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IMAGERY
ANALYSIS
DIVISION

PIR

PHOTOGRAPHIC INTELLIGENCE REPORT

HEN ROOST ANTENNAS

SARY SHAGAN ANTIMISSILE

TEST CENTER, USSR

Declassification Review
by NIMA/DoD

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CIA/PIR 61113

DATE Apr 1966

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PAGES 13

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Excluded from automatic
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CIA/PIR-61113

HEN ROOST ANTENNAS

SARY SHAGAN ANTIMISSILE TEST CENTER, USSR

PREFACE

This report is in response to a CIA requirement which requested:

1. A detailed, color-coded line drawing portraying the chronological development of the HEN ROOST radar facilities at Sary Shagan Missile Test Center (Figure 1) from [redacted]
2. Improved mensuration of antennas and facilities, where possible.
3. A graphic study of the radar antennas with a perspective drawing based on photography from the Soviet film "Rockets Guarding the Peace."
4. A detailed textual chronology with special attention to indications of levels of activity on the specific coverages. Relatively frequent [redacted] comparative [redacted] coverage was obtained between [redacted] [redacted]. Although of small scale, it is of fair to good quality.

HEN ROOST ANTENNA NORTH (Figure 2)

This antenna is located at 45-56-05N 73-38-20E on the west shore of Lake Balkhash, approximately 10 nautical miles south of the town of Sary Shagan.

Reflector Screen

The reflector screen is approximately 515 feet long and 60 feet in chord, with a boresight azimuth of [redacted]

No changes were apparent in the reflector screen since it was first observed in [redacted] at which time the screen appeared to be partially dismantled. This activity can be negated on [redacted] On good quality [redacted] photography of [redacted] probable reflector panels or crates can be seen stacked on the ground just west of the antenna.

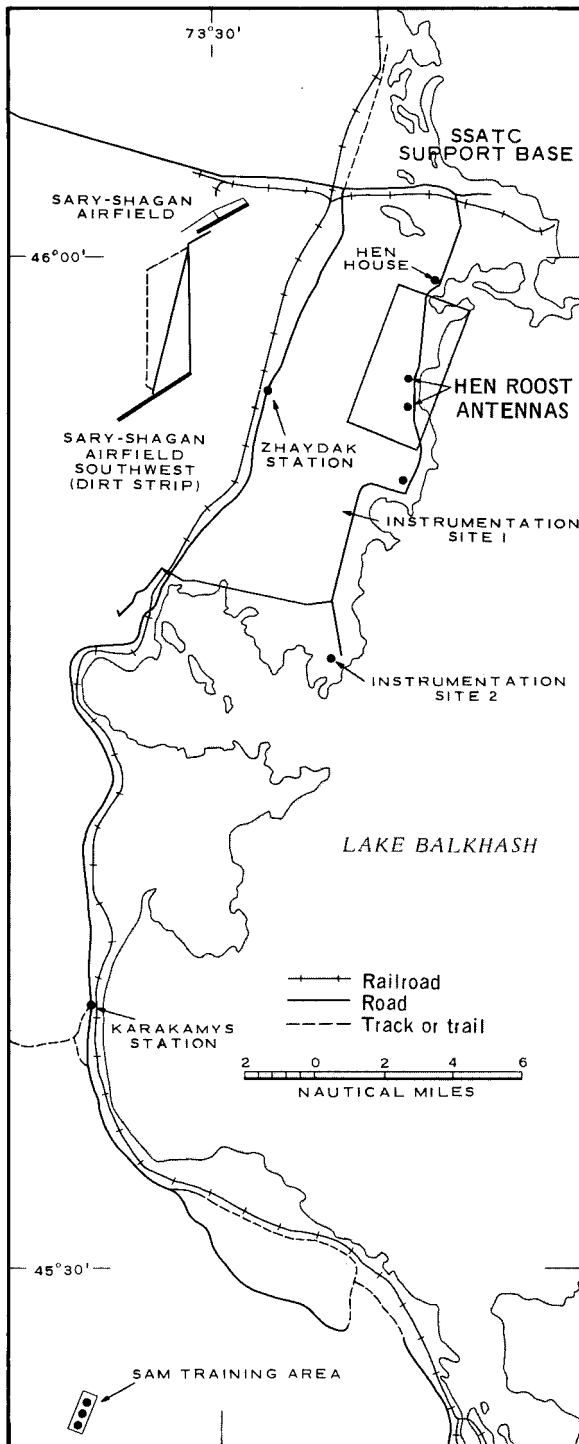
Clutter Screen

No changes in the clutter screen could be detected between [redacted]

