

LORING AIR FORCE BASE, ALERT AREA  
Southern portion of base; east of  
southern end of runway  
Limestone Vicinity  
Aroostook County  
Maine

HAER No. ME-64-E

HAER  
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WRITTEN HISTORICAL AND DESCRIPTIVE DATA

PHOTOGRAPHS

HISTORIC AMERICAN ENGINEERING RECORD  
National Park Service  
Northeast Region  
Philadelphia Support Office  
U.S. Custom House  
200 Chestnut Street  
Philadelphia, Pennsylvania 19106

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**HISTORIC AMERICAN ENGINEERING RECORD**

**LORING AIR FORCE BASE, ALERT AREA**

**HAER NO. ME-64-E**

**Location:** Southeastern portion of base; east of southern end of runway  
Limestone Vicinity  
Aroostook County, Maine

USGS 7.5-minute Fort Fairfield NW Quadrangle  
Universal Transverse Mercator Coordinates  
1) 19:585655.5198881; 2) 19:585828.5198728;  
3) 19:585797.5198480; 4) 19:585275.5198277;

**Date(s) of Construction:** 1959-1986

**Architects:** Leo A. Daly Company,  
Hoyle, Tanner & Associates, Inc.,  
Alonzo B. Reed, Inc.

**Present Owner(s):** United States Air Force  
Air Force Base Conversion Agency (AFBCA) - Loring  
RR 1, Box 1719  
Limestone, Maine 04750-7943

**Present Occupants:** Vacant

**Present Use:** Vacant

**Significance:** The design of the structures in the Alert Area at Loring Air Force Base (AFB) represents special, strategic modifications of standard Air Force design in response to Soviet weapons advancements. The Alert Area is the physical embodiment of the Strategic Air Command (SAC) Alert mission, and continues to convey its Cold War character. The mission-critical structures of the Alert Area clearly represent the Ground Alert concept of SAC. All aspects of the duty are illustrated: living in close quarters, working with top-secret materials, quick and easy access to aircraft, high-security operations, and swift execution of the takeoff of the alert force in time of emergency.

**Project Information:**

Pursuant to the recommendations of the 1990 Defense Base Closure and Realignment Commission, Loring AFB was closed in September 1994. In order to mitigate adverse effects to historic properties that may occur with conveyance of property to a non-federal agency, mitigation measures were recommended in the Loring AFB Historic Building Inventory and Evaluation. The Maine State Historic Preservation Officer (SHPO) has concurred with the Air Force's recommendation of Historic American Building Survey (HABS)/Historic American Engineering Record (HAER) recordation of National Register-eligible properties in lieu of nomination to the National Register.

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## **SUMMARY DESCRIPTION OF LORING AIR FORCE BASE, ALERT AREA**

**Historical Background.** The Strategic Air Command's (SAC's) deterrent role gained importance following the 1953 detonation of a Soviet hydrogen test bomb and Soviet successes by 1957 with intercontinental ballistic missile (ICBM) testing. Officials calculated only 15 minutes of warning time in the event of a Soviet missile attack. This limitation led to the institution of the Ground Alert. SAC Ground Alert required one-third of the SAC force to be on continuous alert with weapons loaded and aircrews prepared for immediate launch. This plan was determined feasible in tests conducted during 1956. General Thomas S. Power, SAC's Commander in Chief in 1957, assumed that the brunt of a Soviet attack would be directed at SAC, and the only way to ensure SAC survival would be the ability to immediately launch a significant percentage of the force capable of retaliatory strike. He wrote that the Alert Force was of the "utmost importance to the security and welfare of this nation and its allies in the free world" (Alert Operations and Strategic Air Command 1991:56). The SAC Alert Force formed the cornerstone of the American Containment and deterrence policies.

An Alert Force was established at Loring Air Force Base (AFB) on 15 October 1957. The Wing began supporting the Alert Force with six B-52s in January 1958. By May 1958, Loring AFB's Alert Force expanded to include the entire 42nd Bombardment Wing (BW) and the 42nd Air Refueling Squadron with its new fleet of 20 KC-135s. In response to Soviet actions in the Middle East that same month, the 42nd BW and the 42nd Air Refueling Squadron activated Head Start I, the first test of a sustained airborne alert operation. Successful in this operation, Loring AFB demonstrated SAC's ability to maintain weapon-loaded bombers on airborne alert almost indefinitely. SAC's overall one-third goal was achieved in 1960.

Crew members on alert duty had special requirements. Crews typically underwent extensive training while on alert (when not flying), they had to remain relatively close to their aircraft at all times, and the members of each individual crew had to be together at all times. Officials designated specific buildings, or areas, to accommodate these requirements of the alert force. A high-security component of the base, the Alert Area was the vital nucleus of base alert operations. It accommodated bombers, tankers, and crews, and in some cases was also the hub for much of the strategic planning and tactical intelligence related to alert missions.

