LA-UR-99-4241

Decontamination and Decommissioning of Structure TA-3-156 and Building TA-3-163

Historic Building Survey Report No. 174

Los Alamos National Laboratory

July 23, 1999
Survey No. 773

Prepared for the Department of Energy
Los Alamos Area Office

prepared by

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Abstract

In June 1999, historic building surveys were conducted for one abandoned structure and one abandoned building proposed for decontamination and decommissioning (D&D). The buildings are situated on Department of Energy managed land at Los Alamos National Laboratory Technical Area (TA) 3.

Structure TA-3-156 (a cooling tower) and building TA-3-163 (a pump house) were built between June 4, 1962 and April 15, 1963, during the early to middle Cold War years. Both of these properties are support/ancillary buildings to a large laboratory facility at TA-3. Because these properties were built during this significant time period at Los Alamos, historic building assessments (New Mexico Historic Building Inventory Forms, building plan drawings, and photographs) for these properties have been included in this report.

Through documentation it has been determined that both support properties (TA-3-156, TA-3-163) are not eligible for the National Register of Historic Places. Both were associated with the day to day operation of a large laboratory facility, which is also now abandoned, where Los Alamos National Laboratory's controlled thermonuclear research program was conducted until 1990.

The New Mexico State Historic Preservation Officer (SHPO) is requested to concur with the eligibility determinations contained in this report. Additionally, based on the status of the these properties as support buildings and the information included in this report regarding the proposed effects and treatment of effects to the properties, the SHPO is requested to concur with a "Determination of No Effect." Through documentation the structure and building have been determined not eligible for inclusion on the National Register of Historic Places. Therefore, no further documentation of the structure (TA-3-156) and building (TA-3-163) is necessary prior to D&D project activities.

As a result of this historic building survey, this project complies with the National Historic Preservation Act of 1966 (as amended).

Provenience and Environmental Setting

Location: Technical Areas (TA) 3 Los Alamos National Laboratory (LANL)

Land Manager: The Department of Energy (DOE)

Legal Description: Township 19 North, Range 6 East, Section 17
NE ¼, SW ¼, SE ¼

Maps: USGS Frijoles Mountain 7.5 Minute Series (Appendix A, Maps 1 and 2)

Topography: Townsite Mesa

Nearest Drainage: Two Mile Canyon to the south

Elevation: 2261.6 meters (7420 feet)

Current Land Use: Developed TA-3

Project Description

As an inactive structure and building, TA-3-156 and TA-3-163, are subject to the DOE mission statement. "The DOE environmental vision and mission are based on operating all facilities in full compliance with applicable laws and regulations and cleaning up inactive sites and facilities so that no unacceptable risk to the public or environment remains" (U. S. Department of Energy 1994).

LANL proposes to decontaminate and decommission (D&D) one structure and one building. Both are inactive properties and are on the excess space list. These properties are located in TA-3, South Mesa Site, and both were built during the early to middle Cold War years at Los Alamos. Structure TA-3-156, a cooling tower, and building TA-3-163, its associated pump house, were built between June 4, 1962, and April 15, 1963. The proposed D&D project activities include the removal of the concrete masonry unit building and the transite panel structure, foundations, and the capping off and removal of all associated utilities. As a result of the decommissioning phase, the properties will be completely demolished.

Methods

In June 1999, an historic building evaluation was conducted for structure TA-3-156 and building TA-3-163 (Appendix A, Maps 1 and 2) by Kari L. M. Garcia and Alysia D. McLain, Environment, Safety, and Health Division, Ecology Group (ESH-20), LANL.

The historic building evaluations were accomplished by first conducting a field visit to TA-3. Both the structure and the building are abandoned support buildings for an abandoned large

laboratory facility at this TA. New Mexico Historic Building Inventory Forms were completed for both properties and photographs were taken (Appendix B). Records research at LANL was also carried out, and existing drawings were compiled for the buildings.

Culture History Overview

World War II and Early Cold War (1942–1956)

A. Site Selection, Acquisition

In 1942, Albert Einstein wrote a letter to President Franklin Roosevelt warning him of a possible German atomic bomb threat (Rothman 1992). President Roosevelt, acting on Einstein's concerns, gave approval to develop the world's first atomic bomb and appointed Brigadier General Leslie Groves to head the "Manhattan Project." Groves, in turn, chose Robert Oppenheimer to coordinate the design of the bomb.

A single research facility, isolated and secret, was proposed. General Groves had several criteria: security, isolation, a good water supply, an adequate transportation network, a suitable climate, an available labor force, and a locale west of the Mississippi located "at least 200 miles from any international border or the West Coast" (Rothman 1992). Oppenheimer, who had visited the Pajarito Plateau on a horseback trip, suggested the Los Alamos Ranch School.

B. Manhattan Project (1942–1945)

A suitable site selected, Oppenheimer and his staff moved to Los Alamos to begin work. The recruitment of the country's "best scientific talent" and the construction of technical buildings were top priorities. The University of California agreed to operate the site, code name "Project Y," under contract with the government (an arrangement that has continued to this day). Although the fission bomb was conceptually attainable, many difficulties still stood in the way of producing a usable weapon. Technical problems included the timing of the release of energy from fissionable material and the engineering aspects of producing a deliverable device. Nuclear material and high explosive (HE) studies were of immediate importance (Los Alamos National Laboratory 1995).

Two bomb designs appeared to be the most promising: a uranium "gun" method and a plutonium "implosion" method. The "gun" method bomb involved bringing fissionable material together to form a critical mass by firing one subcritical mass of uranium-235 at another. This method led to the development of the "Little Boy" device. Scientists were less confident about the second "implosion" method, a design that necessitated the compression of fissionable material using HE. The compression action would increase the density of a slightly subcritical mass of plutonium-239 and cause a critical reaction (Los Alamos National Laboratory 1995). In 1944, due to the uncertainties surrounding the second design, the search began for an appropriate test site for the implosion method, later used in the "Fat Man" device. The Alamogordo Bombing Range in south-central New Mexico was selected. A trial run involving 100 tons of TNT was

conducted at "Trinity Site" on May 7, 1945. This "dress rehearsal" provided measurement data and simulated the dispersal of radioactive products. The Trinity test was planned for July, and its objectives were "to characterize the nature of the implosion, measure the release of nuclear energy, and assess the damage" (Los Alamos National Laboratory 1995). The HE components of the "Trinity" device were test assembled in building TA-16-516 at Los Alamos in an area known as V-site. Other buildings at V-site were used to prepare and finish the HE components and to run preliminary tests on the "Trinity" bomb (Wilder 1991). The world's first atomic bomb was successfully detonated in the early morning of July 16, 1945. "Little Boy," the untested uranium gun-type bomb, was exploded over the Japanese city of Hiroshima on August 6, 1945. "Fat Man" was exploded over Nagasaki three days later on August 9, 1945, thus essentially ending the war with Japan.

C. Early Cold War Era (1946–1956)

The Manhattan Project had come to a close with the end of World War II (WWII), and many Los Alamos scientists and site workers went back to their prewar existences. The future of Los Alamos was in question. With the beginning of the Cold War, continued weapons research was a top priority. Norris Bradbury had been appointed director of the Laboratory following Oppenheimer's departure from Los Alamos. Bradbury felt that the nation needed "a laboratory for research into military applications of nuclear energy" (Los Alamos National Laboratory 1993a). In 1945, stockpiling and development of additional atomic weapons was an important mission. In 1946, the Laboratory became involved in the technical direction of the atmospheric testing program in the Pacific, dubbed "Operation Crossroads." Later in 1946, the U.S. Atomic Energy Commission (AEC) was established to act as a civilian steward for the new atomic technology born of WWII. The AEC formally took over the Laboratory in 1947, making a commitment to retain Los Alamos as a permanent weapons research facility. Postwar weapons research revolved around the development of advanced fission weapons and, acting on an idea born in 1942, the development of the hydrogen bomb. The combined work of Edward Teller and Stanislaw Ulam led to the beginning of the Laboratory's thermonuclear research program (Los Alamos National Laboratory 1993a).

In 1952, the first thermonuclear device, known as "Mike," was detonated at Eniwetok atoll in the Pacific (Los Alamos National Laboratory 1993a). The Mike shot used liquefied deuterium fuel. The Castle-Bravo shot, conducted in the Pacific in 1954, was revolutionary in that it contained dry, solid thermonuclear fuel. Other early Cold War weapons-related developments include: (1) from 1952 to 1956, "improvements to the primary stage of a nuclear weapon" and (2) in 1956, "the first use of plastic-bonded explosives in a nuclear explosion" (Los Alamos National Laboratory 1995).

Technical Area 3 (South Mesa) Historical Background

TA-3, South Mesa Site, is a large developed technical area. It contains the Laboratory's main administration buildings, library, cafeteria, shops, several large laboratories for a wide variety of

research and development activities, warehouses, electrical generating plant, sewage treatment plant, and numerous other permanent and temporary buildings, transportable trailers, and transportainers.

TA-3 was originally built as a firing site prior to 1945, containing wooden buildings for administration, a shop, magazines, and fiberboard buildings for storage, minor assembly, and checkout of scientific hardware. There was also a burn pit for destroying explosives. This original TA-3 site was decommissioned and cleared in 1949 (Los Alamos National Laboratory 1993b).

Construction began in 1950 at the South Mesa site on the main buildings that were to replace the operational facilities in the current Los Alamos town site. The first buildings, including the Van de Graaff accelerator, laboratory, and support buildings; the communications building; the large chemistry and metallurgy laboratory, the site of critical chemistry and metallurgy supporting the Laboratory's weapons program; warehouses for general supplies and chemicals; shops; a fire station; and a large physics laboratory and office building became operational between mid-1951 and late-1952.

The Van de Graaff accelerator building at one time housed the world's highest voltage Van de Graaff accelerator (Hawkins et al. 1983, Los Alamos National Laboratory 1995). The chemistry and metallurgy laboratory conducts "operations involving plutonium, uranium, other radionuclides, metals, inorganic and organic compounds, acids, and solvents of every nature." The physics building at one time "housed two accelerators and a cyclotron" (Los Alamos National Laboratory 1993b:2-5). Radioactive materials including plutonium, uranium, and tritium, and metals and solvents have been used in the building over the years. To serve these facilities, a gas-fired electrical generating plant, a waste-water treatment plant, a service station, and maintenance garage were also constructed.

A second stage of construction at TA-3 occurred during the mid- to late-1950s. Several major buildings were completed during these years, including the Administration Building which houses offices, laboratories, shop, and photographic facilities, the Sigma Building that houses facilities for metallurgical and ceramics research and fabrication (Los Alamos National Laboratory 1993b), and the Sherwood Building that housed research facilities for LANL's controlled thermonuclear research program.

The structure (TA-3-156) and building (TA-3-163) discussed in this report are abandoned support structures for the Sherwood Building, which is also non functioning and scheduled for D&D work at a later time and will be discussed in detail in a separate report.

