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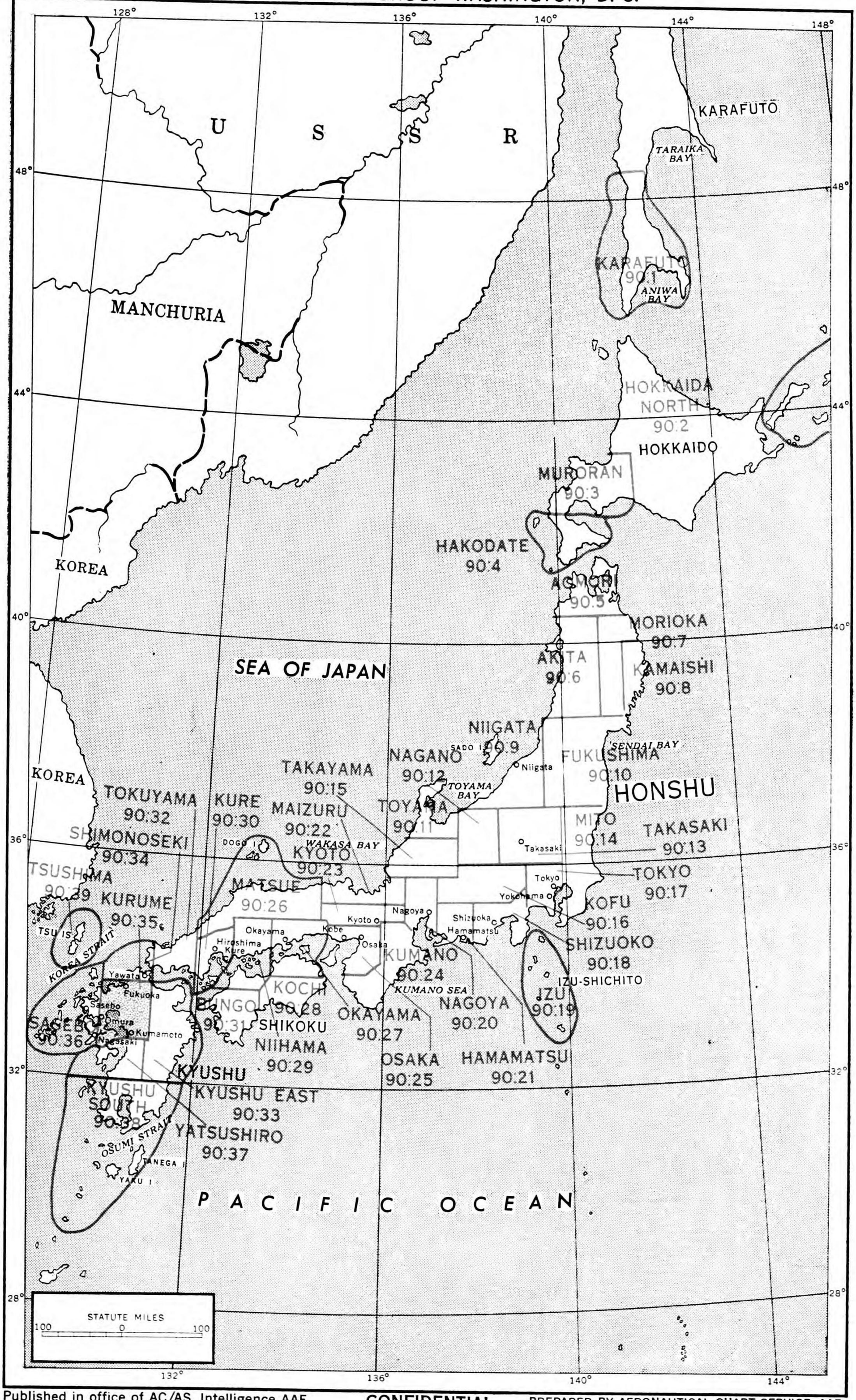

90:35 KURUME

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AIR TARGET INDEX—JAPANESE WAR

NUMERICAL TARGET INDEX

SHEET . . . . . ATI

DATE . . . . . 20 June 1945

OBJECTIVE AREA 90:35—KURUME (JAPAN)

Target Number and Objective Area	Name	Location	Coordinates (approx.)	General Category	Particular Category	Comment
90:35-662 Kurume (Japan)	Watanabe Aircraft Plant, (Kyushu Aircraft)	5 miles SE of Fukuoka City.	33°32′N 130°27′E	EPI	AC	One of principal airframe plants on Kyushu. Quantity production of airframe parts and major sections, assembled elsewhere.
90:35-664 Kurume (Japan)	Najima Steam Power Station	4 miles NNE of Fukuoka on S side of Najima Point.	33°38′N 130°26′E	BSU	EP	Important. 60,000 kw. Supplies Fukuoka region.
90:35-665 Kurume (Japan)	Saitozaki Petroleum Storage	4 miles NNW of and across Hakata Bay from Fukuoka.	33°38′N 130°21′E	MS	P	Bunkering point with storage capacity of approximately 183,000 barrels.
90:35-838 Kurume (Japan)	Isahaya Railroad Junctions	NW Isahaya on neck of Shimabara Peninsula.	32°51′N 130°03′E	BSU	RRT	Yards at junction of Nagasaki Main Line RR with Sasebo branch.
90:35-1236 Kurume (Japan)	Tachiarai Army Air Depot	1 mile SE of Tachiarai, 8½ miles NE of Kurume City.	33°24′N 130°37′E	EPI	AC	One of principal air arsenals, engaged in pilot training, major repair and modification of Army aircraft.
90:35-1238 Kurume (Japan)	Watanabe Iron Works, Plant No. 1	On Ishiba River in NE section Hakata.	33°36′N 130°25′E	EPI BEI	A MMT	Main Watanabe plant. Produces heavy munitions and machinery.
90:35-1239 Kurume (Japan)	Kyushu Ordnance Plant	Approximately 4 miles SE Fukuoka City.	33°32′N 130°28′E	EPI BEI	A AC MMT	Substantial producer of aircraft machinery and precision tools. Also produces some arms.
90:35-1241 Kurume (Japan)	Miyata Motor Works	About 5 miles SE of Fukuoka City.	33°32′N 130°29′E	EPI BEI	AC TE	Produces motorcycles and auto parts. Recently expanded to aircraft parts production and now making landing gear, fuselage and engine parts.
90:35-1242 Kurume (Japan)	Sangyo Cement Co.	1½ miles W of Gotoji at N foot of Mt. Funao.	33°37′N 130°46′E	BPI	C	Annual production 100,000 tons of cement.
90:35-1243 Kurume (Japan)	Miike Dyestuffs	In E Omuta 2.2 miles E of Miike Harbor.	33°02′N 130°28′E	BPI EPI	C A	Probably major producer of chemical warfare items. A large producer of picric acid and TNT.
90:35-1244 Kurume (Japan)	Oriental High Pressure Co., Plant A	E outskirts of Omuta. N of and adjacent to Mitsui Coal Liquefaction Plant (90:35-1262).	33°02′N 130°28′E	BPI	C	Major nitrogen fixation plant, also nitric acid.
90:35-1245 Kurume (Japan)	Oriental High Pressure Co., Plant B	NW Omuta, adjacent to and N of Electro-Chemical Industry (90-35:1246) and Mitsui Electrolytic Zinc Refinery. (90:35-1261).	33°02′N 130°26′E	BPI	C	Large ammonium sulphate fertilizer producer. Produces some sulphuric acid and nitric acid.
90:35-1246 Kurume (Japan)	Electro-Chemical Industry	NW Omuta, adjacent to and W of Mitsui Electrolytic Zinc Refinery (90:35-1261)	33°02′N 130°26′E	BPI	C	Major producer of calcium carbide, and calcium cyanamide.
90:35-1247 Kurume (Japan)	Kurume Military Zone	In 3 locations in SE Kurume City.	33°18′N 130°32′E	MS	M	Three separate groups of barracks. N group contains an arsenal, which is primarily an ordnance depot.

BEI—Basic Equipment Industries; BPI—Basic Processing Industries; BSU—Basic Services & Utilities; EPI—End Product Industries; MIC—Mixed Industrial Concentrations; MS—Military Stores.

A—Armament; AC—Aircraft; C—Chemicals; CIS—Coke, Iron & Steel; EP—Electric Power; LM—Light Manufacturing; MMT—Machinery & Machine Tools; M—Munitions; NFM—Non-ferrous Metals; P—Petroleum; RRT—Road & Rail Transportation; S—Shipping; TE—Transportation Equipment; UIC—Urban Industrial Concentrations.

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DATE . . . . . 20 June 1945

JOINT TARGET GROUP, WASHINGTON, D. C.
AIR TARGET INDEX — JAPANESE WAR
NUMERICAL TARGET INDEX

OBJECTIVE AREA 90:35—KURUME (JAPAN)—(Continued)

Target Number and Objective Area	Name	Location	Coordinates (approx.)	General Category	Particular Category	Comment
90:35-1248 Kurume (Japan)	Kumamoto Military Zone	In 2 locations in NW and NE Kumamoto. NW installations are in center of Castle grounds.	32°48′N 130°43′E	MS	M	Two extensive groups of barracks and storehouses.
90:35-1249 Kurume (Japan)	Omuta No. 1 Steam Power Plant	At Mikawa, just E of Miike Harbor. (90:35-1254).	33°01′N 130°26′E	BSU	EP	34,000 kw station supplying power for Miike Harbor coal loading equipment.
90:35-1250 Kurume (Japan)	Onagohata Power Station	30 miles E of Kurume City above and E of Hida, on S bank of Kusu (Kuma) River.	33°18′N 130°59′E	BSU	EP	Largest hydro-electric station in Kurume area and a central generating plant of the Kyushu power network.
90:35-1254 Kurume (Japan)	**Miike Harbor**	**1.8 mile SW of Omuta.**	**33°00′N 130°25′E**	**BSU**	**S**	**Cancelled. See Target 90:35-3532.**
90:35-1255 Kurume (Japan)	**Hakata Harbor**	**On SE shore of Hakata Bay at NW edge of Hakata City.**	**33°36′N 130°24′E**	**BSU**	**S**	**Cancelled. See Target 90:35-3511.**
90:35-1256 Kurume (Japan)	Miike Machinery Works	NE Omuta, just NW of Mitsui Zinc Distillery. (90:35-1260).	33°02′N 130°27′E	BEI	MMT	Large plant, manufacturing colliery machinery, gas engines and electric motors.
90:35-1257 Kurume (Japan)	Kobukuro Machinery Works	W side of Kobukuro, 1.6 miles N of Iizuka.	33°39′N 130°41′E	BEI	MMT	Produces engines, boilers, winches, and colliery equipment.
90:35-1259 Kurume (Japan)	**Togami Electric Works**	**NE Saga, 1.1 mile N NE of Saga Castle.**	**33°16′N 130°16′E**	**BEI**	**MMT**	**Producer of heavy electrical apparatus and accessories.**
90:35-1260 Kurume (Japan)	**Mitsui Zinc Distillery**	**E Omuta, NW of and adjacent to Miike Dyestuffs (90:35-1243).**	**33°02′N 130°27′E**	**BPI**	**NFM C**	**Largest high grade zinc plant in Empire. Also produces large quantity of sulphuric acid.**
90:35-1261 Kurume (Japan)	**Mitsui Electrolytic Zinc Refinery**	**NW Omuta, E of and adjoining Electro-Chemical Industry. (90:35-1246).**	**33°02′N 130°26′E**	**BPI**	**NFM C**	**Important zinc refinery, producing 11% of Japanese capacity. Also produces large quantity of sulphuric acid.**
90:35-1262 Kurume (Japan)	**Mitsui Coal Liquefaction Plant**	**E Omuta, S of and adjacent to Oriental High Pressure Company Plant A. (90:35-1244).**	**33°02′N 130°27′E**	**EPI BPI**	**P CIS**	**Synthetic oil plant with about 4% of Japanese synthetic oil capacity. Also fairly large coke capacity.**
90:35-1263 Kurume (Japan)	Bridgestone Tire Co.	NW Kurume City, near E bank of Chikugo River. In same compound with Nippon Rubber Company. (90:35-1264).	33°19′N 130°30′E	BEI	TE	Large tire plant manufacturing about 23% of Japan's total.

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OBJECTIVE AREA 90:35—KURUME (JAPAN)—(Continued)

Target Number and Objective Area	Name	Location	Coordinates (approx.)	General Category	Particular Category	Comment
90:35-1264 Kurume (Japan)	Nippon Rubber Company	In same compound with Bridgestone Tire Co. (90:35-1263) in NW Kurume City on E bank of Chikugo River.	33°19′N 130°30′E	BPI	C	Produces substantial quantities of rubber shoes and boots.
90:35-1265 Kurume (Japan)	Nippon Rubber Co., Fukuoka Plant	About 1 mile SE of Fukuoka on the Kyushu Main Line RR.	33°34′N 130°26′E	BPI BEI	C TE	Makes rubber boots and shoes, some tires and rubber curing chemicals.
90:35-1266 Kurume (Japan)	Tsuchiya Tabi Co. (Rubber Shoe Industry)	S edge of Kurume City.	33°18′N 130°30′E	BPI	C	Large producer of rubber soled shoes and rubber boots.
90:35-1268 Kurume (Japan)	Mitsui RR Workshops	On S side of Miike Harbor (90:35-1254)	33°00′N 130°25′E	BSU	RRT	Shops for repair and maintenance of railroad equipment for Mitsui mines.
90:35-1269 Kurume (Japan)	**Kurume RR Station**	**In W section Kurume City.**	**33°19′N 130°30′E**	**BSU**	**RRT**	**Passenger and freight stations with large number of warehouses. Very little marshalling.**
90:35-1270 Kurume (Japan)	**Hakata RR Yards and Station**	**NE of Fukuoka on ESE edge of Hakata.**	**33°36′N 130°26′E**	**BSU**	**RRT**	**Principal station in Fukuoka, with warehouses and marshalling yards.**
90:35-1274 Kurume (Japan)	Dainoura Mine	About 4 miles SW of Nogata.	33°43′N 130°40′E	BPI	CIS	One of largest coal mines in Japan.
90:35-1275 Kurume (Japan)	Tagawa Mines	In NE outskirts of Gotoji.	33°38′N 130°49′E	BPI	CIS	Important coal producer.
90:35-1276 Kurume (Japan)	Futase Mines	About 1 mile NW of Iizuka.	33°39′N 130°40′E	BPI	CIS	Important coal producer.
90:35-1277 Kurume (Japan)	Kineshima (Kishima) Mine	About 13 mi WSW of Saga Castle.	33°13′N 130°04′E	BPI	CIS	Important coal producer.
90:35-1278 Kurume (Japan)	Manda Mine	S of Omuta and 1½ miles ESE of Miike Inner Harbor	33°00′N 130°27′E	BPI	CIS	Important coal producer.
90:35-1279 Kurume (Japan)	Yotsuyama Mine	SE Omuta, just S of Miike Inner Harbor.	33°00′N 130°25′E	BPI	CIS	Large coal producer.
90:35-1595 Kurume (Japan)	**Omuta No. 2 Steam Power Plant**	**Mikawa, S side of gate locks for Miike Inner Harbor.**	**33°01′N 130°25′E**	**BSU**	**EP**	**162,000 kw. Serves Omuta, Fukuoka and Sasebo areas.**
90:35-1596 Kurume (Japan)	**Omuta No. 3 Steam Power Plant**	**Omuta, near harbor.**	**33°00′N 130°25′E**	**BSU**	**EP**	**Reported 104,000 kw. Serves Omuta, Fukuoka and Sasebo areas.**
90:35-1870 Kurume (Japan)	Tachiarai Machine Works	At W edge of Tachiarai Army Air-Depot (90:35-1236) at Tachiarai.	33°24′N 130°37′E	EPI	AC	Assembly of trainer planes and A/C parts manufacture.

BEI—Basic Equipment Industries; BPI—Basuc Processing Industries; BSU—Basic Services & Utilities; EPI—End Product Industries; MIC—Mixed Industrial Concentrations; MS—Military Stores.

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NUMERICAL TARGET INDEX

OBJECTIVE AREA 90:35—KURUME (JAPAN)—(Continued)

Target Number and Objective Area	Name	Location	Coordinates (approx.)	General Category	Particular Category	Comment
90:35-1871 Kurume (Japan)	**Tosu RR Yards and Repair Shops**	**E side of Tosu and NE toward Tashiro.**	**33°22′N 130°31′E**	**BSU**	**RRT**	**Extensive and important classification yards, station, roundhouse and repair shops. Handles freight to and from W and S Kyushu.**
90:35-1872 Kurume (Japan)	Showa Iron Works	N of Kyushu University, along RR to Najima.	33°38′N 130°25′E	EPI	A	Boiler works, probably producing Navy ordnance.
90:35-1873 Kurume (Japan)	Tatara Machinery Works	About 1 mile E of Hakata RR Yards and Station. (90:35-1270).	33°36′N 130°27′E	BEI	MMT	Coal field equipment and other heavy machinery.
90:35-1874 Kurume (Japan)	Asano Cement Co.	In Kawara city, at S foot of high limestone mountain. About 8 miles SE of Nogata.	33°40′N 130°51′E	BPI	C	Large producer of cement.
90:35-1875 Kurume (Japan)	Japan Explosives Mfg. Co.	About 1 mile SSW of Iizuka.	33°36′N 130°41′E	EPI	A	Produces explosives for coal mine operations and some military uses.
90:35-1877 Kurume (Japan)	Toyo Aluminum Co.	About 2 miles NE of Central Omuta.	33°03′N 130°28′E	BPI	NFM	One of Japan's larger alumina producers. Not getting any bauxite at present.
90:35-2079 Kurume (Japan)	**Fukuoka Seaplane Works**	**NE shore of Hakata Bay, N of Fukuoka.**	**33°39′N 130°26′E**	**EPI**	**AC**	**Probable aircraft assembly plant.**
90:35-2093 Kurume (Japan)	**East Omuta Explosives Works**	**In E outskirts of Omuta.**	**33°01′N 130°28′E**	**MS EPI**	**M A**	**Large HE manufacture and storage.**
90:35-2094 Kurume (Japan)	**Arao Branch of Tokyo No. 2 Arsenal**	**Just E of Arao.**	**32°58′N 130°28′E**	**EPI MS**	**A M**	**Large initiator loading.**
90:35-2139 Kurume (Japan)	**Kumamoto Aircraft Factory**	**2 miles E of Kumamoto.**	**32°48′N 130°46′E**	**EPI**	**AC**	**Airframe components. Probably assembles completed aircraft.**
90:35-2156 Kurume (Japan)	**Nogata RR Yards**	**In Nogata.**	**33°45′N 130°43′E**	**BSU**	**RRT**	**Important yards for Chikuho Coal fields.**
90:35-2165 Kurume (Japan)	**Yoshizuka RR Yards, Fukuoka**	**Fukuoka, just E of Hakata Yards and Station. (90:35-1270).**	**33°36′N 130°25′E**	**BSU**	**RRT**	**Freight sidings.**
90:35-2166 Kurume (Japan)	**Kurume Freight Yards**	**S outskirts of Kurume**	**33°16′N 130°30′E**	**BSU**	**RRT**	**Freight sidings.**
90:35-2172 Kurume (Japan)	**Tatara-gawa RR Bridges (Kagoshima Line)**	**Directly NE of Fukuoka**	**33°38′N 130°26′E**	**BSU**	**RRT**	**Bridges on Kagoshima Line and local railway.**
90:35-2180 Kurume (Japan)	**Midori-kawa RR Bridge (Kagoshima Line)**	**S of Kumamoto.**	**32°43′N 130°40′E**	**BSU**	**RRT**	**A 700 foot bridge on the main North-South Trunk line.**

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AIR TARGET INDEX—JAPANESE WAR

NUMERICAL TARGET INDEX

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DATE . . . . . 20 June 1945

OBJECTIVE AREA 90:35—KURUME (JAPAN)—(Continued)

Target Number and Objective Area	Name	Location	Coordinates (approx.)	General Category	Particular Category	Comment
90:35-2181 Kurume (Japan)	Shira-kawa RR Bridge (Kagoshima Line)	Directly S of Kumamoto.	32°46′N 130°41′E	BSU	RRT	An alternative to the Midori-kawa bridge.
90:35-2182 Kurume (Japan)	Chikugo-gawa RR Bridge (Kagoshima Line)	Kurume.	33°19′N 130°30′E	BSU	RRT	Long twin bridges in north outskirts of Kurume on the main line from the straits.
90:35-2183 Kurume (Japan)	Chikugo-gawa RR Bridges (Kyushu Elec. Exp. Line)	Directly NE of Kurume.	33°19′N 130°32′E	BSU	RRT	A double track and a single track bridge both carrying tram lines. Has limited potentiality for transshipment if Kagoshima line bridge were cut.
90:35-2193 Kurume (Japan)	Chikugo-gawa RR Bridge (Br Nagasaki Line)	SE of Saga.	33°13′N 130°22′E	BSU	RRT	A 1700-foot bridge on the cut-off line linking the Nagasaki Sasebo area with central and southern Kyushu.
90:35-2198 Kurume (Japan)	Ima-gawa RR Bridge (Nippo Line)	S of Yukuhashi.	33°43′N 130°58′E	BSU	RRT	On the line following the North & East coast from the Straits to Southern Kyushu.
90:35-2205 Kurume (Japan)	Gotoji RR Yards	Gotoji.	33°38′N 130°48′E	BSU	RRT	Yards handling Chikuho coal field traffic.
90:35-2206 Kurume (Japan)	Ida RR Yards	Ida.	33°38′N 130°49′E	BSU	RRT	Yards handling Chukuho coal field traffic.
90:35-2209 Kurume (Japan)	Kituchi-gawa RR Bridge (Kagoshima Line)	Takase.	32°56′N 130°34′E	BSU	RRT	On the main North-South trunk line.
90:35-2212 Kurume (Japan)	Kumamoto RR Yards	Kumamoto.	32°47′N 130°41′E	BSU	RRT	Yards important in serving local Army depots.
90:35-2218 Kurume (Japan)	Saga RR Yards	Saga.	33°16′N 130°18′E	BSU	RRT	Yards at point at which branch of Nagasaki Line branches off from the main line.
90:35-2234 Kurume (Japan)	Muromi-gawa Bridge (Kita-Kyushu Line)	W of Fukuoka.	33°35′N 130°20′E	BSU	RRT	RR bridge on secondary line leading West to Karatsu.
90:35-3511 Kurume (Japan)	Fukuoka (Hakata)—Port Area	On Genkai Sea, in NW Kyushu.	33°36′N 130°24′E	BSU	S	Annual capacity about 1,518,000 metric tons. Coal and oil port.
90:35-3532 Kurume (Japan)	Omuta/Miike—Port Area	On E side of Shimabara Bay, in in W Kyushu.	33°00′N 130°25′E	BSU	S	Annual capacity about 940,000 metric tons. Mechanical coal loading equipment. Water level in inner harbor governed by tidal lock gates.

BEI—Basic Equipment Industries; BPI—Basic Processing Industries; BSU—Basic Services & Utilities; EPI—End Product Industries; MIC—Mixed Industrial Concentrations; MS—Military Stores.

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JOINT TARGET GROUP, WASHINGTON, D. C.
URBAN AREA MOSAIC

OMUTA — JAPAN

Clear Mosaic

SHEET . . . . . OMUTA—PM
DATE . . . . . 21 May 1945

10° 9° 8° 7° 6° 5° 4° 0°

1346 1347 130°24' 1348 1349 1350 26' 1351 1352 1353 28' 1354 1355 1356 1357 130°30' 1358

1105 1104 33°04' 1103 1102 1101 1100 02' 1099 1098 1097 1096 33°00' 1095

1097 1096 33°00' 1095 1094 1093 1092 32°58' 1091 000yds N.

1346 000yds E. 1347 130°24' 1348 1349 1350 26 1351 1352 1353 1354 28' 1355 1356 P 1357 130°30 1358

Scale 1:25,000

1/2 0 1 Statute Mile

1/2 0 1 Nautical Mile

500 0 1000 2000 Meters

500 0 1000 2000 Yards

ONE THOUSAND YARD WORLD POLYCONIC GRID, BAND (III), ZONE C
THE LAST THREE DIGITS OF THE GRID NUMBERS ARE OMITTED

POLYCONIC PROJECTION

RESTRICTED

Prepared under the direction of the Aeronautical Chart Service by Aero Service Corp., Phila., Pa. 1945
Mosaic Controlled by average fit to best available map source.
Aerial photographs flown by U.S.A.A.F., June 1944-Jan. 1945. (Sorties) 5MF-8 12"V, 5MF-8 24"V, 4MR 15 24"V.

Reliability of grid uncertain due to local linear misalignment between photo mosaic and topographic map

Use diagram only to obtain numerical values. To determine magnetic north line, connect the pivot point "P" on the south edge of the map with the value of the angle between GRID NORTH and MAGNETIC NORTH as plotted on the degree scale at the north edge of the map.

AVERAGE MAGNETIC VARIATION 14°E
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OMUTA — PM

File No. **720,650.5**

JOINT TARGET GROUP, WASHINGTON, D. C.

TARGET INFORMATION SHEET

SHEET 90:35-662-TI
DATE. . . . . 8 May 1945
PAGE 1

WATANABE AIRCRAFT PLANT (KYUSHU AIRCRAFT)

ZASSHONOGUMA JAPAN

TARGET 90:35-662
OBJ. AREA 90:35
OBJ. FOLDER 90:35
CATEGORY
End Prdt. Ind.—AIRCRAFT

LAT. . . . . 33° 32′ N
LONG. . . . . 130° 27′ E
ALT. . . . . 60 feet

ALL PREVIOUS SHEETS CANCELLED

NOTE: This revision is designed to incorporate new ground intelligence although no satisfactory air cover has been received since the issuance of Target Information Sheet No. 90:35-662-TI, dated 14 September 1944.

REPRINT

SIGNIFICANCE

The Zasshonoguma plant, engaged in the manufacture and sub-assembly of airframe parts, is reported to be the main Watanabe Aircraft plant. There is no airfield near the plant; final assembly and flight testing of finished planes is performed elsewhere. Both the Fukuoka Seaplane Works at Najima (TARGET 90:35-2079), about 10 miles NNW, and the Tachiarai Machine Works (TARGET 90:35-1870) located on the W edge of the Tachiarai Army Air Field (TARGET 90:35-1236), about 13 miles SE, have been reported to assemble Watanabe planes. Air cover indicates plane assembly or modification and repair at both places. These plants together with the Zasshonoguma plant may now be known as Kyushu Aircraft (Kyushu Hikoki) which is reported to be the holding company for many of the aircraft plants in this area. It is also reported that Kyushu Aircraft has taken over the Omura Aircraft Factory (TARGET 90:36-1627). Recent post-attack air cover indicates that at least one of the Watanabe plane types may be assembled or repaired and modified at the Omura plant.

No important combat-type aircraft are known to be manufactured by the Watanabe Company although it has been reported that a Navy fighter is made at the Zasshonoguma plant. At one time, however, Watanabe manufactured wings for Bettys assembled by Mitsubishi and it may still be producing components for important combat type aircraft. It is also reported to manufacture engines for trainer aircraft, but no Watanabe engines have been recovered. It is not possible to determine either from air cover or ground intelligence whether this sub-contracting work and engine manufacture occurs at the Zasshonoguma plant or at another of the many Watanabe plants in the Fukuoka area.

LOCATION

(Refer to Illustration No. 90:35-662-P2.) At Zasshonoguma on the S side of the Kagoshima Mainline RR, about 5 miles SE of Fukuoka City. The Mikasa River, which flows generally NW-SE is just under one mile to the NE at its closest point. The Naka River curving southward is about one mile WNW. Low hills rise directly to the S and about 1.5 miles to the N.

DESCRIPTION AND LAYOUT

(Refer to Illustration No. 90:35-662-P4.) The total target area is oblong in shape, measuring about 7500 feet NW-SE by 2200 feet NE-SW. Ground intelligence and air cover is not adequate to permit the identification of buildings or an analysis of the flow of production. Available photography, however, indicates that there are two distinct clusters of factory buildings separated by an open space of roughly 2,000 x 2,000 feet. The larger built-up area (Area I) lies to the NW. It is irregular in shape, consisting of approximately 480,000 square feet of closely grouped buildings. The group of buildings in the northern part of Area I has been reported to be the Watanabe Iron Works (possibly now the Kyushu Ordnance Factory) manufacturing torpedoes and depth charges for the Navy. The SE cluster (Area II) consisting of about 392,000 square feet of scattered buildings, may be an extension of the aircraft plant or a branch of the Tachiarai Army Air Depot reported to be in this area.

PRIMARY OBJECTIVES

It is not possible to determine the primary target objectives from currently available photography and ground intelligence.

CONSTRUCTION AND VULNERABILITY

Photography of 18 June 1944 indicates the buildings housing process operations to be of one-story, steel frame construction with roofs and walls of lightweight sheet materials. Sawtooth roofs of short to medium span predominate, the height to eaves of most buildings being between 20 and 30 feet. Administrative and storage buildings are probably of wood frame construction.

WEAPON RECOMMENDATIONS

Instructions with regard to weapons will usually be given in Field or Operational Orders, but in the absence of such instructions and to assist Planners in formulating such orders the following information is given:

An attack with a combination of high explosive and incendiary bombs is recommended. A preliminary structural and occupancy analysis of the plant indicates the following weapons should be selected:

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	High Explosive	Fuzing	Incendiary
Preferred:	1000-lb GP or 500-lb GP or 2000-lb GP	0.01 N/ND T	AN-M50 or AN-M69 (in aimable clusters for high altitude attack)
Alternative:			AN-M47 70-lb AN-M76 500-lb
Not recommended:	Smaller GP bombs SAP or AP bombs Depth bombs		

Notes: (a) Use 0.1 N fuzes if 0.01 N fuzes are not available, and 0.01 T if ND T are not available. ND tail fuzing is recommended as most of the buildings have light roof material, and are best destroyed by blast effects.

(b) The above recommendations are on a weight for weight basis.

CAMOUFLAGE, DECOYS, AND SMOKE SCREENS

Photography of 18 June 1944 indicates disruptive roof painting on all buildings. There is no indication of smoke screens or decoys.

ADDITIONAL INFORMATION

Watanabe is believed to manufacture the following operational aircraft:

(1) Glen—SE Recce Float Plane (carried by submarines)
(2) Jake SE Recce Float Plane
(3) Tokai—2E Recce

A Navy fighter is also reported to be made but none have been recovered which can be definitely associated with Watanabe.

Two of the plants reported to be assembling the aircraft manufactured at Watanabe's Zasshonoguma plant, the Tachiarai Machine Works (TARGET 90:35-1870) and the Omura Aircraft Factory (TARGET 90:36-1627), have been severely damaged by air attacks during the latter part of March. However, since final assembly operations can be performed almost anywhere the destruction of these plants would not seriously interrupt Watanabe's aircraft output even if final assembly operations of Watanabe planes were performed there.

The Gannosu Airfield in the vicinity of Wajiro-mura about 10 miles NW is reported to be used for testing the wheeled airplanes manufactured at Zasshonoguma. There does not appear to be any aircraft assembly operations at this field although a field close by, the Hakata Airfield, has considerable building capacity which might be used for assembly and post-assembly.

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JOINT TARGET GROUP
WASHINGTON, D. C.

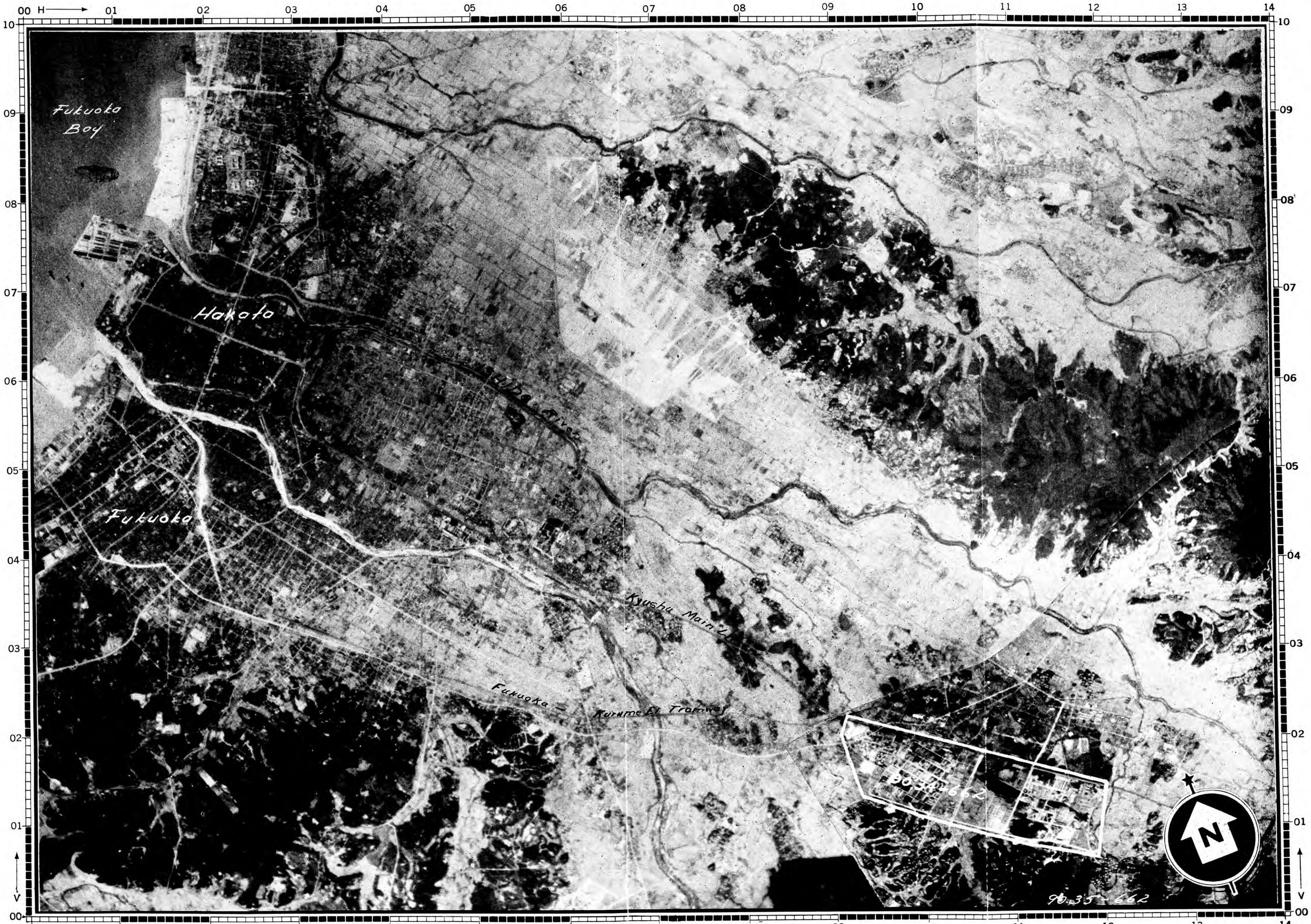
WATANABE AIRCRAFT PLANT (KYUSHU AIRCRAFT)

ZASSHONOGUMA JAPAN

0 2000 4000 6000 FEET
0 ½ 1 MILE
1:32 000 APPROX.

RESTRICTED

SHEET	90:35-662 P2
DATE	29 April 1945
TARGET	90:35-662
COORDINATES	33°32'N 130°27'E
PHOTOGRAPHED	18 June 1944



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File No. 721,662.54

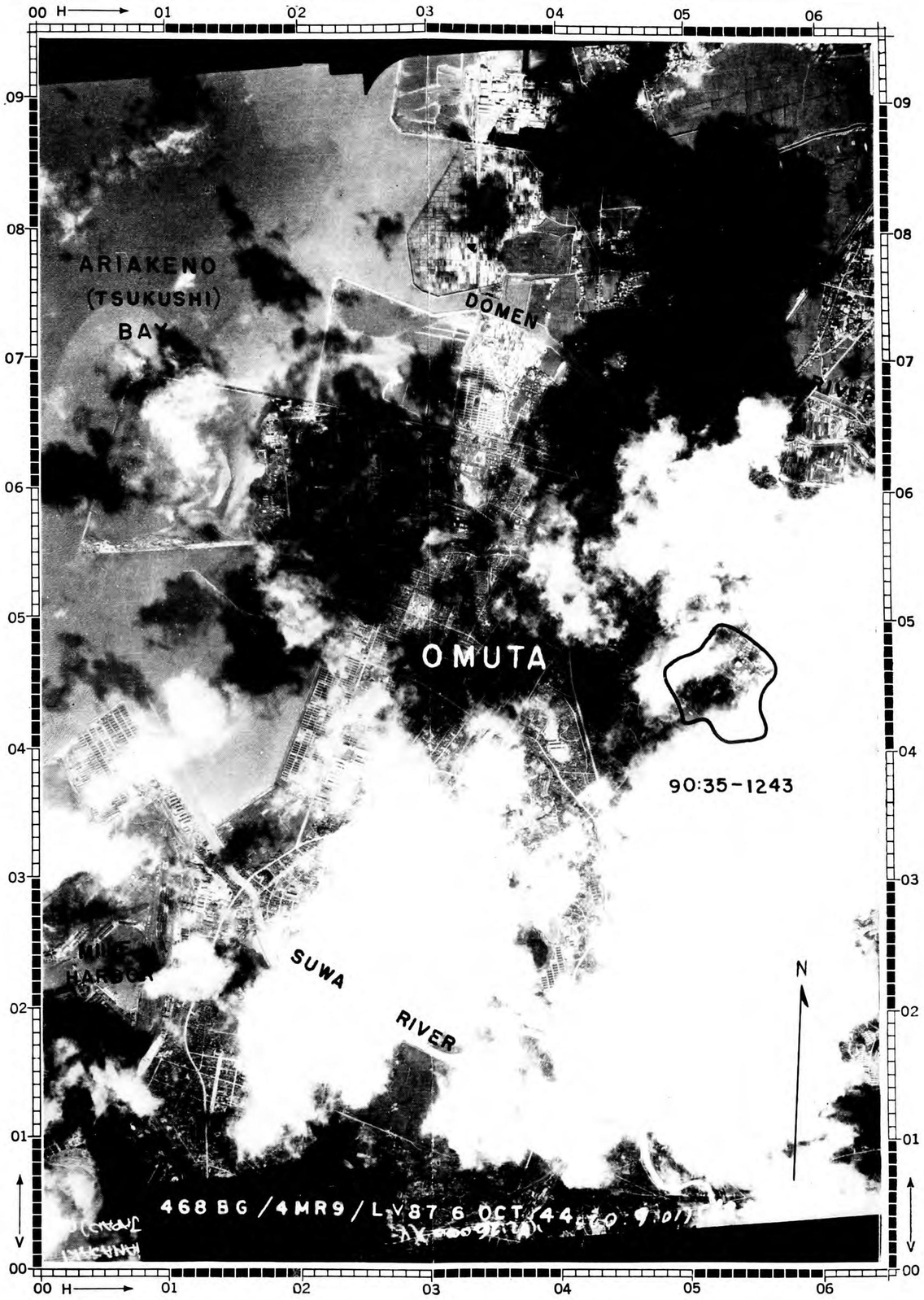
JOINT TARGET GROUP, WASHINGTON, D. C.
TARGET LOCATION SHEET

MIIKE DYESTUFFS
OMUTA JAPAN

SHEET	90:35-1243—TL
DATE	8 June 1945
TARGET	90:35-1243
CATEGORY	Bsc. Proc. Ind.—CHEMICALS
COORDINATES	33°02'N 130°27'E
ALTITUDE	30 feet

SIGNIFICANCE:

Produces picric acid, TNT, ammonium nitrate, poison gases and other coal tar derivatives. Coke ovens are critical point. They provide plant with its own supply of basic raw materials. Prior to 1941 was one of four plants producing at least 55% of Japan's dye intermediates and dyes.



LARGE SCALE ILLUSTRATION—SCALE APPROX.: 1:15,500

SMALL SCALE ILLUSTRATION—SCALE APPROX.: 1:26,000

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JOINT TARGET GROUP, WASHINGTON, D. C.
TARGET LOCATION SHEET

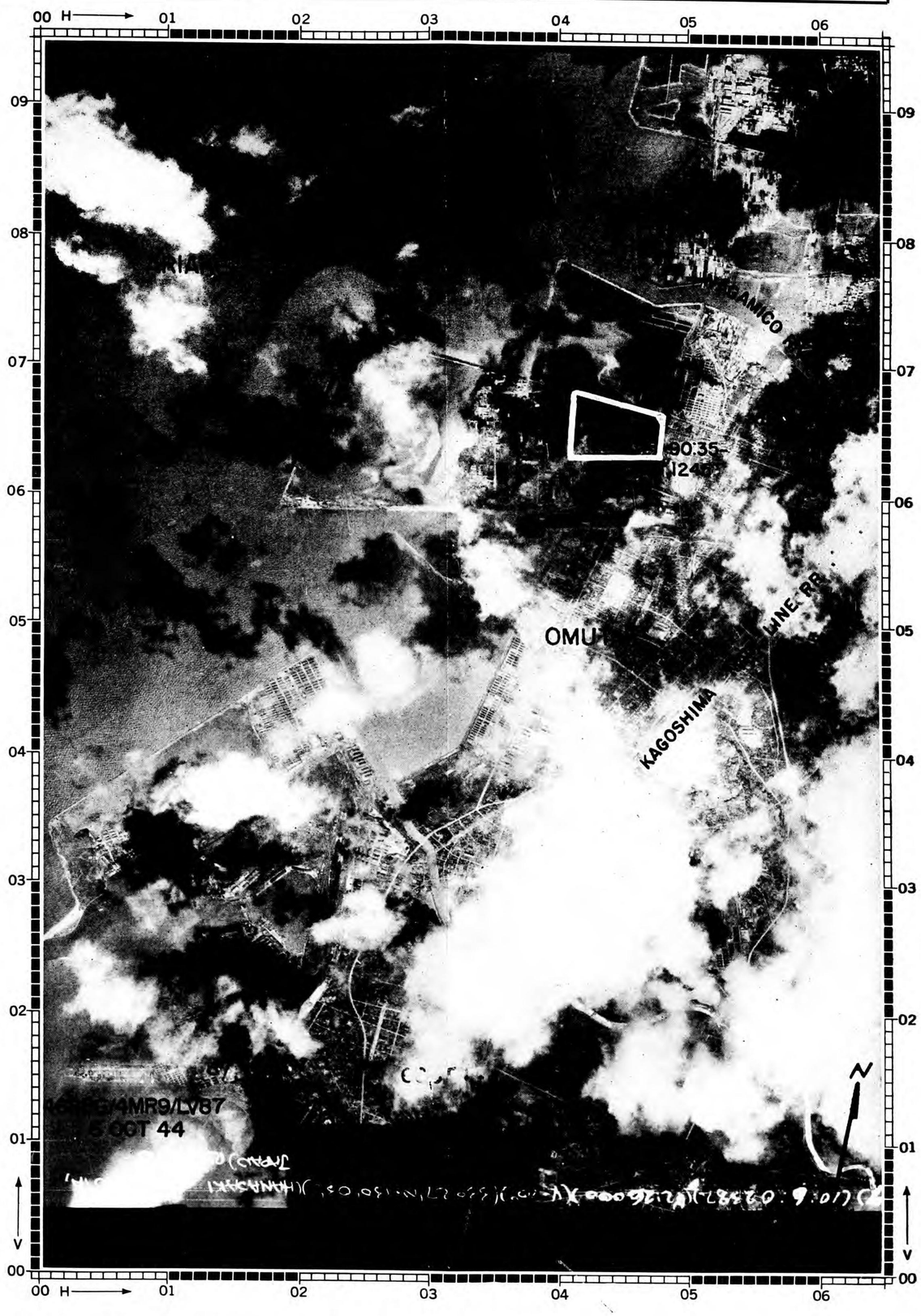
ORIENTAL HIGH PRESSURE CO., PLANT B
OMUTA JAPAN

SHEET	90:35-1245—TL
DATE	22 May 1945
TARGET	90:35-1245
CATEGORY	Bsc. Proc. Ind.—CHEMICALS
COORDINATES	33°02'N 130°26'E
ALTITUDE	15 feet

SIGNIFICANCE:

One of the 8 largest sulphuric acid plants which together are believed to have about 35 percent of Japan's total capacity. Also produces nitric acid and ammonium sulphate.

