ELLSWORTH AIR FORCE BASE,
TRANSMITTER STANDBY BUILDING
(Building No. 11002)
200 yards east of County Road
Black Hawk Vicinity
Meade County
South Dakota

HABS No. SD-21-Y

HABS
SD-21-Y

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN BUILDINGS SURVEY
National Park Service
Midwest Region
1709 Jackson Street
Omaha, Nebraska 68102-2571

HISTORIC AMERICAN BUILDING SURVEY

ELLSWORTH AIR FORCE BASE
TRANSMITTER STANDBY BUILDING
(Building No. 11002)

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I. INTRODUCTION

Location: Ellsworth Air Force Base, 200 yards east of County Road, Black Hawk Vicinity, Meade County, South Dakota.

Quad: Rapid City NW

UTM: Zone 13

Date of Construction: 1953

Architect: U.S. Army Corps of Engineers, Omaha, Nebraska

Present Owner: United States Air Force

Present Occupant: Vacant

Present Use: Vacant

Significance: The Transmitter Standby Building (Building No. 11002) was built in 1953 adjacent to Building No. 11000 as an electrical generator building. Building No. 11000 was constructed to house radio-based aircraft navigation and communication equipment.[1] Building No. 11002 was a small utilitarian building housing a diesel-powered generator. The generator was designed to provide an auxiliary electrical power source for adjacent Building No. 11000.[2]

Historian: Wayne Rosby and Lee Geiger
Rapid City, South Dakota
August, 1998

II. HISTORY

A. ELLSWORTH AIR FORCE BASE, 1942 - 1959

Ellsworth Air Force Base's history begins in 1941 when the Rapid City area was considered for an air base by the United States Army Air Corps. South Dakota's congressional delegation actively "boosted" South Dakota as a location for a military base. Congressman Francis Case promoted Rapid City as the best location. Reports suggest that Rapid City was selected as an air base site by General Henry H. Arnold, the commander of the Army Air Corps (AAC) because of the AAC's need for a gunnery range facility -- a large tract of undeveloped public land which could be used for bombing and target practice. General Arnold saw western South Dakota as an ideal site for such a facility. Rapid City was informed on December 10, 1941 that it had been chosen as the site for the new Rapid City Army Air Base (RCAAB).[3]

The project was assigned to the U.S. Army Corps of Engineers' Fort Peck (Montana) District.[4] The base was to be built on land originally leased, but later purchased for $52,000 for 1,898 acres of land, at the site of the Rapid City Municipal Airport.[5] The base would have three runways and over 250 buildings, built to house some 5,000 men and to be used for the training of military bomber pilots and bombardiers for World War II.[6]

The general layout of the base, as well as the design of the airfield and runways, was designed by the Fort Peck office. The Corps' Kansas City office planned the base's street and road network. The designing of the water, sewer, and electrical systems for the base was contracted to a private engineering firm, A.E. Ellerbe & company of St. Paul, Minnesota.[7] A proposed site plan for the base was completed on January 1, 1942. The first building, the base's "detention barracks" but intended first as interim office space for the Army's planning and construction staff, was constructed between January 27 and March 1, 1942. This was the only building built by the Army. The rest of the construction was done by private contractors.[8]

The construction of RCAAB took place from April to September 30, 1942, when it was officially considered to be complete. There were two main private construction firms who were

contracted to do the construction. The base runway and utility systems were done by Northwestern Engineering Company of Rapid City, who subcontracted work to three other firms -- Bismarck Construction Company, Bismarck, North Dakota; Bonesteel & Hyde, Watertown, South Dakota; and McCree Company, St. Paul, Minnesota.[9] The building construction was done by United Construction Company, an ad hoc consortium formed by smaller Rapid City contractors specifically to bid on the air base contract. Among the builders involved in the alliance were the Henry Carlson Company, Henry H. Hackett, S.W. Jonason, and R.A. Mark.[10]

The Army Corps of Engineers transferred the first group of completed buildings at RCAAB to the Second Air Force on July 31, 1942, and the base was officially activated on that date. The Army Air Force (AAF) received operational control of the entire facility on October 1, 1942. At the time of the transfer, the total cost of the new air base was listed at $8,725,967.00.[11]