Because the alert concept had not been devised until 1956-1957, the original Loring AFB Master Plan did not make provisions for a building specifically constructed for the Alert Force. In July 1958, the Alert Crew was placed in Building 6000. Building 6000 has accommodated a variety of functions over the years, including Wing Headquarters (1984-1994), an education center (1984-1994), and office space (1984-1994). In 1991, the building was modified to accommodate the USAF Command Post; however, the command post was never moved there due to the announcement of base closure. This building was constructed as a 250-person barracks in 1952 to house the first Air Force personnel at Loring AFB. The location of Building 6000 was soon considered inadequate for alert operations. With growing bomber squadrons and upgraded alert exercises, plans were developed to construct a building with better facilities and better access to the runway and aircraft.

In 1959, construction was begun on a SAC Alert Area. The area was situated just to the east of the south end of the runway and a special taxiway connected the area to the runway. This strategic location was chosen because it allowed for reduced response time. The first component of the SAC Alert Area constructed was the aircraft parking apron, whose distinctive configuration of five branching parking spaces dubbed it the "Christmas tree" or the "crow's foot." This design allowed organized and systematic takeoff. Each parking space was designed to accommodate one B-52 bomber or one KC-135 tanker (the B-36 bombers had been retired from the Air Force inventory by the time the Alert Area was under construction). The aircraft remained parked on alert, ready for immediate takeoff.

The main building in the Alert Area is the Crew Readiness Building (also known as the Readiness Crew Building), a sunken concrete building known informally as the "Molehole." This building accommodated living, sleeping, working, and recreational space for the bomber and tanker crews on duty. The Crew Readiness Building was constructed in two separate phases. The original section of the building lies to the west and was designed by the Leo A. Daly Company of Omaha, Nebraska, in conjunction with the Omaha District of the U.S. Army Corps of Engineers (USACE). The eastern section of the building, a large addition, was designed by Hoyle, Tanner & Associates, Inc., of Londonderry, New Hampshire, and Alonzo B. Reed, Inc., of Boston in conjunction with the New York Division of the USACE.

The distinctive exterior feature of the Crew Readiness Building is the number of tunnels that project from the basement and ground levels to give clear access to bombers on the apron once the alert klaxon has been sounded. The original building was completed in April 1960, and alert crews immediately moved into the new facility. The new location cut valuable minutes off the crew response time.

Other structures typically constructed in an SAC Alert Area include mechanical buildings and equipment, security-related structures, and recreational facilities for alert crews. At Loring AFB, the Alert Area also includes a surveillance tower, an entry control building, a surrounding fence, an electric power station, and tennis courts.

In January 1965, Project One Roof was submitted to consolidate all Alert Force functions in one location. The plan transferred all operational and maintenance alert force activities from the Training and Briefing Building (5050), the Social Actions Building (8820), The Deputy Commander for Maintenance Building (8830), and the Crew Readiness Building (8970) into Building 6000. Implementation of Project One Roof in late 1967 succeeded in moving the Alert Force back into the building that had temporarily housed it in the late 1950s. (This date is estimated from unit and real property records.)

Building 6000 accommodated Loring AFB's Alert Force through the 1970s. Ground Alert was maintained even as parts of the 42nd BW and the 42nd Air Refueling Squadron flew combat missions over Vietnam. SAC's primary command during this time remained strategic deterrence, but the war drained valuable assets. By 1972, Loring AFB's Alert Force was reduced to only 62 percent of its bomber force and 72 percent of its tanker force. Increased military funding in

the early 1980s significantly affected Loring AFB's Alert Force. In 1983, a wing was added to the Alert Area Crew Readiness Building. (Dates of the addition and relocation of Alert Force facilities are estimated from real property records and engineering plans. No documented dates have been found.) The new addition more than doubled the structure's space and added an extra floor at the east end. Immediately following completion of construction, the Crew Readiness Building was reinstated as the official quarters of the Alert Force.

The peaceful settlement of United States/Soviet hostilities marked a clear victory for SAC. With the alert force stand down in 1991, the Cold War function of the Crew Readiness Building in the Alert Area was ended and alert crews departed the structure.

**Description and Construction Details.** The Loring AFB Alert Area is a high-security area covering approximately 40 acres of land and containing the structures necessary for maintaining a state of SAC alert readiness. The area is east of the southern end of the runway. Situated at the center of the fenced area is the Alert Parking Apron. A taxiway at the southern end of the apron joins the Alert Area with the main runway. Positioned around the apron are the Alert Crew Readiness Building (8970), a surveillance and control tower (8990), a Security Police Entry Control Building (8965), an electric power station building (8966), a heating fuel oil storage tank (8967), and tennis courts (14501). A road surrounds the Alert Area just inside the security fence.

**Structure No. 540.** The Alert Area Aircraft Parking Apron (540) is a large, concrete bomber parking area with a taxiway that leads to the main runway. The apron contains approximately 21,300 square yards of asphaltic-concrete pavement. It cost \$400,000 to construct in 1959. The concrete apron, which is often referred to as a crow's foot or a Christmas tree, is configured to provide maximum parking and navigation area in a minimum of space. The apron contains five separate aircraft parking branches, each of which is capable of accommodating one B-52 bomber.

