

21 OCT 1991

CESAD-PD-R (200)

MEMORANDUM FOR CDR, USACE, ATTN: CEMP-ZA, WASH, DC 20314-1000

SUBJECT: Defense Environmental Restoration Program for Formerly Used Defense Sites (DERP-FUDS), Inventory Project Reports (INPR)

1. As a result of an alleged high incidence rate of Hodgkin's disease within the South Patrick Shores Subdivision, U.S. Representative Jim Bacchus asked several Federal and state agencies to investigate the site for potential hazardous and toxic waste problems that might exist in the area. The Jacksonville District investigated the site for eligibility in the DERP-FUDS program.
2. The site is located south of Patrick Air Force Base (former Banana River Naval Air Station). This site was evaluated and determined to be ineligible for the DERP-FUDS program. There is no evidence that the South Patrick Shores Subdivision site was formerly owned or used by the Department of Defense.
3. Copies of this report are concurrently being sent to CEHND-ED-PM, CESAJ-PD-EE, and Environmental Protection Agency, Region IV. The District should notify Congressman Bacchus of our findings and provide his office a copy of the INPR.
4. The Division focal point is Gary Mauldin, CESAD-PD-R, at COMM 404-331-6043 or FTS 841-6043.

/S/

Encl

JOHN F. SOBKE
Major General, USA
Commanding

DWB 10/21
Barnett/PD-R
10/21
Rushing/PD

CF (w/encl):
CEHND-ED-PM
CESAJ-PD-EE
EPA, Region IV

MFR: Self-explanatory
MAULDIN

Jones/DK
Simms/DC 10/21
Ashhurst/DM
Miller/DD 10/21
Sobke/DE

NOTE: RE, PM reviewed with no comments.

PD



DEPARTMENT OF THE ARMY

SOUTH ATLANTIC DIVISION, CORPS OF ENGINEERS

ROOM 313, 77 FORSYTH ST., S.W.

ATLANTA, GEORGIA 30335-6801

REPLY TO
ATTENTION OF:

21 OCT 1991

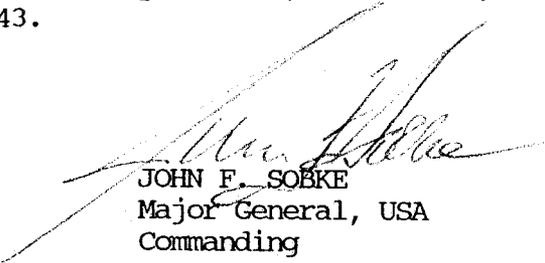
CESAD-PD-R (200)

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Encl


JOHN F. SOBKE
Major General, USA
Commanding

CF (w/encl):
CEHND-ED-PM
CESAJ-PD-EE
EPA, Region IV



DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P. O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

CESAJ-PD-EE (1110-2-1150b)

30 September 1991

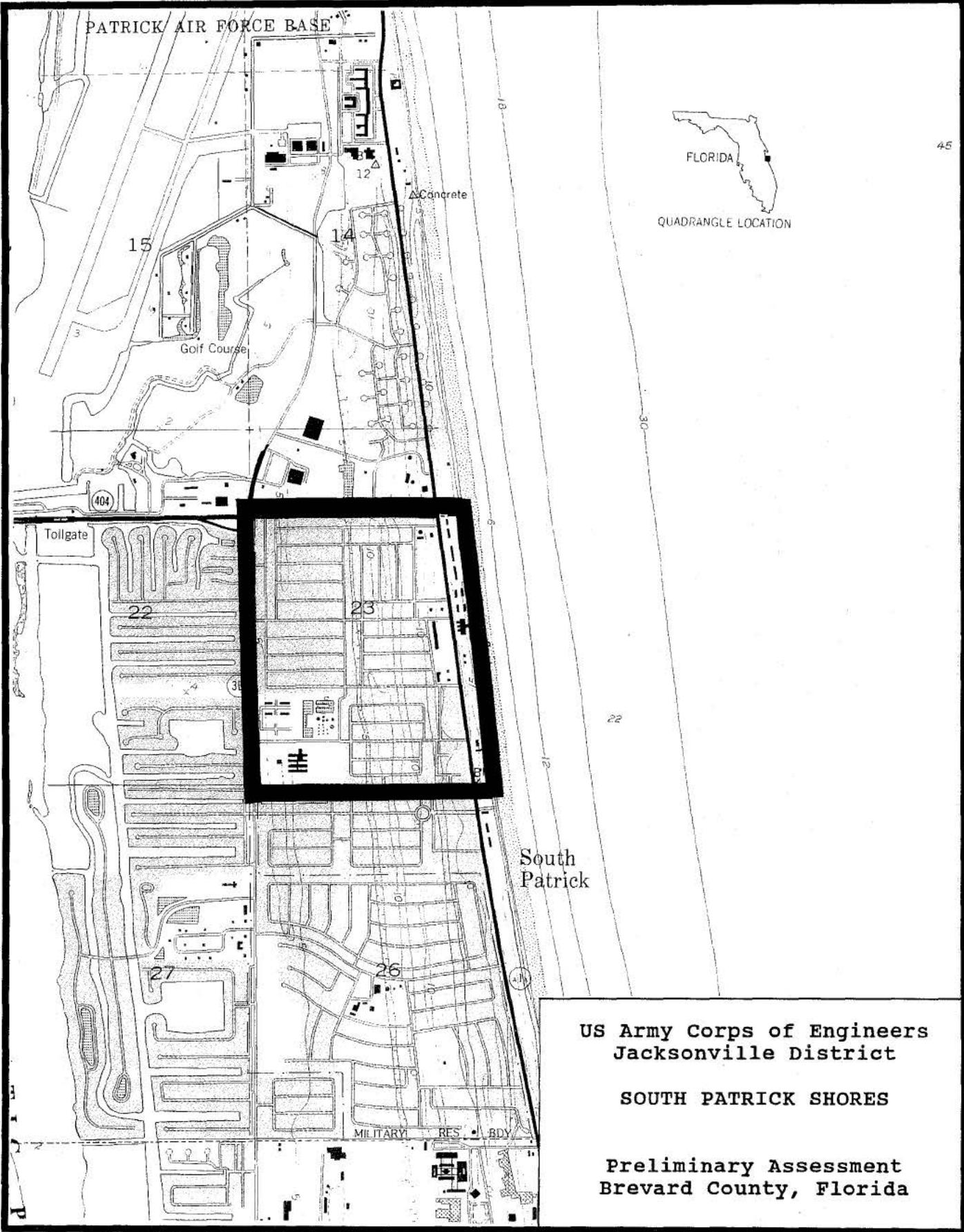
MEMORANDUM FOR Commander, South Atlantic Division

SUBJECT: DERP-FUDS Inventory Project Report (INPR) Investigation of South Patrick Shores Subdivision, Brevard County, FL.

1. This INPR reports on the DERP-FUDS investigation of South Patrick Shores which was conducted during the past three months. Because of alleged high incidence of Hodgkin's Disease within the South Patrick Shores Subdivision, U.S. Representative Jim Bacchus, called upon several Federal and State agencies to investigate potential hazardous and toxic waste problems that might exist in the area. The Jacksonville District, Corps of Engineers has investigated the possibility that South Patrick Shores Subdivision was a formerly used military site. Site visits were conducted between 23 July and 23 August 1991.
2. The site summary sheet (encl 1) and a recommended Findings and Determination of Eligibility (encl 2) are provided. A diskette containing all enclosures in ASCII and wordperfect format is provided as enclosure 3.
3. We have determined that there is no evidence that this site was formerly owned or used by the Department of Defense and is therefore not eligible as a DERP-FUDS site.
4. I recommend that you approve and sign the FDE.
5. Points of contact are Peter Besrutschko, (904) 791-2298 or FTS 946-2298 and Don Nelson, (904)-791-3874 or FTS 946-3874.

3 Encls

TERRENCE C. SALT
Colonel, Corps of Engineers
Commanding



US Army Corps of Engineers
 Jacksonville District
 SOUTH PATRICK SHORES
 Preliminary Assessment
 Brevard County, Florida

SITE SURVEY SUMMARY SHEET
FOR
SOUTH PATRICK SHORES SUBDIVISION
24 SEPTEMBER 1991

SITE NAME: South Patrick Shores Subdivision

LOCATION: South Patrick Shores Subdivision is located in Section 23, Township 26 South, Range 37 East, Brevard County, Florida, immediately south of Pineda Causeway, the south boundary of Patrick Air Force Base; see attached site location map (attach 1).

SITE HISTORY: Patrick Air Force Base, an active Air Force installation, was known as Banana River Naval Air Station, between 1940 and 1948. The location of South Patrick Shores Subdivision is immediately south of the south boundary of Patrick Air Force Base. During the period 1940 to 1954, the area encompassing what is now South Patrick Shores Subdivision was undeveloped and predominantly marsh land. The site was investigated due to allegations by members of the community that the subdivision was constructed over a military landfill and reports of alleged high incidence of Hodgkin's disease in the neighborhood.

SITE VISIT: Between 23 July and 23 August, several site visits were conducted. The land title records, Navy and Air Force real estate records, and the history of the former Banana River Naval Air Station were reviewed to determine if the DoD ever acquired or disposed of real estate interest in the property. No records have been located which would indicate that the DoD acquired any real estate interest or used the property on which the subdivision is now located. Because aerial photography from 1943 through 1954 showed some type of scarring of the lands in the area where the subdivision is now located, the District conducted a more extensive investigation into the site to determine if the DoD had used the site without benefit of any real estate interest. Personal interviews were conducted with former Naval personnel stationed at the Banana River Naval Air Station between 1941 and 1948 (attach 2), residents of the subdivision (attach 3), and excavation workers and contractors who assisted in the development of the subdivision (attach 4). Based on the interviews it is concluded that debris of a military origin may have been found within the boundaries of the subdivision, however, former Naval personnel do not recall the military dumping in the subdivision area. According to former Naval personnel, the area was mostly undeveloped between 1941 and 1948.

encl 1

The U.S. Army Engineer Topographic Laboratories, Ft. Belvoir, analyzed aerial photography sets from 1943 through 1958 (attach 5) to reveal that excavation and bulldozing occurred in the area where the subdivision is now located. However the resolution of the photography is not of sufficient quality to determine if military debris burying occurred. We have determined that there is no evidence that this site was formerly owned or used by the Department of Defense and is therefore not eligible as a DERP-FUDS site.

CATEGORY OF HAZARD: None.

PROJECT DESCRIPTION: None.

AVAILABLE STUDIES AND REPORTS: Engineering Topographic Laboratories, Terrain Analysis Center, Aerial Photo analysis report, 23 Sep 1991 (attach 5).

PA POC: Peter Besrutschko, (904) 791-2298 or FTS 946-2298, or Don Nelson (904) 791-3874 or FTS 946-3874.

encl 1

INTERVIEW WITH MR. CECIL NEAL

Mr. Neal is a former Marine, stationed at the Banana River Naval Air Station between 1945 and 1946 as a Brig Warden. As he lives in the Brevard County area, he is familiar with the South boundary of Patrick Air Force Base (Pineda Causeway) and the location of South Patrick Shores. To the best of his knowledge, he did not recall any dump in the area of South Patrick Shores. Did not recall to much about area except to say that POW camp was within boundaries of Navy property.

