BUREAU OF PLANNING
GOVERNMENT OF GUAM
AGANA, GUAM

GUAM'S
Natural and Manmade
Constraints

GUAM'S
NATURAL AND MANMADE
CONSTRAINTS

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Prepared by: CARTOGRAPHIC/GRAPHIC
DESIGN SECTION
Bureau of Planning
Government of Guam
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INTRODUCTION

Do you intend to purchase property on Guam? Do you intend to build on property you currently own?

If the answer to any of the above questions is "yes", this property may be affected by one or more constraints that you should be aware of before developing or purchasing the property. Most land on Guam is affected in one way or another by flooding, earthquakes, airplane noise and other natural and man-made constraints. These constraints do not necessarily stop you from developing your land but you should be informed of them so as to prevent loss of life, property and reduce inconvenience.

This document will help you in identifying natural and man-made constraints that affect your property. It provides a series of maps by village showing the constraints and generally defining them. In addition, this document identifies the government agency to be contacted for more information. You only have to know the general location of your property to use this document. Since certain areas are affected by more than one constraint, you should look at all the maps within your village.

LEGEND:

Air Installation Compatible Use Zones (AICUZ)	=	Red
Radio Frequency Interference (RFI) Free Zones	=	Light Blue
Electromagnetic Radiation (EMR) Zones	=	Blue
Explosive Safety Quantity Distance (ESQD) Circles	=	Pink
Historical/Preshitorical Sites	=	Red
Aquifer Recharge Areas	=	Violet
Watershed	=	Yellow Orange
Wells	=	Grey
Seismic Fault Zones	=	Brown
Slide and Erosion Zones	=	Orange
Flood Hazard Areas	=	Light Green
Seashore Reserve	=	Purple
Wetlands	=	Lemon Yellow
Marine Pristine Ecological Communities	=	Green
Coral Reefs	=	Yellow
Limestone Forest	=	Turquoise

AIR INSTALLATION COMPATIBLE USE ZONES (AICUZ)

A. NOISE ZONES

Noise Zones are land areas that are affected by aircraft operations. These zones exist primarily in the vicinity of the Guam International Air Terminal, Naval Air Station and Andersen Air Force Base. Aircraft landing and take off operations generate a tremendous amount of noise. Generally, this noise is greater the closer one is to the landing/take-off strip and decreases the farther away one gets. This noise can cause inconvenience to residents and may also cause structural defects due to noise vibrations. However, certain design factors such as sound-proofing can minimize these effects.

Most uses are premissable within certain noise zones but it is strongly encouraged that these design factors be applied in construction.

B. ACCIDENT POTENTIAL ZONES (APZ)

Accident Potential Zones are a result of the need to protect life and property in the event of airplane crashes. Generally, these areas are situated closest to the landing or take-off areas which the Department of Defense recommends remain undeveloped.

Within the Accident Potential Zones, there is a Clear Zone, an Accident Potential Zone I and an Accident Potential Zone II depending upon the distance of the property from the air strip. The Clear Zone is the area immediately beyond the end of the runway; the Accident Potential Zone I is 3,000 feet wide and 5,000 feet long; while the Accident Potential Zone II is beyond Accident Potential Zone I, 7,000 feet long by 3,000 feet wide.

Within the Clear Zone all uses which involve development are unacceptable; development in Accident Potential Zone I is normally unacceptable while development in Accident Potential Zone II is encouraged by the Department of Defense to be of very low density.

For further information contact:

NAS =
Commander
Naval Air Station
Agana, Guam
Tel. 344-4295

AAFB =
Guam Airport Authority
Government of Guam
Tamuning, Guam
Tel. 646-4148/6571

43rd. CSG/DEEV
Environmental and Contract Planning Section
Andersen, Air Force Base
Yigo, Guam
Tel. 366-5202

RADIO FREQUENCY INTERFERENCE (RFI) FREE ZONES

Radio Frequency Interference Free Zones are areas around receiving antennas where it is desirable to control land use to prevent interference with the receiving capabilities of the antennas.

One-mile radius Radio Frequency Interference Free Zones around receiving antennas are normally desirable; however, the impact on receiving capability of encroachment into the desired Radio Frequency Interference Free Zones must be determined by individual studies.

For further information contact:
Commander
Naval Communication Station
Finegayan, Guam
Tel. 355-5311

ELECTROMAGNETIC RADIATION (EMR) ZONES

Electromagnetic Radiation Zones are areas around transmitting antennas where high density electromagnetic power densities may constitute a hazard to personnel, explosives or fuels, or may interfere with non-military electronic equipment.

General guidelines have been developed by the Department of Defense which recommend that land uses within a one-mile radius of transmitting antennas be controlled to preclude Electromagnetic Radiation problems. The actual degree of hazard at a specific location, however, must be determined by special studies because the degree of hazard can vary with the type of antenna, radio frequencies transmitted and amount of radio frequency energy radiated.

In addition to Electromagnetic Radiation Zones required for high-powered transmitting antennas previously discussed, specialized transmitting facilities such as air navigational aids require isolation in order to operate correctly. The VORTAC is one of these facilities. It requires a 1,000-feet protection area around the facility.

For further information contact: Commander
Naval Communication Station
Finegayan, Guam
Tel. 355-5311

EXPLOSIVE SAFETY QUANTITY DISTANCE (ESQD) CIRCLES

Explosive Safety Quantity Distance Circles are a result of the storage of explosives such as bombs and ammunition. These circles are set up to accommodate accidential explosions thereby, preventing or reducing injuries and property loss.

Explosives are stored in structures called "magazines". Each magazine can store up to 500,000 pounds of TNT. For safety purposes, 3,970 feet is required around the magazine to prevent injuries and property loss. Generally, uses that do not involve the construction of homes and other habitable structures such as agriculture, conservation, open recreation and roads are permissable within the outer forty percent (beyond 2,382 feet) of the Explosive Safety Quantity Distance Circle.

For more detailed information contact: Commander
Naval Magazine
Santa Rita, Guam
Tel. 339-4148

HISTORICAL AND PREHISTORICAL SITES

Historical and prehistorical sites are areas on Guam where past human activity has left structures and artifacts that are highly valued as links with a rich cultural heritage. These areas are particularly important because of their archaeological significance, aesthetic value and fragile nature. Unplanned development can destroy these areas or limit their use as areas for observation, recreation and educational experience. The three elements of historic preservation are historic sites, archaeological sites and architectural sites. Included in historic sites are pre-spanish village areas characterized by a prevalence of artifacts and associated features such as latte stones, rock shelters and mortar stones.

Since much of the island's present lifestyle has been influenced by a Spanish heritage, buildings that have survived this colonial era are valuable historic sites. Also, of historic significance are World War II relics that provide

fascinating information for both residents and visitors, into the past time of conflict.

For further information contact: Department of Parks and Recreation
Government of Guam
Toto, Guam
Tel. 477-9620/21

AQUIFERS RECHARGE AREAS, WATERSHEDS AND WELLS

Within the northern and central parts of the island, a layer of freshwater floats upon saltwater and forms a lens. This freshwater is pumped upwards and provides island residents with drinking and irrigation water. The freshwater lens is replenished by rain seeping through the limestone.

In the south, water is obtained from reservoirs which hold water from rivers and streams. Rainwater does not seep underground as much as in the north and central areas because the south is composed of volcanic rock. The areas surrounding these streams and rivers are called watersheds which directs rainwater into the streams and rivers.

Since aquifer recharge areas, watersheds and wells are critically important in providing water and protecting our water resources, these areas must be effectively managed to prevent water contamination.

For further information contact: Guam Environmental Protection Agency
Government of Guam
Harmon Plaza, Guam
Tel. 646-7916

SEISMIC FAULT ZONES

Seismic fault zones are those areas that subdivide the island's geologic structure and are potentially hazardous during an earthquake.

During the island's geological development, different blocks of land have uplifted and subdivided. Six major blocks are divided by fault lines or geologic structural subdivision zones. Most seismic activity occurs in the vicinity of these zones. Since geologic activity occurs over such a long expanse of time, the immediate hazard along fault lines is relatively minor. The land is stable enough for most land uses. Further geologic and seismological studies are needed before a more precise determination of the extent of the hazards associated with fault lines is known.

For more information contact: Bureau of Planning
Government of Guam
Room 403, Pacific News Building
Tel. 477-9502

SLIDE AND EROSION ZONES

Slide and erosion zones are areas with topographic characteristics that are liable to create an inconvenience and sometimes disasterous threats to human life if not properly maintained or developed. These are hilly areas with slopes in excess of 15%.

Approximately half of Guam's total acreage (43%) has slopes in excess of 15%. Steep terrain generally occurs on the island's coastal cliffs, terraces, and southern savannah grasslands.

Construction on hillsides can promote erosion which destroys protective vegetative cover, limits land use, and degrades water quality and visual appearance. Unplanned development can also lead to landslides and increase flood hazards. The weight of structures on steep hillsides can cause unstable soils to "slump" and weaken foundations. In extreme cases, mud slides may cause building damage and/or threaten human life. When ground cover is disturbed or removed during development, exposing the soil, potential for erosion is introduced. As the surface area available for absorption of rainwater is reduced by impervious surfaces (roofs, roadways, parking lots, etc.), runoff is increased and the potential for erosion also increases. As a rule, slopes are more easily eroded than level lands; the extent of erosion during construction and prior to soil stabilization is substantially increased on steep terrain. Septic tanks and leaching fields installed on steep slopes are more susceptible to failure than similar installations in more level landscapes. Where provisions are made for the public power, water, telephone, or sewage systems, the difficulties and costs are significantly greater on steep slopes. In addition, the acreage requirements for roads and also for structures increase with slope. In short, land cannot be used as efficiently on steep slopes as on level land.

Efficiency is related to cost and some cost of developing land on steep slopes must be borne by the public, as local government must maintain roadways or other utilities or when erosion, water sedimentation, or slide damage occurs.

For more information contact: Bureau of Planning
Government of Guam
Room 403, Pacific News Building
Tel. 477-9502

FLOOD HAZARD AREAS

Flood hazard areas are low lying areas which retain the overflow of runoff from the natural and developed drainage systems during periods of persistant rainfall. If improperly used, flood hazard areas can become problem areas as a result of deterioration of flood-damaged structures and the recurrence of public expense for relief and repair of flood-damaged facilities and failing sanitary systems.

In a lot of cases, these flood hazard areas are level and because level land is in high demand on the island, much development has already occurred in or encroaches upon flood hazard areas.

There are presently performance standards developed by the Government of Guam in compliance with the requirements of the National Flood Insurance Program and by Executive Order 78-29.

For further information contact: Department of Land Management
Government of Guam
Agana, Guam
Tel. 472-8851/2/3

SEASHORE RESERVE

The seashore reserve is defined by P.L. 13-154 as "that land and water area of Guam extending seaward to the ten fathom contour (60 ft.), including all islands within the Government's jurisdiction except Cabras Island and those villages wherein

residences have been constructed along the shoreline prior to the effective date of the Seashore Act (1974), and extending inland to the nearer of the following points:

1) From the mean high water line for a distance on a horizontal plane of 10 meters (33 ft.).
2) From the mean high water line to the inland edge of the nearest public right-of-way.

The law basically intends to protect the seashore reserve through the review of development proposals by the Territorial Seashore Protection Commission.

For further information contact: Department of Land Management
Government of Guam
Agana, Guam
Tel. 472-8851/2/3

WETLANDS

Wetlands are unique parts of the island's natural land area. They include swamps, marshes, mangroves and river valleys that are constantly covered with water. They support aquatic plants and animals. Wetlands also act as a source of freshwater or as floodplains. Most importantly, they are a nursery ground for juvenile plants and animals. The mangrove wetlands are not only a wildlife habitat, but are also useful for shoreline protection from wind and waves. Development within wetlands should not involve their filling or uses which adversely affect water quality or wildlife.

For more information contact: Department of Land Management
Government of Guam
Agana, Guam
Tel. 472-8851/2/3

MARINE PRISTINE ECOLOGICAL COMMUNITIES

Marine Pristine Ecological Communities are relatively undisturbed near-shore and off-shore areas that provide a rich variety of habitats for rare aquatic and marine species. They include mangrove swamps, seagrass beds, reef channels and submarine cliffs and should be protected for their educational, scientific and aesthetic values.

For further information contact: Department of Agriculture
Government of Guam
Mangilao, Guam
Tel. 734-3941

CORAL REEFS

Coral reefs are geological formations created by living marine organisms which separate the shore from the deeper ocean. During low tide, these reefs may be exposed to a great extent.

Coral reefs provide protection of the shoreline, especially beaches from storm waves and erosion. They also provide recreational areas for water sports and fishing. It is for these reasons that development on land and within near-shore areas be managed to prevent damage or destruction of coral reefs.

For further information contact: Department of Agriculture
Government of Guam
Mangilao, Guam
Tel. 734-3941

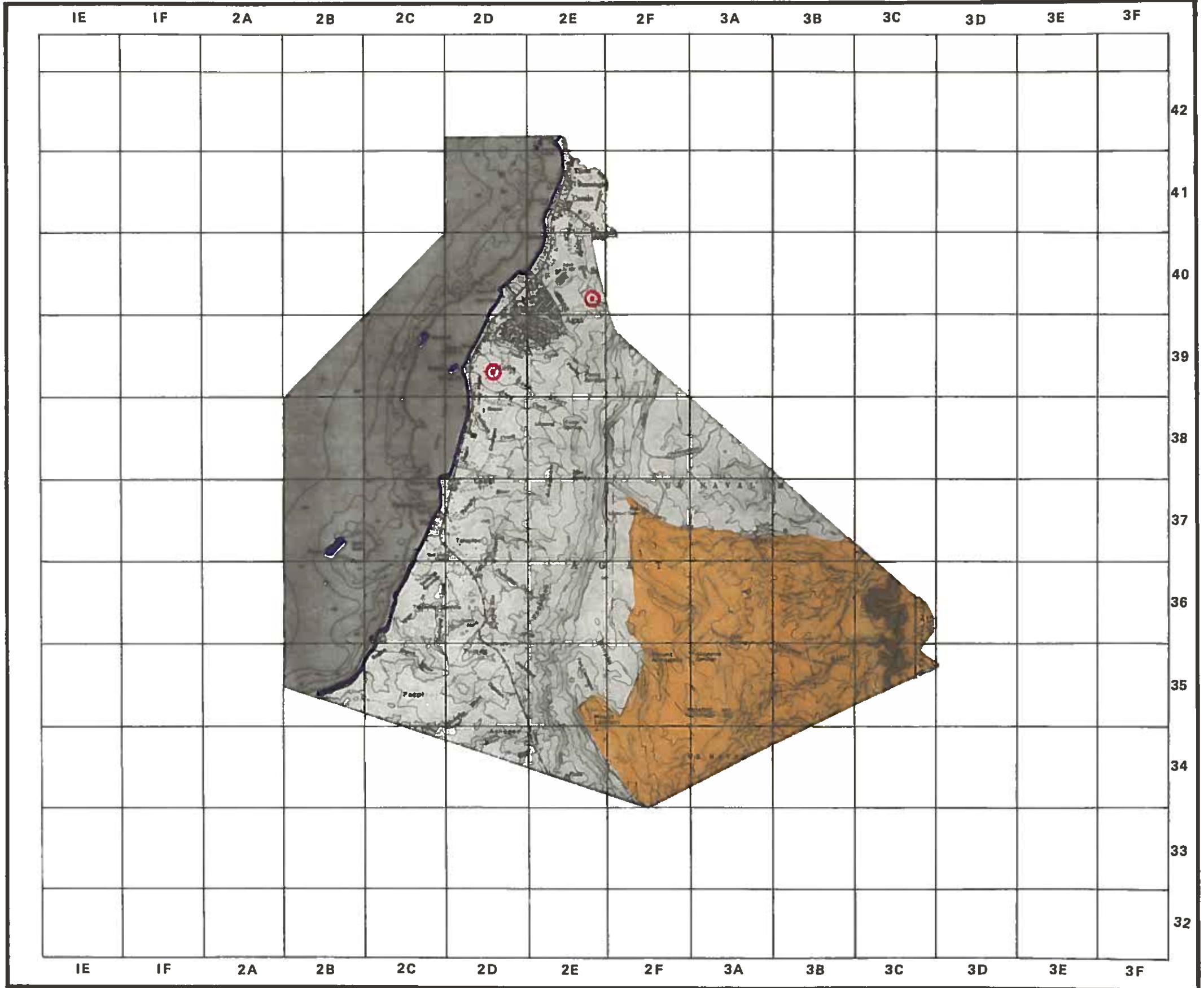
LIMESTONE FORESTS

The limestone forests of Guam are so named because they grow in minimal soil upon the northern limestone plateau. They are a limited resource because land development has cleared most of the forested areas. They can never be reforested to their original condition because newly introduced weeds and shrubs prohibit the reestablishment of native plants and animals. Limestone forests are characterized by large

trees which shade the lower vegetation. These areas must be protected to support wildlife, recreational, and educational uses.

For more information contact:

Department of Agriculture
Government of Guam
Mangilao, Guam
Tel. 734-3941

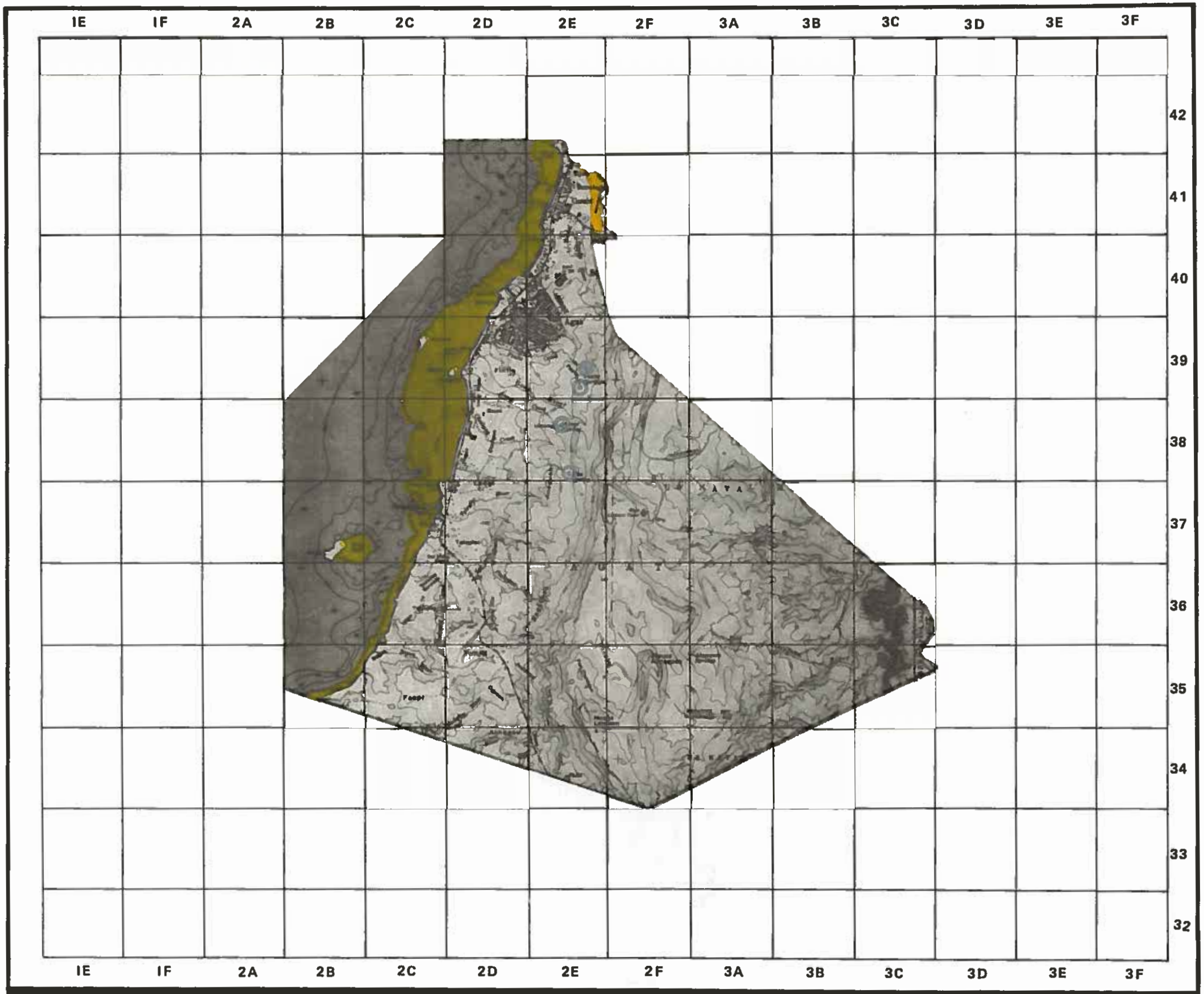


LEGEND

- Watershed
- Historical/Prehistorical
- Seashore Reserve

AGAT

MAP No. 1

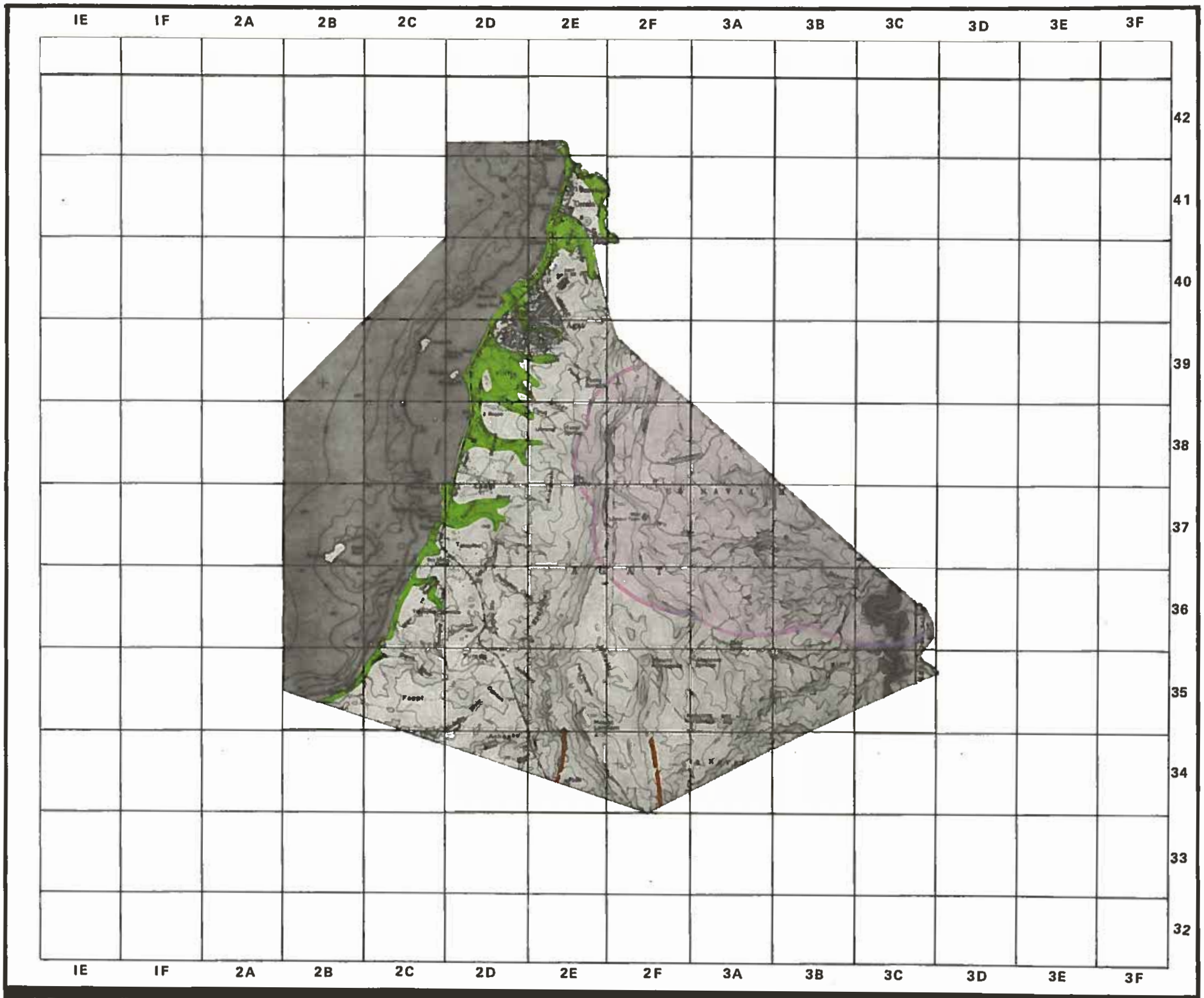


LEGEND

- Coral Reefs
- Wetlands
- Wells

AGAT

MAP No. 2

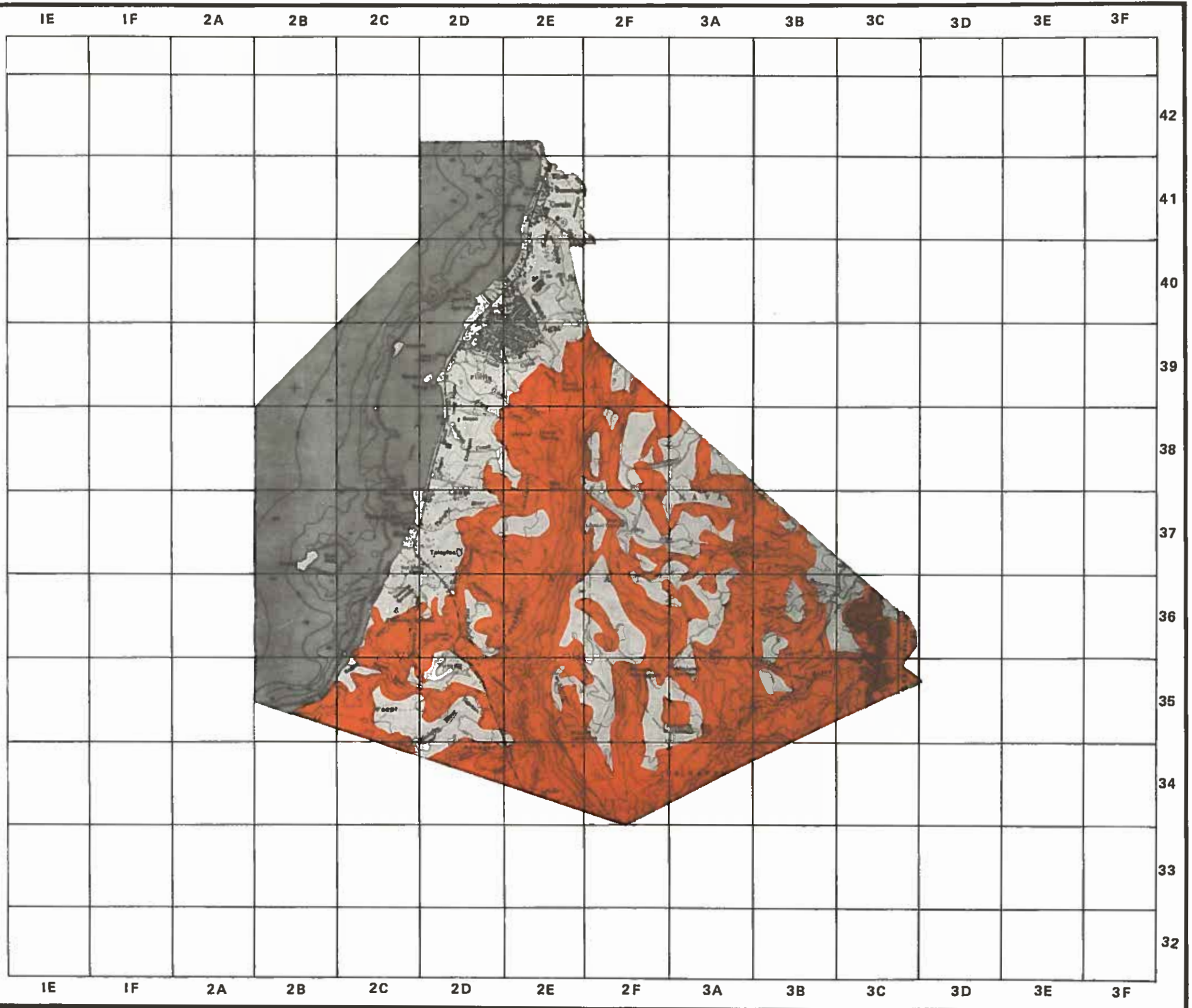


LEGEND

- Flood Hazard Areas
- Seismic Fault Zones
- Explosive Safety Quantity Distance (ESQD) Circle

AGAT

MAP No. 3



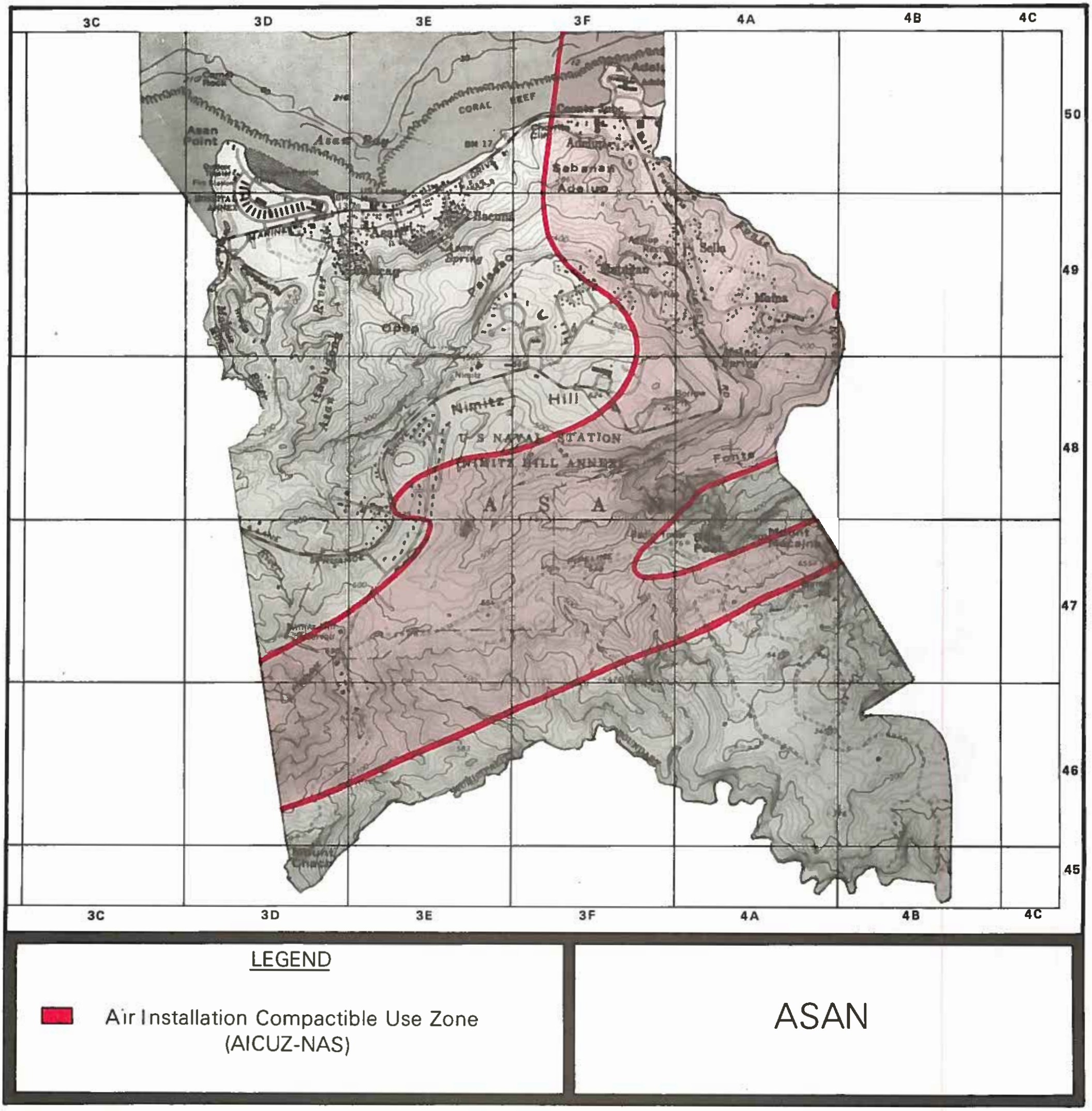
LEGEND

Slide and Erosion Zones

AGAT

MAP No. 4

MAP No. 1

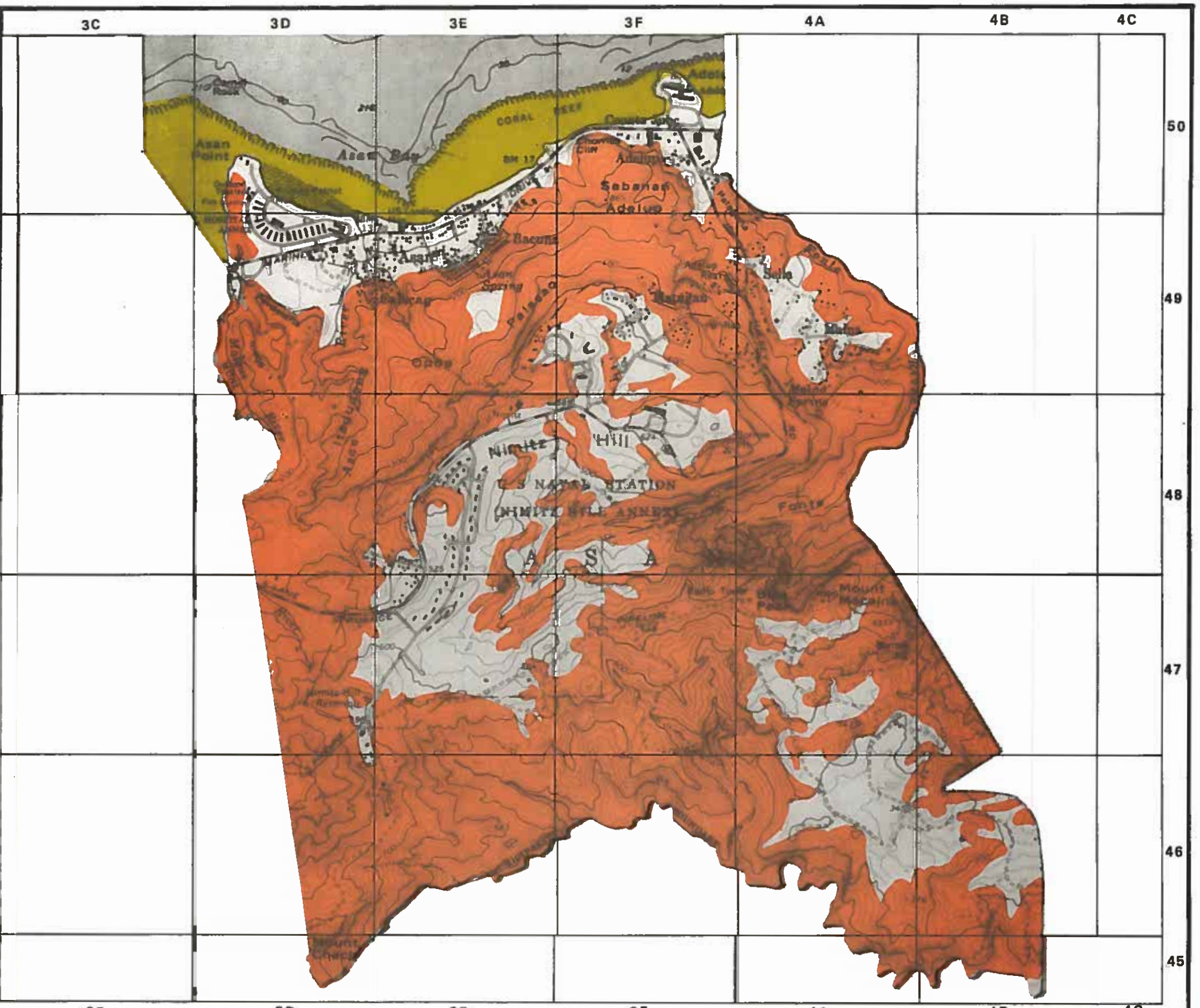


LEGEND

Air Installation Compactible Use Zone (AICUZ-NAS)