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LOCATION OF HEN ROOST ANTENNAS

SARY-SHAGAN ANTIMISSILE TEST CENTER

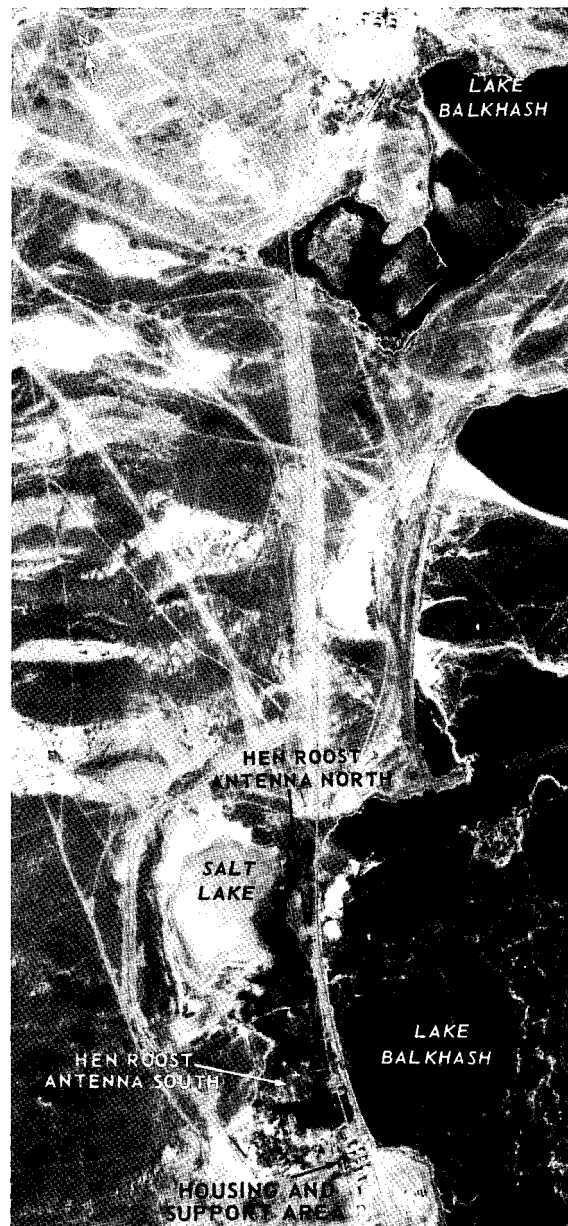


Figure 1

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[redacted] at which time the screen appears to have been removed.

Located approximately 250 feet west of, and parallel to the HEN ROOST antennas, the 580 foot long by [redacted] ground clutter screen extended the full length of the reflector screen and approximately 65 feet beyond, to the north.

Control Building

The control building, which reveals no changes since [redacted] is adjacent to the north end of the reflector screen and is aligned with the screen's longitudinal axis.

Support Facilities

The large (approximately 150 by 50 feet) support building (Figure 2, Item 7) which was under construction in [redacted] appeared to be complete in [redacted]

The four small support buildings located north of the reflector screen were present in [redacted]. Between [redacted] the most northern buildings were removed and between [redacted] the two western buildings were removed.

HEN ROOST ANTENNA SOUTH (Figure 3)

This antenna is located at 45-55-20N 73-38-05E, on the west shore of Lake Balkhash approximately 3,080 feet south of HEN ROOST Antenna North.

