

APPENDIX A

SECTION 404 (b)(1) EVALUATION REPORT

CONSTRUCTION OF THE MOBILE HARBOR TURNING BASIN
MOBILE HARBOR FEDERAL NAVIGATION PROJECT
MOBILE COUNTY, ALABAMA**I. DESCRIPTION OF THE AUTHORIZED FEDERAL PROJECT**

Mobile Harbor, Alabama, is located in the southwestern part of the state, at the junction of the Mobile River with the head of Mobile Bay (Figure 1). The port is about 28 nautical miles north of the Bay entrance from the Gulf of Mexico and 170 nautical miles east of New Orleans, Louisiana. The navigation channel dredging in Mobile Bay and Mobile River began in 1826 with enactment of the River and Harbor Act of 1826. Over subsequent years, the federal project at Mobile River and Mobile Bay was expanded to include adjoining channels within the bay. Section 104 of the River and Harbor Act of 1954 (House Document 74, 83rd Congress, First Session, as amended, and previous acts) authorized a 40-foot channel. Improvements to the existing Federal project were authorized in Water Resources Development Act of 1986 (PL 99 – 662, Ninety-ninth Congress, Second Session), which was approved 17 November 1986, and amended by Section 302 of the Water Resources Development Act of 1996.

The authorized project dimensions as illustrated in Figure 1 are: a) 57 by 700 feet for a distance of 7.4 miles across the bar; b) 55 by 550 feet for a distance of 27.0 miles in the bay; c) 55 by 650 feet for a distance of 4.2 miles in the bay; and, d) provision of a 55-foot deep anchorage and turning basin in the vicinity of Little Sand Island. The current dimensions of the existing navigation channel are: 47 feet deep by 600 feet wide across Mobile Bar and 45 feet deep by 400 feet wide in the bay (Figure 1). The 45-foot channel serves McDuffie Terminals located at the mouth of the river. The river channel, as illustrated in Figure 2, then becomes 40 foot deep and proceeds north to the Cochrane/Africatown Bridge passing over the Bankhead and Wallace tunnels. The Mobile River, on which the Alabama State Docks facilities are located, is formed some 45 miles north of the city with the joining of the Alabama and Black Warrior/Tombigbee Rivers. The Mobile River also serves as the gateway to international commerce for the Tennessee/Tombigbee Waterway. In the southern edge of Mobile Bay, access is gained to the Gulf Intercoastal Waterway which stretches from St. Marks, Florida, to Brownsville, Texas.

a. Location. The project is location is within the upper portion of the Mobile Harbor Federal Navigation project as illustrated in Figure 2.

b. General Description of the Proposed Action. The proposed action will excavate approximately 3 million cubic yards (cy) of sediment to construct the authorized turning basin in the Mobile River located between Pinto Island to the north and Little Sand Island to the south. The eastern limit of the turning basin would be approximately 1,350 feet

from the centerline of the existing ship channel. The depth of the turning basin would be to elevation -45.0 feet mean lower low water (MLLW) with 4 feet of advance maintenance and an additional 2 feet for allowable overdepth to account for imprecision of the dredge capability for a total depth elevation of -51.0 feet (MLLW). Side slopes at all locations would be approximately 1 vertical to 4 horizontal. The excavation will be performed using either or combination of a hydraulic pipeline dredge, bucket dredge, or hopper dredge. The location and configuration of the proposed turning basin in the Mobile River is illustrated in Figure 3. The dredged material will be disposed of entirely in approved and preexisting disposal areas provided by the ASPA.

The disposal sites used to accept the dredged material removed during construction of the turning basin will occur at three previously authorized disposal areas. Approximately 1.2 million cy of sandy material will be placed at Garrows Bend on land to be reclaimed associated with the Choctaw Point Terminal Project. The site will involve the construction of approximately 5,100 feet of dike with a finished elevation of approximately 14 ft NGVD. Impacts connected with the use of this site were addressed in the Final Environmental Impact Statement for the Choctaw Point Terminal Project, Mobile, Alabama, 2004. A permit was issued (AL-01-04269-L) for the construction of the proposed facilities in March 2005. The approximate location of the Garrows Bend disposal area is illustrated on the project map in Figure 2. A plan view of the disposal area as well as sections for the containment dikes are shown in Figures 4 and 5, respectively.

The remaining materials will be disposed in either or both the Sand Island Beneficial Use Area (SIBUA) (Figure 6) and Gaillard Island disposal site (Figure 7). Sediment consisting of predominantly sand will be placed in the SIBUA site for support and preservation of the Sand Island Lighthouse. Every attempt will be made to place approximately 500 thousand cy of material in this area. Materials containing higher fractions of fine grained materials will be placed at the Gaillard Island Site.

c. Authority and Purpose. The Mobile Harbor Turning Basin was authorized as a portion of the Mobile Harbor Project in the Supplemental Appropriations Act of 1985 (PL 99-88), which was approved on 15 August 1985. The project was also authorized in the Water Resources Development Act of 1986 (PL 99-662), which was approved on 17 November 1986, and provides for development to deepen and widen the channel over the bar to 57 feet by 700 feet for 7.4 miles; deepen and widen the bay channel to 55 feet by 550 feet for 27 miles; deepen and widen an additional 3.6 miles of bay channel to 55 feet by 650 feet; and provide a 55-foot deep anchorage area and turning basin in the vicinity of Little Sand Island.

