

August 16, 1993

Planning Division
Environmental Branch

Mr. David J. Wesley
Field Supervisor
U.S. Fish and Wildlife Service
3100 University Boulevard South
Suite 120
Jacksonville, Florida 32216

Dear Mr. Wesley:

This is in reference to the proposed maintenance dredging of the federal navigation channel at Horseshoe Cove and upland placement of dredged material (Figure 1). The dredging would likely be accomplished by clamshell or pipeline dredge.

We have conducted several field investigations of the project area, one in conjunction with the Florida Marine Patrol (FMP) and the Florida Game and Freshwater Fish Commission. Horseshoe Cove is a relatively shallow area on the Gulf coast. The navigation channel was originally constructed through limestone bedrock and bottom sediments. No maintenance dredging has occurred in the last 20 years. A commercial fishing industry including crab and shell fishing supports the Town of Horseshoe Beach. According to the FMP, no manatees are known to occur in this area.

The area that is being considered for use as a Placement Area is a pine forest containing an isolated wetland (Encl 1). The understory is oak scrub. A few gopher tortoise burrows were identified in the sandy knolls that have elevations high enough above the water table for burrows to occur. No scrub jays were observed.

In accordance with Section 7 of the Endangered Species Act and based on the field investigations, we have determined that the proposed work would have No Effect on species listed by your office as threatened or endangered. Therefore, we are requesting concurrence in this matter.

If you have any questions, contact Mr. Bill Fonferek at telephone 904-232-2803.

Sincerely,

A. J. Salem
Chief, Planning Division

Enclosure

bcc: CESAJ-CO-ON

Fonferek/CESAJ-PD-ES KH
Kurzbaach/CESAJ-PD-E 8/20
Davis/CESAJ-PD-A
704 Salem/CESAJ-PD



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
9450 Koger Boulevard
St. Petersburg, FL 33702

August 31, 1993 F/SEO13:EH

Mr. A. J. Salem
Chief, Planning Division
U.S. Army Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-0019

Dear Mr. Salem:

This is in reference to the proposed maintenance dredging of the federal navigation channel at Horseshoe Cove, Florida, and upland placement of dredged material, described in your letter dated August 16, 1993.

We concur with your determination that the proposed work will have no effect on threatened or endangered species under NMFS purview.

This concludes consultation responsibilities under Section 7 of the ESA. However, consultation should be reinitiated if new information reveals impacts of the identified activity that may affect listed species or their critical habitat, a new species is listed, the identified activity is subsequently modified or critical habitat determined that may be affected by the proposed activity.

If you have any questions please contact LCDR Eric Hawk, Fishery Scientist, at 813/893-3366.

Sincerely yours,

Terry Kemmerer
for Andrew J. Kemmerer
Regional Director

cc:
F/SEO2
F/PR2



STANDARD MANATEE PROTECTION CONDITIONS

9.4.1 Manatee Protection.

9.4.1.1 The Contractor shall instruct all personnel associated with the project of the potential presence of manatees and right whales and the need to avoid collisions with these animals.

9.4.1.2 All construction personnel shall be advised that there are civil and criminal penalties for harming, harassing, or killing manatees and right whales which are protected under the Marine Mammal Protection Act of 1972, the Endangered Species Act of 1973, and the Florida Manatee Sanctuary Act. The Contractor shall be held responsible for any manatee or right whale harmed, harassed, or killed as a result of construction activities.

9.4.1.3 If siltation barriers are used, they shall be made of material in which manatees cannot become entangled, are properly secured, and are regularly monitored to avoid manatee entrapment. Barriers must not block manatee entry to or exit from essential habitat.

9.4.1.4 All vessels associated with the project shall operate at "no wake/idle" speeds at all times while in waters where the draft of the vessel provides less than a four foot clearance from the bottom and vessels shall follow routes of deep water whenever possible. Boats used to transport personnel shall be shallow-draft vessels, preferably of the light-displacement category where navigational safety permits.

9.4.1.5 If a manatee(s) is sighted within 100 yards of the project area, all appropriate precautions shall be implemented by the Contractor to ensure protection of the manatee. These precautions shall include the operation of all moving equipment no closer than 50 feet of a manatee. If a manatee is closer than 50 feet to moving equipment or the project area, the equipment shall be shut down and all construction activities shall cease to ensure protection of the manatee. Construction activities shall not resume until the manatee has departed the project area.

9.4.1.6 9.4.1.6 Prior to commencement of construction, each vessel involved in construction activities shall display at the vessel control station or in a prominent location, visible to all employees operating the vessel, a temporary sign at least 8 1/2" x 11" reading, "Caution: Manatee Habitat/Idle Speed is Required in Construction Area." In the absence of a vessel, a temporary 3' x 4' sign reading "Caution: Manatee Area" will be posted adjacent to the issued construction permit. A second temporary sign measuring 8 1/2" X 11" reading "Caution: Manatee Habitat. Equipment Must Be Shutdown Immediately If A Manatee Comes Within 50 Feet Of Operation" will be posted at the dredge operator control station and at a location prominently adjacent to the displayed issued construction permit. The Contractor shall remove the placards upon completion of construction.

9.4.1.7 Any collisions with a manatee or sighting of any injured or incapacitated manatee shall be reported immediately to the Corps of Engineers. The order of contact within the Corps of Engineers shall be as follows:

Order of Contact of Corps Personnel
for Dredging Contractor to Report
Manatee Death or Injury

<u>Title</u>	<u>Telephone Number</u>	
	<u>Work Hours</u>	<u>After Hours</u>
Corps, Inspector	On site	Lodging Location
Mr. _____, Area Engineer, _____ (CESAJ- -)	_____	_____
Dr. Hanley K. Smith, Chief Environmental Resources Branch, Planning Division (CESAJ-PD-E)	904/232-2202	904/745-0632
Mr. C. Alex Morrison, Acting Chief, Construction Branch, Construction- Operations Division (CESAJ-CO-C)	904/232-1120	904/367-0758
Mr. Giralmo DiChiara, Chief Construction-Operations Division (CESAJ-CO)	904/232-1122	904/737-1909

The Contractor shall also immediately report any collision with a manatee to the Florida Marine Patrol "Manatee Hotline" (800) 342-5367 as well as the U.S. Fish and Wildlife Service, Jacksonville Endangered Species Field Station (904) 232-2580.

