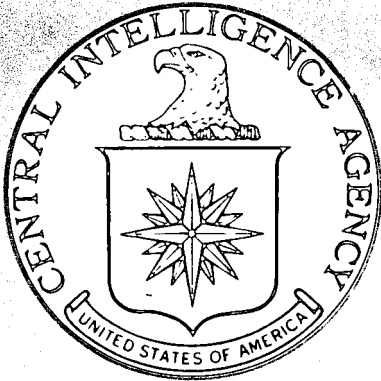


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PHOTOGRAPHIC INTELLIGENCE REPORT

LAUNCH COMPLEX B, SARY SHAGAN

ANTIMISSILE TEST CENTER, USSR

1960-1965

Declass Review by
NIMA/DOD

25X

NSA review(s) completed.

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CIA/PIR 61068

DATE NOV 1965

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SARY SHAGAN ANTI MISSILE TEST CENTER, USSR

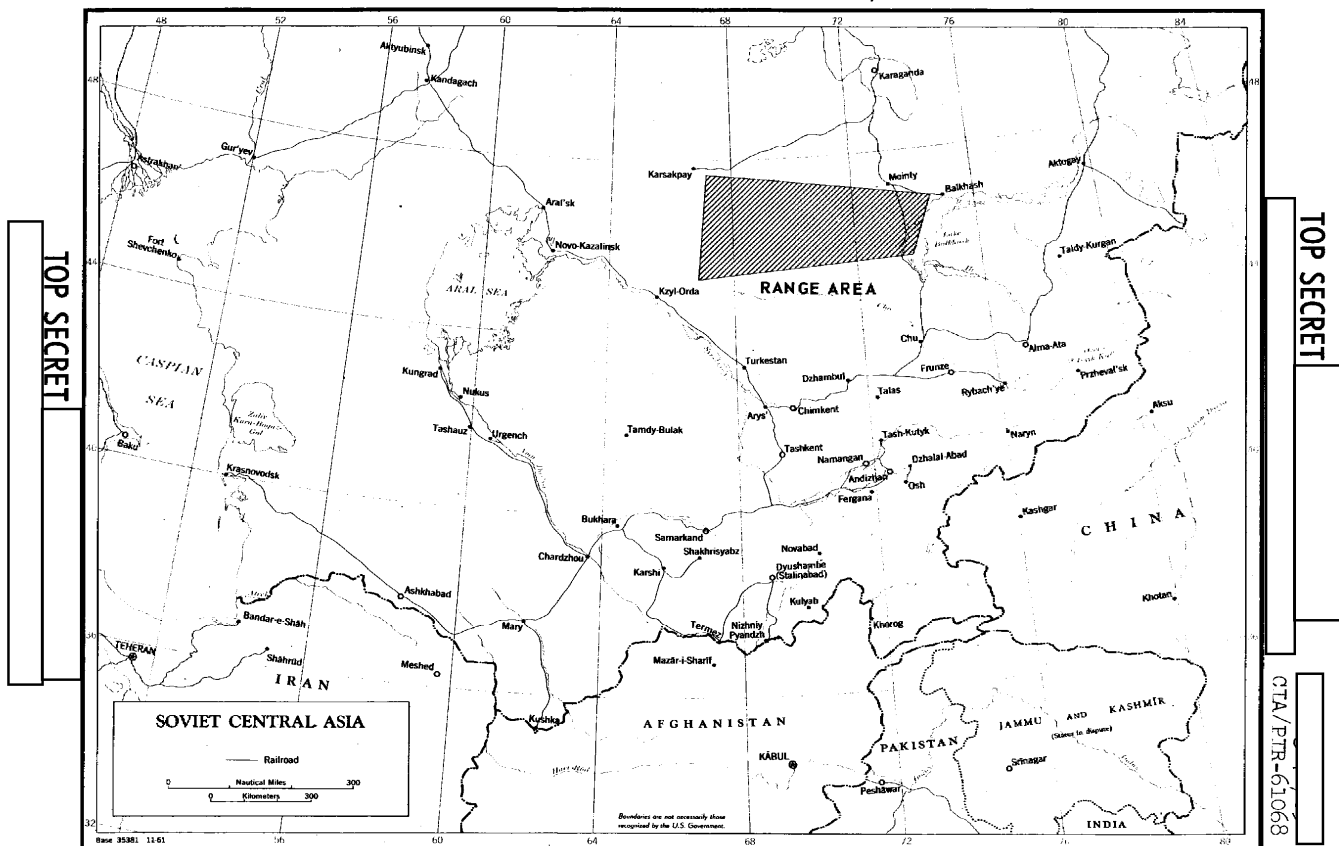


Figure 1

SARY SHAGAN ANTIMISSILE TEST CENTER

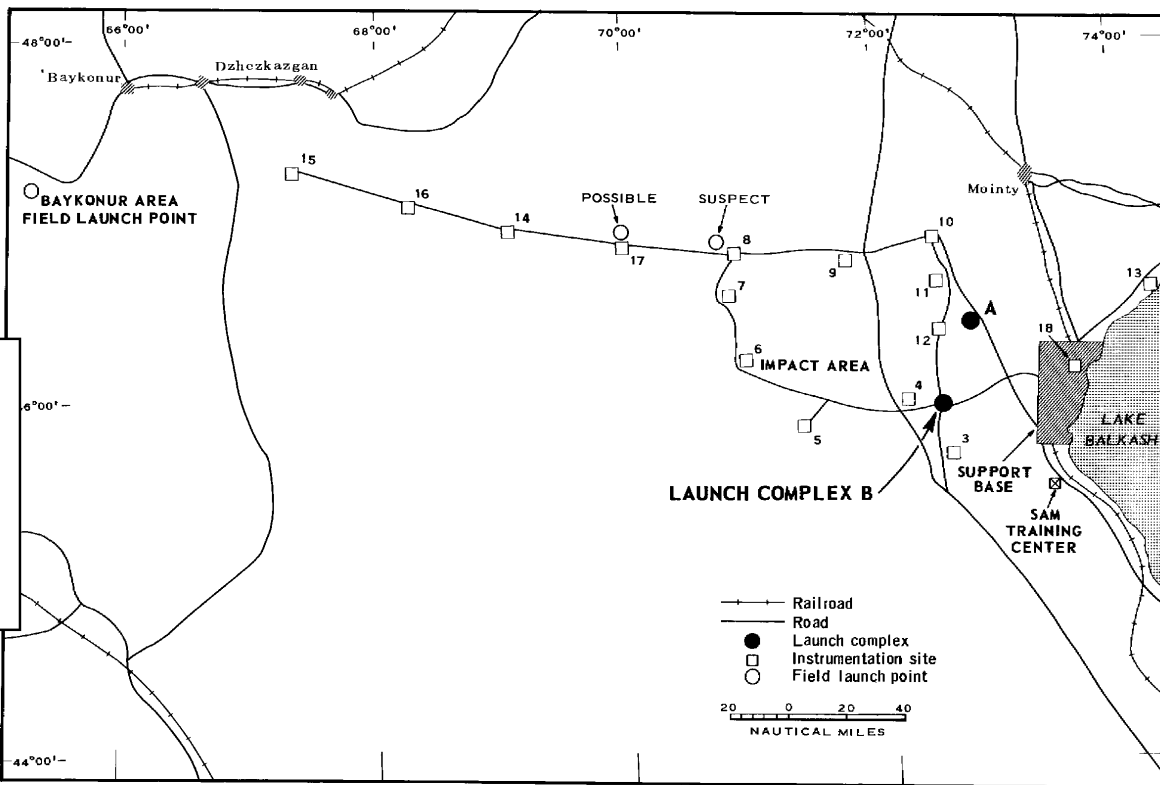


Figure 2

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LAUNCH COMPLEX B, SARY SHAGAN
ANTIMISSILE TEST CENTER, USSR
1960-1965

PREFACE

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This report updates previous photo analysis of Launch Complex B (46-00N 72-31E) at the Sary Shagan Antimissile Test Center in the USSR with a cutoff date of [redacted]. However, during later stages of work on this project, [redacted] provided the first large scale coverage of the launch facilities at Launch Complex B since the initial photography of the complex was obtained on [redacted]. As this report was being finalized, [redacted] covered Launch Complex B with high quality [redacted] photography. This photography reveals many more details to the analyst than previous photography has provided and pertinent references are made to this coverage. However, this report does not contain a detailed analysis [redacted].

All measurements in this report have been made by the CIA/IAD project analyst, using scale factors provided by NPIC/TID. They should not be construed as being mensuration data compiled by the NPIC Technical Intelligence Division.

INTRODUCTION

Initial photography of Launch Complex B on [redacted] revealed two launch facilities containing one launch pad and two probable launch pads, all of which appeared complete, and a small missile checkout facility near the launch area that appeared essentially complete. In addition, the area contained a major support area in the late stages of construction, a probable major missile handling facility adjacent to the support area that appeared to be in the early stages of construction, and four small instrumentation sites.

In the five years since this initial coverage, Launch Complex B has remained, to a large extent, an enigma. What appeared in 1960 to be a major missile handling facility under construction adjacent to the support area,

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remains virtually unchanged [redacted]

During the same period, buildings in the construction support area have been dismantled and two new facilities constructed in the operations area. The latter include a triad of buildings and two launch positions served by loop roads. The triad of buildings is one of a group of four installations at Sary Shagan, believed to be the prototype for a probable antiballistic missile (ABM) system currently being constructed in the Moscow area. Construction of the triad of buildings has been under way for at least four years and may not yet be complete.

The Soviets have probably tested more than one missile and/or missile system at Launch Complex B and may be continuing a multiple program, probably to develop an ABM capability.

LAUNCH OPERATIONS AREA

(Figures 3 through 10 and Table 4)

The launch operations area consists of four facilities. Three of these, Launch Facility A, Launch Facility B, and the nearby Missile Assembly and Checkout Facility, were probably complete in [redacted] Facility C, the building triad electronics, and loop road launch positions (B-3 and B-4) at Facility B have been added since 1960.

The launch operations area is served by an overhead power line (35 KV or less) which goes underground approximately 1,000 feet north of the Missile Assembly and Checkout Facility. From there, buried power lines serve the other three major facilities. A faint trace associated with the overhead power line was probably present on [redacted] but negated on [redacted]. Poor quality of early [redacted] photography precludes more exact negation, however the negation of this electric power line in [redacted] suggests the probable use of on-site electric power generators if launch operations took place at that early date.

The [redacted] photo coverage of [redacted] revealed transmission towers for an overhead, probable 110 KV, power line between the complex support area and a probable electric power transformer substation located near the southern edge of Facility C (Figure 5). A ground scar,

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probably associated with this power line, can be first detected on [redacted] and is negated on [redacted]. Transmission towers were first detected on [redacted] photography of [redacted]. Two buried water pipelines also serve the launch operations area.

FACILITY A

(Figures 3 through 5)

No major change in facilities has occurred at Facility A since the initial coverage of [redacted] (see Document Reference 2). However, a new service road to the launch pad (Annotation 26, Figure 5) was added, possibly sometime early in 1964. It appears to be a hastily prepared surface of stone, gravel or possibly asphalt in order to gain right angle access to the north side of the launch pad in front of the launcher. This new service road pattern did not become prominent until [redacted] when light snow cover and apparent activity on the road revealed its presence. Analysis of previous coverage reveals that this service road was present on [redacted] however, it does not appear to be present on [redacted].

Activity at Launch Facility A was seen as recently as [redacted]. On this photographic coverage, two unidentified vehicles were seen on the approach road immediately off the north edge of the launch pad, indicating the facility continues to play a role in the mission of Launch Complex B five years after initial [redacted] photo coverage.

FACILITY B

(Figures 3 through 10 and Table 4)

The original facilities at Launch Facility B have undergone little change since they were first observed in [redacted]. The two concrete pads (B-1 and B-2), once considered to have a possible electronics function, are now positive launch pads on the basis of new evidence revealed by [redacted] and the Soviet television film "Rockets Guard the Peace" (Document Reference 12). South of the road between Launch Positions B-1 and B-2, a wide-entrance drive-in probable missile storage bunker (Annotation 22, Figure 5) was

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identified on [redacted] along with a suspect missile, just outside the bunker entrance. Details are contained in Document Reference 9 dated [redacted]

No identifiable activity has been evident at Launch Position B-1 during five years of [redacted] photographic coverage. However, in comparing the appearance of snow covered Launch Complex B on [redacted] it is evident that some form of activity at Launch Position B-2 and possibly B-1 had taken place following the snowfall as revealed on the [redacted] photo coverage. On [redacted] photography revealed no post-snowfall activity at either Facility B or Facility A.

At Launch Position B-2, activity has been noted several times since the early summer of 1964. This activity has consisted of two unidentified vehicles or items of equipment parked along the eastern edge of the pad, always in the same general location (Annotation 21, Figure 5), but in different positions. The objects have appeared very dark and measure approximately 35 feet in length. In comparing two [redacted] missions of good quality, [redacted] activity is apparent. On the latter date, one of the two vehicles or items of equipment usually parked near the eastern entrance to Launch Position B-2 is not present in its former position, however a possible transporter measuring approximately 40 feet long is parked nearby (Annotation 1, Figure 10). At the same time an unidentified object approximately 40 feet long is parked on the upper end of, and at right angles to, the access ramp to the underground, probable missile storage bunker (Annotation 2, Figure 10). A possible vehicle approximately 30 feet long is parked about halfway between the latter object and the northwestern entrance to Launch Position B-1 (Annotation 3, Figure 10). None of these objects were present on [redacted]

New at Facility B since initial 1960 coverage are the two loop road launch positions south of Positions B-1 and B-2. They are referred to as Launch Positions B-3 and B-4, in the sequence of their construction. A control bunker (Annotation 14, Figure 5) is centrally located north of, and adjacent to Launch Position B-3. The easternmost loop road (Launch Position B-3) first appeared under construction in the summer of 1961 and was complete on [redacted]. Evidence of construction on the second loop road (Launch Position B-4) was not apparent until the summer of 1963, with the position probably complete when observed in [redacted]. Both launch positions contain probable erector/launchers, each located in the same relative position. They are believed to be positioned as shown on

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Figures 7 and 11 through 13a. Five self-supporting lattice towers, from 45 to 65 feet in height, have been positioned around Launch Position B-3 (Annotation 15, Figure 5). Foundations for the two southernmost and the westernmost towers were probably present on [redacted]

On [redacted] these three towers were probably complete. They are clearly visible on [redacted] along with the two northernmost towers which were visible for the first time. However, the northwestern tower was not visible on good quality [redacted] photography from [redacted] and appears to have been dismantled. The four other towers appear to remain intact.

At Launch Position B-4, three self-supporting, lattice towers approximately 100 feet high, are located around the launch position (Annotation 10, Figure 5). The foundations for all three towers are first seen on [redacted]

[redacted] All three towers were probably in an early stage of construction on [redacted]

[redacted] approximately one-third of the northernmost tower was erected, with it being the furthest advanced of the three. All three towers were probably complete by [redacted]

All of the towers at Launch Positions B-3 and B-4 have unidentified objects or equipment mounted on top of them. Shadow analysis does not permit identification of these objects, however they appear to be approximately five feet in width. This size could be compatible with an observation platform, electronics antennas, or possibly lighting equipment.

The azimuths of the service roads through each launch position (B-3 and B-4) is approximately 295 degrees (± 5 degrees), similar to that of the launch pad at Facility A and also similar to the long axis azimuths of the "E" shaped electronics buildings located at the four westernmost Sary Shagan Instrumentation Sites 14, 15, 16 and 17 (see Document Reference 8).

