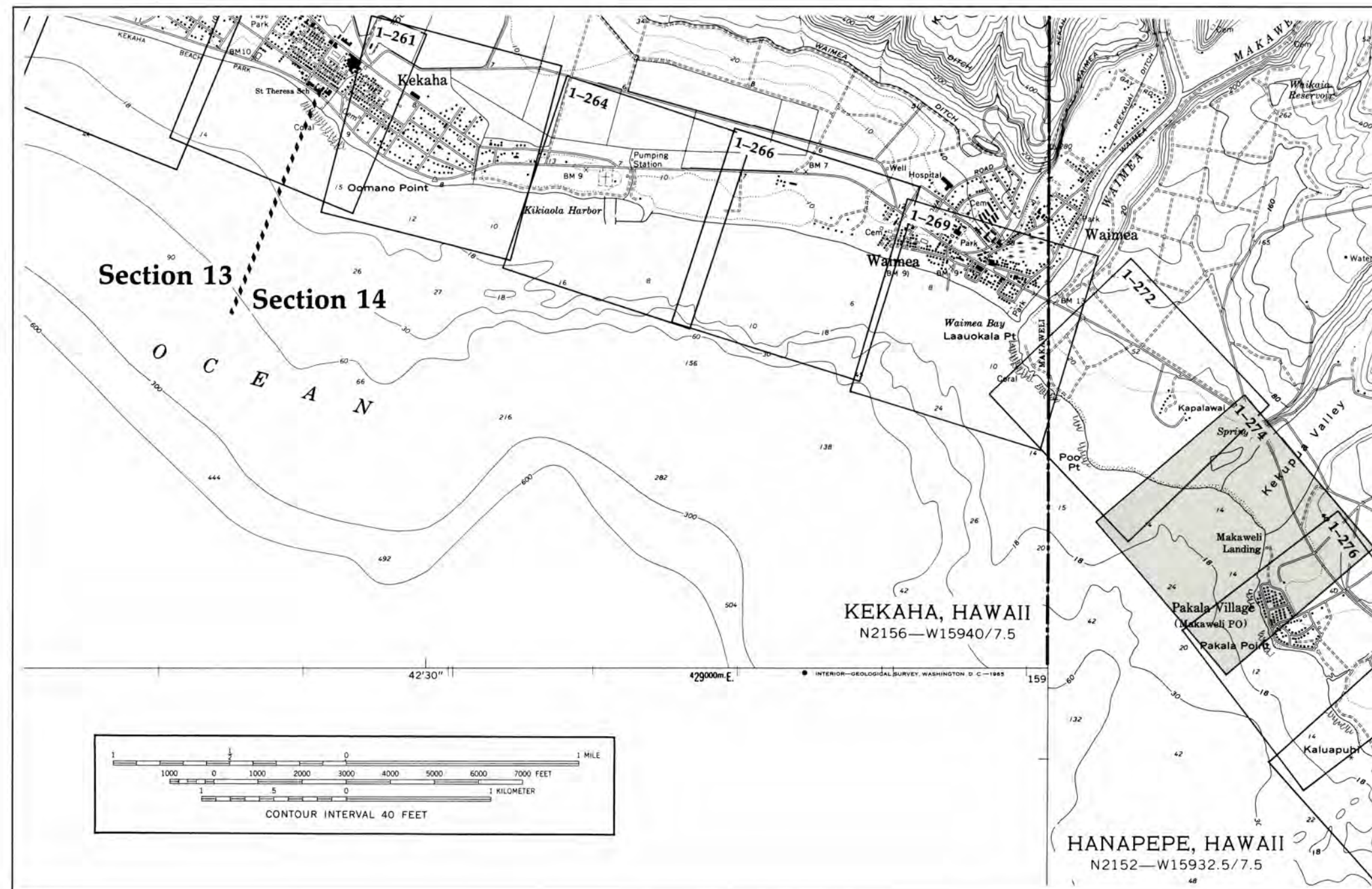




- rcg - Consolidated reef with well defined groove-and-spur system.
- rsg - Sand predominates in the depressions of conspicuous groove-and-spur system.
- rcs - Mostly consolidated reef with some (25-50%) sediment bottom.

SHORELINE

- ba - Volcanic rock shorelines.
 - ba1 - Low basalt outcrops/shoreline less than 1 meter high, including ramps.
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- bc - Concrete/cement masonry seawalls and shorelines.
- lm - Limestone rock shorelines.
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 - br - Beachrock (a specialized category normally formed at the shoreline).
 - tp - Tidepools, where they are a prominent feature at the shoreline.

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Special types.

- co - Areas of greater than 50% live coral cover (spot checked for verification).
- br - Beachrock (offshore).

r - Rock.

- rs - Mostly sand bottom but with some rocky features; rock bottom covered by a veneer of sand.
- rbs - Hard bottom, but with conspicuous sediment up to 50% coverage.
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- rbb - Seaward extensions of talus boulder beaches, with definable rocks or boulders.

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rc - Reef complex.

- rc - Shallow reef flats or structural reefs, normally (but not exclusively) in water depths less than 2 meters.
- rcl - Consolidated limestone; lacking sediment (also a catch-all for moderate to high relief areas).
- rcp - Consolidated smooth limestone pavement.

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rs	less than 50	more than 50
rbs, rcs, rsg	25 - 50	50 - 75
r, rc, co	less than 25	more than 75
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-  Gill-netting.
-  Throw-netting.
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-  Torching.
-  Trapping.
-  Lobster.
-  Sea urchin (wana).
-  Octopus (he'e).
-  Surround netting.
-  Aquarium fish collecting.
-  Seaweed (limu).
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-  Crabbing (kona, 'a'ama, swimming crab).
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-  Trolling, bottom-fishing.
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USES NOT RELATED TO BIOTA

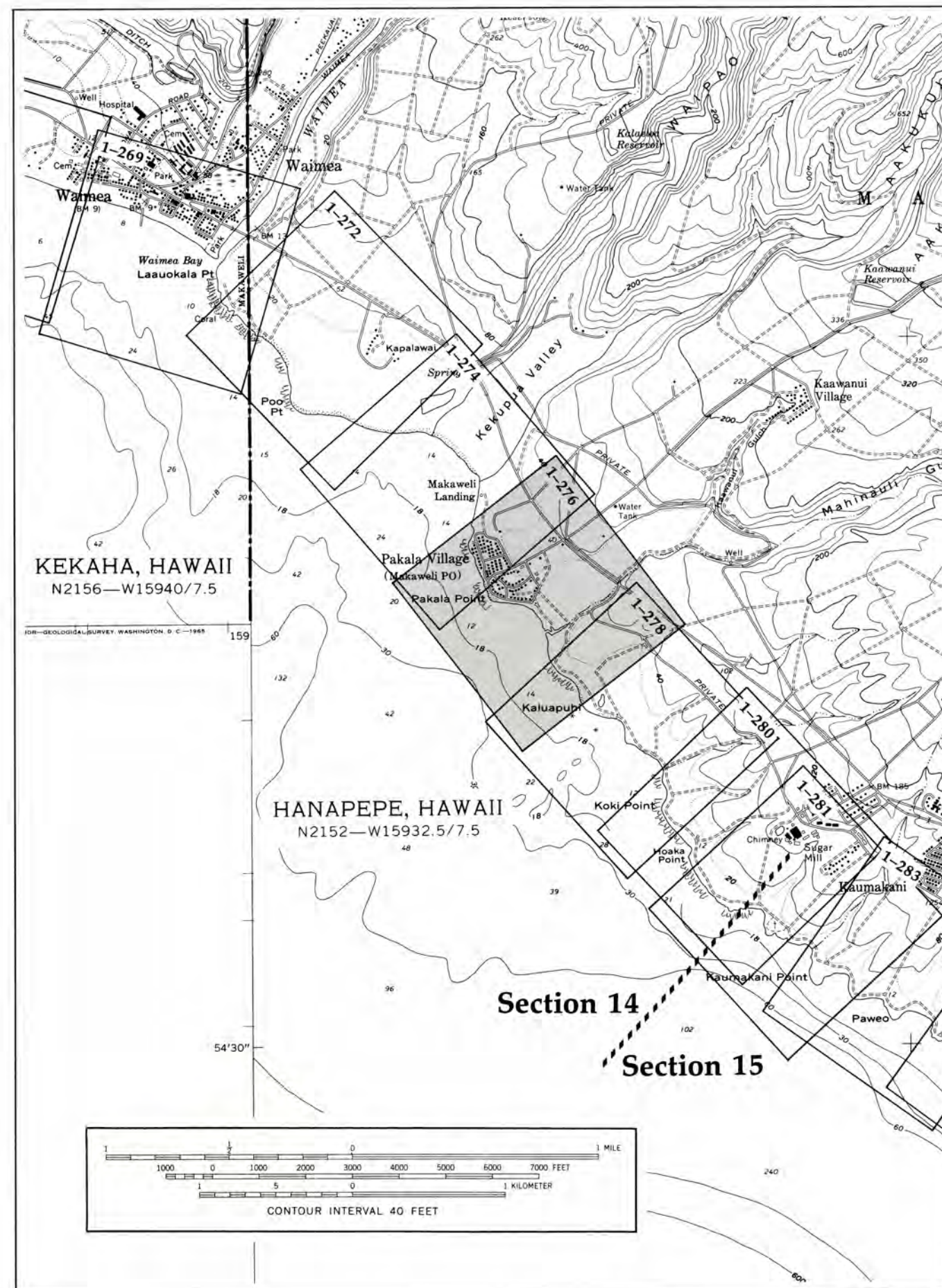
- | | |
|---|--|
|  | Board surfing. |
|  | Body surfing. |
|  | Canoe paddling. |
|  | Sailing. |
|  | Aquatic recreation (smallcraft sailing, wind-surfing). |
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|  | Anchorage. |

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-  Shoreline (above water observations).
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-  Seaweed (limu).
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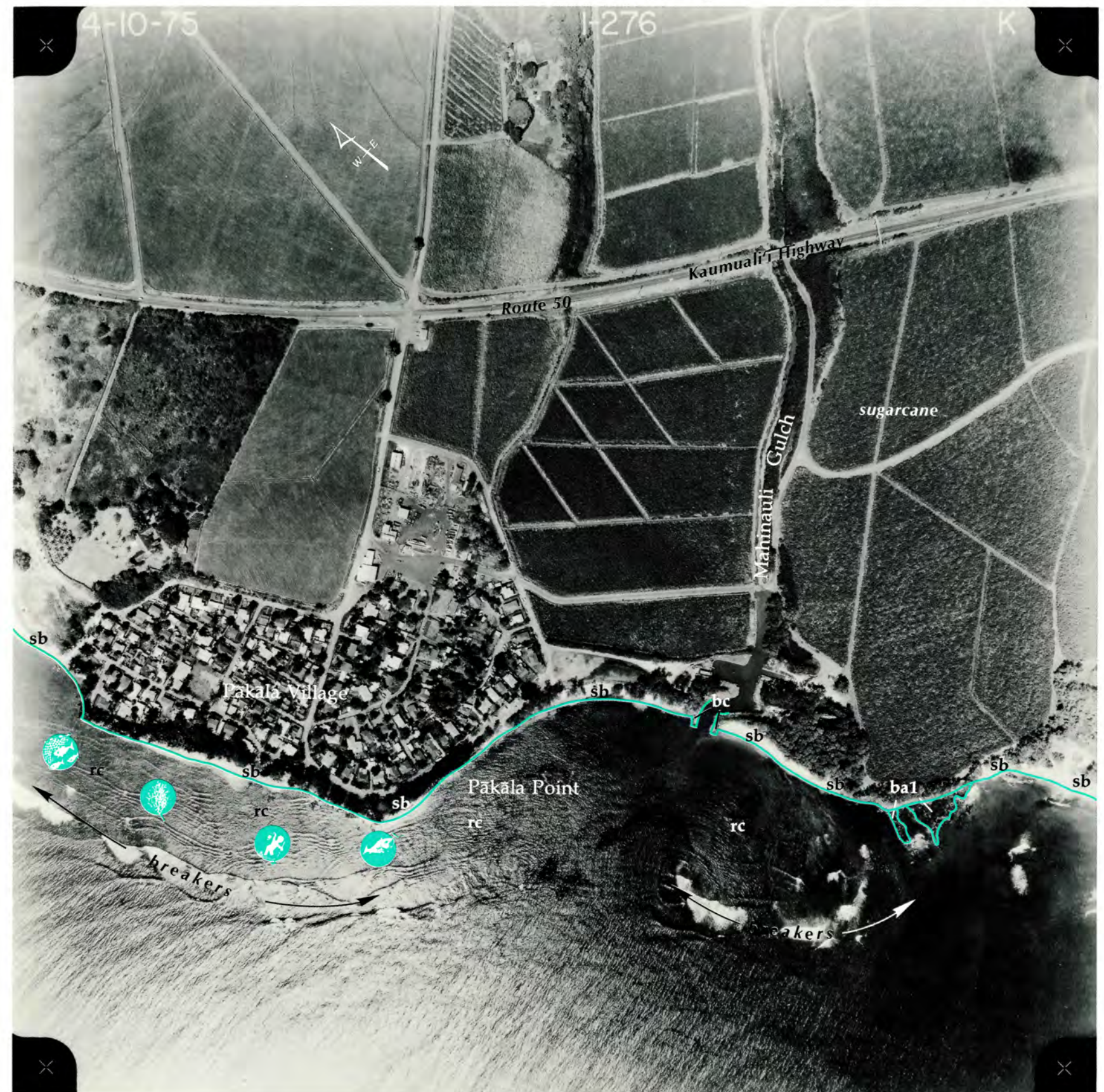
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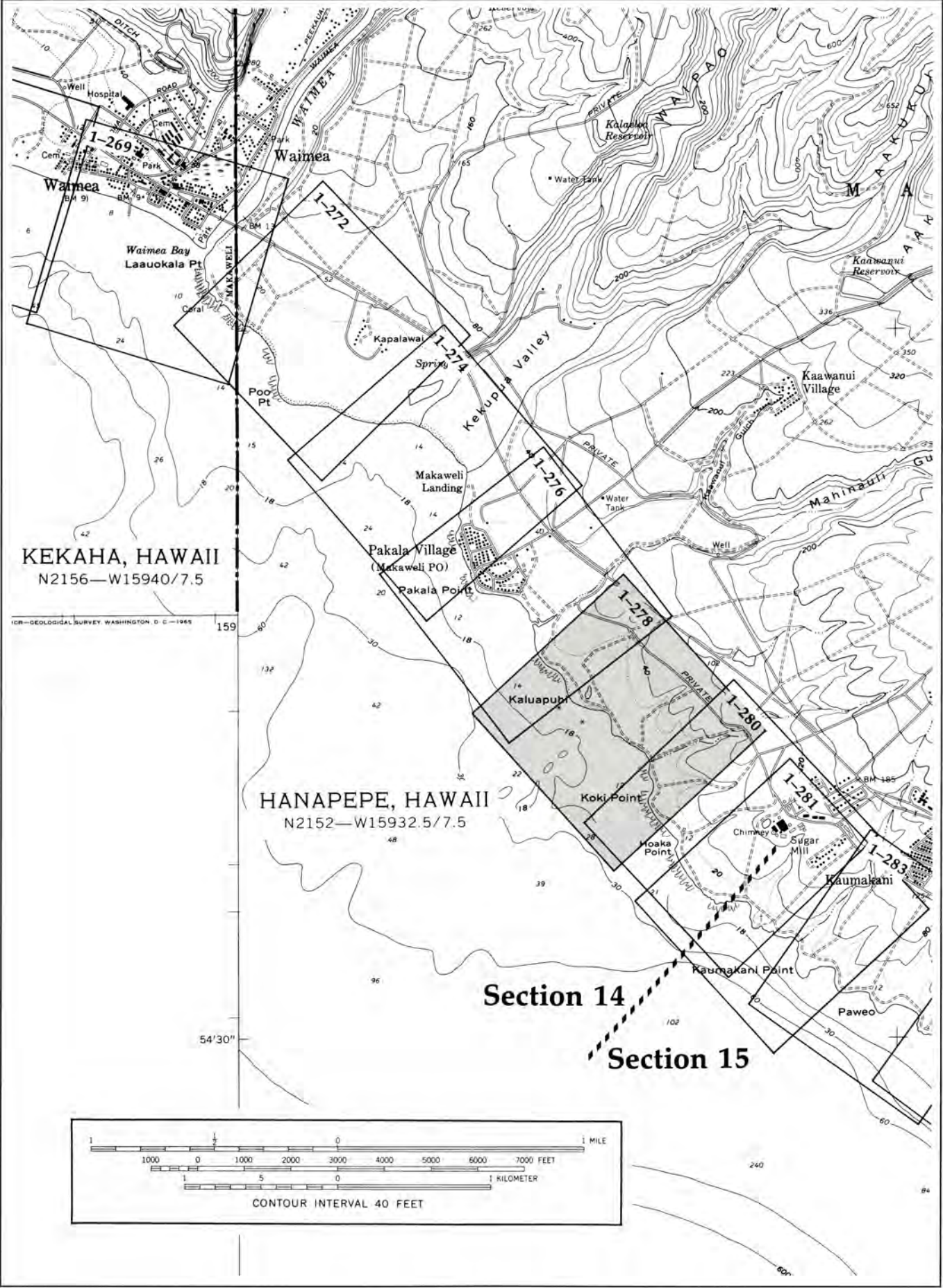
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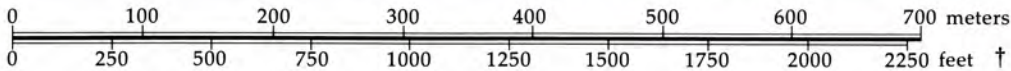
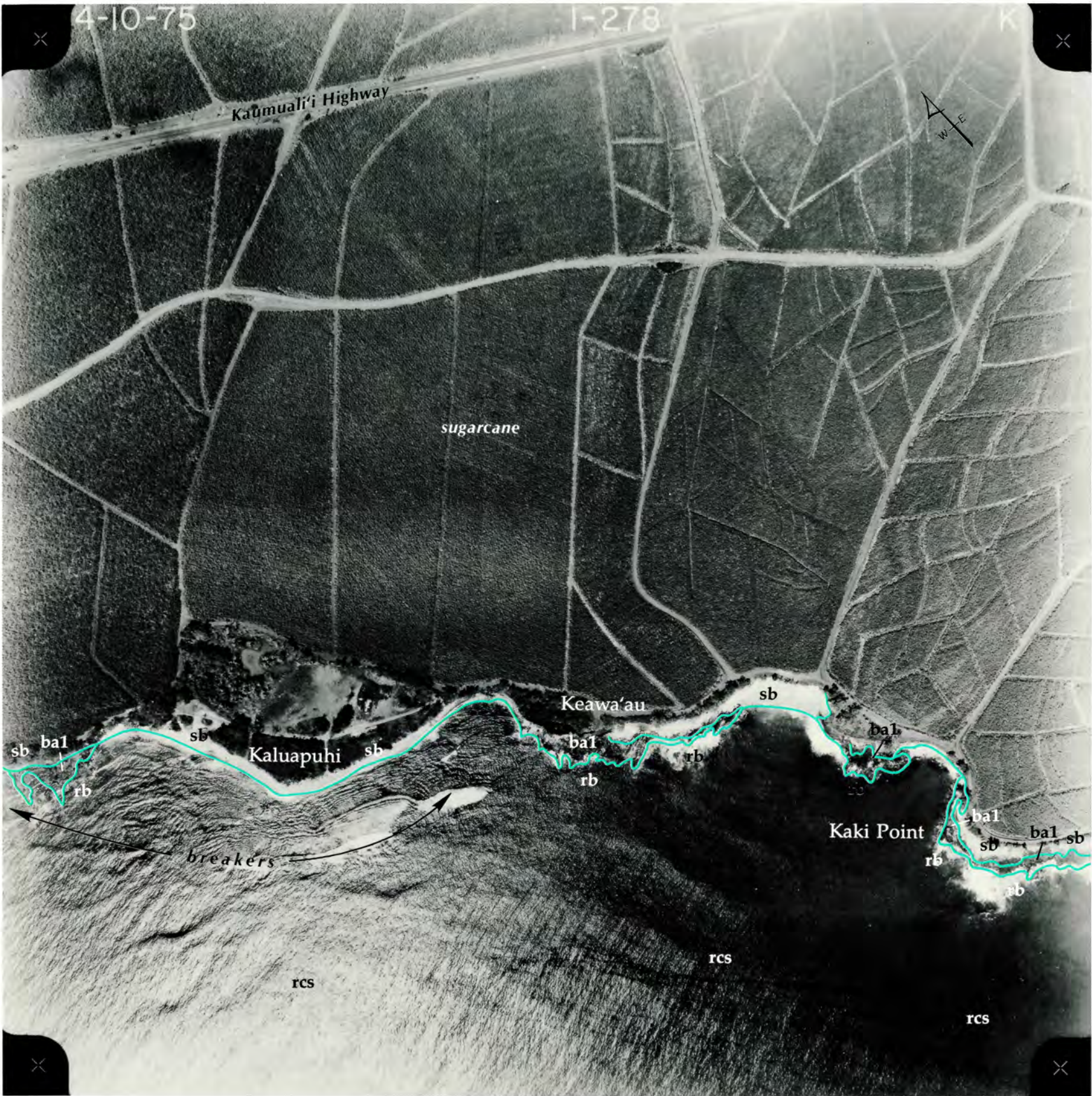
USES NOT RELATED TO BIOTA

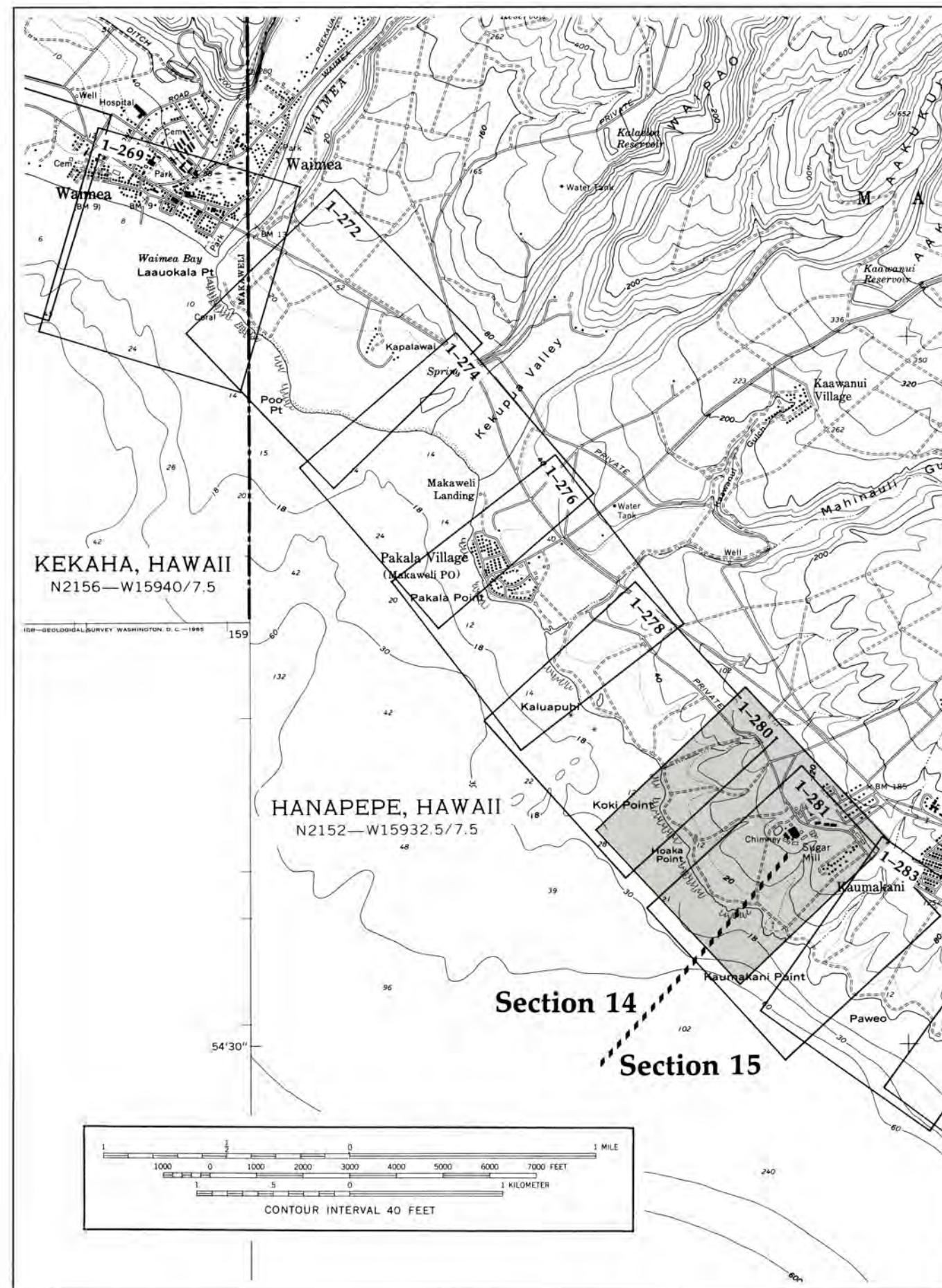
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USES NOT RELATED TO BIOTA

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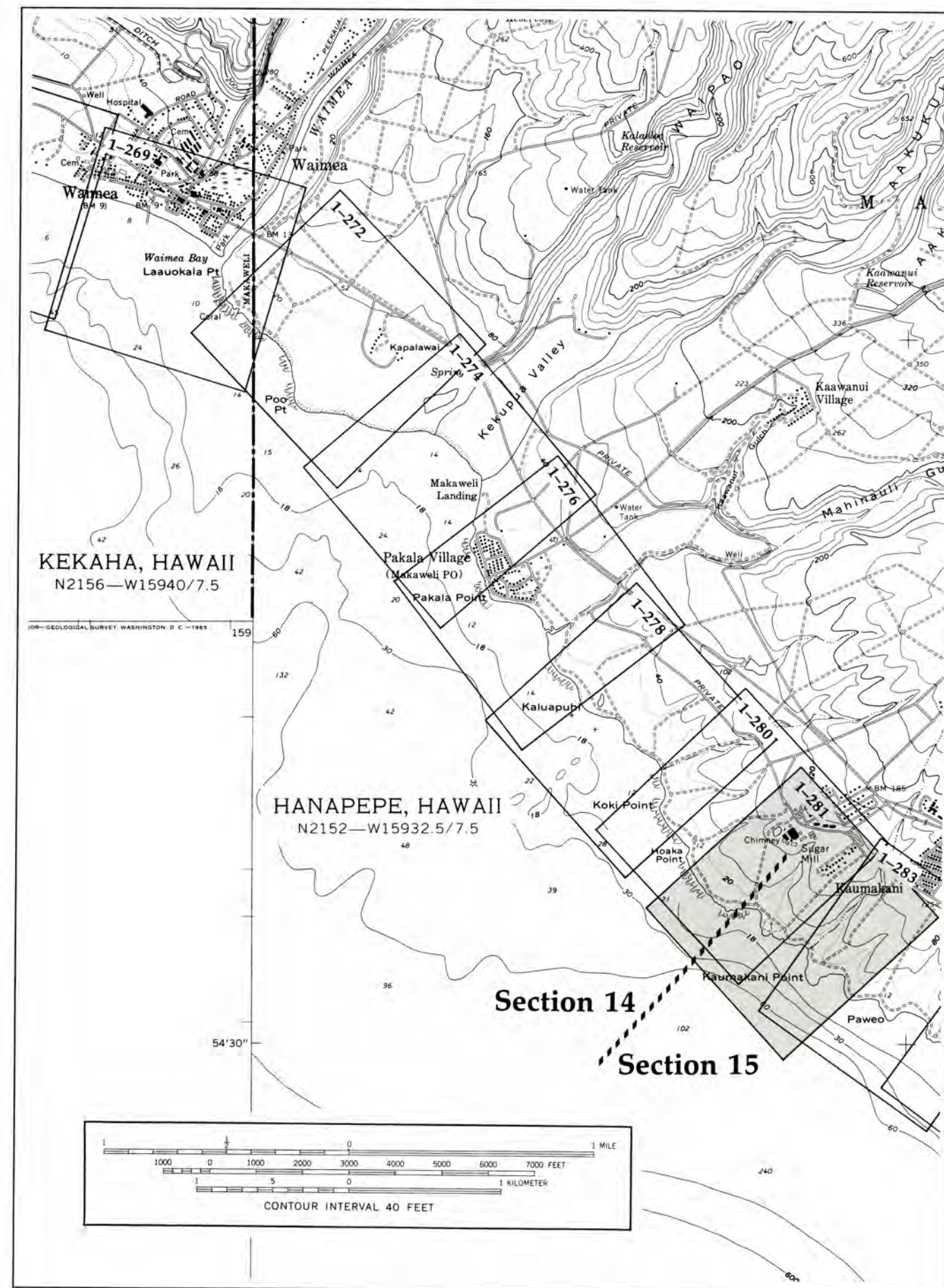
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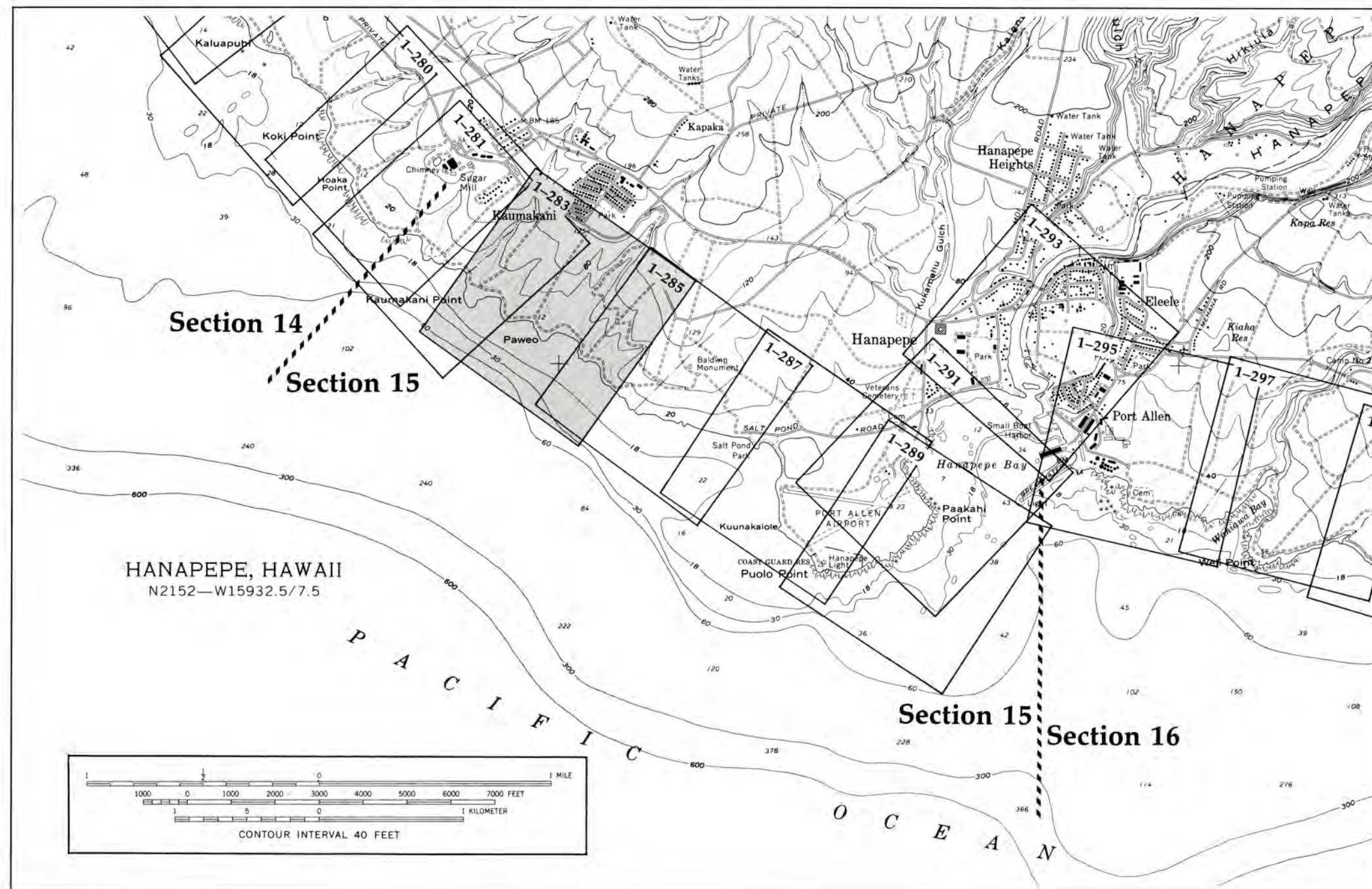
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Uses and Activities Along and Off the Coast

USES RELATED TO NEARSHORE BIOTA

-  Pole-and-line fishing.
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-  Throw-netting.
-  Spearfishing.
-  Torching.
-  Trapping.
-  Lobster.
-  Sea urchin (wana).
-  Octopus (he'e).
-  Surround netting.
-  Aquarium fish collecting.
-  Seaweed (limu).
-  Sport-diving.
-  Shell collecting.

