NPS Form 10-900a
(8-86)

OMB No. 1024-0018

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES CONTINUATION SHEET

Section _____ Page ___

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SUPPLEMENTARY LISTING RECORD

NRIS Reference Number: 09000579 **Date Listed: 7/31/2009**

Atlas E Missile Site 9	Lincoln	WA
Property Name	County	State

N/A
Multiple Name

This property is listed in the National Register of Historic Places in accordance with the attached nomination documentation subject to the following exceptions, exclusions, or amendments, notwithstanding the National Park Service certification included in the nomination documentation.

Signature of the Keeper	Date of Action

==========

Amended Items in Nomination:

U. T. M. Coordinates:

The correct U.T.M. Coordinates should read:

1	11	437810	5293800
2	11	438000	5293810
3	11	437940	5293600
4	11	437830	5293610

These clarifications were confirmed with the WA SHPO office.

DISTRIBUTION:
National Register property file
Nominating Authority (without nomination attachment)

NPS Form 10-900
(Oct. 1990)

OMB No. 1024-0018

United States Department of the Interior
National Park Service

579

National Register of Historic Places Registration Form

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in *How to Complete the National Register of Historic Places Registration Form* (National Register Bulletin 16A). Complete each item by marking "x" in the appropriate box or by entering the information requested. If any item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions. Place additional entries and narrative items on continuation sheets (NPS Form 10-900a). Use a typewriter, word processor, or computer, to complete all items.

1. Name of Property

Historic name: Atlas E Missile Site 9

Other names/site number: Reardan Missile Silo Laboratory

2. Location

street & number: 36000 Crescent Rd N ____ not for publication

city or town: Reardan ____ vicinity X

State: Washington code: WA county: Lincoln code: 043 zip code: 99029-8674

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act of 1986, as amended, I hereby certify that this X nomination __ request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property X meets __ does not meet the National Register criteria. I recommend that this property be considered significant __ nationally X statewide __ locally. (_ See continuation sheet for additional comments.)

Signature of certifying official/Title — Date: 6-3-09

WASHINGTON STATE HISTORIC PRESERVATION OFFICE
State or Federal agency and bureau

In my opinion, the property ✓ meets ___ does not meet the National Register criteria. (__ See continuation sheet for additional comments.)

Signature of certifying official/Title — Date: 6-11-2009

FEDERAL PRESERVATION OFFICER, US Dept. of Health + Human Services
State or Federal agency and bureau

4. National Park Service Certification

I, hereby, certify that this property is:

✓ entered in the National Register.
__ See continuation sheet

___ determined eligible for the National Register.
__ See continuation sheet

__ determined not eligible for the National Register.

__ removed from the National Register.

__ other (explain:) _____

Signature of the Keeper — Date of Action: 7/31/2009

5. Classification

Ownership of Property
(Check as many boxes as apply)

- ___ private
- ___ public-local
- ___ public-State
- X public-Federal

Category of Property
(Check only one box)

- ___ building(s)
- ___ district
- X site
- ___ structure
- ___ object

Number of Resources within Property
(Do not incl. previously listed resources in the count.)

Contributing	Non-Contributing	
3	4	buildings
		sites
		structures
		objects
3	4	Total

Name of related multiple property listing:
(Enter "N/A" if property is not part of a multiple property listing.)

N/A

Number of contributing resources previously listed in the National Register

None

6. Functions or Use

Historic Functions
(Enter categories from instructions)

DEFENSE/air facility

Current Functions
(Enter categories from instructions)

GOVERNMENT/research facility

7. Description

Architectural Classification
(Enter categories from instructions)

NO STYLE

Materials
(Enter categories from instructions)

foundation CONCRETE
walls CONCRETE AND STEEL
roof CONCRETE AND STEEL
other CORREGATED METAL

Narrative Description
(Describe the historic and current condition of the property.) SEE CONTINUATION SHEET

8. Statement of Significance

Applicable National Register Criteria
(Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing.)

- X **A** Property is associated with events that have made a significant contribution to the broad patterns of our history.
- ___ **B** Property is associated with the lives of persons significant in our past.
- ___ **C** Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.
- ___ **D** Property has yielded, or is likely to yield, information important in prehistory or history.

Criteria Considerations
(Mark "x" in all the boxes that apply.)

Property is:

- ___ **A** owed by a religious institution or used for religious purposes.
- ___ **B** removed from its original location.
- ___ **C** a birthplace or grave.
- ___ **D** a cemetery.
- ___ **E** a reconstructed building, object, or structure.
- ___ **F** a commemorative property.
- X **G** less than 50 years old or achieving significance within the past 50 years.

Areas of Significance
(Enter categories from instructions)
MILITARY
POLITICS/GOVERNMENT

Period of Significance
1960-1965

Significant Dates
1960, 1965

Significant Person
(Complete if Criterion B is marked above)
N/A

Cultural Affiliation
N/A

Architect/Builder
Bechtel Corporation - Architect
Henry George & Sons - Builder
MacDonal-Patti-Scott-Leavell - Builder

Narrative Statement of Significance
(Explain the significance of the property.) SEE CONTINUATION SHEET

9. Major Bibliographical References

Bibliography
(Cite the books, articles, and other sources used in preparing this form.) SEE CONTINUATION SHEET

Previous documentation on file (NPS):

- ___ preliminary determination of individual listing (36 CFR 67) has been requested
- ___ previously listed in the National Register
- ___ previously determined eligible by the National Register
- ___ designated a National Historic Landmark
- ___ #_____
- ___ recorded by Historic American Engineering Record#_____

Primary location of additional data:

- ___ State Historic Preservation Office
- ___ Other State agency
- X Federal agency
- ___ Local government
- ___ University
- ___ Other

Name of repository:
NIOSH Spokane Research Center

10. Geographical Data

Acreage of Property Approximately 5 acres

UTM References
(Place additional UTM References on a continuation sheet.)

	Zone	Easting	Northing
1	11	4 375 75	52 939 95
2	11	4 378 76	52 940 22
3	11	43 787 76	52 940 22
4	11	43 759 98	52 937 27

Verbal Boundary Description
(Describe the boundaries of the property.) See continuation sheet.

Boundary Justification
(Explain why the boundaries were selected.) See continuation sheet.

11. Form Prepared By

name/title David Price and Kristie Lockerman
organization New South Associates date November 7, 2008
street & number 6150 E Ponce de Leon Ave telephone (770) 498-4155 x130
city or town Stone Mountain state Georgia zip code 30083

Additional Documentation

Submit the following items with the completed form:

Continuation Sheets

Maps

A **USGS map** (7.5 or 15 minute series) indicating the property's location.

A **Sketch map** for historic districts and properties having large acreage or numerous resources.

Photographs

Representative **black and white photographs** of the property.

Additional items
(Check with the SHPO or FPO for any additional items.)

Property Owner (Complete this item at the request of the SHPO or FPO.)

name National Institute for Occupational Safety and Health (NIOSH)
street & number 315 E Montgomery Ave telephone
city or town Spokane state Washington zip code 99207

NARRATIVE DESCRIPTION

The Atlas E Missile Site 9 is located on an approximately five-acre portion within a larger twenty-acre rural site in the northeastern corner of Lincoln County, just west of the Spokane County line. Site 9 was one of nine identical Atlas E missile complexes arrayed around Fairchild Air Force Base in Spokane, Washington, from 1960 to 1965. The five-acre portion contains all of the original buildings associated with the Atlas E missile site, including the Upper Missile Bay, Launch Operations Building, and Butler Building, which were originally surrounded by a seven-foot high chain link security fence. The original inner security fence was later removed and replaced by a fence around the larger 20-acre boundary. Site 9 is bordered by farmland to the south and woodland to the north. There are no other buildings in the site's immediate viewshed. The Reardan site provides the National Institute for Occupational Safety and Health (NIOSH) Spokane Research Laboratory an auxiliary site to field test noisy vehicles and materials without causing disruption to surrounding homeowners.

Site 9 was originally constructed to house an Atlas E intercontinental ballistic missile (ICBM) as part of the 567th Strategic Missile Squadron attached to Fairchild Air Force Base just outside of Spokane. The Air Force deployed Atlas D, E, and F missiles, each with its own silo type and launch configuration. The Atlas E launch configuration is described in a national historic context of the U.S. Cold War missile program, titled, *To Defend and Deter The Legacy of the United States Cold War Missile Program*, prepared by the Department of Defense Legacy Resource Management Program Cold War Project in 1996 (Lonnquest and Winkler 1996: 220). It states:

> *"The Atlas Es were based in "semi-hard" or "coffin" facilities that protected the missile against overpressures of up to 25 psi. In this arrangement the missile, its support facilities, and the launch operations building were housed in reinforced concrete structures that were buried underground; only the roofs protruded above ground level. The missile launch and service building* [upper missile bay] *was a 105- by 100-foot structure with a central bay in which the missile was stored horizontally. To launch a missile, the heavy roof was retracted, the missile raised to the vertical launch position, fueled, and then fired. The 54- by 90-foot launch operations building was 150 feet from the missile launch facility; the two were connected by an underground passageway. The launch operations building contained the launch control facilities, crew's living quarters, and power plant. The Atlas E launch sites were spaced approximately 20 miles apart."*

The major exterior features and interior floor plan of the configuration described above are intact at Site 9. Also original to the site is the above-ground "Butler Building," a metal warehouse used for storage.

Originally constructed as one of nine identical missile launch complexes, Site 9 joined the other sites in creating an oval arrangement around Fairchild Air Force Base. Of the original 9 sites, Site 9 is the only one still owned by the federal government. The other eight are now under private ownership and have never been surveyed as a group to determine their integrity as a group.

The missile site was decommissioned by the Air Force in 1965 and subsequently purchased by the U.S. Bureau of Mines (USBM), which added three prefabricated metal buildings to the former launch complex, as well as a frame storage shed. The Hill Building on the north side of the property and the Drill Building on the south side of the property are prefabricated metal panel buildings that were added to the site. The Hill Building, a warehouse, is about the same size as the 1960 "Butler Building" and it is the largest of the later USBM support facilities. A frame L-shaped storage shed and trailer/camper are located on the east side of the property and a one car metal prefabricated garage has been placed to the north side of the "Butler Building."

CONTRIBUTING RESOURCES

1) UPPER MISSILE BAY

The Upper Missile Bay is the larger of the two main underground buildings that compose Site 9. It is divided into three rectangular sections including the central missile bay where the missile was stored and two fuels storage and workshop rooms, which contained the various fuel components and equipment used to power and launch the missile. The central missile bay features a massive concrete and steel horizontal sliding door on its north elevation. The missile bay has a 20-foot ceiling and is covered by what was originally a retractable steel and concrete roof, but it has been sealed and is no longer operational. The roof's original materials, however, remain intact. At the south end of the missile bay is the flame pit, or tunnel, which deflected the missile's flame out of the silo. The missile silo is organized along a north-south axis, with the missile bay access door facing north.