**Building No. 8970.** The primary building of the Alert Area is the Crew Readiness Building. Constructed in 1960 and renovated with a major addition by 1983, this building was designed as the temporary living quarters of 78 SAC personnel on active alert duty. It features a functional integration of living, working, and recreation space in a high security area.

The Crew Readiness Building is a large, sprawling, reinforced concrete structure that has virtually no ornament. It consists of two main blocks with flat or slightly pitched roofs. The western block, the original structure, is one story high above ground level; the eastern block, an addition, is two stories high above ground level. A basement level extends the full length of the building. (Architectural plans for the Ready Crew Building designate the basement level as the first story, the ground level as the second story, and the upper level as the third story.) The exterior concrete surfaces of the two-story section of the building are relieved by a simple pattern of batten strip rustication. Mechanical rooms of varying sizes project from the main structure on the south side. A stair tower and a small storage room project from the structure on the north side. Covered ramps on all the elevations lead from the basement and ground-story levels of the building to the Alert Apron or its adjacent roadways. Only a portion of the southern elevation has window openings. The overall Crew Readiness Building is 263 feet long on the north and

south elevations, and 78 feet wide on the east and west elevations. The upper level at the eastern end measures 103 feet long and 78 feet wide.

The southern elevation of the Crew Readiness Building rises one story above ground at the western end and two stories above ground at the eastern end. Four long bays of windows, the only windows in the building, are situated at the ground-level story and are centered near the juncture of the one- and two-story portions of the building. Situated to the west of the windows and emerging from the basement level just to the south is a tunnel. Like the others leading from the basement level, this tunnel is a rounded structure of corrugated metal. All tunnels (both basement and ground level) have concrete end walls at ground level where a pair of metal doors with vision panels are set in a simple concrete surround. Concrete vestibules join the tunnels to the main building at both the basement and ground levels. Situated to the west of the tunnel on the southern elevation is a projecting mechanical room and vestibule/storage room. These one-story concrete structures have three doors, a large louvered vent, and a chimney.

The northern elevation of the building rises two stories above ground at the east and one story at the west. The eastern part of the elevation has a shallow, one-story concrete storage shed that projects at the far eastern end. Situated to the west of the storage shed is a corrugated metal alert tunnel that projects from the basement level. Situated to the west of the tunnel is a two-story concrete stair tower with a single door at ground level. To the west of the stair tower is an exposed stairway that leads from the ground level to the rooftop of the two-story block of the building. An exposed walkway continues across the roof of the two-story section. To the west of the stairway is another corrugated metal alert tunnel. The western half of the northern elevation is one story tall. It has one basement-level tunnel and two ground-level tunnels. Throughout the building, ground level tunnels are constructed of low concrete walls capped with an arched plastic roof.

The eastern elevation of the Crew Readiness Building is two stories high above ground. Two corrugated metal alert tunnels project from the basement level. There is no other ornament or fenestration on this elevation.

The western elevation of the building is one story high above ground. Two corrugated metal tunnels project from the basement level. A third tunnel extends from the ground floor. There is no other ornament or fenestration on this elevation.

The Crew Readiness Building is a high-security structure. Access to the building is gained only through two entrances. Other doors on the building cannot be opened from the exterior. The minimal number of entrances guarantees the greatest level of security.

The interior of the Crew Readiness Building consists of three floors. Each floor is a compilation of distinct activity areas designed to accommodate both bomber and tanker crews while they perform alert duty. Integration of living, working, and learning spaces create a functional atmosphere dedicated totally to the alert force objective.

The basement level, or first floor, is dedicated exclusively to personal living/sleeping space. Two 6-foot corridors run the length of the building approximately 16 feet from the north and south walls. Two shorter corridors run from the north wall to the south wall approximately 55 feet from the east and west walls. An additional corridor runs from the north wall to the southern corridor near the center of the building. At each location where a corridor meets an exterior wall, a tunnel provides access to the ground level exterior.

Forty-eight bedrooms occupy the bulk of living space at the basement level. Eighteen of these are 9 feet 6 inches by 15 feet 2 inches single bed units. Thirty of these are 14 feet 6 inches by 15 feet 2 inches, two-bed units. There are four shower/toilet facilities, two laundry rooms, and two stairwells. Grouped near the center of the floor around the center corridor are recreation facilities including a small television room, a hobby room, an exercise room, a library, and a study room. There are also several storage and janitorial spaces throughout the floor.

Interior wall surfaces throughout the building are a combination of painted concrete block and painted gypsum wallboard. The majority of spaces have dropped ceilings and hard tile flooring or functional carpeting.

The ground level, or second floor, of the Ready Crew Building has a single east-west corridor situated near the center of the building. The western (original) part of the floor has a single north-south corridor. Rooms in this area include administrative spaces and crew messing facilities. Office 207, situated at the western end of the corridor, regulates entry into the building. The adjacent exterior door gives access to an alert tunnel.

This area also contains the Alert Briefing Room (227), which is a large room (57 feet by 29 feet 4 inches) with permanent auditorium-type seating. In this room, the alert crews received briefings on upcoming missions. At the front (east) of the room is a raised speaking platform and a projection screen. Behind the room (west) is a small projection room (206). A door on the north wall gives access to an alert tunnel.

