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Historic Documentation of TA-3-0016

Smashing Atoms & Modern Physics at the Ion Beam Facility

Volume 1



Los Alamos National Laboratory

LANL Fiscal Year 2018 Footprint Reduction

Historic Building Survey Report No. 376

Survey No. 886

Los Alamos
NATIONAL LABORATORY
EST. 1943

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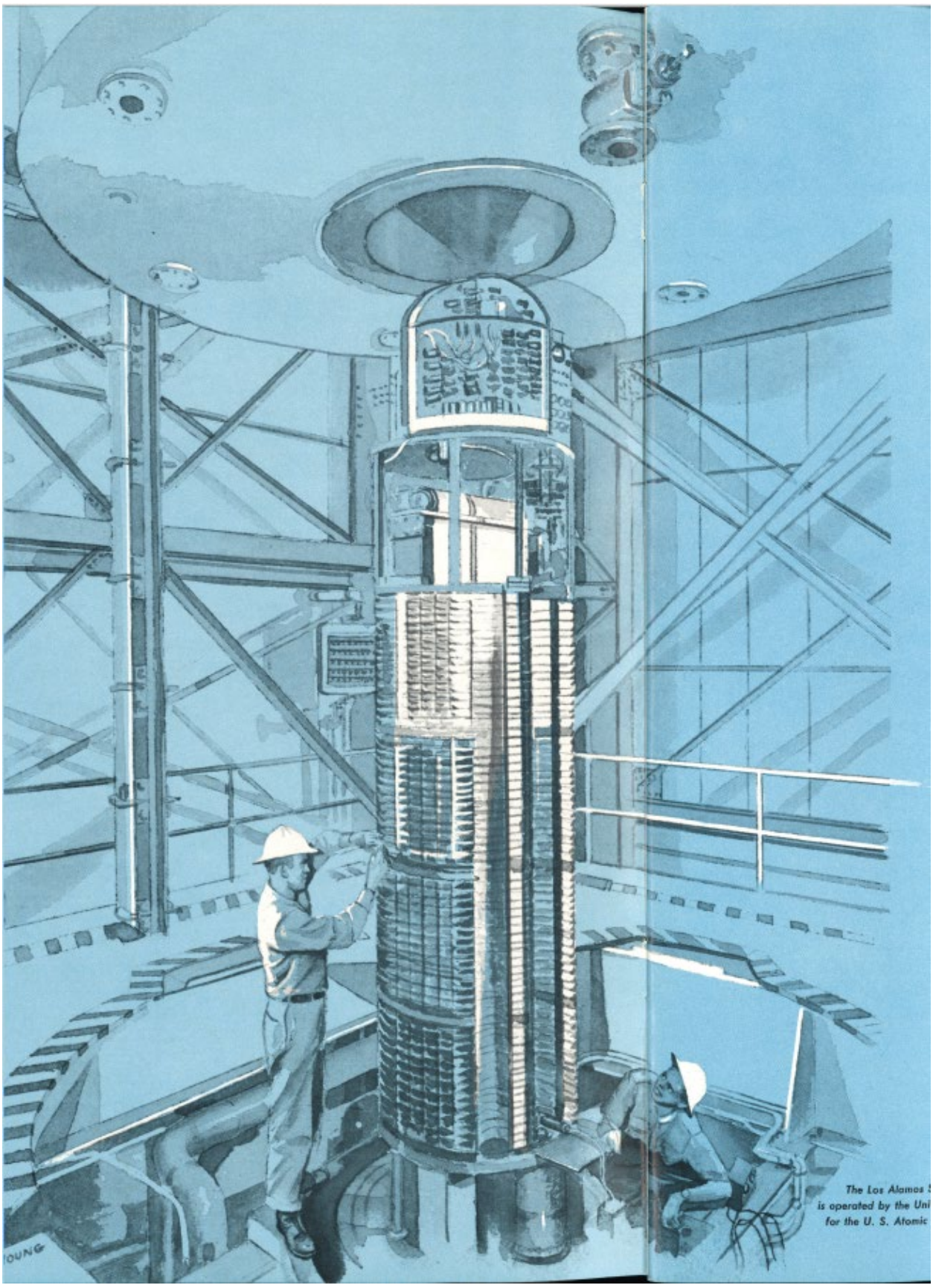
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EXECUTIVE SUMMARY

The U. S. Department of Energy, National Nuclear Security Administration, Los Alamos Field Office (Field Office) requested the State Historic Preservation Officer (SHPO) to concur with the National Register of Historic Places eligibility determination contained in the report *The Decommissioning of TA-3-16, the Ion Beam Facility (IBF)* (LA-UR-05-0775). In this report, Building Technical Area (TA) 3-16 was determined eligible to the National Register of Historic Places. The SHPO concurred with the eligibility determination on March 25, 2005. However, the Field Office later proposed to decontaminate, decommission, and ultimately demolish this property, an adverse effect to Building TA-3-16.

To bring a resolution to these conflicting potential outcomes, consultation began in earnest on March 13, 2018. The New Mexico Historic Preservation Division concurred with the mitigation identified in the *Programmatic Agreement among the U.S. Department of Energy, National Nuclear Security Administration, Los Alamos Field Office, the New Mexico State Historic Preservation Office, and the Advisory Council on Historic Preservation Concerning Management of Historic Properties of Los Alamos National Laboratory, Los Alamos, New Mexico (PA)* and additional mitigation measures identified in correspondence on April 14, 2018. The PA states in Appendix D.2.A that adverse effects to Register-eligible buildings and structures will be resolved according to the procedures defined in *A Plan for the Management of the Cultural Heritage at Los Alamos National Laboratory, New Mexico (CRMP)* (LA-UR-15-27624) and within the PA itself.

Under CRMP, development of a formal three-party memorandum of agreement (MOA) is required to resolve adverse effects to exceptionally significant properties, such as the IBF. In the past, the Advisory Council on Historic Preservation (ACHP) has chosen not to participate in routine MOAs related to the demolition of historic buildings. In this event, the PA stipulates in Section 10.D.6 that if adverse effect resolution only includes the Field Office and the New Mexico SHPO, no MOA is required and the Field Office should consult with the SHPO in writing to resolve the adverse effects. Therefore, a special mitigation plan to resolve adverse effects to Building TA-3-16 in lieu of a formal MOA is required. This document fulfills the special plan for mitigation.


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VOLUME 2

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INTRODUCTION

The U.S. Department of Energy, National Nuclear Security Administration, Los Alamos Field Office (Field Office) is submitting this cultural resource documentation to the New Mexico State Historic Preservation Officer (SHPO) as mitigation for the demolition of Cold War-era Building 16 in Technical Area (TA) 3 (Map 1) at Los Alamos National Laboratory (LANL or the Laboratory).

The Ion Beam Facility was determined eligible for the National Register of Historic Places in the report, *The Decommissioning of TA-3-16, the Ion Beam Facility (IBF)* (LA-UR-05-0775) (Loomis, et al. 2005). The SHPO concurred with this determination on March 25, 2005.

Eligibility of the IBF for inclusion in the National Register of Historic Places was based on the following criteria:

Criterion A: Due to its association with events that have made a significant contribution to the broad patterns in our history (U.S. Department of Interior 1991). During the Cold War years at the Laboratory, the Van de Graaff accelerators housed in Building TA-3-16 were some of the most significant scientific tools at the Laboratory for conducting nuclear experiments. These accelerators played a major role in pure physics research and in experiments related to the development of American's nuclear arsenal during the 1950s and 1960s.

Criterion C: Due to a property's embodiment of distinctive architectural and engineering significance (U.S. Department of Interior 1991). Building TA-3-16 embodies a unique design with its association with the world-class Van de Graaff accelerators.

HISTORICAL CONTEXT

Early Cold War Era (1946–1956)

The future of the early Laboratory was in question after the end of World War II (WWII). Many scientists and site workers left Los Alamos and went back to their pre-war lives. Norris Bradbury was appointed Director of the Laboratory following J. Robert Oppenheimer's return to his pre-WWII duties. At that time, Bradbury felt that the nation needed "a laboratory for research into military applications of nuclear energy" (LANL 1993). In late 1945, General Groves directed Los Alamos personnel to begin stockpiling and developing additional atomic weapons. Post-war weapon assembly work was then tasked to Los Alamos's Z Division, which had been relocated to an airbase (now Sandia National Laboratories) in nearby Albuquerque, New Mexico (Gosling 2001).

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

With the beginning of the Cold War in 1947, weapons research once again became a national priority. Weapons research at LANL was spearheaded by Edward Teller and Stanislaw Ulam. It focused on development of the hydrogen bomb, feasibility of which had been discussed seriously at Los Alamos since 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 1950, President Truman approved the development of a hydrogen bomb. Truman's decision led to the remobilization of the country's weapons laboratories and production plants. The year 1950 also marked the initial 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 was established and the first Nevada atmospheric test, known as Able, was conducted. In the same year, Laboratory scientists directed Operation Greenhouse in the Pacific and successfully conducted both the first thermonuclear test, known as George, and the first thermonuclear boosted test, Item. In 1952, the first thermonuclear bomb, known as Mike, was detonated at Enewetak Atoll in the Pacific (LANL 1993).[1] The Soviet Union responded with a successful fusion demonstration in August 1953, followed by their 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).

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 the Laboratory ended in 1956, a date that marks the completion of all basic nuclear weapons design. Later research at the Laboratory 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 the Laboratory's continued support of the atmospheric testing programs in the Pacific and at the Nevada Test Site. In 1957, the first of many underground tests in Nevada was conducted, and in 1963, the Limited Test Ban Treaty was signed, which banned atmospheric testing and also nuclear weapons tests in the oceans and space (US DOE 2000). Defense mission undertakings during this time included treaty and test ban verification programs such as the satellite detection of 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 collaborations, superconducting research, contained fusion reaction research, and other types of energy research (McGehee and Garcia 1999).

[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).

ARCHITECTURAL CONTEXT

The IBF developed during the period of modern 20th Century architecture, which encompassed many distinct architectural styles including Expressionism and Futurism. Expressionism used concrete to give buildings a sculptural quality. Futurism, as its names suggested, embraced new technologies and the fast pace of life in the 20th Century with linear styling and bold colors, seen mainly in art deco design. Other notable styles of modern architecture include brutalism, high tech (structural expression), neo-modernism, post-modernism, and others.

During the Cold War years, architectural designs began emerging to meet the technical and scientific requirements at facilities like LANL and the IBF. Highly technical and scientific facilities commonly house specific machines and equipment; and, they were usually one-of-a-kind or first-of-a-kind facilities. These facilities were associated with man's first ventures into space, the splitting of the atom, the development of computers and artificial intelligence, and genetic engineering. America's scientific and technical facilities stand as monuments to the nation's ability to invent and exploit new technology, as well as advancing scientific and engineering knowledge (Advisory for Historic Preservation 2017).

These facilities were typically designed from the inside out, where all ornament, if any, was derived from the essential construction of the building. Or, the buildings were designed to support very specific equipment and thereby take the form and shape of what was needed to support all manner of vehicles and specialized equipment needed for the facility's operation. While the IBF does not fit into any of these modern styles, it does adhere to one of the primary attributes of 20th Century Modern Architecture: form follows function. Another characteristic of 20th Century Modern Architecture that finds expression in the IBF and similar facilities includes the concept that materials used in construction are meant to be seen and appreciated for what they are, not hidden falsely by other materials.

It has also been suggested that the industrial archeological movement with its systematic study of material evidence associated with the industrial past, including sites and structures of immense scale and unique structural expression from our technological past, could include these types of highly scientific facilities (Miller 2016). However, the industrial category falls short in really capturing the unique essence of facilities such as the IBF.

Therefore, a new style needs to be defined to capture the highly technical and scientific facilities and sites of the late 20th century and the beginning of the 21st century. Historically significant scientific and technological facilities, structures, and objects are those that meet the criteria for inclusion in the National Register of Historic Places or that qualify for designation as National Historic Landmarks for the contributions they made, the role they played, or breakthroughs they were associated with in American science, technology, and industry. Scientific and technological properties considered significant can be the equipment itself or the facility where it was used or built. Characteristics of these types of facilities are defined by equipment, programs, or processes, not by formal, codified characteristics of a formal style. The IBF is such one facility.

HISTORIC CONTEXT - ACCELERATORS

The History of Nuclear Physics in the Pre-Accelerator Era

As a technology, particle acceleration stems from a thirty-year period of extremely fruitful and revolutionary scientific history. To contextualize the importance of accelerators in nuclear physics, a brief overview of atomic theory history will be presented.

The idea of atoms as indivisible, indestructible, particles—originally proposed by John Dalton in 1803—was the prevailing theory which formed the basis of nuclear physics for over ninety years. By the cusp of the 20th century, however, scientists began challenging this view. With Wilhelm Röntgen's discovery of X-rays in 1895, followed by Joseph J. Thompson's discovery of the electron in 1897, conventional wisdom of the atom's structure quickly evolved. In 1904, seven years after the discovery of the electron, Thompson published *On the Structure of the Atom*, a controversial paper which slightly modified Dalton's long-standing theories and became the subject of intense academic interest (Thompson 1904).

From 1908 to 1913, a series of experiments to measure atomic deflection based on Thompon's model led to a revelation in nuclear physics. By bombarding thin foils of pure elements—typically aluminum, copper, or gold—with an alpha particle source of naturally radioactive radium, the particles would interact with a luminescent material, allowing for more accurate estimations of atomic width and charge (Geiger and Mardsen 1913). Contrary to theories of the period, the dramatic deflection of alpha particles from the Rutherford Gold Foil / Geiger-Mardsen experiments lead to a radical revision in the concept of an atom's structure. Within a decade, Ernst Rutherford, Hans Geiger, and Ernest Mardsen had decisively disproven both Thompson's and Dalton's conjectures. In the wake of this change, Rutherford composed the earliest "modern" model of the atom with an incredibly small nucleus surrounded by a wide orbit of electrons.

In the fifteen years that followed, refined theories of atomic structure based on the pioneering work of Rutherford, Geiger, and Mardsen would be tested through the bombardment of elements from natural radioactive sources. As encapsulated by Rutherford's Presidential address to the Royal Society of London in 1928, it had become apparent to nuclear physicists of the period that the only way to continue their research was through high energy collisions generated with greater control and precision (Bromley 1974).

The Evolution of Electrostatic Particle Accelerators

The Cockcroft-Walton Accelerator

Rutherford's studies, which validated the idea that the atom was comprised of much smaller particles, were the intellectual spark that drove nuclear physics toward the necessity for particle accelerators. Following the discovery of the nucleus, scientists needed methods to study smaller components of the nucleus. Up to this point, the only reliable method of splitting atoms was the reliance on substances, such as radium, which could only produce low-energy alpha radiation (Bromley 1974). To effectively "split" an atom would only be possible if a device was made that could conveniently (and consistently) produce voltages large enough to accelerate subatomic particles.

By the late 1920s and into the early 1930s, it became apparent to many scientists in Europe and the US that there was a need for devices that could accelerate particles to energies sufficient to disintegrate atomic nuclei. In 1932, after several years of research and development, John D. Cockcroft and Ernest T.S. Walton developed the first practical particle accelerator at the Cavendish Laboratory in Cambridge, England. While other scientists had experimented with accelerating subatomic particles via high voltage fields as early as 1904, Cockcroft and Walton were the first to basically demonstrate the disintegration of atomic nuclei by using artificially accelerated particles (Bromley 1974; Contemporary Physics Education Project 2018; Livingston 1969).

The accelerator employed a number of high voltage capacitors, arranged in a staged ladder configuration that was charged in parallel by an electrical transformer (Figure 1). The accelerated particles, generated by an ion source, were then dispersed through a channel in this ladder of capacitors to a target. Cockcroft and Walton's pioneering work in accelerator technology eventually led to their receipt of the Nobel Prize in 1951. Since then, particle accelerators have been extraordinary valuable tools in both probing the structure of, and examining the interactions within, individual atoms.

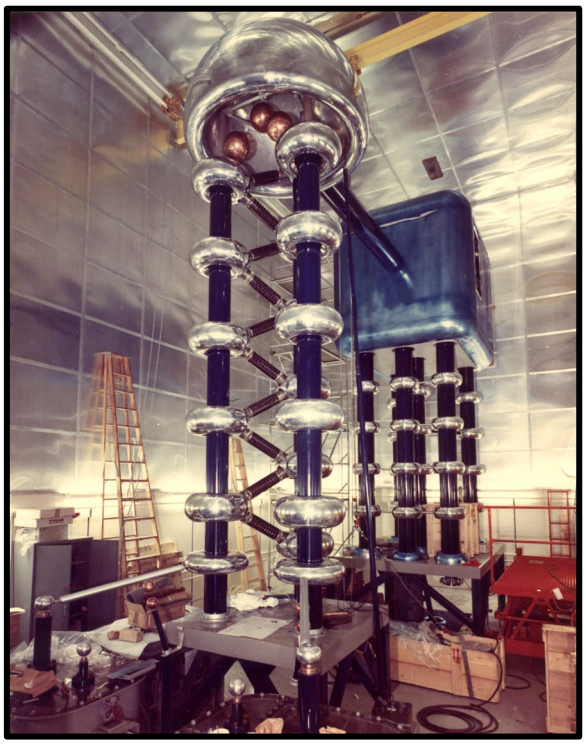


Figure 1: A Cockcroft-Walton Accelerator from Brookhaven National Laboratory. Note the high voltage-capacitors arranged in a zigzag ladder formation (BNL 2009).

See Figure 2 for a general diagram of the operation of a Cockroft-Walton accelerator from Contemporary Physics Education Project 2018.)

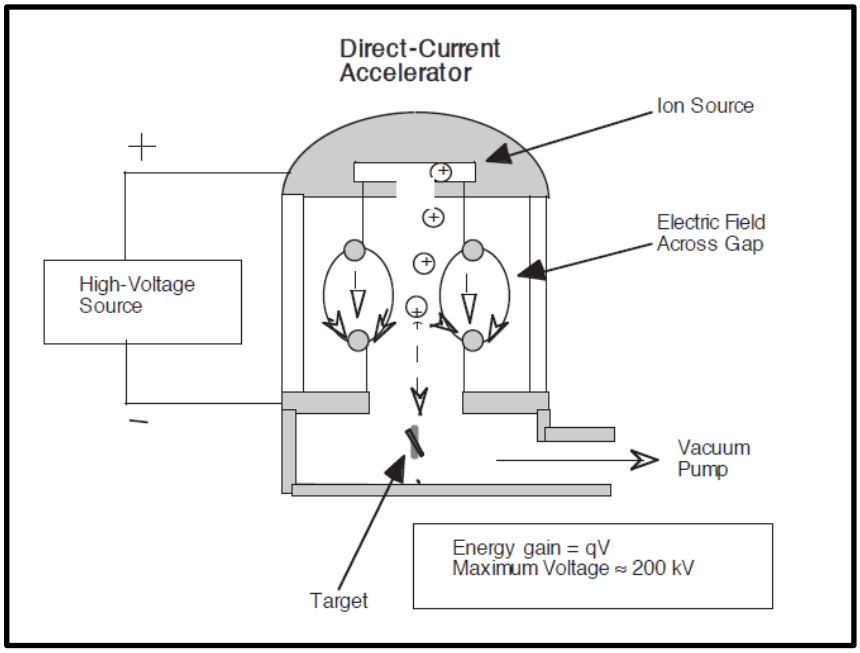


Figure 2: A Cockroft-Walton accelerator. The symbol q in the formula refers to the charge of particle. (Contemporary Physics Education Project 2018).

These accelerators were known as "atom smashers" because they accelerated sub-atomic particles to very high speeds and then "smashed" them into the target atoms. (Livingston 1966). Principally, accelerators are designed to propel atoms to relativistic velocities, which upon contact with a target—typically a thin foil of an ultrapure element—would disintegrate into subatomic components. By studying these collisions and their resulting byproducts, scientists could investigate the fundamental structures and properties of atoms.

Common to all accelerators is the use of electric fields for the acceleration of charged particles, which demanded high electrical supplies. High voltage generating machines were being developed in Germany, and in the US at the California Institute of Technology, Carnegie Institute of Washington, and private companies such as General Electric and the Westinghouse Corporation. Their initial goal was to generate one million (1 MeV) electronvolts (Contemporary Physics Education Project 2018; Livingston 1969). The electronvolt is often used as a unit of momentum; it is the energy that an electron gains when it travels through a potential of one volt (i.e.,1 eV). This definition gives rise to usage of eV (and keV, MeV, GeV or TeV) as units of momentum, for the amount of energy supplied to result in the acceleration of a particle.

Though Cockcroft and Walton's first designs were successful in reaching the 1 MeV threshold, the technology proved to be relatively complex, unreliable, and limited. With some exceptions in X-ray generation, most accelerators using this design were incapable of producing electrical potentials much higher than one to two million volts (1-2 MV), thereby limiting their utility for higher energy applications (Bromley 1974). Experiments to develop accelerators outside of the limitations of the Cockcroft-Walton design employed a wide variety of methods to generate the voltage scientists needed, but were not as capable in providing scientists with steady voltages to produce a beam with reasonable precision (Livingston 1969). Thus, the race was on to achieve ever higher electrostatic voltages with greater simplicity.

The Van de Graaff Accelerator

A major contender in the race for high voltage was an electrostatic generator developed by Robert J. Van de Graaff. After seeing the need for high-voltage machines as a Rhodes Scholar at Oxford in 1928, he designed a belt-charged generator at Princeton in 1930. The accelerator that Van de Graaff designed operated along similar principles to the Cockroft-Walton accelerator, but the electrical current was applied to a belt that rotated between two wheels, rather than using a complex series of capacitors. His machines generated particle energies between 1 and 9 MeV and could deliver a steady parallel beam with excellent energy uniformity and stability. Van de Graaff's design would become the most prolific type of electrostatic accelerator in the world, with the number of installations estimated to be over 500 by the 1960s (Livingston 1969).

Following is a description from 1931 of his early model accelerator that used two spheres:

> "Two spherical aluminum terminals, 24" in diameter, were mounted on 7 feet tall glass rods, each with a motor driven silk belt to transport the charge. The belts were charged with ions produced by corona discharge from needle points, and discharged with similar point in the terminals. One sphere was given a positive charge and the other a negative charge (Livingston 1969)."

Between 1930 and 1932, Van de Graaff accelerators demonstrated steady improvement in electrical potentials and particle energies. Completing his fellowship at Princeton University, Van de Graaff moved to MIT to build the most powerful accelerator possible, limited only "by the size of the building in which it is placed" (Bromley 1974).



Figure 3: Publicity Photo Robert J. Van de Graaff

Robert J. Van de Graaff received his Bachelor and Master's degrees in mechanical engineering from the University of Alabama. "For his master's thesis, he developed an improved system for mining lower grades of iron ore. The ore moved on a conveyer belt and the more ferromagnetic components were extracted from a high magnetic field via a sharp metallic tip." - the precursor to his experiments later in the development of the accelerators that bear his namesake.

He worked briefly at the Alabama Power Company on high voltage equipment. In 1924, he received a grant from the State of Alabama to study at the Sorbonne in Paris. He saw Marie Curie demonstrate that single emissions from a nucleus produce clicks on a loudspeaker. "That experience inspired his life's work." With a Rhodes scholarship to Oxford University in England, he received a bachelor's degree in physics and continued at Oxford to obtain a doctorate. Interesting to note, Van de Graaff never received a high school diploma.

He returned to the United States to work at Princeton where he developed the first prototype of his accelerator in 1929. Later, at the Massachusetts Institute of Technology, he was the director of the high voltage radio graphic project and co-founder of the High Voltage Engineering Corporation after World War II.

While his primary interests throughout his career were making positive contributions to society, his work, nonetheless, was instrumental in the future development of nuclear weapons. Due to injuries sustained playing football while he was young, his work x-raying warheads for inspection during Work War II, and an automobile accident in the 1950s, he died of a heart attack at the age of 66.

The result was the Round Hill accelerator built in 1932. The Round Hill consisted of two 15-foot spherical terminals mounted on vertical insulating fiber cylinders with each terminal enclosing a 4-foot wide belt for charging, one for carrying positive charges and the other carrying negative charges. A discharge tube for accelerating ions was supported between the terminals. It was used as a research tool but became obsolete due to its dependence on sustaining high voltages in the open atmosphere (Bromley 1974). It was later dismantled in 1937, and was moved to the Boston Museum of Science as a permanent exhibit, where it impressed the public with its electrostatic show (Livingston 1969). As of August 2018, visitors can still visit the round Hill accelerator as part of the *Lightning!* exhibit at the museum.

Van de Graaff accelerators work by developing high potential electrical differences, which are built up and maintained on a smooth conducting surface. An ion source, located inside the conducting surface, would generate particles for the beam. The electrical differences, applied between the high voltage supply connected to a rotating belt and ground, would produce a continuous transfer of positive static charges and accelerate the ion source particles to a fixed target (Contemporary Physics Education Project 2018). (See Figure 3 for a diagram of a Vertical Van de Graaff accelerator.)

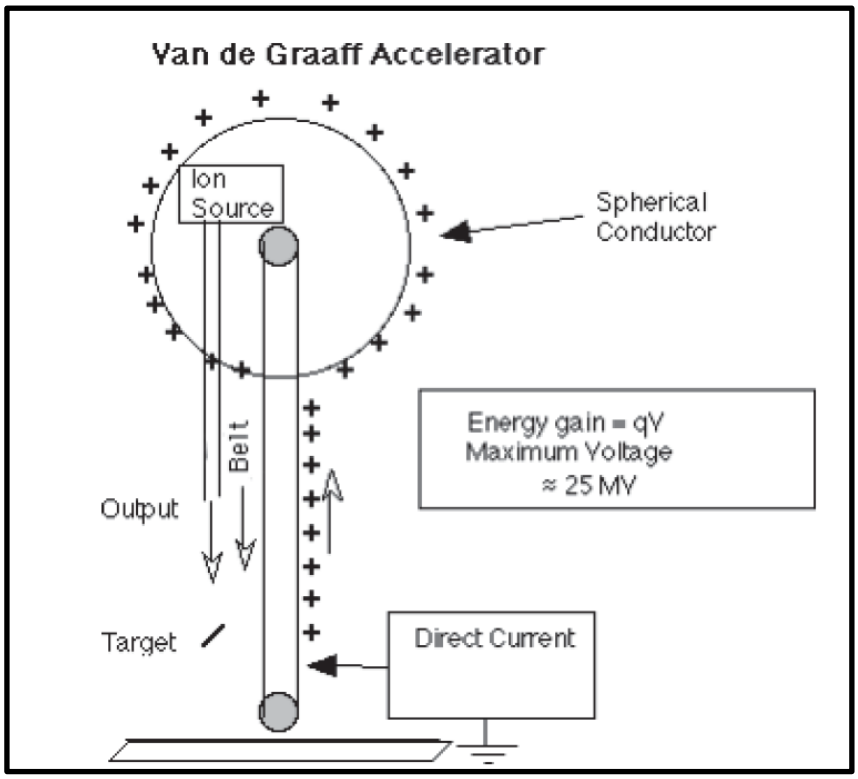


Figure 4: Schematic view of a Van de Graaff accelerator (Contemporary Physics Education Project 2018).

Although mechanically simpler than the Cockcroft-Walton design, most Van de Graaff accelerators operated at only marginally higher voltage potentials than their contemporaries. This relative parity in voltages between Van de Graaff and Cockcroft-Walton accelerators would remain constant until the invention of the pressure-insulated Van de Graaff generator, developed by Raymond G. Herb during his graduate studies at the University of Wisconsin – Madison in

1933 (Barschall 1997). By isolating the generator's conducting surface from the outside atmosphere, and connecting electrical sources within the accelerator via a series of evenly-spaced metallic rings, a high-pressure Van de Graaff machine would produce an electrostatically uniform field which enclosed the belt, conductive surface, and acceleration tube (Bromley 1974). This uniform field helped to limit a condition known as "corona sparking" where the stored electrical charges above a defined limit would randomly discharge, thereby reducing the overall effectiveness of the accelerator.

In 1937, five years after Herb's groundbreaking discovery, the University of Wisconsin, MIT, and private industries such as the Westinghouse Corporation were developing accelerators capable of delivering particle energies up to 4.5 MeV (Bromley 1974; Coltman 1987). The end result, perfected by John G. Trump of MIT and Van de Graaff over the next decade, would lead to voltages exceeding any other electrostatic accelerator design, providing consistent particle energies of 9 MeV. These developments came at an opportune time, with academic and government interest in nuclear physics reaching a fever pitch following the Second World War. To further study the potential of the atom, public and private institutions throughout Western Europe and North America began demanding more powerful accelerators.

In 1947, Trump, Van de Graaff and others formed the High Voltage Engineering Corporation (HVEC), for the commercial production of "van de graaff" generators. This company would produce several models of pressure-insulated machines of both increasing energy and reliability for institutions throughout the world. By 1959, HVEC expanded capabilities of the original Van de Graaff design by producing the "tandem" accelerator. A double-ended, horizontal generator in which negative hydrogen ions are accelerated "up" to the central terminal, then stripped of electrons, and subsequently accelerated "down" to ground potential. With this new model, tandem accelerators could obtain particle energies that were double the terminal voltage of earlier Van de Graaff designs (Livingston 1969). Older models of Van de Graaff accelerators could be connected to these tandem designs through focusing magnets, which were employed to control and focus charged particle beams to provide a more accurate delivery to accelerator targets (Kraus 1993).

Development of Accelerators and Uses at Los Alamos

The history of nuclear physics is vital to understanding the scientific goals and trajectory of Los Alamos during the Manhattan Project and Cold War eras. As the study of the physical properties of atomic nuclei and their interactions with subatomic particles has evolved, the field of nuclear physics has been absolutely vital to understanding the mechanisms behind, and the general improvement of, nuclear weapons technology. From the establishment of Project Y until the first thermonuclear experiments in 1952 and 1953, the nuclear physics program in Los Alamos was devoted almost exclusively to the study of weapons systems (Brooks and Hollen 1993). With the maturation of thermonuclear weapons research in the late 1950s, nuclear physics in Los Alamos began to diversify. As the field of research has broadened, scientists at the Laboratory have made numerous valuable contributions to nuclear reactor design, fusion research, and nuclear nonproliferation (Brooks and Hollen 1993).

The Early Van de Graaffs

During World War II, accelerator tests provided vital information to Project Y scientists designing the first nuclear weapons at Los Alamos. After the war, some of those machines were used as tools of basic scientific research (Reichelt 1993). Four early-designed accelerators were brought to Los Alamos from universities across the country. As suppliers of nuclear data, (the physical interactions involving atom nuclei), these bulky hand-built machines were urgently needed to provide an experimental foundation for developing the fission bombs, Fat Man and Little Boy. Two of these accelerators came from the University of Wisconsin, Short Tank (affectionately called Little Van) and Long Tank. Short tank was constructed by Joseph L. McKibben. Long Tank was constructed by Raymond G. Herb. The designs of the two accelerators were based on Van de Graaff's models.

Little Van and Long Tank, provided by the University of Wisconsin, were some of the most powerful accelerators of the era, with electrical outputs of 2.4 and 4.5 million volts, respectively (Bromley 1974). From 1937 to 1942, these accelerators provided physicists with a reliable source of charged particles for neutron bombardment and cross-section experiments with particle energies up to 4.5 MeV. With the United States' entry into World War II, these accelerators were of great interest to the federal government's military research programs.

Between February 1942 and April 1943, a contract with the Office of Scientific Research and Development (OSRD) and the University of Wisconsin began to develop the fission bomb. The OSRD was an agency of the United States federal government created to coordinate scientific research for military purposes during World War II. Oppenheimer was involved in directing the research activities associated with this contract (Los Alamos Historical Society 1996). The other two accelerators at Los Alamos included the Cockcroft-Walton accelerator from the University of Illinois and a cyclotron brought from Harvard University (McKibben 1991).

This first accelerators provided charged particles for nearly every conceivable neutron experiment and served a major role in development of the first nuclear bombs during World War II (LASL 1964). Spearheaded by the Electrostatic Generator Group (P-2), which was led by Physicist John H. Williams and incorporated nearly the entire accelerator research team from the University of Wisconsin, Long Tank and Little Van were immediately put to wartime use as soon as they were delivered to Los Alamos (Seidel 1993). One of the first theoretical problems investigated was determining the number of neutrons that resulted per fission of Uranium and Plutonium.

Beginning on July 15, 1943, with an infinitesimal quantity of Plutonium produced by Washington University in Saint Louis, Missouri, numerous experiments were conducted to determine its suitability for weapons development. Hugh Richards, a physicist from Rice University who came to support the accelerator effort, later recalled:

> *"Before we had to turn it (the Plutonium sample) over to the chemists, we were to measure as many of its physical cross sections as possible. In particular we needed to verify that it produced neutrons upon fission and to measure roughly the number of neutrons per fission. Many of us worked 18- to 20-hour days during this period, but we got the crucial measurements done. We arranged to take a few days vacation afterward."* (Seidel 1993).

The experiments from Little Van and Long Tank proved that both Uranium and Plutonium were suitable in producing a critical chain reaction, giving the research program of Project Y the confidence they needed to pursue enrichment operations with both elements. P-2 would continue to refine their experiments throughout the remainder of the Manhattan Project, with both accelerators contributing valuable basic research. After the conclusion of the Manhattan Project, Little Van was purchased by the postwar Los Alamos Scientific Laboratory. The accelerator was in prolific use during the remainder of its 21 year-long career in service with the Physics (P) Division until it was eventually removed from the Physics Building in 1964 (See Figure 5). Long Tank, following the conclusion of the Laboratory's wartime scientific mission, would be returned to the University of Wisconsin.



Figure 5: Moving "Little Van", The Atom, 1964.

Postwar Van de Graaff Accelerator Developments and the Ion Beam Facility

In February 1946, the Laboratory named Joe McKibben to head theGroup P-9 (Physics-Experimental Division), the postwar successor of P-2. During 1946, McKibben and his scientists created and tested new versions of the Van de Graaff that would not only continue existing experiments but would allow the Laboratory to experiment with different forms of neutrons and study reactions at high energies. In February 1946, the Laboratory initiated a program to build a a vertical Van de Graaff generator with the intention of producing neutron collisions at all energies up to 14 MeV (Woods et al. 1974). To generate such immense particle energies, the Laboratory's proposal called for developing an accelerator that could generate up to 12 MV – four times more voltage than any contemporary electrostatic accelerator (Black et al. 1947).

Considered to be a large step forward in the state of the art for accelerator technology, the majority of the vertical Van de Graaff's design was the direct responsibility of McKibben. Incorporating principles learned during the development of the Long Tank accelerator, such as the use of nested inter-potential shells to produce the best possible average accelerator voltage, the Los Alamos proposal was a massive device with an internal accelerator column length of 6 m (19.685 ft) (Bromley 1974; Woods et al. 1974). In support of the design effort, P-9 conducted research between July 1946 and early 1948 with a specially made 2.5 MV vertical generator to test necessary improvements to the charging belt, spherical conductor, and dual pressure tanks among other key components (Black et al. 1947).

Once the accelerator was completed, scientists at Los Alamos realized that the height and equipment constraints of the IBF would be a limiting factor in the capabilities of the machine. To accommodate easy maintenance on the accelerator's unique two tank design, the generator would be suspended on a 150-ton hoist. This arrangement, combined with the nested inter-potential shells, limited the height of the inner column where the charge would be deposited on the accelerating ion beam. In the end, concerns over cost and size had forced designers to reduce the internal accelerator column from an initial height of 7.2 m, which brought the maximum voltage down to from 12 MV to approximately 8 MV (Woods et al. 1974). The IBF Van de Graaff could produce consistent particle energies of 8 MeV (Hawkins et al. 1983).

Although it was not initially able to achieve its intended voltages, the vertical Van de Graaff accelerator achieved a number of notable successes. Starting in 1951 with the first operation of the vertical Van de Graaff, the newly constructed IBF became the home for accelerator research at post-war Los Alamos. The Laboratory continued its groundbreaking nuclear physics experiments at the IBF, which would eventually house two accelerators: the vertical Van de Graaff as well as a horizontal or "tandem" Van de Graaff. In its day, Los Alamos's vertical machine was the highest voltage Van de Graaff in the world. Over the years, the Laboratory made upgrades to the IBF and added the powerful tandem accelerator in 1965. The accelerators could either be operated separately or coupled together. This opened an energy range of more than double that of the existing accelerators (Shera 1993). (See Figure 6 and 7 for diagrams of the Van De Graaff accelerators at Los Alamos.)

Ultimately, the Van de Graaff accelerators housed at TA-3-16 played an instrumental role in the continued development of nuclear weapons at Los Alamos and are key to understanding Laboratory history and the history of the nuclear age.

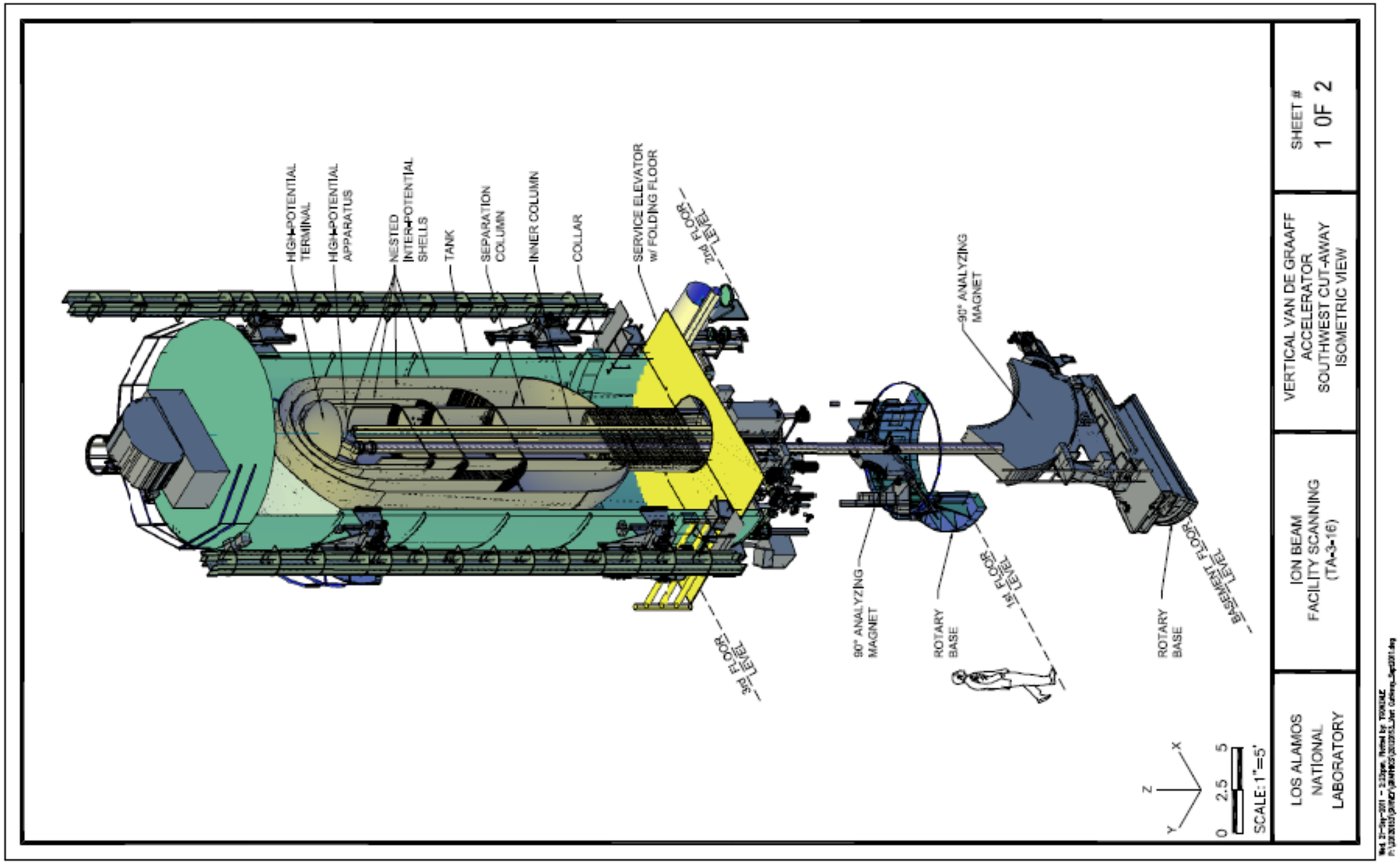


Figure 6: Vertical Van de Graaff Accelerator

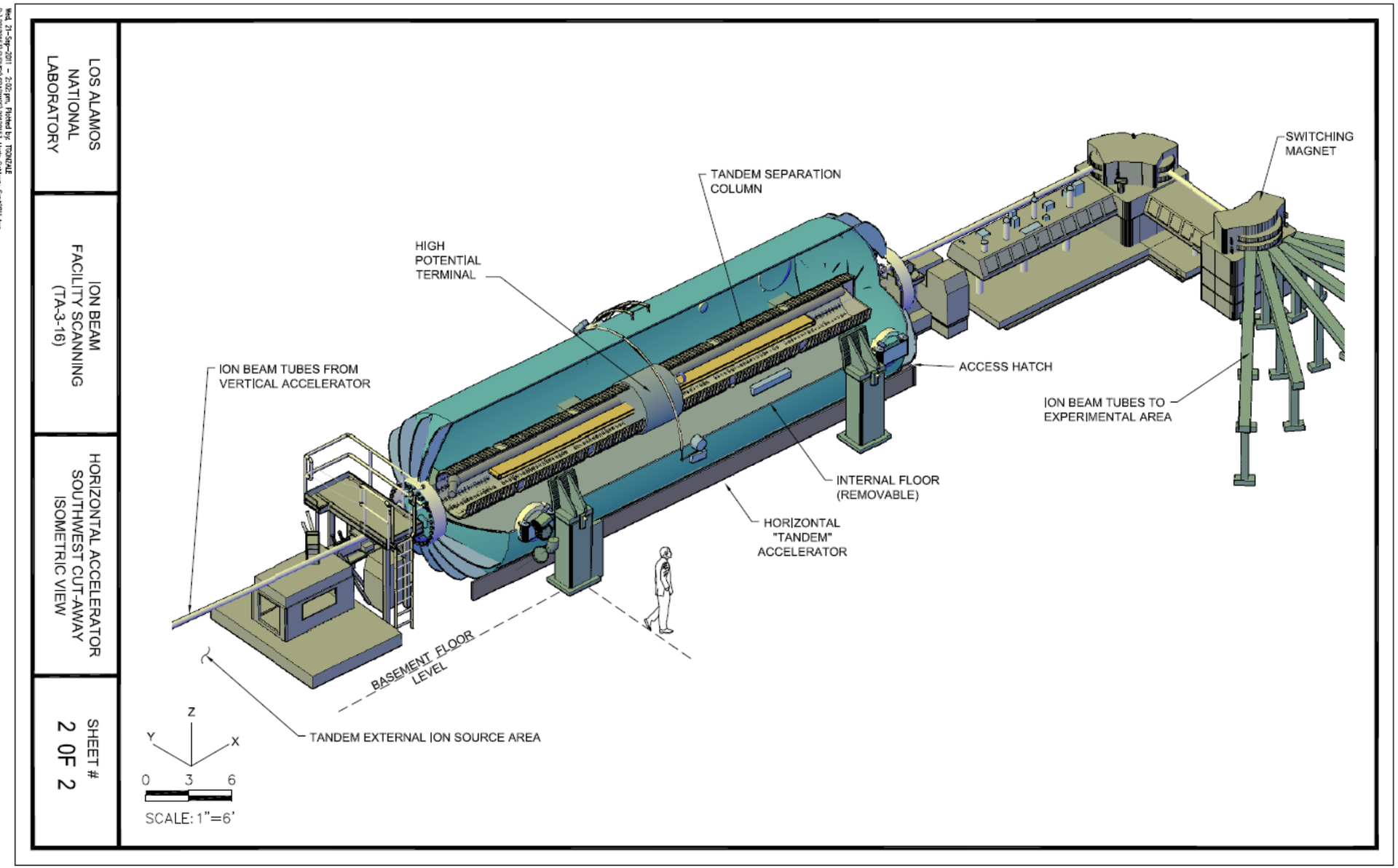


Figure 7: Horizontal Van de Graaff Accelerator (Tandem Accelerator)

The Los Alamos Van De Graff Accelerator Experiments

Thousands of experiments made use of the Van de Graaff accelerators at the IBF. Most experiments involved pure physics, the study of problems and explanations of pure physical phenomena. The accelerators were certainly the work horses of the lab for many years and the most useful tools in nuclear physics studies. Since it would be impossible to identify every single experiment that used the Van de Graaff accelerators and that would be out of the scope of this document, a general description of the types of experiments are provided.

Research fell into two categories, nuclear spectroscopy (the study of the energy level schemes of nuclei and determination of the levels' properties) and nuclear reactions (qualitative and quantitative studies of the magnitudes of the interactions of nuclei with various bombarding particles such as protons, neutrons, alpha-particles, and oxygen ions). Experiments solved a lot of the mysteries surrounding the fission process. Accelerated protons, deuterons, and heavy ions were available for experimental programs (tests), particularly triton accelerations (LASL 1964).

Following is a description of some of the Laboratory experiments that used the Van de Graaff tandem machine:

> The concentrated, intense beams of high-energy ions and electrons which they produce are of great value as probes for precise studies of the properties of atomic nuclei. They can disintegrate atomic nuclei and can produce new elements or unstable isotopes of known elements. Measurements of the energies of product particles from nuclear interactions show the energy-level structure of nuclei. During the early years of the study of nuclear fission, accelerators provided much of the volume of essential data required for development of nuclear reactors and weapons. (Livingston 1966)

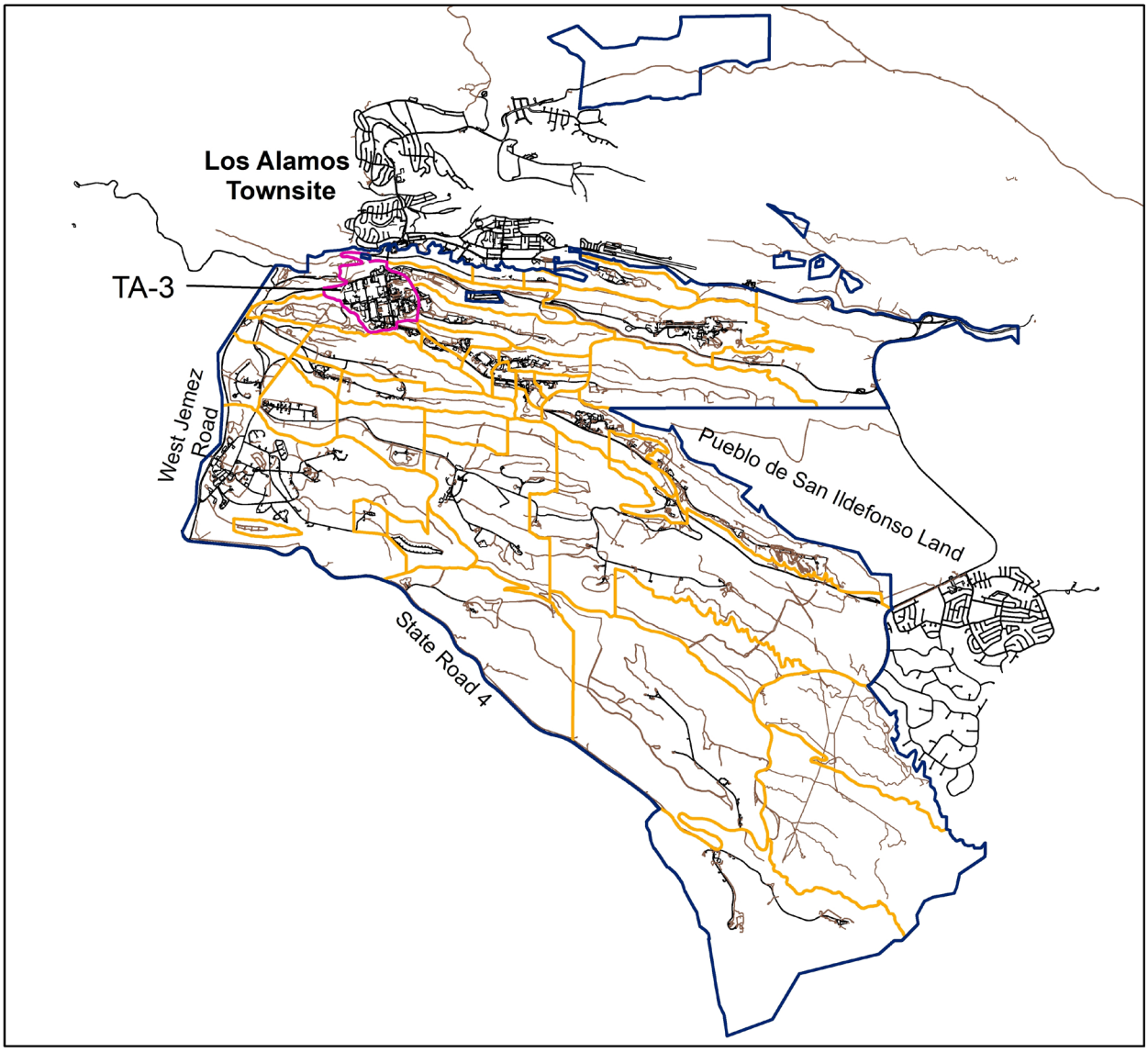
After WWII, funding for accelerator research was, in large part, supported by government agencies. Contributions made by scientists to military-weapons development during the war, and the importance of basic research to national security were widely recognized. The US Office of Naval Research, The Atomic Energy Commission, and other government agencies responded favorably to requests by university scientists for financial support for large new accelerators. (Livingston 1966)

TECHNICAL AREA DESCRIPTION

TA-3 Historical Background

TA-3, formerly referred to as South Mesa Site (SM), is a large technical area located on top of South Mesa, across Los Alamos Canyon from the town of Los Alamos, New Mexico. TA-3 functions as the administrative center of LANL. The Ion Beam Facility (IBF) (TA-3-16), the former main administrative building (TA-3-43), the Oppenheimer Study Center, the Otowi Building, and numerous office and laboratory buildings are located at this technical area. LANL's new administrative building, study center, and Otowi Building are located in a central complex of buildings that serve as a focal point for Laboratory visitors. See Maps 1 through 3.

TA-3 was developed during the Manhattan Project for use as a firing site. Facilities associated with the earliest use of TA-3 included a shop, magazine buildings, and buildings for the storage and assembly of scientific hardware. The wartime technical area was decommissioned and cleared in 1943. The Laboratory's early administrative functions were relocated from downtown Los Alamos (old TA-1) to TA-3 during the 1950s. In 1950, construction began at TA-3 on buildings that were to replace wartime facilities originally located in the Los Alamos townsite. The first buildings, including the Ion Beam Facility (IBF), became operational between mid-1951 and late-1952.



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Los Alamos
National Laboratory
Resources Management Team
EPC-ES Environmental
Stewardship Group

LANL Boundary
and
Technical Area (TA) 3

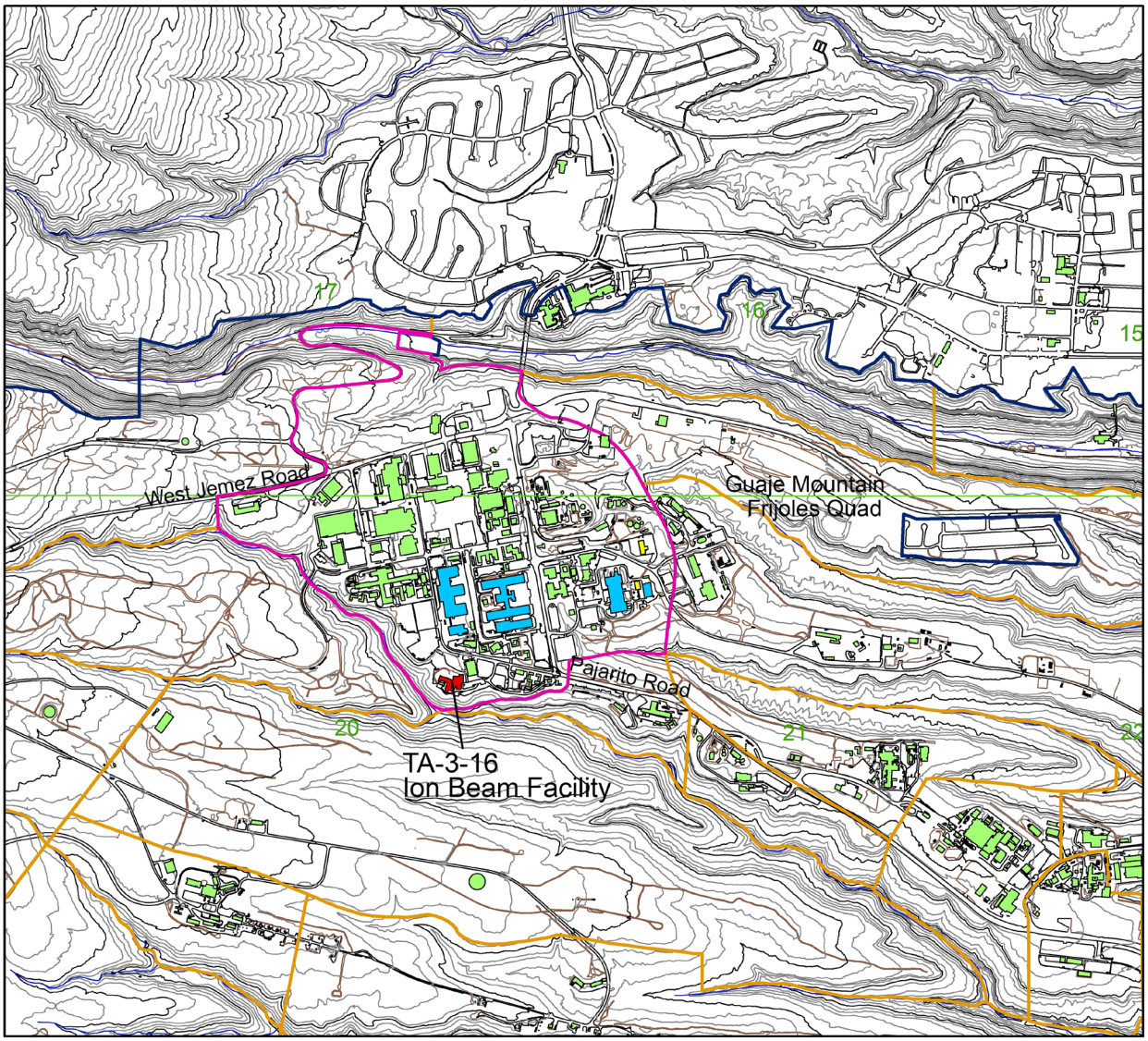
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W E
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7,000 3,500 0 7,000 14,000 Feet

2,000 1,000 0 2,000 4,000 Meters

LANL Boundary
Technical Area 3
Technical Areas
Dirt Roads
Paved Roads

Map 1



1:24,000

Los Alamos
National Laboratory
Resources Management Team
EPC-ES Environmental
Stewardship Group

2,000 1,000 0 2,000 4,000 Feet

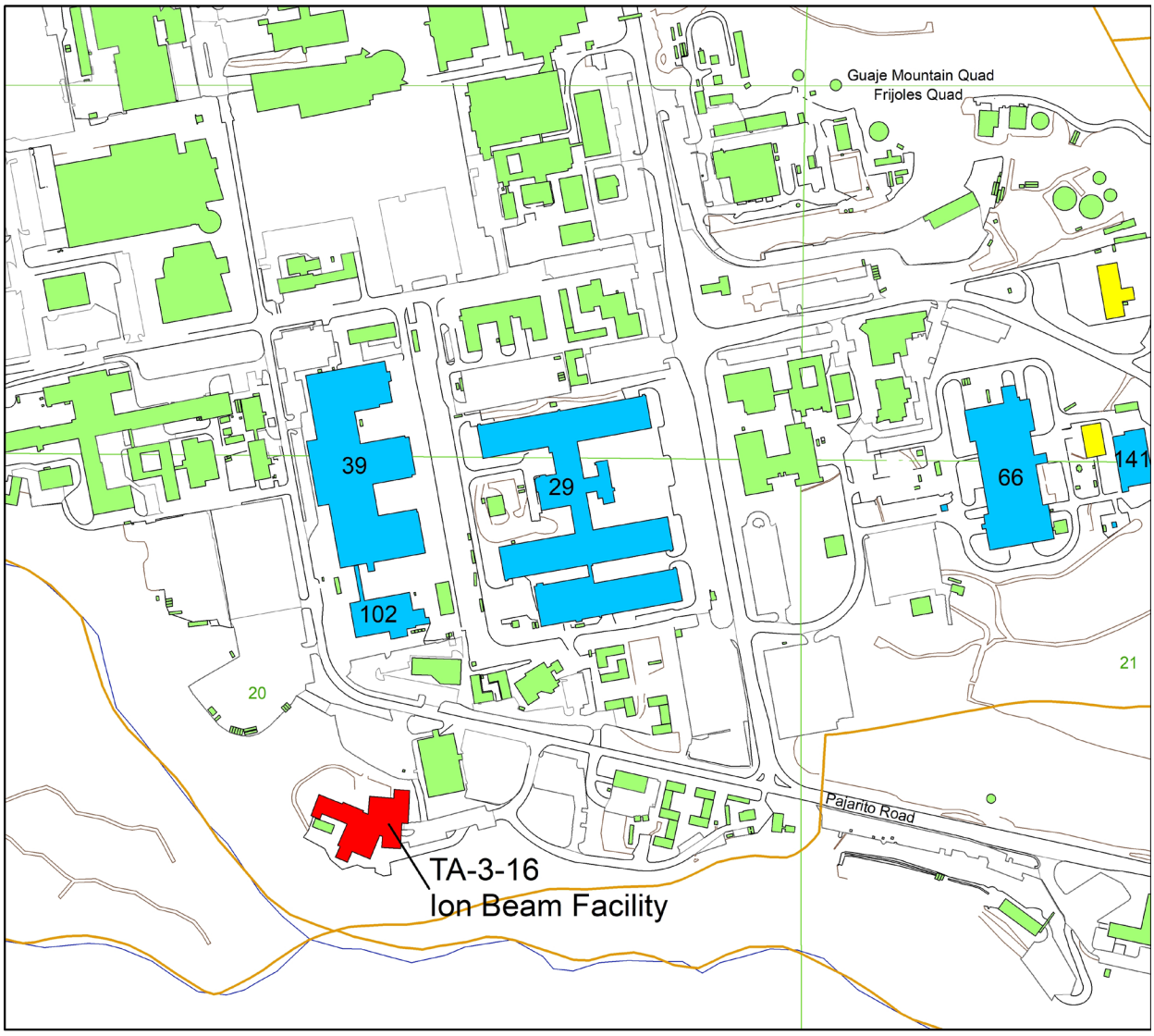
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N
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Buildings/Structures
Sigma Press Building - Previously Declared Eligible
Buildings Previously Declared Eligible
Buildings Previously Declared Not Eligible
Buildings/Structures
Technical Area 3
LANL Boundary
Technical Areas
Drainage
USGS 7.5 Minute
20 Foot Contours
100 Foot Contou
Dirt Roads
Paved Roads

TA-3
Evaluated Buildings

Map 2



1:6,000

Los Alamos
National Laboratory

Resources Management Team
EPC-ES Environmental
Stewardship Group

N
W E
S

500 250 0 500 Feet

125 62.5 0 125 250 Meters

- Ion Beam Facility - Previously Declared Eligible
- Buildings Previously Declared Eligible
- Buildings Previously Declared Not Eligible
- Buildings/Structures
- LANL Boundary
- Technical Area 3
- Technical Areas
- Drainage
- Township, Range, Sect
- USGS 7.5 Minute Quad
- Dirt Roads
- Paved Roads

Closeup TA-3-16 Ion Beam Facility and Evaluated Buildings

Map 3

DESCRIPTION OF BUILDING

Initial Development

The South Mesa Site (TA-3) was referred to by the abbreviation "SM" in the Laboratory early days. During the 1970's, the preface "SM" was dropped from usage and the TA designation along with the building number was used creating a unique property identifier (ie. TA-3-16, formerly referred to as SM-16).

The IBF building is an amalgamation of three facilities (SM-16, SM-17, and SM-18) that have developed over the years into one facility, all commonly referred to as TA-3-16.

The building grew amorphously with no cohesive development plan in the ultimate "form follows function" 20th Century Modern architectural principle. In brief, this principle states that the function of a building dictates its final form. Nowhere is this type of building development more prevalent than in these Laboratory facilities that house unique and one-of-a-kind pieces of highly specialized technical equipment.

The first buildings of the IBF were constructed in quick succession in the early 1950s. For ease of discussion, in this section, on the development of the overall IBF the buildings will be referred to by their original designations from when constructed. Building SM-18 was constructed first,

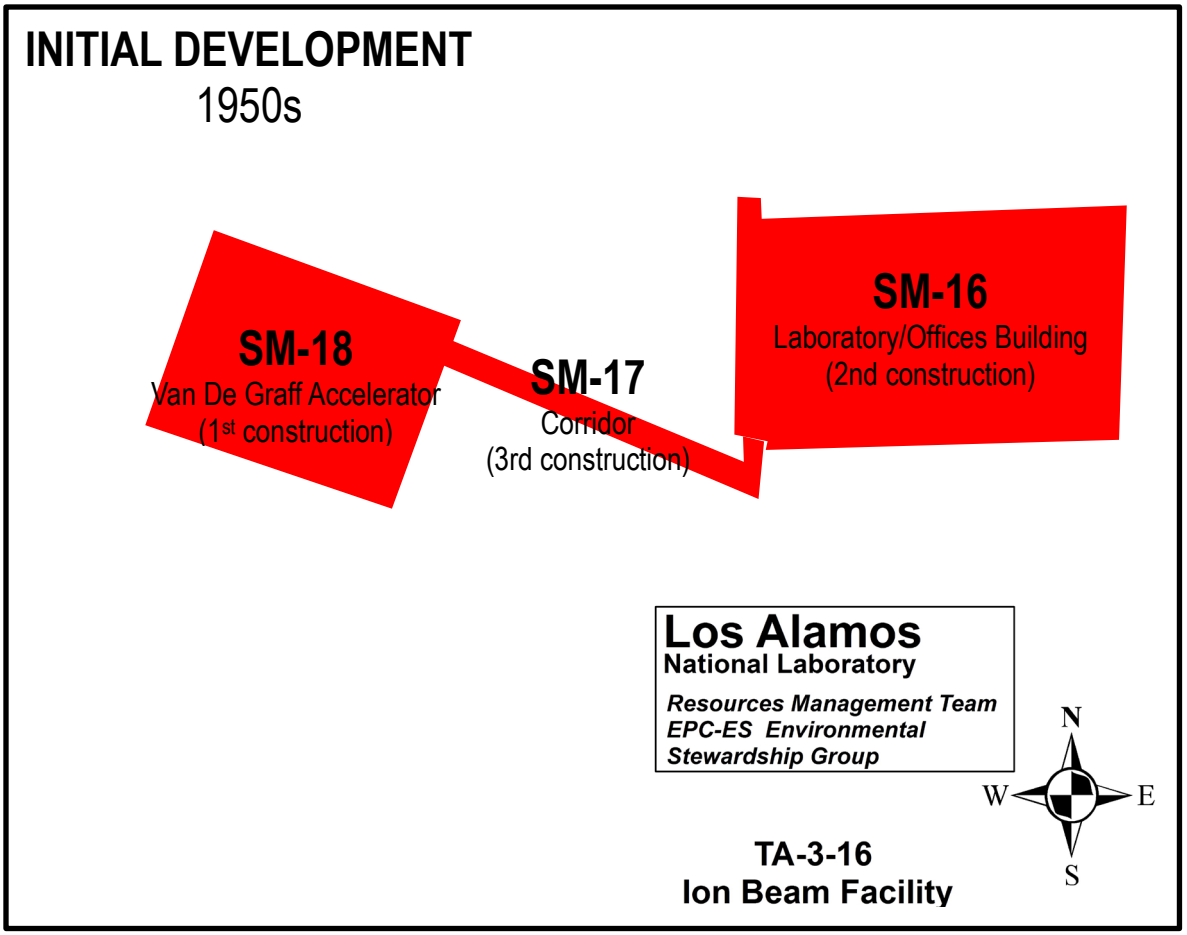


Figure 8: IBF Initial Development

followed by SM-16, and then SM-17 (Note that construction of the buildings was not in sequential order. See Figure 8.



Figure 9: Building SM-18 (Tower that housed the vertical Van de Graaff accelerator on the left, Building SM-17 (the corridor) in center and Building SM-16 (Laboratory and Offices) on right. A tank field is to the left of Building SM-18. (LANL photo, 1950.)

Property Descriptions

SM-18 (TA-3-18)

In 1948, SM-18 was designed to house the vertical Van de Graff accelerator built by Joseph McKibben. See Figure 8. Construction of the facility was completed around 1950. This original construction was a structural steel frame sheeted with aluminum insulated panels provided by the H.H. Robertson Company, of approximately 3,233 square feet. The company launched its



Figure 10: Inner Column of the vertical Van de Graaff. See Figure 6 for identification of accelerator parts.It may also be useful to review the Van de Graaff animation on the enclosed CD.

revolutionary line of construction products in 1906, and later merged with E.G. Smith Company and Steelite to form a new company called Centria in 1996. SM-18 was designed by the Santa Fe Operations Office of the U.S. Atomic Energy Commission.

The vertical Van De Graff accelerator was housed in the 111-foot and 11-inch tall tower section of the IBF that was accessed by a steel stair that went up six flights. This tower is one of the most prominent features of the original design and dominated the Los Alamos landscape for many years. The tower housed a 150-ton crane that would remove the outer tank of the accelerator for servicing. See Figure 6 for an identification of accelerator parts; and, it may also be useful to review the Van de Graaff animation on the enclosed CD. The crane was suspended from a steel support system in the tower's top section. A 150-ton crane was used to remove the steel bell housing that covered the core of the accelerator. See Figure 10. Other specialty equipment housed in the tower was the "gooser" lift, a personnel lift used to transport workers into the housing that covered the core. The lift is very small and hence the name "gooser". A large service elevator with a folding platform would raise and lower along the inner core or separation column to access the high potential terminal at the top. See Figure 11 and Figure 6 for identification of accelerator parts. The top level of the tower that

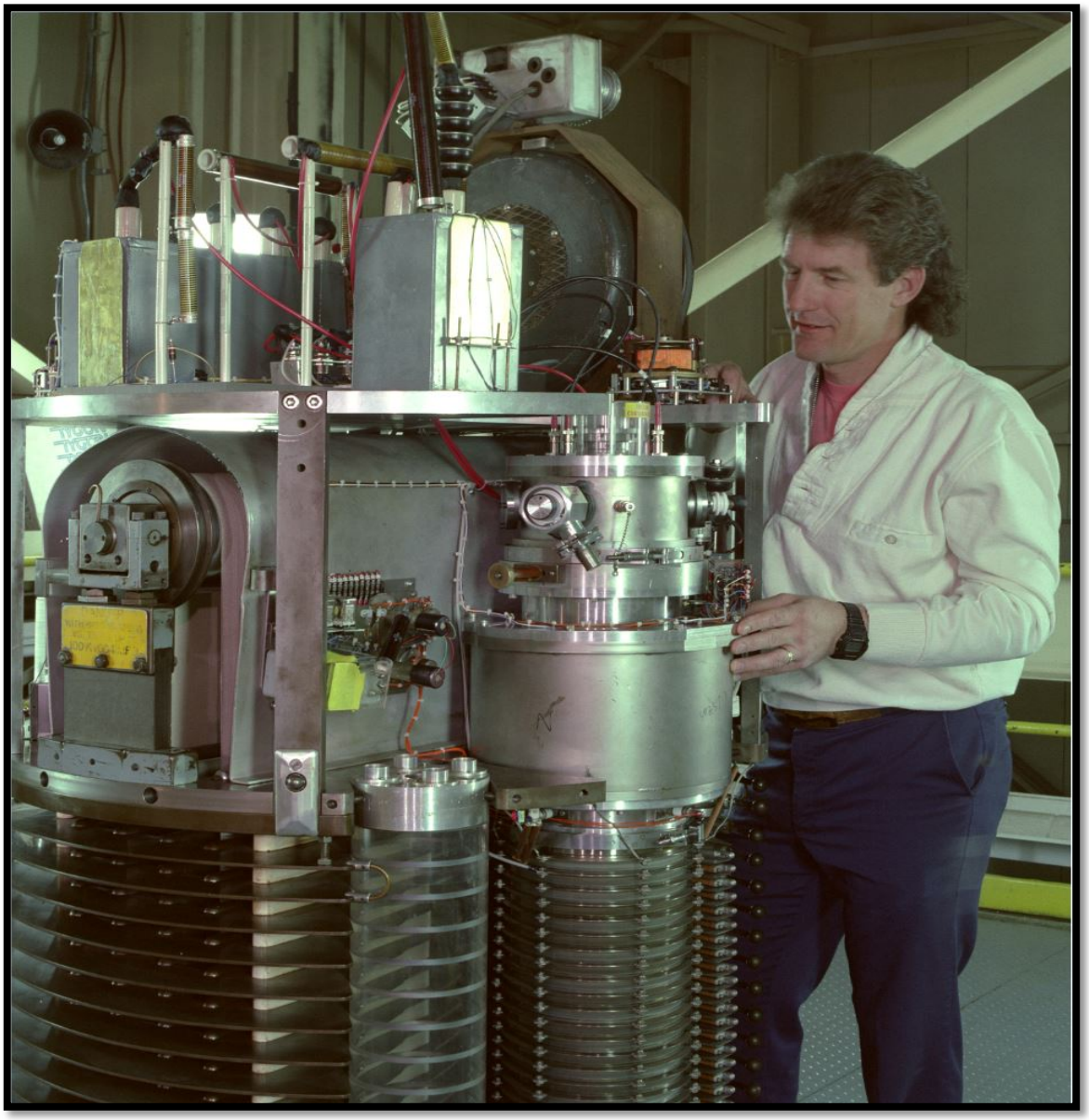


Figure 11: High Potential Terminal. Note the belt at the left in the photo.

housed the lift for the 150-ton crane, was flooded with light that filtered down from windows facing both north and south. A catwalk with steel pipe railing was installed at the top tower level. The catwalk was placed on the perimeter of the tower and a fixed ladder provided access to the roof. The roof was built-up asphalt composition with a parapet. An exterior red warning lighting was installed on the parapet top.

Experimental stations were scattered throughout the two-story structure that was part of the original construction. See Figure 12 for a representative configuration of beam tubes and experiments. This area was lit by nine hot-rolled steel windows (approximately 7-feet wide by 8-feet tall each) on three sides that allowed light to flood the interior. This addition had a gable roof with corrugated roofing. This roof was supported by steel trusses. A large overhead door was provided with the original

construction. In 1962, it was enlarged to approximately 13-feet wide by 15-feet, 6 inches tall to allow for vehicle and equipment access. It has long been covered by a subsequent addition.

A tank farm south of SM-18 was installed to provide Nitrogen and Sulfur Hexafluoride used in the different tests. A tank gauge panel, 72 inches wide by 48 inches tall, had a corresponding gauge for each tank, and was installed near a rear door inside the facility.

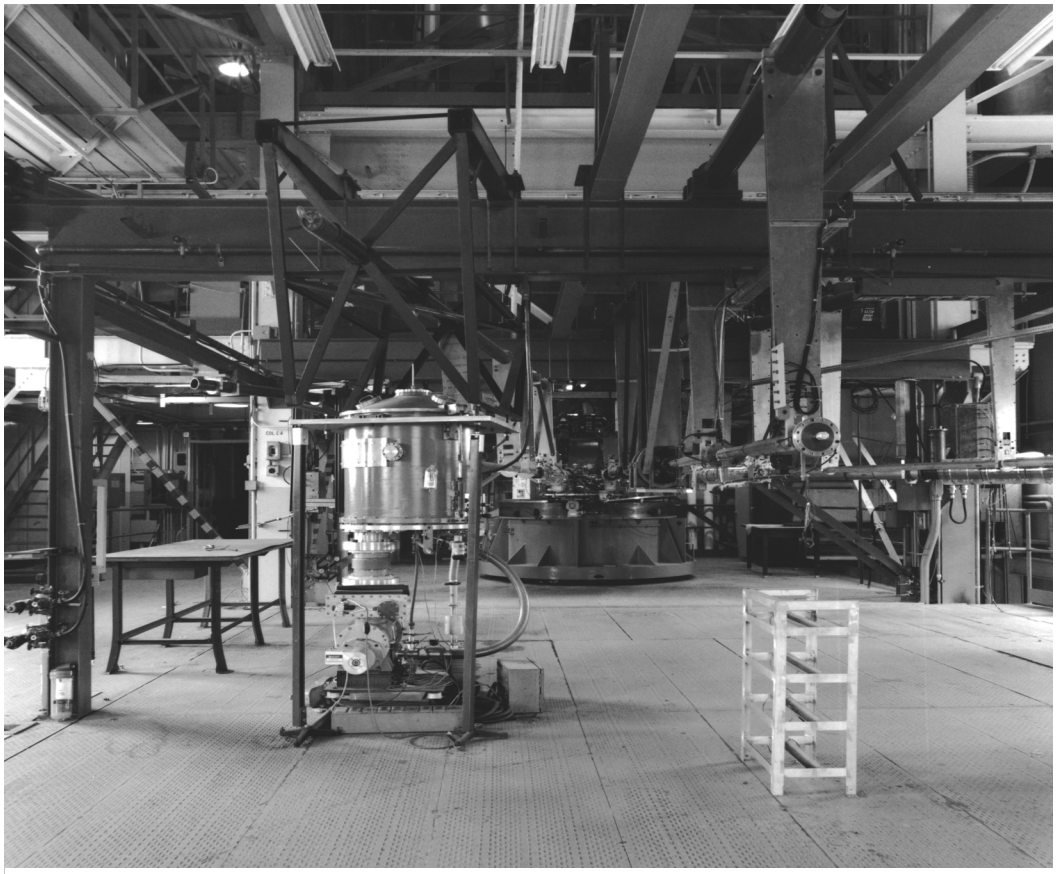


Figure 12. Experimental Stations, room 170.

SM-16 (TA-3-16) Additions

Shortly after SM-18 was constructed, a 9,100 square-foot, one-story addition was constructed to house the control room, conference room, shop, drafting room, guard area, four offices, seven laboratories, and restrooms. A basement utility corridor, room 21, that was 1,340 square-feet overall and seven feet tall by nine feet wide runs through the center of the building, east to west; it is accessible from the first floor via a central stair. See Figure 13. Utility tunnels were typically used in laboratory facilities for piping to transport the myriad of chemicals and gasses that were



Figure 13: Utility Tunnel, room 21.

needed for testing. The corridor had natural convection venting. A small service dock was located outside the shop area on the south side of the building.

Two shield walls, one was 5 feet wide by 60 feet, 6 inches long by 24 feet tall and the other was one 5 feet wide by 20 feet long by 22 feet, 10 inches tall, were constructed at the west end of the building, the side nearest the vertical accelerator. Shield walls were constructed of cast concrete and earth-filled. The purpose of the shield walls was to protect users from potential radiation hazards from operation of the Van De Graaff accelerator as well as reducing background interference during tests.

The building has a very high ceiling on the first floor with an added drop down ceiling. The space above the lay-in ceiling was used for exhausting air naturally through vents in the front (east end) of the building and along both sides of the building. Venting occurred using natural convection through these vents and the wind turbines at the apex of the gable. The building is supported by spread footings and pier foundations. Exterior walls are cast concrete with integrated columns. The roof was a gable style with a shallow 1:12 pitch. The roof structure was made of precast concrete roofing Ts that vary in size according to the span supported.

The building had a double-loaded corridor with laboratory spaces and other spaces on both sides. Offices were located near the main entry along with a connected group manager office and administrative personnel office. The interior support is primarily cast reinforced concrete columns and reinforced concrete beams are provided to add internal support of the roof. The interior partitions were Type “BB”, sound proofed, semi-flush, movable steel partitions from the E.F. Hauserman Company, Cleveland, Ohio; Hauserman had factories in many major cities. Large hot rolled steel windows with both hopper and awning operational windows were provided



Figure 14: SM-16 that housed the laboratories and offices for the Van de Graaff. SM-18 in rear at left. (LANL photo, 1950).

for all of the offices. These windows flooded the rooms with natural light. In addition, there were three removable walls on the building's north exterior side and one on the south side that were approximately three feet, six inches wide by seven feet, six inches tall. These could have been used for ventilation or a type of blow out wall. If an explosion in a laboratory occurred, the wall would allow the extra pressure and hazards a place to go that was directed outside the facility.

SM-17 (TA-3-17)

A corridor was constructed to connect SM-16 and SM-17 most likely to protect users from weather. The corridor was supported with concrete piers with steel I-beam columns. Cross beams were used under the taller sections of the construction for stabilization. The construction was steel frame with a shed roof. The corridor was ventilated with roof wind turbines. There were four, north facing windows approximately 4 feet by 4 feet.

Successive Developments at IBF

Later additions were constructed to expand testing capabilities and they are listed in chronological order below. These additions grew somewhat amorphously based on the

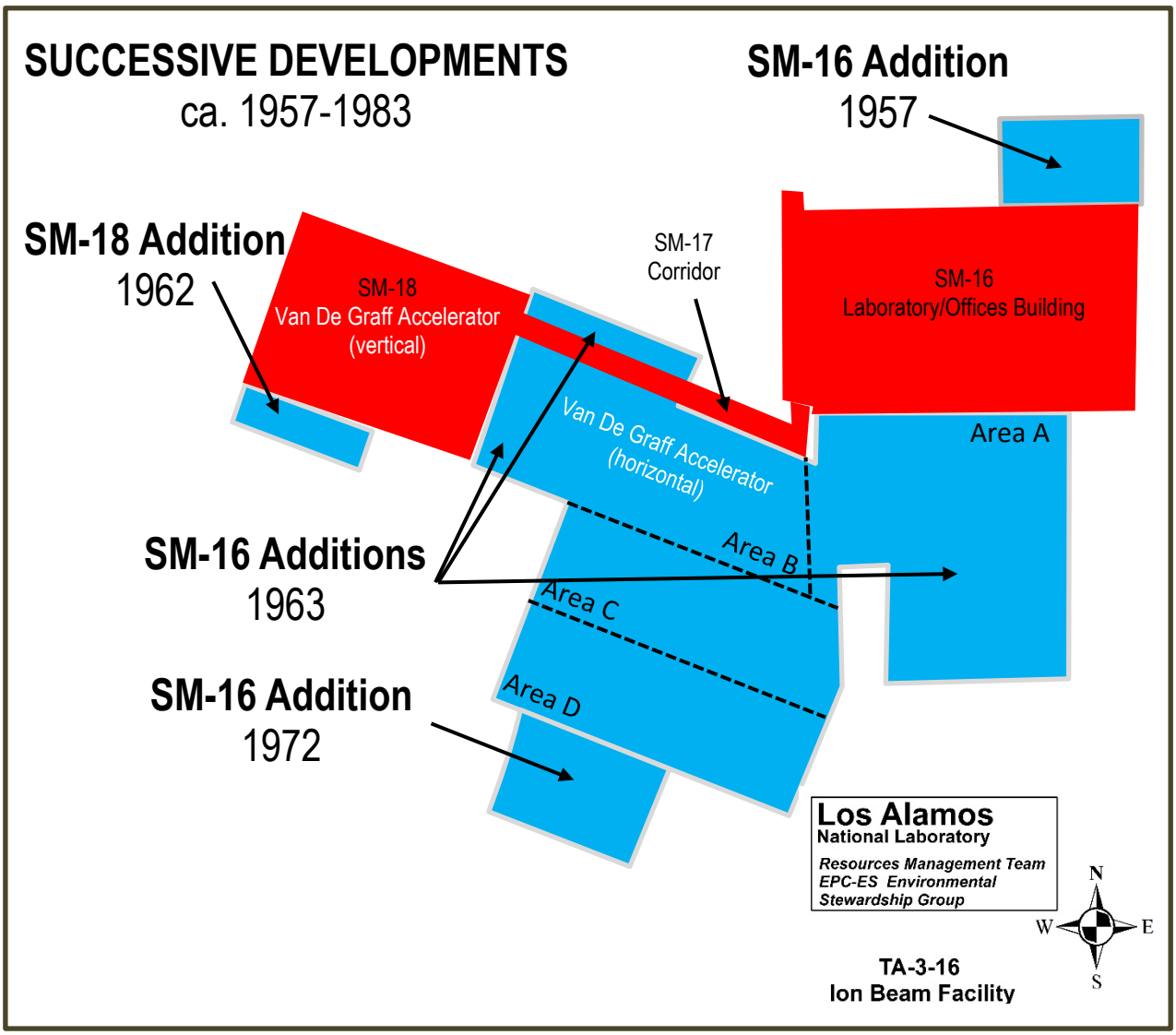


Figure 15: IBF Facility Additions

dimensions of the Van de Graaff accelerators and experimental needs. Figure 15 identifies the additions that were constructed throughout the history of the building. Each addition is described in detail in the following narrative

SM-16 Additions

An addition was added on the north side of this facility in 1957 to house four offices and a laboratory. This building was constructed of eight-inch reinforced concrete with a shed roof. The structure was approximately 864 square-feet and is one story. A dirt and asphalt covered

structure, approximately 12 feet tall and located directly east of the facility, was used to shield the building's users from the Van de Graaff accelerator.

In 1963, a building to house a tandem Van de Graaff accelerator was constructed. It was designed by Norman Engineering Company, from Los Angeles, California, a company that is no longer in business. The tandem Van de Graaff, new construction and associated equipment cost approximately $3,500,000 (LASL 1960). The project added 15,300square-feet to SM-16.

For ease of discussion, the following sections of the building are not in alphabetical arrangement. Refer to Figure 15 for locational details:

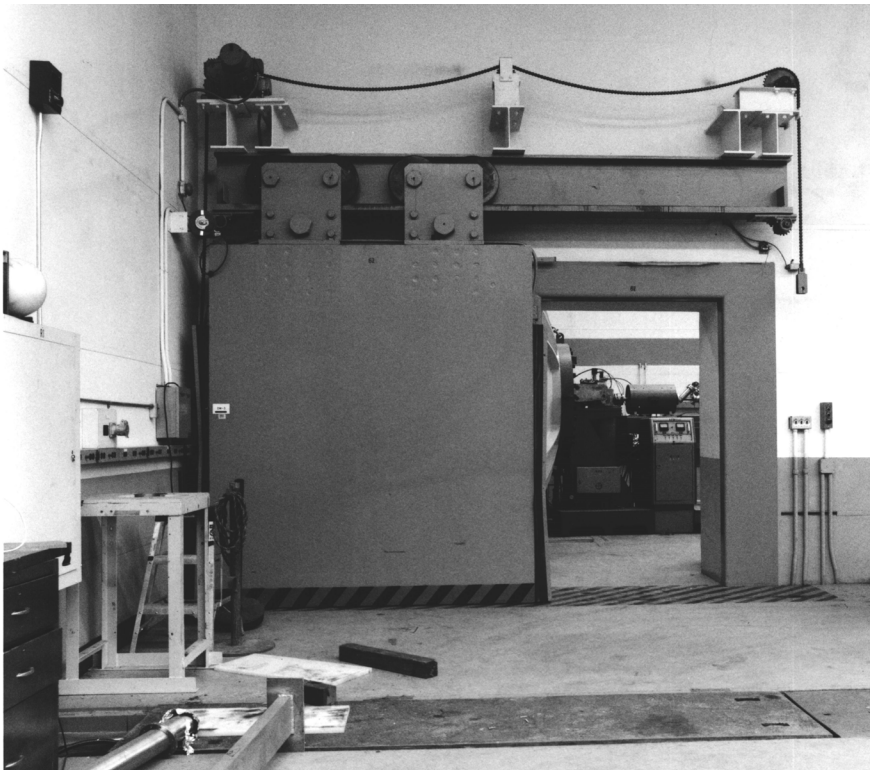


Figure 16: Shield door at SM16, between rooms 62 and 64.

– **Area B**
Area B housed the tandem Van de Graff. Three foot concrete shield walls surrounded the Van de Graaff on all sides creating some of the exterior walls of this area. Steel faced, magnetite filled shielding doors with large steel wheels moved on large steel tracks to close off the accelerator room during tests to keep radiation disturbances to a minimum. See Figure 16. The structure was one story with a flat roof. A switching magnet would direct beams to any of the beam tubes used for testing through a wall constructed of movable shielding blocks that provided seven holes for the beam tubes.

– **Area C**
This area was directly south of Area B and was also one story and had a flat roof. This area housed a charged-particle experimental vault (reaction room) that was shielded with solid, cast, concrete and a (generator room).

– **Area D**
Several concrete shielded laboratory rooms were created in this addition to include a neutron room and a spectrometer room. The structure was one story with a flat roof and was constructed of a steel frame and sheeted with the insulated aluminum siding.

– **Area A**

Area A was a two level structure constructed of cast concrete for both exterior and interior rooms. Spaces included an auxiliary apparatus room, a target preparation room, an assembly room, polishing room, dark room, a massive mechanical room, laboratory rooms, shop room, equipment/utilities room, control rooms, electronics room, and a computing room. These rooms were partitioned with solid reinforced concrete walls and shielding doors.

The last addition to SM-16 is a 1,520 square foot addition constructed of steel posts and beams. The roof slope is very low but is gable shaped with a center pitch. The addition has a concrete floor and was used as an experimental laboratory.

SM-18 (TA-3-18) Addition

A small two story addition with a mezzanine was added to the south of SM-18 in 1962. It was approximately 15 feet wide by 35 feet long and was constructed of the same materials used in the original construction. A collimator track was installed in 1966 on the 2nd floor of this structure (which is level with the 1st floor of the entire building). At this time the floor was reinforced with additional steel I-beams and columns. Beam collimation reduces uncontrolled beam losses in the machine and protect machine components and personnel against excessive irradiation. The collimator could be set up at different places along the track.

Demolition of IBF Interiors and Ancillary Facility

While the Van de Graaff accelerators are still in the building. Many of the tritium contaminated beam tubes and other ancillary equipment were removed in 2006 and 2010. The 2006 demolition consisted of interior demolition and removal of selected electrical, mechanical and plumbing systems associated with both accelerators including vacuum piping, valves, and pumps. Approximately 422 cubic feet of material was removed. In 2010, ancillary equipment and other items left over from programmatic operations were removed that totaled 2,638 cubic feet (Liechty 2017). An ancillary facility, TA-03-208, was demolished in 2005. Its foundation is still in place.



Figure 17: TA-03-208. Demolished in 2005.

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1993 *Physics Division Progress Report: Special 50th Anniversary Issue*, Los Alamos National Laboratory, Los Alamos, New Mexico.

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U. S. DOE (Department of Energy)

1986 *Phase 1: Installation Assessment, Los Alamos National Laboratory, Comprehensive Environmental Assessment and Response Program [CEARP] (Working Draft)*. Albuquerque Operations Office, Albuquerque, New Mexico. On file at RRES-ECO, Los Alamos National Laboratory, Los Alamos, New Mexico.

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U.S. DOI (Department of Interior)

1991 *How to Apply the Ntional Register Criteria for Evaluation, National Register Bulletin*, No. 15, U.S. National Park Service, Washington, D.C.

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Appendix A.

Historic Building Inventory Form

LANL TA- Building # 03-0016

Camera 984242

Frame #s DCP_2789 through DCP_2813

Surveyor(s) J.Ronquillo/K.Towery/C.Brown

Date 9/24/2002 & 7/19/2018

Los Alamos National Laboratory RMT
Historic Building Survey Form

Building Name Ion Beam Facility UTMs easting 380470 northing 3969993 zone 13

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

Current Use/ Function The building is currently not occupied Original Use/ Function Accelerator Building

Date (estimated) 1950 Date (actual) 1951 Property Type Laboratory/Processing

Type of Construction

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

Other Type of Construction Characteristics are based on the three structures that were built in quick succession in the early 1950s. All addition characteristics are identified under "Addition" on this form. # of Stories 7

Foundation Reinforced Concrete, Slabs and Pier Foundations

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

Wood Siding ☐ Asbestos Shingles-Exterior ☐ In-Fill Panels ☐ Other-Exterior Aluminimun rib siding.

Exterior Treatment (painted, stuccoed, etc) Unpainted aluminum ribbed siding from H.H. Robertson Company, and painted (ivory) reinforced concrete.

Exterior Features (docks, speakers, lights, signs, etc) Large rolled steel windows on all sides of building. Tower has "jettied story" characteristics, upper story project over lower stories beneath it. Red warning lights on top and sides of tower, speakers mounted on walls. Lightenening protection on top of tower. Large ventilation grilles. Loading dock on east elevation with overhead crane. Multiple vent stacks.

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

Steel (corrugated)-Addition ☐ Asbestos Shingles-Addition ☐ Other- Addition Aluminimun rib siding.

Exterior Treatment-Addition Unpainted aluminum rib siding, painted and umpainted reinforced concrete, painted CMU, and steel siding.

Exterior Features-Addition Overhead cranes, warning lights, speakers, cooling tower on top of shield wall, large tank on roof.

Roof Form Slanted/Shed ☑ Gable ☑ Other Roof Type

Degree of Pitch/ Slope Moderate

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

Other Roof Materials

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

Other Window Type: Hot Rolled steel windows and aluminum windows

# of Each Window Type/ Comments: Hot rolled Steel windows: 28 Aluminum windows: 22 Ribbon Windows at tower: 2

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

Light Pattern: 4 over 6

Door Type

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

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

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

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

# of Each Door Type/Comments: Single leaf Steel: 5 Double leaf steel: 4 Double leave Wood: 1 Roll up: 2

Interior Wall

Gypsum Board ☐ Reinforced Concrete- Interior ☑

CMU- Interior ☑ Plywood ☐ Other- Interior: Prefabricated metal sandwich panel walls and concrete post and beam with cmu infill.

In-Wall Electrical Wiring ☑ On-Wall Electrical Wiring ☑

Ceiling Drop Ceiling ☑

Interior Comments (Equipment, etc): There is a variety of equipment in the building including overheard cranes of varying sizes, control room electronic equipment throughout, instrumentation used in support of the accelerators and remnants of the accelerators.

Degree of Remodeling: Minor

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

Associated Buildings ☑

If yes, list building names and #s: Equipment Building TA-3- 208 that was demolished in 2005.

Integrity: Good

Significance: Eligible

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

DOE Themes

Nuclear Weapon Components and Assembly ☐
Nuclear Weapon Design and Testing ☑
Nuclear Propulsion ☐
Peaceful Uses: Plowshare, Nuclear Medicine, Nuclear Energy, Nuclear Science ☐
Energy and Environment: Research and Design Projects ☐

LANL Themes

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

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

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

Recommendations/ Additional Comments

Architectural Features (elevations)

Refer to Elevation Reference Key:
EAST ELEVATION:
Original Construction:
·Elevation Reference Symbol 3 and 4: Main entrance to facility has double leaf door (steel with ½ glass) surrounded with a concrete wing wall and roof. There are six hot rolled steel windows, approximately seven feet wide by five feet, five inches high with hopper and awning windows. Three fixed aluminum windows, are associated with the loading dock area. Windows have a painted concrete window sill plates. Gable roof with eave overhang.
·Elevation Reference Symbol 24: Tower has "jettied story" characteristics, upper most section of tower projects over lower stories. Flat roof with parapet. Surface has insulated aluminum siding by H.H. Robertson Company and no windows.

Additions:
·Elevation Reference Symbol 6: Raised loading dock has steel double leaf doors and a solid steel single leaf door. Dock has round concrete steel columns with steel beam/steel decking supports and cover. Dock accessible by stairs. Dock has one steel pipe guardrail painted blue. Loading crane over dock double leaf doors. Large equipment grilles toward south end to vent equipment room. Walls are painted (ivory) reinforced concrete. Shed pitch roof. Three, fixed, aluminum windows that are approximately five feet wide by five feet high.
·Elevation Reference Symbol 10: Addition has six, fixed, aluminum windows approximately five feet wide by five feet high. Building siding is insulated aluminum siding manufactured by H.H. Robertson Company. Wall material is standing seam steel. Exposed, cast in place, concrete is visible from the interior wall construction. Steel roof ladder present.
·Elevation Reference Symbol 12: Addition has oversized double leaf wood doors with divided lite (two lite wide by four light high) windows.
·Elevation Reference Symbol 18: Addition has aluminum siding by H.H. Robertson Company and no windows. Shed roof.
·Elevation Reference Symbol 2: Painted reinforced concrete addition with two five foot by eight foot, ten inches hot rolled steel windows with both a hopper style and awning style operation.

SOUTH ELEVATION:
Original Construction:
·Elevation Reference Symbol 19: Tower has "jettied story" characteristics, upper most section of tower projects over lower stories. Ribbon windows at top of jettied story. Tower has flat roof with parapet. Surface has insulated aluminum siding by H.H. Robertson Company. One fixed, hot rolled steel window, seven feet wide by 8 feet tall at corrugated roofed, gable pitched part of building.

Additions:
·Elevation Reference Symbol 20: Addition to original construction has insulated aluminum panels by H.H. Robertson with two, fixed, hot rolled steel windows, approximately seven feet wide by 8 feet tall. This section of building has a corrugated steel, shed roof.
·Elevation Reference Symbol 17: One segmented metal roll up door, single leaf steel pedestrian door with ½ glass, and two, fixed, hot rolled steel windows that are approximately five feet wide by three feet high.
·Elevation Reference Symbol 15: This elevation references the elevation before an addition was added.
·Elevation Reference Symbol 13: Addition to addition is sheeted in standing seam steel siding with no penetrations. Slight gable pitch.
·Elevation Reference 9 and 11: Addition has two sets of two fixed hot rolled steel windows and with one, double leaf, steel door with ½ glass. One metal segmented, roll up door with slight concrete ramp. Five, fixed, aluminum window, approximately five feet wide by five feet high. Several vent stacks.
·Elevation Reference Symbol 7: Exposed reinforced concrete wall with two large grilles and two small grilles for ventilating the large equipment room on ground floor and upper floor.

·Elevation Reference Symbol 5: One, solid steel, pedestrian door and one large hot rolled steel window.

WEST ELEVATION:
Original Construction:
·Elevation Reference Symbol 22: Steep pitched, corrugated steel, gable roof with insulated aluminum siding manufactured by H.H. Robertson Company. Three hot rolled steel windows that are approximately 7 feet wide by 8 feet tall. Tower has "jettied story" characteristics, upper most section of tower projects over lower stories. Flat roof with parapet.
·Elevation Reference Symbol 26: Other original construction has painted concrete surface for a shielding wall. Approximately 24 feet tall.

Additions:
·Elevation Reference Symbol 28: Painted reinforced concrete with shed roof with eave. No windows.
·Elevation Reference Symbol 8: Solid cast reinforced concrete wall with no windows and shed roof consisting of concrete Ts with overhang. One set of double leaf pedestrian doors with louvers at upper level to permit access the equipment room. One set of double leaf pedestrian doors at ground level. One louver over door.
·Elevation Reference Symbol 16: One set of double leaf doors. Five, single, fixed, aluminum windows. Each window is five feet by five feet.
·Elevation Reference Symbol 14: Prefabricated steel panels, no windows.
·Elevation Reference Symbol 21: Addition has aluminum siding by H.H. Robertson Company and no windows. Shed roof.

NORTH ELEVATION:
Original Construction:
·Elevation Reference Symbol 23: Surface has insulated aluminum siding by H.H. Robertson Company. Three hot rolled steel windows on upper level. Single leaf pedestrian door with ½ glass. Tower has "jettied story" characteristics, upper most section of tower projects over lower stories. Ribbon windows at top of jettied story. Flat roof with parapet.
·Elevation Reference Symbol 27: Painted reinforced concrete wall with two removable wall sections and ten louver attic vents. One, single leaf, pedestrian door with ½ glass lite installed in old removable wall section.

Additions:
·Elevation Reference Symbol 25: Insulated aluminum siding with four hot rolled steel windows and one pedestrian door.
·Elevation Reference Symbol 1: Painted reinforced concrete with shed roof with eave. No windows. Two fan openings.

Total sq ft 59,259 Gross **Architect/ Builder** Consolidated Western Steel Corp/Utah Const. Co., C.H. Leavell & Co.

Alterations Addition Built in 1957 Contractor: Barret & Moore. In 1962 through 1964 TA-3-16, 17 & 18 combined into one building, as TA-3-16. New addition 38' x 40'.

List of Drawings (Cntrl + Enter for para break)

ENG-C 18901
Sheet 1 of 5
TA-3- SM-16 (TA-3-16)
Building SM-16 Addition
Plans & Elevations
May 22, 1957

ENG-C 1917
Sheet 28 of 78
TA-3-16
12 MeV Van de Graaff Accelerator Building and Laboratory
Elevations and Sections Laboratory Buildings
March 28, 1949

ENG-C 31384
Sheet 14 of 123
TA-3 SM-16 (TA-3-16)
Tandem Van de Graaff Facilities
Elevations
October 1, 1962

ENG-C 40820
Sheet 4 of 10
TA-3 Bldg SM-16 (TA-3-16)
Experimental Facility, RM 69
Floor Plan & Elevations
Circa 1972/1973

ENG-PL 584
Sheet 7 of 34
TA-3 Bldgs SM-16 & -18 (Ta-3-16 and TA-3-18)
Tandem Van de Graaff Facilities
Sections
November 28, 1961

ENG-C 26900
Sheet 1 of 11
TA-3 bldg SM-16 (TA-3-16)
Ion Beam Compression System Installation
Location-Layout Plan & Elevations
February 28, 1962

ENG-C 1903
Sheet 14 of 78
TA-3-16
12 MeV Van de Graaff Accelerator Building and Laboratory
Framing Elevation Column Line A Accelerator Building
September 22, 1948

ENG-C 1904
Sheet 15 of 78
TA-3-16
12 MeV Van de Graaff Accelerator Building and Laboratory
Framing Elevation Column Lines 7 & D Accelerator Building
September 22, 1948

ENG-C 1461
Sheet 1 of 3
TA-3 Building SM-16 (TA-3-16)
Revisions to Laboratory Heating & Ventilating System (shows floor plan of offic portion of building)
July 20, 1951

ENG-R 1722
Sheet 1 of 1
TA-3 Bldg SM-18 (Ta-3-18)
Fire Alarm Equipment
Firs Floor Plan
March 5, 1959

ENG-C 29690
Sheet 1 of 2
TA-3 Bldg SM-18 (TA-3-18)
Lighting Modifications Experimental Room
Electrical Layout
March 15, 1963

ENG-C 31378
Sheet 8 of 123
TA-3 Bldg SM-16 (TA-3-16)
Tandem Van de Graaff Facilities
Overall Floor Plan at Floor Elevation 7400' 0"
October 1, 1962

ENG-C 31379
Sheet 9 of 123
TA-3 Bldg SM-16 (TA-3-16)
Tandem Van de Graaff Facilities
Enlarged Floor Plan at Lower Lever - Area "A" at Floor Elevation 7400' 0"
October 1, 1962

ENG-C 31380
Sheet 10 of 123
TA-3-Bldg SM-16 (TA-3-16)
Tandem Van de Graaff Facilities
Enlarged Floor Plan Upper Leverl Area "A at Floor Elevation 7415' 0"
October 1, 1962

ENG-C 31381
Sheet 11 of 123
TA-3 Bldg Sm-16 (TA-3-16)
Tandem Van de Graaff Facilities
Enlarged Floor Plan Area "B" at Floor Elevation 74oo' 0"
October 1, 1962

ENG-C 31382
Sheet 12 of 123
TA-3-Bldg SM-16 (TA-3-16)
Tandem Van de Graaff Facilities
Enlarged Floor Plan area "C" at Floor Elevation 7400' 0"
October 1, 1962

ENG-C 31382
Sheet 13 of 123
TA-3-Bldg SM-16 (TA-3-16)
Tandem Van de Graaff Facilities
Enlarged Floor Plan area "D" at Floor Elevation 7400' 0"
October 1, 1962

ENG-R 3390
Sheet 1 of 5
TA-3 Bldg SM-16 (TA-3-16)
Van de Graaff Laboratory
Sub Basement Floor Plan
March 16, 1964
Revised to status of June 7, 1984

ENG-R 3391
Sheet 2 of 5
TA-3 Bldg SM-16 (TA-3-16)
Van de Graaff Laboratory
Basement Floor Plan
March 16, 1964
Revised to status of June 7, 1984

ENG-R 3392
Sheet 3 of 5
TA-3 Bldg SM-16 (TA-3-16)
Van de Graaff Laboratory
First Floor Plan
March 16, 1964
Revised to status of June 7, 1984

ENG-R 3390=3
Sheet 4 of 5
TA-3 Bldg SM-16 (TA-3-16)
Van de Graaff Laboratory
Second Floor Plan
March 16, 1964
Revised to status of June 7, 1984

ENG-R 3394
Sheet 5 of 5
TA-3 Bldg SM-16 (TA-3-16)
Van de Graaff Laboratory
#rd, 4th & 5th Floor Plan
March 16, 1964
Revised to status of June 7, 1984



TA-3-16, East elevation, north half



TA-3-16, East elevation, south half



TA-3-16, South elevation, east portion



TA-3-16, South elevation, east portion



TA-3-16, East elevation



TA-3-16, South elevation, eastern portion



TA-3-16, East elevation



TA-3-16, West elevation



TA-3-16, West and south elevations



TA-3-16, North and west elevations



TA-3-16, North elevation, central portion



TA-3-16, North elevation



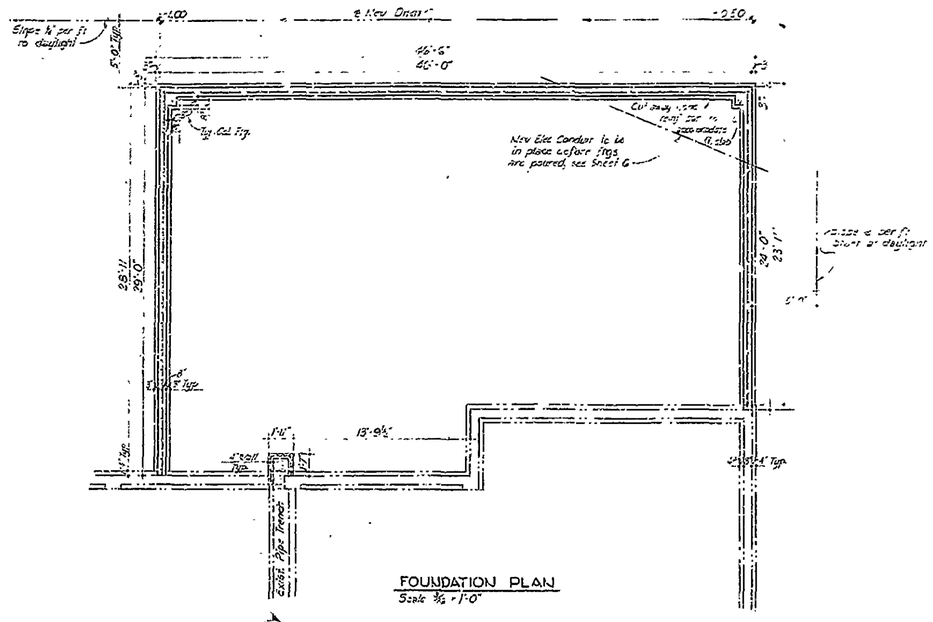
TA-3-16, North elevation

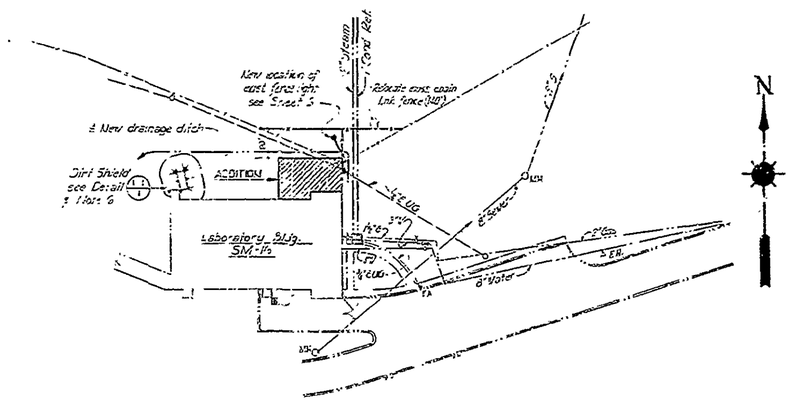


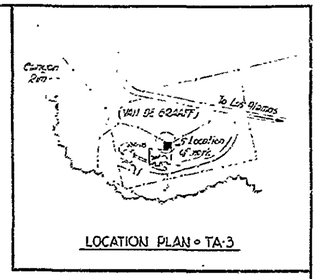
TA-3-16, North elevation, eastern portion



TA-3-16, North elevations





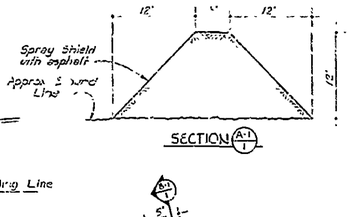


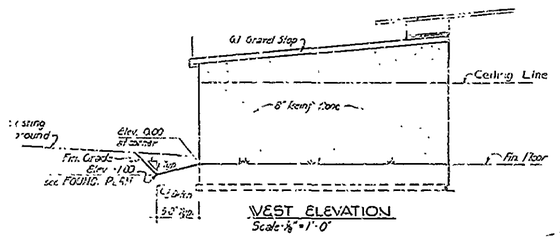
NOTES

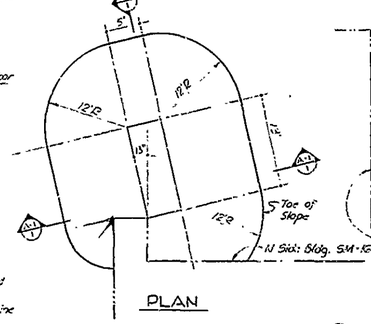
1. Concrete to be Class A-3000psi @ 28 days.
2. Backfill to be compacted to 92% maximum density at optimum moisture content
3. All items to be as called for or approved equal.
4. Furniture for Lab #8 to be Kewaunee (Cat No 50) as listed below.

