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SPECIAL REPORT

GIC ENGINEERING STUDY NO. 126

AND SHIKOKU (JAPAN)

RAIN INTELLIGENCE

Prepared by

L SURVEY, U.S. DEPARTMENT OF THE INTERIOR

Under direction of

CHIEF OF ENGINEERS, U.S. ARMY

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Classification cancelled or changed to RESTRICTED
by authority of the Chief of Engineers.
by J.H. Arbuthnot, Capt. 22 Oct 45
(name and grade) (date)

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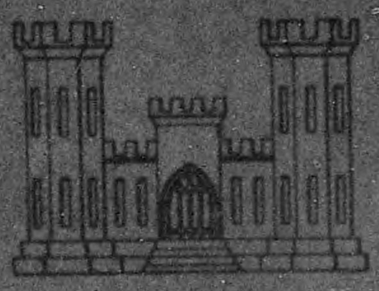

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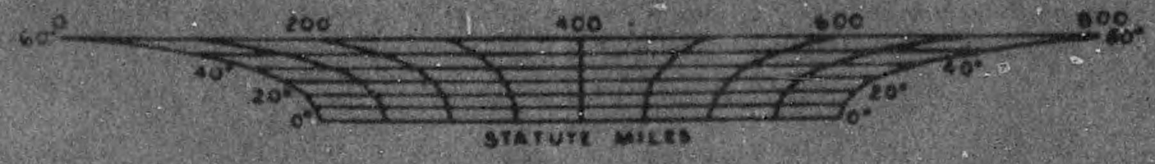

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SEA OF OKHO

SAKHALIN

S.E.S. 88

HOKKAIDO

S.E.S. 90

AIRFIELD SITES ON

SEA OF JAPAN

KOREA

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S. E. S. 126

KYUSHU

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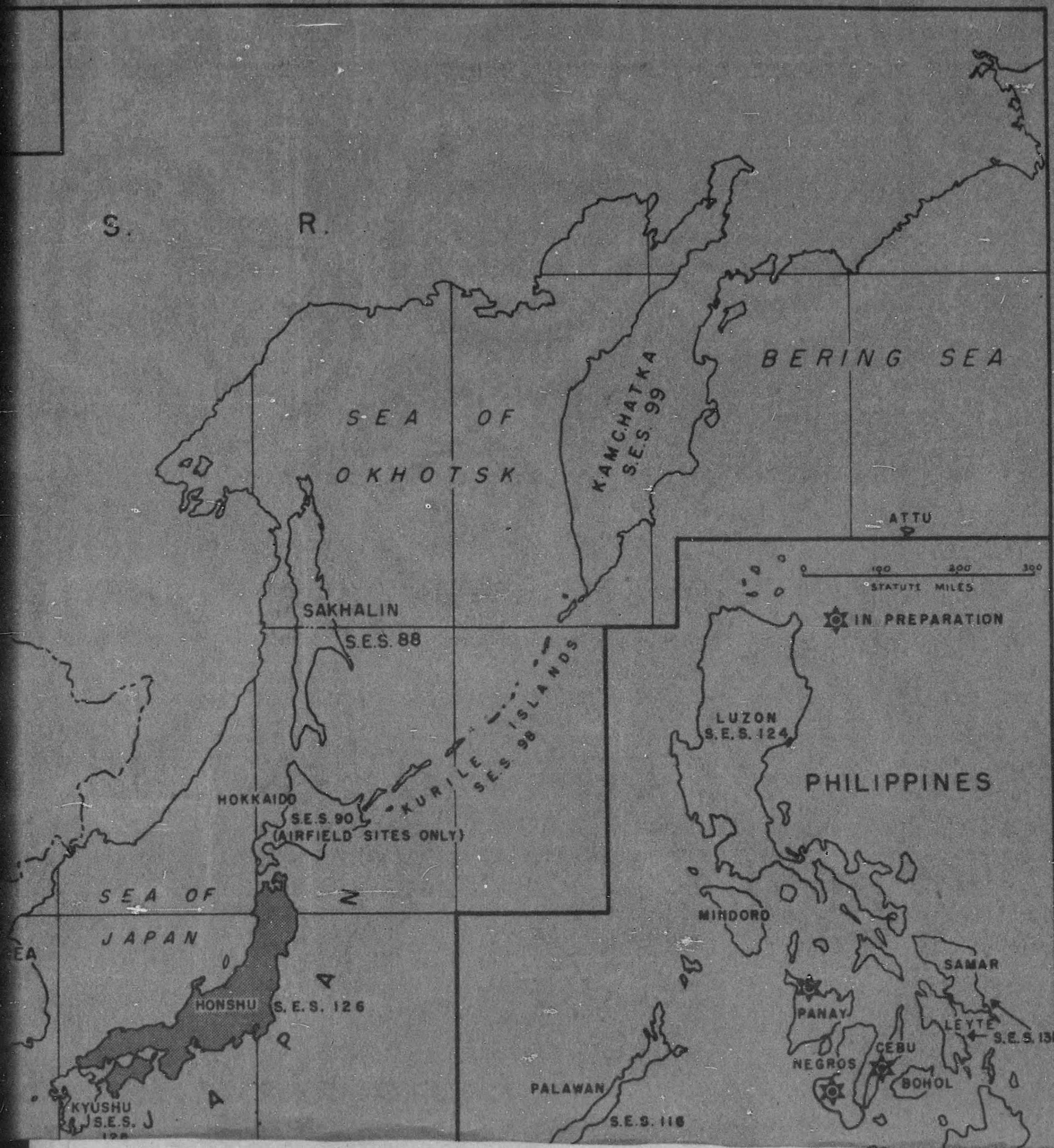

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SPECIAL REPORT

ATEGIC ENGINEERING STUDY NO. 126

SHU AND SHIKOKU (JAPAN

ERRAIN INTELLIGENCE

Prepared by

SECTION OF MILITARY GEOLOGY

EOLOGICAL SURVEY, U.S. DEPARTMENT OF THE INTERIOR

Under direction of

CHIEF OF ENGINEERS, U.S. ARMY

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SUMMARY OF TERRAIN SITUATION

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AREA 9: Hills, low mountains, and dissected plateaus, 1,000 to 4,000 feet in altitude. Terrain rugged in north. Rounded uplands in south. Narrow river plains, especially in south. Coast is cliffed. Movement: Many roads; in north, cross passes over 2,000 feet in altitude. Cross-country movement confined to narrow valleys; generally hindered by forest.

AREA 8: rated by Basins mo plains co system of Movement: corridor; completel roads. C difficult separati defiles.

AREA 10: Low hilly land, mostly less than 500 feet in altitude; in places, over 2,000 feet. Small plains at heads of bays and in valleys between hills. Coast rocky and indented; plains commonly bordered by tidal flats, salt pans, and reclaimed land. Movement: Good road network. Movement off roads generally easy; on plains, rice paddies are a hindrance.

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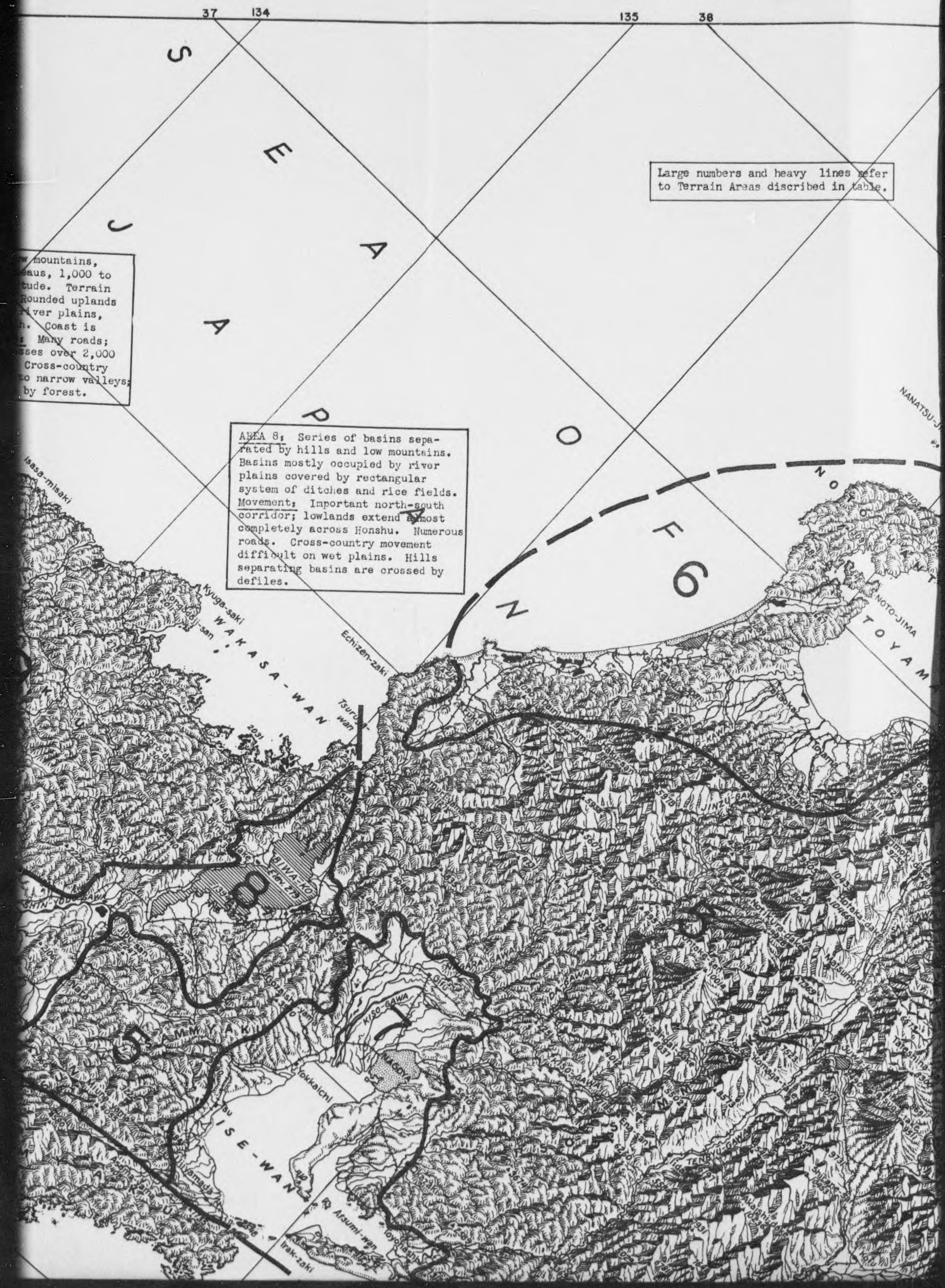

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arge numbers and heavy lines refer
o Terrain Areas discribed in table.

AREA 6: Coastal plains and mountains; latter mostly less than 2,500 feet in altitude, with gentle slopes and wide-floored valleys. Plain near Toyama has gentle slope, is well drained; other plains flat, wet, and crossed by winding streams. Movement: Dense road network. Movement off roads easy in much of mountainous area and in parts of plains.

Terrain diagram drawn
N I 52, N I 53, N I
1:1,000,000. Detail
1:240,000; Japanese
Geological Survey of
tion, reference was
Japan, by Guy Harold
of Northern Honshu
Geological Survey
1:1,000,000 (apx.).
of perspective is
features northward by
altitude. Distances
only between points o

Railroads (Minor branches and narrow gauge lines omitted).

Cities and towns (only more important shown).

Coastal sand dunes.

Submerged sand and mud banks.

HEKURA-JIMA
NANATSU-JIMA
NOTO-JIMA
Ryokugō-misaki
TOYAMA-WA
SADO SHIMA
Ya-saki
Mano-wan
Sawasaki-han
Ryōtsu-wan
Niigata
6

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137 40 138 139

Terrain diagram drawn on map base, A.M.S. 3501, sheets N I 52, N I 53, N I 54, N J 53, N J 54, and N K 54, 1:1,000,000. Details sketched from A.M.S. L 571, 1:240,000; Japanese Imperial Land Survey, 1:200,000; Geological Survey of Japan, 1:200,000. During compilation, reference was also made to Physiographic Map of Japan, by Guy Harold Smith, 1:4,000,000; Relief Maps of Northern Honshu and Southern Japan, by U. S. Geological Survey and Air Staff Intelligence, 1:1,000,000 (apx.). Altitudes in feet. The appearance of perspective is obtained by shifting all relief features northward by 1/10 inch for each 3,000 feet of altitude. Distances on map can therefore be scaled off only between points of equal elevation.

Railroads (Minor branches and narrow gauge lines omitted).

Railroad tunnels (only more important shown).

Cities and towns (only more important shown).

Lakes

Coastal sand dunes.

Offshore rocks and islets.

Submerged sand and mud banks.

Swamps and roads not shown. (Swamps occupy only very small area).

AREA 3: Rugged low mountains with several volcanic cones. Peaks reach altitudes of 3,000 to 7,000 feet. Central row of basins crossed by winding rivers; many marsh areas; dry fans along borders. Coast mostly indented and rocky. Movement: Roads follow lowlands, cross intervening mountains through passes. West coast and central basins form discontinuous corridors through area. Movement off roads difficult, except along foot slopes of mountains, because of wet ground. Movement on mountain slopes difficult for foot troops.

AREA 2: Flat, p... wi... nding, di... swamps, and lak... fans along north... Scattered ranges... 700 feet in alti... straight, edged...

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HONSHU AND SHIKOKU (JAPAN)

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Roads follow lowlands,
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st coast and central
discontinuous corridors
a. Movement off roads
except along foot slopes
ns, because of wet ground.
mountain slopes diffi-
ot troops.

AREA 1: Low massive mountain ranges. Highest peaks 3,000 to 6,000 feet altitude. Steep rocky slopes, rounded tops. Abrupt rocky coast. Streams flow in gorges; a few narrow flat-bottomed valleys. Movement: Coastal road. A few narrow steep interior roads; passes are over 1,500 feet in altitude. Cross-country movement difficult for foot troops.

AREA 2: Flat, poorly drained plain with winding, diked streams, swamps, and lakes. Well-drained fans along northwest border. Scattered ranges of hills, 300 to 700 feet in altitude. Coast straight, edged by sand dunes.

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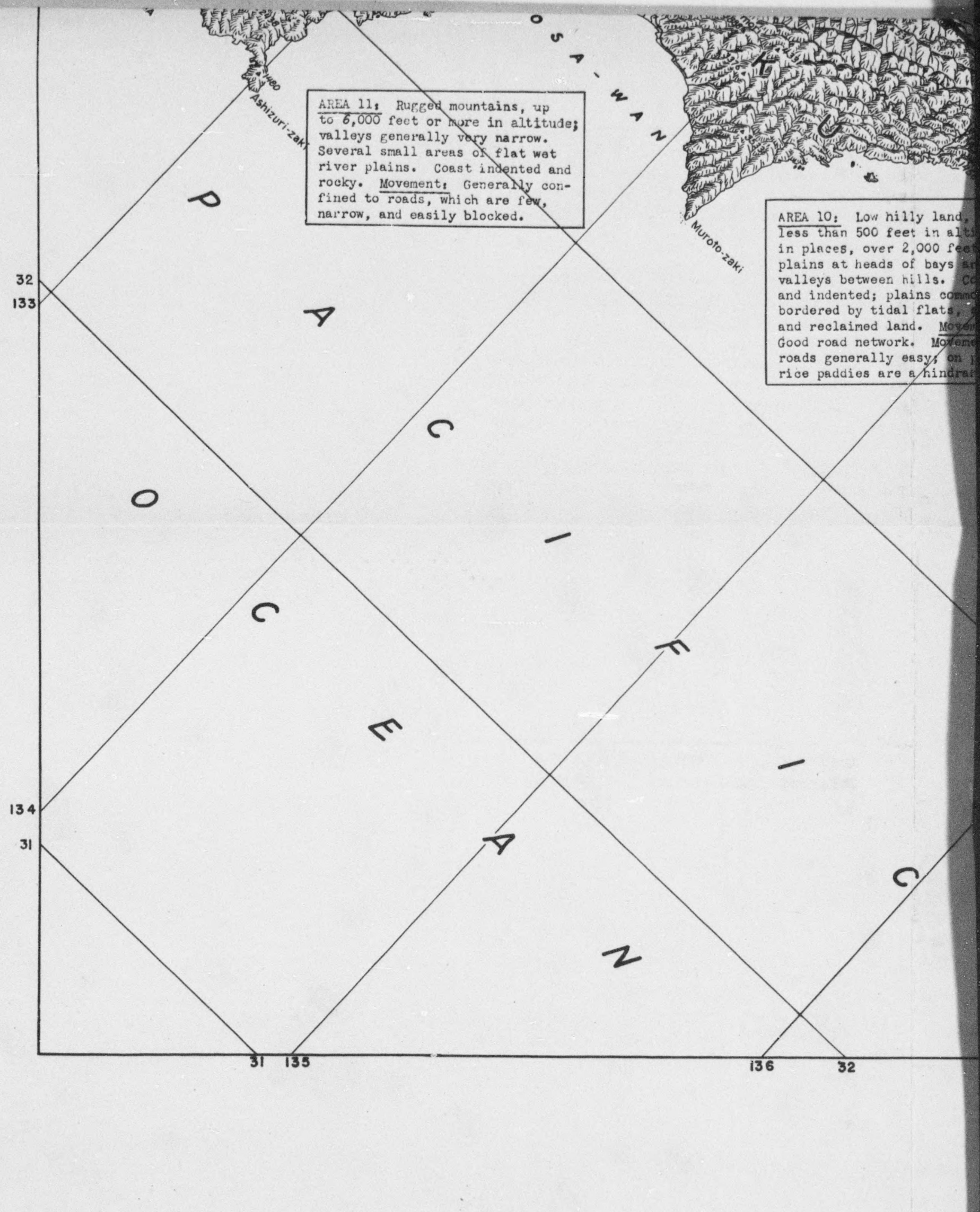

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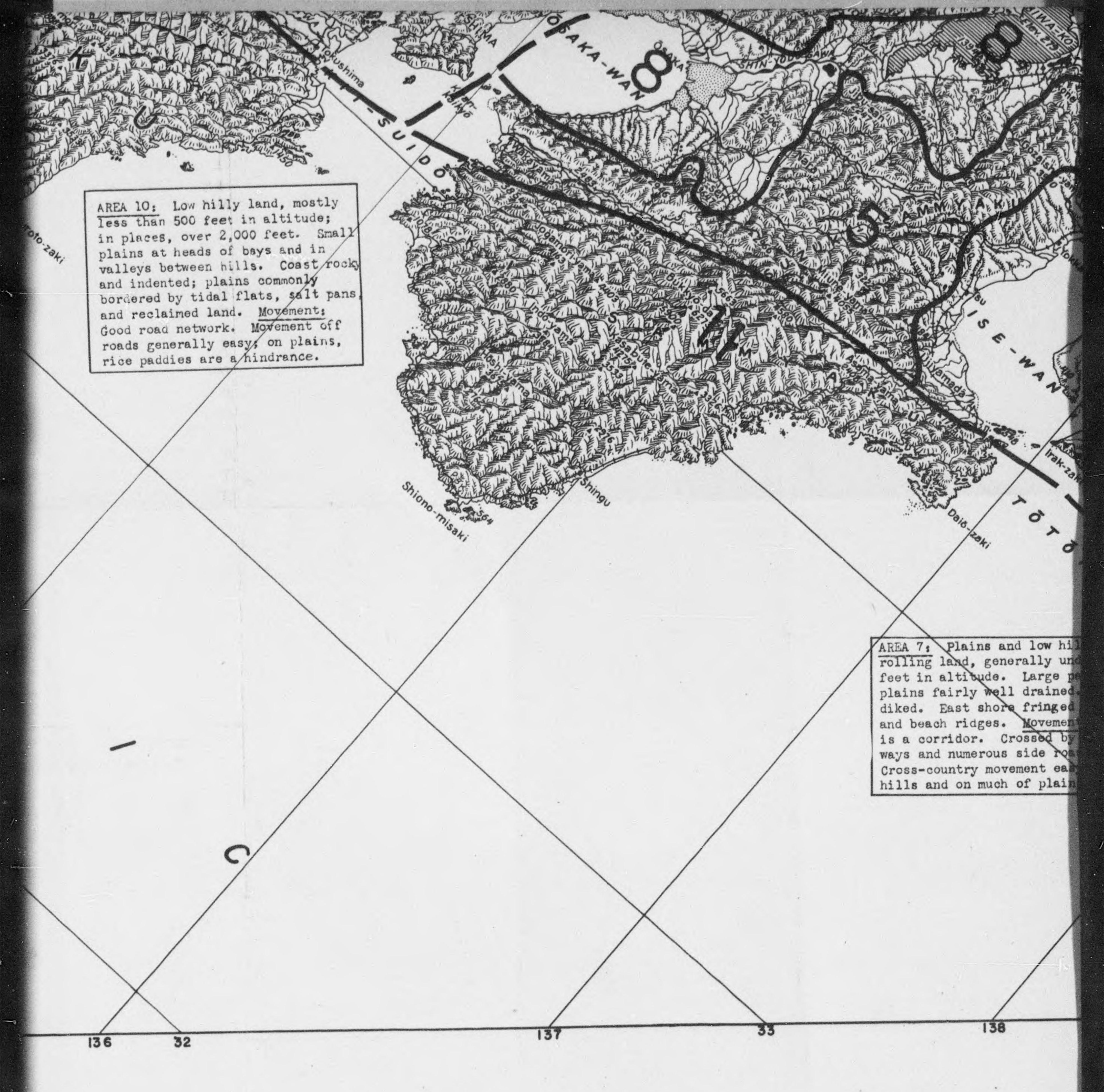

AREA 10: Low hilly land, mostly less than 500 feet in altitude; in places, over 2,000 feet. Small plains at heads of bays and in valleys between hills. Coast rocky and indented; plains commonly bordered by tidal flats, salt pans, and reclaimed land. Movement: Good road network. Movement off roads generally easy; on plains, rice paddies are a hindrance.

AREA 7: Plains and low hil
rolling land, generally und
feet in altitude. Large p
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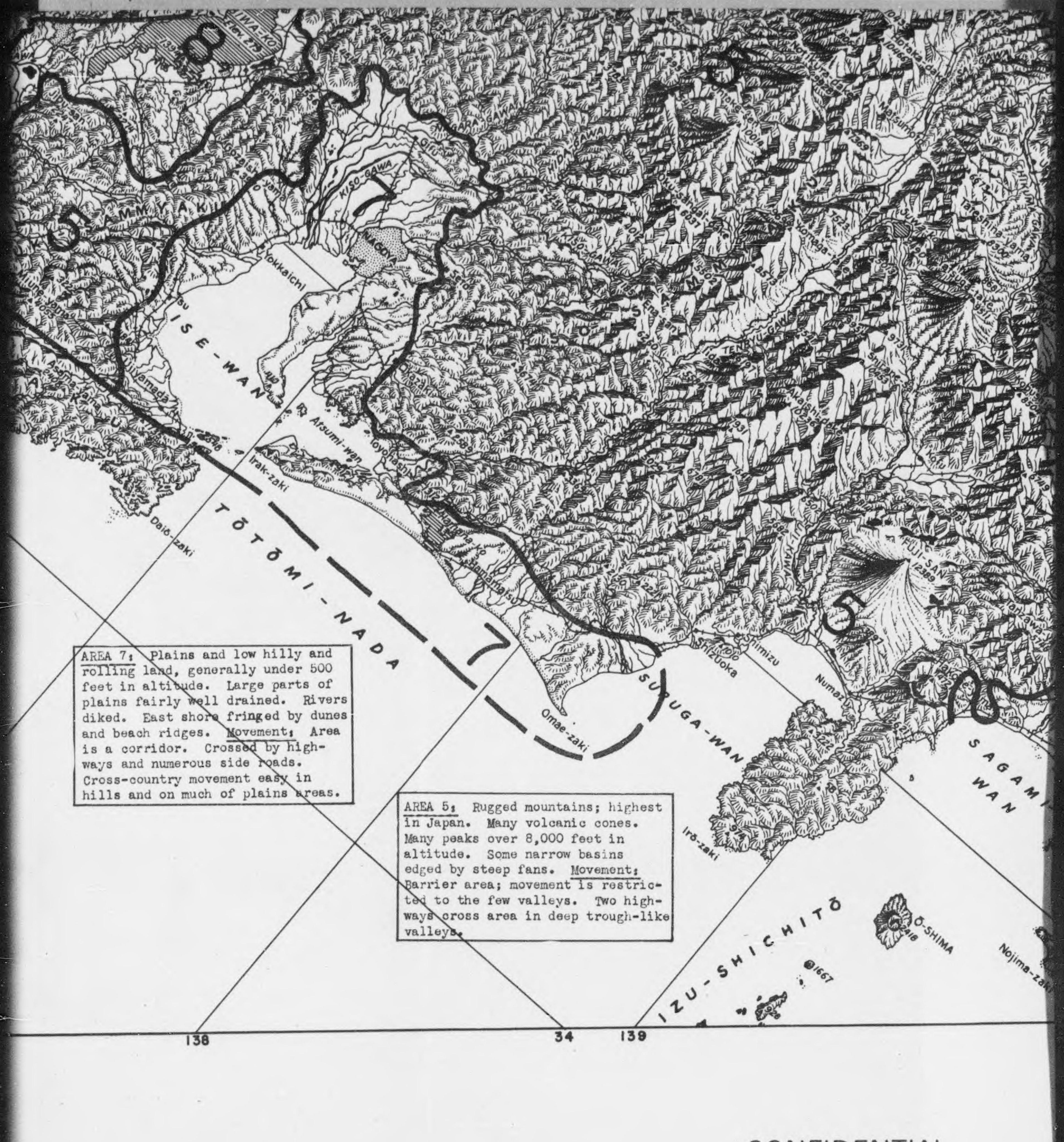

AREA 7: Plains and low hilly and rolling land, generally under 500 feet in altitude. Large parts of plains fairly well drained. Rivers diked. East shore fringed by dunes and beach ridges. Movement: Area is a corridor. Crossed by highways and numerous side roads. Cross-country movement easy in hills and on much of plains areas.

AREA 5: Rugged mountains; highest in Japan. Many volcanic cones. Many peaks over 8,000 feet in altitude. Some narrow basins edged by steep fans. Movement: Barrier area; movement is restricted to the few valleys. Two highways cross area in deep trough-like valleys.

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AREA 4: Lowland with terraces, 50 to 100 feet high, and poorly drained plains. Large rivers and canals; swamps and lakes in north. Fields interspersed with patches of wasteland. Hills near borders and in most of Chiba Peninsula. Shore, in part bluffs, in part sand dunes and swamps. Movement: Dense network of good roads. Movement off roads easy except on wet parts of plains, on steep terrace scarps, and in hills of Chiba Peninsula.

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AREA 1
AREA 2
AREA 3
AREA 4
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Ishinomaki wan
Kinka-zan
Shioya-zaki
Inubō-saki
Chōshi
Kitaura
Nakaumi
Ushiku-numa
Kasumigaura
Tsuchiura
Mito
Hitachi
Abukuma-gawa
Kitakami-gawa
Natori-gawa
Iwaki
Ōkuma-yama
Kurikoma-yama
Hayachine-san
Kitakami-sanchi
Abukuma-kōchi
Ōu-sanmyaku
Kitakami-gawa
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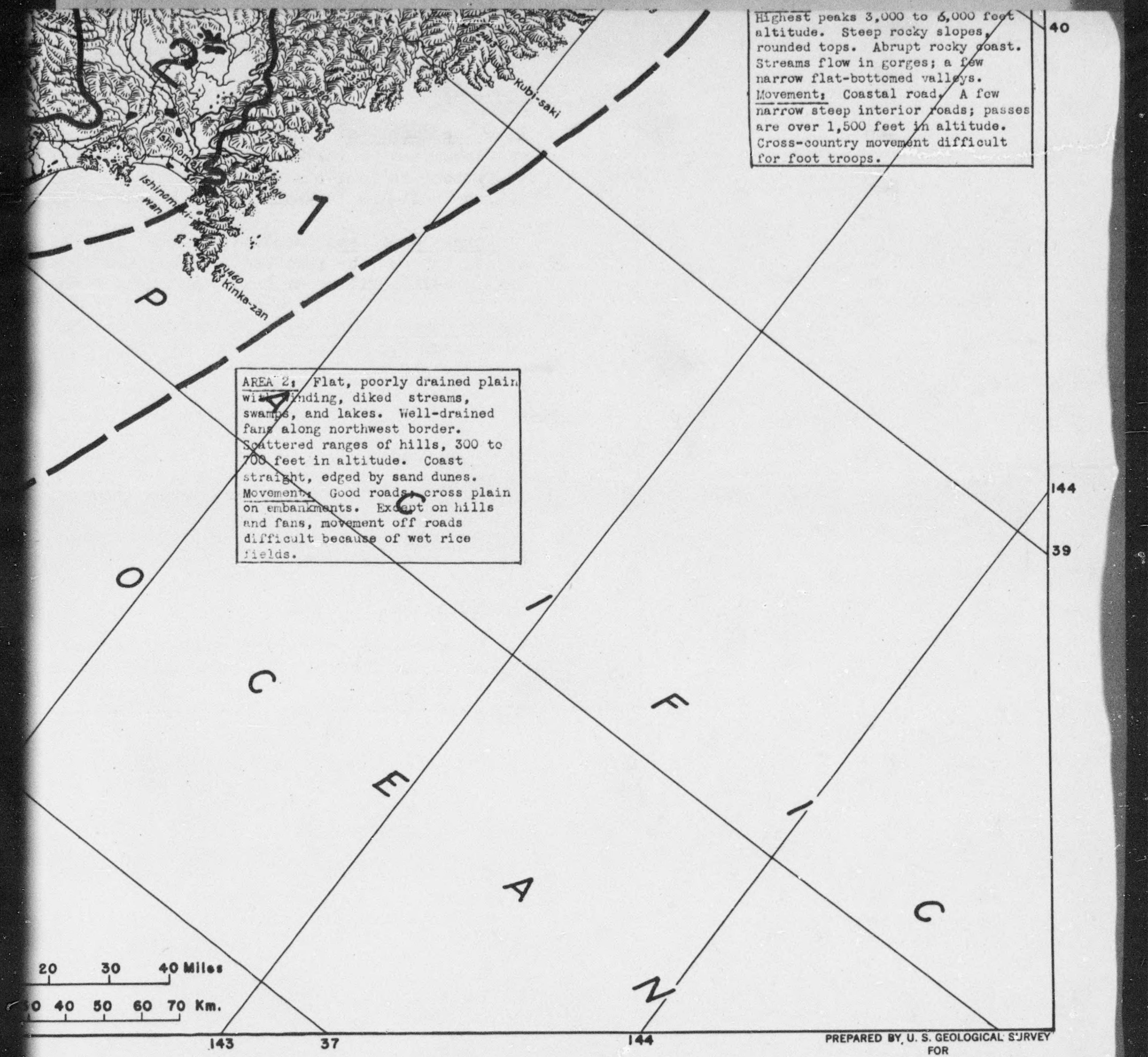

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HONSHU AND SHIKOKU (JAPAN)

I. Introduction:

A. Honshu, area 91,000 square miles, is the largest and most important of the Japanese Islands. Shikoku, area 7,000 square miles, is closely adjacent to the southwest coast of Honshu; separated from it by a narrow island-studded strip of water called the Inland Sea. Honshu and Shikoku together form an arc 800 miles long, extending from about lat 33° N and long. 131° E to about lat 41°30' N and long. 142° E.

