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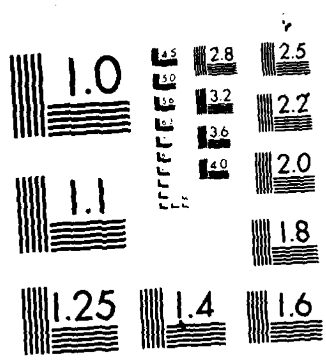

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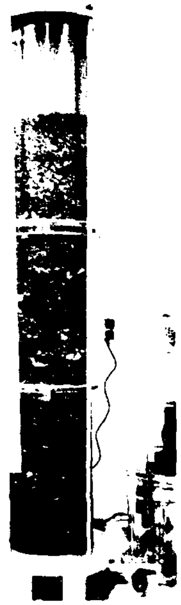

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MISCELLANEOUS PAPER GL-86-26

VERIFICATION OF DESIGN AND CONSTRUCTION TECHNIQUES FOR GAILLARD ISLAND DREDGED MATERIAL DISPOSAL AREA, MOBILE, ALABAMA

by

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Geotechnical Laboratory

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US ARMY ENGINEER WATERWAYS EXPERIMENT STATION

August 1986
Final Report

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Mobile, Alabama 36628

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A 1,700-acre, triangular-shaped dredged material island was constructed by both barge haul and hydraulic placement of the dredged material excavated from the Theodore Ship channel. Approximately 6 miles of perimeter dikes were constructed on very soft bay bottom soils at the northwest junction of the Mobile and Theodore ship channels. The dike area exposed above mean low water (mlw) was approximately 320 acres. In addition, an area exposed of about 350 acres inside the containment area was exposed at mlw. The new work dredging consisted of the removal of about 33.5 million cu yd of material. The material dredged was either hydraulically pumped or barged to the disposal area for use in constructing the dikes.

The project consisted of dredging a deep draft ship channel about 5.2 miles long, 400 ft wide, and 40 ft deep linking the Mobile Ship Channel with the Middle Fork Deer River shoreline at Theodore, Alabama. An inland ship channel about 1.9 miles long, 300 ft wide,

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and 40 ft deep was also dredged to join a 42-acre ship turning basin with a 6,500-ft-long barge channel. About 95 percent of the material dredged from the bay cut and about 52 percent of the material from the land cut was clay that readily formed clay balls. The remaining channel material was primarily sand with small amounts of shell and gravel.

The perimeter dike was constructed from an average elevation of about -9 ft mlw to about el +7 ft mlw at the crest. The width of the dike varied from 1,200 to 1,600 ft at the base. At el 0 ft mlw the dike width was from 300 to 600 ft. The average crest width of the dike was about 20 ft.

Creation of the disposal site required the construction of approximately 31,000 lin ft of dike over some extremely soft cohesive soils. The foundation soils were determined to have an undrained shear strength ranging from 50 to 100 psf. A minimum factor of safety of 3.0 was determined from dike stability based on a conventional rotational analysis. Based on conventional consolidation analysis it was estimated that about 9 ft of settlement would occur at the dike centerline. In the 2 years since construction, settlement at the dike centerline has been measured to be almost 1 ft.

The project required a thorough geotechnical investigation and numerous dike stability analyses prior to construction. In addition, specific steps were necessary to protect the environment. Because of the size and complexity of the job, similar projects were visited prior to the start of construction. These sites included the Craney Island disposal area in Norfolk, Virginia, and the Houston Bay Disposal Island in Houston, Texas. The project required 828 days of continuous work to construct the retention dikes.

The dikes were constructed of a sand, silt, clay ball, and shell matrix with slopes that varied from 1V on 32H to 1V on 61H. The dikes were constructed by hydraulically pumping and barge hauling dredged material over distances up to 7 miles. A dust pan dredge was used to dredge the soft clayey bottom material and deposit it within the dike perimeter. Verification of the design and construction techniques were correlated with measured dredged material volumes, material types, consistencies, retention rates, dike subsidence, and predicted consolidation rates.