SHORELINE AND DEEP-WATER FISHING ACTIVITIES

-  Crabbing (kona, 'a'ama, swimming crab).
-  Limpet (opihi).
-  Trolling, bottom-fishing.
-  Specialized fisheries (type indicated).

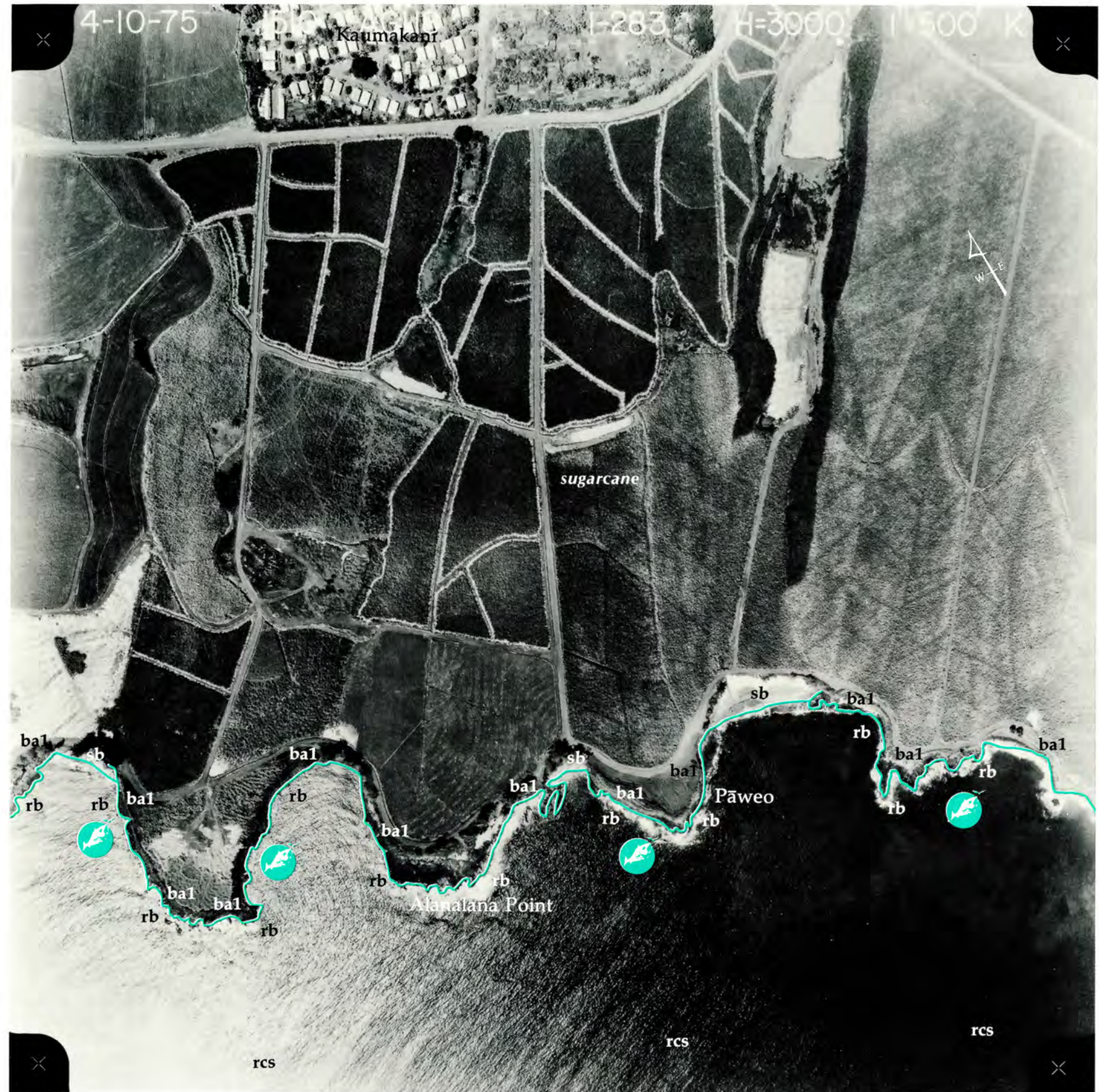
USES NOT RELATED TO BIOTA

-  Board surfing.
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-  Canoe paddling.
-  Sailing.
-  Aquatic recreation (smallcraft sailing, wind-surfing).
-  Excursion boat.
-  Anchorage.

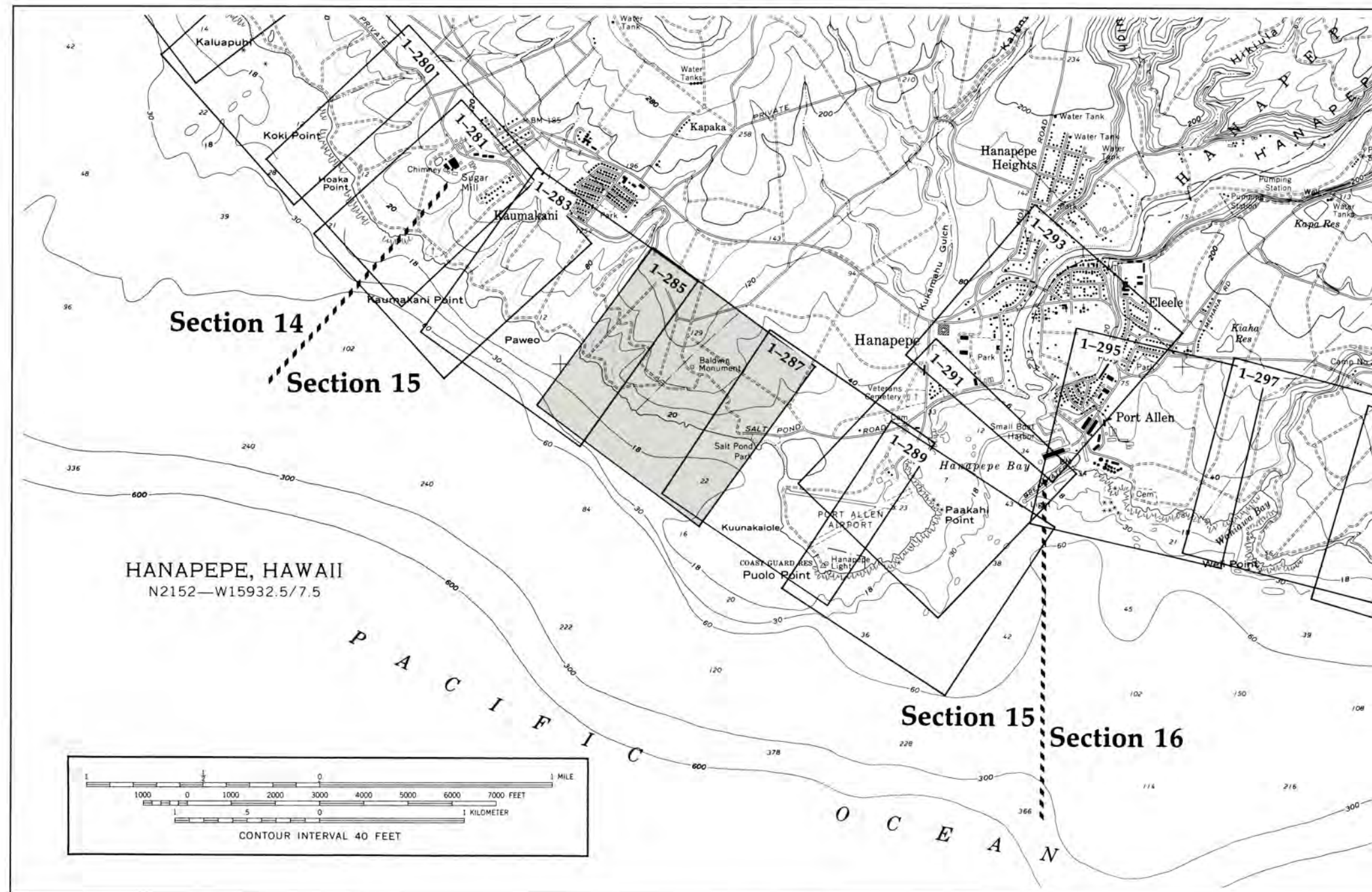
Study Sites

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0 100 200 300 400 500 600 700 meters
0 250 500 750 1000 1250 1500 1750 2000 2250 feet †



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- 
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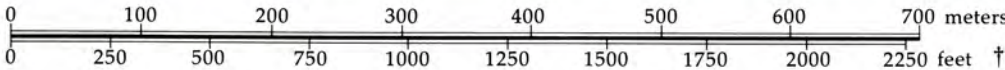
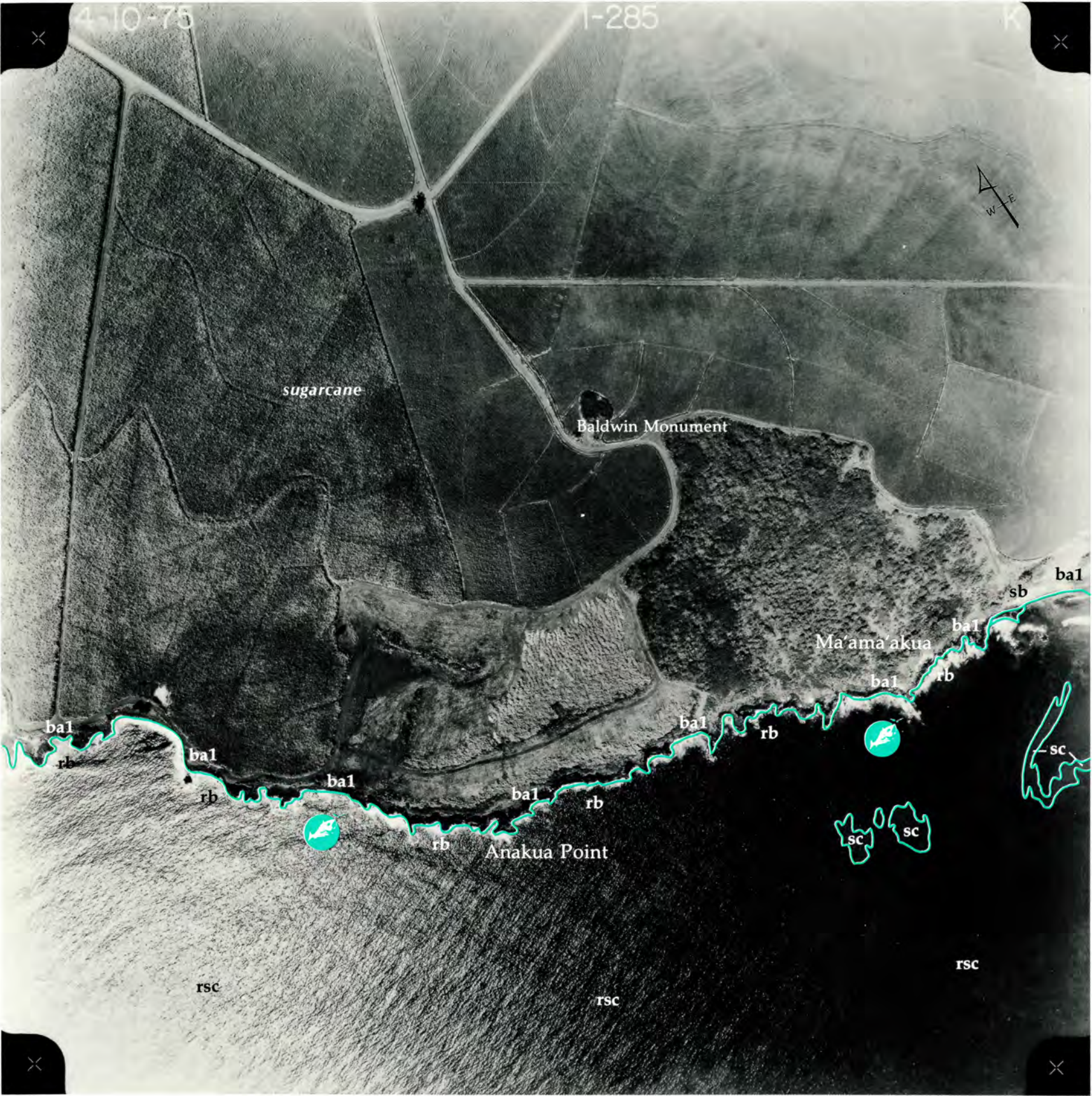
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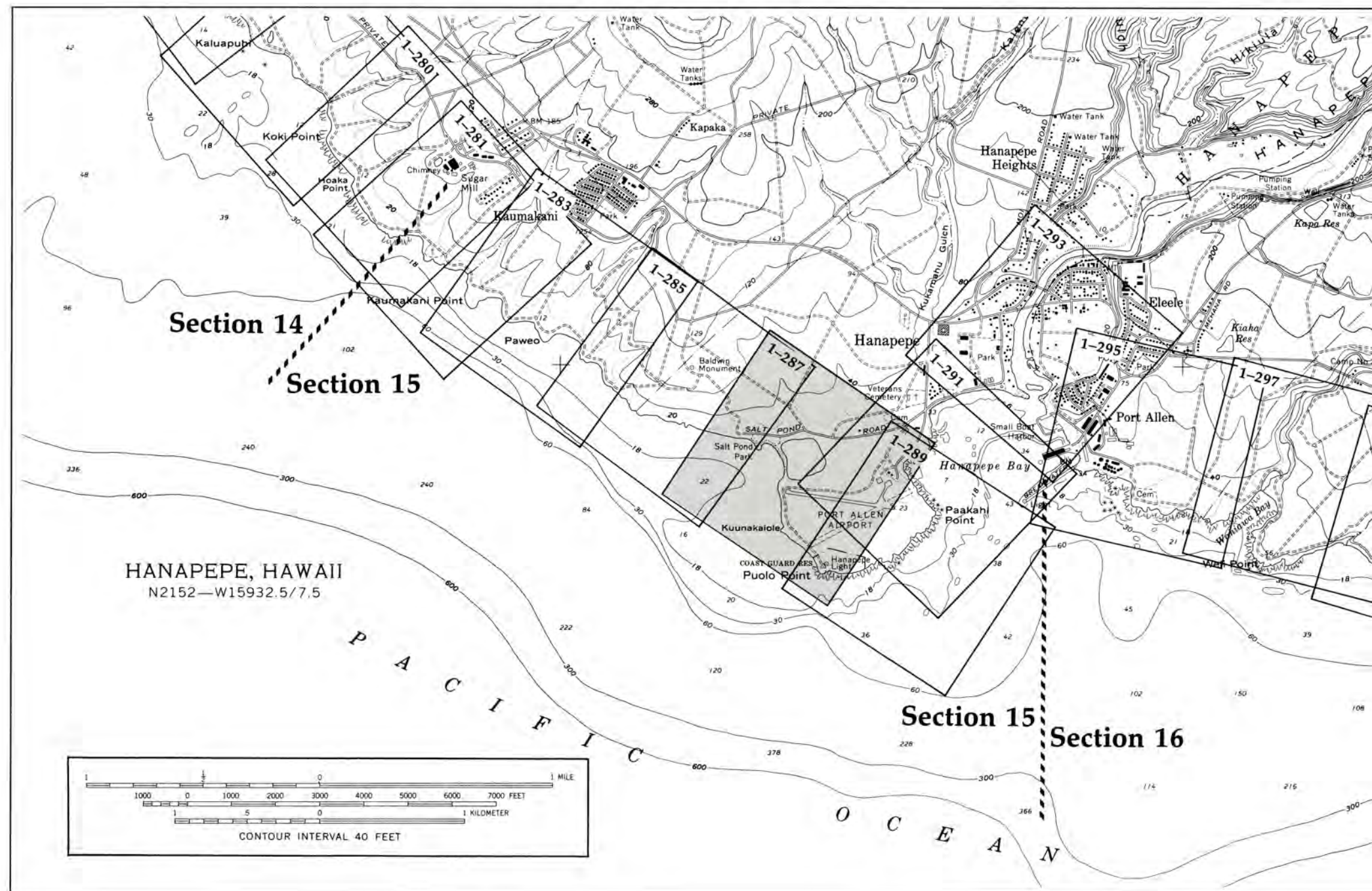
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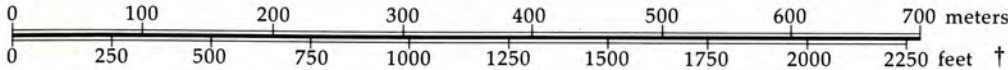
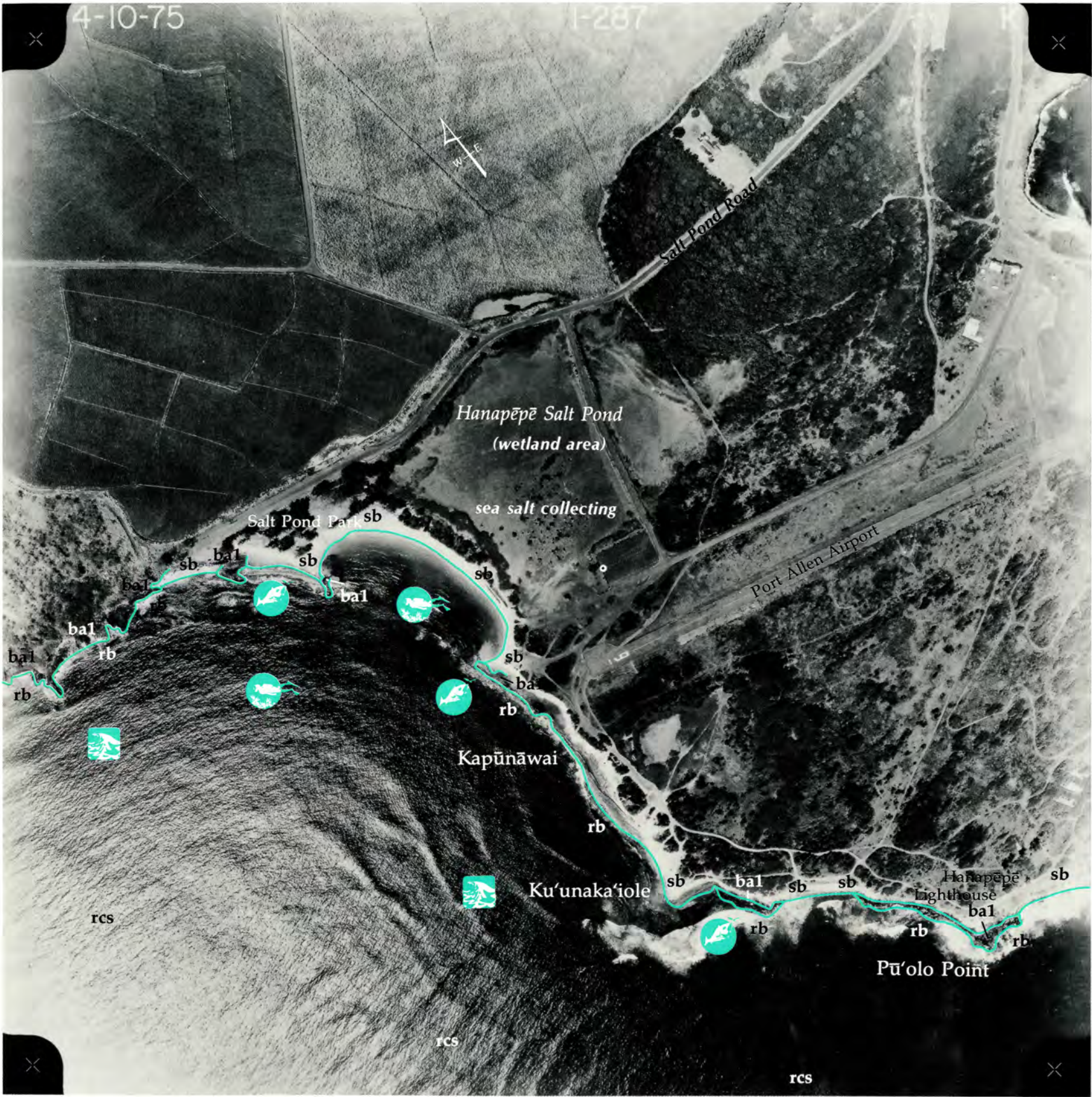
USES NOT RELATED TO BIOTA

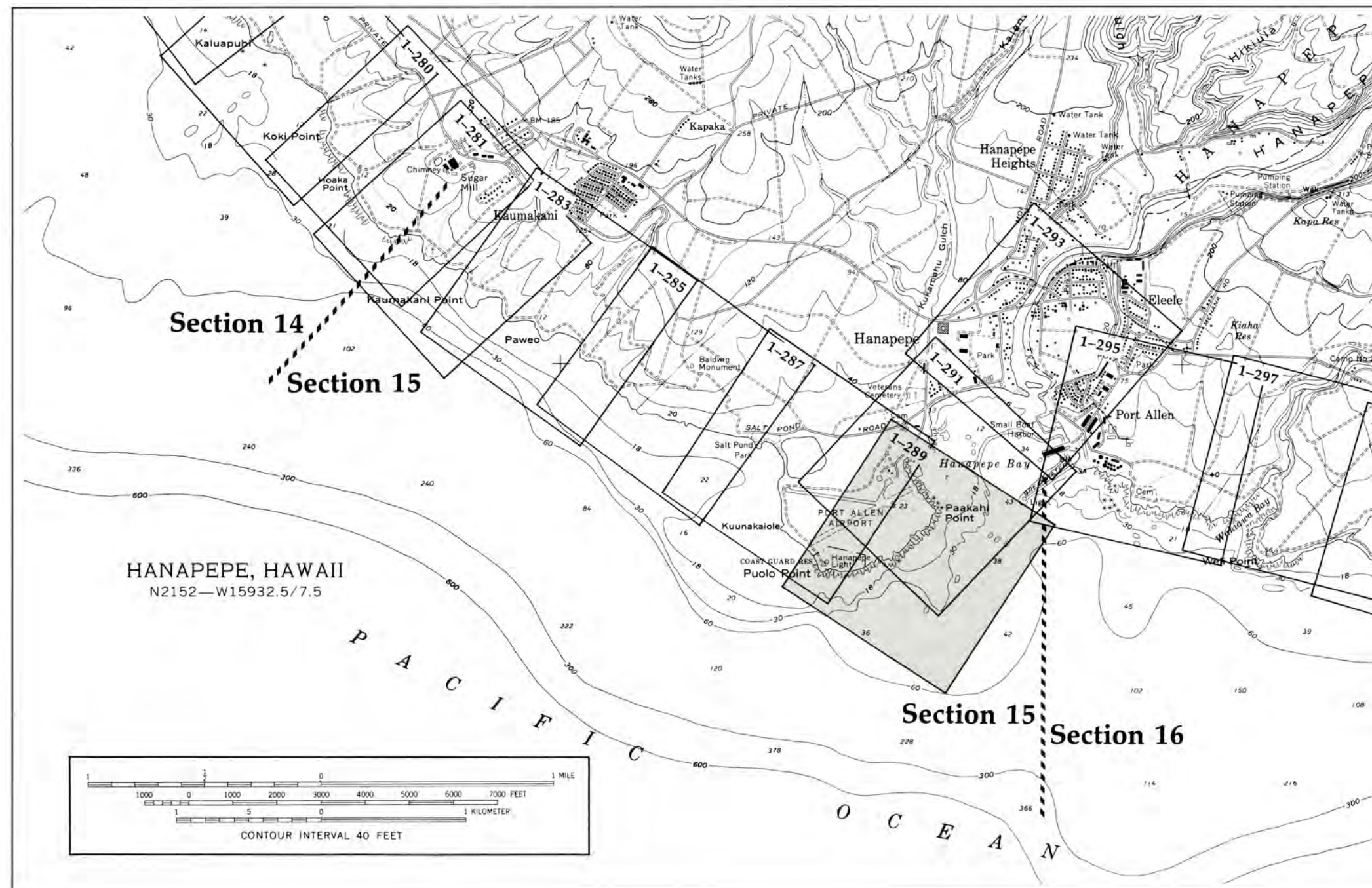
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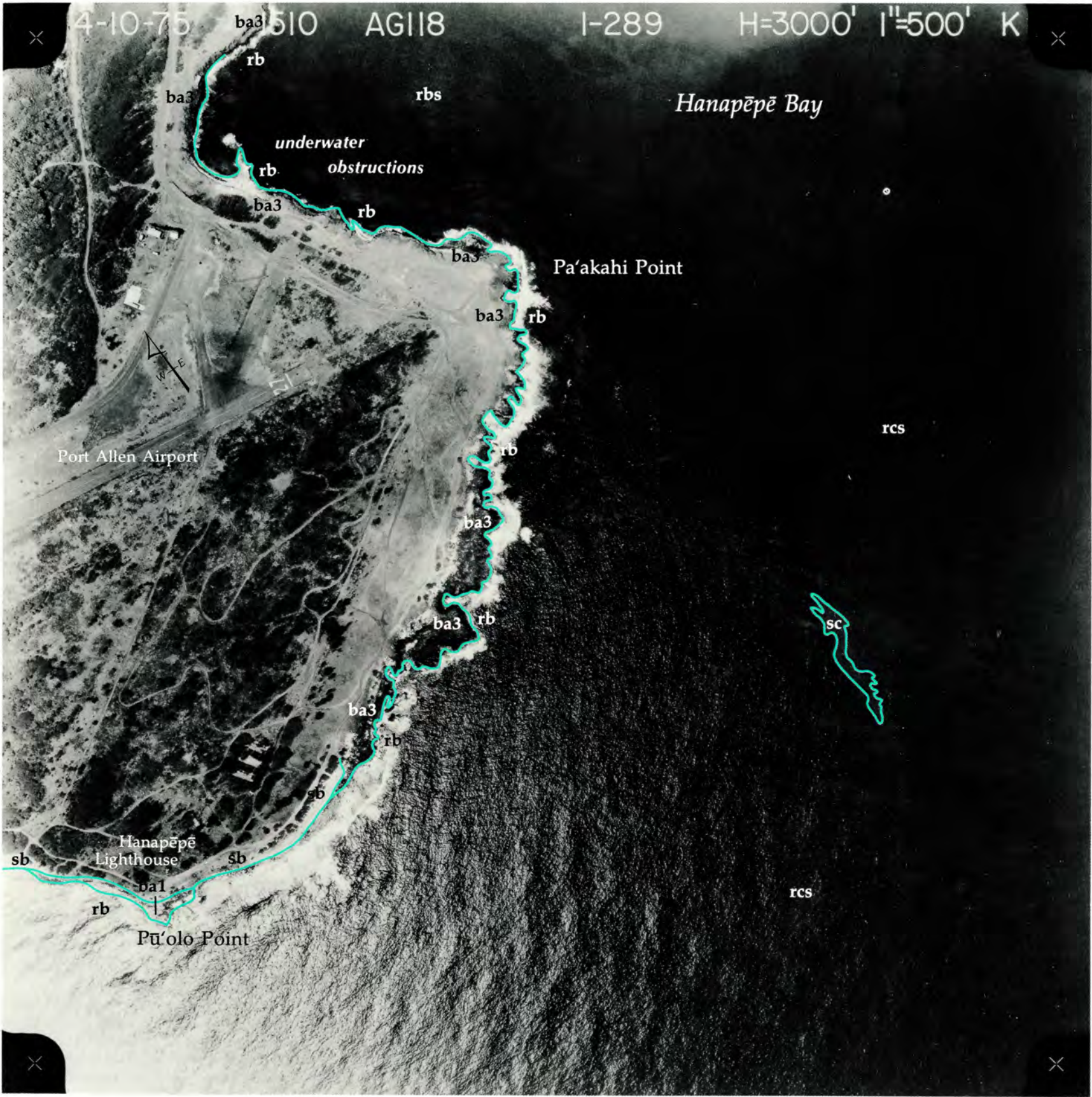
Uses and Activities Along and Off the Coast