The room to the east of the missile bay was historically the location of the liquid oxygen used to power the missile. It has a 10-foot ceiling and concrete walls and floor. Extending to the east off the north end of the missile bay is a narrow rectangular room containing a large original liquid oxygen storage tank. With most of the other original fuel tanks and equipment long removed, this room is currently used for storage.

The room to the west of the missile bay was the location of helium and liquid nitrogen storage tanks and the fuel control equipment. It too has a 10-foot ceiling with concrete walls and floor. With all of its original fuel tanks and equipment long removed, this room is currently used for storage.

2) LAUNCH OPERATIONS BUILDING AND ACCESS TUNNEL

The launch operations building was historically the location of the missile launch equipment and where site personnel lived. It was roughly divided into a living section on the west half of the building and a machine and equipment room on the east half. The living section has a 10-foot ceiling height but now features a dropped acoustic tile ceiling. It contained an office, the launch operations room, bunk rooms, kitchen, dining room, closets, bathroom, and shower/locker room. The electronic equipment used to raise and launch the missile was located in the launch operations room but it has been completely removed.

The machine and equipment room has a fourteen-foot ceiling height. The room features two 7.5' x 22' built-in tables and machinery areas that contain an original air compressor, plumbing and ventilation fixtures, and

power generation equipment. A bank of original breaker boxes and other electronic equipment is arrayed along the south wall. There is a rectangular access hatch in the roof of the workshop area that was used to raise and lower large pieces of equipment into the room that could not fit through the access tunnel.

The upper missile bay and launch operations buildings are connected by a 150-foot cylindrical tunnel lined with corrugated metal walls and a poured concrete floor. The tunnel is illuminated by original lighting fixtures. The wall facing the north end of the tunnel features an original color mural depicting the Strategic Air Command coat of arms.

3) BUTLER BUILDING (1960)

The circa 1960 Butler Building (Warehouse B) is an original one-story metal warehouse at the missile site with a front-gable roof, metal sides, and a poured concrete foundation. It is accessed through a central roll-up garage door on its south façade and has one-over-one metal windows throughout. The interior has a central loading area flanked on either side by metal and wood shelving.

NON-CONTRIBUTING RESOURCES

After Site 9 was decommissioned by the Air force in 1965 it was acquired by the United States Bureau of Mines (USBM), which used it for mine safety research. By the 1980s the USBM installed four new above-ground metal buildings and two explosive magazines at the complex. These included a camper trailer and L-shaped building on the east side of the property, a small metal garage adjacent to the north side of the Butler Building, a large blue warehouse known as the Hill Building on the north side of the property, the Drill Building on the south side of the property, and two small magazines in the northwest corner of the property. It is now used by NIOSH for limited occupational health and safety research.

4) L BUILDING (circa 1980)

The L Building is a one-story L-shaped shed with a metal gable roof, wood frame construction, metal siding, and a poured concrete foundation. It is located on the east side of the missile site's basalt outcropping that is now used as an observation and testing platform. There are open garage bays with no doors on both the south and west elevations of the building, and another door-less entrance on the east elevation next to a small rectangular window opening that is missing a window. There is a camper trailer parked on the south side of the building that may have been involved in the work performed there.

5) SMALL GARAGE (circa 1980)

There is a single-bay metal garage on the north side of the Butler Building with a metal gable roof, metal and concrete block exterior, and a poured concrete foundation. The walls are composed of five courses of

concrete block at the base topped by metal walls and roof. There is a single garage bay entrance with no door on the west elevation.

6) HILL BUILDING (1984)

The Hill Building (Warehouse A) is a one-story metal warehouse with a gable roof, metal exterior, and a poured concrete foundation. It has single-bay garage doors on both the east and west elevations and there are no windows throughout the building.

7) DRILL BUILDING (circa 1980)

The Drill Building (Warehouse C) is a split-level metal warehouse built on top of the missile silo's original flame pit, which was designed to deflect flames and exhaust out of the silo in the event of a launch. The upper level of the warehouse has a metal gable roof, metal exterior, and concrete foundation. There is a horizontal sliding door made of plywood on the north elevation. The lower level of the building has a metal gable roof and metal siding with a single-bay garage door on the south elevation.

STATEMENT OF INTEGRITY

Atlas E Missile Site 9 retains six out of seven aspects of integrity, including *location, setting, design, materials, workmanship, and association.* The silo's integrity of *feeling* was compromised by the removal of its original equipment and furniture after it was acquired by the USBM in 1965. Additionally, the site's *feeling* is also compromised by the six prefabricated metal USBM buildings that were erected after 1965. While these buildings do compromise the site's integrity, they are temporary structures and could easily be removed.

However, the upper missile bay, launch operations building, and access tunnel retain their original interior organization, which is sufficient to convey the building's historic function during its period of significance. The interior spaces also retain their historic finishes of concrete, metal, and drywall partitions. One exception to this is the acoustic tile drop ceiling in the former living quarters of the launch operations building, but this feature could be reversed without destroying the significant features of the space. While they retain original interior organization and finishes, the buildings do lack many original salient features such as launch equipment and some fuel storage tanks. While these features are indeed missing, the remaining interior organization and finishes are sufficient to convey the building's significance.

Other missing original features include the steel boom that erected the missile into place, fuel storage tanks, and missile control panels and electronics. There is one intact liquid oxygen storage tank in the side chamber of the east missile bay room. The west missile bay room retains its original floor plan but no original storage tanks or other equipment.

STATEMENT OF SIGNIFICANCE

The Atlas E Missile Site 9 in Lincoln County, WA, is eligible to the National Register of Historic Places (NRHP) under Criterion A for its association with the nation's historic deployment of intercontinental ballistic missile (ICBM) nuclear weapons during the Cold War. The missile site is significant at the state level of significance as the most intact resource associated with 567th Strategic Missile Squadron at Fairchild Air Force Base in Spokane, Washington. The period of significance spans from 1960 the year the missile site was built, to 1965 the year it was decommissioned. It was one of nine identical Atlas E missile complexes attached to Fairchild Air Force Base. Of these nine complexes, Site 9 is the last one still owned by the Federal government, in this case the Centers for Disease Control and Prevention's National Institute for Occupational Safety and Health (CDC/NIOSH). To date there are no other Cold War-era missile sites listed on the NRHP in Washington. The missile site is proposed for listing on the NRHP as part of CDC/NIOSH's responsibilities as a federal agency under the National Historic Preservation Act of 1966 as amended.

Site 9 meets requirements for listing under Criterion Consideration G for properties that have achieved significance within the last fifty years. The missile site is associated with early ICBM deployment in the United States during the Cold War, which dated roughly from the end of World War II in 1945 to the demolition of the Berlin Wall in 1989. The Atlas missile program was the first operational ICBM deployed during the Cold War and it laid the technological foundation for subsequent missile programs such as the Titan and Minuteman. As one historian stated, "The effort to develop, build, deploy, and maintain an effective ICBM force spawned an unprecedented peacetime defense mobilization that deeply affected American economic, technological, and political life for more than four decades following World War II" (Slattery et al. 2003). The Atlas E Site 9 at Reardan was a significant representative product of that effort. The historic significance of Cold War nuclear missile complexes built in the 1960s is recognized in a number of NRHP-listed sites in Florida, South Dakota, and Arkansas (Slattery et al. 2003, Welling and Dickey 2004, Stumpf 1992, Stumpf 2000).

HISTORIC NARRATIVE

The Atlas E Missile Site 9 was built in 1960 as an Atlas E ICBM nuclear missile launch complex attached to the 567th Strategic Missile Squadron at Fairchild Air Force Base. The Atlas series was the first generation of operational liquid-fueled ICBMs deployed by the United States during the Cold War and it laid the technological and administrative foundations for later ICBM programs (Lonnquest and Winkler 1996:1-2). As ICBM technology advanced and produced the more advanced Titan I, II, and Minuteman programs, the Atlas missile bases were decommissioned in the mid-1960s. Site 9 was decommissioned in 1965 and subsequently purchased by the United States Bureau of Mines (USBM) as an auxiliary research laboratory to support mining health and safety research conducted at the USBM Spokane Research Laboratory in Spokane.

THE COLD WAR

The construction of the Atlas E Missile Site 9 occurred within a context of the political, military, and economic confrontation with the Soviet Union between 1945-1989 known as the Cold War. The site was built as a part of the era's arms race, which pitted the United States and Soviet Union against each other in a battle for technological supremacy in the realm of nuclear arms.

The Cold War began in the years immediately following World War II when the U.S. took the leading role in helping Europe and Japan rebuild their infrastructure and economies. The reconstruction effort increasingly put the U.S. at odds with the Soviet Union, especially as that nation began to increase its influence in Eastern Europe. During this period, the U.S. held the upper hand against the Soviet Union as the sole power on earth that possessed nuclear weapons. The U.S. used this advantage to balance the growing Soviet military threat in Europe with an extension of nuclear protection over its allies (Lonnquest and Winkler 1996:1-2).

This balance shifted in 1949, however, when the world discovered that the Soviet Union had acquired nuclear weapons. In response to the possibility of Soviet air attack, the U.S. engaged in a rapid expansion of its ability to simultaneously *defend* itself from attack and *deter* an attack from happening in the first place. This effort resulted in a two-pronged strategy that included an air defense system of antiaircraft batteries and surface-to-air missiles, and a deterrence system of ICBMs and air-breathing strategic missiles. The strategy of deterrence worked on the principle that the deployment of strong nuclear weapons would discourage the Soviets from attacking the U.S. or its allies for fear of a swift and destructive nuclear retaliation (Lonnquest and Winkler 1996:2). This strategy was related to the Cold War doctrine of "Mutually Assured Destruction," or MAD, positing that the full-scale use of nuclear weapons would result in the certain destruction of both the attacker and the opponent, therefore discouraging nuclear war in the first place.

THE ATLAS MISSILE PROGRAM

The Atlas missile program was a key part of the nation's nuclear deterrence strategy. After languishing for several years in the shadows of a largely failed effort to develop air-breathing guided missiles, the Atlas missile emerged in 1954 as the nation's first operational ICBM. The early development of the Atlas missile dates to the years immediately following the end of World War II. In 1946, the Convair Corporation worked under a contract with the Air Force and the Strategic Air Command (SAC) to develop a long-range ballistic missile called the MX-774, but the project did not get very far after its budget was slashed by the government after only one year. Rather than drop the project completely, however, Convair continued to conduct missile research and development on its own. By 1951, federal funds for missile projects were restored and the Air Force again hired

Convair to develop plans for the Atlas, the most advanced missile ever attempted (National Park Service-US Air Force 1995: 26).

