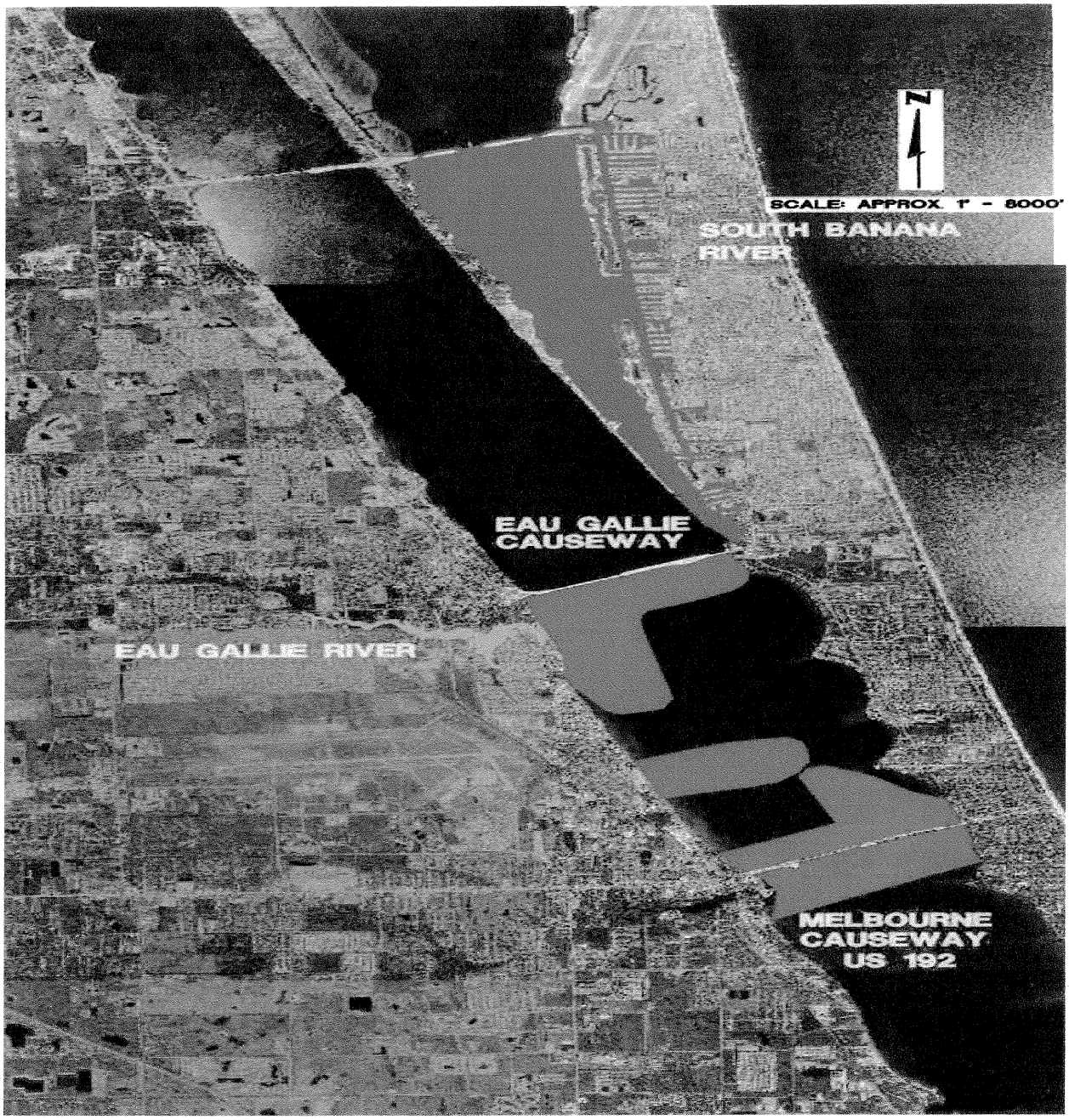
MUCK DEPOSIT ASSESSMENT & MANGEMENT PROJECT
INDIAN RIVER LAGOON PROGRAM
PHASE I SUMMARY REPORT



BCI
ENGINEERS & SCIENTISTS, INC.

BCI PN: 19-9910
February 22, 2000

INDIAN RIVER LAGOON PROGRAM

Phase I Summary Report

Muck Deposit Assessment and Management Project
Indian River Lagoon Program
Feasibility Study
Contract # 99W301

Prepared for:

St. Johns Water Management District
Indian River Lagoon Program

Melbourne, FL

Prepared by:

BCI
ENGINEERS & SCIENTISTS, INC.

February 22, 2000
BCI File 19-9910

TABLE OF CONTENTS

FIGURES

PHOTOGRAPHS

TABLES

APPENDICES

INTRODUCTION

BCI Engineers & Scientists, Inc. (BCI) was engaged by the St. Johns River Water Management District (SJRWMD) to provide services to complete a muck deposit assessment and management project. The overall goal of this project was to evaluate the feasibility of removing muck from three of the 10 previously identified areas in Brevard and Indian River Counties within the Indian River Lagoon System. Specifically the areas to be evaluated in this project were Eau Gallie River, Melbourne-Eau Gallie Causeway, (excluding the Intracoastal waterway) and South Banana River.

The Phase I work involved identification and field reconnaissance of potential sites for disposal and management of dredged muck sediment, and cost estimation for project implementation. More specifically, Phase I will include assessment of cost estimates for dredging, permitting fees, land ownership, construction of site, zoning, accessibility, site capacity, and long-term site and dredged material management (e.g. beneficial uses). A cost analysis will be completed for each area.

In order to accomplish the above phase, the work within phase I was divided into the following tasks:

TASK 1: Dredged Material Management Site Investigation
TASK 2: Zoning and Engineering Issues
TASK 3: Long Term Site and Material Management
TASK 4: Sediment Removal and Management Cost Analysis
TASK 5: Project Management, Meetings, and Reports

In addition, a preliminary meeting was held with regulatory agencies which was part of Task 7 Permitting Issues, Phase II of the project.

This report specifically includes work completed on identifying and characterizing all private and public lands near each project area. All information related to cost on project construction and implementation, and long-term management will be finalized in 45 to 60 days from the submittal of this report.

TASK 1: Dredged Material Management Site Investigation

In September1999 a kick-off meeting was held to discuss the estimated muck limits based on previous muck survey work completed by Trefry et al. (1990) within the IRL and by John Fergus (1996) within the Grand Canal system in Satellite Beach. The agreed scope, schedule and estimated project muck limits map are attached in **Appendix A**.

As part of the process to select the potential upland dredged material management site(s), surveys using aerial maps, field reconnaissance and meetings with various municipalities were conducted. Communication with both public and private owners was facilitated through letters of-interest and/or meetings. Our communication efforts are presented in **Appendix B**.

All private and public lands within a five-mile radius from each muck area were considered. A total of 15 parcels were identified and found suitable based on location, size (>8 acres), and area characteristics such as possible pipeline routes, right-of-way, access to the site, wetland and habitat

issues, and specifically future land use considerations by owner. **Tables 1 - 4** summarize the approximate acreage and distance of the 15 sites from each of the muck areas, including potential considerations leading to their suitability for this project. Some of the sites may be useable for more than one project area due to its proximity to another project area.

Table 1
Eau Gallie River
Potential Disposal Site

Site #	Location	Acreage	Distance to project (miles)	Wetlands	Gopher Tortoise	Zoning Code	Surrounding Area	Vegetation
1	At Melbourne Airport	50	0.5	Possible	Possible	Light Industrial	Commercial/ Residential	Pine, Palmetto, Cabbage Palm, Brazilian Pepper
2	West of R.R. tracks, South of Pineda Causeway	45	5.5	No	Possible	Retail, Warehouse, & Wholesale Commercial	Commercial/ Residential F.I.N.D. BV-40 site	Pine, Oak, Palmetto, Wax Myrtle
9*	Adjacent to Eau Gallie High School (West)	13	0.25	No	Possible	1,2, & Multi-Family	Commercial/ Residential/ School	Pine, Palmetto, Oak
11*	Between Apollo Ave. and RR tracks	17	0.5	Possible	No	Light Industrial	Residential/ Airport	Pine, Oak, Palmetto, Wax Myrtle, Brazilian Pepper
10*	Corner of Eau Gallie Blvd. & Mosswood	12	0.5	No	Possible	Residential Holding	Commercial/ Residential	Pine, Palmetto
13	On Apollo Ave. adjacent to Police Dept.	43	0.5	No	No	Light Industrial	Residential/ Airport	Pine, Oak, Palmetto, Wax Myrtle

* Land parcels owned by private landowners

Table 2
Eau Gallie Causeway
Potential Disposal Site

Site #	Location	Acreage	Distance to project (miles)	Wetlands	Gopher Tortoise	Zoning Code	Surrounding Area	Vegetation
3*	On SR 518 behind Publix	58	0.25	Yes	Possible	1,2, & Multi-Family	Commercial/ Residential	Pine, Oak, Palmetto, Brazilian Pepper, Cabbage Palm, Melaluca
2	West of R.R. tracks, South of Pineda Causeway	45	5.5	No	Possible	Retail, Warehouse, & Wholesale Commercial	Commercial/ Residential F.I.N.D. BV-40 site	Pine, Oak, Palmetto, Wax Myrtle
9*	Adjacent to Eau Gallie High School (West)	13	0.25	No	Possible	1,2, & Multi-Family	Commercial/ Residential/ School	Pine, Palmetto, Oak
11*	Between Apollo Ave. & RR tracks	17	0.5	Possible	No	Light Industrial	Residential/ Airport	Pine, Oak, Palmetto, Wax Myrtle, Brazilian Pepper
10*	Corner of Eau Gallie Blvd. & Mosswood	12	0.5	No	Possible	Residential Holding	Commercial/ Residential	Pine, Palmetto
1	At Melbourne Airport	50	0.5	Possible	Possible	Light Industrial	Commercial/ Residential	Pine, Palmetto, Cabbage Palm, Brazilian Pepper
13	On Apollo Ave. adjacent to Police Dept.	43	0.5	No	No	Light Industrial	Residential/ Airport	Pine, Oak, Palmetto, Wax Myrtle

* Land parcels owned by private landowners

Table 3
Melbourne Causeway
Potential Disposal Site

Site #	Location	Acreage	Distance to project (miles)	Wetlands	Gopher Tortoise	Zoning Code	Surrounding Area	Vegetation
4	397 Florida Ave.	40	2	No	No	Institutional	Commercial/ Residential	Cleared/scattered Palm
5	Corner of Lipscomb & Monroe	30	1	No	No	Institutional	Residential/ School	Cleared/scattered Palm
6*	Corner of Babcock & Florida Ave.	22	1	No	Possible	Low Intensity Commercial/ 1,2 & Multi-Family	Commercial/ Residential	Pine, Oak, Palmetto, Cabbage Palm, Brazilian Pepper
15	Crane Creek Disposal Area	8	0.05	No	No	Institutional	Residential/ Industrial	Grass
14	On Lipscomb, West of Applin Street	12	0.25	No	Possible	Residential Professional	Commercial/ Residential	Pine, Oak, Palmetto

* Land parcels owned by private landowners

Table 4
South Banana River
Potential Disposal Site

Site #	Location	Acreage	Distance to project (miles)	Wetlands	Gopher Tortoise	Zoning Code	Surrounding Area	Vegetation
7	Island West of Satellite Beach Fire Dept.	6	0.25	No	Yes	Institutional	Residential	Privet, Cedar, Pine, Brazilian Pepper
8	Adjacent to Satellite Beach Public Library	8	1	No	No	Institutional	Residential	Cleared
2	West of R.R. tracks, South of Pineda Causeway	45	5.5	No	Possible	Retail, Warehouse, & Wholesale Commercial	Commercial/ Residential F.I.N.D. BV-40 site	Pine, Oak, Palmetto, Wax Myrtle
12	Gleason Park Indialantic	27	2	No	No	Institutional	Residential	Cleared/scattered Palm

The project areas were ranked most favorable to least favorable based on available information presented in **Tables 1 - 4**. At present, the ranking is weighted more on land size to accommodate the conventional dredge and disposal method with clear water discharge from site. The Eau Gallie River ranked most favorable, followed by the Eau Gallie Causeway, Melbourne Causeway, and South Banana

River. The preliminary layout for the dredged material management and the noise buffer berm has been provided by the Airport Engineering Co., Inc. for site No. 1 (see **Appendix F**). Photos of select parcels for the three project sites can be found in **Appendix H**.

BCI made inquiries regarding endangered species and exotic plants to the Marine Resource Council, National Marine Fisheries Service, U.S. Fish and Wildlife Service, and Florida Fish and Wildlife Conservation Commission (see **Appendix C**). At present, least terns, black skimmers, scrub jays, gopher tortoise, seagrasses and manatees appear to be the only species of concern for the projects.

The parcel identification and Geographic Information System maps for all properties adjacent to the project areas have been obtained from the City of Melbourne Zoning Department. BCI has this information on disk and it will be submitted along with the final report.

TASK 2: ZONING AND ENGINEERING ISSUES

All, city, county, and state ordinances regarding the design and location of the upland material management site(s) were investigated and considered. Information generated in Task 1 was utilized for preliminary engineering design. This task evaluated impacts on any public or private right-of-ways and will also determine ordinances for noise during construction, limits on construction hours and days, and anticipated duration of project.

All Ordinances pertaining to the upland material management site(s) have been obtained from the City of Satellite Beach and the City of Melbourne. Potential issues have been discussed with local municipalities. The only zoning issues that pertain to construction and implementation of the project are noise during construction, and limits on construction hours and days (see **Appendix E** for specific ordinances). There are not limits on dike heights or buffer requirements at this time.

TASK 3: LONG TERM SITE AND MATERIAL MANAGEMENT

Both the long-term site management and dredged material management will be addressed upon selection of a final site(s). Elements for site management will include erosion control, aesthetic value, safety (access), site visibility, odor and maintenance of the site. The material management will include dewatering of the dredged material and its final disposition (beneficial uses). Site access, loading facilities and trucking away the material will also be considered.

The work on this task will be deferred until specific sites for the management of dredge material have been selected. However, emphasis will be placed on hauling activities from site (traffic) and identifying final beneficial use or storage sites. The final uses of these sediments were discussed with all municipalities. However, this issue will be better resolved upon site selection or dredging approach.

TASK 4: SEDIMENT REMOVAL AND MANAGEMENT COST ANALYSIS

No work has been completed for this task. Strategies and the best option for sediment removal will be addressed in this task. However, data gathered on the physical characteristics of sediments from other more recently completed dredging projects in the area will be used to estimate the size of the upland management site.

Understanding that the intent is to remove muck and there will be a need to consider environmental issue, we will make certain assumption to develop the cost estimates. Assumptions will include the use of chemical polymers to enhance water clarity and assist with some dewatering at the time of actual dredging. We will also assume that there will be a need to route the return (decant) water from the upland management site back into a surface water body.

Other cost considerations, such as pumping distances, pumps, pipeline route, construction and purchase of management site, permitting fees, environmental monitoring, and those related to beneficial uses such as earth moving equipment and trucking will also be included. This task will explore innovative disposal concepts such as hydrocycloning to separate the fine- and coarse-grained materials for beneficial uses.

For this project, hydraulic dredging appears to be the only logical and cost effective method for removal of the sediments. However, reputable dredging contractors will be contacted to assess the cost of the dredging options to be considered. The cost-analysis will be "fine tuned" once Phase III is completed.

Due to the fact no disposal site has been confirmed or selected for each project site, no cost analysis has been completed. BCI is also waiting for replies from some prospective parcel landowners.

We have, however, requested the City of Cocoa Beach to provide information they have gathered on their "phased-approach" to remove sediments from their canal system. This information will be available towards the end of March, 2000. We will evaluate such a process for this project, specifically for the Satellite Beach Grand Canal system.

TASK 5: PROJECT MANAGEMENT, MEETINGS, AND REPORTS

Meetings were held regarding the project and possible disposal sites with the following municipalities (See **Appendix F**).

- City of Melbourne
- City of Satellite Beach
- Patrick Air Force Base
- Florida Department of Transportation
- Melbourne Parks and Recreation Department

TASK 7: PERMITTING ISSUES

A meeting was held at the Melbourne Permitting office of the SJRWMD on November 18, 1999 (**Appendix G**). The highlights of this meeting were that FDEP would not recommend individual permits to be submitted for each project since the approaches/design to sediment removal may vary. Also, if no historical information of design of canals or waterways is available, dredging will be limited to –5 feet below MLW. Also, the SJRWMD will address with FDEP the beneficial use of dredged materials for private use once all public use options are exhausted. This discussion will occur at a later date and will be initiated by SJRWMD. There is also a $100 permitting fee for Notice of General Permit, confirmed by Tami Debu of FDEP.

Appendix A

MUCK DEPOSIT ASSESSMENT AND MANAGEMENT PROJECT
INDIAN RIVER LAGOON PROGRAM
(ST. JOHNS WATER MANAGEMENT DISTRICT)
SCOPE OF WORK
BCI PN 19-9910

Introduction:

Project Goal:

The overall goal of this Muck Assessment & Management Project is to evaluate the feasibility of removing muck from **three** of the 10 previously identified areas in Brevard and Indian River Counties within the Indian River Lagoon System. Specifically the areas to be evaluated in this project are Eau Gallie River, Melbourne-Eau Gallie Causeway, and South Banana River.

This project will be completed in three phases as described below:

Phase I

- Identification and field reconnaissance of potential sites for disposal and management of dredged muck sediment, and cost estimation for project implementation. More specifically, Phase I will include assessment of cost estimates for dredging, permitting fees, land ownership, construction of site, zoning, accessibility, site capacity, and long-term site and dredged material management (e.g. beneficial uses). A cost analysis will be completed for each area

Phase II

- Potential Project development. More specifically, Phase II will include critical project review of benefits and feasibility, local support, conflicting land use issues, potential funding sources, and permitting considerations.

Phase III

- Specific project development. Phase III will build upon the review and analysis of existing data on muck deposits in one of the three above referenced areas. Specifically, new data will be collected to confirm or fill in gaps regarding existing data. These data include bathymetry, muck deposit boundaries, depth, volume estimates, and the physical characterization of muck. **This phase will be completed for only one of the three areas that shows the highest feasibility for dredging based on information generated in Phases I and II above.**

To accomplish the above phases, the project work will be divided into the following tasks:

Phase I

TASK 1: Dredged Material Management Site Investigation
TASK 2: Zoning and Engineering Issues
TASK 3: Long Term Site and Material Management
TASK 4: Sediment Removal and Management Cost Analysis
TASK 5: Project Management, Meetings, and Reports

Phase II

TASK 6: Public Support for Project and Additional Funding Sources
TASK 7: Permitting Issues
TASK 8: Project Management, Meetings, and Reports

Phase III

TASK 9: Evaluate Existing Muck Depth Extent and Establish Project Boundary
TASK 10: Survey and Identification of Muck Sediments, and Sampling
TASK 11: Physical Characterization and Muck Volume Determination
TASK 12: Project Management, Meetings, and Reports

The project will be initiated with a kick-off meeting, at which time the project scope, schedule, project coordination procedures, and reporting requirements for the Indian River Lagoon Program Office (St. Johns River Water Management District) will be confirmed.

PHASE I

This phase will begin by gathering and reviewing all existing muck survey information. This will involve a review of existing information such as reports, muck maps, previous surveys, aerial photographs, plans, and other relevant information that will assist in proceeding with the fieldwork.

TASK 1: Dredged Material Management Site Investigation

This task will identify and investigate potential upland dredged material management site(s) within a two-mile radius of each project area. The intent of this task will be to identify any private or public lands and then select those parcels that show suitability for management (disposal) of dredged material.

A cursory survey will be conducted on each site for suitability as an upland management site based on size and topographic features. A detailed survey will then be conducted on the most probable sites. This survey will include issues such as threatened and endangered plant and animal species, wetlands, proximity to residential and other public use areas and other surface/subsurface water resources. Public, City, and County input will be solicited during this process.

The detailed survey process will include public input and will be conducted with considering permitting issues that would need to be addressed.

TASK 2: Zoning and Engineering Issues

All city, county, and state ordinances regarding the design and location of the upland material management site(s) will be investigated and considered. Information generated in Task 1 will be utilized for preliminary engineering design. This task will evaluate impacts on any public or private right-of-ways and will also determine ordinances for noise during construction, limits on construction hours and days, and anticipated duration of project. Access to the site(s) will be considered which will be critical for Task 3 below.

TASK 3: Long Term Site and Material Management

Both the long-term site management and dredged material management will be addressed in this Task. Elements for site management will include erosion control, aesthetic value, safety (access), site visibility, odor and maintenance of the site. The material management will include dewatering of the dredged material and its final disposition (beneficial uses). Site access, loading facilities and trucking away the material will also be considered.

TASK 4: Sediment Removal and Management Cost Analysis

Strategies and the best option for sediment removal will be addressed in this task. However, data gathered on the physical characteristics of sediments from other more recently completed dredging projects in the area will be used to estimate the size of the upland management site.

Understanding that the intent is to remove muck and there will be a need to consider environmental issue, we will make certain assumption to develop the cost estimates. Assumptions will include the use of chemical polymers to enhance water clarity and assist with some dewatering at the time of actual dredging. We will also assume that

there will be a need to route the return (decant) water from the upland management site back into a surface water body.