B. Total population of the two islands in 1935 was 55,000,000; large percentage on Honshu. Population is concentrated in lowlands comprising only 15% of the total area. The most densely settled region is the series of lowlands along the Pacific coast of Honshu between Tokyo (population about 6,000,000 in 1935) and Osaka (population about 3,000,000 in 1935); this area is the industrial center of Japan. The least settled region is north of lat 37° N; it contains only a few towns of several hundred thousand inhabitants.

C. Climate is humid. Temperatures compare with those of the Atlantic coast of the United States, though winters are somewhat colder. A marked contrast exists between the east and west sides; the east side has its highest precipitation in summer, with little snow in winter; the west side has its highest precipitation in winter, in the form of heavy snow.

II. Topography and Movement:

Rugged mountains and high volcanic cones make up the greater part of the islands. Isolated plains border coasts; small basins in the interior are completely surrounded by mountains. Cross-country movement is generally difficult, being hindered in the mountains by steep slopes and dense forest and on the lowlands by rivers and extensive areas of wet rice paddies. See annotations on accompanying map for further descriptions.

III. Water Supply:

A. Existing Supplies: Surface water supplies plentiful in nearly all parts; most abundant in lowlands. In uplands, water generally free from serious pollution; in lowlands greatly polluted. Few wells in uplands. Many shallow wells in lowlands; water generally polluted.

B. Temporary Supplies: Easily available from surface sources and shallow wells, but must be purified. Stream and spring water acceptable in uplands; wells, drilled or dug by military forces, preferable in lowlands.

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SUMMARY OF TERRAIN SITUATION

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2. On coastal and valley plains, bridges across large rivers are vulnerable. Roads generally on embankments, easily damaged; fairly difficult to construct detours over adjacent wet rice fields.

3. Roads least vulnerable where they cross well-drained, higher ground (fans and terraces) along the footslopes of hills and mountains.

V. Airdromes:

A. Existing Airdromes: Over 200 on Honshu, 17 on Shikoku. Many concentrated on plains near Tokyo, Nagoya and Osaka; few in northern Honshu, southern Shikoku, or mountainous interior. Majority on flat alluvial plains or terraces; some along steep coasts on artificial fill. Rapid expansion possible only for airdromes on terraces and gently sloping alluvial fans.

B. Suggested Airdrome Sites: Sites available in all parts of Honshu and Shikoku, but limited to relatively small coastal plains and mountain valleys. Terraces and gently sloping alluvial fans afford best sites for expansion of existing airdromes and construction of new ones. On low alluvial plains construction possible, but drainage difficult. Beaches, dune areas, and small upland surfaces in low hills afford possible sites for emergency fields. In mountains, construction difficult or impossible except locally in valleys.

C. Construction Problems: Drainage poor on flat alluvial plains. Grading requirements generally light on plains and terraces; extensive grading required in hills, some mountain valleys, and dune areas. Mechanical stabilization of subgrade generally not difficult except on flat alluvial plains. Clearing generally a minor problem. Rain, wind, and heavy snow hamper construction on northwest coast.

VI. Construction Materials and Fuels:

A. Gravel and Sand: Plentiful in most lowlands along stream channels, in dunes and beaches at coast, and on terraces and fans along the footslopes of bordering hills and mountains. Extensive areas, in some of the largest plains, particularly north of Tokyo, may be some distance from sources of sand and gravel. Some mountain valleys contain gravel and boulders.

B. Hard Rock: Widely distributed. Few parts of mountains and hills are far from suitable outcrops. Not available on lowlands, but boulders or outcrops of hard rock generally occur in nearby slopes.

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III. Water Supply:

A. Existing Supplies: Surface water supplies plentiful in nearly all parts; most abundant in lowlands. In uplands, water generally free from serious pollution; in lowlands greatly polluted. Few wells in uplands. Many shallow wells in lowlands; water generally polluted.

B. Temporary Supplies: Easily available from surface sources and shallow wells, but must be purified. Stream and spring water acceptable in uplands; wells, drilled or dug by military forces, preferable in lowlands.

C. Semi-Permanent Supplies: In lowlands drilled wells preferable. In uplands mountain streams and springs yield supplies. Sources must be properly protected and water purified.

IV. Roads:

A. Existing Roads: Area is served by a fairly complete road net. Condition of roads generally poor, particularly in mountains; a few first-class roads on plains.

B. Ease of Constructing Additional Roads: Nearly all practicable routes are used by existing roads or trails and can be improved for military traffic.

C. Vulnerability to Damage:

1. In mountains, roads generally in defiles, easily blocked; improvements and detours will require much grading of hard rock, some forest clearing.

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B. Hard Rock: Widely distributed. Few parts of mountains and hills are far from suitable outcrops. Not available on lowlands, but boulders or outcrops of hard rock generally occur in nearby slopes.

C. Timber: Forests cover about 60% of the total area; occur mostly on mountain slopes. Best timber in small widely scattered stands. On lowlands little timber available; stands of small trees suitable for corduroy along streams, on sandy coasts, near houses, and in cultivated fields.

D. Mineral Fuels: Scattered small coal deposits in various parts of Honshu; most are being mined. Oil fields along northwest coast of Honshu have very small yield; most of Japan's oil is imported from the Dutch East Indies and Sakhalin.

Prepared by U. S. Geological Survey
for Chief of Engineers, U. S. Army.

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INTRODUCTION

This report was prepared by the Geological Survey, United States Department of Interior, for the Chief of Engineers, U. S. Army, during the period July and August, 1944.

The report is a brief generalized description of those terrain features of Honshu and Shikoku that are of significance in strategic planning of military operations; it presents a summary of the highly detailed material available for many specific areas. Many of the main points considered are outlined in the Terrain Appreciation table and accompanying map. Several pages of photographs and detailed maps illustrate the terrain types occurring in the region. Other maps and tables present basic data and interpretations thereof for special sets of problems: water supply, road and airfield construction, nature and location of principal construction materials and natural fuels, engineering aspects of geology, and soils. Climate and vegetation are considered only briefly; other intelligence sources should be consulted for detailed information.

RELIABILITY OF INFORMATION

Honshu and Shikoku have been studied and described by many geologists and geographers, both Japanese and foreign; the most comprehensive and detailed accounts are published in the Japanese language. Few of these have been used in the preparation of this report; many of them would be very valuable for more detailed reports.

The completeness and reliability of data differ for different areas and for different kinds of information. Conclusions presented in this report are rated according to reliability, ranging from excellent to fair; none is considered poor.

Good, late Japanese topographic and geologic maps on various scales were available for all parts of the region included in this folio.

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Tabulated records of disch

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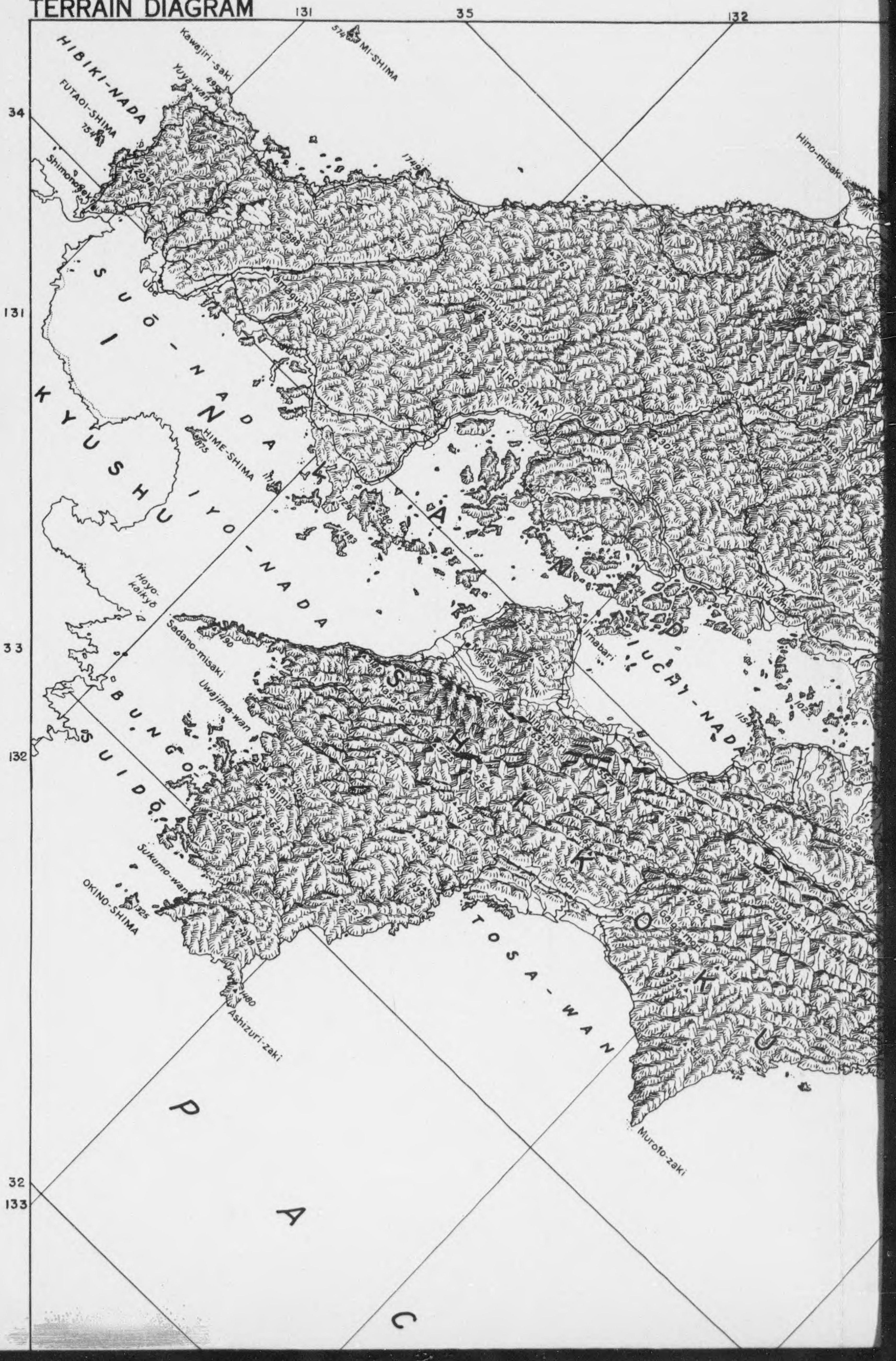
TERRAIN DIAGRAM



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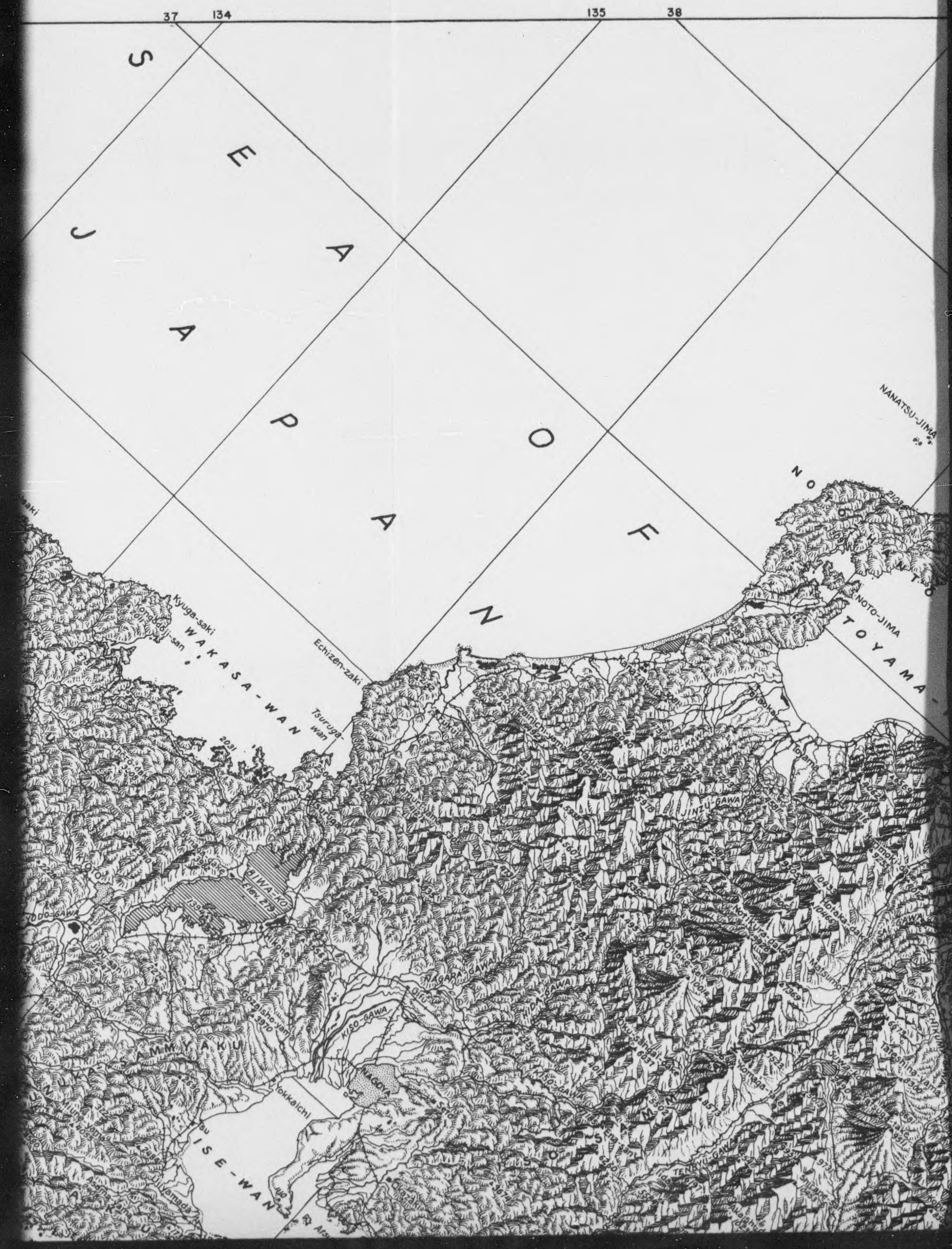

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Coastal sand

Submerged sa
mud banks.

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39 137 40 138 13

Terrain diagram drawn on map base, A.M.S. 3501, sheets N I 52, N I 53, N I 54, N J 53, N J 54, and N K 54, 1:1,000,000. Details sketched from A.M.S. L 571, 1:240,000; Japanese Imperial Land Survey, 1:200,000; Geological Survey of Japan, 1:200,000. During compilation, reference was also made to Physiographic Map of Japan, by Guy Harold Smith, 1:4,000,000; Relief Maps of Northern Honshu and Southern Japan, by U. S. Geological Survey and Air Staff Intelligence, 1:1,000,000 (apx.). Altitudes in feet. The appearance of perspective is obtained by shifting all relief features northward by 1/10 inch for each 3,000 feet of altitude. Distances on map can therefore be scaled off only between points of equal elevation.

Railroads (Minor branches and narrow gauge lines omitted).

Railroad tunnels (only more important shown).

Cities and towns (only more important shown).

Lakes

Coastal sand dunes.

Offshore rocks and islets.

Submerged sand and mud banks.

Swamps and roads not shown. (Swamps occupy only very small area).

SADO SHIMA
Ya-saki
3097
Mano-wan
Ryōtsu-wan
Sawasaki-han
2077
AWA-SHIMA
869
TOBI-SHIMA
Nyūdō-zaki
2349
Niigata
2080
SHINANO GAWA
Agano
Iide san
6906
KITAKAMI
Mikaguradake
Sumon-zan
Yamagata
Mori-yama
Yonezawa
3993
Azuma
6640
Kanai-san
Haguro-yama
Nantai-san
Nikko
Akagi san
Iwaki-san
Chōkai-san
7360
Sendai
Ishinomaki
Ishinomaki-wan
ABUKUMA GAWA
Fukushima
Funagata-yama
4921
Haguro
4974
Surikoba
Matsuyama
Kasajima
Shiogama
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HONSHU AND SHIKOKU (JAPAN)

139 41 142 41 143 40

HOKKAIDO
TSUGARU-KAIKYŌ
MUTSU-WAN
Aomori-wan
Noheji-wan
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Tappi-saki
Kodomari-saki
Yotsutaki-yama 2200
Jōsan-ko
Kogane-saki
Shirokami-dake 1042
Iwaki-san 5391
Shiriya-zaki 1361
Aomori 2351
Hakkoda-san 5200
Ōwara-numa
Nyūdō-zaki 2349
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Inaniwa-dake 3557
Hachinohe 2428
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Chōkai-san 7316
Ganjū 6697
Iwate-san 6956
Kuri-kama-yama 5341
Kurikoma-yama 5627
Kamaishi 4400
Goyō-san 4245
Todo-saki 1653
Kubi-saki
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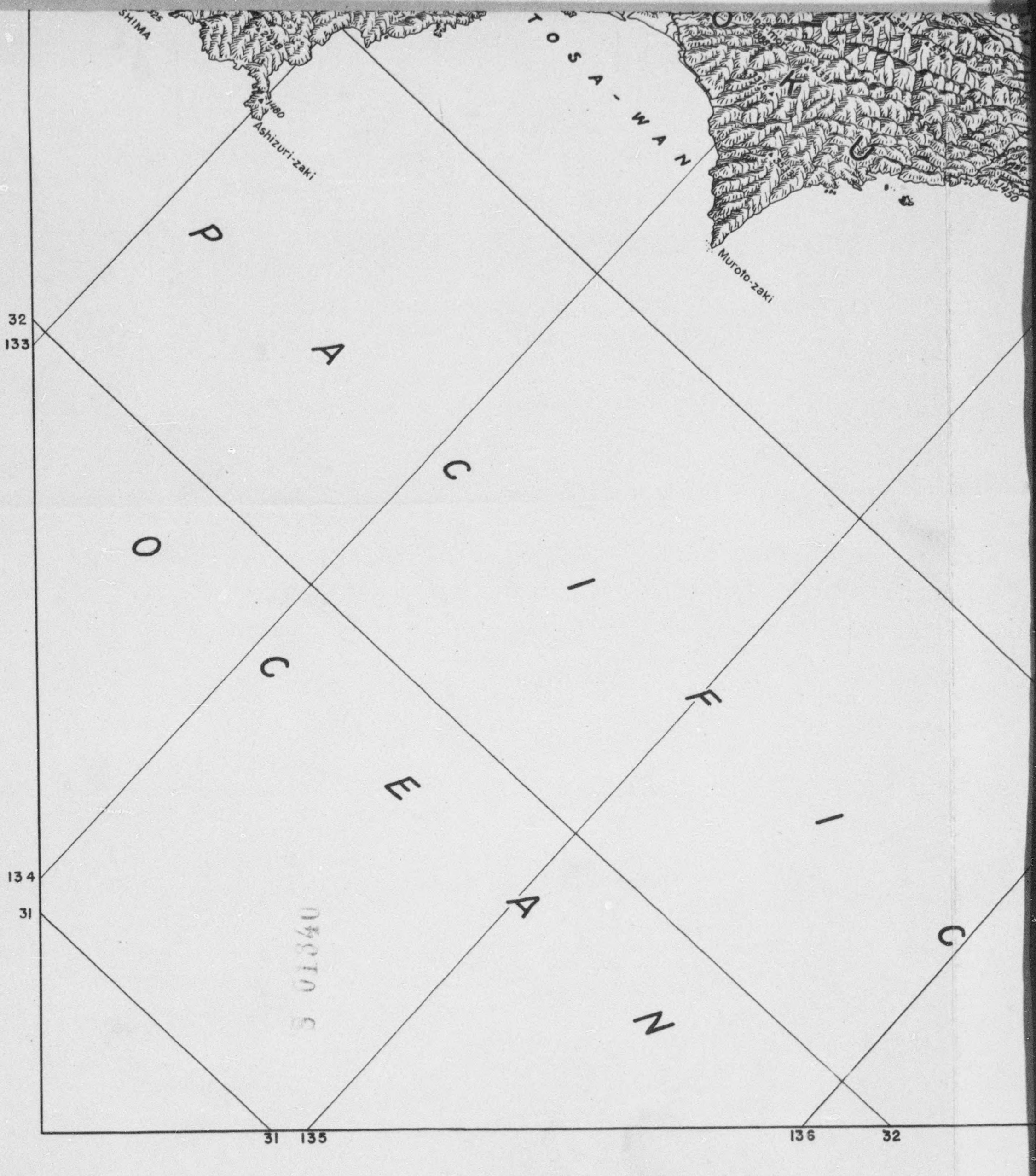

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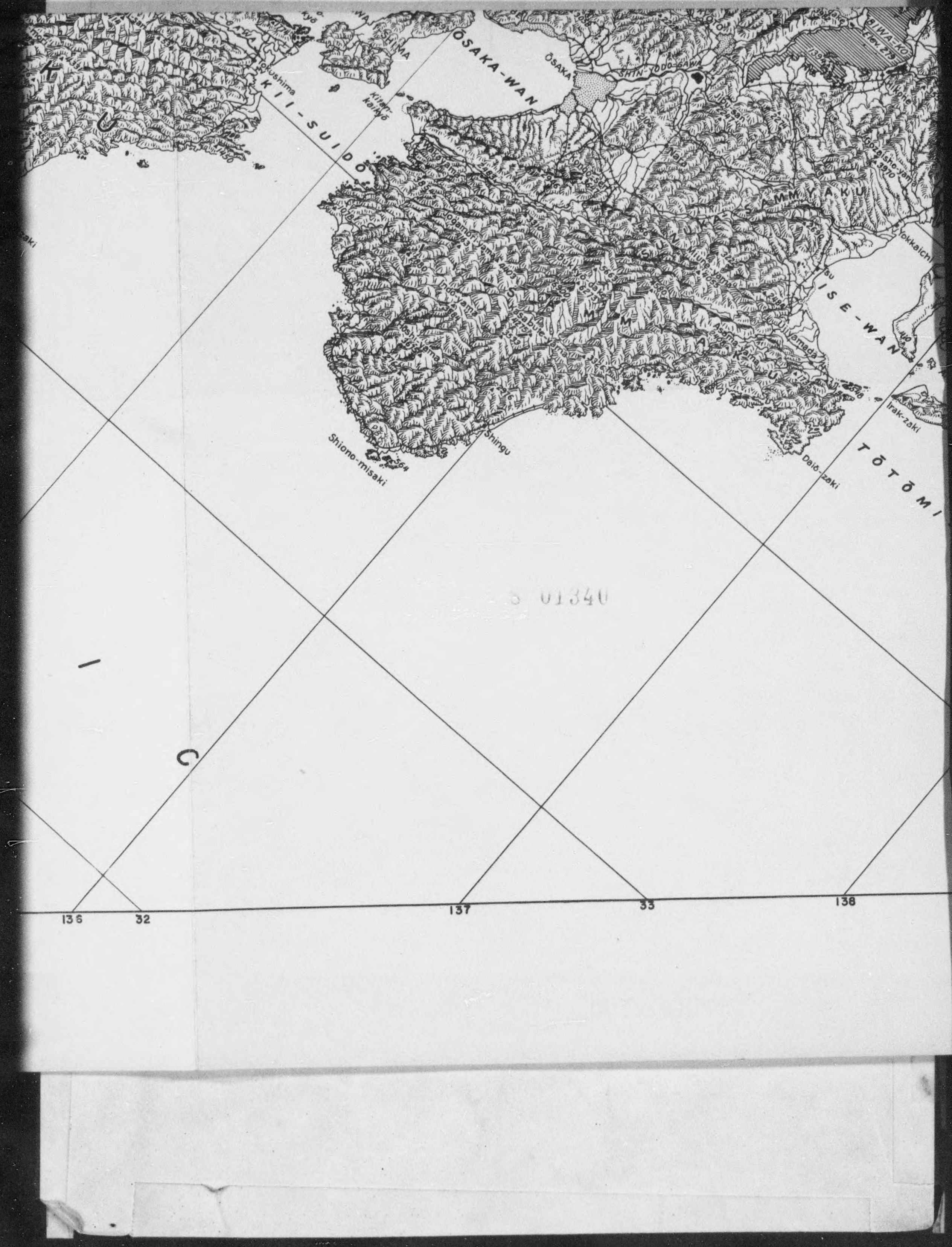

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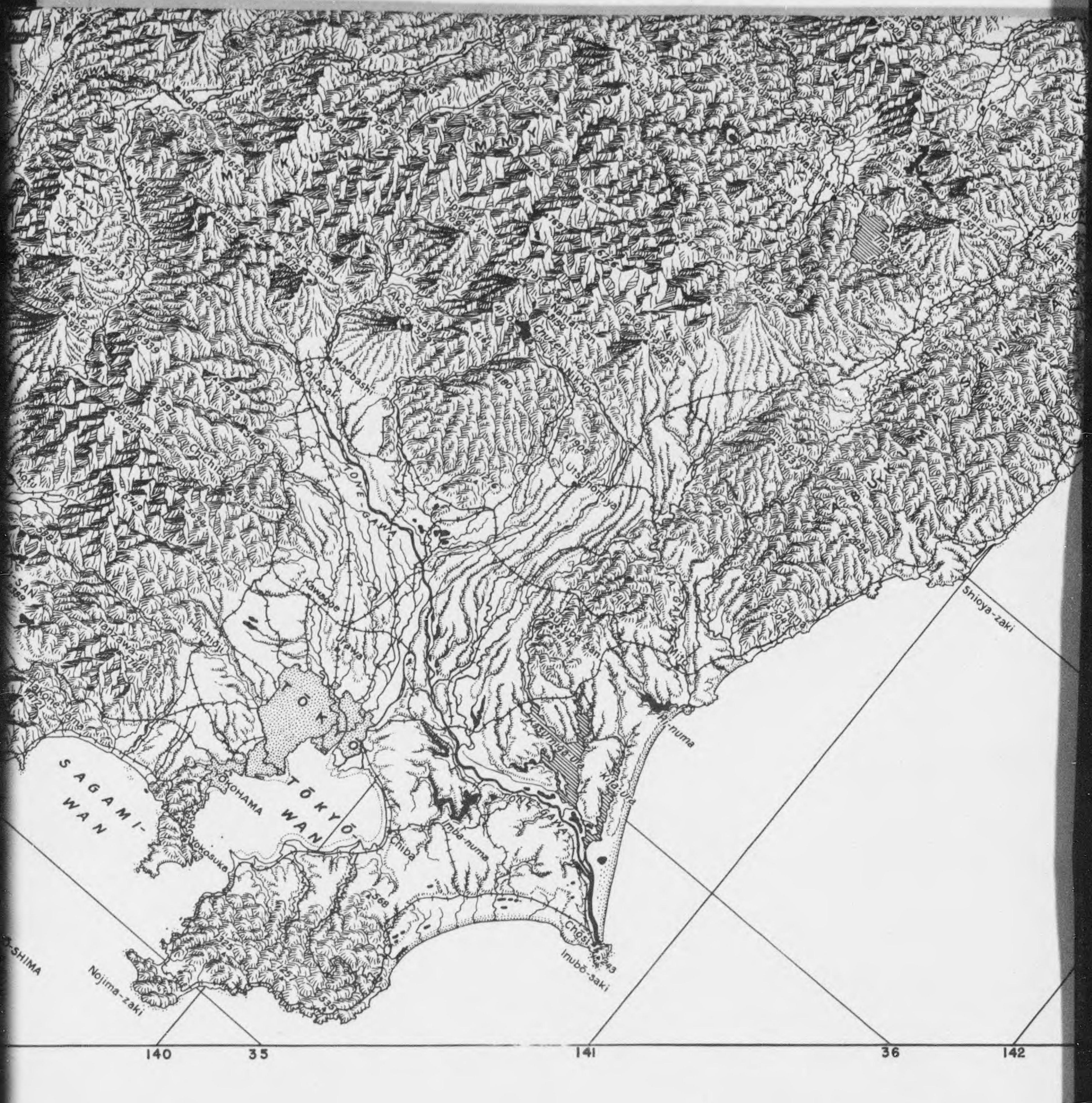