According to a history of US missile programs published jointly by the National Park Service and the Air Force, "the Atlas was essentially a highly evolved version of the German V-2 missile, which Germany had used against the Allies during the waning years of World War II" (National Park Service-US Air Force 1995: 26). Like the German missile, the Atlas was fueled by rocket engines that burned a mixture of liquid fuel and oxygen, but the Atlas featured a more advanced lightweight body design that allowed for a drastically longer flight range. Where the V-2 had an effective range of only a few hundred miles, the Atlas could deliver its warhead to a target over 5,000 miles away. Convair achieved this design with an ultra-light airframe assembled from "rings of paper-thin stainless steel, stacked together like stovepipes and welded at the seams to form cylinders. The cylinders were then inflated with nitrogen gas to give the missile its structural integrity" (National Park Service-US Air Force 1995:26).

There were six different models of the Atlas missile designated Atlas A, B, C, D, E, and F. The first three models were used exclusively for prototype development and test launches at Vandenberg Air Force Base in California and were never deployed. The last three were deployed to locations throughout the country, including seven Atlas D, twenty-seven Atlas E, and seventy-two Atlas F complexes. These sites were controlled by 10 Air Force bases, mostly in the West and Midwest, but there were a handful in New York. All 10 Air Force bases were assigned a Strategic Missile Squadron to staff the missile complexes built around that base (http://www.atlasmissilesilo.com/).

Once the design was finalized, the bullet-shaped Atlas missile stood 82 feet tall, 10 feet in diameter, with an internal guidance system and oxygen supply, and three liquid-fueled rocket boosters that could carry it almost 16,000 miles per hour. It had a range of 5,500 to 6,750 miles, with the majority of the missile's parabolic flight path outside of the earth's atmosphere. It was called a ballistic missile because once it reached the peak of its flight path it followed a ballistic trajectory to its target (Lonnquest and Winkler 1996:3-4, 209).

The Atlas was the nation's first generation of ICBM technology, and was considered a stopgap measure until a more advanced solid-fuel missile could be developed. As soon as it was developed, in fact, there were skeptics in the military who questioned whether or not the missile's thin-skinned airframe would even survive an actual launch. Additionally, the volatility of the missiles' liquid fuel made Atlas complexes difficult to maintain, and often led to dangerous accidents. For instance, a valve malfunction led to a dangerous liquid oxygen spill during a launch exercise at Fairchild's Site 8 in Eqypt, Washington. (Mellor and Eastep 2008: 5). As a result of these and other problems, the Air Force immediately looked to develop a backup missile. In 1955, before the first Atlas missile was even deployed, the Air Force contracted with the Glenn L. Martin Company to develop a new ICBM called the Titan. The Titan also used liquid propellants but had a stiffer airframe, a larger payload, and a greater range. By the mid-1960s, the Atlas was replaced by the Titan, which was later replaced by the solid-fuel Minuteman (National Park Service-US Air Force 1995:28).

Before it was replaced by the Titan, the Air Force deployed three models of its first ICBM, Atlas D, E, and F, each one with slightly different specifications and in varying launch configurations. Despite concerns over its design, the deployment of the Atlas was considered urgent as the Air Force rushed to meet rising tensions with the Soviet Union in the 1950s and early 1960s. The D series of Atlas missiles was the first to be deployed, with three strategic missile squadrons that oversaw a total seven missile complexes located in Omaha, Nebraska, and Cheyenne, Wyoming. The Atlas E was next, with three strategic missile squadrons that oversaw 27 missile sites located in Topeka, Kansas; Cheyenne, Wyoming; and Spokane, Washington. Both the Atlas D and E missile sites featured "coffin" type missile bays where the missile was stored horizontally and had to be raised and fueled before it could launch. This process took about 15 minutes to complete, a considerable lag time that left the missile sites and nation vulnerable to attack (Mellor and Eastep 2008: 12). The final version of the missile was the Atlas F, which featured the first underground upright "silo" launch configuration. The Air Force established six Atlas F strategic missile squadrons, each of which oversaw 12 missile sites, for a total of 72 missiles. The Atlas F squadrons were located in Salina, Kansas; Lincoln, Nebraska; Plattsburgh, New York; Altus, Oklahoma; Abilene, Texas; and Roswell, New Mexico. (http://www.atlasmissilesilo.com/atlas_f.htm).

The Air Force's Strategic Air Command deployed 12 Atlas squadrons around the nation, mostly in the west and Midwest, including the 567th Missile Squadron at Fairchild Air Force Base in Spokane, Washington. The site requirements mandated that the missiles be located within 5,000 miles from their target in the Soviet Union, that they be located near support services, and that they be sufficiently inland enough to be out of range of Soviet submarine-launched intermediate range missiles. Additionally, each launch complex required 20 acres of land for the missile site itself plus one acre for an offside microwave relay station, which allowed the complex to communicate with their respective Air Force bases (NIOSH n.d. n.p.).

FAIRCHILD AIR FORCE BASE AND THE ATLAS MISSILE

Fairchild Air Force base, outside of Spokane, met all of the Department of Defense location requirements. Spokane's historic connection to aviation and the military emerged in the 1920s when local booster James Alson Ford succeeded in establishing the city's first commercial airstrip, Felts Field. In 1940, the city hosted a Works Progress Administration (WPA) project to build Geiger Field, which served as a small Army Air Force base of operations during World War II. The site of Geiger Field later became Spokane International Airport. The Army Air Corps strengthened its presence in Spokane in 1941 when it built a permanent depot at Galena, a whistle-stop on county land just west of Spokane. After a string of different names through the 1940s, the name of the depot was changed for good in 1951 to Fairchild Air Force Base (Bal 1976:88-98).

In 1958, the U.S. Army Corp of Engineers Seattle District began the initial planning and mapping work for the first Atlas E installations around Fairchild. At first the Air Force wanted three sites with three missiles each, but as a safety and defensive measure later changed it to nine individual sites scattered at regular intervals around Fairchild. These launch sites were built in an oval around Spokane at Reardan, Deer Park, Newman Lake,

Sprague, Davenport, Wilbur, Egypt, Lamona, and near Rockford, Washington, just over the state border in Idaho (Lonnquest and Winkler 1996:434). Each site included a total of 20 acres with a central five-acre parcel, which contained the missile silo and support structures, inside a seven-foot chain link fence (http://www.atlasmissilesilo.com/atlas_e.htm).

The notice to proceed on construction of all nine Fairchild missile sites was issued in May of 1959 and construction finished in December of 1960. All nine sites were built simultaneously on what was described as a "crash schedule" in an effort to get the missiles operational as soon as possible because of a perceived "missile gap" with the Soviet Union. The U.S. Army Corps of Engineers Seattle District Construction Division served as the project's general contractor and provided initial survey and engineering work. The design firm for the site was the Bechtel Corporation of San Francisco and Los Angeles. Henry George & Sons were selected to construct the Launch Operations Building and MacDonal-Patti-Scott-Leavell was selected to build the Launch and Service Building (U.S. Army Corps of Engineers n.d.:1-3).

The missile site included a number of necessary construction features, including the Launch Operations Building, Launch and Service Building, connecting tunnel, water wells, water storage tanks, water distribution systems, sanitary sewer and waste water disposal systems, access roads, and security fencing. Most of these features remain intact at Site 9 in Reardan, with many original water tanks and other infrastructure buried under ground. The construction contract with the above companies also included missile site equipment such as on-site generators, heating, ventilating, and air conditioning equipment, mechanical and electrical systems, and gas storage tanks (U.S. Army Corps of Engineers n.d.:1-3).

Once completed, Site 9 was turned over to the USAF 567th Strategic Missile Squadron at the beginning of 1961 and missileer and support staff training began shortly thereafter. The 567th had been the first missile squadron to successfully launch an Atlas ICBM at California's Vandenberg AFB in 1959. The Atlas E missiles and their liquid oxygen fuel were manufactured at Vandenberg and then flown to Fairchild on C-141 Globemaster airplanes. The missiles arrived already loaded on specially built trailers and were unloaded off the airplane and then trucked to the individual missile sites (see Additional Items). The first Atlas E missile arrived at Site 9 in December 1960 and the site was declared operational in September 1961 (Lonnquest and Winkler 1996:434-5; NIOSH n.d.: n.p.).

SITE 9 OPERATION

Oral history interviews with former members of the 567th Strategic Missile Squadron conducted for this nomination revealed essential details about the day-to-day operation of the Fairchild missile sites. According to these sources, each missile site was staffed by five squadron members, including two officers (usually a Major and a Lieutenant) and three enlisted airmen, who had anywhere from two to six rank stripes. The position titles of each crew member included the Missile Combat Crew Commander (MCCC), Missile Combat Crew Deputy Commander (MCCDC), Electric Power Production Technician (EPPT), Missile Maintenance Technician

(MMT), and Ballistic Missile Analyst Technician (BMAT). The MCCC was the officer in charge of the site. He had ultimate control of the missile launch operations, as well as responsibility for the safety and well-being of the other crew members, communications, and site maintenance and security. In the 567th Squadron, the MCCC was usually a Major, but sometimes a Lieutenant. There may even be a higher ranking officer on site, but the MCCC still had ultimate control of the site operations. The MCCDC was in charge of communications and keeping track of all other crew members on the site. He was also the second in command and would take command in the event that the MCCC became incapacitated and unable to perform his duties. The EPPT was in charge of maintaining the large diesel-fueled electricity generator on site, which provided all of the electric power needed to run the site. The sites had absolutely no connection to outside electric power sources, so it was essential that the EPPT do his job well. Diesel fuel used to power the generator was regularly trucked in from Fairchild. Excess heat from the generator was also used to heat the site's living and working areas and its water supply, making the missile site nearly self-sufficient. The MMT was in charge of the missile mechanical equipment, including ensuring the proper pressure levels inside the nitrogen-gas filled missile body. The BMAT was responsible for missile site electronics, launch system electrical systems, and electronics connected to the missile airframe. The 567th squadron also employed a Standardization Crew, also known as a "standboard crew," which supervised the staff and operations at all nine missile sites (Mellor and Eastep 2008: 20; Linley 2008: 1-3; http://www.titan2icbm.org/titanE.html).

At least one of the commanding officers had to be in the launch control room at all times, as well as one other crew member who was qualified to decode incoming Emergency War Orders (EWO) in the event that the site received orders to launch the missile. The Crew Commander and Deputy Commander were typically the two EWO-qualified members on site, but at least one of the enlisted men also had to be EWO-qualified in case one of the commanders was unavailable or on break (Mellor and Eastep 2008: 13).