Other cost considerations, such as pumping distances, pumps, pipeline route, construction and purchase of management site, permitting fees, environmental monitoring, and those related to beneficial uses such as earth moving equipment and trucking will also be included. This task will explore innovative disposal concepts such as hydrocycloning to separate the fine- and coarse-grained materials for beneficial uses.

For this project, hydraulic dredging appears to be the only logical and cost effective method for removal of the sediments. However, reputable dredging contractors will be contacted to assess the cost of the dredging options to be considered. The cost-analysis will be "fine tuned" once Phase III is completed.

TASK 5: Project Management, Meetings, and Reports

This task is described in detail in Task 12. However, project management will be an on-going process from scope and budget development until the final approval of completeness of project is received from the IRL project manager.

Meetings for public input will be coordinated as needed. A Phase I report will be submitted with an overview of the above four tasks. This report will rank the three areas considered based on issues addressed in the tasks above. The Report will be submitted in four months for the Notice to Proceed date.

PHASE II

Some of the Phase II tasks will be initiated concurrently with the Phase I tasks. Phase II tasks are described below.

TASK 6: Public Support for Projects and Additional Funding Sources

It is recommended that the public from each area be informed to solicit comments and address their concerns during each phase of the project. A Public Advisory committee (PAC) may be formed to facilitate a forum for resolving these concerns and could consist of four to six members, including commissioners, citizens, and personnel from environmental organizations, governmental agencies and the scientific community. This task will also include a public meeting to facilitate this process. The meeting can be facilitated by the Marine Resources Council workshops. This task is and will continue to be critical to the successful completion of each of these projects.

Additional funding sources will be evaluated. Local, state and federal agencies will be approached to evaluate their participation in the funding process.

TASK 7: Permitting Issues

This task will include contacting various regulatory and funding agencies and other entities that may influence the cost and permitting of the project. The agencies to be contacted may include

- City and County
- Florida Department of Transportation
- Florida Inland Navigation District
- U.S. Army Corps of Engineers
- Florida Department of Environmental Protection
- Florida East Coast Rail Road
- Florida Fish and Wildlife Conservation Commission
- U.S. Fish and Wildlife Service
- Department of State, Division of Archives, History and Records Management

A meeting will be held with regulatory agency personnel from SJRWMD, FDEP, and the USACOE including local and county permitting staff. This meeting will assist in identifying future issues to consider as the project proceeds towards permit preparation including any construction and monitoring requirements during actual dredging. Any potential fees for permits will also be addressed. The meeting for this task will be coordinated immediately after the projected kick-off meeting.

TASK 8: Project Management, Meetings, and Reports

This task is described in detail in Task 12. As mentioned in Task 5, project management will be an on-going process from scope and budget development until final approval of completeness of project is received from the IRL project manager.

A Phase II report will be submitted with an overview of 6 through 8. This report will rank the three areas considered based on issues addressed in the tasks above. The Report will be submitted in eight months of the Notice to Proceed date. The Phase I and II reports will be used to evaluate and select the one of three areas for detailed survey and muck volume determination.

PHASE III

Information generated in Phases I and II may also be applicable to tasks in Phase III. However, Phase III work will be limited to only one area that will be considered in detail to implement our actual restoration dredging effect.

TASK 9: Evaluate Existing Muck Depth Extent and Establish Project Boundaries

This task will evaluate existing information complied in Task 1 regarding muck surveys for the selected area and will develop a strategy and plan to complete the subsequent tasks. A cursory survey for muck depth and coverage will be conducted to establish a project boundary.

Task 10 Survey and Identification of Muck Sediments and Sampling

Information compiled in Task 9 will be used to assist in refining the selected project site survey and sampling plan and enable generation of additional information for sediment delineation, characterization and management. A 200-400 foot grid system, depending on the area selected, will be developed to survey for muck.

Additional *in situ* field survey for muck identification, sampling and delineation will be conducted using a piston-tube sampler developed by BCI for collecting fine-grained materials. Several locations will be sampled at various depths to hard sand bottom or predetermined/engineered depths. All sample locations will be identified and mapped using a Global Positioning System.

TASK 11: Physical Characterization and Muck Volume Determination

Samples collected in task 10 will be placed in jars, sealed and returned to BCI's testing laboratory for physical characterization. All samples will be collected in accordance with BCI's FDEP approved Comprehensive Quality Assurance Plan (CompQAP).

The following physical/engineering properties will be determined on individual and composite samples to assist in determining handling characteristics, disposal behavior and beneficial uses. We anticipate testing between 10 to 20 individual and/or composite samples for the following properties:

- Moisture/-200 sieve
- Specific Gravity
- Atterberg Limits

- Organic Content
- Grain Size
- 30-Day Settling Test

Testing will be conducted in accordance with appropriate American Society for Testing and Materials (ASTM) standards. The samples will be classified according to the Unified Soil Classification System, where applicable.

Information from task 10 will be used to develop muck thickness maps and estimate the volume of muck to be removed from the selected area.

TASK 12: Project Management, Meetings, and Reports

We anticipate completing this project in 12 months from the date Notice to Proceed is received. A Final report will be prepared that is inclusive of the three phase reports and will be submitted to IRL project manager for review and comment.

The documents to be delivered to the IRL Program will include a reproducible set of mylar maps and plans, probably at a scale of 1 inch = 200 feet and digital copies in AutoCAD, Intergraph or as requested by the IRL Program project manager. Two sets of blue line drawings will also be delivered at the draft and final deliverable phase.

The BCI management plan will include the use of the Axium computer system for monitoring, control and reporting of costs and progress throughout the project.

As a backup for each invoice, we will submit a weekly and monthly status report to the County. This report will cover the work completed for that period, any technical or management problems, discussions or correspondence with the regulatory agencies and work planned for the upcoming period. Other reporting requirements will be addressed at the IRL project managers request. Six meetings are included in the project budget.

Meeting 1:	Kick-off meeting with IRL Program and SJRWMD staff
Meeting 2:	Meeting with regulatory staff to discuss disposal site permitting issues, permit costs including concerns from any other agencies
Meeting 3:	PAC (Public) meeting
Meeting 4 & 5:	Two additional project meetings, if needed
Meeting 6:	Final Report Presentation, possibly at a conference or public workshops

A Report for Phase III. This report will include information that will enable the implementation of a restoration-dredging project at one of the three selected areas. This information may be presented at the public workshop. Hard copies and disk copies of all information will be provided to the IRL Project Manager.

Muck Deposit Assessment and Management Project
Work Schedule From Date of Notice to Proceed

Month	Task and Description of Work*
1	1, 6, 7: Kick-off meeting. Meeting with Regulatory agencies. Public notification of project areas.
2, 3, 4	2, 3, 4: Meeting with City and County staff on zoning issues. Develop long term site and material strategies. Gather information for each project cost
5	4: Finalize strategies and cost estimates.
6	5: Complete Phase I tasks. **Submit Phase I report.**
7	6, 7: Continue addressing public concerns and funding sources.
8	8: Complete Phase II tasks. **Submit Phase II report**.
9	9: Develop muck survey and sampling plan.
10, 11	10, 11: Complete sediment characterization and volume estimation. Revisit selected project cost analysis
12	12: Complete Phase III tasks. **Submit final report and disk copies.** Receive notice of project completion.

* Project Management will be an on-going process through weekly and monthly updates

PLOT DATE: 2-16-2000

BCI FILE: P:\LAKES\989910\989910-PROJ-BNDY-FT.DWG

BCI
ENGINEERS & SCIENTISTS, INC.
2000 E. EDGEWOOD DRIVE, LAKELAND, FL 33803
PHONE: (863) 667-2345

DATE: 2-16-2000	REVISED:	DRAWN BY: CMR

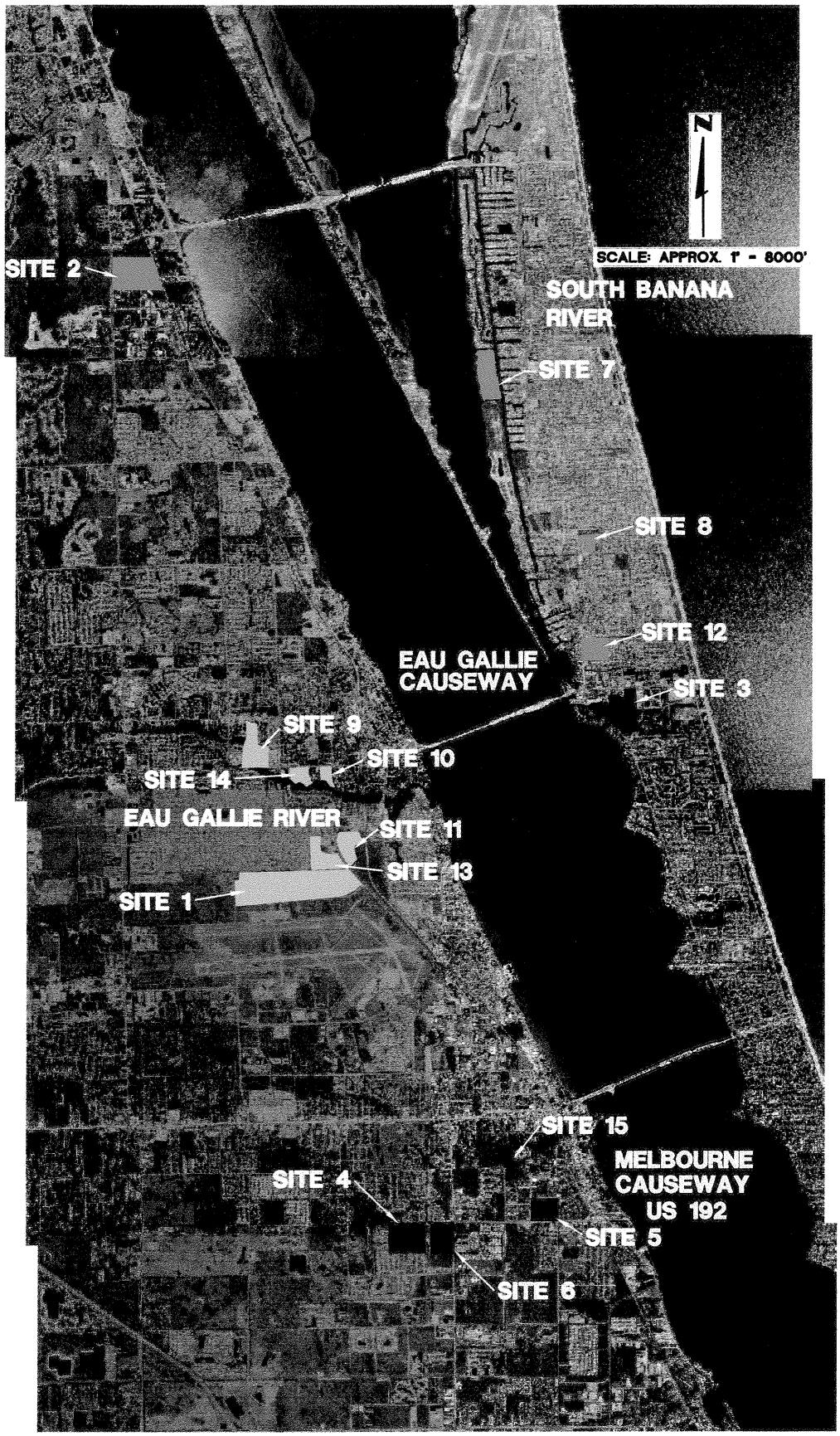
ST. JOHNS RIVER WATER MANAGMENT DISTRICT

FIGURE 1

MUCK LOCATION MAP

MUCK DEPOSIT ASSESSMENT AND MANAGEMENT PROJECT

SCALE: AS SHOWN	PROJECT NO.: 989910



Area not to scale

BCI ENGINEERS & SCIENTISTS, INC.
2000 E. EDGEWOOD DRIVE, LAKELAND, FL 33803
PHONE: (863) 667-2345

DATE: 2-16-2000	REVISED:	DRAWN BY: CMR

ST. JOHNS RIVER WATER MANAGMENT DISTRICT

FIGURE 2

DISPOSAL SITE LOCATIONS

MUCK DEPOSIT ASSESSMENT AND MANAGEMENT PROJECT

SCALE: AS SHOWN	PROJECT NO.: 989910

BCI FILE: P:\...\989910\989910-PROJ-BNDY-FT.DWG
PLOT DATE: 2-16-2000

John Fergus
135 Maple Drive
Satellite Beach
Florida 32937
(321) 773-7075
fergus@spacey.net

To: Shailesh Patel
Melisa McCluskey

18 November 1999

Re: Depth Chart of Grand Canal

Attached 10 pages form a mosaic of two charts showing depths of the Banana River and associated canal complex in the vicinity of Satellite Beach. They were prepared by the Corps of Engineers in 1976 for, as I understand it, preparations to a dredging project. The City's Building Official has the two charts from which I created the mosaic.

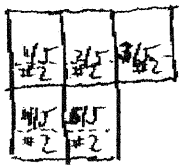
A quick check of depths in several areas indicate the values on this chart are consistent with my readings to the bottoms of the dredged canals, the sand/muck interface. Note the borrow pits which are apparent to the north of the Pineda Causeway. The one I encountered near the south eastern end is not so obvious.

Do you expect these charts suffice to convince DEP that a dredging project is not increasing the depth of the canals?

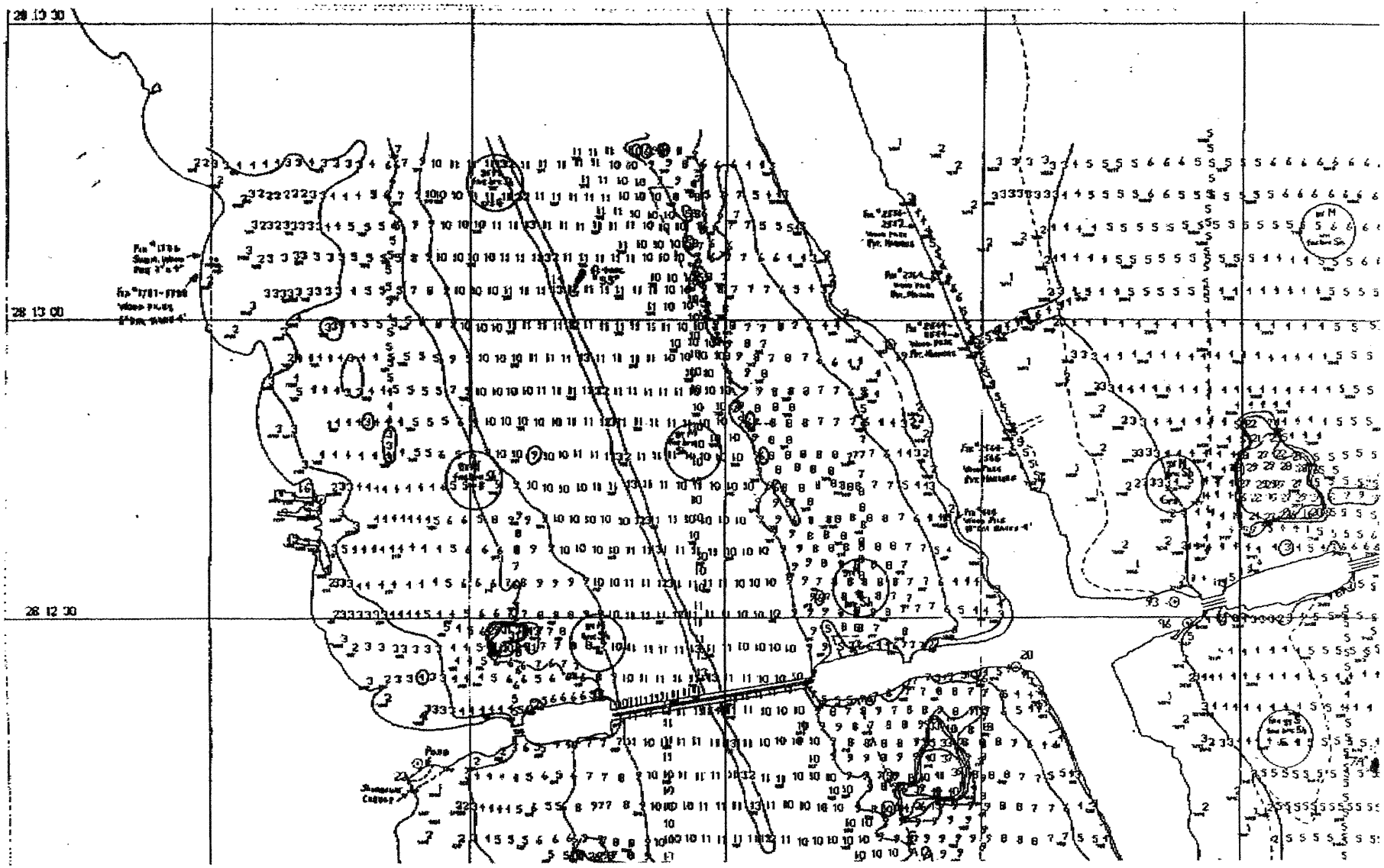
John

Mosaic Attached (10 sheets)