Activity at Launch Positions B-3 and B-4 suggests the possibility that missile firings took place at these sites in the summer of 1964. At Launch Position B-3 on [redacted] a probable GALOSH missile transporter and prime mover was seen 35 feet west of the erector/launcher. Figures 7 and 8 show location and comparative dimensions. It is possible that this view was that of an empty canister just after it had been pulled off the launch turntable by the prime mover.

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Three theories or concepts of missile handling/erection at the launch position were developed prior to the arrival of the outstanding [redacted] mission of [redacted]

[redacted] These theories are presented in Figures 11 through 13. Following an analysis of [redacted] one additional handling concept was developed as presented in Figure 13a. These theories are not intended to be complete set of all possibilities. They are simply presented for consideration as possible means of handling, erecting and launching the GALOSH missile. Theories 1 through 3 have the erector mechanism positioned well off center on the turntable, as revealed by [redacted] Theory 4 shows it mounted as seen on [redacted]

On [redacted] the probable GALOSH transporter was not present, however on [redacted] [redacted] it was again visible at Launch Position B-3. On the latter occasions the probable GALOSH transporter was abutting the downrange side of the probable erector/launcher (Figure 9). On [redacted] [redacted] good quality coverage revealed no activity at Launch Position B-3 but at this time activity was visible at Launch Position B-4 (Figure 10). See Document Reference 13 for additional details on these probable missiles.

This activity at Launch Position B-4 includes a small unidentified vehicle (Annotation 4, Figure 10) approximately 35 feet in length, parked on the road approximately 25 feet southeast of the probable erector/launcher. The unidentified vehicle was aligned with the road passing through the launch position. In addition approximately seven vehicles or items of equipment were seen parked in the area immediately northwest of Launch Position B-4 (Annotation 5, Figure 10). This is an increase of approximately three over that seen on the coverage of [redacted] which was of similar good quality. Changes in position of vehicles is noted in this area as well as in the area immediately south of the adjacent bunker.

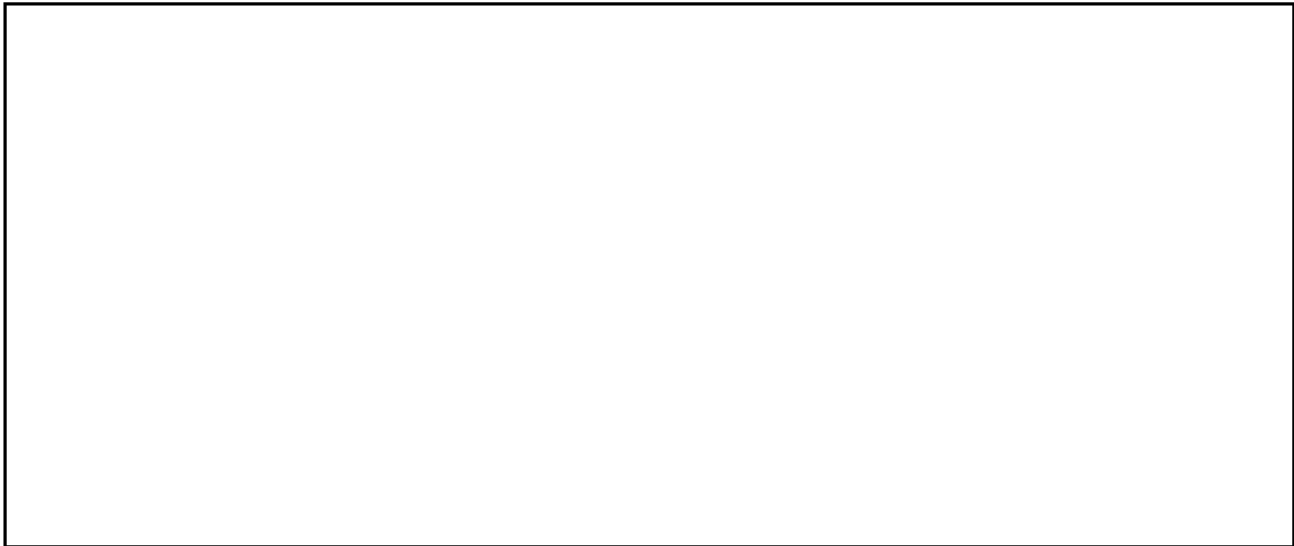
Launch Position B-3 is connected with the triad buildings by a cable trench that was first noted under construction in [redacted] This trench appeared to connect Triad Building B with Launch Position B-3 [redacted] It is suspected that Launch Positions B-3 and B-4 are also connected by a cable trench.

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FACILITY C

(Figures 3 through 10 and Table 4)

Construction was first noted in the triad area on [redacted] [redacted] the three buildings which form the triad electronics facility appeared externally complete. The largest building (A) measures 255 by 145 feet by 35 feet in height. Buildings B and C measure 115 by 110 feet by 35 feet in height. Four other smaller buildings subsequently added to the triad facility are considered an integral part of this facility. They are: Building A-1 located southwest of Building A, Building A-2 located northeast of Building A, Building B-1 located southeast of Building B and Building C-1 located southeast of Building C. After four years of activity, construction work has not yet been completed at this facility, though it could possibly be in the late stage. Construction atop the roofs of the triad buildings began early in the summer of 1962. On [redacted] however, no significant structures could be discerned on the roofs. [redacted] the 80-foot tower on Building A appeared complete with a 50-foot circular dish antenna atop it. On the other hand the structures on the roofs at Buildings B and C were not significantly advanced from that seen during the summer of 1962 and in early 1963.

On [redacted] the ring base for the environmental shelter was visible on the roof of Triad Building A around the 80-foot tower.

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[redacted] the environmental shelter surrounded the tower to a height of approximately 40 feet. [redacted] the environmental shelter appeared complete with the exception of the radome cap, which was lying on the ground adjacent to the building. At that time the circular dish antenna had been removed from atop the tower and was also on the ground. On [redacted] the radome cap was on the environmental shelter of Building A, but the circular dish antenna-like object remained on the ground beside the building. At Triad Buildings B and C, construction also appeared to continue well into the winter. On both of the buildings the environmental shelters appeared complete on [redacted]. The above noted construction activity is significant in that construction continued through the winter at the triad facility, possibly in an attempt to reach operational status by summer.

The sequence of activity at the triad facility could denote a checkout of the basic components involved in the system in the latter portion of 1963, utilizing only Building A and its installed equipment. It is possible that construction in the summer of 1964 and the winter of 1964-1965 was speeded to complete at least one triad facility for further missile associated testing and development.

An area of activity has been present southeast of the large triad building (Building A) since [redacted]. At that time it consisted of two excavations (Annotation 3, Figure 5), each 50 feet in diameter and 150 feet apart, located approximately 275 feet southeast of Triad Building A. A line connecting the centers of these excavations would parallel the southeast side of Triad Building A. A third excavation was observed for the first time on [redacted]. [redacted] the initial two excavations contained semi-buried tanks approximately 15 feet in height and 45 feet in diameter. The excavations were not back-filled and the third excavation did not contain a tank.

[redacted] the third excavation was graded over. No buried tank was noted. On [redacted] the two excavations containing tanks were graded over. They appeared to be raised slightly above the surrounding terrain. These two tanks probably provide water storage for cooling equipment in the triad buildings.

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Another significant area of activity at Facility C has recently been highlighted. On the lateral SA-1 type service road, approximately 250 feet northeast of Triad Buildings B and C, two of the three dark patterns (Annotations 6 and 7, Figure 5) previously referred to as possible launch points, have been identified as shallow, circular excavations on photography [redacted]. The third dark pattern (Annotation 5, Figure 5), north of the central access road, does not have excavations which equate to the others, either in location or size. The southernmost excavation measures approximately 20 feet in diameter while the central excavation probably has a bevelled circumference with a maximum diameter of approximately 45 feet and an inner diameter of approximately 30 feet. Neither of these two excavations appear to have any significant depth, probably no more than ten feet. The position north of the central access road has two possible excavations less than ten feet in diameter.

Details of the above excavations are difficult to discern, however they appeared for the first time as dark spots on [redacted]. They have appeared relatively unchanged since then, however most [redacted] photography would reveal only gross changes in any event. [redacted] the first [redacted] coverage revealed no "liner" construction material in the vicinity, which would be expected around a launch silo in the mid-late stages of construction. Nevertheless, the 30-foot circular excavation with a bevelled circumference, the information reported in Document Reference 5*, plus the tie-in to Launch Positions B-3 and B-4 requires retention of the designation "possible launch positions." The absence of other supporting evidence requires the low order of confidence. It is further suspected that initial plans called for a test of the triad electronics in conjunction with a missile launched from nearby, and also, more distant, launch position (i.e., Launch Positions B-3 and B-4).

* "Comparison of Possible AMM-Associated Facilities at Moscow and Sary Shagan, USSR, [redacted]"

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All three positions are adjacent to and probably connected by a cable trench which also connects with a small, square, unidentified structure (Annotation 4, Figure 5) located approximately 175 feet northwest of Building B. This cable trench ties to one connecting Triad Building B and Launch Position B-3 (Figure 5). The small structure referred to above was possibly under construction on [redacted] and positively verified on [redacted]. It is similar to one (both 25 feet on a side) located approximately 150 feet northeast of Launch Position B-4 (Annotation 13, Figure 5) which was first seen on [redacted].

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HIGHLIGHTS FROM MISSION [redacted]

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Several missions have photographed Launch Complex B subsequent to the cutoff date for this report. These are [redacted] with the latter providing the best quality [redacted] coverage to date. Due to the significance of the features clearly revealed by this mission, it is considered mandatory to add the following information.

Launch Positions B-3 and B-4 contain two massive erector mechanisms straddling a turntable, each with rails running through the turntable and extending approximately 45 feet off each end, parallel to the contiguous loop road. The tracks have a gage of approximately [redacted] and ties can be seen. The erectors, approximately 20 feet high at Launch Position B-3 and 30 feet high at Position B-4, are probably designed to launch the GALOSH missile (Figure 13a).

The presence of a probable GALOSH launch position approximately 200 feet northwest of Triad Building B (adjacent to Annotation 4, Figure 5). This launch position (designated C-1) appears identical in appearance and size to the B-3 position.

The presence of uncompleted probable GALOSH launch positions (previously referred to as possible launch points) east of the triad (Annotations 5, 6, and 7, Figure 5), one of which has a well developed hole for the turntable foundation and a marked off section to accommodate tracks.

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The presence of [redacted] missiles on launchers at Launch Positions B-1 and B-2, each with a [redacted] long booster and rectangular booster stabilizer fins. The mensuration ratios equate with an unidentified missile seen launched in a recent Soviet propaganda film entitled "Rockets on Guard for Peace" (Document Reference 12). Dimensions are also similar to a suspect missile which was seen adjacent to the entrance

[redacted]

Probable GALOSH canisters were photographed at Launch Position B-4 on [redacted] On the former date a probable GALOSH canister was seen in position at Launch Position B-4. On [redacted] probable GALOSH was again photographed at B-4 and a probable GALOSH was seen for the first time at Launch Position C-1.

Conclusions drawn from this latest information are as follows: Launch Complex B is being used to test at least two and possibly three different missiles. Construction activity in the triad area at Moscow SAM Site E33-1 reveals that the Soviets are probably installing GALOSH-type launch positions in the immediate vicinity of the triad buildings (Figures 18 and 19). Similarities between the activity at Moscow E33-1 and the Facility C activity at Launch Complex B were reported in Document Reference 5.

MISSILE ASSEMBLY/CHECKOUT FACILITY (OPERATIONS AREA)

(Figures 3, 5 and 6, and Table 4)

This missile handling facility has appeared unchanged since the initial coverage of [redacted] Early reports on this facility indicated possible modification was under way in [redacted] however later photography reveals that the facility was essentially complete at that time. Additions since [redacted] consist of two small unidentified structures (Annotation 27, Figure 5) which were present in [redacted]

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SUPPORT AREA

(Figures 3, 4, and 14 and Tables 1 and 3)

The support area at Launch Complex B appeared to be in the mid-to-late stages of construction when first observed on [redacted]

[redacted] By early 1963 all major buildings of what can now be termed the permanent station were complete (Areas A through D, Figure 14). The area is served by an all-weather road from the main base support area, two water pipelines from Lake Balkhash, and two 110-KV overhead electrical power lines from the substation in the main support area. A 4,300 by 225-foot graded earth airstrip is located in the general area. A nearby well also provides a local water supply to the complex.

Gradual removal of support/storage buildings in Area E (Figure 14) probably began during the spring of 1963, with two buildings missing by [redacted] four buildings removed a year later, eight more by [redacted] and the last three of the seventeen removed by the spring of 1965 (Table 3).

Total available floor space in quarters will accommodate approximately 4,000 men at 60 square feet per man or approximately 2,500 men at 100 square feet per man.

Located just north of the complex support area is Sary Shagan Anti-missile Test Center SAM Site B21-2. It is a standard star configuration SA-2 site with an on-site support facility located immediately west of the launch area. This site can be negated on [redacted] but was present and appeared complete on [redacted]

In addition, a probable surface-to-air missile training facility is located just north of SAM Site B21-2. It consists of two generally circular road patterns each with scarred areas around the perimeters and in the centers of the areas, forming rough SA-2 site configurations. No revetments are present. No equipment/vehicles have ever been identified in the area. The probable training facility was not present on [redacted]

OLD MISSILE FACILITY

(Figures 3, 4, and 15 and Table 3)

This probable missile handling facility, adjacent to the support area,

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was believed to be a major missile assembly/checkout and storage facility under construction when first observed in [redacted] Five years later this facility appears undeveloped and not significantly different from that first observed. Three small storage buildings were added (Annotation 2, Figure 15) in 1960 and two other unidentified buildings have been added since 1960 (Annotations 5 and 8, Figure 15). One building has been torn down and a smaller building constructed at the same locations (Annotation 10, Figure 15). An irregularly curved, unidentified object appears to be attached to the north side of Building 3. The object measures approximately 25 feet across and has a height approximately that of the adjacent building.

No large vehicles or any significant concentration of vehicles has ever been identified at this facility. It has never shown any indications of being developed into a major missile support facility. The small arms firing range and the sports area suggests that the Soviets have attempted to utilize the facilities for other functions rather than let them remain idle.

LAUNCH COMPLEX B GRADED-EARTH AIRSTRIP

(Figure 16)

Launch Complex B is served by a liaison-type airstrip located 1.4 nautical miles east of the complex support area. The graded-earth runway is 4,300 feet long and has an overall graded width of 650 feet. However, a more thoroughly graded center strip of 225 feet has apparently been used as the main landing strip. Facilities include a fenced maintenance/operations area containing nine small buildings, a graded-earth parking area, and probable landing aids. The landing aids are located 700 feet north of the west end of the airstrip and 6,000 feet west of the west end of the airstrip.

This airstrip was present on [redacted] No apparent change has occurred since that time on all coverage to date (through [redacted] No aircraft have been identified at this airstrip on any photography to date.

INSTRUMENTATION SITES

(Figures 3, 4 and 17 and Table 5)

Four sites make up the instrumentation "ring" around Launch Complex B.

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Two sites are south of the launch area, one to the west, and one to the north. Instrumentation Site B-1 is the largest of the four, containing nineteen buildings as of [redacted]. The largest building here is approximately 65 by 45 feet (Annotation B, Figure 17). Building B was noted under construction for the first time on [redacted] and appeared to be complete on [redacted]. Five other buildings were added at Instrumentation Site B-1 in the summer of 1964.

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Instrumentation Sites B-2 and B-3 are very similar in layout. Each contains three buildings (approximately 30 by 30 feet) and three or four other smaller buildings. Probable vans have been present at these sites parked in similar locations (Figure 17) since [redacted]. Grading for the foundations for Building A at Instrumentation Site B-2 were probably present in [redacted].