Site security was composed of fences and two security police, the Air Force equivalent of the Army's Military Police, and two perimeter fences. The outer fence surrounded the entirety of each 20-acre missile site, and then another inner fence around the approximately 5-acre area containing the actual missile complex. The entrance of the inner fence was guarded 24 hours a day by a security police officer, who rotated on and off in four-hour shifts with his partner. Once inside the missile site, the launch operations buildings only had one entrance, which was monitored inside and out by security camera's that were connected to screens in the launch control room. Once a person approached the entrance, his or her image appeared on the monitor and site staff pressed a button to open the door. A final security measure took the form of a .22 caliber pistols carried by crew commanders (Mellor and Eastep 2008: 18, 32; Linley 2008: 20).

Standard communications to and from Site 9 occurred via two methods, a land telephone line connected directly with the 567th squadron headquarters at Fairchild, and by radio. Individual missile sites could not communicate directly with any other site without first going through squad headquarters. A third mode of communication was by microwave networks, which transmitted coded orders that signified the missile sites' alert status, including

EWOs that would have initiated a missile launch had one ever been ordered. According to former Staff Sergeant Dick Mellor, who was a Standardization Supervisor over all nine Fairchild missile sites, coded orders came in

> "over the microwave network and comes in as a warbled tone on the alert system in the site and then the control center at Fairchild would transmit it to us and we had to decode it. And then the two officers carried the answer code around their neck at all times, and they had to match. They would tear them open and match them with the message that came in. Then they'd start the countdown. And when they got up to the commit sequence which was the last minute before firing, the deputy had to go into another room and put a key in a special lock in another room. So one person sitting at the launch console could not launch the bird [missile] by himself."

The missile crew at Site 9, and at all of the other Fairchild sites, were aware that their target was located in the Soviet Union, but they never knew the exact location, which was top secret. Whenever individual targets were changed, a special "targeting crew" from Fairchild traveled to the missile site and changed out the "targeting boards," a hardware component of the site's launch control equipment (Mellor 2008: 26, 30-31).

While the missile crews never knew their exact targets, they did have to conduct certain activities to ensure that Fairchild had accurate geographic location information about each missile site to accurately choose targets. The Atlas missile had no internal guidance system so once it was launched there was no further controlling where it went. This made it essential that the initial launch and target coordinates were exact at the time of launch. This was accomplished with a theodolite, a tool used in surveying and engineering, which was kept in the missile bay and used to calculate the site's exact position on the planet. This geographic positioning is the reason why all of the Fairchild Atlas E missile sites were oriented to the north. On a regular basis the missile crew cranked open the missile bay door, which opened to the north, and trained their theodolite onto the North Star, which never changes position in the sky. After the star was located and the site coordinates determined three times in a row to ensure correctness, the coordinates were transmitted to 567th headquarters and the targeting boards updated when necessary. This process was especially necessary after earthquakes such as a 1964 Alaskan earthquake that actually shifted the location, however slightly, of Fairchild's Atlas E missile sites (Mellor 2008: 30-31).

The one time that the Fairchild missile crews did have a good idea of their target was during the Cuban Missile Crisis of 1962. When the crisis began in October of that year, the Air Force's Strategic Air Command was alerted to DEFCON 2 (DEFense readiness CONdition) status, which is the second highest alert status used by the military. Mellor confirmed that the Fairchild missiles were targeted on Cuba during this time, "the targeting teams came out to each one of the sites and put in new target boards. I was there when one of them did Site 2. And yes, Cuba was the target" (Mellor 2008: 26). The conventional wisdom at the time maintained that the Fairchild missile sites were the only ones in the nation far enough away for the missile's ballistic trajectory, designed to fly over 5,000 miles, to actually hit the Caribbean nation. Mellor and the other standardization crews were posted at different missile sites for the entire 13-day duration of the crisis and not allowed to leave. While

the regular missile crews rotated in and out of the sites, but the standardization crews were there to assist in case anything went wrong (Mellor 2008: 29).

ATLAS E SITE DECOMMISSIONING

Rapid advances in early-1960s of solid-fueled ICBM technology resulted in the swift phasing out of the Atlas and Titan I missile programs. Both the Atlas and Titan I missiles had a number of design problems, not the least of which were their liquid oxygen fuel propellants, which were complex and laborious to operate (Slattery et al. 2003). The liquid oxygen was volatile and could not be stored aboard the missile, which resulted in a time of 15 to 20 minutes necessary to raise, fuel, and launch. This lag time was a sure liability in the event of a Soviet nuclear assault and left the missiles vulnerable to surprise attack. The more advanced Titan II replaced these early missiles and featured a launch time of about one minute as well as longer ranges, increased accuracy, more secure launch complexes, and even multiple warheads (Stumpf 1992, Slattery et al. 2003).

The 567th was called off alert in March 1965, and by May the Site 9 complex was decommissioned. The remaining nine launch complexes arrayed around Fairchild AFB were never reused for new missile programs, but the base did host B-52 Stratofortress bombers that were modified to carry Air-Launched Cruise Missiles (ALCMs). The remaining missiles at Reardan and other launch complexes were later retrofitted for space use to launch satellites (Lonnquest and Winkler 1996: 5, 435; NIOSH n.d.: n.p.).

In 1966, the USBM purchased Site 9, which had been declared USAF excess property. The USBM removed most of the site's original equipment except for mechanical pieces like air compressors and sewage pumps, which are still operational. It was used as a supporting research laboratory to the Region II Mining Division headquartered in Spokane and containing the Minerals Development Branch and Mining Methods Branch. In 1973, the USBM moved into the newly built Spokane Research Laboratory in northeast Spokane and continued to conduct mine safety research at the former launch complex. According to oral sources, around 1980, the USBM built the handful of new metal storage and warehouse buildings and made other changes that now mark the surface of the former launch complex. It was also during USBM ownership when two small explosives magazines were installed at the site's northwest corner. When the USBM was decommissioned in 1996 the former launch complex and Spokane laboratory were acquired by NIOSH. NIOSH continues to operate the two sites, now known as the Reardan Missile Silo Laboratory and the Spokane Research Laboratory for mine safety and health research (NIOSH n.d.: n.p.).

USBM IN SPOKANE

The USBM presence in Spokane resulted from the city's history as a commercial center for the vast mining and timber producing region known as the Inland Northwest, located between the western Cascade Mountains and the Idaho panhandle. Spokane grew into a regional center in the 1880s and 1890s, as mining, timber production, and railroad development channeled wealth into the city. Especially significant were mineral discoveries in northern

Idaho and northeastern Washington that included gold, silver, lead, and zinc (HistoryLink.org Online Encyclopedia of Washington State History 2006: n.p.).

The city's early role as a regional mining center led in the 1950s to the establishment of the USBM Region II Mining Division in downtown Spokane. Other USBM Region II offices were located in Albany, Oregon; Boise, Idaho; and Seattle, Washington. The original USBM headquarters in Spokane was replaced in 1974 by a new building in the northeast part of the city on land leased from the Union Iron Works that had been used by the foundry as a storage yard. The building, called the Spokane Research Laboratory, was used by the USBM from 1974 to 1996, when Congress was disbanded the USBM. The USBM leased the building beginning in 1974 from the Coast Trading Company, Inc. before the agency finally bought it in 1989. Since 1996, NIOSH has used the facility for mine occupational health and safety research.

CONCLUSION

The Atlas E Missile Site 9, in Reardan, Washington, is a significant resource that demonstrates an essential period in the United States military's history during the Cold War, the strategic deployment of nuclear weapons as a deterrent against Soviet aggression. Site 9 is an example of how the military manifested this strategy in its initial stages between 1960 and 1965. Everything about Site 9, from its isolated rural location to its construction, to the way it was staffed and operated, reveals insight into how the military thought about nuclear deterrence and how that thinking evolved during the rush to plug the perceived "missile gap" with the Soviet Union. The Atlas E missile was the first successfully deployed ICBM in the nation, and it had several design flaws that led to its replacement in 1965. These flaws included its volatile liquid fuel design, which created maintenance difficulties and increased the likelihood of dangerous accidents, and its horizontal storage, which created a 15-minute launch delay that left the nation vulnerable to attack. In light of these flaws, the Atlas E was an important first step in ICBM design that ultimately led to more sophisticated designs for the Titan and Minuteman missile programs. Listing Site 9 on the National Register of Historic Places will ensure its preservation for future generations to better understand the history of US nuclear deterrence strategy.

Of the nine Atlas E missile sites associated with Fairchild Air Force Base, Site No.9 is the only resource at present which is in public ownership. The nine sites as a group have not been evaluated, nor has each site been officially recorded on Statewide Historic Property Inventory Forms. However, based on oral testimony and web research, which included aerial photography, Site No.9 appears to be the most intact. Site 3 and 5 have been converted to farm machinery storage and several of the site components have been lost. Site 4 has been converted into a dwelling. Site 2 and 8 are presently vacant. Site 7 has been modified for use as a tree seedling farm, and Site 1 is being used by a private contractor for munitions storage. Site 6 is currently home to the National UFO Reporting Center.

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VERBAL BOUNDARY DESCRIPTION

See attached map.

VERBAL BOUNDARY JUSTIFICATION

The proposed boundary includes features that have historically been associated with the Atlas E Missile Site 9 inside the site's original security fence, which enclosed an approximately 5-acre portion within a larger 20-acre square parcel. These features include the site entrance driveway, the Upper Missile Bay, the Launch Operations Building, Butler Building, and four non-contributing buildings that were built after the 1965 decommissioning of the site.