New facilities continued to be built during the 1960s and 1970s including office buildings, storage areas, shops, an addition to the waste-water treatment plant, a cement batch plant, and numerous transportable buildings. In the late 1960s to early 1970s the Scyllac Building was constructed for additional space for the controlled thermonuclear research program. In 1977 the Oppenheimer Study Center was constructed; in 1981 an addition to the Administration Building was constructed, and in the early 1990s a computer facility and several national centers for various scientific research activities were constructed (Los Alamos National Laboratory 1993b).

Description of Buildings

One structure and one building, TA-3-156 and TA-3-163, are proposed for demolition. Appendix A contains maps showing the locations of the properties proposed for demolition. Appendix B contains the Historic Building Inventory Forms, plan drawings, and photographs.

TA-3-156 Cooling Tower

Building Name: TA-3-156 Original Name: South Mesa-156 (SM-156)

Location:

City - Los Alamos, New Mexico

County - Los Alamos

UTMs - Zone 13 Easting 380399 Northing 3970629

Legal Description - Township 19 North, Range 6 East, Section 17

Surroundings - TA-3 is the Laboratory's administrative area, additionally there are also large laboratory research buildings located within this TA. It is a large developed technical area consisting of many permanent and temporary buildings of various construction styles and material types. Buildings include laboratories, office buildings, maintenance shops, medical facilities, and utilities.

Relationship to surroundings – Not similar.

Construction Date: 6/4/62 to 4/15/63

Original Use: Structure TA-3-156 was a cooling tower for the Sherwood Building, which is a large abandoned laboratory building used for controlled thermonuclear research. The cooling tower was a support structure for the daily operation and maintenance of the Sherwood Building.

Use History: Structure TA-3-156 has always served as a cooling tower for the Sherwood Building. It was part of the facilities drain plan.

Use at Time of Survey: The cooling tower TA-3-156 is abandoned and for the most part the Sherwood Building, which the cooling tower supported, is also abandoned and not in use. A small portion of the Sherwood Building that connects to the Administration Building is still occupied by Laboratory security personnel.

Condition at Time of Survey: Fair condition

Building Description: (see also Appendix B)

Building style – TA-3-156 is constructed of transite panels and louvers (asbestos containing material) on a reinforced concrete base with a flat open roof.

Foundation material - Reinforced concrete slab

Wall material/surface - Lower portion of walls are reinforced concrete and the upper portion are transite panels and louvers.

Architectural features - The cooling tower is an approximate 528-ft^2 rectangular structure situated on a reinforced concrete base. The reinforced concrete base contains a sump that has a slight slope. There are transite panels on all sides of the structure and transite louvers on two sides. Inside the structure there are two "V" shaped veins constructed of 2-in.-wide horizontal wood strips connected together on a wood frame. The structure does not have a conventional roof, but there is a guardrail around the top of the structure and metal gratings covering the interior of the structure.

Both the north and south elevations are completely transite panels. The south side has numerous pipes that connect the cooling tower to the pump house. The north elevation has a small door constructed of the same transite material that was used for servicing the interior equipment of the cooling tower. Also on the north elevation are the supports for the ladder that would have been for accessing the interior portion of the structure from the top, and there is also a gap in the guardrail where the ladder would have been positioned.

On both the east and west elevations there are transite louvers above the row of transite panels that runs around the structure on all four elevations and are situated directly above the concrete base.

Remodeling History: During 1990 Los Alamos' CTR Division, which was conducting research on "Z" and "Theta Pinch" fusion technology, was disbanded and the Sherwood Building was vacated. Congress had reduced funding for all other branches of fusion research as an alternative energy source except for research on "Tokamak" technology. Sometime after the Sherwood Building was vacated the cooling tower and pump house were also taken out of service and abandoned. It is assumed that the ladder that would have been attached to the north elevation was removed for safety reasons.

Associated Buildings: TA-3-163 (the connected pump house) and TA-3-105 (the Sherwood Building) the laboratory research facility that the cooling tower and pump house served.

District Potential: None. This TA is the administrative area of the Laboratory. It is a conglomeration of a wide variety of permanent and temporary buildings of many different construction styles built throughout the late 1940s to the present. There are many facilities and Divisions with many different research thrusts, as well as this area being where the Laboratory's maintenance contractor and the Laboratory's administrative offices are.

Contamination Information: There is no record of any contamination existing within this structure other than the asbestos transite panels and louvers that it is constructed with.

TA-3-163 Pump House

Building Name: TA-3-163, Original Name: South Mesa-163 (SM-163)

Location:

City - Los Alamos, New Mexico

County - Los Alamos

UTMs - Zone 13 Easting 380399 Northing 3970621

Legal Description - Township 19 North, Range 6 East, Section 17

Surroundings - TA-3 is the Laboratory's administrative area, additionally there are also large laboratory research buildings located within this TA. It is a large developed technical area consisting of many permanent and temporary buildings of various construction styles and material types. Buildings include laboratories, office buildings, maintenance shops, medical facilities, and utilities.

Relationship to surroundings – Not similar

Construction Date: 6/4/64 to 4/15/63

Original Use: Building TA-3-163 was a pump house associated with the cooling tower (TA-3-156) for the Sherwood Building, which is a large abandoned laboratory building used for controlled thermonuclear research. The pump house was a support building for the daily operation and maintenance of the Sherwood Building.

Use History: TA-3-163 has always served as the pump house for the Sherwood Building. It was part of the facilities drain plan.

Use at Time of Survey: TA-3-163 is currently abandoned and for the most part the building it supported, the Sherwood Building, is also abandoned and not in use. A

small portion of the Sherwood Building that connects to the Administration Building is still occupied by Laboratory security personnel.

Condition at Time of Survey: Fair condition

Building Description: (See also Appendix B)

Building style - Small concrete masonry unit building with a flat roof

Foundation material – Concrete slab and footings

Wall material/surface – Concrete masonry units (pumice concrete blocks). The exterior walls are painted to seal the structure.

Architectural features - Building TA-3-163 is a small, 324-ft^2 concrete pump house with a flat roof. The roof is a three ply built up roof with a roof vent along the south side. There is galvanized metal flashing around the edge of the roof.

The north elevation faces and is connected by pipes to TA-3-156, the cooling tower. There also is a small louver on the northwest portion of the wall.

On the west elevation there is a window with nine individual glass panes.

The south elevation is devoid of windows, doors, or any defining features.

The building contains pumps, compressors, and other equipment related to the operation of the cooling tower.

Remodeling History: The 1962 engineering drawings show that there is a louver located on the south elevation of the building, however, the entire south elevation is devoid of any features.

During 1990 Los Alamos' CTR Division, which was conducting research on "Z" and "Theta Pinch" fusion technology, was disbanded and the Sherwood Building was vacated. Congress had reduced funding for all other branches of fusion research as an alternative energy source except for research on "Tokamak" technology. Sometime after the Sherwood Building was vacated the cooling tower and pump house were also taken out of service and abandoned.

Associated Buildings: TA-3-156 (the connected cooling tower) and TA-3-105 (the Sherwood Building) the laboratory research facility that the pump house and cooling tower served.

District Potential: None. This TA is the administrative area of the Laboratory. It is a conglomeration of a wide variety of permanent and temporary buildings of many different construction styles built throughout the late 1940s to the present. There are many facilities and Divisions with many different research thrusts, as well as this area being where the Laboratory's maintenance contractor and the Laboratory's administrative offices are.

Contamination Information: There is no record of any contamination existing within this structure other than the asbestos insulation that is around some of the equipment.

National Register Eligibility Determination

Based on the information gathered during this building survey, properties TA-3-156, a cooling tower, and TA-3-163, a pump house, are not eligible for nomination to the National Register of Historic Places.

The one structure and one building are ancillary support properties to the daily operations of a large research facility, are less than fifty years old, and lack any qualities to be considered eligible for the National Register.

Currently both properties are abandoned and no future use is designated for these properties; or for the large laboratory facility they are associated with, which is also scheduled for D&D sometime in the future. Because of this these properties are on the Laboratory's surplus space list and are currently scheduled for D&D this fiscal year.

Proposed Treatment of Effects

The proposed D&D activities at TA-3 will result in the destruction of structure TA-3-156 and building TA-3-163. Neither property is eligible for the National Register of Historic Places.

Even though the two support properties are not eligible for the National Register of Historic Places they were built during the middle Cold War years at Los Alamos, therefore the following documentation of the properties has been included in this report (New Mexico Historic Building Inventory Forms, building plan drawings, and photographs).

Recommendations

As stated above, both properties (TA-3-156 and TA-3-163) proposed for demolition are not considered significant historic properties based on their status as solely support properties for a large Laboratory research facility. Therefore, they are not eligible for nomination to the National Register of Historic Places. The SHPO is requested to concur with this determination and our assessment of "no effect" for this undertaking.

As a result of this historic building survey, this project complies with the National Historic Preservation Act of 1966 (as amended).

References Cited

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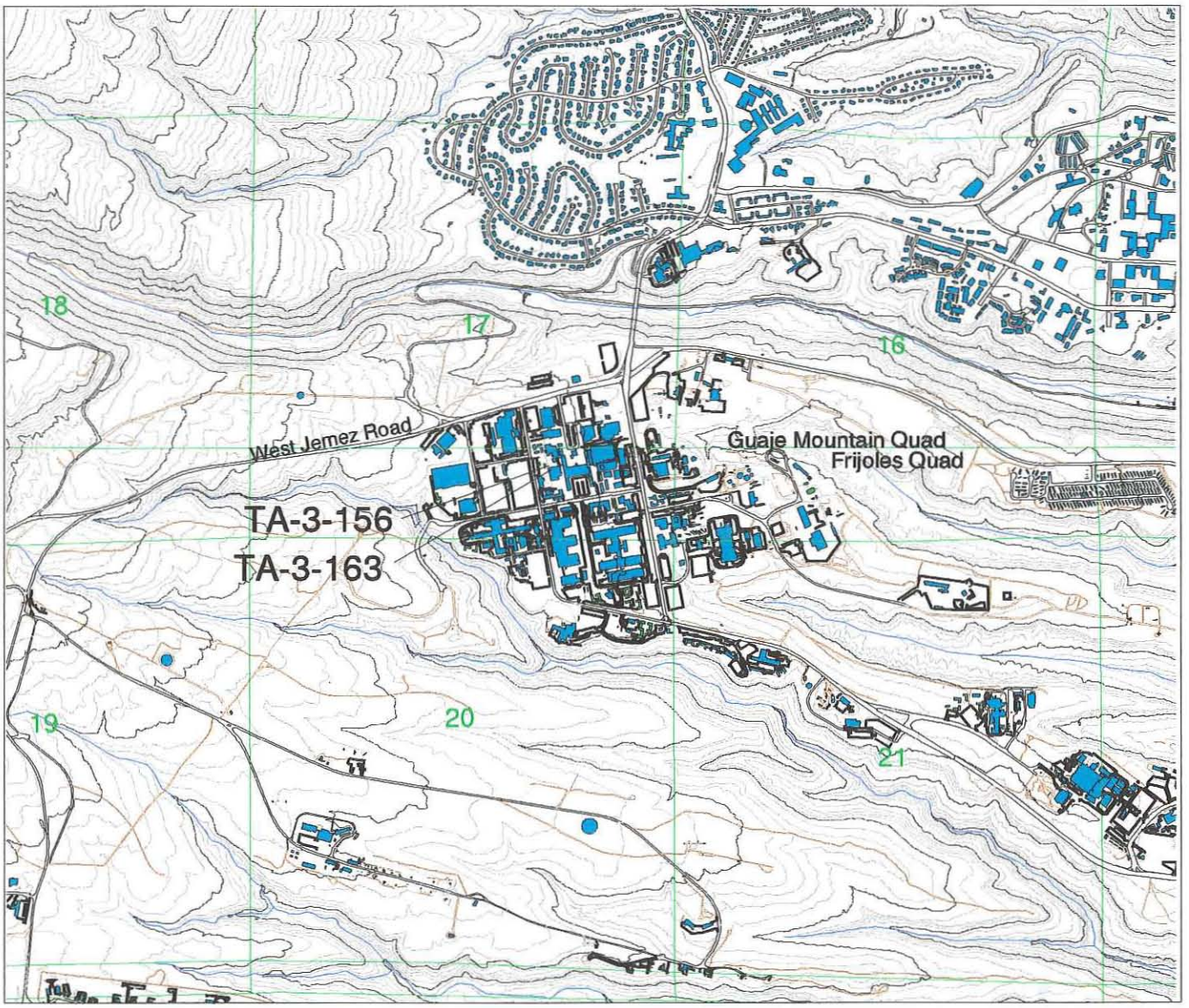
APPENDIX A

