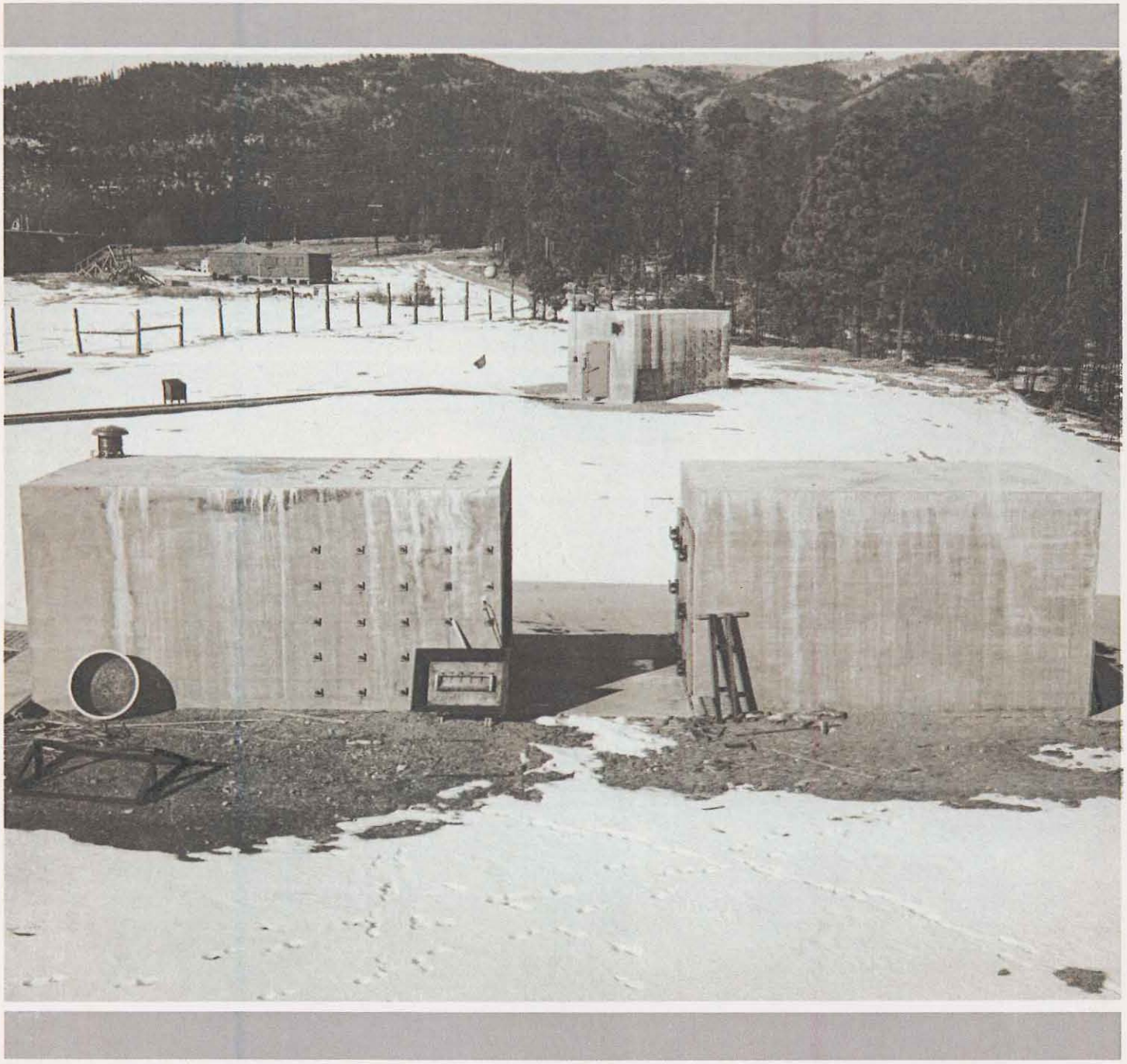
LA-UR-04-7130

Engineering the Bomb: Detonator and Plutonium Recovery Research at Two-Mile Mesa Site (TA-6)

Volume 1



RRES-ECO Heritage Resources and Environmental Policy Compliance Team
Risk Reduction and Environmental Stewardship Division
LOS ALAMOS NATIONAL LABORATORY

LA-UR-04-7130

Engineering the Bomb:
Detonator and Plutonium Recovery Research at Two-Mile Mesa Site (TA-6)

Historic Context and Property Documentation

Historic Building Report No. 236

Los Alamos National Laboratory

September 30, 2004
Survey No. ~~883~~ 833

Prepared for the
Department of Energy, National Nuclear Security Administration
Los Alamos Site Office

prepared by

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RRES-ECO Heritage Resources and Environmental Policy Compliance (HREPC) Team
Risk Reduction and Environmental Stewardship Division
LOS ALAMOS NATIONAL LABORATORY

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ACRONYMS

AEC – Atomic Energy Commission

kV - Kilovolt

LASL – Los Alamos Scientific Laboratory

LASO – Department of Energy, National Nuclear Security Administration, Los Alamos Site Office

LANL – Los Alamos National Laboratory

MOA – Memorandum of Agreement

NASA – National Aeronautics and Space Administration

NTS – Nevada Test Site

PETN – Pentaerythritol tetranitrate

OSRD – Office of Scientific Research and Development

SHPO – State Historic Preservation Officer

TA – Technical Area

TM – Two-Mile Mesa

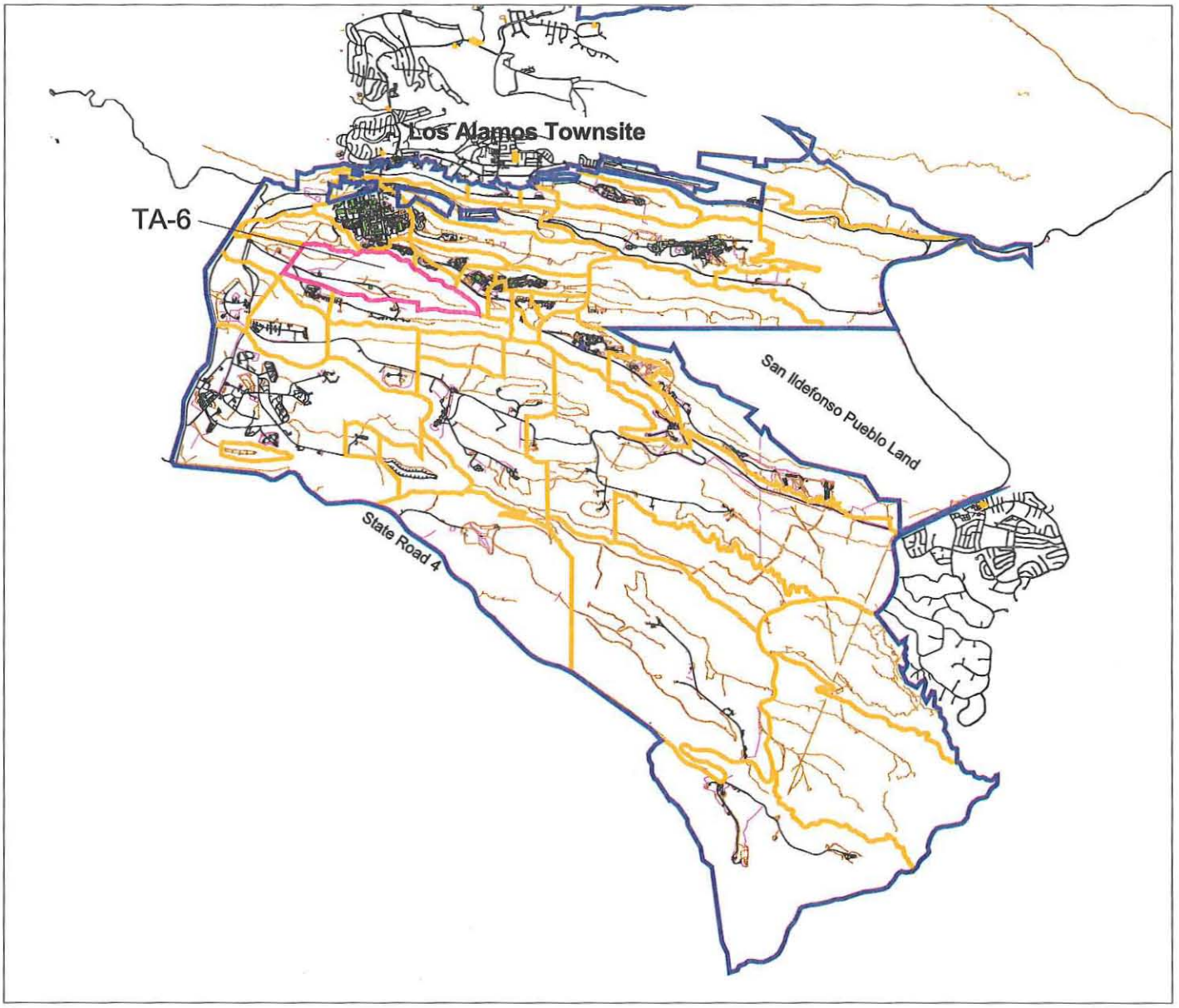
TNT – Trinitrotolulene

INTRODUCTION

The following documentation fulfills the terms set forth in a memorandum of agreement (MOA) between the Department of Energy, National Nuclear Security Administration, Los Alamos Site Office (LASO) and the New Mexico Historic Preservation Division regarding the demolition of buildings TA-6-1, -2, -3, -5, -6, -7, -8, and -9 at Technical Area (TA) 6, Los Alamos National Laboratory (LANL). As per the terms of the MOA, finalized on November 13, 2003, Volume 1 of this report includes a history and description of TA-6. Appendices to Volume 1 include historic building inventory forms with selected photographs and building drawings (Appendix A), maps showing TA-6's construction history and the location of eligible and non-eligible properties (Appendix B), oral interview information (Appendix C), and a listing of drawings on file at LANL for the eight buildings listed in the MOA (Appendix D). A set of indexed archival photographs of the MOA properties is included in Volume 2.

Buildings TA-6-1, -2, -3, -5, -6, -7, -8, and -9 were determined eligible for the National Register of Historic Places under Criterion A or under both Criterion A and Criterion C in correspondence between the New Mexico State Historic Preservation Officer (SHPO) and LASO on June 5, 2003. Initial recommendations for eligibility are contained in a report written by LANL heritage resource managers (*Sentinels of the Atomic Dawn: A Multiple-Property Evaluation of the Remaining Manhattan Project Properties at Los Alamos (1942-1946)*, Historic Building Survey Report No. 215, LA-UR-03-0726).

Situated on the Pajarito Plateau in northern New Mexico, TA-6 is located south of LANL's main administrative area in the central region of the Laboratory (Map 1). Work processes carried out in this remote technical area, historically known as Two-Mile Mesa Site or TM Site, supported early World War II detonator development and plutonium recovery research related to the weaponization of the "Fat Man" or implosion-type atomic bomb. Post-war work at TA-6 focused primarily on detonator improvements until 1952, by which time all laboratory, fabrication, and testing work had been relocated to nearby facilities at TA-22 and TA-40. Other scientific research continued at TA-6 until the mid 1980s—operations included explosives development, laser and chemistry research, and experiments regarding detonation and shock



Los Alamos
National Laboratory
Heritage Resources and
Environmental Policy Compliance Team
RRES-ECO Ecology Group

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4000 0 4000 8000 12000 16000 Feet

1000 0 1000 2000 3000 4000 5000 Meters

N
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Technical Area 6
LANL Boundary
LANL Tech Area Boundary
Roads
Roaddirt
Parkpave
Parkdirt
Fences

TA-6

Map 1

waves in gases. TA-6's historical significance, however, rests with its contributions to World War II research—experiments conducted at TA-6 were critical to the timely production of the world's first atomic weapons designs. Without the specialized engineering of unique weapons components, such as the development of detonator systems at a level of speed and precision never before achieved, the theories of atomic science would never have progressed to deliverable weapons systems.

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 (an arrangement that has continued to this day). 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.

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 trinitrotolulene (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.

Early Cold War Era (1946–1956)

The future of the early Laboratory was in question after the end of WWII. Many scientists and site workers left Los Alamos and went back to their pre-war existences. Norris Bradbury had been appointed director of the Laboratory following Oppenheimer's return to his pre-WWII duties (LANL 1993a). Bradbury felt that the nation needed "a laboratory for research into

military applications of nuclear energy" (LANL 1993a:62). In late 1945, General Groves directed Los Alamos to begin stockpiling and developing additional atomic weapons (Gosling 2001). Post-war weapon assembly work was now tasked to Los Alamos's Z Division, which had been relocated to an airbase (now Sandia) in nearby Albuquerque, New Mexico (Gosling 2001).

In 1946, Los Alamos became involved in the atmospheric testing program in the Pacific, dubbed "Operation Crossroads." Later, also in 1946, the U.S. Atomic Energy Commission (AEC) was established to act as a civilian steward for the new atomic technology born of WWII. The AEC formally took over the Laboratory in 1947, making a commitment to retain Los Alamos as a permanent weapons facility.

With the beginning of the Cold War—the term "Cold War" was first coined in 1947—weapons research once again became a national priority. Weapons research at Los Alamos, spearheaded by Edward Teller and Stanislaw Ulam, focused on the development of the hydrogen bomb, the feasibility of which had been discussed seriously at Los Alamos as early as 1946. The simmering Cold War came to a full boil in late 1949 with the successful test of "Joe I," the Soviet Union's first atomic bomb. In January of 1950, President Truman approved the development of the hydrogen bomb; Truman's decision led to the remobilization of the country's weapons laboratories and production plants. The year 1950 also marked the first meeting of Los Alamos's "Family Committee"—a committee tasked with developing the first two thermonuclear devices (LANL 2001). In 1951, the Nevada Proving Ground (now the Nevada Test Site [NTS]) was established and the first Nevada atmospheric test, "Able," was conducted. In the same year, Los Alamos directed "Operation Greenhouse" in the Pacific and successfully conducted both the first thermonuclear test, "George," and the first thermonuclear "boosted" test, "Item." In 1952, the first thermonuclear bomb, known as "Mike," was detonated at Enewetak Atoll[1] in the Pacific (LANL 1993a). In short order, the Soviet Union responded with a successful demonstration of the use of fusion in August 1953, followed by a test of a hydrogen bomb in 1955. The arms race was on. By 1956, Los Alamos had successfully tested a new generation of high explosives

[1] A better understanding of the Marshall Islands language has permitted a more accurate transliteration of Marshall Island names into English. Enewetak is now the preferred spelling (formerly Eniwetok).

(plastic-bonded explosives) and had begun to make improvements to the primary stage of a nuclear weapon (LANL 2001).

Although weapons research and development has always played a major role in the history of LANL, other key themes for the years 1942–1956 include supercomputing advancements, fundamental biomedical and health physics research, high explosives research and development, reactor research and development, pioneering physics research, and the development of the field of high-speed photography (McGehee and Garcia 1999). The Early Cold War era at Los Alamos ended in 1956, a date that marks the completion of all basic nuclear weapons design at LANL; later research at Los Alamos focused on the engineering of nuclear weapons to fit specific delivery systems. The year 1956 was also the last year that Los Alamos was a closed facility—the gates into the Los Alamos townsite came down in 1957.

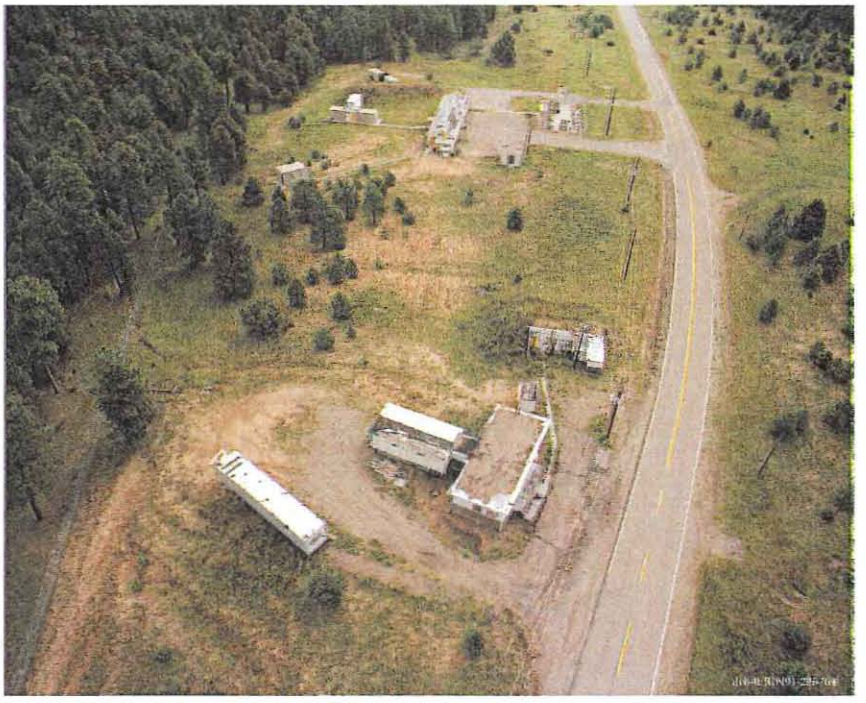
Late Cold War Era (1956–1990)

The Late Cold War era saw Los Alamos's continued support of the atmospheric testing programs in the Pacific and at NTS. In 1957, the first of many underground tests at NTS was conducted. Other defense mission undertakings during this time included treaty and test ban verification programs (such as using satellite sensors to detect nuclear explosions), research and development of space-based weapons, and continued involvement with stockpile stewardship issues. Non-weapons undertakings supported nuclear medicine, genetic studies, National Aeronautics and Space Administration (NASA) collaborations, superconducting research, contained fusion reaction research, and other types of energy research (McGehee and Garcia 1999).

HISTORIC CONTEXT OF TECHNICAL AREA (TA) 6, TWO-MILE MESA SITE

Two-Mile Mesa Site--General Overview

TA-6 (TM Site) is located on Two-Mile Mesa to the south of LANL's main administrative area (TA-3) and the town of Los Alamos (Figures 1 and 2) (Maps 2 and 3). Wartime research at TA-6 focused primarily on developing the detonators necessary for the atomic bomb.

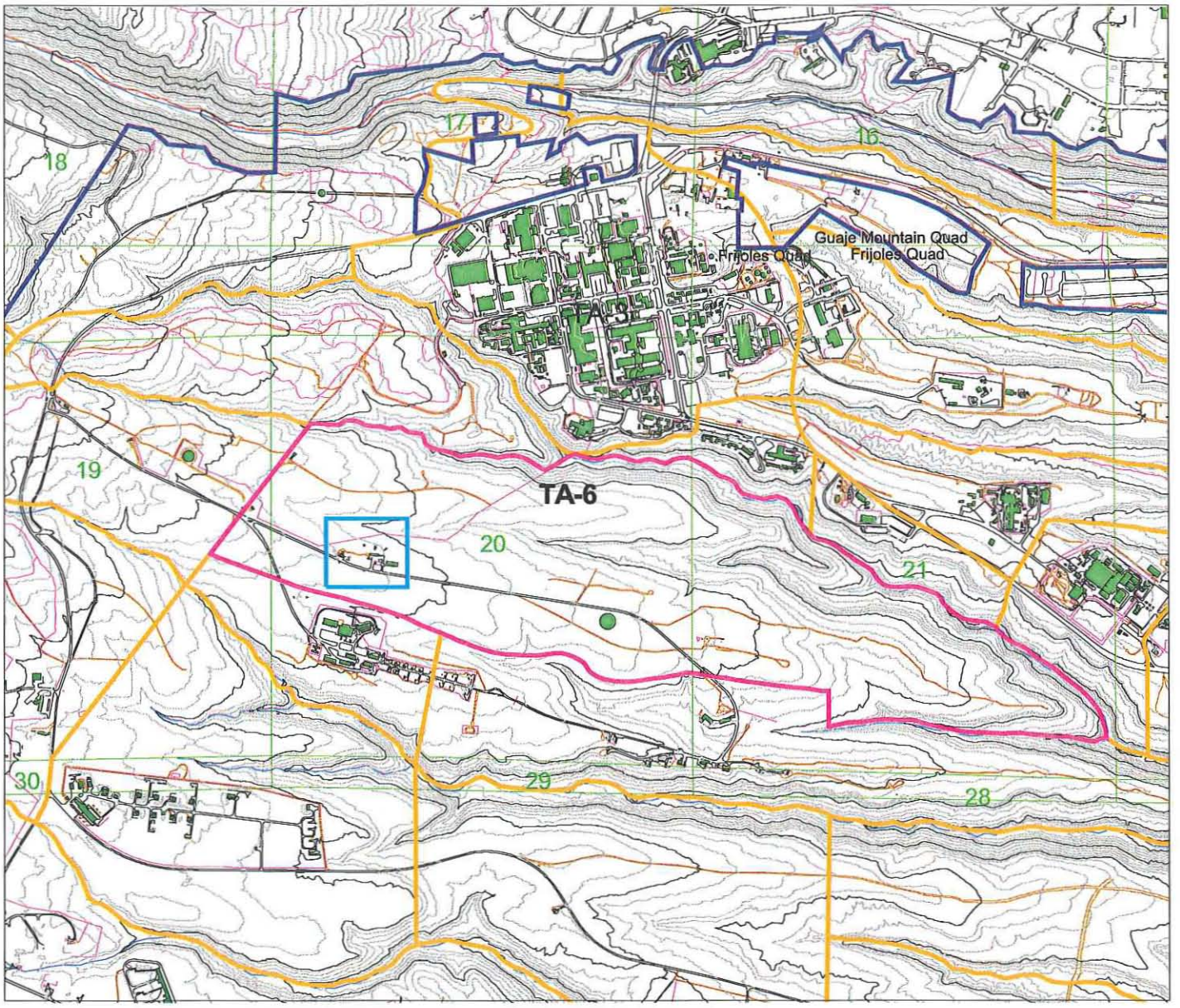


(LANL, IM-9 Photography, #RN91-235-164)

Figure 1. Overview of TA-6
(TA-6-1, -2, and -3 in foreground)

(LANL, IM-9 Photography, #RN91-222-001)

Figure 2. TA-6, Eastern Grouping of Buildings (TA-6-5, -6, -7, -8, and -9)



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RRES-ECO Ecology Group

800 0 800 1600 2400 3200 Feet

200 0 200 400 600 800 1000 Meters

N
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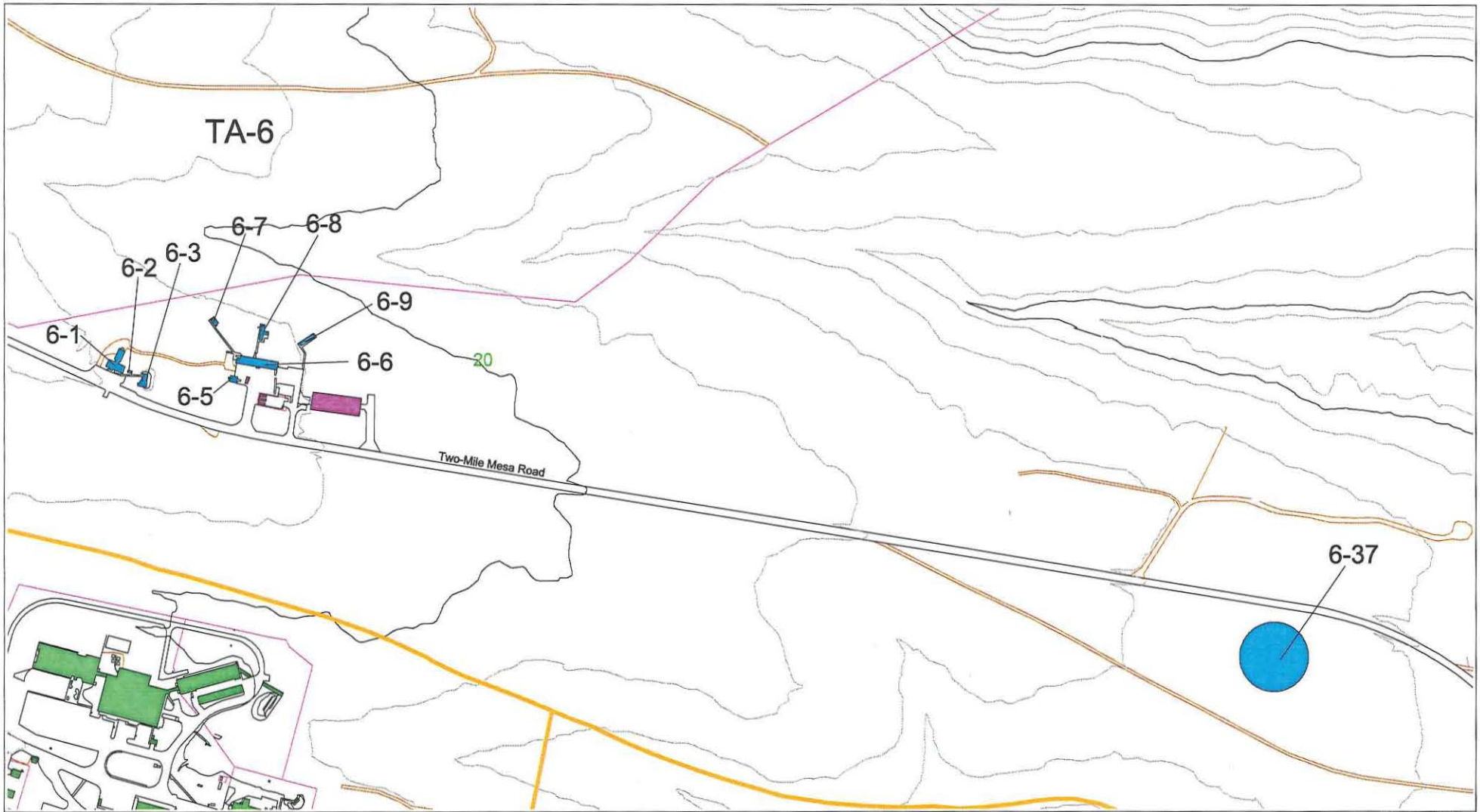
S

- Project Area
- Tech Area 6
- LANL Boundary
- LANL Tech Area Boundary
- 20 Foot Contours
- 100 Foot Contours
- Drainage
- Township, Section, Range
- USGS 7.5 Minute Quad
- Trails
- Roads
- Roaddirt
- Parkpave
- Parkdirt
- Fences
- Buildings/Structures

TA-6 Decontamination and Decommissioning

Map 2



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Heritage Resources and
Environmental Policy Compliance Team
RRES-ECO (Ecology Group)

TA-6 Decontamination and Decommissioning

Map 3

TA-6 Exempt Buildings/Structures
TA-6 Eligible Buildings
LANL Tech Area Boundary
LANL Boundary
20 Foot Contours
100 Foot Contours
Drainage
Township, Section, Range
Trails
Roads
Roaddirt
Parkpave
Parkdirt
Fences
Buildings/Structures

N
W E
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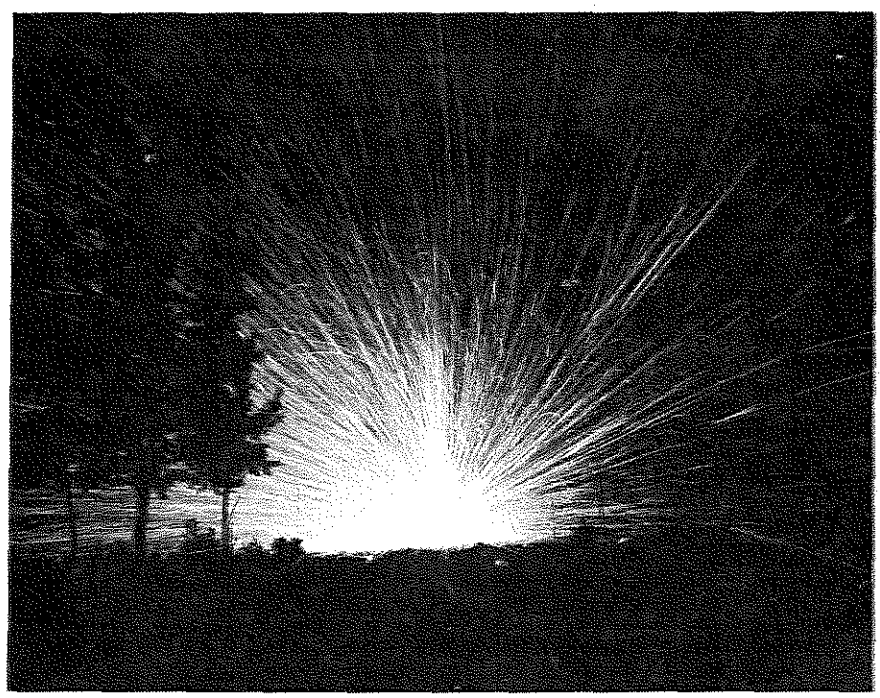
1:5000

200 0 200 400 600 Feet

30 0 30 60 90 120 150 180 210 240 Meters

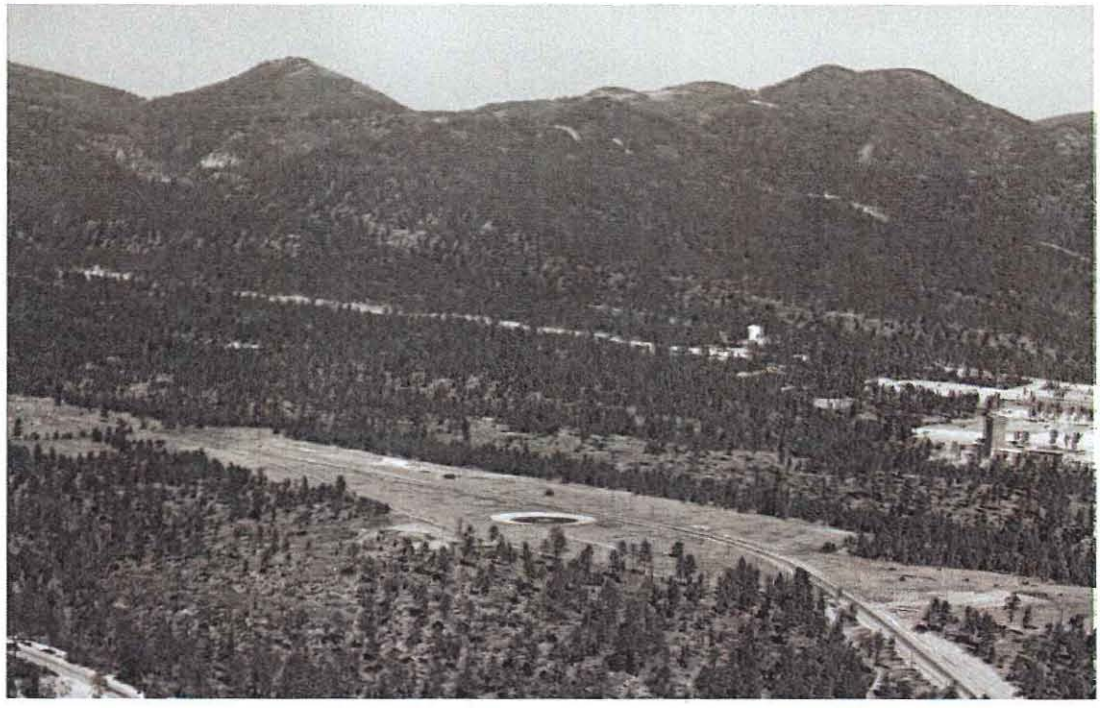
TM Site was also used to develop methods for recovering active material (plutonium) in the event that the Trinity Site field-test of the implosion device failed.

The first facilities at TM Site were constructed in 1944 and were used for miscellaneous high explosives tests (U.S. DOE 1986) (Figure 3). Early buildings and structures were rough field installations and included bunkers, a control building, and a shop building. By the spring of 1944, Los Alamos scientists were using building TA-6-3 to conduct firing tests located at a sand pit built approximately one-half mile to the east. The TA-6-3 control bunker and an associated generator building (TA-6-2) were the first facilities at TM Site. A large concrete experimental structure, located to the east of TM Site, was built by October of 1944 to support plutonium recovery operations (Figure 4). The "concrete bowl," as it is now known, was designed "for experiments of recovery when a gadget [bomb] is immersed in an elevated tank of water" (LASL 1944a). Small wooden storage structures, housing Fat Man bomb casings or other components, were also located on the mesa top area to the east of TA-6 (Creamer 1992, McGehee *et al.* 2003, Masse *et al.* 2001) (Figure 5).



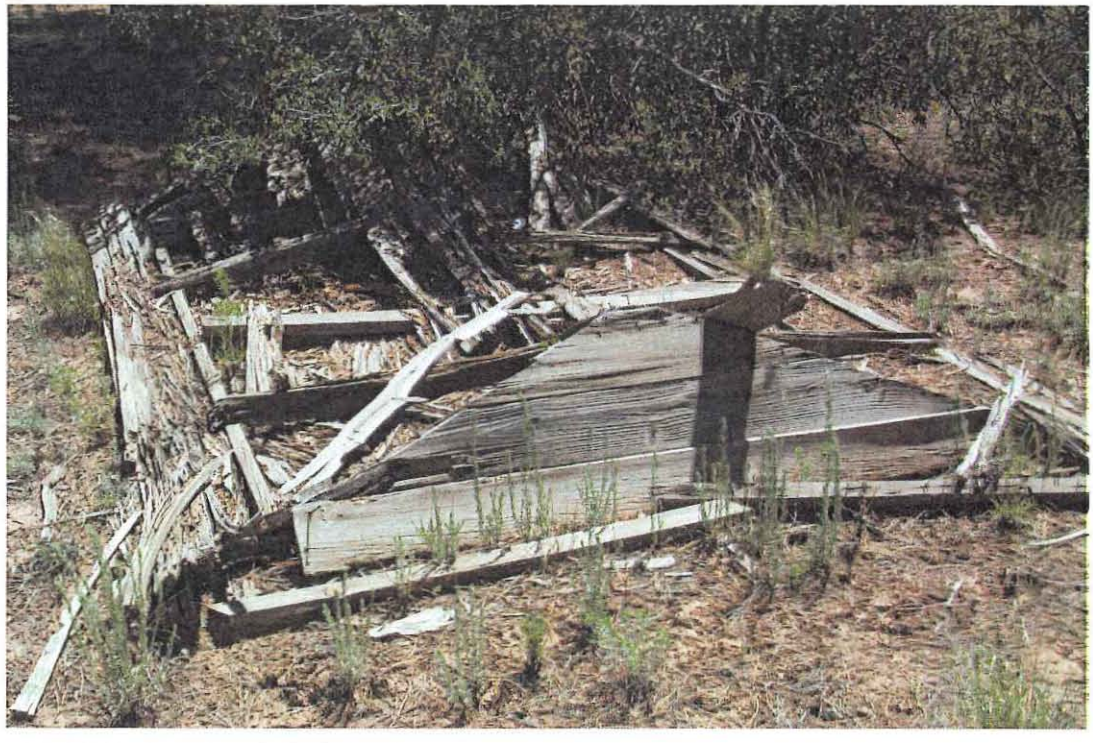
(Photo courtesy of the Los Alamos Historical Museum Archives, #P1992-33-1-3741)

Figure 3. Explosion at Two-Mile Mesa, July 1944



(LANL, IM-9 Photography, #15951)

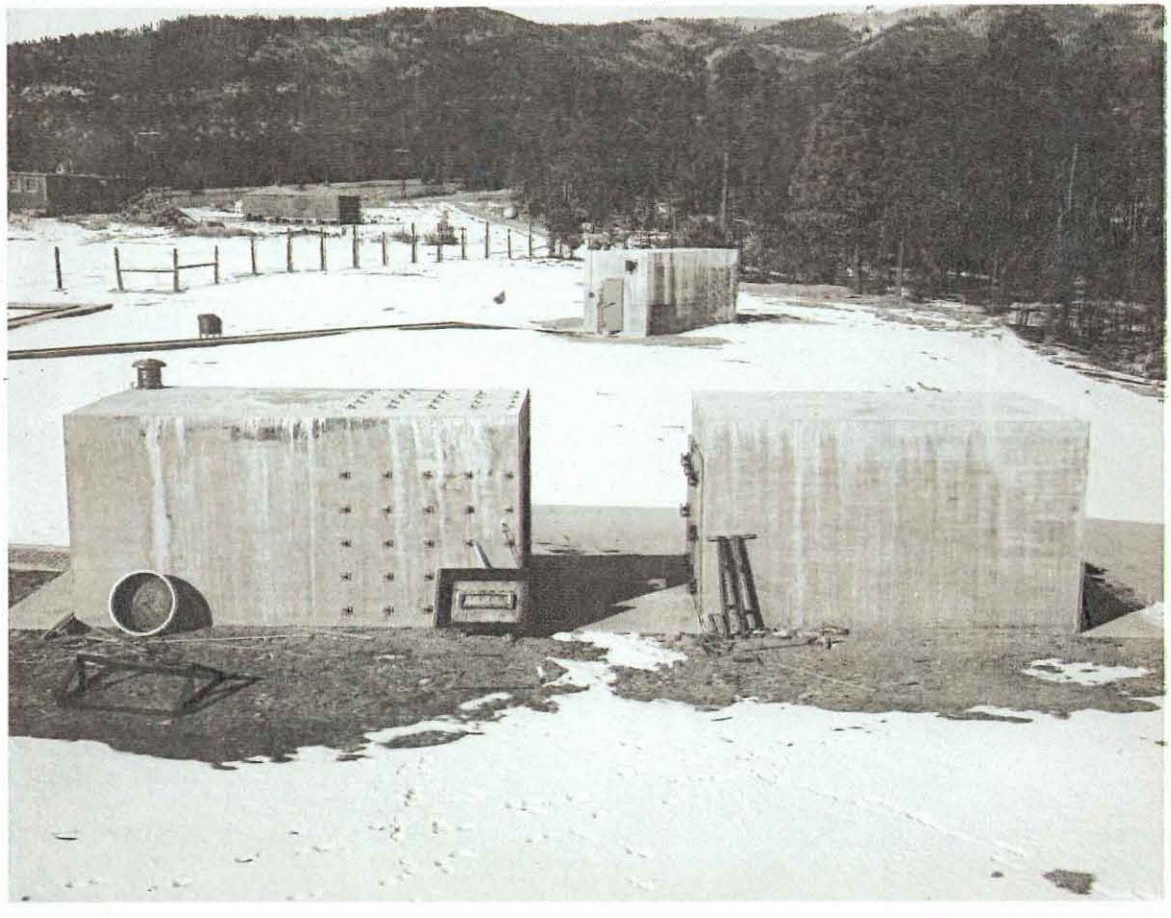
Figure 4. The Concrete Bowl, TA-6-37, circa 1950



(LANL, RRES-ECO/HREPC, #P0000696)

Figure 5. Wooden Storage Structure

In 1945, Manhattan Project director Robert Oppenheimer ordered most detonator work moved to Two-Mile Mesa. In response to this directive, TM Site was enlarged in the spring of 1945 to include detonator manufacturing and testing facilities; new construction consisted of laboratories, concrete detonator test structures, and storage magazines (Figure 6). Soon the wartime Laboratory had erected over forty buildings to support detonator development. A new administration building, laboratories, and firing chambers were clustered to the north of Two-Mile Mesa Road, east of buildings TA-6-2 and TA-6-3. A group of eleven storage magazines and other associated buildings were located across the road to the south (Figure 7).



(Photo courtesy of the Los Alamos Historical Museum Archives, #P1995-2-1-2431)

Figure 6. Buildings at TA-6, TM Site
(TA-6-8, foreground, shown prior to two-story wood addition)

(LANL, IM-9 Photography, #15937)

Figure 7. TA-6, circa 1950

TA-6 was a very active place at its wartime peak. Detonator operations included classifying and weighing PETN[2], pressing and sealing the PETN in tubes, and assembling detonators. Shake tests of detonators were also conducted. TA-6 remained the center of detonator testing at the Laboratory during the immediate post-war period. However, in 1948, Laboratory director Norris Bradbury directed that a new technical area be created for detonator research. The boundaries of this new technical area, TA-22, included land that was originally part of TA-6. Soon after, all office, laboratory, and fabrication work moved from TA-6 to nearby TA-22. In 1950, Bradbury established TA-40 to replace the firing chambers at TA-6. The last firing tests at TA-6 took place in 1952 and all firing experiments moved to nearby TA-40 (located to the east of TM Site

[2] PETN – The explosive "Pentaerythritol Tetranitrate"

on Two-Mile Mesa). Explosives development, laser and chemistry research, and photographic operations continued at TA-6 until the early 1980s. In particular, the research section of the Detonator Group, GMX-7, used several buildings at TA-6 until 1972 for experiments on detonation and shock waves in gases (LANL 1993b).

Many of the early TA-6 buildings have been relocated or demolished over the years. Removal of storage buildings and magazines began as early as 1949 with the relocation of building TA-6-12, a small hutment used for detonator pressing and storage. Other buildings removed during the 1950s to 1970s include TA-6-11 (a detonator loading shack) and TA-6-4 and TA-6-20 (storage magazines). In 1960, many of the buildings at TA-6 were burned by the Laboratory: TA-6-10 (a PETN recrystallization laboratory), TA-6-13 (a small explosives laboratory), TA-6-14 (a pressing hutment), TA-6-15 (a boiler house), TA-6-38 (a generator building), and TA-6-49 (a ramp and building). The storage magazines and other buildings located south of Two-Mile Mesa Road were also burned at this time (TA-6-16, -17, -21 through -30) (LASL 1945a, U.S. DOE 1986) (see Appendix B for maps showing the location of these previously removed properties).

"Engineering the Bomb"

The major accomplishment of Project Y was the actual production of the first fission devices—the transition from a theoretical concept to a weaponized reality (Hoddeson *et al.* 1998). Scientist Robert Serber, in his introductory lectures known as "the Los Alamos Primer," acknowledged this when he said that the Laboratory's principal mission was the production of "a practical military weapon" (Hoddeson *et al.* 1998: 69).

Fortunately, much of the theoretical basis for atomic weapons was well known by the time Oppenheimer started assembling his team of scientists in early 1943. However, specific scientific and engineering details still had to be worked out. In the spring of 1943, chemical, metallurgical, and technical problems abounded, and further work was needed on many aspects

of weapons design including the key areas of critical mass, instantaneous assembly, methods of detonation, and effects of tamper[3] (LANL 1995, Smyth 1989).

In response to these and other research problems, diverse and complex engineering methods were developed relating to detonator, initiator, and high explosives research. For example, hundreds of iterative experiments were conducted in order to develop the correct design for the explosive lenses used in the implosion device.

Detonator Research

One of the most difficult problems faced by Manhattan Project scientists working at Los Alamos was the wartime development of detonators (see Hoddeson *et al.* 1998, pages 169-173, 301-307, and 321-325, for an in-depth discussion of Los Alamos's wartime detonator research). The importance of using precision detonators for multipoint detonation was apparent early in the development of the Fat Man or plutonium implosion device. The simultaneous firing of detonators[4] and the development of precision timing systems were major technical problems to work out, especially since commercially available detonators were not adequate (Hawkins *et al.* 1983). Detonators and associated high explosives components were designed, built, inspected, and tested at Los Alamos technical areas such as South Mesa Site (TA-3) and TM Site (TA-6). Luis Alvarez directed G-Division detonator research and Lewis Fussell and Lt. Commander E. Stevenson oversaw some of X-Division's efforts (Martinez 1991, Hornig 1986, Hawkins *et al.* 1983).

In order for the atomic bomb to work correctly, a series of precisely timed explosions was needed to compress the weapon's nuclear core. Manhattan Project scientists were tasked with the development of detonators that would set off the main explosive charges at a level of precision that had never before been achieved. Like many wartime goals, the scientists worked on multiple versions of detonators and associated firing circuits in order to identify the most effective designs in the shortest period of time.

[3] Tamper is an internal component of the atom bomb and serves to reflect neutrons. The presence of tamper material delays the expansion of the exploding material and makes the explosion more energetic.

[4] A detonator is a device for setting off explosions, similar to a "blasting cap."

Industry had made some progress toward the development of detonators, but commercial products were well below the level of precision necessary for use in an atomic weapon. In addition, neither industry nor the military had faced the issue of firing large numbers of detonators simultaneously, something that was necessary in order to symmetrically compress the plutonium core of the Fat Man device and cause a critical reaction. Los Alamos scientists had to overcome a series of technical challenges on the way to developing the new generation of detonators ultimately used in the first atomic weapons. In general, detonators would need to be safe and reliable, and firing circuits would need to work in cold conditions and be able to withstand the heavy vibration of a falling bomb (Hoddeson *et al.* 1998).

When Los Alamos scientists first began working on the detonator problem they used a single electrical detonator that started a detonation wave down a length of Primacord (a flexible tubing filled with the explosive PETN). Researchers used Primacord because electric detonators had timing uncertainties of approximately one millisecond. While this uncertainty factor seems miniscule, for the precise timing needed to detonate a nuclear bomb, it was quite significant.

In May of 1944, Luis Alvarez and Lawrence Johnston conducted a series of important detonator experiments that would transform the wartime detonator program. Alvarez was searching for a way to use electric detonators to produce the simultaneous multipoint detonations necessary for implosion shots. He raised the critical question: was it really necessary to ignite a sensitive primary explosive before detonating a less sensitive secondary one? Alvarez wanted to explore the possibility of using the vaporization of an electric bridgewire detonator to detonate the secondary explosive. One of Alvarez's first tests was a fairly simple method of determining the simultaneity of multiple detonations using electric bridgewire detonators[5]. Johnston conducted the experiments at South Mesa (TA-3). He used a one-ft length of Primacord with a detonator taped to each end and a block of lead placed under its middle. Johnston then set off the two detonators, starting detonation waves that met in the middle. When the two waves collided, the increased pressure dug a crease in the lead. If the detonators fired simultaneously, the crease in

[5] A bridgewire detonator contained a wire that could be heated by a high-voltage, low-current electric current. The glowing bridgewire would then set off a small amount of "sensitive" explosive, which had been penetrated by the wire.

the lead would occur in the middle of the lead block; if the timing was off, the crease would occur near one of the ends. The detonators in the first test fired within less than one microsecond apart, and in a few days the timing spread was less than 1/10 of a microsecond. By August of 1945, the scientists had reduced the timing spread for detonators to within a few billionths of a second (Hoddeson *et al.* 1998, Alvarez 1987).

In the same month, Laboratory director Robert Oppenheimer transferred work on electric detonators to the newly formed G Division. In the fall of 1944, scientists were focusing their testing efforts on both the bridgewire detonator and on another design, the spark-gap detonator[6]. Alvarez's group at TA-6 was primarily responsible for detonator development and performed an in-depth examination of both detonator designs.

> Aided by a large staff...they examined every aspect of both bridgewire and spark-gap detonators—including composition of the wire, explosives and insulation, the voltage versus the capacity of the energy source, the circuit impedance, the wire size, and the methods of preparing and loading the detonators with explosive (Hoddeson *et al.* 1998:301).

Alvarez and his fellow researchers used PETN as the preferred explosive for detonator fabrication. However, PETN needed purification before it could be used and TA-6 scientists also had to develop a method of recrystallization to produce sufficiently pure PETN for the tests.

While detonator research was being conducted by Alvarez' group, Lewis Fussell's X Division group concentrated on the development of the detonator's X-unit or firing circuit and focused on three types of firing switches: the mechanical switch, the explosive switch, and the spark-gap switch. X Division scientist Donald Hornig's spark-gap design had a system of identical rapidly operating switches, and was ultimately chosen over the mechanical switch, which could not fire simultaneously, and the explosive switch, which was viewed as an impractical design for use in the bomb (Hoddeson *et al.* 1998).

While the spark-gap switch and bridgewire detonator designs both proved successful solutions to the detonator problem, the two systems had a complex relationship. Fussell's X Division group

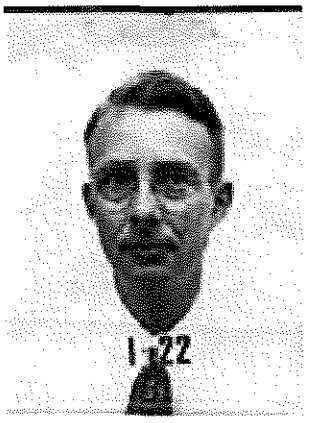
[6] An electric spark-gap detonator used a spark discharge rather than heat from the bridgewire to ignite the primary explosive.

had difficulty making their switches compatible with Luis Alvarez's detonators. Fussell's switches needed to operate with a low current in order to allow the firing circuits to fire many detonators at the same time. Alvarez, however, could not guarantee that his G Division group (G-7) could develop bridgewire detonators that would fire with such low currents. Fussell and Alvarez argued over this issue but they eventually developed compatible systems. Alvarez perfected detonators that required lower voltages while Fussell developed switches that not only handled larger currents and higher voltages, but were suitable for a greater number of detonators (Hoddeson *et al.* 1998).

Luis Alvarez

Born in San Francisco, California, on June 13, 1911, Luis W. Alvarez played an invaluable role in the development of the atomic bomb at Los Alamos. Alvarez received his Ph.D. from the University of Chicago in 1936 and joined the Radiation Laboratory of the University of California as a research fellow in the same year. He soon became a professor at California where he became a pioneer in nuclear physics. In 1937, he gave the first experimental demonstration of the existence of the phenomenon of K-electron capture by nuclei, and in the early 1940s, was part of the team that discovered the radioactivity of ^{3}H, commonly known as tritium. Alvarez also demonstrated that ^{3}He was a stable constituent of ordinary helium, an important discovery in low temperature research. During World War II, Alvarez first served at the Massachusetts Institute of Technology, where he developed three important radar systems. He then worked at the Metallurgical Laboratory at the University of Chicago from 1943 to 1944 before coming to the Manhattan Project's Project Y (Los Alamos) in 1944 (The Nobel Foundation 2004).

While at Los Alamos, Alvarez spearheaded the development of detonators. In 1944, Project Y director Robert Oppenheimer named Alvarez head of G-7 to develop the detonators needed to explode a plutonium bomb (Figure 8). Alvarez and his team of scientists faced the difficult prospect of detonating all the explosives electronically and with exact precision. G-7 detonators were eventually used in the "Fat Man" bomb that was dropped over Nagasaki, Japan, on August 9, 1945 (Figure 9).



(LANL, IM-9 Photography)

Figure 8. Luis Alvarez. Los Alamos Badge Photo

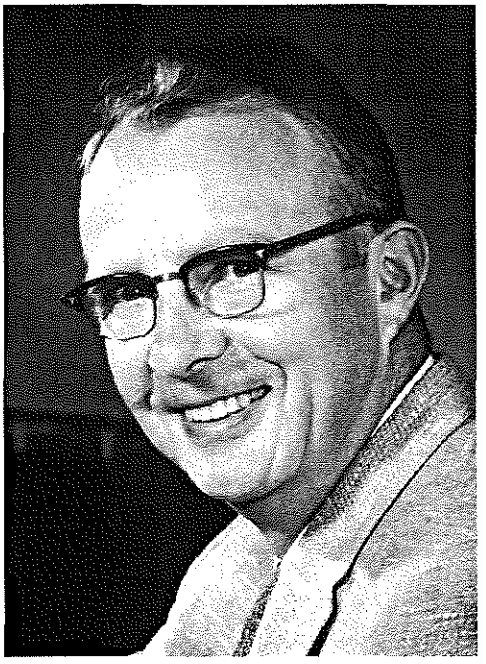
(LANL, IM-9 Photography, #TR-612)

Figure 9. Luis Alvarez (standing right) with Former Laboratory Director Harold Agnew (standing left) and others on Tinian Island, August 1945

After the war, Alvarez went back to the University of California to continue his scientific research, developing a 40-foot proton linear accelerator in 1947 and publishing the first ideas for charge exchange acceleration that led to the development of the Tandem Van de Graaff accelerator in 1951. In 1968, Luis Alvarez won the Nobel Prize in Physics for his

groundbreaking work (Figure 10). When presenting Alvarez's award, the Nobel committee said of him:

> Your contributions to physics are numerous and important. Today our attention is focused on the outstanding discoveries which you have made in the field of high-energy physics as a result of your far-sighted and bold development of the hydrogen bubble-chamber into an instrument of great power and high precision and of the means of handling and analyzing the large quantities of valuable information which it can produce (The Nobel Foundation 2004).