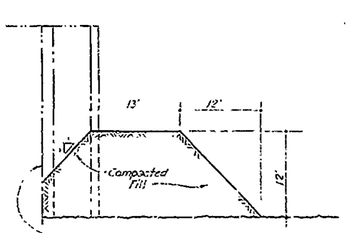
Bench tops to be Removed.		
#14	Four Drawer Pedestal Unit	1 ea.
#34	Sink base Unit	1 ea.
	Stainless Steel Sink Top	1 ea.
1/46	Single Cupboard & Drawers	1 ea.
#50	Drawer Unit	1 ea.
#51	" "	1 ea.
#56	" "	2 ea.
#63	Open Storage Unit	1 ea.
#860	Table Rail Assembly	3 ea.

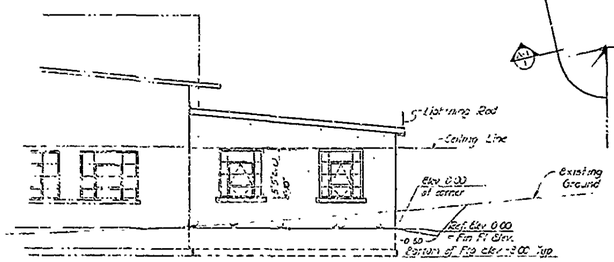
5. Paint interior walls light green Do not paint ceiling.
6. Dirt Shield to be in place before building construction is started.
7. Hinges to be P&E BB86½ 4"x4" (1½ pr/door) Locksets to be P&E A1056 225 Proctor Hand #110 or 10.

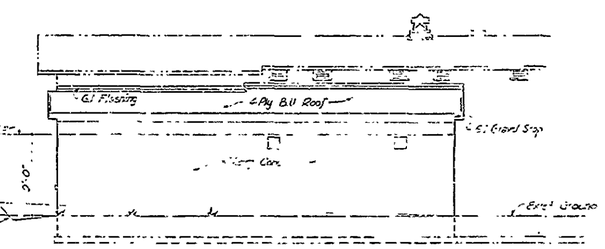


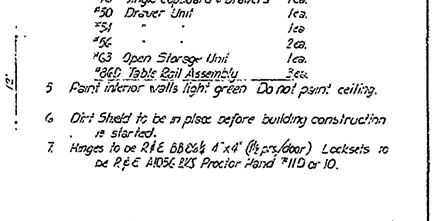












THIS DRAWING HAS BEEN APPROVED AND ANY CHANGES APPROVED BY ENG-A KONRAD PHONE 7-1656

NO.	DATE	REVISIONS	BY	CHKD	GRP. LDR.	ENG. D. G.
1	7-12-57	Change Exterior Walls From Block To Reinf. Conc.	REO	JFZ		

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

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

BUILDING SM-16 ADDITION
PLANS & ELEVATIONS

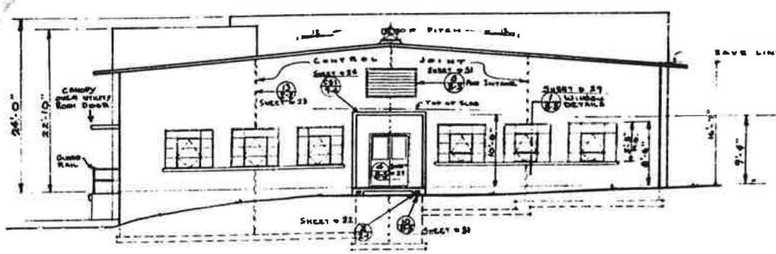
SM-16 TA-3

CHECKED		RECOMMENDED	APPROVED
PROJ. ENG.	JFZ	GROUP LEADER	ENG. DEPT. OFFICE
DESIGNER	JSM	DATE	DRAWING NO.
DRAWN	JSM	5-22-57	ENG-C-18901
SCALE	As Noted	SHEET 1 OF 8	

Ref. Dwg. Eng-C 1916 & C1917

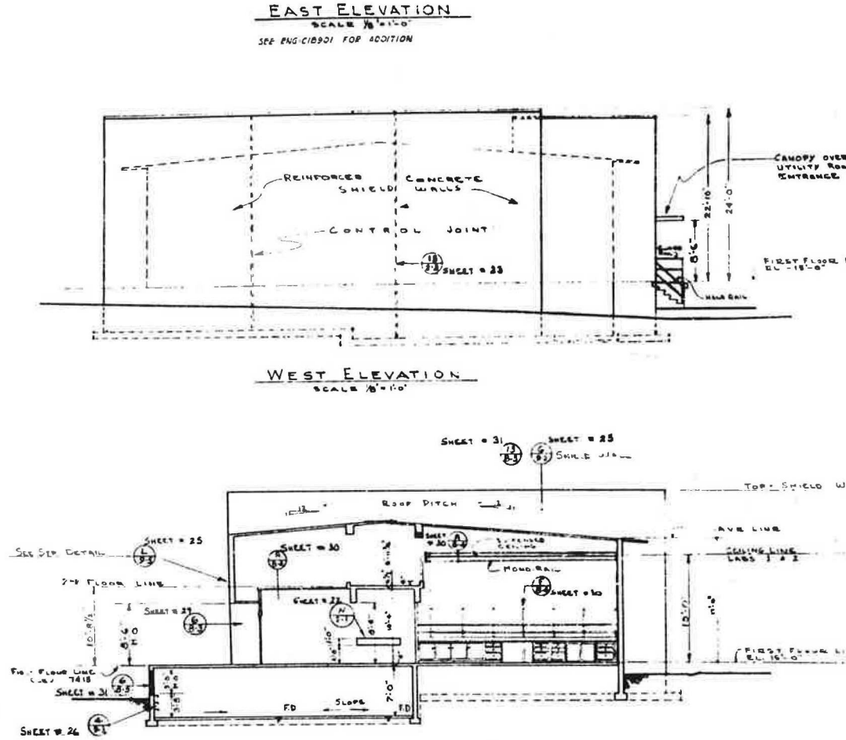
B. A. NO. _____ LAB. JOB NO. 1847

SIZE A



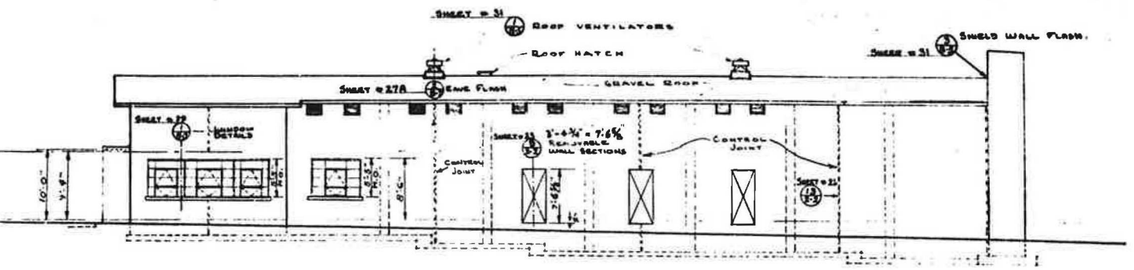
EAST ELEVATION
SCALE 1/8" = 1'-0"
SEE ENG-C18901 FOR ADDITION

WEST ELEVATION
SCALE 1/8" = 1'-0"

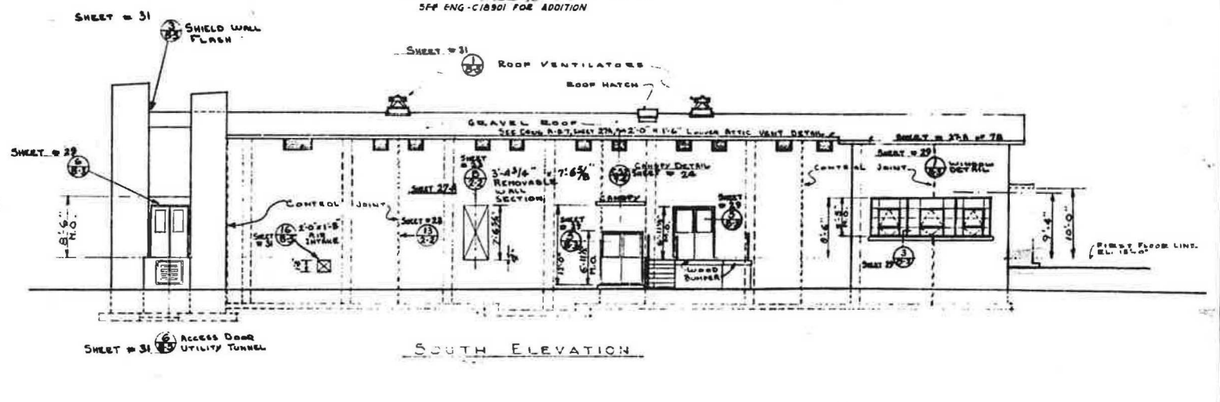


TRANSVERSE SECTION (A / B-6)
SCALE 1/8" = 1'-0"

TRANSVERSE SECTION (B / B-6)
SCALE 1/8" = 1'-0"

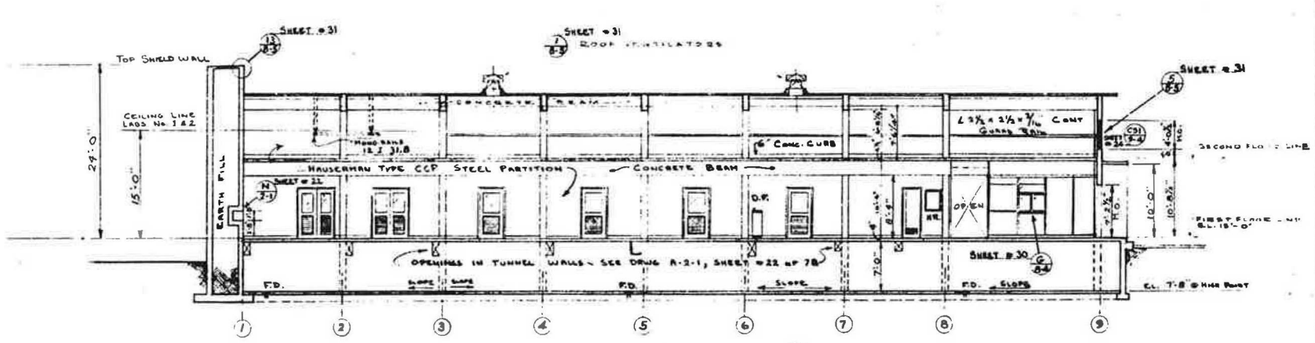


NORTH ELEVATION
SCALE 1/8" = 1'-0"
SEE ENG-C18901 FOR ADDITION



SOUTH ELEVATION

SHEET # 31 ACCESS DOOR UTILITY TUNNEL



LONGITUDINAL SECTION (C / B-6)
SCALE 1/8" = 1'-0"

AS CONSTRUCTED DRAWING
CONSTRUCTED UNDER DIRECTION OF AT 24-D 7/2
SUBMITTED Consolidated Western Const. Inc.
RECOMMENDED
APPROVED

NO	DATE	REVISIONS	BY	CH	CERT FOR CONSTR
3					
2	3-11-57	CORRECT TO 8-15-57	EJL		
1	1-10-50	As Built	DMB		

U. S. ATOMIC ENERGY COMMISSION
SANTA FE OPERATIONS OFFICE
LOS ALAMOS, NEW MEXICO

12 MEV VAN DE GRAAFF
ACCELERATOR BUILDING AND LABORATORY
ELEVATIONS AND SECTIONS
LABORATORY BUILDING

DESIGNED E. GABEL
DRAWN R.H.M.
TRACED R.H.M.
SCALE 1/8"=1'-0"
DATE 3-28-49

SUBMITTED J. Mudd
APPROVED Lyle Haney

CONSOLIDATED WESTERN CONSTRUCTORS INC.
LOS ANGELES HOUSTON

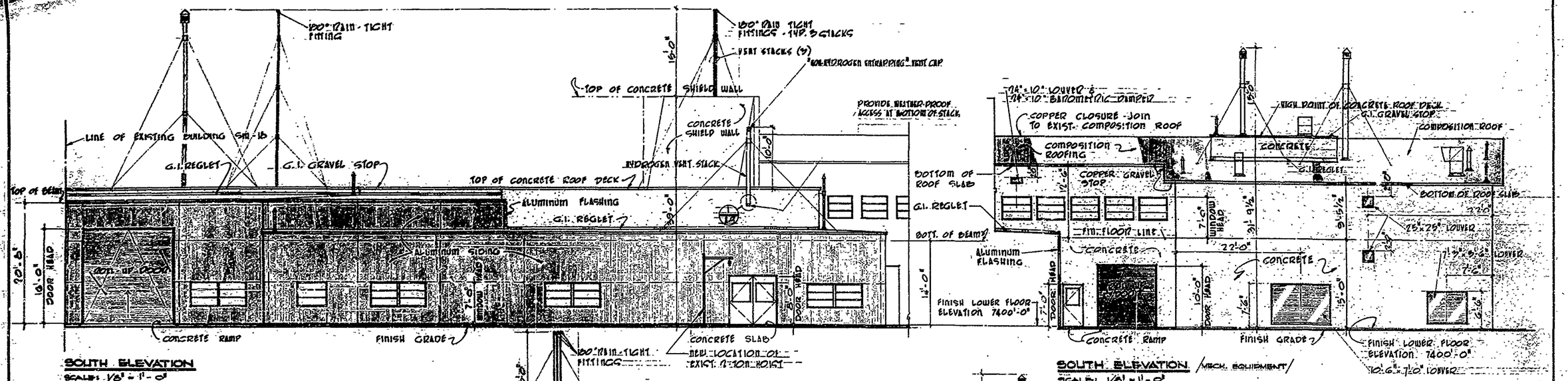
46993
28 of 78
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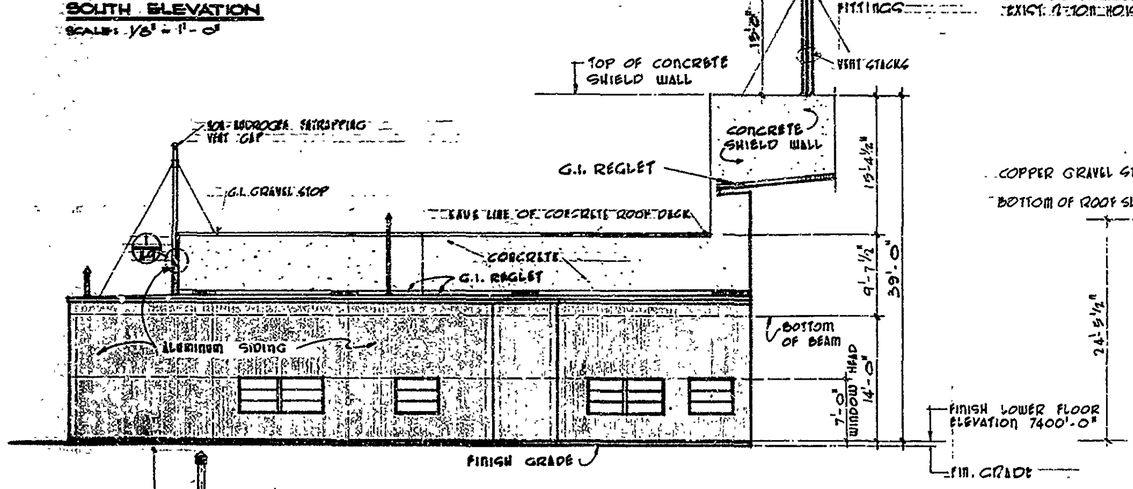
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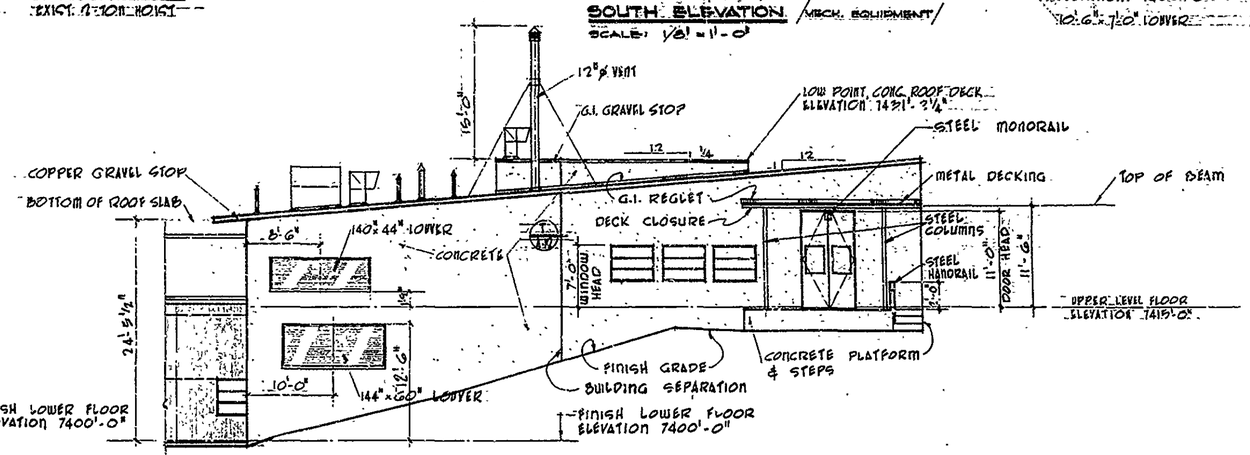
LASL-DRWG. ENG-C 1917 LAB. JOB. 188

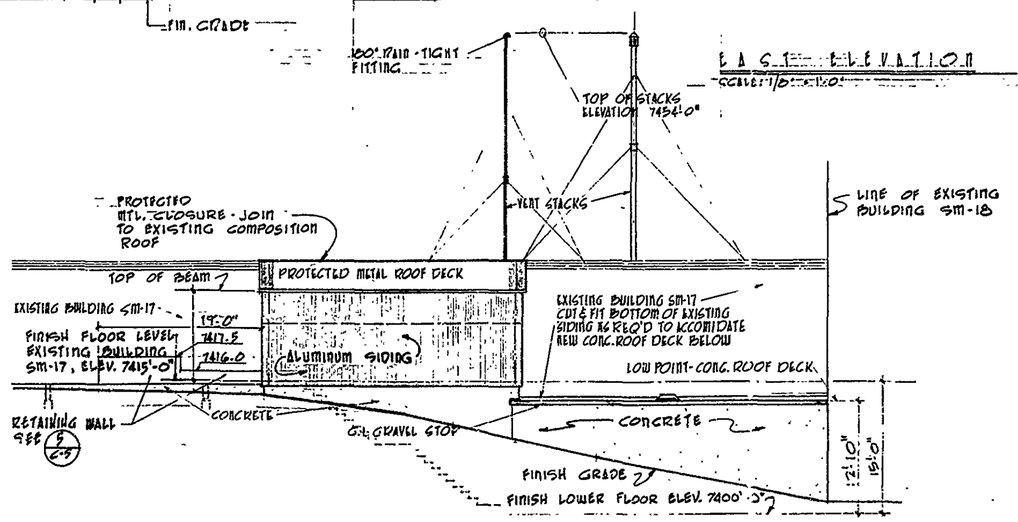
ORIGINALLY, SHEET #2 OF ADDENDUM #1

SAF-01-3/3









AS CONSTRUCTED DRAWING
CONSTRUCTION CONTRACT NO. AT(29-1)1767
SUBMITTED E.O. Harris ARCHITECT-ENGINEER
RECOMMENDED
APPROVED E. E. Bingham

NO.	DATE	REVISIONS	BY	CK	PROJ. ENGR.	A.E.C. APP.
2	2-28-62	ADDED BLDG. NO. TO TITLE BLOCK	RJH			
1	1-15-62	AS BUILT	P.L.			

U. S. ATOMIC ENERGY COMMISSION
LOS ALAMOS AREA OFFICE
LOS ALAMOS, NEW MEXICO

TANDEM VAN DE GRAAFF FACILITIES

ELEVATIONS

BLDG. SM-16 TA-3

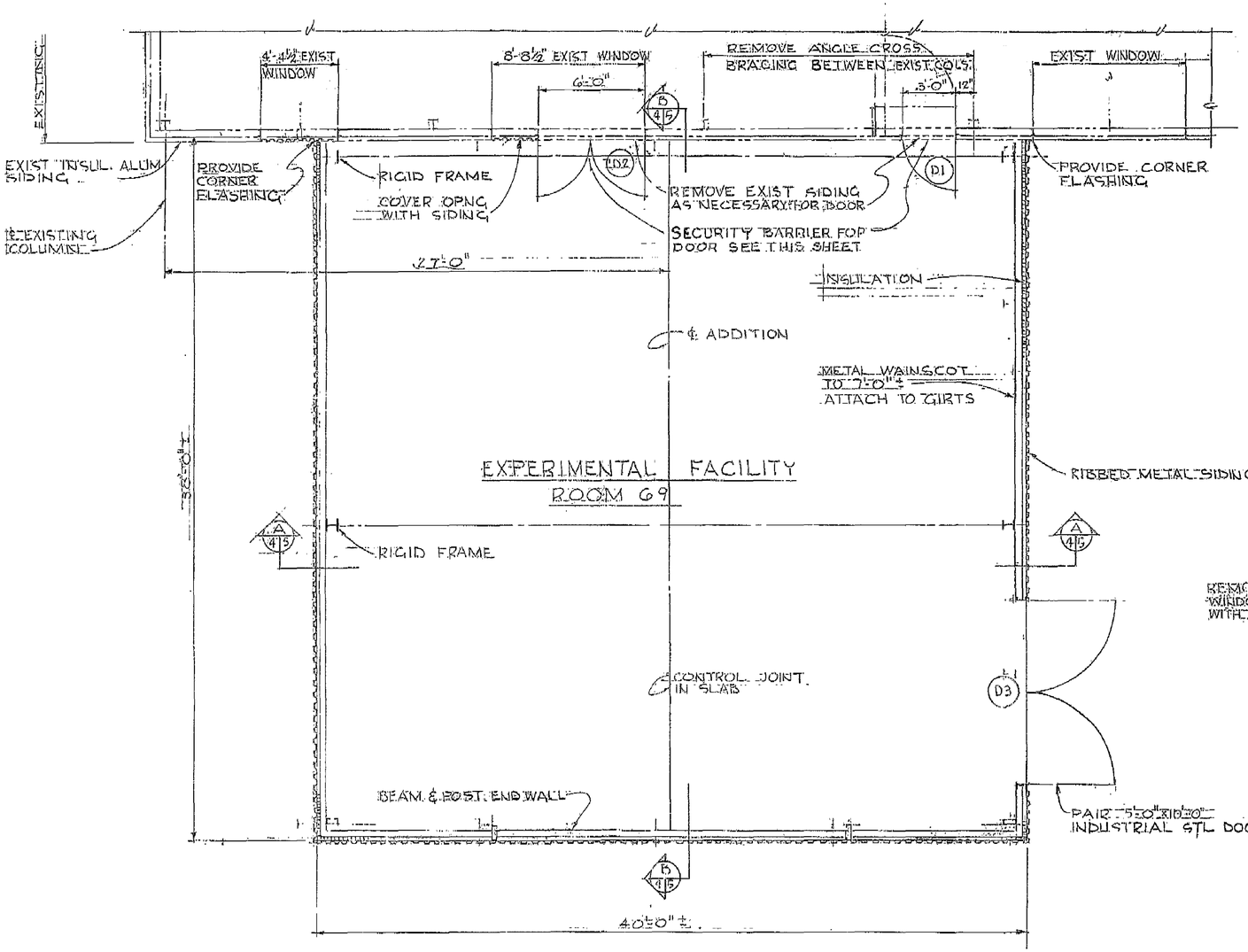
A.E. APPROVED
DESIGN HEAD
GROUP
DEPARTMENT MANAGER
CHECKED
PROJECT MANAGER

SUBMITTED: ARCHITECT-ENGINEER
RECOMMENDED: E. E. Bingham A.E.C.
APPROVED: A.E.C.
DATE: 1 OCT 1962

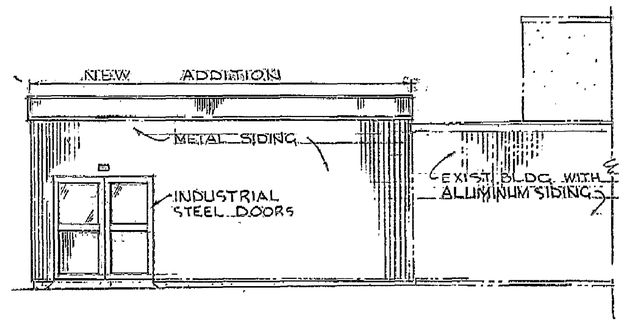
NORMAN ENGINEERING CO.
consulting engineers
LOS ANGELES, CALIFORNIA

DRAWING NO. LA-FD-A-7
SHEET 14 OF 123

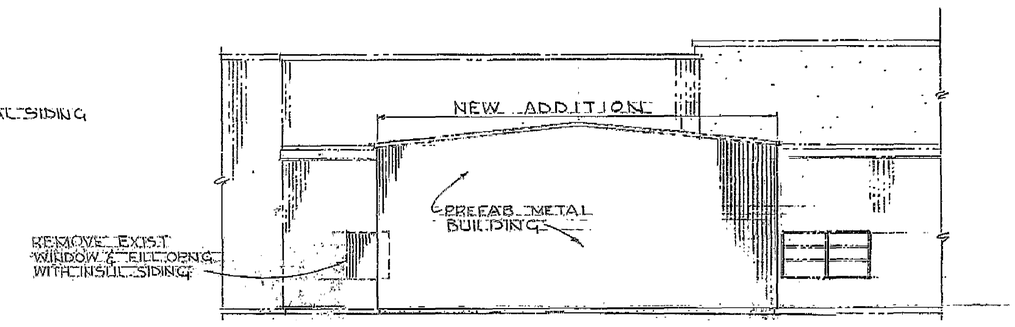
LAB JOB 188 A LASL DWG NO. ENG-C 31384



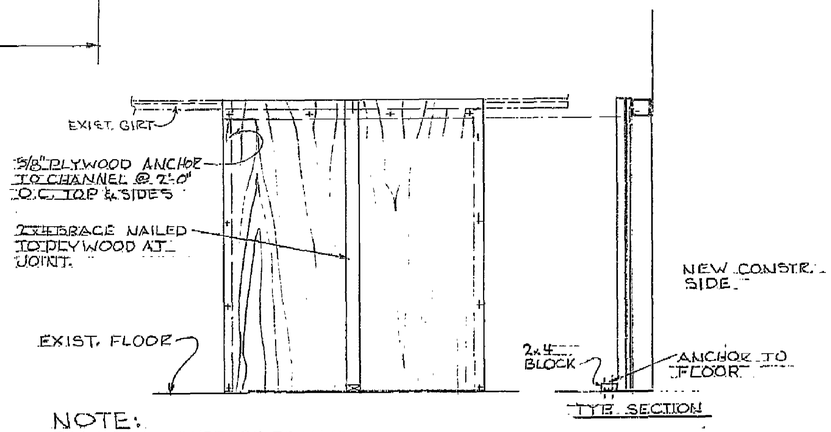
FLOOR PLAN
SCALE: 1/4"=1'-0"



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



SOUTH ELEVATION
SCALE: 1/8"=1'-0"



NOTE:
PATCH ALL SURFACE TO MATCH EXISTING ADJACENT SURFACES AS CLOSELY AS POSSIBLE

(DOOR D1 SIMILAR)

SECURITY BARRIER AT NEW DOORS
SCALE 1/2"=1'-0"

LAB. JOB NO. 4757-3

NO.	DATE	REVISIONS	BY	CK.	ENGR. D.O.	A.E.C. APP.

AUTHORIZED FOR: P-9 P.D.D. HEALTH SAFETY FIRE PH. SEC.

U. S. ATOMIC ENERGY COMMISSION
LOS ALAMOS AREA OFFICE
LOS ALAMOS, NEW MEXICO

AEC COST ACCTING CODE NO.

EXPERIMENTAL FACILITY, RM 69

FLOOR PLAN & ELEVATIONS

BLDG SM-16 TA-3

L. ALAMOS: J. JIPARDUS
CHECKED
A-E APPROVED
DESIGN
GROUP LEADER
SCALE: AS NOTED
DATE

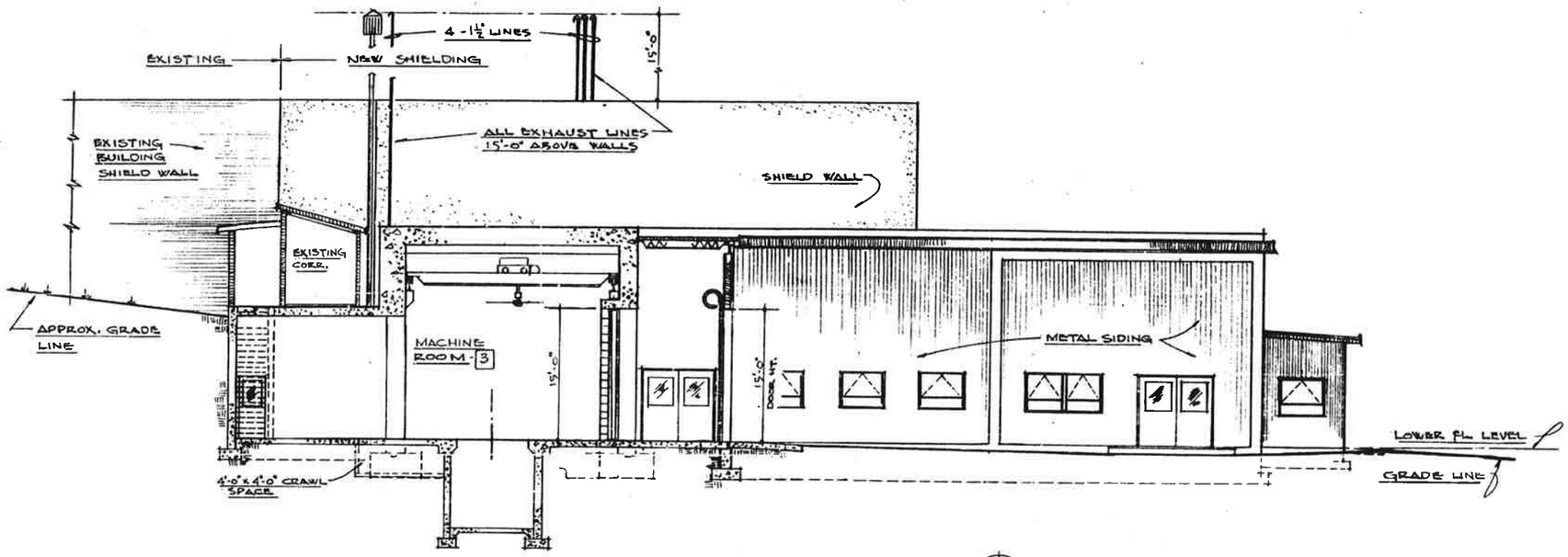
SUBMITTED: Chief, Engr. Office
RECOMMENDED: AEC.
APPROVED: AEC.

LAB. DWG. NO. ENG-C40820

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

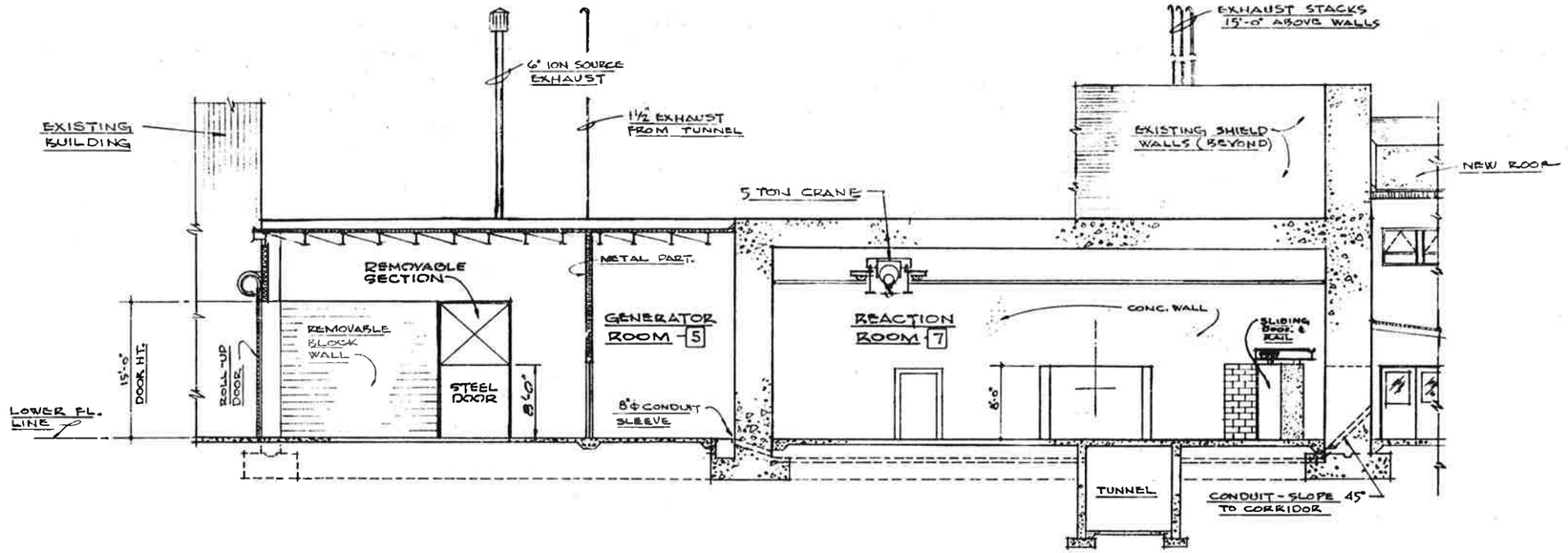
AEC. DRAWING NO. LA-LE-A1

SHEET 4 OF 10



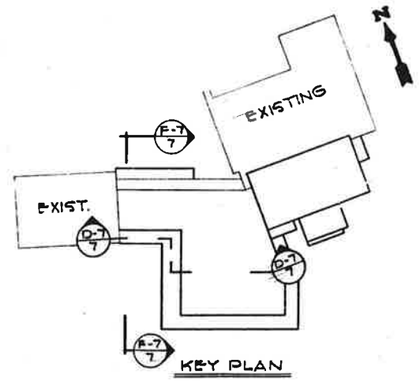
PARTIAL SECTION & WEST ELEVATION (F/7 7)

SCALE 1/8" = 1'-0"



SECTION (D/7 7)

SCALE 1/8" = 1'-0"



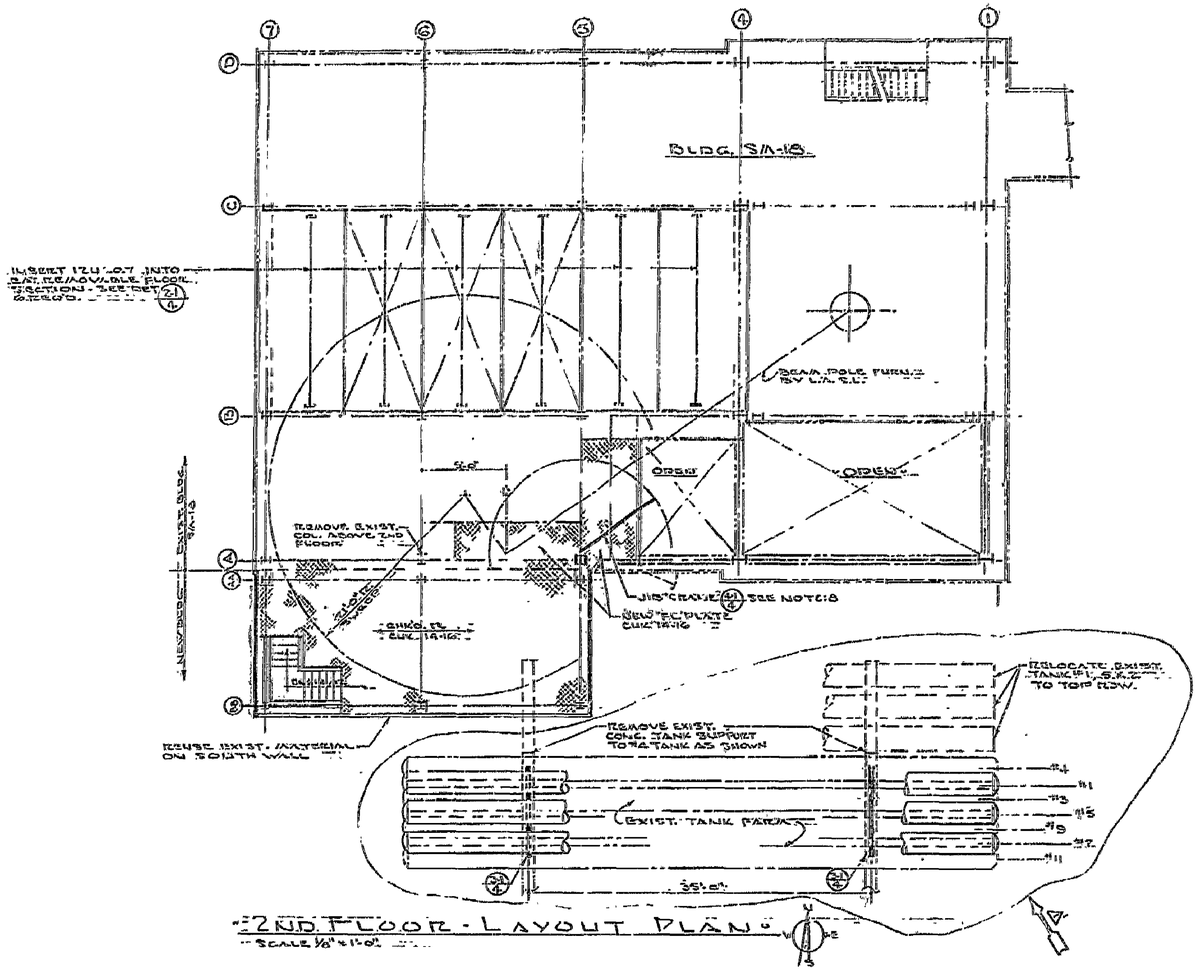
NO.	DATE	REVISIONS	BY	CHKD	GRP. LDR.	ENG. D. O.

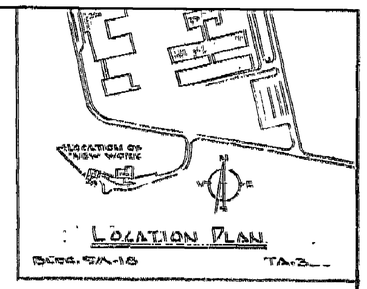
AUTHORIZED FOR
HEALTH H-5 ECH H-1
SAFETY P-DO
FIRE PROT. E-3
SEC.

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

TANDEM VAN DE GRAAFF FACILITIES
SECTIONS
BLDGS. SM-16 & 18 TA-3

CHECKED PROJ. ENG. RRR	RECOMMENDED GROUP LEADER Cam	APPROVED ENG. DEPT. OFFICE WB	
DESIGNER RDD	DATE 11-28-61	DRAWING NO. ENG-PL 584	
DRAWN MECRACKEN	SHEET 7 OF 34		
SCALE AS NOTED			





GENERAL NOTES:

1. CONCRETE TO BE CLASS "A" MIN. COMPRESSIVE STRENGTH OF 3,000 P.S.I. @ 28 DAYS.
2. WHERE BRAND NAMES ARE USED TO SPECIFY A PRODUCT OR MATERIAL, APPROVED ITEMS OF EQUAL QUALITY AND FUNCTION MAY BE SUBSTITUTED.
3. EXISTING CORRUGATION R-PANELING ON 26'-0" OF THE SOUTH WALL OF BLDG. SM-18 TO BE REUSED ON SOUTH WALL OF NEW ADDITION ALONG WITH THAT STRUCTURE AS INDICATED ON DWGS.
   EXISTING STORAGE RACKS, 1ST FL. S.W. CORNER BLDG. SM-18, TO BE RELOCATED TO SOUTH WALL OF NEW ADDITION.
4. ALL EXPOSED STEEL TO BE PAINTED 2 COATS OF DULUX LIGHT GRAY #617.
   NO SHOP PRIME COAT ON STRUCTURAL STEEL. PRIME COAT TO BE APPLIED AFTER STEEL ERECTION.
   DO NOT PAINT ALUM. OR GALV. SIDING, FLOORING, DECKING OR ALUM. FLASHING AND TRIM.
5. STAIR TREADS 9 1/2" x 36" TO BE "BORDEN" TYPE W/6 SLE 4 BEARING BAR 1"x 1/4" (10 REQ'D) COMPLETE WITH 1/4" ABRASIVE NOSING. THREE EXTRA ABRASIVE LANDING NOSINGS
6. PROVIDE FLOOR LOAD LIMIT SIGNS TO LIMIT LIVE LOAD TO 100 LBS./SQ. FT.
7. FIELD ASSEMBLY OF THE FOLLOWING MATERIALS SHALL BE IN ACCORDANCE WITH ARCH'L SPECIFICATIONS AND SHOP DRAWINGS. EXISTING SIDING, TO BE RELOCATED TO BE ERECTED SIMILAR TO ABOVE.
- (A) SIDING TO BE ROBERTSON INSULATED Q-PANEL CONSISTING OF: #16 GA. 24 GA. STANDARD MILL FINISH ALUM. 3" SELECT. (OUTER). 1 1/2" R.G. FIBERGLAS INSUL. 18 GA. METAL COATED STEEL "D" SECT. (INNER).
- FLASHING: 14 & 16 GA. STAND. MILL FINISH ALUM., 18 GA. M.S. STEEL (INNER).
- (B) ROOFING TO BE ROBERTSON 20 GA. GALBESTOS W-BEAM COATED BLACK BOTH SIDES.
- (C) FLOOR DECK TO BE ROBERTSON Q-DECK TYPE CHK 14-16. WELD TO SUPPORTING STL. @ 12" c.c. FROM UNDERSIDE.
- (D) JIB CRANE TO BE "ENGLISH-HARRIS" STANDARD MODEL 1031, 10 FT. WALL BRACKET TYPE, 2 TON CAPACITY, 360° SWING WITH 2 HP HOIST STEP, WELD TO COLUMN AS PER DET. E. LABEL CRANE & HOIST CAPACITIES IN ACCORDANCE WITH STANDARD MARKING PROCEDURE ESTABLISHED BY ENG. A.
- (E) HOIST TO BE "ENGLISH-HARRIS" CYCLONE, MODEL "A" LOW HEADROOM, TROLLEY HOIST NR 4866, 2 TON CAPACITY.
- (F) TEST HOIST & JIB CRANE PRIOR TO ACCEPTANCE IN ACCORDANCE WITH THE FOLLOWING:
  "SAFETY CODE FOR CRANES, DERRICKS & HOISTS, ASA B 30.2-1943"

BOLTING NOTES:

- (A) IT IS INTENDED THAT ALL STRUCTURAL STEEL ERECTED IN THE NEW ADDITION & PORTIONS OF THE EXIST. BLDG. SM-18, INDICATED AS BEARING, STANDARD "N" TYPE CONNECTIONS, BOLTED TOGETHER (NOT RIVETED) USING HEX-HEAD, HIGH STRENGTH, BOLTS (HEAVY HEAD) AS DESIGNATED BY ASTM A-325 (LATEST REV.) F.N.G.N. BOLTS ARE NOT INCLUDED. ALL MS BOLTS TO BE 3/4" INCH W/ 1 1/2" MIN. T. HEX. NUTS, LENGTHS TO BE DETERMINED BY GRIP.
- (B) DO NOT USE WASHERS WITH HIGH STRENGTH BOLTS.
- (C) TEST AT LEAST (3) BOLTS TO FAILURE FROM EACH LOT PRIOR TO USE IN BLDG. BY TORQUE WRENCH & OBSERVING THE NUMBER OF TURNS TO FAILURE. THE "LOT" AS TYPE OF MANUFACT. TESTS TO BE WITNESSED BY PERSONNEL FROM ENGR. AND SNCA.
- (D) WRENCHES TO BE USED MAY BE MANUAL OR IMPACT TYPE AS LONG AS DESIRED EFFECT IS ATTAINED.
- (E) PROCEDURE:
  1. BRING WORK TIGHTLY TOGETHER WITH STANDARD SQUARE-HEAD MACHINE BOLTS. (MAX. 24%)
  2. INSTALL HIGH-STRENGTH BOLTS IN REMAINING HOLES. TIGHTEN NUTS BY HAND TO FINGER TIGHT. THEN TURN NUTS ONE (1) FULL TURN ONLY WITH WRENCH. DO NOT OVER TIGHTEN!
  3. REMOVE FITTING-UP BOLTS & REPLACE WITH HIGH-STRENGTH BOLTS, TIGHTENED AS NOTED ABOVE.
     NOTE: IF IMPACT WRENCH IS USED, MARK CHUCK IN ORDER TO DETERMINE (1) FULL TURN AND REGULATE DRIVE TO OBTAIN (1) TURN OF NUT IN APPROX. 10 SEC. IF HAND WRENCH IS USED, MARK NUT.
  4. AFTER EACH NUT RECEIVES ONE (1) FULL TURN FROM FINGER TIGHT, MARK WITH YELLOW CRAYON TO AVOID FURTHER TIGHTENING.
  5. DO NOT RE-TIGHTEN ANY INSTALLED H.S. BOLT & DO NOT REUSE ANY H.S. BOLT WHICH HAS RECEIVED WRENCH TIGHTENING AND THEN REMOVED.
- (F) PERMISSIBLE TOLERANCE: NUT ROTATION 1/2 TURN OVER, NOTHING UNDER, ONE (1) FULL TURN FROM FINGER TIGHT.
- (G) ALL H.S. BOLTED CONNECTIONS ARE TO BE FRICTION TYPE, RATHER THAN BEARING TYPE. (BOLT MFGR. REQUIRES THIS INFORMATION) BOLT LENGTH IS CRITICAL.
- (H) SUGGESTED BOLT SOURCE - BETHLEHEM STEEL CO. BETTLEHEM, PA.

THIS JOB MUST BE PROTECTED AND ANY CHANGES APPROVED BY [illegible]

NO.	DATE	REVISIONS	DRD	BY	CHKD	PROJ. ENG.	DIV. OR DEPT.
2	2-28-62	ADD CONNECTIONS TO RELOCATED TANKS	JTS	T.V.R.	RMcD	[illegible]	GJB

AUTHORIZED FOR: HEALTH U.A. — SAFETY ENG. — FIRE PROT. ASST. — SEC. N.A.

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

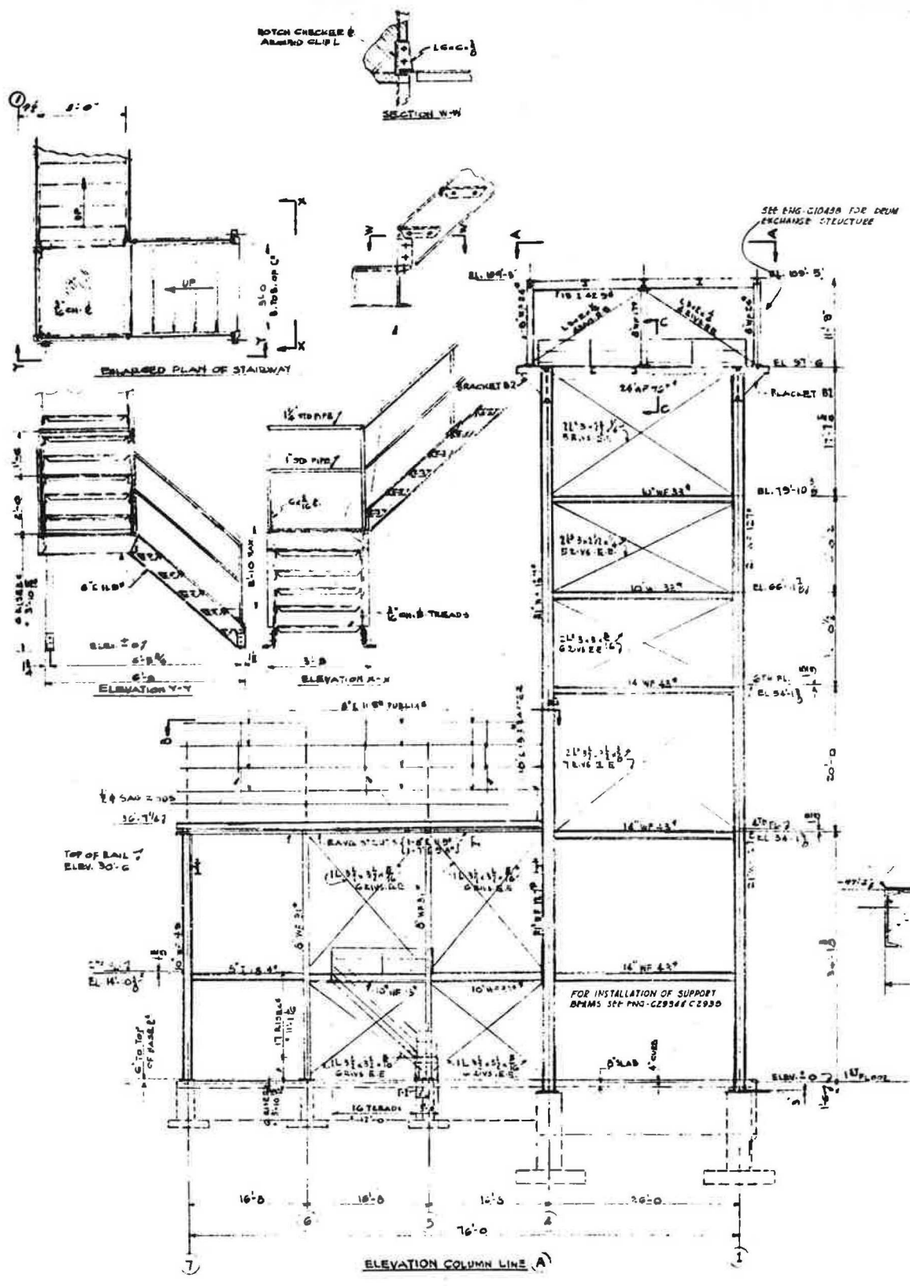
ION BEAM COMPRESSION SYSTEM INSTALLATION

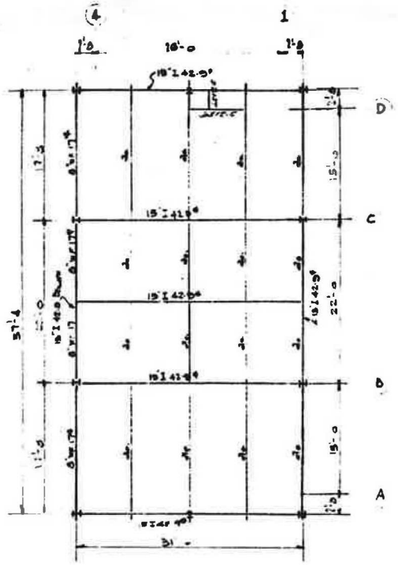
LOCATION - LAYOUT PLAN & ELEV'S.
BLDG. SM-18 TA-3

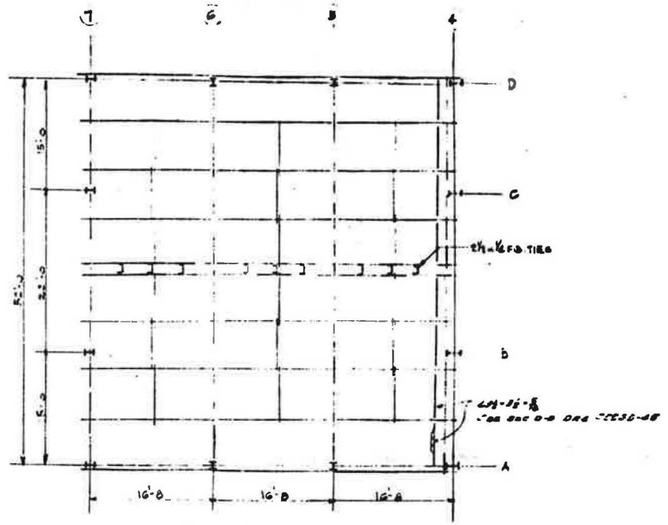
CHECKED	RECOMMENDED	APPROVED
PROJ. ENG. TE 2	R.M. McDonald GROUP LEADER	ENG. DEPT. OFFICE
DESIGNED T. VENNER	DATE FEB. 28 1962	DRAWING NO. ENG-C 26900
DRAWN T. RICHARDSON	SHEET 1 OF 11	
SCALE AS SHOWN		

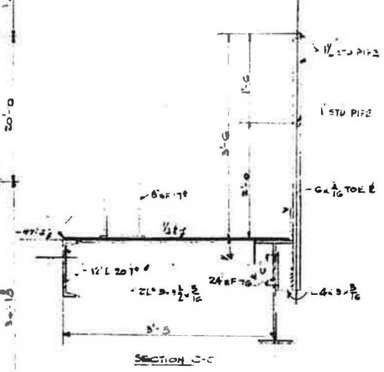
B. A. NO. 75 LAB. JOB NO. 2589-3

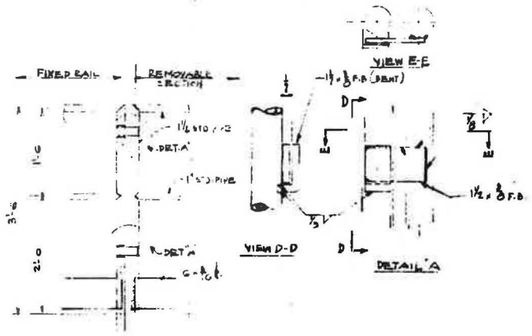
Prefix	Drawing number	Sheet number	Sheet suffix	Number of sheets	Revision number
C	26900	1	_	11	1











TYPICAL DETAIL AT REMOVABLE RAIL SECTIONS

AS CONSTRUCTED DRAWING
SUBCONTRACT NO. AT 29-U 313
CONSTRUCTED CONSOLIDATED WESTERN CONSTRUCTORS INC.
RECOMMENDED
APPROVED

NO.	DATE	REVISIONS	BY	CK.	CONST. FOR BIDDING
3					
2					
1	9-11-57	CORRECT TO 8-15-57	G/L	WS	SEND

U. S. ATOMIC ENERGY COMMISSION
SANTA FE OPERATIONS OFFICE
LOS ALAMOS, NEW MEXICO

12 MEV VAN DE GRAAFF
ACCELERATOR BUILDING AND LABORATORY
FRAMING ELEVATION COL. LINE A
ACCELERATOR BUILDING

DESIGNED BY J.C.T.
DRAWN BY E.S.
CHECKED BY BOYSEN
SCALE AS NOTED
DATE 9-22-60

CONSOLIDATED WESTERN CONSTRUCTORS INC.
LOS ANGELES HOUSTON
46993
14 OF 78
0

S-3569-42

L.A.S.L. DWG. NO. ENG-C 1903 LAB. JOB. 188 JAF-DI-2/3

SHEET A

SEE ENG-C2191 FOR HOIST INSTALLATION

PLAN VIEW B-B

ENLARGED SECTION C-C

SECTION D-D

SECTION N-N

SEE ENG-C899 FOR PERIMETER VESSEL ACCESS PLATFORM

SECTION F-F

SECTION G-G

SECTION K-K

SECTION W-W

PLAN VIEW A-A
BOTTOM CHORD BRACING
ALL DIAGONALS 1L 3 × 2½ × 1/4 (LONG LEG E.B.)

SECTION Y-Y

SECTION H-H (TYP)

SECTION E-E

SECTION M-M

TYPICAL DETAIL OF CRANE BRKT.

ELEVATION COLUMN LINE (D)

ELEVATION COLUMN LINE (7)

NO.	DATE	REVISIONS	BY	CK.	CONT. PER CONSTR.
2	9-21-57	CORRECT TO 8-15-57	CVL		
1	10-1-57	AS BUILT	JS		

U. S. ATOMIC ENERGY COMMISSION
SANTA FE OPERATIONS OFFICE
LOS ALAMOS, NEW MEXICO

12 MEV VAN DE GRAAFF
ACCELERATOR BUILDING AND LABORATORY
FRAMING ELEVATIONS COL. LINES 7 & D
ACCELERATOR BUILDING

DESIGNED BY J.C.T.
DRAWN BY E.S.
DESIGNED BY BOYSEN
SCALE AS NOTED
DATE 9-22-40

CONSOLIDATED WESTERN CONSTRUCTORS INC.
LOS ANGELES HOUSTON

46993
15 OF 78
0

5-5565-45

LAB. JOB. 188 L.A.S.L. DWG. NO. ENG-C 1904 JAF-01-2/14

LAB. No.1 | LAB. No.2 | LAB. No.3 | LAB. No.4 | LAB. No.5 | STORAGE RM. | WOMEN | MEN | DARK ROOM | OFFICE No.1 | OFFICE No.2 | OFFICE No.3 | OFFICE No.4 | OFFICE No.5 | OFFICE No.6 | CONTROL RM. | LAB. No.6 | UTILITIES | SHOP

EXISTING 12x12 GR. 650 CFM 1300 O.V. (TO REMAIN)
EXISTING 12x12 GR. 450 CFM 1300 O.V. (TO REMAIN)
EXISTING 12x9 GR. 375 CFM 1000 O.V. (TO REMAIN)
EXISTING 12x12 GR. 375 CFM 1000 O.V. (TO REMAIN)
EXISTING 12x12 GR. 500 CFM 1000 O.V. (TO REMAIN)
EXIST. 9x9 GR. 280 CFM 1000 O.V. TO REMAIN
EXISTING EXH. SYSTEM (TO REMAIN)
EXISTING 6x6 GR. 100 CFM 900 O.V. (TO REMAIN).
EXIST. 6x6 GR. 75 CFM 600 O.V.
EXIST. 6x6 GR. CLOSE
EXIST. HEAT. THERM. (TO REMAIN) NEW LOCATION OF EXIST. THERM. FROM OFFICE No.1
NEW HUMIDOSTAT
NEW 12x9 AGITAIR R-40 225 CFM 600 O.V.
NEW 15x15 AGITAIR R-40 430 CFM 550 O.V.
NEW 9x9 AGITAIR R-40 175 CFM 625 O.V.
NEW 9x9 AGITAIR R-40 120 CFM 450 O.V.
NEW 18x18 AGITAIR R-40 1100 CFM 890 O.V.
NEW 15x12 AGITAIR 625 CFM 1000 O.V.
NEW 18x18 AGITAIR 1100 CFM 1300 O.V.
NEW 12x12 AGITAIR R-40 200 CFM 550 O.V.
NEW 12x9 AGITAIR R-40 225 CFM 600 O.V.
NEW 12x9 AGITAIR R-40 250 CFM 625 O.V.
NEW 15x15 AGITAIR R-40 430 CFM 550 O.V.
EXIST. 18x8 DN. TO EXIST. HOOD
EXISTING AMERICAN BLOWER UTILITY SET 90 M. G.E. MOTOR 1 HP 208/220/440 3-60
EXISTING AMERICAN BLOWER UTILITY SET 150-HN G.E. 2 HP MOTOR 220/440-3-60 (TO REMAIN)
EXISTING 18x16 DN. TO CONTROL PANEL (TO REMAIN)
EXIST. CONTROL PANEL HEAT. SYSTEM (TO REMAIN)
EXIST. FILTERS SEE GENERAL NOTE # 14 (TO REMAIN)
EXIST. THERMOSTAT (TO REMAIN)
EXISTING THERMOSTAT (TO REMAIN)
NEW THERMOSTAT LOCATION FROM LAB. No.6
NEW THERMOSTAT SEE SCHEDULE SHT 3
STEAM COIL SEE SHT. 3
2 STEAM COILS SEE SHT 3
EXIST. AGITAIR SEE GENERAL NOTE # 10
NEW FIN RADIATORS SEE SHT. 3
2 QUADRANT DAMPERS FOR ZONE CONTROL
QUADRANT DAMPERS
SPLITTER DAMPER
TRANSITION 24x19 TO 18x16
TRANSITION 18x20 TO 24x19
TRANS. ELBOW 18x12 TO 18x18 12" RADIUS
TRANS. ELBOW 12x10 TO 15x12 12" RADIUS
TRANS. ELBOW 18x11 TO 18x13 12" RAD.
TRANS. ELBOW 15x6 TO 15x15 15" RADIUS
TRANS. ELBOW 9x6 TO 12x9 9" RAD.
TRANS. ELBOW 9x6 TO 12x9 9" RAD.
TRANS. ELBOW 9x6 TO 12x9 9" RAD.
TRANS. ELBOW 9x6 TO 12x9 9" RAD.
TRANS. ELBOW 10x9 TO 12x12 9" RAD.
CONT. DUCT WITH 10x9 ELBOW 9" RAD. TERMINATE WITH TRANS. ELBOW 10x9 TO 15x15 15" RAD. USE EXIST. CEILING OPG.
CONNECT NEW DUCT TO 6" EXISTING GRILLES
EACH 36x14 TAP IN TO HAVE 18" RAD. & VOL. CONTROL DAMPERS ADJ. FROM ATTIC
6-36x14 EXH. GRILLES IN MAIN FLOOR CORRIDOR CEILING EXHAUST INTO ATTIC SPACE
24x18 LOUVER & SCREEN (TYP.) ATTIC RELIEF (TO REMAIN)
INSTALL OIL DRIP PAN UNDER MOTOR (SEE DETAIL SHEET No.3)
FOR DETAILS OF HEATING EQUIP. SEE SHT 4
FOR DETAILS OF HEATING EQUIP. SEE SHT 3
STEAM COILS SEE SHT. 3 GUARD STATION
EVEN SPLIT
TOP 15 BOT. 5
TOP 9/6 BOT. 10/9
TOP 10x9 BOT. 12x9
8½"x3½" SPLIT

MAIN FLOOR PLAN
SCALE 1/8"=1'-0"

NOTES:
1. FOR GENERAL NOTES COVERING THIS DWG. SEE SHT. 3
2. SHADED PORTION INDICATES NEW INSTALLATION
3. UNSHADED PORTION IS EXISTING EQUIPMENT TO REMAIN
4. SEE ENG-C 5141 FOR MODIFICATIONS OF H & V.

RECORD DRAWING—AS BUILT CONSTRUCTION

SUBMITTED:	RECOMMENDED:	APPROVED:
FOR THE LAB. DIR.	A.E.C.	A.E.C.

Dodd PHONE 2-2034
ENG 4 - FIELD ENGINEER

AUTHORIZED FOR PROJECT APPLICABLE

HEALTH	C.H.P.	NOT APPLICABLE
SAFETY	C.S.P.	NOT APPLICABLE
FIRE PR.	F.P. DIV.	NOT APPLICABLE
CONST.	ENG. & CONST. DIV.	APPROVED

OFFICIAL USE ONLY

NO.	DATE	REVISIONS	BY	CK.	PROJ. ENG.	A.E.C.
2	9-11-57	CORRECT TO 8-15-57	CJL			
1	6-24-57	REVISED TO AS BUILT STATUS	JRH	RCK		

U. S. ATOMIC ENERGY COMMISSION
SANTA FE OPERATIONS OFFICE
LOS ALAMOS, NEW MEXICO

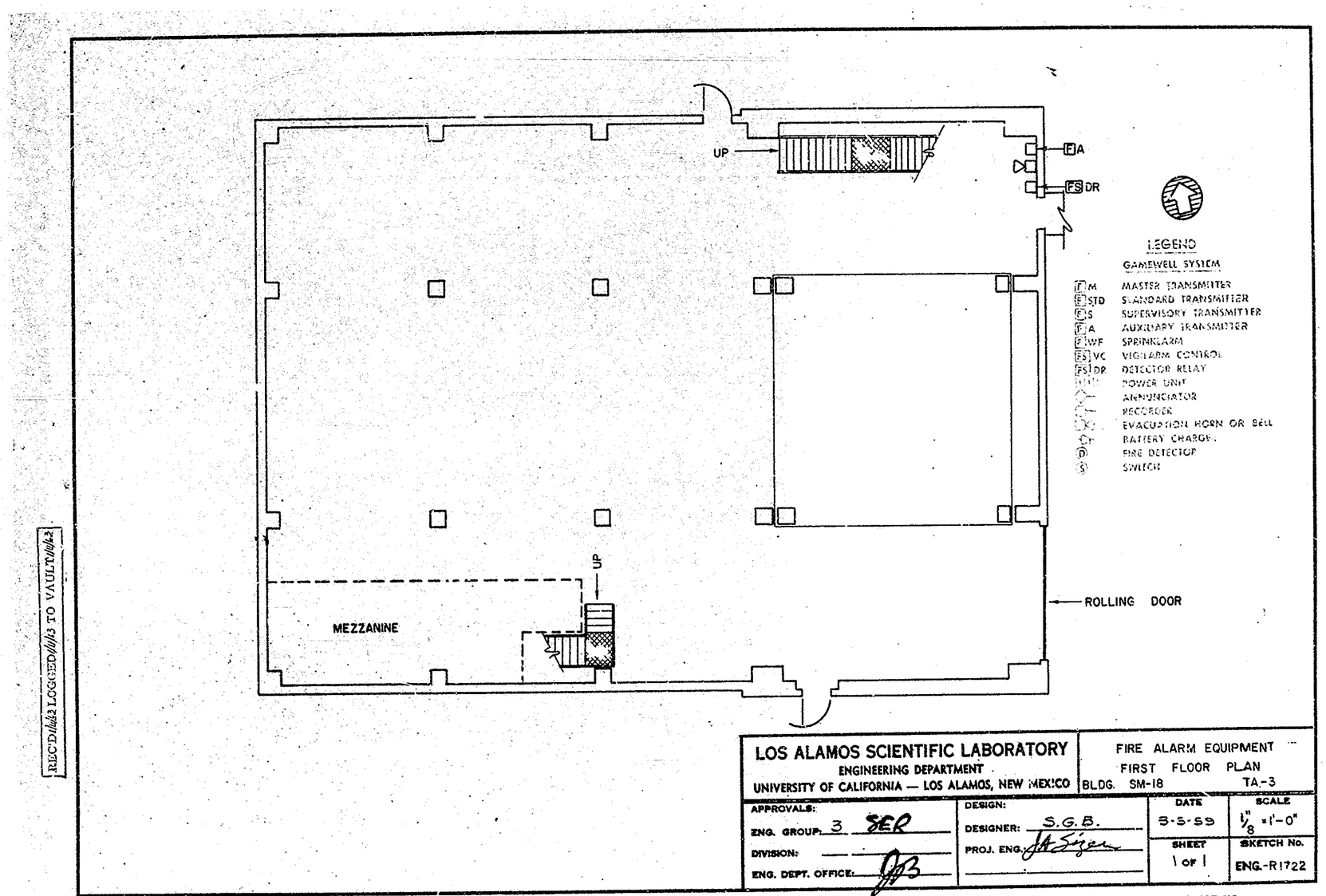
REVISIONS TO LABORATORY HEATING & VENTILATING SYSTEM
BUILDING SM-16 TA-3

A.E.C. COST ACCTING CODE NO.	
DRAWN	LANE
CHECKED	DLP
A-E APPROVED	
DESIGN	Park
TRACE	
CHECK	
C.&S. APP.	
SCALE	NOTED
DATE	7-20-57
LAB. DWG. NO.	ENG-C 1461
SHEET	1
OF	3

RECOMMENDED
APPROVED
A.E.C.
LOS ALAMOS SCIENTIFIC LABORATORY
DEPARTMENT OF ENGINEERING
CONSTRUCTION & MAINTENANCE GROUP
A.E.C. DRAWING NO.

REF. DWG. ENG-C 1924

LAB. JOB NO. 730



RECD 11/43 LOGGED 11/13 TO VAULT 11/43

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

FIRE ALARM EQUIPMENT
FIRST FLOOR PLAN
BLDG. SM-18 TA-3

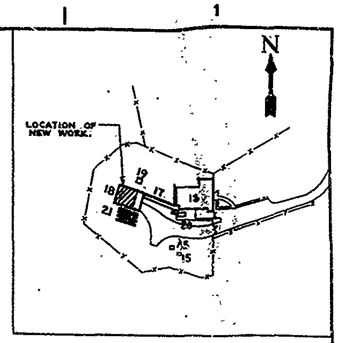
APPROVALS:	DESIGN:	DATE	SCALE
ENG. GROUP 3 SER	DESIGNER: S.G.B.	3-5-59	1/8" = 1'-0"
DIVISION:	PROJ. ENG. J.A. Sigen	SHEET 1 OF 1	SKETCH No. ENG.-R1722
ENG. DEPT. OFFICE: JJB			

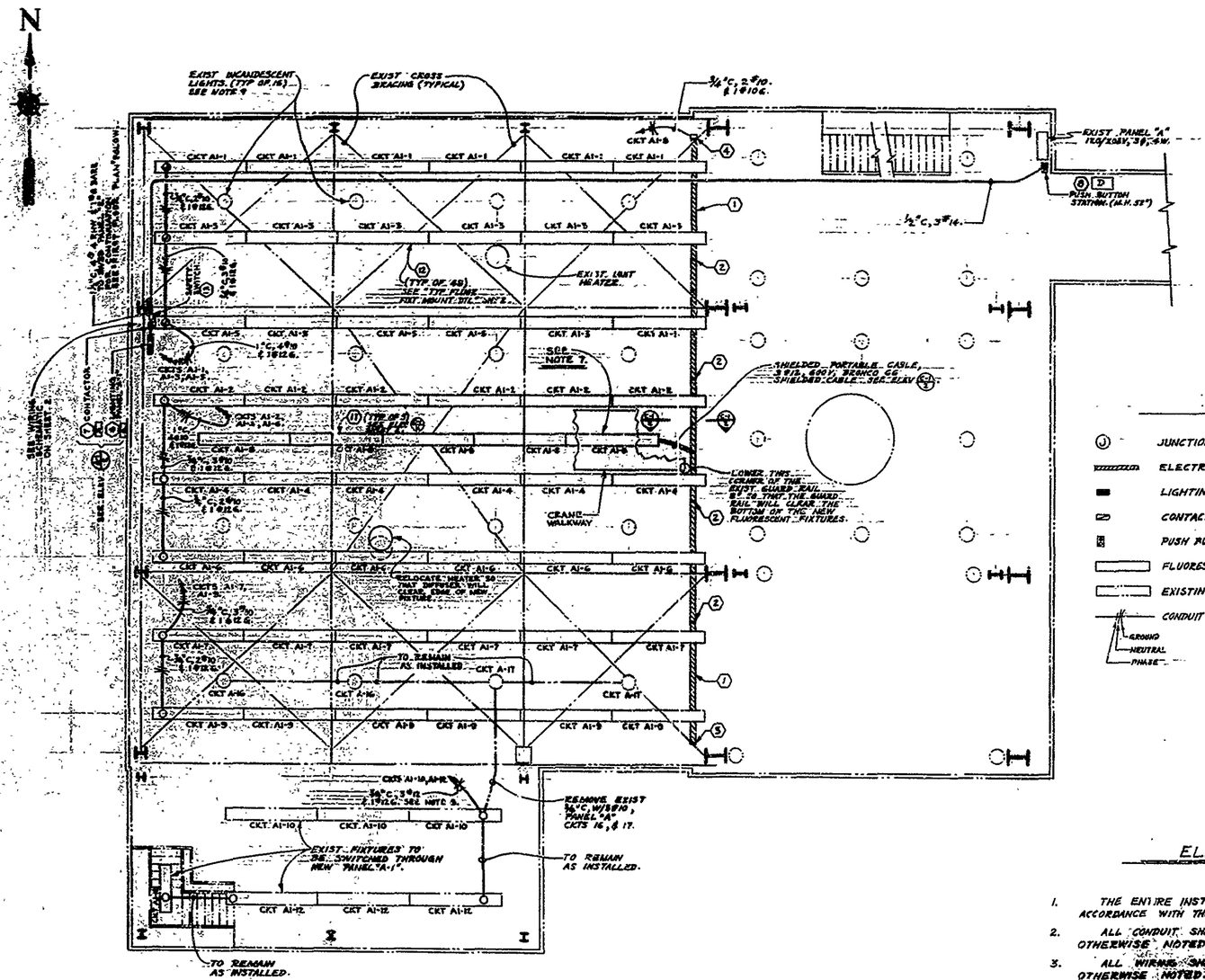
INFO. SHOWN CURRENT AS OF 12-14-62

B. A. NO. J. O. NO. LAB. JOB NO.

SCOPE OF WORK

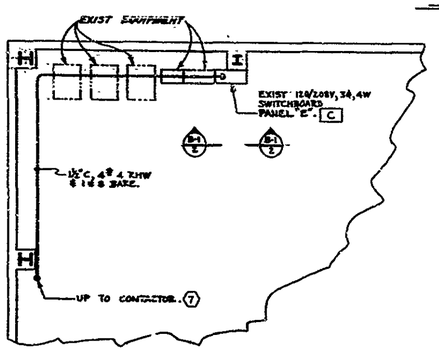
INSTALLATION OF NEW FLUORESCENT FIXTURES AND A NEW CONTACTOR SWITCHED PANEL IN THE EXPERIMENTAL ROOM OF THE VAN DE GRAAFF BLDG. ALSO CHANGED THE CIRCUITING OF THE EXISTING FLUORESCENT FIXTURES TO THE NEW CONTACTOR SWITCHED PANEL.





EXPERIMENTAL ROOM - PLAN (SECOND FLOOR)

SCALE : 3/16" = 1'-0"



FIRST FLOOR PLAN

SCALE : 3/16" = 1'-0"

LEGEND

- JUNCTION BOX.
- ELECTRIC FEEDRAIL.
- LIGHTING PANEL.
- CONTACTOR.
- PUSH BUTTON STATION.
- FLUORESCENT FIXTURES.
- EXISTING FLUORESCENT FIXTURES.
- CONDUIT RUN WITH CONDUCTORS AS INDICATED. (GROUND, NEUTRAL, PHASE)

BILL OF MATERIAL

THE BILL OF MATERIAL IS INTENDED ONLY AS AN AID IN ESTIMATING AND MATERIAL TAKE-OFF; AND DOES NOT NECESSARILY INCLUDE ALL MATERIALS REQUIRED. UNLESS OTHERWISE NOTED, CATALOG NUMBERS ARE GIVEN AS REFERENCE ONLY, AND EQUAL APPROVED SUBSTITUTIONS MAY BE MADE.

ITEM NO.	NO. REQ'D.	DESCRIPTION	MFR. AND CAT. NO.	FURNISHED BY
1	5	ELECTRIC FEEDRAIL, 60A, 250 VAC, 3P, 10'-0" LONG.	FEEDRAIL #FRS-100	CONTRACTOR
2	4	ELECTRIC FEEDRAIL COUPLING SET.	FEEDRAIL #FRS-102	CONTRACTOR
3	1	ELECTRIC FEEDRAIL DEAD END CAP.	FEEDRAIL #FRS-107	CONTRACTOR
4	1	ELECTRIC FEEDRAIL END FEED SET WITH JUNCTION BOX.	FEEDRAIL #FRS-106 #FRS-110	CONTRACTOR
5	1	ELECTRIC FEEDRAIL TROLLEY, 3P, 20A, 250 VAC, NON FUSIBLE.	FEEDRAIL #FRS-84	CONTRACTOR
6	1	CIRCUIT BREAKER PANELBOARD, 120/208Y, 3Ø, 4W, 100A MAIN LUGS, W/14 SINGLE POLE "E" FRAME CIRCUIT BREAKERS SIZE AS INDICATED, FACTORY ASSEMBLED TYPE INCLUDING CABINET. THE FRONT OF THE CABINET SHALL BE HINGED ON THE RIGHT SIDE FOR EASY ACCESS TO THE WIRING GUTTER.	"SQUARE D" TYPE NQOB	CONTRACTOR
7	1	A.C. MECHANICALLY HELD LIGHTING CONTACTOR, 3P, 480V, 100A, THE ENCLOSURE SHALL BE NEMA TYPE 1, W/ ONE GFE PUSH BUTTON IN COVER. MOMENTARY CONTACT TYPE.	SQUARE "D" CLASS 8903 #24-2	CONTRACTOR
8	1	PUSH BUTTON STATION, HEAVY DUTY, MOMENTARY CONTACT, 600V AC, MOUNTED IN "FS" BOX W/DOUBLE PUSH BUTTON COVER.	C-H #PB, C-H #PBG	CONTRACTOR
9	1	CIRCUIT BREAKER, 15A, 125V, 1P, IN GENERAL PURPOSE ENCLOSURE NEMA TYPE 1.	HEINEMANN #5011	CONTRACTOR
10	1	MOLDED CASE CIRCUIT BREAKER, WITHOUT ENCLOSURE, 100A, 3P, 240 V AC, "F" FRAME, FOR MOUNTING IN EXISTING SWITCHBOARD PANEL "E".	SQUARE "D" #999316 TYPE ML1.	CONTRACTOR
11	5	INDUSTRIAL FLUORESCENT FIXTURE, 8'-0", SLIMLINE, 10% UPWARD COMPONENT, 2 LAMP, 70 WATT, 96T12 SLIMLINE LAMPS, W/120V, 450 MA, HPF, CBM CERTIFIED BALLAST, FOR CONTINUOUS ROW 40 LONG.	BENJAMIN FSL-1081-8	CONTRACTOR
12	48	INDUSTRIAL FLUORESCENT FIXTURE, 8'-0", SLIMLINE, 10% UPWARD COMPONENT, 3 LAMP, 70 WATT, 96T12 SLIMLINE LAMPS, W/120V, 450 MA, HPF, CBM CERTIFIED BALLAST, FOR CONTINUOUS ROWS 48 LONG.	BENJAMIN FSL-1081-8	CONTRACTOR
13	1	GENERAL DUTY SAFETY SWITCH, 3P, 100A, 240 V AC, NON-FUSIBLE, NEMA 1 ENCLOSURE	SQUARE "D" # DU323	CONTRACTOR

ELECTRICAL NOTES

1. THE ENTIRE INSTALLATION SHALL BE MADE IN ACCORDANCE WITH THE CURRENT RULES OF THE N.E.C.
2. ALL CONDUIT SHALL BE 3/4" RIGID UNLESS OTHERWISE NOTED.
3. ALL WIRING SHALL BE # 12 TW UNLESS OTHERWISE NOTED.
4. ALL CONDUIT SHALL BE ROUTED TO SUIT EQUIPMENT & BUILDING STRUCTURE.
5. ALL BRANCH CIRCUITS SHALL BE IDENTIFIED AT PANEL.
6. ITEMS DESIGNATED ○ ARE DESCRIBED IN THE ELECTRICAL BILL OF MATERIAL.
7. RELOCATE THE EXISTING LOCAL-REMOTE CONTROL SWITCH ON THE TROLLEY SO THAT THE TOP OF THE TROLLEY WILL CLEAR THE BOTTOM OF THE FLUORESCENT FIXTURES. ALSO REMOVE THE HOOK EYE BOLT ON THE MOTOR.
8. MATCH EXISTING COLOR CODE ON EXISTING WIRING TO BE EXTENDED.
9. EXISTING INCANDESCENT LIGHTING SYSTEM TO REMAIN.

NAMEPLATE SCHEDULE

NAMEPLATES SHALL BE L.A.S.L. SUPPLIED AND UNLESS OTHERWISE NOTED, SHALL BE 1/16" THICK LAMINATED PHENOLIC, BLACK WITH WHITE CORE, WITH LETTERS 3/16" H&V. USE 1/8" HIGH LETTERS ON PLATE [D].

PLATE NO.	DESIGNATION	NO. REQ'D.
A	LIGHTING PANEL A-1 120/208V 3Ø 4W	1
B	LIGHTING PANEL A-1	1
C	FEED FOR LIGHTING PANEL A-1 EXPERIMENTAL ROOM	1
D	EXPERIMENTAL ROOM LIGHTS	2
E	LIGHTING CONTROL CIRCUIT	1

THIS JOB MUST BE INSPECTED, AND ANY CHANGES APPROVED BY LRM-4 STALLINGS PHONE 7-4888

AUTHORIZED FOR P-DO P-9 - Q-4 X
HEALTH N A
SAFETY C H B
FIRE PROT. D H B
SEC. N A

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

LIGHTING MODIFICATIONS EXPERIMENTAL ROOM
ELECTRICAL LAYOUT
BLDG SM-18 TA-3

CHECKED PROJ. ENG. Wm P Hall	RECOMMENDED GROUP LEADER R.T. McDonald	APPROVED ENG. DEPT. OFFICE
DESIGNER Willenbrock	DATE 3-15-63	DRAWING NO. ENG-C-29690
DRAWN C.G.Z.	SHEET 1 OF 2	
SCALE 3/16"=1'-0"		
C.A. NO.	B. A. NO.	L. J. NO. 2793-3

RECD & LOGGED INTO VAULT

NO	DATE	REVISIONS	BY	LINED	DRF.	D. D.	DRF. ENG.	ENG. D. D.

108'-0"

N 5254.96
E 1522.58
CORNER OF EXISTING VAN DE GRAFF ACCELERATOR BUILDING SM-18

30'-7"

N 5240
E 1602
INTERSECTION OF SM-17 WITH SM-16

LINE OF EXISTING CORRIDOR BUILDING SM-17 · FLOOR ELEV. 7415'-0"

EXISTING VAN DE GRAFF ACCELERATOR BUILDING SM-18 FLOOR ELEVATION 7400'-0"

CENTERLINE OF EXISTING VERTICAL VAN DE GRAFF ION BEAM

CENTERLINE OF ION BEAM

CENTERLINE OF VAN DE GRAFF ACCELERATOR

MACHINE ROOM 60 62 5 TON BRIDGE CRANE

90°-00'

SERVICE ACCESS 10

N 5232.67
E 1504.56
CORNER OF EXISTING VAN DE GRAFF ACCELERATOR BUILDING SM-18

GENERATOR ROOM 68

REACTION ROOM 64 5 TON BRIDGE CRANE

NEUTRON ROOM 67 5 TON BRIDGE CRANE

SPECTROMETER ROOM 66 5 TON BRIDGE CRANE

CORRIDOR 65

90'-5"

54'-9"

52'-0"

120'-9"

CL OF ION BEAM

FLOOR PLAN SCALE: 1/8" = 1'-0"

EXISTING LABORATORY BUILDING SM-16 FLOOR ELEVATION 7415'-0"

FLOOR EL. 7401'-1"

STORAGE 41

POLISHING 46

DARK ROOM 48

LIGHT TRAP

TOILET 44

JANITOR 43

STORAGE 47A

CORRIDOR

ASSEMBLY 47

TARGET PREPARATION 45

AUXILIARY APPARATUS ROOM 40

ELEVATOR HOISTWAY (2000 LB. CAPACITY)

MECHANICAL EQUIPMENT 50

41'-4"

56'-0"

67'-8"

51'-8"

41'-8½"

EXISTING CORRIDOR SM-17

EXISTING LABORATORY SM-16

EXISTING ACCELERATOR BLDG SM-18

FUTURE CONSTRUCTION

KEY PLAN

NOTES:

1. FOR CLARITY, ROOF LEVEL OF OVERHEAD BRIDGE CRANES HAS BEEN OMITTED. SEE ENLARGED FLOOR PLANS
2. FOR CLARITY, EQUIPMENT and FURNISHINGS HAVE BEEN OMITTED. SEE ENLARGED FLOOR PLANS.
3. CENTERLINE OF ION BEAM THIS AREA ACCELERATOR SHALL ALIGN WITH CENTERLINE OF EXISTING ION BEAM IN BUILDING SM-18 and SHALL BE PARALLEL TO EXISTING CORRIDOR BUILDING SM-17
4. CONTRACTOR SHALL VERIFY LOCATION OF CENTERLINE OF EXISTING ION BEAM

LEGEND

- CONCRETE
- CONCRETE BLOCK
- MAGNETITE CONCRETE
- STEEL OR MEEHANITE
- INSULATED ALUMINUM SIDING
- STEEL STUDS, METAL-LATH & PLASTER

AS CONSTRUCTED DRAWING

CONSTRUCTOR AT(29-1)1707

CLIENT E.O. Harnett

APPROVED E.E. Bingham

NO.	DATE	REVISIONS	BY	CK	PROJ. ENGR.	A.E.C. APP.
4	7/6/61	ADD. BLDG. NO. TO TITLE BLOCK & RM. NO. CHANGES	T.R.			
3	11/4/60	AS BUILT	FA			
2	10/5/60	LOCKED DOOR AND STOOP				
1	9/8/60	RELOCATED WINDOWS 12-9 & 10				

U. S. ATOMIC ENERGY COMMISSION
LOS ALAMOS AREA OFFICE
LOS ALAMOS, NEW MEXICO

TANDEM VAN DE GRAAFF FACILITIES

OVERALL FLOOR PLAN

FLOOR ELEVATION 7400'-0"

BLDG. SM-16

TA-3

NORMAN ENGINEERING CO.
consulting engineers
LOS ANGELES, CALIFORNIA

DRAWING NO. LA-FD-A-1.1

CONTRACT NO. A.E. AT(29-1)-1680

A.E. APPROVED

DESIGNED E.E. BINGHAM

DRAWN J. BRUCKNER

ENGINEERING MANAGER Jan Jr

DIRECTOR Hoar

PROJECT MANAGER A.E. Wilcox

DATE 1 OCT 1962

SHEET 5 OF 103

LAB JOB 188 A LASL DWG NO. ENG-C 31378

STAIRWAY

10 SECTIONS OF 1800 # 4085 METAL STORAGE SHELVES (ADJUSTED IN HEIGHT) CONTAINING W/ # 4641 RACK ENDS

STORAGE 41

METAL FURRING CHANNELS

FLOOR EL. 7407'-1"

20'-12" LITE-PROOF LOUVRE THRU WALL at 7408'-0" to ℄

10' CORRIDOR

JANITOR 42

3⅝" ST'L STUDS

TOILET 44

SHELF & MIRROR OVER

STORAGE CABINET (TYP.)

F.C. GRINDER (R.I.C.)

DUST COLLECTOR (TYP.)

SOFFIT FURRED TO TOP OF CABINETS (9'-0½") TYPICAL

ROT. TABLE (R.I.C.)

TWIN GRINDER AND POLISHER (R.I.C.)

POLISHING 46

DARK ROOM 48

4' x 4' CHALKBOARD

6'-8"

12'-8"

REFER TO SHEET L-16 FOR ELEVATIONS and SECTIONS METAL LABORATORY FURNITURE

ELECTRIC WATER COOLER

RECESSED FIRE EXTINGUISHER CABINET

6" ST'L STUDS

REFER TO SHEET L-16 FOR ENLARGED FLOOR PLAN and ELEVATIONS OF JANITOR and TOILET ROOMS

LIGHT TRAP

AUXILIARY APPARATUS 40

SHIELDING WALL PENETRATING COVER BOXES

CORRIDOR

CATWALK @ ELEV. 7407'-1"

SHIELD WALL PENETRATIONS SEE

LIMIT OF 9' CEILING HEIGHT OF CORRIDOR

REMOVABLE PULLING EYE at EL. 1402'-0" SEE

STORAGE ROOM 47A

DOWN TO LOW BACKGROUND COUNT ROOM

4' x 4' CHALKBOARD

4' x 4' CHALKBOARD

SLOPE FLOOR TO DRAIN at EMERGENCY SHOWER

¾" PIPE SLEEVE - ROTOR at 7407'-0"

REFER TO SHEET L-16 FOR ELEVATIONS and SECTIONS OF METAL LABORATORY FURNITURE

ASSEMBLY 47

TABLE (R.I.C.)

TABLE (R.I.C.)

REFER TO SHEET L-16 FOR ELEVATIONS and SECTIONS OF METAL LABORATORY FURNITURE

TERMINAL BOX

EXHAUST STACKS - 5-1½" & 6" ø PIPES - CAPPED and GUYED at 1407'-0"

CABLE TRAYS - 2½ & 3" ø PIPES - ELEVATION at EAST END = 7408.50' - ELEVATION at WEST END = 7412.50'

ONE-TON OVERHEAD MONORAIL-ELECTRIC HOIST, MANUAL DRIVE

8'-0" HOIST TRAVEL

TARGET PREPARATION 45

SOFFIT FURRED TO TOP OF CABINETS (9'-0")

1000 LB. HYDRAULIC FREIGHT ELEVATOR

MECHANICAL EQUIPMENT 50

ELEVATOR HOISTWAY

REFER TO SHEET L-16 FOR ENLARGED PLANS and SECTIONS OF HOISTWAY

50" x 48" x 8" DEEP TERMINAL BOX CENTERED 3'-0" SOUTH OF SHIELD DOOR OPENING and 6'-0" ABOVE FLOOR (7406'-0") - CONNECTED TO 48" UNIT SHIELDING PENETRATION COVER BOX NORTH OF SHIELD DOOR OPENING W/ 3" ø CONDUIT - CONDUIT TO ENTER REAR OF THIS TERMINAL BOX at CENTER. CONDUIT SHALL BE EMBEDDED IN SHIELD WALL and SHALL RISE VERTICALLY TO FLOOR

FLOOR PLAN

AT ELEVATION 7400'-0"

SCALE: ¼" = 1'-0"

10' CORRIDOR

STAIRWAY

DESK (R.I.C.)

4' x 8' CHALKBOARD

¾" PIPE SLEEVE at 7396'-0"

18" x 48" BALANCE BEAM - 30" HIGH - ISOLATED FROM FLOOR AND STRUCTURE

TABLE (R.I.C.)

LOW BACKGROUND COUNT ROOM

FL. ELEV. 7388'-0"

2-2½" ø 48' LONG TUBES FOR SOURCE STORAGE

REFER TO SHEET L-16 FOR ELEVATIONS and SECTIONS OF METAL LABORATORY FURNITURE

SOFFIT FURRED TO TOP OF CABINETS (7'-0")

AREA "A"

KEY PLAN

AS CONSTRUCTED DRAWING

CONSTRUCTION ATEG-1-1702

SUBMITTED E.G. Harnett

RECOMMENDED

APPROVED Geo. E. Bingham

No.	DATE	REVISIONS	BY	CK	PROJ. ENGR.	A.E.C.
2	9-26-62	ADDED BLDG. NO. TO TITLE BLOCK & RM. NO. CHANGES	RJ			
1	6-6-62	AS BUILT	F.A.			

U. S. ATOMIC ENERGY COMMISSION
LOS ALAMOS AREA OFFICE
LOS ALAMOS, NEW MEXICO

CONTRACT NO. A.E. AT(29-1)-1690

A.E. APPROVED

DESIGNED W. Ellis

DRAWN [illegible]

DEPARTMENT MANAGER [illegible]

CHECKED [illegible]

PROJECT MANAGER [illegible]

TANDEM VAN DE GRAAFF FACILITIES
ENLARGED FLOOR PLAN AT LOWER LEVEL - AREA "A"
AT BLDG. SM-1G
FLOOR ELEVATION 7400'-0" TA-3

SUBMITTED [illegible] ARCHITECT-ENGINEER

RECOMMENDED: G. E. Bingham A.E.C.

APPROVED: [illegible] A.E.C.

DATE 1 OCT. 1962

NORMAN ENGINEERING CO.
consulting engineers
LOS ANGELES, CALIFORNIA

DRAWING NO. LA-FD-A1-2

SHEET 9 OF 123

LAB JOB 188A LASL DWG NO. ENG-C 31379

38'-4" 21'-0" 28'-4"

STAIRWAY DOWN TO AUXILIARY APPARATUS ROOM

ELECTRIC WATER COOLER

DESK (N.I.C.)

8'-1" x 4'-0" CHALKBOARD

VENTILATION and WIREWAY OPENINGS TO SERVE CONTROL CONSOLE - SEE SHEET U-1

9" SQ. HOLE THRU FLOOR W/VINYL-ASBESTOS COVERED STL. COVER PLATE - TYPICAL SEE 1/A2

CONTROL ROOM 140 (35)

12" SQ. OPNG. THRU FLOOR W/VINYL-ASBESTOS COVERED STL. COVER PLATE CIM 10 (1/A2)

REFER TO SHEET S-3 FOR LOCATION OF ALL OPENINGS THRU FLOOR SLAB IN THIS AREA.

8'-1" x 4'-0" CHALKBOARD

5'-8" x 4'-0" CHALKBOARD

EXISTING OPENING FILLED-IN W/MASONRY

FILE N.I.C. 4" PUMICE BLOCK

BOOKCASE N.I.C.

6'-1" x 4'-0" CHALKBOARD

12 DRWR N.I.C.

DESK N.I.C.

DESK N.I.C.

K-124 UPPER CABINET

ELECTRONICS MAINTENANCE 143 (35)

REFER TO SHEET A-15 FOR ELEVATIONS and SECTIONS OF METAL LABORATORY FURNITURE

L-5012-3 LOCKERS W/1010 LOCKS

6'-0" HOLE THRU FLOOR W/VINYL ASBESTOS COVERED STL. COVER PLATE

L-3804 BIN

CAB N.I.C.

LATHE (N.I.C.)

6'-0" x 4'-0" CHALKBOARD

TABLE N.I.C.

12" SQ OPNG. THRU FLOOR W/VINYL-ASBESTOS COVERED STL. COVER PLATE CIM 10 (1/A2)

DESK N.I.C.

12" SQ OPENING THRU WALL, BOTT. 6" ABOVE FLOOR W/COVER PLATES TWO SIDES

COMPUTING ROOM 145 (35)

8'-1" x 4'-0" CHALKBOARD

TABLE N.I.C.

DESK N.I.C.

DESK N.I.C.

6'-8"

12"

4'-0"

3'-5"

5'-0"

4000 LB HYDRAULIC FREIGHT ELEVATOR 283

2" OFFSET (UPPER LEVEL ONLY)

ELEVATOR HOISTWAY

MECHANICAL EQUIPMENT 150 (35)

1'-10½" 4'-1" 1'-10½" 4'-1" 1'-10½" 6'-1" 1'-10½" 6'-1" 1'-10½" 4'-1" 1'-10½" 8" 6'-2" 8" 20'-8"

31'-8"

56'-0"

3'-10" 10'-10" 8"

1-TON HOIST and MONORAIL - ELECT. HOIST and DRIVE.

10'-0"

5'-0"

BENCH N.I.C.

CABINET N.I.C.

L-3000 CABINET

DO ALL SAW N.I.C.

DRILL PRESS N.I.C.

FLASH ARRESTOR FOR ACETYLENE MANIFOLD

ACETYLENE MANIFOLD

OXYGEN MANIFOLD

12 DRWR PRINTER N.I.C.

L-1000 CABINET W/L-4195 INSERT

MILL N.I.C.

L-3000 CABINET

MILL N.I.C.

(HOIST TRAVEL) 10'-3"

9'-8"

4"

BRANCH SHOP 147 (35)

6'-0" RAD.

6'-0" RAD.

15'-11"

2'-1½"

LOADING DOCK

16'-0" (HOIST TRAVEL)

½ TON ELECTRIC DRIVE MONORAIL

L-3567 WORK BENCH

CAB N.I.C.

CRIDLES and KEEPER CHAINS FOR BOTTLE IN STORAGE

L-1000 CABINET

LATHE N.I.C.

DRILL PRESS N.I.C.

DRILL PRESS N.I.C.

DRILL PRESS N.I.C.

DRILL PRESS N.I.C.

L-3850 BIN

GUARD RAIL WITH CRADLES and KEEPER CHAINS FOR ADDITIONAL OXYGEN and ACETYLENE BOTTLE STORAGE

(1)

(2)

(3)

L-3000 CABINET

LATHE (N.I.C.)

LATHE (N.I.C.)

(HOIST TRAVEL) 18'-6"

L-2561 WORK BENCHES W/THREE - 2704 DRAWERS BACK. (STACKED)

GRINDER (N.I.C.)

GRINDER (N.I.C.)

L-2553 WORK BENCH W/THREE 2704 DRAWERS (STACKED)

SHAPER N.I.C.

SURFACE GRINDER N.I.C.

ELECTRIC WATER COOLER

L-3000 CABINET

L-2561 WORK BENCH W/THREE 2704 DRAWERS (STACKED)

(6)

7'

20'

42'-4"

4'-1"

1'-10½"

4'-1"

6'-0"

6'-0"

16'-4"

8'-0"

13'-9"

6'-4"

6'-0"

12'-4"

6'-4"

15'-6"

4'-6"

3'-10"

12'-4"

6'-4"

6'-7"

41'-4"

(7)

(8)

(4)

(5)

(G)

(31)

(4)

(3)

(5)

(4)

(35)

(35)

(35

EXIST. GRADE EL.
EXIST. FLOOR TRENCH 1'-0" DEEP
1'-0" NEW WALL
1'-0" DEEP
EXISTING SUPPORTS SM-17
EXTERIOR WALL MACHINE ROOM
INTERIOR WALL MACHINE ROOM & STAIRWAY
INTERIOR WALL OF STAIRWAY
50'-7"
53'-9⅛" (VERIFY IN FIELD)
VERIFY IN FIELD
EXISTING GIRT LINE
END 12" CONC. WALL
30'-10" ℄ COLUMN
15'-1"
15'-9"
REMOVE EXISTING SASH & SIDING AS REQUIRED, INSTALL NEW 3'-6" x 7'-0" DOOR
NEW 6" COLUMN
℄ COLUMN
GIRT LINE
15'-9½"
6"
6'-9½"
WORK BENCH
TYPICAL WORK BENCH THIS SPOT SHALL BE 1 WORK BENCH WITH FLOOR SHELF & DRAWERS (STACKED) BACK END
REMOVE EXISTING SUPPORTS FOR SM-17 AND CONCRETE WALL TO PROVIDE SUPPORT
GIRT LINE OF EXISTING DOOR/DOOR SM-17 ABOVE
EXISTING FOOTINGS FOR SM-11 TO REMAIN
FT. OF FOOTINGS STRADDLING SM-17
ELECTRIC WATER COOLER
STAINLESS STEEL SINK and DRAINBOARD
VENT STACK 6" ø CC. PIPE PROVIDE BREECH FLANGE at CEILING TO BE FIELD DRILLED and TAPPED
TOP OF TRAVEL BELOW
DEPRESSED FILLING ELEV. 1402'-0" SEE
DEPRESS FOR EXTENT. SEE
POWER DISTRIBUTION PANEL (N.I.C.)
ELECTRIC WATER COOLER
REFERENCE: N 5240 E 1002
OUTLINE OF VDG ACCELERATOR (N.I.C.)
CENTERLINE OF ION BEAM TARU ACCELERATOR
CENTERLINE OF VDG ACCELERATOR TANK and OPENING TO TRAVEL BELOW
OPENING TURU FLOOR TO TRAVEL BELOW
5-TON BRIDGE CRANE HOOK TRAVEL LIMITS
STAINLESS STEEL SINK and DRAINBOARD
DEPRESSED FILLING ELEV. 1402'-0" SEE
90° DEFLECTING MAGNET (N.I.C.)
SWITCHING MAGNET (N.I.C.)
REMOVABLE LADDER SEE
REMOVABLE GRATING SEE
4'-0" OPENING WITH REMOVABLE COVER
BEAM PARK TARGET RECESS 4'-2" THICK SEE
STEEL FACED MAGNETITE FILLED STEEL SHIELDING DOOR SEE SHEET A-22 & 23
REMOVABLE SHIELDING BLOCKS (N.I.C.)
ION SOURCE LOCATION (N.I.C.)
OPENING IN ION BEAM CENTERLINE 42" WIDE x 8" HIGH CUT 45° THRU EXISTING SIDING
GRADE BEAM REMOVED FOR 1'-0" WIDE TRENCH
5'-10" MAX
5 TON BRIDGE CRANE HOOK TRAVEL LIMITS
MACHINE ROOM
62
DEPRESSED FILLING ELEV. 1402'-0" SEE
2'-0" x 2'-0" UTILITY TRENCH WITH STEEL COVER PLATE
CENTERLINES OF ACCELERATOR TANK SUPPORT COLUMNS and BASE PLATES and LIFTING EYES SET INTO CEILING ABOVE TYPICAL 4 PLACES SEE SHEET A-21 and
SHIELDING BLOCKS (N.I.C.)
REMOVABLE STUMP FOR MEGAVOLTS SHIELDING DOOR and HINGED PANEL ABOVE SEE SHEET A-21
3'-6" I.D. CI. ROOF DRAIN
SERVICE ACCESS
STEEL FACED, MAGNETITE FILLED SHIELDING DOOR SEE-SHEET A-22 & A-23
LINE OF EXISTING BUILDING SM-101
6" OF NEW COLUMNS PARALLEL TO & OFFSET 1-1¼" FROM EXTENSION OF EXISTING EXTERIOR WALL
LINE OF EXISTING EXTERIOR WALL
RAMP
180°-00"
℄ EXISTING COLUMN
℄ OF COLUMNS
FACE OF SIDING
VERIFY IN FIELD

FLOOR PLAN

SCALE: 1/4" = 1'-0"

NOTE: FOR DETAILED INFORMATION REGARDING LOCATIONS FOR SUPPORT OF ACCELERATOR TANK and FLOOR OPENINGS FOR UTILITY CORRECTIONS TO TANK SEE SHEET A-21

KEY PLAN

I.P.E.L. 'B'

N

AS-CONSTRUCTED DRAWING
CONSTRUCTION CONTRACT NO. AT(29-1)1207
SUBMITTED E. A. Harris ARCHITECT-ENGINEER
RECOMMENDED
APPROVED E. E. Bingham

4.	12-29-61	ADD BLDG. NO. TO TITLE BLOCK & RM. NO. CHANGES	T.R.		
3.	7-14-61	AS BUILT	F.A.		
2	1-15-61	ENLARGED TUNNEL	H.K.		
1	4-5-60	ADDED DOOR NO. 9 DOOR; DELETED HATCH IN SM-11			
NO.	DATE	REVISIONS	BY	CK	PROJ. ENGR.	A.E.C. APP.

U. S. ATOMIC ENERGY COMMISSION
LOS ALAMOS AREA OFFICE
LOS ALAMOS, NEW MEXICO

CONTRACT NO. A.E. AT(29-1)-1690

A.E. APPROVED

TANDEM VAN DE GRAAFF FACILITIES
ENLARGED FLOOR PLAN
I.P.E.L. 'B'
BLDG. SM-16
FLOOR ELEVATION 1400'-0" TA-3

SUBMITTED	RECOMMENDED	APPROVED	DATE
ARCHITECT-ENGINEER	A.E.C.		
	E. E. Bingham	R. D. Manning	1 Oct 1962

NORMAN ENGINEERING CO.
consulting engineers
LOS ANGELES, CALIFORNIA

DRAWING NO. LA-FD-A-4.1 | SHEET 11 | OF 109

LAB. JOB 188 A LASL DWG NO. ENG-C 31381

GENERATOR ROOM
68
REACTION ROOM
64
ANALYZING MAGNET POWER SUPPLY (N.I.C)
SWITCHING MAGNET POWER SUPPLY (N.I.C)
WINDOW
EMERGENCY GENERATOR
UTILITY TRENCH WITH ALUMINUM COVER PLATES
STACKED SHIELDING BLOCKS WITH SPECIAL SECTION TO PROVIDE 7 BEAM HOLES AT EL. 7405'-9" SEE SHEET S-10
REFERENCE SWITCHING POINT
C' TYP.
18" TYPICAL
STEEL-FACED MAGNETITE-FILLED SHIELDING DOOR SEE SHEETS A-22.4 & A-23
REMOVABLE SHIELDING BLOCKS (N.I.C)
STAINLESS STEEL SINK AND DRAINBOARD
5'-10" MAX.
UTILITY TRENCH
10'-0" SECTION OF STEEL COVER PLATES
ALUMINUM COVER PLATES
2"ϕ CONDUITS SLOPED CONNECTING TRENCHES
SEE 13/S-17
LINE OF SERVICE TUNNEL BELOW
30'-0" MINIMUM HOOK TRAVEL
ALUMINUM COV. PLATES | 10 FOOT SECTION OF STEEL COVER PL'S | ALUM. COV. PL.
2"ϕ CONDUITS SLOPED SEE 12/S-17
SOURCE STORAGE SEE 5/S-17
5 TON BRIDGE CRANE HOOK TRAVEL LIMITS SEE 2/S-10 FOR SUPPTS.
DOWN
STACKED SHIELDING BLOCKS
REMOVABLE SHIELDING BLOCK (N.I.C)
24" SQ. OPNG (BM. SLOT) - 4 OPNG AT ELEV. 7405'-9"
24" SQ. OPNG (BM. SLOTS) w/ 12" SQ. OPNG EXTENSION THRU WALL 4 OPNG AT ELEV 7405'-9"
24" SQ. OPNG (BM. SLOTS) - 4 OPNG AT ELEV. 7405'-9" TYP.