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Instrumentation Site B-4 is the least sophisticated, containing three very small structures, the largest of which appears to be mounded and measures approximately 10 to 15 feet in diameter. The other two structures are smaller and were first visible on [redacted]. These structures appear to be cable-connected.

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Instrumentation Sites B-2, B-3 and B-4 are connected by cable to Instrumentation Site B-1. Sites B-1 and B-4 are cable-connected with Facility B while a cable scar from Site B-3 leads to the Facility C area.

REFERENCES

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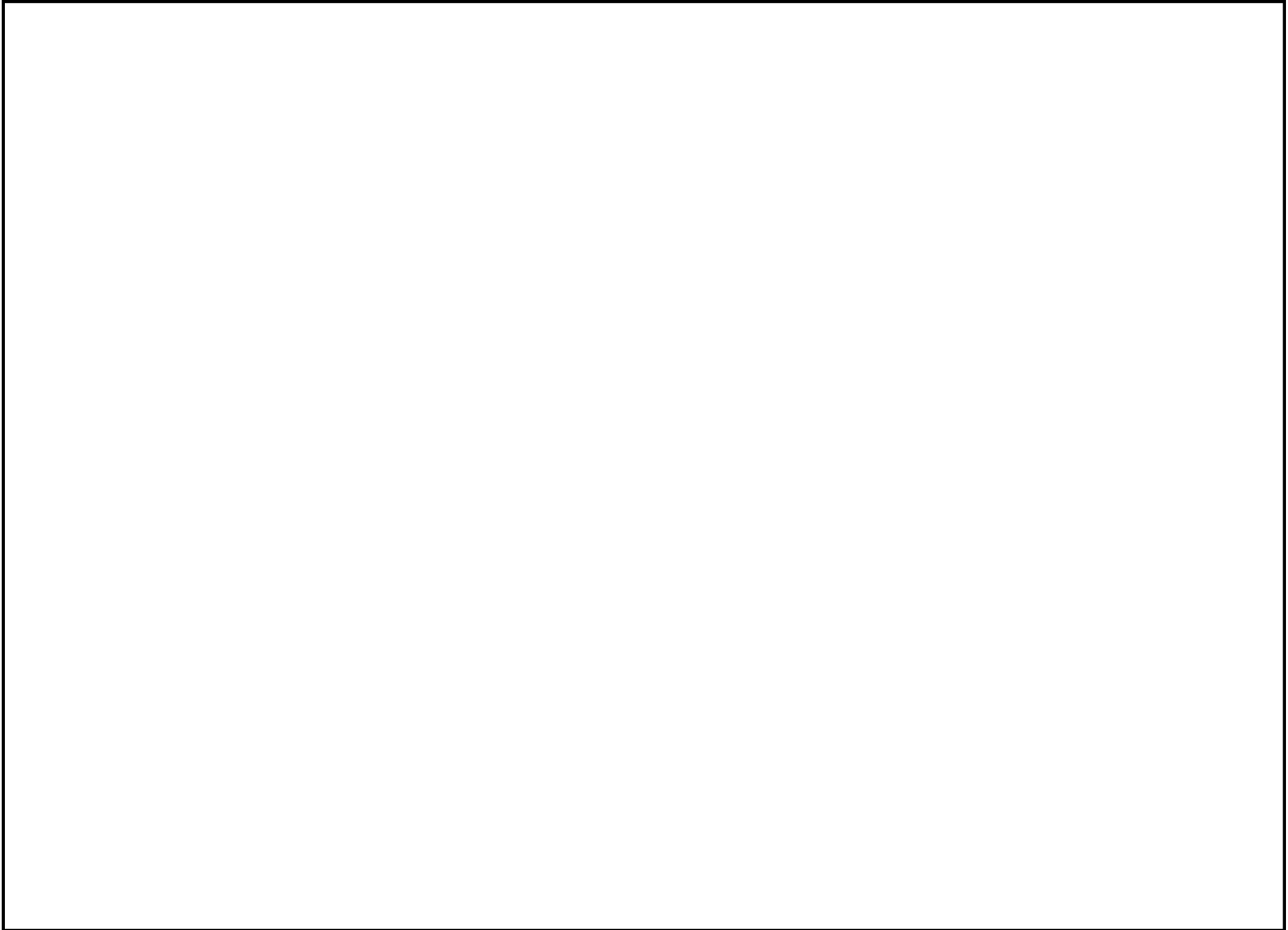
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MAPS AND CHARTS

- USATC. Series 200, Sheet 245-14, scale 1:200,000, 4th ed., October 1964.
(SECRET)
- AMS. Series DESPA-1, sheets NI43-4 and NI43-7, scale 1:250,000, 1st ed., June 1962. (TOP SECRET [redacted])
- ACIC. ONC F-6, scale 1:1,000,000, 1st classified ed., September 1961.
(CONFIDENTIAL)

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- 1. CIA. PIC/SC-02755/60, Activities in the Sary Shagan Area, USSR, July 1960. (TOP SECRET Codeword [redacted])
- 2. CIA. PIC/JR-1010/61, Antimissile Complex Sary Shagan, USSR, April 1961. (SECRET/ [redacted])

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- 3. NPIC. R-61/63, Antimissile Test Center, Sary Shagan, USSR, Changes and Additions [redacted] April 1963. (TOP SECRET [redacted]) 25X
- 4. NPIC. R-162/64, Antimissile Test Center, Sary Shagan, USSR, Changes and Additions [redacted] March 1964. (TOP SECRET [redacted]) 25X
- 5. CIA. PIR-13/64, Comparison of Possible AMM-Associated Facilities at Moscow and Sary Shagan, USSR, [redacted] May 1964. (TOP SECRET [redacted]) 25X
- 6. NPIC. R-328/64, Sary Shagan Antimissile Test Center, USSR, Changes and Additions [redacted] May 1964. (TOP SECRET [redacted]) 25X
- 7. NPIC. R-923/64 [redacted] Sary Shagan Antimissile Test Center, USSR, Changes and Additions [redacted] November 1964. (TOP SECRET [redacted]) 25X
- 8. CIA. [redacted] E-Shaped Buildings, Sary Shagan Antimissile Test Center, USSR, March 1965. (TOP SECRET [redacted]) 25X
- 9. CIA. [redacted] (M/EB 157/65), Suspect Missile at Facility B, Launch Complex B, Sary Shagan Antimissile Test Center, May 1965. (TOP SECRET [redacted]) 25X
- 10. CIA. PIR-1014/65 [redacted] Suspect GALOSH Launch Site From "Rockets on Guard For Peace" (Soviet Source), June 1965. (TOP SECRET [redacted]) 25X
- 11. NPIC. R-57/65, GALOSH Missile, Moscow Parade 7 November 1964, March 1965. (SECRET/[redacted]) 25X
- 12. CIA. PIR-61052 [redacted] Identified Missile From Soviet Film "Rockets Guard the Peace", October 1965. (TOP SECRET [redacted]) 25X
- 13. CIA. PIR-61067 [redacted], Analysis of Select 1964-65 Activity at Launch Complexes A and B, Sary Shagan Antimissile Test Center, USSR, November 1965. (TOP SECRET [redacted]) 25X

REQUIREMENT

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TABLE I

BUILDING MENSURATION -- LAUNCH COMPLEX B SUPPORT AREA

(Figure 14)

<u>Annotation Number</u>	<u>Number of Buildings</u>	<u>Function</u>	<u>Length & Width (feet)</u>	<u>Number of Stories</u>
1	1	Quarters	110 by 55	2
2	2	Quarters	85 by 40	2
3	1	Possible Personnel Services	105 by 50	1
4	1	Possible Personnel Services	85 by 35	1
5	1	Quarters	150 by 60	2
6	1	Quarters	60 by 45	1
7	2	Quarters	90 by 45	2
8	3	Quarters	50 by 35	1
9	3	Quarters	35 by 30	1
10	1	Quarters	70 by 30	1
11	1	Quarters	35 by 30	1
12	1	Possible Personnel Services	150 by 40	1
13	1	Administration	160 by 70	1
14	3	Quarters	140 by 45	1
15	1	Administration	110 by 30	1
16	2	Quarters	100 by 30	1
17	1	Quarters	75 by 30	1
18	5	Quarters	145 by 55	2
19	2	Quarters	160 by 40	1
20	1	Quarters	140 by 70	1
21	1	Possible Personnel Services	140 by 30	1
22	1	Administration	145 by 55	2
23	1	Shop Type	105 by 30	1
24	1	Substation Control Building	80 by 30	1
25	1	Shop	65 by 35	1
26	1	Shop	80 by 45	1
27	1	Steam Plant	165 by 40	1
28	1	Shop	80 by 30	1
29	1	Shop	60 by 60	1
30	1	Vehicle Maintenance	220 by 50	1
31	1	Vehicle Maintenance	220 by 65	1
32	1	Shop	80 by 25	1
33	1	Shop	60 by 45	1
34	1	Shop	60 by 50	1

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Table I continued....

<u>Annotation Number</u>	<u>Number of Buildings</u>	<u>Function</u>	<u>Length & Width (feet)</u>	<u>Number of Stories</u>
35	1	Shop	105 by 50	1
36	5	Storage/Housing	105 by 30	1
37	1	Storage/Housing	90 by 30	1
38	2 Wings	Storage/Housing	80 by 30	1
	Center Section		65 by 30	1
39	1	Storage/Housing	100 by 30	1
40	2	Storage/Housing		
	2 Sections		105 by 30	1
	2 Sections		85 by 35	1
41	1	Storage/Housing	100 by 35	1
42	1	Storage	100 by 25	1
43	1	Shop	95 by 35	1
44	1	Shop	75 by 35	1
45	1	Shop	110 by 30	1
46	1	Shop	190 by 25	1
47	1	Shop	65 by 55	1
48	1	Shop	60 by 30	1
Standpipe	1	Water Storage	Height - 75 Diameter - 25	-
Buried Tanks	2	Water Storage	Diameter - 25	-

- (1) Total Square Footage (permanent quarters only): 202,000
- (2) Total Square Footage (possible temporary quarters): 49,000
- (3) Permanent quarters available for 3,300 men at 60 square feet per man.
- (4) Temporary quarters available for 800 men at 60 square feet per man.
- (5) Total quarters space available for 4,100 men at 60 square feet per man.
- (6) Total quarters space available for approximately 2,500 men at 100 square feet per man.

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TABLE II

BUILDING DATA LIST -- OLD MISSILE FACILITY

(Figure 15)

<u>Annotation Number</u>	<u>Number of Buildings</u>	<u>Function</u>	<u>Length & Width (feet)</u>	<u>Number of Stories</u>
1	1	Possible Administration	100 by 30	1
2	3	Storage	35 by 50	1
3	1	Checkout/Assembly	100 by 55	1
4	1	Storage/Checkout	70 by 30	1
5	1	Unidentified	235 by 70	1
6	1	Checkout	45 by 30	1
7	1	Unidentified	30 by 30	1
8	1	Unidentified	155 by 40	1
9	1	Unidentified	50 by 35	1
10	1	Unidentified	50 by 25	1
11	1	Security	45 by 50	1
12	3	Ammunition Storage	30 by 30	1

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TABLE III

CHRONOLOGY OF THE LAUNCH COMPLEX B SUPPORT AREA AND

THE OLD MISSILE FACILITY

(Figures 14 and 15)

Analysis

See PIC-1010/61

Buildings 2, 17, 18-A, 31, 32 and 36-A (Figure 14) have been added since [redacted] Shadows indicate wall construction is probably under way on all these buildings. In the old missile facility, Buildings 2, 10 and 11 appear to be present (Figure 15). Cloud covered.

Buildings 3, 18-A, 31 and 32 are present and probably complete and Buildings 2, 17, 18-A, 32 and 36-A are complete (Figure 14). No details discernible in the old missile facility. A probable second water line trench, running to the launch area, is visible. The foundation for Building 1 (Figure 14) is present. Clutter in Area F (Figure 14), indicates possible open storage of materials. A second water line trench to the launch area is visible. No apparent change in the old missile facility.

No apparent change in the support area or the old missile facility.

No apparent change in the support area or the old missile facility.

No apparent change in the support area or the old missile facility.

Building 1 (Figure 14) is complete. No apparent change in the old missile facility.

Buildings 5 and 18-C are in early stages of construction. Much clutter is visible in Area F (Figure 14) indicating probable open storage of materials. Buildings annotated 49 removed (Figure 14). No apparent change in the old missile facility.

Building 5 is complete and wall construction is under way on Building 18-C (Figure 14). Building 5 (Figure 15) visible for the first time in the old missile facility.

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Table III continued....

Analysis

No details discernible in the old missile facility. Building 18-C (Figure 14) is complete in the support area.

No changes discernible in the old missile facility or the support area.

Heavy snow cover. Building 8 (Figure 15) in the old missile facility is visible for the first time. Only the walls appear to be up. No apparent change in the support area.

Building 8 (Figure 15) in the old missile facility consists of four walls only. It appears very similar to the four-walled structure that was torn down at the location of the present Building 10. This four-walled structure at the location of Building 10 was only visible as such on [redacted]

See

text for details. In the support area, buildings annotated 50 are torn down (Figure 14).

No apparent change in the support area. In the old missile facility, Building 8 (Figure 15) has the roof on.

No apparent change in either area.

No apparent change in either area.

No apparent change in either area.

No apparent change in the old missile facility. Buildings annotated 51 have been removed in the support area (Figure 14).

Support area buildings annotated 52 have been removed (Figure 14). No apparent change in cloud-free areas of the old missile facility.

In the old missile facility, Building 10 (Figure 15) appears as a new, smaller building for the first time. Construction clutter can be seen around Building 8.

In the support area, three and possibly four small unidentified buildings are clearly visible for the first time just west of the water/storage area along main road.

Light snow cover. Extensive track activity in the vicinity of the old motor pool indicates facility still in use. Building 46 (Figure 14) is observed for the first time and appears complete. Track activity is seen around Buildings 2 and 3 in the old missile facility (Figure 15).

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Table III continued

Analysis

Heavy snow cover. The building annotated 53 (Figure 14) has been removed. No activity or changes are visible in the old missile facility. Heavy snow cover. No changes noted in either area. Buildings annotated 54 have been removed (Figure 14). No apparent change in the old missile facility.

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TABLE IV

CHRONOLOGY OF LAUNCH COMPLEX B OPERATIONS AREA

FACILITIES A, B, AND C

(Figures 5 to 10--Annotations Keyed to Figure 5 Unless Otherwise Noted)

Analysis

See PIC/JR-1010/61, Antimissile Complex, Sary Shagan, USSR. (SECRET/ [redacted])

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Launch Position B-2 is partially visible under cloud cover and was probably complete on [redacted]

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[redacted] No other details or changes are discernible at Facilities A and B. There is no evidence of construction in the triad area (Facility C).

No apparent change at Facility A. At Facility B both bunkers (Annotations 14 and 23) are present and the first loop road (Launch Position B-3) is probably under construction. Early stages of site preparation in Facility C are visible as extensive earth scarring. Three darkened areas are apparent where the triad buildings later appear and probably indicate very early foundation preparation.

No apparent change at Facility A. At Facility B, loop road construction for Position B-3 continues. Construction on the triad of buildings at Facility C is apparently in advanced stages with all walls and probably the roofs in place. Building A-1 is not visible. Two excavations, each 50 feet in diameter, are located 275 feet southeast of Building A. They are 150 feet apart and a line connecting their approximate centers would be parallel to Building A (Annotation 3).

No apparent change at Facility A. At Facility B the loop road for Launch Position B-3 is probably complete. At Facility C a trench for a water pipeline enters the south side of Building A. Materials/equipment and a raised structure can be seen on the rear portion

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Table IV continued....