ALVAREZ, Luis Walter
Nobel Laureate PHYSICS 1968
© Nobelstiftelsen

(© The Nobel Foundation, used with permission)

Figure 10. Luis Alvarez, 1968

Today, Alvarez is most famous for the theory that an asteroid killed off the dinosaurs approximately sixty-five million years ago. Alvarez developed this extinction theory in 1980 along with his son Walter Alvarez, a geologist at the University of California. Luis W. Alvarez, one of the world's most respected and famous scientists, died of cancer in Berkeley, California, on September 1, 1988 (The Nobel Foundation 2004).

Plutonium Recovery Experiments

The Concrete Bowl (TA-6-37)

One of the most visible legacies of wartime testing at TA-6 is the large 200-ft diameter concrete bowl recovery experiment (Figures 11, 12, and 13).

(LANL, RRES-ECO/HREPC, #6-37conbowl)

Figure 11. TA-6-37, Concrete Bowl

TA-6-37 is a large concrete bowl constructed in 1944 for use as a scaled-down experimentation platform. The bowl consists of a sloping, ground level concrete pad with a drain in the center of the structure. The concrete bowl is 200 ft in diameter and consists of 16 pie-shaped wedges. The center of the bowl has a raised dome with a metal cover on top. Near the north side of the bowl is a wood-framed and gravel-filled ramp (McGehee *et al.* 2003). After an explosion, workers would wash the depression at TA-6-37 and filter the water to recover the metal shot fragments (LANL 1990).

(LANL, IM-9 Photography, #RN91-221-005)

Figure 12. Aerial View of Concrete Bowl, 1991

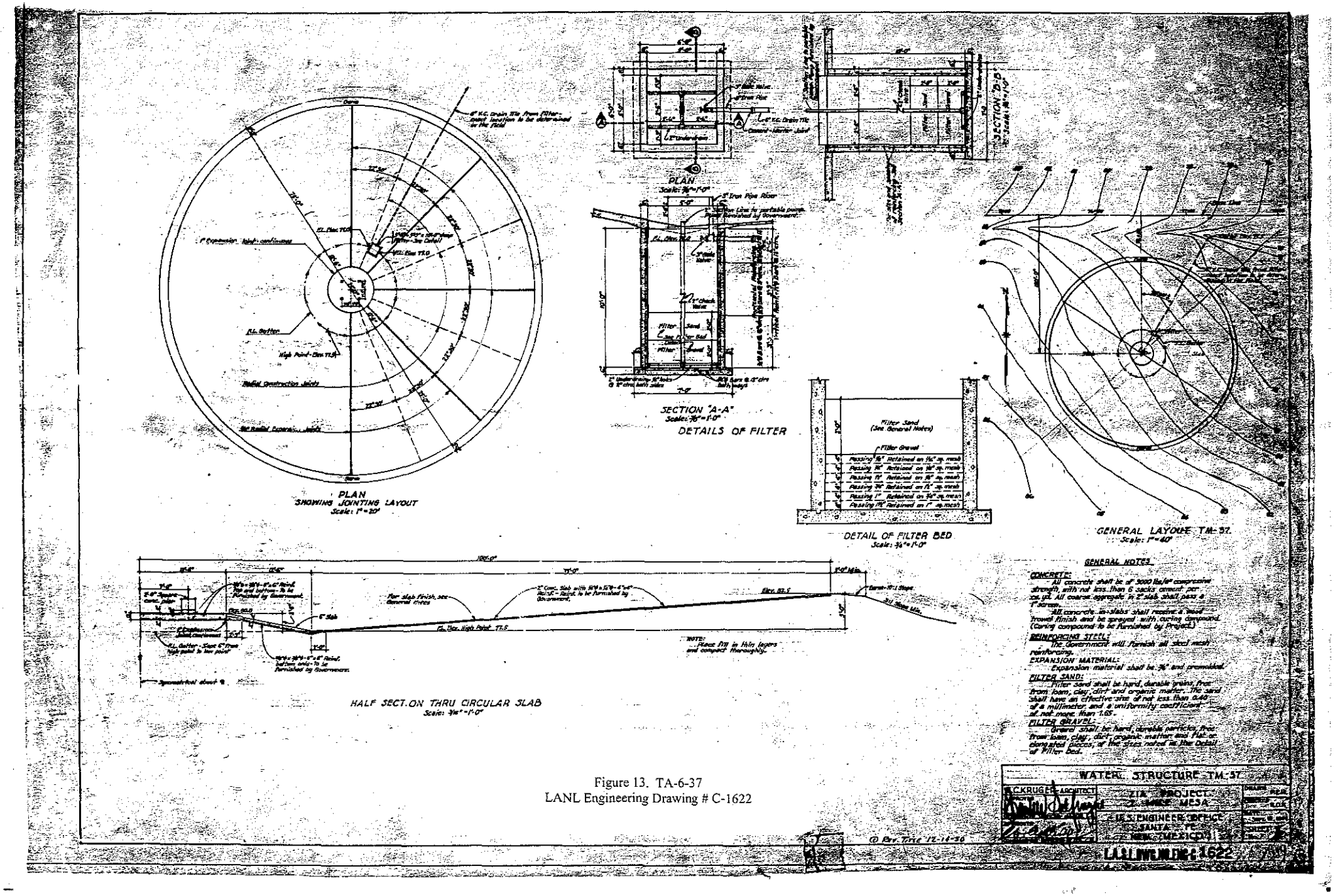


Figure 13. TA-6-37
LANL Engineering Drawing # C-1622

TA-6-37 is particularly significant because it was a plutonium recovery experiment that supported the first nuclear implosion device. Fissile radioactive materials (such as uranium-235 and plutonium) were so rare during World War II that the scientists needed to conserve every bit they could for the first atomic weapons.[7] Scientists were concerned that the implosion design would fail to detonate properly during the Trinity test near Socorro, New Mexico. If the atomic reaction "fizzled," the high explosives used in the bomb would spread the precious radioactive material to the winds (Szasz 1984).

Two-Mile Mesa Site was used to develop methods for recovering active material (plutonium) in the event that the field-test of the implosion device failed. In 1944, researchers developed a water recovery method in which they would suspend a test device in a tank of water; when it exploded, fragments of uranium metal (used as a stand-in for plutonium) would be stopped by a 50 to 1 ratio of water to high explosive mass. The tests involved a shot containing tuballoy (depleted uranium) in a redwood water container on a tower approximately fifty feet high. The shots contained up to ten pounds of explosives and up to five hundred gallons of water (Creamer 1992). The original design for the concrete bowl was too elaborate and would have been too time intensive and costly to build. By reducing the diameter from three hundred to two hundred feet and reducing the thickness of the central area of concrete from twenty-four inches to twelve inches, the scientists produced a more cost efficient and practical design for the water recovery experiment (LASL 1944a). Water recovery tests continued until the spring of 1945.

The Laboratory ultimately decided against using the water recovery method for the Trinity test because it was not feasible to scale the project up to the size required for the test of an actual atomic bomb. Another idea was the sand recovery method. In this method, scientists stationed in TA-6-3 fired irradiated copper at a sand pad located to east of the building (which was then being used as an observation bunker) (Figure 14). These early tests of the sand method at TA-6 did not work, however, because the short half-life of the radioactive material made accurate analysis of the recovered material impossible (Creamer 1992). Tests for the water shots were

[7] Fissile or fissionable material, such as uranium-235 and plutonium, is heavy radioactive material that can be split or fissioned by fast neutrons. The fission of heavy elements is accompanied by a relatively large amount of energy; this fission process is fundamental to the design of the atom bomb.

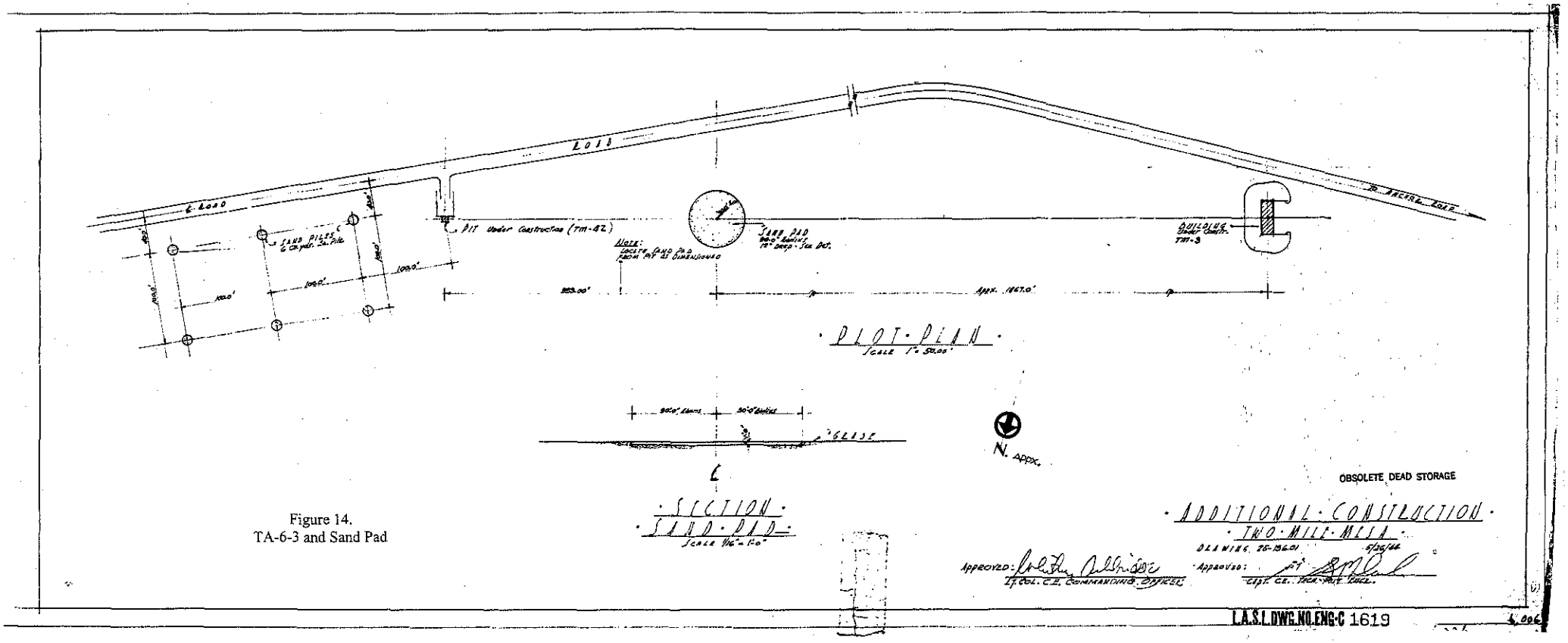
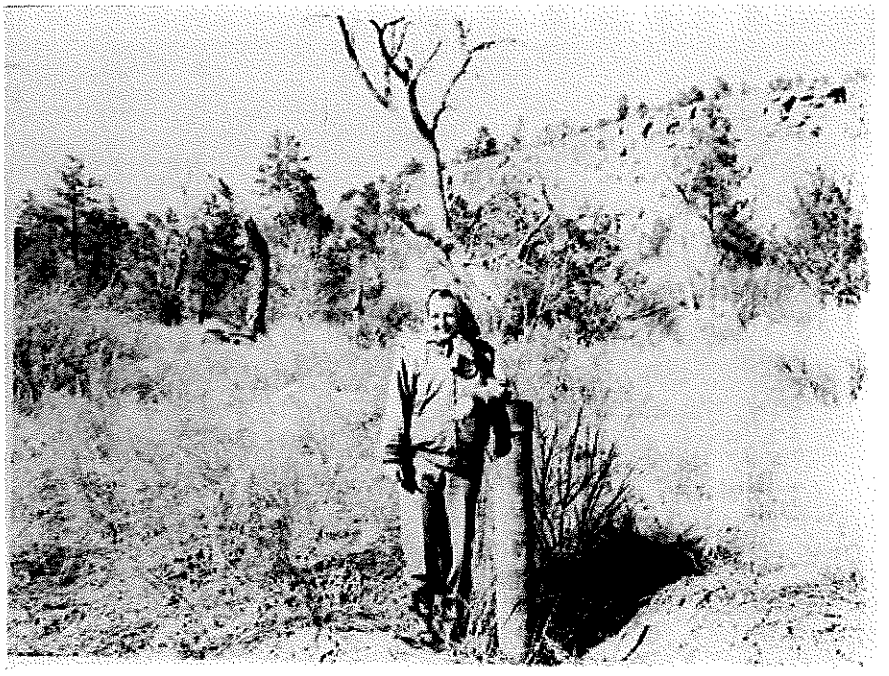


Figure 14.
TA-6-3 and Sand Pad

conducted at TA-6 while the sand recovery method was tested further at Bayo Canyon, located to the north of the Los Alamos townsite area (Figure 15).



(Photograph courtesy of the Los Alamos Historical Museum Archives)

Fig. 15. Explosives Technician Frances Dunne at Bayo Canyon, Working on a Sand Shot

Jumbo and the Jumbinos

Disappointed with the results of the sand recovery experiments and concerned about the ultimate practicality of the water recovery method, scientists ultimately decided to proceed with a third recovery method, physical containment. Using this method, the test device would be placed inside a large steel containment vessel, which would be vaporized if the test succeeded but would be strong enough to contain a conventional high explosives blast (and the plutonium) in the event of a test failure. Scaled-down tests of various containment vessel designs were conducted on Two-Mile Mesa at TA-6 (Figure 16). The first designs were spherical in shape and were tested in a pit at TA-6 (TA-6-42); however, none of the spherical vessels withstood the early high-explosives blasts. The vessel design was then modified to a cylinder form with cast concrete ends. These cylindrical vessels were known as "jumbinos" because they were smaller versions of "Jumbo," a huge steel containment vessel that was eventually built for use at the Trinity test

(Figure 17). Scientists conducted shake tests of explosive assemblies, including "jumbinos," in the concrete bowl structure (TA-6-37) in 1945 (LASL 1944a, Szasz 1984, Creamer 1992, LANL 1993b).

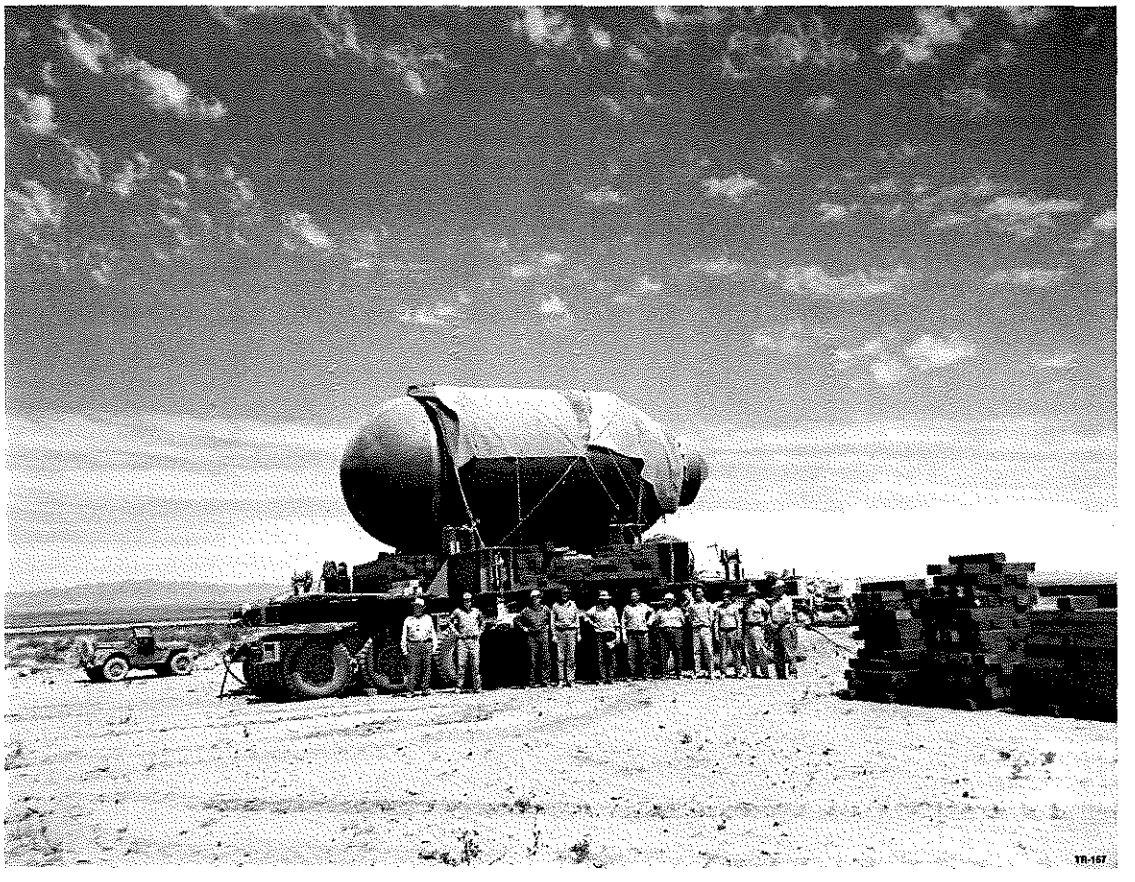
(LANL, Courtesy of Bradbury Science Museum)

Figure 16. Jumbino Parts at TA-6

(LANL, Courtesy of Bradbury Science Museum)

Figure 17. Salvaged Jumbinos at Bradbury Science Museum Warehouse

With the success of the jumbino tests, Los Alamos (with personal leverage from the Office of Scientific Research and Development [OSRD]'s Vannevar Bush) commissioned Babcock and Wilcox Steel Corporation of Ohio to build Jumbo. The steel vessel took three months to complete. Twenty feet long and weighing 214 tons, Jumbo was the world's largest pressure vessel in its time. Transporting Jumbo from Ohio to New Mexico proved to be a difficult task. The vessel traveled by rail to Pope's Siding near Socorro, New Mexico, where it was unloaded onto a 64-wheel trailer and hauled the remaining 15 miles to Trinity Site (Figure 18). In spite of these elaborate and costly preparations, Manhattan Project scientists chose not to use Jumbo in the final days leading up to the test—they feared that placing the bomb inside of Jumbo would drastically affect the measurements and could make for a larger fireball than desired. Instead, the scientists placed Jumbo on a 20-ft high tower structure near the blast to see how the vessel would be affected by the explosion (Figure 19).



(LANL, IM-9 Photography, #TR-157)

Figure 18. Jumbo on 64-Wheel Transport Trailer

(LANL, IM-9 Photography, #TR-179)

Figure 19. Jumbo on Tower Structure at Trinity Site, 1945

In part to justify the tremendous expense of Jumbo, the Army "tested" the unscathed vessel a few years later with an explosive blast generated by several 500-lb bombs. Jumbo, with its ends blown off, still resides near ground zero. Popular with tourists who visit Trinity Site, Jumbo remains a symbolic reminder of the myriad engineering efforts that supported (both successfully

and unsuccessfully) the development of the atomic bomb (Goldberg 1991, Hoddeson *et al.* 1998, LANL 1993a, Szasz 1984) (Figures 20 and 21).

(LANL, RRES-ECO/HREPC, #DCP_0075)

Figure 20. Jumbo (with its ends blown off)

(LANL, RRES-ECO/HREPC, #DCP_0074)

Figure 21. Jumbo Near Ground Zero

PROPERTY DESCRIPTIONS (TA-6-1, -2, -3, -5, -6, -7, -8, -9)

TA-6-1

(LANL, RRES-ECO/HREPC, #P0001246)

TA-6-1

Constructed in 1944, TA-6-1 was used primarily as a chemistry laboratory and carpenter shop to support detonator research. During the war, scientists working at TA-6-1 developed analytical procedures for nonradioactive cobalt tracer shots fired at the asphalt pad. After the war, the Laboratory mostly used the building as a shop, including some silver soldering. The building continued to serve as a carpenter's shop until the 1980s (LANL 1993b).

TA-6-1 is made up of two barrack-type structures set perpendicular to each other and connected by a small corridor. The original portion of the building, constructed in 1944, is oriented east/west. A small connecting corridor was added to the north side of the building in October 1944. In 1958, an addition was added to the north side of the 1944 addition and is oriented north/south. The structures are wood-frame construction with a low slope roof, asbestos wall shingles, and built up and composite roofing material. Corrugated metal siding has been added

up to the wainscot level on the exterior of the original portion and the 1944 addition. Numerous windows are visible in the perimeter walls. The windows are wood sash, hopper style, with three-over-three window lights. The foundation is of concrete piers and the building is elevated about three feet. Wood stairs and platforms provide elevation rise to the floor level. The front door area is covered by a wood porch and canopy, which provides weather protection and some exterior material storage. The two main entry doors are wood double doors with two-over-two window lights.

TA-6-2

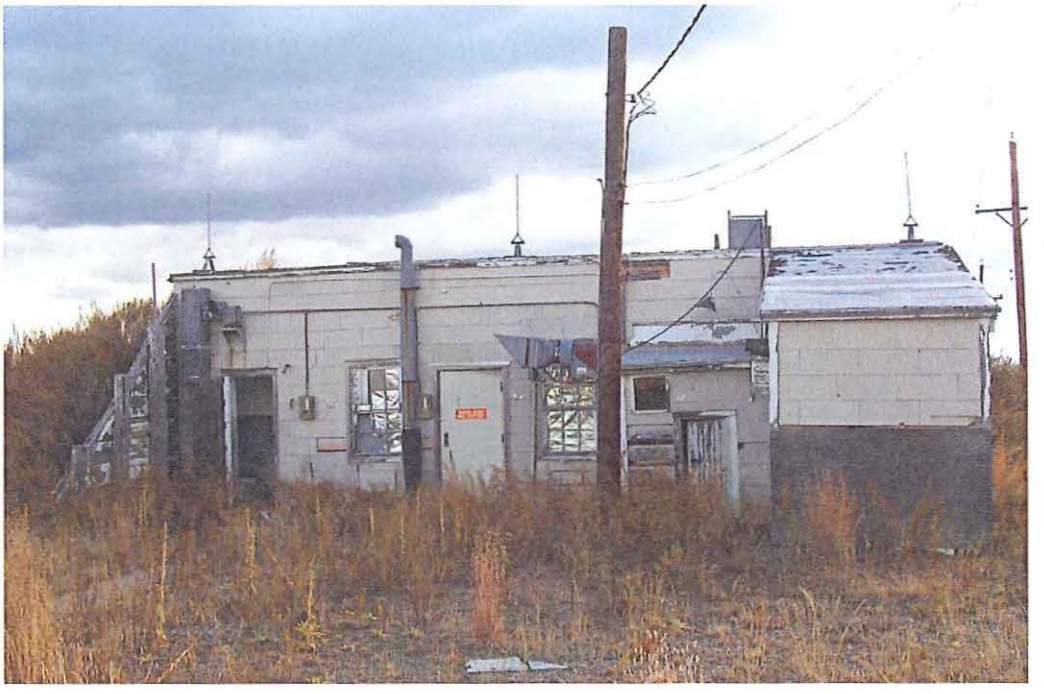
(LANL, RRES-ECO/HREPC, #P0001230)

TA-6-2

TA-6-2 is a small mechanical building that was constructed in 1944 along with building TA-6-3. Little is known of the day-to-day activities that occurred in TA-6-2 other than that it functioned as a generator building and housed an air compressor during the war (McGehee *et al.* 2003, U.S. DOE 1986).

Building TA-6-2 sits on a concrete slab and foundation. The walls are wood frame with asbestos shingles, and the roof is low slope with composite roof material. The current finishes and exposed materials, such as painted wood and roofing material, have deteriorated. The front elevation has a single door. Several wood louver panels that provide air flow to the original equipment can be seen on the other three walls.

TA-6-3



(LANL, RRES-ECO/HREPC, #P0001249)

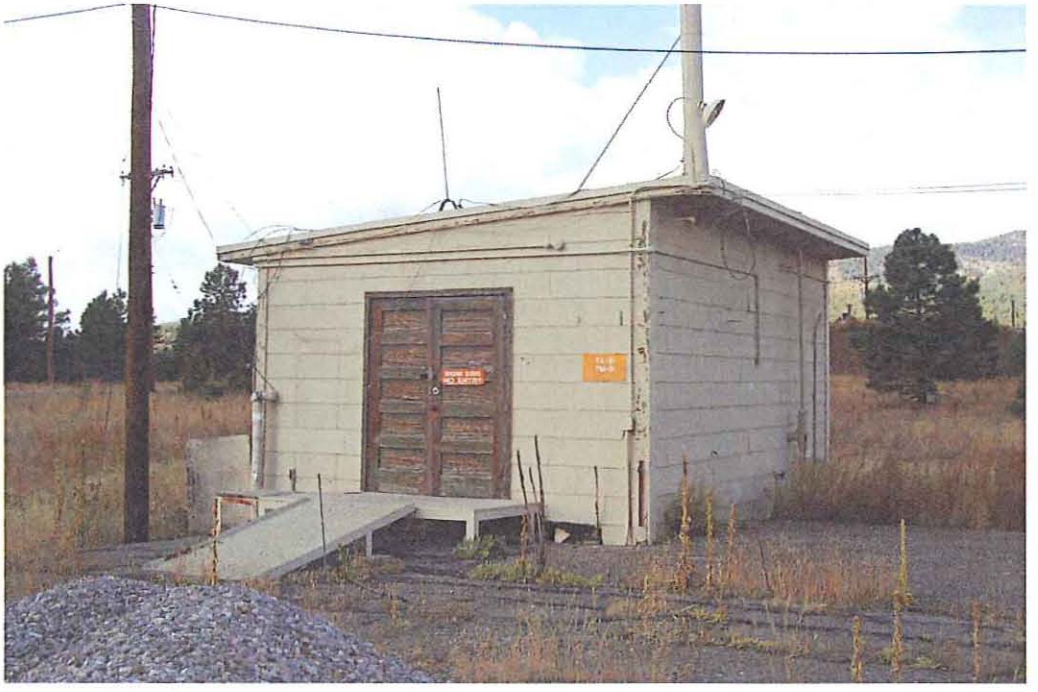
TA-6-3

TA-6-3 was a detonator fabrication building. Constructed in May of 1944, it is the oldest building at TA-6. TA-6-3 was first used as a control bunker for explosive shots fired at a sand pad located about ½ mile east of the building. In the summer of 1944, TA-6-3 was remodeled with explosion-proof fixtures because diethyl ether was used in the analysis of cobalt tracer shots within the building, a process that ended in 1945. The building housed offices between 1945 and 1948. Between 1948 and an undisclosed time in the early 1950s, TA-6-3 contained a firing control panel and bridgewire testing laboratory. The building included a darkroom that remained active until 1957. In 1972, the building was remodeled again, this time into a printed circuit shop

with a darkroom. The building continued to be used as a silk-screening facility until some point in the 1980s (LANL 1990, LANL 1993b).

TA-6-3 is earth bunkered on two elevations. Earth is piled against a timber retaining structure up to the roof level. The other building elevations are typical of the TA-6 buildings. The building is wood frame on a concrete foundation and has asbestos shingle siding and a low slope roof with composite sheet roofing material. The windows are wood sash with three-over-three lights. Several wood doors provide access to the interior of the building; the bathroom is one of the areas that can be accessed from the outside. Two lean-to type structures are attached to the side elevation.

TA-6-5



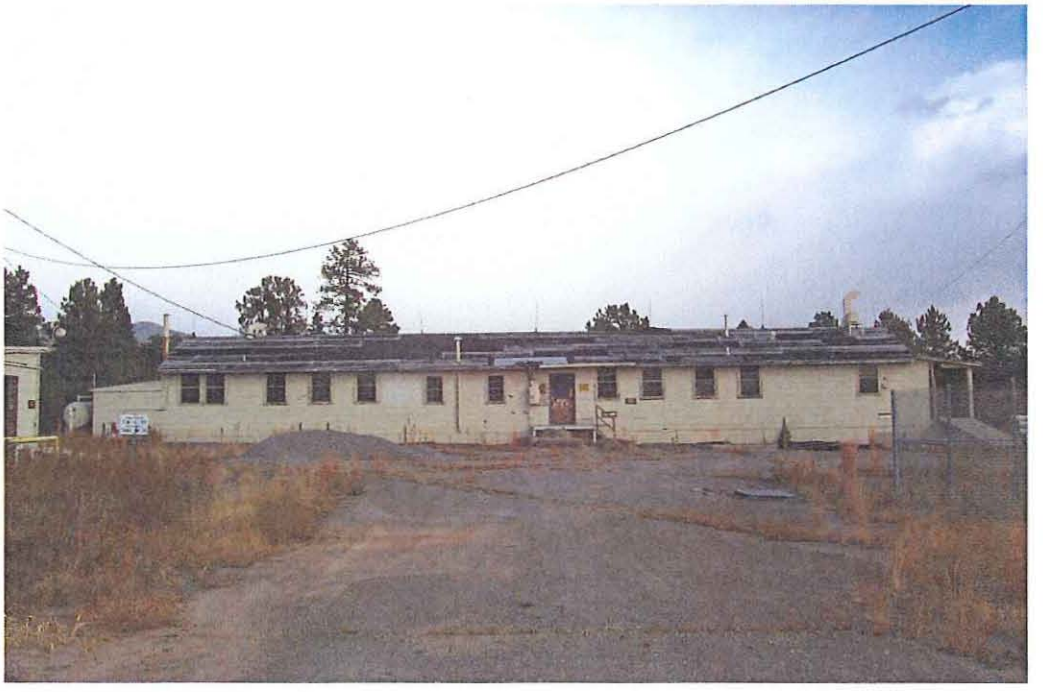
(LANL, RRES-ECO/HREPC, #P0001259)

TA-6-5

Constructed in 1945, TA-6-5 was used as a laboratory building for high explosives pressing operations (LASL 1945a, McGehee *et al.* 2003). TA-6-5 is a small windowless structure, typical of the construction at TA-6. The foundation is wood and concrete with a wood-framed floor.

The walls and roof structure are also wood framing. The roof is low slope with metal flashing and rolled roofing material, which has been replaced several times over the years. Two window openings on the south side of the building have been covered over. The wood walls are covered with asbestos shingles. Two wood doors on opposite sides of the building provide access; one door is single leaf and the other is double leaf. Raised platforms and ramps lead to the doorways. An exhaust fan and stack are visible on the roof of the building.

TA-6-6



(LANL, RRES-ECO/HREPC, #P0001270)

TA-6-6

Constructed in 1945, TA-6-6 originally housed laboratory operations relating to detonator assembly and included an electronics work room, chemistry room, and darkrooms. Scientists prepared detonator assemblies for test firing in this building until 1950. TA-6-6 frequently changed functions in the postwar years. Between 1945 and 1947, the chemistry lab in the building became a "connecting room" and the assembly room was split into office space and a cable preparation room. In 1948, an optics laboratory in use north of the electronics room. During the late 1950s, GMX-7 Division took over a large portion of the building for offices. By

1959, the connecting room had been split into a sprinkler room and an equipment room. By 1961, the darkrooms, the assembly room, and the storage area at end of building had all become offices. During the 1970s and early 1980s, E Division used the building as a cable shop and for printed circuit production (LASL 1944b-j, LASL 1945b-e, LASL 1947, LASL 1948, LASL 1949, LASL 1959, LASL 1961, LANL 1993b).

TA-6-6 is representative of the standard vernacular military type barrack building. It is long and narrow and has a medium slope hip roof with roll type roofing material. The building is wood frame with a wood post and beam foundation on concrete bases or piers. The walls are sheathed with asbestos wall shingles. A corrugated steel skirt has been added to the base at the elevated floor level. Numerous windows penetrate the walls. The wood sash windows are three-over three panes with bug screens added. A wood door and porch located in the center of the south elevation serves as the front door. One end of the building has a covered dock type entry and the opposite end of the building joins a lean-to structure that contains the boiler with the expansion tank on a steel stand outside the building.

TA-6-7

(LANL, RRES-ECO/HREPC, #P0001302)

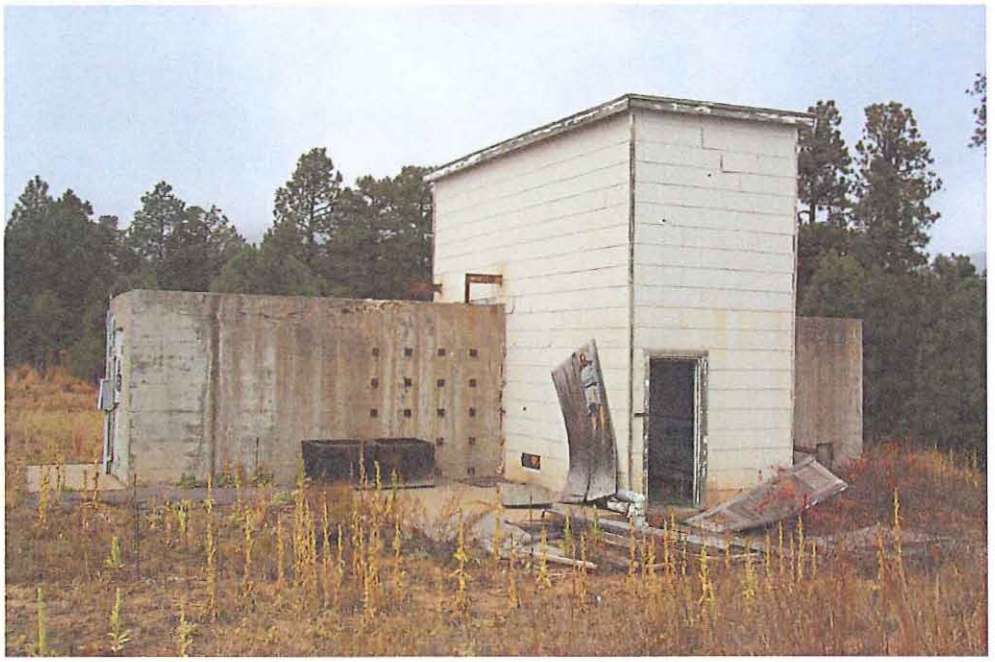
TA-6-7 (prior to the Cerro Grande Fire in May 2000)

Built in 1945, TA-6-7 was a firing chamber for the detonator experiments. Testing continued here until 1952 when the Laboratory moved detonator tests to TA-40. The firing tests are believed to have contained only high explosives and not radioactive materials (LANL 1990).

TA-6-7 is a small hardened laboratory building. It is a cast-in-place, board form, concrete structure. The flat roof is cast-in-place concrete, and the foundation and floor are also concrete. The ends of the building express the openings, and small concrete porches are visible at the door openings. A steel vault type door and frame are located on one end of the building. The opposite end of the building contained a blast or over-pressure panel constructed of wood frame and corrugated metal. The building contains two rooms. The north room is reinforced with multiple anchor bolts protruding from the sides of the building. The bolts support interior steel panels, which provide explosive protection for the interior of the structure. One exhaust fan is evident

on the south end of the structure. This building has the same floor plan as the south structure of building TA-6-8 and the west structure of TA-6-9.

TA-6-8



(LANL, RRES-ECO/HREPC, #P0001285)

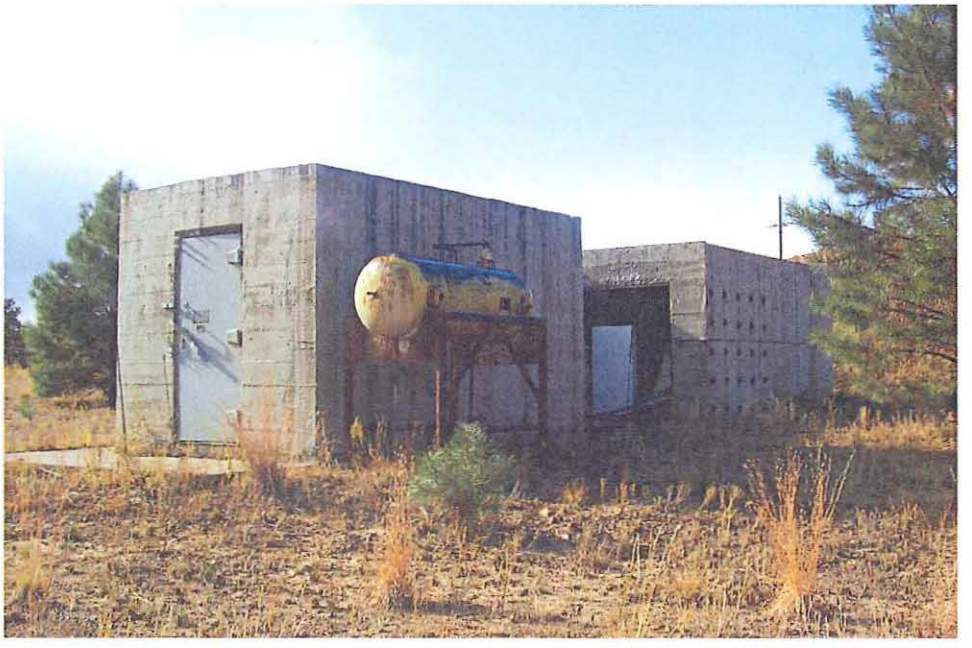
TA-6-8

TA-6-8 was a firing chamber for detonator experiments. This structure was built in 1945. At an unknown date, but before 1952, the Laboratory stopped using TA-6-8 for test firing. From 1972 to 1976 the Laboratory used the building for testing uranium hexafluoride (UF_6) (LANL 1993b).

TA-6-8 consists of three separate building forms: two concrete structures and a wood-frame two-story connector element. The original concrete portions of this building were built from the same plan as TA-6-9. Additionally, the south concrete building has the same plan as building TA-6-7. The concrete sections are similar in materials to each other. They have concrete cast-in-place foundations, floors, walls and roofs. Each concrete building has a steel plate and frame door and a concrete porch at the outside end. The south concrete structure shows exposed anchor bolts, which attach the interior metal plate to the wall. There are no other windows or openings visible on the exterior walls.

The wood-frame addition was built in 1952, the second story being added in 1953. This two-story wood-frame connector structure is sheathed with standard asphalt, wood sleepers, and asbestos shingles attached to the sleepers. The roof is flat with a slight overhang and wood fascia boards. Steel structural elements stand off from the two-story structure, supporting equipment inside the building. Wood doors on each side of the wood structure provide access to the laboratory space within. Steam and electric utility connections are visible entering the structure.

TA-6-9



(LANL, RRES-ECO/HREPC, #P0001311)

TA-6-9

TA-6-9 was a firing chamber for detonator experiments. This structure was built in 1945. Testing continued here until 1952 when the Laboratory moved detonator tests to TA-40. The firing tests are believed to have contained only high explosives and not radioactive materials (LANL 1993b).

TA-6-9 was built off the same plan as the original portion of TA-6-8. It is a two-structure layout characterized by two similar cast-in-place concrete buildings. The west building has the same floor plan as building TA-6-7. It has cast-in-place concrete walls, floor, and roof. A wood vault

door is located on one end and a framed opening is visible on the other. One interior room is paneled with steel plate and the anchor bolts are visible on the outside. The east building is also a cast-in-place concrete structure. A large expansion tank is mounted on a steel frame adjacent to the structure. The east end contains a steel door; the west end has a lift-away steel plate serving as a door and blast protection. The two buildings face each other end to end and are connected by a steel plate floor and an exposed wood fence structure.

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Appendix A: Historic Building Inventory Forms with Representative Building Drawings

LANL TA- Building # 06-0001

Camera 984242

Frame #s DCP_2150 through DCP_2154

Surveyor(s) J. Ronquillo, K. Towery, K. Garcia

Date 04/01/2004

Los Alamos National Laboratory
HREPCT Historic Building Survey Form

Building Name Laboratory and Office UTMs easting 379541 northing 3969522 zone 13

Legal Description: Map Frijoles Quad, 1984 tnsp 19N range 6E sec 20

Current Use/ Function Building is currently abandoned. Original Use/ Function Carpenter Shop/Laboratory and Office

Date (estimated) 1944 Date (actual) 1944 Property Type Laboratory/Processing

Type of Construction

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

Other Type of Construction # of Stories 1

Foundation Other, concrete pier foundation.

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) Asbestos shingles and painted wood elements.

Exterior Features (docks, speakers, lights, signs, etc) Wood stairs and entrance platforms provide elevation rise to the floor level.

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

Steel (corrugated)-Addition ☐ Asbestos Shingles-Addition ☑ Other- Addition Additions were built in 1944 and 1958.

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 Built-up and composite roofing material.

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

Other Window Type Wood sash hopper style windows.

# of Each Window Type/ Comments

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

Light Pattern 9 fixed pane.

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

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 ☐

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

# of Each Door Type/Comments:

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) The building has been vacant for some time and the interior is in a very deteriorating state of disrepair.

Degree of Remodeling Minor

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

Associated Building ☑

If yes, list building names and #s: TA-6-2, -3, -5, -6, -7, -8, and -9.

Integrity Fair

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 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 The original August 1944 portion of the building is oriented east/west. In October 1944 a small addition was added on the

north side of the building. In 1958 an addition was added to the north side of the 1944 addition and oriented north/south.

Architectural Features (elevations) Wood frame construction with asbestos shingle siding with lower panels of metal siding, probably not original. The elevations feature wood doors, entry platforms, and hopper type wood windows. The exterior design is typical design and construction of the mid 1940's. The south elevation is the main entrance into the facility.

Total sq ft 1,496 **Architect/ Builder** W.C. Kruger. Built by hired labor and completed in 1944.

Alterations It appears some alterations were made throughout the years in an attempt to correct weathering damage.

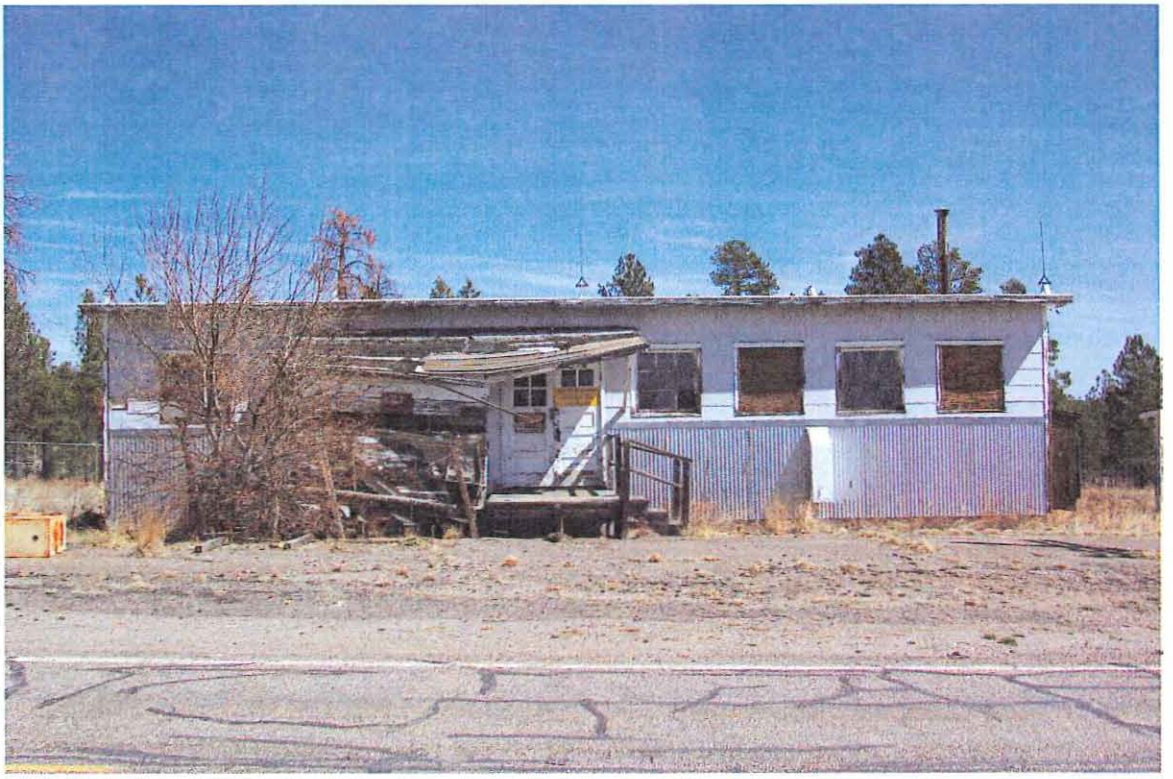
List of Drawings (Cntrl + Enter for para break)

ENG-C 1623
2 Mile Mesa, TA-6
Bldg.1 - Plan - Elev - Sect - Miscel. Details
August 29, 1944

ENG-C 1625
Two Mile Mesa
Addition to Bldg No. 1
October 24, 1944

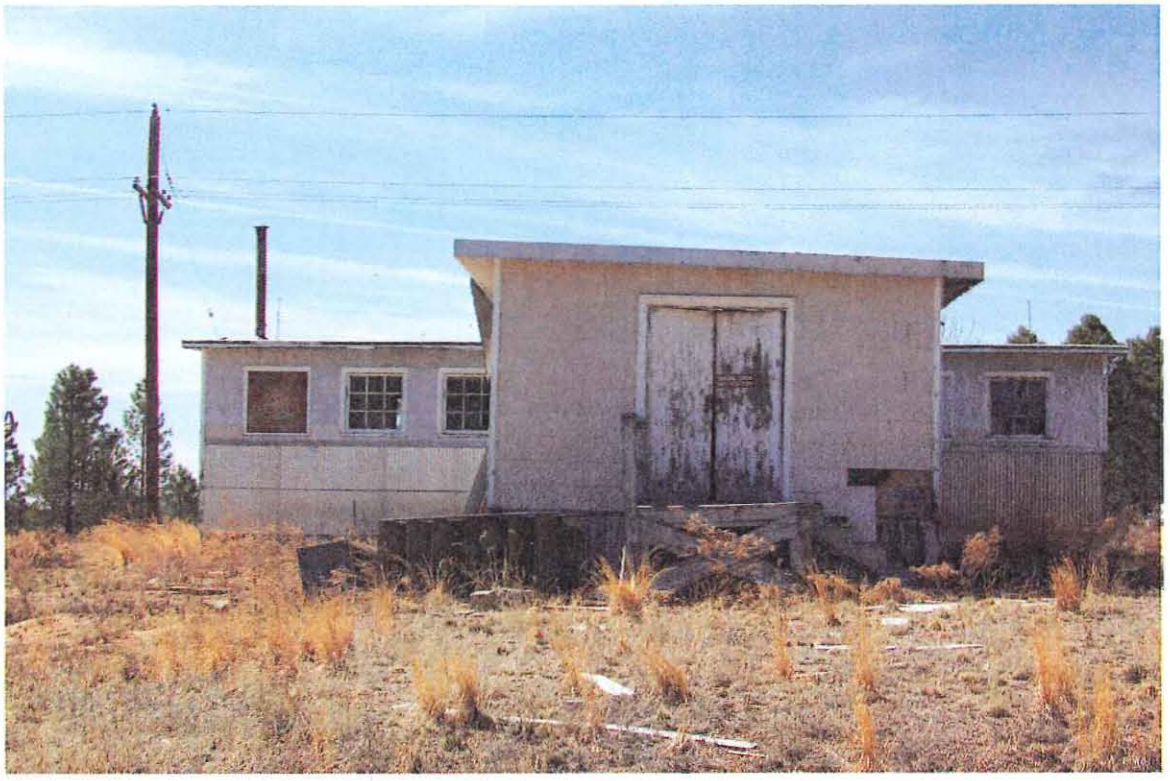
ENG-SK 1181
TA-6, Bldg. TM-1
Lumber Storage Shelter
Arch Plan & Details
April 24, 1958