Reflector Screen

The reflector screen is approximately 500 feet long with a boresight azimuth of [redacted]. No change was observed in this antenna until [redacted] at which time it appears to be less prominent, suggesting possible modification or dismantlement. The small scale of photography precludes a more definite statement.

Control Building

The T-shaped two story control building is adjacent to the north end of the reflector screen. The major component is perpendicular to the

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reflector and measures 155 by 50 feet; the northern wing of the building measures 45 by 50 feet.

Two 55 foot diameter probable cooling ponds are located north-northwest of the reflector screen.

Support Buildings

Two of the small support buildings located north of the reflector screen in [redacted] were removed by [redacted] and another was removed by [redacted]

Two new support buildings were constructed east of the south end of the reflector screen between [redacted]

HEN ROOST South Immediate Support Area

The HEN ROOST south immediate support area is located approximately 1,200 feet east of the reflector screen, astride the main coastal road. In [redacted] it consisted of seven buildings of various sizes, a probable pumphouse and a probable water standpipe. Two buildings were removed between [redacted] and the remaining five buildings were removed between [redacted]

HOUSING AND SUPPORT AREA FOR HEN ROOST ANTENNAS

NORTH AND SOUTH (Figure 4)

This facility is located approximately 1,500 feet south-southeast of the HEN ROOST Antenna South and consists of a barracks and storage area, a probable power transformer station, an athletic field and a motor pool.

Two small buildings have been constructed and one large building removed since [redacted]

PERSPECTIVE OF HEN ROOST ANTENNA NORTH (Figure 5)

The perspective of the HEN ROOST antenna is based on film clips from the Soviet movie "Rockets Guarding the Peace" which contributes considerable detail to previous concepts. This much larger scale view of the radar revealed the presence of four separate structures. Though all four appear to be antennas, it is possible that the second and fourth structure from

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the top may be feed structures. Previous drawings represented concepts derived from examination of [redacted] photography of [redacted]

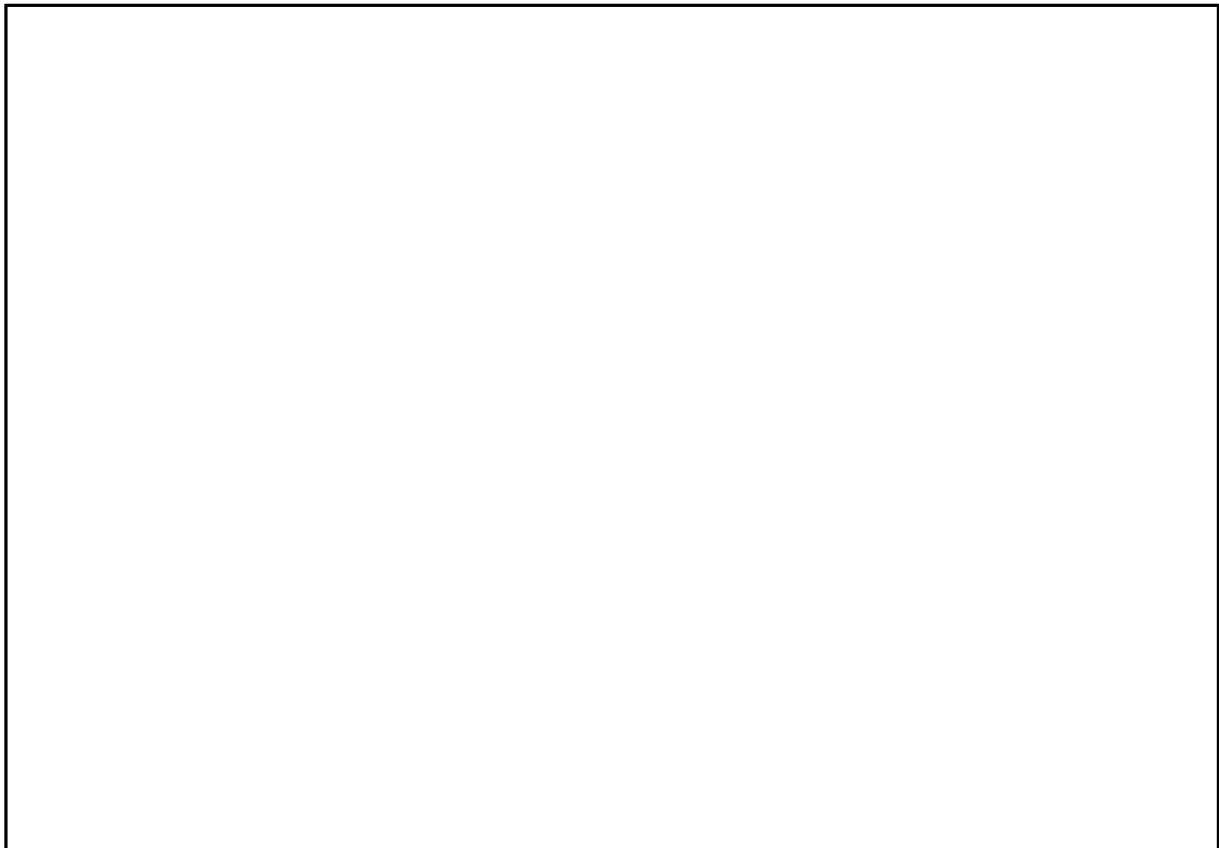
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The Soviet movie did not reveal the area at ground level immediately in front of the radar antennas, thus there is no change in the concept presented in document reference 2 (Figure 28) as regards the "suspect feed-associated structures."