FLOOR PLAN — SCALE: 1/4" = 1'-0"

AREA 'C'

AS CONSTRUCTED DRAWING
CONSTRUCTION CONTRACT NO. AT(29-1)1707
SUBMITTED E.O. Zaucha ARCHITECT-ENGINEER
RECOMMENDED
APPROVED C. E. Bingham

NO.	DATE	REVISIONS	BY	CK	PROJ ENGR	A.E.C. ENGR
4	7-7-61	ADDED BLDG. NO. TO TITLE BLOCK & RM. NO. CHANGES	RH			
3	7-7-61	AS BUILT	F.A.			
2	4-5-61	LOCKED DOOR TO ROOF				
1	3-15-61	RELOCATED WINDOWS 9 AND 10				

U. S. ATOMIC ENERGY COMMISSION
LOS ALAMOS AREA OFFICE
LOS ALAMOS, NEW MEXICO

CONTRACT NO. A.E. AT-29-1-1690

TANDEM VAN DE GRAAFF FACILITIES
ENLARGED FLOOR PLAN
AREA 'C'
BLDG. SM-16
FLOOR ELEVATION 7400'-0" TA-3

A.E. APPROVED
DESIGNED W. HAAS
DRAWN A. HELLGREN
QUANTITY SURVEYED
CHECKED
PROJECT ENGINEER

SUBMITTED: RECOMMENDED: E. E. Bingham APPROVED: DATE: 1 OCT 1962

NORMAN ENGINEERING CO.
consulting engineers
LOS ANGELES, CALIFORNIA

DRAWING NO. LA-FD-A-5.1
SHEET 12 OF 175

LAB JOB 188A LASL DWG NO. ENG-C 31382

GENERATOR ROOM

REACTION ROOM

SPECTROMETER ROOM

REACTION ROOM

CORRIDOR

G8 G4 G6 G7 G5

15'-9" 4'-0" 21'-0" 4'-0" 10'-0" 16'-6" 16'-0 1/4" 6'-2 3/4" 3'-0" 10'-3"

6'-0 1/8" 14'-11 7/8"

SHIELDING BLOCKS N.I.C.

24" SQ. OPENING ℄ at 7405'-9"

24" SQ. OPENING w/ 12" SQ. EXTENSION ℄ at 7405'-9"

5-TON BRIDGE CRANE HOOK TRAVEL LIMITS

5'-0" MAX. 30'-9" minimum HOOK TRAVEL 5'-0" MAX.

minimum HOOK TRAVEL

COVERED UTILITY TRENCH

ALUMINUM COVER PLATES (TYP.)

10'-0" SECTION STEEL COVER PLATE

JANITOR'S SINK SEE MECHANICAL

DOWN

STAINLESS STEEL SINK and DRAINBOARD SEE MECHANICAL

2'-6" CONDUITS SLOPED SEE 15/A-17 SIMILAR

ALUMINUM COVER PLATES

STACKED SHIELDING BLOCKS

STAINLESS STEEL SINK AND DRAINBOARD SEE MECHANICAL

10'-0" SECTION-STEEL COVER PLATES

STACKED SHIELDING BLOCKS 14'-0" HIGH ONLY

6" ℄ CONDUIT STUB UP 1'-11"

39'-11" minimum HOOK TRAVEL

5'-0" MAX. 3'-0" MAX.

6" ℄ CONDUIT STUB UP 1'-11" and CAP

5 TON BRIDGE CRANE HOOK TRAVEL LIMITS

1 1/2" ℄ HYDROGEN VENT

SHIELDING BLOCKS 4'-0"±

DUCTWORK SEE MECHANICAL

2'-6" CONDUITS SLOPED SEE 12/A-17 SIMILAR

ELECTRIC WATER COOLER SEE MECHANICAL

1 1/2" ℄ PIPE STUB UP 24" AND CAP

NEW LOCATION OF EXISTING RELOCATED 2-TON HOIST

℄ OF ION BEAM

7'-8" 7'-7" 7'-8" 7'-7" 15'-3" 15'-3" 15'-3" 15'-3" 15'-3" 15'-3" 15'-3" 15'-3" 15'-3" 54'-9" 52'-0" 106'-9"

9'-0" 6'-3" 8'-6" 6'-9" 7'-8" 7'-7"

28'-0 3/4"

AS CONSTRUCTED DRAWING
CONSTRUCTION CONTRACT NO. AT(29-1)1707
SUBMITTED E.O. Hassig ARCHITECT-ENGINEER
RECOMMENDED
APPROVED G.E. Bingham

FLOOR PLAN

SCALE: 1/4" = 1'-0"

KEY PLAN

AREA "D"

NO.	DATE	REVISIONS	BY	CK	PROJ. ENGR.	A.E.C.
2	7/6/64	ADD. BLDG. NO. TO TITLE BLOCK & RM. NO. CHANGES	T.R.			
1	7/1/64	AS BUILT	F.A.			

U. S. ATOMIC ENERGY COMMISSION
LOS ALAMOS AREA OFFICE
LOS ALAMOS, NEW MEXICO

CONTRACT NO. A.E.C. AT(29-1)-1690

A.E. APPROVED

TANDEM VAN DE GRAAFF FACILITIES
ENLARGED FLOOR PLAN
AREA "D" BLDG SM-16
FLOOR ELEVATION 7400'-0" TA-3

DESIGNED	W. HARRIS
DRAWN	J. SCHLICHER
DEPARTMENT MANAGER	
CO-SIGNS	
ENGINEER	

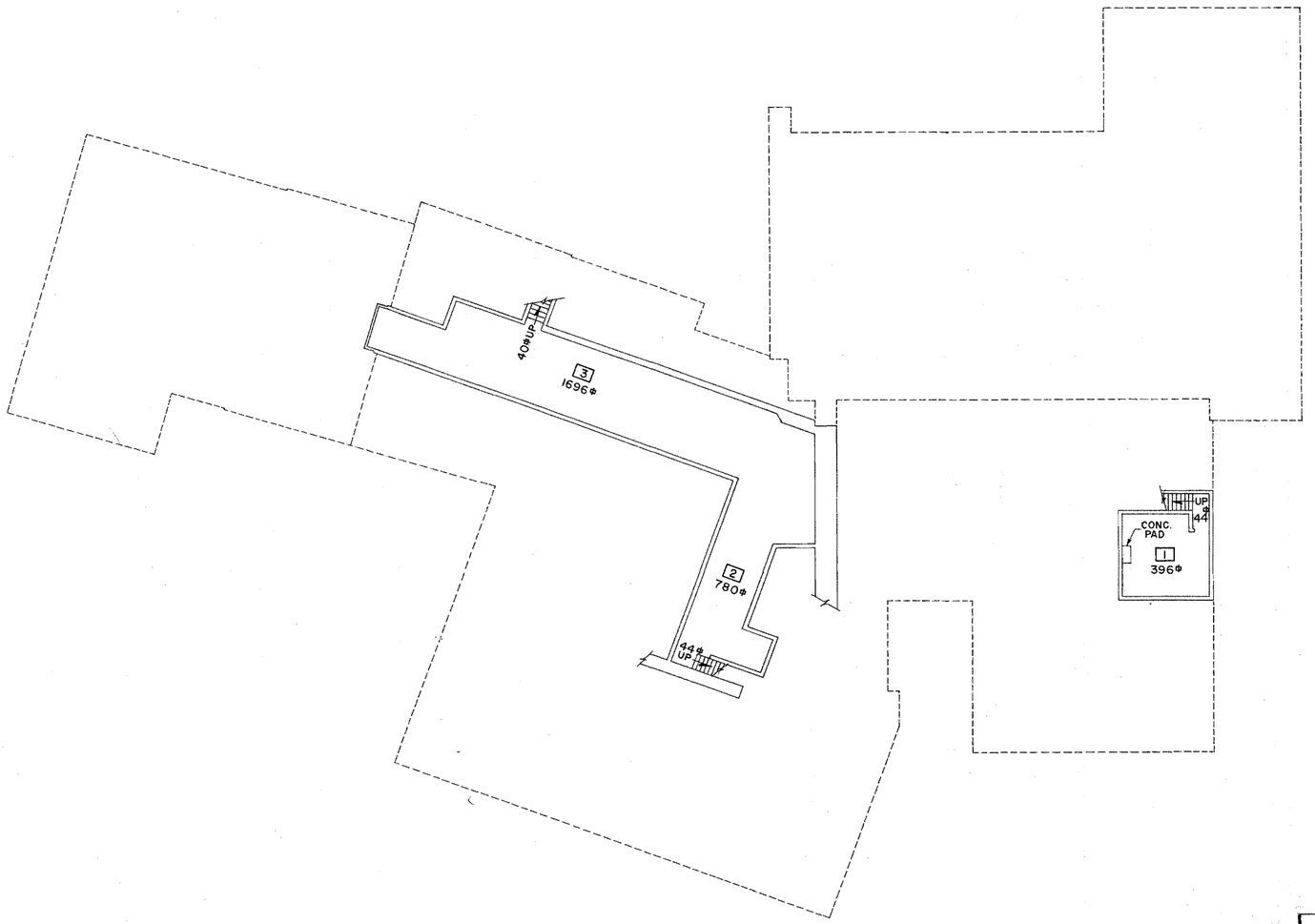
SUBMITTED E.E. Bingham A.E.C. APPROVED DATE OCT 1964

NORMAN ENGINEERING CO.
consulting engineers
LOS ANGELES, CALIFORNIA

DRAWING NO. LA-FD-A1-6 SHEET 18 OF 120

SERIES 03

LAB JOB 188A LASL DWG NO. ENG-C-31083



1/16" = 1'-0"

0 10 20 30 40 50

GRAPHIC SCALE

SUB BASEMENT FLOOR TOTAL SQ. FT. 3000

REV.	DATE	REVISION	BY	CKD.	APP.
3	6-7-84	REVISED TO STATUS OF 6-7-84	H&N		

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Los Alamos National Laboratory
Los Alamos, New Mexico 87545

FACILITIES ENGINEERING DIVISION

VAN DE GRAAF LABORATORY

SUB BASEMENT FLOOR PLAN

BLDG. SM-16 TA-3

SEC. CLASSIFICATION: CLASS. U; REVIEWER Groves; DATE 6-8-84

SUBMITTED	RECOMMENDED	APPROVED
E. Trujillo	Dewin Rapp	W. T. Eckert

DRAWN BREMER; CHECKED Humble H&N

DATE 3-16-64; SHEET NO. 1 OF 5

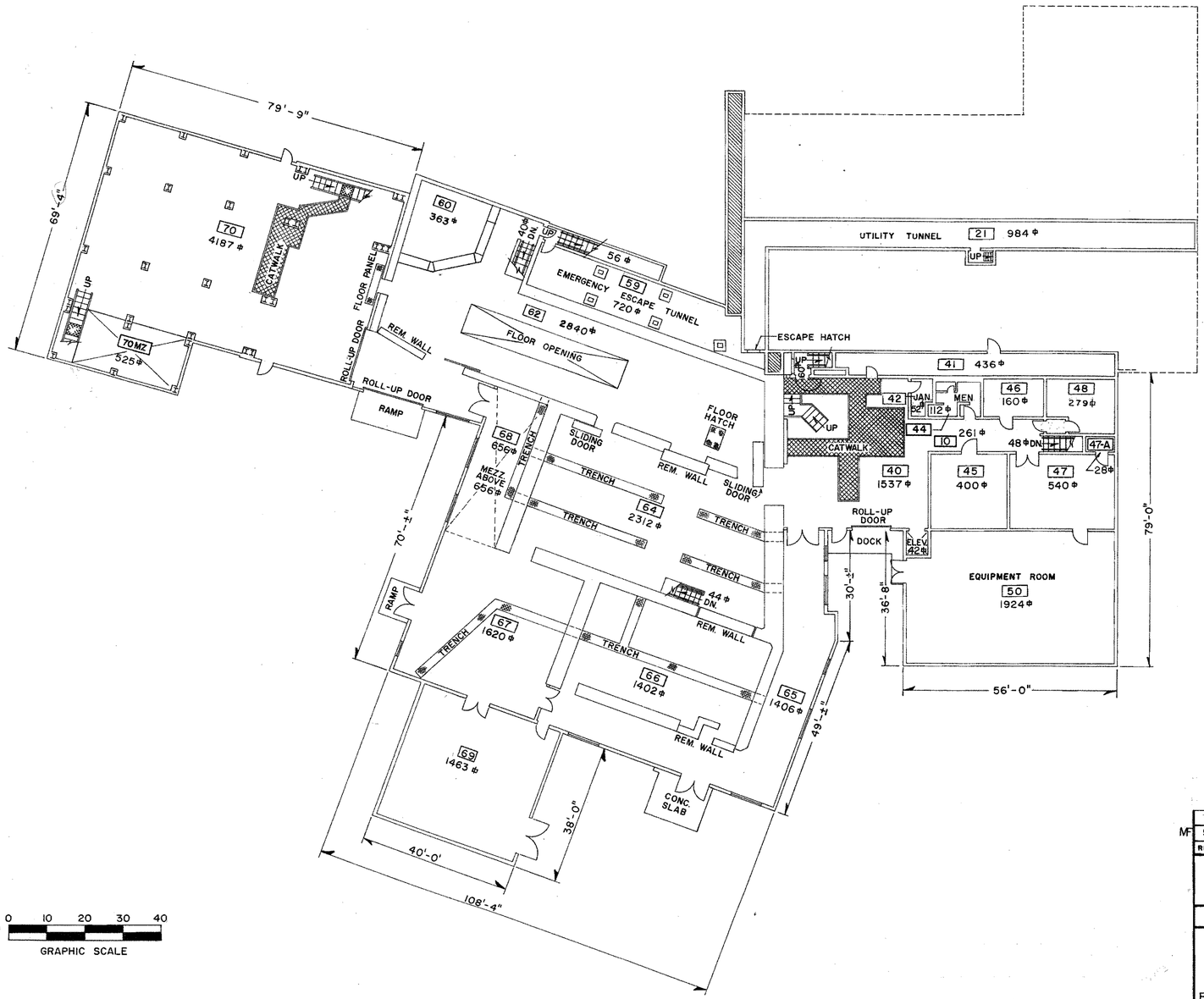
DRAWING NO. ENG-R3390

INFO. SHOWN CURRENT AS OF _____ B.A. NO. _____ LAB. JOB NO. _____

166-G4 CLOTH—K. & E. CO., N. Y.—REG. U.S. PAT. OFF.

REC'D & LOGGED TO VAULT

REC'D LOGGED TO VAULT 5/6/84



1/16"=1'-0" 0 10 20 30 40
GRAPHIC SCALE

BASEMENT FLOOR TOTAL 25,153 S.F.

REV.	DATE	REVISION	BY	CKD.	APP.
5	6-7-84	REVISED TO STATUS OF 6-7-84	HGN	HH	DR

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Los Alamos National Laboratory
Los Alamos, New Mexico 87545

FACILITIES ENGINEERING DIVISION

VAN DE GRAAFF LABORATORY

BASEMENT FLOOR PLAN

BLDG. SM-16 TA-3

SEC. CLASSIFICATION
CLASS. U
REVIEWER Friedman
DATE 6-8-84

SUBMITTED	RECOMMENDED	APPROVED
E. Trujillo	Dawn Rapp	W. F. Ellis for

DRAWN BREMER
CHECKED Humble H4N

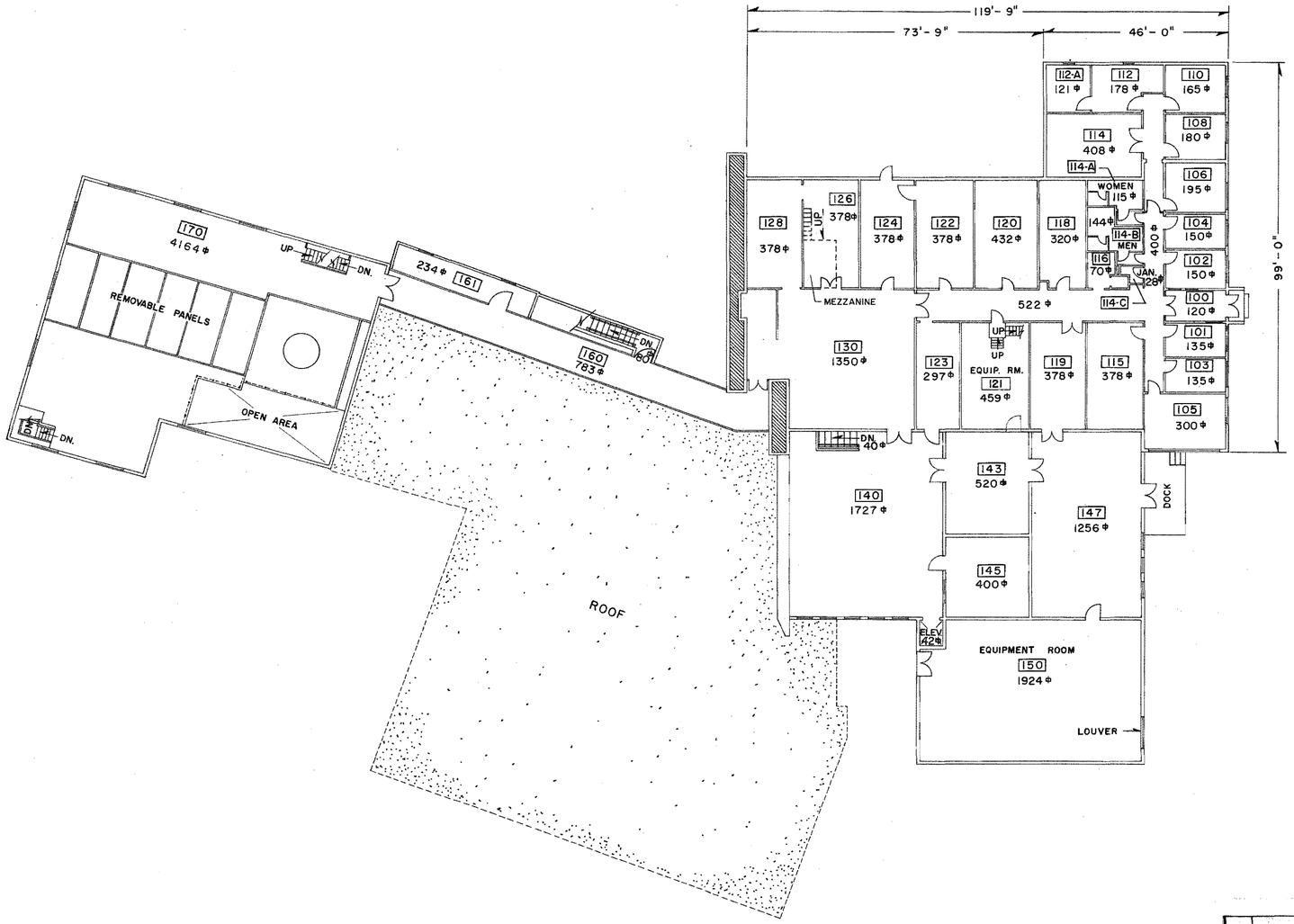
DATE 3-16-64
SHEET NO. 2 OF 5

DRAWING NO. ENG-R3391

INFO. SHOWN CURRENT AS OF _____ B.A. NO. _____ LAB. JOB NO. _____

166-G4 CLOTH—K. & E. CO., N. Y.—REG. U.S. PAT. OFF.

REC'D & LOGGED IN VAULT 6/21/84 REC'D _____ LOGGED _____ TO VAULT 6/21/84



1/16" = 1'-0"

0 10 20 30 40 50

GRAPHIC SCALE

FIRST FLOOR TOTAL 19,812 S.F.

REV.	DATE	REVISION	BY	CKD.	APP.
3	6-7-84	REVISED TO STATUS OF 6-7-84	H&N		

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Los Alamos National Laboratory
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FACILITIES ENGINEERING DIVISION

VAN DE GRAAFF LABORATORY

FIRST FLOOR PLAN

BLDG. SM-16 TA-3

SEC. CLASSIFICATION: CLASS. U; REVIEWER Gradus; DATE 6-8-84

SUBMITTED	RECOMMENDED	APPROVED
E. Tindall	Dawn Rapp	W. T. E. Hoe

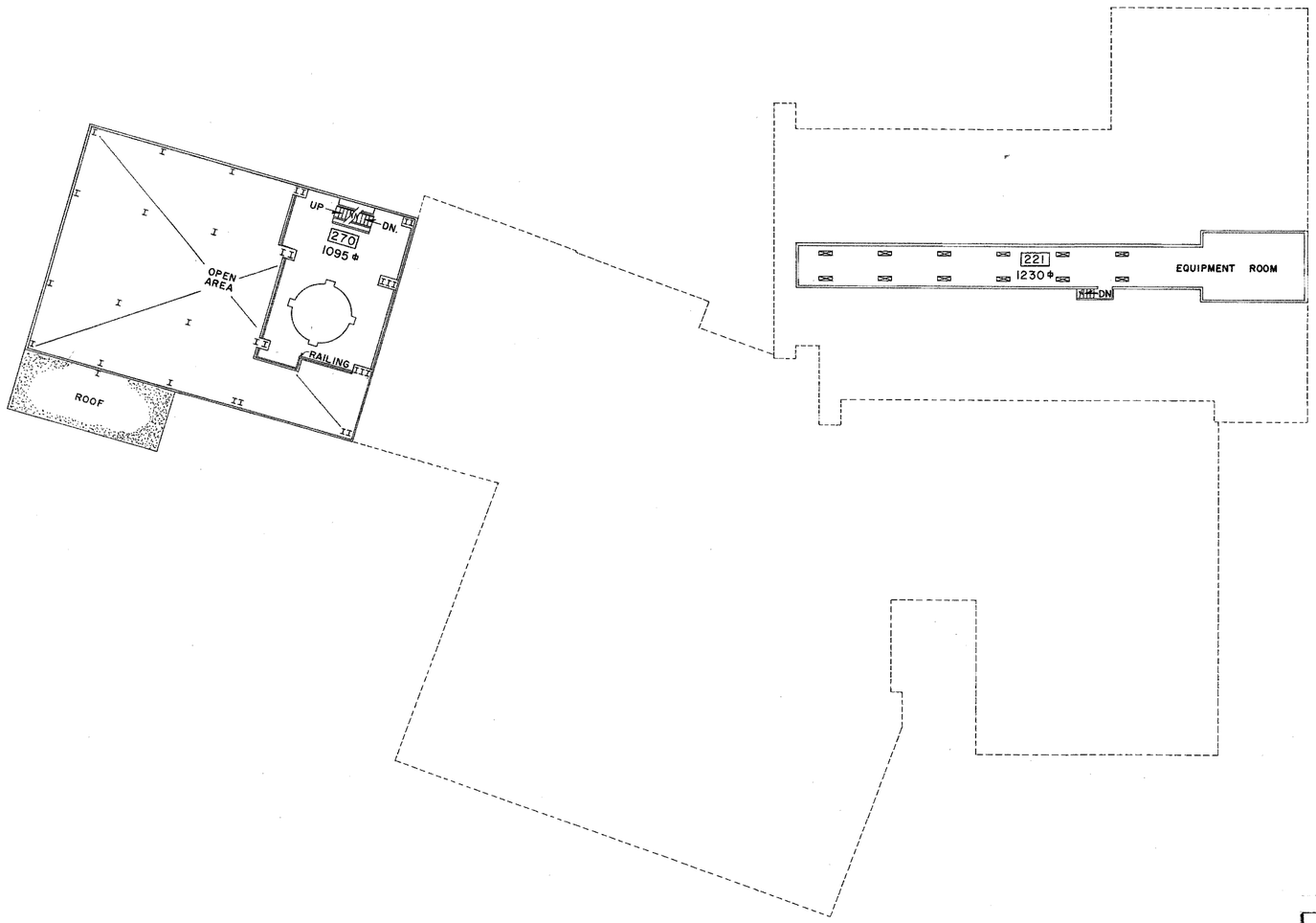
DRAWN BREMER | CHECKED Humble H&N | DATE 3-16-64 | SHEET NO. 3 OF 5 | DRAWING NO. ENG-R3392

INFO. SHOWN CURRENT AS OF _____ B.A. NO. _____ LAB. JOB NO. _____

166-G4 CLOTH—K. & E. CO., N. Y.—REG. U.S. PAT. OFF.

REC'D LOGGED TO VAULT

REC'D LOGGED TO VAULT



1/16" = 1'-0"

0 10 20 30 40 50

GRAPHIC SCALE

SECOND FLOOR TOTAL SQ. FT 2325

REV.	DATE	REVISION	BY	CKD.	APP.
3	6-7-84	REVISED TO STATUS OF 6-7-84	HBN	HBN	

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FACILITIES ENGINEERING DIVISION

VAN DE GRAAFF LABORATORY

SECOND FLOOR PLAN

BLDG. SM-16 TA-3

SEC. CLASSIFICATION: CLASS. U; REVIEWER Shaeffer; DATE 6-8-84

SUBMITTED	RECOMMENDED	APPROVED
Ed Trujillo	Dennis Ryan	C.A. Tobias

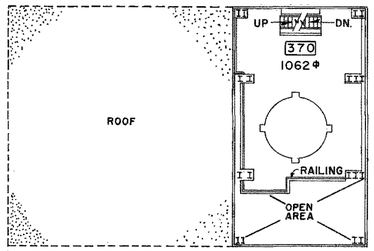
DRAWN	CHECKED	DATE	SHEET NO.	DRAWING NO.
BREMER	Humble H&N	3-16-64	4 OF 5	ENG-R3393

INFO. SHOWN CURRENT AS OF _____ B.A. NO. _____ LAB. JOB NO. _____

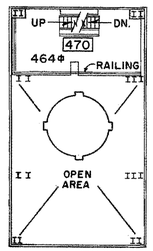
156-G4 CLOTH—K. & E. CO., N. Y.—REG. U.S. PAT. OFF.

REC'D & LOGGED IN TO VAULT 6/3/84

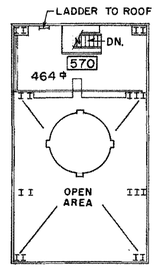
REC'D LOGGED IN TO VAULT 6/3/84



3RD FLOOR PLAN



4TH FLOOR PLAN



5TH FLOOR PLAN

1/16" = 1'-0"

0 10 20 30 40 50

GRAPHIC SCALE

SUB BASEMENT	FLOOR	TOTAL SQ. FT.	3000
BASEMENT	FLOOR	TOTAL SQ. FT.	25,153
FIRST	FLOOR	TOTAL SQ. FT.	19,812
SECOND	FLOOR	TOTAL SQ. FT.	2325
THIRD	FLOOR	TOTAL SQ. FT.	1062
FOURTH	FLOOR	TOTAL SQ. FT.	464
FIFTH	FLOOR	TOTAL SQ. FT.	464
		TOTAL SQ. FT.	52,280

REV.	DATE	REVISION	BY	CKD.	APP.
4	6-7-84	REVISED TO STATUS OF 6-7-84	H&N		

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Los Alamos National Laboratory
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FACILITIES ENGINEERING DIVISION

VAN DE GRAAFF LABORATORY

3RD, 4TH & 5TH FLOOR PLAN

BLDG. SM-16 TA-3

SEC. CLASSIFICATION: CLASS. U; REVIEWER Goodrich; DATE 6-8-84

SUBMITTED	RECOMMENDED	APPROVED
E Trujillo	Dennis Ross	W. F. Ehrhorn

DRAWN	CHECKED	DATE	SHEET NO.	DRAWING NO.
BREMER	Humble H&N	3-17-64	5 OF 5	ENG-R3394 -

INFO. SHOWN CURRENT AS OF _____ B.A. NO._____ LAB. JOB NO._____

RECD & LOGGED IN TO VAULT RECD LOGGED IN TO VAULT 6/8/84

166-G4 CLOTH—K. & E. CO., N. Y.—REG. U.S. PAT. OFF.

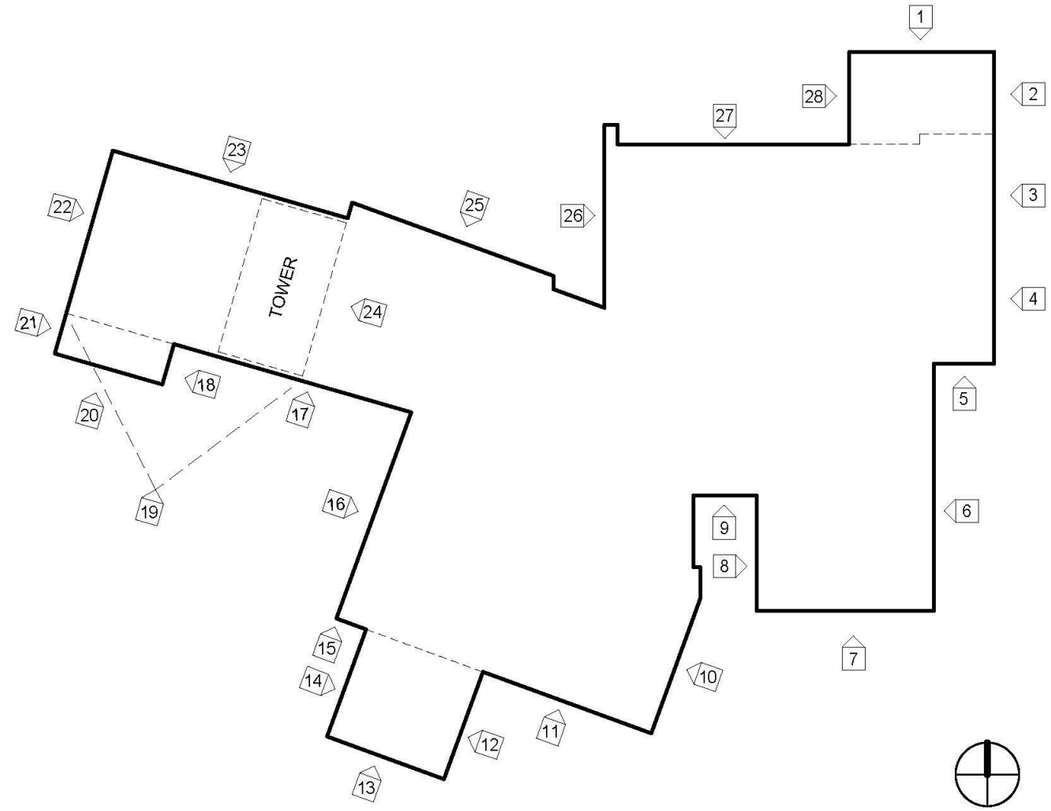
Appendix B.

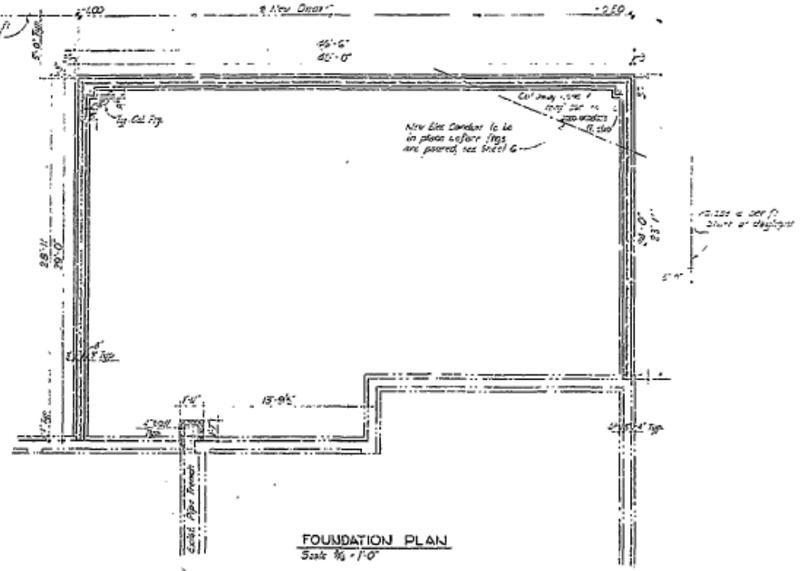
Building Key Plan, Elevations, and Current Floorplans

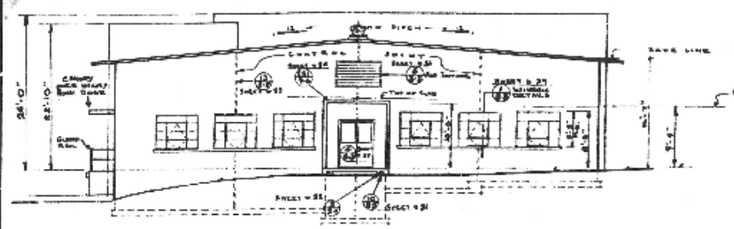
ELEVATION REFERENCE KEY
FOR DIAGRAMMATIC PURPOSES ONLY
ION BEAM FACILITY- TA-3-16

LEGEND

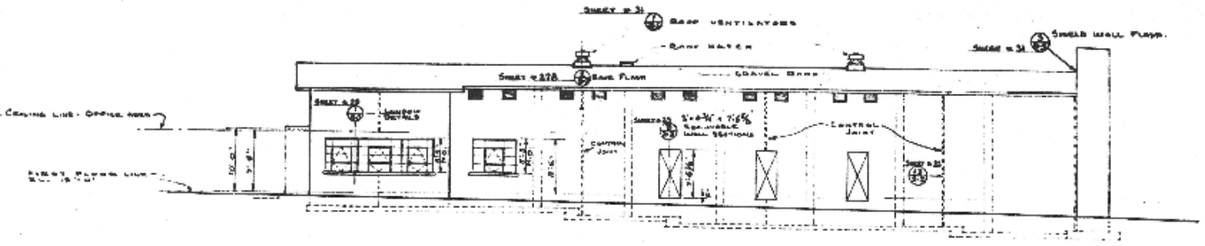
SYMBOL	SHEET NAME	DRAWING NAME
1	ENG-C 18901	NORTH ELEVATION
2	ENG-C 18901	EAST ELEVATION
3	ENG-C 1917	EAST ELEVATION
4	ENG-C 31384	EAST ELEVATION /MECHANICAL EQUIPMENT/
5	ENG-C 1917	SOUTH ELEVATION
6	ENG-C 31384	EAST ELEVATION /MECHANICAL EQUIPMENT/
7	ENG-C 31384	SOUTH ELEVATION /MECHANICAL EQUIPMENT/
8	ENG-C 31384	WEST ELEVATION /MECHANICAL EQUIPMENT/
9	ENG-C 31384	SOUTH ELEVATION /MECHANICAL EQUIPMENT/
10	ENG-C 31384	EAST ELEVATION /CORRIDOR/
11	ENG-C 31384	SOUTH ELEVATION
12	ENG-C 40820	EAST ELEVATION
13	ENG-C 40820	SOUTH ELEVATION
14	ENG-C 40820	EAST ELEVATION (SIMILAR, OPPOSITE, WITH NO DOORS)
15	ENG-C 31384	SOUTH ELEVATION
16	ENG-PL 584	PARTIAL SECTION & WEST ELEVATION
17	ENG-C 31384	SOUTH ELEVATION
18	ENG-C 26900	EAST ELEVATION
19	ENG-C 1903	ELEVATION COLUMN LINE (A)
20	ENG-C 26900	SOUTH ELEVATION
21	ENG-C 26900	WEST ELEVATION
22	ENG-C 1904	ELEV COLUMN LINE 7
23	ENG-C 1904	ELEV COLUMN LINE D
24	ENG-C 1904	ELEV COLUMN LINE 7 (SIMILAR, OPPOSITE)
25	ENG-C 31384	NORTH ELEVATION
26	ENG-C 1917	WEST ELEVATION
27	ENG-C 1917	NORTH ELEVATION
28	ENG-C 18901	WEST ELEVATION



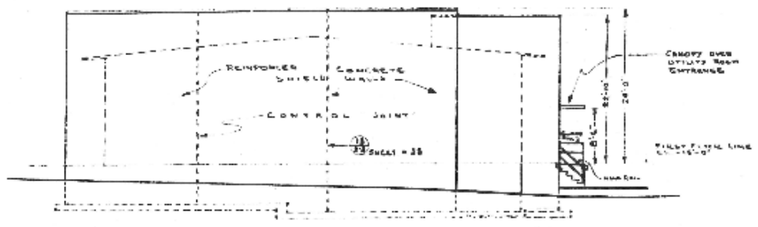

Slope ½" per ft to daylight
New Door
Cut Away Conc. & Reinf. Bars as Req'd for New Door
Typ Col. Pcp.
New Elec Conduit to be in place before Pkgs are poured. see Detail 6
Slope ½" per ft Down or daylight
4" Typ
Typ
Typ



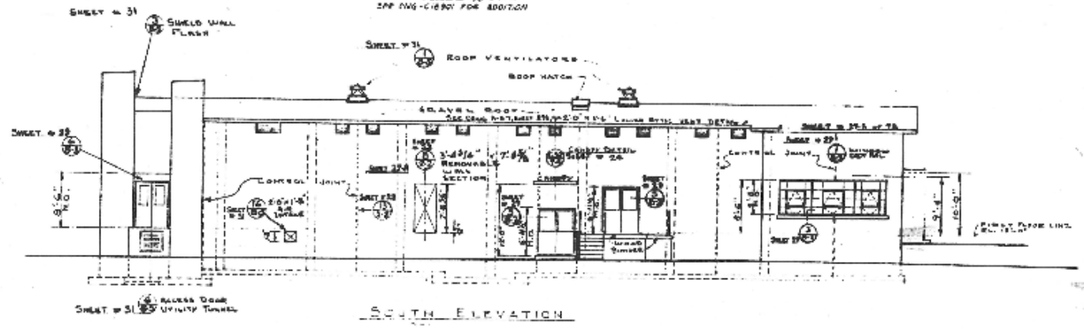
EAST ELEVATION
SCALE 1/8"=1'-0"
SEE DWG C-1-832 FOR ADDITION



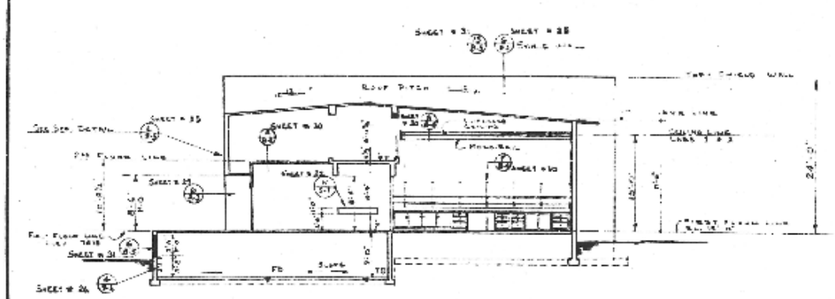
NORTH ELEVATION
SCALE 1/8"=1'-0"
SEE DWG C-1-832 FOR ADDITION



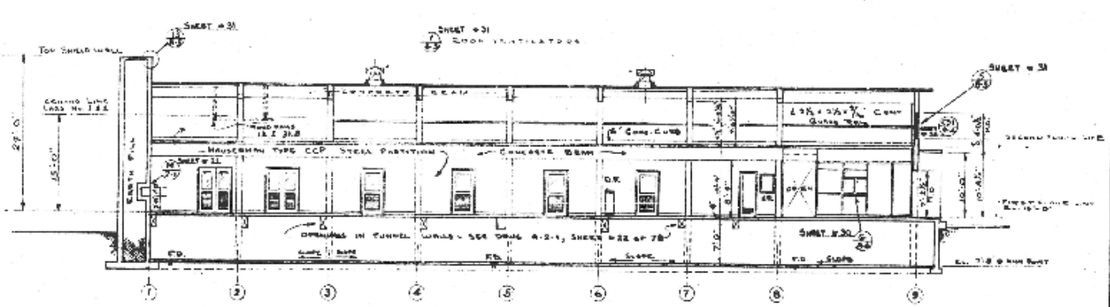
WEST ELEVATION
SCALE 1/8"=1'-0"



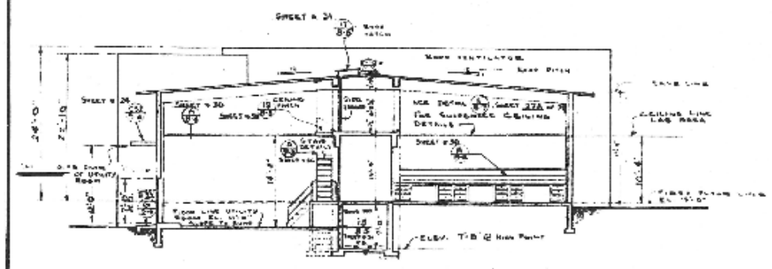
SOUTH ELEVATION



TRANSVERSE SECTION (A A-A)
SCALE 1/8"=1'-0"



LONGITUDINAL SECTION (C C-C)
SCALE 1/8"=1'-0"



TRANSVERSE SECTION (B B-B)
SCALE 1/8"=1'-0"

AS CONSTRUCTED DRAWING
AT 2-1-0 716
RECOMMENDED
APPROVED

3				
2	2-1-57	CORRECT TO 8-15-57	EAL	WEP
1	10-30	As Built	Date	
No.	Date	Revisions	By	Chkd

U. S. ATOMIC ENERGY COMMISSION
SANTA FE OPERATIONS OFFICE
LOS ALAMOS, NEW MEXICO

12 MEV VAN DE GRAAFF
ACCELERATOR BUILDING AND LABORATORY
ELEVATIONS AND SECTIONS
LABORATORY BUILDING

Submitted: Consolidated Western Constructors Inc., Los Angeles
Approved: Approved for U.S.A.E.C.
In charge of W. K. M.
Scale: 1/8"=1'-0"
Date: 3-28-58

Contractor: Consolidated Western Constructors Inc., Los Angeles
Job No. 46993
Sheet 28 of 78
Revision No. 1

A-5-6

U.S.E.R.D.A. Eng. 1917 Lab. Job. 188

Originally, Sheet #2 of Addendum #1

JAC-Q5-3/5

SOUTH ELEVATION
SCALE: 1/8" = 1'-0"

SOUTH ELEVATION /MECH. EQUIPMENT/
SCALE: 1/8" = 1'-0"

WEST ELEVATION /MECH. EQUIPMENT/
SCALE: 1/8" = 1'-0"

EAST ELEVATION /CORRIDOR/
SCALE: 1/8" = 1'-0"

EAST ELEVATION /MECHANICAL EQUIPMENT/
SCALE: 1/8" = 1'-0"

NORTH ELEVATION
SCALE: 1/8" = 1'-0"

AS CONSTRUCTED DRAWING
CONSTRUCTION CONTRACT NO. AT(29-1)1767
SUBMITTED E.O. Haupt ARCHITECT-ENGINEER
RECOMMENDED
APPROVED R.E. Bingham

NO.	DATE	REVISIONS	BY	CH	PROJ. ENGR.	A.E.C. APP.
2	3/64	ADDED BLDG. NO. TO TITLE BLOCK	RH			
1	9/62	AS BUILT	EL			

U. S. ATOMIC ENERGY COMMISSION
LOS ALAMOS AREA OFFICE
LOS ALAMOS, NEW MEXICO

TANDEM VAN DE GRAAFF FACILITIES

ELEVATIONS

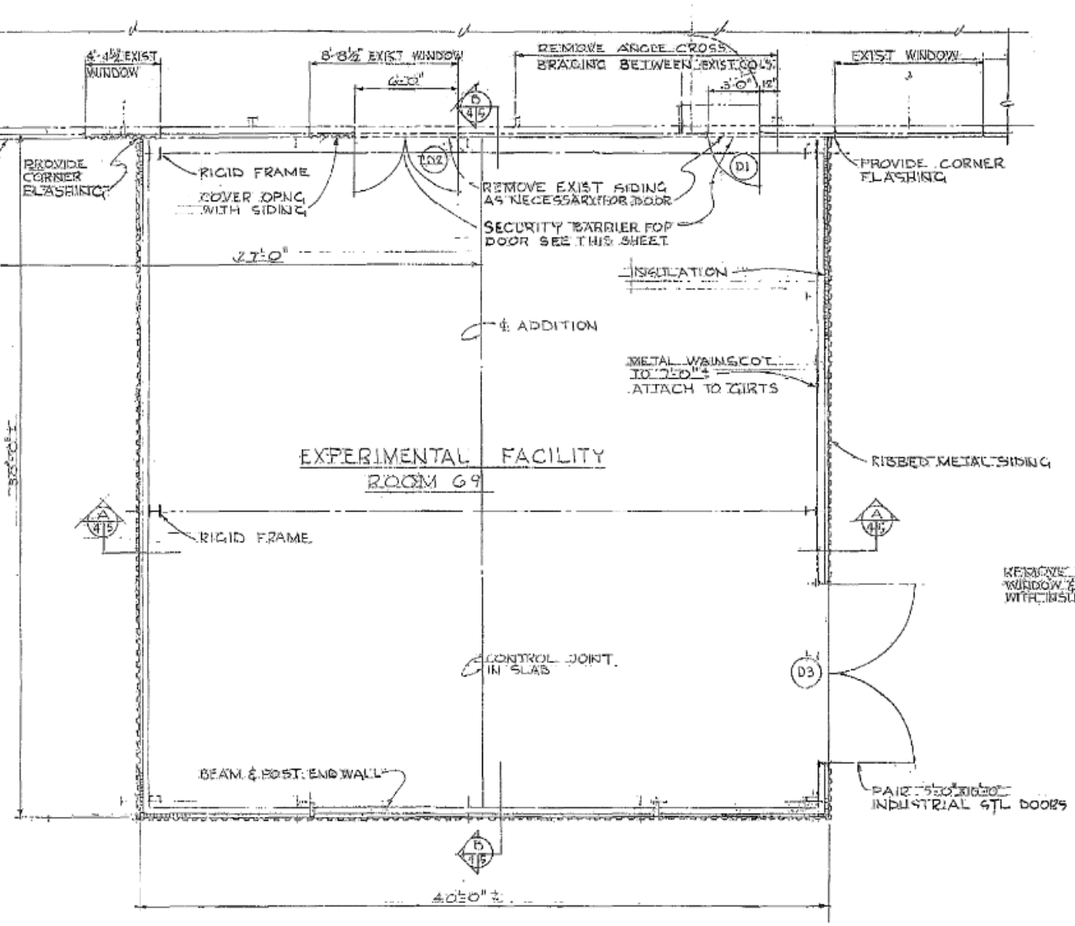
BLDG. SM-16 TA-3

SUBMITTED: [illegible] RECOMMENDED: R.E. Bingham APPROVED: R.D. Nininger DATE: 1 OCT. 1962

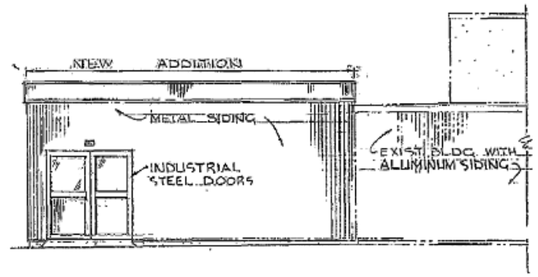
NORMAN ENGINEERING CO.
consulting engineers
LOS ANGELES, CALIFORNIA

DRAWING NO. LA-FD-A-7 SHEET 14 OF 123

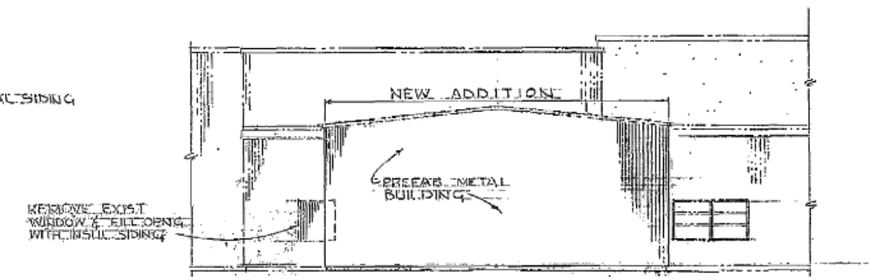
LAB JOB 188A LASL DWG NO. ENG-C 31384



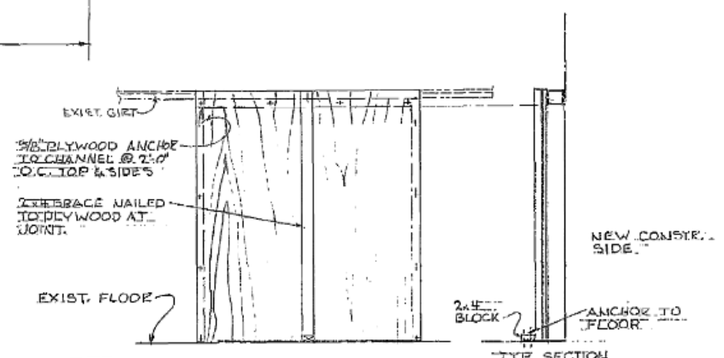
FLOOR PLAN
SCALE: 1/4"=1'-0"



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



SOUTH ELEVATION
SCALE: 1/8"=1'-0"



NOTE:
PATCH ALL SURFACE TO MATCH EXISTING ADJACENT SURFACES AS CLOSELY AS POSSIBLE

(DOOR D1 SIMILAR)

SECURITY BARRIER AT NEW DOORS
SCALE: 1½"=1'-0"

LAB. JOB NO. 4757-3

NO.	DATE	REVISIONS	BY	CK.	ENGR. D.O.	A.E.C. APP.

AUTHORIZED FOR: P-9 P.O.D. 5-5-K; HEALTH 764 690m; SAFETY 765; FIRE DR.; REG. 1100

U. S. ATOMIC ENERGY COMMISSION
LOS ALAMOS AREA OFFICE
LOS ALAMOS, NEW MEXICO

AEC COST / ADD-TIME / CODE NO.

SUBMITTED	
CHECKED	
A-E APPROVED	
DESIGN	
GROUP LEADER	
SCALE	AS NOTED
DATE	

EXPERIMENTAL FACILITY, RM 69

FLOOR PLAN & ELEVATIONS

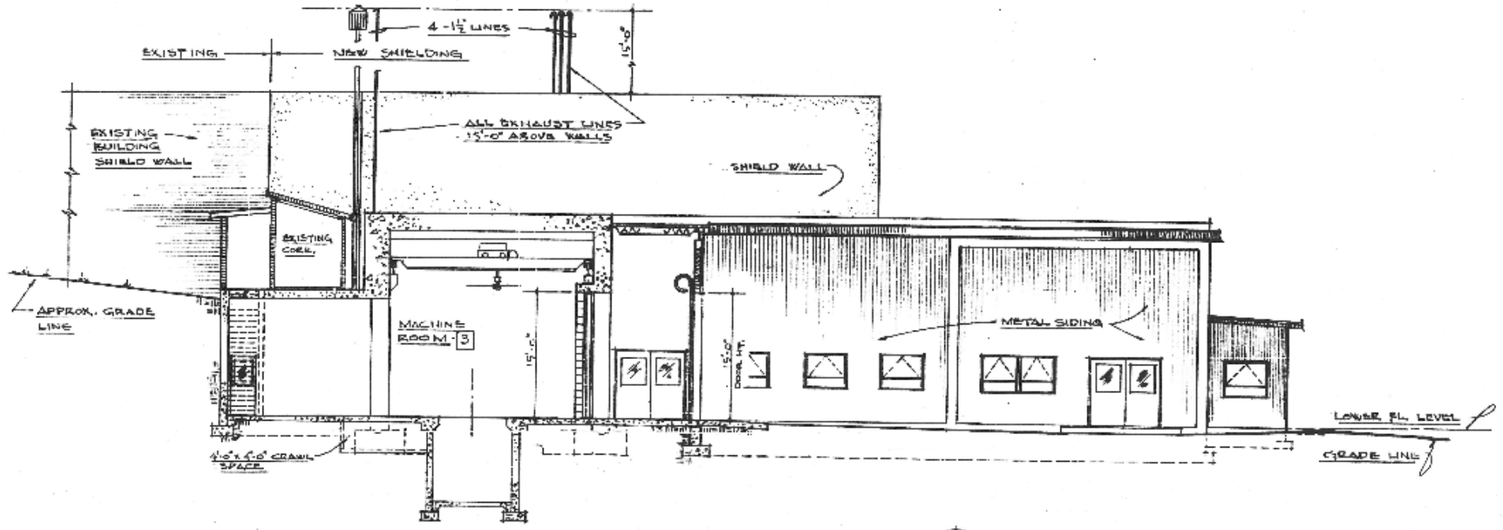
BLDG SM-16 TA-3

SUBMITTED	RECOMMENDED	APPROVED	LAB. DWG. NO.
ENG. DEPT. DIVISION	AEC	AEC	ENG-C40820

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

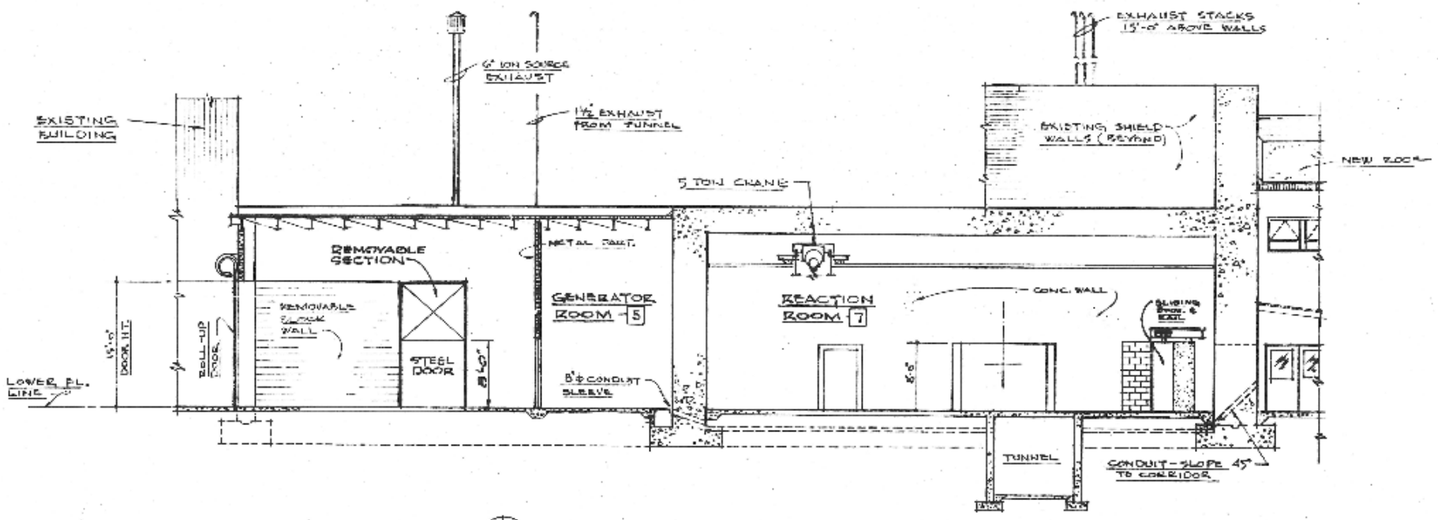
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SHEET 4 OF 10



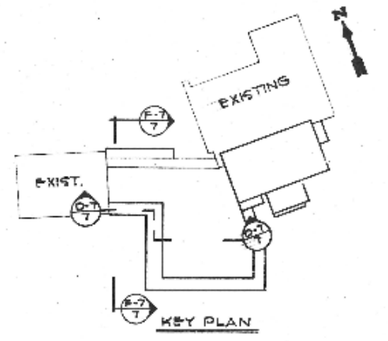
PARTIAL SECTION & WEST ELEVATION (F 7 / 7)

SCALE 1/8" = 1'-0"



SECTION (D 7 / 7)

SCALE 1/8" = 1'-0"



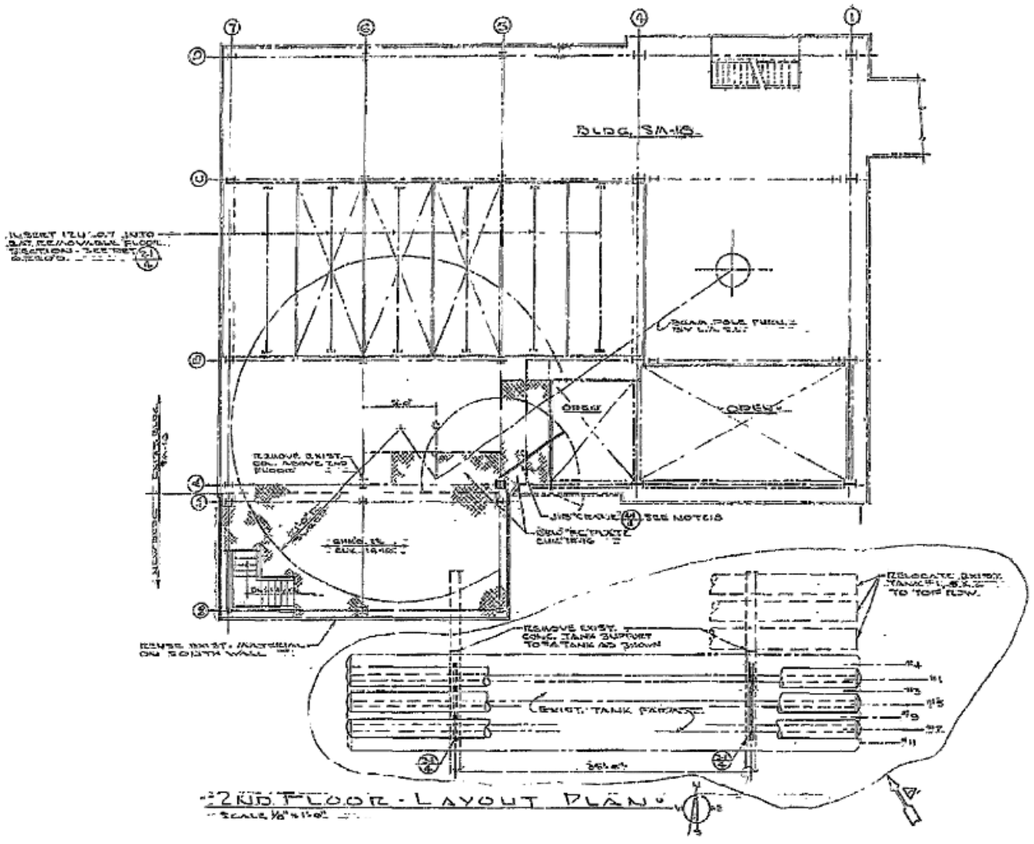
NO.	DATE	REVISIONS	BY	CHKD	GRP LDR	ENG. D. H.

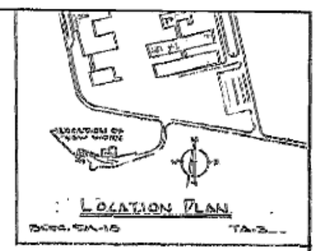
AUTHORIZED FOR
HEALTH 1-5 ECM 1-1
SAFETY
FIRE PROT. SEC.

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

TANDEM VAN DE GRAAFF FACILITIES
SECTIONS
BLDGS. SM-16 & 18 TA-3

CHECKED PROJ. ENG.	RECOMMENDED GROUP LEADER	APPROVED ENG. DEPT. OFFICE	
DESIGNED R.R.R.	DATE 11-28-61	DRAWING NO.	
DRAWN MCCRACKEN	SHEET 7 OF 34	ENG-PL 584	
SCALE AS NOTED			





GENERAL NOTES:

1. CONCRETE TO BE CLASS 'A' MIN. COMPRESSIVE STRENGTH OF 3,000 P.S.I. @ 28 DAYS.
2. WHERE BRAND NAMES ARE USED TO SPECIFY A PRODUCT OR MATERIAL, APPROVED ITEMS OF EQUAL QUALITY AND FUNCTION MAY BE SUBSTITUTED.
3. EXISTING CORRUGATED G-PANELING ON 26'-0" OF THE SOUTH WALL OF BLDG. SA-16 TO BE REUSED ON SOUTH WALL OF NEW ADDITION ALONG WITH THAT STRUCTURE AS INDICATED ON DWGS.
   EXISTING STORAGE RACKS, 144 PLASM. CORNER BLDG. SA-16, TO BE RELOCATED TO SOUTH WALL OF NEW ADDITION.
4. ALL EXPOSED STEEL TO BE PAINTED 2 COATS OF DULUX LIGHT GRAY #617.
   NO SHOP PRIM. COAT ON STRUCTURAL STEEL. PRIME COAT TO BE APPLIED AFTER STEEL ERECTION.
   DO NOT PAINT ALUM. OR GALV. SIDING, ROOFING, DECKING OR ALUM. PLASTIC AND TRIM.
5. STAIR TREADS 9"W x 36" TO BE "BERGEN" TYPE W/ 6 SIZE 4 REINF. BAR, 1"THK (10 TREADS) COMPLETE WITH 1" ABRASIVE NOSING. INCLUDE EXTRA ABRASIVE NOSING MATERIAL
6. PROVIDE FLOOR LOAD LIMIT SIGNS TO LIMIT LIVE LOAD TO 100 LBS./SQ. FT.
7. FIELD ASSEMBLY OF THE FOLLOWING MATERIALS SHALL BE IN ACCORDANCE WITH MFGR. SPECIFICATIONS AND SHOP DRAWINGS. EXISTING SIDING TO BE RELOCATED TO BE ERECTED SIMILAR TO ABOVE.
8. SIDING TO BE ROBERTSON INSULATED G-DECK, CONSISTING OF 1" K-SPAN ON STANDARD MIL FINISH ALUM. SELECT (OUTER). INTER. INSULATE. METAL, 18 GA. METAL COATED STEEL FOR SELECT (INNER). FLASHING, 16 & 22 GA STAND. MIL FINISH ALUM., 18 GA. M.F. STEEL (INNER).
9. ROOFING TO BE ROBERTSON 20 GA. GALVESTOS W/ BAKED COATED BLACK BOTH SIDES.
10. FLOOR DECK TO BE ROBERTSON B-DECK TYPE CUR 18-16, WELD TO SUPPORTING STL. @ 12'0" FROM UNDERSIDE.
11. JIB CRANE TO BE "CHISHOLM-MOORE" STANDARD MODEL 1021, 10 FT. WALL BRACKET TYPE, 2 TON CAPACITY, 360° SWING WITH 360° HOIST STOP. WELD TO COLUMN AS PER DET. "E". LABEL CRANE & HOIST CAPACITIES IN ACCORDANCE WITH STANDARD MARKING PROCEDURE ESTABLISHED BY OSHA.
12. HOIST TO BE "CHISHOLM-MOORE" CYCLONE, MODEL "M" LOW HEADROOM TROLLEY HOIST NO. 6836, 2 TON CAPACITY.
13. TEST HOIST & JIB CRANE PRIOR TO ACCEPTANCE IN ACCORDANCE WITH THE FOLLOWING:
    "SAFETY CODE FOR CRANES, DERRICKS & HOISTS, ASA B 30.2-1943"

BOLTING NOTES:

A. IT IS INTENDED THAT ALL STRUCTURAL STEEL SHOWN IN THE NEW ADDITION & PORTIONS OF THE EXIST. BLDG. W/ STL. INDICATED AS BOLTING STANDARD "D" TYPE CONNECT ONLY, BE BOLTED TOGETHER (NOT WELDED) USING HIGH-STRENGTH BOLTS ONLY HEAVY HEXAGON STRUCTURAL BOLTS DESIGNATED BY ASTM A325 (LATEST ISSUE) FULL DIA. BOLTS ARE NOT INCLUDED. BOLTS TO BE SHOP FURNISHED IN LENGTHS (INCREMENTS) TO BE DETERMINED BY DSP.

B. DO NOT USE WASHERS WITH HIGH STRENGTH BOLTS.

C. TEST AT LEAST (2) BOLTS TO FAILURE FROM EACH LOT RECEIVED AT JOB SITE. BY TORQUE OUT & OBSERVING THE NUMBER OF TURNS TO FAILURE (OR TORQUE AS PER DET. OF FAILURE). TESTS TO BE WITNESSED BY REPRESENTATIVE FROM ENG. & SALES.

D. WRENCHES TO BE USED ANY OF MANUAL OR IMPACT TYPE AS LONG AS DESIRED EFFECT IS ATTAINED.

E. PROCEDURE:
1. SNUG WORK TIGHTLY TOGETHER WITH STANDARD SQUARE-HEAD MACHINE BOLTS. (MAX. 25%)
2. INSTALL HIGH-STRENGTH BOLTS IN REMAINING HOLES. TIGHTEN NUTS BY HAND TO FINGER TIGHT. THEN TURN NUTS ONE (1) FULL TURN ONLY WITH WRENCH. DO NOT OVER TIGHTEN.
   REMOVE FITTING-UP BOLTS & REPLACE WITH HIGH-STRENGTH BOLTS, TIGHTENED AS NOTED ABOVE.
   NOTE: IF IMPACT WRENCH IS USED, MARK CHUCK IN ORDER TO OBTAIN (1) FULL TURN AND RECALIBRATE DRIVE TO OBTAIN (1) TURN OF NUT IN APPROX. 10 SEC. IF HAND WRENCH IS USED, MARK NUT.
3. AFTER EACH NUT RECEIVES ONE (1) FULL TURN FROM FINGER TIGHT, MARK WITH YELLOW CRAYON TO AVOID FURTHER TIGHTENING.
4. DO NOT RE-TIGHTEN ANY INSTALLED H.S. BOLT & DO NOT REUSE ANY H.S. BOLT WHICH HAS RECEIVED WRENCH TIGHTENING AND THEN REMOVED.

F. PERMISSIBLE TOLERANCE: NUT ROTATION ⅓ TURN OVER, NOTHING UNDER. ONE (1) FULL TURN FROM FINGER TIGHT.

G. ALL H.S. BOLTED CONNECTIONS ARE TO BE FRICTION TYPE RATHER THAN BEARING TYPE. (BOLT MFGR. REQUIRES THIS INFORMATION) BOLT LENGTH IS CRITICAL.

H. SUGGESTED BOLT SOURCE - BETHLEHEM STEEL CO. BETHLEHEM, PA.

THIS JOB MUST BE INSPECTED AND ANY CHANGES APPROVED BY U.C. LABORATORY, LOS ALAMOS, N. MEX.

NO.	DATE	REVISIONS	DRN	BY	CHKD	APP'D	ENG. APP'D
1	7-25-62	TO BE UNITE TO BE RELOCATED TANKS	WT	CJK	DAE	[illegible]	WB

AUTHORIZED FOR
HEALTH N.A.
SAFETY TS.
FIRE PROT. [illegible]
SEC. N.A.

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

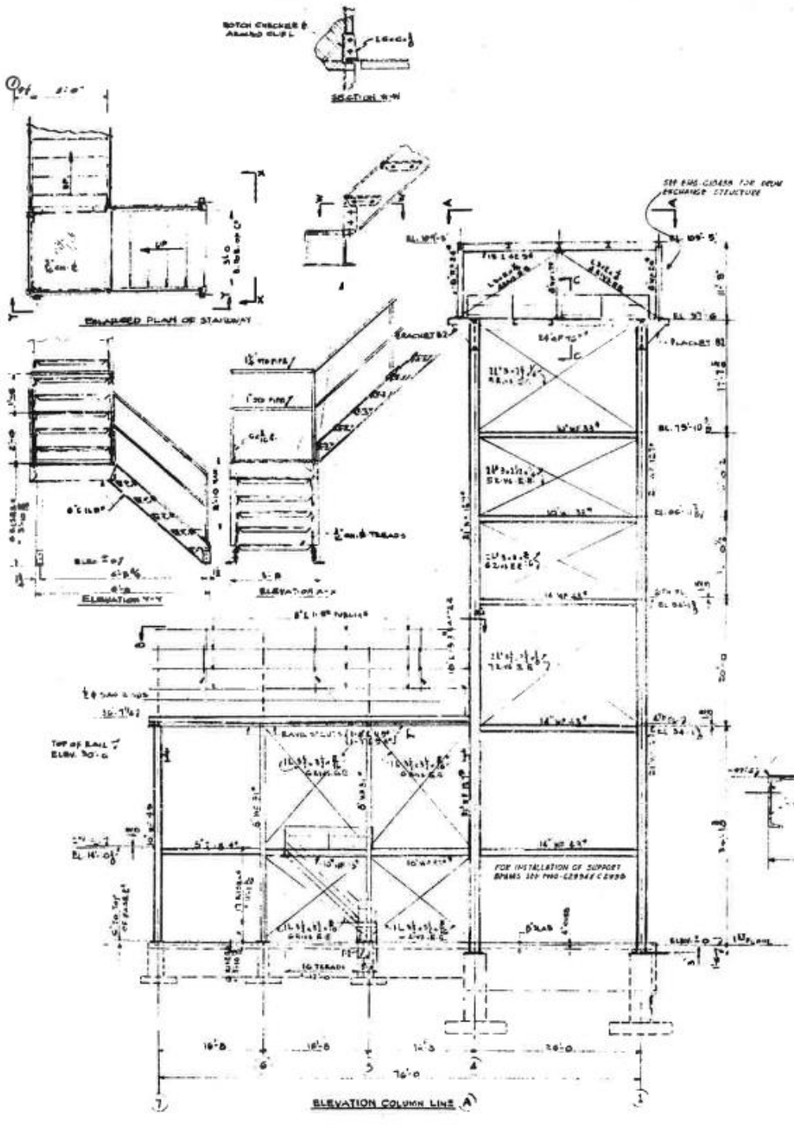
ION BEAM COMPRESSION SYSTEM INSTALLATION

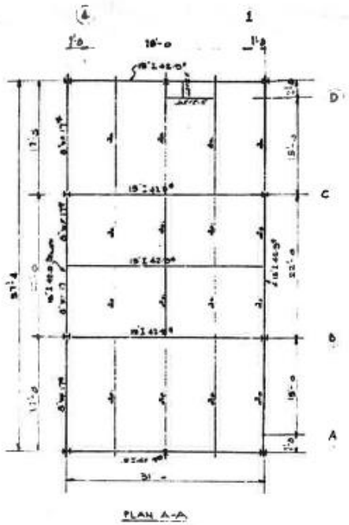
LOCATION: LAYOUT PLAN & ELEVS.
BLDG. SA-16 TA-2

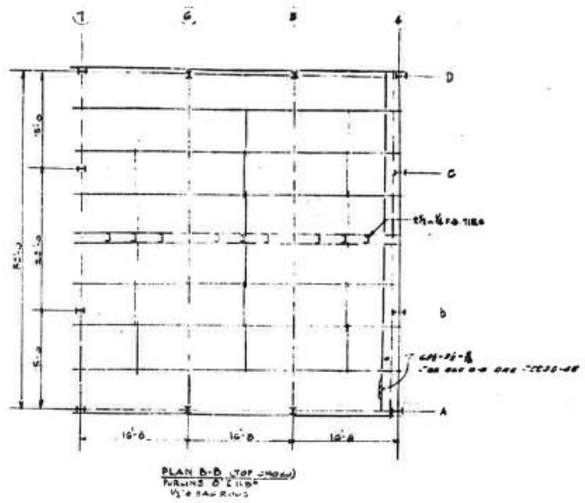
CHECKED [illegible]	RECOMMENDED	APPROVED
FROM ENG. TS-2	GROUP LEADER B.M. McDonald	ENG. DEPT. OFFICE WB
SCALE: 1/8" = 1'-0"	DATE FEB. 28 1962	DRAWING NO.
DRAWN TECHNICIAN	SHEET 1 OF 11	ENG-C 26900
SCALE AS SHOWN		

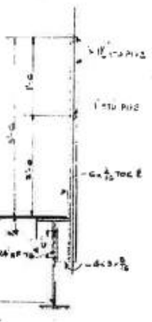
B. A. NO. 75 LAB. JOB NO. 2589-3

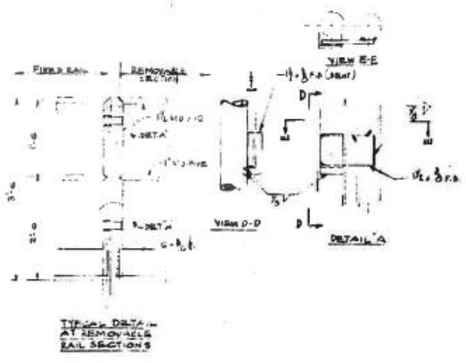
SIZE A











AS CONSTRUCTED DRAWING

1	9-10-57	CORRECT TO 8-15-57	GS	RS	SMD

U. S. ATOMIC ENERGY COMMISSION
SANTA FE OPERATIONS OFFICE
LOS ALAMOS, NEW MEXICO

12 MEV VAN DE GRAAFF
ACCELERATOR BUILDING AND LABORATORY
FRAMING ELEVATION COL LINE A
ACCELERATOR BUILDING

CONSOLIDATED WESTERN CONSTRUCTORS INC.
LOS ANGELES

46095
14 OF 78
0

L.A.S.L. DWG. NO. ENG-C 1903 LAB. JOB. 188 SAF-01-263

PLAN VIEW B-D

ENLARGED SECTION C-C

PLAN VIEW A-A
BOTTOM CHORD BRACING

SECTION P-P

SECTION M-M

SECTION N-N

SECTION Q-Q

SECTION R-R

SECTION S-S

SECTION T-T

SECTION U-U

SECTION V-V

SECTION W-W

SECTION Y-Y

SECTION 5-5

TYPICAL DETAIL OF CRANE RAIL

ELEVATION COLUMN LINE D

ELEVATION COLUMN LINE 1

CORRECT TO 8-15-57

8	9-5-57	CORRECT TO 8-15-57	CVL	
7	8-23-57	AS BUILT	JM	
NO.	DATE	REVISIONS	BY	CK.

U. S. ATOMIC ENERGY COMMISSION
SANTA FE OPERATIONS OFFICE
LOS ALAMOS, NEW MEXICO

12 MEV VAN DE GRAAFF
ACCELERATOR BUILDING AND LABORATORY
FRAMING ELEVATIONS COL. LINES 1 TO D
ACCELERATOR BUILDING

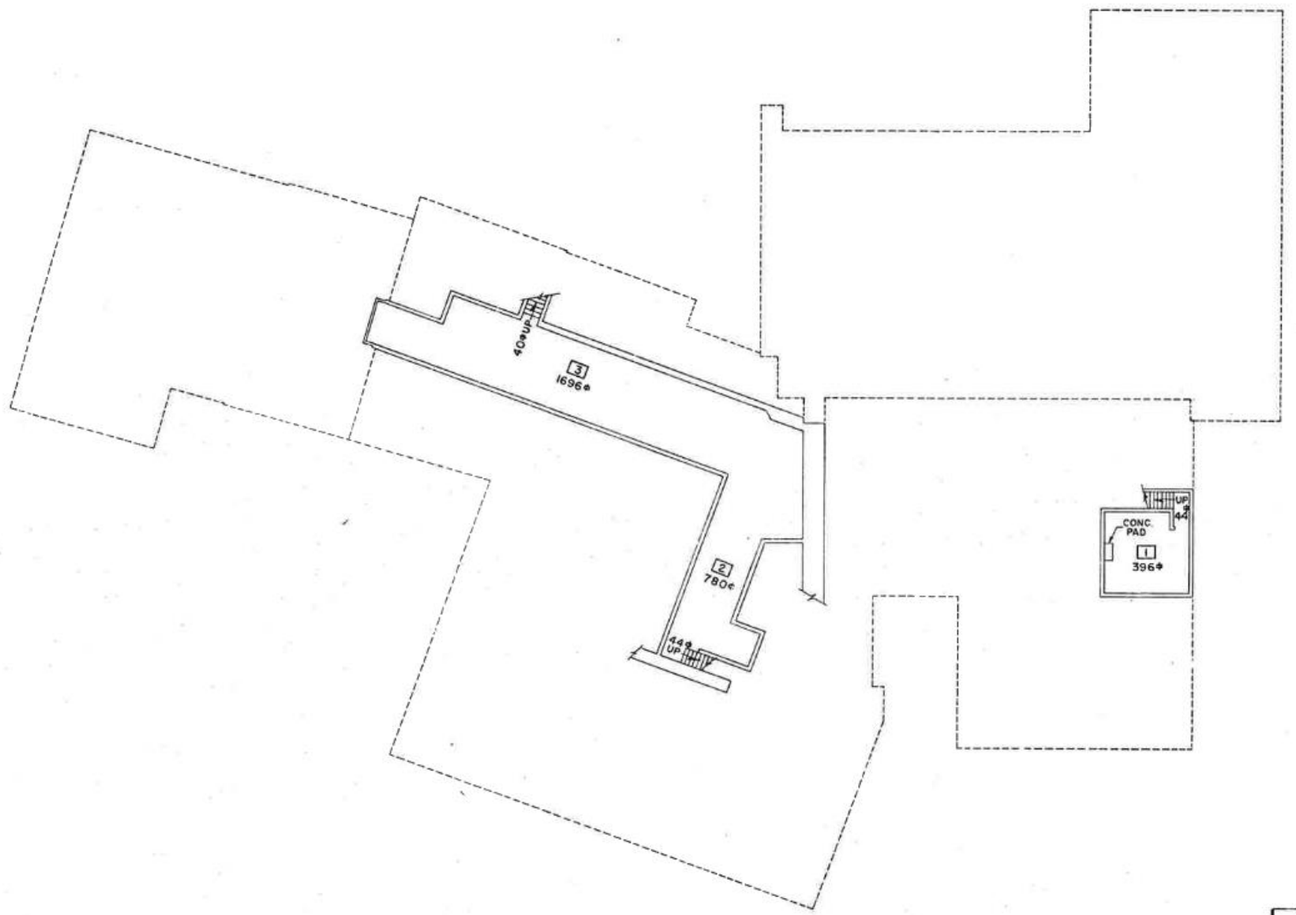
DESIGNED BY	JCT
DRAWN BY	E. S.
TRACED BY	BOTTSEN
CHECKED BY	
SCALE	AS NOTED
DATE	5-23-57
APPROVED FOR CONSTRUCTION	

CONSOLIDATED WESTERN CONSTRUCTORS INC.
LOS ANGELES NEVADA

46993
15 OF 78

D

5-5565-65



1/16" = 1'-0" 0 10 20 30 40 50
GRAPHIC SCALE

SUB BASEMENT FLOOR TOTAL SQ. FT. 3000

REV.	DATE	REVISION	BY	CKD.	APP.
3	6-7-84	REVISED TO STATUS OF 6-7-84	H&N		

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

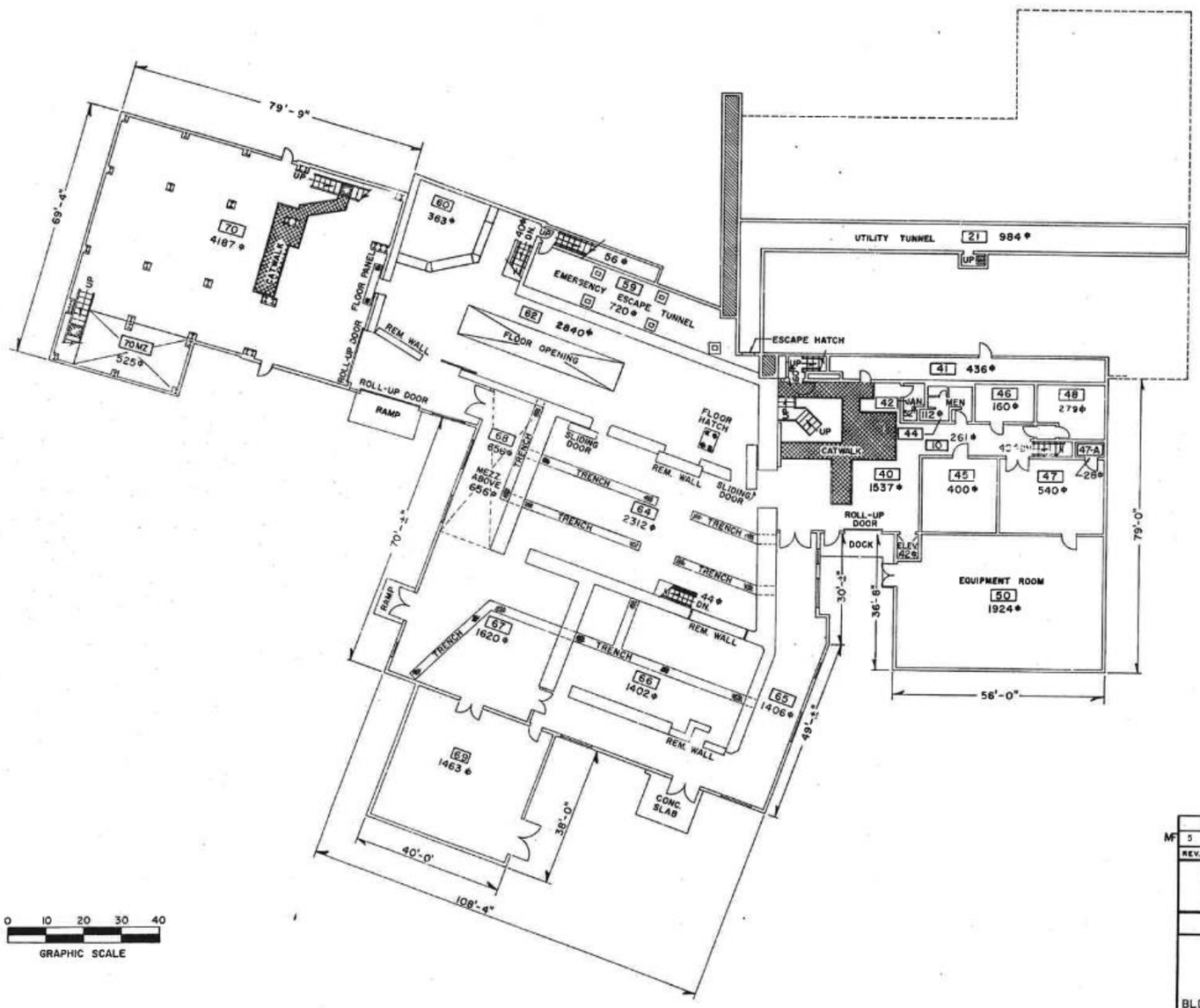
FACILITIES ENGINEERING DIVISION

VAN DE GRAAF LABORATORY
SUB BASEMENT FLOOR PLAN
BLDG. SM-16 TA-3

REC. CLASSIFICATION
CLASS. U
REVIEWER Shadeck
DATE 6-8-84

SUBMITTED	RECOMMENDED	APPROVED
E. Trujillo	Darrell Page	E. E. Tafoya

DRAWN	CHECKED	DATE	SHEET NO.	DRAWING NO.
BREMER	H&N	3-16-64	1 OF 5	ENG-R3390



1/16"=1'-0" 0 10 20 30 40
GRAPHIC SCALE

BASEMENT FLOOR TOTAL 25,153 S.F.

REV.	DATE	REVISION	BY	CKD.	APP.
5	6-7-84	REVISED TO STATUS OF 6-7-84	H&N		

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

FACILITIES ENGINEERING DIVISION

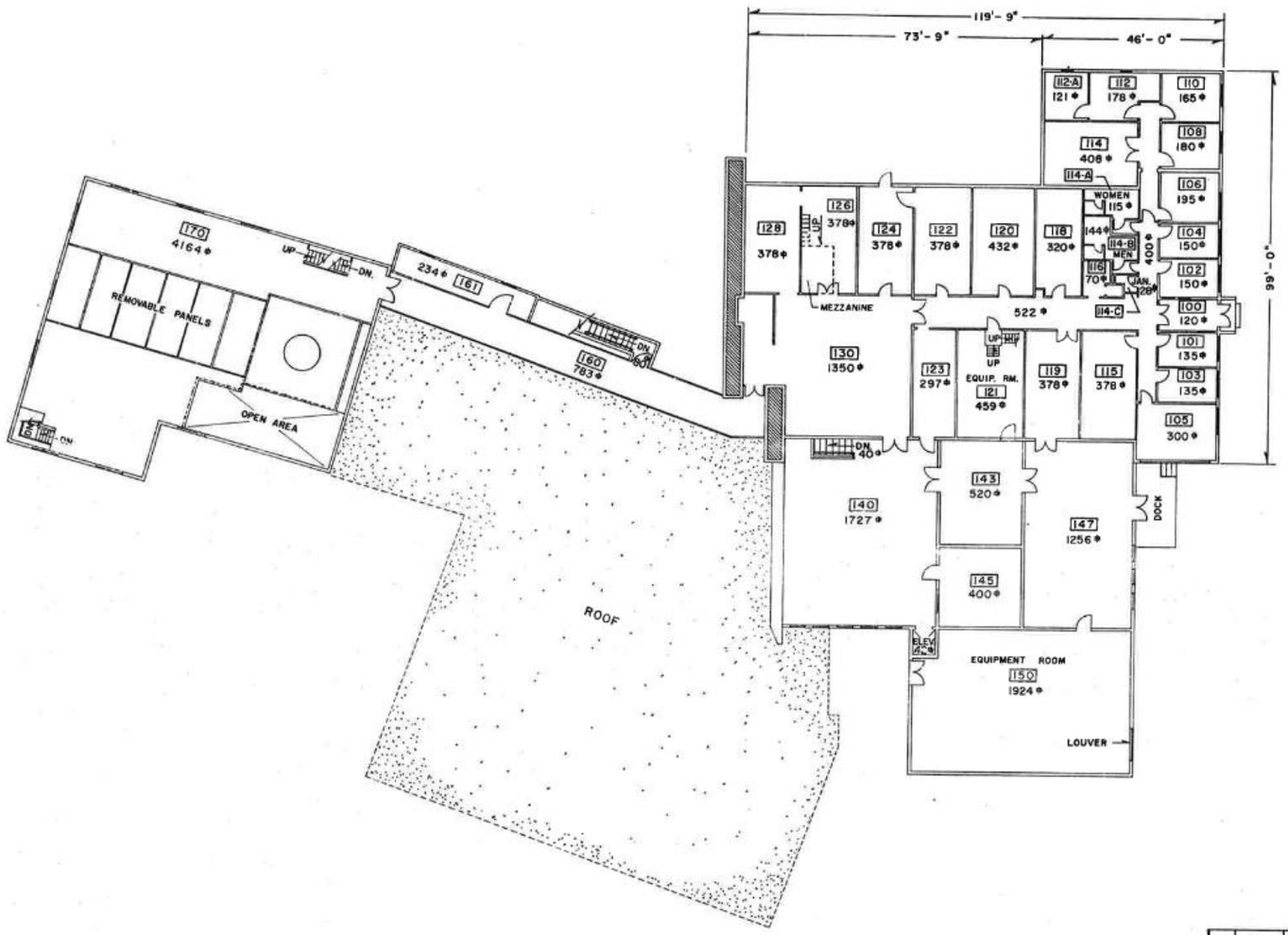
VAN DE GRAAFF LABORATORY

BASEMENT FLOOR PLAN

BLDG. SM-16 TA-3

SEC. CLASSIFICATION
CLASS. U
REVIEWER Stratford
DATE 6-8-84

SUBMITTED	RECOMMENDED	APPROVED
E. Trujillo	Division Prog.	
DRAWN BREMER	DATE 3-16-64	SHEET NO. 2 OF 5
CHECKED H&N		DRAWING NO. ENG-R3391



1/16" = 1'-0"

0 10 20 30 40 50

GRAPHIC SCALE

FIRST FLOOR TOTAL 19,812 S.F.

REV.	DATE	REVISION	BY	CKD.	APP.
3	6-7-84	REVISED TO STATUS OF 6-7-84	HGN		

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

FACILITIES ENGINEERING DIVISION

VAN DE GRAAFF LABORATORY

FIRST FLOOR PLAN

BLDG. SM-16 TA-3

SEC. CLASSIFICATION
CLASS. U
REVIEWER
DATE

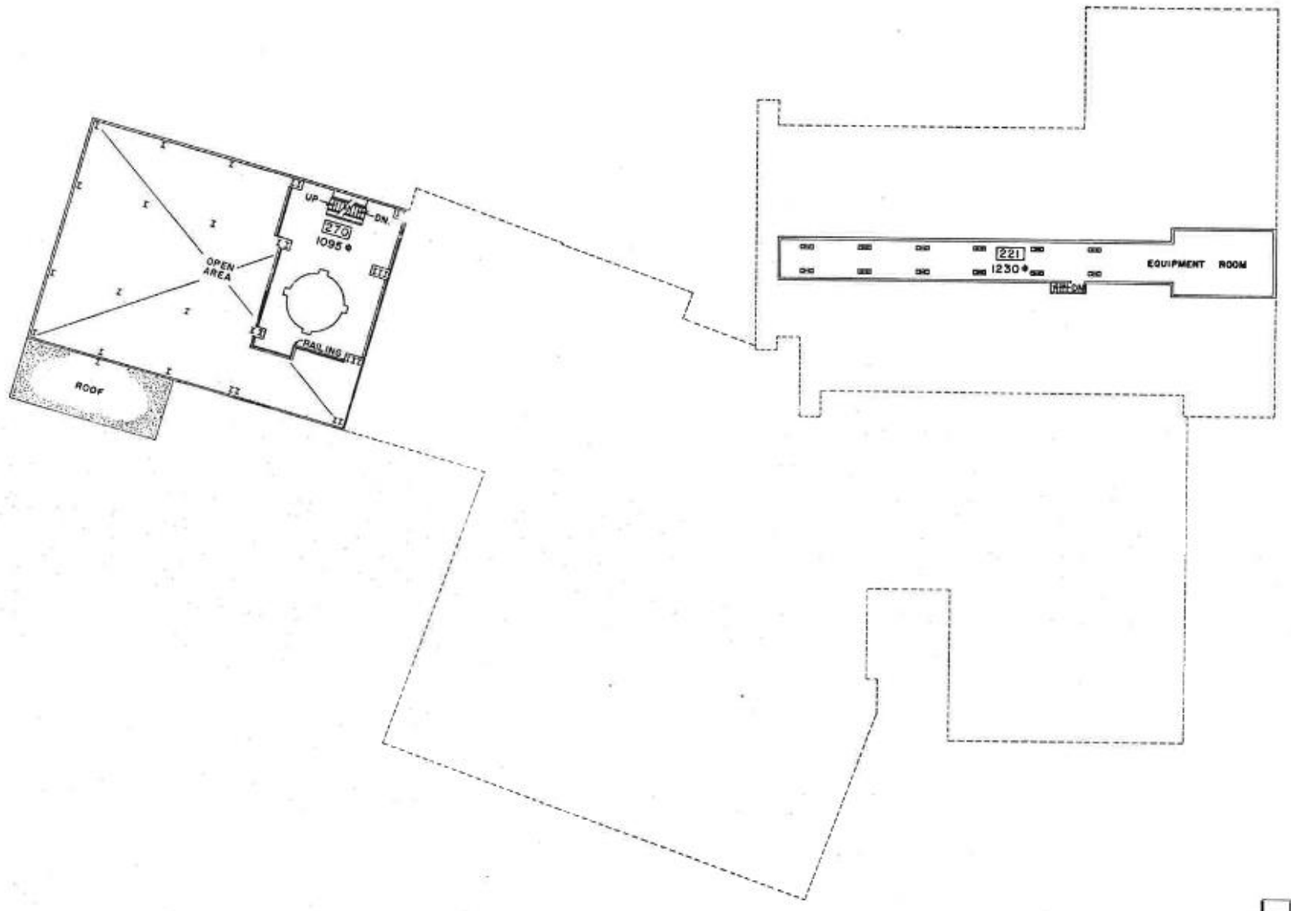
SUBMITTED	RECOMMENDED	APPROVED

DRAWN BREMER
CHECKED

DATE 3-16-64

SHEET NO. 3 OF 5

DRAWING NO. ENG-R3392



1/16" = 1'-0"

0 10 20 30 40 50

GRAPHIC SCALE

SECOND FLOOR TOTAL SQ. FT 2325

REV.	DATE	REVISION	BY	CKD.	APP.
3	6-7-84	REVISED TO STATUS OF 6-7-84	HBN		

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

FACILITIES ENGINEERING DIVISION

VAN DE GRAAFF LABORATORY

SECOND FLOOR PLAN

BLDG. SM-16 TA-3

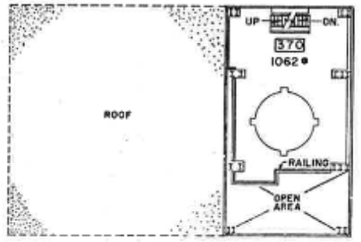
SEC. CLASSIFICATION: CLASS. U

REVIEWER

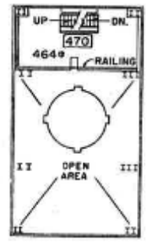
DATE 6-8-84

SUBMITTED	RECOMMENDED	APPROVED

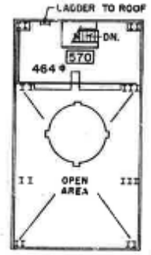
DRAWN	CHECKED	DATE	SHEET NO.	DRAWING NO.
BREMER		3-16-84	4 OF 5	ENG-R3393



3RD FLOOR PLAN



4TH FLOOR PLAN



5TH FLOOR PLAN

1/16" = 1'-0"

0 10 20 30 40 50

GRAPHIC SCALE

SUB BASEMENT	FLOOR	TOTAL SQ. FT.	3000
BASEMENT	FLOOR	TOTAL SQ. FT.	25153
FIRST	FLOOR	TOTAL SQ. FT.	19,812
SECOND	FLOOR	TOTAL SQ. FT.	2325
THIRD	FLOOR	TOTAL SQ. FT.	1062
FOURTH	FLOOR	TOTAL SQ. FT.	464
FIFTH	FLOOR	TOTAL SQ. FT.	464
		TOTAL SQ. FT.	52,280

REV.	DATE	REVISION	BY	CKD.	APP.
4	6-7-84	REVISED TO STATUS OF 6-7-84	HAN		

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

FACILITIES ENGINEERING DIVISION

VAN DE GRAAFF LABORATORY

3RD, 4TH & 5TH FLOOR PLAN

BLDG. SM-16 TA-3

SEC. CLASSIFICATION: CLASS. U; REVIEWER; DATE 6-8-84

SUBMITTED; RECOMMENDED; APPROVED

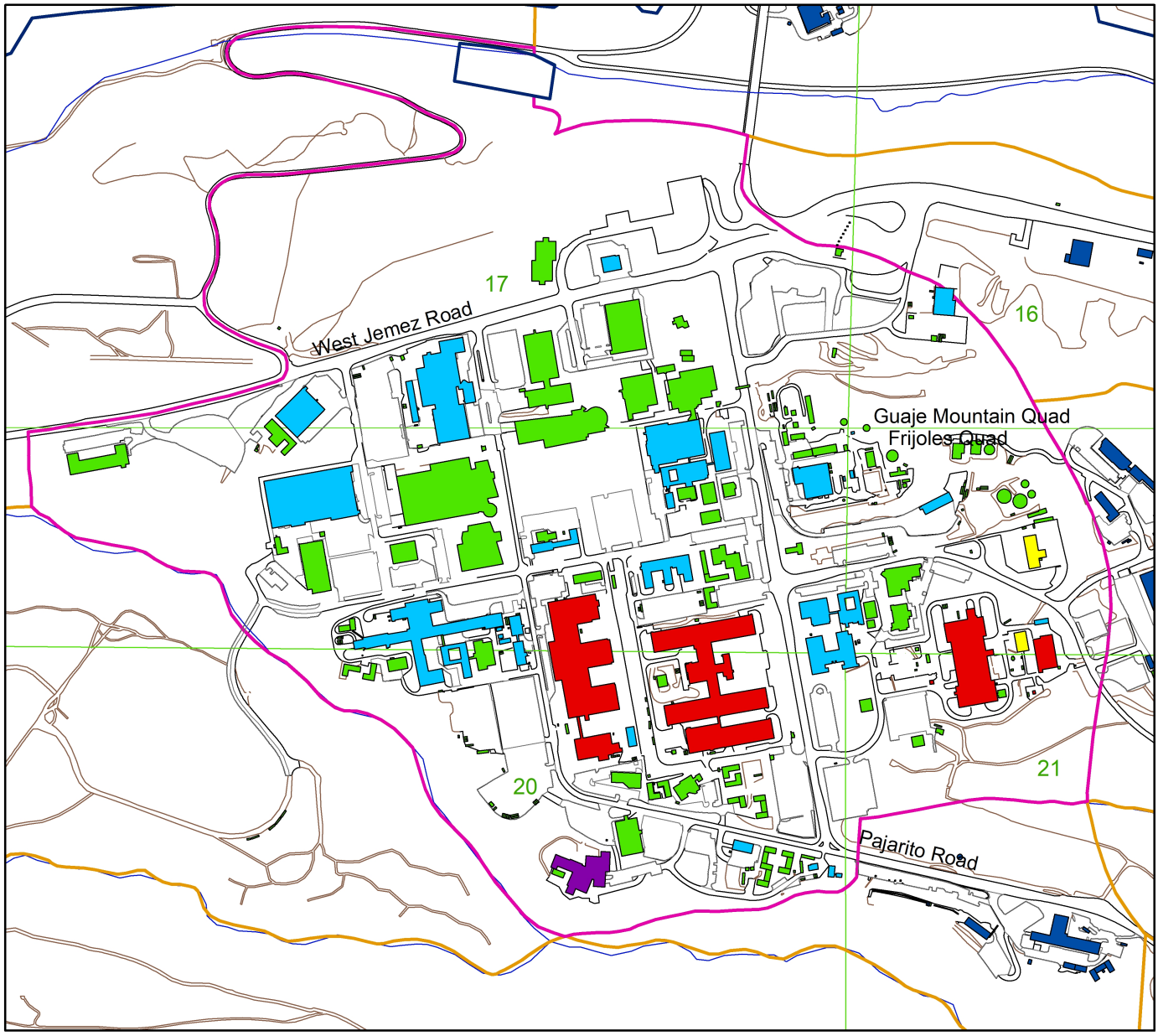
DRAWN BREMER; CHECKED

DATE 3-17-64; SHEET NO. 5 OF 5

DRAWING NO. ENG-R3394

Appendix C.

Map showing Location of Eligible and Non-Eligible Properties and TA-3's Construction History



1:10,000

Los Alamos
National Laboratory

Resources Management Team
EPC-ES Environmental
Stewardship Group

500 250 0 500 1,000 Feet

125 62.5 0 125 250 375 500 Meters

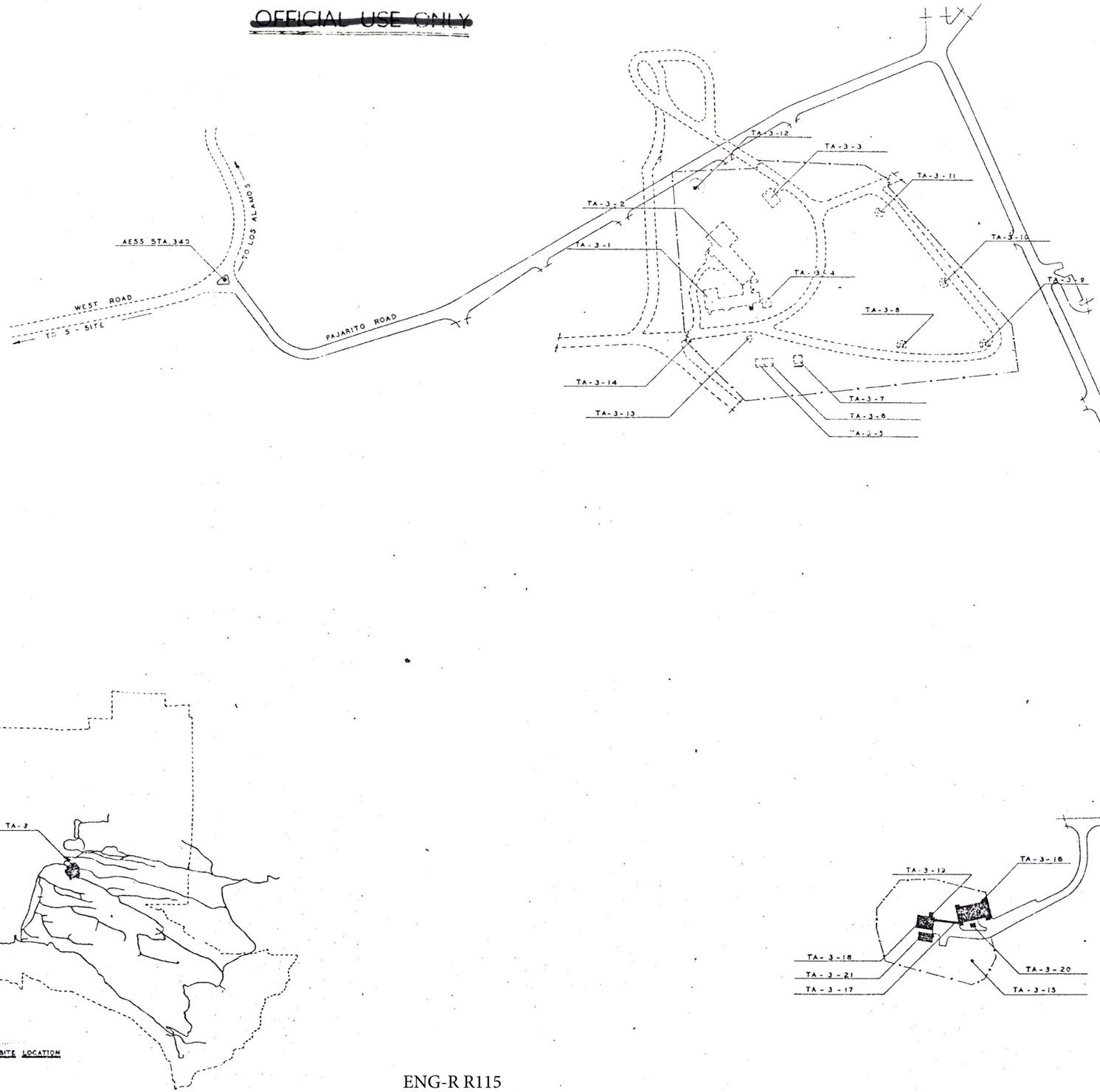
N
W E
S

- TA-3-16 Ion Beam Facility
- Buildings Previously Declared Eligible
- Buildings Previously Declared Not Eligible
- Buildings Yet to be Evaluated
- Exempt Buildings/Structures
- Buildings/Structures
- Technical Area 3
- Technical Areas
- LANL Boundary
- Drainage
- Township, Range, Section
- USGS 7.5 Minute Quad
- Dirt Roads
- Paved Roads

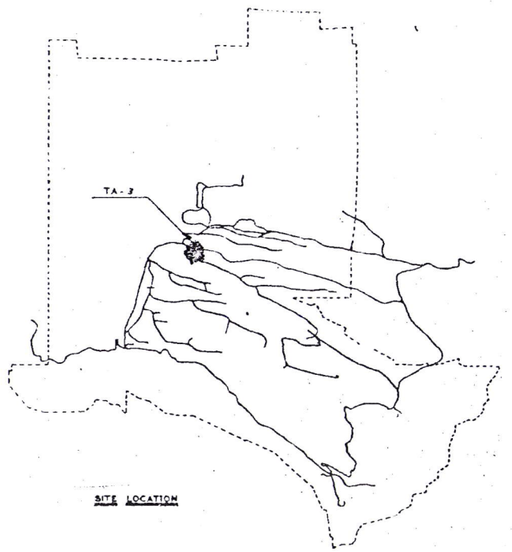
TA-3
Evaluated buildings

Map C-1

OFFICIAL USE ONLY



STRUCTURE NUMBER	DESIGNATION	REMARKS
TA-3-1	SM-1	REMOVED — MAIN BUILDING
TA-3-2	SM-2	REMOVED — PRODUCTION SHED
TA-3-3	SM-3	REMOVED — STORAGE SHED
TA-3-4	SM-4	REMOVED — HUT
TA-3-5	SM-5	REMOVED — HUT
TA-3-6	SM-6	REMOVED — HUT
TA-3-7	SM-7	REMOVED — HUT
TA-3-8	SM-8	REMOVED — MAGAZINE
TA-3-9	SM-9	REMOVED — MAGAZINE
TA-3-10	SM-10	REMOVED — MAGAZINE
TA-3-11	SM-11	REMOVED — MAGAZINE
TA-3-12	SM-12	REMOVED — BURN PIT
TA-3-13	SM-13	REMOVED — FIRE EQUIP. HYDRANT HOUSING
TA-3-14	SM-14	REMOVED — GUARD BLDG.
TA-3-15	SM-15	VAN DE GRAAFF — SEPTIC TANK
TA-3-16	SM-16	VAN DE GRAAFF — LABORATORY BLDG.
TA-3-17	SM-17	VAN DE GRAAFF — CONNECTING CORRIDOR
TA-3-18	SM-18	VAN DE GRAAFF — ACCELERATOR BLDG.
TA-3-19	SM-19	VAN DE GRAAFF — COOLING TOWER
TA-3-20	SM-20	VAN DE GRAAFF — STEAM PLANT
TA-3-21	SM-21	VAN DE GRAAFF — CYLINDER TANK STORAGE



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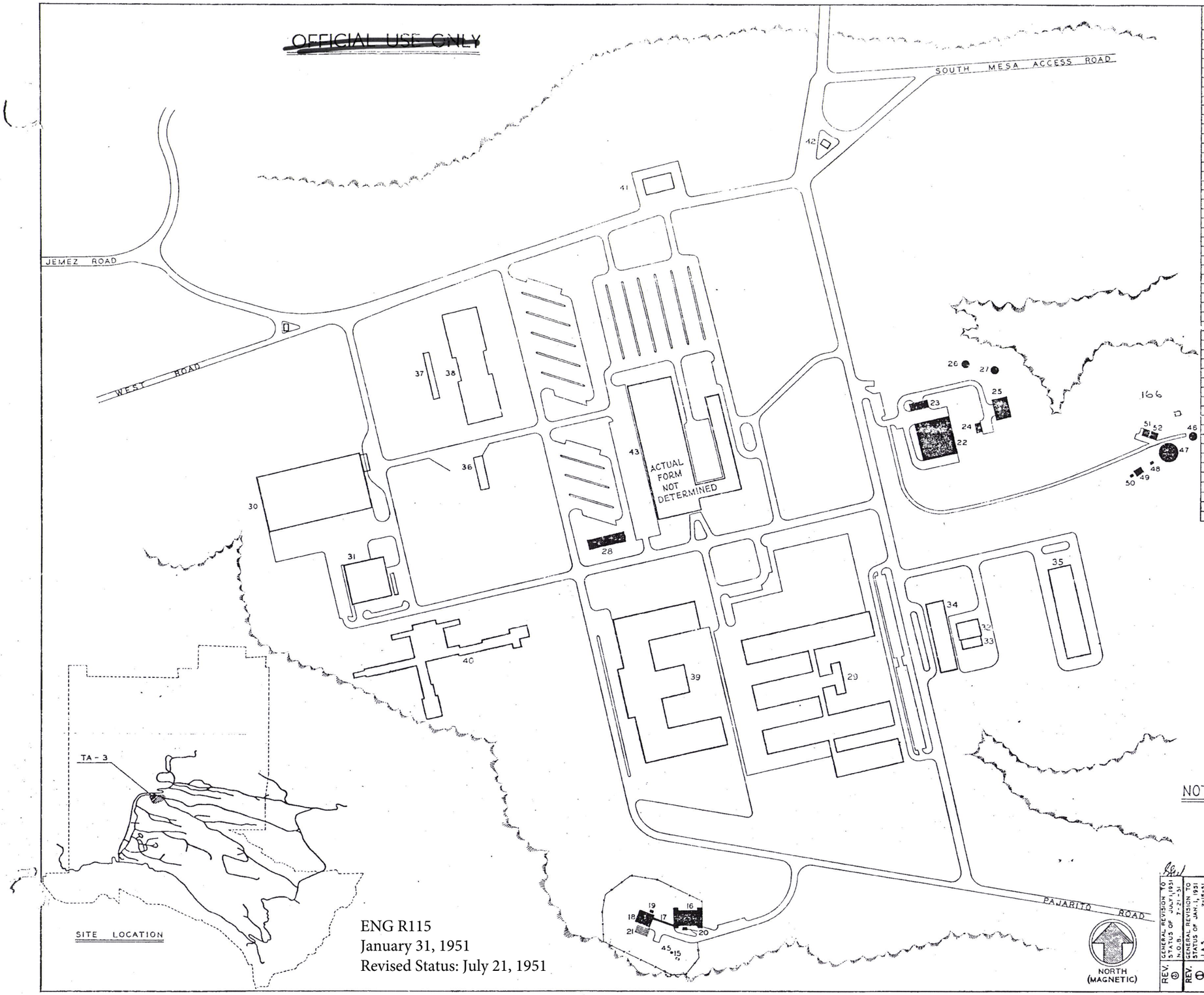
PUBLICLY RELEASABLE
LANL Classification Group
9/15/89

ENG-R R115
March 31, 1950

1-0105981

	AUTHORIZED FOR	LOS ALAMOS SCIENTIFIC LABORATORY DEPARTMENT OF ENGINEERING—CONSTRUCTION & MAINTENANCE GROUP			
	HEALTH SAFETY FIRE PR. COMM. SEC.	STRUCTURE LOCATION PLAN TA-3 SOUTH MESA SITE			
REV.		SCALE	DRAWN BY: J. BLAINE	DATE: 3-31-50	DWG. NO.
0		1" = 200'	CHKD. BY: J.R.	DATE: 3/31/50	
			APPVD. BY:	DATE:	ENG4-R115

~~OFFICIAL USE ONLY~~



STRUCTURE NUMBER	DESIGNATION	REMARKS
TA-3-1	SM-1	MAIN BLDG. (REMOVED)
TA-3-2	SM-2	PRODUCTION SHOP "
TA-3-3	SM-3	STORAGE BLDG. "
TA-3-4	SM-4	HUTMENT "
TA-3-5	SM-5	HUTMENT "
TA-3-6	SM-6	HUTMENT "
TA-3-7	SM-7	HUTMENT "
TA-3-8	SM-8	MAGAZINE "
TA-3-9	SM-9	MAGAZINE "
TA-3-10	SM-10	MAGAZINE "
TA-3-11	SM-11	MAGAZINE "
TA-3-12	SM-12	BURN PIT "
TA-3-13	SM-13	FIRE EQUIP. & HOSE HOUSE "
TA-3-14	SM-14	GUARD HOUSE "
TA-3-15	SM-15	SEPTIC TANK (VAN DE GRAAFF)
TA-3-16	SM-16	LABORATORY BLDG. " " "
TA-3-17	SM-17	CONNECTING CORRIDOR " " "
TA-3-18	SM-18	ACCELERATOR BLDG. " " "
TA-3-19	SM-19	COOLING TOWER " " "
TA-3-20	SM-20	STEAM PLANT " " "
TA-3-21	SM-21	CYLINDER TANK STORAGE " " "
TA-3-22	SM-22	CENTRAL POWER & STEAM PLANT
TA-3-23	SM-23	" " " " "
TA-3-24	SM-24	" " " " "
TA-3-25	SM-25	" " " " "
TA-3-26	SM-26	TANK
TA-3-27	SM-27	TANK
TA-3-28	SM-28	COMMUNICATIONS
TA-3-29	SM-29	D BLDG. PROPOSED
TA-3-30	SM-30	GENERAL WHSE. "
TA-3-31	SM-31	CHEMICAL WHSE. "
TA-3-32	SM-32	CRYOGENICS FACILITIES "
TA-3-33	SM-33	" " "
TA-3-34	SM-34	" " "
TA-3-35	SM-35	" " "
TA-3-36	SM-36	SERVICE STATION & MOTOR POOL "
TA-3-37	SM-37	LAB. MAINTENANCE SHOPS "
TA-3-38	SM-38	" " " "
TA-3-39	SM-39	TECH. SHOP "
TA-3-40	SM-40	PHYSICS BLDG. "
TA-3-41	SM-41	FIRE STATION "
TA-3-42	SM-42	GUARD HOUSE "
TA-3-43	SM-43	ADMINISTRATION BLDG. "
TA-3-44	SM-44	INCINERATOR (REMOVED)
TA-3-45	SM-45	CESS POOL
TA-3-46	SM-46	FINAL SETTLING TANK
TA-3-47	SM-47	TRICKLING FILTER
TA-3-48	SM-48	DOSING TANK
TA-3-49	SM-49	IMHOFF TANK
TA-3-50	SM-50	INLET STRUCTURE
TA-3-51	SM-51	SLUDGE DRYING BED
TA-3-52	SM-52	SLUDGE DRYING BED

ENG R115
January 31, 1951
Revised Status: July 21, 1951

PUBLICLY RELEASABLE
LANL Classification Group
David Ellis 9/15/09

NOTE: Locations and Plans for the 'Proposed' Structures as shown hereon are tentative only, and subject to future revisions.