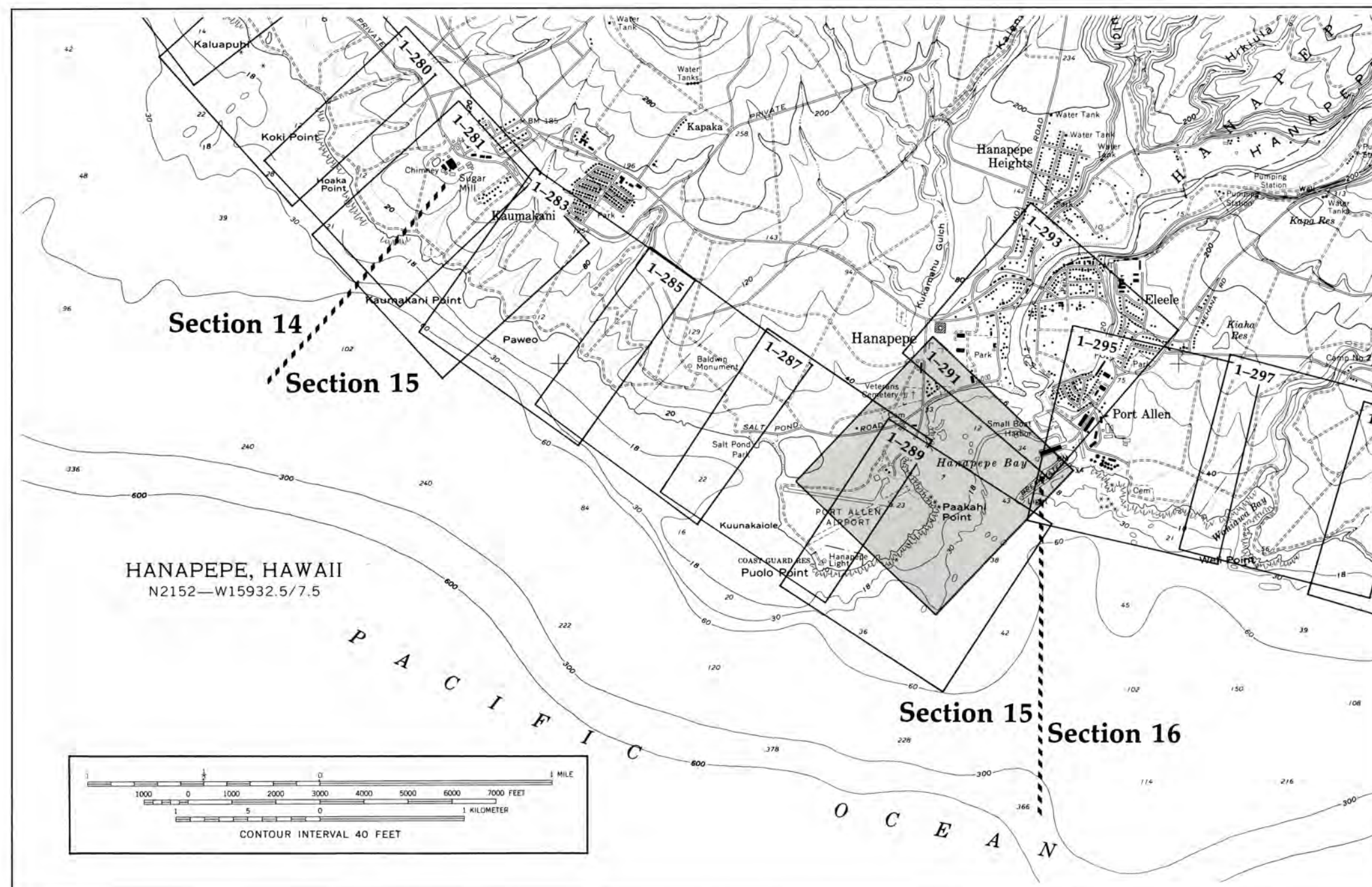
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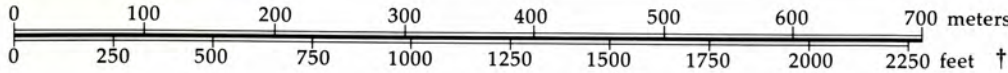
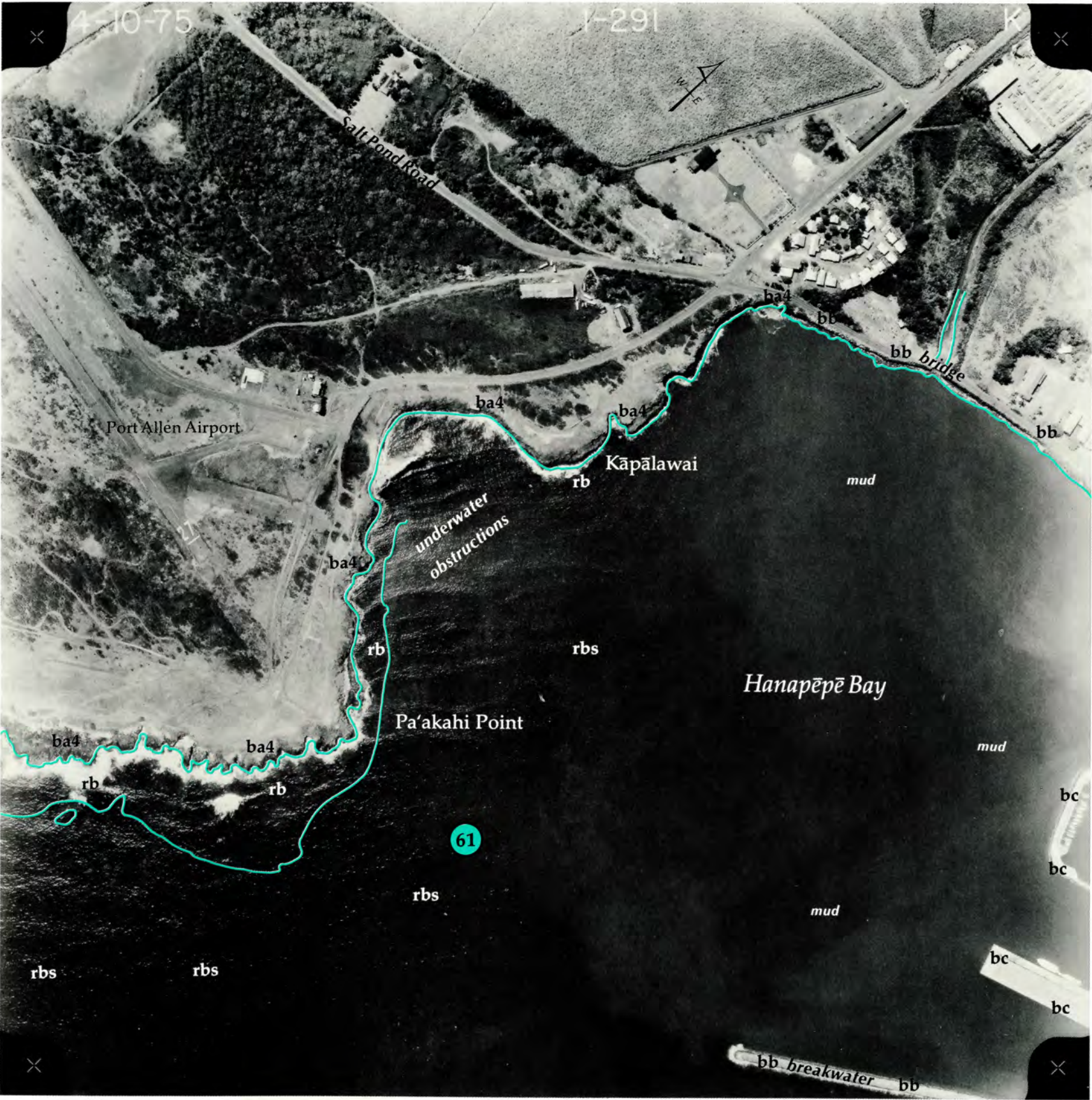
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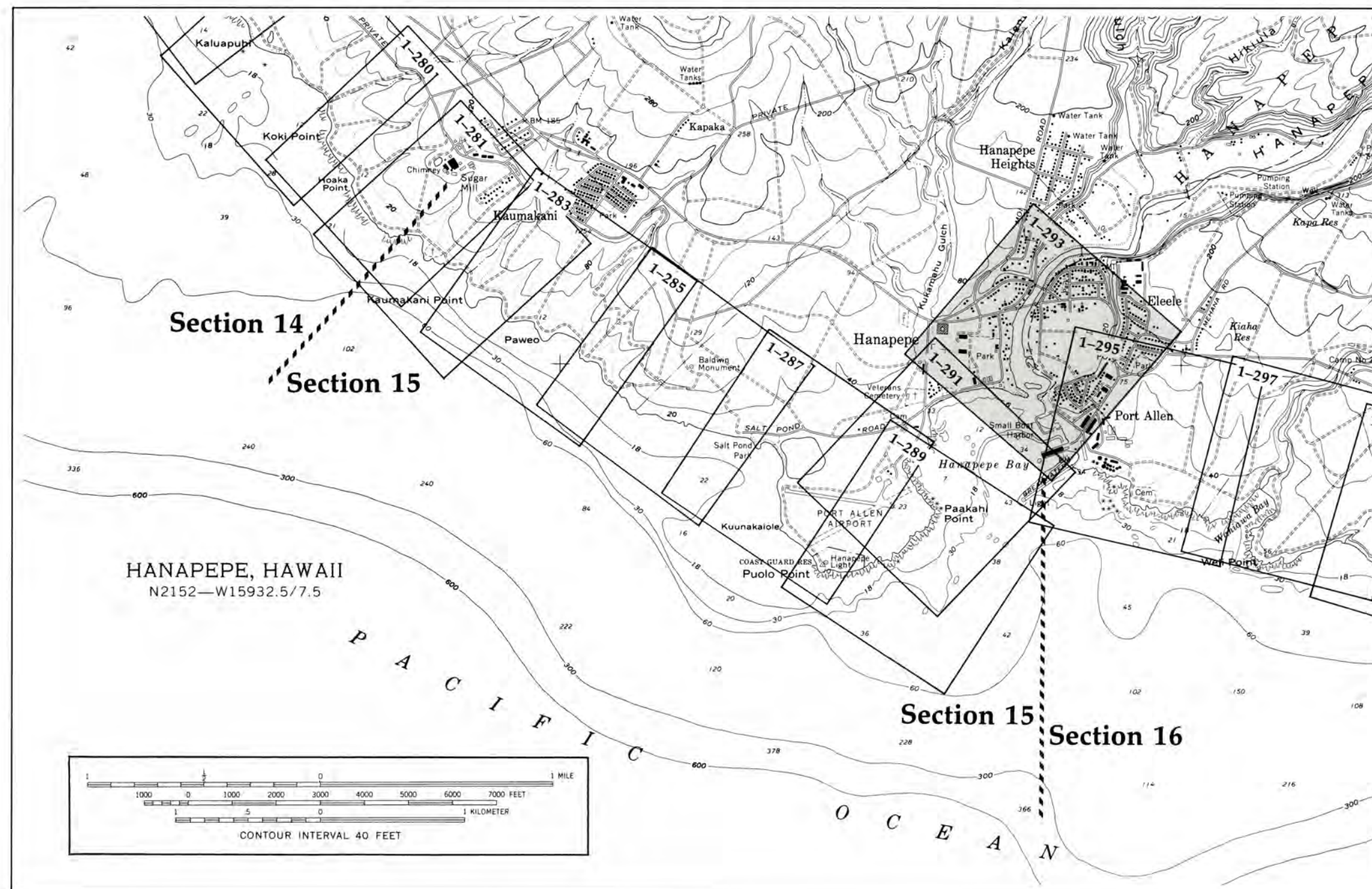
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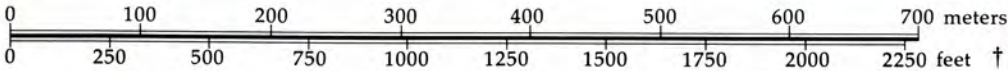
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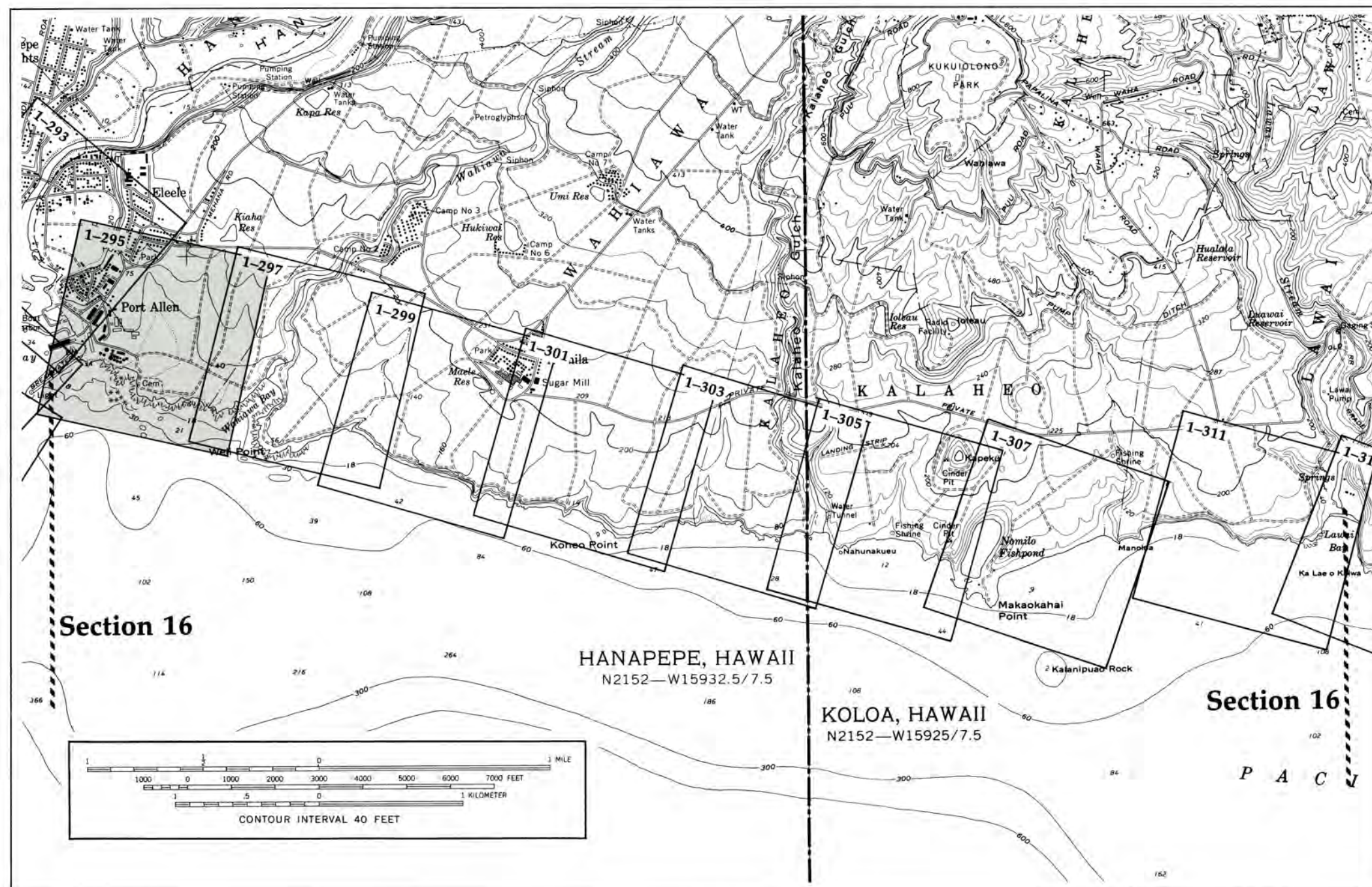
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- rbs - Hard bottom, but with conspicuous sediment up to 50% coverage.
- rb - "Other" hard bottom types (a catch-all for dark areas, not reefal or sedimentary; normally basalt with a thin veneer of marine life).
- rbb - Seaward extensions of talus boulder beaches, with definable rocks or boulders.

- rbc - Seaward extensions of cobble beaches (rocks smaller than boulders).

rc - Reef complex.

- rc - Shallow reef flats or structural reefs, normally (but not exclusively) in water depths less than 2 meters.
- rcl - Consolidated limestone; lacking sediment (also a catch-all for moderate to high relief areas).
- rcp - Consolidated smooth limestone pavement.

Offshore Bottom Type Summary

Categories	% Sand	% Rock
rbc, br, s, sb, sc, sd	100	—
rs	less than 50	more than 50
rbs, rcs, rsg	25 - 50	50 - 75
r, rc, co	less than 25	more than 75
rbb, rb, rcl, rcp, rcg	—	100

Uses and Activities Along and Off the Coast

USES RELATED TO NEARSHORE BIOTA

Pole-and-line fishing.
 Gill-netting.
 Throw-netting.
 Spearfishing.
 Torching.
 Trapping.
 Lobster.
 Sea urchin (wana).
 Octopus (he'e).
 Surround netting.
 Aquarium fish collecting.
 Seaweed (limu).
 Sport-diving.
 Shell collecting.

SHORELINE AND DEEP-WATER FISHING ACTIVITIES

Crabbing (kona, 'a'ama, swimming crab).
 Limpet (opihi).
 Trolling, bottom-fishing.
 Specialized fisheries (type indicated).

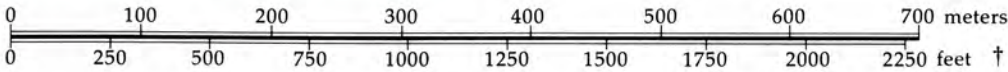
USES NOT RELATED TO BIOTA

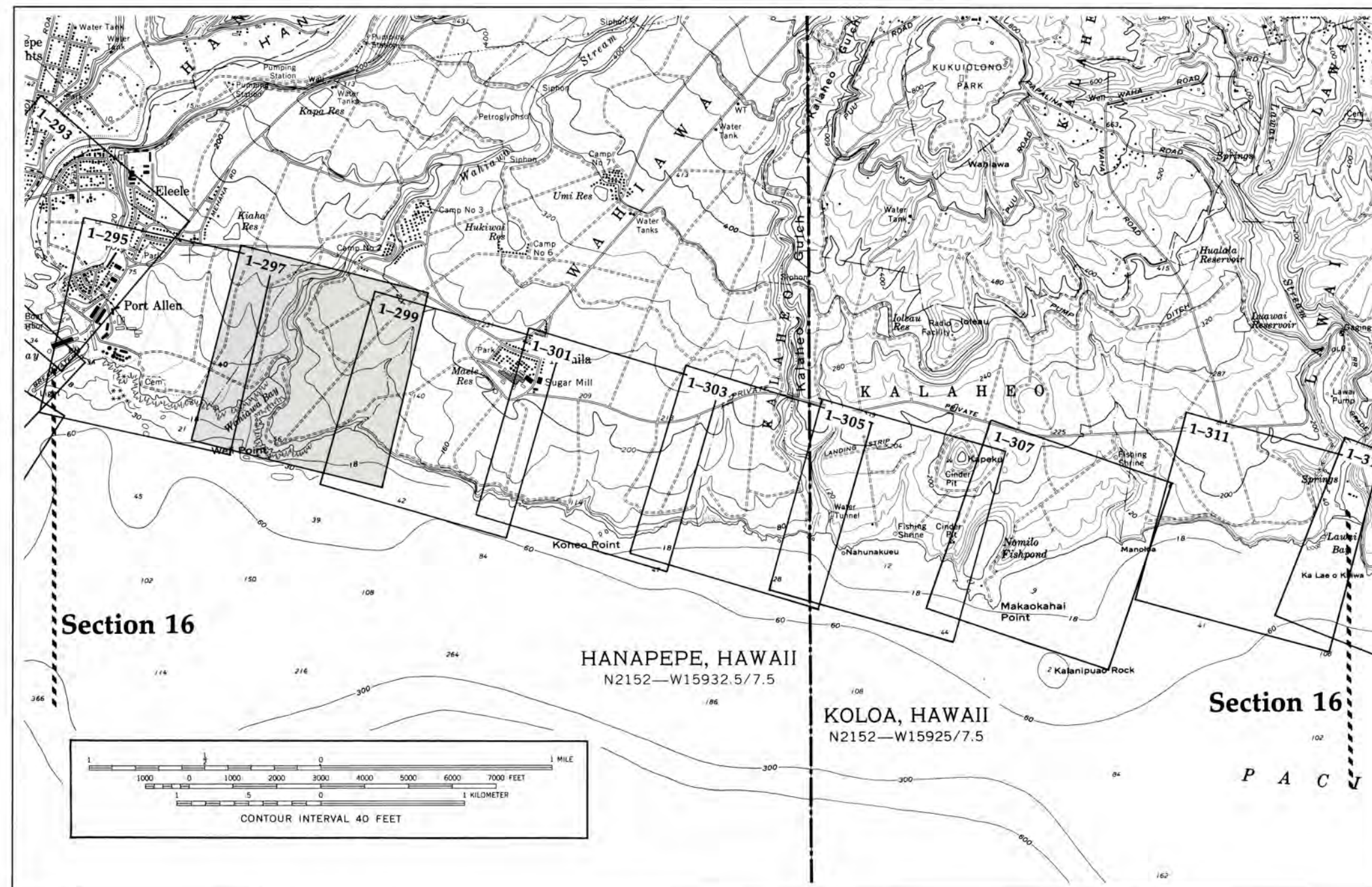
Board surfing.
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 Canoe paddling.
 Sailing.
 Aquatic recreation (smallcraft sailing, wind-surfing).
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 Anchorage.

Study Sites

- Shoreline (above water observations).
 Inshore (inside reef edge).
 Offshore (beyond reef edge).

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- rcg - Consolidated reef with well defined groove-and-spur system.
- rsg - Sand predominates in the depressions of conspicuous groove-and-spur system.
- rcs - Mostly consolidated reef with some (25-50%) sediment bottom.

SHORELINE

- ba - Volcanic rock shorelines.
 - ba1 - Low basalt outcrops/shoreline less than 1 meter high, including ramps.
 - ba2 - Talus rocks at the base of high sea cliffs (clearly not reworked by waves into a beach); sometimes this unit is seaward of ba4 or ba5 cliffs.
 - ba3 - Low outcrops to low cliffs (1-3 meters high), shoreline access possible.
 - ba4 - Sea cliffs more than 10 meters high; access difficult to dangerous.
 - ba5 - Sea cliffs more than 10 meters high; access dangerous to impossible.
- bb - Man-made boulder shorelines (blue rock, revetments, rip-rap, etc.).
- bc - Concrete/cement masonry seawalls and shorelines.
- lm - Limestone rock shorelines.
 - lm1 - Low outcrops, boulders of limestone, including ramps.
 - lm2 - Limestone talus (probably rare, since limestone cliffs are not expected to be high).
 - lm3 - 1-3 meter high limestone cliffs.
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 - sa - Storm beach, deposited by large waves well inland and/or above shoreline.
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 - sb1 - Detrital sand beach.
 - sb2 - Black sand beach.
 - sbb - Boulder beach.
 - sbc - Cobble, pebble beach.
 - sbr - Poorly sorted deposits (common off stream mouths, sometimes shoreward extensions of rubble or sand beaches).
- Special types.
 - br - Beachrock (a specialized category normally formed at the shoreline).
 - tp - Tidepools, where they are a prominent feature at the shoreline.

Aerial Photograph Based Classification System

OFFSHORE

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- co - Areas of greater than 50% live coral cover (spot checked for verification).
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Offshore Bottom Type Summary

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rbs, rcs, rsg	25 - 50	50 - 75
r, rc, co	less than 25	more than 75
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Uses and Activities Along and Off the Coast

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 Spearfishing.
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 Lobster.
 Sea urchin (wana).
 Octopus (he'e).
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 Seaweed (limu).
 Sport-diving.
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- SHORELINE AND DEEP-WATER FISHING ACTIVITIES

Crabbing (kona, 'a'ama, swimming crab).
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 Trolling, bottom-fishing.
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- USES NOT RELATED TO BIOTA

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 Excursion boat.
 Anchorage.

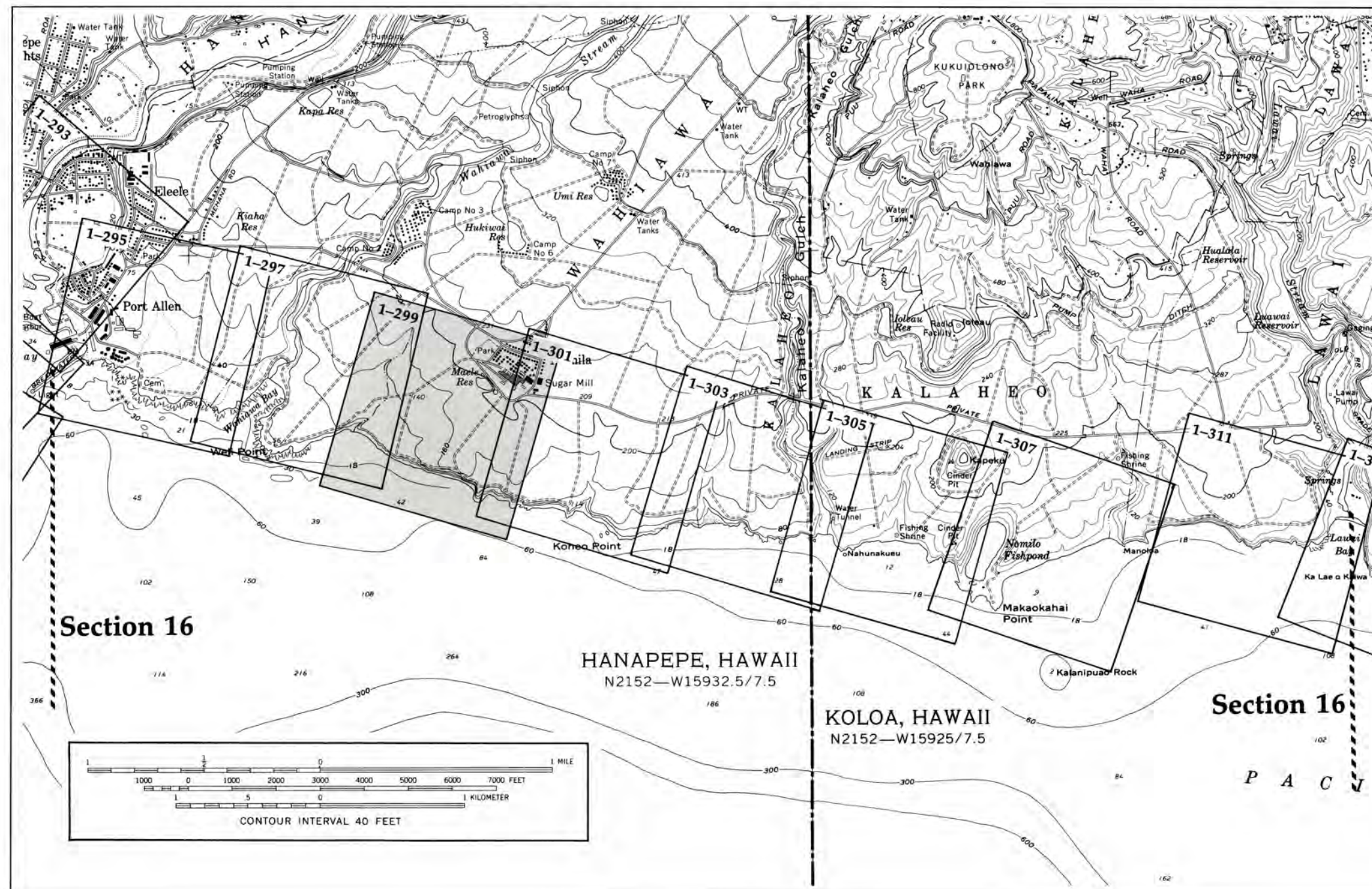
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0 100 200 300 400 500 600 700 meters
 0 250 500 750 1000 1250 1500 1750 2000 2250 feet †



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 - sbr** – Poorly sorted deposits (common off stream mouths, sometimes shoreward extensions of rubble or sand beaches).
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Aerial Photograph Based Classification System

OFFSHORE

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-  Throw-netting.
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-  Torching.
-  Trapping.
-  Lobster.
-  Sea urchin (wana).
-  Octopus (he'e).
-  Surround netting.
-  Aquarium fish collecting.
-  Seaweed (limu).
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-  Shell collecting.