REFERENCES

PHOTOGRAPHY

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DOCUMENTS

- 1. NPIC. R-294/63, HEN ROOST Antennas, Antimissile Test Center, Sary Shagan, USSR, July 1963 (TOP SECRET [redacted])

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TABLE I

HEN ROOST ANTENNA NORTH

<u>Item Number</u>	<u>Width</u>	<u>Length</u>
1	25 feet	55 feet
2	15 feet	15 feet
3	25 feet	55 feet
4	35 feet	60 feet
5 (clutter screen)	-	580 feet
6 (control)	50 feet	145 feet
7 (support)	50 feet	150 feet
8 (reflector screen)	-	515 feet
9	35 feet	45 feet

All buildings are one story high except Buildings 6 and 7 which are two stories high.

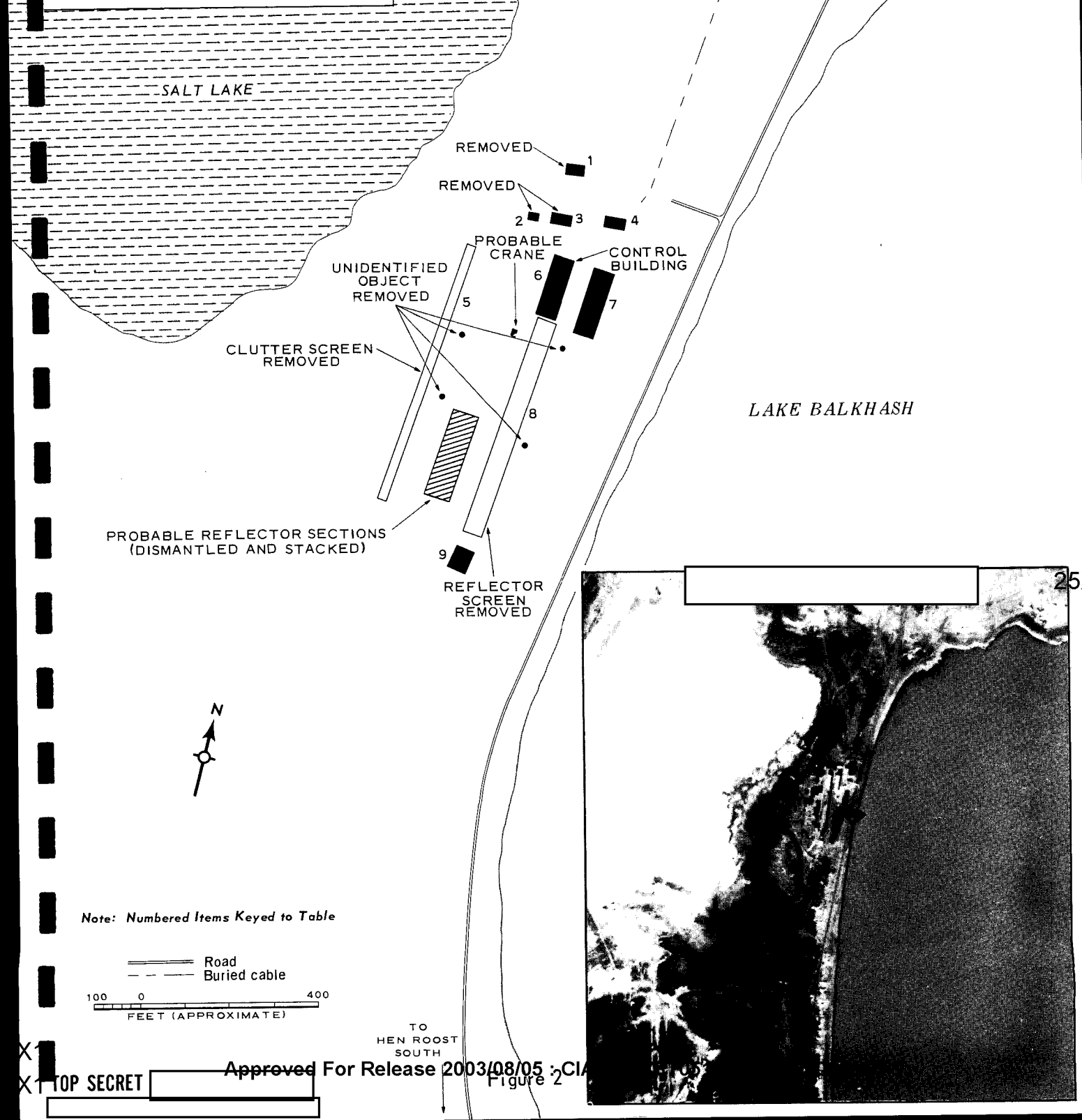
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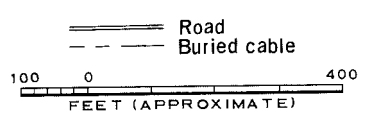
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HEN ROOST ANTENNA NORTH

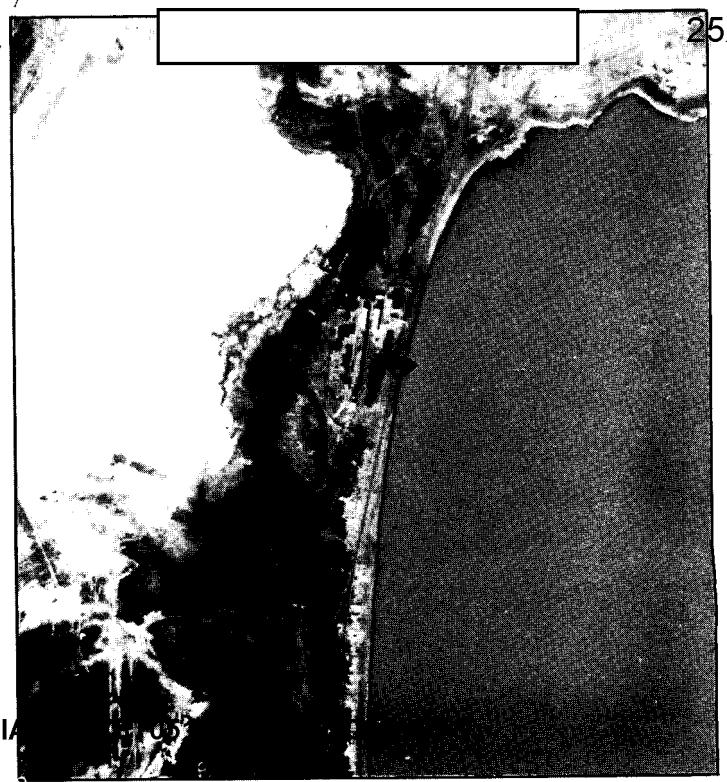
- 5X Black denotes activity prior to []
- 5X1 Red denotes activity as of []
- 5X Blue denotes activity as of []
- 5X1 Brown denotes activity as of []
- 5X Green denotes activity as of []