Analysis

of the roof of Building A, indicating radar tower construction was under way. Portions of trenches which later connect Building A to Buildings B and C are visible. Three dark spots are evident at Facility C (Annotations 5, 6, and 7) of which two have been identified on later large scale coverage as circular, shallow excavations.

No apparent change at Facility A. The loop road for Launch Position B-3 appears complete. At Facility C, construction is evident on the roofs of all three triad buildings. Trenching connects Triad Buildings A and C, while a suspect trench extends from the south side of Building B. A second trench now appears to enter the southeast side of Building A. It extends approximately 300 feet southeast from Building A and is adjacent and parallel to the previously reported water pipeline trench.

No apparent change at Facilities A and B. Building A-1 at Facility C is seen under construction for the first time.

No apparent change at Facilities A and B. Trenches connecting all three triad buildings are quite apparent. Buildings B and C appear externally complete with objects on the roofs.

No changes are discernible.

No changes are discernible.

No apparent change at Facilities A and B. At Facility C, Building A-2 is seen for the first time. A new area of activity (Annotation 9) is seen southeast of the triad area. An earth mound has been added on the southwest side of Building A-1. The probable cable trench on the west side adjacent to the three unidentified positions (Annotations 5, 6 and 7) is seen for the first time to extend westward toward an unidentified area (Annotation 4).

No apparent change at Facility A. At Facility B, a possible trench is evident on the south side of the loop road at Launch Position B-3. The westernmost

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Table IV continued....

Mission and DateAnalysis

tower (65 feet high), the southwestern tower (65 feet high), and the southeastern tower (50 feet high) are visible for the first time (Annotation 15). A trench is under construction between Triad Building B and Launch Position B-3. At Facility C, a probable radar dish is seen on the ground beside Building A for the first time.

No apparent change at Facilities A and B. The tower on the roof of Building A at Facility C is now approximately 40 feet above the roof level.

No apparent changes at Facility A. At Facility B, a trench from Triad Building B to the loop road at Launch Position B-3 is complete. Earth scarring west of the loop road indicates construction on Launch Position B-4 may have begun. The loop pattern of roads in Facility C is now more distinct. The three unidentified positions are very prominent (Annotations 5, 6 and 7). Each consists of a light-toned segment with a dark toned central area of activity, excavation, or equipment. Two buildings are now identified approximately 1,600 feet southeast of Triad Buildings A (Annotation 9). A third excavation, approximately 50 feet in diameter, is visible for the first time near the two excavations (Annotation 3) southeast of Building A. It is 150 feet from the southernmost of the original two excavations and in line with these two. The tower on Building A is complete and reaches a height of approximately 85 feet above the roof surface. A 50-foot diameter parabolic dish reflector is mounted on the top of the tower.

Facility A is completely snow covered. Roads are partially cleared at Facility B and the loop road for Launch Position B-4 is visible for the first time and is probably complete. Some form of activity may have taken place at Position B-2 and possibly B-1 since the snow fall which covered the area. Roads are partially cleared in Facility C.

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Table IV continued....

Analysis

At Facility A the two loop striations are evident for the first time (Annotation 26). These were very apparent [redacted]. These probable service roads leave the old concrete service road, become one dark striation and pass between the control buildings/bunker (Annotation 25). The dark striation intersects the launch pad at the forward end and continues to the launcher. At Facility B the loop road for Launch Position B-4 appears complete. A probable erector/launcher is located on each pad in the same relative positions (Annotations 11 and 16). A probable GALOSH missile with attached prime mover is parked on Launch Position B-3 (see text and Figure 7 for details). The northwestern tower (55 feet high) and the northeastern tower (45 feet high, Annotation 15) are visible for the first time. Approximately fifteen other small unidentified vehicles are scattered around Facility B. The wide entrance drive-in bunker (Annotation 4) between Positions B-1 and B-2 is clearly visible for the first time. Two unidentified vehicles or items of equipment are on the east edge of Position B-2 (Annotation 21). The circular sunken pad (Annotation 18) appears black. Construction activity in Facility C has resumed. The circular dish antenna remains atop its tower on Building A. An 85-foot diameter ring, the start of an environmental cylinder, has been laid around the base of the 85-foot high tower on Building A. A possible radome cap 50 feet in diameter is located on the ground adjacent to the northwest side of Building A-1. Probable antenna pedestals, possibly present [redacted] can be seen on top of the two small triad buildings (B and C). A cylindrical base, 80 feet in diameter, for an environmental cylinder is seen around the pedestal on top of Building C. Cylindrical sections for environmental shelters are seen on the ground adjacent to the southwest of Buildings B and C. The section adjacent to Building B has a diameter of 55 feet while the one near Building C measures 50 feet

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Table IV continued....

Mission and Date

Analysis

across. Probable environmental shelter caps are on the ground northwest of Buildings B and C. Each measures 20 feet in diameter. A newly identified probable water pipeline trench extends from the main water line for approximately 250 feet along the southern perimeter of the triad area. The two initial excavations (Annotation 3) 275 feet southeast of Triad Building A now appear to contain semi-buried tanks approximately 45 feet in diameter. The third excavation does not contain a tank. The two unidentified positions (Annotations 6 and 7) south of the central service road appear as shallow circular excavations. Two self-supporting lattice towers, probable calibration towers approximately 145 feet high, are identified for the first time. One is located 850 feet east of Triad Building B (Annotation 8). It was possibly present or under construction [redacted] and was possibly complete on [redacted]. The quality of previous [redacted] photography precludes a more exact determination of the negation/first observed date. The second tower (Annotation 28) is located 300 feet south of the missile assembly and checkout area. This tower was probably present [redacted] and was definitely present on [redacted]. No apparent change at Facilities A and C. At Facility B the probable GALOSH missile seen on [redacted] [redacted] is not present at Launch Position B-3. No apparent change at Facility A. At Facility B a probable GALOSH missile on a transporter is present at Launch Position B-3. The circular sunken pad (Annotation 18) still appears dark in tone as on [redacted]. Approximately five small unidentified vehicles are concentrated north and west of Launch Position B-4. Environmental shelter construction on the Triad Buildings A and C at Facility C appears



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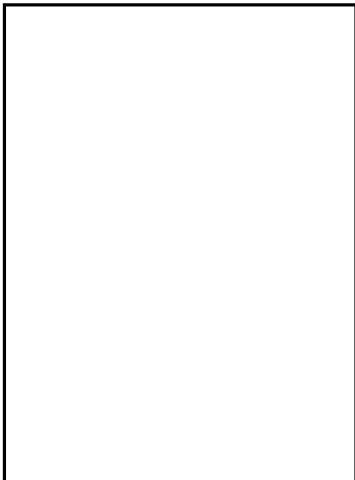
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Table IV continued....

Mission and Date

Analysis



unchanged since [redacted] Building B has an environmental cylinder around the antenna pedestal and a radome cover is on the ground beside the building. The third excavation southeast of Triad Building A has been graded over.

No apparent change at Facility A. At Facility B a probable GALOSH missile on a transporter is on the loop road at Launch Position B-3. No apparent change in Facility C since [redacted]

Photogrammetric analysis of the tower-mounted dish on top of Triad Building A reveals the dish is at an approximate elevation of 90 degrees from horizontal. Margins of error do not permit detection of dish movement, if any.

No apparent changes visible through scattered clouds and cloud shadow.

(Annotations keyed to Figure 10.) No apparent change at Facility A. At Facility B, the probable GALOSH missile transporter previously seen at Launch Position B-3 is not present. At Launch Position B-4 an unidentified probable vehicle, approximately 35 feet long, is on the road adjacent to the launcher/erector apparatus (Annotation 4). An unidentified object, approximately 40 feet long, is on the road at the entrance to the drive-in bunker between Positions B-1 and B-2 (Annotation 2). The two probable vehicles on the east edge of Position B-2 (Annotation 1) have changed position since first noted on [redacted] Another vehicle/equipment is located between the entrance to the probable underground storage bunker and Launch Position B-1 opposite the control bunker across the road (Annotation 3). Approximately seven vehicles/equipments are concentrated west of Launch Position B-4 in the area where a tower later appears (Annotation 5). At Facility C, cylindrical sections of the environmental shelter for the antenna tower are on the ground beside the southeast corner of Building A. The smaller section has a diameter of approximately

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Table IV continued....

Mission and Date

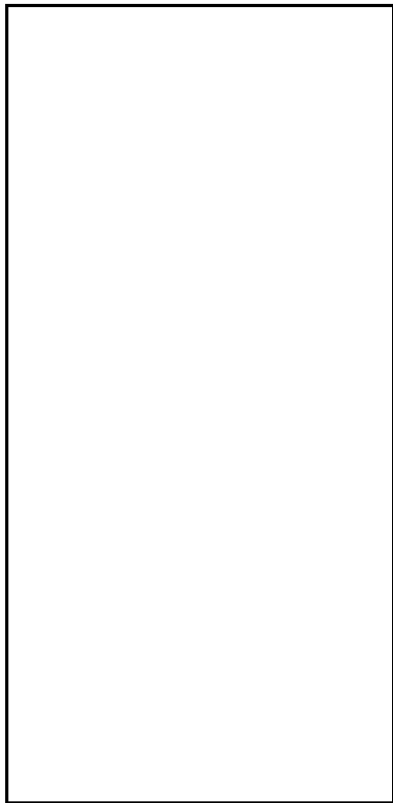
Analysis

65 feet and rests inside a 110-foot diameter section. The 50-foot parabolic dish antenna remains atop the roof-mounted tower on Building A. A probable cap for the cylindrical environmental shelter is on the ground at the southwest corner of the building. The environmental cylinder sections seen on the ground west of Buildings B and C on [redacted] remain, but are capped. An environmental cylinder now rises around the pedestal of Building B. It rises to a height approximately that of the pedestal it surrounds. Only the ring base is visible around the pedestal on the roof of Building C.

Light snow covers the ground. Snow clearance and prominent service road patterns (first observed on [redacted] indicate activity at Facility A. Approximately five unidentified vehicles are parked in the area. At Facility C, a second segment of the environmental shelter is now on the ground at the southwest corner of Triad Building A. The environmental shelter rises to approximately two-thirds of the height of the antenna tower. The two buried tanks southeast of Building A have been earth covered. They appear slightly raised. The environmental shelter at Building B appears complete and capped. The environmental cylinder surrounds the pedestal tower at Building C, however the cap for the shelter is lying on the ground beside the building.

Heavy snow covers the area. The road connecting the support area and operations area has been cleared of snow as far as the entrance to Facility B, however little activity, if any, is visible throughout the operations area. Snow has been removed at Facility C from the central triad service road.

The road to the operations area is clear of snow and shows evidence of heavy use, especially to Facility C. No activity is visible at Facility A, which is completely snow covered. The road to Facility B also shows



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Table IV continued....

Mission and Date

Analysis

evidence of snow clearance and use, although activity in the launch area is not prominent.

[Redacted]

and one vehicle or piece of equipment is suspected to be parked adjacent to the launcher at Position B-2. At facility C, a section of the cylindrical environmental shelter on Building A and the dish from the enclosed tower, have been removed and lie on the ground adjacent to the southwestern corner of the building. Two sections of the shelter remain on the ground on the south side of Building A, the smaller section inside the larger one. The environmental shelters on Buildings B and C are capped. At Facility A, two unidentified vehicles are on the launch pad; one to the left front of the launcher and one to the left rear. Another unidentified vehicle is parked on the road immediately off the north edge of the pad. At Facility B, two unidentified vehicles are again visible on the east edge of Position B-3 (Annotation 21). Approximately 200 feet north of Launch Position B-4, a 50-foot diameter excavation is visible for the first time (Annotation 12). Approximately ten unidentified small vehicles are in the vicinity of the loop roads. All sections of the environmental shelter have been built up around the antenna tower on Building A at Facility C. However the shelter cap and circular dish antenna are both on the ground beside the building. Construction clutter continues to be apparent in the area. Earth is being removed from the earth mound on the southwest side of Building A-1.

[Redacted]

Note: No changes have been apparent at the Missile assembly and checkout facility since it was first observed on [Redacted]

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TABLE IV-A

FACILITY C--CHRONOLOGY OF PROBABLE GALOSH LAUNCH POSITIONS

(Annotations 4, 5, 6, and 7, Figure 5)

Analysis

No evidence of activity at any of the four positions. All three positions northeast of the triad buildings are probably under construction. Central position (Annotation 6) appears most prominent. A probable cable trench extends between the two southernmost positions (Annotations 6 and 7).

No apparent change at the three positions (Annotations 5, 6 and 7). No details of change could be detected on this small scale photography.

No apparent change at the three positions. No details of change could be detected on this small scale photography.

Loop road probably being extended around Triad Building B but road pattern is not clearly defined. Probable activity at Launch Position C-1 (Annotation 4) but no details discernible. A probable cable trench connects the three positions northeast of the triad buildings. These three positions all appear very prominent, indicating activity.

No apparent change at any of the four positions. Poor quality photography.

The road which loops around Triad Building B is clearly defined for the first time. A probable cable trench extends from the cable trench linking Positions 5, 6 and 7. It appears to terminate at an excavation centered approximately 35 feet southeast of Launch Position C-1 and approximately 15 feet north of the future locations of the 25 by 25-foot building [redacted]. Unidentified activity at Position C-1.

A possible piece of equipment is present at the location where the 25 by 25-foot building later appears near Position C-1 (Annotation 4). No other details or changes apparent at the four positions.

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Table IV-A continued....

Analysis

The possible piece of equipment at Position C-1 is still apparent. No other details or changes discernible at Position C-1 or the other three positions.

No details or changes apparent at any of the four positions.

Snow cover. No details or changes apparent at any of the four positions.

The two southernmost positions (Annotations 6 and 7) give the appearance of shallow excavations. These positions and the northernmost position (Annotation 5) were apparently at the same status at this time, as later large scale coverage from [redacted] showed them to be uncompleted launch positions.

At Launch Position C-1 (Annotation 4), the cable junction is evident for the first time. A newly identified cable trench extends from this junction through (or under) the southwest edge of Launch Position C-1. Later coverage indicates this may have been the trench for connection to one of the 50-foot towers opposite Position C-1. A possible piece of equipment is located at the future northeast terminus of the tracks which were seen to extend through this position on [redacted]. The image size suggests it could be either construction equipment or possibly the erector/launcher mechanism identified on Mission [redacted] coverage. The small scale of this [redacted] coverage precludes any identification.

No apparent change from [redacted] at the four positions. The possible piece of equipment at the northeast terminus of Launch Position C-1 is still evident.

The excavation southeast of Position C-1 appears very prominent. The possible piece of equipment at northeast terminus of Launch Position C-1 is still evident. No apparent change from [redacted] at the other three positions.

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Table IV-A continued....

Analysis

An object/piece of equipment smaller than that reported from [redacted] is located midway between Launch Position C-1 and the north-east terminus of the launch position track pattern. No equipment is evident at the northeast terminus of the launch position. A second possible piece of equipment or construction shed is present between the central erector position and the future location of the 25 by 25-foot building [redacted]. No details discernible at the other three positions.

No details are discernible at any of the four positions. The 25 by 25-foot building which is later very apparent on [redacted] near Position C-1 is probably present and is at least under construction. An unidentified object, possible the erector mechanism, is visible in the central erector position at C-1. No details are discernible at the other three positions. The quality of this photography precludes interpretation of detail in either area.

The 25 by 25-foot building appears complete at Launch Position C-1. Cable trenching is very prominent leading to the building from the trench paralleling the other three positions. Also emanating from the cable junction 15 feet north of the building is another cable trench which extends through the rear or just off the southwest edge of the central erector position. It most probably will serve the 50-foot tower later evident on [redacted]. The two erector arms in the central position are clearly visible. Five pieces of equipment/vehicles are visible in the vicinity of Launch Position C-1. Details of the positions northeast of the triad buildings are discussed in the text.