The principal navigation problem is the lack of a safe and efficient turning area for vessels calling at McDuffie Terminal, as well as the planned Choctaw Point Terminal. The current federal navigation project in the vicinity of McDuffie Terminals and Choctaw Point terminal does not include an authorized turning area. Consequently, vessels calling at McDuffie terminals opt to turn off their berth and utilize the channel and authorized turning basin location in the vicinity of Little Sand Island, rather than travel the additional distance for the turning maneuver in the Cochrane Turning Basin. Vessels turning off their berth are constrained to performing the maneuver by adjusting

their forward draft and ballast to 15 feet or less in order to turn adjacent to McDuffie Terminals, given the risk of grounding outside the channel limits. Once the turned vessels are pierside, reballasting requires an additional 2 to 6 hours in order to commence loading. The additional 2 to 6 hours for reballasting is costly and inefficient. Reballasting costs could be eliminated if vessels were able to proceed into the harbor in-ballast and stable to use the Mobile Turning Basin. Furthermore, use of the channel for the turning maneuver blocks traffic moving north or south of McDuffie Terminals, resulting in costly delays. The existing channel width limits vessel maneuverability and also restricts many vessels to one-way traffic. Widening the channel adjacent McDuffie Island for a distance of approximately 0.8 miles to its fully authorized width and constructing the authorized turning basin in the location adjacent Little Sand Island through a “General Reevaluation Report” has been proposed to alleviate harbor delays and improve safety conditions.

d. General Description of the Dredged or Fill Material. The material to be placed in the existing disposal areas site will be new dredged material from the proposed Mobile Harbor Turning Basin. A geotechnical investigation was conducted to determine the physical characteristics of the material contained in the proposed project area. A summary of the findings are discussed below. The sediment proposed for excavation was also sampled and tested for possible contaminants. A summary of this investigation is also summarized below.

(1) Geotechnical Investigation. The findings of the geotechnical investigations indicate that sediments underlying the proposed Mobile Harbor Turning Basin are generally comprised of fine dark-brown, gray and tan silty sands and clay/silt composites from the marine bottom to approximately elevation -40 MLLW. Within this general profile, however, some plastic clays and silts do exist. This is particularly true where the existing ship channel will be widened 100-ft as an approach to the main basin. Below elevation of -40 MLLW to the proposed maximum dredging elevation of -51 MLLW, are quantities of poorly graded sands having 4 to 5% fines and some silty sands with more than 12% fines.

(2) Sediment Contaminant Analyses. It was assumed for chemical testing of the sediments that upper 10 feet of the area would present the sediments deposited within the last 100 years or more. The preliminary findings of the sediment chemical analyses indicate that within the upper 10-foot layer, a few metals (arsenic, copper, mercury, and nickel) and pesticides were present at detectable levels but did not exceed critical thresholds. This section will be updated to reflect the finalized chemical analysis report when made available.

e. General Description of the Discharge Sites.

(1) Location Map. Maps illustrating the location of the existing disposal areas are presented in Figures 2, 4, 6, and 7.

(2) Type of Habitat. The Garrows Bend and Gaillard Island disposal areas are existing upland and confined disposal areas that are approved to accept materials that

contain sand and fine-grained sediments. The SIBUA is part of the ebb tidal shoal associated with the mouth of Mobile Bay. This sediment is characterized as predominantly fine to medium quartz sand. This zone is a very dynamic environment that changes drastically as a function of currents and wave conditions. The direction of the littoral transport in this location is from east to west. Due to the dynamic nature of this environment, the benthic community generally consists of opportunistic invertebrates. The constantly shifting sediments do not allow aquatic vegetation to become rooted or attached to the unconsolidated sandy substrate.

(4) **Timing and Duration of Discharge.** The construction of the Mobile Harbor Turning Basin is anticipated to occur sometime in FY08.

f. Disposal Method. Placement of materials in the Garrows Bend and Gaillard Island sites will be accomplished by hydraulic pipeline. Sediment placed in the SIBUA will likely be accomplished using a hopper dredge or scowl. It is expected that some support equipment such as bull dozers, marsh buggies, etc. may be necessary to redistribute the sediment within the Garrows Bend and Gaillard Island sites.

II. FACTUAL DETERMINATIONS.

a. Physical Substrate Determinations.

(1) Substrate elevation and slope. The substrate placed in Garrows Bend and Gaillard Island will be confined with the disposal areas. The intent of the SIBUA is to keep sandy materials in the littoral system. The materials placed will be redistributed by local currents and waves to a more natural configuration consistent with the ebb tidal shoal.

(2) Sediment type. Approximately 1.2 million cy of sandy material will be placed at Garrows Bend. Materials disposed the SIBUA will consist of predominantly sand for support and preservation of the Sand Island Lighthouse. Materials containing higher fractions of fine grained materials will be placed at the Gaillard Island Site.

(3) Dredged/fill material movement. The dredged material placed in the Garrows Bend and Gaillard Island sites will be confined. The intent of the SIBUA is to keep sandy materials in the littoral system. The materials placed will be redistributed by local currents and waves to a more natural configuration consistent with the ebb tidal shoal.