The mission of the RCAAB from the time of activation in 1942 until 1945 during World War II was to train crews in the operation of B-17 bomber aircraft for the Army Air Force's Second Air Force. The base's first commander was Colonel Charles B. Oldfield.[12] The training mission at RCAAB began as soon as the base's new runways were able to handle military takeoffs and landings. The AAF's 96th Bombardment Group stationed at Walla Walla, Washington was the first to train at RCAAB. The first of the group's seven B-17 "Flying Fortress" bombers touched down on September 29, 1942, marking the first official aircraft landing at RCAAB.[13]

During the nine months between September 1942 and June 1943, nine heavy bombardment groups and ten provisional groups completed B-17 training at RCAAB. This activity kept the base busy and at capacity. A head count at the end of 1942 showed 4,912 enlisted men and 620 officers stationed at RCAAB. The last bombardment group training at the base was completed during June 1943.[14]

In July 1943, RCAAB became a Combat Crew Training School (CCTS). RCAAB served as a CCTS continuously from July 1943 through July 1945. A head count in October 1944, for example, showed 4,278 Army personnel stationed at the base. They were supported by an on-base civilian workforce which numbered as high as 1,000.[15]

Germany's surrender in World War II on May 7, 1945 effectively sealed the fate of the B-17 training program at Rapid City. Personnel and equipment were reassigned elsewhere and the Second Air Force formally deactivated RCAAB on July 15, 1945; only 50 military personnel and 150 civilian workers remained at the base.[16]

Since the base's permanent closure would have dealt Rapid City a tremendous economic blow, local civic leaders joined with South Dakota's United States Senators (Francis Case and Karl Mundt) to lobby the War Department for Rapid City Air Base's retention. Army Air Force leaders soon informed Case and Mundt that the base would quickly be reactivated and given a different mission. The base was formally reactivated on July 21, 1945.[17]

The revived RCAAB was transferred to the Army Air Force's Third Air Force, a command then primarily engaged in training flight crews for short-range and tactical aircraft. The base's new mission was to become a training facility for weather reconnaissance flights, with crews using the P-61 "Black Widow" aircraft. The new mission saw portions of the base brought back to use, but staffing and operations levels were far less than during the busy war years; an August 1945 census counted only 1,651 military personnel assigned to RCAAB.[18]

In May 1946, the reconnaissance unit stationed at RCAAB was deactivated. Although the base itself was not closed, the departure of the AAF's reconnaissance aircraft left the facility without an active flying contingent. During the remainder of 1946, the RCAAB airfield saw only Army Reserve pilot training, and the rest of the facility was used only for military recruitment. The base's troop strength declined to approximately 450.[19]

In 1946 the Army Air Force reorganized into three air commands, with direct responsibilities for combat aircraft and their missions. The new Strategic Air Command (SAC) was devoted to strategic, long-range air combat; the Air Defense Command became responsible for domestic defense; and the Tactical Air Command was intended to support ground and naval troops in their wartime mission. These commands were activated in March 1946.[20]

On March 23, 1947, the AAF activated the 28th Bombardment Group and on May 3rd was formally assigned to RCAAB. On its reactivation, the Group began flying the B-29 "Superfortress", the newest and largest of the World War II heavy bombers. Three squadrons of B-29s were stationed at Rapid City that summer. The 28th Group became a unit of the newly formed 28th Bombardment Wing, also a component of the Fifteenth Air Force and SAC. The 28th Bomb Wing was assigned to RCAAB on August 15, 1947.[21]

As a result of the planning for AAF's postwar airbase network, a complete examination of the branch's organizational structure was undertaken. With tremendous growth of the AAF during the war years; its size and importance relative to the rest of the Army increased dramatically. It became evident that the two-part division (encompassing land and sea operations) military hierarchy needed to be reconfigured into a three-part structure (encompassing coequal land, sea, and air divisions) all coordinated by a central Department of Defense. General George C. Marshall and Dwight Eisenhower supported this idea, adding to the strong support by President Truman eventually resulting in its implementation. The National Security Act of 1947 finally saw the creation of a unified Department of Defense, as well as the formation of an independent United States Air Force. The USAF formally came into being on September 18, 1947.[22]