SHORELINE AND DEEP-WATER FISHING ACTIVITIES

-  Crabbing (kona, 'a'ama, swimming crab).
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-  Trolling, bottom-fishing.
-  Specialized fisheries (type indicated).

USES NOT RELATED TO BIOTA

-  Board surfing.
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-  Sailing.
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-  Excursion boat.
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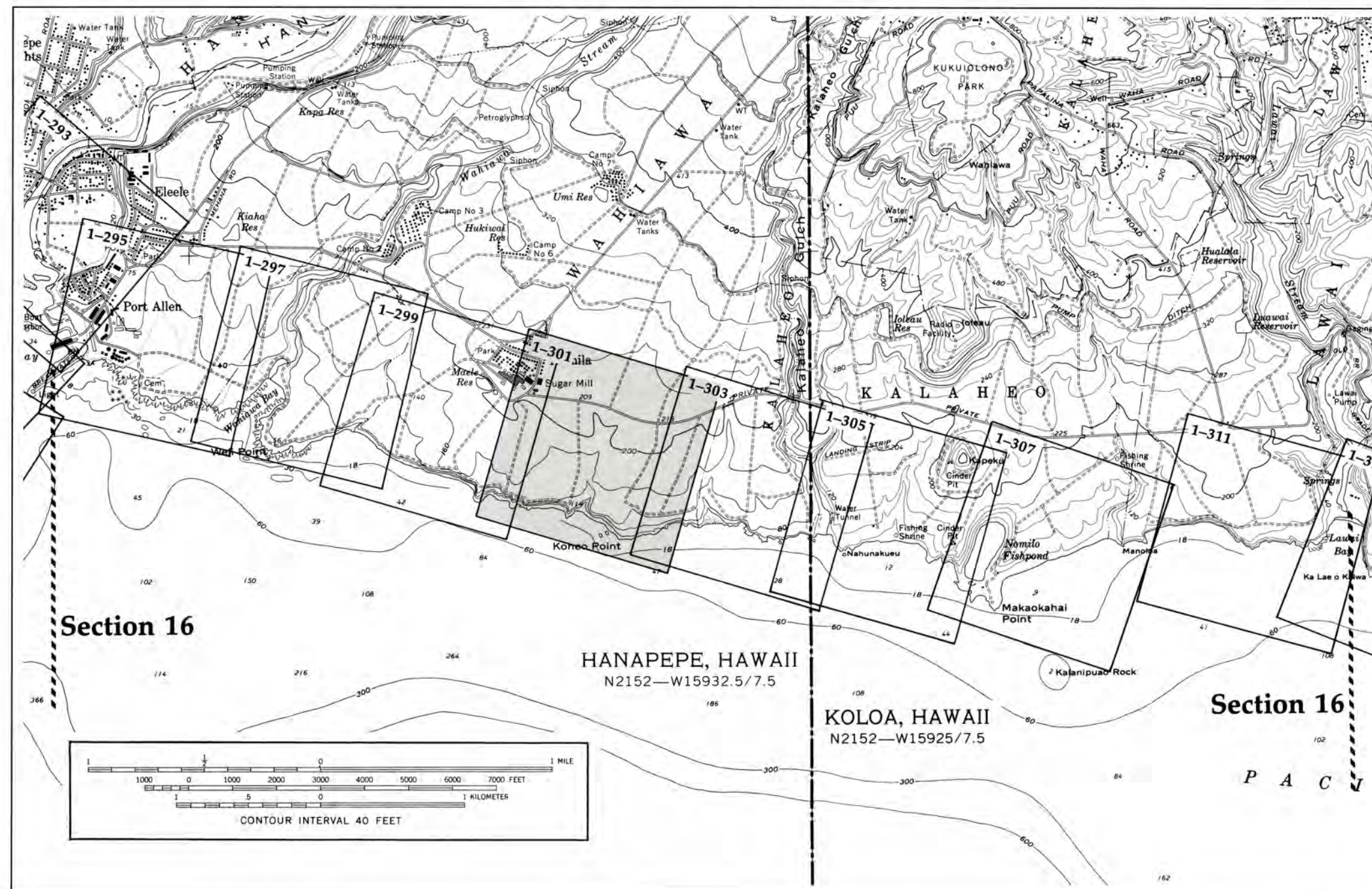
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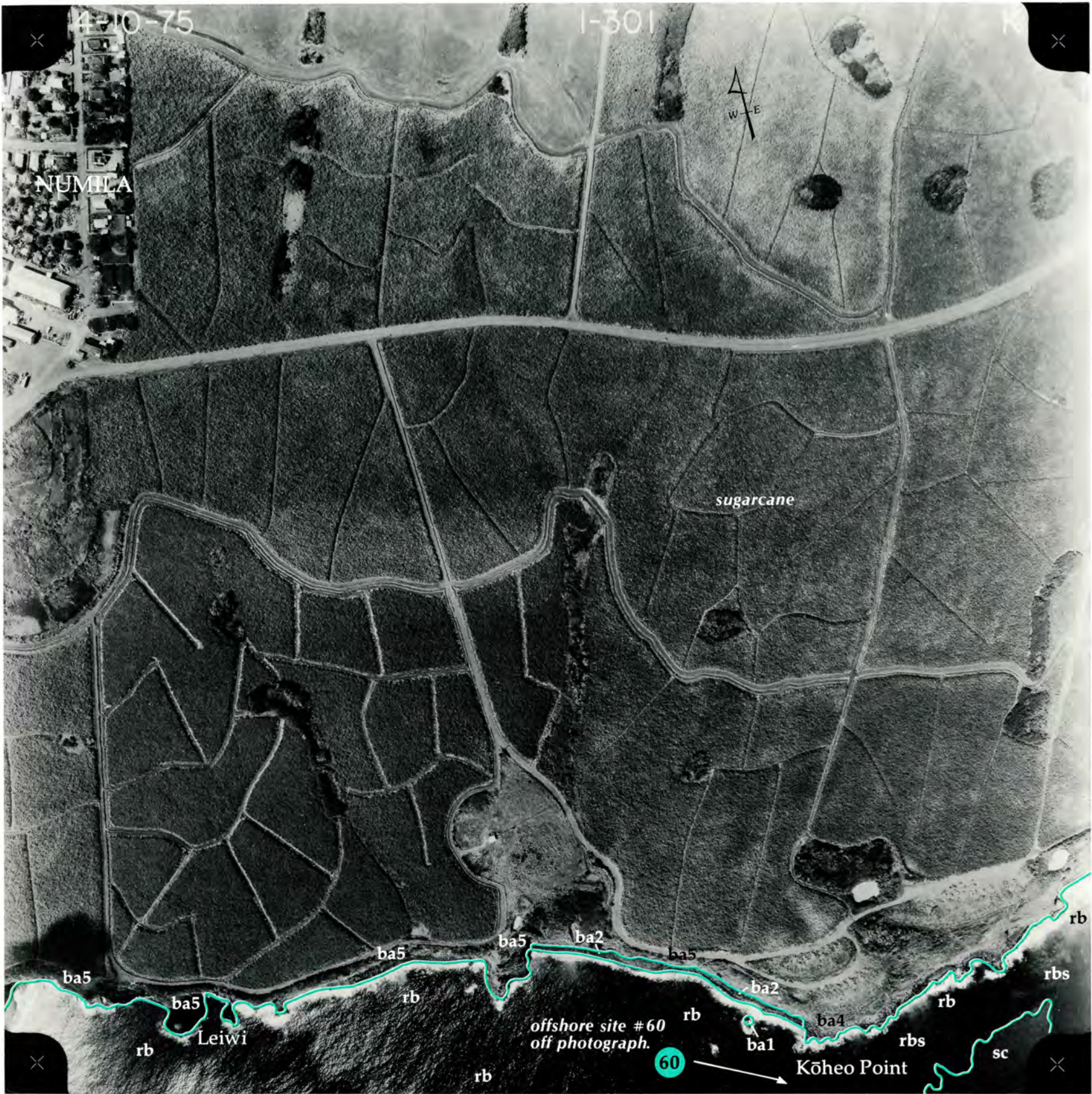
USES NOT RELATED TO BIOTA

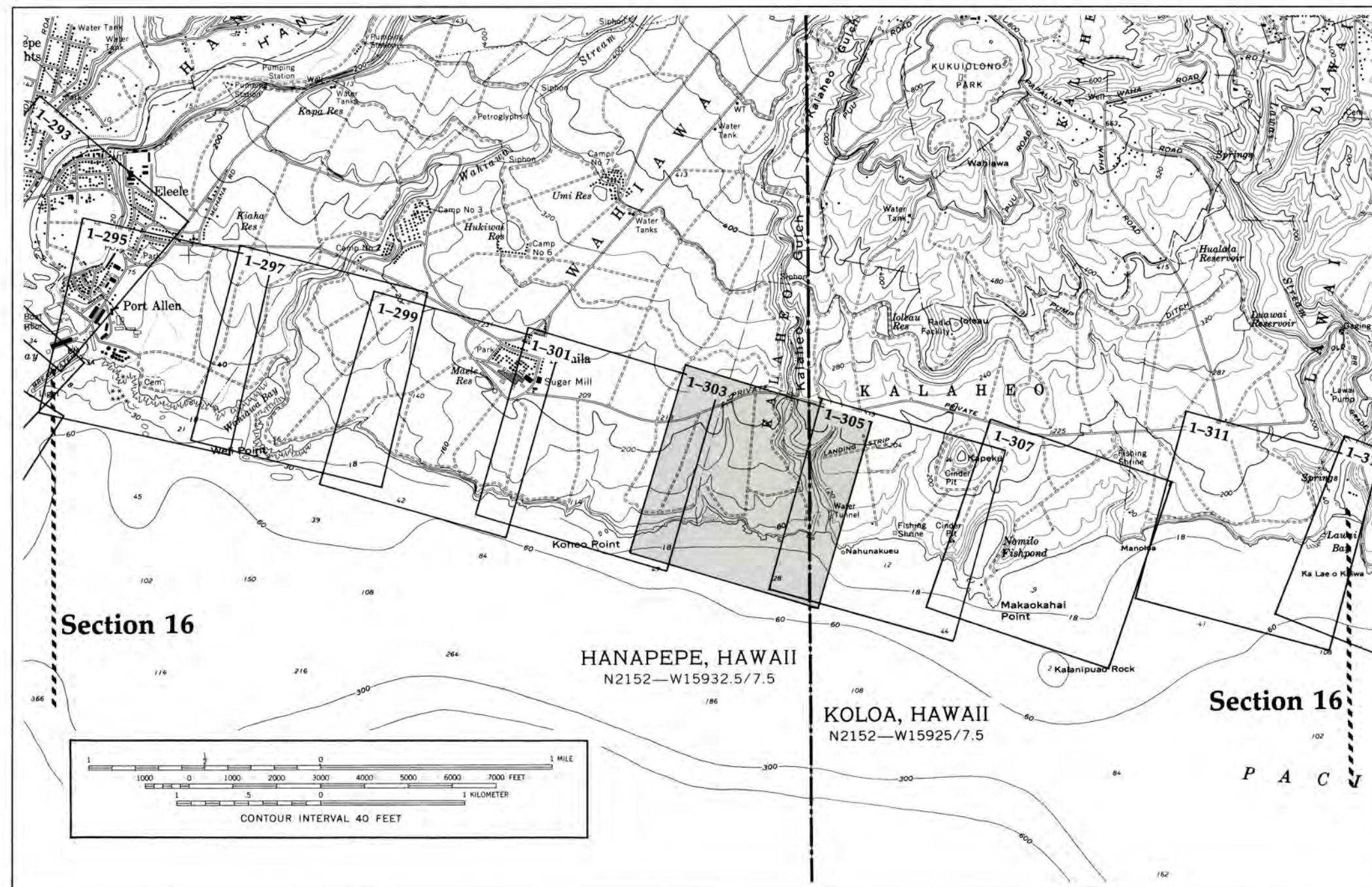
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-  Aquatic recreation (smallcraft sailing, wind-surfing).
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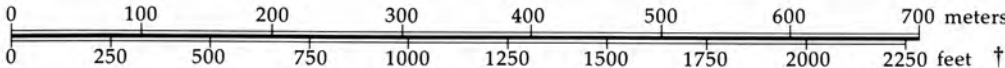
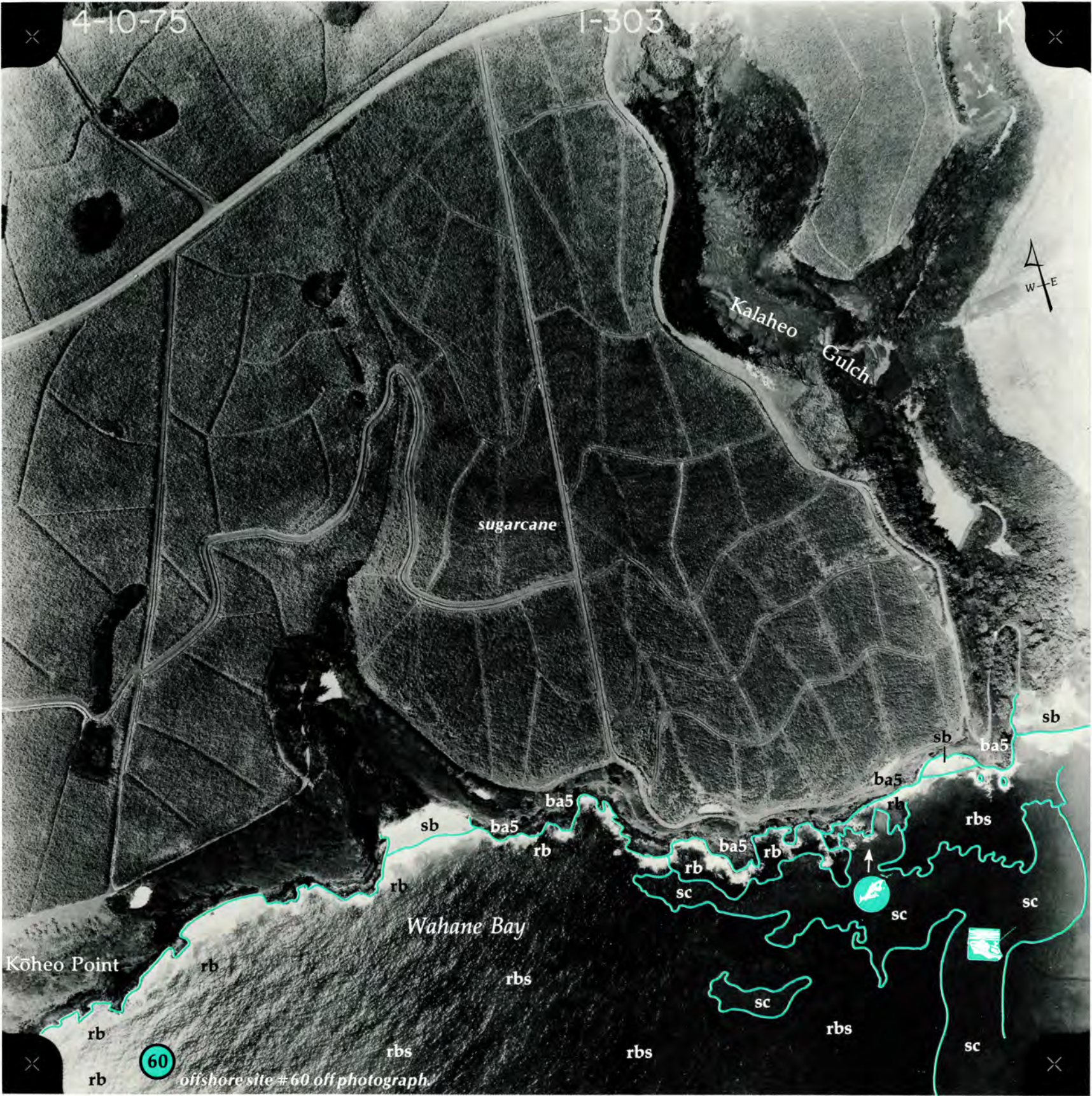
USES NOT RELATED TO BIOTA

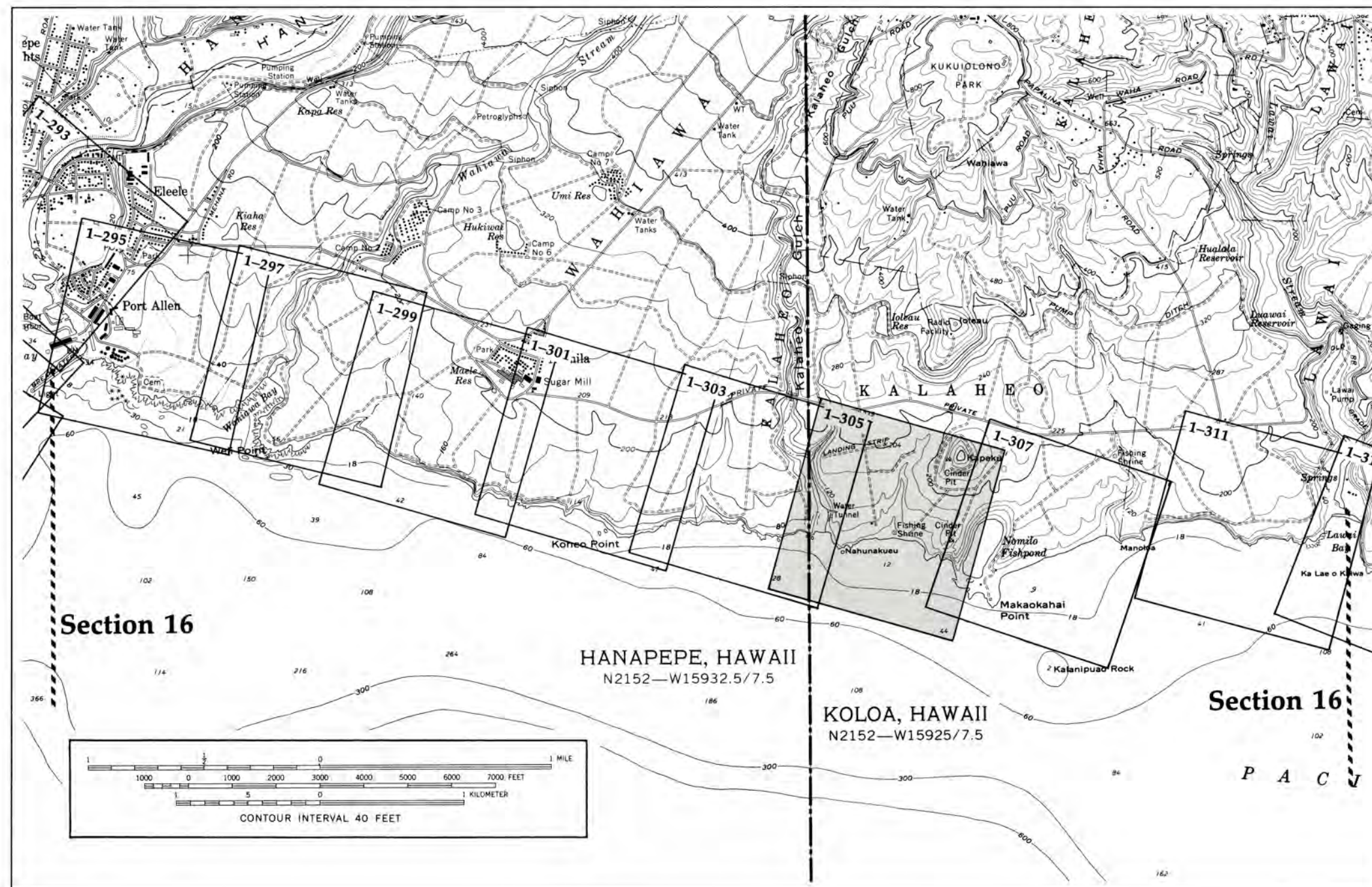
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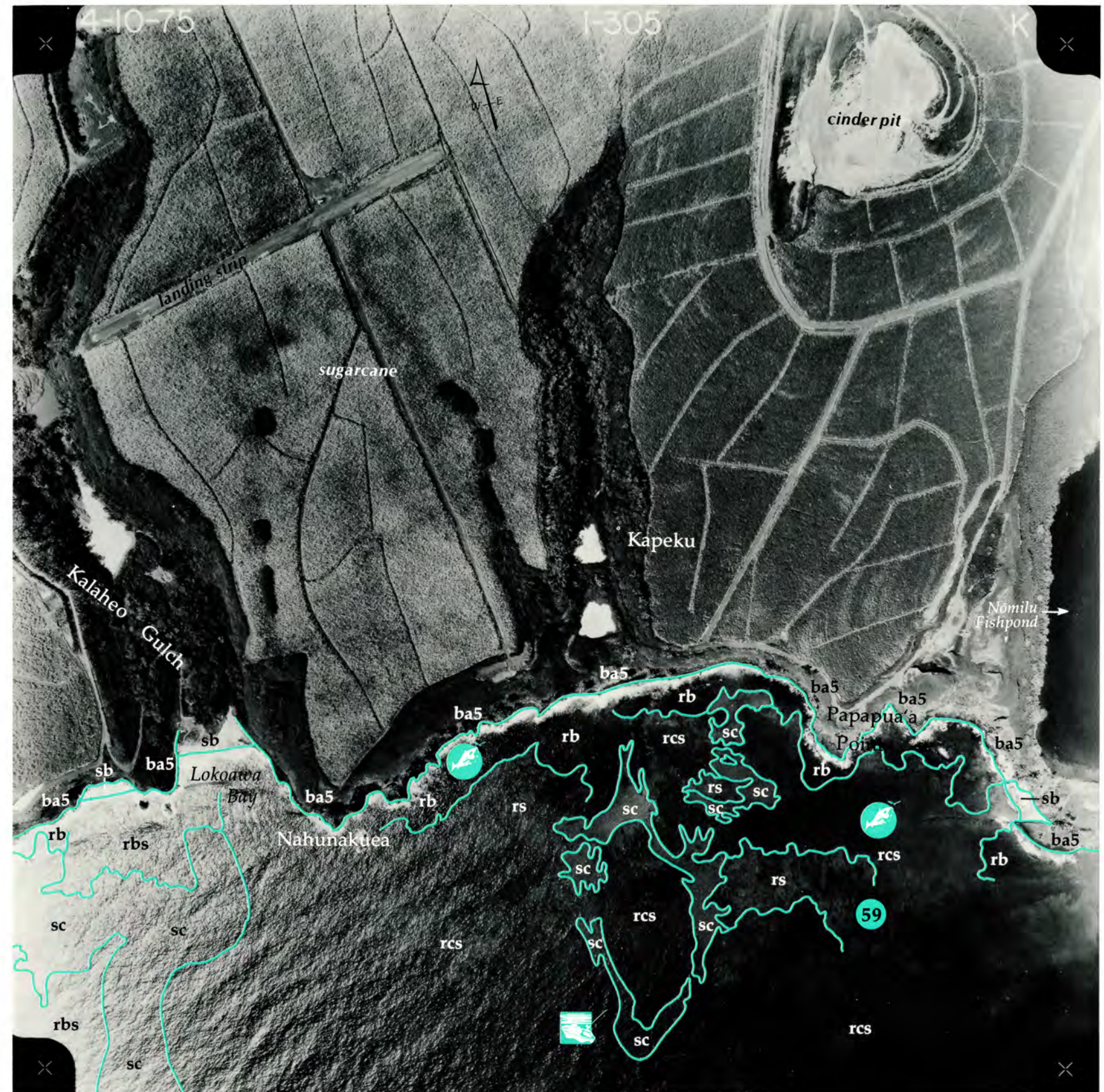
USES NOT RELATED TO BIOTA

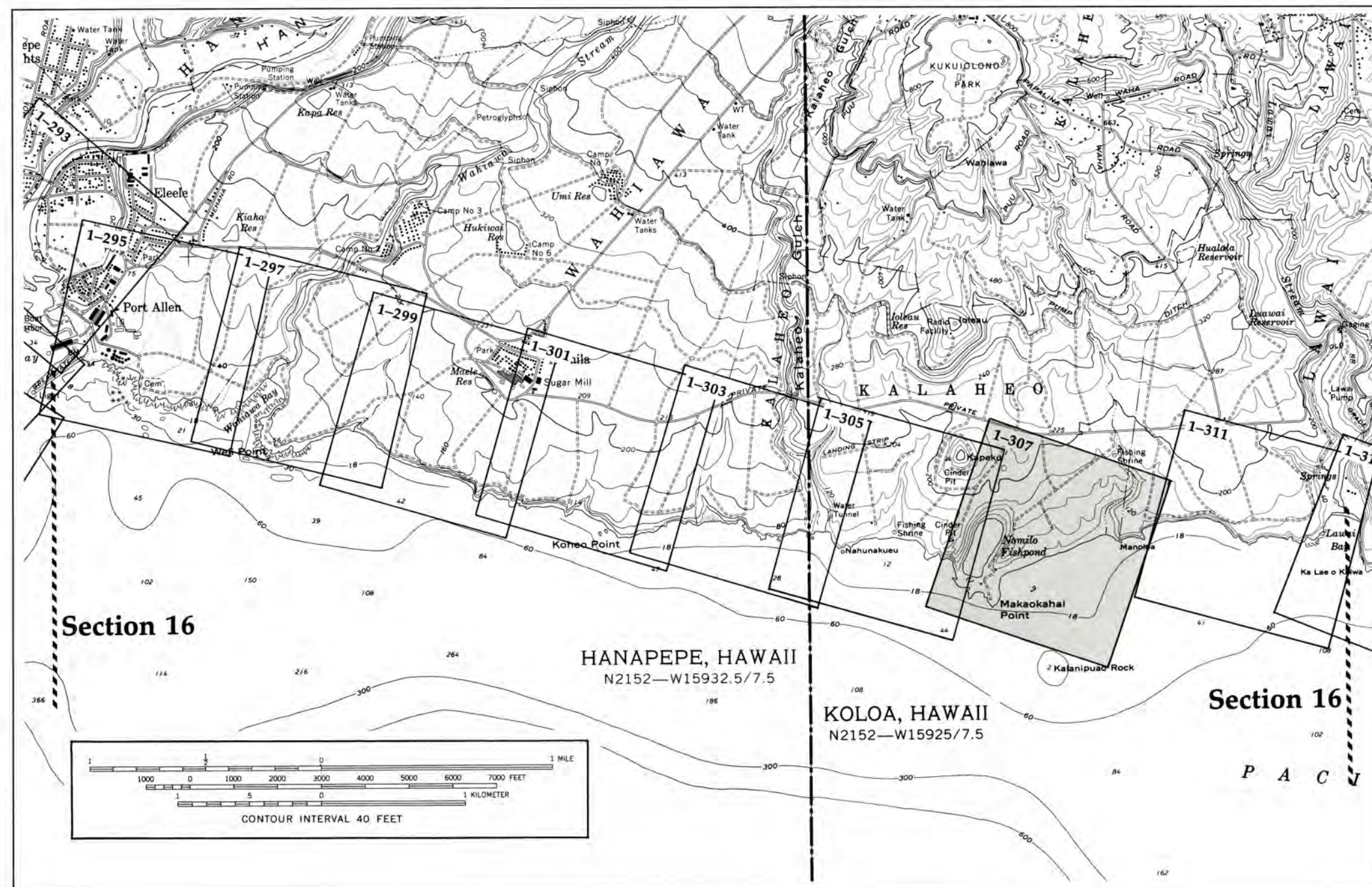
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- bb – Man-made boulder shorelines (blue rock, revetments, rip-rap, etc.).**
- bc – Concrete/cement masonry seawalls and shorelines.**
- lm – Limestone rock shorelines.**
 - lm1** – Low outcrops, boulders of limestone, including ramps.
 - lm2** – Limestone talus (probably rare, since limestone cliffs are not expected to be high).
 - lm3** – 1–3 meter high limestone cliffs.
 - lm4** – Limestone cliffs 3–10 meters high.
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 - sa** – Storm beach, deposited by large waves well inland and/or above shoreline.
 - sb** – White sand beaches.
 - sb1** – Detrital sand beach.
 - sb2** – Black sand beach.
 - sbb** – Boulder beach.
 - sbc** – Cobble, pebble beach.
 - sbr** – Poorly sorted deposits (common off stream mouths, sometimes shoreward extensions of rubble or sand beaches).

Special types.

- br** – Beachrock (a specialized category normally formed at the shoreline).
- tp** – Tidepools, where they are a prominent feature at the shoreline.

Aerial Photograph Based Classification System

OFFSHORE

- s – Sediment.**
- sc** – Sand bottom, including channels, in water depths less than 10 meters (especially common offshore from beaches).
 - sd** – Sand bottom, deeper than 10 meters (some possibility of error, such as white reflecting rock in deep water, not checked by dives).
- Special types.**
- co** – Areas of greater than 50% live coral cover (spot checked for verification).
 - br** – Beachrock (offshore).