ENG-R 2595
TA-6, Bldg. TM-1
Carpenter Shop
Floor Plan
August 23, 1983



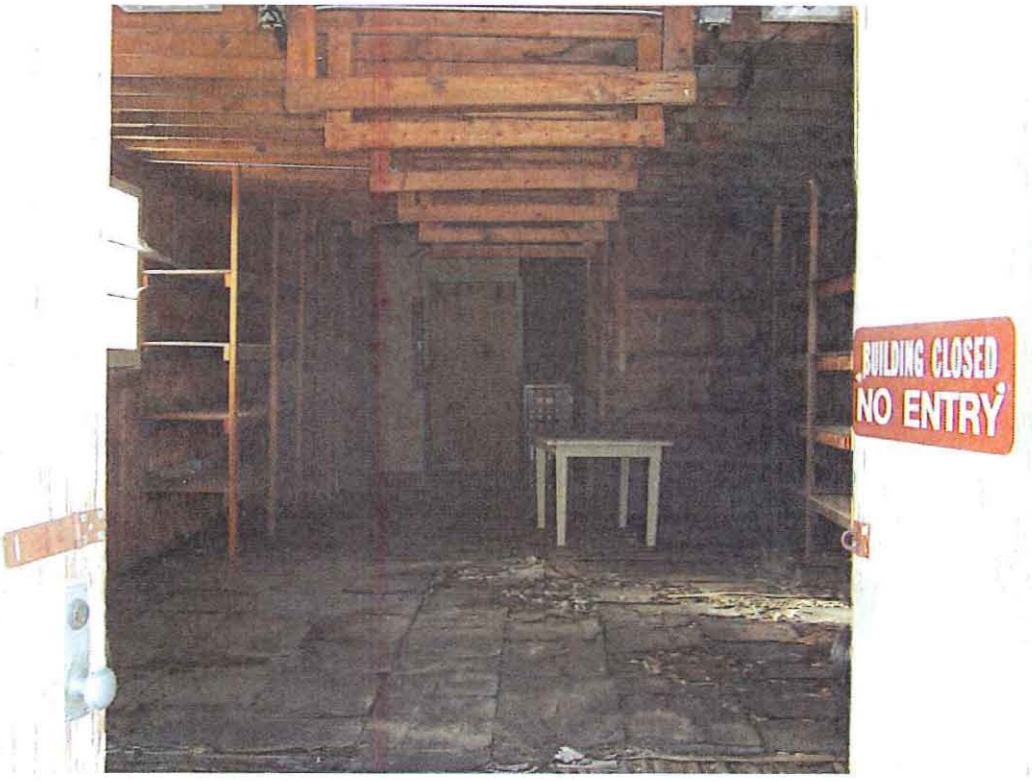
TA-6-1, South Elevation

TA-6-1, East Elevation

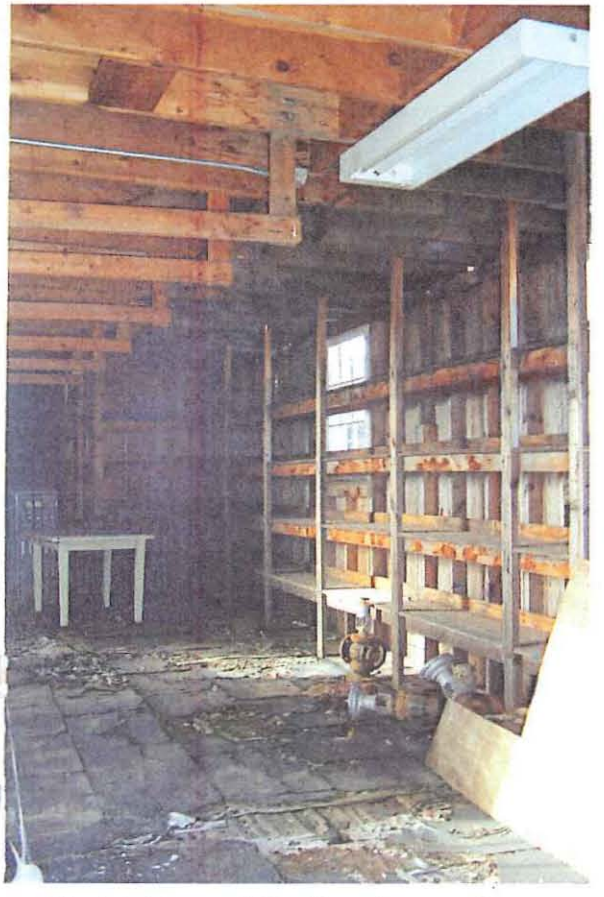


TA-6-1, North Elevation

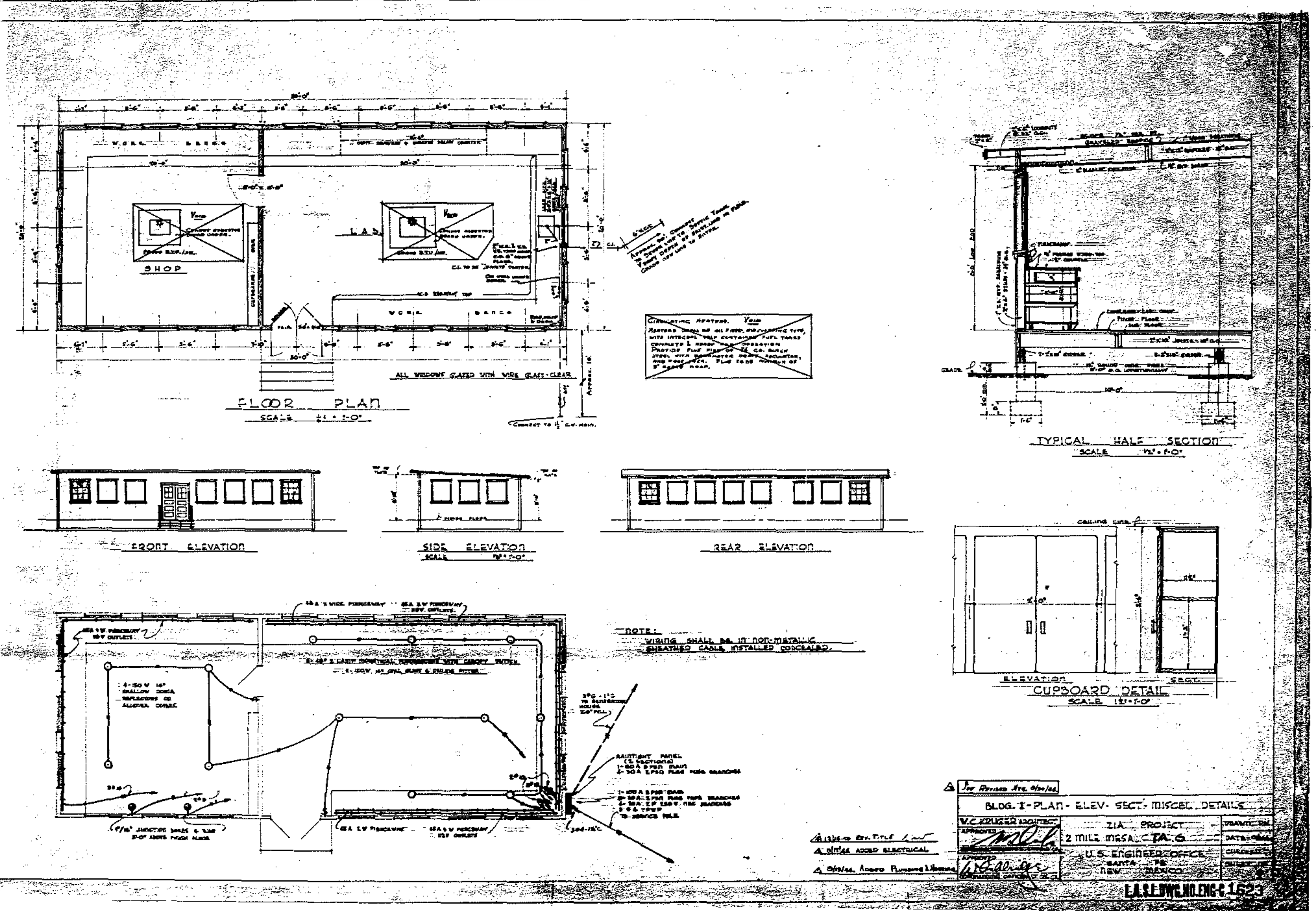
TA-6-1, West Elevation



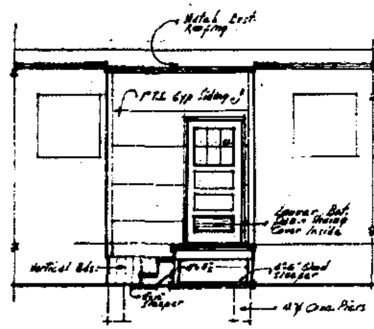
TA-6-1, Room 103, direction south



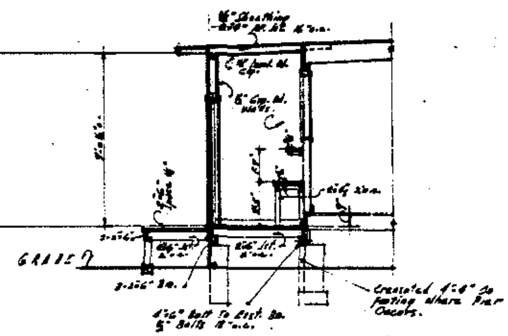
TA-6-1, Room 103, direction southwest



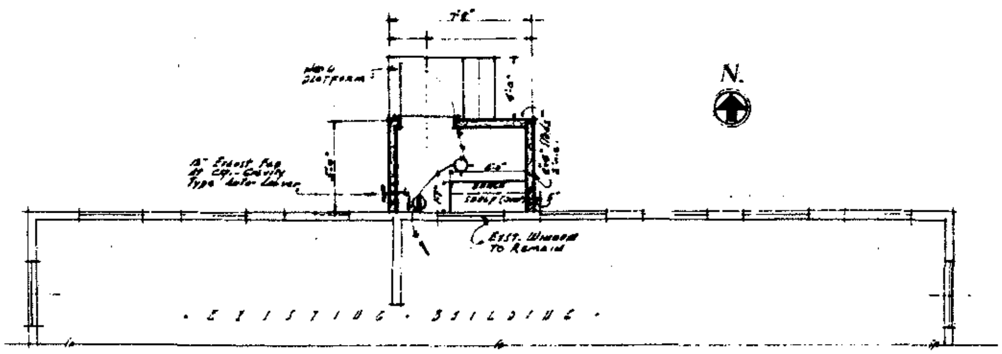
FLOOR PLAN
SCALE 1/4" = 1'-0"
SHOP
LAB
WORK BENCH
ALL WINDOWS GLAZED WITH WIRE GLASS - CLEAR
CIRCULATING HEATERS. VOID
TYPICAL HALF SECTION
SCALE 1/2" = 1'-0"
FRONT ELEVATION
SIDE ELEVATION
SCALE 1/8" = 1'-0"
REAR ELEVATION
ELEVATION
SECT.
CUPBOARD DETAIL
SCALE 1/2" = 1'-0"
NOTE:
WIRING SHALL BE IN NON-METALLIC SHEATHED CABLE INSTALLED CONCEALED.
BLDG. I - PLAN - ELEV. - SECT. - MISCEL. DETAILS
V.C. KRUGER ARCHITECT
ZIA PROJECT
2 MILE MESA - CTA-6
U.S. ENGINEER OFFICE
SANTA FE
NEW MEXICO
L.A.S.L. DWG. NO. ENG-C 1623



· ELEVATION ·
SCALE 1/4" = 1'-0"



· SECTION · AA ·
SCALE 1/4" = 1'-0"



· PLAN ·
SCALE 1/4" = 1'-0"

N.

GENERAL NOTES:

Interior Trim 1"x2" - Base 1"x6".
Ext. Door 3'0"x6'8"x 1 3/4" - 2 Top Panels Glazed.
Notch 2x6" Platform Joist Over 2x2" Ledger Ea. End.
Steps - Support on 3 - 2x10" Horses.
Lap & Spike 2x6" Roof Joist on Exist 2x10" Jst.
Provide 1/8"x1 1/4"x12" Blt. Strap Anchors - Pipes To 3 - 2x6" Bm.
Provide 2x4" Legs At Ends & Center of Bench. 2x4" Cross-Supports - 1x12" Top.
Sub. Fl. 5/8" Fin. Fl. 1/2x2 1/4" T&G. Paper Btwn.

DATE	NO.	REVISIONS	BY	APPROV.

U. S. ENGINEER OFFICE
SANTA FE, NEW MEXICO

· ADDITION to BLDG No. 1 ·
· TWO · MILE · MESA ·

IN	SHEETS	SCALE	SHEET No.

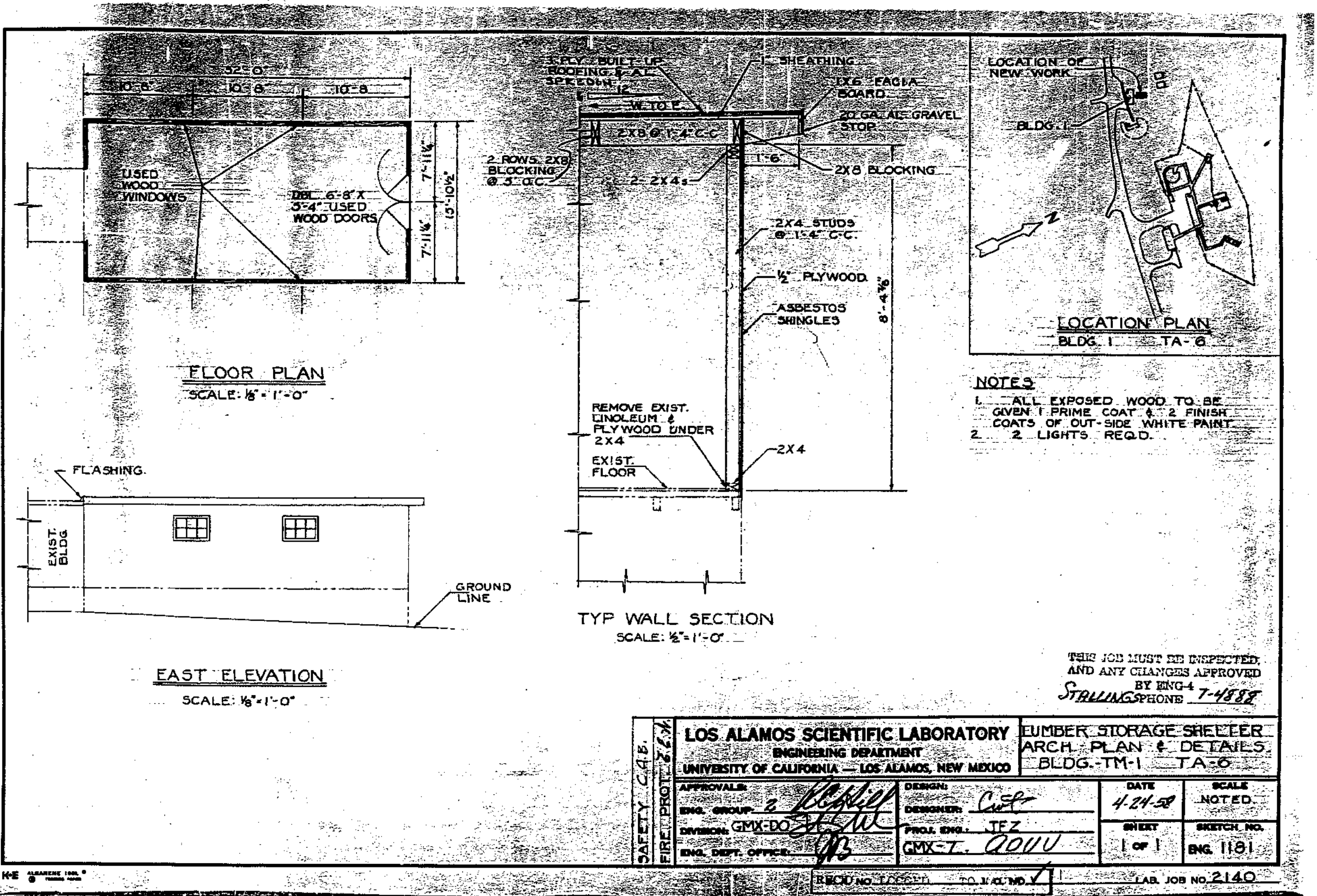
OFFICE OF POST ENGINEER 10/24/44

SUBMITTED BY | APPROV. RECOM'D | APPROVED BY

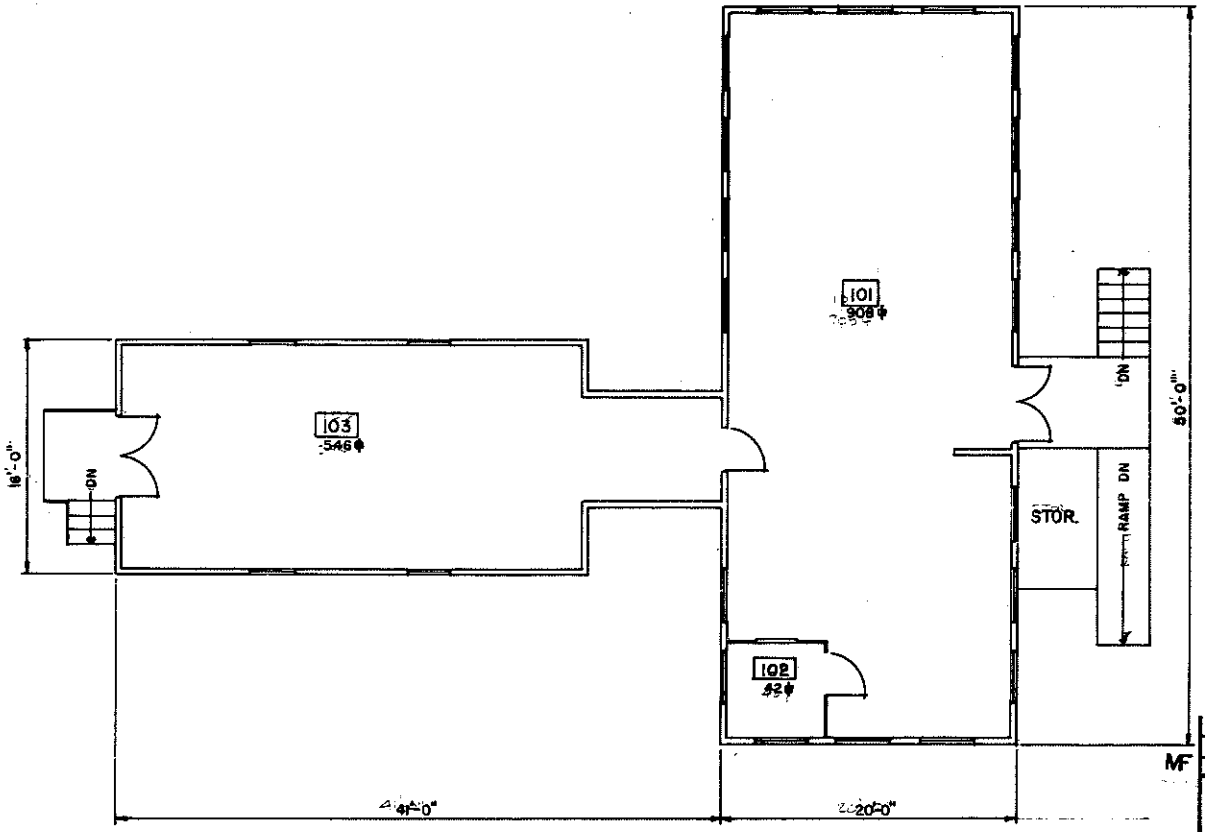
DR. BY C.S.
TR. BY
CH. BY

FILE NO. PE 156

L.A.S.L. DWG. NO. ENG-C 1625



FLOOR PLAN
SCALE: 1/8" = 1'-0"
32'-0"
10'-8"
10'-8"
10'-8"
USED WOOD WINDOWS
DBL. 6'-8" X 5'-4" USED WOOD DOORS
7'-11¼"
7'-11¼"
15'-10½"
EAST ELEVATION
SCALE: 1/8" = 1'-0"
FLASHING.
EXIST. BLDG.
GROUND LINE
TYP WALL SECTION
SCALE: ½" = 1'-0"
3 PLY BUILT UP ROOFING & AL. SPREDIN
1" SHEATHING
1X6 FACIA BOARD
20 GA. AL. GRAVEL STOP
2X8 @ 1'-4" C-C
2 ROWS 2X8 BLOCKING @ 5' O.C.
2-2X4s
1'-6"
2X8 BLOCKING
2X4 STUDS @ 1'-4" C-C.
½" PLYWOOD
ASBESTOS SHINGLES
8'-4⅞"
REMOVE EXIST. LINOLEUM & PLYWOOD UNDER 2X4
EXIST. FLOOR
2X4
LOCATION OF NEW WORK
BLDG. 1
N
LOCATION PLAN
BLDG. 1 TA-6
NOTES
1. ALL EXPOSED WOOD TO BE GIVEN 1 PRIME COAT & 2 FINISH COATS OF OUT-SIDE WHITE PAINT.
2. 2 LIGHTS REQ.D.
THIS JOB MUST BE INSPECTED, AND ANY CHANGES APPROVED BY ENG-4
STALLINGS PHONE 7-4888
SAFETY C.A.B.
FIRE PROT.
LOS ALAMOS SCIENTIFIC LABORATORY
ENGINEERING DEPARTMENT
UNIVERSITY OF CALIFORNIA — LOS ALAMOS, NEW MEXICO
LUMBER STORAGE SHELTER
ARCH. PLAN & DETAILS
BLDG.-TM-1 TA-6
APPROVALS:
ENG. GROUP: 2
DIVISION: GMX-DO
ENG. DEPT. OFFICE:
DESIGN:
DESIGNER:
PROJ. ENG.: TFZ
GMX-7 Q011U
DATE 4-24-58
SCALE NOTED.
SHEET 1 OF 1
SKETCH NO. ENG. 1181
LAB. JOB NO. 2140



(1/8"=1'-0")

0 4' 8' 16'

GRAPHIC SCALE

BLDG. TOTAL 1496 S.F.

REV.	DATE	REVISION	BY	CKD.	APP.
2	8-23-83	REDRAWN & REVISED TO STATUS OF 8-23-83	H&N		

UNIVERSITY OF CALIFORNIA
Los Alamos
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

FACILITIES ENGINEERING DIVISION

CARPENTER SHOP
FLOOR PLAN

BLDG. TM-1 TA-6

SEC. CLASSIFICATION: CLASS. U
REVIEWER Hendricks
DATE 10-31-83

SUBMITTED	RECOMMENDED	APPROVED
E. Trujillo	Darwin Briggs	W. F. Edwards

DRAWN	CHECKED	DATE	SHEET NO.	DRAWING NO.
H&N	Humble H&N	8-23-83	1 of 1	ENG-R 2595

2595

REC'D ____ LOGGED ✓ TO VAULT 11/3

LANL TA- Building # 06-0002

Camera 984242

Frame #s DCP_2155 through DCP_2158

Surveyor(s) J.Ronquillo, K.Towery, K. Garcia

Date 04/01/2004

Los Alamos National Laboratory
HREPCT Historic Building Survey Form

Building Name Compressor Building UTMs easting 379552 northing 3969514 zone 13

Legal Description: Map Frijoles Quad 1984 tnsp 19N range 6E sec 20

Current Use/ Function Building is currently abandoned. Original Use/ Function Compressor Building/Generator Building

Date (estimated) 1944 Date (actual) 1944 Property Type Support

Type of Construction

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

Other Type of Construction # of Stories 1

Foundation Concrete Slab.

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) Asbestos shingles and painted wood elements.

Exterior Features (docks, speakers, lights, signs, etc) There are large wooden intake air louvers on three sides; 5 total.

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 Built-up composite roofing material.

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

Other Window Type N/A

# of Each Window Type/ Comments N/A

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

Light Pattern

Door Type Personnel Door Types Exterior Fire Door ☐ Single ☑ Double ☐ Roll-up ☐ Sliding ☐

Hollow Metal ☐ Solid Wood ☐ 1/2 Glazed ☐ Paneled ☐
Louvered ☐ Painted ☐

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 ☐

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

# of Each Door Type/Comments:

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) Roof/ceiling is in a very poor condition to identify original interior finish.

Degree of Remodeling Unknown/None

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

Associated Building ☑

If yes, list building names and #s: TA-6-1, -3, -5, -6, -7, -8, & -9.

Integrity Fair

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 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) Functional, utilitarian construction exhibiting construction methods and exterior finishes typical of the 1940's. It is wood construction with asbestos shingle siding.

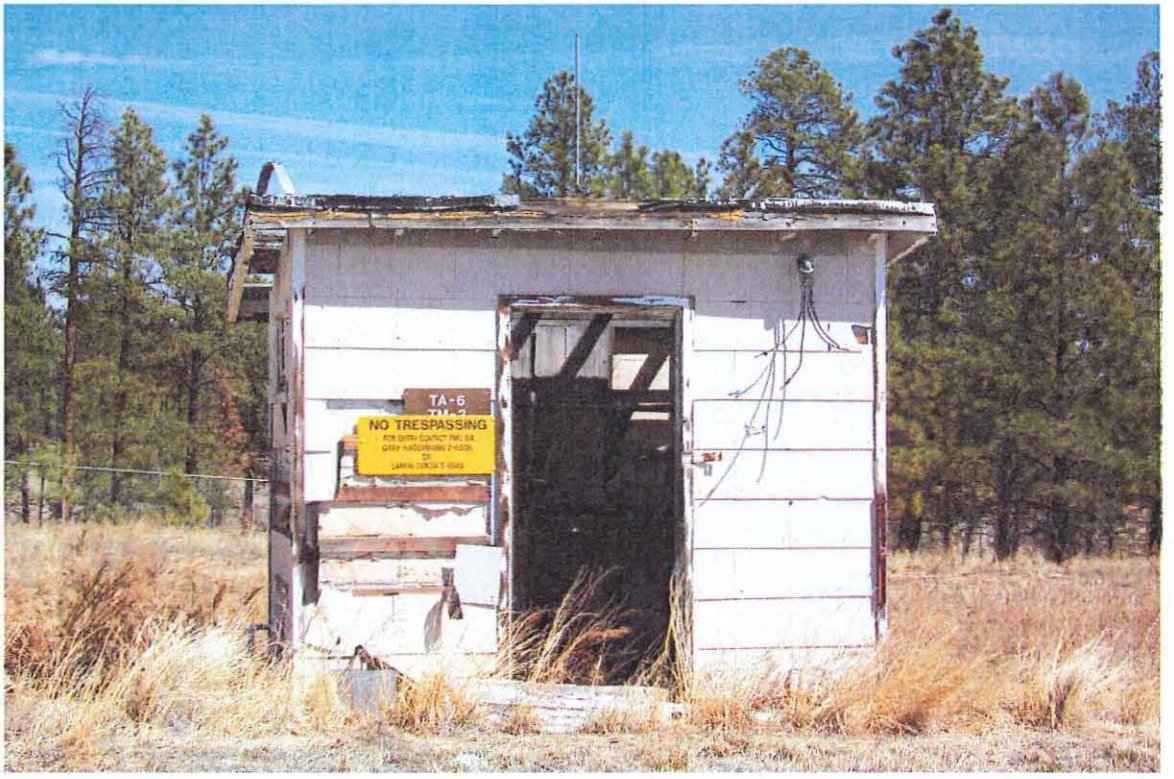
Total sq ft 54 **Architect/ Builder** W. C. Kruger. Built by hired labor May 1944.

Alterations

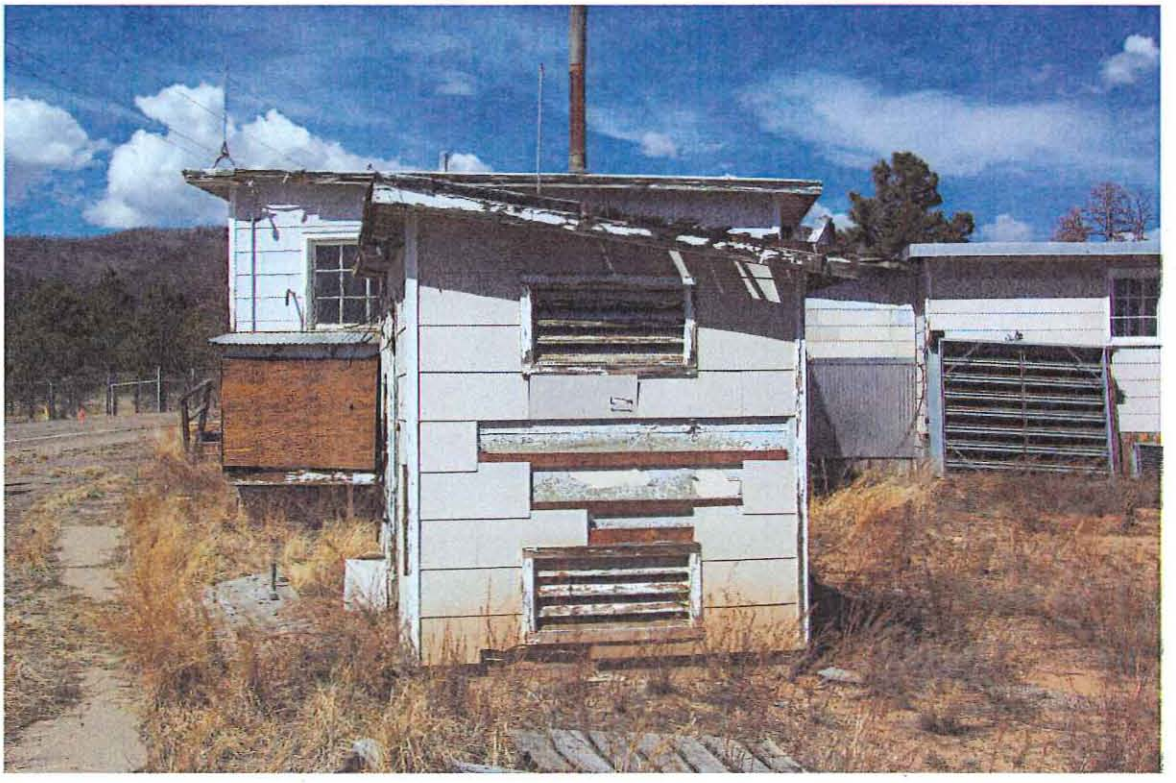
List of Drawings (Cntrl + Enter for para break)

ENG-C 1618
Two-Mile Mesa TA-6
Laboratory Bldgs. TM-2 & TM-3 (TA-6-2 & TA-6-3)
May 16, 1944

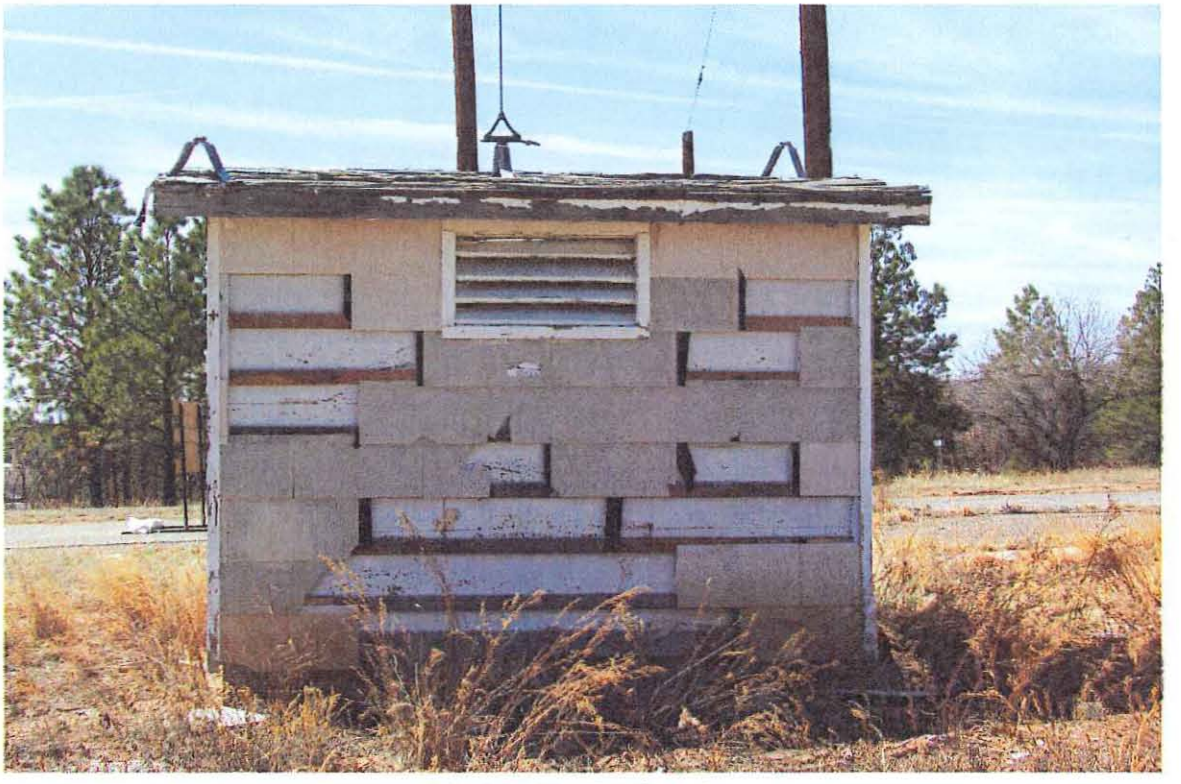
ENG-R 2596
TA-6, Bldg. TM-2 (TA-6-2)
Compressor Building
Floor Plan
August 22, 1983



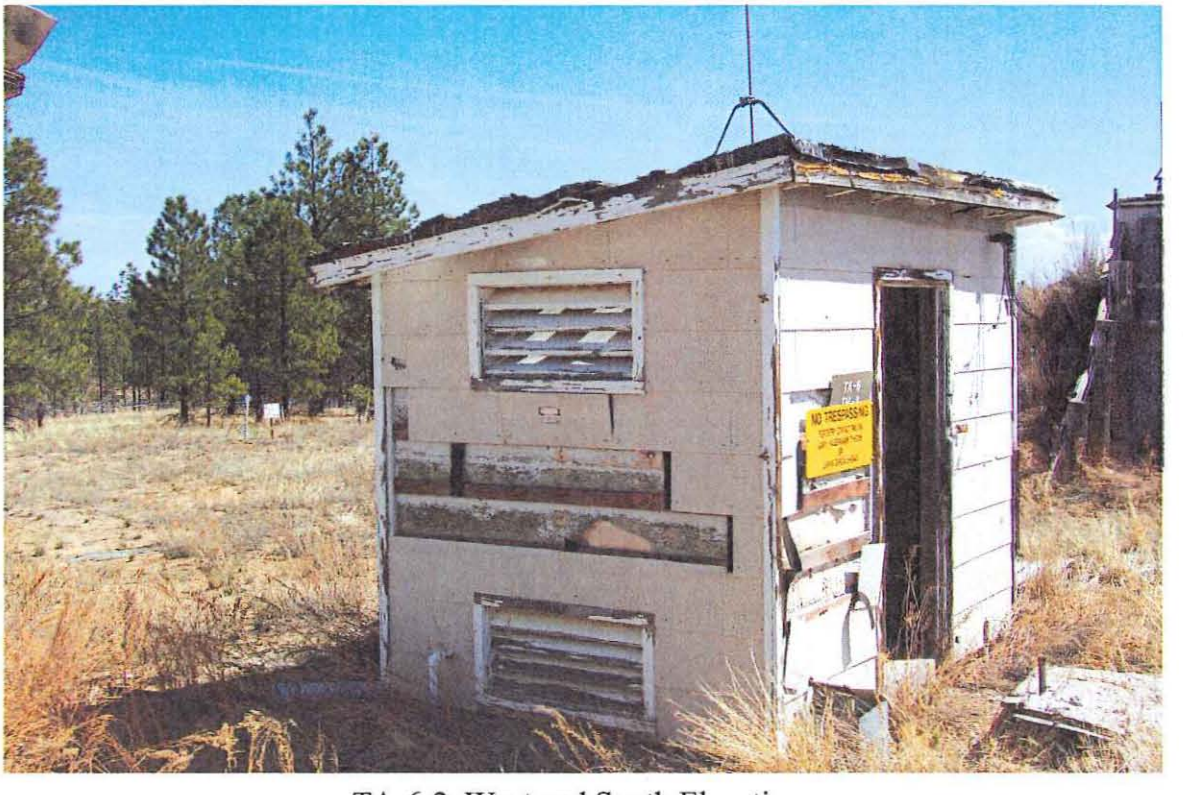
TA-6-2, South Elevation



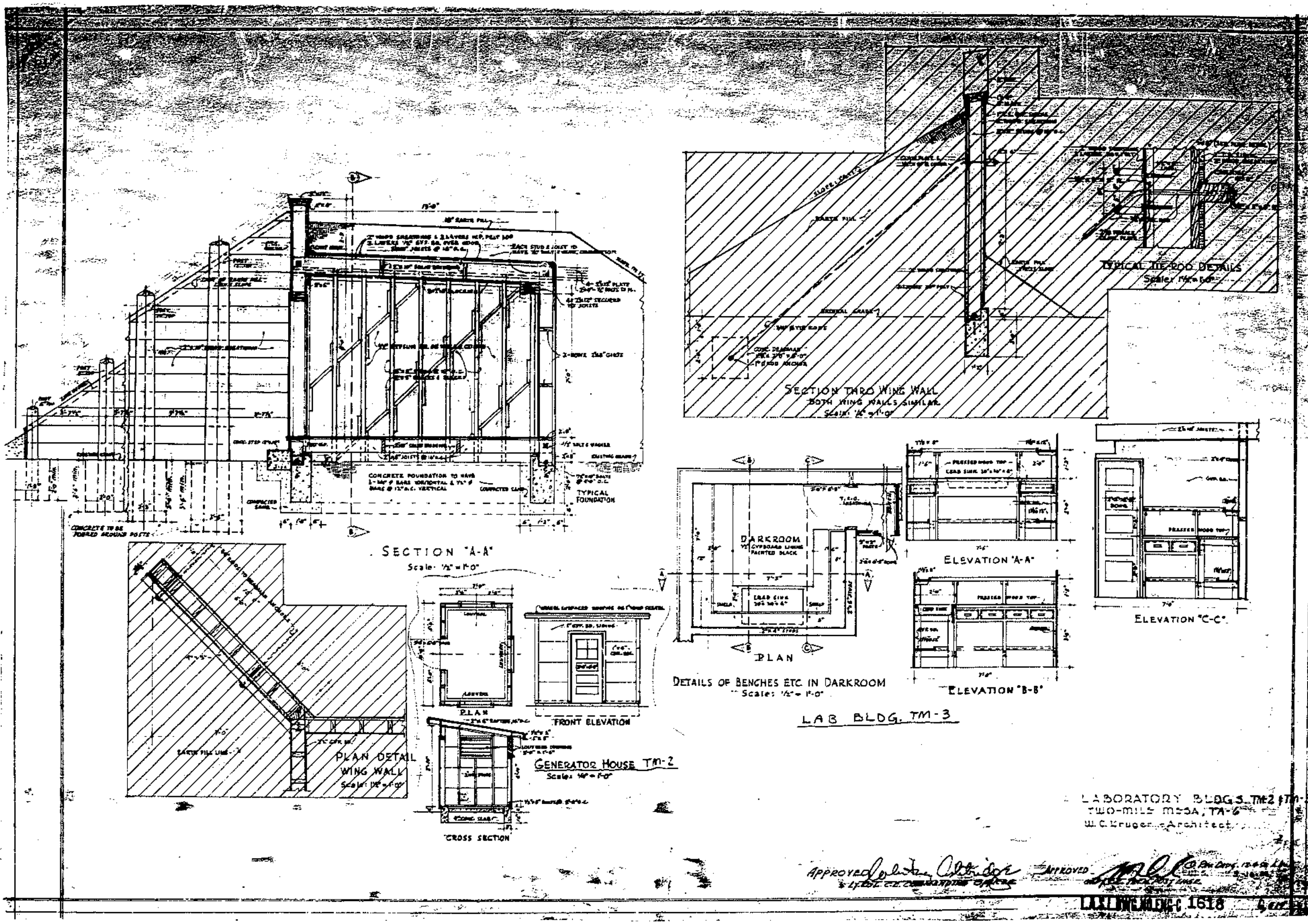
TA-6-2, East Elevation

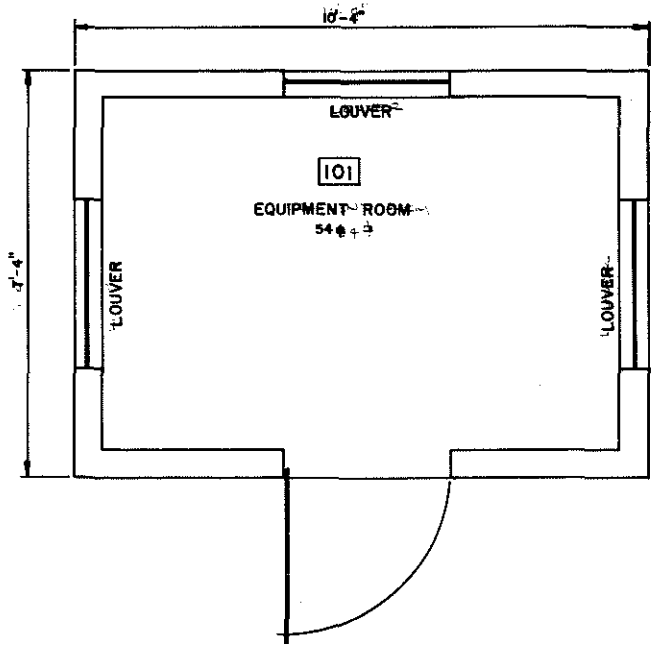


TA-6-2, North Elevation



TA-6-2, West and South Elevations


Section "A-A"
Scale: 1/2" = 1'-0"
Typical Foundation
Concrete to be poured around posts
Section Thru Wing Wall
Both wing walls similar
Typical Tie-Rod Details
Plan Detail Wing Wall
Plan
Front Elevation
Cross Section
Generator House TM-2
Scale: 1/4" = 1'-0"
Darkroom
Details of Benches etc. in Darkroom
Scale: 1/2" = 1'-0"
Elevation "A-A"
Elevation "B-B"
Elevation "C-C"
Lab Bldg. TM-3
Laboratory Bldgs. TM-2 & TM-3
Two-Mile Mesa, TA-6
W. C. Kruger, Architect
Approved
Approved
1618



GRAPHIC SCALE

BLDG. TOTAL 54 S.F.

REV.	DATE	REVISION	BY	CHK.	APR.
2	8-22-83	REDRAWN & REVISED TO STATUS OF 8-22-83	HNN		

UNIVERSITY OF CALIFORNIA
Los Alamos
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

FACILITIES ENGINEERING DIVISION

COMPRESSOR BUILDING
FLOOR PLAN

SEC. CLASSIFICATION: CLASS. U

BLDG. TM-22 TA-6

SUBMITTED	RECOMMENDED	APPROVED
E. Trujillo	Dave Rogers	

DRAWN: N B-N
CHECKED: HNN
DATE: 8-22-83
SHEET NO. 1 OF 1
DRAWING NO. ENG-R 2596

REC'D ___ LOGGED ___ TO VAULT ___

2596

LANL TA- Building # 06-0003

Camera 984242

Frame #s DCP_ 2159 through DCP_2162

Surveyor(s) K.Towery, J.Ronquillo, K. Garcia

Date 04/01/2004

Los Alamos National Laboratory
HREPCT Historic Building Survey Form

Building Name Fabrication Building UTMs easting 379564 northing 3969505 zone 13

Legal Description: Map Frijoles Quad 1984 tnsp 19N range 6e sec 20

Current Use/ Function Building is currently abandoned. Original Use/ Function Fabrication Building

Date (estimated) 1944 Date (actual) 1944 Property Type Laboratory/Processing

Type of Construction

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

Other Type of Construction # of Stories 1

Foundation Reinforced Concrete.

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) Asbestos shingles and painted wood elements.

Exterior Features (docks, speakers, lights, signs, etc) Building is earth bermed against a timber retaining structure on the east and north elevations and partially on the south. Several emission stacks protrude from building.

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 Built-up composite roofing material.

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

Other Window Type

# of Each Window Type/ Comments Windows were originally to be wire glass.

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

Light Pattern Three-over-three double hung type.

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

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 ☐

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

# of Each Door Type/Comments:

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)

Degree of Remodeling Unknown/None

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

Associated Building ☑

If yes, list building names and #s: TA-6-1, -2, -5, -6, -7, -8, & -9.

Integrity Fair

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 _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) Plaster board/sheet rock with wood sleepers and asbestos shingles is the typical construction. The east and north sides as well as portion of the south side are bermed with earth behind a timber retaining structure.

Total sq ft 459 **Architect/ Builder** W. C. Kruger

Alterations Several lean-to type structures were added to the building.

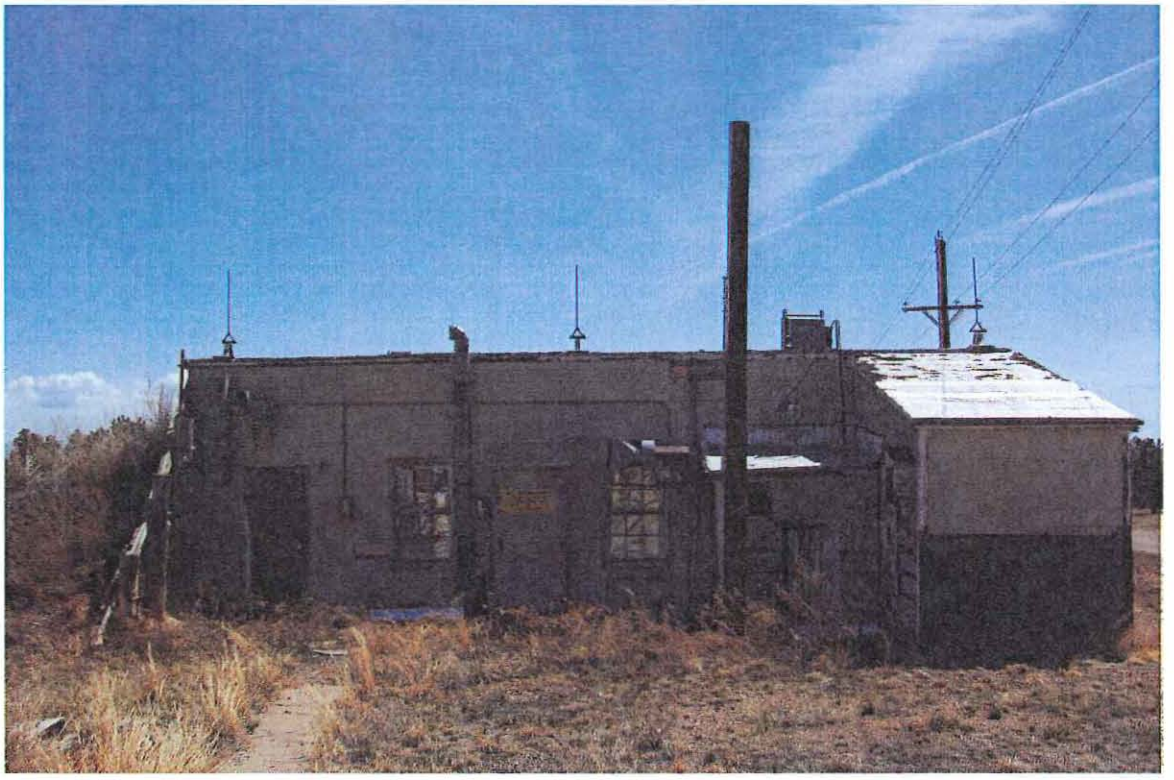
List of Drawings (Cntrl + Enter for para break)

ENG-C 1616
Two-Mile Mesa, TA-6
Plan and Elevations, TM-3 (TA-6-3)
May 16, 1944

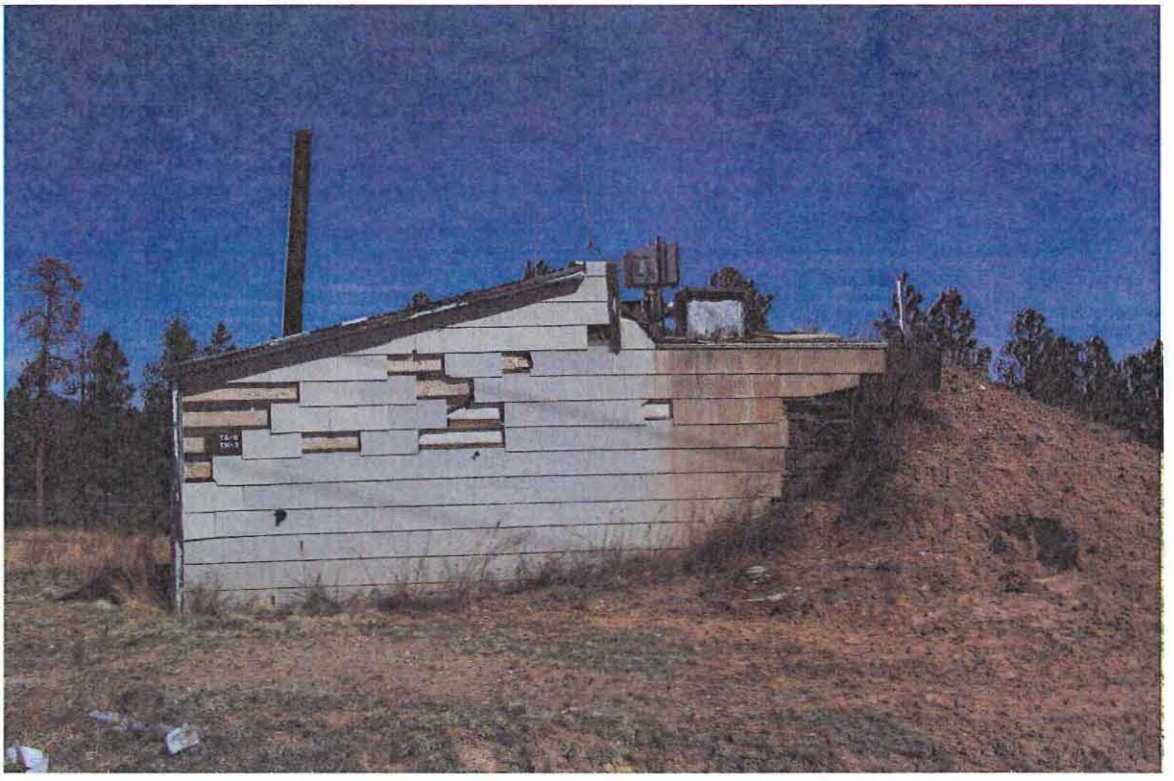
ENG-C 1618
Two-Mile Mesa TA-6
Laboratory Bldgs. TM-2 & TM-3 (TA-6-2 & TA-6-3)
May 16, 1944

ENG-C 1626
2 Mile Mesa Construction
Additions to Laboratory #3
February 1, 1945

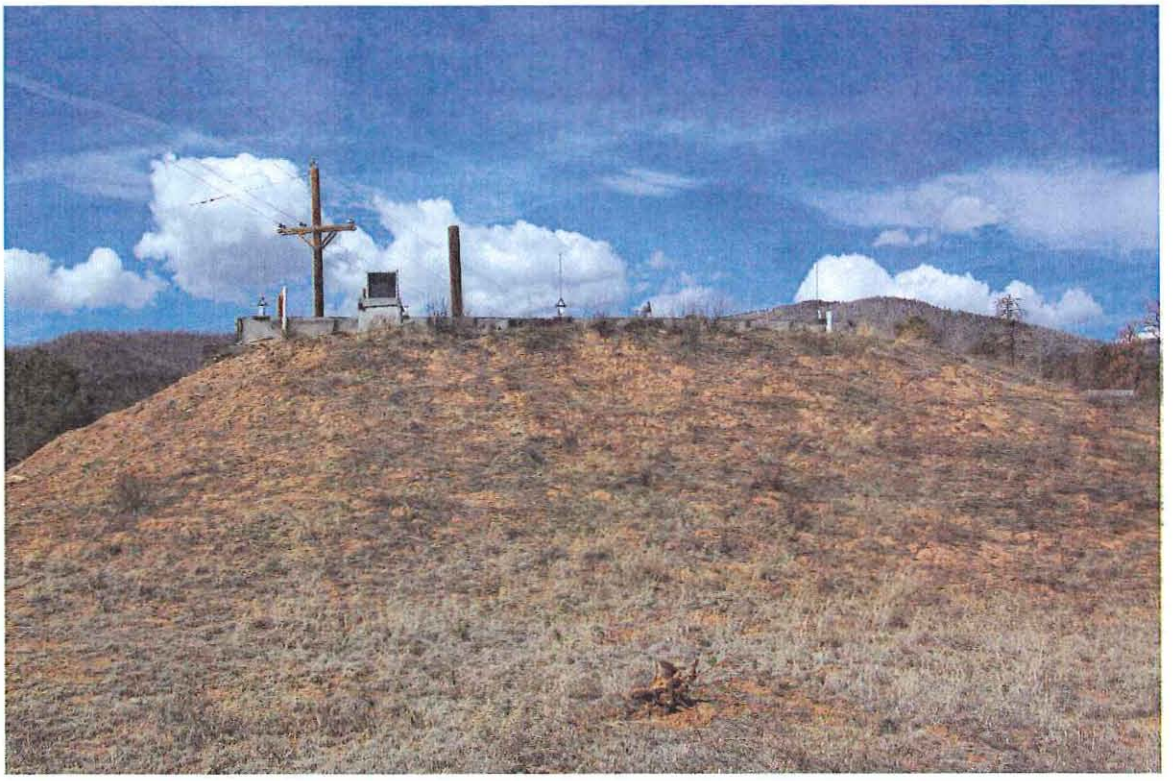
ENG-R 2597
TA-6, Bldg. TM-3, (TA-6-3)
Fabrication Building
Floor Plan
August 22, 1983