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TABLE V

CHRONOLOGY OF LAUNCH COMPLEX B INSTRUMENTATION SITES

(Figure 17)

<u>Position B-1</u>	<u>Position B-2</u>	<u>Position B-3</u>	<u>Position B-4</u>
Identification only	Identification only	Identification only	Identification only
No apparent change	Identification only	Cloud cover	No apparent change
Building A first observed (approx 30 by 30 feet)	Building A first observed (approx 30 by 30 feet)	Identification only	Identification only
No apparent change	No apparent change	Identification only	Identification only
No apparent change	No apparent change	Building A first observed (approx 35 by 25 feet)	Identification only
No apparent change	No apparent change	No apparent change	Three very small probable structures visible
No apparent change	No apparent change	Identification only	No apparent change
No apparent change	No apparent change	No apparent change	No apparent change
No apparent change	No apparent change	No apparent change	Identification only
Building B possibility under construction.	Identification only	Identification only	Identification only
Building B appears larger than on [redacted]	Identification only	Identification only	Identification only
Building B probably complete	Identification only	No cover	Identification only

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Table V continued....

	<u>Position B-1</u>	<u>Position B-2</u>	<u>Position B-3</u>	<u>Position B-4</u>
	Snow cover-- no details discernible	Snow cover-- no details discernible	Snow cover-- no details discernible	Snow cover-- no details discernible
	Building B complete (65 by 45 feet). Building A measures 30 by 30 feet and Building C is visible.	No cover	No cover	No cover
	No apparent change	No apparent change. Building A measures 30 by 25 feet.	Building A appears complete and measures 35 by 25 feet.	No apparent change
	Identification only	Identification only	Identification only	Identification only
	Cloud cover	Cloud shadow-- no apparent change	No apparent change	Identification only
	Cloud shadow-- no apparent change	Identification only	No apparent change	No apparent change
	Building E missing. Four new buildings at F largest approx 20 by 20 feet all appear complete.	No apparent change	No apparent change	No apparent change
	Identification only	No apparent change	No apparent change	Identification only
	Building G is first observed approx 25 by 20 feet	Small Building B identified as building for first time. Five unidentified vehicles in area	No apparent change	No apparent change

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CIA/PIR-61068

Table V continued....

	<u>Position B-1</u>	<u>Position B-2</u>	<u>Position B-3</u>	<u>Position B-4</u>
	Light snow cover--no apparent change.	Light snow cover--no apparent change	Light snow cover--no apparent change	Light snow cover--no apparent change.
	Identification only	Identification only	Identification only	Identification only
	No apparent change	No apparent change	No apparent change	No apparent change
	No apparent change	No apparent change	No apparent change	No apparent change

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LIST OF ILLUSTRATIONS

- Figure 1 - Small Scale Map Defining the Sary Shagan Antimissile Test Center Range
- Figure 2 - Line Drawing of Sary Shagan Antimissile Test Center Range Facilities
- Figure 3 - Photograph of Launch Complex B [redacted]
- Figure 4 - Line Drawing of Launch Complex B
- Figure 5 - Line Drawing of Launch Complex B Operations Area
- Figure 6 - Photograph of Launch Complex B Operations Area [redacted]
- Figure 7 - Line Drawing of Launch Position B-3, Facility B, Launch Complex B
- Figure 8 - Photograph of Launch Positions at Facility B [redacted]
- Figure 9 - Photograph of Launch Positions at Facility B [redacted]
- Figure 10 - Photograph of Launch Positions at Facility B [redacted]
- Figure 11 - Graphic Portrayal of Theory One - GALOSH Missile Off-Loading and Erecting Procedure
- Figure 12 - Graphic Portrayal of Theory Two - GALOSH Missile Off-Loading and Erecting Procedure
- Figure 13 - Graphic Portrayal of Theory Three - GALOSH Missile Off-Loading and Erecting Procedure
- Figure 13a - Graphic Portrayal of Theory Four - GALOSH Missile Off-Loading and Erecting Procedure
- Figure 14 - Line Drawing of Launch Complex B Support Area
- Figure 15 - Line Drawing of Old Missile Facility Adjacent to Support Area
- Figure 16 - Line Drawing of the Graded-Earth Airstrip
- Figure 17 - Line Drawing of the Launch Complex B Instrumentation Sites
- Figure 18 - Photograph of Moscow SAM Site E33-1 [redacted] with Probable GALOSH Missile Launch Positions under Construction
- Figure 19 - Photograph of Moscow SAM Site E33-1 [redacted] with Probable GALOSH Missile Launch Positions under Construction

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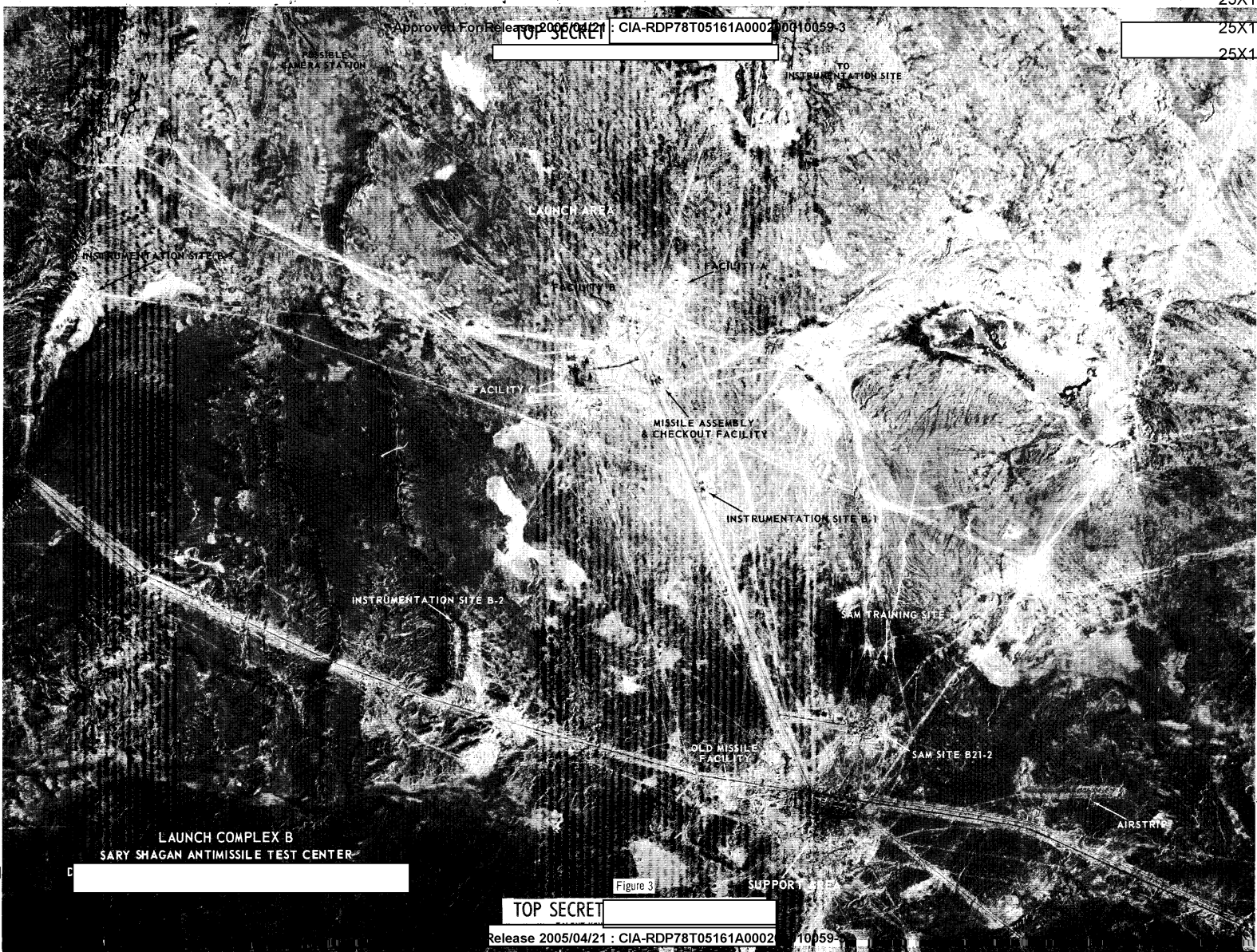


Figure 3

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LAUNCH COMPLEX B - SSATC

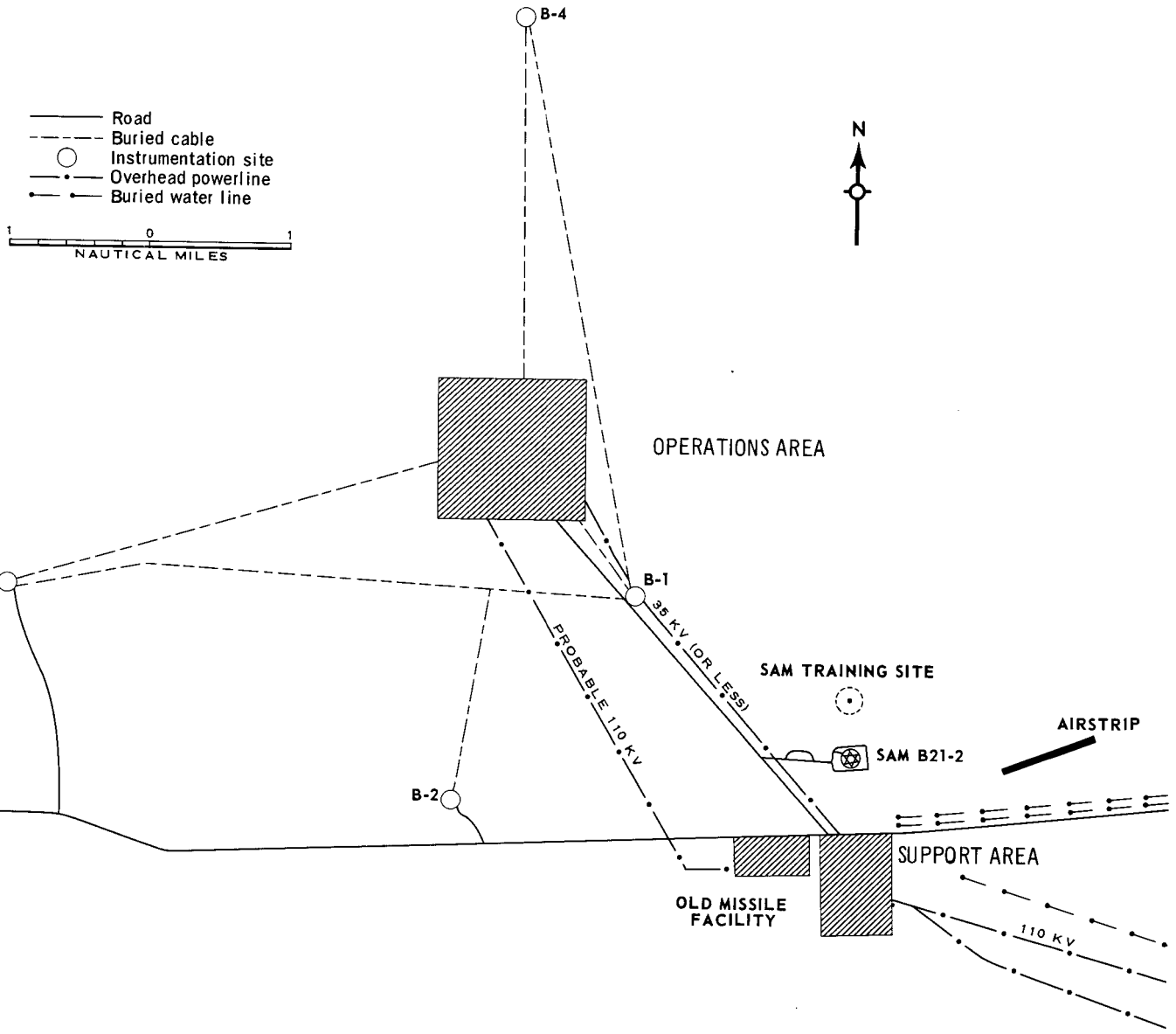


Figure 4

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LIST OF ANNOTATIONS -- FIGURE 5

1. Earth mound.
2. Fifty-foot diameter parabolic radar dish lying on ground, [REDACTED]
3. Buried water storage tanks.
4. Launch Position C-1 and associated 25 by 25-foot building.
5. Possible launch position.
6. Possible launch position.
7. Possible launch position.
8. Self-supporting lattice tower, 145 feet high.
9. Two buildings, each 100 by 30 feet, function undetermined.
10. Three towers, each approximately 100 feet high.
11. Erector/launcher mechanism for Launch Position B-4.
12. Excavation.
13. [REDACTED]
14. Control bunker.
15. Five towers, ranging in height from 45 to 65 feet.
16. Erector/launcher mechanism for Launch Position B-3.
17. Microwave tower and control building, tower 225 feet high.
18. [REDACTED]
19. [REDACTED]
20. Bunker.
21. Location of two vehicles/equipment, apparent here several times in 1964.
22. [REDACTED]
23. Control bunker.
24. Launch pad with launcher.
25. Control bunkers.
26. New service road, 1964.
27. Two new small buildings added since 1960.
28. Self-supporting lattice tower, 145 feet high.