1) Atlas E Missile Site 9
Lincoln County, Washington
David Price – New South Associates
April 2006
Exterior view, facing southwest

2) Atlas E Missile Site 9
Lincoln County, Washington
David Price – New South Associates
April 2006
Silo access door, north elevation facing south

3) Atlas E Missile Site 9
Lincoln County, Washington
David Price – New South Associates
April 2006
Silo roof, ventilation equipment, view southeast

4) Atlas E Missile Site 9
Lincoln County, Washington
David Price – New South Associates
April 2006
Silo retractable roof, view southeast

5) Atlas E Missile Site 9
Lincoln County, Washington
David Price – New South Associates
April 2006
Launch Operations Building roof and ventilation equipment, view southwest

6) Atlas E Missile Site 9
Lincoln County, Washington
David Price – New South Associates
April 2006
Missile bay interior, view south

7) Atlas E Missile Site 9
Lincoln County, Washington
David Price – New South Associates
April 2006
Original liquid oxygen fuel tank in the Upper Missile Bay

8) Atlas E Missile Site 9
Lincoln County, Washington
David Price – New South Associates
April 2006
Interior of the Upper Missile Bay, west wing

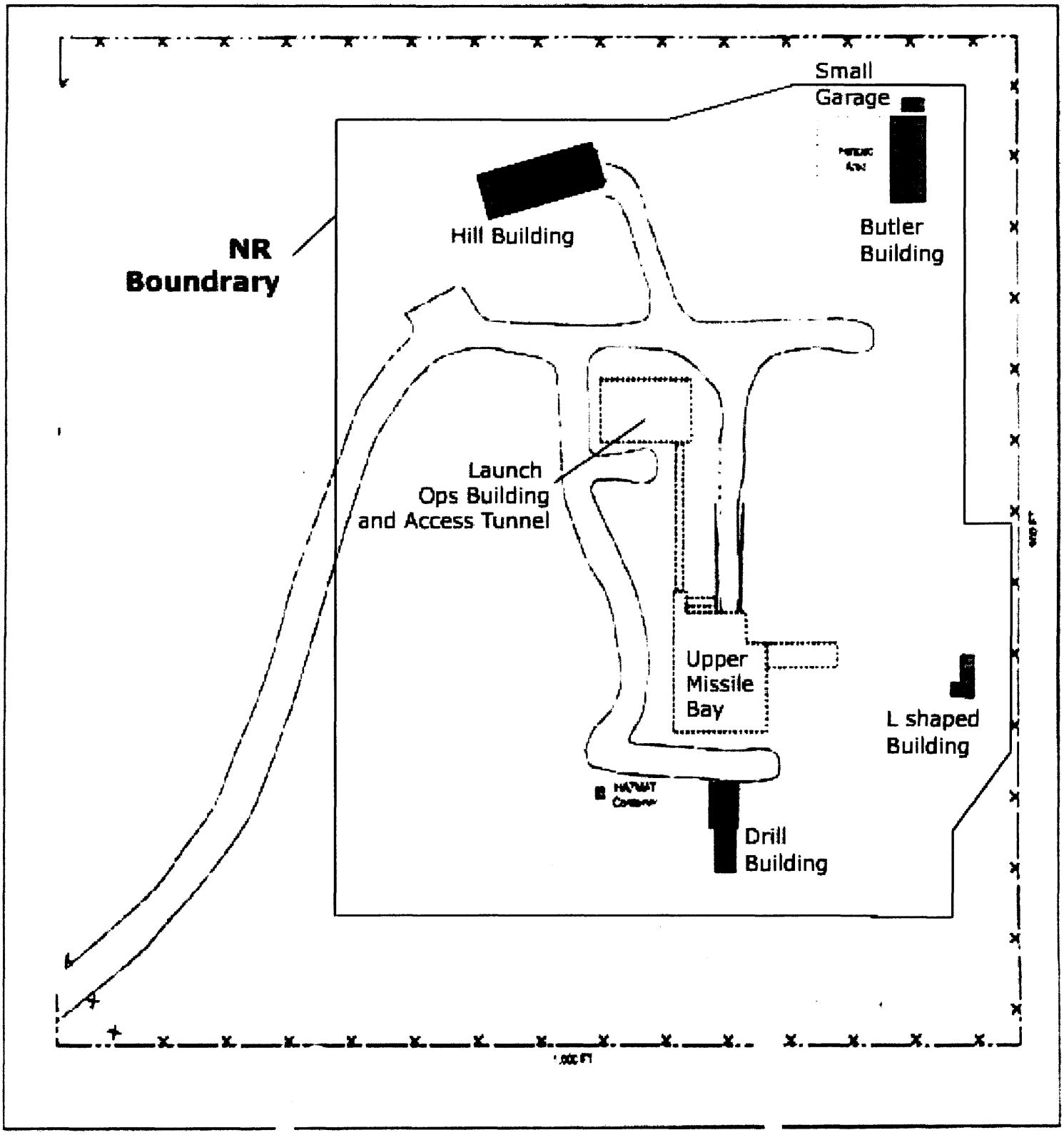
9) Atlas E Missile Site 9
Lincoln County, Washington
David Price – New South Associates
April 2006
Original Strategic Air Command mural in the Upper Missile Bay

10) Atlas E Missile Site 9
Lincoln County, Washington
David Price – New South Associates
April 2006
Tunnel connecting Upper Missile Bay and Launch Operations Building, view south

11) Atlas E Missile Site 9
Lincoln County, Washington
David Price – New South Associates
April 2006
Interior of the Launch Operations Building

12) Atlas E Missile Site 9
Lincoln County, Washington
David Price – New South Associates
Aprile 2006
Butler Building, exterior, view southeast

13) Atlas E Missile Site 9
Lincoln County, Washington
David Price – New South Associates
April 2006
Butler Building, interior, view south

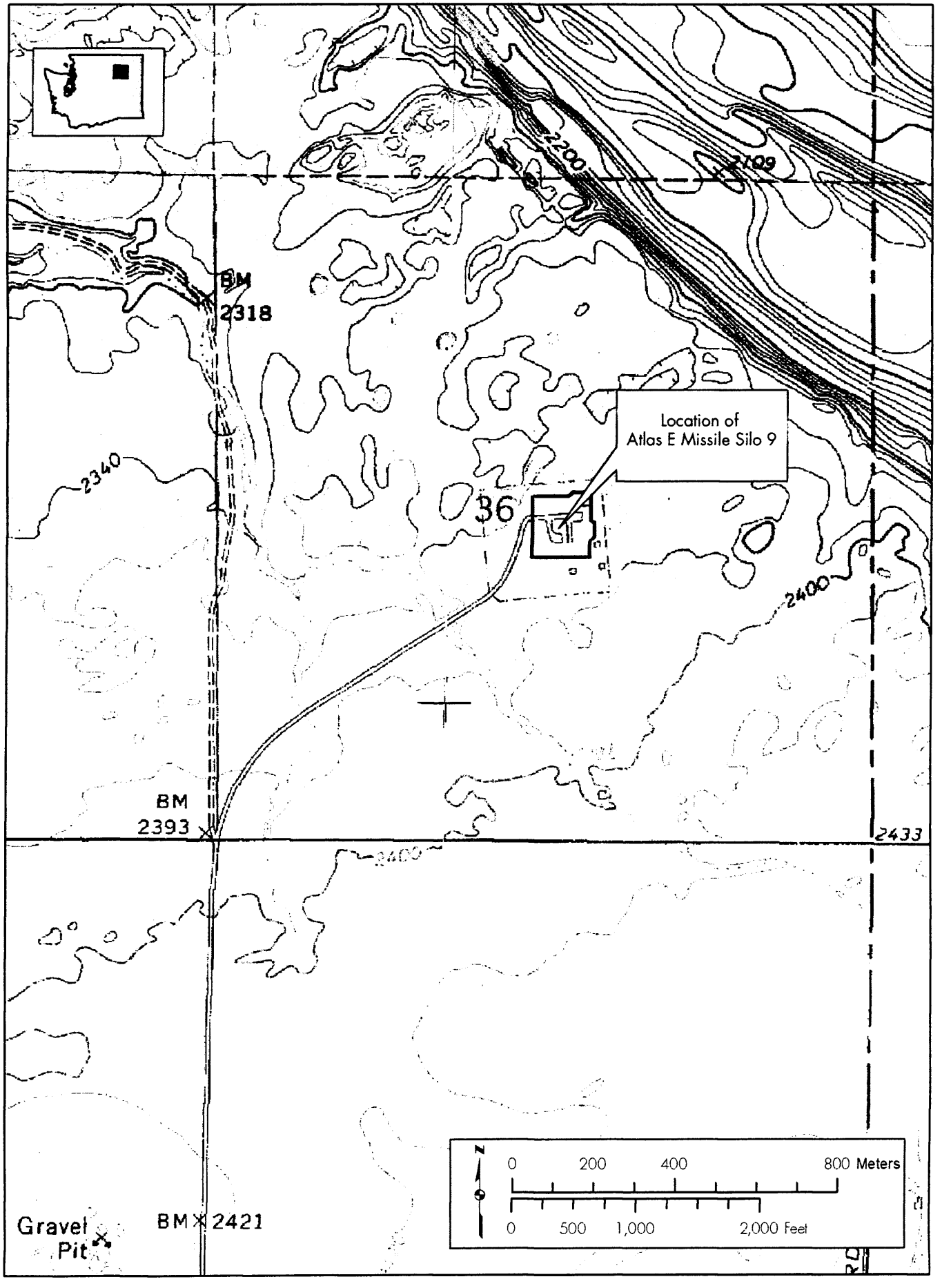


Reardan Missile Site

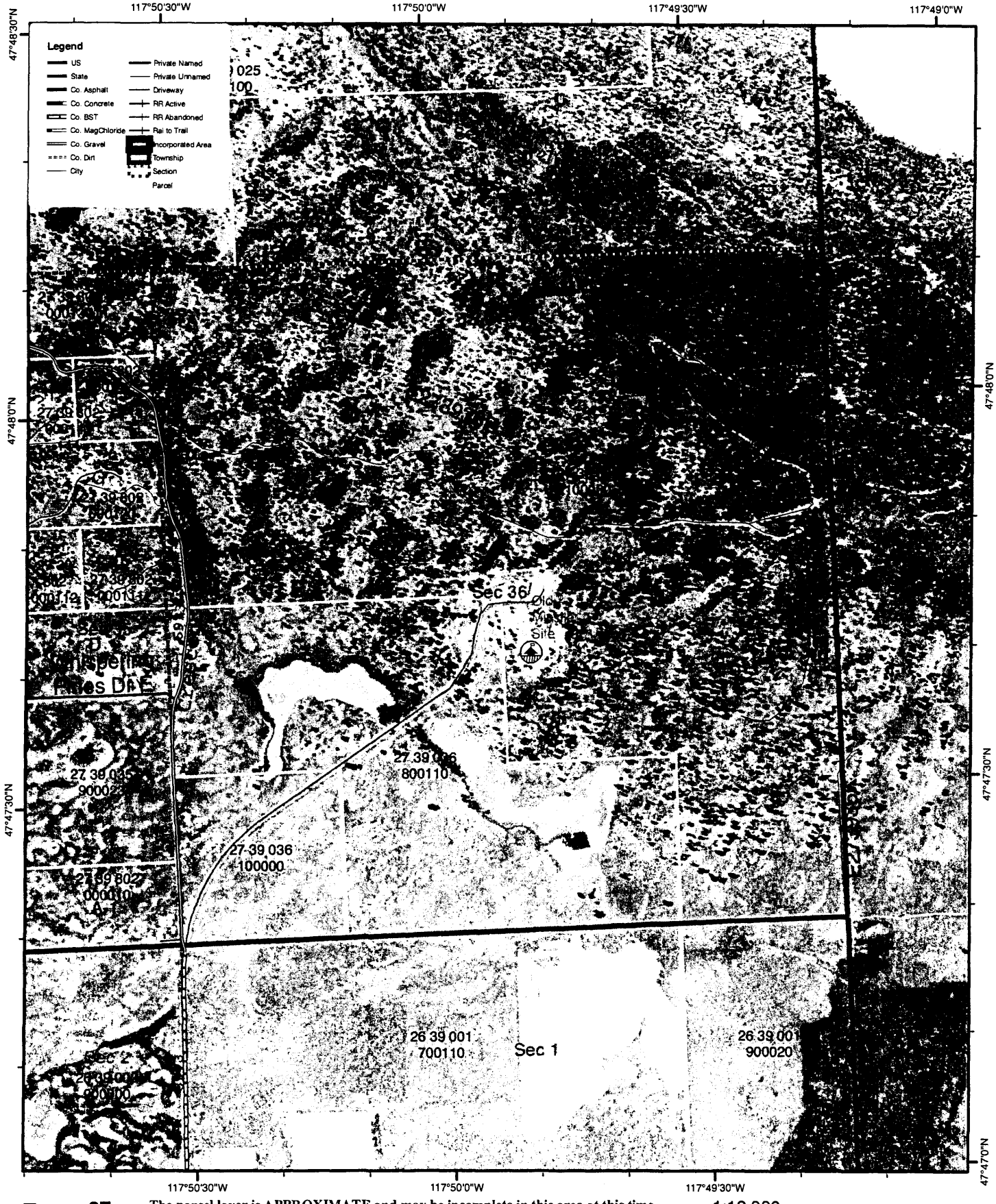
- Building above ground
- Building below ground
- Road / driveway