ASAN

MAP No. 2

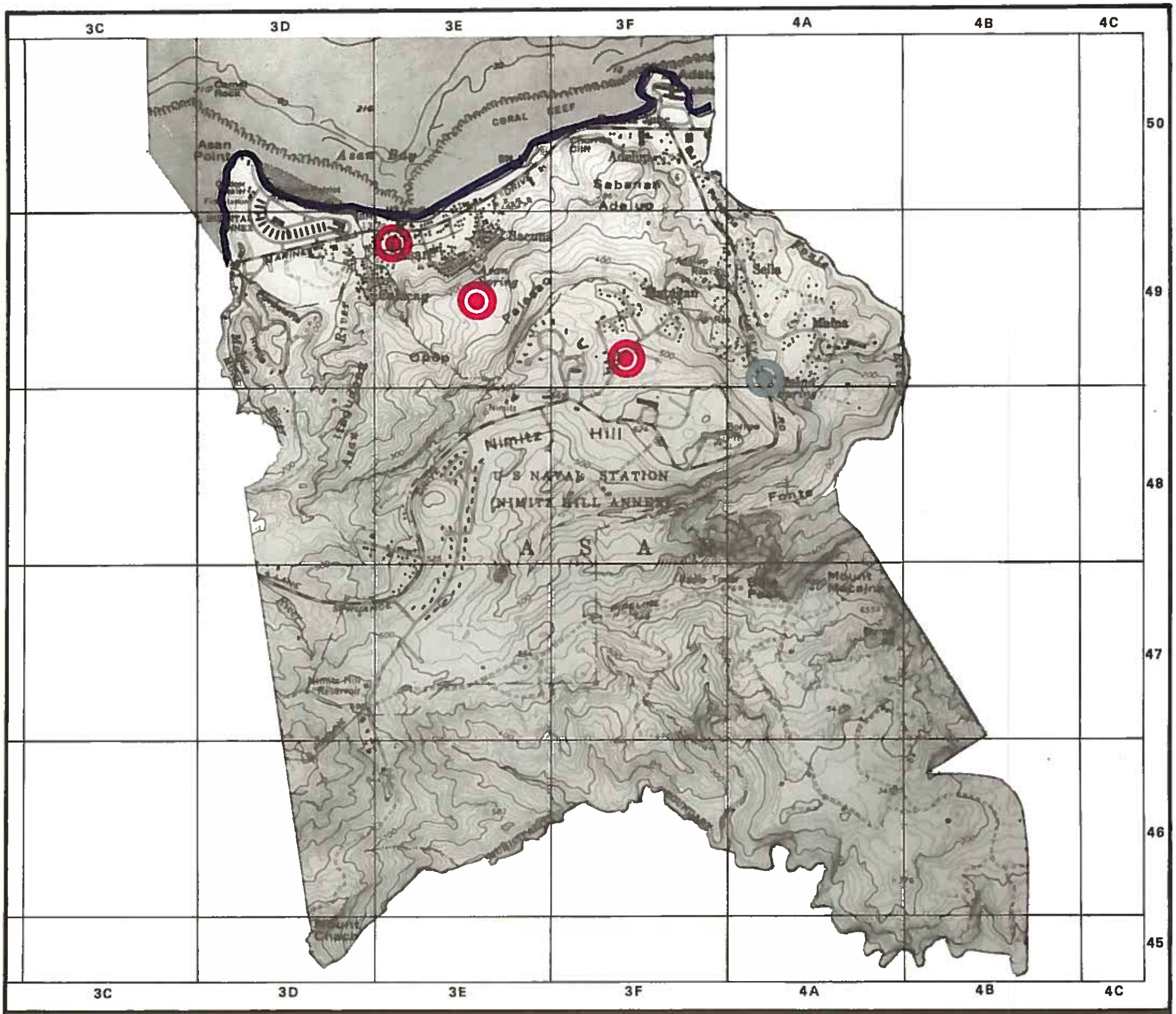


LEGEND

- Slide and Erosion Zones
- Coral Reefs

ASAN

MAP No. 3

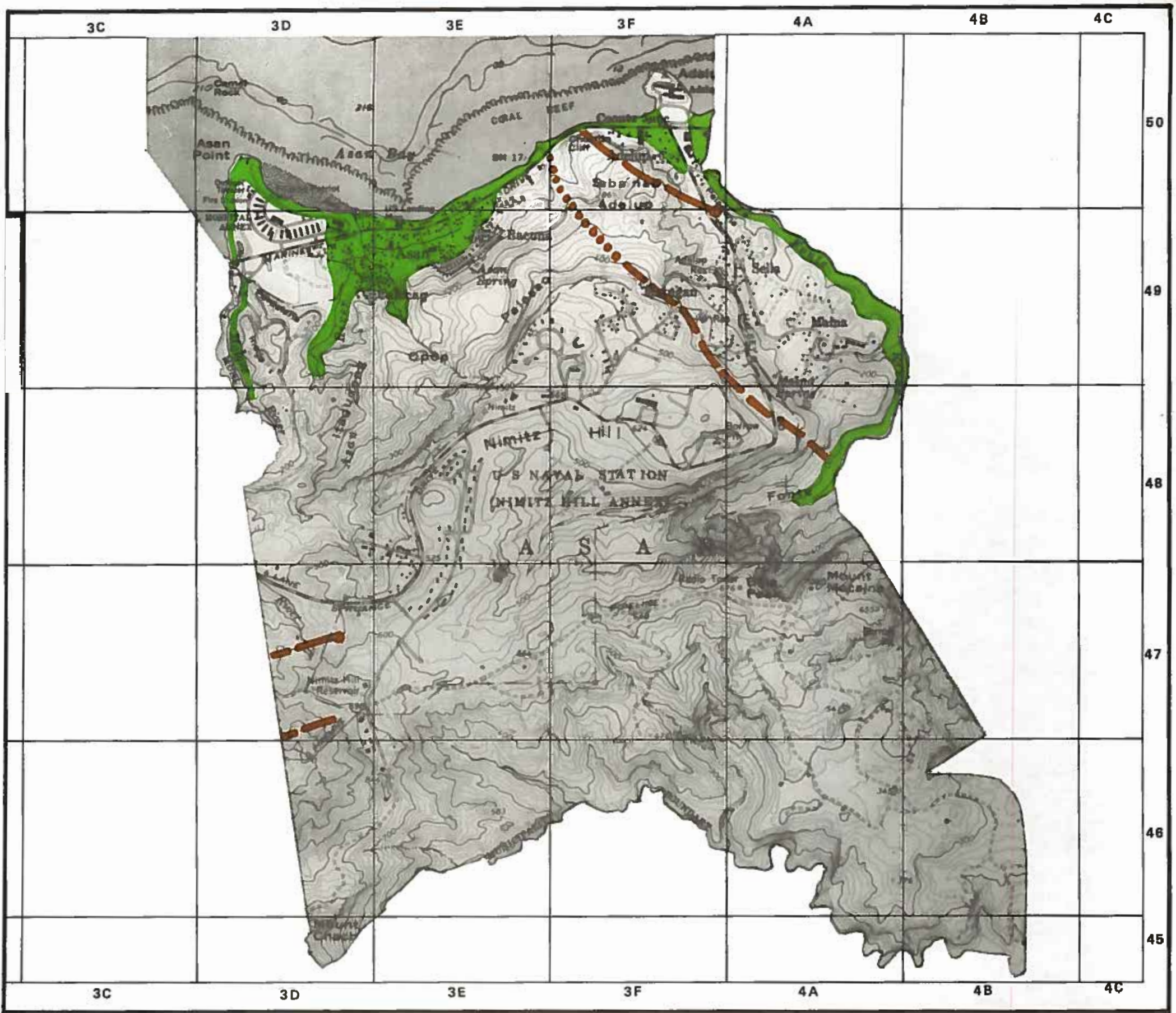


LEGEND

- Seashore Reserve
- Historical/Prehistorical Sites
- Wells

ASAN

MAP No. 4

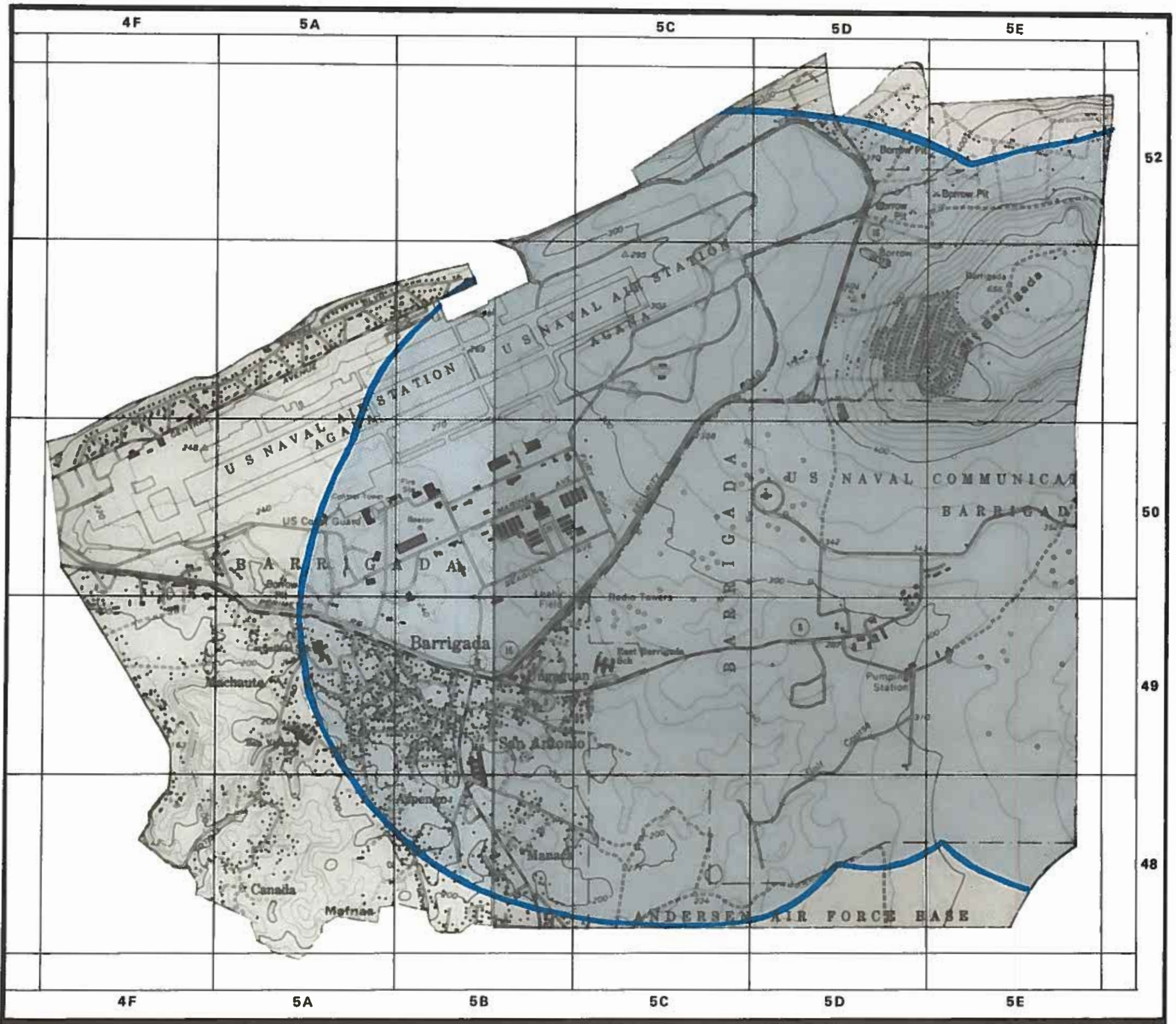


LEGEND

- Seismic Fault Zones
- Flood Hazard Areas

ASAN

MAP No. 1

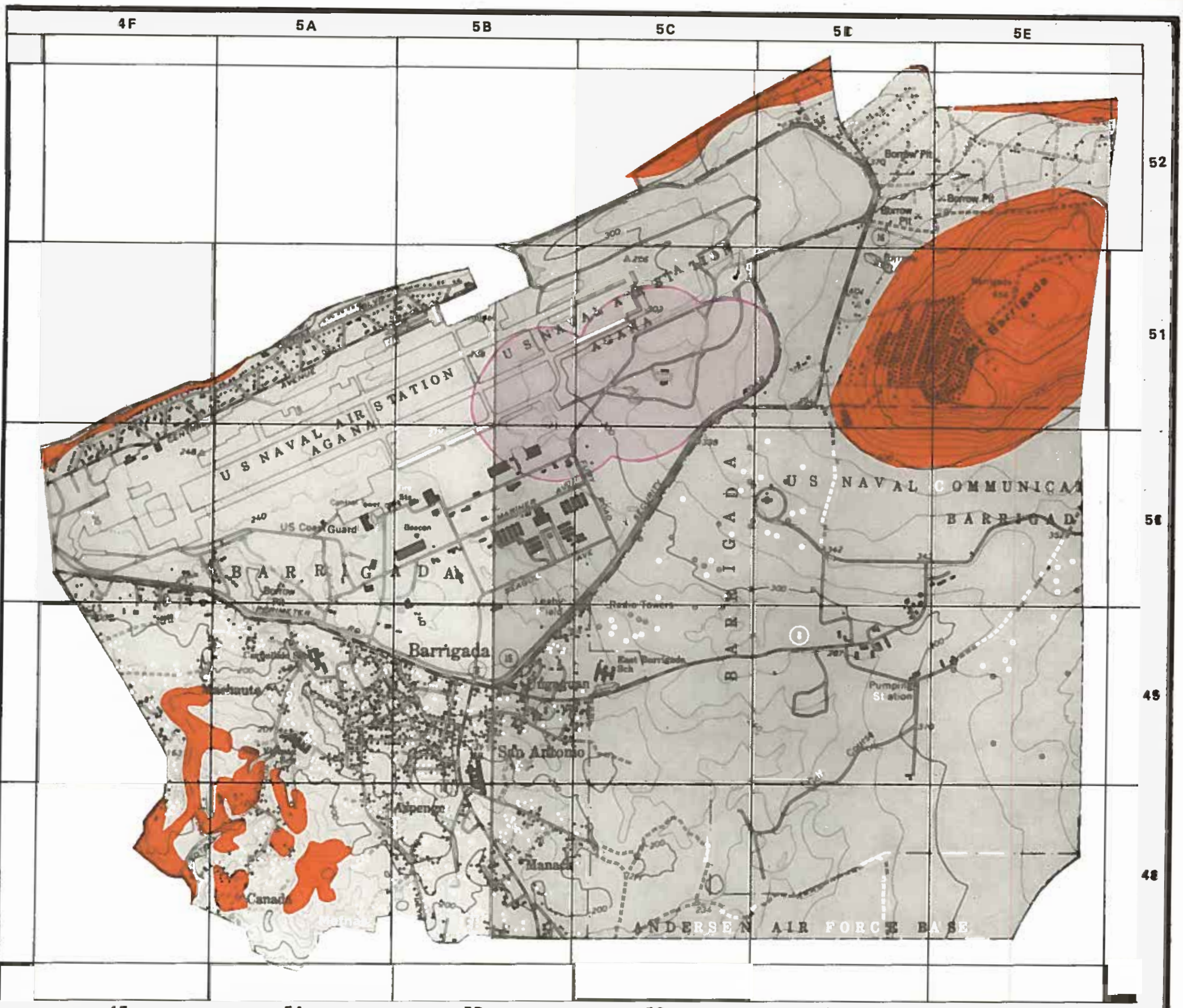


LEGEND

Electromagnetic Radiation (EMR) Zones

BARRIGADA

MAP No. 2

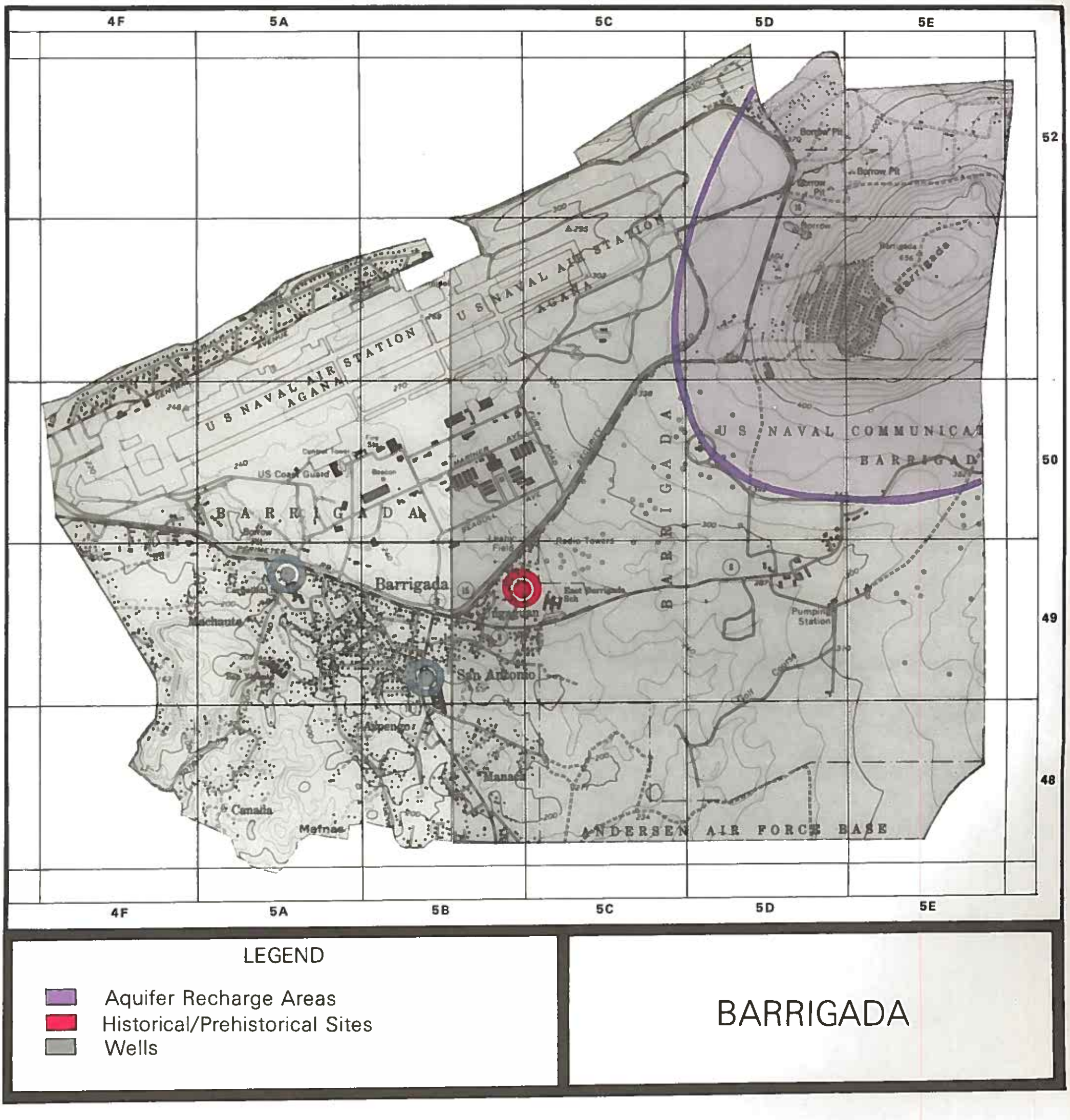


LEGEND

- Slide and Erosion Zones
- Explosive Safety Quantity Distance (ESOD) Circles

BARRIGADA

MAP No. 3

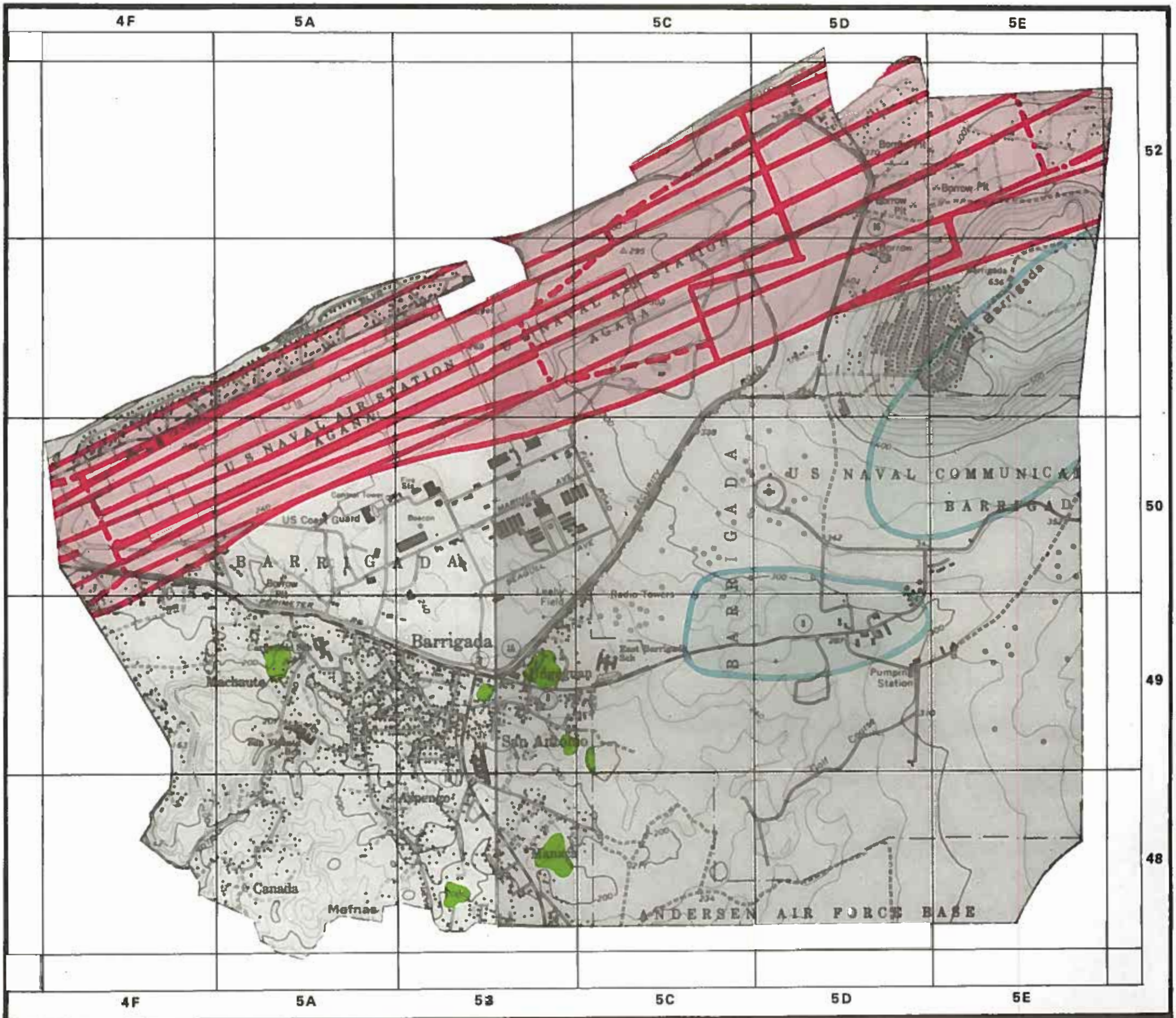


LEGEND

- Aquifer Recharge Areas
- Historical/Prehistorical Sites
- Wells

BARRIGADA

MAP No. 4

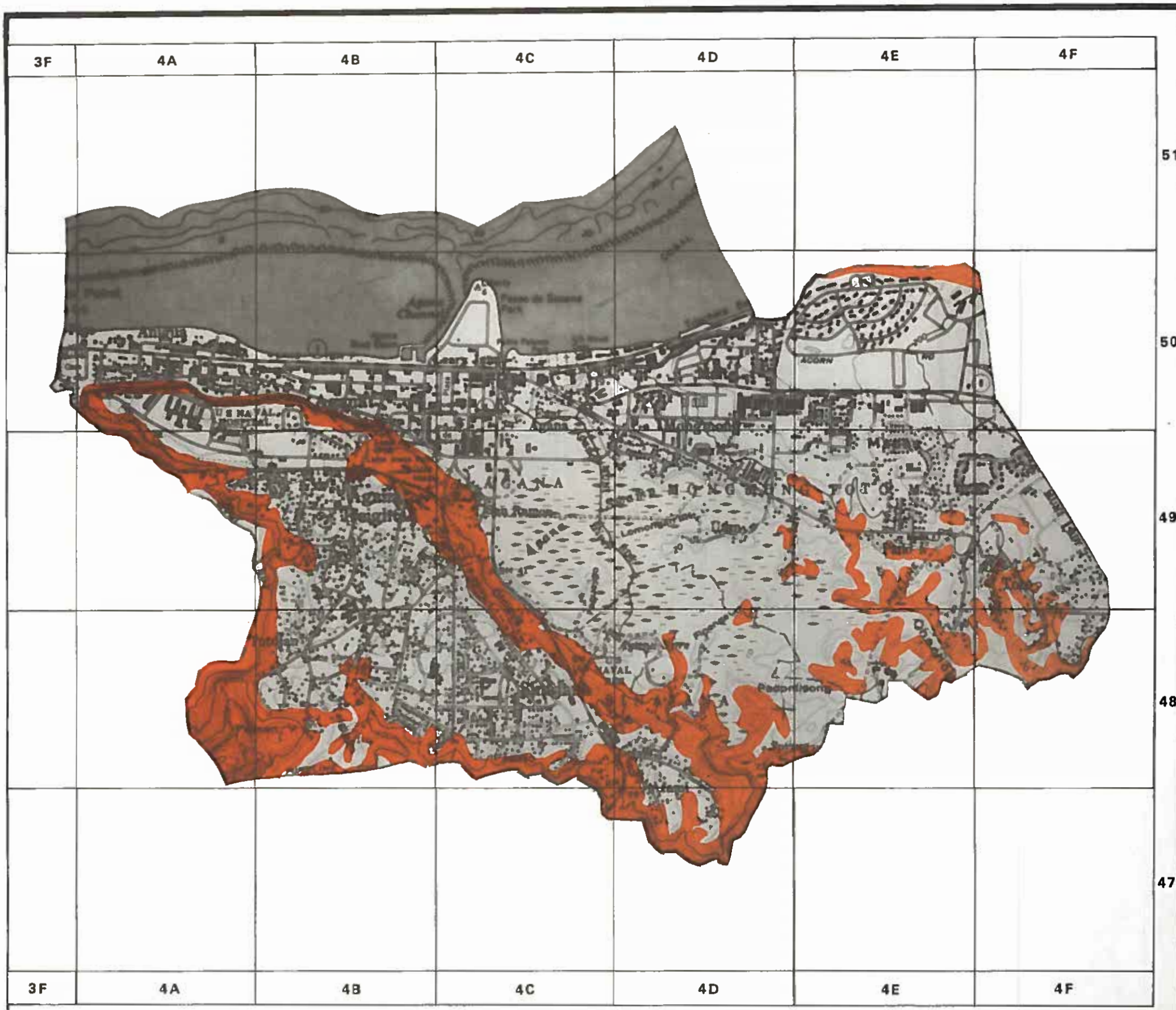


LEGEND

- Air Installation Compatible Use Zone (AICUZ-NAS)
- Flood Hazard Areas
- Limestone Forest

