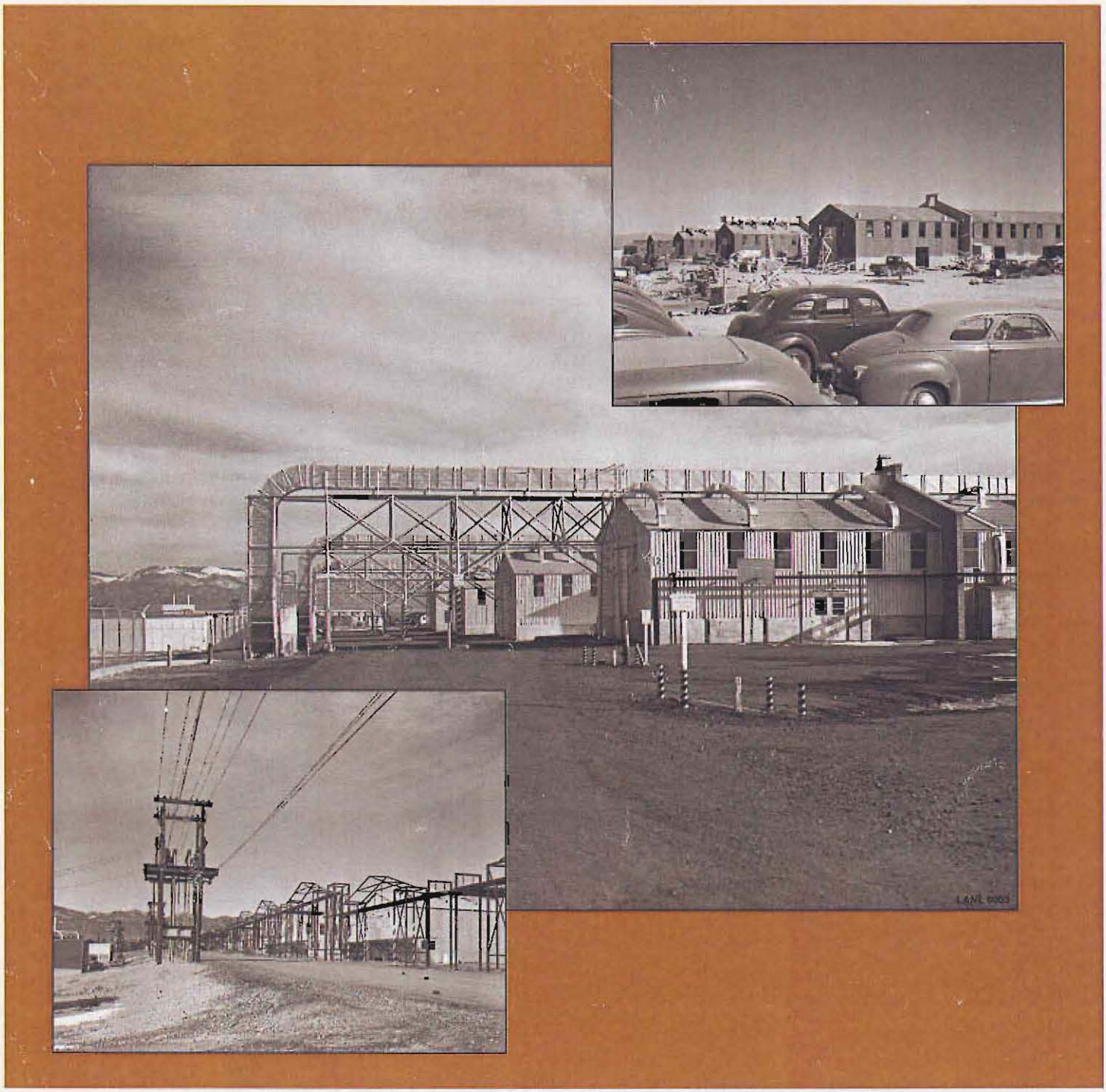
LA-UR-04-6856

Supplemental Historic Context of DP Site, Technical Area 21

Volume 1



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

LA-UR-04-6856

Supplemental Historic Context of DP Site, Technical Area 21

Historic Building Report No. 235

Los Alamos National Laboratory

September 24, 2004
Survey Nos. 664, 857, and 880

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

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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

LANL – Los Alamos National Laboratory

LASL – Los Alamos Scientific Laboratory

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

MOA – Memorandum of Agreement

NASA – National Aeronautics and Space Administration

NERVA – Nuclear Engine for Rocket Vehicle Application

NTS – Nevada Test Site

PCB – Polychlorinated Biphenyl

SHPO – State Historic Preservation Officer

TA – Technical Area

TNT – Trinitrotolulene

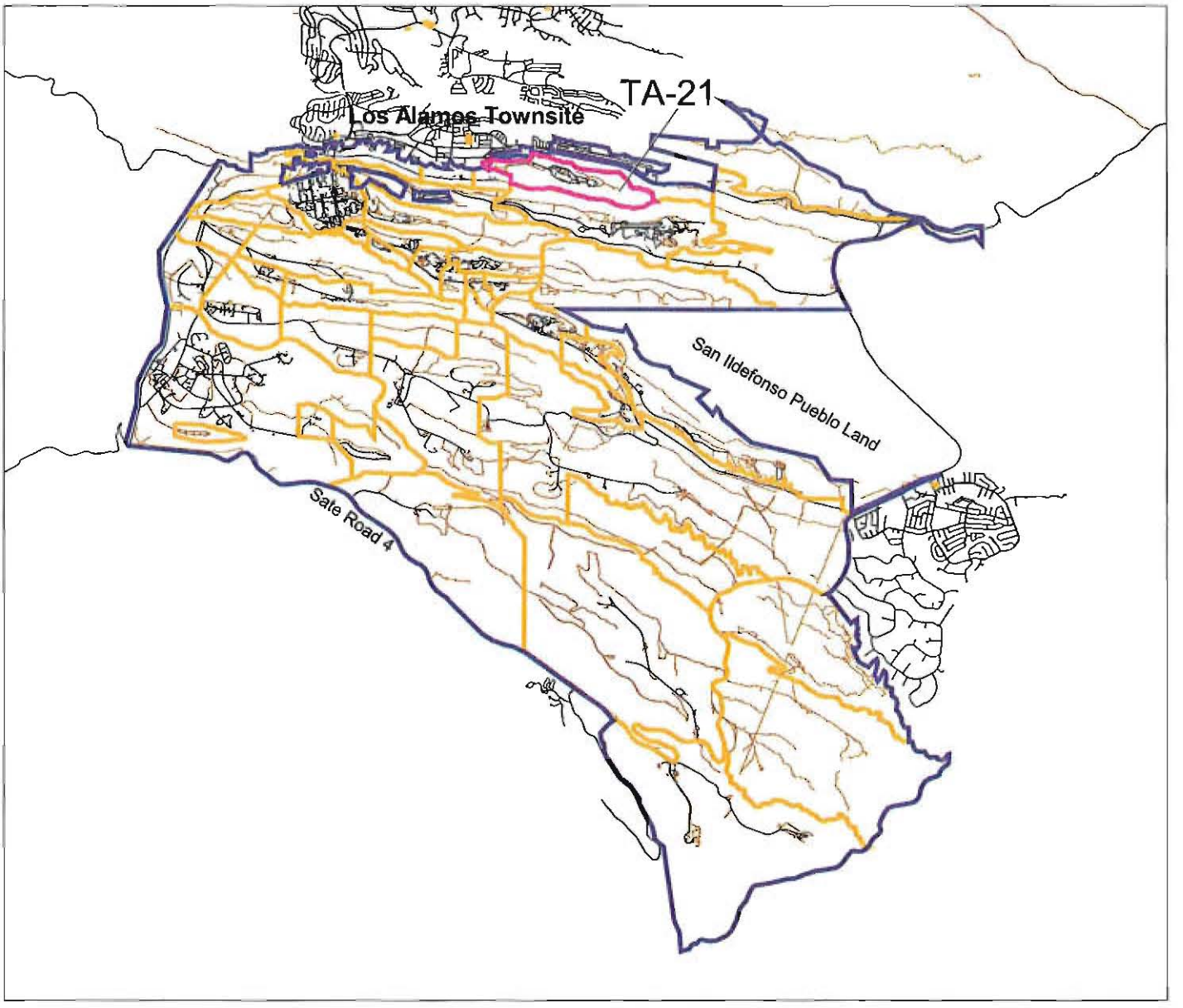
TSTA – Tritium Systems Test Assembly

INTRODUCTION

The following documentation fulfills the terms set forth in two memoranda of agreement (MOAs) 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 21, 30, 61, 254, and 286 at Technical Area (TA) 21, Los Alamos National Laboratory (LANL). As per the terms of the two MOAs, finalized on April 10, 2002 and November 13, 2003, this report includes a brief history and description of TA-21 with supplemental histories of buildings TA-21-21 and TA-21-61. Appendices to Volume 1 include maps showing TA-21's construction history and the location of eligible and non-eligible properties (Appendix A), oral interview information and memoir references (Appendix B), and a listing of building drawings on file at LANL for buildings 21, 30, 61, 254, and 286 (Appendix C). A set of indexed archival photographs of the MOA properties is included in Volume 2.

TA-21 is located to the east of downtown Los Alamos, New Mexico, on a spur of "Townsite Mesa" known as DP Mesa (Map 1). DP Site at TA-21 is one of LANL's earliest nuclear chemistry research areas (Figure 1). With its origins during the wartime Manhattan Project, this distinct complex of laboratory and support facilities was the location of research and development activities related to the processing of plutonium and uranium for the earliest Cold War atomic devices. Weapons components known as initiators were also developed at DP Site during the late 1940s and early 1950s. Later research at TA-21 included plutonium-238 fuels research, high temperature work in support of the nuclear rocket program (Project Rover), and tritium research.

The five TA-21 buildings discussed in this report (-21, -30, -61, -254, and -286) were determined eligible for the National Register of Historic Places under Criterion A or under both Criterion A and Criterion C in correspondence between LASO and the New Mexico State Historic Preservation Officer (SHPO) submitted on July 28, 2000. The initial recommendations for eligibility were contained in an indepth LANL report describing most of the buildings and structures located at TA-21 (*Historic Building Assessment for the Department of Energy Conveyance and Transfer Project, Volumes 1 and 2*, Report No. 178, LA-UR-00-1003).



Los Alamos
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1:110000

4000 0 4000 8000 12000 16000 Feet

900 0 900 1800 2700 3600 4500 Meters

N
W E
S

Tech Area 21
LANL Boundary
LANL Tech Area Boundary
Roads
Roaddirt
Parkpave
Parkdirt

TA-21

Map 1

(LANL, IM-9 Photography, #CN79-2907)

Figure 1. Aerial View of TA-21, DP Site, circa 1979

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 1993). Bradbury felt that the nation needed "a laboratory for research into military applications of nuclear energy" (LANL 1993:62). 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 1993). 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 (plastic-bonded explosives) and had begun to make improvements to the primary stage of a nuclear weapon (LANL 2001).

[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).

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).

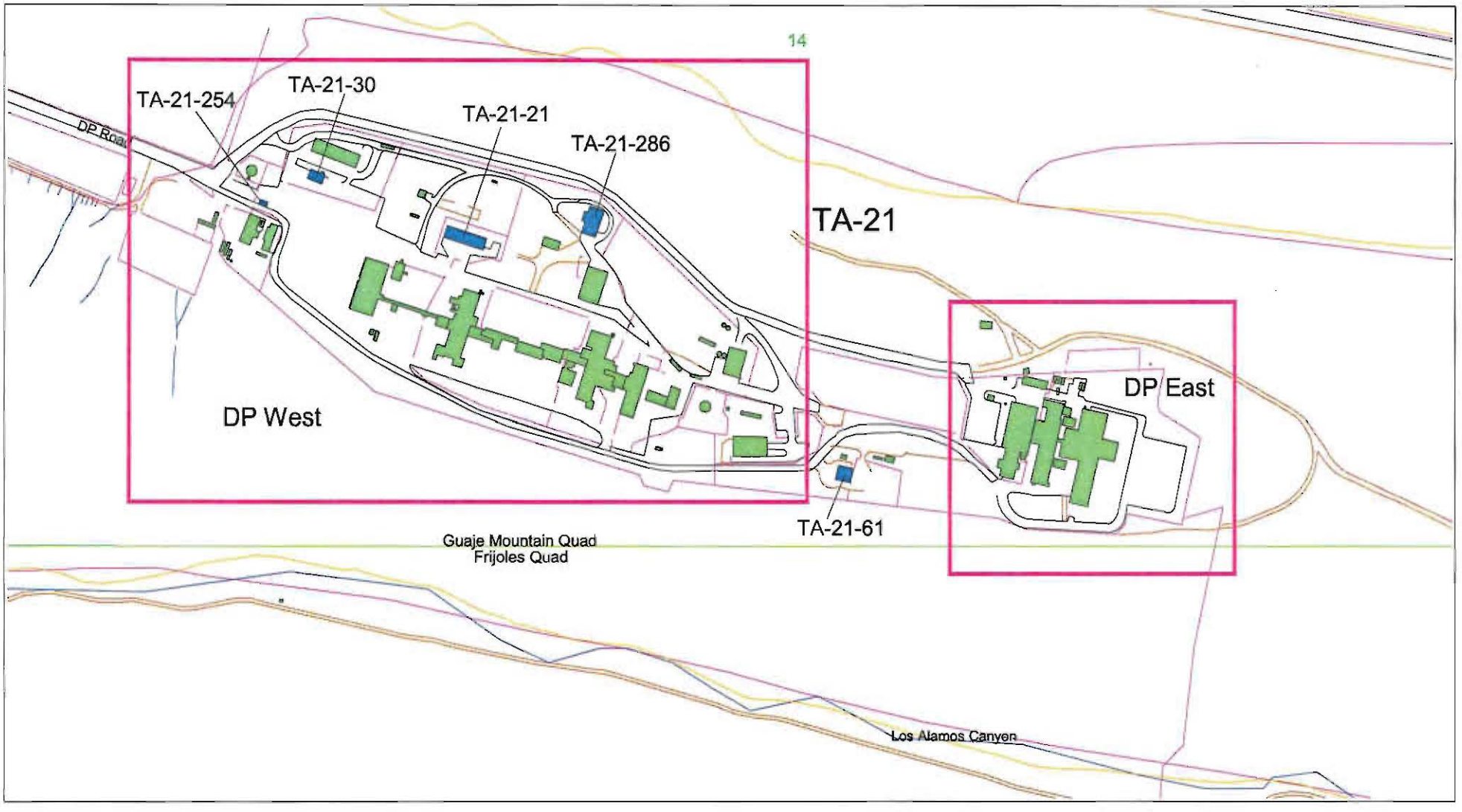
Technical Area (TA) 21, DP Site

TA-21 was the center of chemical and metallurgical production at Los Alamos for many years. The original facilities at TA-21 were constructed in 1945 and early research and development activities included plutonium and uranium processing. The buildings and structures are located within a geographically distinct, fenced laboratory area and date to the Manhattan Project and Cold War time periods at Los Alamos (1945–1990). Approximately half of the properties at TA-21 are 50 years old or older. The remaining

properties are associated with the late Cold War years at Los Alamos and are less than 50 years old, having been constructed in the 1950s, 1960s, 1970s, and 1980s. TA-21, known as "DP Site," has changed over the years, but the basic site plan remains. DP Site is divided into two separate areas (Map 2). The western area, historically dedicated to plutonium operations, is known as DP West (Figures 2 and 3). The easternmost grouping of buildings is known as DP East and was the site of polonium initiator[2] research during the 1940s and 1950s (Figures 4 and 5). A small complex of laboratory and storage buildings, centered around building TA-21-61, was once located in the central portion of TA-21 between the well-defined DP West and DP East areas (Figure 4). These properties were originally used in the 1950s for cryogenic[3] research that supported the development of the hydrogen bomb.

In later years, important research at DP West included plutonium-238 fuels research in support of space heat sources and the artificial heart program. Significant work conducted at the DP East facilities and the TA-21-61 complex involved high temperature research in support of Los Alamos's nuclear rocket program (Project Rover). Other DP East activities included superconductivity research and tritium and deuterium work at Tritium Systems Test Assembly (TSTA). (See McGehee and Garcia 1999 for a more detailed discussion of these historical themes.)

[2] Nuclear weapons rely on initiator devices to supply a source of neutrons that will quickly enhance the chain reaction at exactly the right moment.
[3] Cryogenics is the branch of physics dealing with very low temperatures.



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TA-21

TA-21 and MOA Properties

N
W E
S

Map 2

Techarea
Drainage
Township, Section, Range
USGS 7.5 Minute Quad
Trails
Roads
Roaddirt
Parkpave
Parkdirt
Fences
Buildings/Structures

1:5000

200 0 200 400 600 Feet

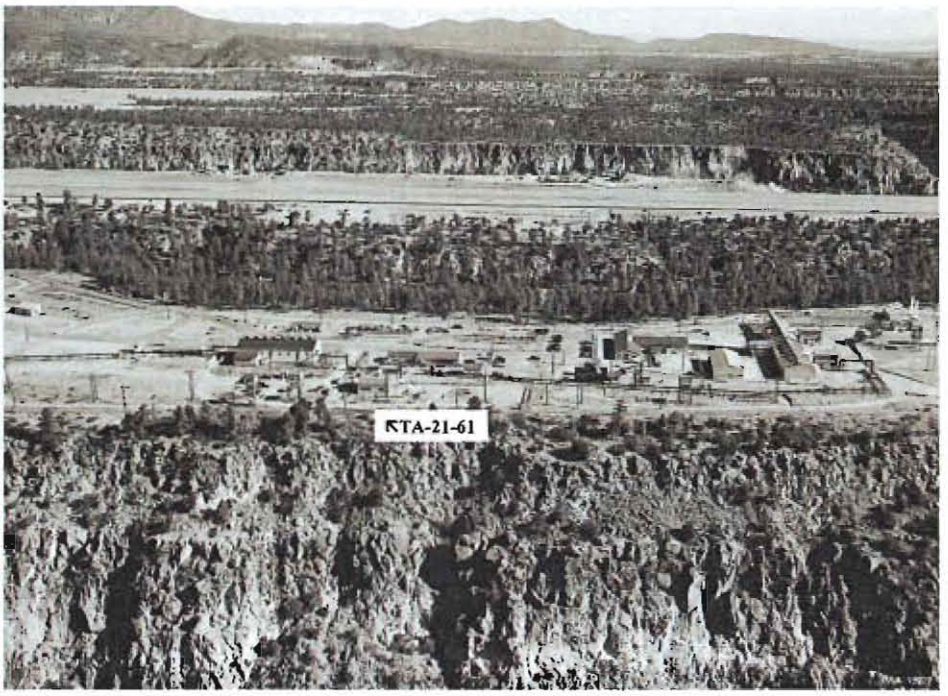
50 0 50 100 150 Meters

(LANL, IM-9 Photography, #15926)

Figure 2. DP West, circa 1950
Direction northeast

(LANL, IM-9 Photography, #RN91-220-013)

Figure 3. DP West, 1991
Direction southeast



(LANL, IM-4 Photography, #15927)

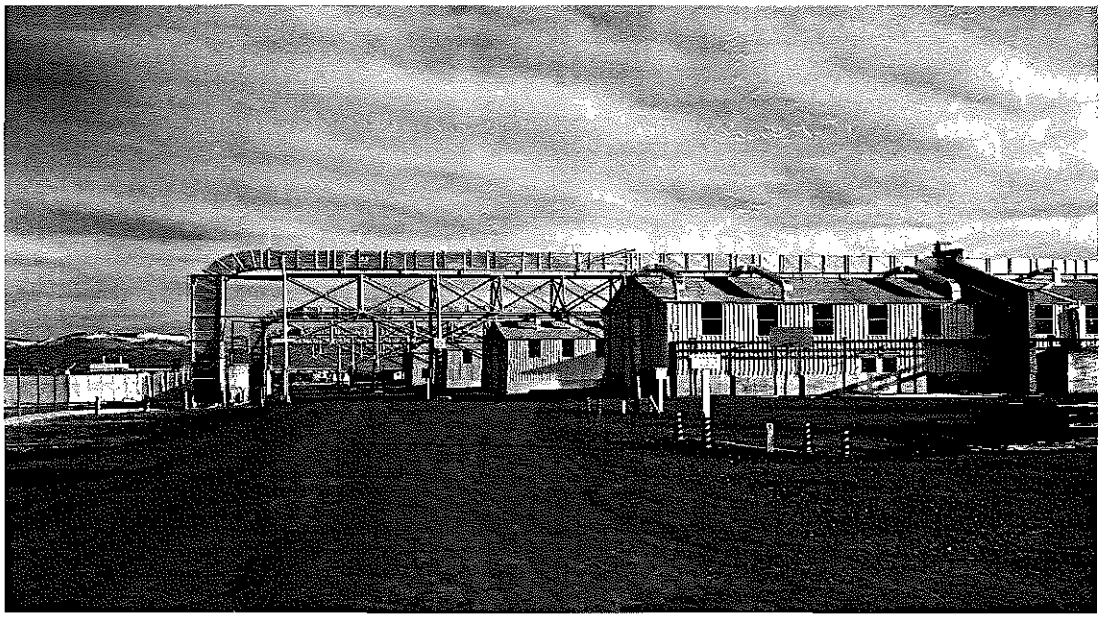
Figure 4. DP East, circa 1950
Direction northeast

(LANL, IM-9 Photography, #RN-220-015)

Figure 5. DP East, 1991
Direction southeast

DP Site Significance

The historical importance of this technical area comes from its contributions to weapons-related research and development after the end of World War II (the first plutonium facilities at DP Site were not occupied until the summer of 1945) (Figure 6). Fissile material used in the Trinity device and in the "Little Boy" and "Fat Man" bombs was not processed at DP Site; rather, the final processing of the uranium and plutonium used in these wartime devices was carried out in laboratory buildings located at the Main Technical Area (TA-1) in downtown Los Alamos. In fact, the world's first plutonium metal was processed in TA-1's "D" Building, located near Ashley Pond.