N

Atlas E Missile Site 9
Reardan, WA
Site Plan
Not to Scale



Source: USGS 15' Quadrangle, Long Lake WA (1973)



T 27
R 39
Sec 36

The parcel layer is APPROXIMATE and may be incomplete in this area at this time.
Search for 13 digit parcel numbers at www.co.lincoln.wa.us/assessor

Prepared Septempber 25, 2007

USDA/NAIP Aerial Photo: 2006

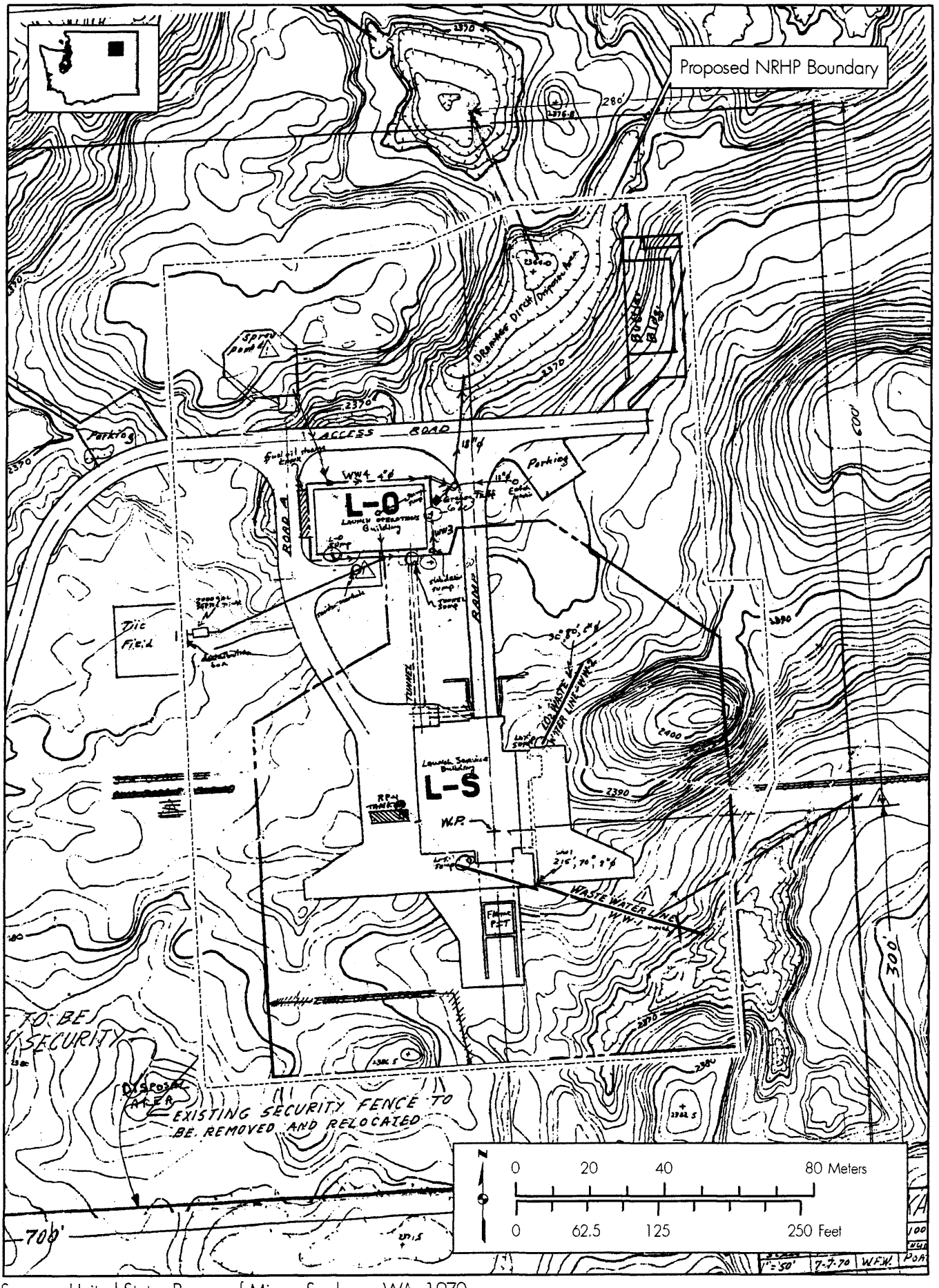
1:12,000

0 500 1,000 Feet

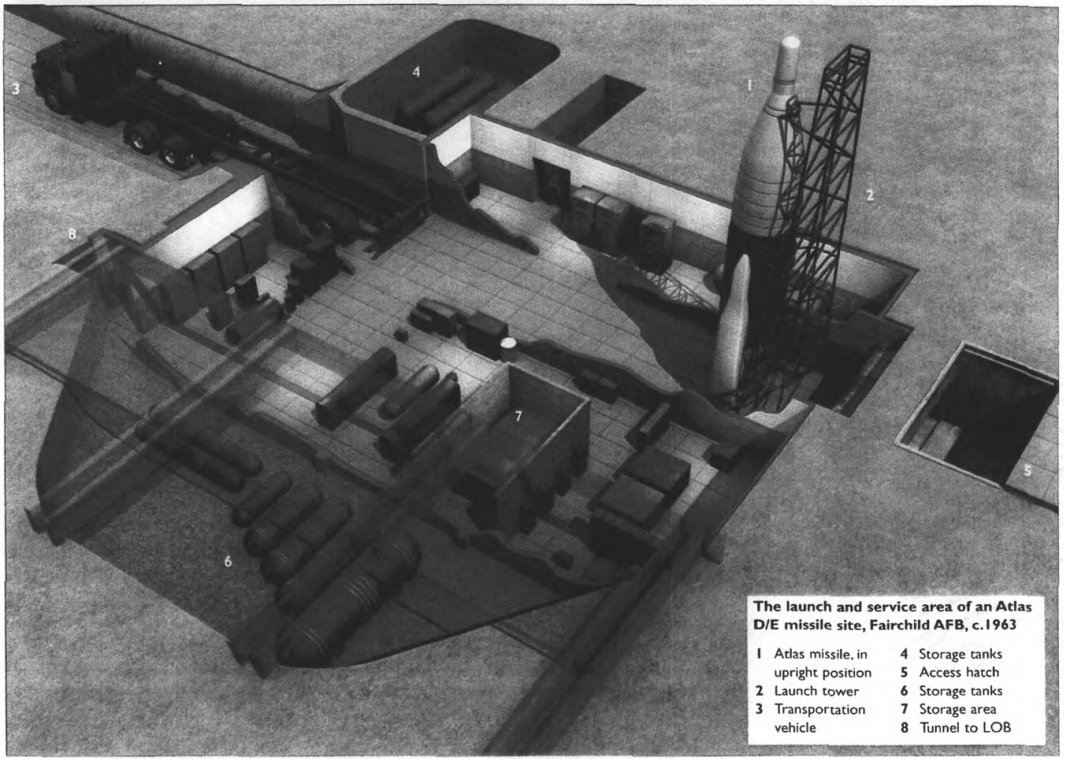
1 inch equals 1,000 feet

Lincoln County, WA

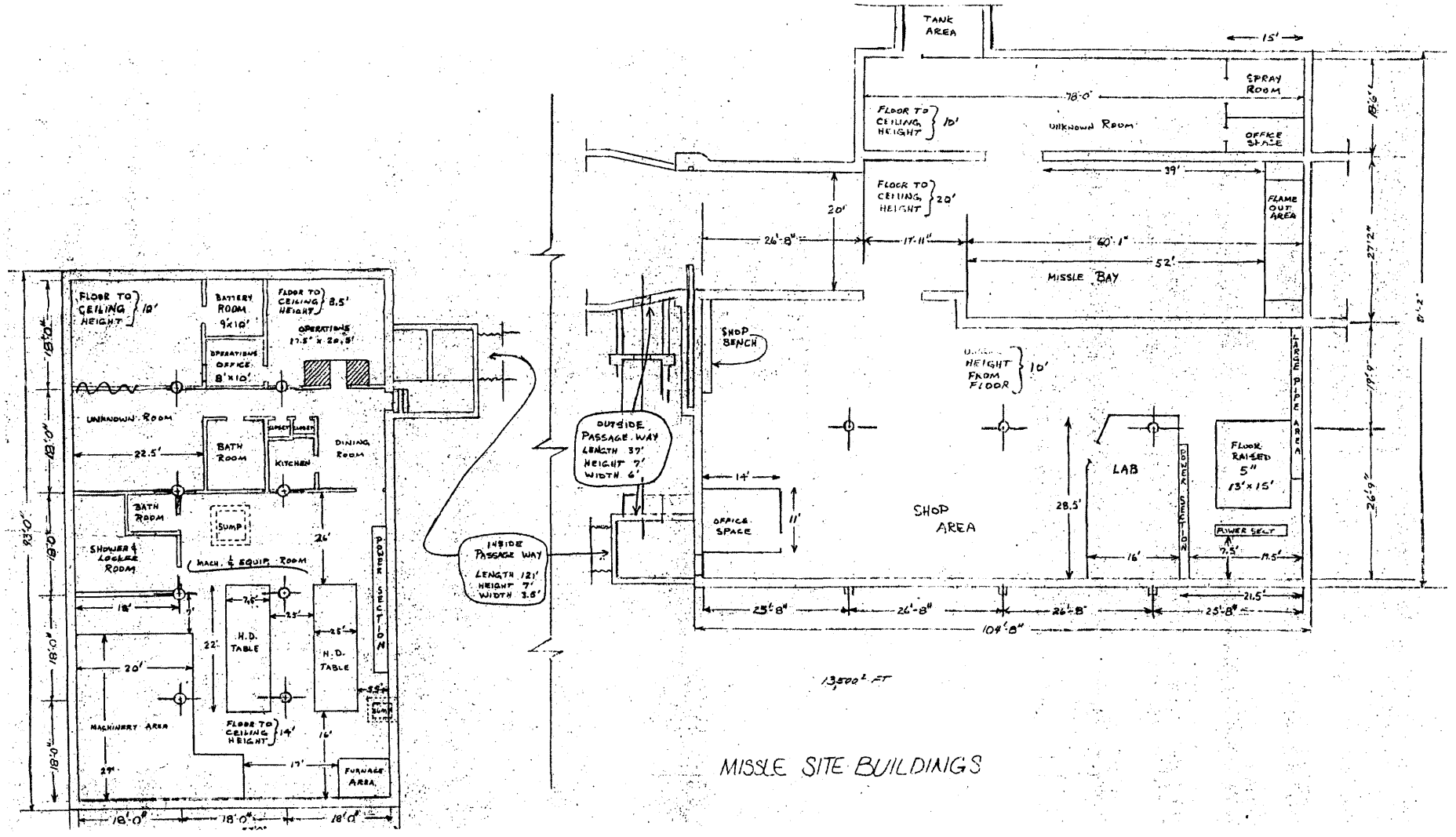
This is not a survey. Actual relationships and distances between features may be different from those depicted on this map. Accurate measurements are required in order to verify these relationships and distances.