INTERVIEW WITH MR. WILLIAM SPIETH AND WIFE

Mr. Spieth was a Navy aviation mechanic stationed at Banana River Naval Air Station from 1941 to 1945, his wife worked in the Public Works department at BRNAS from 1941 to 1945. Neither were to familiar with the south boundary of PAFB or the location of SPS. They both remembered the Navy dumping within the boundaries of the former BRNAS and could not recall any dumps off base. Area south of base was mostly scrub and palmettos.

INTERVIEW WITH MR. ART CORLEW

Mr. Corlew was with an Army detachment assigned to guard German POWs at the Banana River Naval Air Station. Served at BRNAS from 1944 to 1945. Is familiar with current south boundary of PAFB and location of SPS. POW camp was located within boundaries of BRNAS. No recollection of any activity within area of SPS, but did not recall what area south of base fence line looked like in 1944.

INTERVIEW WITH MR. BARTON CAMPFIELD

Mr. Campfield served in the Navy at BRNAS from 1943 to 1947, and is basically familiar with the south boundary of PAFB and the location of SPS. Because of the job he was assigned at BRNAS he had no knowledge of any Navy activity in the area of SPS but could recall that the area south of the base was mostly palmetto and scrub.

INTERVIEW WITH MR. CHARLES HUSON

Mr. Huson was a Navy flight engineer stationed at BRNAS from 1942 to 1943 training pilots on the PBMs. He was familiar with both the south boundary of PAFB and the location of SPS. He knows of no dumping by the Navy on the area of SPS. As a flight engineer, he overflew the area and stated that the only thing in that area was some wood pilings utilized by the Navy to check air speed.

INTERVIEW WITH MR. JAMES W. WHITE

Mr. White was a Navy radio man stationed at BRNAS from 1942 to 1943. He was familiar with the south boundary of PAFB and the location of SPS. To the best of his knowledge he could not recall anything like dumping in the area south of the Pineda Causeway. He did not recall too much about what the area looked like in 42 and 43, except that a lot of palmettos existed south of the base.

INTERVIEW WITH MR. WARREN OSBORNE

Mr. Osborne was a Navy electronics expert stationed at BRNAS in 1941. While he was familiar with the south boundary of PAFB and the location of SPS, he could not recall how the area looked in 1941.

INTERVIEW WITH MR. W.J. POSEY

Mr. Posey was in the 1943 training class at BRNAS for 3 months and could not recall anything about the base.

INTERVIEW WITH MR. CLYDE MADDOCK

Mr. Maddock was a Navy supply officer stationed at BRNAS from 1942 to 1943. While he was familiar with the south boundary of PAFB and the location of SPS, he could not recall anything about the area south of the BRNAS during 42 and 43.

INTERVIEW WITH MR. JOE KOWALSKI

Mr. Kowalski was a Navy aviation chief at the BRNAS from 1945 to 1946. He was familiar with the location of SPS and the south boundary of PAFB. He did not recall any Navy material being placed on the area of SPS. Stated area was mostly palmettos.

INTERVIEW WITH MR. RALPH KING

Mr King was a Navy radio man on PBYS stationed at the BRNAS from 1941 to 1943. He was familiar with the location of SPS and the south boundary of PAFB. He did not recall any Navy material being placed on the area of SPS. Stated area was mostly palmettos and water.

INTERVIEW WITH MR. J.F. HUNTRESS

Mr. Huntress was a Navy Disbursing officer stationed at the BRNAS from 1946 to 1948. He was familiar with the location of SPS and the south boundary of PAFB. He did not recall any Navy material being placed on the area of SPS. Stated area was all open area and composed of mostly palmettos and water. Said that there was no reason for Navy to go off base to dump with all land available to dump on onbase.

INTERVIEW WITH MR. LESTER CAMPBELL

Mr. Campbell was a Navy Seaman stationed at the BRNAS from 1947 to 1948, assigned to assist in the closing of BRNAS. He was familiar with the location of SPS and the south boundary of PAFB. He recalled that Navy material being placed south of fence in POW camp, thought POW camp was off base property. The Navy buried old wood and items such as furniture. Said area was 500 to 1000 feet south of fenceline.

INTERVIEW WITH MR. JOHN E. BUTLER

Mr. Butler was a Navy student stationed at the BRNAS in 1946 for three months. Did not remember anything about area.

INTERVIEW WITH MR. LES STANEK

Mr. Stanek was a Navy Blimp pilot stationed at the BRNAS from 1942 to 1944. He was familiar with the location of SPS and the south boundary of PAFB. He did not think that the Navy buried material or dumped material offbase in the area now SPS. He was shown the 1943 aerial photo of the SPS area. He remembers going south of BRNAS in jeeps to hunt alligators in the marshes, palmettos and scrub. He stated that the area south of BRNAS (SPS) is the place where they recreated.

INTERVIEW WITH MR. ERNIE MORRIS

Mr. Morris was with the Navy stationed at the BRNAS from 1944 to 1948. He was familiar with the location of SPS and the south boundary of PAFB. He did not think that the Navy buried material or dumped material offbase in the area now SPS. He also assisted in the surplus of materials at the closure of BRNAS. He stated that during the 1946 to 1947 time frame, there were several plane crashes in the area now SPS and that the Navy sent personnel into the area to cut roads to retrieve the planes. Two of the planes were such wrecks that the Navy personnel beat them to pieces in the SPS area. During the 1947 to 1948 time frame, Mr. Morris remembers the surplus of remaining Navy material, (Jeeps, aluminum, drums, etc.). Stuff was sold in lots to purchasers who were then required to haul the material away. BRNAS was central surplus for area (BRNAS, Melbourne and Jax). He can recall that some of the material surplused was later found along side A1A. Thinks that may be salvage contractors might have dumped material on area now SPS.

INTERVIEW WITH MR. PAUL ROBERTS

Mr. Roberts worked as a surveyor/engineer at BRNAS from 1941 to March 1948. He was familiar with the location of SPS and the south boundary of PAFB. He stated that there was no dump in area of South Patrick Shores. He said that he remembers that on south end of BRNAS, there was black sand mining. The mining operations were conducted on the beach side of A1A, but may have utilized the west side of A1A.

INTERVIEW WITH MR. DICK KUDRNA

Mr. Kudrna was only stationed at BRNAS for three months in 1943. He was unfamiliar with the location of SPS and the south boundary of PAFB. He did not remember anything about area.

INTERVIEW WITH MR. HARRY BRUCE

Mr. Bruce was a civilian electrical worker at BRNAS during 1946. He was familiar with the location of SPS and the south boundary of PAFB. He did not remember anything about area south of PAFB except that palmettos grew in the area.

INTERVIEW WITH MR. THOMAS A. EASON

Mr. Eason was stationed at BRNAS in 1944-1946. He was familiar with the location of SPS and the south boundary of PAFB. He did not remember anything about area south of PAFB except that palmettos grew in the area.

INTERVIEW WITH MRS. MARGARET FOSTER

Mrs. Foster worked as civilian employee at BRNAS from 1946-1948. She was familiar with the location of SPS and the south boundary of PAFB. She did not remember any dumping in area south of PAFB except that palmettos grew in the area. Lived in Melbourne during 1946-1948.

INTERVIEW WITH MR. GRAYBILL HARMON

Mr. Harmon was stationed at BRNAS from 1944-1945. He was familiar with the location of SPS and the south boundary of PAFB. He did not remember anything about area south of PAFB except that it was covered with palmettos in the area. Lived in Cocoa during 1944-1945.

INTERVIEW WITH DIANE BARILE
EXECUTIVE DIRECTOR OF
MARINE RESOURCES COUNCIL
OF EAST FLORIDA
August 9, 1991

Ms. Barile has lived in Brevard County, Florida and is currently Executive Director of the Marine Resources Council of East Florida. She stated that while she was not familiar with actual knowledge regarding the alleged dumping within SPS, she had talked to some of the individuals who were stationed at the Banana River Naval Air Station during WWII during a reunion had in Brevard County. At least one of the individuals (James Weatherall, 600 Cothorn Avenue, Angleton, Texas) had told her that he was a Navy pilot during WWII assigned to Banana River Naval Air Station and that he flew TBF & TBD planes that dropped DDT over the SPS area. The Navy pilots were utilized to carry 4500 gallons of DDT over the area as part of a top secret experiment conducted by DOD in conjunction with the Department of Agriculture. Ms. Barile also indicated that if DDT was sprayed over SPS, most of the remains would have probably washed into the finger canals in Section 22 which lies west of South Patrick Drive and SPS. This is based on the water flows and the storm sewer runoff. She indicated that Florida Institute of Technology could (with some funding) takes samples in the finger canals to determine the materials in the muck and date the materials.

TELEPHONE CONVERSATION WITH MRS. HELEN MANN
SATELLITE BEACH, BREVARD COUNTY, FLORIDA
August 10, 1991

Ms. Mann is a former cafeteria worker at PAFB and lived in SPS at 136 SE 1st Street from 1965 to 1989. She stated that in digging in her yard at 136 SE 1st Street, she had found metal parts (unable to identify), kitchen debris (china), coke bottles, milk bottles and various other debris. She could not remember any of the debris which she dug up from her yard containing any insignia whatsoever. She was aware of a story that at least one house sunk after it was built because it was built over an airplane fuselage. The house had to be rebuilt. She also stated that when the sewer & water lines were replaced approximately 8 to 10 years ago, that numerous debris was uncovered.

TELEPHONE INTERVIEW WITH BUD CLARK
August 10, 1991

Mr. Clark moved into house on 140 SE 3rd Street in SPS in 1960. Approximately 20 years ago during plumbing repairs found a part of a horizontal airplane tail stabilizer. Knew it was tail stabilizer because he used to work for airline. Has also found ribs of tail stabilizer and some aluminum. They were told when they moved in that SPS was built on top of Navy aircraft graveyard. Indicates Lubie Jones is deceased. Also said Jim Gaskin of Gaskin Drug Store found practice bomb in yard. Thinks that Navy used site as aircraft graveyard.

TELEPHONE INTERVIEW WITH WARREN LIGHTFOOT
August 10, 1991

Worked for company building Pineda Causeway in 1960-1965 doing dewatering. Found airplane parts, car parts, tin cans, lumber, tree limbs are the extreme south edge of Causeway pavement. Does not know of anything in SPS, didn't work in area.

TELEPHONE INTERVIEW WITH ERNEST B. POWERS
August 10, 1991

Mr. Ernest Powers has lived all his life (1920) in Brevard County. Between 1938 and 1942 worked in Brevard County. 1942 to 1945 was in military overseas. From 1945 to present lived in Brevard County. Lived in Melbourne area. 1945-1950 worked various jobs in Melbourne. Was not familiar with SPS during 1942 to 1950.