(LANL, IM-9 Photography, #6003)

Figure 6. Early TA-21 Plutonium Facilities

In September of 1945, the operations in D Building were moved to the newly constructed facilities on the west end of DP Site. Uranium and plutonium operations were transferred to the then state-of-the-art laboratory buildings. The work at DP West concentrated on the development of chemical and physical processes needed to purify fissionable material used to produce weapons-grade metal for nuclear weapons (McGehee and Garcia 1999).

Nitrate solution feedstock, primarily from Hanford, was purified to produce plutonium metal and metal alloys. Several processing steps were necessary to separate the plutonium and other actinides from the nitrate solution. Early research focused on the development of new purification and recovery techniques—purification byproducts were reprocessed to recover as much of the valuable plutonium and uranium as possible (LANL 1991).

DP East also began its operations in September of 1945. The new laboratory facilities on the east side of DP Site were smaller in scope than those at DP West. The buildings housed polonium and actinium processing operations, previously carried out in "H" Building at TA-1. This work with neutron sources was essential to the production of nuclear weapon initiators (LANL 1991).

SUPPLEMENTAL HISTORIES

TA-21-21

The very early years at DP Site, just at the end of World War II and before the AEC's involvement with the Laboratory in 1947, were extremely important to the nation's stockpile of critical atomic weapons components. Plutonium pit manufacture and storage activities, although later shifted to other AEC facilities, were centered at DP Site in the plutonium operations area. Uranium and plutonium metal resulting from the operations at DP West were secured and stored in the TA-21 vault building (TA-21-21) (LANL 1991) (Figures 7 and 8).

Immediately after the war, the Laboratory had to change the focus of its entire program. Improvement of the Fat Man design and development of new weapons designs were early post-war priorities (Ullrich 1998). Although there was an awareness of the need for a stockpile of usable weapons, the number of weapons ready for immediate use

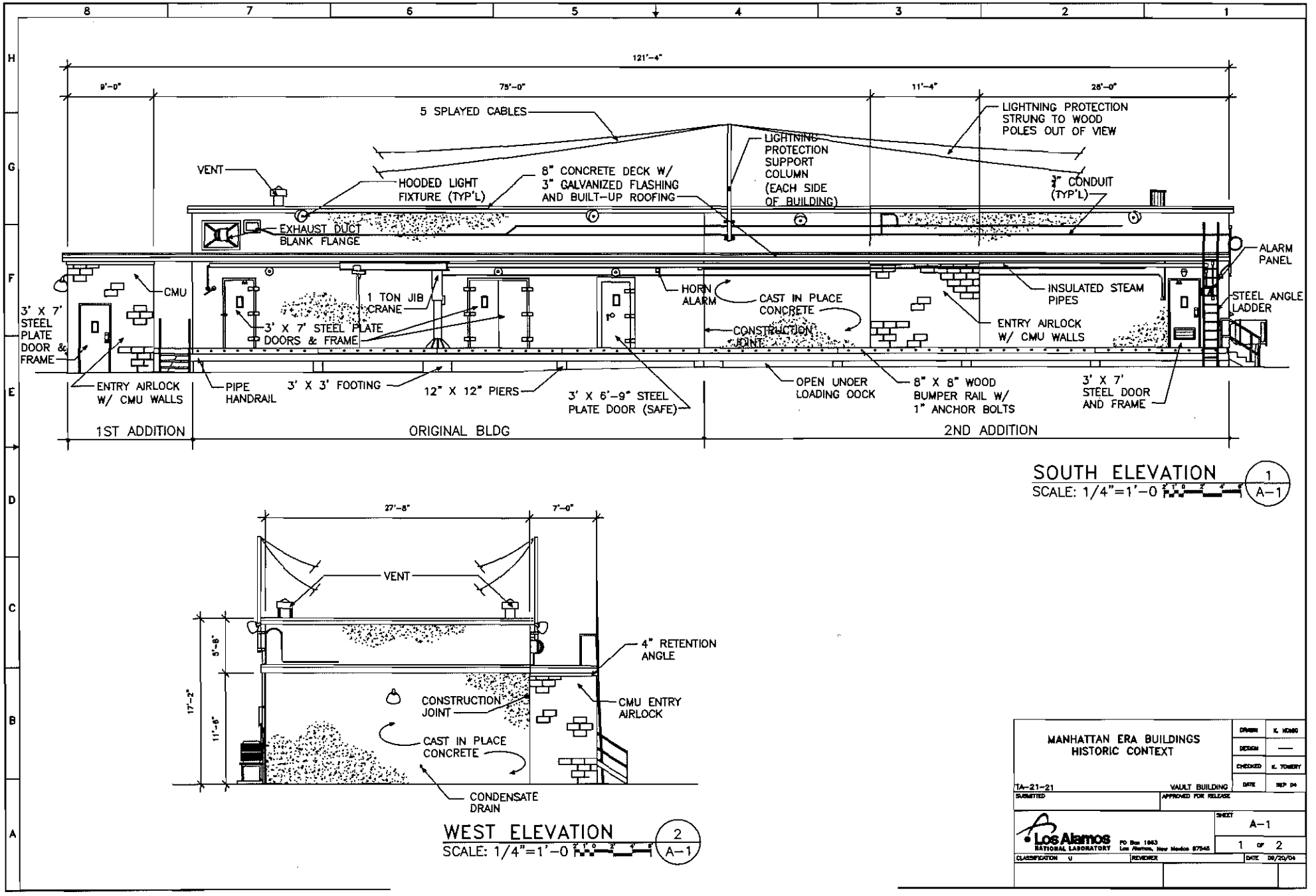


Figure 7.
TA-21-21, Elevations, 1 of 2

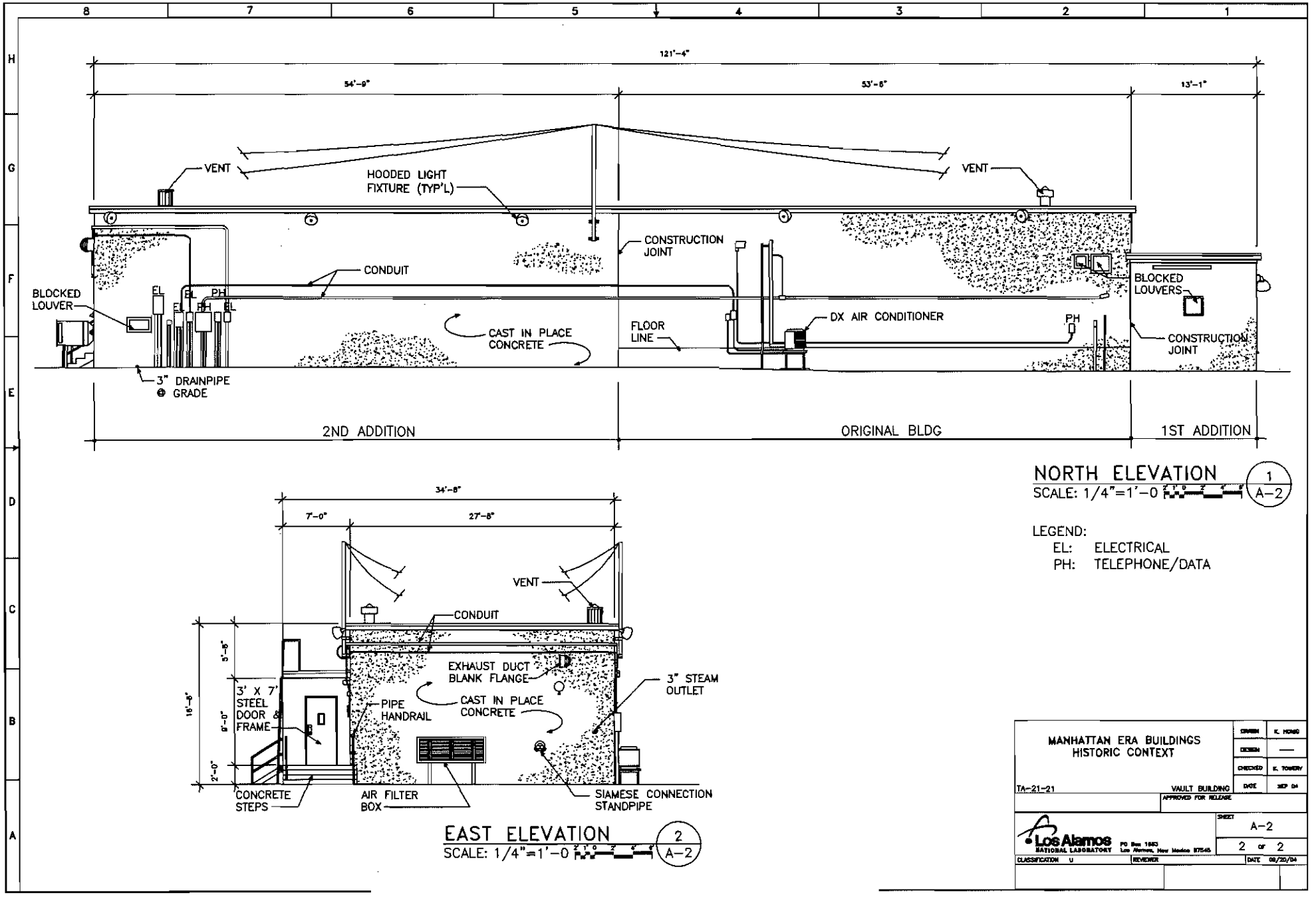


Figure 8.
TA-21-21, Elevations, 2 of 2

was quite small. In a 1983 interview, Los Alamos scientist Carson Mark discussed the stockpile situation in 1946.

> To the extent that the production plants produced material, it was converted, as near as could be managed, into devices that could have been used, had there been an occasion. But, as I mentioned earlier, there was a large slump in production at the end of '45. Consequently we were not making tens of weapons per month or anything of that kind. It was necessary to take two to Bikini Island for Operation Crossroads in the first half of '46, and at that time they were not a trivial fraction of the stockpile (LANL 1983:35).

In the spring of 1946, the Laboratory's Z-Division in Albuquerque was making some progress on testing, development, stockpile assembly, and bomb assembly. However, this group, the precursor of present-day Sandia National Laboratories, was the only organization other than the Laboratory's Crossroads group that was capable of bomb assembly (Ullrich 1998). In June 1946, components for only a few operational Fat Man bombs were in the U.S. nuclear weapons stockpile. Several other Fat Man devices were available but lacked initiators. The scarcity of ready weapons was directly linked to problems with the production of plutonium at Hanford. By late 1949, however, the atomic arsenal had increased dramatically.

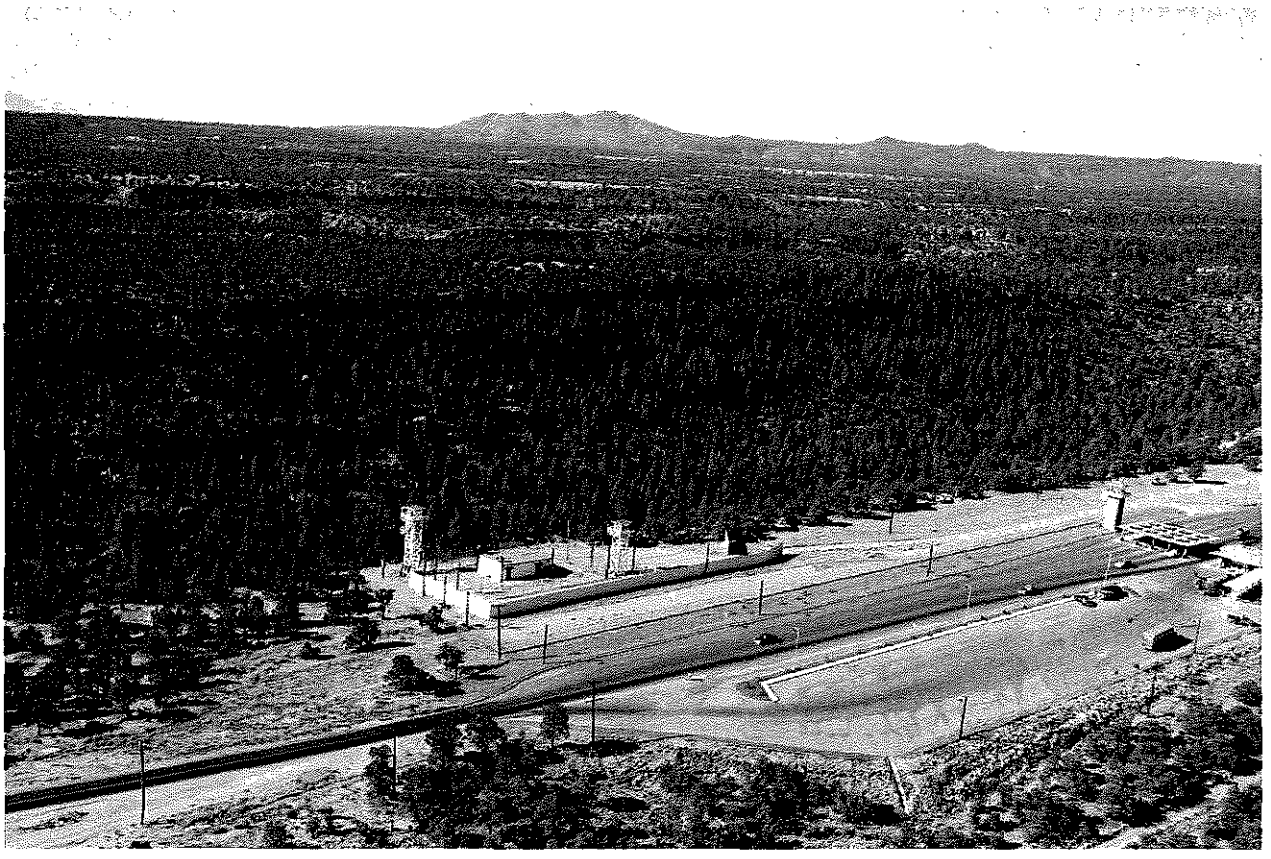
Another change from the wartime program at Los Alamos came about with the realization that the nation's usable stockpile would have to be stored for long periods of time. The weapons would ultimately be handled, not by scientists using select components in a controlled environment, but rather, by the military under field conditions. Issues such as quality control, parts interchangeability, personnel training, and the preparation of specifications and manuals suddenly became crucial to the post-war Laboratory.

Los Alamos Fissile Material Storage Vaults

Built in the spring of 1946, the TA-21-21 vault was designed to stockpile the first real quantities of weapons-grade fissile material being produced at the DP West facilities. At a cost of more than $40,000 (in 1940s dollars), the construction of this vault was of critical importance to the early Laboratory (Seeman 1945, Groves 1946). From the 1950s

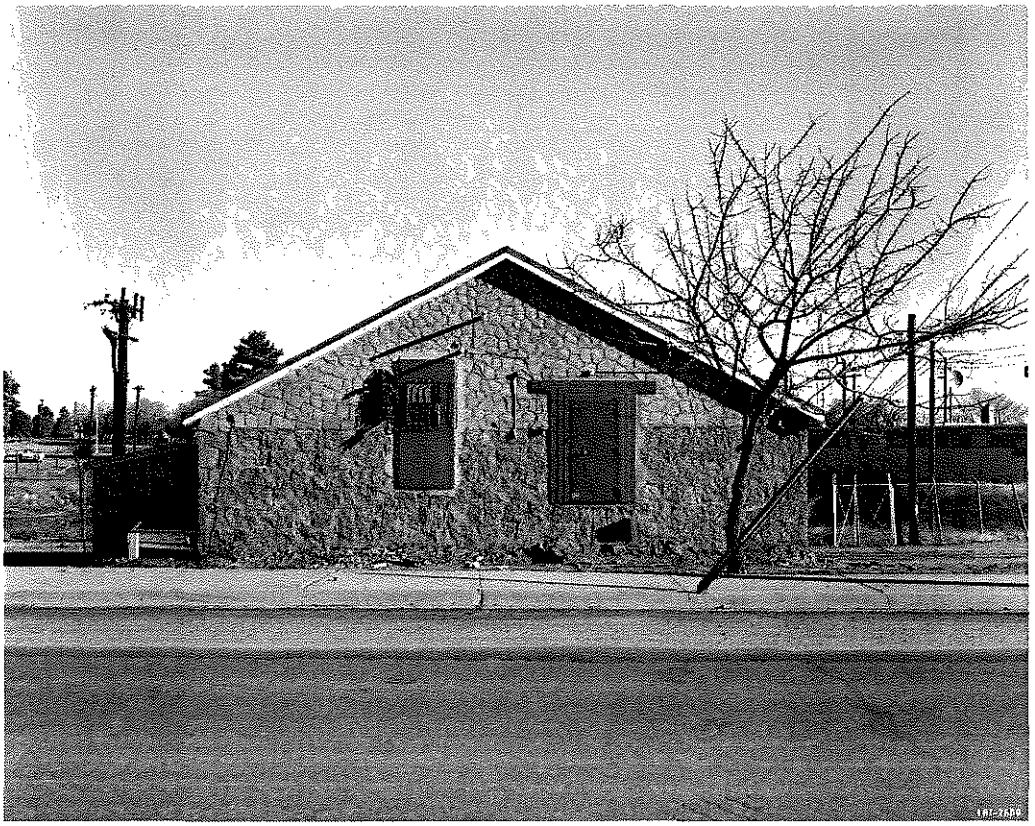
to the 1970s, with the construction of additional stockpile vaults around the country, the vault at DP Site (TA-21-21) was primarily used for the storage of new designs of plutonium and uranium pit components awaiting testing in the Pacific and at the Nevada Test Site.

Three principal storage areas were in use during the immediate post-war period: the TA-21-21 vault, a nearby vault at TA-26, and the original Ranch School icehouse at Ashley Pond in downtown Los Alamos (Figures 9 and 10). The TA-26 vault complex was built on the same contract as TA-21-21 and was completed within the same two-month period (April-May 1946). TA-26 was located along the main road to Los Alamos, east of the airport area near the East Gate. Facilities included several standard guard towers and a concrete vault for storing nuclear material.



(LANL, IM-9 Photography, #15924)

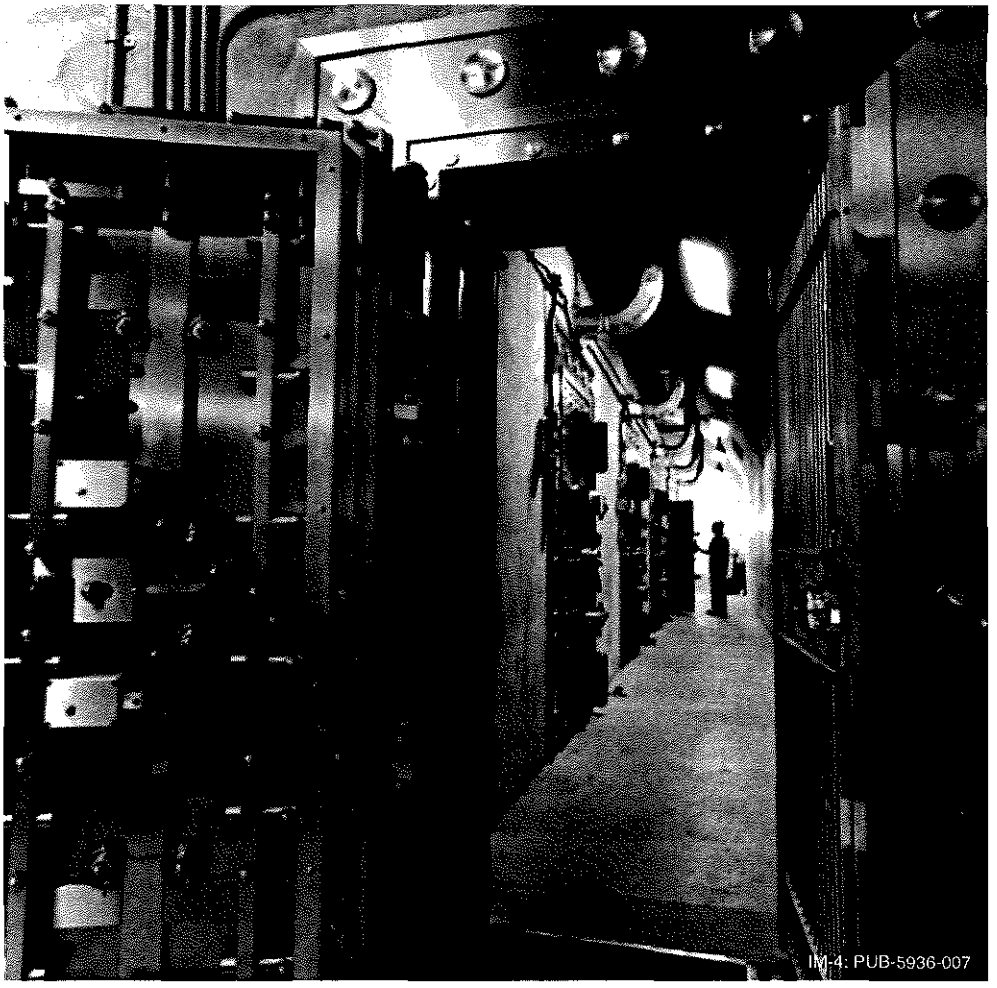
Figure 9. TA-26 and the D Site Vault, circa 1950



(LANL, IM-9 Photography, #LAT-2689)

Figure 10. The Original Icehouse Building

At TA-21, unprocessed fissile material from Hanford (plutonium nitrate in solution) was originally stored in the TA-21-21 vault, but was later stored in building TA-21-286. After 1949, finished plutonium and uranium weapons components prepared at TA-21 were also stored in the TA-41 tunnel and vault complex (TA-41-1). The new tunnel and vault at TA-41 took almost a year to build (it was under construction from June 1948 to May 1949). It was designed to have controlled humidity (around 50 percent) and temperature (between 40 and 60 degrees) with redundant sources of light and power, including an emergency battery supply and a standby diesel-powered electric generator. The tunnel and vault area, along with associated security features and a new guard station, cost about $500,000 to build. The tunnel extends approximately 250 feet into the north side of Los Alamos Canyon. The tunnel and vault were built to replace the D Site Vault at TA-26 and also to take on the storage functions of the original icehouse at the pond (Figure 11) (McGehee *et al.* 2004).