Maps



1:24000

300 0 300 600 900 1200 1500 Meters

1000 0 1000 2000 3000 4000 Feet

Los Alamos
National Laboratory

Cultural Resources Team
ESH-20 Ecology Group

N
W E
S

Township, Range, Section
USGS 7.5 Minute Quadrangle
Drainage
20 Foot Contours
100 Foot Contours
Roads - Dirt
Parking - Dirt
Roads - Paved
Parking - Paved
Structures - Perm Buildings
Structures - Temp Buildings

Cooling Tower TA-3-156 and Pump House TA-3-163

Project Location

Map1

Public disclosure of archaeological site locations is prohibited by 36 CFR 296.18

1:3000

50 0 50 100 Meters

200 0 200 400 Feet

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Cultural Resources Team
ESH-20 Ecology Group

N
W E
S

Township, Range, Section
USGS 7.5 Minute Quadrangle
Drainage
20 Foot Contours
100 Foot Contours
Roads - Dirt
Parking - Dirt
Roads - Paved
Parking - Paved
Structures - Perm Buildings
Structures - Temp Buildings

Cooling Tower TA-3-156 and Pump House TA-3-163

Closeup Project Area

Map 2

Public disclosure of archaeological site locations is prohibited by 36 CFR 296.18

APPENDIX B

Historic Building Inventory Forms

NEW MEXICO HISTORIC BUILDING INVENTORY FORM

LA#

building threatened?	surveyed	County	ID no.
yes	date **6/16/99** by **Kari L. M. Garcia & Alysia D. McLain**	**Los Alamos**	**TA-3-156**

Field map number	UTM reference: easting **380399** northing **3970629** zone **13**
LANL Orthotopo Sheet 4	

location description	city/town
Technical Area (TA) 3,	**Los Alamos** land grant/reservation **n/a**

building name	legal description **USGS Guaje Mountain 7.5 Series**
TA-3-156, Original name **South Mesa (SM-156)**	tnsp **19N** range **6E** sec **17** **NE¼ SW¼ SE¼**

film roll by nos.	Negative nos.	location of neg.	date of construction
digital photos	**digital photos on file with ESH-20 by building number**	**LANL, ESH-20**	_____ estimate **6/4/62 to 4/15/63** actual source **Facilities Division Engineering 9 (F-9) records (LANL).**

Style	Foundation material	Use	Condition
Utilitarian, cooling tower, of transite panels and louvers, wood frame on a reinforced concrete base (see below for more information)	**Reinforced concrete slab** wall material/surface **transite panels and louvers**	Present residential ✔ other **cooling tower.** historic residential ✔ other **cooling tower.**	___ excellent **X** fair to ___good **X** deteriorating

degree of remodeling
X minor ____ moderate ____major
describe: **During 1990 Los Alamos' CTR Division, which was conducting research on "Z" and "Theta Pinch" fusion technology, was disbanded and the Sherwood Building was vacated. Congress had reduced funding for all branches of fusion research, as an alternative energy source, except research on "Tokamak" technology. Sometime after the Sherwood Building was vacated the cooling tower and pump house were also taken out of service and abandoned. It is assumed that the ladder that would have been attached to the north elevation was removed for safety reasons.**

Surroundings	Relationship to surroundings	district potential
Developed Laboratory Technical Area 3	**X** similar ___not similar	___ yes **X** no

Significance	Associated building? **X** yes	Photos and plan drawings are on following pages:
Eligible of interest **X** none if not eligible, why? **Cooling tower TA-3-156 is only an abandoned support structure for the Sherwood Building TA-3-105.**	What type? **Industrial laboratory type building with an associated pump house** If inventoried, list ID nos. **TA-3-163 (pump house) and TA-3-105 (the Sherwood Building)**	**ENG-C 27070 (sheet 2 of 20) Sherwood Cooling Tower Architectural-Plan, Section & Details March 27, 1962**

		Photos and plan drawings are on following pages cont.: **ENG-C 27072 (sheet 4 of 20)** **Sherwood Cooling Tower** **Architectural Sections & Details** **March 27, 1962** **ENG-AB 61 (sheet 1 of 2)** **As-Built Facility Drain Plan Cooling Tower and Pump House** **Civil: Site Plan, Storm Drain, & Sanitary Sewer System** **August 7, 1992** **ENG-AB 61 (sheet 2 of 2)** **As-Built Facility Drain Plan Cooling Tower and Pump House** **Mechanical: Storm Drain and Sanitary Sewer System** **August 7, 1992** Size: **Approximate 528 ft^2**

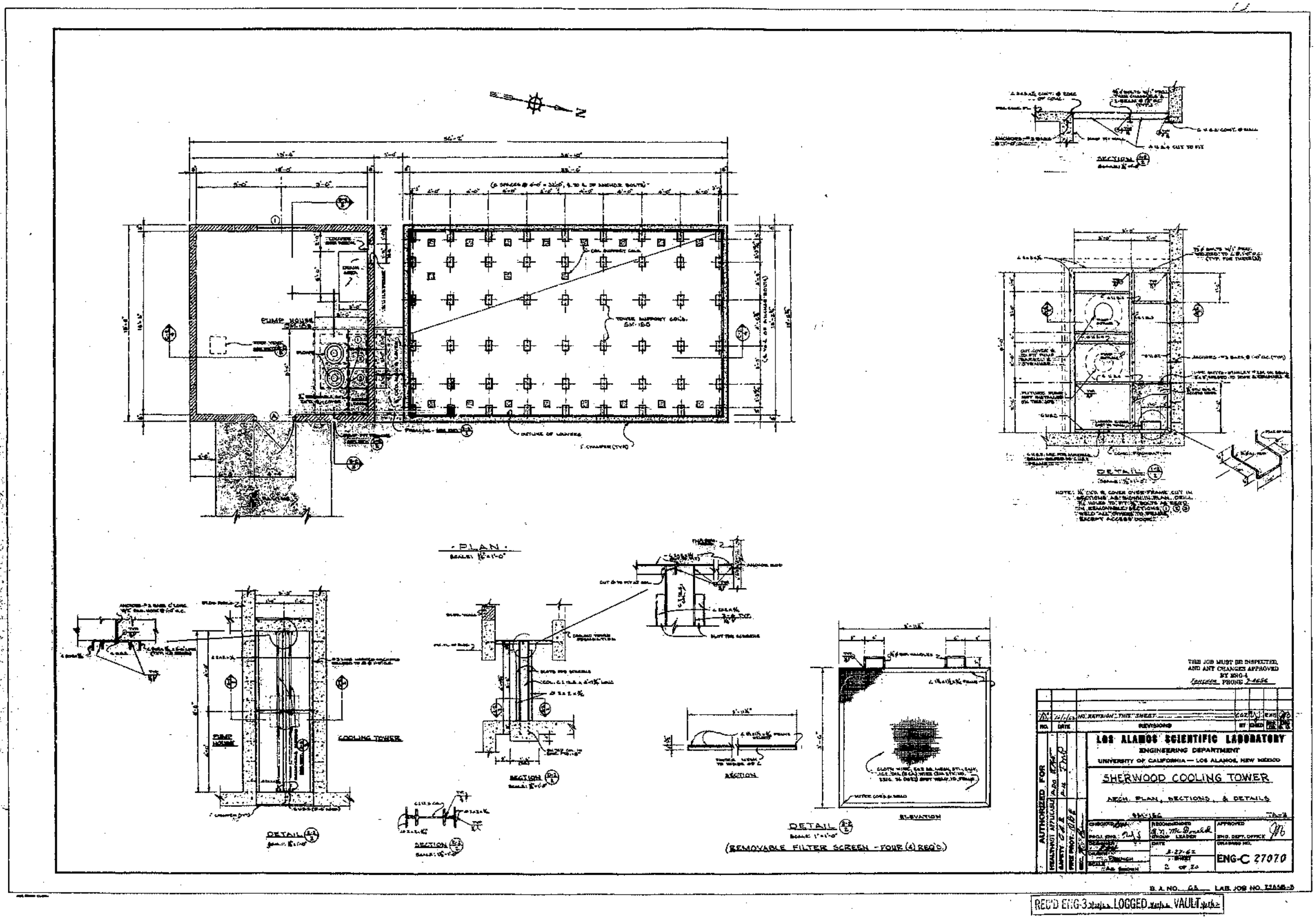
Architectural features: **The cooling tower is an approximate 528-ft^2 rectangular structure situated on a reinforced concrete base. The reinforced concrete base contains a sump that has a slight slope. There are transite panels on all sides of the structure and transite louvers on two sides. Inside the structure there are two "V" shaped veins constructed of 2 in. wide horizontal wood strips connected together on a wood frame. The structure does not have a conventional roof, but there is a guardrail around the top of the structure and metal gratings covering the interior of the structure.** **Both the north and south elevations are completely transite panels. The south side has numerous pipes that connect the cooling tower to the pump house. The north elevation has a small door constructed of the same transite material that was used for servicing the interior equipment of the cooling tower. Also on the north elevation are the supports for the ladder that would have been for accessing the interior portion of the structure from the top and there is also a gap in the guardrail where the ladder would have been positioned.** **On both the east and west elevations there are transite louvers above the row of transite panels that runs around the structure on all four elevations and are situated directly above the concrete base.**	Comments:

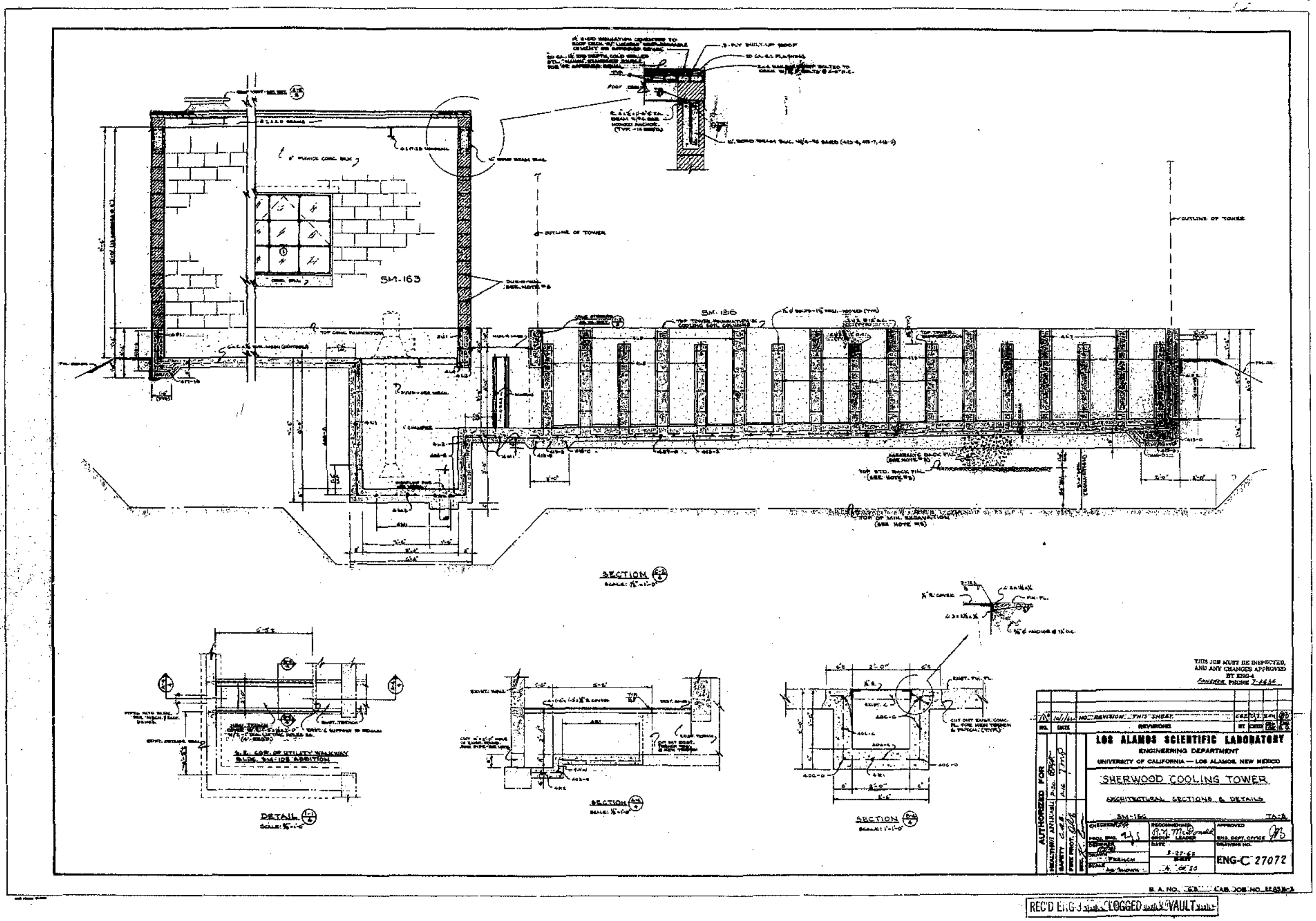
TA-3-156 North Side

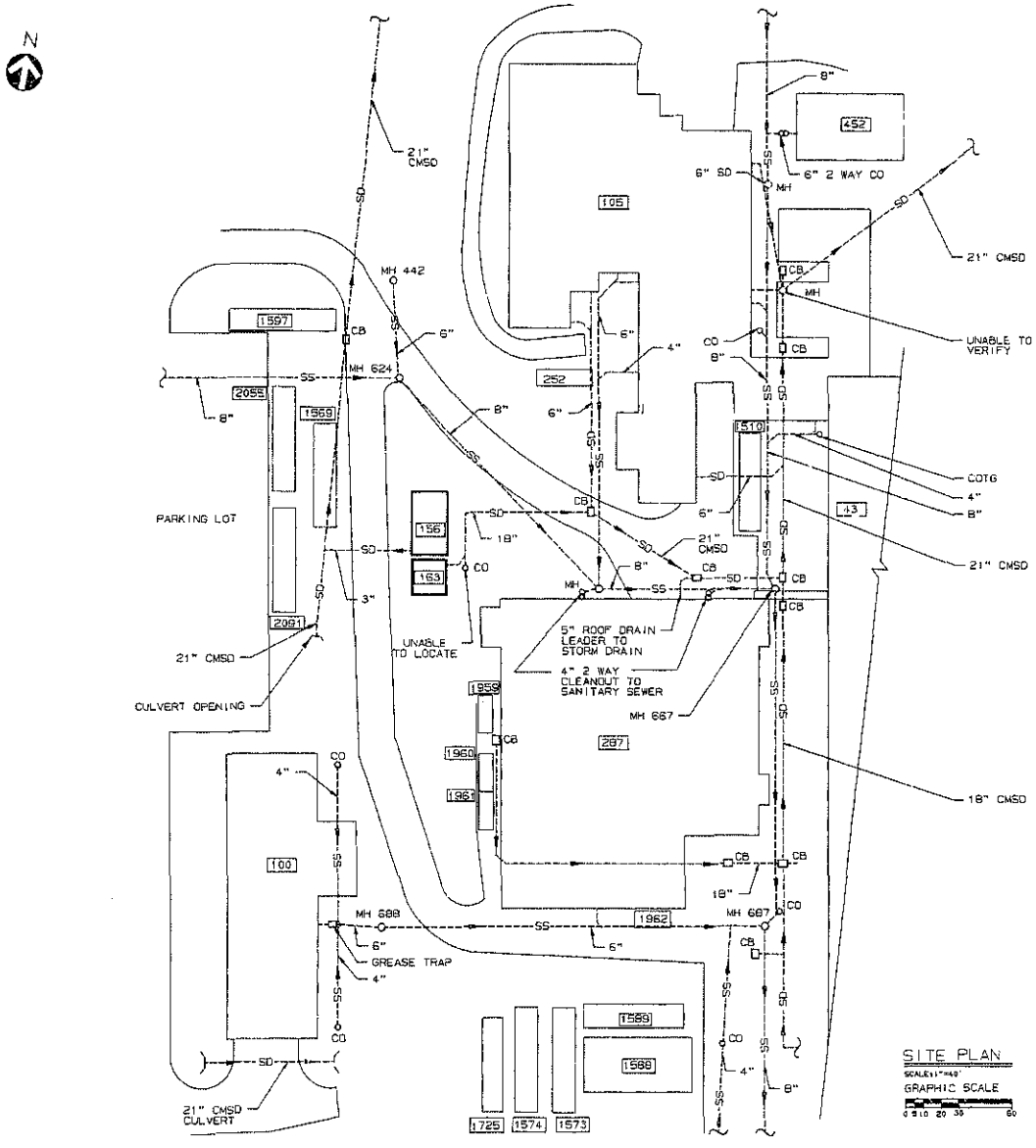
TA-3-156 East Side

TA-3-156 West Side

TA-3-163 North Side and TA-3-156 South Side


PLAN
PUMP HOUSE
COOLING TOWER
DETAIL
SECTION
ELEVATION
(REMOVABLE FILTER SCREEN - FOUR (4) REQ'D.)
THIS JOB MUST BE INSPECTED AND ANY CHANGES APPROVED BY ENG-4
REVISIONS
AUTHORIZED FOR
LOS ALAMOS SCIENTIFIC LABORATORY
ENGINEERING DEPARTMENT
UNIVERSITY OF CALIFORNIA — LOS ALAMOS, NEW MEXICO
SHERWOOD COOLING TOWER
ARCH. PLAN, SECTIONS, & DETAILS
ENG-C 27070
REC'D ENG-3 LOGGED VAULT


SM-163
SM-156
OUTLINE OF TOWER
SECTION
DETAIL
THIS JOB MUST BE INSPECTED, AND ANY CHANGES APPROVED BY ENG-4
PHONE 7-4656
NO REVISION THIS SHEET
REVISIONS
AUTHORIZED FOR
LOS ALAMOS SCIENTIFIC LABORATORY
ENGINEERING DEPARTMENT
UNIVERSITY OF CALIFORNIA — LOS ALAMOS, NEW MEXICO
SHERWOOD COOLING TOWER
ARCHITECTURAL SECTIONS & DETAILS
SM-156
TA-3
CHECKED
RECOMMENDED
GROUP LEADER
APPROVED
ENG. DEPT. OFFICE
PROJ. ENG.
DESIGNED
DRAWN
SCALE
DATE
8-27-62
SHEET
4 OF 20
DRAWING NO.
ENG-C 27072
B. A. NO.
CAB. JOB NO.
REC'D ENG-3
LOGGED
VAULT

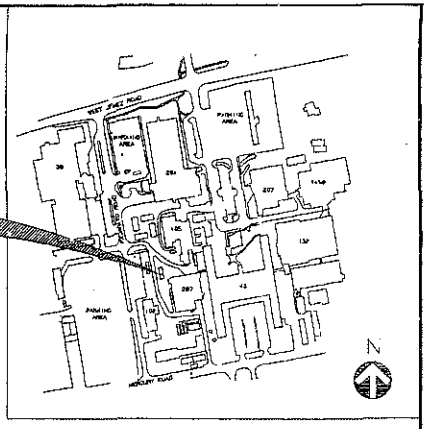


SITE PLAN

SCALE: 1"=40'

GRAPHIC SCALE

0 5 10 20 30 60



SITE PLAN

SCALE: NONE

LEGEND

SD	BURIED STORM DRAIN
SS	BURIED SANITARY SEWER
CMCD	CORR METAL STORM DRAIN
COTG	CLEANOUT TO GRADE
CB	CATCH BASIN
8	2 WAY CLEANOUT
CO	CLEANOUT
MH	MANHOLE

FIELD VERIFIED ON 7-9-92

NO.	DATE	CLASS REV.	REVISIONS	DRWN	VER	CHKD	AEL	SUB	REC	APP

JOHNSON CONTROLS WORLD SERVICES INC.