LARGE SCALE ILLUSTRATION—SCALE APPROX.: 1:15,500



SMALL SCALE ILLUSTRATION—SCALE APPROX.: 1:26,000

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File No. 722,245.1

REPRINT

JOINT TARGET GROUP, WASHINGTON, D. C.
TARGET LOCATION SHEET

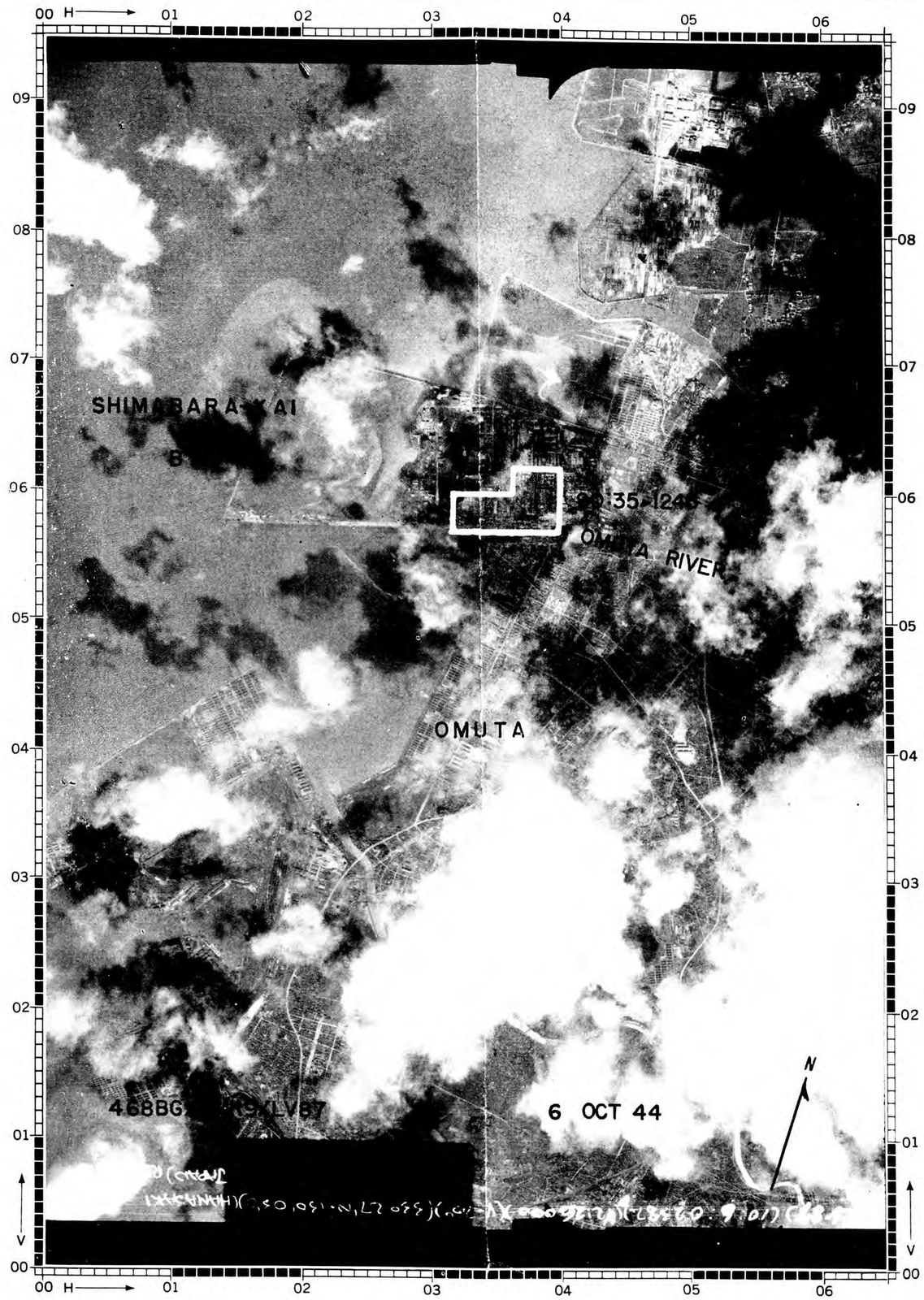
ELECTRO-CHEMICAL INDUSTRY
OMUTA JAPAN

SHEET . . . . . 90:35-1246—TL
DATE . . . . . 18 May 1945
TARGET 90:35-1246
CATEGORY . Bsc. Proc. Ind.—CHEMICALS
COORDINATES . . . . 33°02'N 130°26'E
ALTITUDE . . . . . 20 feet

SIGNIFICANCE:

One of six largest calcium carbide plants which together are believed to account for more than 50 percent of total Japanese capacity. Also produces nitrogen by calcium cyanamide process.

LARGE SCALE ILLUSTRATION—SCALE APPROX.: 1:15,500



SMALL SCALE ILLUSTRATION—SCALE APPROX.: 1:26,000

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File No. 722,246.1

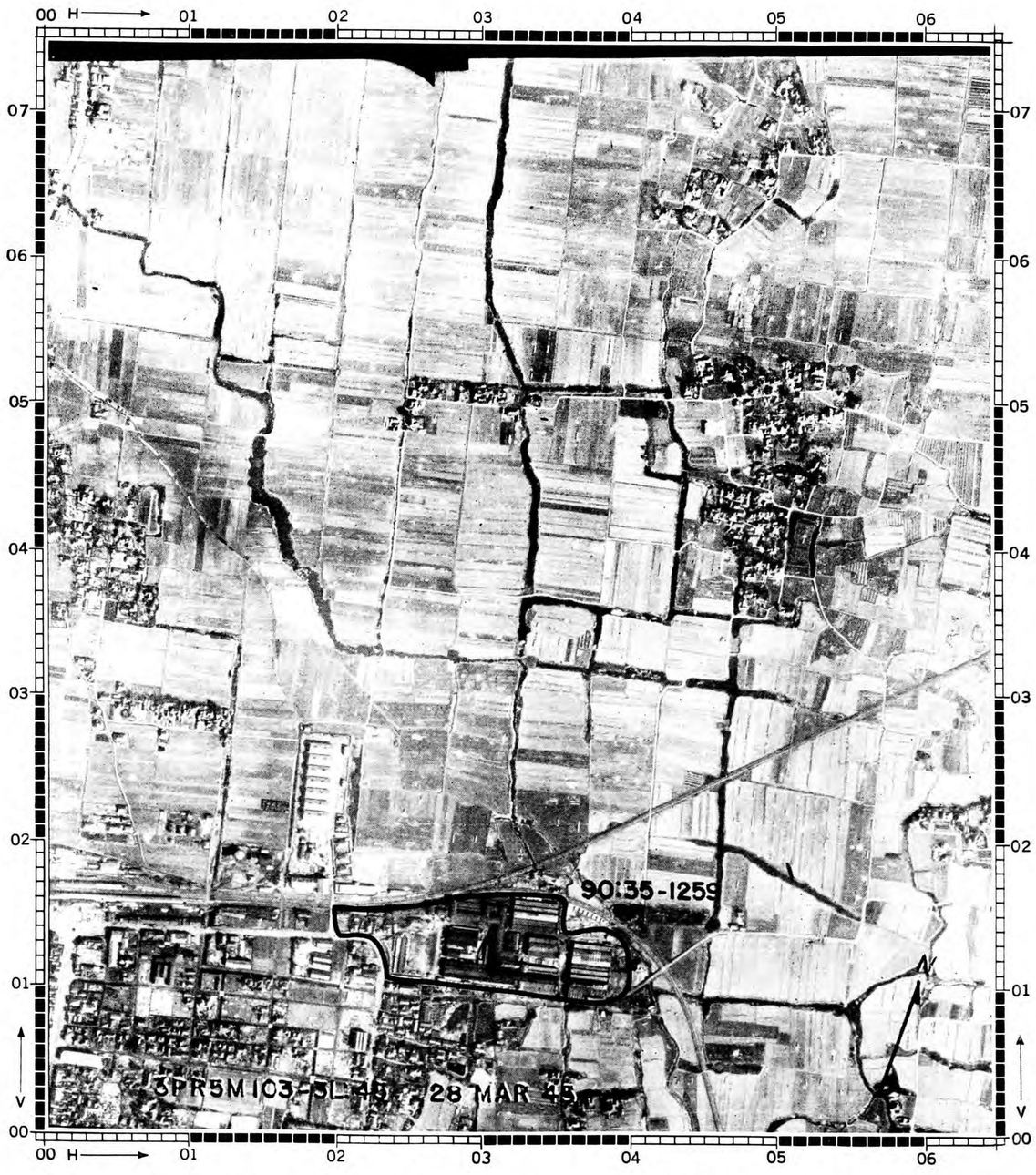
JOINT TARGET GROUP, WASHINGTON, D. C.
TARGET LOCATION SHEET

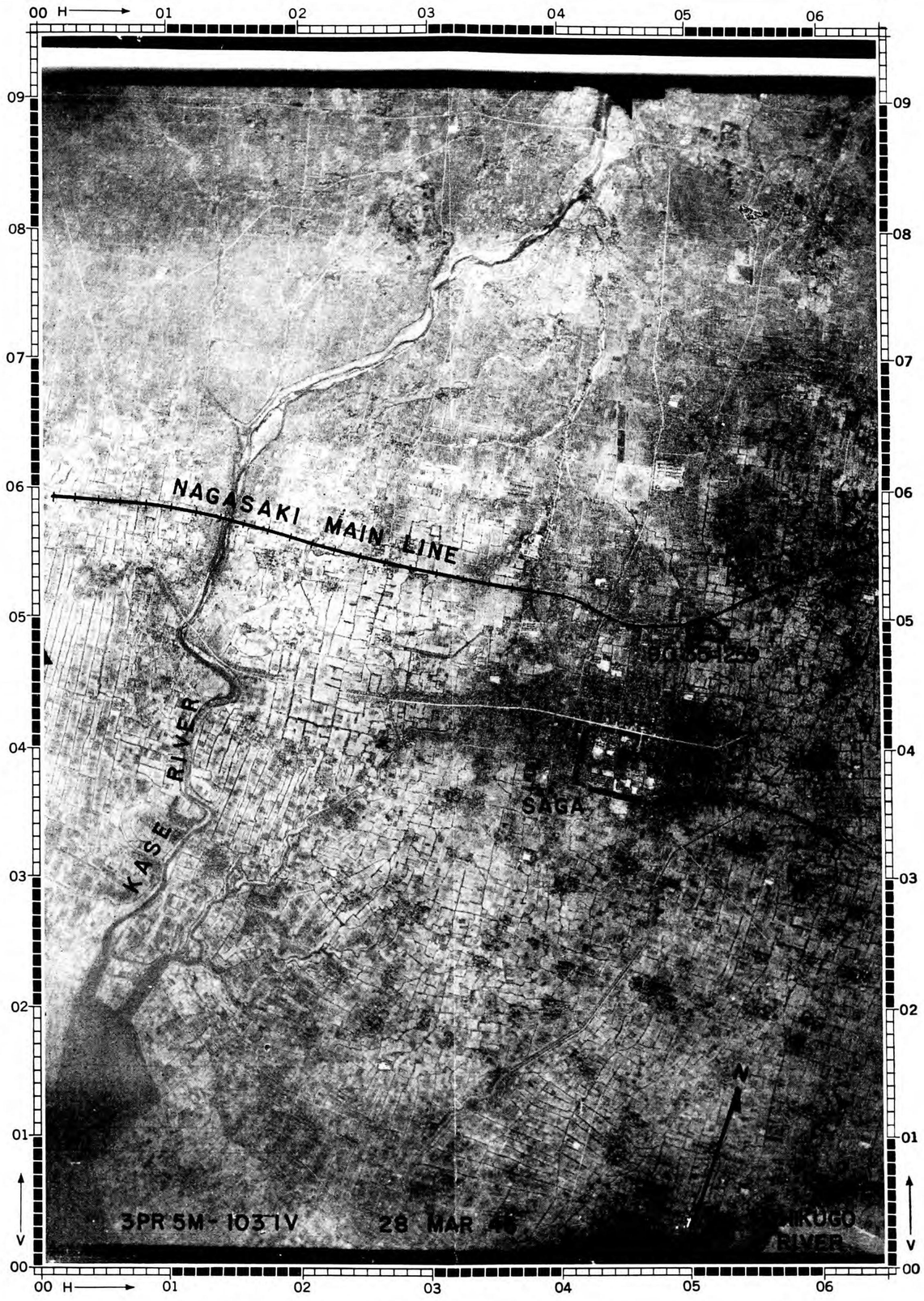
TOGAMI ELECTRIC WORKS
SAGA JAPAN

SHEET . . . . . 90:35-1259—TL
DATE . . . . . 23 May 1945
TARGET 90:35-1259
CATEGORY . . . . . Bsc. Eqpt. Ind.—MACHY. AND MACH. TOOLS
COORDINATES . . . . 33°16'N 130°18'E
ALTITUDE . . . . . 25 feet

SIGNIFICANCE:

Heavy electrical equipment plant of medium importance producing automatic switches, switchboards and power plant equipment. It is reported to be making electrical apparatus for the Navy.





LARGE SCALE ILLUSTRATION—SCALE APPROX.: 1:9,000

SMALL SCALE ILLUSTRATION—SCALE APPROX.: 1:60,000

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File No. 722,259.1

REPRINT

JOINT TARGET GROUP
WASHINGTON, D. C.

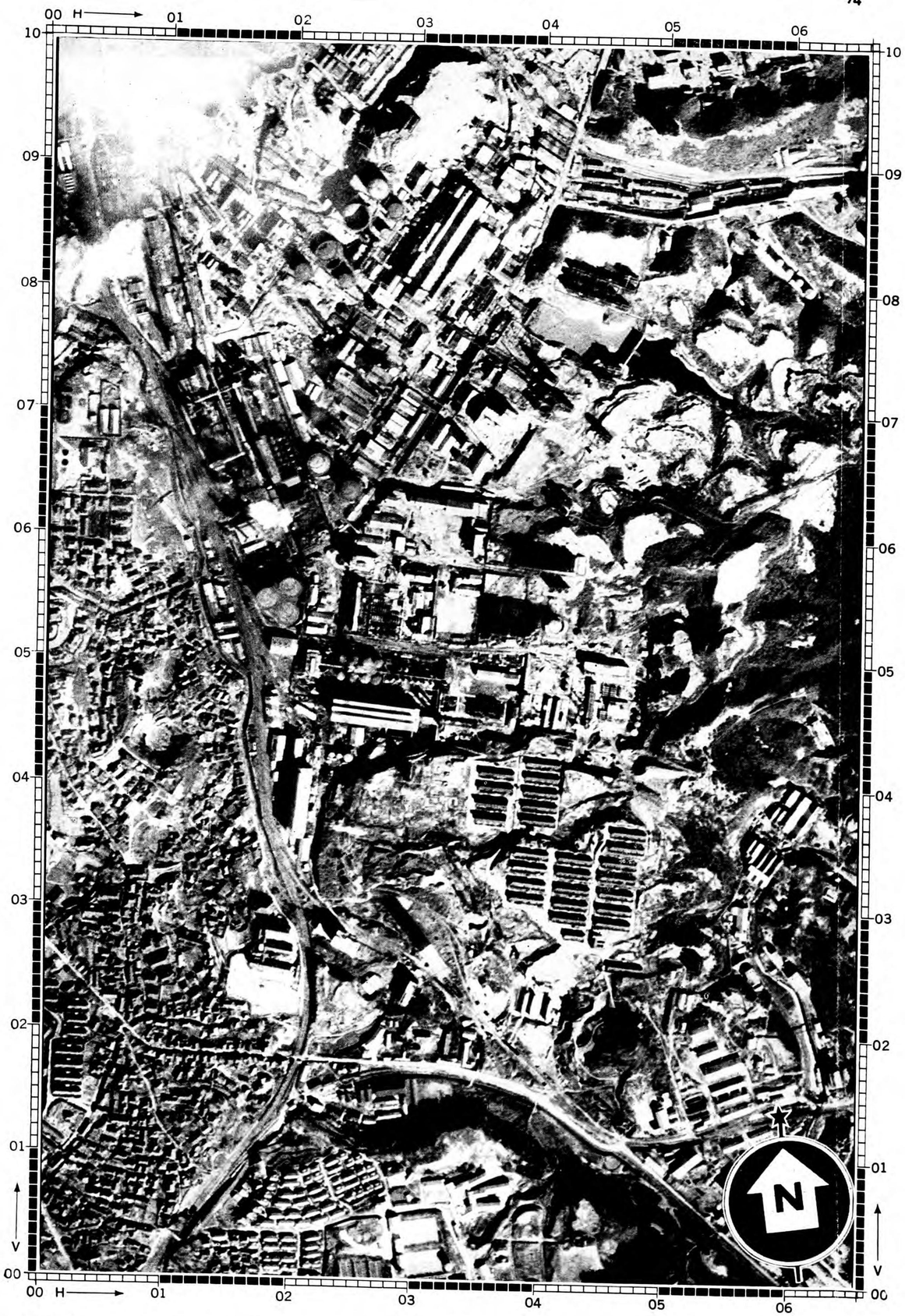
MITSUI COAL LIQUEFACTION PLANT

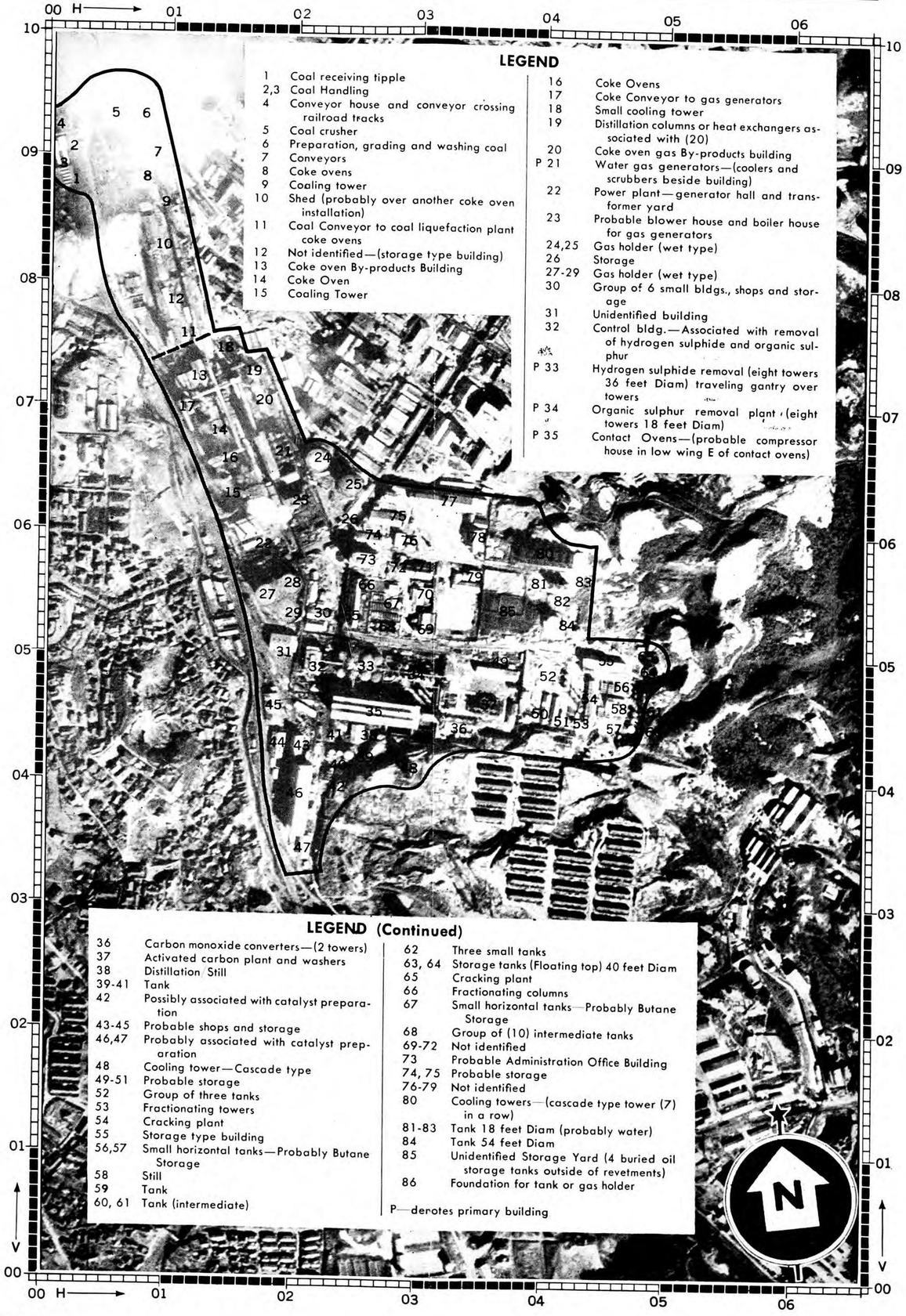
OMUTA JAPAN

0 500 1000 1500 2000 2500 3000 FEET
0 1/4 1:6000 APPROX. 1/2 MILE

CONFIDENTIAL

SHEET . . . . . 90:35-1262—P3
DATE . . . . . 14 June 1945
TARGET 90:35-1262
COORDINATES . . 33°02'N 130°27'E
PHOTOGRAPHED . . 6 November 1944





LEGEND

1	Coal receiving tipple
2,3	Coal Handling
4	Conveyor house and conveyor crossing railroad tracks
5	Coal crusher
6	Preparation, grading and washing coal
7	Conveyors
8	Coke ovens
9	Coaling tower
10	Shed (probably over another coke oven installation)
11	Coal Conveyor to coal liquefaction plant coke ovens
12	Not identified—(storage type building)
13	Coke oven By-products Building
14	Coke Oven
15	Coaling Tower
16	Coke Ovens
17	Coke Conveyor to gas generators
18	Small cooling tower
19	Distillation columns or heat exchangers associated with (20)
20	Coke oven gas By-products building
P 21	Water gas generators—(coolers and scrubbers beside building)
22	Power plant—generator hall and transformer yard
23	Probable blower house and boiler house for gas generators
24,25	Gas holder (wet type)
26	Storage
27-29	Gas holder (wet type)
30	Group of 6 small bldgs., shops and storage
31	Unidentified building
32	Control bldg.—Associated with removal of hydrogen sulphide and organic sulphur
P 33	Hydrogen sulphide removal (eight towers 36 feet Diam) traveling gantry over towers
P 34	Organic sulphur removal plant (eight towers 18 feet Diam)
P 35	Contact Ovens—(probable compressor house in low wing E of contact ovens)

LEGEND (Continued)

36	Carbon monoxide converters—(2 towers)
37	Activated carbon plant and washers
38	Distillation Still
39-41	Tank
42	Possibly associated with catalyst preparation
43-45	Probable shops and storage
46,47	Probably associated with catalyst preparation
48	Cooling tower—Cascade type
49-51	Probable storage
52	Group of three tanks
53	Fractionating towers
54	Cracking plant
55	Storage type building
56,57	Small horizontal tanks—Probably Butane Storage
58	Still
59	Tank
60, 61	Tank (intermediate)
62	Three small tanks
63, 64	Storage tanks (Floating top) 40 feet Diam
65	Cracking plant
66	Fractionating columns
67	Small horizontal tanks—Probably Butane Storage
68	Group of (10) intermediate tanks
69-72	Not identified
73	Probable Administration Office Building
74, 75	Probable storage
76-79	Not identified
80	Cooling towers—(cascade type tower (7) in a row)
81-83	Tank 18 feet Diam (probably water)
84	Tank 54 feet Diam
85	Unidentified Storage Yard (4 buried oil storage tanks outside of revetments)
86	Foundation for tank or gas holder

P—denotes primary building

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File No. 722,262.56

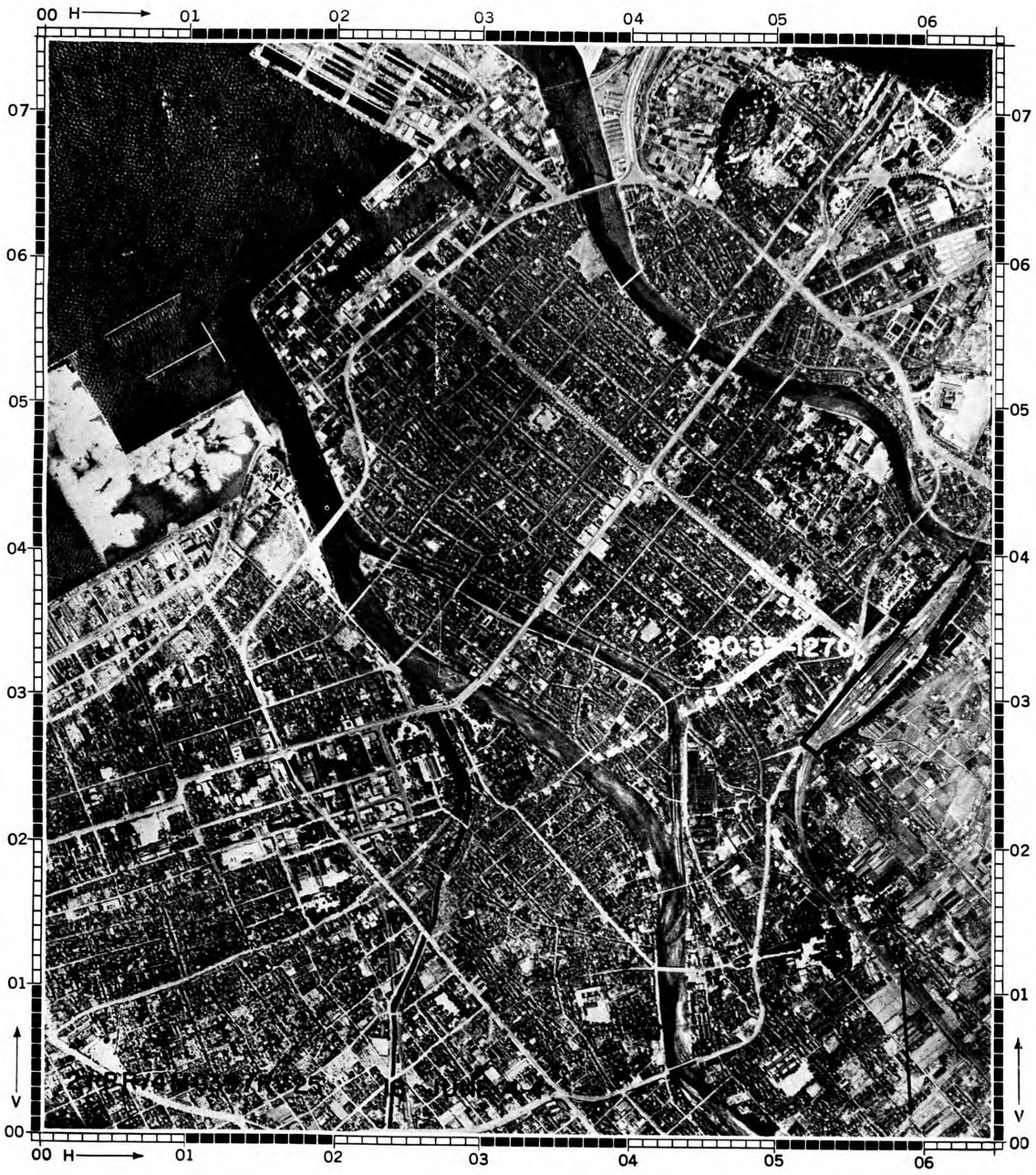
JOINT TARGET GROUP, WASHINGTON, D. C.
TARGET LOCATION SHEET

HAKATA RR YARDS AND STATION
FUKUOKA JAPAN

SHEET . . . . . 90:35-1270—TL
DATE . . . . . 25 May 1945
TARGET 90:35-1270
CATEGORY . . . . . Bsc. Serv. Utly.—Road and Rail Transpt.
COORDINATES . . . . 33°36'N 130°25'E
ALTITUDE . . . . . 10 feet

SIGNIFICANCE:

Of secondary importance. Freight yards and storage; passenger sidings and platforms. On the Kagoshima Line. Length, 1500'. Average width, 160'. Area, 260,500 sq. ft.



LARGE SCALE ILLUSTRATION—SCALE APPROX.: 1:14,800

SMALL SCALE ILLUSTRATION—SCALE APPROX.: 1:59,000

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JOINT TARGET GROUP, WASHINGTON, D. C.
TARGET LOCATION SHEET

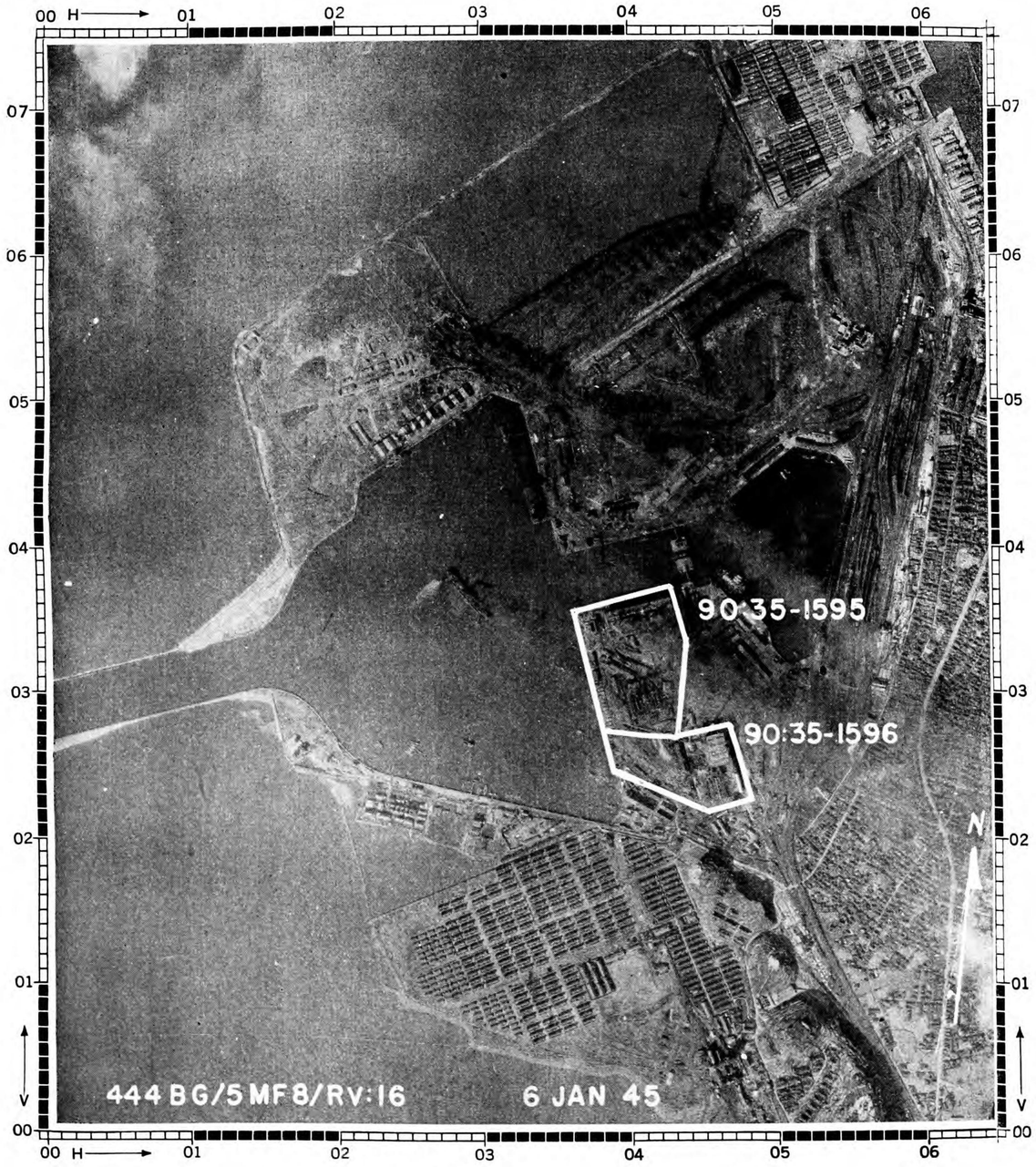
OMUTA NO. 2 AND OMUTA NO. 3 STEAM POWER PLANTS

OMUTA JAPAN

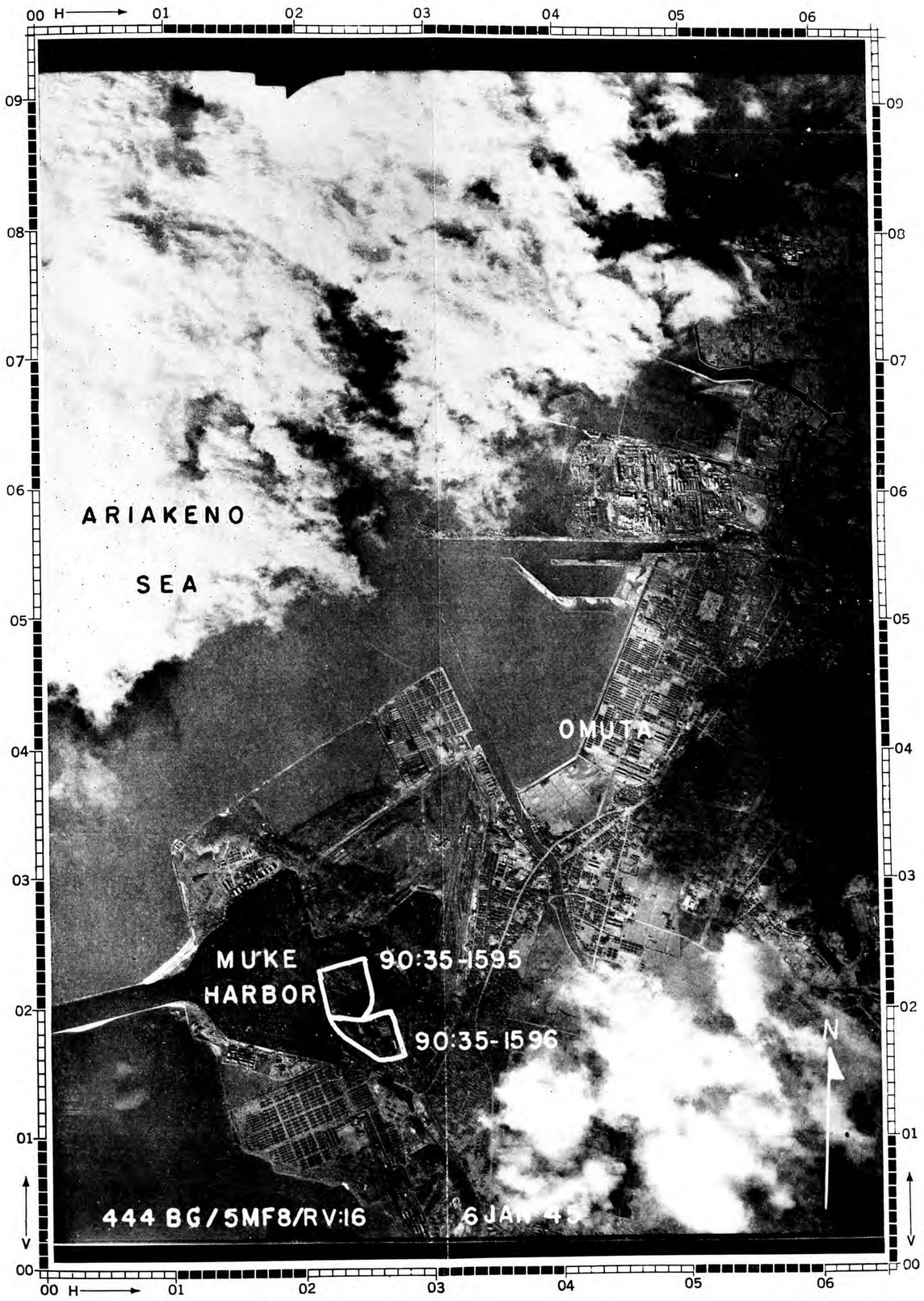
SHEET. 90:35-1595 & 90:35-1596—TL
DATE. . . . . 15 June 1945
TARGET. . 90:35-1595 & 90:35-1596
CATEGORY. . . . . Bsc. Serv. and Utly.—ELECTRIC POWER
COORDINATES. . . . . 33°00'N 130°25'E
ALTITUDE. . . . . 13 feet

SIGNIFICANCE:

OMUTA No. 2 Steam Power Plant (Minato), capacity 162,000 KW and OMUTA No. 3 Steam Power Plant (Shin Kaiyoku), capacity 104,000 KW, are the two largest power plants in the West Kyushu power supply area. Supplying two-fifths of the area's installed steam capacity, these plants serve industries in the Omuta region and feed power to Fukuoka and Sasebo and vicinity.



LARGE SCALE ILLUSTRATION—SCALE APPROX.: 1:14,500



SMALL SCALE ILLUSTRATION—SCALE APPROX.: 1:30,000

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File No. 722,595.1

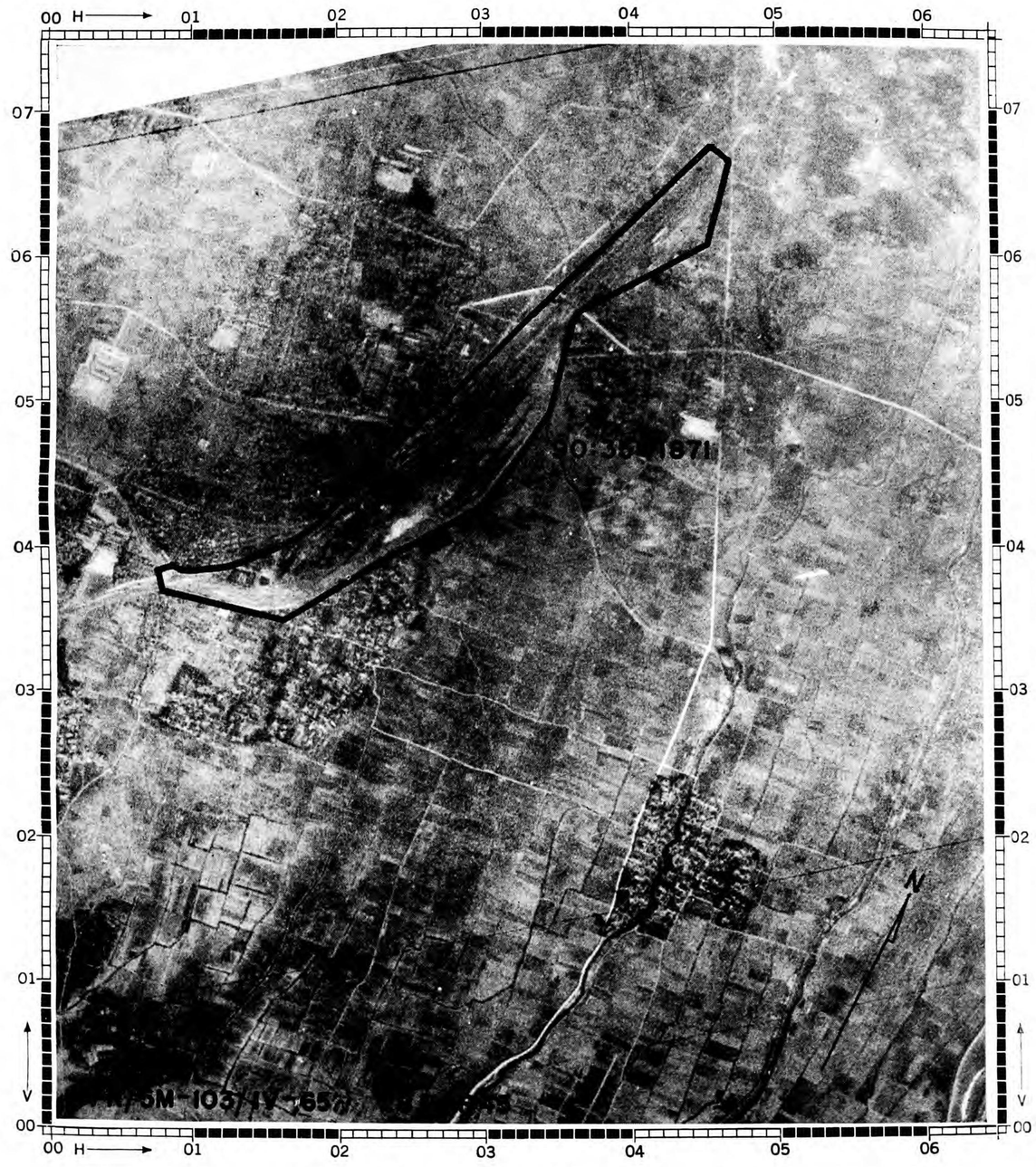
JOINT TARGET GROUP, WASHINGTON, D. C.
TARGET LOCATION SHEET

TOSU YARDS AND REPAIR SHOPS
TOSU JAPAN

SHEET . . . . . 90:35-1871—TL
DATE . . . . . 31 May 1945
CATEGORY . . . . . Bsc. Serv. & Utly.—ROAD-RAIL TRANSPT.
COORDINATES . . . . . 33°22'N 130°31'E
ALTITUDE . . . . . 35 feet

SIGNIFICANCE:

These are the largest RR yards in Kyushu outside the Straits area. The Nagasaki Line branches off from the N-S Kagoshima Line at this point, and the Daito Line, running E to Oita branches off about 5½ miles to the S. This yard, therefore, performs important classification of economic and military traffic between primary N-S and E-W lines. Includes hump-gravity classification yards, roundhouse, and repair shops. Dimensions, 6800′ x 675′. Area about 4 million square feet.



LARGE SCALE ILLUSTRATION—SCALE APPROX.: 1:16,700

SMALL SCALE ILLUSTRATION—SCALE APPROX.: 1:50,000

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File No. 722,871.1

JOINT TARGET GROUP, WASHINGTON, D. C.

TARGET INFORMATION SHEET

SHEET #. . . 90:35-2079—TI
DATE. . . . . 25 May 1945
PAGE 1

TARGET 90:35-2079
OBJ. AREA 90:35
OBJ. FOLDER . . New Target
CATEGORY
End Prdt. Ind.—AIRCRAFT

LAT. . . . . 33° 39′ N
LONG. . . . . 130° 26′ E
LAT. . . . . 10 feet

FUKUOKA SEAPLANE WORKS

FUKUOKA JAPAN

SIGNIFICANCE

This small plant at one time producing Jake float planes or possible the twin engine land plane Lorna, has recently had several buildings removed, and is of relatively minor importance in the aircraft industry. It may still be producing on a reduced scale with greater dependence on outside production of parts, or may be converting to repair or modification functions.

LOCATION

(Refer to Illustration No. 90:35-2079 P2.) Situated in NW Kyushu, on reclaimed land on the NE shore of Hakata Bay, about 5 miles NNE of the center of Fukuoka and 3000 feet NE of Najima Steam Power Station (TARGET 90:35-664) at the Tatara River mouth. A main highway forms the E boundary and the Kyushu RR to Moji runs about 900 feet further inland. The Fukuoka Air Station is on a tongue of land across the bay due W.

DESCRIPTION AND LAYOUT

(Refer to Illustration No. 90:35-2079 P3.) The plant occupies a narrow rectangle, measuring about 3000 feet on its main NE-SW axis and 1000 feet wide. The productive buildings were originally arranged in two rows along the main axis. Several buildings (5, 8, 15, 21) were removed between 30 December and 8 March and another (18) was in process of being dismantled. Three large buildings (12, 19, 22) and several smaller ones remained on 23 April. Sub-assembly functions, if such remain, are probably done in buildings 12 and 22, while final assembly or repair occurs in building 19. Post assembly functions are in buildings 24 and 26 at the S near the service apron and ramp.

PRIMARY OBJECTIVES

(Refer to Illustration No. 90:35-2079 P3.) The three large productive buildings still standing (12, 19, 22) house all the remaining equipment of any consequence.

CONSTRUCTION AND VULNERABILITY

Major buildings are of noncombustible, steel frame construction with roofs and probably walls of light weight sheet materials. All except one hangar are of one-story, sawtooth roof design, long span structures (HE vulnerability class V4A; see JTG/M-3/1) predominating. Other structures which occupy a relatively small proportion of the site are mostly of one-story, wood frame construction. Because of removals the site is now sparsely built-up.