9.4.1.8 The Contractor shall maintain a daily log detailing sightings, collisions, or injuries to manatees occurring during the contract period. The data shall be recorded on forms provided by the Contracting Officer (sample form is appended to the end of this section). All data in original form shall be forwarded directly to Dr. Hanley K. Smith, Chief Environmental Resources Branch, P. O. Box 4970, Jacksonville, Florida, 32232-0019, within 10 days of collection and copies of the data will be supplied to the Contracting Officer. Within 15 days, following project completion, a report summarizing the above incidents and sightings, including a list and addresses of all observers utilized during the construction will be submitted to the following:

Florida Department of Natural Resources
Marine Research Institute
Office of Protected Species Research
3900 Commonwealth Blvd. Mail Station 245
Tallahassee, Florida 32399

U.S. Fish and Wildlife Service
3100 University Blvd. S. (Suite 120)
Jacksonville, Florida 32216

Chief, Environmental Resources Branch
U.S. Army Corps of Engineers (CESAJ-PD-E)
P.O. Box 4970
Jacksonville, Florida 32232-0019

Florida Marine Patrol's District 8 Office
2510 2nd Avenue North
Jacksonville Beach, Florida 32250

Area Engineer, _____

APPENDIX III

COASTAL ZONE MANAGEMENT CONSISTENCY DETERMINATION

Florida Coastal Zone Management Program Federal Consistency Evaluation Procedures

1. Chapter 161, Beach and Shore Preservation.

The intent of the coastal construction permit program established by this chapter is to regulate construction projects located seaward of the line of mean high water and which might have an effect on natural shoreline processes.

Response: The proposed maintenance dredging and upland placement of the material does not impact any beaches or shores or their natural processes, therefore, this Act does not apply.

2. Chapters 186 and 187, State and Regional Planning.

These chapters establish the State Comprehensive Plan which sets goals that articulate a strategic vision of the State's future. Its purpose is to define in a broad sense, goals and policies that provide decision-makers directions for the future and provide long-range guidance for an orderly social, economic and physical growth.

Response: The proposed maintenance of the Federal channel and economic benefits derived from its recreational and commercial use would provide the continual, long-term growth of this community.

3. Chapter 252, Disaster Preparation, Response and Mitigation.

This chapter creates a state emergency management agency, with the authority to provide for the common defense; to protect the public peace, health and safety; and to preserve the lives and property of the people of Florida.

Response: This project will not affect disaster preparation, response or mitigation. Therefore, this Act would not apply.

4. Chapter 253, State Lands.

This chapter governs the management of submerged state lands and resources within state lands. This includes archeological and historical resources; water resources; fish and wildlife resources; beaches and dunes; submerged grass beds and other benthic communities; swamps, marshes and other wetlands; mineral resources; unique natural features; submerged lands; spoil islands; and artificial reefs.

Response: A site investigation was conducted and coordinated with the SHPO. No potential sites were located. A site investigation has been conducted with representatives of the Florida Game and Freshwater Fish Commission and the Marine Patrol to determine the presence of any significant resources in the project area that could be affected. None were located.

5. Chapters 253, 259, 260, and 375, Land Acquisition.

This chapter authorizes the state to acquire land to protect environmentally sensitive areas.

Response: No sensitive environmental lands are located at these sites, therefore, this chapter would not apply.

6. Chapter 258, State Parks and Aquatic Preserves.

This chapter authorizes the state to manage state parks and preserves. Consistency with this statute would include consideration of projects that would directly or indirectly adversely impact park property, natural resources, park programs, management or operations.

Response: The proposed work would not affect any state parks or preserves, and would, therefore, be consistent with this chapter.

7. Chapter 267, Historic Preservation.

This chapter establishes the procedures for implementing the Florida Historic Resources Act responsibilities.

Response: The project has been coordinated with the State Historic Preservation Officer (SHPO) during the public notice. The report resulting from cultural resource field investigations has also been coordinated with the SHPO. In a May 2, 1995 letter, SHPO concurred with the District's determination that significant archeological resources will not be affected by maintenance dredging or placement of dredged material in the constructed disposal area. Procedures will also be implemented to avoid effects on unidentified archeological resources within the project area. Therefore, the work will be consistent with the goals of this chapter.

8. Chapter 288, Economic Development and Tourism

This chapter directs the state to provide guidance and promotion of beneficial development through encouraging economic diversification and promoting tourism.

Response: This project does not impact economic development or tourism.

9. Chapters 334 and 339, Public Transportation.

This chapter authorizes the planning and development of a safe, balanced and efficient transportation system.

Response: This project is not part of any transportation system.

10. Chapter 370, Saltwater Living Resources.

This chapter directs the state to preserve, manage and protect the marine, crustacean, shell and anadromous fishery resources in state waters; to protect and enhance the marine and estuarine environment; to regulate fishermen and vessels of the state engaged in the taking of such resources within or without state waters; to issue licenses for the taking and processing products of fisheries; to secure and maintain statistical records of the catch of each such species; and, to conduct scientific and economic studies and research.

Response: A site investigation has been conducted in conjunction with the Florida Marine Patrol and the Florida Game and Freshwater Fish Commission. No seagrasses or other living aquatic resources would be affected by the dredging.