TA-6-3, West Elevation

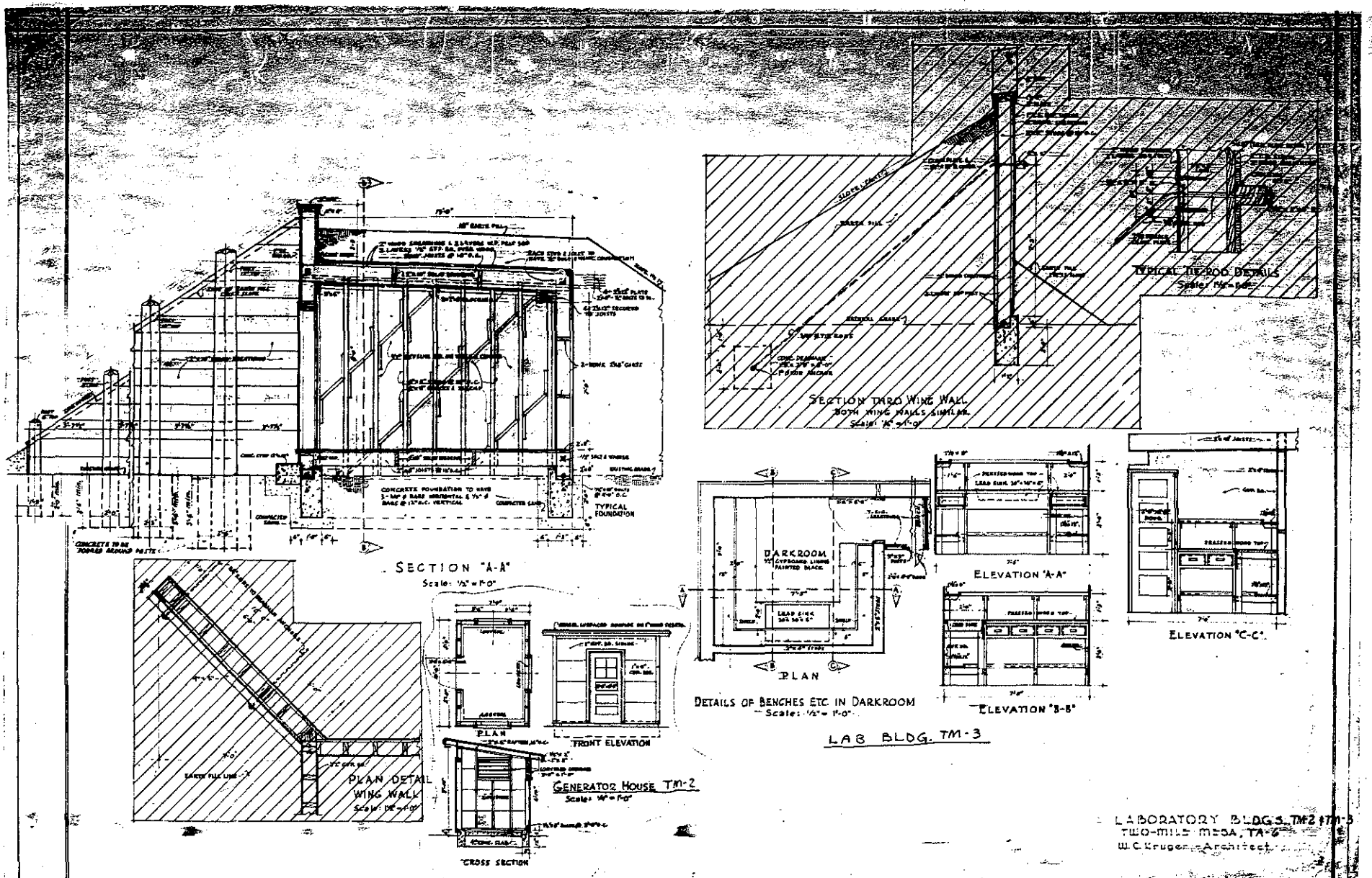


TA-6-3, South Elevation



TA-6-3, East Elevation

TA-6-3, North Elevation

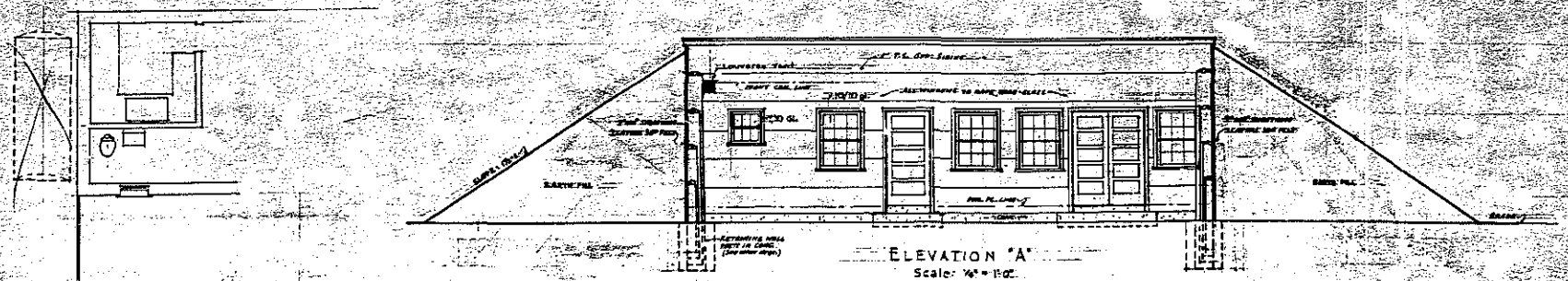


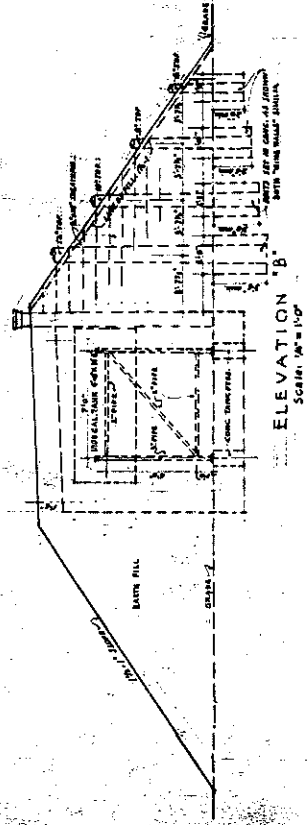
LABORATORY BLDGS. TM-2 & TM-3
TWO-MILE MESA, TA-6
W. C. Kruger, Architect

APPROVED

APPROVED

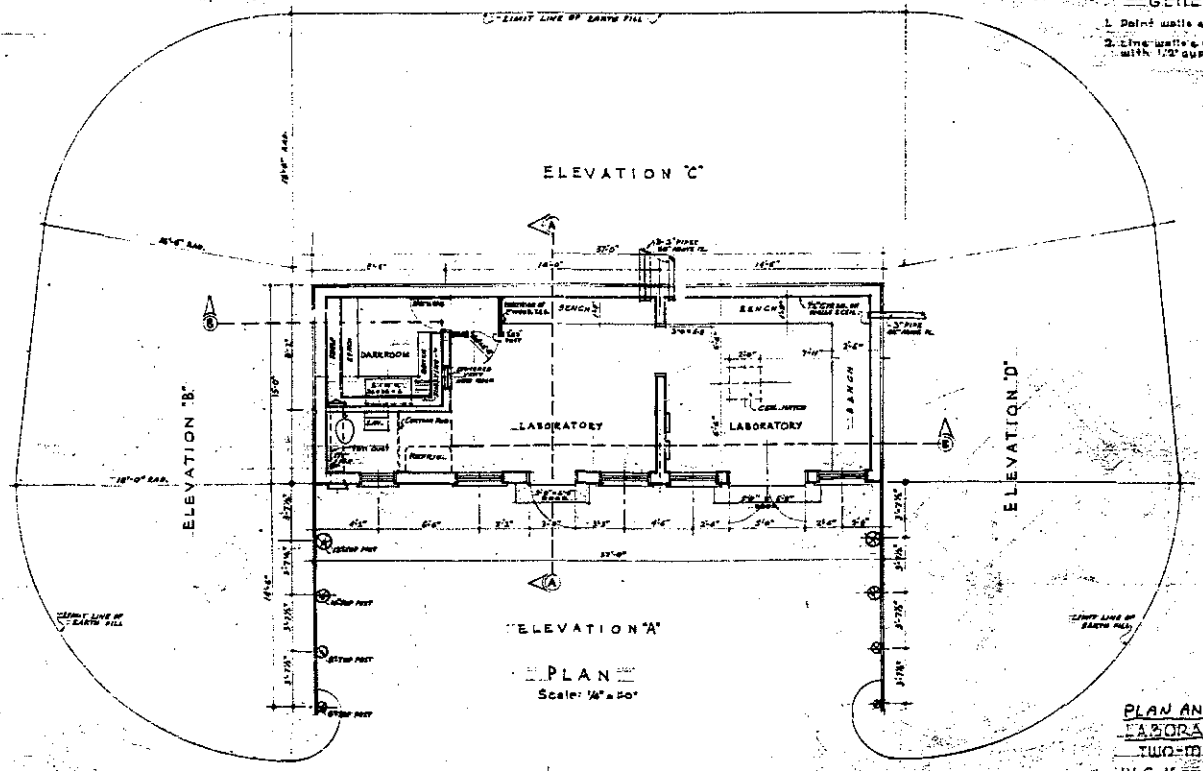
LOS ALAMOS LDG-C 1618





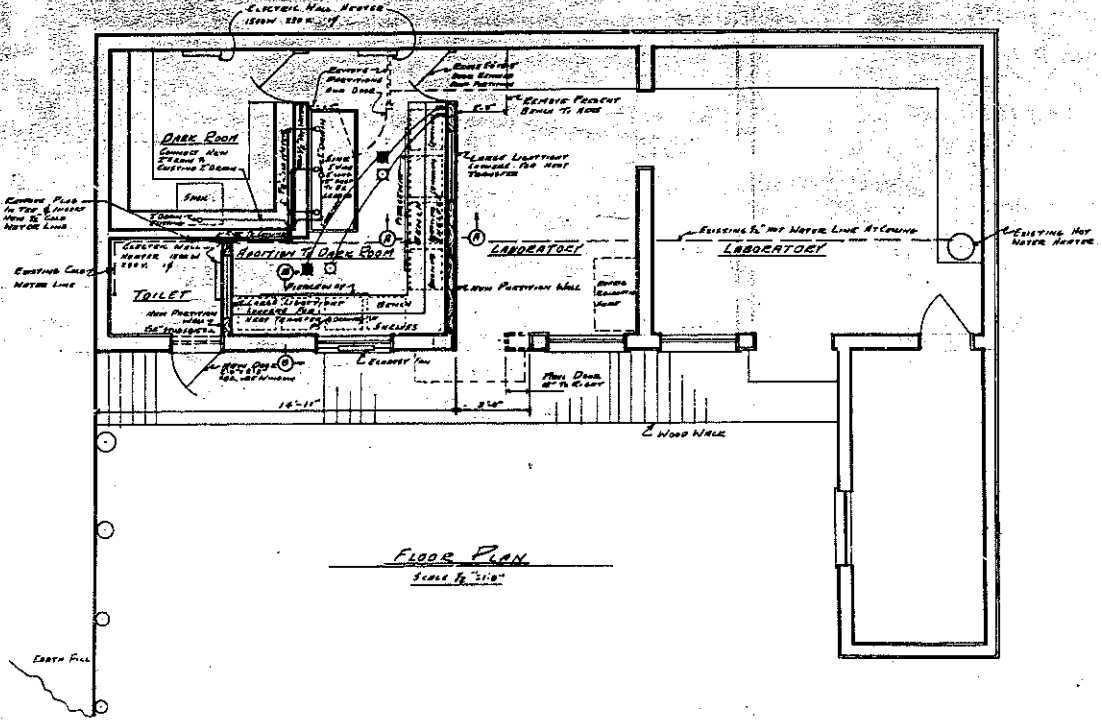
GENERAL NOTES

1. Paint walls & ceiling of dark room black.
2. Line walls & ceiling of all rooms with 1/2" gypsum board.



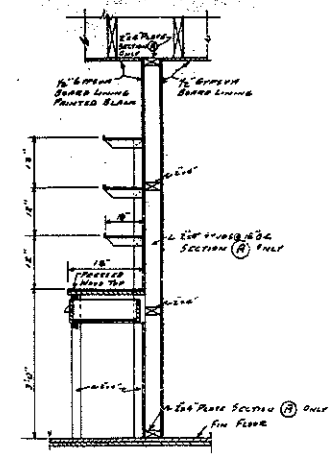
PLAN AND ELEVATIONS
LABORATORY BUILDING
TWO-MILE MESA - TA-G
W.C. Krueger Architect

APPROVED
APPROVED



FLOOR PLAN

SCALE ¼"=1'-0"



SCALE 1½"=1'-0"

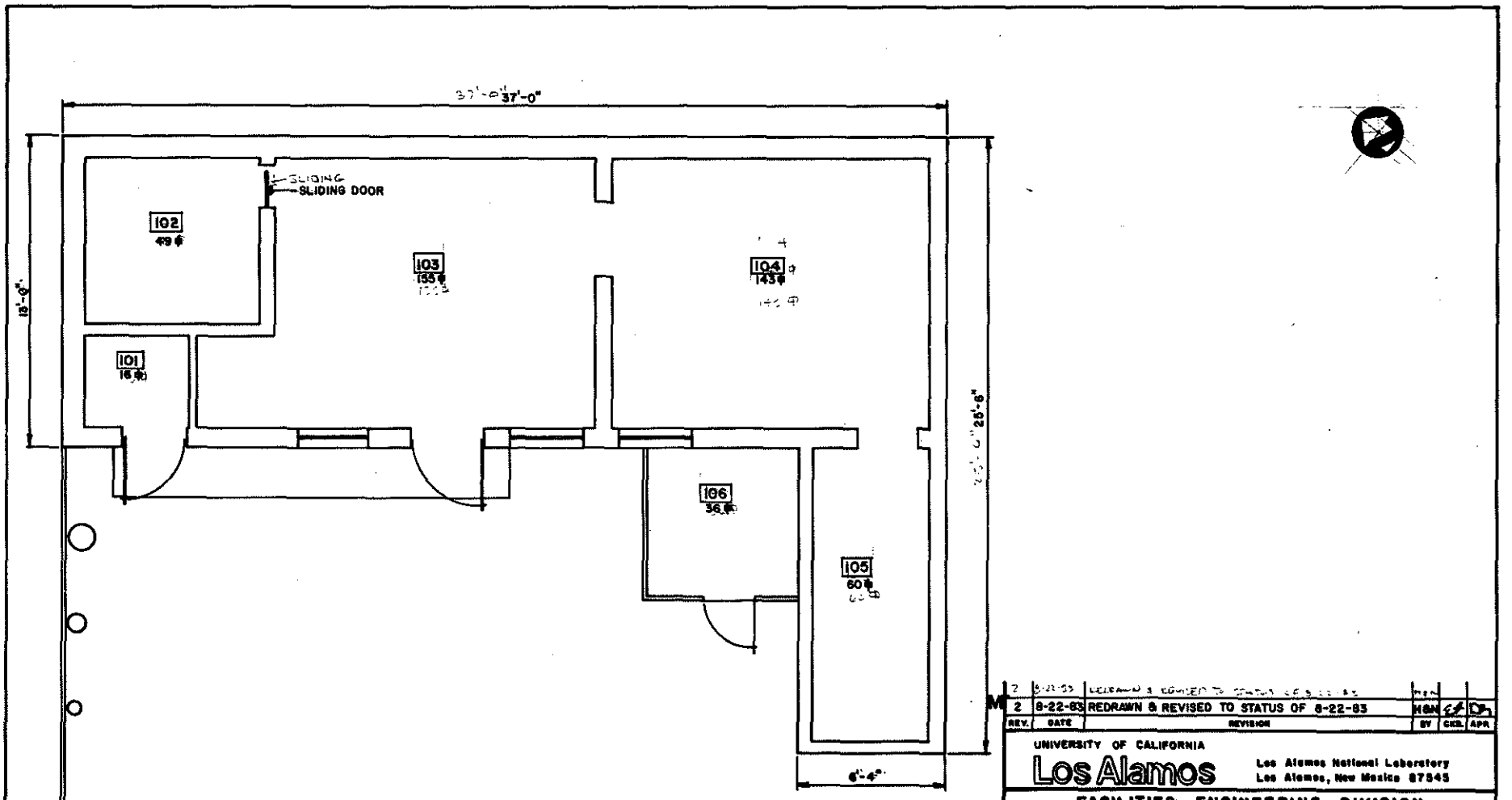
U. S. ENGINEER OFFICE
SANTA FE, NEW MEXICO

EIA PROJECT: E MILE MESA CONSTRUCTION

ADDITIONS TO LABORATORY #3
PLAN, SECTION

FILE NO. PE 215

LA BLUEPRINTING CO. 1626



(1/4"=1'-0")

GRAPHIC SCALE

BLDG. TOTAL 459 S.F.

REV.	DATE	REVISION	BY	CKD.	APP.
2	8-22-83	REDRAWN & REVISED TO STATUS OF 8-22-83	H&N		

UNIVERSITY OF CALIFORNIA
Los Alamos
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

FACILITIES ENGINEERING DIVISION

FABRICATION BUILDING
FLOOR PLAN

BLDG. TM-3 TA-6

SUBMITTED G. Trujillo	RECOMMENDED Dennis Rapp	APPROVED	SEC. CLASSIFICATION
DRAWN H & N	DATE 8-22-83	SHEET NO. 1 OF 1	CLASS. U
CHECKED Kenneth L. Hen			REVIEWER Gardner
			DATE 10-21-83

DRAWING NO. ENG-R 2597

REC'D ___ LOGGED ✓ TO VAULT

2597

LANL TA- Building # 06-0005

Camera 984242

Frame #s DCP_ 2163 through DCP_2166

Surveyor(s) J.Ronquillo, K.Towery, K. Garcia

Date 04/01/2004

Los Alamos National Laboratory
HREPCT Historic Building Survey Form

Building Name Storage Building UTMs easting 379642 northing 3969505 zone 13

Legal Description: Map Frijoles Quad 1984 tnsp 19N range 6E sec 20

Current Use/ Function Building is currently abandoned. Original Use/ Function Laboratory Building

Date (estimated) 1944 Date (actual) 1945 Property Type Laboratory/Processing

Type of Construction

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

Other Type of Construction # of Stories 1

Foundation Reinforced Concrete.

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) Asbestos shingles with painted wood elements.

Exterior Features (docks, speakers, lights, signs, etc) Porch/entrance landings on east and west elevations.

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 Built-up composite roofing material.

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

Other Window Type N/A

# of Each Window Type/ Comments The two window openings on the south side have been covered.

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

Light Pattern N/A

Door Type Personnel Door Types Exterior Fire Door ☐ Single ☑ Double ☑ Roll-up ☐ Sliding ☐

Hollow Metal ☐ Solid Wood ☑ 1/2 Glazed ☐ Paneled ☑
Louvered ☐ Painted ☑

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 ☐

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

# of Each Door Type/Comments: There are two doors. One is single leaf and the other is double leaf.

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)

Degree of Remodeling Unknown/None

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

Associated Building ☑

If yes, list building names and #s: TA-6-1, -2, -3, -6, -7, -8, & -9.

Integrity Fair

Significance

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 _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) Wood construction with asbestos shingle siding typical of the 1940's. An exhaust fan and stack are visible on the roof of the building.

Total sq ft 241 **Architect/ Builder** W.C. Kruger

Alterations

List of Drawings (Cntrl + Enter for para break)

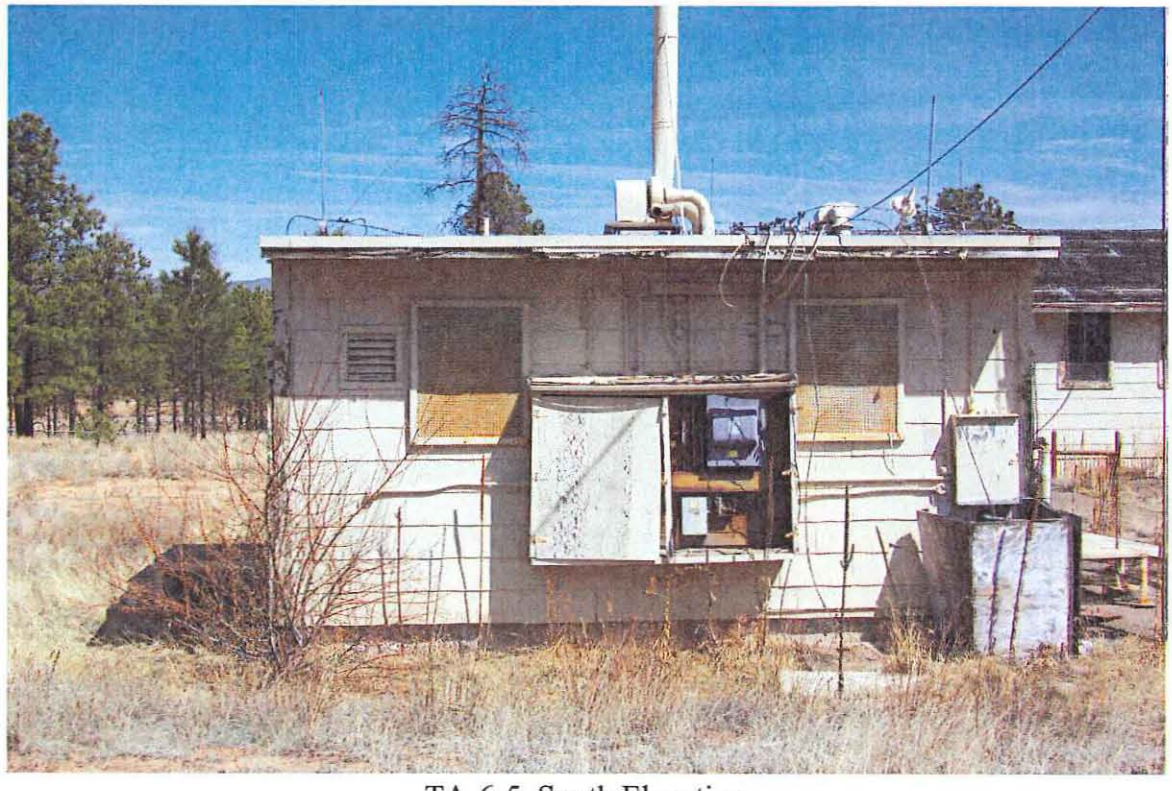
ENG-C 1629
2 Mile Mesa (TA-6)
Proposed Buildings
Buildings TM-7, -8, -9, -4, -5
July 3, 1945
Revised July 16, 1945

ENG-C 1634
2 Mile Mesa Firing Site
Plans Elevations, Sections, Bldgs TM-4 & 5
August 1, 1945

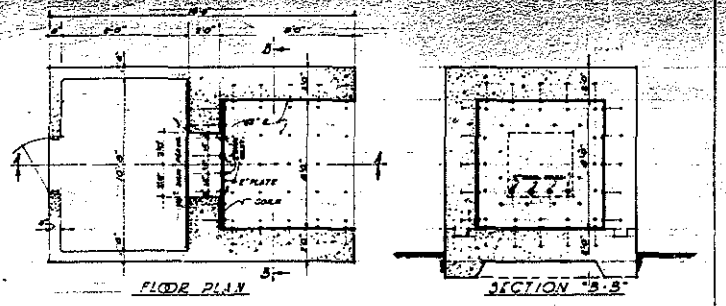
ENG-C 23704
Sheet 1 of 2
TA-6, Bldgs, TM-5 & TM-6 (TA-6-5 and TA-6-6)
Porch Alterations
Civil: Location Plan, Gen. Notes, Bldg. Plans, & Porch Section
August 18, 1965

ENG-R 2599
TA-6, Bldg. TM-5 (TA-6-5)
Laboratory Building
Floor Plan
August 22, 1983

TA-6-5, West Elevation

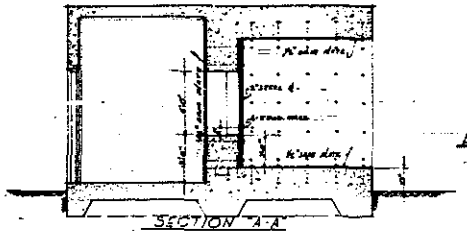


TA-6-5, South Elevation



FLOOR PLAN

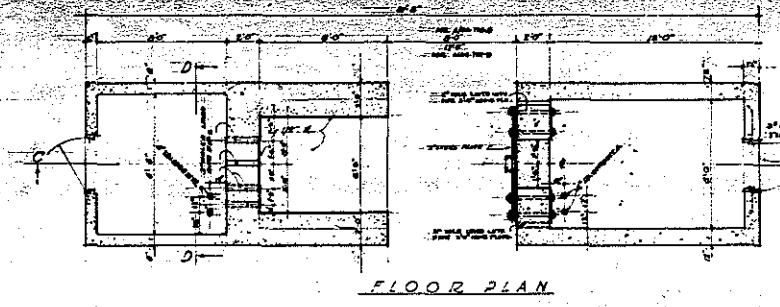
SECTION "B-B"



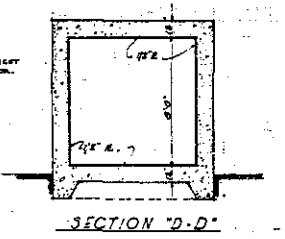
SECTION "A-A"

BUILDING TM-7

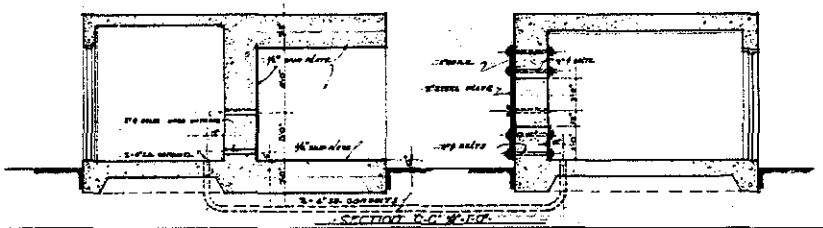
SCALE 1/4"=1'0"



FLOOR PLAN



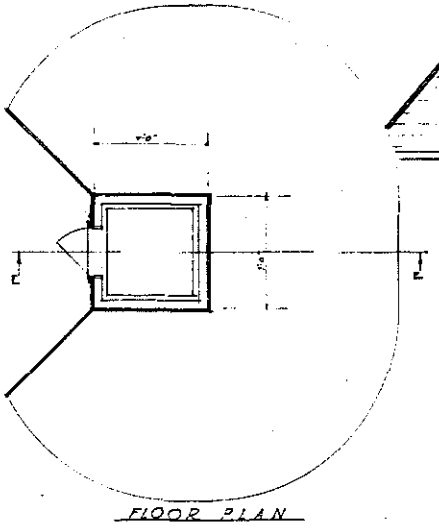
SECTION "D-D"



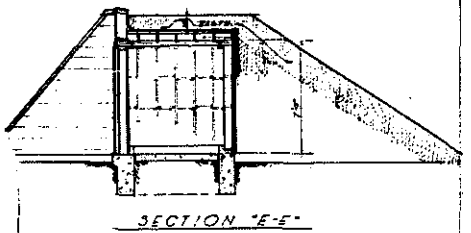
SECTION B.C. W.C.

BUILDINGS TM-8 & TM-9

SCALE: 1/4"=1'0"



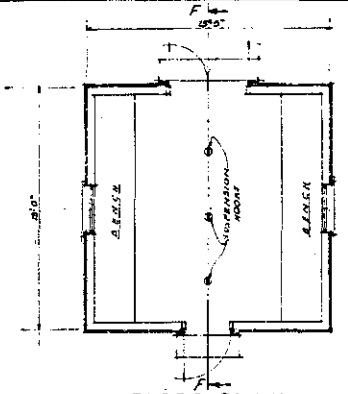
FLOOR PLAN



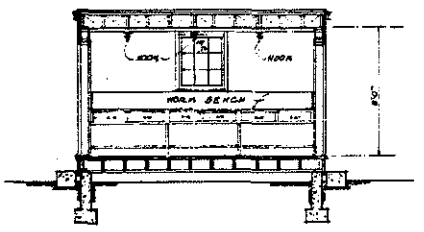
SECTION "E-E"

BUILDING TM-4

SCALE: 1/4"=1'0"



FLOOR PLAN



SECTION "F-F"

BUILDING TM-5

SCALE: 1/4"=1'0"

PROPOSED BUILDINGS

2 MILE MESA

BUILDINGS TM-7-8-9-+5

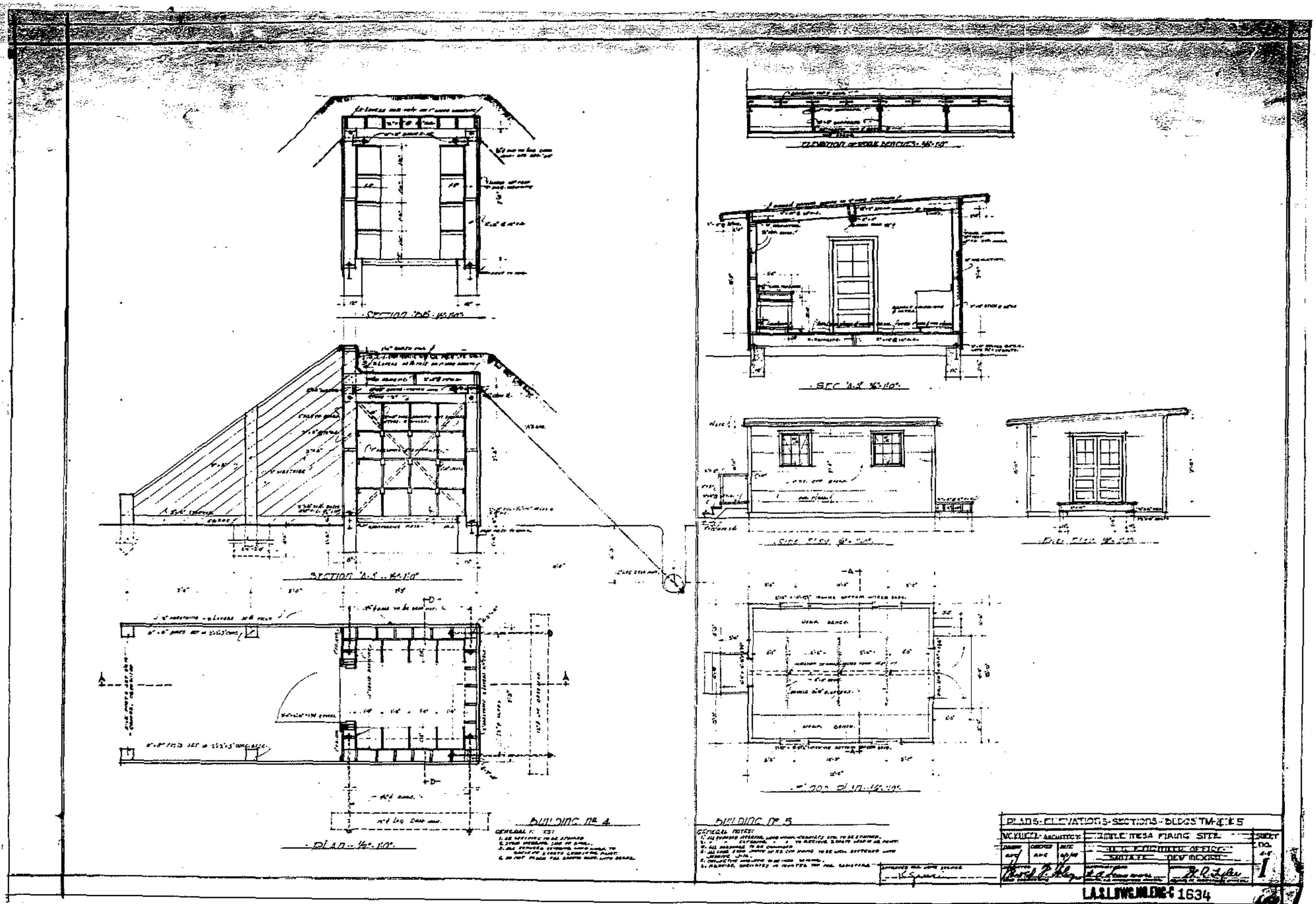
W.C. KRUGER - ARCHT.

7-3-45 (REVISED 7/14/45)

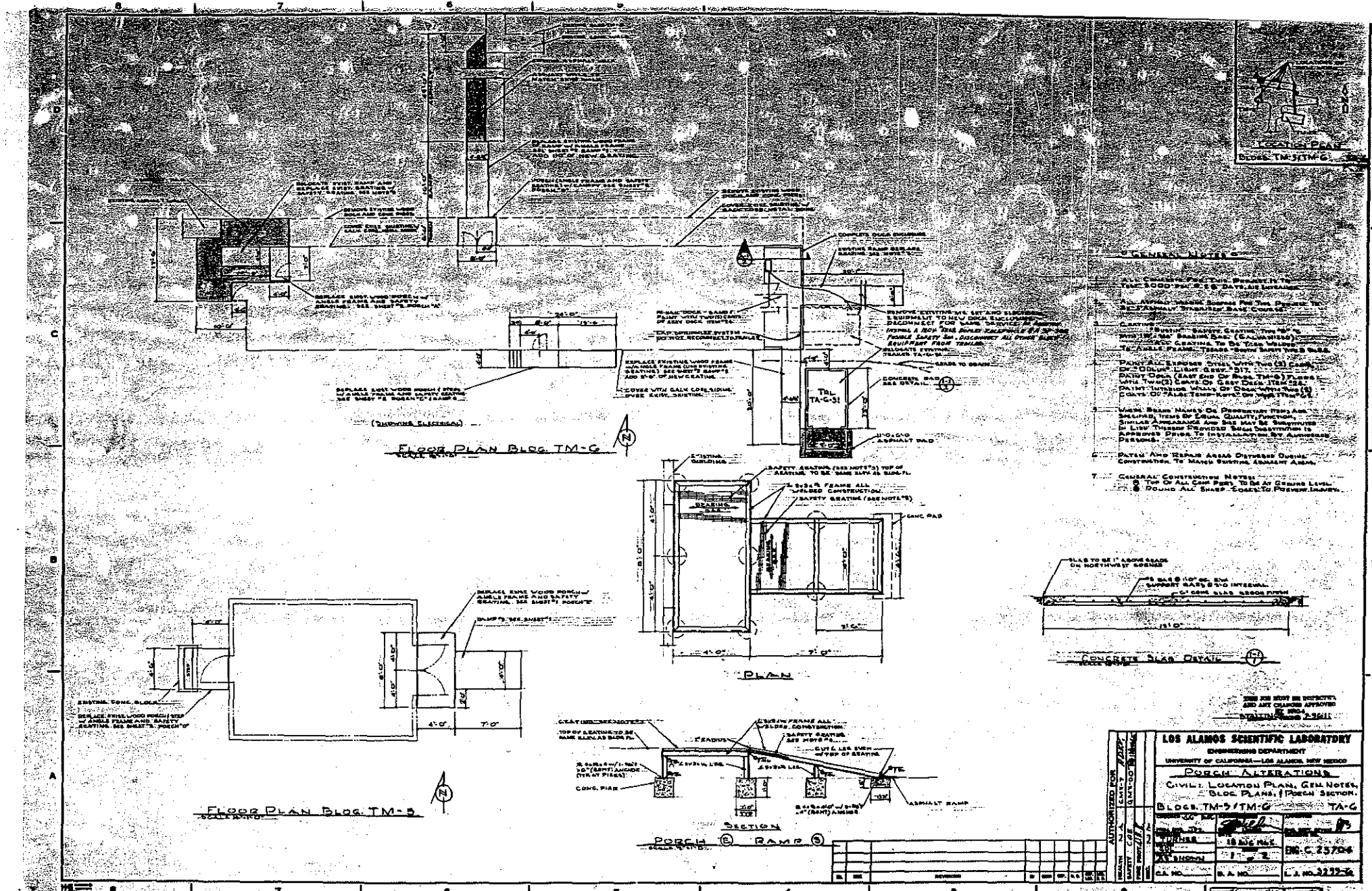
REVISED TITLE 6-19-52 JTH

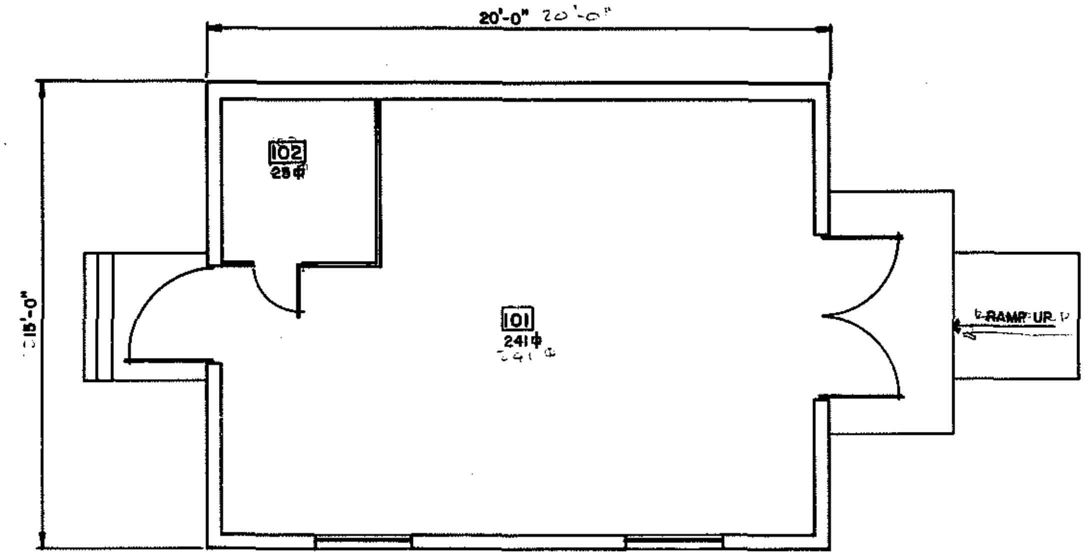
SHEET 2 OF 5

L.A.S.L.DWG.NO.ENG-C 1629



BUILDING No 4
BUILDING No 5
PLANS-ELEVATIONS-SECTIONS-BLDGS TM-4 & 5
MESA FIRING SITE
NEW MEXICO
1634


FLOOR PLAN BLDG. TM-G
FLOOR PLAN BLDG. TM-5
PLAN
SECTION
PORCH (E) RAMP (5)
CONCRETE SLAB DETAIL
LOCATION PLAN
BLDGS. TM-5 & TM-G
GENERAL NOTES
LOS ALAMOS SCIENTIFIC LABORATORY
ENGINEERING DEPARTMENT
UNIVERSITY OF CALIFORNIA—LOS ALAMOS, NEW MEXICO
PORCH ALTERATIONS
CIVIL: LOCATION PLAN, GEN. NOTES, BLDG. PLANS, PORCH SECTION.
BLDGS. TM-5 / TM-G
TA-G
ENG-C 25706
C.A. NO. 3222-56



(1/4"=1'-0") 0' 2' 8'
GRAPHIC SCALE

BLDG. TOTAL 266 S.F.

REV.	DATE	REVISION	BY	CKD.	APR.
2	8-23-93	REDRAWN & REVISED TO STATUS OF 8-23-93	HGN		

UNIVERSITY OF CALIFORNIA
Los Alamos
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

FACILITIES ENGINEERING DIVISION

LABORATORY BUILDING
FLOOR PLAN

BLDG. TM-5   TA-6

SEC. CLASSIFICATION	
CLASS.	U
REVIEWER	
DATE	10-31-93

SUBMITTED	RECOMMENDED	APPROVED
E. Trujillo		

DRAWN	HGN	DATE	SHEET NO.	DRAWING NO.
CHECKED	HGN	8-22-93	1 OF 1	ENG-R2599

R'C'D ...... LOGGED ✓ TO VAULT

LANL TA- Building # 06-0006

Camera 984242

Frame #s DCP_2222 through DCP_2225

Surveyor(s) K.Towery, J.Ronquillo, K. Garcia

Date 04/13/2004

Los Alamos National Laboratory
HREPCT Historic Building Survey Form

Building Name Laboratory and Office Building UTMs easting 379664 northing 3969520 zone 13

Legal Description: Map Frijoles Quad 1984 tnsp 19N range 6E sec 20

Current Use/ Function Building is currently abandoned. Original Use/ Function Laboratory and Office Building

Date (estimated) 1944 Date (actual) 1945 Property Type Laboratory/Processing

Type of Construction

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

Other Type of Construction # of Stories 1

Foundation Concrete piers @ 6' supporting wood post and beam foundation.

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) Asbestos shingles with painted wood elements.

Exterior Features (docks, speakers, lights, signs, etc) Corrugated metal skirting.

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

Steel (corrugated)-Addition ☑ Asbestos Shingles-Addition ☐ Other- Addition Shed type metal enclosure around and over existing loading dock/platform.

Exterior Treatment-Addition

Exterior Features-Addition

Roof Form Slanted/Shed ☐ Gable ☑ Other Roof Type

Degree of Pitch/ Slope Moderate

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 The windows are double hung, wood sash, with bug screens.

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

Light Pattern Three-over-three

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

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 ☐

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

# of Each Door Type/Comments:

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) Fire protection piping, boiler, compressor, expansion tank, two exhaust fans on roof.

Degree of Remodeling Minor

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

Associated Building ☑

If yes, list building names and #s: TA-6-1, -2, -3, -5, -7, -8, & -9

Integrity Fair

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 _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)

North elevation of the building is the main entrance. West elevation has a louver, an exterior mechanical room, and an expansion tank for the steam. The loading dock/platform on the east end of the building was later enclosed with metal siding. There are ramps leading to entrance doors on the west, north, and east sides of the building.

Total sq ft 2184

Architect/ Builder W. C. Kruger

Alterations

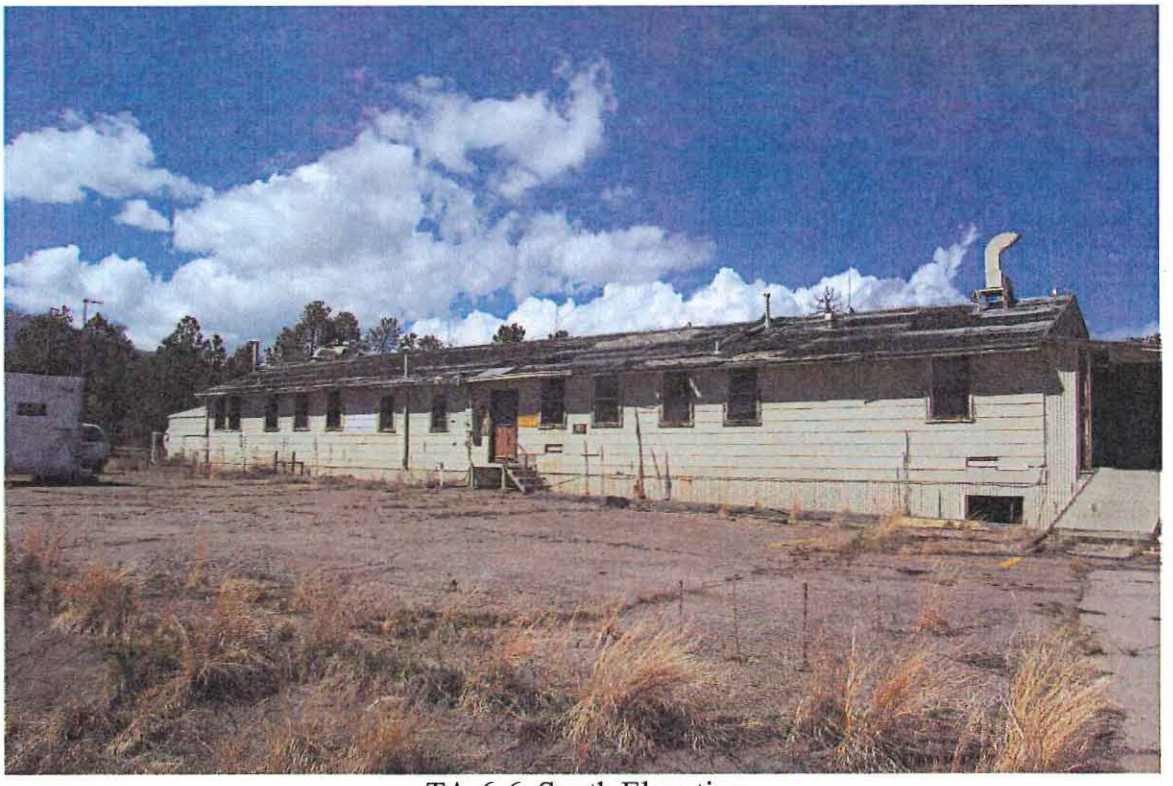
List of Drawings (Cntrl + Enter for para break)

ENG-C 1635
2 Mile Mesa, TA-6 Firing Site
Building TM-6 (TA-6-6)
Plans, Elevations, Sections, Details
August 12, 1945

ENG-SK 69
TA-6
Modification - Bldg. TM-6 (TA-6-6)
September 26, 1947

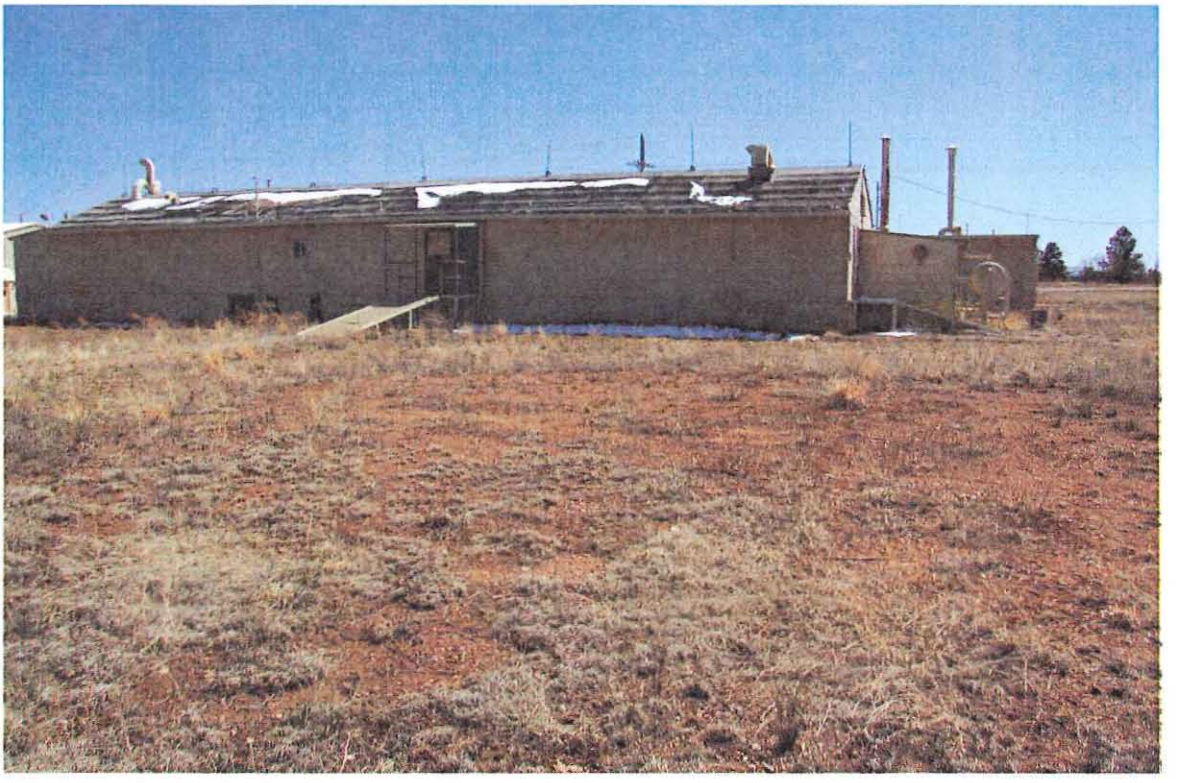
ENG-C 111
TA-6
Modification - Bldg. TM-6 (TA-6-6)
April 21, 1948
Revised As-Built December 31, 1948

ENG-R 2600
TA-6, Bldg. TM-6 (TA-6-6)
Laboratory Office & Shop Building
Floor Plan
August 22, 1983



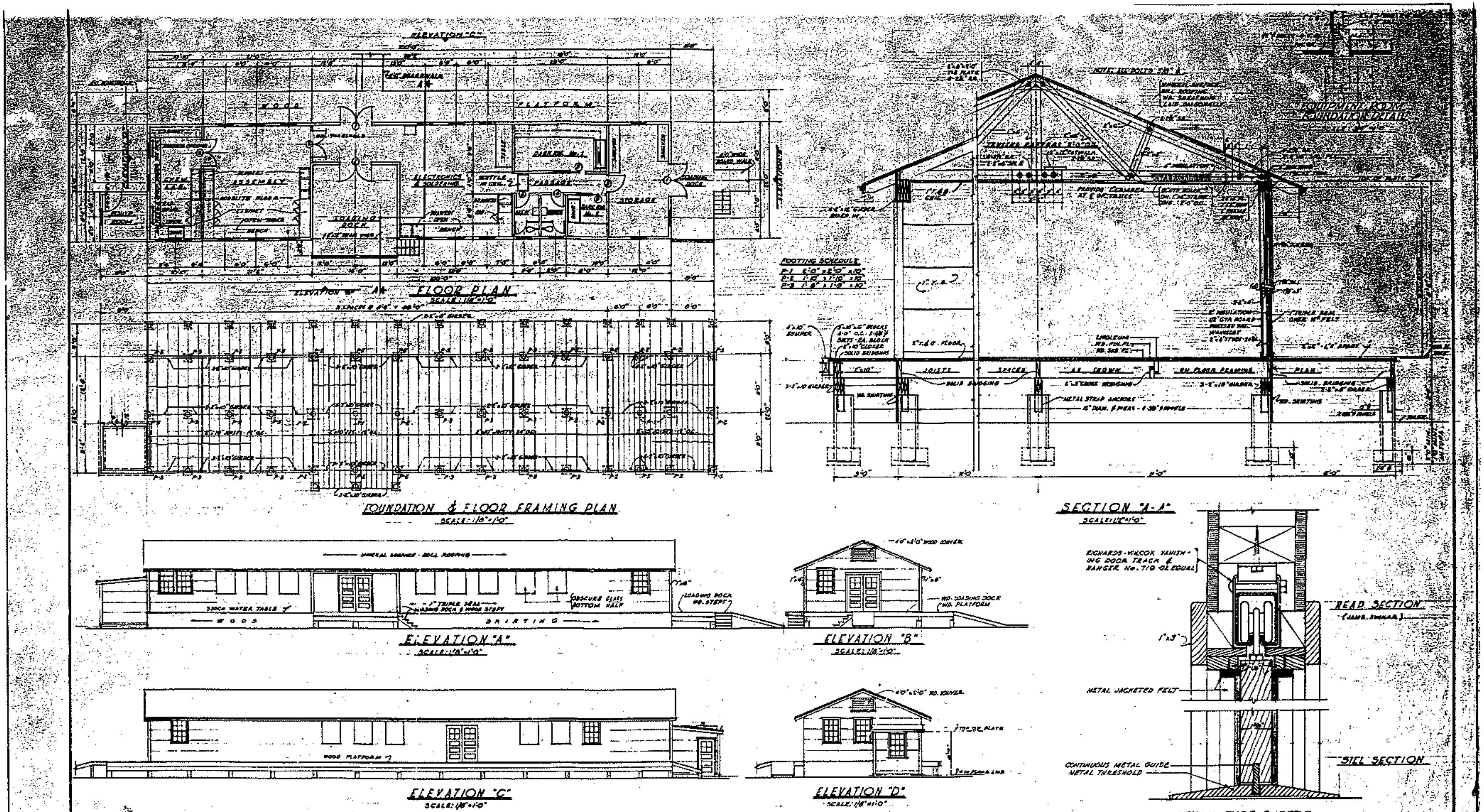
TA-6-6, South Elevation

TA-6-6, East Elevation



TA-6-6, North Elevation

TA-6-6, West Elevation



DETAIL-TYPE 5 DOOR
SCALE: 6"=1'-0"

GENERAL NOTES

1. ALL EXTERIOR WOODWORK SHALL BE GIVEN TWO COATS LEAD IN OIL PAINT.
2. ALL INTERIOR WOODWORK SHALL BE STAINED.
3. ALL INTERIOR WALLS AND CEILINGS SHALL BE GIVEN TWO COATS LEAD IN OIL PAINT.
4. ALL JOINTS OF 1" T.G. SIDING SHALL BE GIVEN A LIBERAL APPLICATION OF JENNITE J-16
5. PROVIDE 1/2" RUBBLITE-AS PER MANUFACTURERS SPECIFICATIONS-OVER 2 LAYERS 15# BUILDING FELT OVER 5/8"-5 PLY PLYWOOD OVER 1" WOOD SUB-FLOOR LAID DIAGONALLY, WHERE SHOWN ON PLAN
6. FLOOR IN STORAGE ROOM SHALL BE 1" T. & G. OVER 1" SUB-FLOOR LAID DIAGONALLY.
7. ALL OTHER FLOORS SHALL BE STANDARD GAUGE LINOLEUM LAID AS PER MANUFACTURERS SPECIFICATIONS OVER 1" & NOT GREATER THAN 4" T.& G. OVER 1" WD. SUB-FLOOR LAID DIAGONALLY
8. PROVIDE 4'-0" PRESSED WOOD WAINSCOT & CAP THROUGHOUT.
9. PROVIDE 15# FELT UNDER 1" T. S. SIDING.
10. PROVIDE INSECT SCREENS AT ALL WINDOWS - PROVIDE SCREEN DOORS AT ALL EXTERIOR DOORS
11. PROVIDE CYLINDER LOCKS AT ALL EXTERIOR DOORS.
12. PROVIDE SHELF AND MIRROR OVER LAVATORIES

DOOR SCHEDULE

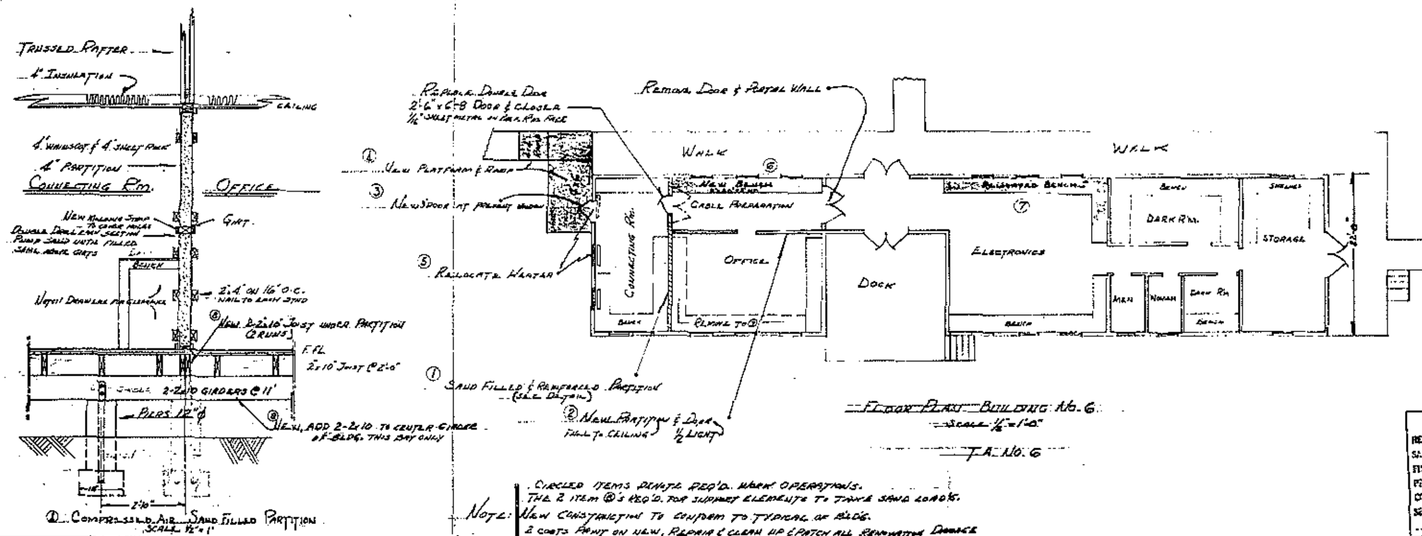
TYPE	1 – 8'-0" x 7'-0" x 1 3/4" -5 CROSS PANEL-GLAZED AT TOP
"	2 – 5'-0" x 6'-8" x 1 3/4" -5 CROSS PANEL
"	3 – 3'-0" x 6'-8" x 1 3/4" -5 CROSS PANEL
"	4 – 2'-6" x 6'-8" x 1 3/4" -5 CROSS PANEL
"	5 – 3'-6" x 6'-8" x 1 3/4" -5 CROSS PANEL-SLIDING-LIGHT TIGHT

NOTE: ALL SASH 2'-10" x 4'-6" x 1 3/8" 2-LIGHTS WIDE, 6-LIGHTS HIGH 10" x 12" GLASS SIZE, DOUBLE HUNG.