WEAPON RECOMMENDATIONS

Instructions with regard to weapons will usually be given in Field or Operational Orders, but in the absence of such instructions and to assist Planners in formulating such orders the following information is given:

An attack with high explosive bombs alone is recommended. A preliminary structural and occupancy analysis of the plant indicates that weapons should be selected as follows:

	High Explosive	Fuzing	Incendiary
Preferred:	2000-lb GP or 1000-lb GP	0.01 N/ND T 0.01 N/ND T	None
Alternative:	500-lb GP	0.01 N/ND T	None
Not recommended:	100-lb GP or 250-lb GP bombs SAP or AP bombs Depth bombs		

Notes: (a) Use 0.025 N or 0.1 N fuzes if 0.01 N fuzes are not available, and 0.01 T fuzes if ND T fuzes are not available. The use of ND tail fuzing is recommended since all of the buildings have light roof material and are best destroyed by blast effects.

(b) The above recommendations are on a weight for weight basis.

CAMOUFLAGE, DECOYS, AND SMOKE SCREENS

Buildings 12 and 24 have disruptive painting; the remainder are not camouflaged. There have been no indications of smoke screens or decoys.

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JOINT
TARGET
GROUP
WASHINGTON, D. C.

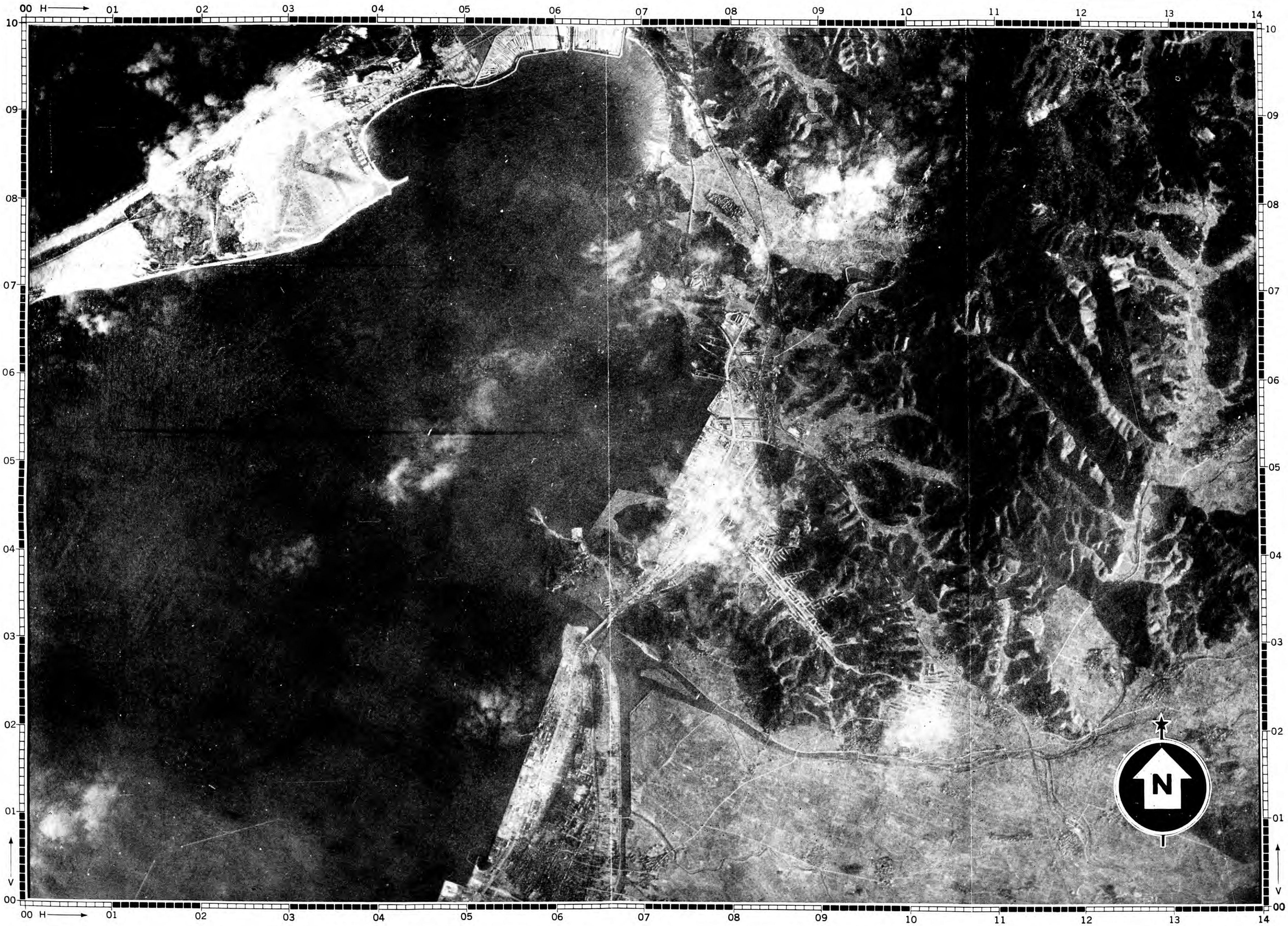
FUKUOKA SEAPLANE WORKS

FUKUOKA **JAPAN**

0 2000 4000 6000 FEET
0 ½ 1 MILE
1:32 000 APPROX

RESTRICTED

SHEET	90:35-2079 P1
DATE	25 May 1945
TARGET	90:35-2079
COORDINATES	33°39′N 130°26′E
PHOTOGRAPHED	30 December 1944



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JOINT TARGET GROUP
WASHINGTON, D. C.

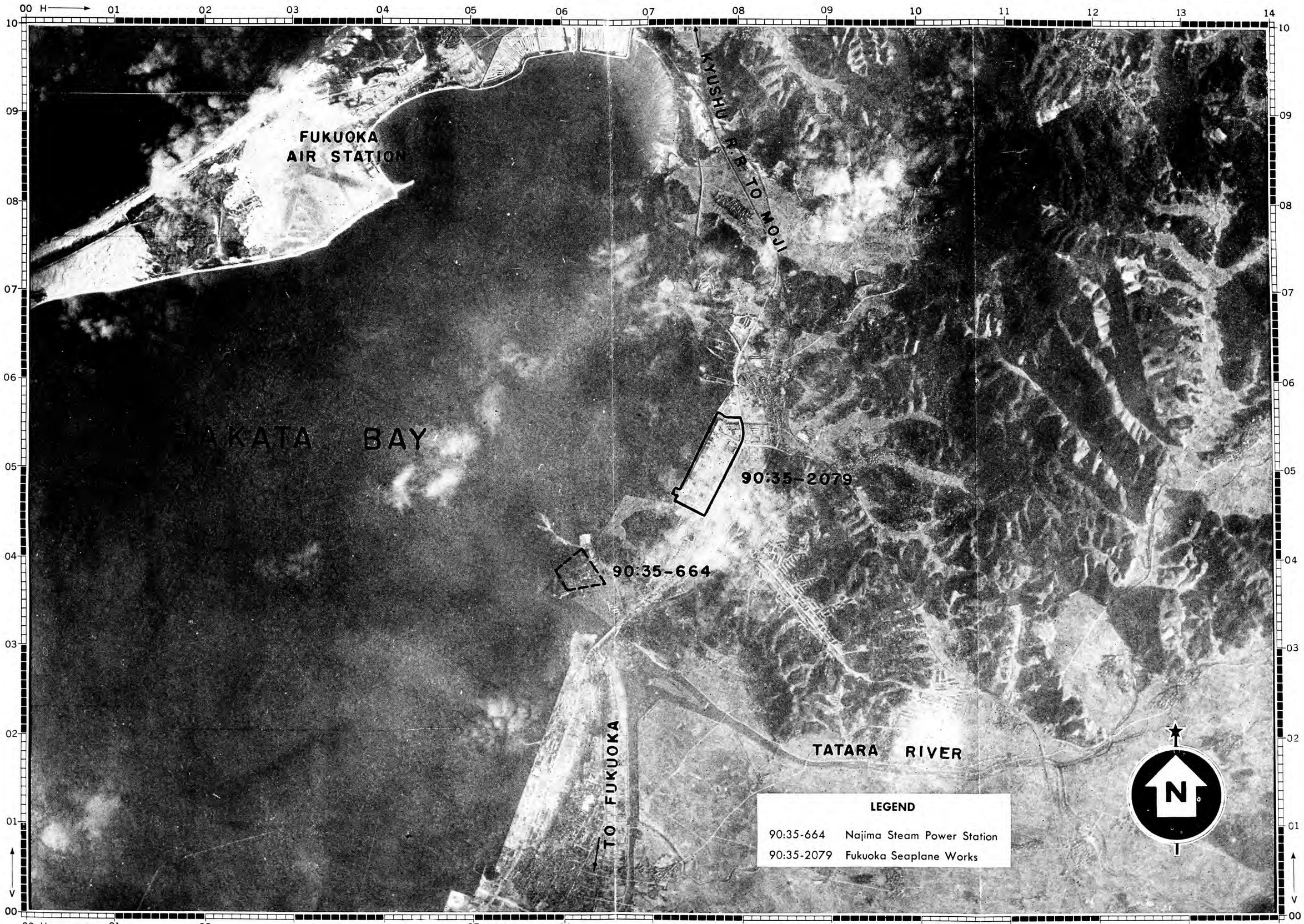
FUKUOKA SEAPLANE WORKS

FUKUOKA **JAPAN**

0 2000 4000 6000 FEET
0 ½ 1 MILE
1:32 000 APPROX.

RESTRICTED

SHEET	90:35-2079 P2
DATE	25 May 1945
TARGET	90:35-2079
COORDINATES	33°39'N 130°26'E
PHOTOGRAPHED	30 December 1944



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RESTRICTED

File No. 723,079.54

CONFIDENTIAL

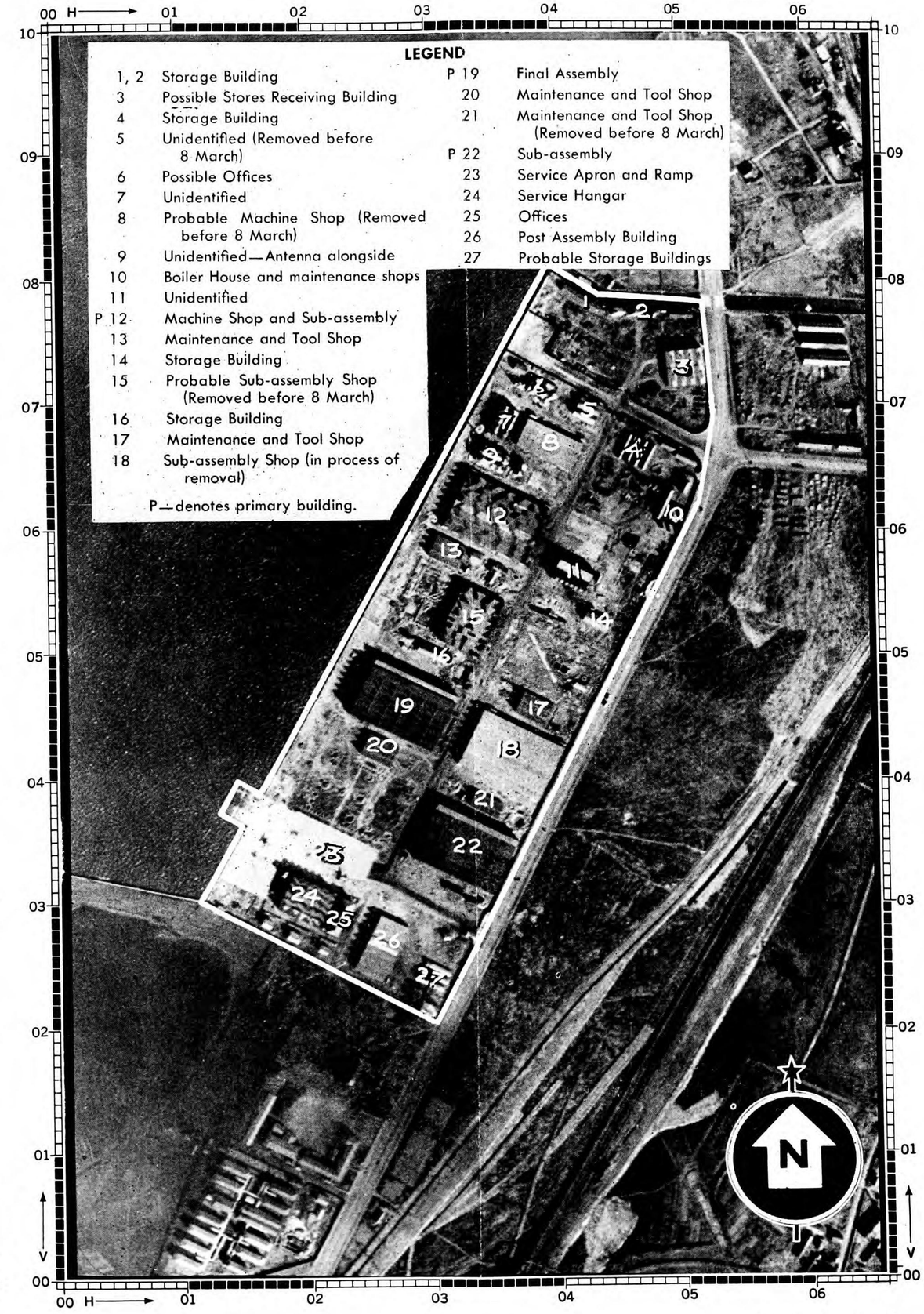
JOINT TARGET GROUP
WASHINGTON, D. C.

FUKUOKA SEAPLANE WORKS

FUKUOKA JAPAN

0 500 1000 1500 2000 2500 3000 FEET
0 1/4 1:6000 APPROX. 1/2 MILE

SHEET 90:35-2079 P3
DATE . . . . . 25 May 1945
TARGET 90:35-2079
COORDINATES . . . 33°39'N 130°26'E
PHOTOGRAPHED . 30 December 1944



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CONFIDENTIAL

File No. 723,079.56

JOINT TARGET GROUP, WASHINGTON, D. C.
TARGET LOCATION SHEET

EAST OMUTA EXPLOSIVES WORKS
OMUTA JAPAN

SHEET 90:35-2093–TL
DATE . . . . . 28 May 1945
TARGET 90:35-2093
CATEGORY . . . . . End Prdt. Ind.– MILTY. STRS.; ARMAMENT
COORDINATES . . . . . 33°01'N 130°28'E
ALTITUDE . . . . . 325 feet

SIGNIFICANCE:

A medium sized area believed to be devoted to the manufacture and storage of high explosives.

LARGE SCALE ILLUSTRATION–SCALE APPROX.: 1:15,500

SMALL SCALE ILLUSTRATION–SCALE APPROX.: 1:31,000

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JOINT TARGET GROUP, WASHINGTON, D. C.

TARGET LOCATION SHEET

ARAO BRANCH OF TOKYO NO. 2 ARSENAL

ARAO JAPAN

SHEET . . . . . 90:35-2094—TL
DATE . . . . . 28 May 1945
CATEGORY . . . . . End Prdt. Ind.—ARMAMENT, MILITARY STORES
COORDINATES . . . . . 32°59′N 130°27′E
ALTITUDE . . . . . 95 feet

SIGNIFICANCE:

A large area believed to be devoted to the manufacture and storage of explosives and finished munitions.

LARGE SCALE ILLUSTRATION—SCALE APPROX.: 1:15,500

SMALL SCALE ILLUSTRATION—SCALE APPROX.: 1:31,000

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File No. 723,094.1

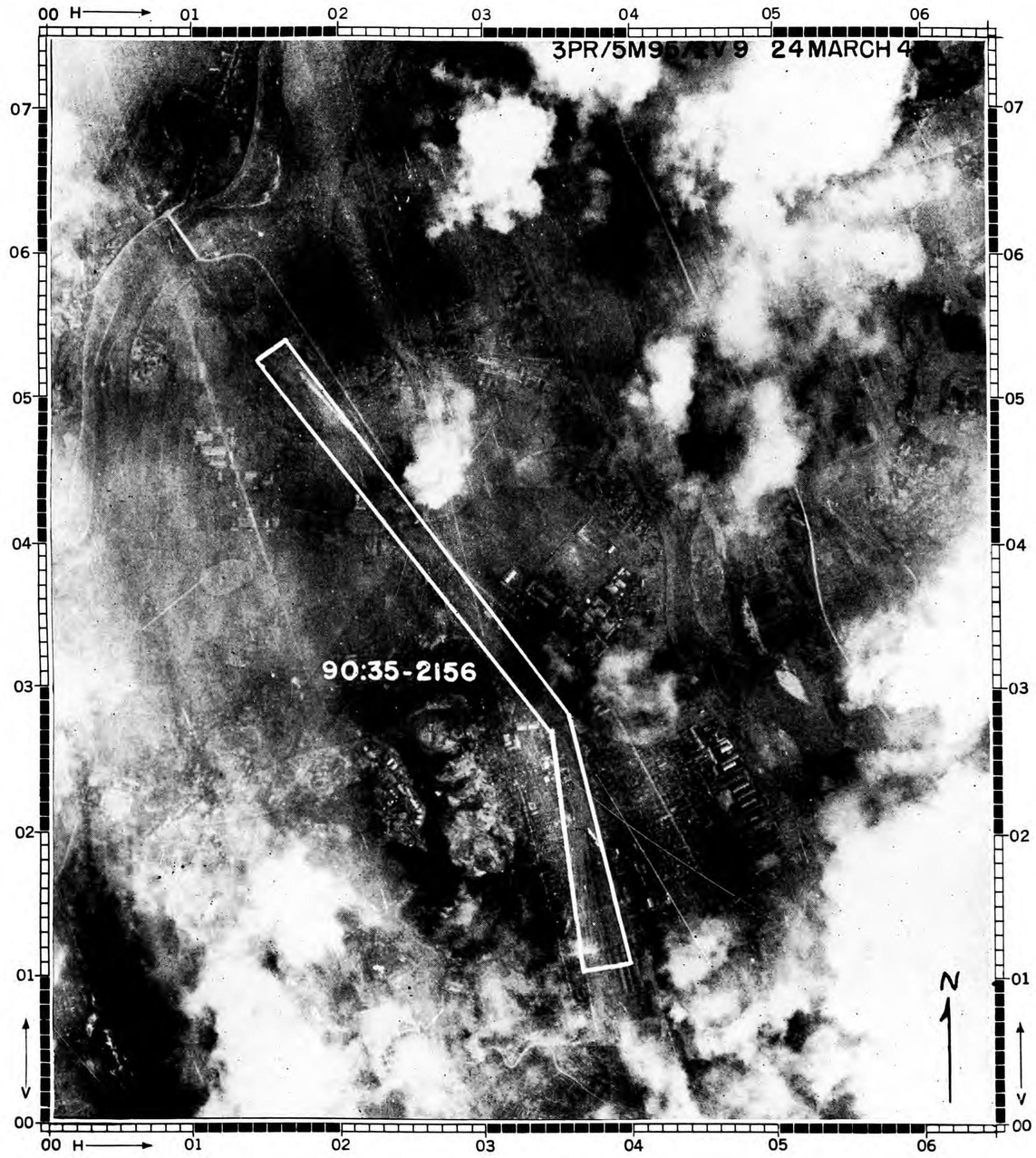
JOINT TARGET GROUP, WASHINGTON, D. C.
TARGET LOCATION SHEET

NOGATA RR YARDS
NOGATA JAPAN

SHEET No. .....90:35-2156—TL
DATE.....25 May 1945
TARGET No. 90:35-2156
CATEGORY.....Bsc. Serv. & Utly.—Road and Rail Transpt.
COORDINATES ....33°45'N 130°43'E
ALTITUDE .....50 feet

SIGNIFICANCE:

This yard is of first importance since it is essential to the large scale rail movement of coal from nearby mines in the Chikuho field, the largest in Kyushu. Length, 7100'. Average width, 280'. Area, 1,960,000 square feet.



LARGE SCALE ILLUSTRATION—SCALE APPROX.: 1:15,000

SMALL SCALE ILLUSTRATION—SCALE APPROX.: 1:50,000

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File No. 723,156.1

JOINT TARGET GROUP, WASHINGTON, D. C.
TARGET LOCATION SHEET

YOSHIZUKA RR YARDS
FUKUOKA JAPAN

SHEET ..... 90:35-2165—TL
DATE ..... 26 May 1945
TARGET 90:35-2165
CATEGORY ..... Bsc. Serv. & Utly.—Road and Rail Transpt.
COORDINATES .... 33°36′N 130°25′E
ALTITUDE ..... 20 feet

SIGNIFICANCE:

This yard is located on the Kagoshima Line. It is the principal freight yard in Fukuoka/Hakata. The area served contains an army headquarters and administrative center and has some war industry. The port is important for traffic with the mainland. Length, 1900′. Average width, 200′. Area, 380,000 square feet.

LARGE SCALE ILLUSTRATION—SCALE APPROX.: 1:14,800

SMALL SCALE ILLUSTRATION—SCALE APPROX.: 1:59,000

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JOINT TARGET GROUP, WASHINGTON, D. C.

TARGET LOCATION SHEET

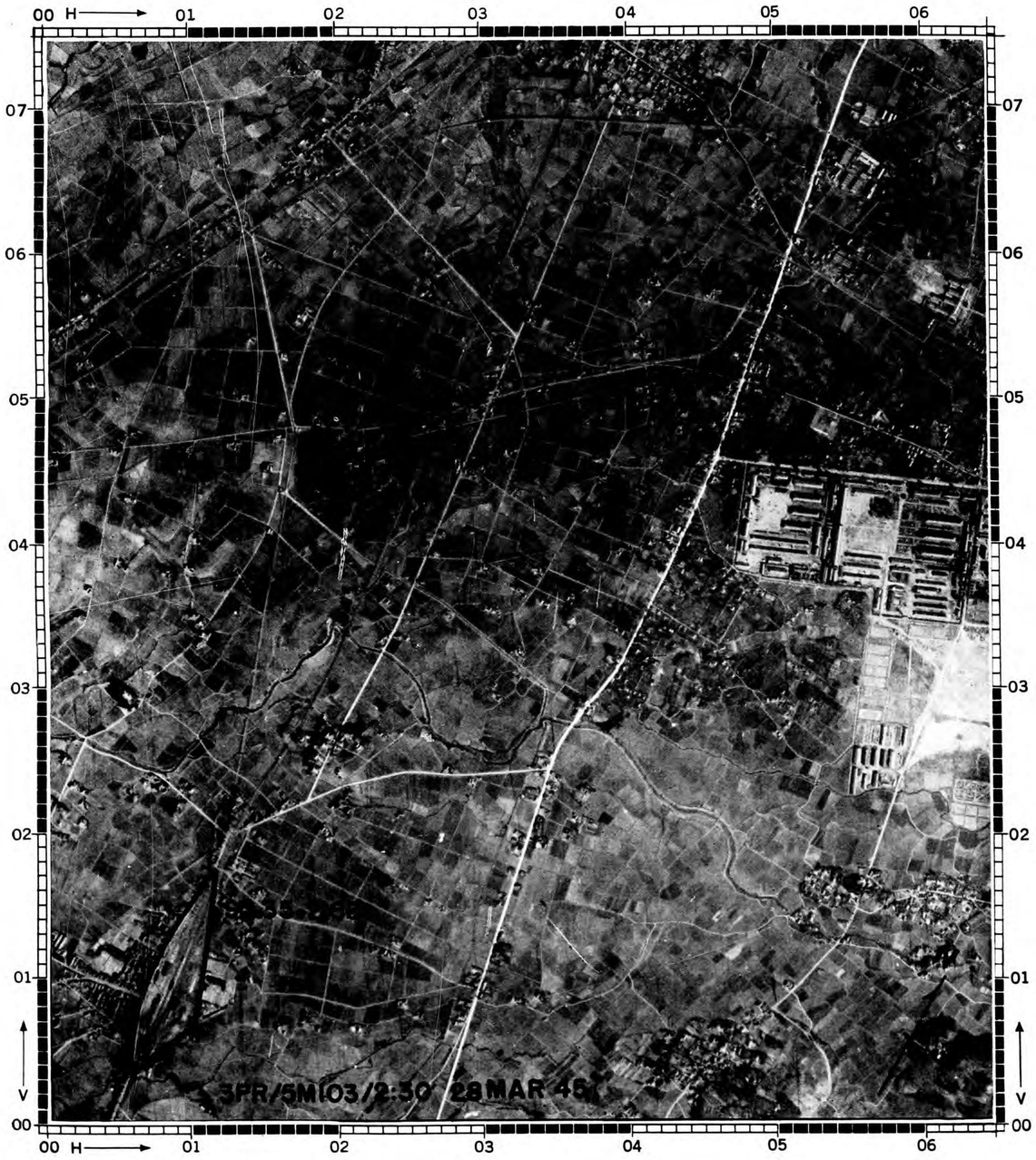
KURUME FREIGHT YARDS

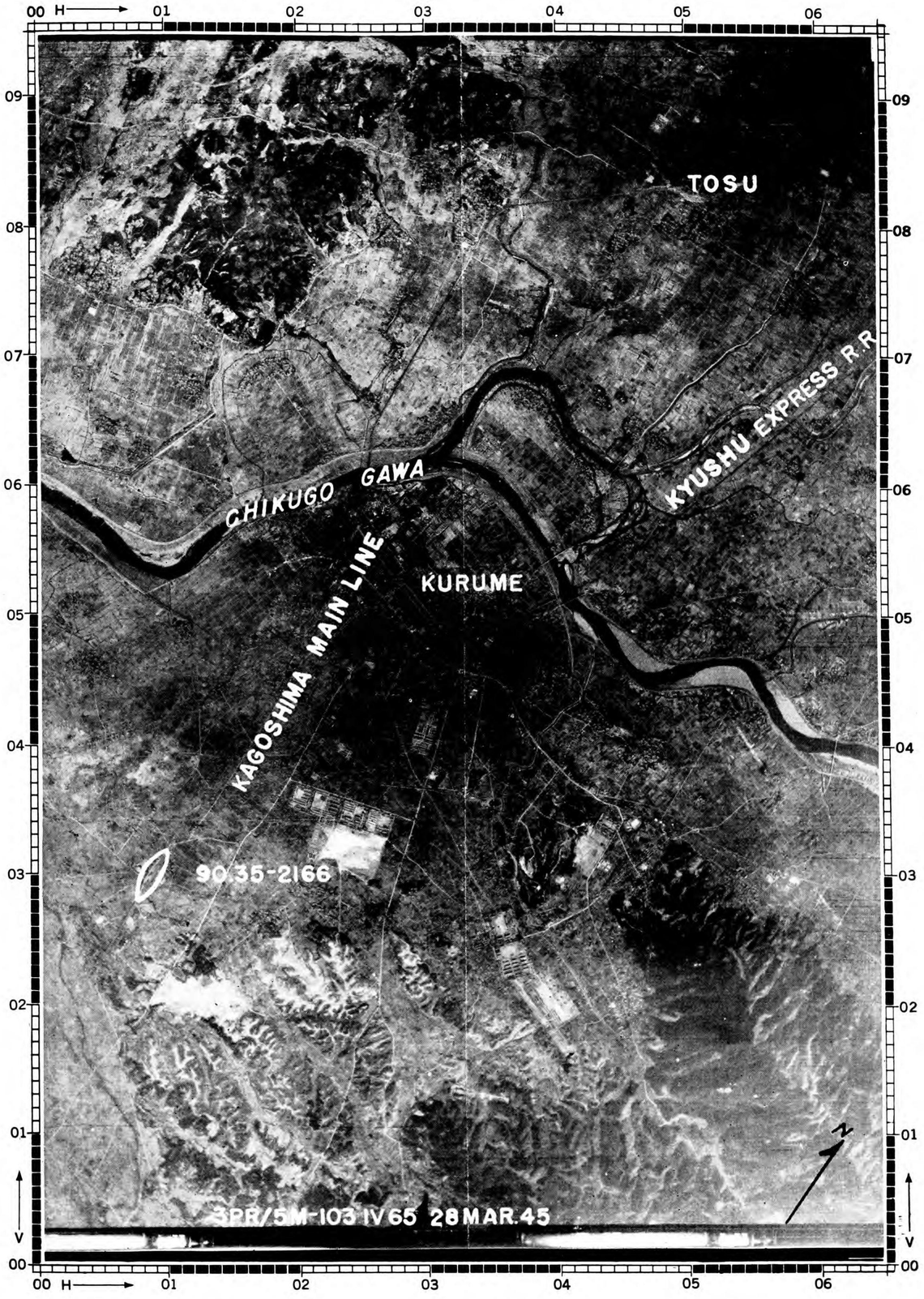
KURUME JAPAN

SHEET No. .....90:35-2166—TL
DATE.....26 May 1945
TARGET No. 90:35-2166
CATEGORY.....Bsc. Serv. & Utly.—Road and Rail Transpt.
COORDINATES ....33°16'N 130°30'E
ALTITUDE .....20 feet

SIGNIFICANCE:

On the Kagoshima Line, S of Kurume. A small yard of local importance, whose significance, however, would increase greatly if other facilities, notably Tosu, were denied. Kurume, as an army administrative and depot area and as the junction of N-S and E-W lines is a substantial traffic center. Dimensions, 1900' x 370'. Area, 440,000 square feet.





LARGE SCALE ILLUSTRATION—SCALE APPROX.: 1:15,500

SMALL SCALE ILLUSTRATION—SCALE APPROX.: 1:50,000

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JOINT TARGET GROUP, WASHINGTON, D. C.

TARGET LOCATION SHEET

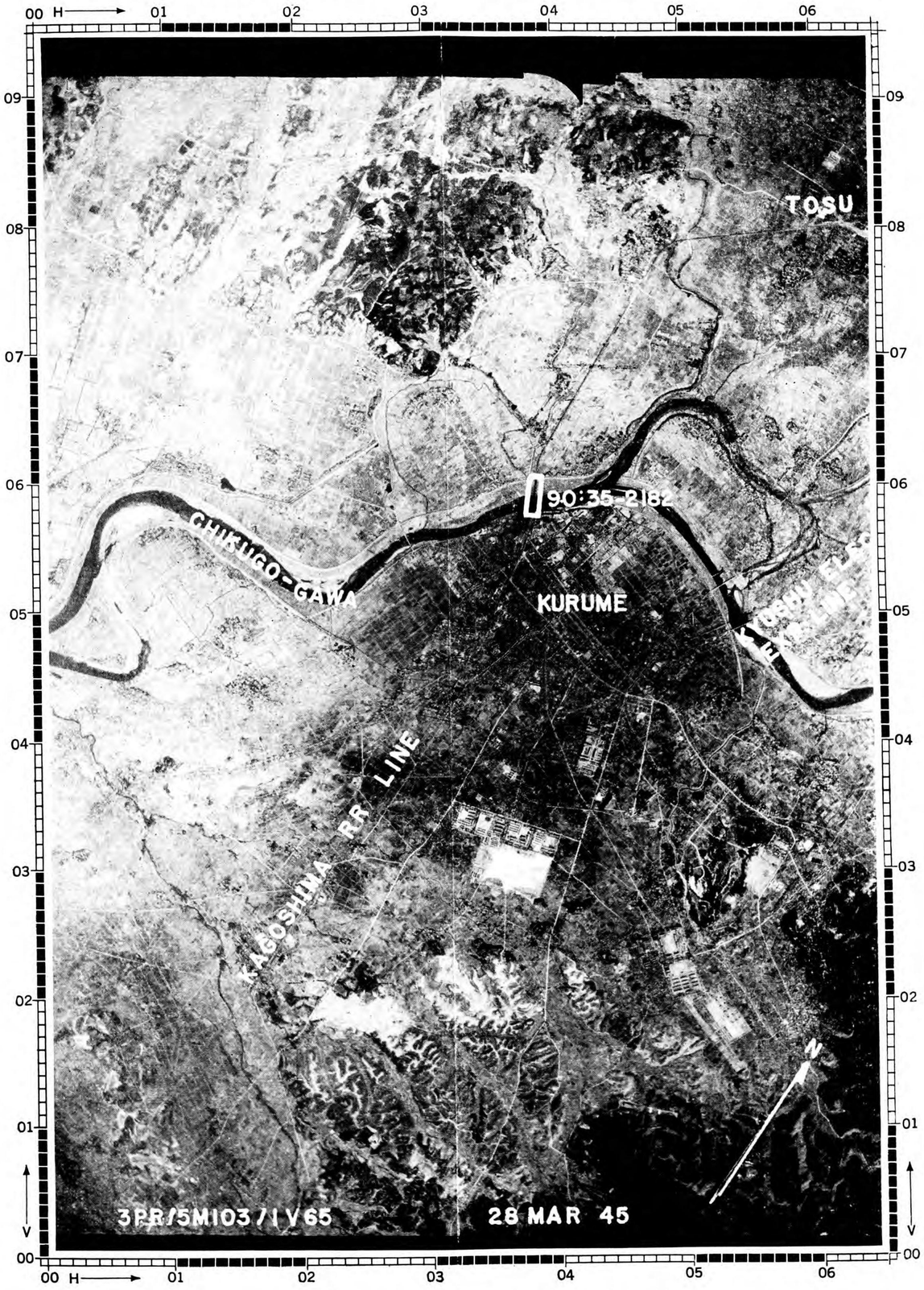
CHIKU[illegible]O-GAWA RR BRIDGE (KAGOSHIMA LINE)

KURUM[illegible] JAPAN

SHEET . . . . . 90:35-2182—TL
DATE . . . . . 31 May 1945
CATEGORY . . . . . Bsc. Serv. & Utly.—ROAD-RAIL TRANSPT.
COORDINATES . . . . . 33°19'N 130°30'E
ALTITUDE . . . . . 30 feet

SIGNIFICANCE:

Twin bridges, about 15' apart, each about 1240' long, with four 150' overhead truss spans, four 100' plate girder spans, and two short spans located on the main Kyushu railroad line running from the industrial area in the north to Kagoshima in the south. Destruction of this bridge combined with destruction of the Chikugo-gawa bridge on the Saga-Setaka branch of the Nagasaki Line would interdict N-S through traffic. Transshipment via the Tosu-Kurume loop on the 4'8½" gauge Kyushu Electric Express Line would, however, still be possible.



LARGE SCALE ILLUSTRATION—SCALE APPROX.: 1:15,500

SMALL SCALE ILLUSTRATION—SCALE APPROX.: 1:50,000

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File No. 723,182.1

JOINT TARGET GROUP, WASHINGTON, D. C.
TARGET LOCATION SHEET

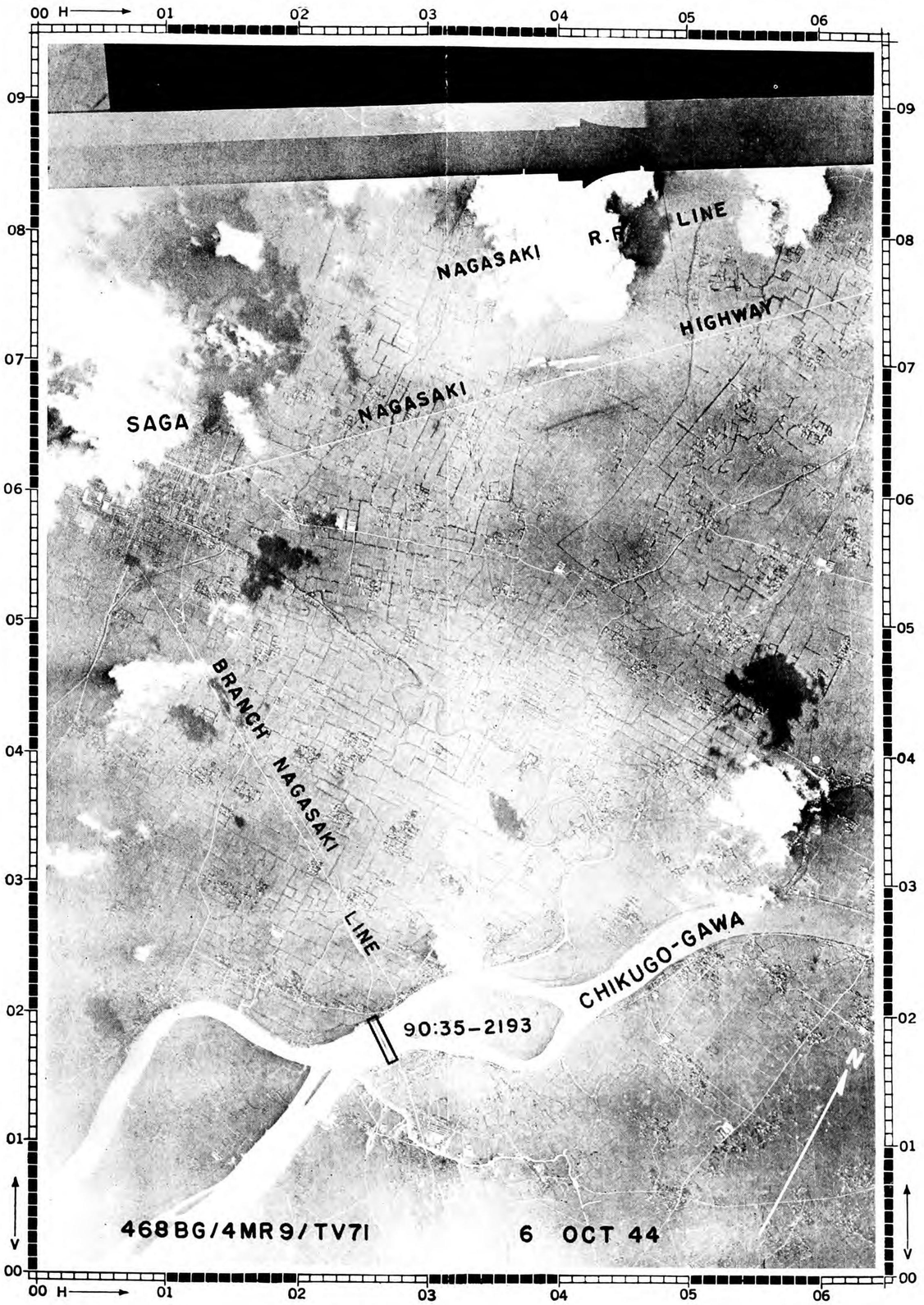
CHIKUGO-GAWA RR BRIDGE (BRANCH NAGASAKI LINE) SE OF SAGA JAPAN

SHEET . . . . . 90:35-2193—TL
DATE . . . . . 11 June 1945
TARGET 90:35-2193
CATEGORY . . . . . Bsc. Serv. & Utly.—ROAD & RAIL TRNSPT.
COORDINATES . . . . . 33°13'N 130°22'E
ALTITUDE . . . . . 20 feet

SIGNIFICANCE:

This single-track bridge is located about 3 miles SE of Saga on the cutoff line linking the Nagasaki/Sasebo area, served by the Nagasaki Line system, with the area south of Kurume, served by the Kagoshima Line system, and would be important to the movement of military supplies. If the Chikugo-gawa bridges on the Kagoshima Line (AOF 90:35-2182) were attacked, it would be necessary also to attack this bridge in order to prevent the routing of southbound Kagoshima Line military traffic via Tosu, Saga and Setaka to by-pass the cut. This bridge is 1690' long. It includes an 80' plate girder lift span with one 156' truss span on either side, and nine 121' and three 43'-74' deck plate girder spans.

LARGE SCALE ILLUSTRATION—SCALE APPROX.: 1:26,000



SMALL SCALE ILLUSTRATION—SCALE APPROX.: 1:52,000

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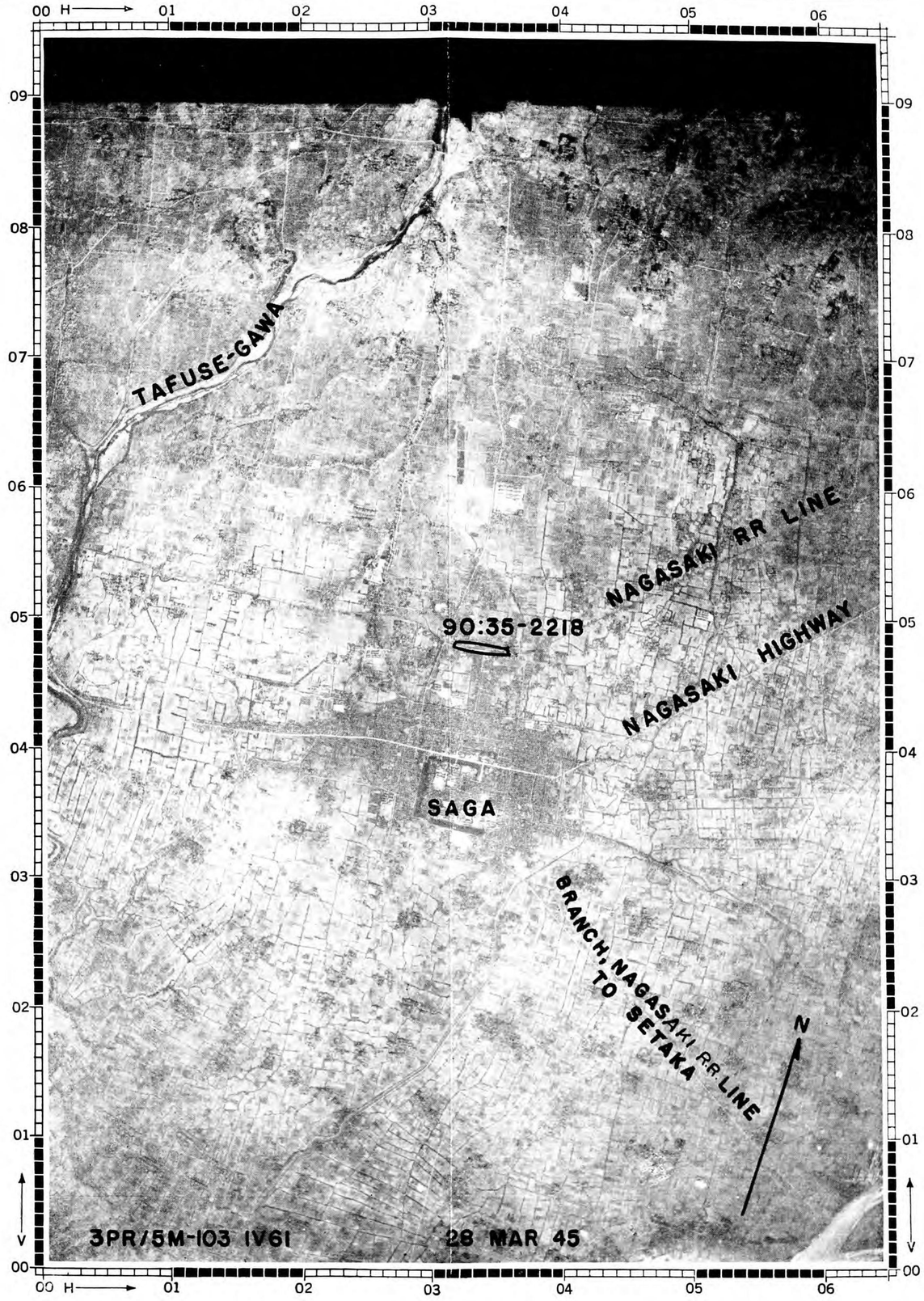
JOINT TARGET GROUP, WASHINGTON, D. C.
TARGET LOCATION SHEET

SAGA RR YARDS
SAGA JAPAN

SHEET 90:35-2218–TL
DATE . . . . . 11 June 1945
TARGET 90:35-2218
CATEGORY . . . . . Bsc. Serv. and Utly.– ROAD AND RAIL TRANSPT.
COORDINATES . . . . . 33°16′N 130°18′E
ALTITUDE . . . . . 20 feet

SIGNIFICANCE:

These are small yards of local importance in the north outskirts of Saga. They are located at the junction of the Nagasaki Line leading NE to Tosu and the branch of this line leading SE to Setaka. Some classification, therefore, takes place. Extreme dimensions 1600′ x 170′. Area about 220,000 square feet.