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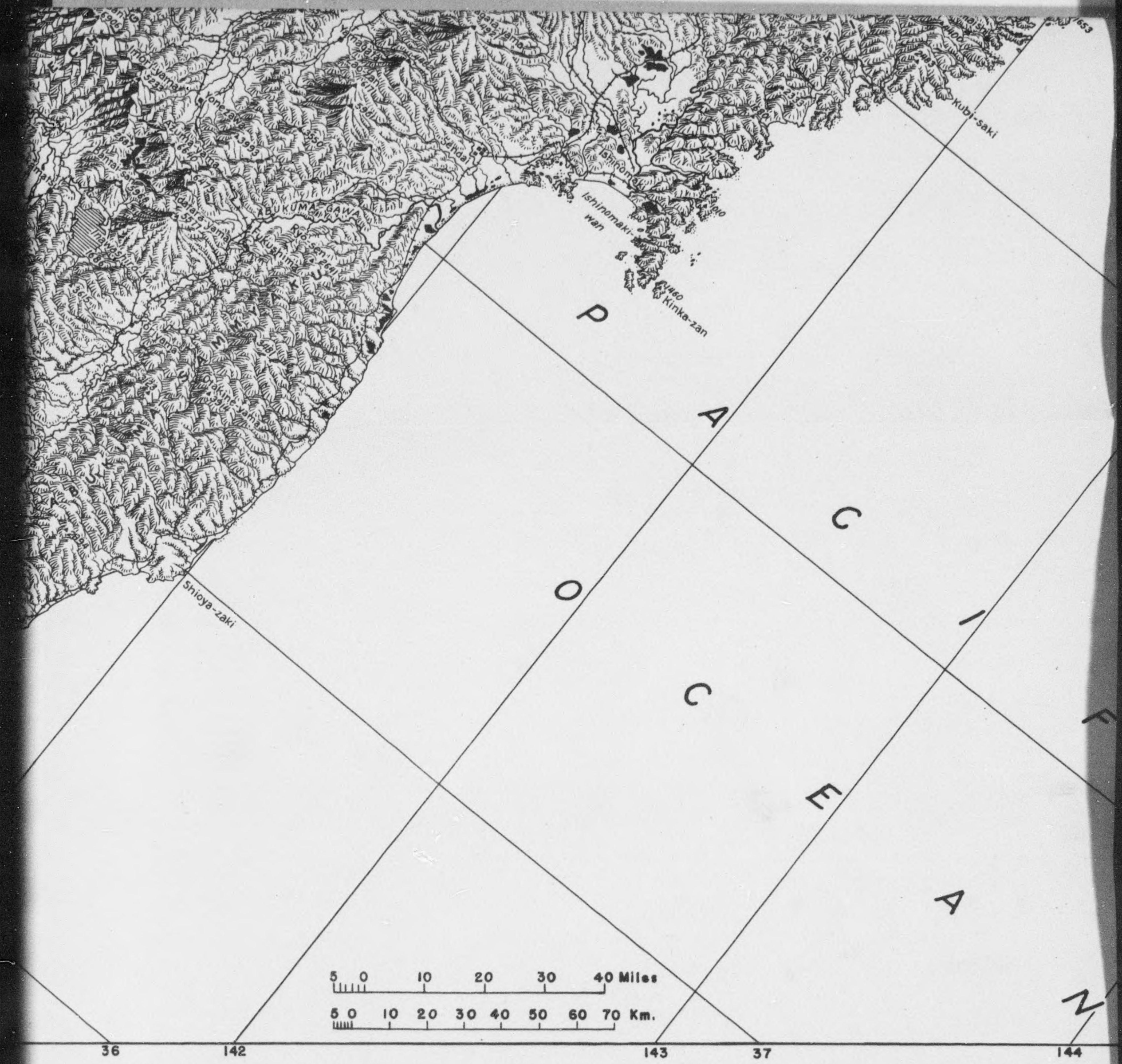
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Ryo-sen-yama
Taka-yama
Ou-yama
Ou-zan
Azuma-yama
Bantai-san
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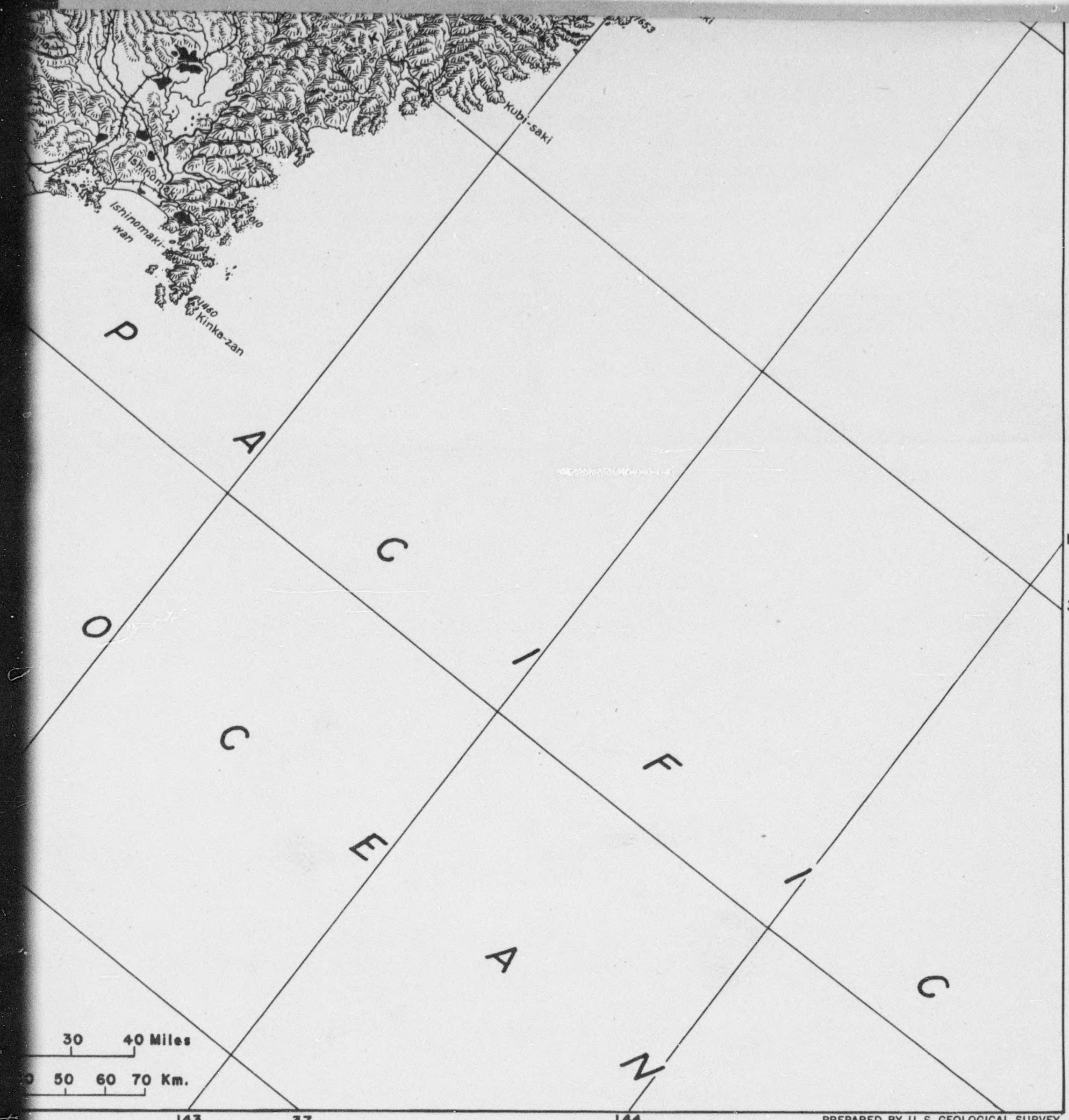

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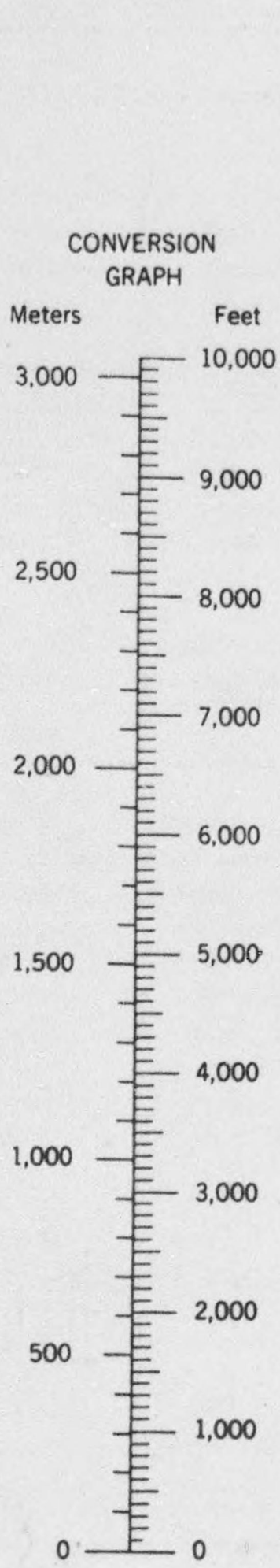
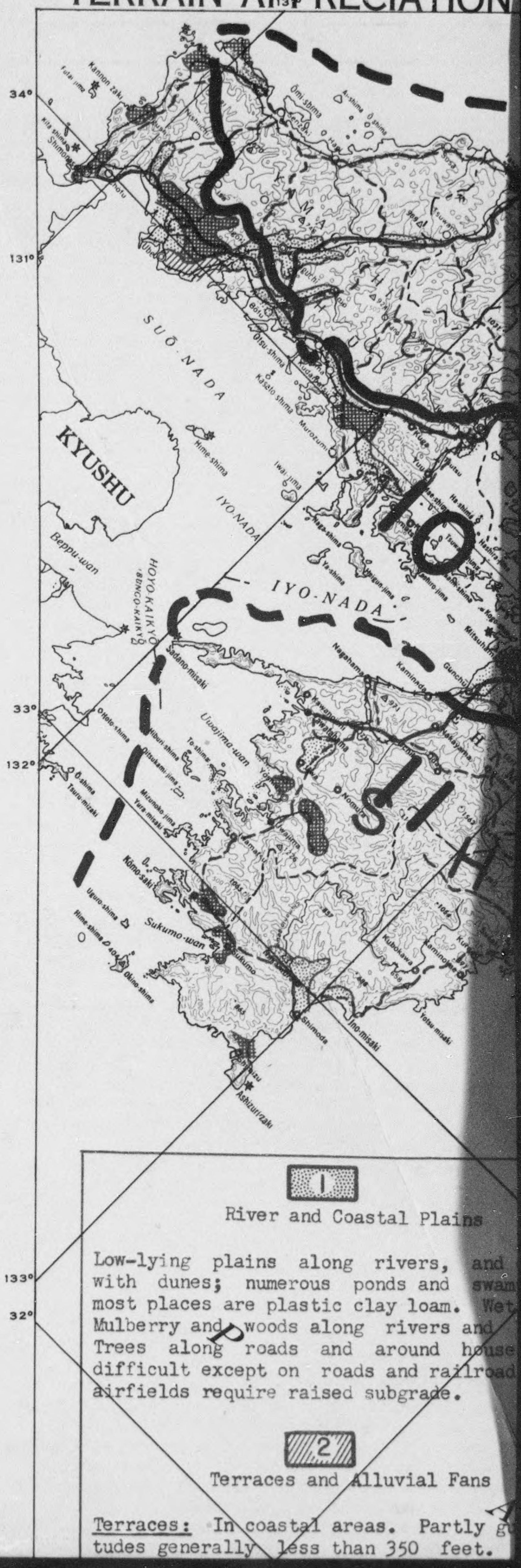
TERRAIN APPRECIATION





GLOSSARY

-bana	point
-ch'on	river
-do	island, province
-dō	province
-dong	village
-gang	river
-gata	beach
-gawa	river
-gunto	archipelago
-hana	point
-hang	harbor
-jima	island
-kaikyo	strait
-kawa	river
-ko	harbor
-li	village
-man	bay
-misaki	cape
-nada	sea
-ni	village
-numa	lake
-retto	island chain
-ri	village
-saki	cape
-shima	island
-to	island
-umi	sea
-wan	bay
-zaki	cape

1

River and Coastal Plains

Low-lying plains along rivers, and with dunes; numerous ponds and swam most places are plastic clay loam. Wet Mulberry and woods along rivers and Trees along roads and around house difficult except on roads and railroad airfields require raised subgrade.

2

Terraces and Alluvial Fans

Terraces: In coastal areas. Partly g tudes generally less than 350 feet.

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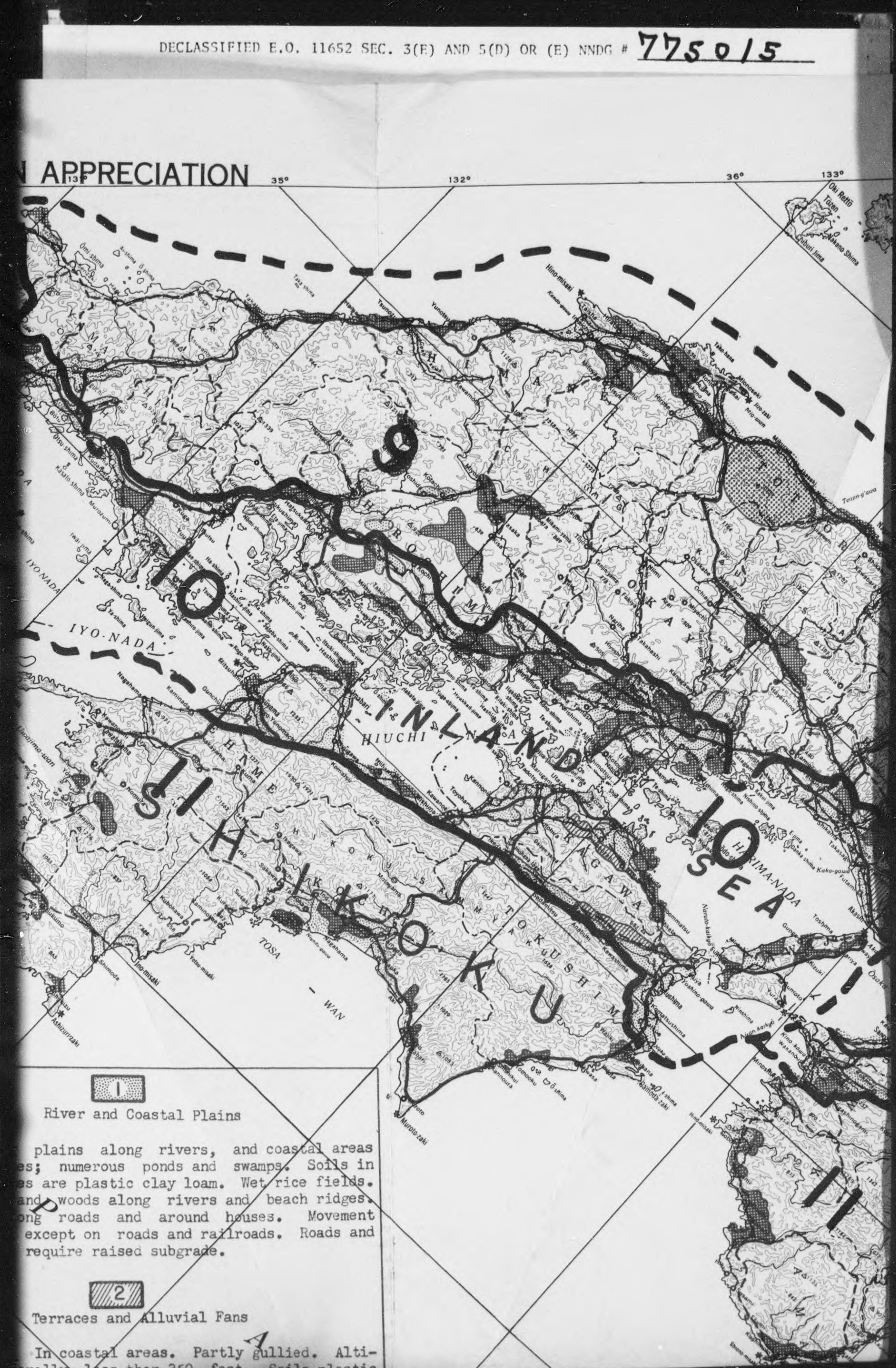

1

River and Coastal Plains

plains along rivers, and coastal areas es; numerous ponds and swamps. Soils in es are plastic clay loam. Wet rice fields. and woods along rivers and beach ridges. ong roads and around houses. Movement except on roads and railroads. Roads and require raised subgrade.

2

Terraces and Alluvial Fans

In coastal areas. Partly gullied. Alti- erally less than 350 feet. Soils plastic

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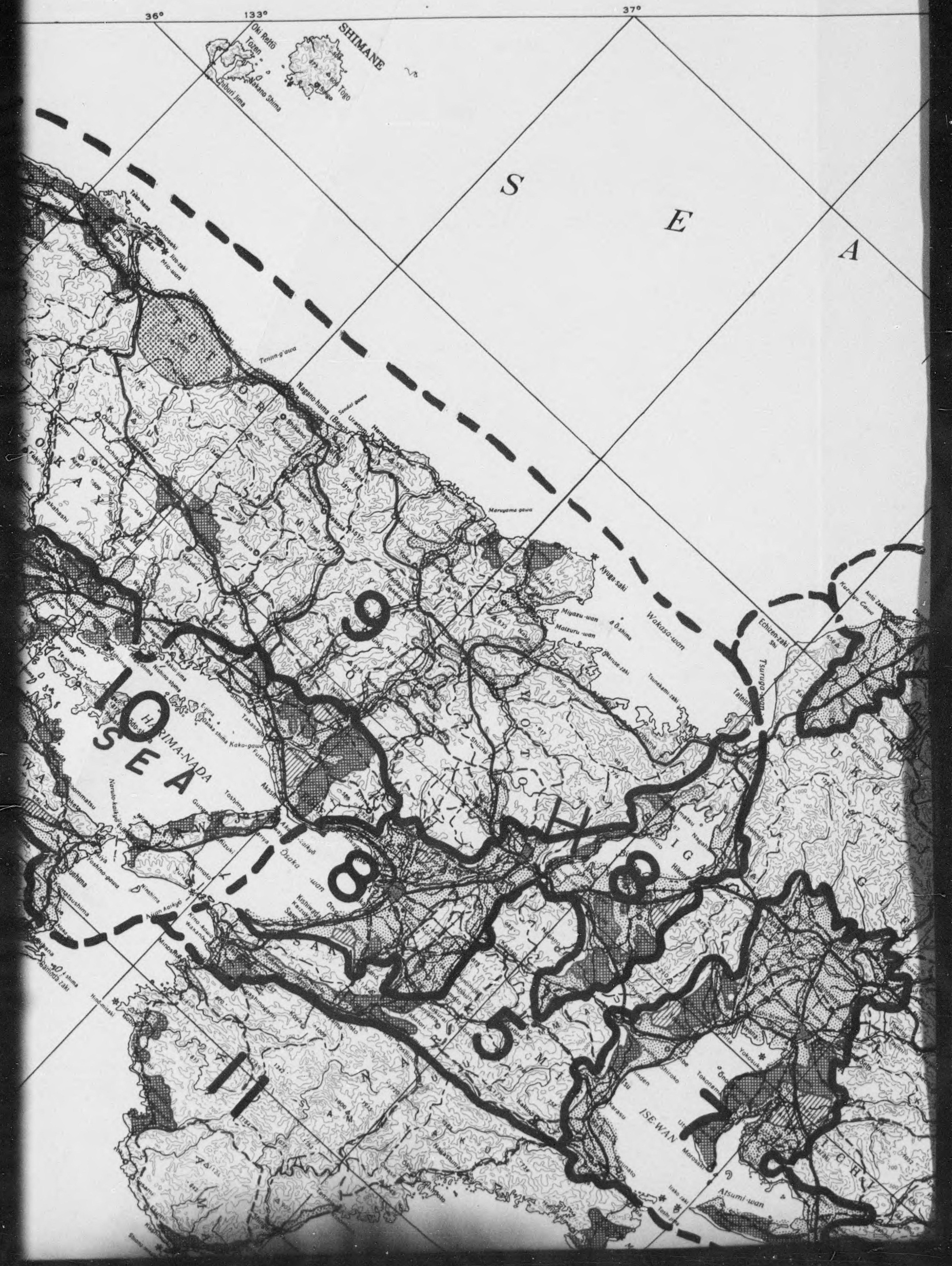

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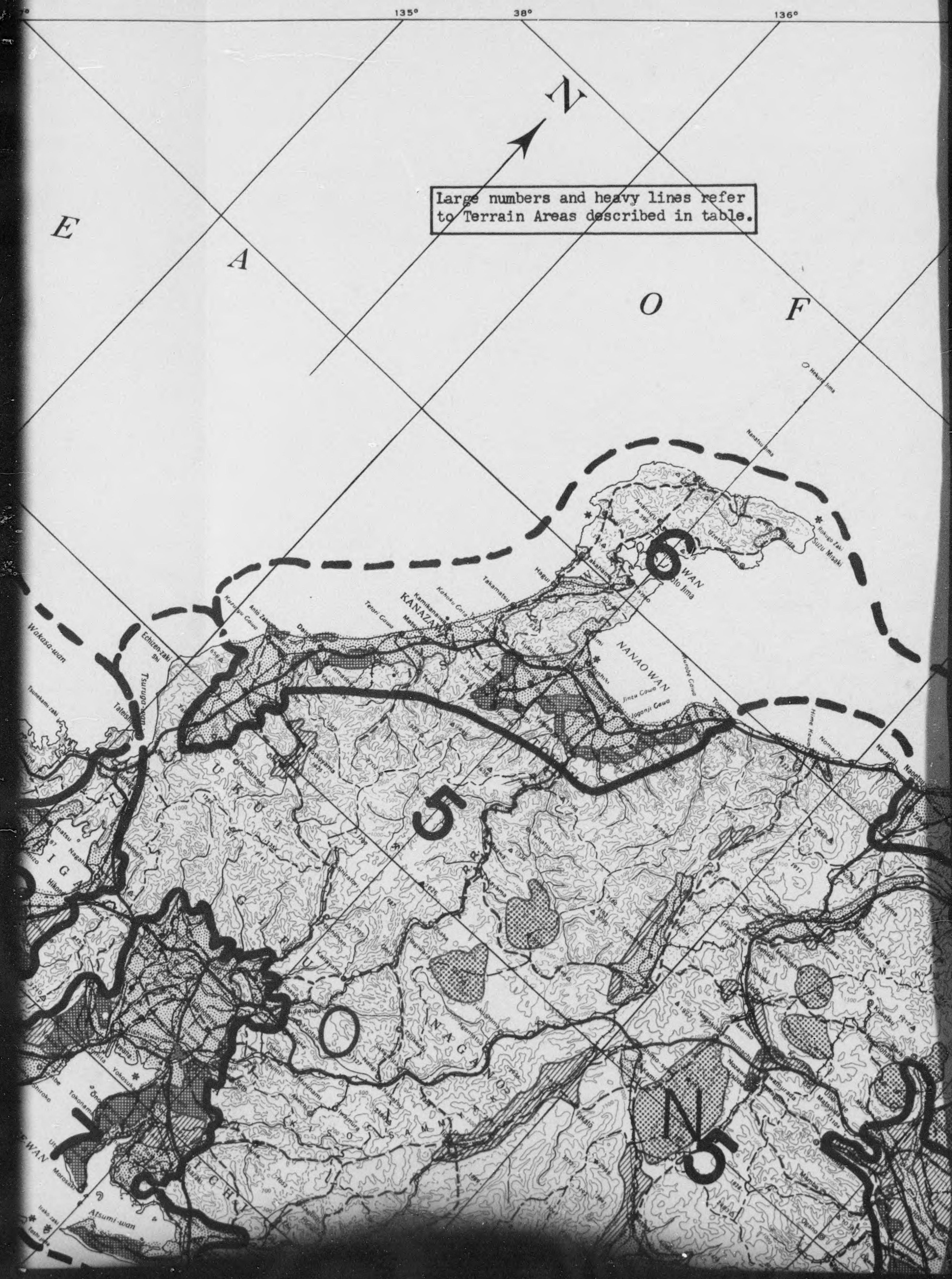
135°
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Nanatsu Jima
Anamikyu
Uzetsu Gyo
Rokugo Zaki
Suzu Misaki
Takahama
Hagui
Takamatsu
Kahoku Gata
Kamikanaiwa
KANAZAWA
Matsu
Tetori Gawa
Kurusuyu Gawa
Anto Zaki
Daishoji
Wakasa-wan
Echizen-zaki
Shi
Tsuruga-wan
Tsunekami-zaki
Tateishi
Kamiukeda
Ukui
Shiratori
Kamiyama
Hikone
Nagahama
Yokosuka
Shiroko
Tokonami
Ono
Morosaki
Irako Zaki
Toshi jima
Atsumi-wan
Ichi
Yasotsu
Mitake
Tsukechi
Nagatsu
Inagano
Iwamura
Kiso
Isami
Akechi
Nakatsu
Fukushima
Agematsu
Fukuji
Takaki
Nanao
Jinzu Gawa
Joganji Gawa
Kuroba Gawa
Togawa
Funami
Hime Kawa
Nomachi
Nadachi
Nagatsu
Iiyama
Nagano
Shinonoi
Togakushi
Nakano
Mashiko
Sakaki
Yashiro
Negahuki
Shimmachi
Meriko
Nozawa
Yudo
Iwamurada
Matsumoto
Kisatsu
Nakamonai
Sora
Mamba
Ogano
Shimo-suwa
Kami
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Ryotsu-wan
Mano-wan
Sawasaki-hana
Hime-saki
Awa-shima
Tobi-shima
Mogami-gawa
Kamo
Murakami
Tsuruoka
Yoshida
Sakata
Shonai
Nishikawa
Senami
Iwafune
Murata
Uchino
Niigata
Shinano-gawa
Agano-gawa
Teradomari
Mitsuke
Yoshida
Sanjo
Kodoito
Tsubame
Nagaoka
Izumozaki
Ishiji
Takahama
Kashiwazaki
Nagaoka
Nomachi
Nadachi
Naoetsu
Hime Kawa
Iiyama
Nagano
Nakano
Matsushiro
Kusatsu
Nakanojo
Haruna
Usui Pass
Matsuida
Maebashi
Ojano
Tatebayashi
Tsukigata
Kawamata
Obama
Miyatomiya
Haranomachi
Odaka
Obamachi
Tomioka
Shinzan
Yamagata
Arato
Kaminoyama
Negai
Takahata
Hirosawa
Tendo
Hijiyoshine
Tateoka
Oshido
Kakuda
Yokote
Omagari
Akita
Kamikoani
Tsuchizaki
Kakunodate
Hachimantai
Shizukuishi
Morioka
Hanamaki
Kitakami
Ichinoseki
Tsuwano
Tsuwano-gawa
Yoshii-gawa
Kuma-gawa
Tone-gawa
Kinu-gawa
Naka-gawa
Kuji-gawa
Abukuma-gawa
Kitakami-gawa
Mogami-gawa
Shinano-gawa
Agano-gawa
Tsugawa
Nagawa
Ajima
Inawashiro
Kitakata
Aizu-Wakamatsu
Koriyama
Fukushima
Sukagawa
Shirakawa
Nasu
Utsunomiya
Mito
Tokyo
Yokohama
Kofu
Nagano
Matsumoto
Ueda
Takasaki
Maebashi
Kusatsu
Nakanojo
Haruna
Usui Pass
Matsuida
Ojano
Tatebayashi

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HONSHU AND SHIKOKU (JAPAN)

139° 41° 140° 141° 142° 41° 143° 40°

N

HOKKAIDO

TSUGARU-KAIKYO

Kodoman-saki

Tappi-saki

Ōma-saki

Mutsu-wan

Natsudomari-saki

Nobeji-wan

Shimokita-hanto

Kyuroku-shima

Kogane-saki

Nyudo-zaki

Furakawa-minato

Nosuto-minato

Nosuto-gawa

Omono-gawa

Arakawa

Akita

Hachiro-gata (Lake)

Oga-hanto

Oga-wan

Aomori

Hirosaki

Kuroishi

Kashiwa-gi

Towada-ko

Gonohe

Takko

Sannohe

Ichinohe

Karumai

Hachinohe

Mi-saki

Hirasawa

Kamikita

Onjū

Kamikita-gawa

Nishinomai

Kunimidake

Rokugō

Yokote

Yokote-gawa

Omagari

Ōmonai

Miyoshi

Inaniwa

Kanayama

Shunji

Nagugo

Ōsakazawa

Ishinomaki-wan

Miyato-shima

Tashiro-jima

Ishinomaki

Ōhara

Orikabe

Fujisawa

Sakari

Takata

Iozuma

Shiogama

Shiogama-wan

Matsushitaga

Abukuma-gawa

Watarai

Ōnagawa

Izu-shima

Eno-shima

Ai-shima

Kinka-zan

Kamiwari-zaki

Kubi-saki

Kamaishi-wan

Sangan-jima

Miyako-wan

Hei-saki

Todo-saki

Yamada

Ōtsuchi

Kamaishi

Morioka

Hizume

Ishidoriya

Ōhasama

Toho

Kitakami

Kitakami-gawa

Tōno

Tōno-gawa

Kosaka

Ōgata

Akita

Ani

Yuzawa

Yuzawa-gawa

Tsuchizawa

Tsuchizawa-gawa

Mitsuishi-gawa

Ōmonai-gawa

Kurosawajiri

Iwayado

Ōsawa

Ōsawa-gawa

Ōmagasaki

Kitakami-sanchi

Ōu-sanmyaku

Dewa-sanchi

Akita-Yoko-shima

Kitakami-gawa

Kitakami-sanchi

Ōu-sanmyaku

Dewa-sanchi

Akita-Yoko-shima

Kitakami-gawa

Kitakami-sanchi

Ōu-sanmyaku

Dewa-sanchi

Akita-Yoko-shima

Kitakami-gawa

Kitakami-sanchi

Ōu-sanmyaku

Dewa-sanchi

Akita-Yoko-shima

Kitakami-gawa

Kitakami-sanchi

Ōu-sanmyaku

Dewa-sanchi

Akita-Yoko-shima

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GLOSSARY

-bana	point
-ch'on	river
-do	island, province
-dō	province
-dong	village
-gang	river
-gata	beach
-gawa	river
-gunto	archipelago
-hana	point
-hang	harbor
-jima	island
-kaikyo	strait
-kawa	river
-ko	harbor
-li	village
-man	bay
-misaki	cape
-nada	sea
-ni	village
-numa	lake
-retto	island chain
-ri	village
-saki	cape
-shima	island
-to	island
-umi	sea
-wan	bay
-zaki	cape