During this period of time, the United States saw its former allies in World War II become unfriendly, resulting in the onset of the "Cold War". This Cold War period saw the American military forced to maintain an active defense and readiness posture in the event the Cold War would turn into a real war. This set the stage for RCAAB and the 28th Bomb Wing to emerge as major components of America's Cold War defense network.[23]

The arrival of the United States Air Force also mandated a name change for RCAAB. The base briefly became known simply as "Rapid City Air Field", but on January 1, 1948 the Air Force formally changed the facility's name to Weaver Air Force Base. The new name honored the late Major General Walter R. Weaver, a pioneering leader of the old Army Air Corps. The name change was not warmly welcomed in Rapid City. South Dakota government officials began

an angry lobbying campaign to return Rapid City's name to the base. The Weaver name was discarded in July 1948 and replaced with the designation Rapid City Air Force Base (RCAFB).[24]

In May 1949, the base's fleet of B-29 aircraft was replaced by new B-36 "Peacemaker" bombers. At the time, the B-36 aircraft was the largest and most significant strategic component of the SAC Cold War arsenal. The B-36 was the first aircraft created specifically to carry nuclear bombs to Soviet and other overseas targets.[25]

The RCAFB B-36 program was assigned RB-36 craft in 1950, temporarily shifting the base's primary mission from one of combat to one of reconnaissance. As a result, the 28th Wing was transferred from the Fifteenth to the Eighth Air Force. The Eighth Air Force was also part of SAC. The RB-36 aircraft operated at RCAFB from 1950 to 1955, completing a number of aerial photography and reconnaissance projects throughout the world.[26]

On March 18, 1953, an RB-36 returning to RCAFB crashed in Newfoundland, killing all aboard. Among the plane's passengers was General Richard E. Ellsworth, the commander of the 28th Wing. That June, in ceremonies presided over by Dwight D. Eisenhower, Rapid City Air Force Base was renamed Ellsworth Air Force Base (EAFB), in the General's memory.[27]

A new generation of heavy bombardment aircraft, the B-52, began to arrive in quantity in 1955, and were first stationed at Ellsworth in 1957. During that time, continued flight training and a massive program of infrastructure improvements at Ellsworth worked to ensure that the base would remain a state-of-the-art bombardment facility. Construction at the base included runway improvements and additional hangars. A new control tower and other operational buildings were also constructed during the early 1950s, resulting in a new flight line for the base. The total number of military and civilian personnel working at the base grew from 3,283 in 1949 to a high of 7,139 in 1954.[28]

One of the early 1950s construction projects at Ellsworth included a new, highly-secret, military installation located just to the north of the airbase. Completed in 1952, Rushmore Air Force Station (RAFS), was designed and constructed exclusively to store and maintain nuclear bombs and other weaponry for possible use by the heavy bombers stationed at Ellsworth. Because of the extremely sensitive nature of the RAFS mission, its administration and operation

was largely independent from that at Ellsworth. The station maintained its own housing, warehouse, and shop facilities. This arrangement continued until 1962, when RAFS was formally merged with Ellsworth.[29]

In April 1955, the 28th Wing returned to the Fifteenth Air Force and the base's reconnaissance mission formally ended in October. Ellsworth resumed hosting B-36 aircraft intended for use in strategic long-range bombardment roles. Formal announcement of a B-52 assignment for the base came in early 1956. With this announcement, the base's role as an integral component of SAC, and as a key element in America's Cold War defense strategy, remained readily apparent and secure.[30]

In the Spring of 1957, Ellsworth's fleet of B-36 bombers was retired when it became the official home of a fleet of new B-52 "Stratofortress" aircraft. The B-52, a versatile and reliable machine, formed the backbone of America's strategic bomber defense for the next three decades. Because of the heightened Cold War threat, there was concern of enemy attack, so that same year saw the arrival of a new air defense component at Ellsworth, with a series of four "Nike" missile facilities located to the north, south, east, and west of the base. These missiles were a replacement for anti-aircraft batteries, manned by Army troops. Fighter aircraft were also maintained at the base on a constant alert status.[31]