LARGE SCALE ILLUSTRATION–SCALE APPROX.: 1:9,000

SMALL SCALE ILLUSTRATION–SCALE APPROX.: 1:50,000

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JOINT TARGET GROUP, WASHINGTON, D. C.
TARGET LOCATION SHEET

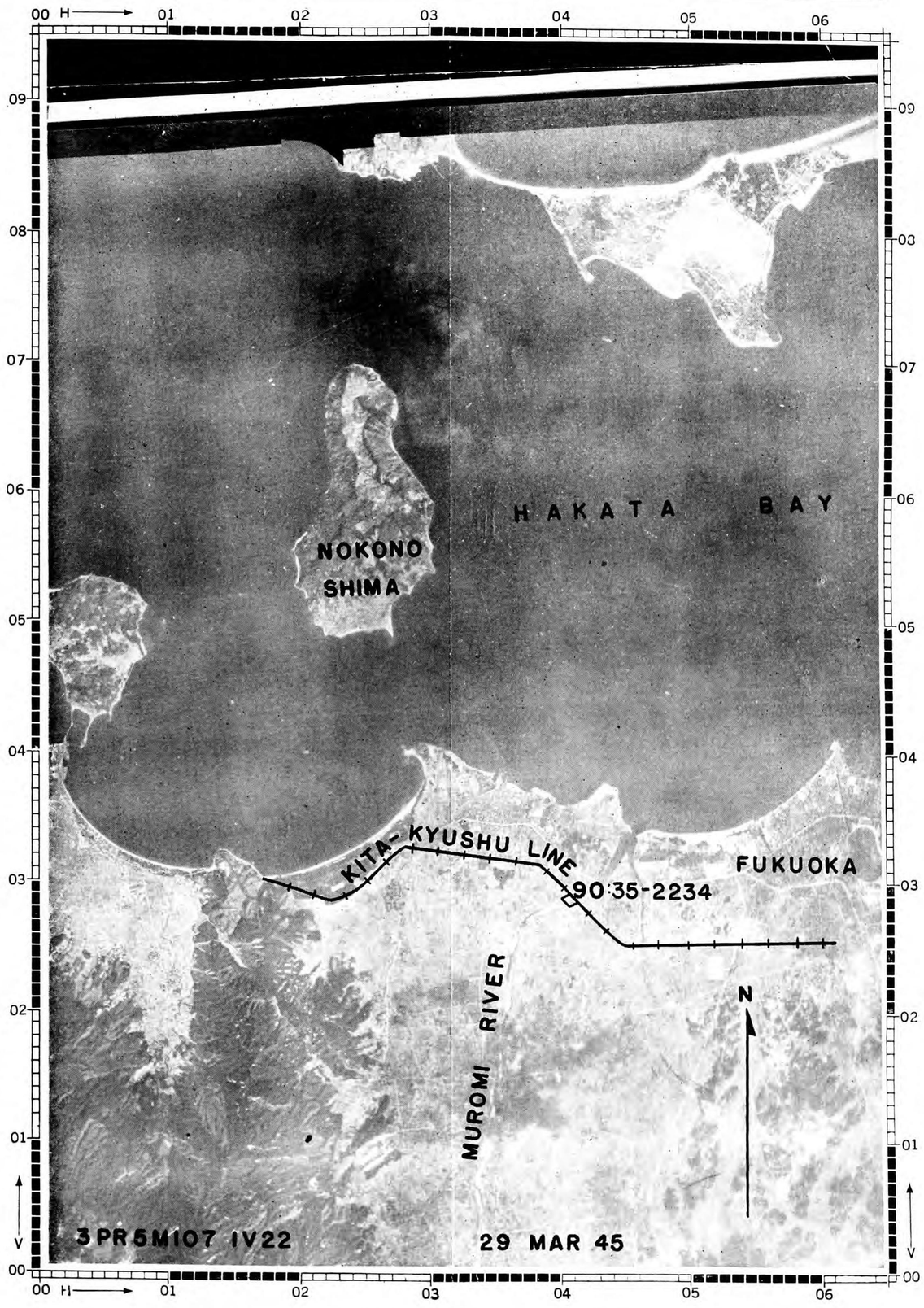
MUROMI-GAWA RR BRIDGE
(KITA-KYUSHU LINE)
FUKUOKA JAPAN

SHEET . . . . . 90:35-2234—TL
DATE . . . . . 11 June 1945
TARGET 90:35-2234
CATEGORY . . . . . Bsc. Serv. and Utly.—ROAD AND RAIL TRANSPT.
COORDINATES . . . . 33°35'N 130°20'E
ALTITUDE . . . . . 10 feet

SIGNIFICANCE:

This bridge is located about 3 miles west of Fukuoka on the Kita-Kyushu Line, which runs between Fukuoka and Karatsu and provides a secondary route for through rail movement between the Nagasaki/Sasebo area and the Straits area. Successful attack on this bridge, supplementing a primary break in the Nagasaki Line between Kubata and Saga, would completely deny through rail movement between Nagasaki/Sasebo and the Karatsu coal field and the remainder of Kyushu. The bridge is about 450' long with nine 50' spans, probably deck plate. The bridge 1200' north carries a highway and a narrow gauge tram line.

LARGE SCALE ILLUSTRATION—SCALE APPROX.: 1:16,000



SMALL SCALE ILLUSTRATION—SCALE APPROX.: 1:56,000

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File No. 723,234.1

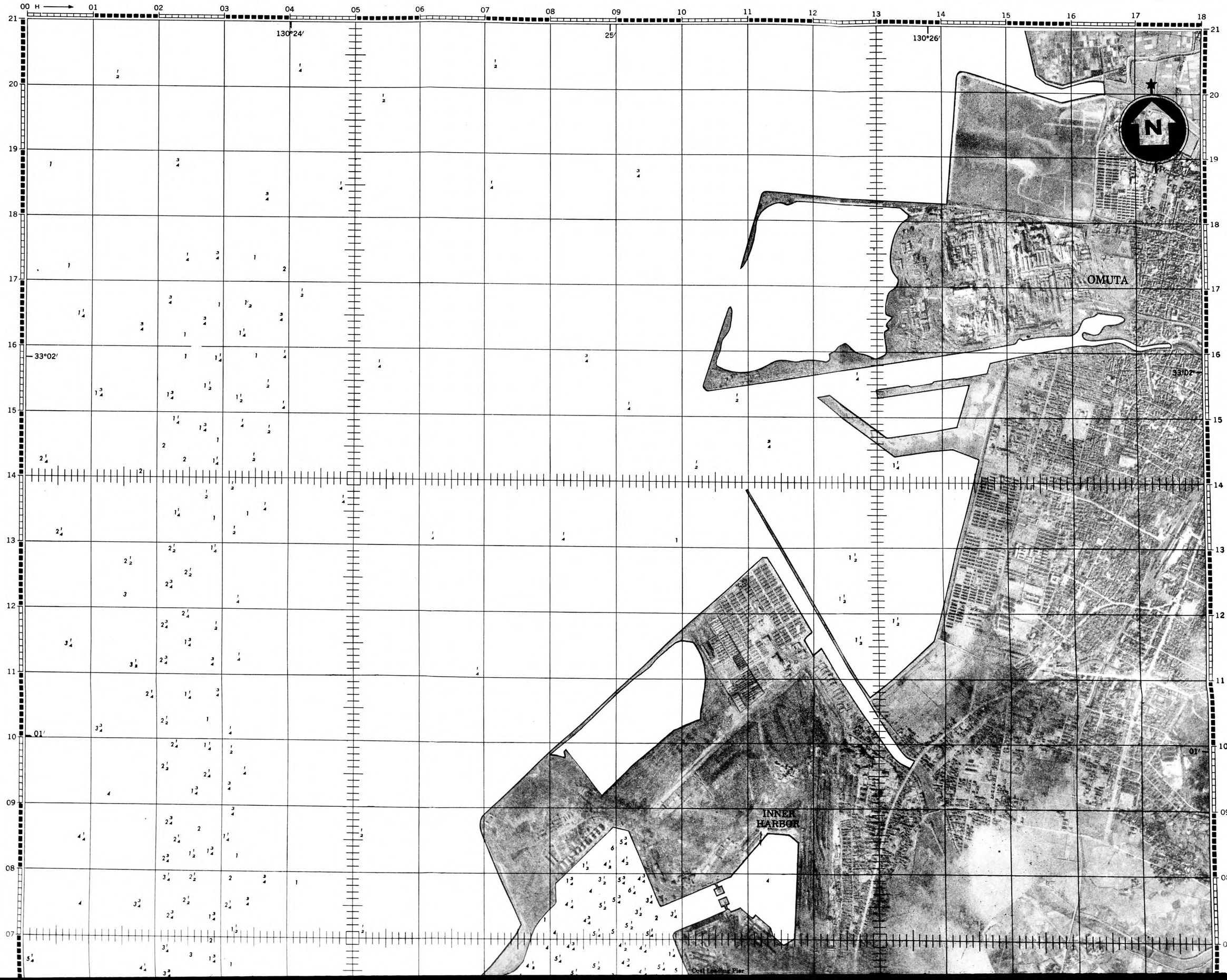
JOINT TARGET GROUP, WASHINGTON, D. C.
PORT SHIPPING PLOT

OMUTA/MIIKE, JAPAN

Scale 1:12,500

RESTRICTED

ILLUSTRATION No. . . . . 90.35-3532 PSP
DATE . . . . . 7 May 1945



INNER HARBOR

Coal Loading Pier

Example

01′

33°00′

130°24′

25′

130°26′

00 H → 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18

V 00 01 02 03 04 05 06 07 08 09 10

EXAMPLE Grid Reference Reading:
Omuta/Miike (or 90.35-3522)PSP H103 V007
Always Use Three Digits Preceded by H & V

Prepared under the direction of the Aeronautical Chart Service by Aero Service Corp., Phila., Pa. 1945 from Controlled Mosaic by the Army Map Service, U.S. Army, Washington, D.C. 1945. Aerial photographs flown by U.S.A.A.F. (Sorties): 4MR-15 24"V June '44, 5MF-8 12" V, 5MF-8 24" V Jan. '45, AAF City Plan, Omuta '44.

1/2 Statute Miles 0 Miles 1/2
1/2 Nautical Miles 0 1/2

500 0 500 1000 Yards
1" = 1041.7 Ft 0 1000 2000 3000 Feet

DEPTH IN FATHOMS AT NEARLY LOWEST LOW WATER

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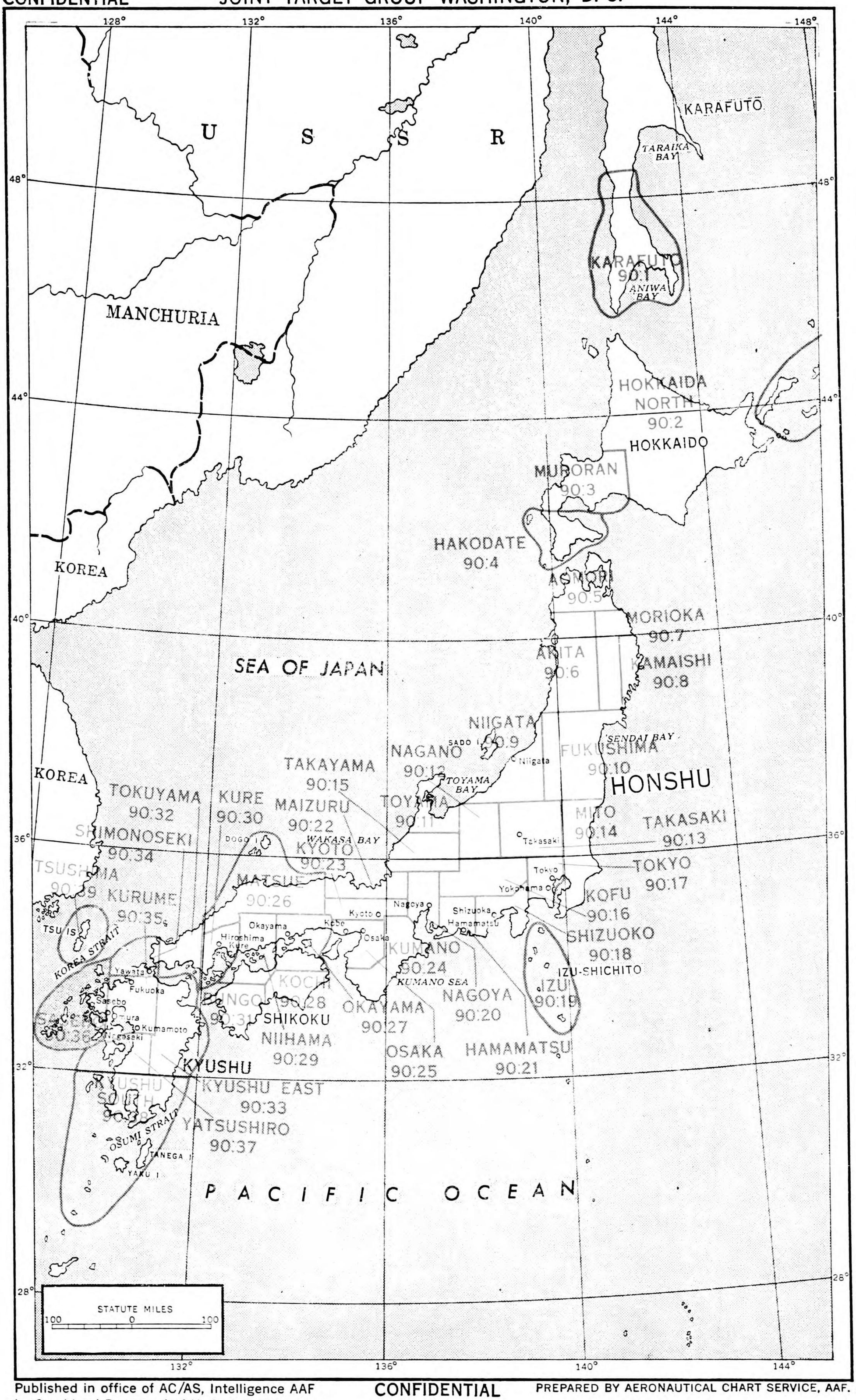
RESTRICTED

File No. 724,532.66

OMUTA/MIIKE, PSP



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PREPARED BY AERONAUTICAL CHART SERVICE, AAF.

File No. 730,100

90:36 SASEBO

JOINT TARGET GROUP, WASHINGTON, D. C.

AIR TARGET INDEX—JAPANESE WAR

NUMERICAL TARGET INDEX

SHEET . . . . . ATI

DATE . . . . . 20 June 1945

OBJECTIVE AREA 90:36—SASEBO (JAPAN)

Target Number and Objective Area	Name	Location	Coordinates (approx.)	General Category	Particular Category	Comment
90:36-542 Sasebo (Japan)	Akunoura Engine Works	At Akunoura, on W side of Nagasaki Harbor.	32°44′N 129°52′E	BEI	TE	One of leading marine engine works, producing diesel engines, steam turbines, boilers and forgings. Integrated with 90:36-543 and 90:36-544.
90:36-543 Sasebo (Japan)	Mitsubishi Dockyard	On W side Nagasaki Harbor, between Tategami and Akunoura.	32°44′N 129°51′E	BEI	TE	Complete ship repair dockyard. Has 3 concrete drydocks and several large shops. Possibly camouflaged. Integrated with 90:36-542 and 90:36-544.
90:36-544 Sasebo (Japan)	Tategami Shipyard	On W side Nagasaki Harbor, at Tategami.	32°44′N 129°51′E	BEI EPI	TE A	One of Japan's principal shipbuilding yards. Has built all types of merchant vessels and naval craft up to 40,000 tons. Has 6 building slips and usual shops and facilities. Integrated with 90:36-542 and 90:36-543.
90:36-545 Sasebo (Japan)	Kozaki Point Oil Storage	At 6 points below Tategami (W Nagasaki Harbor) on both sides of Kozaki Point.	32°43′N 129°51′E	MS	P	Major storage area. Six groups of tanks. Probable underground storage.
90:36-546 Sasebo (Japan)	Mitsubishi Steel & Arms Works	At Urakami, NW Nagasaki, on E bank of Urakami River.	32°45′N 129°52′E	EPI BPI	A CIS	One of six leading ordnance plants, reportedly producing torpedoes and other naval munitions. Also has closely integrated steel furnaces, steel rolling mill and arms works.
90:36-752 Sasebo (Japan)	Sasebo Naval Dockyard	W Sasebo, in NW corner Sasebo Harbor.	33°10′N 129°42′E	EPI	A	One of 3 primary naval shipyards and a principal fleet repair base.
90:36-755 Sasebo (Japan)	Sasebo Oil Storages	At 3 points from W center to SW tip of Sasebo Harbor.	33°08′N 129°42′E	MS	P	11 surface tanks. Substantial underground storage capacity.
90:36-757 Sasebo (Japan)	Sasebo Mine and Torpedo Storage	SE Sasebo City, in NE corner Sasebo Harbor.	33°09′N 129°44′E	MS	M	Reported to be torpedo and mine depot and possible destroyer base.
90:36-758 Sasebo (Japan)	Sasebo Naval Arsenal and Engineering Dept.	SW Sasebo City, on N side Sasebo Harbor.	33°10′N 129°43′E	EPI	A	Integral part of naval dockyard (90:36-752). Is a major arsenal, underwater munitions.
90:36-762 Sasebo (Japan)	Sasebo Fuel and Munitions Depot	On E Central shore of Sasebo Harbor.	33°09′N 129°44′E	MS	M	Has concrete magazines and underground munitions and fuel storage. Torpedoes and mines reported adjusted and set.
90:36-828 Sasebo (Japan)	Hayashi Commercial Co., Engine Works	NW Nagasaki Harbor, across from Nagasaki and Dejima Wharves and RR Yards (90:36-1842) and ¼ mile NE of Mitsubishi Electric Mfg. Co. Nagasaki Plant. (90:36-829).	32°45′N 129°52′E	BEI	MMT TE	Makes heavy marine engines, probably for Kawanami Industry Co. Shipyard (90:36-860).
90:36-829 Sasebo (Japan)	Mitsubishi Electric Mfg. Co., Nagasaki Plant	NW Nagasaki Harbor, across from city and adjoining Akunoura Engine Works to the SW (90:36-542).	32°45′N 129°52′E	BEI	MMT	Manufacturer of heavy electrical equipment, including equipment for ships, such as large generators, motors, etc.

BEI—Basic Equipment Industries; BPI—Basic Processing Industries; BSU—Basic Services & Utilities; EPI—End Product Industries; MIC—Mixed Industrial Concentrations; MS—Military Stores.

A—Armament; AC—Aircraft; C—Chemicals; CIS—Coke, Iron & Steel; EP—Electric Power; LM—Light Manufacturing; MMT—Machinery & Machine Tools; M—Munitions; NFM—Non-ferrous Metals; P—Petroleum; RRT—Road & Rail Transportation; S—Shipping; TE—Transportation Equipment; UIC—Urban Industrial Concentrations.

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SHEET . . . . . **ATI**
DATE . . . . . **20 June 1945**

JOINT TARGET GROUP, WASHINGTON, D. C.
AIR TARGET INDEX — JAPANESE WAR
NUMERICAL TARGET INDEX

OBJECTIVE AREA 90:36—SASEBO (JAPAN)—(Continued)

Target Number and Objective Area	*Name*	*Location*	*Coordinates (approx.)*	*General Category*	*Particular Category*	*Comment*
90:36-832 Sasebo (Japan)	Megami Point Oil Storages	Megami Point, Nagasaki Harbor.	32°43′N 129°51′E	MS	P	Three tanks and coal storage S of Point, 2 tanks N of Point. Explosives magazine reported in hillside to E.
90:36-833 Sasebo (Japan)	**Karatsu Iron Works**	**Karatsu Bay, between Karatsu and RR causeway to O Shima.**	**33°28′N 129°58′E**	**BEI**	**MMT**	**Major producer of machine tools for manufacture of aero-engines and ordnance,—gear shapers and hobbers, most types of grinders, gun boring lathes.**
90:36-834 Sasebo (Japan)	Sasebo Aircraft Factory	About 1 mile SE of Sasebo.	33°09′N 129°45′E	EPI	AC	Has assembled small Navy observation planes. Probably now engaged in repair and overhaul of fleet aircraft.
90:36-839 Sasebo (Japan)	**Haiki RR Terminal**	**Haiki.**	**33°08′N 129°48′E**	**BSU**	**RRT**	**Junction of Sasebo-Nagasaki RR with trunk line from NE Kyushu.**
90:36-842 Sasebo (Japan)	Takashima Colliery	On Taka Shima, about 8 miles SSW of Nagasaki.	32°40′N 129°45′E			Produces slightly more than 1% of total Japanese coal production.
90:36-843 Sasebo (Japan)	Ha Shima Colliery	On Ha Shima, about 10 miles SSW of Nagasaki.	32°37′N 129°45′E			Coal mine with modern equipment.
90:36-845 Sasebo (Japan)	Sasebo Provision Wharf	N end Sasebo Harbor, adjoining and to E of Sasebo Naval Dockyard (90:36-752).	33°10′N 129°43′E	BSU MS	S M	U-shaped concrete dock, probably main supply depot.
90:36-860 Sasebo (Japan)	**Kawanami Industry Co. Shipyard**	**NE part Koyagi I., Nagasaki Harbor.**	**32°42′N 129°49′E**	**BEI** BSU	**TE** S	**Builds and repairs medium and small ships. 6 partially covered ways, 2 drydocks, shops, etc.**
90:36-1603 Sasebo (Japan)	Ainoura Steam Power Station	On shore of Ainoura Bay, NW of Sasebo.	33°11′N 129°39′E	BSU	EP	1939 capacity 30,000 kw with expansion reported. Only large plant in Sasebo area.
90:36-1627 Sasebo (Japan)	**Omura Aircraft Factory**	**NW of town of Omura, on the E coast of Omura Bay. Mino Island lies 1 mile to W.**	**32°55′N 129°56′E**	**EPI**	**AC**	**Major airframe and aero engine repair center. Limited production of new aircraft. Large scale production of new engines planned.**
90:36-1835 Sasebo (Japan)	**Yokose Oil Storage**	**On S shore of Sasebo Harbor, NE of Yokose.**	**33°05′N 129°42′E**	**MS**	**P**	**Very large underground fuel tanks (major oil storage target).**
90:36-1842 Sasebo (Japan)	**Nagasaki and Dejima Wharves and RR Yards**	**In Nagasaki, on E shore of inner harbor, around mouth of Nakashima River to about 1 mile northward.**	**32°45′N 129°52′E**	**BSU**	**RRT**	**Extensive warehouse, oil storage, shops area.**
90:36-1843 Sasebo (Japan)	Kyushu Coal and SS Co. Colliery	On small island, about 14 miles SW of Sasebo Naval Base.	33°00′N 129°33′E	BPI	CIS	Supplies coal to Sasebo Naval Base area. Small power plant in connection with mine.
90:36-2021 Sasebo (Japan)	**Kawatana Factory, Sasebo Arsenal**	**At Kawatana, N end of Omura Bay.**	**33°04′N 129°52′E**	**EPI**	**A**	**Branch of Sasebo Naval Arsenal and Engineering Department (90:36-758). Engines, torpedoes and other ordnance.**

BEI—Basic Equipment Industries; BPI—Basic Processing Industries; BSU—Basic Services & Utilities; EPI—End Product Industries; MIC—Mixed Industrial Concentrations; MS—Military Stores.

A—Armament; AC—Aircraft; C—Chemicals; CIS—Coke, Iron & Steel; EP—Electric Power; LM—Light Manufacturing; MMT—Machinery & Machine Tools; M—Munitions; NFM—Non-ferrous Metals; P—Petroleum; RRT—Road & Rail Transportation; S—Shipping; TE—Transportation Equipment; UIC—Urban Industrial Concentrations.

JOINT TARGET GROUP, WASHINGTON, D. C.

AIR TARGET INDEX—JAPANESE WAR

NUMERICAL TARGET INDEX

SHEET . . . . . ATI

DATE . . . . . 20 June 1945

OBJECTIVE AREA 90:36—SASEBO (JAPAN)—(Continued)

Target Number and Objective Area	Name	Location	Coordinates (approx.)	General Category	Particular Category	Comment
90:36-2022 Sasebo (Japan)	Mitsubishi-Urakami Ordnance Plant	In N Nagasaki, about 1¾ miles N of Mitsubishi Steel and Arms Works (90:36-546).	32°46′N 129°52′E	EPI	A	New plant, a major arsenal, torpedoes.
90:36-2217 Sasebo (Japan)	Sasebo RR Yards	At Sasebo.	33°10′N 129°44′E	BSU	RRT	Yards serving local Naval facilities.
90:36-2231 Sasebo (Japan)	Sasebo Munitions Storage	At Sasebo.	33°07′N 129°46′E	MS	M	Extensive storage area.
90:36-2239 Sasebo (Japan)	Doinokubi Oil Storage	On SE shore of Outer Nagasaki Harbor	32°42′N 129°50′E	MS	P	Approximately 80,000 barrels storage capacity.
90:36-3441 Sasebo (Japan)	Sakito—Port Area	On East China Sea in NW Kyushu.	33°01′N 129°34′E	BSU	S	Coal port.
90:36-3451 Sasebo (Japan)	Usunoura Ko—Port Area	On Sea of Japan, in NW Kyushu.	33°12′N 129°37′E	BSU	S	Port for coastal vessels.
90:36-3535 Sasebo (Japan)	Matsushima Ko—Port Area	On East China Sea on small island just off W Central Kyushu.	32°56′N 129°36′E	BSU	S	Coal port.
90:36-3537 Sasebo (Japan)	Nagasaki—Port Area	On East China Sea in NW Kyushu.	32°43′N 129°50′E	BSU	S	Annual capacity about 1,650,000 metric tons. Shipbuilding port.
90:36-3552 Sasebo (Japan)	Sasebo—Port Area	On East China Sea in NW Kyushu.	33°10′N 129°43′E	BSU	S	Annual capacity about 3,630,000 metric tons. Naval base.
90:36-3565 Sasebo (Japan)	Karatsu—Port Area	On Genkai Sea in NW Kyushu.	33°28′N 130°00′E	BSU	S	Annual capacity about 660,000 metric tons. Coal port.

BEI—Basic Equipment Industries; BPI—Basic Processing Industries; BSU—Basic Services & Utilities; EPI—End Product Industries; MIC—Mixed Industrial Concentrations; MS—Military Stores.

A—Armament; AC—Aircraft; C—Chemicals; CIS—Coke, Iron & Steel; EP—Electric Power, LM—Light Manufacturing; MMT—Machinery & Machine Tools; M—Munitions; NFM—Non-ferrous Metals; P—Petroleum; RRT—Road & Rail Transportation; S—Shipping; TE—Transportation Equipment; UIC—Urban Industrial Concentrations.

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JOINT TARGET GROUP, WASHINGTON, D. C.

TARGET INFORMATION SHEET

SHEET . . . . . Nagasaki—TI
DATE . . . . . 5 March 1945
PAGE 1

OBJ. FOLDER . . . 90:36, 39
OBJ. AREA 90:36
CATEGORY . . . . Mixed Ind. Conc.—URBAN AREA

LAT. . . . . 32° 44′ N
LONG. . . . . 129° 52′ E

ALL PREVIOUS SHEETS CANCELLED

NAGASAKI
JAPAN
(Pre-Attack Assessment)

REPRINT

SIGNIFICANCE

The Nagasaki area derives its industrial importance chiefly from the extensive shipbuilding and ship repair facilities of the Mitsubishi Dockyard (Target 90:36-543) and Kawanami Industry Co. Shipyard (Target 90:36-860). In addition, there are small-boat yards engaged in the construction of small wooden vessels. The Akunoura Engine Works (Target 90:36-542) a producer of large ship engines, and the Hayashi Commercial Co., Engine Works (Target 90:36-828) are functionally integrated with the ship construction and repair installations of the area. These facilities are estimated to represent some 10 percent of marine engine capacity, 13 percent of shipbuilding capacity, and 6 percent of ship repair capacity for Japan Proper; and to employ some 60,000 workers (67 percent of total industrial employment in Nagasaki). The large shipways and graving docks permit the construction and repair of the largest merchant and naval vessels.

Two large ordnance plants, the Mitsubishi Steel and Arms Works (Target 90:36-546) and the Mitsubishi-Urakami Ordnance Plant (Target 90:36-2022) are estimated to employ some 14,000 workers and to account for the production of some 7 percent of arms and munitions (principally naval torpedoes) and 5 percent of heavy ordnance and A/A guns for Japan Proper.

The Mitsubishi Electric Manufacturing Co. (Target 90:36-829) is estimated to have 10 percent of total capacity in Japan Proper for the production of heavy electrical equipment, principally large ship turbines.

The city is also a strategically located military supply port.

DESCRIPTION AND LAYOUT

(Refer to Illustration No. UA/Nagasaki/PM.) Nagasaki, located on the western side of Kyushu Island, occupies a very limited, amphitheater-like site with narrow valleys extending back from the harbor to the east, and to the north along the Urakami River. The principal industrial concentration (shipbuilding and repair, and marine engine works) is on the western side of the harbor. The eastern side of the harbor contains important loading and storage facilities. The city proper located at the head of the harbor, is partly built on reclaimed land and extends back into the surrounding hills.

CONCENTRATION

Commercial and public buildings are concentrated in the eastern and central parts of the city. Densely-grouped housing crowds the commercial areas and extends in an almost unbroken mass to the hills, fanning out on both sides of the harbor and up the narrow valleys.

CONSTRUCTION AND VULNERABILITY

Zone R—Residential

R_1—Over 40% built-up—comprising 30% of built-up area.
R_2—20-40% built-up—comprising 38% of built-up area.
R_3—5-20% built-up—comprising 10% of built-up area.

Predominantly residential type buildings used as dwellings, small shops and household industry, mostly one story with some two story, framed in timber with walls and partitions of heavy plaster construction. Floors are of wood covered with heavy compressed straw matting. Roofs are generally of tile with a few of corrugated or sheet iron over wood framing and rafters. Along main streets are two and some three-story commercial buildings housing stores, shops, etc. Roofs are as above. Floors are generally wood. A few large, modern fire-resistive buildings serving as office buildings, hotels and municipal buildings are found concentrated in downtown section. Roofs of all except latter group of large buildings are combustible and are readily penetrable by all incendiary bombs.

Zone M—Manufacturing

Built-upness 43%—comprising 16% of built-up area.

Industry is concentrated along waterfront, predominantly heavy manufacturing including shipbuilding, marine engines and boilers, steel production and fabrication, and arms. Plants are predominantly of one-story steel frame, medium span gable roof, buildings with roofs of corrugated asbestos and iron. Many buildings have travelling cranes. Roofs of buildings are readily penetrable by all incendiary bombs. Susceptibility of important targets to damage from conflagration during area attack are found in Table I.

Zone X—Mixed Residential/Industrial

Built-upness 33%—comprising 1½% of built-up area.

Combined residential/industrial area containing about equal areas of both classes. Residential construction same as described above. Industrial construction small factories including both wall-bearing and frame construction, predominantly combustible roofs readily penetrable by all incendiary bombs. Entire zone susceptible to destruction by conflagration.

Zone S—Storage

Built-upness 28%—comprising 4% of built-up area.

Predominantly one-story steel and wood frame buildings with medium span, gable roofs of light weight sheet materials. Buildings are generally divided into moderate sized fire divisions by fire walls. Few moderate sized three and four story reinforced concrete

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File No. 730,640.1

frame buildings. Roofs of buildings except reinforced concrete structures are readily penetrable by all incendiary bombs. Because of wide streets, railroads, etc., storage facilities are only moderately susceptible to damage from fire spread.

Zone T—Transportation

Built-upness 9%—comprising 0.5% of built-up area.

Concentrated in single terminus at waterfront consisting of station of reinforced concrete and some small transit and storage sheds of wood and steel frame construction. Roofs of the sheds are of light weight materials, are generally combustible, and are readily penetrable by incendiary bombs. Because of isolation, low density of buildings and low vulnerability of important portions to fire damage, transportation facilities are susceptible to only minor damage from fire spread.

WEAPON RECOMMENDATIONS

The most suitable weapon for attack on the congested areas of Nagasaki (Zones R_1, R_2, and X) is the M-69 (or M-74) in aimable clusters. This bomb will also be effective on many of the industrial buildings in Zones M, S, and T provided these buildings are within formation patterns.

It is not believed that any available high explosives or fragmentation bomb is worth the weight of M-69 clusters which it would displace. On the other hand, a high explosive charge (X feature) or white phosphorous cup attached to the bomb should considerably increase its effectiveness.

Suggestions for the tactical employment of the M-69 type bomb in attacks on congested urban areas are made in the paper on "Physical Vulnerability and Weapon Recommendations" at the front of the Urban Areas Target System Folder. In general, aiming points should be selected in well built-up zones, and an attempt made to secure high local densities in a number of nearly contiguous areas.

REPRINT

LEVEL OF DAMAGE

A successful area attack against Nagasaki will damage or destroy factories and a large proportion of the housing in the city. The purpose of this pre-attack assessment is to indicate the probable amount of production which will be lost in factories as a result of the following combination of factors:

(1) Damage or destruction of factory structures and equipment.

(2) Absenteeism (housing destruction, etc.).

(3) Cost of repair and replacement.

Assumptions of physical damage are as follows:

(1) The substantial destruction of zones R_1 and R_2 (estimated to contain not less than 75 percent of the housing, and 80 percent of the population).

(2) Conflagration damage to industrial structures at risk in or adjacent to zones R_1 and R_2 as measured by the physical vulnerability assessment (see Table 1).

TABLE 1
Estimates of Industrial Employment and Plant Vulnerability to Fire Spread

Target No.	Identified Priority Plants	Estimated Employment	Vulnerability to Fire Spread
	Shipbuilding and Ship Repair		
90:36-543	Mitsubishi Dockyard	10,000	Moderate
90:36-544	Tategami Shipyard	20,000	Moderate
90:36-860	Kawanami Industry Co. Shipyard[1]	10,000	None
90:36-542	Akunoura Engine Works	10,000	Moderate
90:36-828	Hayashi Commercial Co., Engine Works	2,000	Moderate
	Ordnance		
90:36-546	Mitsubishi Steel and Arms Works	6,000	Slight
90:36-2022	Mitsubishi-Urakami Ordnance Plant	8,000	None
	Machinery, Tools and Instruments		
90:36-829	Mitsubishi Electric Mfg. Co.	4,000	Moderate
	Chemicals and Oil		
90:36-545	Kozaki Point Oil Storages	300	None
90:36-832	Megami Point Oil Storages	100	None
	Transportation, Communication, Wharf Activities		
90:36-1842	Nagasaki & Dejima Wharves and RR Yards	5,000	Moderate
	Unidentified Priority Plants		
	Shipbuilding and Ship Repair Small boat yards	8,000	None
	Chemicals and Oil Small chemical and oil plants	600	High
	Non-Priority Plants		
	Clothing	500	High
	Construction	2,000	High
	Food Products	2,000	High
	Gas and Electricity	1,000	High
	Lumber, Woodenware	2,000	High
	Printing	500	High
	Textiles	500	High
	Other Manufacturing	1,500	High

Production loss of identified priority plants, including transportation and wharf installations, attributable to damage to structures and equipment alone is 71 percent of total loss; of unidentified priority plants 16 percent; and of non-priority plants 65 percent. Of a total production loss of 166,000 man-months 67 percent consists of damage to industrial structures and equipment.

[1] Located south of city, outside of area covered by mosaics.

Major concentration of loss is against the shipbuilding and ship repair industry which out-ranks all other industry in Nagasaki in importance. The two ordnance plants will incur production loss only through absenteeism; transportation and wharf installations through damage to buildings and equipment; and electrical equipment manufacturing by damage to buildings and equipment, and absenteeism in equal proportions.

The relationship between direct production loss and annual industrial production for Nagasaki is as follows:

TABLE 2
Direct Production Loss as Proportion of Annual Industrial Production*

Industry	Loss in Months	Production Loss—Percent Annual Prod.
Shipbuilding and Repair	1.8	15
Ordnance	1.0	8
Machinery, Tools, Instruments	2.0	17
Chemicals and Oils	2.4	20
Transportation, Communications, Wharf Activities	2.5	20
AVERAGE	1.7	14
Non-Priority Industry	2.4	20
AVERAGE	1.8	15

*See LEVEL of DAMAGE for assumptions as to physical damage.

Photographic cover reveals little in the way of barracks adjacent to industrial plants for worker housing. It is probable, therefore, that the bulk of industrial workers are housed in the city proper. Nagasaki has long been an important industrial city in Japan. The war does not appear to have caused any significant change in the city's industry, population, or the residential location of industrial workers.

INDIRECT PRODUCTION LOSS

For purposes of this pre-attack assessment, certain factors are used to indicate the general magnitude of the cost of repair and replacement. This cost is a legitimate addition to direct production loss, as indicated above. The cost of repair and replacement, however, has an impact on final output which is delayed and uncertain in point of time.

The overall cost of repair and replacement of damaged industrial plants is estimated at 195,000 man-months.

The cost of repair and replacement of industrial loss, as estimated above, does not include any allowance for the cost of repair and replacement of (1) buildings, equipment, and stocks of non-priority industries, (2) stocks in warehouses, stores, or in transit, (3) raw material stocks in factories, and (4) damaged and destroyed residential buildings.

The total estimated direct and indirect production loss is 361,000 man-months.

Replacement of industrial equipment and stocks is a task of priority industries. Restoration of building damage is a charge against the construction industry and producers of building materials. Much of this indirect loss will be burden to other areas rather than to industry in Nagasaki.

On the basis of the assumed level of damage, a substantial order of loss is imposed on industrial production in Nagasaki. This loss concentrates against two major functions—shipbuilding and transportation. The cost of repair and replacement, although causing an additional strain on Japanese industry, will be diffused. This burden, of itself, should not create a condition of significant industrial unbalance or strain.

ESTIMATED PRODUCTION LOSS FROM A REDUCED LEVEL OF DAMAGE

A reduction in the level of damage by some 50 percent, both to industrial plants and housing (destruction of 50 percent of housing in zones R_1 and R_2) would cause direct production loss to decrease somewhat more than a proportionate amount. As the level of damage is still substantial, the effect of the declining rate of absenteeism is not significant. Direct production loss as a proportion of annual industrial production declines from 1.8 months' loss to .85 months' loss.

TARGETS AND OTHER SIGNIFICANT INSTALLATIONS

Significant Installations

Reference No.	Name	Comment
1	*TARGET 2022—Mitsubishi-Urakami Ordnance Plant (Mitsubishi-Urakami Heiki Seisakusho)	Branch of Mitsubishi Steel and Arms Works (TARGET 546); unconfirmed production of ship fittings and naval ordnance.
2	Unidentified Industry	
3	Urakami Branch Gas Works	
4	Barracks	
5	Prison	
6	Unidentified Industry	
7	Several small unidentified factories	
8	Medical School and Hospital	Camouflaged, but no other evidence of conversion to other use.
9	Probable Barracks or School	
10	*TARGET 546—Mitsubishi Steel and Arms Works (Mitsubishi Heiki Seisakusho)	Integrated steel ingot/rolling/casting works, producing ship plate and shapes, as well as naval ordnance (principally torpedoes).
11	Casting Plant of Mitsubishi Steel and Arms Works	Castings for (TARGET 1795—Mitsubishi Steel Rolling Mill has been cancelled) Mitsubishi Steel and Arms Works (TARGET 546).
12	Mitsubishi Woodworking Plant	Produces wooden fittings and cuts lumber for Nagasaki's shipyards.
13	Steam Power Plant	Small standby plant.
14	Unidentified Small Industry	
15	Unidentified Small Industry	
16	TARGET 828—Hayashi Commercial Co. Engine Works (Hayashi Kane Shoten KK)	Reported producer of marine engines.
17	(Part of TARGET 1842)—Nagasaki Station and Freight Yard	
18	Kyushu Gas Works	
19	TARGET 1842—Nagasaki and Dejima Wharves and RR Yards	
20	*TARGET 829—Mitsubishi Electric Mfg. Co. (Mitsubishi Denki KK)	Produces heavy turbo-generators and other electrical equipment.
21	*TARGET 542—Akunoura Engine Works (Mitsubishi Jukogyo KK)	Major producer of marine engines, boilers, etc.
22	*TARGET 543—Mitsubishi Dockyard	Repairs all types of merchant and naval craft.
23	*TARGET 544—Tategami Shipyard (Mitsubishi Jukogyo KK)	Builds all types of merchant and naval ships.
24	Small Industrial Plant	Reported flour mill and grain storage.
25	TARGET 545—Kozaki Point Oil Storages	In aggregate, comprises large oil bunkering storage.
26	New Shipyard	Probable producer of small standardized cargo vessels.
27	Small Industrial Plant	Reported chemical plant, products unknown.
28	Small-boat Yard	
29	Barracks and Storage	
30	Small-boat Yards	Build small fishing and patrol craft, lifeboats, etc.
31	Unidentified Industry and Storage	Reported operated by Navy.
32	TARGET 832—Megami Point Oil Storages	Oil storage and unidentified naval storage.
33	Military Barracks and Storehouses	
34	Kamigo Reservoir	
35	Water Filtration Plant	
36	Nishiyama Reservoirs and Filtration Beds	
37	Ogakura Reservoir and Filtration Beds	

*Installations for which Target Information sheets have been completed or are scheduled.

Note: Schools, public buildings, and small military barracks or stores are not annotated.

REPRINT

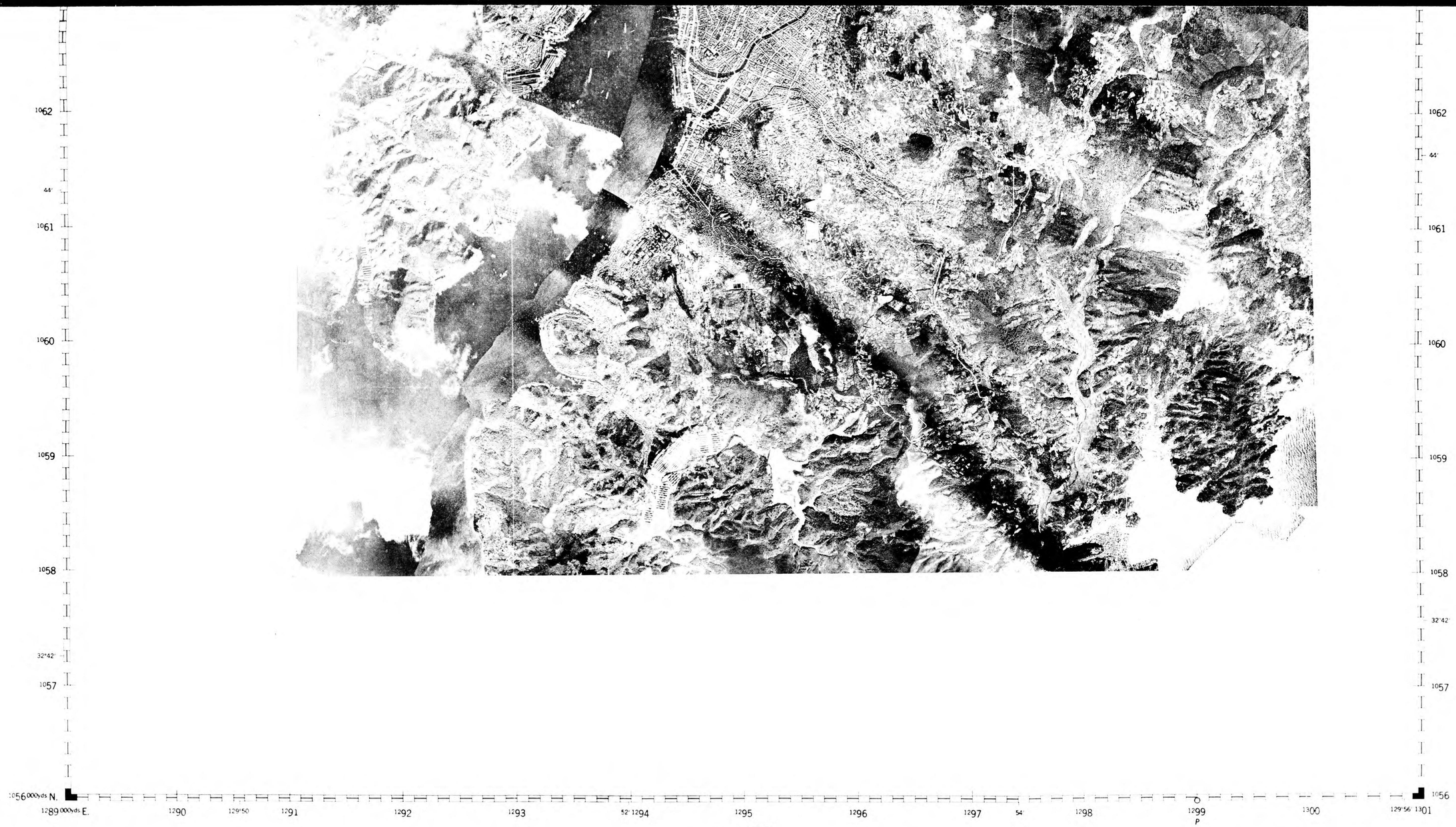
JOINT TARGET GROUP, WASHINGTON, D. C.
URBAN AREA MOSAIC

NAGASAKI — JAPAN

Clear Mosaic

RESTRICTED

SHEET . . . . . NAGASAKI—PM
DATE. . . . . 21 March 1945



Scale 1:25,000

Prepared under the direction of the Chief of Engineers by the Army Map Service (AAA), U. S. Army, Washington, D. C. 1945. Mosaic controlled by average fit to best available map source. Aerial photographs flown by U.S.A.A.F. Oct. Nov. 1944. (Sorties) 4MR 9 12 V 4MR 22 24 V.