11. Chapter 372, Living Land and Freshwater Resources.

This chapter establishes the Game and Freshwater Fish Commission and directs it to manage freshwater aquatic life and wild animal life and their habitat to perpetuate a diversity of species with densities and distributions which provide sustained ecological, recreational, scientific, educational, aesthetic and economic benefits.

Response: No freshwater aquatic ecosystems would be involved in the project. The upland area would not affect any unique wildlife habitat for threatened or endangered species.

12. Chapter 373, Water Resources.

This chapter provides the authority to regulate the withdrawal, diversion, storage, and consumption of water.

Response: No use of water resources as regulated by this chapter are anticipated.

13. Chapter 376, Pollutant Spill Prevention and Control.

This chapter regulates the transfer, storage, and transportation of pollutants and the cleanup of pollutant discharges.

Response: This work does not involve the transportation or discharging of pollutants. Special conditions have been added to the contract specifications to control inadvertent spill

of pollutants during construction. Therefore, the work will comply with the intent of the Chapter.

14. Chapter 377, Oil and Gas Exploration and Production.

This chapter authorizes the regulation of all phases of exploration, drilling, and production of oil, gas, and other petroleum products.

Response: This work does not involve the exploration, drilling or production of gas, oil or petroleum product and therefore, this chapter does not apply.

15. Chapter 380, Environmental Land and Water Management.

This chapter establishes criteria and procedures to assure that local land development decisions consider the regional impact nature of proposed large-scale development.

Response: The public notice will be coordinated with the regional planning council to assure that no planned activities will be affected.

16. Chapter 388, Arthropod Control.

This chapter provides for a comprehensive approach for abatement or suppression of mosquitoes and other pest arthropods within the state.

Response: The work would not further the propagation of mosquitoes or other pest arthropods.

17. Chapter 403, Environmental Control.

This chapter authorizes the regulation of pollution of the air and waters of the state by the DER.

Response: A Water Quality Certification was issued by the State for this project. Water quality and erosion control measures will be implemented during construction. Effects of the operation of construction equipment on air quality would be minor. Therefore, the work is complying with the intent of this chapter.

18. Chapter 582, Soil and Water Conservation.

This chapter establishes policy for the conservation of the state soil and water through the Department of Agriculture soil conservation districts. Land use policies will be evaluated in terms of their tendency to cause or contribute to soil erosion or to conserve, develop, and utilize soil and water resources both onsite or in adjoining properties affected by the work. Particular attention will be given to work on or near agricultural lands.

Response: This project will not cause or contribute to any unacceptable soil erosion of nearby agricultural lands or impact nearby water resources. Any disturbed topsoil will be stabilized either by seeding or sodding.

APPENDIX IV

COORDINATION DOCUMENTATION



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

REPLY TO
 ATTENTION OF

Construction-Operations Division
 Public Notice No. PN-HC-178

July 14, 1993

PUBLIC NOTICE

TO WHOM IT MAY CONCERN: The District Engineer, Jacksonville District, U.S. Army Corps of Engineers, has forwarded an application to the State of Florida Department of Environmental Regulation pursuant to Section 401 of the Clean Water Act of 1977. This Federal project is being evaluated and coordinated pursuant to 33 CFR 335 through 338.

Comments regarding the project should be submitted in writing to the District Engineer at the above address within 30 days from the date of this notice. Any person who has an interest which may be affected by the construction of this project may request a public hearing. The request must be submitted in writing to the District Engineer within 30 days of the date of this notice and must clearly set forth the interest which may be affected and the manner in which the interest may be affected by this activity.

If you have any questions concerning this application, you may contact Mr. Matthew Miller of this office, telephone 904-232-3600.

WATERWAY & LOCATION: Horseshoe Cove, Dixie County, Florida

WORK & PURPOSE: The proposed work consists of removal of shoal material from the Federal Channel (including turning basin) to obtain a depth of 7 feet, project depth plus one foot for advanced maintenance. Approximately 120,000 cubic yards of silt and silty sand will be excavated. Material will be pumped/placed to/at a diked upland disposal site. The upland site is approximately 30 acres in size and is located approximately 4000 feet northeast of the dredging area at Horseshoe Beach. Attached drawings, 7 sheets, provide additional information on the project.

PROJECT AUTHORIZATION: Act of 17 May 1950, House Document 106/81/1.

EVALUATION:

a. Environmental Assessment. A Preliminary Environmental Assessment is being prepared for this project. It will be available for review upon written request to Construction-Operations Division at the above letterhead address, when it becomes available.

b. Need for Environmental Impact Statement. Based on information available in the project files for this and similar projects, the proposed work will have no significant adverse impact on the quality of the human environment and does not require an Environmental Impact Statement.

APPLICABLE LAWS: The following laws are, or may be, applicable to the review of the proposed disposal sites and to the activities affiliated with this Federal project:

1. Water Resources Development Act of 1976 (PL 94-587).
2. Federal Water Project Recreation Act of 1965 (PL 89-72).
3. Rivers and Harbors Act of 1899.
4. Watershed Protection and Flood Prevention Act of 1954 (PL 566).
5. River and Harbor Flood Control Act of 1970 (PL 91-611).
6. Executive Order 12372.
7. Executive Order 12088.
8. Executive Order 11514.
9. Executive Order 11593.
10. Executive Order 11988.
11. Executive Order 11990.
12. Estuary Protection Act of 1968 (PL 90-454).
13. Clear Air Act of 1963 (PL 909-148).
14. American Indian Religious Freedom Act of 1978 (PL 95-341).
15. Antiquities Act of 1906.
16. Archeological Resources Protection Act of 1979 (PL 96-95).
17. Historic Sites Act of 1935 (PL 74-292).
18. The National Historic Preservation Act of 1966 (PL 89-665) (16 U.S.C. 470, 80 Stat. 915).
19. Reservoir Salvage Act of 1960 (PL 86-523)