AS-BUILT FACILITY DRAIN PLAN
COOLING TOWER AND PUMP HOUSE

CIVIL: SITE PLAN, STORM DRAIN AND SANITARY SEWER SYSTEM

BLDG. 156/163 TA-3

DRAWN	T. ZOCCETTA
VERIFIED	R. PENNEY
CHECKED	B. BOSWORTH
RELEASED	B. BOSWORTH
DATE	8-7-92

SUBMITTED S. YORTE

RECOMMENDED F.C. Thompson 10/15/92

APPROVED F.C. Thompson 10/19/92

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

SHEET C1 1 OF 2

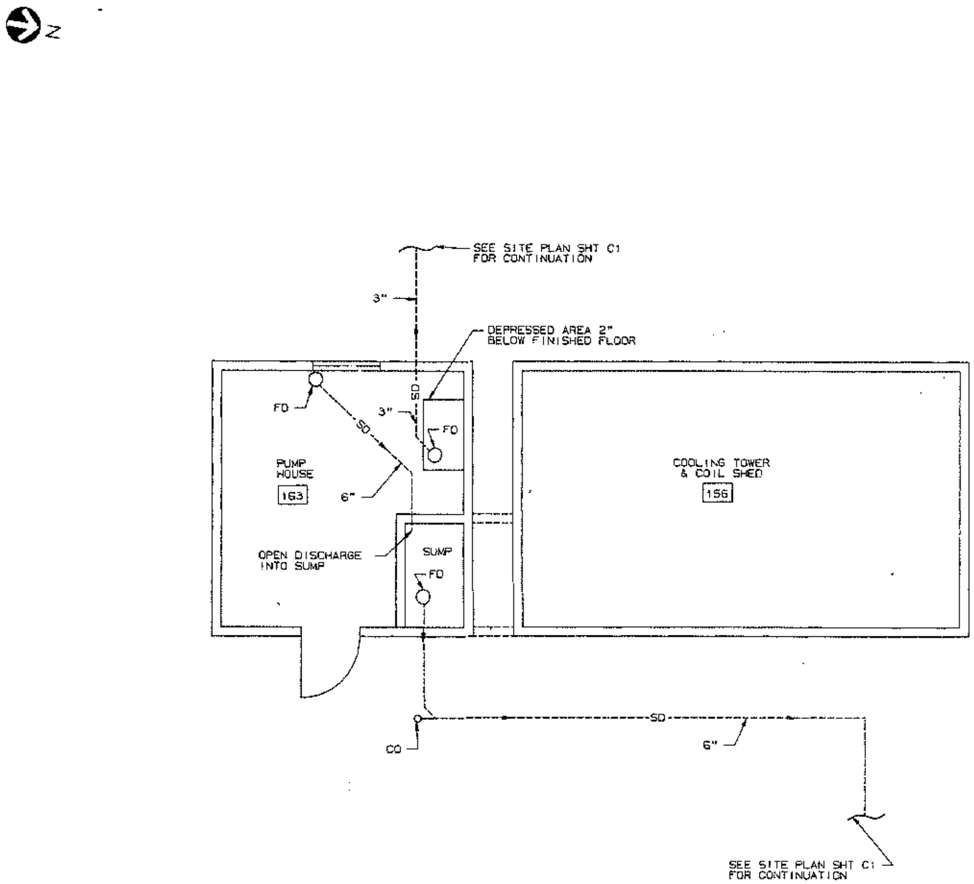
CLASSIFICATION U REVIEWER [illegible] DATE 10-8-92

LAB JOB NO. 11831-99

DRAWING NO. A861

REV.

JCI 91-001



LEGEND

SD	BURIED STORM DRAIN
SS	BURIED SANITARY SEWER
CO	CLEANOUT
FD	FLOOR DRAIN

STORM DRAIN PIPING PLAN

SCALE 1/4" = 1'0"

GRAPHIC SCALE

0 2 4 6 8 10

FIELD VERIFIED ON 7-9-92

NO.	DATE	CLASS REV.	REVISIONS	DWN	VER	CHKD	REL	SUB	REC	APP

JOHNSON CONTROLS WORLD SERVICES INC.

AS-BUILT FACILITY DRAIN PLAN
COOLING TOWER AND PUMP HOUSE

MECH: STORM DRAIN AND SANITARY SEWER SYSTEM

BLDG. 156 & 163 TA-3

DRAWN	S. GALLEGOS
VERIFIED	R. REMEY
CHECKED	B. GOLDSMITH
RELEASED	B. GOLDSMITH
DATE	8-7-92

SUBMITTED L.S. FORTE RECOMMENDED F.C. Thompson 10/13/92 APPROVED F.C. Thompson 10/13/92

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

SHEET M1 2 OF 2

CLASSIFICATION U REVIEWER [illegible] DATE 10-8-92

PROJECT ID	DRAWING NO.	REV.
11831-99	AB61	

JCI 91-001

NEW MEXICO HISTORIC BUILDING INVENTORY FORM

LA#

building threatened? yes	surveyed date 6/16/99 by K. L. M. Garcia & Alysia D. McLain	County Los Alamos	ID no. TA-3-163

Field map number LANL Orthotopo Sheet 4	UTM reference: easting 380399 northing 3970621 zone 13

location description Technical Area (TA) 3, South Mesa	city/town Los Alamos land grant/reservation n/a

building name TA-3-163, Original name: South Mesa (SM-163)	legal description USGS Guaje Mountain 7.5 Series tnsp 19N range 6E sec 17 NE¼ SW¼ SE¼

film roll by nos. digital photos	Negative nos. digital photos on file with ESH-20 by building number	location of neg. LANL, ESH-20	date of construction _____ estimate 6/4/62 to 4/15/63 actual source Facilities Division Engineering 9 (F-9) records (LANL)

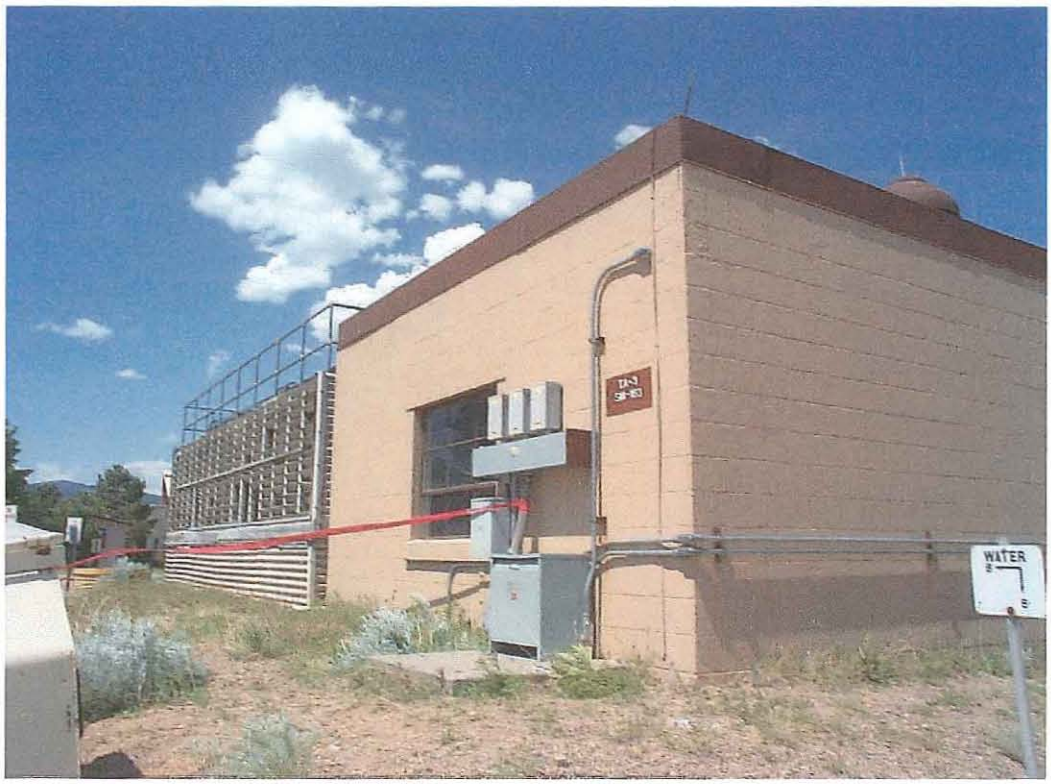
Style Utilitarian, pump house, of concrete masonry units, with one window and one pedestrian door. (see below for more information)	Foundation material concrete slab wall material/surface concrete masonry units painted to seal exterior surface.	Use Present residential ✔ other abandoned pump house containing pumps, compressors, and other equipment that was used during the operation of the cooling tower. historic residential ✔ other pump house	Condition ___ excellent __X__fair to ___good ___deteriorating

degree of remodeling
__X__minor ____ moderate ____major
describe: **The 1962 engineering drawings show that there is a louver located on the south elevation of the building, however, the entire south elevation is devoid of any features.**

Surroundings Developed Laboratory Technical Area 3	Relationship to surroundings ___similar __X__not similar	district potential ____ yes __X__no
Significance __Eligible__of interest __X__none if not eligible, why? **Pump house TA-3-163 is only an abandoned support structure for the Sherwood Building TA-3-105.**	Associated building? __X__yes What type? **Industrial laboratory type building with an associated cooling tower** If inventoried, list ID nos. **TA-3-156 (cooling tower) and TA-3-105 (the Sherwood Buidling)**	Photos and plan drawings are on the following pages: **ENG-C 27070 (sheet 2 of 20) Sherwood Cooling Tower Architectural Plan, Section & Details March 27, 1962** **ENG-C 27072 (sheet 4 of 20) Sherwood Cooling Tower Architectural Sections & Details March 27, 1962**

		Photos and plan drawings are on the following pages: cont.: **ENG-C 27073 (sheet 5 of 20)** **Sherwood Cooling Tower** **Roof Framing Plan, Sections & Details** **March 27, 1962** **ENG-C 34166 (sheet 1)** **Cooling Water System Instrumentation** **May 11, 1966** **ENG-AB 61 (sheet 1 of 2)** **As-Built Facility Drain Plan Cooling Tower and Pump House** **Civil: Site Plan, Storm Drain, & Sanitary Sewer System** **August 7, 1992** **ENG-AB 61 (sheet 2 of 2)** **As-Built Facility Drain Plan Cooling Tower and Pump House** **Mechanical: Storm Drain and Sanitary Sewer System** **May 11, 1992** Size: **Approximately 324-ft^2**
Architectural features: Building TA-3-163 is a small, 324-ft^2 concrete pump house with a flat roof. The roof is a three-ply built up roof with a roof vent along the south side. There is galvanized metal flashing around the edge of the roof. **The north elevation faces and is connected by pipes to TA-3-156, the cooling tower. There also is a small louver on the northwest portion of the wall.** **On the west elevation there is a window with nine individual glass panes.** **The south elevation is devoid of windows, doors, or any defining features.** **The building contains pumps, compressors, and other equipment related to the operation of the cooling tower.**		Comments:

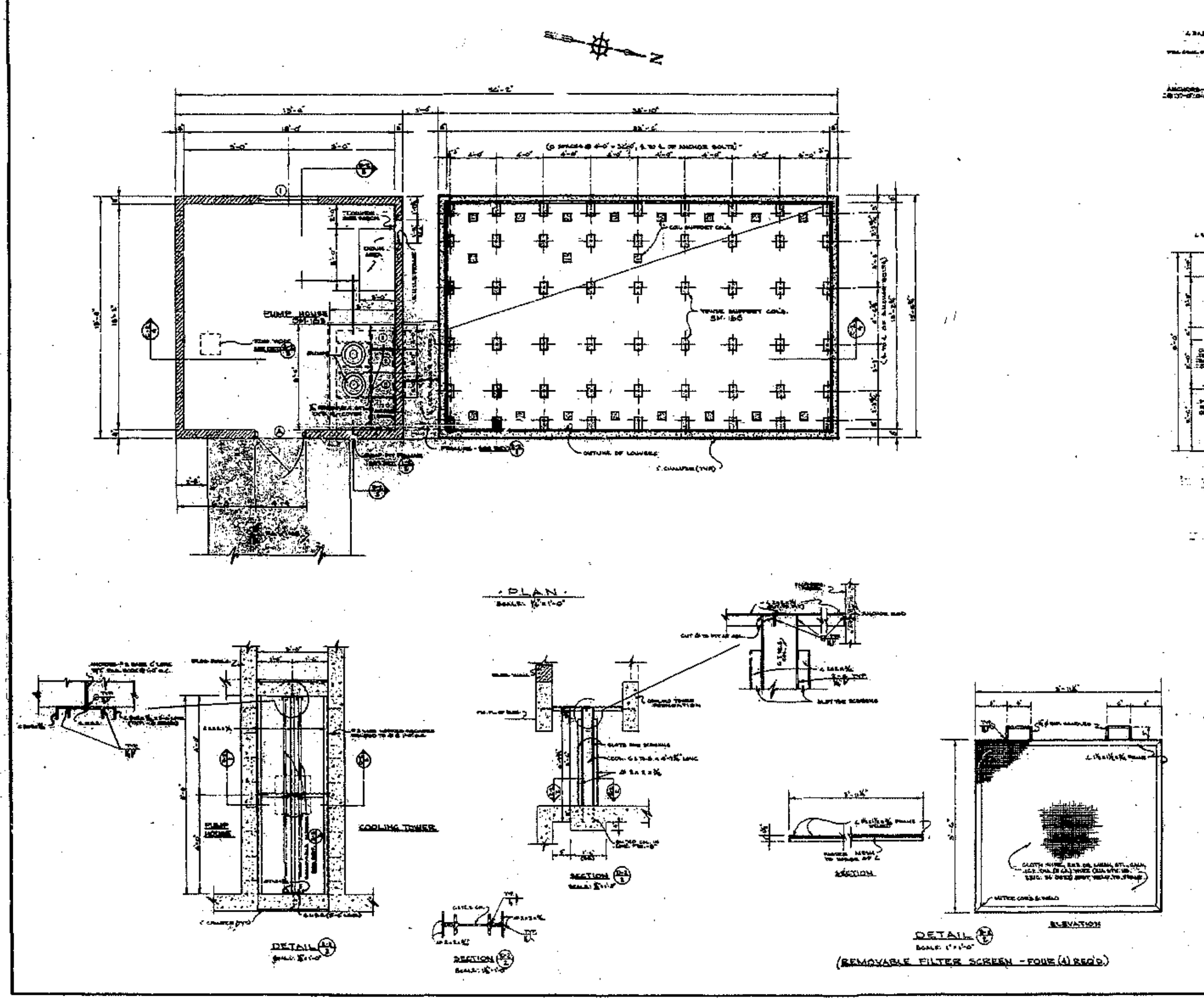
TA-3-163 South and East Sides



TA-3-163 West and South Sides

TA-3-163 Inside

TA-3-163 Inside



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

NO REVISION THIS SHEET

AUTHORIZED FOR

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

SHERWOOD COOLING TOWER

ARCH. PLAN, SECTIONS, & DETAILS

TA-3

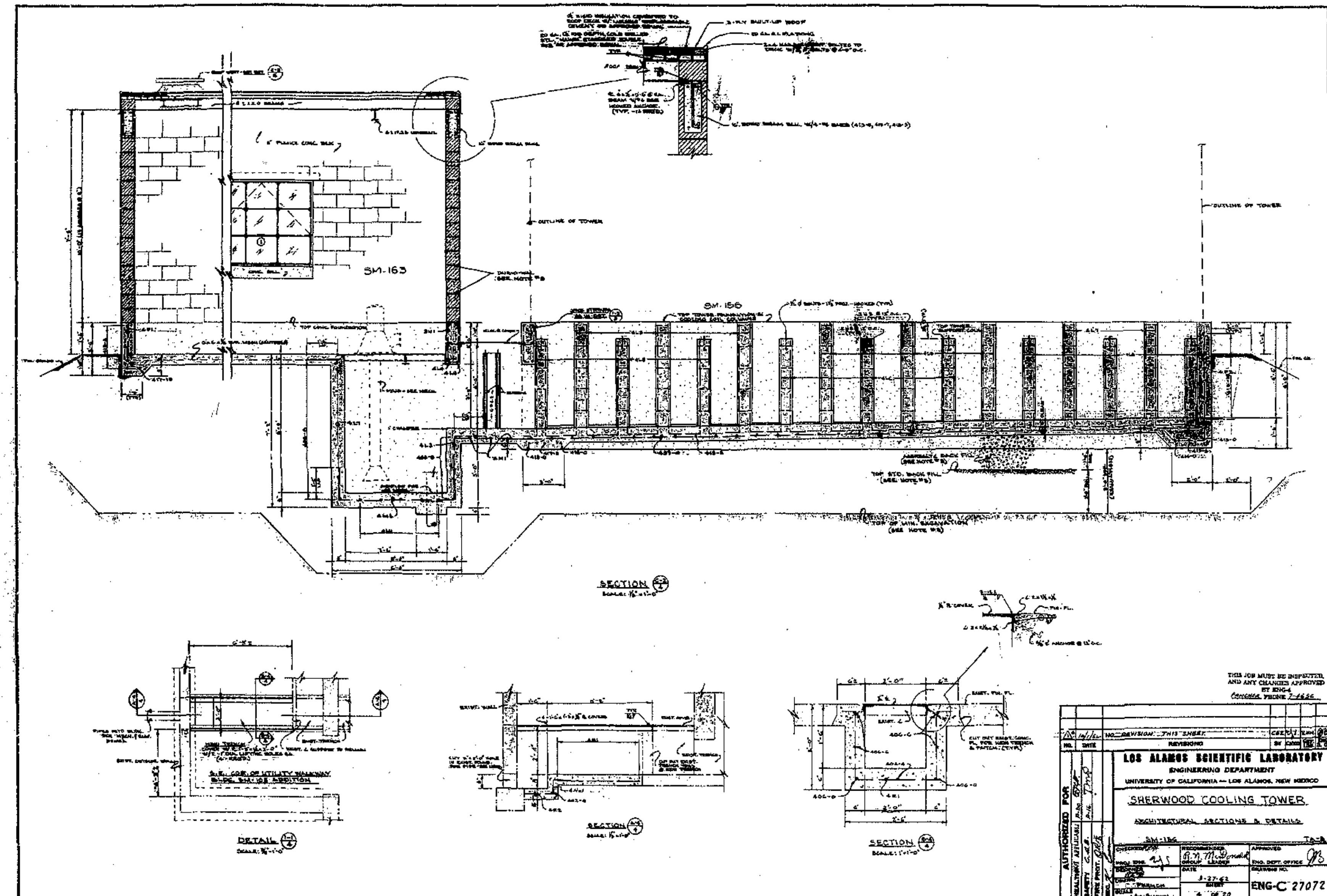
DATE 3-27-62

SHEET 2 OF 26

DRAWING NO. ENG-C 27070

B. A. NO. GA LAB. JOB NO.

REC'D ENG-3 LOGGED VAULT



THIS JOB MUST BE INSPECTED, AND ANY CHANGES APPROVED BY ENG-4
Concrete PHONE 7-4656

NO.	DATE	REVISIONS	BY	CHKD		
1	10/1/62	NO REVISION THIS SHEET				

AUTHORIZED FOR

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

SHERWOOD COOLING TOWER

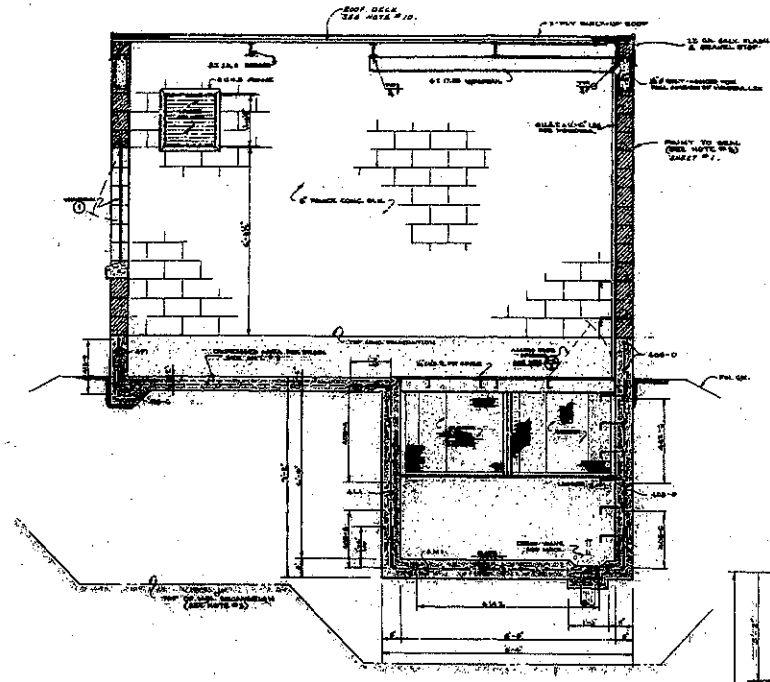
ARCHITECTURAL SECTIONS & DETAILS

SM-156 TA-3

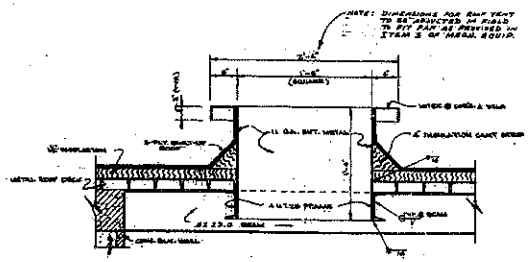
CHECKED	RECOMMENDED R.N. McDonald GROUP LEADER	APPROVED ENG. DEPT. OFFICE
PROJ. ENG.	DATE 3-27-62	DRAWING NO. ENG-C 27072
DESIGNED	SHEET 4 OF 20	
SCALE As Shown		