PLANS·ELEVATIONS·SECTIONS·DETAILS BUILDING TA-6

W.C. KRUGER-ARCHITECT | 2 MILE MESA T.A. 6 FIRING SITE
U.S. ENGINEER OFFICE
SANTA FE, N. M.

L.A.S.L. ENG. DWG. C 1635



FLOOR PLAN — BUILDING No. 6
SCALE ⅛" = 1'-0"

T.A. No. 6

NOTE:
- CIRCLED ITEMS DENOTE REQ'D. WORK OPERATIONS.
- THE 2 ITEM ⑧'s REQ'D. FOR SUPPORT ELEMENTS TO TAKE SAND LOADS.
- NEW CONSTRUCTION TO CONFORM TO TYPICAL OF BLDG.
- 2 COATS PAINT ON NEW, REPAIR & CLEAN UP & PATCH ALL RENOVATION DAMAGE

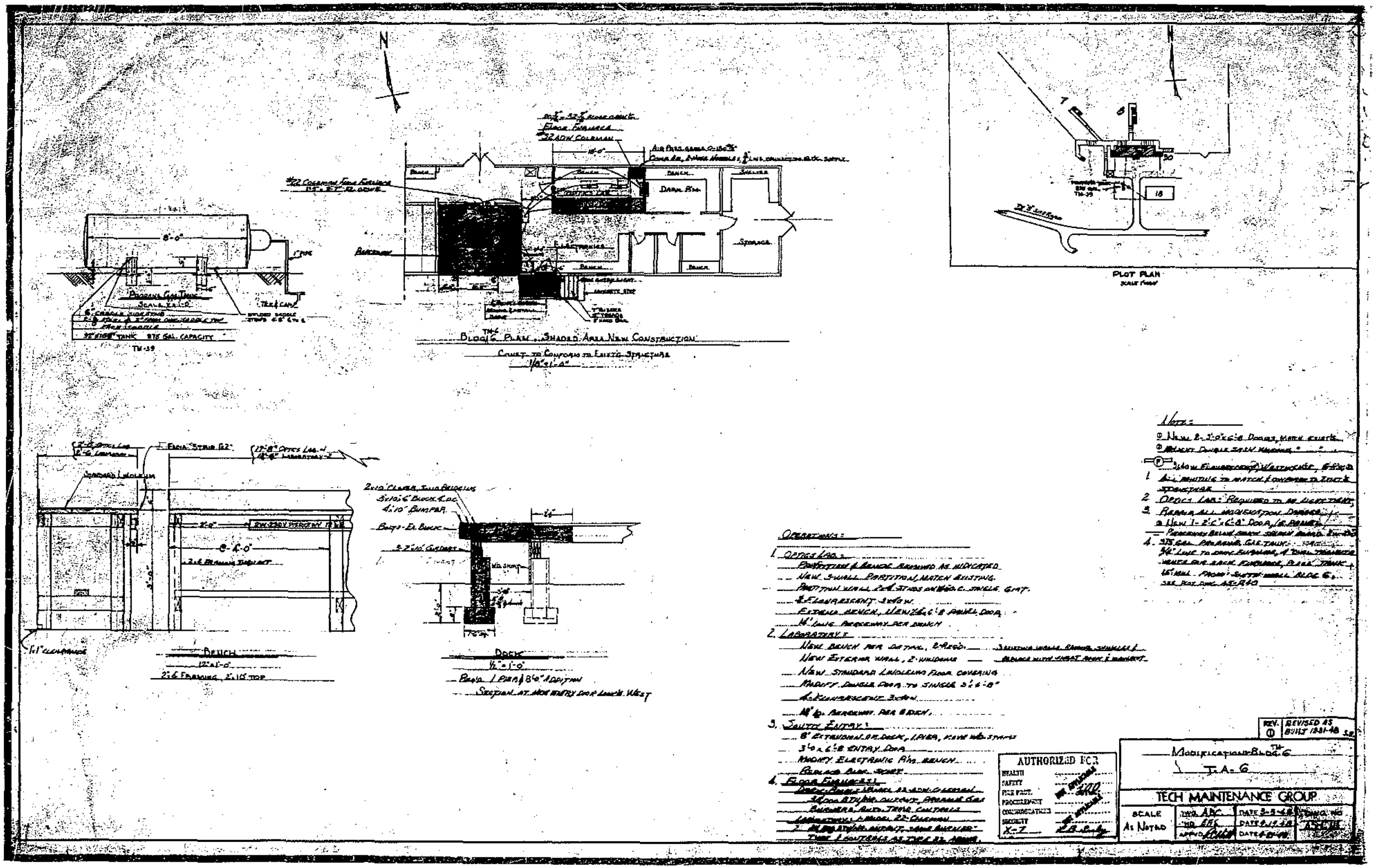
AUTHORIZED FOR

HEALTH	NOT APPLICABLE
SAFETY	[signature]
FIRE PROT.	
PROCUREMENT	
COMMUNICATIONS	NOT APPLICABLE
SECURITY	
X-7	L.B. Seely

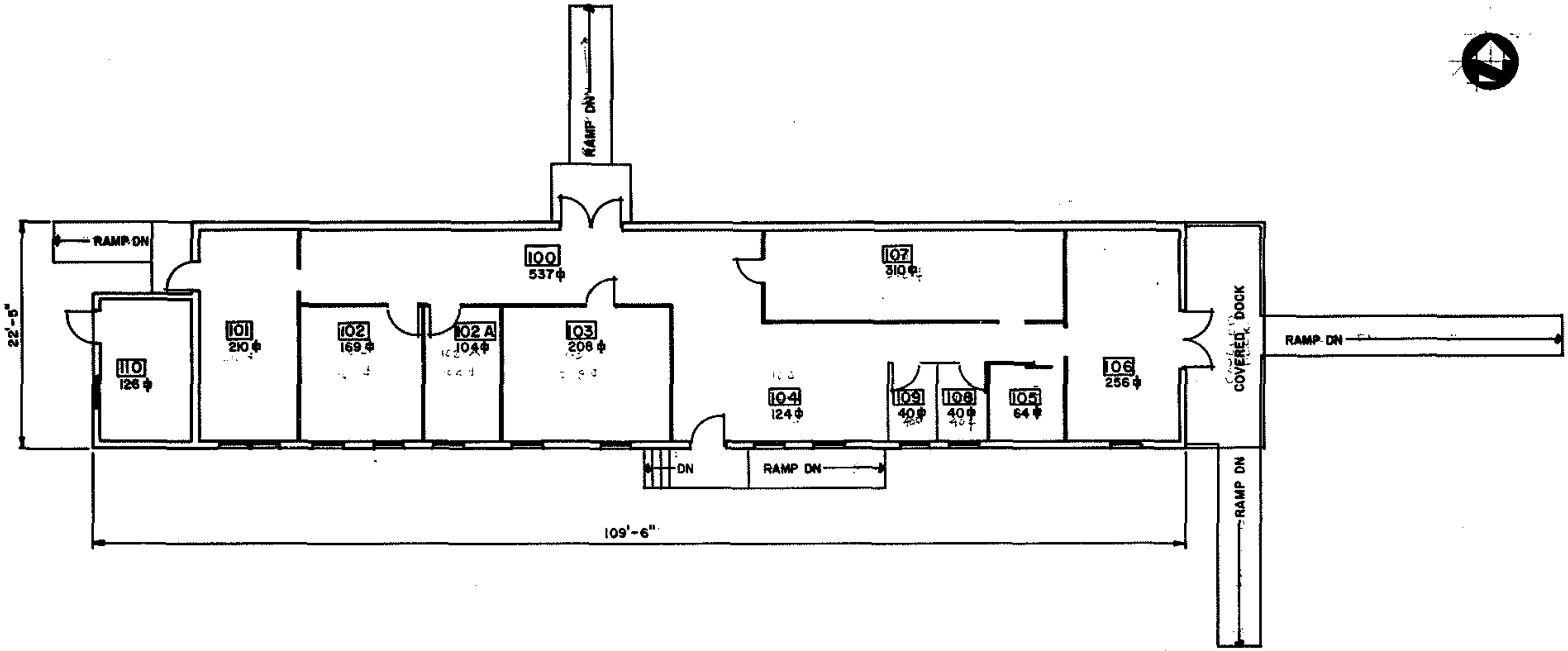
MODIFICATION - BLDG. TM-6
T.A. 6

TECH MAINTENANCE GROUP

SCALE			DWG. NO.
As Noted	DWG. ABC	DATE 9-22-47	A5-69
	CK. EBS	DATE 9-22-47	
	APP'D [signature]	DATE 9-26-47	



N
PLOT PLAN
Propane Gas Tank
TH-39
Bldg. TH-6 Plan. Shaded Area New Construction
Bench
Dark Rm.
Shelves
Storage
Bench
Dock
Notes:
Operations:
1. Optics Lab:
New 3-wall partition, match existing.
2. Laboratory:
New standard linoleum floor covering
3. South Entry:
4. Floor Furnaces:
AUTHORIZED FOR
HEALTH
SAFETY
FIRE PROT.
PROCUREMENT
COMMUNICATIONS
SECURITY
X-7
REV. 1
Modification Bldg. TH-6
T.A-6
TECH MAINTENANCE GROUP
SCALE
As Noted



(3/32" = 1'-0")
0' 5' 10' 20'
GRAPHIC SCALE

BLDG. TOTAL 2184 S.F.

MF

REV.	DATE	REVISION	BY	CKD.	APR.
3	8-22-83	REDRAWN & REVISED TO STATUS OF 8-22-83	HBN		

UNIVERSITY OF CALIFORNIA
Los Alamos
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

FACILITIES ENGINEERING DIVISION

LABORATORY OFFICE & SHOP BUILDING
FLOOR PLAN
BLDG. TM-6 TA-6

SEC. CLASSIFICATION
CLASS. U
REVIEWER
DATE 10-31-83

SUBMITTED / RECOMMENDED / APPROVED
DRAWN H B N
CHECKED
DATE 8-22-83
SHEET NO. 1 OF 1
DRAWING NO. ENG-R2600

REC'D LOGGED

LANL TA- Building # 06-0007

Camera 984242

Frame #s DCP_2167 through DCP_2170

Surveyor(s) J.Ronquillo, K.Towery, K. Garcia

Date 04/01/2004

Los Alamos National Laboratory
HREPCT Historic Building Survey Form

Building Name Storage building UTMs easting 379626 northing 3969556 zone 13

Legal Description: Map Frijoles Quad 1984 tnsp 19N range 6E sec 20

Current Use/ Function Building is currently abandoned. Original Use/ Function Firing Chamber

Date (estimated) 1944 Date (actual) 1945 Property Type Laboratory/Processing

Type of Construction

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

Other Type of Construction Cast-in-place concrete. # of Stories 1

Foundation Reinforced concrete

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) Unpainted concrete walls.

Exterior Features (docks, speakers, lights, signs, etc) There is a large steel encased opening on the north end of the building. It was originally enclosed with corrugated metal siding and a single metal door. This burned in the May 2000 Cerro Grande Fire. There is an exhaust fan on the south elevation.

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 Flat

Degree of Pitch/ Slope

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

Other Roof Materials Cast-in-place concrete.

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

Other Window Type

# of Each Window Type/ Comments N/A

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

Light Pattern: N/A

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: Steel door

Interior Wall

Gypsum Board ☐ Reinforced Concrete- Interior ☑

CMU- Interior ☐ Plywood ☐ Other- Interior: The walls of the northern room are shielded with steel.

In-Wall Electrical Wiring ☐ On-Wall Electrical Wiring ☐

Ceiling Drop Ceiling ☐

Interior Comments (Equipment, etc):

Degree of Remodeling: Unknown/None

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

Associated Building ☑

If yes, list building names and #s: TA-6-1, -2, -3, -5, -6, -8, & -9.

Integrity: Fair

Significance:

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 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) Concrete utilitarian structure designed to run component testing. The concrete building has a steel plate and frame door. It shows exposed steel anchor bolts, which attach interior steel plates to the walls.

Total sq ft 144 **Architect/ Builder** W. C. Kruger

Alterations

List of Drawings (Cntrl + Enter for para break)

ENG-C 1629
2 Mile Mesa (TA-6)
Proposed Buildings
Buildings TM-7, -8, -9, -4, -5
July 3, 1945
Revised July 16, 1945

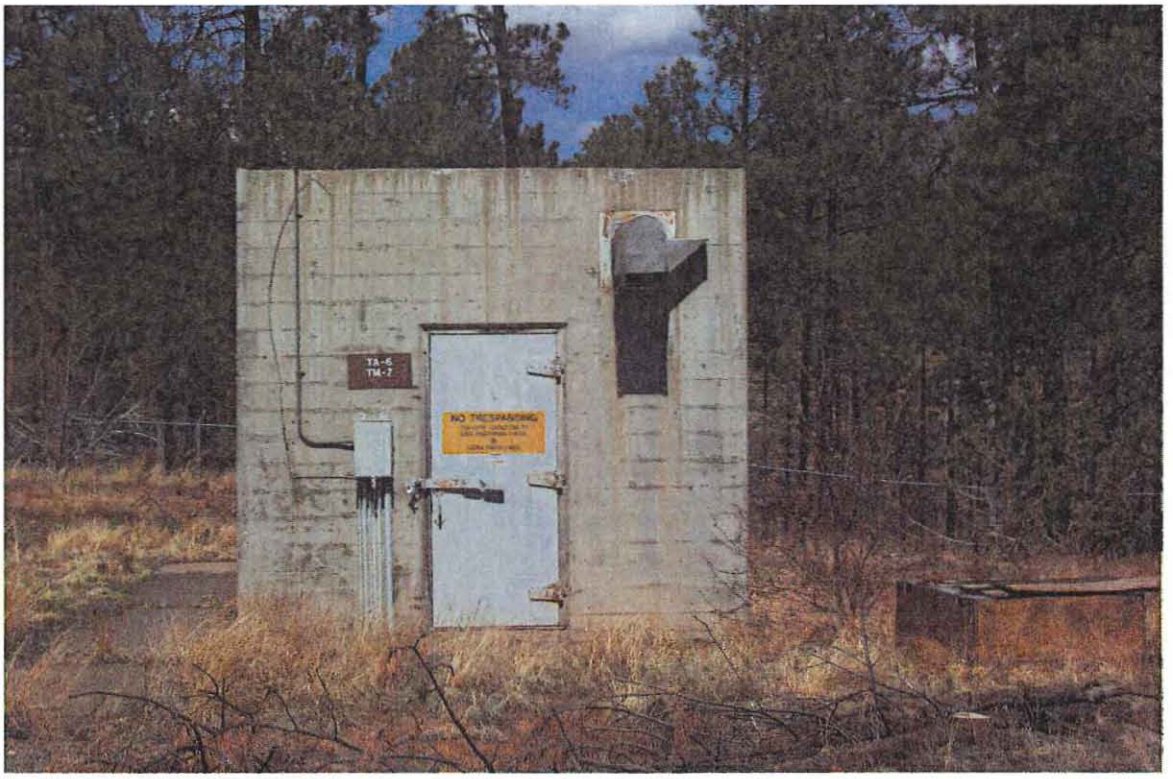
ENG-C 1632
2 Mile Mesa Firing Site (TA-6)
Building - 7
Plan, Sections, Details
July 27, 1945

ENG-C 1631
2 Mile Mesa Firing Site (TA-6)
Electric Layout & Distribution
August 18, 1945

ENG-C 1630
2 Mile Mesa Firing Site (TA-6)
Utility Distribution & Layout Plan
July 20, 1945

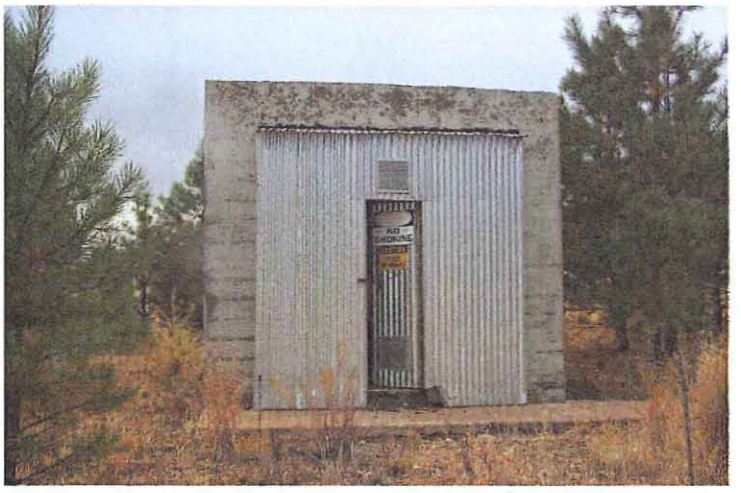
ENG-R 2601
TA-6, Bldg. TM-7 (TA-6-7)
Storage Bldg
Floor Plan
August 23, 1983

Manhattan Era Buildings Historic Context
Sheet 1 of 3
TA-6, Bldg-7
Elevations
April 28, 2004



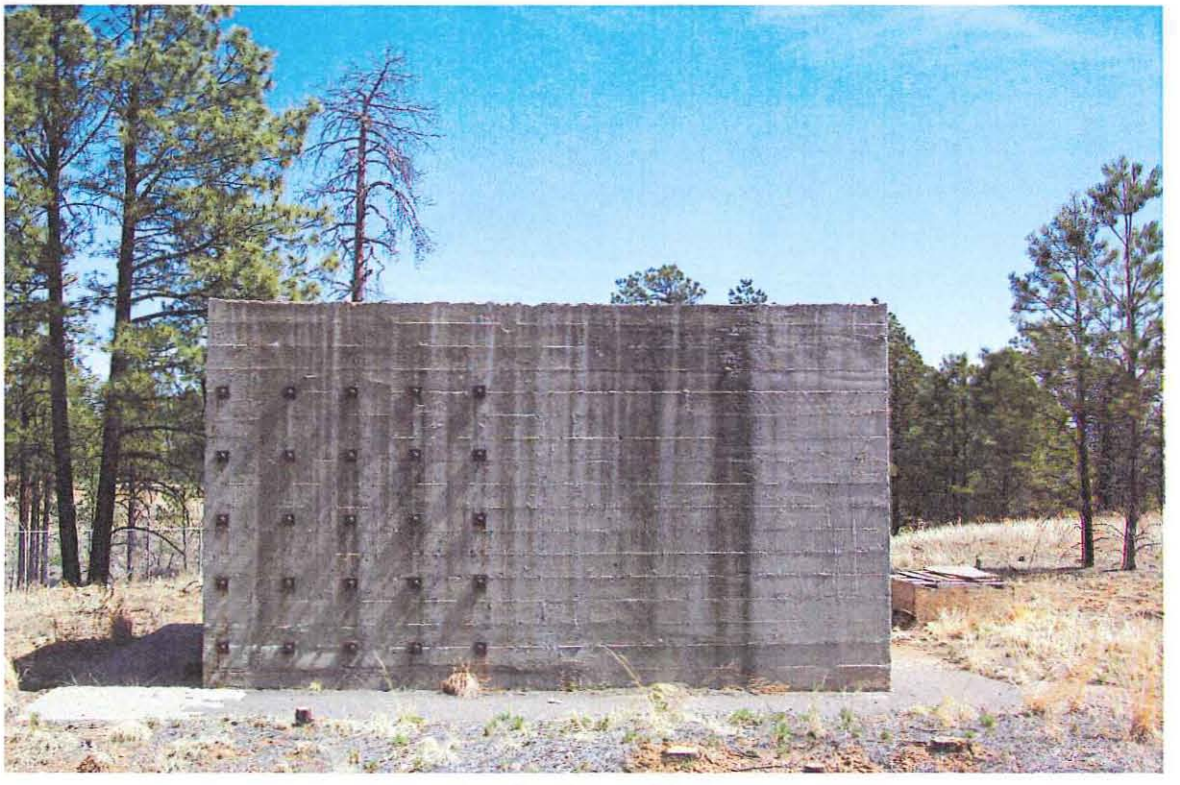
TA-6-7, Southeast Elevation

TA-6-7, Northeast Elevation

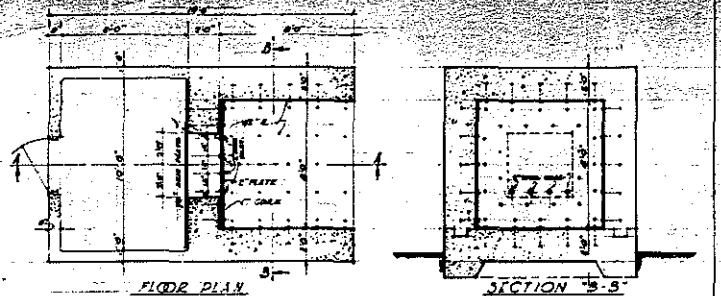


TA-6-7, Northwest Elevation,
October 1999

TA-6-7, Northwest Elevation,
April 2004
(after Cerro Grande Fire)

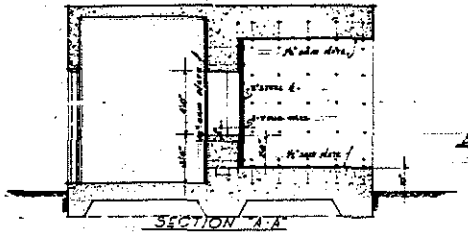


TA-6-7, Southwest Elevation



FLOOR PLAN

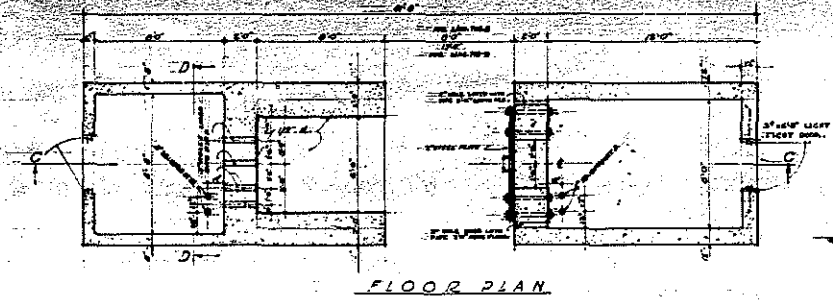
SECTION "B-B"



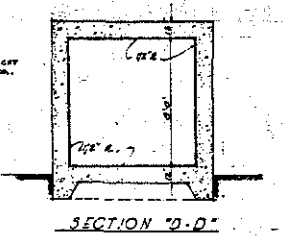
SECTION "A-A"

BUILDING TM-7

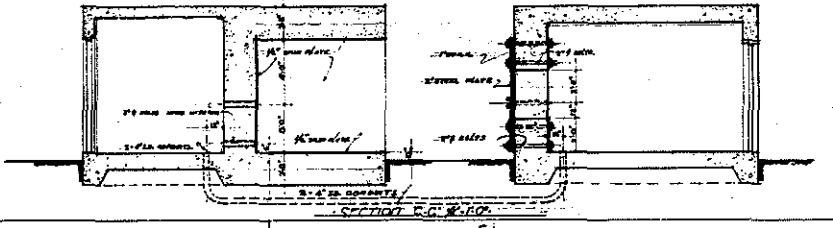
SCALE 1/4"=1'0"



FLOOR PLAN



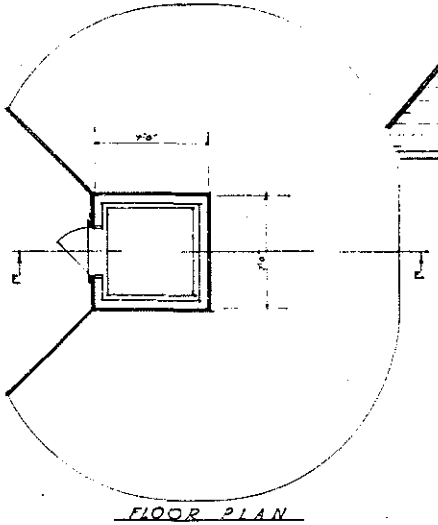
SECTION "D-D"



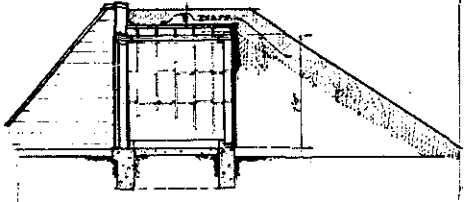
SECTION E-E 1/4"=1'0"

BUILDINGS TM-8 & TM-9

SCALE: 1/4"=1'0"



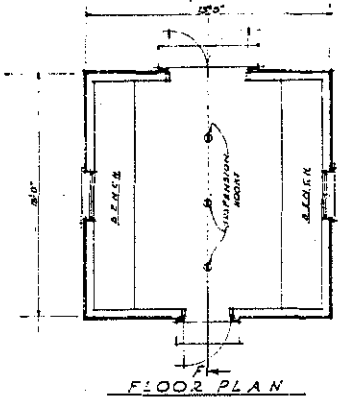
FLOOR PLAN



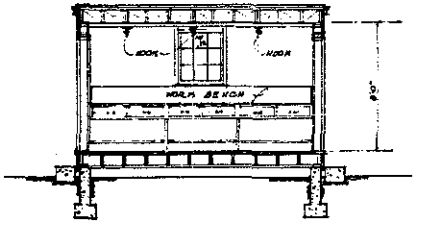
SECTION "E-E"

BUILDING TM-4

SCALE: 1/4"=1'0"



FLOOR PLAN



SECTION "F-F"

BUILDING TM-5

SCALE: 1/4"=1'0"

PROPOSED BUILDINGS

2 MILE MESA

BUILDINGS TM-7-8-9-4-5

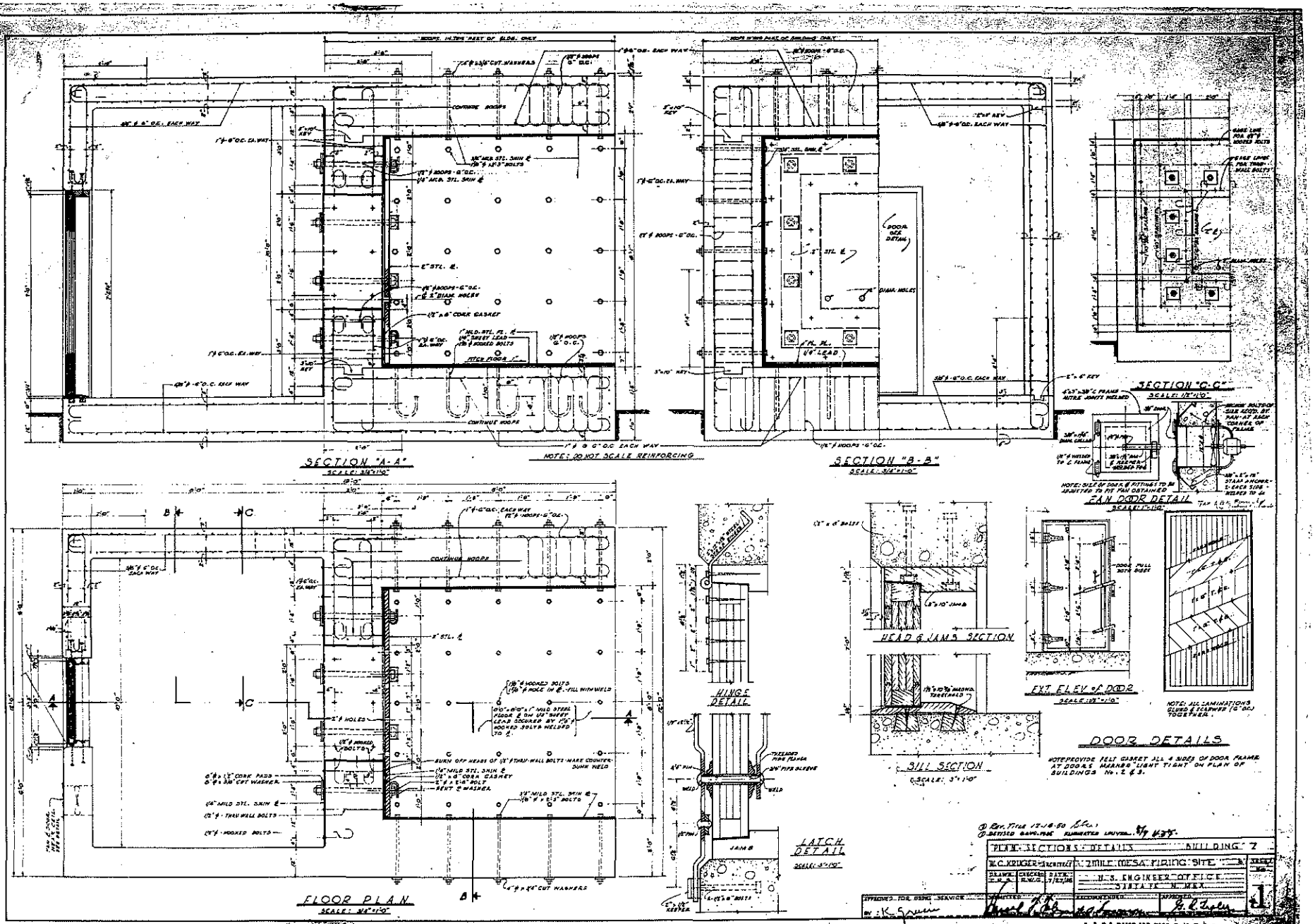
W.C. KRUEGER - ARCH'T.

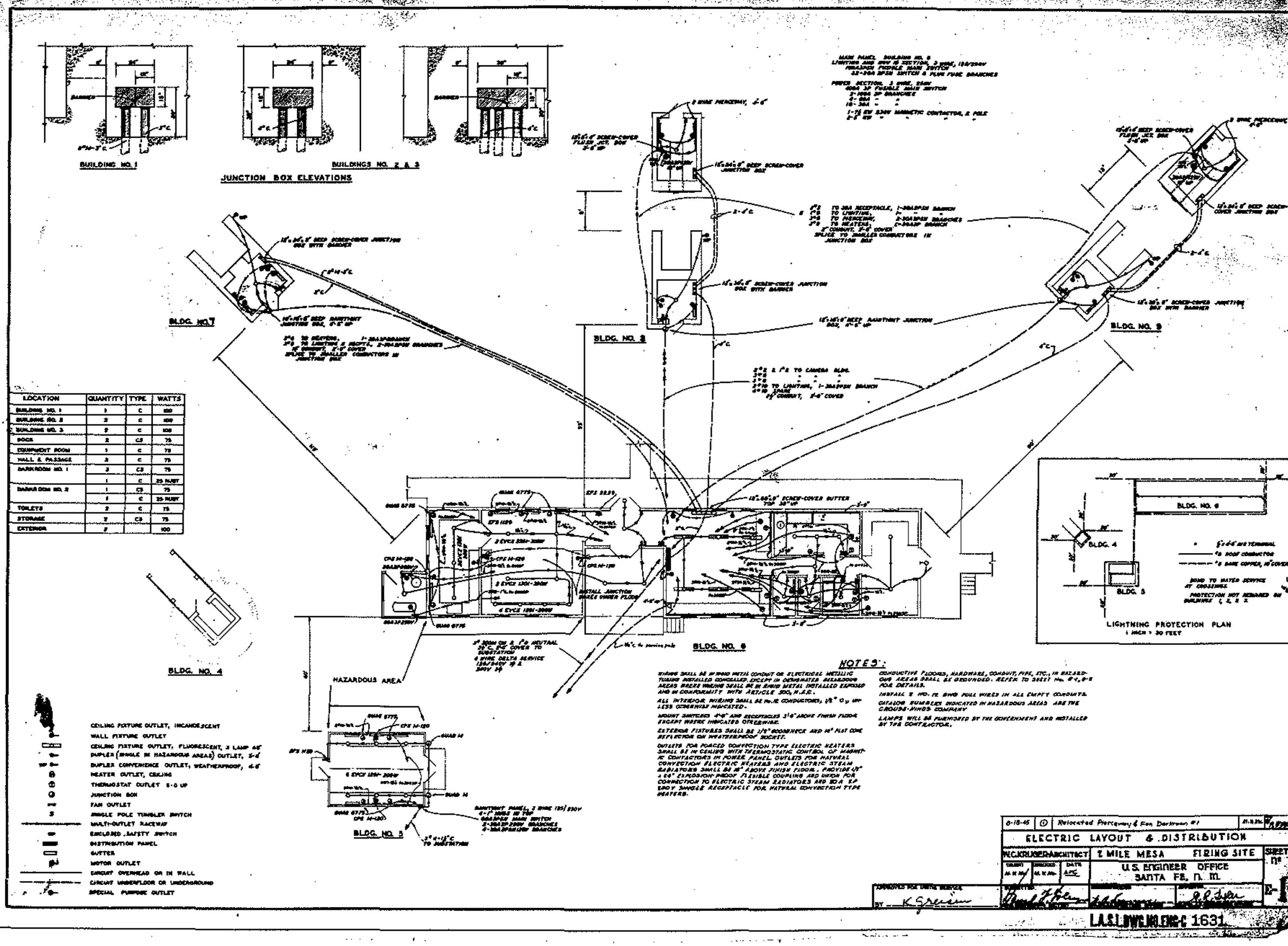
7-8-45 (REVISED 7/14/48)

REVISED TITLE 8-19-52 JTH

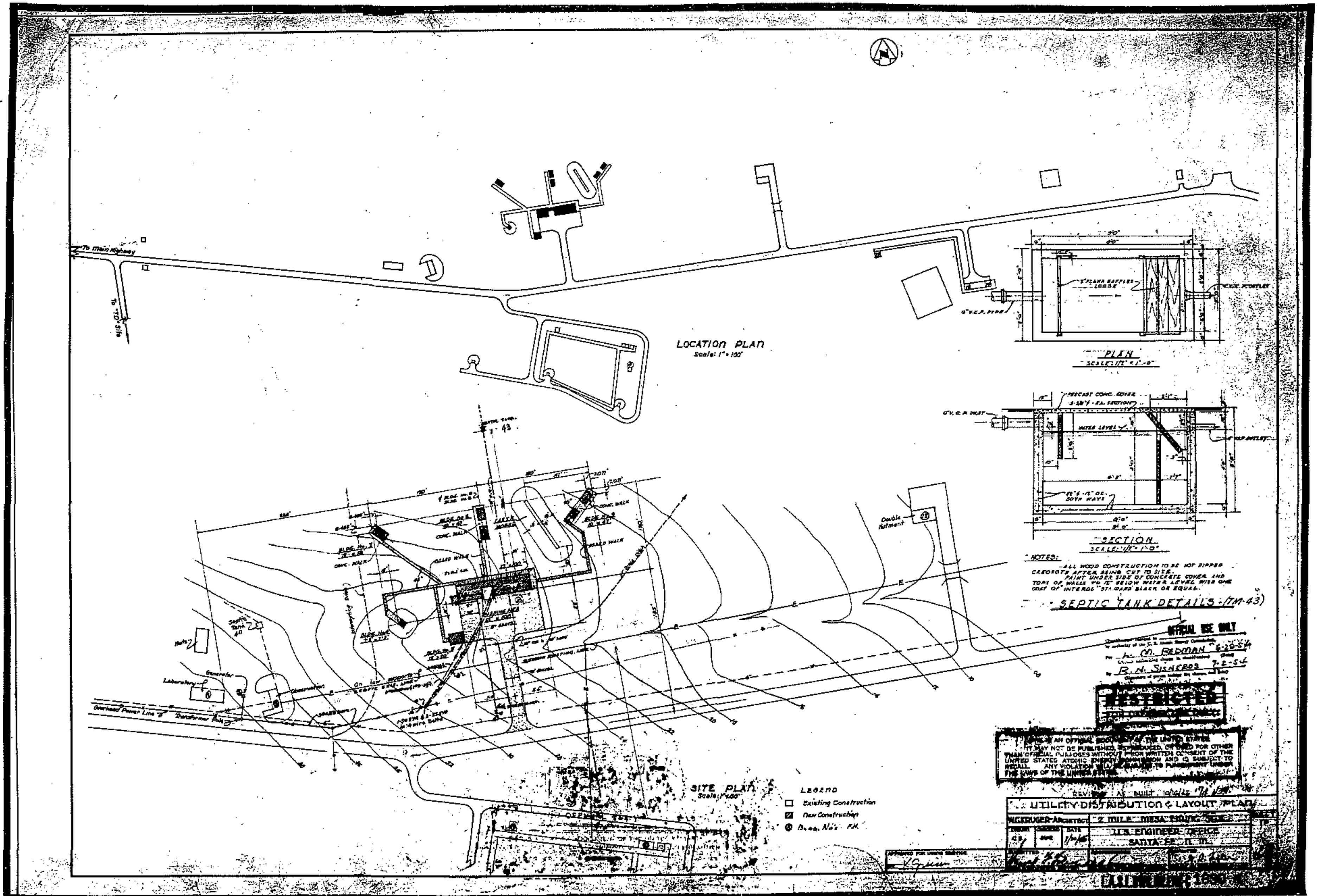
SHEET 2 OF 5

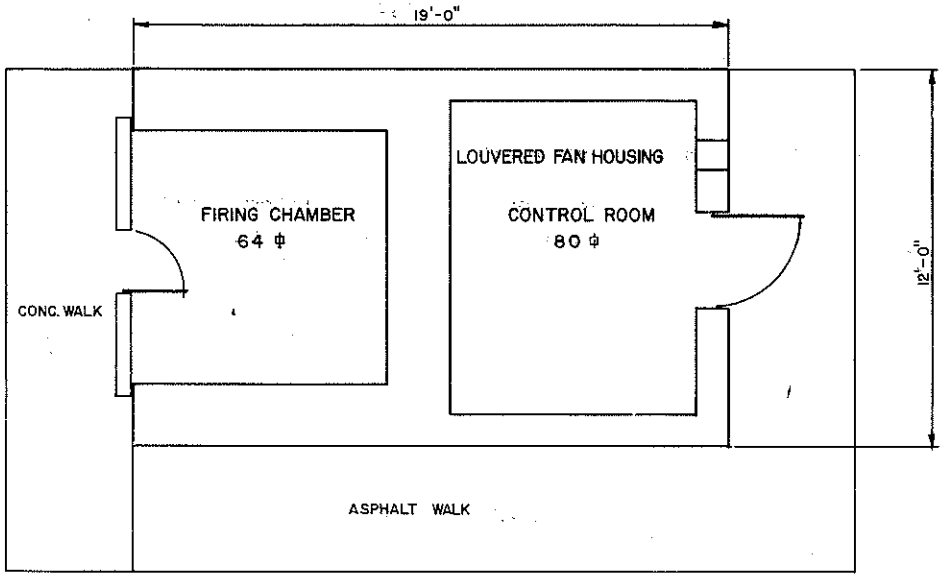
U.S. CORPS OF ENGINEERS DRAWING NO. ENG-C 1629


SECTION "A-A"
SCALE: 3/8"=1'0"
NOTE: DO NOT SCALE REINFORCING
SECTION "B-B"
SCALE: 3/8"=1'0"
SECTION "C-C"
SCALE: 1/2"=1'0"
CAN DOOR DETAIL
SCALE: 1"=1'0"
FLOOR PLAN
SCALE: 3/8"=1'0"
HINGE DETAIL
HEAD & JAMB SECTION
SILL SECTION
SCALE: 3"=1'0"
EXT ELEV. of DOOR
SCALE: 1/2"=1'0"
LATCH DETAIL
SCALE: 3"=1'0"
DOOR DETAILS
NOTE: PROVIDE TELT GASKET ALL 4 SIDES OF DOOR FRAME AT DOORS MARKED "LIGHT TIGHT" ON PLAN OF BUILDINGS No. 2 & 3.
NOTE: ALL LAMINATIONS GLUED & SCARFED TOGETHER.
PLOT: SECTIONS - DETAILS
BUILDING 7
W. C. KRUGER Architect
2 MILE MESA FIRING SITE
U.S. ENGINEER OFFICE
SEATTLE, WASH.
APPROVED FOR BLDG. SERVICE
L.A.S.L. DWG. NO. ENG-C 1632


JUNCTION BOX ELEVATIONS
BUILDING NO. 1
BUILDINGS NO. 2 & 3
BLDG. NO. 7
BLDG. NO. 2
BLDG. NO. 9
BLDG. NO. 4
BLDG. NO. 6
BLDG. NO. 5
HAZARDOUS AREA
LIGHTNING PROTECTION PLAN
1 INCH = 30 FEET
BLDG. NO. 6
BLDG. 4
BLDG. 5
NOTES:
WIRING SHALL BE IN RIGID METAL CONDUIT OR ELECTRICAL METALLIC TUBING INSTALLED CONCEALED EXCEPT IN DESIGNATED HAZARDOUS AREAS WHERE WIRING SHALL BE IN RIGID METAL INSTALLED EXPOSED AND IN CONFORMITY WITH ARTICLE 500, N.E.C.
ALL INTERIOR WIRING SHALL BE No. 12 CONDUCTORS, 1/2" C., UNLESS OTHERWISE INDICATED.
MOUNT SWITCHES 4'-6" AND RECEPTACLES 3'-6" ABOVE FINISH FLOOR EXCEPT WHERE INDICATED OTHERWISE.
EXTERIOR FIXTURES SHALL BE 1/2" GOOSENECK AND 12" FLAT CONE REFLECTOR ON WEATHERPROOF SOCKET.
OUTLETS FOR FORCED CONVECTION TYPE ELECTRIC HEATERS SHALL BE IN CEILING WITH THERMOSTATIC CONTROL OF MAGNETIC CONTACTORS IN POWER PANEL. OUTLETS FOR NATURAL CONVECTION ELECTRIC HEATERS AND ELECTRIC STEAM RADIATORS SHALL BE 18" ABOVE FINISH FLOOR. PROVIDE 1/2" x 24" EXPLOSION-PROOF FLEXIBLE COUPLING AND UNION FOR CONNECTION TO ELECTRIC STEAM RADIATORS AND 30 A. EP. DUPLEX SINGLE RECEPTACLE FOR NATURAL CONVECTION TYPE HEATERS.
CONDUCTIVE FLOORS, HARDWARE, CONDUIT, PIPE, ETC., IN HAZARDOUS AREAS SHALL BE GROUNDED. REFER TO SHEET No. E-4, E-5 FOR DETAILS.
INSTALL 2 NO. 12 BWG PULL WIRES IN ALL EMPTY CONDUITS.
CATALOG NUMBERS INDICATED IN HAZARDOUS AREAS ARE THE CROUSE-HINDS COMPANY
LAMPS WILL BE FURNISHED BY THE GOVERNMENT AND INSTALLED BY THE CONTRACTOR.
CEILING FIXTURE OUTLET, INCANDESCENT
WALL FIXTURE OUTLET
CEILING FIXTURE OUTLET, FLUORESCENT, 2 LAMP 48"
DUPLEX (SINGLE IN HAZARDOUS AREAS) OUTLET
DUPLEX CONVENIENCE OUTLET, WEATHERPROOF
HEATER OUTLET, CEILING
THERMOSTAT OUTLET 5-0 UP
JUNCTION BOX
FAN OUTLET
SINGLE POLE TUMBLER SWITCH
MULTI-OUTLET RACEWAY
ENCLOSED SAFETY SWITCH
DISTRIBUTION PANEL
GUTTER
MOTOR OUTLET
CIRCUIT OVERHEAD OR IN WALL
CIRCUIT UNDERFLOOR OR UNDERGROUND
SPECIAL PURPOSE OUTLET
8-18-45 ① Relocated Piercway & Fan Darkroom #1
ELECTRIC LAYOUT & DISTRIBUTION
W.C. KRUGER ARCHITECT
2 MILE MESA FIRING SITE
U.S. ENGINEER OFFICE
SANTA FE, N. M.
SHEET No
APPROVED FOR UNITS SERVICE
BY K Green
L.A.S.L. DWG. NO. ENG-C 1631

LOCATION	QUANTITY	TYPE	WATTS
BUILDING NO. 1	1	C	100
BUILDING NO. 2	2	C	100
BUILDING NO. 3	2	C	100
DOCK	2	CS	75
EQUIPMENT ROOM	1	C	75
HALL & PASSAGE	3	C	75
DARKROOM NO. 1	3	CS	75
	1	C	25 RUBY
DARKROOM NO. 2	1	CS	75
	1	C	25 RUBY
TOILETS	2	C	75
STORAGE	2	CS	75
EXTERIOR	2		100


LOCATION PLAN
Scale: 1" = 100'
To Main Highway
To "TD" Site
PLAN
SCALE: 1/2" = 1'-0"
SECTION
SCALE: 1/2" = 1'-0"
NOTES:
ALL WOOD CONSTRUCTION TO BE HOT DIPPED CREOSOTE AFTER BEING CUT TO SIZE.
PAINT UNDER SIDE OF CONCRETE COVER AND TOPS OF WALLS TO 12" BELOW WATER LEVEL WITH ONE COAT OF INTEROL STANDARD BLACK OR EQUAL.
SEPTIC TANK DETAILS (TM-43)
Double Hutment
Laboratory
Generator
Overhead Power Line
Transformer Pole
SITE PLAN
Scale: 1" = 50'
LEGEND
Existing Construction
New Construction
Dwg. No's. F.H.
OFFICIAL USE ONLY
M. REDMAN 6-20-54
R. N. SISNEROS 7-2-54
RESTRICTED
THIS IS AN OFFICIAL DOCUMENT OF THE UNITED STATES. IT MAY NOT BE PUBLISHED, REPRODUCED, OR USED FOR OTHER THAN OFFICIAL PURPOSES WITHOUT PRIOR WRITTEN CONSENT OF THE UNITED STATES ATOMIC ENERGY COMMISSION AND IS SUBJECT TO RECALL. ANY VIOLATION WILL BE SUBJECT TO PUNISHMENT UNDER THE LAWS OF THE UNITED STATES.
REVISED AS BUILT
UTILITY DISTRIBUTION & LAYOUT PLAN
W. C. KRUGER ARCHITECT
2 MILE MESA
U.S. ENGINEER OFFICE
SANTA FE, N. M.



(1/4"=1'-0")
0' 4' 8'
GRAPHIC SCALE

BLDG. TOTAL 144 S.F.