PREFACE

This report describes the design and construction techniques for the Theodore Ship Channel new work dredging project at Theodore, Alabama.

This project was carried out for the US Army Engineer District, Mobile (MDO), by the US Army Engineer Waterways Experiment Station (WES), Vicksburg, Mississippi, during the period of May 1980 to December 1983.

The research study described in this report was conceived and formulated by Dr. J. Fowler of the Soil Mechanics Division (SMD) of the WES Geotechnical Laboratory (GL) and the late Dr. T. A. Haliburton, Geotechnical Engineering Consultant. In addition, Drs. Fowler and Haliburton performed general supervision and inspection of the research construction.

Specific onsite observation and inspection activities for the construction and research project were conducted by Mr. H. N. Blakeney, Geotechnical Branch Chief, MDO, Mr. J. Tyson, Geotechnical Engineer, Mr. J. Patrick Langan, Chief, MDO, Project Operations Branch, and Mr. P. Warren, Resident Engineer, MDO. Mr. T. Love of Project Development Branch, MDO, was responsible for the contractual details along with providing general guidance and assessment of the work.

This report was written by Dr. Fowler under the general supervision of Mr. G. B. Mitchell, Chief, Engineering Group, SMD, Mr. C. L. McAnear, Chief, SMD, and Dr. W. F. Marcuson III, Chief, GL. Mr. H. N. Blakeney, MDO, and Dr. M. L. Hayden, Assistant Professor, University of South Florida, Tampa, Florida, assisted Dr. Fowler in the final preparation of the report.

District Engineer of the MDO during this period was COL Robert H. Ryan, US Army Corps of Engineers (CE), and COL Patrick H. Kelly, CE. COL Allen F. Grum, USA, was the previous Director of WES. COL Dwayne G. Lee, CE, is the present Commander and Director. Dr. Robert W. Whalin is Technical Director.

CONTENTS

VERIFICATION OF DESIGN AND CONSTRUCTION TECHNIQUES FOR GAILLARD ISLAND DREDGED MATERIAL DISPOSAL AREA MOBILE, ALABAMA

PART 1: INTRODUCTION

Background

1. The Port of Mobile is one of the largest deep water ports in the Nation and is Alabama's only seaport. Mobile was established at this location in 1702 by the French because of Mobile Bay and the interconnecting rivers. Mobile first served as the capital and a supply port for the early French Louisiana Territory and has remained an important meeting point for the shipping lanes of the world. Situated at the mouth of the Mobile River and at the head of Mobile Bay, Mobile Harbor (Figure 1) is connected to a protected waterway that extends south to Florida and Mexico. The harbor is linked to northern shipping centers by interconnecting rivers which include the Tennessee-Tombigbee Waterway System. Mobile serves as a shipping port for cities in Alabama, Mississippi, Georgia, Tennessee, and Kentucky.

2. The Mobile Bay is located in the southwestern part of Alabama on the Gulf of Mexico. Mobile Bay is about 30 miles long from the north to the south and about 8 miles wide at the north end and 20 miles wide at the south end. The Bay encompasses about 400 square miles and is relatively shallow with depths ranging from 8 to 10 ft. Tidal fluctuations in the bay vary from less than 1 ft during tides to 2.5 ft during spring tides. Because of prevailing winds and circulation patterns, tidal fluctuations in the bay are unpredictable.

3. The original Federal project adopted by Congress in 1826 to improve navigation in Mobile Bay has been modified to include a channel 42 ft deep, 600 ft wide and 1.5 miles long over the bar at the mouth of Mobile Bay; a channel 40 ft deep varying in width from 500 to 775 ft and extending 4.5 miles upstream to the Cochran Bridge, and various basins and feeder channels. The total length of the Mobile Ship channel and river channels is about 42 miles.