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REV. ① GENERAL REVISION TO STATUS OF JAN. 1, 1951 J.A.S. 7-21-51
REV. ② GENERAL REVISION TO STATUS OF JAN. 1, 1951 J.A.S. 2-15-51

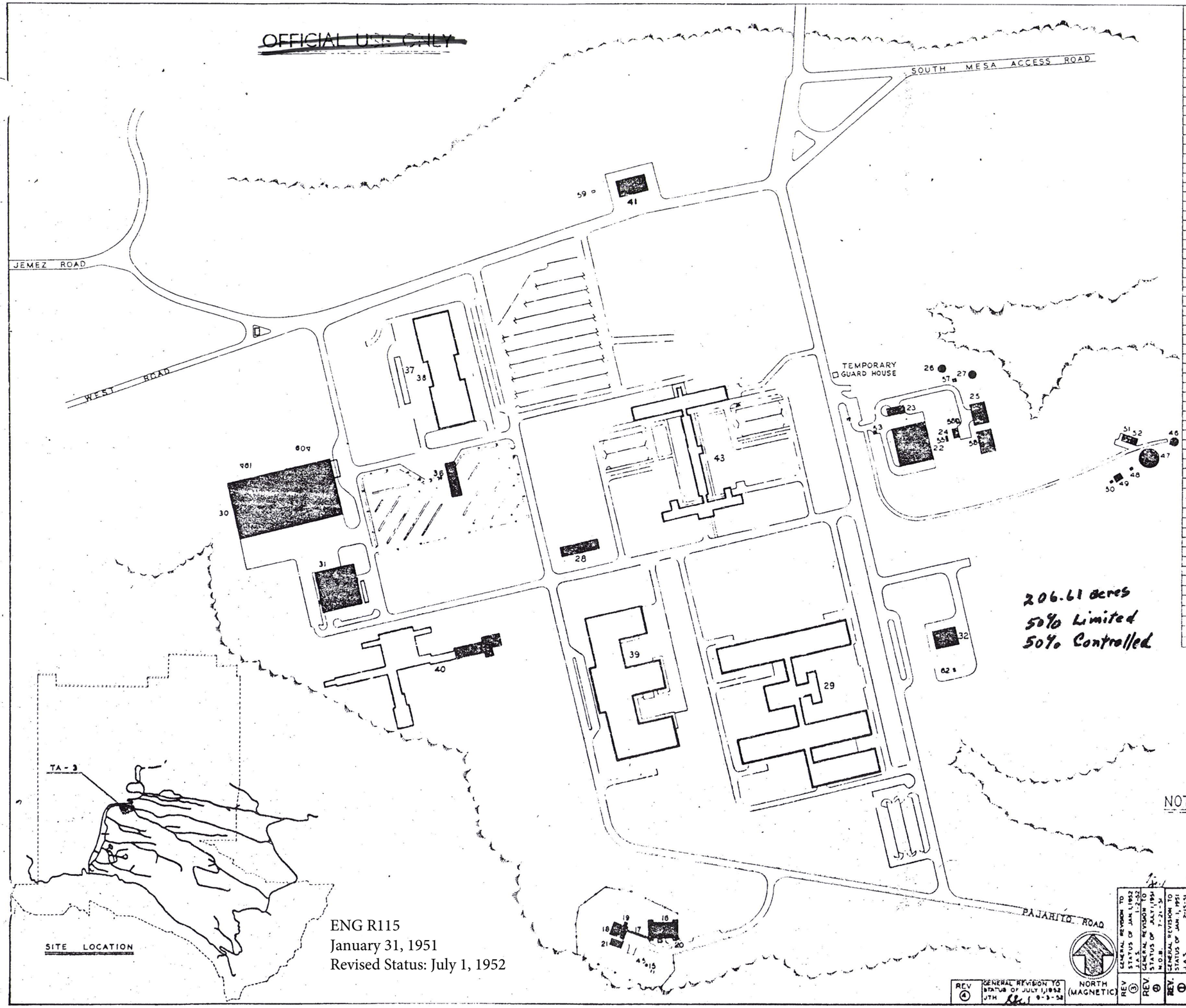
AUTHORIZED FOR
HEALTH
SAFETY
FIRE PR.
COMM.
SEC.

LOS ALAMOS SCIENTIFIC LABORATORY
DEPARTMENT OF ENGINEERING—CONSTRUCTION & MAINTENANCE GROUP

STRUCTURE LOCATION PLAN
TA-3 SOUTH MESA SITE

SCALE	DRAWN BY: J.A. SIZER	DATE: 1-31-51	DWG. NO.
1" = 200'	CHKD. BY:	DATE: 3-10-51	ENG R 115
	APPVD. BY:	DATE: 3-10-51	

~~OFFICIAL USE ONLY~~



STRUCTURE NUMBER	DESIGNATION	REMARKS
TA-3-1	SM-1	MAIN BLDG. (REMOVED)
TA-3-2	SM-2	PRODUCTION SHOP "
TA-3-3	SM-3	STORAGE BLDG. "
TA-3-4	SM-4	HUTMENT "
TA-3-5	SM-5	HUTMENT "
TA-3-6	SM-6	HUTMENT "
TA-3-7	SM-7	HUTMENT "
TA-3-8	SM-8	MAGAZINE "
TA-3-9	SM-9	MAGAZINE "
TA-3-10	SM-10	MAGAZINE "
TA-3-11	SM-11	MAGAZINE "
TA-3-12	SM-12	BURN PIT "
TA-3-13	SM-13	FIRE EQUIP & HOSE HOUSE "
TA-3-14	SM-14	GUARD HOUSE "
TA-3-15	SM-15	SEPTIC TANK (VAN DE GRAAFF)
TA-3-16	SM-16	LABORATORY BLDG. " " "
TA-3-17	SM-17	CONNECTING CORRIDOR " " "
TA-3-18	SM-18	ACCELERATOR BLDG. " " "
TA-3-19	SM-19	COOLING TOWER " " "
TA-3-20	SM-20	STEAM PLANT " " "
TA-3-21	SM-21	CYLINDER TANK STORAGE " " "
TA-3-22	SM-22	CENTRAL POWER & STEAM PLANT
TA-3-23	SM-23	" " " " " SUBSTATION
TA-3-24	SM-24	WATER TREATMENT HOUSE
TA-3-25	SM-25	COOLING TOWER
TA-3-26	SM-26	TANK
TA-3-27	SM-27	TANK
TA-3-28	SM-28	COMMUNICATIONS
TA-3-29	SM-29	CMR LABORATORY
TA-3-30	SM-30	GENERAL WHSE.
TA-3-31	SM-31	CHEMICAL WHSE.
TA-3-32	SM-32	CRYOGENICS FACILITIES
TA-3-33	SM-33	" " NOT BUILT
TA-3-34	SM-34	" " " "
TA-3-35	SM-35	" " " "
TA-3-36	SM-36	SERVICE STATION & MOTOR POOL
TA-3-37	SM-37	LAB. MAINTENANCE SHOPS
TA-3-38	SM-38	" "
TA-3-39	SM-39	TECH. SHOP
TA-3-40	SM-40	PHYSICS BLDG.
TA-3-41	SM-41	FIRE STATION
TA-3-42	SM-42	RESERVE
TA-3-43	SM-43	ADMINISTRATION BLDG. PROPOSED
TA-3-44	SM-44	INCINERATOR (REMOVED)
TA-3-45	SM-45	CESS POOL
TA-3-46	SM-46	FINAL SETTLING TANK
TA-3-47	SM-47	TRICKLING FILTER
TA-3-48	SM-48	DOSING TANK
TA-3-49	SM-49	IMHOFF TANK
TA-3-50	SM-50	INLET STRUCTURE
TA-3-51	SM-51	SLUDGE DRYING BED
TA-3-52	SM-52	SLUDGE DRYING BED
TA-3-53	SM-53	GUARD HOUSE
TA-3-54	SM-54	SEPTIC TANK NOT BUILT
TA-3-55	SM-55	GAS HOUSE
TA-3-56	SM-56	UNIT SUBSTATION
TA-3-57	SM-57	OIL PUMP HOUSE
TA-3-58	SM-58	COOLING TOWER
TA-3-59	SM-59	SEWAGE LIFT STATION
TA-3-60	SM-60	HOSE HOUSE
TA-3-61	SM-61	HOSE HOUSE
TA-3-62	SM-62	AUXILIARY GENERATOR

PUBLICLY RELEASABLE
LANL Classification Group
Dave Holly 3/15/19

NOTE: Locations and Plans for the 'Proposed' Structures as shown hereon are tentative only, and subject to future revisions.

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ENG R115
January 31, 1951
Revised Status: July 1, 1952

REV ④ GENERAL REVISION TO STATUS OF JULY 1, 1952 JTH 9-3-52

REV ③ GENERAL REVISION TO STATUS OF JAN 1, 1952 J.A.S.

REV ② GENERAL REVISION TO STATUS OF 7-21-51 M.O.B.

REV ① GENERAL REVISION TO STATUS OF JAN 1, 1951 J.A.S. 2-15-51

AUTHORIZED FOR
HEALTH
SAFETY
FIRE PR.
COMM.
SEC.

LOS ALAMOS SCIENTIFIC LABORATORY
ENGINEERING DEPARTMENT

STRUCTURE LOCATION PLAN
TA-3 SOUTH MESA SITE

SCALE	DRAWN BY: J.A.SIZER	DATE: 1-31-51	DWG. NO.
1" = 200'	CHKD BY:	DATE: 3-10-51	ENG R 115
	APPVD. BY:	DATE: 3-10-51	

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~~OFFICIAL USE ONLY~~

~~Classification changed to~~ by authority of the U. S. Atomic Energy Commission

Per L. M. Redman 12-14-54
(Person authorizing change in classification) (Date)

Ruben N. Seneroz SEP 30 1955
(Signature of person making the change, and date)

SOUTH MESA ACCESS ROAD

JEMEZ ROAD

WEST ROAD

TEMPORARY GUARD HOUSE

PAJARITO ROAD

TA-3

SITE LOCATION

ENG R115
January 31, 1951
Revised Status: July 1, 1953

NORTH (MAGNETIC)

STRUCTURE NUMBER	DESIGNATION	REMARKS
TA-3-1	SM-1	MAIN BLDG. (REMOVED)
TA-3-2	SM-2	PRODUCTION SHOP "
TA-3-3	SM-3	STORAGE BLDG. "
TA-3-4	SM-4	HUTMENT "
TA-3-5	SM-5	HUTMENT "
TA-3-6	SM-6	HUTMENT "
TA-3-7	SM-7	HUTMENT "
TA-3-8	SM-8	MAGAZINE "
TA-3-9	SM-9	MAGAZINE "
TA-3-10	SM-10	MAGAZINE "
TA-3-11	SM-11	MAGAZINE "
TA-3-12	SM-12	BURN PIT "
TA-3-13	SM-13	FIRE EQUIP. & HOSE HOUSE "
TA-3-14	SM-14	GUARD HOUSE "
TA-3-15	SM-15	SEPTIC TANK (VAN DE GRAAFF)
TA-3-16	SM-16	LABORATORY BLDG. " " "
TA-3-17	SM-17	CONNECTING CORRIDOR " " "
TA-3-18	SM-18	ACCELERATOR BLDG. " " "
TA-3-19	SM-19	COOLING TOWER " " "
TA-3-20	SM-20	STEAM PLANT " " "
TA-3-21	SM-21	CYLINDER TANK STORAGE " " "
TA-3-22	SM-22	CENTRAL POWER & STEAM PLANT
TA-3-23	SM-23	" " " " " SUBSTATION
TA-3-24	SM-24	WATER TREATMENT HOUSE
TA-3-25	SM-25	COOLING TOWER
TA-3-26	SM-26	TANK
TA-3-27	SM-27	TANK
TA-3-28	SM-28	COMMUNICATION
TA-3-29	SM-29	CMR LABORATORY
TA-3-30	SM-30	GENERAL WHSE.
TA-3-31	SM-31	CHEMICAL "
TA-3-32	SM-32	CRYOGENICS FACILITIES
TA-3-33	SM-33	CRYOGENICS PASSAGEWAY PROPOSED
TA-3-34	SM-34	CRYOGENICS FACILITIES PROPOSED
TA-3-35	SM-35	FABRICATION FACILITIES UNDER CONST.
TA-3-36	SM-36	SERVICE STATION & MOTOR POOL
TA-3-37	SM-37	LAB MAINTENANCE SHOPS
TA-3-38	SM-38	" " "
TA-3-39	SM-39	TECH. SHOP
TA-3-40	SM-40	PHYSICS BLDG.
TA-3-41	SM-41	FIRE STATION
TA-3-42	SM-42	GUARD HOUSE
TA-3-43	SM-43	ADMINISTRATION BLDG. PROPOSED
TA-3-44	SM-44	INCINERATOR (REMOVED)
TA-3-45	SM-45	CESS POOL
TA-3-46	SM-46	FINAL SETTLING TANK
TA-3-47	SM-47	TRICKLING FILTER
TA-3-48	SM-48	DOSING TANK
TA-3-49	SM-49	IMHOFF TANK
TA-3-50	SM-50	INLET STRUCTURE
TA-3-51	SM-51	SLUDGE DRYING BED
TA-3-52	SM-52	SLUDGE DRYING BED
TA-3-53	SM-53	GUARD HOUSE
TA-3-54	SM-54	SEPTIC TANK NOT BUILT
TA-3-55	SM-55	GAS HOUSE
TA-3-56	SM-56	UNIT SUBSTATION
TA-3-57	SM-57	OIL PUMP HOUSE
TA-3-58	SM-58	COOLING TOWER
TA-3-59	SM-59	SEWAGE LIFT STATION
TA-3-60	SM-60	HOSE HOUSE
TA-3-61	SM-61	HOSE HOUSE
TA-3-62	SM-62	AUXILIARY GENERATOR
TA-3-63	SM-63	TANK
TA-3-64	SM-64	TANK
TA-3-65	SM-65	SOURCE STORAGE BUILDING
TA-3-66	SM-66	SIGMA BLDG. PROPOSED
TA-3-67	SM-67	RADIO CHEM. BLDG. PROPOSED
TA-3-68	SM-68	GUARD HOUSE
TA-3-69	SM-69	UNIT SUBSTATION

PUBLICLY RELEASABLE
LANL Classification Group
9/15/09

~~RESTRICTED~~
~~SECURITY INFORMATION~~

NOTE: Locations and Plans for the 'Proposed' Structures as shown hereon are tentative only, and subject to further revisions.

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375

REV. ⑤ GENERAL REVISION TO STATUS OF JULY 1, 1953 DPH 8-5-53
REV. ④ GENERAL REVISION TO STATUS OF JULY 1, 1952 JTH 8-3-52
REV. ③ GENERAL REVISION TO STATUS OF JULY 1, 1954 H.O.B. 7-21-54
REV. ② GENERAL REVISION TO STATUS OF JAN. 1, 1951 A.A.J. 2-15-51
REV. ①

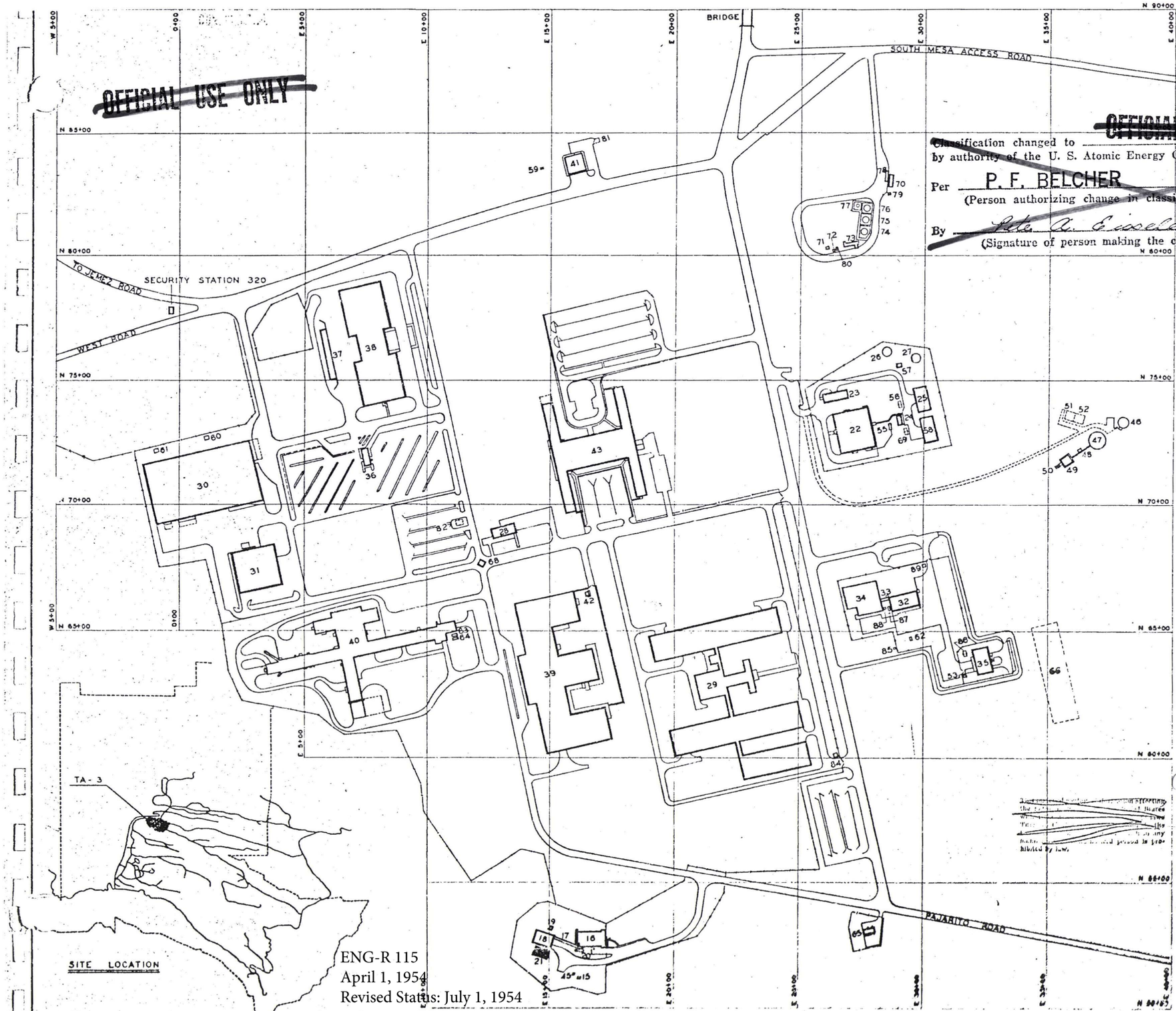
AUTHORIZED FOR: HEALTH, SAFETY, FIRE PR., COMM., SEC.

LOS ALAMOS SCIENTIFIC LABORATORY
ENGINEERING DEPARTMENT

STRUCTURE LOCATION PLAN
TA-3 SOUTH MESA SITE

SCALE 1" = 200' | DRAWN BY J.A. SIZER DATE 1-31-51 | CHKD. BY DATE 2-16-51 | APPVD. BY DATE 2-16-51 | ENG. NO. ENG. R 115

~~OFFICIAL USE ONLY~~



~~OFFICIAL USE ONLY~~

Classification changed to ~~OFFICIAL USE ONLY~~

by authority of the U. S. Atomic Energy Commission,

Per P. F. BELCHER MAR. 4, 1955
(Person authorizing change in classification) (Date)

By Pete A. Casella Sept. 3, 1951
(Signature of person making the change, and date)

STRUCTURE NUMBER	DESIGNATION	REMARKS
TA-3-1	SM-1	MAIN BUILDING (REMOVED)
TA-3-2	SM-2	PRODUCTION SHOP "
TA-3-3	SM-3	STORAGE BUILDING "
TA-3-4	SM-4	HUTMENT "
TA-3-5	SM-5	HUTMENT "
TA-3-6	SM-6	HUTMENT "
TA-3-7	SM-7	HUTMENT "
TA-3-8	SM-8	MAGAZINE "
TA-3-9	SM-9	MAGAZINE "
TA-3-10	SM-10	MAGAZINE "
TA-3-11	SM-11	MAGAZINE "
TA-3-12	SM-12	BURN PIT "
TA-3-13	SM-13	FIRE EQUIPMENT & HOSE HOUSE "
TA-3-14	SM-14	GUARD HOUSE "
TA-3-15	SM-15	SEPTIC TANK
TA-3-16	SM-16	VAN DE GRAAFF LABORATORY
TA-3-17	SM-17	VAN DE GRAAFF CORRIDOR
TA-3-18	SM-18	VAN DE GRAAFF ACCELERATOR BUILDING
TA-3-19	SM-19	COOLING TOWER
TA-3-20	SM-20	STORAGE BUILDING
TA-3-21	SM-21	CYLINDER TANK STORAGE
TA-3-22	SM-22	CENTRAL POWER & STEAM PLANT
TA-3-23	SM-23	SWITCHGEAR STATION
TA-3-24	SM-24	WATER TREATMENT HOUSE
TA-3-25	SM-25	COOLING TOWER
TA-3-26	SM-26	TANK
TA-3-27	SM-27	TANK
TA-3-28	SM-28	COMMUNICATIONS BUILDING
TA-3-29	SM-29	CMR LABORATORY
TA-3-30	SM-30	GENERAL WAREHOUSE
TA-3-31	SM-31	CHEMICAL WAREHOUSE
TA-3-32	SM-32	CRYOGENICS BUILDING "A"
TA-3-33	SM-33	CRYOGENICS PASSAGEWAY (UNDER CONSTR)
TA-3-34	SM-34	CRYOGENICS BUILDING "B" (UNDER CONSTR)
TA-3-35	SM-35	FABRICATION BUILDING
TA-3-36	SM-36	SERVICE STATION & MOTOR POOL
TA-3-37	SM-37	LAB MAINTENANCE STORAGE
TA-3-38	SM-38	LAB MAINTENANCE SHOPS
TA-3-39	SM-39	TECH SHOPS
TA-3-40	SM-40	PHYSICS BUILDING
TA-3-41	SM-41	FIRE STATION
TA-3-42	SM-42	GUARD HOUSE
TA-3-43	SM-43	ADMINISTRATION BUILDING (UNDER CONSTR)
TA-3-44	SM-44	INCINERATOR (REMOVED)
TA-3-45	SM-45	ECSS POOL
TA-3-46	SM-46	FINAL SETTLING TANK
TA-3-47	SM-47	TRICKLING FILTER
TA-3-48	SM-48	DOSING TANK
TA-3-49	SM-49	IMHOFF TANK
TA-3-50	SM-50	INLET STRUCTURE
TA-3-51	SM-51	SLUDGE DRYING BED
TA-3-52	SM-52	SLUDGE DRYING BED
TA-3-53	SM-53	GUARD HOUSE
TA-3-54	SM-54	SEPTIC TANK
TA-3-55	SM-55	GAS HOUSE
TA-3-56	SM-56	UNIT SUBSTATION
TA-3-57	SM-57	OIL PUMP HOUSE
TA-3-58	SM-58	COOLING TOWER
TA-3-59	SM-59	SEWAGE LIFT STATION
TA-3-60	SM-60	HOSE HOUSE
TA-3-61	SM-61	HOSE HOUSE
TA-3-62	SM-62	AUXILIARY GENERATOR
TA-3-63	SM-63	TANK
TA-3-64	SM-64	TANK
TA-3-65	SM-65	SOURCE STORAGE BUILDING
TA-3-66	SM-66	SIGMA BUILDING (PROPOSED)
TA-3-67	SM-67	RESERVE
TA-3-68	SM-68	GUARD HOUSE
TA-3-69	SM-69	UNIT SUBSTATION
TA-3-70	SM-70	OFFICE BUILDING (BATCH PLANT)
TA-3-71	SM-71	STORAGE BUILDING
TA-3-72	SM-72	AGGREGATE BINS
TA-3-73	SM-73	ASPHALTIC CONCRETE PLANT
TA-3-74	SM-74	STORAGE TANK
TA-3-75	SM-75	STORAGE TANK
TA-3-76	SM-76	STORAGE TANK
TA-3-77	SM-77	STORAGE TANK
TA-3-78	SM-78	TRUCK SCALE
TA-3-79	SM-79	SEPTIC TANK
TA-3-80	SM-80	TRANSFORMER STATION
TA-3-81	SM-81	SUBSTATION
TA-3-82	SM-82	SUBSTATION
TA-3-83	SM-83	TRANSFORMER STATION (REMOVED)
TA-3-84	SM-84	GUARD HOUSE
TA-3-85	SM-85	MANHOLE (GAS)
TA-3-86	SM-86	SUBSTATION
TA-3-87	SM-87	SWITCHGEAR STATION
TA-3-88	SM-88	SUBSTATION
TA-3-89	SM-89	GUARD HOUSE

PUBLICLY RELEASABLE
LANL Classification Group
[redacted] 9/15/09

640

NO.	DATE	REVISIONS	BY
1	4-1-54	REDRAWN TO STATUS 7-1-54	LCW JAS JC

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

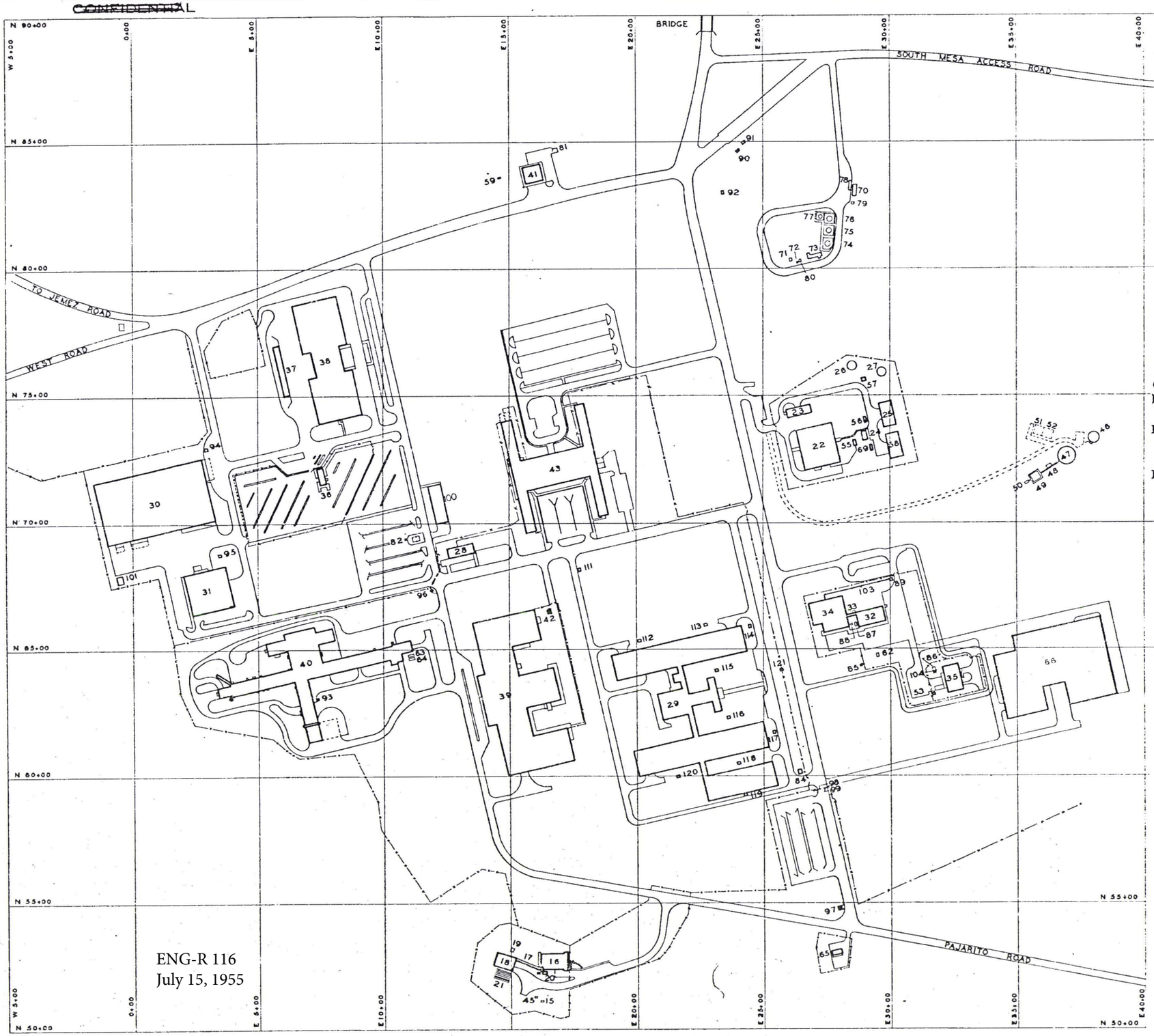
AUTHENTICATED FOR: MEDICINE, SAFETY, FIRE DEPT., SEC.

STRUCTURE LOCATION PLAN
TA-3 SOUTH MESA SITE

CHECKED JAE RECOMMENDED [illegible] APPROVED [illegible]
DRAWN LC. WINKS DATE 4-1-54 DRAWING NO. ENG-R 115
SCALE 1" = 200' SHEET 1 OF 1

ENG-R 115
April 1, 1954
Revised Status: July 1, 1954

~~CONFIDENTIAL~~



ENG-R 116
July 15, 1955

~~OFFICIAL USE ONLY~~

Classification changed to ~~UNCLASSIFIED~~

by authority of the U. S. Atomic Energy Commission,

Per P. F. BELCHER (Person authorizing change in classification) MAY 31 1957 (Date)

By J. L. Montoya (Signature of person making the change, and date) JUN 13 1957

~~This material contains information affecting the national defense of the United States within the meaning of the espionage laws Title 18, U. S. C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.~~

~~CONFIDENTIAL~~

PUBLICLY RELEASABLE
LANL Classification Group
Dan Reddy 9/6/07

1-1118781

NO.	DATE	REVISIONS	BY	CHKD	ENGR	ENG O.C.
7	7-15-55	REDRAWN DRAWING NO. ENG-R 85 CHANGED TO ENG-R 85 AND ENG-R 115	NOB	JASPER		

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

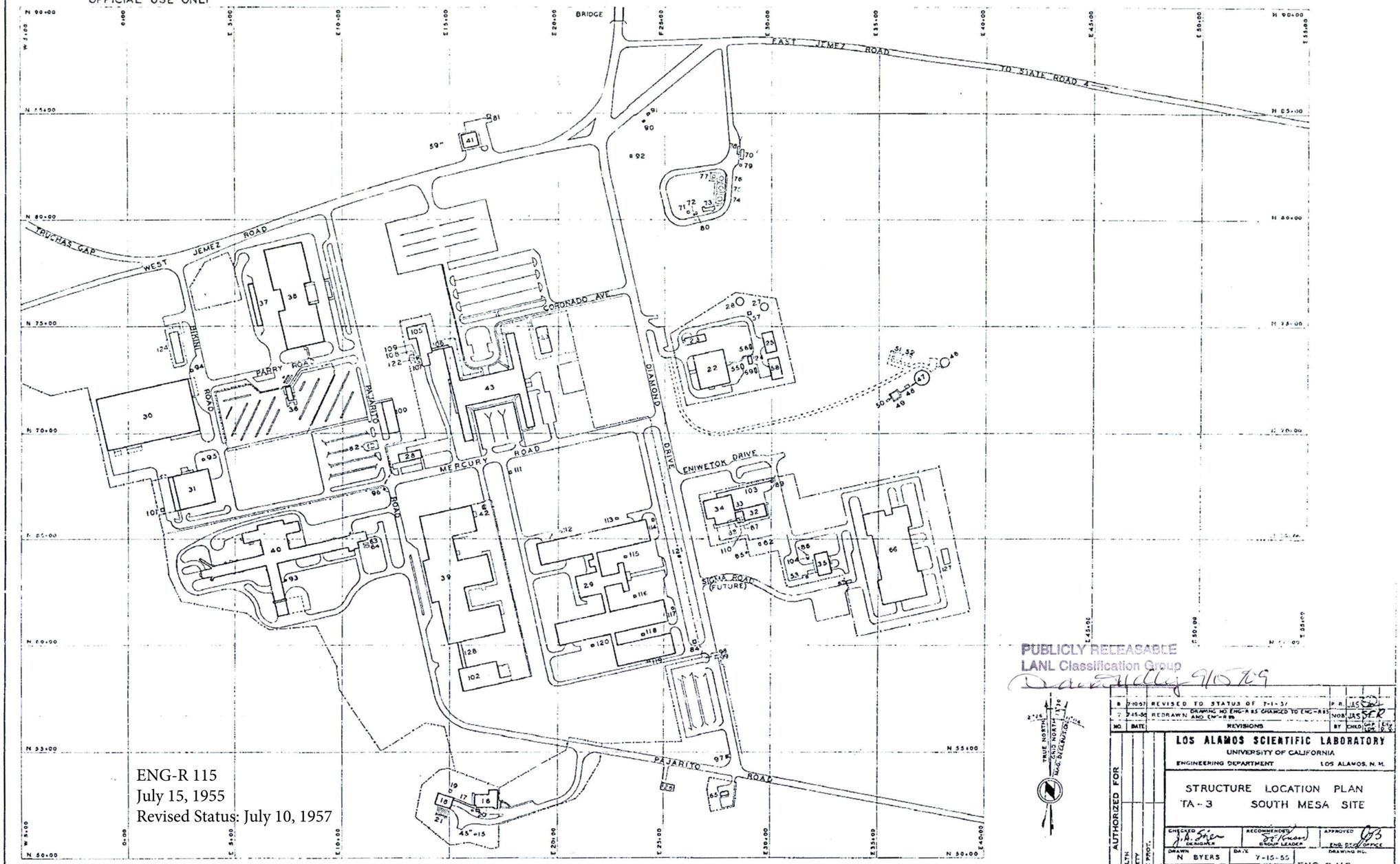
LOS ALAMOS SCIENTIFIC LABORATORY
UNIVERSITY OF CALIFORNIA
ENGINEERING DEPARTMENT LOS ALAMOS, N. M.

STRUCTURE LOCATION PLAN
TA - 3 SOUTH MESA SITE

CHECKED	RECOMMENDED	APPROVED
J. A. Sizer DESIGNER	GROUP LEADER	ENG. DEPT. OFFICE

DRAWN	DATE	DRAWING NO.
N BYERS	7-15-55	ENG-R 116
SCALE 1" = 200'	SHEET 2 OF 2	

OFFICIAL USE ONLY



ENG-R 115
July 15, 1955
Revised Status: July 10, 1957

PUBLICLY RELEASABLE
LANL Classification Group
Date 9/15/09

NO.	DATE	REVISIONS	BY	CHKD	SUP'R	ENG'G
8	7-1957	REVISED TO STATUS OF 7-1-57	P.R.	JAS		
7	7-15-55	REDRAWN AND DRAWING NO ENG-R 85 CHANGED TO ENG-R 115	NOB	JAS	SER	

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

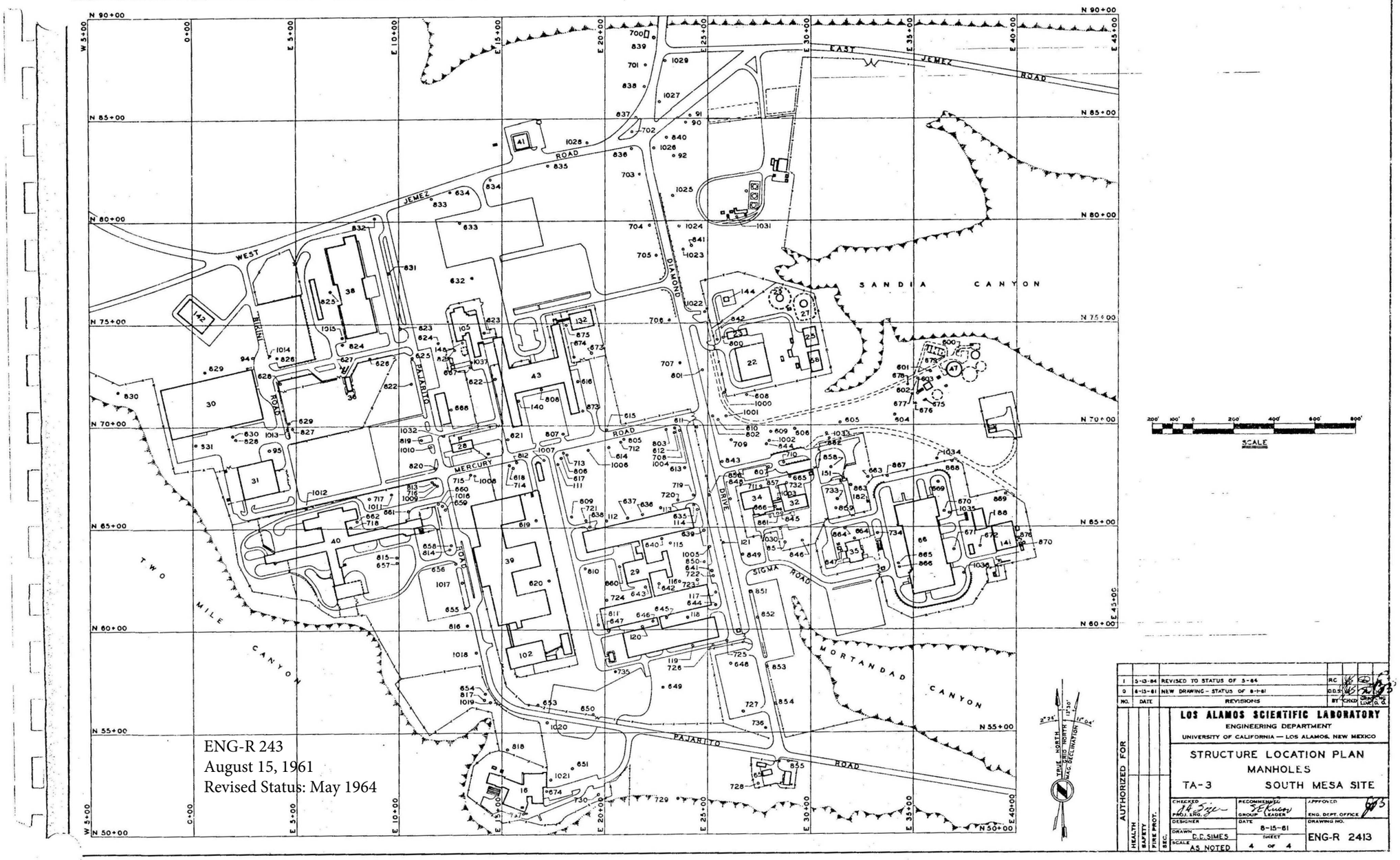
LOS ALAMOS SCIENTIFIC LABORATORY
UNIVERSITY OF CALIFORNIA
ENGINEERING DEPARTMENT — LOS ALAMOS, N. M.

STRUCTURE LOCATION PLAN
TA-3 SOUTH MESA SITE

CHECKED	RECOMMENDED	APPROVED
J.A. Sier, DESIGNER	S.E. Rhea, GROUP LEADER	ENG. DEPT. OFFICE

DRAWN N BYERS — DATE 7-15-55 — SCALE 1" = 200' — SHEET 2 of 2 — DRAWING NO. ENG-R 118

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ENG-R 243
August 15, 1961
Revised Status: May 1964

NO.	DATE	REVISIONS	BY	CHK'D	GROUP LDR.	PROJ. ENGR.
1	5-13-64	REVISED TO STATUS OF 5-64	RC			
0	8-15-61	NEW DRAWING - STATUS OF 8-1-61	DDS			

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

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ENGINEERING DEPARTMENT
UNIVERSITY OF CALIFORNIA — LOS ALAMOS, NEW MEXICO

STRUCTURE LOCATION PLAN
MANHOLES
TA-3 SOUTH MESA SITE

CHECKED PROJ. ENGR.	RECOMMENDED GROUP LEADER J.E. Rieger	APPROVED ENG. DEPT. OFFICE	
DESIGNER	DATE 8-15-61	DRAWING NO. ENG-R 2413	
DRAWN C.D. SIMES	SHEET 4 OF 4		
SCALE AS NOTED			



ENG-R 5103
September 2, 1970
Revised Status: September 13, 1977

REVIEWER M. A. Linke
CLASS U DATE 9/27/77

NO.	DATE	REVISIONS	BY	CHKD	GRP	D.O.	GRP ENGR LDR	D.O.
26	9-13-77	REVISED TO STATUS OF 9-13-77 REVISED DWG. NO. (FORMERLY R2414)	M.N.					
25	10-9-75	REVISED TO STATUS OF 10-9-75	B.H.					
24	9-11-74	REVISED PER ENG. DWG. 42189	B.H.					
23	9-26-74	REMOVED STRS. NOS. 347, 348, 349 & 350 REPLACED WITH NO. 404	B.H.					
22	7-26-74	REVISED TO STATUS OF 7-26-74	B.H.					
21	7-23-73	REVISED TO STATUS OF 7-23-73	DAD					
20	12-29-72	REVISED TO STATUS OF 12-29-72	DAD					
19	9-19-72	REVISED TO STATUS OF 9-19-72	CRA					
18	8-11-71	REVISED TO STATUS OF 8-11-71	DAD					
17	12-11-70	REDRAWN & REVISED TO STATUS OF 12-11-70	RHS					

THIS JOB MUST BE INSPECTED AND ANY CHANGES APPROVED BY ENG-4 PHONE

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engineering department
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AUTHORIZED FOR
SECURITY
SAFETY
HEALTH
FIRE PROT.
DIVISION
GROUP
ENG-5
SCALE AS SHOWN

STRUCTURE LOCATION PLAN

TA-3 SOUTH MESA SITE

SUBMITTED	APPROVED	APPROVED
PROJ. ENGR.	ENGR. GROUP LEADER	ENGR. DIV. OFFICE
CHECKED BENNETT	CA BA	DATE 9-2-70 SHEET NO. 6
DESIGNED	LAB JOB NUMBER	DRAWING NO.
DRAWN SUMMERS		ENG-R 5103



ENG-R 5103
September 2, 1970
Revised Status: January 11, 1982

REVIEWER Brand
CLASS U DATE 1-20-82

200' 100' 0 200' 400' 600' 800'
SCALE

NO.	DATE	REVISIONS	BY	CHKD	GRP	O.D.	ELEC	PIPING	LDR.	D.D.
27	1-11-82	REVISED TO STATUS OF 1-11-82	B.D.							
26	9-13-77	REVISED TO STATUS OF 9-13-77 REVISED DWG NO. (FORMERLY R2414)	M.M.							
25	10-9-75	REVISED TO STATUS OF 10-9-75	B.H.							
24	1-11-74	REVISED PER ENG. DWG 42189	B.H.							
23	9-26-74	REMOVED STRS. NOS. 347, 348, 349 & 350 REPLACED WITH NO. 404	B.H.							
22	7-26-74	REVISED TO STATUS OF 7-26-74	B.H.							
21	7-23-73	REVISED TO STATUS OF 7-23-73	DAD							
20	12-29-72	REVISED TO STATUS OF 12-29-72	DAD							
19	9-19-72	REVISED TO STATUS OF 9-19-72	CRA							
18	8-11-71	REVISED TO STATUS OF 8-11-71	DAD							
17	12-11-70	REDRAWN & REVISED TO STATUS OF 12-11-70	RHS							

THIS JOB MUST BE INSPECTED AND ANY CHANGES APPROVED BY ENG-4 PHONE

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FACILITIES AND ADMINISTRATIVE SUPPORT DIVISION
UNIVERSITY OF CALIFORNIA — LOS ALAMOS, NEW MEXICO

STRUCTURE LOCATION PLAN

TA-3 SOUTH MESA SITE

SUBMITTED: PROJ. ENGR.	APPROVED: ENGR. GROUP LEADER	APPROVED: ENGR. DIV. OFFICE	
CHECKED Benson H	CA	BA	DATE 9-2-70
DESIGNED	LAB JOB NUMBER		SHEET NO. 6
DRAWN SUMMERS			DRAWING NO. ENG-R 5103



ENG-R 5103
June 30, 1983

1" = 200'

200' 100' 0 200' 400' 600' 800'

GRAPHIC SCALE

REV	DATE	REVISION	BY	CKD	APP
28	6-30-83	REVISED TITLE BLOCK & DWG. TO STATUS OF 6-15-83	JMD		

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

FACILITIES ENGINEERING DIVISION

STRUCTURE LOCATION PLAN

SEC CLASSIFICATION: CLASS U; REVIEWER Goodwin; DATE 12-16-83

TA-3 SOUTH MESA SITE

SUBMITTED	RECOMMENDED	APPROVED
Jack Rogers	Dave Rogo	
DRAWN J.M. DONAHOE	DATE 6-30-83	SHEET NO 9 OF 12
CHECKED		DRAWING NO ENG-R 5103

MERCURY ROAD

PAJARITO ROAD

PAJARITO CANYON

DIAMOND DRIVE

MATCH POINT

PARKING AREA

40 494 215 39 409 422 218 16 102 29 216 410 391 316

1269 1517 1541 1540 1519 406 1507 1506 1516 206 214 228 1220 1230 322 254 123 255 253 1523 1542 1512 1508 1530 460 462 467 461 1533 1534 473 472 1578 1564 497 128 164 1511 1520 1527 1615 1537 468 466 470 440 1353 474 1539 495 496 190 208 21 189 191 213 386 477 1505 1504 1514 1538 1228 1229 1522 1513 177 1503 65 1502 154 84 424 1561 1549 1550 330 369 1579 1531 1546 1648 1610 1614 456 324 42 149 97 1642 373

A B C D E F

5 6 7 8 9

ENG-R5103
November 25, 1985

FEET 0 50 100 200 300
METERS 0 25 50 75 100

GRAPHIC SCALE

SHT. NO. 10	SHT. NO. 12
SHT. NO. 11	SHT. NO. 13

MAIN BUILDINGS

SHT. NO. 14	SHT. NO. 16
SHT. NO. 15	SHT. NO. 17

UTILITY STRUCTURES

TA-3 MAP GUIDE

REV.	DATE	REVISION	BY	CKD.	APP
29	12-27-85	REDRAWN & REVISED TO STATUS OF 11-25-85	NB		

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Los Alamos National Laboratory
Los Alamos, New Mex. 87545

FACILITIES ENGINEERING DIVISION

STRUCTURE LOCATION PLAN
MAIN BUILDINGS
TA-3 SOUTH MESA SITE

SEC. CLASSIFICATION
CLASS
REVIEWER
DATE

SUBMITTED	RECOMMENDED	APPROVED

DRAWN N. BYERS
CHECKED
DATE 12-27-85
SHEET NO. 11 OF 17
DRAWING NO. ENG-R5103

SHEET NO. 3

SHEET NO. 4

SCALE 1: 2400.

200 0 200 400 FEET

N

EAST JEMEZ ROAD

WEST JEMEZ ROAD

MERCURY ROAD

DIAMOND DRIVE

ENTRANCE DRIVE

PAJARITO ROAD

TA-61

TA-60

TA-3

TA-59

41 38 261 207 1498 142 105 132 200 287 43 30 31 216 409 40 39 29 102 16 22 223 34 32 35 66 141 70 271

SHEET NO. 5

SHEET NO. 6

REV	DATE	REVISION	BY	CKD.	APP.
32	09-29-89	REDRAWN & REVISED TO STATUS OF 09-27-89	JM	BL	CWS
31	05-23-89	REDRAWN & REVISED TO STATUS OF 05-17-89	JM	NB	CWS
30	02-21-89	REDRAWN & REVISED TO STATUS OF 02-15-89	JM	NB	CWS

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Los Alamos National Laboratory
Los Alamos, New Mexico 87545

Los Alamos

FACILITIES ENGINEERING DIVISION

STRUCTURE LOCATION MAP

SHEET KEY MAP

TA-3 SOUTH MESA SITE

SEC. CLASSIFICATION: CLASS U; REVIEWER J. Cooley; DATE 5/16/89

SUBMITTED	RECOMMENDED	APPROVED
DRAWN J. MORK	DATE 02-21-89	SHEET NO. 2 OF 6
CHECKED N. BYERS		DRAWING NO. ENG-R 5103

ENG-R 5103
February 21, 1989
Revised Status: September 27, 1989

AUTOGIS

ENG-R 5134
April 10, 1991

SHEET 3 | SHEET 4
SHEET 5 | SHEET 6

TA-3 MAP GUIDE

SCALE 1: 1320.

N

110 0 110 220 FEET

NO.	DATE	CLASS REV.	REVISIONS	DRN	DES	CHKD	REL	SUB	REC	APP

FACILITIES ENGINEERING DIVISION

STRUCTURE LOCATION MAP
TA-03
SOUTH MESA SITE
BLDG.

DRAWN	J. MORK
DESIGN	
CHECKED	B. COMER
RELEASED	B. COMER
DATE	04-10-91

SUBMITTED | RECOMMENDED | APPROVED

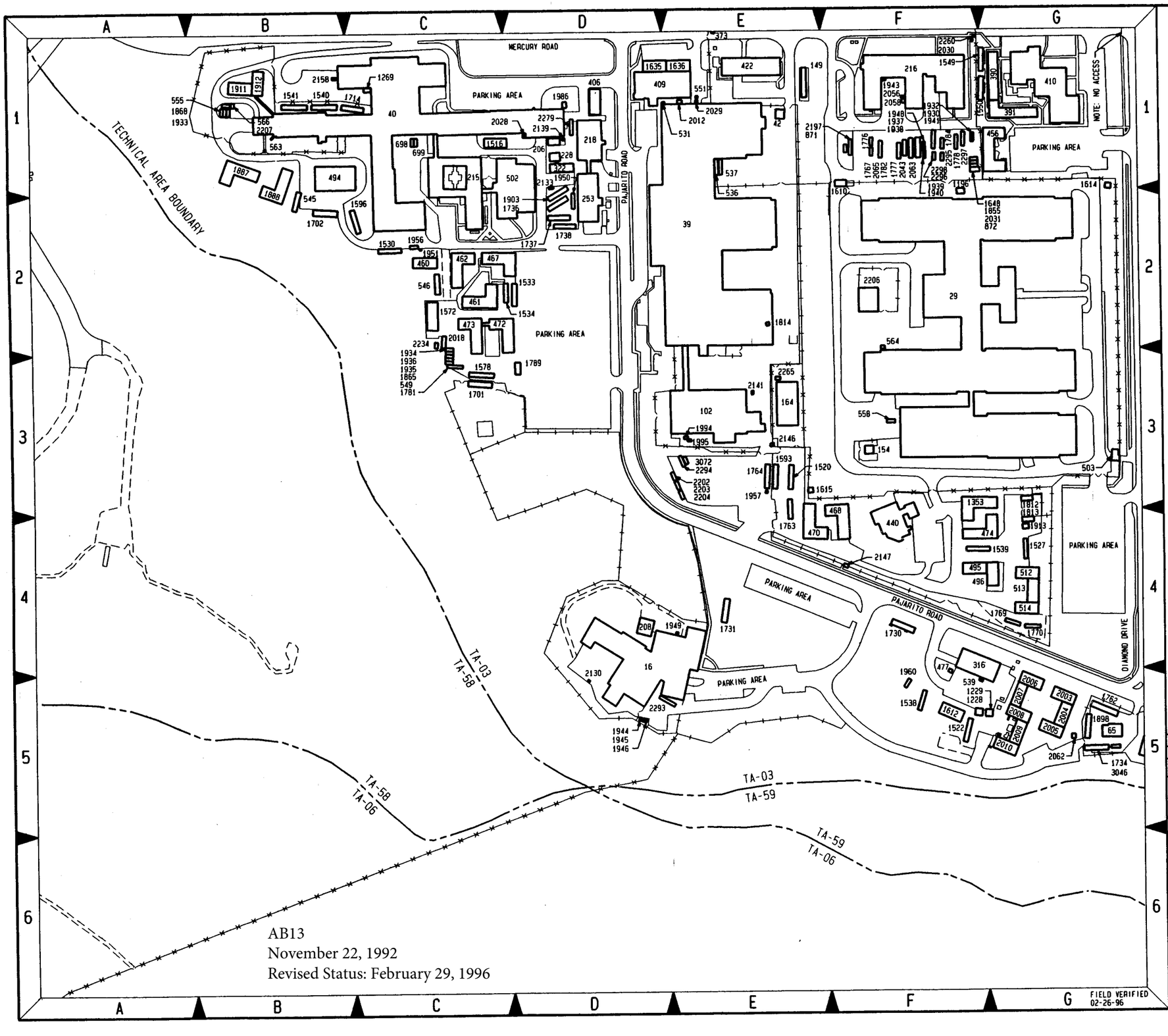
Los Alamos — Los Alamos National Laboratory, Los Alamos, New Mexico 87545

SHEET 5 OF 6

CLASSIFICATION U REVIEWER DATE 4-15-91

LAB JOB NO. | DRAWING NO. ENG-R 5134 | REV. 34

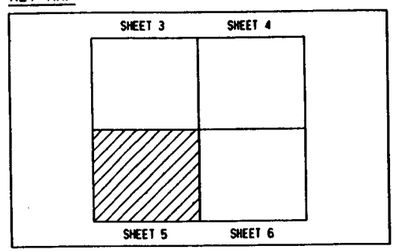
AUTOGIS



AB13
November 22, 1992
Revised Status: February 29, 1996

FIELD VERIFIED 02-26-96

KEY MAP



N

SCALE: 1:1320

110 0 110 220

FEET

NO	DATE	CLASS REV	DESCRIPTION	DWN	VER	CHKD	SUB	APP
9	02-29-96		REVISED TO STATUS OF 02-26-96	JAC	JAC	JPM	JAF	FCT
8	01-31-96		REVISED TO STATUS OF 01-25-96	JAC	JAC	JPM	JAF	FCT
7	11-30-95		REVISED TO STATUS OF 11-20-95	JPM	JPM	HMS	JAF	FCT

JOHNSON CONTROLS

AS-BUILT STRUCTURE LOCATION MAPS

TA-03

SOUTH MESA SITE

DRAWN J. HOWE

VERIFIED J. HOWE

CHECKED H. SALAZAR

DATE 11-22-92

SUBMITTED JERRY FORTE

APPROVED FOR RELEASE FRED THOMPSON 5/3/96

Los Alamos National Laboratory
Los Alamos, New Mexico 87545

SHEET 5 OF 6

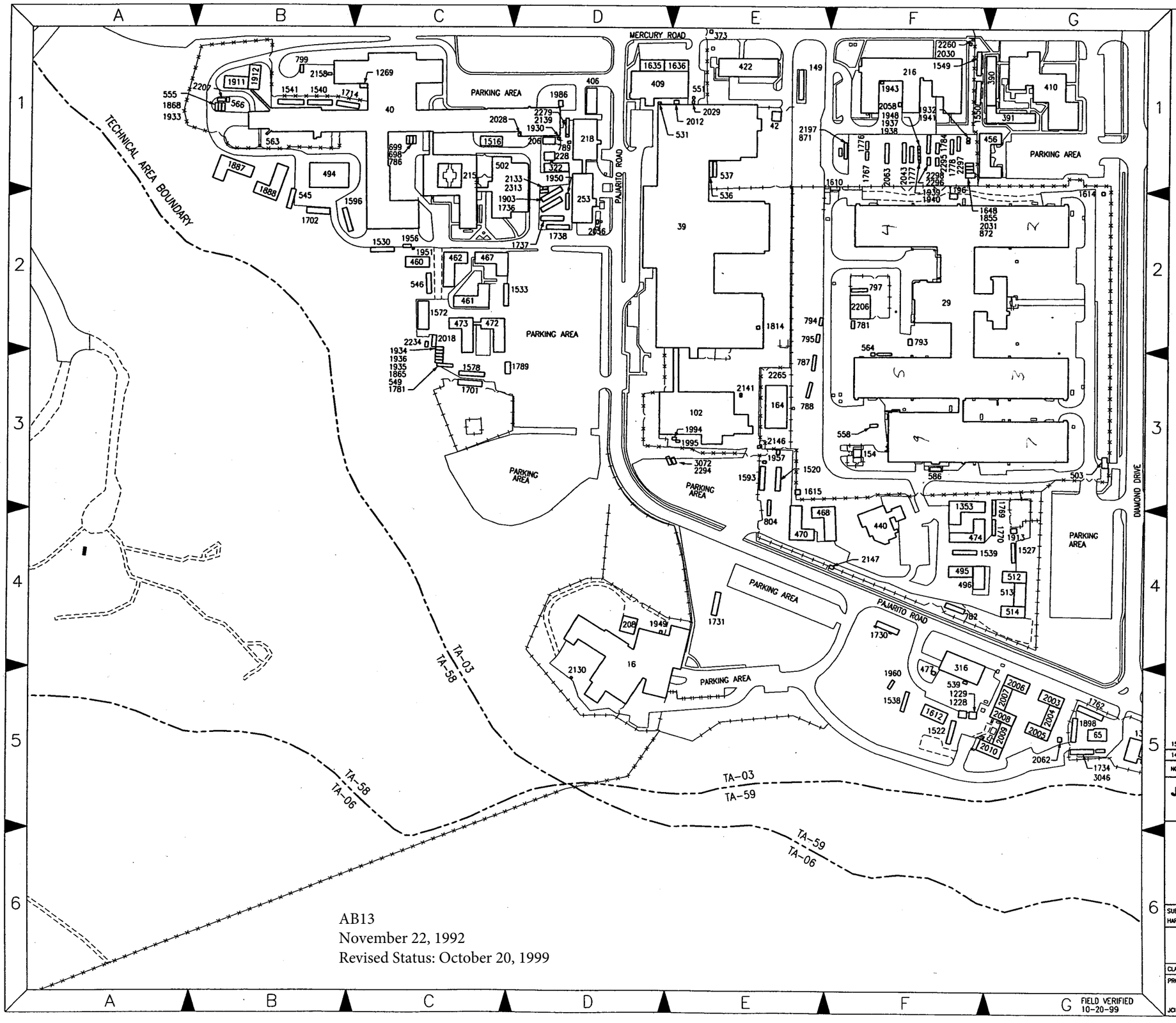
CLASSIFICATION U REVIEWER H. SALAZAR DATE 5-2-96

PROJECT ID 11952

DRAWING NO AB13

REV 9

JCI NO 91-020



AB13
November 22, 1992
Revised Status: October 20, 1999

NO	DATE	CLASS REV	DESCRIPTION	DWN	VER	CHKD	SUB	APP
15	10-20-99		REVISED TO STATUS OF 10-20-99	SADH	SAD	CES	HMS	LAB
14	03-16-98		REVISED TO STATUS OF 03-02-98	AFV	AFV	HMS	HMS	LAB

Johnson Controls
Northern New Mexico

AS-BUILT STRUCTURE LOCATION MAPS

TA-03

SOUTH MESA SITE

DRAWN	J. MORK
VERIFIED	J. MORK
CHECKED	H. SALAZAR
DATE	11-22-92

SUBMITTED HAROLD SALAZAR

APPROVED FOR RELEASE LARRY BAYS

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

SHEET 5 OF 6

CLASSIFICATION U REVIEWER HAROLD SALAZAR DATE 11-16-99

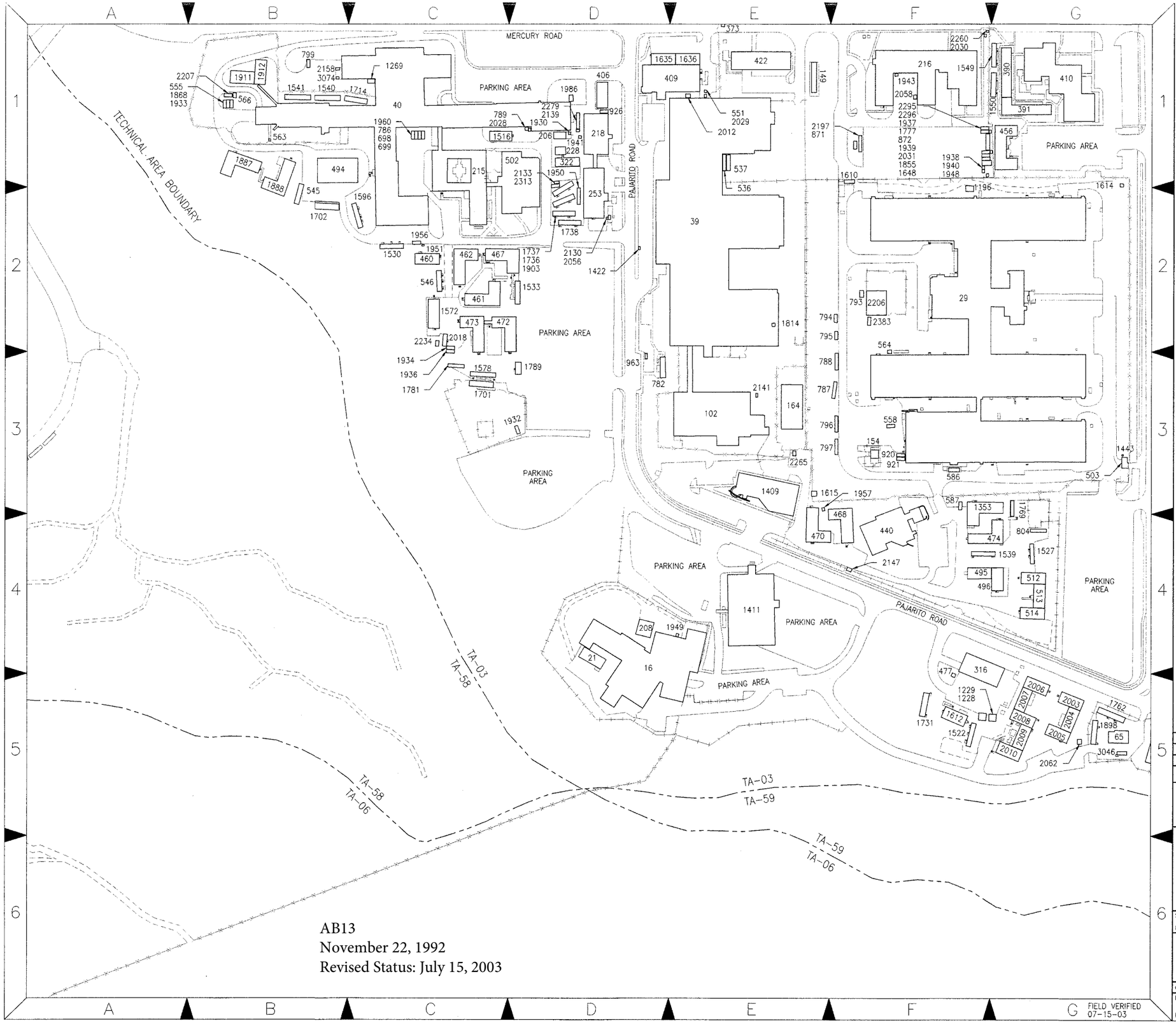
PROJECT ID 11952

DRAWING NO AB13

REV 15

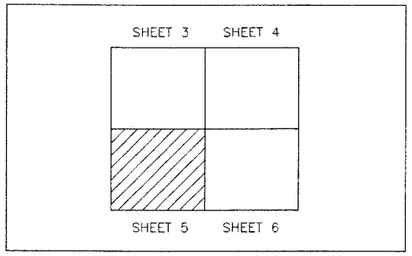
JCI NO 97-002

FIELD VERIFIED 10-20-99



AB13
November 22, 1992
Revised Status: July 15, 2003

KEY MAP



SCALE: 1:1320
110 0 110 220
FEET

N

NO	DATE	CLASS REV	DESCRIPTION	DWN	DES	CHKD	SUB	APP
23	07-15-03		REVISED TO STATUS OF 07-15-03	EIM	HPR	MEG	HMS	LAB
22	03-12-03		REVISED TO STATUS OF 03-12-03	HPR	HPR	MEG	HMS	LAB
21	09-25-02		REVISED TO STATUS OF 09-25-02	HPR	MEG	MEG	HMS	LAB
20	10-09-01		REVISED TO STATUS OF 10-09-01	JJP	MEG	RAG	HMS	LAB

KSL KBR • SHAW • LATA

AS-BUILT STRUCTURE LOCATION MAPS
SOUTH MESA SITE
TA-03

DRAWN	J. MORK
DESIGN	J. MORK
CHECKED	H. SALAZAR
DATE	11-22-92

SUBMITTED: HAROLD SALAZAR
APPROVED FOR RELEASE BY: LARRY BAYS

Los Alamos NATIONAL LABORATORY
P.O. Box 1663
Los Alamos, New Mexico 87545

SHEET 5 OF 6

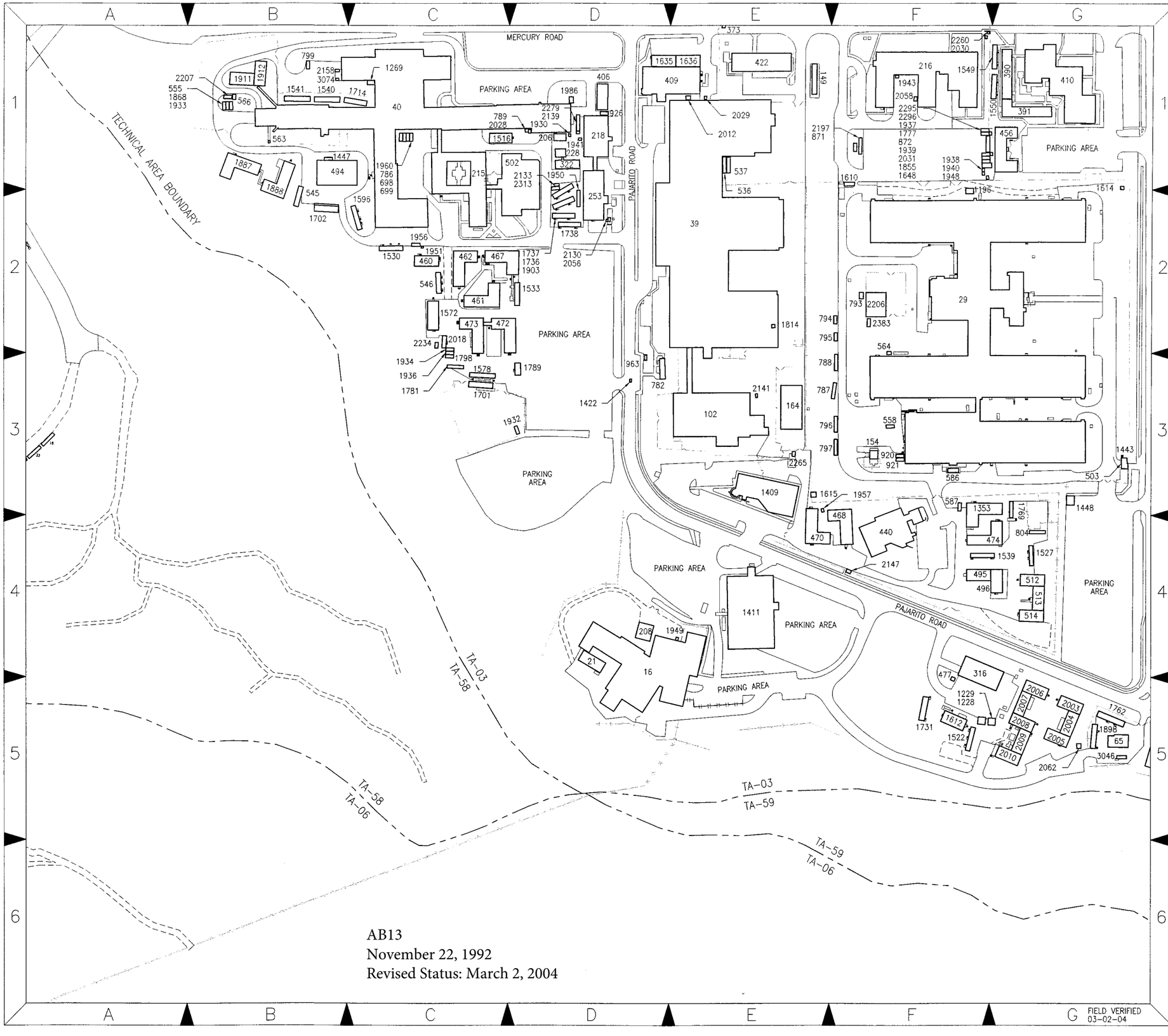
CLASSIFICATION U
REVIEWER H. SALAZAR
DATE

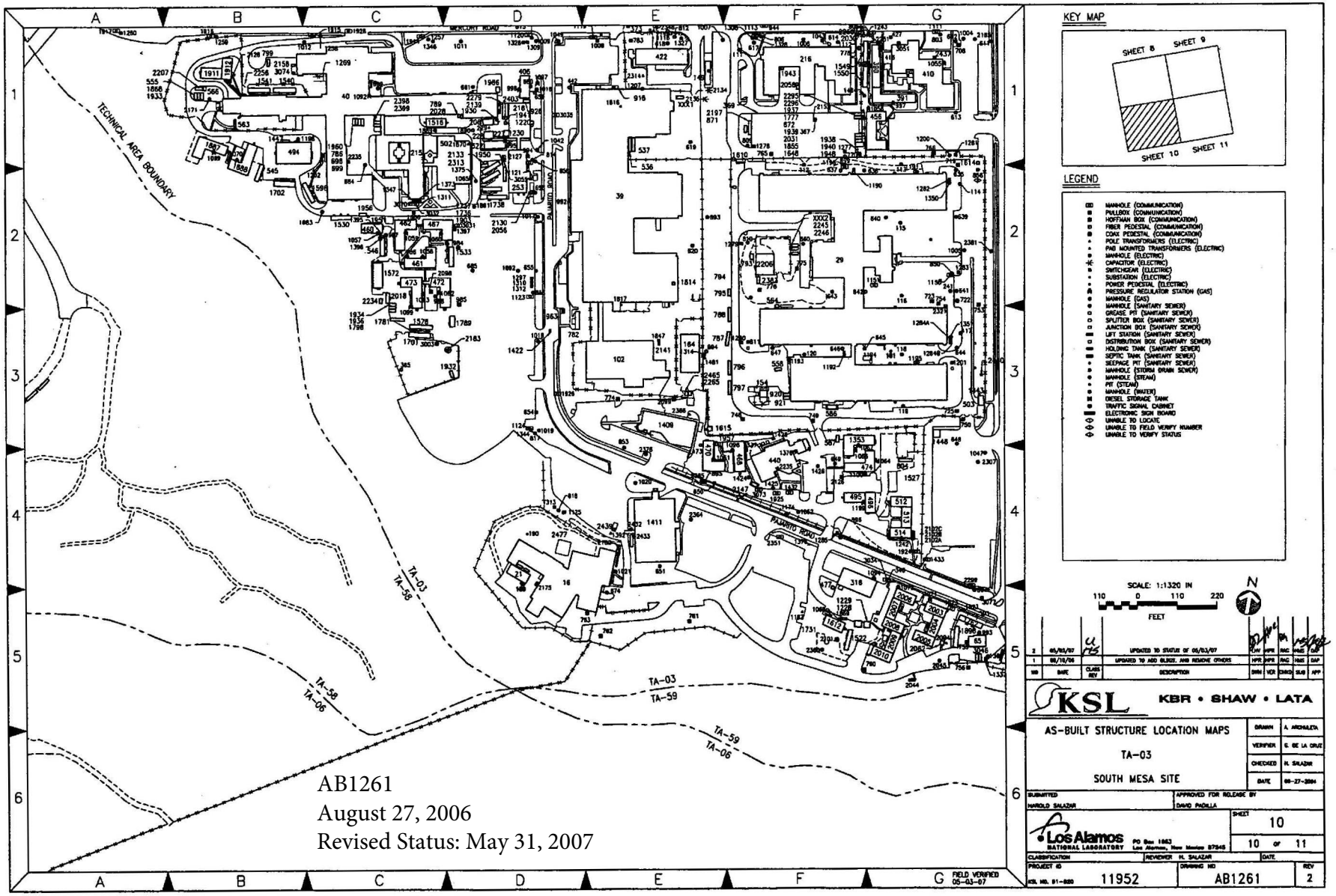
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KSL NO. 91-020 11952

DRAWING NO AB13

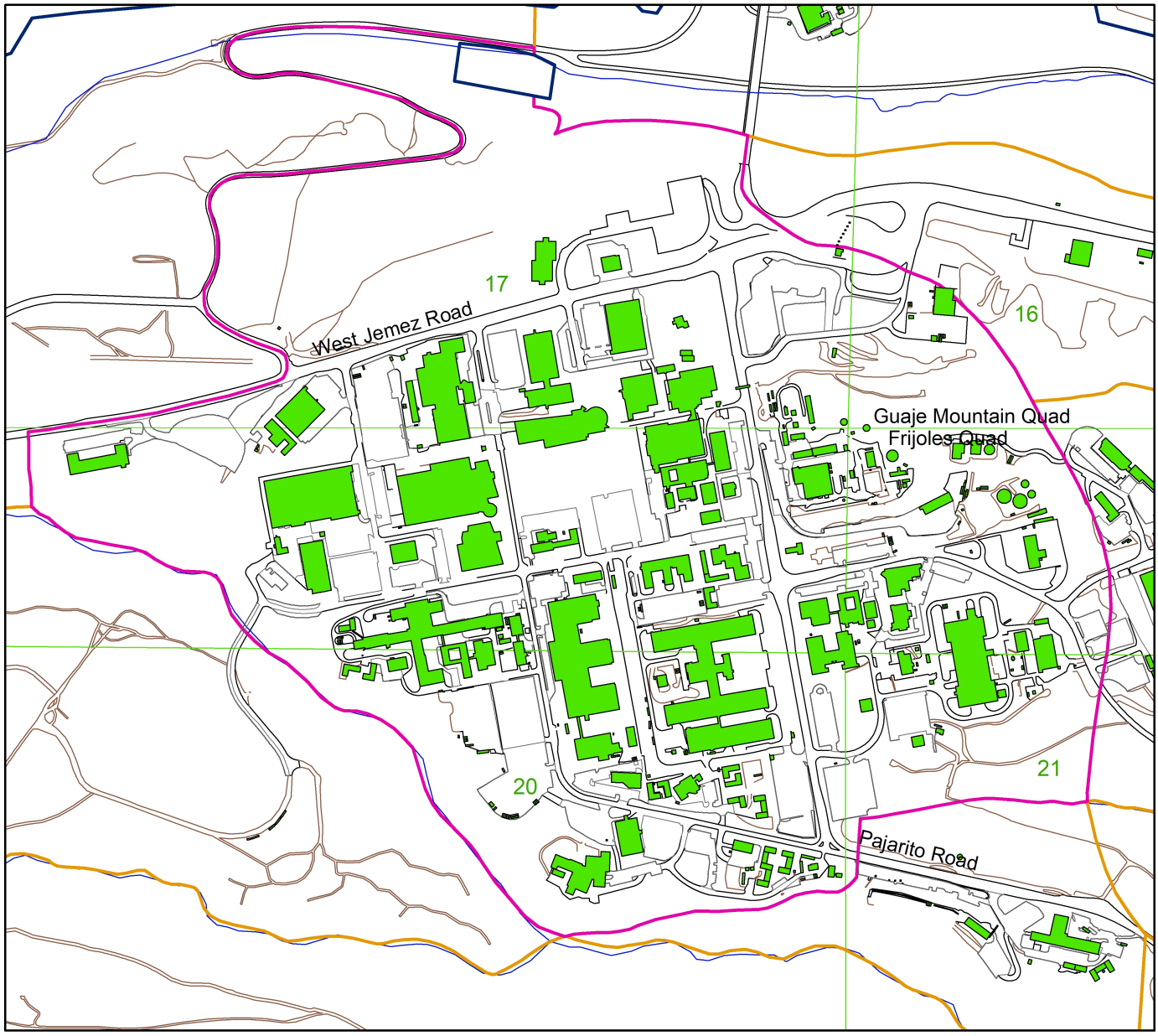
REV 23

FIELD VERIFIED 07-15-03


A
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MERCURY ROAD
PARKING AREA
TECHNICAL AREA BOUNDARY
PAJARITO ROAD
PARKING AREA
PARKING AREA
PARKING AREA
PARKING AREA
PARKING AREA
PARKING AREA
PARKING AREA
PARKING AREA
PAJARITO ROAD
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AB1261
August 27, 2006
Revised Status: May 31, 2007



1:10,000

Los Alamos
National Laboratory

Resources Management Team
EPC-ES Environmental
Stewardship Group

500 250 0 500 1,000 Feet

125 62.5 0 125 250 375 500 Meters

N
W E
S

- Buildings
- Technical Area 3
- Technical Areas
- LANL Boundary
- Drainage
- Township, Range, Section
- USGS 7.5 Minute Quad
- Dirt Roads
- Paved Roads

TA-3
October 2018

Appendix D.

ARTIFACT LIST

Ion Beam Facility Historical Artifact List

Appendix D, Section 2, B.2, of the *Programmatic Agreement among the U.S. Department of Energy, National Nuclear Security Administration, Los Alamos Field Office, the New Mexico State Historic Preservation Office, and the Advisory Council on Historic Preservation Concerning Management of Historic Properties of Los Alamos National Laboratory, Los Alamos, New Mexico (PA),* states that historically significant equipment and artifacts associated with historic properties will be identified and documented before removal or demolition, and curated before demolition. The Van de Graaff machines have been well documented elsewhere in this report and due to their size, are not likely to be curated in the future.

Items identified are directly associated with the control and operation of the Van de Graaff machines and the building. Artifacts are associated with the following dates, 1951 through early 2000s, the closing of the facility. In the future, items that will be curated will be selected based on importance and the availability of storage space. The following items have been identified and location information can be coordinated on the following floor plan maps.

Room 70

1. Chemical utility meters, 74" X 48", numerous dials, south wall at exit door.

Room 130

2. Control Panel tagged on desk
3. 2 Van De Graaff control panels with tags on west side of control panel, 18" wide X 12" tall (metal and plastic), attached with slotted screws
17. "Tandem Area Radiation" sign, 24" wide X 8" tall, plastic and metal.

Room 140

4. Vertical Area Radiation sign
5. Tag for control desk: "Console Van De Graaff" PN 94128
6. 2 schematic panels with tags on control panel
7. High Voltage Engineering plate

Room 160

8. 2 Control panels with tags, 10" wide X 20" wide steel control panel and 19" wide X 14" tall plastic sign with lights

Room 170

9. "Vertical Machine in Operation" sign

Vertical Accelerator Service Platform – First Floor

10. "Red Light Indicates Beam On Target" sign

Room 570 (5^{th} Floor of Vertical Accelerator)

11. "Magnet On" sign. Located on accelerator

12. “Gooser” person lift, 3’ X 3” basket with 20” sides, 48” to top of control mechanism. Lift provided access to the interior of the vertical Van de Graaff shells.
13. Volt meter. Has a tag

Room 62

14. Large line drawing leaning against the wall. This drawing has a partial picture frame attached to the bottom. Size is 24” tall X 114” wide.
15. “Tandem Accelerator in Operation” Just the cover plate, not the entire fixture. Plastic and metal, 24” wide X 8” tall.
16. Safety Switch. On wall near large blast door

Room 66

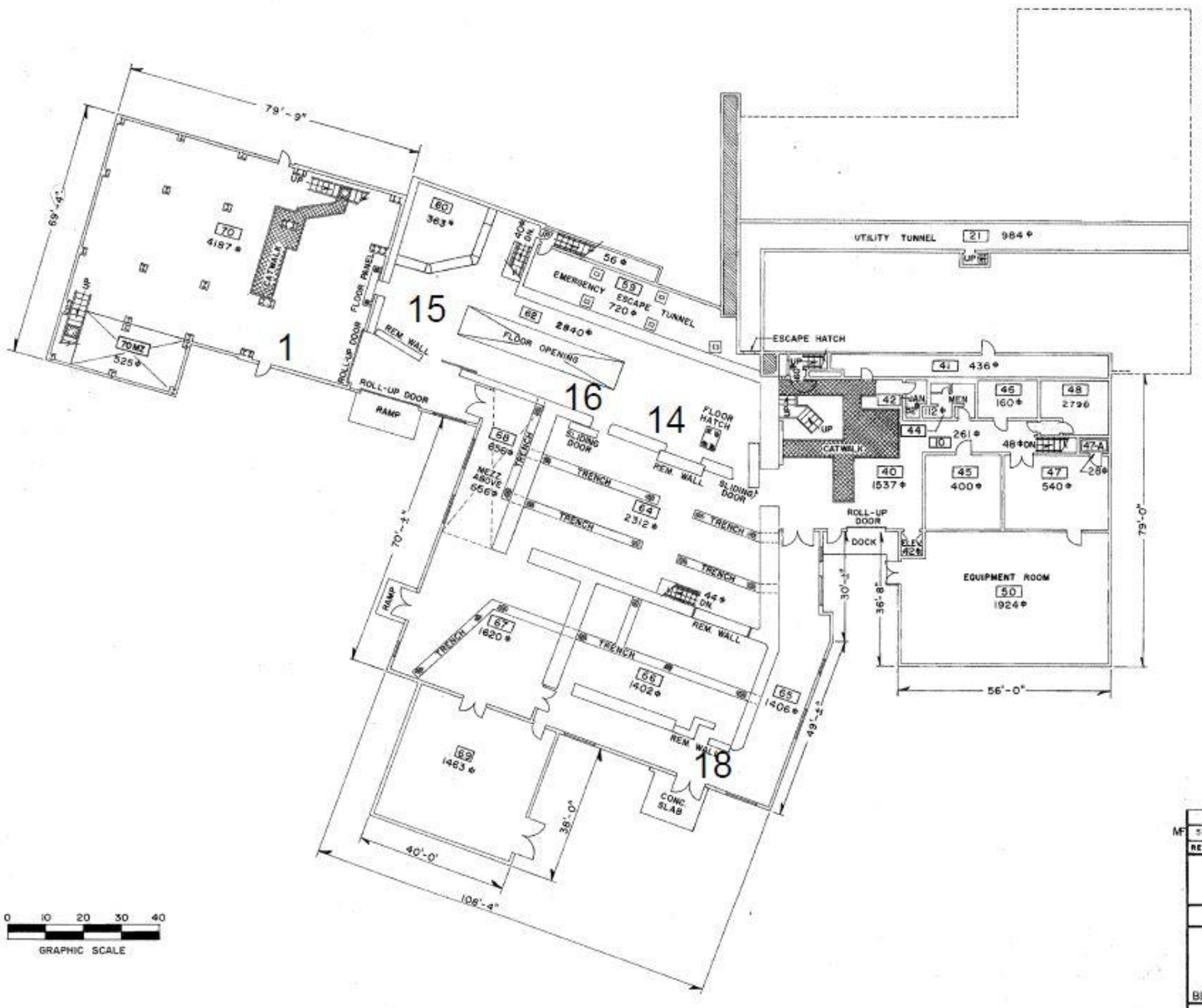
18. Humorous sign next to exit door, 13” wide X 10” tall

East entrance above door

19. Fallout Shelter Sign

Items Already Curated

1. Large sign from Tandem tank “Electrostatic Van de Graaff Accelerator, High Voltage Engineering Corporation”



1/16"=1'-0" 0 10 20 30 40
GRAPHIC SCALE

BASEMENT FLOOR TOTAL 25,153 S.F.

REV.	DATE	REVISION	BY	CKD.	APR
5	6-7-84	REVISED TO STATUS OF 6-7-84	HGN		

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

FACILITIES ENGINEERING DIVISION

VAN DE GRAAFF LABORATORY

BASEMENT FLOOR PLAN

SEC. CLASSIFICATION: CLASS. U
REVIEWER
DATE 6-8-84

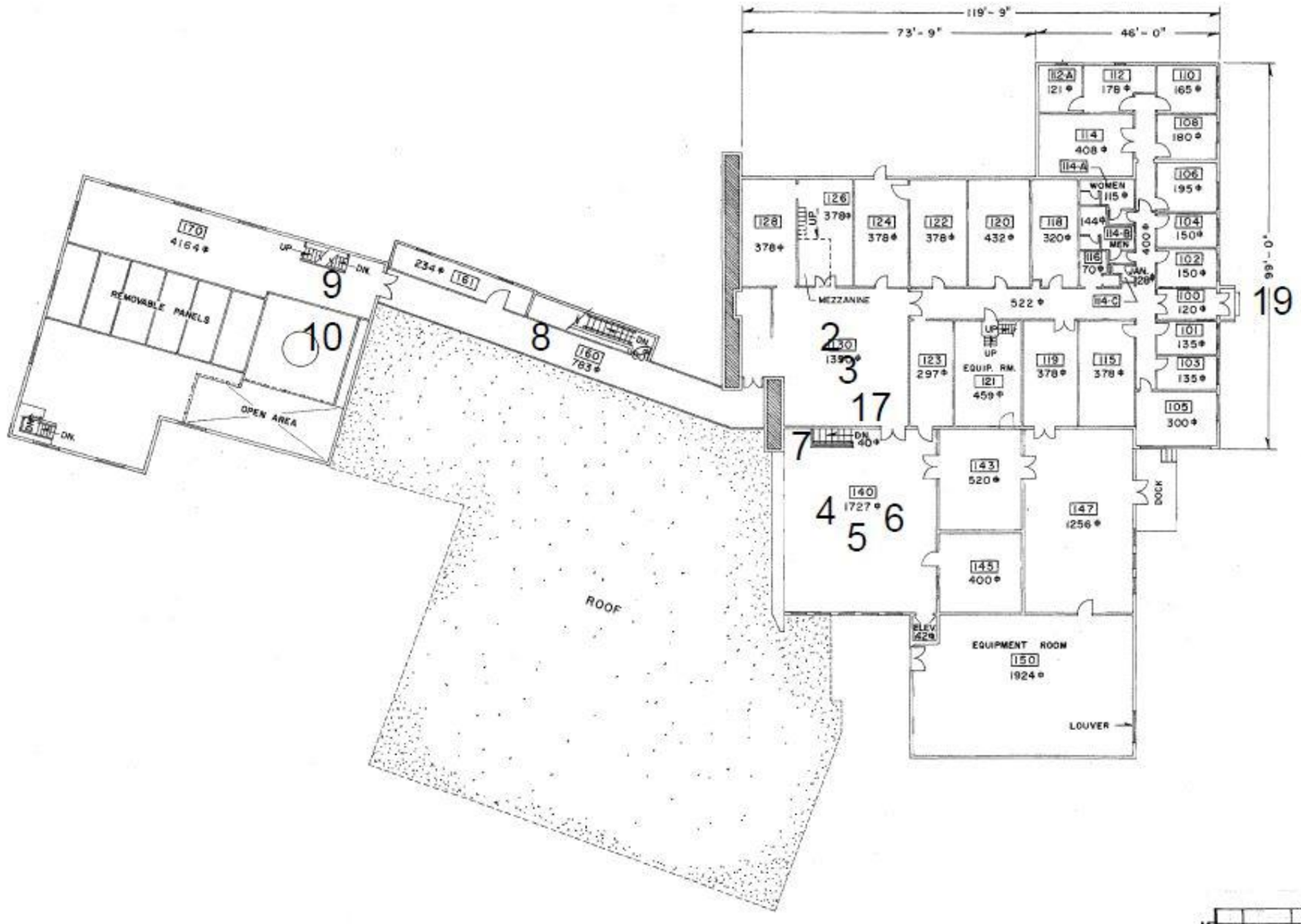
BLDG. SM-16 TA-3

SUBMITTED	RECOMMENDED	APPROVED
E. Trujillo	Dennis Ruge	

DRAWN	BREMER	DATE	SHEET NO.	DRAWING NO.
CHECKED	HGN	3-16-64	2 OF 5	ENG-R3391

INFO. SHOWN CURRENT AS OF _____ B.A. NO. _____ LAB. JOB NO. _____

18434 CLOTH—K. & E. CO., N. Y.—REG. U.S. PAT. OFF.



1/16" = 1'-0"

0 10 20 30 40 50

GRAPHIC SCALE

FIRST FLOOR TOTAL 19,812 S.F.

REV.	DATE	REVISION	BY	CKD.	APR.
3	6-7-84	REVISED TO STATUS OF 6-7-84	HBN		

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

FACILITIES ENGINEERING DIVISION

VAN DE GRAAFF LABORATORY

FIRST FLOOR PLAN

BLDG. SM-16 TA-3

SEC. CLASSIFICATION
CLASS. U
REVIEWER Gradassi
DATE 6.8.84

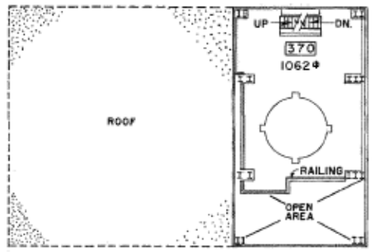
SUBMITTED	RECOMMENDED	APPROVED
E. Tardella	Dave Bruns	C.W. TEC Hoe

DRAWN BREMER
CHECKED Humble Hsu

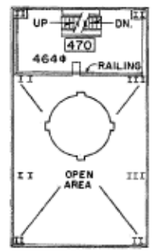
DATE 3-16-64
SHEET NO. 3 OF 5
DRAWING NO. ENG-R3392

INFO. SHOWN CURRENT AS OF _____ B.A. NO. _____ LAB. JOB NO. _____

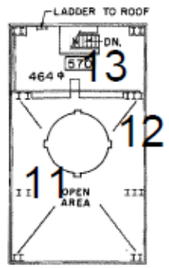
RECORD LOCATION TO VAULT



3RD FLOOR PLAN



4TH FLOOR PLAN



5TH FLOOR PLAN

1/16" = 1'-0"

0 10 20 30 40 50

GRAPHIC SCALE

SUB BASEMENT	FLOOR	TOTAL SQ. FT.	3000
BASEMENT	FLOOR	TOTAL SQ. FT.	25,153
FIRST	FLOOR	TOTAL SQ. FT.	19,812
SECOND	FLOOR	TOTAL SQ. FT.	2325
THIRD	FLOOR	TOTAL SQ. FT.	1062
FOURTH	FLOOR	TOTAL SQ. FT.	464
FIFTH	FLOOR	TOTAL SQ. FT.	464
		TOTAL SQ. FT.	52,280

REV.	DATE	REVISION	BY	CKD.	APP.
4	6-7-84	REVISED TO STATUS OF 6-7-84	H&N		

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

FACILITIES ENGINEERING DIVISION

VAN DE GRAAFF LABORATORY

3RD, 4TH & 5TH FLOOR PLAN

BLDG. SM-16 TA-3

SEC. CLASSIFICATION: CLASS. U; REVIEWER Smedley; DATE 6-8-84

SUBMITTED	RECOMMENDED	APPROVED
E Truyadle	Dawn Fox	W F Stanley

DRAWN	CHECKED	DATE	SHEET NO.	DRAWING NO.
BREMER	Hamilton H&N	3-17-84	5 OF 5	ENG-R 3394

INFO. SHOWN CURRENT AS OF _____ B.A. NO. _____ LAB. JOB NO. _____

RECEIVED LOGGED IN TO VAULTS REC'D ____ LOGGED ✓ IS VAULTED 6/8/84

116-64 CLOTH—K. & E. CO., N. Y.—REG. U.S. PAT. OFF.

Appendix E.

INTERVIEW INFORMATION

Interview

Interview Location: TA-03-0016, Interview and Walk-thru of the IBF

Interview Date: June 6, 2006

Interviewees: Hardekopf, Robert, Lloyd Hunt, D. Stafford

Interviewed by: Ellen McGehee, Los Alamos National Laboratory, Los Alamos, New Mexico

Interview media: Recording

Location of Media: Held at Los Alamos National Laboratory, Environmental Protection and Compliance Offices, TA-00-1331, Los Alamos, New Mexico

Appendix F.