INTERVIEW WITH JOYCE SANTEE, 7 Aug 1991
1-48 SE 1st street, (407) 777-1709

Mrs. Santee stated that clevises (a U shaped piece of iron with holes in the ends through which a pin is run to attach one thing to another.) were found on her property.

INTERVIEW WITH MRS. SHAMBAUGH, 7 Aug 1991
1-40 SE 1st street, (407) 773-7856

Found brass shells on property.

INTERVIEW WITH MRS. Eden Rosen, 7 Aug 1991
1-62 SE 1st street, (407) 773-0800

Found muffler system about 6 feet below ground, while excavating for replacing sewer. Note that the water table is about 2.5 feet at that location.

INTERVIEW WITH MR. Santee, 7 Aug 1991
200 Pelican Drive, (407) 777-9159

House to the right of property has a spot which cannot grow anything. Nothing will at this location.

INTERVIEW WITH MRS. Ramsey, 7 Aug 1991
200 Pelican Drive, (407) 777-2828

Found miscellaneous debris on property.

INTERVIEW WITH MRS. Linda Jones, 7 Aug 1991
113 SE 2nd Street, (407) 777-4666

Found a wheel assembly on property.

INTERVIEW WITH LINDA JONES

John Jones who lived at 109 SE 2nd St. had reported that a part of his house collapsed because of airplane wing, shifted or broke causing the house to settle. His wife died of cancer. New address
1000 Lambert Drive
Abbey Marina
Merritt Island, FL 32952 beeper 459-6774

INTERVIEW NOT OBTAINED - James Harris
108 Dover Street, Sattelite Beach
(407) 773-0806
(407) 494-2781
Nothing will grow on a spot in his yard.

TELEPHONE INTERVIEW WITH Dale Bryant, City Manager Blakely GA

He stated that his dad was a heavy equipment operator who worked overtime digging a large hole about 50' diameter, 10' depth, using a drag line (Marion drag line), drag bucket, and clam shell (1944 -1946). He and his father would scanvange things out, such as drums, which was used to burn garbage in the backyard. The location where all this activity occurred was located just south of the southern gate. He knew that it was the southern gate because during the war you had to drive from cocoa, where they lived, thru two gates to get to the landfill. After getting thru the south gate, about 1/4 to 1/2 mile they would make a 90 degree right turn into Palmettoes. The hole was used to landfill regular, daily garbage.

His father was involved in the construction of the air field, gravel was brought in on barges.

PETER BESRUTSCHKO
Environmental Engineer
Environmental Resources Branch
Planning Division
Jacksonville District

13

INTERVIEW WITH MR. JOE WICKHAM
August 8, 1991

Mr. Joe Wickham has lived in Eau Gallie, Brevard County, Florida since 1926. He is 80 years old and was a County Commissioner from 1952 to 1964 and has worked in the construction business since 1950. In the 1950's, he assisted in the surveying of A1A, in 1953, he helped out in South Patrick Drive, the western boundary of South Patrick Shores Subdivision (SPS). He knew Jack Taylor who was the developer of South Patrick Shores. Mr. Wickham stated that he remembers that Jack Taylor put in the best sewer system in the County at the time he constructed SPS in 1953 to 1958. He also stated that the Melbourne Water system which supplied the drinking water to SPS was not the best in the 1950's and 1960's and stated that large amounts of chloroform were found in the City water during that time. The water system ended at SPS. He also stated that the area also had drainage problems after construction of SPS. Mr. Wickham was responsible for the construction of the finger and mosquito canals in Section 22 (west of South Patrick Drive and SPS). Mr. Wickham was questioned regarding the use of the property by the Navy and/or Air Force. He stated that he did not remember the Navy ever burying material on the site, however, he does remember that there was Navy material (airplane parts, jeeps, wood, and other trash) on top of the ground. He stated that the area prior to the development of SPS was composed of savannahs (high ground/ditch/high ground/ditch). He stated that the Navy could not have buried the stuff because of the low water table (2 to 3 feet). He also stated that Jack Taylor had any material found within SPS removed from the site prior to construction of homes.

INTERVIEW WITH ROBERT A. CONNOR, SR.
PRESIDENT OF ROBERT A. CONNOR, INC.
August 9, 1991

Mr. Robert A. Connor, Sr., age 60, is President of Robert A. Connor, Inc., a business specializing in land development, installation of underground utilities, heavy equipment rental, and other types of construction. He stated that he was excavation contractor for Jack Taylor in the development of SPS. He stated that he did not find any Navy material during the excavation of SPS. He also stated that his company had done the

excavation to put in a lot of the swimming pools in the SPS and that his people did not find any Navy materials during the excavation of the pools sites. He also stated that he had assisted Mr. Wickham in the excavation of the canals in Section 22.

CONCLUSION: Mr. Connor would have been age 20 to 25 when SPS was developed. Based on the conversation with Mr. Connor, it would appear that he had more excavation and development interests in the properties west and south of SPS and not within SPS. He could not recall which part of Section 23 was developed first.

INTERVIEW WITH CLIFF BEST
FORMER EXCAVATION WORKER
August 8, 1991

Mr. Cliff Best, age 84, has lived in Brevard County, Florida since 1949 and now lives in Melbourne, Brevard County, Florida. Mr. Best stated that he worked in 1951 to 1958 for Al Swanson who was the excavation contractor for Jack Taylor the developer of SPS. Mr. Best stated during the first stage of development of SPS, he remembers finding aluminum parts, aircraft parts (pieces of wings, canopies, etc.) while doing the excavation of SPS. They also found one airplane fuselage of a Navy Hellcat, 40 to 50 automobile batteries, 15 to 20 crushed 55 gallon drums, 10 to 12 wrecked jeeps (some with engines but mostly carcasses), and 2-fifty-five gallon drums that were half filled (one with motor oil and one with hydraulic fluid). All materials that were found were hauled away by Central Iron & Salvage Company of Orlando. Best stated that most of the material was found was found in the northeast part of Section 2 of SPS, the first area developed by Mr. Taylor.

SUMMARY: The account of Mr. Best would place the Navy material far north of the area shown on the aerials as having been scarred. However, the county records disclose that the first area developed was Section 1 which is located right over the area shown on the aerials as having scarring.

CEETL-TC (CESAJ-PD-EE/19 Aug 91) (1110-2-1150b) 1st End
SUBJECT: Determination of Eligibility for South Patrick Shores,
South of Patrick Air Force Base, as a DERP-FUDS Site

Commander and Director, U.S. Army Engineer Topographic
Laboratories, Fort Belvoir, VA 22060-5546

FOR Commander, U.S. Army Engineer District, Jacksonville, P.O.
Box 4970, Jacksonville, FL 32232-0019

1. Enclosed is the final report for the study requested. Exhibits are included as enclosure 2, which are enlarged annotated photos, keyed to this report.
2. The Terrain Analysis Center has analyzed a total of nine sets of aerial photography, ranging in date from 1943 - 1984. Our final conclusions indicate that the disturbed area shows evidence of material removal. The resolution of the photography is not of sufficient quality to determine if the burying of military waste actually occurred on this site. The disturbance was long term and left a long-lasting scar upon the ground.
3. If you have any further questions, or if this matter needs further coordination, our points of contact are Mr. Richard Dobie, DSN 345-3840, commercial (703) 355-3840; or Mr. Michael Barwick, DSN 345-2948, commercial (703) 355-2948.

2 Encls
wd encl 1
Added 1 encl
2. as



JOHN F. OLESAK
Lieutenant Colonel, EN
Acting Commander and Director



DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P. O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

CESAJ-PD-EE (1110-2-1150b)

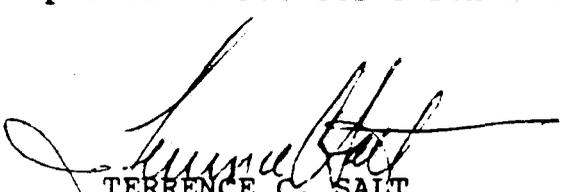
19 AUGUST 1991

MEMORANDUM FOR Colonel David P. Maune, Commander and Director,
U.S. Army Engineers Topographic Laboratories
Fort Belvoir, Virginia, 22060 - 5546

SUBJECT: Determination of eligibility for South Patrick Shores,
South of Patrick Air Force Base, as a DERP-FUDS site.

1. Reference: Telephone conversation with Allen DeWall from the Terrain Analysis Center, indicated that the U. S. Army Engineers Topographic Laboratories has photo interpretive talents required.
2. Currently the Jacksonville District U.S. Army Corps of Engineers is investigating the eligibility of the South Patrick Shores area as a DERP-FUDS site. Despite extensive investigation we still lack conclusive evidence establishing that debris allegedly uncovered by local resident came from a landfill and was military in origin.
3. We are seeking evidence to confirm or disclaim allegations that a portion of South Patrick Shores was built on top of a military landfill. Request enhanced photo interpretation of the enclosed aerial negatives taken in 1943, 1951, 1958 and a 1947 print. The photo analysis should establish the following for each year:
 - a. Estimate surface area shown in the disturbed site.
 - b. Develop topographic map of site.
 - c. Develop site comparison to the undisturbed site.
 - d. Note if large vehicles, airplane carcasses, drums exist.
 - e. Establish the nature of the disturbance indicated in the aerial photos.
4. Request you furnish the cost estimate to perform this work, so that we can transfer funds.
5. My point of contact on this matter is Peter Besrutschko at 904-791-2298. Request you provide a POC for further needed coordination.

Encl


TERRENCE C. SALT
Colonel, Corps of Engineers
Commanding

DEPARTMENT OF THE ARMY
UNITED STATES ARMY ENGINEER TOPOGRAPHIC LABORATORIES
TERRAIN ANALYSIS CENTER
FORT BELVOIR, VIRGINIA 22060-5546

CEETL-TC-TB

20 September 1991

SUBJECT: Transmittal of materials

TO: US ARMY CORPS of ENGINEERS
JACKSONVILLE DISTRICT
400 W. BAY STREET
ATTN: Peter Besrutschko
JACKSONVILLE, FL 32232

1. Enclosed are the following material(s)
 - A. Analysis report of South Patrick Shores (6 pages)
 - B. 24 x 30 mounted photographs (8)
 - 1 each of the following:
 - 14 February 1943
 - 26 February 1944
 - 17 June 1947
 - 8 December 1947
 - 2 April 1951
 - 9 November 1954
 - 23 April 1958
 - 10 December 1984
 - C. Tropic Quadrangle 1:24,000 1947 edition (1)
 - D. Tropic Quadrangle 1:24,000 1988 edition (1)
with 3 ERDAS inserts.
2. Should additional information be required, please call
Michael Barwick at 703/ 355-2948.

SOUTH PATRICK SHORES ANALYSIS

A. TOPOGRAPHY

The main landform type characterized by this area can best be described as a low-lying barrier island. The topography of the site and its surrounding area are characterized by a linear ridge and trough system that runs north-south, parallel to the coast. These ridges are subtle, usually less than 10 feet above mean sea level (MSL). The terrain rises from the Atlantic Ocean to Highway A1A. It then descends into a trough that begins the alternating ridge/trough landscape. Over the years changes in the area have occurred, the topography has undergone many changes. Land development has caused the area to be drained, graded, and leveled to its present day appearance.