(LANL, IM-9 Photography, #PUB-5936-007)

Figure 11. Main Vault Door and Interior Walk-In Vaults

TA-21-61

TA-21-61 played an important role in the origins of the United States thermonuclear weapons program. Cryogenic research and development relating to high-pressure gas systems was carried out in this laboratory building—research that directly supported Early Cold War thermonuclear tests in the Pacific. In later years, the building was used by group CMB-3 for high temperature chemistry work that supported Los Alamos's nuclear propulsion program, specifically contributing to the Kiwi reactor series (LASL Community News 1960, LANL 1991).

Operation Greenhouse (A Test of the Fusion Principle)

In January of 1950, following swiftly on the heels of the Soviet Union's first atomic test, President Truman approved the development of the hydrogen bomb. Truman's decision led to a full-scale program to develop the first thermonuclear device, research that had already begun at Los Alamos during the wartime years with Edward Teller's "Super" bomb research (LANL 2001). In 1951, Los Alamos directed "Operation Greenhouse" in the Pacific, the fourth post-war atmospheric test series. The George Shot, tested at Enewetak on May 9, 1951, produced the first thermonuclear reactions. George proved the feasibility of radiation implosion of a secondary stage and demonstrated the successful ignition of thermonuclear fuel. The Item Shot, fired on May 25, 1951, was the first successful demonstration of deuterium-tritium "boosting," the enhancement of fission weapon performance by making use of neutrons released as part of the thermonuclear reactions.

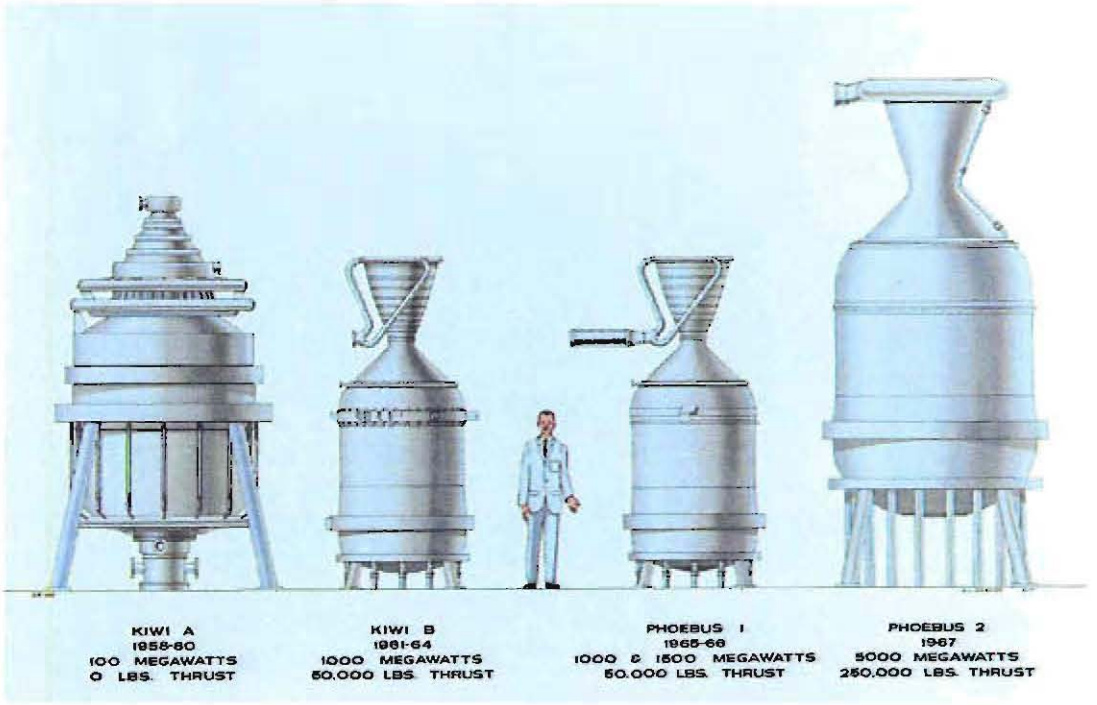
The Greenhouse series was a successful way station in the development of thermonuclear weapons, leading directly to the first thermonuclear test shot, "Mike," in 1952 (LANL 1993). Activities conducted at TA-21 supported Operation Greenhouse's "test of thermonuclear principle," in which implosion devices would be boosted with deuterium and tritium. A key component of these first thermonuclear tests was the development of high-pressure gas systems. These systems, based on technology developed at TA-21, produced the deuterium used in the Greenhouse test series.

Project Rover, Kiwi Fuel Elements, CMB-3, and High Temperature Chemistry

The Laboratory, AEC, and NASA started Project Rover in 1955. The goal of this program was to build the first nuclear reactor for use in rocket propulsion. The reactor would be incorporated into a rocket engine or NERVA (Nuclear Engine for Rocket Vehicle Application). Nuclear space rockets would be used to launch large manned or unmanned payloads. The basic Rover reactor design involves passing hydrogen gas through a reactor core. In the process, the hydrogen is heated to extremely high

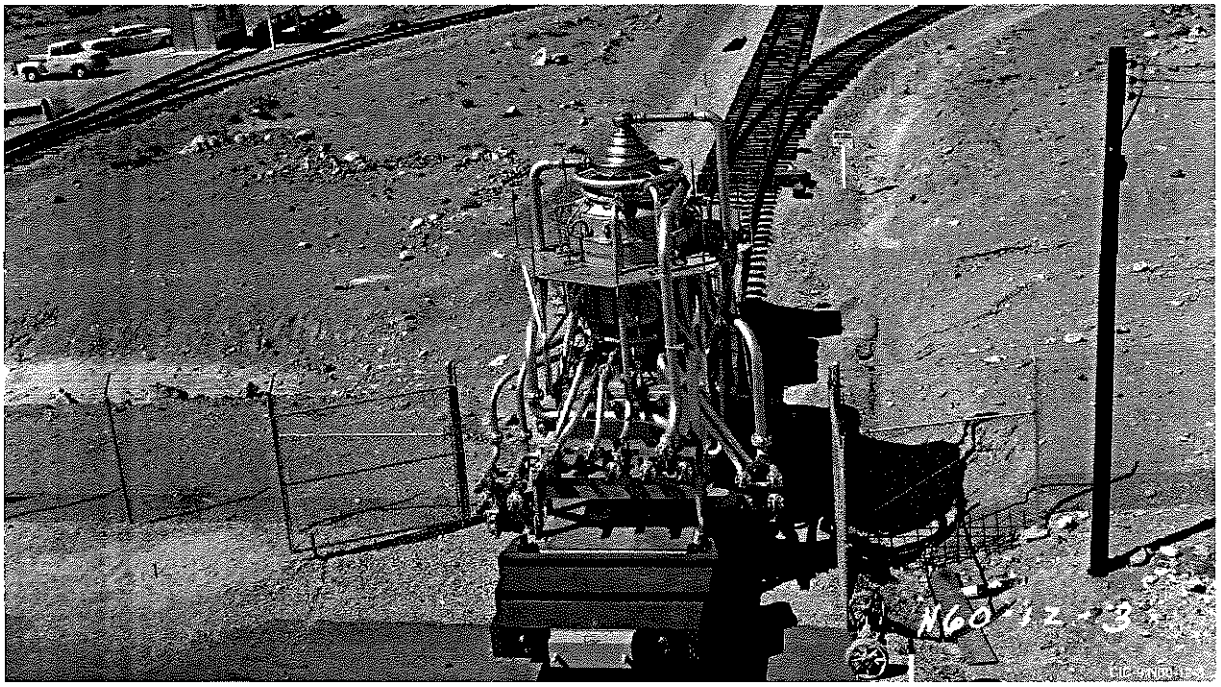
temperatures. When the expanded hydrogen gas exits the reactor core at a high velocity, propulsion occurs (McGehee and Garcia 1999).

Los Alamos was assigned the technical and scientific details. Construction and initial low-power testing of the Rover reactors was carried out at TA-18. The reactors were then disassembled and shipped to NTS for complete testing at the Nuclear Rocket Development Station. In addition to the work at TA-18, fuel element work was conducted at TA-21 and TA-46. Project Rover had two phases of reactor development and testing—Kiwi (1959 to 1964) and Phoebus (1965 to 1972) (Figures 12 and 13). The first reactor, Kiwi A, was tested in 1959. "Kiwi" reactors were named after the New Zealand flightless bird since these reactors were never meant to fly. The Kiwi A uranium-graphite reactors were of a 100 MW design. Later Kiwi B reactors were of a 1000 MW design and were the first Rover reactors to be run with liquid hydrogen. The "Phoebus" reactor was named after Phoebus Apollo, the Greek god of light. Although actual operating times were short, the Phoebus reactors developed very large power levels, comparable to the power generated by Hoover Dam (McGehee and Garcia 1999).



(LANL, IM-9 Photography, #NN66145, drawing used in January 1967 Atom article, Vol. 4, #1)

Figure 12. Relative Sizes of the Project Rover Reactor Series, from Kiwi to Phoebus



(LANL, IM-9 Photography, #N60-12-3, photo from November 1964 Atom artiele, Vol. 1, #11)

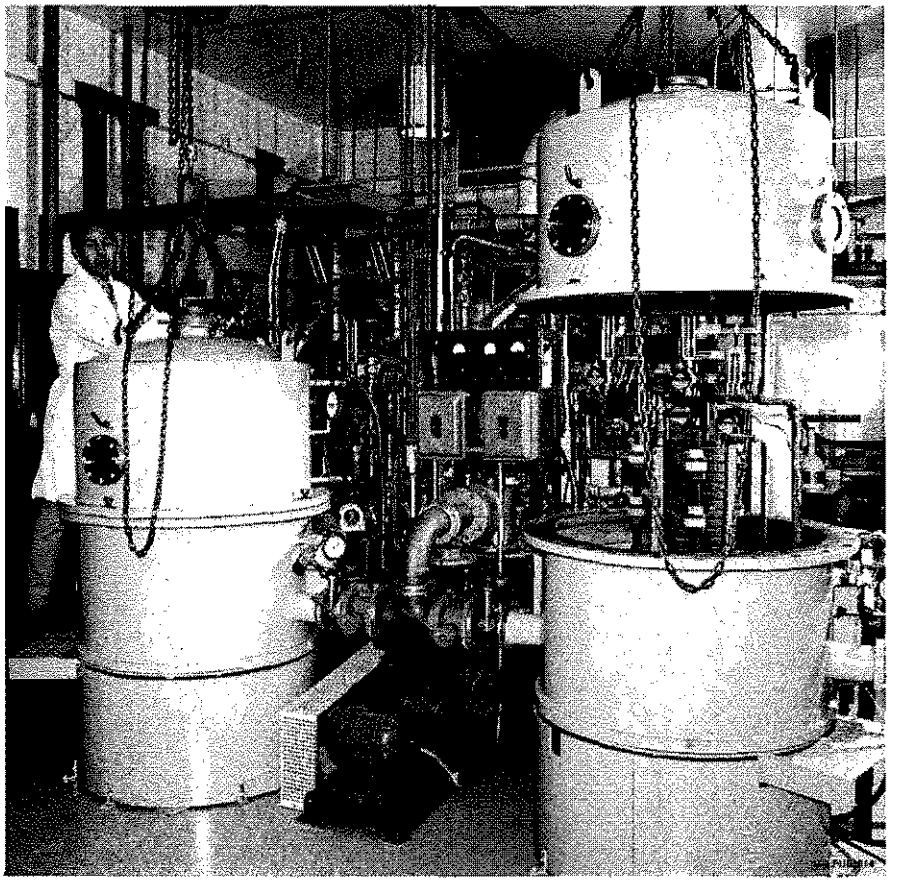
Figure 13. A Los Alamos Kiwi Reactor at the NTS Nuclear Rocket Development Station

The design of the reactor's fuel element was a long process, one that used a lot of the Laboratory's Project Rover resources. Fuel elements contain fissile material and are the central part of the reactor core. The fissile material is usually mixed with a matrix material and then coated to prevent corrosion. Several different types of fuel elements were developed: one was a mixture of uranium dioxide with metal and another was a mixture of uranium carbide and graphite. The reactor fuel elements were designed with holes in them for hydrogen to pass through. The holes were coated with high-temperature carbides for protection against the intense heat of the reactor (McGehee and Garcia 1999).

Scientists at DP Site were key in developing coatings to protect Rover fuel elements from the corrosion caused by hydrogen. Fuel elements were coated with niobium carbide, which helped reduce the corrosion. At DP East, CMB-3 researchers improved the protective coating, established controls for the thickness of the coating, and used vapor deposition techniques with several different materials in addition to niobium. A mass spectrometer was used to study the thermodynamic values of these materials when exposed to high temperatures (McGehee and Garcia 1999).

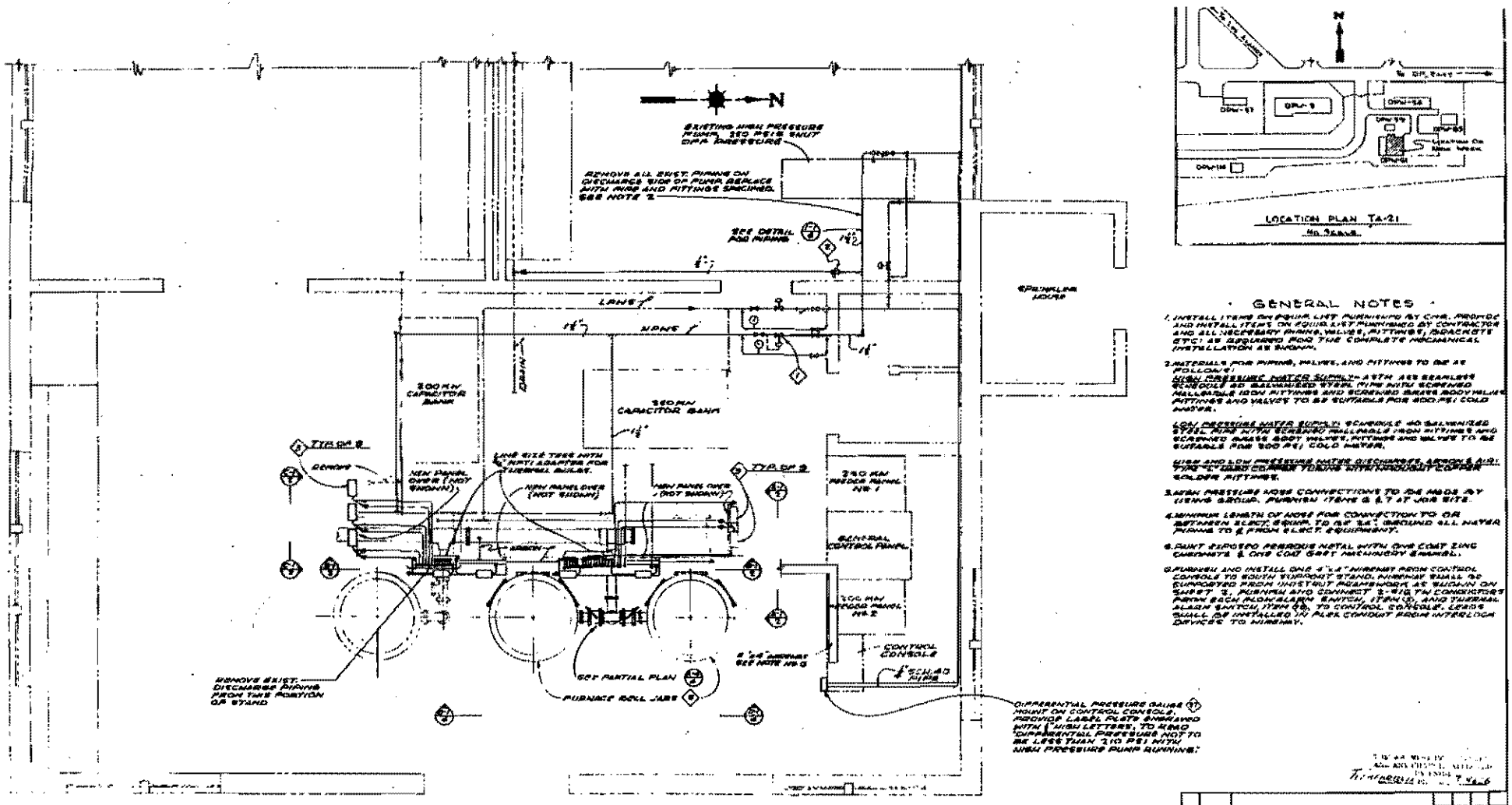
> Since high temperature chemistry research is a relatively new field, CMB-3 scientists are looking at materials in a fundamental way to see how they behave when hot....Part of the fundamental approach includes such basics as the determination of melting points, phase diagrams, how materials vaporize, what is vaporized, effects of vapor pressures, and basic thermodynamic properties....The emphasis at DP East since 1955 under co-group leaders Dwayne Vier and Melvin Bowman has shifted to high-temperature chemistry research, dealing in general with temperatures in the 1500° C to 3500° C range....Much of CMB-3's work has been devoted to investigating materials of potential and immediate interest in the LASL nuclear rocket program where extremely high temperatures are involved. In a related vein, CMB-3 does part of the development and production work on the fuel elements for the Kiwi nuclear engines (LASL Community News 1960:4).

At TA-21-61, special "bell jars" were used for high temperature development and production work with fuel elements for Kiwi nuclear engines (Figures 14 and 15).



(LANL, IM-9 Photography, #PUB2814)

Figure 14. CMB-3 Employee Working with "Bell Jars" at TA-21-61



ENG-C 18465 (sheet 1 of 4)
Propulsion Program Work DP Site
Buildings DPW-61 & DPW-65, TA-21
Mechanical Plan- Bldg. DPW-61
February 27, 1958

Figure 15.

LOS ALAMOS SCIENTIFIC LABORATORY
ENGINEERING DEPARTMENT
UNIVERSITY OF CALIFORNIA — LOS ALAMOS, NEW MEXICO
PROPULSION PROGRAM WORK
DP SITE
MECHANICAL PLAN - BLDG. DPW-61
BLDGS. DPW-61 & DPW-65 TA-21
2-27-58
ENG-C18465
PHASE-B

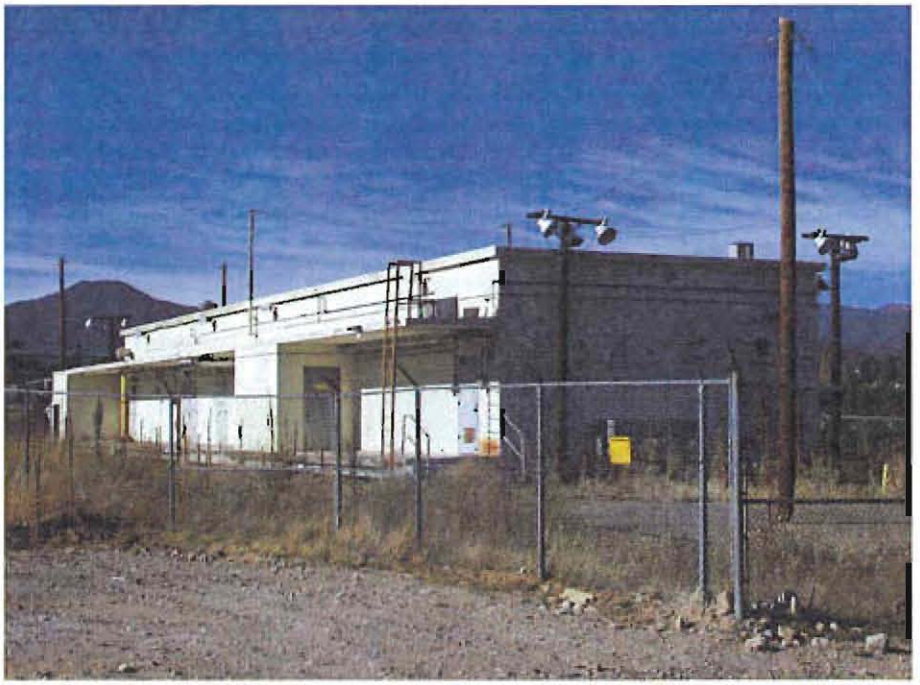
Project Rover continued for 17 years until, faced with concerns about the cost of the space program, the project was phased out in 1972. The program's experimental objectives were successful, however, and NASA's deep space missions have benefited from technology developed by Project Rover scientists (McGehee and Garcia 1999).

DESCRIPTIONS OF MOA PROPERTIES

TA-21-21

Original Name: DP-21 (Storage Vault)

Construction Date: 1946



(LANL, RRES-ECO/HREPC, #PIC021-SE)

TA-21-21

Building TA-21-21 was constructed as a vault for special fissile material processed in the main plutonium facility at TA-21. Uranium and plutonium metal produced in Buildings TA-21-2, -3, -4, -5, and, later, -150 was secured and stored in this vault.