Reliability of grid uncertain due to local minor disagreement between photo map and topographic map.

½ 0 1 Mile

500 0 1000 2000 Meters

500 0 1000 2000 Yards

ONE THOUSAND YARD WORLD POLYCONIC GRID, BAND IIIN, ZONE "C"
THE LAST THREE DIGITS OF THE GRID NUMBERS ARE OMITTED

POLYCONIC PROJECTION

RESTRICTED

Use diagram only to obtain numerical values. To determine magnetic north line, connect the pivot point "P" on the south edge of the map with the value of the angle between GRID NORTH and MAGNETIC NORTH, as plotted on the degree scale at the north edge of the map.

APPROXIMATE MEAN DECLINATION 1945 FOR CENTER OF SHEET
ANNUAL MAGNETIC CHANGE 7' WESTERLY

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NAGASAKI / PM

File No. 730,640.5

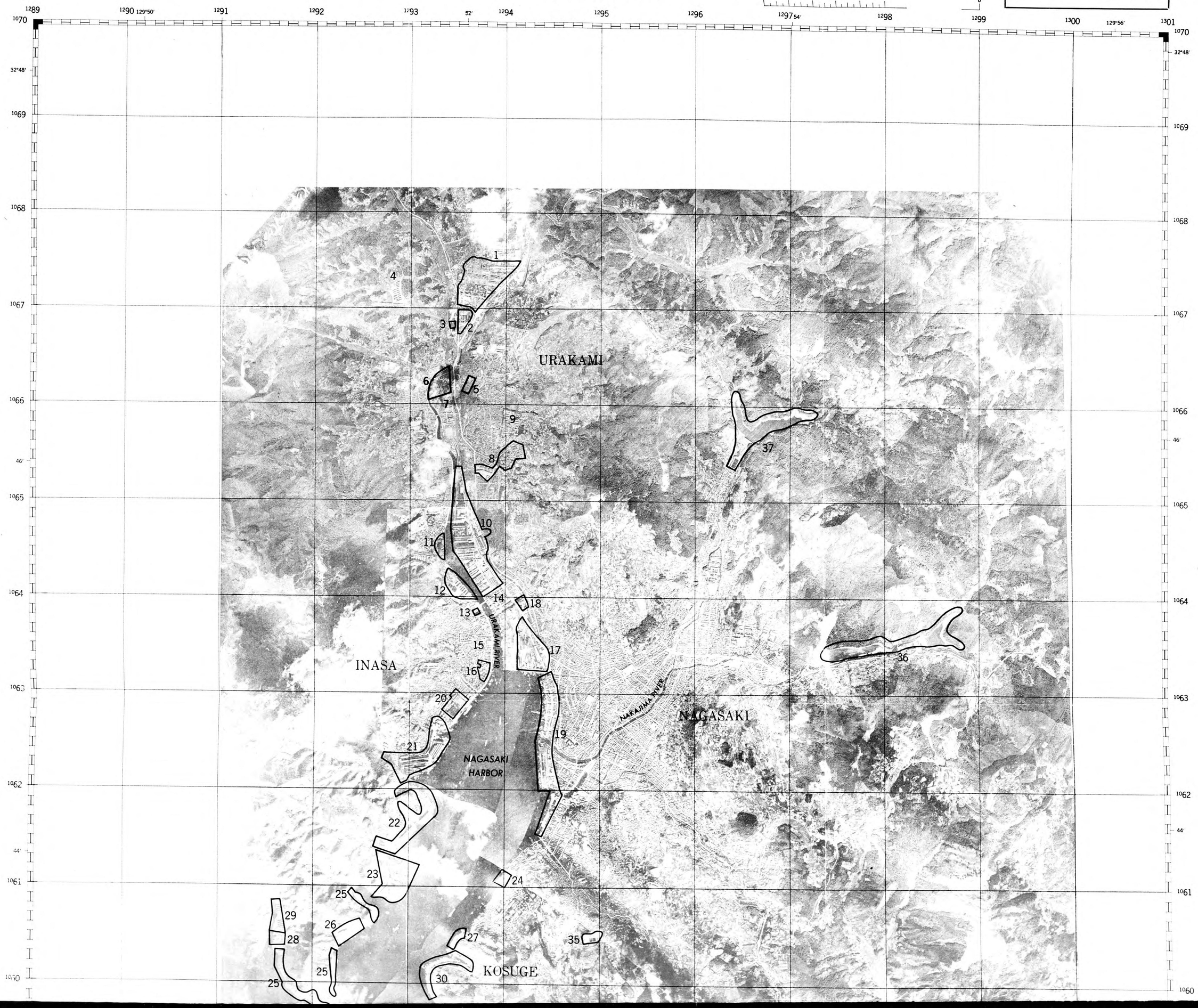
JOINT TARGET GROUP, WASHINGTON, D. C.
URBAN AREA MOSAIC

NAGASAKI — JAPAN

Annotated Mosaic

CONFIDENTIAL

SHEET . . . . . NAGASAKI—PA
DATE . . . . . 21 March 1945



NAGASAKI

NAGASAKI HARBOR

NAKAMACHI

KOSUGE

KOZAN POINT

19 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35

1062 1061 1060 1059 1058 1057 1056

44' 32°42'

1289 000yds E. 1290 129°50' 1291 1292 1293 52' 1294 1295 1296 1297 54' 1298 1299 1300 129°56' 1301

1056 000yds N.

P

Scale 1:25,000

1/2 0 1 Mile

500 0 1000 2000 Meters

500 0 1000 2000 Yards

ONE THOUSAND YARD WORLD POLYCONIC GRID, BAND IIIn, ZONE "C"
THE LAST THREE DIGITS OF THE GRID NUMBERS ARE OMITTED

POLYCONIC PROJECTION

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Aerial photographs flown by U.S.A.A.F., Oct.-Nov. 1944
(Sorties): 4MR-9 12 V
4MR-22 24 V

Reliability of grid uncertain due to local minor disagreement between photo map and topographic map

CONFIDENTIAL

6°30' OR 116 MILS

1°30' OR 26 MILS

GRID NORTH

MAGNETIC NORTH

Use diagram only to obtain numerical values. To determine magnetic north line, connect the pivot point "P" on the south edge of the map with the value of the angle between GRID NORTH and MAGNETIC NORTH, as plotted on the degree scale at the north edge of the map.

APPROXIMATE MEAN DECLINATION 1945
FOR CENTER OF SHEET
ANNUAL MAGNETIC CHANGE 1° WESTERLY

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NAGASAKI/PA

File No. **730,640.6**

JOINT TARGET GROUP, WASHINGTON, D. C.
URBAN AREA MOSAIC

NAGASAKI — JAPAN

Zoned Mosaic

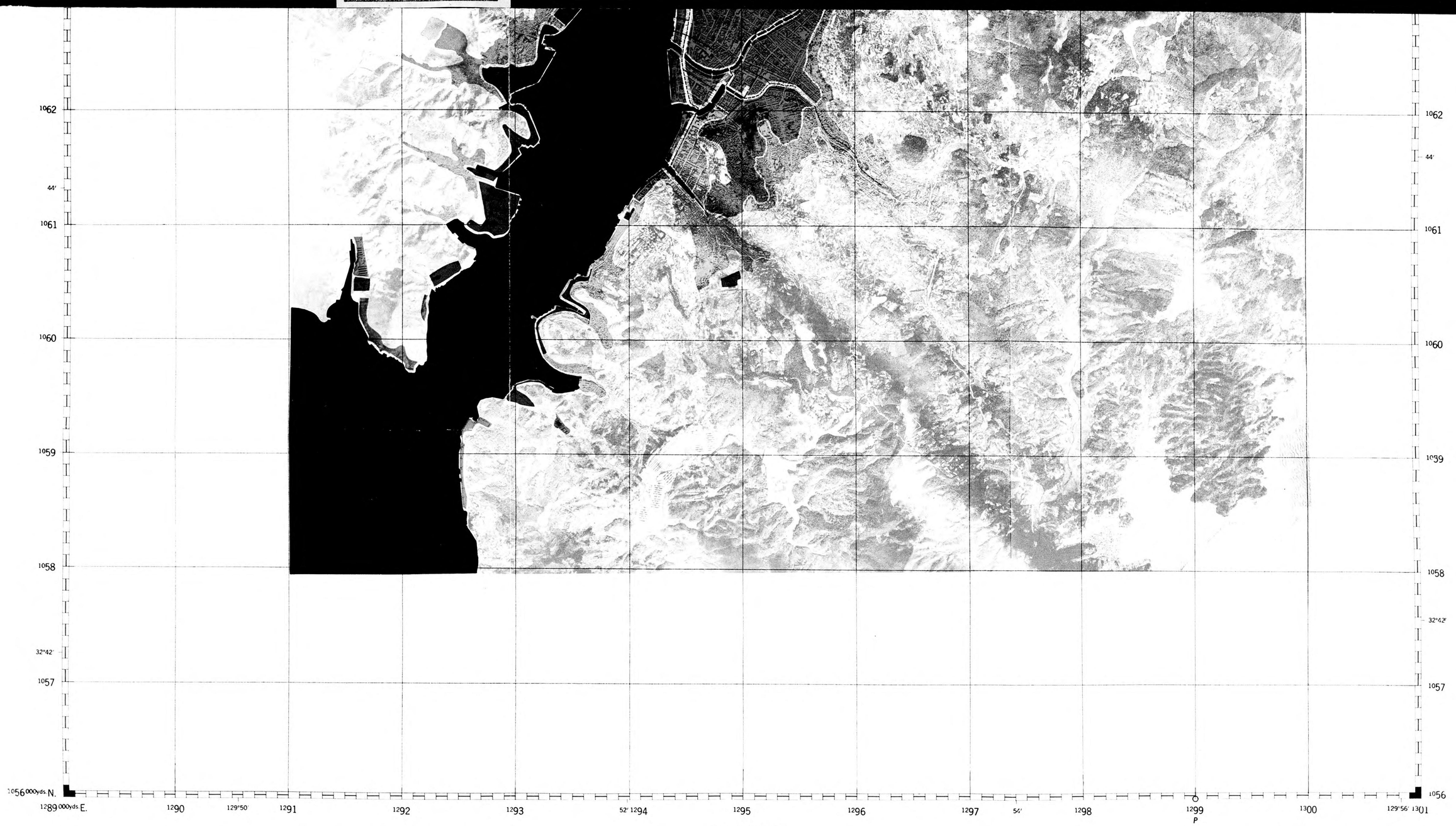
CONFIDENTIAL

SHEET . . . . . NAGASAKI—PZ
DATE . . . . . 21 March 1945

9° 8° 7° 6° 5° 4° 0°

1289 1290 129°50′ 1291 1292 1293 52′ 1294 1295 1296 1297 54′ 1298 1299 1300 129°56′ 1301

1070 32°48′ 1069 1068 1067 1066 46′ 1065 1064 1063 1062 44′ 1061 1060



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Mosaic controlled by average fit to best available map source
Aerial photographs flown by U.S.A.A.F., Oct.-Nov. 1944.
(Sorties) 4MR 9-12 V
4MR 22-24 V

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RESIDENTIAL (FULLY BUILT UP: 40%
RESIDENTIAL (MODERATELY BUILT UP: 20%–40%)
RESIDENTIAL (SPARSELY BUILT UP: 5%–20%)
MANUFACTURING
MIXED (INDUSTRIAL AND RESIDENTIAL)
TRANSPORTATION
STORAGE
PRIMARY FIRE BREAK
SECONDARY FIRE BREAK

½ 0 1 Mile
500 0 1000 2000 Meters
500 0 1000 2000 Yards

ONE THOUSAND YARD WORLD POLYCONIC GRID, BAND IIIn, ZONE "C"
THE LAST THREE DIGITS OF THE GRID NUMBERS ARE OMITTED
POLYCONIC PROJECTION

CONFIDENTIAL

Use diagram only to obtain numerical values. To determine magnetic north line, connect the pivot point "P" on the south edge of the map with the value of the angle between GRID NORTH and MAGNETIC NORTH, as plotted on the degree scale at the north edge of the map.

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NAGASAKI/PZ

File No. **730,640.7**

JOINT TARGET GROUP, WASHINGTON, D. C.
URBAN AREA MOSAIC

SASEBO — JAPAN

Clear Mosaic

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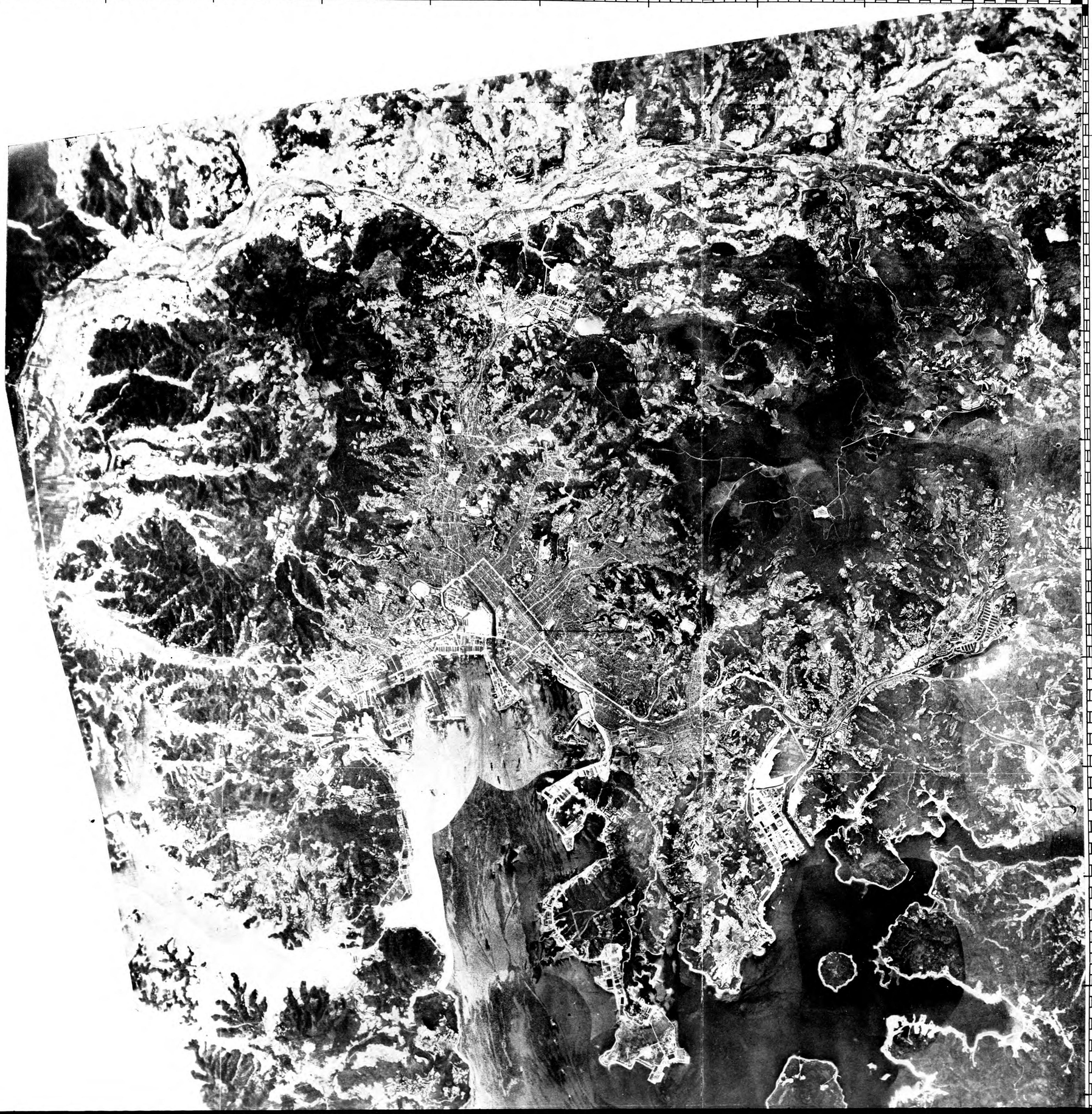
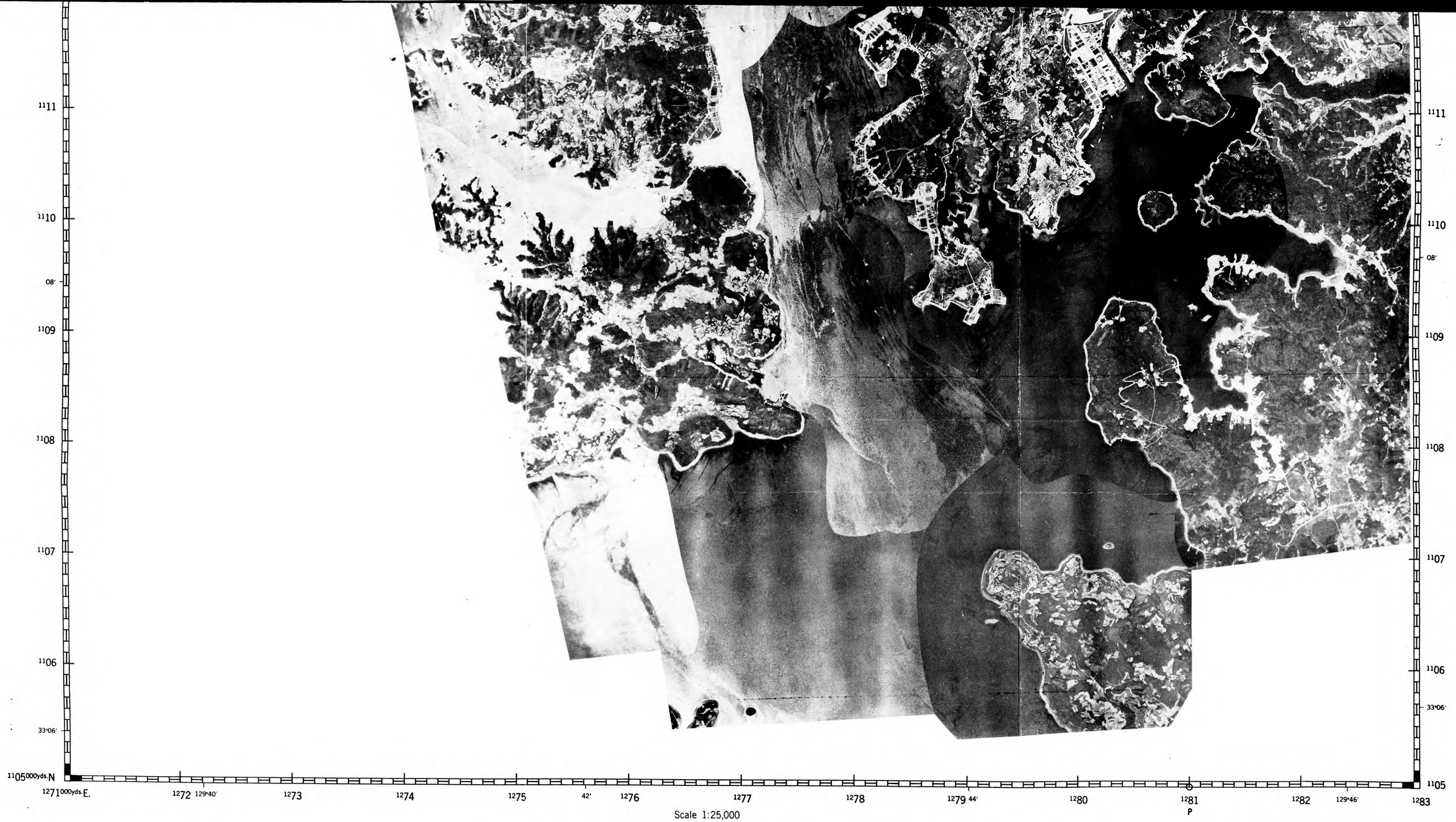
SHEET . . . . . SASEBO—PM
DATE . . . . . 21 May 1945





Scale 1:25,000

1/2 0 1 Statute Mile

1/2 0 1 Nautical Mile

500 0 1000 2000 Meters

500 0 1000 2000 Yards

ONE THOUSAND YARD WORLD POLYCONIC GRID, BAND IIIn, ZONE "C"
THE LAST THREE DIGITS OF THE GRID NUMBERS ARE OMITTED

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Aerial photographs flown by A.S.A.A.F., June 1944.
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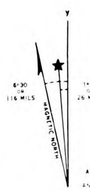

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SASEBO — PM

File No. **730,690.5**

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JOINT TARGET GROUP, WASHINGTON, D. C.
TARGET INFORMATION SHEET

Sheet 90:36-542—TI
Date 26 March 1945
Page 1

Target 90:36-542
Obj. Area 90:36
Obj. Folder 90:36, 39
Category: Bsc. Eqpt. Int.—TRNSPTN EQPT.

Lat. 32°44′N
Long. 129°52′E
Alt. 20 feet

AKUNOURA ENGINE WORKS

NAGASAKI • • • • • • JAPAN

ALL PREVIOUS SHEETS CANCELLED

REPRINT

SIGNIFICANCE

One unit of a group of adjacent facilities for building and repairing all merchant and naval ship types. One of the most important pre-war Japanese marine engine works, accounting for about 10 percent of all production. It is integrated with the Mitsubishi Electric Mfg. Co. (Target 90.36–829) adjacent on the northeast. These two plants build, install, and/or repair engines and electrical equipment.

The Mitsubishi Dockyard (Target 90.36–543), adjacent to the south, is designed primarily for ship repair; Tategami Shipyard (Target 90.36–544), south of the Dockyard, is designed for new ship construction.

Akunoura Engine Works is believed to be working at near capacity. Photography to 10 March 1945 shows a high level of shipbuilding activity in the vicinity for which Akunoura is probably doing parallel engine work. Both Mitsubishi and Tategami Yards are active, and large numbers of standardized 200-foot vessels, probably not yet operational, are anchored in the harbor.

LOCATION

On the west side of Nagasaki Harbor about 2,640 feet southwest of the mouth of Urakami River at the head of the harbor, and about 1.4 miles north-northeast of Kozaki Point at the harbor entrance. The compound is bounded on the north by the Mitsubishi Electric Mfg. Co. (Target 90.36–829), on the south by the Mitsubishi Dockyard (Target 90.36–543) and the adjacent Tategami Shipyard (Target 90.36–544), on the east by the Nagasaki Harbor, and on the west by narrow fringes of workers' homes between the target and high ground.

DESCRIPTION AND LAYOUT

(Refer to Illustrations No. 90.36–542 P3/1, P5 and P6.) The target area is roughly crescent in shape, following the curving shore line. It measures about 2,700 feet northeast-southwest and 700 feet northwest-southeast, covering an area of approximately 1.6 million square feet. The area is about 51 percent covered by 26 buildings. Two large buildings (12 and 15) dominate the installation. The largest (12), covering about 384,700 square feet, houses electrical equipment, machine, copper working, forge, and engine erecting shops which are equipped with heavy machine tools and contain the engines in production. A hammerhead crane, 178 feet high with a capacity of 150 tons at 80 feet, is on the waterfront outside of building 12. The smaller building (15), covering about 123,100 square feet, houses the boiler and boiler tube shop. Both buildings are equipped with overhead cranes. The power plant (1) at the extreme south end covers about 23,200 square feet. Several small shop buildings are in the west end of the compound. The small buildings at the north end are chiefly storage and administrative offices.

PRIMARY OBJECTIVES

(Refer to Illustrations No. 90.36–542 P3/1, P5, and P6). The primary objectives, in order of productive importance, are:

Primary
12
15

Destruction of building 12 and its extensive engine production equipment, and marine engines in production, would most damage the activity of this plant. Marine engines are designed to meet specifications of a particular ship or class of ships. Their loss is more important than assembly line products. Building 15 houses boiler and boiler tube making facilities.

CONSTRUCTION AND VULNERABILITY

(Refer to Illustrations 90.36–542 P3/1, P5, and P6). Primary objectives listed in order of importance:

Building No.	Plan area (square feet)	Roof [1]	Combustibility	HE vulnerability) [2]
12	384,700	Light	Noncombustible	V2
15	123,100	do	do	V2

[1] Light weight roofs are readily penetrated by all types of incendiary bombs. Initiation of HE tail fuzes by these roofs cannot be depended upon except for bombs striking structural members (30 to 40 percent of bombs striking buildings).

[2] HE vulnerability classifications are explained in JTG Memorandum No. JTG/M/3/1 which is now in process of revision. In brief, a single vulnerability classification is assigned types of industrial buildings which behave in a similar manner when attached with the same HE weapon. These vulnerability classes are arranged in order of vulnerability to HE attack, with very invulnerable, multi-story, earthquake-proof structures assigned the classification V1. The other classifications V2, V3, V4, V5 are progressively more vulnerable types, V5 being the most vulnerable large span, arched hangar type structures. Most 1-story buildings fall in class V4.

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Classification of buildings:

	Primary objectives	Whole target
Total plan area of buildings (square feet)	507,800	810,600
Combustibility:	*Percent*	*Percent*
Fire resistant (R)		8
Noncombustible (N)	100	80
Combustible (C)		12
H. E. vulnerability:		
V1 (least vulnerable)	0	8
V2	100	62
V3	0	14
V4	0	16
V5 (most vulnerable)	0	0

Combustibility of contents (whole target): Low (less than average industrial fire occupancy). For detailed study of fire susceptibility of structures and contents refer to Illustration No. 90.36–542 P5.

WEAPON RECOMMENDATIONS

Reference should be made to Weapon Recommendations Sheet No. 90.36–542 WR1 for high and medium altitude attack and to Weapon Recommendations Sheet No. 90.36–542 WR2 for low altitude attack.

CAMOUFLAGE, DECOYS, AND SMOKE SCREENS

Photography of 20 August and 17 November 1944, and 10 March 1945 shows no camouflage or decoys. No use of smoke screens has been reported.

REPRINT

JOINT TARGET GROUP, WASHINGTON, D. C.

WEAPON RECOMMENDATIONS SHEET

Sheet	90:36-542—WR1
Date	26 March 1945
Page	1
Target	90:36-542
Obj. Area	90:36
Obj. Folder	90:36, 39
Category:	Bsc. Eqpt. Int.—TRNSPTN. EQPT.
Lat.	32°44'N
Long.	129°52'E
Alt.	20 feet

AKUNOURA ENGINE WORKS

NAGASAKI • • • • • • JAPAN

High and Medium Altitude Attack

AIMING POINT

For maximum damage to primary objectives the aiming point should be the east end of building 12. (Illustration No. 90.36–542 P5.)

WEAPONS AND FUZING

	HE	Fuze	IB
Preferred	2,000-lb. GP	.025N/.025T	None.
Alternative	1,000-lb. GP	.025N/.025T	None.
	500-lb. GP	.025N/.025T	

Not recommended: Smaller GP Bombs.
SAP and AP Bombs.
Depth Bombs.

(*a*) Use 0.1N fuzes, if 0.025N fuzes are not available.

(*b*) The 1,000-lb. GP and 500-lb. GP are respectively 85 and 65 percent as effective as the 2,000-lb. GP Bomb.

LOADING TABLE FOR INITIAL ATTACK

Loading table for preferred high explosive bomb [2]

[This table is prepared for an initial attack on this target. For its application to later attacks see JTG Memorandum No. 3/1]

Tons (actual) dispatched	Percent of bombs dispatched falling within 1,000 feet of aiming point			
	10 percent	15 percent	20 percent	30 percent
	F[1]	F[1]	F[1]	F[1]
400	15	20	25	35
600	25	25	35	45
800	30	35	45	50
1000	35	40	50	60
1500	45	50	60	----
2000	55	60	----	----
2500	60	----	----	----

[1] Expected percent of serious damage to the whole target.

[2] If the alternative bombs are used, the expected percent of damage will of course be lower.

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175 T-3

JOINT TARGET GROUP, WASHINGTON, D. C.

WEAPON RECOMMENDATIONS SHEET

Sheet	90:36-542—WR2
Date	28 March 1945
Page	1
Target	90:36-542
Obj. Area	90:36
Obj. Folder	90:36, 90:39
Category:	Bsc. Eqpt. Int.—TRNSPTN. EQPT.
Lat.	32°44′N
Long.	129°52′E
Alt.	20 feet

AKUNOURA ENGINE WORKS

NAGASAKI . . . . . JAPAN

ALL PREVIOUS SHEETS CANCELLED

Low Level Attack

(See also 90.36-542 TI and associated target illustrations)

TYPE OF ATTACK

This sheet applies primarily to an attack by carrier based aircraft, fighter bombers, or other similar aircraft which carry out dive, glide, low level, or minimum altitude attacks.

BUILDINGS CONSIDERED

Data are given below for an attack on primary and/or secondary buildings only. (See Ill. No. 90.36–542 P5.) Other buildings are of insufficient importance to merit specific attack.

WEAPONS AND FUZING

A pure HE attack (no incendiaries) may be launched against the buildings specified in the table below. The choice of a particular HE weapon for attack on a given building can be made by considering both the number of hits on that building required for the various bombs (see the table below) and the stowage capabilities of the aircraft to be used. The proper fuzings for the HE weapons to be used against the individual buildings are given in the table below, with the exception that for minimum altitude attacks a 4–5 seconds delay is required for safety to the aircraft. The use of SAP, AP, smaller GP, or depth bombs is not recommended for this target.

NUMBER OF HITS

Number of hits required to achieve 50 percent serious damage to individual important buildings [1]

Buildings in order of importance to production (Ill. No. 90.36–542 P5)	Number of hits			Fuzing [2]
	500-lb. GP	1,000-lb. GP	2,000-lb. GP	
12	165	68	26	0.025 N/.025 T
15	53	22	8	.025 N/.025 T

[1] To obtain the number of hits required to achieve 30 percent serious damage to individual important buildings, multiply the appropriate entry in the preceding table by 0.5; for 70 percent serious damage, multiply by 1.7.

[2] Use 0.1 N fuses, if 0.025 N fuses are not available. Recommended altnative fuzing is 0.1 N/O. 1 T.

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TARGET NO. 90:36-542

APPROX. COORDINATES 32° 44' N 129° 52' E

PHOTOGRAPHED 21 AUGUST 1944

AKUNOURA ENGINE WORKS
NAGA[illegible]AKI, JAPAN

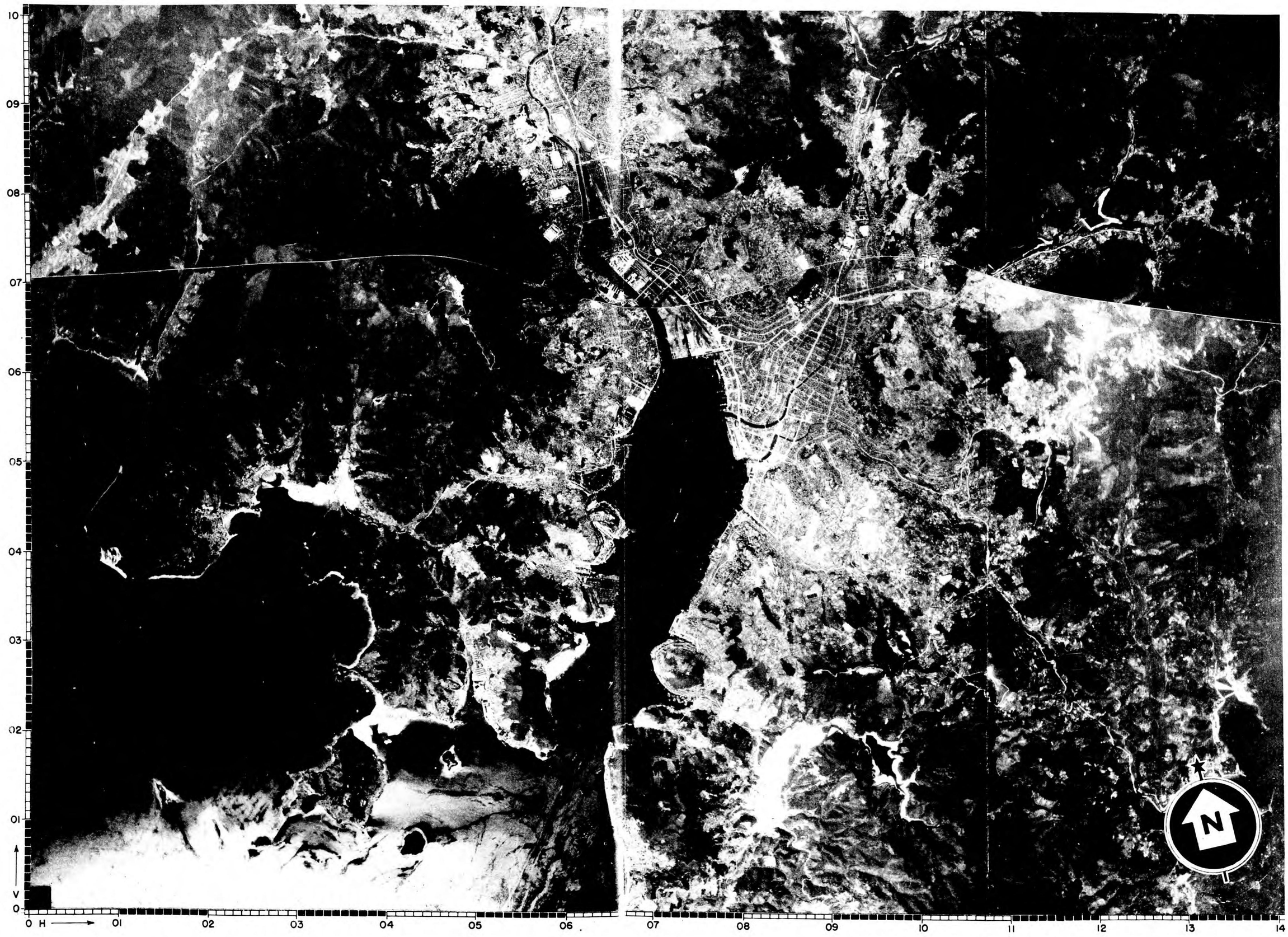
0 2000 4000 6000 FEET
0 1 MILE

1:32[illegible]00 APPROX.

ILLUSTRATION NO. 90:36-542 P1

SEPTEMBER 1944

CONFIDENTIAL



AC/AS, INTELLIGENCE

CONFIDENTIAL

File No. 731,542.52

TARGET NO. 90:36-542

APPROX. COORDINATES 32° 44' N 129° 52' E

PHOTOGRAPHED 21 AUGUST 1944

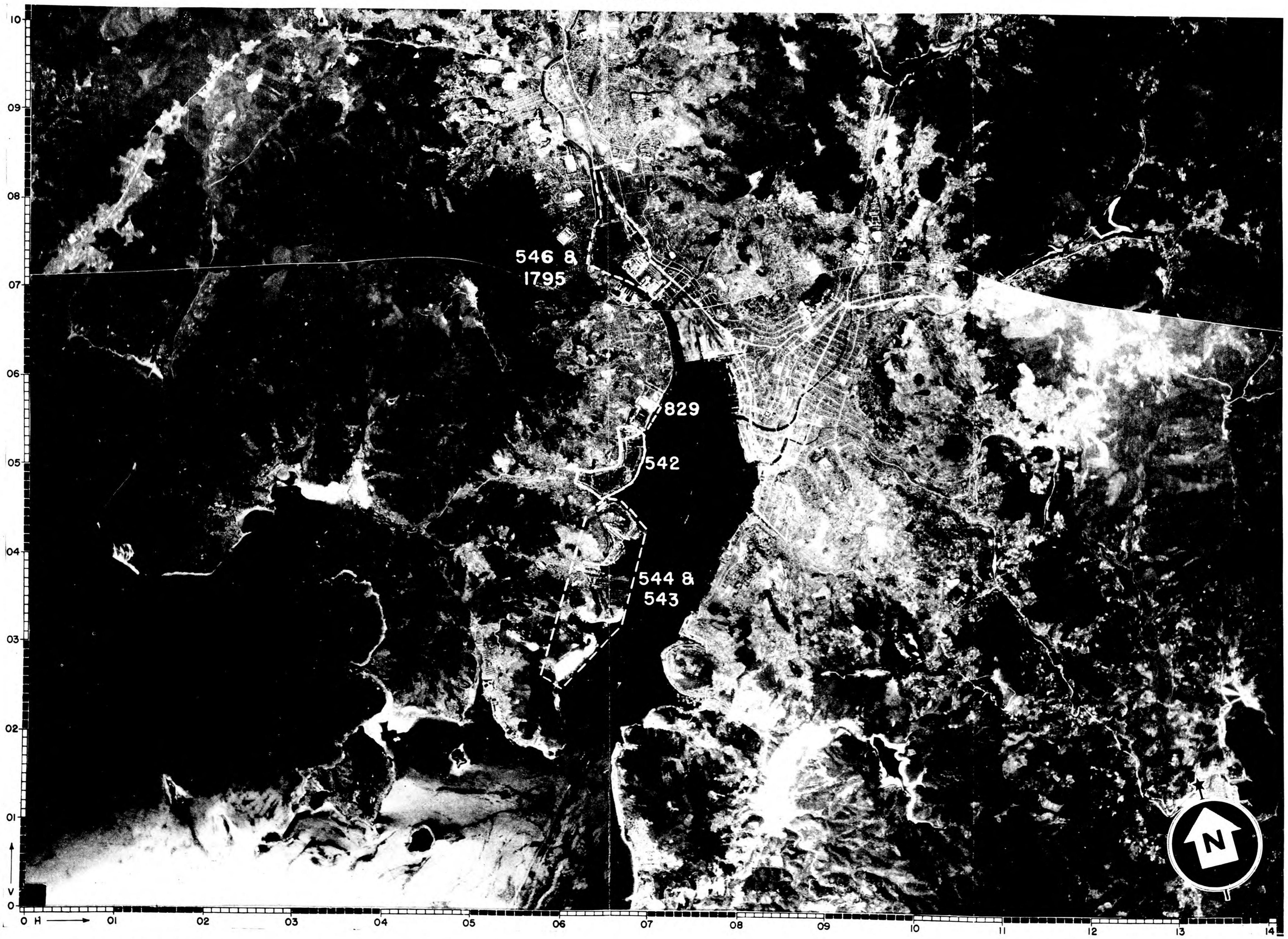
AKUNOURA ENGINE WORKS
NAGASAKI, JAPAN

0 2000 4000 6000 FEET
0 1/2 1 MILE
1:32 000 APPROX.

ILLUSTRATION NO. 90:36-542 P2

SEPTEMBER 1944

CONFIDENTIAL



AC/AS, INTELLIGENCE

CONFIDENTIAL

File No. 731,542.54

JOINT TARGET GROUP, WASHINGTON, D. C.

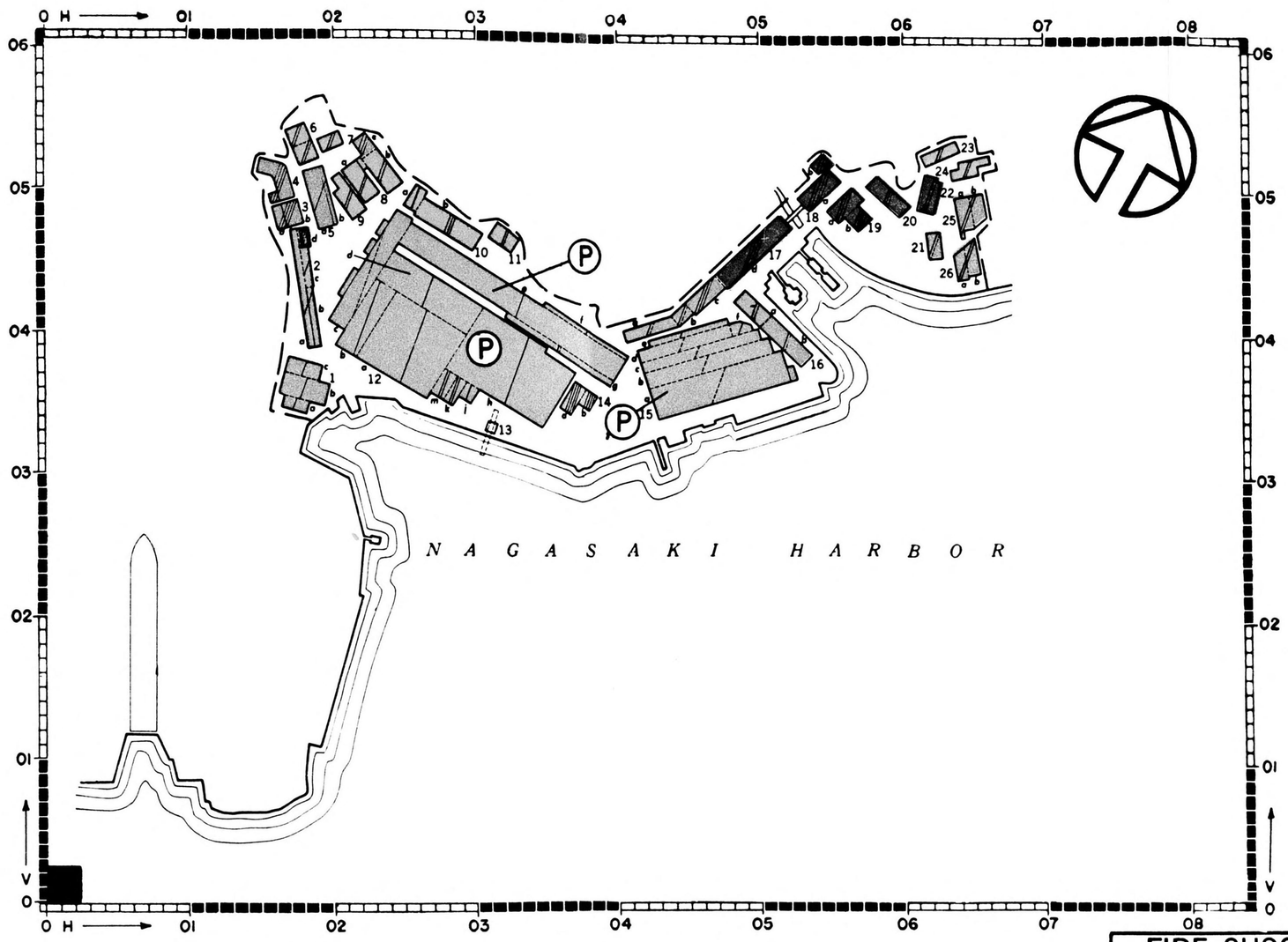
FIRE SUSCEPTIBILITY PLAN

SHEET	90:36-542–P5
DATE	14 December 1944
TARGET	90:36-542
COORDINATES	32°44′N 129°52′E
PHOTOGRAPHED	20 August 1944

AKUNOURA ENGINE WORKS

SCALE 1:6000

500 0 500 1000 Feet



LEGEND

Building No.	Function of building
1	Power plant—stack approx. 160′ high
2	Experimental tanks
3, 4	Hospital
5	Heavy machine shop
6	Machine shop
7	Unidentified
8	Probable machine shop
9	Machine shop
10a	Pattern shop
b	Copper working shop
11	Pattern storage
12 [1]	Main machine and outfitting
12a	South side—Electrical shop North side—Engine erecting shop
b	Copper working shop
c	Forging shop
d	Machine shop
e, f, g	Foundry
h	North side—Fitting machine shop South side—Engine erecting shop
i, k, m	Not identified
13	Hammerhead crane approx. 178′ high
14	Cafeteria
15 [1]	Boiler and boiler tube shop
16	Storage
17a, b, c [1]	Storage
17d, 18a	Administration
18b	Engineering Office
19a, b	Reported Laboratory. Administrative Bldg.
20	Engineering Office
21-26b	Storage

Note—Illustration No. 90:36-542 P5 indicates that plan area of all buildings is 880,600 square feet. This is in error and should be changed to 810,600 square feet.