Note: Numbered Items Keyed to Table



TO
HEN ROOST
SOUTH



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Figure 2

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TABLE II

HEN ROOST ANTENNA SOUTH

<u>Item Number</u>	<u>Width</u>	<u>Length</u>
1	35 feet	60 feet
2 (control)	50 feet 45 feet	155 feet 50 feet
3	30 feet	40 feet
4	20 feet	25 feet
5	20 feet	25 feet
6	25 feet	30 feet
7 (reflector screen) -		500 feet
8	20 feet	30 feet
9	25 feet	50 feet
10	25 feet	50 feet
11	20 feet	40 feet
12	30 feet	45 feet
13	40 feet	75 feet
14	40 feet	100 feet
15	50 feet	105 feet
16	25 feet	60 feet
17	30 feet	50 feet
18	20 feet	30 feet

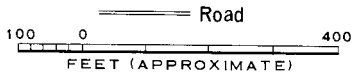
All buildings are one story except the control building (Building 2) which is two stories high.

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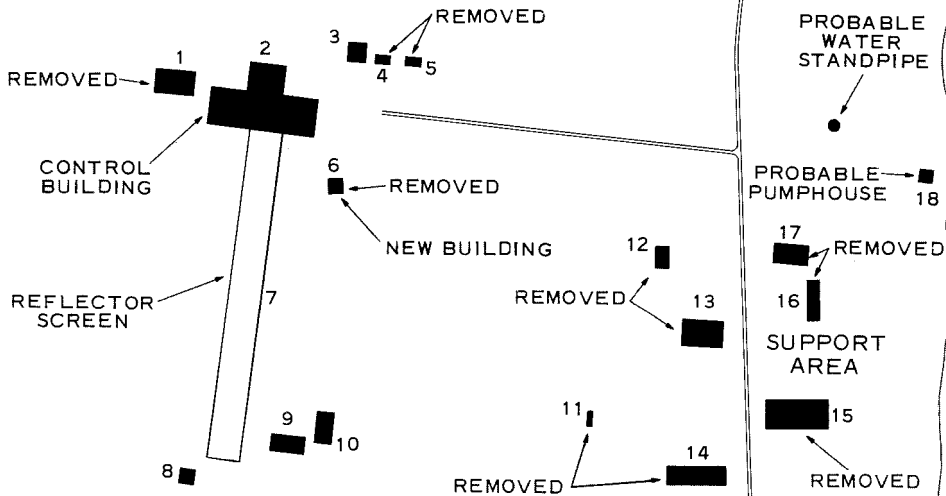
- Black denotes activity prior to [redacted]
- Red denotes activity as of [redacted]
- Blue denotes activity as of [redacted]
- Brown denotes activity as of [redacted]
- Green denotes activity as of [redacted]

Note: Numbered Items Keyed to Table



HEN ROOST ANTENNA SOUTH

TO
HEN ROOST
NORTH



EGIB



TO HOUSING
AND SUPPORT AREA

Figure 3

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TABLE III

HEN ROOST HOUSING AND SUPPORT AREA

<u>Item Number</u>	<u>Width</u>	<u>Length</u>
1(sustainer)	25 feet	65 feet
2	35 feet	160 feet
3	25 feet	25 feet
4	25 feet	45 feet
5(barracks)	70 feet	140 feet
6	35 feet	90 feet
7(barracks)	70 feet	140 feet
8(barracks)	70 feet	140 feet
9	50 feet	60 feet
10	50 feet	120 feet
11	45 feet	95 feet
12	35 feet	80 feet
13	40 feet	45 feet
14(barracks)	75 feet	115 feet
15	55 feet	55 feet
16	55 feet	105 feet
17	20 feet	35 feet
18	25 feet	35 feet
19	55 feet	55 feet
20	35 feet	60 feet
21	25 feet	25 feet
22	20 feet	40 feet
23(storage)	60 feet	170 feet
24	55 feet	105 feet
25	25 feet	55 feet
26	25 feet	55 feet
27(storage)	60 feet	170 feet
28	35 feet	140 feet

All buildings are one story high except Buildings 5, 7, 8, 23, 27 which are two stories high.