(4) Physical effects on benthos. Within the SIBUA some benthic organisms would be destroyed by the proposed action; however, due to the constant movement of material by currents, benthic organism diversity and abundance would appear to be low. Research conducted by the U.S. Army Corps of Engineers, Waterways Experiment Station under the Dredged Material Research Program (DMRP) suggests that the benthic community is adapted to a wide range of naturally occurring environmental changes and that no significant or long-term changes in community structure or function are expected.

(5) Other effects. No other significant effects due to movement of the physical substrate are noted.

(6) Actions taken to minimize impacts. No actions, which would further reduce impacts due to the placement of the dredged material are deemed necessary.

b. Water Circulation/Fluctuation, and Salinity Determination.

(1) Water

(a) Salinity. No effects.

(b) Water chemistry. No effects.

(c) Clarity. Water clarity may locally be decreased slightly during the proposed placement of dredged material, but this would not be significant.

(d) Color. No effects.

(e) Odor. No effects.

(f) Taste. No effects.

(g) Dissolved gases. No effects.

(h) Nutrients. No effects.

(i) Eutrophication. No effects.

(2) Current Patterns and Circulation

(a) Current patterns and flow. Changes in water circulation and flow due to placement of sand in the SIBUA are not expected to occur. Natural currents and flow will occur during tidal, wave, and storm activities.

(b) Velocity. No effects.

(c) Stratification. No effects.

(d) Hydrologic effects. No effects.

(3) Normal Water Level Fluctuations. No effects.

(4) Salinity Gradients. No effects.

(5) Actions That Will Be Taken To Minimize Impacts. No other actions that would minimize impacts on water circulation/fluctuation and salinity are deemed

necessary.

c. Suspended Particulate/Turbidity Determinations.

(1) Expected changes in suspended particulate and turbidity levels in the vicinity of the disposal site. Suspended particulate and turbidity levels are expected to undergo minor increases during dredging and placement activities, however, suspended sediment of this type will quickly fall out of the water column and return to normal conditions. No significant effects would occur as a result of these increases.

(2) Effects on the chemical and physical properties of the water column.

(a) Light penetration. Increased turbidity levels in the project area as a result of the placement of dredged material would reduce the penetration of light into the water column only slightly and would be a minor short-term impact.

(b) Dissolved oxygen. No effects.

(c) Toxic metals and organics. No effects.

(d) Pathogens. No effects.

(e) Esthetics. The placement of dredged material would likely decrease the esthetic qualities of the project area for a short period of time during and shortly after placement. The disposal areas equilibrate and rapidly return to normal upon exposure to the wave climate.

(f) Others as appropriate. None appropriate.

(3) Effects on biota.

(a) Primary production, photosynthesis. No significant effects.

(b) Suspension/filter feeders. Some local minor increases in suspended particulates may be encountered during the proposed action, but these increases would not cause significant impacts to these organisms unless they are directly covered with sand. If directly covered with dredged material, it is expected that some organisms will be destroyed. Rapid recruitment of these organisms will promote a rapid recovery to normal populations. Overall, the impact to these organisms is expected to be minor and insignificant.

(c) Sight feeders. Sight feeders would avoid impacted areas and return when conditions are more suitable, however, it is difficult to relate the presence or absence of sight feeders in an area to the placement of dredged material. Sight feeders, particularly fishes, may vary in abundance as a result of temperature changes, salinity changes, seasonal changes, dissolved oxygen level changes, as well as other variables.

No significant impacts are expected to occur on sight feeders.

(4) Actions taken to minimize impacts. No further actions are deemed appropriate.

d. Contaminant Determination. No significant effects. The preliminary findings of the sediment chemical analyses indicate that within the upper 10-foot layer, a few metals (arsenic, copper, mercury, and nickel) and pesticides were present at detectable levels but did not exceed critical thresholds. This section will be updated to reflect the finalized chemical analysis report when made available.

e. Aquatic Ecosystem and Organism Determinations.

(1) Effects on plankton. No effects.

(2) Effects on benthos. Benthic organisms would be destroyed by the deposition of dredged material below the waterline in the SIBUA placement area, but no significant effects are expected on the benthic community as a result of the proposed action.

(3) Effects on nekton. No effects.

(4) Effects on aquatic food web. No effects.

(5) Effects on special aquatic sites.

(a) Sanctuaries and refuges. Not applicable

(b) Wetlands. Not applicable

(c) Mud flats. Not applicable.

(d) Vegetated shallows. Not applicable'

(e) Coral reefs. Not applicable.

(f) Riffle and pool complexes. Not applicable.

(6) Threatened and endangered species. In accordance with the Threatened and Endangered Species Act, coordination of listed species for this area was conducted in 1985 in the EIS for Mobile Harbor, Alabama Channel Improvement. Further coordination was also conducted for the adjacent area associated with the Choctaw Point Terminal Project, Mobile, Alabama in a 2004 EIS and considered to be the same environmental conditions. Based on these findings the construction of the turning basin will have no effect to any Federal listed threatened or endangered species. Aquatic species such as the Florida manatee, Gulf sturgeon, and sea turtles would not normally use the project area and would not likely exhibit incidental use of the area during project

implementation. Because the area is not a major provider of life history requirements for these species, it has been determined that there will be no effect to these species as a result of the proposed action.

(7) Other wildlife. No significant effects.

(8) Actions to minimize impacts. No other actions to minimize impacts on the aquatic ecosystem are deemed appropriate.

f. Proposed Disposal Site Determination.