20. Section 313 of the Clean Water Act of 1977 (PL 92-500) (33 U.S.C. 1323, 82 Stat. 816).
21. Section 401 of the Clean Water Act of 1977 (PL 92-500).
22. Section 404 of the Clean Water Act of 1977 (PL 92-500) (33 U.S.C. 1344).
23. Coastal Barrier Resources Act of 1982 (PL 97-384).
24. Sections 307(c) (1) and (2) of the Coastal Zone Management Act of 1972 (PL 92-583) (16 U.S.C. 1456 (c) (1) and (2), 86 Stat. 1280).
25. Endangered Species Act of 1973 (PL 93-205).
26. The Fish and Wildlife Coordination Acts of 1958 (PL 85-624) (16 U.S.C. 661-666c).
27. The Fish and Wildlife Act of 1956 (16 U.S.C. 472a et seq.).
28. Section 302 of the Marine Protection, Research, and Sanctuaries Act of 1972 (PL 92-532, 86 Stat. 1052).
29. Wild and Scenic Rivers Act of 1968 (PL 90-542).
30. The National Environmental Policy Act of 1969 (PL 91-190) (42 U.S.C. 4321-4347).
31. The Migratory Marine Game-Fish Act of 1959 (16 U.S.C. 760c-760g).
32. The Endangered Species Act of 1973 (PL 93-205) (16 U.S.C. 668aa-668cc-6, 87 Stat. 884).
33. Coastal Zone Management Act of 1972, as amended.
34. Farmland Protection Policy Act of 1981.
35. Marine Mammal Protection Act of 1972, as amended.
36. The Clean Air Act of 1972.

COASTAL ZONE MANAGEMENT: The proposed project is being evaluated in accordance with the Florida Coastal Zone Management Act to determine consistency with the goals and intent of the appropriate State statutes. This determination is based on the Preliminary Environmental Assessment, the Section 404(b)(1) Evaluation, and the Coastal Zone Consistency Determination. Full compliance will be achieved by issuance of the necessary Water Quality Certificate from the State.

ENDANGERED SPECIES: Consultation with the National Marine Fisheries Service and the US Fish and Wildlife Service pursuant to Section 7 of the Endangered Species Act will be conducted. The following species could be located in the project area:

green sea turtle	<u>Chelonia mydas</u>
hawksbill sea turtle	<u>eretmochelys imbricata</u>
Kemp's Ridley sea turtle	<u>Lepidochelys kempii</u>
leatherneck sea turtle	<u>Derموchelys coriacea</u>
loggerhead sea turtle	<u>Caretta</u>
West Indian manatee	<u>Trichechus manatus</u>

EVALUATION FACTORS: All factors which may be relevant to the proposal will be considered including the cumulative effects thereof. Among these are conservation, economics, aesthetics, general environmental concerns, wetlands, historic resources, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shoreline erosion and accretion, recreation, seagrasses, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, consideration of property ownership and, in general, the needs and welfare of the people.

DISSEMINATION OF NOTICE: You are requested to communicate the information contained in this notice to any other parties whom you deem likely to have an interest in this matter.

COORDINATION: This notice is being sent to, and coordinated with, the following agencies:

FEDERAL AGENCIES:

Commander, Seventh Coast Guard District, FL
Director, Atlantic Marine Cnt., National Ocean Ser, Norfolk, VA
FDA, Regional Shellfish Specialist, Atlanta, GA
Director, National Park Ser., Southeast Region, Atlanta, GA
Regional Director, National Park Ser., SE Region, Atlanta, GA
Regional Director, Fish & Wildlife Service, Atlanta, GA
Field Supervisor, Fish & Wildlife Service, Jacksonville, FL
Field Supervisor, Fish & Wildlife Service, Vero Beach, FL
Regional Hydrologist, U.S. Geological Survey, Atlanta, GA
District Chief, U.S. Geological Survey, WRD, Tallahassee, FL
Regional Hydrologist, NOAA, National Weather Ser., Fort Worth, TX
Southeast River Forecast Cnt., NOAA, National Weather Ser.
Atlanta, GA
Environmental Protection Agency, Office of Federal Activities,
Washington, D.C.
Federal Energy Regulatory Commission, Atlanta, GA
National Marine Fisheries Service, EA Branch, Panama City, FL
National Marine Fisheries Service, EA Branch, St. Petersburg, FL
Federal Maritime Commission, Office of Environmental Impact,
Washington, DC
USDA, Soil Conservation Service, Gainesville, FL
Federal Highway Administration, Tallahassee, FL

STATE AGENCIES:

Executive Director, DNR, Tallahassee, FL
DNR, Division of Beaches & Shores, Tallahassee, FL
Florida Game & Fresh Water Commission, Lakeland, FL
Secretary, Department of Environmental Reg., Tallahassee, FL
Department of Agriculture, Bureau of Soil & Water Conservation,
Gainesville, FL
Director, Florida Game & Fresh Water Fish Commission,
Tallahassee, FL
Director, Div of Archives, History & Records Management,
Tallahassee, FL
Secretary, Department of Transportation, Tallahassee, FL

ENVIRONMENTAL ORGANIZATIONS:

Executive Director, Florida Audubon Society, Maitland, FL
Executive Director, Florida Wildlife Federation, West Palm Beach,
FL

LOCAL GOVERNMENTS:

City of Horseshoe Beach
Board of County Commissioners, Dixie County
Suwanee River Water Management District, Live Oak, FL