- r – Rock.**
- rs** – Mostly sand bottom but with some rocky features; rock bottom covered by a veneer of sand.
 - rbs** – Hard bottom, but with conspicuous sediment up to 50% coverage.
 - rb** – “Other” hard bottom types (a catch-all for dark areas, not reefal or sedimentary; normally basalt with a thin veneer of marine life).
 - rbb** – Seaward extensions of talus boulder beaches, with definable rocks or boulders.

- rbc** – Seaward extensions of cobble beaches (rocks smaller than boulders).
- rc – Reef complex.**
 - rc** – Shallow reef flats or structural reefs, normally (but not exclusively) in water depths less than 2 meters.
 - rcl** – Consolidated limestone; lacking sediment (also a catch-all for moderate to high relief areas).
 - rcp** – Consolidated smooth limestone pavement.

Offshore Bottom Type Summary

Categories	% Sand	% Rock
rbc, br, s, sb, sc, sd	100	—
rs	less than 50	more than 50
rbs, rcs, rsg	25 – 50	50 – 75
r, rc, co	less than 25	more than 75
rbb, rb, rcl, rcp, rcg	—	100

Uses and Activities Along and Off the Coast

USES RELATED TO NEARSHORE BIOTA

-  Pole-and-line fishing.
-  Gill-netting.
-  Throw-netting.
-  Spearfishing.
-  Torching.
-  Trapping.
-  Lobster.
-  Sea urchin (wana).
-  Octopus (he'e).
-  Surround netting.
-  Aquarium fish collecting.
-  Seaweed (limu).
-  Sport-diving.
-  Shell collecting.

SHORELINE AND DEEP-WATER FISHING ACTIVITIES

-  Crabbing (kona, 'a'ama, swimming crab).
-  Limpet (opihi).
-  Trolling, bottom-fishing.
-  Specialized fisheries (type indicated).

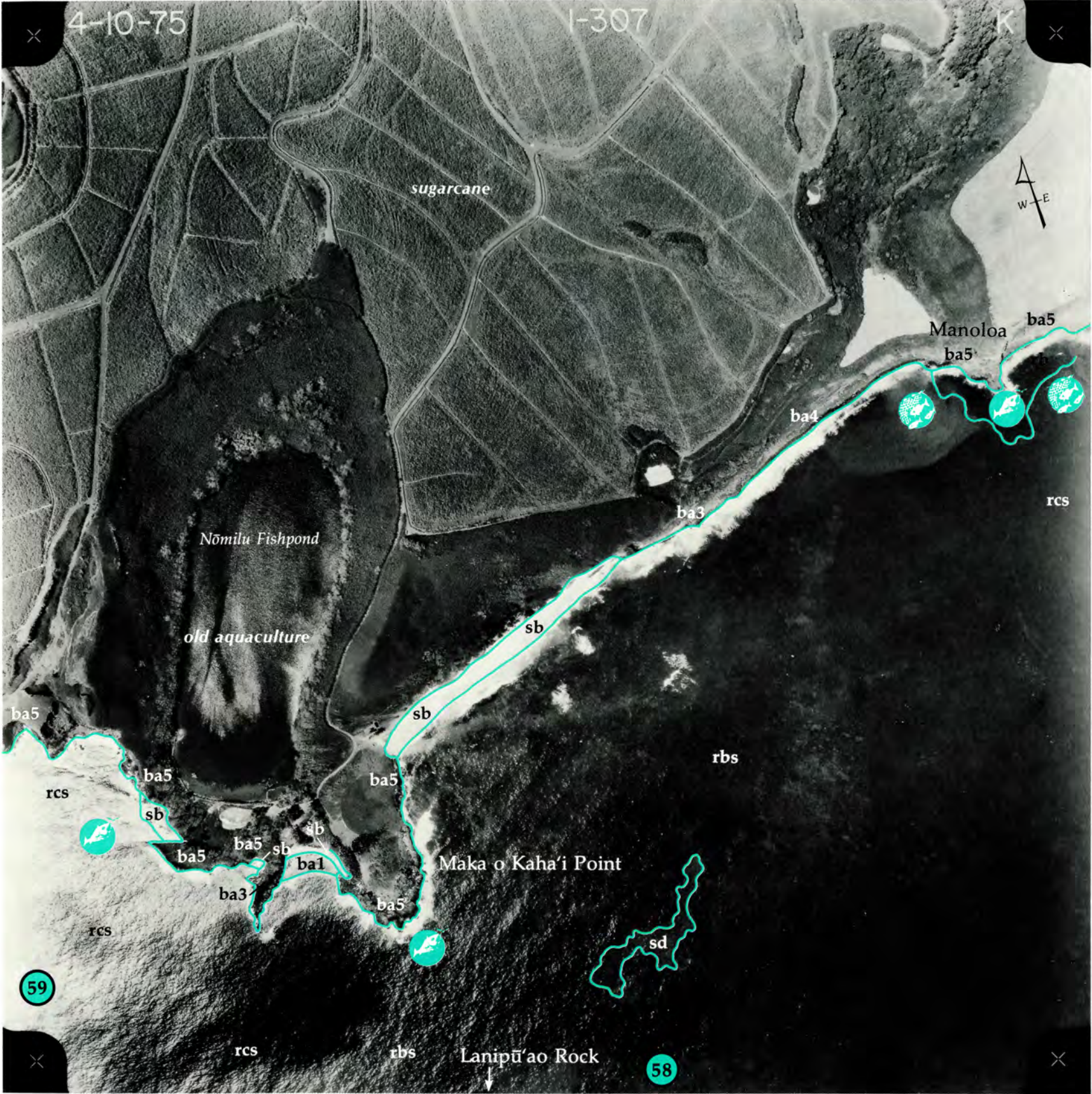
USES NOT RELATED TO BIOTA

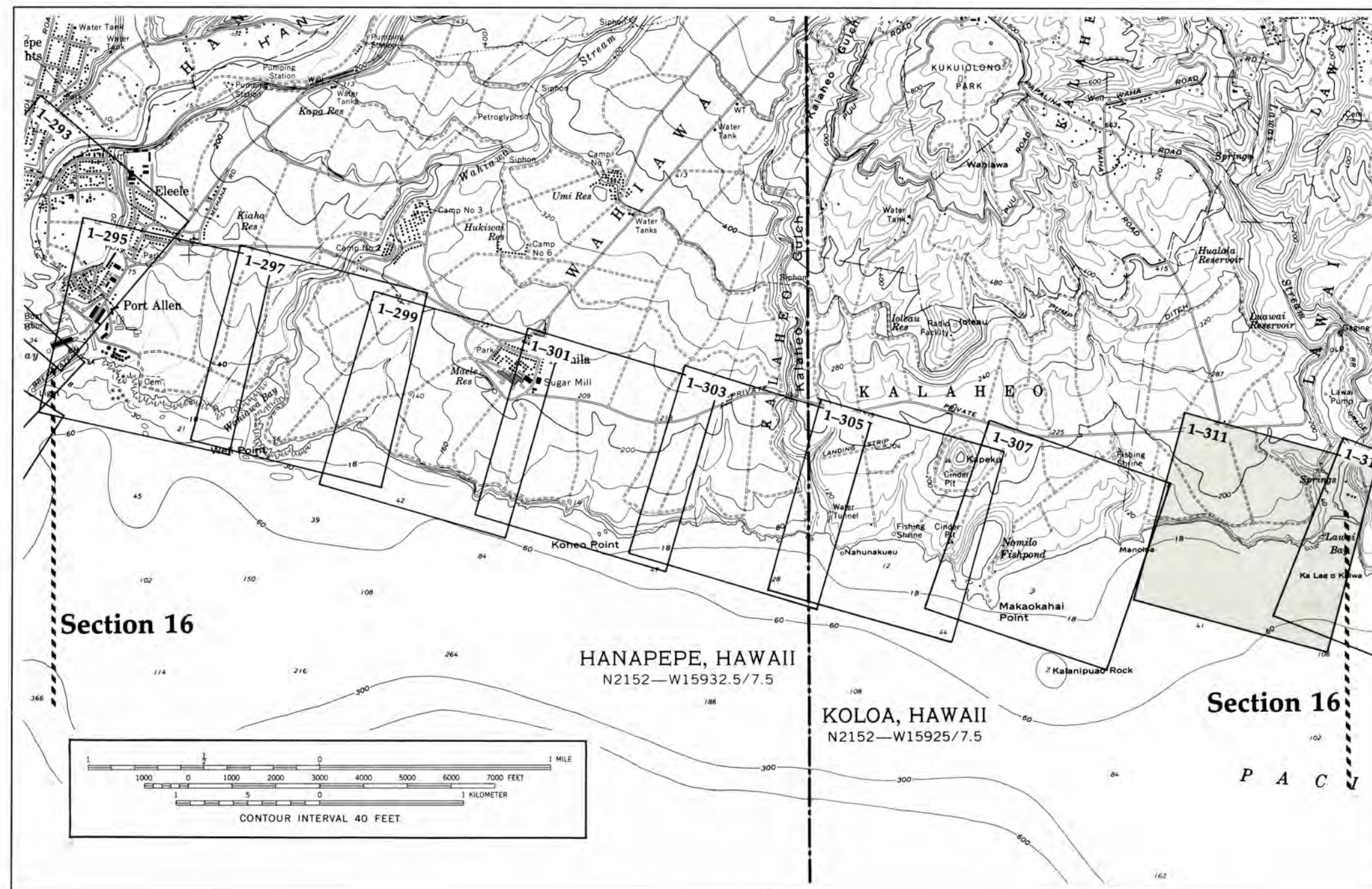
-  Board surfing.
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-  Canoe paddling.
-  Sailing.
-  Aquatic recreation (smallcraft sailing, wind-surfing).
-  Excursion boat.
-  Anchorage.

Study Sites

-  Shoreline (above water observations).
-  Inshore (inside reef edge).
-  Offshore (beyond reef edge).

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- rcg - Consolidated reef with well defined groove-and-spur system.
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- rcs - Mostly consolidated reef with some (25-50%) sediment bottom.

SHORELINE

- ba - Volcanic rock shorelines.
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- bb - Man-made boulder shorelines (blue rock, revetments, rip-rap, etc.).
- bc - Concrete/cement masonry seawalls and shorelines.
- lm - Limestone rock shorelines.
 - lm1 - Low outcrops, boulders of limestone, including ramps.
 - lm2 - Limestone talus (probably rare, since limestone cliffs are not expected to be high).
 - lm3 - 1-3 meter high limestone cliffs.
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- s - Sedimentary shoreline.
 - sa - Storm beach, deposited by large waves well inland and/or above shoreline.
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 - sb1 - Detrital sand beach.
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 - sbc - Cobble, pebble beach.
 - sbr - Poorly sorted deposits (common off stream mouths, sometimes shoreward extensions of rubble or sand beaches).
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- rc - Shallow reef flats or structural reefs, normally (but not exclusively) in water depths less than 2 meters.
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-  Trapping.
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-  Surround netting.
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-  Seaweed (limu).
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-  Shell collecting.

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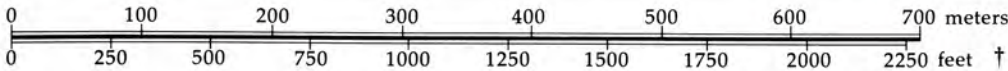
USES NOT RELATED TO BIOTA

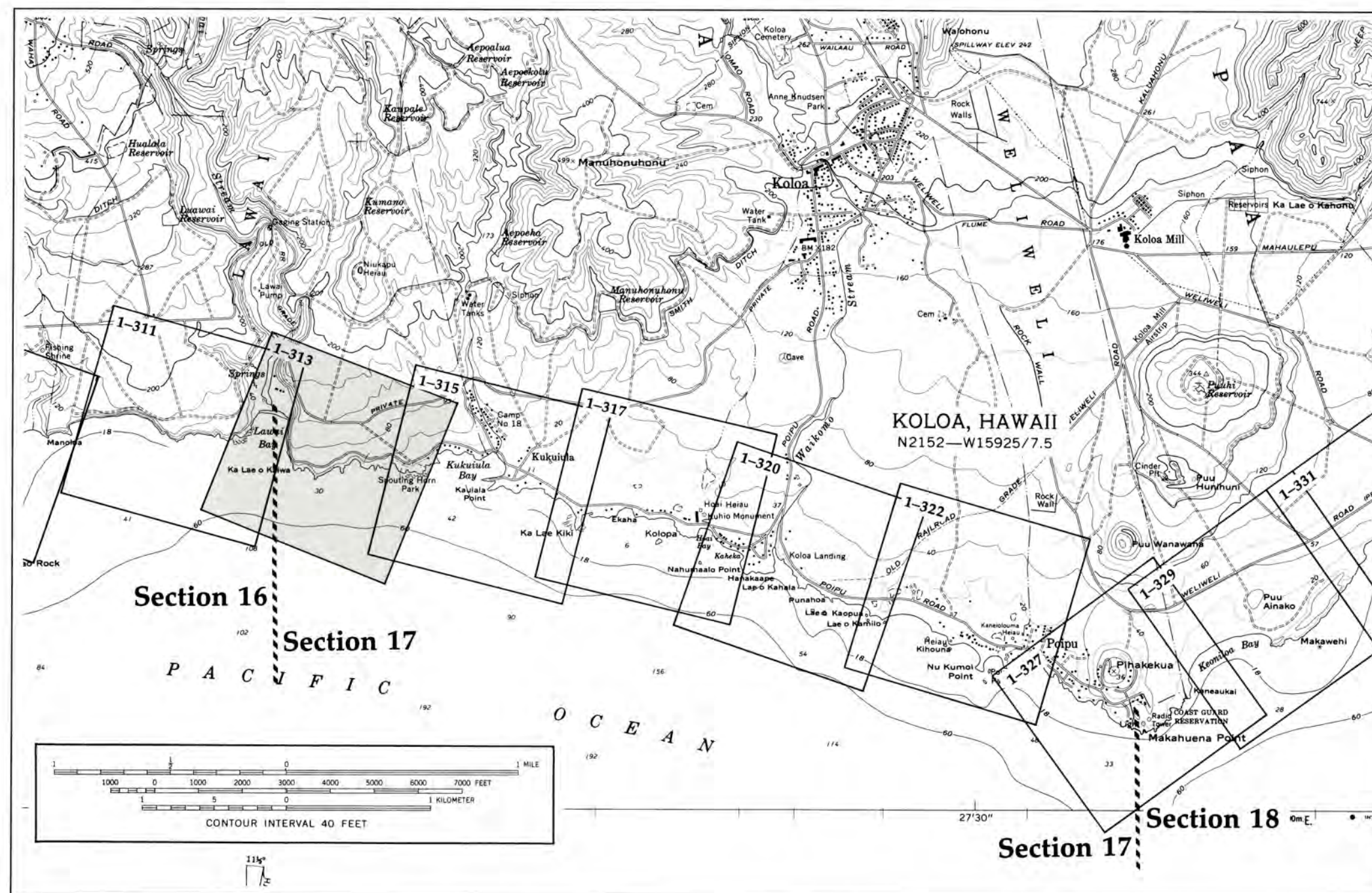
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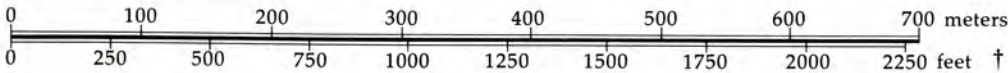
USES NOT RELATED TO BIOTA

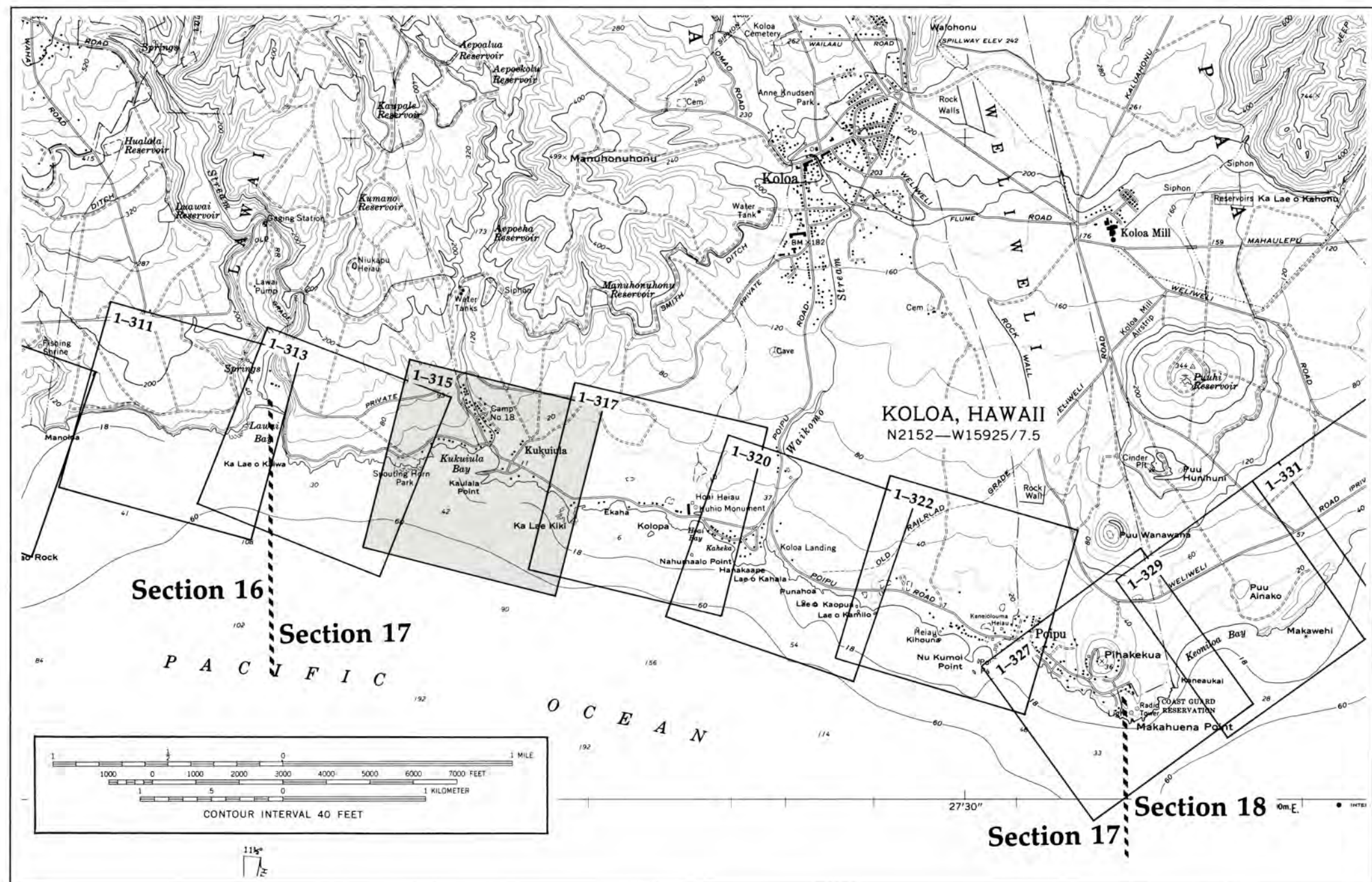
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Uses and Activities Along and Off the Coast

- USES RELATED TO NEARSHORE BIOTA

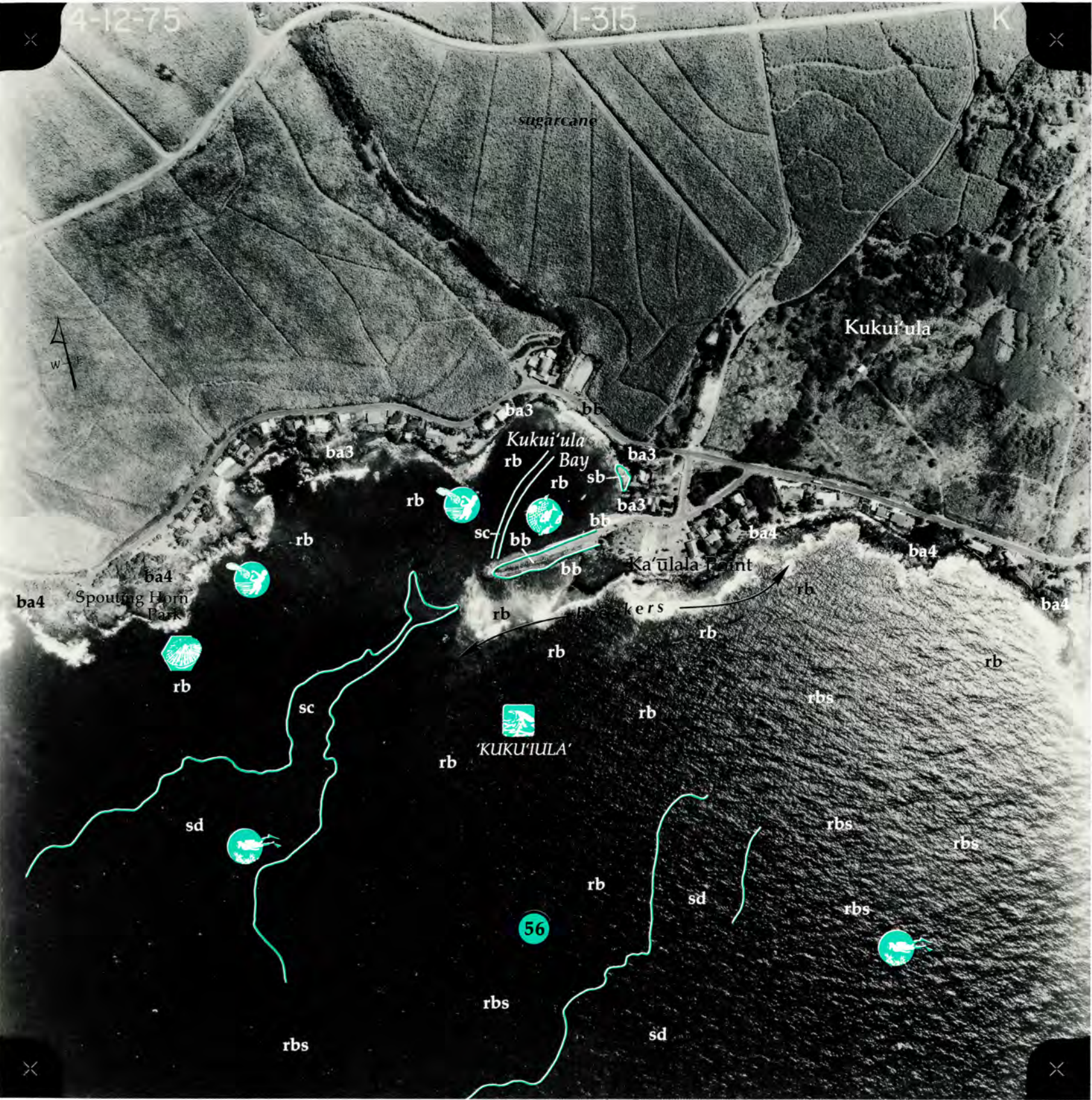
 - Pole-and-line fishing.
 - Gill-netting.
 - Throw-netting.
 - Spearfishing.
 - Torching.
 - Trapping.
 - Lobster.
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 - Surround netting.
 - Aquarium fish collecting.
 - Seaweed (limu).
 - Sport-diving.
 - Shell collecting.
- SHORELINE AND DEEP-WATER FISHING ACTIVITIES

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- USES NOT RELATED TO BIOTA

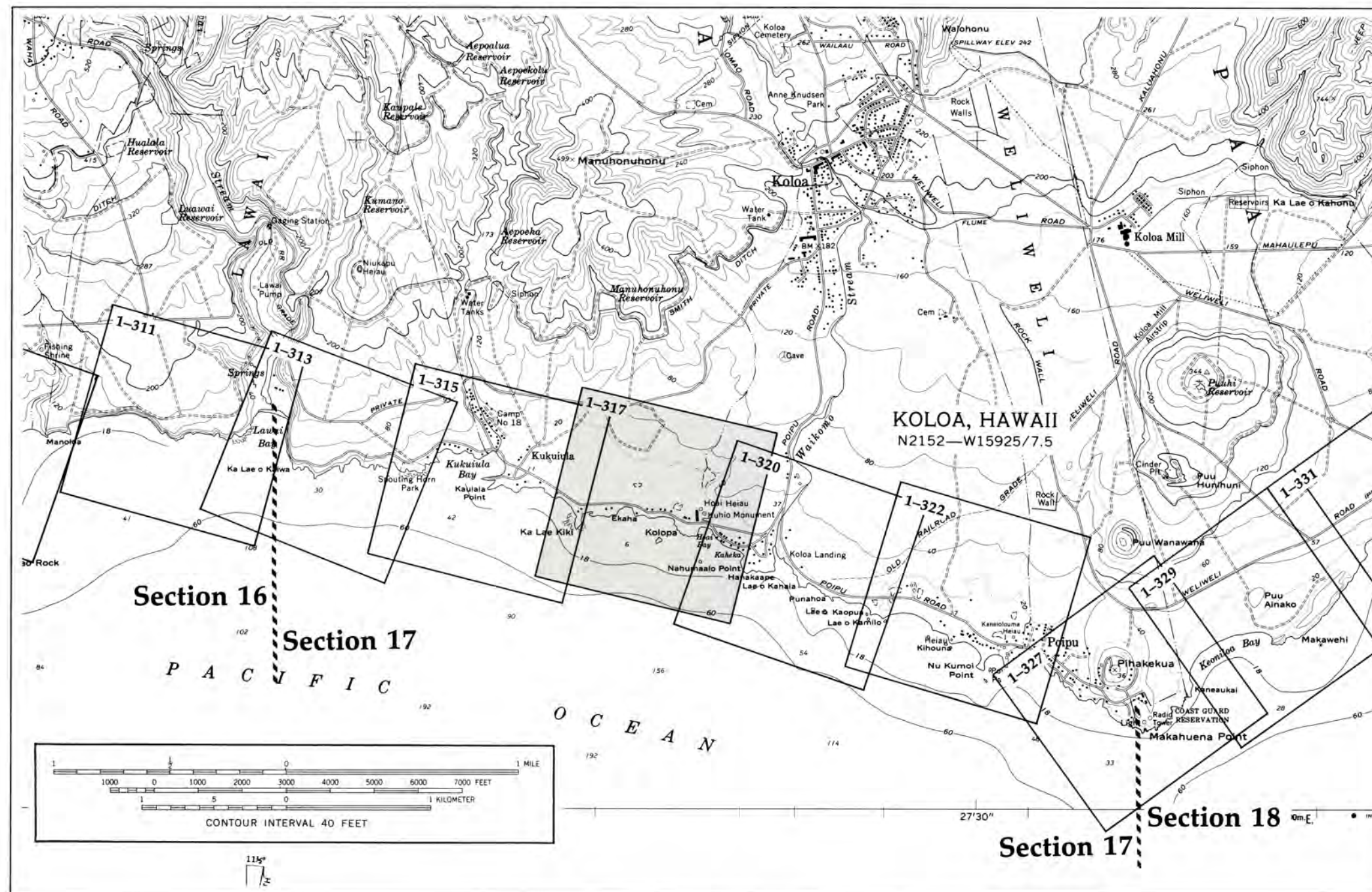
 - Board surfing.
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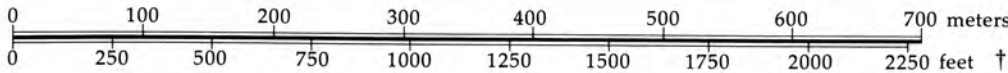
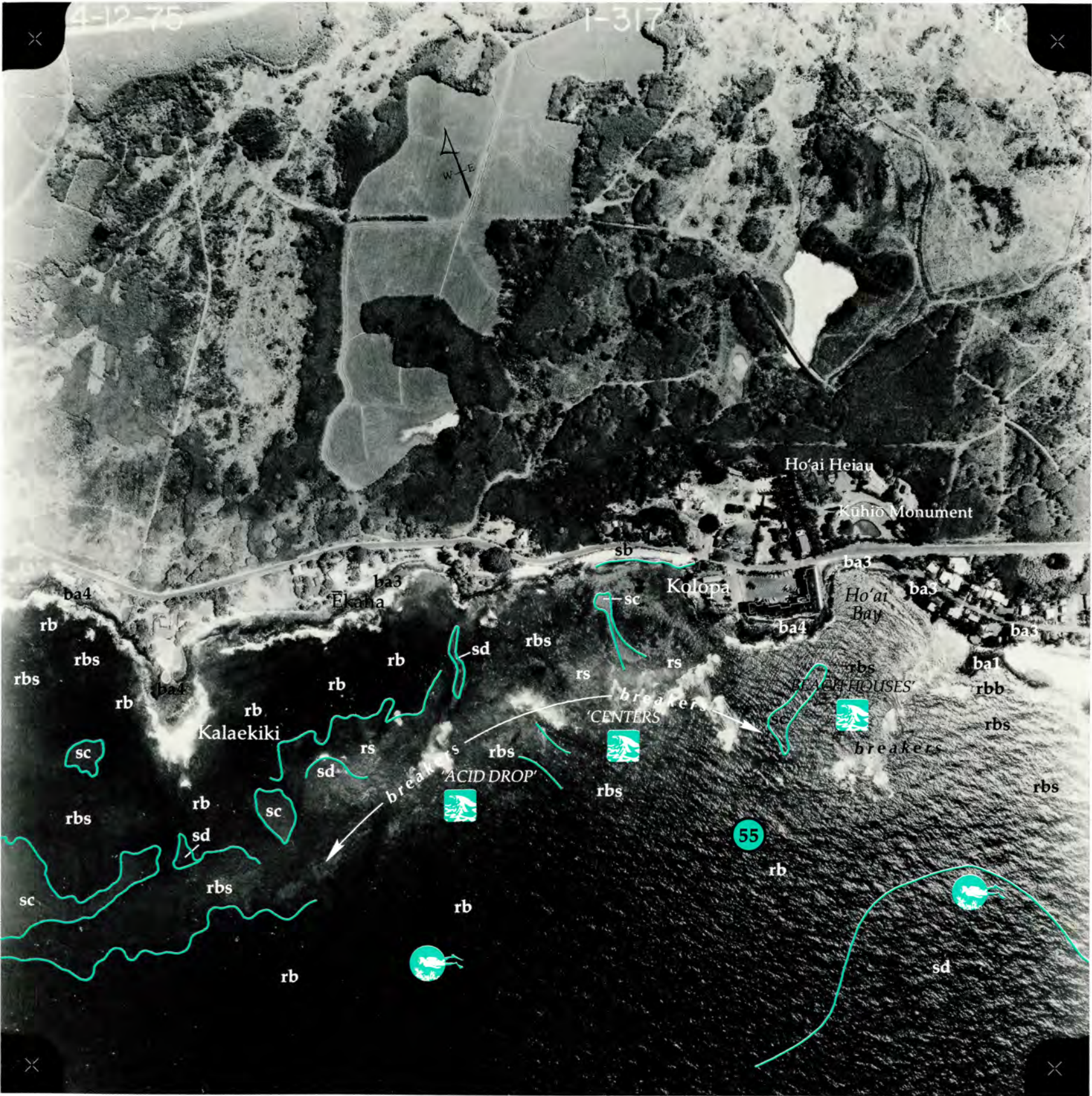
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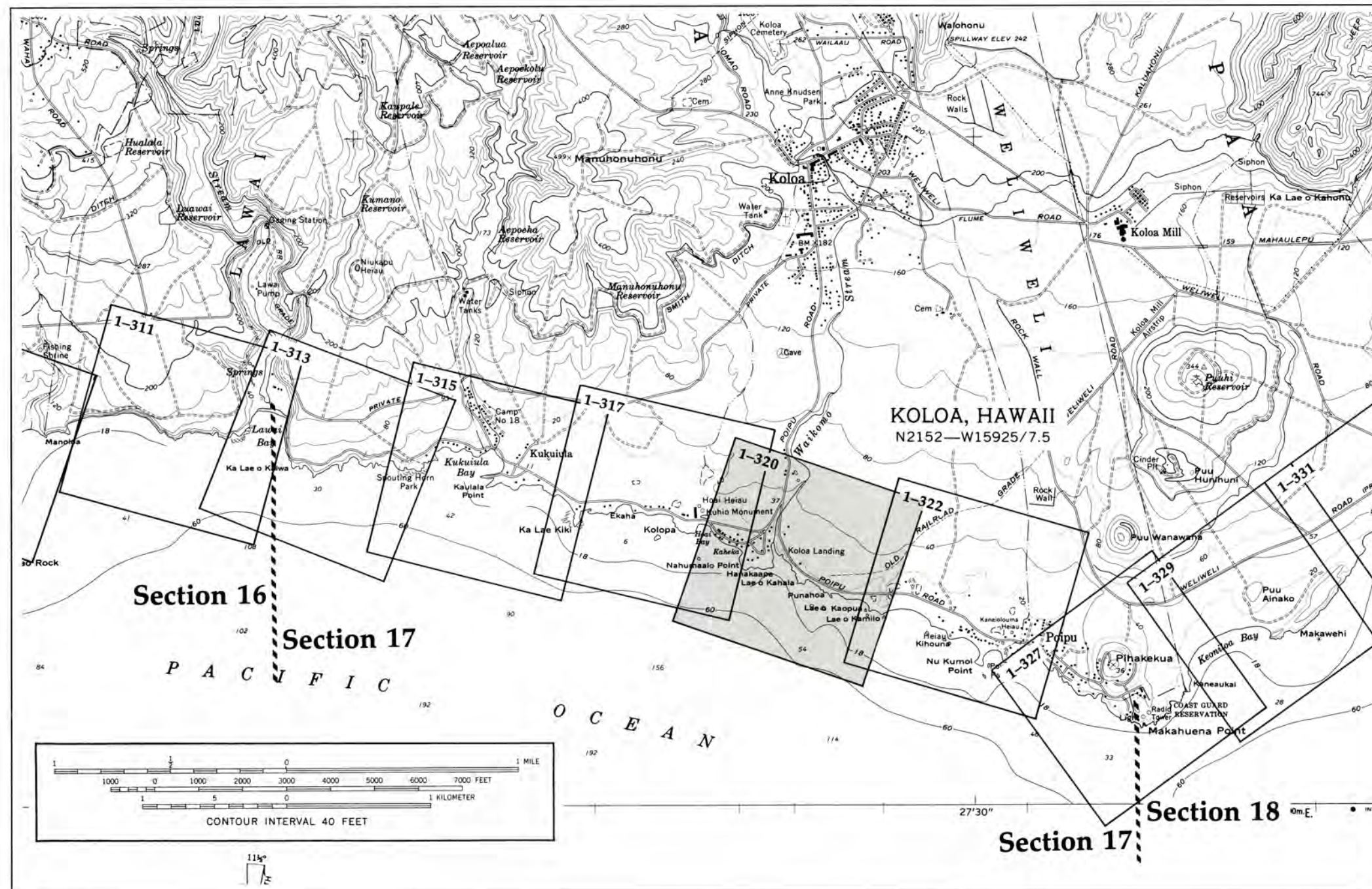
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r, rc, co	less than 25	more than 75
rbb, rb, rcl, rcp, rcg	—	100