LISTING OF DRAWINGS ON FILE AT LANL FOR BUILDING TA-3-16

Building Drawing List

TA	BLDG	PREFI	DRAWNUM	PAGE	REV	LOG_DATE	DOC_DATE	PROJID	DISC	TITLE
3	16	C	1966	76	8	12-May-53	3-Feb-48	188	M	ION BEAM FAC. (VAN DE GRAAFF), INNER COLUMN - LOWER MAIN PLATE
3	16	C	1964	74	5	12-May-53	14-Feb-48	188	M	ION BEAM FAC., (VAN DE GRAAFF), INNER COLUMN - INNER PLATE
3	16	C	1963	73	6	12-May-53	16-Feb-48	188	M	ION BEAM FAC. (VAN DE GRAAFF), INNER COLUMN - UPPER MAIN PLATE
3	16	C	1965	75	3	12-May-53	18-Feb-48	188	M	ION BEAM FAC. (VAN DE GRAAFF), INNER COLUMN - KEY PLATE
3	16	C	1962	72	4	12-May-53	3-Mar-48	188	M	ION BEAM FAC. (VAN DE GRAAFF), INNER COLUMN SECTION
3	16	C	1935	45	5	12-May-53	21-Mar-48	188	E	ION BEAM FAC., (VAN DE GRAAFF), FLOOR PLAN, ELECTRICAL
3	16	C	1967	77	9	12-May-53	9-Apr-48	188	M	ION BEAM FAC., (VAN DE GRAAFF), HIGH-POT. BASE PLATE
3	16	C	1904	15	2	12-May-53	22-Sep-48	188	A	12 MEV VAN DE GRAAFF ACCELERATOR BLDG. & LAB, FRAMING ELEVATIONS COL. LINES
3	16	C	1901	12	1	12-May-53	22-Sep-48	188	A	12 MEV VAN DE GRAAFF ACCELERATOR BLDG. & LAB, INNER FRAME ELEVATIONS
3	16	C	1903	14	1	12-May-53	22-Sep-48	188	S	12 MEV VAN DE GRAAFF ACCELERATOR BLDG. & LAB, TA-3. FRAMING ELEVATION COL. LINE
3	16	C	1907	18	1	12-May-53	22-Sep-48	188	S	12 MEV VAN DE GRAAFF ACCELERATOR BLDG. & LAB, TA-3. GIRT FRAMING ELE. COL. LINE
3	16	C	1906	17	2	12-May-53	22-Sep-48	188	S	12 MEV VAN DE GRAAFF ACCELERATOR BLDG. & LAB, TA-3. GIRT FRAMING ELEV. COL. LIN
3	16	C	1905	16	1	12-May-53	22-Sep-48	188	S	12 MEV VAN DE GRAAFF ACCELERATOR BLDG. & LAB, TA-3. GIRT FRAMING ELEVATION COL.
3	16	C	1908	19	1	12-May-53	22-Sep-48	188	S	12 MEV VAN DE GRAAFF ACCELERATOR BLDG. & LAB, TA-3. TRUSSES AT ELEV. 36-0 COL.
3	16	C	1937	47	4	12-May-53	22-Sep-48	188	E	ION BEAM FAC., (VAN DE GRAAFF), POWER & LIGHTING, SECTIONS
3	16	C	1950	60	1	12-May-53	30-Nov-48	188	M	ION BEAM FAC., (VAN DE GRAAFF), TRACK, GUIDE WHEEL ASSEM. PRESSURE VESSEL
3	16	C	1949	59	3	12-May-53	1-Dec-48	188	M	ION BEAM FAC. (VAN DE GRAAFF), INSPECTION PLATFORM
3	16	C	1948	58	1	12-May-53	2-Dec-48	188	M	ION BEAM FAC. (VAN DE GRAAFF), MAGNET STAND
3	16	C	1953	63	1	12-May-53	2-Dec-48	188	M	ION BEAM FAC., (VAN DE GRAAFF), HOIST ASSEMBLY FOR SERVICE PLATEFORM
3	16	C	1952	62	3	12-May-53	8-Dec-48	188	S	ION BEAM FAC., (VAN DE GRAAFF), ASSEMBLY OF SERVICE PLATFORM
3	16	C	1954	64	1	12-May-53	8-Dec-48	188	M	ION BEAM FAC., (VAN DE GRAAFF), HYDRAULIC LAYOUT FOR SERVICE PLATEFORM
3	16	C	1955	65	1	12-May-53	10-Dec-48	188	E	ION BEAM FAC. (VAN DE GRAAFF), ELECTROSTATIC PRESSURE VESSEL
3	16	C	1957	67	2	12-May-53	10-Dec-48	188	S	ION BEAM FAC. (VAN DE GRAAFF), CAPACITOR SHELL AND SKIRT SHIELD
3	16	C	1956	66	1	12-May-53	10-Dec-48	188	S	ION BEAM FAC.(VAN DE GRAAFF), GAS STORAGE TANKS
3	16	C	1951	61	1	12-May-53	10-Dec-48	188	A	ION BEAM FAC., (VAN DE GRAAFF), GEN. ARRANGEMENT OF SERVICE PLATFORM
3	16	C	1968	78	2	12-May-53	17-Dec-48	188	S	ION BEAM FAC, (VAN DE GRAAFF), INNER COLUMN - BOTTOM PLATE
3	16	C	1910	21	4	12-May-53	19-Dec-48	188	S	12 MEV VAN DE GRAAFF ACCELERATOR BLDG.. PASSAGEWAY TO LAB. BLDG.
3	16	C	1912	23	1	12-May-53	4-Jan-49	188	S	12 MEV VAN DE GRAAFF ACCELERATOR BLDG. FOUNDATION AND STRUCTURAL DETAILS
3	16	C	1911	22	3	12-May-53	4-Jan-49	188	S	12 MEV VAN DE GRAAFF ACCELERATOR BLDG., FOUNDATION PLAN AND DETAILS
3	16	C	1915	26	2	12-May-53	14-Jan-49	188	S	12 MEV VAN DE GRAAFF ACCELERATOR BLDG. & LAB, TA-3. STEEL DETAILS, LAB. BLDG.
3	16	C	1920	31	2	12-May-53	14-Jan-49	188	A	12 MEV VAN DE GRAAFF BLDG. & LAB BLDG., EXTERIOR AND INTERIOR DETAILS
3	16	C	1919	30	2	12-May-53	14-Jan-49	188	A	12 MEV VAN DE GRAAFF BLDG. & LAB, TA-3. LABORATORY INTERIOR DETAILS, LAB. BLDG.
3	16	C	1918	29	2	12-May-53	14-Jan-49	188	A	12 MEV VAN DE GRAAFF BLDG. & LAB, TA-3. SCHEDULES AND DETAILS, LAB. BLDG.
3	16	C	1916	27	2	12-May-53	14-Jan-49	188	A	12 MEV VAN DE GRAAFF BLDG. AND LAB BLDG., FLOOR AND ROOF PLANS
3	16	C	1924	35	2	12-May-53	23-Feb-49	188	AC	12 MEV VAN DE GRAAFF ACCELERATOR BLDG. & LAB, HEATING AND VENTILATING
3	16	C	1926	37	2	12-May-53	23-Feb-49	188	AC	12 MEV VAN DE GRAAFF ACCELERATOR BLDG., LAB, HEATING AND VENTILATING PIPING
3	16	C	1925	36	3	12-May-53	24-Feb-49	188	AC	12 MEV VAN DE GRAAFF ACCELERATOR BLDG. & LAB, HEATING AND VENTILATING
3	16	C	1928	39	4	12-May-53	1-Mar-49	188	E	12 MEV VAN DE GRAAFF ACCELERATOR BLDG, & LAB, PROTECTIVE LIGHTING LAYOUT
3	16	C	1940	50	3	12-May-53	19-Mar-49	188	E	ION BEAM FAC., (VAN DE GRAAFF), COMPRESSOR, COOLING WATER, VACUUM PUMPS
3	16	C	1936	46	5	12-May-53	21-Mar-49	188	E	ION BEAM FAC., (VAN DE GRAAFF), POWER PLAN, TUNNEL PASSAGE, CORRIDOR LIGHTING

Building Drawing List

TA	BLDG	PREFI	DRAWNUM	PAGE	REV	LOG_DATE	DOC_DATE	PROJID	DISC	TITLE
3	16	C	1931	41	4	12-May-53	22-Mar-49	188	E	12 MEV VAN DE GRAAFF ACCELERATOR BLDG. & LAB, POWER PLANS 1ST & 2ND FLOOR
3	16	C	1932	42	4	12-May-53	22-Mar-49	188	E	12 MEV VAN DE GRAAFF ACCELERATOR BLDG. POWER LAYOUT 3RD,4TH,5TH,6TH. CRANE PLATF
3	16	C	1930	40	4	12-May-53	22-Mar-49	188	E	12 MEV VAN DE GRAAFF ACCELERATOR BLDG., SINGLE LINE DIAGRAM, ELECT. SYS.
3	16	C	1933	43	3	12-May-53	22-Mar-49	188	E	ION BEAM FAC., (VAN DE GRAAFF), POWER & LIGHT SECTIONS AND DETAILS
3	16	C	1934	44	4	12-May-53	22-Mar-49	188	E	ION BEAM FAC., (VAN DE GRAAFF), POWER & LIGHT SECTIONS AND DETAILS
3	16	C	1938	48	3	12-May-53	22-Mar-49	188	E	ION BEAM FAC., (VAN DE GRAAFF), 1ST & 2ND FLOOR LIGHTING
3	16	C	1939	49	3	12-May-53	22-Mar-49	188	E	ION BEAM FAC., (VAN DE GRAAFF), 3RD, 4TH, 5TH, 6TH FLOOR LIGHTING
3	16	C	1917	28	2	12-May-53	29-Mar-49	188	A	12 MEV VAN DE GRAAFF BLDG. & LAB, TA-3. ELEVATIONS AND SECTIONS, LAB.
3	16	C	1941	51	3	12-May-53	30-Mar-49	188	M	ION BEAM FAC., (VAN DE GRAAFF), PROCESS PIPING FLOW DIAGRAM
3	16	C	1913	24	2	12-May-53	4-Apr-49	188	A	VAN DE GRAAFF ACCELERATOR BLDG. & LAB, 2ND FLOOR & ROOF FRAMING, PLANS
3	16	C	1960	70	2	12-May-53	2-Jun-49	188	M	ION BEAM FAC. (VAN DE GRAAFF), INTERPOTENTIAL SHELL - 90' O.D.
3	16	C	1958	68	2	12-May-53	2-Jun-49	188	S	ION BEAM FAC., (VAN DE GRAAFF), INTERPOTENTIAL SHELL - 62' O.D.
3	16	C	641	1	3	29-Mar-50	29-Mar-50	494	A	CYLINDER AND MANIFOLD INSTALLATION, VAN DE GRAAFF, BLDG. SM-16
3	16	C	699	2	2	6-Apr-50	6-Apr-50	511	A	VAN DE GRAAF BLDG SM-16, TESTER ACCESS PLATFORM
3	16	C	698	1	1	6-Apr-50	6-Apr-50	511	S	VAN DE GRAAF BLDG. SM-16, TESTER ACCESS PLATFORM
3	16	C	1970	2	1	12-May-53	14-Apr-50	188	S	ION BEAM FAC., (VAN DE GRAAFF) HOUSING FOR INSP. PLAT., GUIDE RAILS
3	16	C	1969	1	2	12-May-53	14-Apr-50	188	E	ION BEAM FAC., (VAN DE GRAAFF), 150 TON CRANE, ELEMENTARY WIRING
3	16	C	1971	3	1	12-May-53	15-Apr-50	188	S	ION BEAM FAC. (VAN DE GRAAFF), LADDERS & PLATFORMS FOR PRESSURE VESSEL
3	16	C	720	1	1	18-Apr-50	18-Apr-50	520	A	SHIELD WALL, LAB #1, BLDG. SM-16
3	16	C	771	1	2	3-May-50	3-May-50	523	C	CONCRETE SIDEWALK & FENCE (BLDG. SM-16 AREA)
3	16	SK	214	1	1	24-May-50	26-May-50	538	A	12 MEV VAN DE GRAAFF ACCELERATOR BLDG. & LABORATORY, BLDG. SM-16, HOIST INSTALLA
3	16	C	7421	63	1	20-Jun-56	1-Jun-50	499	C	CENTRAL SITE FACILITIES, DUCT RUN IV, ELECTRICAL AND TELEPHONE DISTRIBUTION
3	16	C	7441	83	2	20-Jun-56	1-Jun-50	499	C	CENTRAL SITE FACILITIES, PLAN & PROFILE STEAM DISTRIBUTION
3	16	C	7367	9	1	20-Jun-56	1-Jun-50	499	C	CENTRAL SITE FACILITIES, PROJECT E, CIVIL, SITE GRADING, AREA H
3	16	C	1927	38	2	12-May-53	25-Oct-50	188	M	12 MEV VAN DE GRAAFF ACCELERATOR BLDG., UTILITY ROOM EQUIP. AND PIPING
3	16	C	1923	34	2	12-May-53	6-Nov-50	188	M	12 MEV VAN DE GRAAFF ACCELERATOR BLDG., SERVICE PIPING, LAB. BLDG., 1ST FLOOR
3	16	C	1942	52	3	12-May-53	9-Nov-50	188	M	ION BEAM FAC. (VAN DE GRAAFF), PIPING & MACHINERY ARRANGEMENT 1ST FLOOR
3	16	C	1945	55	2	12-May-53	9-Nov-50	188	M	ION BEAM FAC., (VAN DE GRAAFF), EQUIPMENT DETAILS
3	16	C	1946	56	3	12-May-53	9-Nov-50	188	M	ION BEAM FAC., (VAN DE GRAAFF), PIPING & MACHINERY ARRANGEMENT
3	16	C	1922	33	2	12-May-53	13-Nov-50	188	M	12 MEV VAN DE GRAAFF ACCELERATOR BLDG. & LAB, TA-4. SERVICE PIPING WEST END, LA
3	16	C	1944	54	3	12-May-53	13-Nov-50	188	M	ION BEAM FAC. (VAN DE GRAAFF) PIPING & MACHINERY, 2ND,3RD,4TH FLOOR
3	16	C	1943	53	3	12-May-53	13-Nov-50	188	M	ION BEAM FAC. (VAN DE GRAAFF), PIPING & MACHINERY ARRANGEMENT, 1ST FLOOR
3	16	C	1947	57	3	12-May-53	20-Nov-50	188	C	ION BEAM FAC., (VAN DE GRAAFF), ARRANGEMENT OF PIPING OUTSIDE
3	16	C	1959	69	2	12-May-53	29-Nov-50	188	M	ION BEAM FAC. (VAN DE GRAAFF), INTERPOTENTIAL SHELL - 71' O.D.
3	16	C	1961	71	2	12-May-53	29-Nov-50	188	M	ION BEAM FAC. (VAN DE GRAAFF), INTERPOTENTIAL SHELL - 119' O.D.
3	16	SK	786	1	1	25-Aug-97	6-Dec-50	682	M	Add Water Closet Facilities, Bldg. SM-16
3	16	C	1929	39	1	12-May-53	7-Dec-50	188	E	12 MEV VAN DE GRAAFF ACCELERATOR BLDG. AND LAB, OUTSIDE LIGHTING DIAGRAM
3	16	C	2510	1	2	12-May-53	1-Nov-51	986	E	LIGHTING REVISIONS, MACHINE SHOP, BLDG. SM-16
3	16	C	1921	32	2	12-May-53	2-Nov-51	188	M	12 MEV VAN DE GRAAFF BLDG. & LAB BLDG., SERVICE PIPING EAST END, TUNNEL
3	16	C	2516	1	0	9-Dec-51	9-Nov-51	1011	E	LIGHTING MODIFICATIONS, LAB. BLDG. SM-16

Building Drawing List

TA	BLDG	PREFI	DRAWNUM	PAGE	REV	LOG_DATE	DOC_DATE	PROJID	DISC	TITLE
3	16	C	2575	1	2	9-Jan-52	9-Jan-52	1053	M	MODIFY FUME HOOD IN MACHINE SHOP, VAN DEGRAAFF, BLDG. SM-16
3	16	C	7363	5	1	20-Jun-56	31-Jan-52	499	C	CENTRAL SITE FACILITIES, PROJECT E, CIVIL, SITE GRADING, AREA D
3	16	C	2706	1	2	6-Jun-52	6-May-52	1194	M	AIR MOTOR CLUTCH HOLDER, 5TH FLOOR, BLDG. SM-18
3	16	SK	2249	1	0	13-Mar-98	5-Jan-53	1355	E	ADDITION TO POWER PANEL PLAN
3	16	C	1462	2	1	12-May-53	29-Jun-53	730	AC	REVISIONS TO LABORATORY, HEATING & VENTILATION SYSTEM, PLAN VIEW AND SECTIONS
3	16	C	3148	2	1	5-Oct-53	5-Oct-53	1487	AC	DESIGN MOD. - AIR COND. - ELEC. & MECH. DETAILS
3	16	C	3147	1	2	5-Oct-53	5-Oct-53	1487	AC	DESIGN MODIFICATIONS - AIR CONDITIONING, MECHANICAL PLAN & SECTIONS BLDG. SM-16,
3	16	C	34915	1	0	5-Sep-68	22-Dec-53	3582	S	COMPUTER SYSTEM RELOCATION BLDG. SM-16 - ARCHITECTURAL - STRUCTURAL
3	16	SK	3436	1	0	19-Jun-54	18-Jun-54	1592	C	SECURITY GATE INSTALLATION, CIVIL, LOCATION PLAN & ELEVATIONS
3	16	C	1463	3	1	12-May-53	28-Jun-55	730	AC	REVISIONS TO LABORATORY HEATING & VENTILATION SYSTEM, STEAM PIPING, EAST END PART PLAN V
3	16	C	10442	1	1	25-Aug-55	18-Aug-55	1723	M	REBUILDING OF 150 TON CRANE, PNEUMATIC CONTROL SYSTEM FOR EMERGENCY BRAKE
3	16	C	13068	2	0	12-Apr-56	10-Apr-56	1825	E	FUME HOOD INST., PLAN & DETAILS
3	16	C	13067	1	1	12-Apr-56	10-Apr-56	1825	M	FUME HOOD INSTALLATION, RM. 115, PLAN, ELEVATION & DETAILS
3	16	C	17350	1	0	20-Sep-57	3-Sep-57	188	T	ION BEAM FAC. (VAN DE GRAAFF ACCELERATOR) - SHOP DRAWING INDEX
3	16	C	2456	1	2	12-May-53	11-Sep-57	970	A	FIFTH FLOOR EXTENSION, BLDG. SM-18. SERVICE PLATFORM ACCESS STEPS & T.B.
3	16	C	839	1	2	8-Jun-50	11-Sep-57	568	S	JIB CRANE INSTALLATION, BLDG. SM-16
3	16	C	916	1	2	29-Jul-50	11-Sep-57	599	A	OUTSIDE STOCK RACK, BLDG. SM-16
3	16	C	1375	1	2	12-May-53	11-Sep-57	852	S	PORTABLE ACCESS LADDERS, HOOKING DETAIL, SECTION AND DETAILS
3	16	C	1461	1	2	12-May-53	11-Sep-57	730	AC	REVISIONS TO LABORATORY HEATING & VENTILATION SYSTEM, MAIN FLOOR PLAN,
3	16	R	1721	1	1	11-Jan-63	5-Mar-59	0	F	FIRE ALARM EQUIPMENT, BUILDING SM-16, FLOOR PLAN
3	16	C	26374	2	0	25-Feb-98	31-Aug-61	2580	E	M.G. SET AND SAFETY PLATFORM INSTALLATION, PLAN AND WIRING DIAGRAM
3	16	R	2340	2	0	6-Apr-62	6-Dec-61	0	A	FALLOUT SHELTER SURVEY, UTILITY TUNNEL, SOUTH MESA SITE
3	16	R	2339	1	0	6-Apr-62	26-Mar-62	0	A	FALLOUT SHELTER SURVEY, FIRST FLOOR PLAN, SOUTH MESA SITE
3	16	C	31493	123	3	3-Feb-65	1-Oct-62	188	M	ACCELERATOR & CONTROL CONSOLE, POSITIONING & UTILITY PENTRATIONS, SM-16
3	16	C	31419	49	5	3-Feb-65	1-Oct-62	188	S	CONCRETE BEAM SCHEDULE, CONCRETE WALL SCHEDULE, MISCELLANEOUS STR. DETAILS, SM-1
3	16	C	31398	28	2	3-Feb-65	1-Oct-62	188	A	DETAILS, SHIELDING DOOR BETWEEN SERVICE ACCESS & MACHING ROOM, SM-16
3	16	C	31379	9	2	3-Feb-65	1-Oct-62	188	B	ENLARGED FL. PL. AT LOWER LEVEL - AREA 'A' T FL. ELEV. 7400-0', SM-16 BORINGS
3	16	C	31380	10	2	3-Feb-65	1-Oct-62	188	A	ENLARGED FLOOR PLAN AT UPPER LEVEL AREA A, FLOOR ELEV 7415-0', SM-16
3	16	C	31393	23	2	3-Feb-65	1-Oct-62	188	A	ENLARGED PLANS, SECTIONS & ELEVATIONS OF TOILET ROOM AREA & ELEVATION HOISTWAY,
3	16	C	31431	61	4	3-Feb-65	1-Oct-62	188	AC	MACHINE BLDG. SERVICE TUNNEL-HEATING & VENTILATING, PLAN & SECTIONS
3	16	C	31492	122	2	3-Feb-65	1-Oct-62	188	E	NEW COMMUNICATION SYSTEM IN EXISTING BLDG. SM-18, SM-16, TANDEM VAN DE GRAAFF
3	16	C	31490	120	2	3-Feb-65	1-Oct-62	188	E	NEW COMMUNICATION SYSTEM IN EXISTING BLDGS. SM-16, SM-17, TANDEM VAN DE GRAAFF
3	16	C	31390	20	3	3-Feb-65	1-Oct-62	188	A	TANDEM VAN DE GRAAF, MISCELLANEOUS DETAILS
3	16	C	31409	39	2	3-Feb-65	1-Oct-62	188	S	TANDEM VAN DE GRAAF, STRUCTURAL SECTIONS & DETAILS
3	16	C	31371	1	2	3-Feb-65	1-Oct-62	188	T	TANDEM VAN DE GRAAFF FACILITIES - TITLE SHEET AND DRAWING INDEX, BLDG. SM-16
3	16	C	31424	54	2	3-Feb-65	1-Oct-62	188	AC	TANDEM VAN DE GRAAFF, AIR CONDITIONING SYSTEMS NO. 1 & NO. 2, FLOW DIAGRAMS
3	16	C	31441	71	2	3-Feb-65	1-Oct-62	188	AC	TANDEM VAN DE GRAAFF, AIR CONDITIONING SYSTEMS NOS. 1 & 2, CONTROL DIAGRAMS
3	16	C	31386	16	2	3-Feb-65	1-Oct-62	188	A	TANDEM VAN DE GRAAFF, ARCH. SECTIONS
3	16	C	31432	62	2	3-Feb-65	1-Oct-62	188	M	TANDEM VAN DE GRAAFF, AREA 'A' LOWER LEVEL - SECTIONS
3	16	C	31446	76	2	3-Feb-65	1-Oct-62	188	M	TANDEM VAN DE GRAAFF, AREA 'A' LOWER LEVEL PLUMBING PLAN

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3	16	C	31447	77	2	3-Feb-65	1-Oct-62	188	M	TANDEM VAN DE GRAAFF, AREA 'A' UPPER LEVEL, PLUMBING PLAN
3	16	C	31428	58	2	3-Feb-65	1-Oct-62	188	AC	TANDEM VAN DE GRAAFF, AREA 'B' HEATING & VENTILATING PLAN
3	16	C	31429	59	2	3-Feb-65	1-Oct-62	188	AC	TANDEM VAN DE GRAAFF, AREA 'C' HEATING & VENTILATING PLAN
3	16	C	31430	60	2	3-Feb-65	1-Oct-62	188	AC	TANDEM VAN DE GRAAFF, AREA 'D' HEATING & VENTILATING PLAN
3	16	C	31434	64	2	3-Feb-65	1-Oct-62	188	M	TANDEM VAN DE GRAAFF, AREAS 'B', 'C', 'D' SECTIONS
3	16	C	31392	22	2	3-Feb-65	1-Oct-62	188	A	TANDEM VAN DE GRAAFF, CABINET ELEVATIONS
3	16	C	31391	21	2	3-Feb-65	1-Oct-62	188	A	TANDEM VAN DE GRAAFF, CABINET ELEVATIONS
3	16	C	31420	50	2	3-Feb-65	1-Oct-62	188	S	TANDEM VAN DE GRAAFF, CATWALK PLAN & DETAILS, CONC. SHIELDING BLOCK DETAILS
3	16	C	31485	115	2	3-Feb-65	1-Oct-62	188	E	TANDEM VAN DE GRAAFF, COMMUNICATION SYSTEM, BLOCK DIAGRAM
3	16	C	31407	37	2	3-Feb-65	1-Oct-62	188	S	TANDEM VAN DE GRAAFF, CONCRETE COLUMN SCHEDULE AND DETAILS
3	16	C	31406	36	2	3-Feb-65	1-Oct-62	188	S	TANDEM VAN DE GRAAFF, CONCRETE SECTIONS & DETAILS
3	16	C	31399	29	2	3-Feb-65	1-Oct-62	188	S	TANDEM VAN DE GRAAFF, DETAILS - MAGNETITE FILLED SHIELDING DOORS
3	16	C	31400	30	2	3-Feb-65	1-Oct-62	188	A	TANDEM VAN DE GRAAFF, DETAILS - MAGNETITE FILLED SHIELDING DOORS
3	16	C	31483	113	2	3-Feb-65	1-Oct-62	188	E	TANDEM VAN DE GRAAFF, DIMMER PANEL 'DM CONTROL DIAGRAM
3	16	C	31397	27	2	3-Feb-65	1-Oct-62	188	S	TANDEM VAN DE GRAAFF, DOOR & WINDOW DETAILS
3	16	C	31396	26	3	3-Feb-65	1-Oct-62	188	A	TANDEM VAN DE GRAAFF, DOOR & WINDOW SCHEDULES
3	16	C	31489	119	2	3-Feb-65	1-Oct-62	188	E	TANDEM VAN DE GRAAFF, ELECTRICAL MISCELLANEOUS DETAILS
3	16	C	31456	86	2	3-Feb-65	1-Oct-62	188	E	TANDEM VAN DE GRAAFF, ELECTRICAL PLOT PLAN & SYMBOL LIST
3	16	C	31486	116	2	3-Feb-65	1-Oct-62	188	E	TANDEM VAN DE GRAAFF, ELEMENTARY DIAGRAMS, CHILLED, HOT WATER SYSTEM
3	16	C	31487	117	2	3-Feb-65	1-Oct-62	188	E	TANDEM VAN DE GRAAFF, ELEMENTARY DIAGRAMS, HEATING, VENTILATION SYSTEMS
3	16	C	31488	118	2	3-Feb-65	1-Oct-62	188	E	TANDEM VAN DE GRAAFF, ELEMENTARY DIAGRAMS, HV AND COMPRESSED AIR SYSTEMS
3	16	C	31487	117	2	3-Feb-65	1-Oct-62	188	E	TANDEM VAN DE GRAAFF, ELEMENTRY DIAGRAMS, SHT. 2, HEATING AND VENTILATION
3	16	C	31384	14	2	3-Feb-65	1-Oct-62	188	A	TANDEM VAN DE GRAAFF, ELEVATIONS
3	16	C	31381	11	4	3-Feb-65	1-Oct-62	188	A	TANDEM VAN DE GRAAFF, ENLARGED FLOOR PLAN AREA 'B' AT FLOOR ELEVATION
3	16	C	31382	12	4	3-Feb-65	1-Oct-62	188	A	TANDEM VAN DE GRAAFF, ENLARGED FLOOR PLAN, AREA 'C' AT FLOOR ELEVATION
3	16	C	31383	13	2	3-Feb-65	1-Oct-62	188	A	TANDEM VAN DE GRAAFF, ENLARGED FLOOR PLAN, AREA 'D' AT FLOOR ELEVATION
3	16	C	31440	70	2	3-Feb-65	1-Oct-62	188	M	TANDEM VAN DE GRAAFF, EQUIPMENT SCHEDULES
3	16	C	31480	110	2	3-Feb-65	1-Oct-62	188	E	TANDEM VAN DE GRAAFF, FIXTURE SCHEDULE AND MOUNTING DETAILS
3	16	C	31401	31	2	3-Feb-65	1-Oct-62	188	A	TANDEM VAN DE GRAAFF, GENERAL NOTES & TYPICAL DETAILS
3	16	C	31460	90	2	3-Feb-65	1-Oct-62	188	F	TANDEM VAN DE GRAAFF, GROUNDING & FIRE ALARM PLAN
3	16	C	31459	89	2	3-Feb-65	1-Oct-62	188	E	TANDEM VAN DE GRAAFF, GROUNDING DETAILS
3	16	C	31442	72	2	3-Feb-65	1-Oct-62	188	AC	TANDEM VAN DE GRAAFF, HEATING & VENTILATING SYS. NOS. 3, 4, 5, CONTROL DIAGRAMS
3	16	C	31425	55	2	3-Feb-65	1-Oct-62	188	AC	TANDEM VAN DE GRAAFF, HEATING & VENTILATING SYSTEMS NO. 3 & 4, FLOW DIAGRAMS
3	16	C	31439	69	2	3-Feb-65	1-Oct-62	188	AC	TANDEM VAN DE GRAAFF, HEATING, VENTILATING & AIR CONDITIONING DETAILS
3	16	C	31438	68	2	3-Feb-65	1-Oct-62	188	AC	TANDEM VAN DE GRAAFF, HEATING, VENTILATING & AIR CONDITIONING, DETAILS
3	16	C	31404	34	2	3-Feb-65	1-Oct-62	188	A	TANDEM VAN DE GRAAFF, HIGH ROOF FRAMING PLAN AND DETAILS
3	16	C	31394	24	2	3-Feb-65	1-Oct-62	188	G	TANDEM VAN DE GRAAFF, INTERIOR ROOM FINISH SCHEDULE
3	16	C	31462	92	2	3-Feb-65	1-Oct-62	188	E	TANDEM VAN DE GRAAFF, LIGHTING PLAN - AREA 'A', LOWER LEVEL
3	16	C	31463	93	2	3-Feb-65	1-Oct-62	188	E	TANDEM VAN DE GRAAFF, LIGHTING PLAN - AREA 'A', UPPER LEVEL
3	16	C	31464	94	2	3-Feb-65	1-Oct-62	188	E	TANDEM VAN DE GRAAFF, LIGHTING PLAN - AREA 'B'

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3	16	C	31465	95	2	3-Feb-65	1-Oct-62	188	E	TANDEM VAN DE GRAAFF, LIGHTING PLAN - AREA 'C'
3	16	C	31466	96	2	3-Feb-65	1-Oct-62	188	E	TANDEM VAN DE GRAAFF, LIGHTING PLAN - AREA 'D'
3	16	C	31468	98	2	3-Feb-65	1-Oct-62	188	E	TANDEM VAN DE GRAAFF, LIGHTING PLAN - MECHANICAL EQUIPMENT ROOMS
3	16	C	31467	97	3	3-Feb-65	1-Oct-62	188	E	TANDEM VAN DE GRAAFF, LIGHTING, POWER & COMMUNICATIONS, PLAN - TUNNEL
3	16	C	31402	32	5	3-Feb-65	1-Oct-62	188	S	TANDEM VAN DE GRAAFF, LOWER LEVEL, ELEVATIONS, FOUNDATION FRAMING PLAN
3	16	C	31449	79	2	3-Feb-65	1-Oct-62	188	M	TANDEM VAN DE GRAAFF, MACHINE BUILDING TUNNEL, PLUMBING PLAN & SECTIONS
3	16	C	31448	78	4	3-Feb-65	1-Oct-62	188	M	TANDEM VAN DE GRAAFF, MACHINE BUILDING, PLUMBING PLAN
3	16	C	31450	80	4	3-Feb-65	1-Oct-62	188	M	TANDEM VAN DE GRAAFF, MECH. EQUIPMENT ROOMS, PLUMBING PLAN & SECTIONS
3	16	C	31436	66	2	3-Feb-65	1-Oct-62	188	M	TANDEM VAN DE GRAAFF, MECHANICAL EQUIPMENT ROOM NO. 150 PLAN & SECTIONS
3	16	C	31435	65	2	3-Feb-65	1-Oct-62	188	M	TANDEM VAN DE GRAAFF, MECHANICAL EQUIPMENT ROOM NO. 50 PLAN & SECTIONS
3	16	C	31421	51	4	3-Feb-65	1-Oct-62	188	S	TANDEM VAN DE GRAAFF, MISCELLANEOUS - STRUCTURAL DETAILS #1
3	16	C	31413	43	3	3-Feb-65	1-Oct-62	188	S	TANDEM VAN DE GRAAFF, MISCELLANEOUS CONCRETE DETAILS
3	16	C	31481	111	2	3-Feb-65	1-Oct-62	188	E	TANDEM VAN DE GRAAFF, MISCELLANEOUS ELECTRICAL DETAILS
3	16	C	31375	5	2	3-Feb-65	1-Oct-62	188	S	TANDEM VAN DE GRAAFF, MISCELLANEOUS SITE DETAILS
3	16	C	31376	6	2	3-Feb-65	1-Oct-62	188	C	TANDEM VAN DE GRAAFF, MISCELLANEOUS SITE DETAILS
3	16	C	31412	42	2	3-Feb-65	1-Oct-62	188	S	TANDEM VAN DE GRAAFF, MISCELLANEOUS STEEL AND CONCRETE DETAILS
3	16	C	31411	41	2	30-Apr-98	1-Oct-62	188	S	TANDEM VAN DE GRAAFF, MISCELLANEOUS STEEL DETAILS
3	16	C	31417	47	2	3-Feb-65	1-Oct-62	188	S	TANDEM VAN DE GRAAFF, MISCELLANEOUS STRUCTURAL DETAILS
3	16	C	31422	52	3	3-Feb-65	1-Oct-62	188	S	TANDEM VAN DE GRAAFF, MISCELLANEOUS STRUCTURAL DETAILS #2
3	16	C	31423	53	2	3-Feb-65	1-Oct-62	188	S	TANDEM VAN DE GRAAFF, MISCELLANEOUS STRUCTURAL DETAILS, #3
3	16	C	31484	114	2	3-Feb-65	1-Oct-62	188	E	TANDEM VAN DE GRAAFF, MOTOR CONTROL CENTERS, SCHEDULES & ELEVATIONS
3	16	C	31476	106	2	3-Feb-65	1-Oct-62	188	E	TANDEM VAN DE GRAAFF, MOTOR CONTROL CENTERS, SINGLE LINE DIAGRAM
3	16	C	31491	121	2	3-Feb-65	1-Oct-62	188	E	TANDEM VAN DE GRAAFF, NEW COMMUNICATION SYSTEM IN EXISTING BLDG. SM-16
3	16	C	31455	85	2	3-Feb-65	1-Oct-62	188	M	TANDEM VAN DE GRAAFF, NITROGEN TRANSFER PIPING & MISC. PLUMBING DETAILS
3	16	C	31378	8	4	3-Feb-65	1-Oct-62	188	A	TANDEM VAN DE GRAAFF, OVERALL FLOOR PLAN AT FLOOR ELEVATION
3	16	C	31395	25	2	3-Feb-65	1-Oct-62	188	A	TANDEM VAN DE GRAAFF, PAINTING SCHEDULE
3	16	C	31477	107	2	3-Feb-65	1-Oct-62	188	E	TANDEM VAN DE GRAAFF, PANEL SCHEDULES - SHEET NO. 1
3	16	C	31478	108	2	3-Feb-65	1-Oct-62	188	E	TANDEM VAN DE GRAAFF, PANEL SCHEDULES - SHEET NO. 2
3	16	C	31479	109	2	3-Feb-65	1-Oct-62	188	E	TANDEM VAN DE GRAAFF, PANEL SCHEDULES, SHEET NO. 3
3	16	C	31443	73	2	3-Feb-65	1-Oct-62	188	M	TANDEM VAN DE GRAAFF, PIPING DETAILS
3	16	C	31452	82	2	3-Feb-65	1-Oct-62	188	M	TANDEM VAN DE GRAAFF, PLUMBING ISOMETRICS
3	16	C	31453	83	2	3-Feb-65	1-Oct-62	188	M	TANDEM VAN DE GRAAFF, PLUMBING ISOMETRICS
3	16	C	31454	84	3	3-Feb-65	1-Oct-62	188	M	TANDEM VAN DE GRAAFF, PLUMBING SECTIONS
3	16	C	31469	99	2	3-Feb-65	1-Oct-62	188	E	TANDEM VAN DE GRAAFF, POWER & COMMUMICATIONS, AREA 'A' POWER LEVEL
3	16	C	31470	100	3	3-Feb-65	1-Oct-62	188	E	TANDEM VAN DE GRAAFF, POWER & COMMUNICATIONS, AREA 'A', UPPER LEVEL
3	16	C	31471	101	3	3-Feb-65	1-Oct-62	188	E	TANDEM VAN DE GRAAFF, POWER & COMMUNICATIONS, AREA 'B'
3	16	C	31472	102	4	3-Feb-65	1-Oct-62	188	E	TANDEM VAN DE GRAAFF, POWER & COMMUNICATIONS, AREA 'C'
3	16	C	31473	103	2	3-Feb-65	1-Oct-62	188	E	TANDEM VAN DE GRAAFF, POWER & COMMUNICATIONS, AREA 'D'
3	16	C	31475	105	2	3-Feb-65	1-Oct-62	188	E	TANDEM VAN DE GRAAFF, POWER & COMMUNICATIONS, MECH. EQUIPMENT ROOMS
3	16	C	31374	4	2	3-Feb-65	1-Oct-62	188	C	TANDEM VAN DE GRAAFF, PROFILES & CROSS SECTIONS

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3	16	C	31389	19	2	3-Feb-65	1-Oct-62	188	A	TANDEM VAN DE GRAAFF, ROOF DETAILS
3	16	C	31388	18	2	3-Feb-65	1-Oct-62	188	A	TANDEM VAN DE GRAAFF, ROOF PLAN
3	16	C	31385	15	2	3-Feb-65	1-Oct-62	188	A	TANDEM VAN DE GRAAFF, SECTIONS & ELEVATIONS
3	16	C	31387	17	4	3-Feb-65	1-Oct-62	188	A	TANDEM VAN DE GRAAFF, SECTIONS & ELEVATIONS
3	16	C	31457	87	2	3-Feb-65	1-Oct-62	188	E	TANDEM VAN DE GRAAFF, SINGLE LINE DISTRIBUTION DIAGRAM
3	16	C	31416	46	2	3-Feb-65	1-Oct-62	188	S	TANDEM VAN DE GRAAFF, STAIR AND MISCELLANEOUS DETAILS
3	16	C	31415	45	3	3-Feb-65	1-Oct-62	188	S	TANDEM VAN DE GRAAFF, STAIR DETAILS AND MISCELLANEOUS SECTIONS
3	16	C	31410	40	3	3-Feb-65	1-Oct-62	188	S	TANDEM VAN DE GRAAFF, STRUCTURAL FRAMING ELEVATIONS
3	16	C	31458	88	2	3-Feb-65	1-Oct-62	188	E	TANDEM VAN DE GRAAFF, SUBSTATION PLAN & ELEVATION
3	16	C	31451	81	2	3-Feb-65	1-Oct-62	188	M	TANDEM VAN DE GRAAFF, TOILET ROOM, PLAN & DETAILS
3	16	C	31418	48	2	3-Feb-65	1-Oct-62	188	S	TANDEM VAN DE GRAAFF, TUBE TRAILER STATION, PLAN & SECTIONS
3	16	C	31414	44	4	3-Feb-65	1-Oct-62	188	A	TANDEM VAN DE GRAAFF, TUNNEL FLOOR PLAN & DETAILS
3	16	C	31437	67	4	3-Feb-65	1-Oct-62	188	M	TANDEM VAN DE GRAAFF, UNDERGROUND DUCTWORK, PLAN & SECTIONS
3	16	C	31444	74	2	3-Feb-65	1-Oct-62	188	M	TANDEM VAN DE GRAAFF, UNDERGROUND STEAM DISTRIBUTION, DETAILS
3	16	C	31403	33	5	3-Feb-65	1-Oct-62	188	A	TANDEM VAN DE GRAAFF, UPPER LEVEL FLOOR & LOW ROOF FRAMING PLAN
3	16	C	31373	3	2	3-Feb-65	1-Oct-62	188	C	TANDEM VAN DE GRAAFF, UTILITIES PLAN
3	16	C	31408	38	2	3-Feb-65	1-Oct-62	188	S	TANDEM VAN DE GRAAFF, WALL SECTIONS
3	16	C	31474	104	4	3-Feb-65	1-Oct-62	188	E	TANDEM VAN DE GRAAFF, WIRE DUCT AND CABLE TRAY-TUNNEL
3	16	C	31482	112	2	3-Feb-65	1-Oct-62	188	E	TANDEM VAN DE GRAAFF, WIREWAY DETAILS
3	16	C	31433	63	2	3-Feb-65	1-Oct-62	188	M	TANDEM VAN DE GRAAFF,AREA 'A' UPPER LEVEL SECTIONS
3	16	C	31377	7	2	3-Feb-65	1-Oct-62	188	B	TANDEM VAN DE GRAAFF,LOG OF SOIL BORINGS
3	16	C	31372	2	3	3-Feb-65	1-Oct-62	188	C	TANDEM VAN DE GRAAFF. GRADING PLAN
3	16	C	31405	35	3	3-Feb-65	1-Oct-62	188	S	TANDEM VAN DE GRAAFF. CONCRETE BEAM AND SLAB SCHEDULE
3	16	C	31426	56	2	3-Feb-65	1-Oct-62	188	AC	TANDEM, AREA 'A' LOWER LEVEL, HEATING, VENTILATING & AIR CONDITIONING PLAN
3	16	C	31427	57	3	3-Feb-65	1-Oct-62	188	AC	TANDEM, AREA 'A' UPPER LEVEL, HEATING, VENTILATING & AIR CONDITIONING PLAN
3	16	C	29079	1	1	13-Nov-62	23-Oct-62	188	S	TANDEM VAN DE GRAAFF SITE PREPARATION, BLDGS. SM-16, SM-18 - LOCATION PLAN & STR
3	16	C	29083	5	1	13-Nov-62	23-Oct-62	188	E	TANDEM VAN DE GRAAFF, ELECTRICAL - BILL OF MATERIAL, SCOPE & BLDG. SM-16
3	16	C	29082	4	1	13-Nov-62	23-Oct-62	188	M	TANDEM VAN DE GRAAFF, MECHANICAL - BLDG. SM-18
3	16	C	29080	2	1	13-Nov-62	23-Oct-62	188	M	TANDEM VAN DE GRAAFF, SITE PREPARATION, MECHANICAL
3	16	R	3345	1	0	5-Sep-63	14-Feb-63	0	A	FIRST FLOOR PLAN
3	16	C	29085	1	0	21-May-63	17-May-63	188	S	TANDEM VAN DE GRAAFF, PHASE 'A' - FLOOR TRENCH & TOWER SWAY BRACING MODS.
3	16	C	26058	1	0	1-Nov-63	30-Oct-63	2858	E	LIGHTING MODIFICATIONS, ELEC. PLANS & SECTIONS, OFFICES & LABS
3	16	C	26059	2	0	1-Nov-63	30-Oct-63	2858	E	LIGHTING MODIFICATIONS, ELECTRICAL - PLAN, CONTROL ROOM
3	16	C	26060	3	0	1-Nov-63	30-Oct-63	2858	E	LIGHTING MODIFICATIONS, ELECTRICAL - WIRING - CONTROL ROOM LIGHTS
3	16	C	26061	4	0	1-Nov-63	30-Oct-63	2858	E	LIGHTING MODIFICATIONS, ELECTRICAL- MATERIAL LIST & NAMEPLATE SCHEDULE
3	16	R	1619	5	1	17-Mar-64	17-Mar-64	188	A	3RD, 4TH & 5TH FL. PL. SHOWING CONSOLIDATION OF VAN DE GRAAFF BLDGS. SM-16,17&18
3	16	R	1616	2	0	17-Mar-64	17-Mar-64	188	A	BASEMENT FL. PL. SHOWING CONSOLIDATION FOR VAN DE GRAAFF BLDGS. SM-16,17&18 INTO
3	16	R	1617	3	0	17-Mar-64	17-Mar-64	188	A	FIRST FL. PL. SHOWING CONSOLIDATION OF VAN DE GRAAFF BLDG. SM-16, 17 & 18, INTO
3	16	R	1618	4	0	17-Mar-64	17-Mar-64	188	A	SECOND FLOOR PLAN SHOWING CONSOLIDATION OF VAN DE GRAAFF BLDG. SM-16,17&18, INTO
3	16	R	1615	1	0	17-Mar-64	17-Mar-64	188	A	SUB-BSMT. FL. PL. SHOWING CONSOLIDATION FOR VAN DE GRAAFF BLDG., SM-16,17&18 INT

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TA	BLDG	PREFI	DRAWNUM	PAGE	REV	LOG_DATE	DOC_DATE	PROJID	DISC	TITLE
3	16	C	25991	1	0	30-Apr-64	27-Apr-64	3014	A	ALTERATIONS, BLDG. SM-16, FLOOR PLANS & DETAILS
3	16	C	25992	2	0	30-Apr-64	27-Apr-64	3014	S	ALTERATIONS, BLDG. SM-16, STRUCTURAL - DETAILS & SECTIONS
3	16	C	25995	5	0	30-Apr-64	27-Apr-64	3014	E	ALTERATIONS, ELEC. - PLANS, SCOPE, BILL OF MATERIAL & GENERAL NOTES
3	16	C	25993	3	0	30-Apr-64	27-Apr-64	3014	M	ALTERATIONS, MECHANICAL
3	16	C	25994	4	0	30-Apr-64	27-Apr-64	3014	M	ALTERNATIONS, MECHANICAL
3	16	R	2387	2	1	27-May-64	25-May-64	0	A	SHELTER ANALYSIS SURVEY, BASEMENT FLOOR PLAN
3	16	R	2386	1	1	27-May-64	25-May-64	0	A	SHELTER ANALYSIS SURVEY, SUB-BASEMENT FLOOR PLAN
3	16	C	19118	1	0	19-Nov-64	16-Nov-64	188	M	OCCUPANCY MODIFICATIONS, TANDEM VAN DE GRAAFF, MECH. - PLAN, DETAILS
3	16	C	19119	2	0	19-Nov-64	16-Nov-64	188	E	OCCUPANCY MODS., TANDEM VAN DE GRAAFF, ELECTRICAL
3	16	R	3669	1	1	27-Sep-66	15-Sep-66	3546	A	EQUIPMENT SURVEILLANCE SYSTEMS, BASEMENT FLOOR PLAN
3	16	R	3670	2	0	27-Sep-66	15-Sep-66	3546	A	EQUIPMENT SURVEILLANCE SYSTEMS, FIRST FLOOR PLAN
3	16	R	3672	1	1	27-Sep-66	15-Sep-66	3546	E	EQUIPMENT SURVEILLANCE SYSTEMS, INFORMATON SHEET
3	16	C	34941	1	0	13-Feb-67	30-Jan-67	3482	S	SHIELDING DOOR SUPPORT MODIFICATIONS, TANDEM VAN DE GRAAFF FACILITIES, BEAM DETAIL
3	16	C	34968	1	1	13-Mar-67	6-Mar-67	3582	S	COMPUTER SYSTEM RELOCATION, ARCHITECTURAL - STRUCTURE
3	16	C	34969	2	1	13-Mar-67	6-Mar-67	3582	S	COMPUTER SYSTEM RELOCATION, BLDG. SM-16 - ARCHITECTURAL - STRUCTURAL
3	16	C	34973	6	1	13-Mar-67	6-Mar-67	3582	E	COMPUTER SYSTEM RELOCATION, ELECTRICAL - DETAILS & MATERIAL
3	16	C	34972	5	1	13-Mar-67	6-Mar-67	3582	E	COMPUTER SYSTEM RELOCATION, ELECTRICAL PLAN
3	16	C	34970	3	1	13-Mar-67	6-Mar-67	3582	M	COMPUTER SYSTEM RELOCATION, MECHANICAL; PLANS, SECTION
3	16	C	34971	4	1	13-Mar-67	6-Mar-67	3582	M	COMPUTER SYSTEM RELOCATION, MECHANICAL; SECTION & EQUIPMENT LIST
3	16	R	3919	4	0	18-Jan-68	5-Sep-67	3586	A	AUDIO SYSTEM EQUIP. LOCATION, 3RD, 4TH, 5TH FLOOR PLAN, & OVERHEAD VIEW
3	16	R	3916	1	0	18-Jan-68	5-Sep-67	3586	A	AUDIO SYSTEM EQUIP. LOCATION, BASEMENT FLOOR PLAN
3	16	R	3917	2	1	18-Jan-68	5-Sep-67	3586	A	AUDIO SYSTEM EQUIP. LOCATION, FIRST FLOOR PLAN
3	16	R	3918	3	0	18-Jan-68	5-Sep-67	3586	A	AUDIO SYSTEM EQUIP. LOCATION, SECOND FLOOR PLAN
3	16	R	3921	2	0	28-Sep-66	7-Sep-67	3586	E	AUDIO SYSTEM, BLOCK DIAGRAM
3	16	R	3920	1	0	28-Sep-66	7-Sep-67	3586	A	EQUIPMENT SURVEILLANCE SYSTEMS, AUDIO SYSTEM, BLOCK DIAGRAM
3	16	R	3923	1	0	18-Jan-68	8-Sep-67	3586	E	AUDIO SYSTEM, KEYING CIRCUIT
3	16	R	3922	3	1	28-Dec-67	27-Oct-67	3586	E	AUDIO SYSTEM, BLOCK DIAGRAM
3	16	C	42893	2	0	31-Mar-80	1-Jul-70	5465	F	FIRE PROTECTION IMPROVEMENTS PLOT PLAN BLDG. SM-16, TA-3. TITLE I PACKAGE
3	16	C	41465	4	1	20-Dec-72	20-Dec-72	4152	C	UTILITY SYSTEM IMPROVEMENTS & REHABILITATION, CIVIL, STEAM AND CONDENSATE DISTRIBUTION P
3	16	C	41465	4	1	20-Dec-72	20-Dec-72	4152	M	UTILITY SYSTEM IMPROVEMENTS & REHABILITATION, CIVIL, STEAM AND CONDENSATE DISTRIBUTION P
3	16	C	42893	7	0	31-Mar-80	11-May-76	5465	A	FIRE PROTECTION IMPROVEMENTS, 3RD, 4TH, AND 5TH FLOOR PLAN
3	16	C	42893	5	0	31-Mar-80	11-May-76	5465	A	FIRE PROTECTION IMPROVEMENTS, BASEMENT FLOOR PLAN
3	16	C	42893	4	0	31-Mar-80	11-May-76	5465	A	FIRE PROTECTION IMPROVEMENTS, BASEMENT FLOOR PLAN
3	16	C	42893	6	0	31-Mar-80	11-May-76	5465	A	FIRE PROTECTION IMPROVEMENTS, SECOND FLOOR PLAN
3	16	C	42893	3	0	31-Mar-80	11-May-76	5465	A	FIRE PROTECTION IMPROVEMENTS, SUB BASEMENT FLOOR PLAN
3	16	SK	7080	1	1	27-Mar-98	17-Jul-81	6922	A	TANDEM MACHINE ROOM CATWALK FOR CHANGING LIGHTS PLAN AND DETAILS
3	16	C	44014	7	0	21-Oct-82	14-Sep-82	6873	M	UPGRADE HEATING SYS. MECH; PARTIAL ROOF PLAN AND SECTION, STRUCT, SUPPORT DET
3	16	C	44014	11	0	21-Oct-82	14-Sep-82	6873	E	UPGRADE HEATING SYSTEM ELEC; PARTIAL PLAN & DIAGRAM
3	16	C	44014	6	0	21-Oct-82	14-Sep-82	6873	M	UPGRADE HEATING SYSTEM MECH; CONTROL EQUIPMENT LIST
3	16	C	44014	10	0	21-Oct-82	14-Sep-82	6873	M	UPGRADE HEATING SYSTEM MECH; EQUIPMENT LIST

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TA	BLDG	PREFI	DRAWNUM	PAGE	REV	LOG_DATE	DOC_DATE	PROJID	DISC	TITLE
3	16	C	44249	90	2	4-Aug-83	1-Oct-82	5662	E	RADIOACTIVE LIQUID WASTE COLLECTION SYSTEM IMPROVEMENTS, ELEC., DETAIL PLAN
3	16	C	44249	70	2	4-Aug-83	1-Oct-82	5662	M	RADIOACTIVE LIQUID WASTE COLLECTION SYSTEM IMPROVEMENTS, MECH., INSTRUMENTATION LOCA
3	16	C	44014	12	0	21-Oct-82	15-Oct-82	6873	E	UPGRADE HEATING SYSTEM ELEC; BILL OF MATERIAL, NOTES & NAMEPLATE SCHEDULE
3	16	C	44014	2	0	21-Oct-82	15-Oct-82	6873	G	UPGRADE HEATING SYSTEM GENERAL; SUBMITTALS
3	16	C	44014	5	0	21-Oct-82	15-Oct-82	6873	M	UPGRADE HEATING SYSTEM MECH; CONTROL DIAGRAM & SEQUENCE
3	16	C	44014	3	0	21-Oct-82	15-Oct-82	6873	M	UPGRADE HEATING SYSTEM MECH; PARTIAL HEATING AND VENTILATING PLAN
3	16	C	44014	4	0	21-Oct-82	15-Oct-82	6873	M	UPGRADE HEATING SYSTEM MECH; PARTIAL HEATING AND VENTILATING PLAN
3	16	C	44014	8	0	21-Oct-82	15-Oct-82	6873	M	UPGRADE HEATING SYSTEM MECH; PIPING DIAGRAM
3	16	C	44014	9	0	21-Oct-82	15-Oct-82	6873	M	UPGRADE HEATING SYSTEM, MECH; NOTES
3	16	C	44014	1	0	21-Oct-82	15-Oct-82	6873	T	UPGRADE HEATING SYSTEM, TITLE SHEET, INDEX TO DRAWINGS AND LOCATION PLAN
3	16	C	44249	42	2	4-Aug-83	1-Nov-82	5662	M	RADIOACTIVE LIQUID WASTE COLLECTION SYSTEM IMPROVEMENTS, MECH., PIPING MODIFICATIONS P
3	16	SK	7180	3	0	2-Mar-98	14-Feb-83	6922	C	EXISITING LANDSCAPE AREAS,
3	16	SK	7186	1	0	2-Mar-98	4-Mar-83	6922	C	LAWN IRRIGATION DISTRIBUTION SYSTEM, PLAN AND DETAILS
3	16	C	49038	4	1	16-Dec-92	30-Aug-83	0	C	TA-3 CONDENSATE SYSTEM REPLACEMENT, CIVIL, PLAN & PROFILE, SCOPE OF WORK, MANHOLE
3	16	C	43943	50	0	14-May-92	5-Jan-84	5253	C	RADIOACTIVE LIQUID WASTE COLLECTION, CIVIL, RADIOLOGICAL SOILS TEST RESULTS, TA-3
3	16	C	43943	30	0	14-May-92	5-Jan-84	5253	C	RADIOACTIVE LIQUID WASTE COLLECTION, CIVIL, REMOVAL OF EXISTING LINES 12, 13, 14, MANHOLE D
3	16	R	3394	5	4	25-Mar-64	8-Jun-84	0	A	3RD, 4TH & 5TH FLOOR PLAN, VAN DE GRAAF LABORATORY
3	16	R	3391	2	5	25-Mar-64	8-Jun-84	0	A	BASEMENT FLOOR PLAN, VAN DE GRAAF LABORATORY
3	16	R	3392	3	3	25-Mar-64	8-Jun-84	0	A	FIRST FLOOR PLAN, VAN DE GRAAF LABORATORY
3	16	R	3393	4	3	25-Mar-64	8-Jun-84	0	A	SECOND FLOOR PLAN, VAN DE GRAAF LABORATORY
3	16	R	3390	1	3	25-Mar-64	8-Jun-84	0	A	SUB BASEMENT FLOOR PLAN, VAN DE GRAAF LABORATORY
3	16	C	45335	6	0	29-Jan-88	20-Oct-87	9141	E	ROTOCLONE RELOCATION, ELEC; POWER & LIGHTING PLAN
3	16	C	45335	3	0	29-Jan-88	4-Nov-87	9141	M	ROTOCLONE RELOCATION, MECH; SECTION, NOTES AND LEGEND
3	16	C	45335	4	0	29-Jan-88	4-Nov-87	9141	F	ROTOCLONE RELOCATION, MECH; SPRINKLER FLOOR PLAN AND PIPING DETAIL
3	16	C	45335	2	1	29-Jan-88	21-Jan-88	9141	S	ROTOCLONE RELOCATION, STRUCT., BASE SUPPORT
3	16	C	45335	1	3	29-Jan-88	21-Jan-88	9141	S	ROTOCLONE RELOCATION, STRUCT., ROTOCLONE FRAME AND BASE EXTENSION
3	16	C	45335	9	1	29-Jan-88	16-Feb-88	9141	E	ROTOCLONE RELOCATION, ELEC; ELECTRICAL BILL OF MATERIAL & NAMEPLATE SCHEDULE
3	16	C	45335	8	1	29-Jan-88	16-Feb-88	9141	E	ROTOCLONE RELOCATION, ELEC; PARTIAL ROOF PLAN FOR LIGHTNING PROTECTION
3	16	C	45335	7	1	29-Jan-88	16-Feb-88	9141	E	ROTOCLONE RELOCATION, ELEC; PARTIAL ROOF PLAN FOR POWER & LIGHTING
3	16	C	45335	5	1	29-Jan-88	16-Feb-88	9141	E	ROTOCLONE RELOCATION, ELEC; SCOPE OF WORK, NOTES & LEGEND
3	16	C	45861	2	0	18-Dec-89	7-Dec-89	9110	M	VAN DE GRAAFF FAC, ENERGY MANAGEMENT SYSTEM, MECH; CONFIGURATION & CONTROL SYSTEM S
3	16	C	45861	3	0	18-Dec-89	7-Dec-89	9110	M	VAN DE GRAAFF FAC, ENERGY MANAGEMENT SYSTEM, MECH; CONTROLS SCHEDULES
3	16	C	45861	1	0	18-Dec-89	7-Dec-89	9110	M	VAN DE GRAAFF FAC, ENERGY MANAGEMENT SYSTEM, MECH; FLOOR PLANS, LEGEND AND DRAWING L
3	16	C	45861	4	0	18-Dec-89	7-Dec-89	9110	M	VAN DE GRAAFF FAC, ENERGY MANAGEMENT SYSTEM, MECH; SEQENCE OF OPERATION
3	16	C	46117	3	0	24-Jun-91	11-Jun-91	11836	C	INSTALL UNDERGROUND STORAGE TANK, CIVIL; GENERAL NOTES
3	16	C	46117	2	0	24-Jun-91	11-Jun-91	11836	C	INSTALL UNDERGROUND STORAGE TANK, CIVIL; SECTION AND DETAILS
3	16	C	46117	1	0	24-Jun-91	11-Jun-91	11836	C	INSTALL UNDERGROUND STORAGE TANK, CIVIL; SITE PLAN, SECTION, & DETAILS
3	16	C	46117	4	0	24-Jun-91	11-Jun-91	11836	G	INSTALL UNDERGROUND STORAGE TANK, GEN; SUBMITTALS SCHEDULE
3	16	SK	7845	11	0	22-May-92	16-Mar-92	12509	E	REPLACE PCB TRANSFORMERS, ELEC; SITE PLAN
3	16	SK	7845	10	0	22-May-92	16-Mar-92	12509	E	REPLACE PCB TRANSFORMERS, ELEC; NOTES AND SCOPE OF WORK

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3	16	C	46373	1	0	24-May-93	29-Sep-92	13498	C	EMERGENCY GENERATOR INSTALLATION, CIVIL; PLAN - CONC. PAD FOR GENERATOR, SECTION & DETAI
3	16	C	46373	3	0	24-May-93	29-Sep-92	13498	E	EMERGENCY GENERATOR INSTALLATION, ELEC; ONE LINE DIAGRAM, LEGEND AND DETAIL
3	16	C	46373	4	0	24-May-93	29-Sep-92	13498	E	EMERGENCY GENERATOR INSTALLATION, ELEC; PARTIAL FLOOR PLAN
3	16	C	46373	2	0	24-May-93	29-Sep-92	13498	M	EMERGENCY GENERATOR INSTALLATION, MECH; PIPING PLAN, DETAILS, AND NOTES
3	16	SK	7910	4	0	30-Aug-93	9-Aug-93	14751	E	ELEC; SUBSTATION TA-3-190 'SUS-B' ONE LINE DIAGRAM
3	16	SK	7910	3	0	30-Aug-93	9-Aug-93	14751	E	REPLACE PCB TRANSFORMERS, ELEC; SITE PLAN
3	16	SK	7910	2	0	30-Aug-93	9-Aug-93	14751	E	REPLACE PCB TRANSFORMERS, ELEC; NOTES AND SCOPE OF WORK
3	16	SK	7910	1	0	30-Aug-93	9-Aug-93	14751	T	REPLACE PCB TRANSFORMERS, ELEC; TITLE SHEET AND LIST OF DRAWINGS
3	16	SK	8755	1	0	26-Jul-99	5-Oct-98	18953	F	BASEMENT ROOM 70; MODIFICATIONS TA-3-16
3	16	C	53436	5	0	13-Nov-02	2-Oct-02	100615	E	PARKING LOT LIGHTING, ELEC., DETAILS
3	16	C	53436	3	0	13-Nov-02	2-Oct-02	100615	E	PARKING LOT LIGHTING, ELEC., GENERAL NOTES
3	16	C	53436	4	0	13-Nov-02	2-Oct-02	100615	C	PARKING LOT LIGHTING, ELEC., SITE PLAN
3	16	C	53436	4	0	13-Nov-02	2-Oct-02	100615	E	PARKING LOT LIGHTING, ELEC., SITE PLAN
3	16	C	53436	2	0	13-Nov-02	2-Oct-02	100615	E	PARKING LOT LIGHTING, ELEC., SYMBOL LEGEND
3	16	C	53436	1	0	13-Nov-02	2-Oct-02	100615	T	PARKING LOT LIGHTING, TITLE SHEET
3	16	SK	213	1	0	1-Jun-53		512	UN	12 MEV VAN DE GRAAFF ACCELERATOR BLDG. & LABORATORY, BLDG. SM-16, SAFETY FENCE
3	16	C	34392	1	0	13-Oct-67		3247	E	600 KVA SUBSTATION RENOVATION, STRUCTURE SM-16 - ELECTRICAL
3	16	C	47471	1	0	15-Sep-92		0	A	ACCELERATOR INSPECTION PLATFORM FABRICATION DRAWINGS, BLDG. SM-16
3	16	C	47471	2	0	15-Sep-92		0	S	ACCELERATOR INSPECTION PLATFORM FABRICATION, BLDG. SM-16
3	16	C	26293	1	0	29-Nov-61		1943	AC	ADDITIONAL CONT. RM. RACK VENT., RM. 110, BLDG. SM-16, MECHANICAL - PLAN, NOTES
3	16	PL	755	1	0	6-Aug-64		188	A	ADDITIONAL CRITERIA, BLDGS. SM-16 & 18
3	16	C	26296	4	0	29-Nov-61		1943	M	ADJUSTABLE SPEED FAN, FE-2 DRIVE
3	16	C	26295	3	0	29-Nov-61		1943	M	ADJUSTABLE SPEED FAN, FE-2 DRIVE
3	16	PL	756	1	0	3-May-63		188	A	ALIGNMENT TARGET ASSY., BLDGS. SM-16 & SM-18
3	16	PL	758	3	0	3-May-63		188	A	ALIGNMENT TARGET STAND DETAILS, BLDGS. SM-16 & SM-18
3	16	C	40999	1	1	13-Sep-72		0	S	ALLOWABLE FLOOR LOADING, ROOM 70
3	16	C	41537	2	1	5-Apr-73		4990	G	AUXILARY GENERATOR INSTALLATION ELEC. PLAN, DETAILS, SCOPE & NOTES
3	16	C	41536	1	1	5-Apr-73		4990	G	AUXILIARY GENERATOR INSTALLATION, MECHANICAL
3	16	C	38502	3	0	6-Aug-70		3820	A	BASEMENT FLOOR PLAN
3	16	PL	757	2	0	3-May-63		188	S	BLDGS. SM-16 & SM-18 - ALIGNMENT TARGET AND STAND
3	16	C	18901	1	1	15-May-57		1847	UN	BUILDING SM-16 ADDITION - PLANS & ELEVATIONS
3	16	C	27721	1	0	29-Jun-66		3434	M	CART & CART-BEAM FOR COLLIMATOR BLDG. SM-16, PHASE 'A', ASSEMLBY - ISOMETRIC VIE
3	16	C	27724	4	0	29-Jun-66		3434	M	CART & CART-BEAM FOR COLLIMATOR BLDG. SM-16, PHASE 'A', CART ASSEMBLY
3	16	C	27722	2	0	29-Jun-66		3434	M	CART & CART-BEAM FOR COLLIMATOR BLDG. SM-16, PHASE A', CART BEAM ASSEMBLY
3	16	C	27723	3	0	29-Jun-66		3434	M	CART & CART-BEAM FOR COLLIMATOR BLDG. SM-16, PHASE 'A', DETAILS & SECTIONS
3	16	C	27725	5	0	29-Jun-66		3434	S	CART & CART-BEAM FOR COLLIMATOR, BLDG. SM-16, PHASE 'A', SECTIONS, ELEVATION AND
3	16	C	34463	1	1	26-Aug-66		3339	M	CHILLED WATER MODIFICATIONS, BLDGS. SM-16 & SM-208 - MECHANICAL, PIPING PLAN, D
3	16	C	34276	1	1	3-May-66		3271	S	COLLIMATOR TRACK INSTALLATION BLDG. SM-16 - STRUCTURAL - PLANS & DETAILS
3	16	C	22001	1	3	13-Sep-65		3271	S	COLLIMATOR TRACK INSTALLATION, BLDG. SM-16 - STRUCTURAL - PLAN & DETAILS
3	16	C	35484	1	0	29-Dec-66		3271	UN	COLLIMATOR TRACK INSTALLATION, BLDG. SM-16, PH.'A' - MONORAIL DETAILS

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3	16	C	34607	1	0	7-Sep-66		0	M	COMPRESSED AIR DRYER INSTALLATION, EQUIPMENT ROOM BLDG. SM-16
3	16	C	36039	1	0	18-Jan-68		3708	M	COMPRESSED AIR SYSTEM MODIFICATIONS, BLDG. SM-16, MECHANICAL
3	16	C	47125	3	0	8-Sep-92		0	M	COMPRESSOR REPACEMENT PROPOSED ALTERNATIVE BASE REWORK
3	16	C	47125	1	0	8-Sep-92		0	M	COMPRESSOR REPLACEMENT PLAN & ELEVN-EXISTING PIPING & SPACE, BLDG. 16, ROOM 70
3	16	C	43104	1	0	26-Apr-77		5673	C	COMPRESSOR REPLACEMENT, BLDG. SM-16, TA-3. CIVIL; PLAN, SECTION AND LOCATION PL
3	16	C	47125	4	0	8-Sep-92		0	M	COMPRESSOR REPLACEMENT, PLAN, ELEVN, & SPOOLS OF NEW INLET & OUTLET PIPING
3	16	C	42766	1	0	20-Mar-75		5343	E	COMPUTER POWER MODIFICATIONS, RMS. 143 AND 145, BLDG. SM-16. SINGLE LINE DIAGRA
3	16	C	19341	1	0	5-Mar-58		1943	AC	CONTROL ROOM RACK VENTILATION, RM. 110, BLDG. SM-16 - MECHANICAL - PLAN & ELEVAT
3	16	C	52368	2	0	8-Feb-00			E	DATA SHEET - PROTECTIVE DEVICES
3	16	C	34277	2	1	3-May-66		3271	S	DETAILS - STRUCTURE CONNECTIONS
3	16	C	37465	1	0	28-May-69		4091	M	DISTILLED WATER SYSTEM MODS. BLDG. SM-16, MECH. & ELEC. - PLAN, DETAIL, NOTES &
3	16	C	41538	3	1	5-Apr-73		4990	E	ELEC - CONNECTION DIAGRAM, MATERIAL & NAMEPLATES
3	16	C	42766	3	0	20-Mar-75		5343	E	ELEC. CONNECTION DIAGRAM
3	16	C	42766	2	0	20-Mar-75		5343	E	ELEC. XONDUIT PLAN AND ELEVATIONS
3	16	C	45494	6	0	6-Dec-88		9207	E	ELEC; BILL OF MATERIAL
3	16	C	45494	3	0	6-Dec-88		9207	E	ELEC; ONE LINE DIAGRAM
3	16	C	45494	2	0	6-Dec-88		9207	E	ELEC; SITE PLAN
3	16	C	45494	5	0	6-Dec-88		9207	E	ELEC; SUBSTATION 'SUS-A' PLAN AND ELEVATION
3	16	SK	7623	2	0	20-Aug-94		9207	E	ELEC; SUBSTATION 'SUS-A' PLAN AND ELEVATION
3	16	C	45494	4	0	6-Dec-88		9207	E	ELEC; SUBSTATION 'SUS-A' REMOVAL AND INSTALLATION PLANS
3	16	C	40826	10	0	2-Nov-73		4757	E	ELECTRICAL
3	16	C	40825	9	0	2-Nov-72		4757	E	ELECTRICAL
3	16	C	42738	3	0	21-Mar-75		5317	E	ELECTRICAL
3	16	C	38757	4	1	21-Jan-71		4493	E	ELECTRICAL
3	16	C	36041	3	0	18-Jan-68		3708	E	ELECTRICAL
3	16	C	36042	4	0	18-Jan-68		3708	E	ELECTRICAL
3	16	C	34473	11	1	26-Aug-66		3339	E	ELECTRICAL - ELEMENTARY DIAGRAMS
3	16	C	38503	4	0	6-Aug-70		3820	E	ELECTRICAL - FIRST FLOOR PLAN
3	16	C	34474	12	1	26-Aug-66		3339	E	ELECTRICAL - INTERCONNECTION, WIRING DIAGRAM
3	16	C	34475	13	1	26-Aug-66		3339	E	ELECTRICAL - INTERCONNECTION, WIRING DIAGRAM
3	16	C	19346	6	0	5-Mar-58		1943	E	ELECTRICAL - ISOMETRIC
3	16	PL	598	21	0	6-Aug-64		188	E	ELECTRICAL - ONE LINE DIAGRAM. BLDGS. SM-16 & 18
3	16	C	34472	10	1	26-Aug-66		3339	E	ELECTRICAL - ONE-LINE DIAGRAM
3	16	C	34279	4	0	3-May-66		3271	E	ELECTRICAL - PLANS & DETAILS, ETC.
3	16	C	34471	9	1	26-Aug-66		3339	E	ELECTRICAL - PLOT PLAN, SCOPE, NOTES & BILL OF MATERIAL
3	16	C	19345	5	0	5-Mar-58		1943	E	ELECTRICAL - SCOPE & WIRING DIAGRAM
3	16	C	35740	3	0	15-Aug-67		3715	M	ELECTRICAL & MECHANICAL
3	16	C	18908	8	1	15-May-57		1847	E	ELECTRICAL DETAILS 1-6/8,2-6/8,3-6/8
3	16	C	38505	6	0	6-Aug-70		3820	E	ELECTRICAL ONE-LINE DIAGRAM
3	16	C	41117	6	0			4794	E	ELECTRICAL PARITAL PLAN

Building Drawing List

TA	BLDG	PREFI	DRAWNUM	PAGE	REV	LOG_DATE	DOC_DATE	PROJID	DISC	TITLE
3	16	C	18906	6	1	15-May-57		1847	E	ELECTRICAL PLAN POWER & LIGHTING
3	16	C	18907	7	1	15-May-57		1847	E	ELECTRICAL SINGLE LINE DIAGRAM
3	16	C	38499	4	0	23-Jun-70		3820	E	ELECTRICAL WIRING DIAGRAM
3	16	C	41116	5	0	3-Jan-73		4794	E	ELECTRICAL, ELEVATIONS, MATERIAL AND NAMEPLATES
3	16	C	41115	4	0	3-Jan-73		4794	E	ELECTRICAL, PART. PLAN ROOM 70 AND SINGLE LINE
3	16	C	34476	14	1	26-Aug-66		3339	E	ELECTRICAL, PLAN & WIRING DIAGRAM
3	16	C	41114	3	0	3-Jan-73		4794	E	ELECTRICAL, PLOT PLAN AND NOTES
3	16	PL	750	1	1	5-Mar-63		188	AC	ELECTRONIC RACK, AIR CONNECTOR, BLDGS. SM-16 & SM-18
3	16	PL	751	2	1	5-Mar-63		188	AC	ELECTRONIC RACK, AIR CONNECTOR, BLDGS. SM-16 & SM-18
3	16	PL	583	6	0	6-Aug-64		188	A	ELEVATIONS, BLDGS. SM-16 & 18
3	16	C	38500	1	0	6-Aug-70		3820	M	EMERGENCY POWER REVISIONS BLDG. SM-16 - MECHANICAL - EQUIPMENT LIST, PLAN & SCHE
3	16	C	38496	1	0	23-Jun-70		3820	M	EMERGENCY POWER REVISIONS, BLDG. SM-16, TA-3-MECHANICAL-EQUIPMENT LIST, PLAN AND
3	16	C	2934	1	2			1366	S	EQUIPMENT SUPPORT BEAM, BLDG. SM-18, PLAN AND DETAIL
3	16	C	2935	2	1			1366	M	EQUIPMENT SUPPORT BEAMS -CATWALK, BLDG. SM-18, DETAILS - CATWALK
3	16	PL	760	1	0	6-Aug-64		188	E	EXIST. AUGOMATIC CONTROLS FOR DOUBLE ENDED OPER. OF 600 KVA SUB.
3	16	C	40817	1	0	2-Nov-72		4757	C	EXPERIMENTAL FACILITY, RM. 69 VICINITY MAP AND DWG. INDEX. BLDG. SM-16
3	16	C	37269	1	0	18-Aug-70		0	F	FIRE DETECTION SYSTEM, RM. 60, BLDG. SM-16, PLANS & WIRING DIAGRAM
3	16	C	42893	36	1	1-Apr-77		5465	F	FIRE PROTECTION IMPROV., BLDG. SM-16, 208, ELEC. BSMT. FLOOR PLAN,
3	16	C	42893	38	1	1-Apr-77		5465	F	FIRE PROTECTION IMPROVE. ELECT., SECOND FLOOR PLAN FIRE ALARM SYSTEM LAYOUT
3	16	C	42893	35	1	1-Apr-77		5465	F	FIRE PROTECTION IMPROVE., ELEC.- SUB BASEMENT FIRE ALARM SYSTEM LAYOUT
3	16	C	42893	37	1	1-Apr-77		5465	E	FIRE PROTECTION IMPROVE., ELECT. FIRST FLOOR PLAN FIRE ALARM SYSTEM LAYOUT
3	16	C	42893	3	0	1-Apr-77		5465	C	FIRE PROTECTION IMPROVEMENTS, CIVIL; DETAILS
3	16	C	42893	40	1	1-Apr-77		5465	E	FIRE PROTECTION IMPROVEMENTS, ELEC. - BLOCK DIAGRAM
3	16	C	42893	39	1	1-Apr-77		5465	E	FIRE PROTECTION IMPROVEMENTS, ELECTRICAL SECTIONS
3	16	C	38754	1	1	21-Jan-71		4493	F	FIRE SPRINKLER INSTALLATION, SM-16 - MECHANICAL PLAN - FIRST FLOOR
3	16	C	36614	1	0	16-May-68		0	S	FLOOR COVERING FOR AIR PALLET, BLDG. SM-16, STRUCTURAL - PLANS & DETAILS
3	16	PL	580	3	0	6-Aug-64		188	A	FLOOR PLAN, LOWER LEVEL, BLDGS. SM-16, 18
3	16	PL	581	4	0	6-Aug-64		188	A	FLOOR PLAN, UPPER LEVEL, BLDGS. SM-16, 18
3	16	C	40820	4	0	2-Nov-72		4757	A	FLOOR PLANS AND ELEVATIONS
3	16	C	43104	2	0	26-Apr-77		5673	M	GAS COMPRESSOR REPLACEMENT, SM-16, TA-3. MECH; PLAN, ELEVATION. DETAILS AND NOT
3	16	C	43104	3	0	26-Apr-77		5673	E	GAS COMPRESSOR REPLACEMENT, SM-16. ELECTRICAL
3	16	C	31461	91	2	3-Feb-65		188	F	GROUNDING & FIRE ALARM PLAN & LIGHTNING ROD ARRANGEMENT, BLDG. SM-16
3	16	C	35802	1	0	22-Oct-70		1735	M	HUMIDITY CONTROL, ROOM 143, BLDG. SM-16, MECH; PLAN, SCHEMATIC, EQUIP. LIST & N
3	16	C	19206	1	0	2-Nov-64		1880	M	HUMIDITY CONTROL, ROOMS 140 & 145, BLDG. SM-16 - MECHANICAL - PLAN, SECTIONS & E
3	16	C	38360	1	0	11-Feb-70		0	AC	HYDROGEN VENT LINE BLDG. SM-16 - RM. 64 - PLAN & DETAILS
3	16	C	34526	1	0	21-Jul-67		3482	A	INSTALLATION DETAILS
3	16	C	26900	1	1	1-Mar-62		1589	A	ION BEAM COMPRESSION SYSTEM INSTALLATION, BLDG. SM-18, LOCATION - LAYOUT PLAN &
3	16	C	26904	5	1	1-Mar-62		2589	UN	ION BEAM COMPRESSION SYSTEM INSTALLATION, BLDG. SM-18, MEZZANINE & STAIR DETAILS
3	16	C	19154	1	0	29-Dec-64		3159	E	L.A.T.A.F. COMPUTER INSTALLATION, ROOM 145, BLDG. SM-16 - ELECTRICAL
3	16	C	48021	1	0	14-Nov-92		0	A	L.N.2 DEWAR LIFTING DEVICE

Building Drawing List

TA	BLDG	PREFI	DRAWNUM	PAGE	REV	LOG_DATE	DOC_DATE	PROJID	DISC	TITLE
3	16	C	48589	1	0	30-Nov-92				LANDSCAPE PLAN SM-16, TA-3
3	16	C	14845	1	0	13-Aug-54		986	E	LIGHTING REVISIONS, LAB. VAN DE GRAFF, BLDG. SM-16
3	16	C	27616	3	0	6-Jul-64		3094	E	LIQUID NITROGEN DISTRIBUTION SYSTEM, BLDG. SM-16, CONDUIT PLANS AND DETAILS
3	16	C	27617	4	0	6-Jul-64		3094	M	LIQUID NITROGEN DISTRIBUTION SYSTEM, BLDG. SM-16, ELEVATIONS & DETAILS
3	16	C	27615	2	0	6-Jul-64		3094	M	LIQUID NITROGEN DISTRIBUTION SYSTEM, BLDG. SM-16, PIPING DIAGRAMS AND DETAILS
3	16	C	27614	1	0	6-Jul-64		3094	M	LIQUID NITROGEN DISTRIBUTION SYSTEM, BLDG. SM-16, PIPING PLANS
3	16	C	27618	5	0	6-Jul-64		3094	E	LIQUID NITROGEN DISTRIBUTION SYSTEM, BLDG. SM-16, WIRING DIAGRAMS, NAMEPLATE SCH
3	16	C	47100	2	0	4-Sep-92		0	M	LN2 DEWAR INSTALLATION LIFTING ELEVATION
3	16	C	47100	1	0	4-Sep-92		0	UN	LN2 DEWAR INSTALLATION LIFTING PLAN, BLDG. SM-16, TA-3
3	16	C	42738	1	0	21-Mar-75		5317	C	LN2 DEWAR INSTALLATION, BLDG. SM-16. CIVIL; PLAN AND DETAILS
3	16	C	40818	2	0	2-Nov-72		4757	C	LOCATION PLAN
3	16	C	52368	1	0	8-Feb-00			E	LOW VOLTAGE UNIT SUBSTATIONS - ONE LINE DIAGRAM & ELEVATIONS
3	16	C	26373	1	0	5-Sep-61		2580	A	M.G. SET & SAFETY PLATFORM INSTALLATION, BLDG. SM-18, SAFETY PLATE DETAILS
3	16	C	42738	2	0	21-Mar-75		5317	M	MECH; DETAILS AND NOTES
3	16	C	36040	2	0	18-Jan-68		3708	M	MECHANICAL
3	16	C	40824	8	0	2-Nov-72		4757	M	MECHANICAL - EQUIPMENT LIST, NOTES, & DETAILS
3	16	C	40822	6	0	2-Nov-72		4757	M	MECHANICAL - FLOOR PLAN
3	16	C	35739	2	0	15-Aug-67		3715	M	MECHANICAL - PLAN - EQUIPMENT LIST
3	16	C	40823	7	0	2-Nov-72		4757	M	MECHANICAL - PLAN AND SECTIONS
3	16	C	38497	2	0	23-Jun-70		3820	M	MECHANICAL - PLAN, DETAILS, SCHEMATICS & NOTES
3	16	C	38501	2	0	6-Aug-70		3820	M	MECHANICAL - PLAN, DETAILS, SCHEMATICS & NOTES
3	16	C	26294	2	0	29-Nov-61		1943	M	MECHANICAL - SECTIONS & DETAILS
3	16	C	18905	5	1	15-May-57		1847	AC	MECHANICAL - VENTILATION
3	16	C	19344	4	0	5-Mar-58		1943	AC	MECHANICAL - VENTILATION DETAILS
3	16	C	19343	3	0	5-Mar-58		1943	AC	MECHANICAL - VENTILATION, DETAILS & CONTROL DIAGRAM
3	16	C	19342	2	0	5-Mar-58		1943	AC	MECHANICAL - VENTILATION, SECTIONS & DETAILS
3	16	C	18904	4	1	15-May-57		1847	M	MECHANICAL HEATING
3	16	C	34464	2	1	26-Aug-66		3339	M	MECHANICAL, COOLING WATER INSTRUMENTATION
3	16	C	34468	6	1	26-Aug-66		3339	M	MECHANICAL, DETAILS - EQUIPMENT SCHEDULES
3	16	C	38498	3	0	23-Jun-70		3820	M	MECHANICAL, ELECTRICAL BLDG. TSL-27, TA-35
3	16	C	34469	7	1	26-Aug-66		3339	M	MECHANICAL, PIPING PLANS
3	16	C	34465	3	1	26-Aug-66		3339	M	MECHANICAL, PIPING PLANS & DETAILS
3	16	C	34470	8	1	26-Aug-66		3339	M	MECHANICAL, PLAN & DETAILS
3	16	C	34467	5	1	26-Aug-66		3339	M	MECHANICAL, PLANS & DETAILS
3	16	C	41113	2	0	21-Mar-73		4794	M	MECHANICAL, PLANS AND NOTES
3	16	C	34466	4	1	26-Aug-66		3339	M	MECHANICAL, PLANS, SECTIONS & DETAILS
3	16	C	38756	3	1	21-Jan-71		4493	M	MECHANICAL; PLAN AND SECTIONS
3	16	C	38755	2	1	21-Jan-71		4493	M	MECHANICAL; TUNNEL PLAN & SECTION AND BILL OF MATERIAL
3	16	C	38506	7	0	6-Aug-70		3820	E	MISCELLANEOUS ELECTRICAL
3	16	C	42766	4	0	20-Mar-75		5343	UN	NAMEPLATES, CONDUIT SCHEDULE AND BILL OF MATERIAL

Building Drawing List

TA	BLDG	PREFI	DRAWNUM	PAGE	REV	LOG_DATE	DOC_DATE	PROJID	DISC	TITLE
3	16	PL	761	2	0	6-Aug-64		188	E	NEW CONTROLS FOR PARALLEL OPERATION OF 600 KVA SUBSTATION, BLDG. SM-18
3	16	C	34527	1	0	23-Nov-66		0	S	NIRTOGEN TANKS INSTALLATION, BLDG. SM-16 - STRUCTURE PLANS & DETAILS
3	16	PL	585	8	0	6-Aug-64		188	C	OCCUPANCY, AREA 'A', LOWER LEVEL, BLDGS. SM-16 & 18
3	16	PL	586	9	0	6-Aug-64		188	A	OCCUPANCY, AREA 'A', UPPER LEVEL, BLDGS. SM-16, 18
3	16	PL	587	10	0	6-Aug-64		188	E	OCCUPANCY, AREA 'B', BLDGS. SM-16 & 18
3	16	PL	588	11	0	6-Aug-64		188	A	OCCUPANCY, AREA 'C', BLDGS. SM-16 & 18
3	16	PL	589	12	0	6-Aug-64		188	A	OCCUPANCY, AREA 'D', BLDGS. SM-16 & 18
3	16	C	38155	1	0	3-Feb-70		0	AC	P-9 INSTALL REPLACEMENT VACUUM PUMP VENT LINES - RMS. 21, 126, 128, 221 - BLDG.
3	16	C	45494	1	0	6-Dec-88		9207	E	PCB TRANSFORMER REPLACEMENT UTIL. RESTORATION ELEC; NOTES SCOPE WORK INDEX DWG N
3	16	SK	7623	1	0	20-Aug-94		9207	E	PCB TRANSFORMER REPLACEMENT, UTILITY RESTORATION, TA-0, ELEC; ONE LINE DIAGRAM
3	16	C	40819	3	0	2-Nov-72		4757	C	PLOT PLAN
3	16	PL	579	2	0	6-Aug-64		188	C	PLOT PLAN, BLDGS. SM-16 & 18
3	16	C	35738	1	0	15-Aug-67		3715	S	POLARIZED ION SOURCE ROOM 60, BLDG. SM-16, STRUCTURAL
3	16	C	38504	5	0	6-Aug-70		3820	E	POWER & COMMUNICATION LAYOUT
3	16	C	41118	7	0			4794	E	POWER PLAN, RM. 69 & ELEVATIONS
3	16	C	41112	1	0	3-Jan-73		4794	S	Q3D SPECTORMETER INSTALLATION, BLDG. SM-16 STRUCTURAL, PLAN, DETAILS & SECTIONS
3	16	C	47125	2	0	8-Sep-92		0	M	SCALE DRWG. OF COMPRESSOR (SER. NO. 681718)
3	16	PL	591	14	0	6-Aug-64		188	AC	SCHEMATIC AIR CONDITIONING SYSTEM, NO. 1, BLDGS. SM-16, 18
3	16	PL	592	15	0	6-Aug-64		188	AC	SCHEMATIC AIR CONDITIONING SYSTEM, NO. 2, BLDGS. SM-16, 18
3	16	PL	593	16	0	6-Aug-64		188	AC	SCHEMATIC HEATING & VENTILATING SYSTEM, SM. 3, BLDGS. SM-16 & 18
3	16	PL	594	17	0	6-Aug-64		188	AC	SCHEMATIC HEATING & VENTILATION SYSTEM, NO. 4, BLDGS. SM-16, 18
3	16	C	26375	3	0	5-Sep-61		2580	E	SCOPE, NOTES, BILL OF MATERIAL & DETAILS/ELECT CONNECTIONS
3	16	PL	590	13	0	6-Aug-64		188	A	SECTION, MACHINE ROOM., BLDGS. SM-16 & 18
3	16	C	40821	5	0	2-Nov-72		4757	S	SECTIONS AN DETAILS
3	16	PL	584	7	0	6-Aug-64		188	A	SECTIONS, BLDGS. SM-16 & 18
3	16	PL	582	5	0	6-Aug-64		188	C	SECTIONS, BLDGS. SM-16, 18
3	16	C	37456	1	0	8-Aug-69		4090	M	SERVICES FOR SUPERCONDUCTING MAGNET., BLDG. SM-16, ELEC. & MECH. PLAN
3	16	C	37457	2	0	8-Aug-69		4090	E	SERVICES FOR SUPERCONDUCTING MAGNET., BLDG. SM-16, ELEC. CONNECTION DIAGRAM
3	16	C	34525	1	0	28-Aug-68		3482	M	SHIELDED DOOR SUPPORT MODIFICATIONS BLDG. SM-16 - TANDEM VAN DEGRAAFF FACILITY
3	16	PL	597	20	0	6-Aug-64		188	A	SHIELDWALL PENETRATIONS, BLDGS. SM-16 & 18
3	16	C	14839	1	0	26-Sep-55		0	A	SHOPS, SM-16 - PLAN
3	16	C	34278	3	1	3-May-66		3271	S	STRUCTURAL - DETAILS
3	16	C	18903	3	1	15-May-57		1847	S	STRUCTURAL DETAILS
3	16	C	18902	2	1	15-May-57		1847	S	STRUCTURAL PLAN & SECTIONS
3	16	C	36335	1	0	28-Apr-69		4131	E	SUBSTATION MODIFICATIONS, BLDG. SM-16, ELECT. - SUBSTA. DETS., WIRING DIAG.-BILL
3	16	PL	754	3	0	5-Mar-63		188	S	SUPPLEMENTAL CRITERIA, BLDGS. SM-16 & SM-18
3	16	PL	752	1	1	5-Mar-63		188	A	SUPPLEMENTAL CRITERIA, BLDGS. SM-16 & SM-18
3	16	PL	753	2	0	5-Mar-63		188	A	SUPPLEMENTAL CRITERIA, BLDGS. SM-16 & SM-18
3	16	PL	748	1	0	6-Aug-64		188	E	TANDEM VAN DE GRAAFF FACILITIES - JUNCTION BOX & POWER OUTLET ADDITIONS, BLDGS.
3	16	PL	745	2	0	6-Aug-64		188	A	TANDEM VAN DE GRAAFF FACILITIES - TUBE TRAILER STATION, BLDGS. SM-16 & 18

Building Drawing List

TA	BLDG	PREFI	DRAWNUM	PAGE	REV	LOG_DATE	DOC_DATE	PROJID	DISC	TITLE
3	16	PL	749	1	0	5-Mar-63		188	A	TARGET HOUSING, BLDGS. SM-16 & SM-18
3	16	C	35874	1	0	2-Nov-67		3755	M	TRITIUM EXHAUST FAN MODIFICATIONS, BLDG. SM-16, TA-3, MECH. - PLAN - NOTES & SEC
3	16	C	35875	2	0	2-Nov-67		3755	M	TRITIUM EXHAUST FAN MODIFICATIONS, BLDG. SM-16, TA-3, MECH. - PLAN - NOTES & SEC
3	16	PL	612	1	0	6-Aug-64		188	M	TUBE TRAILER OUTLETS, MANIFOLD OUTLETS, BLDGS. SM-16 & 18
3	16	C	24053	1	0	10-Aug-59		0	M	VAN DE GRAAFF LAB BLDG. SM-16, JOHNSON SERVICE CO.
3	16	C	21398	1	0	3-Mar-58		2092	AC	VENTILATION FOR ELECTRONIC RACKS, BLDG. SM-16 (ADDITION LAB 8) - MECH. - VENTILA
3	16	PL	596	19	0	6-Aug-64		188	E	WIREWAY PLAN, LOWER LEVEL, AREA 'A', BLDGS. SM-16 & 18

Appendix G.

SCRIPT AND TIME LOG FOR ANIMATION

Time start - Time end	Description
00:00 - 00:30	Fly over of the vertical Van de Graaff (green and yellow) and the horizontal or tandem Van de Graaff (blue and red) in TA-03-0016, Ion Beam Facility.
00:31 - 00:45	External housing or tank of vertical Van de Graaff lifted off to expose the internal accelerator column.
00:45 - 00:46	External housing or tank view is cut vertically to show in section.
00:47 - 01:10	“Gooser” lift shown going up the separation column for cleaning and to ready for testing. "Gooser" returning to original position. Staff would use "gooser" lift.
01:11 - 01:27	Service elevator with folding platform for staff to move up to ready the high potential terminal on top.
01:28 - 01:31	High potential terminal appears and disappears.
01:32 - 01:42	Service elevator lowers and folds out of way.
01:43 - 02:02	Slow panning around and in/out. Cut section of external housing is made whole.
02:03 - 02:39	External housing moved back into place. Internal accelerator column and separation column connected and external housing moved off again to expose married internal accelerator column and separation column.
02:40 - 02:56	Nested outer shells installed. The flow of voltage through these shells produce the best average acceleration voltage.
02:57 - 03:05	External housing moved back into place.
03:06 - 03:18	Collimator is moved into position. A collimator is a device that focuses particles. In this case, the collimator would focus the particles sent from the accelerator and after the atoms were smashed apart. Red pulsing animation are atoms being sent down the beam tubes. Animation shows the collimator being adjusted to provide particles to several experiments. Experiment set ups are not shown. Red splashing are leftover particles from the atom smashing.
03:19 - 03:25	Atoms shown traveling down other beam tubes at first floor.
03:26 - 03:31	Magnet moving out of way.
03:31 - 03:46	Atoms shown traveling to other beam tubes at bottom level.
03:47 - 03:48	Magnet being adjusted to provide for additional acceleration.
03:49 - 03:59	Horizontal accelerator showing accelerating atoms through a variety of beam tubes where independent experimental stations would be in stalled.
04:00 - 04:08	Vertical accelerator working in “tandem” with horizontal accelerator. Vertical accelerator would pre accelerator atoms before sending though horizontal accelerator.

LA-UR-18-30885
February 2019

Historic Documentation of TA-3-16

Smashing Atoms & Modern Physics at the Ion Beam Facility

Volume 2



Los Alamos National Laboratory

LANL Fiscal Year 2018 Footprint Reduction

Historic Building Survey Report No. 376

Survey No. 886

Los Alamos
NATIONAL LABORATORY
EST. 1943

Los Alamos National Laboratory Historic Building Survey
Index to Photographs

Technical Area (TA) 3 "South Mesa Site" (SM)
Structure 16 (TA-3-16) Ion Beam Facility (IBF)
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-3 "South Mesa 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-3-16).

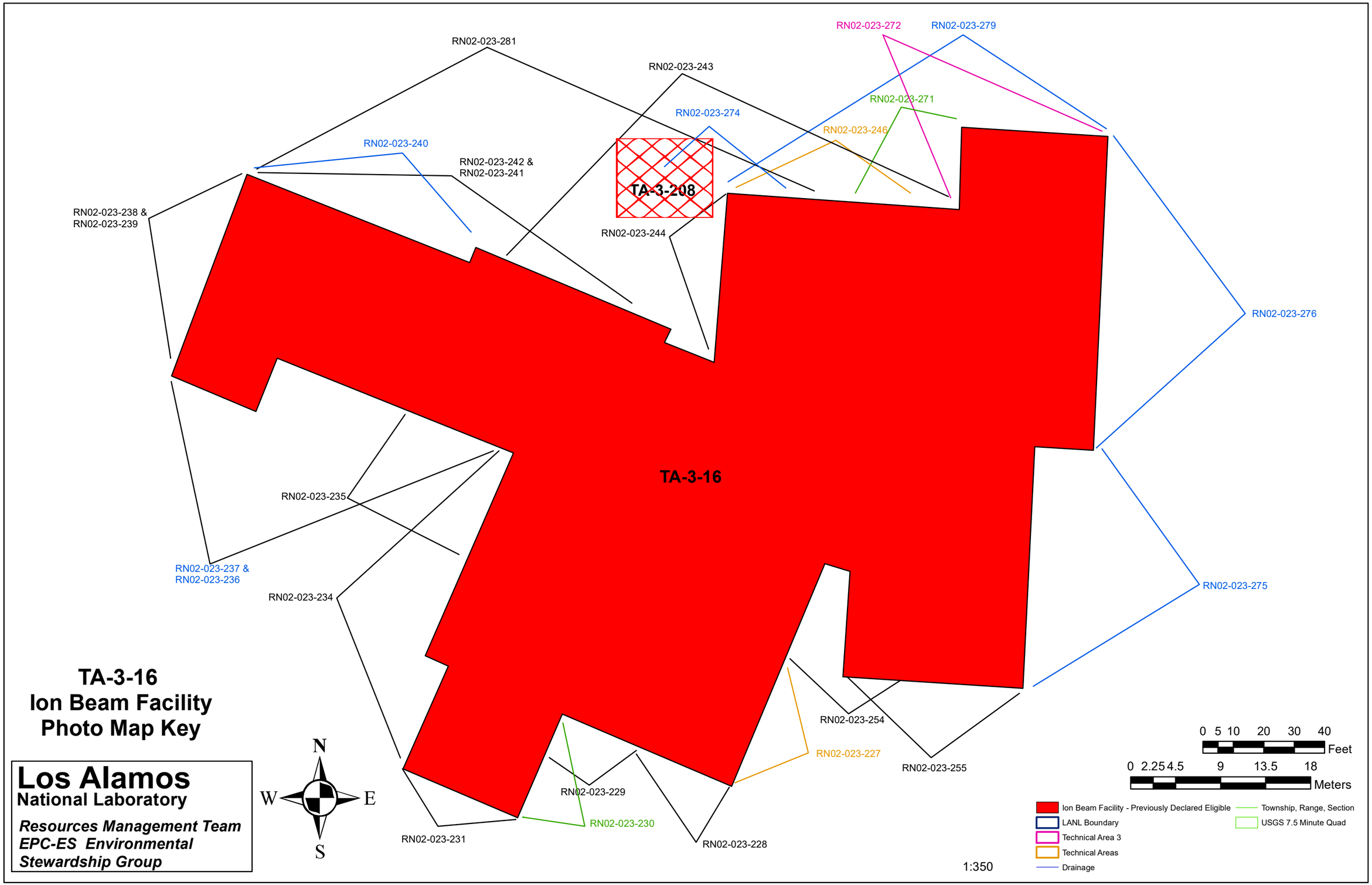
Manhattan Project scientist Joe McKibben brought the first Van de Graaff accelerator to Los Alamos from the University of Wisconsin in 1943 (Hawkins et al. 1983). This first accelerator provided charged particles for nearly every conceivable neutron experiment and served a major role in the development of the first nuclear bombs during World War II (LASL 1964).

In February 1946, the Laboratory named Joe McKibben the head of Group P-9, which placed him in charge of Van de Graaff construction at Los Alamos. McKibben designed the vertical Van de Graaff between 1946 and 1950—a machine that allowed the acceleration of ions to 8 to 9 million electron volts (MeV). The Ion Beam Facility (TA-3-16) was constructed during 1949 through 1951. Several small additions were added in 1957 and 1962 with a major addition being constructed in 1963 followed by a small addition in 1972. The main facilities and the 1963 addition were shaped by the equipment that was intended to be housed in them. Starting in 1951 with the first operation of the vertical Van de Graaff, the newly constructed facility became the home of accelerator research at post-war Los Alamos. The facility eventually housed two accelerators: the vertical Van de Graaff as well as a horizontal or "tandem" Van de Graaff.

References

Hawkins, David, Edith c. Truslow, and Ralph Carlisle Smith
1983 *Project Y: The Los Alamos Story*. The History of Modern Physics, 1800-1950, Vol. II. Tomash Publishers and the American Institute of Physics.

Los Alamos Scientific Laboratory (LASL)
1964 "Portrait of a Particle Accelerator." *The Atom*, January 1964:9



TA-3-16
Ion Beam Facility
Photo Map Key

Los Alamos
National Laboratory
Resources Management Team
EPC-ES Environmental
Stewardship Group

Enclosure

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Technical Area (TA) 3 "South Mesa Site" (SM)
Structure 16 (TA-3-16) Ion Beam Facility (Exterior)
Los Alamos National Laboratory (LANL)
Los Alamos
Los Alamos County
New Mexico

Mike O'Keefe, Photographer, IRM-RMMSO, LANL
August 19, 20, 21, 22, 26, 27, and 29, and September 3, 9, 10, 11, 12, 13, 16, 17, and 18, 2002

RN02-023-001 through RN02-023-357

Photograph Number	Description

The Ion Beam Facility (TA-3-16) is irregularly shaped with multiple angles on each of the four primary elevations (north, south, east, and west). A map key is enclosed separately to aid in the viewing of the exterior building photos.

RN02-023-276	TA-3-16, east side (front), north half, facing west.
RN02-023-275	TA-3-16, east side (front), south half, facing west.
RN02-023-255	TA-3-16, south side, east portion, facing north.
RN02-023-254	TA-3-16, south side, east portion, facing north northeast.
RN02-023-227	TA-3-16, east side, facing northwest.
RN02-023-228	TA-3-16, south side, central east portion, facing northeast.
RN02-023-229	TA-3-16, south side, central west portion, facing northeast.
RN02-023-230	TA-3-16, east side, facing northwest.
RN02-023-231	TA-3-16, south side, facing northeast.
RN02-023-234	TA-3-16, west side, south portion, facing southeast.
RN02-023-235	TA-3-16, southwest corner, facing northeast. Nitrogen and sulfur hexafluoride tank farm at left.

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Structure 16 (TA-3-16) Ion Beam Facility (Exterior) continued
Los Alamos National Laboratory (LANL)
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Photograph Number	Description
RN02-023-237	TA-3-16, south side, west portion, showing height of tower, facing northeast. Nitrogen and sulfur hexafluoride tank farm in front of building.
RN02-023-236	TA-3-16, south side, west portion, tank farm in front of building, facing northeast.
RN02-023-238	TA-3-16, west side (back), central portion, facing southeast.
RN02-023-239	TA-3-16, west side (back), central portion, facing southeast.
RN02-023-281	TA-3-16, north side, west half, facing southwest.
RN02-023-240	TA-3-16, north side, west end of west half, facing southwest.
RN02-023-242	TA-3-16, north side, west end and central portion, showing height of tower, facing southwest.
RN02-023-241	TA-3-16, north side, west end and central portion of west half, facing southwest.
RN02-023-244	TA-3-16, west side, along central portion of north side, facing east.
RN02-023-243	TA-3-16, north side, central portion, facing southeast. TA-3-208, prefabricated metal mechanical building center of photo.
RN02-023-274	TA-3-16, north side, central portion, facing southwest. TA-3-208, prefabricated metal mechanical building center of photo.
RN02-023-279	TA-3-16, north side, east portion, facing south.
RN02-023-246	TA-3-16, north side, west half of east portion, facing south.
RN02-023-271	TA-3-16, north and west sides, west portion of east half, facing southeast.

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Technical Area (TA) 3 "South Mesa Site" (SM)
Structure 16 (TA-3-16) Ion Beam Facility (Exterior) continued and
(Interior) Sub-basement and basement
Los Alamos National Laboratory (LANL)
Los Alamos
Los Alamos County
New Mexico

Photograph Number	Description
RN02-023-272	TA-3-16, north and west sides, east portion of east half, facing southeast.
RN02-023-232	TA-3-16, south of the southern portion of the building, facing south. Three of the four inter-potential shells of various diameter sizes (62 inch, 71 inch, and 119 inch) for the vertical Van de Graaff accelerator, staged south of the building. The fourth inter-potential shell is 90 inch in diameter (see photographs RN02-023-121 and RN02-023-123).
RN02-023-067	TA-3-16, sub-basement, room 1 (Low Background Count Room), facing southwest.
RN02-023-066	TA-3-16, sub-basement, utility corridor 2, facing south.
RN02-023-065	TA-3-16, sub-basement, utility corridor 3, facing west.
RN02-023-063	TA-3-16, sub-basement, utility corridor 3, facing east.
RN02-023-064	TA-3-16, sub-basement, utility corridor 3, facing east. Underneath side of the tandem accelerator tank is visible in the center upper portion of photo.
RN02-023-148	TA-3-16, basement, utility tunnel 21, facing west.
RN02-023-149	TA-3-16, basement, utility tunnel 21, facing south. An escape hatch is located at the south end of the utility tunnel which is at the east end of the Emergency Escape Tunnel, room 59.
RN02-023-218	TA-3-16, basement, room 40 (Auxiliary Apparatus Room), facing north, stairs at left lead to the storage catwalk and to first floor room 140.
RN02-023-219	TA-3-16, basement room 40 (Auxiliary Apparatus Room), facing west. Looking into rooms 62 (Machine Room) at right and 64 (Reaction Room) at left.

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Technical Area (TA) 3 "South Mesa Site" (SM)
Structure 16 (TA-3-16) Ion Beam Facility (Interior) Basement continued
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Photograph Number	Description
RN02-023-221	TA-3-16, basement, room 40 (Auxiliary Apparatus Room), facing south. Looking into corridor 65. At far-left, roll-up door and pedestrian door leading outside of the building.
RN02-023-222	TA-3-16, basement, room 40 (Auxiliary Apparatus Room), facing southeast. Two-thousand (2,000) lb. freight elevator with vertical opening doors is to the left of the roll-up door, the overhead storage catwalk is visible at upper left.
RN02-023-225	TA-3-16, basement, room 40 (Auxiliary Apparatus Room), facing southeast. Two-thousand (2,000) lb. freight elevator doors closed.
RN02-023-223	TA-3-16, basement, room 40 (Auxiliary Apparatus Room), facing south. Four Civil Defense water storage cans within the two-thousand (2,000) lb. freight elevator.
RN02-023-224	TA-3-16, basement, room 40 (Auxiliary Apparatus Room), Civil Defense water storage can, facing east.
RN02-023-215	TA-3-16, basement, room 40 (Auxiliary Apparatus Room), facing east. Corridor 10 is to the left.
RN02-023-128	TA-3-16, basement, room 45 (Target Preparation Room), small glove box at center rear and fume hoods at both right and left rear, facing south.
RN02-023-144	TA-3-16, basement, room 46 (Polishing Room), glove box at the right, facing northeast.
RN02-023-150	TA-3-16, basement, room 47 (Assembly Room), laboratory work bench and sink, facing west northwest.

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Technical Area (TA) 3 "South Mesa Site" (SM)
Structure 16 (TA-3-16) Ion Beam Facility (Interior) Basement continued
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Photograph Number	Description
RN02-023-143	TA-3-16, basement, room 48 (Dark Room), metal laboratory work bench and sink, facing northwest.
RN02-023-214	TA-3-16, basement, room 59 (Emergency Escape Tunnel), facing east. This leads to the escape hatch in the flooring of corridor 160.
RN02-023-060	TA-3-16, basement, room 62 (Machine Room), facing southeast. Room 60 (Polarized Source Room) is at right delineated by brick shielding walls. Tandem (horizontal) Van de Graaff accelerator tank in the center rear of photo. Stairs lead down to sub-basement utility corridor 3.
RN02-023-049	TA-3-16, basement, room 62 (Machine Room), facing west northwest. Tandem (horizontal) Van de Graaff accelerator tank in rear of photo. Ion beam line apparatus, 90° Analyzing Magnet bending the beamline 90° at right front, Switching Magnet and reference Switching Point at left front of photo.
RN02-023-052	TA-3-16, basement, room 62 (Machine Room), facing west. East end of tandem (horizontal) Van de Graaff accelerator tank and connecting ion beam apparatus, 90° Analyzing Magnet bending the beamline 90° at front of photo.
RN02-023-051	TA-3-16, basement, room 62 (Machine Room), facing west. East end and south side of tandem (horizontal) Van de Graaff accelerator tank and connecting ion beam line apparatus.
RN02-023-050	TA-3-16, basement, room 62 (Machine Room), facing west. East end and north side of tandem (horizontal) Van de Graaff accelerator tank and connecting ion beam line apparatus, 90° Analyzing Magnet bending the beam line 90° at left front of photo.

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Technical Area (TA) 3 "South Mesa Site" (SM)
Structure 16 (TA-3-16) Ion Beam Facility (Interior) Basement continued
Los Alamos National Laboratory (LANL)
Los Alamos
Los Alamos County
New Mexico

Photograph Number	Description
RN02-023-054	TA-3-16, basement, room 62 (Machine Room), facing southwest. Tandem (horizontal) Van de Graaff accelerator beam apparatus and external ion source area at the west end of the horizontal accelerator tank. Ion beam line tubes extend from the west end of the horizontal Van de Graaff accelerator tank connecting to the vertical Van de Graaff accelerator.
RN02-023-005	TA-3-16, basement, room 64 (Reaction Room), two-foot thick, steel-faced, magnetite-filled shielding door in the northwest corner, facing north. The shielding door is between room 62 (Machine Room) which houses the tandem (horizontal) Van de Graaff accelerator and room 64 (Reaction Room). Photo is looking into the southwestern end of room 62.
RN02-023-021	TA-3-16, basement, room 64 (Reaction Room), two-foot thick, steel-faced, magnetite-filled shielding door in the northwest corner, facing west.

There are six (6) beam tubes extending south from the switching magnet at east end of the tandem Van de Graaff accelerator in room 62 (Machine Room) to experimental areas in room 64 (Reaction Room). These beam tubes continue further south into rooms 66 (Spectrometry Room), 67 (Neutron Room), and 69 (New Experimental Facility). In these photos the beam tubes are numbered 1 through 6, from west to east. Beam tube 1 ends in room 64. Beam tubes 2 and 3 extend through room 64 south into room 67, and beam tube 3 continues to extend farther south into room 69. Beam tubes 4, 5, and 6 extend through room 64 into room 66. These beam tubes are at varying degrees from the switching magnet in room 62 (Machine Room) at the east end of the tandem Van de Graaff accelerator. Beam tubes 3 and 4 are at 18^{o}, beam tubes 2 and 5 are at 30^{o}, and beam tubes 1 and 6 are at 45^{o}.

RN02-023-002	TA-3-16, basement, room 64 (Reaction Room), facing west. Tandem beam line apparatus and beam tubes extending from tandem Van de Graaff accelerator switching magnet in room 62.
RN02-023-003	TA-3-16, basement, room 64 (Reaction Room), facing northwest. North portions of tandem Van de Graaff accelerator beam line apparatus and beam tubes.

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Structure 16 (TA-3-16) Ion Beam Facility (Interior) Basement continued
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Photograph Number	Description
RN02-023-004	TA-3-16, basement, room 64 (Reaction Room), facing northeast. North portions of tandem Van de Graaff accelerator beam line apparatus and beam tubes.
RN02-023-006	TA-3-16, basement, room 64 (Reaction Room), facing east. Tandem Van de Graaff accelerator beam tube 1 and experimental chamber.
RN02-023-007	TA-3-16, basement, room 64 (Reaction Room), facing southeast. South portion of tandem Van de Graaff accelerator beam tubes 2 and 3 (tube 2 in front center, 3 in rear center). Shielding blocks arranged creating a zig zag shielded passage for entry into room 67 (right side of photo).
RN02-023-009	TA-3-16, basement, room 64 (Reaction Room), facing southeast. South portion of tandem Van de Graaff accelerator beam tubes 2 and 3 (tube 2 in front center, 3 in rear center) extending into room 67.
RN02-023-011	TA-3-16, basement, room 64 (Reaction Room), facing south. South portion of Tandem Van de Graaff accelerator beam tube area in room 64. Wall opening between rooms and 64 (Reaction Room) and 66 (Spectrometry Room) and south portion of tandem Van de Graaff beam tube 4.
RN02-023-012	TA-3-16, basement, room 64 (Reaction Room), facing south. South portion of tandem Van de Graaff accelerator beam tube 5 and wall opening to room 66 (Spectrometry Room). Stairs in rear of photo lead down to sub-basement utility corridor 2.
RN02-023-013	TA-3-16, basement, room 64 (Reaction Room), facing south. South portion of tandem Van de Graaff accelerator beam tube 6.
RN02-023-014	TA-3-16, basement, room 64 (Reaction Room), facing northwest. North portion of tandem Van de Graaff accelerator beam tube 6 and experimental station.