(Based on F/A Report No. 18, AC/AS Intelligence, Photographic Division, dated 18 December 1944.)

[1] Primary buildings.

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Combined personnel of U.S. and British
Services for the use of Allied Forces

FIRE SUSCEPTIBILITY PLAN

PRIMARY BUILDINGS	(P)	FIRE WALL, CERTAIN	
SECONDARY BUILDINGS	(S)	FIRE WALL, PROBABLE	

BUILDINGS	CONTENTS
COMBUSTIBLE	NON-COMBUSTIBLE
NON-COMBUSTIBLE	SLIGHTLY COMBUSTIBLE
FIRE RESISTANT	MODERATELY COMBUSTIBLE
COMBINATION I.E. COMBUSTIBLE ROOF RESISTANT FLOORS	HIGHLY COMBUSTIBLE
WATER TANK (W)	EXTREMELY COMBUSTIBLE
	INTERMEDIATE VALUES

AREA IN SQ. FT.	PRIMARY	ALL BLDGS. SHOWN
NO. OF BUILDINGS	2	26
NO. OF FIRE DIVISIONS	17	57
PLAN AREA	507,800	880,600
TOTAL FLOOR AREA	507,800	1,077,800
SITE AREA	1,609,000	

PREPARED BY AERONAUTICAL CHART SERVICE, AAF.

REPRINT

File No. 731,542.7

TARGET NO. 90:36-544 (& 543)

APPROX. COORDINATES 32° 44' N 129° 51' E

PHOTOGRAPHED 21 AUG. 1944

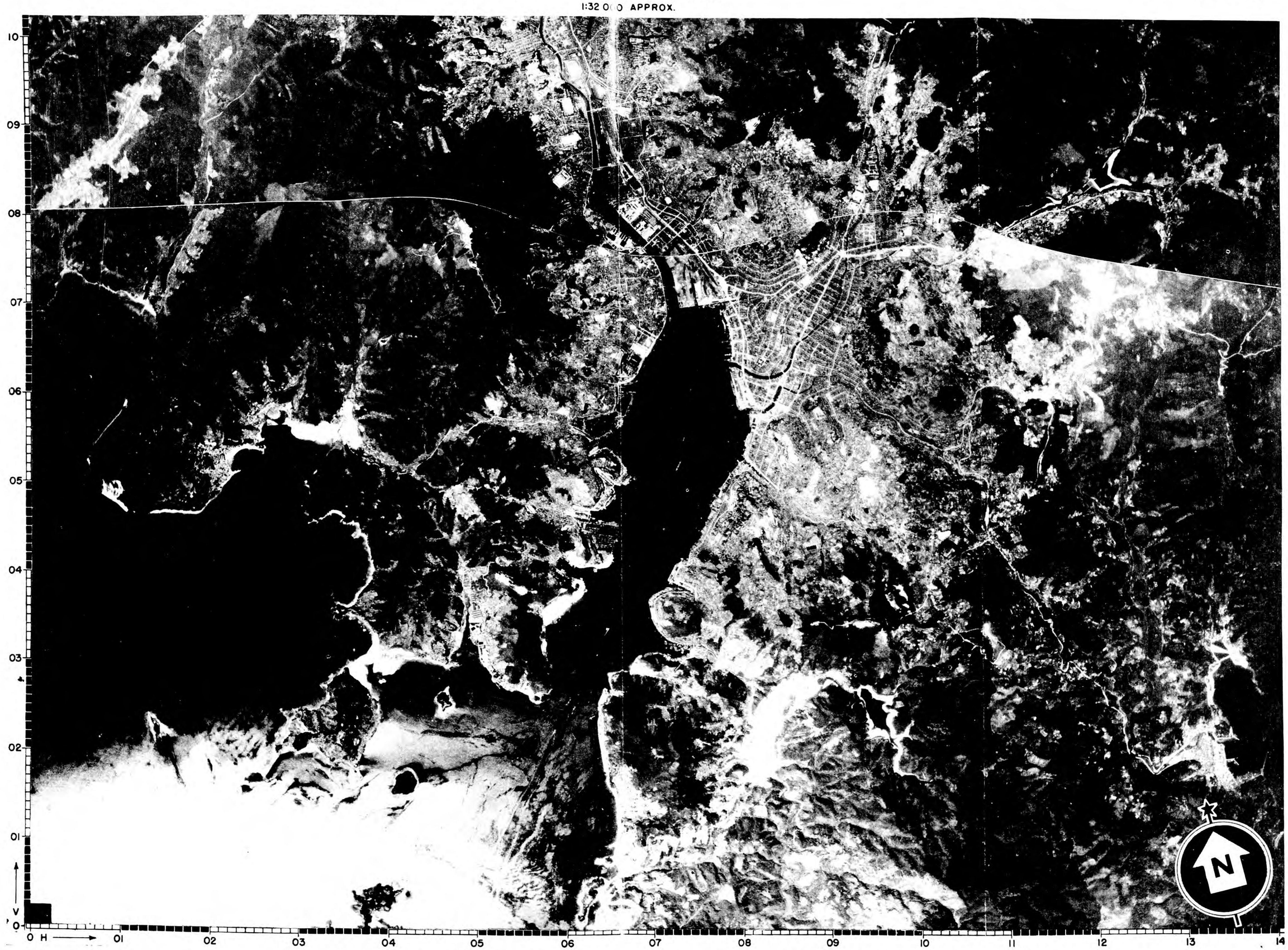
TATEGAMI SHIPYARD (& MITSUBISHI DOCKYARD) NAGASAKI, JAPAN

0 2000 4000 6000 FEET
0 1/2 1 MILE
1:32 000 APPROX.

ILLUSTRATION NO. 90:36-544 PI

SEPTEMBER 1944

CONFIDENTIAL



AC/AS, INTELLIGENCE

CONFIDENTIAL

File No. 731,544.52

TARGET NO. 90:36-544 (& 543)

APPROX. COORDINATES 32° 44' N 129° 51' E

PHOTOGRAPHED 21 AUG 1944

TATEGAMI SHIPYARD (& MITSUBISHI DOCKYARD) NAGASAKI, JAPAN

ILLUSTRATION NO. 90:36-544 P2

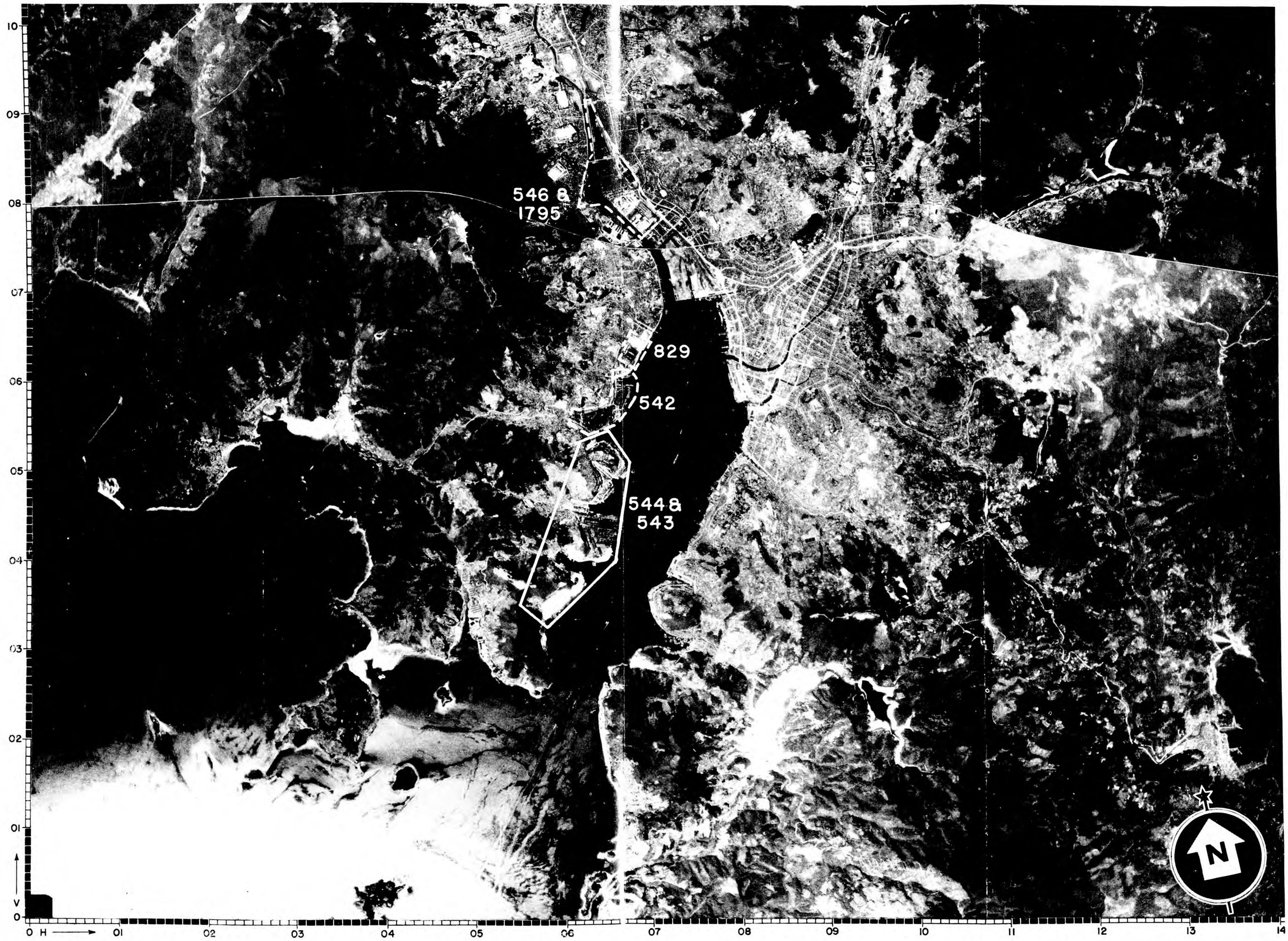
SEPTEMBER 1944

CONFIDENTIAL

0 2000 4000 6000 FEET

0 1/2 1 MILE

1:32 000 APPROX.



AC/AS, INTELLIGENCE

CONFIDENTIAL

File No. 731,544.54

TARGET NO. 90:36-544 (& 543)

TATEGAMI SHIPYARD
(& MITSUBISHI DOCKYARD)
NAGASAKI, JAPAN.

ILLUSTRATION NO. 90:36-544 P3

APPROX. COORDINATES 32° 44' N 129° 51' E

PHOTOGRAPHED 21 AUG. 1944

SEPTEMBER 1944

CONFIDENTIAL

0 500 1000 500 2000 2500 3000 FEET
0 1/4 1/2 MILE
1:6C O APPROX.

AC/AS, INTELLIGENCE

CONFIDENTIAL

File No. 731,544.56

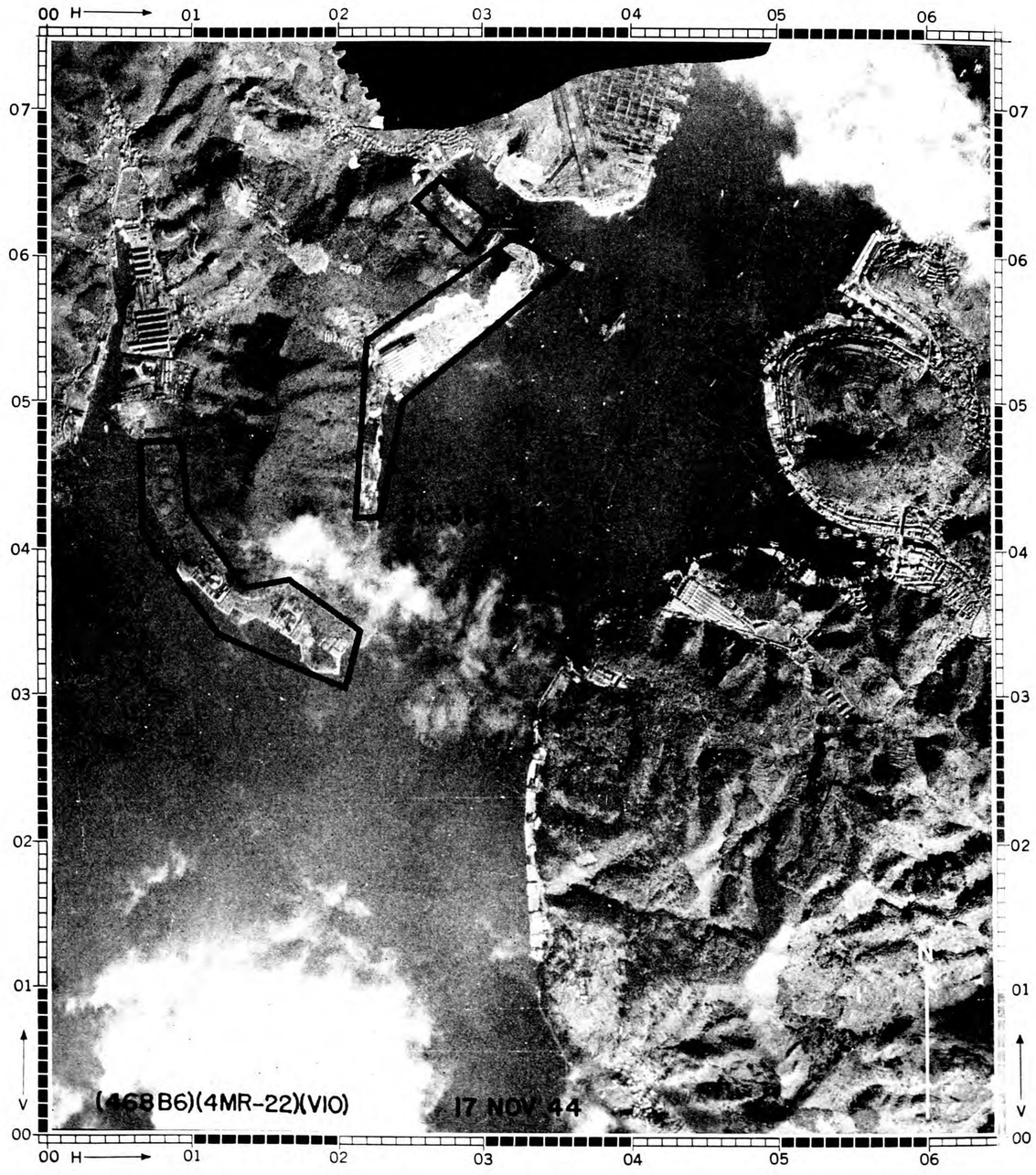
JOINT TARGET GROUP, WASHINGTON, D. C.
TARGET LOCATION SHEET

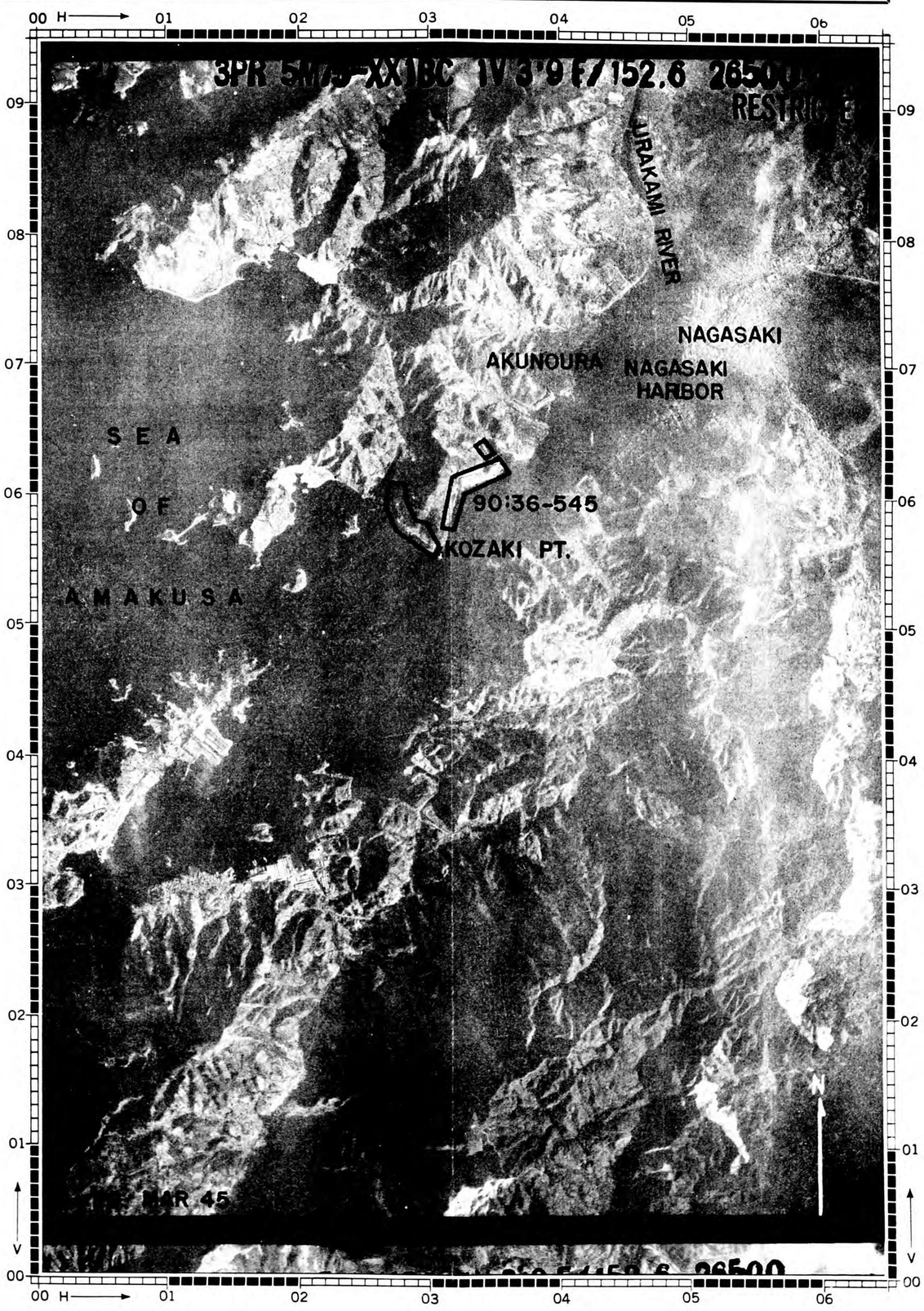
KOZAKI POINT OIL STORAGES
NAGASAKI JAPAN

SHEET	90:36-545–TL
DATE	18 May 1945
TARGET	90:36-545
CATEGORY	MILITARY STORES
COORDINATES	32°43'N 129°51'E
ALTITUDE	20 feet

SIGNIFICANCE:

New photographic interpretation reduces previous estimates, also based on photography. Current estimates: 14 surface tanks in 5 farms with a capacity of 446,000 barrels; 4 partially underground connecting tanks with a capacity of 60,000 barrels; total capacity 506,000 barrels.





LARGE SCALE ILLUSTRATION–SCALE APPROX.: 1:15,000

SMALL SCALE ILLUSTRATION–SCALE APPROX.: 1:53,000

PUBLISHED IN OFFICE OF AC/AS INTELLIGENCE, A.A.F., BY COMBINED PERSONNEL OF UNITED STATES AND BRITISH SERVICES FOR THE USE OF ALLIED FORCES.

TARGET NO. 90:36-546 (& 1795)

APPROX. COORDINATES 32° 45' N 129° 52' E

PHOTOGRAPHED 21 AUGUST 1944

MITSUBISHI STEEL & ARMS WORKS (& MITSUBISHI STEEL ROLLING MILL)

NAGASAKI, JAPAN

0 2000 4000 6000 FEET

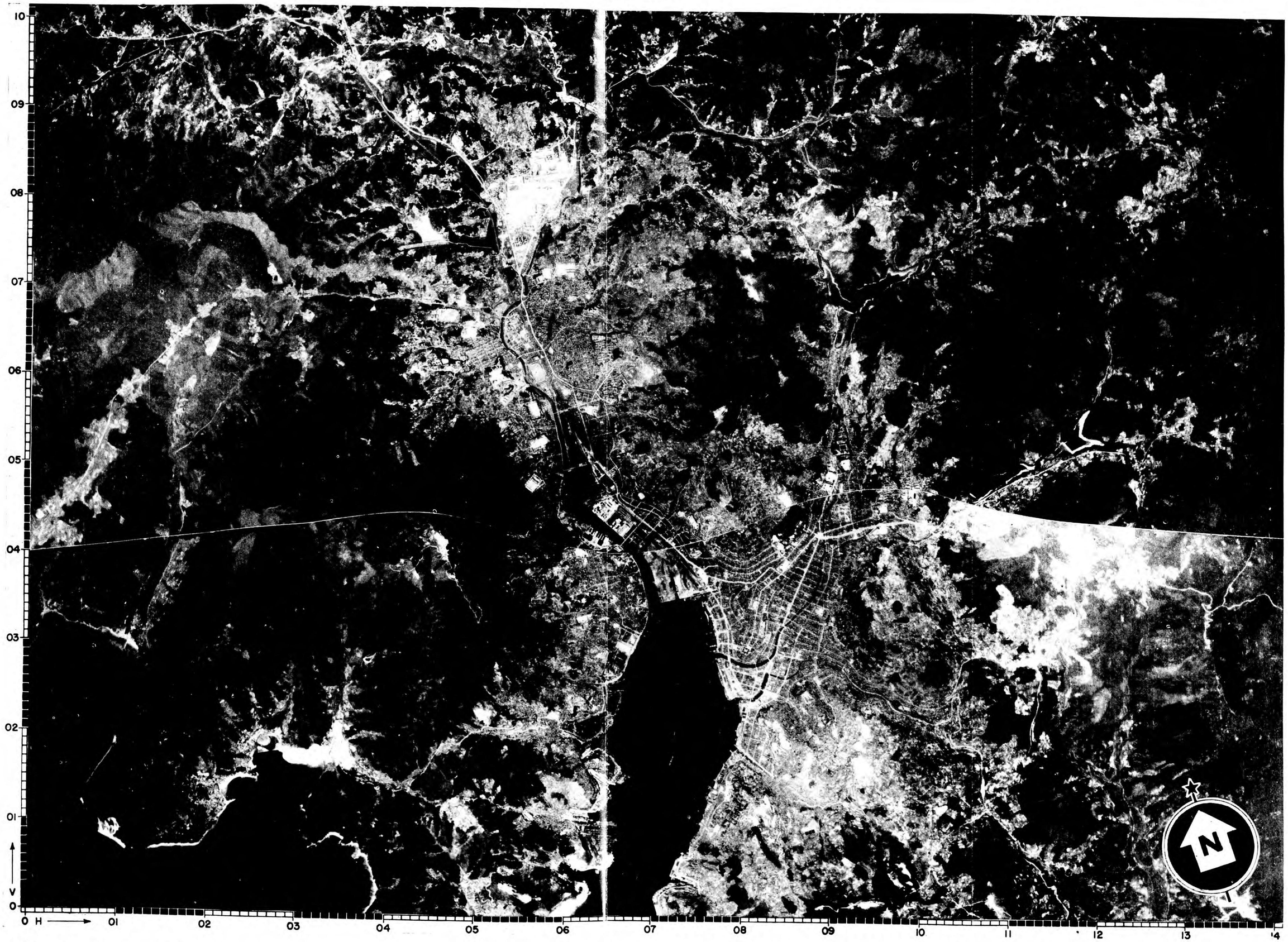
0 1/2 1 MILE

1 32 000 APPROX.

ILLUSTRATION NO. 9036-546 P I

SEPTEMBER 1944

CONFIDENTIAL



AC/AS, INTELLIGENCE

CONFIDENTIAL

File No. 731,546.52

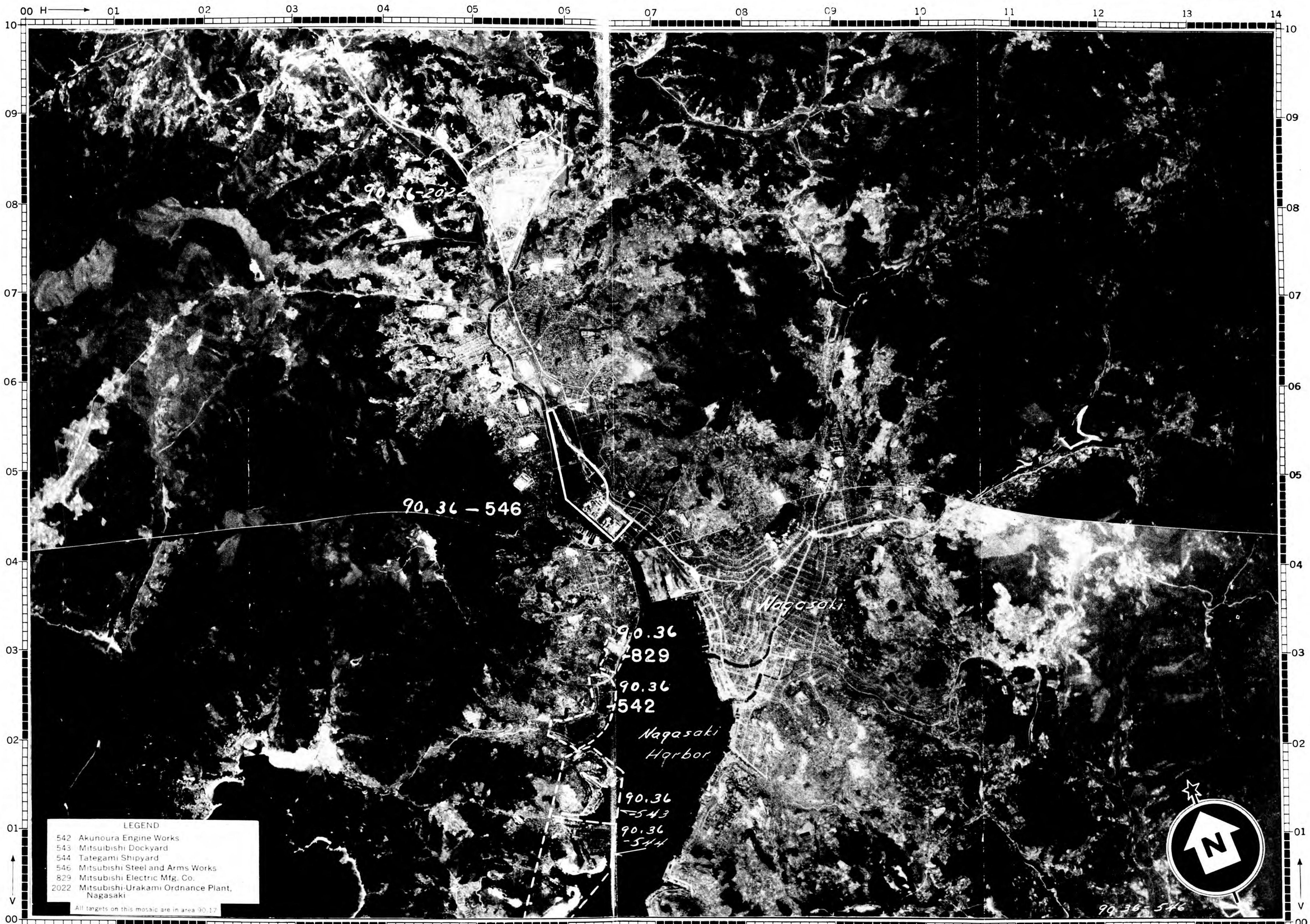
RESTRICTED

JOINT TARGET GROUP
WASHINGTON, D. C.

MITSUBISHI STEEL & ARMS WORKS
NAGASAKI JAPAN

0 2000 4000 6000 FEET
0 ½ 1 MILE
1: 12 000 APPROX.

SHEET 90:36-546 P2
DATE . . . . . 29 April 1945
TARGET 90:36-546
COORDINATES . . 32°45'N 129°52'E
PHOTOGRAPHED . . . 21 August 1944



LEGEND
542 Akunoura Engine Works
543 Mitsuibishi Dockyard
544 Tategami Shipyard
546 Mitsubishi Steel and Arms Works
829 Mitsubishi Electric Mfg. Co.
2022 Mitsubishi-Urakami Ordnance Plant, Nagasaki

All targets on this mosaic are in area 90.17

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RESTRICTED

File No. 731,546.54

TARGET NO. 90:36-546

MITSUBISHI STEEL AND ARMS WORKS
NAGASAKI, JAPAN

ILLUSTRATION NO. 90:36-546 P 3

APPROX. COORDINATES 32° 45' N 129° 52' E

PHOTOGRAPHED 20 AUGUST 1944

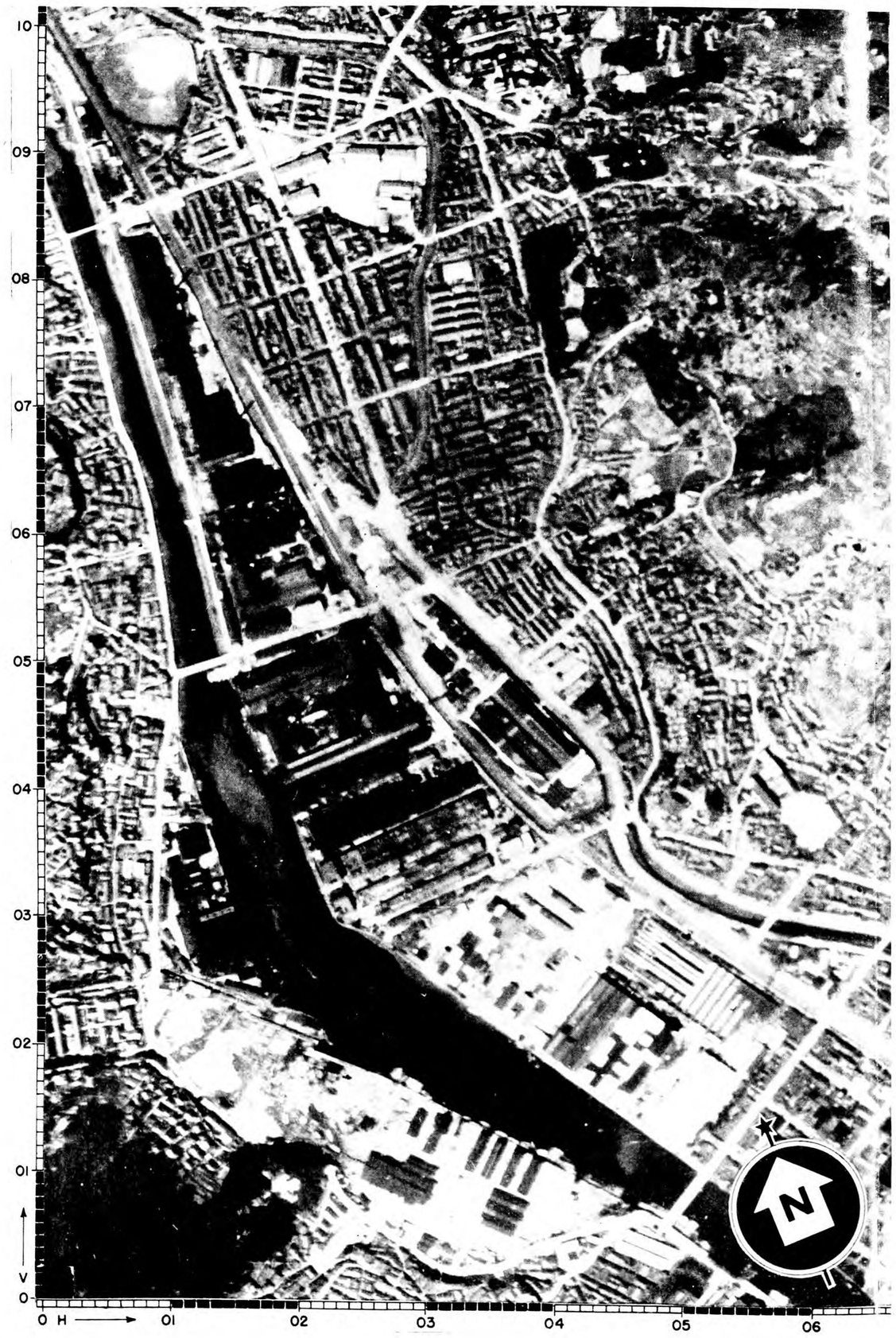
SEPTEMBER 1944

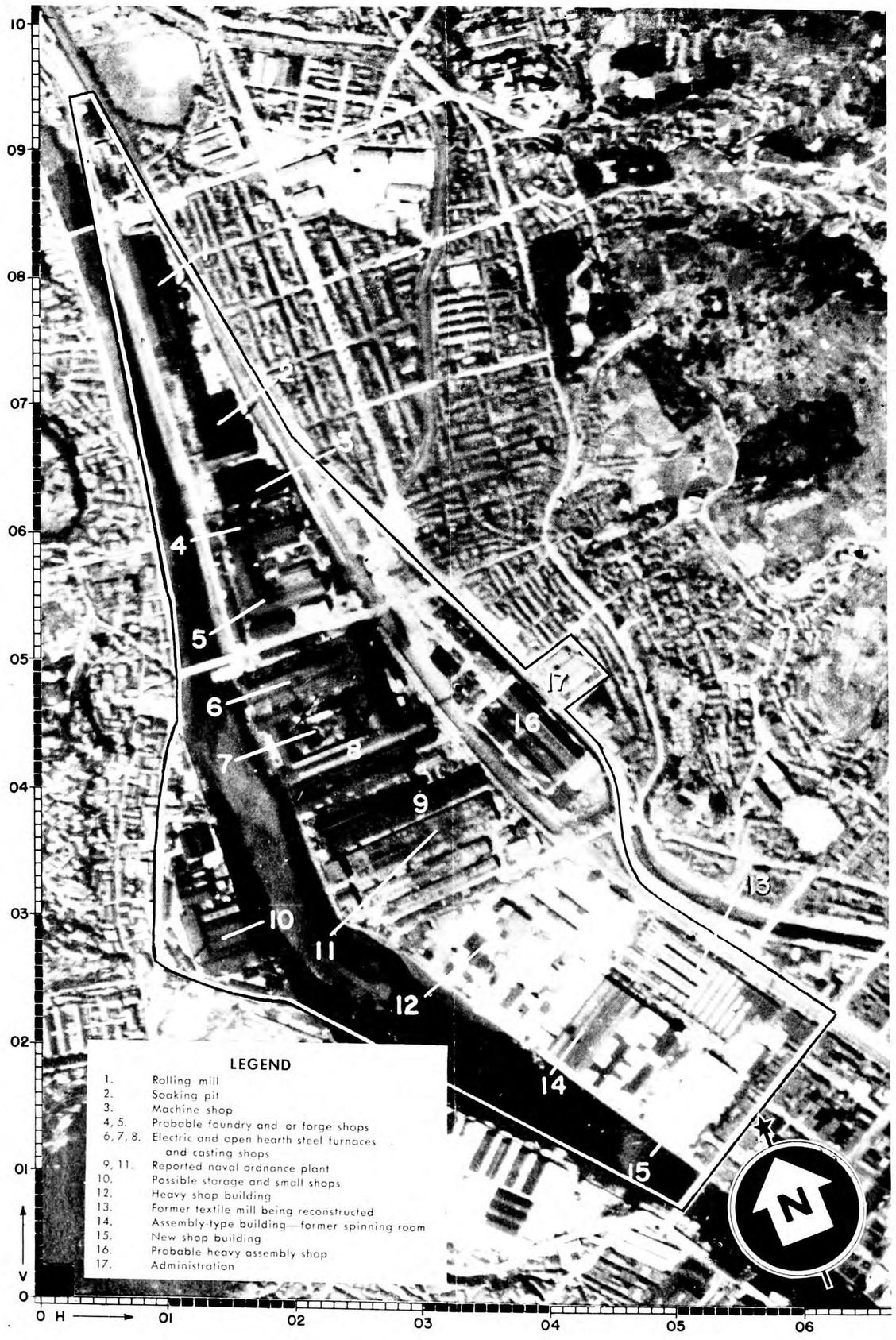
CONFIDENTIAL

0 500 1000 1500 2000 2500 3000 FEET

0 1/2 MILE

1:[illegible]00 APPROX.





LEGEND

1. Rolling mill
2. Soaking pit
3. Machine shop
4, 5. Probable foundry and or forge shops
6, 7, 8. Electric and open hearth steel furnaces and casting shops
9, 11. Reported naval ordnance plant
10. Possible storage and small shops
12. Heavy shop building
13. Former textile mill being reconstructed
14. Assembly-type building—former spinning room
15. New shop building
16. Probable heavy assembly shop
17. Administration

JOINT TARGET GROUP, WASHINGTON, D. C.

TARGET LOCATION SHEET

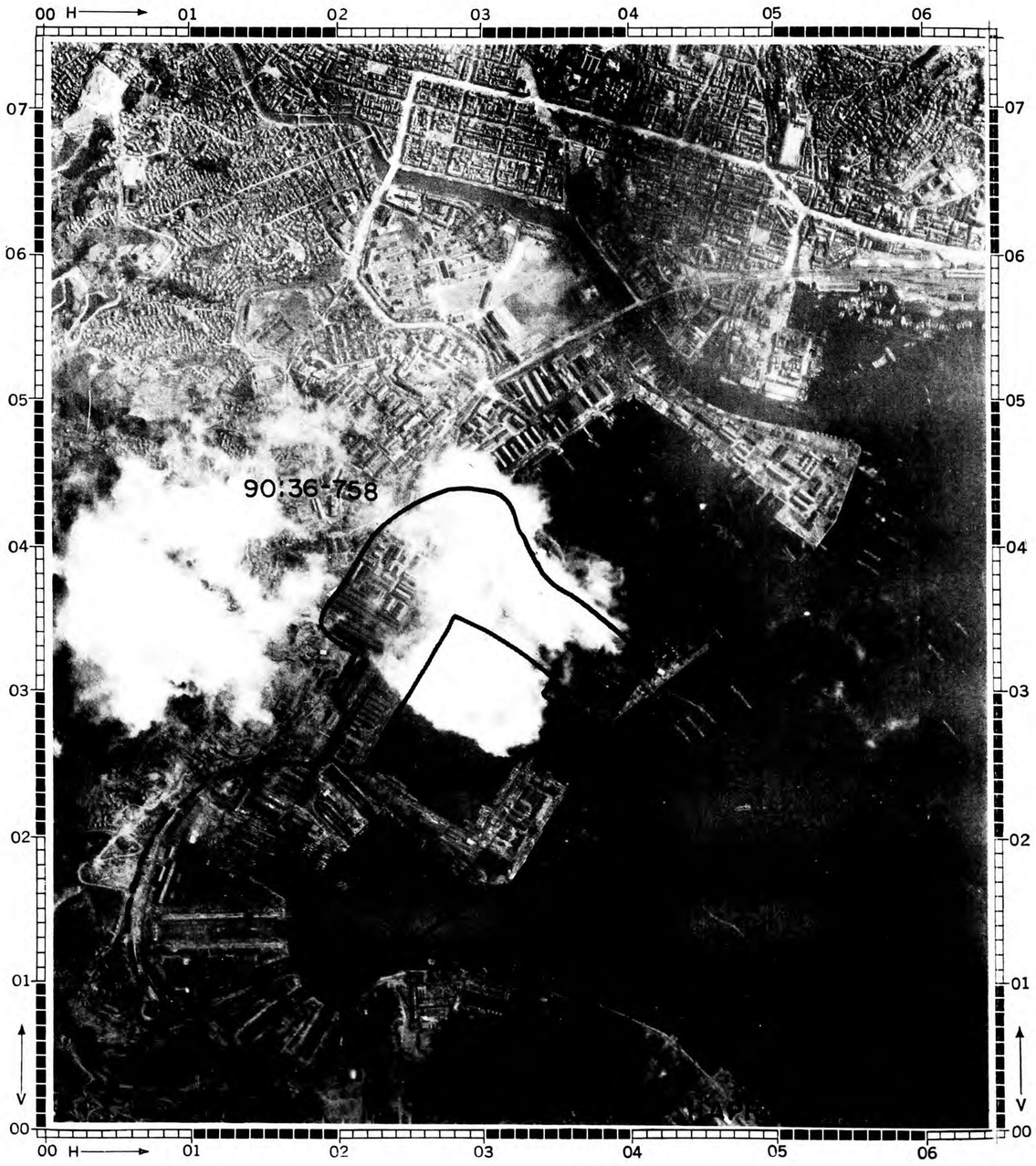
SASEBO NAVAL DOCKYARD

SASEBO JAPAN

SHEET	90:36-752—TL
DATE	30 May 1945
TARGET	90:36-752
CATEGORY	End Prdt. Ind.—ARMAMENT
COORDINATES	33°10'N 129°42'E
ALTITUDE	30 feet

SIGNIFICANCE:

Sasebo Naval Dockyard (TARGET 90:36-752) is one of the largest and most important navy yards in Japan, capable of handling the largest type naval vessel. The Naval Arsenal and Engineering Department (TARGET 90:36-758) is an important arsenal believed to produce engines, guns, naval mines, torpedoes, shell casings and other naval armament.