LEGEND

Boundary: Province, Prefecture

Railroads: 3'6", Single track, Double track — Tunnel — Sta

Railroads: Narrow gauge

Cities: 1st importance

Cities: 2nd importance

Towns

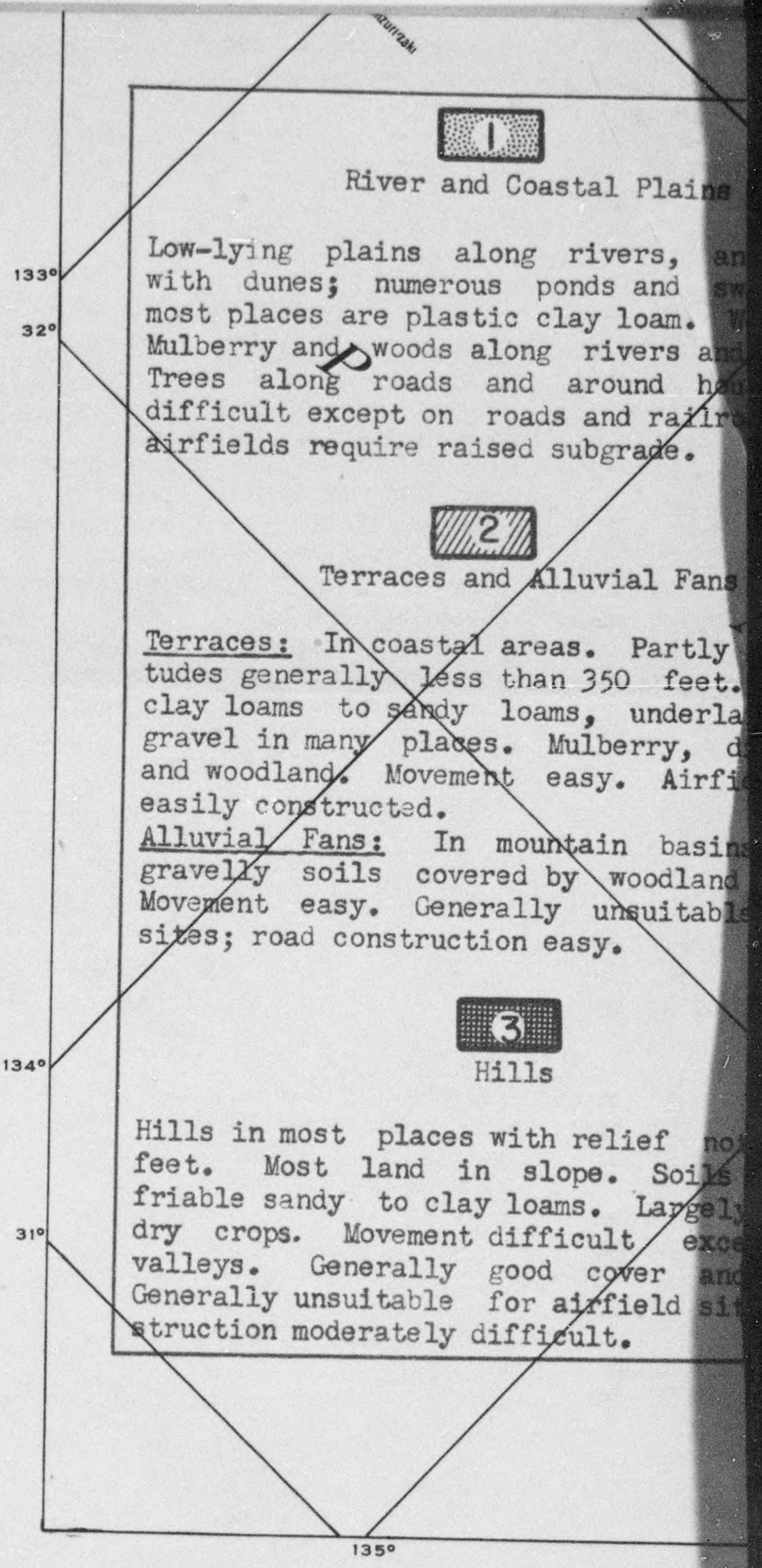
Heights in meters .1352

Lighthouse

Rivers

Contours —200—

Mine



Prepared under the direction of the Chief of Engineers by the Army Map Service (AM), U.S. Army, Washington, D.C., 1944.

Sources: IMW, Eastern Asia, 1:1,000,000; AMS, NK 54, NJ 53, NJ 54, NI 52, NI 5

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Muroto-zaki
Hino-misaki
Shionomisaki
Kushimoto
Shingū
Kumano-gawa
Kinomoto
Tatsuura
Kii-Nagashima
Kii-Yokoshima
Kii-Ōshima
Kii-Ōshima
Kii-Kashima
Kii-Kashima
Kii-Kash

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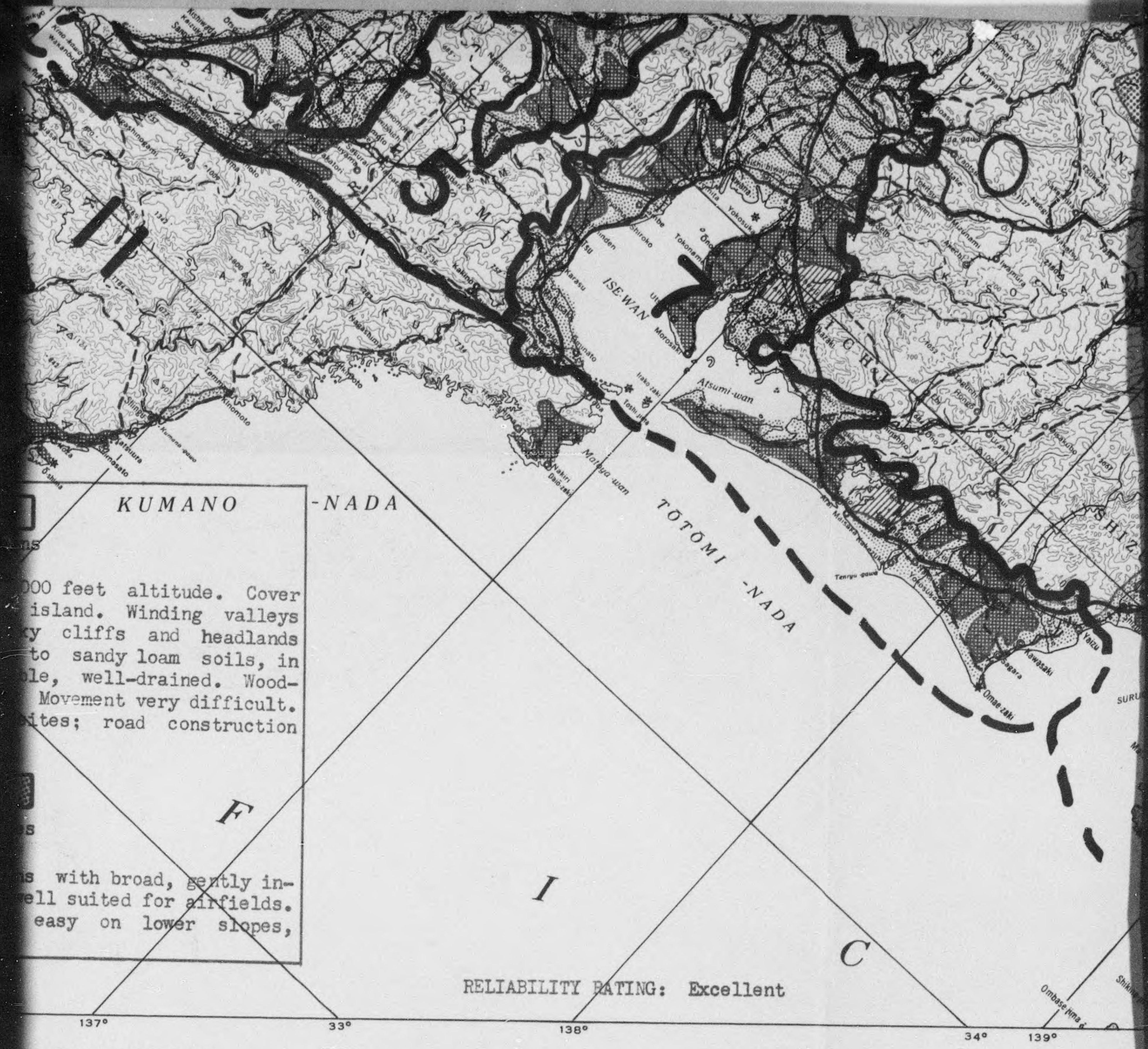

KUMANO -NADA

...000 feet altitude. Cover... island. Winding valleys ...y cliffs and headlands ...to sandy loam soils, in ...le, well-drained. Wood-... Movement very difficult. ...ites; road construction

F

...s with broad, gently in-...ell suited for airfields. ... easy on lower slopes,

I

C

RELIABILITY RATING: Excellent

...IGHTS IN METERS

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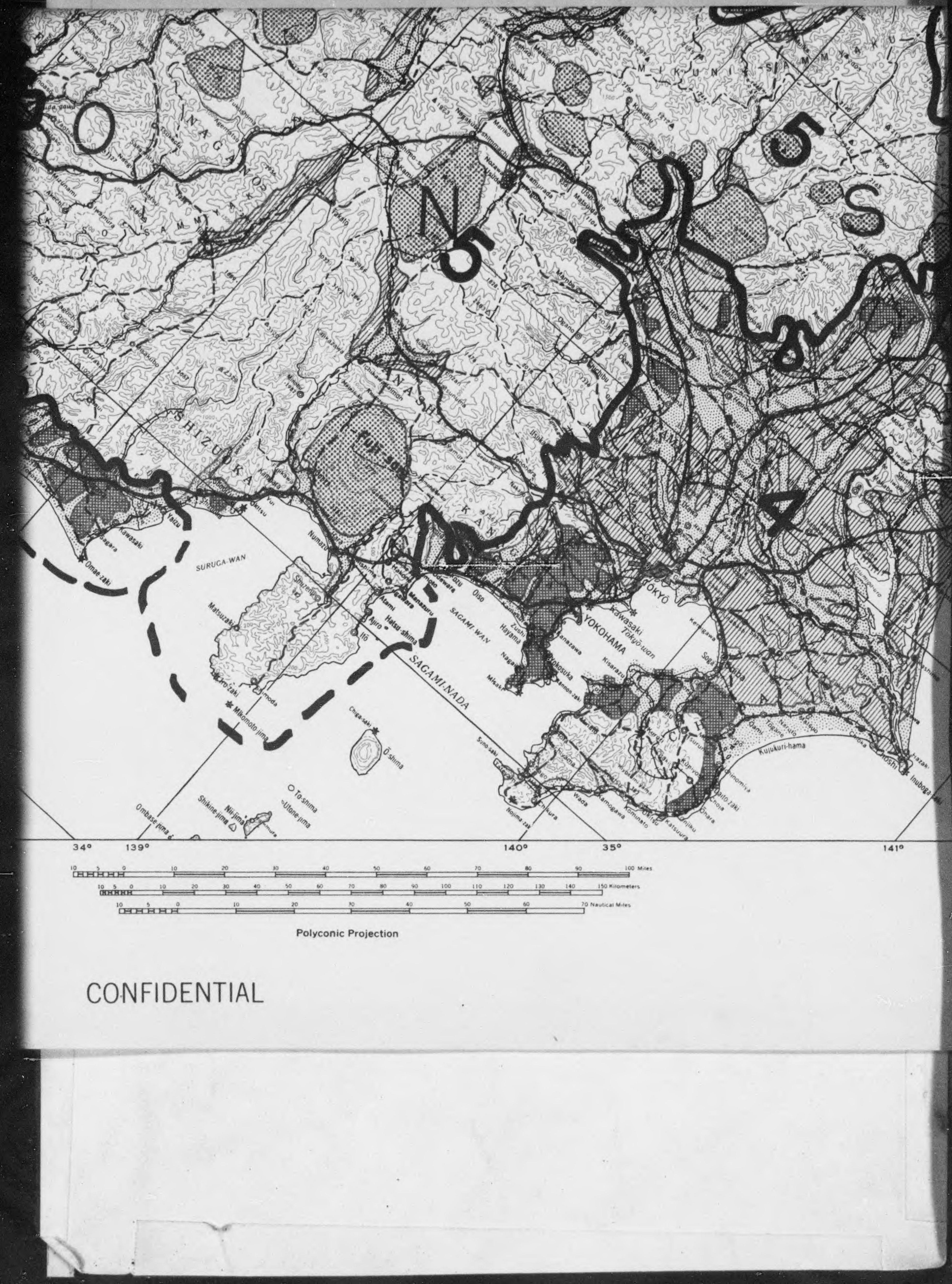

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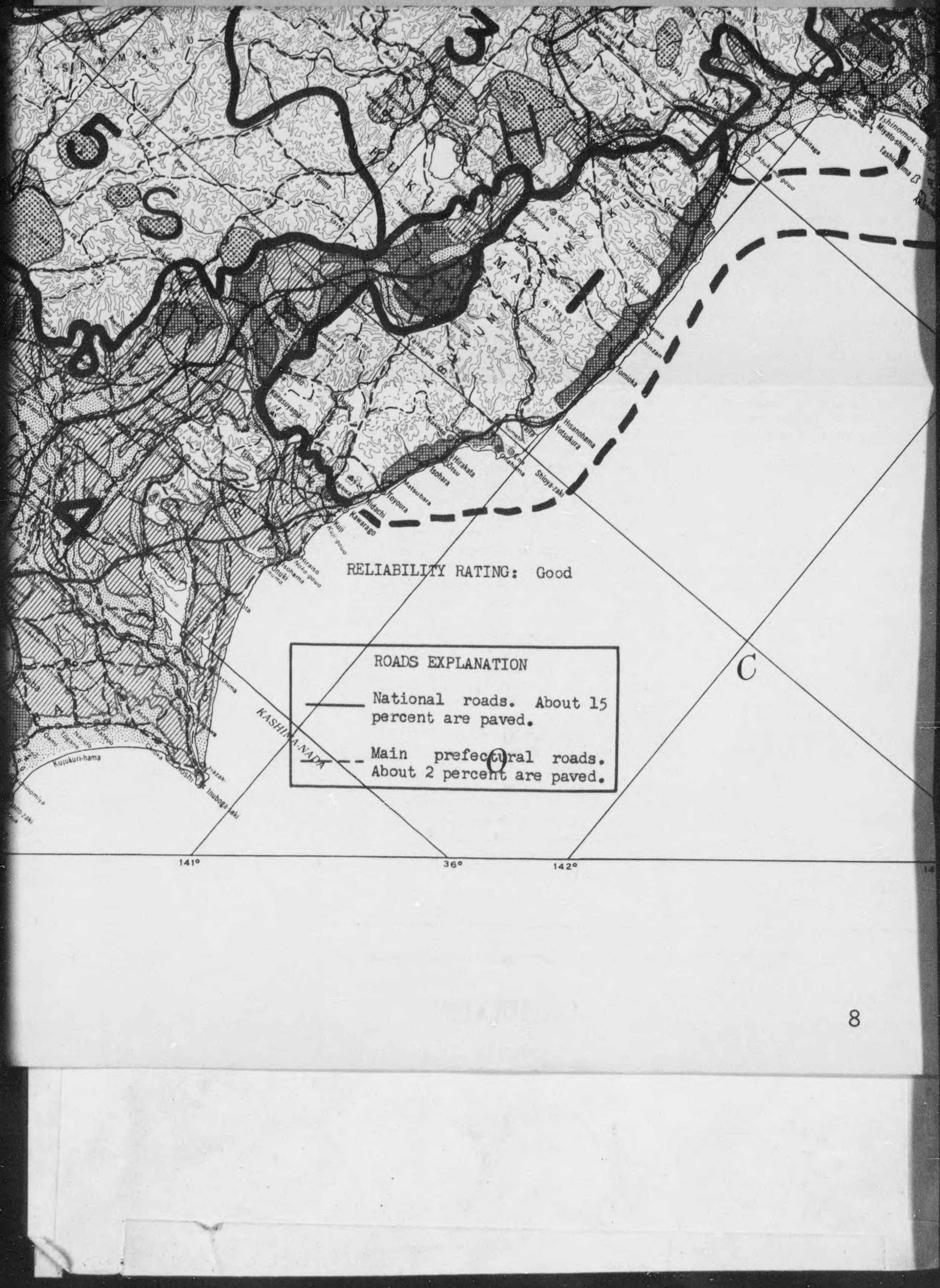

RELIABILITY RATING: Good

ROADS EXPLANATION

——— National roads. About 15 percent are paved.

— — — Main prefectural roads. About 2 percent are paved.

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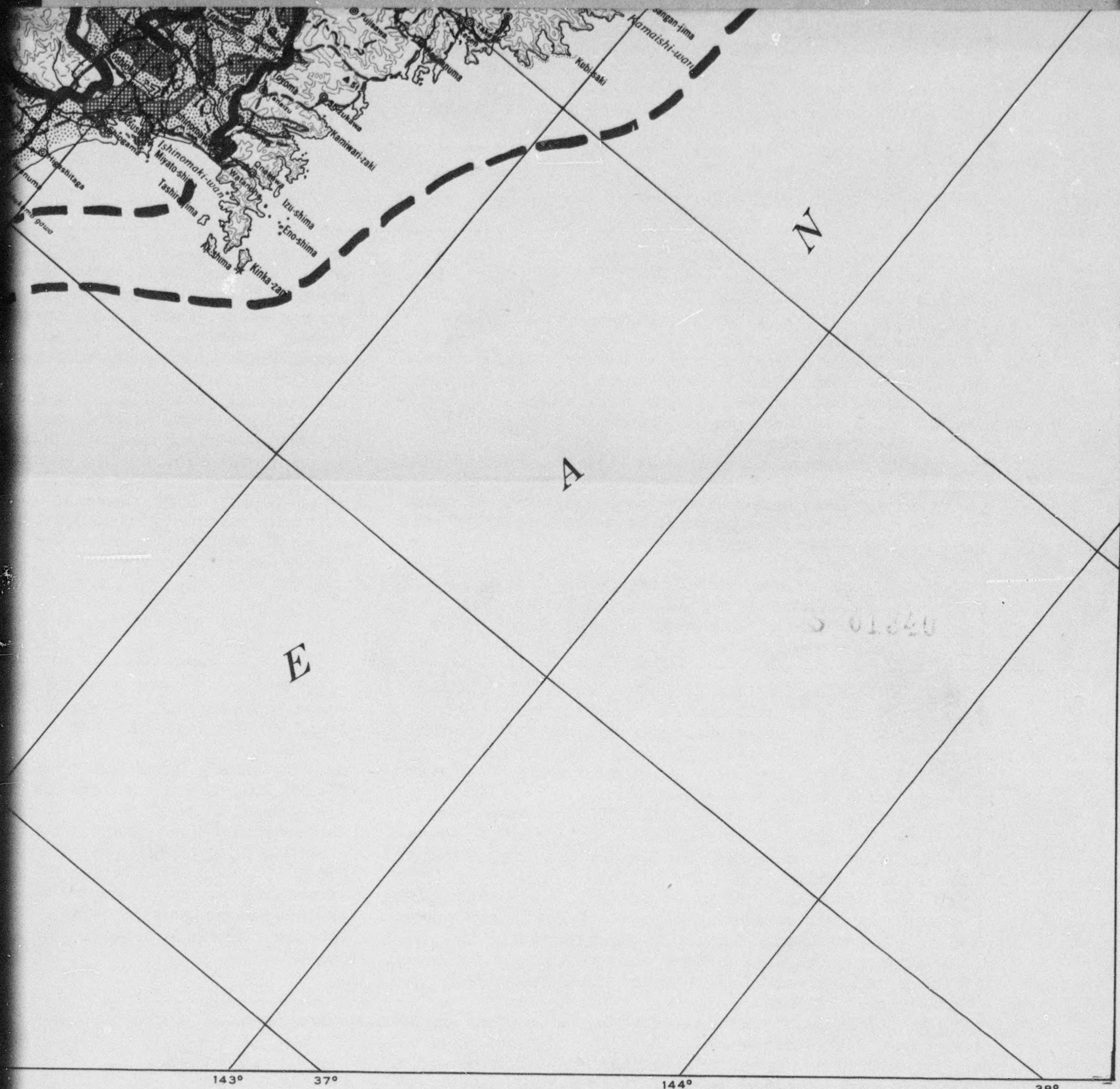

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CHIEF OF ENGINEERS, U. S. ARMY

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HONSHU AND SHIKOKU (JAPAN)

General Statement: Honshu, the largest of the Japanese Islands, is about 800 miles long, and has an average width of about 100 miles. Shikoku, about 150 miles long, lies off the south coast, enclosing the island-studded Inland Sea. Honshu and Shikoku are almost entirely mountainous, and most of the surface is steeply sloping, little farmed, and covered with forests. Much of the population is concentrated on three broad lowland plains in the south central part facing the Pacific Ocean (Areas 4, 7, and 8). The largest of these, the Kwanto Plain (Area 4), contains over 1/6 of the inhabitants of Japan. Smaller plains, most numerous in the north, are also densely populated.

In general the terrain is monotonous. The mountains are rugged, being highest in central and northern Honshu, where they reach altitudes over 10,000 feet, lowest in southwestern Honshu, where they are mostly less than 3,000 feet in altitude.

Area No.	Topography	Communicati
1 KITAKAMI AND ABUKUMA HIGHLANDS	Relief and Slopes: Low massive mountain ranges reaching a maximum width of about 40 miles. Altitude of highest peaks 3,000 to 6,000 feet. Slopes steep and rocky. Valley bottoms generally less than 600 to 1,200 feet wide; many rocky gorges. Mountain tops rounded and forested. Kitakami Highland has abrupt rocky coast with few coastal plains (too small to show on map). Abukuma Highland on south is lower, has somewhat wider valleys, and descends seaward to a belt of low hills separated by flat valleys 1/2 to 1 mile wide. These valleys (not differentiated on map) have sandy beaches and dunes along shore. Drainage: Streams on eastern slope originate near western margin of area and flow in steep narrow valleys, generally with rocky or gravelly beds. Courses mostly trend eastward. Streams on west slope have steep gradients. South end of Abukuma Highland crossed by large through-flowing streams.	Main road and r follow coast of coastal route i Relatively few though several larger valleys. from area 2 cro one crosses Abu Kitakami Highla many isolated f no large cities more dense popu square mile), es in southern par near railroads.
2 KITAKAMI LOWLAND	North of Ichinoseki: Flat-floored valley, 3 to 7 miles wide bounded on west by gentle sloping alluvial fans extending out as low benches from mountains and forcing the winding sluggish river to eastern side of valley. These fans are well-drained; have slope of 1 to 3 percent; steepen near valley margin. Banks of main stream are low and sandy. Tributary streams numerous, especially on alluvial fans on west side of valley. Most, however, are small, dissipated by irrigation ditches. South of Ichinoseki: Lowland widens; consists of flat, poorly drained plain with many winding streams, swamps, and lakes. Roads are on embankments. Streams and canals bordered by dikes. Plain broken by well-drained hills, 300 to 700 feet in altitude; hillsides scoured by many ravines. Coastal area: Coast straight except where hills reach shore; paralleled by ridges of dunes and pine-covered sand hills mostly less than 25 feet high.	Area is main ro ern Honshu; fo road. North of well-drained we close to mounta roads and side where area is w Sendai is large 1935). Shiogam of Tokyo. Mori at north end of city, but towns roads are numer
3 NORTHERN MOUNTAINS	General: Mountainous area broken by a line of interior lowlands trending north-south, and locally bordered by wide coastal lowlands. Mountains: Mountains are rugged but generally low. Altitude of highest peaks 3,000 to 7,000 feet. Divided into two ranges by central row of basins. Highest peaks	Railroads and m area, following cross interveni narrow valleys passes. West-c row of lowlands

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Reliability: Excellent

INTRODUCTION

Many volcanic cones rise above the general level of mountain summits. The only level areas are scattered intermontane basins and coastal plains. They are floored in general by river alluvium, covered by rice paddies, and have winding streams bordered by dikes and by sandy belts planted to dry crops. They are bordered by steep alluvial fans, or dissected terraces. In places these terraces are extensive, as on the Kwanto Plain.

Movement: Movement is relatively easy in the lowlands. However, in many places on river plains, poor drainage and numerous stream crossings make cross-country movement difficult, except in winter. At this time most rice fields are dry and, the ground in the north frozen. In general terraces and fans are dry, well-drained, and suitable for rapid movement on roads and cross country. The mountains, which make up most of the area are barriers and can be traversed only through narrow defiles over winding roads. In general roads in the mountains

areas are numerous but can be easily b
in the mountains is deep and increases
movement.

Observation: In the lowlands obs
large areas can be easily found; visib
because on the rice lands trees are sc
visibility is restricted by the preva
rough topography.

Concealment: Concealment is scar
cause tall vegetation is generally lac
found on margins of river plains and n
mountains concealment is abundant.

Cover: Cover is lacking on river
artificial embankments and in protecti

	Communications and Settlements[a/]	Movement	Observation
hing est Valley many astal on nds leys ed on stern rally ast- South ring	Main road and railroad north from Tokyo follow coast of Abukuma Highland. No coastal route in Kitakami Highland. Relatively few roads in interior of area, though several roads cross area in larger valleys. Two branch railroads from area 2 cross Kitakami Highland; one crosses Abukuma Highland. Kitakami Highland has sparse population; many isolated farms and small villages; no large cities. Abukuma Highland has more dense population(300 to 450 per square mile), especially near coast and in southern part. Several large towns near railroads.	Corridor on coast of Abukuma Highland: Belt of low hills on east coast is followed by main Tokyo to Sendai road and railroad; traverse numerous flat valleys floored by wet rice fields, where footing is poor and movement off road difficult. Valleys separated by low passes with gentle, dry, grassy and cultivated slopes. Other parts of area: Elsewhere in area, movement is generally confined to narrow winding mountain roads which can be easily blocked. In most places cross-country movement difficult because of steep rocky slopes and dense forest. Easiest direction of movement: Generally east-west, following valleys and ridges. Passes across crest of range mostly over 1,500 feet in altitudes.	All existing roads in a commanded from hill top- tain slopes. Mountain terior probably not goo tion points, because val concealed by lower slop ridges. Visibility goo coastal plains which i hills south of Sendai, mountain areas because forest. Scattered area meadow on hill and mou afford good observation
les ex- rcent; y er, t, s, nals ls, y	Area is main route from Tokyo to northern Honshu; followed by road and railroad. North of Ichinoseki. route crosses well-drained western slope of valley close to mountain spurs. Alternate roads and side roads numerous only where area is wide. Sendai is largest city (Pop., 219,500, 1935). Shiogama is largest port north of Tokyo. Morioka (Pop. 62,000,1930) at north end of valley is only other city, but towns and villages along roads are numerous.	North of Ichinoseki: Movement generally easy along western side of valley floor. Extensive rice fields are hindrance; in summer these are water-filled but in winter are dry. They are watered by irrigation and can be easily drained. Stream crossings numerous but probably only the largest are not fordable. South of Ichinoseki: Movement difficult on poorly drained plains except on roads; generally easy in hills. Plains are covered by rice fields and crossed by many wide streams and canals. These rice fields are probably wet even when fallow in winter. Well-drained hills stand like islands in paddy-covered plain. Coastal area: Movement difficult for vehicles on pine-covered dunes because of trees and loose sand.	North of Ichinoseki: V can be commanded fro al mountain slopes. A groves and rows of tree floor obstruct visibili South of Ichinoseki: Nu tops command wide views plains. Visibility exc except on coastal hills of few trees.
or y ed aks	Railroads and main highways traverse area, following lowlands where possible; cross intervening mountains through narrow valleys over low but rough passes. West-coast lowland and central row of lowlands form discontinuous	Mountains: Movement difficult except on roads because of steep slopes and forest. Roads have many curves and between lowlands pass through valleys which are generally narrow defiles; easily blocked. Passes across ranges	Observation points comma lands and valley bottoms available nearly everywh Widest valley floors pro few high points except d embankments, but rise to

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TERRAIN APPRECIATION

be easily blocked. Winter snow cover
nd increases the difficulties of

lowlands observation posts covering
found; visibility is generally good
trees are scarce. In the mountains
y the prevailing dense forests and

ment is scarce in most lowlands, be-
enerally lacking, but is more easily
plains and near sandy coasts. In the
bundant.

ing on river plains except behind
in protective shelters which in most places must be above ground because of poor drainage. On terraces and hills natural cover is easier to find, and shelters can be easily excavated. In mountains, natural cover is generally abundant.