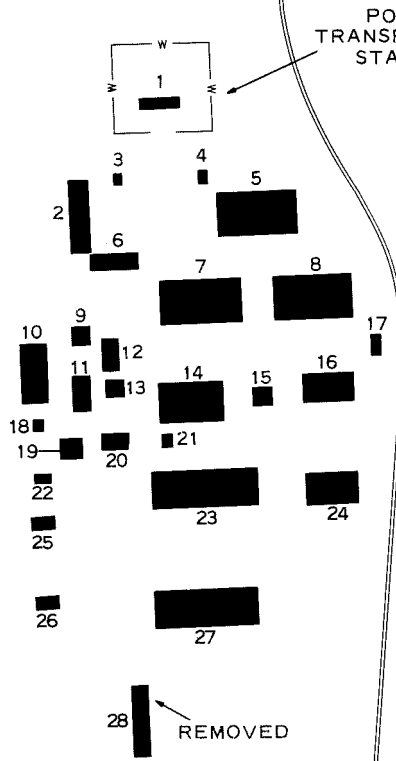
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TO HEN ROOST SOUTH

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POWER TRANSFORMER STATION



Black denotes activity prior to [redacted]

No major activity apparent in [redacted]

Brown denotes activity as of [redacted]

Green denotes activity as of [redacted]

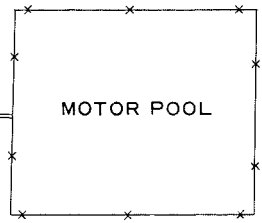
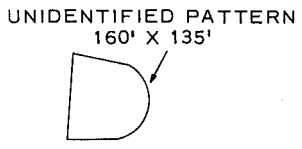
— Road
—x— Fence
—w— Wall

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25X



LAKE
BALKHASH



25X

HEN ROOST HOUSING AND SUPPORT AREA

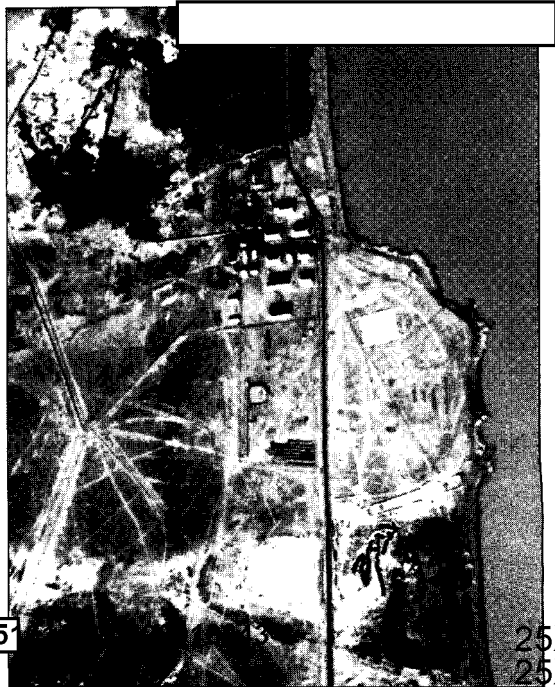


Figure 4

Note: Numbered items

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2. CIA. PIR, [redacted] Dual HEN HOUSE Radar Sites, Angarsk, Sary Shagan, and Olenegorsk, USSR (TOP SECRET [redacted])