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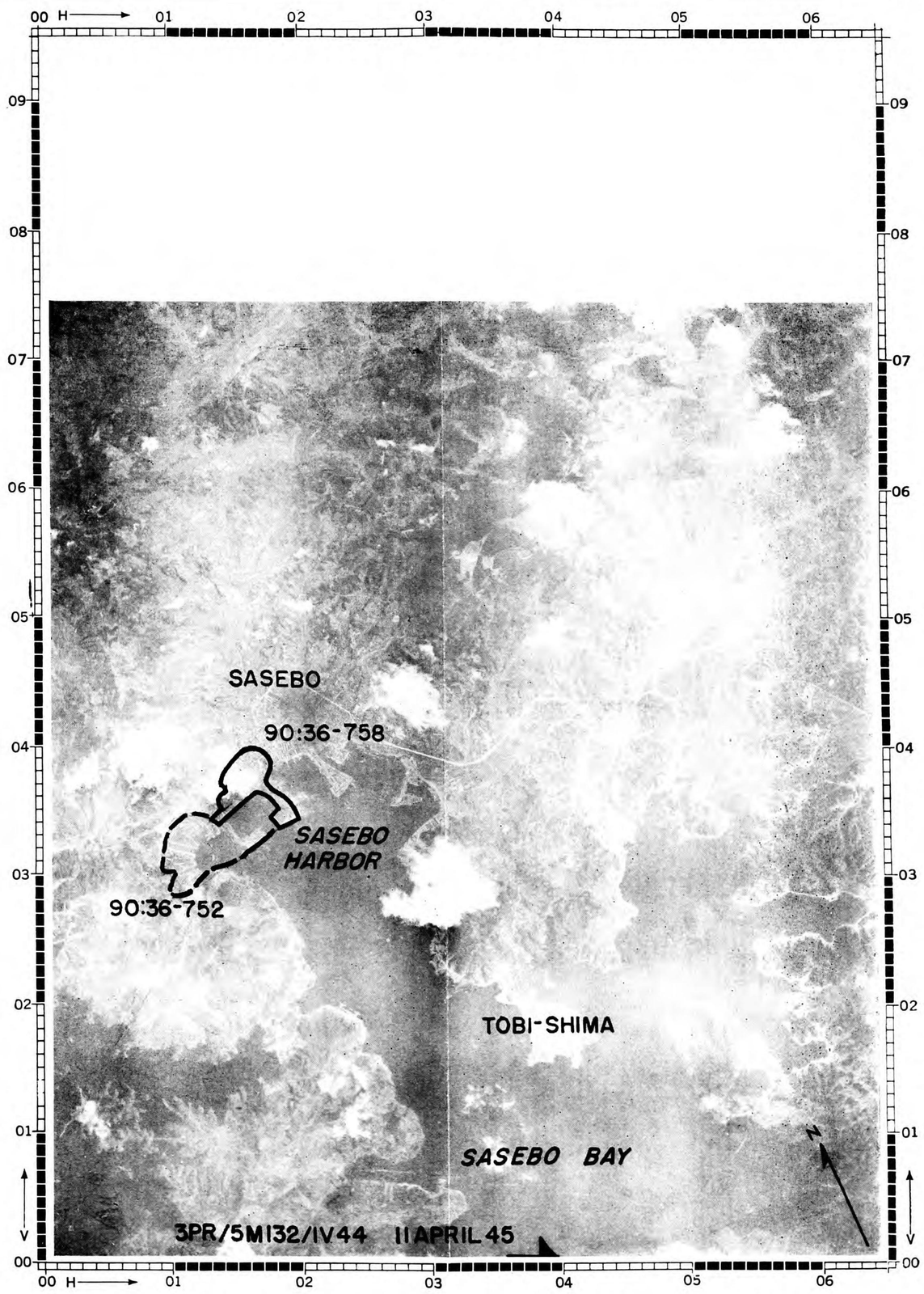

SMALL SCALE ILLUSTRATION—SCALE APPROX.: 1:60,000

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File No. 731,752.1

JOINT TARGET GROUP, WASHINGTON, D. C.
TARGET LOCATION SHEET

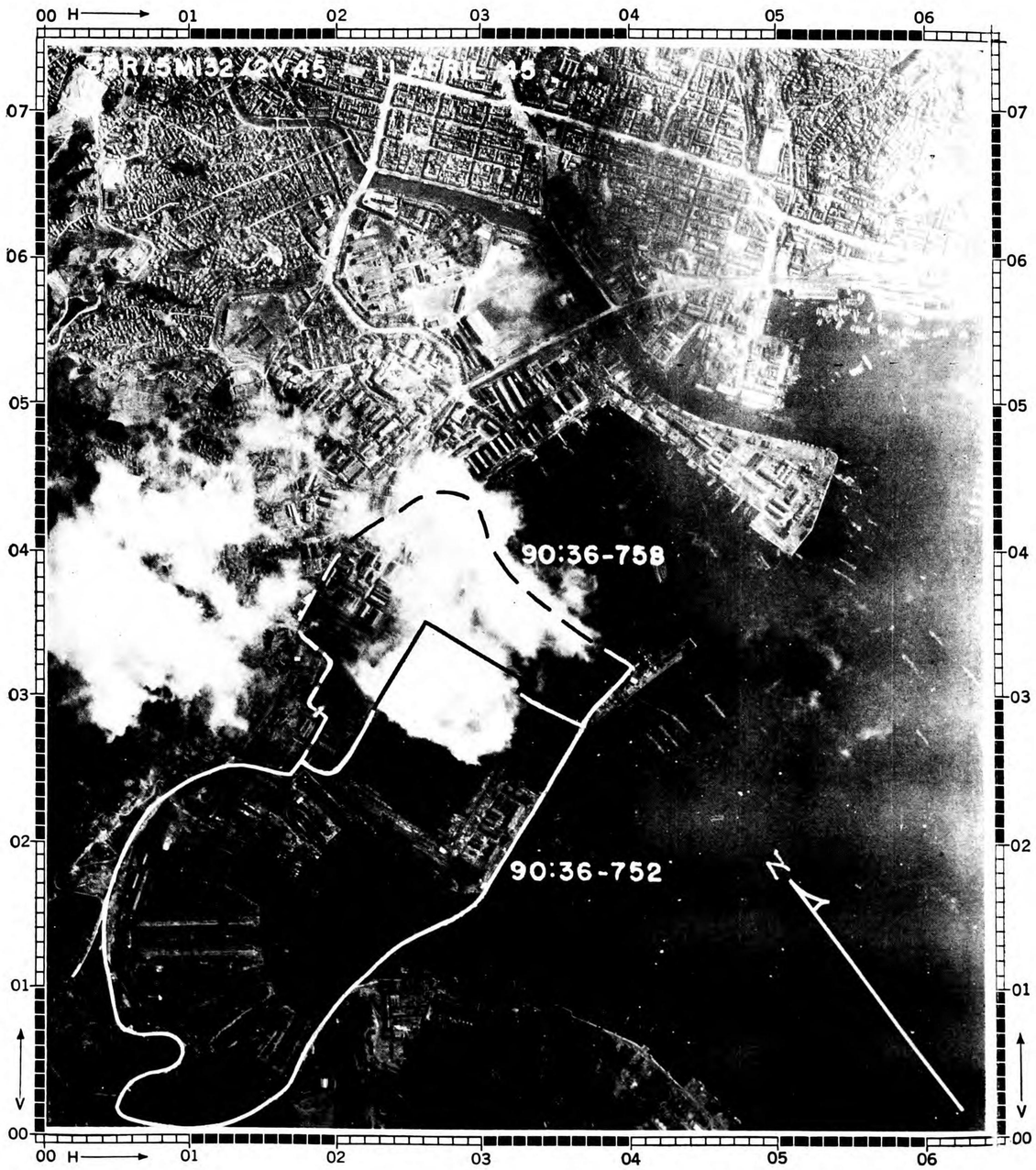
SASEBO NAVAL ARSENAL AND ENGINEERING DEPARTMENT

SASEBO JAPAN

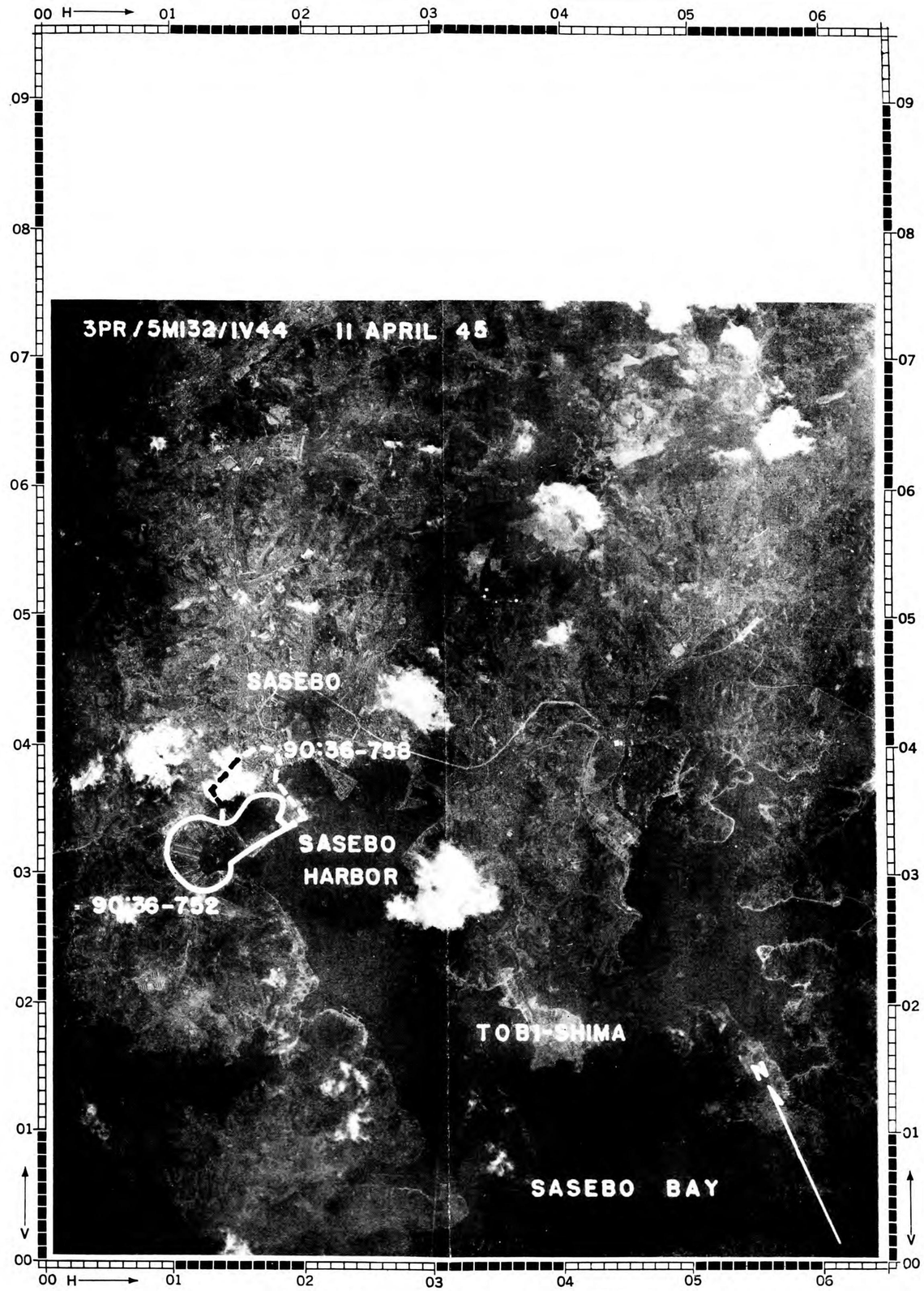
SHEET	90:36-758–TL
DATE	30 May 1945
TARGET	90:36-758
CATEGORY	End Prdt. Ind.–ARMAMENT
COORDINATES	33°10'N 129°42'E
ALTITUDE	30 feet

SIGNIFICANCE:

Sasebo Naval Dockyard (Target 90:36-752) is one of the largest and most important navy yards in Japan, capable of handling the largest type naval vessel. The Naval Arsenal and Engineering Department (TARGET 90:36-758) is an important arsenal believed to produce engines, guns, naval mines, torpedoes, shell casings and other naval armament.



LARGE SCALE ILLUSTRATION–SCALE APPROX.: 1:15,000



SMALL SCALE ILLUSTRATION–SCALE APPROX.: 1:60,000

PUBLISHED IN OFFICE OF AC/AS INTELLIGENCE, A.A.F., BY COMBINED PERSONNEL OF UNITED STATES AND BRITISH SERVICES FOR THE USE OF ALLIED FORCES.

File No. 731,758.1

TARGET NO. 90:36-829

APPROX. COORDINATES 32° 45′ N 124° 52′ E

PHOTOGRAPHED 21 AUGUST 1944

MITSUBISHI LECTRIC MFG. CO.

NAGA AKI, JAPAN

0 2000 4000 6000 FEET

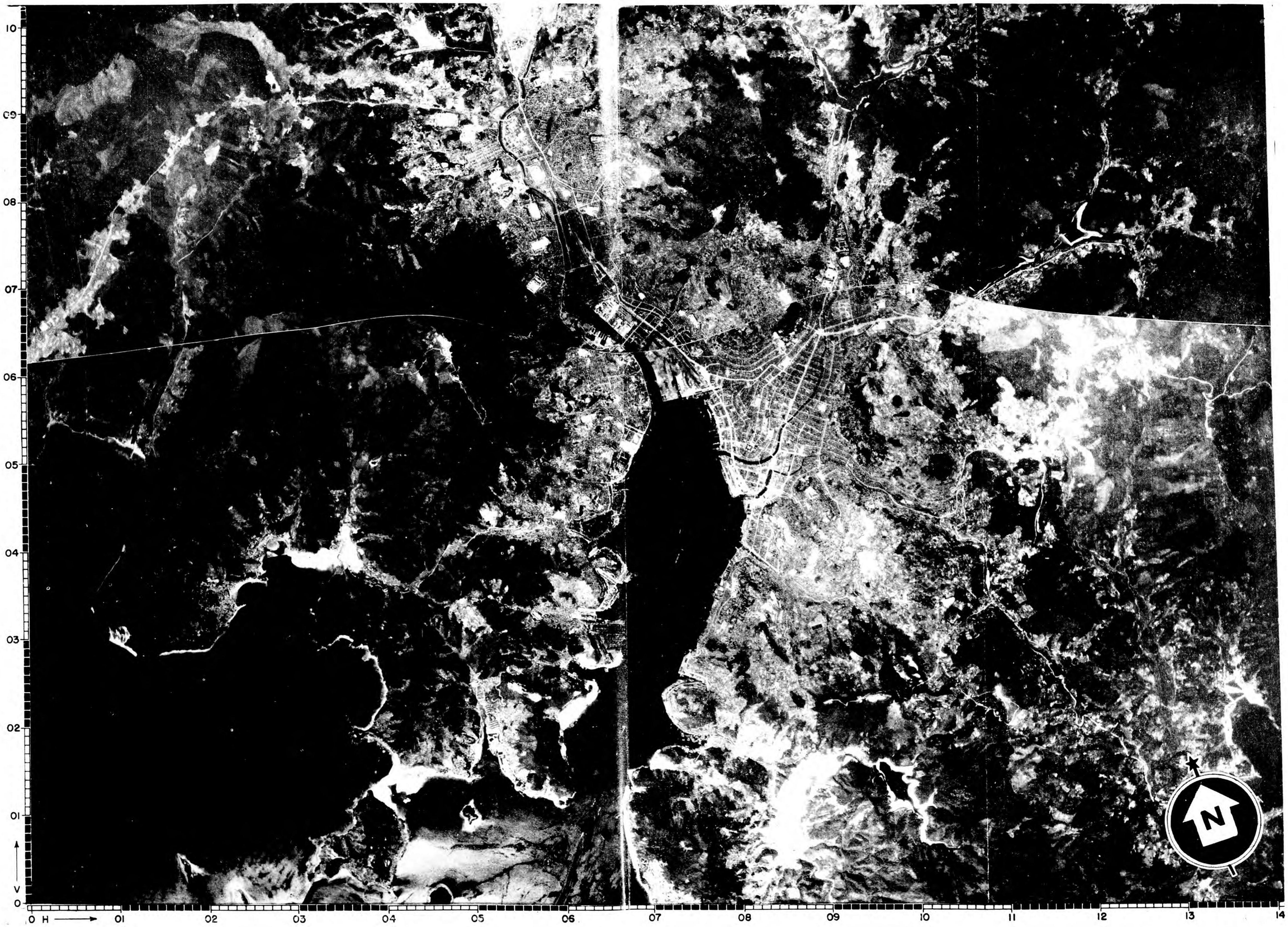
0 1 MILE

1:3 00 APPROX.

ILLUSTRATION NO. 90:36-829 P1

SEPTEMBER 1944

CONFIDENTIAL



AC/AS, INTELLIGENCE

CONFIDENTIAL

File No. 731,829.52

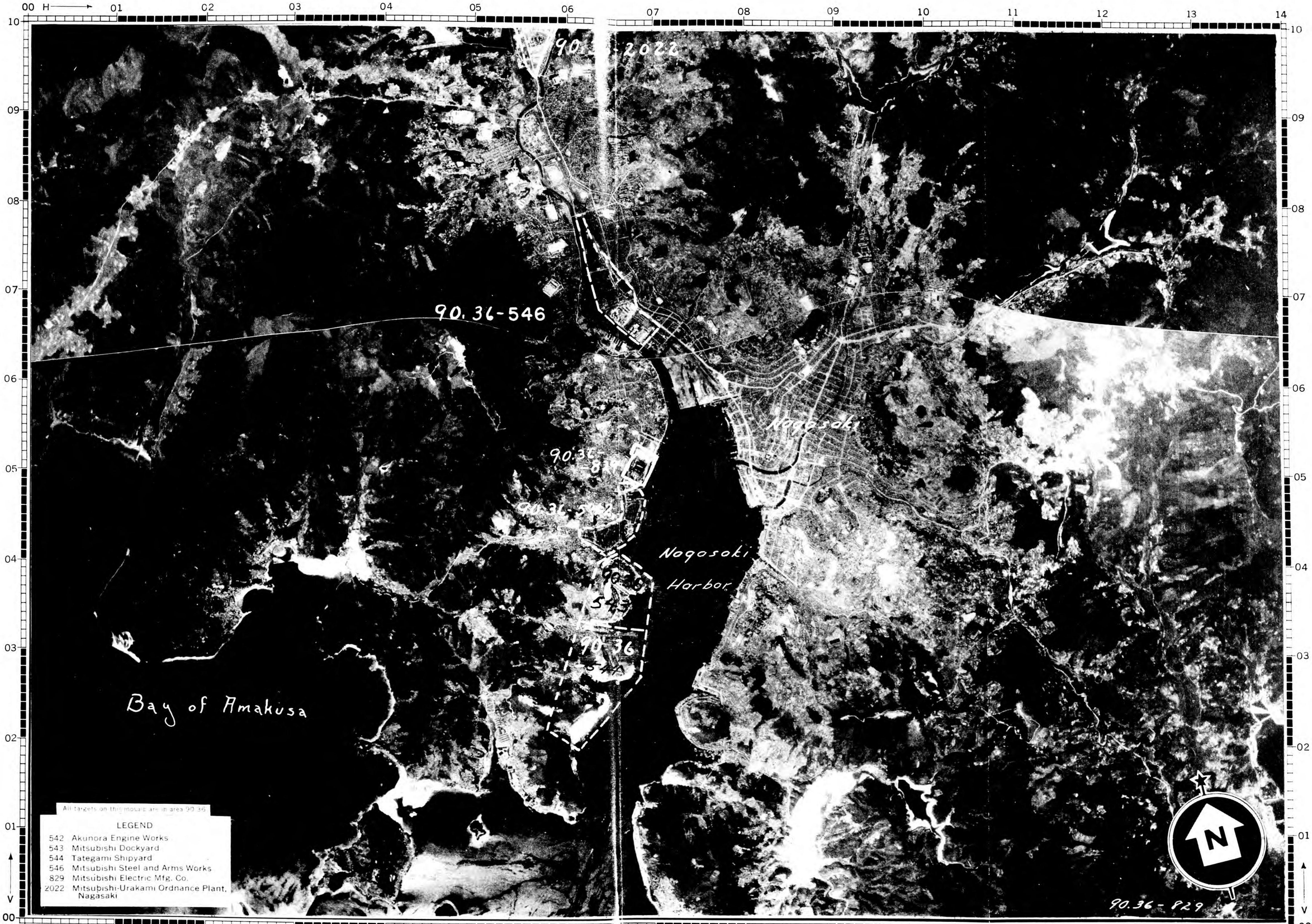
JOINT
TARGET
GROUP
WASHINGTON, D. C.

MITSUBISHI ELECTRIC MFG. CO.
NAGASAKI JAPAN

0 2000 4000 6000 FEET
0 ½ 1 MILE
1:32 000 APPROX.

RESTRICTED

SHEET	90:36-829 P2
DATE	29 April 1945
TARGET	90:36-829
COORDINATES	32°45'N 124°52'E
PHOTOGRAPHED	21 August 1944



All targets on this mosaic are in area 90.36

LEGEND

542 Akunora Engine Works
543 Mitsubishi Dockyard
544 Tategami Shipyard
546 Mitsubishi Steel and Arms Works
829 Mitsubishi Electric Mfg. Co.
2022 Mitsubishi-Urakami Ordnance Plant, Nagasaki

REPRODUCTION

PUBLISHED IN OFFICE OF AC/AS INTELLIGENCE, AAF, BY COMBINED PERSONNEL OF UNITED STATES AND BRITISH SERVICES FOR THE USE OF ALLIED FORCES.

File No. 731,829.54

TARGET NO. 90:36-829

MITSUBISHI ELECTRIC MFG. CO.
NAGASAKI, JAPAN

ILLUSTRATION NO. 90:36-829 P 3

APPROX. COORDINATES 32° 45' N 129° 52' E

PHOTOGRAPHED 20 AUGUST 1944

SEPTEMBER 1944

CONFIDENTIAL

0 500 1000 1500 2000 2500 3000 FEET
0 ½ MILE
1:6000 APPROX.

REPRINT

JOINT TARGET GROUP, WASHINGTON, D. C.

TARGET INFORMATION SHEET

SHEET . . . . . 90:36-834—TI
DATE 14 September 1944
PAGE 1

TARGET 90:36-834
OBJ. AREA 90:36
OBJ. FOLDER 90:36, 90:39
CATEGORY End Prdt. Ind.—AIRCRAFT

LAT. . . . . 33° 09′ N
LONG. . . . . 129° 45′ E
ALT. . . . . 10 feet

ALL PREVIOUS SHEETS CANCELLED

SASEBO AIRCRAFT FACTORY

SASEBO JAPAN

SIGNIFICANCE

The Sasebo Naval Aircraft Factory is a medium size assembly and parts plant. Operated by the 21st (Sasebo) Naval Air Arsenal, it has assembled PETES and produced engine mounts and small parts.

LOCATION

The plant is located at the SE outskirts of Sasebo city and about 2 miles SE of the Sasebo Naval Base. The Sasebo Naval Air Station is located 1½ miles to the SSW and extensive groups of revetted and underground naval storages are located to the E and NE. The plant is bordered on the NNE by a small river.

REPRINT

DESCRIPTION

The factory occupies a rectangular site, measuring 2500 by 1100 ft., with the long axis lying N-S. The plant consists of some 25 shop and hangar-type buildings as well as a number of administration and small storage buildings. Four shop buildings along the W side of the compound, averaging about 160 ft square, and six hangar-type buildings to the N, averaging about 100 ft square, appear to comprise the heart of the installation. Of the remaining buildings, only two, in the north-central part, are of significant size. A large assembly or shop building formerly situated near the center of the compound was dismantled recently.

Several medium size shop and storage buildings are located along the shore to the S and NE across the river. Photo cover of June 1944 indicates that additional ground is being levelled to the N, possibly for expansion of the plant. There is also evidence of additional construction under way in the center of the plant compound. Available intelligence is inadequate for appraisal of the function of individual units.

CRITICAL POINTS

Accurate evaluation of the character and relative importance of the various units of this installation will depend on availability of more complete intelligence.

ADDITIONAL INFORMATION

While this plant is considered of secondary importance in terms of the whole Japanese aircraft industry, its present status has not been definitely established. Although general intelligence has referred to the production of aircraft engines either at this plant or at the nearby Sasebo Naval Arsenal, available direct evidence indicates that PETES assembled here have been equipped with Mitsubishi engines, presumably manufactured elsewhere. The plant is believed to be affiliated with the new, large Omura Aircraft Factory (AAF TARGET 1627).

The Sasebo Naval Air Station is a large and well-equipped patrol and naval pilot training base. A large group of shop buildings at the NW end is believed to constitute a major repair depot. A second aircraft depot, for repair and overhaul of naval aircraft, has been reported at the naval base. It has not been possible to determine whether or not the Sasebo Naval Aircraft Factory is directly integrated into the repair activity of these depots.

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TARGET NO. 90:36–834

APPROX. COORDINATES 33° 09' N 129° 45' E

PHOTOGRAPHED 18 JUNE 1944

SASEBO AIRCRAFT FACTORY

SASEBO, JAPAN

0 2000 4000 6000 FEET

0 ½ 1 MILE

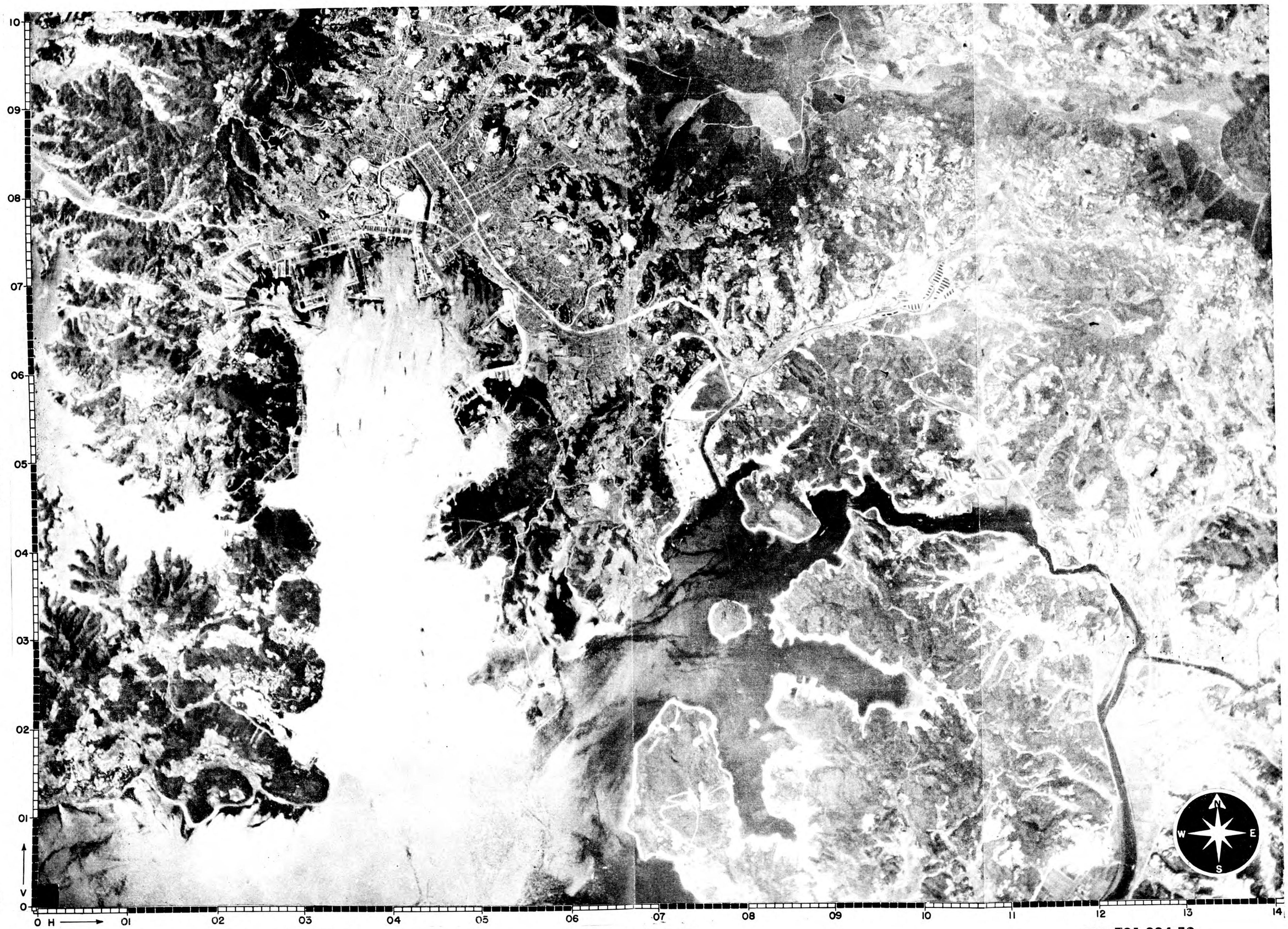
1:32 000 APPROX.

ILLUSTRATION NO. 90:36–834 P1

12 SEPTEMBER 1944

RESTRICTED

REPRINT



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RESTRICTED

FILE NO. **731,834.52**

TARGET NO. 90:36-834

SASEBO AIRCRAFT FACTORY
SASEBO, JAPAN

ILLUSTRATION NO. 90:36-834 P3

APPROX. COORDINATES 33° 09' N 129° 45' E

PHOTOGRAPHED 12 JUNE 1944

12 SEPTEMBER 1944

CONFIDENTIAL

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0 1/4 1/2 MILE
1:6000 APPROX.

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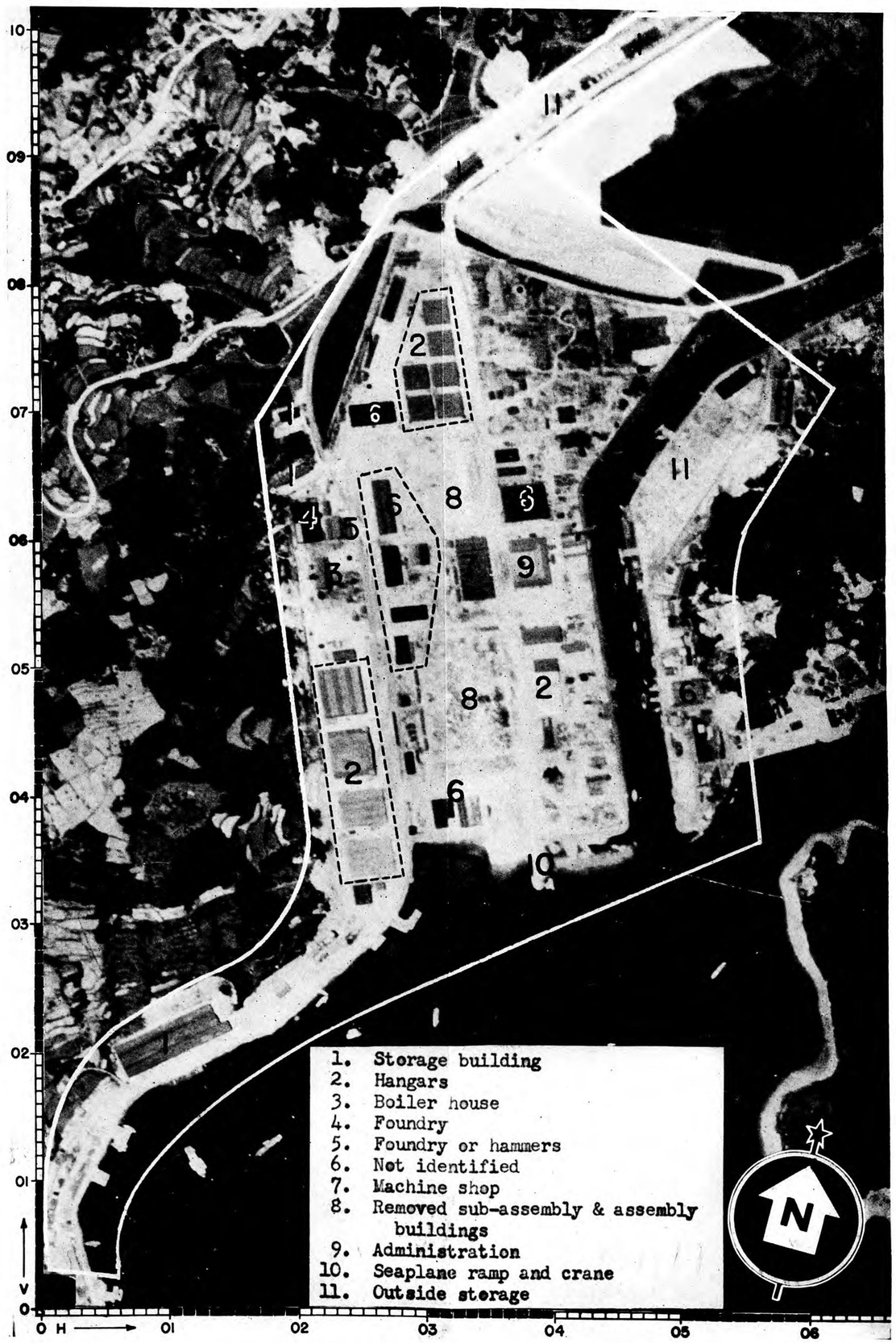


AC/AS, INTELLIGENCE

CONFIDENTIAL

File No. 731,834.56

JOINT TARGET GROUP, WASHINGTON, D. C.

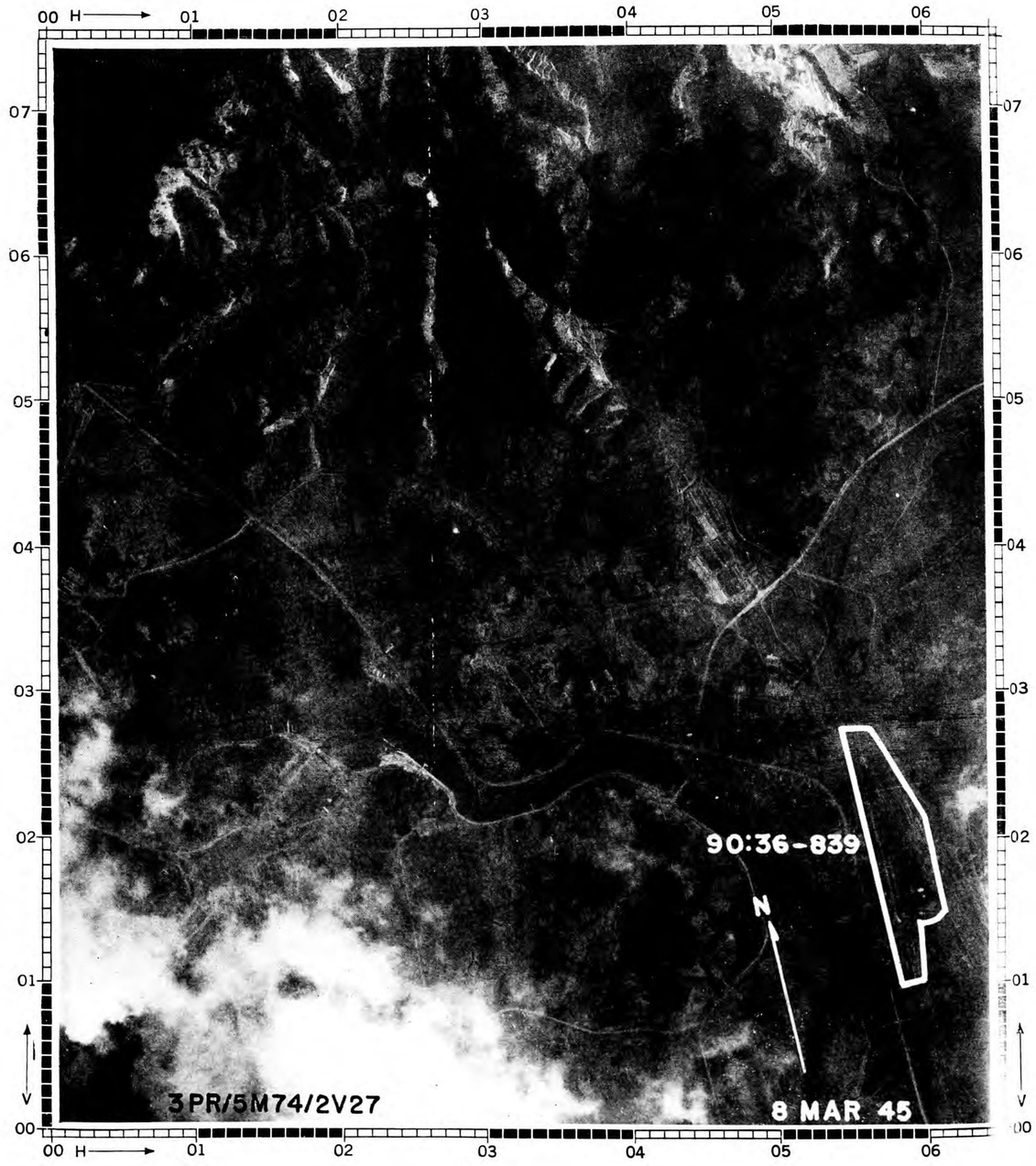
TARGET LOCATION SHEET

HAIKI RR TERMINAL
HAIKI JAPAN

SHEET . . . . . 90:36-839—TL
DATE . . . . . 31 May 1945
CATEGORY . . . . . Bsc. Serv. & Utly.—ROAD & RAIL TRANSPT.
COORDINATES . . . . . 33°08'N 129°48'E
ALTITUDE . . . . . 20 feet

SIGNIFICANCE:

Junction of the N-S Omura Line, connecting Nagasaki and Sasebo and the E-W line from Tosu to Sasebo. The yard is of local importance but would be an objective in any attack designed to paralyze rail traffic in the northwestern peninsula of Kyushu. Roundhouse. Yard dimensions, 2400′ x 480′. Area about 900,000 square feet.



LARGE SCALE ILLUSTRATION—SCALE APPROX.: 1:14,000

SMALL SCALE ILLUSTRATION—SCALE APPROX.: 1:59,000

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File No. 731,839.1

TARGET NO. 90:36–1627

APPROX. COORDINATES 32° 55' N 129° 56' E

PHOTOGRAPHED 21 AUGUST 1944

OMURA AIRCRAFT FACTORY
OMURA, JAPAN

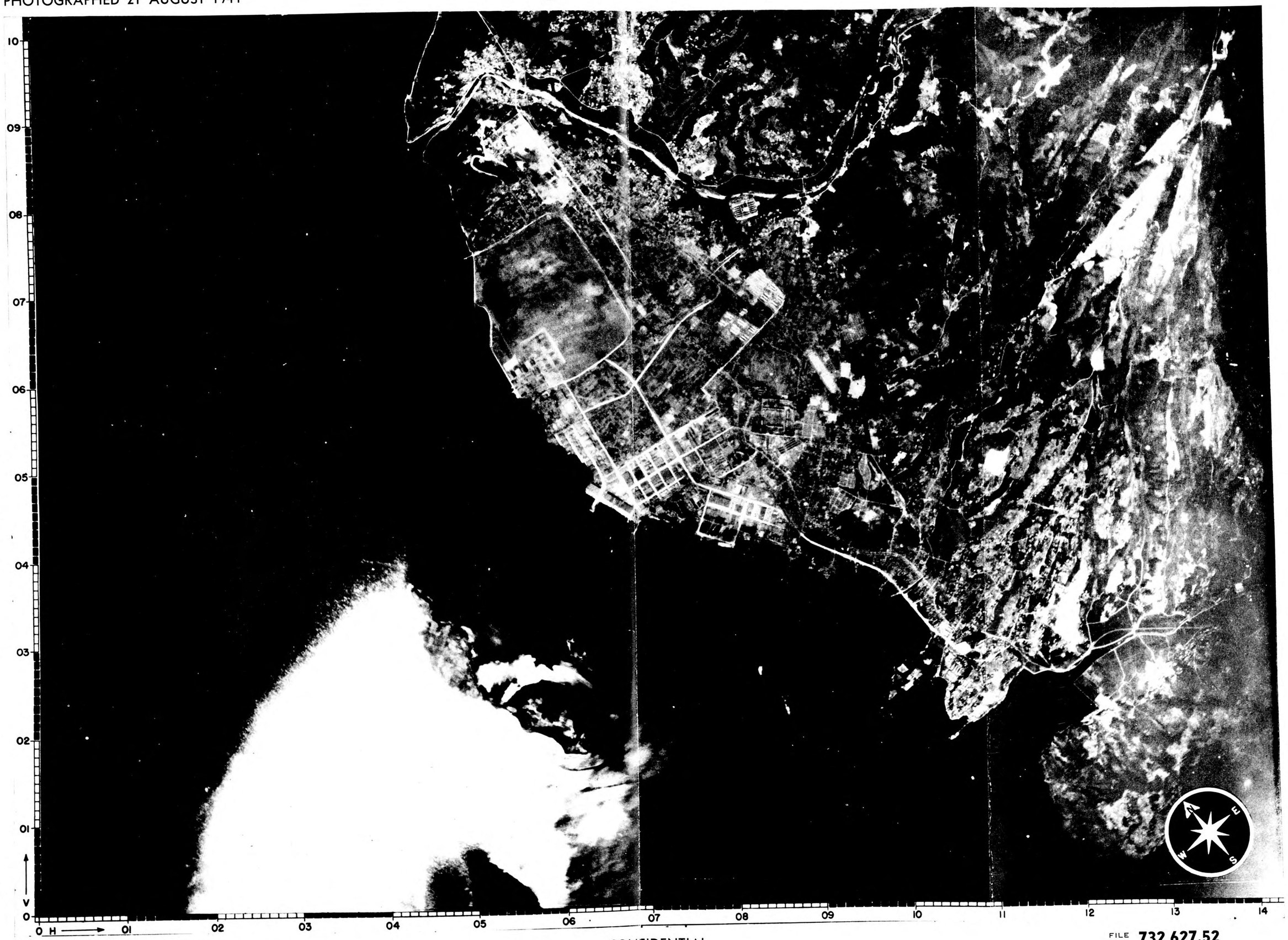
0 2000 4000 6000 FEET
0 ½ 1 MILE

1:32 000 APPROX

ILLUSTRATION NO. 90:36–1627 P1

7 SEPTEMBER 1944

CONFIDENTIAL



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FILE NO **732,627.52**

RESTRICTED

JOINT TARGET GROUP
WASHINGTON, D. C.

OMURA AIRCRAFT FACTORY
OMURA JAPAN

0 2000 4000 6000 FEET
0 ½ 1 MILE
1:32 000 APPROX.

SHEET 90:36-1627 P2
DATE . . . . . 29 April 1945
TARGET 90:36-1627
COORDINATES . . . 32°55'N 129°56'E
PHOTOGRAPHED . . . 21 August 1944

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RESTRICTED

File No. 732,627.54

TARGET NO. 90:36-1627

APPROX. COORDINATES 32° 55' N 129° 56' E

PHOTOGRAPHED 21 AUGUST 1944

OMURA AIRCRAFT FACTORY

OMURA JAPAN

0 500 1000 1500 2000 2500 3000 FEET

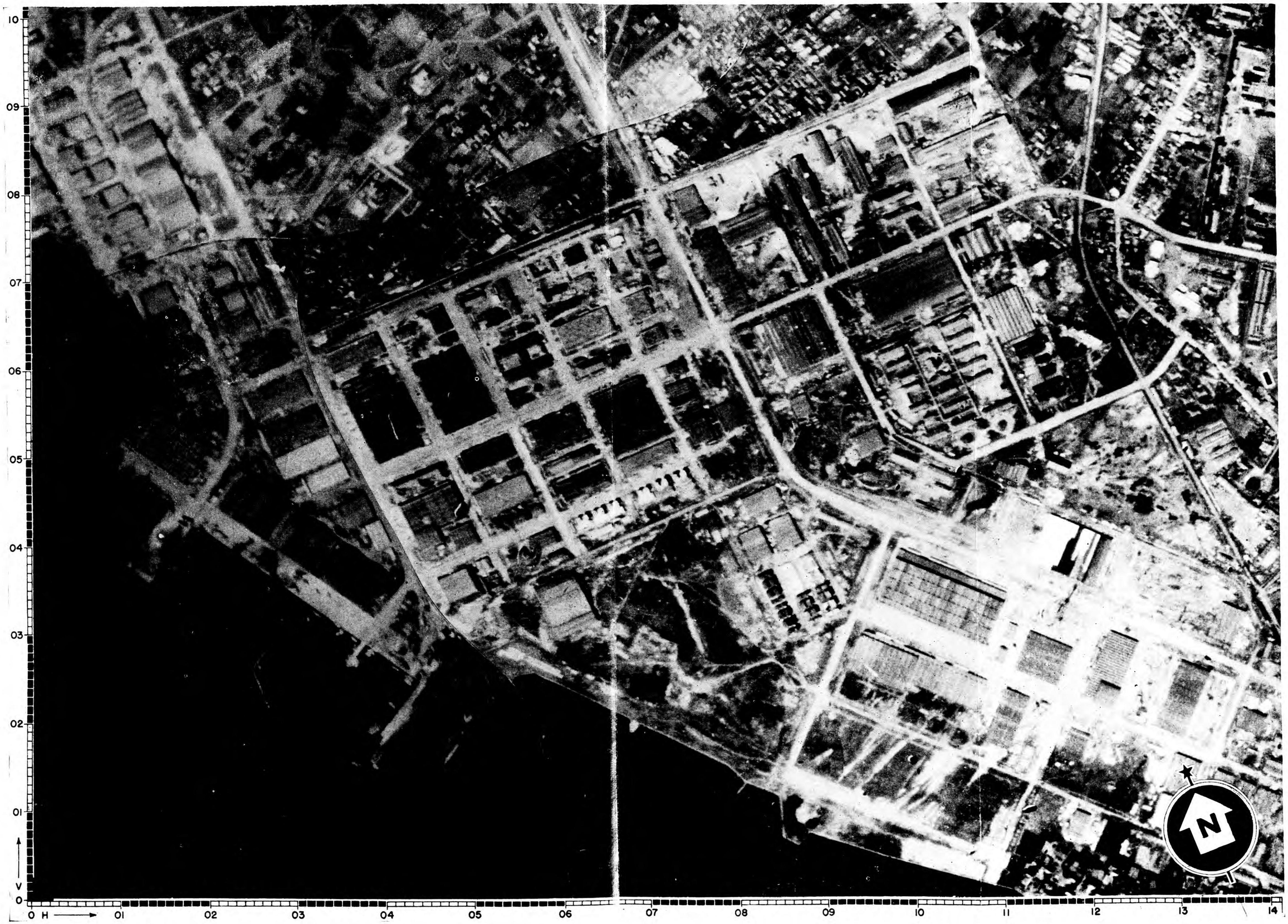
0 1/4 1/2 MILE

1:6000 APPROX.