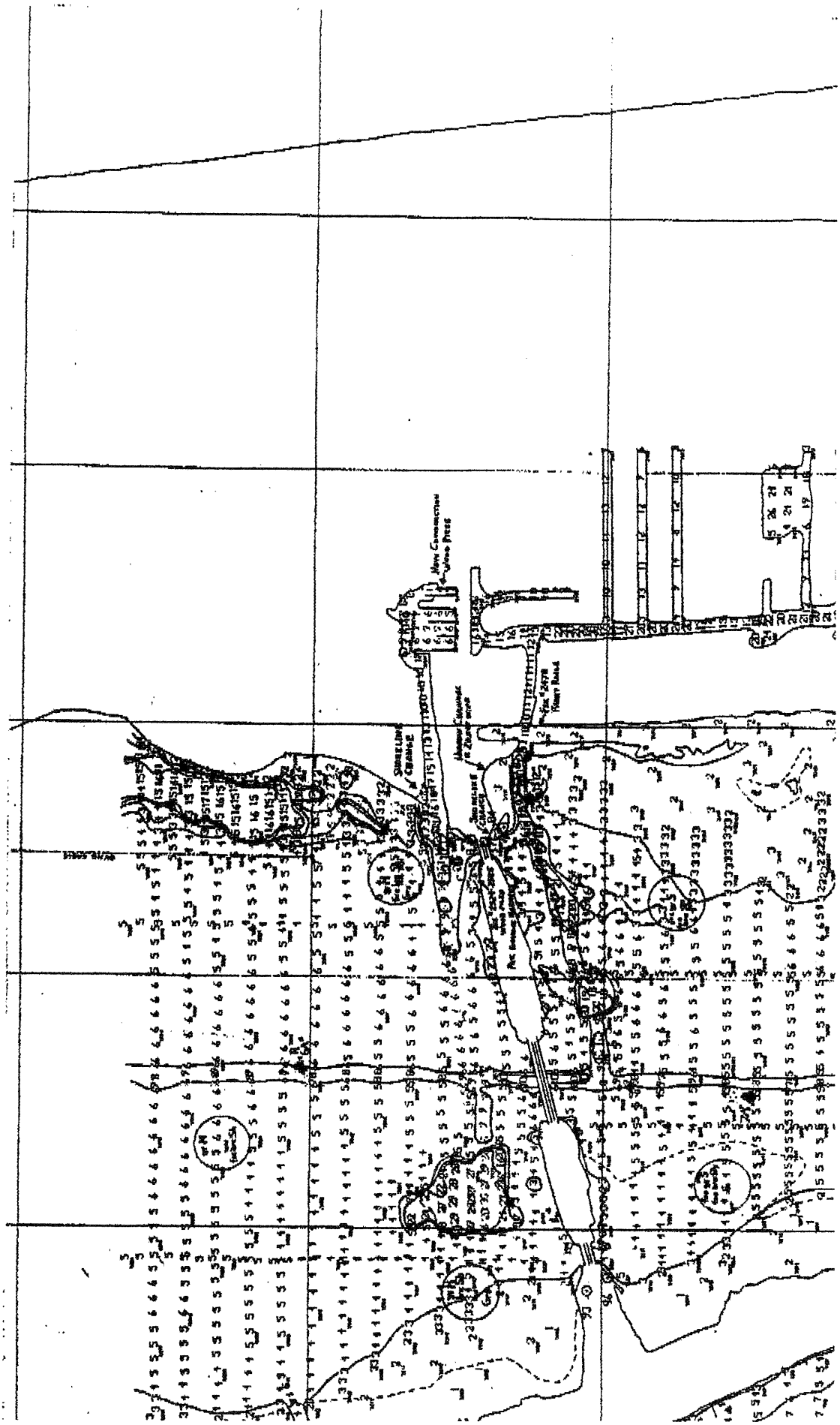
1/5



1996 USACoE Survey

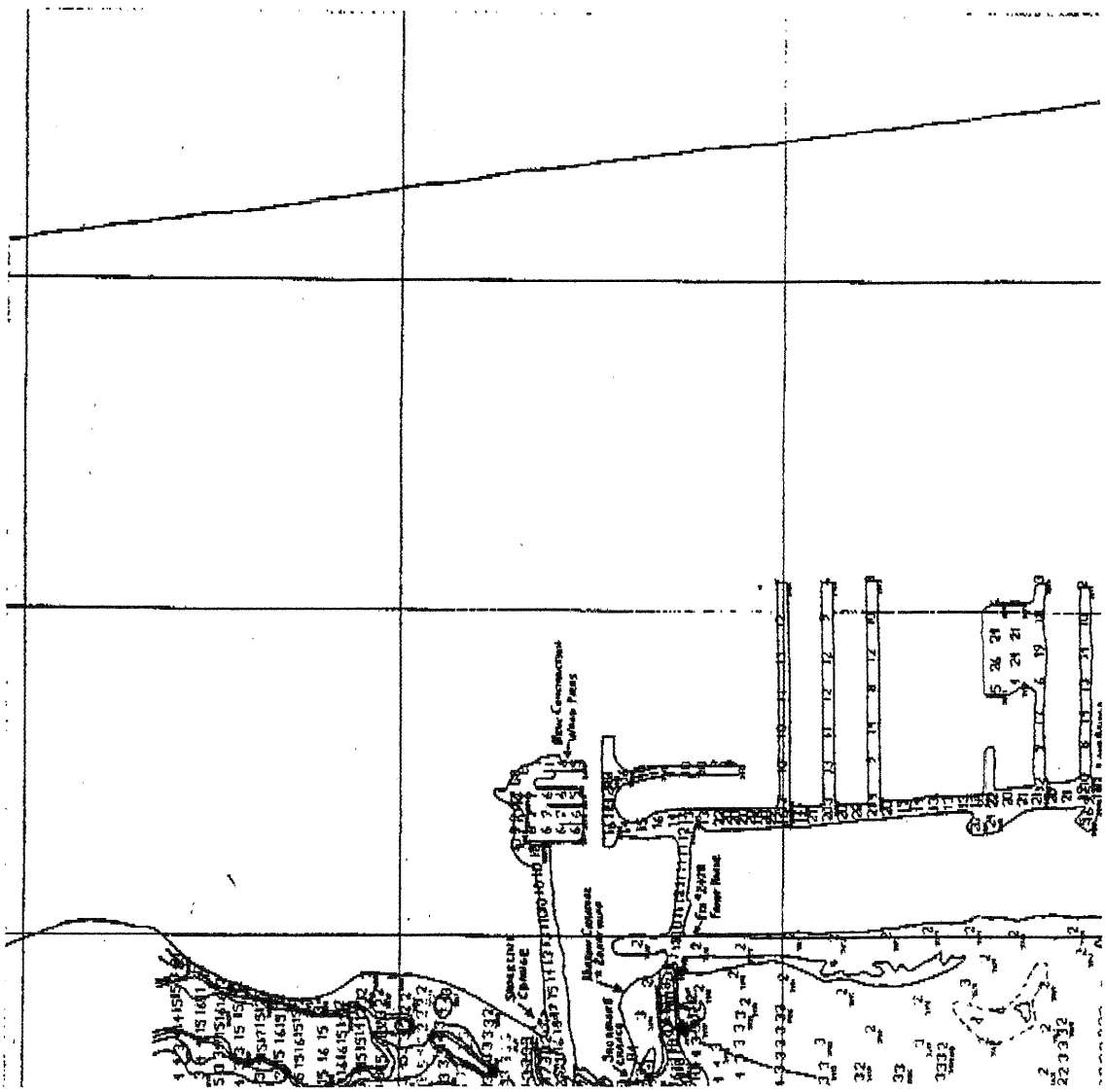


11/18/1999 17:19 407-779-1388 CITY OF SATELLITE BH PAGE 03

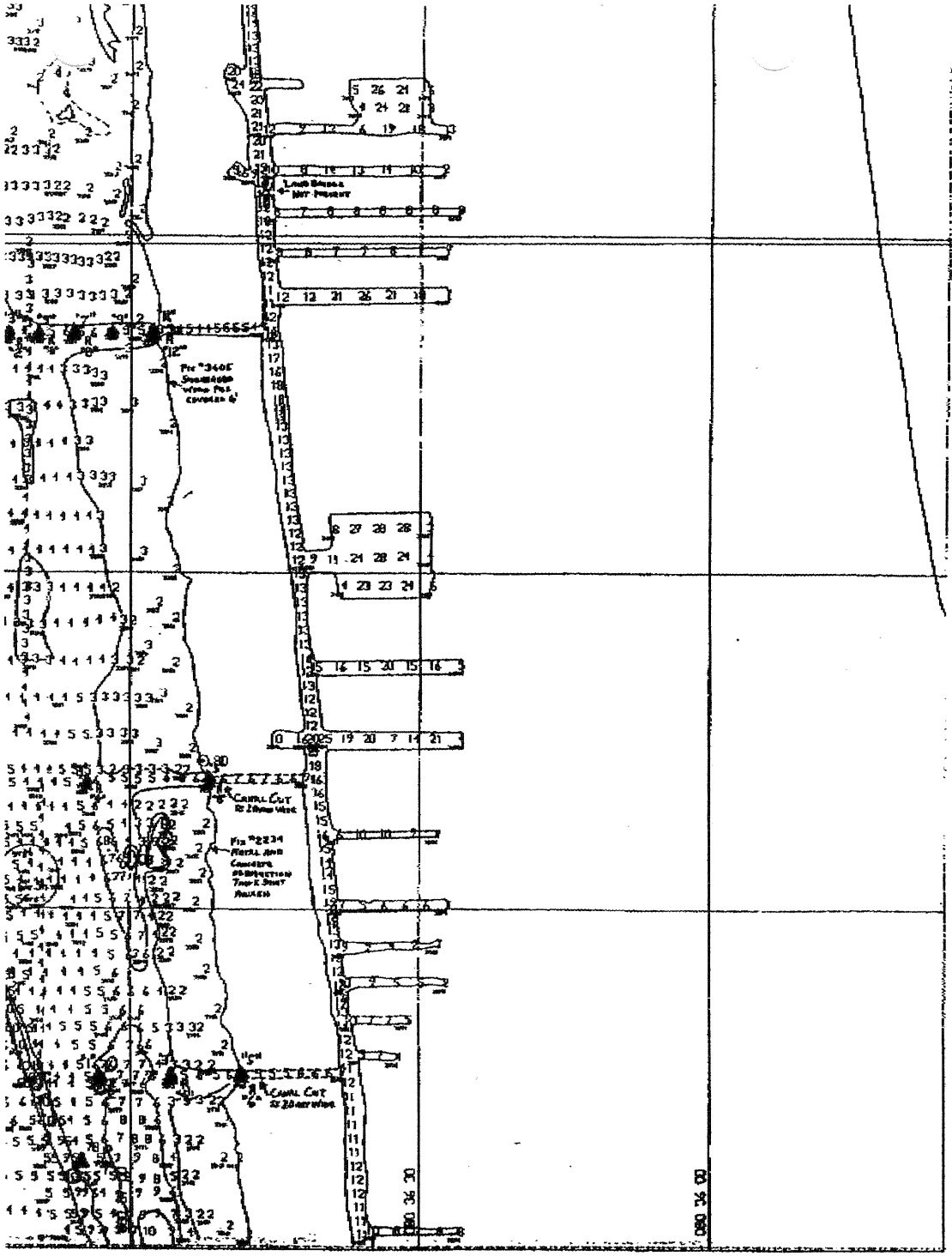


2/5

11/18/1999 17:19 407-779-1388 CITY OF SATELLITE BH PAGE 05

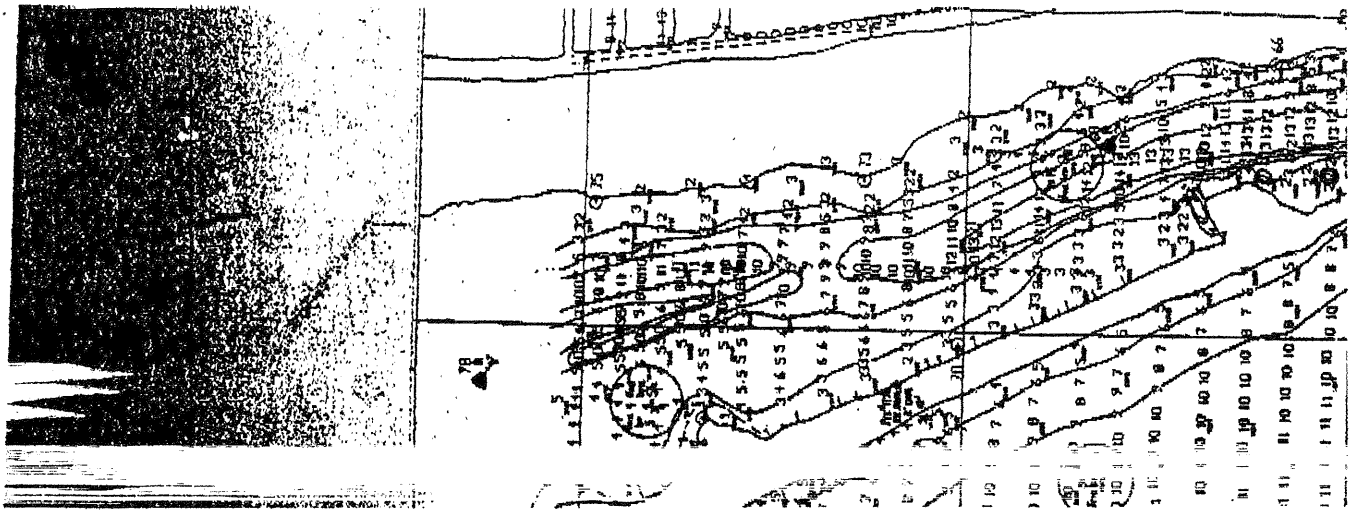


3/5 #2

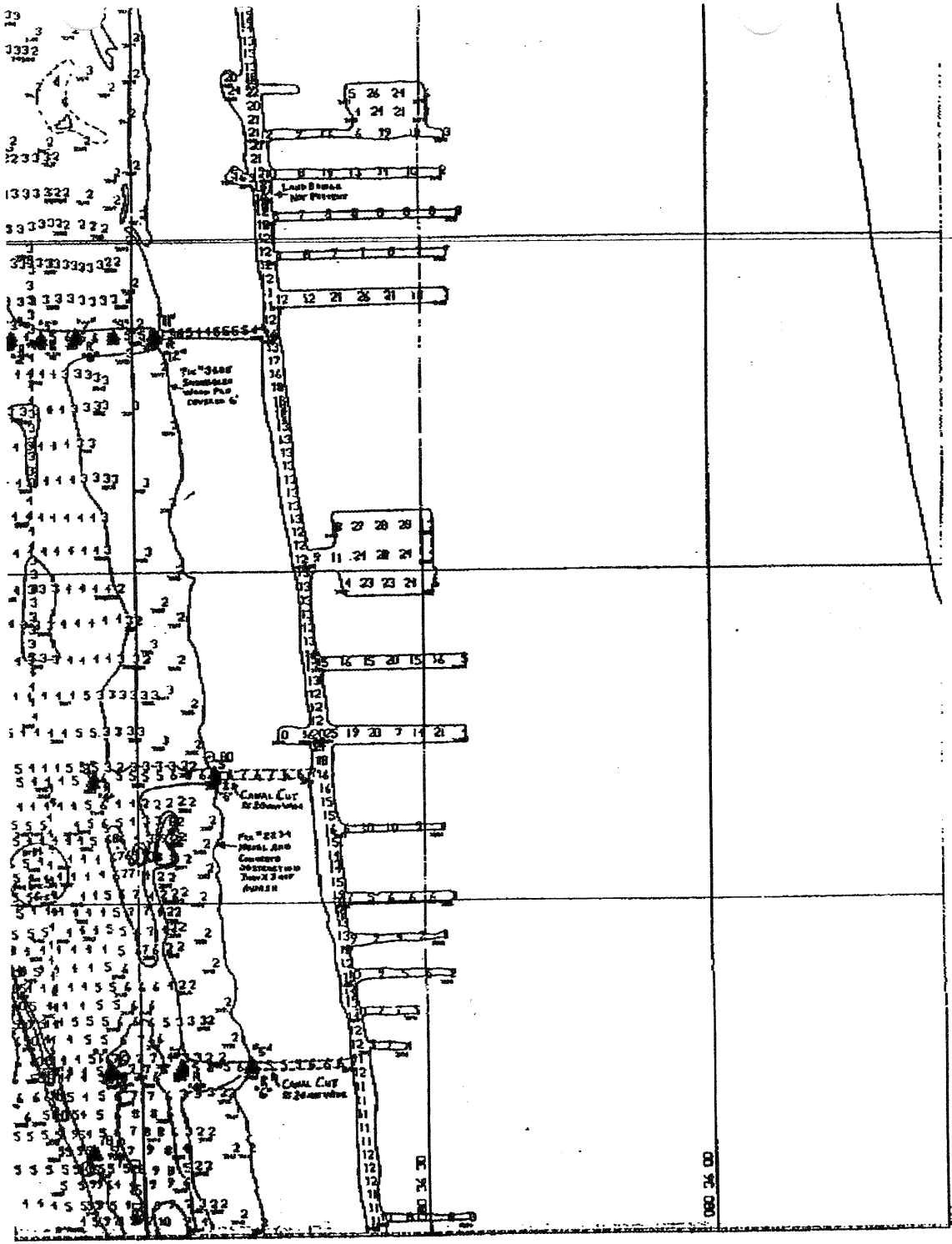


DPR-499
INDIAN AND BANANA RIVERS, FLORIDA
NOAA LAUNCH 1277
AHP-10-1-76
H-9606
1:10000 SCALE
PART A. OF A.

SURVEYED BY:
M. WERT
L. BENNETT
W. SPRYE
E. FANNING
M. ROBINETT

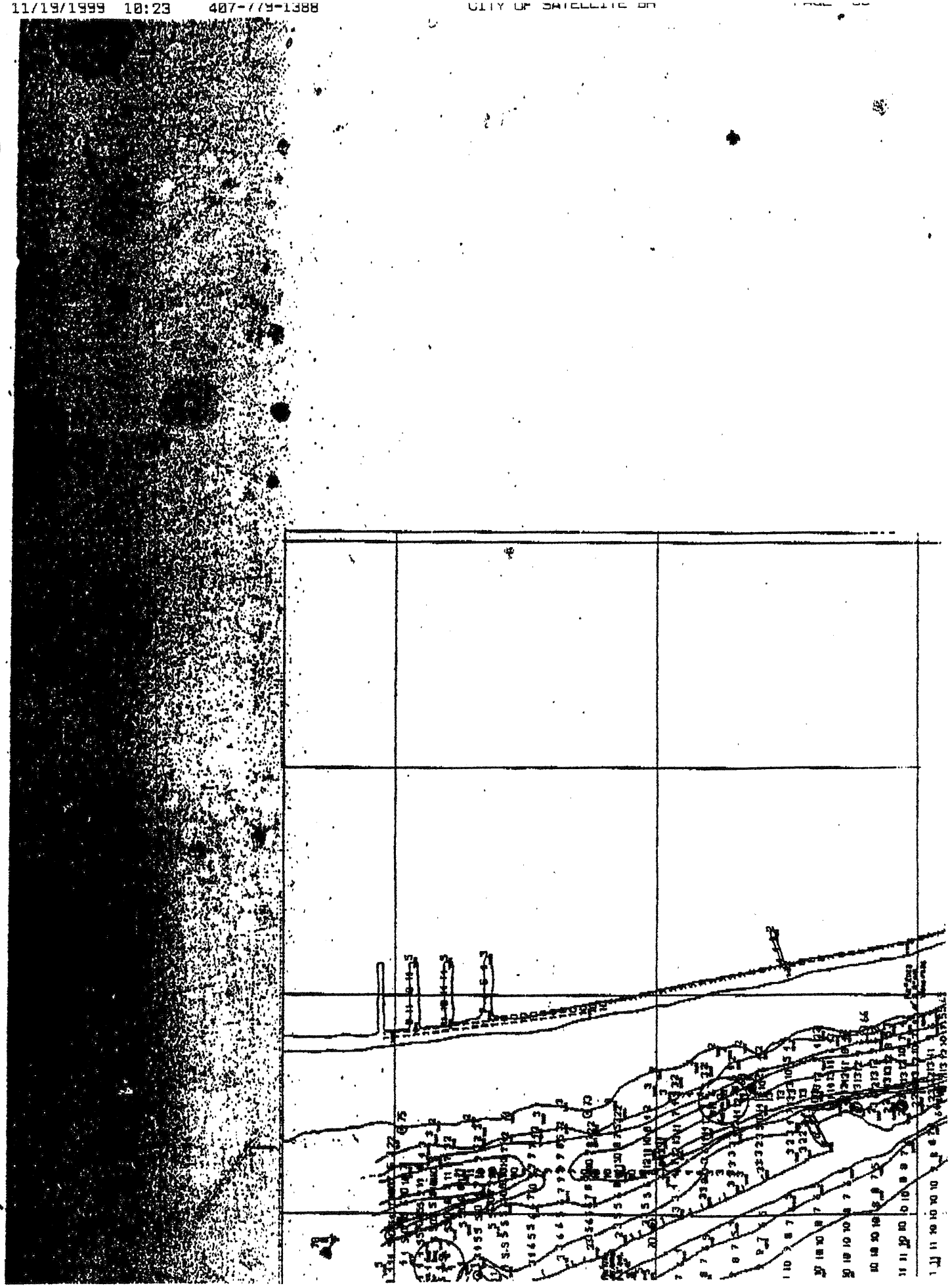


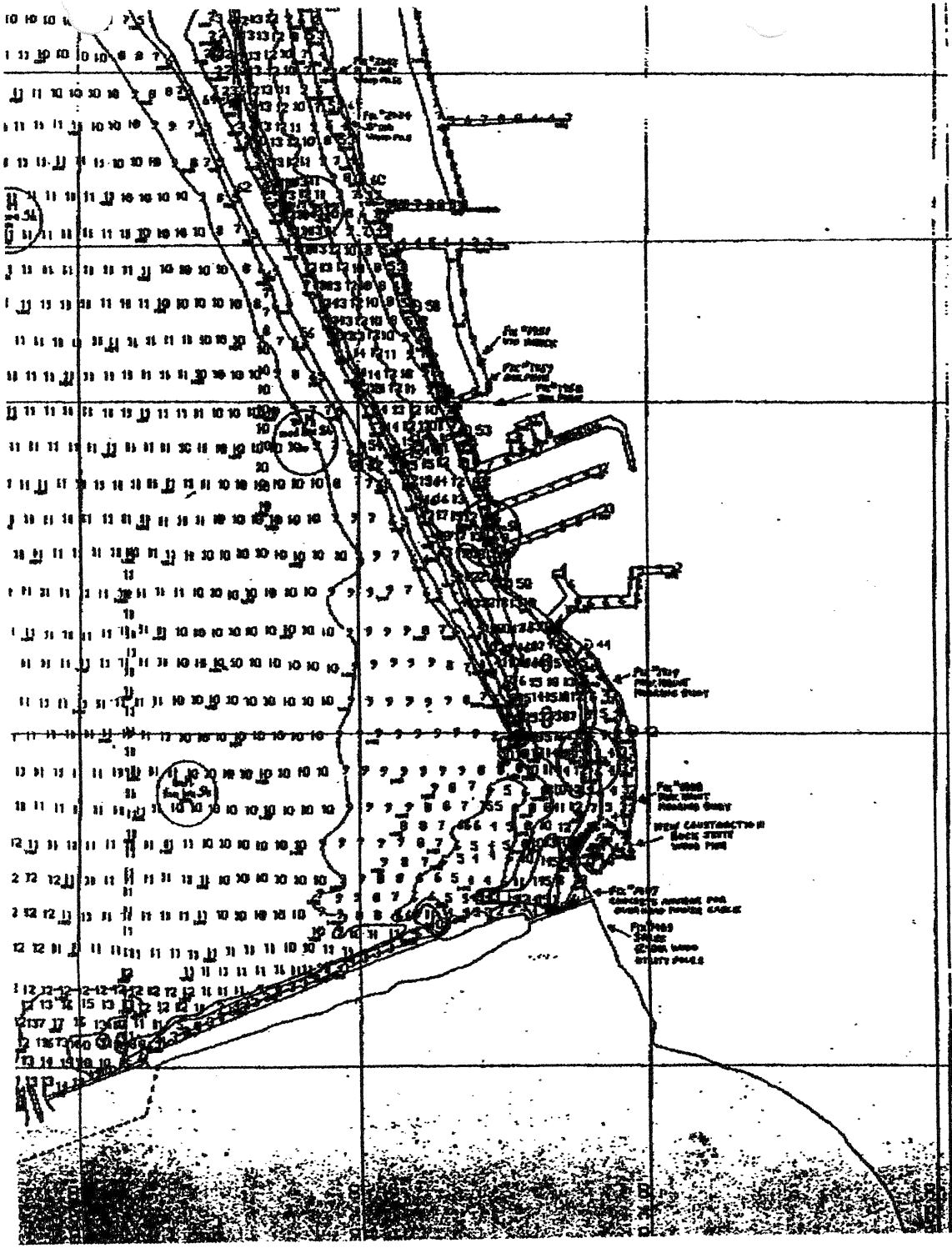
3/5 #2



OPR-499
INDIAN AND BANANA RIVERS, FLORIDA
NOAA LAUNCH 1277
ARP-10-1-76
H-9606
1:10000 SCALE
PART A. OF A.