Uses and Activities Along and Off the Coast

USES RELATED TO NEARSHORE BIOTA

Pole-and-line fishing.
 Gill-netting.
 Throw-netting.
 Spearfishing.
 Torching.
 Trapping.
 Lobster.
 Sea urchin (wana).
 Octopus (he'e).
 Surround netting.
 Aquarium fish collecting.
 Seaweed (limu).
 Sport-diving.
 Shell collecting.

SHORELINE AND DEEP-WATER FISHING ACTIVITIES

Crabbing (kona, 'a'ama, swimming crab).
 Limpet (opihi).
 Trolling, bottom-fishing.
 Specialized fisheries (type indicated).

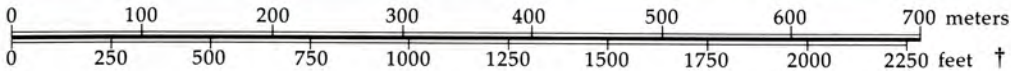
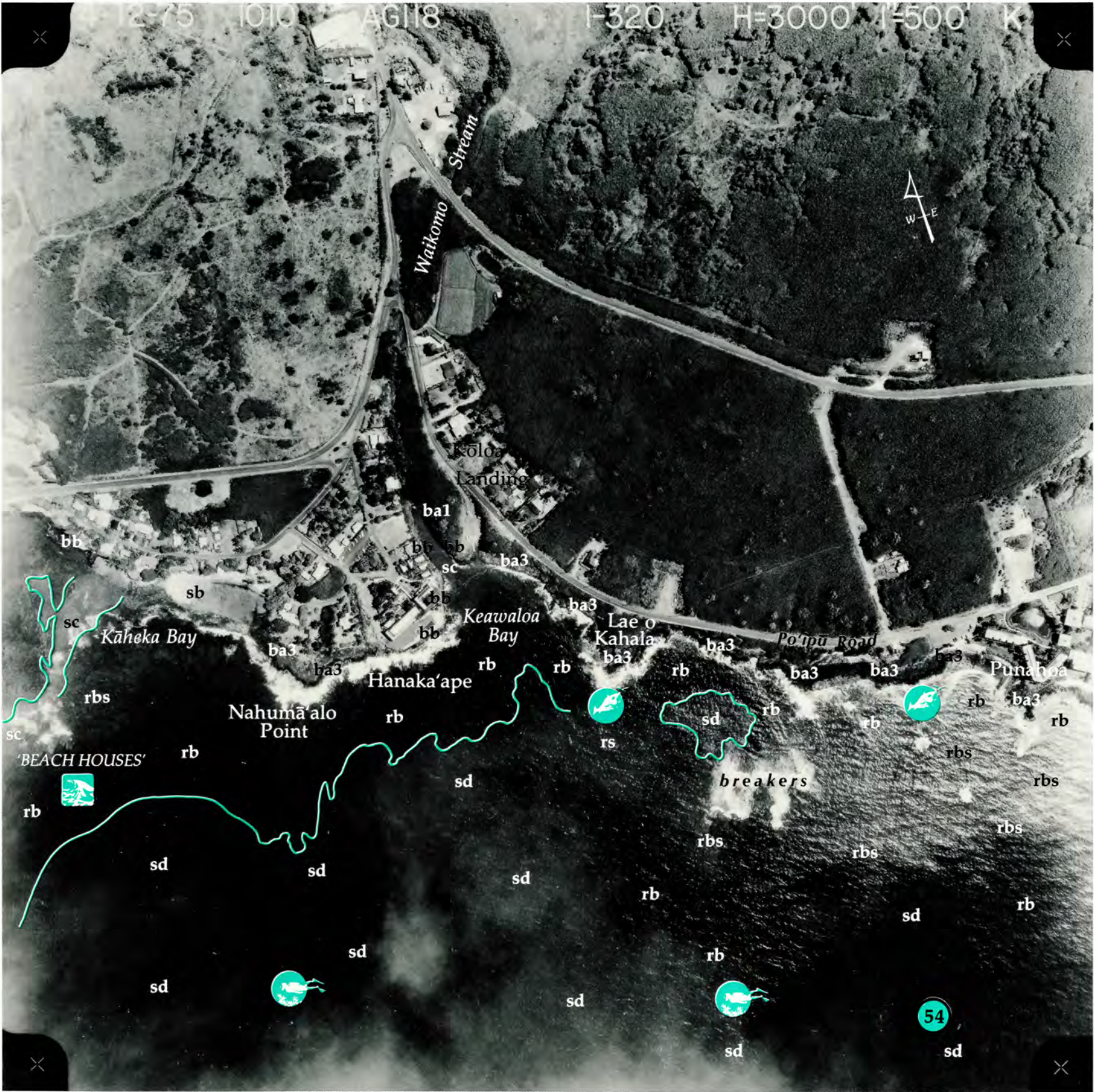
USES NOT RELATED TO BIOTA