BARRIGADA

MAP No. 1



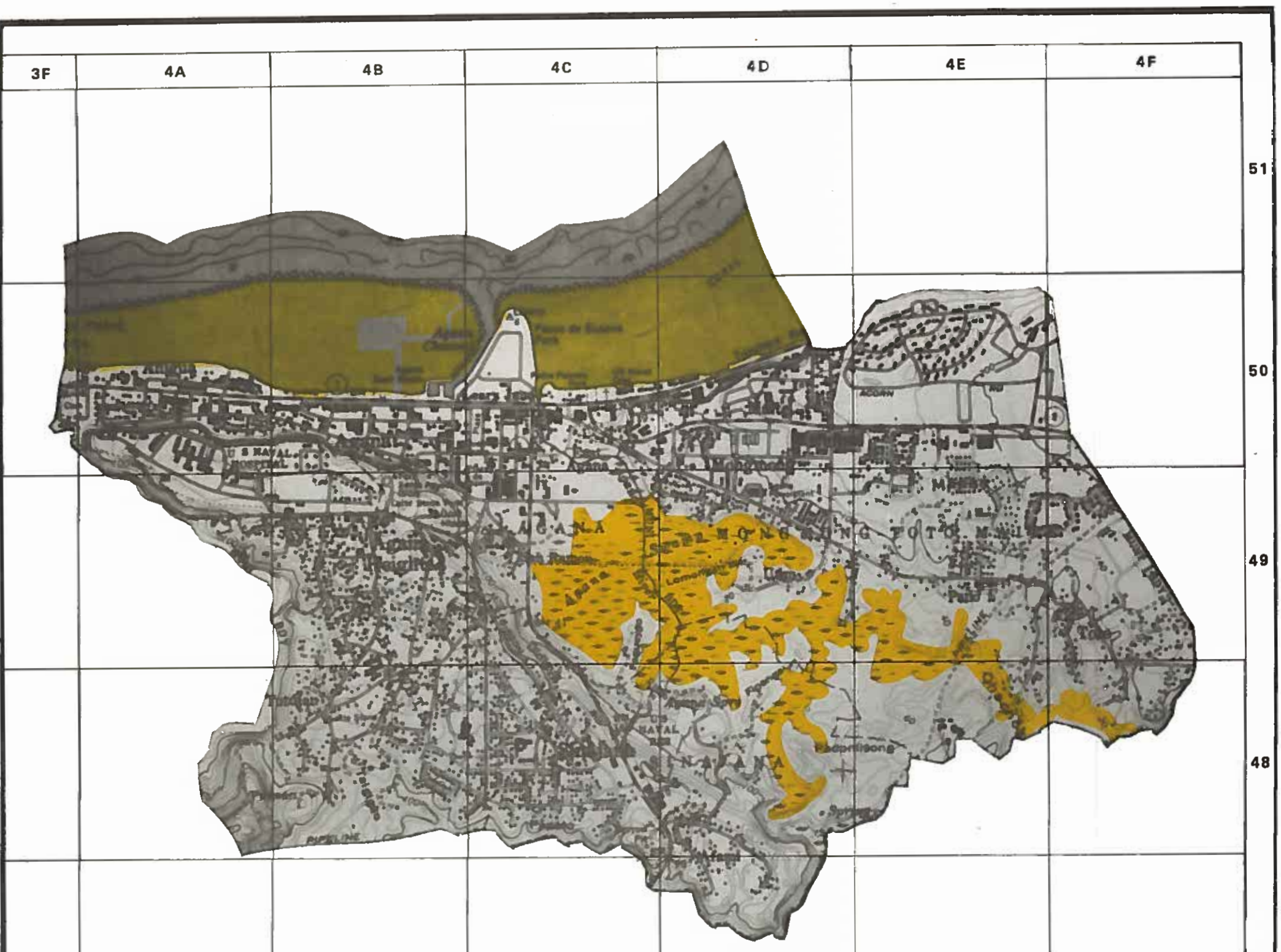
LEGEND

Slide and Erosion Zones

CENTRAL GUAM

AGANA, AGANA HGTS., SINAJANA,
MONGMONG-TOTOTO-MAITE

MAP No. 2



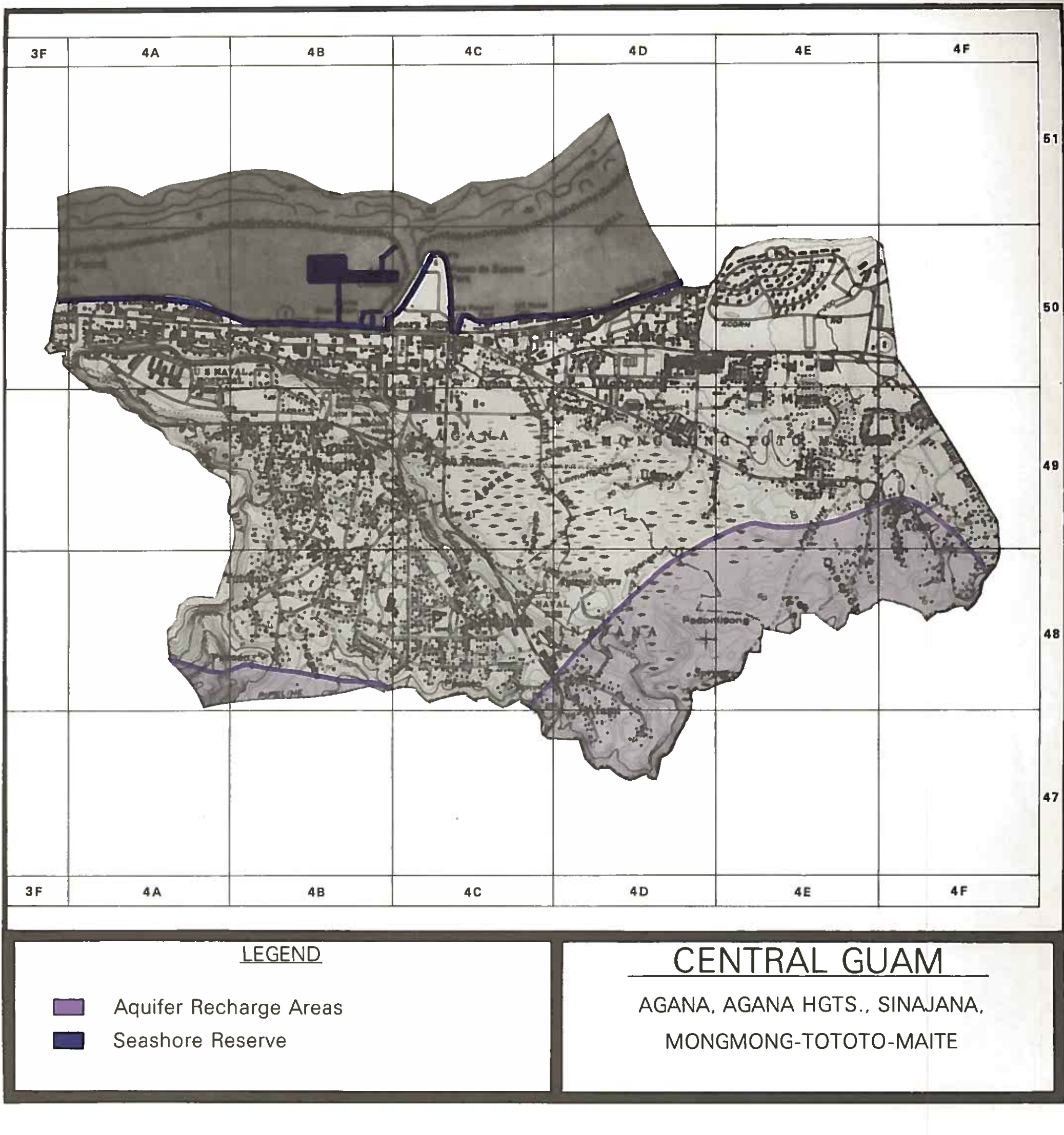
LEGEND

- Coral Reefs
- Wetlands

CENTRAL GUAM

AGANA, AGANA HGTS., SINAJANA,
MONGMONG-TOTOTO-MAITE

MAP No. 3



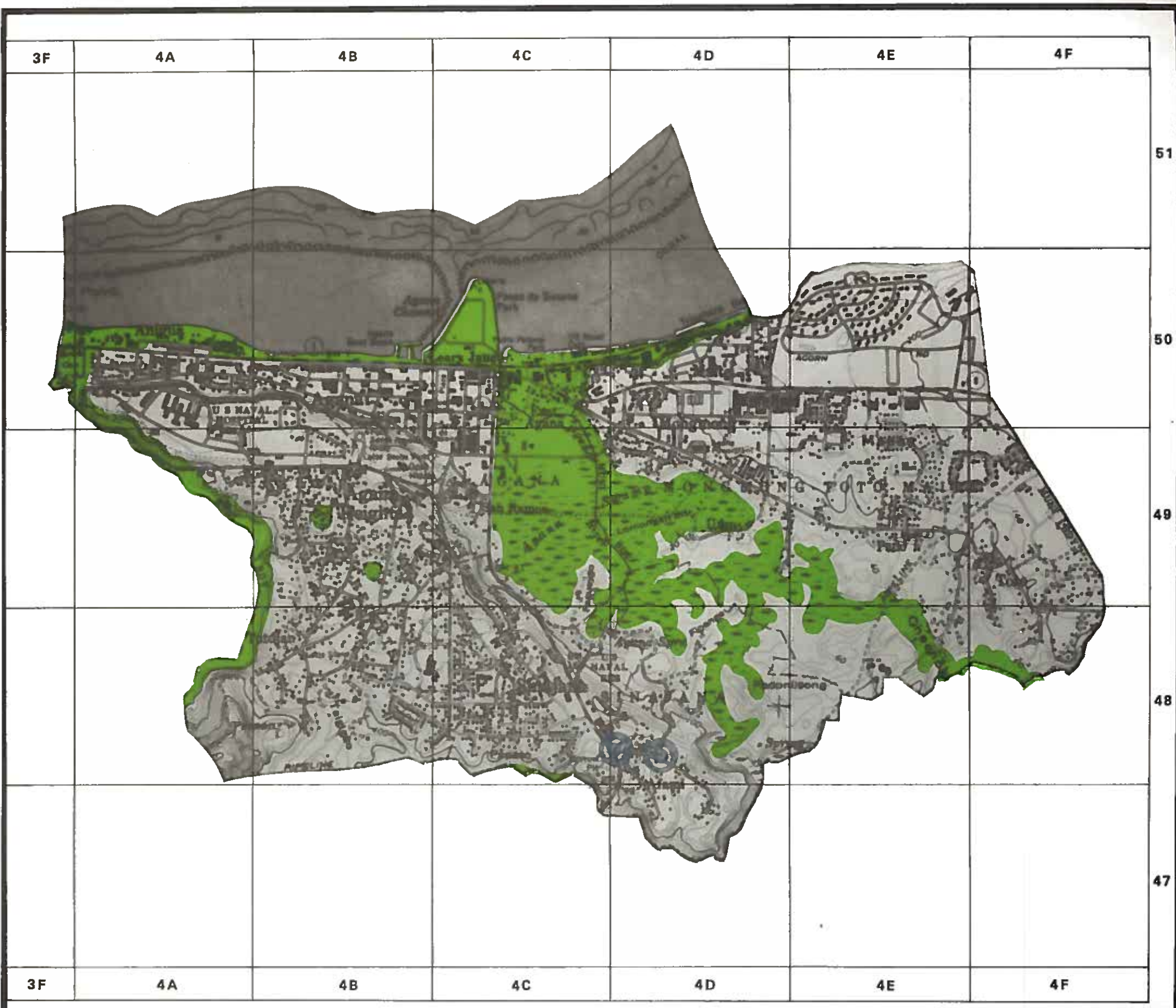
LEGEND

- Aquifer Recharge Areas
- Seashore Reserve

CENTRAL GUAM

AGANA, AGANA HGTS., SINAJANA,
MONGMONG-TOTOTO-MAITE

MAP No. 4



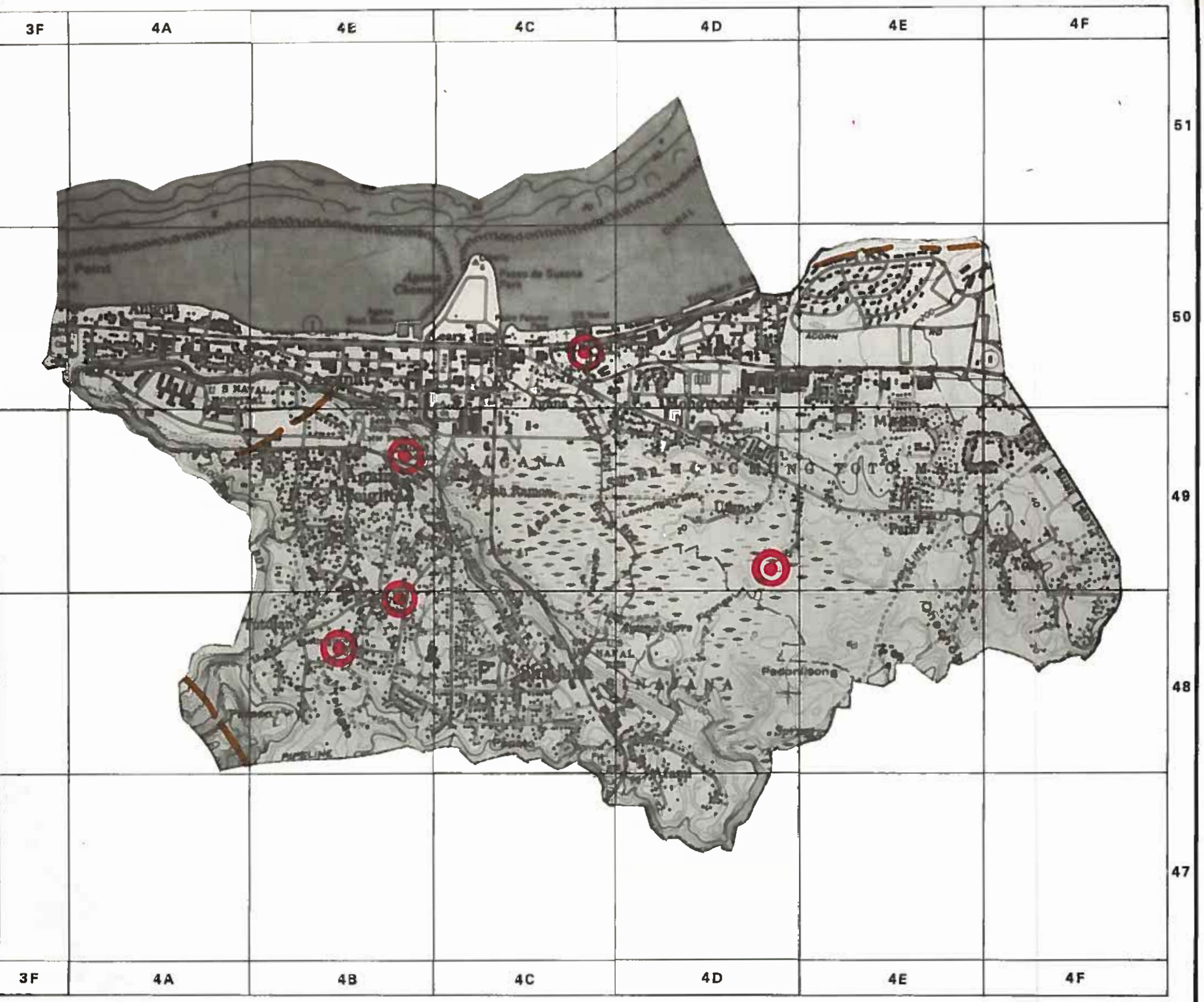
LEGEND

- Flood Hazard Areas
- Wells

CENTRAL GUAM

AGANA, AGANA HGTS., SINAJANA,
MONGMONG-TOTOTO-MAITE

MAP No. 5



LEGEND

- Historical/Prehistorical Sites
- Seismic Fault Zones

CENTRAL GUAM

AGANA, AGANA HGTS., SINAJANA,
MONGMONG-TOTOTO-MAITE

MAP No. 6

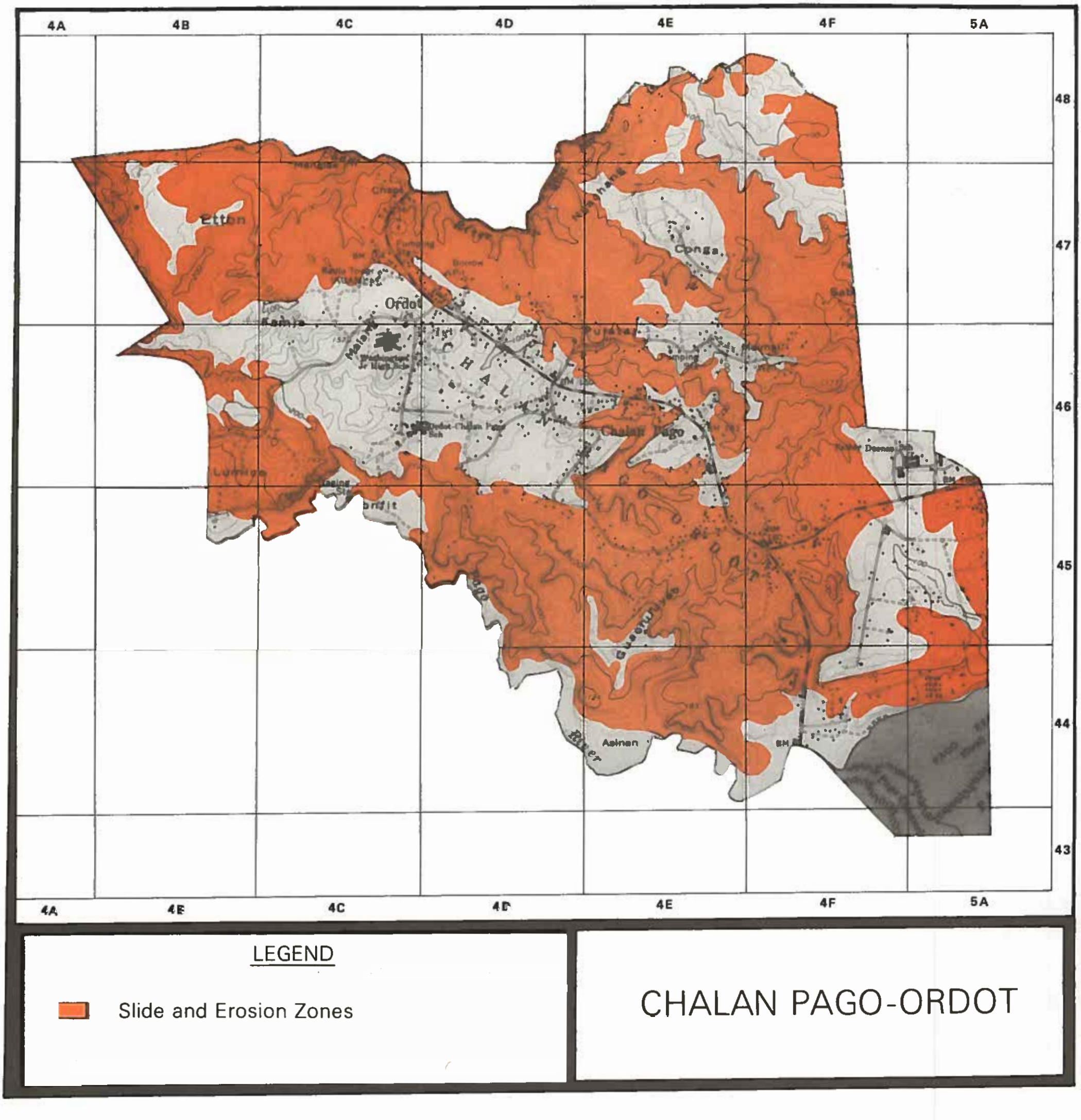
LEGEND

Air Installation Compatible Use Zone (AICUZ-NAS)

CENTRAL GUAM

AGANA, AGANA HGTS., SINAJANA, MONGMONG-TOTOTO-MAITE

MAP No. 1

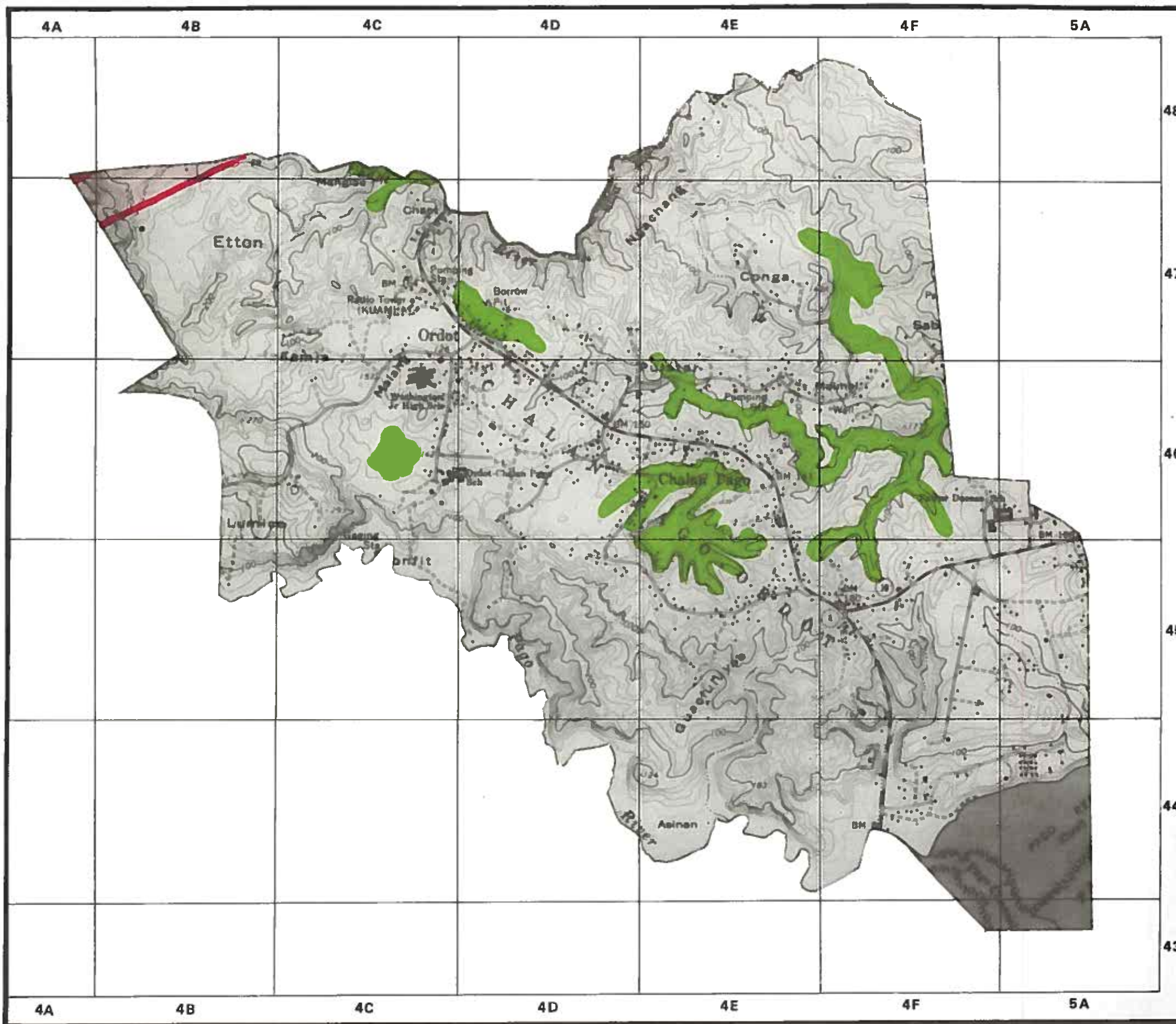


LEGEND

Slide and Erosion Zones

CHALAN PAGO-ORDOT

MAP No. 2

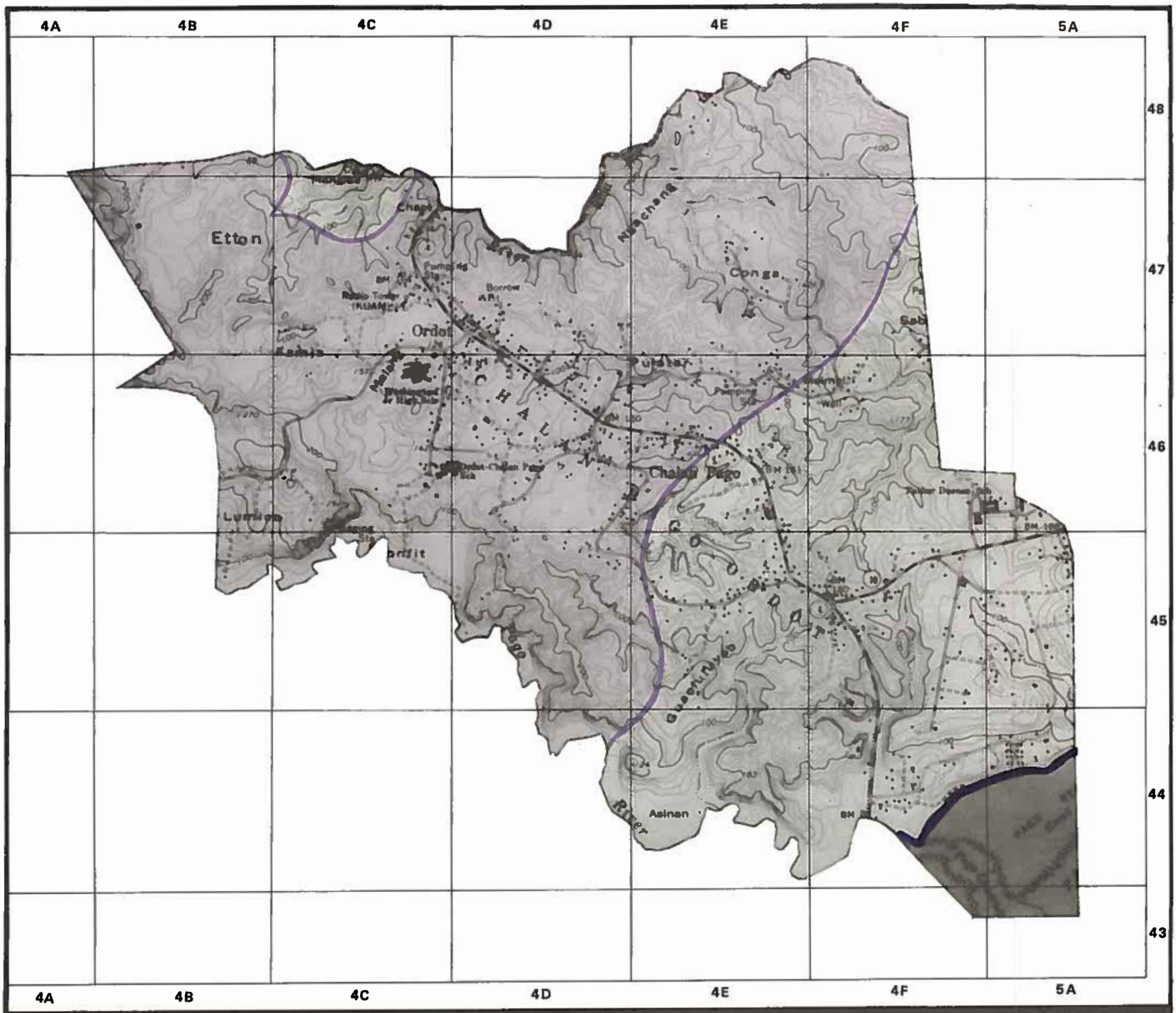


LEGEND

- Flood Hazard Areas
- Air Installation Compatible Use Zone (AICUZ-NAS)

CHALAN PAGO-ORDOT

MAP No. 3

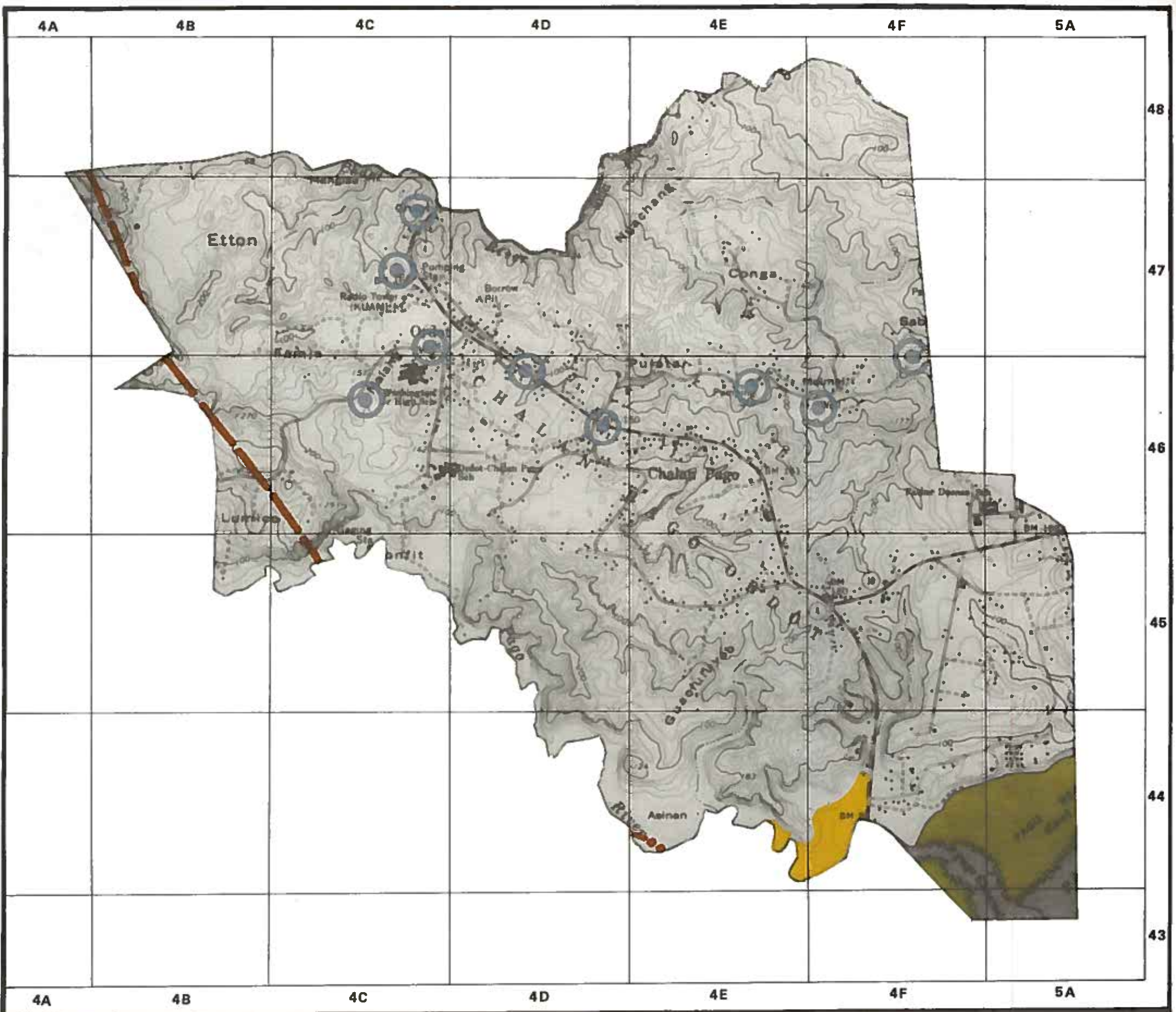


LEGEND

- Aquifer Recharge Areas
- Seashore Reserve

CHALAN PAGO-ORDOT

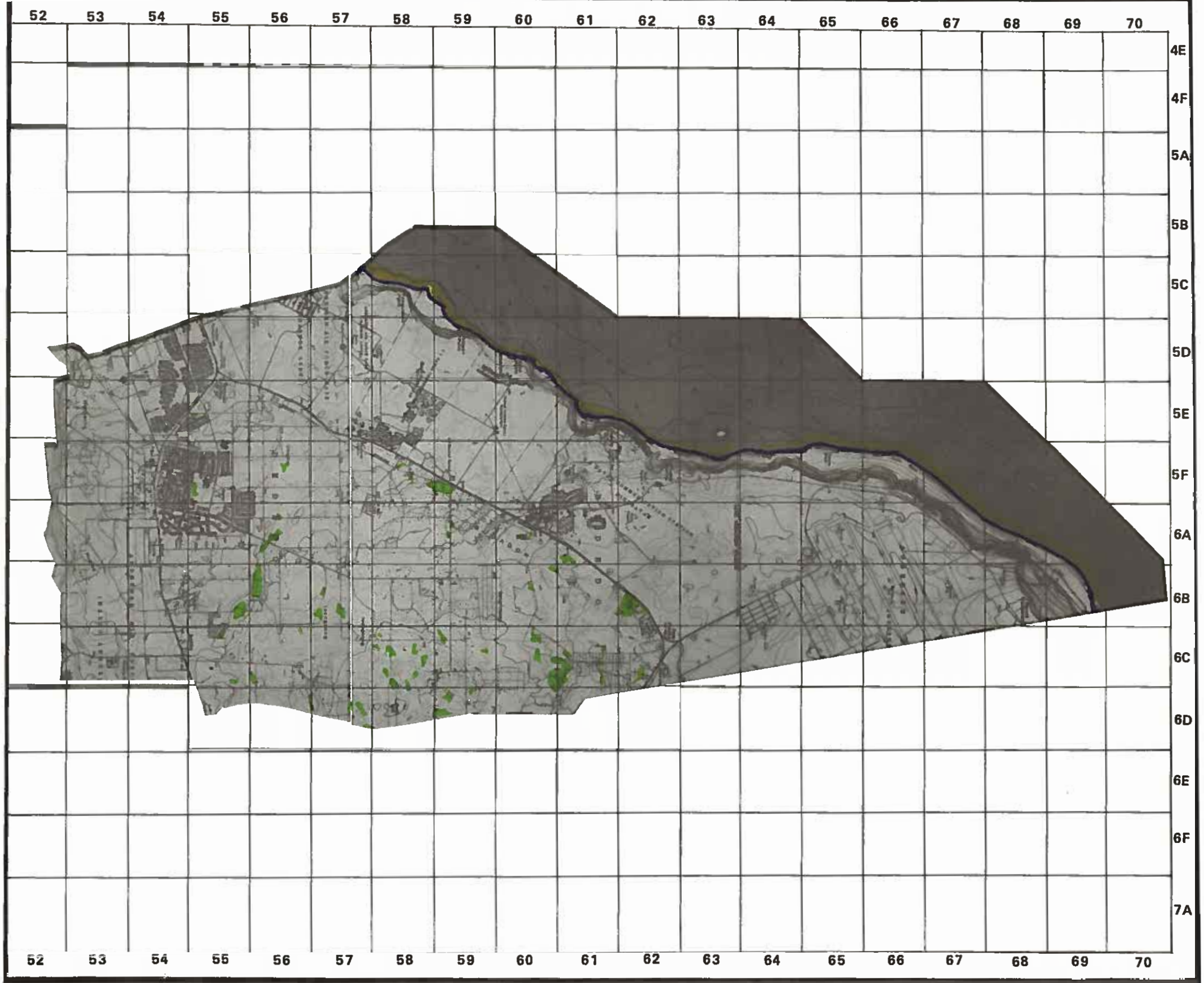
MAP No. 4



LEGEND

- Seismic Fault Zones
- Wetlands
- Coral Reefs
- Wells

CHALAN PAGO-ORDOT

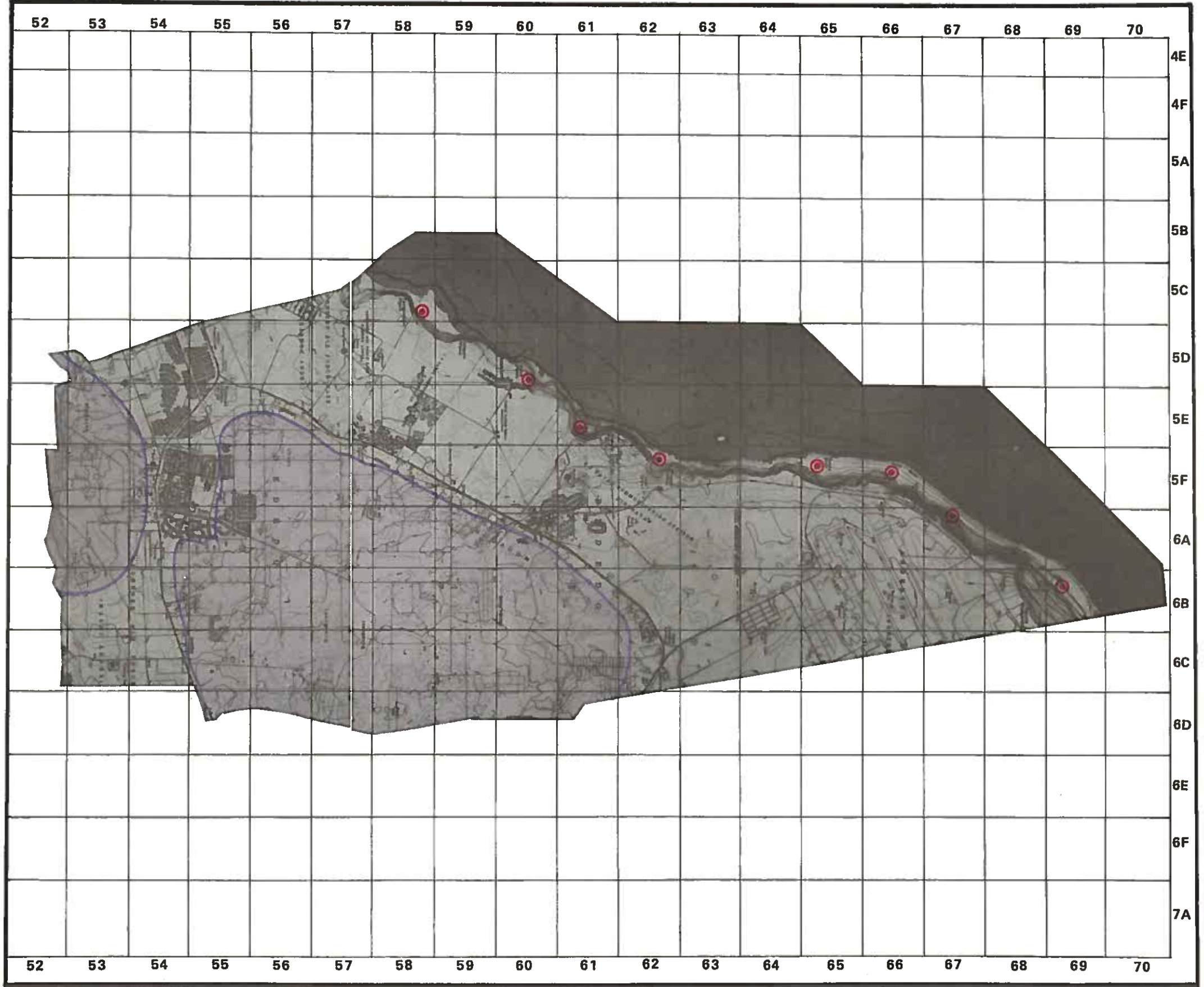


LEGEND

- Coral Reefs
- Seashore Reserve
- Flood Hazard Areas

DEDEDO

MAP No. 1

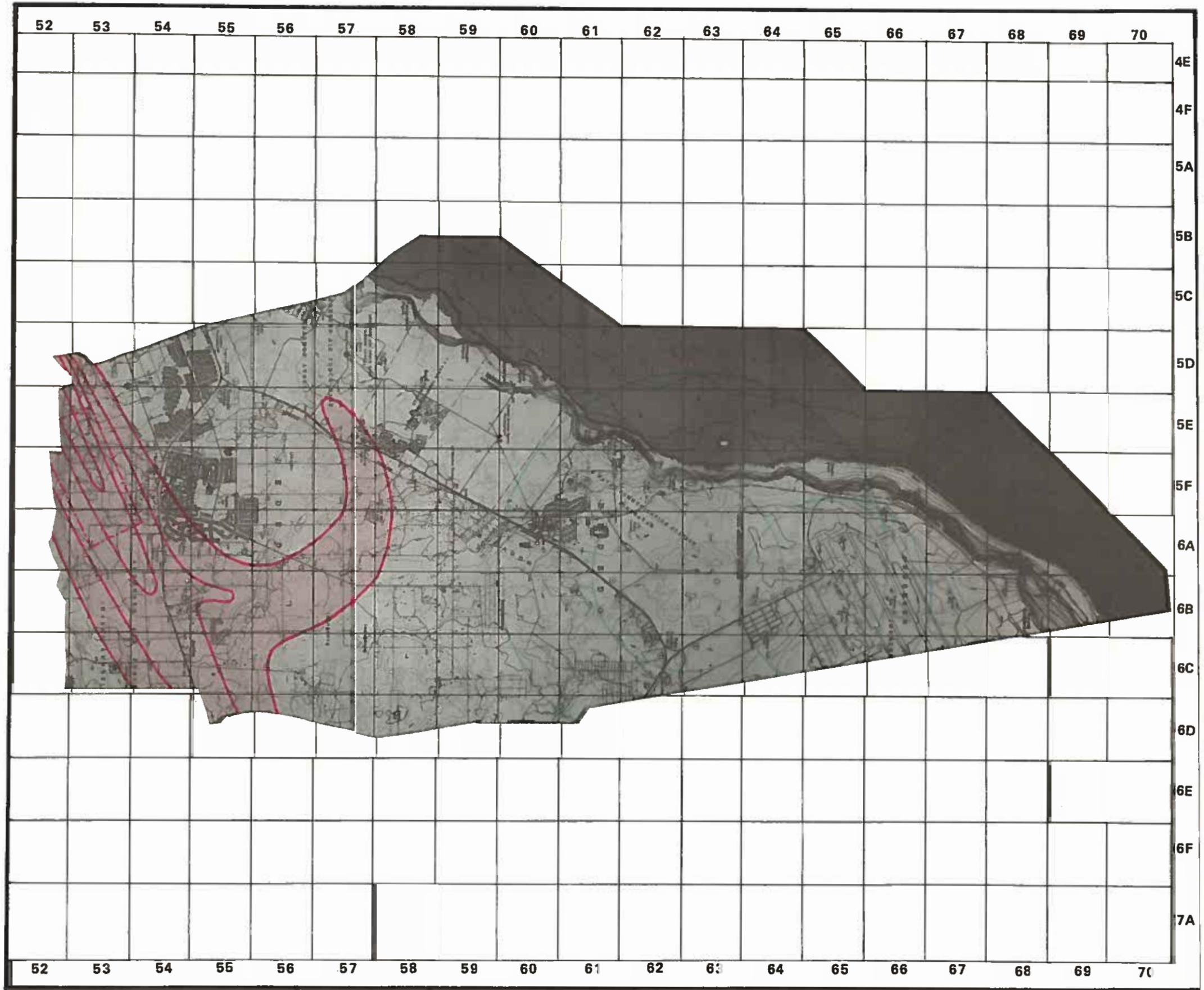


LEGEND

- Historical/Prehistorical Sites
- Aquifer Recharge Areas

DEDEDO

MAP No. 2

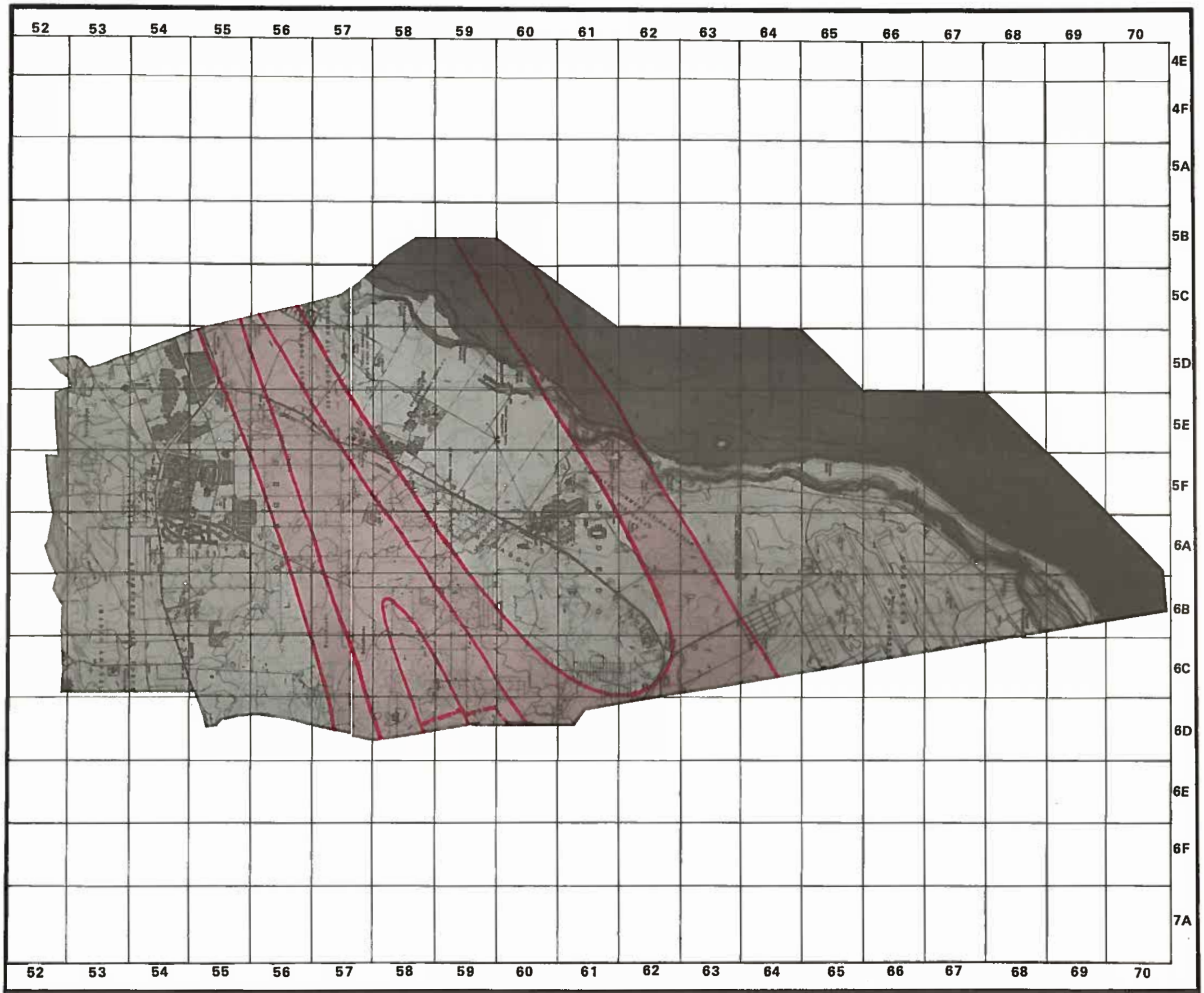


LEGEND

- Air Installation Compatible Use Zones (AICUZ-NAS)
- Radio Frequency Interference (RFI) Zones

DEDEDO

MAP No. 3

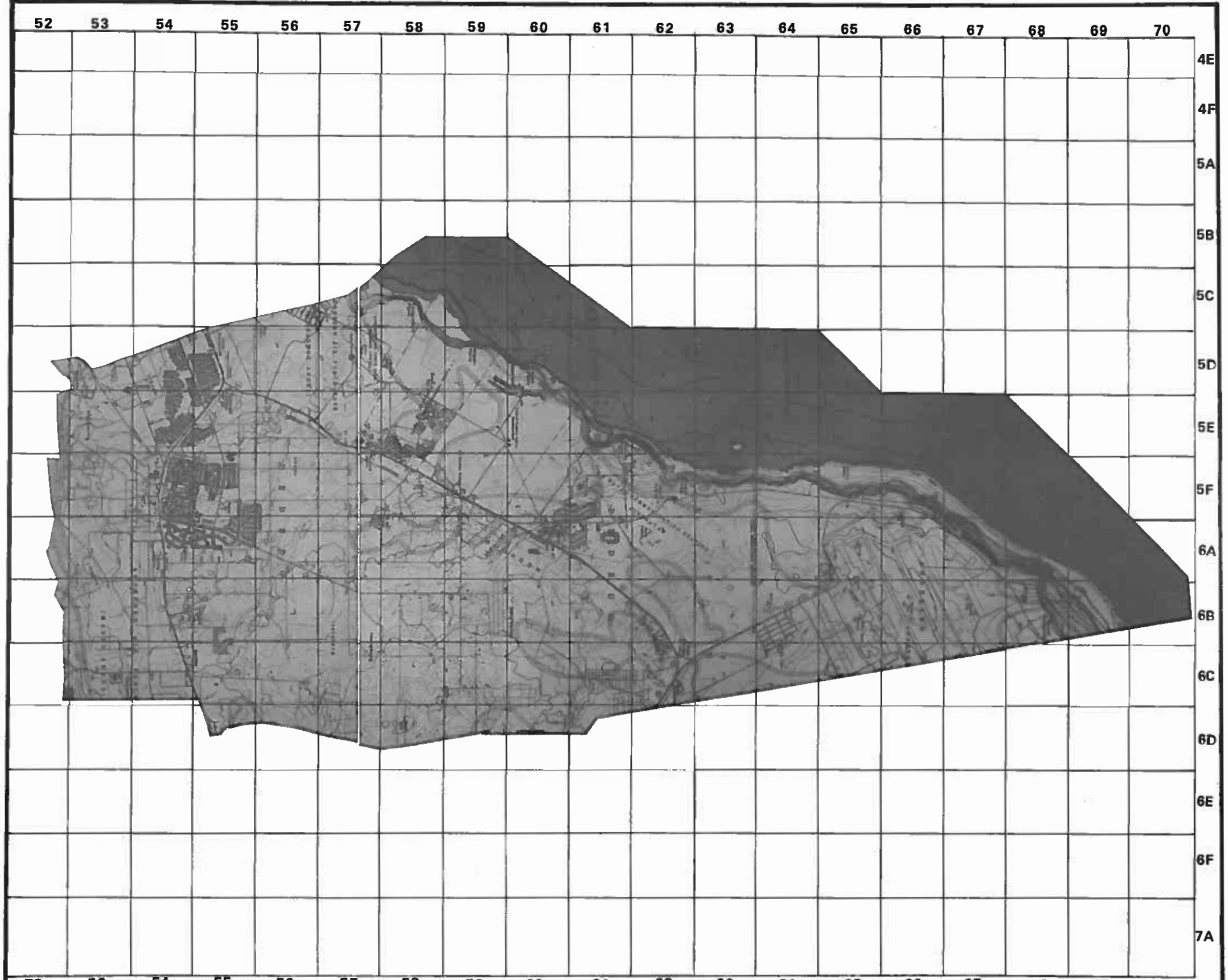


LEGEND

Air Installation Compatible Use Zones (AICUZ-AAFB)