TA-21-21 is a 2,967-sq-ft reinforced concrete building, void of window openings, with a flat roof. The roof is constructed of multi-ply composite roofing material (felt, tar, and gravel). There is galvanized steel flashing around the roof. The building has a loading dock and awning around most of its south side (the front of the building). There are steps leading up to the dock on both the east and southwest ends. There are no windows on any side of this building. On the south side of the building there are four single metal pedestrian doors and one set of double metal pedestrian doors. Two of the doors lead into the equipment rooms at either end of the building. Another single door leads into the

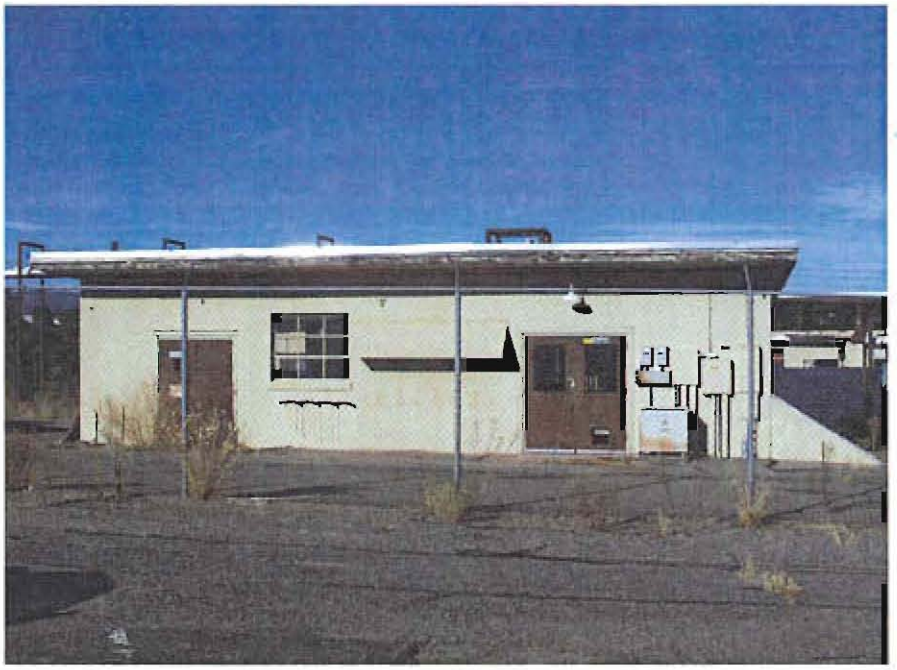
airlock room built in front (to the south) of the mid-1946 room addition, on the west end of the building. The fourth door leads into the empty container storage room. There are pedestrian doors on the east and west sides of the airlock that lead into the hallway of the eastern portion of the building (added in 1959-1960). There are interior combination lock vault doors in the main hallways of both the western and eastern portions of the building. There is also a rail and hoist in the unloading room. A metal ladder, attached to the building, provides access from the ground to the roof. Conduits carrying electrical service for the building are attached to the outside walls.

The original building had eight rooms—an equipment room, unloading room, finished product storage rooms, nitrate storage room, and a room for empty containers—and several hallways. In mid-1946, a room was added to the west side of the building—its entrance and floor are at ground level (the dock does not extend in front of this room). Additional space was added to the east side of the building almost doubling its storage capacity in 1959-1960. Six storage rooms, an equipment room, and a hallway were added. The loading dock on the south side of the building was also extended. Two additional pedestrian doors were added, one of which is a combination lock vault door similar to the other combination lock type doors on the original portion of the building. There are no windows in this addition. In 1972, airlocks (rooms enclosing the exterior vault doors) were planned around the entrance to the new storage rooms on the east end of the building and around the entrance to the 1946 addition on the western end of the building. The proposed reinforced concrete masonry block airlocks were added in 1973, and the dock and stairs on the western end of the building were reconfigured to face the south instead of the west. The original location of the stairs was filled with concrete to the level of the dock. There were plans, made in 1977, to enlarge the airlock on the eastern portion of the building creating two additional rooms on the loading dock area. However, based on the most recent floor plan of the building (1983), this addition was never constructed.

TA-21-30

Original Name: DP-30 (Paint Shop)

Construction Date: 1946



(LANL, RRES-ECO/HREPC, #PIC030-S)

TA-21-30

Building TA-21-30 originally functioned as a paint shop for DP Site activities. Paint and supplies were stored in this building, and monitoring instruments used in the laboratory buildings by the radiological technicians were sometimes painted in this building. The building was most recently used as a maintenance shop.

TA-21-30, demolished in 2002, was a utilitarian, functional concrete and metal lath building with concrete slab, footings, and stem walls. The exterior wall treatment consisted of a plaster and stucco covering. TA-21-30 had a flat roof sloped from the south to the north for drainage purposes. The roof overhung the building four feet in front (less on the other three sides of the building). The roof was a built-up design with gravel. There were several fume hood exhaust vents located on the roof above the spray room. The second room in the building was designated as an office and storage room. All the windows in the building were identical awning-type windows with nine individual

glass panes. The south elevation of the building had two sets of metal double doors and one window; one set of the doors was wider for the movement of equipment. The south elevation also contained one awning-type window with nine individual glass panes. The north elevation had two windows, both of which were located on the west half of this elevation. A small room extending to the north was located on the east half of the north elevation. This room had a single pedestrian doorway with several concrete steps leading down to the ground level. The west elevation had two windows and the east elevation had only one.

The small room on the eastern half of the north elevation of the building was added sometime between 1946 and 1963. In 1985, modifications were made to the cooling and vent system in the spray room. New ducts from the vent hoods were installed through the ceiling to the roof of the building. New fume hoods were installed in 1986.

TA-21-61

Original Name: DPW-61

Construction Date: 1950

(LANL, RRES-ECO/HREPC, #P1C061-NW)

TA-21-61

TA-21-61 was originally built for use as a cryogenics laboratory. Early facility drawings show the presence of fume hood and sinks. In 1958, the nuclear propulsion program (Project Rover) converted the building for high temperature chemistry work (LANL 1991) and large furnaces were installed in the eastern portion of the building. Beginning in 1978, the building and an earthen pad located to the east of the building were used to store capacitors and transformers containing polychlorinated biphenyl (PCB) oil, PCB-contaminated pumps, and drums of PCB-contaminated waste oil, solvents, and trash. Use of the bare earth pad for storage of PCB-contaminated materials continued until October 1981 when part of the area was paved with asphalt and bermed. TA-21-61 and the asphalt storage pad continued to be used for storage of PCB-contaminated materials until August 1989 when the PCB storage area was moved to TA-54-39 (LANL 1991:14–16).

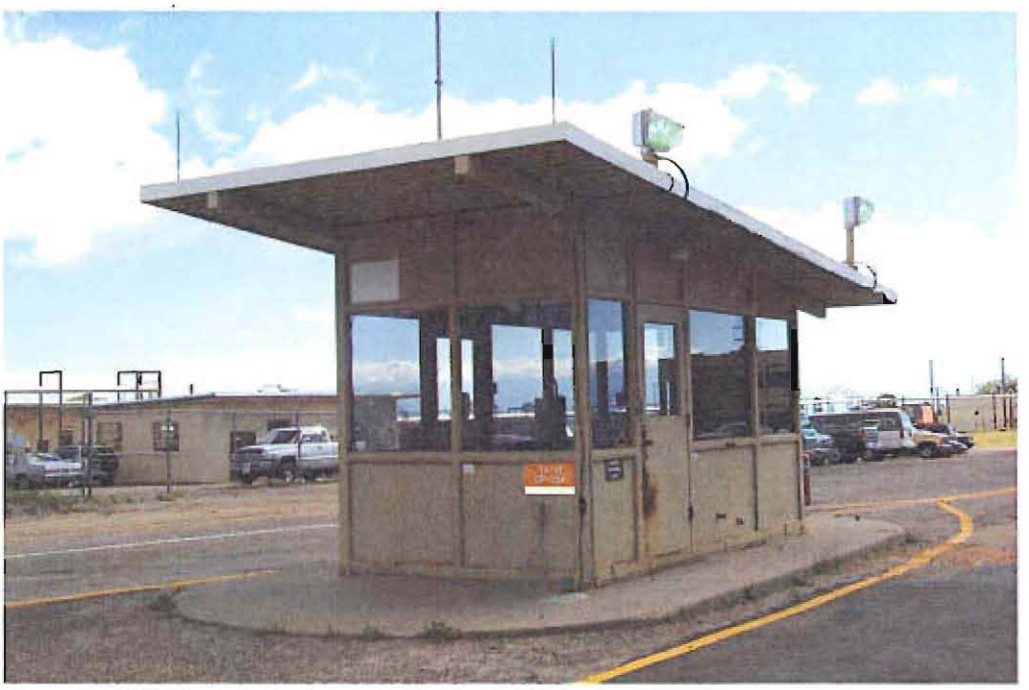
Demolished in 2002, building TA-21-61 was an industrial, pre-engineered, steel frame design with ribbed metal siding, a concrete slab foundation, and a pitched roof. The roof was constructed of corrugated metal and several vents penetrated the roof from the interior. The north elevation had a metal lean-to with a pedestrian door attached to the center of this façade. There were two metal awning windows to the east of the lean-to and four windows to the west. A louver vent was located at the western end of the north elevation. On the west elevation there were three sets of metal double pedestrian doors. The center set of doors had two-paned glass windows in the top half of each door. An exterior metal louver vent, concrete pad, and concrete loading dock were also located on this side of the building. The loading dock had several steps leading up to it from the ground surface. There were no doors on the south elevation, only windows: four metal awning windows towards the east end and three towards the west end. The east elevation of the building had one set of metal double pedestrian doors and two metal awning windows on each side of the doors. A series of copper lines, running horizontally on the outside walls, led into the building; these lines may have been used to provide laboratory gases or liquids into the building. Miscellaneous mechanical equipment, appearing to have been disconnected and left in place, was located on the roof.

Over the years, several interior walls and doors were relocated, and, in 1952, a small lean-to with a set of double doors was added to the south elevation of the building. A hand-operated hoist and trolley, located in the southeastern portion of the building, was removed and replaced with a new power operated hoist and trolley in 1962.

TA-21-254

Original Name: DP-254

Construction Date: 1966



(LANL, RRES-ECO/HREPC, #P0001117)

TA-21-254

Building TA-21-254 functioned as a guard station for TA-21 until in the mid-1990s when the Laboratory relaxed the security perimeter at TA-21. TA-21-254 was a 113-sq-ft pre-engineered, industrial style, steel-tube frame structure with glass and cemesto panels.

The building's foundation was a reinforced concrete pad and footings. The walls were steel-tube frame column and beam frame with cemesto in-fill panels and solar, gray tint-glass window panels. TA-21-254 was situated on an "island" pad between the two traffic lanes for entering and exiting the TA-21 facility. The building had a sloped roof made of metal decking and built-up roofing material. The roof overhung the building on all sides. There were four floodlights mounted at each corner on the roof. An antenna was located on the roof, towards the front or west end, and a restroom was located on the inside of the

building. There were two side-by-side windows and four cemesto panels (one above and below each window panel) located on the west elevation. A hollow metal pedestrian door with a wire glass window was located on the north elevation. There were also three glass window panels and seven cemesto panels on this elevation. The east elevation was comprised of three cemesto panels, above which three glass window panels were located. The south elevation had a hollow metal pedestrian door with a wire glass window, three glass window panels, and seven cemesto panels. Building 21-254 was removed in 2002.

TA-21-286

Original Name: DP-286 (Hot Storage Replacement Warehouse)
Construction Date: 1968

(LANL, RRES-ECO/HREPC, #PIC286-E)

TA-21-286

TA-21-286 served as a "hot" storage replacement warehouse (plutonium storage vault) at the TA-21 plutonium facility. Some areas of the building were used to store plutonium in solution. TA-21-286 is a pre-engineered, rigid steel frame building with a pitched roof and concrete masonry unit addition on the west elevation. The building is approximately 3,338 sq ft in size.

The foundation is a concrete slab, with concrete piers and footings. The exterior walls are made of steel siding and galvanized wainscot. The interior surface of the building walls consists of blanket insulation, covered by gypsum board. The building has seven rooms: six storage rooms and one small mechanical room. The rooms can only be accessed from exterior entrances, as there are no interconnecting doorways between rooms. Six of the seven interior rooms are designated by 8-ft chainlink fencing material. The seventh room is delineated by metal wall studs sheathed in gypsum board. TA-21-286 has a pitched galvanized steel roof with galvanized flashing. There are roof canopies on the center portion of the building, covering the docks on both the east and west elevations. Steps leading up to the docks, which are 2 ft 6 in. above the ground surface, are located at the south end of the docks. The north elevation is devoid of doors and windows. The east elevation has a concrete dock area along the center portion of this side and three sets of hollow metal double pedestrian doors. The south elevation is also devoid of windows and has only a single pedestrian door that leads to the small mechanical pit room. An approximate 300-sq-ft concrete masonry unit addition is located on the west elevation. This room functions as an air lock for two of the six internal storage rooms; it encloses two of the three double door entrances on this side of the building. Entrance into the air lock is by double doors on the south side of the addition.

In 1973, the concrete masonry unit and rebar addition mentioned above was added to the west elevation of the building on the concrete dock. Also at this time, the chainlink fence walls of one of the rooms, accessed through the air lock, were made into permanent solid walls constructed of metal wainscot, with blanket insulation, and gypsum board over the metal lath frame. Various other mechanical and fire protection systems were also upgraded.

REFERENCES CITED

Gosling, F. G.
2001 *The Manhattan Project: Making the Atomic Bomb.* U.S. Department of Energy, DOE/MA-0002.

Groves, L. R.
1946 "Construction of Concrete Storage Vault at DP-Site." Memorandum to Commanding Officer, U.S. Engineer Office, Santa Fe, New Mexico, January 23, 1946. General Decimal File, 600.1, Records of the Army Corps of Engineers, RG 77, National Archives at College Park, College Park, MD.

Hoddeson, L., P. W. Henriksen, R. A. Meade, and C. Westfall
1998 *Critical Assembly: A Technical History of Los Alamos during the Oppenheimer Years, 1943-1945.* Cambridge University Press, New York and Cambridge.

LANL (Los Alamos National Laboratory)
1983 *Los Alamos Science.* Winter/Spring, "The Bradbury Years 1945-1970" and "Plutonium, a Wartime Nightmare but a Metallurgist's Dream," Los Alamos National Laboratory, Los Alamos, New Mexico.

1991 *TA-21 Operable Unit, RFI Work Plan for Environmental Restoration.* Volume 1, Los Alamos National Laboratory, Los Alamos, New Mexico.

1993 *Los Alamos: Beginning of an Era, 1943-1945.* Reprinted by the Los Alamos Historical Society, Los Alamos, New Mexico.

1995 Los Alamos National Laboratory: A Proud Past, An Exciting Future (Special Issue), LALP-95-2-6&7. *Dateline: Los Alamos.*

2001 The Laboratory in a Changing World: A Los Alamos Chronology; LALP-01-65. The Nuclear Weapons Publication Team, Los Alamos National Laboratory, Los Alamos, New Mexico.

LASL (Los Alamos Scientific Laboratory) Community News
1960 Vol. 22, No. 22, Los Alamos Scientific Laboratory, New Mexico, November 3, 1960.

McGehee, E. D. and K. L. M. Garcia
1999 *Historical Building Assessment for the Department of Energy Conveyance and Transfer Project.* Historic Building Survey No. 178, LA-UR-00-1003. On file at RRES-ECO, Los Alamos National Laboratory.

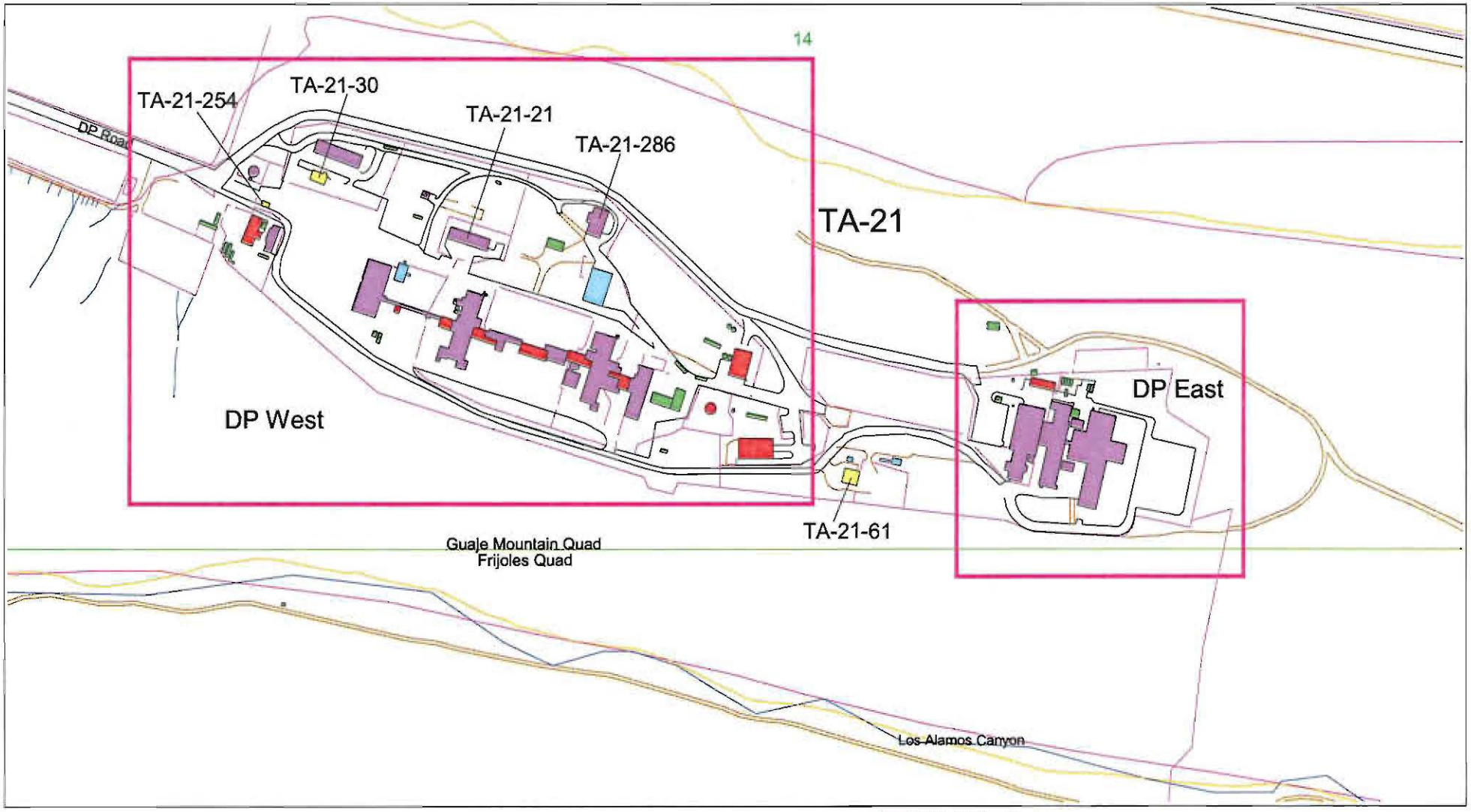
McGehee, E. D., K. L. M. Garcia, E. Loomis, J. Ronquillo, K. Towery, and J. Isaacson
2004 *Historical Context of W Site, Technical Area 41.* Historic Building Report No. 231, LA-UR-04-6492. On file at RRES-ECO, Los Alamos National Laboratory.

Rothman, H.
1992 *On Rims and Ridges, The Los Alamos Area Since 1880.* University of Nebraska Press, Lincoln, Nebraska.

Seeman, L. E.
1945 Memorandum to Lt. Colonel Stevens, December 17, 1945. General Decimal File, 600.1, Records of the Army Corps of Engineers, RG 77, National Archives at College Park, College Park, MD.

Ullrich, R.
1998 *Tech Area II: A History.* Sandia National Laboratories, SAND98-1617.

Appendix A: Maps Showing TA-21's Construction History and Location of Eligible and Non-Eligible Properties



Los Alamos
National Laboratory

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

TA-21

Eligible and Not Eligible Buildings

Map A-1

N
W E
S

Eligible Buildings/Structures
Eligible Buildings/Structures - Previously Removed
Not Eligibe Buildings/Structures
Not Eligible Buildings/Structures - Previously Removed
Exempt Buildings/Structures
Techarea
Drainage
Township, Section, Range
USGS 7.5 Minute Quad
Trails
Roads
Roaddirt
Parkpave
Parkdirt
Fences
Buildings/Structures

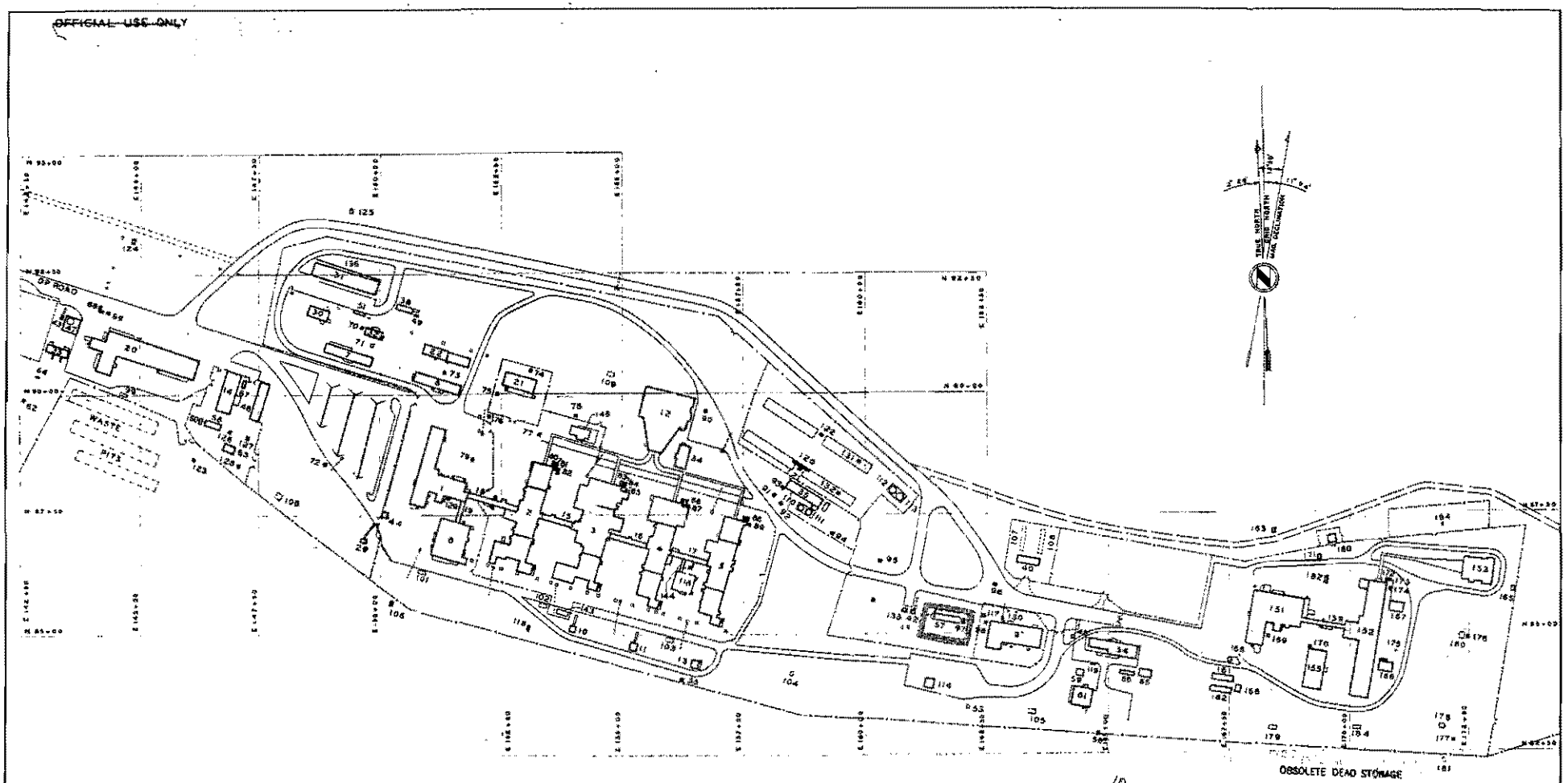
1:5000

200 0 200 400 600 Feet

50 0 50 100 150 Meters

September 2004

OFFICIAL USE ONLY



VOID - See Rev. 9, ENG-R-2450

NO.	DATE	REVISIONS	BY	CHK'D
8	11-58	REVISED TO FIELD CHECK STATUS OF 12-28-58	T.R.	
9	11-59	REVISED TO STATUS AT 11-1-59	P.B.	N.B.
10	12-60	ENG-R 138 REDRAWN AS ENG-R 140 AND ENG-R 140	NOB	JASSED

AUTHORIZED FOR: HEALTH, SAFETY, FIRE PROT., REC.