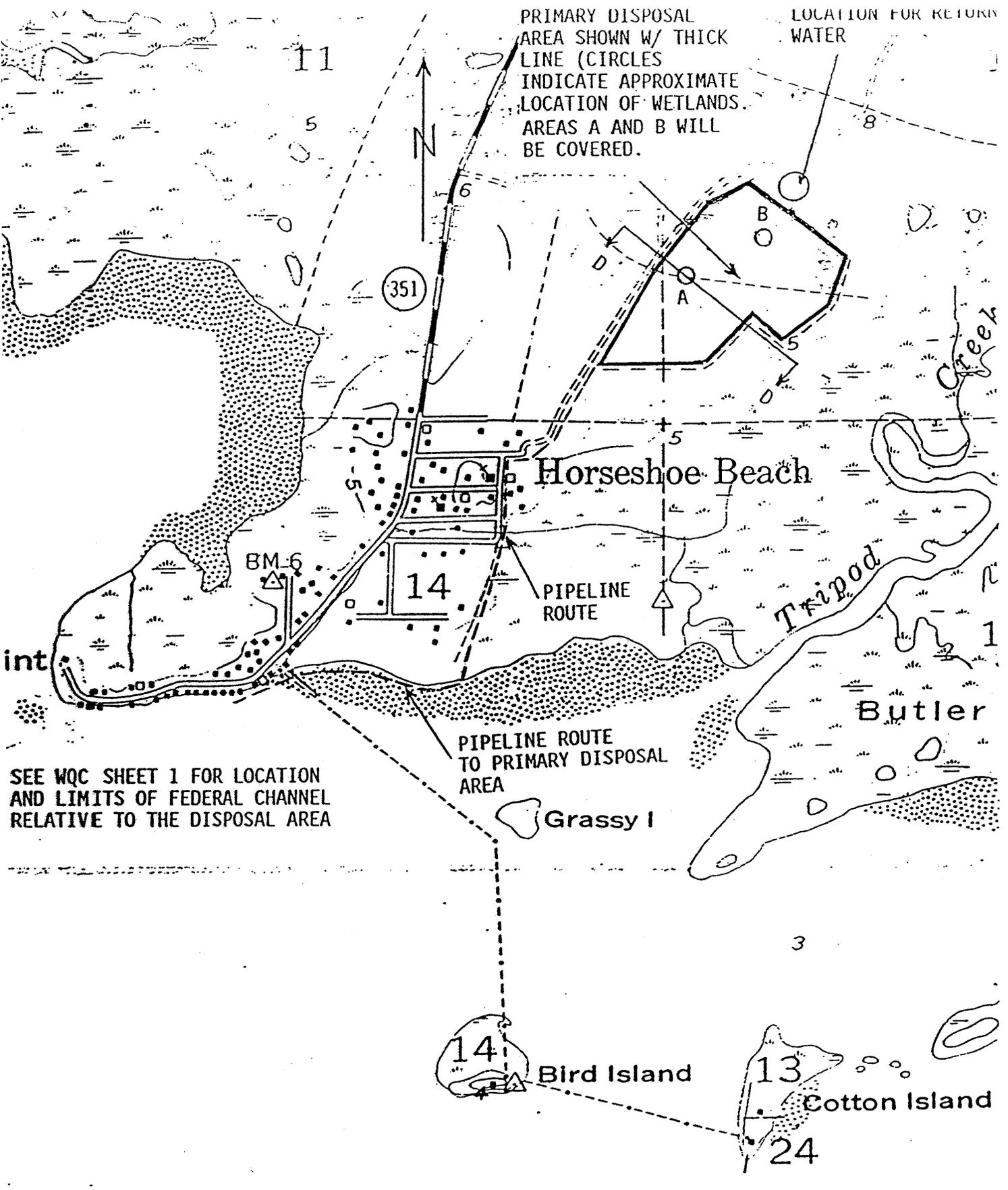
LOCAL NEWSPAPER:

The Dixie County Advocate, Cross City, FL

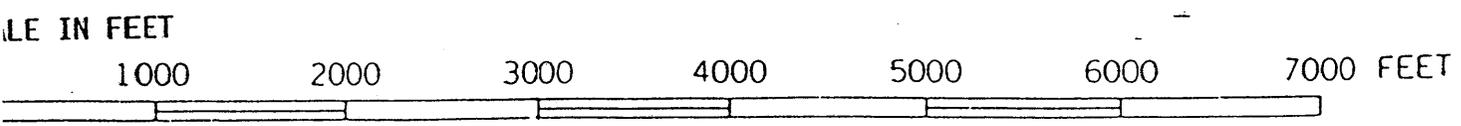
FOR THE COMMANDER:



GIROLAMO DICHIARA
Chief, Construction-Operations
Division



SEE WQC SHEET 1 FOR LOCATION AND LIMITS OF FEDERAL CHANNEL RELATIVE TO THE DISPOSAL AREA

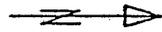


HORSESHOE COVE LOCATION MAP

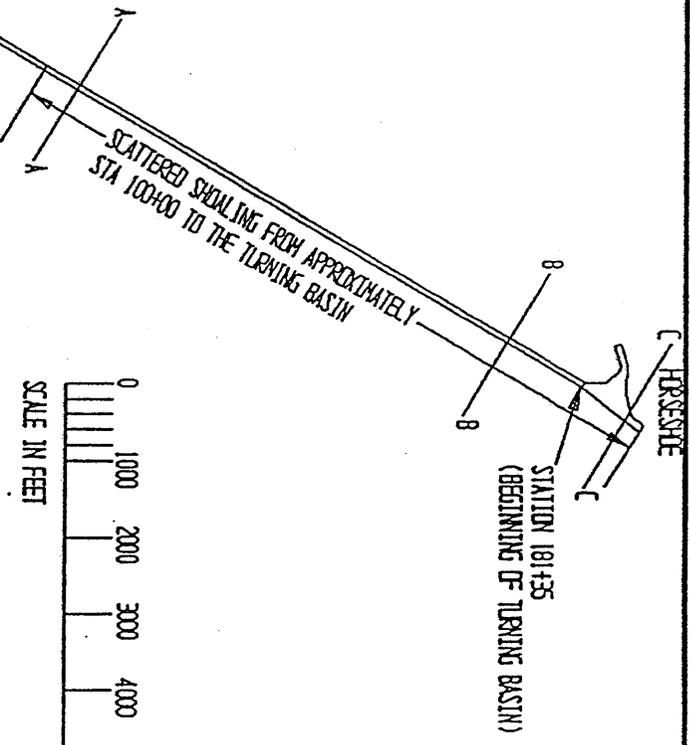
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Y=155,000