The southern side of this part of the building contains recreational rooms and mess facilities including a kitchen, serving area, dish washing area, dry storage, and a large dining room. Windows are provided in the dining room. A lounge (240) east of the dining room is also provided with windows.

Rooms in the eastern (addition) part of the building at this level include a high-security area occupied by offices used for mission planning and intelligence activities. Entrance to this section is through Entry Control Room 247. This room is equipped with an electric release door, a view window with bullet-resistant glass, and a steel vault door with electric strikes.

The office spaces in the area beyond the Entry Control Room accommodated war planning, tactical development, and aircraft intelligence operations. The Separate Control Information Facilities (SCIF) Room (255) was the center for war planning purposes. The Target Intelligence Room (259) accommodated bomber targeting information, including target locations and



launching details. For example, B-52 deployment plans for Desert Storm were formulated in this room. Adjacent to the Target Intelligence Room is a Chart Storage room (257). The Crew Library (243) is also a part of the high-security area and is entered through a steel vault door.

The eastern part of the Crew Readiness Building has an upper (third-floor) level. This level accommodated additional top-secret, high-security Alert Force planning facilities. The Entry Control Room (319) regulated access to the area through a series of security measures including an electric release door, a viewing window with bullet-resistant glass, and a steel vault door. The Strategic Missions Room (323) in the northeast corner of the building accommodated space for Single Integrated Operational Plan (SIOP) operations. Top-secret documents storage, a Radio Frequency Booth (322), and extensive computer equipment for target information were in this area. The Tanker Operations Room (324) in the southeast corner of the building was the center for KC-135 tanker mission planning and information. Adjacent to this room was the Alternate Battle Staff conference room (310). Also included on this level were a number of administrative offices and study rooms.

**Building No. 8965 and Security Gate.** Entry to the Alert Area is through a high-security gate on Maine Road near the southern end of the base. Two 15-foot sliding gates keep vehicles in a small holding area until the security check is complete. A fence extends from the gate area around the entire Alert Area.

Adjacent to the gate is the Security Police Entry Control Building (8965), the check-in station for alert crew and other personnel. Pedestrians enter through a covered walkway and a 7-foot turnstile. The building, constructed in 1986, is a one-story concrete-block structure with a gabled roof. The northern elevation has two sets of sliding metal doors and a pedestrian door. The southern elevation has a single window at its eastern end.

**Building No. 8966.** The Electric Power Station Building (8966) contains the electrical equipment that provides power to the Alert Area facilities. Constructed in 1986, it is a small, one-story, concrete-block structure with a gabled roof. The building contains 1,750 square feet of space. The northern elevation has a small extension at the western end and a door at the eastern end. The southern elevation has a larger extension with a shed roof at the western end and two entrances. The building has no windows and its eastern and western elevations are blank.

**Structure No. 8990.** The Master Surveillance and Control Tower (8990) is a 40-foot steel tower containing a network of steel support beams and cross-braces. An open stairway wraps around the structure to the platform above. The platform supports a small, one-story, windowed enclosure that housed electronic equipment and control personnel. The tower was originally constructed in 1979 as Facility 8107, but was relocated to the Alert Area in 1986. The tower provided general security for the Alert Area and assisted in controlling the movement of aircraft from the area.

**Other Structures.** The Alert Area also contains a Heating Fuel Oil Storage Tank (8967), which contained 550 gallons of fuel oil used to heat the facilities in the Alert Area and Tennis Courts (14501) that were used for recreation by the alert crews on duty.

## **SOURCES OF INFORMATION**

### **A. Engineering Drawings**

Engineering drawings are kept on file at the Air Force Base Conversion Agency at Loring Air Force Base. Upon conveyance of the base property, the drawings will be kept on file at the Loring Development Authority or at the U.S. Fish and Wildlife Service office, both located at 5100 Texas Road, Limestone, Maine.