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

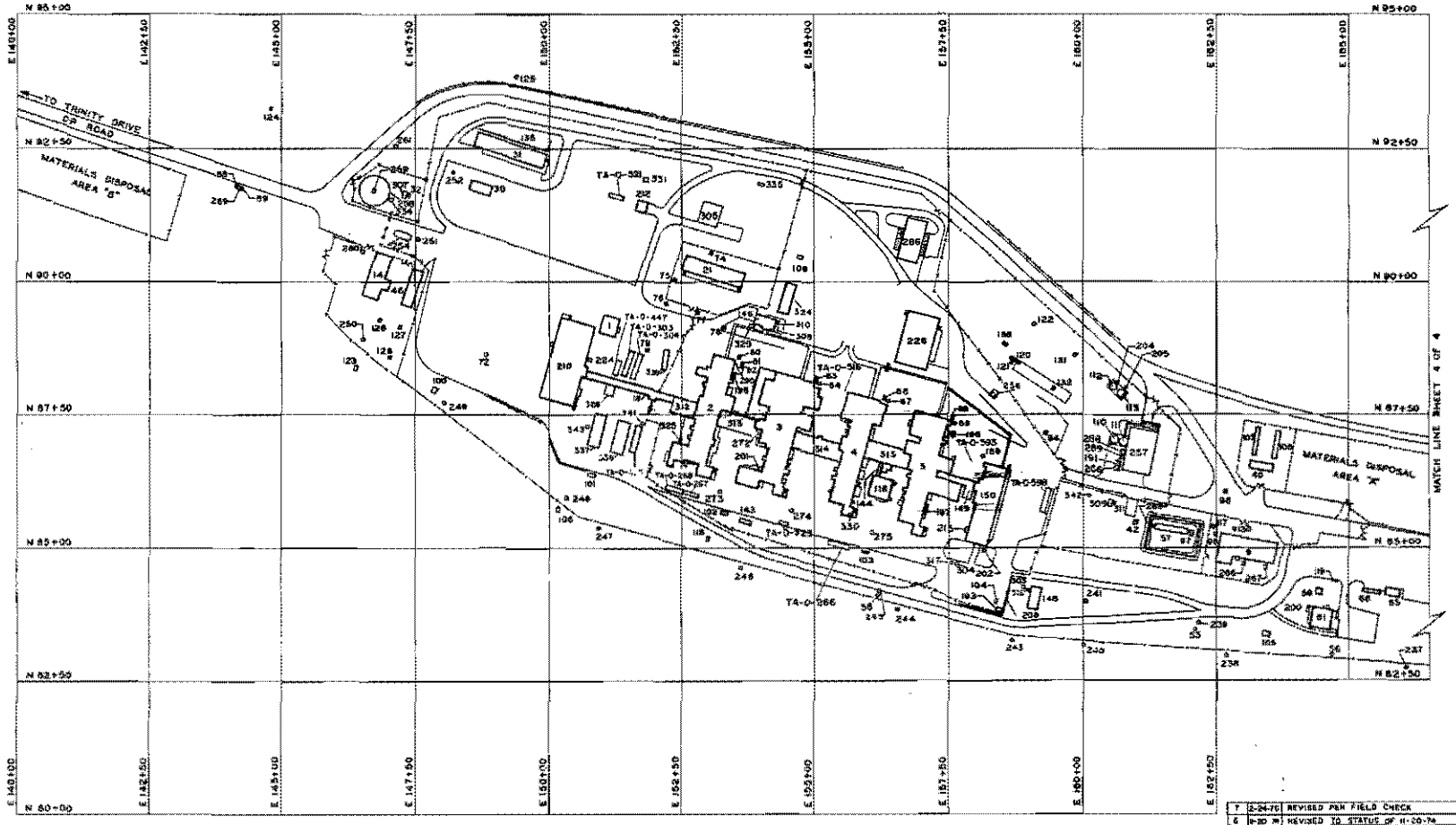
STRUCTURE LOCATION PLAN
TA-21 DP SITE

DRAWN	DATE	DRAWING NO.
N. BYERS	9-23-55	ENG-R 140
SCALE 1" = 100'	SHEET 2 of 2	

TA-21, DP Site
Structure Location Plan
September 23, 1955
Revised to Status of December 28, 1958

OFFICIAL USE ONLY

SCD 9/23/04



1" = 100'-0"

GRAPHIC SCALE

NOTE:
THIS SET OF FOUR DRAWINGS CONSISTS OF:
ENG-R2448, INDEX SHEET, 1 OF 4
ENG-R2450, INDEX SHEET, 2 OF 4
ENG-R2451, SITE MAP, 3 OF 4
ENG-R2452, SITE MAP, 4 OF 4
THIS SET VOIDS AND SUPERSEDES DRAWINGS:
ENG-R2449, REV. NO. 10, DATED 5-13-64
ENG-R2450, REV. NO. 10, DATED 5-13-64

REVIEWER _____

CLASS _____ DATE _____

NO.	DATE	REVISIONS	BY
7	2-24-75	REVISED PER FIELD CHECK	RAD
6	9-20-74	REVISED TO STATUS OF 11-20-74	R.H.
5	9-19-74	REVISED PER ENG. DWG. C-41300	R.H.
4	12-13-73	REVISED TO STATUS OF 12-13-73	RAD
3	6-18-73	REVISED PER FIELD CHECK	JMR
2	3-30-71	REVISED TO STATUS OF 3-30-71	RAD
1	12-2-68	REVISED TO STATUS OF 12-2-68	RAD
0	2-25-66	REDRAWN TO STATUS OF 2-66 (SEE NOTE)	T.S.

AUTHORIZED FOR: HEALTH, SAFETY, FIRE PROT., MISC.

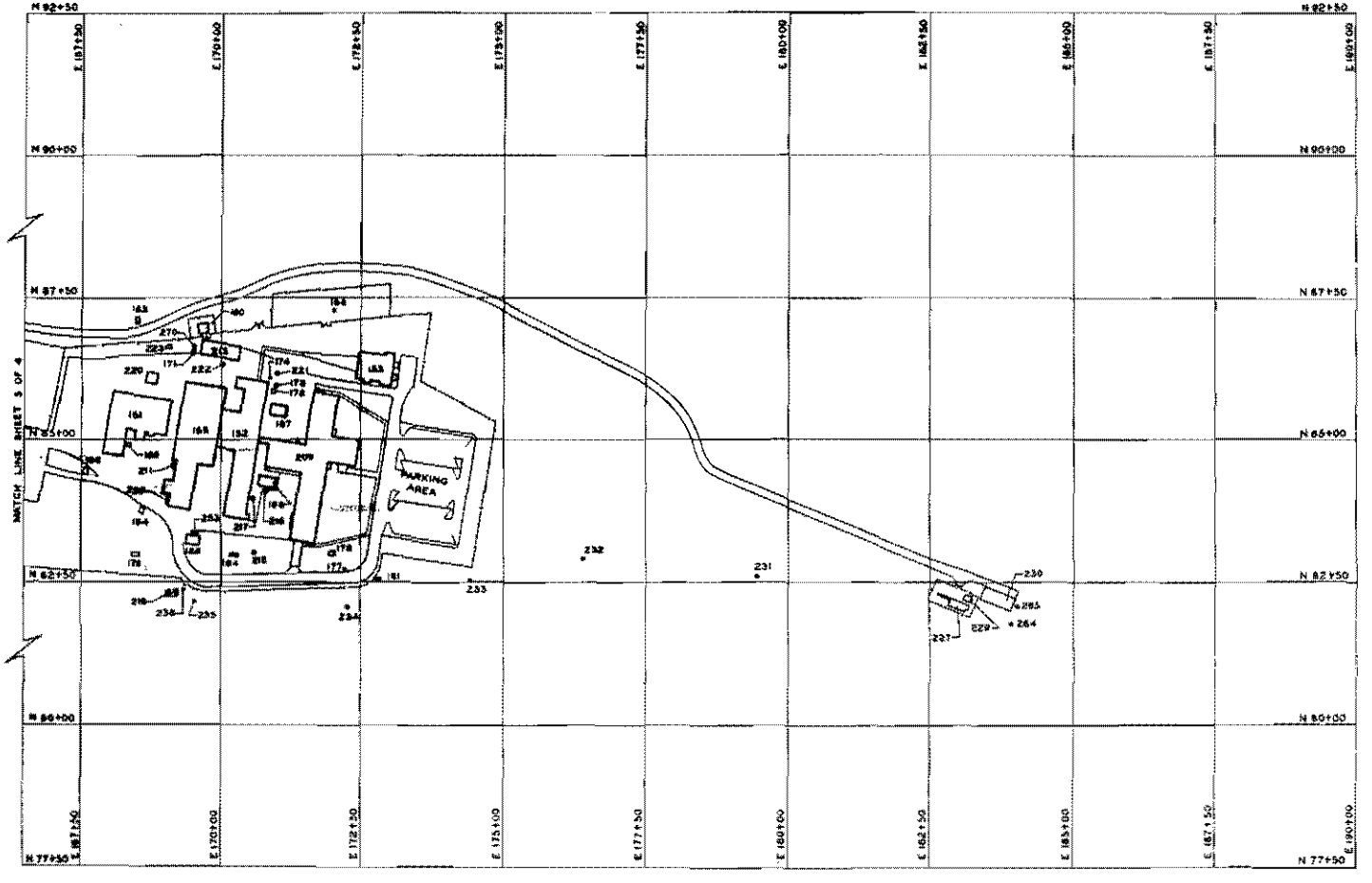
LOS ALAMOS SCIENTIFIC LABORATORY
ENGINEERING DEPARTMENT
UNIVERSITY OF CALIFORNIA — LOS ALAMOS, NEW MEXICO

STRUCTURE LOCATION PLAN
TA-21 DP-SITE

DESIGNED T. ROYBAL
DRAWN T. ROYBAL
TRACED
SCALE AS NOTED
DATE 2-25-66
SHEET 3 OF 4
ENG-R 2451

B.A. NO. _____ LAB. JOB NO. _____

TA-21, DP-Site
(DP West)
Structure Location Plan
February 25, 1966
Revised to Status of November 20, 1974



SCALE

NOTE:
THIS SET OF FOUR DRAWINGS CONSISTS OF:
ENG-R2448, INDEX SHEET, 1 OF 4
ENG-R2450, INDEX SHEET, 2 OF 4
ENG-R2451, SITE MAP, 3 OF 4
ENG-R2452, SITE MAP, 4 OF 4
THIS SET VOIDS AND SUPERSEDES DRAWINGS:
ENG-R2448, REV. NO. 10, DATED 5-13-65
ENG-R2450, REV. NO. 10, DATED 5-13-65

TA-21, DP-Site
(DP East)
Structure Location Plan
February 25, 1966

NO.	DATE	REVISIONS	BY	APPROVED
9	2-25-66	REDRAWN TO STATUS OF 2-1-66 (SEE NOTE)	TA	

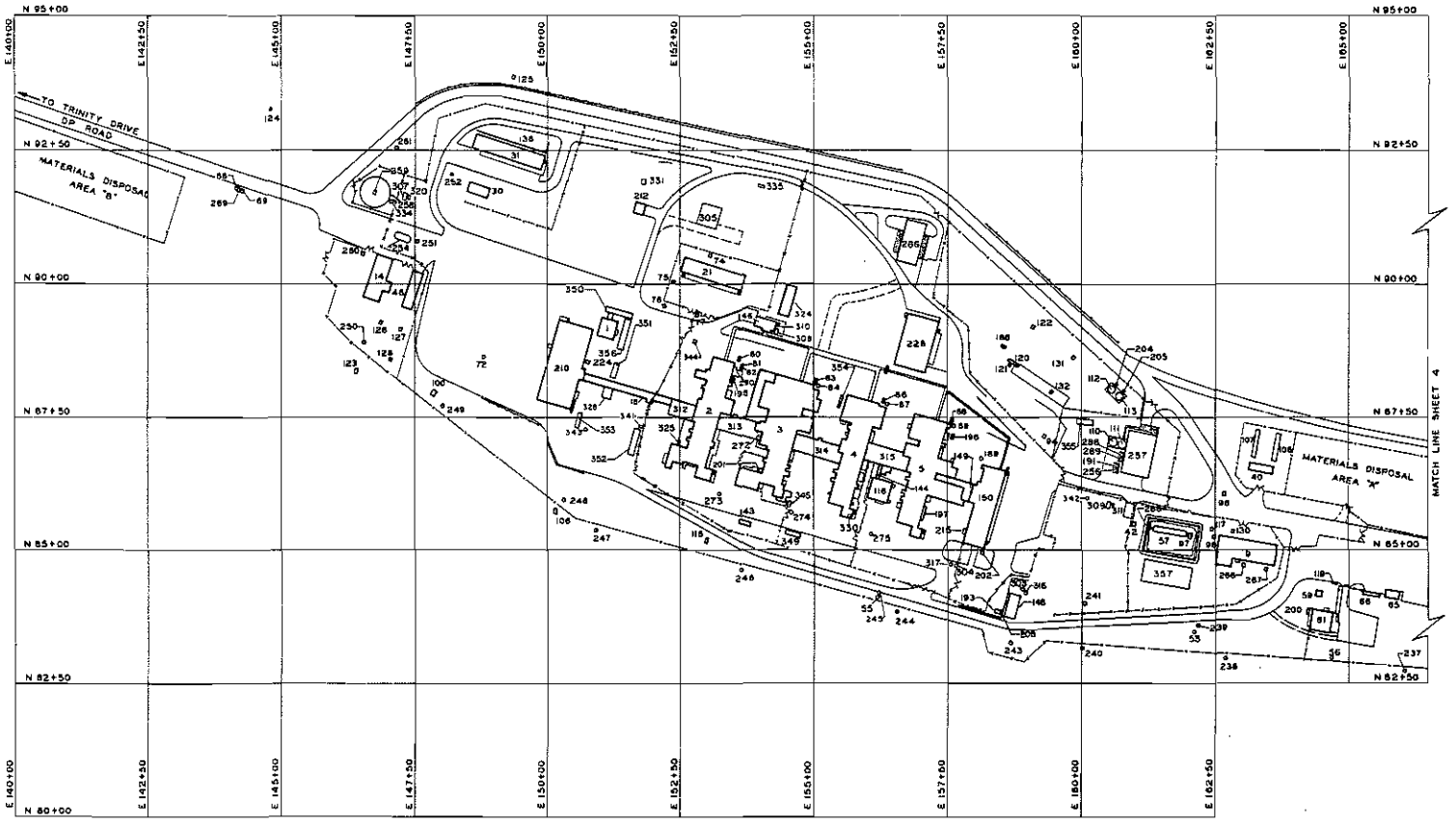
LOS ALAMOS SCIENTIFIC LABORATORY
ENGINEERING DEPARTMENT
UNIVERSITY OF CALIFORNIA — LOS ALAMOS, NEW MEXICO

STRUCTURE LOCATION PLAN
TA-21 DP - SITE

AUTHORIZED FOR
HEALTH
SAFETY
FINAL PROJ.
M.C.

DESIGNED BY	RECOMMENDED	
DRAWN BY	GROUP LEADER	
K. ROYBAL	DATE 2-25-66	DRAWING NO.
SURVEY	SHEET	ENG-R 2452
AS NOTED	4 OF 5	

E. A. NO. LAS JOB NO.



1" = 100'

GRAPHIC SCALE

TA-21, DP-Site
(DP West)
Structure Location Plan
August 5, 1983

REV.	DATE	REVISION	BY	CKD.	APP.
12	6-5-85	REVISED TITLE BLOCK & DWG. TO STATUS OF 6-1-83	M.S.	JG	DH

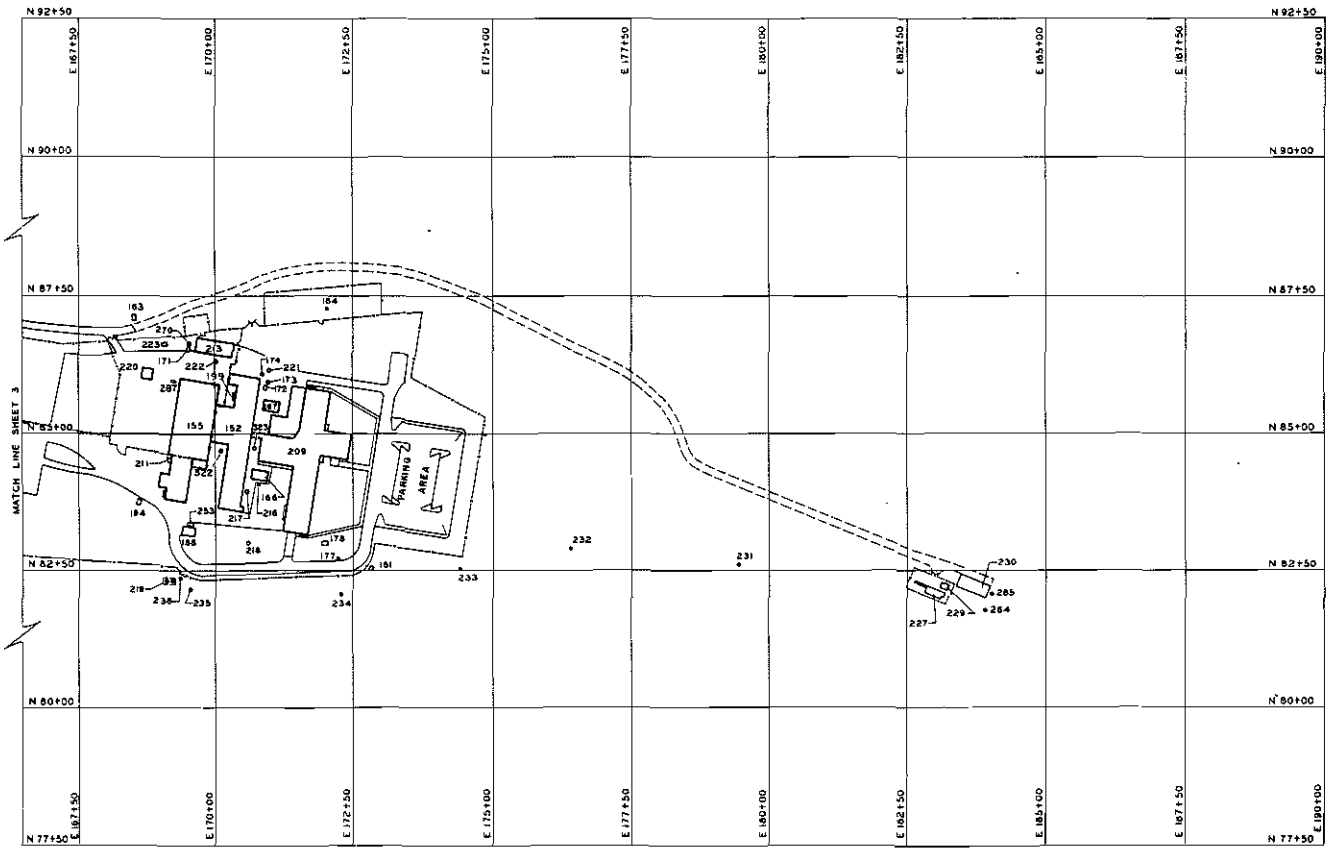
UNIVERSITY OF CALIFORNIA
Los Alamos
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

FACILITIES ENGINEERING DIVISION

STRUCTURE LOCATION PLAN
TA-21 DP-SITE

SEE CLASSIFICATION
CLASS. U
REVIEWER
DATE 6-5-85

SUBMITTED	RECOMMENDED	APPROVED
DRAWN	DATE	SHEET NO.	DRAWING NO
CHECKED	8-5-83	3 OF 4	ENG-R5113



1" = 100'

GRAPHIC SCALE

TA-21, DP-Site
(DP East)
Structure Loeation Plan
August 5, 1983

REV.	DATE	REVISION	BY	CKD.	APR.
6	8-5-83	REVISED TITLE BLOCK & DWG TO STATUS OF 8-1-83	H.S.		