(1) Mixing zone determinations. The Alabama Department of Environmental Management (ADEM) delineates mixing zones on a case-by-case basis. Any requirements placed on the project would be followed to the maximum extent practicable.

(2) Determination of compliance with applicable water quality standards. Preliminary findings show that action would be in compliance to the maximum extent practicable, with all applicable water quality standards.

(3) Potential effects on human use characteristics.

(a) Municipal and private water supply. No effects.

(b) Recreational and commercial fisheries. No effects.

(c) Water-related recreation. No effects.

(d) Esthetics. No effects.

(e) Parks, national and historic monuments, national seashores, wilderness areas, research sites, and similar preserves. Not applicable.

g. Determination of Cumulative Effects on the Aquatic Ecosystem. No significant cumulative effects on the aquatic ecosystem would occur as a result of the proposed action.

h. Determination of Secondary Effects on the Aquatic Ecosystem. No significant effects.

III. FINDING OF COMPLIANCE.

a. Adaptation of Section 404(b)(1) Guidelines. No significant adaptations to the guidelines were made relative to this evaluation.

b. Alternatives.

(1) The only other disposal alternative considered included placement in the ODMDS. This option was not further considered.

c. Compliance with State Water quality Standards. A Clean Water Act (CWA), Section 401 Water Quality Certification is required for the proposed action. The certification from ADEM has been requested.

d. Compliance with Applicable Toxic Effluent Standard or Prohibition Under Section 307 of the Clean water Act. The action is consistent with the Alabama Coastal Program to the maximum extent practicable. Recertification of the existing project and addition of the new disposal area is being requested from the State of Alabama.

e. Compliance with Endangered Species Act. The proposed activity is not expected to harm Federally-protected species. No critical habitats of any Federally-protected species exist within the project area. Regarding potential impacts to Federally-protected species, the appropriate Federal agencies have been contacted. Sufficient safeguards exist to protect Federally-protected species which may enter into the project area.

f. Compliance with Specific Protection Measures for Marine Sanctuaries Designated by the Marine Protection, Research, and Sanctuaries Act. The proposed activity would not result in any significant adverse effects on human health or welfare, including municipal or private water supplies, recreation and commercial fishing, plankton, fish, shellfish, and wildlife. The life stages of aquatic life and other wildlife would not be adversely affected. Significant adverse effects on aquatic ecosystem diversity, productivity and stability, and recreational, esthetic, and economic values would not occur. No wetlands would be impacted by the proposed action.

g. Evaluation of Extent of Degradation of the Waters of the United States. The proposed fill plan is specified as complying with the requirements of these guidelines.

h. Appropriate and Practicable Steps Taken to Minimize Potential Adverse Impacts of the Discharge on the Aquatic Ecosystem. The proposed fill plan is specified as complying with the requirements of these guidelines.

i. On the Basis of the Guidelines, the proposed Disposal Site for the Discharge of Dredged Material. Specified as complying with the requirements of these guidelines.