Ellsworth's Nike sites were deactivated in 1959 when the perceived threat of Soviet aircraft traveling to South Dakota had lessened. [32]

B. ELLSWORTH AIR FORCE BASE, 1962 - 1994

In the early 1960s, the Air Force introduced a massive program to construct and deploy offensive long range nuclear missiles, and Ellsworth was assigned a major role in this effort. At Ellsworth, the program started with the construction of three Titan I missile complexes, each facility housing three intercontinental nuclear missiles, stored in underground steel and concrete silos. The Titans assigned to Ellsworth were completed and made operational in 1962 -- the first of many ICBMs to be placed in South Dakota.[33]

The Titans were replaced after only a short period by the Minuteman I missile system, a more advanced missile technology, offering greater range and flexibility, as well as more efficient operations. During the Cold War buildup of the early 1960s, hundreds of these Minuteman I missiles were placed in individual sites scattered across the American Midwest, making the Minuteman the standard Air Force ICBM. Ellsworth became the second Air Force Base designated to host a Minuteman Program in December 1960. The 44th Strategic Missile Wing (44SMW) was activated in 1962, to operate the missiles and was fully operational by October 1963, controlling 150 Minuteman silos in three widely scattered groups located north and east of the Base. The Titans were deactivated in 1965.[34]

Throughout the 1960s and 1970s, Ellsworth's combination of heavy bombardment and missile operations made the base one of the premier installations of the Strategic Air Command, earning the appellation, "The Showplace of SAC". Staffing at the base consistently exceeded 6,000 throughout the period, and numerous physical improvements took place. By the mid-1980s, the Base had lost nearly all of its original World War II buildings.[35]

In 1986, the last of these generations of B-52 bombers were retired. A new generation of heavy bombardment aircraft, the B-1B "Lancer" bomber, was Ellsworth's new assignment. They began arriving in January of 1987. The B-1Bs are proving themselves to be an effective and reliable component of the USAF's bomber fleet.[36]

As international Cold War tensions began to dissolve, Ellsworth's nuclear ordnance was removed in 1991. Also in that year a decision was made to deactivate all of Ellsworth's 150 Minuteman missiles. The work of dismantling Ellsworth's missile program began immediately and was essentially complete by 1994, when the 44SMW was deactivated. A further change, highly symbolic of the end of the Cold War, was the inactivation of SAC itself in 1992; Ellsworth was then assigned to the newly-formed Air Combat Command (ACC).[37]

C. TRANSMITTER STANDBY BUILDING

During the early Cold War era, the need for implementation of more sophisticated military navigation technology arose. This need was addressed by the construction of Transmitter Building (Bldg. No. 11000) to house radio-based aircraft navigation and communication

equipment and Transmitter Standby Building (Bldg. No. 11002) to act as an electrical generator building. Both buildings are located on an isolated tract of land just west of the base proper.[38] The Transmitter Standby Building (Bldg. No. 11002) was completed on April 17, 1953 for $24,100.00, designed by the Army Corps of Engineers, Omaha, Nebraska office. Building 11002 was later used for Base Supplies and Equipment and is currently vacant.[39]

III. ARCHITECTURAL DESCRIPTION

The Transmitter Standby Building (Building No. 11002) is a one story military vernacular structure with a rectangular shaped plan.[40] The building is 34'-0" X 32'-0". Its longer axis is oriented east and west on the site. A small and square concrete block chimney is attached to the exterior of the building near the southwest corner and projects past the roof line approximately 4'-8".[41]

Construction materials for the building include reinforced concrete foundations, concrete floors, exposed 12" concrete masonry walls, and a reinforced concrete roof finished with tile and fiberglass insulation. The entire exterior perimeter of the building has a concrete cornice with metal flashing. The windows are steel frame, fixed, in a 24-light grid. All window lintels and sills are concrete.[42]

The north wall has only one small louvered vent near the center of the building.[43]