SURVEYED BY:
W. WERT
A. BENNETT
W. SPRYE
E. FANNING
M. ROBINETT





OPR-499
INDIAN AND BANANA RIVERS, FLORIDA
NASA LAUNCH 1277
ENP-16-1-76
H-5606
1:10000 SCALE
PART 3 OF 5

SURVEYED BY
W. WEST
J. BENNETT
W. SPRYE
E. FANNING
M. ROBINETT

Appendix B

BCI
ENGINEERS & SCIENTISTS, INC.

1[illegible] Executive Circle, Suite 104
L[illegible]na Beach, FL 32114

(904) 253-1717
FAX: (904) 253-1767

November 17. 1999

Schweizer & Schewizer Limited
600 S. Barracks Street
Suite 210
Pensacola, FL 32501

RE: Land Parcel Lease for Possible Dredge Site

To Whom It May Concern:

BCI is currently working on a Muck Assessment project for the Indian River Lagoon Program in conjunction with the City of Melbourne. The intent of this project is to prioritize three areas for future sediment removal. These areas are Eau Gallie River, Eau Gallie Causeway, and South Banana River "Grand Canal".

The sediment removal is not anticipated before 2001. Our intent is to identify any land parcels that appear suitable for placement of sediments. Final site selection and material disposal will require FDEP permitted approval.

We are looking for a large parcel of land (8 Acres or more) to lease for the Eau Gallie River Causeway site. We came upon your parcel of land off of South Patrick Drive, Melbourne. We wish to investigate your interest in leasing this land for this project. Please contact us as soon as possible in writing or call if you require clarification.

Sincerely,

BCI

Shailesh K. Patel, M.Sc.
Project Manager

LEE ENGINEERING, INC.
1275 SOUTH PATRICK DRIVE, SUITE H
SATELLITE BEACH, FL 32937
(321) 777- 6270 phone, (321) 777- 4795 fax

November 29, 1999

Shailesh K. Patel, M.Sc
BCI Engineers & Scientists. Inc.
139 Executive Circle, Suite 104
Daytona Beach, FL 32114

via fax 904-253-1767

RE: DREDGE SITE LAND LEASE INQUIRY

Dear Mr. Patel

We are the civil engineers of record for the residential development project known as Ocean Side Village, located at the site you inquired about in the attached letter.

The project is currently awaiting final development permits and will begin construction shortly. The owner had asked me to reply to your letter and advise you of his plans to develop the property.

Thank you for your inquiry.

Sincerely,

LEE ENGINEERING, INC.

Robert I. Lee P.E.
President

enclosure

cc: Schweizer & Schewizer Limited via fax 850-301-0182

BCI
ENGINEERS & SCIENTISTS, INC.

1[illegible]xecutive Circle, Suite 104
D[illegible]ia Beach, FL 32114

(904) 253-1717
FAX: (904) 253-1767

December 20, 1999

Mr. David Roach
FIND
1314 Marcinski Road
Jupiter, FL 33477

Re: Indian River Lagoon Program

Dear ~~Mr. Roach~~ Dave:

BCI is currently working on a Muck Assessment project for the Indian River Lagoon Program (SJRWMD) in conjunction with the City of Melbourne, Satellite Beach and FDOT. The intent of this project is to prioritize three areas for future sediment removal. These areas are Eau Gallie River, Eau Gallie Causeway, and South Banana River "Grand Canal", excluding the intracoastal waterway.

The sediment removal is not anticipated before 2001. Our intent is to identify any land parcels that appear suitable for placement of sediments. Final site selection and material disposal will require FDEP permitted approval.

We understand that FIND may have designated Upland Sediment Management Sites in Brevard County or may be in the process of pursuing acquiring such land. We would therefore like to inquire if you can assist in identifying these land parcels that may be in close proximity (<5 miles) of the above identified areas. Once again, we thank FIND for your continued support of such projects. We look forward to your response.

Happy Holidays.

Sincerely,

BCI

Shailesh K. Patel, M.Sc.
Project Manager

Melisa McCluskey
Ecologist

SKP:tjt

I:\projects\989910\correspondence\FINDland

FLORIDA INLAND NAVIGATION DISTRICT
Administrative Office on the Intracoastal Waterway in Palm Beach County
1314 Marcinski Road, Jupiter, Florida 33477
Telephone 561-627-3386 FAX 561-624-6480

FACSIMILE TRANSMITTAL FORM

TO: Shailesh DATE 1/4

CC: TOTAL PAGES 4
(Includes cover)

FROM: D Roach

COMMENTS:

In response to your attached request, enclosed is a location map of our site in the subject area BV-40. This property is a little over 5 miles from the EAU Gallie causeway. The site is not yet constructed but is designed for 232,000 cybs.

Original to follow by mail. ( ) yes (✓) no

BCI
ENGINEERS & SCIENTISTS, INC.

139 Executive Circle, Ste. 203
Daytona Beach, FL 32114

)4) 253-1717
FAX: (904) 253-1767

January 6, 2000

Boruch-David Inc.
2100 N Atlantic Ave.
Cocoa Beach, FL 32931

RE: Land Parcel Lease for Possible Dredge Site

To Whom It May Concern:

BCI is currently working on a Muck Assessment project for the Indian River Lagoon Program in conjunction with the City of Melbourne. The intent of this project is to prioritize three areas for future sediment removal. These areas are Eau Gallie River, 1-92 Causeway/Eau Gallie Causeway, and South Banana River "Grand Canal".

The sediment removal is not anticipated before 2001. Our intent is to identify any land parcels that appear suitable for placement of sediments. Final site selection and material disposal will require FDEP permitted approval.

We are looking for a large parcel of land (8 Acres or more) to lease for the 1-92 Causeway site. We came upon your parcel of land off of Florida Avenue, Melbourne. We wish to investigate your interest in leasing this land for this project. Please contact us as soon as possible in writing or call if you require clarification.

Sincerely,

BCI

Shailesh K. Patel, M.Sc.
Project Manager

BCI
ENGINEERS & SCIENTISTS, INC.

139 Executive Circle, Ste. 203
Daytona Beach, FL 32114

) 253-1717
AX: (904) 253-1767

January 14, 2000

Riverwalk of Melbourne Ltd.
2308 Winter Woods Blvd.
Winter Park, FL 32792

RE: Land Parcel Lease for Possible Dredge Site

To Whom It May Concern:

BCI is currently working on a Muck Assessment project for the Indian River Lagoon Program in conjunction with the City of Melbourne. The intent of this project is to prioritize three areas for future sediment removal. These areas are Eau Gallie River, 1-92 Causeway/Eau Gallie Causeway, and South Banana River "Grand Canal".

The sediment removal is not anticipated before 2001. Our intent is to identify any land parcels that appear suitable for placement of sediments. Final site selection and material disposal will require FDEP permitted approval.

We are looking for a large parcel of land (8 Acres or more) to lease for the Eau Gallie River and the Eau Gallie Causeway. We came upon your parcel of land off of Eau Gallie Blvd., Melbourne. We wish to investigate your interest in leasing this land for this project. Please contact us as soon as possible in writing or call if you require clarification.

Sincerely,

BCI

Shailesh K. Patel, M.Sc.
Project Manager

BCI
ENGINEERS & SCIENTISTS, INC.

139 Executive Circle, Ste. 203
Daytona Beach, FL 32114

) 253-1717
FAX: (904) 253-1767

January 14, 2000

HL Clark III Et Al Trustees
340 Bay Point Dr.
Melbourne, FL 32935

RE: Land Parcel Lease for Possible Dredge Site

To Whom It May Concern:

BCI is currently working on a Muck Assessment project for the Indian River Lagoon Program in conjunction with the City of Melbourne. The intent of this project is to prioritize three areas for future sediment removal. These areas are Eau Gallie River, I-92 Causeway/Eau Gallie Causeway, and South Banana River "Grand Canal".

The sediment removal is not anticipated before 2001. Our intent is to identify any land parcels that appear suitable for placement of sediments. Final site selection and material disposal will require FDEP permitted approval.

We are looking for a large parcel of land (8 Acres or more) to lease for the Eau Gallie River and the Eau Gallie Causeway. We came upon your parcel of land off of Eau Gallie Blvd., Melbourne. We wish to investigate your interest in leasing this land for this project. Please contact us as soon as possible in writing or call if you require clarification.

Sincerely,

BCI

Shailesh K. Patel, M.Sc.
Project Manager

BCI
ENGINEERS & SCIENTISTS, INC.

139 Executive Circle, Ste. 203
Daytona Beach, FL 32114

253-1717
FAX: (904) 253-1767

January 14, 2000

Riverwalk of Melbourne Ltd.
2308 Winter Woods Blvd.
Winter Park, FL 32792

RE: Land Parcel Lease for Possible Dredge Site

To Whom It May Concern:

BCI is currently working on a Muck Assessment project for the Indian River Lagoon Program in conjunction with the City of Melbourne. The intent of this project is to prioritize three areas for future sediment removal. These areas are Eau Gallie River, I-92 Causeway/Eau Gallie Causeway, and South Banana River "Grand Canal".

The sediment removal is not anticipated before 2001. Our intent is to identify any land parcels that appear suitable for placement of sediments. Final site selection and material disposal will require FDEP permitted approval.

We are looking for a large parcel of land (8 Acres or more) to lease for the Eau Gallie River and the Eau Gallie Causeway. We came upon your parcel of land off of Eau Gallie Blvd., Melbourne. We wish to investigate your interest in leasing this land for this project. Please contact us as soon as possible in writing or call if you require clarification.

Sincerely,

BCI

Shailesh K. Patel, M.Sc.
Project Manager

BCI
ENGINEERS & SCIENTISTS, INC.

P ox 5467
L. .and, FL 33807-5467

(941) 667-2345
FAX: (941) 667-2662

February 14, 2000

Church of First Baptist
560 Montreal Avenue
Melbourne, FL 32935

RE: Land Parcel Lease for Possible Dredge Site

To Whom It May Concern:

BCI is currently working on a Muck Assessment project for the Indian River Lagoon Program in conjunction with the City of Melbourne. The intent of this project is to prioritize three areas for future sediment removal. These areas are Eau Gallie River, 1-92 Causeway/Eau Gallie Causeway, and South Banana River "Grand Canal".

The sediment removal is not anticipated before 2001. Our intent is to identify any land parcels that appear suitable for placement of sediments. Final site selection and material disposal will require FDEP permitted approval.

We are looking for a large parcel of land (8 Acres or more) to lease for the Eau Gallie River and the Eau Gallie Causeway. We came upon your parcel of land off of Eau Gallie Blvd., Melbourne. We wish to investigate your interest in leasing this land for this project. Please contact us as soon as possible in writing or call if you require clarification.

Sincerely,

BCI

Melisa Diolosa
Ecologist

BCI
ENGINEERS & SCIENTISTS, INC.

Box 5467
Land, FL 33807-5467

(941) 667-2345
FAX: (941) 667-2662

February 14, 2000

B.E. Davis Trustee
1222 N. Harbor City Blvd.
Melbourne, FL 32935

RE: Land Parcel Lease for Possible Dredge Site

To Whom It May Concern:

BCI is currently working on a Muck Assessment project for the Indian River Lagoon Program in conjunction with the City of Melbourne. The intent of this project is to prioritize three areas for future sediment removal. These areas are Eau Gallie River, 1-92 Causeway/Eau Gallie Causeway, and South Banana River "Grand Canal".

The sediment removal is not anticipated before 2001. Our intent is to identify any land parcels that appear suitable for placement of sediments. Final site selection and material disposal will require FDEP permitted approval.

We are looking for a large parcel of land (8 Acres or more) to lease for the Eau Gallie River and the Eau Gallie Causeway. We came upon your parcel of land off of Eau Gallie Blvd., Melbourne. We wish to investigate your interest in leasing this land for this project. Please contact us as soon as possible in writing or call if you require clarification.

Sincerely,

BCI

Melisa Diolosa
Ecologist

Appendix C

BCI
ENGINEERS & SCIENTISTS, INC.

xecutive Circle, Suite 104
Daytona Beach, FL 32114

(904) 253-1717
FAX: (904) 253-1767

September 21, 1999
BCI Project No. 989910.01

Mr. Donald Palmer
U.S. Fish and Wildlife Service
6620 Five Point Drive South
Suite 310
Jacksonville, FL 32216

RE: Brevard County, Florida
Eau Gallie River , Eau Gallie Causeway & South Banana River

Dear Mr. Palmer:

The Indian River Lagoon Program (St. Johns River Water Management District) has commissioned BCI to conduct a dredging feasibility study of the above sites.

The proposed dredge areas consist of the Eau Gallie River, a portion of the Indian River along the Melbourne Eau Gallie Causeway, and the South Banana River. Please refer to the enclosed maps for specific project areas. We will be conducting a survey of threatened and endangered species and exotic plant life along the shoreline and within the dredging areas. We request you advise on any species identified in the subject area that BCI needs to be aware of.

If you have any questions or concerns, please do not hesitate to contact the undersigned at 904-253-1717.

Sincerely,

BCI

Shailesh K. Patel, M.Sc.
Project Manager

SKP:tjt

I:\projects\989910\eaugallie letter

BCI
ENGINEERS & SCIENTISTS, INC.

Executive Circle, Suite 104
Daytona Beach, FL 32114

(904) 253-1717
FAX: (904) 253-1767

September 21, 1999
BCI Project No. 989910.01

Mr. Jim Egan
Marine Resources Council
(Indian River Lagoon)
P.O. Box 22892
Melbourne, FL 32902

RE: Brevard County, Florida
Eau Gallie River , Eau Gallie Causeway & South Banana River

Dear Mr. Egan:

The Indian River Lagoon Program (St. Johns River Water Management District) has commissioned BCI to conduct a dredging feasibility study of the above sites.

The proposed dredge areas consist of the Eau Gallie River, a portion of the Indian River along the Melbourne Eau Gallie Causeway, and the South Banana River. Please refer to the enclosed maps for specific project areas. We will be conducting a survey of threatened and endangered species and exotic plant life along the shoreline and within the dredging areas. We request you advise on any species identified in the subject area that BCI needs to be aware of.

If you have any questions or concerns, please do not hesitate to contact the undersigned at 904-253-1717.

Sincerely,

BCI

Shailesh K. Patel, M.Sc.
Project Manager

SKP:tjt

I:\projects\989910\eaugallie letter

BCI
ENGINEERS & SCIENTISTS, INC.

13[illegible] Executive Circle, Suite 104
D[illegible]a Beach, FL 32114

(904) 253-1717
FAX: (904) 253-1767

September 21, 1999
BCI Project No. 989910.01

Mr. David Dale
National Marine Fisheries Service
The Habitat Conservation Division
9721 Executive Center Drive North
St. Petersburg, FL 33702

RE: Brevard County, Florida
Eau Gallie River , Eau Gallie Causeway & South Banana River

Dear Mr. Dale:

The Indian River Lagoon Program (St. Johns River Water Management District) has commissioned BCI to conduct a dredging feasibility study of the above sites.

The proposed dredge areas consist of the Eau Gallie River, a portion of the Indian River along the Melbourne Eau Gallie Causeway, and the South Banana River. Please refer to the enclosed maps for specific project areas. We will be conducting a survey of threatened and endangered species and exotic plant life along the shoreline and within the dredging areas. We request you advise on any species identified in the subject area that BCI needs to be aware of.

If you have any questions or concerns, please do not hesitate to contact the undersigned at 904-253-1717.