DATE: _____

Peter F. Taylor, Jr.
Colonel, Corps of Engineers
District Engineer

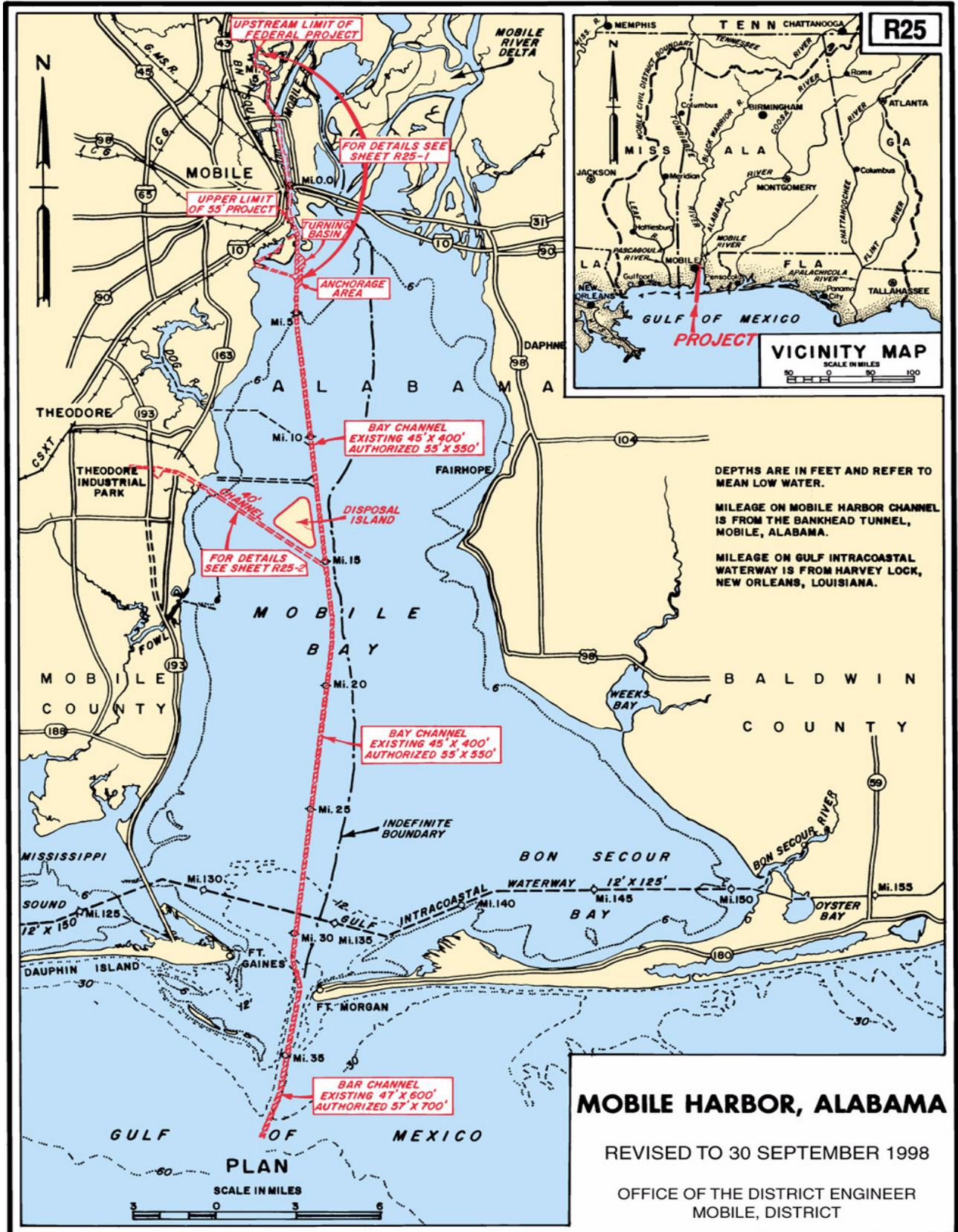


Figure 1. Overall project map illustrating general location and project dimensions.