DEDEDO

MAP No. 4

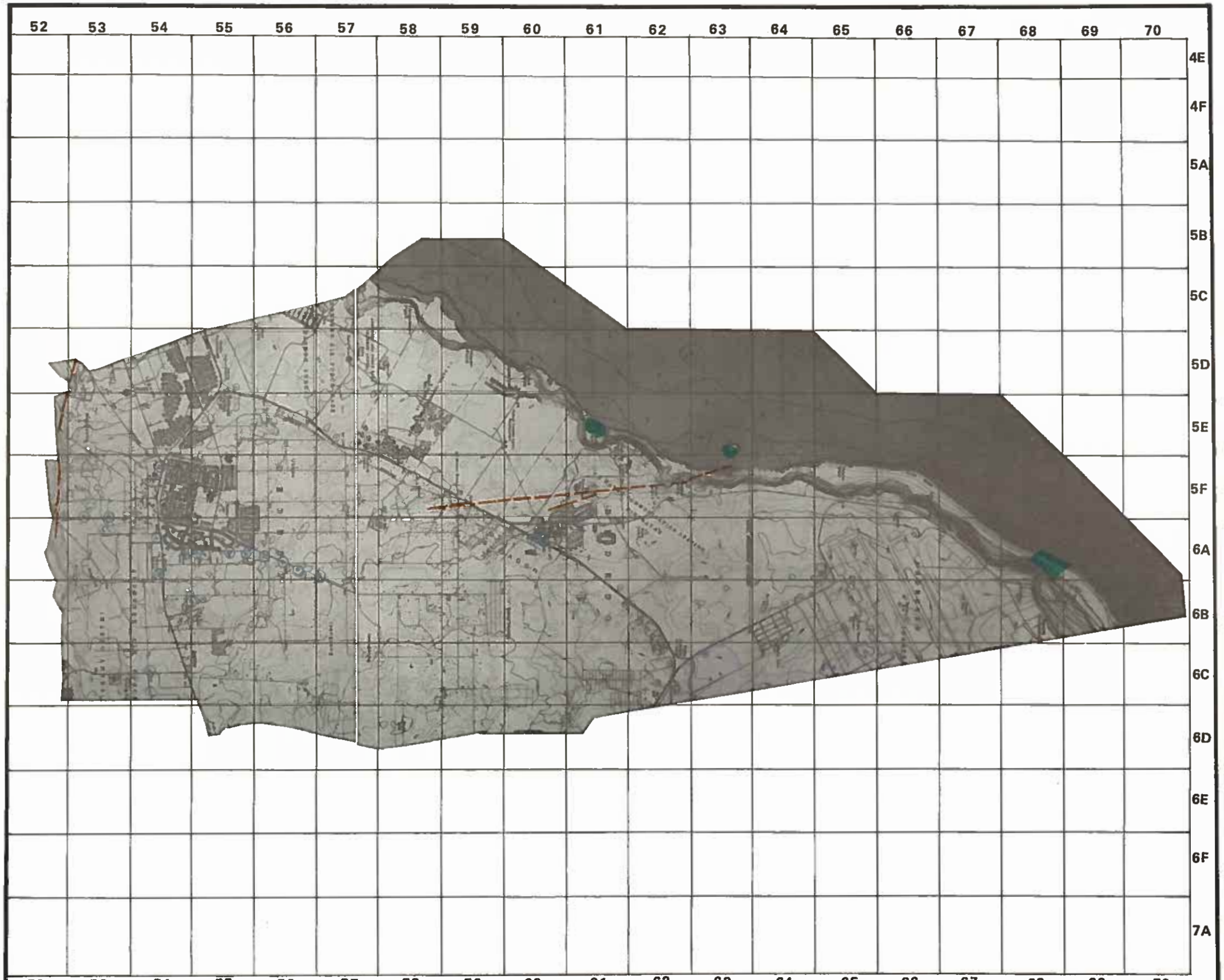


LEGEND

Limestone Forest

DEDEDO

MAP No. 5

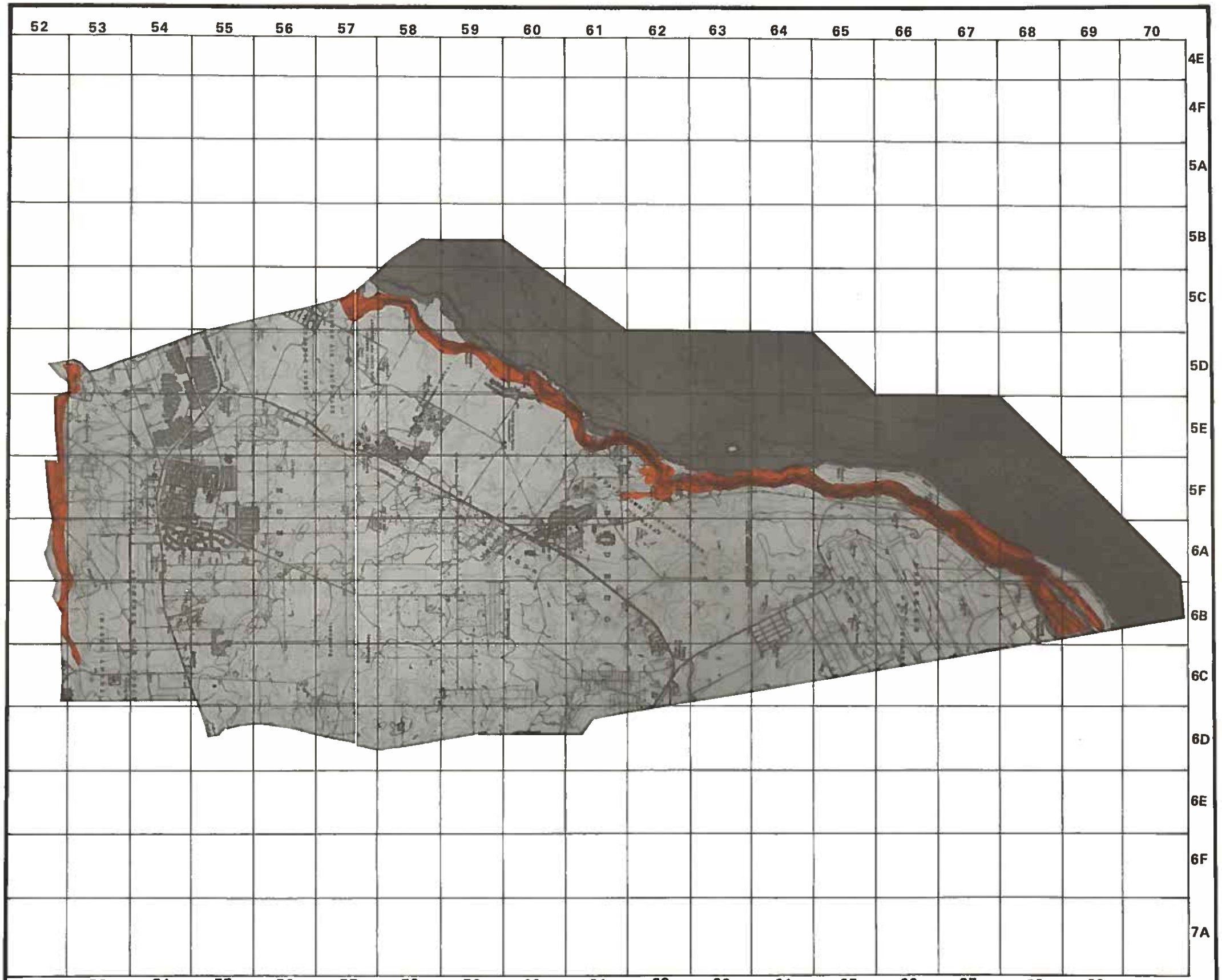


LEGEND

- Wells
- Explosives Safety Quantity Distance (ESQD) Circles
- Seismic Fault Zones
- Marine Pristine Ecological Communities

DEDEDO

MAP No. 6



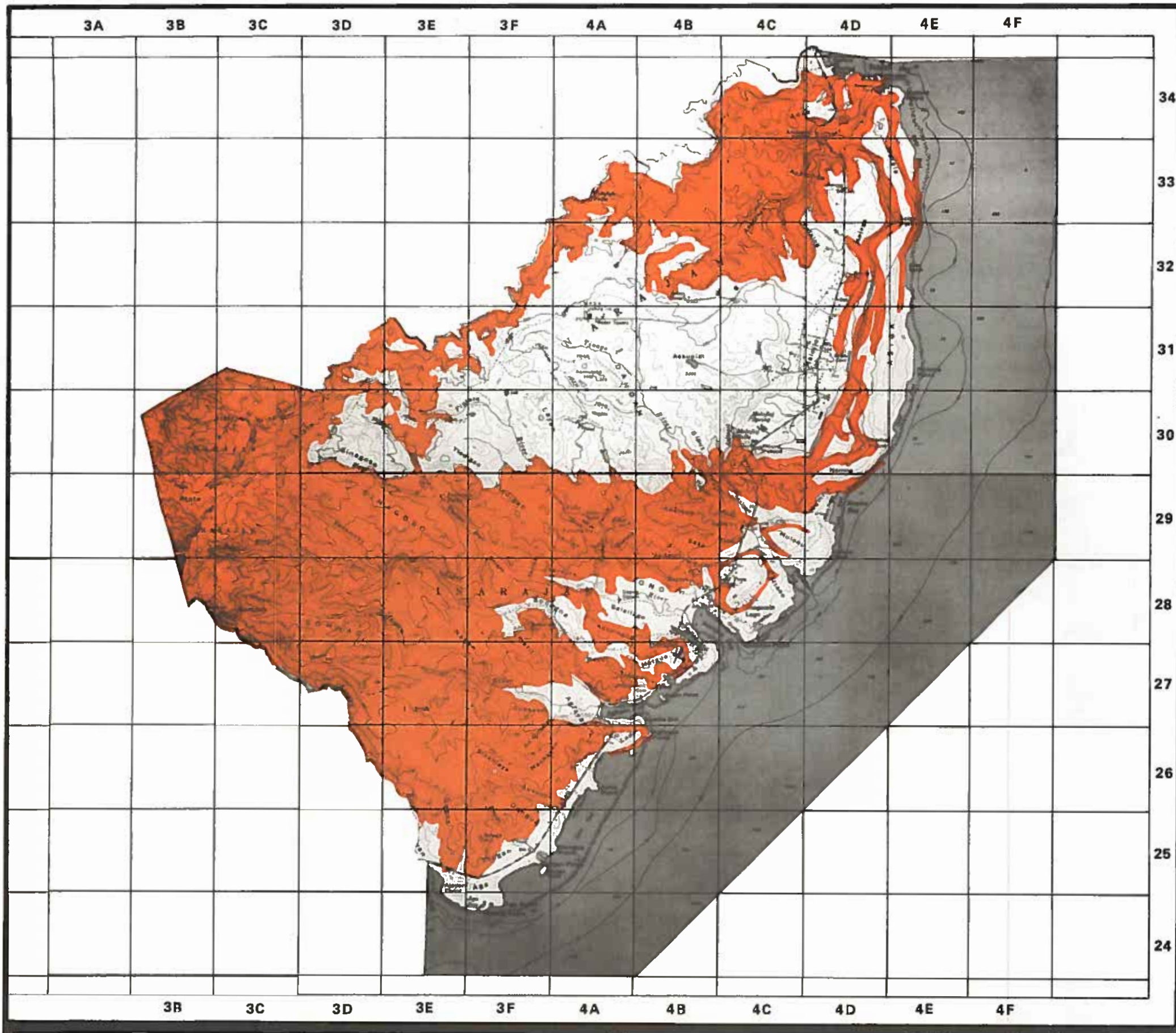
LEGEND

Slide and Erosion Zones

DEDEDO

MAP No. 7

MAP No. 1

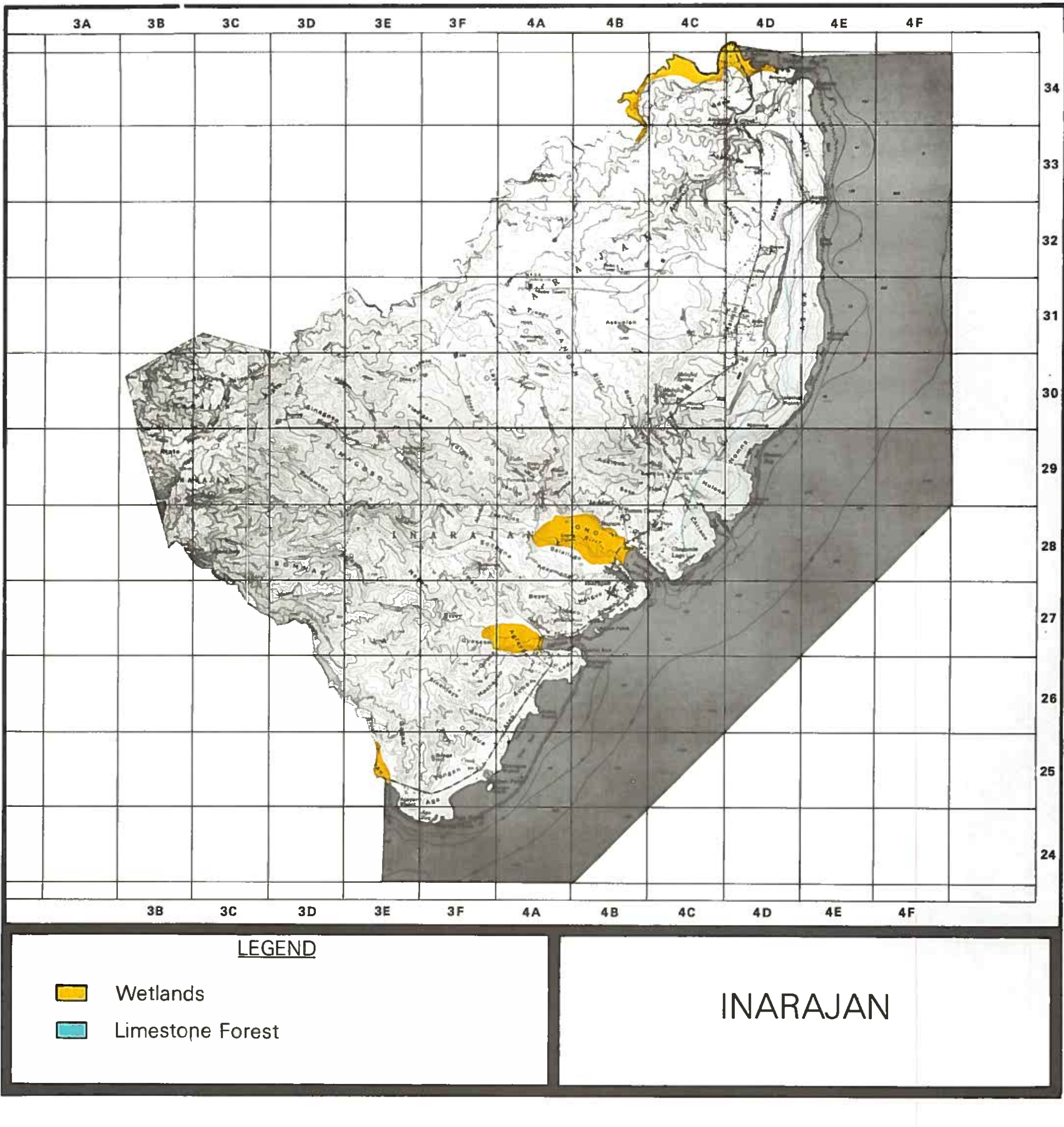


LEGEND

Slide and Erosion Zones

INARAJAN

MAP No. 2

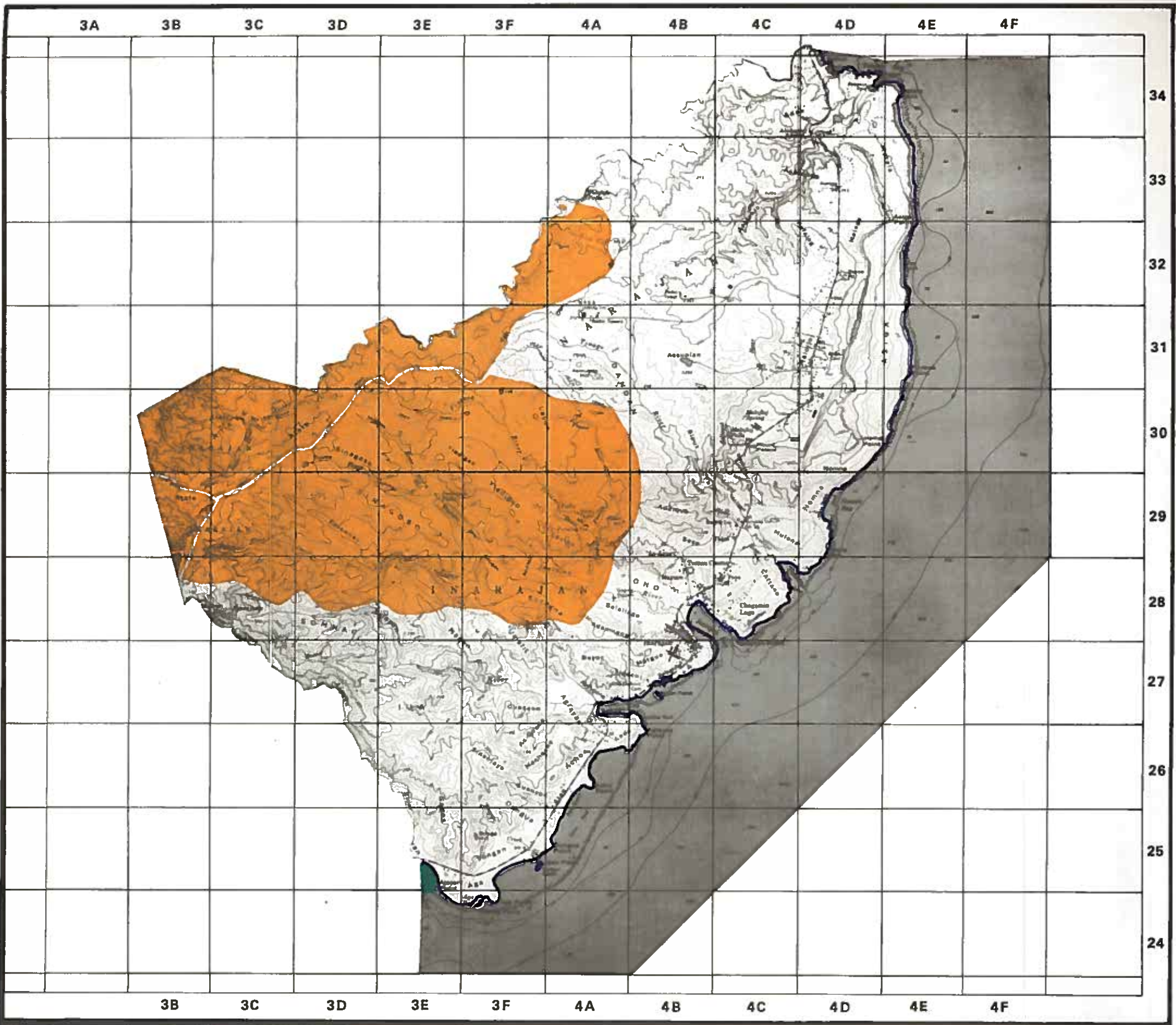


LEGEND

- Wetlands
- Limestone Forest

INARAJAN

MAP No. 3

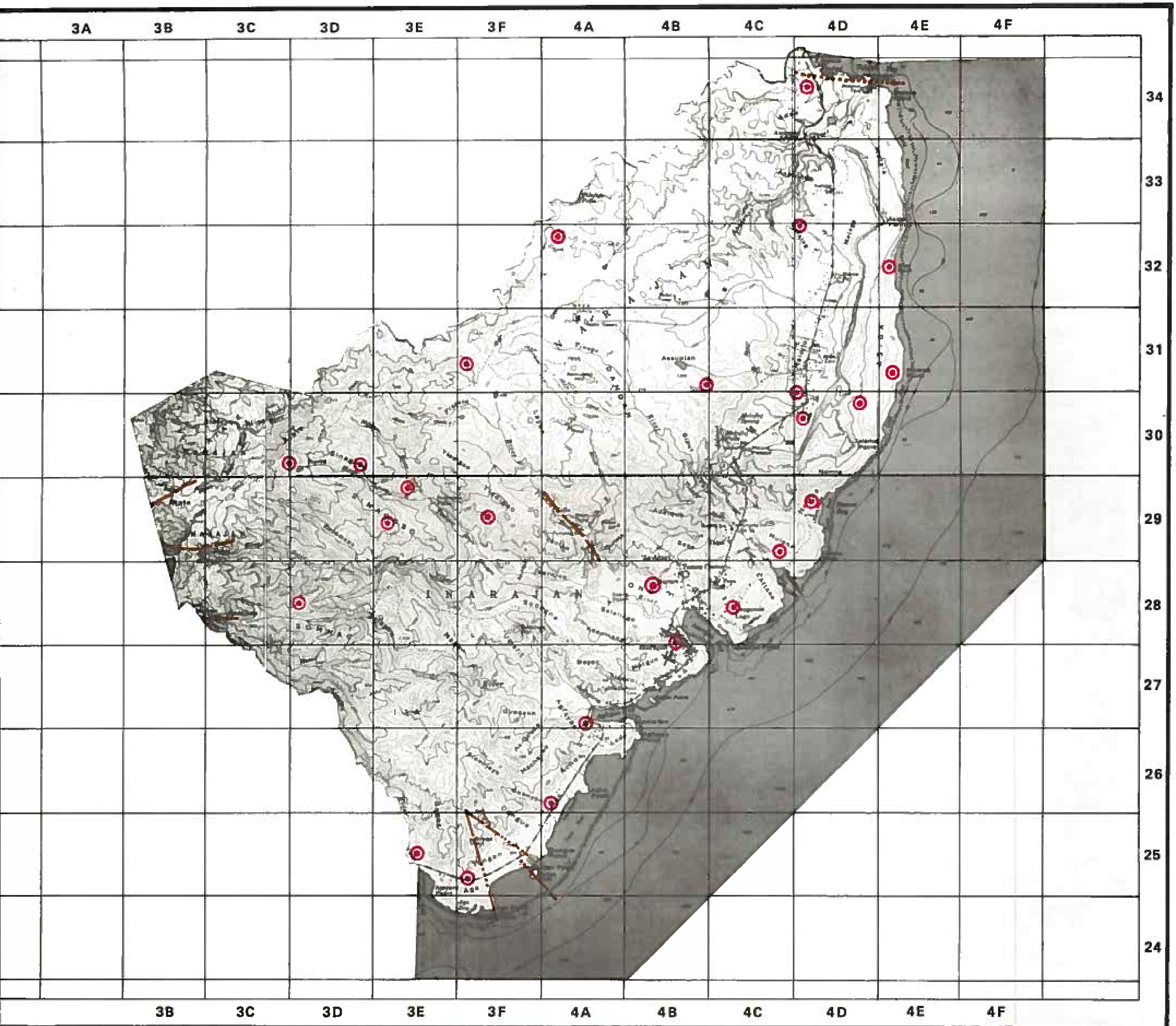


LEGEND

- Watershed
- Seashore Reserve
- Marine Pristine Ecological Communities

INARAJAN

MAP No. 4



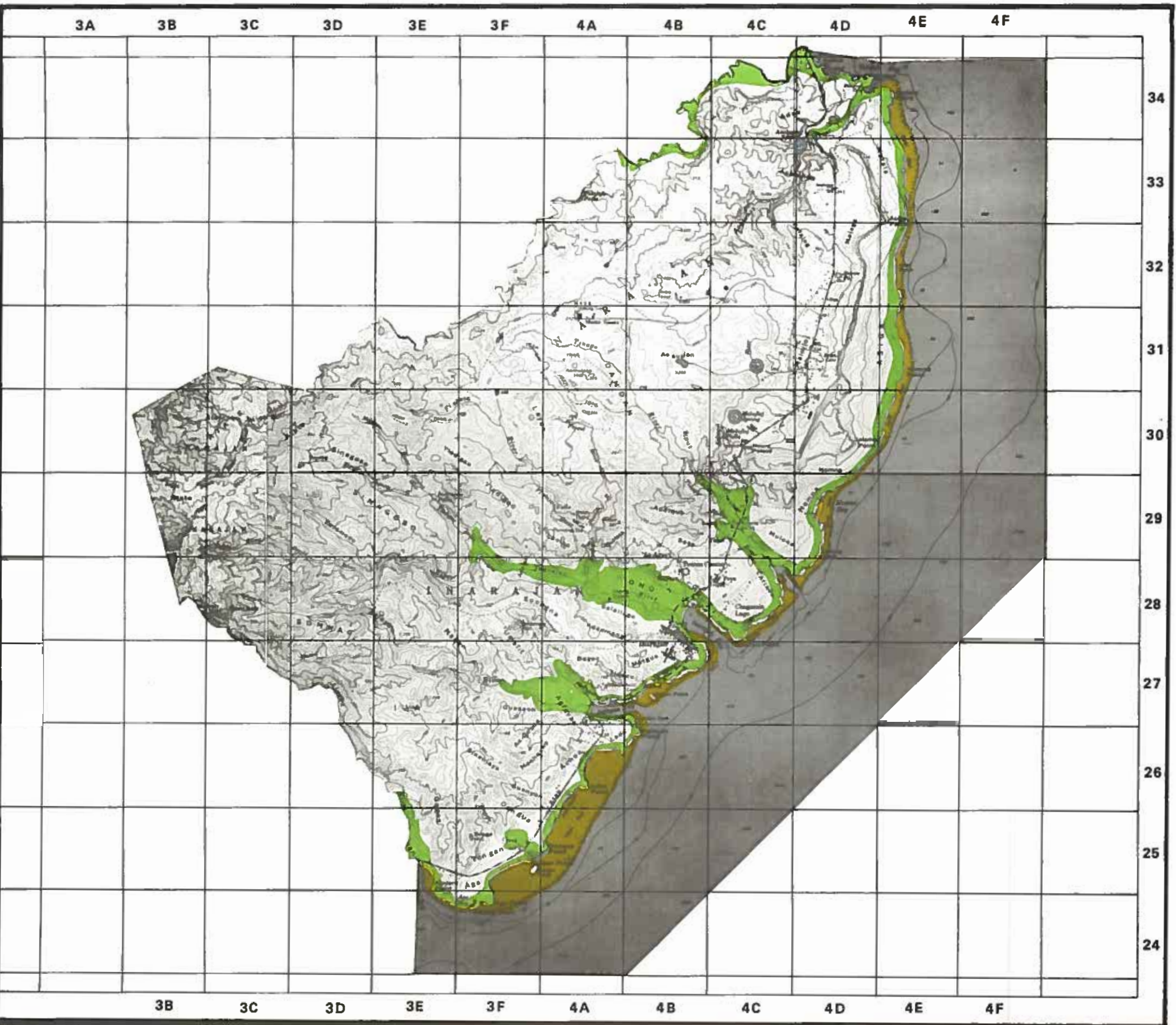
LEGEND

Historical/Prehistorical Sites

Seismic Fault Zones

INARAJAN

MAP No. 5

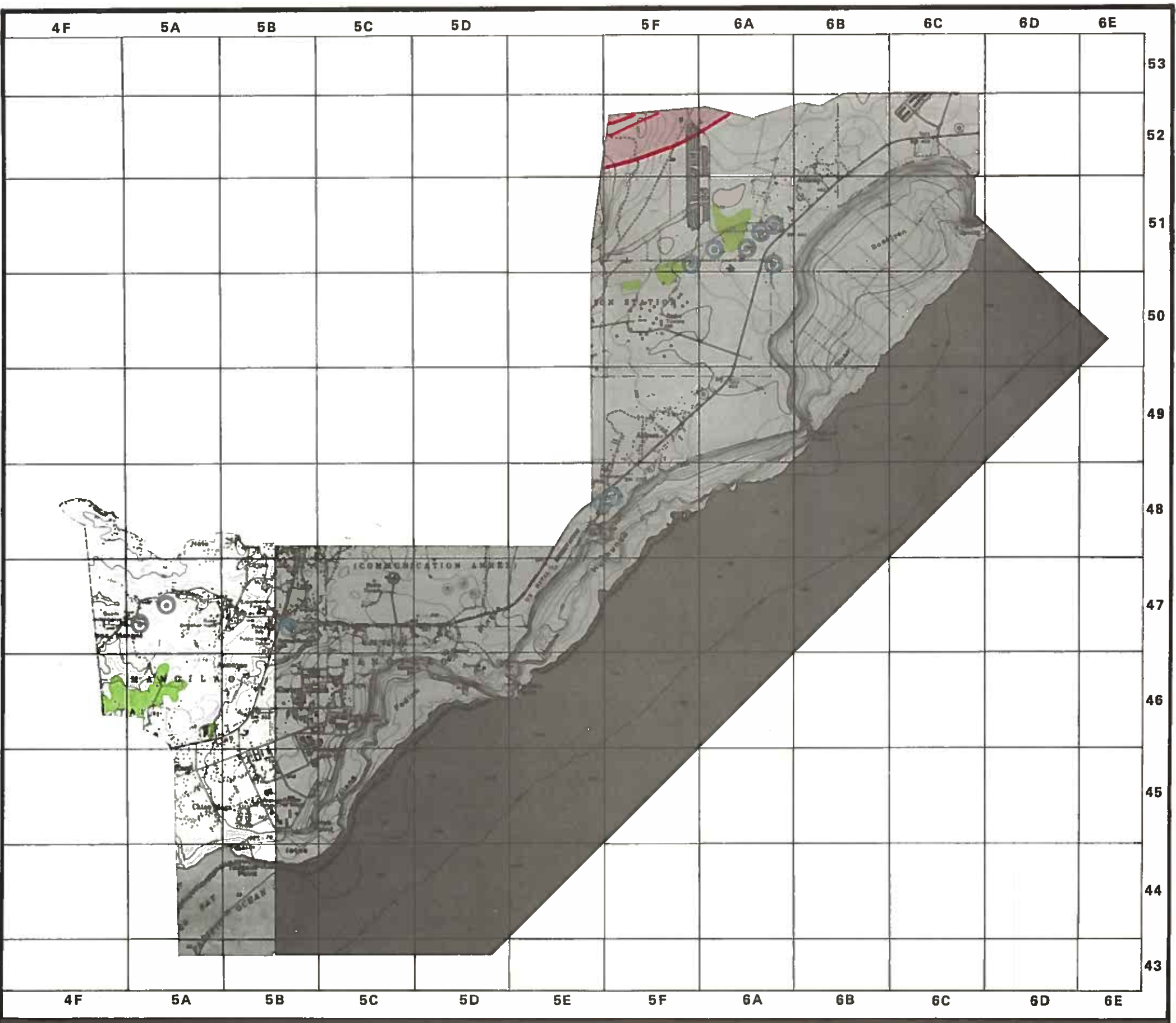


LEGEND

- Flood Hazard Areas
- Wells
- Coral Reefs

INARAJAN

MAP No. 1

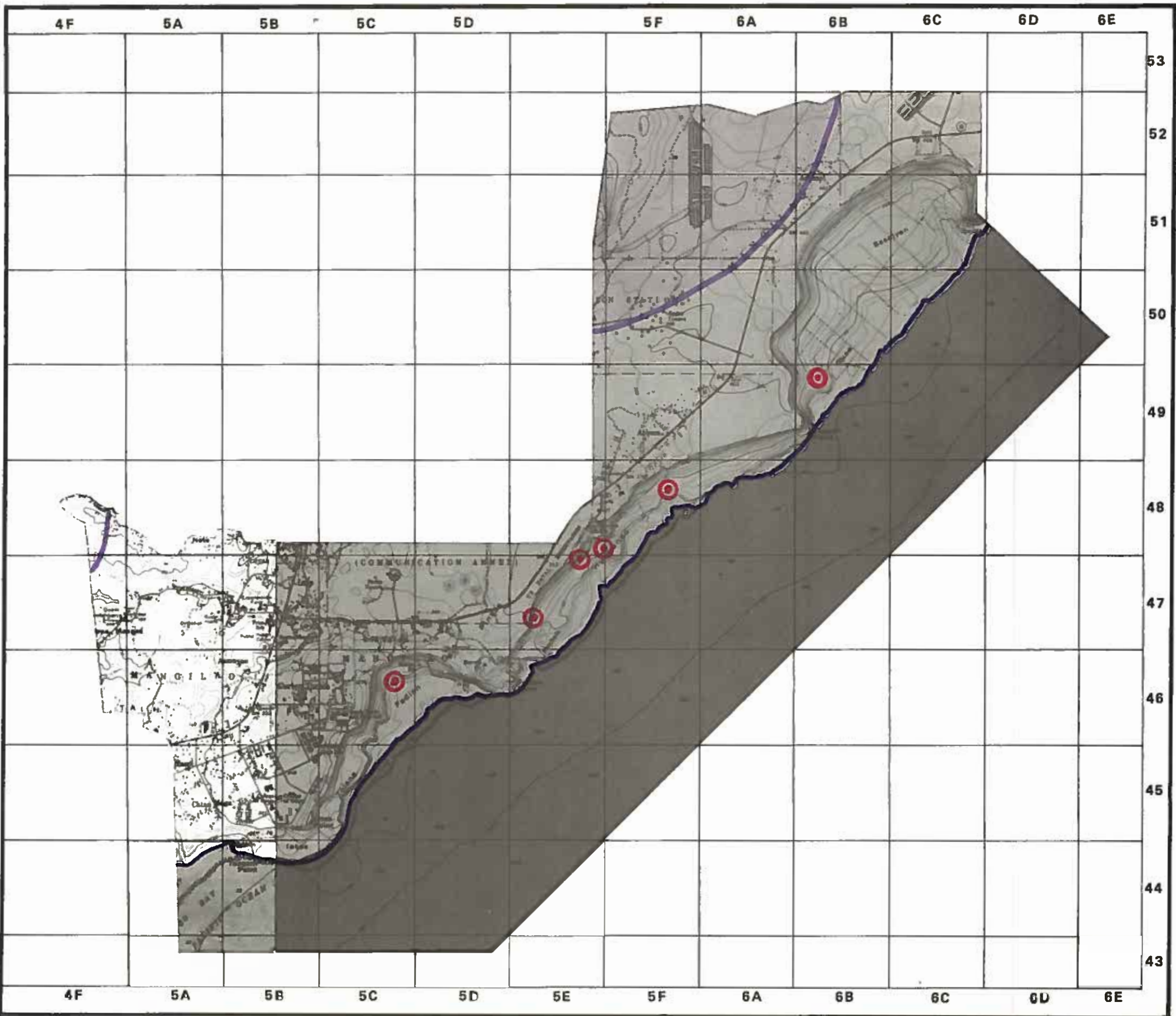


LEGEND

- Slide and Erosion Zones
- Wells
- Flood Hazard Areas
- Air Installation Compatible Use Zone (AICUZ-NAS)