B. DRAINAGE

The drainage pattern at the site has evolved over the years. Surface drainage at one time was through the troughs of the ridge/trough system. Many attempts have been made to improve the drainage of this area most commonly, the use of drainage ditches to carry water. The water table is high, possibly due to an impervious layer of Cocino Sandstone that is overlain by a porous sand, causing water to "pond" between the layers.

C. PHOTO INTERPRETATION

14 February 1943

The ground disturbance seen in the 1943 photographs cannot be clearly defined. However, speculations about the disturbance could be related to one or more of the following, but are not limited to these possibilities. Speculations about the disturbances are:

a. Chemical related- There is a possibility that some type of chemical has defoliated the area. Aerial spraying could be an explanation.

b. Water related- This is not probable because the area of disturbance crosses elevations, which is not a typical practice for water.

c. Fire related- Because the disturbed area does not correspond to a normal burn scar, forest experts are skeptical of this possibility.

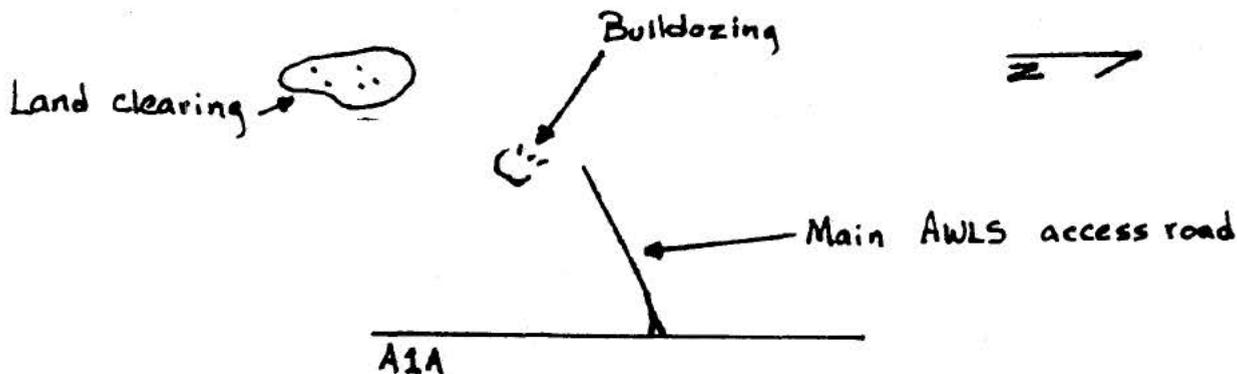
d. Man-made- The disturbed area contains many linear segments, it also has curvilinear segments. The shape and configuration of the area does not suggest land clearing.

There is no evidence of depressions, digging, bulldozing, dumping, or removal of sands. The elongated portion of the disturbed area lies in a trough. The central portion of the site is the most devoid of vegetation and lies at a higher elevation. Three (3) separate sets of tracks terminate in this area and another track runs along the western edge. The road network suggests that the central area is the focal point of the site. Estimated surface area of the disturbed area is 69.9 acres. Another disturbance can be detected northeast of the site. The area is already being reclaimed by vegetation.

The main All-Weather, Hard Surface (AWHS) road through the area is Florida A1A. An All-Weather, Loose Surface (AWLS) road leads into the site. The orientation of this road suggests that the road receives traffic from the north and south. A second AWLS road runs parallel to the site, this road lies west of the site and runs from the military reservation boundary southward to where it "Ts" into another AWLS just south of the site. Another AWLS road picks up at the reservation boundary and goes northward to a hangar/taxiway area. There may or may not be a gate at this location. A track just west of the site, runs south from the military reservation. This track lies in a trough and connects to the main access road. Several other tracks branch from the main access road into the central portion of the disturbed area.

26 February 1944

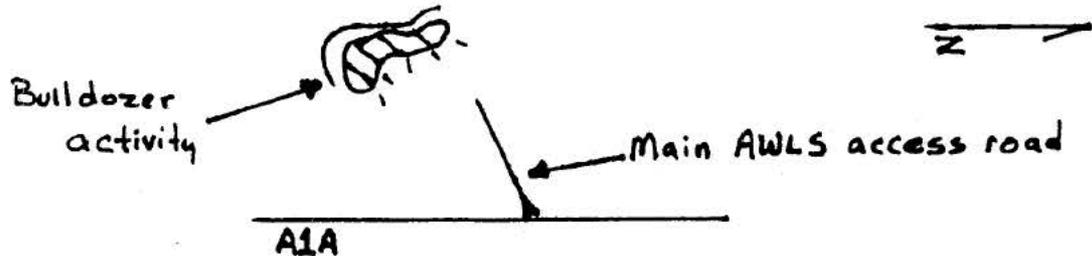
A small cleared area can be observed on the photographs. There has been some removal of materials from this location. Immediately to the south, land is being cleared along the ridgeline. The land scarring seen in the 1943 photographs can still be detected, however the vegetation is coming back and this area probably won't be noticeable in a couple of years. The other portions of the photographs show similar scars.



A new access road is present, its orientation suggests that its primary use will be from the north. In fact, a trail of soil material can be seen on highway A1A heading in the northern direction.

10 April 1945

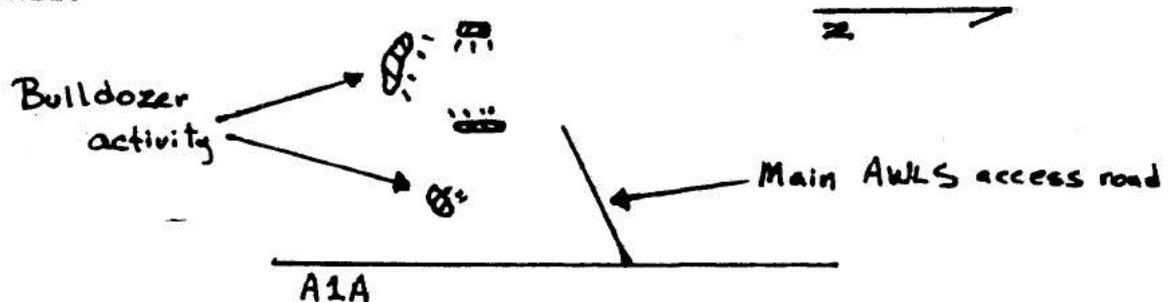
An expansion of the site is noted in these photographs (These photos are not supplied due to their poor quality). Evidence of the removal of materials can be noted. Definite bulldozer activity is taking place along the ridgeline. No traces of the land scarring seen on the 1943 photographs exist and vegetation has made total reclamation of the area.



The road network has not changed since the 1944 photographs. It looks like some of the tracks associated with the land clearing change locations when different areas of the site are being cleared.

17 June 1947

Man-made characteristics exist in the site. Signs of bulldozing can be observed in two separate areas, as evidenced by scrapings on the photographs. Whether the bulldozing is being done in conjunction with the extraction of materials, disposal of materials, or some combination of both activities can not be determined.



Slight depressions can be observed in the two locations where the bulldozing has taken place. Tailing piles are located to the east, south, and west of the main depression. The bulldozing at the largest depression is being done on a ridge feature (This would tend to suggest excavation of materials). Bulldozing at the smaller depression is in a trough area.

The road network remains virtually the same as in the 1945 photographs. Just off the main access road several objects (unidentifiable) can be seen. Bulldozer scars can be seen to the south, west, and east. Evidence of vegetation clearing can also be noted to the south of the depression. The AWLS road to the west is still present and seems to be in good shape (which tends to indicate use and upkeep). A new track into the site

from the south branches out into the two active areas. A network of tracks connect the main access road with different portions of the site.

8 December 1947

Site area looks similar to the earlier 17 June 1947 photographs. A couple of major changes have occurred during the elapsed time. The most important change noted is in the size of the site. More material has been removed from the major bulldozed area along the ridge line. The material has been taken from an area that was being cleared in the June photographs. Distinct marks are left on the surface. These marks indicate definite bulldozer activity. Combining the June and December photographs gives strong evidence to the theory of material being taken for construction purposes. There is still an area south of the bulldozing that is being cleared of vegetation, suggesting a continuation of the clearing and removal practices of the past.

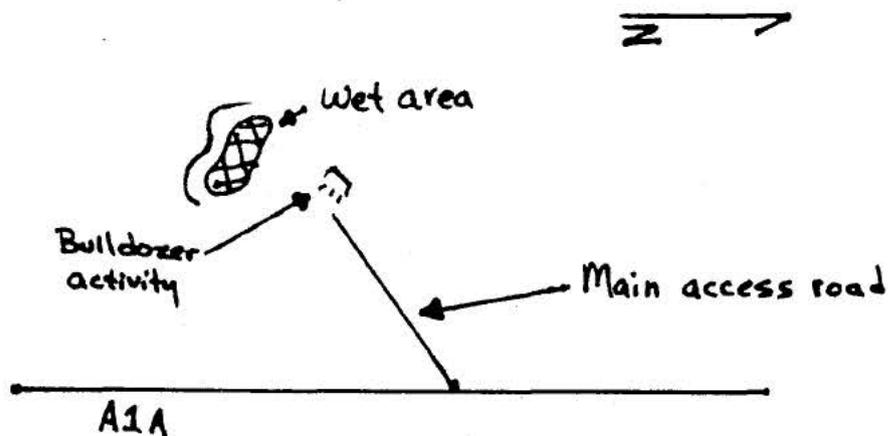
2 April 1951

The area of disturbance in the 1951 photographs is 34.2 acres. The area of disturbed ground is larger than the area shown in the 1947 photographs which suggests an expansion of the site in the 1947 - 1951 time frame. In these photographs, activity at the site seems to be slowing down. This is evidenced by a scattered resurgence of vegetation in the area. Only areas currently being used are void of vegetation. In the cleared areas only 2 locations show signs of bulldozing activity, as indicated by scrapings on the surface.

Road pattern is much like it was in the 1947 photographs. The major difference is there are not as many tracks and these tracks are in poor condition. Some tracks have completely disappeared, others suffer from disuse and lack of maintenance. This decline in the road network supports the theory that the actual site is being utilized less.

9 November 1954

Due to vegetation reclaiming parts of the site, the size of the disturbed area is smaller. This activity indicates that the site is returning to its original state. The portion of the site that has been the most active in the past, now appears to be dormant. The area where the most material was removed in past years shows a dark continuous tone, suggesting a wetness to the surface. Activity in this area has terminated, possibly due to the amount of water on or near the surface. New activity can be noted on a small scale in two other areas within the site. In these areas, we notice fresh earth and signs of bulldozer activity.



Road patterns are essentially the same as they were in the 1951 photographs. The only major difference is the addition of an AWLS road, added just south of the site. This road runs east - west across the island. The only other difference would be in road use. Tracks which are not used are disappearing.