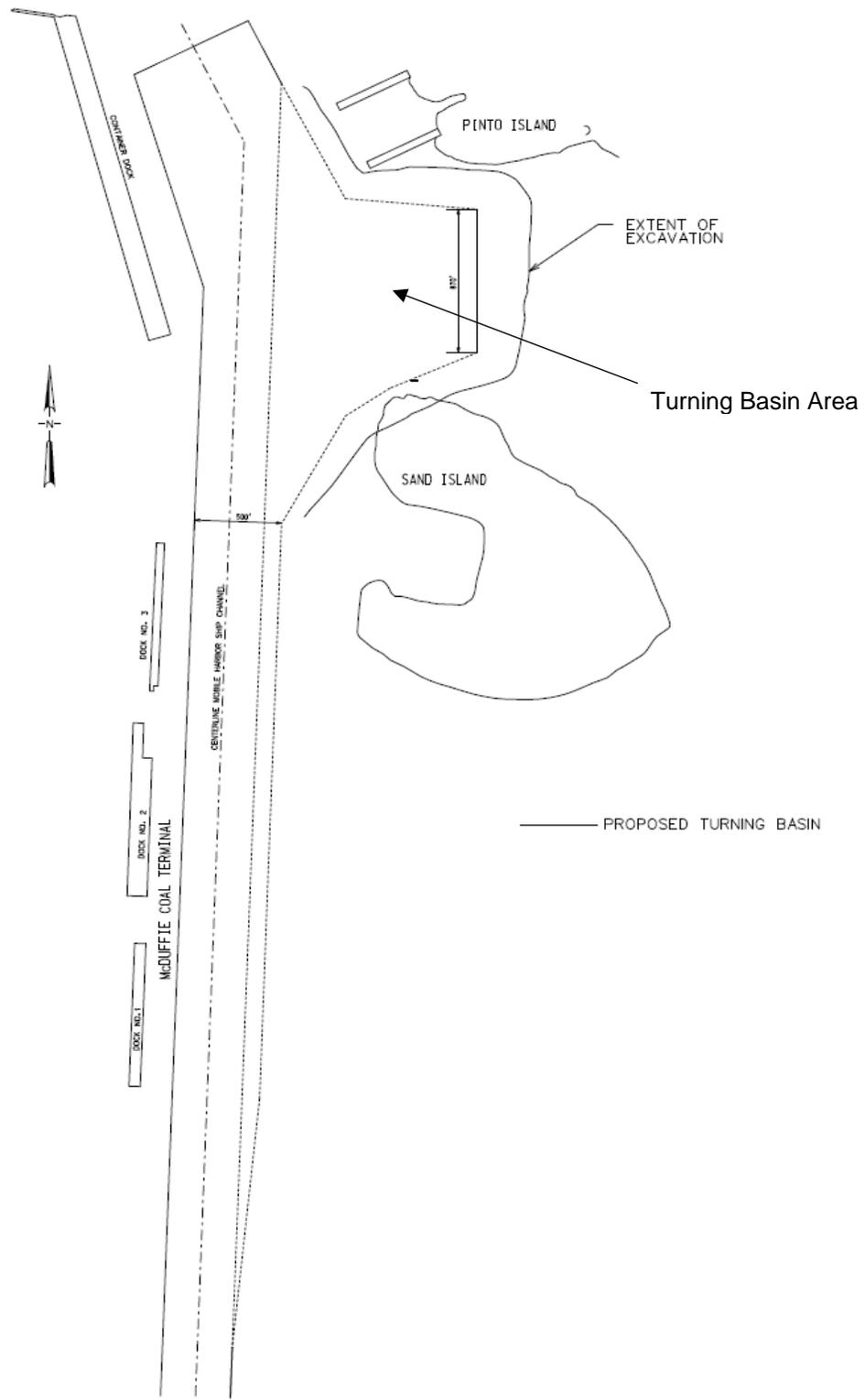


Figure 3. Location and configuration of the proposed turning basin

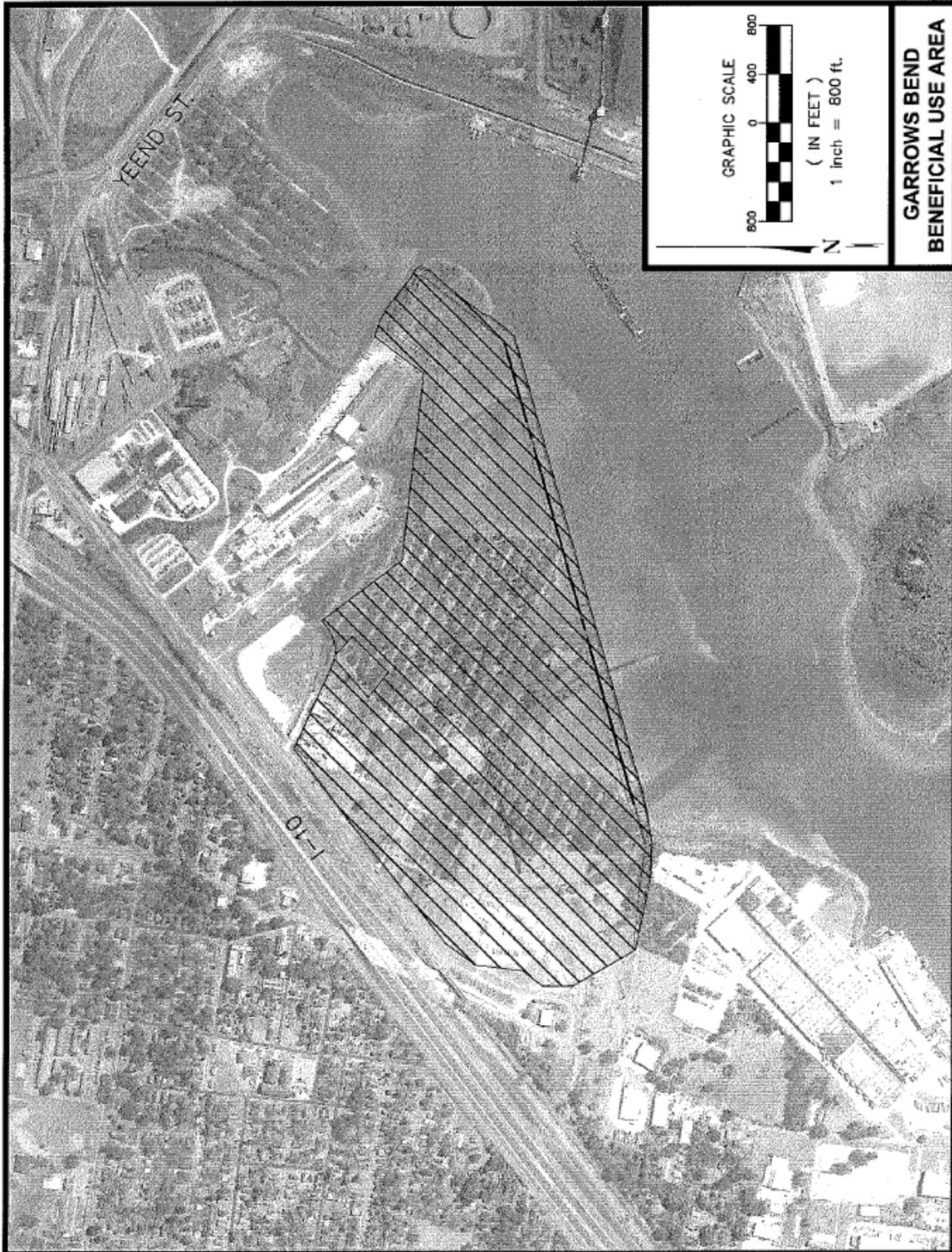