MANGILAO

MAP No. 2

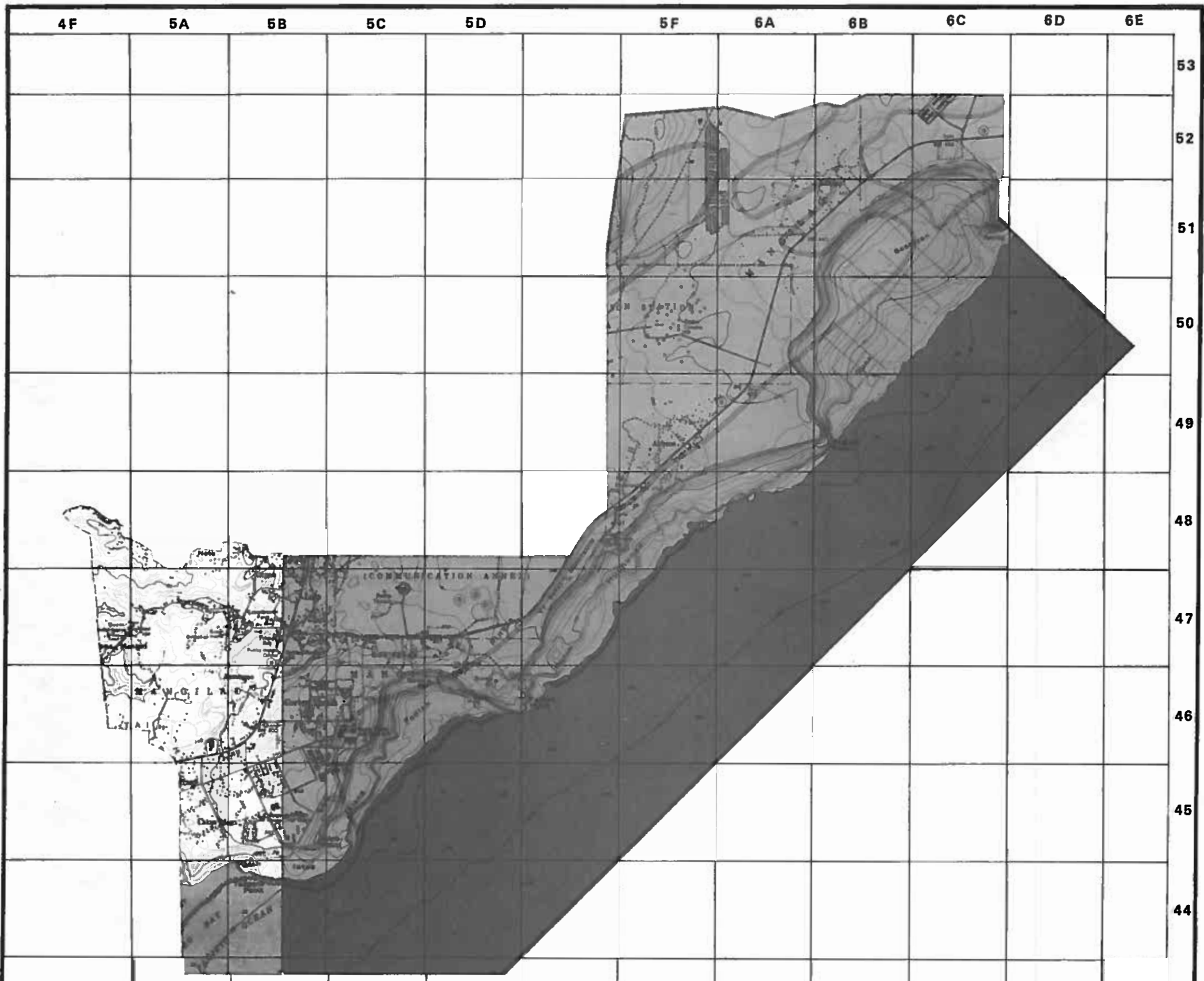


LEGEND

- Historical/Prehistorical Sites
- Aquifer Recharge Areas
- Seashore Reserve

MANGILAO

MAP No. 3

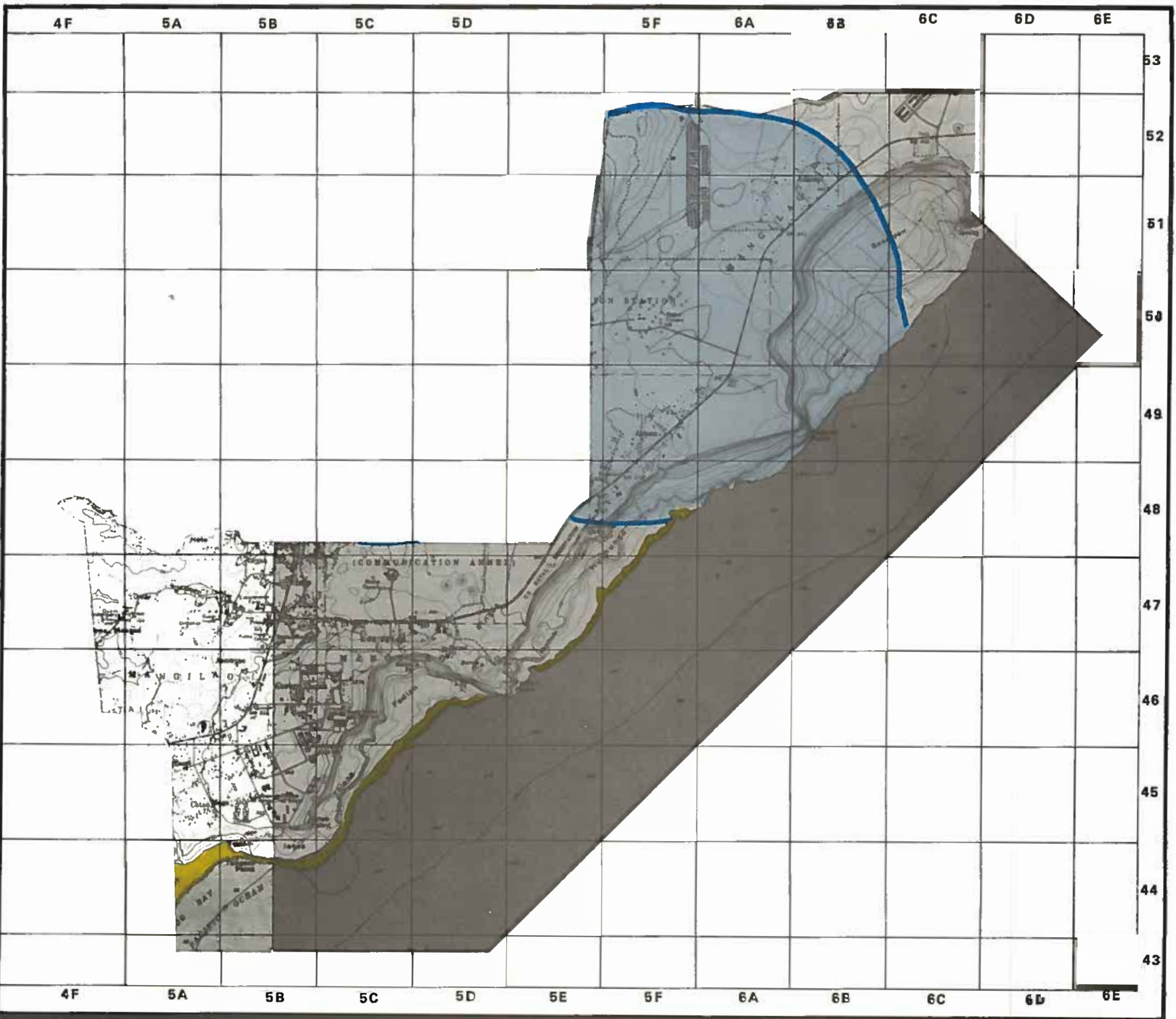


LEGEND

Limestone Forest

MANGILAO

MAP No. 4

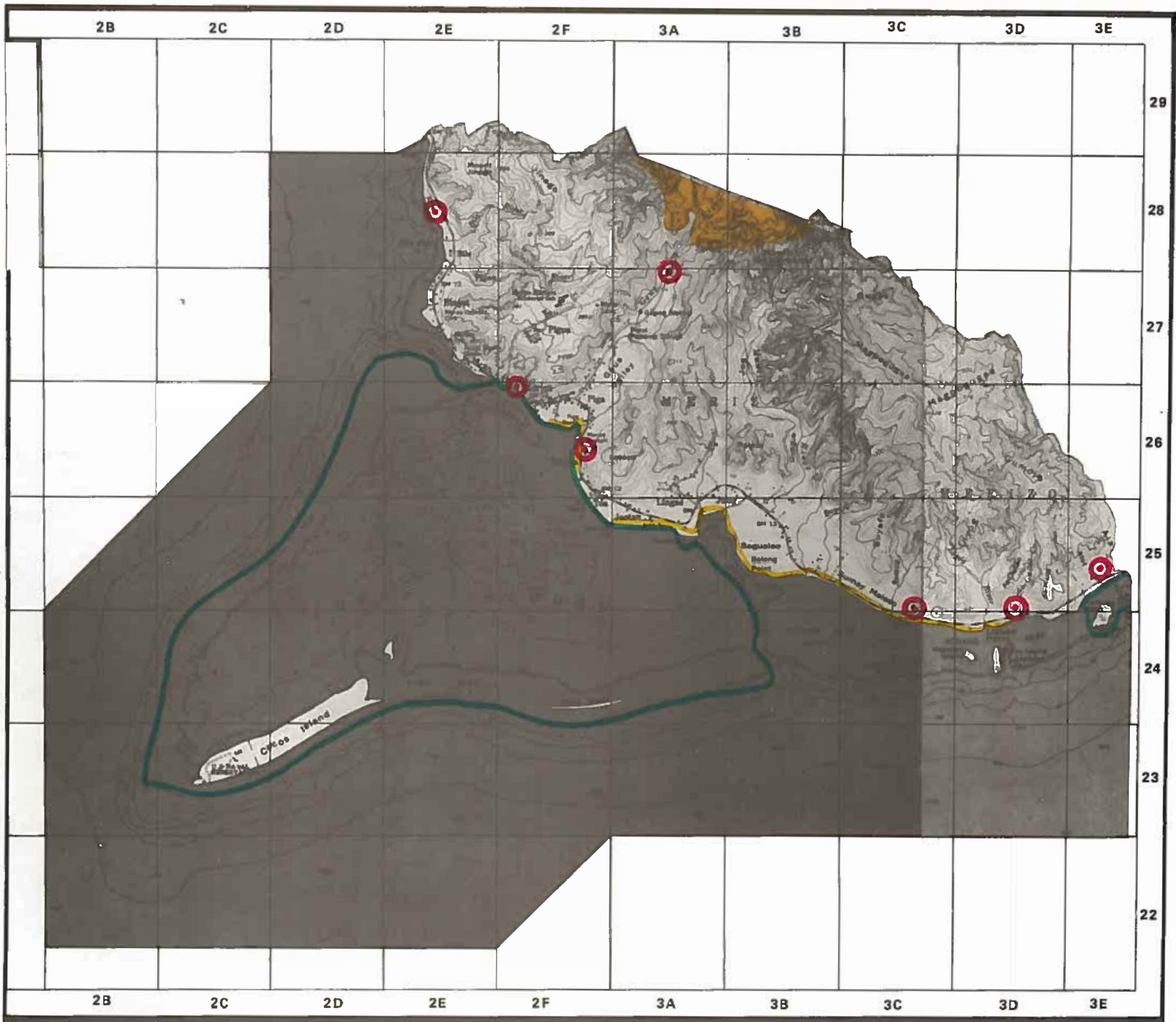


LEGEND

- Electromagnetic Radiation (EMR) Zones
- Coral Reefs

MANGILAO

MAP No. 1

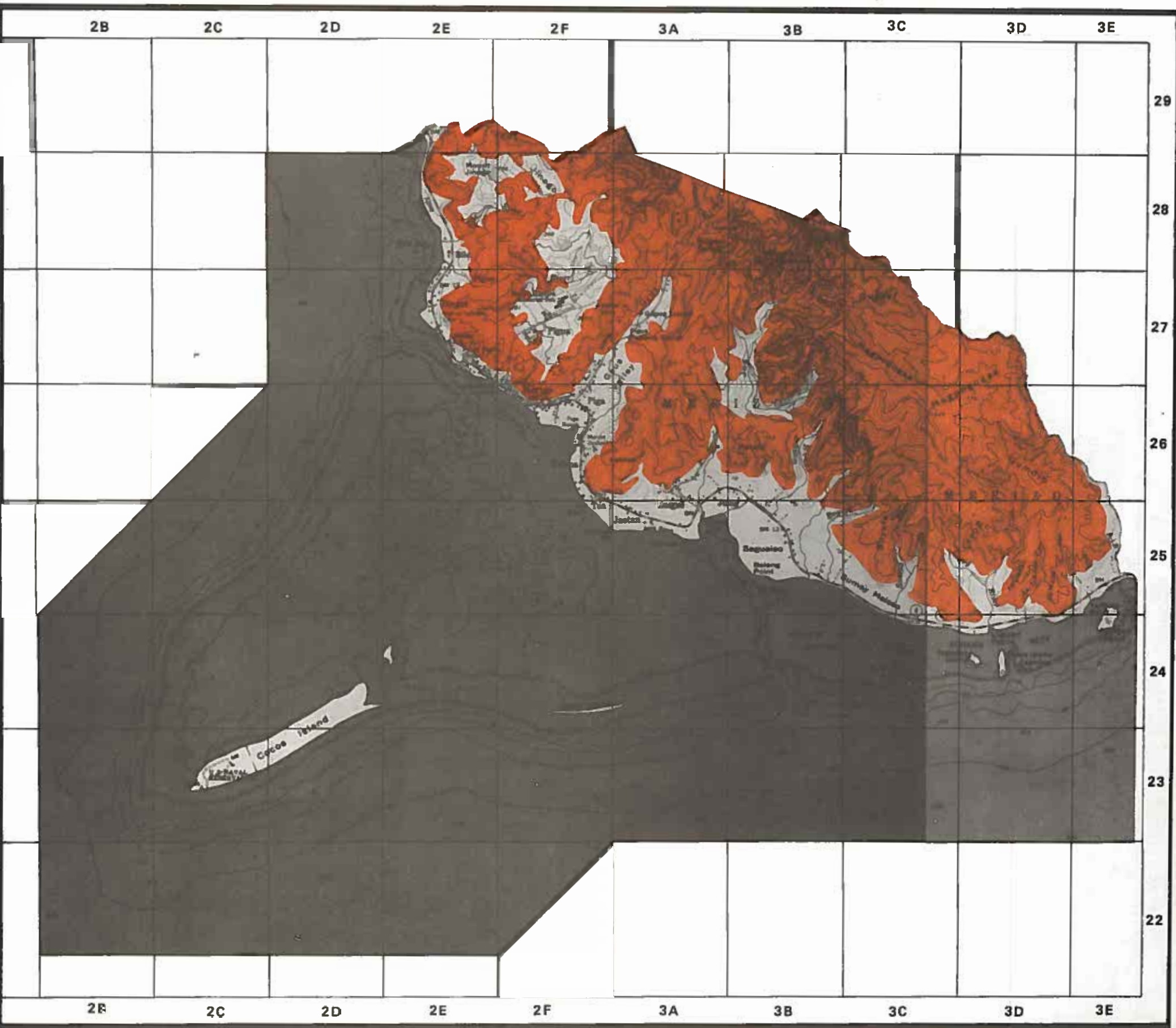


LEGEND

- Marine Pristine Ecological Communities
- Historical/Prehistorical Sites
- Watershed
- Wetlands

MERIZO

MAP No. 2

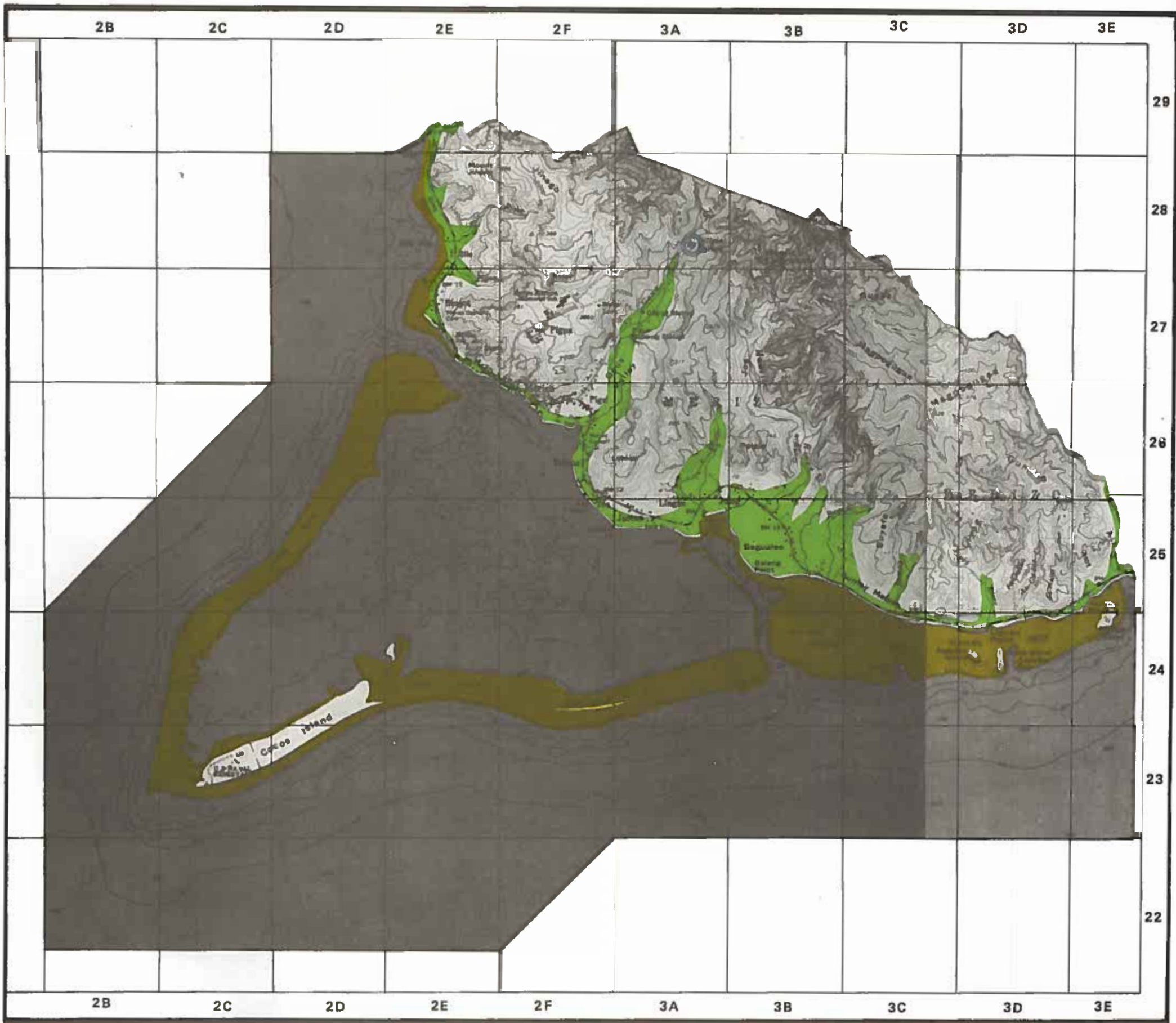


LEGEND

Slide and Erosion Zones

MERIZO

MAP No. 3

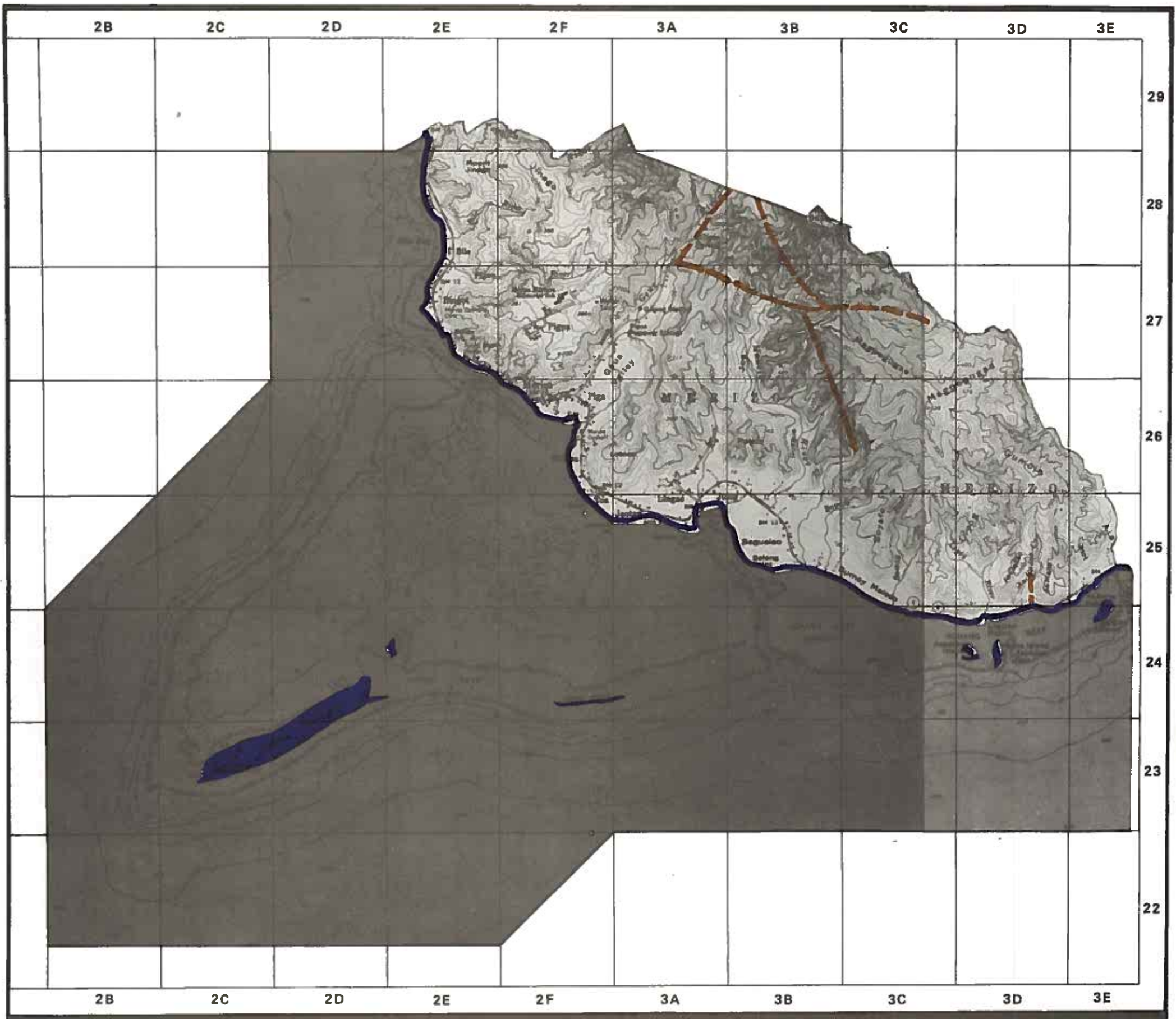


LEGEND

- Wells
- Flood Hazard Areas
- Coral Reefs

MERIZO

MAP No. 4

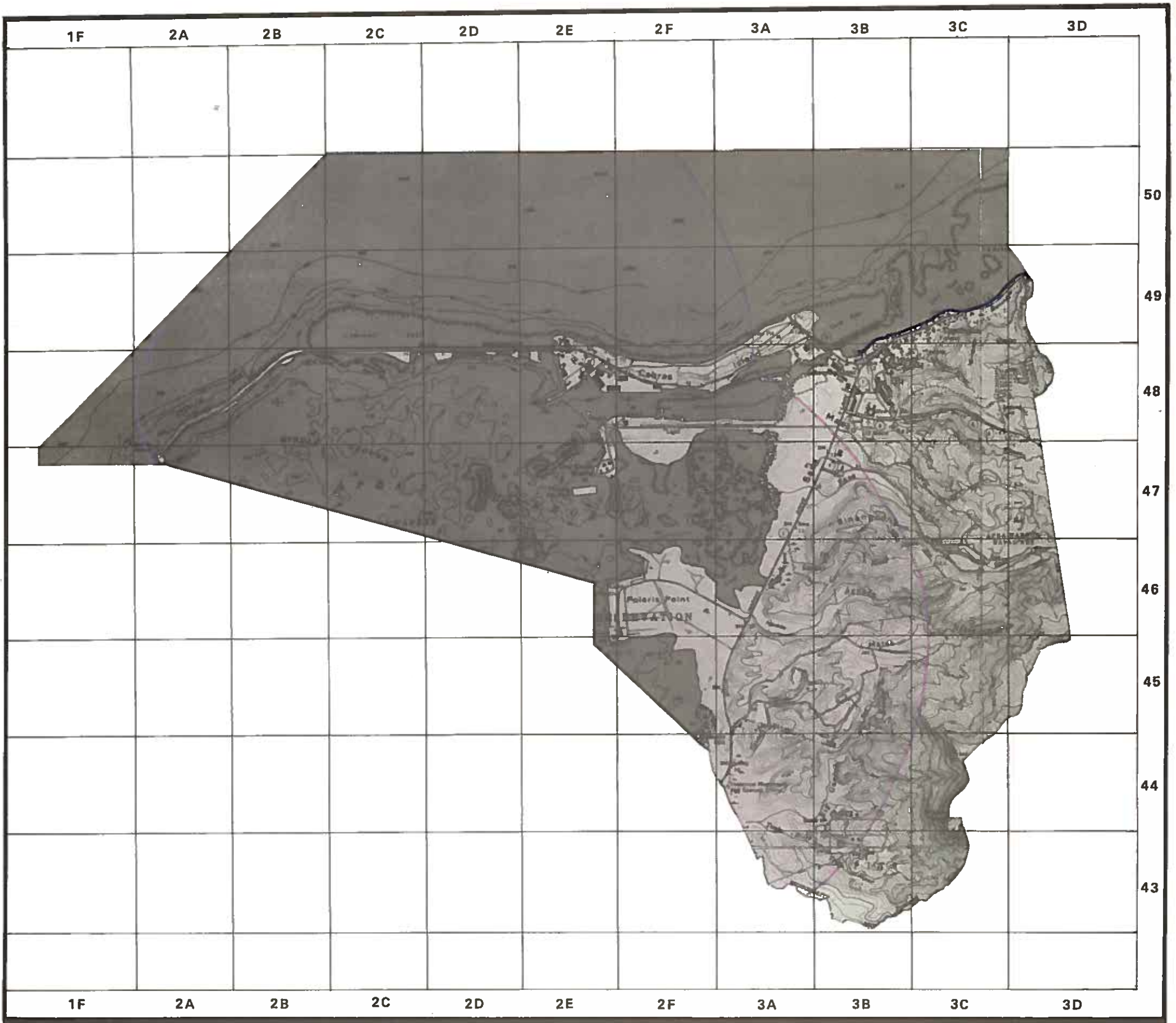


LEGEND

- Seismic Fault Zones
- Seashore Reserve

MERIZO

MAP No. 1

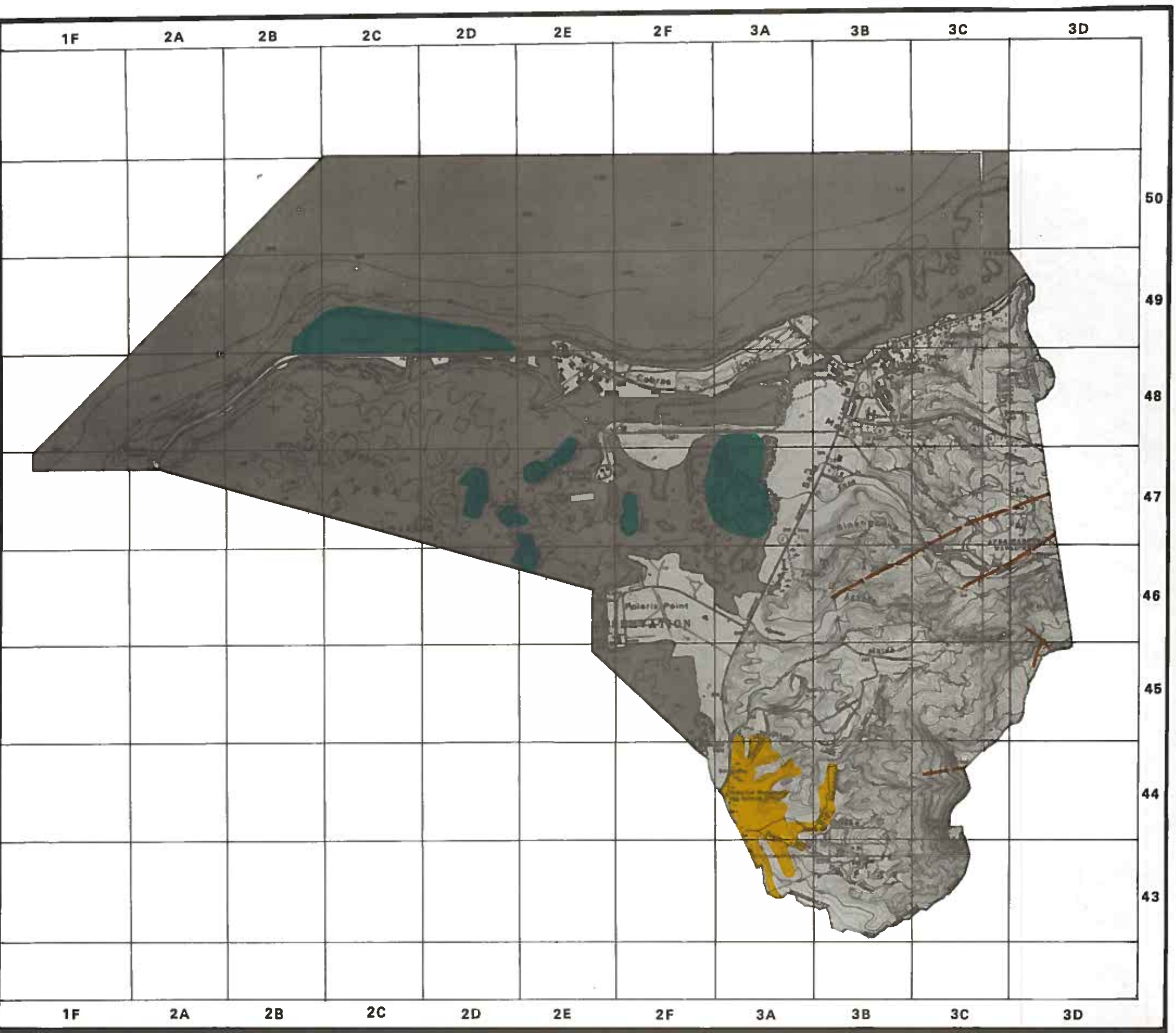


LEGEND

- Seashore Reserve
- Explosive Safety Quantity Distance (ESQD) Circles

PITI

MAP No. 2

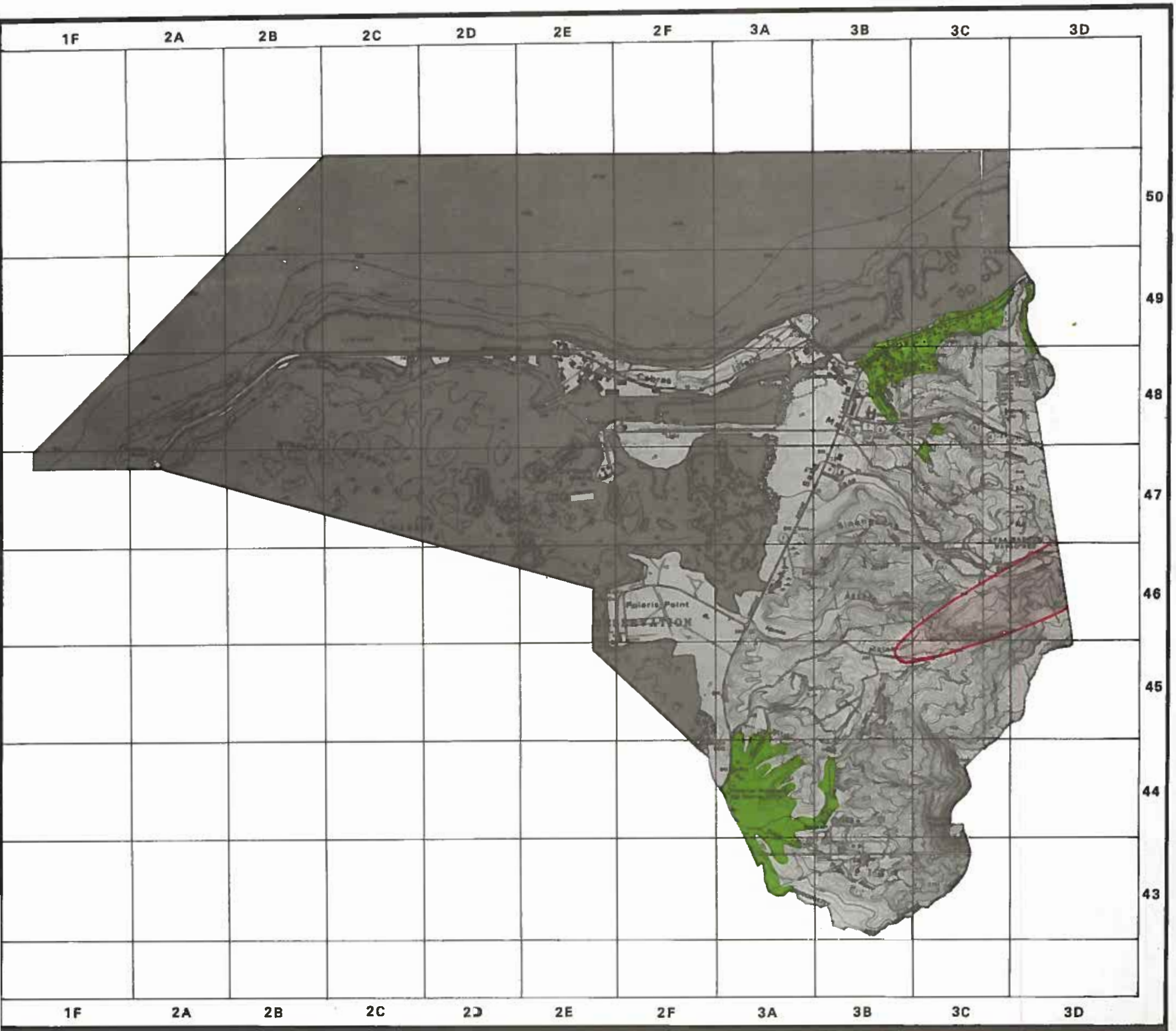


LEGEND

- Marine Pristine Ecological Communities
- Seismic Fault Zones
- Wetlands

PITI

MAP No. 3

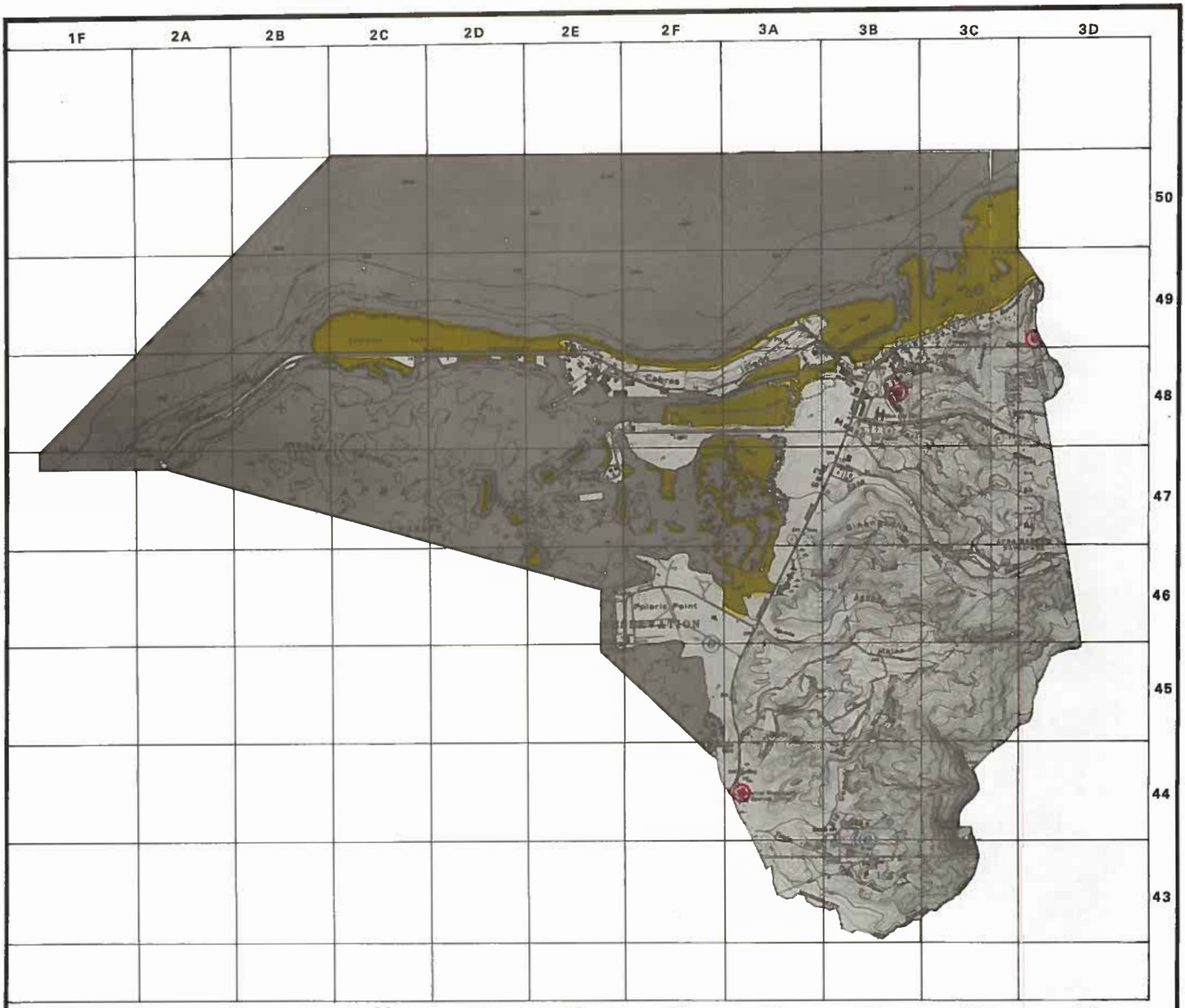


LEGEND

- Flood Hazard Areas
- Air Installation Compatible Use Zones (AICUZ-NAS)