Sincerely,

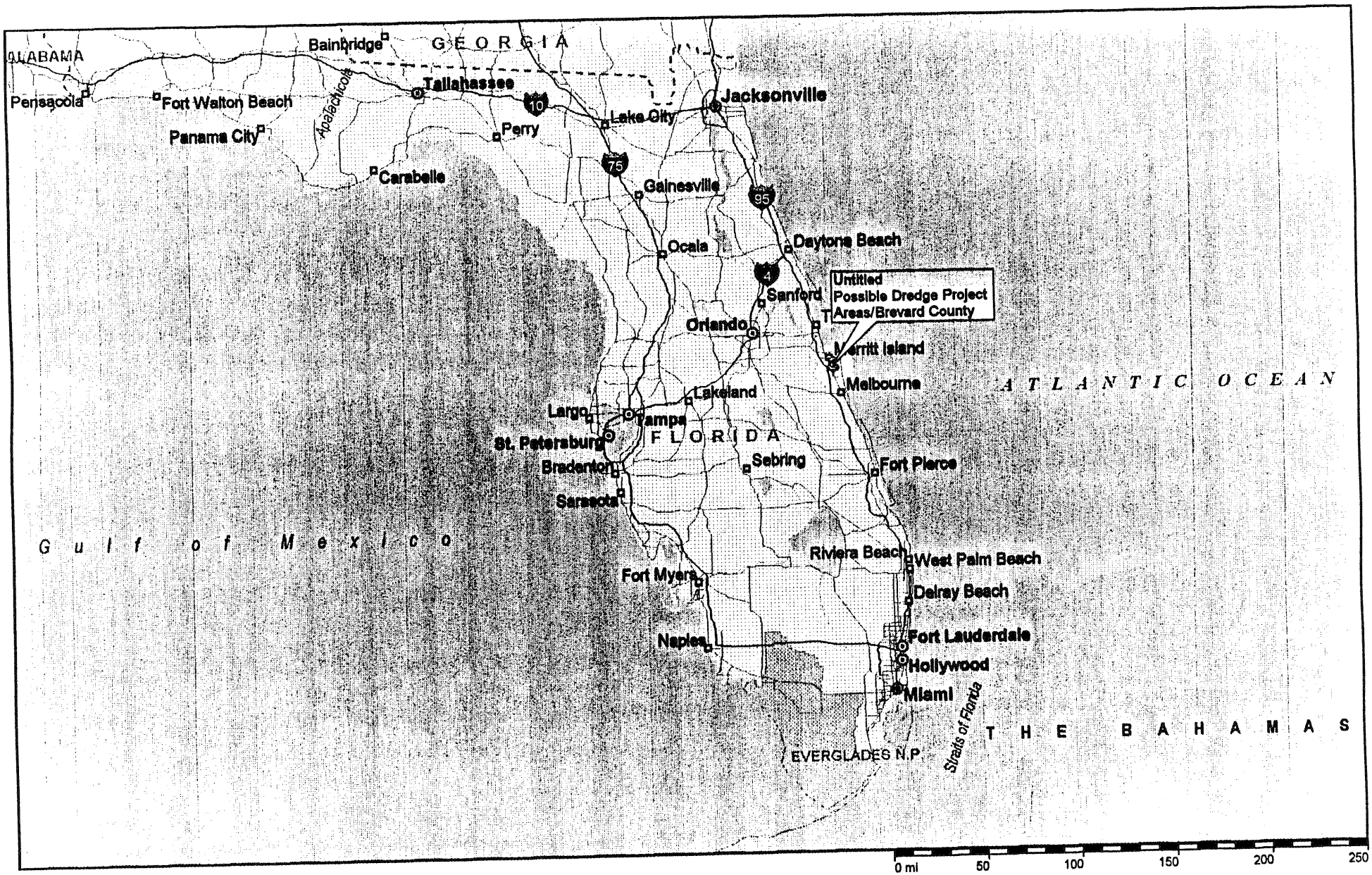
BCI

Shailesh K. Patel, M.Sc.
Project Manager

SKP:tjt

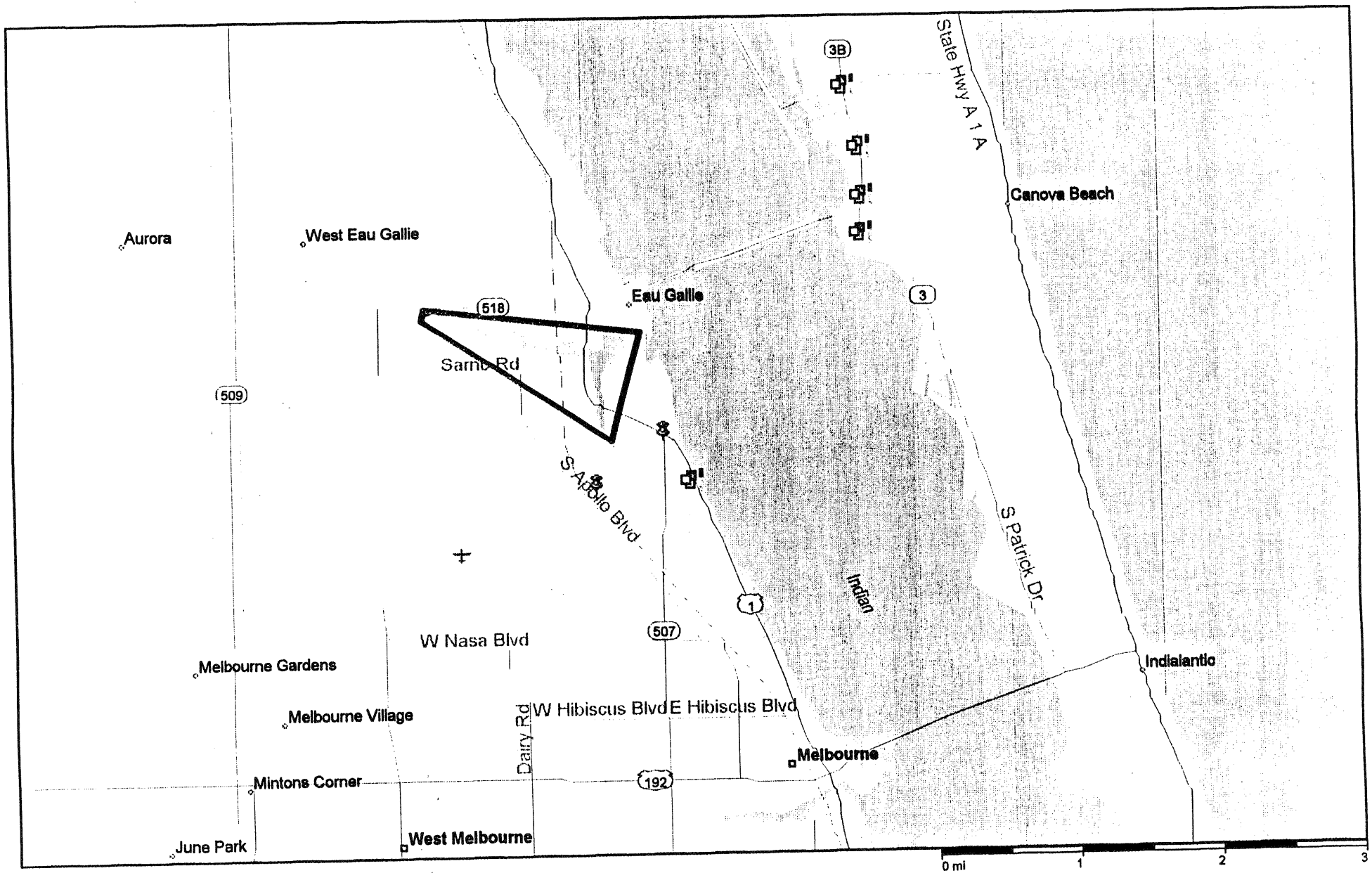
I:\projects\989910\eaugallie letter

Possible Dredge Sites, Brevard County, Florida



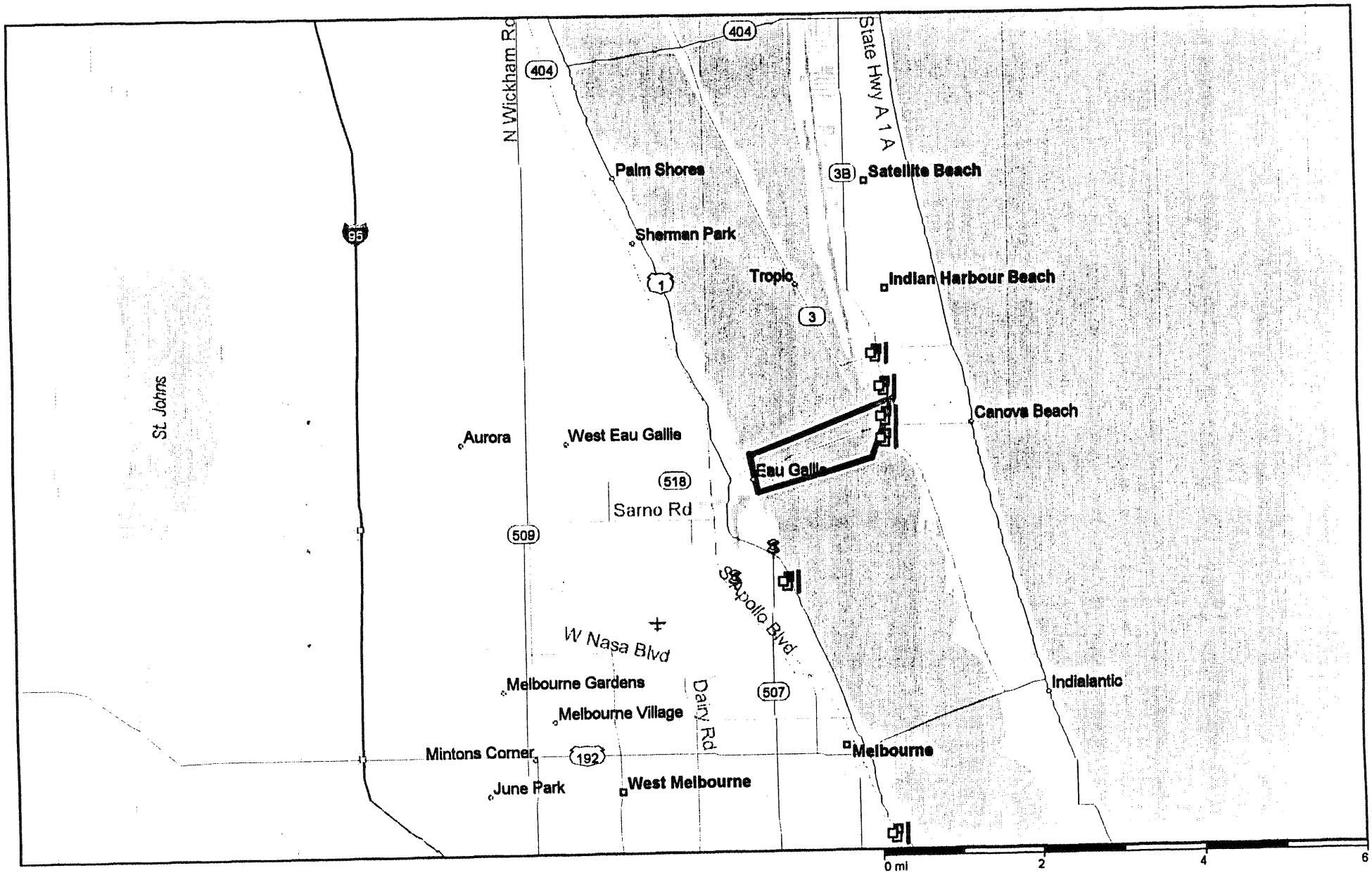
Streets98

Eau Gallie River, Melbourne, Florida



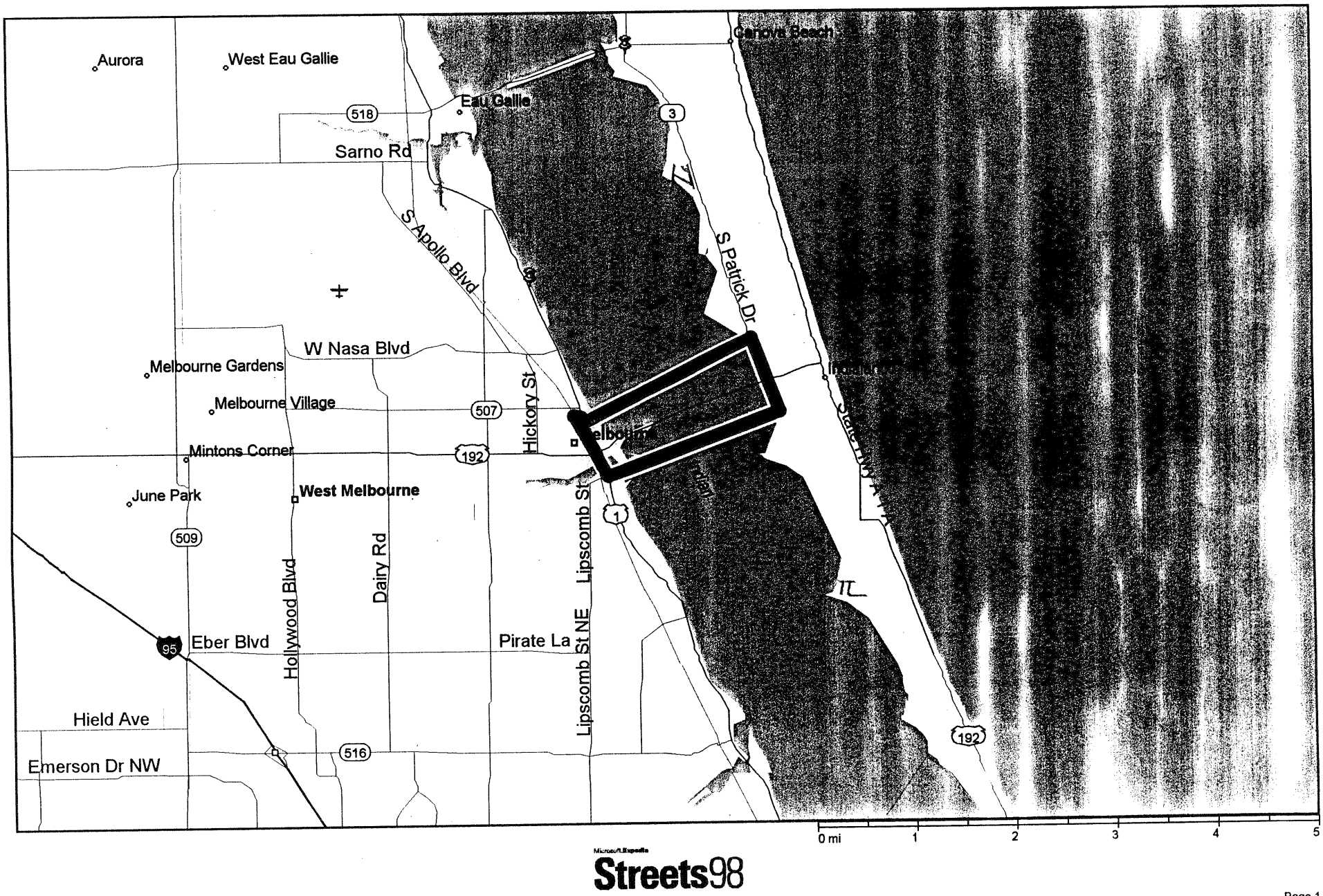
Microsoft Expedia Streets98

Melbourne-Eau Gallie Causeway, Melbourne, Florida



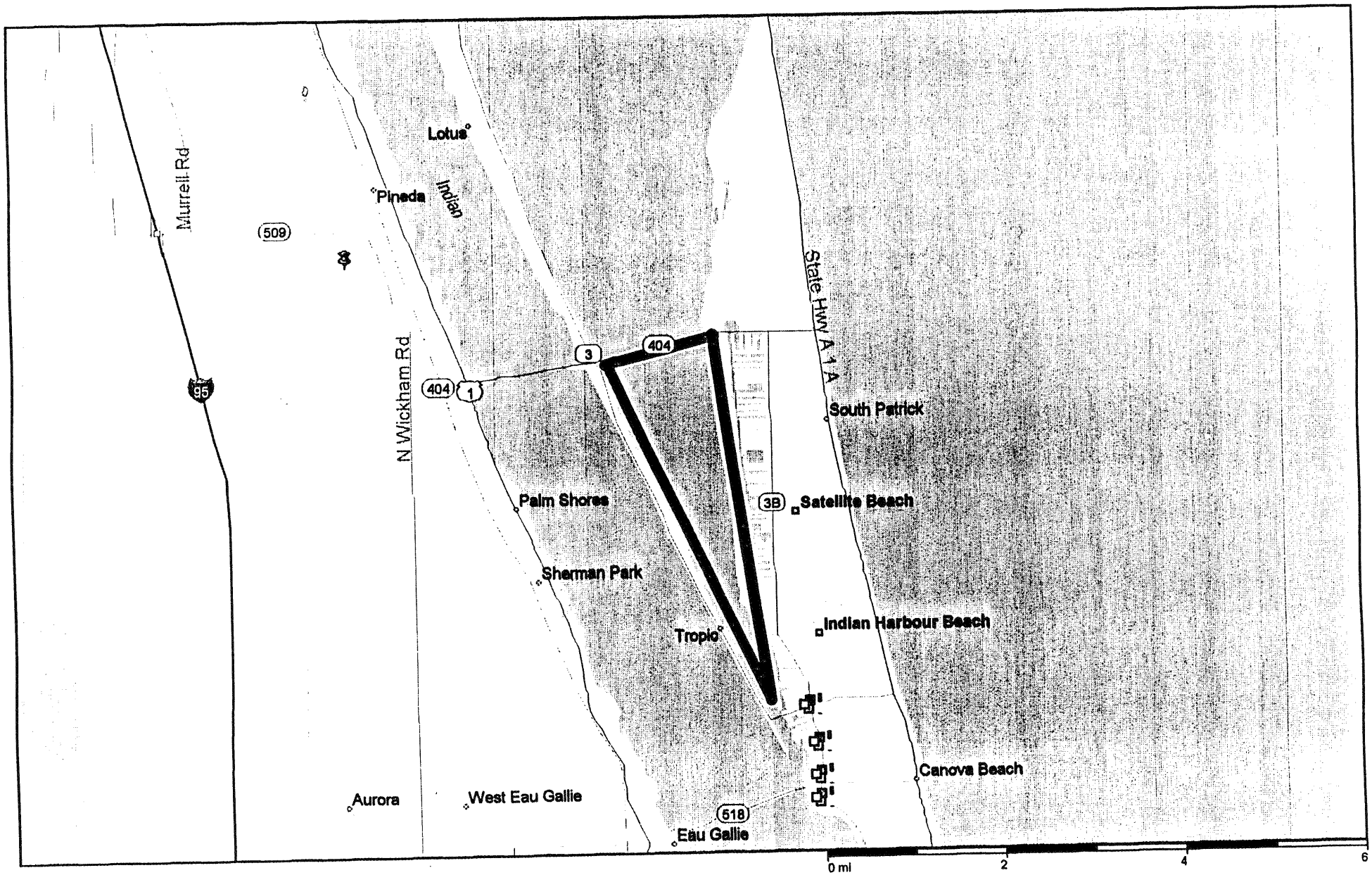
Streets98

Melbourne 1-92 Causeway, Melbourne, FL



Microsoft Expedia Streets98

South Banana River, Satellite Beach, FL



Microsoft Expedia Streets98

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE

Southeast Regional Office
9721 Executive Center Drive North
St. Petersburg, Florida 33702

October 21, 1999

Shailesh K. Patel, Project Manager
BCI Engineers and Scientists, Inc.
139 Executive Circle, Suite 104
Daytona Beach, Florida 32114

Dear Mr. Patel:

This responds to your request for information, dated September 21, 1999, regarding the presence of any Federally listed species or critical habitat at the Eau Gallie River and South Banana River project sites in Brevard County, Florida. We coordinated your request with our Protected Resources Division who provided the enclosed information in response to your request.

If we can be of further assistance, please advise. Related comments, questions, or correspondence should be directed to Mr. David N. Dale in St. Petersburg, Florida. He may be contacted at 727/570-5311 or at the letterhead address above.

Sincerely,

for Andreas Mager, Jr.
Assistant Regional Administrator
Habitat Conservation Division

Enclosure

cc:
F/SER4
F/SER43
F/SER3

Endangered and Threatened Species and Critical Habitat under the Jurisdiction of the National Marine Fisheries Service

Florida - Atlantic Coast

Listed Species	Scientific Name	Status	Date Listed
Marine Mammals			
blue whale	*Balaenoptera musculus*	Endangered	12/02/70
finback whale	*Balaenoptera physalus*	Endangered	12/02/70
humpback whale	*Megaptera novaeangliae*	Endangered	12/02/70
right whale	*Eubalaena glacialis*	Endangered	12/02/70
sei whale	*Balaenoptera borealis*	Endangered	12/02/70
sperm whale	*Physeter macrocephalus*	Endangered	12/02/70
Turtles			
green sea turtle	*Chelonia mydas*	Endangered[1]	07/28/78
hawksbill sea turtle	*Eretmochelys imbricata*	Endangered	06/02/70
Kemp's ridley sea turtle	*Lepidochelys kempii*	Endangered	12/02/70
leatherback sea turtle	*Dermochelys coriacea*	Endangered	06/02/70
loggerhead sea turtle	*Caretta caretta*	Threatened	07/28/78
Fish			
shortnose sturgeon	*Acipenser brevirostrum*	Endangered	03/11/67
Seagrasses			
Johnson's seagrass	*Halophilia johnsonii*	Threatened	09/14/98

Species Proposed for Listing

None

Designated Critical Habitat

Right whale: Between 31°15'N (approximately the mouth of the Altahama River, Georgia) and 30°15'N (approximately Jacksonville, Florida) from the coast out to 15 nautical miles offshore; the coastal waters between 30°15'N and 28°00'N (approximately Sebastian Inlet, Florida) from the coast out to 5 nautical miles.

Proposed Critical Habitat

None

Candidate Species[2]	Scientific Name
Fish	
dusky shark	*Carcharhinus obscurus*
sand tiger shark	*Odontaspis taurus*
night shark	*Carcharinus signatus*
speckled hind	*Epinephelus drummondhayi*
Atlantic sturgeon	*Acipenser oxyrhynchus oxyrhynchus*
mangrove rivulus	*Rivulus marmoratus*
opposum pipefish	*Microphis brachyurus lineatus*
Key silverside	*Menidia conchorum*
jewfish	*Epinephelus itajara*
Warsaw grouper	*Epinephelus nigritus*
Nassau grouper	*Epinephelus striatus*

[1] Green turtles are listed as threatened, except for breeding populations of green turtles in Florida and on the Pacific Coast of Mexico, which are listed as endangered.

[2] Candidate species are not protected under the Endangered Species Act, but concerns about their status indicate that they may warrant listing in the future. Federal agencies and the public are encouraged to consider these species during project planning so that future listings may be avoided.

Florida Fish and Wildlife Conservation Commission

CENTRAL REGION
LTC. ROBERT B. BUTLER, Director
1239 SW 10th Street
Ocala, FL 34474-2797
www.state.fl.us/gfc
(352) 732-1225

October 4, 1999

Ms. Shailesh K. Patel
BCI Engineers & Scientists, Inc.
139 Executive Circle, Suite 104
Daytona Beach, FL 32114

Dear Ms. Patel:

This responds to your recent inquiry regarding the potential occurrence of threatened and endangered species within the vicinity of the proposed dredge sites at the Eau Gallie River, Melbourne-Eau Gallie Causeway, and South Banana River in Brevard County, Florida. As for wildlife species over which this agency has jurisdiction, occurrence records for Florida scrub-jay (Threatened-state and federal), least tern (Threatened-state), and black skimmer (Species of Special Concern-state) were noted in our Wildlife Observation database in the vicinity of the referenced locations.

Florida scrub-jays were observed approximately one mile southwest (Township 27S, Range 37E, Section 29) and 0.8 miles south (Township 27S, R37E, Section 28) of the Eau Gallie River site during a statewide survey in 1992-93. Numerous Florida scrub-jays were also observed approximately 0.5 miles east (Township 27S, Range 37E, Section 14) and one mile east (Township 27E, Range 37E, Section 13) of the Eau Gallie Causeway site during the same statewide survey. Specific location data are not available for these observations. Five adult Florida scrub-jays were observed approximately 0.25 miles east of the South Banana River site at Latitude 28°10.0', Longitude 80°36.5' in May 1981. In addition, two adult Florida scrub-jays were observed approximately 0.7 miles east of the South Banana River site at Latitude 28°09.5', Longitude 80°36.0' in May 1981.

Twenty-five adult and 35 young least terns were observed in 20 nests approximately 0.1 miles north of the western end of the Eau Gallie River site on the roof of the Eau Gallie High School at Latitude 28°07.8', Longitude 80°38.9' in May 1993. Approximately 150 adult and 285 young least terns were observed approximately one mile east of the South Banana River site on the roof of the De Laura Junior High School at Latitude 28°11.0', Longitude 80°35.8' in May 1993. In addition, 350 adult and 268 young least terns were observed approximately one mile east of the South Banana River site on the roof of the Patrick Air Force Base Commissary at

Latitude 28°13.0', Longitude 80°36.2' in May 1993. Least terns were also observed on the roof of the hospital at Patrick Air Force Base in May 1993, but an estimate of the number of birds present was not made. With the exception of the Patrick Air Force Base Hospital, least terns were observed at all of these sites during a presence/absence survey conducted in May 1999.

Forty-five adult black skimmers were observed in 20 nests approximately one mile east of the South Banana River site on the roof of the Patrick Air Force Base Commissary at Latitude 28°13.0', Longitude 80°36.2' in June 1993. No black skimmers were observed at the Commissary during a presence/absence survey conducted in May 1999.

Please note that our database is not necessarily inclusive of all listed species which may occur in a given area. For various reasons, occurrence records for some species are not necessarily input into our database on a site-specific basis. Moreover, some species which are accounted for in the database may occur in areas we are unaware of. Only through systematic field surveys could such data be factored in with respect to your request.

Requests for information concerning bald eagle nest site locations, status, history, and productivity are being handled by Ms. Jennifer Swan (4005 South Main Street, Gainesville, FL 32601; Phone 352-955-2230). Accordingly, your request has been forwarded to Ms. Swan, and any data concerning bald eagles in the vicinity of the above referenced dredge sites will be provided by her. If you have any questions, please feel free to give her a call.

Thank you for consulting us in this matter. As for occurrence records for listed plants and plant communities of concern, the appropriate contact would be the Florida Natural Areas Inventory, 1018 Thomasville Road, Suite 200C, Tallahassee, FL 32303, 850/224-8207.