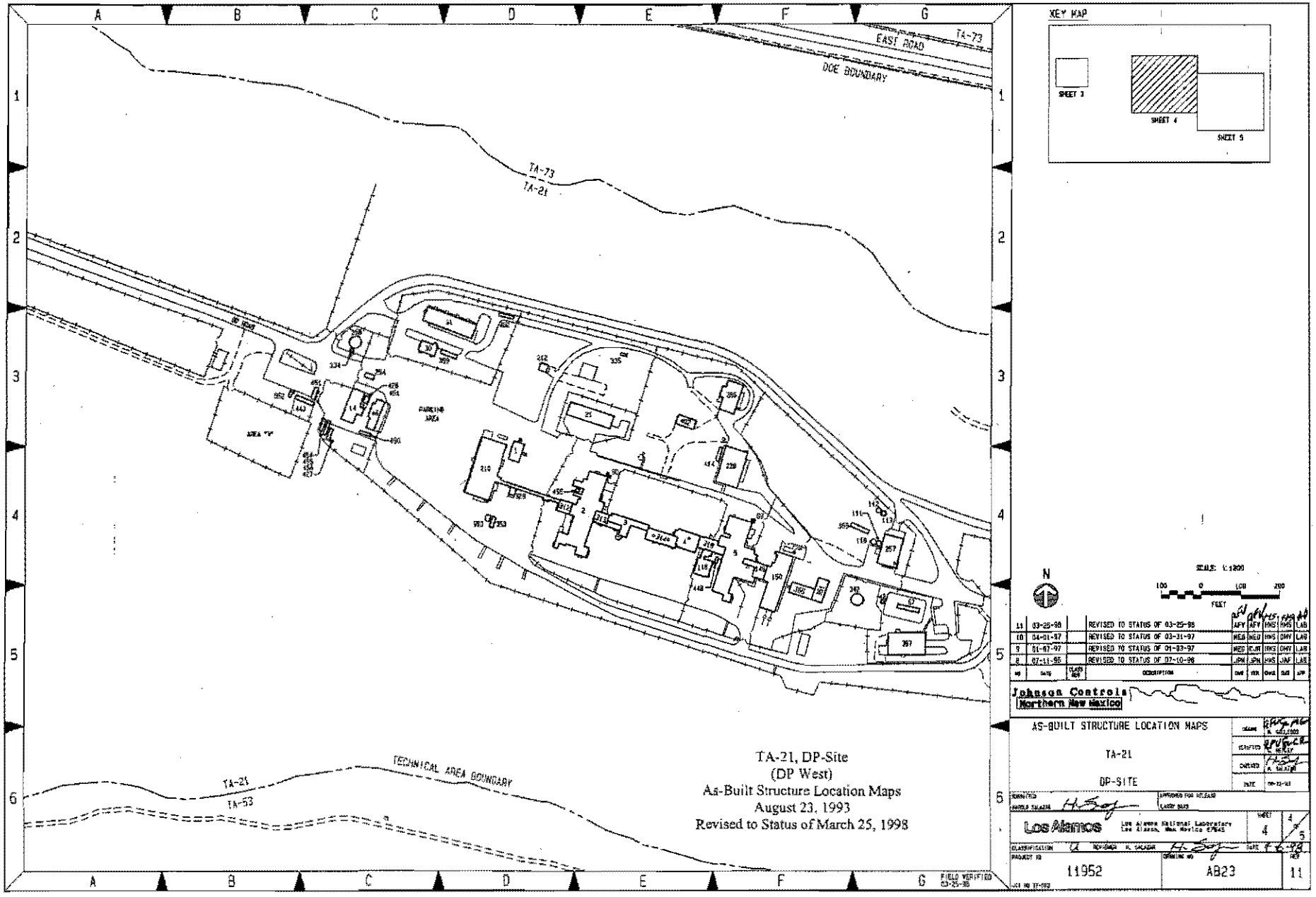
UNIVERSITY OF CALIFORNIA
Los Alamos
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

FACILITIES ENGINEERING DIVISION

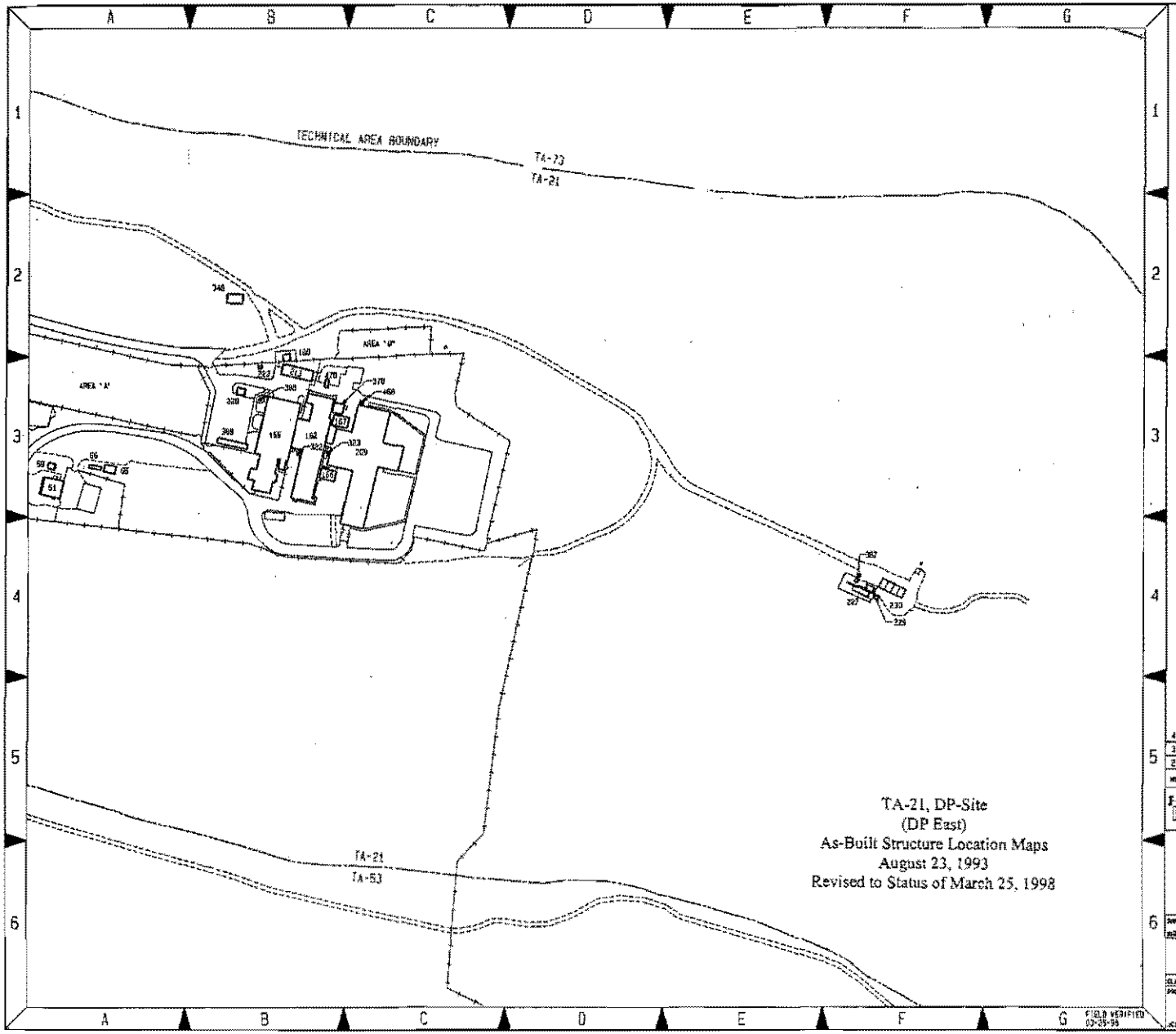
STRUCTURE LOCATION PLAN
TA-21 DP-SITE

SEC CLASSIFICATION
CLASS. U
REVIEWER
DATE

SUBMITTED	RECOMMENDED	APPROVED
DRAWN	DATE	DRAWING NO
CHECKED	8-5-83	ENG-R913

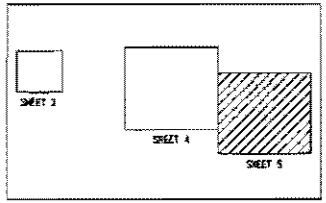


TA-21, DP-Site
(DP West)
As-Built Structure Location Maps
August 23, 1993
Revised to Status of March 25, 1998



TA-21, DP-Site
(DP East)
As-Built Structure Location Maps
August 23, 1993
Revised to Status of March 25, 1998

KEY MAP



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NO	DATE	CLASS'N BY	DESCRIPTION	DWN	VER	CHKD	SUP	APP
4	03-25-98		REVISED TO STATUS OF 03-25-98	AFV	AFV	RNG	HRS	LAB
3	04-01-97		REVISED TO STATUS OF 03-31-97	MEG	MEG	HAS	SMV	LAB
2	11-22-95		REVISED TO STATUS OF 11-20-95	JAC	JAC	LPM	JAF	FCT

Johnson Controls
Northern New Mexico

AS-BUILT STRUCTURE LOCATION MAPS

TA-21

DP-SITE

DRAWN
VERIFIED
CHECKED
DATE 08-23-93

SUBMITTED

APPROVED FOR RELEASE
LANL DATE

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

SHEET 5 OF 5

CLASSIFICATION

PROJECT NO 11952

DRAWING NO AB23

REV 4

Appendix B: Interview Information and Memoir References

Oral Histories

Anderson, Jim

1999 July 27, 1999 interview of J. Anderson by Ron Stafford and John Ronquillo. Notes on file at RRES-ECO, Los Alamos National Laboratory, Los Alamos, New Mexico.

Cowan, George

1999 June 3, 1999 interview of G. Cowan by John Ronquillo. Notes on file at RRES-ECO, Los Alamos National Laboratory, Los Alamos, New Mexico.

Green, Jere

1999 June 7, 1999 interview of J. Green by John Ronquillo. Notes on file at RRES-ECO, Los Alamos National Laboratory, Los Alamos, New Mexico.

Haas, Milton

1999 May 7, 1999 interview of M. Haas by John Ronquillo. Notes on file at RRES-ECO, Los Alamos National Laboratory, Los Alamos, New Mexico.

Hammel, Edward F.

1993 Recording of 1993 interview with E. Hammel on file at the Los Alamos National Laboratory Archives, Collection OH-0218, T-1993-004, Los Alamos National Laboratory, Los Alamos, New Mexico.

1999 May 10, 1999 interview of E. Hammel by John Ronquillo. Notes on file at RRES-ECO, Los Alamos National Laboratory, Los Alamos, New Mexico.

Magel, Ted

1999 June 17, 1999 telephone interview of T. Magel by John Ronquillo. Notes on file at RRES-ECO, Los Alamos National Laboratory, Los Alamos, New Mexico.

Stafford, Ronald

1999 Information from January, 13, 1999 interview. Notes transcribed by Kari Manz Garcia, on file at RRES-ECO, Los Alamos National Laboratory, Los Alamos, New Mexico.

1999 May 4, 1999 interview of R. Stafford by John Ronquillo. Notes on file at RRES-ECO, Los Alamos National Laboratory, Los Alamos, New Mexico.

Stark, Walter

1999 May 25, 1999 interview of W. Stark by John Ronquillo. Notes on file at RRES-ECO, Los Alamos National Laboratory, Los Alamos, New Mexico.

Vier, Dwayne
1999 Interview with Roger Meade and Ellen McGehee. Recording of interview with D. Vier on file at the Los Alamos National Laboratory Archives, Los Alamos National Laboratory, Los Alamos, New Mexico.

Memoir References

Hammel, Edward F.
1998 *Plutonium Metallurgy at Los Alamos, 1943-1945: recollections of Edward F. Hammel.* Los Alamos Historical Society, Los Alamos, New Mexico.

Appendix C: Listing of Drawings on File at LANL for TA-21-21, -30, -61, -254, and -286

REPORT FOR: DRAWINGS

TA	BLDG	PREFIX	DRAWNUM	PAGE	REV	DSHEET	LOG_DATE	DOC_DATE	PROJID	DISC	TITLE
21	21	C	2353	1	1		12-MAY-53	08-FEB-46	0	A	CONCRETE STORAGE VAULT, DPW-21, DP SITE. ARCH. PLAN & DETAILS, PLOT PLAN
21	21	C	2354	2	0		12-MAY-53	04-JAN-46	0	S	CONCRETE STORAGE VAULT, DPW-21, DP SITE. STRUCTURAL PLANS & DETAILS
21	21	C	2355	3	2		12-MAY-53	29-DEC-45	0	M	CONCRETE STORAGE VAULT, DPW-21, DP SITE. MECHANICAL PLAN
21	21	C	2356	4	2		12-MAY-53	01-MAR-46	0	E	CONCRETE STORAGE VAULT, DPW-21, DP SITE. ELEC. PLAN & DETAILS
21	21	C	2359	1	1		12-MAY-53	22-JUL-46	0	A	ADD. TO BLDGS. DPW-21, DP-SITE, FLOOR PLANS, ELEVATIONS, DETAILS
21	21	C	2360	2	0		12-MAY-53	22-JUL-46	0	M	ADD. TO BLDG. DPW-21, DP-SITE. MECHANICAL & ELECTRICAL
21	21	c	49861	1	1		26-JUN-99	09-DEC-96	16854	T	WASTE STREAM CORRECTIONS FMU #66, TITLE SHEET AND LIST OF DRAWINGS, SEVERAL TA AREAS
21	21	C	8411	1	1		25-JUN-56		0	F	PROPOSED SPRINKLER SYSTEMS CONCRETE STORAGE VAULT (DPW-21)
21	21	C	23354	4	0		11-FEB-60		1998	M	MECHANICAL - NOTES & EQUIPMENT LIST
21	21	C	23353	3	0		11-FEB-60		1998	UN	REINFORCING SCHEDULE
21	21	C	23351	1	0		11-FEB-60		1998	UN	STORAGE VAULT ADD. FOR SF MATERIAL, BLDG. DPW-21 - LOC. & PLOT PLANS-FTG & ROOF
21	21	C	23352	2	0		23-DEC-96	03-FEB-60	1998		Storage Vault Addition for SF Materials, Elevations, Floor Plan, details,
21	21	C	23361	11	0		11-FEB-60		1998	E	ELEC. - SINGLE LINE DIAGRAM & PANEL
21	21	C	23360	10	0		11-FEB-60		1998	E	ELECT. - PLAN - ALARM & POWER CKTS.
21	21	C	23359	9	0		11-FEB-60		1998	E	ELECTRICAL - PLAN & BILL OF MATERIAL
21	21	C	23358	8	0		11-FEB-60		1998	M	MECHANICAL - PLANS & DETAILS
21	21	C	23357	7	0		11-FEB-60		1998	M	MECH. - PLAN, DETAILS, SECTIONS & ELEVATIONS
21	21	C	23356	6	0		11-FEB-60		1998	M	MECHANICAL - PLAN & DETAILS
21	21	C	23355	5	0		11-FEB-60		1998	M	MECHANICAL CONTROL & PIPING

										DIAGRAM
21	21	R	2377	1	0	06-APR-62	26-MAR-62	0	A	FALLOUT SHELTER SURVEY, FLOOR PLAN, DP-SITE
21	21	SK	31	1	0	01-JUN-53	02-FEB-48	115	A	TOWER INSTALLATION, BLDG. DPW-21
21	21	PL	1921	12	1			4786	UN	DP INTERIUM UPGRADING PHASE II
21	21	PL	1940	9	0	01-NOV-72	01-NOV-72	4786	F	FIRE SPRINKLER INSTALLATIONS FLOOR PLAN
21	21	PL	84	1	0	30-JUL-59		1998	UN	STORAGE VAULT ADDITION (FOR SF MATERIAL), BLDG. DPW-21 - PLOT PLAN & DRAWING IND
21	21	PL	85	2	0	30-JUL-59		1998	UN	ENLARGED PLOT PLAN
21	21	PL	87	4	0	30-JUL-59		1998	UN	SPECIAL REQUIREMENTS
21	21	R	4507	1	0	19-JAN-79	24-OCT-83	0	A	MODULAR OFFICE BUILDING, FLOOR PLAN
21	21	R	4196	1	0	22-JAN-68	31-AUG-67	3586	A	AUDIO SYSTEM EQUIP. LOCATION, FLOOR PLAN
21	21	R	2936	1	3	20-MAR-63	31-OCT-83	0	A	FLOOR PLAN, VAULT
21	21	R	1888	1	0	15-APR-63		0	F	FIRE ALARM EQUIPMENT, BLDG. DP-21, FLOOR PLAN (VOID)
21	21	C	47753	1	0	20-SEP-92		5018	UN	P.U. STORAGE VAULT MOD.S CONTAINMENT VESSEL DETAILS
21	21	C	43706	1	1	05-DEC-79		6354	C	EPA TASK FORCE SUPPORT DPW STEAM PLANT CIVIL; NOTES AND LOCATION PLAN BLDG. DP
21	21	C	43706	2	1	05-DEC-79		6354	M	MECH; PLANS, SECTIONS AND NOTES
21	21	C	43079	1	0	26-APR-77	16-APR-77	5653	C	MODIFICATIONS TO DOCK AREA, BLDG. DP-21, TA-21. CIVIL; PARTIAL FLOOR PLAN, SECT
21	21	C	43079	3	0	26-APR-77	26-APR-77	5653	E	MOD. TO DOCK AREA; PLAN, DETAILS, NAMEPLATES. BILL OF MATERIAL, AND NOTES
21	21	C	43079	4	0	26-APR-77	26-APR-77	5653	F	MOD. DOCK AREA,ELEC; SCOPE, FIRE PROTECTION PLAN, AND WIRING DIAGRAMS
21	21	C	42784	1	0	06-MAY-75		5361	F	MOD. OF WET PIPE SPRINKLER SYS. TO PRE-ACTION SYS. ELECTRICAL; LOCATION PLAN, B
21	21	C	42784	2	0	06-MAY-75		5361	E	ELECTRICAL LAYOUT AND DETAILS
21	21	C	42784	3	0	06-MAY-75		5361	E	ELECTRICAL

21	21	C	42528	5	2	16-MAY-74		4908	UN	BUILDING DP-21
21	21	C	41134	9	1	09-AUG-73		5018	E	ELEC-PLAN & SCOPE OF WORK, BLDG. DP-21
21	21	C	41124	1	1	30-MAY-73		5018	C	PU STORAGE VAULT MODIFICATIONS MECHANICAL AND CIVIL
21	21	C	41125	2	1	30-MAY-73		5018	E	ELECTRICAL
21	21	C	41127	2	1	09-AUG-73		5018	C	PLANS, SECTIONS & DETAILS - CIVIL
21	21	C	41128	3	1	09-AUG-73		5018	C	CONTAINMENT VESSEL DETAILS - CIVIL
21	21	C	41131	6	0	09-AUG-73		5018	M	MECH; PARTIAL PLAN, SECTION AND DETAILS, DP-21
21	21	C	39389	4	1	03-FEB-70		3925	E	ELECTRICAL
21	21	C	39386	1	1	03-FEB-70		3925	E	BLDG. POWER SERVICE DP-21,146,212,228,286 - ELECTRICAL - SERVICE CONDUIT & POWER
21	21	C	39387	2	1	03-FEB-70		3925	E	ELECTRICAL; SECTIONS & DETAILS
21	21	C	39388	3	1	03-FEB-70		3925	E	ELECTRICAL; SECTIONS & DETAILS
21	21	C	36747	1	0	06-JAN-71		4554	F	FIRE PROTECTION MODS., BUILDING DP-21
21	21	C	36748	2	0	06-JAN-71		4554	F	FIRE PROTECTION MODS., BUILDING DP-21
21	21	C	36749	3	0	06-JAN-71		4554	F	FIRE PROTECTION MODS., BUILDING DP-21
21	21	C	49861	37	0	16-JUN-99	30-SEP-96	16854	M	WASTE STREAM CORRECTIONS FMU #66, MECH., CORRECTIVE ACTIONS SUMMARY
21	21	C	49861	9	0	17-JUN-99	27-SEP-96	16854	P	WASTE STREAM CORRECTIONS FMU #66, MECH., FIRST FLOOR PLUMBING PLAN
21	21	C	49861	7	0	17-JUN-99	27-SEP-96	16854	G	WASTE STREAM CORRECTIONS FMU #66, GEN., TEST PLAN
21	21	C	49861	6	0	17-JUN-99	27-SEP-96	16854	G	WASTE STREAM CORRECTIONS FMU #66, GEN., INSPECTION PLAN
21	21	C	49861	5	0	17-JUN-99	27-SEP-96	16854	G	WASTE STREAM CORRECTIONS FMU #66, GEN., INSPECTION PLAN
21	21	C	49861	4	0	17-JUN-99	27-SEP-96	16854	G	WASTE STREAM CORRECTIONS FMU #66, GEN., NOTES AND SCOPE OF WORK
21	21	C	49861	3	0	17-JUN-99	27-SEP-96	16854	G	WASTE STREAM CORRECTIONS FMU #66, GEN., NOTES AND SCOPE OF WORK
21	21	C	49861	1	0	17-JUN-99	27-SEP-96	16854	T	WASTE STREAM CORRECTIONS FMU #66, TITLE SHEET AND LIST OF DRAWINGS,