PITI

MAP No. 4

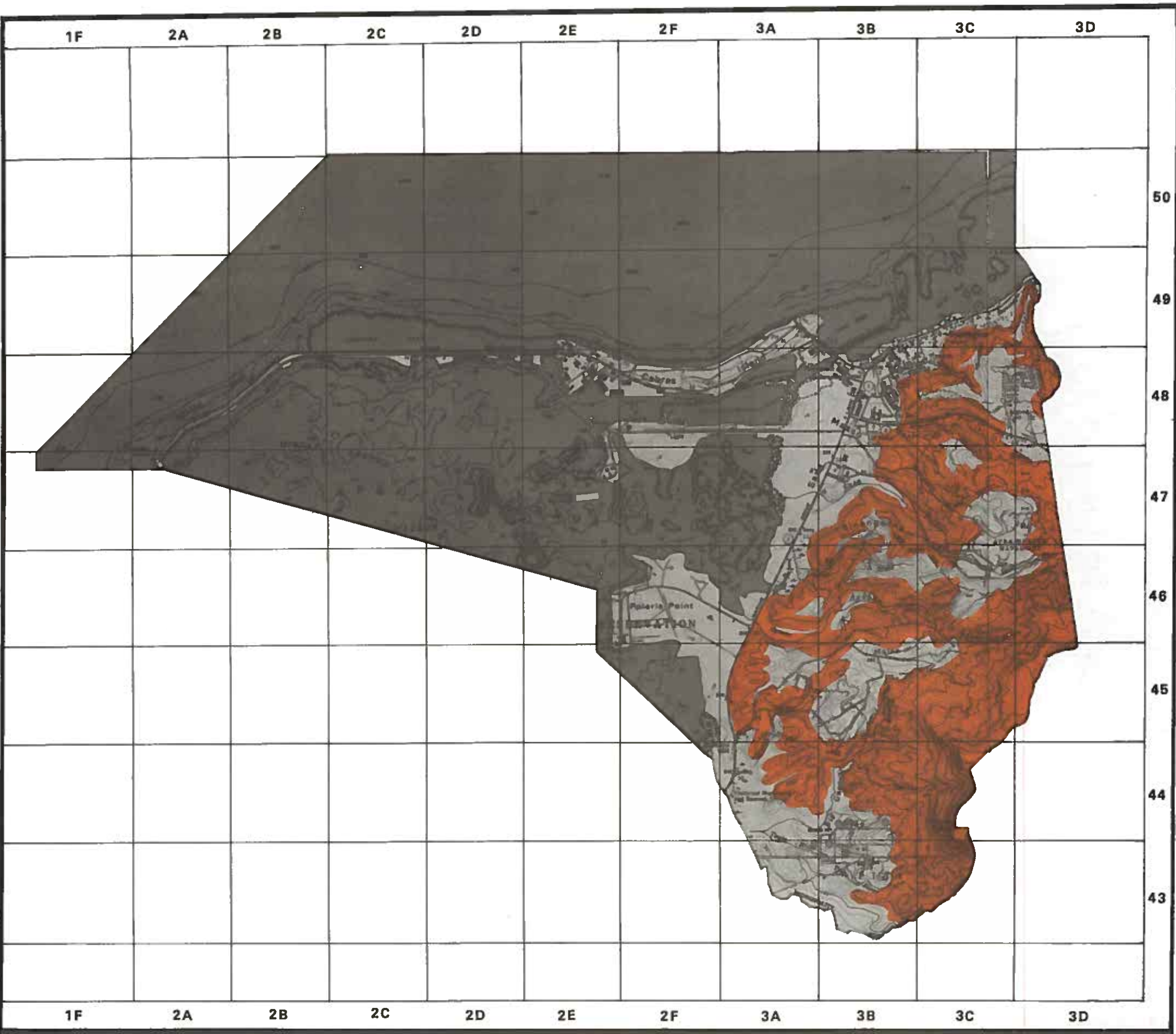


LEGEND

- Coral Reefs
- Wells
- Historical/Prehistorical Sites

PITI

MAP No. 5

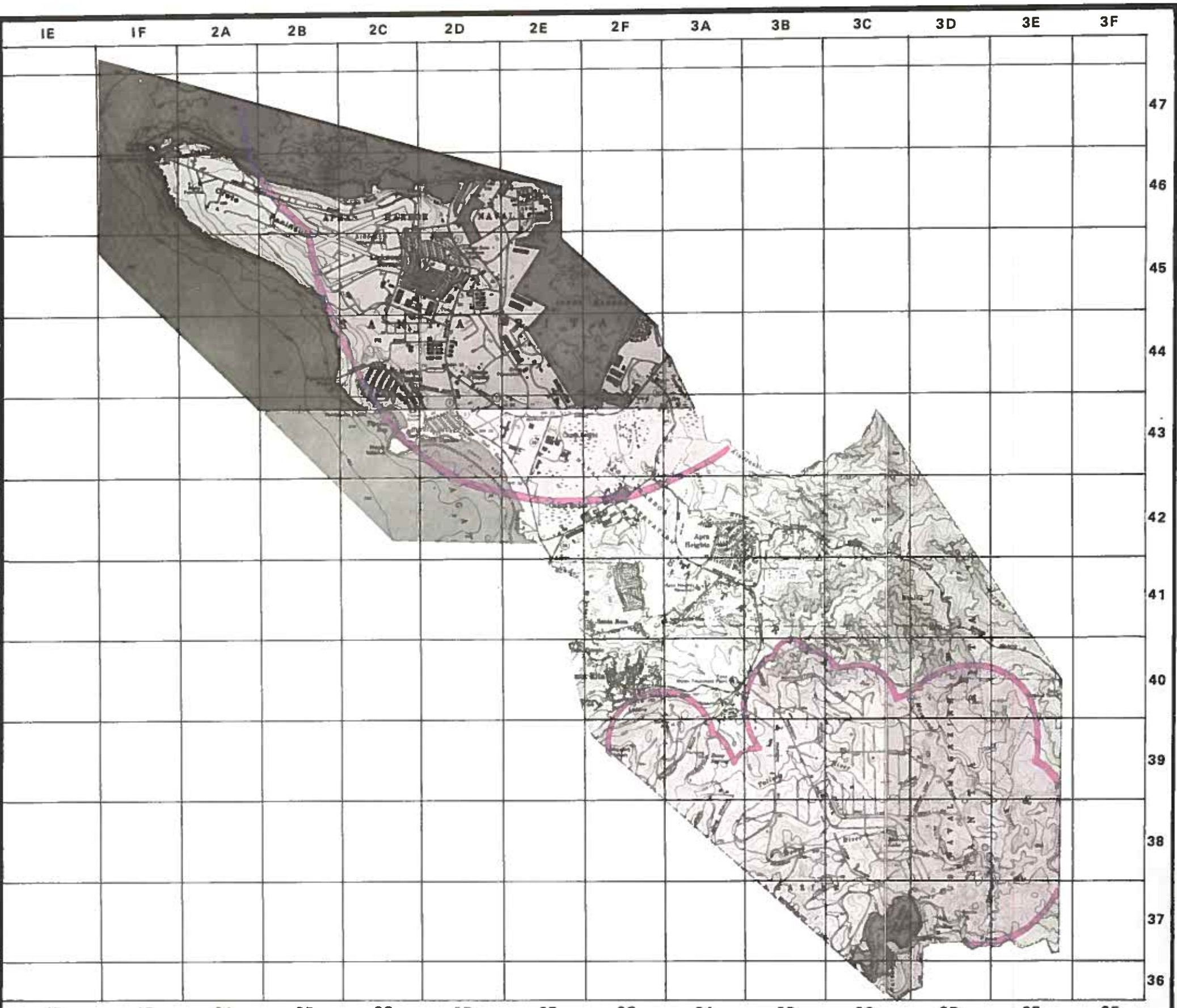


LEGEND

Slide and Erosion Zones

PITI

MAP No. 1

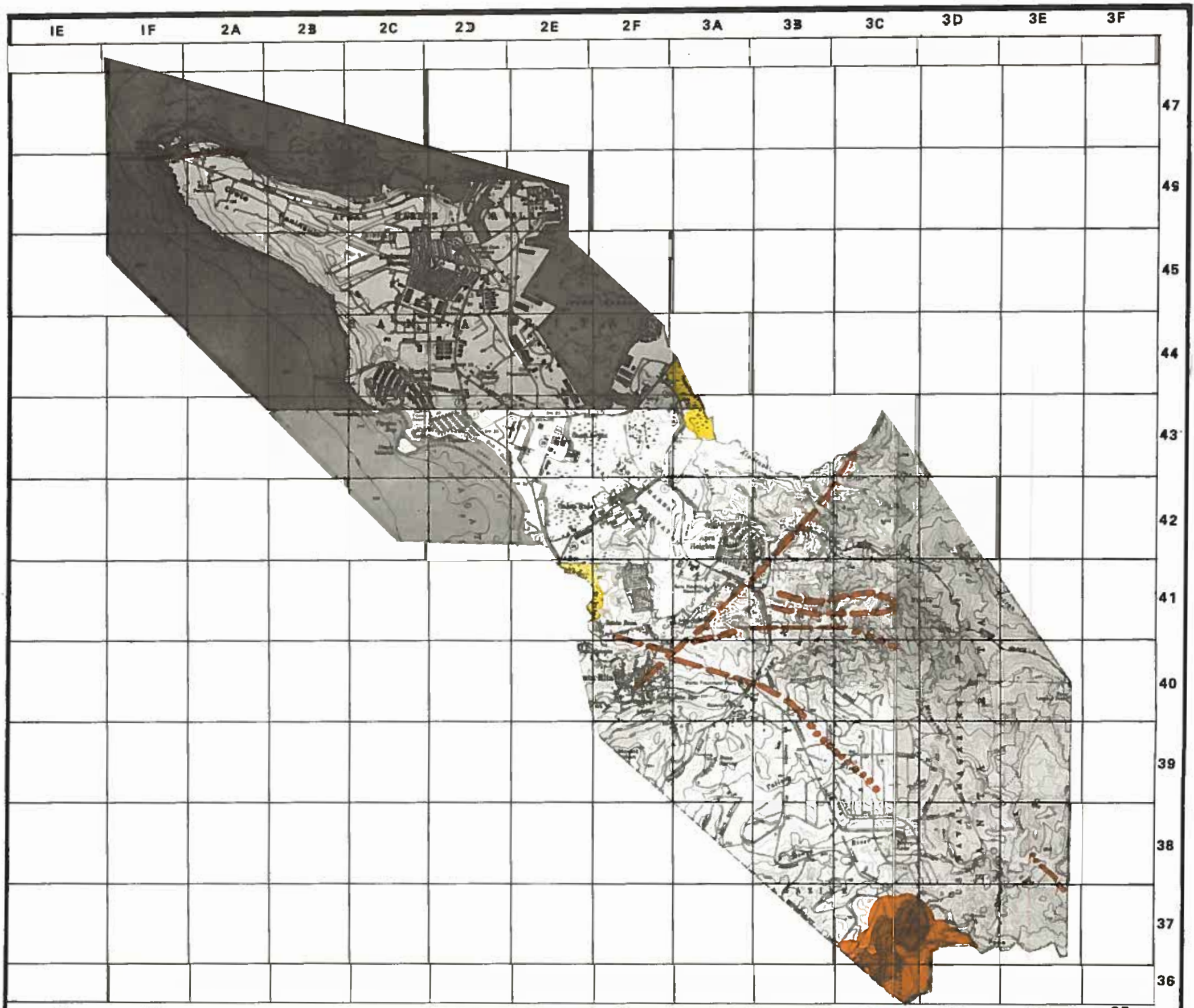


LEGEND

Explosives Safety Quantity Distance (ESQD) Circles

SANTA RITA

MAP No. 2

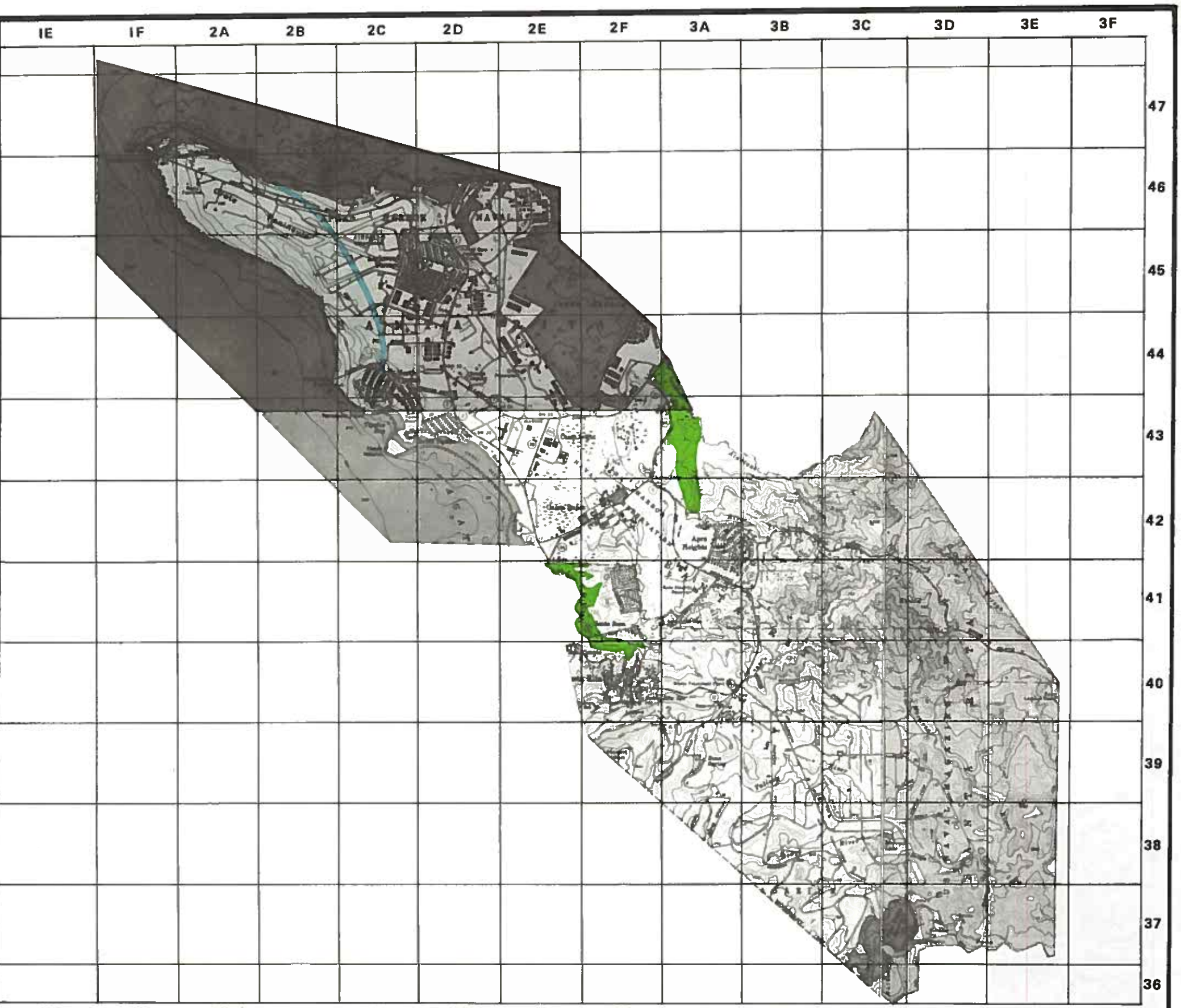


LEGEND

- Watershed
- Seismic Fault Zones
- Wetlands

SANTA RITA

MAP No. 3

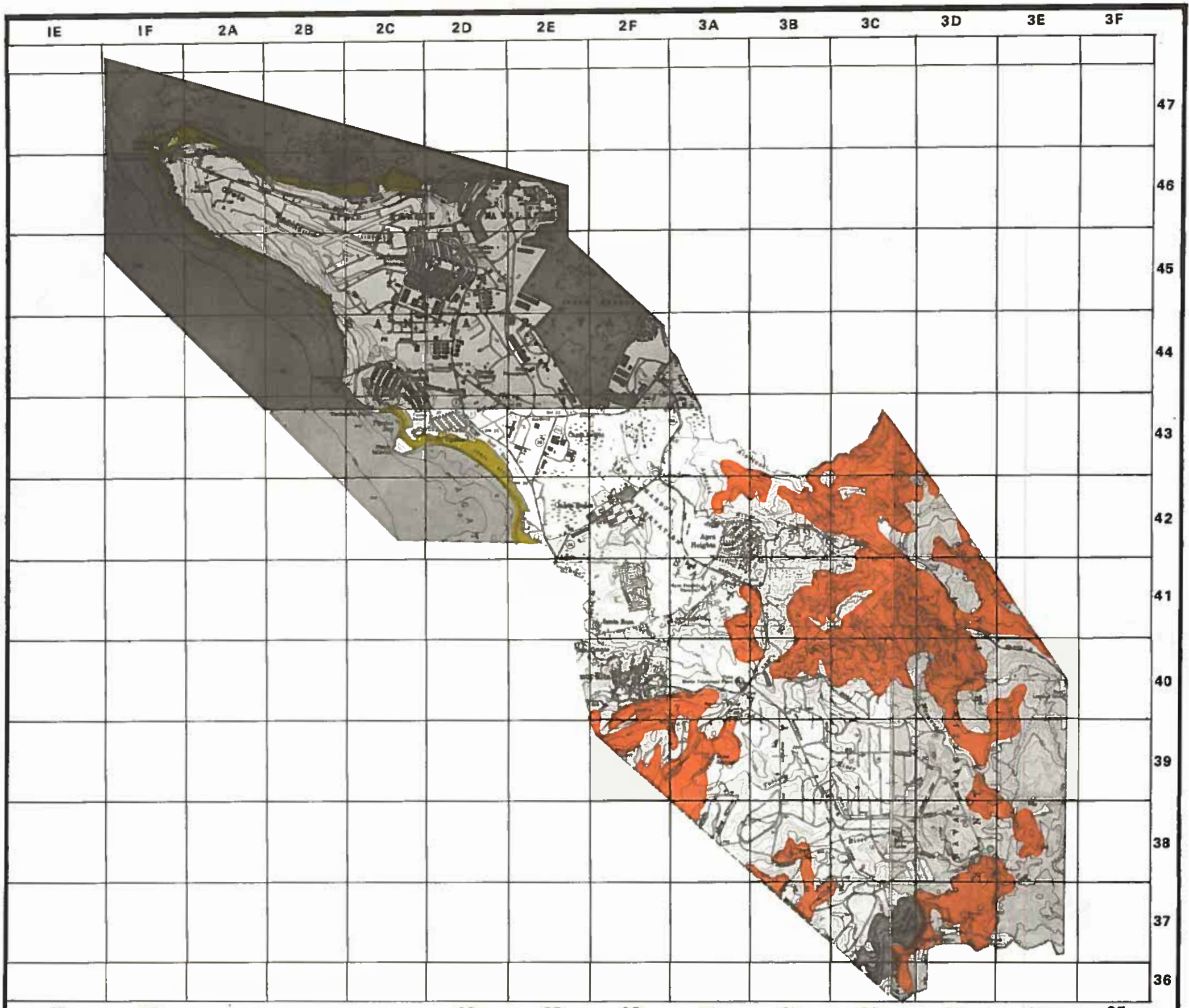


LEGEND

- Flood Hazard Areas
- Limestone Forest

SANTA RITA

MAP No. 4

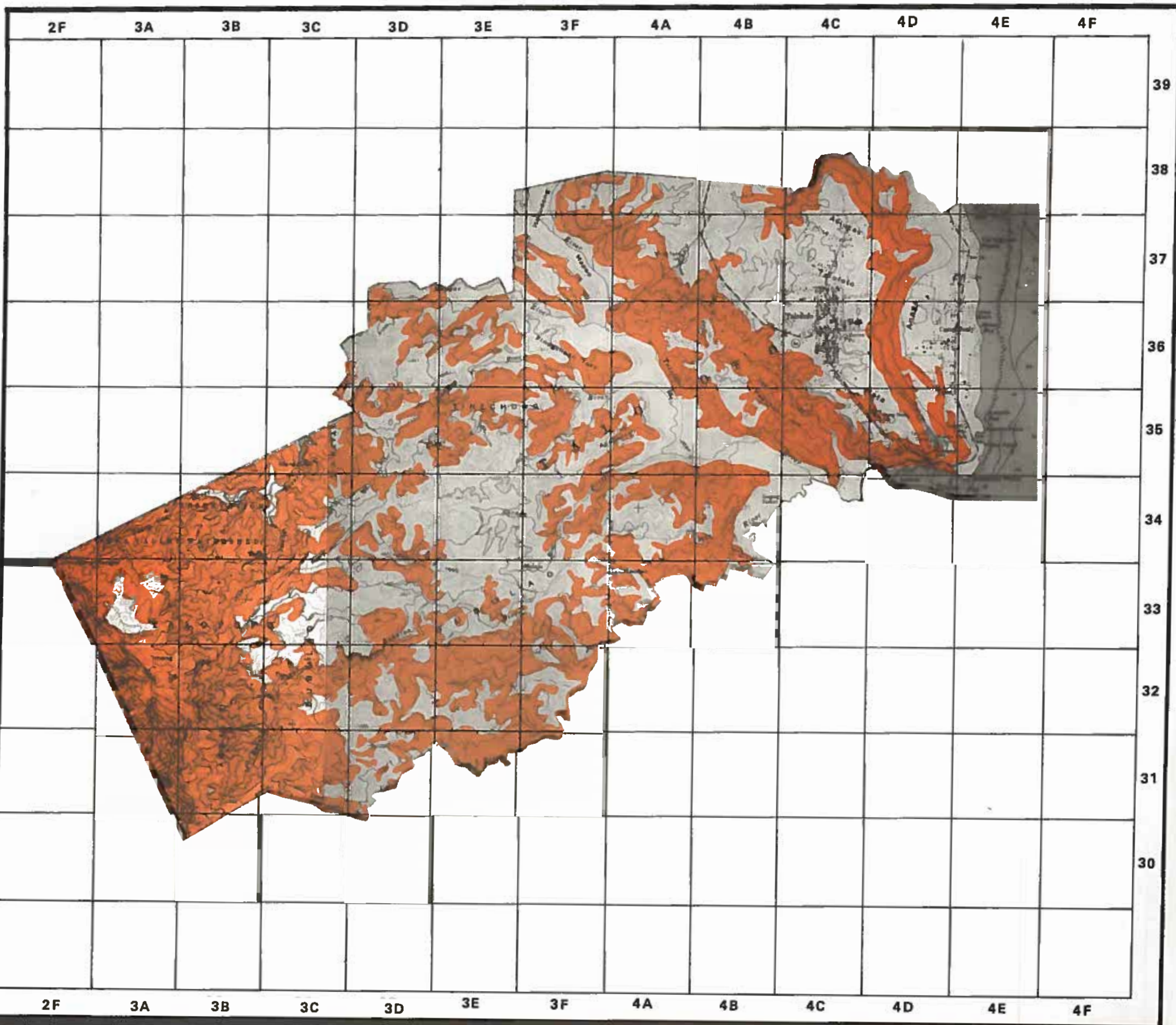


LEGEND

- Slide and Erosion Zones
- Coral Reefs

SANTA RITA

MAP No. 1

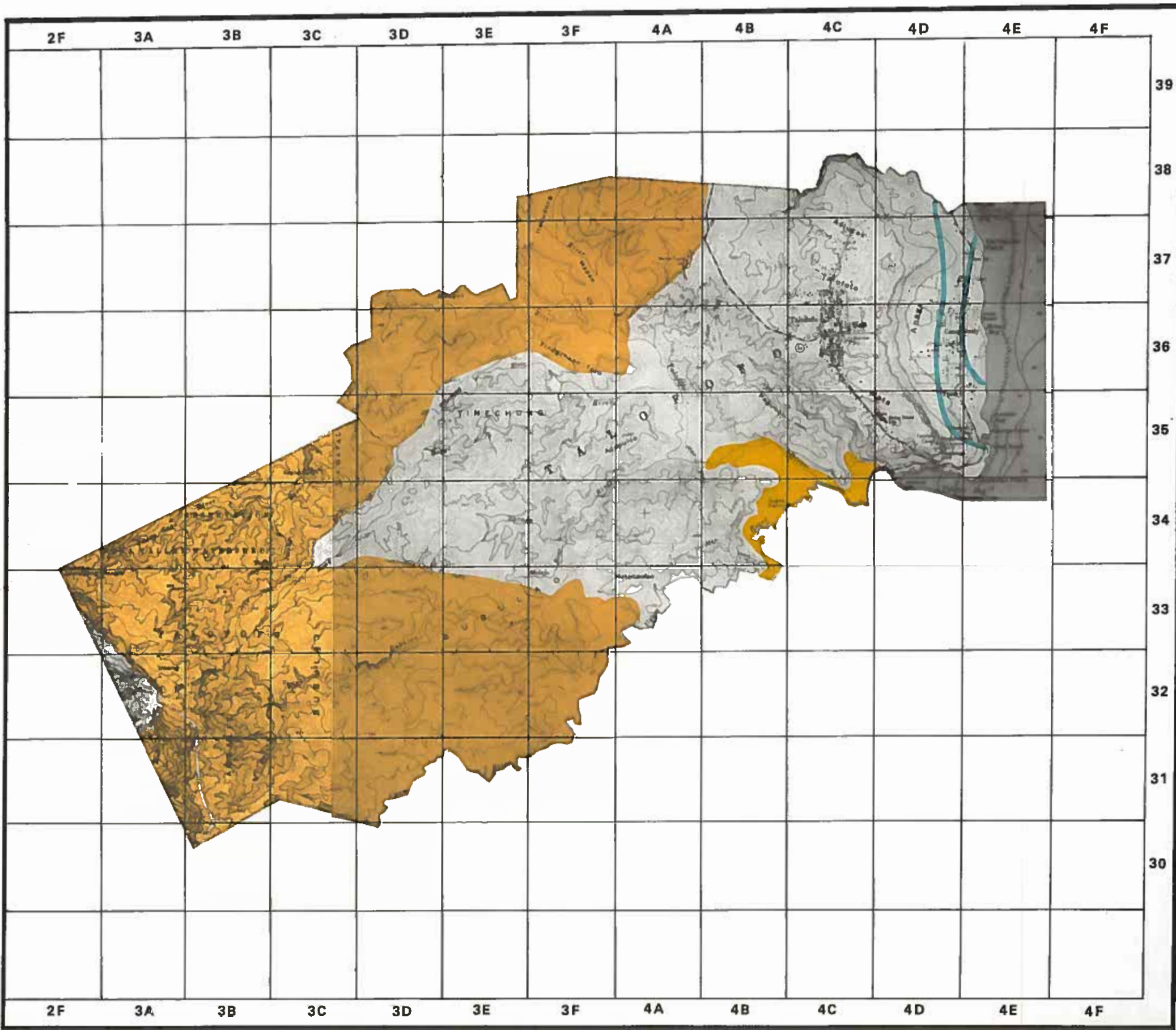


LEGEND

Slide and Erosion Zones

TALOFOFO

MAP No. 2

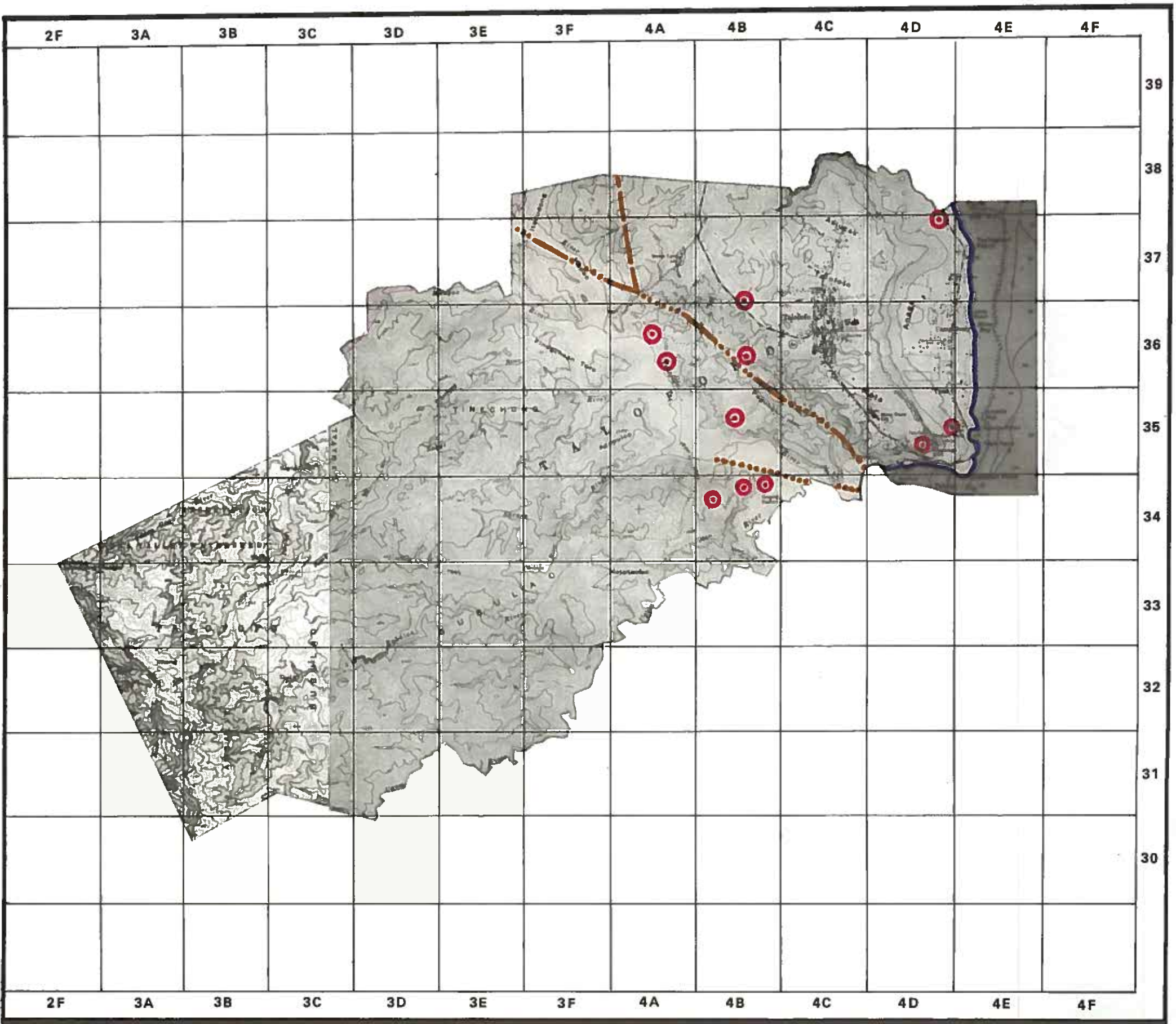


LEGEND

- Watershed
- Wetlands
- Limestone Forest

TALOFOFO

MAP No. 3

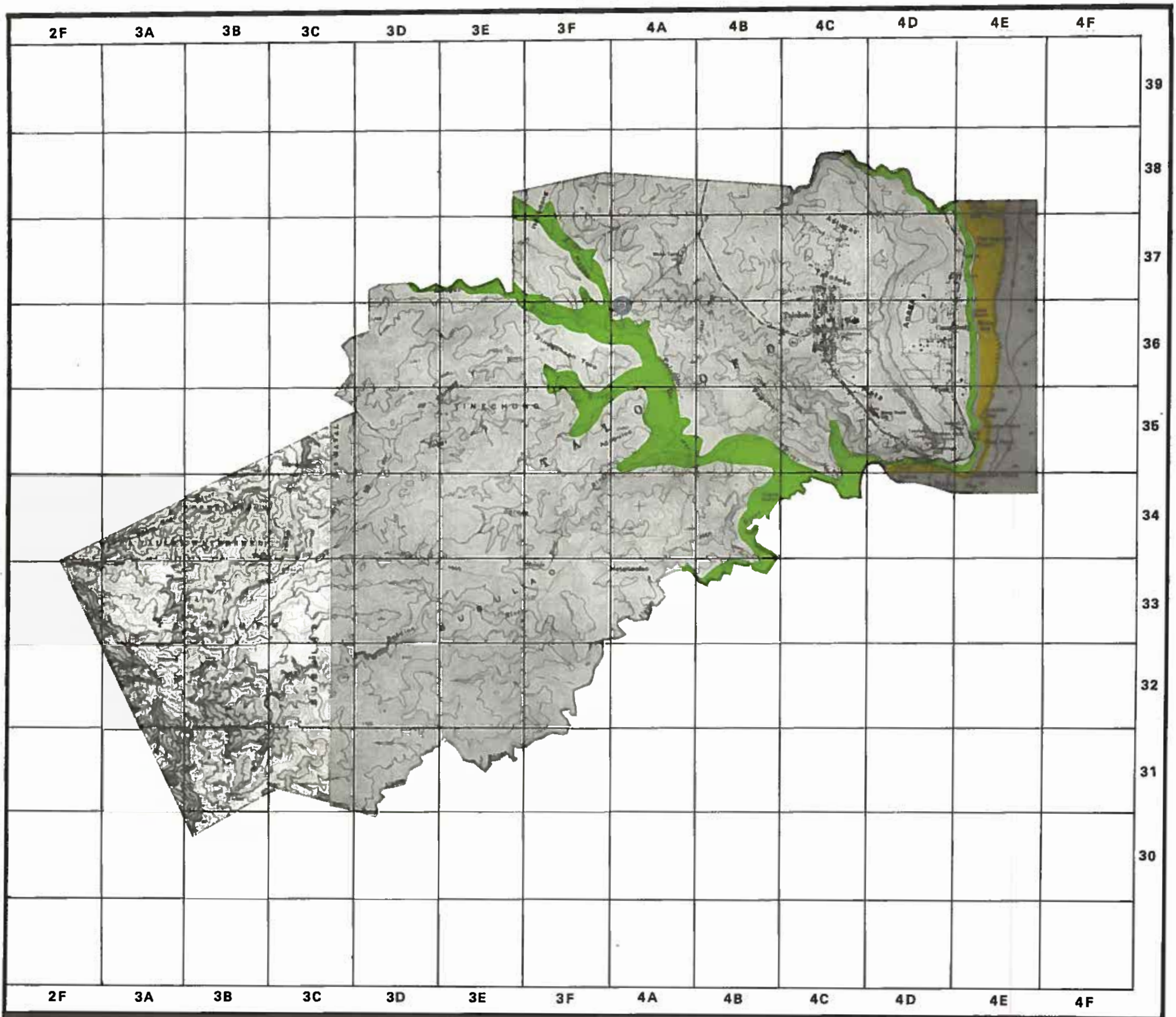


LEGEND

- Explosive Safety Quantity Distance (ESQD) Circles
- Historical/Prehistorical Sites
- Seismic Fault Zones
- Seashore Reserve

TALOFOFO

MAP No. 4

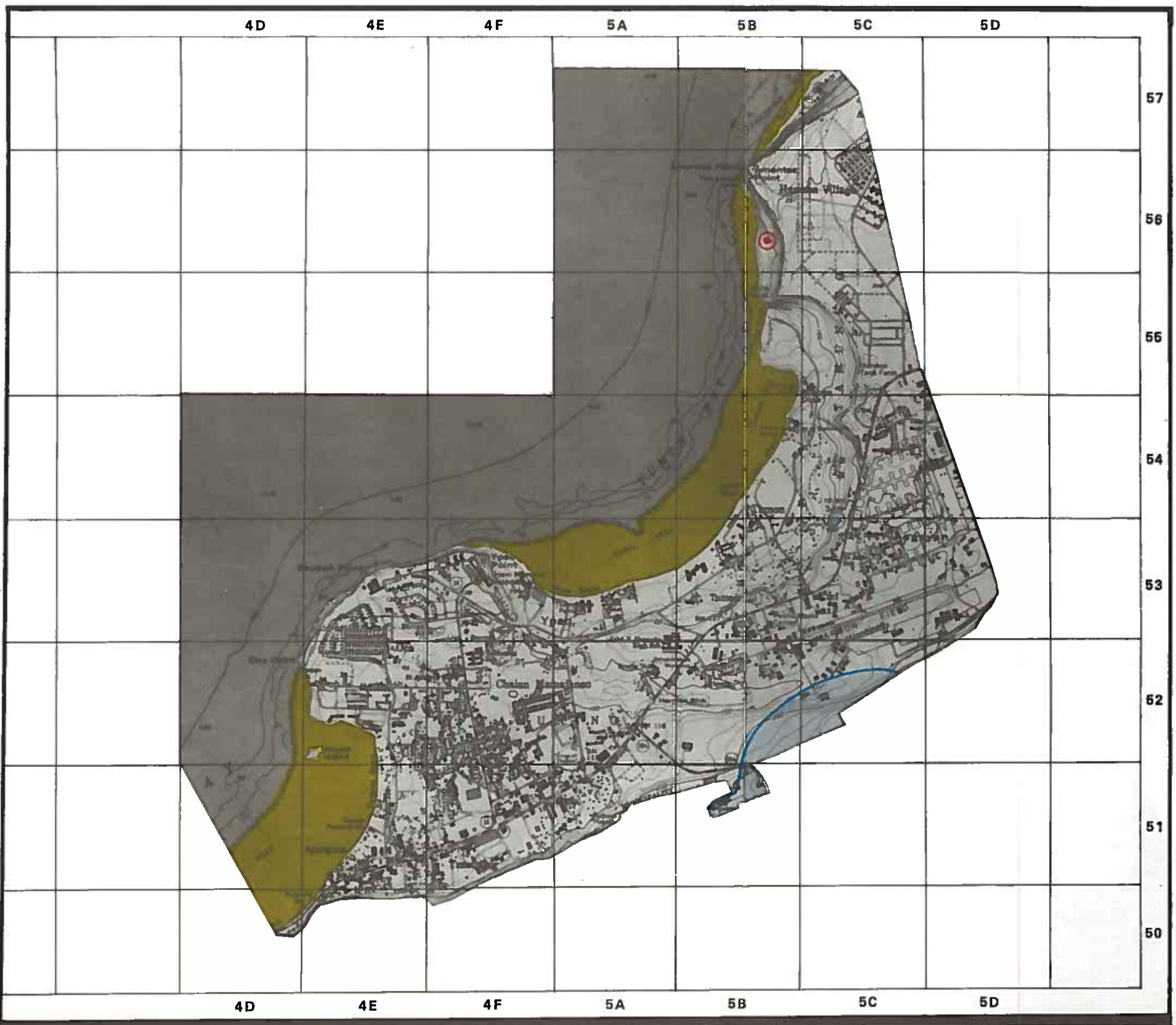


LEGEND

- Wells
- Coral Reefs
- Flood Hazard Areas

TALOFOFO

MAP No. 1

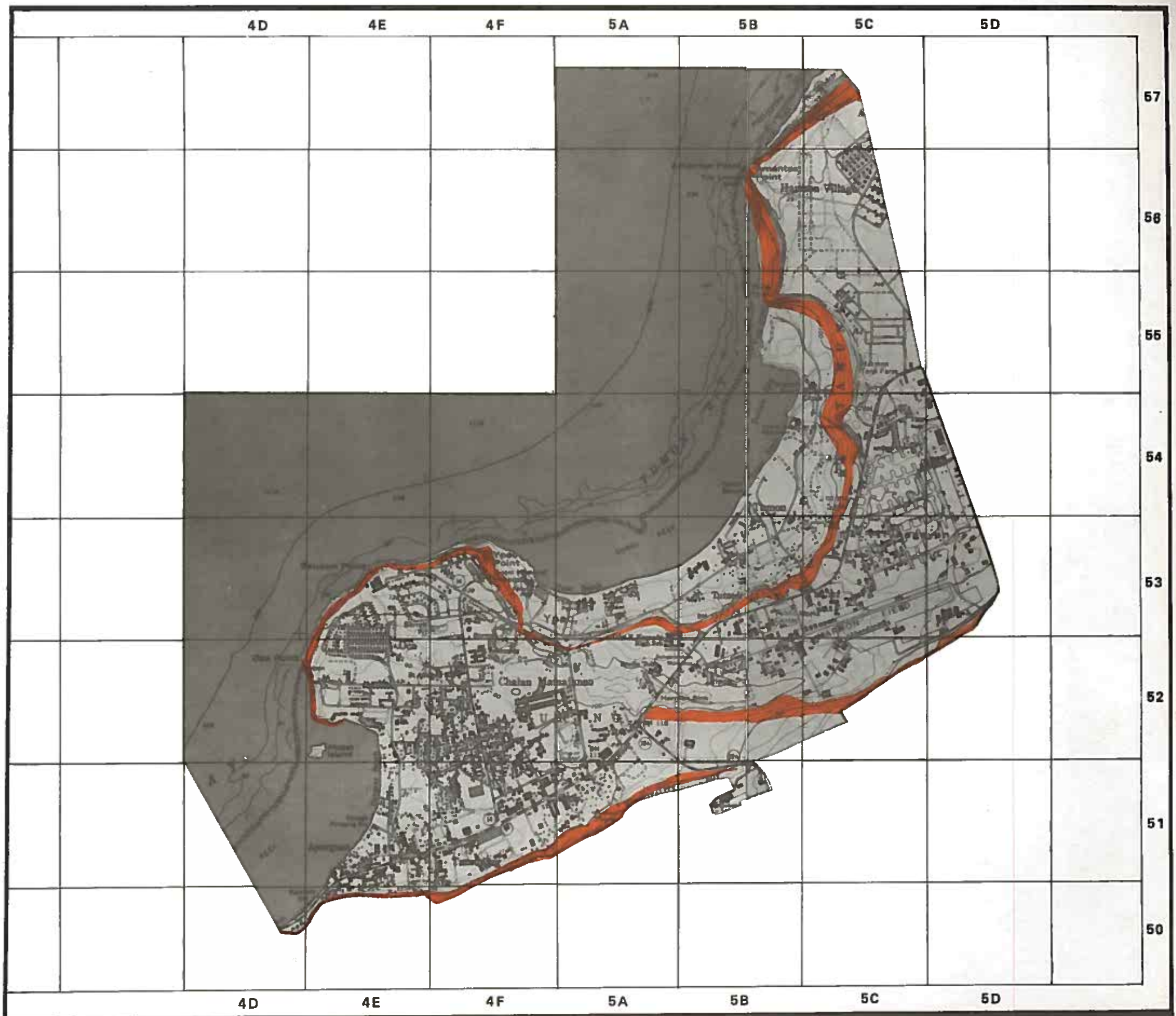


LEGEND

- Electromagnetic Radiation (EMR) Zones
- Wells
- Historical/Prehistorical
- Coral Reefs