ILLUSTRATION NO. 90:36-1627 P3A

ISSUED SEPT. 1944

CONFIDENTIAL



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AC/AS, INTELLIGENCE

CONFIDENTIAL

File No. 732,627.561

TARGET NO. 90:36–1627

APPROX. COORDINATES 32° 55' N 129° 56' E

PHOTOGRAPHED 21 AUGUST 1944

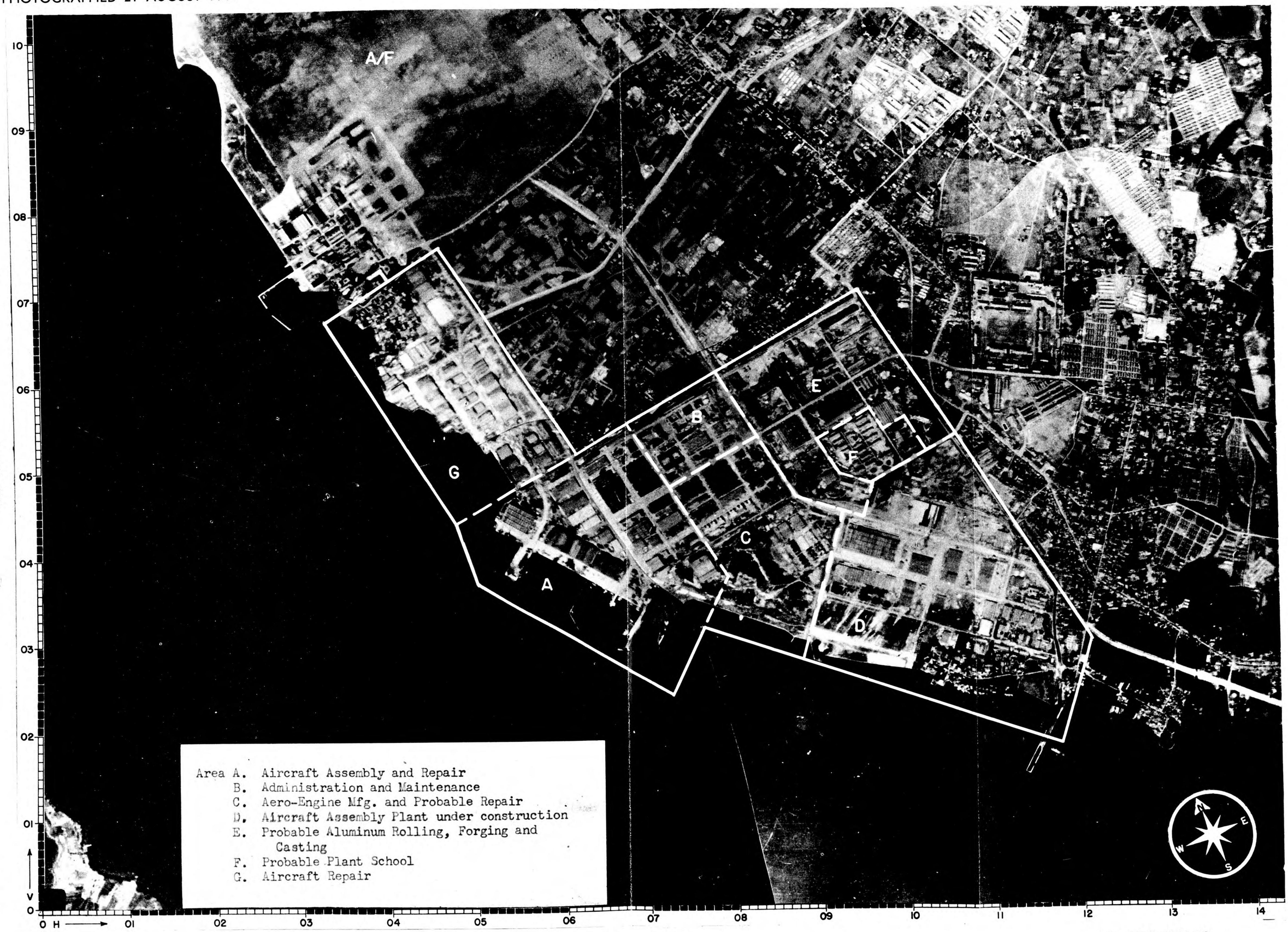
OMURA AIRCRAFT FACTORY
OMURA, JAPAN

0 1000 2000 3000 4000 5000 6000 FEET
0 ½ 1:12 000 APPROX. 1 MILE

ILLUSTRATION NO. 90:36–1627 P4

7 SEPTEMBER 1944

CONFIDENTIAL



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FILE No. **732,627.58**

TARGET NO. 90:36-1627

APPROX. COORDINATES 32° 55' N 129° 56' E

PHOTOGRAPHED 21 AUGUST 1944

OMURA AIRCRAFT FACTORY
OMURA JAPAN

0 500 1000 1500 2000 2500 3000 FEET
0 1/4 1/2 MILE
1:6000 APPROX.

ILLUSTRATION NO. 90:36-1627 P4A

ISSUED SEPT. 1944

CONFIDENTIAL

REPRINT

AREA A—A/C Assembly and Repair
1. Hangar—repair
2, 3. Hangar—flight
4, 5, 6, 7, 8. Storage
9. Unidentified
10. Assembly
11. Administration
12. Assembly
13. Unidentified
14. Transformer
15. Hangar
16. Unidentified
17. Shop
17A. Boiler house
18. Machine shop
19. Sub-assembly
20. Boiler house, press building

AREA B—Administration and Maintenance Administration
2. Boiler house, garages and storage building
3. Shop and storage buildings
4. Warehouse
5. Administration
6, 7. Shop

AREA C—Aero-Engine Mfg. and Probable Repair
1. Machine shop
2. Unidentified
3. Probable Engine Assembly
4. Engine packing and shipping
5, 6, 7, 8, 9. Shops
10, 10A. Engine test cells
11. Storage
12, 13. Shop

AREA D—A/C Assembly Plant u/c
1. A/C assembly
2. Shop
3. Probable sub-assembly
4. Probable sheet metal shop
5. Shop
6. Storage
7. Foundry
8, 9, 10, 11, 12, 13, 14. Shop-type
15. Probable sub-assembly
16. Probable storage
17. Shop
18. Foundations—probable assembly
19. Addition under construction
20. Building under construction

AREA E—Probable Aluminum Rolling, Forging and Casting
1, 2. Shop—some storage
3. Foundry
4, 5, 6. Probable rolling mill building
7. Hammer-press shop
8. Storage
9. Administration
10. Shop
11. Rolling mill building
12. Shop
13. Rolling mill building
14, 15. Storage
16, 17, 18, 19, 20. Shops
21, 22. Unidentified

AREA F—Probable Plant School

AREA G—A/C Repair
1-7. Hangars

AC/AS, INTELLIGENCE

CONFIDENTIAL

File No. 732,627.581

TARGET NO. 90:36–1627
90:36–849

COORDINATES 32° 55' N 129° 56' E

PHOTOGRAPHED 10 DECEMBER 1944

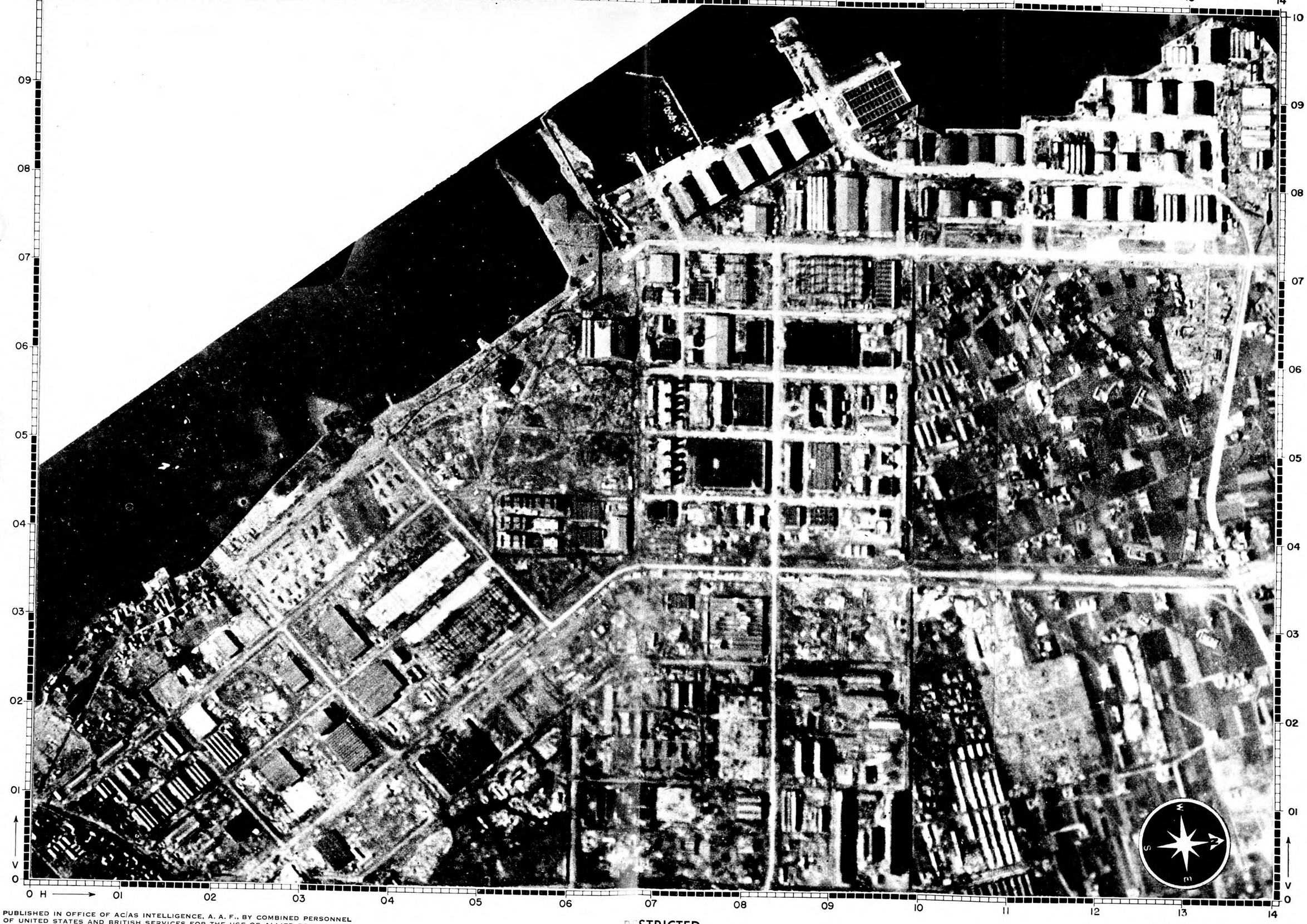
JOINT TARGET GROUP • WASHINGTON, D. C.
OMURA FACTORY AND NAVAL AIR STATION
OMURA, KYUSHU

0 500 1000 1500 2000 2500 3000 FEET
0 ¼ 1:6000 APPROX. ½ MILE

ILLUSTRATION NO. 90:36–1627 / DP1
90:36–849

ISSUED JANUARY 1945

RESTRICTED



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RESTRICTED

FILE NO. **732,627.9**

TARGET NO. 90:36–1627
90:36–849

COORDINATES 32° 55' N 129° 56' E

PHOTOGRAPHED 10 DECEMBER 1944

JOINT TARGET GROUP • WASHINGTON, D. C.

OMURA FACTORY AND NAVAL AIR STATION

OMURA, KYUSHU

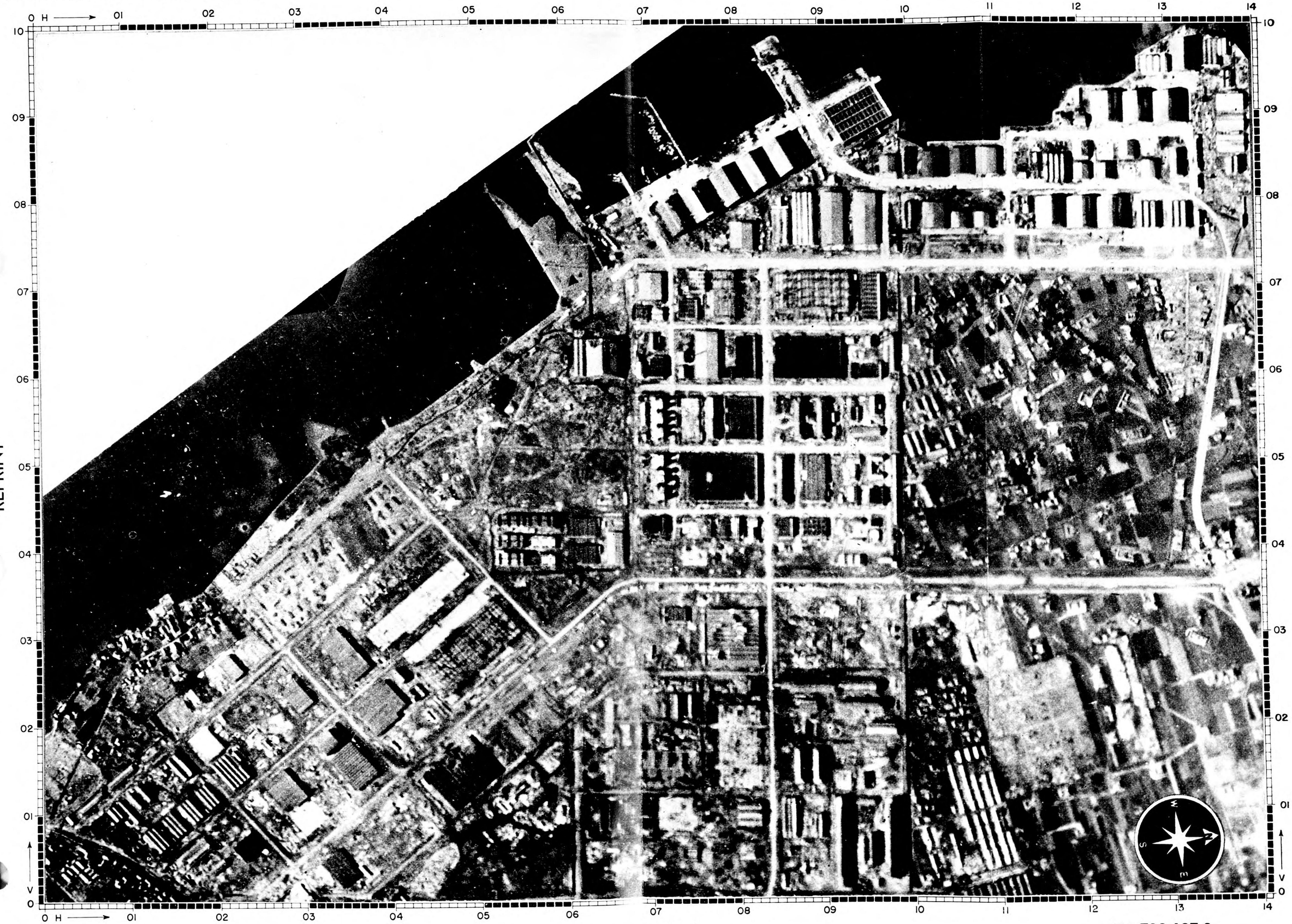
0 500 1000 1500 2000 2500 3000 FEET

0 1/4 1:6000 APPROX. 1/2 MILE

ILLUSTRATION NO. 90:36–1627/DP1
90:36–849

ISSUED JANUARY 1945

RESTRICTED



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FILE NO. **732,627.9**

JOINT TARGET GROUP, WASHINGTON, D. C.
TARGET LOCATION SHEET

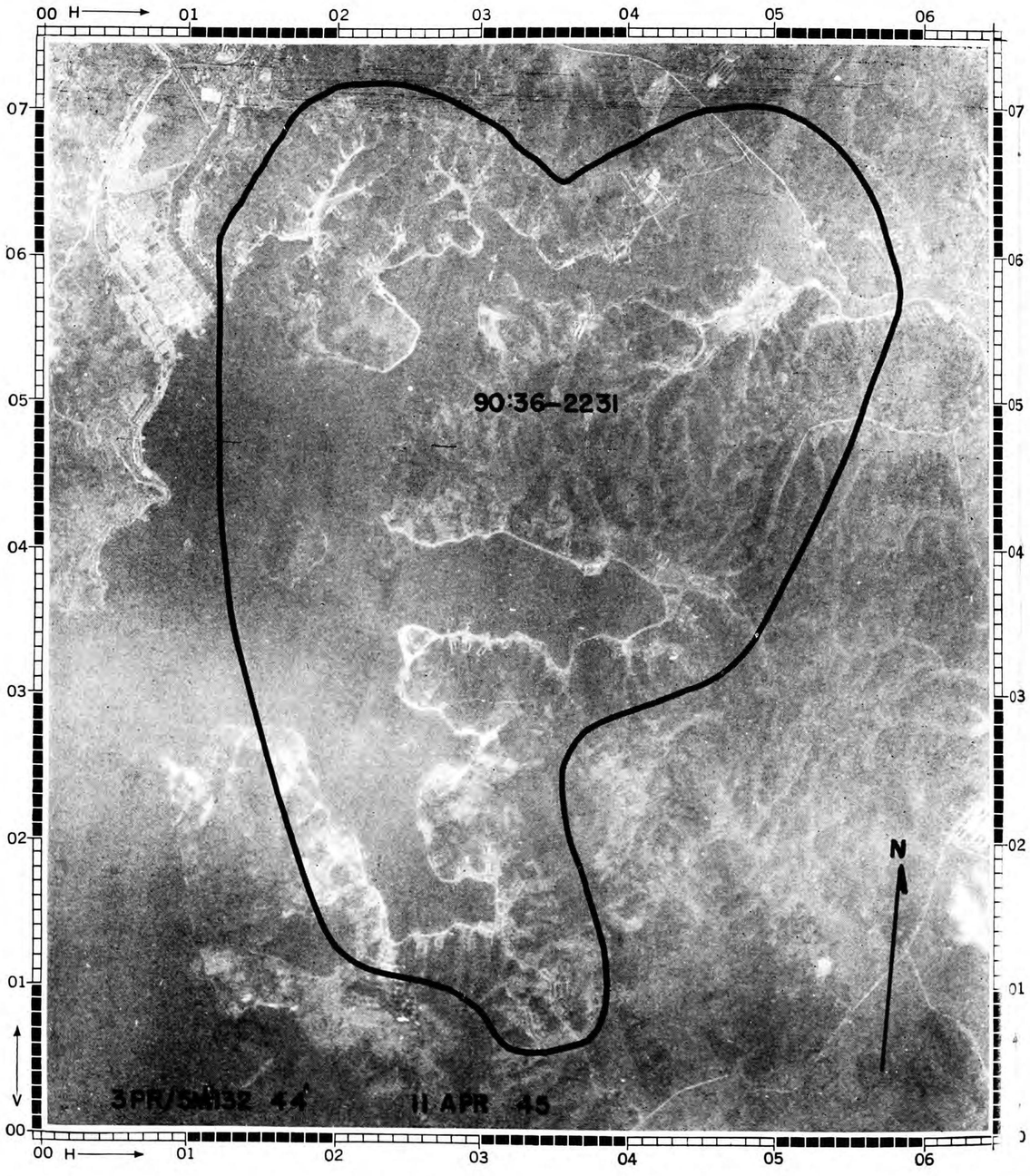
SASEBO MUNITIONS STORAGE

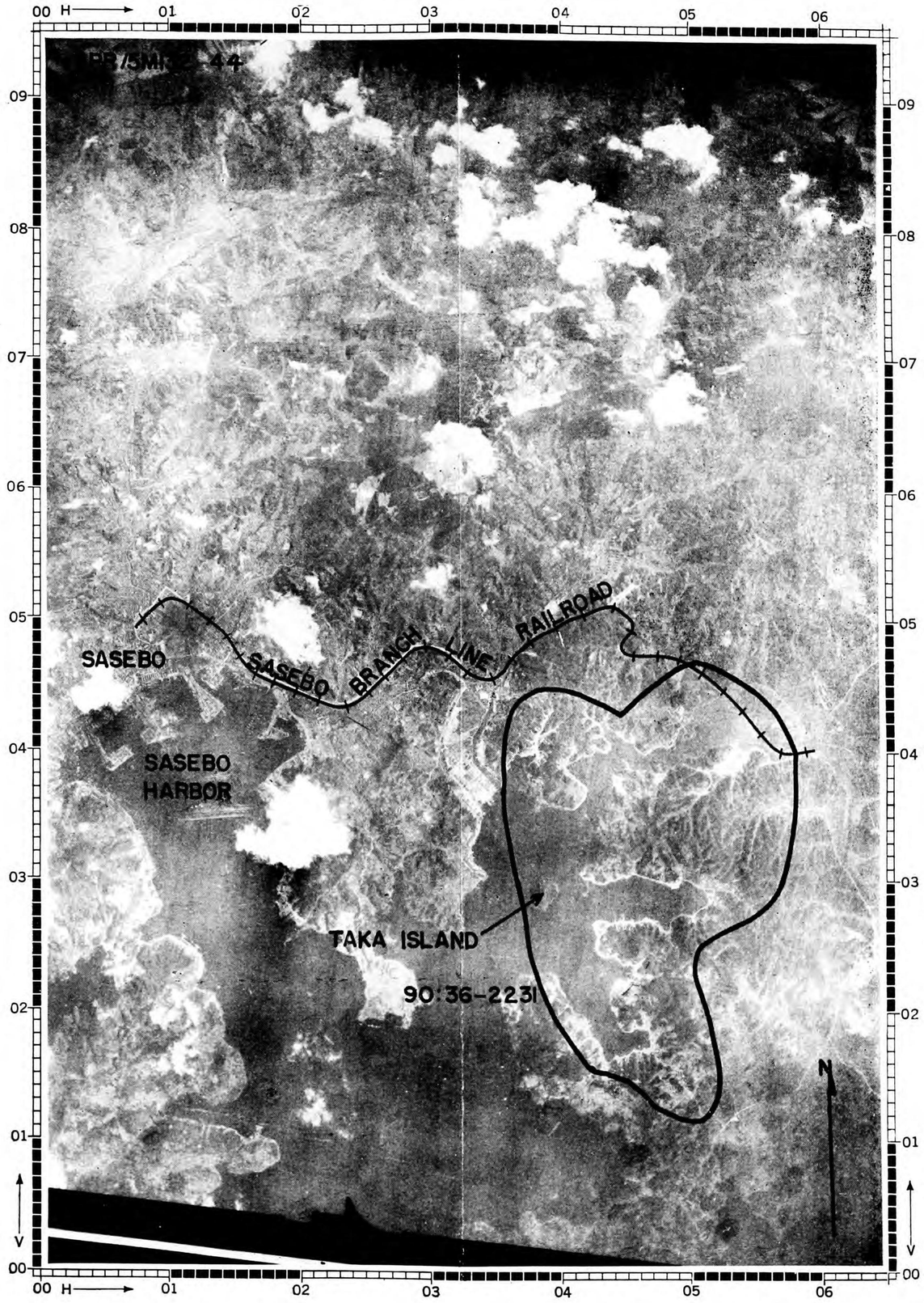
SASEBO JAPAN

SHEET	90:36-2231—TL
DATE	4 June 1945
TARGET	90:36-2231
CATEGORY	MILITARY STORES
COORDINATES	33°07'N 129°46'E
ALTITUDE	400 feet

SIGNIFICANCE:

A large area believed to be devoted to the storage of ammunition and other military explosive end products.





LARGE SCALE ILLUSTRATION—SCALE APPROX.: 1:30,000

SMALL SCALE ILLUSTRATION—SCALE APPROX.: 1:60,000

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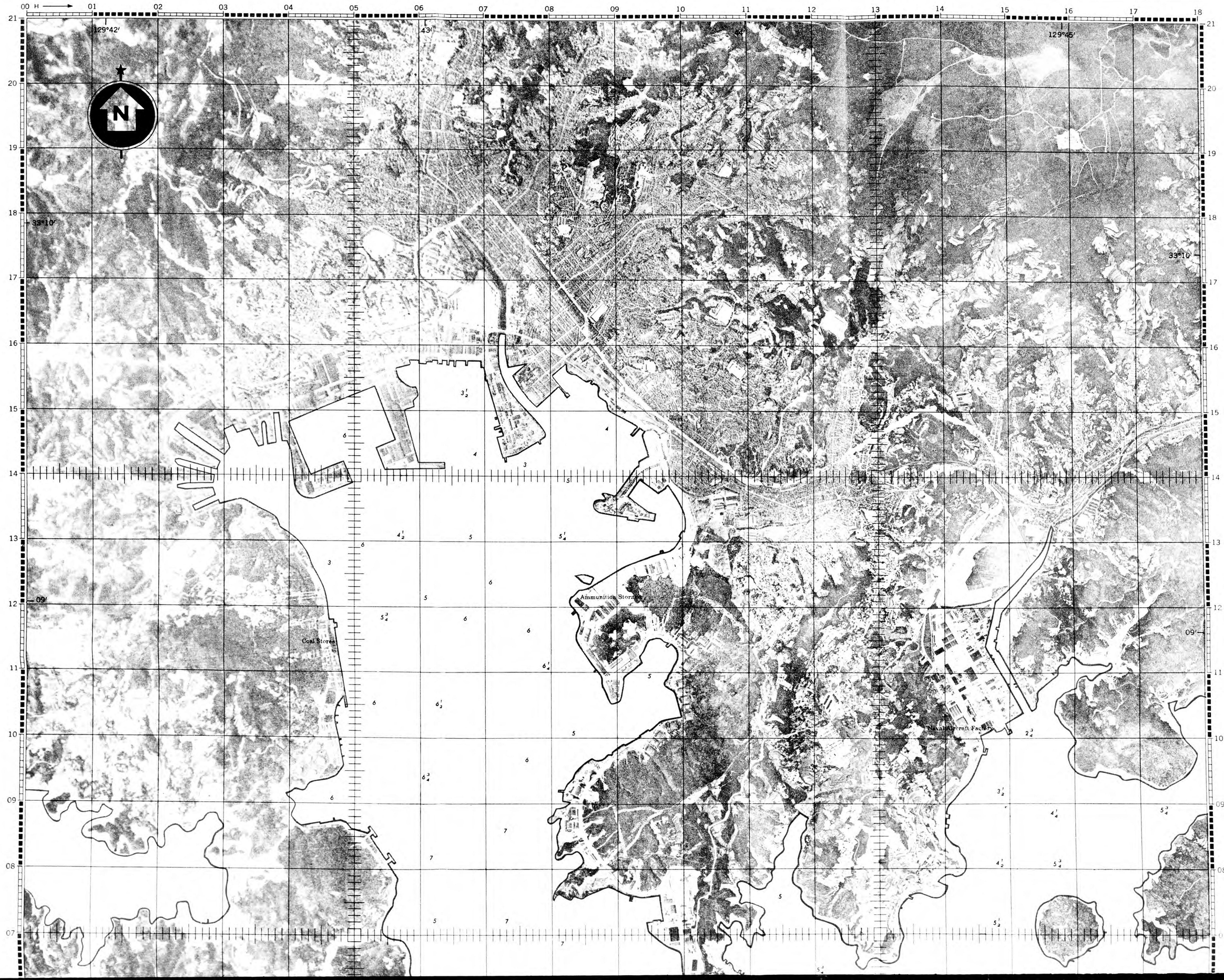
JOINT TARGET GROUP, WASHINGTON, D. C.
PORT SHIPPING PLOT

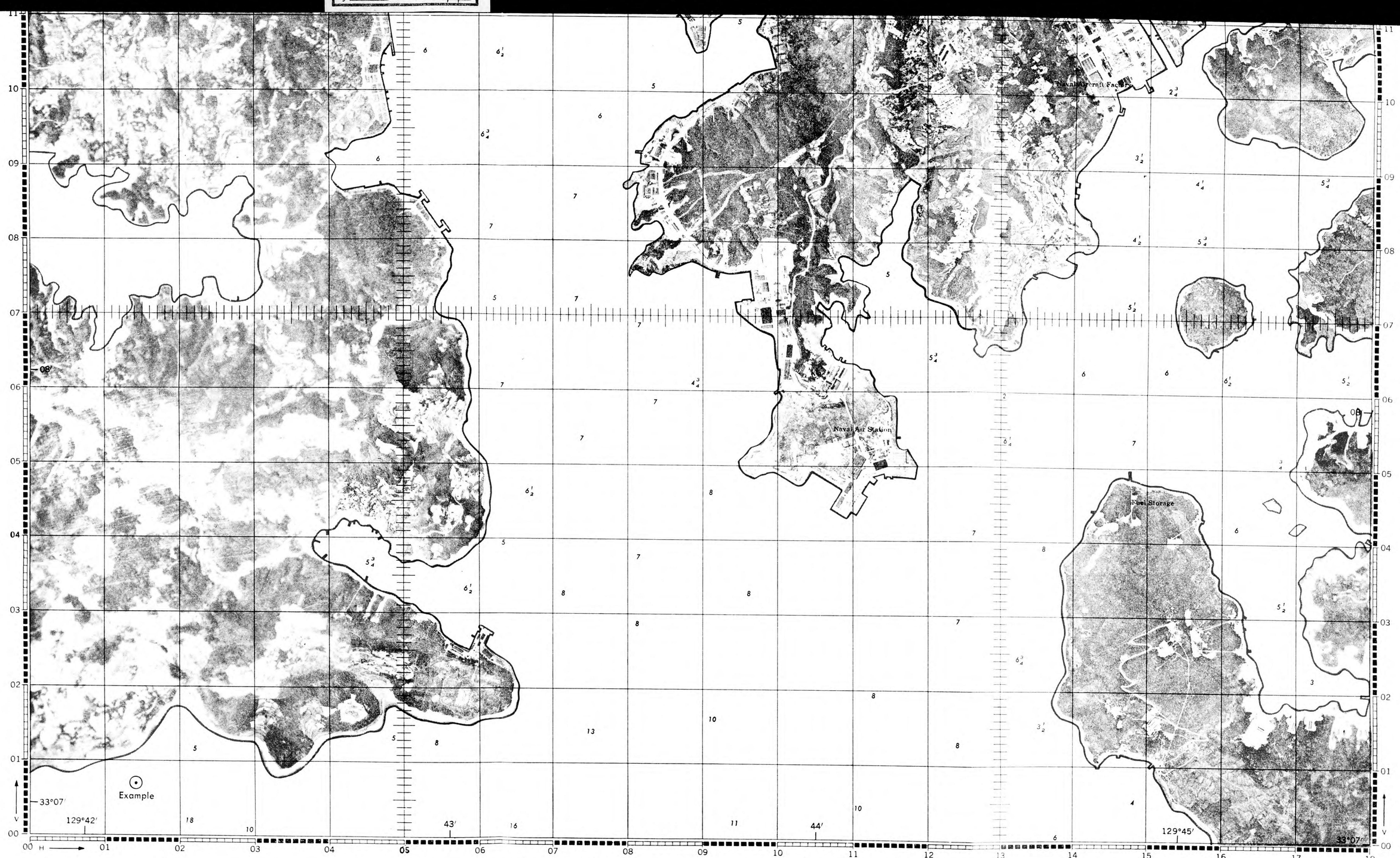
SASEBO, JAPAN

Scale 1:12,500

RESTRICTED

ILLUSTRATION No. . . . . 90.36-3552 PSP
DATE . . . . . 7 May 1945





EXAMPLE Grid Reference Reading:
Sasebo (or 90.36-3552)PSP H014 V007
Always Use Three Digits Preceded by H & V

Prepared under the direction of the Aeronautical Chart Service
by Aero Service Corp., Phila., Pa. 1945 from Controlled Mosaic by the Army Map Service,
U.S. Army, Washington, D.C. 1945. Aerial photographs flown by U.S.A.A.F. (Sorties):
4MC 39 24" V, 4MC 39 8" V, AMR-15 24" V June '44. AAF City Plan, Sasebo '45.

1/2 Statute Miles 0 Miles 1/2
1/2 Nautical Miles 0 1/2

1": 1041.7 Ft 0 500 1000 Yards
0 1000 2000 3000 Feet

DEPTH IN FATHOMS AT NEARLY LOWEST LOW WATER

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RESTRICTED

File No. 734,552.66

SASEBO, PSP

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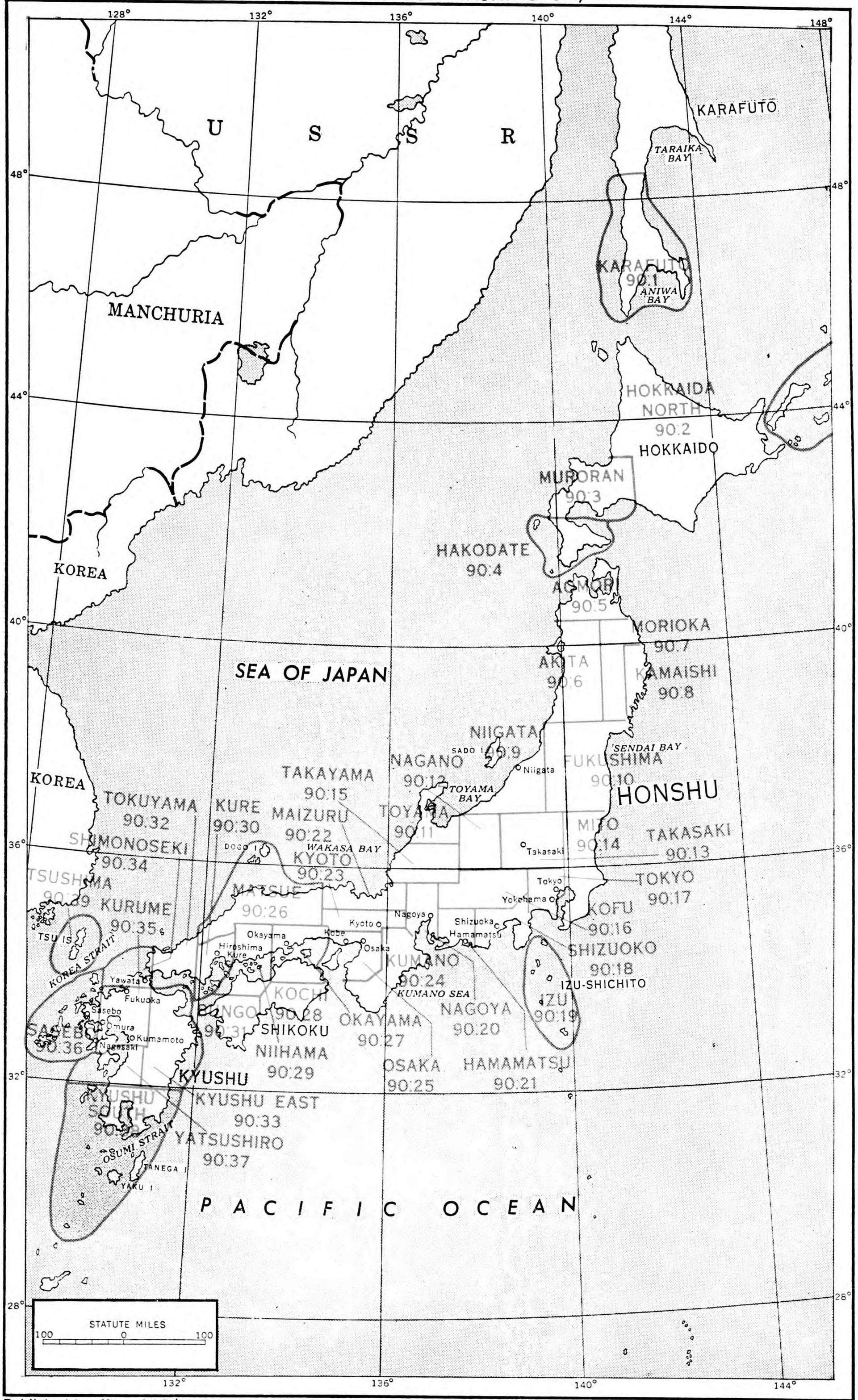
JOINT TARGET GROUP WASHINGTON, D. C.



90:38 KYUSHU SOUTH

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PREPARED BY AERONAUTICAL CHART SERVICE, AAF.

File No. 750,100

JOINT TARGET GROUP, WASHINGTON, D. C.

AIR TARGET INDEX—JAPANESE WAR

NUMERICAL TARGET INDEX

SHEET . . . . . **ATI**

DATE . . . . **20 June 1945**

OBJECTIVE AREA 90:38—KYUSHU S (JAPAN)

Target Number and Objective Area	Name	Location	Coordinates (approx.)	General Category	Particular Category	Comment
90:38-1378 Kyushu S (Japan)	**Kanoya Naval Air Station**	**2 miles SW of Kanoya.**	**31°22′N 130°50′E**	**EPI**	**AC**	**Established airbase with permanent hangars and considerable repair, overhaul and modification facilities.**
90:38-1517 Kyushu S (Japan)	Kagoshima RR Repair Shops	SW Kagoshima.	31°34′N 130°33′E	BSU	RRT	One of 3 major Imperial Government railway shops on Kyushu and only shops S of Shimonseki coast area. Repairs cars only.
90:38-1518 Kyushu S (Japan)	**Kagoshima Freight Yards**	**NE Kagoshima, on waterfront.**	**31°36′N 130°34′E**	**BSU**	**RRT**	**Most important railroad center in S Kyushu. Handles port traffic.**
90:38-2078 Kyushu S (Japan)	**Kanoya Aircraft Works**	**2 miles SW of Kanoya.**	**31°22′N 130°50′E**	**EPI**	**AC**	**Major repair and modification center for naval aircraft. Limited production of new aircraft possible.**
90:38-2184 Kyushu S (Japan)	**Oyodo-gawa RR Bridge (Nippo Line)**	**Miyazaki.**	**31°54′N 131°26′E**	**BSU**	**RRT**	**A long bridge on the E coast through line to southern Kyushu.**
90:38-2223 Kyushu S (Japan)	**Kawasaki Aircraft, Miyakonojo Plant**	**½ mile NE of Miyakonojo.**	**31°44′N 131°05′E**	**EPI**	**AC**	**Reported Kawasaki engine plant (probably engine components).**
90:38-3397 Kyushu S (Japan)	Yamakawa—Port Area	On entrance to Kagoshima Bay in SW Kyushu.	31°12′N 130°38′E	BSU	S	Landing; anchorage.
90:38-3443 Kyushu S (Japan)	Shibushi—Port Area	On Ariake Bay, in SE Kyushu.	31°28′N 131°06′E	BSU	S	Annual capacity about 214,000 metric tons. Port for coastal vessels.
90:38-3444 Kyushu S (Japan)	Aburatsu—Port Area	On Suo Sea, in N Central Kyushu.	31°34′N 131°25′E	BSU	S	Annual capacity about 214,000 metric tons. Fishing and timber port.
90:38-3519 Kyushu S (Japan)	**Kagoshima—Port Area**	**On Kagoshima Bay, in S Kyushu.**	**31°35′N 130°34′E**	**BSU**	**S**	**Annual capacity about 429,000 metric tons. General cargo port.**

BEI—Basic Equipment Industries; BPI—Basic Processing Industries; BSU—Basic Services & Utilities; EPI—End Product Industries; MIC—Mixed Industrial Concentrations; MS—Military Stores.

A—Armament; AC—Aircraft; C—Chemicals; CIS—Coke, Iron & Steel; EP—Electric Power; LM—Light Manufacturing; MMT—Machinery & Machine Tools; M—Munitions; NFM—Non-ferrous Metals; P—Petroleum; RRT—Road & Rail Transportation; S—Shipping; TE—Transportation Equipment; UIC—Urban Industrial Concentrations.

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JOINT TARGET GROUP, WASHINGTON, D. C.
TARGET LOCATION SHEET

KAGOSHIMA FREIGHT YARDS
KAGOSHIMA JAPAN

SHEET . . . . . 90:38-1518—TL
DATE . . . . . 25 May 1945
TARGET 90:38-1518
CATEGORY . . . . . Bsc. Serv. & Utly.—Road and Rail Transpt.
COORDINATES . . . . 31°36'N 130°34'E
ALTITUDE . . . . . 15 feet

SIGNIFICANCE:

Southern terminus of the Kagoshima Line and Nippo/Ibusuki Lines. Important rail-ship freight transfer point. Length 2200'. Average width, 625'. Area, 1,310,000 sq. ft. Roundhouse.

LARGE SCALE ILLUSTRATION—SCALE APPROX.: 1:15,000

SMALL SCALE ILLUSTRATION—SCALE APPROX.: 1:56,000

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JOINT TARGET GROUP, WASHINGTON, D. C.

TARGET LOCATION SHEET

KAWASAKI AIRCRAFT, MIYAKONOJO PLANT

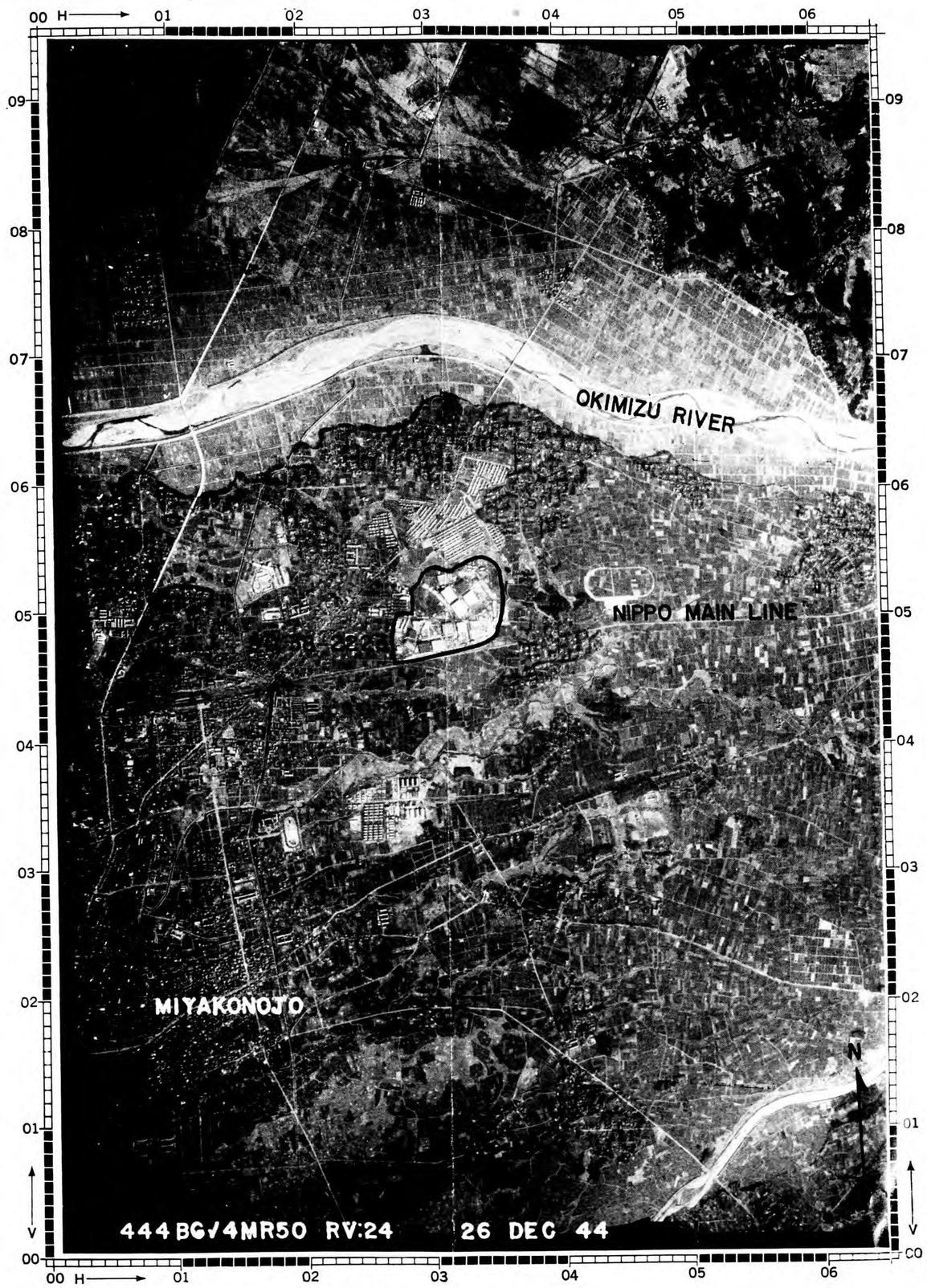
MIYAKONOJO JAPAN

SHEET	90:38-2223—TL
DATE	4 June 1945
TARGET	90:38-2223
CATEGORY	End Prdt. Ind.—AIRCRAFT
COORDINATES	31°44'N 131°05'E
ALTITUDE	500 feet

SIGNIFICANCE:

Reported to be a Kawasaki engine plant but it is doubted that completed engines are produced here. With approximately 500,000 square feet of floor area, substantial quantities of engine components could be turned out, or the plant could have an engine capacity of 100 per month. No test cells have been identified at the plant.

LARGE SCALE ILLUSTRATION—SCALE APPROX.: 1:15,500



SMALL SCALE ILLUSTRATION—SCALE APPROX.: 1:31,000

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