### **B. Historic Views**

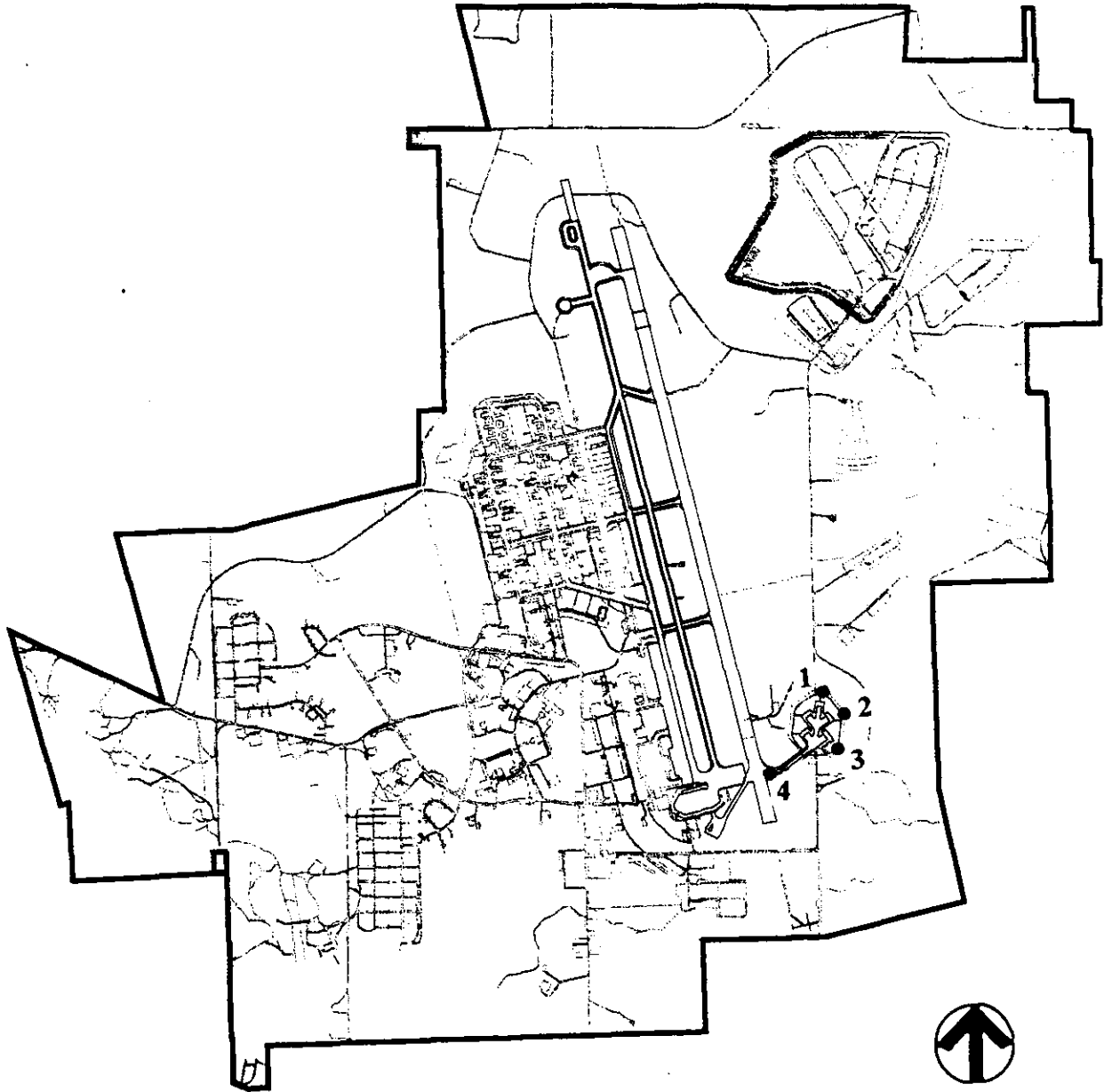
Historic photographs are kept on file at the Air Force Base Conversion Agency at Loring Air Force Base. Upon conveyance of the base property, the photographs will be kept on file at the Loring Development Authority at 5100 Texas Road, Limestone, Maine.

### **C. Bibliography**

U.S. Air Force  
1998 *Historic Building Inventory and Evaluation, Loring Air Force Base, Maine.*

### **D. Likely Sources Not Yet Investigated**

All likely national and local archival sources have been investigated.