										SEVERAL TEC AREAS
21	21	C	43079	2	0	26-APR-77	26-APR-77	5653	M	MOD. DOCK AREA,MECH; PLAN, DETAILS AND NOTES
21	21	C	42955	6	0			4908	A	VAULT FLOOR PLAN, BLDG. DP-21, TA-21
21	21	PL	86	3	0	30-JUL-59		1998	A	FLOOR PLANS & ELEVATIONS
21	21	R	3888	1	0	15-NOV-67	15-JUN-67	3546	A	EQUIPMENT SURVEILLANCE SYSTEMS, FLOOR PLAN
21	21	R	4197	1	0	22-JAN-68	31-AUG-67	3586	E	AUDIO SYSTEM BLOCK DIAGRAM
21	21	C	49861	2	0	17-JUN-99	27-SEP-96	16854	G	WASTE STREAM CORRECTIONS FMU #66, GEN., LEGEND AND GENERAL NOTES
21	21	C	49861	38	0	16-JUN-99	30-SEP-96	16854	M	WASTE STREAM CORRECTIONS FMU #66, MECH., CORRECTIVE ACTIONS SUMMARY
21	21	C	49861	3	1	08-NOV-02	20-NOV-96	16854	G	WASTE STREAM CORRECTIONS FMU #66, GEN., NOTES AND SCOPE OF WORK
21	21	C	49861	4	1	08-NOV-02	09-DEC-96	16854	G	WASTE STREAM CORRECTIONS FMU #66, GEN., NOTES AND SCOPE OF WORK
21	21	C	49861	38	1	08-NOV-02	09-DEC-96	16854	M	WASTE STREAM CORRECTIONS FMU #66, MECH., CORRECTIVE ACTIONS SUMMARY

REPORT FOR: DRAWINGS

TA	BLDG	PREFIX	DRAWNUM	PAGE	REV	DSHEET	LOG_DATE	DOC_DATE	PROJID	DISC	TITLE
21	30	C	3	1	0		18-FEB-46	18-FEB-46	0	A	PROPOSED PAINT SHOP, DP-SITE, DPW-30
21	30	C	2361	1	0		12-MAY-53	12-MAY-53	0	A	PRELIMINARY PLAN OF PROPOSED PAINT SHOP FOR DP-SITE, DPW-30
21	30	C	2362	1	0		12-MAY-53	29-JUL-46	0	A	PAINT SHOP, DP-SITE, DPW-30. FLOOR PLAN, ELEV., ELECT. PLAN, DETAILS
21	30	C	2363	2	1		12-MAY-53	29-JUL-46	0	M	PAINT SHOP, DP-SITE, BLDG. DPW-31. MECHANICAL DETAILS
21	30	C	45097	5	0		26-AUG-86	15-AUG-86	8656	E	FUME HOOD INSTALLATION RM. 101, ELEC., PANEL SCHEDULE, SCOPE OF WORK., NOTES, BILL OF MATERIAL & NAMEPLATE SCHEDULE
21	30	C	45097	1	0		26-AUG-86	15-AUG-86	8656	A	FUME HOOD INSTALLATION RM. 101, ARCH., ROOF & FRAME PLAN & SECTIONS
21	30	C	45097	2	0		26-AUG-86	15-AUG-86	8656	M	FUME HOOD INSTALLATION RM. 101, MECH., FLOOR PLAN, SECTION & LEGEND
21	30	C	45097	4	0		26-AUG-86	15-AUG-86	8656	E	FUME HOOD INSTALLATION RM. 101, ELEC., FLOOR PLAN, SECTION DETAIL & LEGEND
21	30	C	45097	3	0		26-AUG-86	15-AUG-86	8656	M	FUME HOOD INSTALLATION RM. 101, MECH., EQUIPMENT LIST & GENERAL NOTES
21	30	C	49861	37	0		16-JUN-99	30-SEP-96	16854	M	WASTE STREAM CORRECTIONS FMU #66, MECH., CORRECTIVE ACTIONS SUMMARY
21	30	C	49861	10	0		17-JUN-99	27-SEP-96	16854	P	WASTE STREAM CORRECTIONS FMU #66, MECH., FIRST FLOOR PLUMBING PLAN
21	30	C	49861	38	1		08-NOV-02	09-DEC-96	16854	M	WASTE STREAM CORRECTIONS FMU #66, MECH., CORRECTIVE ACTIONS SUMMARY
21	30	C	49861	38	0		16-JUN-99	30-SEP-96	16854	M	WASTE STREAM CORRECTIONS FMU #66, MECH., CORRECTIVE ACTIONS SUMMARY
21	30	C	49861	1	0		17-JUN-99	27-SEP-96	16854	T	WASTE STREAM CORRECTIONS FMU #66, TITLE SHEET AND LIST OF DRAWINGS, SEVERAL TEC AREAS
21	30	C	51342	1	0		06-FEB-86		8021	AC	COOLING & VENT MODS. BLDG. DP-30, TA-21 MECH; PLANS, ELEVATIONS & DETAIL
21	30	C	51342	2	0		06-FEB-86		8021	M	MECH; PLANS & DETAILS
21	30	R	1889	1	2		11-JAN-63		0	F	FIRE ALARM EQUIPMENT, BLDG. DP-30, FLOOR PLAN
21	30	R	2938	1	2		04-AUG-64	12-MAR-84	0	A	FLOOR PLAN, PAINT SHOP
21	30	c	49861	1	1		26-JUN-99	09-DEC-96	16854	T	WASTE STREAM CORRECTIONS FMU #66, TITLE SHEET AND LIST OF DRAWINGS, SEVERAL TA AREAS

REPORT FOR: DRAWINGS

TA	BLDG	PREFIX	DRAWNUM	PAGE	REV	DSHEET	LOG_DATE	DOC_DATE	PROJID	DISC	TITLE
21	61	C	832	1	1		28-SEP-50	19-JAN-51	593	S	EQUIPMENT ALTERATIONS, BLDG. DPW-61. ARCHITECTURAL & STRUCTURAL DETS.
21	61	C	833	2	1		21-SEP-50	19-JAN-51	593	A	EQUIPMENT INSTALLATION, BLDG. DPW-61. FURNITURE & PIPING ARRANGEMENT
21	61	C	834	3	1		21-SEP-50	19-JAN-51	593	M	EQUIPMENT INSTALLATION, BLDG. DPW-61. PLUMBING & PIPING DETAILS
21	61	C	835	4	1		21-SEP-50	19-JAN-51	593	M	EQUIPMENT INSTALLATION, BLDG. DPW-61. PLUMBING & PIPING DETAILS
21	61	C	836	5	1		30-SEP-50	19-JAN-51	593	M	EQUIPMENT INSTALLATION, BLDG. DPW-61. SURFACE DUCT & DUCT LAYOUT
21	61	C	837	6	1		30-SEP-50	19-JAN-51	593	E	EQUIPMENT INSTALLATION, BLDG DPW-61. MAIN FEEDER & BRANCH CIR. DIA.
21	61	C	882	1	1		27-JUN-50	10-NOV-50	583	C	BUILDING DPW-61. PLOT PLAN, UTILITIES & DETAILS
21	61	C	883	2	1		27-JUN-50	10-NOV-50	583	C	BUILDING DPW-61, STEAM LINES AND DETAILS
21	61	C	884	3	1		27-JUN-50	10-NOV-50	583	S	BUILDING DPW-61. FOUNDATION PLAN & DETAILS
21	61	C	885	4	1		27-JUN-50	10-NOV-50	583	M	BUILDING DPW-61. SCHEDULE & MISC. DETAILS
21	61	C	886	5	1		27-JUN-50	10-NOV-50	583	A	BUILDING DPW-61. PLAN & ELEVATIONS
21	61	C	887	6	1		27-JUN-50	10-NOV-50	583	S	BUILDING DPW-61. STEEL FRAMING PLAN & ELEVATION
21	61	C	888	7	1		27-JUN-50	10-NOV-50	583	A	BUILDING DPW-61. PARTITION & DOOR DETAILS
21	61	C	889	8	1		30-JUN-50	10-NOV-50	583	A	BUILDING DPW-61. ARCH. DETAILS
21	61	C	890	9	1		30-JUN-50	10-NOV-50	583	M	BUILDING DPW-61. PLUMBING, HEATING & VENTILATION
21	61	C	891	10	1		27-JUN-50	10-NOV-50	583	M	BUILDING DPW-61. PLUMBING, HEATING & VENTILATION
21	61	C	892	11	1		30-JUN-50	10-NOV-50	583	F	BUILDING DPW-61. SPRINKLER SYSTEM
21	61	C	893	12	1		30-JUN-50	10-NOV-50	583	E	BUILDING DPW-61. ELECTRICAL PLAN & DETAILS
21	61	C	894	13	1		30-JUN-50	10-NOV-50	583	E	BUILDING DPW-61. ELECTRICAL & DETS.
21	61	C	2644	1	2		08-APR-52	08-MAR-52	1135	A	INTERIOR ALTERATIONS, BLDG. DPW-61, ARCHITECTURAL PLANS & DETAILS
21	61	C	2645	2	2		08-APR-52	08-MAR-52	1135	AC	INTERIOR ALTERATIONS, MECH., HEATING, VENT., & SPRINKLERS
21	61	C	2646	3	2		08-APR-52	08-MAR-52	1135	M	INTERIOR ALTERATIONS, MECH., PLUMBING AND PIPING
21	61	C	2647	4	2		08-APR-52	08-MAR-52	1135	E	INTERIOR ALTERATIONS, BLDG. DPW-61, ELECTRICAL PLAN
21	61	C	18203	1	0		21-JUN-56	18-JUN-56	1828	M	PROPULSION PROGRAM WORK, DP-SITE - PLAN
21	61	C	18204	2	0		21-JUN-56	18-JUN-56	1828	M	PROPULSION PROGRAM WORK, PLAN & DETAILS
21	61	C	18205	3	0		21-JUN-56	18-JUN-56	1828	M	PROPULSION PROGRAM WORK, VACUUM SYSTEM

21	61	C	18206	4	0	21-JUN-56	18-JUN-56	1828	M	PROPULSION PROGRAM WORK, COOLING WATER, PIPING DETAILS
21	61	C	18207	5	0	21-JUN-56	18-JUN-56	1828	M	PROPULSION PROGRAM WORK, COOLING WATER PIPING
21	61	C	18208	6	0	21-JUN-56	18-JUN-56	1828	M	PROPULSION PROGRAM WORK, COOLING WATER DIAGRAM
21	61	C	18209	7	0	21-JUN-56	18-JUN-56	1828	M	PROPULSION PROGRAM WORK, EQUIPMENT & MATERIAL LIST & MISC. DETAILS
21	61	C	18210	8	0	21-JUN-56	18-JUN-56	1828	E	PROPULSION PROGRAM WORK, CONDUIT LAYOUT & PLOT PLAN
21	61	C	18211	9	0	21-JUN-56	18-JUN-56	1828	E	PROPULSION PROGRAM WORK, SECTIONS & DETAILS
21	61	C	18212	10	0	21-JUN-56	18-MAY-56	1828	E	PROPULSION PROGRAM WORK, H.F. BUS INST., PLAN & SECTION
21	61	C	18213	11	0	21-JUN-56	18-JUN-56	1828	E	PROPULSION PROGRAM WORK, H.F. BUS INST., SECTIONS
21	61	C	18214	12	0	21-JUN-56	18-JUN-56	1828	E	PROPULSION PROGRAM WORK, 220V., 3 PHASE CIRCUIT WIRING DIAGRAM
21	61	C	18215	13	0	21-JUN-56	18-JUN-56	1828	G	PROPULSION PROGRAM WORK, MAIN STARTER & GEN. SCHEMATIC
21	61	C	18216	14	0	21-JUN-56	18-JUN-56	1828	E	PROPULSION PROGRAM WORK, H.F. BUS & CAP. CONTROL, SCHEMATIC
21	61	C	18217	15	0	21-JUN-56	18-JUN-56	1828	E	PROPULSION PROGRAM WORK, TERMINAL CONNECTION DIAGRAM
21	61	C	18218	16	0	21-JUN-56	18-JUN-56	1828	E	PROPULSION PROGRAM WORK, MATERIAL NAMEPLATES, SCOPE
21	61	C	18282	1	0	05-MAY-59	01-MAY-59	1828	E	PROPULSION PROGRAM WORK-DP SITE BLDGS. DPE-61 & 65, PHASE "C" - SINGLE LIN
21	61	C	18283	2	0	05-MAY-59	01-MAY-59	1828	E	PROPULSION PROGRAM WORK-DP SITE, CONDUIT PLAN
21	61	C	18284	3	0	05-MAY-59	01-MAY-59	1828	E	PROPULSION PROGRAM WORK-DP SITE, SECTIONS A-2,B-2,C-2,E-2 OVER 3
21	61	C	18285	4	0	05-MAY-59	01-MAY-59	1828	E	PROPULSION PROGRAM WORK-DP SITE, DETAILS
21	61	C	18286	5	0	05-MAY-59	01-MAY-59	1828	E	PROPULSION PROGRAM WORK-DP SITE, CONN. DIAGRAM
21	61	C	18287	6	0	05-MAY-59	01-MAY-59	1828	E	PROPULSION PROGRAM WORK-DP SITE, ITEMS 2 & 3 CONN. DIAGRAM
21	61	C	18288	7	0	05-MAY-59	01-MAY-59	1828	E	PROPULSION PROGRAM WORK-DP SITE, CONN. DIAGRAM, BLDG. 65
21	61	C	18289	8	0	05-MAY-59	01-MAY-59	1828	E	PROPULSION PROGRAM WORK-DP SITE, MOTOR STARTER CONN. DIAGRAM
21	61	C	18290	9	0	05-MAY-59	01-MAY-59	1828	E	PROPULSION PROGRAM WORK-DP SITE, ELEMENTARY
21	61	C	18291	10	0	05-MAY-59	01-MAY-59	1828	E	PROPULSION PROGRAM WORK-DP SITE, GENERATOR CONTROL ELEM.

21	61	C	18292	11	0	05-MAY-59	01-MAY-59	1828	E	PROPULSION PROGRAM WORK-DP SITE, CAPACITOR BANKS ELEM.
21	61	C	18293	12	0	05-MAY-59	01-MAY-59	1828	E	PROPULSION PROGRAM WORK-DP SITE, INTERLOCKS, ELEMENTARY
21	61	C	18294	13	0	05-MAY-59	01-MAY-59	1828	E	PROPULSION PROGRAM WORK-DP SITE, MATERIALS & NAMEPLATES
21	61	C	18465	1	0	05-MAR-58		1828	M	PROPULSION PROGRAM WORK, BLDGS. DPW-61,65,PHASE "B" - MECHANICAL-PLAN, BLDG. DPW
21	61	C	18466	2	0	05-MAR-58		1828	UN	ELEVATIONS & DETAILS, DP-SITE
21	61	C	18467	3	0	05-MAR-58		1828	M	MECHANICAL - COOLING WATER, SCHEMATIC, DP-SITE
21	61	C	18468	4	0	05-MAR-58		1828	M	MECHANICAL - EQUIP. & MATERIAL LIST & MISC. DETAILS, DP-SITE
21	61	C	19069	1	0	12-FEB-60		2358	E	ADDITIONAL POWER BLDG. DP-61 - ELEC. - PLAN, SCOPE AND NOTES
21	61	C	19070	2	0	12-FEB-60		2358	E	ELEC. - ELEVATIONS, TRANS. STA. DP-105
21	61	C	23328	1	0	24-MAR-61		2522	M	TUBE FURNACE INSTALLATION, BLDG. DP-61 - MECHANICAL
21	61	C	23329	2	0	24-MAR-61		2522	E	ELECTRICAL - PLAN, SECTIONS, NOTES
21	61	C	23533	1	0	18-MAR-65		3193	M	HOOD EXHAUST MODIFICATIONS, ROOMS 1 AND 2, BLDG. DP-61 - MECH. & ELEC. - PLAN, S
21	61	C	27248	1	0	15-MAY-62		2744	E	BRIDGE CRANE MODIFICATIONS, BLDG. DP-61, STRUCTURAL & ELECTRICAL PLANS & DETAILS
21	61	C	27550	1	0	13-DEC-65		3324	UN	COMMUNICATIONS SYSTEM ALTERATIONS, TELEPHONE AND P.A. SYSTEMS, BLDGS. DP-61, 155
21	61	C	49860	8	0	16-JUN-99	06-SEP-96	16854	P	WASTE STREAM CORRECTIONS PACKAGE 4C, MECH., PLUMBING DETAILS
21	61	C	49860	6	0	16-JUN-99	06-SEP-96	16854	P	WASTE STREAM CORRECTIONS PACKAGE 4C, MECH., PLUMBING PLAN
21	61	C	49860	5	0	16-JUN-99	06-SEP-96	16854	M	WASTE STREAM CORRECTIONS PACKAGE 4C, MECH., INSPECTION PLAN AND TEST PLAN
21	61	C	49860	3	0	16-JUN-99	06-SEP-96	16854	G	WASTE STREAM CORRECTIONS PACKAGE 4C, GEN., NOTES
21	61	C	49860	1	0	16-JUN-99	06-SEP-96	16854	T	WASTE STREAM CORRECTIONS PACKAGE 4C, TITLE SHEET AND LIST OF DRAWINGS
21	61	C	49860	9	0	08-NOV-02	06-SEP-96	16854	M	WASTE STREAM CORRECTIONS PACKAGE 4C, MECH., CORRECTIVE ACTION SUMMARY
21	61	C	49860	2	0	16-JUN-99	06-SEP-96	16854	G	WASTE STREAM CORRECTIONS PACKAGE 4C, GEN., LEGEND AND GENERAL NOTES
21	61	C	49860	4	0	16-JUN-99	06-SEP-96	16854	G	WASTE STREAM CORRECTIONS PACKAGE 4C, GEN., SCOPE OF WORK
21	61	R	1893	1	2	11-JAN-63		0	F	FIRE ALARM EQUIPMENT, BLDG. DP-61, FLOOR PLAN

21	61	R	2946	1	0	06-MAY-63	19-MAR-63	0	A	FLOOR PLAN
21	61	R	4200	1	0	22-JAN-68	31-AUG-67	3586	A	AUDIO SYSTEM EQUIP. LOCATION, FLOOR PLAN
21	61	R	4201	1	0	22-JAN-68	31-AUG-67	3586	E	AUDIO SYSTEM BLOCK DIAGRAM
21	61	SK	220	1	0	01-JUN-53	17-JUN-50	583	A	PROPOSED BLDG. DPW-61

TA	BLDG	PREFIX	DRAWNUM	PAGE	REV	DSHEET	LOG_DATE	DOC_DATE	PROJID	DISC	TITLE
21	61	SK	220	1	0		01-Jun-53	17-Jun-50	583	A	PROPOSED BLDG. DPW-61
21	61	C	832	1	1		28-Sep-50	19-Jan-51	593	S	EQUIPMNET ALTERATIONS, BLDG. DPW-61. ARCHITECTURAL & STRUCTURAL DETS.
21	61	C	833	2	1		21-Sep-50	19-Jan-51	593	A	EQUIPMENT INSTALLATION, BLDG. DPW-61. FURNITURE & PIPING ARRANGEMENT
21	61	C	834	3	1		21-Sep-50	19-Jan-51	593	M	EQUIPMENT INSTALLATION, BLDG. DPW-61. PLUMBING & PIPING DETAILS
21	61	C	835	4	1		21-Sep-50	19-Jan-51	593	M	EQUIPMENT INSTALLATION, BLDG. DPW-61. PLUMBING & PIPING DETAILS
21	61	C	836	5	1		30-Sep-50	19-Sep-51	593	M	EQUIPMENT INSTALLATION, BLDG. DPW-61. SURFACE DUCT & DUCT LAYOUT
21	61	C	837	6	1		30-Sep-50	19-Sep-51	593	E	EQUIPMENT INSTALLATION, BLDG DPW-61. MAIN FEEDER & BRANCH CIR. DIA.
21	61	C	882	1	1		27-Jun-50	10-Nov-50	583	C	BUILDING DPW-61. PLOT PLAN, UTILITIES & DETAILS
21	61	C	883	2	1		27-Jun-50	10-Nov-50	583	C	BUILDING DPW-61. STEAM LINES AND DETAILS
21	61	C	884	3	1		27-Jun-50	10-Nov-50	583	S	BUILDING DPW-61. FOUNDATION PLAN & DETAILS.
21	61	C	885	4	1		27-Jun-50	10-Nov-50	583	M	BUILDING DPW-61. SCHEDULE & MISC. DETAILS
21	61	C	886	5	1		27-Jun-50	10-Nov-50	583	A	BUILDING DPW-61. PLAN & ELEVATIONS
21	61	C	887	6	1		27-Jun-50	10-Nov-50	583	S	STEEL FRAMING PLAN & ELEVATION
21	61	C	888	7	1		27-Jun-50	10-Nov-50	583	A	BUILDINGS DPW-61. PARTITION & DOOR DETAILS
21	61	C	889	8	1		30-Jun-50	10-Nov-50	583	A	BUILDING DPW-61. ARCH. DETAILS
21	61	C	890	9	1		30-Jun-50	10-Nov-50	583	M	PLUMBING, HEATING & VENTILATION
21	61	C	891	10	1		27-Jun-50	10-Nov-50	583	M	PLUMBING, HEATING & VENTILATION
21	61	C	892	11	1		30-Jun-50	10-Nov-50	583	F	BUILDING DPW-61. SPRINKLER SYSTEM
21	61	C	893	12	1		30-Jun-50	10-Nov-50	583	E	ELECTRICAL PLAN & DETAILS
21	61	C	894	13	1		30-Jun-50	10-Nov-50	583	E	ELECTRICAL & DETS.