OPERATIONS AREA, LAUNCH COMPLEX B, SSATC

- Road
- - - Trail
- x - Fence
- * - Possible fence
- . - Overhead powerline
- . . - Underground powerline
- - - Water pipeline
- - - Cable trench
- ☼ Earth mound
- ☼ Earth mounded building
- ☼ Buried tank
- ⊙ Excavation
- Launcher/erector
- Tower

500 0 500 1000
FEET (APPROXIMATE)

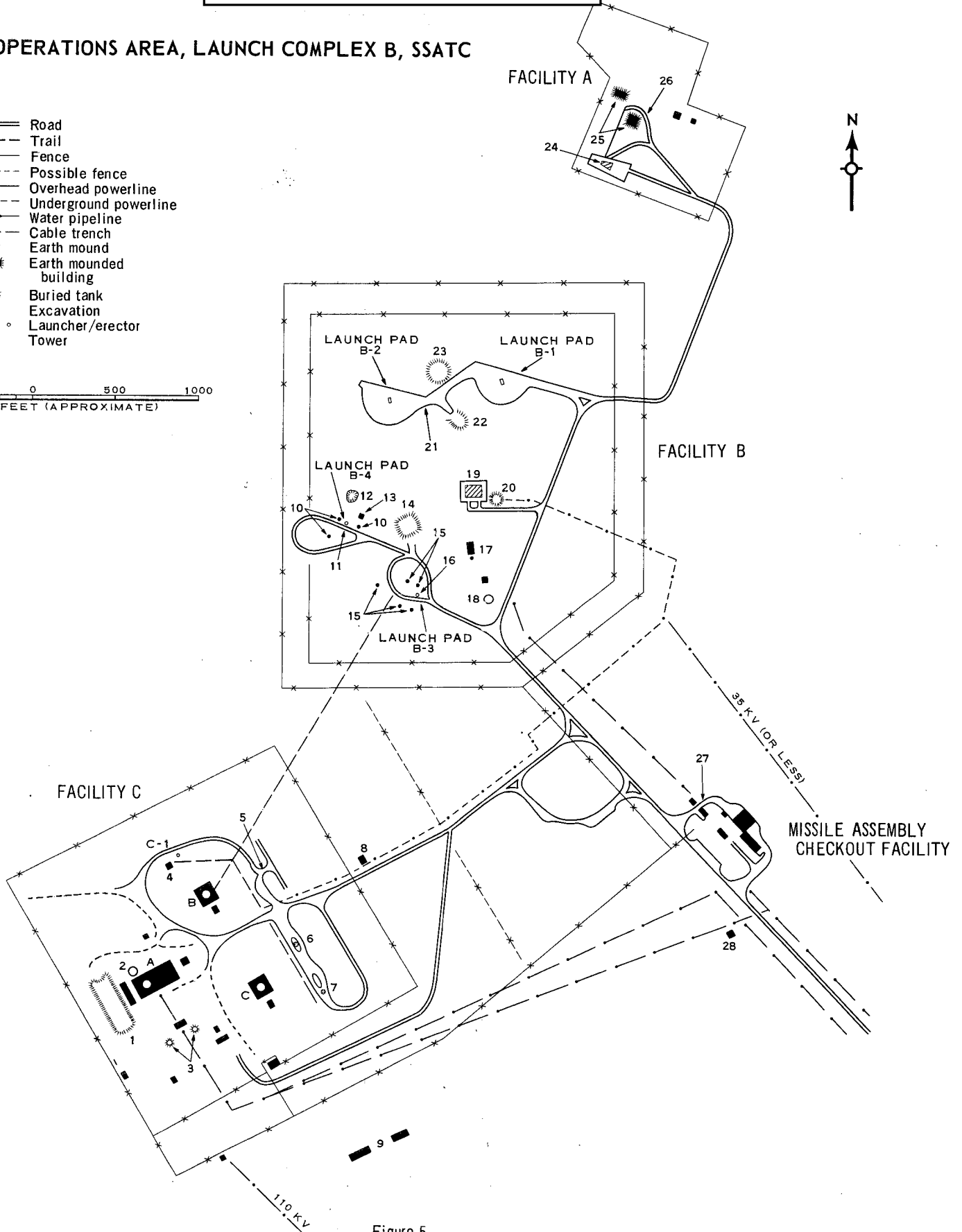


Figure 5

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OPERATIONS AREA, LAUNCH COMPLEX B, SSATC

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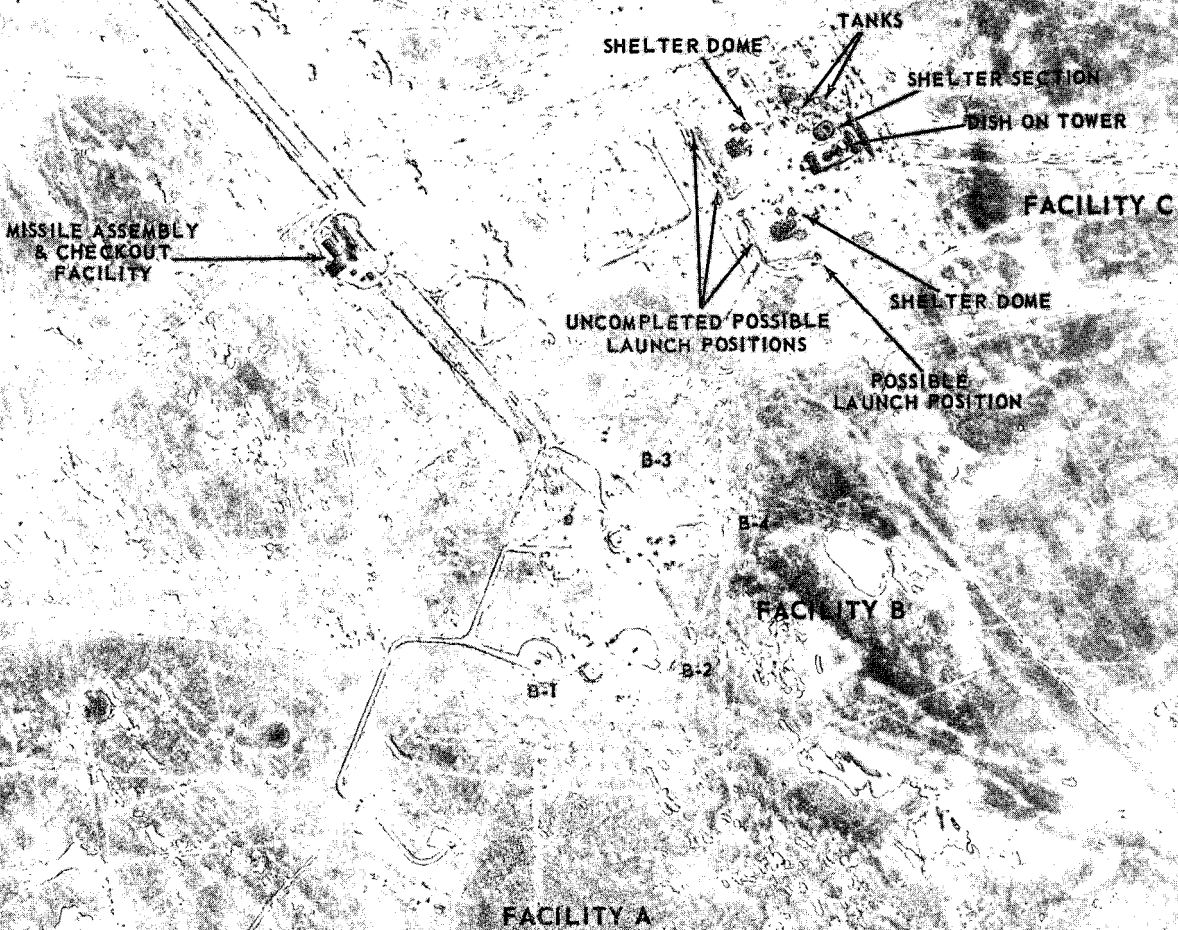


Figure 6

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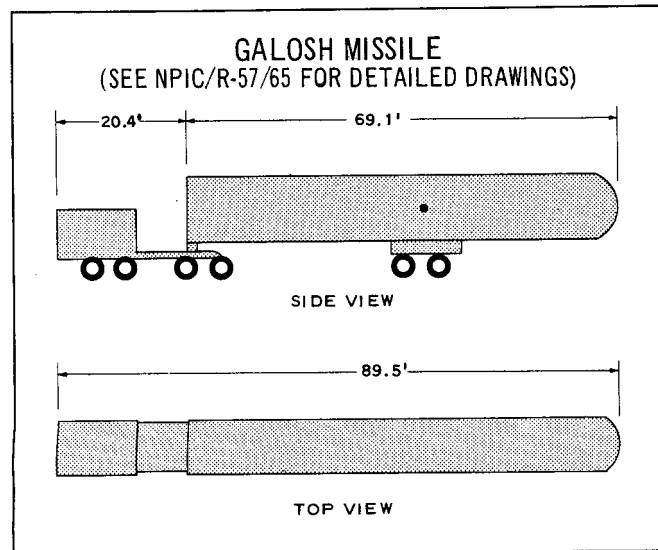
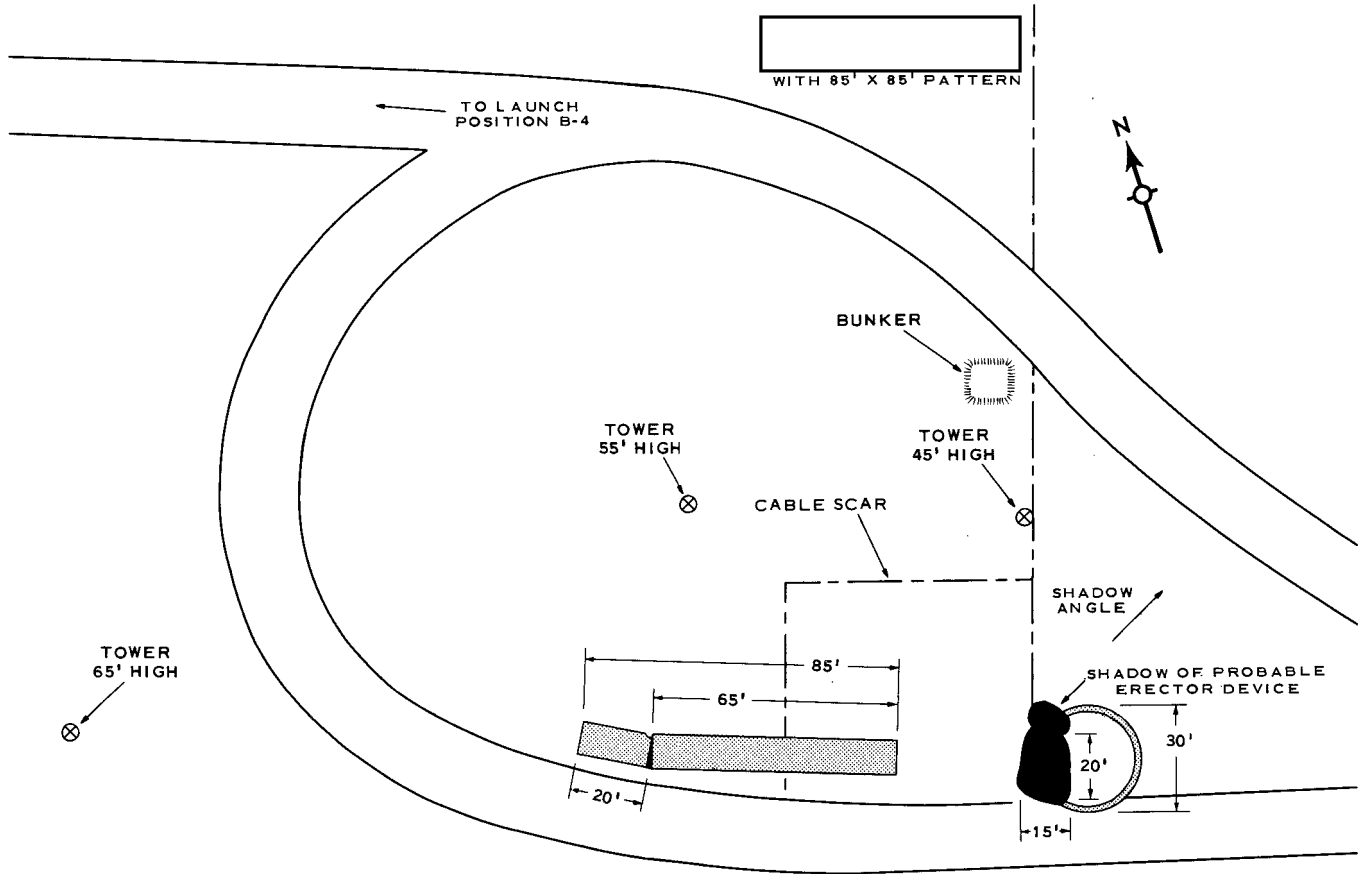
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PROBABLE GALOSH MISSILE AND ERECTOR/
LAUNCHER, LAUNCH POSITION B-3
LAUNCH FACILITY B, LAUNCH COMPLEX B, SSATC



MEASUREMENTS SHOWN WERE DETERMINED BY
PHOTO INTELLIGENCE OFFICERS IN CIA/IAD

(Confidence \pm 5 ft or 10%, whichever is larger)

Figure 7

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FACILITY B, LAUNCH COMPLEX B, SSATC

PROBABLE
ERECTOR/LAUNCHER

PROBABLE GALOSH MISSILE
WITH TRANSPORTER

PROBABLE
ERECTOR/LAUNCHER

30' DIAM RING OR PAD

Figure 8

25

PROBABLE
ERECTOR/LAUNCHER

PROBABLE
GALOSH MISSILE

PROBABLE
ERECTOR/LAUNCHER

Figure 9

25

MEASUREMENTS SHOWN WERE
DETERMINED BY PHOTO INTELLIGENCE
OFFICERS IN CIA/IAD
(Confidence \pm 5 ft or 10%
Whichever is larger)

295'

230'

875'

①

②

③

④

⑤

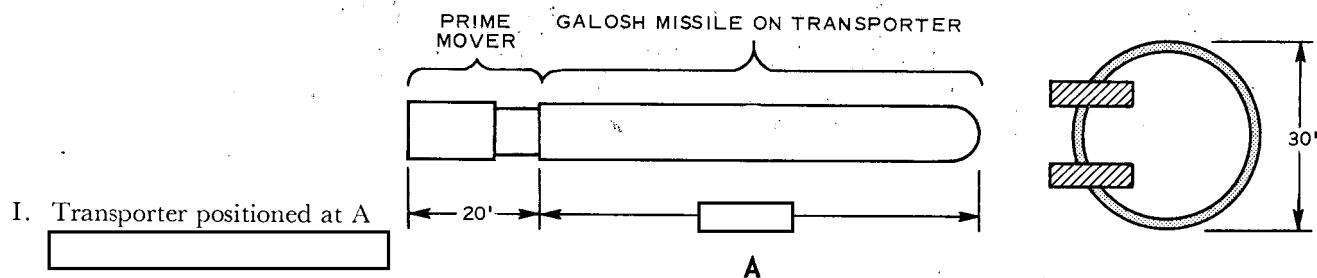
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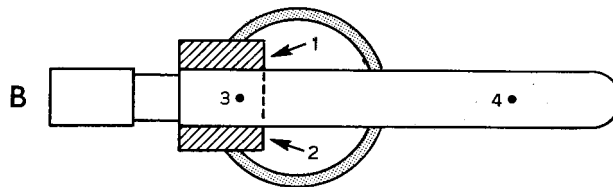
Figure 10

THEORY ONE
GALOSH MISSILE OFF-LOADING AND ERECTING PROCEDURE



II. Transporter backed up over ring base between two erectors (annotations 1 & 2)

III. Hydraulic jacks lowered (annotations 3 & 4), prime mover with transporter moves away

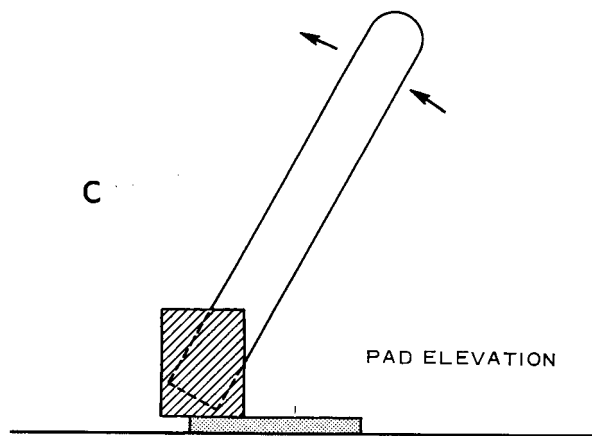


IV. Erectors lock on missile canister

V. Jacks raised

VI. Missile raised into position

VII. Check-out — ready for launch



SCALE: 1" = 30' - 0"

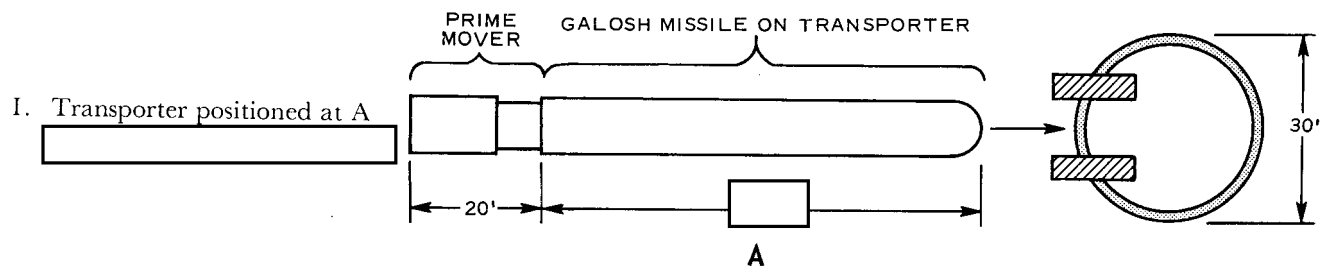
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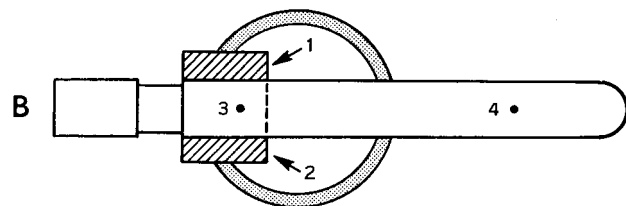
THEORY TWO GALOSH MISSILE OFF-LOADING AND ERECTING PROCEDURE