MF

REV.	DATE	REVISION	BY	CKD.	APP.
1	8-23-83	REDRAWN & REVISED TO STATUS OF 8-23-83	H&N		

UNIVERSITY OF CALIFORNIA
Los Alamos
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

FACILITIES ENGINEERING DIVISION

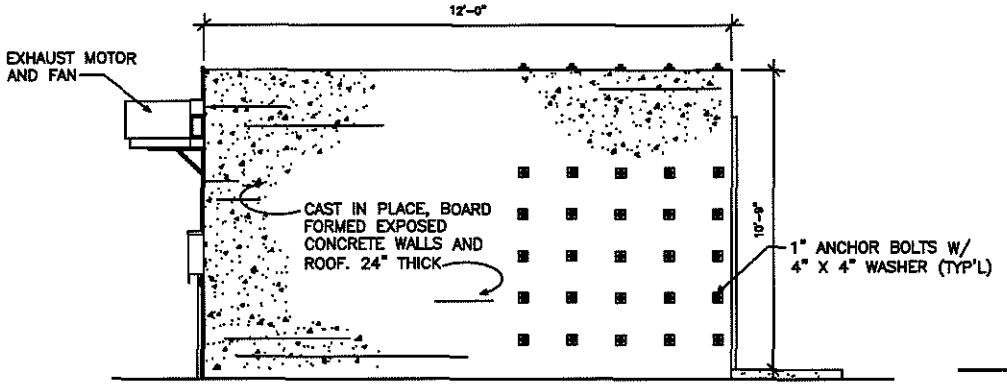
STORAGE BLDG.
FLOOR PLAN

BLDG. TM-7 TA-6

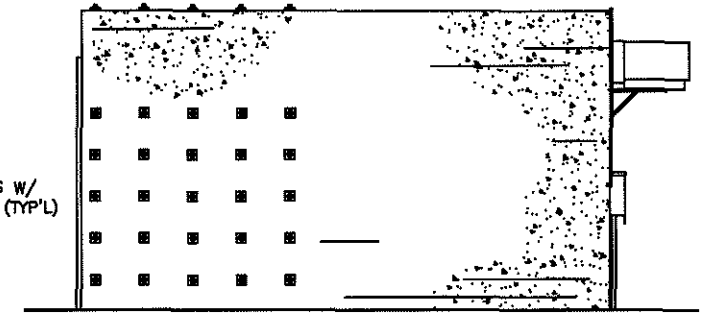
SEC. CLASSIFICATION
CLASS. U
REVIEWER
DATE 3.6.84

SUBMITTED	RECOMMENDED	APPROVED
E. Trujillo		W. T. Enlow

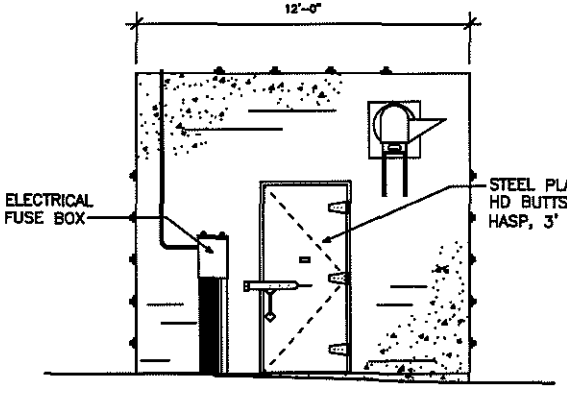
DRAWN	CHECKED	DATE	SHEET NO.	DRAWING NO.
H&N	Humble H&N	8-23-83	1 OF 1	ENG-R 2601



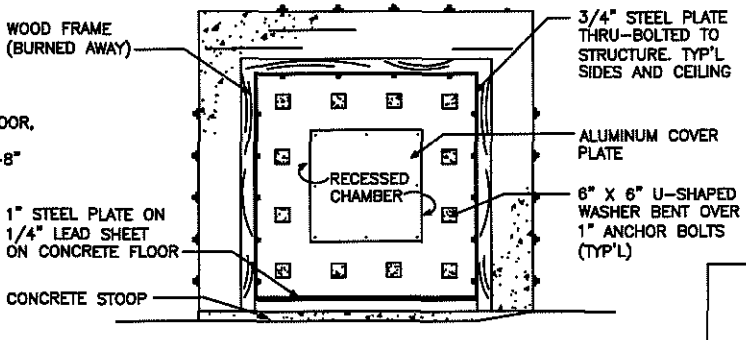
EAST ELEVATION
SCALE: 1/2"=1'-0 — 1 / A-1



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



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



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

MANHATTAN ERA BUILDINGS
HISTORIC CONTEXT

DRAWN: K. HOWE
DESIGN: —
CHECKED: K. TOWERY
DATE: APR 04

BLDG 07 TA-06
SUBMITTED
APPROVED FOR RELEASE

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

SHEET A-1
1 OF 3

CLASSIFICATION: U
REVISIONS
DATE: 04/28/04

LANL TA- Building # 06-0008

Camera 984242

Frame #s DCP_ 2171 through DCP_2174

Surveyor(s) K.Towery, J.Ronquillo, K. Garcia

Date 04/01/2004

Los Alamos National Laboratory
HREPCT Historic Building Survey Form

Building Name Laboratory Building UTMs easting 379668 northing 3969547 zone 13

Legal Description: Map Frijoles Quad 1984 tnsp 19N range 6E sec 20

Current Use/ Function Building is currently abandoned. Original Use/ Function Firing Chamber

Date (estimated) 1944 Date (actual) 1945 Property Type Laboratory/Processing

Type of Construction

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

Other Type of Construction Cast-in-place concrete. # of Stories 2

Foundation Reinforced Concrete.

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) Exposed unpainted concrete and asbestos shingles.

Exterior Features (docks, speakers, lights, signs, etc) Surface mounted electrical conduit, steel anchoring bolts at symmetrical locations on the east and west elevations.

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

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

Exterior Treatment-Addition Wood frame addition built in October 1952. Second story addition in October 1953.

Exterior Features-Addition

Roof Form Slanted/Shed ☑ Gable ☐ Other Roof Type Flat on concrete portions.

Degree of Pitch/ Slope Slight

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

Other Roof Materials Cast-in-place concrete.

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

Other Window Type

# of Each Window Type/ Comments

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

Light Pattern

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

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 ☐

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

# of Each Door Type/Comments: There are two steel doors one on either exposed ends of the concrete portions of the building and two wooden doors on the exposed ends of the wooden portion of the building.

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)

Degree of Remodeling Major

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

Associated Building ☑

If yes, list building names and #s: TA-6-1, -2, -3, 5-, 6-, -7, & -9.

Integrity Fair

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 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) TA-6-8 consists of three separate building forms: two concrete structures and a wood-frame two-story connector element addition. The original concrete portions of this building are built from the same plans as building TA-6-9. Additionally the south concrete building is the same as building TA-6-7. Each concrete building has a steel plate and frame door. The south concrete structure shows exposed steel anchor bolts, which attach the interior steel plate to the wall.

Total sq ft 538 **Architect/ Builder** W.C. Kruger

Alterations The wood frame addition was added in 1952 and then a second story was added in 1953. These additions connect the two concrete portions of the building.

List of Drawings (Cntrl + Enter for para break)

ENG-C 1629
2 Mile Mesa (TA-6)
Proposed Buildings
Buildings TM-7, -8, -9, -4, -5
July 3, 1945
Revised July 16, 1945

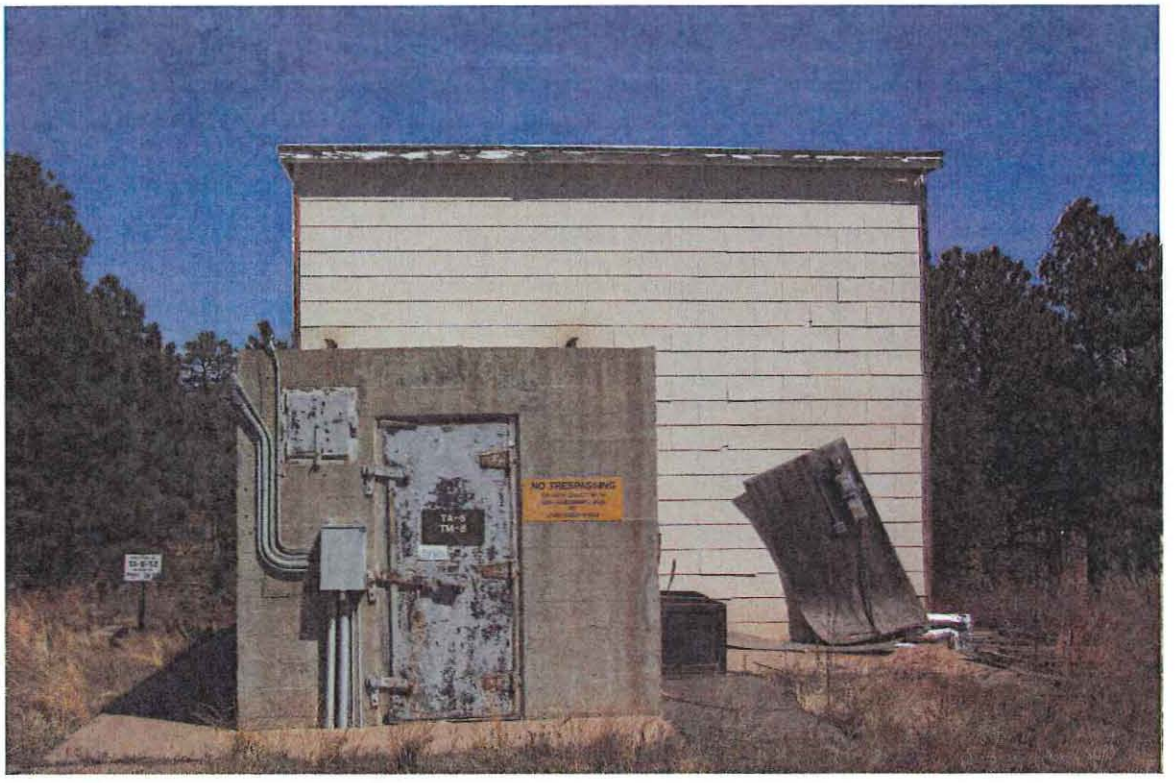
ENG-C 1633
2 Mile Mesa Firing Site
Bldgs. TM-8 & -9 (TA-6-8 &TA-6-9)
Plan, Elevation, Section Details
August 1, 1945

ENG-C 4641
TA-6, Bldg. TM-8 (TA-6-8)
Addition #2
Add. & Temp. Shelter Firing Pad
Plan, Section, & Details
September 29, 1952

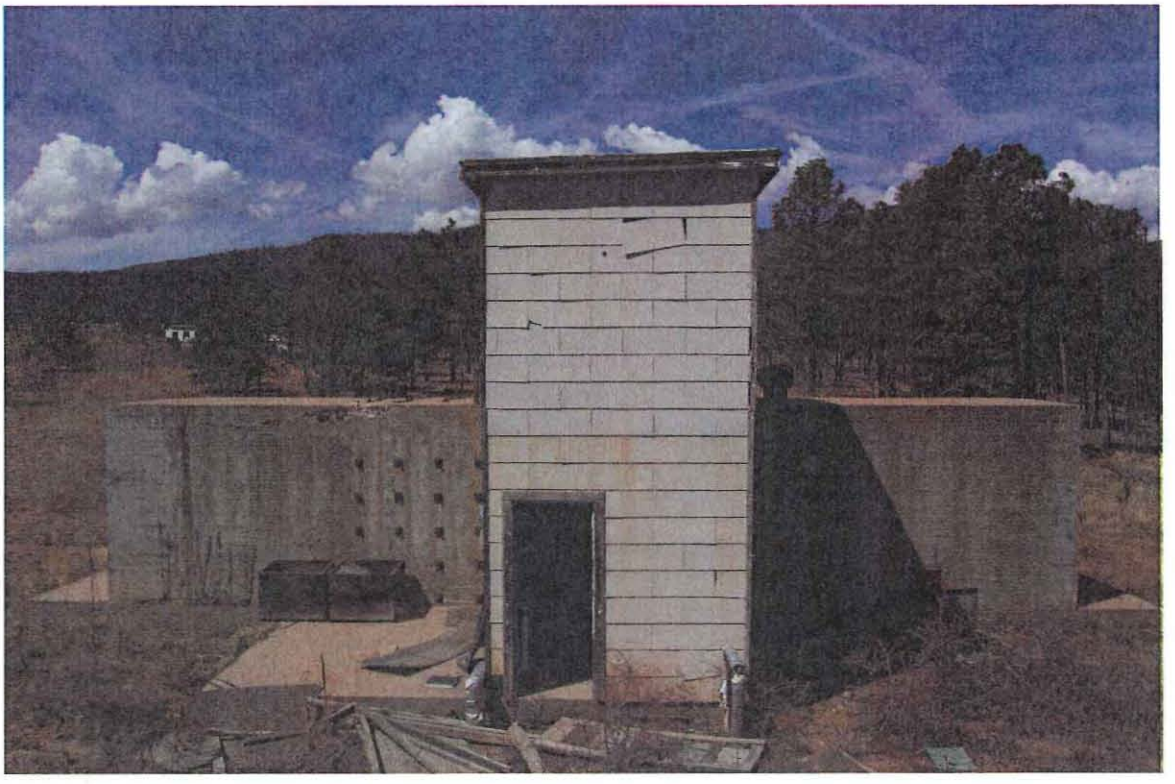
ENG-R 2602
Sheet 1 of 2
TA-6, Bldg-8
Laboratory Building
First Floor Plan
August 23, 1983

ENG-R 2603
Sheet 2 of 2
TA-6, Bldg-8
Laboratory Building
Second Floor Plan
August 23, 1983

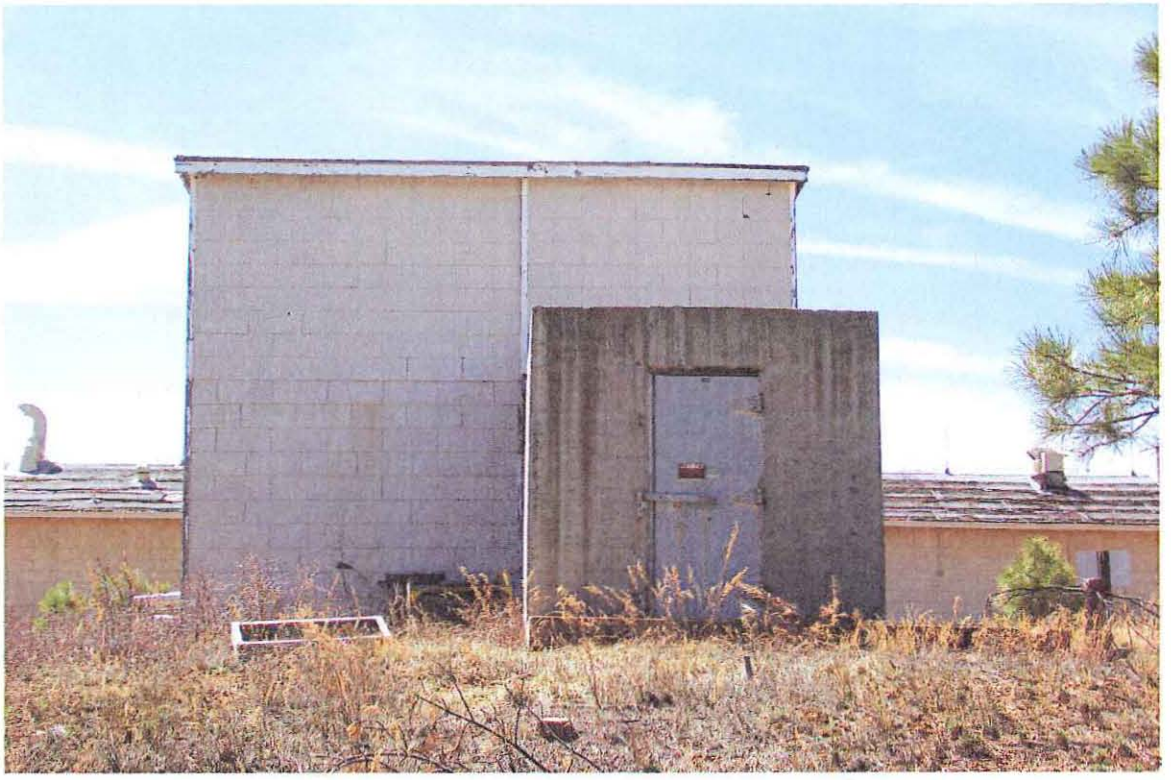
Manhattan Era Buildings Historic Context
Sheet 2 of 3
TA-6, Bldg-8
Elevations
April 28, 2004



TA-6-8, South Elevation

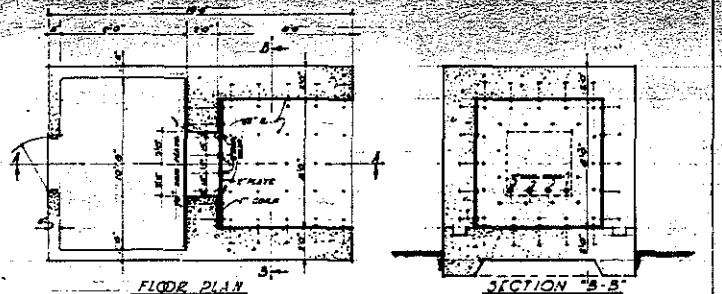


TA-6-8, East Elevation



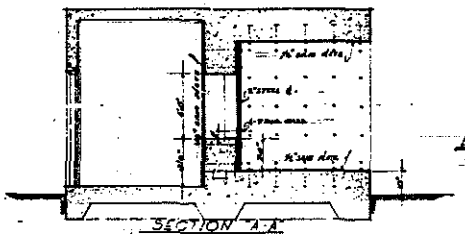
TA-6-8, North Elevation

TA-6-8, West Elevation



FLOOR PLAN

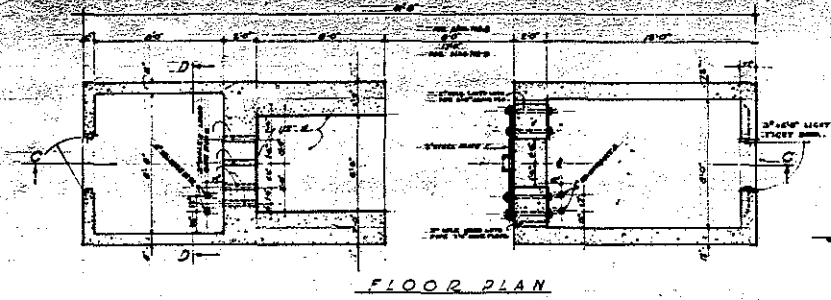
SECTION "B-B"



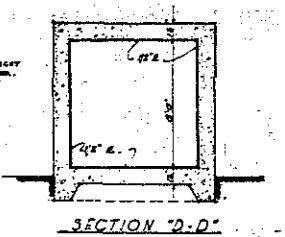
SECTION "A-A"

BUILDING TM-7

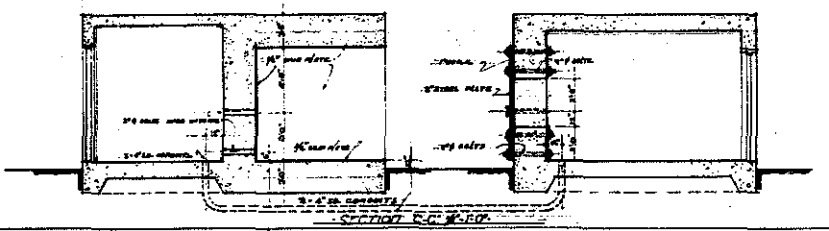
SCALE: 1/8"=1'0"



FLOOR PLAN



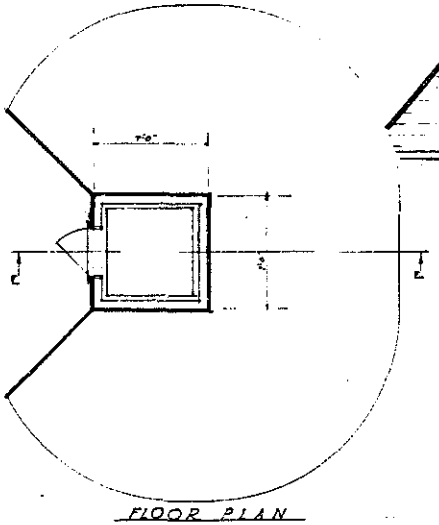
SECTION "D-D"



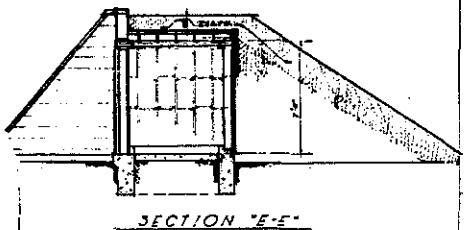
SECTION "C-C"

BUILDINGS TM-8 & TM-9

SCALE: 1/8"=1'0"



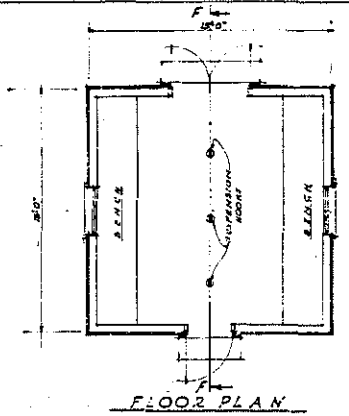
FLOOR PLAN



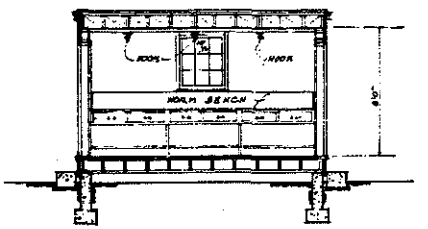
SECTION "E-E"

BUILDING TM-4

SCALE: 1/8"=1'0"



FLOOR PLAN



SECTION "F-F"

BUILDING TM-5

SCALE: 1/8"=1'0"

PROPOSED BUILDINGS

2 MILE MESA

BUILDINGS TM-7-8-9-&5

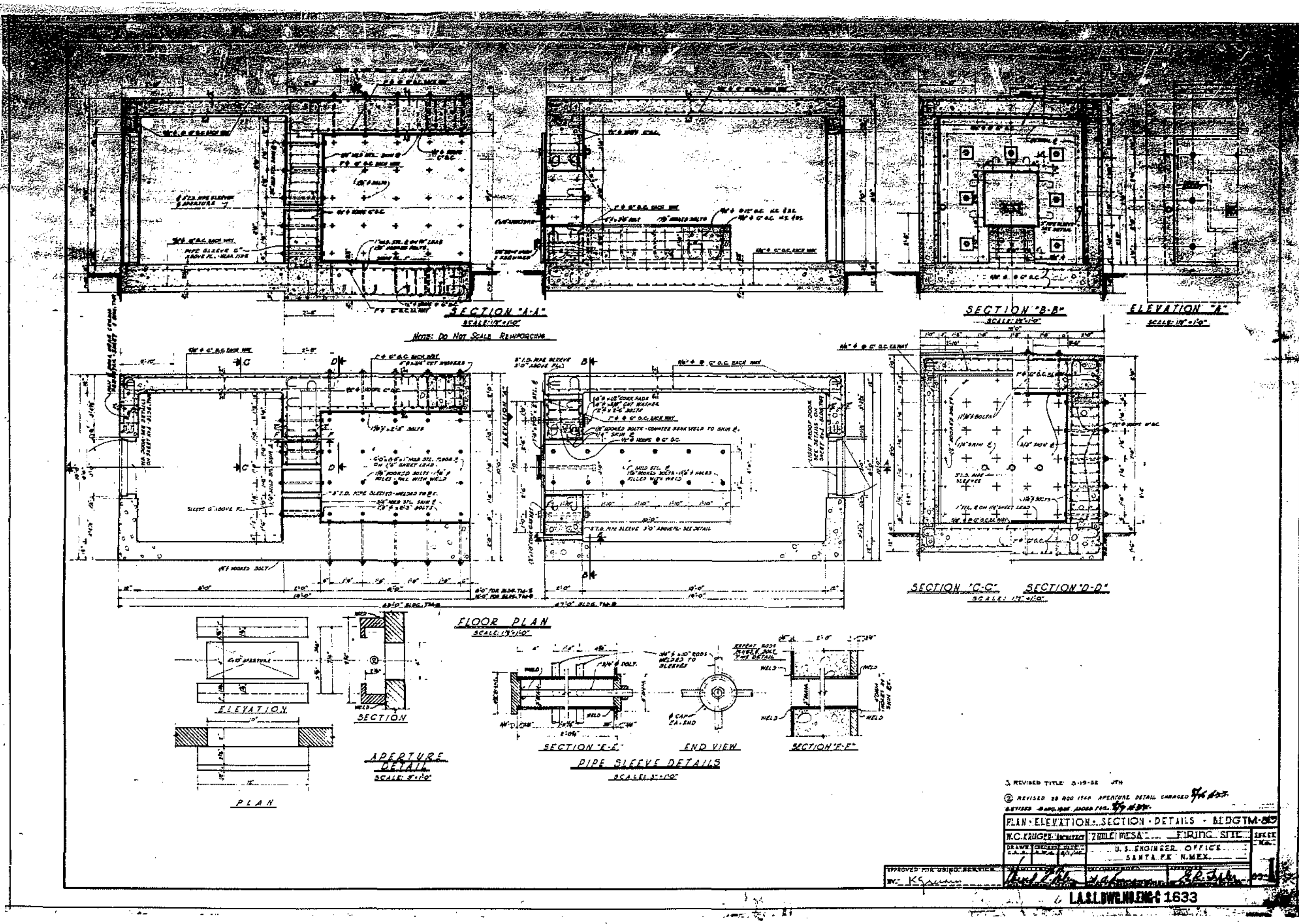
N.C. KRUGER - ARCHT.

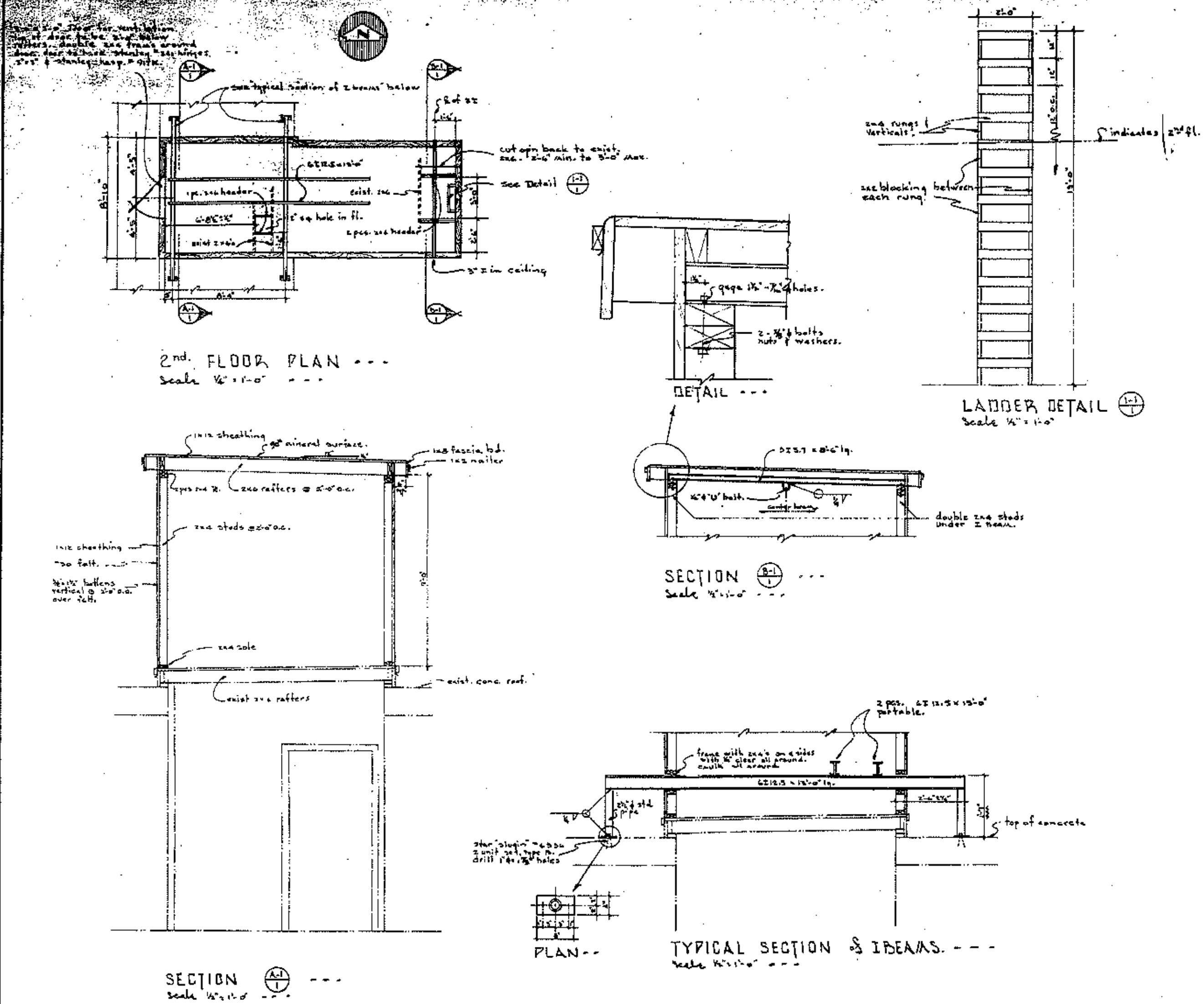
7-3-45 (REVISED 7/14/45)

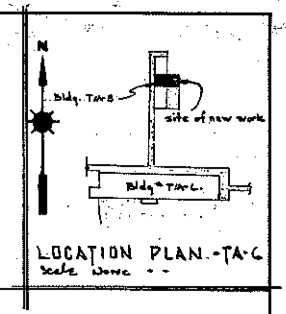
REVISED TITLE 8-19-52 JTH

SHEET 2 OF 5

L.A.S.LOWENKOING-C 1629


SECTION "A-A"
SCALE: 1/4" = 1'-0"
NOTE: DO NOT SCALE REINFORCING
SECTION "B-B"
ELEVATION "A"
FLOOR PLAN
SECTION "C-C"
SECTION "D-D"
ELEVATION
SECTION
PLAN
APERTURE DETAIL
SCALE: 3" = 1'-0"
SECTION "E-E"
END VIEW
SECTION "F-F"
PIPE SLEEVE DETAILS
LIGHT PROOF DOOR SEE DETAILS ON SHEET
3 REVISED TITLE 5-19-52
PLAN · ELEVATION · SECTION · DETAILS · BLDG TM-
W.C. KRUGER ARCHITECT
TWO MILE MESA
FIRING SITE
U.S. ENGINEER OFFICE
SANTA FE N. MEX.
APPROVED FOR USING SERVICE
L.A.S.L. DWG. NO. ENG-C 1633





GENERAL NOTES - - -

1. Remove exist. 'A' frame now on top of structure.
2. Paint all exterior wood with 1 coat of grey house paint
3. No electrical or heating req'd.
4. No interior wall or ceiling covering & no paint.
5. Second floor addition to be light tight.

DOES NOT CONTAIN OFFICIAL USE ONLY INFORMATION
Name/Org: Jill Hefele/S-7 Date: 7/28/04

FARRAR 9-4-01

~~OFFICIAL USE ONLY~~

NO.	DATE	REVISIONS	BY	CHKD
1		Work Completed (8-19-53) No Change Required	RCK	JAC

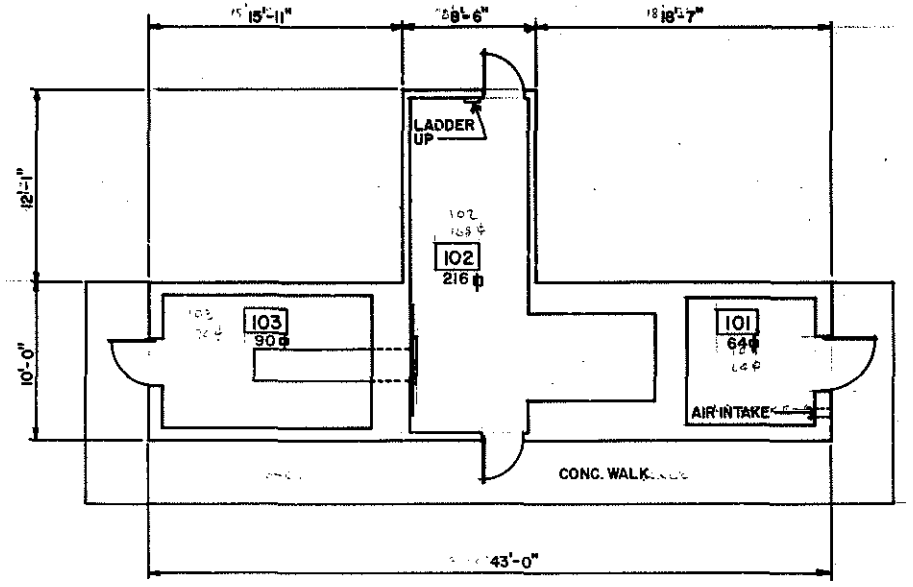
LOS ALAMOS SCIENTIFIC LABORATORY
UNIVERSITY OF CALIFORNIA
ENGINEERING DEPARTMENT — LOS ALAMOS, N. M.

ADD. to TEMP. SHELTER FIRING PAD. - - -
PLAN, SECTION, & DETAILS - - -
BLDG. TA-8 - - - ADD #2 - - - TA-6 - - -

AUTHORIZED FOR: HEALTH NOT APPLICABLE; SAFETY; FIRE PROT.; SEC. NOT APPLICABLE

DATE: Sept. 29, 1953
SCALE: As Noted
SHEET: 1 of 1
DRAWING NO.: ENG-C4641

LAB. JOB NO. 1524



(1/8"=1'-0")
0' 5' 10'
GRAPHIC SCALE

FIRST FLOOR: 370 S.F.

MF

REV.	DATE	REVISION	BY	CHKD.	APP.
3	2-3-84	REVISED TO STATUS OF 2-3-84	HSN		
2	8-23-83	REDRAWN & REVISED TO STATUS OF 8-23-83	HSN		

UNIVERSITY OF CALIFORNIA
Los Alamos
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

FACILITIES ENGINEERING DIVISION

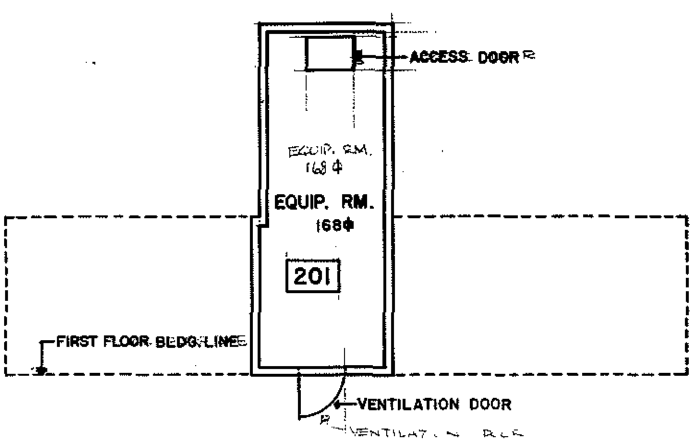
LABORATORY BUILDING
FIRST FLOOR PLAN

BLDG. TM-8 TA-8

SEC. CLASSIFICATION: CLASS. U; REVIEWER Smoot; DATE 3-12-84

SUBMITTED	RECOMMENDED	APPROVED
E. Trujillo	Dennis Hyre	R.M. Kinder

DRAWN	CHECKED	DATE	SHEET NO.	DRAWING NO.
H&N	H&N	8-23-83	1 OF 2	ENG-R 2602



FIRST FL. 370 S.F.
SECOND FL. 168 S.F.
BLDG. TOTAL 538 S.F.

(1/8"=1'-0") GRAPHIC SCALE 0' 8' 40'

REV.	DATE	REVISION	BY	CKD.	APR.
2	8-23-83	REDRAWN & REVISED TO STATUS OF 8-23-83	H&N		

UNIVERSITY OF CALIFORNIA
Los Alamos
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

FACILITIES ENGINEERING DIVISION

LABORATORY BUILDING
SECOND FLOOR PLAN

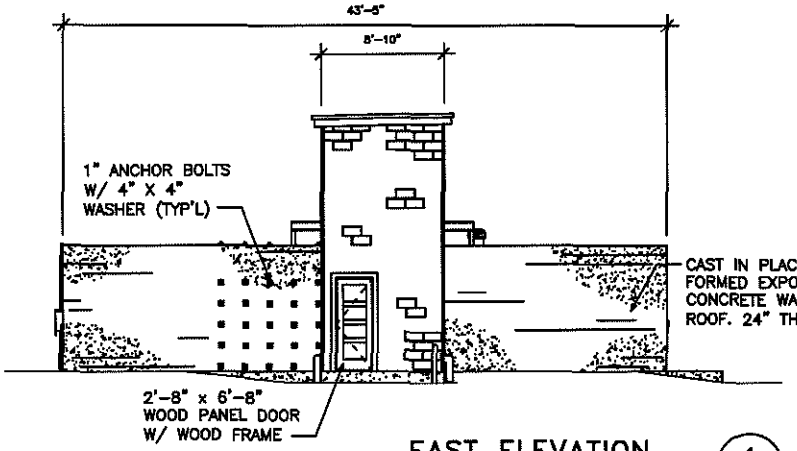
BLDG. TM-8 TA-6

SEC. CLASSIFICATION
CLASS. 4
REVIEWER
DATE 10-31-83

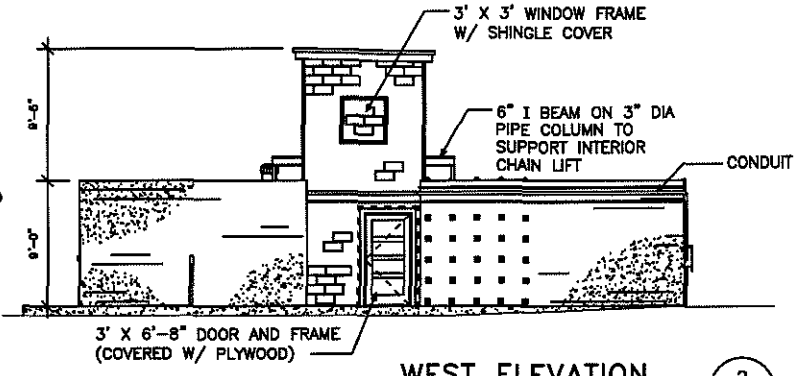
SUBMITTED / RECOMMENDED / APPROVED
DRAWN H&N
CHECKED H&N
DATE 8-23-83
SHEET NO. 2 OF 2
DRAWING NO. ENG-R 2603

REC'D LOGGED ✓ TO VAULT

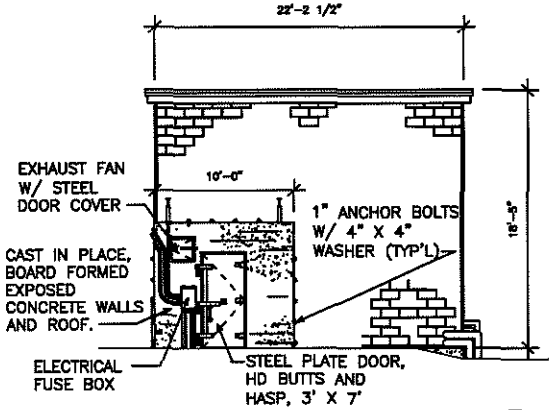
2603



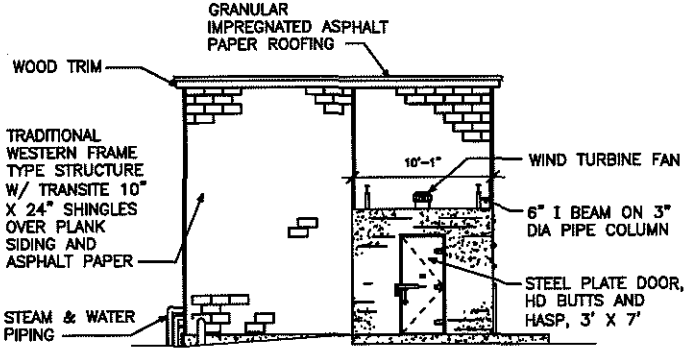
EAST ELEVATION
SCALE: 1/4"=1'-0 (1 A-2)



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



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



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

MANHATTAN ERA BUILDINGS
HISTORIC CONTEXT

DRAWN	K. HOWE
DESIGN	----
CHECKED	K. TOWERY
DATE	APR 04

BLDG 08 TA-08
SUBMITTED APPROVED FOR RELEASE

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

SHEET A-2
2 OF 3

CLASSIFICATION U REVISION DATE 04/28/04

LANL TA- Building # 06-0009

Camera 984242

Frame #s DCP_2175 through DCP_2178

Surveyor(s) K.Towery, J.Ronquillo, K. Garcia

Date 04/01/2004

Los Alamos National Laboratory
HREPCT Historic Building Survey Form

Building Name Firing Chamber UTMs easting 379707 northing 3969540 zone 13

Legal Description: Map Frijoles Quad 1984 tnsp 19N range 6E sec 20

Current Use/ Function Building is currently abandoned. Original Use/ Function Firing Chamber

Date (estimated) 1945 Date (actual) 1945 Property Type Laboratory/Processing

Type of Construction

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

Other Type of Construction Cast-in-place concrete. # of Stories 1

Foundation Reinforced Concrete.

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) Exposed unpainted concrete.

Exterior Features (docks, speakers, lights, signs, etc) Steel anchoring bolts at symmetrical locations on the northwest and southeast elevations. Staging area (steel-concrete shock pad) in between the two halves of the building.

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 Flat

Degree of Pitch/ Slope

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

Other Roof Materials Cast-in-place concrete.

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

Other Window Type

# of Each Window Type/ Comments

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

Light Pattern

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

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 ☐

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

# of Each Door Type/Comments: Steel Door

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)

Degree of Remodeling Unknown/None

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

Associated Building ☑

If yes, list building names and #s: TA-1, -2, -3, 5, -6, -7, & -8

Integrity Fair

Significance

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 _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)

Building TA-6-9 was built off the same plan as the original concrete portions of TA-6-8. Additionally, the west building is the same as building TA-6-7. TA-6-9 is a two structure layout characterized by two similar cast-in-place concrete buildings. A wood vault door is located on the southwestern end and a framed opening in visible on the other end of this portion of the building. The northeast end has a steel door and there is a lift-away steel plate at the other end of this portion of the building.

Total sq ft 182

Architect/ Builder W. C. Kruger/ Built by R. E. McKee

Alterations

List of Drawings (Cntrl + Enter for para break)

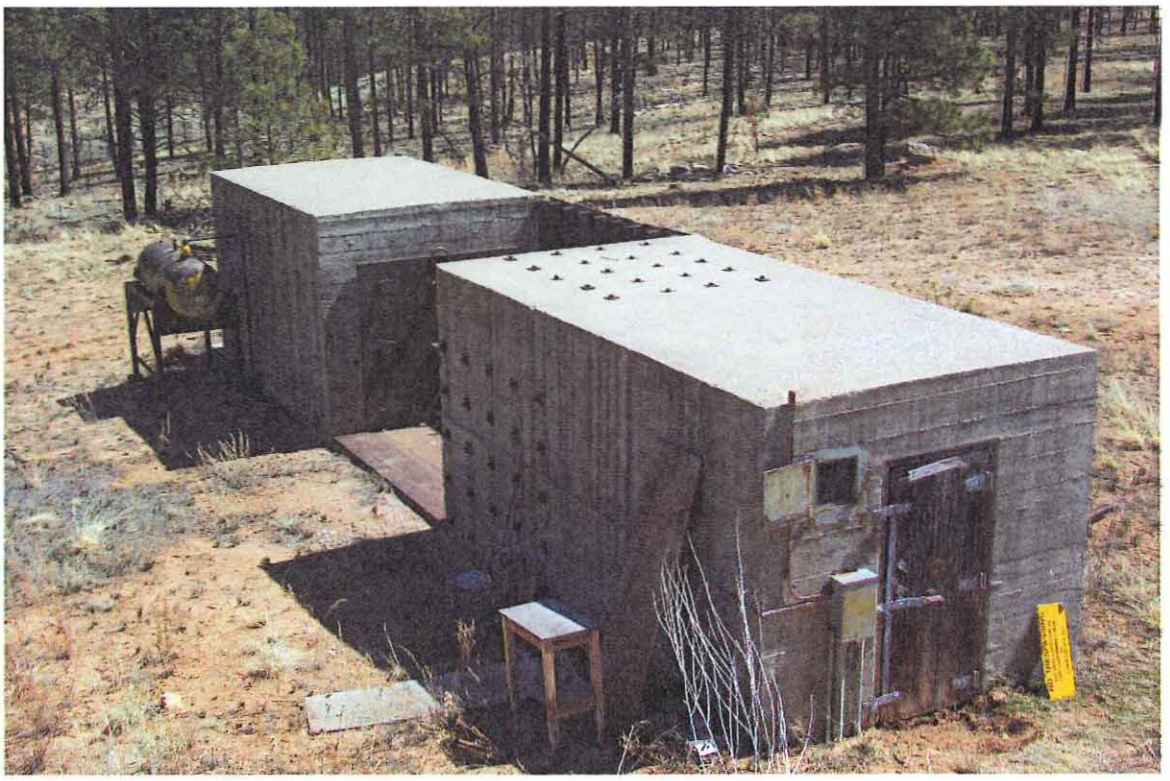
ENG-C 1629
2 Mile Mesa (TA-6)
Proposed Buildings
Buildings TM-7, -8, -9, -4, -5
July 3, 1945
Revised July 16, 1945

ENG-C 1633
2 Mile Mesa Firing Site
Bldgs. TM-8 & -9 (TA-6-8 &TA-6-9)
Plan, Elevation, Section Details
August 1, 1945

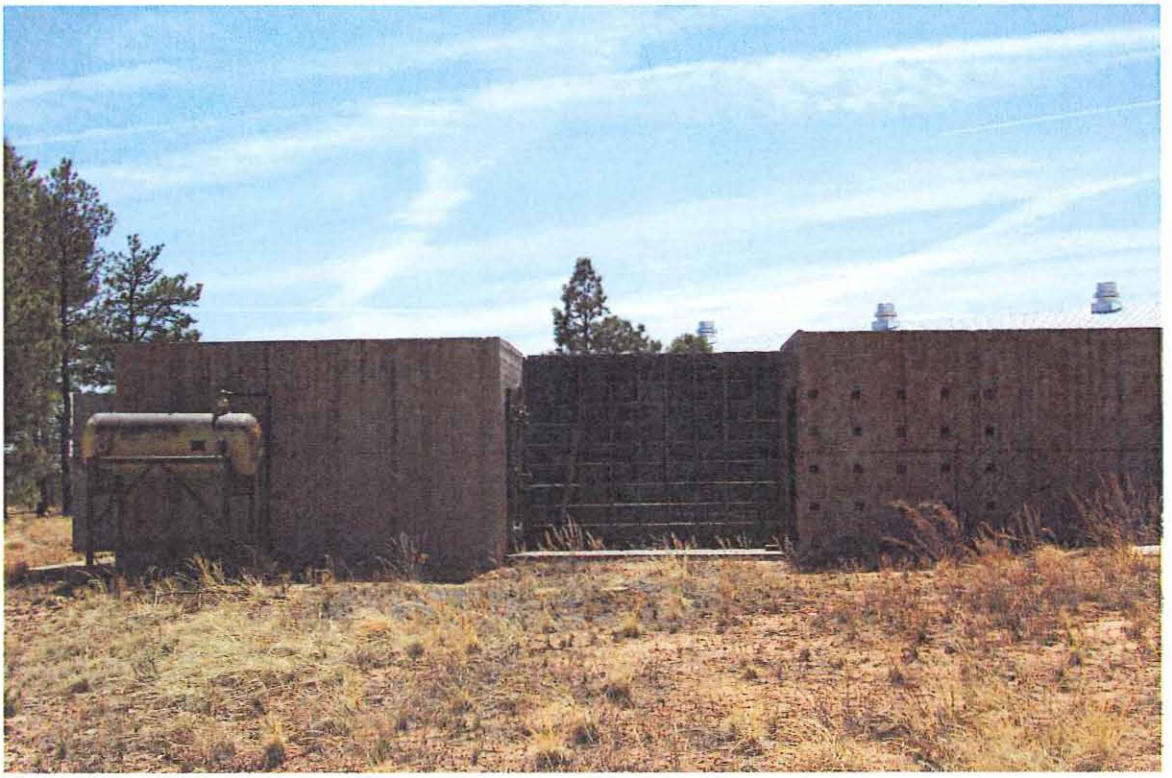
ENG-SK 717
TA-6, Bldg TM-9 (TA-6-9)
Const: Steel - Concrete Shock Pad
October 13, 1948

ENG-R 2604
TA-6, Bldg TM-9 (TA-6-9)
Firing Chamber
Floor Plan
August 23, 1983

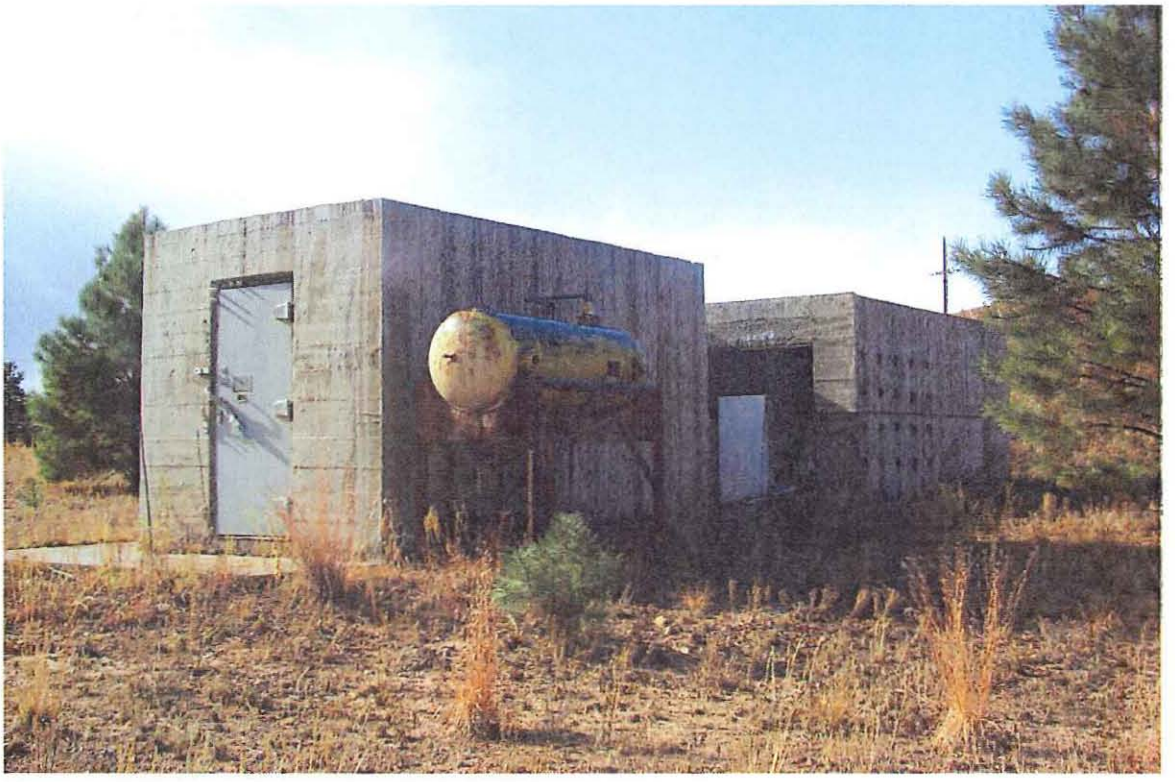
Manhattan Era Buildings Historic Context
Sheet 3 of 3
TA-6, Bldg-9
Elevations
April 28, 2004