B. A. NO. CAB. JOB NO.

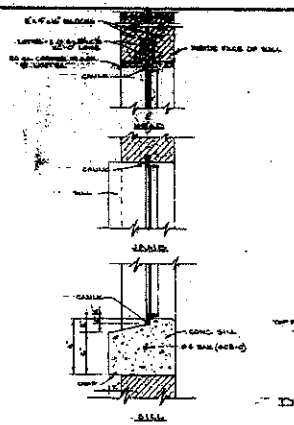
REC'D ENG-3 LOGGED VAULT



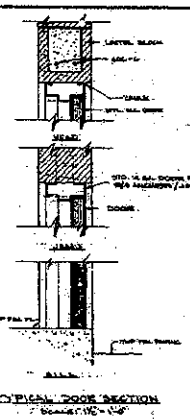
SECTION SM-163



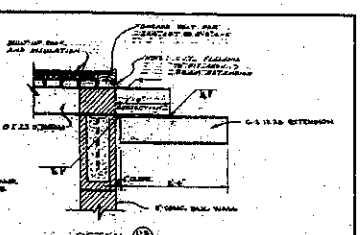
DETAIL
(TYPICAL SECTION OF ROOF VENT)



TYPICAL WINDOW SECTION

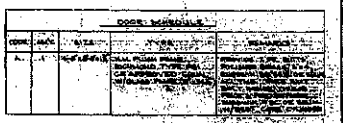


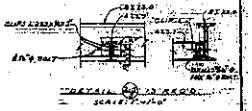
TYPICAL DOOR SECTION



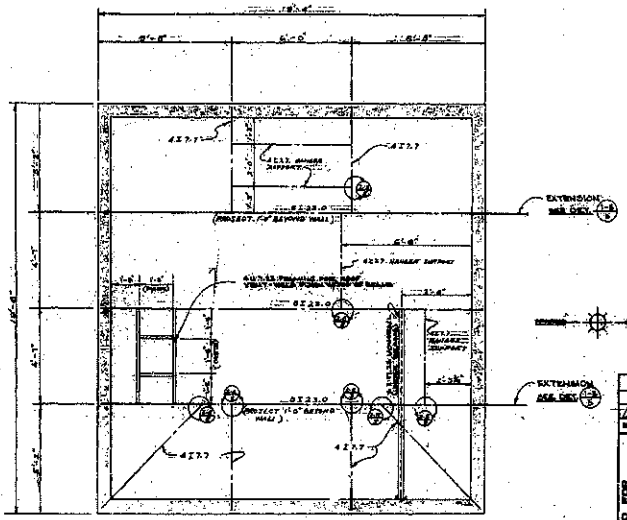
DETAIL
(TYPICAL - 2 REQ'D)

LOCK	MAT.	SIZE	TYPE	REMARKS
1				





DETAIL
SCALE: 1"=1'-0"



EXTENSION SEE DET.

EXTENSION SEE DET.

NORTH

ROOF FRAMING PLAN
SCALE: 1/4" = 1'-0"

THIS JOB MUST BE INSPECTED, AND ANY CHANGES APPROVED BY ENG-4 Fincher, PHONE 7-5685

NO.	DATE	REVISIONS	BY	CHK'D
1	10/1/62	NO REVISION THIS SHEET		

AUTHORIZED FOR CONSTRUCTION: MECHANICAL APPROVAL 2-16-62; SAFETY G.M.E.R.; FIRE PROT. 2-16-62

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

"SHERWOOD" COOLING TOWER

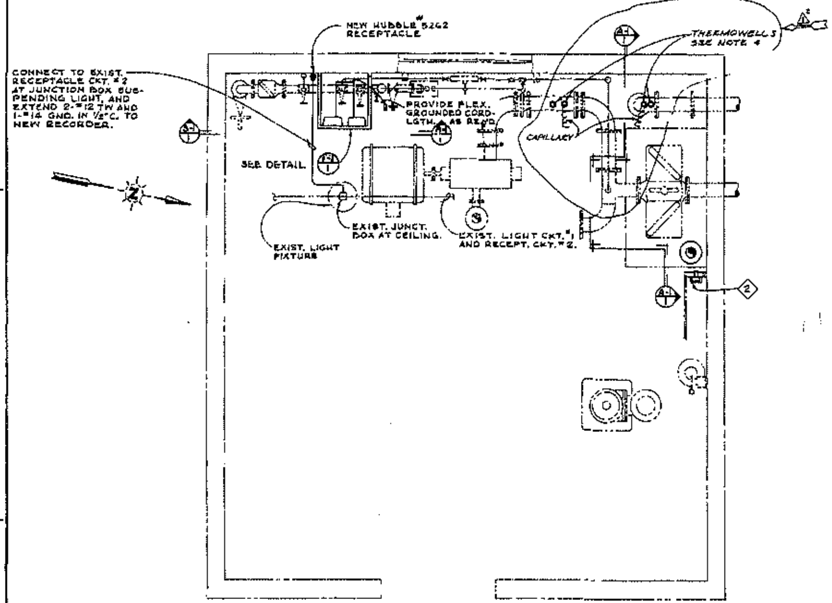
ROOF FRAMING PLAN, SECTIONS & DETAILS

TA-2

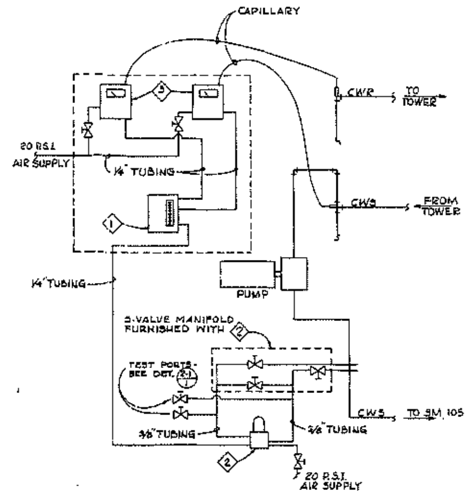
DESIGNED BY		RECOMMENDED	APPROVED
PROJ. ENG.	9-1-61	9-27-61 Ronald	GM
DRAWN BY		ENGR. LEADER	ENG. DEPT. OFFICE
CHECKED BY		DATE	DRAWING NO.
ORIGINAL		3-27-62	ENG-C 27073
SUBMITTED		SHEET	
SCALE: As Noted		5 OF 20	

B. A. NO. 45 LAB. JOB NO. 22483-3

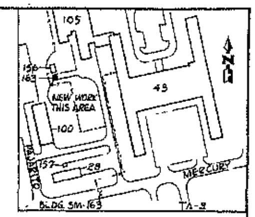
REC'D ENG-3 [illegible] LOGGED [illegible] VAULT [illegible]



FLOOR PLAN SM-163
SCALE: ½" = 1'-0"



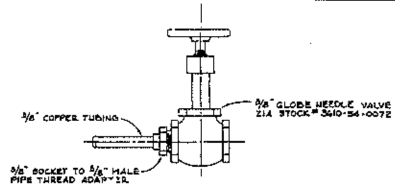
SCHEMATIC DIAGRAM FOR RECORDING SYSTEM
NO SCALE



LOCATION PLAN

MECHANICAL EQUIPMENT LIST

ITEM NO.	NO. REQ'D.	DESCRIPTION - MANUFACTURER OR APPROVED EQUAL	FURN. BY
1	1	RECORDER: FISCHER-PORTER MODEL # 1202WC02-WC02-WC02	L.A.S.L.
2	1	D/P TRANSMITTER: FISCHER-PORTER MODEL # 10B1465A	L.A.S.L.
3	2	TEMPERATURE TRANSMITTER: FISCHER-PORTER MODEL # 1451TF41, FURNISHED WITH TWO (2) THERMOWELLS EACH UNIT.	L.A.S.L.
4	1	ORIFICE FLANGES: DANIEL ORIFICE FITTING CO. CAT. NO. 30 RW RAISED WELD NECK ORIFICE FLANGES 4"-300# A.S.A. WITH STUD BOLTS, HEX. NUTS, JACKSCREWS, GASKETS AND PIPE PLUGS.	CONT'R.
5	1	ORIFICE PLATE: DANIEL ORIFICE FITTING CO. MODEL 520, 304 STAINLESS STEEL ORIFICE PLATE FOR 4"-300# A.S.A. FLANGES WITH 3.125" BORE. FURN. 2 COPIES OF ORIFICE CURVES.	CONT'R.



TEST PORT TERMINATION
DETAIL 2-1
NTS

NAMEPLATE SCHEDULE

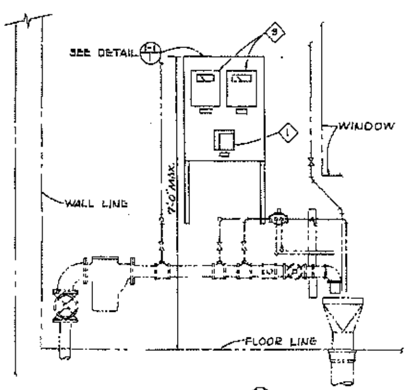
REQ'D	INSCRIPTION
1	CHILLED WATER SUPPLY
1	CHILLED WATER RETURN
1	CWS & CHR TEMP; FLOW GPM

LASL FURNISHED, FABRICATED OF LAMINATED PLASTIC WITH ¼" LETTERS

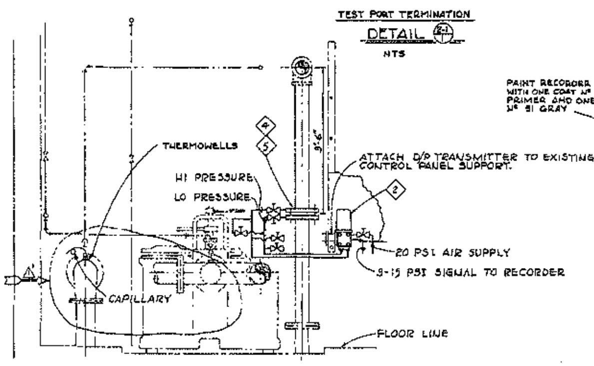
GENERAL NOTES:

1. ALL ¼" Ø TUBING FOR THIS INSTALLATION SHALL BE "POLY-FLO" TUBING AND IS AVAILABLE FROM STOCK.
2. ALL VALVES, TEES AND OTHER NECESSARY FITTINGS SHALL BE "POLY-FLO" AND ARE AVAILABLE FROM STOCK.
3. D/P TRANSMITTER SHALL BE MOUNTED IN A POSITION LOWER THAN THE ORIFICE.
4. NOTE THAT TWO THERMOWELLS ARE FURNISHED WITH EACH TEMPERATURE TRANSMITTER. ONE IS FOR THE TRANSMITTER SENSING BULB AND ONE IS FOR A CALIBRATION THERMOMETER
5. FABRICATE NAMEPLATES FROM LAMINAR PLASTIC WITH ¼" HIGH LETTERS.
6. CONNECT AIR SUPPLY TO EXISTING INSTRUMENT AIR IN ROOM.
7. INSTRUMENT CALIBRATION TO BE PERFORMED BY ENG-4 AND ENG-2.
8. ALL ⅜" TUBING SHALL BE TYPE "L" COPPER.