4. The Theodore Industrial Park (Figure 2) is located about 2.5 miles below the city limits of Mobile on the western shore of Mobile Bay. In 1943 the Federal Government dredged a 32 ft deep channel, 175 ft wide, for a

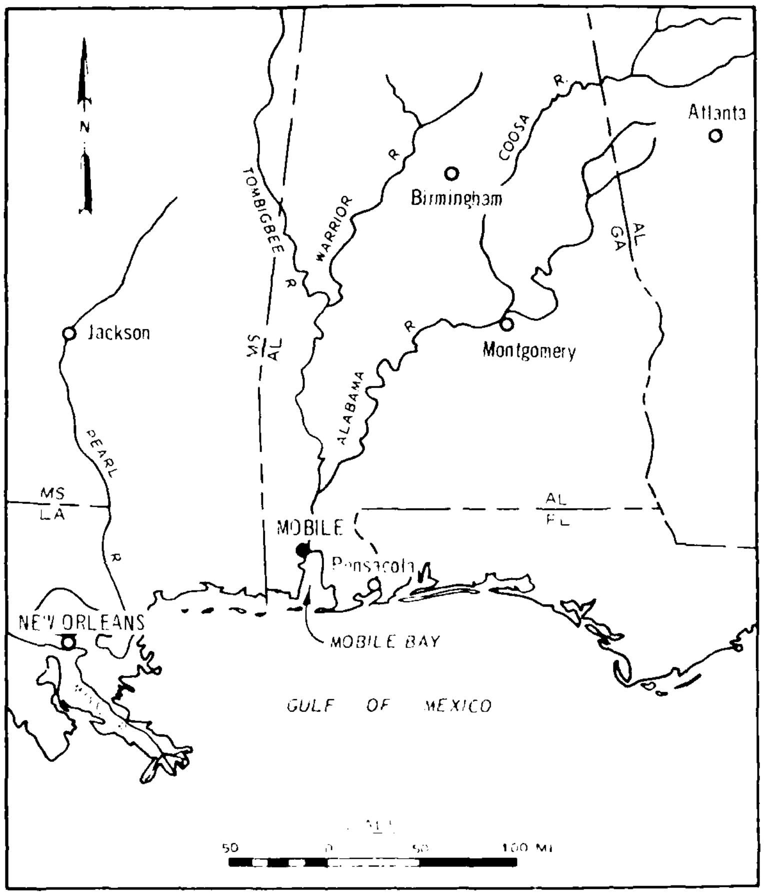

Figure 1. Vicinity map

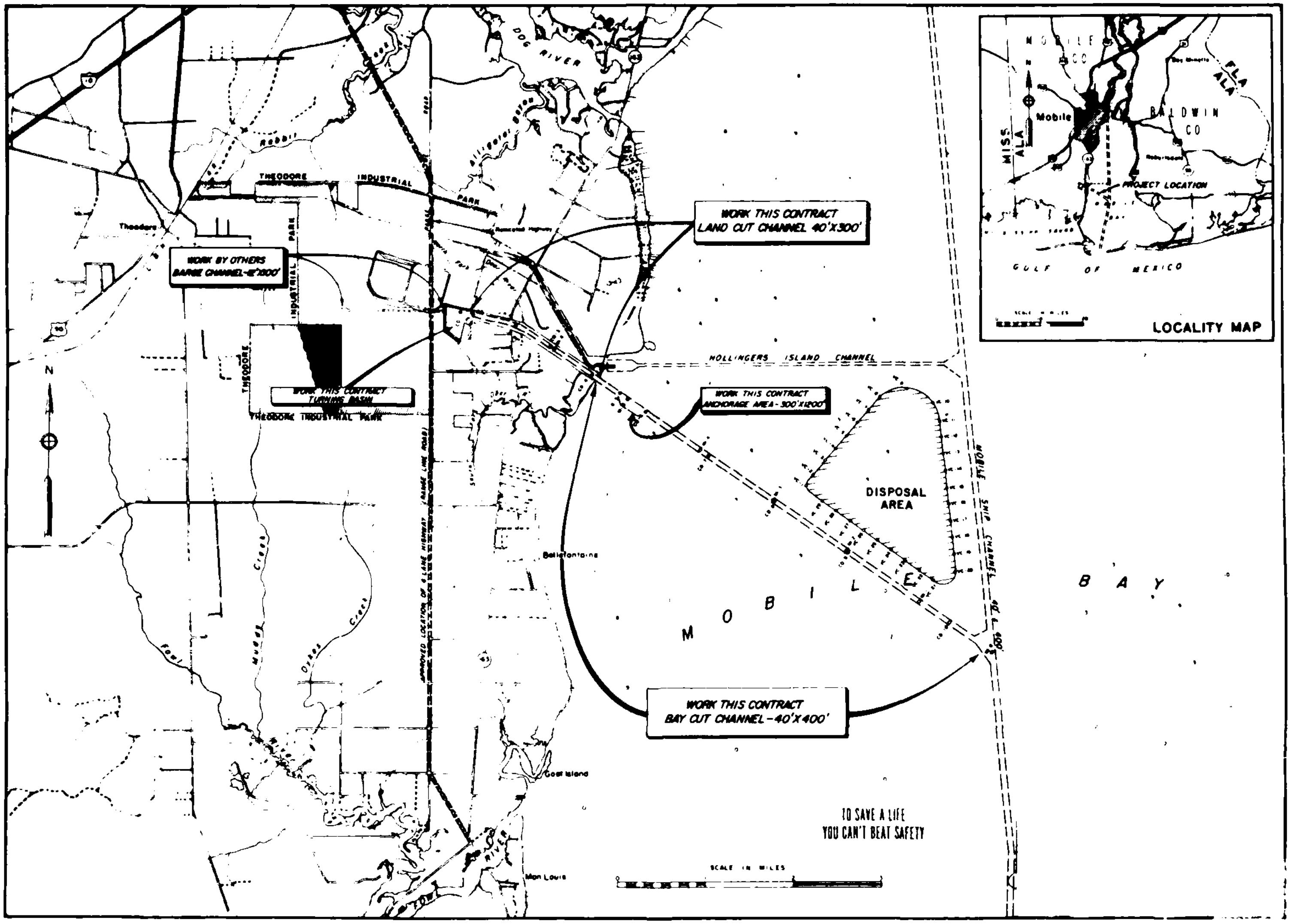

Figure 2. Project location

distance of 4 miles from the Theodore dock facilities (formerly known as the US Army Theodore Ammunition Depot) to the Mobile Bay ship channel, a distance of about 4 miles. During World War II, the Theodore Channel was used to transport munitions and explosives, but since the war commercial carriers have utilized these facilities. The Theodore Channel has been renamed the Hollingers Island Channel and is maintained to a depth of 11 ft by the State of Alabama.

5. The Theodore Industrial Park and Ship Channel was conceived as part of the overall development package along with the Tennessee-Tombigbee Waterway and the Brookley Field Expansion Area. The Mobile Harbor was almost filled and there was little room for industrial expansion (Figures 3 and 4). The concern was that after completion of the Tennessee-Tombigbee Waterway industrial expansion in the Mobile area would be curtailed without the Theodore Industrial Park; therefore, planning for the Theodore Industrial Park began. The Alabama State Docks and the city of Mobile acquired 1800 acres to form the nucleus of the park. The State Docks dredged a 12-ft barge canal up the middle fork of the Deere River (Figure 5). In 1967 the Corps of Engineers, at the request of the State Docks, widened and deepened the barge canal to accommodate deep draft ships.