Source: United States Bureau of Mines, Spokane, WA, 1970



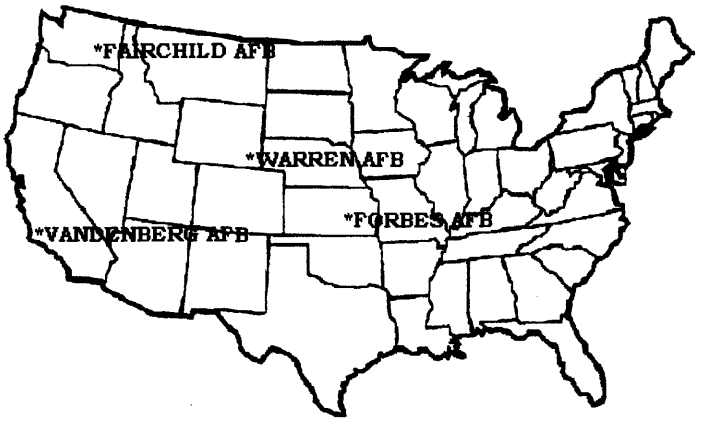
Launch and Service Area Diagram of Atlas E missile site - Fairchild AFB Missile Sites.
(Source: US Strategic and Defensive Missile Systems 1950-2004 by Mark A. Berhow, Illustrated by Chris Taylor).



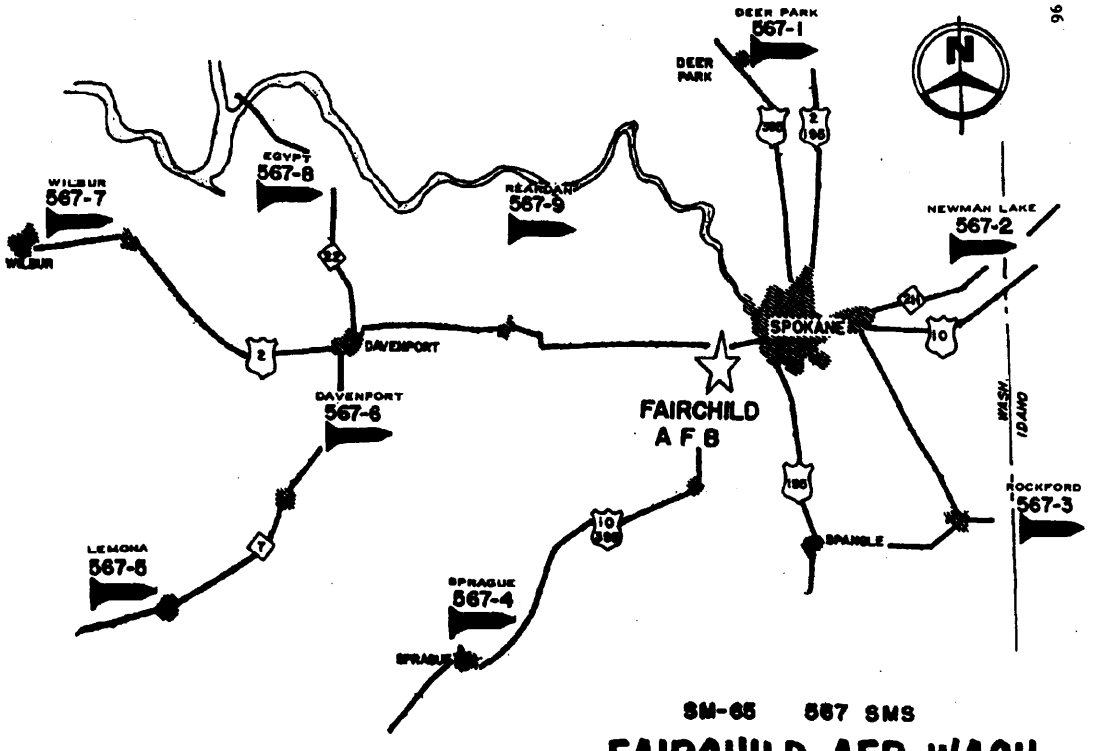
MISSLE SITE BUILDINGS

Reardan Missile Silo Laboratory Floor Plan

ATLAS E MISSILE LOCATIONS

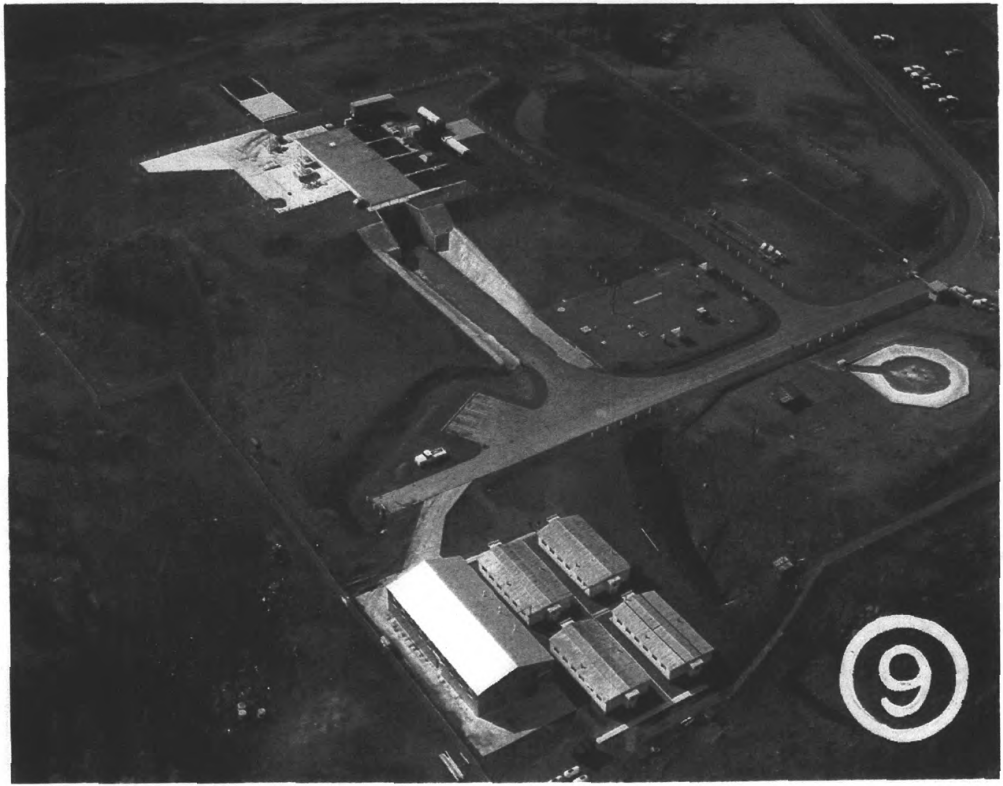


UNIT	MISSILES	BASE	ACTIVATED	CLOSED
566SMS	9	WARREN AFB – Cheyenne, WY	10/60	3/65
548SMS	9	FORBES AFB – Topeka, KS	7/60	3/65
567SMS	**9**	**FAIRCHILD AFB – Spokane, WA**	**4/60**	**6/65**
576SMS	9	VANDENBERG AFB – Lompoc, CA	4/58	4/66



WASHINGTON STATE LOCATIONS:

567-1) Deer Park, WA - N Missile Site Rd (NW end of road, just NE of Deer Park Airport)
567-2) Newman Lake, WA – N Martinson Lane (NE end of road, north of SR-290)
567-3) Rockford, WA - W Missile Base Rd (NE of SR-58 actually in Worley, ID)
576-4) Sprague, WA – Brown Rd E (just east of I-90)
567-5) Lamona, WA - Carlson Rd N (just north of Zeiler Rd E and east of SR-28)
567-6) Davenport, WA – Linstrum Rd N (just south of Red Bridge Rd E)
567-7) Wilbur, WA – Sherman Draw Rd N (just north of SR-2)
567-8) Egypt, WA – Pankey Rd N (near intersection of Sunset Rd)
567-9) Reardan, WA - 36000 Crescent Rd N / Missile Site Rd (NE end of Road, near Intersection of Whispering Pines Dr E

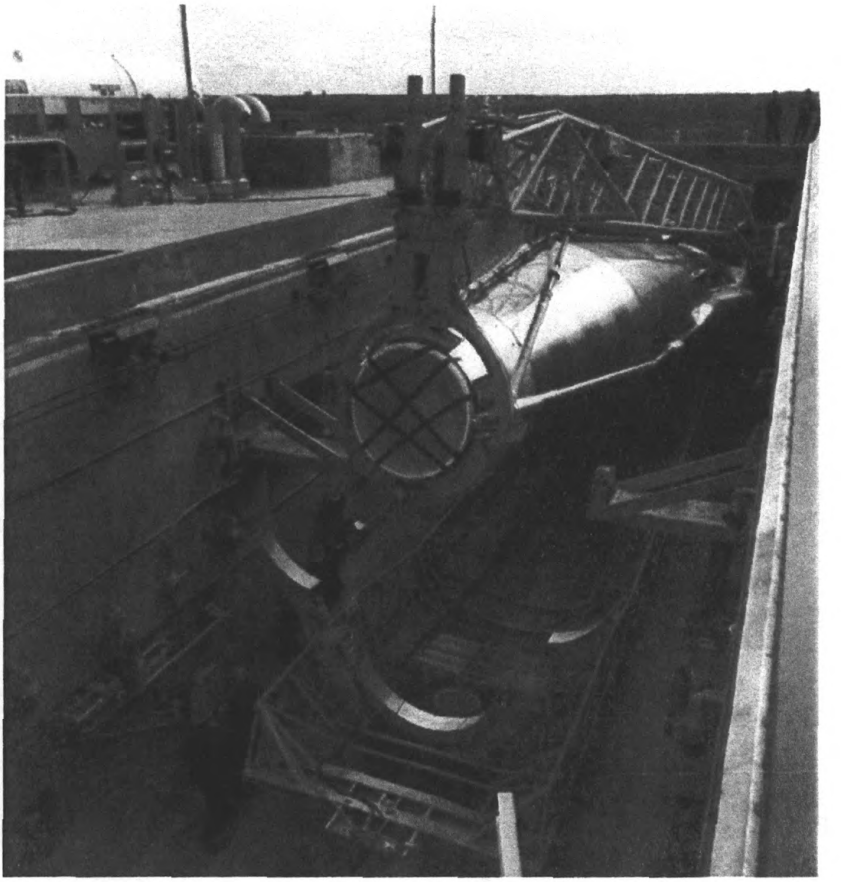


567-9 site: Circa 1961 Aerial View of Atlas E Missile Site 9, Reardan, WA.
(Source: Courtesy of Richard Mellor).