Islands in the Sea of Japan: Two groups of large islands lie near the west coast of Honshu. They are not described in the table below. The Oki Retto are dissected volcanic islands, with steep rocky forested slopes and a rather sparse population. They have little cultivated land, except for small areas of rice at the heads of bays. Sado Island is very similar in character to the terrain of Area 6 on Honshu, composed of two ranges of mountains which reach altitudes over 2,000 feet. A low rice-covered plain bordered by terraces, cut by many gulches, separates the two ranges.

Observation	Concealment	Existing Cover	Construction of Shelters
ng roads in area can be from hill tops or moun-s. Mountain tops in in-bably not good observa-s, because valleys are by lower slopes and isibility good on small ains which interrupt h of Sendai, poor in reas because of thick cattered areas of hill and mountain slopes d observation points.	Vegetation: Mixed forest provides good concealment for men and vehicles throughout area except in hill belt along coast south of Sendai. Gullies and valleys afford some topographic concealment. Mixed forest of both conifers and deciduous trees provide less concealment in winter when trees are bare. In coastal hill belt, concealment poor; land mostly occupied by rice fields, low dry crops, and meadow. Culture: Some concealment in towns and villages along coast.	Abundant cover available in ravines on mountain slopes and even in narrow valley bottoms along stream banks. Little cover on plains in coastal hill belt except in dunes along shore. Coastal railroad has numerous closely-spaced tunnels.	Excavation problems differ widely. In mountainous interior, drainage is good, but soil mostly thin and rocky except on lower slopes and on valley floors. In low coastal hills excavation is probably easy on valley slopes. On valley bottoms drainage is poor, and in most places shelters should not be constructed below ground level.
Ichinoseki: Valley floor ommanded from margin-n slopes. A few large rows of trees on valley truct visibility. Ichinoseki: Numerous hill and wide views of low Visibility excellent coastal hills, because ees.	Vegetation North of Ichinoseki, vegetation mostly rice and mulberry, offering little concealment. However, several large groves of trees cross plain; especially common near valley margin. Valley walls thickly wooded. South of Ichinoseki there is little concealment in rice-covered flats, but groves of deciduous trees common on hills. Dunes near shore are covered by pines. Culture: Villages 1 to 2 miles apart common along main roads.	North of Ichinoseki: Cover lacking on valley floor except in irrigation ditches and gullies which are common near western valley margin. Excellent cover in ravines on mountain slopes. South of Ichinoseki: Cover is lacking over wide areas but is available in coastal dunes, in scattered hills, on road embankments crossing flats, and on dikes which border many streams and canals.	North of Ichinoseki: Ground generally well-drained except near streams. Soil probably gravelly, but excavation and drainage easy. South of Ichinoseki: Excavation easy in hills, but ground probably clayey. On valley flats shelters must be above ground because of poor drainage. Near coast: Sand hills easily excavated but loose sand walls require support.
on points commanding low-valley bottoms probably nearly everywhere. lley floors probably have points except dikes and ts, but rise toward	Vegetation: Dense mixed forest, mostly deciduous with large groves of conifers, provides good concealment in mountain valleys. Some large grassy areas especially on lower slopes. On	Mountains: Rocky slopes and ravines provide abundant cover probably even on valley bottoms. Lowlands: Little	In most places, mountain slopes rocky, but generally shelters can be excavated on lower slopes with hand tools. Timber generally available. On river

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	are small, dissipated by irrigation ditches. South of Ichinoseki: Lowland widens; consists of flat, poorly drained plain with many winding streams, swamps, and lakes. Roads are on embankments. Streams and canals bordered by dikes. Plain broken by well-drained hills, 300 to 700 feet in altitude; hillsides scoured by many ravines. Coastal area: Coast straight except where hills reach shore; paralleled by ridges of dunes and pine-covered sand hills mostly less than 25 feet high.	1935). Shiogama is larges of Tokyo. Morioka (Pop. 6 at north end of valley is city, but towns and villag roads are numerous.
3 NORTHERN MOUNTAINS	General: Mountainous area broken by a line of interior lowlands trending north-south, and locally bordered by wide coastal lowlands. Mountains: Mountains are rugged but generally low. Altitude of highest peaks 3,000 to 7,000 feet. Divided into two ranges by central row of basins. Highest peaks are smooth-sided volcanic cones which rise sharply above other mountains. In mountainous areas, valleys are narrow chasms which, in lower parts, widen out with gentle cultivated lower slopes. Lowlands: Lowlands contain broad river plains with winding, branching channels bordered by dikes and canals. Many marshy areas especially in northern part. In many places, the flat plains bordered by well-drained low hills and sloping alluvial fans which have generally less than 500 feet of relief. Coastal areas: Coast mostly indented and rocky, but where coastal plains border shore, coast is straight and paralleled by rows of pine-covered dunes with marshes and paddies between rows.	Railroads and main highways area, following lowlands wh cross intervening mountains narrow valleys over low but passes. West-coast lowland row of lowlands form discon corridors. Lowlands are densely popula pecially the river plains, is intensively cultivated. are sparsely populated and forested; some mining. Aom (Pop. 93,400, 1935), the on port, is terminus of rail l principal embarkation point service to Hokkaido.
4 KWANTO PLAIN	General: Largest lowland in Honshu, about 90 miles across. Consists mostly of well-drained, slightly elevated plains (terraces) having low escarpments at margins. Streams cross area in wide river plains which separate the elevated plains. Low hills and mountains on margins of plains and on Chiba Peninsula. River plains: Level, poorly drained in places; Rivers bordered by dikes. Numerous canals and ditches. Roads in places are on embankments. Swamps and lakes common in northern part. Terraces: Extensive, level or rolling, well-drained, low terrace plains rise above the river plains in low scarps 50 to 200 feet high. Near most edges dissected by closely-spaced shallow valleys and gullies, in places forming large areas of flat-topped hills, especially in eastern part of area. Hills: Hills 300 to 400 feet high border western and southeastern parts of plain. Some have flat surfaces. Chiba Peninsula: Rough hill country with altitude and relief up to 1,300 feet. Coastal area: Northern part of Pacific coast is bounded by low bluffs. At Kujukuri-hama shore has broad beach backed by low dune ridges and swamps parallel to shore. Shore of Tokyo and Yokohama Harbors bordered by tidal flats, sandy beaches, and hills.	Area crossed by dense netwo roads and railroads radiati Numerous side roads connect plains. Area is densely populated (10,000,000, 1930); contains total population of Japan. largest city (Pop. over 5,3 area 220 sq mi, 1932). Yok (Pop. 704,300, 1935) serves water port for Tokyo and is most important port of Jap 80 other cities have popula 10,000.

a/

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1935). Shiogama is largest port north of Tokyo. Morioka (Pop. 62,000,1930) at north end of valley is only other city, but towns and villages along roads are numerous.	South of Ichinoseki: Movement difficult on poorly drained plains except on roads; generally easy in hills. Plains are covered by rice fields and crossed by many wide streams and canals. These rice fields are probably wet even when fallow in winter. Well-drained hills stand like islands in paddy-covered plain. Coastal area: Movement difficult for vehicles on pine-covered dunes because of trees and loose sand.	except on coastal [illegible] of few trees.
Railroads and main highways traverse area, following lowlands where possible; cross intervening mountains through narrow valleys over low but rough passes. West-coast lowland and central row of lowlands form discontinuous corridors. Lowlands are densely populated, especially the river plains, where rice is intensively cultivated. Mountains are sparsely populated and extensively forested; some mining. Aomori (Pop. 93,400, 1935), the only important port, is terminus of rail lines and principal embarkation point for ferry service to Hokkaido.	Mountains: Movement difficult except on roads because of steep slopes and forest. Roads have many curves and between lowlands pass through valleys which are generally narrow defiles; easily blocked. Passes across ranges are low, generally less than 1,000 feet in altitude but most are defiles. Lowlands: Movement difficult on river plains during summer except on roads, because of extensive rice cultivation. In winter, fields are dry but snow cover may be deep. Numerous wide rivers and canals. Coastal areas have, in places, high ridges of loose sand covered by pines. On terraces and low hills, slopes are generally gentle enough to permit free movement, and ground is well drained; in places ravines may be steep-walled.	Observation points commandi[ng] lands and valley bottoms pr[o]vide available nearly everywhere. Widest valley floors probab[ly] few high points except dike[s] embankments, but rise towar[d] sides where there may be sm[all] hills. Visibility generall[y] on lowlands; may be obstruc[ted] trees in groves and along r[oads]. In mountains visibility poo[r] cause of forest and rough to[pog]raphy.
Area crossed by dense network of modern roads and railroads radiating from Tokyo. Numerous side roads connect towns on plains. Area is densely populated (Pop. 10,000,000, 1930); contains 1/6 of total population of Japan. Tokyo is largest city (Pop. over 5,300,000, area 220 sq mi, 1932). Yokohama (Pop. 704,300, 1935) serves as deep water port for Tokyo and is second most important port of Japan. Over 80 other cities have populations over 10,000.	River plains: Movement generally easy because of numerous roads. Rice fields are hindrance to cross-country movement in summer. Numerous wide rivers and canals are barriers. Terraces: On the extensive upland terrace movement on roads and cross-country is easy in all seasons. Drainage good; relatively little rice land. Large areas of dry crops and waste land. Low Hills: Ravines and valleys in marginal hills have some steep slopes. Movement, however, is generally easy except for extensive areas of trees which may prevent movement by vehicles. Mountains: On Chiba Peninsula, low, but steep forested slopes probably confine vehicular movement.	On river plains, dikes, emban[k]ments, houses, edges of low t[er]races, and isolated hills m[ay] provide extensive views. F[or] commanding heights on low t[er]but marginal hills and high t[er]races offer numerous sites f[or] observation posts. Visibility on river plains o[b]structed by many buildings a[nd] rows of trees in southern p[ar]and by scattered areas of f[or]mostly evergreen. Hills an[d] mountains well wooded. Chi[ba] Peninsula has wooded hills, v[al]valleys generally open.

heastern parts of plain.

ief up to 1,300 feet.
y low bluffs. At
ges and swamps parallel
tidal flats, sandy

a/ See other intelligence reports for more complete and latest information.

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s.	but groves of deciduous trees common on hills. Dunes near shore are covered by pines. Culture: Villages 1 to 2 miles apart common along main roads.	slopes. South of Ichinoseki: Cover is lacking over wide areas but is available in coastal dunes, in scattered hills, on road embankments crossing flats, and on dikes which border many streams and canals.	On valley flats shelters must be above ground because of poor drainage. Near coast: Sand hills easily excavated but loose sand walls require support.
points commanding low-alley bottoms probably early everywhere. ey floors probably have ints except dikes and , but rise toward there may be small ibility generally good ; may be obstructed by oves and along roads. s visibility poor be-rest and rough topo-	Vegetation: Dense mixed forest, mostly deciduous with large groves of conifers, provides good concealment in mountain valleys. Some large grassy areas especially on lower slopes. On lowlands little concealment except in few groves of trees. Pine-covered dunes offer concealment in coastal areas. Culture: Houses mostly in clusters in numerous villages on lowlands. Isolated farms generally far apart, even along roads.	Mountains: Rocky slopes and ravines provide abundant cover probably even on valley bottoms. Lowlands: Little cover available on river plains except at canal banks, dikes and road embankments. Cover afforded by sand hills near shore. Alluvial fans and low hills generally are enough dissected to provide cover in ravines and gullies.	In most places, mountain slopes rocky, but generally shelters can be excavated on lower slopes with hand tools. Timber generally available. On river plains poor drainage in many places requires building shelters above ground. Marginal areas apt to be better drained and have easily worked sandy and loamy soil.
ains, dikes, embank-es, edges of low ter-isolated hills may ensive views. Few heights on low terraces, l hills and high ter- numerous sites for posts. on river plains ob- many buildings and s in southern part, tered areas of forest, green. Hills and ll wooded. Chiba s wooded hills, but rally open.	Vegetation: Provides concealment on mountain and hill slopes and in places on low river plains and terraces. Culture: Houses and villages along roads near Tokyo probably are numerous enough to provide concealment for large units.	Only cover on river plains provided by road embankments and dikes along rivers. and canals. Cover available in ravines and valleys near terrace margins. Abundant cover in hills of Chiba Peninsula and in other marginal hills. Little cover along low coasts. Modern buildings in Tokyo, Yokohama, and other cities may be used for cover.	Much of area is well drained and has deep loamy soil which is easily excavated. Many areas near streams are poorly drained and require shelters above ground level. Timber available on terraces and on river plains in northern part. In places on slopes in Chiba Peninsula, excavations may be difficult; soil thin.

on.

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TERRAIN APPRECIATION

Area No.	Topography	Communications ar
5 MOUNTAINS OF CENTRAL HONSHU	General: Rugged mountains with narrow valleys, few intermontane basins; several high volcanic cones. Lowlands: Lowlands in area are narrow intermontane basins. Have narrow river plains bordered by steeply-sloping alluvial fans and dissected hill country. Streams generally are swift and have wide, gravelly beds; in few places bordered by dikes. Alluvial fans are stony. Mountains: Mountains are highest in Japan proper. Many peaks exceed 8,000 feet, some over 10,000 feet; some are above timber line and have permanent snow patches. Highest ranges known as Japanese Alps lie west of Matsumoto. Area contains several clusters of volcanoes, including Fuji-san (west of Gotemba). These generally have smooth lower slopes covered by volcanic ash. Coasts: South coast has narrow coastal plain south of Fuji-san. North coast almost entirely mountainous and steep.	Three railroads cross Pacific Ocean with Se through deep trough-l Both are followed by east coast railroad c low but narrow divide grades and curves. Settlement mostly res basins in the interio cultivation, vital to is carried out on ste Several large towns i tion of Nagano and Ma 70,000.
6 NOTO PENINSULA AND NEIGHBORING LOWLANDS	General: Area of coastal plains and low mountains. Mountains have rather broad valley floors and gentle slopes. Includes several large river and coastal plains. River and coastal plains: Toyama Plain (sloping to sea from alluvial fans at mountain foot) is exceptional; naturally well-drained, but is largely covered with irrigated rice paddies. Slightly hilly near mountains. Has sandy beach but no dunes or beach ridges near shore. Other plains are flat and poorly drained; crossed by winding rivers bordered by dikes. Niigata Plain at north has large uncultivated marshes. Shore bordered by sandy beach and long parallel high dune ridges, in places separated by swamps. Dune belt in places several miles wide. Hills: Very small area of low hills; consist of rolling hills generally less than 500 feet in altitude. In most places mountains rise directly from plain. Mountains: In few places exceed 2,500 feet; much lower than mountains to south. Slopes relatively gentle and many valleys have rolling floors artificially terraced for rice cultivation.	West-coast railroad a area. Niigata and T connected with south rail roads, and one a Plain and joins west Road network rather c proved secondary roa mountains from plain Noto Peninsula. Area has several ind from north to south, 1935), Naoetsu (58,0 (75,000), Takaoka (5 (163,700), and Fukui (at base of Noto Penin port on Japan Sea.
7 TOKKAIDO COAST	General: Narrow lowland area along Pacific Coast and broad plains bordering Ise Wan, (Ise Bay). River and coastal plains: Low river plains crossed by broad gravelly stream channels, in places bordered by high dikes. Coastal plains east of Ise Wan have fringe of dunes and beach ridges along shore. Nagoya Plain has large areas of fairly well-drained land. Terraces and Low Hills: Well-drained hilly and rolling land. In places, includes large flat upland surfaces (terraces); generally, however, is broken into gentle hills and low ridges and valleys. Altitudes generally under 500 feet.	Area serves as corrid way and railroad west which avoid high moun (Area 5). Population very dense Nagoya(1,082,000,1935 Total population of I is over 4,000,000. I population is more de Kwanto Plain (Area 4) mostly rural, dispers villages and clusters plains. Rice, mulber principal crops.

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Reliability: Excellent

	Communications and Settlements	Movement	Observation
inter- basins. en- w Many are oes, ly of nd	Three railroads cross area connecting Pacific Ocean with Sea of Japan, through deep trough-like valleys. Both are followed by highways. Main east coast railroad crosses area over low but narrow divides with many steep grades and curves. Settlement mostly restricted to the basins in the interior. Here mulberry cultivation, vital to the silk industry, is carried out on steep alluvial slopes. Several large towns in basins; population of Nagano and Matsumoto exceed 70,000.	Area is barrier to movement; roads are few and cross-country movement very difficult because of steep slopes and thick forest cover. Valley bottomlands in many places are planted to rice, but valley margins well drained, cultivated to dry crops.	Several lowland areas ar like with straight valle so that observation pos mountain slopes command areas. In most of area, topography is intricate tain spurs block extensi Visibility generally poo even in lowlands because erous groves of trees. ash-covered slopes of vo are exception; generally even.
ains. sea irri- Has north andy les ling ost wer nd ed	West-coast railroad and highway cross area. Niigata and Takata Plains connected with southeast coast by railroads, and one also connects Toyama Plain and joins west-coast railroad. Road network rather dense and many improved secondary roads lead into mountains from plains, especially on Noto Peninsula. Area has several industrial cities: from north to south, Niigata (135,000, 1935), Naoetsu (58,000), Toyama (75,000), Takaoka (52,000), Kanazawa (163,700), and Fukui (75,300). Fushiki, at base of Noto Peninsula, largest port on Japan Sea.	River and coastal plains: Cross-country movement difficult on lowlands because of many large streams, canals, and extensive marshes. Toyama Plain is exception; has better natural drainage, although like others it is largely covered by rice paddies. On coasts of all plains except Toyama, ground is sandy and cross-country movement is easier, except where trees planted on dunes are obstacles. Mountains: Valleys open but covered with rice paddies. Lower slopes have many irrigation ponds, hindering cross-country movement. On higher mountain slopes forest and steep slopes probably barrier to movement by vehicles.	Low plains except Toyama are flat; commanding po ly limited to bordering and coastal dunes. Toya rises along inner margin comes rolling, providing rises of land suitable f servation points. Visib rather poor throughout a cause of numerous rows o on plains, forests in mo
ge ing y	Area serves as corridor for main highway and railroad west from Tokyo, which avoid high mountains to north (Area 5). Population very dense throughout area. Nagoya(1,082,000,1935) is largest city. Total population of Ise-Wan region is over 4,000,000. In parts of area population is more dense than on Kwanto Plain (Area 4). Population mostly rural, dispersed in small villages and clusters of houses on plains. Rice, mulberry, and tea are principal crops.	River and Coastal Plains: Movement facilitated by numerous roads. Cross-country movement and detours difficult because of poorly drained rice land. However, some large areas, especially along Pacific Coast and belts along rivers, are dry and sandy. Terraces and Low Hills: In low hills slopes are gentle enough to permit movement of vehicles. Rather wide valley bottoms in hills and terraces bordering Nagoya Plain are covered with rice paddies irrigated from numerous small ponds. Terraces and hills bordering Pacific Coast largely in tea and mulberry;	River Plains: Few good points except isolated h houses, and embankments. ty generally poor becaus erous villages and grove Terraces and Low Hills: observation points. Vis generally good, but many and slopes are concealed

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HONSHU AND SHIKOKU (J

	Observation	Concealment	Existing Cover	Construction
	Several lowland areas are trough-like with straight valley walls; so that observation posts on mountain slopes command large areas. In most of area, however, topography is intricate and mountain spurs block extensive views. Visibility generally poor in area, even in lowlands because of numerous groves of trees. Lower ash-covered slopes of volcanoes are exception; generally open and even.	Concealment abundant on hilly, forested slopes. Valley bottoms offer poor concealment except in villages and among numerous scattered groves of trees.	Cover abundant except on lower slopes of Fuji-San and other volcanoes, and on wider valley bottoms. In general slopes are rocky and bouldery, and scored by ravines. Numerous tunnels along railroads.	Soils boulde general, digg hand tools m cult even in valleys. Ho able locatio ters can prob Timber abunda
	Low plains except Toyama Plain are flat; commanding points chiefly limited to bordering slopes and coastal dunes. Toyama Plain rises along inner margin and becomes rolling, providing numerous rises of land suitable for observation points. Visibility rather poor throughout area because of numerous rows of trees on plains, forests in mountains.	Vegetation: Little concealment on plains for large groups of men and equipment because vegetation is mostly rice. Some concealment in trees on coastal dune belts, especially on Niigata Plain. In mountains concealment available on forested slopes. Culture: Some concealment available in buildings in the larger cities and scattered rural villages which are generally enclosed by groves of trees.	Little cover available on plains. Embankments and coastal sand hills provide some cover except on Toyama Plain. In mountains, cover is abundant on intricately ravined slopes.	On Toyama Pla lower slopes in mountains, generally can easily with h Natural drain and paddies c drained. On plains, shelte generally be because of po except in coa and near foot tains. Timber in coastal dur and on mountai
	River Plains: Few good observation points except isolated hills, houses, and embankments. Visibility generally poor because of numerous villages and groves of trees. Terraces and Low Hills: Numerous observation points. Visibility generally good, but many ravines and slopes are concealed.	Vegetation: Vegetation provides little good concealment. Mulberry and tea areas on well-drained parts of lowlands and on bordering hills offer concealment for foot troops from ground observation. Culture: Best concealment in area is in numerous villages and associated groves of trees.	Rivers and Coastal Plains: Cover available behind embankments, dikes, and behind low raised plots of dry crops scattered among rice paddies. Abundant cover in beach ridges and dunes along Pacific coast. Terraces and Low Hills: Gullies and ravines provide cover in	Shelters can b with hand tool places. Lowla areas are poor and in places must be above level. Howeve can generally on raised plot berry or other where shallow can be drained

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HONSHU AND SHIKOKU (JAPAN)

	Concealment	Existing Cover	Construction of Shelters
gh- s; er, un- ws. rea, m- and	Concealment abundant on hilly, forested slopes. Valley bottoms offer poor concealment except in villages and among numerous scattered groves of trees.	Cover abundant except on lower slopes of Fuji-San and other volcanoes, and on wider valley bottoms. In general slopes are rocky and bouldery, and scored by ravines. Numerous tunnels along railroads.	Soils bouldery and, in general, digging with hand tools may be difficult even in broader valleys. However, suitable locations for shelters can probably be found Timber abundant.
ief- in e- us •	<u>Vegetation</u>: Little concealment on plains for large groups of men and equipment because vegetation is mostly rice. Some concealment in trees on coastal dune belts, especially on Niigata Plain. In mountains concealment available on forested slopes. <u>Culture</u>: Some concealment available in buildings in the larger cities and scattered rural villages which are generally enclosed by groves of trees.	Little cover available on plains. Embankments and coastal sand hills provide some cover except on Toyama Plain. In mountains, cover is abundant on intricately ravined slopes.	On Toyama Plain and on lower slopes of valleys in mountains, excavations generally can be made easily with hand tools. Natural drainage is good and paddies can be drained. On other coastal plains, shelters must generally be above ground because of poor drainage, except in coastal dunes and near foot of mountains. Timber available in coastal dune belts and on mountain slopes.
tion dli- m- ees. us	<u>Vegetation</u>: Vegetation provides little good concealment. Mulberry and tea areas on well-drained parts of lowlands and on bordering hills offer concealment for foot troops from ground observation. <u>Culture</u>: Best concealment in area is in numerous villages and associated groves of trees.	<u>Rivers and Coastal Plains</u>: Cover available behind embankments, dikes, and behind low raised plots of dry crops scattered among rice paddies. Abundant cover in beach ridges and dunes along Pacific coast. <u>Terraces and Low Hills</u>: Gullies and ravines provide cover in some parts of area	Shelters can be excavated with hand tools in many places. Lowland rice areas are poorly drained and in places shelters must be above ground level. However, sites can generally be found on raised plots of mulberry or other dry crops where shallow shelters can be drained.

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	many valleys have rolling floors artificially terraced for rice cultivation.	
7 TOKKAIDO COAST	General: Narrow lowland area along Pacific Coast and broad plains bordering Ise Wan, (Ise Bay). River and coastal plains: Low river plains crossed by broad gravelly stream channels, in places bordered by high dikes. Coastal plains east of Ise Wan have fringe of dunes and beach ridges along shore. Nagoya Plain has large areas of fairly well-drained land. Terraces and Low Hills: Well-drained hilly and rolling land. In places, includes large flat upland surfaces (terraces); generally, however, is broken into gentle hills and low ridges and valleys. Altitudes generally under 500 feet.	Area serves as corridor fo way and railroad west fro which avoid high mountain (Area 5). Population very dense thr Nagoya(1,082,000,1935) is Total population of Ise-W is over 4,000,000. In pa population is more dense t Kwanto Plain (Area 4). Fo mostly rural, dispersed i villages and clusters of h plains. Rice, mulberry, s principal crops.
8 KINKI BASINS	General: Lowland area including 4 basins: Biwa, Kyoto, Nara, and Osaka; mostly occupied by river plains and separated by low hills and mountains. Together they form lowland corridor which almost bisects island of Honshu. Biwa Basin: Separated from Sea of Japan by narrow zone of hills trending north-south. Narrow defiles cross this zone at about 1,500 foot altitude. Small coastal plain on north coast. Lake Biwa bordered by even, sloping plains. Rivers cross plains between levees so high that roads in places are tunneled beneath river. Plains irrigated, covered by rice fields. Mountain slopes steep on west, more gentle on east. Kyoto Basin: Flat river plain crossed by irrigation ditches and rice fields arranged in rectangular pattern. Rivers bordered by dikes. Osaka Basin: Level plain crossed by ditches and dike-bordered streams. Terraces at mountain foot dissected into low hills. Coast flat, in part bordered by mud flats and reclaimed land. Low Hills East of Osaka: Hills 500 to 800 feet high separated by cultivated valleys with gentle slopes. Nara Basin: Narrow river plain similar to Kyoto Basin, crossed by rectangular system of irrigation ditches and rice fields.	Area is important north-so across Japan, followed by railroad. These pass thr north and south of Lake Bi valley with railroad and tween Nara and Kyoto. Num throughout area. Area contains several of J manufacturing cities; prod of Japan's manufactured go (2,989,000, 1935) is built delta sediments so that mo ings are supported on pil modern artificial port, a large vessels. Kobe (912, is deep-water port, most i Japan. Kyoto (1,177,000, another industrial city.

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	Area serves as corridor for main highway and railroad west from Tokyo, which avoid high mountains to north (Area 5). Population very dense throughout area. Nagoya(1,082,000,1935) is largest city. Total population of Ise-Wan region is over 4,000,000. In parts of area population is more dense than on Kwanto Plain (Area 4). Population mostly rural, dispersed in small villages and clusters of houses on plains. Rice, mulberry, and tea are principal crops.	River and Coastal Plains: Movement facilitated by numerous roads. Cross-country movement and detours difficult because of poorly drained rice land. However, some large areas, especially along Pacific Coast and belts along rivers, are dry and sandy. Terraces and Low Hills: In low hills slopes are gentle enough to permit movement of vehicles. Rather wide valley bottoms in hills and terraces bordering Nagoya Plain are covered with rice paddies irrigated from numerous small ponds. Terraces and hills bordering Pacific Coast largely in tea and mulberry; ground well-drained. Bushy crops are hindrance but not barrier to movement by vehicles.	River Plains: Few good ob points except isolated hil houses, and embankments. ty generally poor because erous villages and groves Terraces and Low Hills: N observation points. Visib generally good, but many ra and slopes are concealed.
o, of n at eep n. d in- in, nd	Area is important north-south corridor across Japan, followed by road and railroad. These pass through defiles north and south of Lake Biwa. Narrow valley with railroad and highway between Nara and Kyoto. Numerous roads throughout area. Area contains several of Japan's largest manufacturing cities; produces over 1/3 of Japan's manufactured goods. Osaka (2,989,000, 1935) is built on soft delta sediments so that modern buildings are supported on piles. Has modern artificial port, accomodating large vessels. Kobe (912,000, 1935) is deep-water port, most important in Japan. Kyoto (1,177,000, 1935) is another industrial city.	Area has many roads on both plains and hills. Cross-country movement, however, is difficult on the extensive river plains because of rice paddies and poor drainage. Numerous large streams and barriers. Many roads are on embankments, and detours are difficult. In corridors north and south of Lake Biwa, movement off roads difficult because of steep slopes and forest.	Numerous high points borde all basins have commanding Observation on river plain difficult, because only hig are buildings and embankmen few isolated hills. Visibi generally good; trees are f

a/ See other intelligence reports for more complete and latest information.

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- t are a	River Plains: Few good observation points except isolated hills, houses, and embankments. Visibility generally poor because of numerous villages and groves of trees. Terraces and Low Hills: Numerous observation points. Visibility generally good, but many ravines and slopes are concealed.	Vegetation: Vegetation provides little good concealment. Mulberry and tea areas on well-drained parts of lowlands and on bordering hills offer concealment for foot troops from ground observation. Culture: Best concealment in area is in numerous villages and associated groves of trees.	Rivers and Coastal Plains: Cover available behind embankments, dikes, and behind low raised plots of dry crops scattered among rice paddies. Abundant cover in beach ridges and dunes along Pacific coast. Terraces and Low Hills: Gullies and ravines provide cover in some parts of area.	Shelters can with hand to places. Low areas are poo and in places must be above level. Howe can generall on raised pl berry or oth where shallo can be drain
nd ver, ns .	Numerous high points bordering all basins have commanding views. Observation on river plains more difficult, because only high points are buildings and embankments. A few isolated hills. Visibility generally good; trees are few.	Vegetation: Vegetation tall enough to provide concealment is very sparse. Most of river plains covered by rice fields with few trees. Hills have some groves of trees but most slopes are open. Culture: In parts of area villages are numerous and large enough to provide concealment for large numbers of men and equipment.	Little cover available on river plains except at dikes and embankments. Abundant cover available in ravines on hills.	Hills, especi slopes, proba easily worke enough for e shelters. O shelters mus ground becau drainage, ex marginal por farm houses a

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bservation ls, Visibili- of num- of trees. umerous ility vines	Vegetation: Vegetation provides little good concealment. Mulberry and tea areas on well-drained parts of lowlands and on bordering hills offer concealment for foot troops from ground observation. Culture: Best concealment in area is in numerous villages and associated groves of trees.	Rivers and Coastal Plains: Cover available behind embankments, dikes, and behind low raised plots of dry crops scattered among rice paddies. Abundant cover in beach ridges and dunes along Pacific coast. Terraces and Low Hills: Gullies and ravines provide cover in some parts of area.	Shelters can be excavated with hand tools in many places. Lowland rice areas are poorly drained and in places shelters must be above ground level. However, sites can generally be found on raised plots of mulberry or other dry crops where shallow shelters can be drained.
ring views. s more h points nts. A ility few.	Vegetation: Vegetation tall enough to provide concealment is very sparse. Most of river plains covered by rice fields with few trees. Hills have some groves of trees but most slopes are open. Culture: In parts of area villages are numerous and large enough to provide concealment for large numbers of men and equipment.	Little cover available on river plains except at dikes and embankments. Abundant cover available in ravines on hills.	Hills, especially lower slopes, probably have easily worked soil deep enough for excavated shelters. On river plains shelters must be above ground because of poor drainage, except on marginal portions and near farm houses and villages.