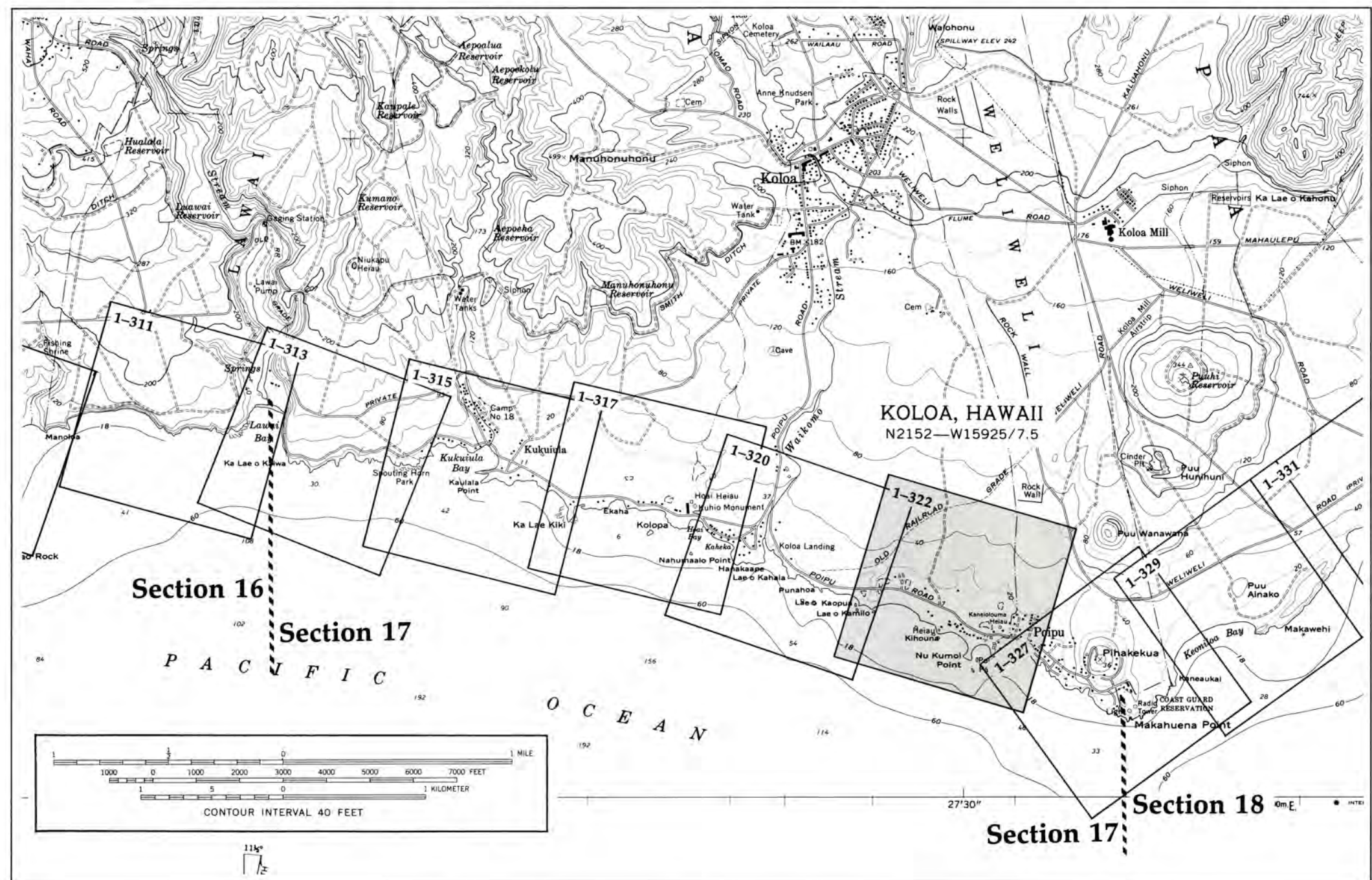
Board surfing.
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- Shoreline (above water observations).
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- rcg – Consolidated reef with well defined groove-and-spur system.
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 - sbr – Poorly sorted deposits (common off stream mouths, sometimes shoreward extensions of rubble or sand beaches).
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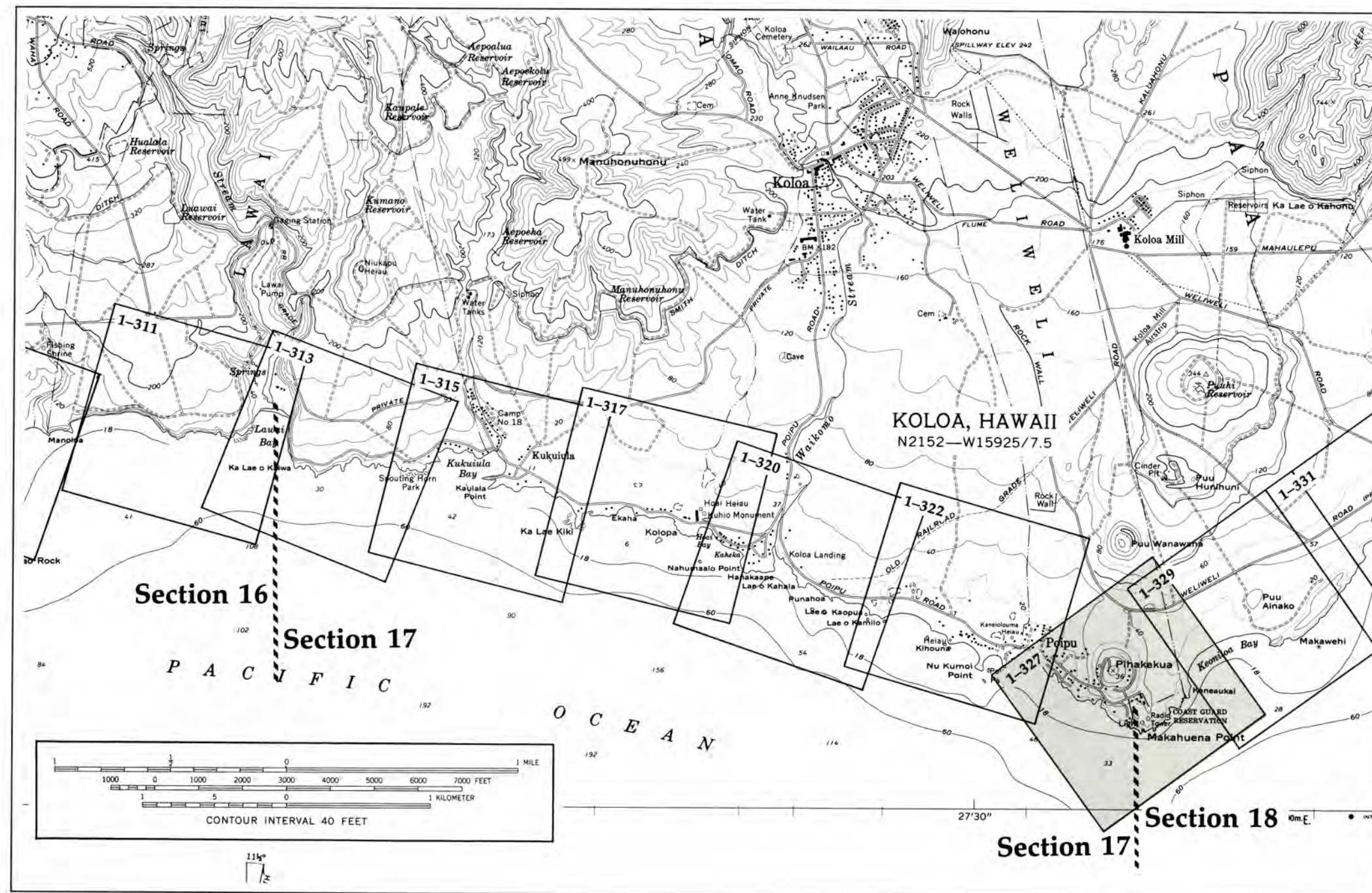
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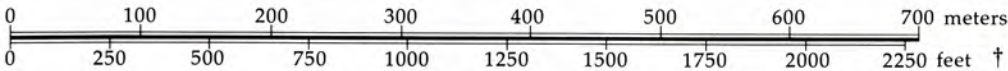
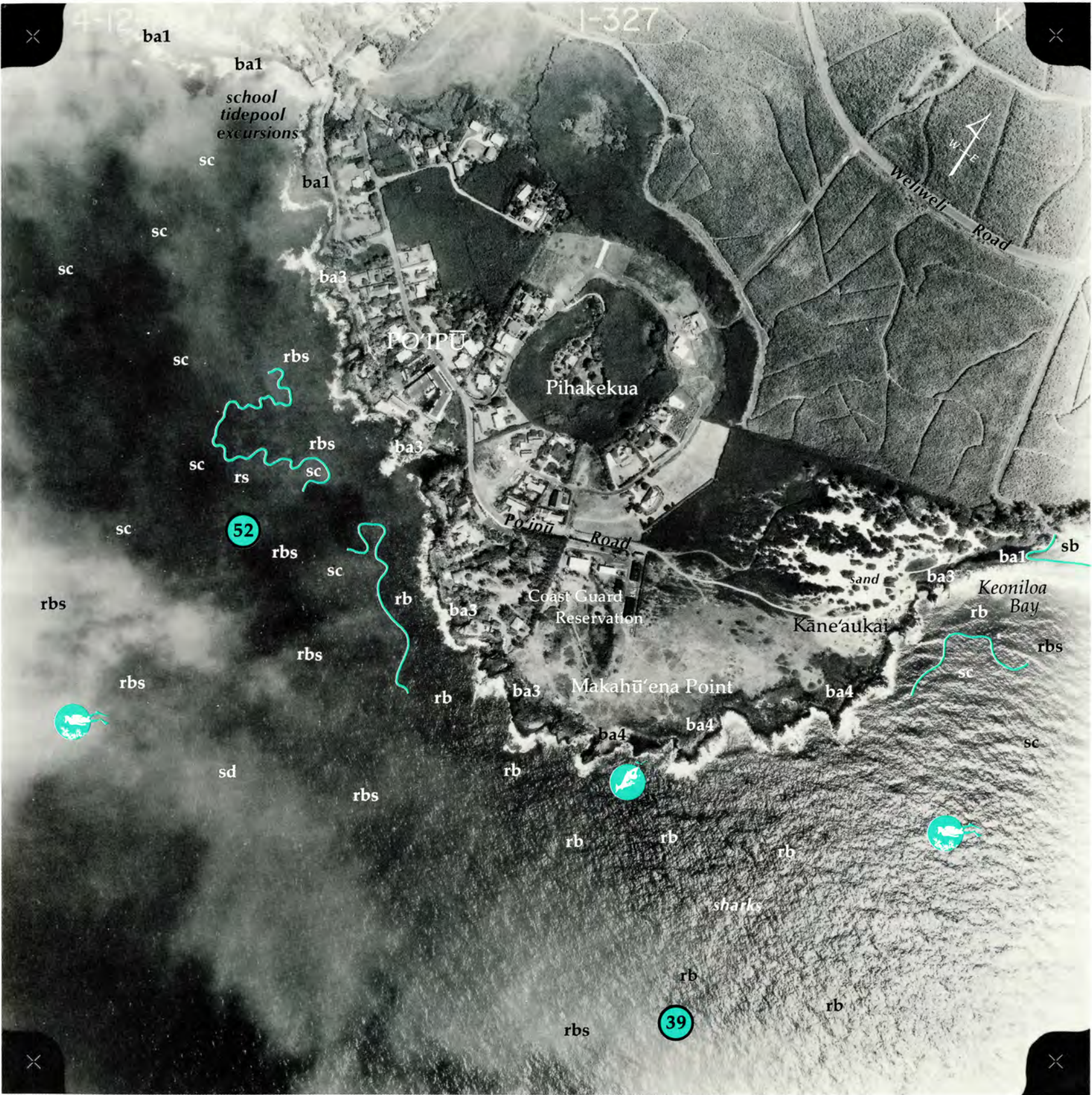
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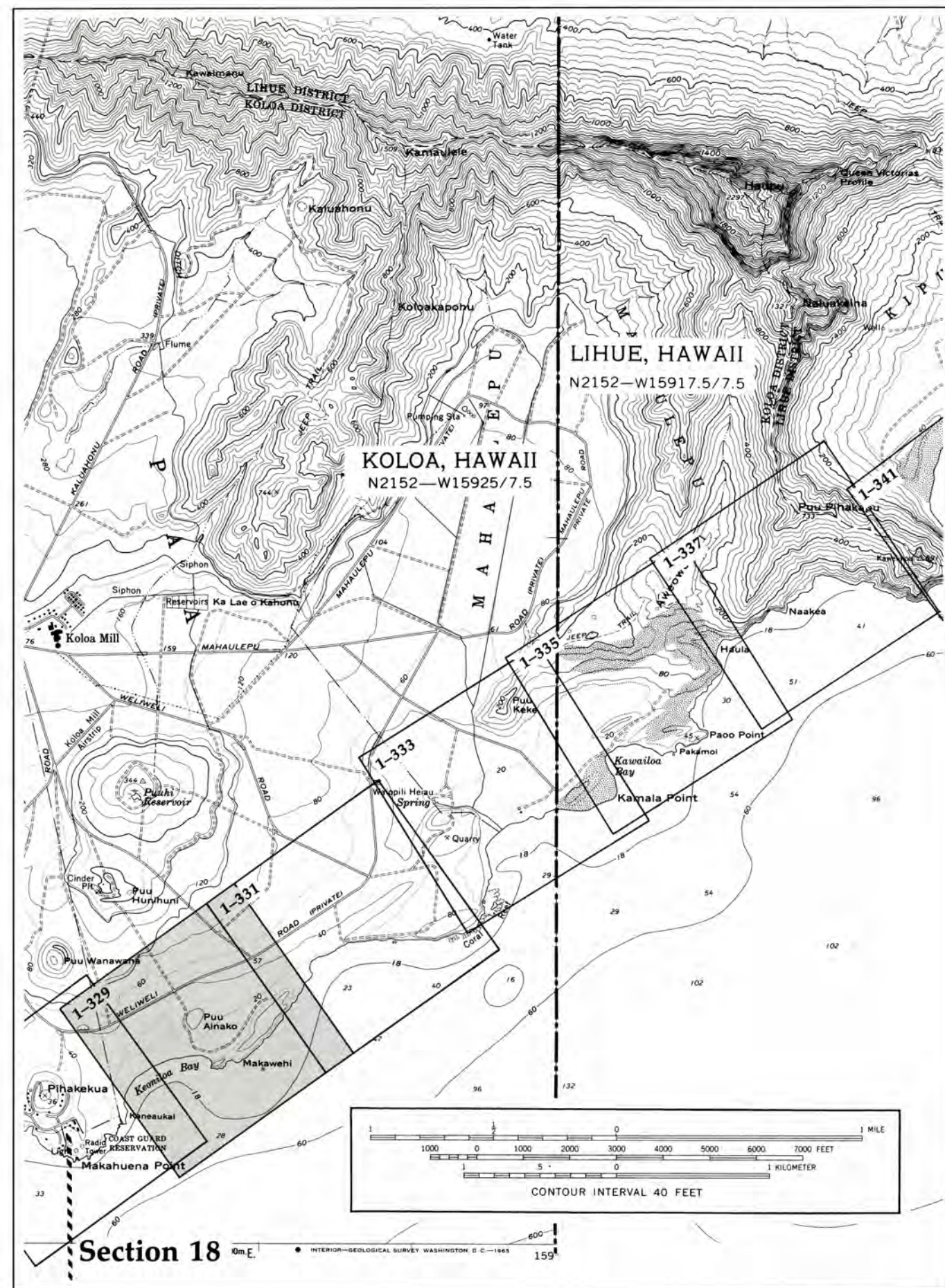
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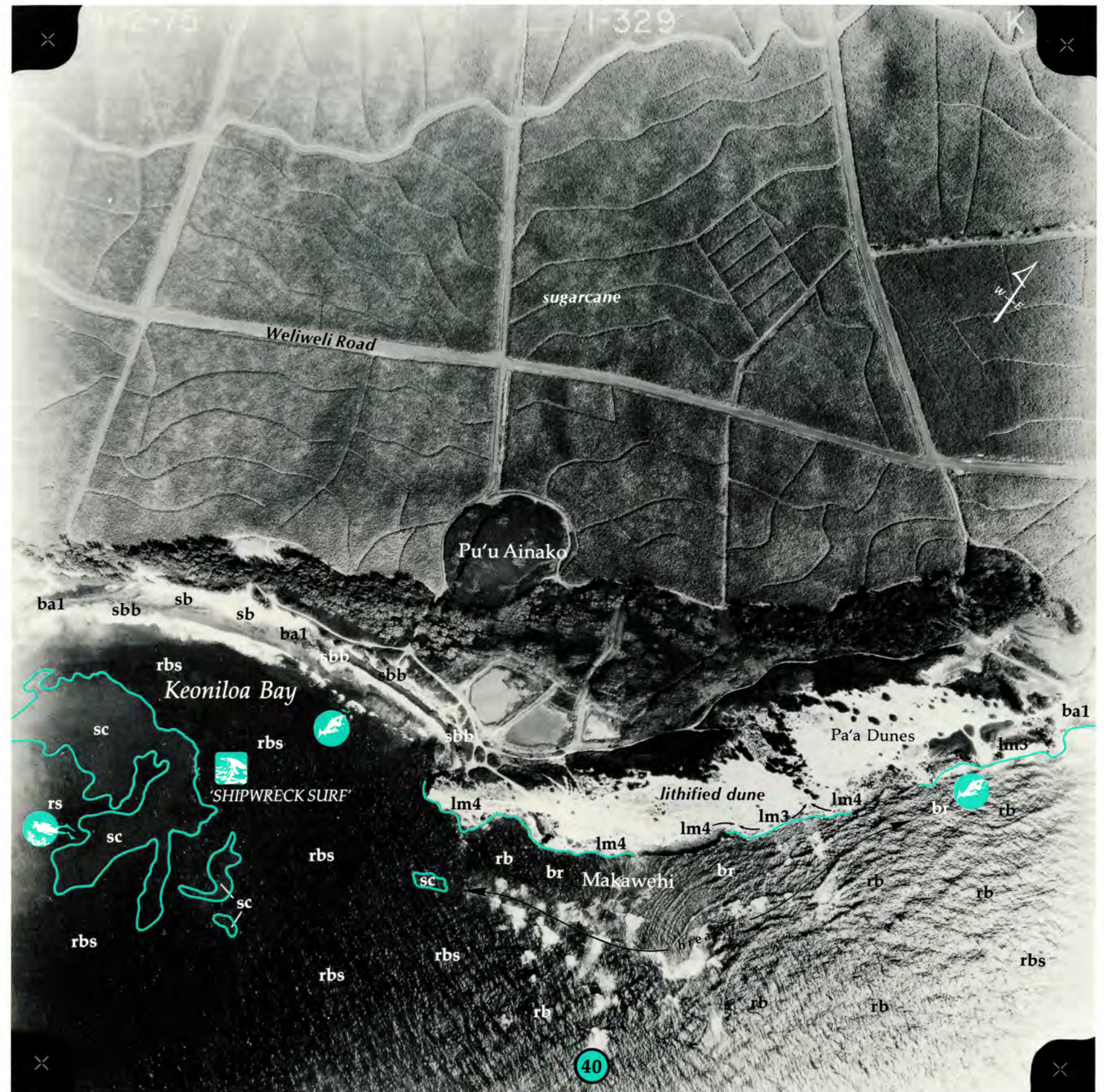
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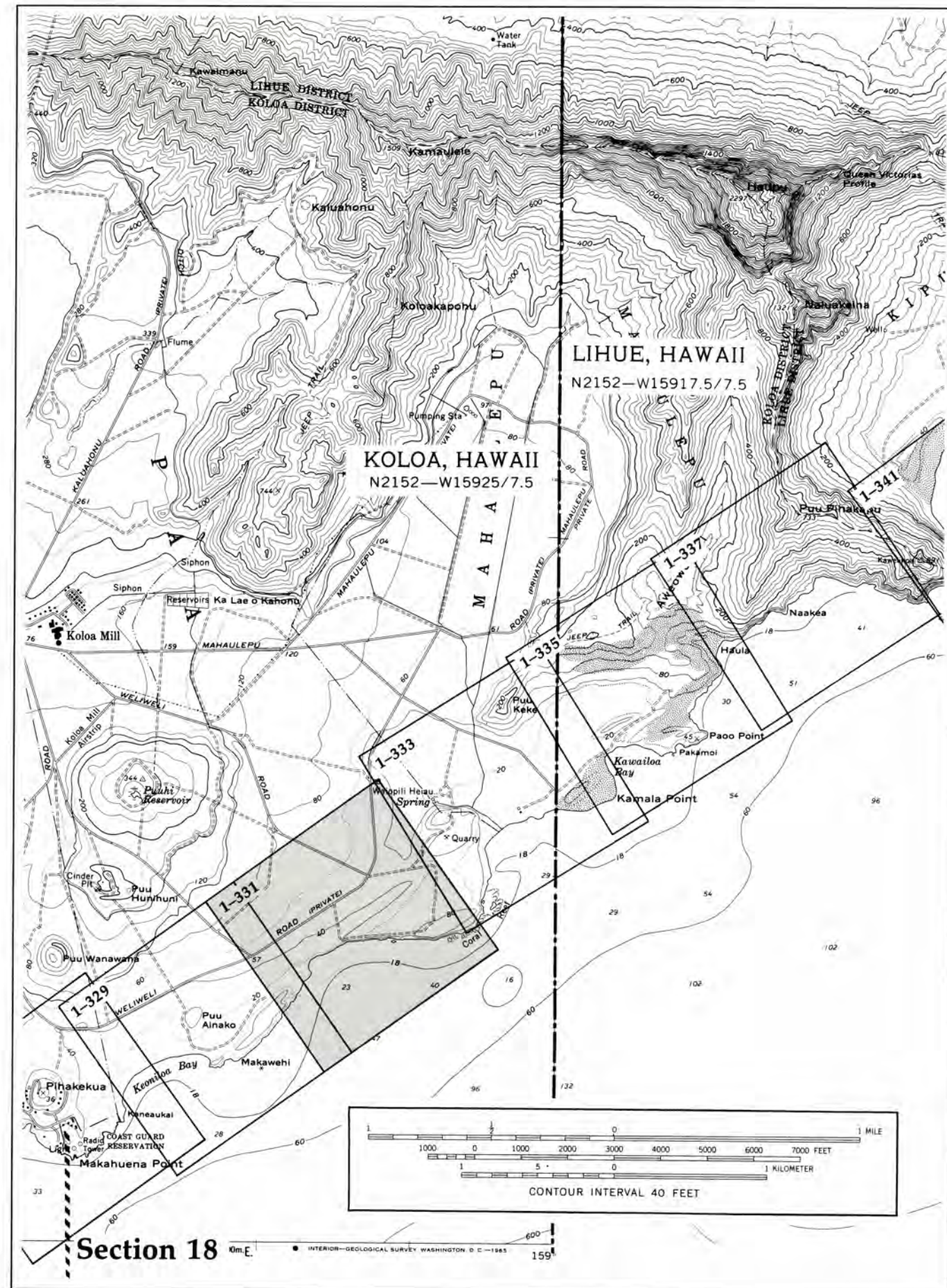
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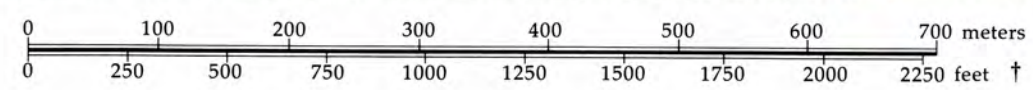
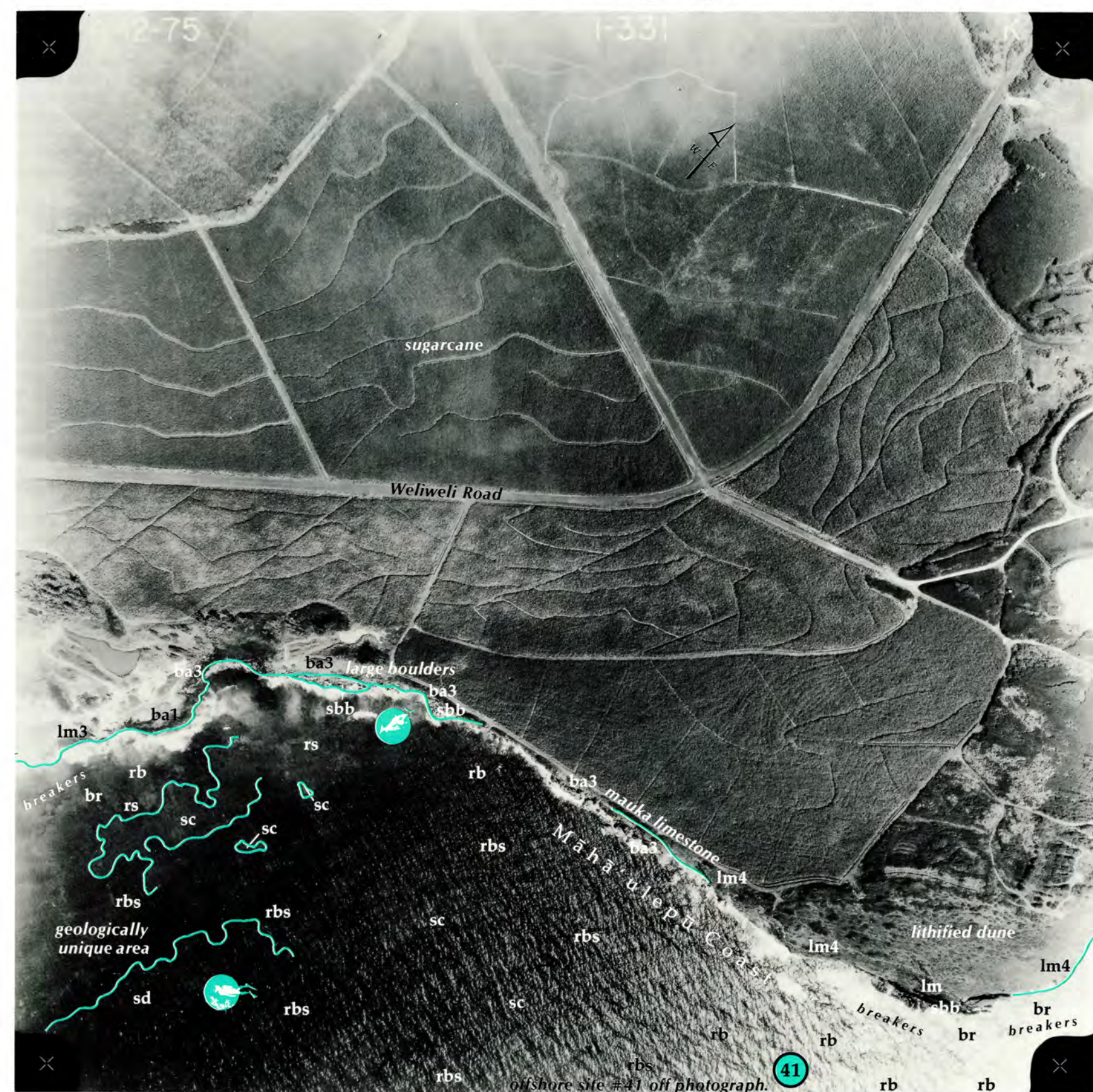
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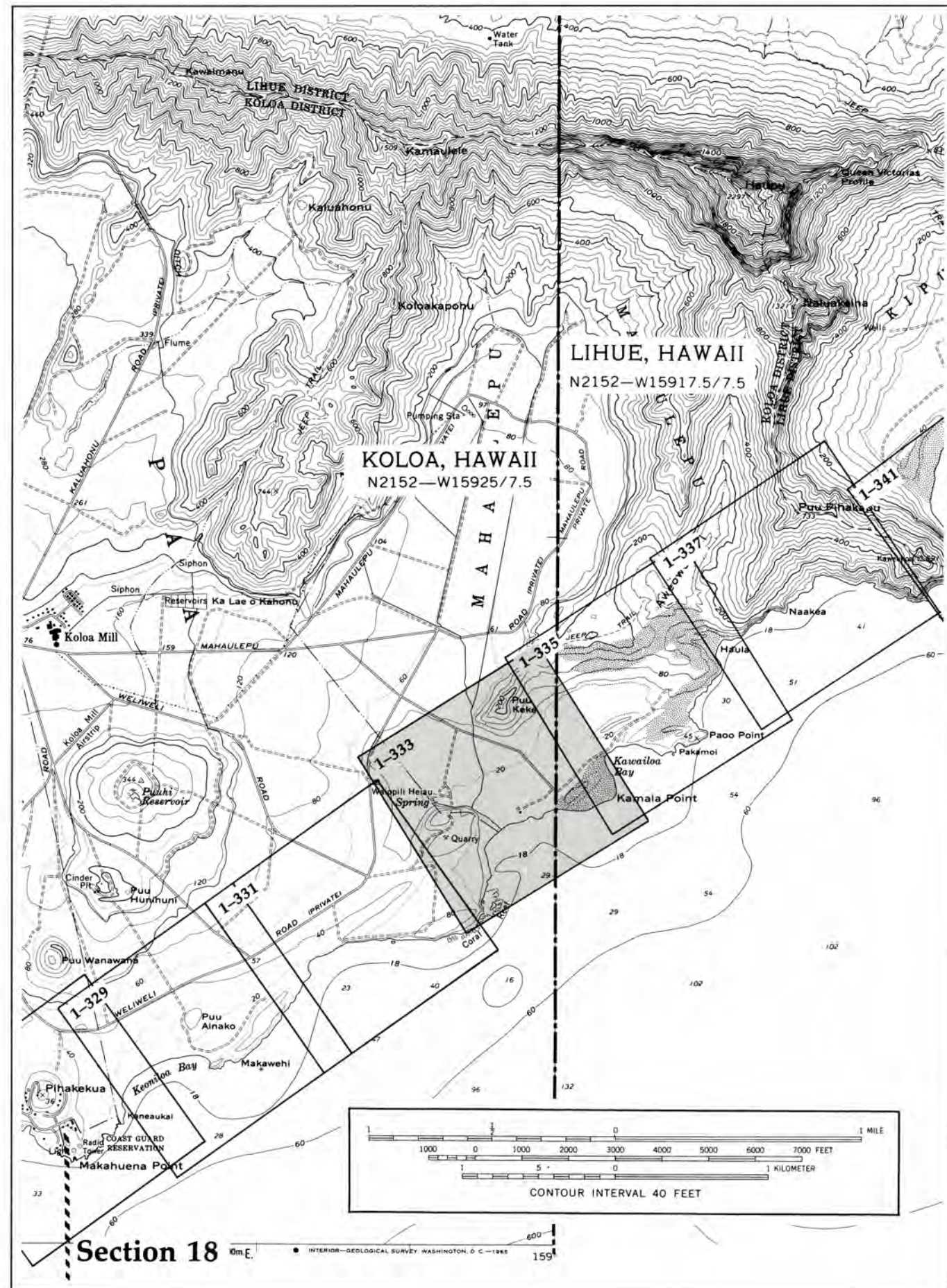
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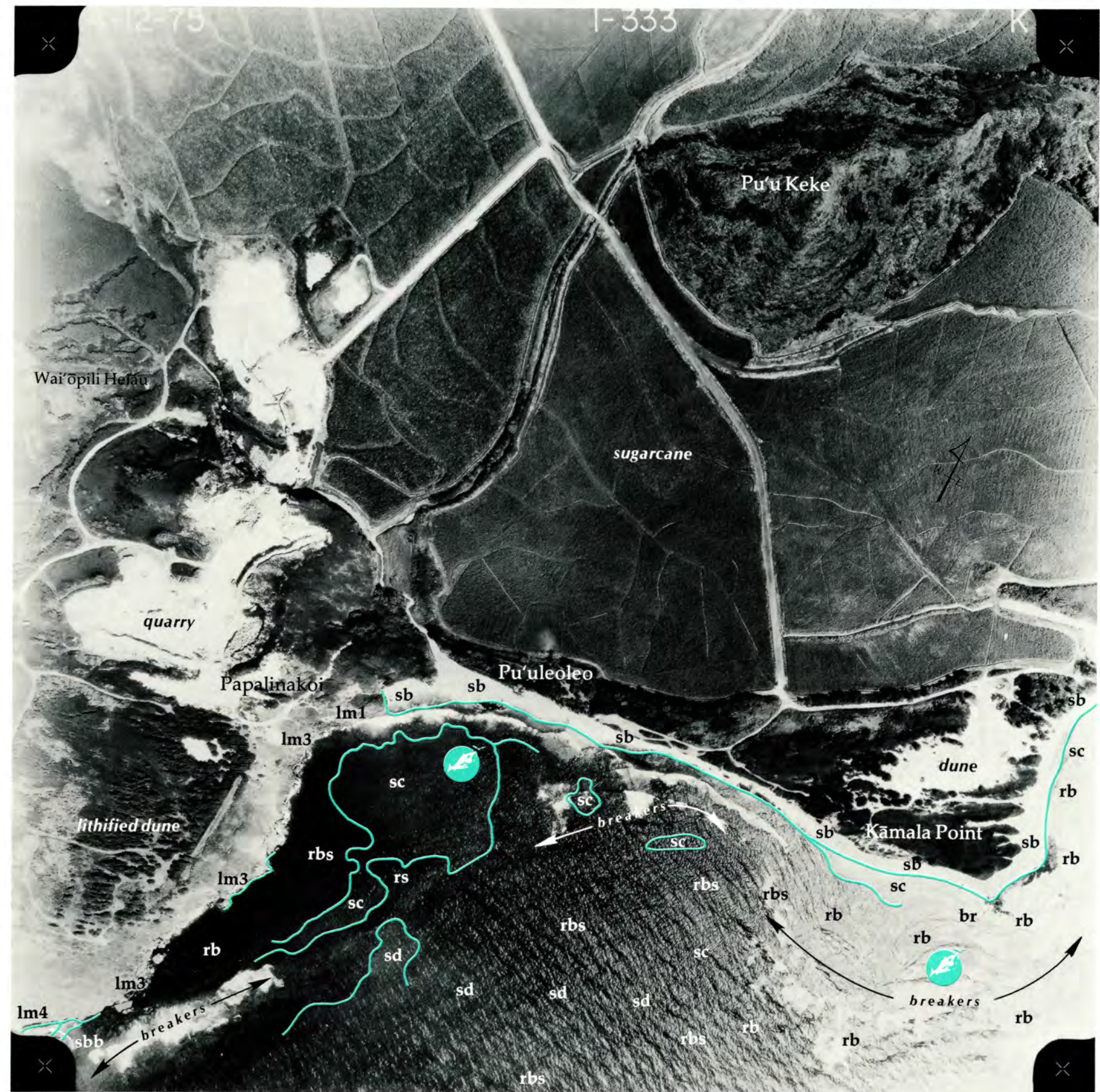
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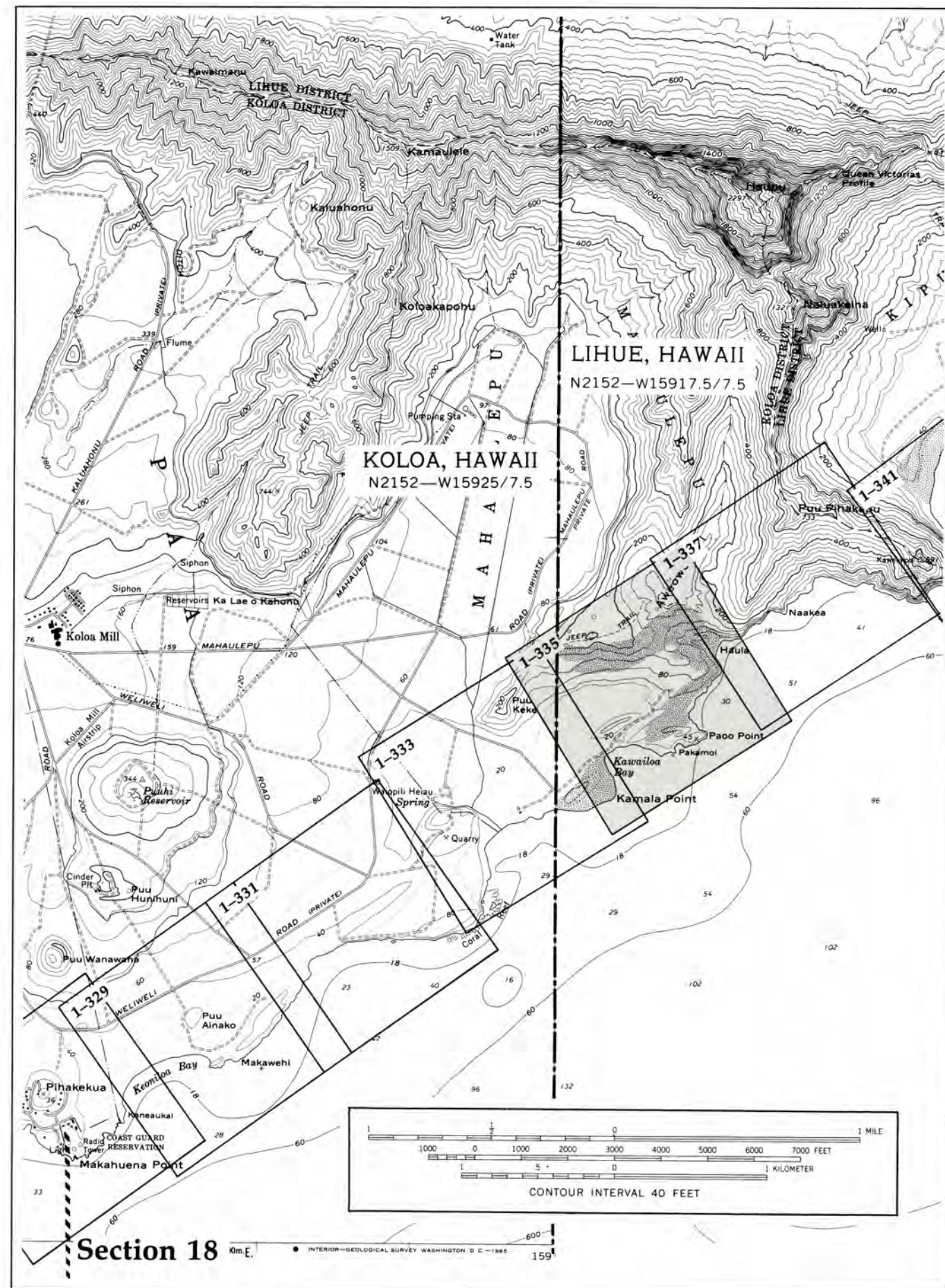
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rbs, rcs, rsg	25 - 50	50 - 75
r, rc, co	less than 25	more than 75
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-  Lobster.
-  Sea urchin (wana).
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-  Trolling, bottom-fishing.
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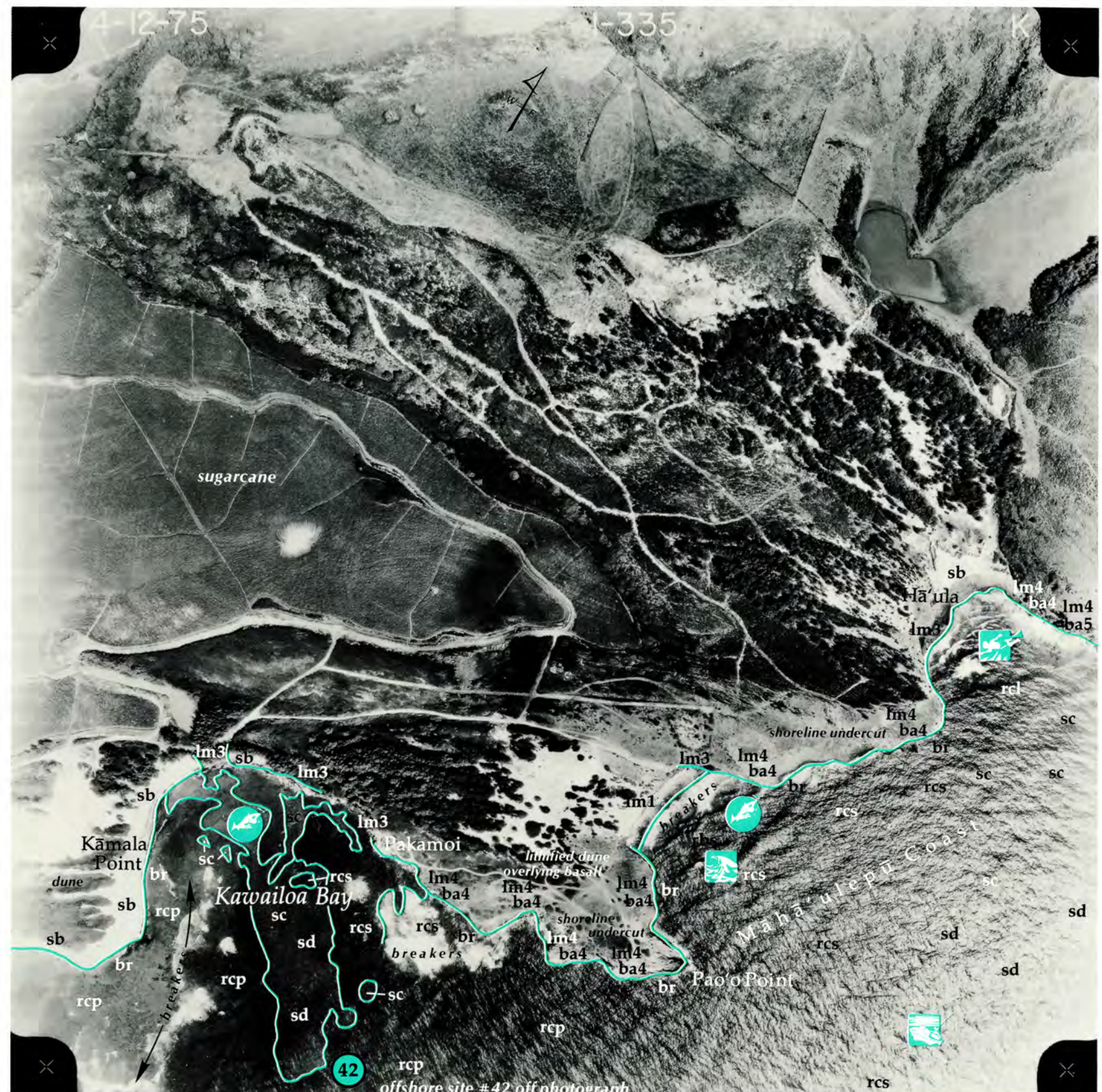
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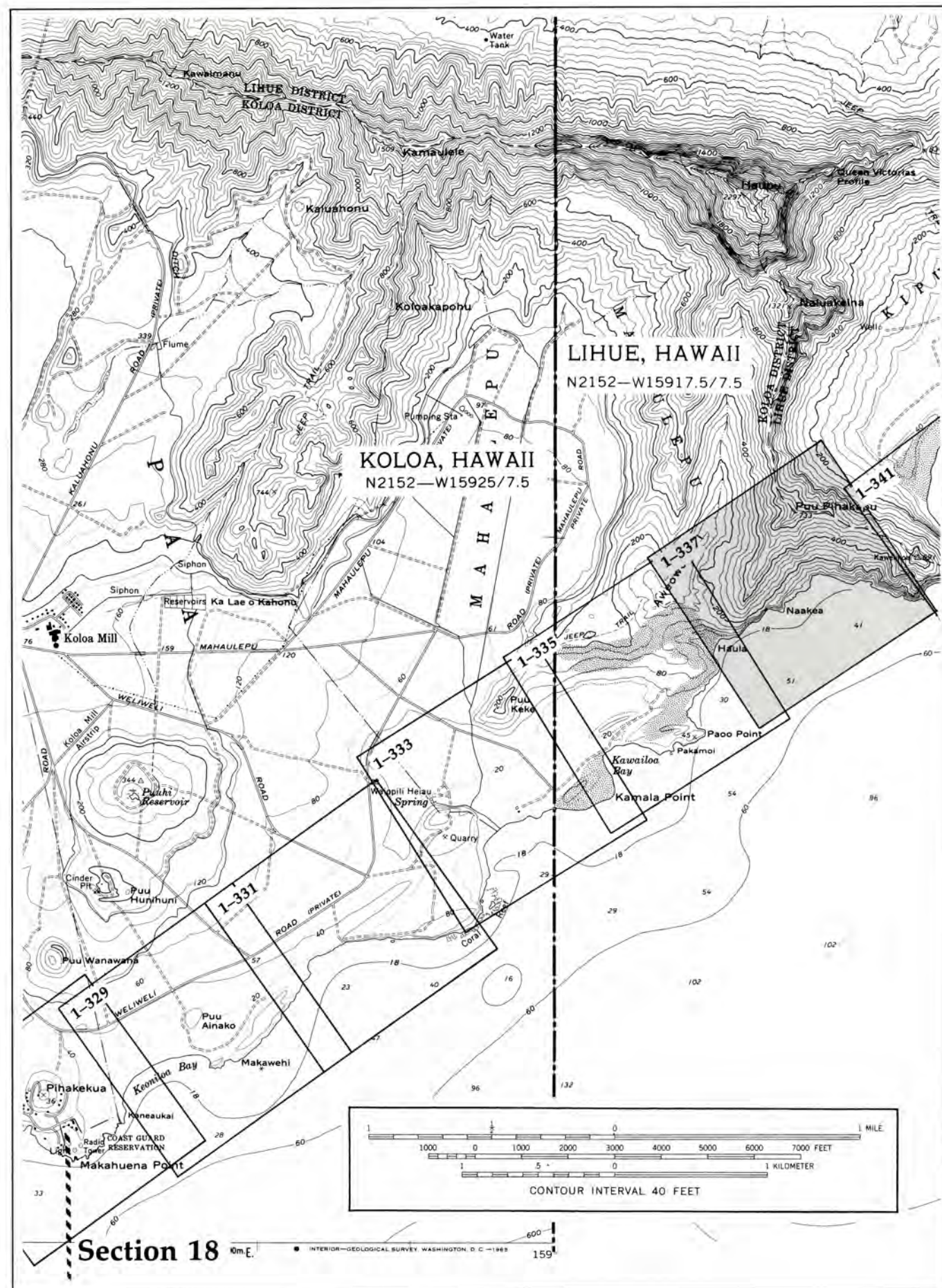
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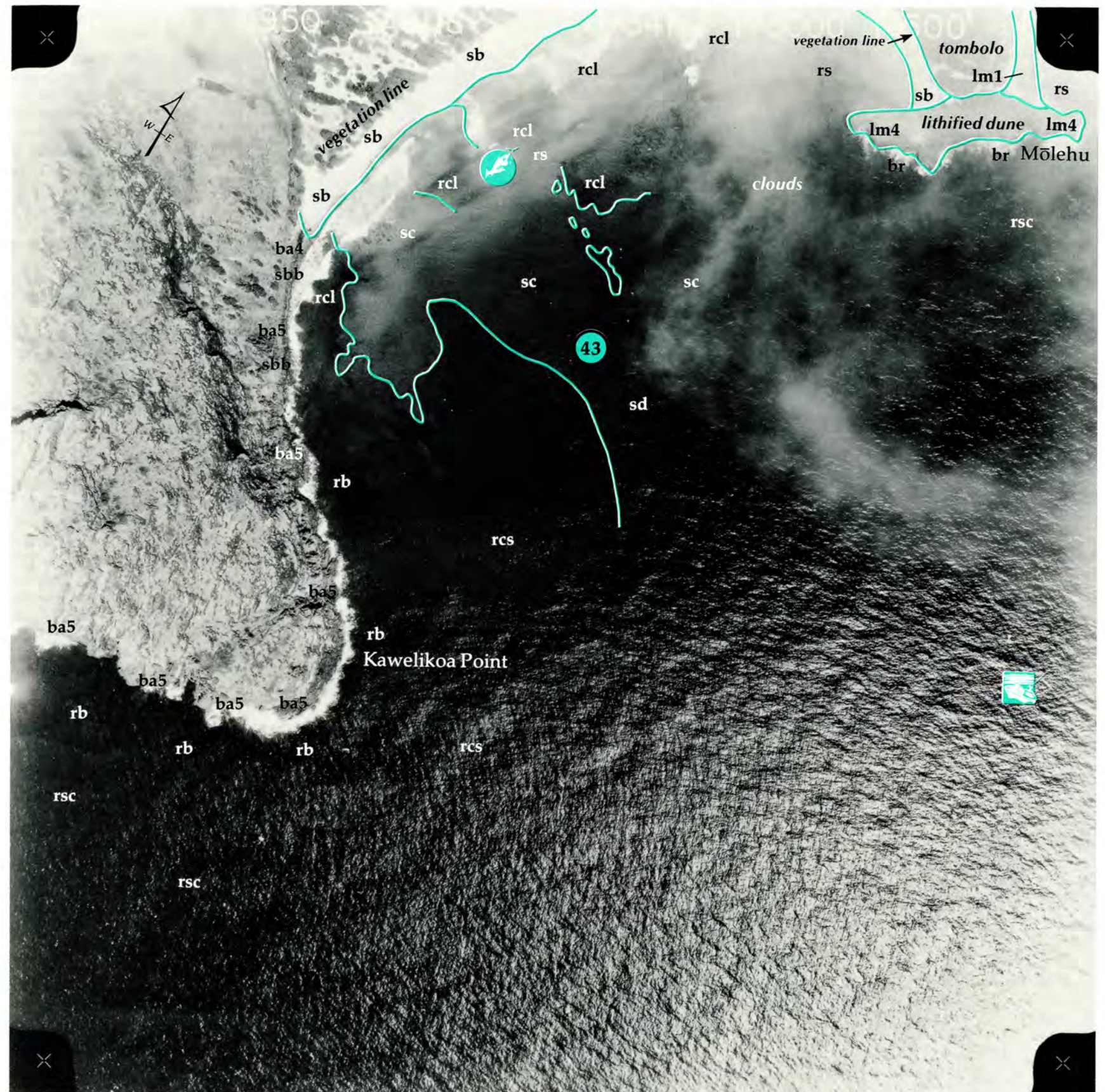
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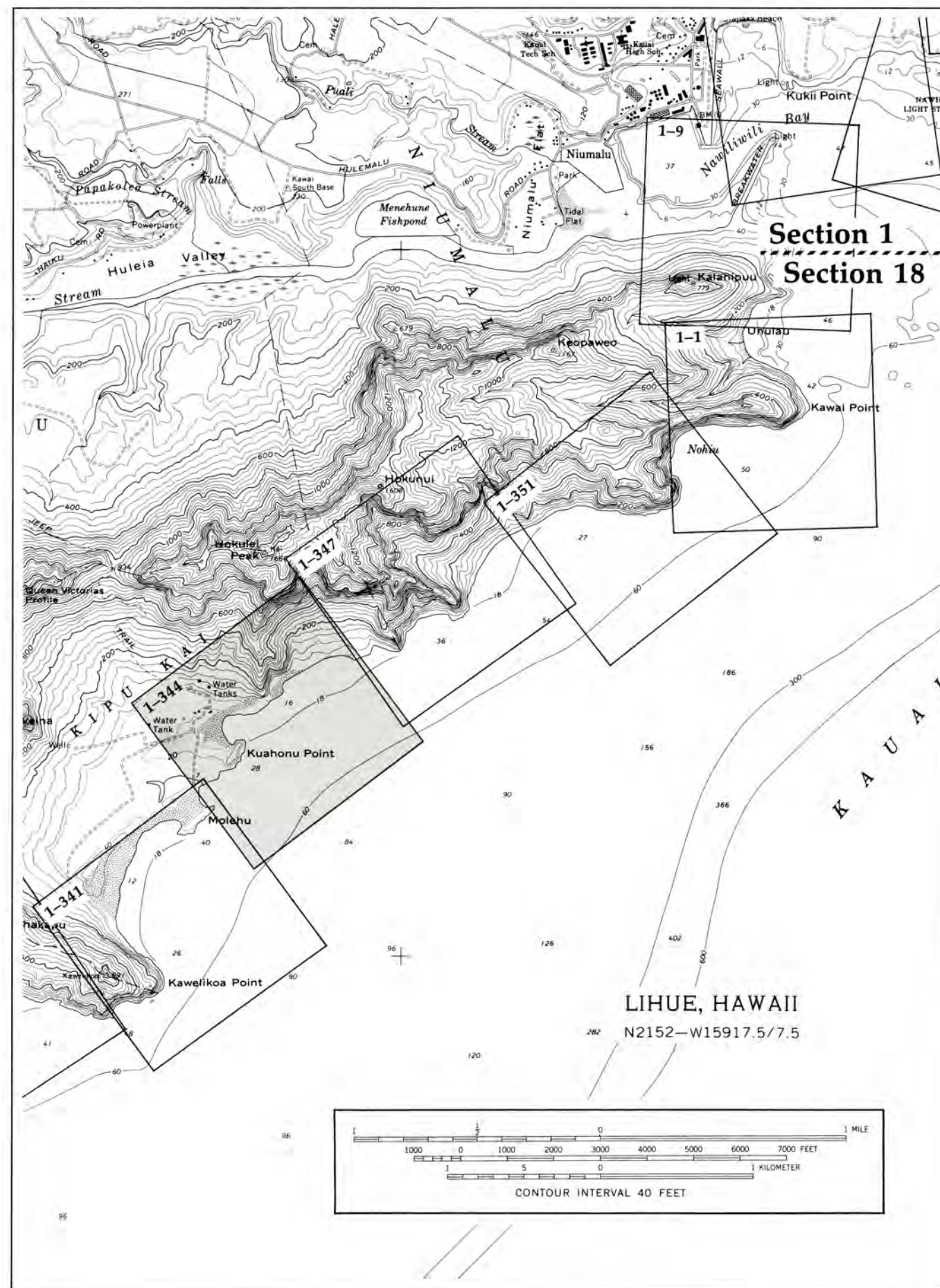
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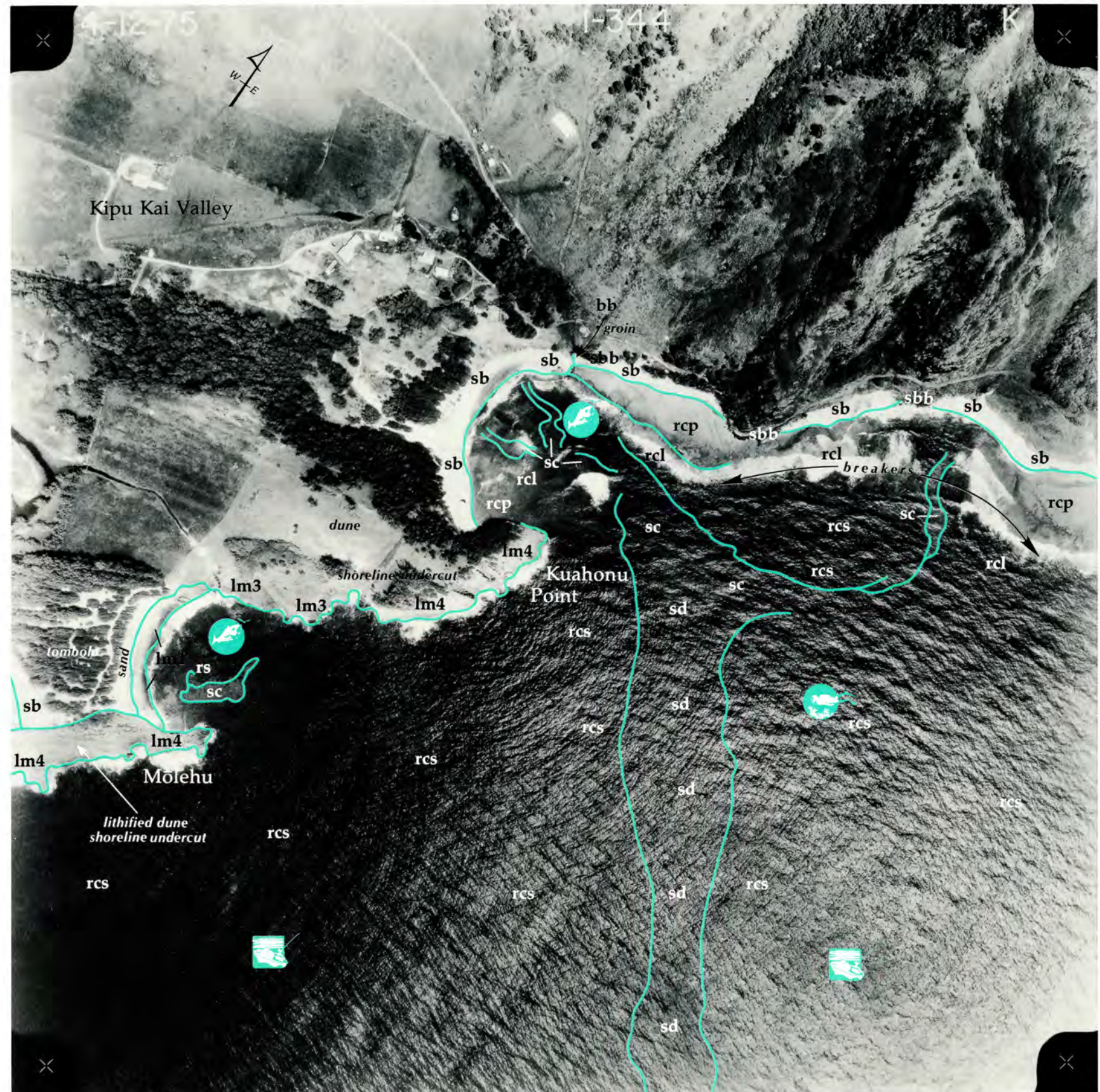
USES NOT RELATED TO BIOTA