23 April 1958

The area of disturbance is now 7.9 acres. The northern portion of the site has been graded and leveled. A subdivision has been built on this land. Another subdivision has been built to the south. The South Park Waste Treatment Plant was built in the 1957 - 1958 time frame, west of the site. Most of the site area has been or is in the process of being reclaimed by vegetation. There is some evidence of fairly recent bulldozing activity in a portion of the site and some clearing work is being done just to the south.

The road network has changed drastically since the 1954 photographs. Tracks now enter the site primarily from the south. One track leads into the site from the waste treatment plant and several tracks enter from the subdivision to the south. One track swings around the site from the northern subdivision to the subdivision to the south. This track goes through an area that shows evidence of being cleared.

10 December 1984

The site can no longer be seen on the photographs. Drainage has been upgraded. The area has been graded and leveled so that the community of South Patrick Shores now fully occupies the area.

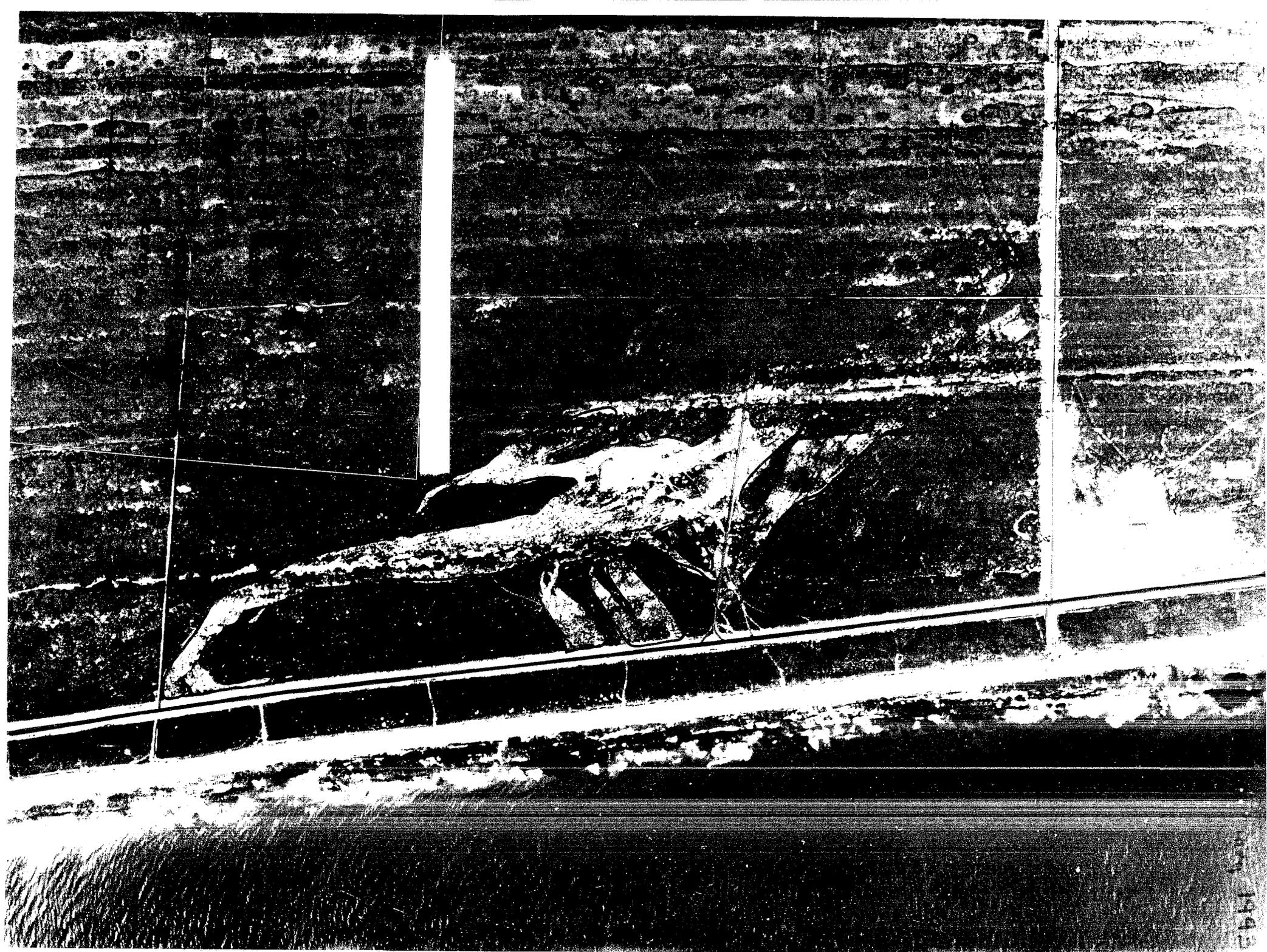
D. CONCLUSIONS

Nine sets of 9x9 stereo photography were analyzed for the following years: 1943, 1944, 1945, 1947, 1951, 1954, 1958, and 1984. Interpretations of the vegetation, topography, drainage, road networks, and man-made characteristics were analyzed for each stereo pair. Over the 41 year period that was studied, the site evolved tremendously. Along the way, the site has been altered significantly. In the 1943 photographs the site was not much more than scrub growth vegetation and wetlands. Drainage ditches and systems were added to improve the drainage and lower the water table. Material has been extracted from the site, specifically the ridge areas. Other material may have been deposited. The site has been graded and leveled and now it is occupied by the South Patrick Shores subdivision.

The road network into the site has varied over periods of time, always in conjunction with the amount of activity in the area. In the 1943 photographs the main access road into the site is oriented so the traffic flow can access the area from both northern and southern directions. In later years, the main access road shifts direction, as the interest in the site shifts south. The orientation of the main access road suggests that it is used more from the north. The road is angled to allow easy access into and out of the site from the north. In fact, dirt from trucks can be observed on highway A1A toward the north. This access road remains in use until the area becomes partially developed. The 1958 photographs show no main access from highway A1A. Tracks lead into the site from the subdivisions and the newly built waste treatment plant. Finally, in the 1984 photographs, all traces of the road network into the site are gone. Now the road pattern of a subdivision exists.

The evidence of man-made activity in the site consists of road networks, drainage practices, and bulldozer activities such as mounds of earth, scrapings on the surface and removal of material. The elapsed time between the June and December 1947 photographs show a substantial removal of material from a ridgeline in the site. There are also signs of a continuation of this process. The photographs do not show the material being moved to another portion of the site so we have to assume that the material was being removed from this location. No fires were observed in the site area and there was no recognition of equipment or materials that would lend support to the presence of a dump.

The bottom line simply states that positive confirmation can be made for the removal of materials, but the dumping of materials cannot be evidenced.