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HONSHU AND SHIKOKU (JAPAN)

Area No.	Topography	Settlement and Commun
9 LOW MOUNTAINS OF CHUGOKU	General: Area of hills, mountains, and plateaus with very little level land and only narrow river plains, mostly in part near southern coast. Drainage divide near northern coast; mountains become lower and valleys wider toward south. Northern Part: Most rugged part of area. From rocky cliffed coast land rises abruptly inland for 20 miles to mountains about 4,000 feet in altitude which parallel coast. Large volcano with smooth lower slopes east of Yonago. Little flat land except for river plains, in part poorly drained, on either side of Shinjo-ko (Shinjo Lake). Small plains at head of bays generally have dunes along shore. Southern Part: Hilly and mountainous area less rugged than northern part. Summits rounded with many rolling upland surfaces. Altitudes decrease from average of about 3,000 feet in eastern part to about 1,000 feet in western part. Valleys become wider toward west and south, and slopes gentler. Near border of Area 10, many valleys are wide enough to be intensively farmed.	Railroad follows north a and several railroads cr connecting north coast w Sea. More railroads in Many roads. Second-clas area about 20 miles apar
10 INLAND SEA COASTAL AREAS AND ISLANDS	General: Low but hilly land on margins of Inland Sea. Small area of plains; irregular and rocky coast with many natural harbors; numerous small islands. Hills and mountains: Most of area is occupied by low hills; most are under 500 feet altitude, but some exceed 2,000 feet. Wide cultivated and artificially terraced valleys are common between hills. Islands: Rocky with few flat areas. Some have peaks over 2,000 feet high. Most slopes are intricate with many ravines. River Plains: Plains mostly small, lie at heads of bays and in valleys between hills. In many places broken by isolated scattered hills. Drainage poor in most places. Few areas of bordering terraces; hills rise directly from valley flats. Coast: Rocky and indented; many natural harbors. Coastal plains are low; commonly bordered by tidal flats, reclaimed land, or salt-evaporating pans (cover 10,000 acres in this area). Sandy beaches without dunes common.	Railroads and roads follo south shores of Inland Se are routed inland through valleys where shore is ru Area is important industr Contains several large ci larger than 25,000 are on Honshu, 5 on shore of Shi Countryside devoted to ag stock raising. The islan small agricultural-fishin
11 SOUTHERN SHIKOKU AND KII PENINSULA	Southern Shikoku: Rugged mountainous country. In general ranges and intervening valleys trend northeast, becoming successively higher toward north; reach altitudes over 6,000 feet. Valleys very narrow with little flat ground. In some places, especially near coasts, are areas of low hills with wide valleys. Several small areas of flat, poorly drained river plains; largest on south coast at of Tosa-wan (Tosa Bay). Coast is indented and rocky. Many small bays, offshore reefs, and islands. A few small plains at heads of narrow bays. Kii Peninsula: Rugged mountains and narrow valleys with general northwest trend, very similar to southern Shikoku. Highest ranges reach altitudes over 6,000 feet. Few flat areas except in narrow coastal lowlands. Slopes generally steep and rocky.	Southern Shikoku: Isolate few settlements. Railroad connect north coast with Railroad also connects sev on east coast. Communicati coastal villages generally roads inland. Villages on small settlements devoted t and agriculture. In inter mostly too steep for agricu most villages are lumberin settlements. Northern part ant copper-mining region. Kii Peninsula: Settlement small agricultural and fish along-coast. Communication sea. Few roads in interior

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Reliability: Excellent

	Settlement and Communications	Movement	Observation
	Railroad follows north coast of area, and several railroads cross area connecting north coast with Inland Sea. More railroads in eastern part. Many roads. Second-class roads cross area about 20 miles apart.	Movement in area confined to narrow valleys, in many places to roads. Valleys more open, offer more space for detours, in southern part than in northern part. In much of area, cross-country movement hindered by forest which covers over half of land surface. Valleys have general north-south trend. Most passes over crest of mountains on north exceed 2,000 feet in altitude.	Intricate topography and wi... deep valleys in most places ... prevent extensive views. Vi... bility restricted by vegetati... except in southern part where ... valleys are more open. The ... river plains near Shinji-ko h... several isolated hills which ... good sites for observation po...
...d ...ys ...st- ...n.	Railroads and roads follow north and south shores of Inland Sea. In places are routed inland through narrow valleys where shore is rugged hills. Area is important industrial district. Contains several large cities; 6 larger than 25,000 are on shore of Honshu, 5 on shore of Shikoku. Countryside devoted to agriculture and stock raising. The islands have many small agricultural-fishing villages.	Movement on roads or cross-country generally not difficult, because of gentle hill slopes and rolling valley floors. On small coastal plains poor drainage and rice paddies are hindrance. Islands probably more densely forested than mainland, and movement more difficult.	Numerous hills near margins of plains provide observation poi... over lowland areas. Observati... in hills mostly limited by int... cate topography. Visibility ... generally good especially in ... lowlands. Hills partly wooded ... partly open grassy slopes.
...al ...g ...d. ...w ...th ...ku.	Southern Shikoku: Isolated region with few settlements. Railroad and road connect north coast with Tosa-wan. Railroad also connects several towns on east coast. Communication between coastal villages generally by sea. Few roads inland. Villages on coast are small settlements devoted to fishing and agriculture. In interior, land mostly too steep for agriculture; most villages are lumbering or mining settlements. Northern part is important copper-mining region. Kii Peninsula: Settlements few, mostly small agricultural and fishing villages along coast. Communications mostly by sea. Few roads in interior.	Movement generally confined to few narrow mountain roads which are easily blocked. Steep, rocky, forested slopes are unsuitable for vehicles and make hard going for foot troops. Low hilly areas and narrow river plains mostly covered by rice fields, which are hindrance except during winter.	Small areas of plains commanded observation points on bordering hills, but elsewhere rough topography, numerous mountain spurs and winding valleys make selection of observation posts over large areas difficult.

a/ See other intelligence reports for more complete and latest information.

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TERRAIN APPRECIATION

Observation	Concealment	Existing Cover	Construction of Shelters
e topography and winding lleys in most places extensive views. Visi- restricted by vegetation, in southern part where are more open. The open lains near Shinji-ko have isolated hills which are es for observation posts.	Vegetation: Forest, mostly evergreen, covers about half of area. It is dense enough and so distributed that it provides concealment on most mountain slopes and in many of the narrower valley bottoms. In northern part, forest cover is more extensive and occupies nearly all of the land surface. Culture: Houses and other buildings too scattered to be important for concealment except in few villages.	Cover in ravines and on rocky slopes probably abundant in northern part; probably less abundant toward south where valleys are wider and slopes probably smoother. Many railroad tunnels.	Soils generally thin and rocky in high northern part of area; deeper and more easily workable in southern part. In few river and coastal plains water table may be too high for underground shelters except at inner margin near hills. Timber abundant.
hills near margins of provide observation points vland areas. Observation mostly limited by intri- pography. Visibility y good especially in . Hills partly wooded, pen grassy slopes.	Vegetation: Hills about half wooded. Cultivation and pasture land commonest on gentle slopes and valley bottoms. Woods dense enough to offer good concealment. On plains trees are few, and concealment in vegetation generally lacking. Culture: Towns and villages in low plains closely spaced enough in places to offer concealment, but houses are sparse in hills.	Cover in hills abundant locally, where slopes are cut by many ravines. May be lacking in most valley bottoms. On plains only cover available is at embankments along roads and streams.	Soil on lower hill slopes probably generally deep and can be excavated with hand tools. On low plains poor drainage requires that shelters be above ground, but rice-paddy areas on narrow valley floors and near margins of plains are easily drained and permit excavation for shelters. Timber generally abundant in hills.
eas of plains commanded by ion points on bordering t elsewhere rough topo- numerous mountain spurs, ding valleys make selec- observation posts covering eas difficult.	Abundant concealment available in dense forest, even on most valley floors. Forest on lower slopes is evergreen and provides concealment in all seasons. Narrow rice-covered plains near coasts are open and offer little concealment.	Cover available throughout area in ravines on valley sides. Exposed boulders and rocks probably fewer than in mountain areas farther north, but river channels and valley bottoms probably are rocky.	Soil is generally deep enough, except on steepest slopes, for excavation of shallow trenches and shelters. Generally workable with hand tools. In many places on steep slopes and near mountain streams, soil is thin and bouldery. Narrow alluvial plains at heads of bays have deep soil, but drainage is poor except on valley sides.

rmation.

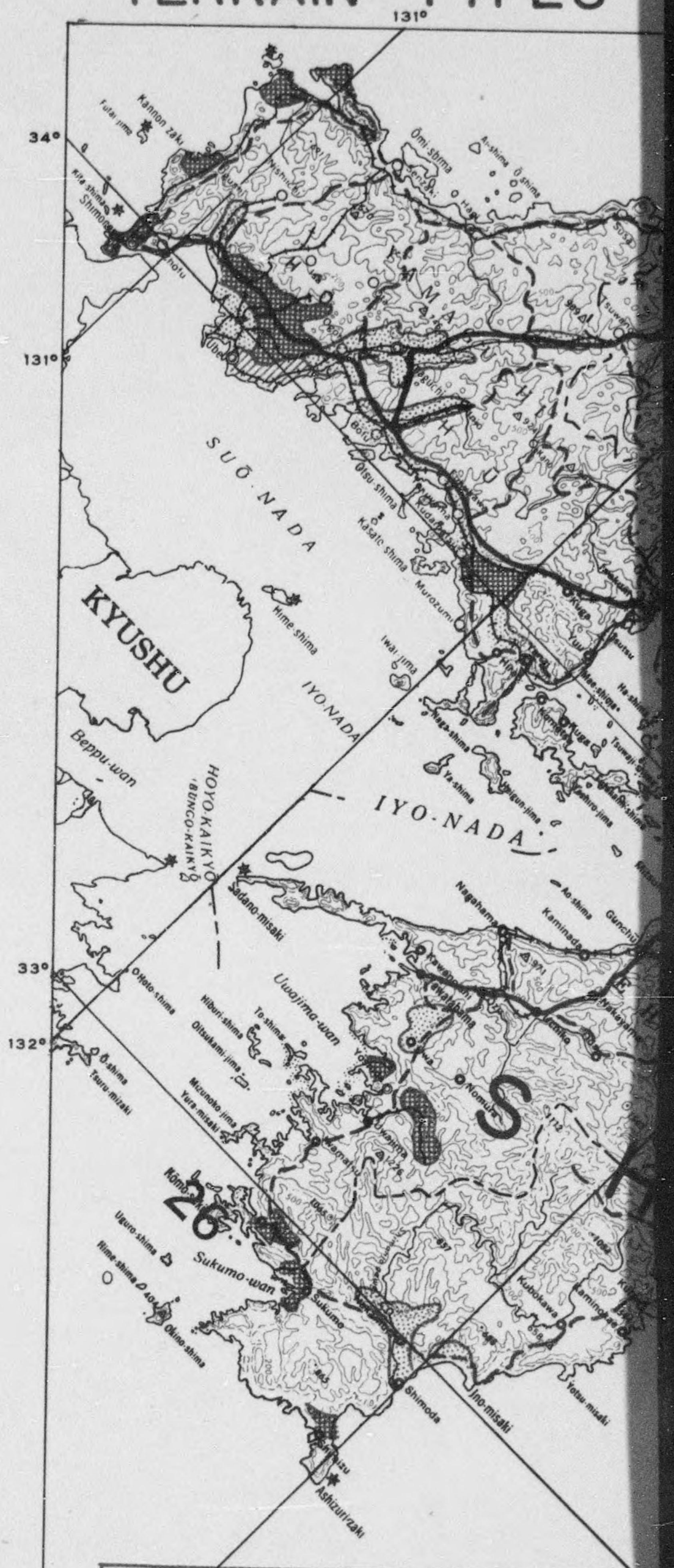
Prepared by U. S. Geological Survey
for Chief of Engineers, U. S. Army.

DECLASSIFIED E.O. 11652 SEC. 3(E) AND 5(D) OR (E) NNDG # 775015

TERRAIN TYPES

CONVERSION GRAPH

Meters	Feet
3,000	10,000
	9,000
2,500	8,000
	7,000
2,000	6,000
1,500	5,000
	4,000
1,000	3,000
500	2,000
	1,000
0	0



GLOSSARY

-bana	point
-ch'on	river
-do	island, province
-dō	province
-dong	village
-gang	river
-gata	beach
-gawa	river
-gunto	archipelago
-hana	point
-hang	harbor
-jima	island
-kaikyo	strait
-kawa	river
-ko	harbor
-li	village
-man	bay
-misaki	cape
-nada	sea
-ni	village
-numa	lake
-retto	island chain
-ri	village
-saki	cape
-shima	island
-to	island

1

River and Coastal Plains

Low-lying plains along rivers, an
with dunes; numerous ponds and sw
most places are plastic clay loam. W
Mulberry and woods along rivers and
Trees along roads and around ho
difficult except on roads and railro
airfields require raised subgrade.

2

Terraces and Alluvial Fans

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YPES

oastal Plains

g rivers, and coastal areas
ponds and swamps. Soils in
clay loam. Wet rice fields.
ng rivers and beach ridges.
d around houses. Movement
ads and railroads. Roads and
d subgrade.

Alluvial Fans

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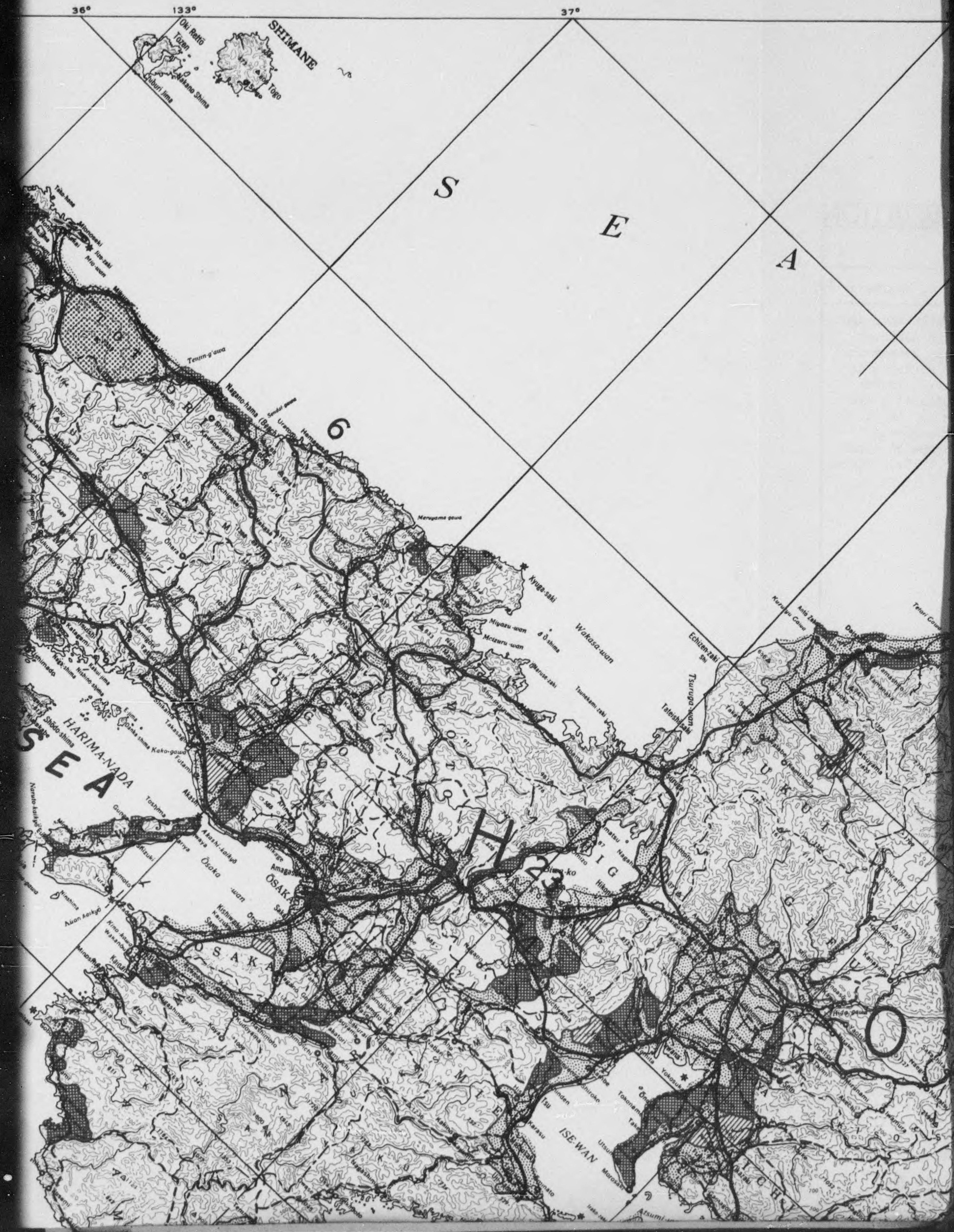
CONF



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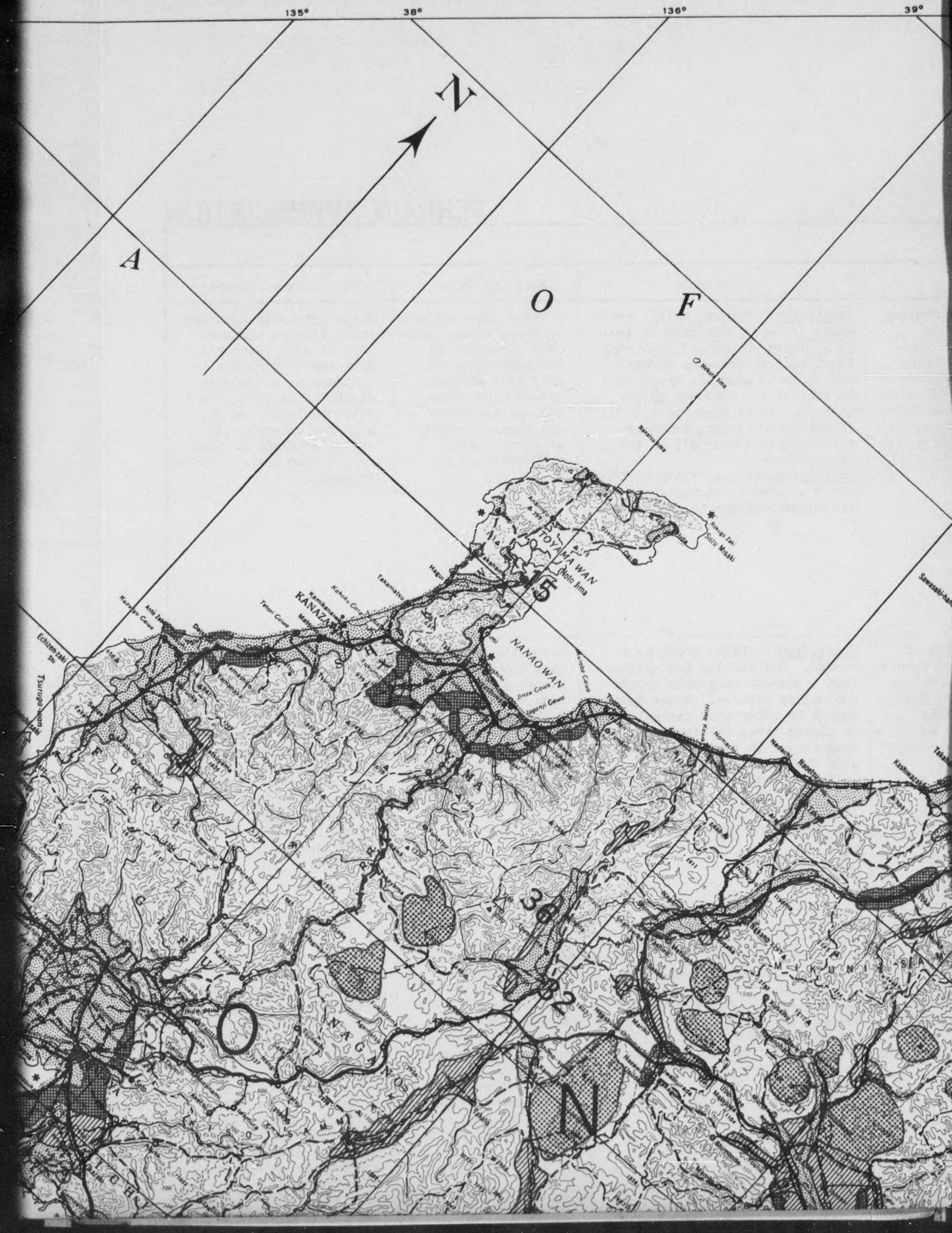

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HONSHU AND SHIKOKU (JAPAN)

139° 41° 140° 141° 142° 41° 143° 40°

HOKKAIDO

TSUGARU-KAIKYO

AOMORI

AKITA

IWATE

MIYAGI

Kodoman-saki
Tappi-saki
Yotsuiake-yama
Ōma-saki
Ōma
Mutsu-wan
Natsudomari-saki
Nobeji-wan
Omori-wan
Aomori
Kurosaki
Kashiwagi
Kuroishi
Owani
Ajigasawa
Kogane-saki
Kyuroku-shima
Shirakami-sanchi
Nosaka-toge
Nosaka-gawa
Nosaka
Nosshiro-gawa
Nosshiro
Nosshiro-minato
Nyudo-zaki
Fukaura
Furukawa
Furukawa-minato
Hachiro-gata (Lake)
Funakoshi
Omono-gawa
Omono
Kawabe
Kakunodate
Ani
Ani-minato
Kosaka
Odate
Kazuno
Hirosaka
Kamikoani
Kamikoani-gawa
Kamikoani-toge
Kamikoani-sanchi
Kumaki
Kumakuri-gawa
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Kumaki-ko-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-sanchi
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Kumaki-ko-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-dake
Kumaki-ko-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-ko
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Kumaki-ko-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-sanchi
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Kumaki-ko-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-dake
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Kumaki-ko-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa
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Kumaki-ko-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-yama
Kumaki-ko-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-dake
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Kumaki-ko-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-dake
Kumaki-ko-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-ko
Kumaki-ko-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa
Kumaki-ko-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-toge
Kumaki-ko-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-sanchi
Kumaki-ko-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-gawa-yama
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Kumaki-ko-gawa

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GLOSSARY

-bana	point
-ch'on	river
-do	island, province
-dō	province
-dong	village
-gang	river
-gata	beach
-gawa	river
-gunto	archipelago
-hana	point
-hang	harbor
-jima	island
-kaikyo	strait
-kawa	river
-ko	harbor
-li	village
-man	bay
-misaki	cape
-nada	sea
-ni	village
-numa	lake
-retto	island chain
-ri	village
-saki	cape
-shima	island
-to	island
-umi	sea
-wan	bay
-zaki	cape

LEGEND

Boundary: Province, Prefecture

Railroads: 3'6", Single track, Double track — Tunnel — Sta

Railroads: Narrow gauge

Cities: 1st importance

Cities: 2nd importance

Towns

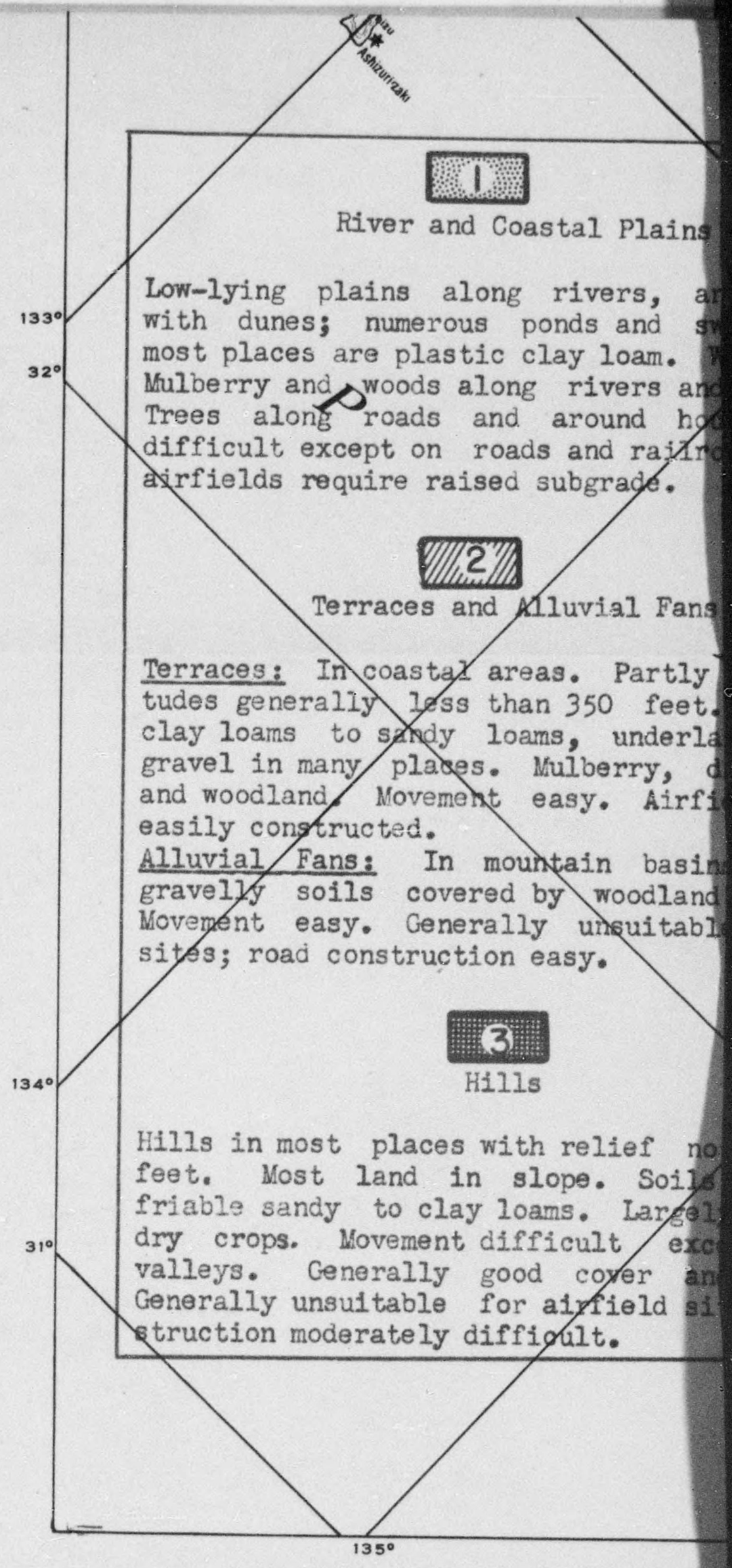
Heights in meters .1352

Lighthouse

Rivers

Contours —200—

Mine



Prepared under the direction of the Chief of Engineers by the Army Map Service (AM), U.S. Army, Washington, D.C., 1944.