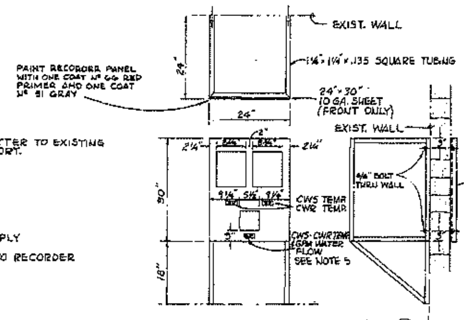
THIS JOB MUST BE INSPECTED, AND ANY CHANGES APPROVED BY ENG-4
McMILLAN PHONE 6-2366



SECTION B-1
SCALE: ¾" = 1'-0"



SECTION A-1
SCALE: ¾" = 1'-0"



RECORDER PANEL DETAIL 1-1
SCALE: ¾" = 1'-0"

SYM.	DATE	REVISIONS	BY	CHKD	SUP.	O.C.	GP. LDR.	ENG. O.O.
1	11-11-66	RELOCATED THERMOWELLS AS SHOWN	E.S.S.					

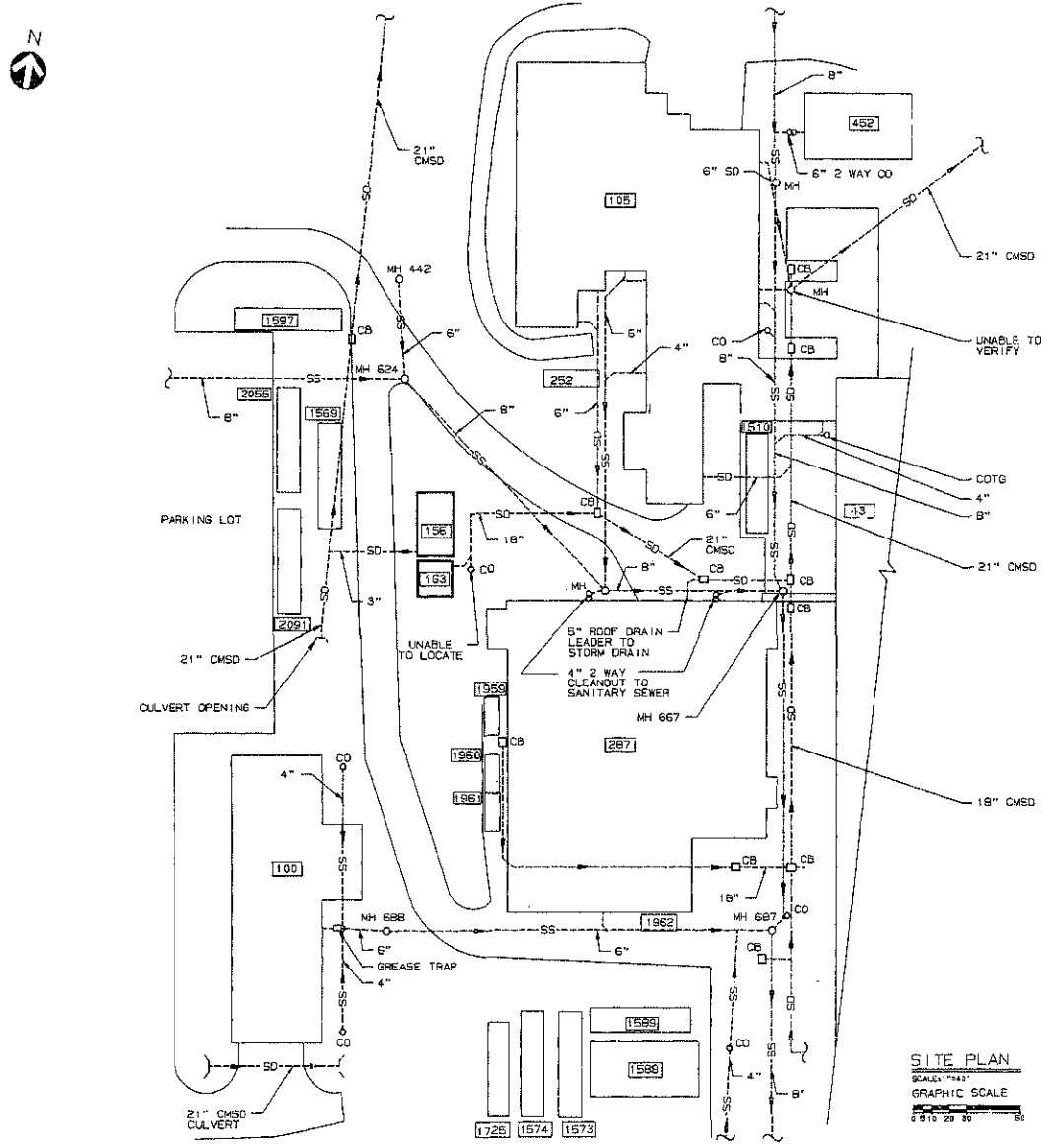
AUTHORIZED FOR — HEALTH — SAFETY — FIRE PROT. — SEC.

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

COOLING WATER SYSTEM
INSTRUMENTATION

BLDG. SM-163		TA-3
CHECKED / PROJ. ENG. RHH	RECOMMENDED / GROUP LEADER	APPROVED / ENG. DEPT. OFFICE
DESIGNER J. SCOTT	DATE 5-11-66	DRAWING NO. ENG-C-34166
DRAWN PYEATT	SHEET 1 OF 1	
SCALE AS NOTED		
C.A. NO.	B. A. NO.	L. J. NO. 3980-3

REC. IN CATALOGED PHOTO VAULT

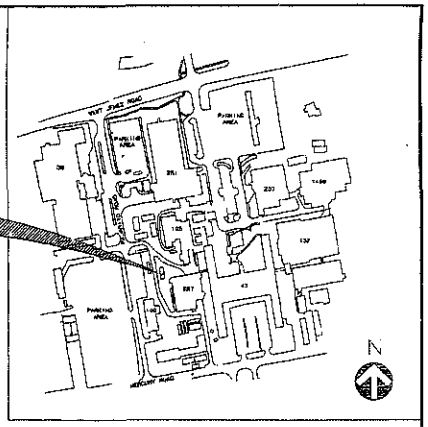


SITE PLAN

SCALE: 1"=40'

GRAPHIC SCALE

0 10 20 30 60



SITE PLAN

SCALE: NONE

LEGEND

SD	BURIED STORM DRAIN
SS	BURIED SANITARY SEWER
CMSD	CORR METAL STORM DRAIN
COTG	CLEANOUT TO GRADE
CB	CATCH BASIN
8	2 WAY CLEANOUT
CO	CLEANOUT
MH	MANHOLE

FIELD VERIFIED ON 7-9-92

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

JOHNSON CONTROLS WORLD SERVICES INC.

AS-BUILT FACILITY DRAIN PLAN
COOLING TOWER AND PUMP HOUSE

CIVIL: SITE PLAN, STORM DRAIN AND SANITARY SEWER SYSTEM

DRAWN	T. ROSETTA	
VERIFIED	B. PENNEY	
CHECKED	S. GOLDSMITH	
RELEASED	S. GOLDSMITH	
DATE	8-7-92	

BLDG. 156/163 TA-3

SUBMITTED D. FORTE 10/13/92 RECOMMENDED 10/13/92 APPROVED 10/13/92

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

SHEET C1 1 OF 2

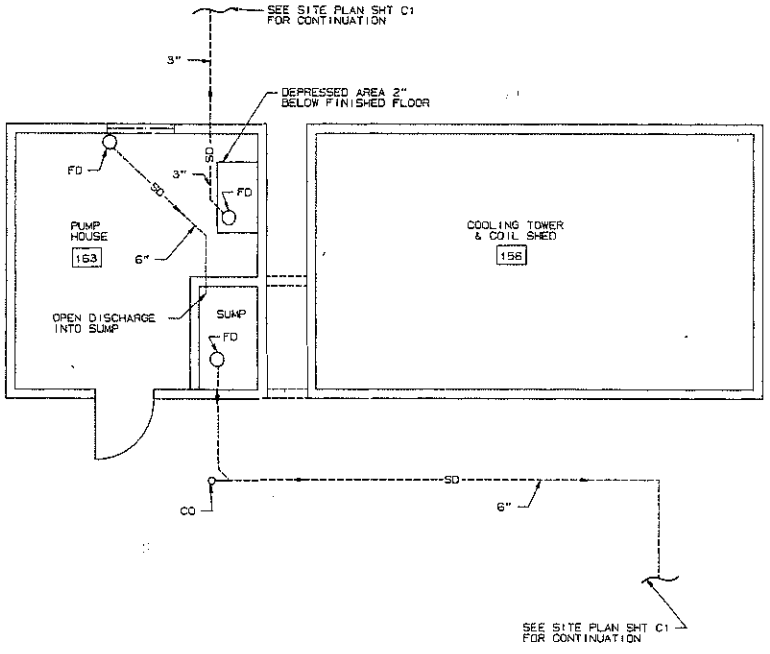
CLASSIFICATION UC REVIEWER DATE 10-8-92

LAB JOB NO. 11831-99

DRAWING NO. AB61

REV.

JCI 91-001



LEGEND

SD	BURIED STORM DRAIN
SS	BURIED SANITARY SEWER
CO	CLEANOUT
FD	FLOOR DRAIN

STORM DRAIN PIPING PLAN

SCALE 1/4" = 1'0"

GRAPHIC SCALE

0 2 4 6 8 10

FIELD VERIFIED ON 7-9-92

NO.	DATE	CLASS REV.	REVISIONS	DRN	VER	CHKD	RCL	SUB	REC	APP

JOHNSON CONTROLS WORLD SERVICES INC.

AS-BUILT FACILITY DRAIN PLAN
COOLING TOWER AND PUMP HOUSE

MECH: STORM DRAIN AND SANITARY SEWER SYSTEM

BLDG. 156 & 163 TA-3

DRAWN	B. GALLEGOS
VERIFIED	B. REMBT
CHECKED	B. GALLEGOS
RELEASED	B. GALLEGOS
DATE	8-7-92

SUBMITTED DATE | RECOMMENDED F.C. Thompson 10/13/92 | APPROVED F.C. Thompson 10/13/92

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

SHEET M1 2 OF 2

CLASSIFICATION U REVISED BY DATE 10-8-92

PROJECT ID 11831-99

DRAWING NO. AB61

REV.

JCI 91-001