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Los Alamos
Los Alamos County
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Photograph Number	Description
RN02-023-015	TA-3-16, basement, room 64 (Reaction Room), facing north. North portion of tandem Van de Graaff accelerator beam tubes 5 (right center) and 4 (left center). Beam tube 6 (far right) is visible behind beam tube 5, and beam tube 3 (far left) is visible behind beam tube 4.
RN02-023-016	TA-3-16, basement, room 64 (Reaction Room), facing north. North portion of tandem Van de Graaff accelerator beam tubes 4, 3, 2, and 1 (left to right). Beam tube 3 is in center left with aluminum cap over open end of this portion of beam tube. Beam tube 4 (left, rear) is behind beam tube 3 and beam tube 1 (far right) is behind beam tube 2.
RN02-023-017	TA-3-16, basement, room 64 (Reaction Room), facing north. North portion of tandem Van de Graaff accelerator beam tubes 3 (right) and 2 (left) with experimental chamber.
RN02-023-018	TA-3-16, basement, room 64 (Reaction Room), facing northeast. North portion of tandem Van de Graaff accelerator beam tubes 2 (right) with experimental chamber and tube 1 (left) with experimental chamber.
RN02-023-019	TA-3-16, basement, room 64 (Reaction Room), facing east. Source storage wells in east wall.
RN02-023-026	TA-3-16, basement, room 66 (Spectrometry Room), northwest corner, facing north northeast. Tandem Van de Graaff accelerator beam tube 4 and target cage. Beam tube 4 extends south through the north wall of room 66 (Spectrometry Room) from room 64 (Reaction Room) to just past the target cage then it turns back approximately 45^{o} to the northeast to the target located in the caged area. A fume hood to the left.
RN02-023-028	TA-3-16, basement, room 66 (Spectrometry Room), northwest corner, facing north northwest. South end of tandem Van de Graaff accelerator beam tube 4 and target cage.

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Technical Area (TA) 3 "South Mesa Site" (SM)
Structure 16 (TA-3-16) Ion Beam Facility (Interior) Basement continued
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Photograph Number	Description
RN02-023-025	TA-3-16, basement, room 66 (Spectrometry Room), north wall, facing north northwest. Tandem Van de Graaff accelerator beam tube 5. Beam tube 4 and target cage are to the left.
RN02-023-024	TA-3-16, basement, room 66 (Spectrometry Room), north wall, facing northwest. Tandem Van de Graaff accelerator beam tube 6.
RN02-023-022	TA-3-16, basement, room 66 (Spectrometry Room), facing east. Northeast (left) and southeast (right) corners of room.
RN02-023-023	TA-3-16, basement, room 66 (Spectrometry Room), facing west. Southwest (left) and northwest (right) corners of room.
RN02-023-032	TA-3-16, basement, room 67 (Neutron Room), facing northwest. Tandem Van de Graaff accelerator beam tubes 2 (center) and 3 (right).
RN02-023-036	TA-3-16, basement, room 67 (Neutron Room), facing northeast. Tandem Van de Graaff accelerator beam tubes 2 (center) and 3 (along wall at right).
RN02-023-034	TA-3-16, basement, room 67 (Neutron Room), northeast corner, facing east. Tandem Van de Graaff accelerator beam tube 2.
RN02-023-035	TA-3-16, basement, room 67 (Neutron Room), southeast corner, facing southeast. Center rear of photo looking into room 69 (New Experimental Facility).
RN02-023-038	TA-3-16, basement, room 68 (Generator Room), facing north. Taken from room 67 (Neutron Room), looking into space designated as room 68. Large magnets for the vertical Van de Graaff accelerator are in the center of the photo. Wooden pallets stored on mezzanine above magnets.

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Structure 16 (TA-3-16) Ion Beam Facility (Interior) Basement continued
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Photograph Number	Description
RN02-023-040	TA-3-16, basement, room 68 (Generator Room), vertical Van de Graaff accelerator magnets, facing northeast. Front and rear magnets are 3,600 pounds, center magnet is 1,100 pounds.
RN02-023-044	TA-3-16, basement, room 69 (Experimental Facility Room), Spectrometer track for the tandem Van de Graaff accelerator, facing northeast.
RN02-023-114	TA-3-16, basement, room 70 (Lower Experimental Room), facing east. Rotary base and 90º analyzing magnet of the vertical Van de Graaff accelerator (center, "A-frame structure"). Large magnet located immediately right of accelerator rotary base. Passageway (at right) with roll-up door leads east into room 68 (Generator Room). Control gauges for exterior nitrogen and sulfur hexafluoride tanks at right edge of photo.
RN02-023-118	TA-3-16, basement, room 70 (Lower Experimental Room), facing northwest. Master Control Center (MCC) in rear center.
RN02-023-124	TA-3-16, basement, room 70 (Lower Experimental Room), 90º analyzing magnet for the vertical Van de Graaff accelerator, facing north. Ion beam tubes extend through wall to connect to the tandem Van de Graaff accelerator in room 62 (Machine Room).
RN02-023-125	TA-3-16, basement, room 70 (Lower Experimental Room), 90º analyzing magnet for the vertical Van de Graaff accelerator, facing east.
RN02-023-121	TA-3-16, basement, room 70 (Lower Experimental Room), facing up and west. Looking up at the 90 inch diameter inter-potential shell for the vertical Van de Graaff accelerator stored up in the tower next to the accelerator containment tank itself.

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Structure 16 (TA-3-16) Ion Beam Facility (Interior) Basement continued and First Floor
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Photograph Number	Description
RN02-023-123	TA-3-16, basement, room 70 (Lower Experimental Room), facing up. Looking directly up at the 90 inch inter-potential shell for the vertical Van de Graaff accelerator stored up in the tower next to the accelerator containment tank itself.
RN02-023-126	TA-3-16, basement, room 70 (Lower Experimental Room), facing west. Scattering chamber, ORTEC, 2800 Series, Serial No. 3, Oak Ridge, Tennessee.
RN02-023-158	TA-3-16, first floor, building foyer, room 100, facing east. Pass-through window (left) connects to room 102, office; exterior building doors (center).
RN02-023-159	TA-3-16, first floor, unnumbered east/west hallway, facing west. Looking west from building foyer, room 100, down hallway into room 130 (Control Room - vertical Van de Graaff accelerator).
RN02-023-181	TA-3-16, first floor, unnumbered north/south hallway, facing south. Double doors (right) access room 114, laboratory.
RN02-023-169	TA-3-16, first floor, room 102, office, facing east. Pass-through window (left) connects to room 104, office, and pass-through window (right) connects to foyer room 100.
RN02-023-157	TA-3-16, first floor, room 103, office, facing east southeast.
RN02-023-156	TA-3-16, first floor, room 105, office, facing east.
RN02-023-171	TA-3-16, first floor, room 110, office, facing east.
RN02-023-174	TA-3-16, first floor, room 114, laboratory, facing west.
RN02-023-183	TA-3-16, first floor, room 120, laboratory, work benches and fume hood (right edge of photo), facing north.

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Structure 16 (TA-3-16) Ion Beam Facility (Interior) First Floor continued
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Photograph Number	Description
RN02-023-182	TA-3-16, first floor, room 120, laboratory, model of Van de Graaff generator, facing west.
RN02-023-185	TA-3-16, first floor, room 122, laboratory, facing north. Metal working equipment.
RN02-023-189	TA-3-16, first floor, room 122, laboratory, facing north. Metal working equipment.
RN02-023-186	TA-3-16, first floor, room 122, laboratory, facing east. Beaver Model A, heavy duty pipe & bolt machine, Beaver Pipe Tools, Incorporated. A pipe and bolt machine is for threading pipes and bolts.
RN02-023-187	TA-3-16, first floor, room 122, laboratory, facing west. PEXTO Model 137-K, metal foot shear; PEXTO (Peck, Stow, & Wilcox Company). A metal foot shear is for cutting sheet metal.
RN02-023-188	TA-3-16, first floor, room 122, laboratory, facing west. Chicago Steel Size W31 Bending Brake, Dreis & Krump Manufacturing Company. A bending brake is for bending sheet metal.
RN02-023-191	TA-3-16, first floor, room 122, laboratory, facing southwest. W.A. Whitney Hand Tools Model No. 92, bench press, W.A. Whitney Corporation. A bench press is for manipulating sheet metal utilizing different dies and punches for fabrication of items.
RN02-023-247	TA-3-16, first floor, room 123, laboratory, facing north.
RN02-023-192	TA-3-16, first floor, room 124, laboratory, facing north. Metal working equipment.
RN02-023-197	TA-3-16, first floor, room 124, laboratory, facing east. Monarch engine lathe, The Monarch Machine Tool Company. An engine lathe is for cutting metal.

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Structure 16 (TA-3-16) Ion Beam Facility (Interior) First Floor continued
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Photograph Number	Description
RN02-023-194	TA-3-16, first floor, room 124, laboratory, facing northwest. Do All supply cabinet (center rear) for saw blades, file bands, and parts, The Do All Company. AC/DC Gas Tungsten Arc welding machine (right front). An arc welding machine is for welding pieces of metal together.
RN02-023-196	TA-3-16, first floor, room 124, laboratory, facing southwest. Di-ACRO notcher, Di-ACRO Precision Metal Working Machines. A notcher is for cutting notches in sheet metal.
RN02-023-195	TA-3-16, first floor, room 124, laboratory, facing west. Marvel Draw Cut No. 2 Hacksaw, Armstrong-Blum Manufacturing Company. A Draw Cut No. 2 Hacksaw is for cutting metal.
RN02-023-199	TA-3-16, first floor, room 126, laboratory, Tester Access Platform, facing south.
RN02-023-202	TA-3-16, first floor, room 126, laboratory, facing north. Different sized orbs for an electro-static Van de Graaff generator.
RN02-023-209	TA-3-16, first floor, room 128, laboratory, facing south southwest.

The control console for the vertical Van de Graaff accelerator contains seven panels numbered 1 through 7 from east to west (left to right in the photographs). The computer control component racks for the vertical Van de Graaff accelerator contains fourteen computer component racks identified by letters A through N from east to west (left to right in the photographs).

RN02-023-270	TA-3-16, first floor, room 130 (Control Room - vertical Van de Graaff accelerator), facing south. Control console (front) and computer control component racks (rear).
RN02-023-257	TA-3-16, first floor, room 130 (Control Room - vertical Van de Graaff accelerator), from northeast corner, facing west.

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Structure 16 (TA-3-16) Ion Beam Facility (Interior) First Floor continued
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Photograph Number	Description
RN02-023-259	TA-3-16, first floor, room 130 (Control Room - vertical Van de Graaff accelerator), from northeast corner, facing south southwest. Control console and computer control component racks.
RN02-023-262	TA-3-16, first floor, room 130 (Control Room - vertical Van de Graaff accelerator), from northwest corner, facing east southeast. Doorway (left) looking into main east/west hallway. Control console and computer control component racks (right).
RN02-023-261	TA-3-16, first floor, room 130 (Control Room - vertical Van de Graaff accelerator), from near northwest corner, facing south. Control console and computer control component racks (left) and entrance into corridor 160 (right).
RN02-023-269	TA-3-16, first floor, room 130 (Control Room - vertical Van de Graaff accelerator), from northwest corner, facing south. Looking into corridor 160 which leads to the vertical Van de Graaff accelerator.
RN02-023-263	TA-3-16, first floor, room 130 (Control Room - vertical Van de Graaff accelerator), from southwest corner, facing north. Back side of computer control component racks.
RN02-023-266	TA-3-16, first floor, room 130 (Control Room - vertical Van de Graaff accelerator), from southeast corner, facing west. Back side of computer control component racks.
RN02-023-267	TA-3-16, first floor, room 130 (Control Room - vertical Van de Graaff accelerator), from southeast corner, facing north. Back side of computer control component racks. Looking into laboratory room 124.
RN02-023-283	TA-3-16, first floor, room 130 (Control Room - vertical Van de Graaff accelerator), control console component panel 1, facing east southeast.

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Structure 16 (TA-3-16) Ion Beam Facility (Interior) First Floor continued
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Photograph Number	Description
RN02-023-284	TA-3-16, first floor, room 130 (Control Room - vertical Van de Graaff accelerator), control console component panel 2, facing southeast.
RN02-023-285	TA-3-16, first floor, room 130 (Control Room - vertical Van de Graaff accelerator), control console component panel 3, facing south.
RN02-023-286	TA-3-16, first floor, room 130 (Control Room - vertical Van de Graaff accelerator), control console component panel 4, facing south.
RN02-023-287	TA-3-16, first floor, room 130 (Control Room - vertical Van de Graaff accelerator), control console component panel 5, facing south.
Rn02-023-288	TA-3-16, first floor, room 130 (Control Room - vertical Van de Graaff accelerator), control console component 6, facing southwest.
RN02-023-289	TA-3-16, first floor, room 130 (Control Room - vertical Van de Graaff accelerator), control console component 7, facing west southwest.
RN02-023-290	TA-3-16, first floor, room 130 (Control Room - vertical Van de Graaff accelerator), computer component racks A and B upper portions, facing east.
RN02-023-291	TA-3-16, first floor, room 130 (Control Room - vertical Van de Graaff accelerator), computer component racks A and B lower portions, facing east.
RN02-023-295	TA-3-16, first floor, room 130 (Control Room - vertical Van de Graaff accelerator), computer component racks C and D upper portions, lower portions empty, facing southeast.
RN02-023-296	TA-3-16, first floor, room 130 (Control Room - vertical Van de Graaff accelerator), computer component racks D and E upper portions, lower portions empty, facing southeast.

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Technical Area (TA) 3 “South Mesa Site” (SM)
Structure 16 (TA-3-16) Ion Beam Facility (Interior) First Floor continued
Los Alamos National Laboratory (LANL)
Los Alamos
Los Alamos County
New Mexico

Photograph Number	Description
RN02-023-297	TA-3-16, first floor, room 130 (Control Room - vertical Van de Graaff accelerator), computer component racks F and G upper portions, lower portions empty, facing south.
RN02-023-298	TA-3-16, first floor, room 130 (Control Room - vertical Van de Graaff accelerator), computer component racks H and I upper portions, lower portions empty, facing south.
RN02-023-299	TA-3-16, first floor, room 130 (Control Room - vertical Van de Graaff accelerator), computer component racks J and K upper portions, lower portions empty, facing southwest.
RN02-023-300	TA-3-16, first floor, room 130 (Control Room - vertical Van de Graaff accelerator), computer component racks L and M upper portions, lower portions empty, facing southwest.
RN02-023-304	TA-3-16, first floor, room 130 (Control Room - vertical Van de Graaff accelerator), computer component racks M and N upper portions, lower portions empty, facing southwest.
RN02-023-294	TA-3-16, first floor, room 130 (Control Room - vertical Van de Graaff accelerator), overall computer component racks C, D, E, and F, facing south southwest.
RN02-023-303	TA-3-16, first floor, room 130 (Control Room - vertical Van de Graaff accelerator), overall computer component racks E, F, G, H, and I, facing southeast.

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Technical Area (TA) 3 “South Mesa Site” (SM)
Structure 16 (TA-3-16) Ion Beam Facility (Interior) First Floor continued
Los Alamos National Laboratory (LANL)
Los Alamos
Los Alamos County
New Mexico

Photograph Number	Description

The control console and computer control component racks for the horizontal (tandem) Van de Graaff accelerator consist of 3 sections. The center section (section 2) combines the control console and computer component racks by a connected control console desktop. The 3 sections are numbered 1 through 3 and contain 28 computer component racks numbered 1 through 28 from west to east (left to right in the photographs).

RN02-023-316	TA-3-16, first floor, room 140 (Control Room - horizontal [tandem] Van de Graaff accelerator), facing north. Low curved desk (front), back side of small two section control desk (one high section and one low section) (middle), computer control component racks with connected control console desktop (rear).
RN02-023-306	TA-3-16, first floor, room 140 (Control Room - horizontal [tandem] Van de Graaff accelerator), from northeast corner, facing south. Back side of computer control component racks.
RN02-023-307	TA-3-16, first floor, room 140 (Control Room - horizontal [tandem] Van de Graaff accelerator), from northeast corner, facing west. Back side of computer control component racks and stairway leading down to basement room 40.
RN02-023-308	TA-3-16, first floor, room 140 (Control Room - horizontal [tandem] Van de Graaff accelerator), from northwest corner, facing south. Back side of computer control component racks.
RN02-023-311	TA-3-16, first floor, room 140 (Control Room - horizontal [tandem] Van de Graaff accelerator), from southwest corner, facing north. Back side of computer control component racks (center) and section 2 racks 16 through 21 (right).
RN02-023-312	TA-3-16, first floor, room 140 (Control Room - horizontal [tandem] Van de Graaff accelerator), from southwest corner, facing east. Computer control component racks section 3 racks 22 through 28.

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Technical Area (TA) 3 “South Mesa Site” (SM)
Structure 16 (TA-3-16) Ion Beam Facility (Interior) First Floor continued
Los Alamos National Laboratory (LANL)
Los Alamos
Los Alamos County
New Mexico

Photograph Number	Description
RN02-023-314	TA-3-16, first floor, room 140 (Control Room - horizontal [tandem] Van de Graaff accelerator), from southeast corner, facing north. Back side of computer control component racks (center) and front side of section 2 racks 8 through 14 (left).
RN02-023-321	TA-3-16, first floor, room 140 (Control Room - horizontal [tandem] Van de Graaff accelerator), computer control component racks section 1 racks 1 through 7, facing northwest.
RN02-023-318	TA-31-16, first floor, room 140 (Control Room - horizontal [tandem] Van de Graaff accelerator), computer control component racks section 2 racks 8 through 19, facing northwest.
RN02-023-345	TA-3-16, first floor, room 140 (Control Room - horizontal [tandem] Van de Graaff accelerator), computer control component racks section 2 racks 11 through 19, facing north.
RN02-023-317	TA-3-16, first floor, room 140 (Control Room - horizontal [tandem] Van de Graaff accelerator), computer control component racks section 2 racks 13 through 21, facing northeast.
RN02-023-320	TA-3-16, first floor, room 140 (Control Room - horizontal [tandem] Van de Graaff accelerator), computer control component racks section 3 racks 22 through 28, facing northeast.
RN02-023-341	TA-3-16, first floor, room 140 (Control Room - horizontal [tandem] Van de Graaff accelerator), computer control component racks section 2 racks 8 and 9 upper portions, facing west.
RN02-023-342	TA-3-16, first floor, room 140 (Control Room - horizontal [tandem] Van de Graaff accelerator), computer control component racks section 2 racks 8 and 9 empty lower portions, facing west.

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Technical Area (TA) 3 “South Mesa Site” (SM)
Structure 16 (TA-3-16) Ion Beam Facility (Interior) First Floor continued
Los Alamos National Laboratory (LANL)
Los Alamos
Los Alamos County
New Mexico

Photograph Number	Description
RN02-023-340	TA-3-16, first floor, room 140 (Control Room - horizontal [tandem] Van de Graaff accelerator), computer control component racks section 2 racks 8, 9, and 10 upper portions, lower portions empty, facing west.
RN02-023-339	TA-3-16, first floor, room 140 (Control Room - horizontal [tandem] Van de Graaff accelerator), computer control component racks section 2 racks 10, 11, and 12 upper portions, lower portions empty, facing northwest.
RN02-023-337	TA-3-16, first floor, room 140 (Control Room - horizontal [tandem] Van de Graaff accelerator), computer control component racks section 2 racks 11 through 18, facing northwest.
RN02-023-336	TA-3-16, first floor, room 140 (Control Room - horizontal [tandem] Van de Graaff accelerator), computer control component racks section 2 racks 13 through 17, facing northeast.
RN02-023-333	TA-3-16, first floor, room 140 (Control Room - horizontal [tandem] Van de Graaff accelerator), computer control component racks section 2 racks 13 through 15 upper portions, facing north.
RN02-023-332	TA-3-16, first floor, room 140 (Control Room - horizontal [tandem] Van de Graaff accelerator), computer control component racks section 2 racks 15 through 17 upper portions, facing north.
RN02-023-330	TA-3-16, first floor, room 140 (Control Room - horizontal [tandem] Van de Graaff accelerator), computer control component racks section 2 racks 17 through 19 upper portions, facing northeast.
RN02-023-329	TA-3-16, first floor, room 140 (Control Room - horizontal [tandem] Van de Graaff accelerator), computer control component racks section 2 racks 17 through 19 lower portions, facing northeast.

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Technical Area (TA) 3 “South Mesa Site” (SM)
Structure 16 (TA-3-16) Ion Beam Facility (Interior) First Floor continued
Los Alamos National Laboratory (LANL)
Los Alamos
Los Alamos County
New Mexico

Photograph Number	Description
RN02-032-325	TA-3-16, first floor, room 140 (Control Room - horizontal [tandem] Van de Graaff accelerator), computer control component racks section 2 racks 18 through 21, facing east.
RN02-023-323	TA-3-16, first floor, room 140 (Control Room - horizontal [tandem] Van de Graaff accelerator), small two section control desk in center of room, facing southeast. Computer control component racks section 3 racks 22 through 28 rear of photo.
RN02-023-248	TA-3-16, first floor, room 143A, western half of room 143 subdivided out, (Electronics Maintenance Room), facing south. Door opening (right) leads into room 140 (Control Room - horizontal [tandem] Van de Graaff accelerator). Eastern half of room 143 was further subdivided into rooms 143B at north and 145B (Computing Room) at south.
RN02-023-252	TA-3-16, first floor, room 145A, formerly room 145 (Computing Room), looking into room 140 (control Room - horizontal [tandem] Van de Graaff accelerator), facing west.
RN02-023-203	TA-3-16, first floor, room 150 (Mechanical Equipment Room), facing west southwest.
RN02-023-206	TA-3-16, first floor, room 150 (Mechanical Equipment Room), facing northeast.
RN02-023-107	TA-3-16, first floor, hallway 160, facing east.
RN02-023-109	TA-3-16, first floor, hallway 160 near east end, facing north. Shield Wall Storage (in wall storage wells for radioactive sources).

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Technical Area (TA) 3 "South Mesa Site" (SM)
Structure 16 (TA-3-16) Ion Beam Facility (Interior) First Floor continued
Los Alamos National Laboratory (LANL)
Los Alamos
Los Alamos County
New Mexico

Photograph Number	Description

There are 5 beam tubes that connect to the main section of ion beam line tube that extends west from the 50º analyzing magnet. Each beam tube connected to an individual experiment chamber. The beam tubes are numbered 1 through 5 from north to south (left to right), in room 170 (Upper Experimental Room).

RN02-023-092	TA-3-16, first floor, room 170 (Upper Experimental Room), rotary base and 50º analyzing magnet (right) for the vertical Van de Graaff accelerator, facing northwest. Beam tubes 5, 4, and 3 (left, center, and right) are visible extending west from 50º analyzing magnet.
RN02-023-097	TA-3-16, first floor, room 170 (Upper Experimental Room), rotary base and 50º analyzing magnet for the vertical Van de Graaff accelerator, facing southwest. beam tubes 3 (center right) and 2 (far right) are visible extending west from 50º analyzing magnet.
RN02-023-105	TA-3-16, first floor, room 170 (Upper Experimental Room), rotary base and 50º analyzing magnet for the vertical Van de Graaff accelerator, facing south. First section of ion beam line tube extends from the magnet and attaches to each individual beam tube 1 through 5.
RN02-023-095	TA-3-16, first floor, room 170 (Upper Experimental Room), rotary base and 50º analyzing magnet for the vertical Van de Graaff accelerator, from between beam tubes 3 (left) and 4 (right), facing east.
RN02-023-104	TA-3-16, first floor, room 170 (Upper Experimental Room), rotary base and 50º analyzing magnet for the vertical Van de Graaff accelerator, from between beam tubes 1 and 2, facing east. Experiment chamber (front center).
RN02-023-103	TA-3-16, first floor, room 170 (Upper Experimental Room), rotary base and 50º analyzing magnet for the vertical Van de Graaff, from between beam tubes 2 and 3, facing east. Experiment chamber (front left), beam tube 2 is next to experiment chamber, beam tubes 3 and 4 (front right).

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Technical Area (TA) 3 "South Mesa Site" (SM)
Structure 16 (TA-3-16) Ion Beam Facility (Interior) First Floor continued and Second Floor
Los Alamos National Laboratory (LANL)
Los Alamos
Los Alamos County
New Mexico

Photograph Number	Description
RN02-023-106	TA-3-16, first floor, room 170 (Upper Experimental Room), rotary base and 50° analyzing magnet for the vertical Van de Graaff accelerator, from between beam tubes 3 and 4, facing east. The vertical Van de Graaff containment tank is visible (upper rear center) behind building frame work, towards the apex of the ceiling in this room, which is between the 4th and 5th floors. The 90 inch-diameter inter-potential shell staged in tower area (upper right).
RN02-023-102	TA-3-16, first floor, room 170 (Upper Experimental Room), rotary base and 50° analyzing magnet for the vertical Van de Graaff accelerator, from between beam tubes 3 and 4, facing east southeast. Beam tube 4 (center).
RN02-023-089	TA-3-16, first floor, room 170 (Upper Experimental Room), facing east. Experiment chamber (center) for the vertical Van de Graaff accelerator, beam tube 4 (right).
RN02-023-088	TA-3-16, first floor, room 170 (Upper Experimental Room), facing southeast. Experiment chamber/apparatus for the vertical Van de Graaff accelerator at beam tube 5 (left center).
RN02-023-099	TA-3-16, first floor, room 170 (Upper Experimental Room), facing south. Experiment chamber/apparatus for the vertical Van de Graaff accelerator at beam tube 5.
RN02-023-100	TA-3-16, first floor, room 170 (Upper Experimental Room), facing north. Back side of experiment chamber/apparatus for vertical Van de Graaff accelerator at beam tube 5.
RN02-023-146	TA-3-16, second floor, room 221 (Equipment Room), facing east.

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Technical Area (TA) 3 "South Mesa Site" (SM)
Structure 16 (TA-3-16) Ion Beam Facility (Interior) Second Floor continued and Third, Fourth, and Fifth Floors
Los Alamos National Laboratory (LANL)
Los Alamos
Los Alamos County
New Mexico

Photograph Number	Description
RN02-023-081	TA-3-16, second floor, room 270, work area around vertical Van de Graaff accelerator containment tank, from west side of room, facing south.
RN02-023-084	TA-3-16, second floor, room 270, work area around vertical Van de Graaff accelerator containment tank, from east side of room, facing north.
RN02-023-078	TA-3-16, third floor, room 370, work area around vertical Van de Graaff accelerator containment tank, from west side of room, facing south. Containment tank in background (left).
RN02-023-076	TA-3-16, fourth floor, room 470, work area around vertical Van de Graaff accelerator containment tank, facing southeast. Containment tank at right.
RN02-023-071	TA-3-16, fifth floor, room 570, work area around vertical Van de Graaff accelerator containment tank, facing southeast. Containment tank at center.
RN02-023-074	TA-3-16, fifth floor, room 570, work area around vertical Van de Graaff accelerator containment tank, facing southwest. Containment tank at center.
RN02-023-075	TA-3-16, fifth floor, room 570, work vertical Van de Graaff accelerator containment tank, facing south and down.
RN02-023-072	TA-3-16, fifth floor, room 570, 150-ton crane, facing southeast and up.

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Technical Area (TA) 3 “South Mesa Site” (SM)
Structure 208 (TA-3-208) Ion Beam Facility Mechanical Equipment Building
Los Alamos National Laboratory (LANL)
Los Alamos
Los Alamos County
New Mexico

Photograph Number	Description

TA-3-208, a prefabricated metal mechanical building, previously removed (2006), was also photographed at the same time as TA-3-16. See photographs RN02-023-243 and RN02-023-0274).

RN02-023-356	TA-3-208, room 101, from northeast corner, facing west.
RN02-023-354	TA-3-208, room 101, from northwest corner, facing east.
RN02-023-348	TA-3-208, room 101, from southwest corner, facing north.
RN02-023-347	TA-3-208, room 101, from southwest corner, facing east.
RN02-023-351	TA-3-208, room 101, from southeast corner, facing north.



RN02-023-276



RN02-023-275



RN02-023-255



RN02-023-254



RN02-023-227



RN02-023-228



RN02-023-229



RN02-023-230



RN02-023-231



RN02-023-234



RN02-023-235



RN02-023-237



RN02-023-236



RN02-023-238



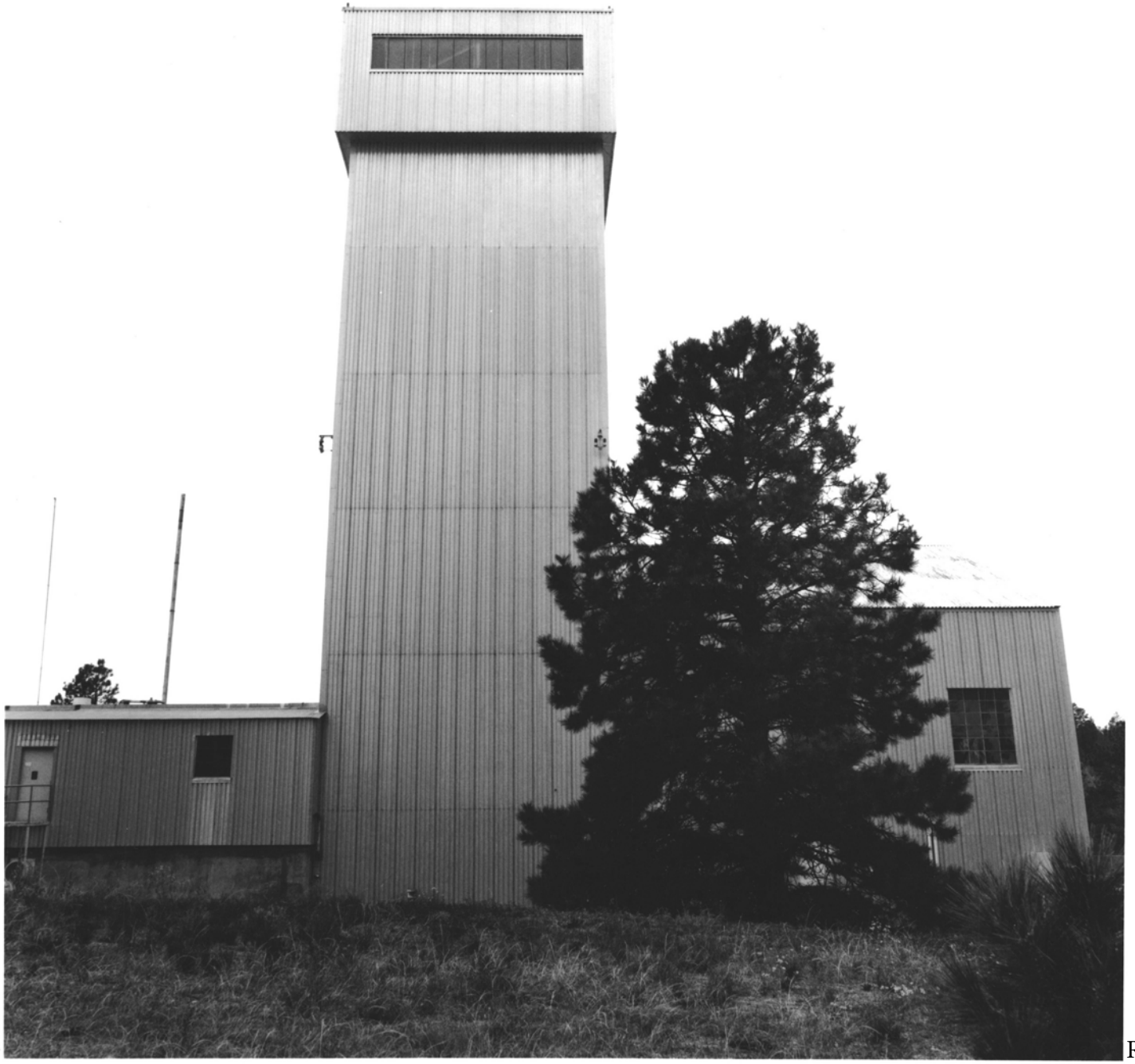
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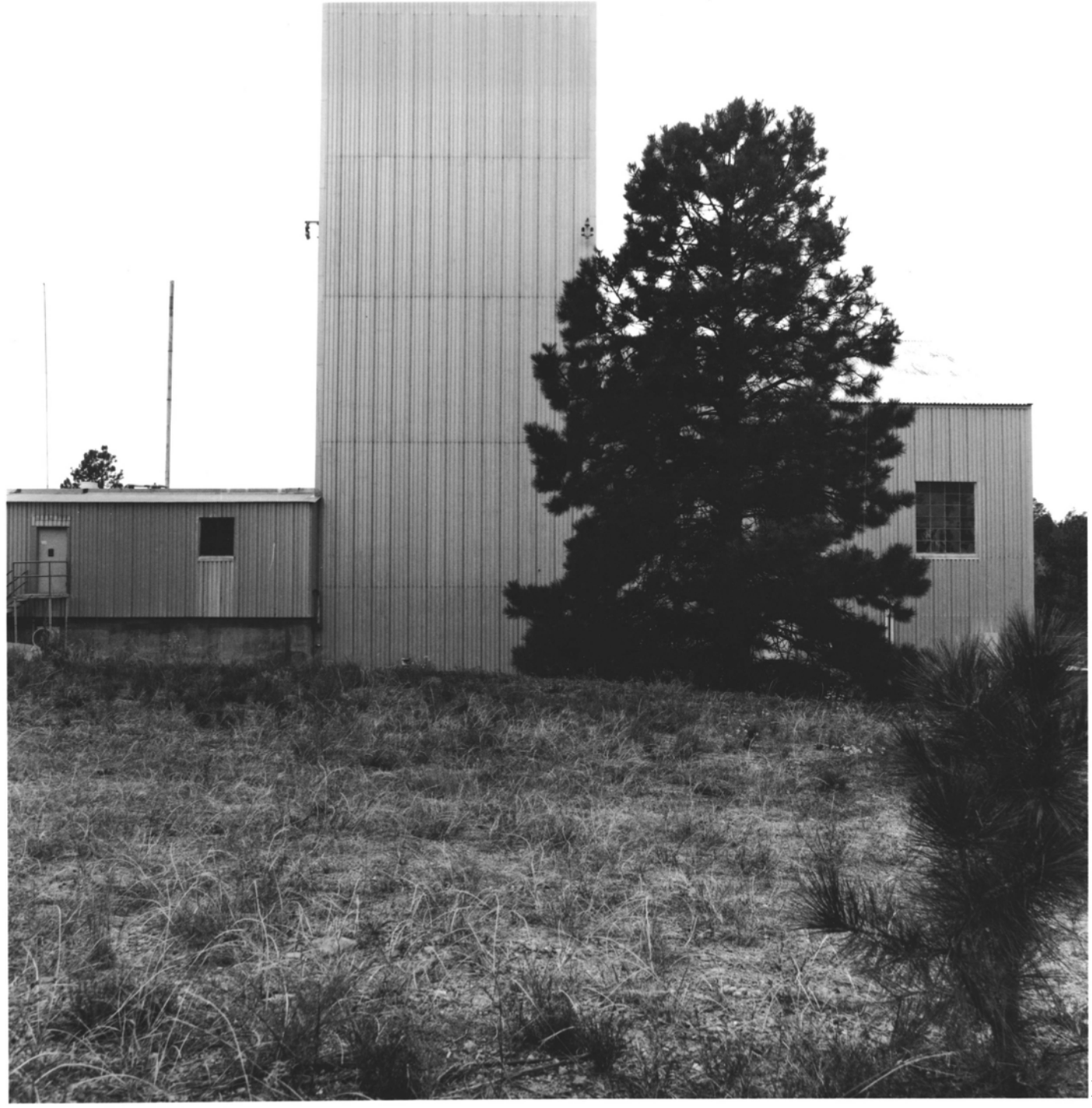
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RN02-023-240



RN02-023-242



RN02-023-241



RN02-023-244



RN02-023-243



RN02-023-274



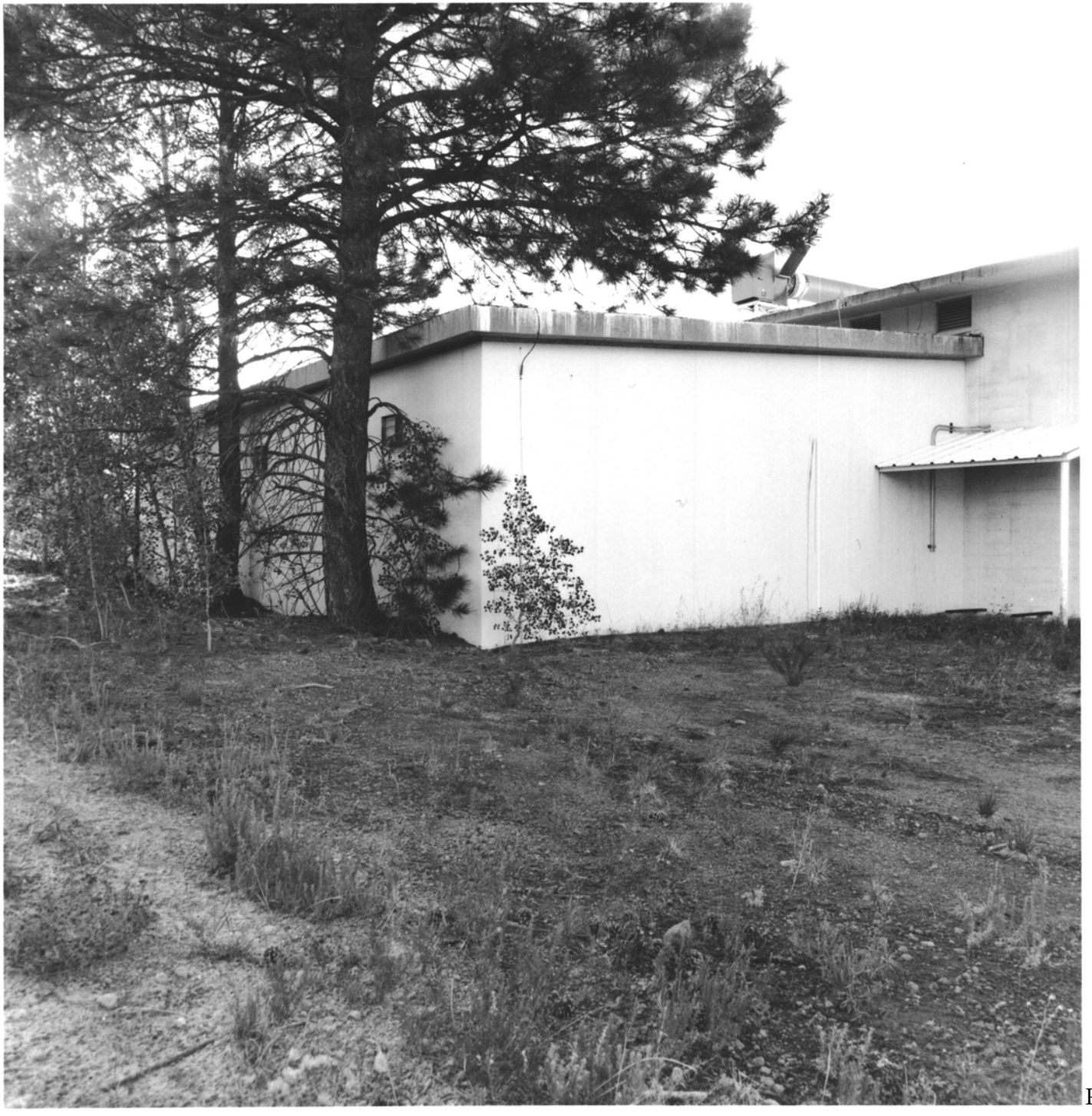
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RN02-023-246



RN02-023-271



RN02-023-272



RN02-023-232



RN02-023-067



RN02-023-066



RN02-023-065



RN02-023-063



RN02-023-064



RN02-023-148



RN02-023-149



RN02-023-218



RN02-023-219



RN02-023-221



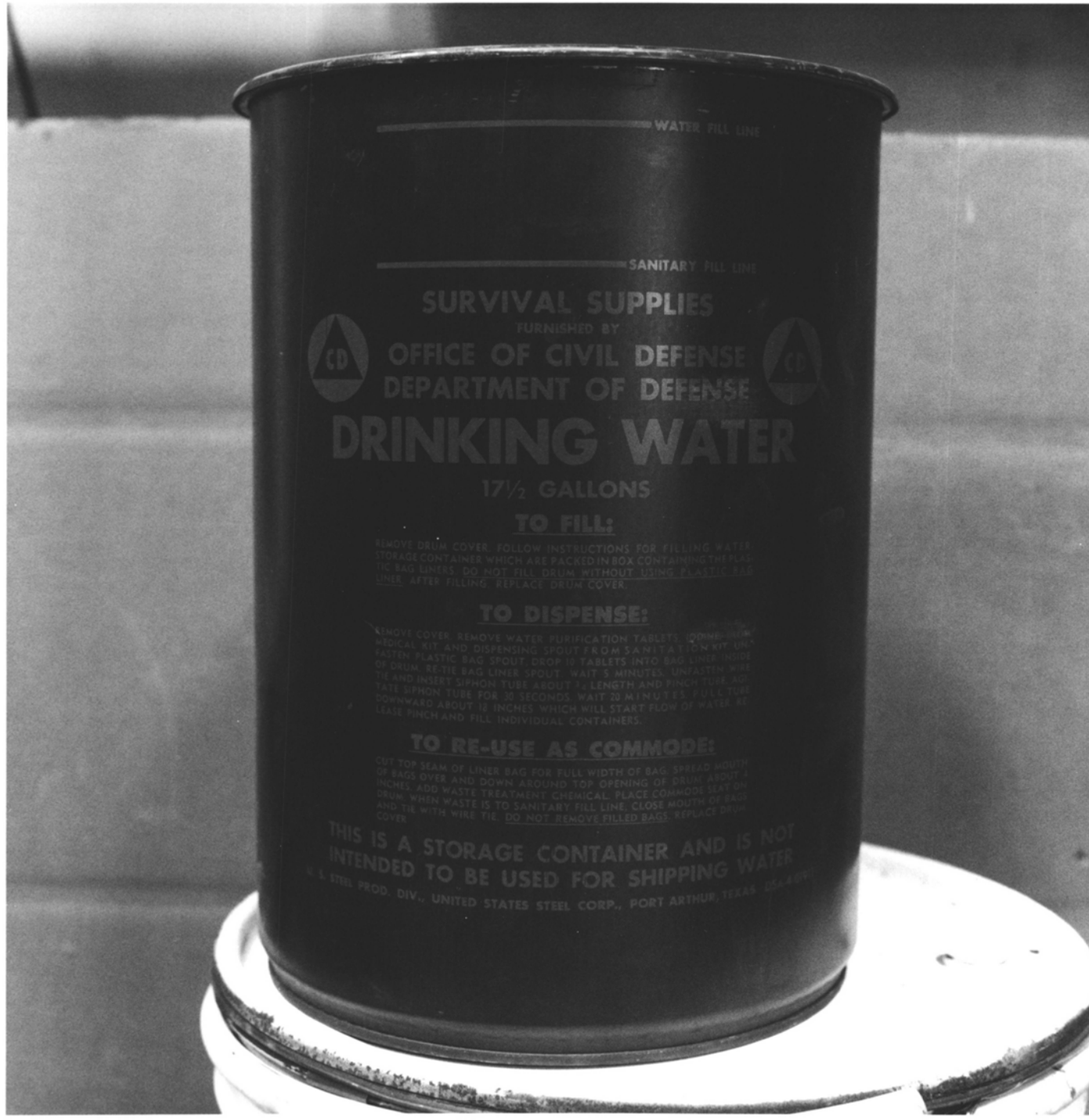
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RN02-023-225



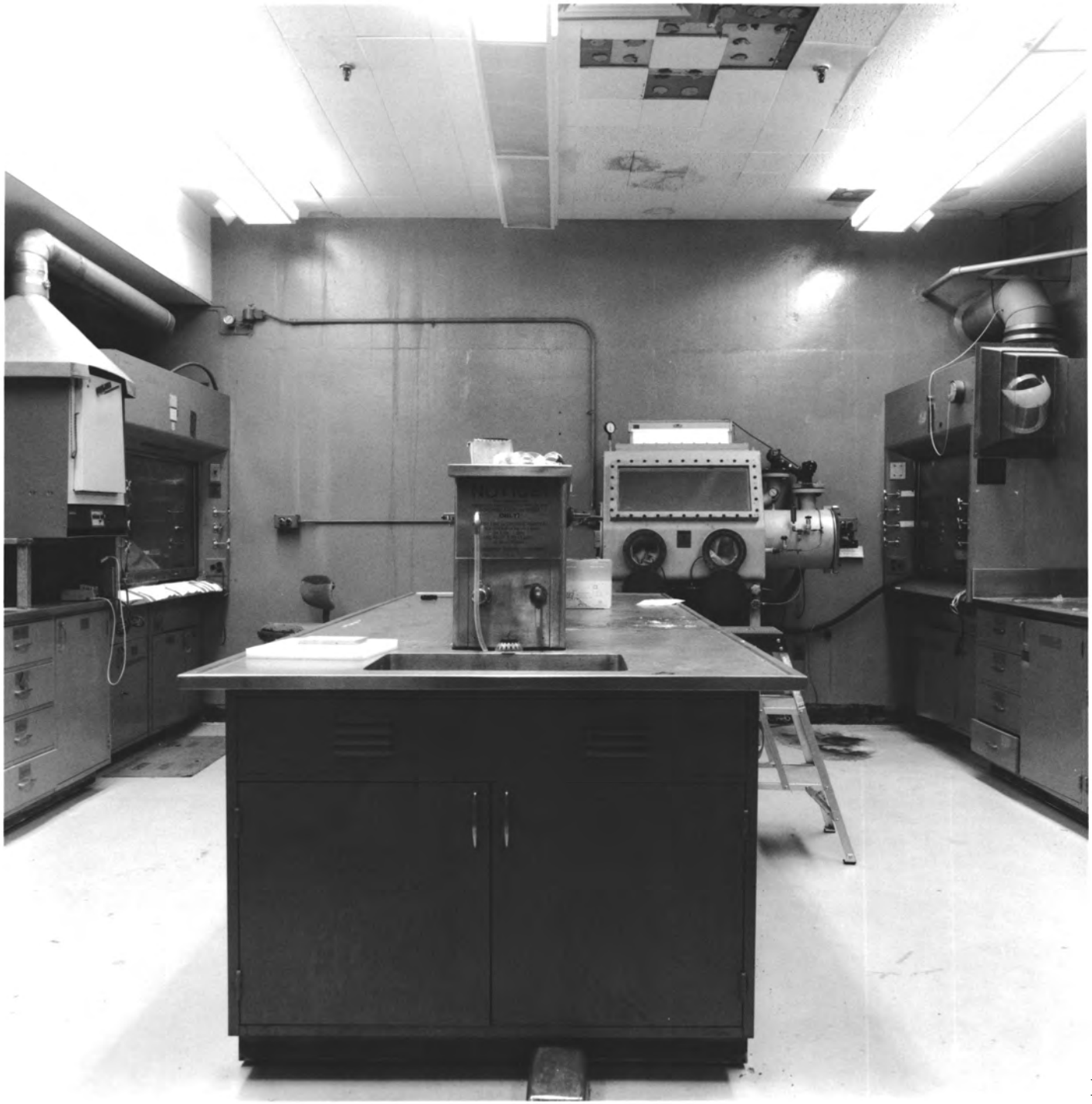
RN02-023-223


WATER FILL LINE
SANITARY FILL LINE
SURVIVAL SUPPLIES
FURNISHED BY
OFFICE OF CIVIL DEFENSE
DEPARTMENT OF DEFENSE
DRINKING WATER
17½ GALLONS
TO FILL:
REMOVE DRUM COVER. FOLLOW INSTRUCTIONS FOR FILLING WATER STORAGE CONTAINER WHICH ARE PACKED IN BOX CONTAINING THE PLASTIC BAG LINERS. DO NOT FILL DRUM WITHOUT USING PLASTIC BAG LINER. AFTER FILLING, REPLACE DRUM COVER.
TO DISPENSE:
REMOVE COVER. REMOVE WATER PURIFICATION TABLETS, IODINE, FROM MEDICAL KIT, AND DISPENSING SPOUT FROM SANITATION KIT. UNFASTEN PLASTIC BAG SPOUT. DROP 10 TABLETS INTO BAG LINER INSIDE OF DRUM. RE-TIE BAG LINER SPOUT. WAIT 5 MINUTES. UNFASTEN WIRE TIE AND INSERT SIPHON TUBE ABOUT ½ LENGTH AND PINCH TUBE. AGITATE SIPHON TUBE FOR 30 SECONDS. WAIT 20 MINUTES. PULL TUBE DOWNWARD ABOUT 18 INCHES WHICH WILL START FLOW OF WATER. RELEASE PINCH AND FILL INDIVIDUAL CONTAINERS.
TO RE-USE AS COMMODE:
CUT TOP SEAM OF LINER BAG FOR FULL WIDTH OF BAG. SPREAD MOUTH OF BAGS OVER AND DOWN AROUND TOP OPENING OF DRUM ABOUT 4 INCHES. ADD WASTE TREATMENT CHEMICAL. PLACE COMMODE SEAT ON DRUM. WHEN WASTE IS TO SANITARY FILL LINE, CLOSE MOUTH OF BAGS AND TIE WITH WIRE TIE. DO NOT REMOVE FILLED BAGS. REPLACE DRUM COVER.
THIS IS A STORAGE CONTAINER AND IS NOT INTENDED TO BE USED FOR SHIPPING WATER
U. S. STEEL PROD. DIV., UNITED STATES STEEL CORP., PORT ARTHUR, TEXAS

RN02-023-224



RN02-023-215



RN02-023-128



RN02-023-144



RN02-023-150



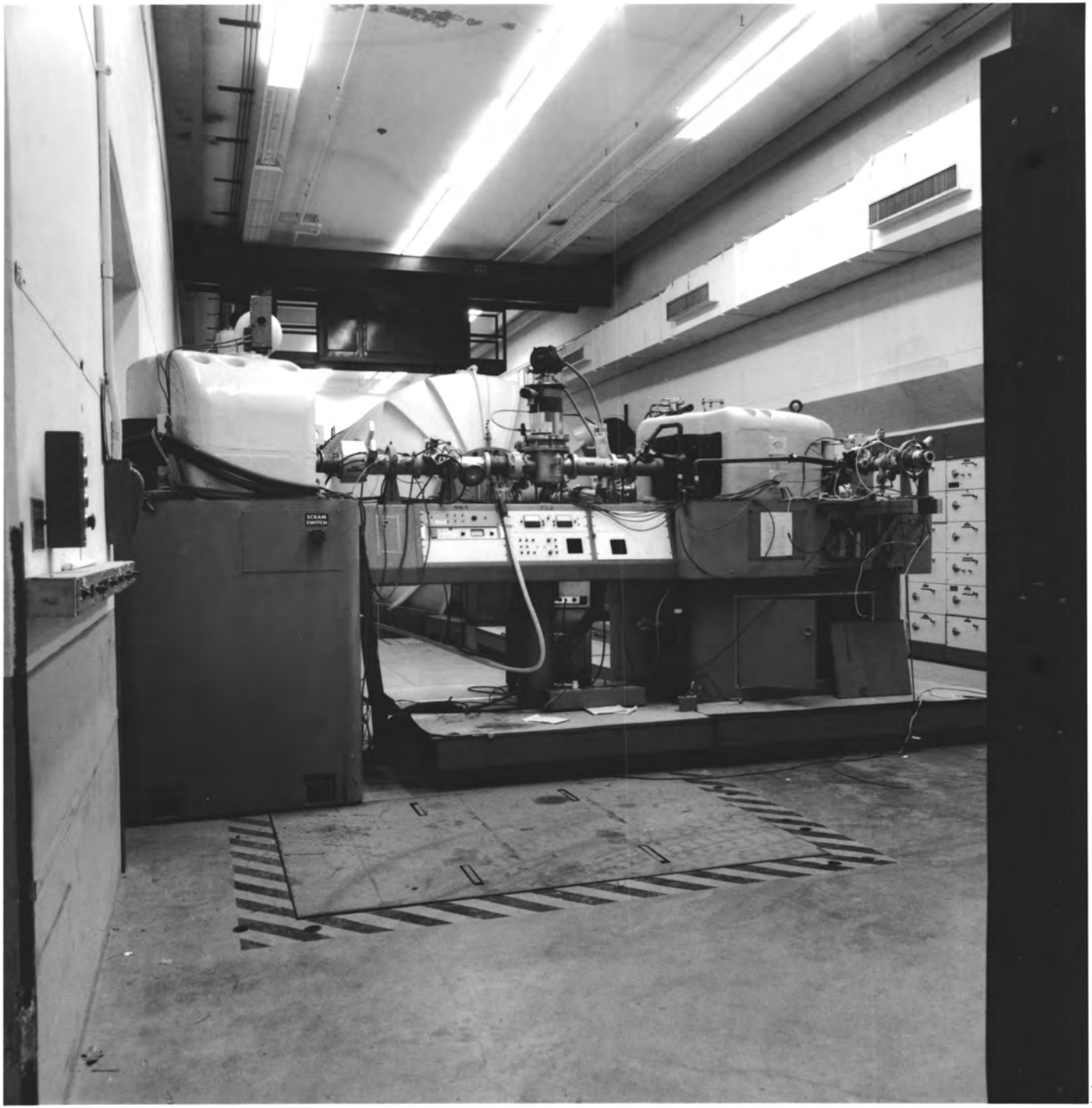
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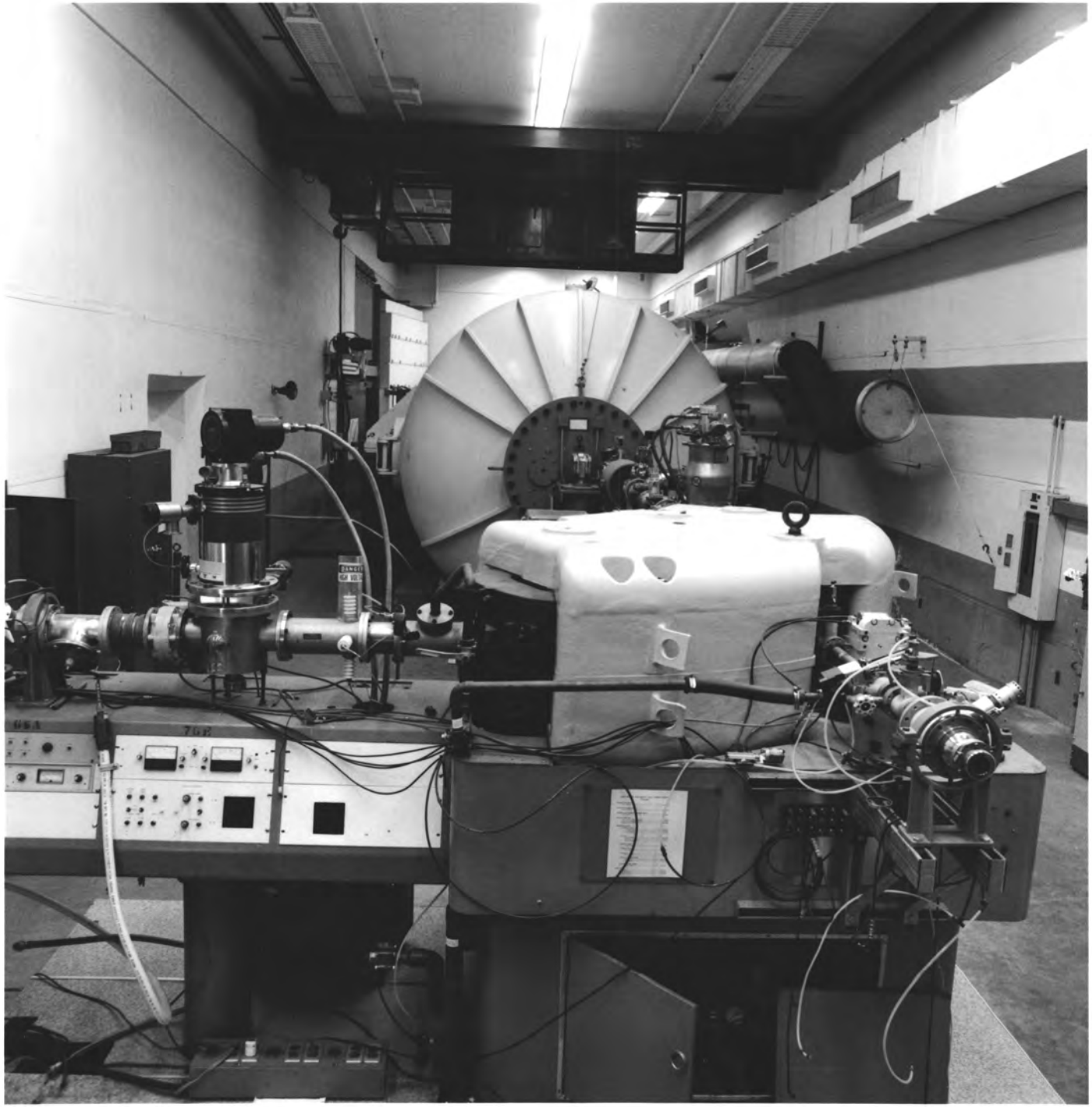
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RN02-023-060



RN02-023-049



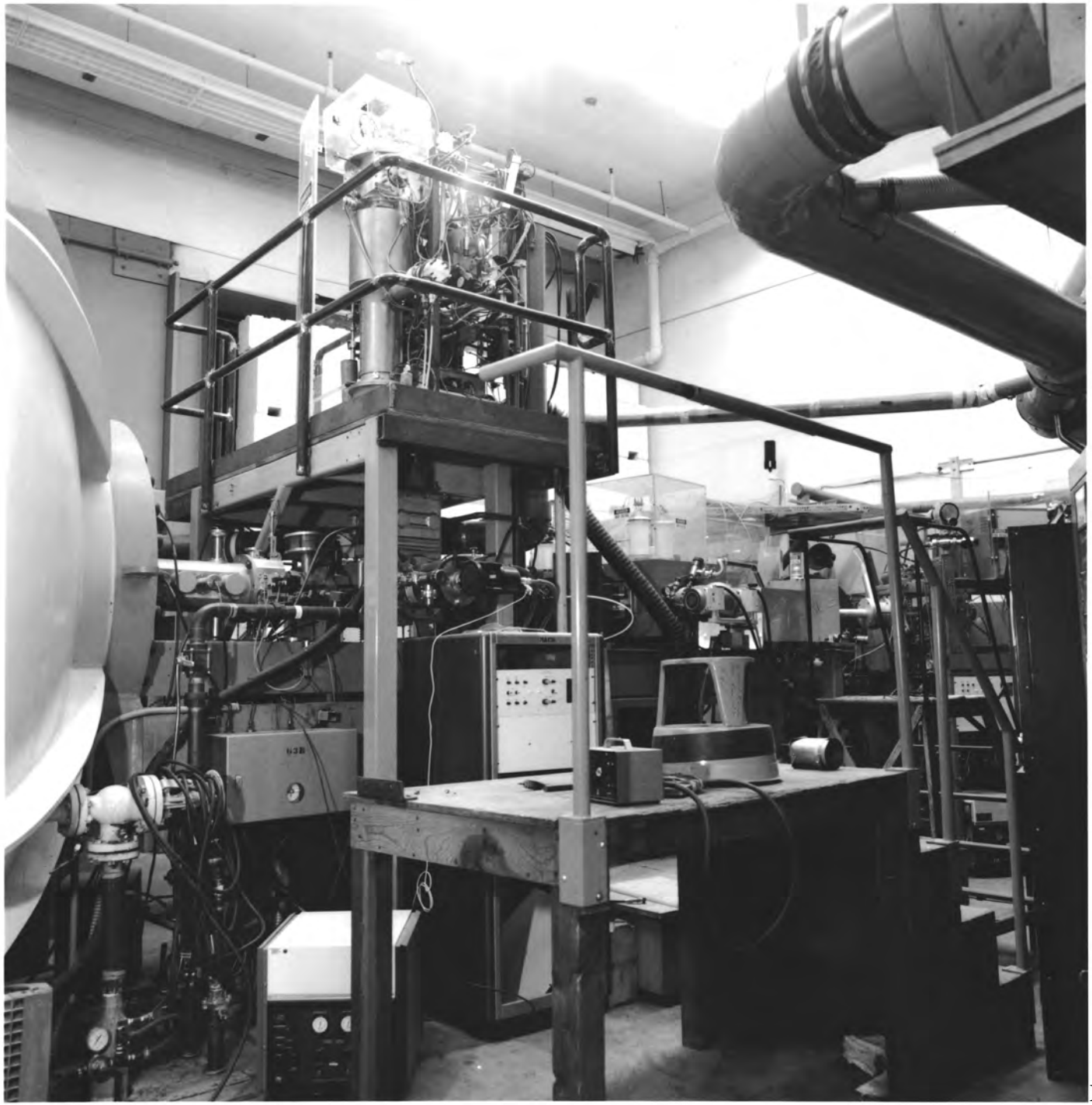
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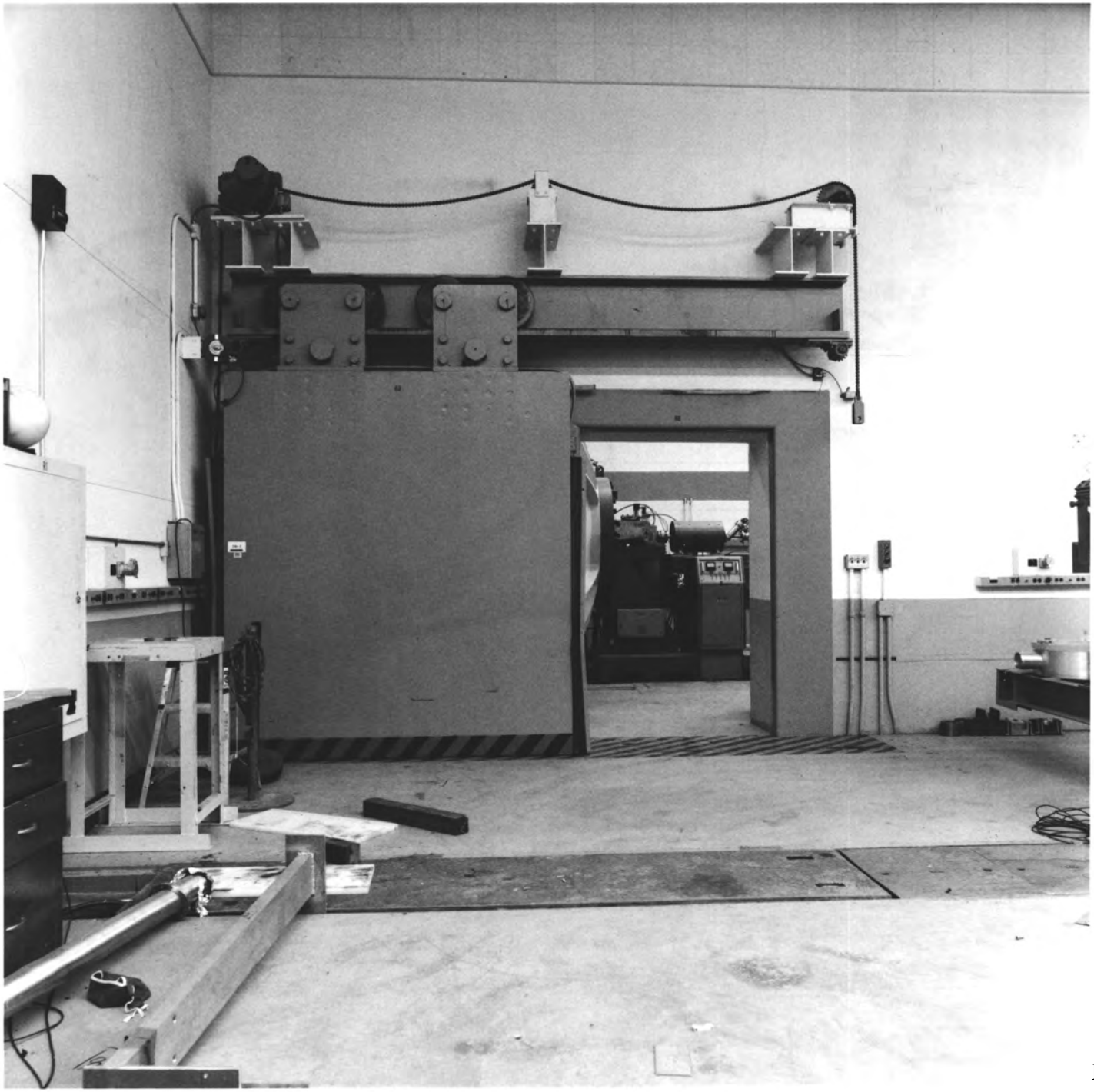
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RN02-023-050



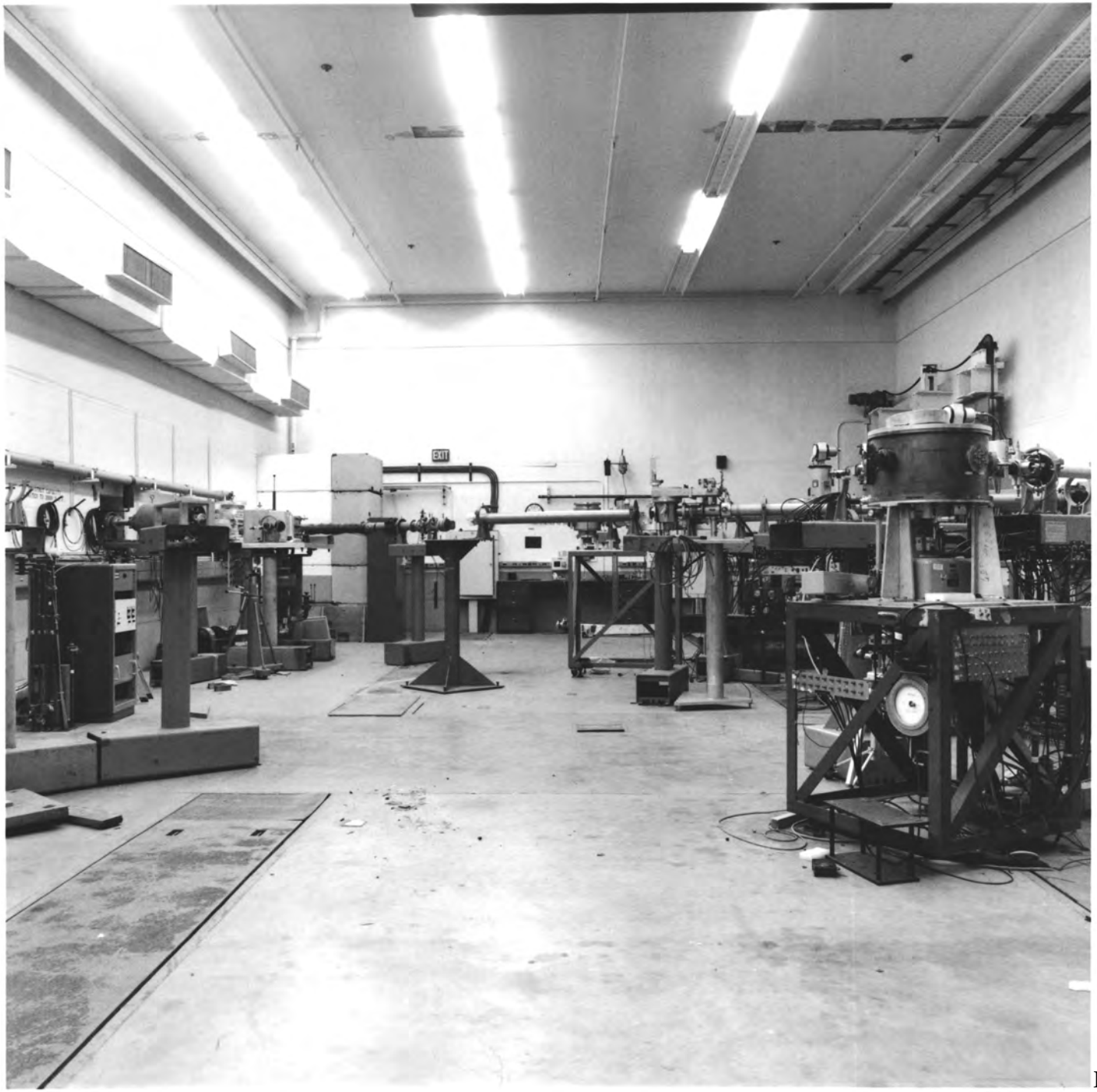
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RN02-023-005



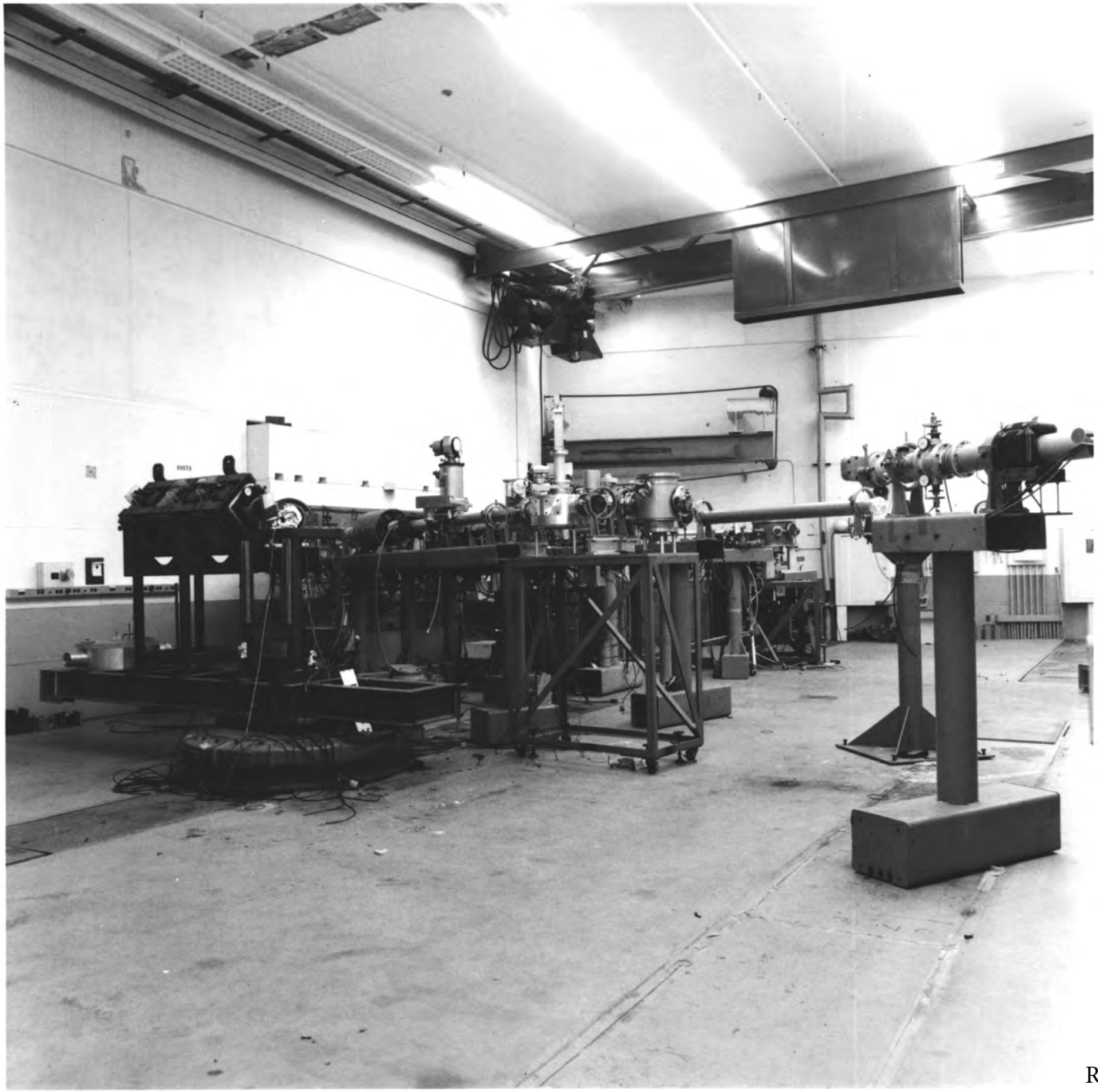
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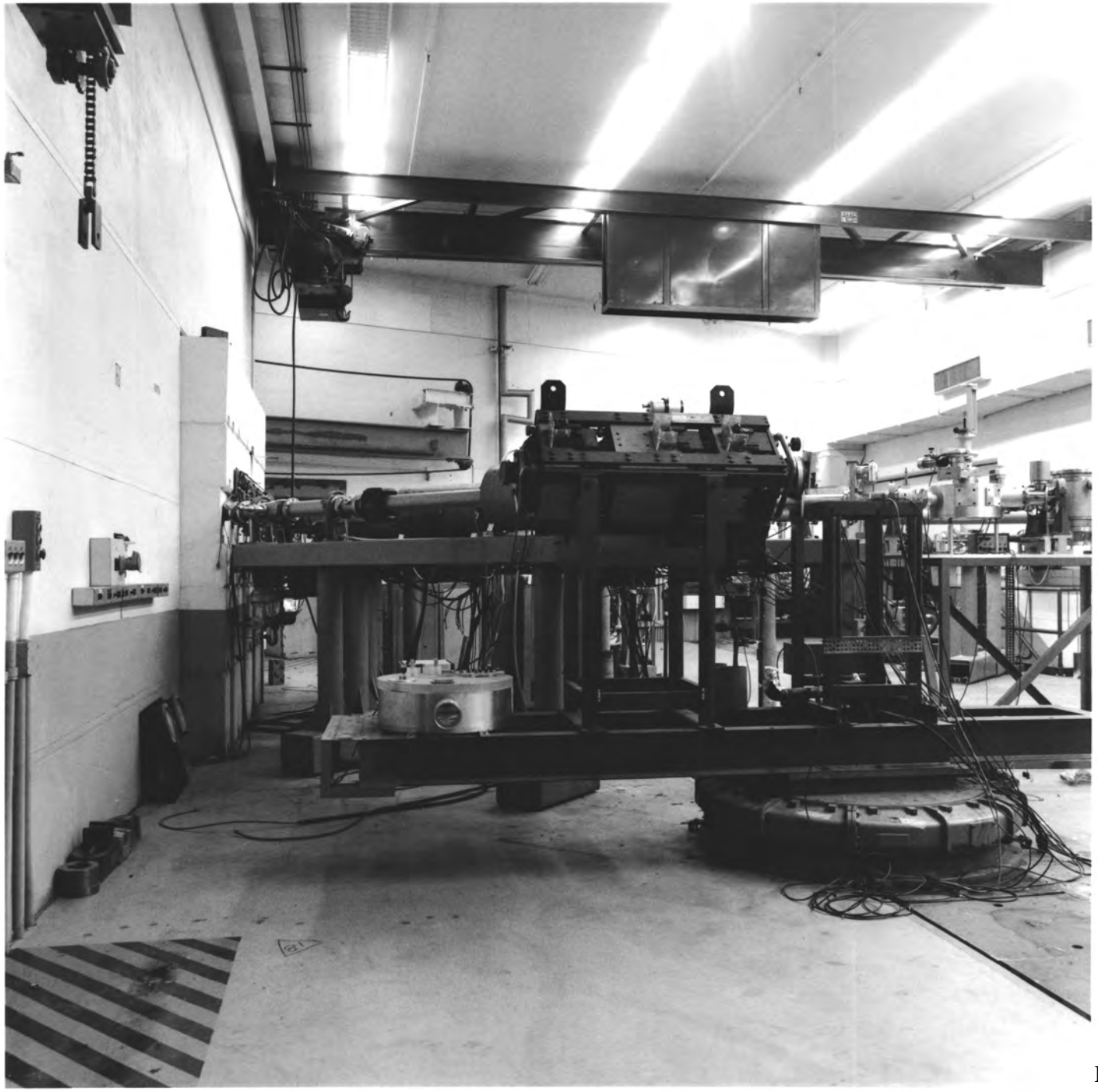
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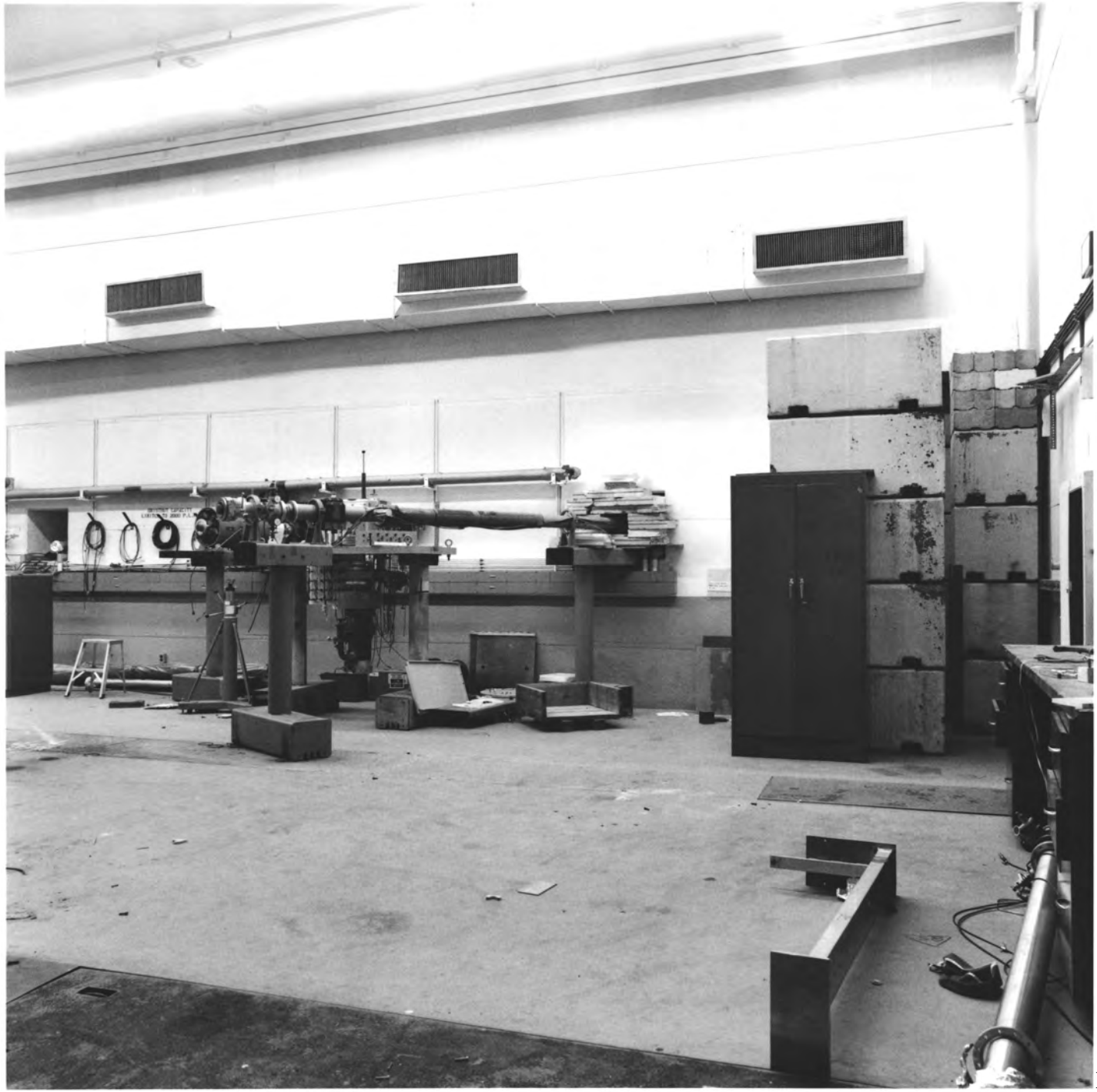
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RN02-023-004



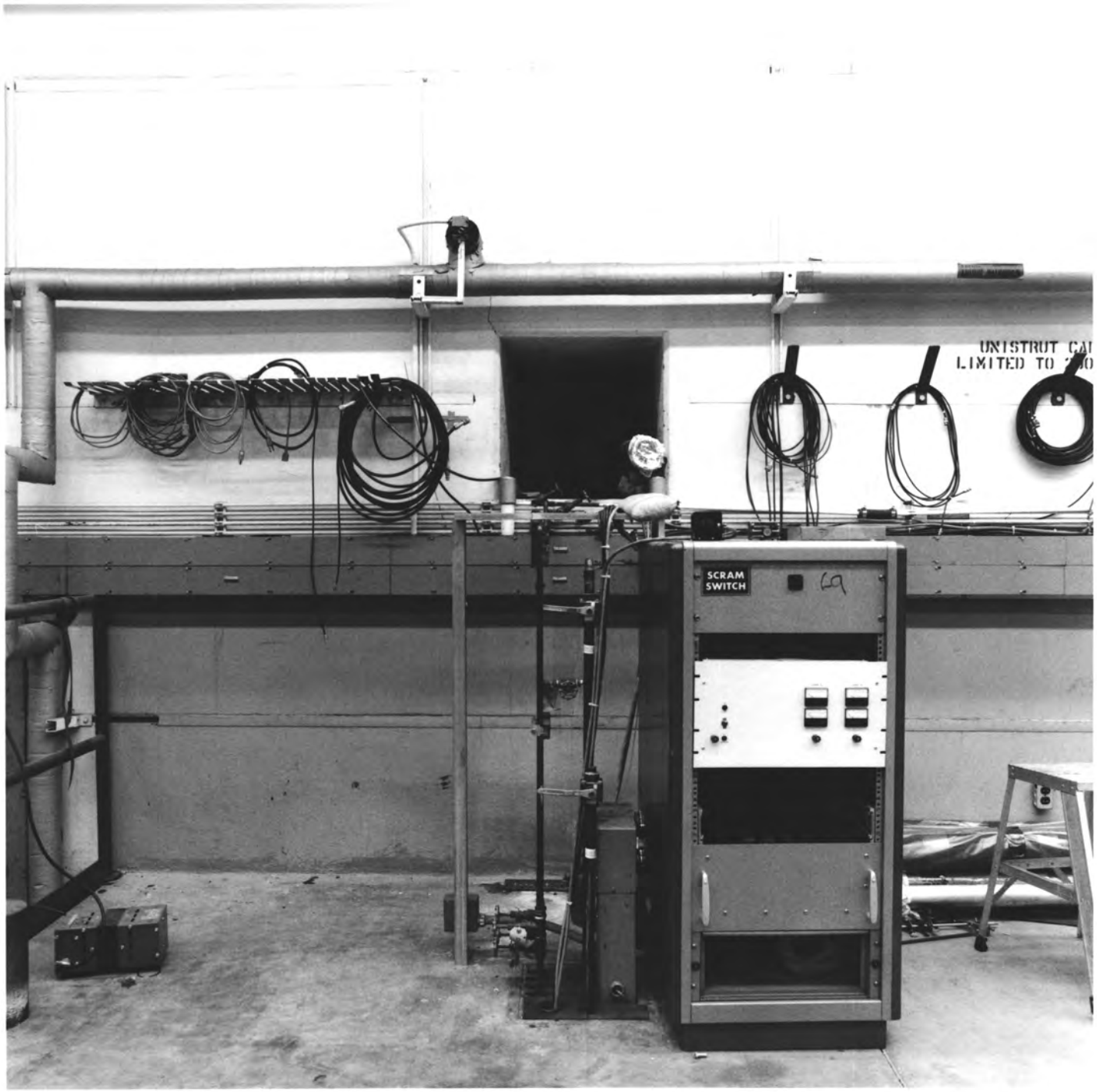
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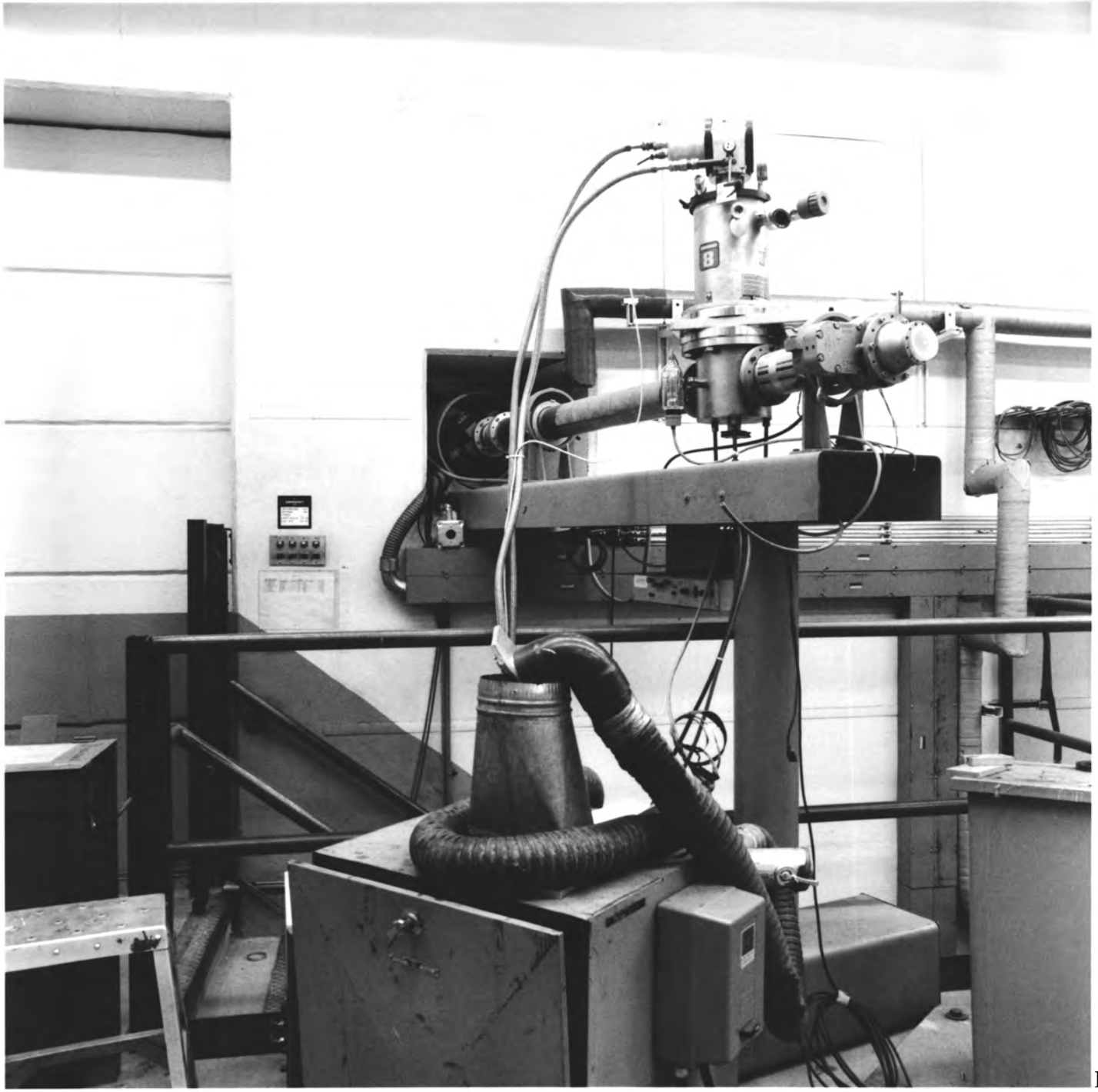
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RN02-023-009



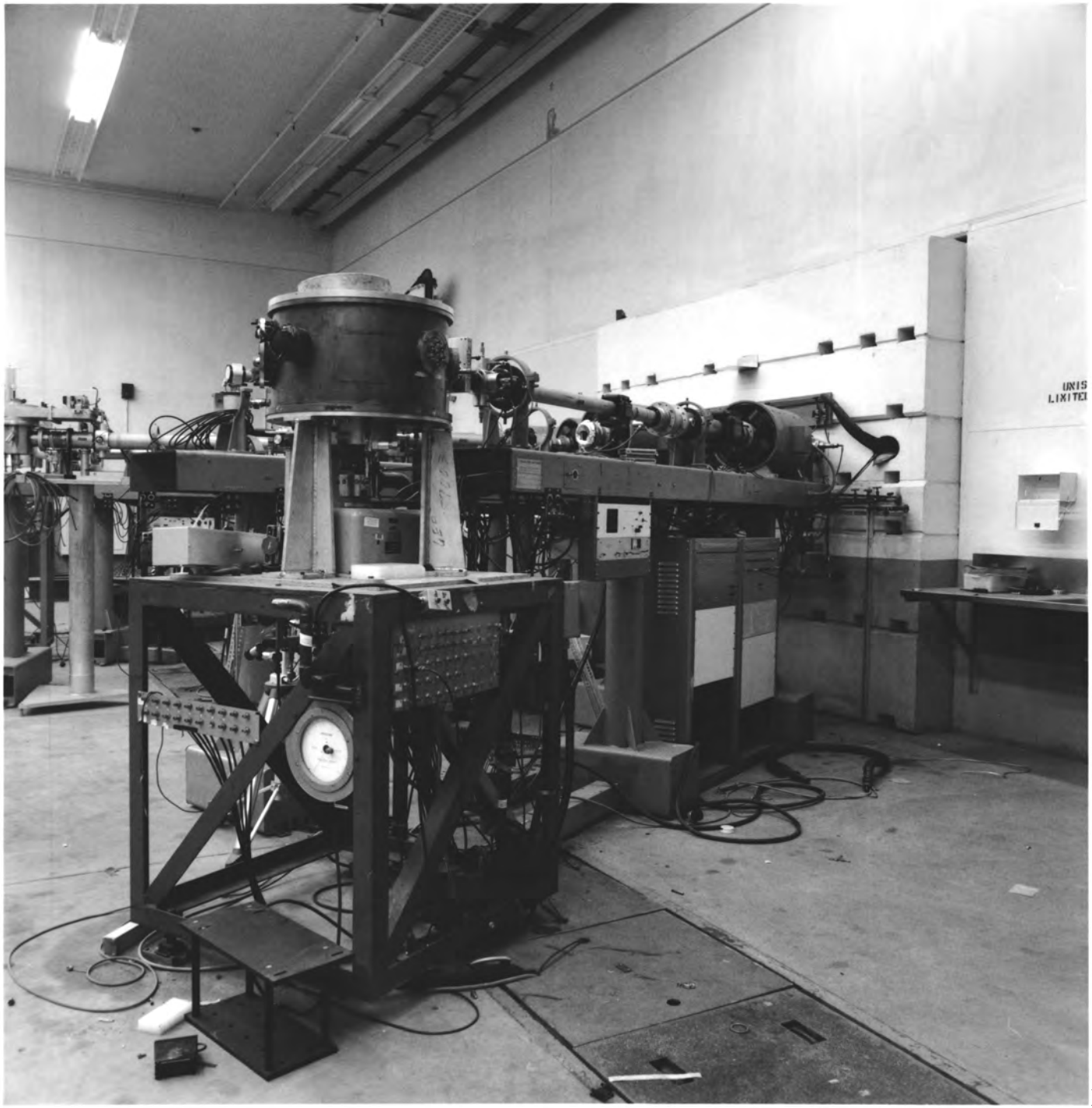
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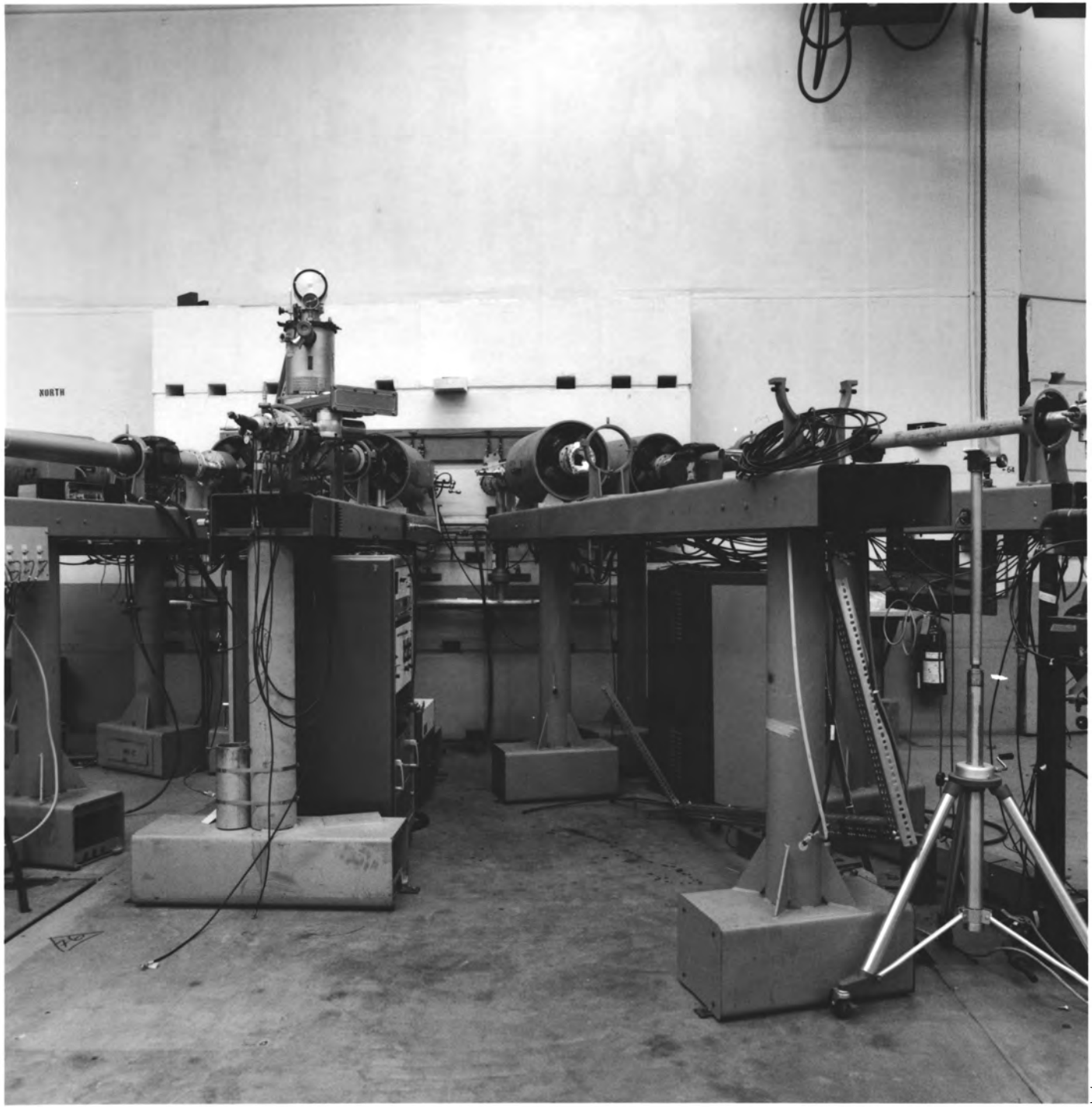
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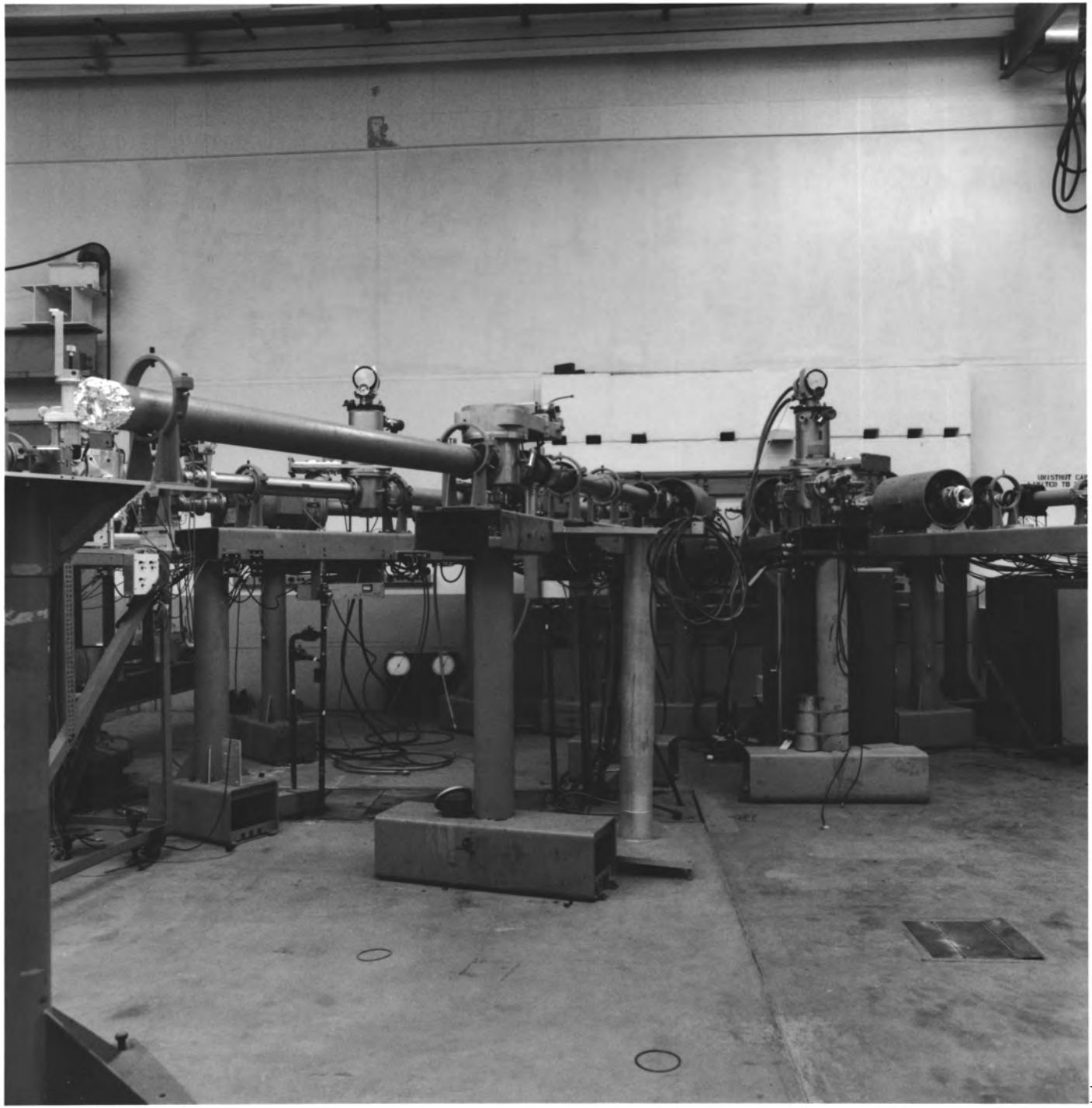
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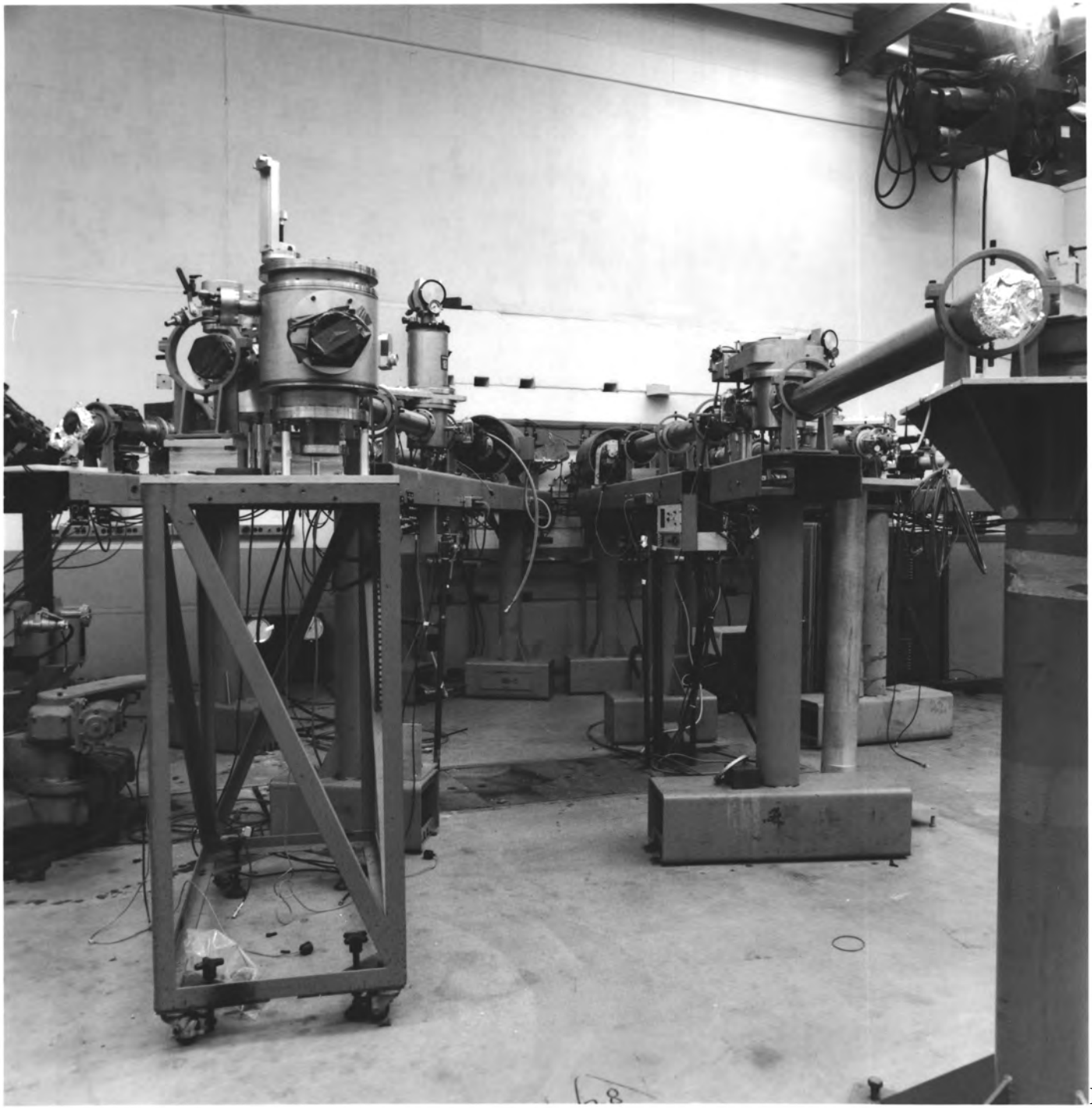
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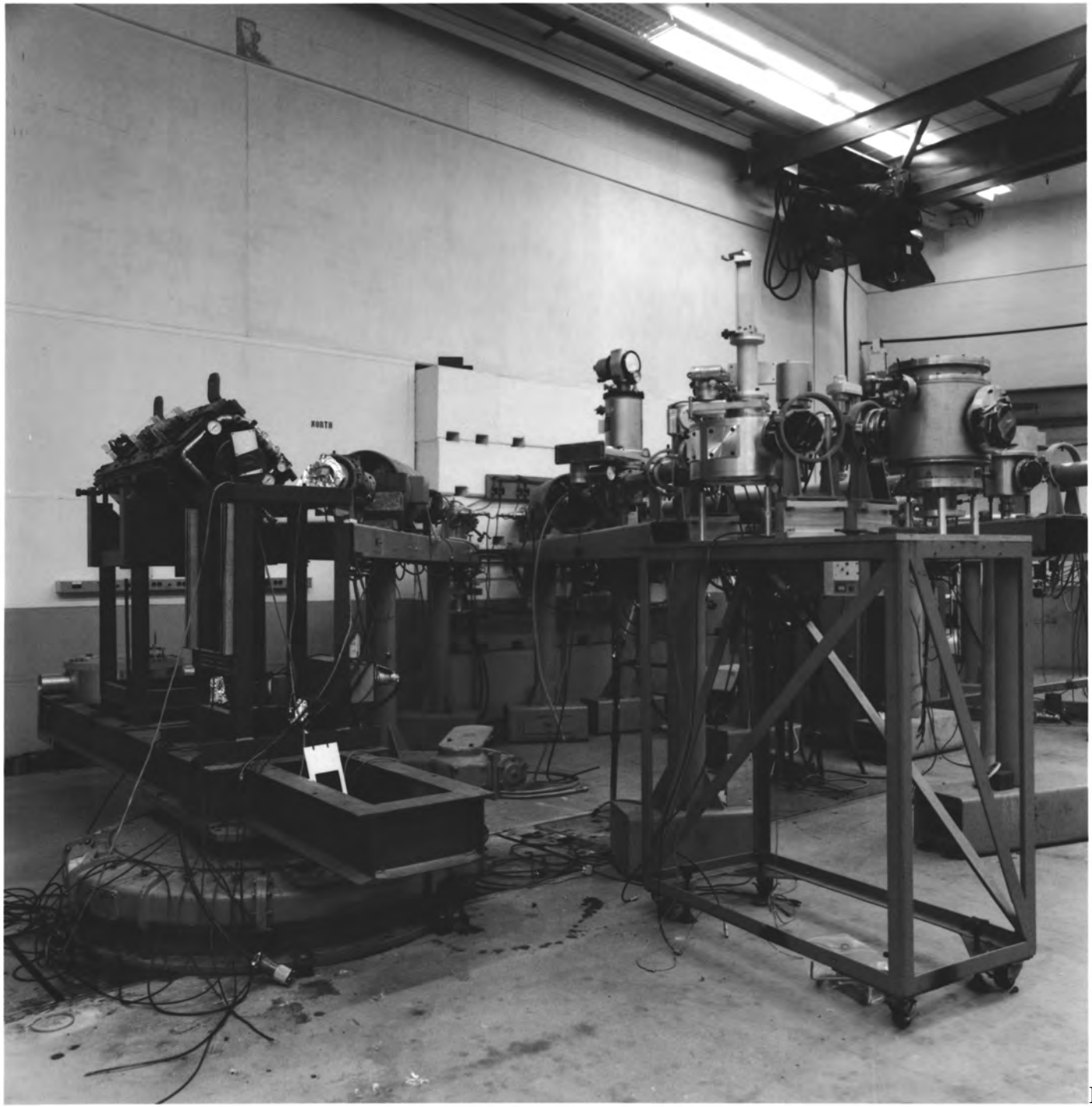
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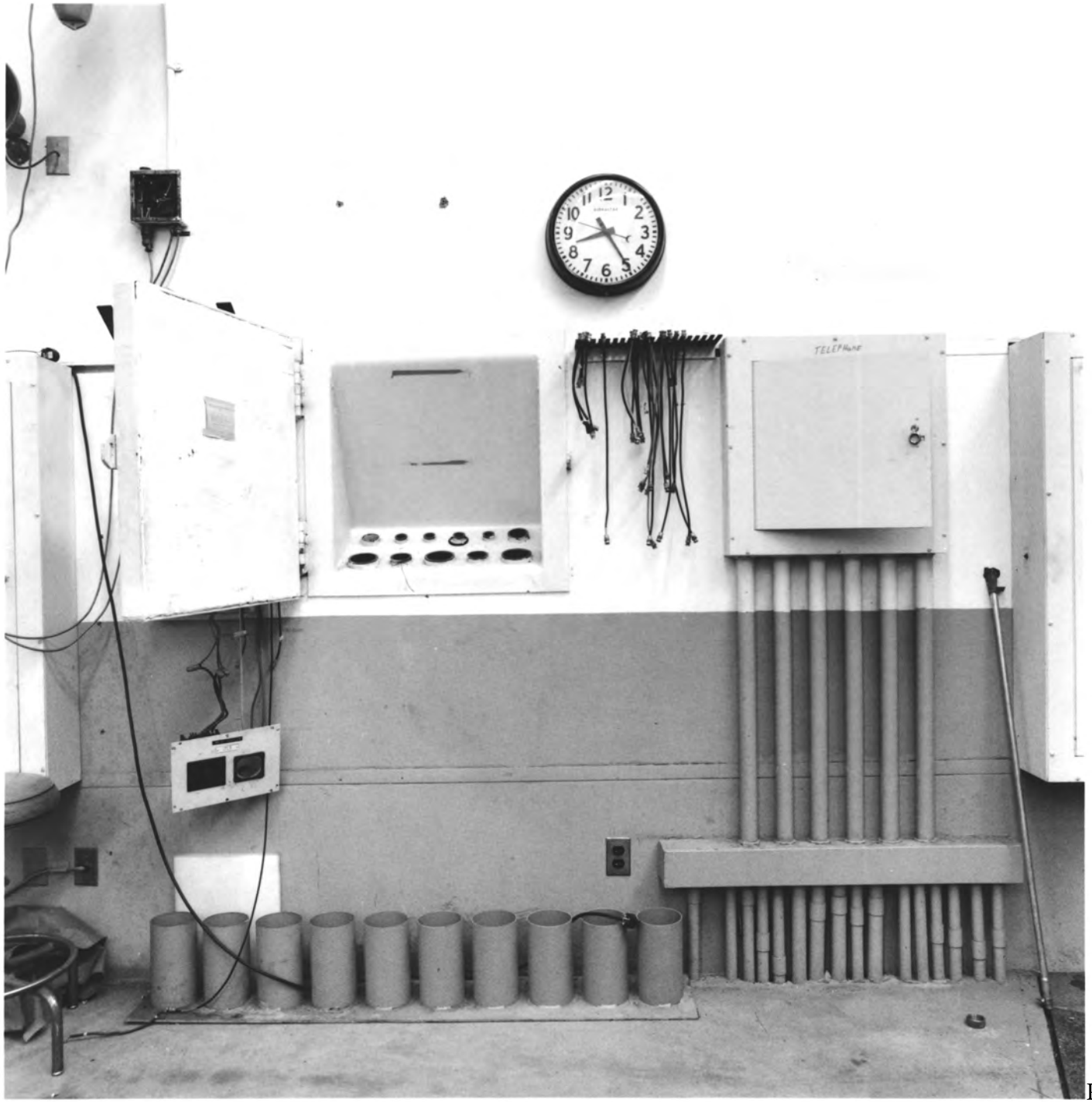
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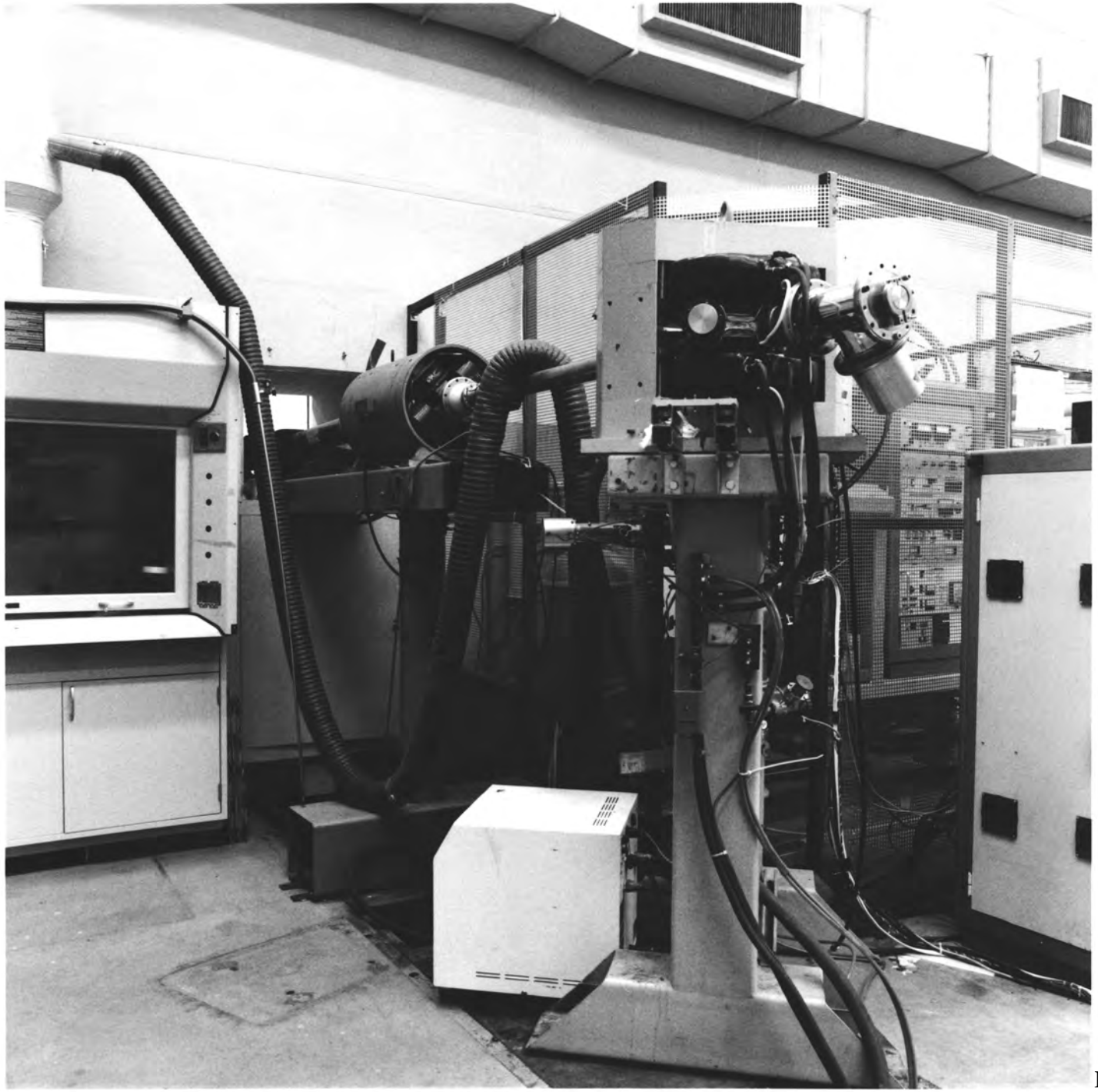
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RN02-023-018