6. The Theodore Ship Channel and Industrial Park is one of the largest development projects in southern Mobile County, and is expected to have a significant impact on the economy of the area. The project consisted of constructing a deep draft ship channel, 5.2 miles long, 400 ft wide, and 40 ft deep, linking the Mobile Ship Channel with the Middle Fork Deere River shoreline at Theodore, Alabama. An island ship channel about 1.9 miles long, 300 ft wide, and 40 ft deep, was constructed to join a 42-acre deep draft turning basin with a barge canal. The canal channel is about 1.0 mile long, 100 ft wide and 12 ft deep, and extends through most of the Industrial Park. An additional turning basin near the shoreline is planned for a later date. The planned turning basin is expected to provide additional docking and berthing space. As a result of this project a 1700-acre dredged material disposal island, called Gaillard Island, was constructed in Mobile Bay. Based on current projections the disposal area is expected to have a useful disposal life of 50 years.

7. The creation of the Theodore Industrial Park and Ship Channel required the removal of approximately 31 million cubic yards of material. The

Figure 3. Mobile Harbor facilities (looking north from Pinto Island)

Figure 4. Mobile Harbor facilities (looking south from Blakeley Island)

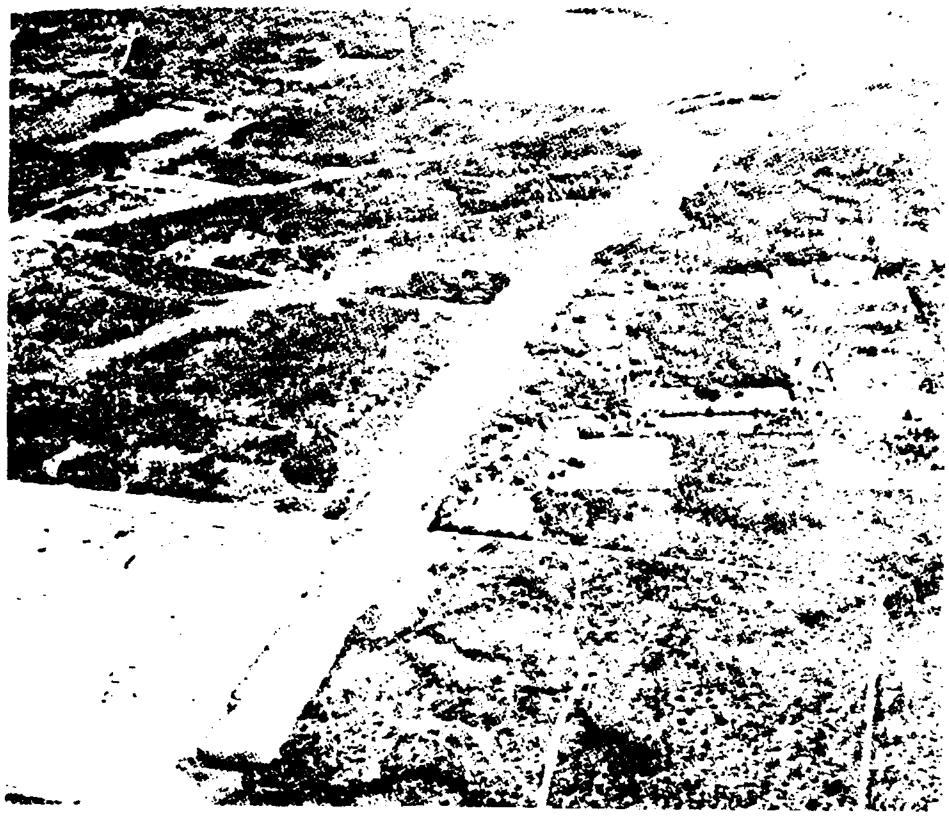

Figure 5. Theodore Barge Canal, looking east

magnitude of the project and the construction of Gaillard Island caused some environmental concern. The concern was primarily whether the construction of the disposal island would adversely affect the bay currents and result in an increase in turbidity of the bay. The US Army Engineer Waterways Experiment Station (WES) Hydraulics Laboratory was requested to conduct a study to investigate various designs for a disposal island and/or clusters of islands. Based upon that detailed study, a single island design was selected which would have a minimal effect on the bay currents. To monitor the environmental impact of construction on the bay, the US Army Engineer District, Mobile, set up biomonitoring stations to measure changes in such things as siltation, salinity, water temperature, dissolved oxygen, and benthic activity.