Figure 4. Garrows Bend Disposal area

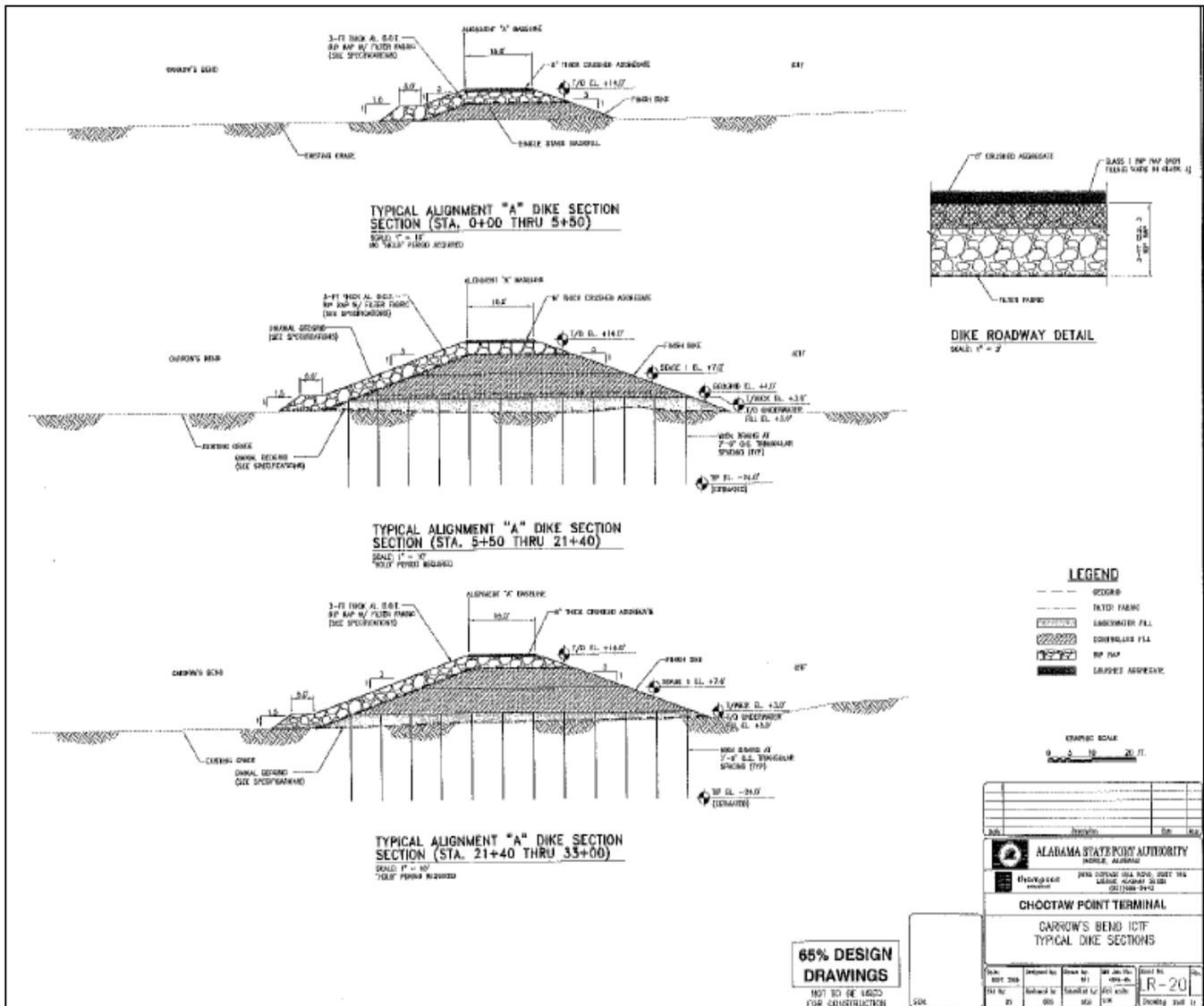


Figure 5. Cross sections of dikes to be constructed at the Garrows Bend Disposal area