The east wall, the building's main entrance, is comprised of a metal roll-up utility door near the north corner of the building. Two steel frame windows, now covered by plywood, are horizontally centered between the door and south corner of the wall.[44]

There is a small and square concrete block chimney at the west side of the south wall. East of this chimney is a large wall opening containing a louvered vent. East of this large vent, the wall ends with an original 8'-0" X 5'-0" opening which was filled with concrete masonry in 1961 to match the original. The concrete lintel is still visible. Near the center of this filled opening is a small air balanced/normally closed louver.[45]

The west wall, the building's rear maintenance entrance, is comprised of a set of double metal doors with 1/4-lights set in metal frames near the north corner. Two steel frame windows, now covered by plywood, are horizontally centered between the doors and south corner of the wall.[46]

The interior of the building consists of a single room with a concrete floor, ceiling and concrete masonry walls. A large diesel generator is located near the southeast corner of the room.[47]

NOTES

1 Johnson, Lon, "Ellsworth AFB History Sites Inventory", July, 1994.

2 Hufstetler, Mark, and McCormick, Mary, et al., draft, "Ellsworth Air Force Base, South Dakota, Statement of Historic Contexts", Renewable Technologies Inc., Butte, Montana, November, 1995, pages 42-43.

3 Ibid., 45.

4 Ibid., 47.

5 Ibid., 43.

6 Ibid., 45.

7 Ibid., 46.

8 Ibid., 50-51.

9 Ibid., 53.

10 Ibid., 55.

11 Ibid., 56.

12 Ibid., 58.

13 Ibid., 59.

14 Ibid.

15 Ibid., 60.

16 Ibid., 76-77.

17 Ibid., 77.

18 Ibid.

19 Ibid., 75.

20 Ibid., 77.

21 Ibid., 74.

22 Ibid., 75.

23 Ibid., 78.

24 Ibid., 79.

25 Ibid., 80.

26 Ibid., 81.

27 Ibid., 81-82.

28 Ibid., 83.

29 Ibid., 83-84.

30 Ibid., 110-111.

31 Ibid., 111.

32 Ibid.

33 Ibid.

34 Ibid.

35 Ibid., 112.

36 Ibid.

37 Ibid., 100.

38 Johnson, Lon, "Ellsworth AFB History Sites Inventory," July, 1994.

39 Ibid.

40 Ibid.

41 "Real Property Records - Building 11002, Ellsworth AFB, South Dakota", Manuscript Records on file at the Real Property Office, Ellsworth AFB, South Dakota.