Sources: IMW, Eastern Asia, 1:1,000,000; AMS, NK 54, NJ 53, NJ 54, NI 52, NI

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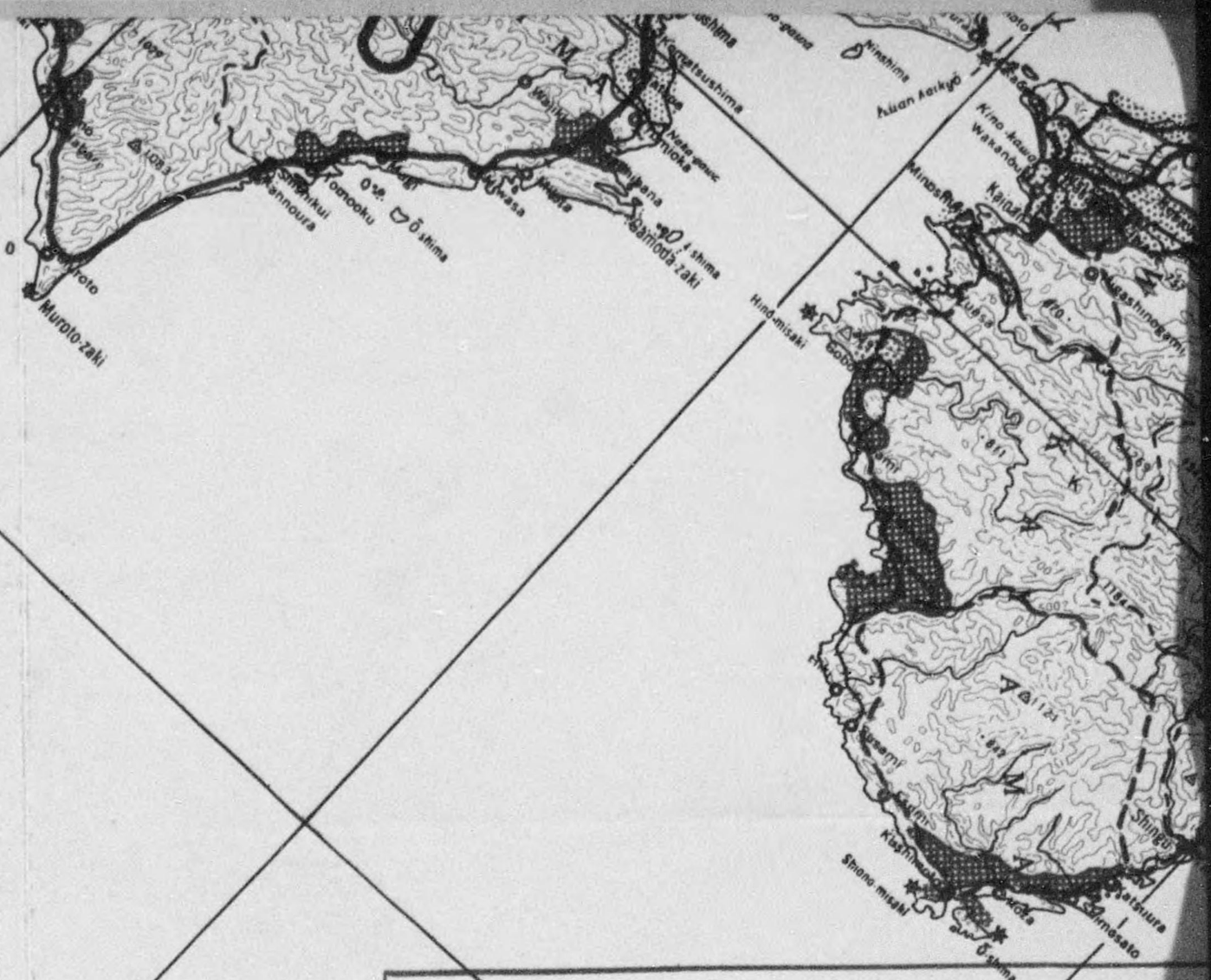
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Muroto-zaki
Kii-misaki
Shionomisaki
Tosashimizu
Kushimoto
Wakanoura
Kainan
Sakai
Osaka
Sumoto
Awaji
Naruto
Tokushima
Anan
Kochi
Susaki
Tosa-shimizu
Nishima
Awan Kaikyō
Kitan Kaikyō
Kii Suidō
Osaka-wan
Harima-nada
Seto Naikai
Shikoku
Shingū
Hashimoto
Tanabe
Gobō
Wakayama
Kainan
Minoshima
Hirashima
Kōchi
Susaki
Nakamura
Tosa-shimizu
Shionomisaki
Kushimoto
Katsuura
Sumoto
Awaji
Naruto
Tokushima
Anan
Kochi
Susaki
Nakamura
Tosa-shimizu

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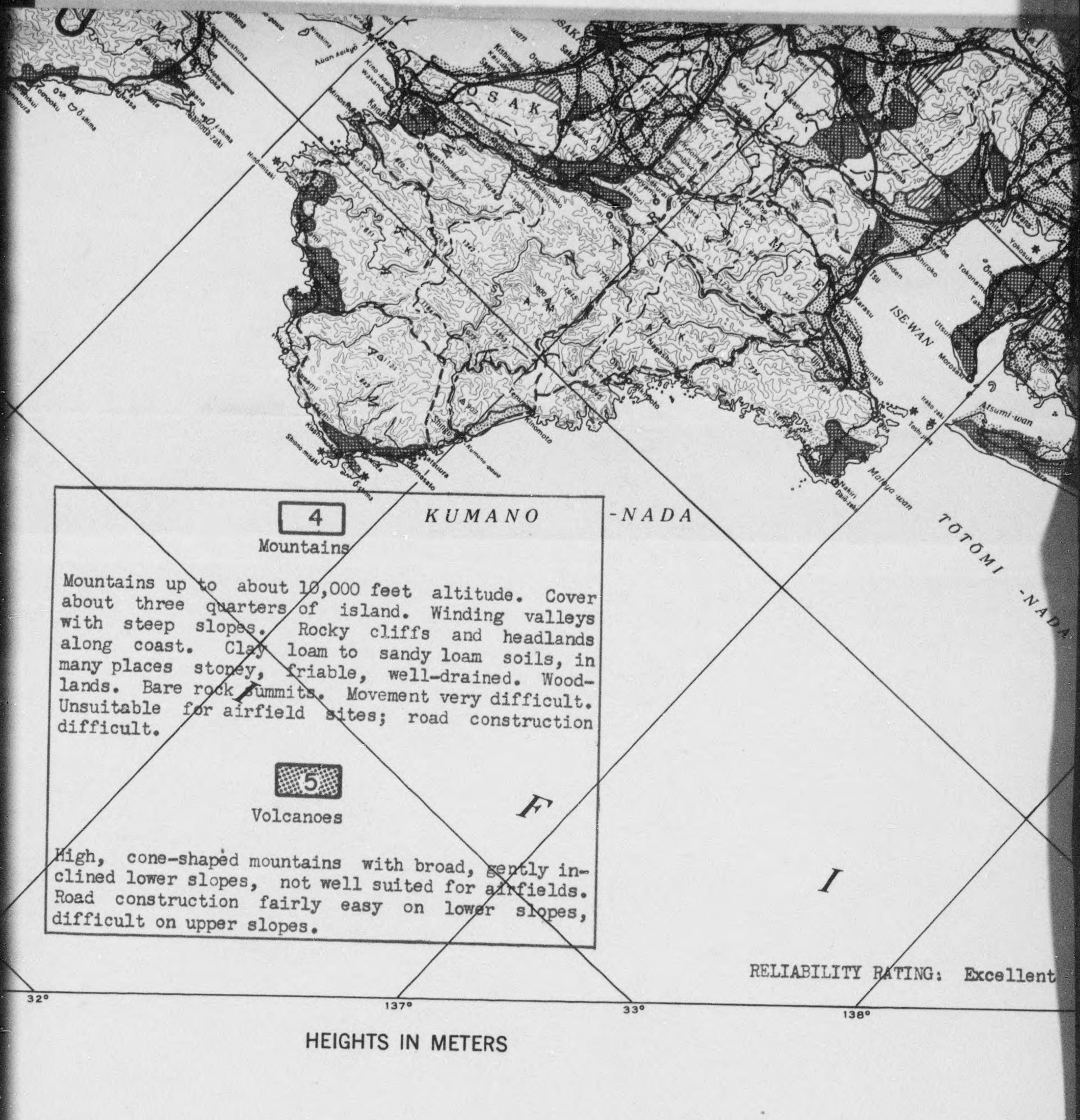
OSAKA
NARA
MIE
ISE-WAN
KUMANO -NADA
TOTOMI -NADA
Atsumi-wan
Mikuni-yama
Kinomoto
Shingū
Kushimoto
Shirahama
Tsu
Yokosuka
Irako-zaki
Toshi-jima
Nakiri
Daiō-zaki
Hino-misaki
Shiono-misaki
Kumano-gawa
Kashimoto
Yoshino
Kaiinji
Kaisho
Kakino
Karasu
Shirooka
Tokonami
Utsu
Morosaki
Matsusaka
Ise
Yamada
Uji
Yamato
Nagashima
Kuwana
Yokkaichi
Suzuka
Tsuchiyama
Seta
Kōri
Kashihara
Sakurai
Yoshino
Hashimoto
Koya
Kudoyama
Gojō
Tenkawa
Totsuka
Shimosato
Tatsuura
Temposan
Nagashima
Kumano-gawa
Kitayama
Kiyotaki
Kawakami
Kamikitayama
Shimokitayama
Higashinogawa
Kitayama

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LITY RATING: Excellent

CONFIDENTIAL

DECLASSIFIED E.O. 11652 SEC. 3(E) AND 5(D) OR (E) NNDG # 775015

RELIABILITY RATING: Good

ROADS EXPLANATION

——— National roads. About 15 percent are paved.

– – – Main prefectural roads. About 2 percent are paved.

35° 141° 36° 142°

90 100 Miles

140 150 Kilometers

70 Nautical Miles

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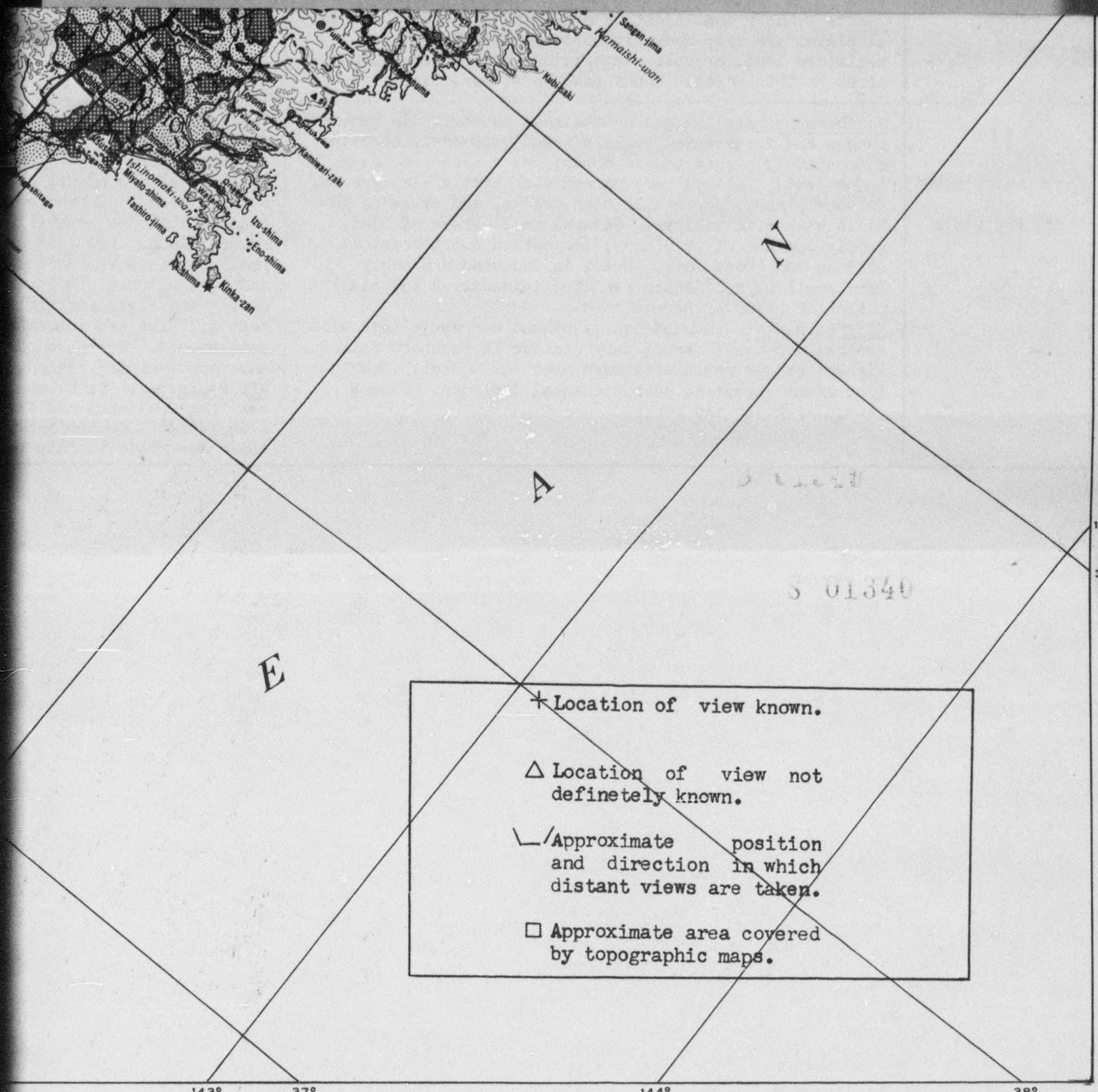

PREPARED BY U. S. GEOLOGICAL SURVEY
FOR
CHIEF OF ENGINEERS, U. S. ARMY

300392

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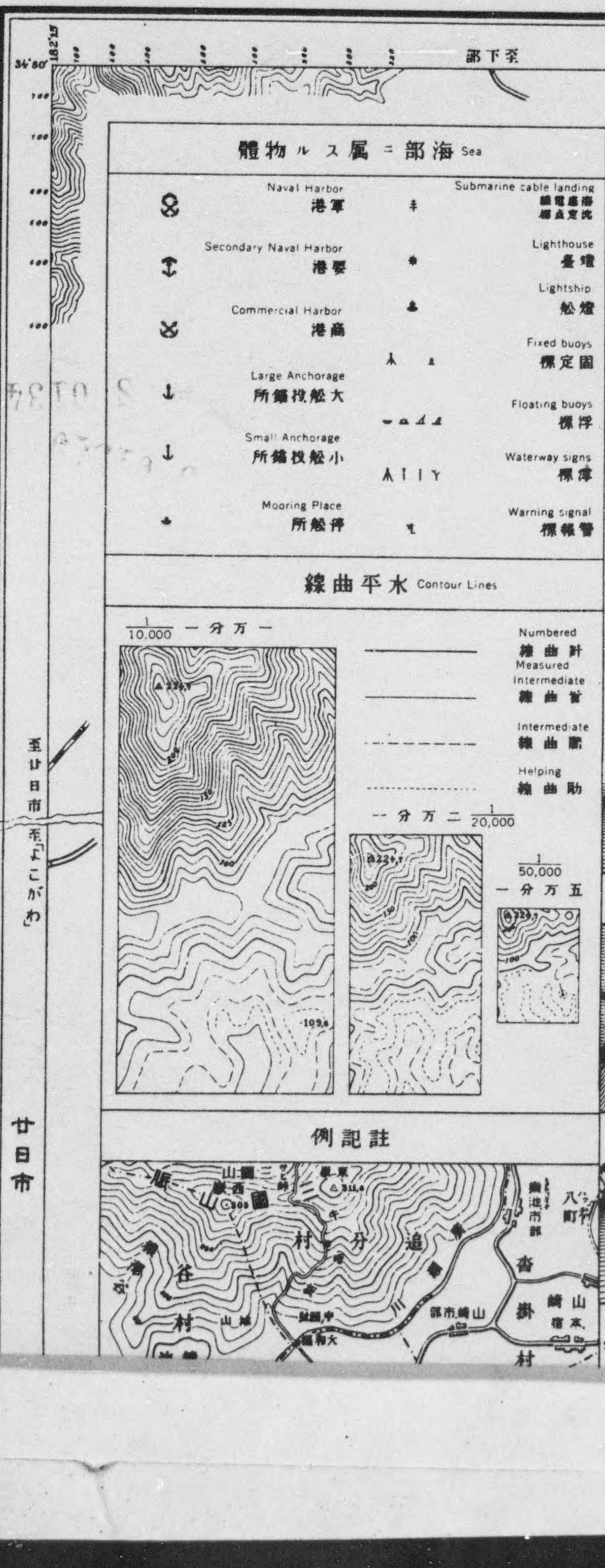
TERRAIN TYPES

EXPLANATI

明治三十三年製版

明治三十何年測圖同三十何年製版



體物ル ス 屬ニ 部海 Sea

- Naval Harbor 港軍
- Secondary Naval Harbor 港要
- Commercial Harbor 港商
- Large Anchorage 所錨投舶大
- Small Anchorage 所錨投舶小
- Mooring Place 所舶停
- Submarine cable landing 線電底海 點上陸
- Lighthouse 臺燈
- Lightship 舶燈
- Fixed buoys 標定固
- Floating buoys 標浮
- Waterway signs 標岸
- Warning signal 標報警

線曲平水 Contour Lines

1/10,000 一分万一

1/20,000 一分万二

1/50,000 一分万五

- Numbered 線曲計
- Measured
- Intermediate 線曲首
- Intermediate 線曲副
- Helping 線曲助

- Dry Reservoir 池水貯瀦
- Marsh 沼
- Swamp Marsh 濕水
- Wet land 濕地
- Mud 泥地

部海 Sea

- Bluff 壁斷
- 汝入川臨土斷壁及泥濘
- Mud Beach 濘泥
- Rough Bank 礁
- 豊石ノ礁岸石礁及豊礁
- Reef 礁石
- Reef 礁暗
- Sand Beach 濱砂

Canals 體物ル ス屬ニ之及瀦溝

- Water-Bank 堰水
- Dike 堰
- Section Dike 區間堰
- Painted 塗被工堀
- Stone Covered 蓋被石骨
- Boards Covered 蓋被製木
- Weaved Cover 蓋被條編
- Tree bordered 樹行

體物ル ス屬ニ之及極水 體物ル ス屬ニ

- Ground Surface 面地
- Space 間空
- Over River 上河
- Over the road 上路道
- Underground 下地
- Pipe Water-Gauge 柱標

水諸 Water

- Lakes Ponds 湖沼

Rivers 體物ル ス屬ニ川河

- Steel 橋鐵
- Masonry 橋工堀
- Wood 橋木
- Wood with masonry support 有ヲ柱工洞橋木ルス
- Temporary 橋假
- Draw bridge 橋動避
- Suspension 橋懸
- Weak bridge 橋ルナ弱脆
- Pontoon 橋舟
- Steel R.R. 橋道鐵製鐵
- Steam 渡舶汽
- Men & Horses Small double 艘兩舶出 渡馬人
- Men only 艘一舶出 渡人
- Small single 渡綱線
- Drawn by rope 渡綱滑
- Attached by pulley to wire
- Ford for vehicles 所渉輌車
- Ford (foot) 所渉徒
- Navigable for steamships 舶通ル由ニ舶汽
- Navigable for boats 舶通ル由ニ楫舟
- 筏下
- Masonry breakwater 水制工堀
- Piled rock breakwater 水制石衆
- Lumber breakwater 水制製木
- Bundles of brushwood breakwater 水制束衆

Bridges

Ferries

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CONFIDENTIAL

式年三十三治明

EXPLANATION OF TOPOGRAPHIC MAP SYMBOLS

嶋　廣

圖　祇

Canals 體物ルス屬ニ之及溝渠

Water-Bank 堰水
Dike 堰
Section Dike 堰間區
Painted 覆被工塗
Stone Covered 覆被石骨
Boards Covered 覆被製木
Weaved Cover 覆被條編
Tree bordered 樹行

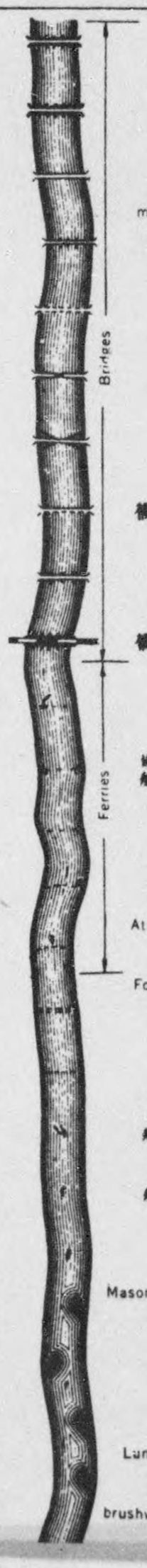
水極及之ニ屬ス ルス物體

Ground Surface 面地
Space 間空
Over River 上河
Over the road 上路道
Underground 下地
Pipe Water-Gauge 栓極

Water 水諸

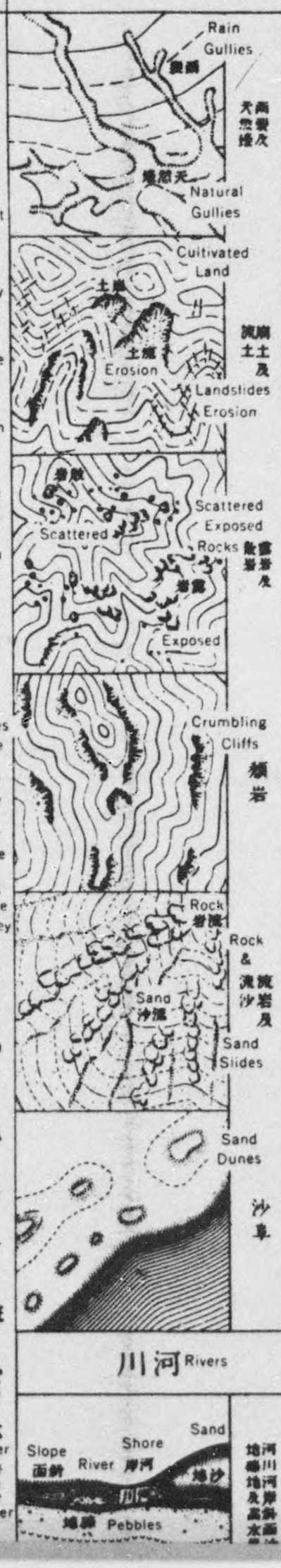
Lakes 湖沼
Ponds

Rivers 體物ルス屬ニ川河



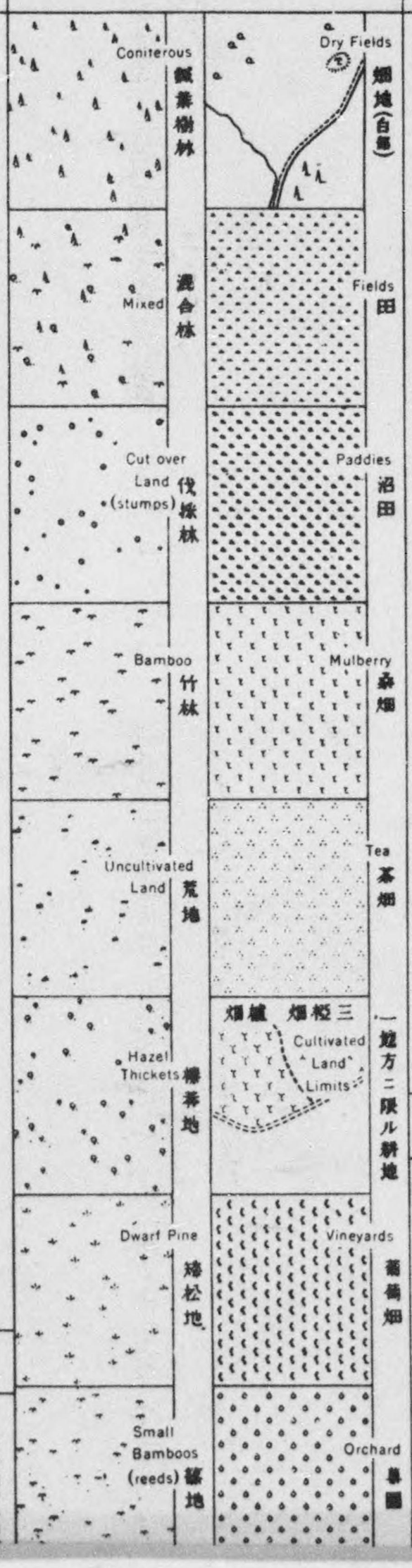
Steel 橋鐵
Masonry 橋工塗
Wood 橋木
Wood with masonry support 有ツ柱工塗橋木ルス
Temporary 橋假
Draw bridge 橋動避
Suspension 橋懸
Weak bridge 橋ルナ弱脆
Pontoon 橋舟
Steel R. R. 橋道鐵製鐵
Steam 渡船汽
Men & Horses 渡馬人
Small double 渡兩艘出
Men only 渡人
Small single 渡一艘出
渡綱線
Drawn by rope
Attached by pulley 渡綱滑
to wire
Ford for vehicles 所渉輛車
Ford (foot) 所渉徒
Navigable for 航通ヘ由ニ船汽
steamships
Navigable 航通ヘ由ニ船舟
for boats
筏下
Masonry breakwater 水制工塗
Piled rock 水制石疊
breakwater
水制製木
Lumber breakwater
Bundles of 水制束柴
brushwood breakwater

Changing Country 地形變

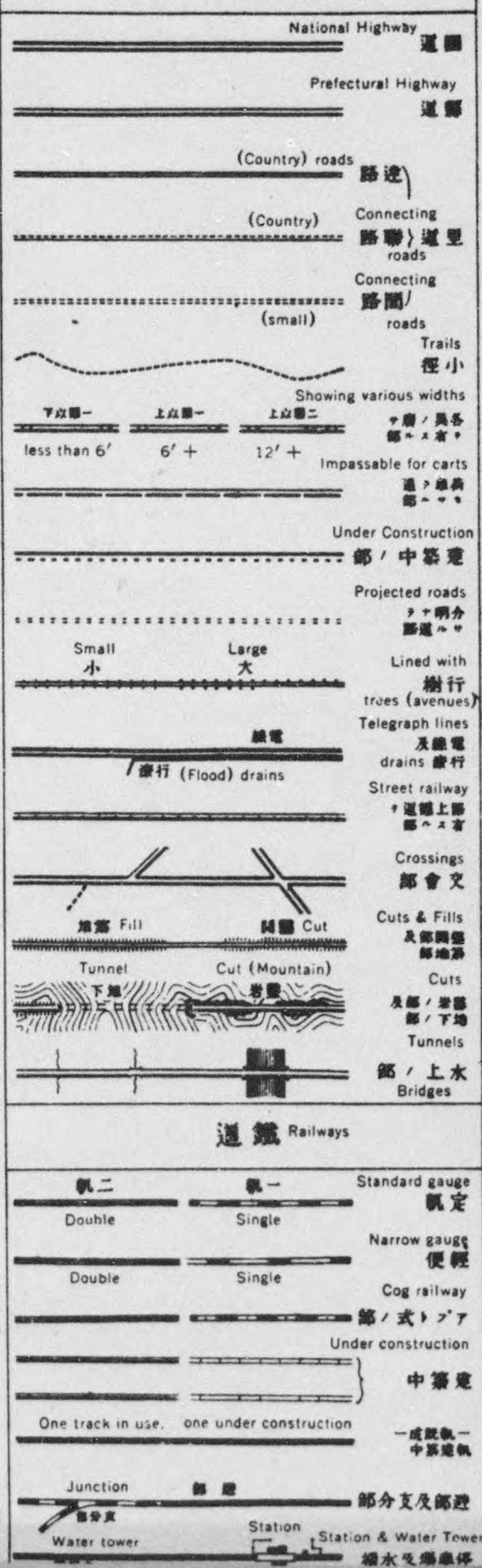


川河 Rivers

Cultivated Land 地耕



路道 Roads Highways



道鐵 Railways

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MBOLS

HONSHU AND SHIKOKU (JAPAN)

五万分一地形図廣島十號(共十六面)

1/50,000

Roads 路道 Highways

- National Highway 國道
- Prefectural Highway 道縣
- (Country) roads 路途
- (Country) Connecting roads 縣聯道里
- (small) Connecting roads 路間小
- Trails 徑小
- Showing various widths 上点第一 上点第二 6′+ 12′+ 寸廣ノ員各部ルス有ヲ
- Impassable for carts 通ヲ車荷部ニヤヲ
- Under Construction 部ノ中築修
- Projected roads ヲヤ明分部道ルサ
- Large 大
- Lined with trees (avenues) 樹行
- Telegraph lines 及線電 drains 潦行
- 潦行 (Flood) drains
- Street railway ヲ道軌上路部ルス有
- Crossings 部會交
- Fill 堤築 Cut
- Cuts & Fills 及部開堀部地築
- Cut (Mountain) 岩壁
- Cuts 及部ノ岩部ノ下地
- Tunnels 部ノ上水 Bridges

道鐵 Railways

- 軌一 Single Standard gauge 軌定
- Single Narrow gauge 便輕
- Single Cog railway 部ノ式トヲア
- Under construction 中築建
- 一成就軌一中築建軌 in use, one under construction
- 部避 部分支及部避
- Station Station & Water Tower 機水受場車停

Road Sign 標道

- Sign Post 標立
- Isolated Trees 樹立獨
- Isolated Bamboos 竹孤
- narrow leaf broad leaf Tree 樹出抽
- Chimney 突烟
- Triangulation Station (Trig. Point) ▲97.1 點角三
- Point by Which to survey サ據ト點測 ●658 点角三ルサ
- Elevation Marker 標準水 ⊟345.27
- Lone Marker with Elevation ·32 點高標立獨
- Well 井
- Cave 洞
- Rock Pit 坑石
- Pebble Pit 坑礫
- Sand Pit 坑砂
- Earth Pit 坑土
- Earth Heaps 土堆
- 阻石景

Landmarks 號記示指

- Mausoleum 陵山
- Castle 墟城
- Old Battleground 墟戰古
- Volcano 山火
- Mineral Spring 泉礦
- Hot Spring 泉湧
- Brick, tile, or

- Wood Post 標木
- Board Fence 圍板
- Bamboo Fence 籬竹
- Hedge 籬生 (living fence)
- Stone Enclosure 圍石景
- Earth Enclosure 圍土
- Moat (water) 濠水
- Dry Ditch 濠乾

Settled Land 地諸ルス属ニ地住居

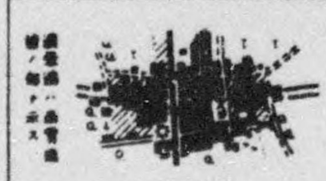
- Gardens (lawns) 地庭
- Garden, park 園園
- Grove 樹叢
- Tree nursery 畑木苗
- Garden, flower 畑花
- Grassland 地芝
- Graveyard 地墓