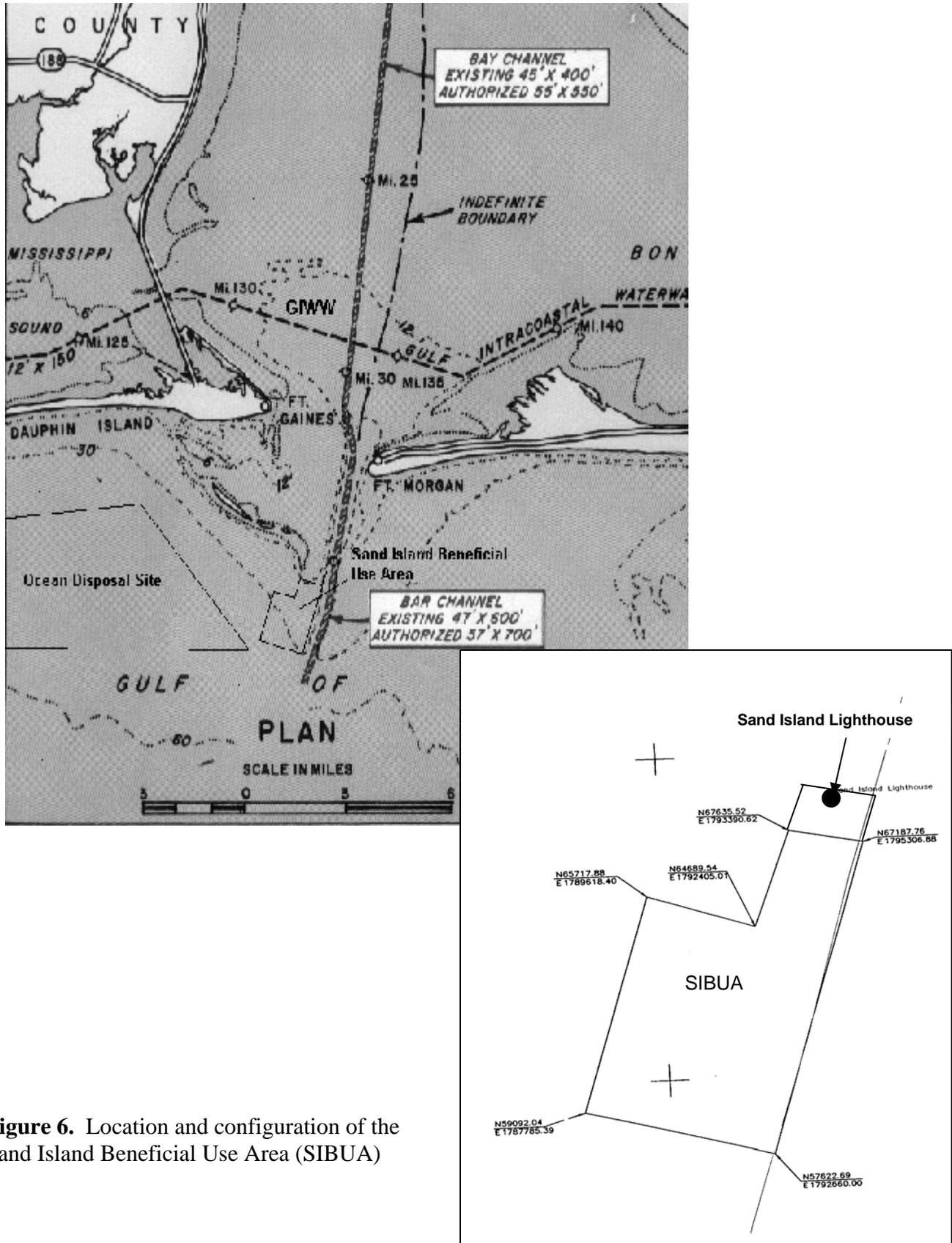


Figure 6. Location and configuration of the Sand Island Beneficial Use Area (SIBUA)

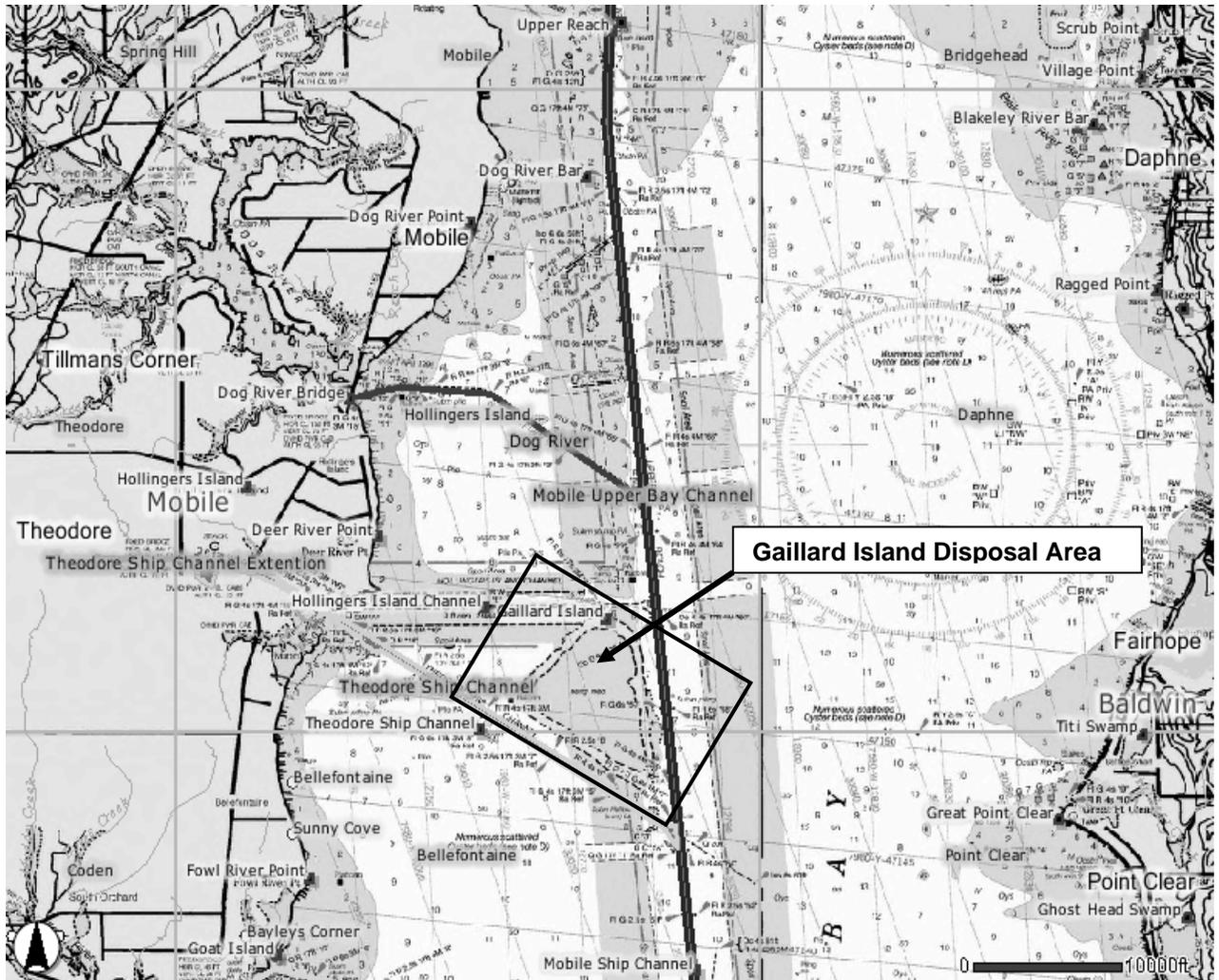


Figure 5. Location of the Gaillard Island disposal area