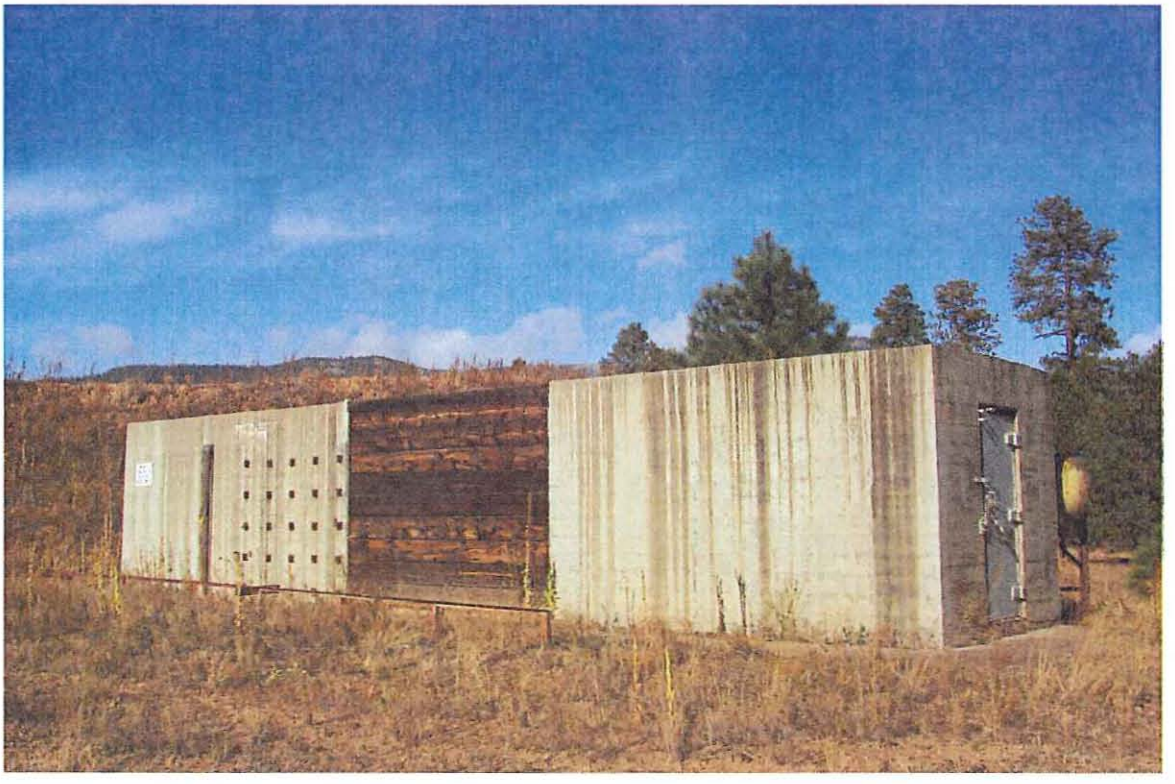
TA-6-9 Northwest and Southwest Elevations



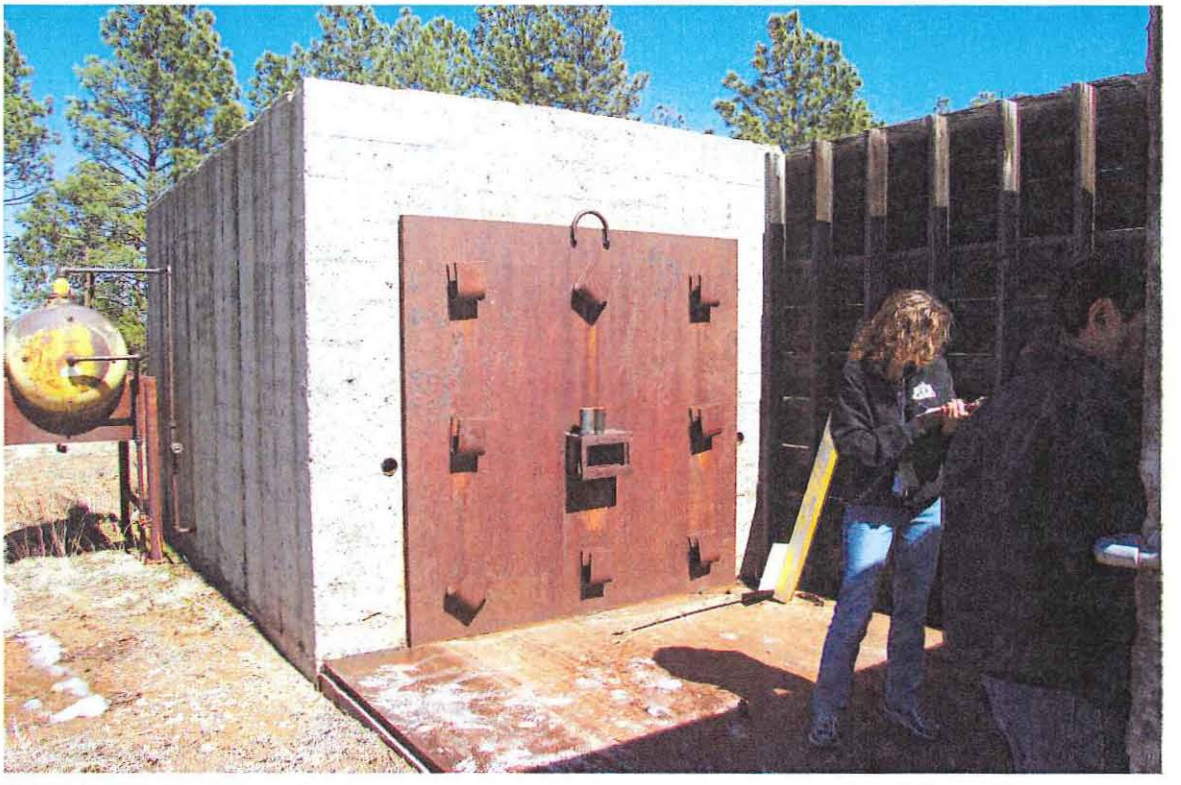
TA-6-9, Northwest Elevation



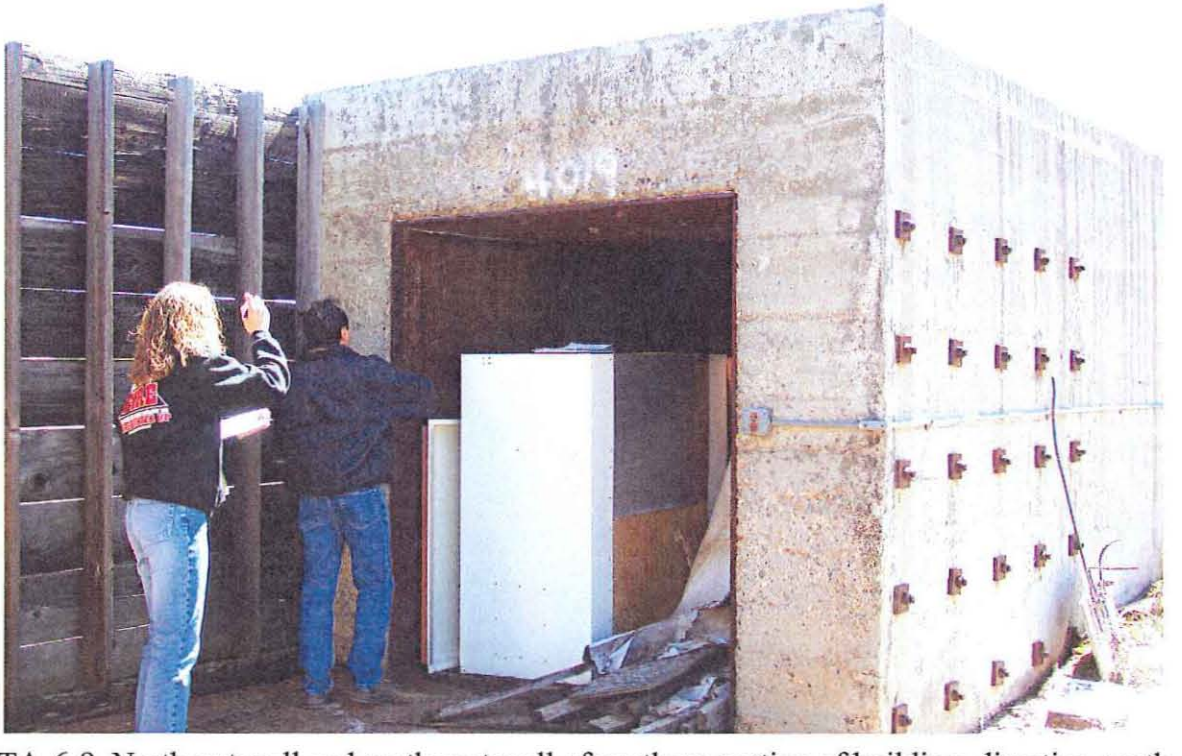
TA-6-9, Northeast and Northwest Elevations



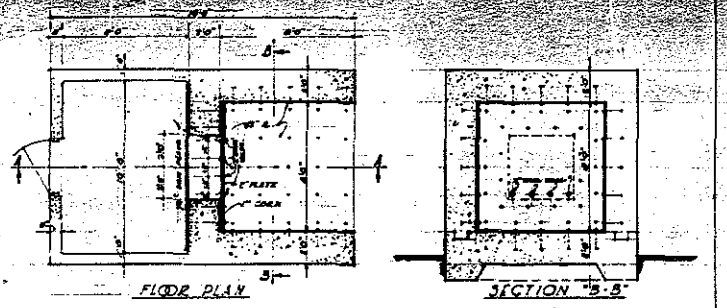
TA-6-9, Southeast and Northeast Elevations



TA-6-9, Northwest wall and southwest wall of northern portion of building, direction east

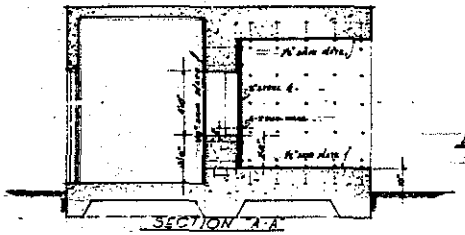


TA-6-9, Northeast wall and northwest wall of southern portion of building, direction south



FLOOR PLAN

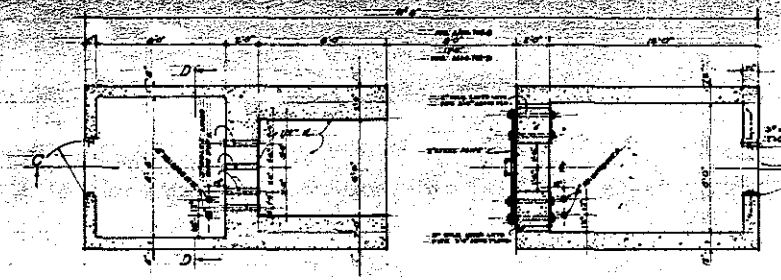
SECTION "B-B"



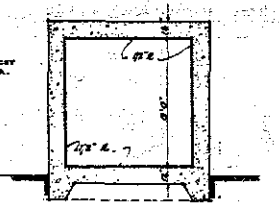
SECTION "A-A"

BUILDING TM-7

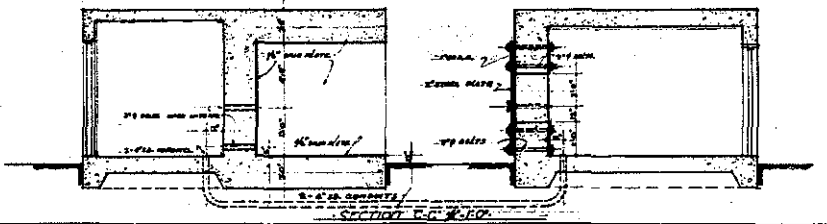
SCALE 1/4"=1'0"



FLOOR PLAN



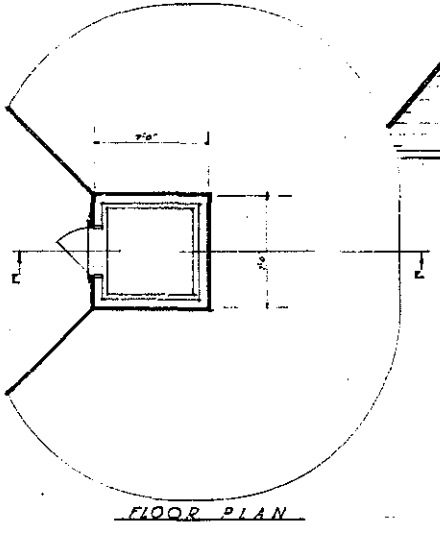
SECTION "D-D"



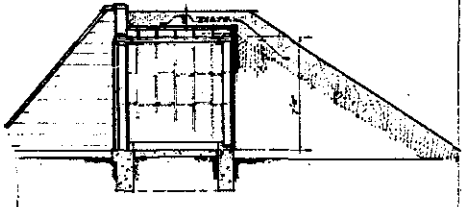
SECTION E-E & F-F

BUILDINGS TM-8 & TM-9

SCALE 1/4"=1'0"



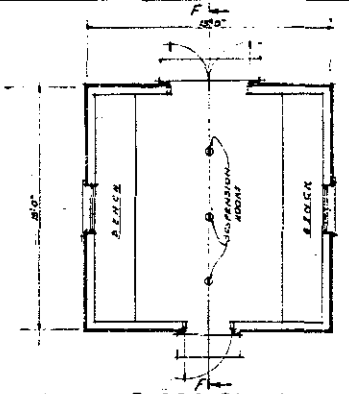
FLOOR PLAN



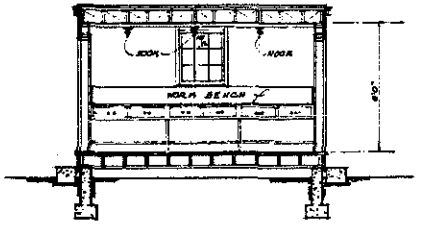
SECTION "E-E"

BUILDING TM-4

SCALE 1/4"=1'0"



FLOOR PLAN



SECTION "F-F"

BUILDING TM-5

SCALE 1/4"=1'0"

PROPOSED BUILDINGS
2 MILE MESA
BUILDINGS TM-7-8-9-+5

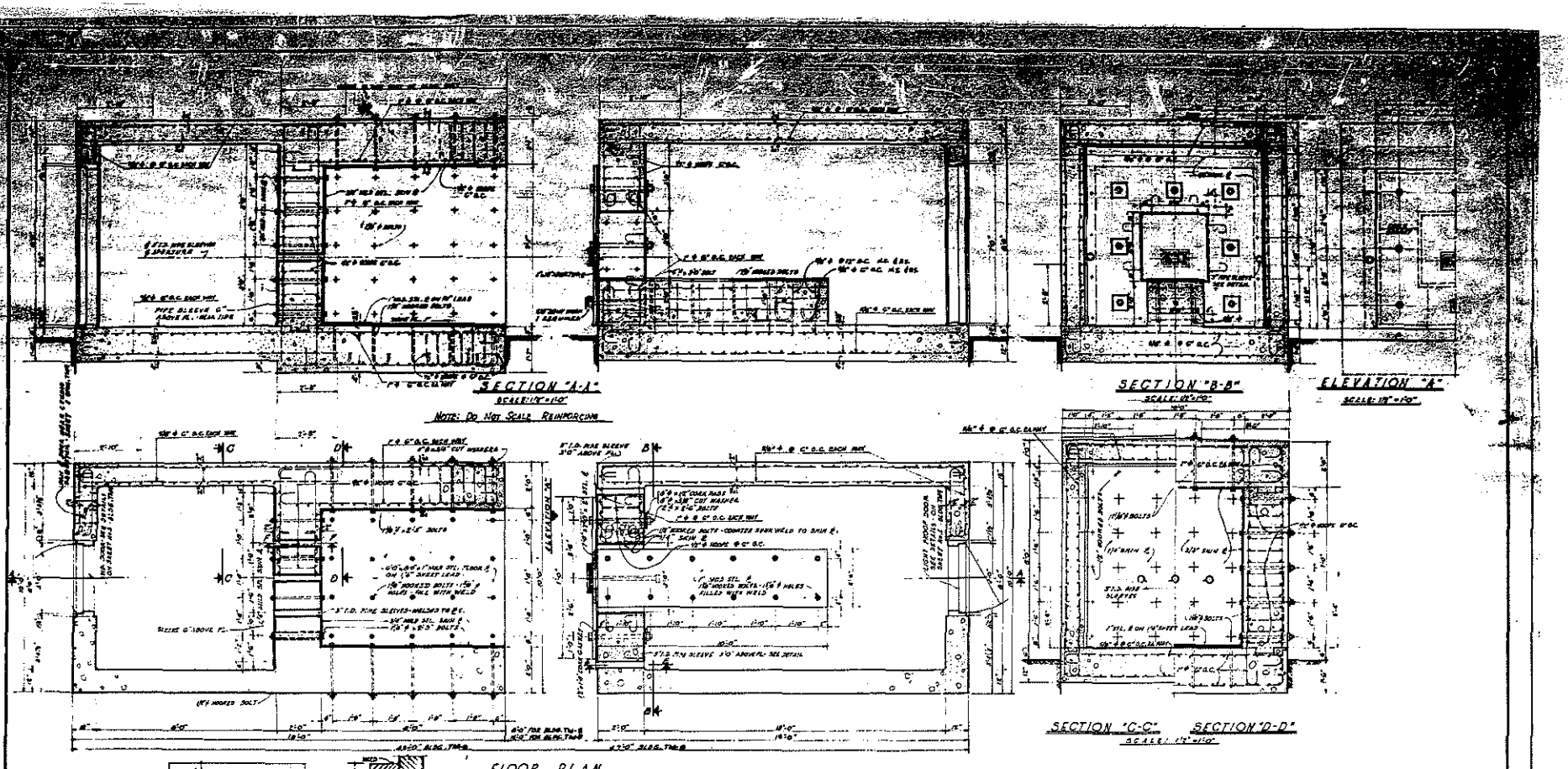
W.C. KRUGER - ARCH'T.

7-8-45 (REVISED 7/9/48)

REVISED TITLE 8-19-52 JTH

SHEET 7 OF 8

L.A.S.LOWE.NO.ENG-C 1629



3 REVISED TITLE 8-19-52 JTH

2 REVISED TO BUG 1948 APERTURE DETAIL CHANGED [illegible]

1 REVISED [illegible]

PLAN - ELEVATION - SECTION - DETAILS - BLDG TM-8

W. C. KRUGER, ARCHITECT — 7 MILE MESA — FIRING SITE

DRAWN | CHECKED | DATE

U. S. ENGINEER OFFICE
SANTA FE N. MEX.

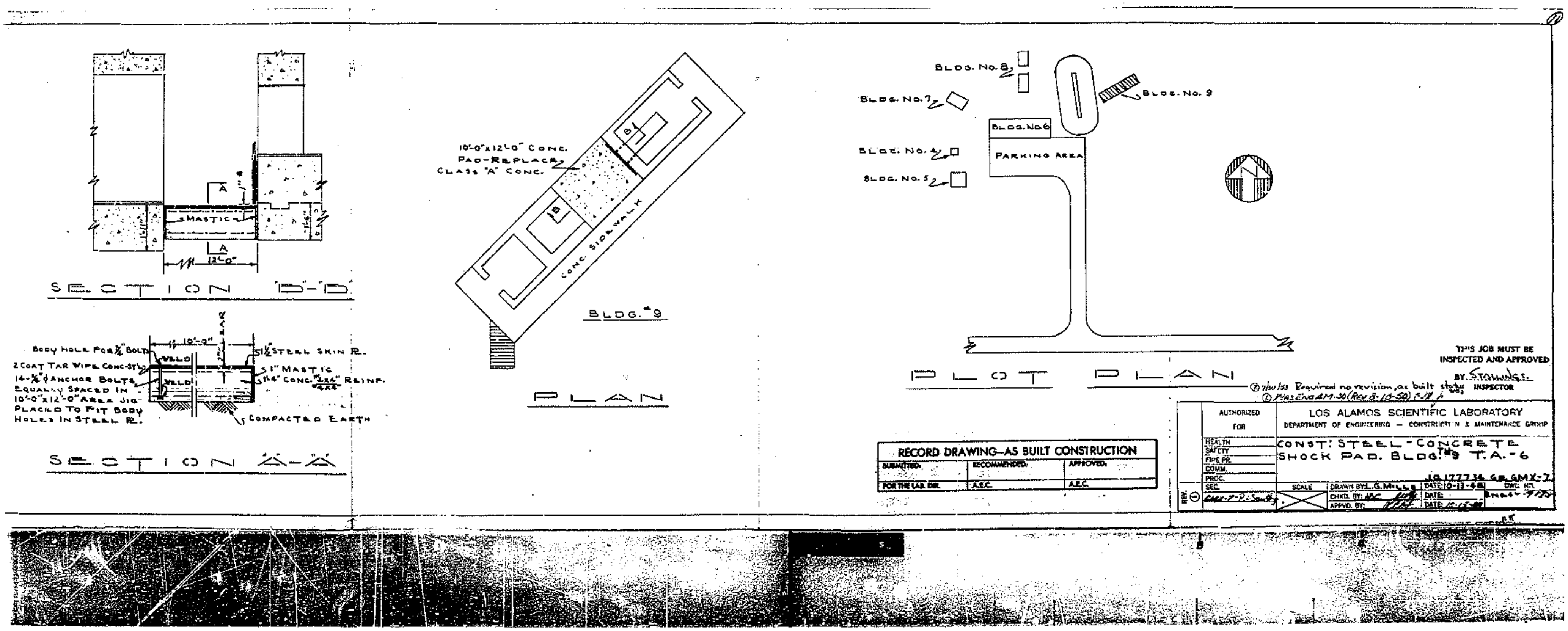
APPROVED FOR USE: [illegible]

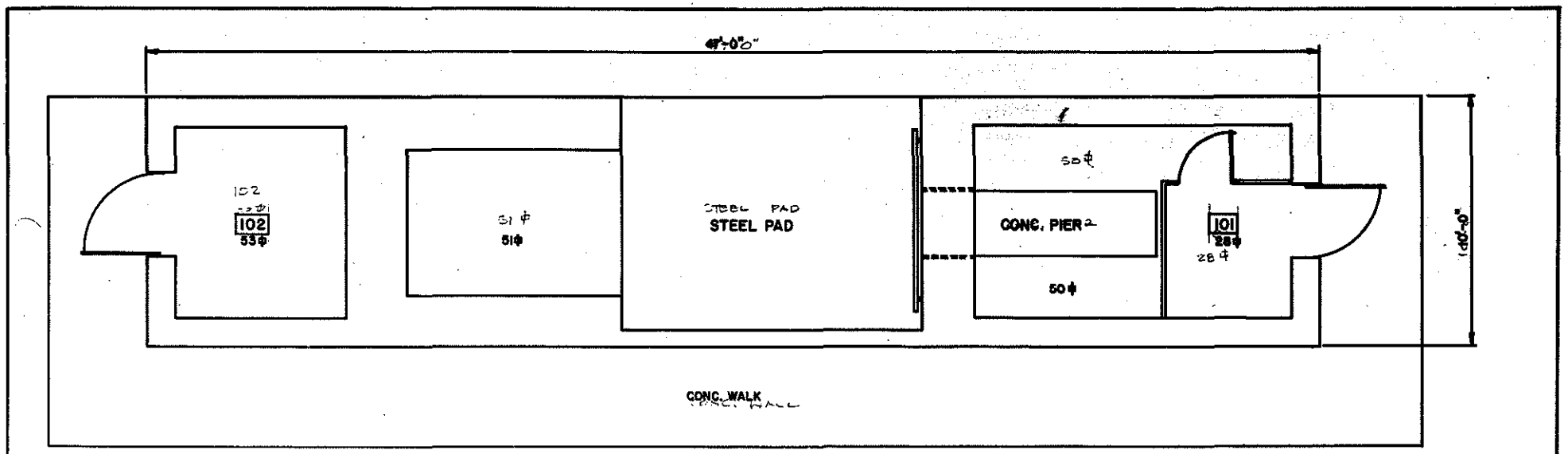
BY: K. S. [illegible]

RECOMMENDED [illegible]

APPROVED [illegible]

L.A.S.L. DWG. NO. ENG-C 1633


SECTION 'B'-'B'
MASTIC
12'-0"
SECTION 'A'-'A'
10'-0"
Body Hole For 3/4" Bolts
2 Coat Tar Wipe Conc. St'l
14-3/4" ∅ Anchor Bolts Equally Spaced In 10'-0"x12'-0" Area Jig-Placed To Fit Body Holes In Steel Pl.
WELD
1 1/2" Steel Skin Pl.
1" Mastic
1'-6" Conc. 4x4 / 4x4 Reinf.
Compacted Earth
10'-0"x12'-0" Conc. Pad-Replace Class "A" Conc.
Conc. Sidewalk
BLDG. #9
PLAN
BLDG. No. 8
BLDG. No. 7
BLDG. No. 9
BLDG. No. 6
BLDG. No. 4
BLDG. No. 5
PARKING AREA
PLOT PLAN
THIS JOB MUST BE INSPECTED AND APPROVED
BY STALLINGS INSPECTOR
② 7/30/53 Required no revision, as built status
① Was Eng AM-30 (Rev 8-10-50)
RECORD DRAWING—AS BUILT CONSTRUCTION
SUBMITTED: RECOMMENDED: APPROVED:
FOR THE LAB. DIR. A.E.C. A.E.C.
AUTHORIZED FOR
HEALTH
SAFETY
FIRE PR.
COMM.
PROC.
SEC.
LOS ALAMOS SCIENTIFIC LABORATORY
DEPARTMENT OF ENGINEERING — CONSTRUCTION & MAINTENANCE GROUP
CONST: STEEL-CONCRETE SHOCK PAD. BLDG. #9 T.A.-6
SCALE
DRAWN BY: L.G. MILLS
CHKD. BY:
APPVD. BY:
DATE: 10-13-48
DWG. NO.
ENG-4-775
REV.



REV.	DATE	REVISION	BY	CHK.	APR.
1	8-23-83	REDRAWN & REVISED TO STATUS OF 8-23-83	HSN		
1	8-23-83	REDRAWN & REVISED TO STATUS OF 8-23-83	HSN	GF	DE

MF

UNIVERSITY OF CALIFORNIA
Los Alamos Los Alamos National Laboratory
Los Alamos, New Mexico 87545

FACILITIES ENGINEERING DIVISION

FIRING CHAMBER
FLOOR PLAN

BLDG. TM-8 TA-8

SEC. CLASSIFICATION: CLASS. U; REVIEWER; DATE 10-25-83

1/4" = 1'-0"

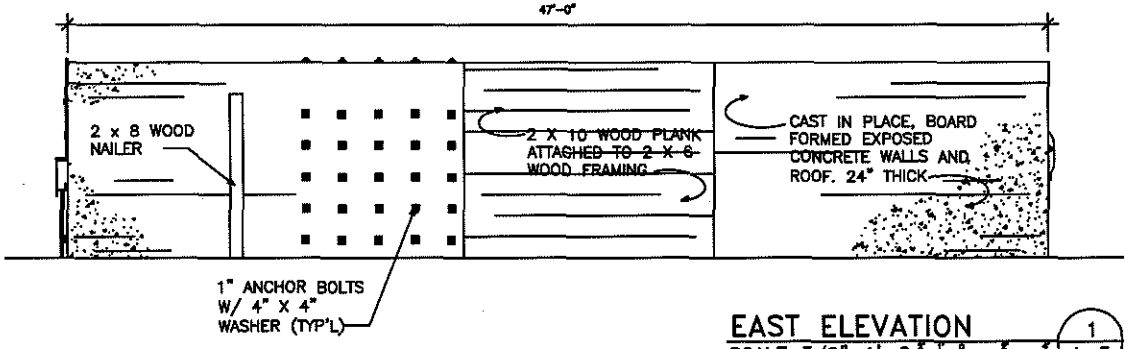
GRAPHIC SCALE

BLDG TOTAL: 102 S.F.

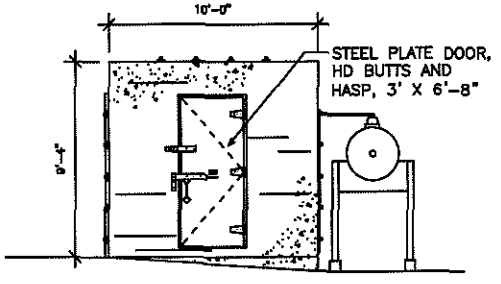
DRAWN	CHECKED	DATE	SHEET NO.	DRAWING NO.
HSN		8-23-83	1 OF 1	ENG-R 2604

RECD LOGGED TO VAULT

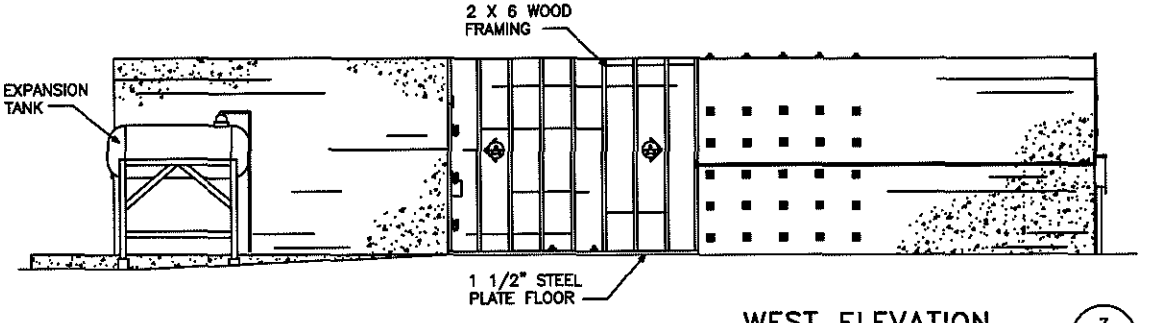
2004



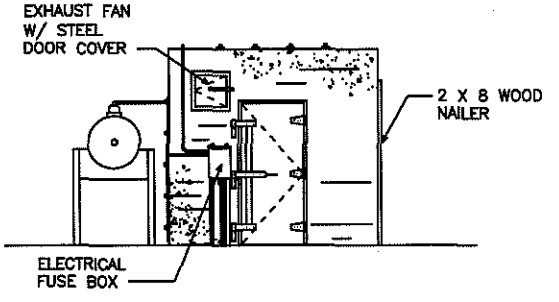
EAST ELEVATION
SCALE: 3/8"=1'-0 — 1 / A-3



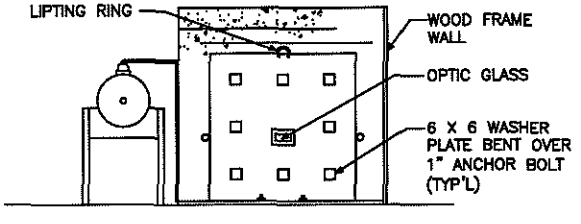
SOUTH ELEVATION
SCALE: 3/8"=1'-0 — 2 / A-3



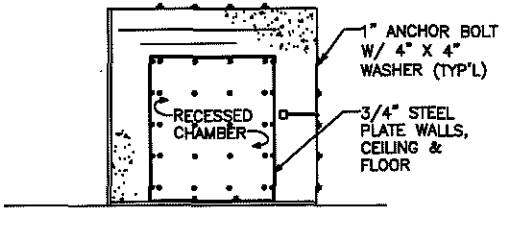
WEST ELEVATION
SCALE: 3/8"=1'-0 — 3 / A-3



NORTH ELEVATION
SCALE: 3/8"=1'-0 — 4 / A-3



SOUTH INT. ELEVATION
SCALE: 3/8"=1'-0 — 5 / A-3



NORTH INT. ELEVATION
SCALE: 3/8"=1'-0 — 6 / A-3

MANHATTAN ERA BUILDINGS
HISTORIC CONTEXT

DRAWN	K. KONIS
DESIGN	—
CHECKED	K. TOMERY
DATE	APR 04

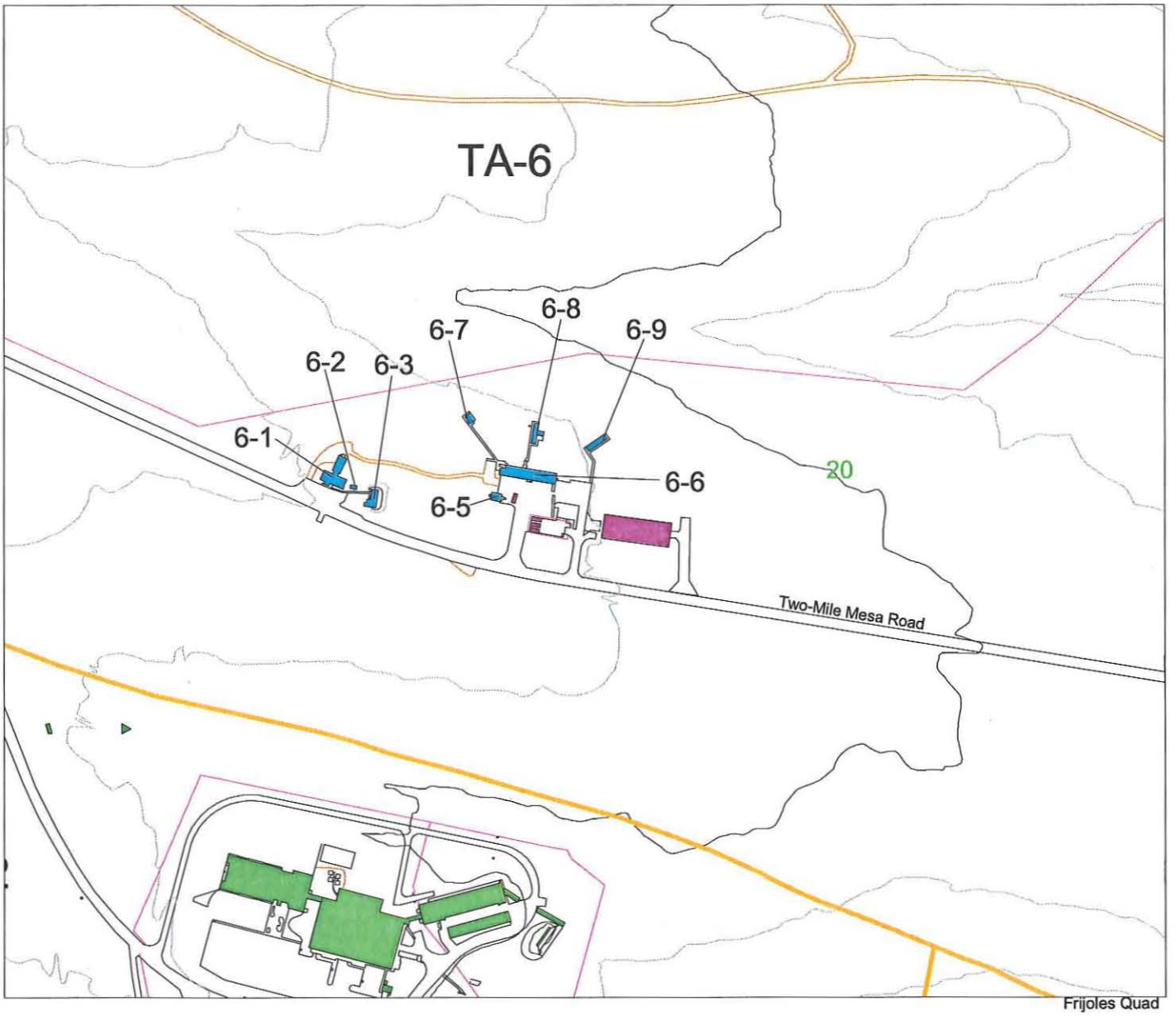
BLDG 09 — TA-05
SUBMITTED — APPROVED FOR RELEASE

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

SHEET A-3
3 OF 3

CLASSIFICATION U — REVISION — DATE 04/28/04

Appendix B: : Maps Showing TA-6's Construction History and Location of Eligible and Non-Eligible Properties



Los Alamos
National Laboratory
Heritage Resources and
Envirotnmental Policy Complaince Team
RRES-ECO Ecology Group

1:4000

200 0 200 400 600 Feet

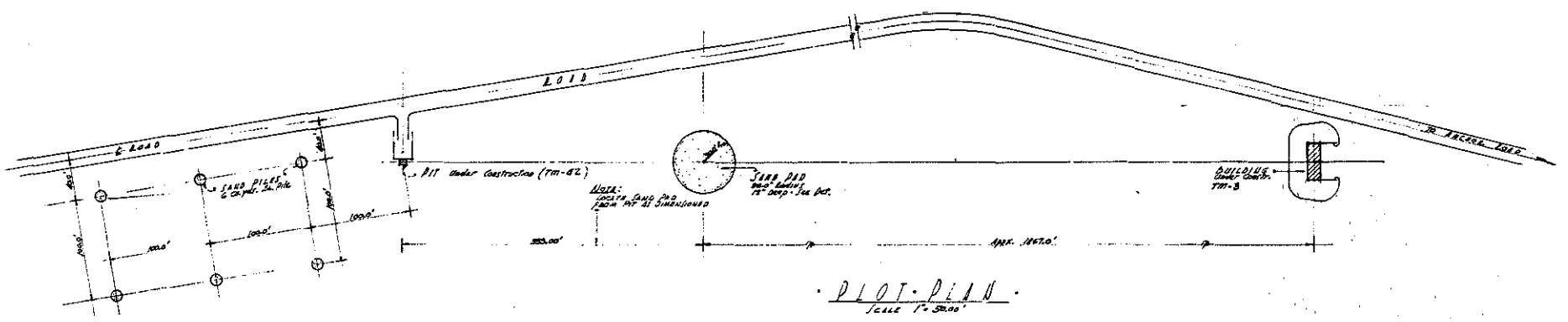
50 0 50 100 150 Meters

N
W E
S

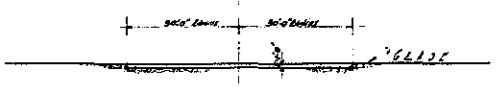
- TA-6 Exempt Buildings/Structures
- TA-6 Eligible Buildings
- LANL Tech Area Boundary
- LANL Boundary
- 20 Foot Contours
- 100 Foot Contours
- Drainage
- Township, Section, Range
- Trails
- Roads
- Roaddirt
- Parkpave
- Parkdirt
- Fences
- Buildings/Structures

TA-6 Eligible and Not Eligible Buildings

Map B-1



· PLOT · PLAN ·
SCALE 1" = 50.00'



· SECTION ·
· SAND · PAD ·
SCALE 1/16" = 1'-0"

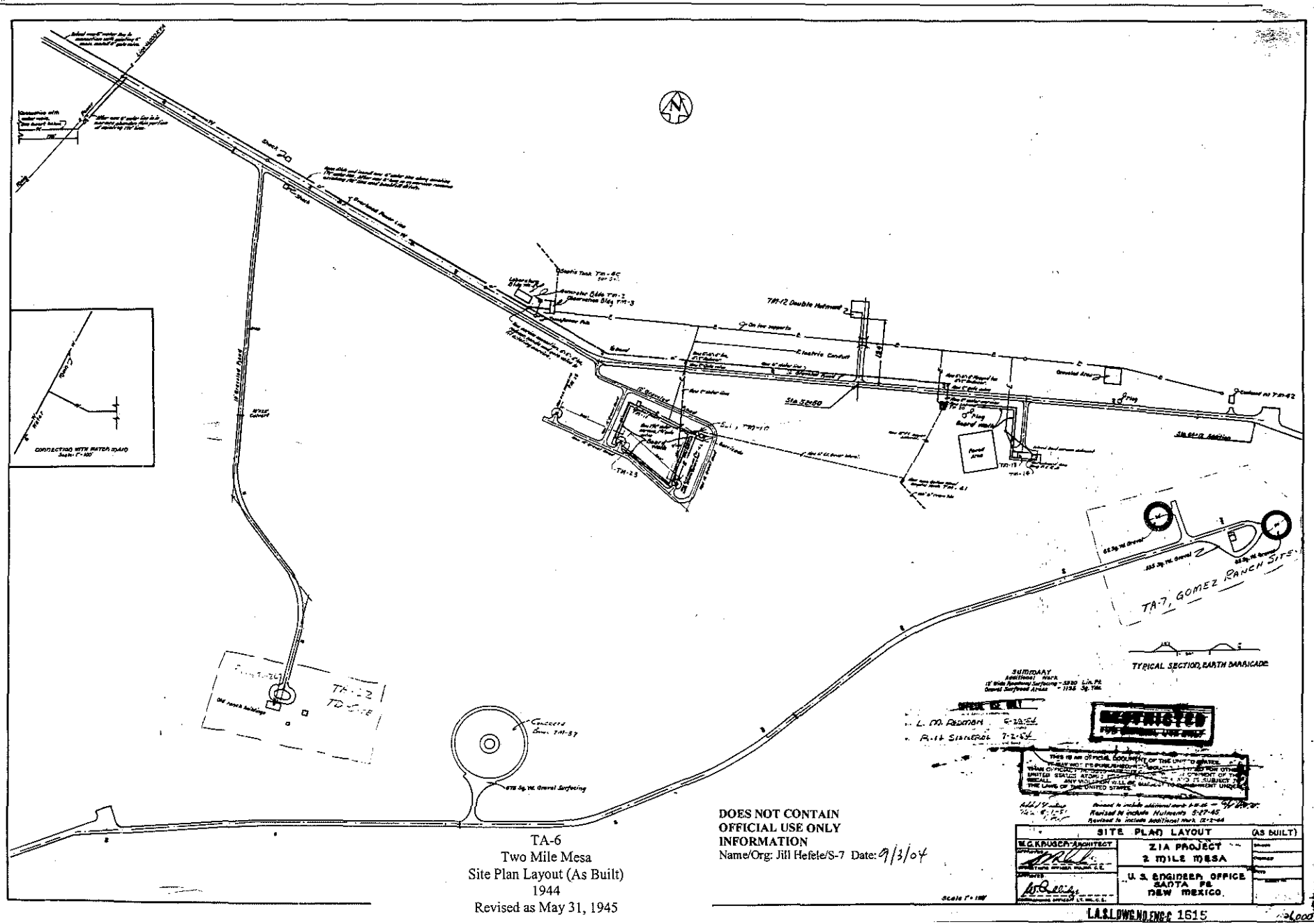
N. Appx.

OBSOLETE DEAD STORAGE

· ADDITIONAL · CONSTRUCTION ·
· TWO · MILE · MESA ·
DRAWING 26-196.01 6/24/44

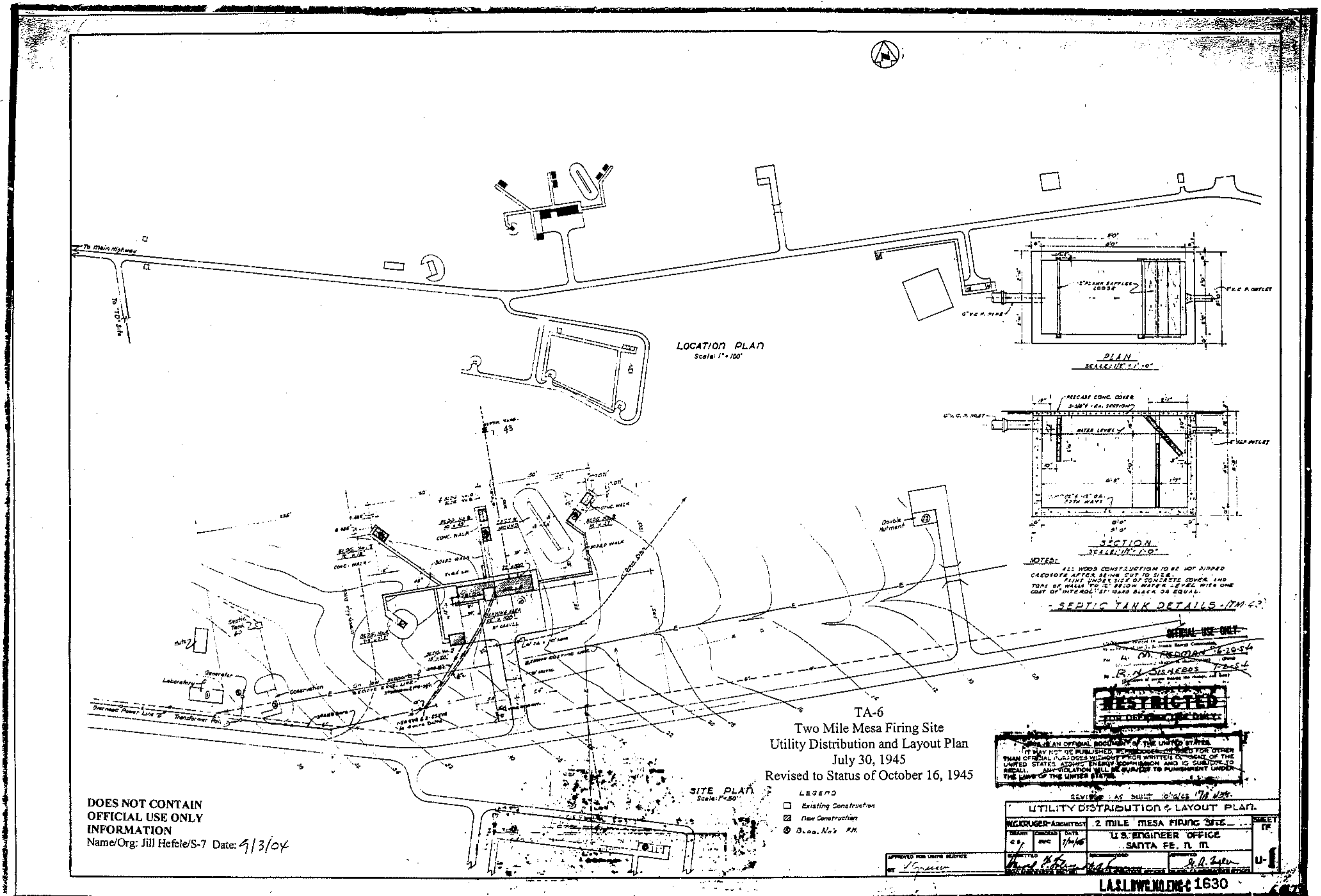
APPROVED: Lt. Col. C.E. COMMANDING OFFICER
APPROVED: Capt. C.E. ACTG. ASST. DIST.