Continuation of Page 4

REPORT FOR: DRAWINGS

TA	BLDG	PREFIX	DRAWNUM	PAGE	REV	DSHEET	LOG_DATE	DOC_DATE	PROJID	DISC	TITLE
21	254	C	32033	1	0		19-NOV-65		3284	A	NEW GUARD STATION, BLDG. DP-254 - ARCHITECTURAL - PLOT PLAN
21	254	C	32034	2	0		19-NOV-65		3284	A	ARCHITECTURAL
21	254	C	32035	3	0		19-NOV-65		3284	S	STRUCTURAL
21	254	C	32036	4	0		19-NOV-65		3284	M	MECHANICAL - FLOOR PLAN, SECTIONS & DETAILS
21	254	C	32037	5	0		19-NOV-65		3284	M	MECHANICAL - FLOOR & SITE PLAN, SCHEDULES - DETAILS & NOTES
21	254	C	32038	6	0		19-NOV-65		3284	E	ELECTRICAL - MATERIAL, NAMEPLATES, NOTES
21	254	C	32039	7	0		19-NOV-65		3284	E	ELECTRICAL - PLOT PLAN & DETAILS
21	254	C	32040	8	0		19-NOV-65		3284	E	ELECTRICAL - INTERIOR PLANS & DETAILS
21	254	R	572	1	0		11-AUG-66	13-JUN-66	0	A	FLOOR PLAN
21	254	R	2916	0	2		29-MAY-84	12-MAR-84	0	A	FLOOR PLAN, GUARD HOUSE

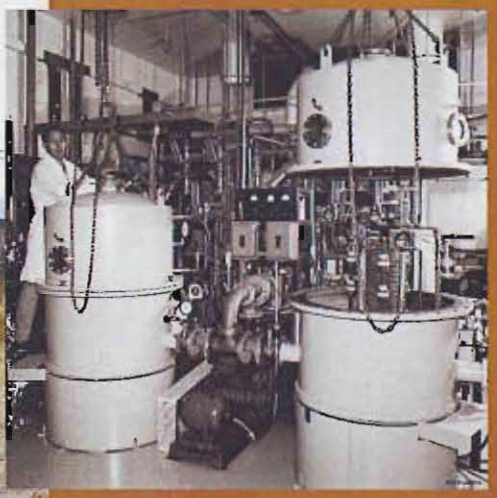
REPORT FOR: DRAWINGS

TA	BLDG	PREFIX	DRAWNUM	PAGE	REV	DSHEET	LOG_DATE	DOC_DATE	PROJID	DISC	TITLE
21	286	C	37241	1	0		02-JAN-69		0	T	GRAPHITE FLOUR STRG. BLDG. SM-317, TA-3, HOT STRG. REPL. WHSE. BLDG. DP-286, TA-
21	286	C	37249	8	0		02-JAN-69		3720	A	ARCH. SITE PLAN & DETAILS
21	286	C	37250	9	2		02-JAN-69		3720	A	ARCH. FOUNDATION PLAN & DETAILS
21	286	C	37251	10	2		02-JAN-69		3720	A	ARCH. FOUNDATION DETAILS
21	286	C	37252	11	2		02-JAN-69		3720	A	ARCH. FLOOR PLAN & SCHEDULES
21	286	C	37253	12	3		02-JAN-69		3720	A	ARCH. EXTERIOR ELEVATIONS
21	286	C	37254	13	3		02-JAN-69		3720	A	ARCH. BUILDING SECTION & DETAILS
21	286	C	37255	14	0		02-JAN-69		3720	E	ELECT. UTILITY PLAN & DETAILS
21	286	C	37256	15	0		02-JAN-69		3720	F	MECH. HEATING & FIRE PROTECTION PLAN
21	286	C	37257	16	0		02-JAN-69		3720	E	ELECT., ELECTRICAL PLAN & SCHEDULES
21	286	C	37366	1	1		28-MAY-69		3720	F	HOT STORAGE REPLACEMENT, WHSE. BLDG., DP-286, SPRINKLER SYSTEM
21	286	C	41126	1	1		09-AUG-73		5018	C	PU STORAGE VAULT MODS. PHASE "B" PLANS, SECTIONS & DETAILS - CIVIL
21	286	C	41129	4	1		09-AUG-73		5018	M	MECH; PARTIAL PLAN, SECTION AND DETAILS BLDG. DP-286
21	286	C	41130	5	1		09-AUG-73		5018	M	MECH; PARTIAL PLAN, ELEVATIONS AND DETAILS
21	286	C	41133	8	1		09-AUG-73		5018	M	MECH; MECH. EQUIPMENT LIST AND NOTES, DP-286, 2, 3, 4, & 5
21	286	C	41135	10	1		09-AUG-73		5018	E	ELEC. - PLAN, NOTES, NAMEPLATES, DETAILS & BILL OF MATERIAL
21	286	C	47752	1	0		20-SEP-92		0	UN	PU STORAGE VAULT MODS. BEAM & COLUMN DETAILS
21	286	C	47752	5	0		20-SEP-92		0	UN	CONTAINMENT TANK PIPE SUPPORT DETAILS
21	286	C	47752	4	0		20-SEP-92		0	UN	CONTAINMENT VESSEL FOOTING REBAR PLACEMENT
21	286	C	47752	3	0		20-SEP-92		0	UN	AIRLOCK ROOM NO. 1 PLAN SECTION & DETAIL
21	286	C	47752	2	0		20-SEP-92		0	UN	AIRLOCK ROOM NO. 12 PLAN, SECTION & DETAILS
21	286	C	48247	1	0		07-DEC-92		0	C	MAN ROOFING SECURITY FENCE-TA-21
21	286	PL	943	1	0		28-MAR-68		3720	UN	HOT STORAGE REPLACEMENT WAREHOUSE, BLDG. DP-286 - PLOT PLAN
21	286	PL	944	2	0		28-MAR-68		3720	A	FLOOR PLAN - ELEVATION
21	286	PL	945	3	0		28-MAR-68		3720	UN	SPECIAL REQUIREMENTS
21	286	R	1724	1	2		07-AUG-70		0	A	FLOOR PLAN, BLDG. DP-286

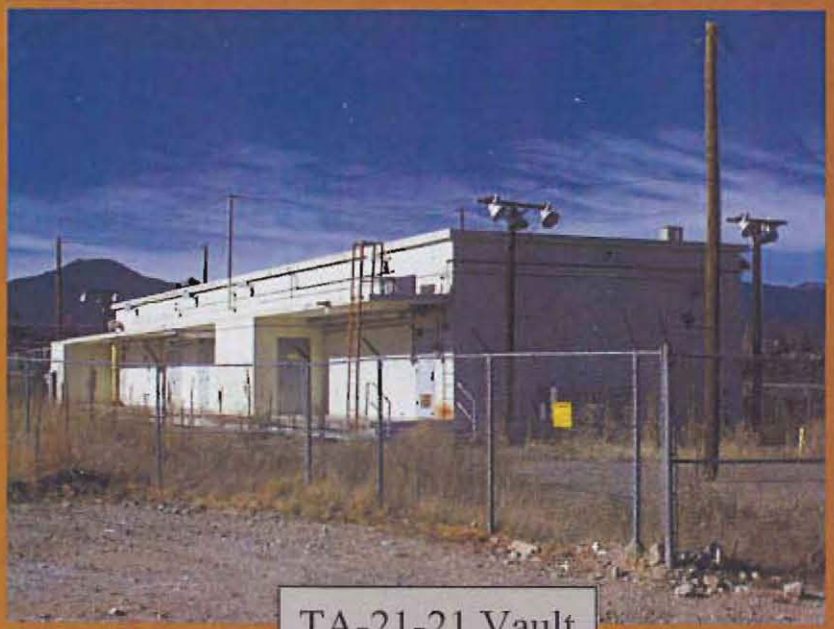
LA-UR-04-6856

Supplemental Historic Context of DP Site, Technical Area 21

Volume 2a – Archival Photographs and Index



TA-21-61



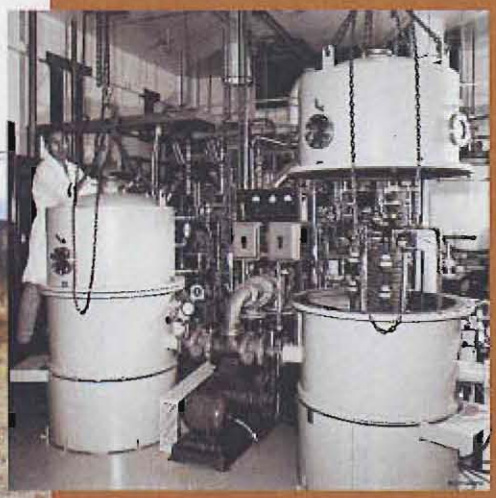
TA-21-21 Vault

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

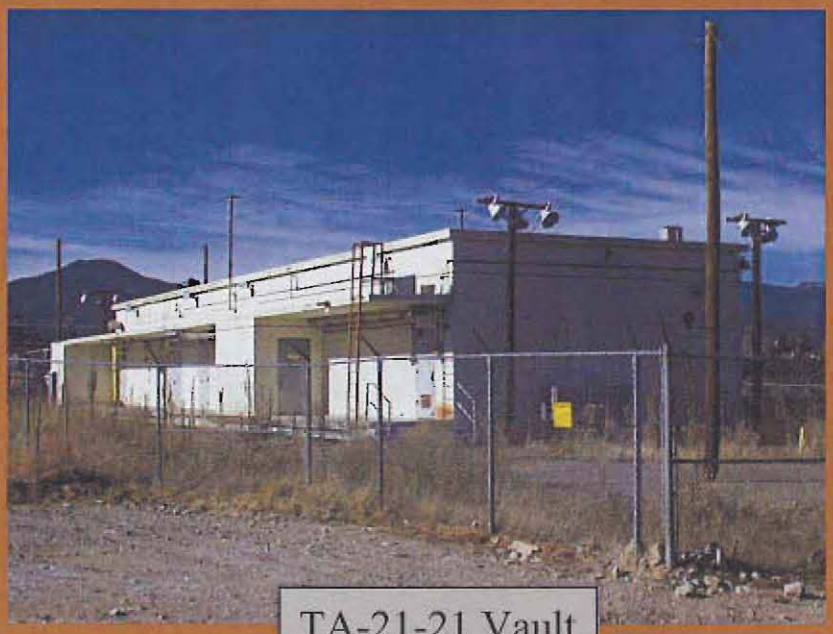
LA-UR-04-6856

Supplemental Historic Context of DP Site, Technical Area 21

Volume 2b – Archival Photographs and Index



TA-21-61



TA-21-21 Vault

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
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Technical Area 21 DP Site
Technical Area 21, Structures (21, 30, 61, 254, and 286)
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) that are designated by numbers. The properties at TA-21 "DP Site" 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-21-30).

DP Site (TA-21) is one of LANL's earliest nuclear chemistry research areas. This TA is divided into two separate areas. The western area, historically dedicated to plutonium operations, is known as DP West. The smaller, eastern most grouping of buildings is known as DP East. Work at DP East originally focused on polonium initiator research.

Plutonium and uranium processing operations conducted in buildings at TA-1 (the wartime Main Technical Area) were moved into the buildings at DP West in September of 1945. The work at DP West concentrated on the development of chemical and physical processes needed to purify fissionable material used to produce weapons-grade metal for nuclear weapons (LANL 1999). DP East also began its operations in September of 1945. The buildings at DP East housed polonium and actinium processing operations, previously carried in H Building at TA-1 (LANL 1991).

Five of the twenty eligible buildings located at TA-21, DP Site, were excess LANL properties and were scheduled for clean up and eventual demolition. This action was 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 five properties was carried out by LANL's Decontamination and Decommissioning (D&D) Program. (For additional information see related project documentation: *Historic Building Assessment for the Department of Energy Conveyance and Transfer Project,* LA-UR-00-1003, Cultural Resource Report No. 178, and *Supplemental Historic Context of DP Site, Technical Area 21,* LA-UR-04-6856, Historic Building Survey Report No. 235.)

References

Los Alamos National Laboratory
1991 *TA-21 Operable Unit, RFI Work Plan for Environmental Restoration.* Volume 1, LA-UR-91-962, Los Alamos National Laboratory, Los Alamos, New Mexico.

1999 *"Information Sheet on the NTISV Demonstration and Deployment at Technical Area 21."* Enclosure to LANL memorandum ER/ER:99-084, dated April 14, 1999, 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 21 "DP Site", TA-21-21
Los Alamos National Laboratory (LANL)
Los Alamos
Los Alamos County
New Mexico

Mike O'Keefe, Photographer, IM-9, LANL July 7, 2004 and September 15, 2004
RB04-012-001 through RB04-012-042 and RB04-013-001 through RB04-013-008

Interior building photos are in order by physical location of the rooms from the west to east. Rooms 6 through 11 are identical and therefore only room 6 was photographed facing into the room and looking out of the room. Rooms 7 through 11 were just photographed facing into the rooms.

Photograph Number	Description
RB04-012-037	TA-21-21, south side (front), western portion, facing north.
RB04-012-038	TA-21-21, south side (front), central portion, facing north.
RB04-012-040	TA-21-21, south side (front), eastern portion, facing north.
RB04-012-041	TA-21-21, south side (front), facing northeast.
RB04-012-042	TA-21-21, south side (front), facing northwest.
RB04-012-031	TA-21-21, east side, facing west.
RB04-012-032	TA-21-21, east side and north side (back), facing southwest.
RB04-013-001	TA-21-21, north side (back) western portion, facing southeast.
RB04-012-034	TA-21-21, north side (back) all or central and eastern portions, facing southeast.
RB04-012-036	TA-21-21, west side, facing northeast.

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Photograph Number	Description
RB04-013-005	TA-21-21, room 1 (airlock), looking into room 1A, facing northeast.
RB04-012-013	TA-21-21, room 1A, facing north.
RB04-012-014	TA-21-21, room 1A, looking into room 1 (airlock), facing south.
RB04-012-016	TA-21-21, room 001 (equipment room), facing north.
RB04-012-019	TA-21-21, room 002 (hallway), facing west.
RB04-012-018	TA-21-21, room 002 (hallway), facing north. Note open vault door leading to rooms 2, 3, and 4 at center and closed vault door leading to room 5 at the right.
RB04-012-023	TA-21-21, close-up of closed vault door in room 002 (hallway) leading to rooms 2, 3, and 4, facing north.
RB04-012-002	TA-21-21, room 2, facing west.
RB04-012-003	TA-21-21, room 2, facing east.
RB04-012-004	TA-21-21, room 3, facing west.
RB04-012-005	TA-21-21, room 3, facing east.
RB04-012-001	TA-21-21, room 4, facing east.
RB04-012-020	TA-21-21, room 5, facing east.
RB04-012-021	TA-21-21, room 5, facing west.
RB04-012-022	TA-21-21, close-up of closed vault door in room 002 (hallway) leading into room 5, facing east.
RB04-012-006	TA-21-21, room 12 (airlock), facing west. Note closed vault door leading to room 003 (hallway) at right.
RB04-012-007	TA-21-21, room 003 (hallway), leading to rooms 6, 7, & 8 on the left and rooms 9, 10, & 11 on the right, facing north.

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Photograph Number	Description
RB04-012-008	TA-21-21, room 6, facing west.
RB04-012-010	TA-21-21, room 6, facing east.
RB04-012-012	TA-21-21, room 7, facing west.
RB04-012-026	TA-21-21, room 8, facing west.
RB04-012-027	TA-21-21, room 9, facing east.
RB04-012-028	TA-21-21, room 10, facing east.
RB04-013-007	TA-21-21, room 11, facing east.
RB04-012-030	TA-21-21, room 004 (equipment room), facing north.

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Technical Area 21 "DP Site", TA-21-30
Los Alamos National Laboratory (LANL)
Los Alamos
Los Alamos County
New Mexico

Ellen McGehee, Photographer, RRES-ECO, LANL July 23, 2001 - August 15, 2001
RB01-004-001 through RB01-004-078, RB02-005-078 through RB02-005-093

Ken Towery, Photographer, PM-1, LANL December 5, 2001
RN02-008-016 through RN02-008-030, RN02-008-067 through RN02-008-069

Photograph Number	Description
RB01-004-012	TA-21-30, south side (front), facing northeast.
RB01-004-011	TA-21-30, south side (front), facing northwest.
RB01-004-005	TA-21-30, east side, facing west.
RN02-008-017	TA-21-30, north side, (back), facing south.
RN02-008-016	TA-21-30, north side (back) and west side, facing southeast. Note above ground steam lines.
RB01-004-002	TA-21-30, west side, facing east.
RB01-004-024	TA-21-30, room 101 and room 101A, facing south.
RB01-004-020	TA-21-30, room 101, facing northwest.
RB01-004-023	TA-21-30, room 101, facing northeast.
RB01-004-025	TA-21-30, room 101, facing southeast.
RB01-004-028	TA-21-30, room 102, facing south-southwest.
RB01-004-018	TA-21-30, room 102, facing southwest.
RB01-004-016	TA-21-30, room 102, facing northwest.

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Photograph Number	Description
RB01-004-017	TA-21-30, room 102, facing northeast.

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Technical Area 21 "DP Site", TA-21-61
Los Alamos National Laboratory (LANL)
Los Alamos
Los Alamos County
New Mexico

Photograph Number	Description
RB01-004-038	TA-21-61, west side (front), facing east.
RB01-004-037	TA-21-61, north side, facing south-southeast.
RB01-004-069	TA-21-61, east side (back), facing west.
RB01-004-033	TA-21-61, south side, facing north-northeast.
RB01-004-073	TA-21-61, rooms 1, 2, and 3 (at time of review all one space), facing west.
RB01-004-051	TA-21-61, rooms 1, 2, and 3 (at time of review all one space), facing northwest.
RB01-004-050	TA-21-61, rooms 1, 2, and 3 (at time of review all one space), facing north-northwest.
RB01-004-060	TA-21-61, rooms 1, 2, and 3 (at time of review all one space), facing northeast.
RB01-004-056	TA-21-61, rooms 1, 2, and 3 (at time of review all one space), facing east.
RB01-004-057	TA-21-61, rooms 1, 2, and 3 (at time of review all one space), facing east.
RB01-004-047	TA-21-61, rooms 1, 2, and 3 (at time of review all one space), facing southwest.
RB01-004-046	TA-21-61, rooms 1, 2, and 3 (at time of review all one space), facing northwest.
RB01-004-074	TA-21-61, rooms 1, 2, and 3 (at time of review all one space), facing southwest.
RB01-004-066	TA-21-61, room 3-A and 3-B, facing north-northeast.

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Photograph Number	Description
RB01-004-055	TA-21-61, room 3-A, facing north.
RB01-004-054	TA-21-61, room 3-B (west and north walls), facing west-southwest.
RB01-004-053	TA-21-61, room 3-B (north, east, and south walls), facing east.
RB01-004-070	TA-21-61, room 4, facing southwest.

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Technical Area 21 "DP Site", TA-21-254
Los Alamos National Laboratory (LANL)
Los Alamos
Los Alamos County
New Mexico

Photograph Number	Description
RB02-005-078	TA-21-254, northeast side and northwest side (front), facing southeast.
RB02-005-082	TA-21-254, northwest side (front) and southwest side, facing north northeast.
RB02-005-084	TA-21-254, southwest side and southeast side (back) facing northwest.
RB02-005-085	TA-21-254, southeast side (back), facing west northwest.
RB02-005-088	TA-21-254, room 101, northwest wall, facing northwest.
RB02-005-093	TA-21-254, room 101, northwest corner, facing north.
RB02-005-091	TA-21-254, room 101, northeast corner, facing east.
RB02-005-090	TA-21-254, room 101, southeast corner, facing south.
RB02-005-092	TA-21-254, room 101A, facing southwest.
RB02-005-089	TA-21-254, room 101, southeast corner, facing south.

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Technical Area 21 "DP Site", TA-21-286
Los Alamos National Laboratory (LANL)
Los Alamos
Los Alamos County
New Mexico

Photograph Number	Description
RN02-008-029	TA-21-286, east side (front), facing west.
RN02-008-030	TA-21-286, north side, facing south.
RN02-008-067	TA-21-286, west side (back), facing east.
RN02-008-068	TA-21-286, south side, facing north.
RN02-008-028	TA-21-286, in room 106 looking north into rooms 104 and 102, facing north. Note room 105 to the left.
RN02-008-026	TA-21-286, room 104, facing west.
RN02-008-025	TA-21-286, in room 102 looking south into rooms 104 and 106, facing south.
RN02-008-027	TA-21-286, room 105, facing west.
RN02-008-022	TA-21-286, room 100, facing north.
RN02-008-024	TA-21-286, room 100, facing southwest.
RN02-008-023	TA-21-286, room 107, facing south.
RN02-008-019	TA-21-286, room 107, facing north.
RN02-008-020	TA-21-286, room 103, facing northwest.
RN02-008-021	TA-21-286, room 103, facing east-northeast.

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Technical Area 21 "DP Site", TA-21-59, -65, and -66 (Removed Properties, Not Eligible)
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Los Alamos
Los Alamos County
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Photos of these three buildings and structures were taken to help depict what the entire site area looked like around TA-21-61 at the time of review. TA-21-59 was a small storage building, TA-21-65 was a small warehouse, and TA-21-66 was a cylinder storage shed. TA-21-59 was built in 1945 and TA-21-65 and -66 were built in 1950.

Photograph Number	Description
RB01-004-009	TA-21-65, -66, -61, -59 (left to right), north sides, facing southeast. Note the above ground steam lines.
RB01-004-032	TA-21 aboveground steam lines, facing northeast.
RB01-004-031	TA-21-59, east side (front), facing west.
RB01-004-040	TA-21-59, west side (back), facing east.
RB01-004-063	TA-21-59, room 101, facing east.
RB01-004-064	TA-21-59, room 101, facing southeast.
RB01-004-065	TA-21-59, room 101, facing southwest.
RB01-004-071	TA-21-59, room 101, facing northwest.
RB01-004-042	TA-21-65, north side (front), facing south.
RB01-004-045	TA-21-65, north side (front) and west side, facing southeast.
RB01-004-075	TA-21-65, south side (back), facing north. Note above ground steam lines.
RB01-004-007	TA-21-65, south side (back), facing west-northwest.
RB01-004-006	TA-21-65, east side, facing west.

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Photograph Number	Description
RB01-004-015	TA-21-65, room 101, facing east.
RB01-004-014	TA-21-65, room 101, facing southwest. Note TA-21-66 (cylinder shed) at right.
RB01-004-044	TA-21-66, cylinder shed, facing south.