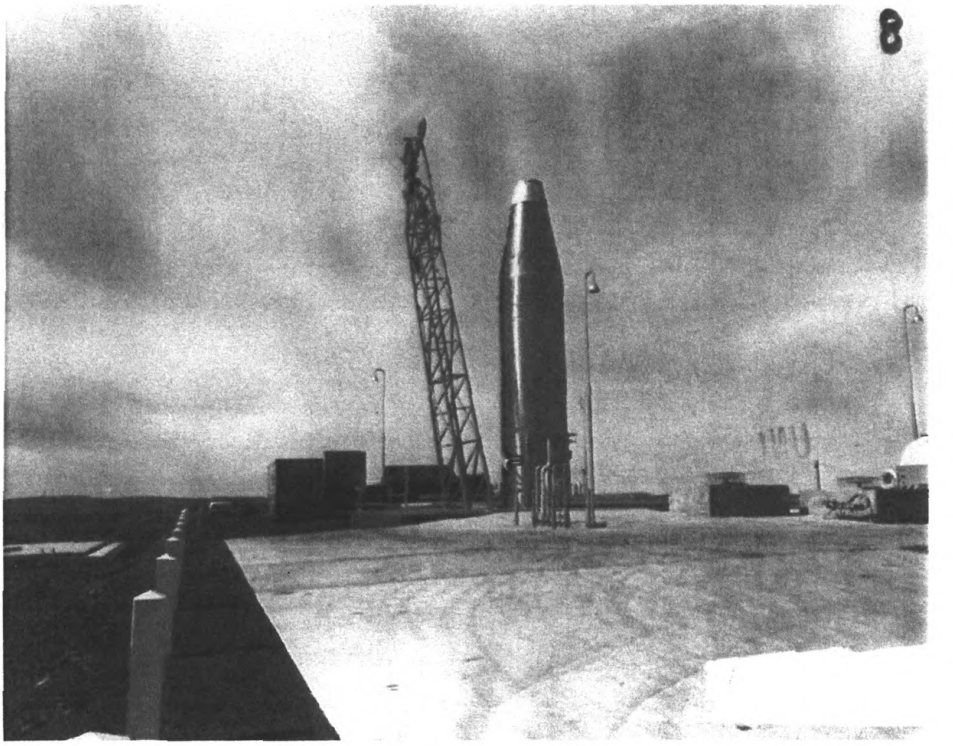
Sc-3: An Atlas E Missile on a specially built trailer being delivered to one of the Fairchild AFB Missile sites. (Source: Courtesy of Richard Mellor).

Atlas being transported through Reardan, Washington.
Image courtesy of www. Silsoworld.com

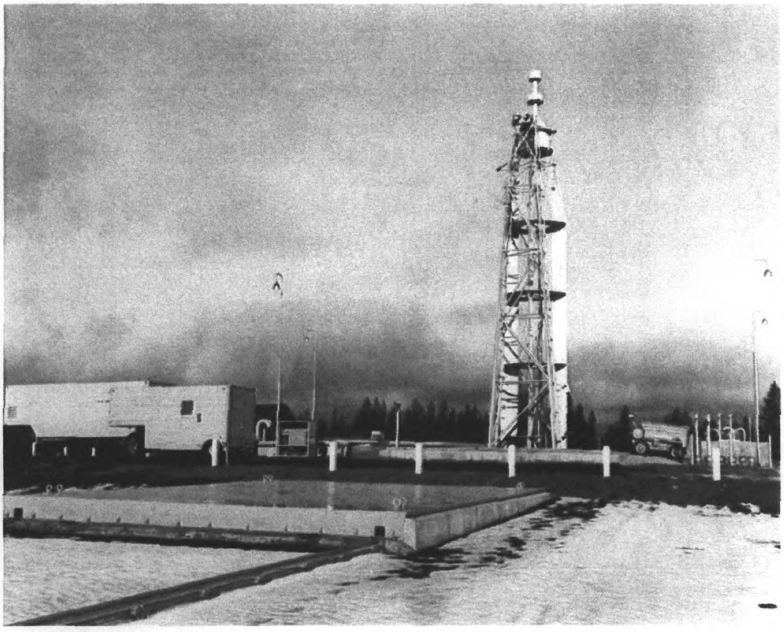
Carefully backing up Atlas E into launcher at Reardan Site.
Image courtesy of www. Silsoworld.com



Atlas E being raised to 90 degrees at Reardan Site.
Image courtesy of www. Silsoworld.com



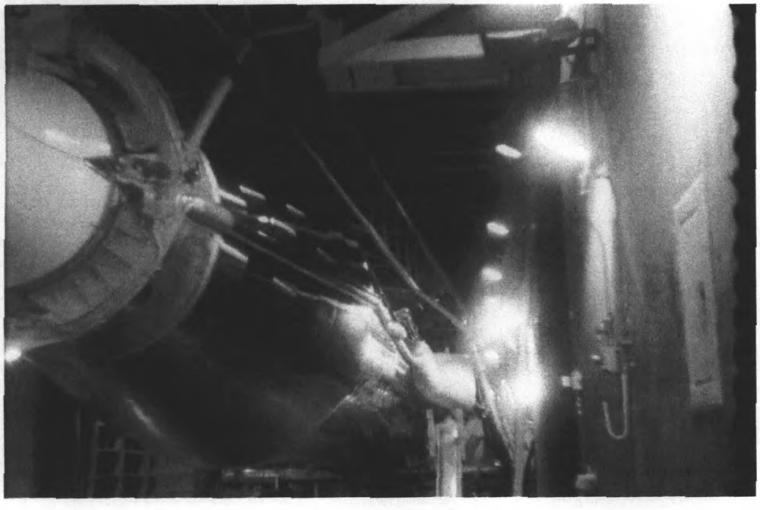
Atlas E fully raised at Reardan site.
Image courtesy of www. Silsoworld.com



567th SMS Site 9 Reardan.
Image courtesy of www. Silsoworld.com

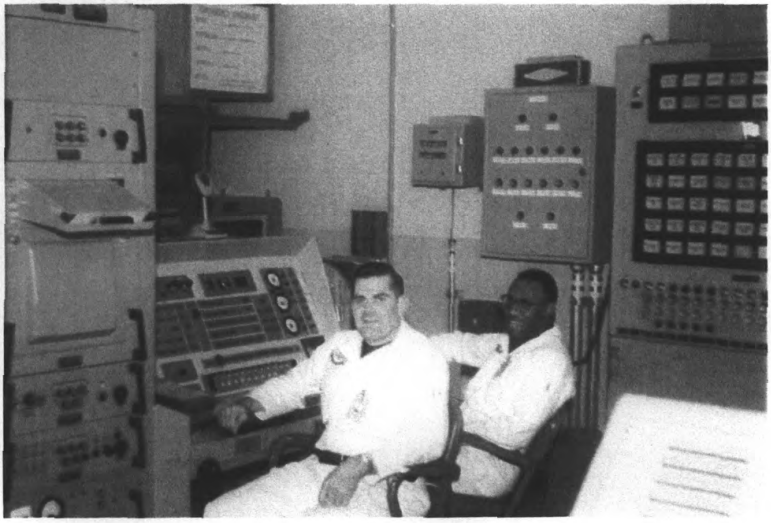
View of Atlas-E ICBM Serial #58-7135 (19E) raised and GOXing ("breathing") at LC 567-9, Reardan/Long Lake, WA., 22 July 1961. (Convair/General Dynamics Photo)
Image courtesy of www. Silsoworld.com

View of Atlas-E ICBM Serial #58-7135 (19E) raised and GOXing ("breathing") at LC 567-9, Reardan/Long Lake, WA., 22 July 1961. (*Convair/General Dynamics Photo*)
Image courtesy of www. Silsoworld.com



View at Atlas-E ICBM Serial #58-7136 (20E) inside Missile Bay, LSB, LC 567-9, Reardan/Long Lake, WA., 25 December 1963. (Image courtesy of Richard Black)
Image courtesy of www. Silsoworld.com

View of welcome plaque; including the names and rank of Ready Operational (RO) Combat Crew R-32, at personnel tunnel junction vestibule at LC 567-9, Reardan/Long Lake, WA., 25 December 1963. (Image courtesy of Richard Black)
Image courtesy of www. Silsoworld.com



View of Launch Operations Room (LOR) in Launch Operations Building (LOB) with Operational (RO) Combat Crew R-32 Commander, Capt. Richard Black (MCCC) and Deputy Commander, 1st Lt. Roosevelt Matthews (DMCCC) at the Launch Control Console, LC 567-9, Reardan, WA., 25 December 1963. (Image is courtesy of Richard Black)
Image courtesy of www. Silsoworld.com

View of Launch Operations Room (LOR) in Launch Operations Building (LOB) with four members of Ready Operational (RO) Combat Crew R-32 sitting down for gourmet Christmas meal at LC 567-9, Reardan/Long Lake, WA.,. From left-to-right, lst Lt. Roosevelt Matthews (DMCCC), A1C. Donald Patterson (BMAT), A3C. An Korchmaros (EPPT), and SSgt. Webster "Gormet" Pettyjohn (MMT), 25 December 1963. (Image courtesy of Richard Black)
Image courtesy of www. Silsoworld.com

Image courtesy of www.atlasmissilesilo.com/567thSMS_Site9.htm