TAMUNING

MAP No. 2

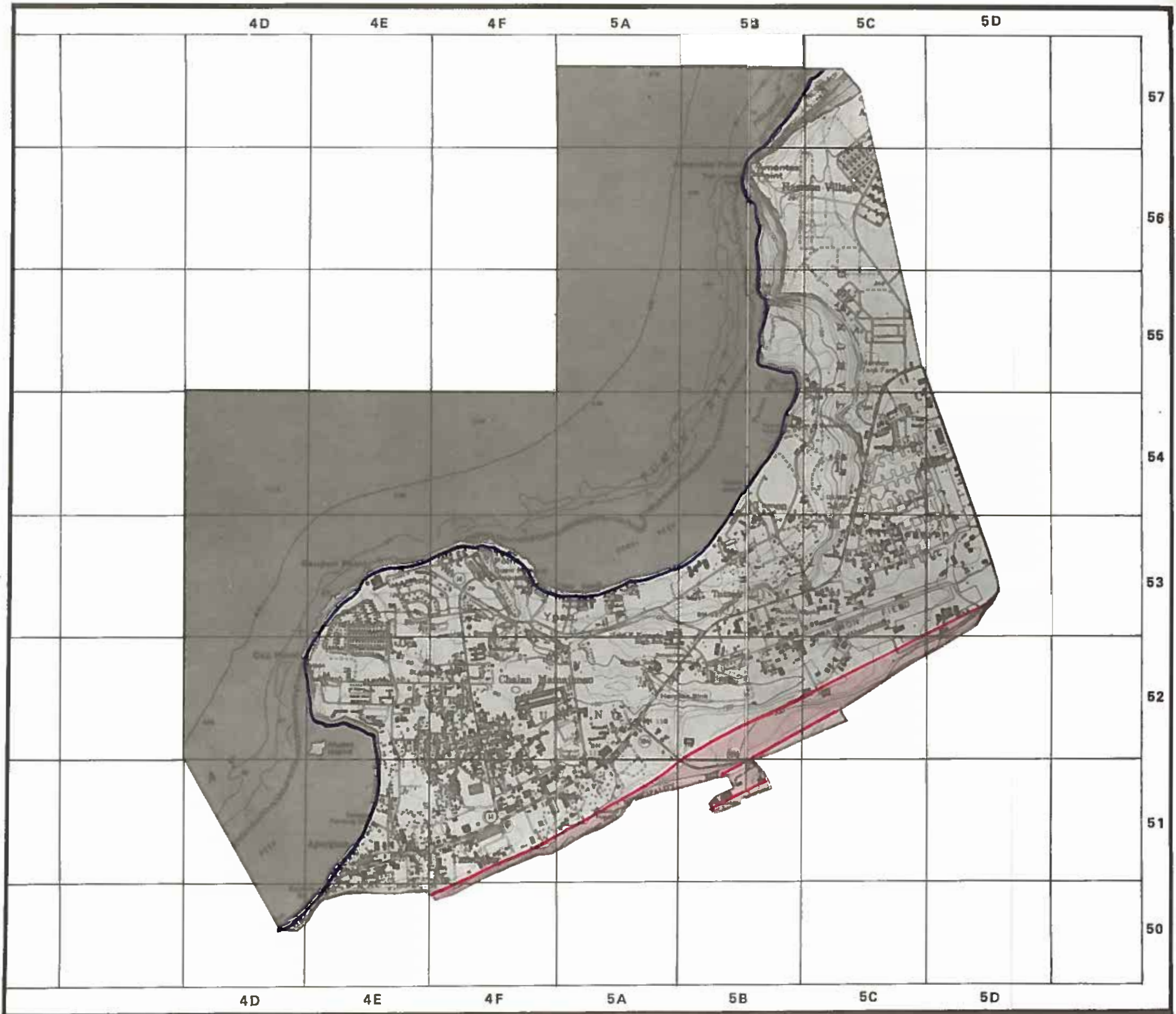


LEGEND

Slide and Erosion Zones

TAMUNING

MAP No. 3

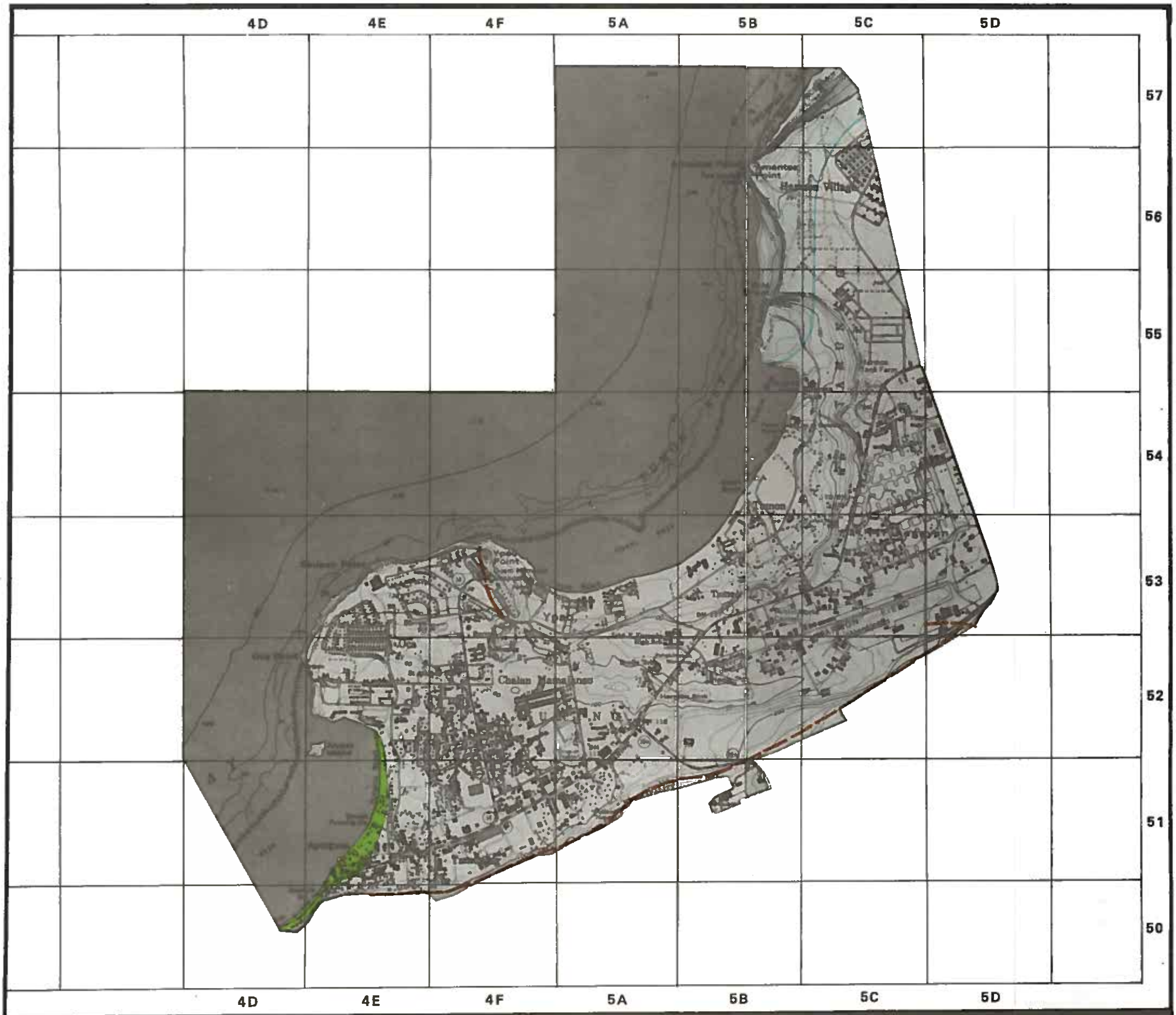


LEGEND

- Seashore Reserve
- Air Installation Compatible Use Zones (AICUZ-NAS)

TAMUNING

MAP No. 4

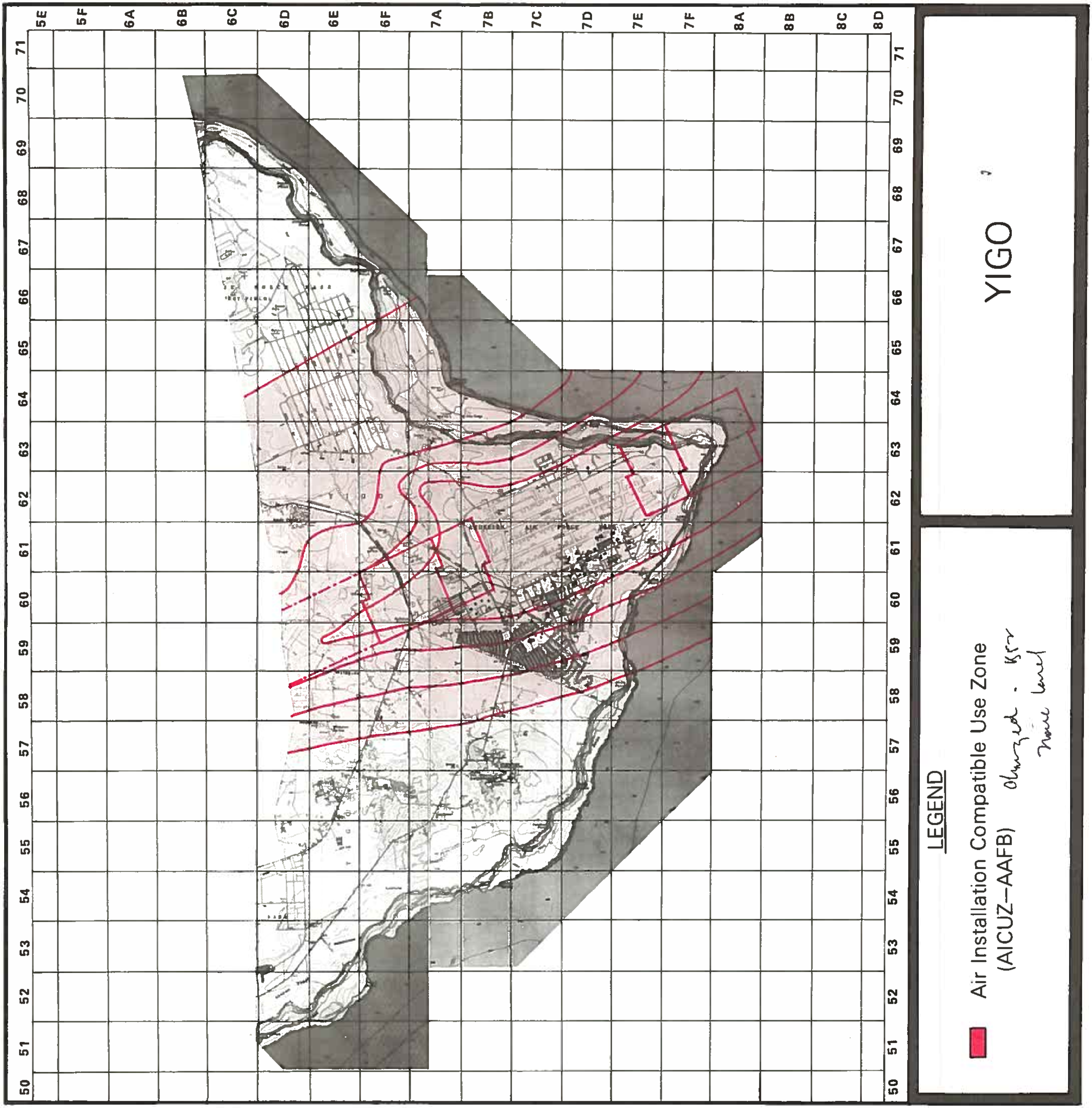


LEGEND

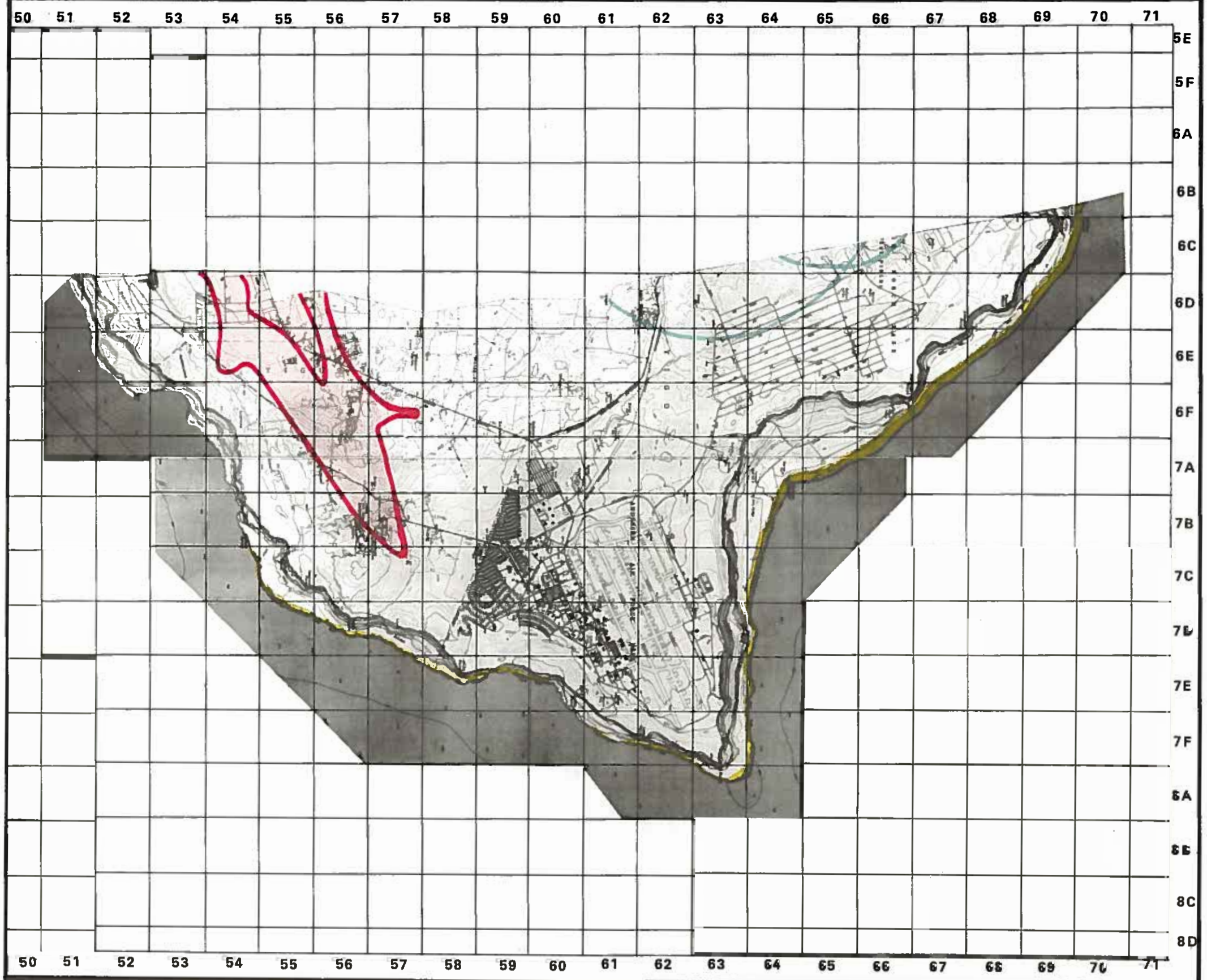
- Limestone Forest
- Flood Hazard Areas
- Seismic Fault Zones

TAMUNING

MAP No. 1



YIGO
LEGEND
Air Installation Compatible Use Zone
(AICUZ–AAFB)

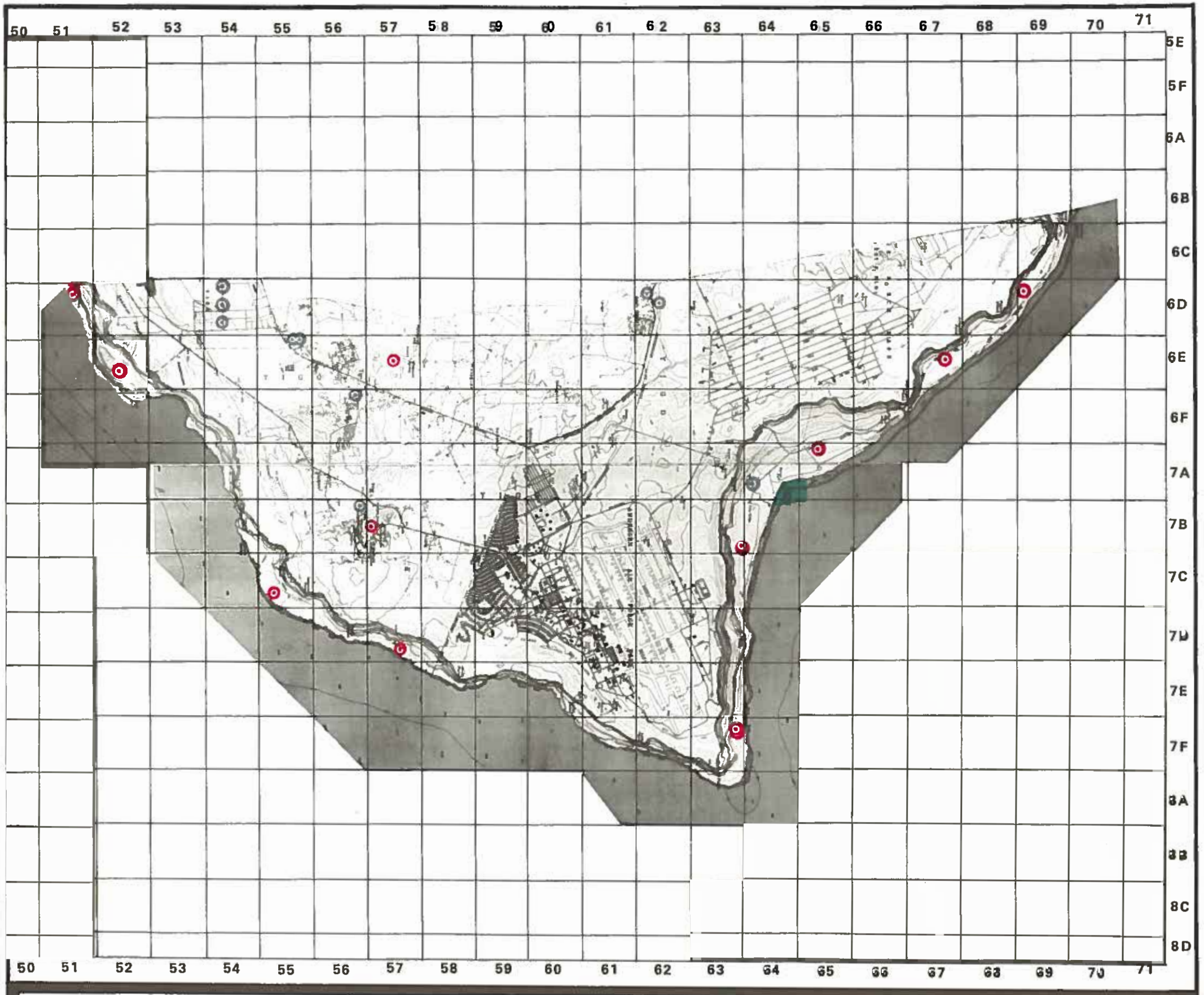


LEGEND

- Air Installation Compatible Use Zone (AICUZ—NAS)
- Coral Reefs
- Radio Frequency Interference (RFI) Zones

YIGO

MAP No. 2

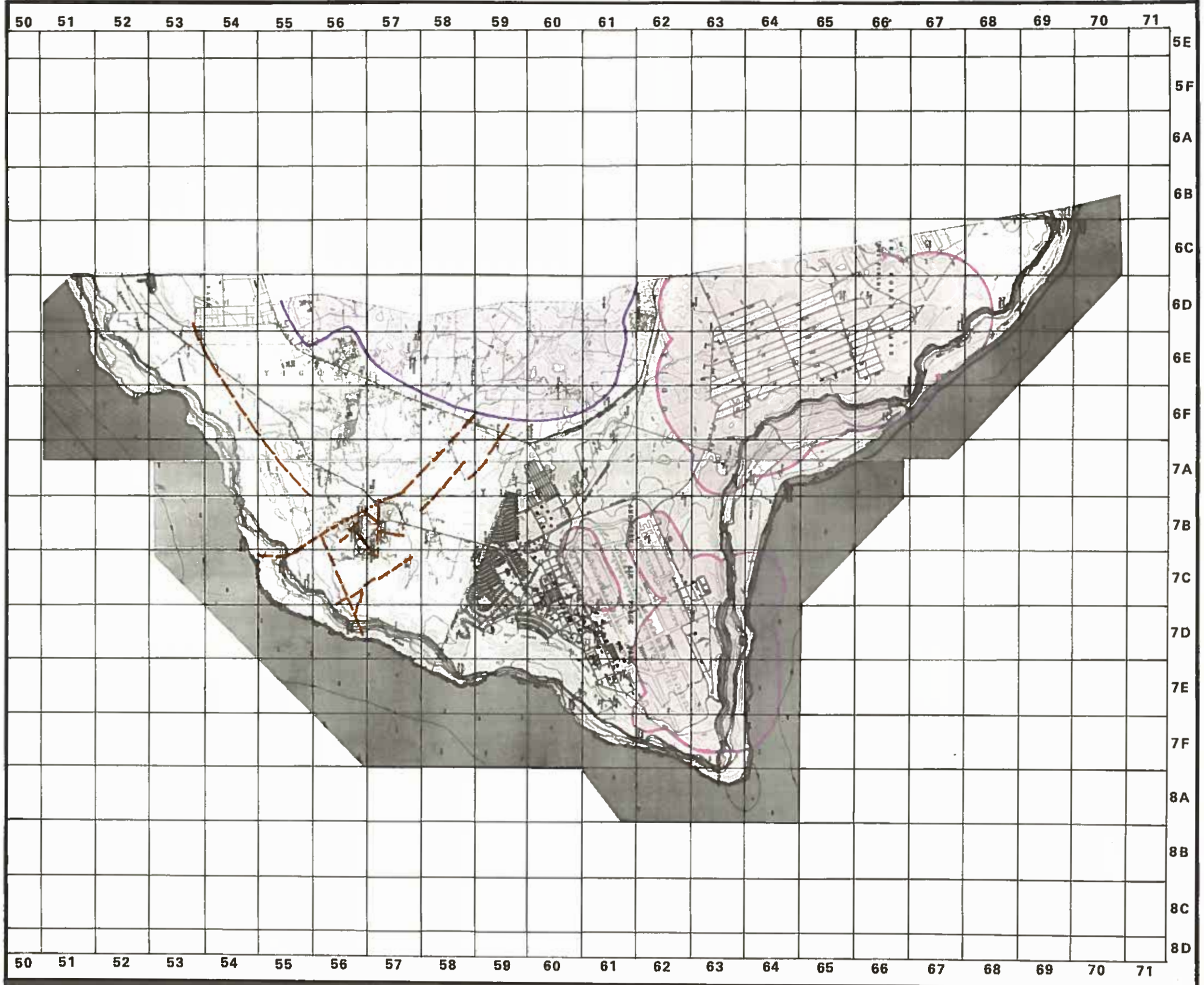


LEGEND

- Wells
- Historical/Prehistorical Sites
- Marine Pristine Ecological Communities

YIGO

MAP No. 3

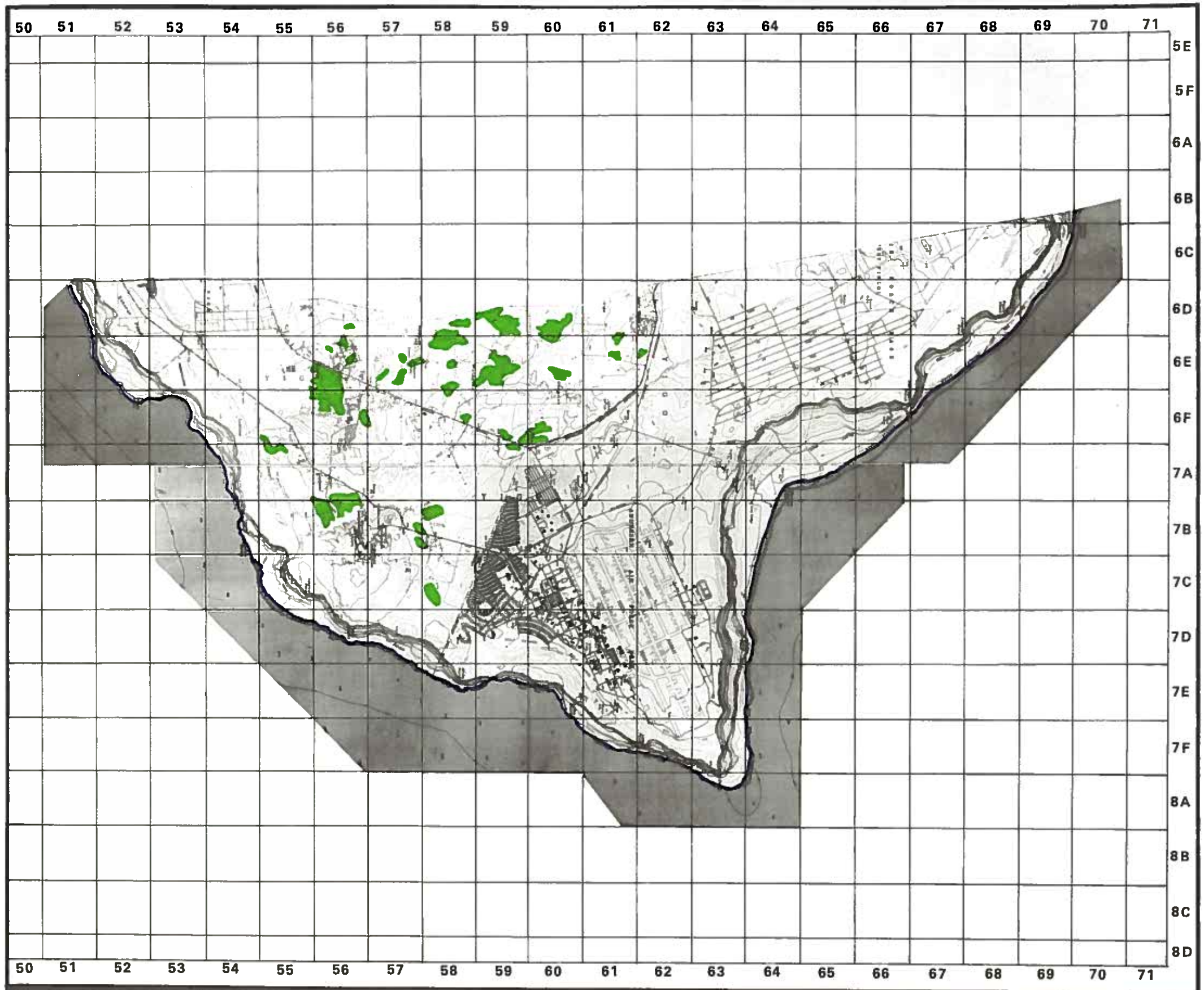


LEGEND

- Aquifer Recharge Areas
- Seismic Fault Zones
- Explosives Safety Quantity Distance (ESQD) Circles

YIGO

MAP No. 4



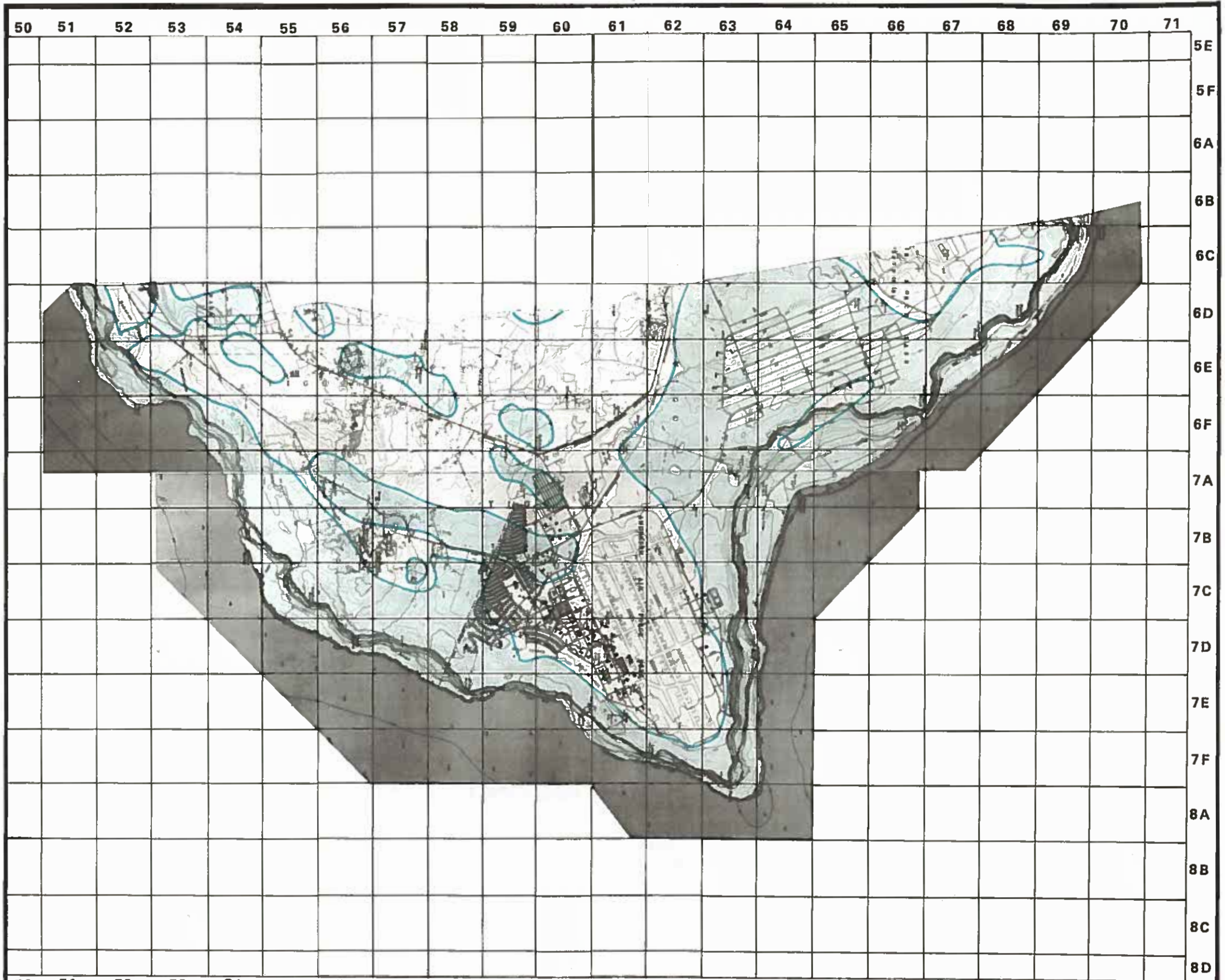
LEGEND

Flood Hazard Areas

Seashore Reserve

YIGO

MAP No. 5

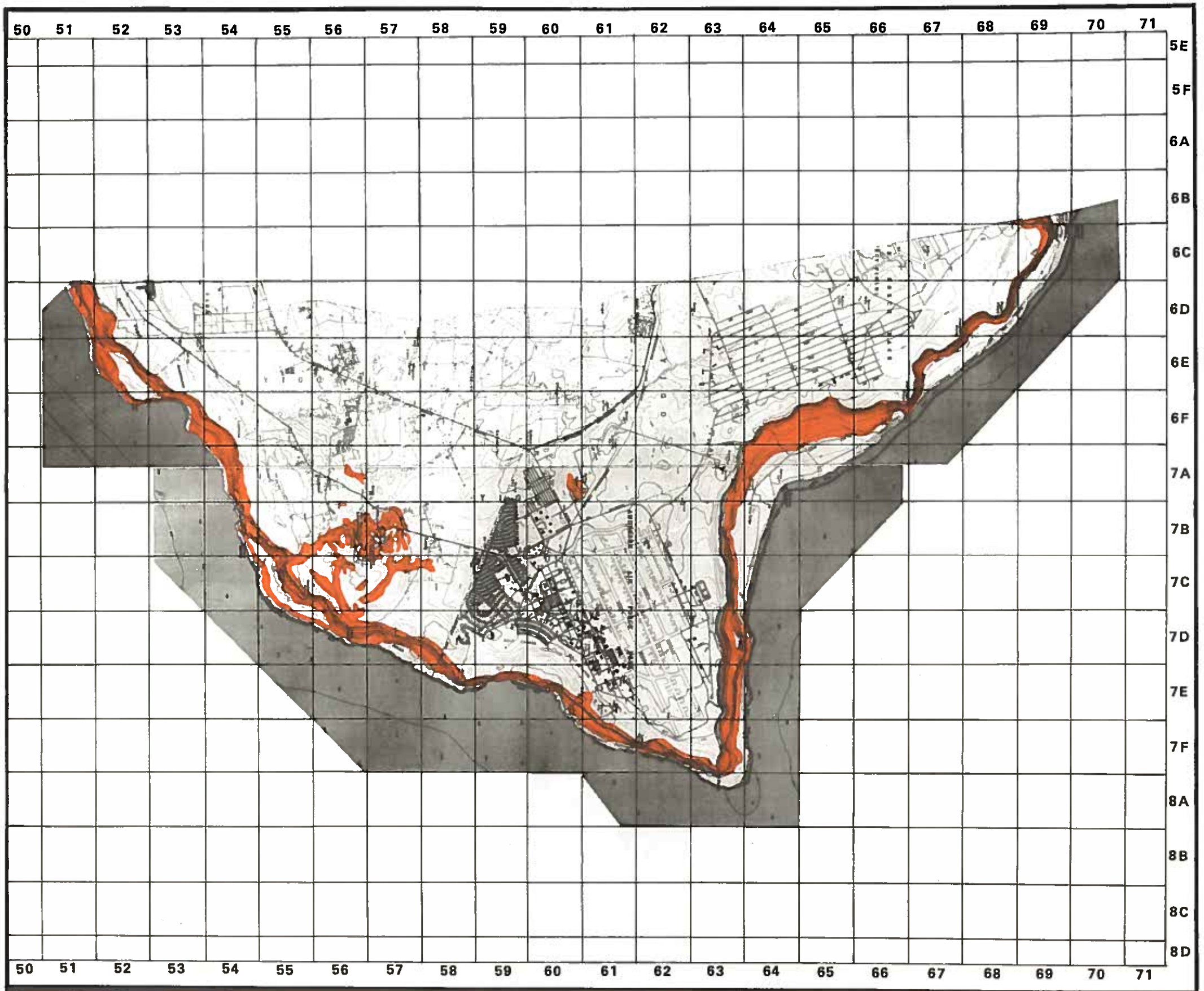


LEGEND

Limestone Forest

YIGO

MAP No. 6



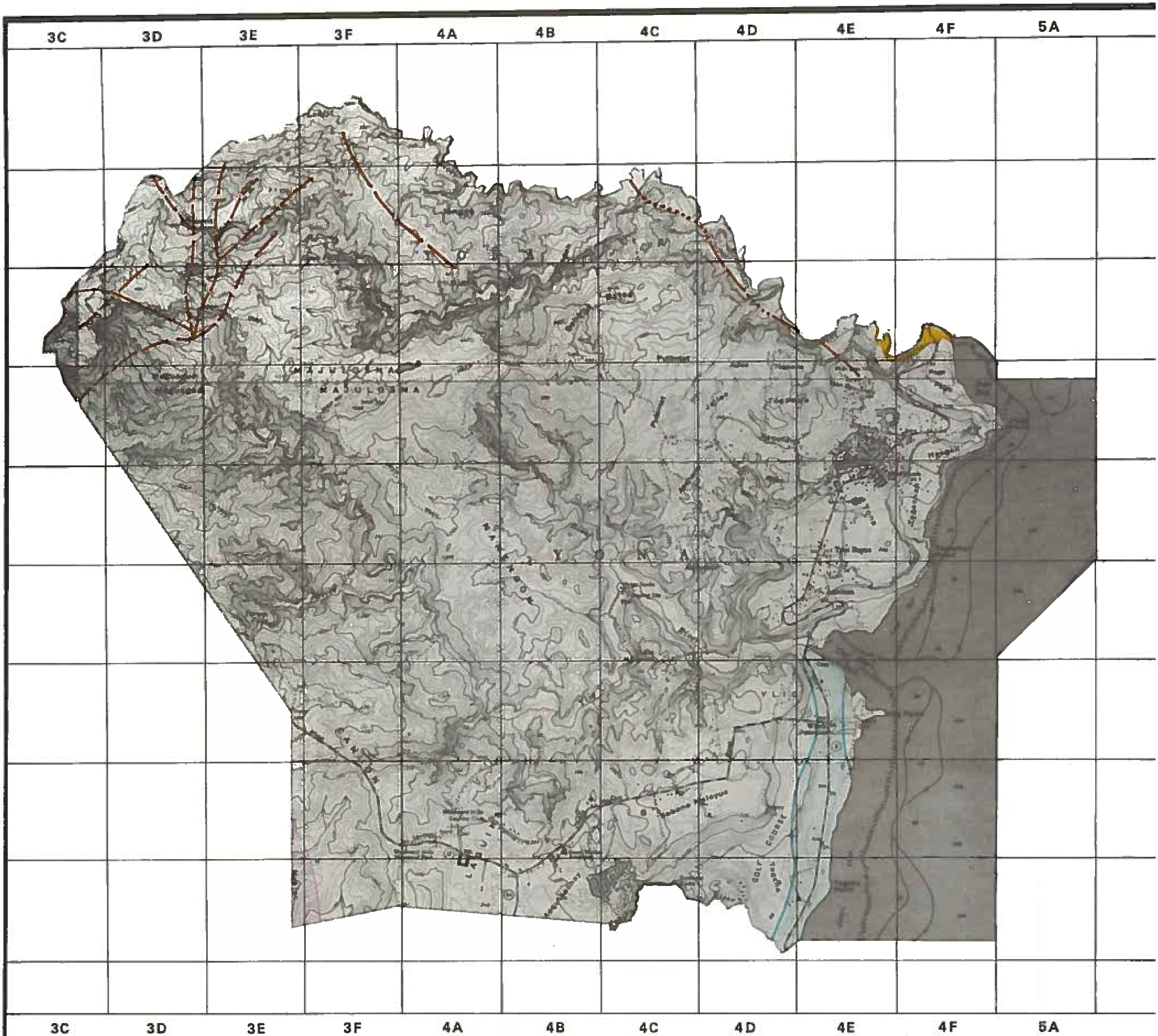
LEGEND

Slide and Erosion Zones

YIGO

MAP No. 7

MAP No. 1

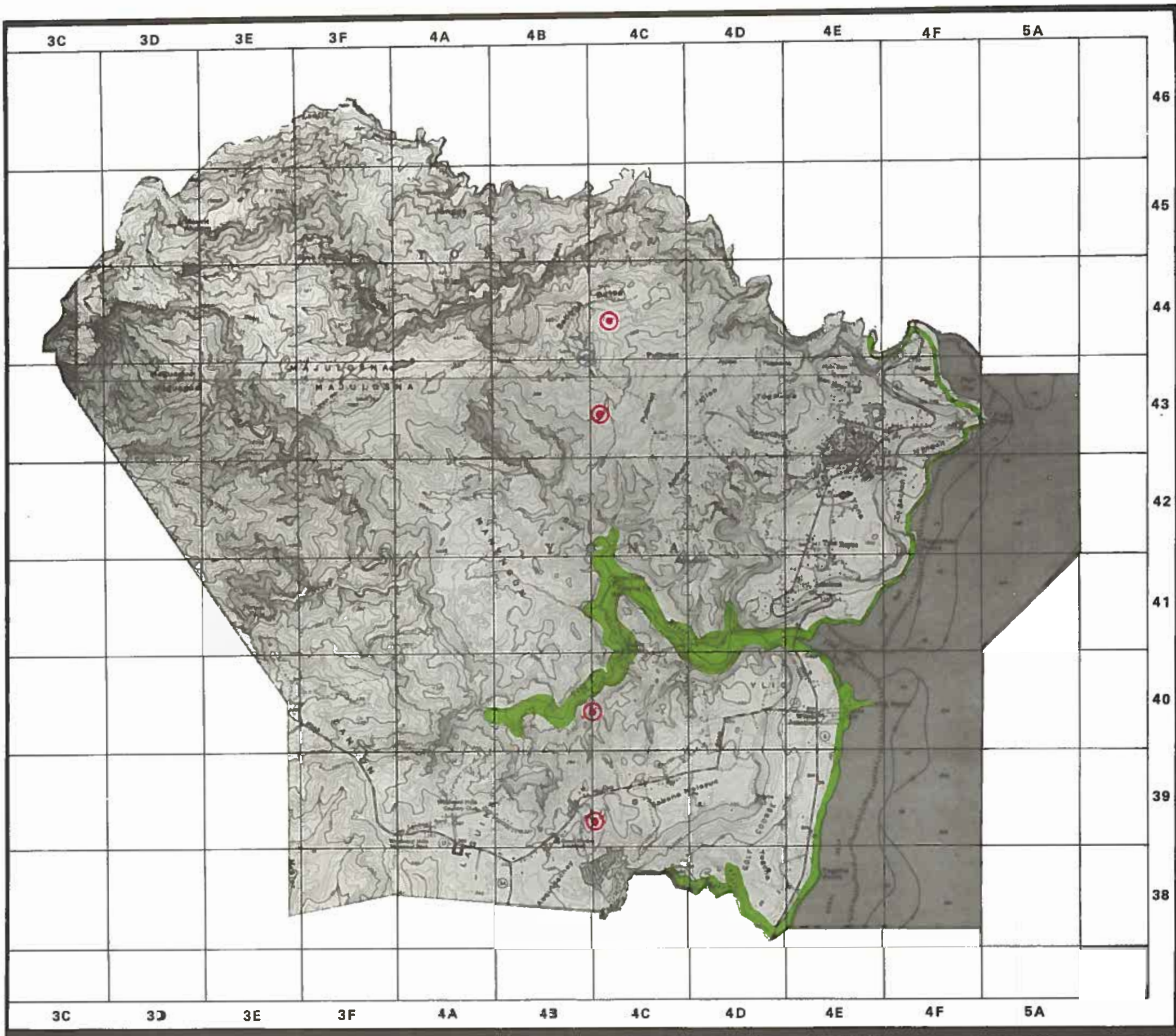


LEGEND

- Seismic Fault Zones
- Explosive Safety Quantity Distance (ESQD) Circles
- Wetlands
- Limestone Forest