Y=150,000



GULF OF MEXICO



STATION 0+00
X=2,375,000

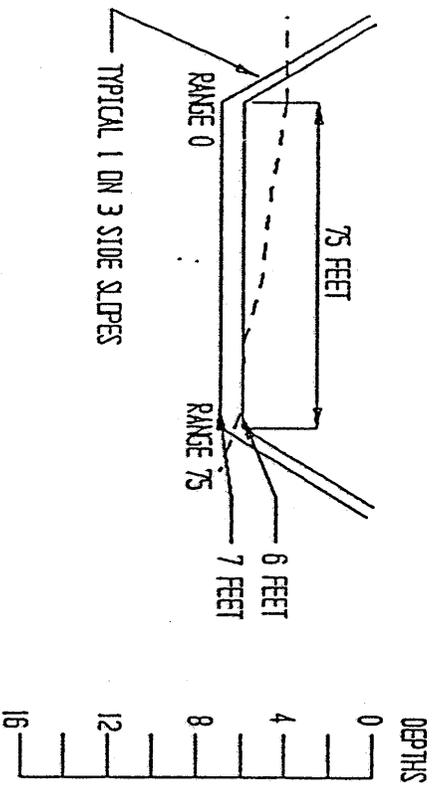
X=2,390,000

X=2,395,000

- NOTES:
1. DRAWING IS TO SCALE
 2. PROJECT DEPTH IS 6 FEET THROUGHOUT
 3. THIS DRAWING AND CROSS SECTIONAL DRAWINGS ARE BASED ON A 1987 SURVEY

U.S. ARMY CORPS OF ENGINEERS	
JACKSONVILLE DISTRICT	
HORSESHOE COVE, FLORIDA	
JUNE 1993	WDC SHEET 2

TYPICAL DREDGING SECTION (CROSS SECTION A-A, STATION 105+00)



NOTES:

1. CROSS SECTIONAL DRAWINGS WERE DEVELOPED FROM A 1987 SURVEY
2. DASHED LINE INDICATES EXISTING BOTTOM
3. PROJECT DEPTH IS 6 FEET THROUGHOUT PROJECT INCLUDING TURNING BASIN
4. ONE FOOT OF ALLOWABLE OVERDEPTH IS SHOWN IN THE DRAWINGS
5. CHANNEL WIDTH IS 75 FEET FROM STATION 0+00 TO STATION 181+35 (BEGINNING OF TURNING BASIN). TURNING BASIN WIDTH VARIES FROM 75 TO 725 FEET
6. DEPTHS ARE GIVEN RELATIVE TO MEAN LOW WATER (MLW)
7. MLW IS 1.2 FEET BELOW MEAN SEA LEVEL (MSL) 1929)
8. MEAN HIGH WATER ELEVATION IS 2.65 FEET ABOVE MLW

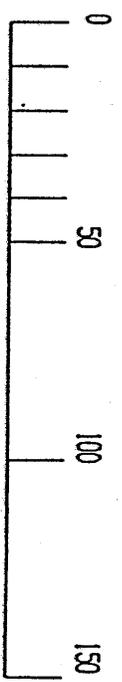
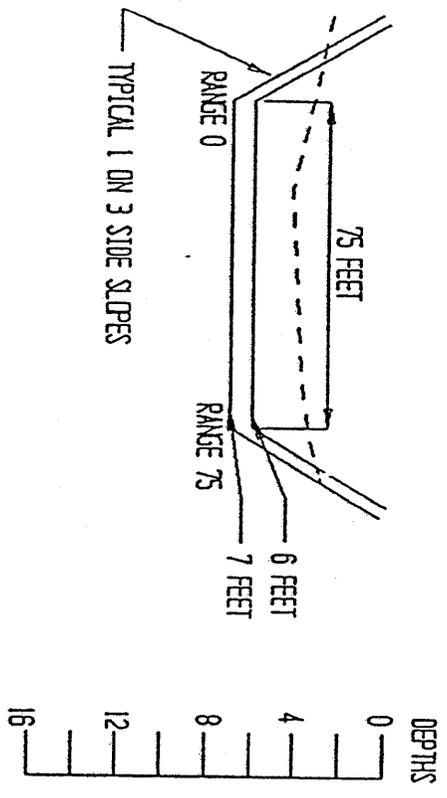
U.S. ARMY CORPS OF ENGINEERS
JACKSONVILLE DISTRICT

HORSESHOE COVE, FLORIDA

JUNE 1993

WDC SHEET 3

TYPICAL DREDGING SECTION (CROSS SECTION B-B, STATION 170+00)