Sincerely,

Tim Breen

Timothy Breen
Assistant Regional Wildlife Biologist
Bureau of Wildlife Diversity Conservation

WLD 4-3-5
cc: Tom Logan

Florida Fish and Wildlife Conservation Commission

ALLAN L. EGBERT, Ph.D., Executive Director
VICTOR J. HELLER, Assistant Executive Director

Wildlife Research Laboratory
4005 South Main Street
Gainesville, FL 32601-9099
(352)955-2230, SC 625-2230

October 12, 1999

Shailesh K. Patel
BCI Engineers and Scientists, Inc.
139 Executive Circle, Suite 104
Daytona Beach, FL. 32114

Re: Brevard County, Florida
Eau Gallie River, Eau Gallie Causeway and South Banana River

Dear Shailesh Patel:

This is in reference to your request for bald eagle nest location information. There are no bald eagle nests within one mile of any of your three project areas (the Eau Gallie River, the Melbourne-Eau Gallie Causeway, and the South Banana River).

This information represents only the general locations of the bald eagle nests and nesting territories for which you have requested information. There may be additional nests in this area of which we are unaware. Such nests would be afforded the same protection. This information was obtained during routine aerial surveys, in most cases; consequently, the location information is only accurate to within 1/10 mile. The specific site of the nest must be determined from the ground, if a more precise location is required. Information provided by FWC does not confer access to the site, and active nests should not be approached during the nesting season (October 1 - May 15). Permission to trespass on private property should be obtained from the land owner.

If I can be of further assistance, please feel free to contact me at the above address and/or phone number. Thank you for your inquiry.

Sincerely,

Julia B. Dodge

Appendix D

Appendix D

FLORIDA INLAND NAVIGATION DISTRICT
Administrative Office on the Intracoastal Waterway in Palm Beach County
1314 Marcinski Road, Jupiter, Florida 33477
Telephone 561-627-3386 FAX 561-624-6480

FACSIMILE TRANSMITTAL FORM

TO: Shailesh DATE 1/4

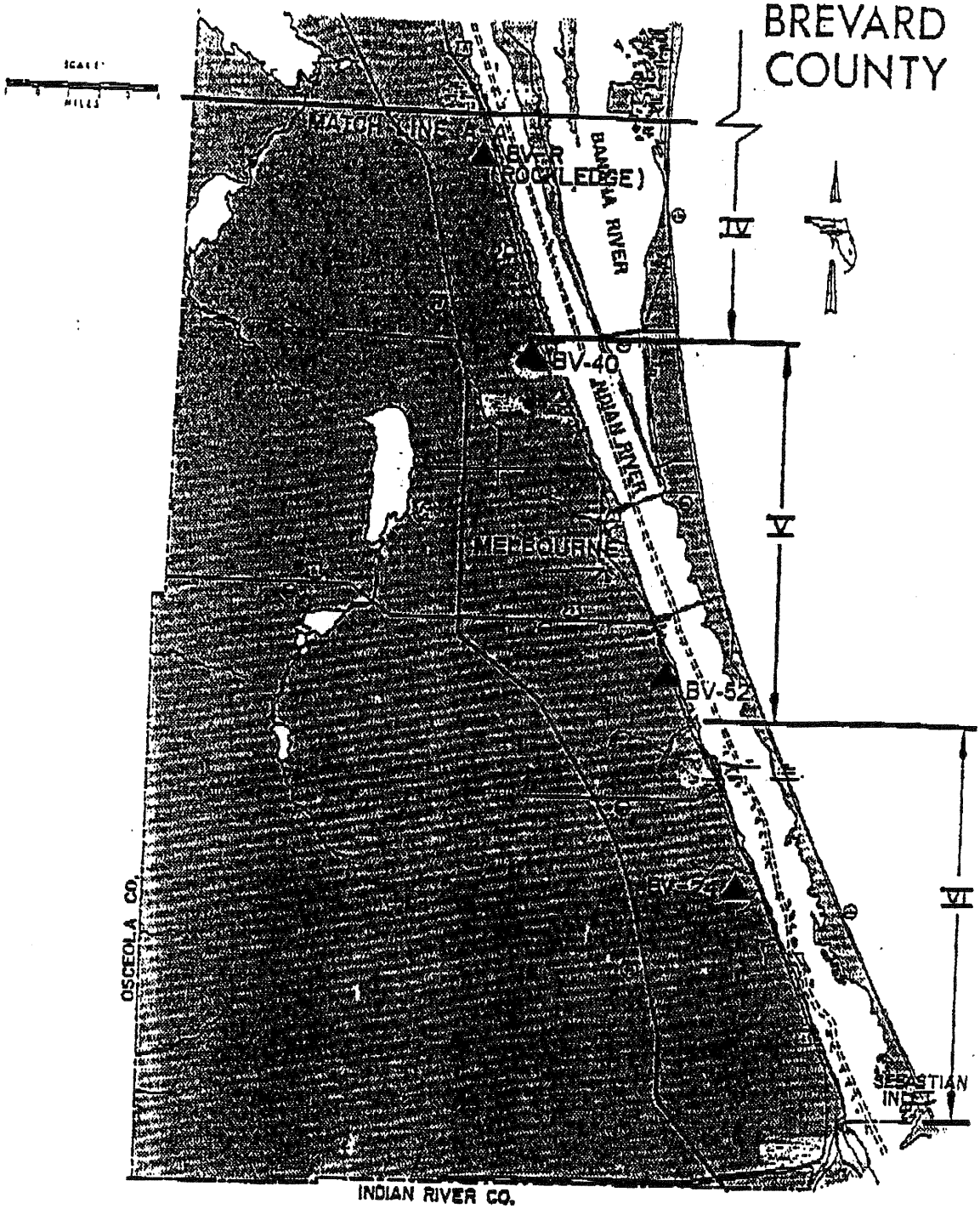
CC: TOTAL PAGES 4
(Includes cover)

FROM: D Roach

COMMENTS:

In response to your attached request, enclosed is a location map of our site in the subject area BV-40. This property is a little over 5 miles from the EAU Falline causeway. The site is not yet constructed but is designed for 232,000 cyds.

Original to follow by mail. ( ) yes (✓) no

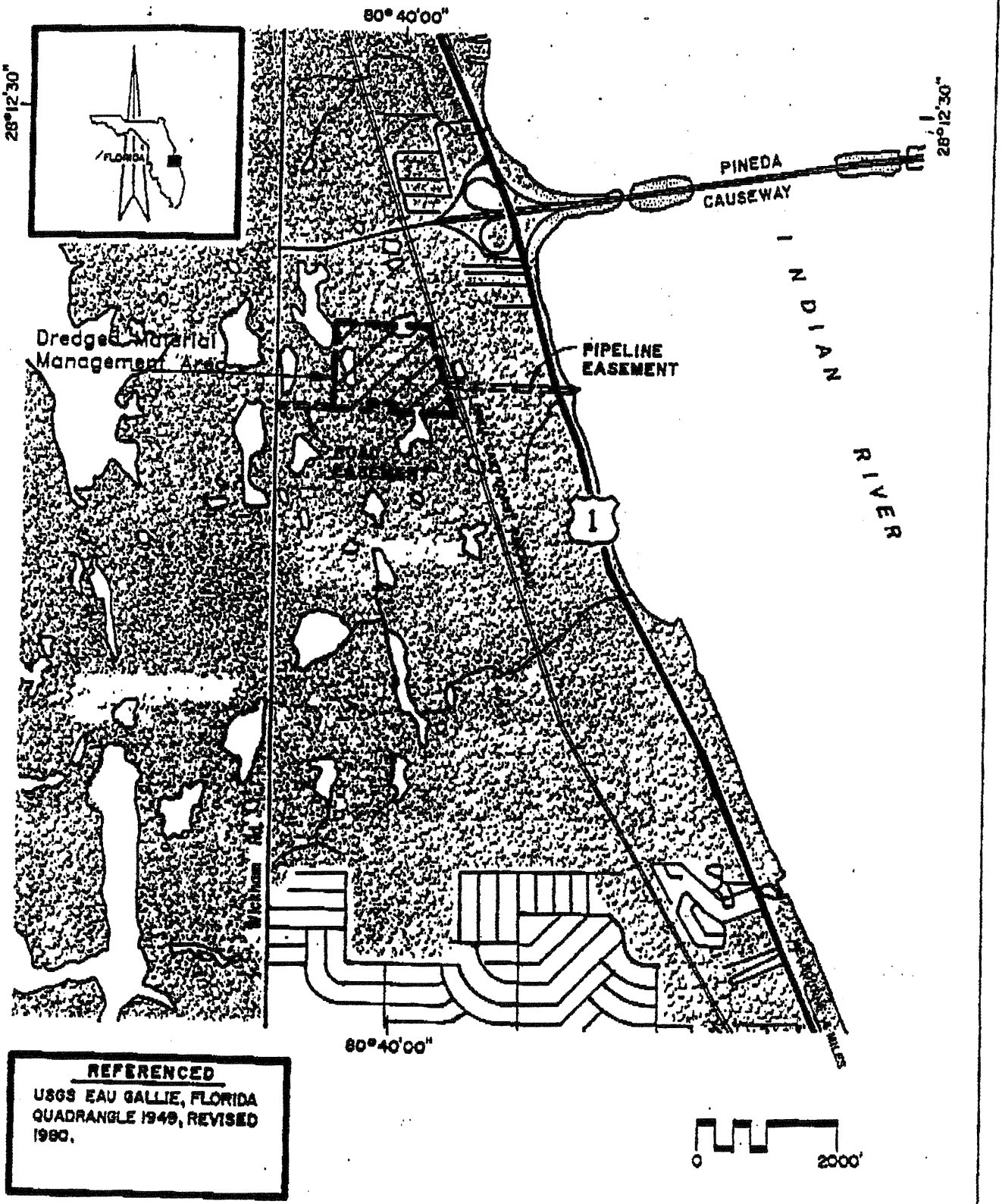


SOURCE: JACKSONVILLE DISTRICT, U.S. ARMY CORPS OF ENGINEERS

TAYLOR ENGINEERING INC
9086 CYPRESS GREEN DRIVE
JACKSONVILLE FLORIDA 32216

Figure Site Bank, Dredged Management Plan, Intracoastal Waterway, Brevard County, Florida

PROJECT C8906
REVISION
DATE 9/30/89



REFERENCED

USGS EAU GALLIE, FLORIDA QUADRANGLE 1949, REVISED 1980.

TAYLOR ENGINEERING INC
9086 CYPRESS GREEN DRIVE
JACKSONVILLE, FLORIDA 32256

Location of Site BV-40
Dredged Material Management Area
Brevard County, Florida

PROJECT	C-9004
REVISION	
SHEET	2 of 6
DATE	March, 1994

Appendix E

CITY OF SATELLITE BEACH, FLORIDA

565 CASSIA BOULEVARD 32937-3197
(407) 773-4407
FAX (407) 779-1388

INCORPORATED 1957

FAX COVER SHEET

TO: Melissa FAX

FROM: Bruce Cooper

DATE: 11-1-99

NUMBER OF PAGES INCLUDING THIS PAGE 4

COMMENTS:

Noise Ordinance - Satellite Beach

This is the only ordinance that would pertain to our project - per Conversation w/ Bruce Cooper 10-29-99.

ARTICLE IV. NOISE*

Sec. 26-81. Prohibited generally.

No person shall make, continue or cause to be made or continued any loud, unnecessary or unusual noise or any noise which annoys, disturbs, injures or endangers the comfort, repose, health, peace or safety of others within the city.
(Code 1976, § 14-24)

Sec. 26-82. Exceptions.

This article shall not be construed to prohibit music upon streets or sidewalks by brass bands or other bands, nor to prohibit religious organizations from beating drums in the course of their religious services.
(Code 1976, § 14-25)

Sec. 26-83. Certain acts construed as noise.

The following acts are declared to be loud, disturbing and unnecessary noises, but such enumeration shall not be deemed to be exclusive:

(1) *Horns, signaling devices, etc.* The sounding of any horn or signaling device on any automobile, motorcycle or other vehicle on any street or public place, except as a danger warning, the creation of any unreasonably loud or harsh sound by means of any such signaling device and the sounding of any such device for an unnecessary or unreasonable period of time. The use of any signaling device except one operated by hand or electricity, the use of any horn, whistle or other device operated by engine exhaust and the use of any such signaling device when traffic is for any reason held up.

(2) *Radios, stereos, phonographs, electronic devices, etc.* Using, operating or permitting to be played, used or operated any radio receiving set, stereo, phonograph, electronic device or other machine or device for the production or reproduction of sound in such manner as to disturb the peace, quiet and comfort of the neighboring inhabitants or at any time with louder volume than is necessary for convenient hearing for the person who is in the building, structure or vehicle in which the machine or device is operated and who is a voluntary listener thereto. The operation of any such set, stereo, phonograph, electronic device, machine or device in such a manner as to be heard at a distance of 50 feet from the building, structure or vehicle in which it is located shall be prima facie evidence of a violation of this subsection.

(3) *Sound trucks.* Sound trucks or other devices or mediums for amplifying sound operated or permitted to be operated within the city for advertising purposes or to attract the attention of the public, where the sound therefrom is transmitted from, to, in or over any public thoroughfare, park or other public place. This subsection shall not prohibit the use of sound amplification for dissemination of religious or political messages, or information concerning civic, recreational and other matters of general public interest; provided that prior permission has been obtained from the chief of police, who is hereby authorized, directed and empowered to make and enforce reasonable conditions as to the time, place, volume of sound, etc.

(4) *Dropping or throwing objects.* The unnecessary dropping or throwing of objects on or

*State law reference—Motor vehicle noise, F.S. §§ 316.293, 403.415.

against the ground, pavement, concrete walk or other object so as to create loud or unnecessary clanging, grating, rattling or other noise.

(5) *Yelling, shouting, etc.* Yelling, shouting, hooting, whistling or singing on the public streets, particularly between the hours of 11:00 p.m. and 7:00 a.m., or any time or place so as to annoy or disturb the quiet, comfort or repose of any person in any office, dwelling, hotel or other type of residence or of any person in the vicinity.

(6) *Animals, birds, etc.* The keeping of any animal or bird which by causing frequent or long continued noise shall disturb the comfort or repose of any person in the vicinity.

(7) *Steam whistles.* The blowing of any train whistle or steam whistle attached to any stationary boiler except to give notice of the time to begin or stop work or as a warning of fire or danger or upon request of city officials.

(8) *Exhausts.* Discharge into the open air of the exhaust of any steam engine, stationary internal combustion engine, motor boat or motor vehicle except through a muffler or other device which will effectively prevent loud or explosive noises therefrom.

(9) *Defect in vehicle or load.* The use of any automobile, motorcycle or other vehicle so out of repair, so loaded or in such manner as to create loud and unnecessary grating, grinding, rattling or other noise.

(10) *Loading, unloading, opening boxes.* Creation of a loud and excessive noise in connection with loading or unloading any vehicle, or opening and destruction of bales, crates and containers.

(11) *Construction or repairing of buildings.* Erection (including excavation), demolition, alteration or repair which requires a permit of any building other than between the hours of 7:00 a.m. and 7:00 p.m. on weekdays and between the hours of 9:00 a.m. and 7:00 p.m. on Saturdays.

(12) *Schools, courts, churches, hospitals.* Creation of any excessive noise on any street adjacent to a school, institution of learning, church or court while the same is in use, or adjacent to any hospital, which unreasonably interferes with the workings of such institution or which disturbs or unduly annoys patients therein; provided, that conspicuous signs are displayed in such streets indicating the proximity of a school, hospital, church or court.

(13) *Hawkers, peddlers, etc.* Shouting and crying of peddlers, hawkers and vendors which disturbs the peace and quiet of the neighborhood.

(14) *Noises to attract attention.* Use of any drum or other instrument or device for the purpose of attracting attention to any performance, show or sale by the creation of noise.

(15) *Transportation of metal rails, etc.* Transportation of rails, pillows or columns of iron, steel or other material over and along streets and other public places upon carts, drays, cars, trucks or in any other manner so loaded as to cause noises or as to disturb the peace and quiet of such streets or other public place.

(16) *Pile drivers, hammers, etc.* Operation, between the hours of 7:00 p.m. and 7:00 a.m., of any pile driver, steam shovel, pneumatic hammer, derrick, steam or electric hoist or other machine or equipment, the use of which is attended by loud or unusual noise.

(17) *Blowers, fans, etc.* Operation of any noise-creating blower or power fan or any internal combustion engine, the operation of which causes noise due to the explosion of operating gases or fluids, unless the blower or fan is equipped with a muffler device sufficient to deaden the noise.

(18) *Equipment, machinery or tools utilized for lot leveling or clearing.* Operation of any mechanical equipment, power tools, engines (gasoline, diesel or steam) or other equipment, machinery or tools which disturb the peace and are utilized for leveling or clearing of lots, other than between the

hours of 7:00 a.m. and 7:00 p.m. on weekdays and between the hours of 9:00 a.m. and 7:00 p.m. on Saturdays.

(Code 1976, § 14-26)

expense, such determinations shall be so made before notice of violation is issued.

(2) Where technical complexity or extraordinary expense makes it unreasonable for the city to maintain the personnel or equipment necessary for making difficult or unusual determinations, the cost of proving to the building official that violations have not occurred shall rest with those responsible for the said violations.

(b) Applicable environmental standards. if the building official finds, after making determinations in the manner set forth in this ordinance, that there is a violation of performance standards, he shall take or cause to be taken lawful action to cause correction to within the limits set by such environmental standards.

(3) ENVIRONMENTAL STANDARDS.

All uses within the city shall conform to the environmental standards set forth below:

(a) *Noise standards:*

(1) Method of measurements. Sound levels shall be measured with a sound level meter and associated octave band filter manufactured according to standards prescribed by the American National Standards Institute, Inc. (American National Standard Institute General Proposed Sound Level Meters for Measurement of Noise and Other Sounds ANSI 51.4-1971, American National Standards Institute; Inc., New York, New York, and American National Standards Institute, Inc. Standard Method for the Measurement of Sound, Pressure Level ANSI 51.13-1971, or the latest edition of such standards shall be used, R-1976).

(2) Locational requirement for measurement. Sound levels shall be measured along the boundaries of the noise site.

(3) Maximum permissible sound levels by land use. In the enforcement of the regulation, noises produced by the operation of motor vehicles or other transportation facilities shall not be included in determining the maximum permitted decibel level. The maximum permissible sound pressure levels (sound level limit) at the location of measurement for noise radiated continuously for periods of ten (10) minutes or more from a property are identified in the table below:

SOUND LEVELS BY LAND USE

Land Use Category	*Time*	*Sound Level Limit dba*
Residential, Professional, or Institutional	7 a.m.—10 p.m.	60
	10 p.m.—7 a.m.	55
Commercial	7 a.m.—10 p.m.	65*
	10 p.m.—7 a.m.	60*
Manufacturing	At all times	75*

*Where the adjacent land use is residential, professional, or institutional, the sound level limit for such land uses shall apply.

Additionally, the maximum sound level due to intermittent, beat frequency, or shrillness for periods of less than ten (10) minutes shall not exceed the sound level limits in the above table by:

(a) 10 dba from 7 a.m. to 10 p.m.

(b) 5 dba from 10 p.m. to 7 a.m.

(c) 10 dba at all times in manufacturing land use.

(b) *Air pollution.* All buildings shall be constructed and maintained in a manner which meets the requirements of the Florida Administrative Code, Chapter 17.2, entitled "Air Pollution."

(c) *Odor standards.* (d)

(1) Requirements. All uses shall be controlled to prevent the emis-

sion of odorous gases or other matter in such quantities as to be readily detectable or to produce a public nuisance or hazard at any point as measured along the lot lines. Detailed plans for the elimination of odorous matter may be required before the issuance of a building permit.

(2) Method of measurement. Odors shall be measured with a "Scentometer," Model 1959-A, as developed by the U.S. Public Health Service. A noxious concentration shall be deemed a nuisance if detectable when diluted in a ratio of one (1) volume of odorous air to seven (7) volumes of clean area for not more than fifteen (15) minutes in any one-hour period.

(3) Locational requirement. Noxious odors shall be measured along the lot lines of the use in question.

(d) *Vibration standards.*

(1) Requirements. All uses shall be controlled to prevent the transmission of any vibration, from any source or at any time whatever, that exceeds the maximum displacement set forth in subsection (4) below.

(2) Method of measurement. The displacement of earth caused by vibration shall be measured in inches by a portable vibration analyzer such as a B & K Type 3513, consisting of vibration meter Type 2511, tuneable filter Type 1621 and a Type 8306 accelerometer.

(3) Location requirement. Vibration shall be measured as specified along the boundaries of the site.

(4) Permitted vibration transmissions.

Any Frequency (Within the Band Width) (cycles per second)	*Maximum Peak Permitted Displacement Along the Property Line (in inches)*
0 to 10	.0008
10 to 20	.0005
20 to 30	.0003
30 to 40	.0002
Over 40	.0001

(e) *Glare and lighting.*

(1) *Requirements.* All man-made light sources must utilize a cut-off luminaire or other shielding device to ensure that there shall be no lighting spillover or direct glare onto residential properties or public streets or highways.

(2) *Lighting spillover.*

(A) *Lighting spillover standard.* Any use, operation or activity on a lot must be conducted, operated and situated so that light spillover onto another lot used for residential purposes does not occur in excess of 1.0 footcandle. Lighting for parks from 6:00 a.m. until midnight, public street lighting in the right-of-way at all times and residential security lights shall be exempt from this standard.