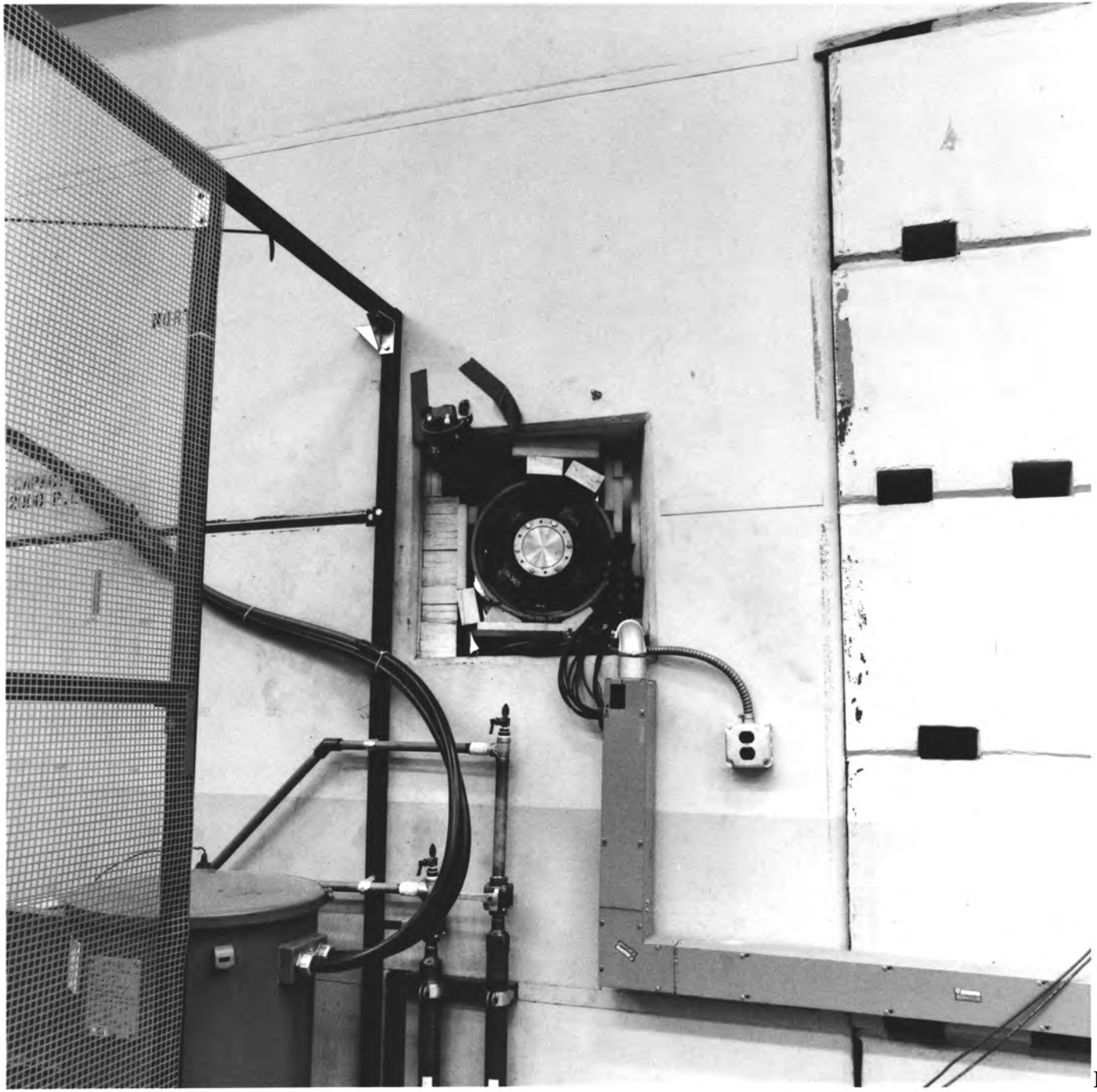
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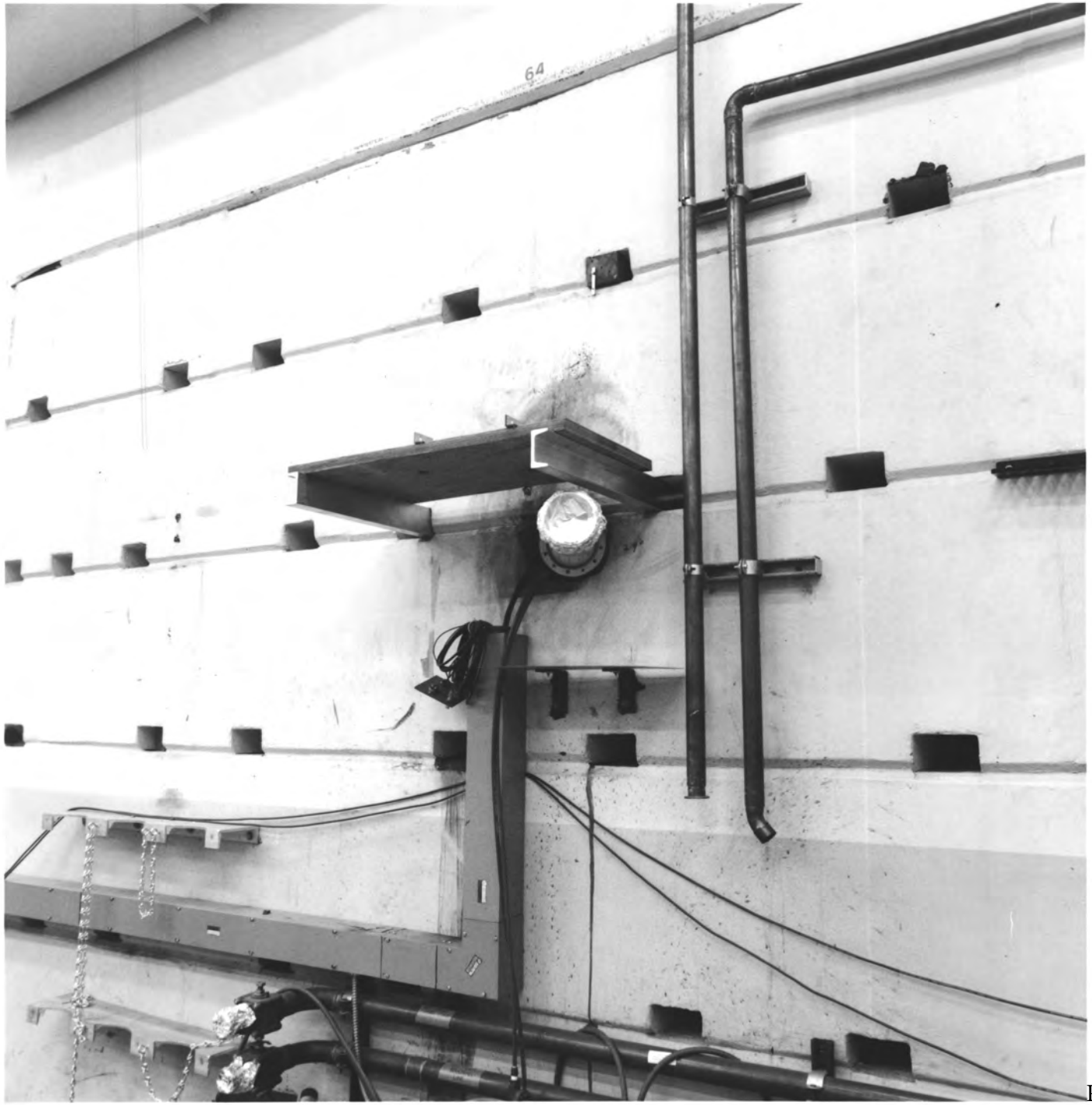
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RN02-023-028



RN02-023-025



RN02-023-024



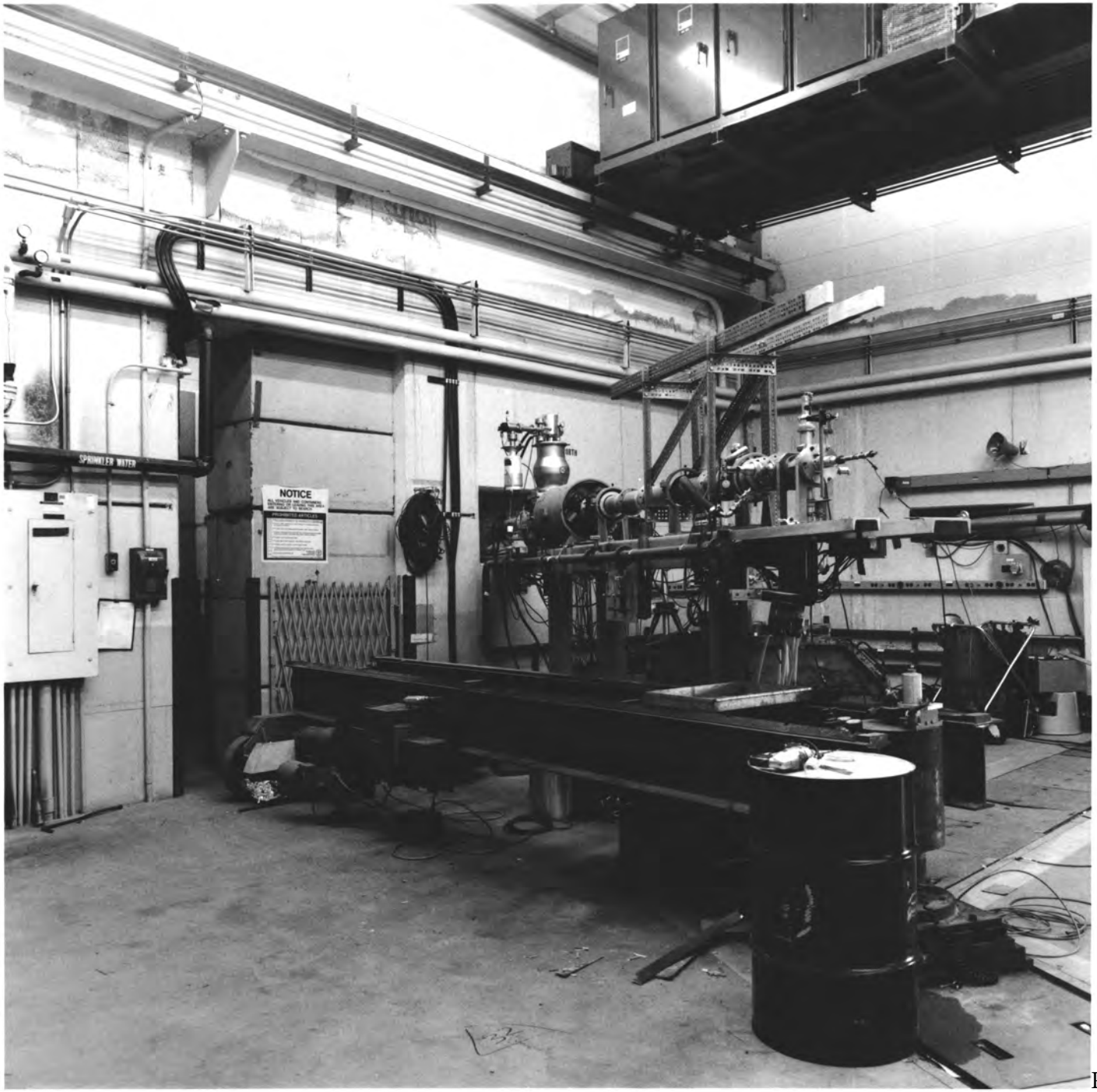
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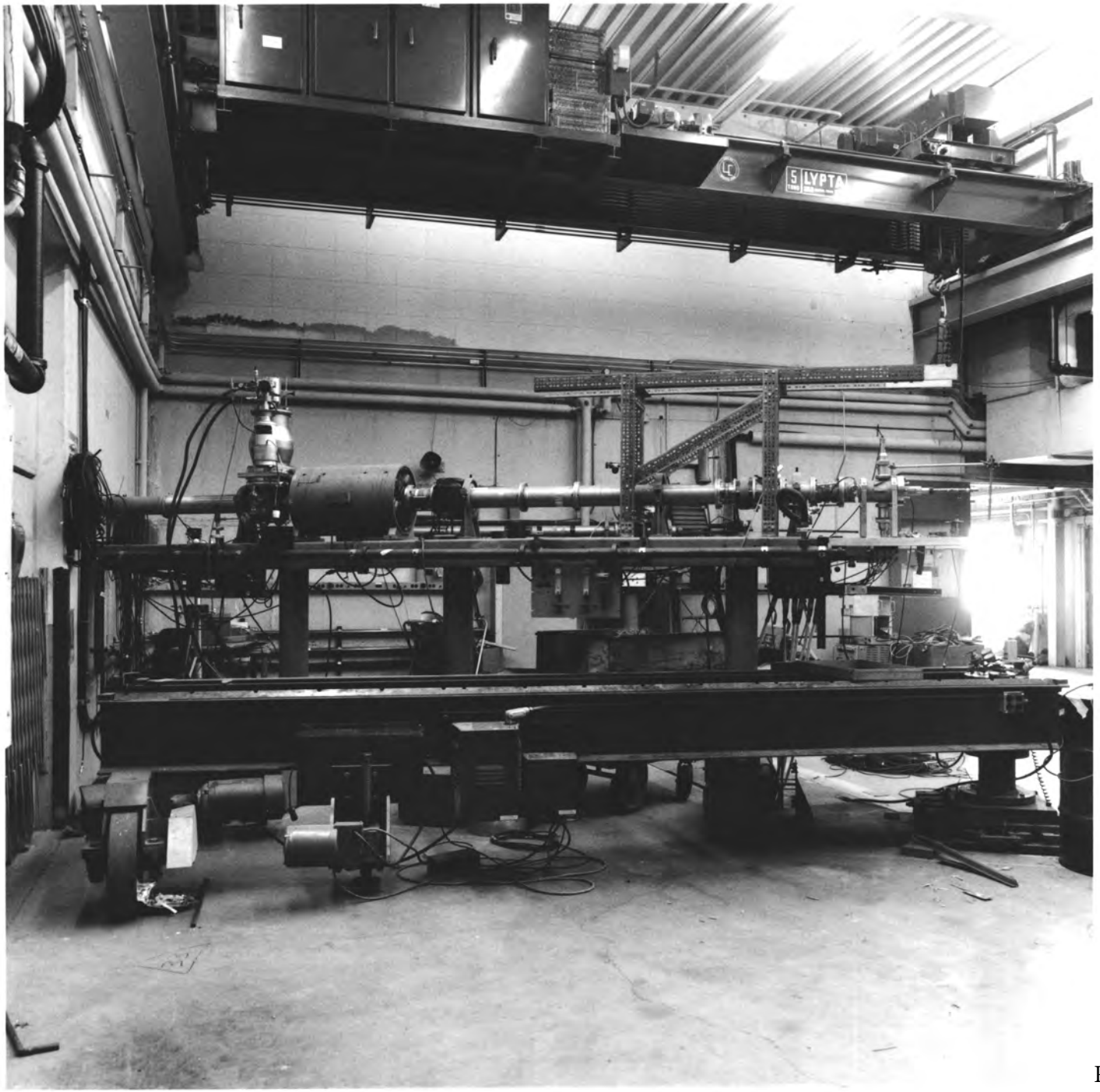
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RN02-023-032



RN02-023-036



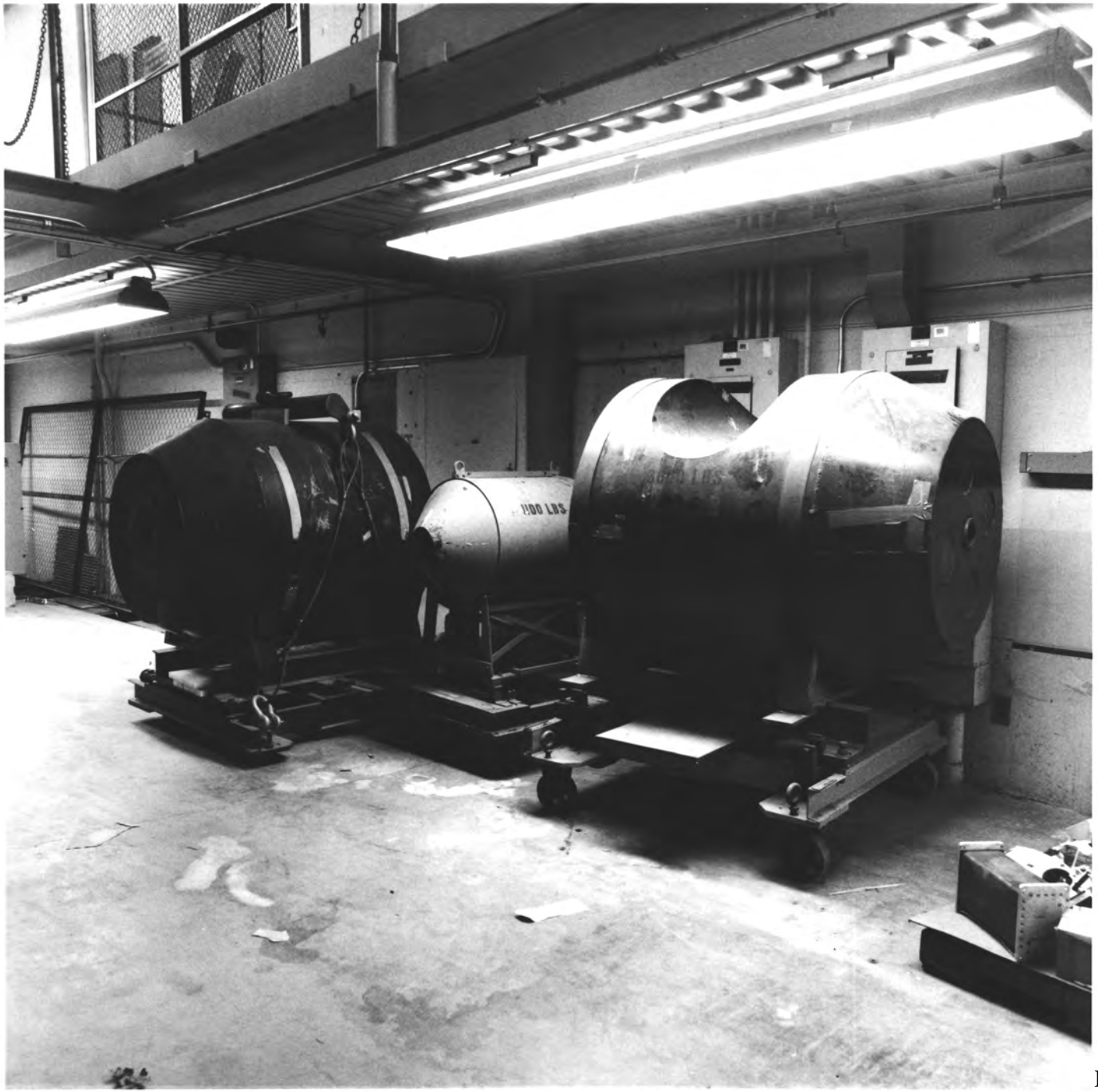
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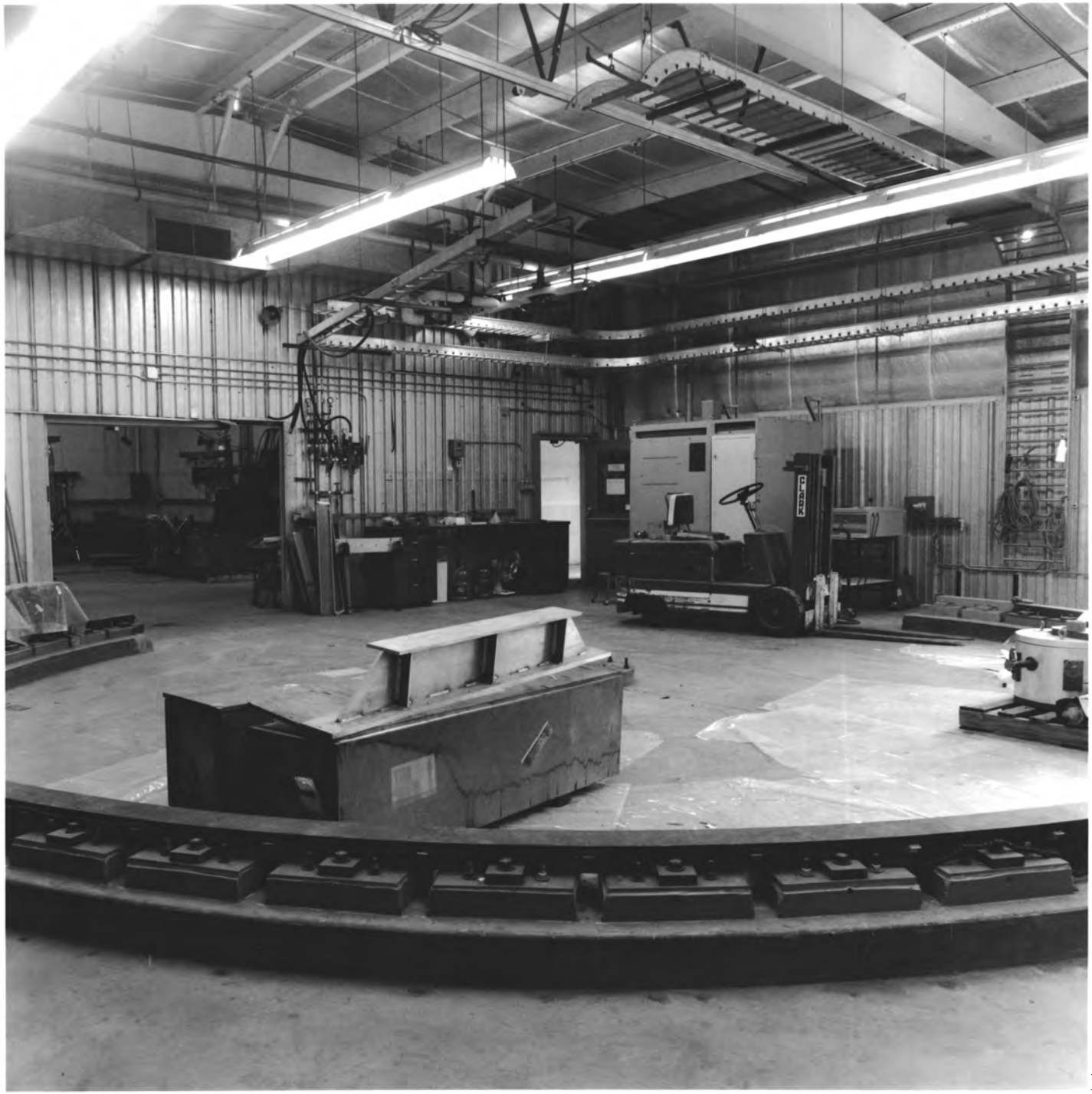
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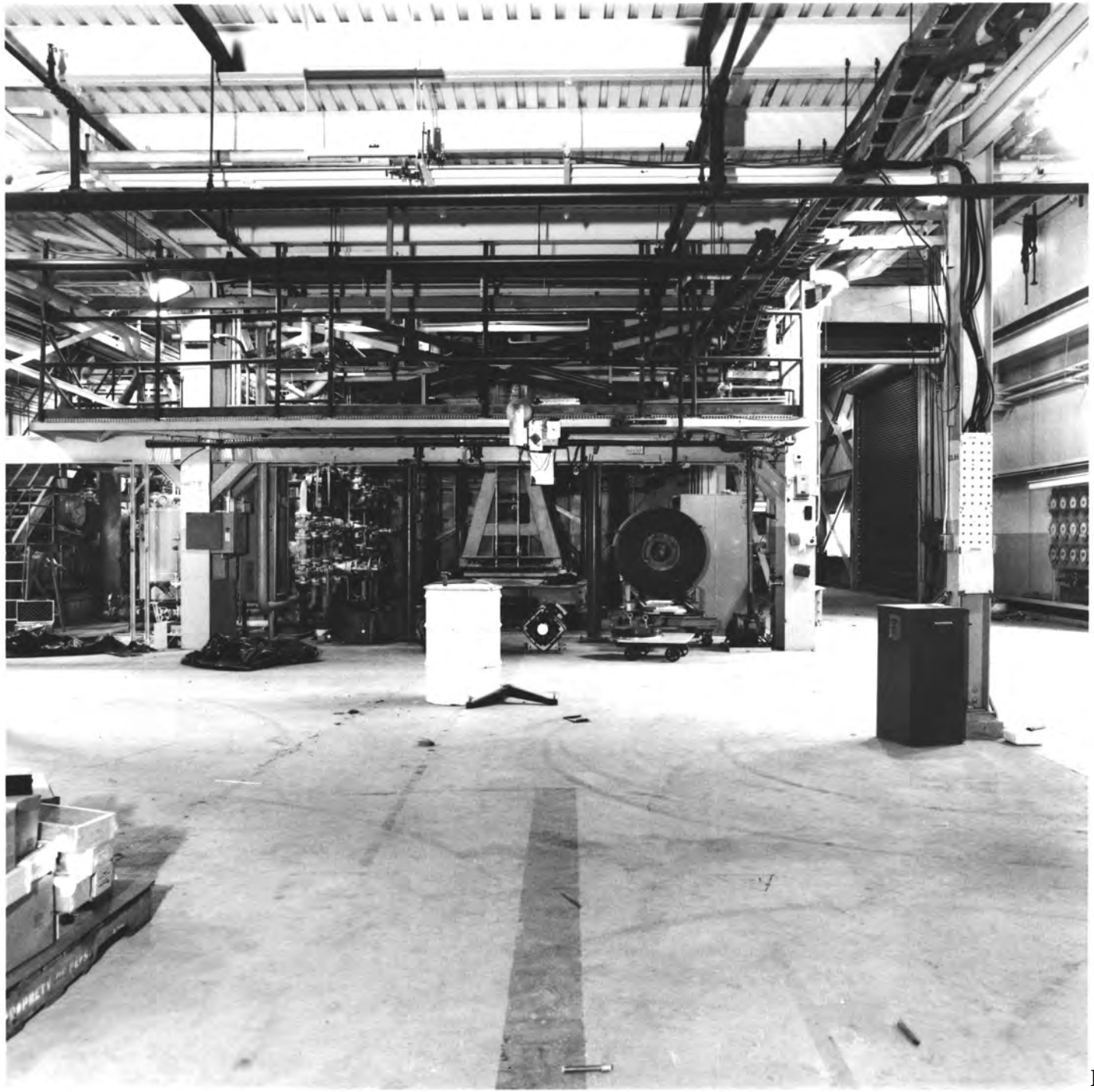
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RN02-023-040



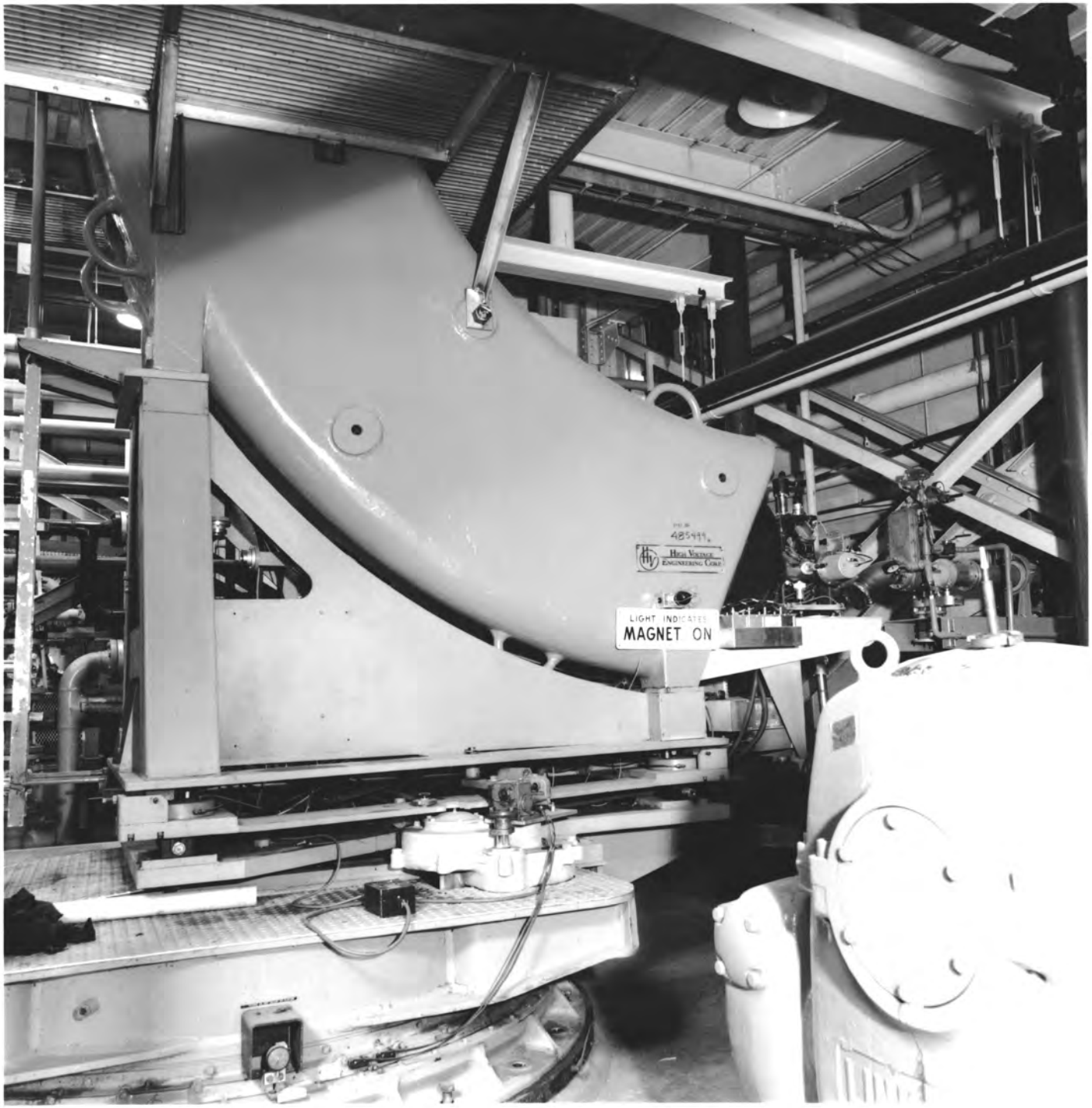
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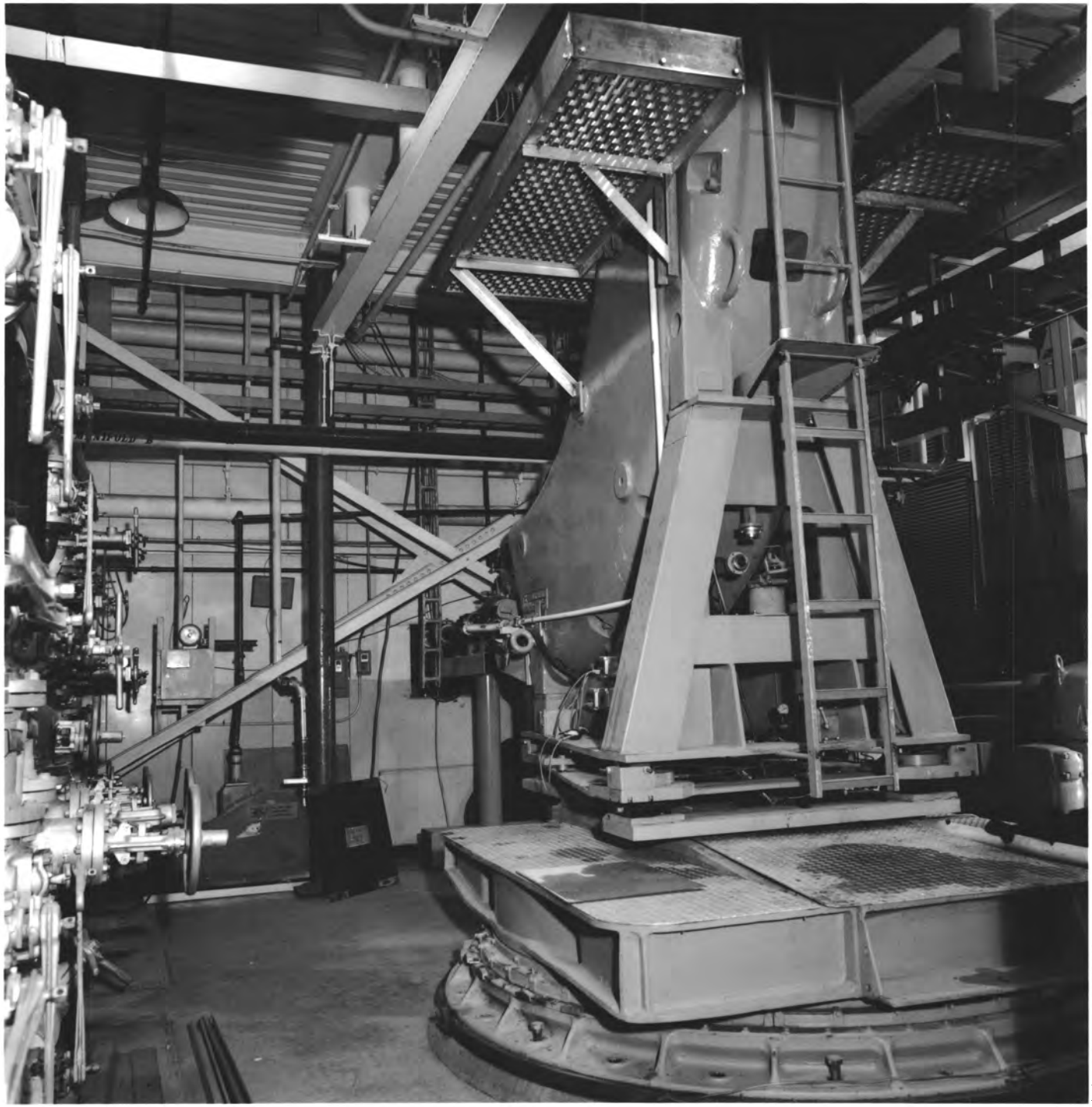
RN02-023-114



RN02-023-118



RN02-023-124



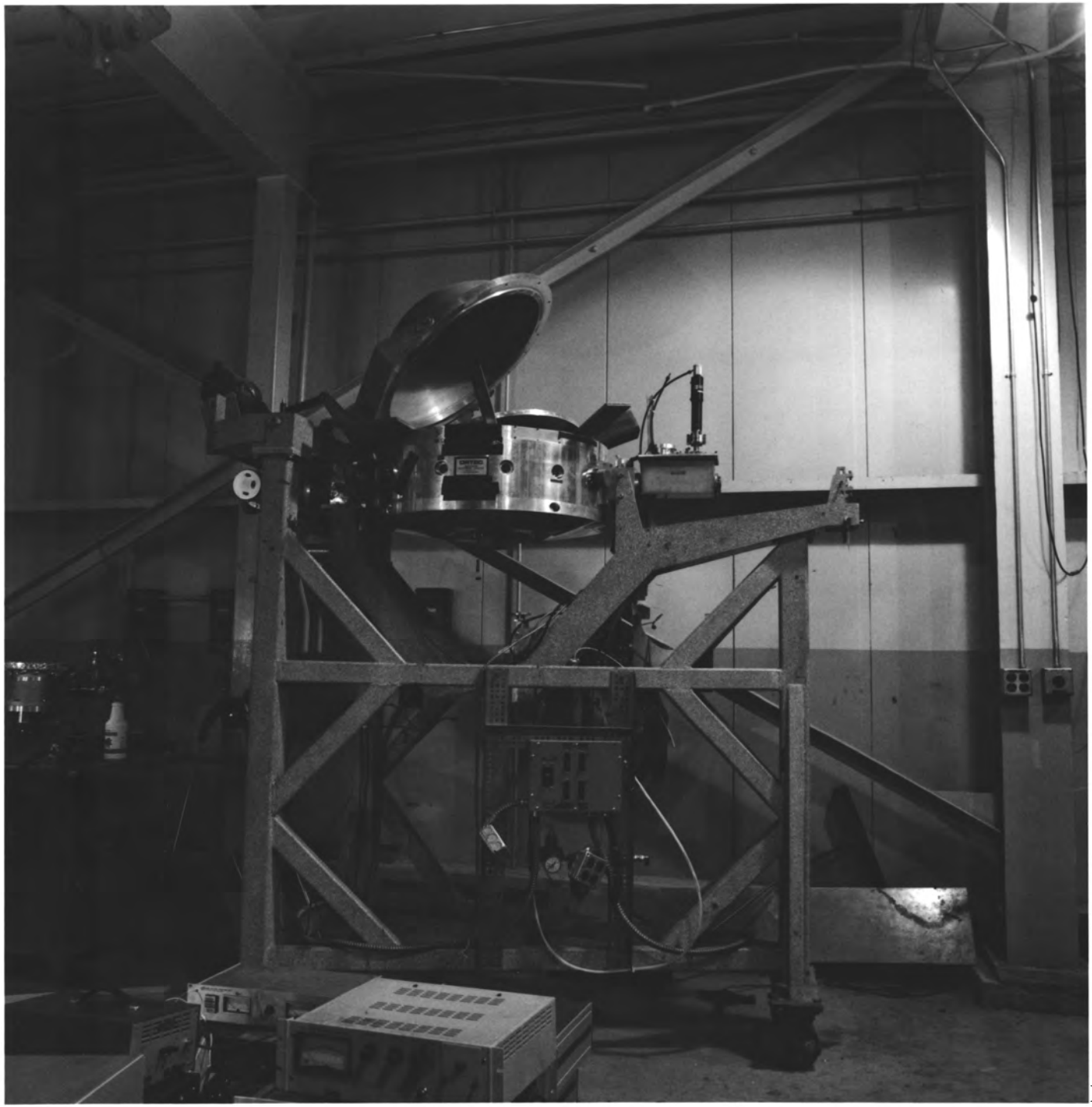
RN02-023-125



RN02-023-121



RN02-023-123



RN02-023-126



RN02-023-158



RN02-023-159



RN02-023-181



RN02-023-169



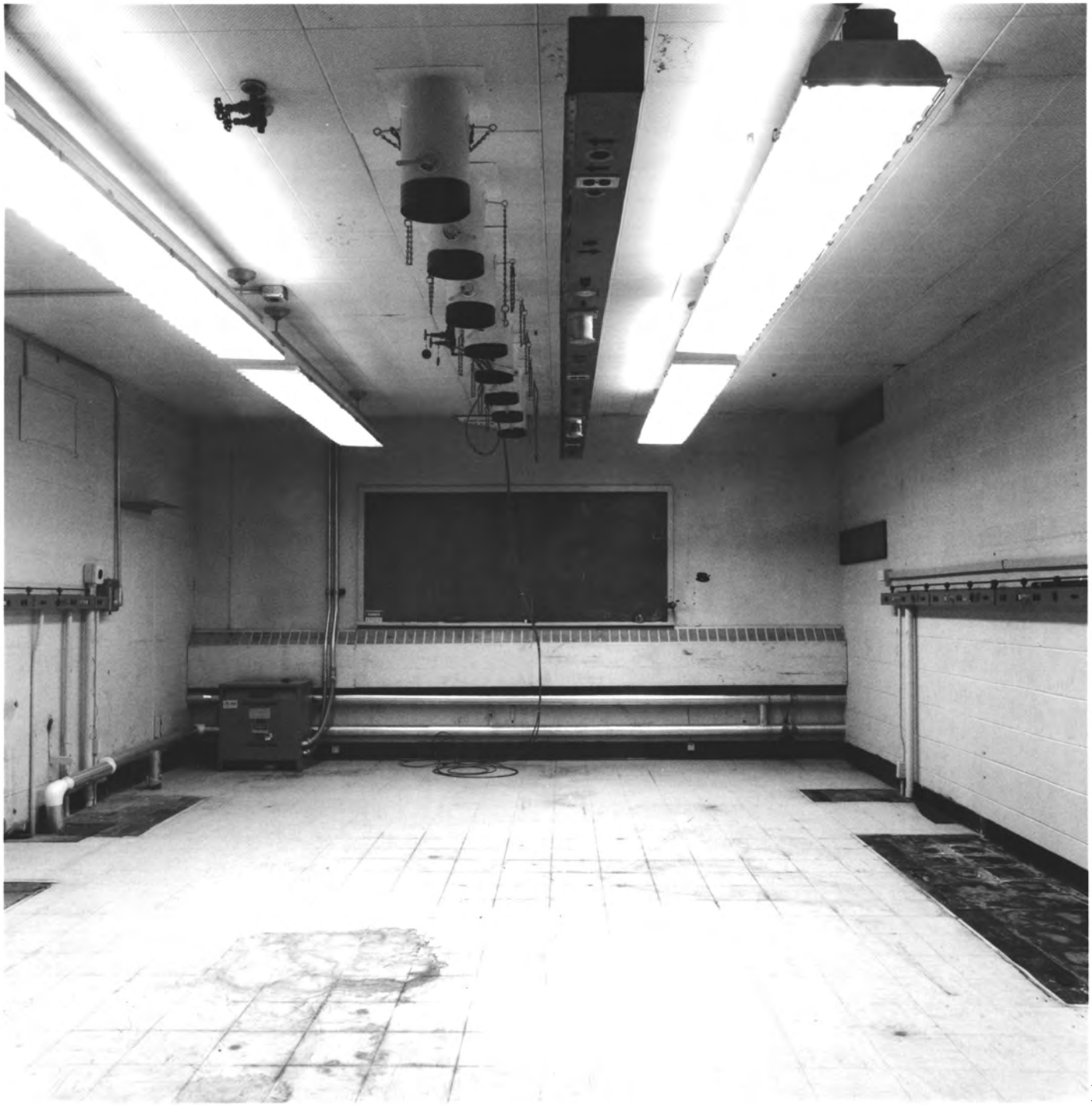
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RN02-023-156



RN02-023-171



RN02-023-174



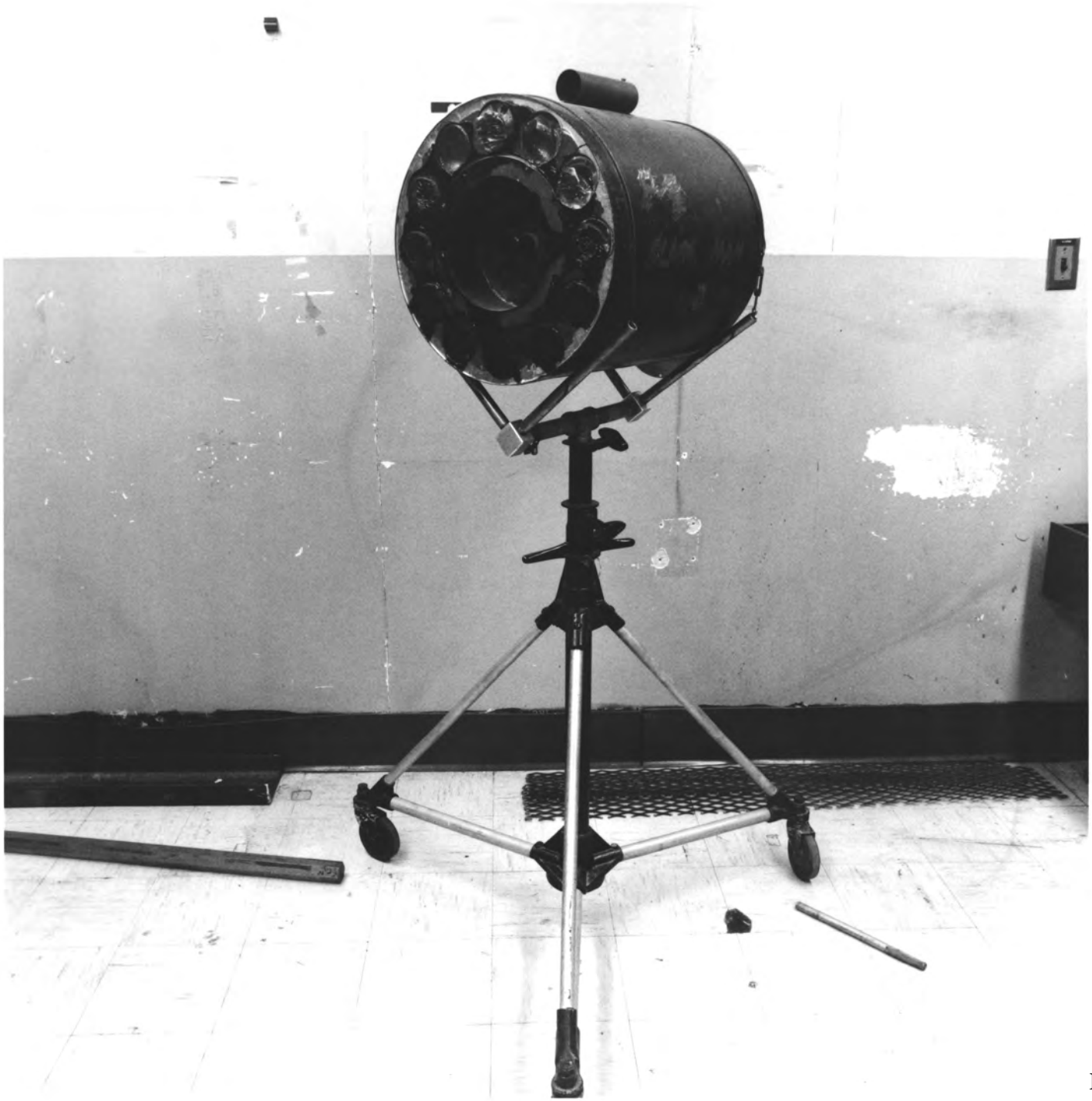
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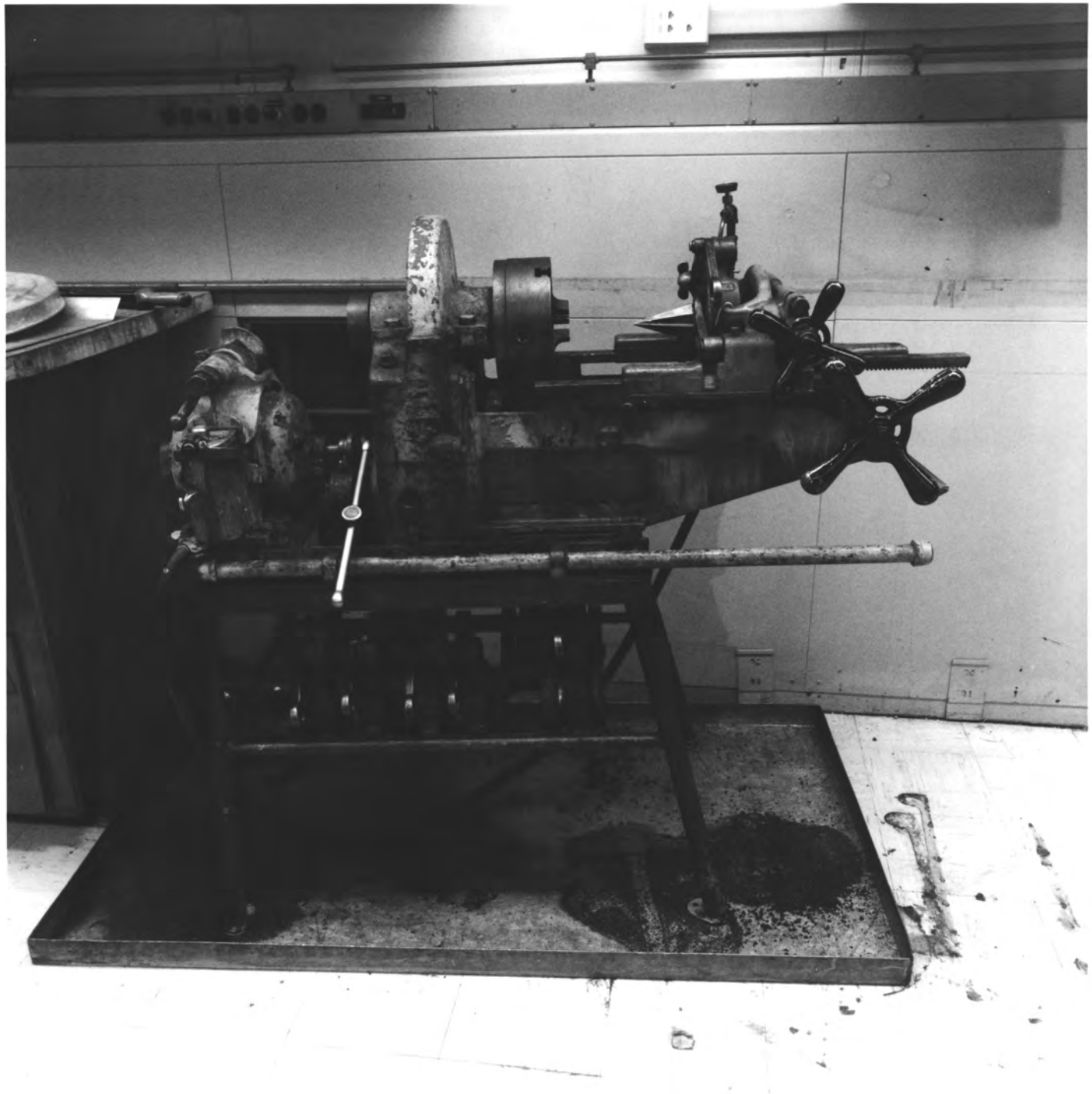
RN02-023-182



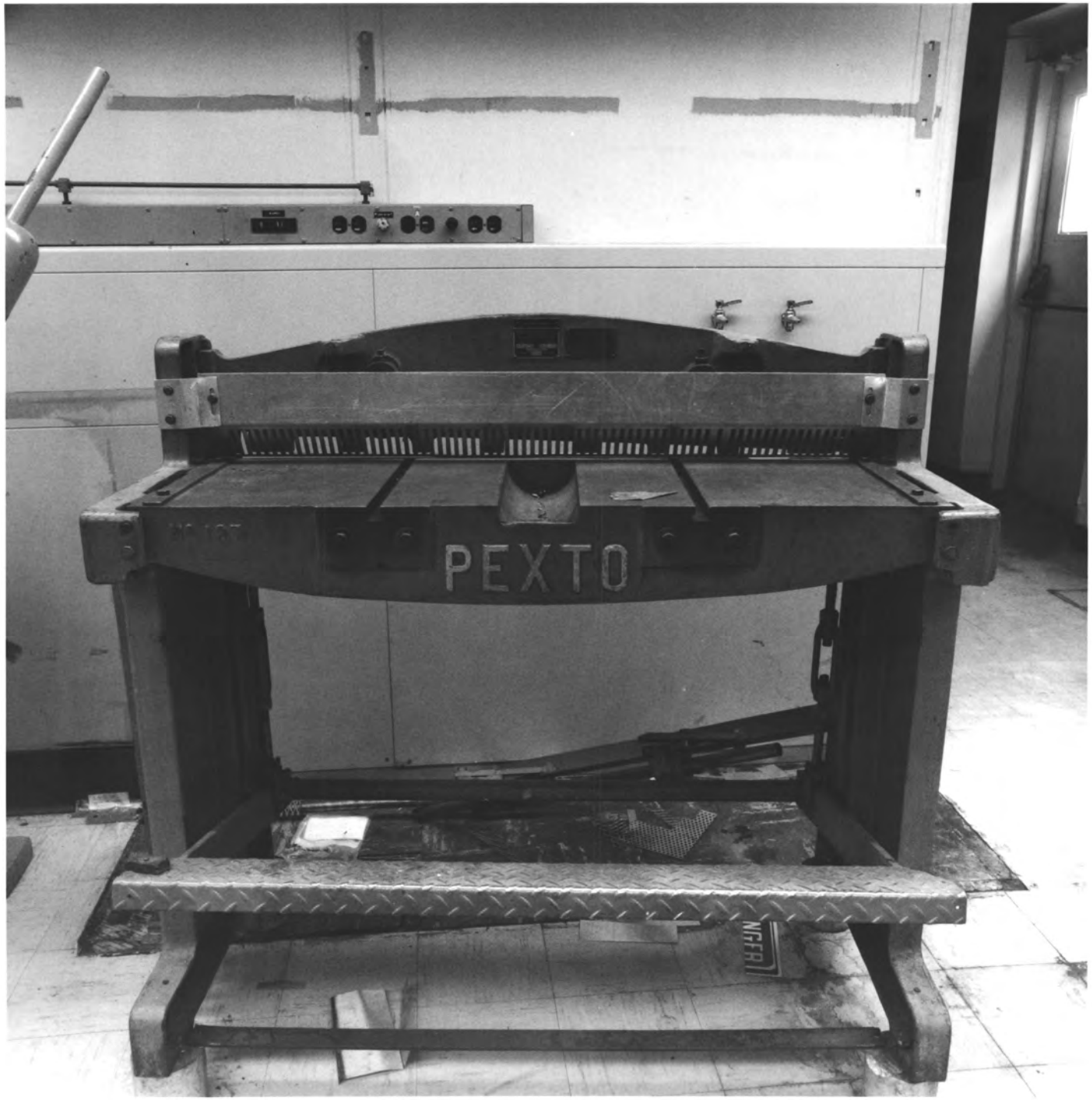
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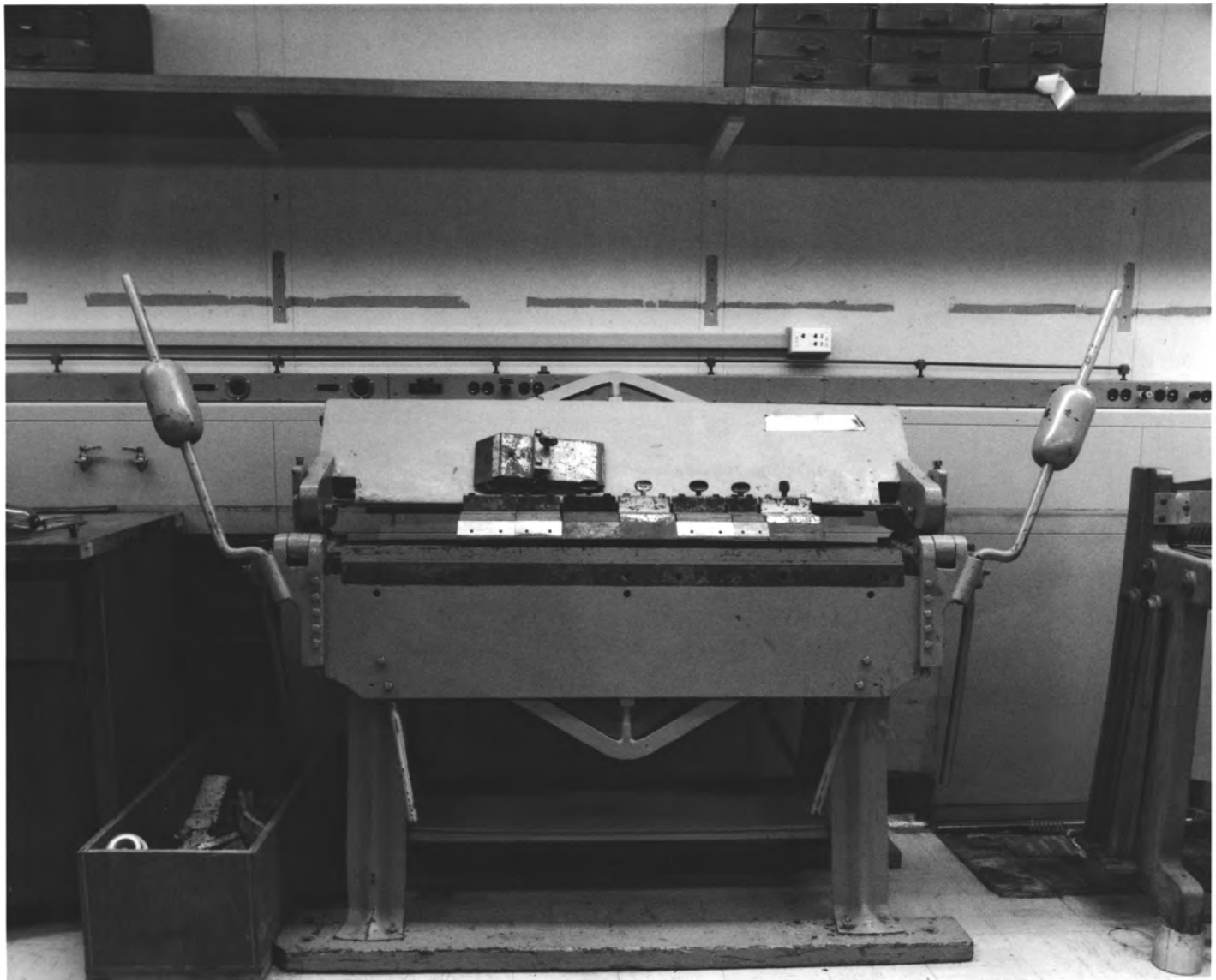
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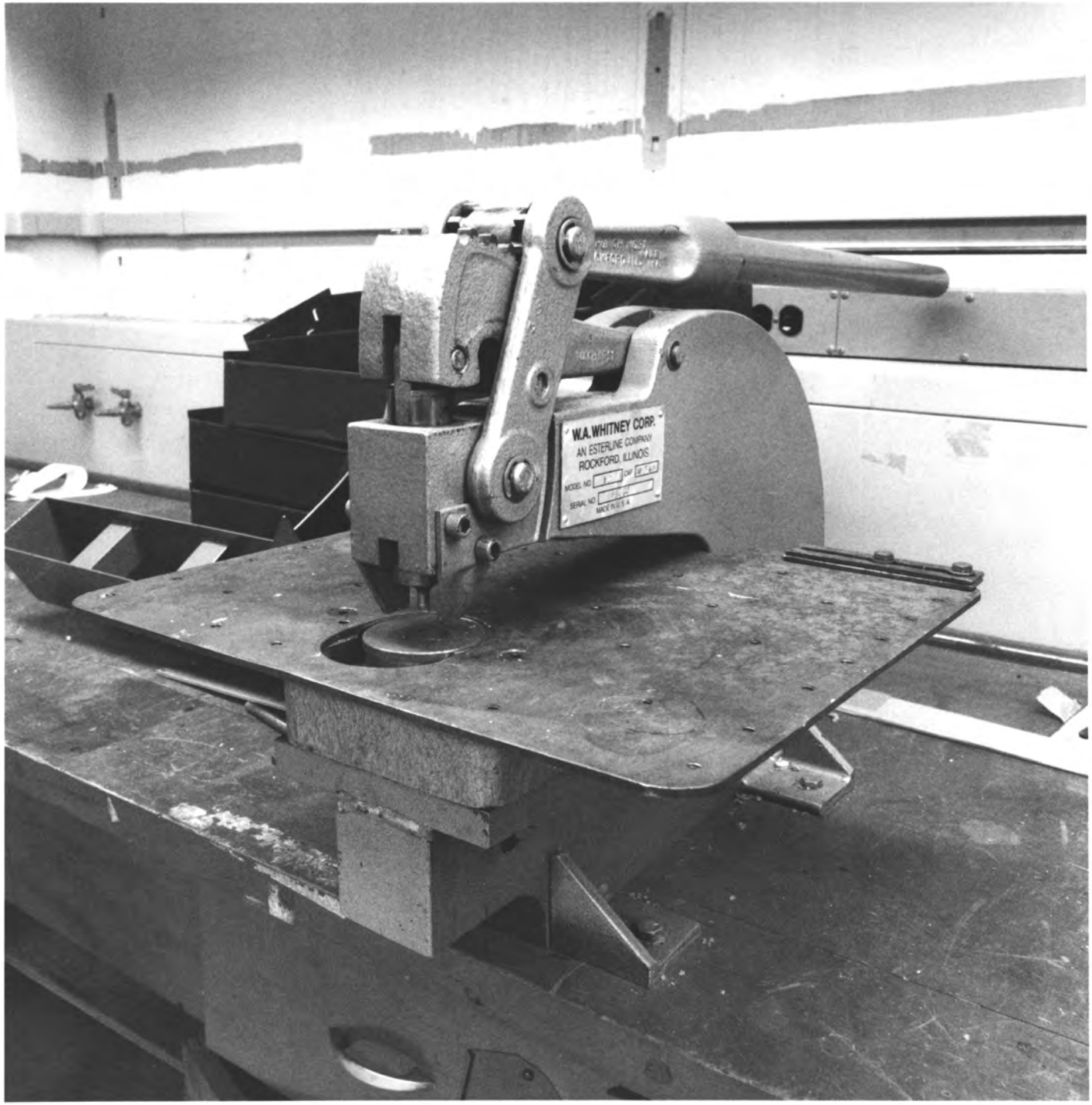
RN02-023-186



RN02-023-187



RN02-023-188


W.A. WHITNEY CORP.
AN ESTERLINE COMPANY
ROCKFORD, ILLINOIS
MODEL NO
SERIAL NO
MADE IN U.S.A.

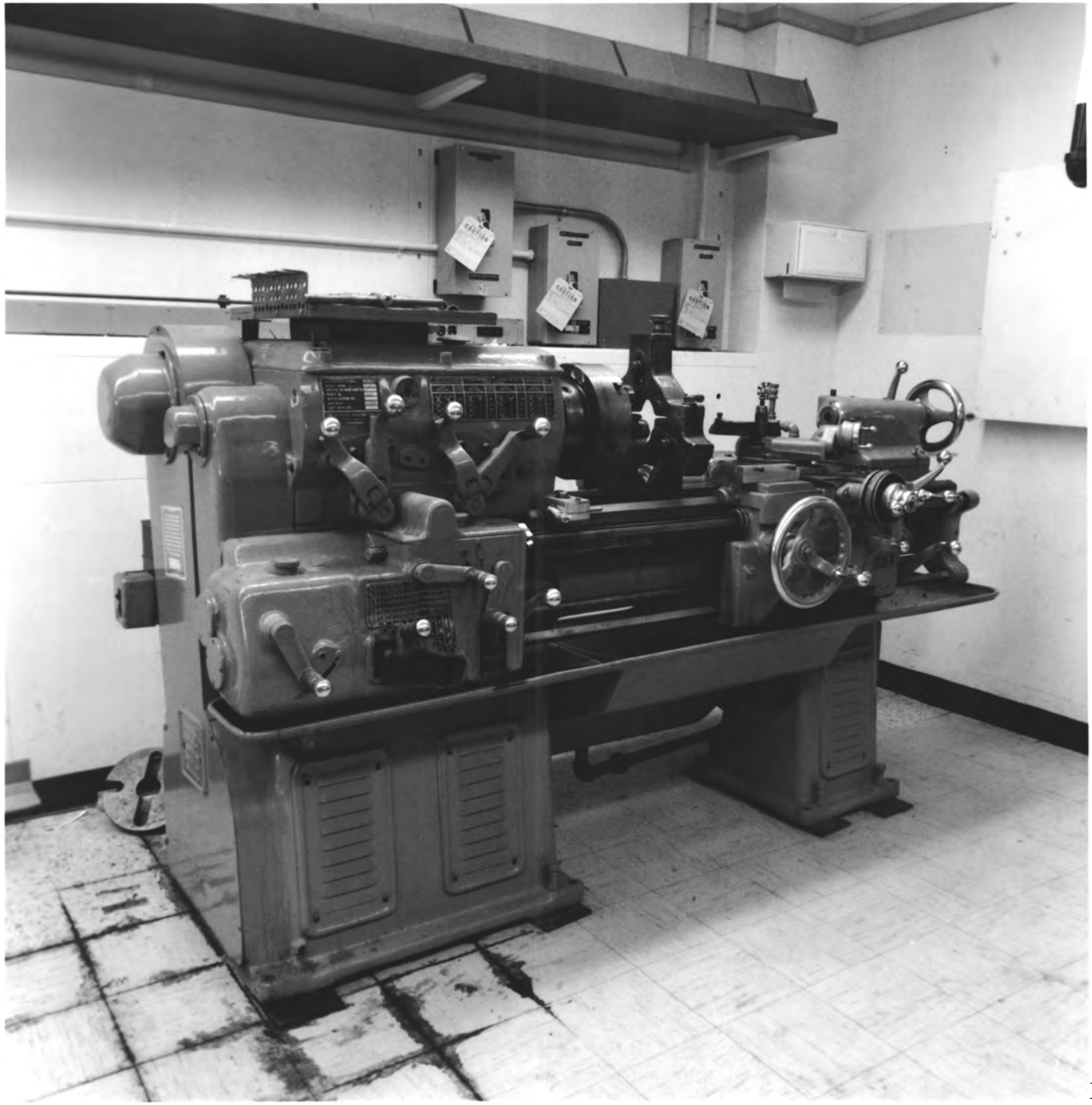
RN02-023-191



RN02-023-247



RN02-023-192



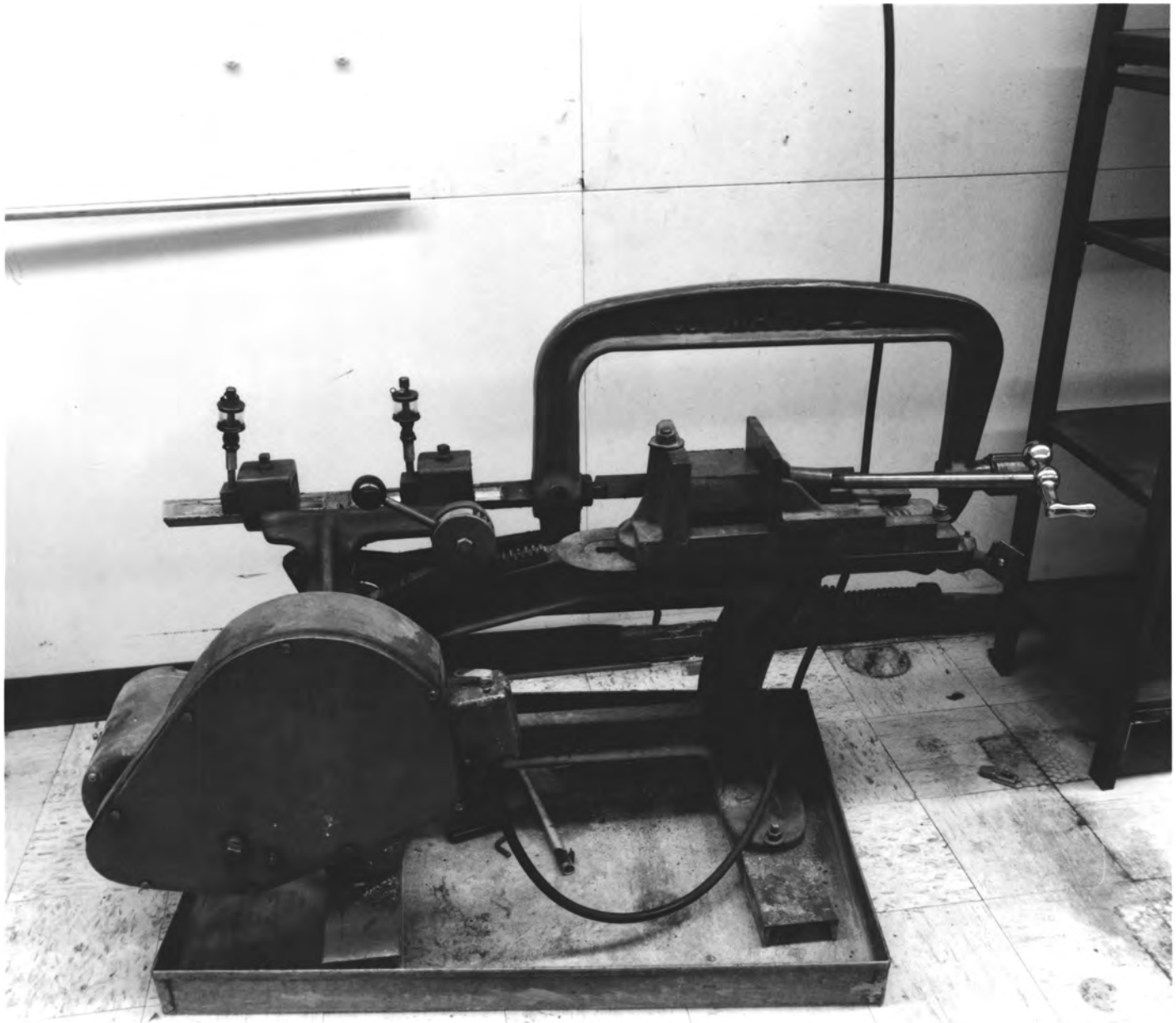
RN02-023-197



RN02-023-194



RN02-023-196



RN02-023-195



RN02-023-199



RN02-023-202



RN02-023-209



RN02-023-270



RN02-023-257



RN02-023-259



RN02-023-262



RN02-023-261



RN02-023-269



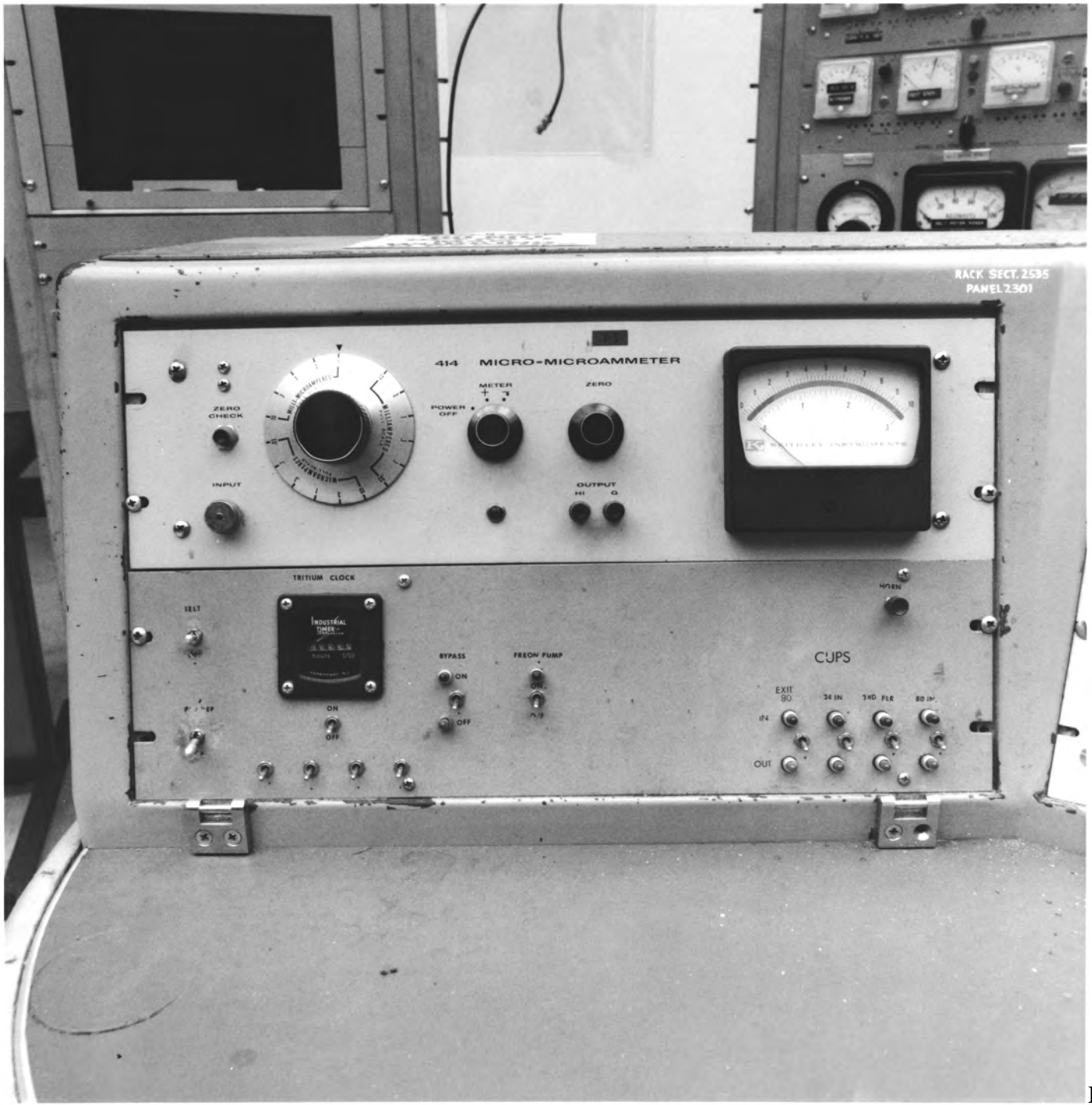
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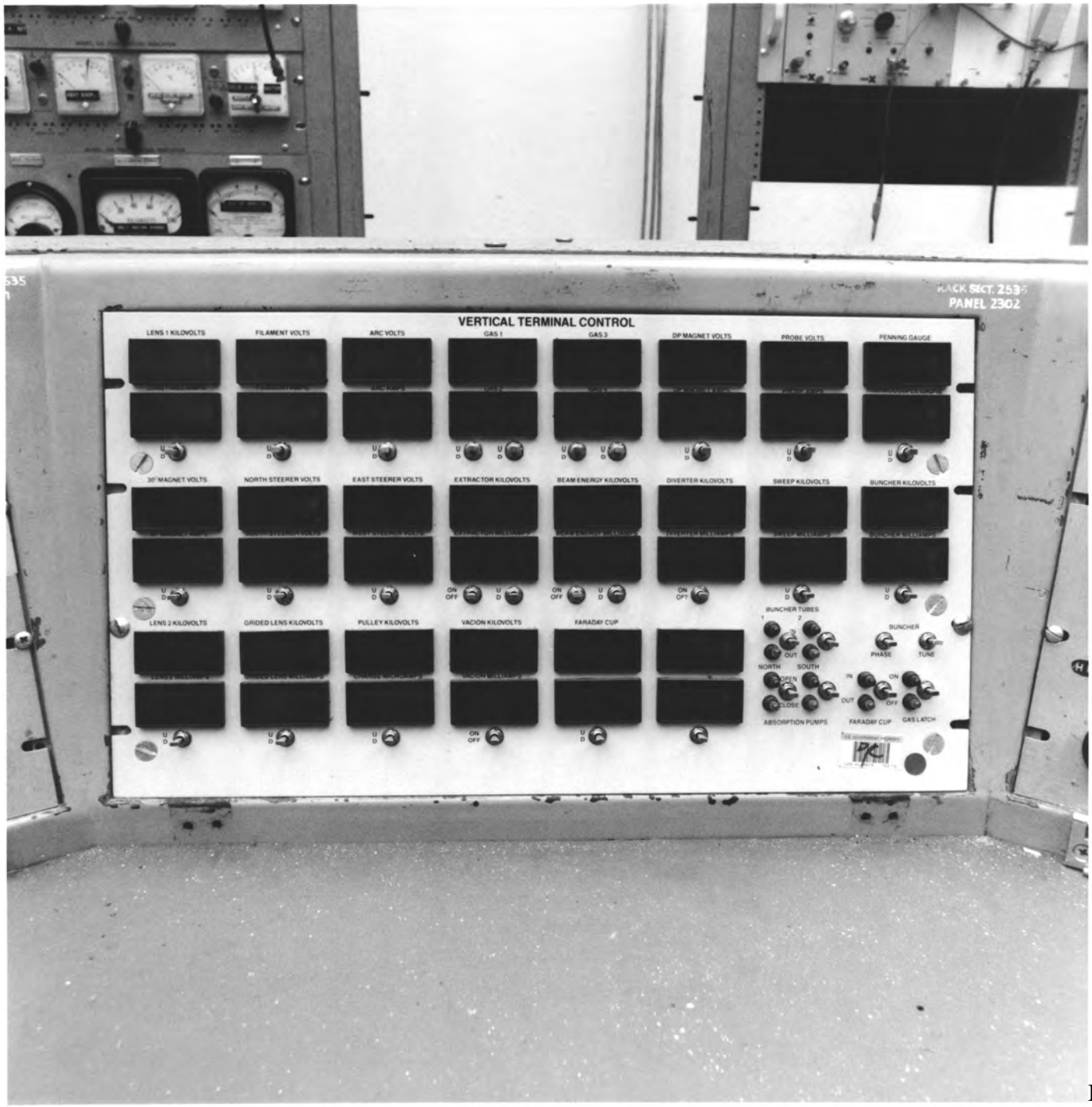
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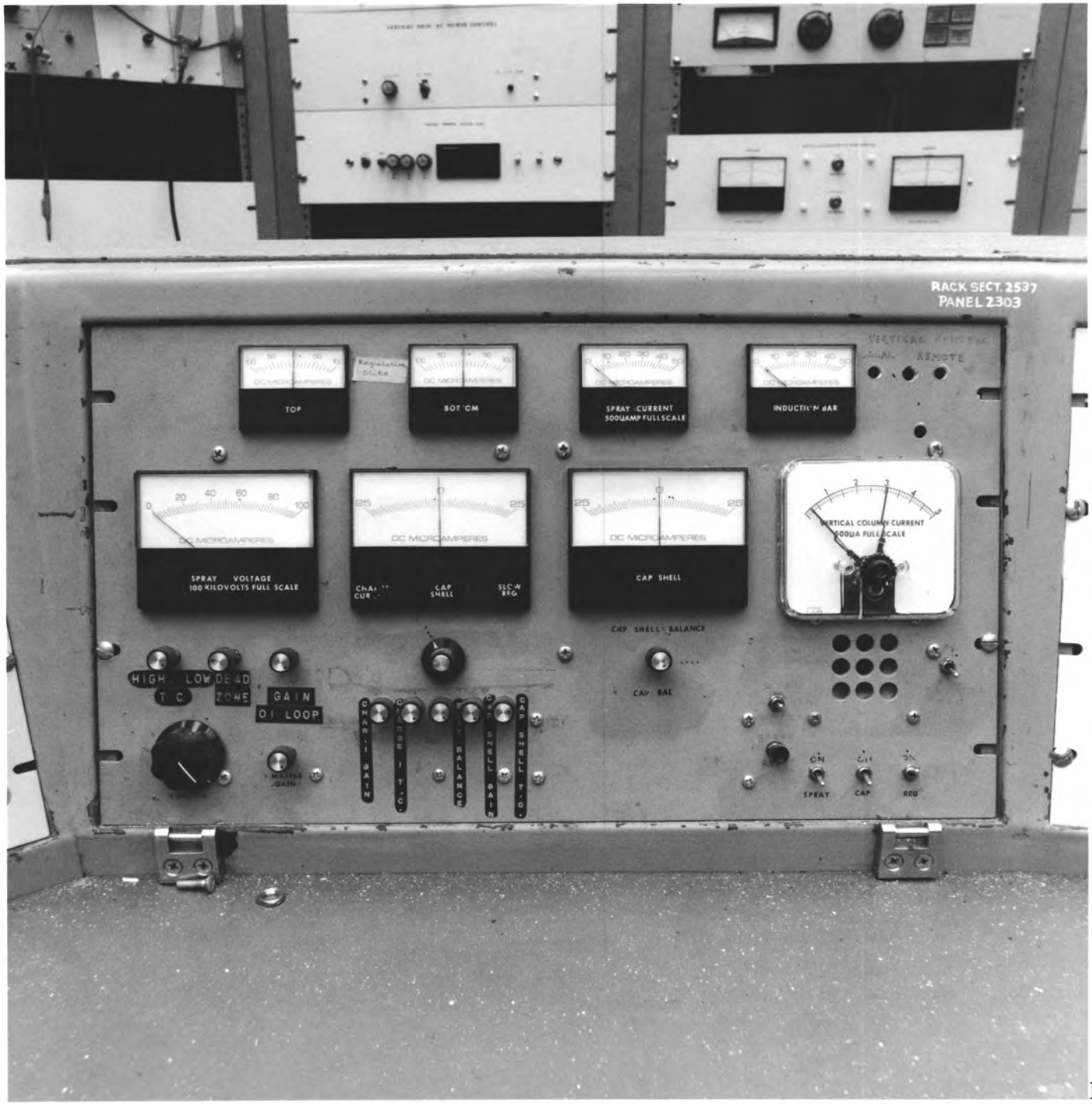
RN02-023-267


RACK SECT. 2535
PANEL 2301
414 MICRO-MICROAMMETER
METER
ZERO
POWER OFF
ZERO CHECK
INPUT
OUTPUT
HI
G
KEITHLEY INSTRUMENTS
TRITIUM CLOCK
INDUSTRIAL TIMER
HORN
BYPASS
ON
OFF
FREON PUMP
CUPS
EXIT
80
24 IN
2KD FLR
80 IN
IN
OUT

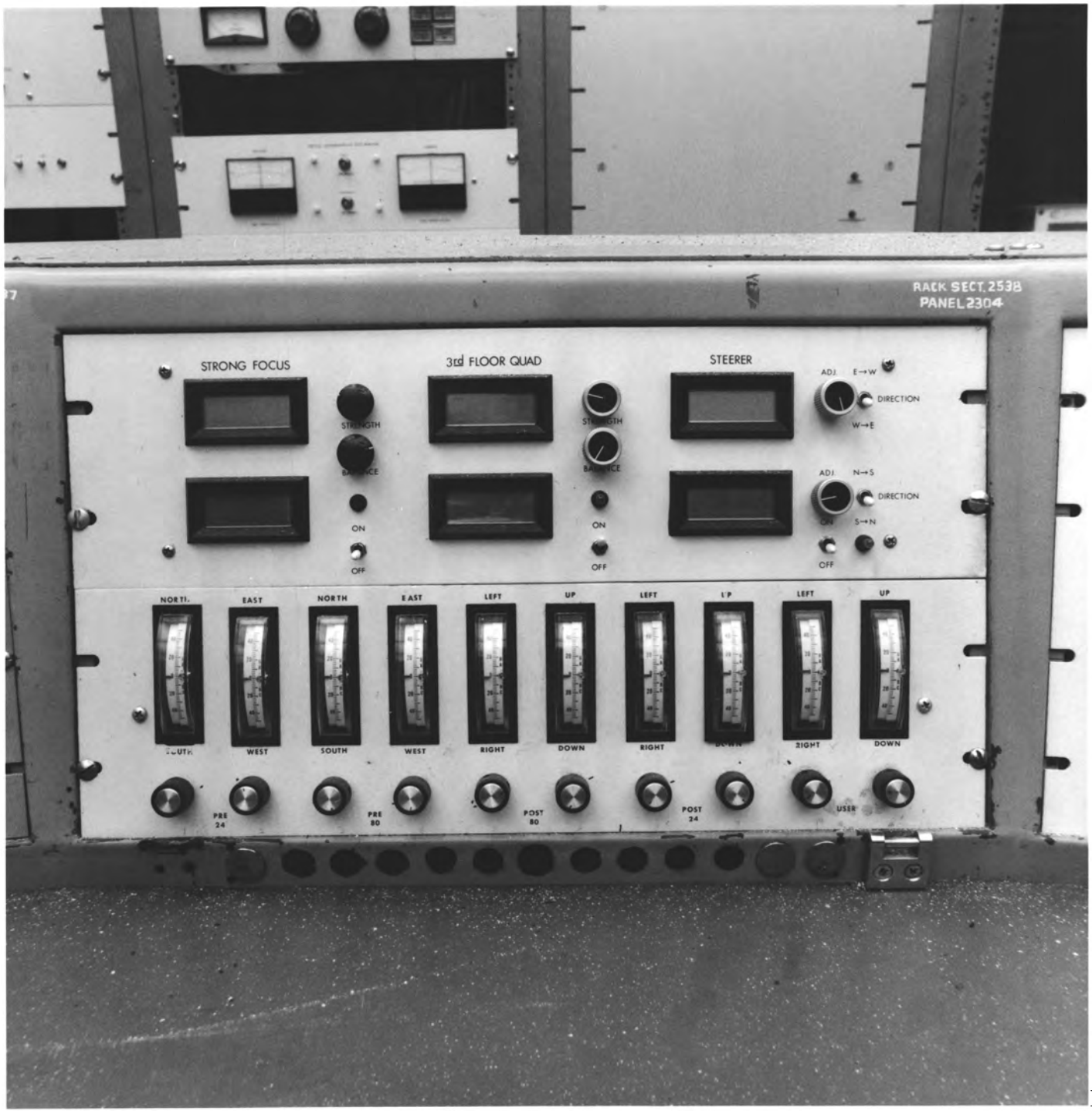
RN02-023-283


RACK SECT. 2535
PANEL 2302
VERTICAL TERMINAL CONTROL
LENS 1 KILOVOLTS
FILAMENT VOLTS
ARC VOLTS
GAS 1
GAS 3
DP MAGNET VOLTS
PROBE VOLTS
PENNING GAUGE
30° MAGNET VOLTS
NORTH STEERER VOLTS
EAST STEERER VOLTS
EXTRACTOR KILOVOLTS
BEAM ENERGY KILOVOLTS
DIVERTER KILOVOLTS
SWEEP KILOVOLTS
BUNCHER KILOVOLTS
LENS 2 KILOVOLTS
GRIDED LENS KILOVOLTS
PULLEY KILOVOLTS
VACION KILOVOLTS
FARADAY CUP
BUNCHER TUBES
BUNCHER
PHASE
TUNE
NORTH
SOUTH
OPEN
CLOSE
IN
OUT
ON
OFF
ABSORPTION PUMPS
FARADAY CUP
GAS LATCH

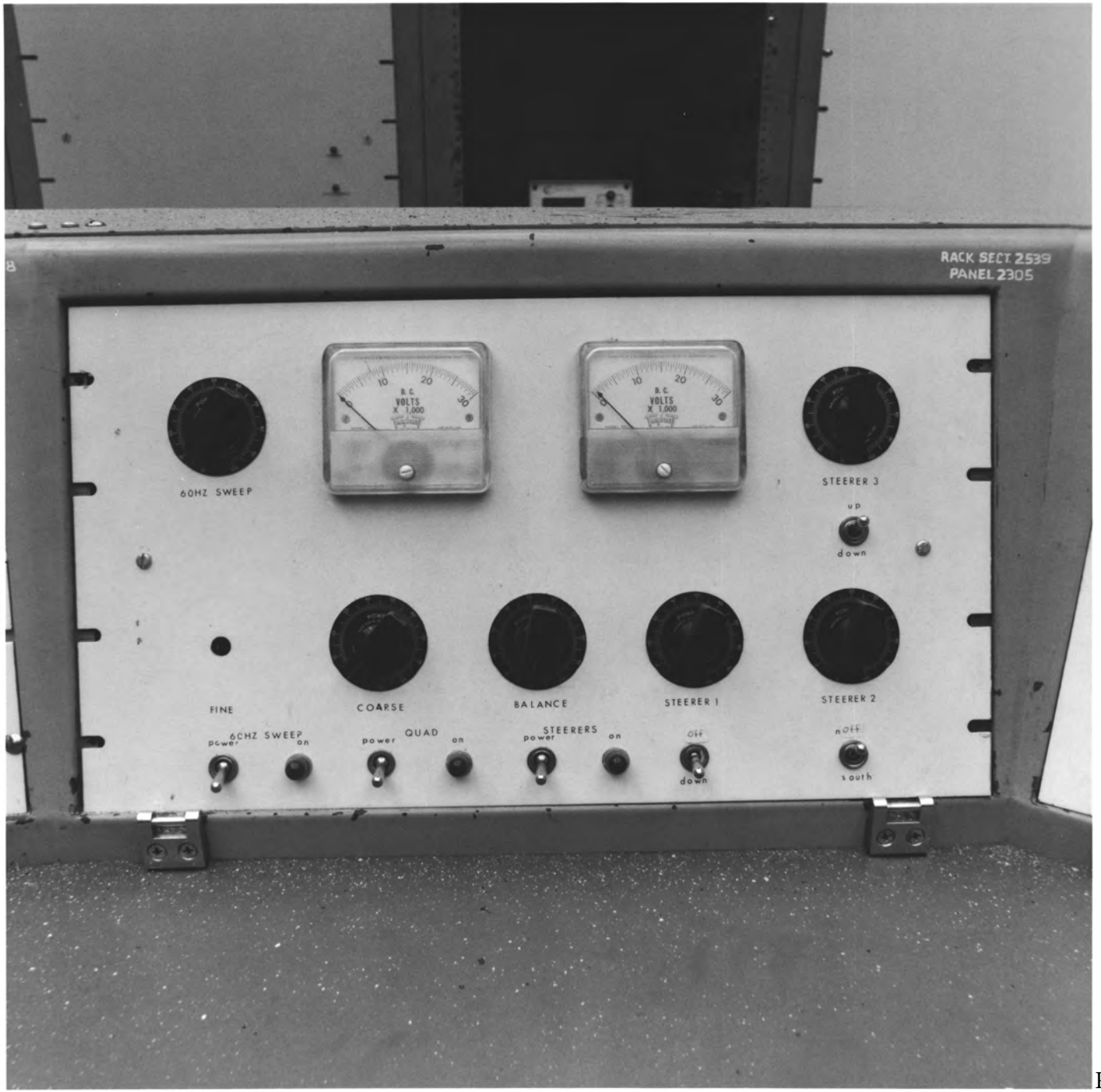
RN02-023-284


RACK SECT. 2537
PANEL 2303
TOP
BOTTOM
SPRAY CURRENT
500UAMP FULL SCALE
INDUCTION GAR
SPRAY VOLTAGE
100 KILOVOLTS FULL SCALE
CAP SHELL
VERTICAL COLUMN CURRENT
500UA FULL SCALE
CAP SHELL BALANCE
CAP BAL
HIGH LOW DEAD
T C ZONE
GAIN
01 LOOP
CHAR. I GAIN
CHARGE I T.C.
I BALANCE
SHELL GAIN
CAP SHELL T.C.
ON
SPRAY
CAP
REG
REMOTE

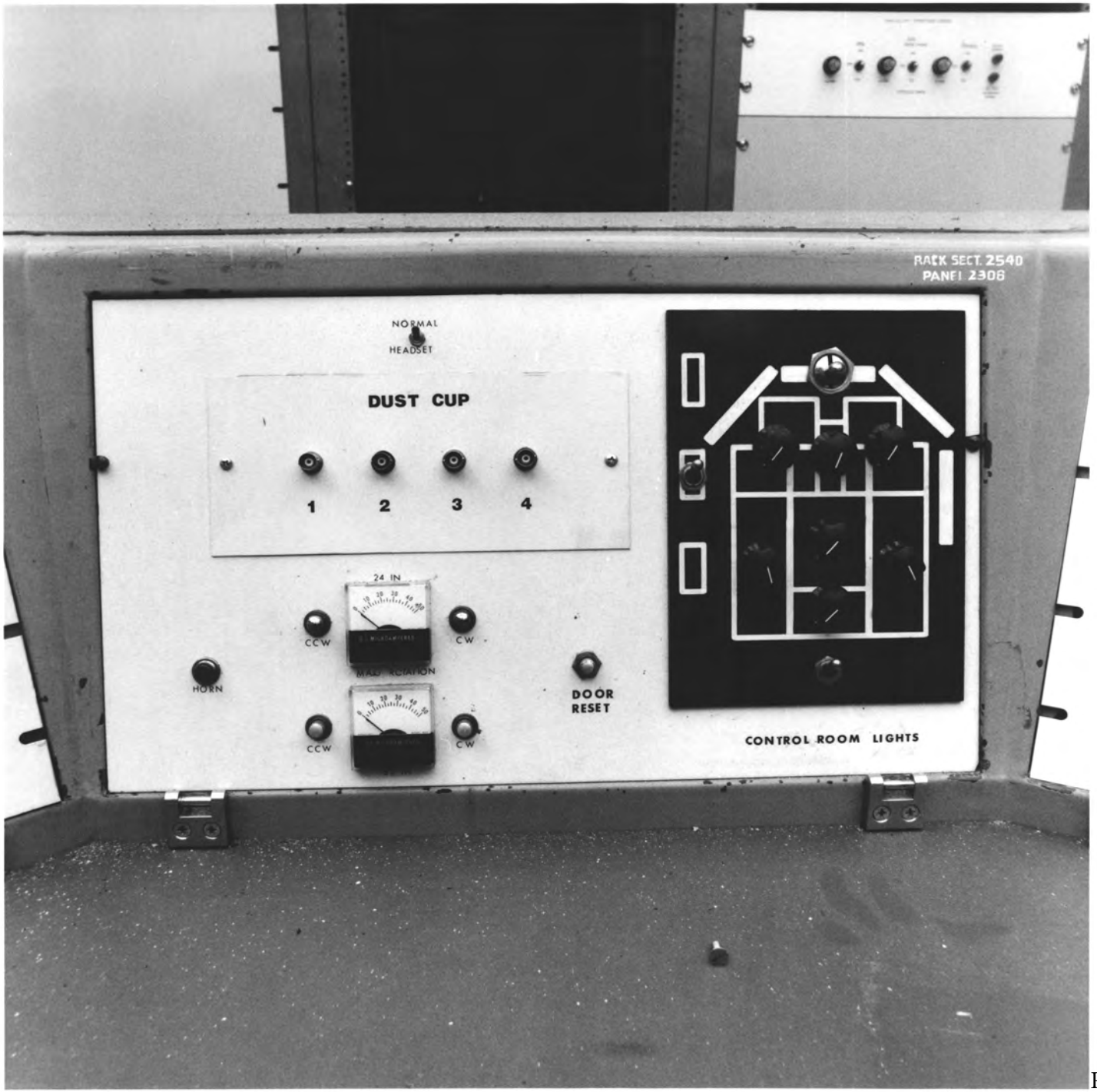
RN02-023-285


RACK SECT. 2538
PANEL 2304
STRONG FOCUS
3rd FLOOR QUAD
STEERER
STRENGTH
BALANCE
ON
OFF
ADJ.
E→W
W→E
DIRECTION
N→S
S→N
NORTH
EAST
WEST
SOUTH
LEFT
RIGHT
UP
DOWN
PRE 24
PRE 80
POST 80
POST 24
USER

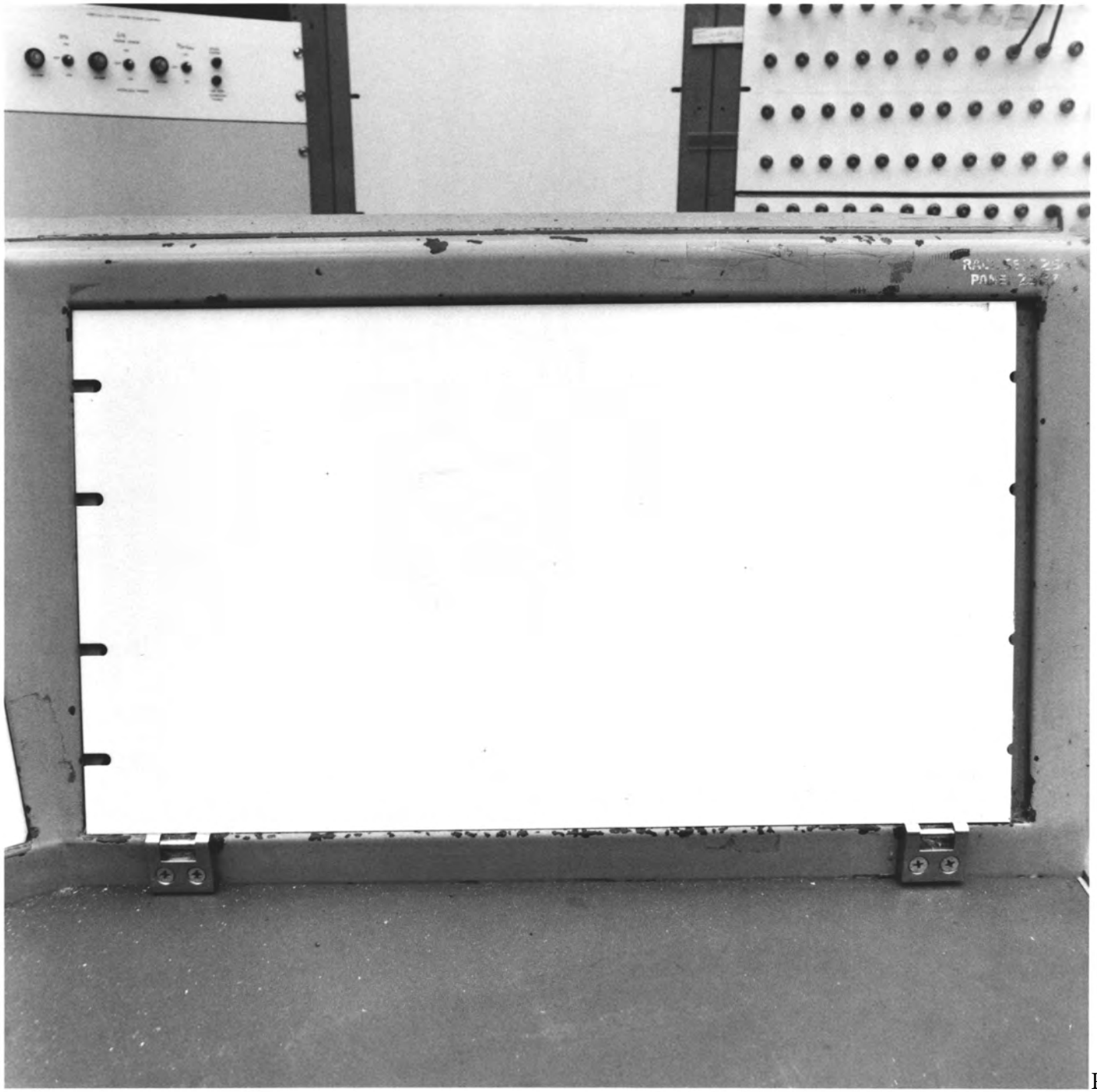
RN02-023-286


RACK SECT 2539
PANEL 2305
60HZ SWEEP
B.C.
VOLTS
X 1,000
STEERER 3
up
down
FINE
COARSE
BALANCE
STEERER 1
STEERER 2
6CHZ SWEEP
power
on
QUAD
STEERERS
off
south