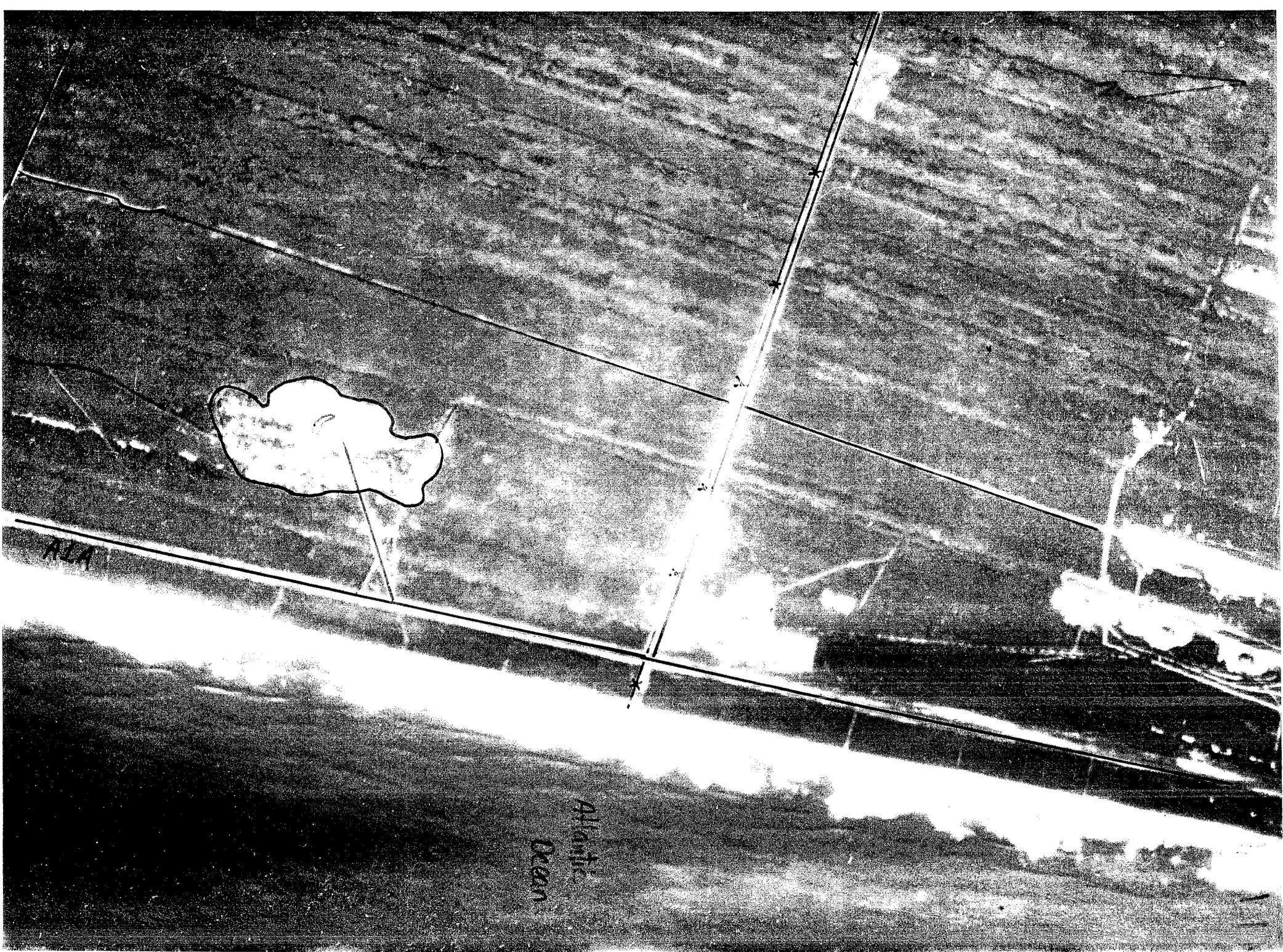
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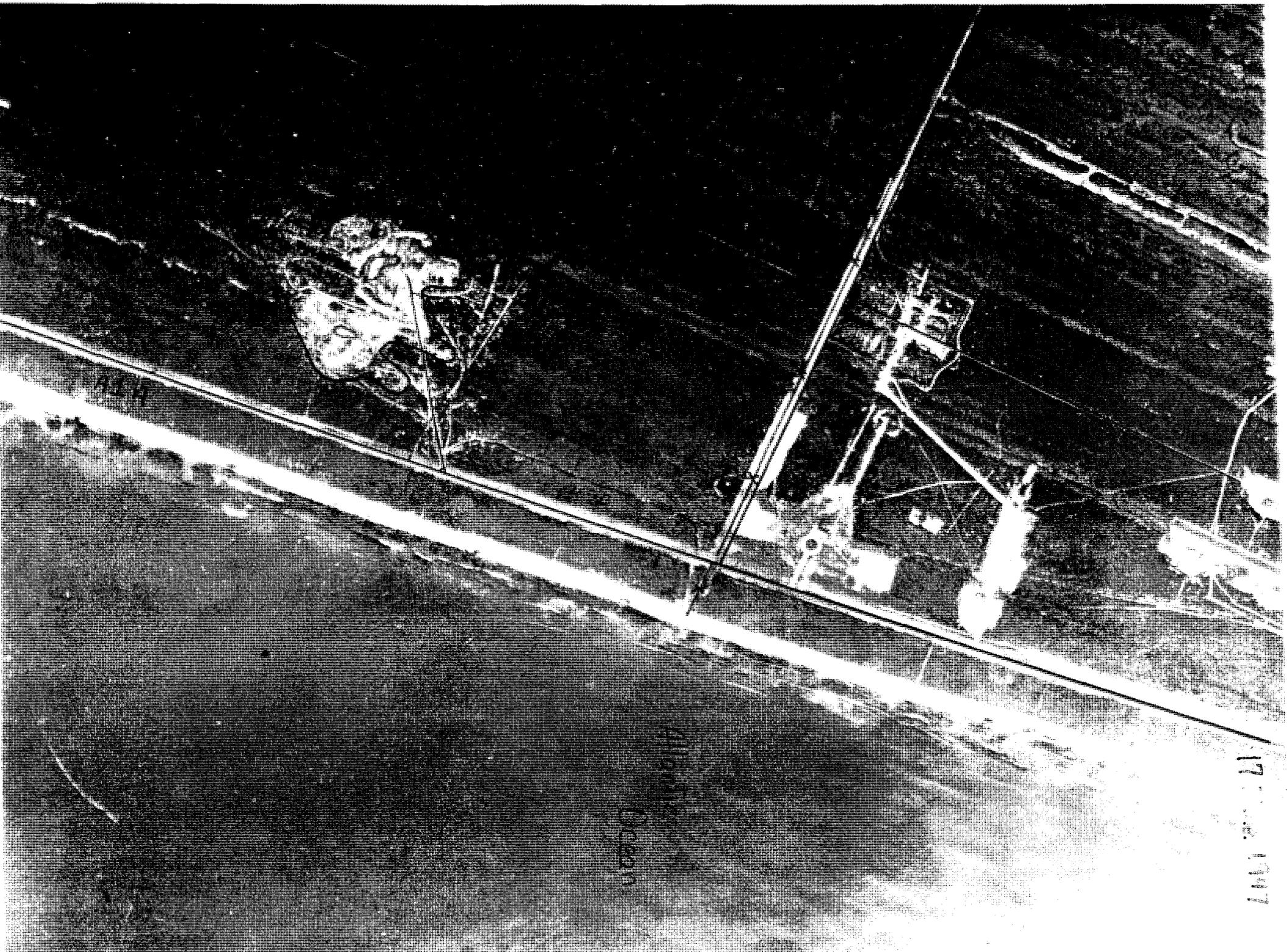
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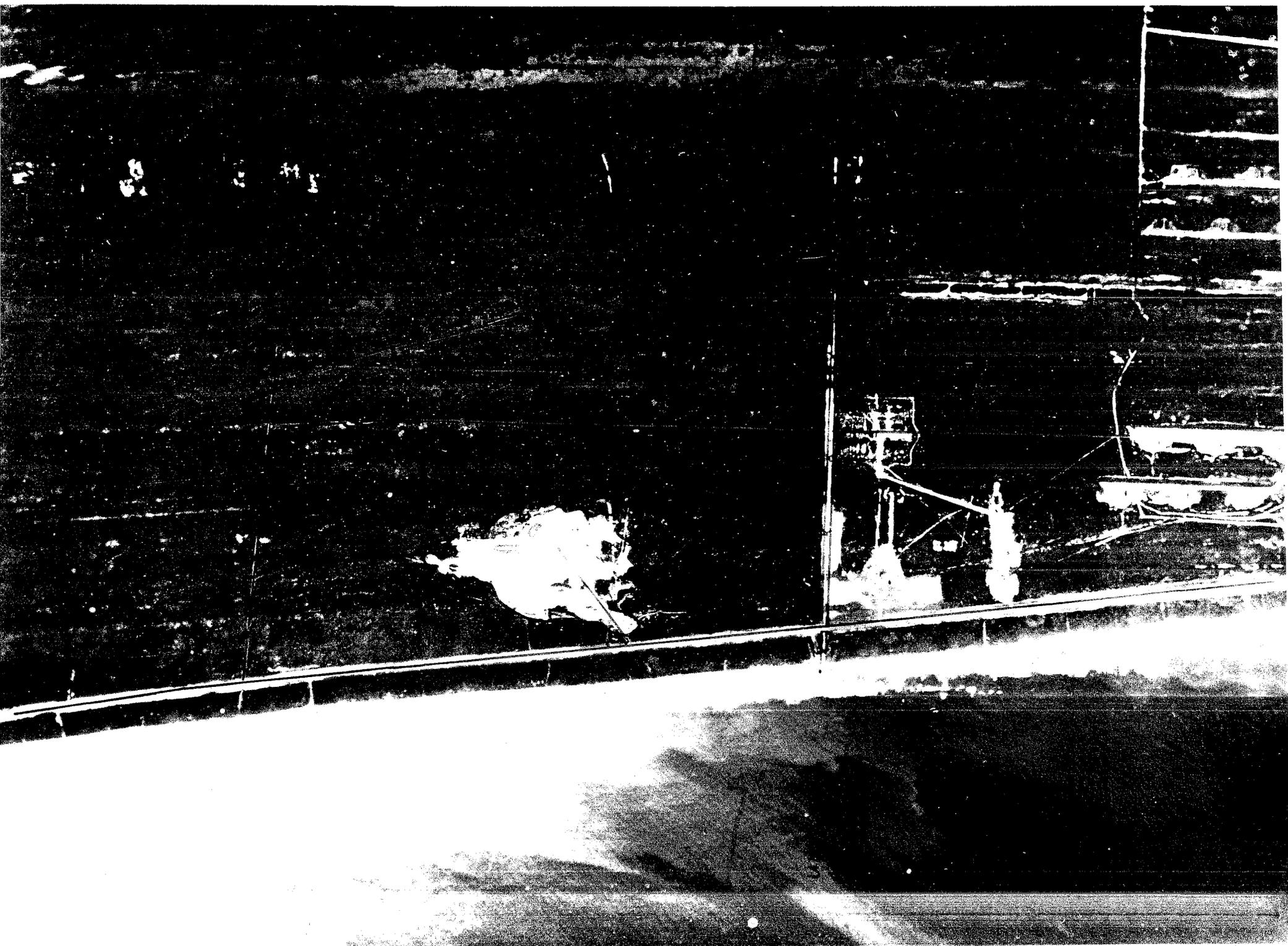
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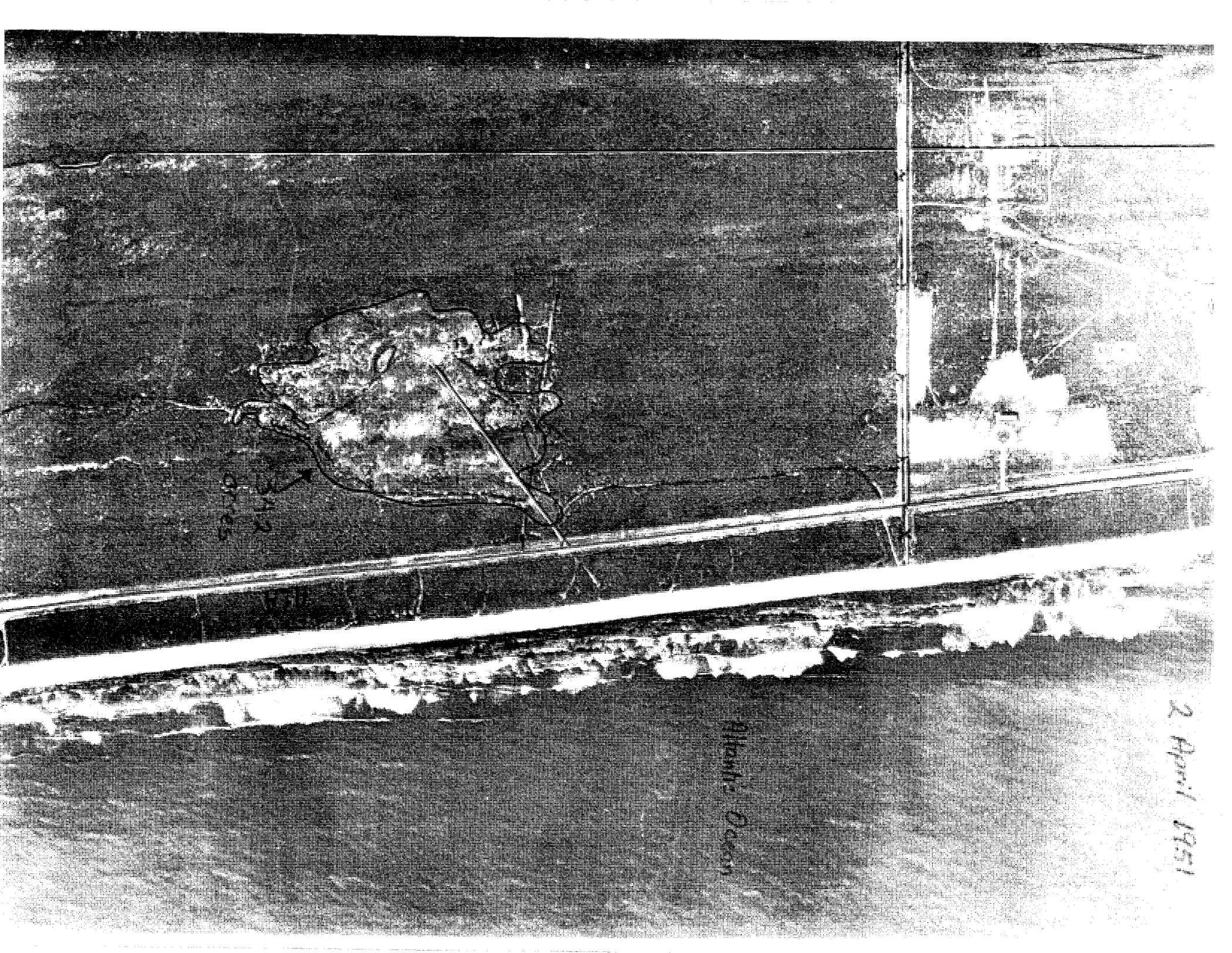