42 Johnson, Lon, "Ellsworth AFB History Sites Inventory," July, 1994.

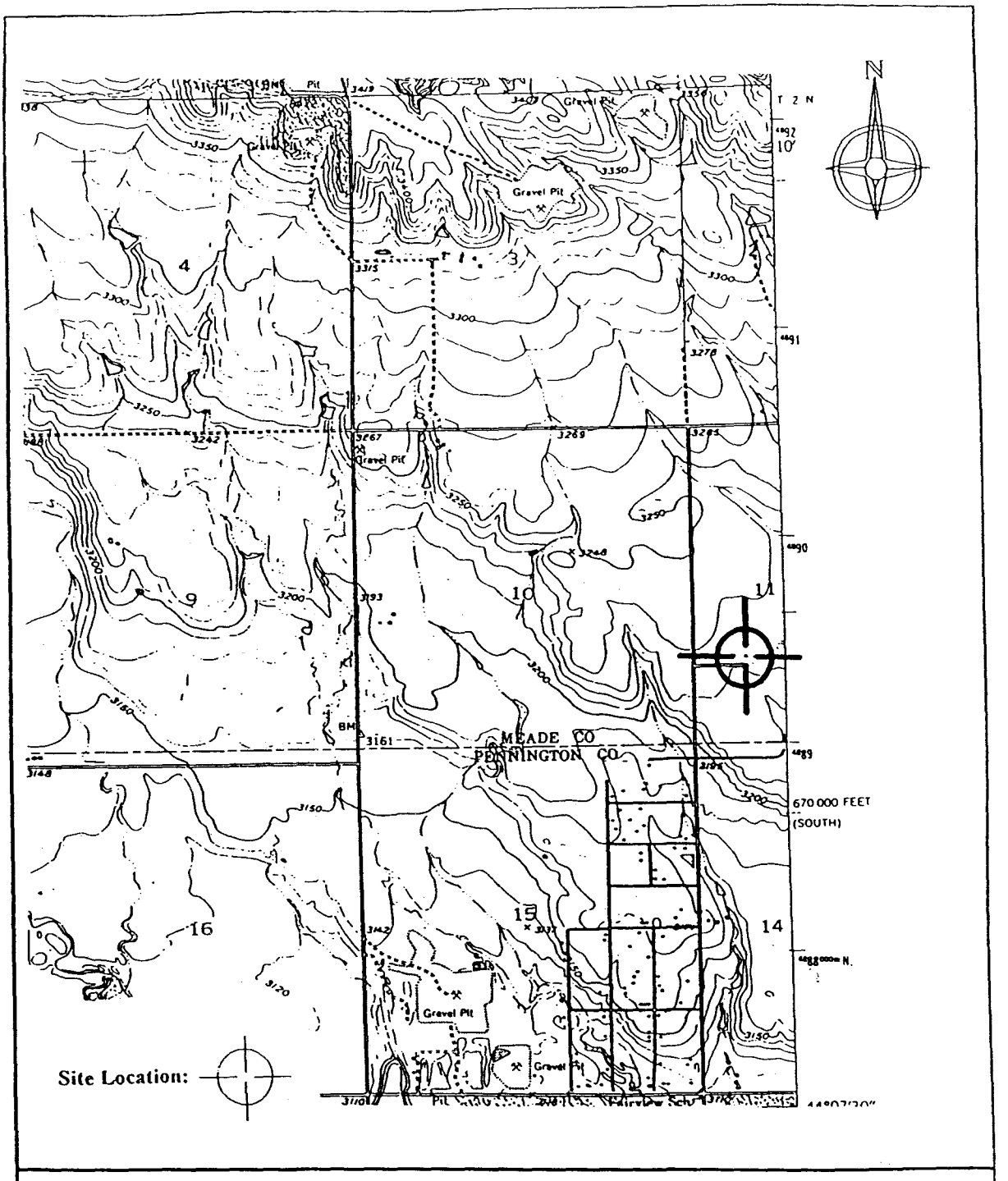
43 File of blueprints and construction drawings, maintained at the Ellsworth AFB Maintenance Engineering Office.