(B) *Lighting spillover assessment.* The light source will be measured with a light meter or photo meter which measures light in footcandles. Measurement for compliance will be conducted by taking a sample measurement at or beyond any common lot (whether conforming or nonconforming) line at any

vertical dimension not to exceed twenty (20) feet without any light from the light source being investigated. This measurement shall be used to determine the amount of background light occurring. The light source being investigated shall then be measured at the same location and at the same vertical dimension. The first measurement shall then be subtracted from the second measurement to determine compliance or non-compliance with the standard of 1.0 footcandle. The first and second lighting measurements referred to herein shall be taken at substantially the same time of day.

In obtaining the first measurement the property owner shall, at the request of the building official or his designee, turn off the light source for such time as is necessary to complete the first measurement. Failure to comply with this request shall be prima facie evidence of violation of this section by the property owner.

(3) *Glare.*

(A) *Direct glare standard.* No light source on private property regardless of zoning classification, shall be permitted to produce direct glare which results in visual discomfort for a normally located viewer on property in any residential zoning district or on any public street or highway.

(B) *Visual discomfort definition.* As used in this subsection (3), the term visual discomfort shall refer to the viewing of a direct light source that is producing luminance which could cause annoyance, discomfort or loss in visual performance and visibility.

(C) *Glare assessment.* Glare shall reflect away from residential properties and shall not produce visual discomfort on residential properties. The determination of visual discomfort on a property shall be made by the building official after three site visits to determine if a violation of the ordinance exists. The building official can require the property owner of the site from which the offensive light source(s) originates to illuminate all existing lights on the site during these site visits to make this determination. If the building official determines that a violation of the direct glare standard has occurred, the property owner of the site in violation shall have thirty (30) days to correct the violation or appeal to the board of adjustments for a six (6) month extension as defined in paragraph (1)(c).

(f) Electromagnetic radiation

(1) Requirements. All uses shall be controlled to prevent any source of electromagnetic radiation which does not comply with the current regulations of the Federal Communications Commis-

sion regulations regarding such sources of electromagnetic radiation. Further, any operation in compliance with the Federal Communications Commission regulations shall not be permitted if such radiation causes an abnormal degradation in performance of other electromagnetic radiators or receptors of quality and proper design because of proximity, primary field, blanketing, spurious reradiation conducted energy in power or telephone systems or harmonic content.

(2) Method of measurement. For the purposes of determining the level of radiated electromagnetic interference, standard field strength measuring techniques interference transmitted or conducted by power or telephone lines, a suitable, turntable peak reading, radio frequency voltmeter shall be used. This instrument shall by means of appropriate isolation coupling, be alternately connected from line to line and from line to ground during the measurement.

(3) Determination of electromagnetic interference. The determination of "abnormal degradation in performance," and "of quality and proper design" shall be made in accordance with good engineering practices as defined in the latest principles and standards of the institute of Electrical and Electronic engineers, and the Radio Manufacturers Association. in case of any conflict between the latest standards and principles of the above groups, precedence in the interpretation shall be in the following order: (a) institute of Electrical and Electronic Engineers, and (b) Radio Manufacturers Association. For the purposes of determining the maximum allowable level of radiated electromagnetic interference and electromagnetic interference transmitted or conducted by power or telephone line, maximum allowable levels will be adopted by the city council upon recommendation of the city engineer.

(g) Heat and humidity. All buildings shall be constructed and maintained in a manner so that any use producing humidity in the form of steam or moist air, or producing heat, shall be carried on in such a manner that steam, humidity or heat is not perceptible at any lot line.

(h) Fire and explosion. Each use shall be so operated as to minimize the danger from fire and explosion and to comply with the regulations of the public safety department.

(i) Radiation hazards. All buildings shall be constructed and maintained in a manner which meets the requirements of the Florida Administrative Code, Chapter 10D56, entitled "Control of Radiation Hazards."

(j) Waste. All buildings shall be constructed and maintained in a manner which provides for the storage and disposal of waste in compliance with Chapters 14 and 32 of the city code.

(Ord. No. 93-58, §§ 2, 3, 1-11-94; Ord. No. 95-24, § 1, 6-13-95; Ord. No. 97-52, § 1, 10-28-97)

ARTICLE XVIII. SUPPLEMENTARY DISTRICT REGULATIONS

(1) Building setback lines.

(a) The comprehensive plan of the City of Melbourne as approved by the city council is by reference made a part of this ordinance. For the purpose of promoting health,

10. To establish level of service standards, areas of service, and phasing of infrastructure in the coastal area.

Policies:

a. Level of service standards delineated in other elements of this Comprehensive Plan apply within the coastal areas as described.

b. Areas of service and the phasing of infrastructure will be established, with consideration given to protection of coastal resources.

c. Consideration will be given to alternative locations of infrastructure if located in coastal high hazard area to reduce potential loses.

11. The City shall support and coordinate with the St. John's River Water Management District, the Department of Environmental Protection, the Army Corps of Engineers, and/or any other regulatory agency having jurisdiction in order to conserve, enhance, and protect coastal wetlands and adjacent uplands.

a. Where there are sufficient coastal uplands on an existing parcel of land or lot of record (at the time of plan adoption) to locate the proposed development in the upland portion of the site, such development shall be located on the uplands. The City may allow the transfer to development at the future land use densities established on the future land use map, from the coastal wetlands to the upland portion of the site. The transfer to density may occur provided all other plan provisions regarding upland and flood plain resource protection, compatibility of adjacent land use, stormwater management and setbacks, etc., are met.

b. Where sufficient coastal uplands do not exist to avoid a taking, development in the wetlands shall be restricted to residential use at a maximum density of one (1) unit per five (5) acres. When the St. Johns River Water Management District and/or other regulatory agencies have provided a mitigation plan to compensate for the loss of wetlands, because of such encroachment, the City will require any development to be consistent with the terms of the mitigation plan.

c. Prior to construction, all necessary permits must have been issued by the Florida Department of Environmental protection, the St. Johns River Water Management District, and/or the U.S. Army Corps of Engineers, as required by the agency or agencies having jurisdiction.

12. To establish marina siting facility guidelines by 2000 or to adopt current draft countywide marina siting plan.

a. Review county marina siting plan for consistency.

b. Require applicants for new or expanding marinas to provide environmental data related to seagrasses, manatee observations and manatee mortality.

d. Marinas shall not be located in areas containing 10% or more of seagrasses.

c. **Coordinate spoil sites with FIND and other regulating agencies to insure that adequate areas are provided to meet the needs of dredging in the community, consistent with areas identified on Map VIII-1, of the Coastal Management Element.**

attached map →

F. PLANNED IMPROVEMENTS.

Funded planned improvements for coastal management within the Planning Area include ~~Ballard Park.~~ Front Street Park, Pineapple Park and improvements including boat ramps on the Eau

Comprehensive Plan. The City will particularly strive to annex industrial areas north of Ellis Road; areas west of Wickham, east of the slough, and east of Turtlemound Road; areas along the west side of Dairy Road, north of Palm Bay Road; areas north of the existing City limits on both sides of Wickham Road; all the unincorporated enclaves within the City, including areas on the barrier island; and properties in the area of the I-95/Eau Gallie Boulevard interchange.

f. Encourage the development of undeveloped pockets within developed areas in order to utilize existing facilities efficiently. Continue to petition the legislature to require annexations of enclaves.

g. Identify necessary lands suitable for future utility facilities necessary to support proposed development through the completion of long-range planning for public facilities including water, sewer, drainage, parks, police, and fire, and schools. by 1992. **Additionally, land for spoil sites are identified on Map VIII-1, Coastal Management Element.**

h. Require new developments to provide necessary services and facilities or to pay a fair share of the cost of those services and facilities., through impact fees, special assessments, exactions, conveyance of land or easements, or pro-rata agreements.

i. ~~Develop equitable funding mechanisms for existing and new development to pay a fair share cost for lands necessary to support growth.~~ Develop equitable funding necessary to support services for existing and redeveloped properties as well as for new development.

j. The availability of infrastructure should limit development to projects that are close to existing infrastructure which is in a compact area and not subject to urban sprawl. The City discourages the use of septic systems and well water since Melbourne is an urbanized community. The policies for using such systems are addressed in Chapters V and VII of this plan.

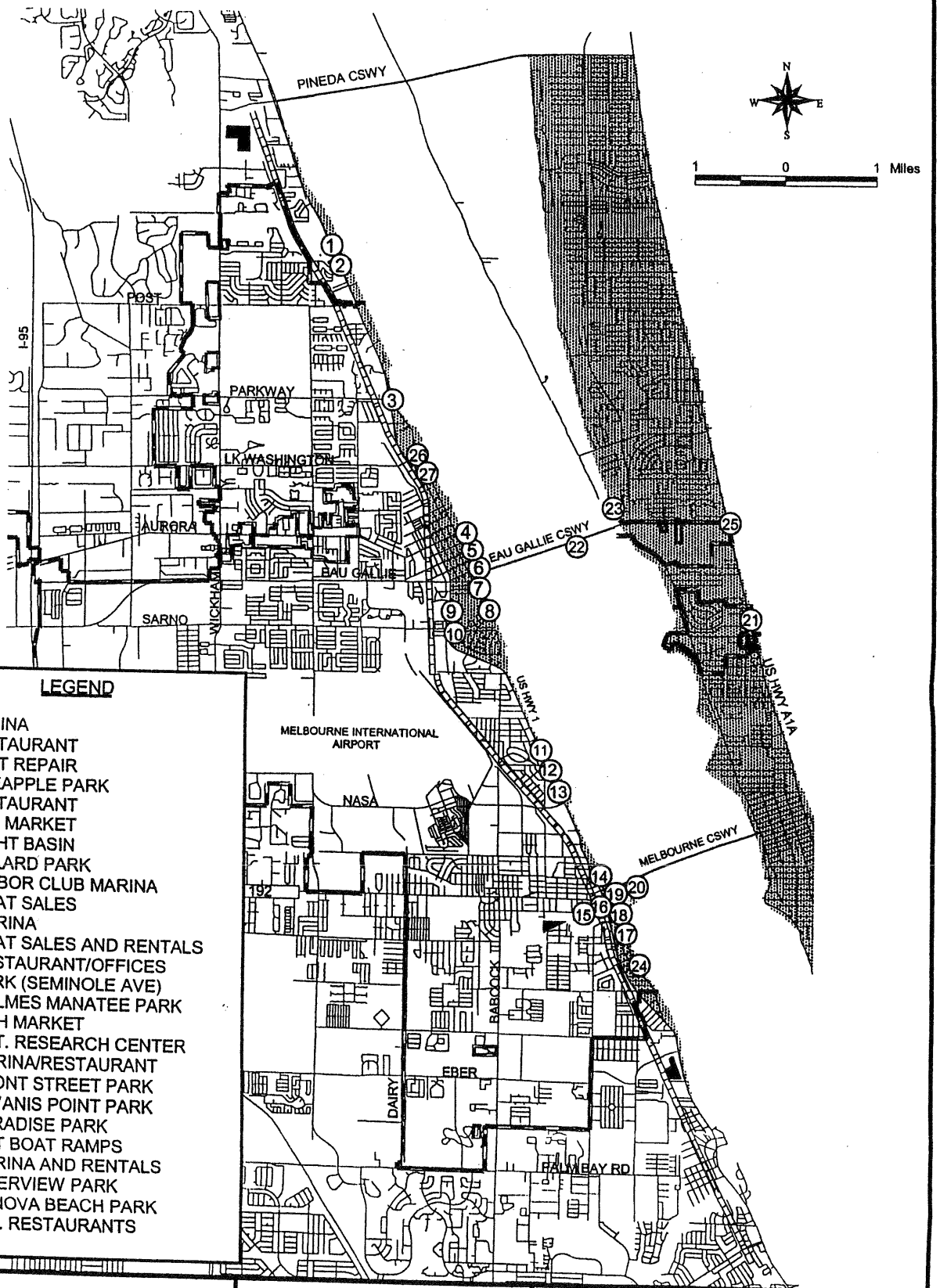
~~j~~k. Policies are provided in the Coastal Management Element and site-specific policies are provided for Study Area IV of the Future Land Use Element to require that coordinate coastal area population densities be consistent with the regional hurricane evacuation plan. Hurricane evacuation plans will be coordinated with Brevard County since they are the key coordinating agency for this area.

Objective:

3. Within the short range planning period, adopt ~~adapt~~ and implement additional plans and programs for the downtown redevelopment area and the Babcock Street Redevelopment area and any additional areas determined by city council to meet the criteria established by Chapter 163, Florida Statutes.

Policies:

COASTAL MANAGEMENT ELEMENT



LEGEND

1. MARINA
2. RESTAURANT
3. BOAT REPAIR
4. PINEAPPLE PARK
5. RESTAURANT
6. FISH MARKET
7. YACHT BASIN
8. BALLARD PARK
9. HARBOR CLUB MARINA
10. BOAT SALES
11. MARINA
12. BOAT SALES AND RENTALS
13. RESTAURANT/OFFICES
14. PARK (SEMINOLE AVE)
15. HOLMES MANATEE PARK
16. FISH MARKET
17. F.I.T. RESEARCH CENTER
18. MARINA/RESTAURANT
19. FRONT STREET PARK
20. KIWANIS POINT PARK
21. PARADISE PARK
22. DOT BOAT RAMPS
23. MARINA AND RENTALS
24. RIVERVIEW PARK
25. CANOVA BEACH PARK
26 & 27. RESTAURANTS

MAP VIII-1
WATER-DEPENDENT & WATER-RELATED USES, SPOIL SITE; PUBLIC ACCESS

CITY BOUNDARY
SPOIL SITES
COASTAL HIGH HAZARD AREA: THREAT LEVEL A

PLANNING AND ZONING DEPARTMENT

REVISED 11-4-98

Appendix F

Meeting with City of Satellite Beach
Muck Assessment & Management Project PN 19-9910
October 1, 1999
9:30am

Bob Day (SJR), Leslie Church (SJR), John Fergus (City of Satellite Beach), Michael Crotty (City of Satellite Beach), Kerry Stoms (Satellite Beach Recreation Dept.), S.K. Patel (BCI), and Melisa McCluskey (BCI) were in attendance.

Topics discussed:

- General overview of BCI's scope of project.
- J. Fergus is contact person for Satellite Beach.
- J. Fergus with map & aerial locations of possible disposal sites.
- 3 areas possible for disposal sites: 1. Soccer fields (adjacent to library)
  2. Samsons Island (south end of island)
  3. Vacant property owned by J. Prima (approx. 3 Acres on S. Patrick Dr.)
- Samsons Island open house Thursday October 7, 1999, 9am-11am. BCI will attend.
- Public support should be good in Satellite Beach.
- Will Indian Harbor Beach be in cooperation?
- How to get material off of Samsons Island? Barges? Cost Issues?
- Input from Lansing Island residents?
- Meeting set up for 8am Thursday October 7, 1999 with John Fergus, Mike Crotty, John Rice, SJR, and BCI.
- A boat tour of Grand Canal was given to BCI and SJR. Photos were taken.

Meeting with City of Melbourne
Muck Assessment & Management Project BCI PN 19-9910
October 1, 1999
2:00pm

Pat Fleming (City of Melbourne), Howard Ralls (C.O. Melbourne), Bob Klaproth (C.O. Melbourne), S.K. Patel (BCI), and Melisa McCluskey (BCI) were in attendance.

Topics discussed:

- General overview of BCI's scope of project.
- Bob Klaproth will be the contact person for the City of Melbourne.
- Portions of the Eau Gallie River were dredged in the 1980's. The disposal site for this project was on the City of Melbourne Airport property (on the West Side of Apollo Rd.). There was a bird issue at the time. The material dredged was spread on site (no removal issues). ACOE did the design for the disposal site (for info call Gary 953-6232).
- Info/disposal area plans on 1980's dredging of Eau Gallie River may by on microfilm at city.
- City of Melbourne wants Eau Gallie River dredged especially Elbow Creek. Many calls have come into the city's office.
- FDOT has jurisdiction of the Eau Gallie Causeway.

Meeting with Melbourne Airport Authority
Muck Assessment & Management Project PN 19-9910
October 14, 1999
10:00am

Richard Ennis (Melbourne Airport Authority), Richard Cloutier (Melbourne Airport Authority), S. K. Patel (BCI), and Melisa McCluskey (BCI) were in attendance.

Topics discussed

- The ACOE dredged Eau Gallie River in the 1980's, disposal site on airport property.
- ACOE left material at the disposal site and did not decant and discharge water.
- Previous bird issues: Hired F.I.T. students to prevent birds from using the disposal area.
- Airport not interested in participating in a mess like previously.
- BCI explained there would be no bird problems because the water would be discharged.
- Any regulations on dike heights?
- Airport mentioned need for a noise buffer on North end of property. Possibly use dredged material.

Meeting w/ FDOT
Muck Assessment & Management Project PN 19-9910
December 14, 1999
10:00am

Ben McKinney (FDOT), SK Patel (BCI), and Melisa McCluskey (BCI) in attendance.

Purpose: FDOT's involvement (if any) in project and FDOT land that could be used as a disposal site.

Topics/Issues discussed

- DOT has no land for the project, besides right of ways.
- Who has design on causeways? Probably no records.
- DOT probably has no use for muck, unless it is in a convenient disposal area. They already have fill.
- Borrow pits from Causeways should be on right away maps.
- BCI has roadway plans for Eau Gallie Causeway, Pineda Causeway, & 1-92 Causeway.
- Sebastian- DOT has a stockpile areas (material from US-1), Sebastian Inlet Park

Meeting w/ Melbourne Parks & Recreation Dept.
Muck Assessment & Management Project PN 19-9910
December 14, 1999
1:00pm

Jeff Dawson (C.O. Melbourne Parks & Recreation Dept.), Bob Klaproth (C.O. Melbourne), SK Patel (BCI), Melisa McCluskey (BCI) were in attendance.

Purpose: Using City of Melbourne Parks as disposal sites. Specifically, Southwest Park and Lipscomb Park.

Topics/Issues discussed

- 2 parks as possible disposal sites: 1. Southwest Park
  2. Lipscomb Park
- Southwest Park
  - has best canal access to Indian River
  - currently has a drainage problem
  - 15-20 acres
  - needs to raise up softball & soccer fields
  - How much material would be needed to raise elevations?
  - March 2000, scheduled to bring in fill, use Crane Creek material?
- Lipscomb Park
  - Largest area
  - Low income area/may have political problems
  - Area closer to US-1 & 1-92
- NPD Park?(at the end of James Street). It would be difficult to get to and set to put a stormwater pond there.
- Can use muck as top dressing at cemeteries?
- 1-92 Causeway has been eroded at West End. Possibly place Crane Creek dredged material to fix eroded areas? Call Ben McKinney (FDOT) Bob Klaproth is willing to truck it.
- Melbourne Central Catholic School (private) may have use for dredged material. E.g. Softball field.
- There are 2 large parcels of land just East of Southwest Park. Check into availability.
- BCI track Crane Creek beneficial uses, contact Bob Klaproth
- Palm Bay High School, may have use for dredged material, also have large parcels of land, Ed Curry contact.
- Florida Air Academy, may have use for dredged material, contact Tim Dwight.
- **If we can empty Crane Creek disposal site by dumping at Southwest Park, may be able to use it again?**

Meeting with Patrick Air Force Base (PAFB)
Muck Assessment & Management Project PN 19-9910
December 14, 1999
3:00pm

Patrick Ginewski (PAFB), John Fergus (Satellite Beach), SK Patel (BCI), and Melisa McCluskey (BCI) in attendance.

Purpose: Possibly using Patrick Air Force Base property for a disposal site for South Banana River.

Topics/Items discussed

- There is a buffer of 1000' from Air Force runway, also height restrictions, & no water.
- PAFB needs 100,000 cy of structural fill this year.
- There is an old domestic dump on base, possible site? Or use muck as top dressing?- area is small however, & some native vegetation is starting to grow, may be considered a wetland now.
- Must consider that any PAFB used land must have Secretary of Air Force approval. He will be a hard sell more than likely because it will be seen as an impact on flight operations.
- Air force golf course may have some use for dredged material
  - Contact- Jim Hickey –Golf Course Manager
  - Contact- Mark Murphy-Grounds Keeper 407-494-7506
- There is no need for top dressing on base.
- No open areas on base for a disposal site.
- South area of base (10-20ac.)- trying to create a natural dune area. Need material to reinforce dunes?
- Area behind hospital? It is now in design for development. Besides this is an area of high visablity and political pressure.
- Patrick Giniewski is in process of moving positions. Call environmental office to reach him 407-494-7288.
- **P. Giniewski wants sediment samples of South Banana River as soon as we get/take them.**

Summary of Meeting with Melbourne Airport Authority

Date & Time: 10:30 am on 2/15/00
Location: Melbourne Airport Offices
Present: Cliff Barnes, Pat Fleming, Bob Klaproth – C.O. Melbourne
Bob Day – SJRWMD (Indian River Lagoon Program)
Brian Pendleton – Airport Engineering Co.
Richard Ennis, Richard Cloutier – Melbourne Airport
Wayne Ericson, Mike Kelley – BCI Engineers and Scientists

Meeting Items:

General Dredging

BCI explained typical dredge and disposal projects, including types of materials produced, disposal options, pipeline concerns and recent projects in the area including Crane and Turkey Creek. C.O. Melbourne discussed the previous dredging of Eau Gallie River, which included disposal in a 40-acre pond on the northeast corner of the airport property adjacent to Apollo Blvd and General Aviation Drive.