Miscellaneous 體物小

- Shrine Entrance 表鳥
- Pagoda

- Prefectural Office 廳縣府及廳縣
- Island (gun) office 所役郡及廳縣
- Municipal Office 所役市
- Village, district office 及區役村町所役區
- School 校學
- Hospital 院病
- Isolation Hospital 及院病感傳病隔
- Gendarmerie (M. P.) 隊兵憲
- Police Station 署察警
- Courthouse 所判裁及院訴控
- Prison 署獄監
- Custom House 關稅
- Revenue Office (taxes) 局理管務稅署務稅及
- Forestry 署區林
- Monopoly Office 局賣專
- P. O. & Telegraph 局信電便郵
- P. O. 局便郵
- Telegraph 局信電
- Telephone 局換交話電
- Meteorological Office 所候測
- Naval Signal Station 樓望軍海
- Factory 所造製
- Metal Works 所工鐵
- Smelting (Foundry) 所造鑄
- Generator 所電發
- Shipyard 所船造
- Storehouse 庫倉

City 街市



Village 落村

Park 園公

Castle 堡城

Old Castle 城古

Settlements 屋家

- 大 large
- 小 small

Accompanying Signs 號記副

- Shrine 祠神
- Temple (Buddist) 字佛
- Church 堂教西
- Imperial Palace 殿宮
- Government Building 署公
- Military Jurisdiction

至打越 至「かいだいち」

海田市 (廣山五九萬)

備考

本圖式ニ於テ省略ノ地形圖式中ノ圖ヲ(廣島)改正最新レタル原ナルモノ下ノ如シ (改正

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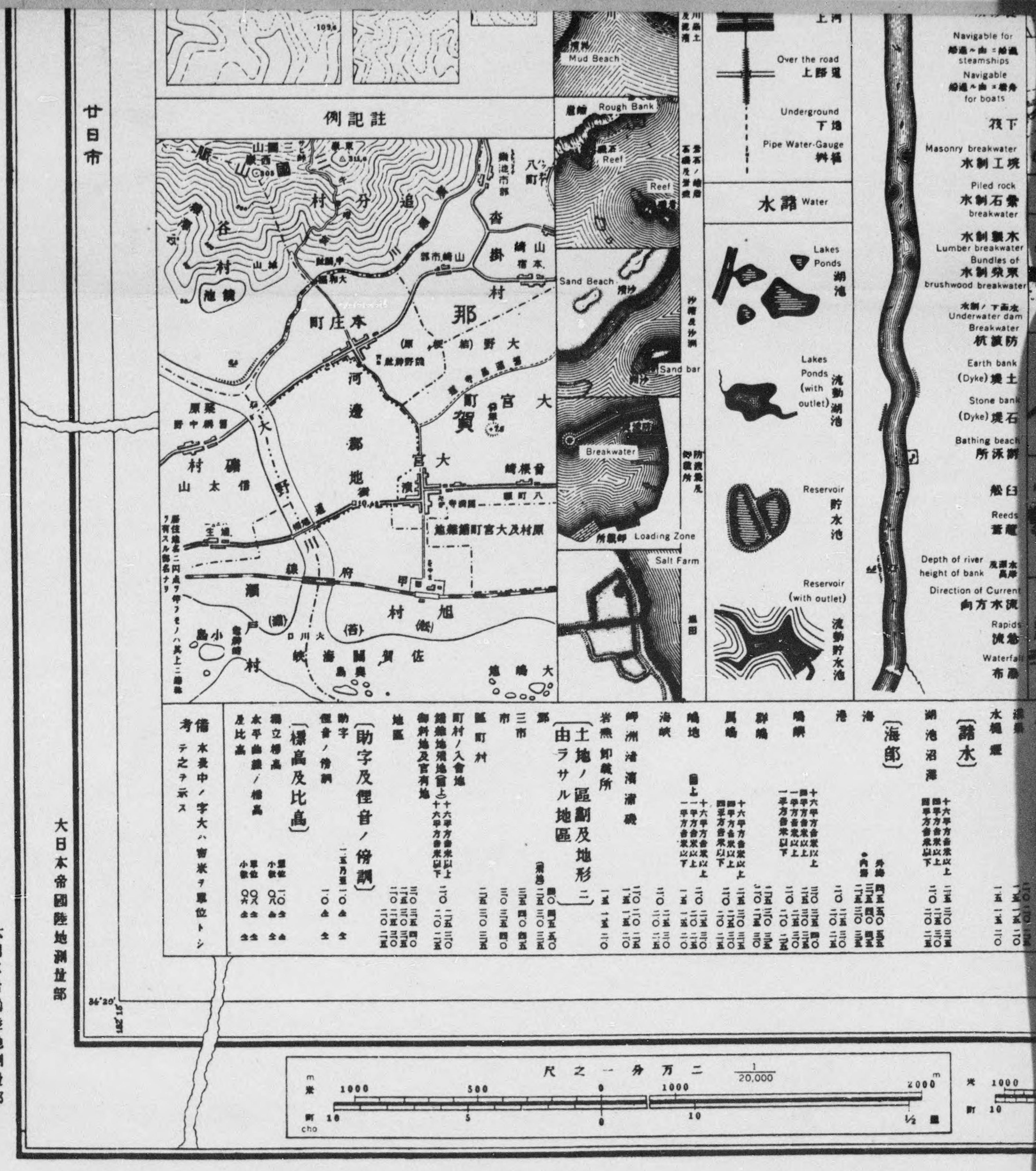

備考 本表中ノ字大ハ密米ヲ單位トシテ之ヲ示ス

〔助字及俚音ノ傍調〕

助字	俚音ノ傍調
一五乃至一〇	一〇

〔標高及比高〕

獨立標高	單位	小數
水平曲線ノ標高	單位	小數
及比高	單位	小數

〔土地ノ區劃及地形 二〕

由ラサル地區	
郡	四〇 四五 五〇
三市	三五 三〇 三五
市	三〇 三五 四〇
區町村	二五 三〇 三五
町村ノ入會地	
鋪雜地殖地(圖上)	十六平方密米以上 二〇 二五 三〇
御料地及官有地	十六平方密米以下 二〇 二〇 二五
地區	三〇 三五 四〇
	二五 三〇 三五
	二〇 二五 三〇
	二〇 二五

〔海部〕

海	外海	內海
港	四五 五〇 五五	三五 四〇 四五
	二五 三〇 三五	二五 三〇 三五
嶋嶼	十六平方密米以上	三〇 三五 四〇
	四平方密米以上	二五 三〇 三五
	一平方密米以上	二〇 二五 三〇
	一平方密米以下	二〇 二〇 二五
群嶋	二五 三〇 三五	二〇 二五 三〇
	二〇 二五 三〇	二〇 二五 三〇
属嶋	十六平方密米以上	二五 三〇 三五
	四平方密米以上	二〇 二五 三〇
	四平方密米以下	二〇 二〇 二五
嶋地	十六平方密米以上	二〇 二五 三〇
	圖上 一平方密米以上	二〇 二〇 二五
	一平方密米以下	一五 一五 二〇
海峡	二〇 二五 三〇	二〇 二〇 二五
岬洲渚濱浦磯	二〇 二〇 二五	一五 一五 二〇
岩燕卸載所	一五 一五 二〇	

〔諸水〕

湖池沼澤	十六平方密米以上	四平方密米以上	四平方密米以下
水槐堰	一五 一五 二〇	一五 一五 二〇	一〇 一〇 一五

溪梁	一〇 一〇 一五	一五 一五 二〇	一〇 一〇 一五
水槐堰	一五 一五 二〇		

尺之一分万二 1/20,000

米 1000 500 0 1000 2000 m

町 10 5 0 10 ½ 里

米 1000

町 10

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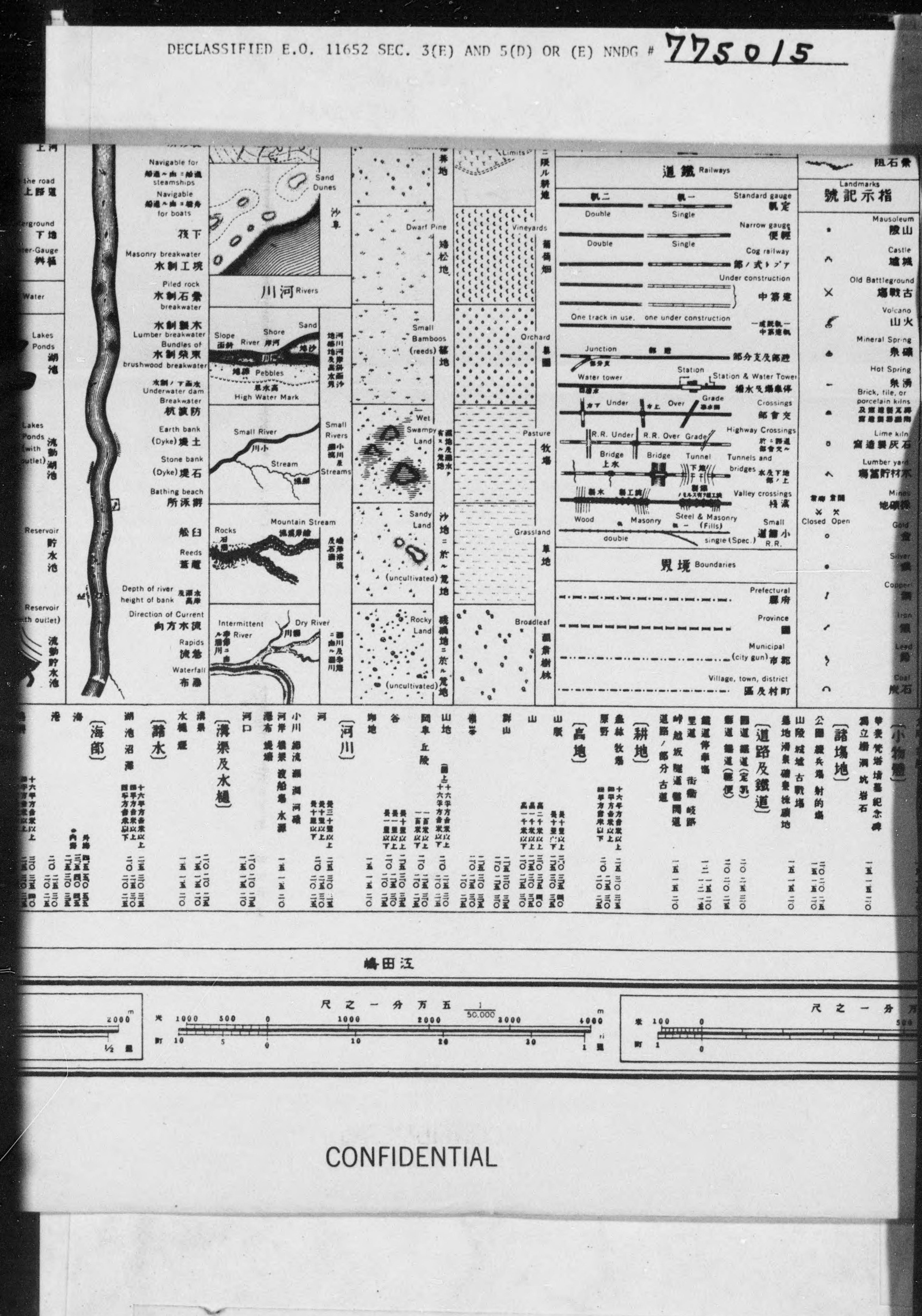

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鐵 Railways

Standard gauge 軌定
Narrow gauge 便輕
Cog railway 鋸ノ式トラア
Under construction 中築建
construction 成既軌 中築建軌
郎分支及郎避
Station
Station & Water Tower 給水及場車停
Grade 地水面
Crossings 交會郎
Highway Crossings 於ニ郎道郎會交
Grade
Tunnel
Tunnels and bridges 水及下地郎ノ上
Valley crossings 橋渡
Steel & Masonry (Fills)
single (Spec.)
Small 道鐵小 R.R.

境 Boundaries

Prefectural 廳府
Province 國
Municipal (city gun) 市郎
Village, town, district 區及村町

阻石衆

Landmarks
號記示指

Mausoleum 陵山
Castle 墟城
Old Battleground 墟戰古
Volcano 山火
Mineral Spring 泉礦
Hot Spring 泉湯
Brick, tile, or porcelain kilns 及窯造製瓦磚 窯造製器燒陶
Lime kiln 窯造製灰石
Lumber yard 場置貯材木
Mines 地礦採
Closed 倉閉 Open 倉開
Gold 金
Silver 銀
Copper 銅
Iron 鐵
Lead 鉛
Coal 炭石

Garden, flower 畑花
Grassland 地芝
Graveyard 地墓

Miscellaneous
物體小

Shrine Entrance 表華
Pagoda 塔寶
Orthodoxy Bell-Tower 院寺教西 樓鐘
Stone Steps 磴石
Temple lantern 籠燈
Tomb 墓墳
Memorial Monument 碑念紀
Statue 像立
Boundary marker 標界
Milestone 標里

Meteorological Office 所候測
Naval Signal Station 機望軍海
Factory 所造製
Metal Works 所工鐵
Smelting (Foundry) 所造鑄
Generator 所電發
Shipyard 所船造
Storehouse 庫倉
Powder Magazine 庫藥火
Granary 倉米
Windmill 房車風
Watermill 房車水

Enclosures
構圍

Masonry Wall 壁工混
Wooden Fence 圍垣柱木
Iron Posts 柱鐵

大 large
小 small

Accompanying Signs
號記副

Shrine 祠神
Temple (Buddist) 寺佛字
Church 堂教西
Imperial Palace 殿宮
Government Building 署公
Military Jurisdiction 轄所軍陸
Naval Jurisdiction 轄所軍海
Governor General 部督都
Division Headquarters 部令司團師
Brigade Headquarters 部令司團旅
Fortress; defense Headquarters 及部令司塞要 部令司隊備守
Regimental & defense Headquarters 及部令司區聯 部令司區隊備守
Naval Station 府守鎮
Military Barracks 營兵軍陸
Naval Barracks 營兵軍海

海田市 (廣山五九島)

備考

本圖式ニ於テ番號ノ地形圖式中ノ圖圖ヲ（廢除）（改正）ルモノ下ノ如シ

○家屋 鐵工■木製■無壁『○制記號 停車場○小物体 門 屋門二階瓦葺通所ム石灰製造所ひ
○町村及三市ノ區ノ不定境界 ○郎地ノ不定境界 ○河川ニ属スル物体 境工鐵道橋
○註記字大麥 居住地ノ俚称及雷称 倉庫家屋ノ俚称 道路ノ俚称及雷称
○制記號 陸軍所轄ヘ海軍所轄ヘ病院◆○境界 府廳 圖 郎地 ○水縄 空間 河上
○註記字大麥 土地ノ俚称及雷称ヲ地區ニ改ム

高極ハ東京湾ノ中等潮位ヨリ起算シ米突ヲ以テ示ス
圖式ハ明治三十三年式地形圖圖式ニ據ル

註記字大表

〔居住地〕

一万分一	二万分一	五万分一
二〇	五〇以上	五万口以上
二〇	三〇以上	二万口以上
二〇	二〇以上	一万口以上
二〇	一〇以上	五千口以上
二〇	五以下	二千口以上
		一千口以下

〔城堡及古城〕

堡壘 砲臺 古城	二〇
城堡及古城ノ部分	二〇

〔家屋〕

宮殿	二〇
公署	二〇
神祠 佛宇 學校	二〇
病院 陸海軍兵營	二〇
製造所 造船所 郵宅	二〇
倉庫 家屋	二〇

〔小物體〕

學表 燈塔 墳墓 紀念碑	一五
獨立標 洞 坑 岩石	一五

〔諸場地〕

公園 練兵場 射的場	二〇
山陵 城墟 古戰場	二〇
墓地 溫泉 礦泉 採鑛地	一五

〔道路及鐵道〕

國道 鐵道(定軌)	二〇
郎道 鐵道(輕便)	二〇
鐵道停車場	一二
里道 街衢 岐路	一二
神社坂 隧道 徒渉道	一五

一万分一之尺 1/10,000

0 500 1000 m
0 5 1/4 里

鳥取縣 伯耆國 安倍郎
島根縣 出雲國 意宇郎
日沼郎 佐世郎
野田郎 伯郎

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HONSHU AND SHIKOKU (JAPAN)

MAP UNIT

Reliability: Excellent

MAP UNIT 1. RIVER AND COASTAL PLAINS

Distribution

Along coast of central and northern Honshu; largest around Tokyo and Nagoya. Smaller areas in southwestern Honshu. A few narrow basins in the mountains, most prominently in northern Honshu.

Terrain

Topography: Low-lying plains bordering rivers or coasts. Rise gently inland up valleys into mountains. Few low hills. Numerous ponds and swamps. Streams shallow, channels braided; in many places elevated above surrounding plain by levees and dikes. Along coastal sections are sandy beach ridges, in places separated from mainland by lagoons and locally capped by dunes, especially on northwest coast.

Soil: Plastic clay loam. Coarser-textured soils near borders of plains and on coastal ridges. Poorly drained. Water table high. Underlain by sand and gravel with lenses of silt and clay.

Vegetation: Plains covered with diked rice paddies. Locally mulberry grows along the rivers and beach ridges. Trees planted around houses and along roads. Grassy swamps around ponds and lagoons. Small areas of more or less open waste land.

Terrain Appreciation

Movement easy over main roads and railroads on embankments. Possible on beach ridges; difficult elsewhere across wet rice lands and swamps. Numerous streams require bridges. Poor cover throughout. Possible cover along main stream embankments. Generally no concealment except in scattered groves of trees near roads, houses and streams.

Construction Problems

Roads and airfields require high subgrade except on inner margin of large river plains, on natural levees, and on beach ridges. Sand and gravel in many places available in slopes of bordering terraces; limited amounts can be found in stream channels especially near the mountains.

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MAP UNIT I: RIVER AND COASTAL PLAINS

round Tokyo and Nagoya.
in the mountains,

ts. Rise gently inland
and swamps. Streams
rrounding plain by
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Underlain by sand

Locally mulberry grows
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cover along main
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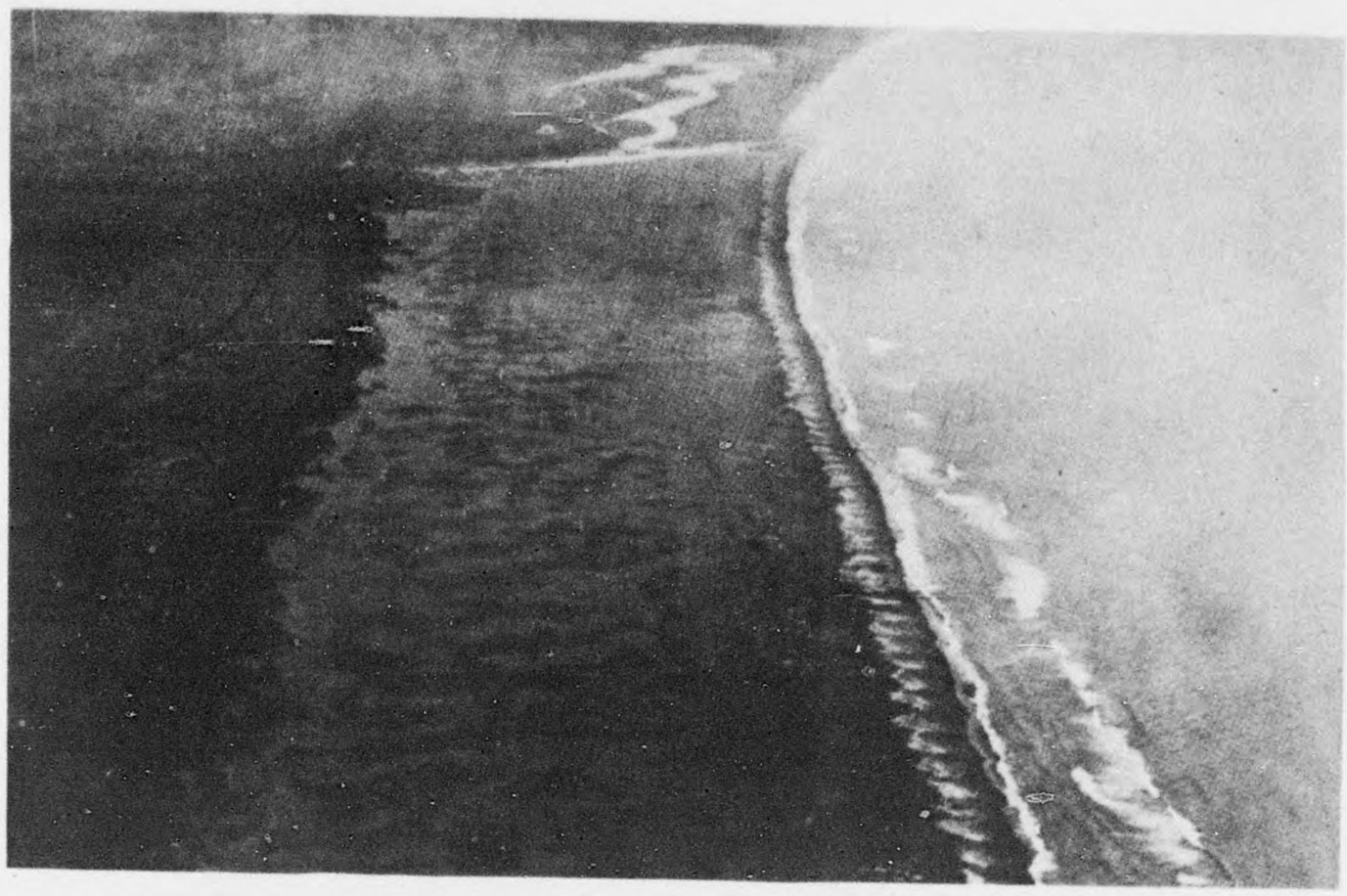
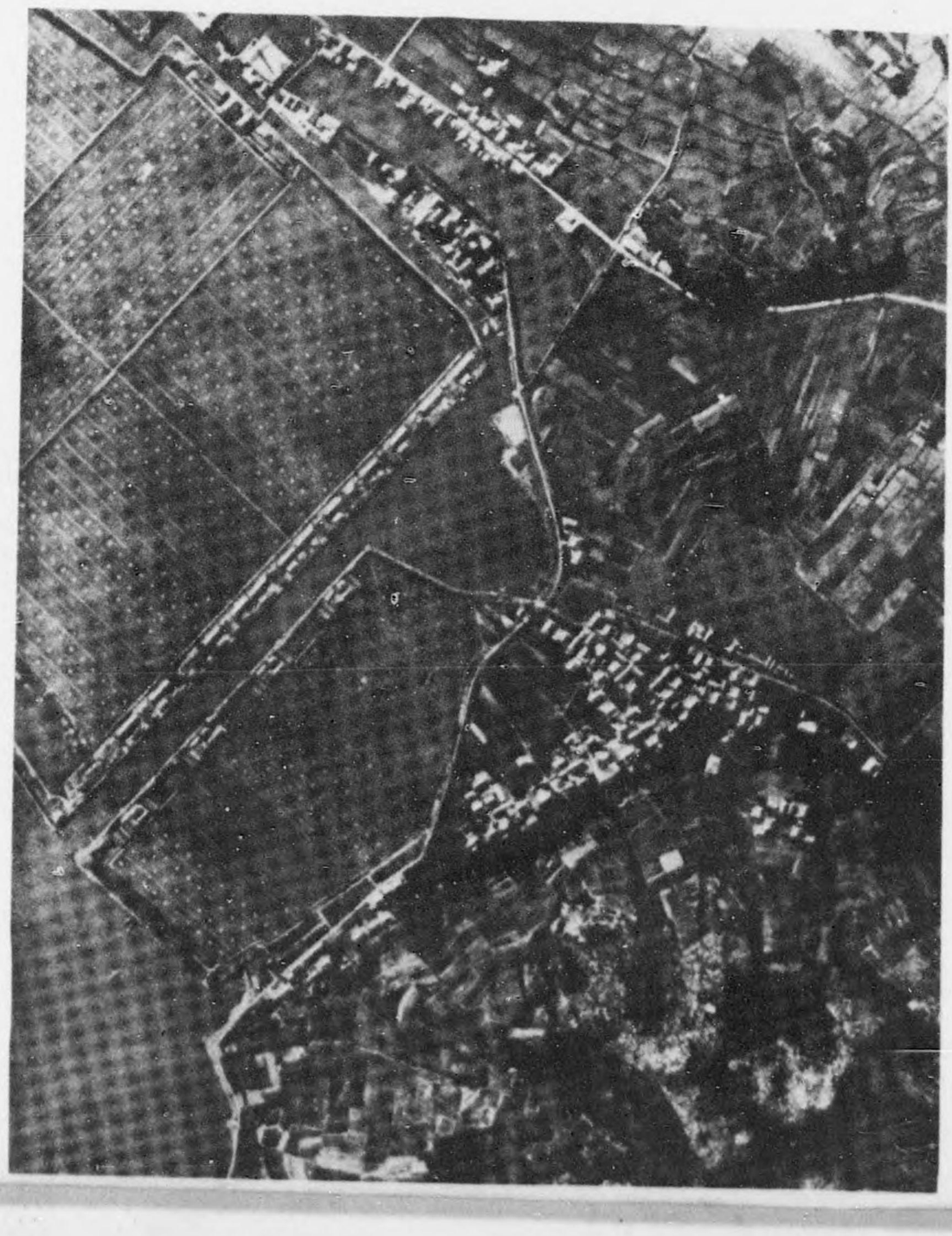
mounts can be found



2 Long curving beach on Pacific coast of Chiba Province. Broad area of low dunes in center of picture offers limited cover. Common feature behind beaches. Dark-colored wind-break of trees separates dunes from dry crop land at left. In background, river channel and lagoon behind beach, characteristic of this coast, are a barrier to movement inland. Kujukuri-hama. (Odauti, Scenery of Japan, Tokyo, 1931)



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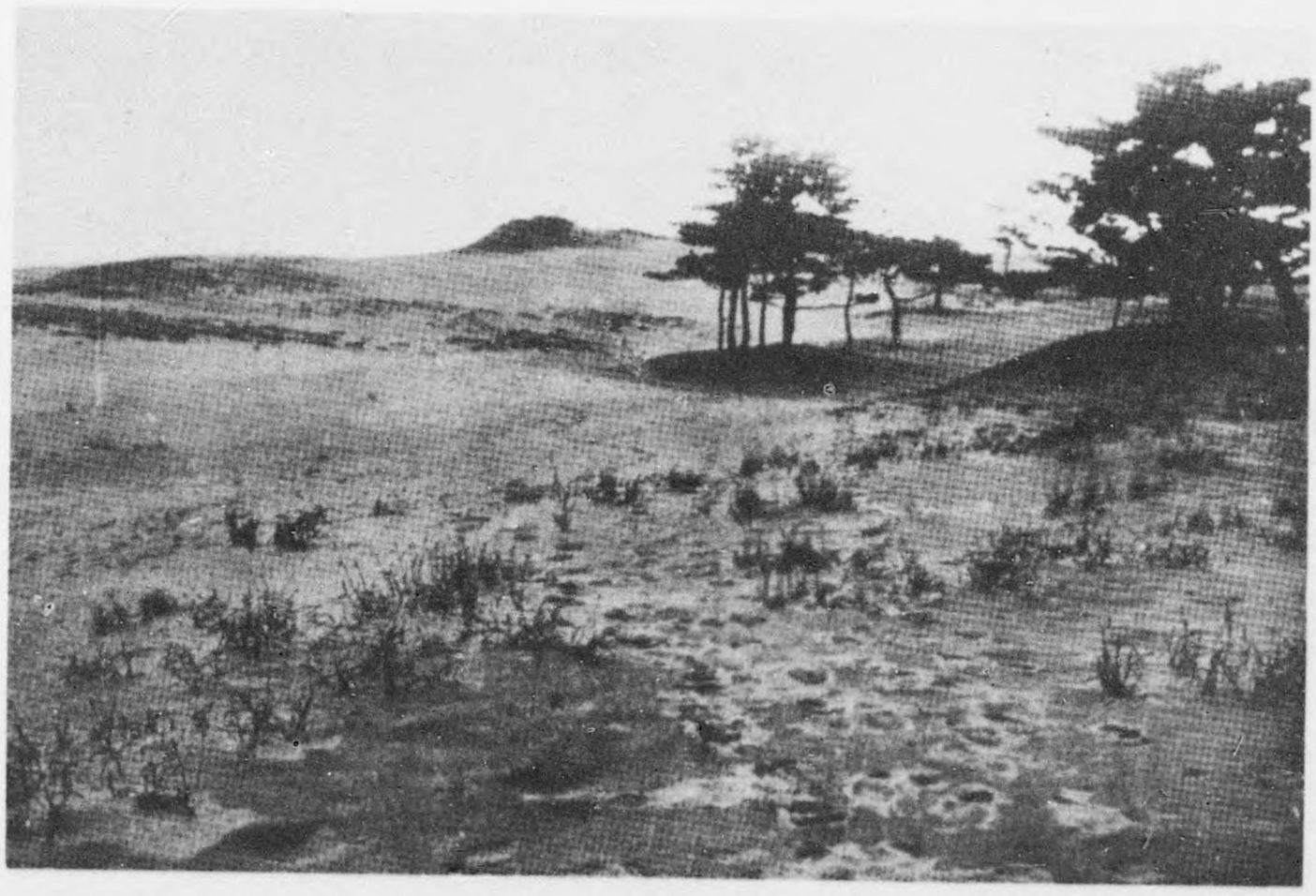
TERRAIN TYPES

S

ince. Broad area
cover. Common
of trees separates
r channel and
a barrier to
apan, Tokyo, 1931)

5 Sandy delta with shallow meandering tidal streams at right. Wet rice paddies on reclaimed land below sea level protected by dikes. Movement extremely difficult except on dikes. Delta of Edo River, southeast of Tokyo. (Odauti, Scenery of Japan, Tokyo, 1931)



6 Low sand hills (dunes) with coniferous trees; characteristic of many shore areas. Offer limited cover. Near Hamasaka (Hyogo Province). Area too small to separate on map from surrounding mountains. (Geog. and Ethnology of Japan, vol. X, 1930)