YONA

MAP No. 2

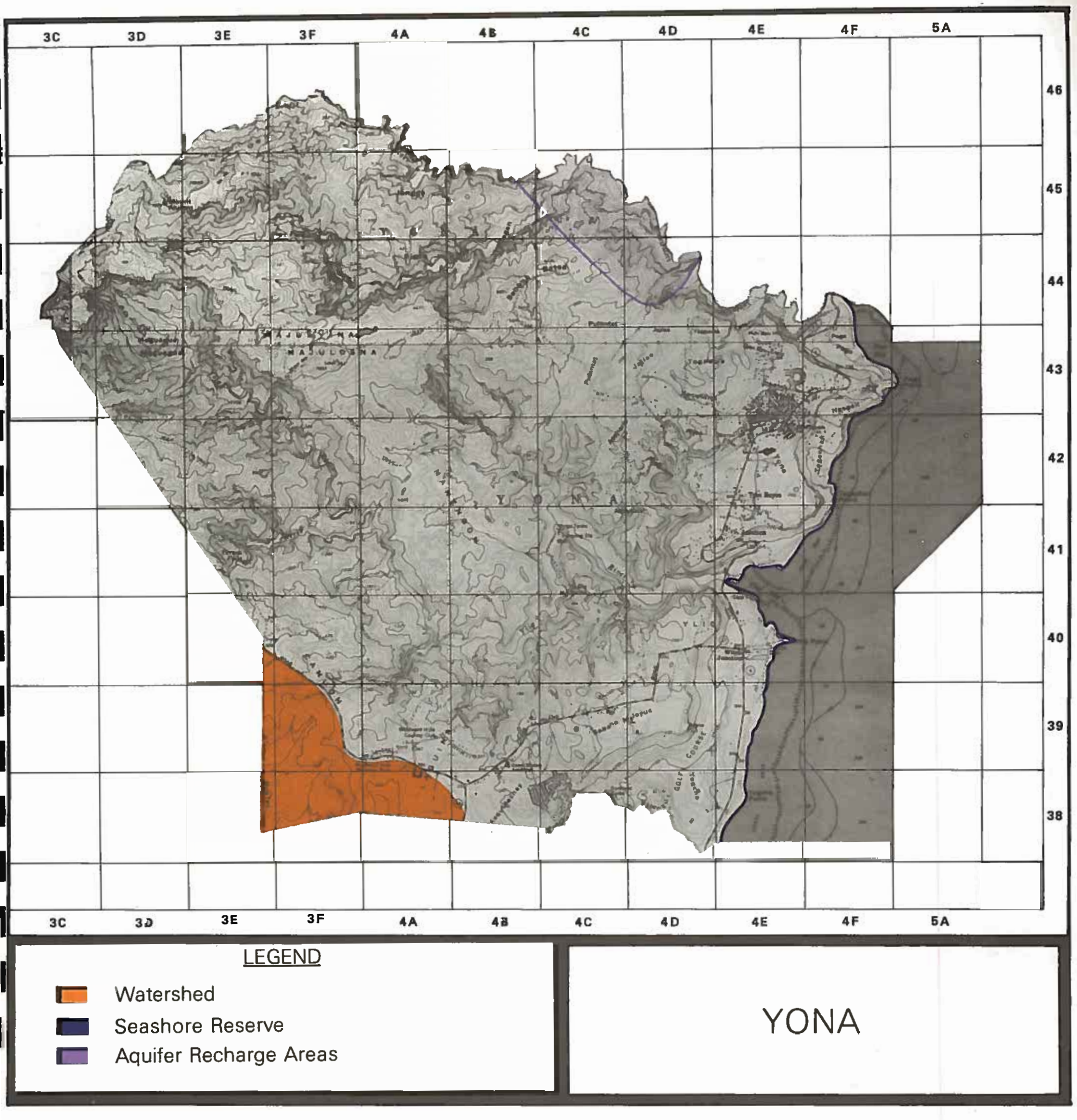


LEGEND

- Flood Hazard Areas
- Historical/Prehistorical
- Wells

YONA

MAP No. 3

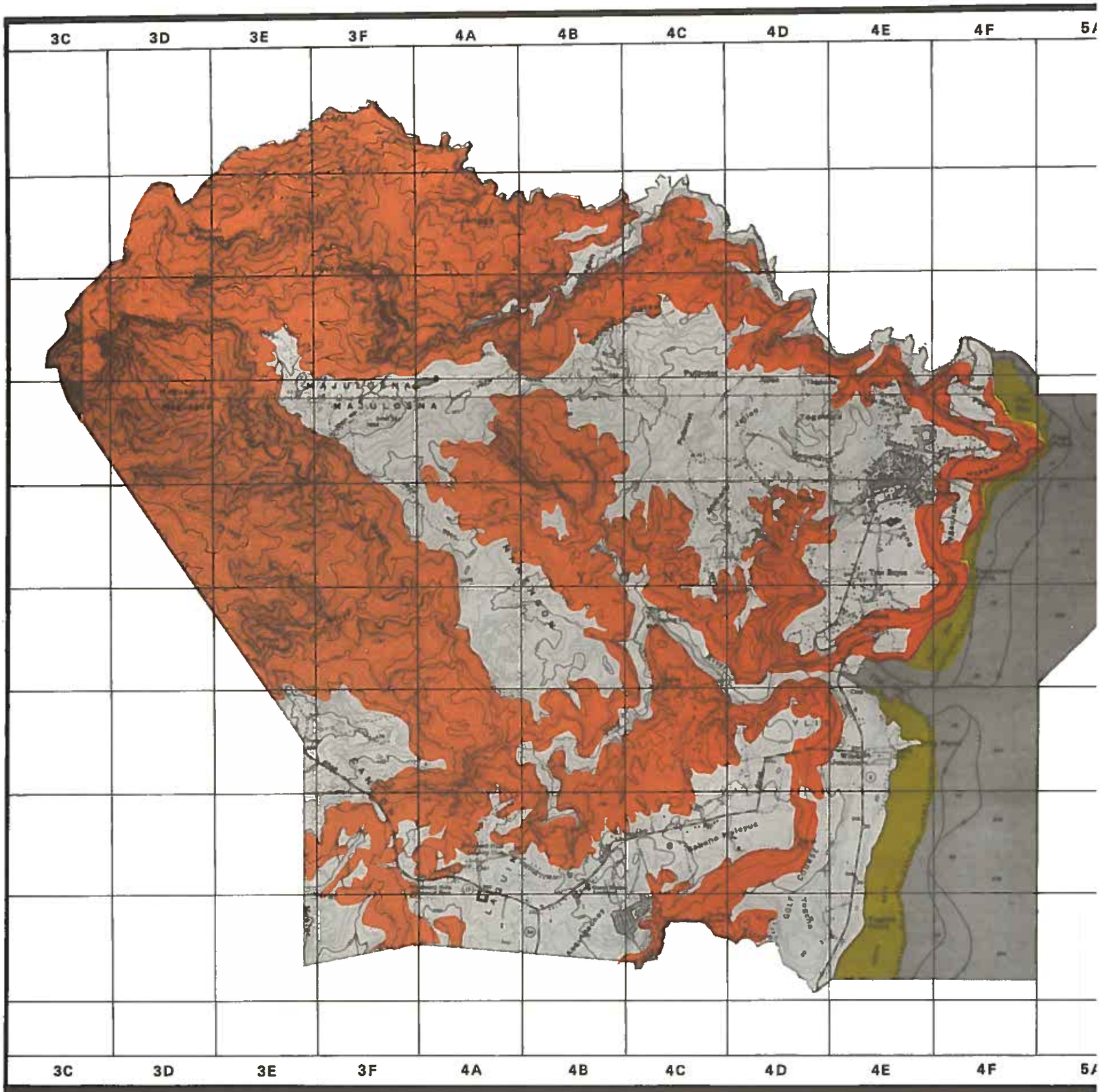


LEGEND

- Watershed
- Seashore Reserve
- Aquifer Recharge Areas

YONA

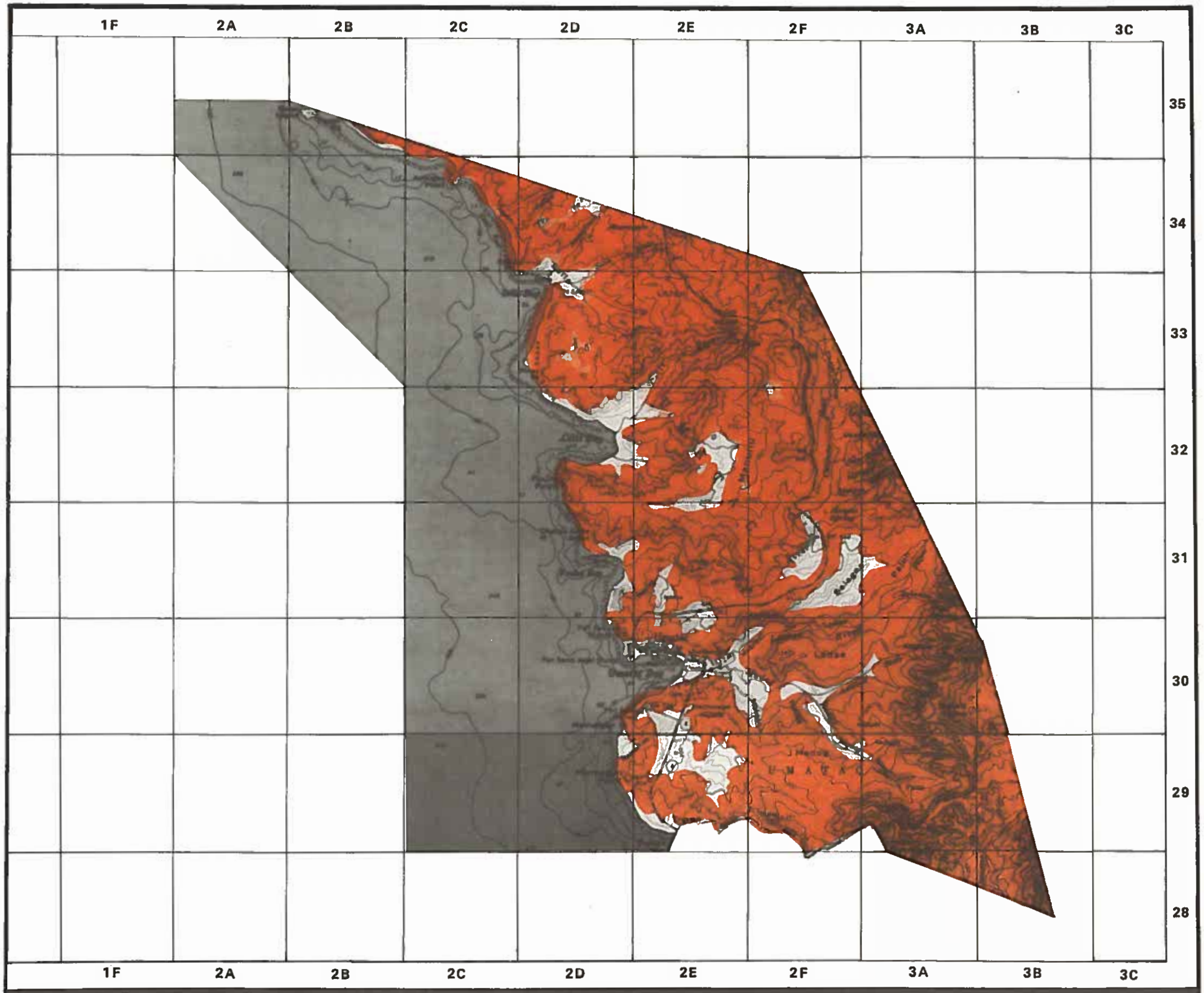
MAP



LEGEND

- Slide and Erosion Zones
- Coral Reefs

YONA

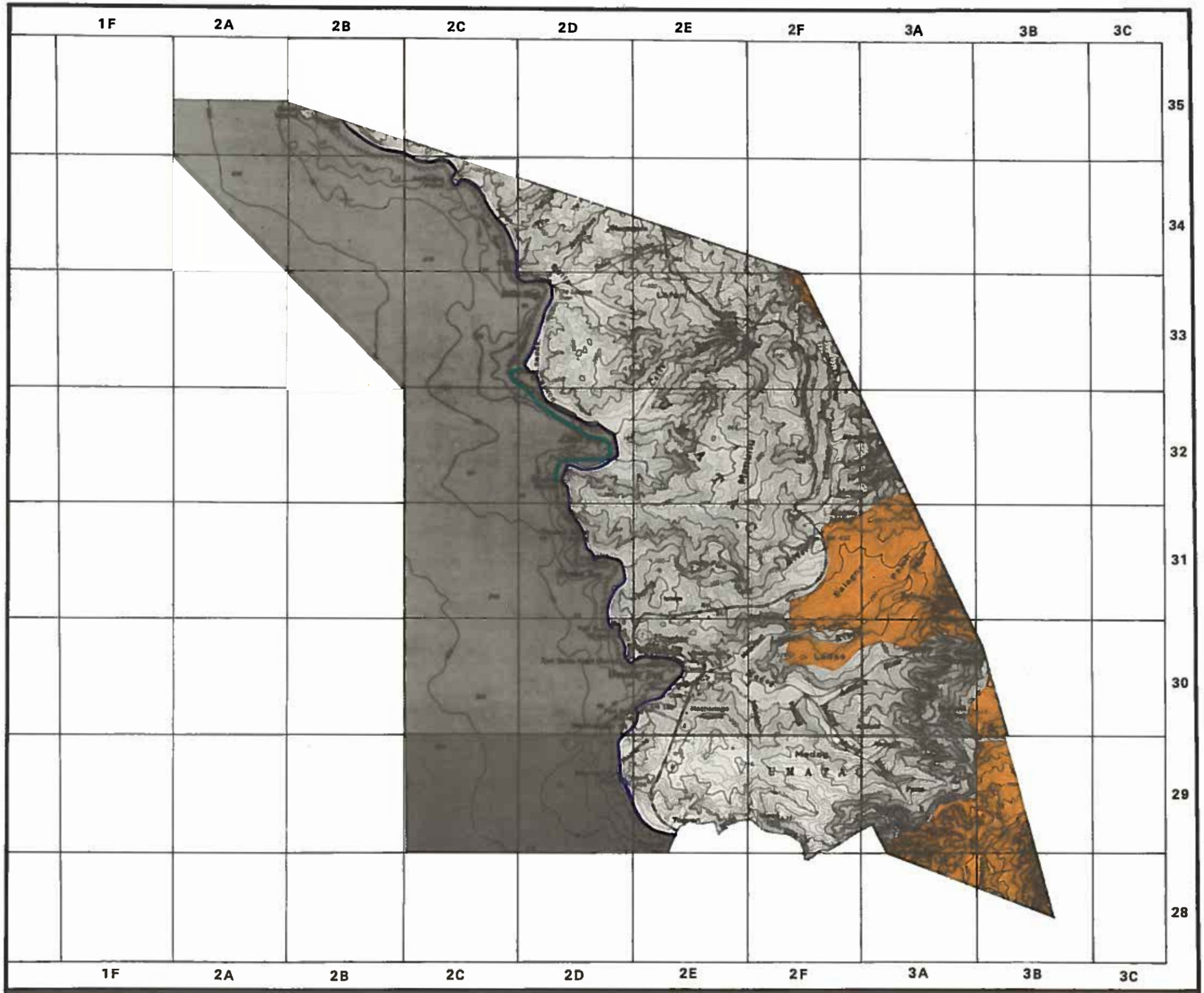


LEGEND

Slide and Erosion Zones

UMATAC

MAP No. 1

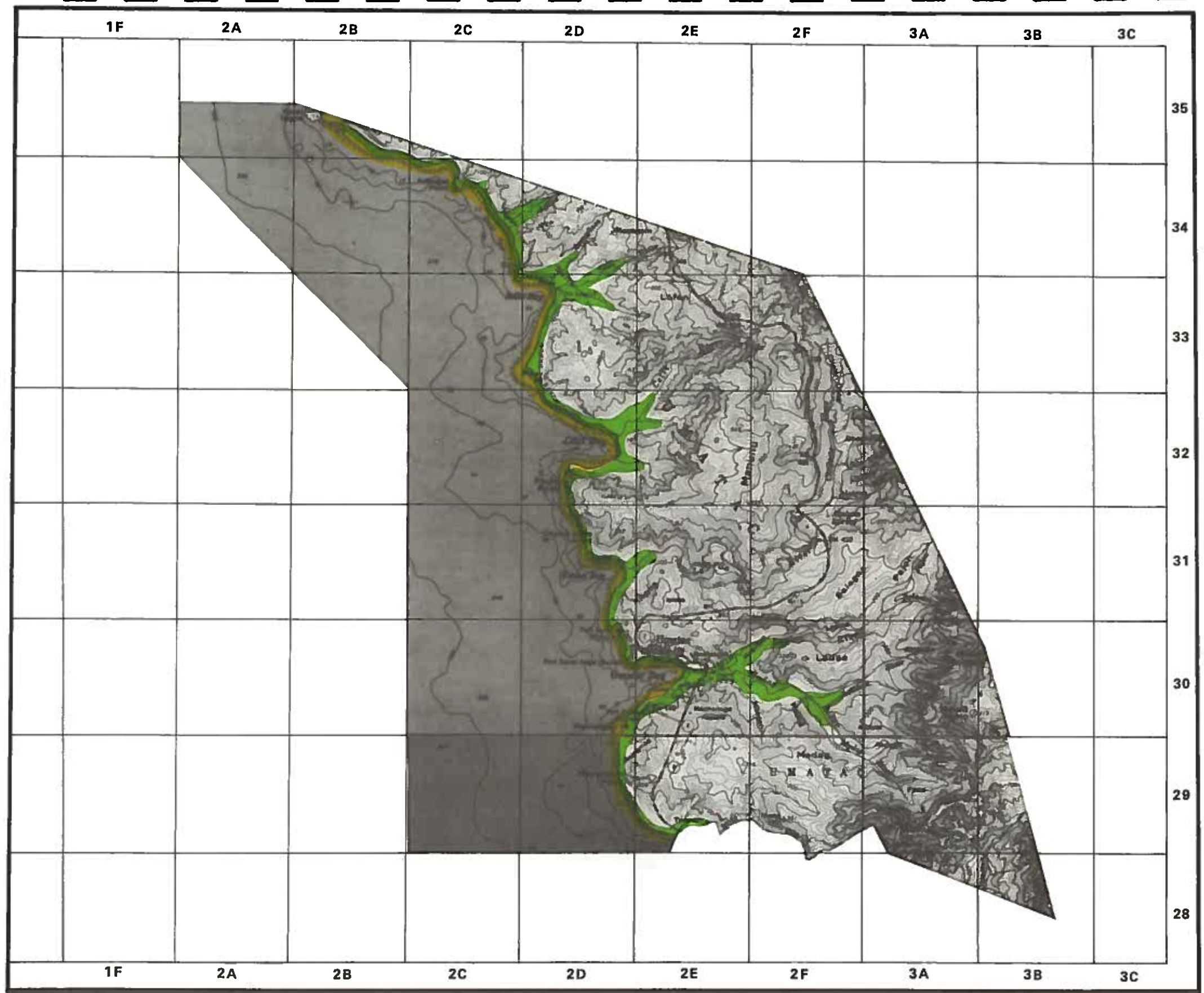


LEGEND

- Watershed
- Seashore Reserve
- Marine Pristine Ecological Communities

UMATAC

MAP No. 2



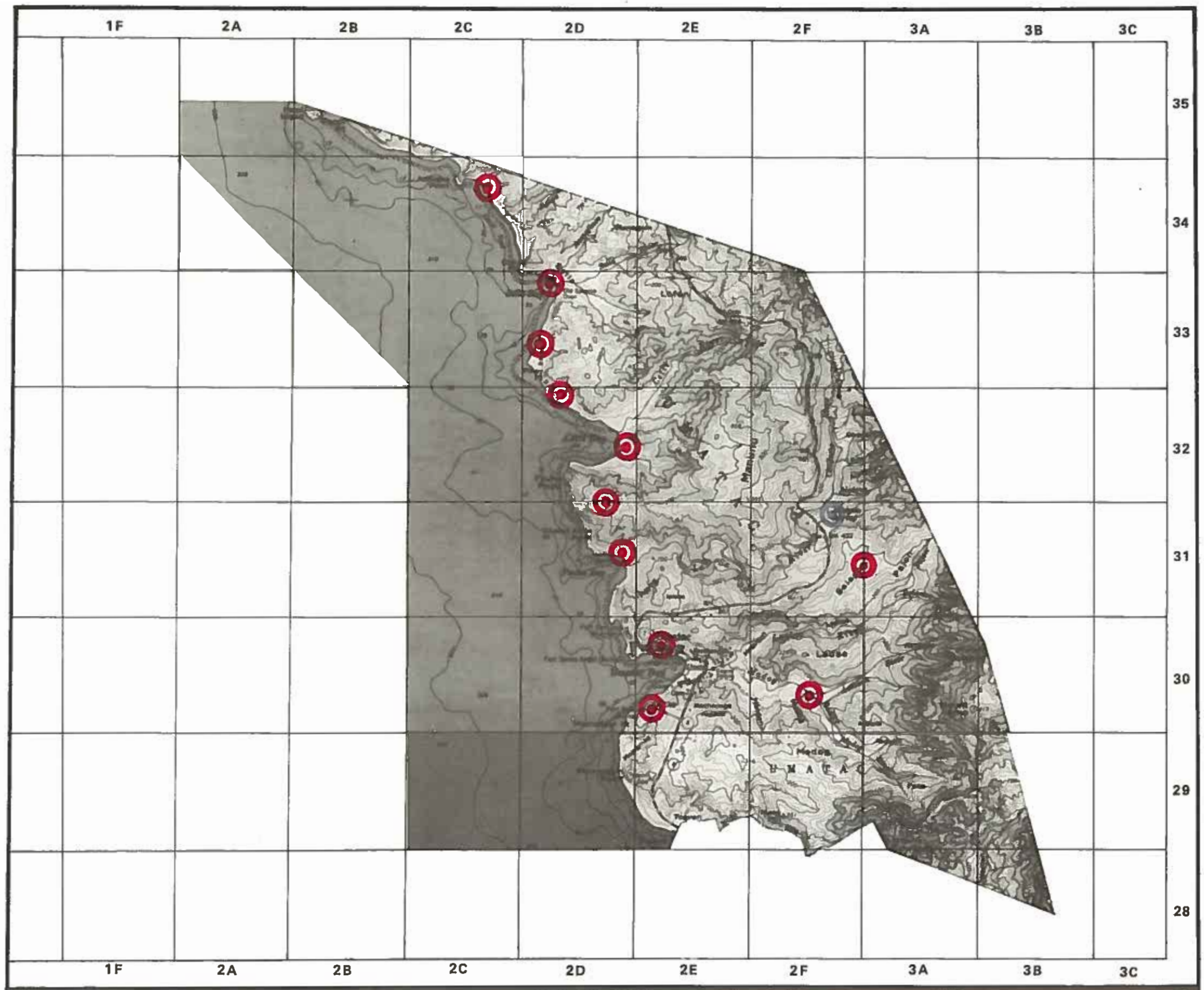
LEGEND

Flood Hazard Areas

Coral Reefs

UMATAC

MAP No. 3



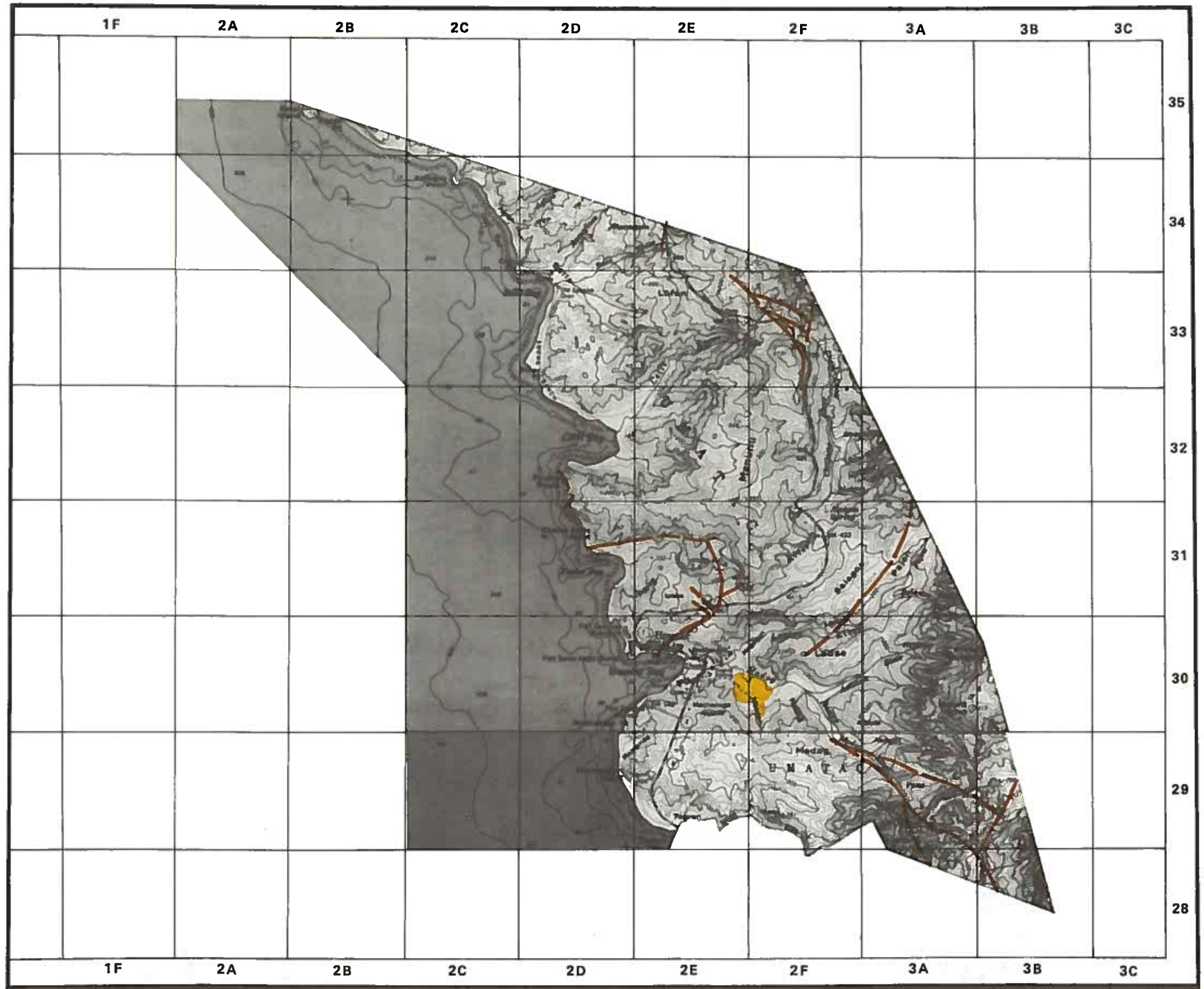
LEGEND

Wells

Historical /Prehistorical Sites

UMATAC

MAP No. 4



LEGEND

- Wetlands
- Seismic Fault Zones

UMATAC

MAP No. 5

The following documents were used as reference in the development of this document:

1. Guam Land-Use Plan

   A Plan for Department of Defense Real Estate on Guam - prepared by the Department of the Navy Pacific Division, Naval Facilities Engineering Command, September 1977.

2. Military Geology of Guam, Mariana Islands

   Part I = Description of Terrain and Environment.

   Part II = Engineering Aspects of Geology and Soils. Prepared by the Office of the Engineer Headquarters, United States Army Pacific with personnel of the United States Geological Survey, 1959.

3. Land-Use Plan Guam: 1977-2000

   A Land-Use Element of the Comprehensive Development Plan to establish a long-range (20-25 years) blueprint for development on Guam. Prepared by the Bureau of Planning, Government of Guam, 1977.

REDUCTION FACTORS

- Size of map space = 94.30 square inches
- Type "A" Map = Title block located on right side of map.
- Type "B" Map = Title block located on bottom of map.

1. CENTRAL GUAM (Agana, Agana Heights, Mongmong-Toto-Maite, Sinajana) = No reduction - Type "B" Map

2. ASAN = No Reduction - Type "B" Map

3. BARRIGADA = No Reduction - Type "B" Map

4. CHALAN PAGO-ORDOT = No Reduction - Type "B" Map

5. AGAT = 46% Reduction - Type "A" Map

94.30 ÷ 175.59	=	.54
100% - 54%	=	46%
175.59 x .46	=	80.77
175.59 - 80.77	=	94.82

6. DEDEDO = 77% Reduction - Type "A" Map

94.30 ÷ 411.75	=	.23
100% - 23%	=	77%
411.75 x .77	=	317.05
411.75 - 317.05	=	94.70

7. INARAJAN = 68% Reduction - Type "B" Map

94.30 ÷ 297	=	.32
100% - 32%	=	68%
297 x .68	=	201.96
297 - 201.96	=	95.04

8. MANGILAO = 63% Reduction - Type "B" Map

94.30 ÷ 255	=	.37
100% - 37%	=	63%
255 x .63	=	160.65
255 - 160.65	=	94.35

9. MERIZO = 43% Reduction - Type "B" Map

94.30 ÷ 165	=	.57
100% - 57%	=	43%
165 x .43	=	70.95
165 - 70.95	=	94.05

10. PITI = 75% Reduction - Type "B" Map

94.30 ÷ 380	=	.25
100% - 25%	=	75%
380 x .75	=	285
380 - 285	=	95

11. SANTA RITA = 74% Reduction - Type "B" Map

94.30 ÷ 365.63	=	.26
100% - 26%	=	74%
365.63 x .74	=	270.57
365.63 - 270.57	=	95.06

12. TALOFOFO = 63% Reduction - Type "B" Map

94.30 ÷ 254.38	=	.37
100% - 37%	=	63%
254.38 x .63	=	160.26
254.38 - 160.26	=	94.12

13. TAMUNING = 25% Reduction - Type "B" Map

94.30 ÷ 126.50	=	.75
100% - 75%	=	25%
126.50 x .25	=	31.63
126.50 - 31.63	=	94.87

14. UMATAC = 37% Reduction - Type "A" Map

94.30 ÷ 150	=	.63
100% - 63%	=	37%
150 x .37	=	55.5
150 - 55.5	=	94.5

15. YIGO = 85% Reduction - Type "A" Map

94.30 ÷ 617.5	=	.15
100% - 15%	=	85%
617.5 x .85	=	524.88
617.5 - 524.88	=	92.62

16. YONA = 61% Reduction - Type "B" Map

94.30 ÷ 239.25	=	.39
100% - 39%	=	61%
239.25 x .61	=	145.94
239.25 - 145.94	=	93.31

CENTRAL GUAM (AGANA, AGANA HGTS., SINAJANA, MONGMONG-TOTO-MAITE) - SIX MAPS

1. Slide and Erosion Zones
2. Coral Reefs, Wetlands
3. Aquifer Recharge Areas, Seashore Reserve
4. Flood Hazard Areas, Wells
5. Historical/Prehistorical Sites, Seismic Fault Zones
6. Air Installation Compatible Use Zone (AICUZ-NAS)

AGAT - FOUR MAPS

1. Watershed, Historical/Prehistorical, Seashore Reserve
2. Coral Reefs, Wetlands, Wells
3. Flood Hazard Areas, Seismic Fault Zones
4. Slide and Erosion Zones

ASAN - FOUR MAPS

1. Air Installation Compatible Use Zone (AICUZ-NAS)
2. Slide and Erosion Zones, Coral Reefs
3. Seashore Reserve, Historical/Prehistorical Sites, Wells
4. Seismic Fault Zones, Flood Hazard Areas

BARRIGADA - FOUR MAPS

1. Electromagnetic Radiation (EMR) Zones
2. Slide and Erosion Zones, Explosive Safety Quantity Distance (ESQD) Circles
3. Aquifer Recharge Areas, Historical/Prehistorical Sites, Wells
4. Air Installation Compatible Use Zone (AICUZ-NAS), Flood Hazard Areas, Limestone Forest

CHALAN PAGO-ORDOT - FOUR MAPS

1. Slide and Erosion Zones
2. Flood Hazard Areas, Air Installation Compatible Use Zone (AICUZ-NAS)
3. Aquifer Recharge Areas, Seashore Reserve
4. Seismic Fault Zones, Wetlands, Coral Reefs, Wells

DEDEDO - SEVEN MAPS

1. Coral Reef, Seashore Reserve, Flood Hazard Areas
2. Historical/Prehistorical Sites, Aquifer Recharge Areas
3. Air Installation Compatible Use Zone (AICUZ-NAS), Radio Frequency Interference (RFI) Zones
4. Air Installation Compatible Use Zone (AICUZ-AAFB)
5. Limestone Forest
6. Wells, Explosives Safety Quantity Distance (ESQD) Circles, Seismic Fault Zones, Marine Pristine Ecological Communities
7. Slide and Erosion Zones

INARAJAN - FIVE MAPS

1. Slide and Erosion Zones
2. Wetlands, Limestone Forest
3. Watershed, Seashore Reserve, Marine Pristine Ecological Communities
4. Historical/Prehistorical Sites, Seismic Fault Zones
5. Flood Hazard Areas, Wells, Coral Reefs

MANGILAO - FOUR MAPS

1. Slide and Erosion Zones, Wells, Flood Hazard Areas, Air Installation Compatible Use Zone (AICUZ-NAS)
2. Historical/Prehistorical Sites, Aquifer Recharge Areas, Seashore Reserve
3. Limestone Forest
4. Electromagnetic Radiation (EMR) Zones, Coral Reefs

MERIZO - FOUR MAPS

1. Marine Pristine Ecological Communities, Historical/Prehistorical Sites, Watershed, Wetlands
2. Slide and Erosion Zones
3. Wells, Flood Hazard Areas, Coral Reefs
4. Seismic Fault Zones, Seashore Reserve

PITI - FIVE MAPS

1. Seashore Reserve, Explosive Safety Quantity Distance (ESQD) Circles
2. Marine Pristine Ecological Communities, Seismic Fault Zones, Wetlands
3. Flood Hazard Areas, Air Installation Compatible Use Zones (AICUZ-NAS)
4. Coral Reefs, Wells, Historical/Prehistorical Sites
5. Slide and Erosion Zones

SANTA RITA - FOUR MAPS

1. Explosive Safety Quantity Distance (ESQD) Circles
2. Watershed, Seismic Fault Zones, Wetlands
3. Flood Hazard Areas, Limestone Forest
4. Slide and Erosion Zones

TALOFOFO - FOUR MAPS

1. Slide and Erosion Zones
2. Watershed, Wetlands, Limestone Forest
3. Explosive Safety Quantity Distance (ESQD) Circles, Historical/Prehistorical Sites, Seismic Fault Zones, Seashore Reserve
4. Wells, Coral Reefs, Flood Hazard Areas

TAMUNING - FOUR MAPS

1. Electromagnetic Radiation (EMR) Zones, Wells, Historical/Prehistorical, Coral Reefs
2. Slide and Erosion Zones
3. Seashore Reserve, Air Installation Compatible Use Zone (AICUZ-NAS)
4. Limestone Forest, Flood Hazard Areas, Seismic Fault Zones

YONA - FOUR MAPS

1. Seismic Fault Zones, Explosive Safety Quantity Distance (ESQD) Circles, Wetlands, Limestone Forest
2. Flood Hazard Areas, Historical/Prehistorical, Wells
3. Watershed, Seashore Reserve, Aquifer Recharge Areas
4. Slide and Erosion Zones

YIGO - SEVEN MAPS

1. Air Installation Compatible Use Zone (AICUZ-AAFB)
2. Air Installation Compatible Use Zone (AICUZ-NAS), Coral Reefs, Radio Frequency Interference (RFI) Zones
3. Wells, Historical/Prehistorical Sites, Marine Pristine Ecological Communities
4. Aquifer Recharge Areas, Seismic Fault Zones, Explosives Safety Quantity Distance (ESQD) Circles
5. Flood Hazard Areas, Seashore Reserve
6. Limestone Forest
7. Slide and Erosion Zones

UMATAC - FIVE MAPS

1. Slide and Erosion Zones
2. Watershed, Marine Pristine Ecological Communities, Seashore Reserve
3. Flood Hazard Areas, Coral Reefs
4. Wells, Historical /Prehistorical Sites
5. Wetlands, Seismic Fault Zones