25X

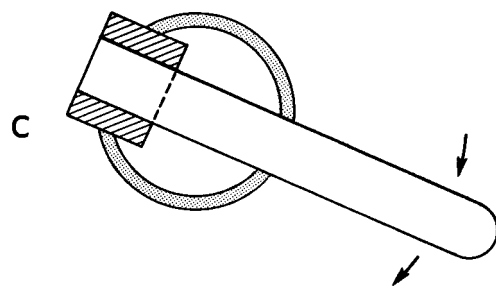
II. Transporter backed up over ring base between two erectors (annotations 1 & 2)

III. Hydraulic jacks lowered (annotations 3 & 4), prime mover with transporter pulls away



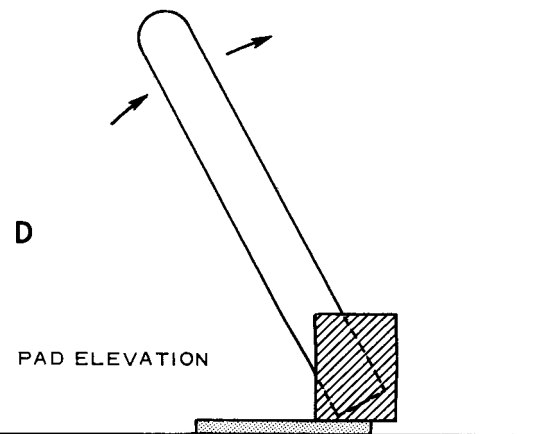
IV. Erectors lock on missile canister, jacks raised

V. Missile in canister along with erectors rotated 180°



VI. Missile raised into position

VII. Check-out — ready for launch



SCALE: 1" = 30' - 0"

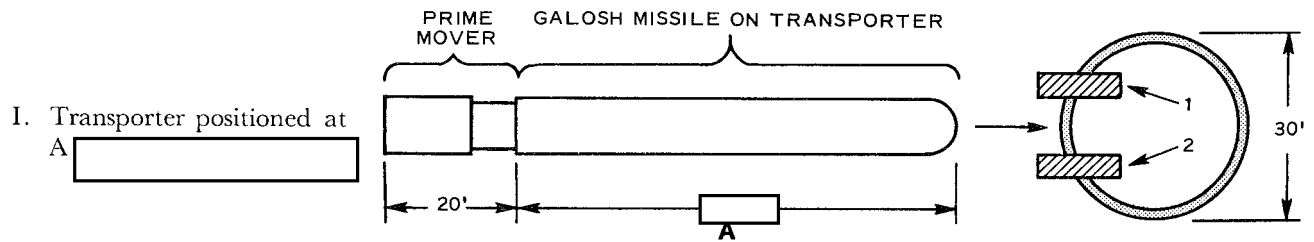
Figure 12

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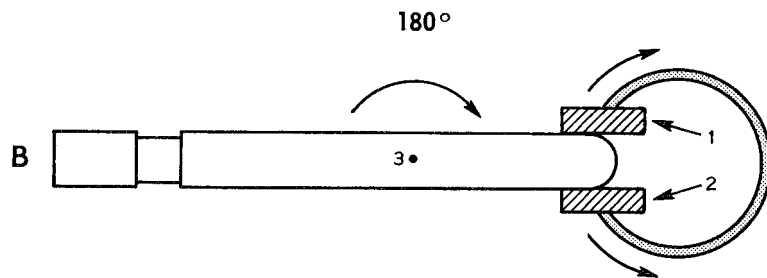
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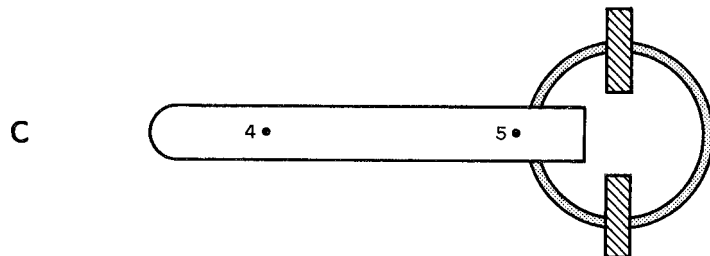
THEORY THREE GALOSH MISSILE OFF-LOADING AND ERECTING PROCEDURE



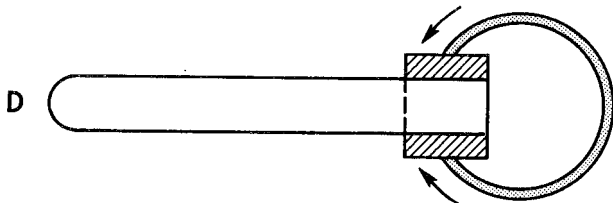
- II. Transporter backed up to Position B
- III. Erectors move aside (annotations 1&2) and missile is rotated 180° around transporter swivel point 3



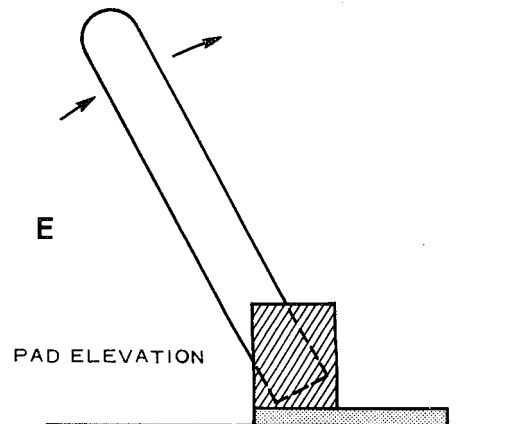
- IV. Jacks are lowered (annotations 4 & 5), missile raised off transporter, transporter moved away



- V. Erectors move back parallel to canister and lock on



- VI. Missile raised into position
- VII. Check-out — ready for launch



SCALE: 1" = 30' - 0"

Figure 13

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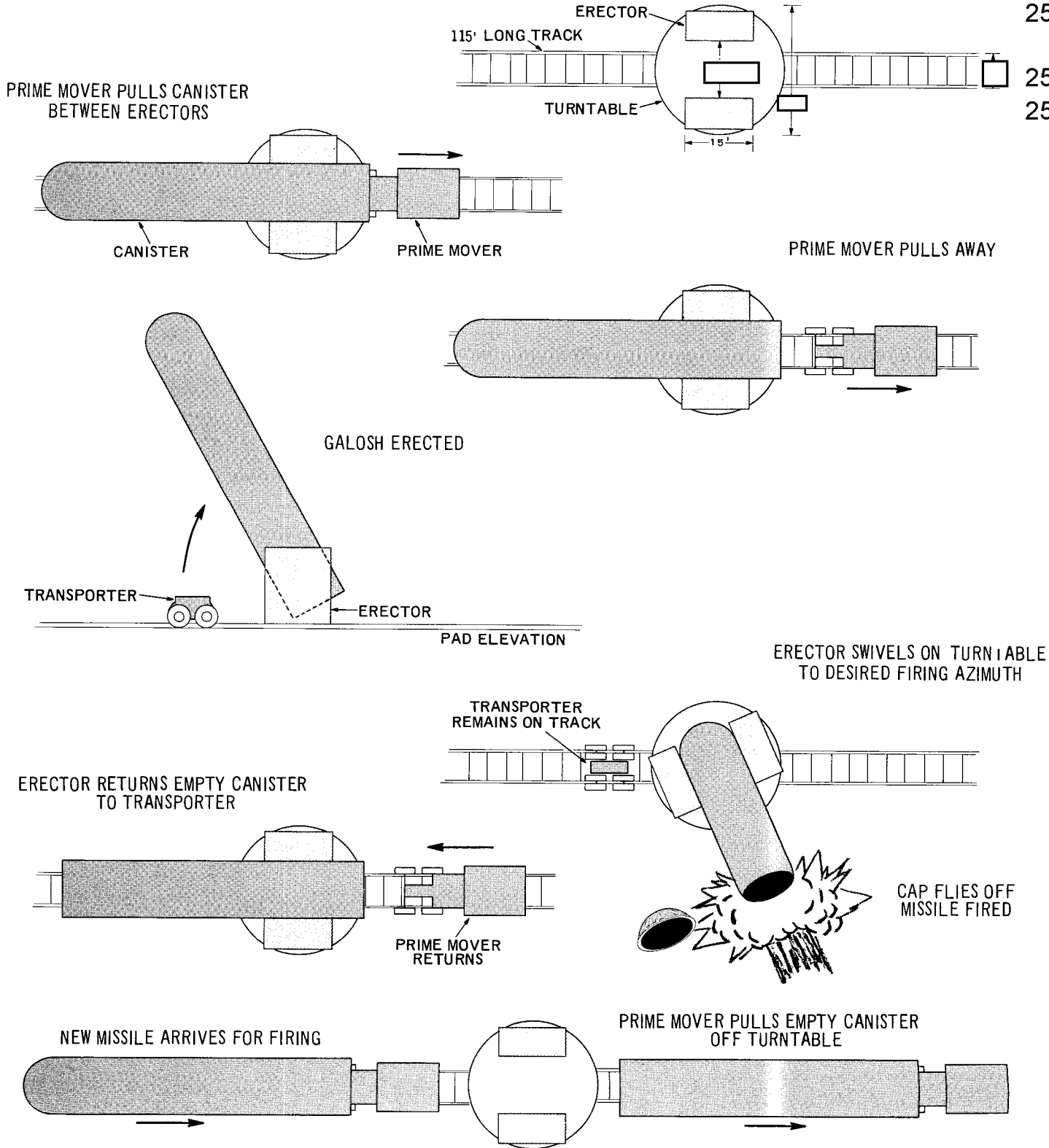
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THEORY FOUR

GALOSH MISSILE OFF-LOADING, ERECTING, AND FIRING PROCEDURE

SCALE 1" = 30'

LAUNCH POSITION AS SEEN ON [REDACTED]



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Figure 13a

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CIA/PTR-61068

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SUPPORT AREA, LAUNCH COMPLEX B, SSATC

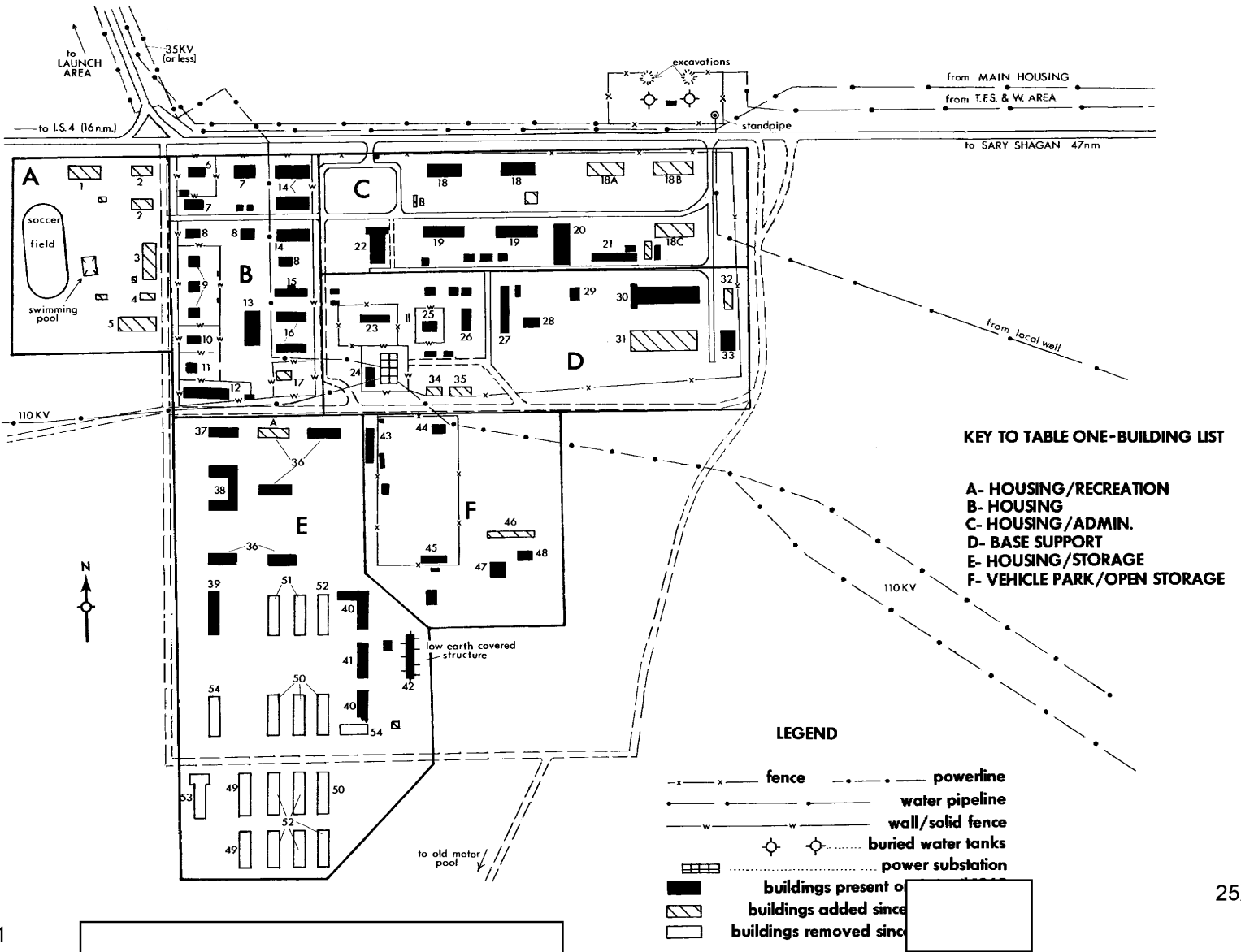


Figure 14

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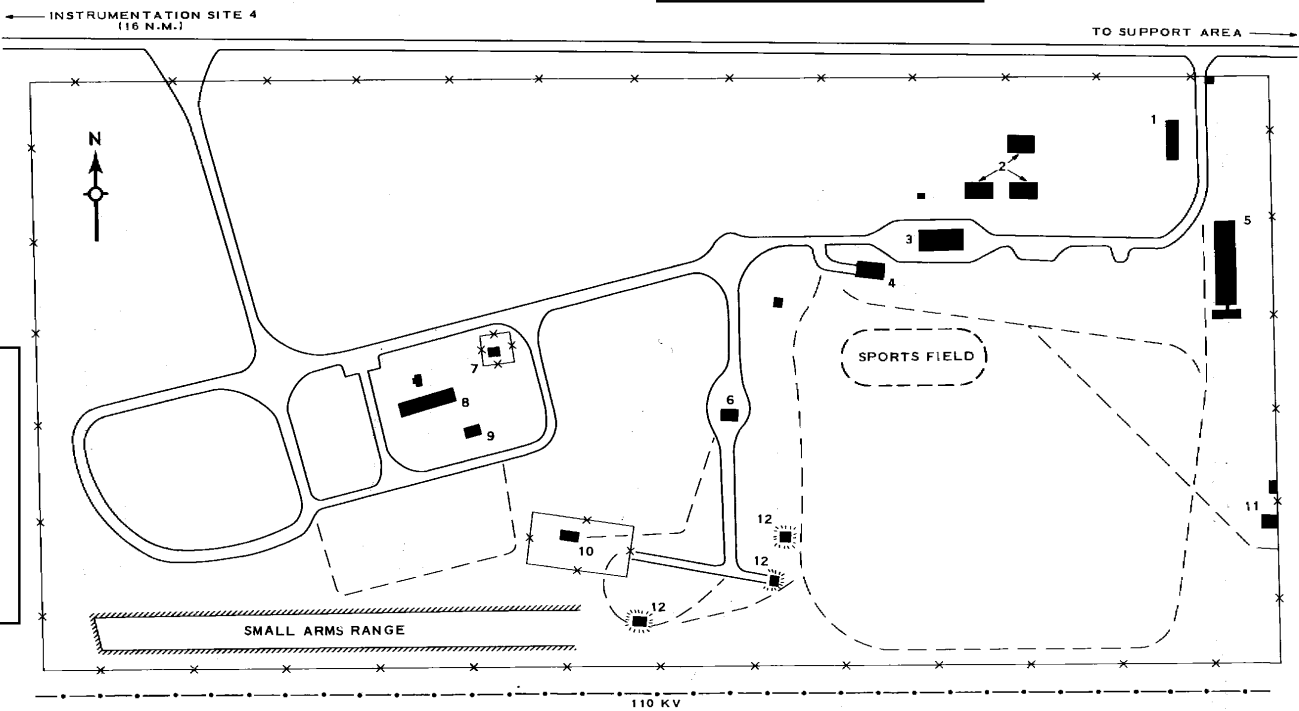
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LAUNCH COMPLEX B, OLD MISSILE FACILITY