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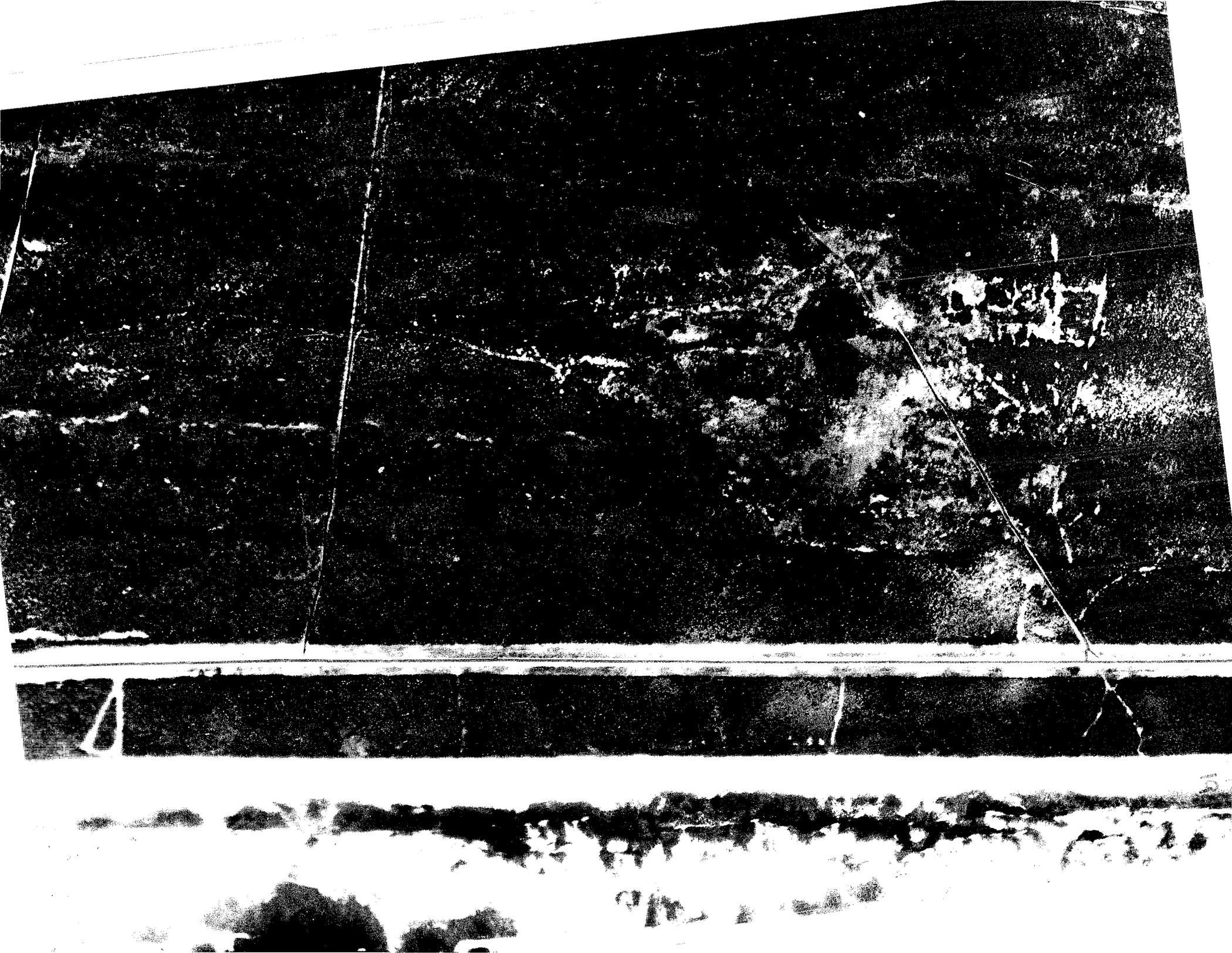
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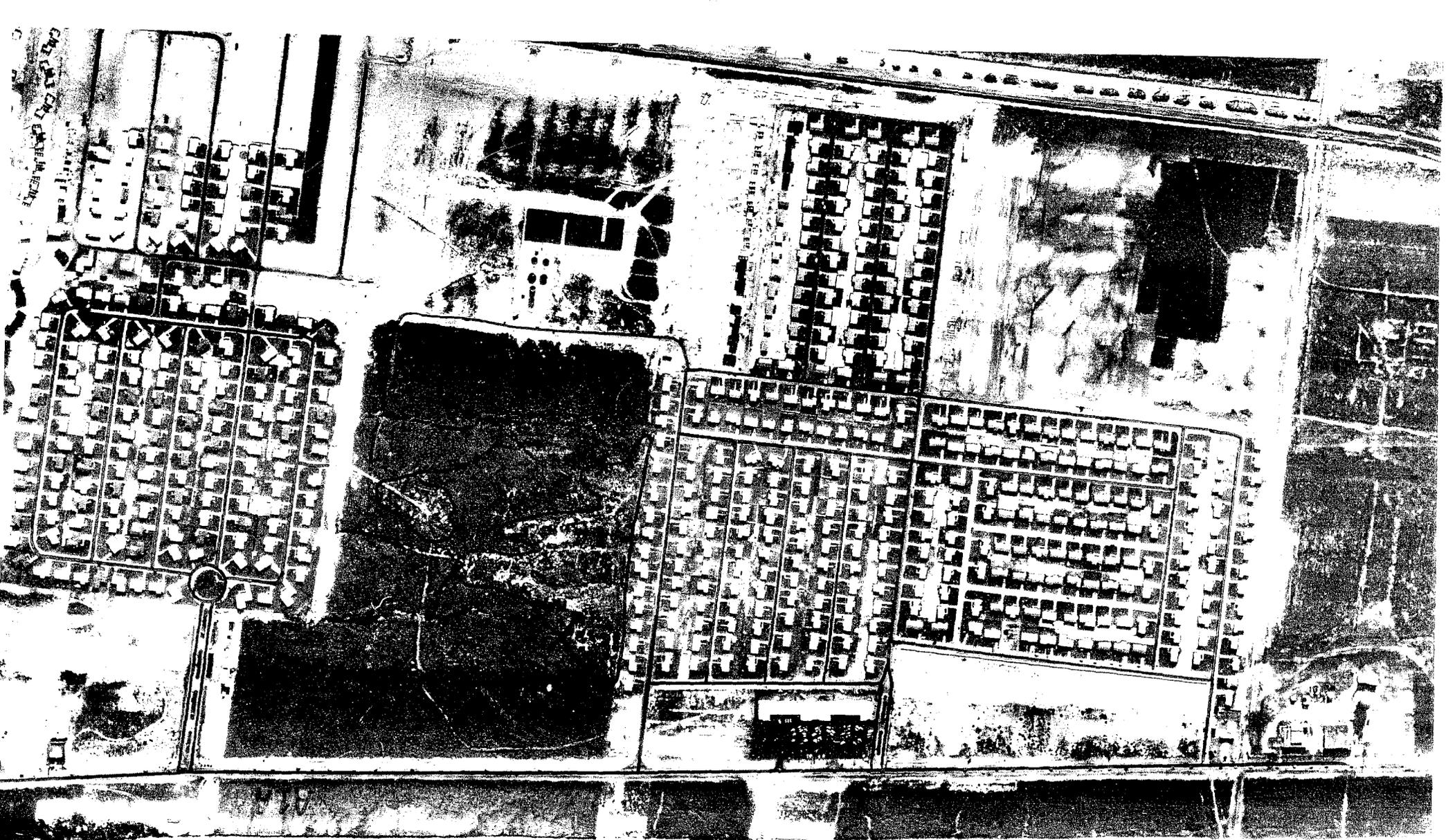