Use of Airport Property

MLB Airport explained their desires and concerns about using the airport property summarized below:

MLB Airport Objectives:

- Construction of a 4000-foot long, 16-foot high, 106-foot wide noise buffer berm along the northern boundary of the airport property.
- Remaining land in the area be suitable for construction of light industrial area (parking lots).
- No disturbance to airport operation during project.

MLB Airport Issues and Concerns:

- Resulting berm will be stable and require no maintenance by airport.
- Large ponded area may possibly attract birds to airport property, MLB will have to file an air safety and property management report for FAA approval
- Airport stormwater drainage is to the north towards the canal, need stormwater system if disposal area is along the north property boundary.
- Presence of shallow hardpan layer inhibits stormwater infiltration over the entire airport property.
- Presence of Gopher Tortoises on site and local relocation areas are overpopulated according to Fish and Wildlife Service.

Summary:

The MLB Airport is willing to evaluate potential disposal alternatives on the airport property for the Eau Gallie River dredging, although the disposal option must meet the many concerns listed above before the airport will proceed. BCI will provide conceptual plans of disposal areas and reclamation scenarios based on the airports concerns. The interested parties understand that this site is the primary disposal option for the Eau Gallie River dredging project.

AIRPORT ENGINEERING CO., INC.
1024 Fairlawn Drive Rockledge, Florida 32955
Tel. (321)633-3034 Fax (321)633-7358 Mobile (321)427-1661 E-MAIL aec1@earthlink.net

Fax Memo To: **Melissa McCluskey**
BCI
Fax No. (904) 253-1767

6 Pages

Fax Copy To: **Richard Ennis, Melbourne Airport Authority**

From: **Brian Pendleton, P.E.**

Date: **1-06-00**

Re: **Misc. Services -**
Prelimary Layout for Soil Disposal and
Noise Buffer Berm
At Melbourne International Airport
AEC Job No. 9714

As discussed, the attached drawings show, in rough and diagrammatic form, a practical disposal scheme for the dredged material, that will provide a useful function to the airport. The feasibility of this plan is dependent upon the ability of the very fine dredged material to be stabilized sufficiently by intermixing with existing in-place sandy soil and being allowed to dry, before forming the berm. There is some question as to the ownership and control of this property, which is currently being resolved by a boundary survey which is nearing completion. Based upon the results of this survey, it may be necessary to move the berm slightly south, which would not materially affect the costs of constructing the berm.

In this preliminary information package I cannot address all of the terms and conditions that would have to be worked out in an agreement, but the principal ones would probably be as follows:

1. The "proponent" (entity proposing to do the work) would have to obtain all required environmental permits, and comply with permit conditions.

2. The proponent would pay all costs associated with the work. The Airport Authority is only allowing the use of the land, not participating in costs.

3. The proponent would have to provide cross-culverts at all drainage crossing points, using concrete pipe for permanence, to prevent flooding to the south.

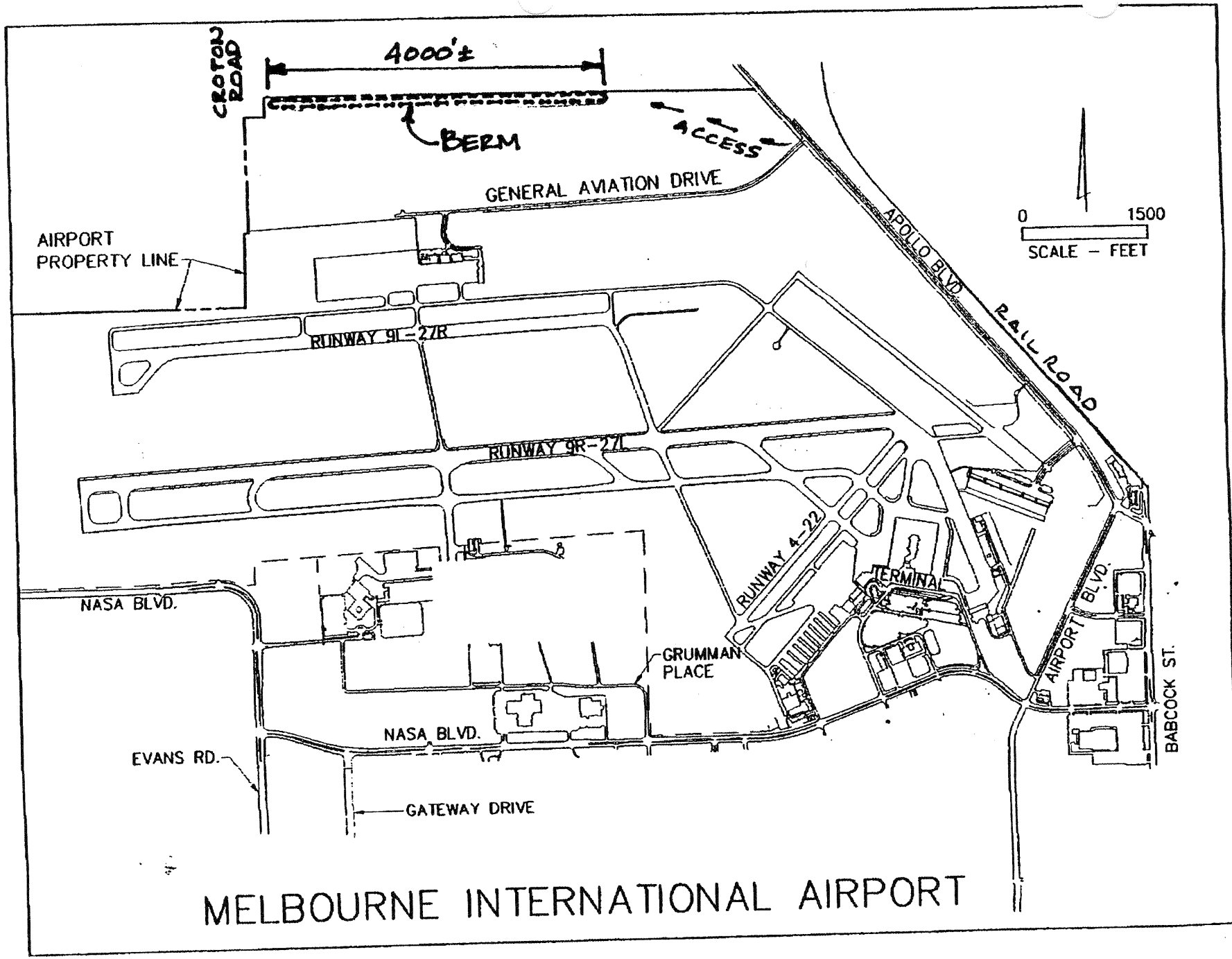
4. Sideslopes would have to be grassed with bahia or other acceptable ground cover, and the work would not be considered complete until the sideslopes are completely stabilized and have endured several heavy storms without significant erosion.

5. The proponent would indemnify and hold harmless the Airport Authority from any liability resulting from contaminants (heavy metals, etc.) in the imported material.

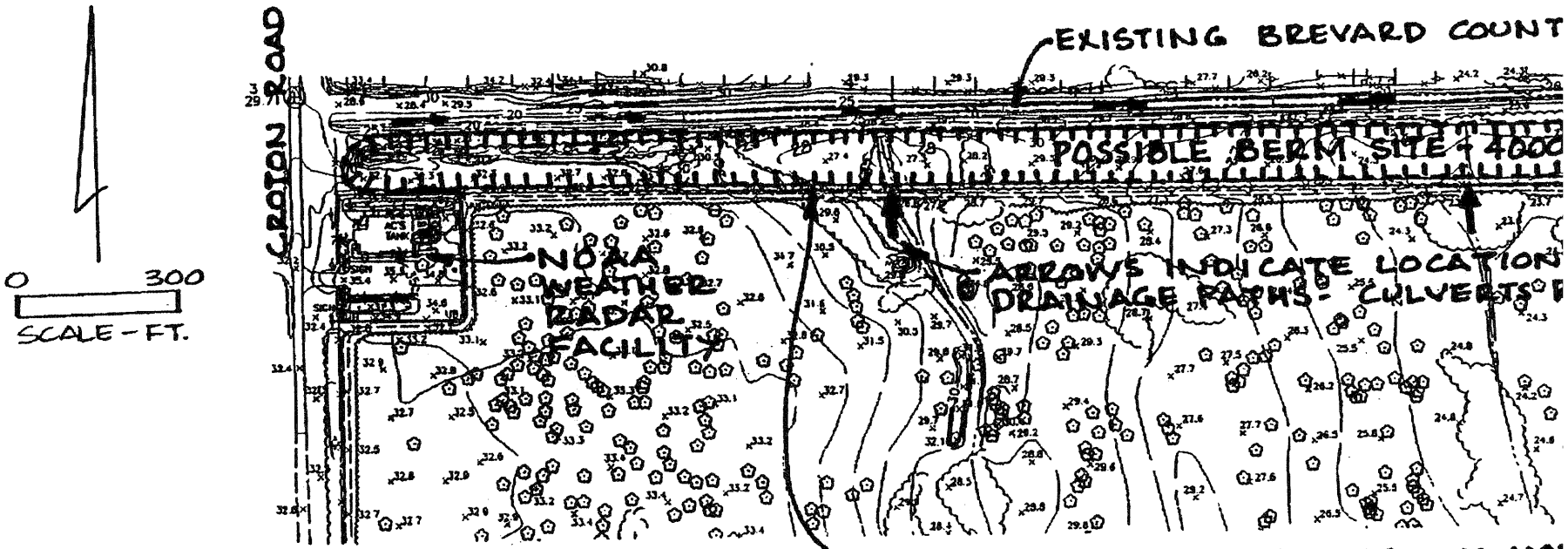
6. The proponent would provide maintenance of traffic (signs, etc.) to assure safety of motorists using General Aviation Drive, while the numerous trucks are entering and leaving (if so transported,) and will protect existing pavements and other items, and restore the access routes to "like-original" condition at the end of the project.

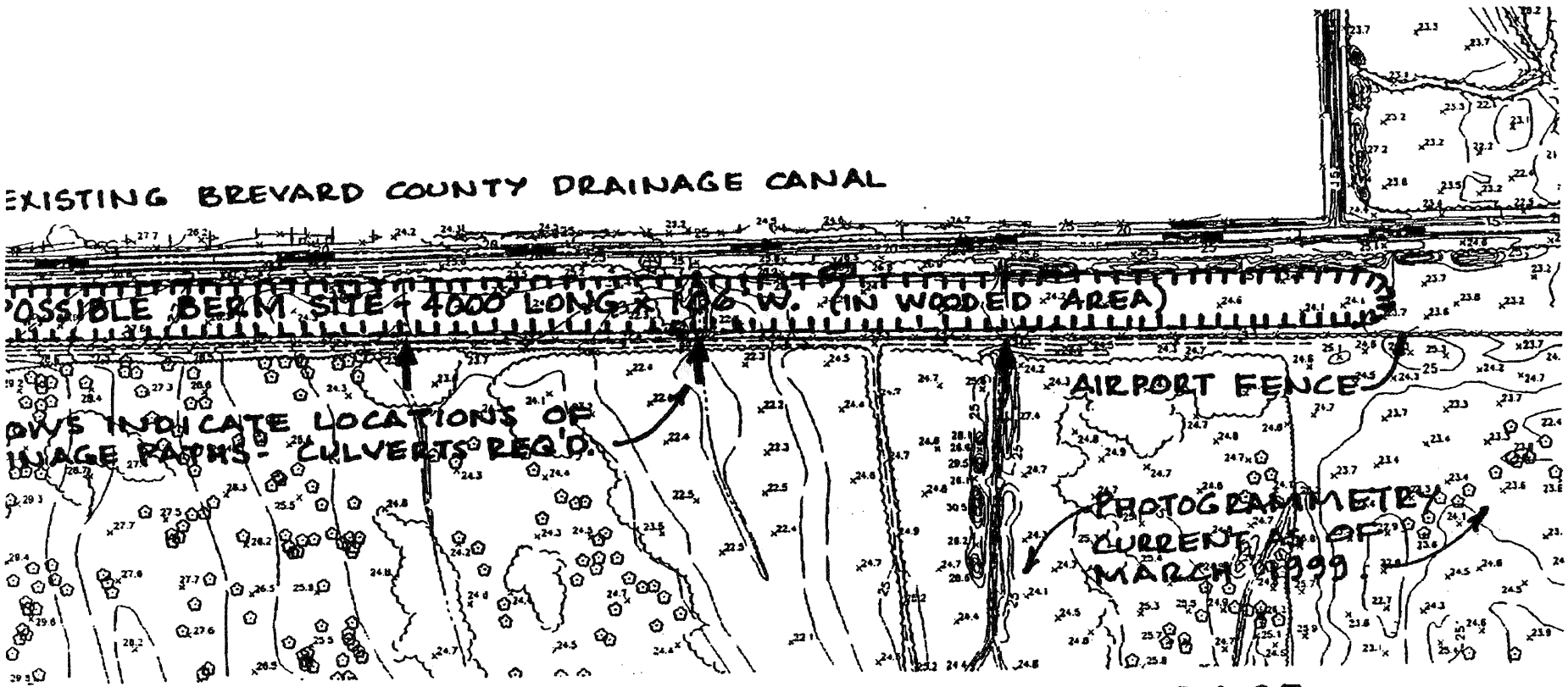
Please let us know if you have any questions, or if any additional information is needed.

9714MISC.060



PROJECT LOCATION PLAN


CROTON ROAD
EXISTING BREVARD COUNT
POSSIBLE BERM SITE - 4000
NOAA WEATHER RADAR FACILITY
ARROWS INDICATE LOCATION
DRAINAGE PATHS - CULVERTS
NOTE: OWNERSHIP OF THIS AREA IS NO
A BOUNDARY SURVEY IS BEING PERF
RESOLVE THIS ISSUE. IT MAY BE NE
TO MOVE THE BERM TO THE SOUTH.
0 300
SCALE - FT.
AEC 9714
1-6-00
MATCH



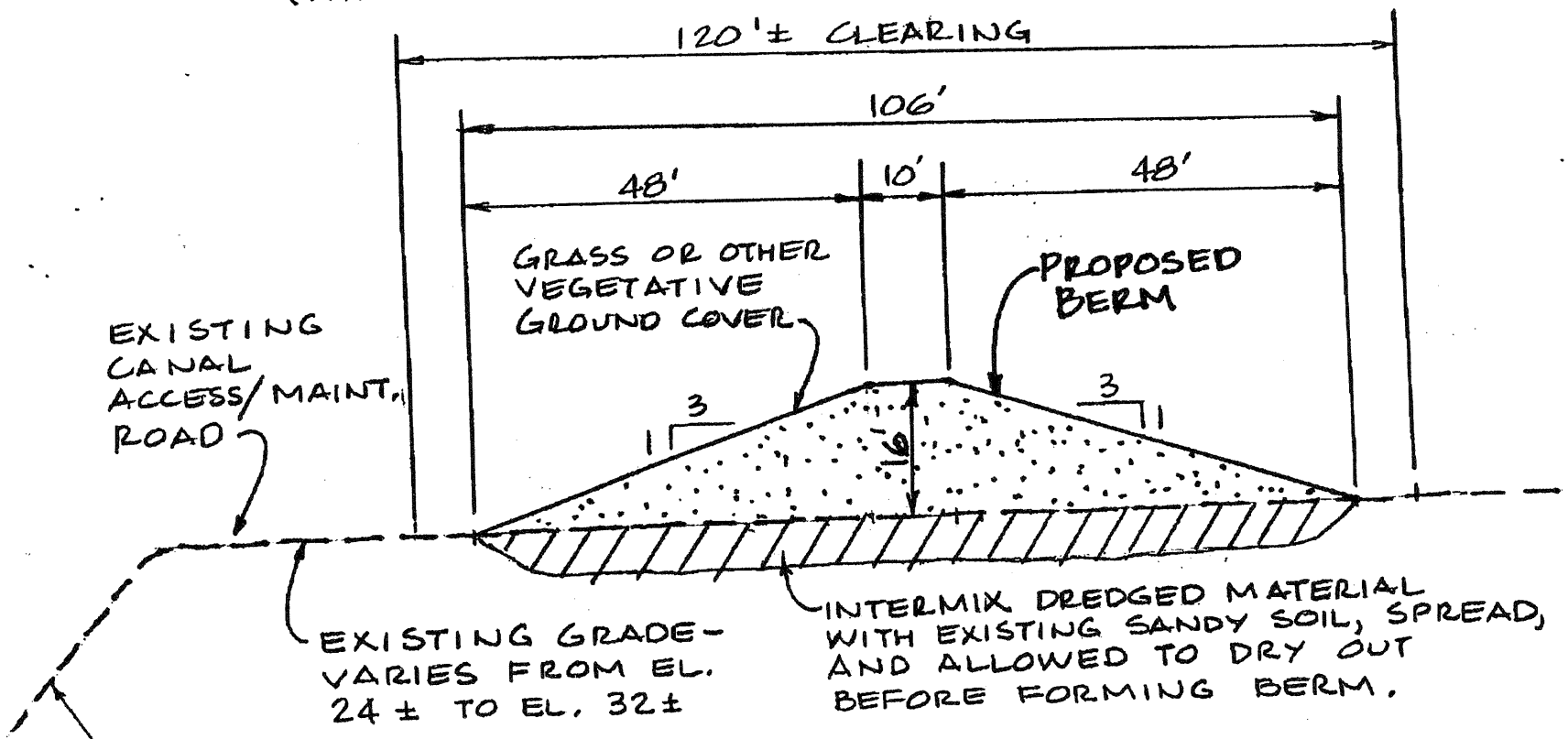
ERSHIP OF THIS AREA IS NOT CERTAIN.
Y SURVEY IS BEING PERFORMED TO
HIS ISSUE. IT MAY BE NECESSARY
THE BERM TO THE SOUTH.

POSSIBLE LOCATION OF
NOISE BUFFER AND
SOIL DISPOSAL BERM AT
MELBOURNE INT'L. AIRPORT.

MATCH

NOTES:

1. CALCULATED VOLUME OF BERM: 137,480 C.Y. (EQUATES TO APPROX. 180,000 C.Y. TRUCK VOLUME)
2. AREA MUST BE CLEARED - DISPOSE OF REMOVED VEGETATION OFF-SITE.
3. COMPACT EMBANKMENT TO 95% MAX. DENSITY (T-99)
4. WETLANDS AT THIS SITE HAVE NOT BEEN EVALUATED (AIRPORT-WIDE WETLAND EVALUATION IS IN PROGRESS)



TYPICAL SECTION - NOISE BUFFER AND SOIL DISPOSAL BERM

Appendix G

Pre-Application Meeting Notes
November 18, 1999
10:30 a.m.

Robert Day (SJRWMD), Leslie Church (SJRWMD), Joel Steward (SJRWMD), John Juilianna (SJRWMD), Jerry Belcher (SJRWMD), Susan Moor (FDEP), Tamy Dabu (FDEP/Orlando), Wilbert Holiday (FDEP/Orlando) Jill Rozycki (FDEP), John Fergus (C.O. Satellite Beach), Bob Klaproth (C.O. Melbourne), Irene Sadowski (USACOE), SK Patel (BCI), Melisa McCluskey (BCI) were in attendance.

Purpose: To familiarize the regulatory agencies with the project, and address any permitting concerns we need to be aware of.

- Noticed General Permit applicant is SJRWMD and there is a $100 fee, confirmed by Tami Debu.
- FDEP wants sieve analysis at dredge sites before dredging starts– go from there, then disposal.
- FDEP – is the dredged material usable material? – not beach material.
- FDEP – moving spoil to site, ultimate uses. Do sieve analysis. Is material usable?
- There are muck pockets all along (Causeway Eau Gallie/I-92).
- 12.5 feet – Eau Gallie River dredged in 1985 by USACOE.
- 25 year , ACOE – 5 year, DEP time limits for permit.
- FDEP concern for stormwater discharge, dredge, then redredge. Any way to stop cycle? Timeline ~ 75 years? Are there any ways to prevent stormwater runoff cycles to avoid premature dredging?
- Sump areas slow material down in the canals/ creeks – They are filling up.
- Sediment toxicity (FDEP) upland toxic?
- 5' dredge limit – If no historical data.
- SJRWMD – Stresses restoration for purpose of dredging – water quality – not boating.
- Muck source control for future - what are the municipalities doing? Yes work is being done.
- SJRWMD – focus on urban areas (Titusville – Melbourne) of IRL. This is where muck deposits have been highest.
- SJRWMD is concerned with segregation of material/sand and muck. Permit – Can we combine 3 areas to one big permit? FDEP says, No just do separate.
- Grand Canal (Eau Gallie – caution on water depths (FDEP).
- Can private property land be used for a disposal site? – FDEP says, okay, just need legal agreement for permit.
- FDEP says, material can be left at the disposal site if need be. – if not usable can stay on public or private property on an upland.
- FDEP suggests the outfall (water pipe) used from the disposal dike to water make it close to center of disposal site. This avoids problems from neighbors complaining about silting and sediment problems.
- South of Pineda Causeway there is a borrow pit. + 10 ft. muck. John Fergus has sampled this area.
- Trees will be planted next summer on Samson Island. Something to consider if possible disposal site. Maybe they should hold off on planting trees?
- Satellite Beach –John Fergus getting historic drawings of depth.