44 Ibid.

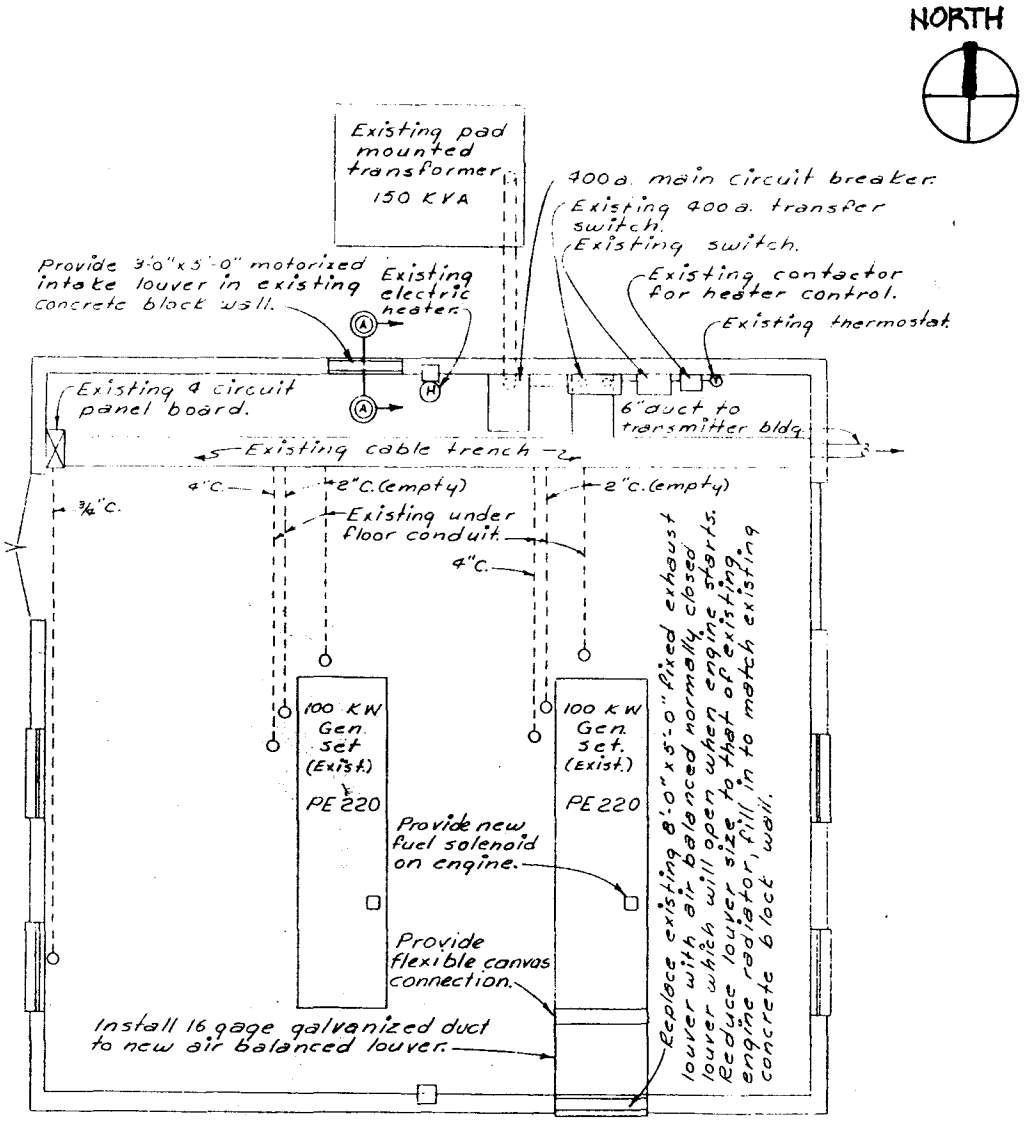
45 Ibid.

46 Ibid.

47 Johnson, Lon, "Ellsworth AFB History Sites Inventory,", July, 1994.



ELLSWORTH AIR FORCE BASE, SOUTH DAKOTA
Site Number: MD-BX-EL-00029
Historic Name: Transmitter Standby Building
USAF Facility Number: 11002
USAF Nomenclature: SHED SUP&EQUIP BSE


NORTH
Existing pad mounted transformer 150 KVA
400a. main circuit breaker.
Existing 400a. transfer switch.
Existing switch.
Existing contactor for heater control.
Existing thermostat.
Provide 3'-0" x 5'-0" motorized intake louver in existing concrete block wall.
Existing electric heater.
Existing 4 circuit panel board.
6" duct to transmitter bldg.
Existing cable trench
4"C.
2"C. (empty)
2"C. (empty)
3/4"C.
Existing under floor conduit.
4"C.
100 KW Gen. Set (Exist.) PE 220
100 KW Gen. Set. (Exist.) PE 220
Provide new fuel solenoid on engine.
Provide flexible canvas connection.
Install 16 gage galvanized duct to new air balanced louver.
Replace existing 8'-0" x 5'-0" fixed exhaust louver with air balanced normally closed louver which will open when engine starts. Reduce louver size to that of existing engine radiator, fill in to match existing concrete block wall.

IV. BIBLIOGRAPHY

File of blueprints and construction drawings, maintained at the Ellsworth AFB Maintenance Engineering Office.

Hufstetler, Mark and McCormick, Mary, et al., draft, "Ellsworth Air Force Base, South Dakota: Statement of Historic Contexts", Renewable Technologies Inc., Butte, Montana, November, 1996.

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"Real Property Records-Building 11002 Ellsworth AFB, South Dakota" Manuscript Records on file at the Real Property Office, Ellsworth AFB, South Dakota.