Atlanta Ocean

2 April 1951

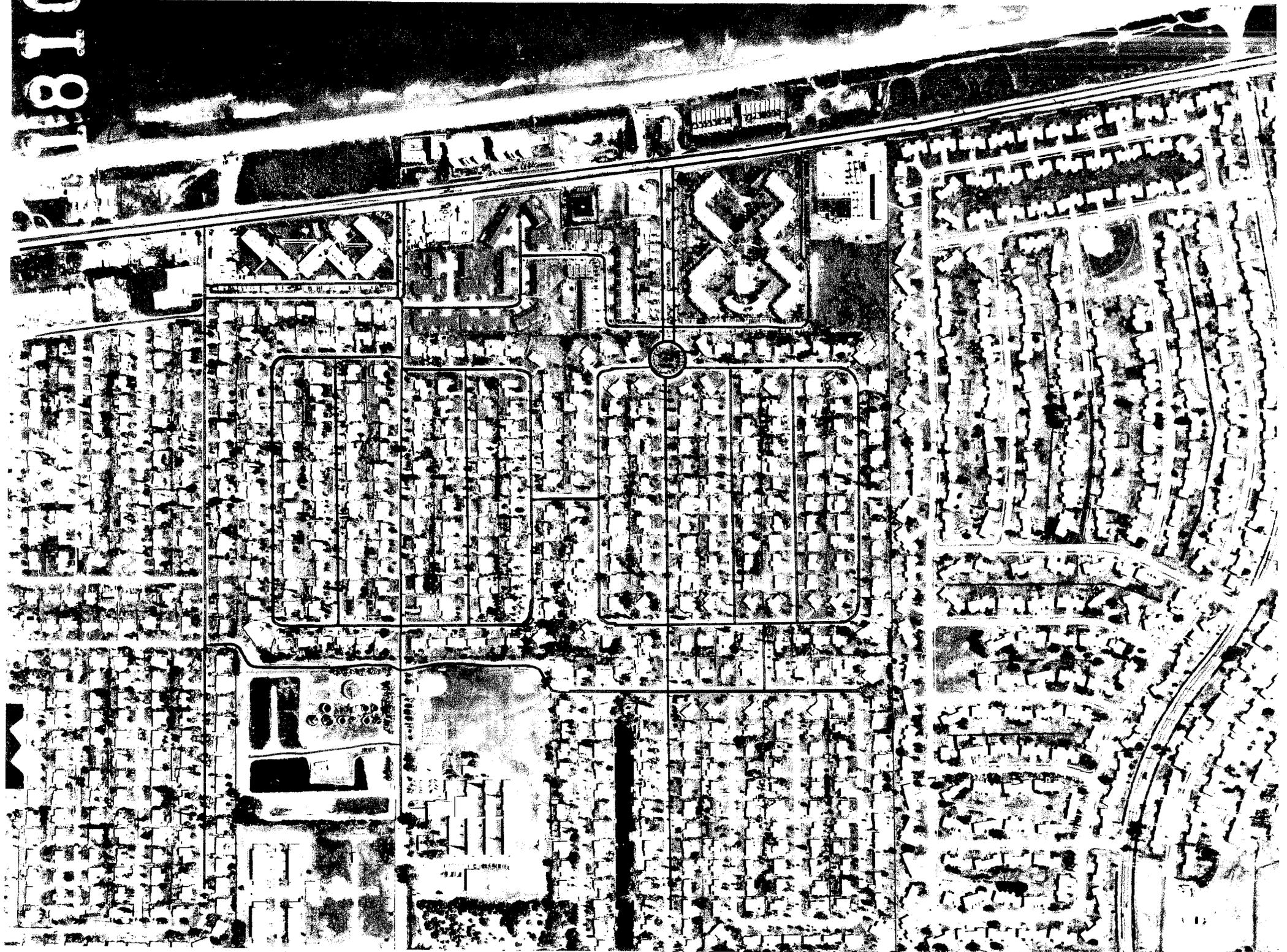


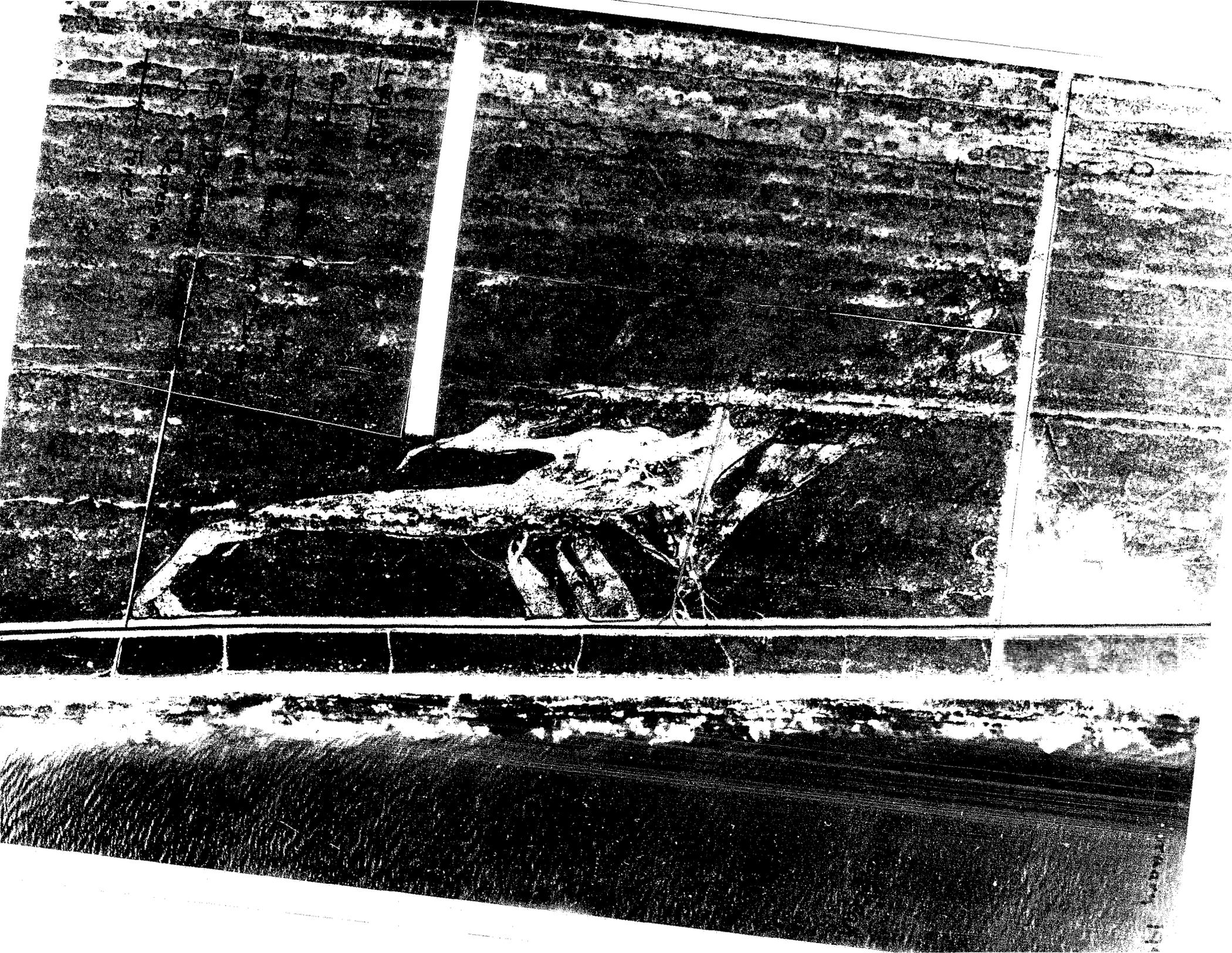


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DEFENSE ENVIRONMENTAL RESTORATION PROGRAM
FORMERLY USED DEFENSE SITES
FINDINGS AND DETERMINATION OF ELIGIBILITY

BANANA RIVER NAVAL AIR STATION
SOUTH PATRICK SHORES SUBDIVISION

FINDINGS OF FACT

1. South Patrick Shores Subdivision is located immediately south of Patrick Air Force Base, just south of the Pineda Causeway, the south boundary of Patrick Air Force Base. Patrick Air Force Base was known as the Banana River Naval Air Station (BRNAS) from 1939 to 1948 and was an auxiliary field to the main Naval base at Jacksonville. The Acting Secretary of the Navy executed three Declarations of Taking to acquire 1822.55 acres of land in fee for BRNAS. The location of the 1822.55 acres is north of the Pineda Causeway, between Cocoa and Melbourne, Florida. A total of 774 acres, more or less, were acquired by Civil Suit 44, filed 23 Oct 1939. A total of 52.55 acres, more or less, were acquired by Civil Suit 61, filed 5 April 1940. The other 996 acres, more or less, were acquired by Civil Suit 80, filed 25 Sept 1940. None of the fee lands acquired by the Navy were located within what is now South Patrick Shores Subdivision. The Navy did not acquire any leases of properties in the vicinity of South Patrick Shores Subdivision during the period 1939 to 1948.

2. Construction of BRNAS began with clearing and grubbing operations on 260 acres in December 1939. A channel was dredged from Eau Gallie to BRNAS and the seaplane area was also dredged. When completed, another 540 acres was cleared and grubbed and covered with sand spoil. Seawalls, ramps and the hanger apron were constructed beginning February 1940 and the first hanger construction as well as construction of temporary BOQ, barracks, dispensary and storehouse began in April 1940. The BRNAS was formally commissioned in October 1940. During WWII, BRNAS served as a seaplane, anti-submarine, patrol base and pilot training station. During the period of Navy use, mosquitoes and sand flies were constant problems. Between November 1944 and March 1945, a major mosquito eradication program was authorized, which was of an experimental nature. This included the spraying of vast salt water marsh swamps from Titusville on the west to Cape Canaveral on the east, to Eau Gallie and Indian River on the south. This area included Cocoa, Cocoa Beach, Merritt Island, South Patrick Shores Subdivision, and BRNAS. The base history states that a comprehensive summary of all this work in its many phases was made in the Station History report from 1 January 1945

to 1 April 1945. (No copy of this report was located). Based on other records found, these swamps were sprayed with four quarts of 5% solution of DDT in distillate oil #2 or .4 of a pound DDT per acre from airplanes. Spraying of DDT continued until base closure. Because of the location of South Patrick Shores Subdivision in relation to BRNAS, (now Patrick Air Force Base), and because of the past discovery of debris of a military origin found with the boundaries of the Subdivision, a military landfill was suspected to have existed in the location of what is now South Patrick Shores Subdivision. Between 1939 and 1948, the period that BRNAS was an active Navy installation, the lands on which South Patrick Shores Subdivision now exists, were predominantly swamp lands covered with palmettos. Aerial photographs of the area between 1944 and 1954 show scarring and land clearing of the lands which indicate bulldozer activity in the area, however, the resolution of the photography was not of sufficient quality for a determination to be made of military debris being placed in the area during the time frame. Real estate records of the Navy and Air Force indicate that the Department of Defense never acquired a real estate interest in the property on which South Patrick Shores Subdivision now exists. According to Naval personnel stationed at the BRNAS between 1941 to 1948, the Navy did not use the lands on which South Patrick Shores Subdivision now exists as a dump site nor was it a landfill. There are reports that several airplane crashes occurred in the area and that the Navy destroyed the planes in the area. There are also reports that Naval personnel utilized the area for "recreational" purposes, driving jeeps into the area to hunt alligators.

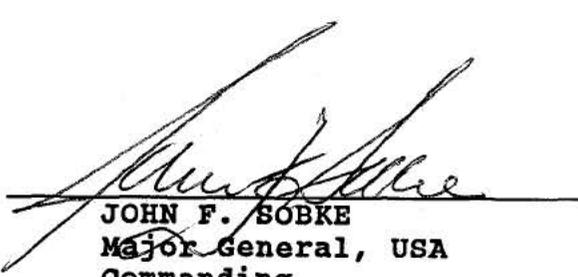
3. BRNAS was deactivated on 1 August 1947 and declared surplus to Navy needs. Navy records disclose that a minimum of 292,826 items were sold as surplus from the BRNAS. These included 661 vehicles, 25 pieces of heavy equipment, and 2620 items of plant equipment. Sales of these materials commenced in late 1946 and continued into 1948. Interviews with Naval personnel stationed at BRNAS between 1946 and 1948 disclosed that a lot of the material surplus by the Navy was taken by the purchasers of the surplus material and dumped off base. The individuals reporting this occurrence indicated that they lived to the North of the base and that the surplus material they saw was dumped north of the base. BRNAS was transferred to the Air Force in September 1948. The BRNAS was in Air Force caretaker status until October 1949. The Joint Long Range Proving Ground was utilized by the Army, Navy and Air Force until May 1950, when the Air Force was given sole responsibility for the site. In August 1950 the site became Patrick Air Force Base, its current name and the entire 1822.55 acres is still assigned to and under the control of the Air Force. Development of South Patrick Shores Subdivision started in the mid 1950's. According to an excavation worker, during the first stage of development, aluminum, aircraft parts (pieces of wings, canopies, etc.), an airplane fuselage of a Navy Hellcat, 40 to 50 automobile batteries, 15 to 20 crushed fifty-five gallon drums, 10 to 12 wrecked jeeps (some with engines but

mostly carcasses), and 2-fifty-five gallon drums that were half filled (one with motor oil and one with hydraulic fluid) were found. All materials that were found were hauled away by Central Iron & Salvage Company of Orlando. Aerial photography taken in 1943, 1944, 1945, 1947, 1951, 1953, 1954 and 1958 were reviewed by the U.S. Army Engineer Topographic Laboratories, Terrain Analysis Center, Fort Belvoir, Virginia. Their final conclusions indicate that the disturbed areas that were apparent on all the aerals in the location of what is now South Patrick Shores Subdivision, shows evidence of material removal and bulldozing in the area, but no evidence of aboveground dumping of materials. The resolution of the aerial photography was not of sufficient quality to allow a determination by the analysts if the burying of military debris, waste or other refuse actually occurred on the site where South Patrick Shores Subdivision is now located. After development, individual lot owners have uncovered additional debris of a military origin. The area is now completely developed into residential homes.

DETERMINATION

Based on the foregoing findings of fact, the site has been determined not to be formerly used by the Department of Defense. It is therefore not eligible for the Defense Environmental Restoration Program - Formerly Used Defense Sites established under 10 USC 2701 et seq.

23 Oct 91
DATE


JOHN F. SOBKE
Major General, USA
Commanding

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