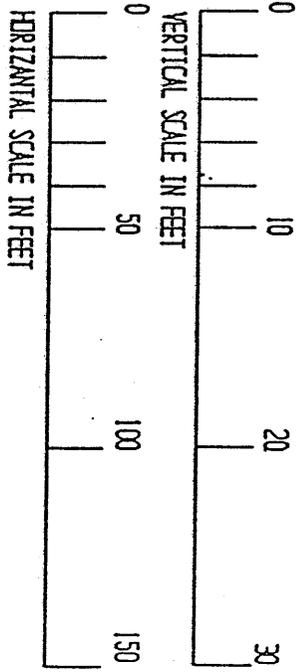
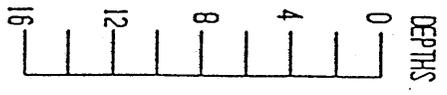
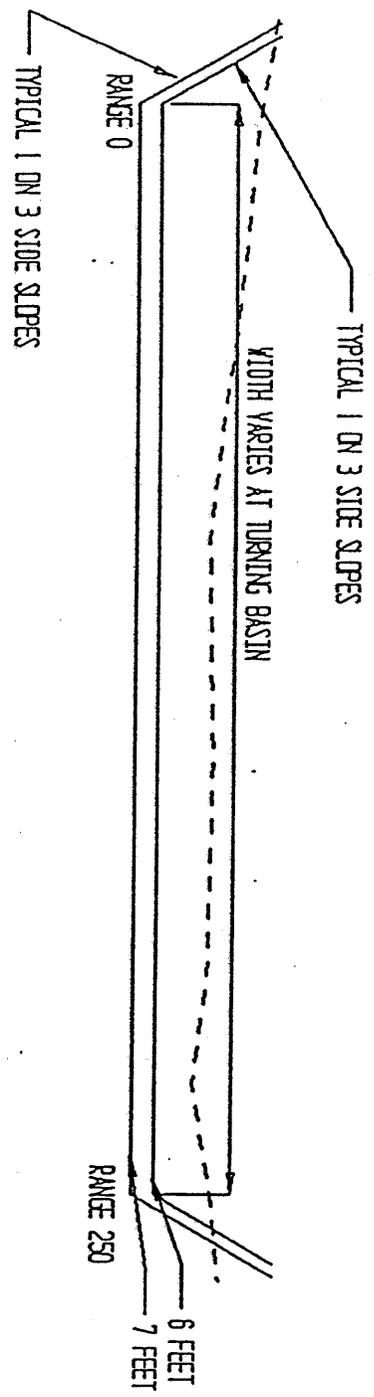


NOTES:

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2. DASHED LINE INDICATES EXISTING BOTTOM
3. PROJECT DEPTH IS 6 FEET THROUGHOUT PROJECT INCLUDING TURNING BASIN
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6. DEPTHS ARE GIVEN RELATIVE TO MEAN LOW WATER (MLW)
7. MLW IS 1.2 FEET BELOW MEAN SEA LEVEL (MSL) (NSVD 1929)
8. MEAN HIGH WATER ELEVATION IS 2.65 FEET ABOVE MLW

U.S. ARMY CORPS OF ENGINEERS	
JACKSONVILLE DISTRICT	
HORSESHIDE COVE, FLORIDA	
JUNE 1993	WQC SHEET 4

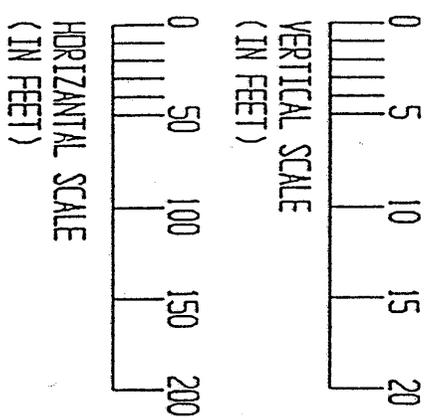
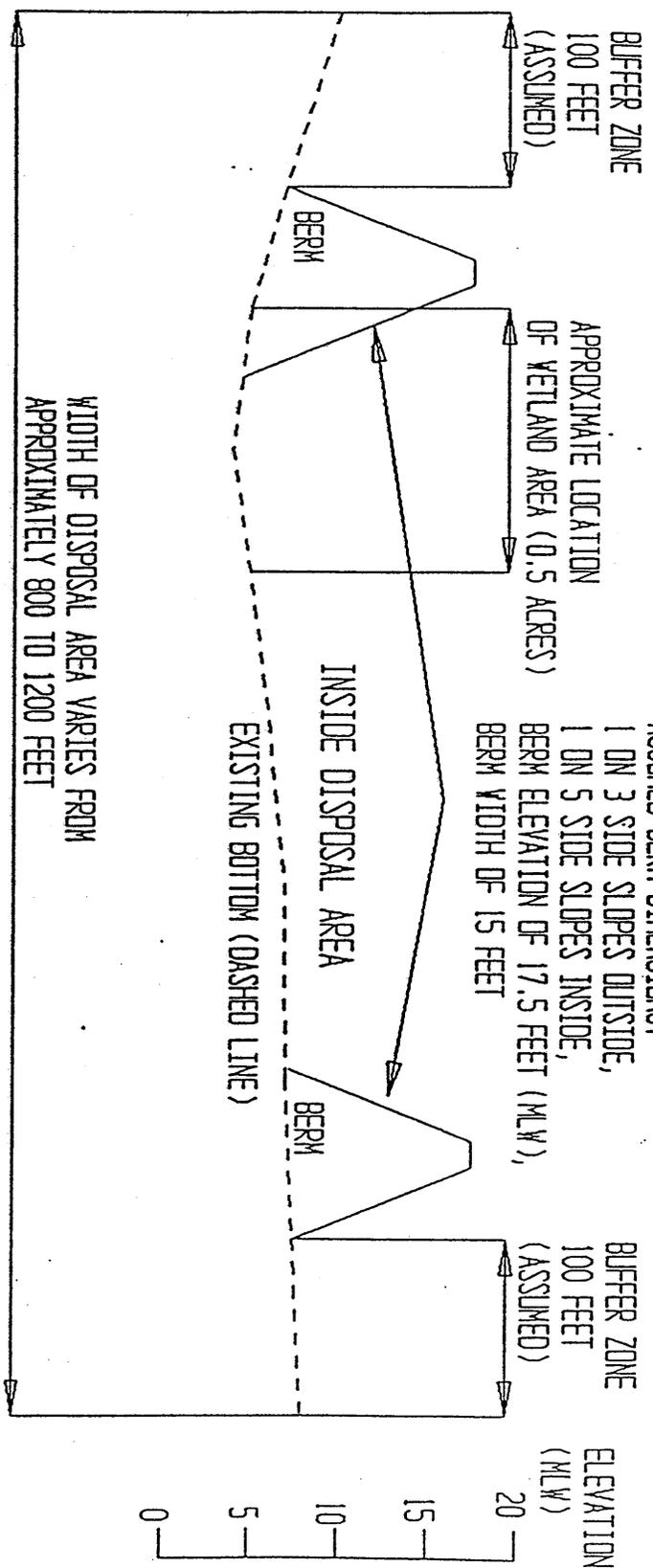
TYPICAL DREDGING SECTION (CROSS SECTION C-C, TURNING BASIN, STATION 187+00)