 ROADS  
 BASE BOUNDARY  
 AIRFIELD

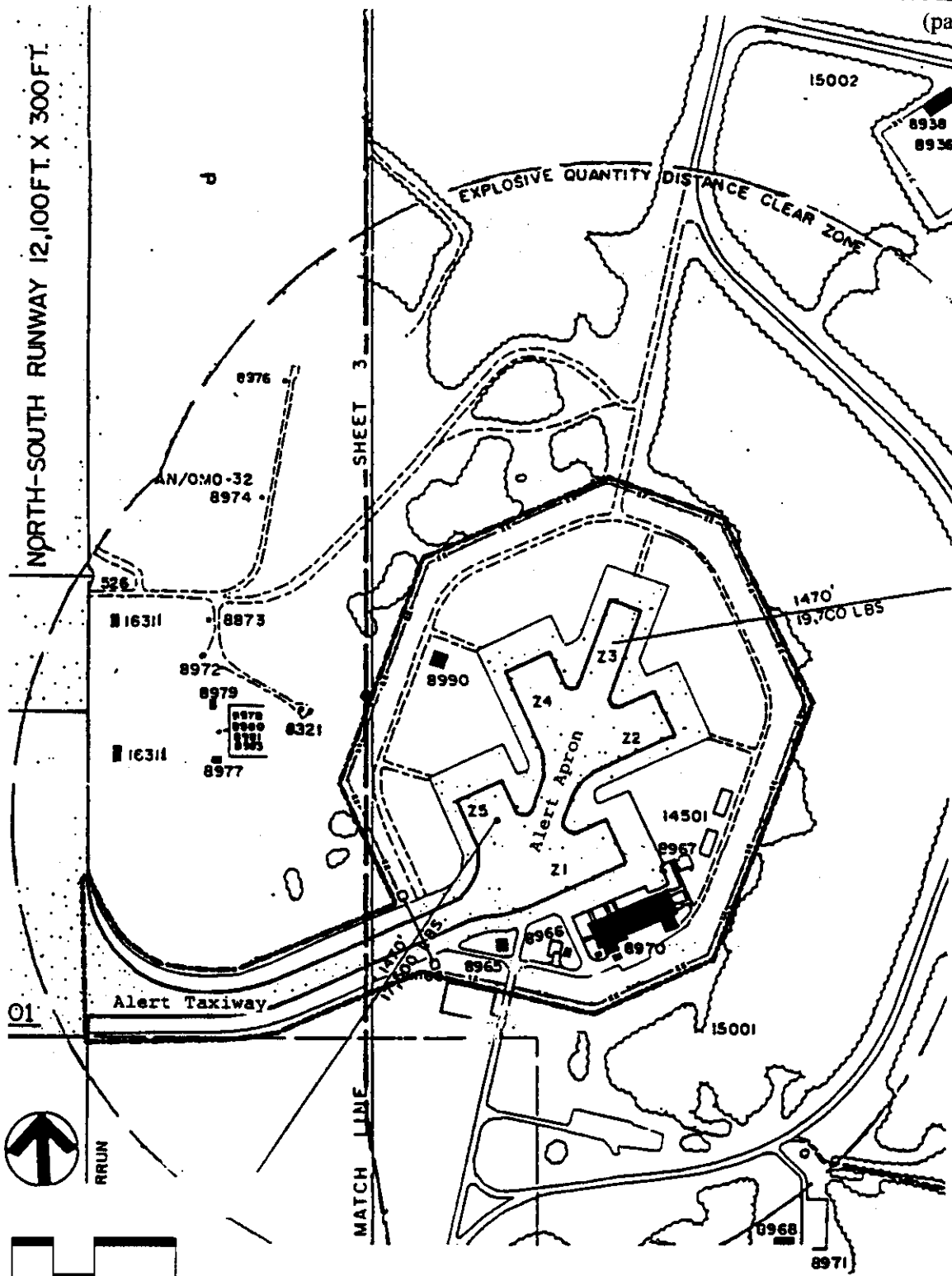
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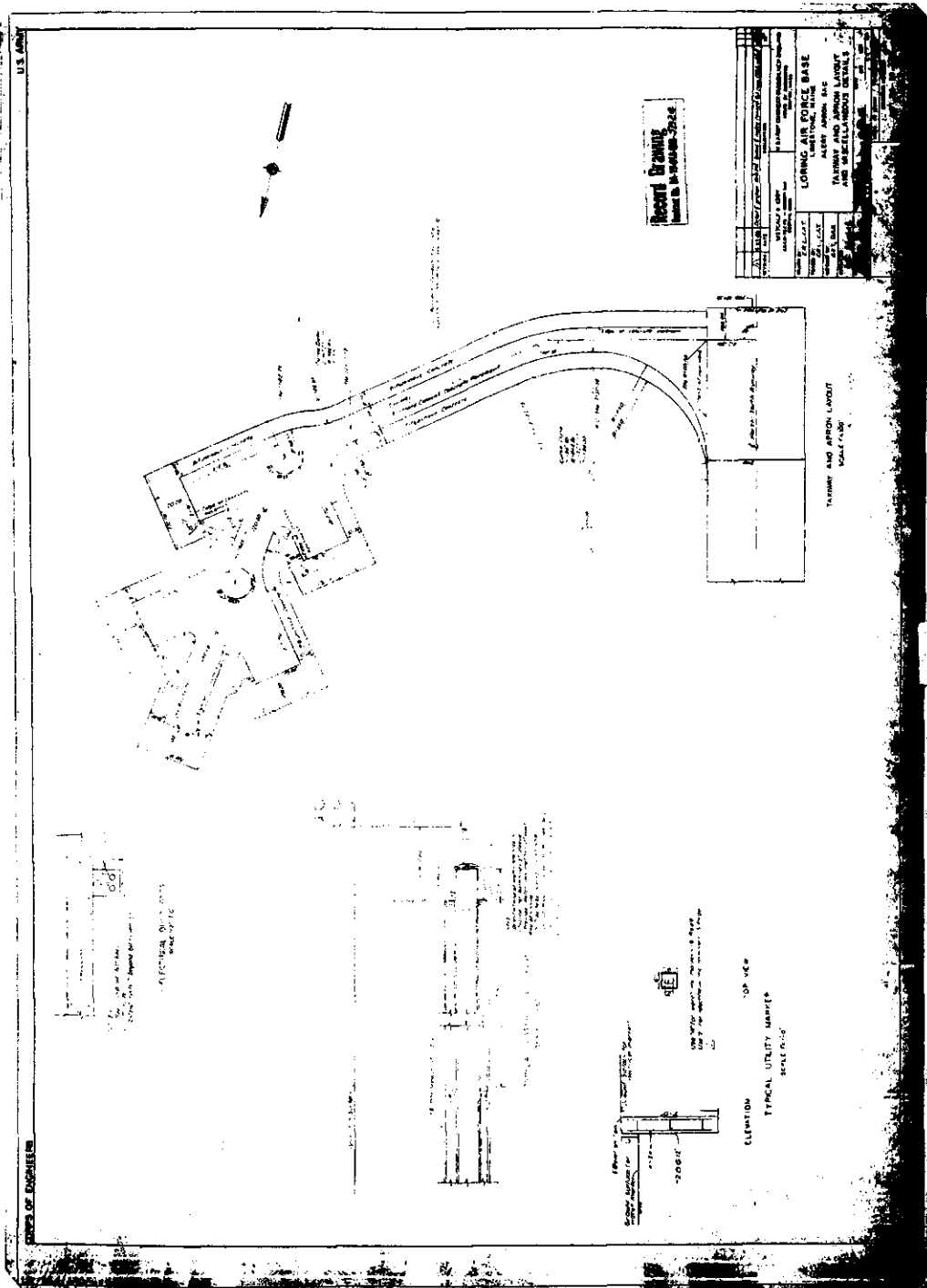