REQUIREMENT

C-RR5-82,728

CIA/IAD PROJECT

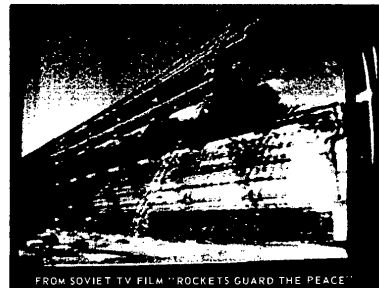
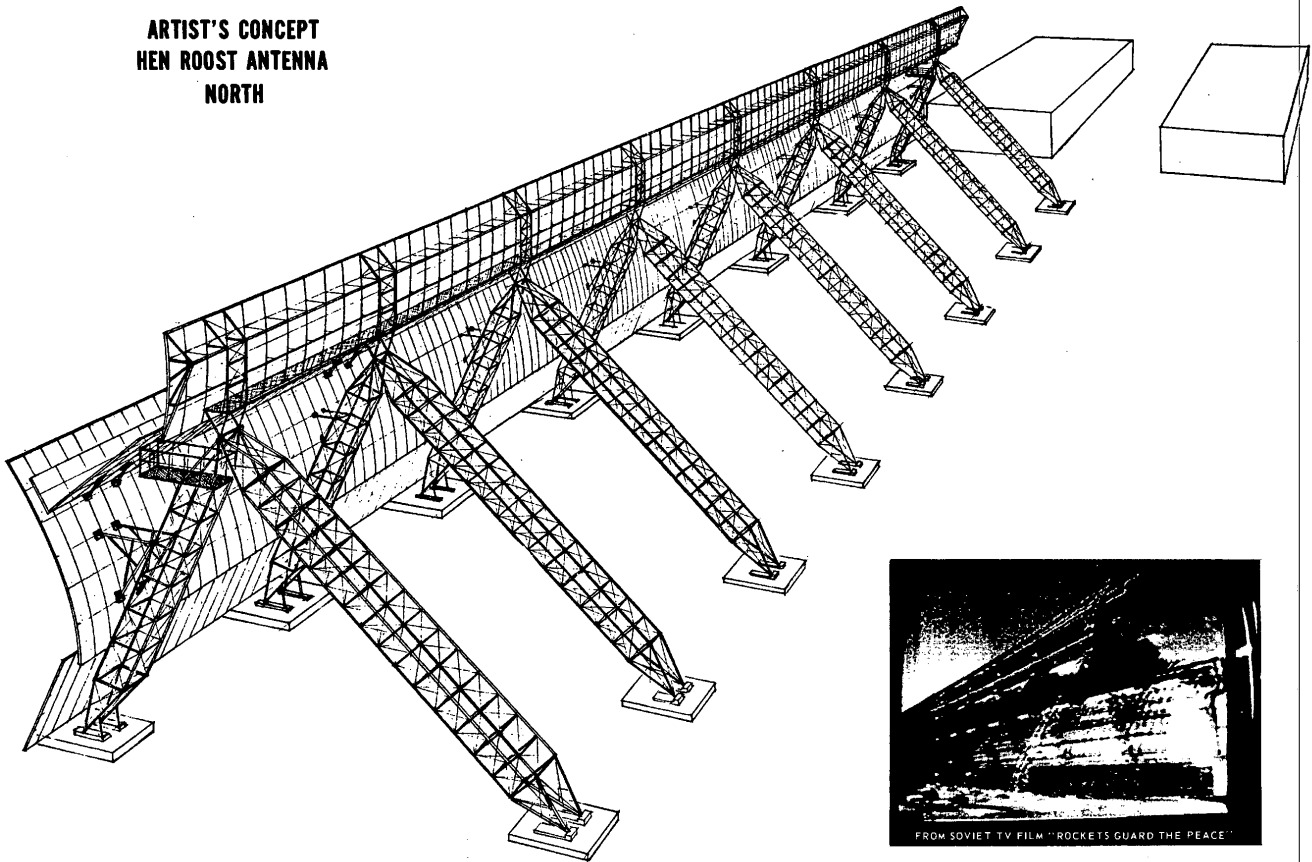
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ARTIST'S CONCEPT
HEN ROOST ANTENNA
NORTH



FROM SOVIET TV FILM "ROCKETS GUARD THE PEACE"

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