- NOTES:
1. CROSS SECTIONAL DRAWINGS WERE DEVELOPED FROM A 1987 SURVEY
 2. DASHED LINE INDICATES EXISTING BOTTOM
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 7. MLW IS 1.2 FEET BELOW MEAN SEA LEVEL (NGVD 1929)
 8. MEAN HIGH WATER ELEVATION IS 2.65 FEET ABOVE MLW

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HORSESHOE COVE, FLORIDA	
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TYPICAL CROSS SECTION OF DISPOSAL AREA (CROSS SECTION D-D)



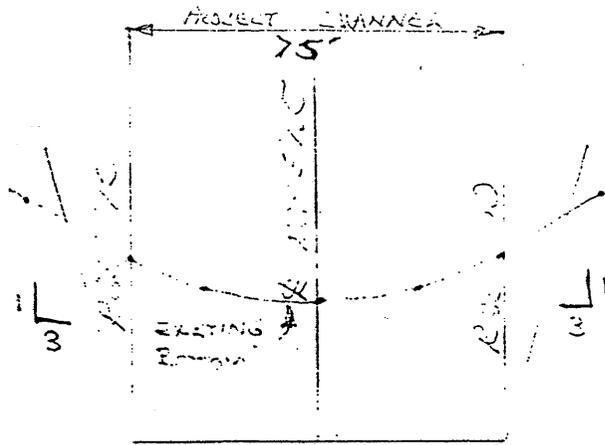
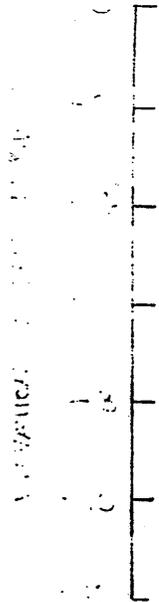
- NOTES:
1. DRAWING IS TO SCALE
 2. DRAWING OBTAINED FROM SITE INVESTIGATION, HORSESHOE BEACH QUADRANGLE MAP (1954), AND DIXIE COUNTY AERIAL PHOTOGRAPHS
 3. ELEVATIONS BASED ON MEAN LOW WATER (MLW) AND ASSUMED FROM QUADRANGLE MAP
 4. MLW IS 1.2 FEET BELOW MEAN SEA LEVEL (NGVD 1929)

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JACKSONVILLE, FLORIDA 32232-0019

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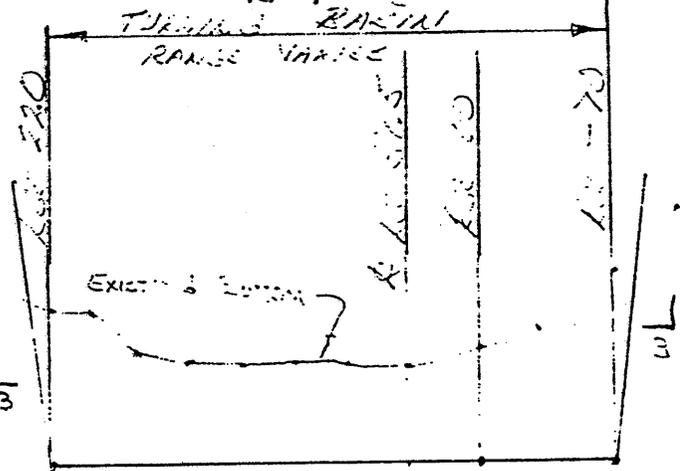
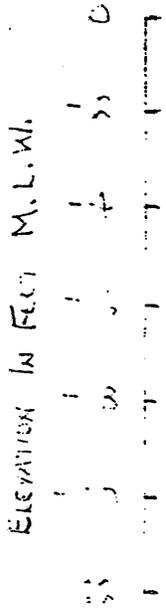
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6'-FOOT PROJECT DEPTH

TYPICAL DREDGING SECTION STA. 175+00 E. C.

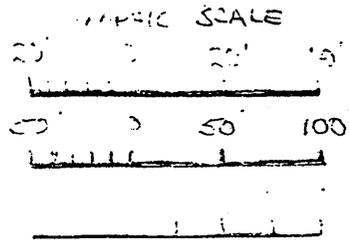
SCALE HORIZ: 1" = 20'
VERT: 1" = 10'



6'-FOOT PROJECT DEPTH

TYPICAL DREDGING SECTION STA. 186+36 T. P.

SCALE HORIZ: 1" = 20'
VERT: 1" = 10'



HORSESHOE COVE, FLORIDA
6-FOOT PROJECT
MAINTENANCE DREDGING
DREDGING AREA SECTION
JACKSONVILLE DISTRICT

CORPS OF ENGINEERS