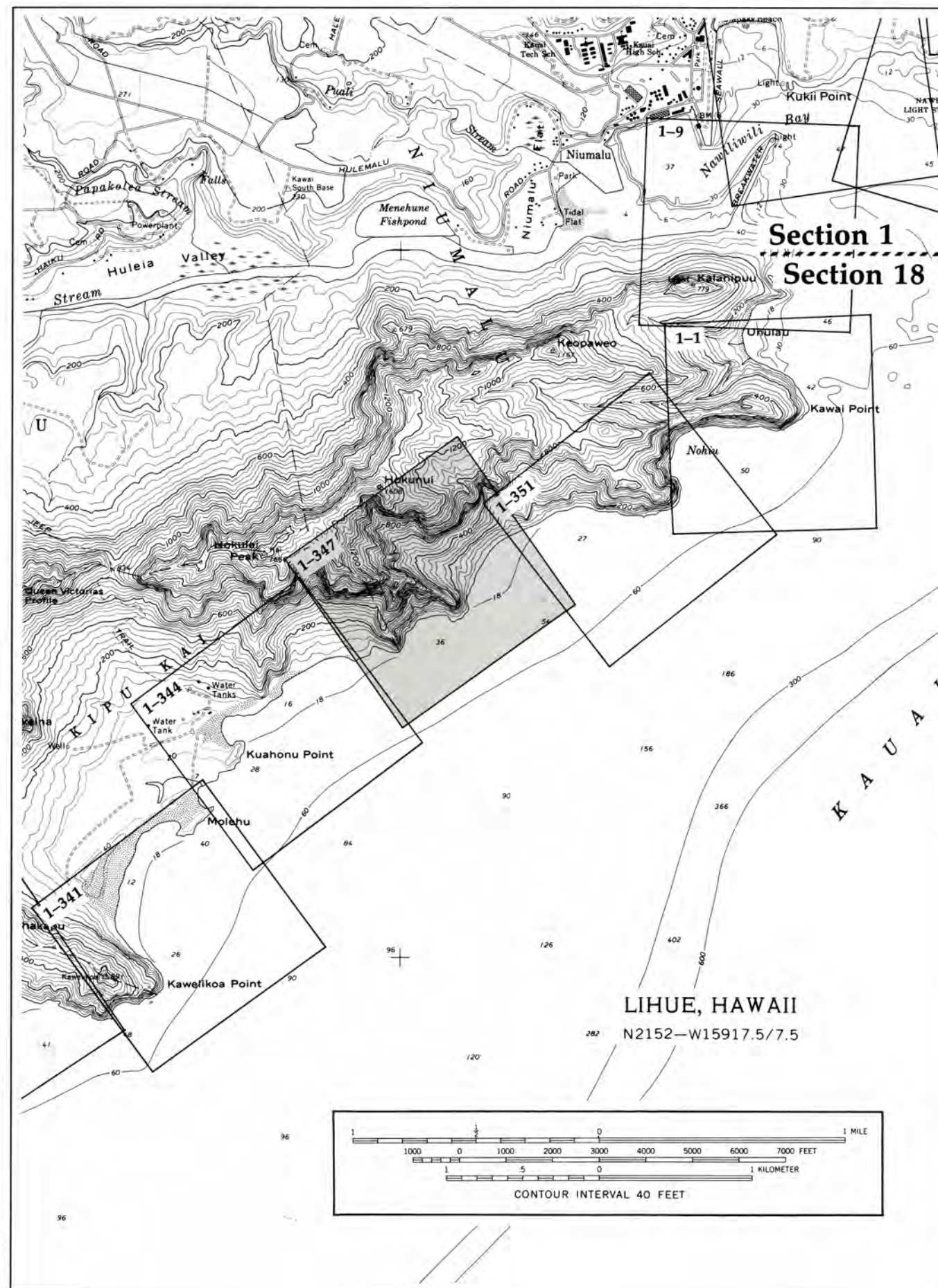
- | | |
|---|--|
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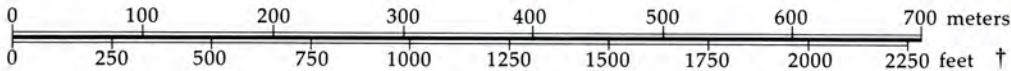
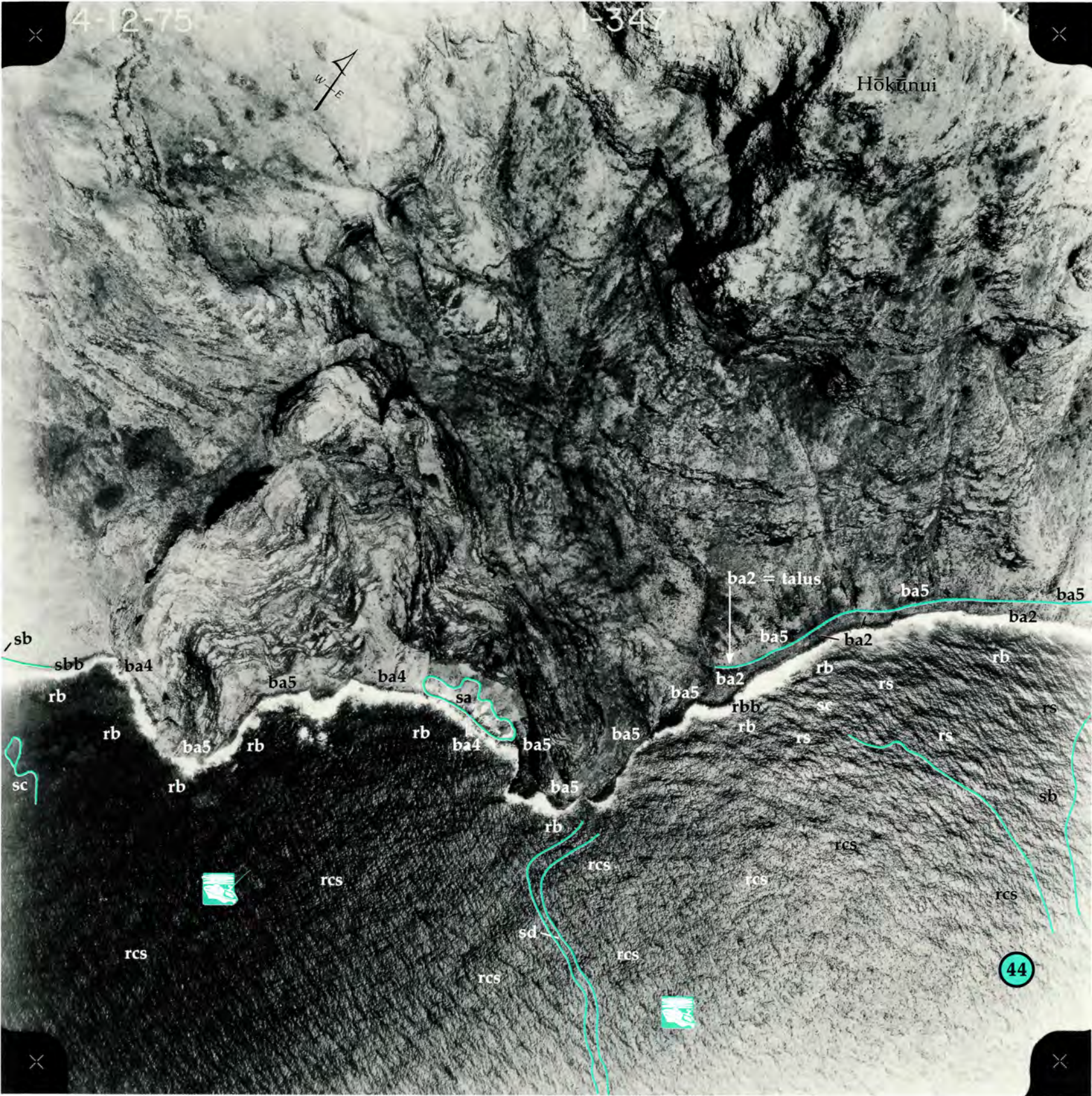
USES NOT RELATED TO BIOTA

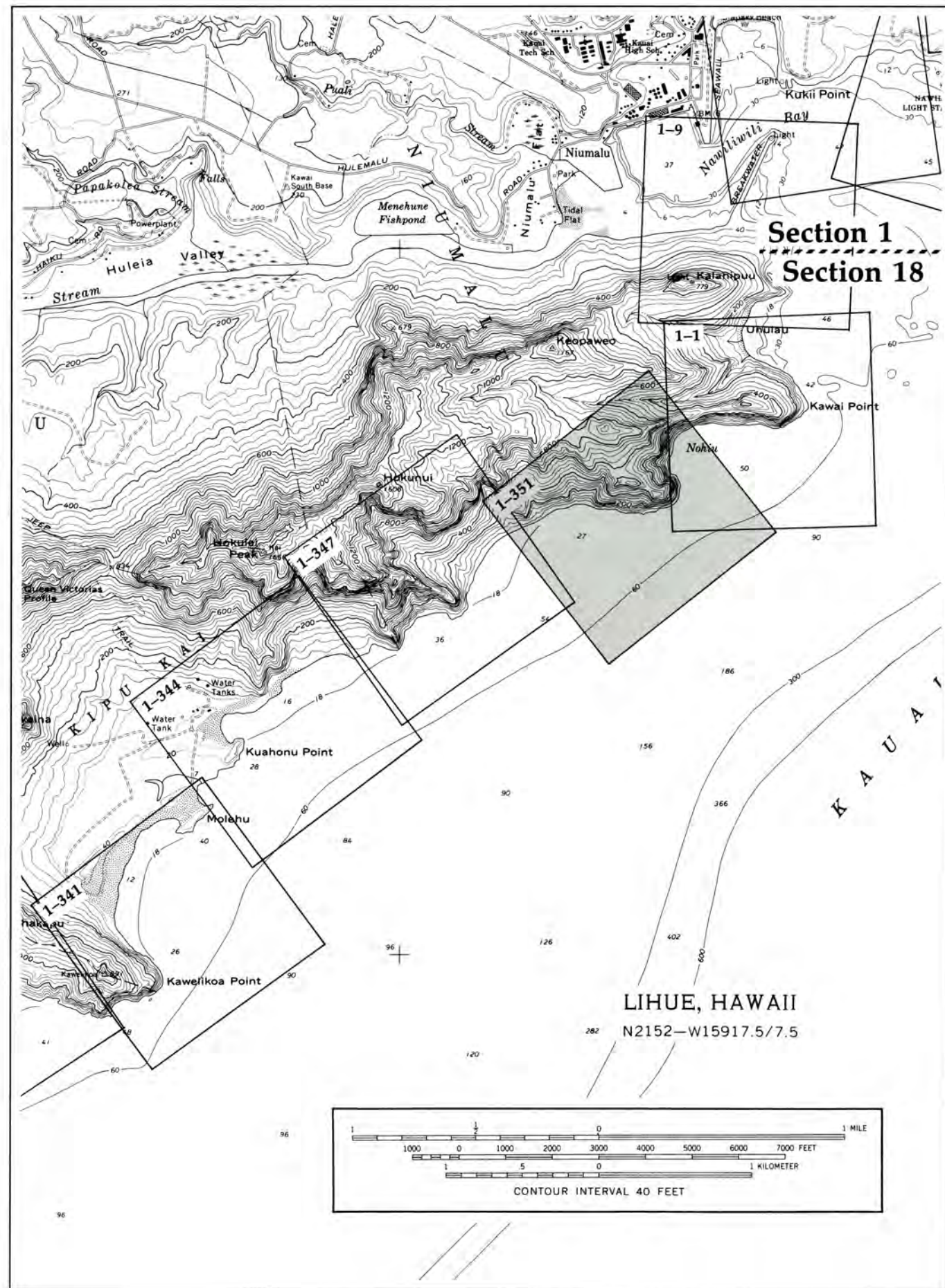
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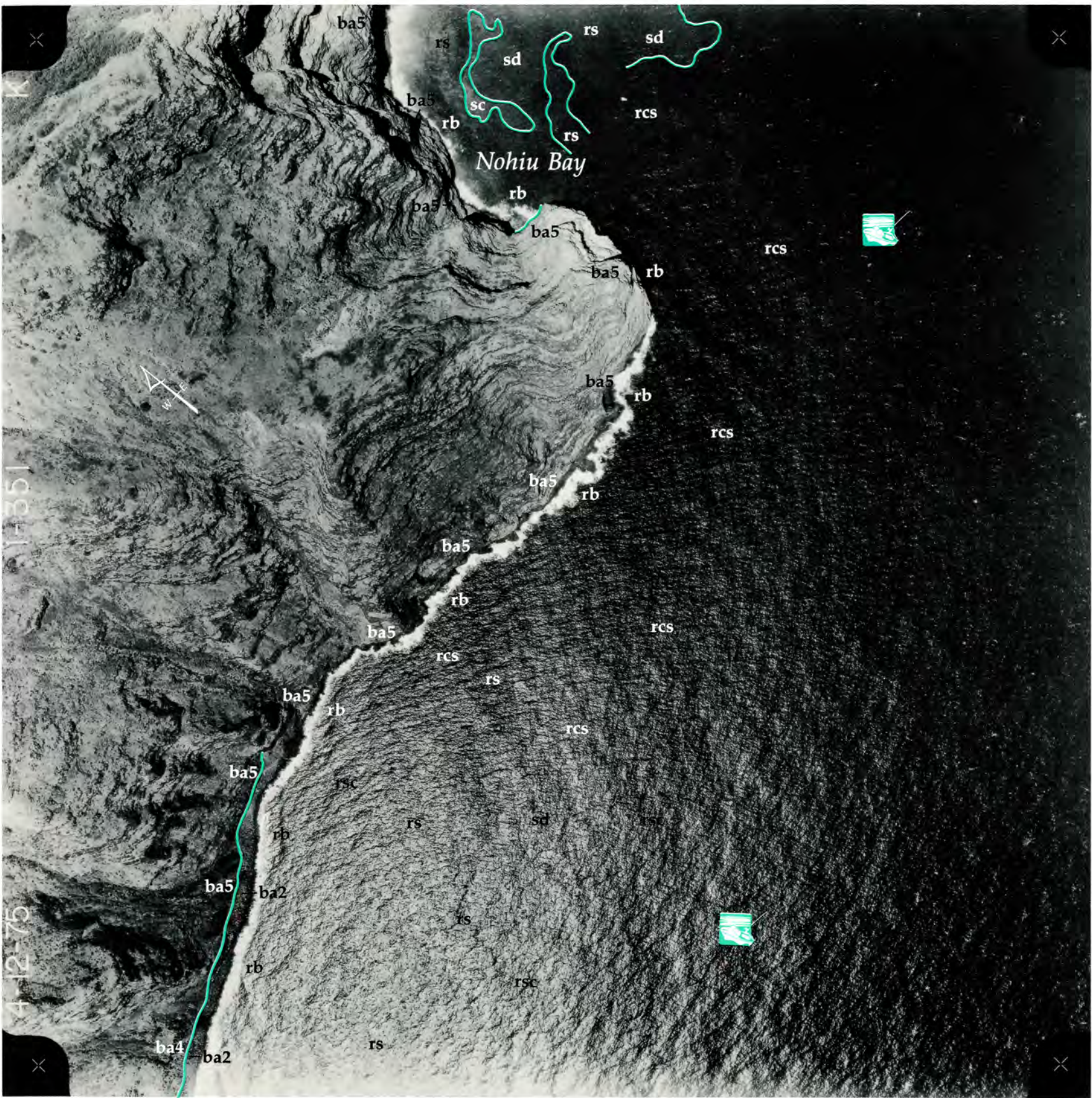
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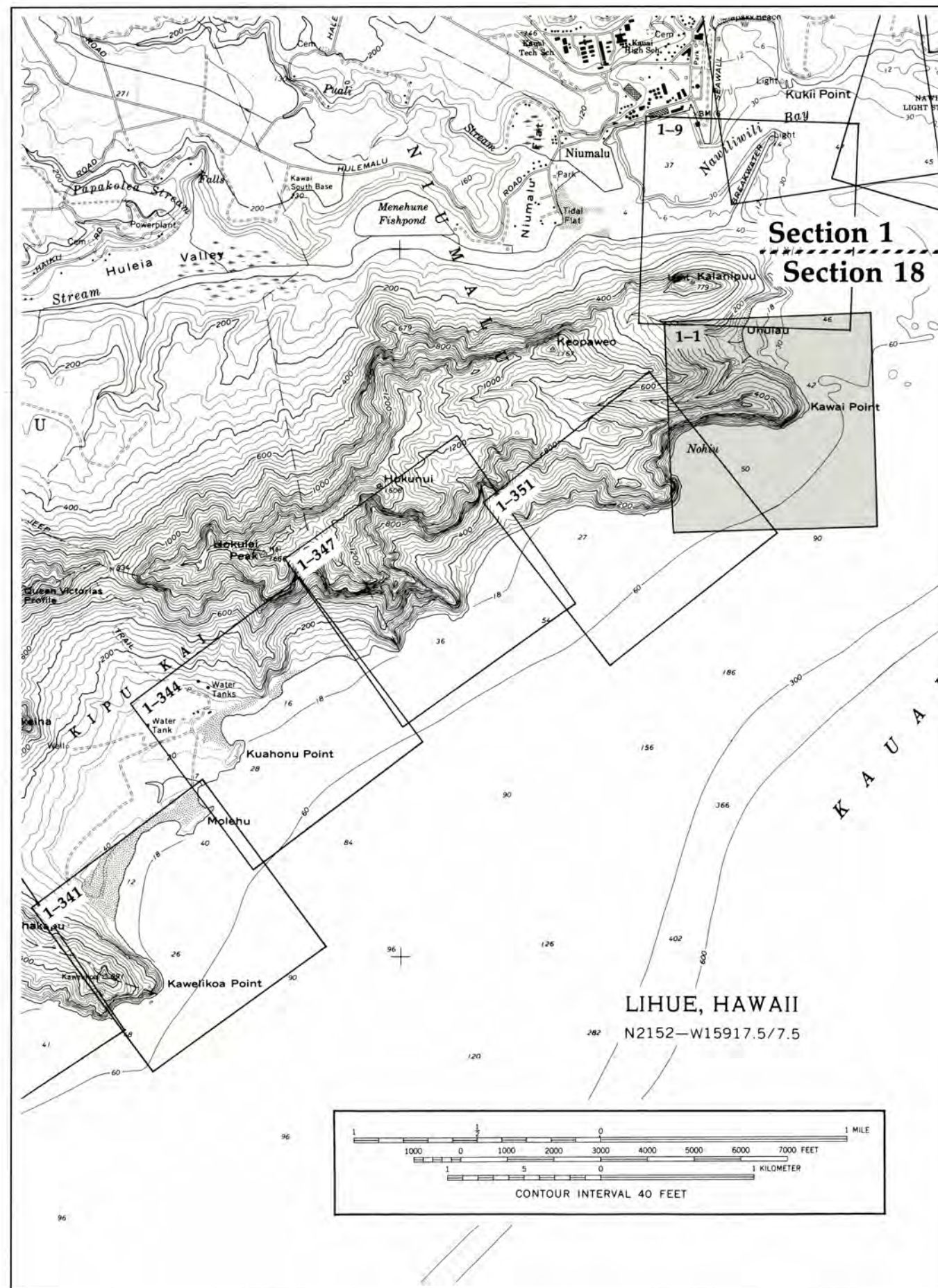
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rbc, br, s, sb, sc, sd	100	—
rs	less than 50	more than 50
rbs, rcs, rsg	25 - 50	50 - 75
r, rc, co	less than 25	more than 75
rbb, rb, rcl, rcp, rcg	—	100

Uses and Activities Along and Off the Coast

USES RELATED TO NEARSHORE BIOTA

-  Pole-and-line fishing.
-  Gill-netting.
-  Throw-netting.
-  Spearfishing.
-  Torching.
-  Trapping.
-  Lobster.
-  Sea urchin (wana).
-  Octopus (he'e).
-  Surround netting.
-  Aquarium fish collecting.
-  Seaweed (limu).
-  Sport-diving.
-  Shell collecting.

SHORELINE AND DEEP-WATER FISHING ACTIVITIES

-  Crabbing (kona, 'a'ama, swimming crab).
-  Limpet (opihi).
-  Trolling, bottom-fishing.
-  Specialized fisheries (type indicated).

USES NOT RELATED TO BIOTA

-  Board surfing.
-  Body surfing.
-  Canoe paddling.
-  Sailing.
-  Aquatic recreation (smallcraft sailing, wind-surfing).
-  Excursion boat.
-  Anchorage.

Study Sites

-  Shoreline (above water observations).
-  Inshore (inside reef edge).
-  Offshore (beyond reef edge).

† Bar scale was calculated for an average photo scale of 1:5785. Variation in flying height may create differences of up to 4% in scale accuracy.