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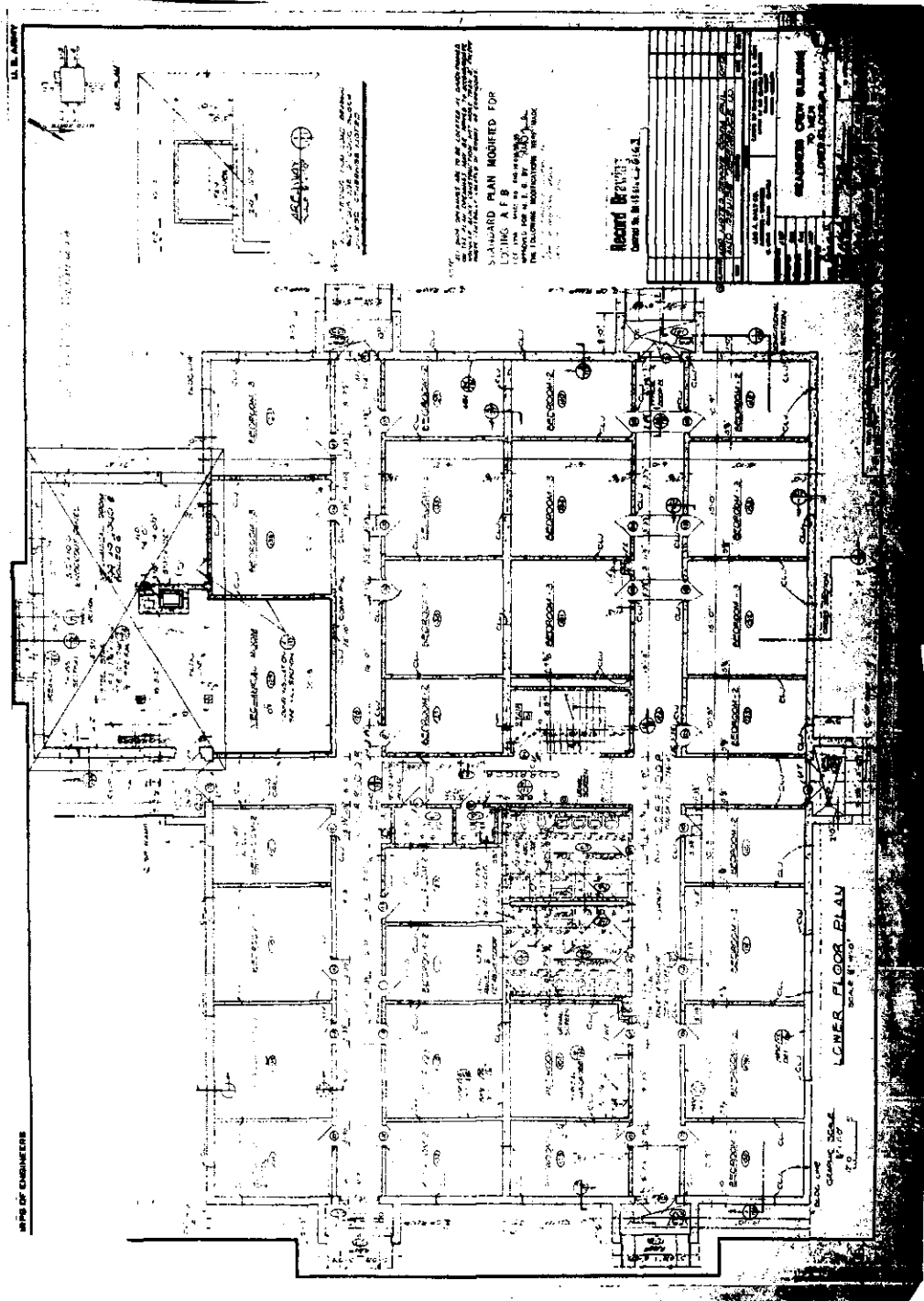
**Location of Alert Area**  
Source: Loring AFB Tab Map, 1993,  
located at AFBCA, Loring AFB, Maine