L.A.S.L. DWG. NO. ENG-C 1619



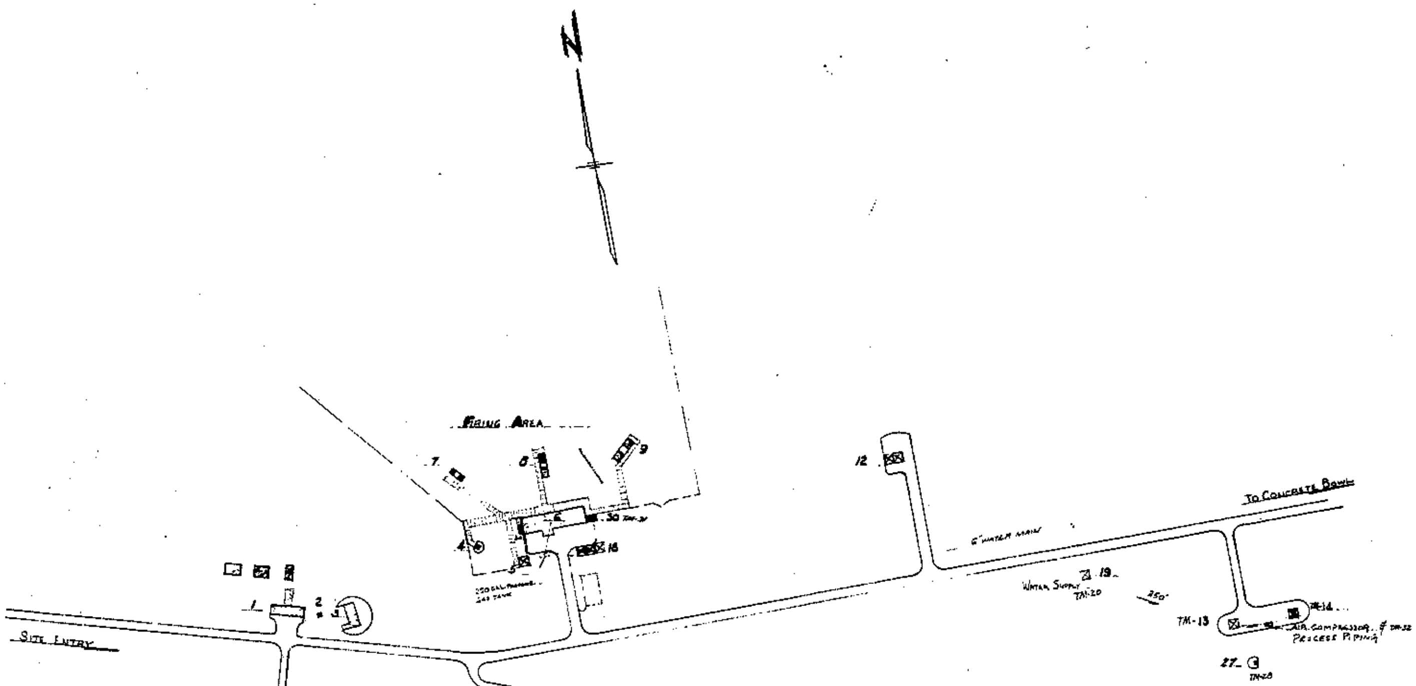
TA-6
Two Mile Mesa
Site Plan Layout (As Built)
1944
Revised as May 31, 1945

DOES NOT CONTAIN
OFFICIAL USE ONLY
INFORMATION
Name/Org: Jill Hefele/S-7 Date: 9/3/04



TA-6
Two Mile Mesa Firing Site
Utility Distribution and Layout Plan
July 30, 1945
Revised to Status of October 16, 1945

DOES NOT CONTAIN OFFICIAL USE ONLY INFORMATION
Name/Org: Jill Hefele/S-7 Date: 9/3/04



No.	[illegible]
1	Shop
2	Conference bldg
3	
4	Mag.
5	Heavy Pressing
6	Assembly
7	Firing Chamber, Production
8	" " "
9	" " Development
10	PETN
11	
12	Detonator Pressing
13	
14	
15	Boiler
16	Screening
17	Shake Test
18	Storage
19	[illegible]
20	Temperature Storage
21	Drying Oven
22	Magazine
23	"
24	"
25	"
26	"
27	"
28	"
29	Reclaiming
30	Trailer Shop
31	General Whse.
32	Firing Chamber, Production
33	" " , Development

Magazine Storage Limits
No. 27 - 50 LB. LIMIT
No. 4, 22, 23, 24, 25, 26, 28, 29 - 100 LB. LIMIT

2-MILE SITE
SCALE 1"=100'

Void - see Dwg. 4-R120

OBSOLETE DEAD STORAGE

① WAS AS-C87 REV. 4-19-48 S.E.E.
② Revised 1-5-28 Bldgs. 16, 18 ABC

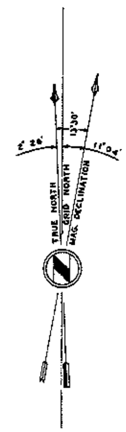
AREA TA-6			
TECH MAINTENANCE GROUP			
SCALE 1:1200	DR. ABC / CHD. E.E.S. / APP. [illegible]	DATE 11-22-47 / DATE 2-4-47 / DATE 1/4/47	DWG. NO. AS-240

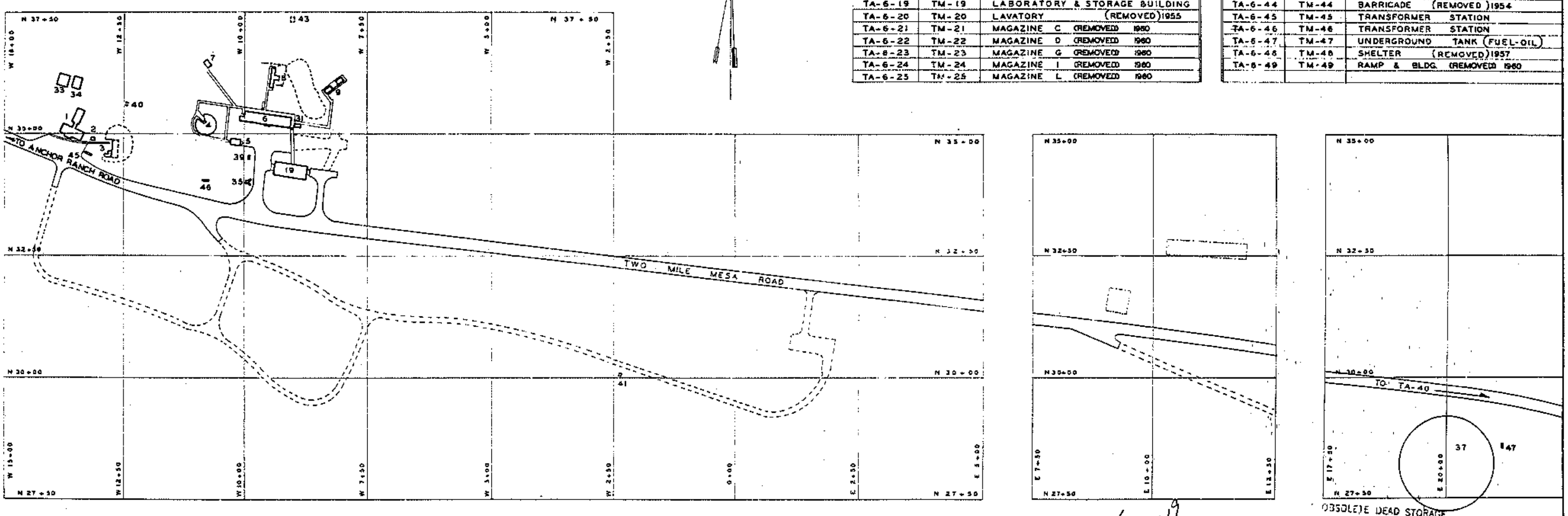
TA-6 Area
December 4, 1947
Revised to Status of April 19, 1948

~~OFFICIAL USE ONLY~~

STRUCTURE NUMBER	DESIGNATION	REMARKS
TA-6-1	TM-1	CARPENTER SHOP
TA-6-2	TM-2	COMPRESSOR BLDG.
TA-6-3	TM-3	LABORATORY & STORAGE BLDG.
TA-6-4	TM-4	MAGAZINE M
TA-6-5	TM-5	LABORATORY
TA-6-6	TM-6	LABORATORY & OFFICE BUILDING
TA-6-7	TM-7	LABORATORY
TA-6-8	TM-8	LABORATORY
TA-6-9	TM-9	LABORATORY
TA-6-10	TM-10	LABORATORY (REMOVED) 1960
TA-6-11	TM-11	LAB (RELOCATED TO CONT. DUMP, 1955)
TA-6-12	TM-12	STORAGE BLDG. (REMOVED) 1950
TA-6-13	TM-13	STORAGE BLDG. (REMOVED) 1960
TA-6-14	TM-14	STORAGE BLDG. (REMOVED) 1960
TA-6-15	TM-15	BOILER BLDG. (REMOVED) 1960
TA-6-16	TM-16	MAGAZINE F (REMOVED) 1960
TA-6-17	TM-17	MAGAZINE E (REMOVED) 1960
TA-6-18	TM-18	STORAGE BLDG. (REMOVED 1948)
TA-6-19	TM-19	LABORATORY & STORAGE BUILDING
TA-6-20	TM-20	LAVATORY (REMOVED) 1955
TA-6-21	TM-21	MAGAZINE C (REMOVED) 1960
TA-6-22	TM-22	MAGAZINE D (REMOVED) 1960
TA-6-23	TM-23	MAGAZINE G (REMOVED) 1960
TA-6-24	TM-24	MAGAZINE I (REMOVED) 1960
TA-6-25	TM-25	MAGAZINE L (REMOVED) 1960

STRUCTURE NUMBER	DESIGNATION	REMARKS
TA-6-26	TM-26	MAGAZINE H (REMOVED) 1960
TA-6-27	TM-27	MAGAZINE J (REMOVED) 1960
TA-6-28	TM-28	MAGAZINE A (REMOVED) 1960
TA-6-29	TM-29	MAGAZINE K (REMOVED) 1960
TA-6-30	TM-30	MAGAZINE B (REMOVED) 1960
TA-6-31	TM-31	TRAILER SHOP
TA-6-32	TM-32	AIR COMPRESSOR BLDG. (REMOVED)
TA-6-33	TM-33	LUMBER STORAGE BLDG.
TA-6-34	TM-34	STORAGE BLDG.
TA-6-35	TM-35	FIRE EQUIP. & HOSE BLDG.
TA-6-36	TM-36	MAGAZINE N (RELOCATED TO TA-40-36)
TA-6-37	TM-37	CONCRETE BOWL
TA-6-38	TM-38	GENERATOR BLDG. (REMOVED) 1960
TA-6-39	TM-39	STORAGE TANK (PROPANE)
TA-6-40	TM-40	SEPTIC TANK (SANITARY)
TA-6-41	TM-41	SEPTIC TANK (ABANDONED)
TA-6-42	TM-42	ENCLOSED PIT (REMOVED) 1952
TA-6-43	TM-43	SEPTIC TANK (SANITARY)
TA-6-44	TM-44	BARRICADE (REMOVED) 1954
TA-6-45	TM-45	TRANSFORMER STATION
TA-6-46	TM-46	TRANSFORMER STATION
TA-6-47	TM-47	UNDERGROUND TANK (FUEL-OIL)
TA-6-48	TM-48	SHELTER (REMOVED) 1957
TA-6-49	TM-49	RAMP & BLDG. (REMOVED) 1960





NO.	DATE	REVISIONS	BY	CHKD	GRP. LDR.	ENG. O. O.
9	10-20-59	REVISED TO STATUS OF 9-1-59	DDS	JAS		
8	7-1-57	REVISED TO STATUS OF 7-1-57	DDS	JAS		
7	9/28/55	REDRAWN TO STATUS OF JULY 1, 1955	NDB	JAS		

AUTHORIZED FOR: HEALTH | SAFETY | FIRE PROT. | SEC.

LOS ALAMOS SCIENTIFIC LABORATORY
UNIVERSITY OF CALIFORNIA
ENGINEERING DEPARTMENT — LOS ALAMOS, N. M.

STRUCTURE LOCATION PLAN
TA-6 TWO MILE MESA SITE

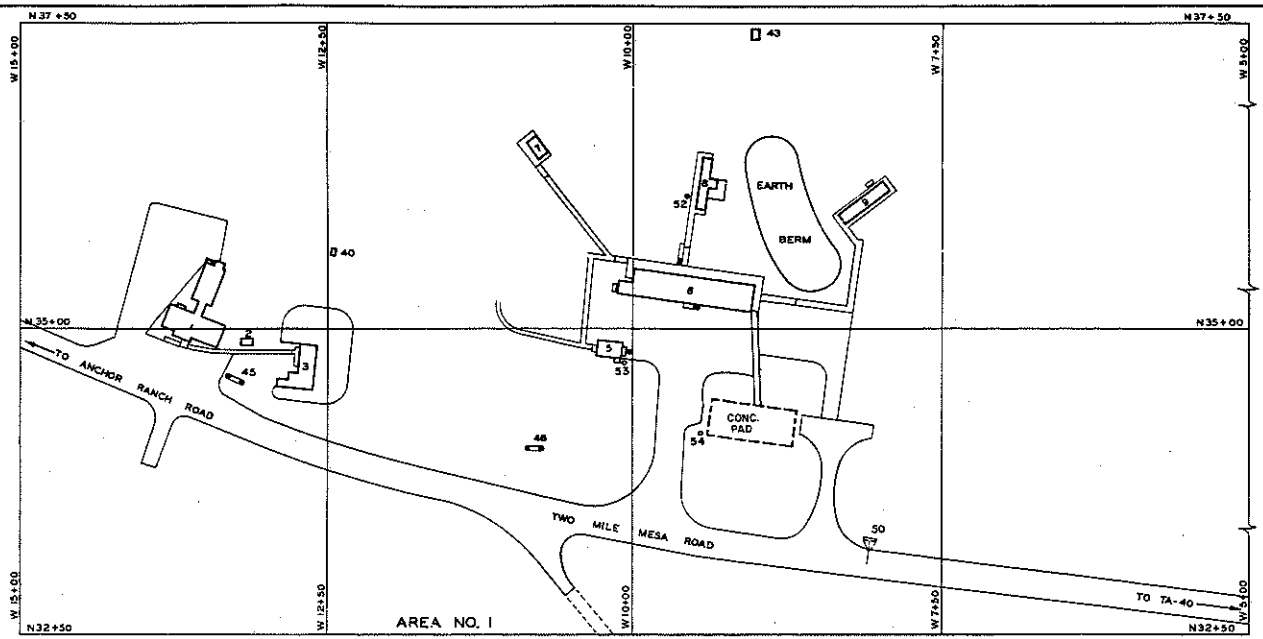
CHECKED / DESIGNER — RECOMMENDED / GROUP LEADER — APPROVED / ENG. DEPT. OFFICE
DRAWN: N. BYERS — DATE: 9/28/55 — DRAWING NO.: ENG-R 120
SCALE: 1" = 100' — SHEET: 1 OF 1

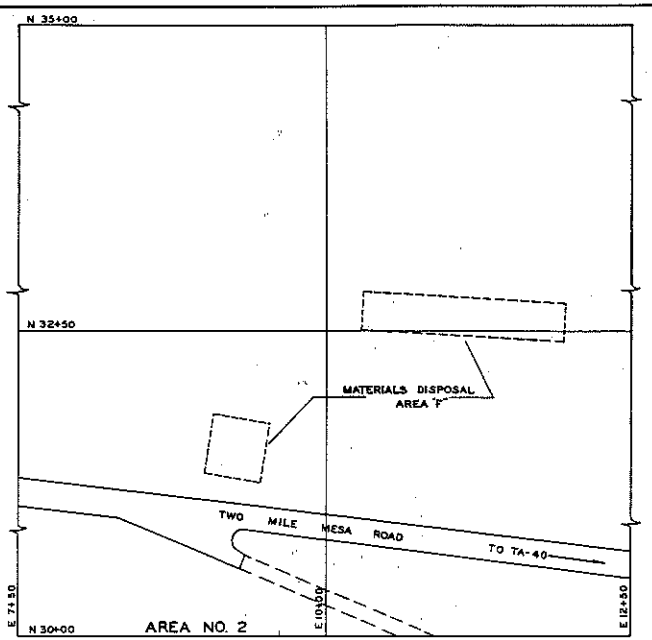
VOID - SEE REV. 10, ENG-R-2419 & ENG-R-2420

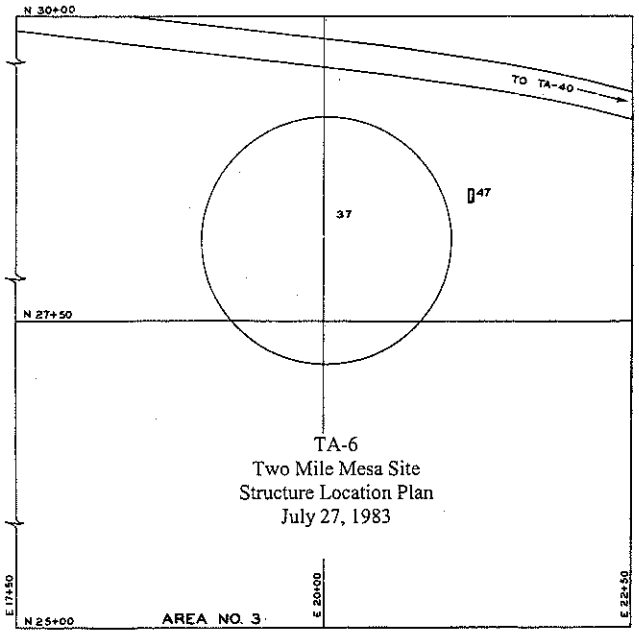
TA-6
Two Mile Mesa Site
Structure Location Plan
September 28, 1955
Revised to Status of September 1, 1959

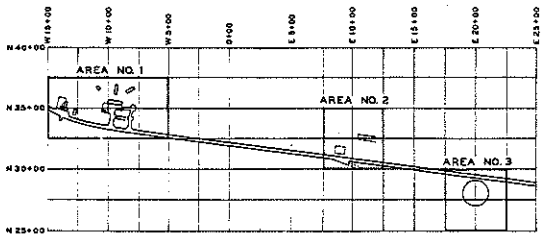
DOES NOT CONTAIN OFFICIAL USE ONLY INFORMATION
Name/Org: Jill Hefele/S-7 Date: 7/14/04

~~OFFICIAL USE ONLY~~









INDEX MAP FOR AREAS NOS. 1, 2, & 3
NO SCALE

TA-6
Two Mile Mesa Site
Structure Location Plan
July 27, 1983

REV.	DATE	REVISION	BY	CKD.	APP.
18	7-27-83	REVISED TITLE BLOCK & DWG. TO STATUS OF 7-29-83	H.S.	JR	DP

UNIVERSITY OF CALIFORNIA
Los Alamos
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

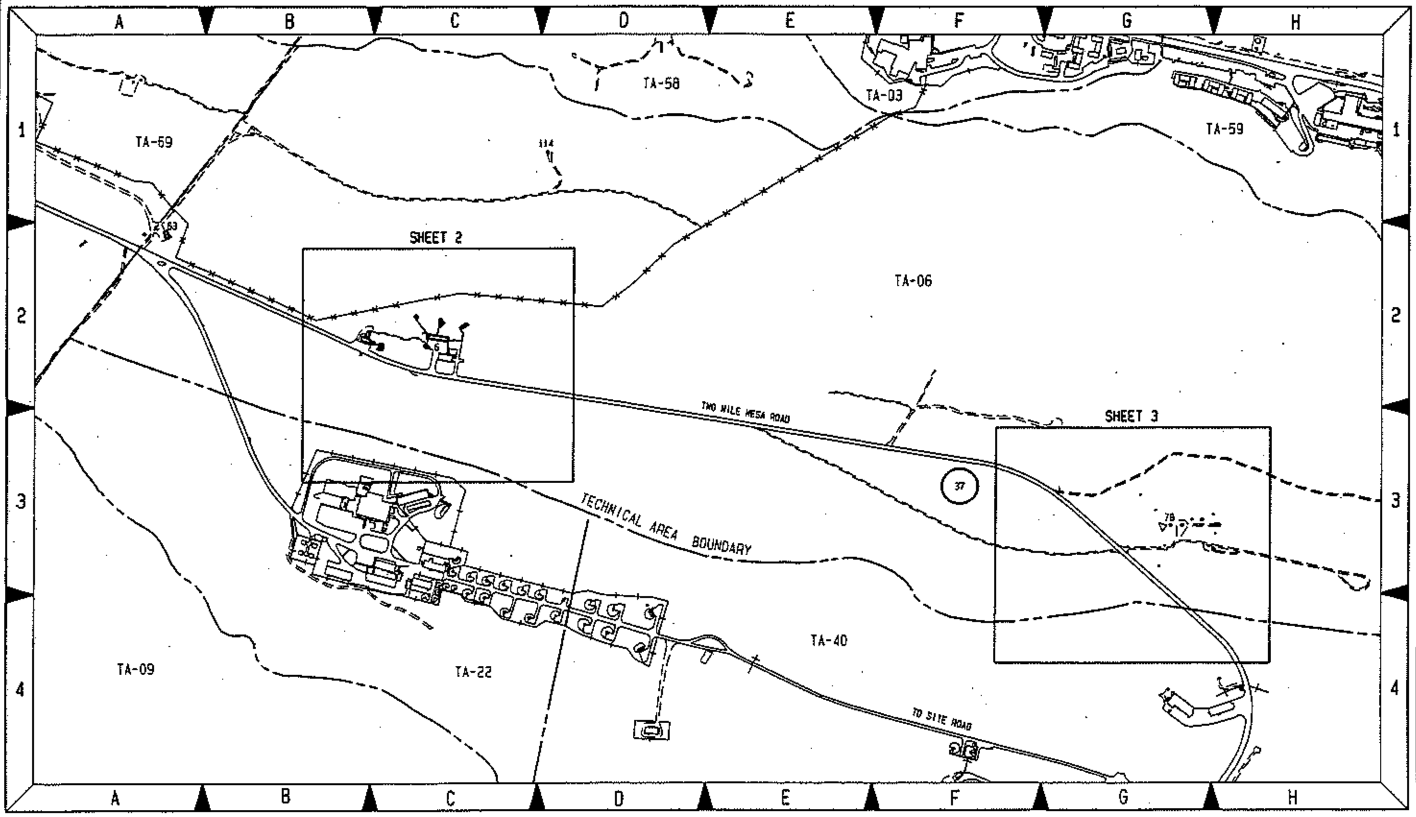
FACILITIES ENGINEERING DIVISION

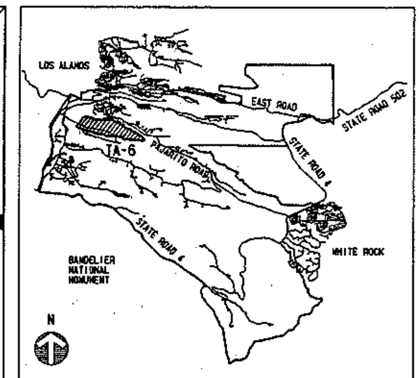
STRUCTURE LOCATION PLAN
TA-6 TWO MILE MESA SITE

SEC. CLASSIFICATION: CLASS. U
REVIEWER: [illegible]
DATE: 7 23 83

SUBMITTED	RECOMMENDED	APPROVED
[signature]	[signature]	[signature]
DRAWN: [illegible]	DATE: 7-27-83	SHEET NO.: 2 OF 2
CHECKED: [signature]		DRAWING NO.: ENG-R5105

STRUCTURE LOCATION MAPS





LOCATION PLAN

SCALE: NONE

TA-06 KEY MAP

SCALE: 1:3600
300 0 300 600
FEET

N

TA-6
Two Mile Mesa South Site
As-Built Structure Location Maps
December 20, 1994

FIELD VERIFIED 12-19-94

JOHNSON CONTROLS

AS-BUILT STRUCTURE LOCATION MAPS

TA-06

TWO MILE MESA SOUTH SITE

DATE 12-20-94

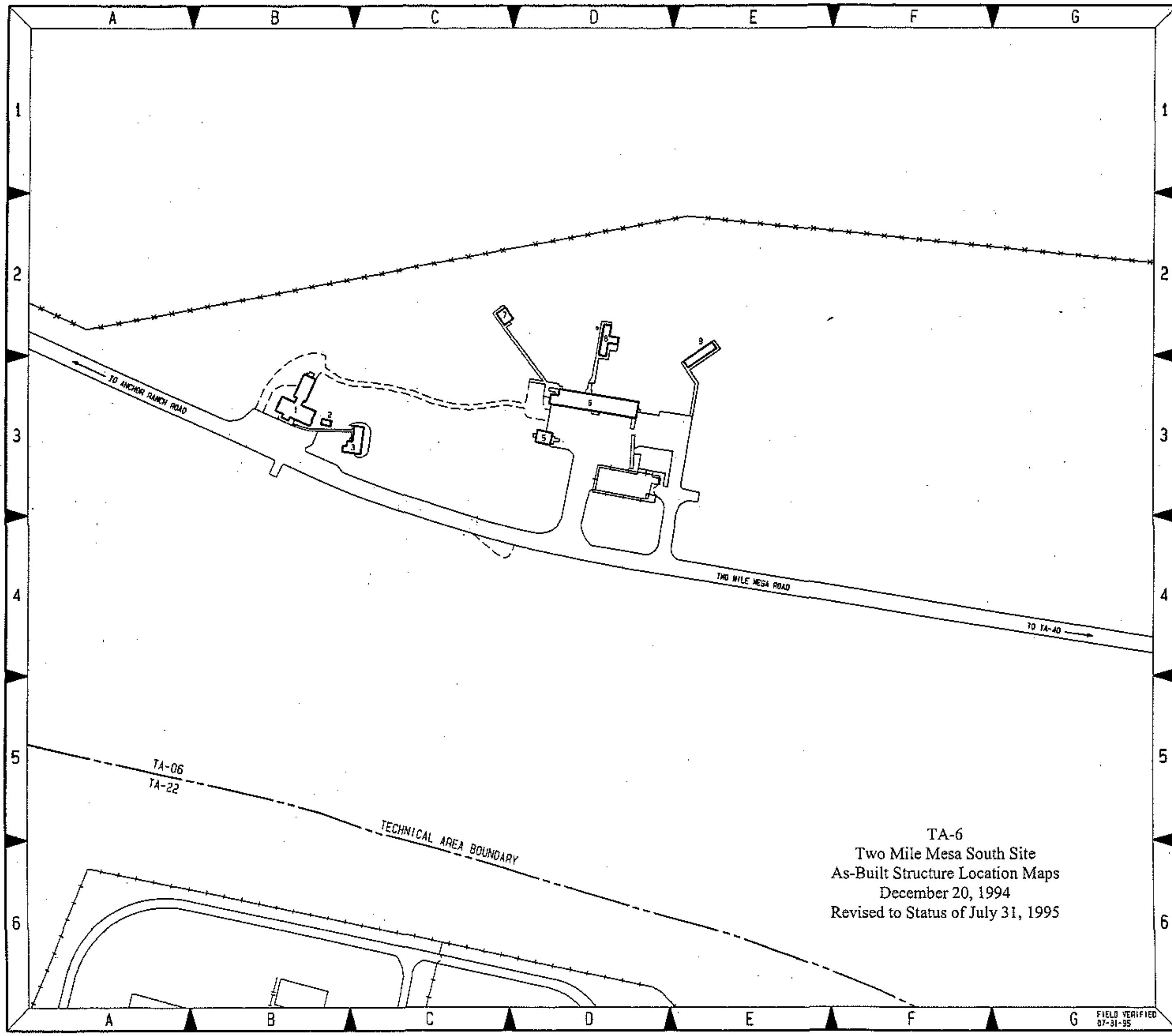
Los Alamos — Los Alamos National Laboratory, Los Alamos, New Mexico 87545

SHEET 1 of 3

CLASSIFICATION U REVIEWER H. SALAZAR

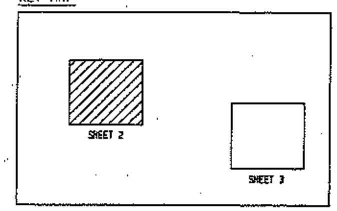
PROJECT ID 11952

DRAWING NO AB15



TA-6
Two Mile Mesa South Site
As-Built Structure Location Maps
December 20, 1994
Revised to Status of July 31, 1995

KEY MAP



STRUCTURE LOCATION INDEX

STRUCTURE TA-NUMBER	STRUCTURE DESIGNATION	STRUCTURE NOMENCLATURE	STRUCTURE LOCATOR SHEET NO.	STRUCTURE LOCATOR MAP KEY
06-1	TH-1	STORAGE BUILDING	2	B-3
06-2	TH-2	COMPRESSOR BUILDING	2	B-3
06-3	TH-3	FABRICATION BUILDING	2	C-3
06-5	TH-5	STORAGE BUILDING	2	D-3
06-6	TH-6	STORAGE BUILDING	2	D-3
06-7	TH-7	STORAGE BUILDING	2	C-2
06-8	TH-8	LABORATORY BUILDING	2	D-2
06-9	TH-9	FIRING CHAMBER	2	E-2
06-37	06-37	CONCRETE BOWL	1	F-3
06-53	06-53	BOOSTER STATION #2	1	A-2
06-78	06-78	METEOROLOGICAL TOWER	3	E-3
06-80	06-80	SHED	3	F-4
06-91	06-91	INSTRUMENT SHED	3	E-3
06-100	06-100	ANTENNA	3	F-3
06-114	06-114	SHED	1	D-1
06-118	06-118	TRAILER, EXPERIMENTAL	3	F-3

N

SCALE: 1:720
60 0 60 120
FEET

NO	DATE	CLASS REV	DESCRIPTION	DWN	YER	CHKD	SUB	APP
1	07-31-95		REVISED TO STATUS OF 07-31-95	JPN	JPN	HNS	JAF	FCT

JOHNSON CONTROLS

AS-BUILT STRUCTURE LOCATION MAPS

TA-06

TWO MILE MESA SOUTH SITE

DRAWN: J. NORR
VERIFIED: J. NORR
CHECKED: H. SALAZAR
DATE: 12-20-94

SUBMITTED: JERRY FORTE
APPROVED FOR PROJECT: FRED THOMPSON 5/13/96

Los Alamos — Los Alamos National Laboratory, Los Alamos, New Mexico 87545

SHEET 2 OF 3

CLASSIFICATION: U   REVIEWER: H. SALAZAR   DATE: 9-26-96

PROJECT ID: 11952   DRAWING NO: AB15   REV: 1

JCI NO 91-020

Appendix C: Interview Information

Oral Histories

Creamer, L.W.

1992 "Interviews with W.H. Meyers and A.D. Van Vessem," August 9, 1992. Los Alamos National Laboratory Memorandum M-7-92-0421, ER ID Number 15037, Los Alamos, New Mexico.

1993 "Interview with Alvin Van Vessem," January 14, 1993. Los Alamos National Laboratory Memorandum M-7-93-0019, ER ID Number 15250, Los Alamos, New Mexico.

Dunne, Frances

1992 "Oral History, Remembering Los Alamos: World War II," February 15, 1992. Transcription of Videotape. LAHM-M1992-113-1-47. Available at Los Alamos Historical Museum Archives, Los Alamos, New Mexico.

Hornig, Lilli S.

1986 "Interview with Dr. Lilli Hornig," June 25, 1986. Transcription of Tape. TR-86-026. Available at LANL Archives, Los Alamos, New Mexico.

Martinez, Lydia Gomez

1991 "Oral History, Remembering Los Alamos: World War II," November 9, 1991. Transcription of Videotape. M1992-112-1-4. Available at Los Alamos Historical Museum Archives, Los Alamos, New Mexico.

Van Vessem, Alvin

1989 Recording of 1989 interview with A. Van Vessem on file at the Los Alamos National Laboratory Archives, Collection OH-0200, T-1989-006, Los Alamos National Laboratory, Los Alamos, New Mexico.

Appendix D: Listing of Drawings on File at LANL for TA-6

REPORT FOR: DRAWINGS

TA	BLDG	PREFIX	DRAWNUM	PAGE	REV	DSHEET	LOG_DATE	DOC_DATE	PROJID	DISC	TITLE
6	1	C	796	1	2		02-JUL-48	05-MAY-50	0	E	STANDARDIZE 220 VOLT OUTLETS, REPLACE PIERCEWAY OUTLETS, REPLACE PANEL BOX, CAR
6	1	C	1623	1	4		12-MAY-53	14-DEC-50	0	A	ZIA PROJ., TWO MILE MESA CONSTRUCTION, BLDG. 1. PLAN, ELEV. SECTIONS, MISC. DETAILS
6	1	C	1624	2	1		12-MAY-53	14-DEC-50	0	M	ZIA PROJ., TWO MILE MESA CONSTRUCTION., BLDGS. TM-1 AND 3. HEATING, PLUMBING
6	1	C	1625	1	0		12-MAY-53	24-OCT-44	0	A	ADDITION TO BUILDING #1, TWO MILE MESA, ELEVATIONS AND SECTIONS
6	1	R	4277	1	0		22-JAN-68	07-SEP-67	3586	A	AUDIO SYSTEM EQUIP. LOCATION, FLOOR PLAN
6	1	R	2595	1	2		23-APR-63	23-AUG-83	0	A	FLOOR PLAN, CARPENTER SHOP
6	1	SK	743	1	1		23-MAY-56		0	C	MOVE BLDG. NO. 12 TO N. SIDE OF BLDG. NO. 1, TA-6
6	1	SK	1181	1	0		21-AUG-97	24-APR-58	2140	A	Lumber Storage Shelter Arch. Plan & Details
6	1	R	4278	1	1		22-JAN-68	07-SEP-67	3586	E	AUDIO SYSTEM BLOCK DIAGRAM

REPORT FOR: DRAWINGS

TA	BLDG	PREFIX	DRAWNUM	PAGE	REV	DSHEET	LOG_DATE	DOC_DATE	PROJID	DISC	TITLE
6	2	C	1618	1	1		12-MAY-53	04-DEC-50	0	A	LABORATORY BLDG AND GENERATOR BLDG. TM-2 AND TM-3, TWO MILE MESA, SECTIONS AND ELEVATIONS
6	2	C	1620	1	1		12-MAY-53	14-DEC-50	0	E	TWO MILE MESA CONSTRUCTION. ELECTRICAL INSTALLATIONS, BLDG. TM-2 AND TM- 3
6	2	R	2596	1	2		11-AUG-64	22-AUG-83	0	A	FLOOR PLAN, COMPRESSOR BUILDING

REPORT FOR: DRAWINGS

TA	BLDG	PREFIX	DRAWNUM	PAGE	REV	DSHEET	LOG_DATE	DOC_DATE	PROJID	DISC	TITLE
6	3	C	1616	1	1		12-MAY-53	04-DEC-50	0	A	LABORATORY BUILDING, TM-3, TWO MILE MESA. PLAN AND ELEVATIONS
6	3	C	1617	1	1		12-MAY-53	04-DEC-50	0	S	LABORATORY BUILDING, TM-3, TWO MILE MESA. LONGITUDINAL SECTIONS
6	3	C	1626	1	1		12-MAY-53	14-DEC-50	0	A	ZIA PROJECT, TWO MILE MESA CONST., ADDITION TO LAB BLDG. #3. PLANS AND SECTIONS, FLOOR PLAN
6	3	C	40980	11	0		25-OCT-72	25-OCT-72	4808	E	ELECTRICAL DETAILS, BLDG. TM-3
6	3	C	40979	10	0		25-OCT-72	25-OCT-72	4808	E	ELECTRICAL LAYOUTS BLDG. TM-3
6	3	C	40978	9	0		25-OCT-72	25-OCT-72	4808	E	ELEC; ONE-LINE-DIAGRAM, NOTES BLDG. TM-3
6	3	C	40977	8	0		25-OCT-72	25-OCT-72	4808	M	MECH; EQUIPMENT LIST & NOTES, BLDG. TM-3
6	3	C	40976	7	0		25-OCT-72	25-OCT-72	4808	M	MECH; PLAN, ELEVATION & SECTION, BLDG. TM-3
6	3	C	40975	6	0		25-OCT-72	25-OCT-72	4808	M	MECH; PLANS & DETAILS, BLDG. TM-3
6	3	C	40974	5	0		25-OCT-72	25-OCT-72	4808	M	MECH; FLOOR PLAN, BLDG. TM-3
6	3	C	40973	4	0		25-OCT-72	25-OCT-72	4808	A	SERVICES FOR PRINTED CIRCUIT EQUIPMENT ARRANGEMENT PLAN, BLDG. TM-3
6	3	C	48325	5	0		30-NOV-92		0	F	FIRE PROTECTION BLDG. TM-3

6	3	C	69623	1	0		17-DEC-71	17-DEC-71	0	A	SECURITY MODS PLANS & DETAILS, ELEVATIONS AND SECTIONS
6	3	R	2597	1	2		23-APR-63	22-AUG-83	0	A	FABRICATION BUILDING, FLOOR PLAN
6	3	C	1619	1	0		12-MAY-53	26-MAY-44	0	C	ADDITIONAL CONSTRUCTION, TWO MILE MESA, SECTION SAND PAD, PLOT PLAN
6	3	C	48325	1	0		30-NOV-92		0	UN	SHEET 1 THRU 4 OF 5 NOT INCLUDED IN SET

REPORT FOR: DRAWINGS

TA	BLDG	PREFIX	DRAWNUM	PAGE	REV	DSHEET	LOG_DATE	DOC_DATE	PROJID	DISC	TITLE
6	5	C	1637	1	1		12-MAY-53	14-DEC-50	0	M	TWO MILE MESA FIRING SITE, BLDGS TM-5,6,7,8,9. HEATING AND VENTILATION PLANS
6	5	C	25705	2	0		03-SEP-65		3255	A	PORCH ALTERATIONS, BLDGS. TM-5 & TM-6, CIVIL - PORCH PLANS & SECTIONS
6	5	C	25704	1	0		03-SEP-65		3255	G	PORCH ALTERATIONS, BLDGS. TM-5 & TM-6, CIVIL - LOCATION PLAN, GEN. NOTES, BLDG.
6	5	R	4279	1	0		22-JAN-68	07-SEP-67	3586	A	AUDIO SYTEM EQUIP. LOCATION, FLOOR PLAN
6	5	R	4282	1	1		22-JAN-68	07-SEP-67	3586	E	AUDIO SYSTEM BLOCK DIAGRAM
6	5	R	2599	1	2		23-APR-63	23-AUG-83	0	A	FLOOR PLAN, LABORATORY BUILDING

REPORT FOR: DRAWINGS

TA	BLDG	PREFIX	DRAWNUM	PAGE	REV	DSHEET	LOG_DATE	DOC_DATE	PROJID	DISC	TITLE
6	6	C	111	1	1		21-APR-48	05-MAR-48	134	A	MODIFICATIONS - BLDG. 6, FLOOR PLAN & DETAILS
6	6	C	1635	1	1		12-MAY-53	18-AUG-45	0	A	TWO MILE MESA FIRING SITE, BLDG. TM-6. PLANS, ELEVATIONS, SECTIONS, DETAILS
6	6	C	1636	2	1		12-MAY-53	18-AUG-45	0	A	TWO MILE MESA FIRING SITE, BLDG. TM-6. CABINET DETAILS
6	6	C	1638	2	1		12-MAY-53	18-AUG-45	0	M	TWO MILE MESA FIRING SITE, BLDG. TM-6., WASTE & VENT, HOT & COLD WATER, COMPRESSED AIR, PIIPING AND EQUIPMENT
6	6	R	1790	1	2		11-JAN-63	05-MAR-59	0	F	FIRE ALARM EQUIPMENT, BLDG. TM-6, FLOOR PLAN
6	6	SK	69	1	1		01-JUN-53	26-SEP-47	73	A	MODIFICATION BLDG.
6	6	R	4280	1	0		22-JAN-68	07-SEP-67	3586	A	AUDIO SYSTEM EQUIP. LOCATION, FLOOR PLAN
6	6	R	3716	1	0		27-SEP-66	15-SEP-66	3546	A	EQUIPMENT SURVEILLANCE SYSTEMS, FLOOR PLAN
6	6	R	2600	1	3		23-APR-63	22-AUG-83	0	A	FLOOR PLAN, LABORATORY OFFICE & SHOP BUILDING
6	6	C	39715	1	0		15-MAY-72		4809	M	AIR COMPRESSOR REPLACEMENT MECH. - ELEC., BLDG. TM-6
6	6	C	38737	1	0		12-AUG-70		4530	C	ADDITIONAL PARKING - PLAN & DETAILS
											SOLDERING HOOD

6	6	C	19226	1	0	15-SEP-58		2158	A	INSTALLATION, BLDG. TM-6 - PLAN, DETAIL, ELEVATION, ELECTRICAL N
6	6	C	19121	1	0	03-JUN-57		1993	F	DRY TYPE SPRINKLER INSTALLATION, BLDG. TM-6 - EQUIPMENT ROOM, ADDITION & NOTES
6	6	C	19122	2	1	03-JUN-57		1993	F	FIRST FLOOR SPRINKLER & H.A.D. PLAN
6	6	C	19123	3	1	03-JUN-57		1993	M	ATTIC PLAN & H.A.D. PLAN
6	6	C	1630	1	1	12-MAY-53	16-OCT-45	0	C	TWO MILE MESA FIRING SITE. UTILITY DIST. AND LAYOUT PLAN, SITE PLAN, SEPTIC TANK DETAILS
6	6	SK	375	1	1	01-JUN-53		0	A	WORK BENCH FOR BLDG. TM-6, TWO MILE MESA
6	6	SK	5334	1	0	14-DEC-61	14-NOV-61	2260	S	OFFICE ADDITION STRUCTURAL PLAN, BLDG. TM-6
6	6	SK	5336	3	0	14-DEC-61	14-NOV-61	2260	S	OFFICE ADDITION STRUCTURAL SECTION, BLDG. TM-6
6	6	SK	5338	5	0	14-DEC-61	14-NOV-61	2260	M	OFFICE ADDITION SPRINKLER AND H.A.D. PLAN, BLDG. 6
6	6	SK	5337	4	0	14-DEC-61	14-NOV-61	2260	M	OFFICE ADDITION HEATING SYSTEM, BLDG. 6
6	6	SK	5335	2	0	14-DEC-61	14-NOV-61	2260	A	OFFICE ADDITION STRUCTURAL, ELEVATION

REPORT FOR: DRAWINGS

TA	BLDG	PREFIX	DRAWNUM	PAGE	REV	DSHEET	LOG_DATE	DOC_DATE	PROJID	DISC	TITLE
6	7	C	1632	1	2		12-MAY-53	14-DEC-50	0	A	TWO MILE MESA FIRING SITE. PLAN, SECTIONS AND DETAILS, BLDG. #7, FLOOR PLAN
6	7	R	2601	1	1		04-AUG-64	23-AUG-83	0	A	FLOOR PLAN, STORAGE BLDG.
6	7	C	1629	2	2		12-MAY-53	19-AUG-52	0	A	PROPOSED BUILDINGS, TWO MILE MESA, BLDGS. TM-7, 8, 9, 4, 5

REPORT FOR: DRAWINGS

TA	BLDG	PREFIX	DRAWNUM	PAGE	REV	DSHEET	LOG_DATE	DOC_DATE	PROJID	DISC	TITLE
6	8	C	1633	1	3		12-MAY-53	19-AUG-52	0	A	TWO MILE MESA FIRING SITE. PLANS, ELEVATIONS, SECTIONS DETAILS, BLDGS. TM-8 & 9
6	8	C	4641	1	1		17-SEP-99	10-NOV-53	1524	S	ADDITIONAL TEMP SHELTER FIRING PAD PLAN, SECTIONS, & DETAILS
6	8	R	4281	1	0		22-JAN-68	07-SEP-67	3586	A	AUDIO SYSTEM EQUIP. LOCATION, FIRST FLOOR PLAN
6	8	R	2602	1	3		30-JUL-64	03-FEB-84	0	A	FIRST FLOOR PLAN, LABORATORY BUILDING
6	8	R	2603	2	2		30-JUL-64	23-AUG-83	0	A	SECOND FLOOR PLAN, LABORATORY BUILDING
6	8	SK	527	1	1		01-JUN-53	05-AUG-50	0	A	CONST. & INSTALL SUN SHIELD ON BLDG. #8, TA-6

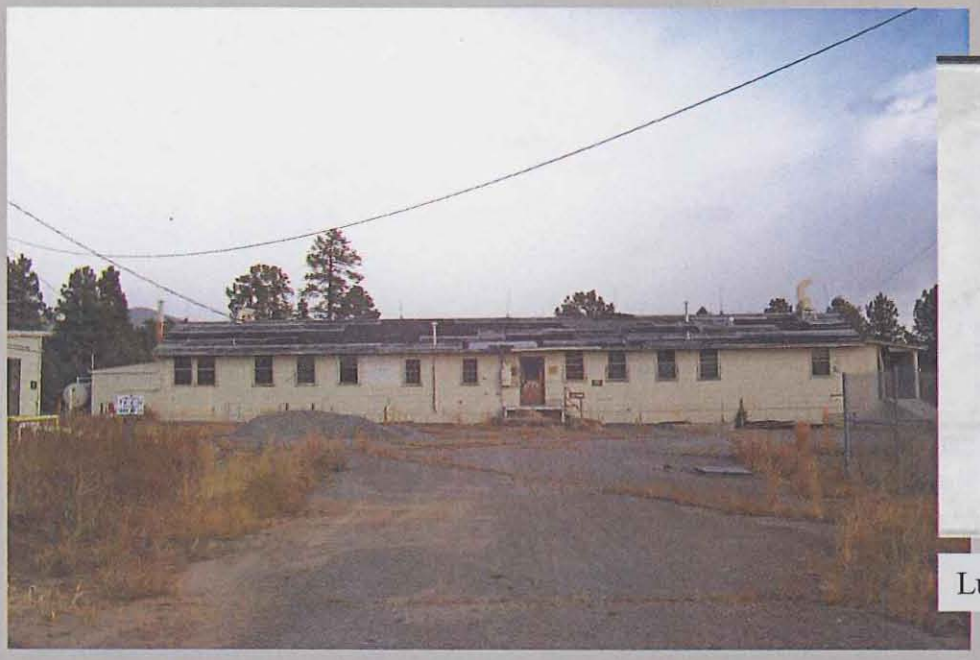
REPORT FOR: DRAWINGS

TA	BLDG	PREFIX	DRAWNUM	PAGE	REV	DSHEET	LOG_DATE	DOC_DATE	PROJID	DISC	TITLE
6	9	R	2604	1	1		11-AUG-64	23-AUG-83	0	A	FLOOR PLAN, FIRING CHAMBER
6	9	SK	717	1	2		01-JUN-53	15-OCT-48	0	S	CONST. STEEL CONCRETE SHOCK PAD, BLDG. 9, TA-6

LA-UR-04-7130

Engineering the Bomb: Detonator and Plutonium Recovery Research at Two-Mile Mesa Site (TA-6)

Volume 2 – Archival Photographs and Index



Luis Alvarez and TA-6

"Jumbo" and a TA-6 Jumbino

RRES-ECO Heritage Resources and Environmental Policy Compliance Team
Risk Reduction and Environmental Stewardship Division
LOS ALAMOS NATIONAL LABORATORY

Los Alamos National Laboratory Historic Building Survey
Index to Photographs

Technical Area 6
Technical Area 6, Structures (1, 2, 3, 5, 6, 7, 8, and 9)
Los Alamos National Laboratory (LANL)
Los Alamos
Los Alamos County
New Mexico

Notes: The Laboratory is divided into different geographic areas called Technical Areas (TAs), which are designated by numbers. The properties at TA-6 are identified using the current LANL system of placing the "TA" prefix and TA number before each building and structure number, creating a unique property identifier (ie. TA-6-1).

Situated on the Pajarito Plateau in northern New Mexico, TA-6 is located south of LANL's main administrative area in the central region of the Laboratory (Map 1). Work processes carried out this remote technical area, historically known as Two-Mile Mesa Site or TM Site, supported early World War II detonator development and plutonium recovery research related to the weaponization of the "Fat Man" or implosion-type atomic bomb. Post-war work at TA-6 focused primarily on detonator improvements until 1952, by which time all laboratory, fabrication, and testing work had been relocated to nearby facilities at TA-22 and TA-40. Other scientific research continued at TA-6 until the mid 1980s—operations included explosives development, laser and chemistry research, and experiments regarding detonation and shock waves in gases.

Eight buildings located at TA-6 are eligible for the National Register of Historic Places (Register). The eight buildings are excess LANL properties and are scheduled for clean up and eventual demolition. This action is in accordance with LANL's commitment to clean up inactive sites and facilities "so that no unacceptable risk to the public or environment remains" (U.S. Department of Energy 1994). The removal of these eight properties will be carried out by LANL's Decontamination and Decommissioning (D&D) Program. (For additional information see related project documentation: *"Sentinels of the Atomic Dawn: A Multiple-Property Evaluation of the Remaining Manhattan Project Properties at Los Alamos (1942-1946),* LA-UR-03-0726, Cultural Resource Report No. 215 and *Engineering the Bomb: Detonator and Plutonium Recovery Research at Two-Mile Mesa Site (TA-6)*, LA-UR-04-7130, Historic Building Report No. 236.

References

Los Alamos National Laboratory
1993 *Work Plan for OU 1111, ER Program.* LA-UR-93-0000, Los Alamos National Laboratory, Los Alamos, New Mexico.

U.S. Department of Energy
1994 *Environmental Restoration and Waste Management Five-Year Plan Fiscal Years 1994-1998.* DOE/S-00097P, U.S. Department of Energy, Washington, D.C.

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Technical Area 6
Technical Area 6, Building TA-6-1
Los Alamos National Laboratory (LANL)
Los Alamos
Los Alamos County
New Mexico

Mike O'Keefe, Photographer, IM-9, LANL March/April 2004
RB04-008-001 through RB04-008-054 and RB04-004-001 through RB04-004-047

Photograph Number	Description
RB04-004-024	TA-6-1, south side (front), facing north.
RB04-004-026	TA-6-1, west side, facing east.
RB04-004-028	TA-6-1, north side (back), facing south.
RB04-004-030	TA-6-1, north and west sides, facing southeast.
RB04-004-032	TA-6-1, north and east sides, facing southwest.
RB04-004-033	TA-6-1, east side, facing southwest.
RB04-008-034	TA-6-1, room 101, east half, facing southeast.
RB04-008-037	TA-6-1, room 101, east half, facing northeast.
RB04-008-035	TA-6-1, room 101, east half, facing northwest.
RB04-008-036	TA-6-1, room 101, east half, facing southwest.
RB04-008-038	TA-6-1, room 101, west half, facing southwest.
RB04-008-040	TA-6-1, room 101, west half, facing southeast.
RB04-008-039	TA-6-1, room 101, west half, facing northeast.
RB04-008-041	TA-6-1, room 101, west half, facing northwest.
RB04-008-042	TA-6-1, room 102, facing northwest.
RB04-008-033	TA-6-1, room 103, facing south

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Technical Area 6
Technical Area 6, Building TA-6-2
Los Alamos National Laboratory (LANL)
Los Alamos
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Mike O'Keefe, Photographer, IM-9, LANL March/April 2004

Photograph Number	Description
RB04-004-036	TA-6-2, south (front) and west sides, facing northeast.
RB04-004-035	TA-6-2, north (back) and east sides, facing southwest.
RB04-004-037	TA-6-2, interior, facing north.

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Technical Area 6
Technical Area 6, Building TA-6-3
Los Alamos National Laboratory (LANL)
Los Alamos
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Mike O'Keefe, Photographer, IM-9, LANL — March/April 2004

Photograph Number	Description
RB04-004-042	TA-6-3, west side (front), facing east.
RB04-004-043	TA-6-3, south and east sides, facing northwest.
RB04-004-044	TA-6-3, east and north sides, facing southwest.
RB04-008-031	TA-6-3, room 102, facing north.
RB04-008-028	TA-6-3, room 103, facing northeast.
RB04-008-029	TA-6-3, room 103, facing southeast.
RB04-008-030	TA-6-3, room 103, facing northwest.
RB04-008-032	TA-6-3, room 105, facing west.

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Technical Area 6
Technical Area 6, Building TA-6-5
Los Alamos National Laboratory (LANL)
Los Alamos
Los Alamos County
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Mike O'Keefe, Photographer, IM-9, LANL — March/April 2004

Photograph Number	Description
RB04-004-047	TA-6-5, south and east sides (front), facing northwest.
RB04-004-046	TA-6-5, north and west sides, facing southeast.
RB04-008-048	TA-6-5, room 101, facing west.

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Technical Area 6
Technical Area 6, Building TA-6-6
Los Alamos National Laboratory (LANL)
Los Alamos
Los Alamos County
New Mexico

Mike O'Keefe, Photographer, IM-9, LANL March/April 2004

Photograph Number	Description
RB04-004-004	TA-6-6, south side (front), facing north.
RB04-004-001	TA-6-6, south side (west half) (front), facing north.
RB04-004-002	TA-6-6, south side (central portion) (front), facing north.
RB04-004-003	TA-6-6, south side (east half) (front), facing north.
RB04-004-005	TA-6-6, east side, facing west.
RB04-004-006	TA-6-6, north side (east half) (back), facing south.
RB04-004-007	TA-6-6, north side (central portion) (back), facing south.
RB04-004-008	TA-6-6, north side (west half) (back), facing south.
RB04-004-009	TA-6-6, west side, facing east.
RB04-008-018	TA-6-6, room 100, facing west.
RB04-008-023	TA-6-6, room 100, facing east.
RB04-008-024	TA-6-6, room 101, facing southwest.
RB04-008-025	TA-6-6, room 101, facing northeast.
RB04-008-022	TA-6-6, room 102, facing southwest.
RB04-008-021	TA-6-6, room 102A, facing southeast.
RB04-008-020	TA-6-6, room 103, facing southwest.

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RB04-008-015	TA-6-6, room 104, facing southwest.
RB04-008-016	TA-6-6, room 104, facing southeast.
RB04-008-012	TA-6-6, room 105, facing southwest.
RB04-008-009	TA-6-6, room 106 looking down the hallway, facing west.
RB04-008-010	TA-6-6, room 106, facing northwest.
RB04-008-011	TA-6-6, room 106, facing southwest.
RB04-008-013	TA-6-6, room 107, east half, facing northwest.
RB04-008-017	TA-6-6, room 107, west half, facing east.
RB04-008-014	TA-6-6, room 109, facing south.
RB04-008-027	TA-6-6, room 110, facing southeast. Note: Room 110A on left and 110B on right.

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Technical Area 6
Technical Area 6, Building TA-6-7
Los Alamos National Laboratory (LANL)
Los Alamos
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Mike O'Keefe, Photographer, IM-9, LANL March/April 2004

Photograph Number	Description
RB04-004-010	TA-6-7, southwest and southeast (front) sides, facing north.
RB04-004-011	TA-6-7, northeast and northwest sides.
RB04-004-012	TA-6-7, interior, looking into firing chamber room on the northwest end, facing southeast.
RB04-008-007	TA-6-7, firing chamber room, facing southeast.
RB04-008-046	TA-6-7, control room, facing northwest.

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Technical Area 6
Technical Area 6, Building TA-6-8
Los Alamos National Laboratory (LANL)
Los Alamos
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New Mexico

Mike O'Keefe, Photographer, IM-9, LANL — March/April 2004

Photograph Number	Description
RB04-004-013	TA-6-8, south side (front), facing north.
RB04-004-014	TA-6-8, east side, facing west.
RB04-004-015	TA-6-8, north side, facing south.
RB04-004-016	TA-6-8, west side, facing east.
RB04-008-005	TA-6-8, room 101, facing north.
RB04-008-002	TA-6-8, room 102, facing west.
RB04-008-045	TA-6-8, room 103, facing south.
RB04-008-001	TA-6-8, room 103, facing south.

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Technical Area 6
Technical Area 6, Building TA-6-9
Los Alamos National Laboratory (LANL)
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Mike O'Keefe, Photographer, IM-4, LANL March/April 2004

Photograph Number	Description
RB04-004-020	TA-6-9, southwest (front) and southeast sides, facing north.
RB04-004-019	TA-6-9, southeast side, facing northwest.
RB04-004-018	TA-6-9, northeast side (back), facing southwest.
RB04-004-017	TA-6-9, northwest side , facing southeast.
RB04-008-043	TA-6-9, back side of room 102, facing southwest.
RB04-008-044	TA-6-9, looking at back wall of room 101, facing northeast.
RB04-008-053	TA-6-9, room 101, facing southwest.
RB04-008-054	TA-6-9, interior part of room 101, facing south/southwest. Note: concrete pier.
RB04-008-050	TA-6-9, room 102, facing northeast