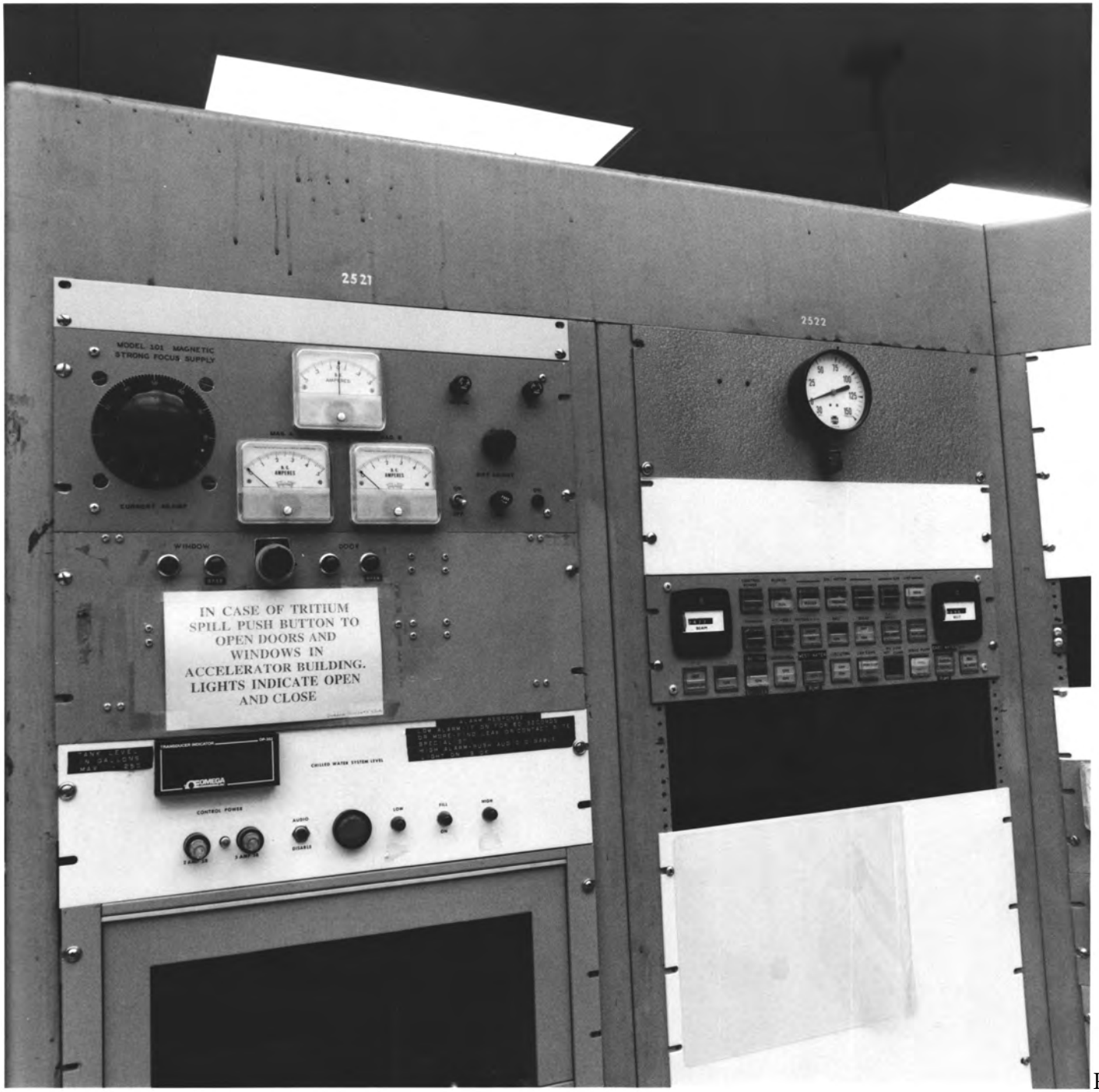
RN02-023-287


RACK SECT. 2540
PANEL 2308
NORMAL
HEADSET
DUST CUP
1
2
3
4
24 IN
CCW
CW
HORN
DOOR
RESET
CCW
CW
CONTROL ROOM LIGHTS

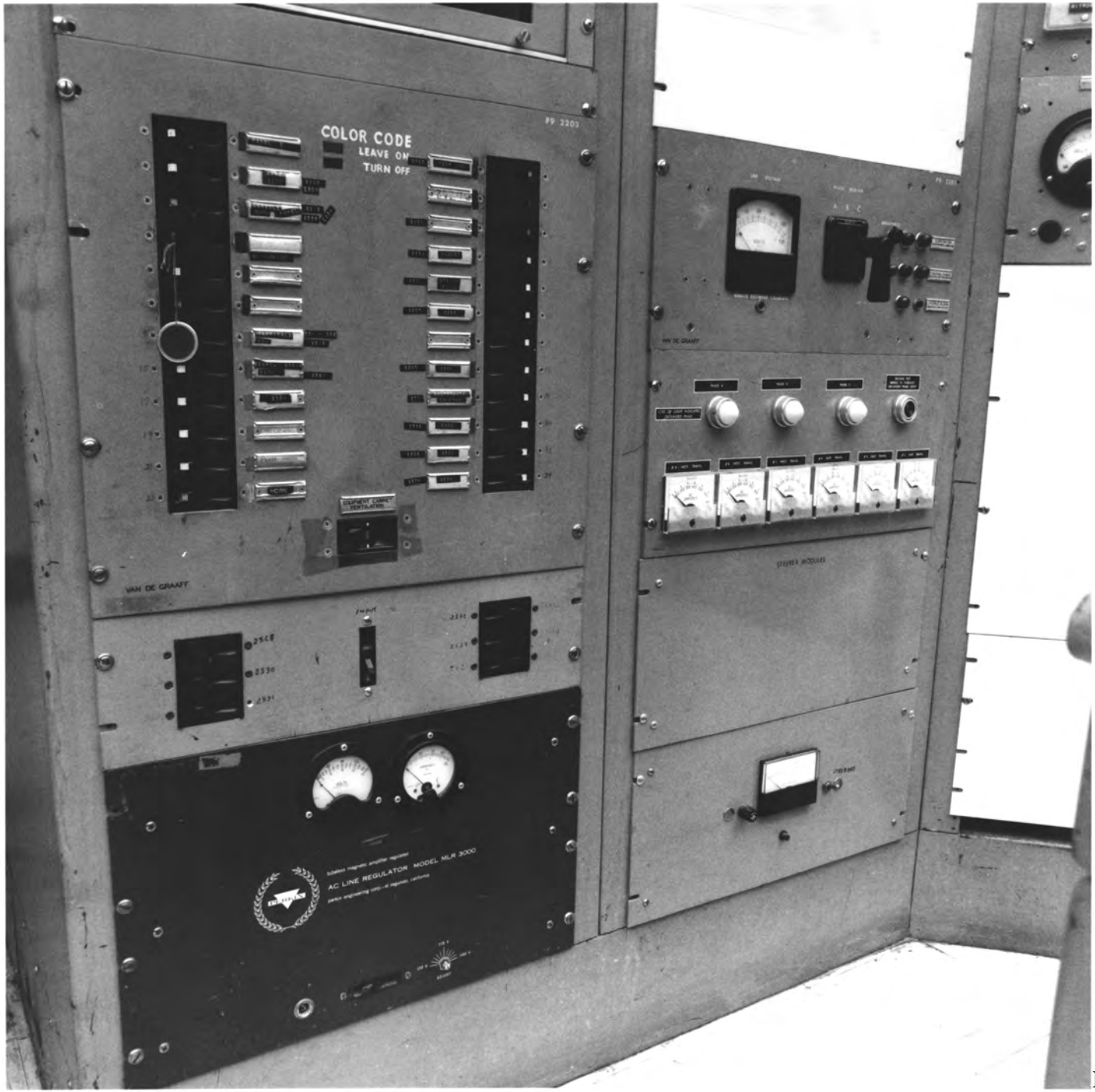
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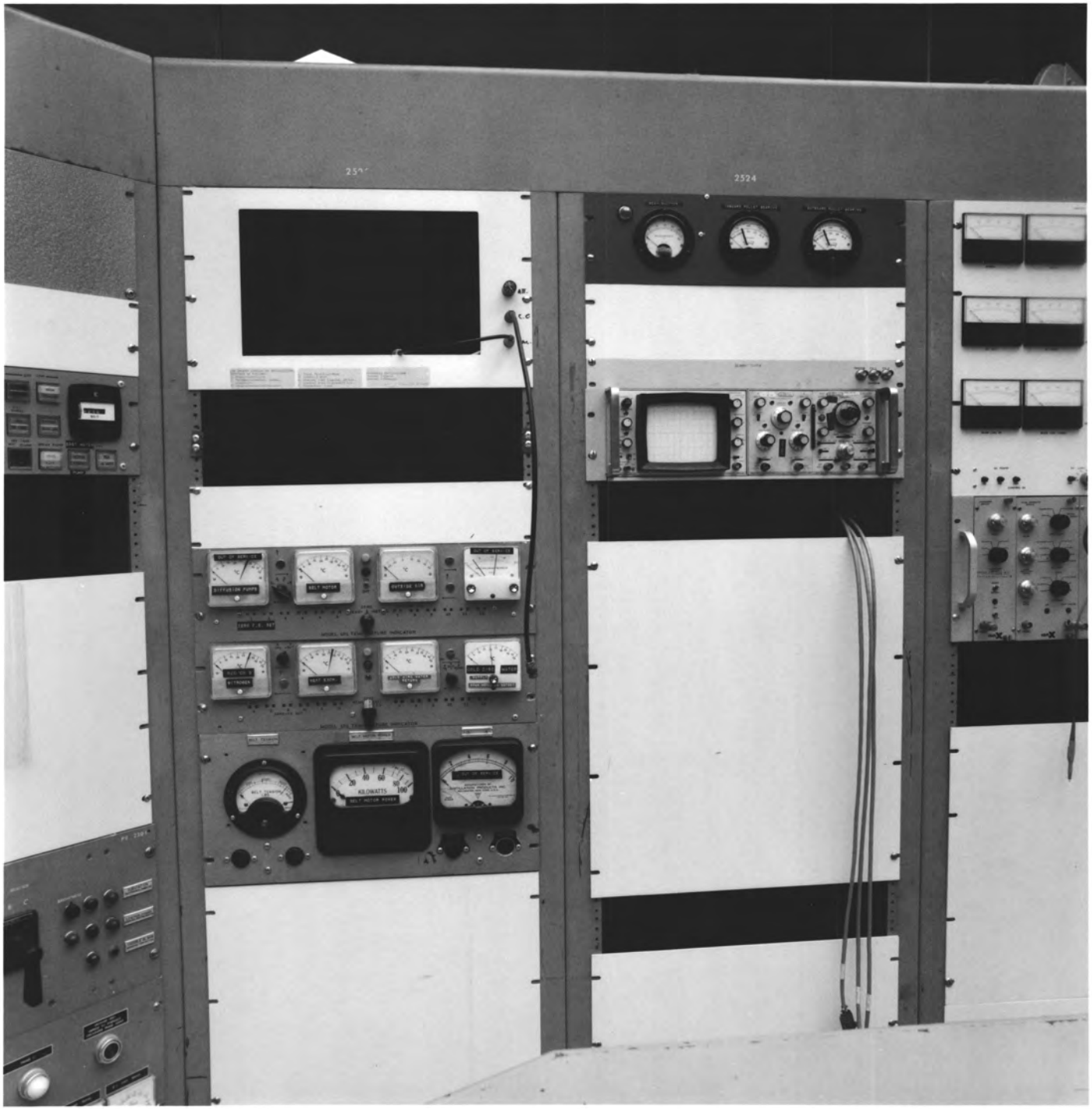
RN02-023-289


2521
2522
MODEL 101 MAGNETIC
STRONG FOCUS SUPPLY
IN CASE OF TRITIUM
SPILL PUSH BUTTON TO
OPEN DOORS AND
WINDOWS IN
ACCELERATOR BUILDING.
LIGHTS INDICATE OPEN
AND CLOSE
OMEGA

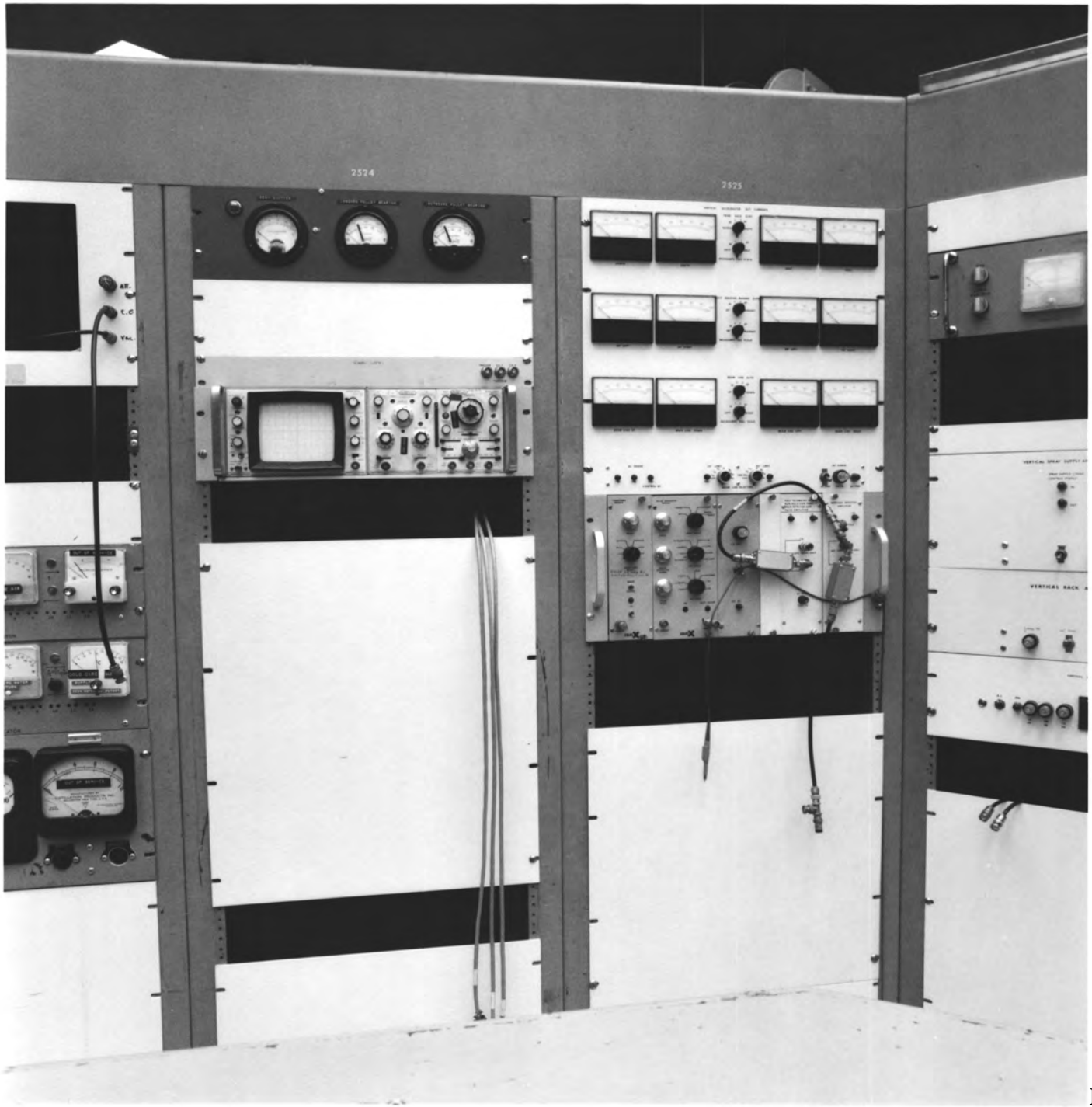
RN02-023-290


COLOR CODE
LEAVE ON
TURN OFF
VAN DE GRAAFF
AC LINE REGULATOR MODEL MLR 3000

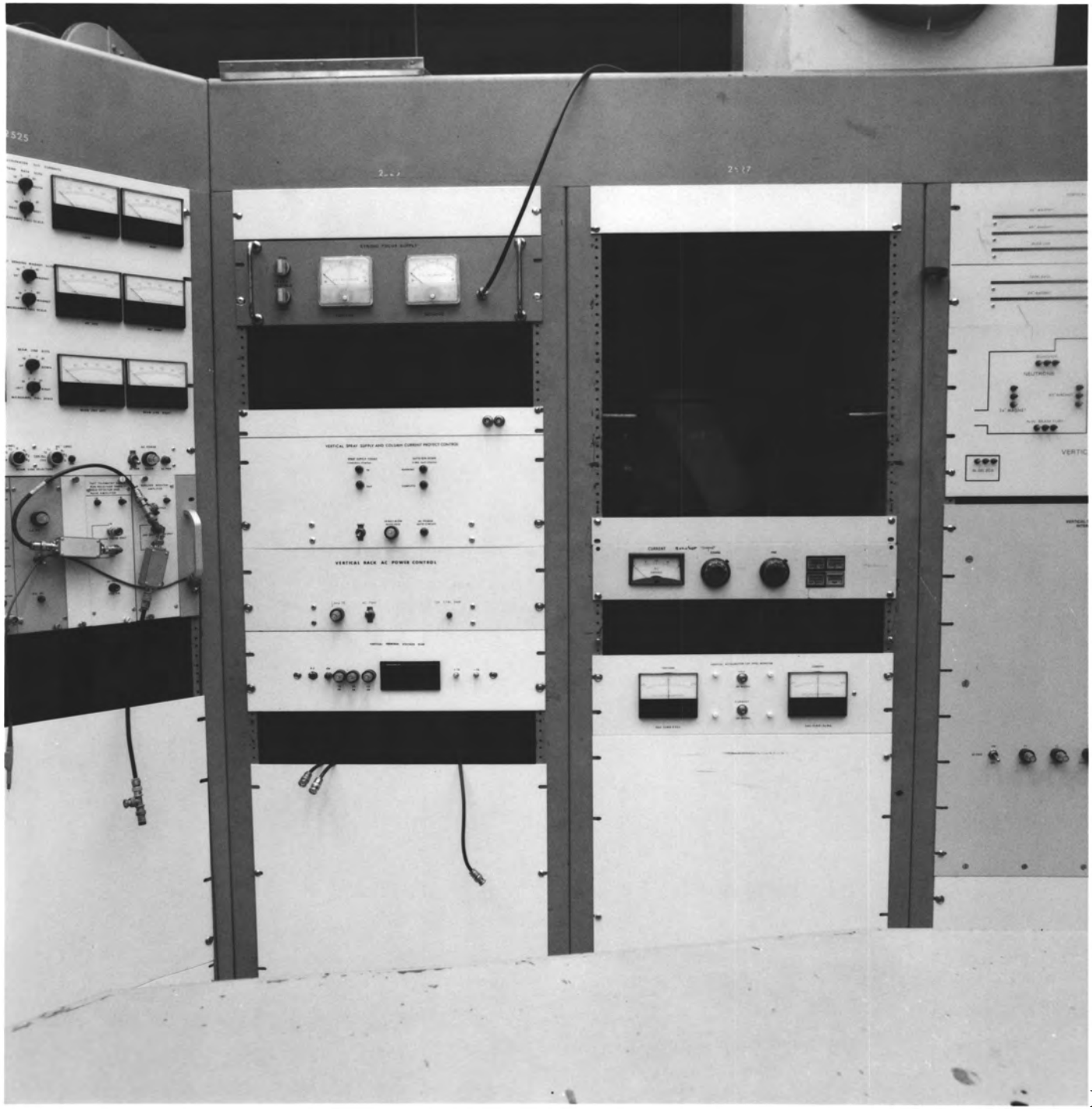
RN02-023-291


2524
DIFFUSION PUMPS
MELT MOTOR
NITROGEN
MELT KWHR
KILOWATTS
MELT MOTOR POWER

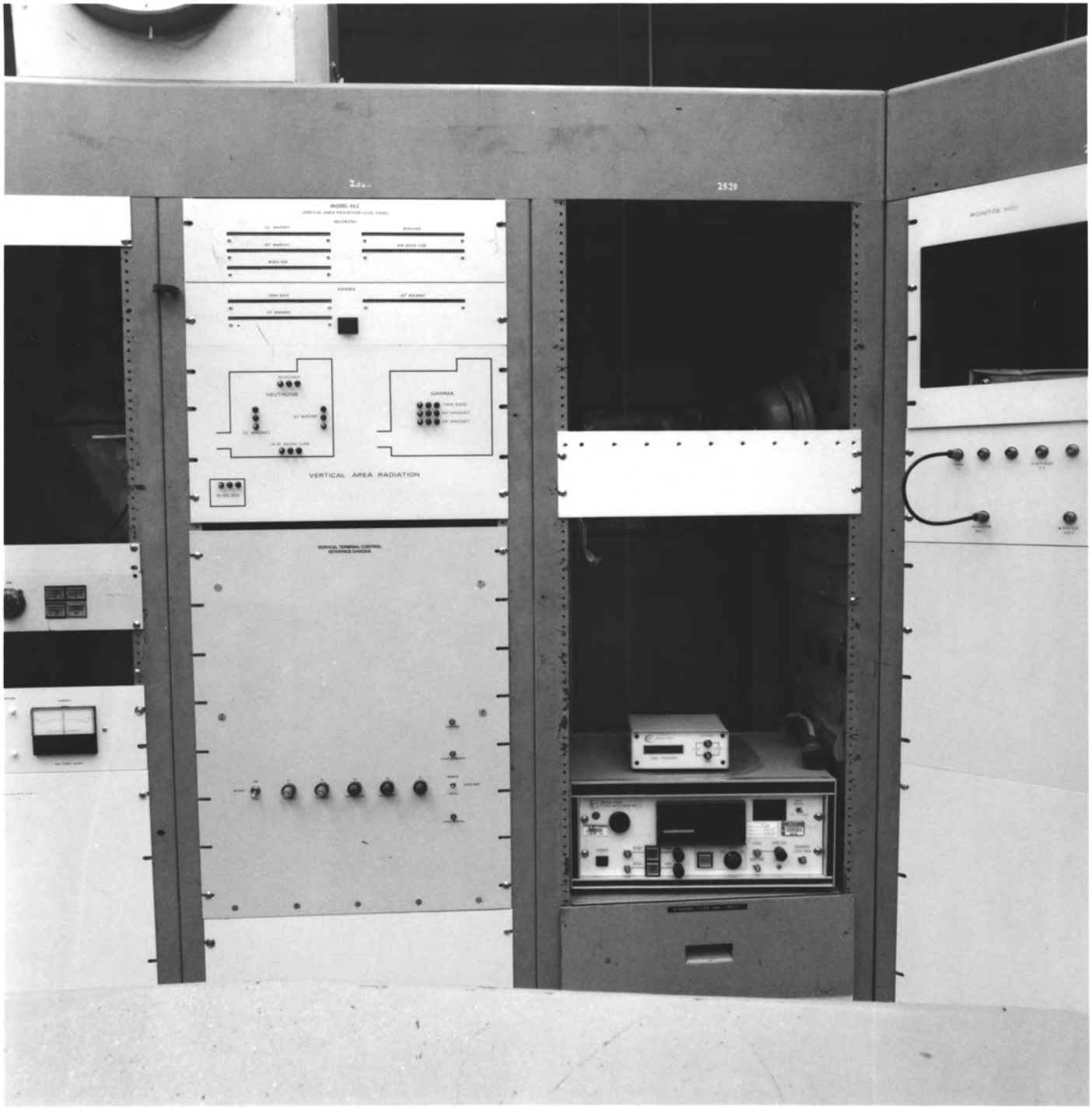
RN02-023-295



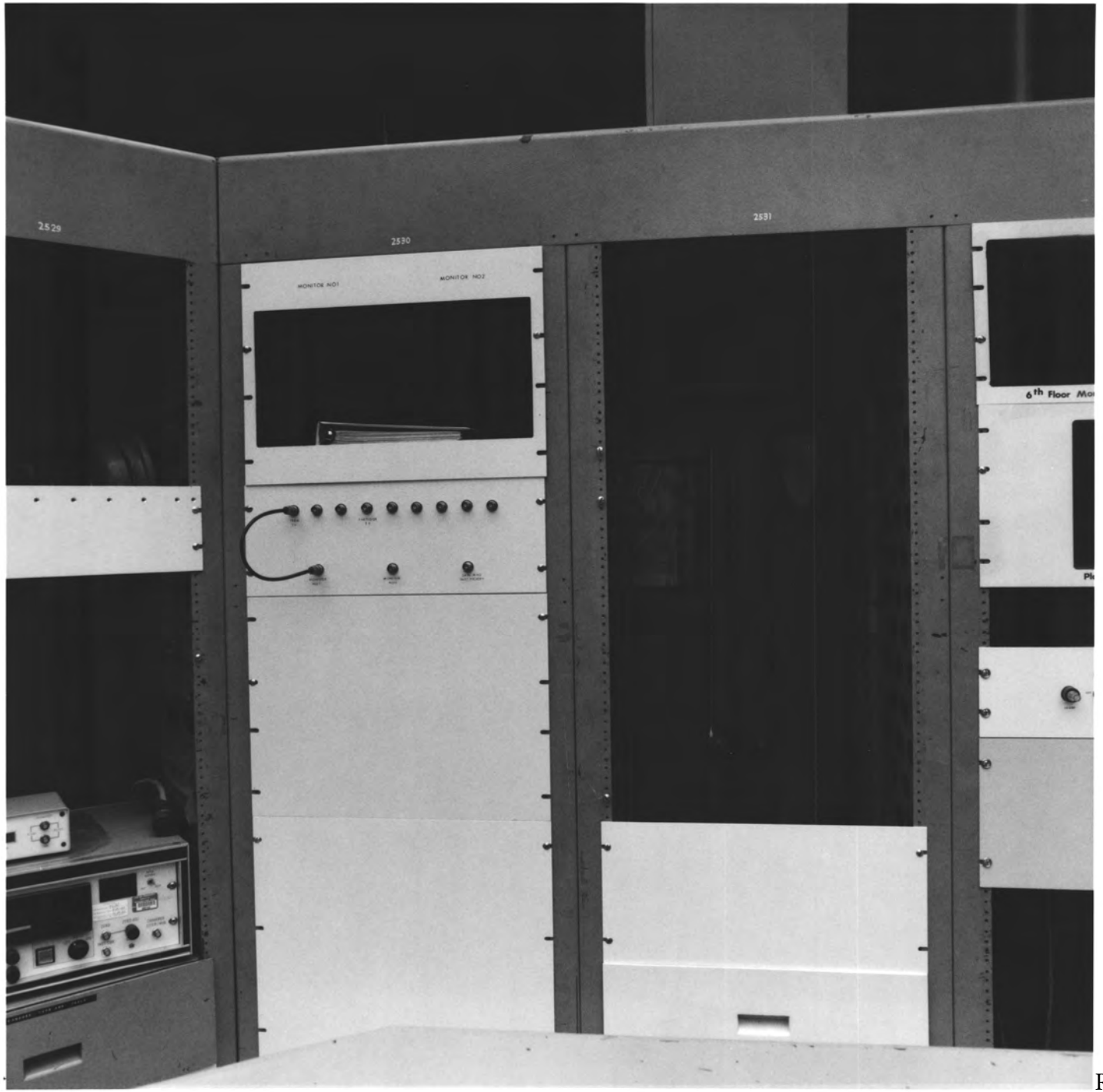
RN02-023-296


VERTICAL SPRAY SUPPLY AND COLUMN CURRENT PROTECT CONTROL
VERTICAL RACK AC POWER CONTROL

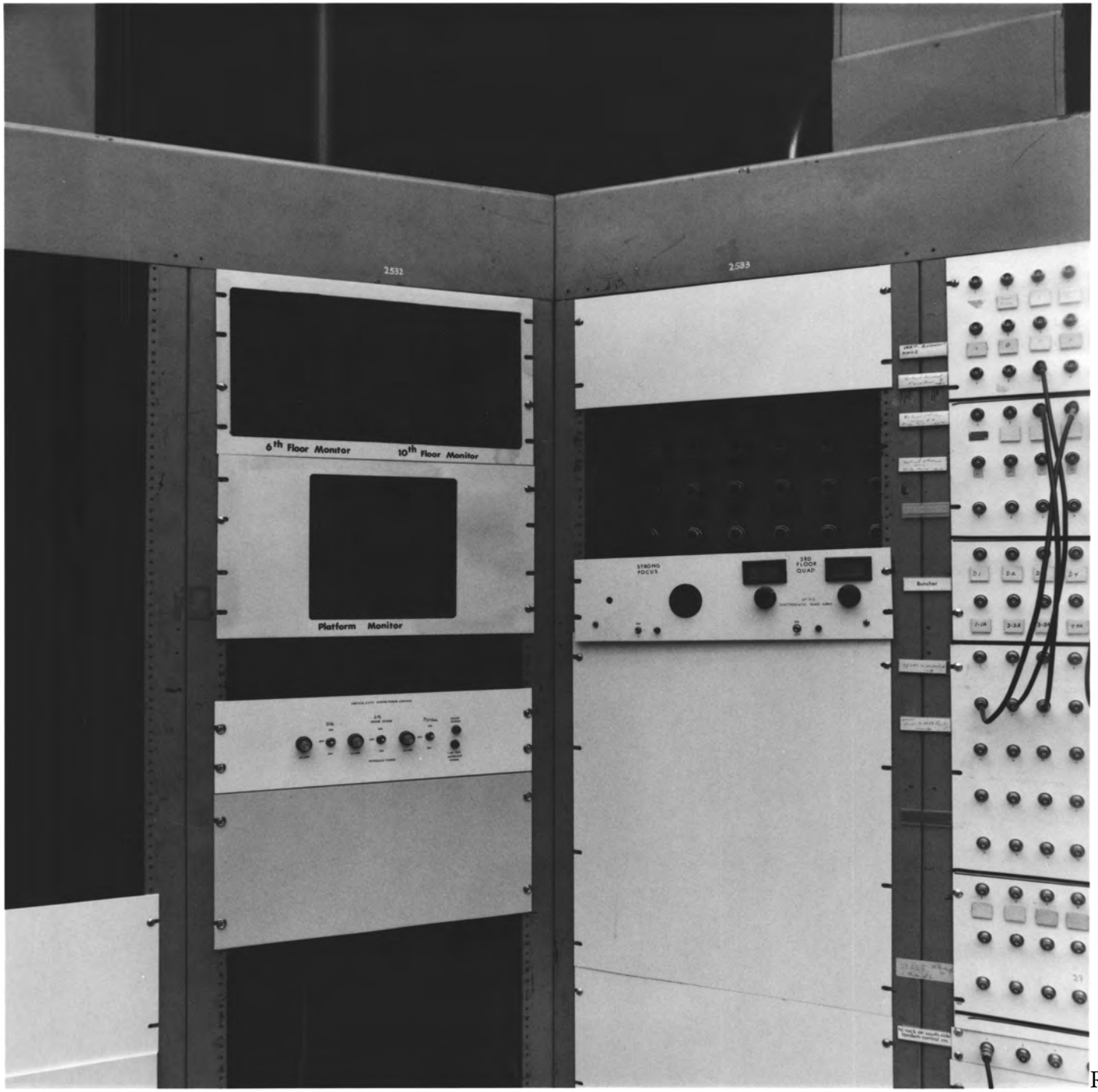
RN02-023-297


2529
NEUTRONS
GAMMA
NEUTRONS
GAMMA
VERTICAL AREA RADIATION

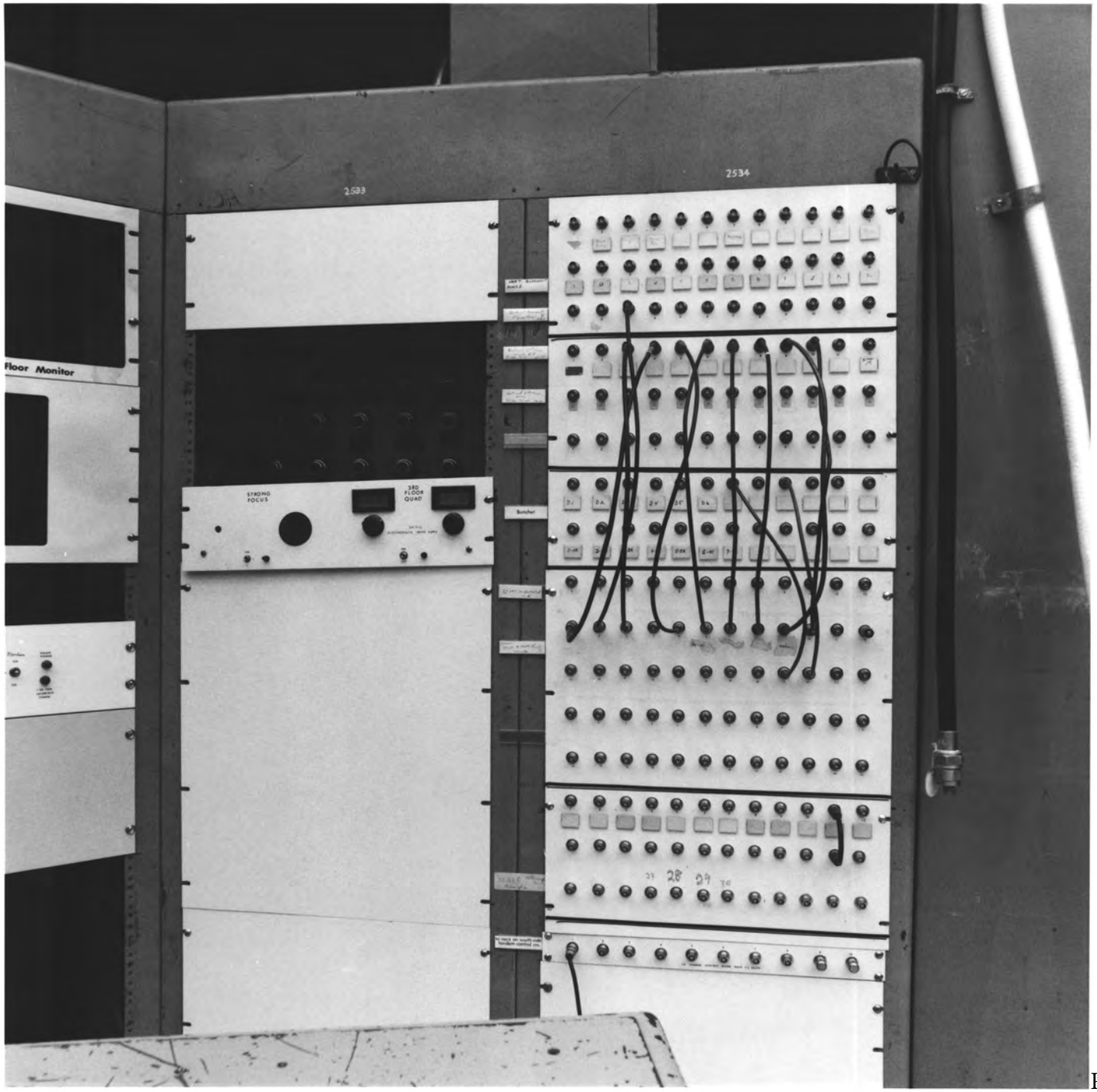
RN02-023-298



RN02-023-299


2532
2533
6th Floor Monitor
10th Floor Monitor
Platform Monitor
STRONG FOCUS
3RD FLOOR QUAD
Buncher

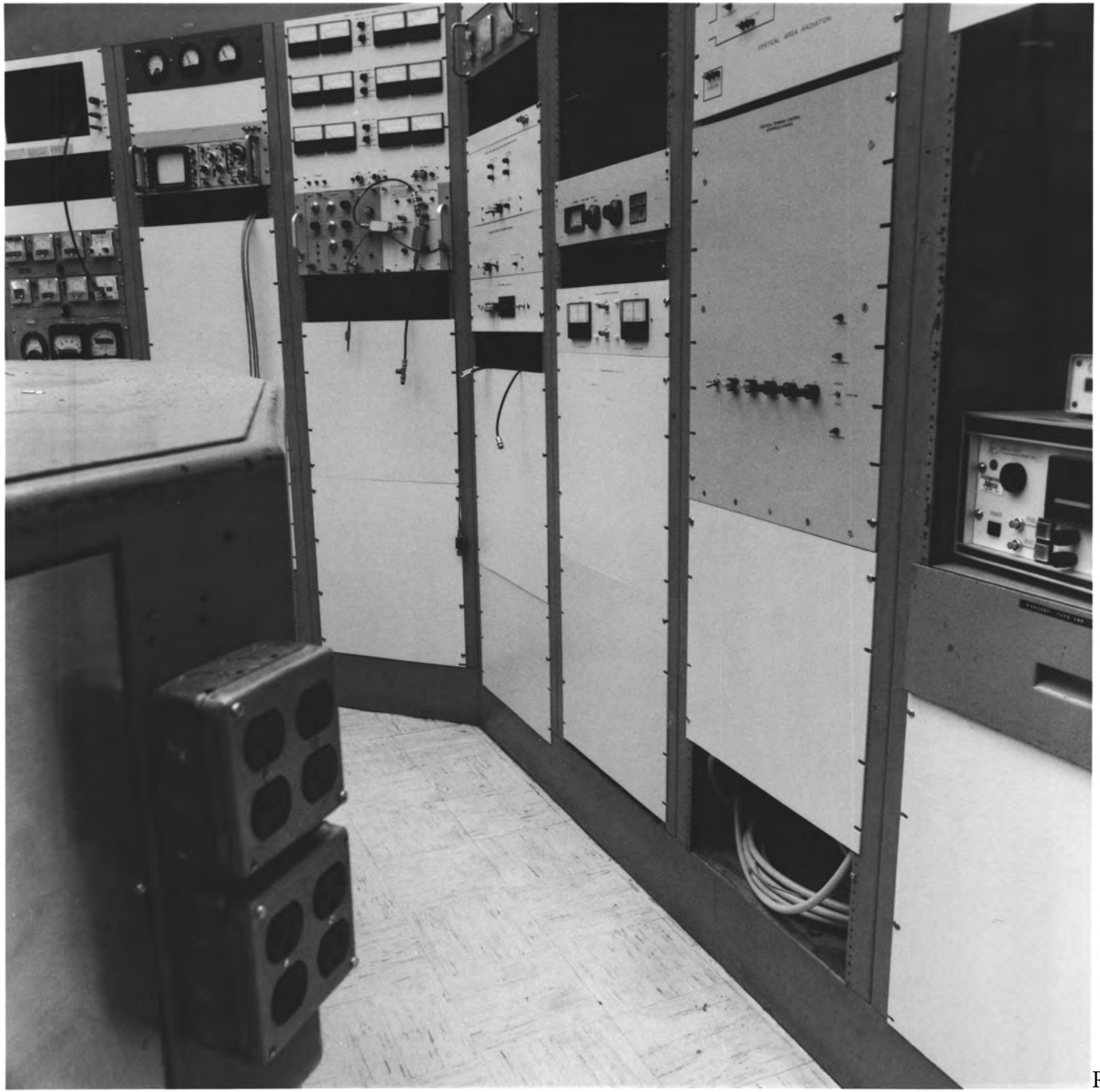
RN02-023-300


2533
2534
Floor Monitor
STRONG FOCUS
3RD FLOOR QUAD
Buncher

RN02-023-304



RN02-023-294



RN02-023-303



RN02-023-316



RN02-023-306



RN02-023-307



RN02-023-308



RN02-023-311



RN02-023-312



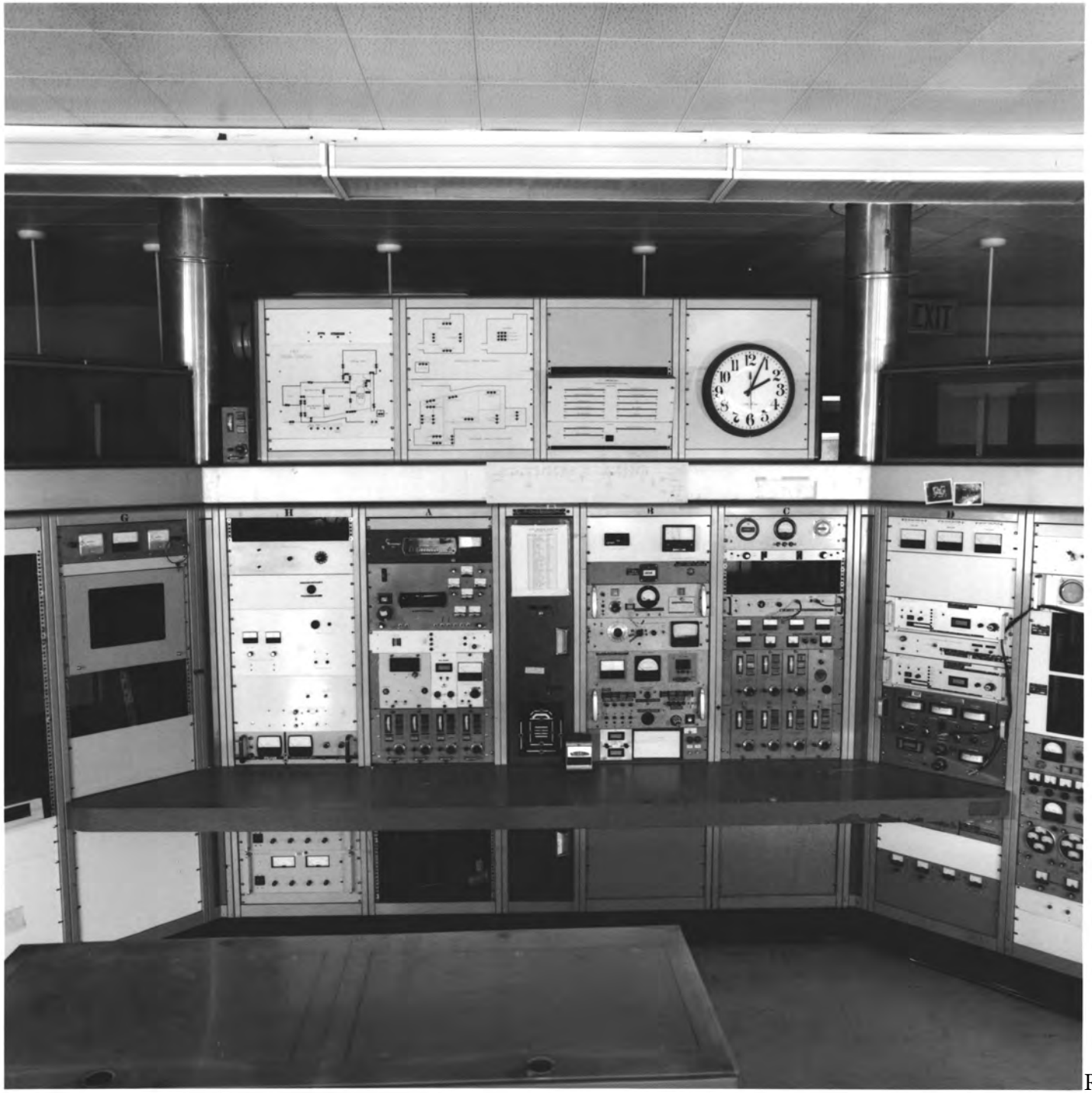
RN02-023-314



RN02-023-321



RN02-023-318



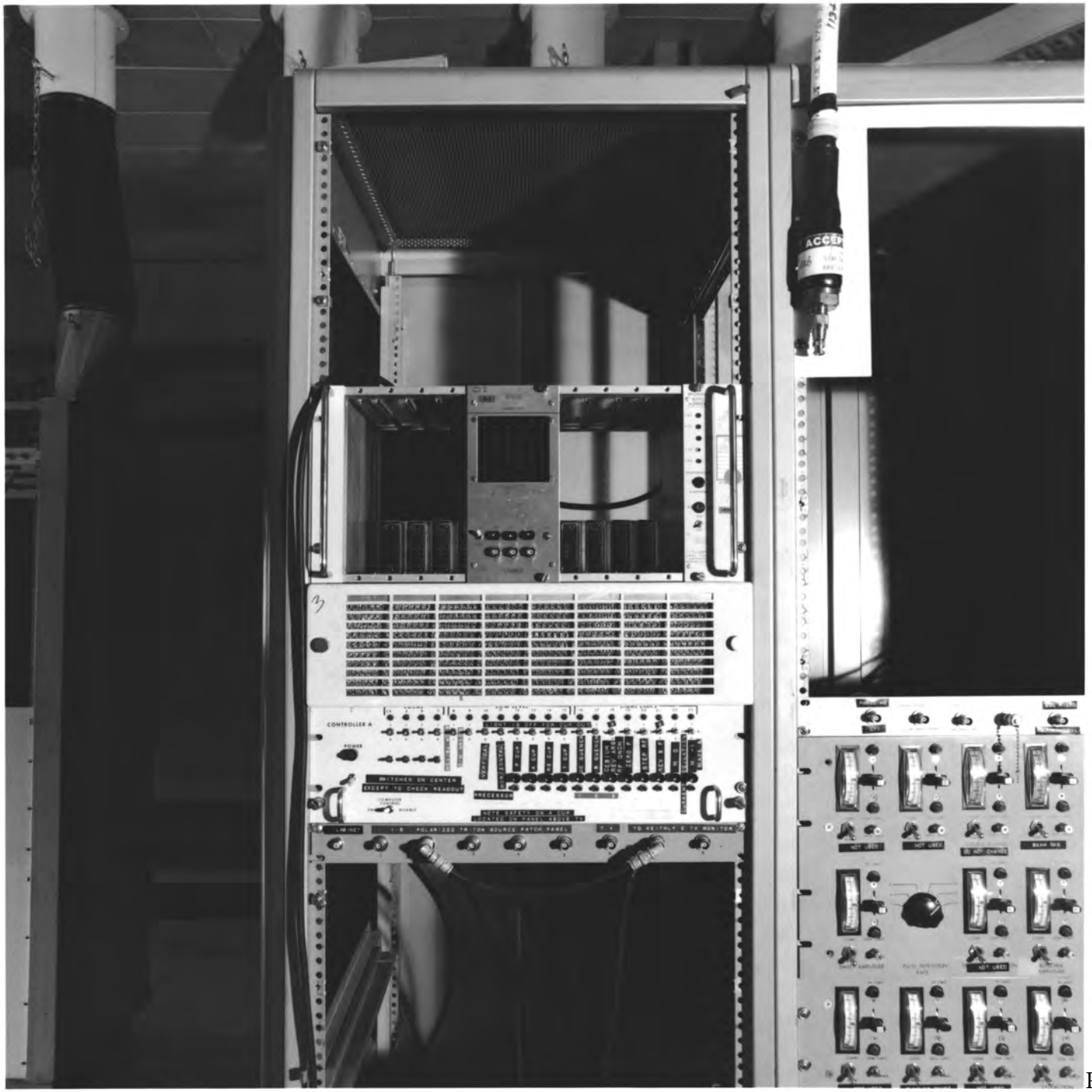
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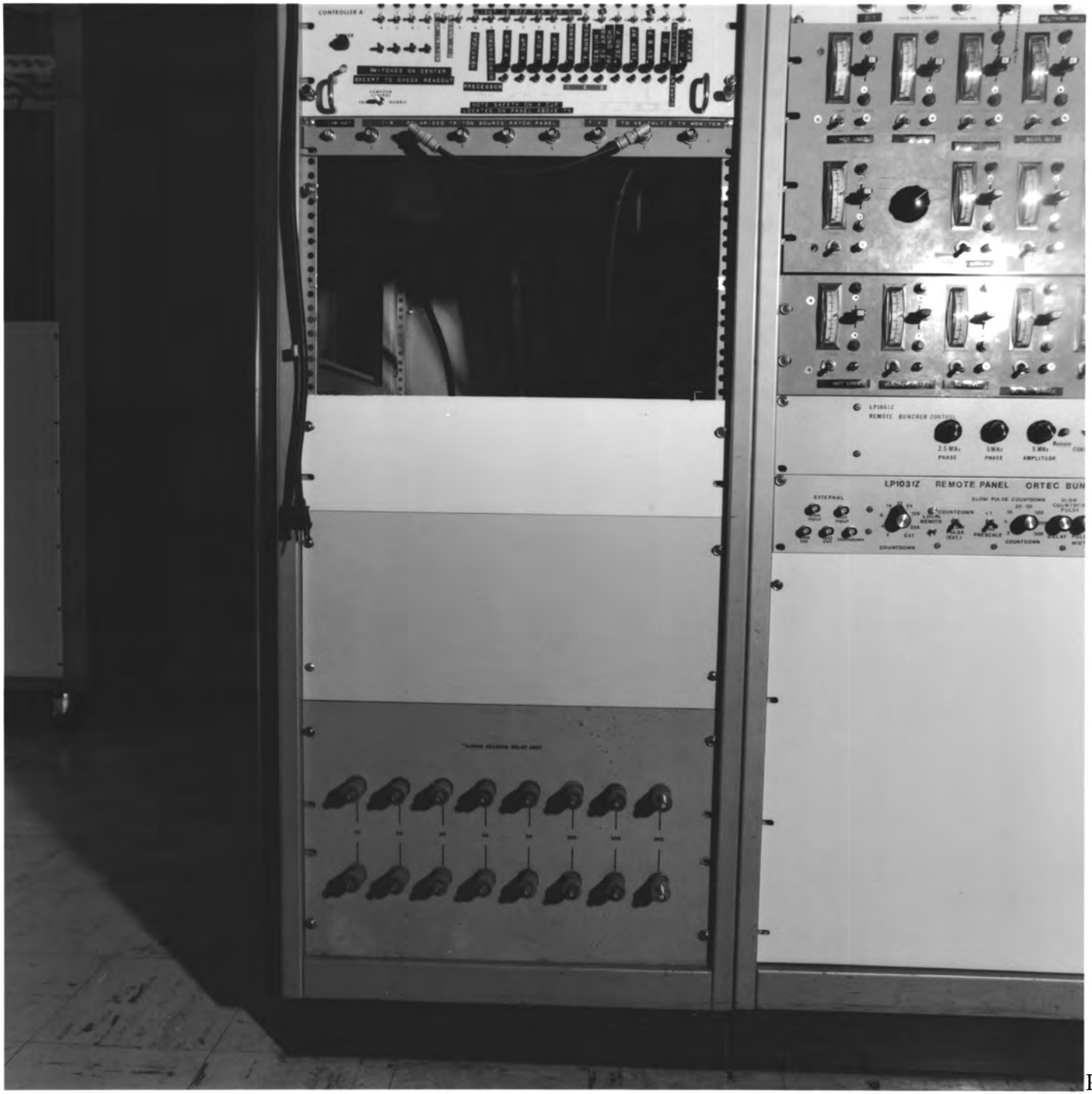
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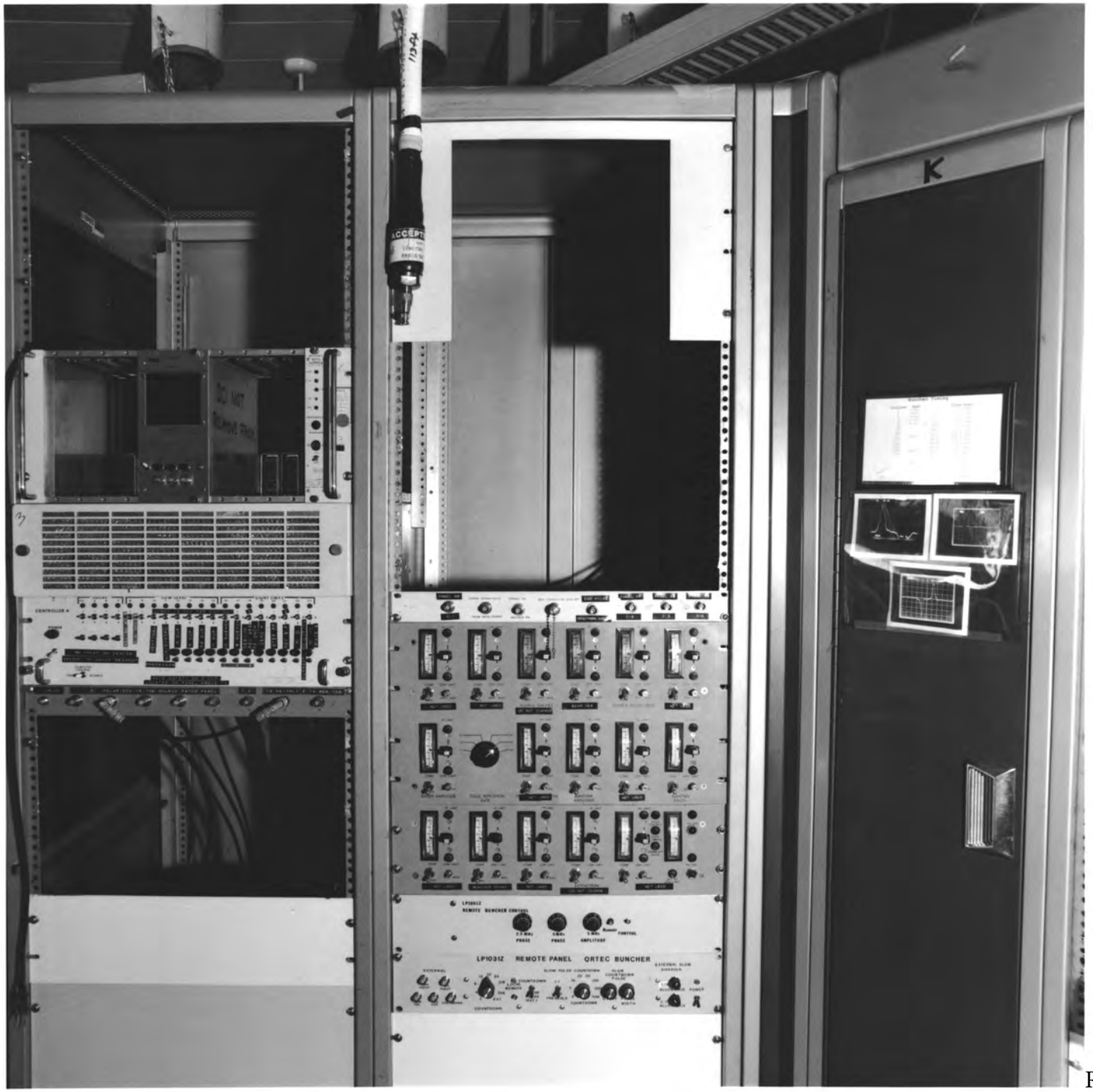
RN02-023-320


CONTROLLER A
POWER
SWITCHED ON CENTER
EXCEPT TO CHECK READOUT
PRECESSOR
NOT USED
NOT USED
DO NOT CHANGE
BEAM SHIFT
NOT USED

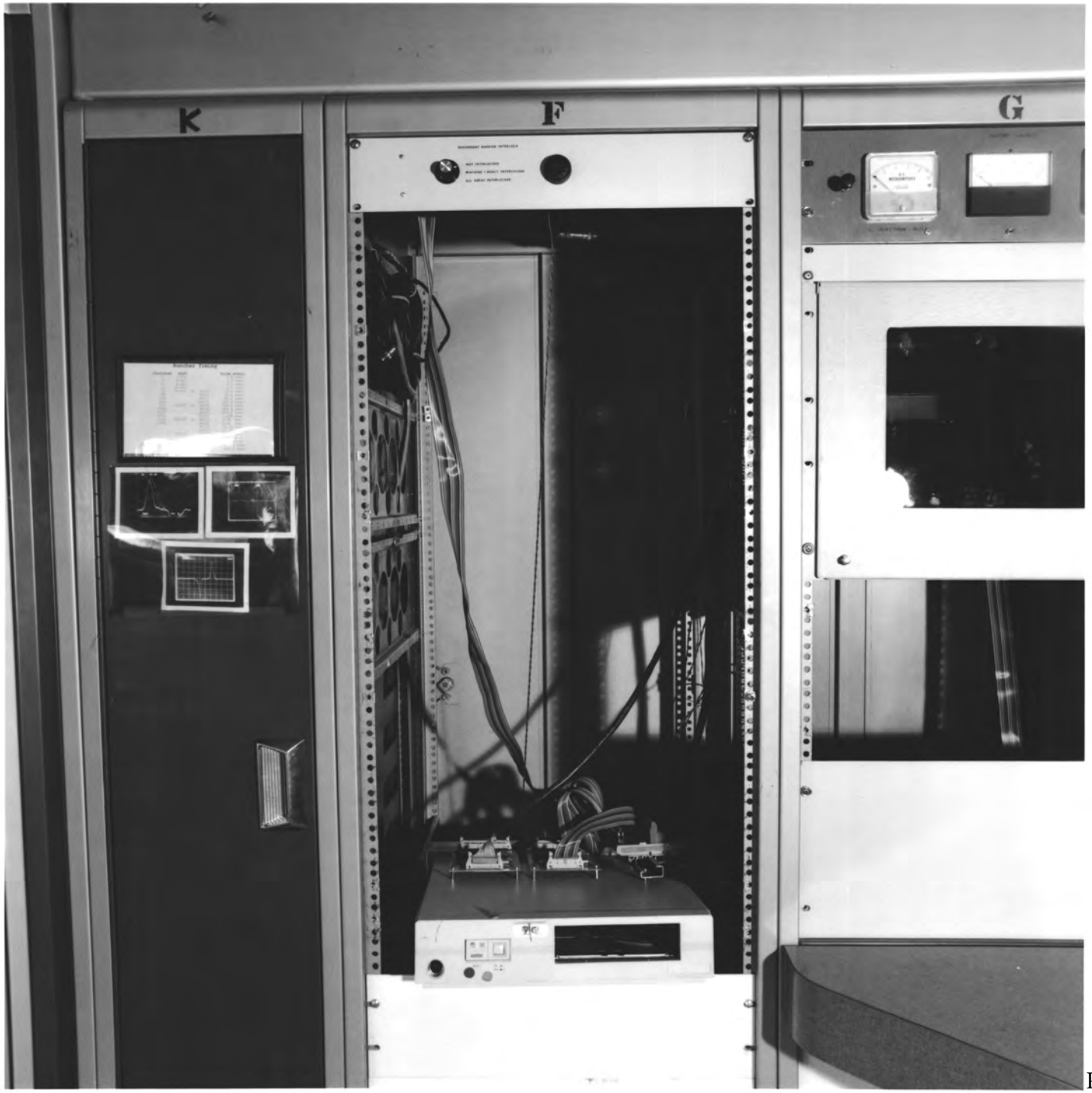
RN02-023-341


CONTROLLER A
WITCHES ON CENTER
EXCEPT TO CHECK READOUT
PRECESSON
LP1061Z
REMOTE BUNCHER CONTROL
2.5 MHz
PHASE
5 MHz
PHASE
5 MHz
AMPLITUDE
LP1031Z REMOTE PANEL ORTEC BUN
EXTERNAL
SLOW PULSE COUNTDOWN
LOCAL
REMOTE
COUNTDOWN
PRESCALE
COUNTDOWN
DELAY

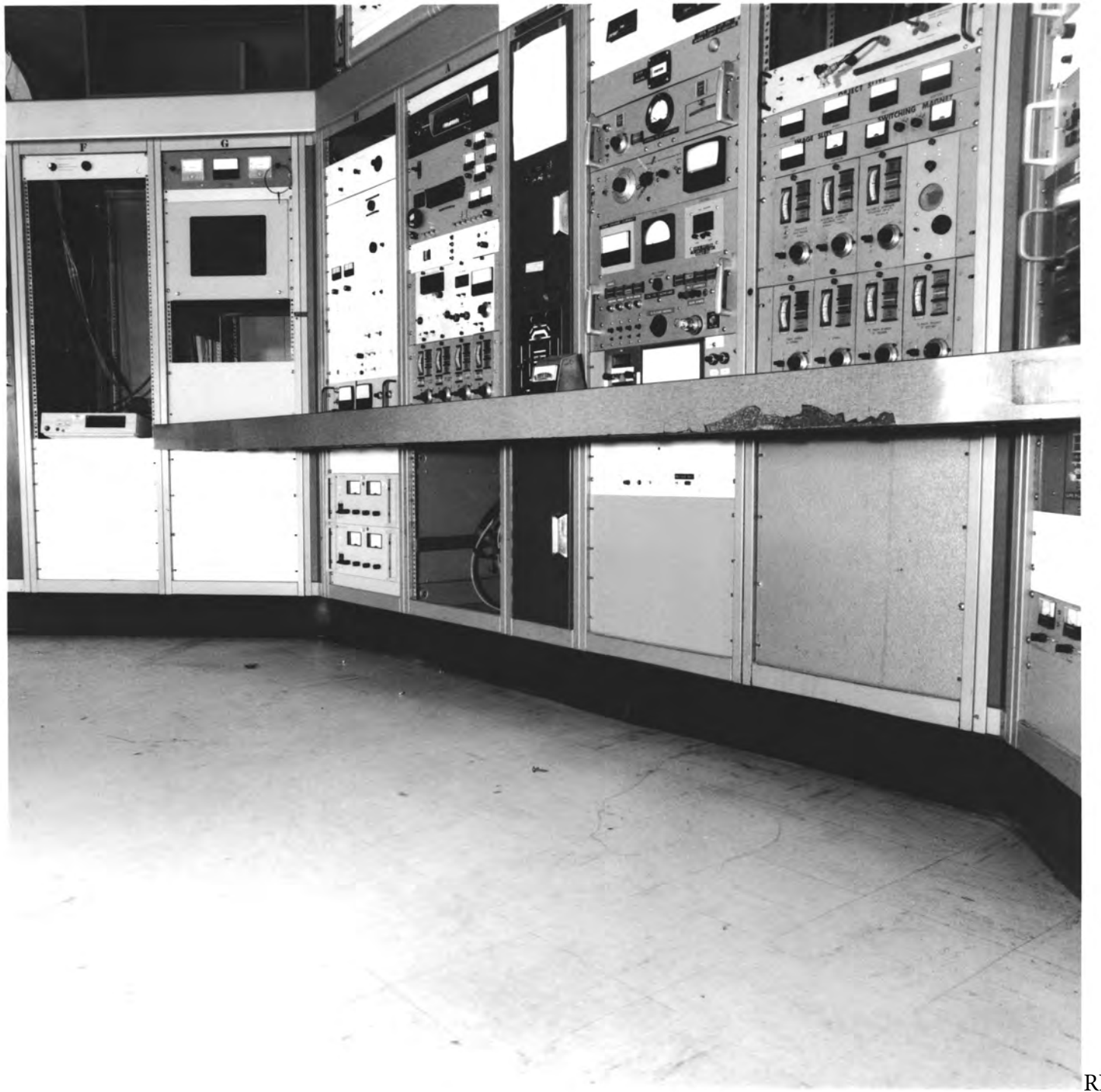
RN02-023-342



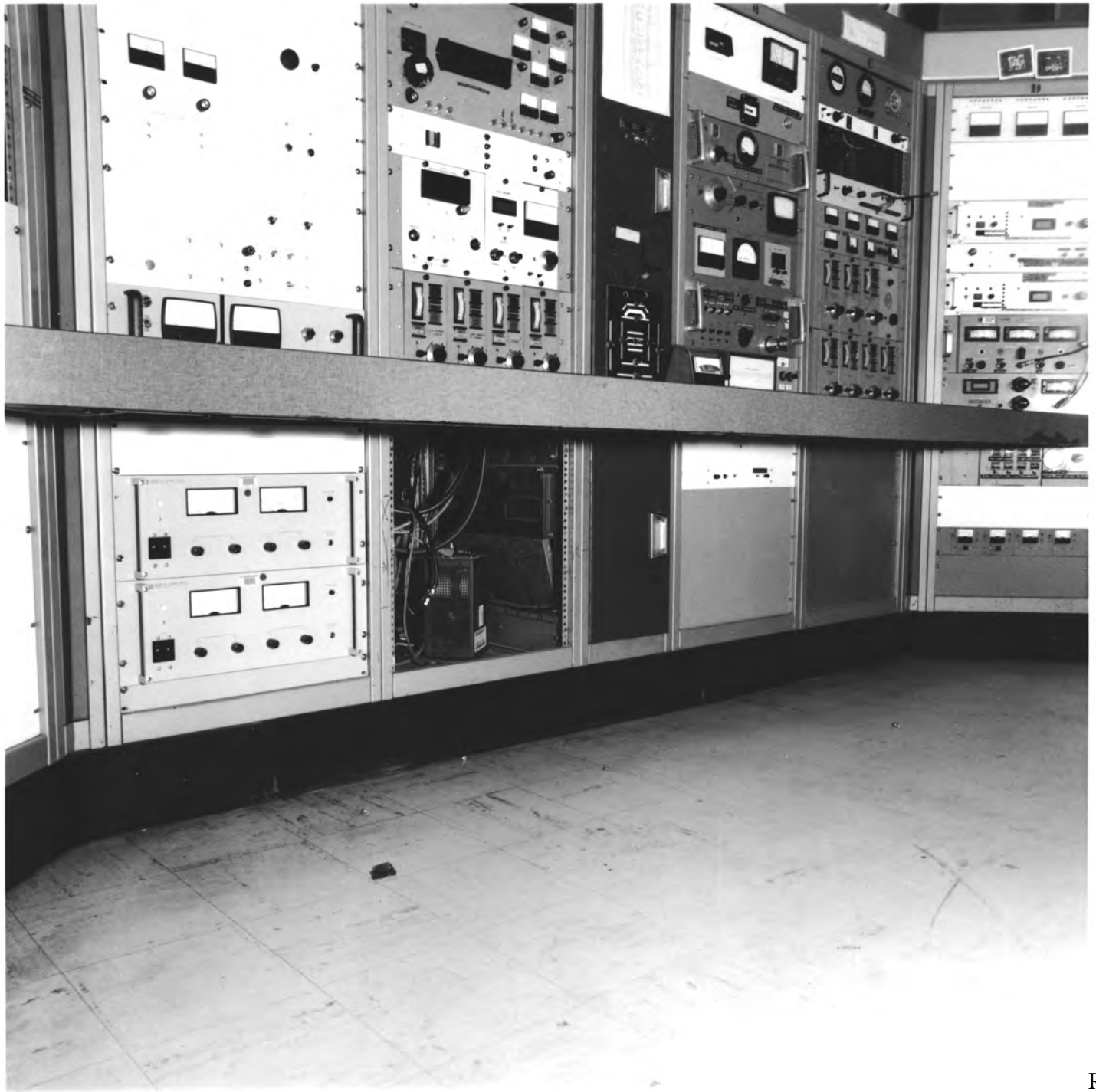
RN02-023-340



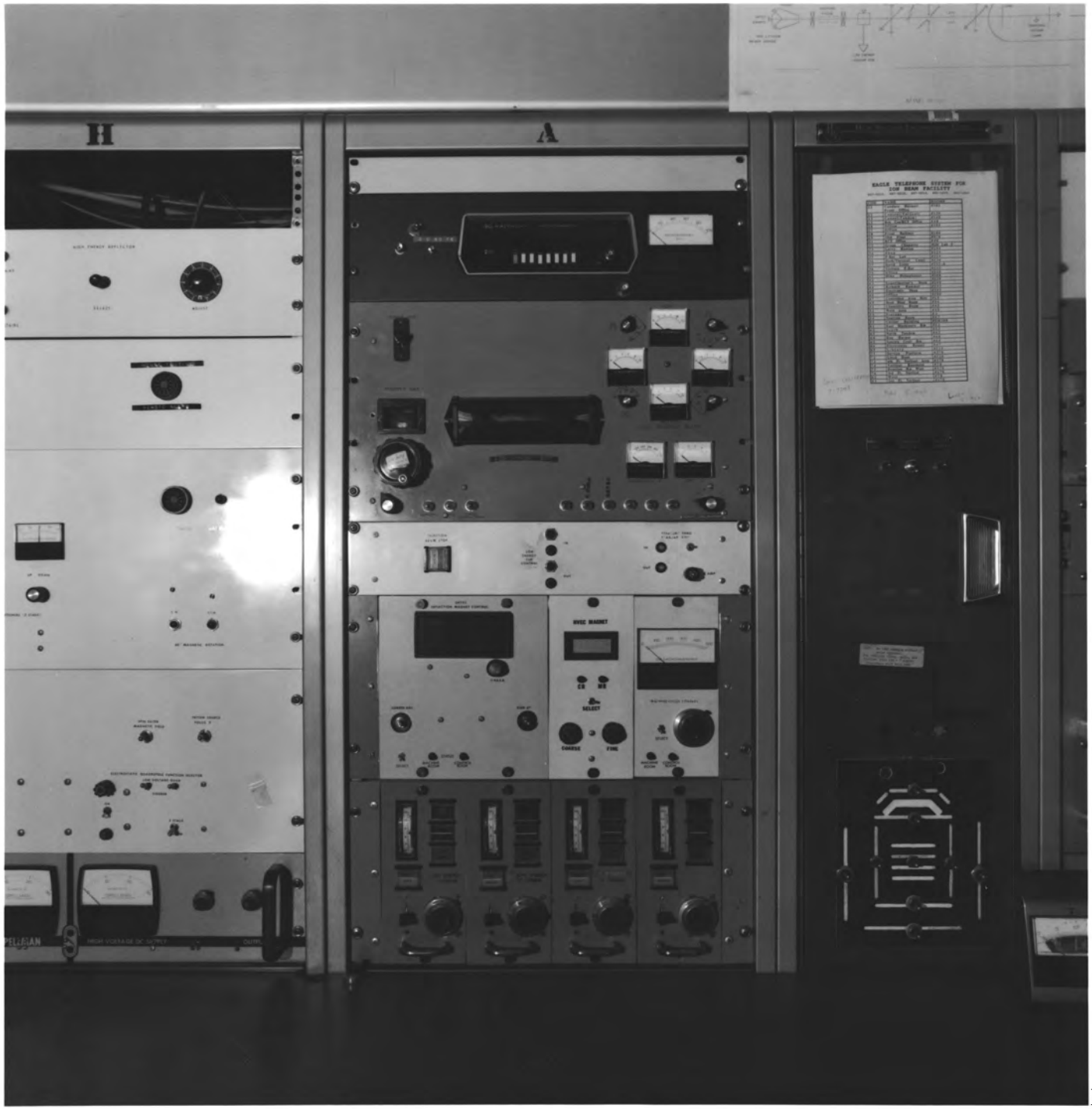
RN02-023-339



RN02-023-337



RN02-023-336


H
A
EAGLE TELEPHONE SYSTEM FOR
SSR BEAM FACILITY
HVEC MAGNET
SELECT
COARSE
FINE

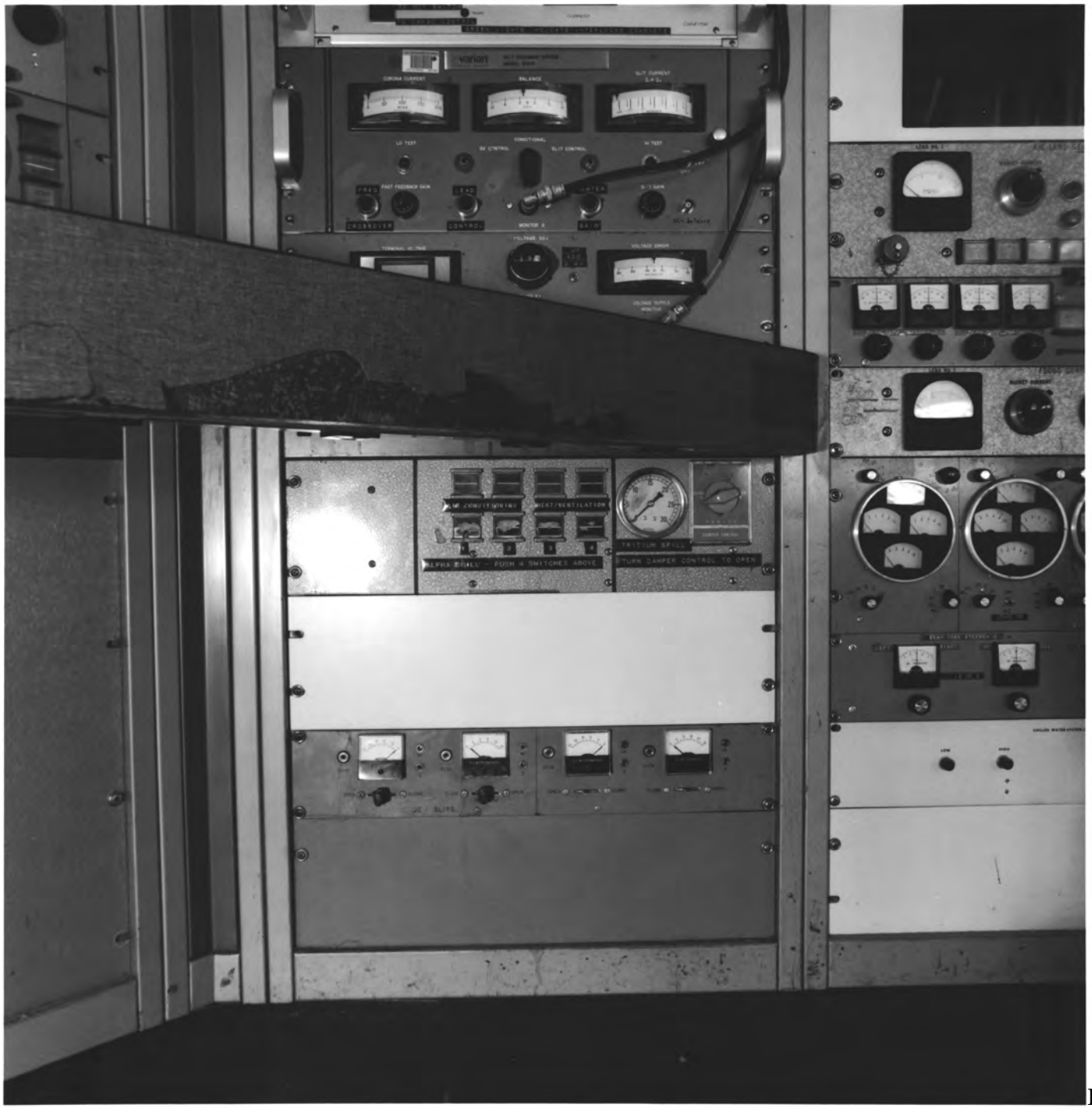
RN02-023-333


HIGH VOLTAGE ENGINEERING CORP.
EAGLE TELEPHONE SYSTEM FOR
10W BEAM FACILITY
X VOLTAGE
Y VOLTAGE

RN02-023-332


VACUUM
VACUUM
VACUUM
ANALYZING MAGNET
REMOTE PANEL
SWITCHING MAGNET
REMOTE PANEL
varian

RN02-023-330


CROSSOVER
CONTROL
TRITIUM SPILL
RETURN DAMPER CONTROL TO OPEN

RN02-023-329



RN02-023-325



RN02-023-323



RN02-023-248



RN02-023-252



RN02-023-203



RN02-023-206



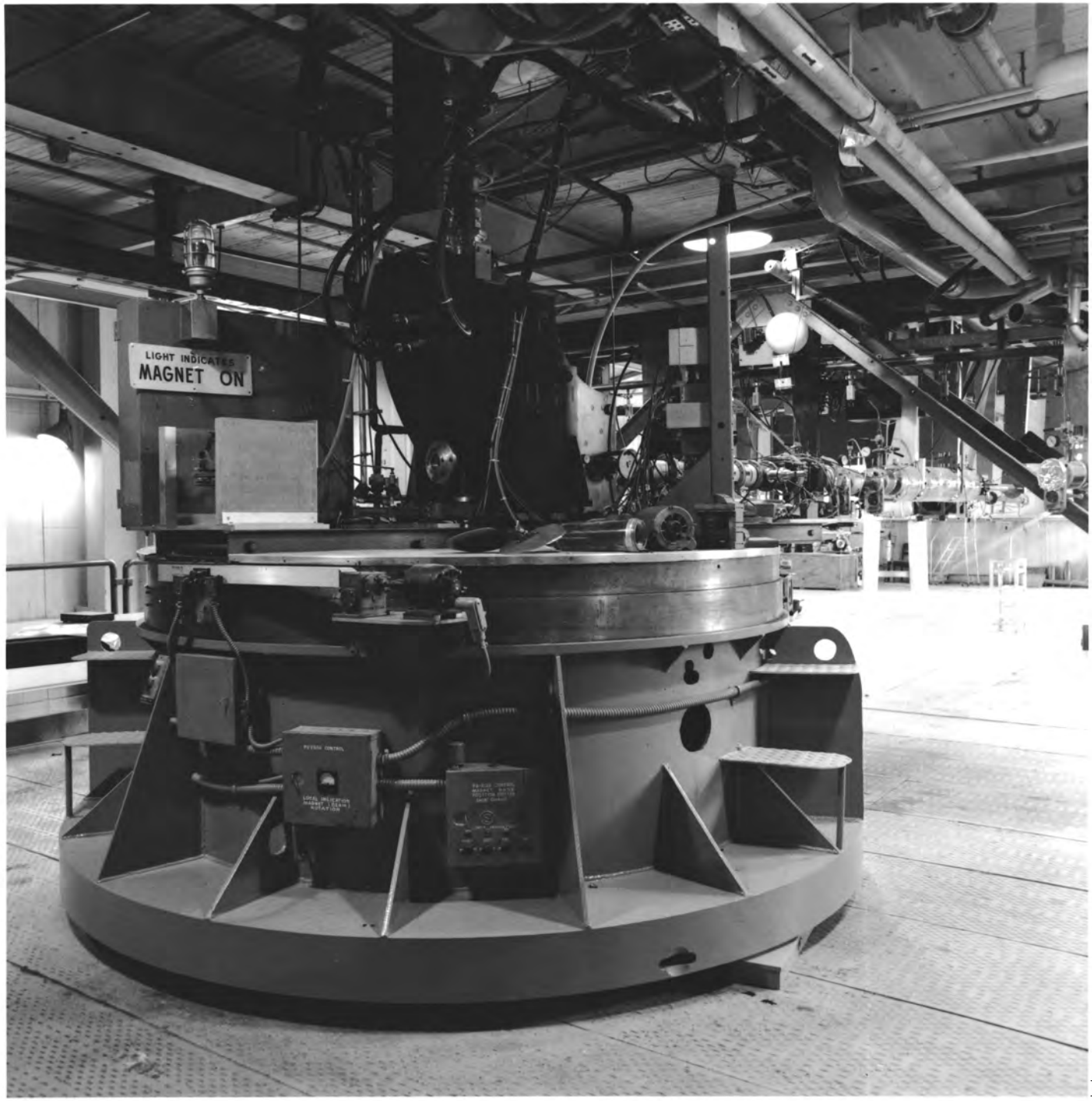
RN02-023-107


NOTICE
SIGN BELOW WHEN YOU
USE THE SOURCES!
S W
SHIELD WALL
STORAGE
AUTION
DIOACTIVE
MATERIAL
DIOACTIVE
WASTE

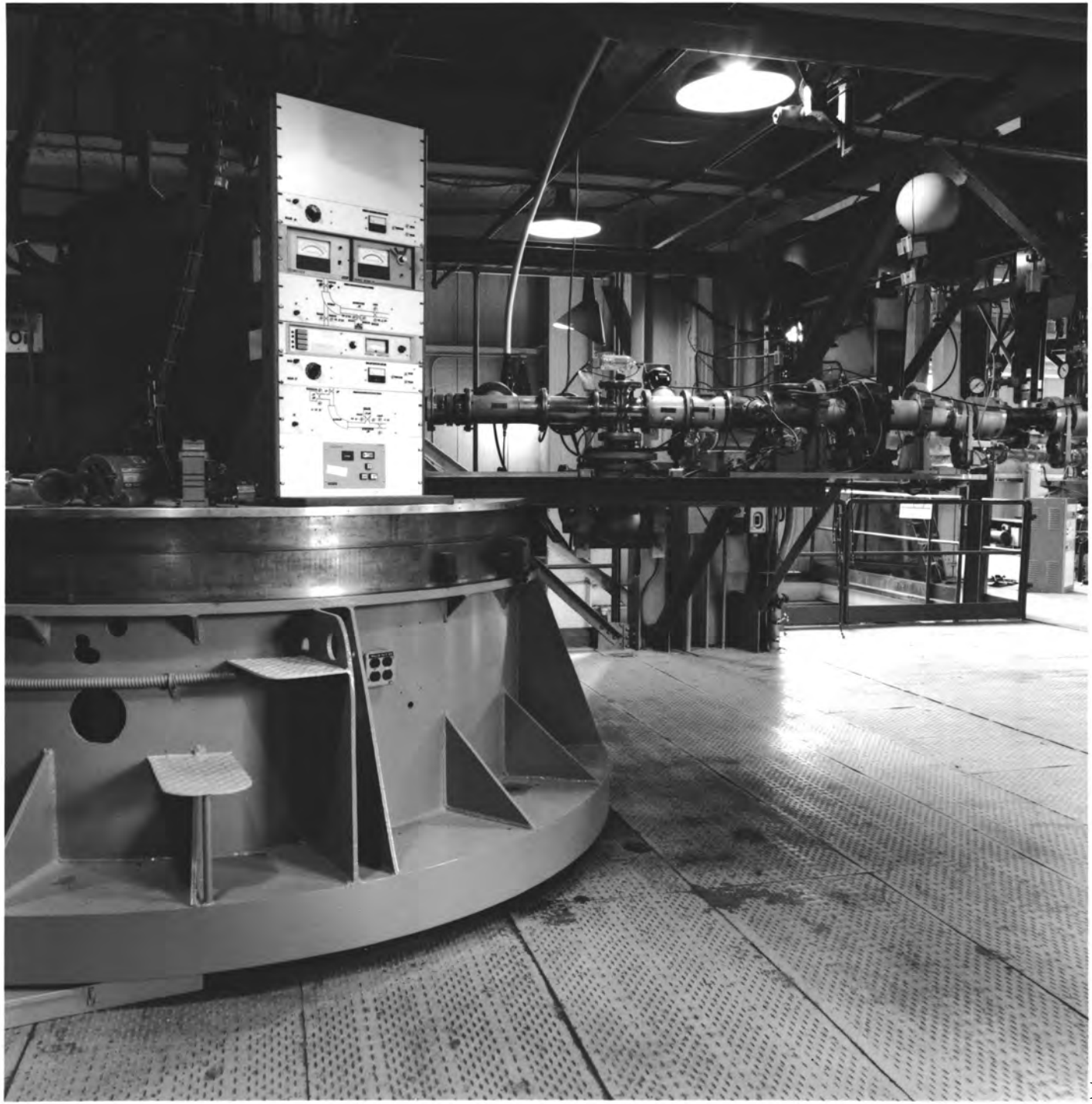
RN02-023-109



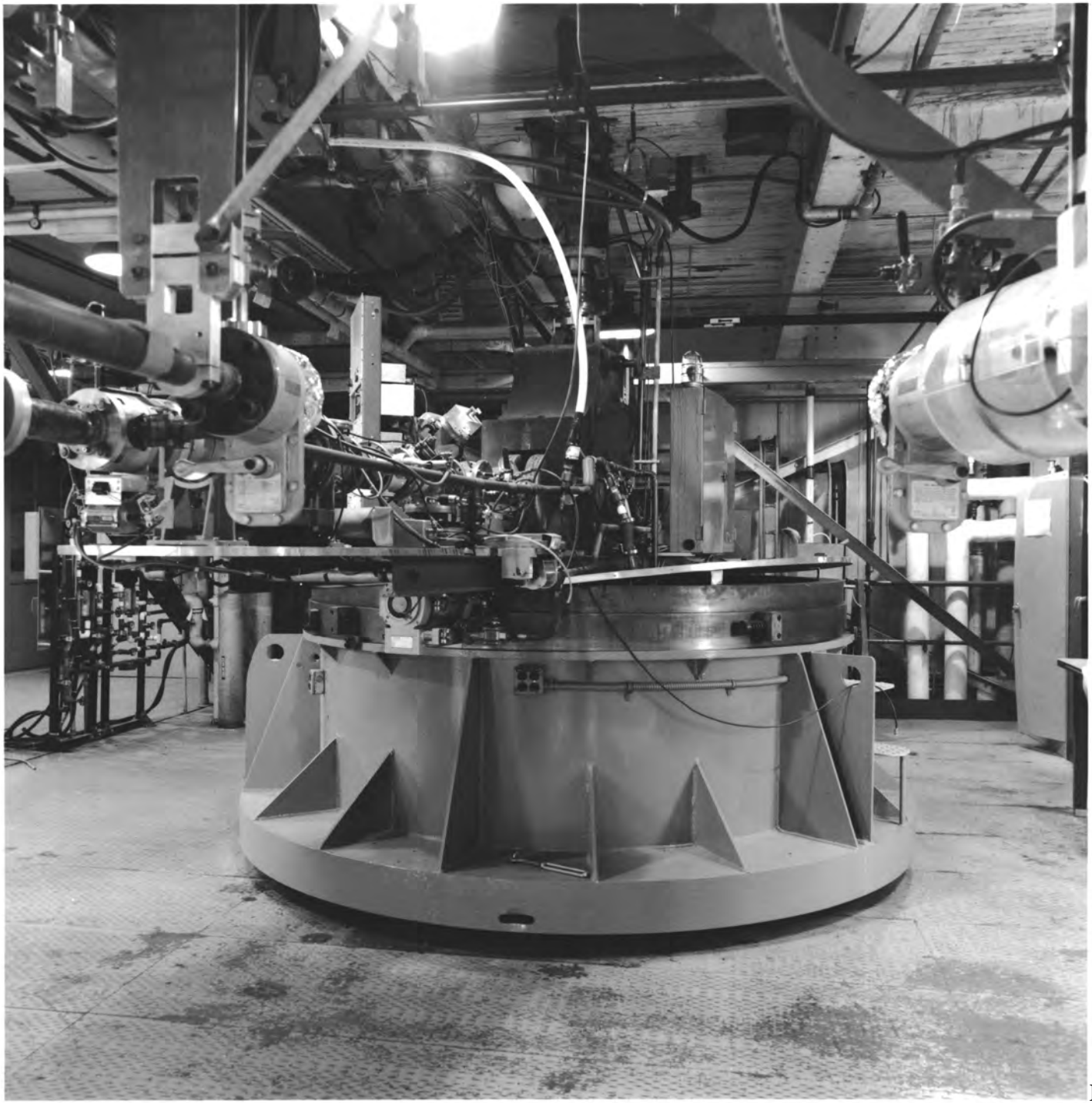
RN02-023-092



RN02-023-097



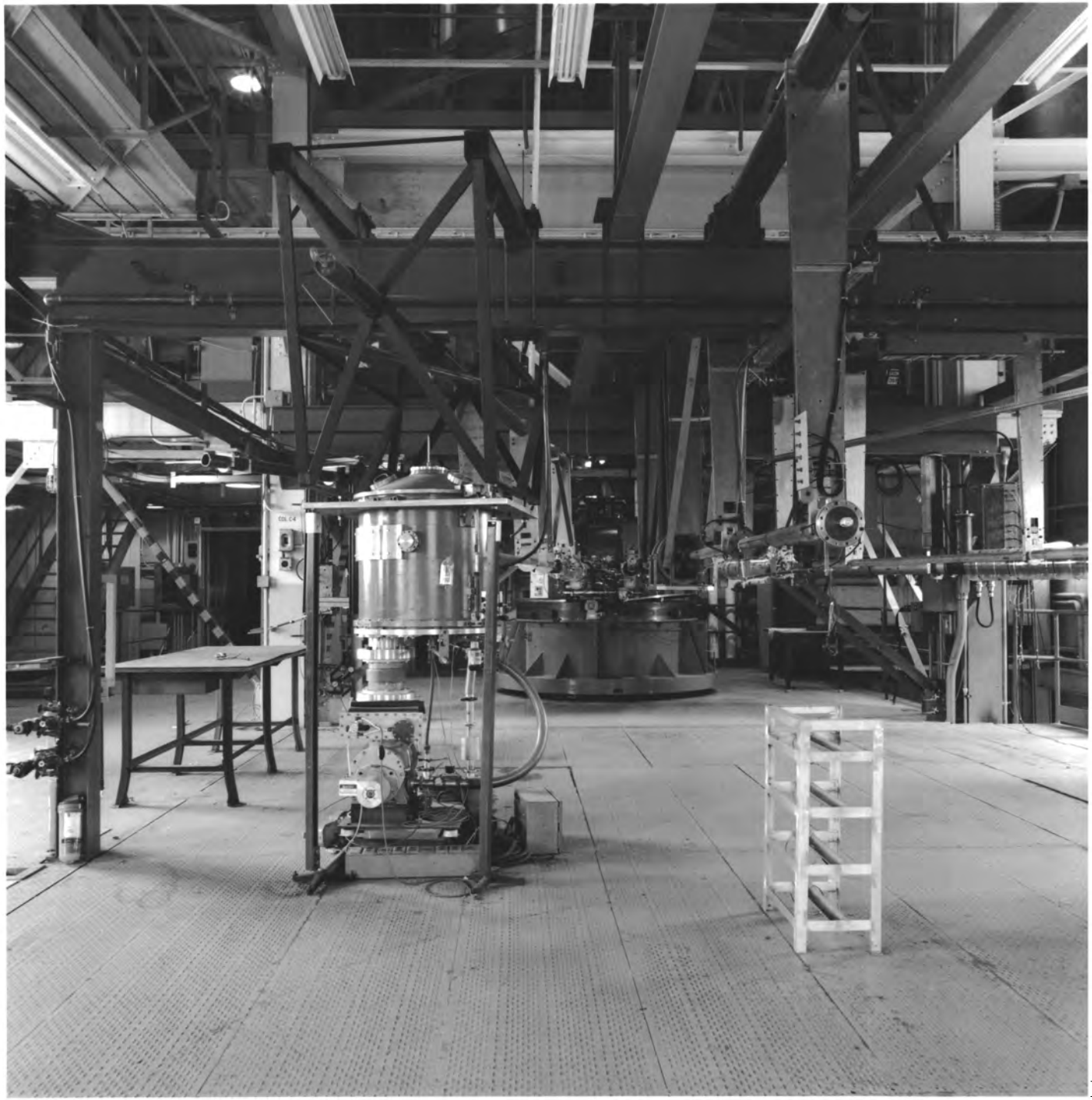
RN02-023-105



RN02-023-095



RN02-023-104



RN02-023-103



RN02-023-106



RN02-023-102



RN02-023-089



RN02-023-088



RN02-023-099



RN02-023-100



RN02-023-146



RN02-023-081



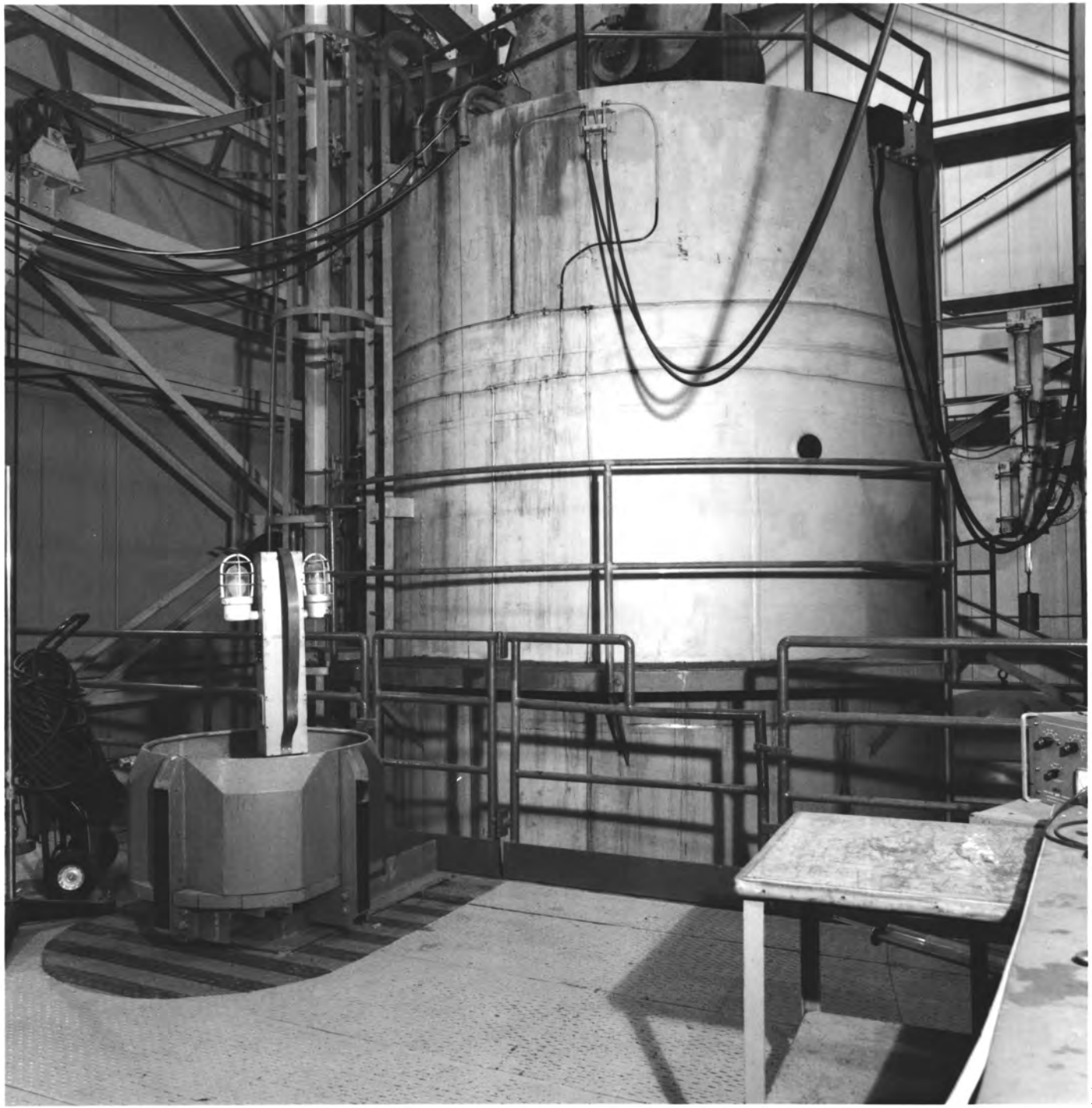
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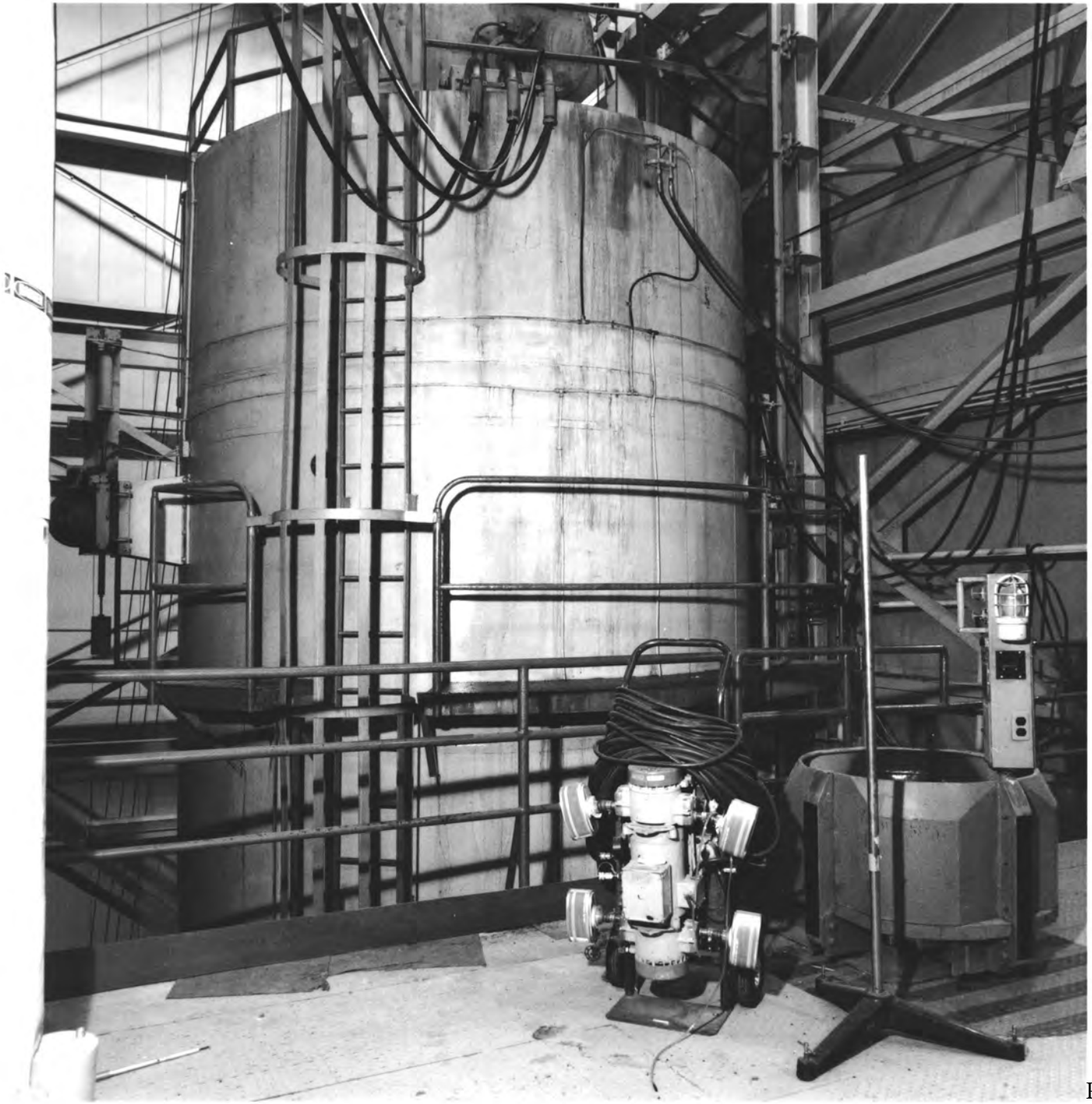
RN02-023-078



RN02-023-076



RN02-023-071



RN02-023-074

RN02-023-075



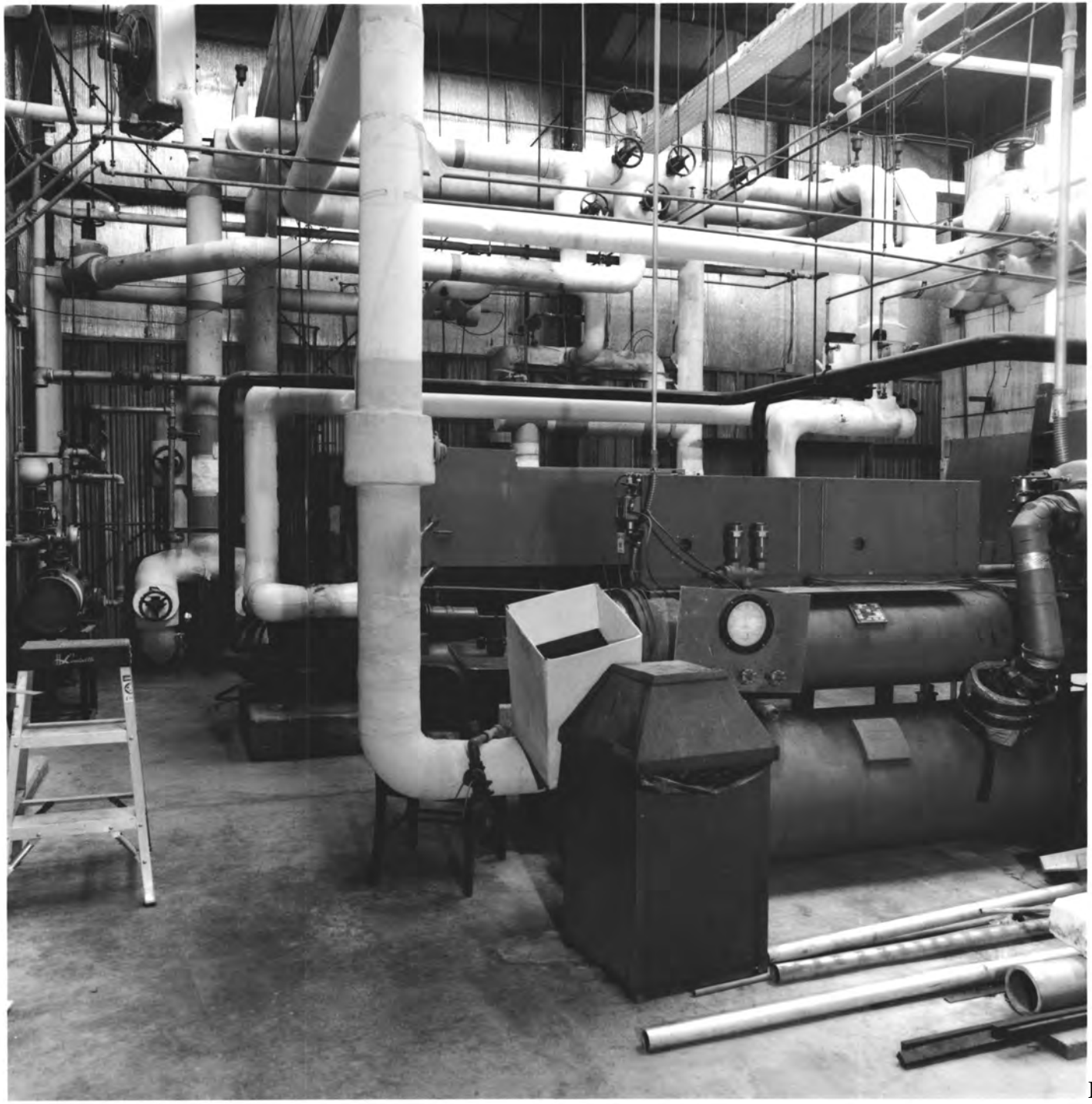
RN02-023-072



RN02-023-356



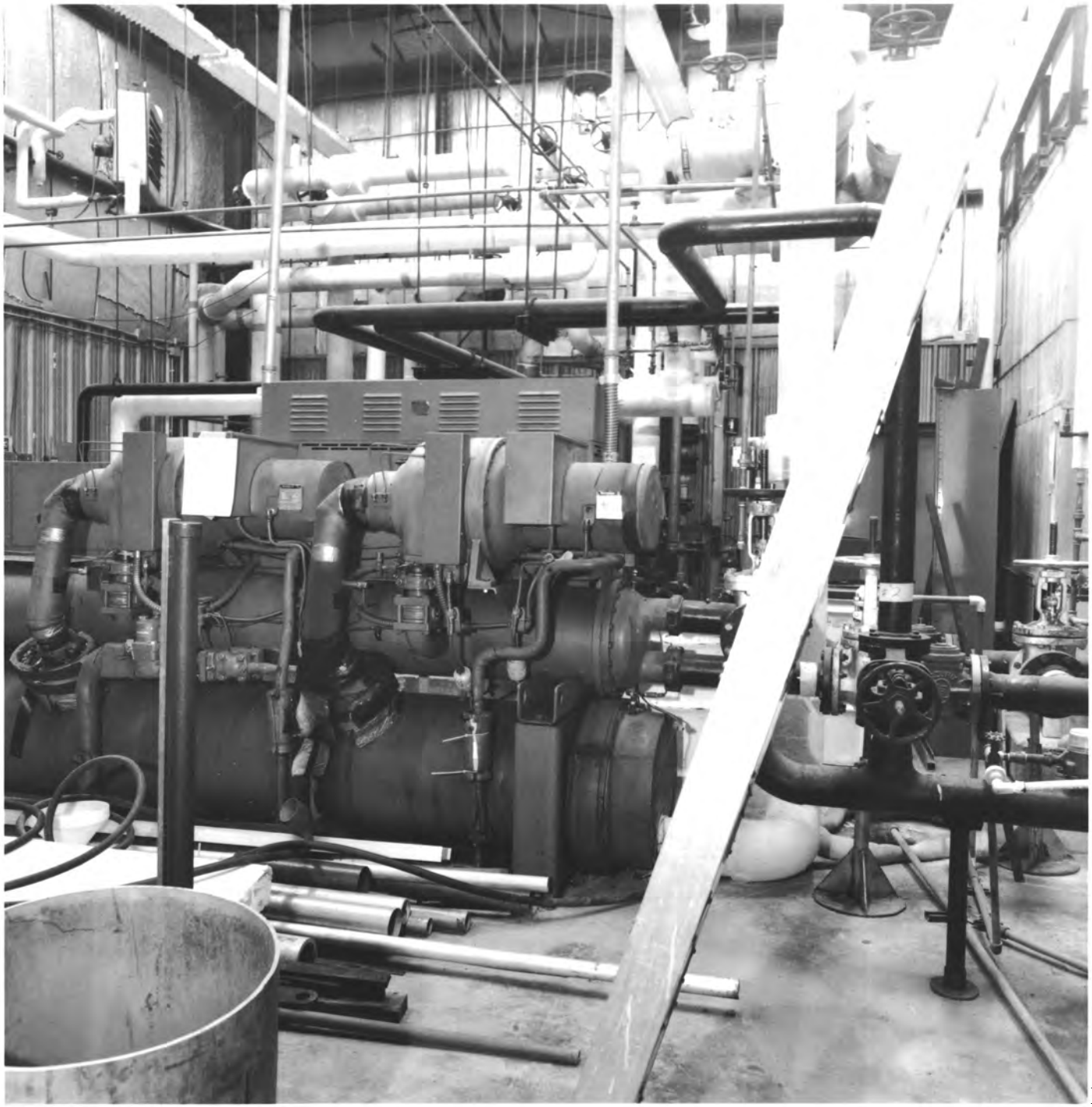
RN02-023-354



RN02-023-348



RN02-023-347



RN02-023-351