INFORMATION CURRENT AS OF [REDACTED]

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25X1

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25X1

- Road
- - - Trail
- x- Fence
- o- Overhead powerline
- ☼ Earth-mounded building

Figure 15

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CIA/PIR-61068

GRADED-EARTH AIRSTRIP, LAUNCH COMPLEX B, SSATC

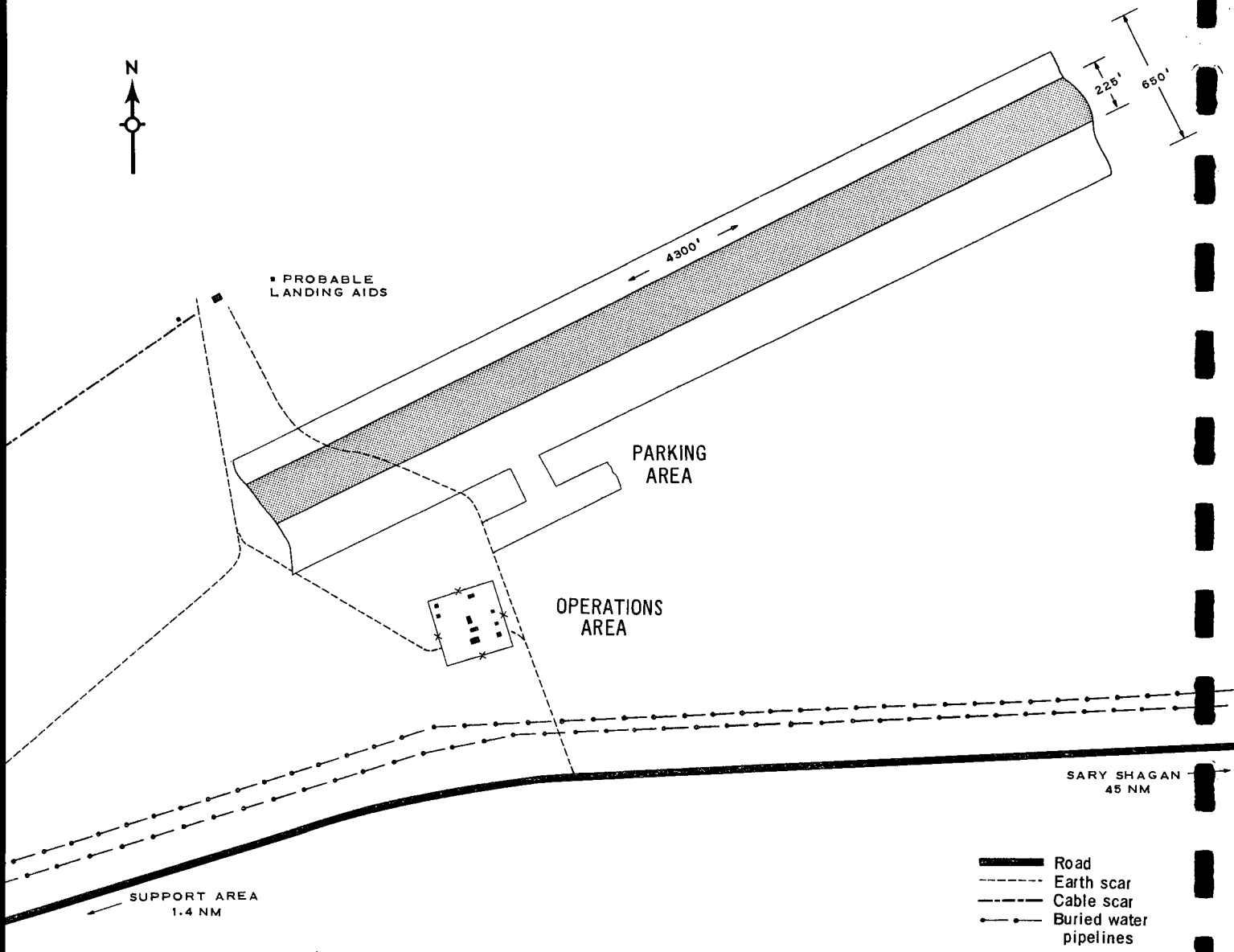
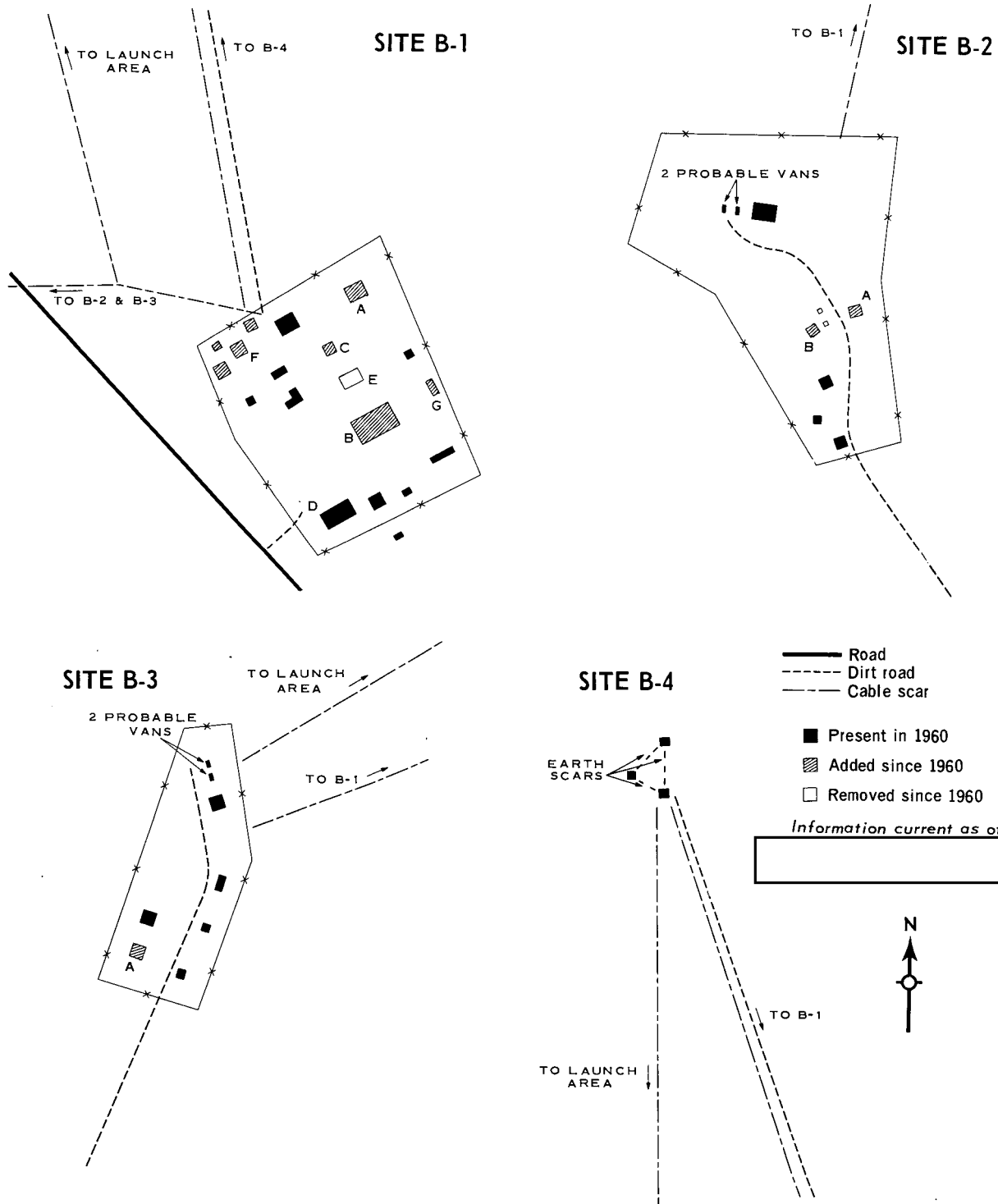


Figure 16

TOP SECRET

INSTRUMENTATION SITES, LAUNCH COMPLEX B, SSATC



Information current as of [redacted]

Figure 17

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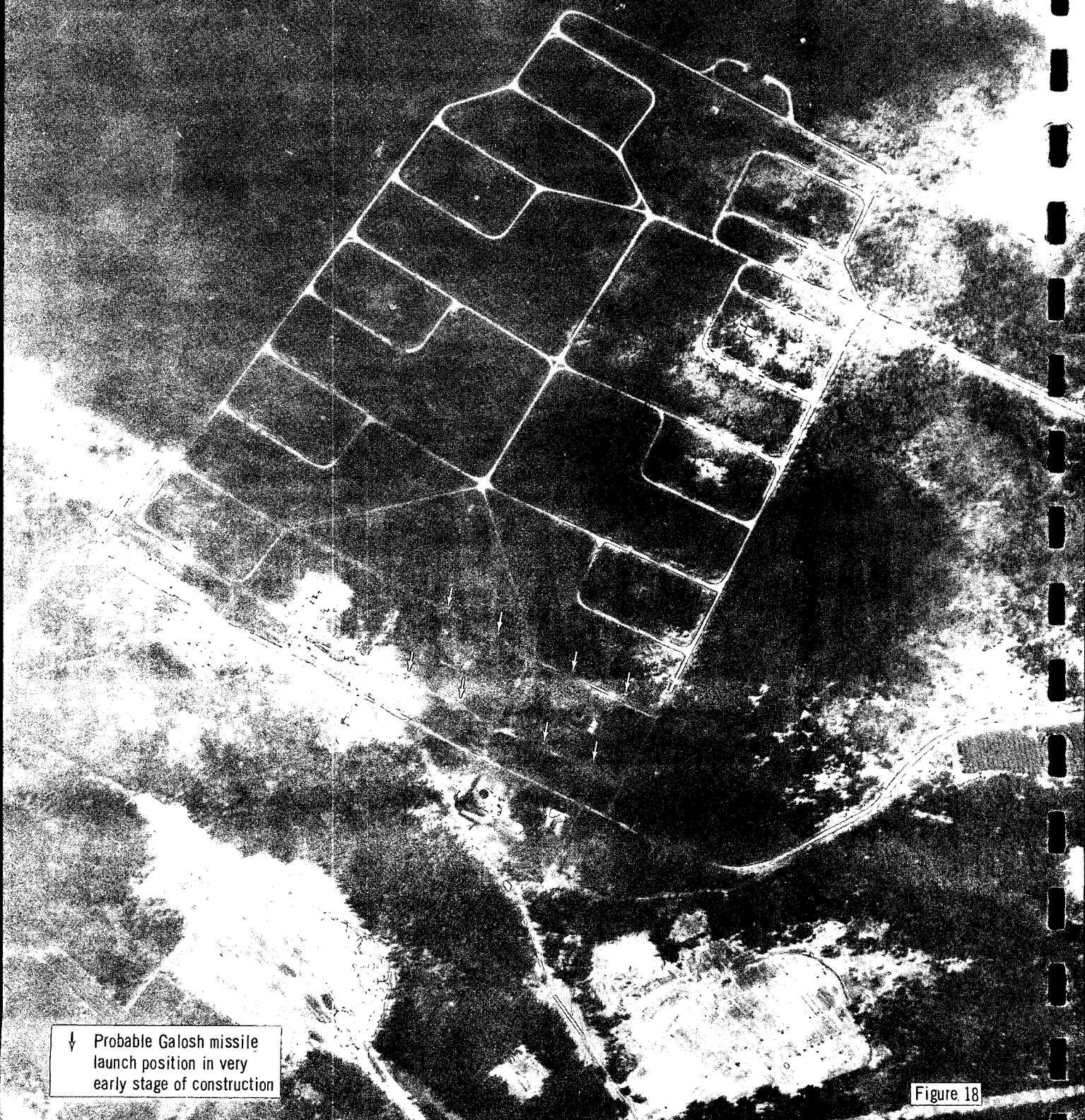
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MOSCOW SAM SITE E33-1

[Redacted]



X1



↓ Probable Galosh missile launch position in very early stage of construction

Figure 18

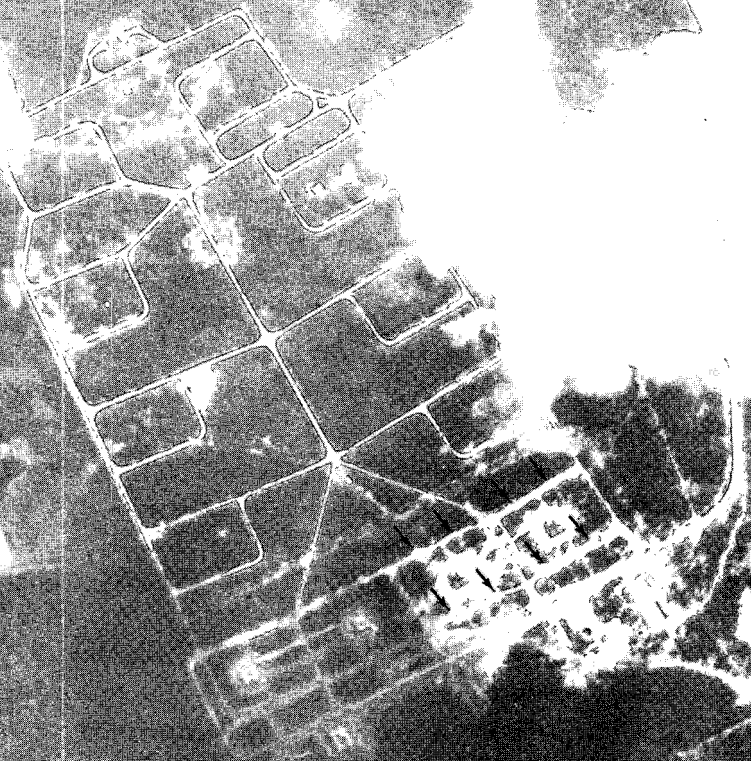
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MOSCOW SAM SITE E33-1



↓ Probable Galosh missile launch position under construction

Figure 19

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