**Alert Area General Layout**  
Source: Loring AFB Tap C Map, 1991,  
Located at AFBCA, Loring AFB, Maine

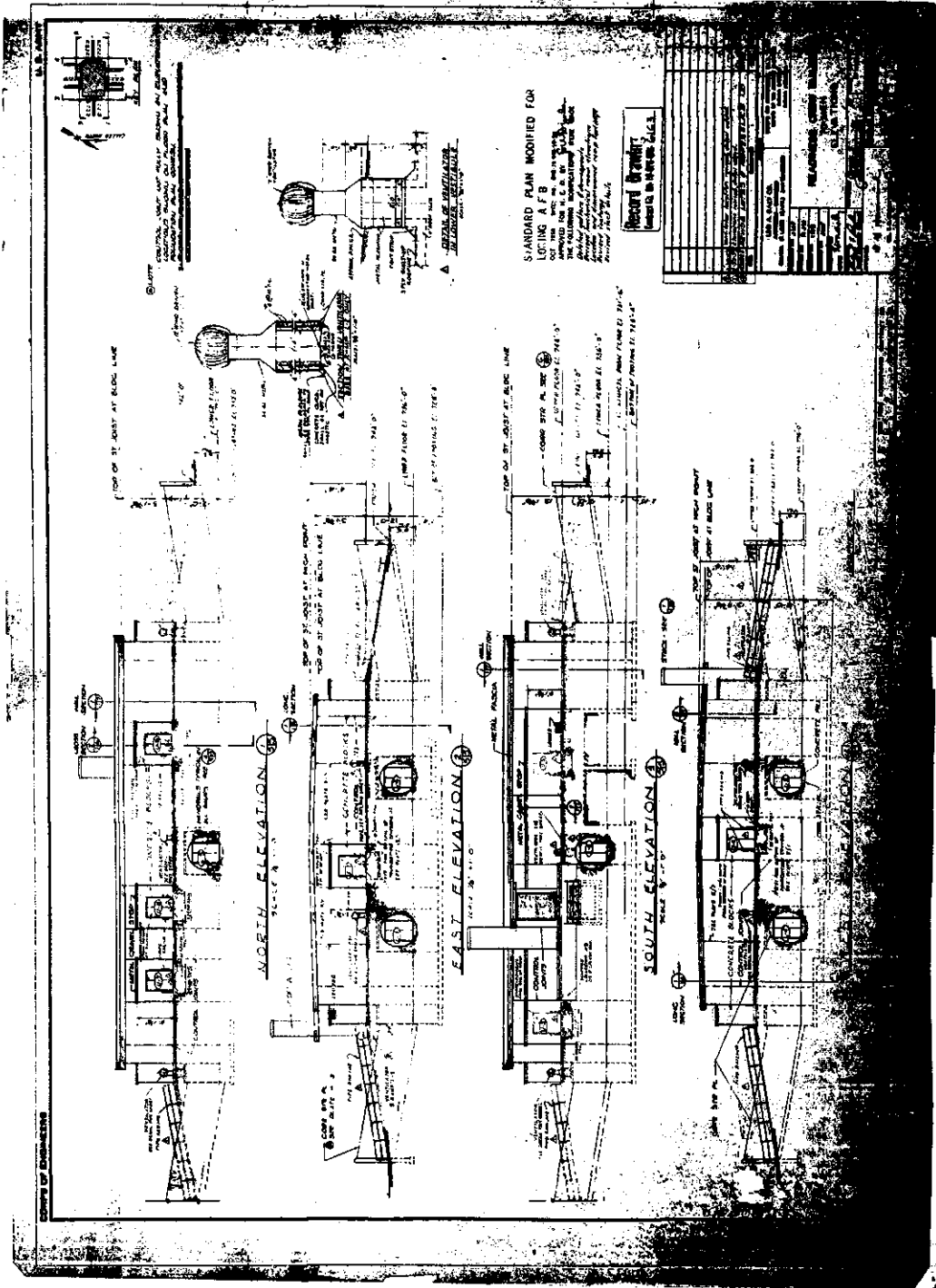


Construction drawing of taxiway and apron layout for Alert Apron SAC (Structure 540), dated April 1958. Drawing by Metcalf & Eddy Architects-Engineers illustrates paving scheme of bituminous concrete at apron edges and Portland Cement concrete pavement at the center. Drawing located at AFBCA, Loring AFB, Maine.



Construction drawing of lower floor plan for Readiness Crew Building (Building 8970) dated April 10, 1958, with revision dated May 12, 1958. Drawing illustrates adaptation of standard plans developed by Leo A. Daly Co. Architects-Engineers. Drawing located at AFBCA, Loring AFB, Maine.





Construction drawing of elevations for Readiness Crew Building (Building 8970), dated April 10, 1958, with revisions through May 28, 1959. Drawing shows addition of details and ventilator to standard plans developed by Leo A. Daly Co. Architects-Engineers. Drawing located at AFBCA, Loring AFB, Maine.