Purpose

8. The purpose of this report is to describe the earth work design and construction procedures used in the construction of Gaillard Island Dredged Material Disposal Area, Mobile, Alabama.

Scope

9. The scope of the work was to observe the behavior of the dredged materials used to construct the dikes in open water, to correlate the final embankment slopes with different soil properties and classification, to observe retention rates of the various materials used to construct the dikes, and to determine consolidation and displacement of the dike foundation. The performance of various dredging techniques used in the construction of the embankments is evaluated. Embankment stability, slope protection, and observations of the mud flow of fine-grained dredged materials are addressed.

PART II: STATEMENT OF PROBLEM

10. A 1300-acre dredged material containment area (Gaillard Island) was to be constructed in the Mobile Bay near the Mobile District office. This area is about 8 miles south of Mobile, Alabama, and 2 miles east of the western shoreline. The project required the construction of a retaining dike approximately 6 miles long and from 8 to 10 ft in height. The dike was constructed using hydraulically placed new work dredged material. The dredged material consisted of various combinations of sand, clay and clay balls.

11. Foundation soils in Mobile Bay consisted of a wide range of soil types including very soft highly organic clays. The presence of these soft organic clays caused conjecture during the planning and design phase whether the necessary embankments could be constructed. This problem was compounded by the fact that very little information was found in literature to aid in the planning, design and construction of the project.

12. A number of dikes have been constructed by the Corps of Engineers (CE) in the past using hydraulically placed dredged material; however, little information was available for these projects. Most CE designs using hydraulically constructed levees in the past have (1) been overdesigned, (2) failed, and/or (3) resulted in construction delays causing large construction claims. This study was undertaken to answer the following questions concerning hydraulically constructed dikes: (1) the retention rate of different types of dredged materials pumped over varying distances, (2) the dike slopes, both initial and final, that can be constructed with different soil types and consistencies, (3) the magnitude of bottom displacement and consolidation likely to occur with varying dike heights and foundation conditions, and (4) the performance of various dredging equipment and dredged material placement techniques.

13. An effort was made to correlate the material properties of the dredged material (i.e. grain size, plasticity etc.) with shear strength parameters determined by standard penetration and vane shear testing soil strength. It is believed the knowledge gained from this project could help predict the behavior of dredged material and alleviate many of the environmental concerns. A more economical and environmentally accepted dredged material disposal area could result from this study.

PART III: HISTORICAL AND LITERATURE REVIEW

Introduction

14. Few earth dikes have been successfully constructed below water on soft foundation using new work dredged material that consists of approximately 50 percent sand and 50 percent silts and clays. Because of this fact a hydraulic model and environmental impact study was made and evaluated prior to design and construction. There was considerable concern during the planning and design as to whether an embankment could be successfully constructed without large foundation displacements. A large displacement of the foundation could block the Mobile Ship Channel and cause excessive turbidity and mud flows during construction. Several large embankments, such as the Fort Peck Dam in Montana, Franklin Falls Dam in Massachusetts, and Sardis Dam in Mississippi, have been successfully designed and constructed by the Corps of Engineers by using large volumes of fine-grained dredged material.

Craney Island

15. Prior to the design of the Gaillard Island Disposal Area, personnel of the Mobile District visited several Corps of Engineers Districts which had experience in constructing dredged fill embankments on soft foundation soil. One of the sites visited was the Craney Island dredged material disposal area, located at Norfolk, Virginia. This disposal area was constructed in the mid-1950's and is similar to that proposed for Gaillard Island Disposal Area. Craney Island is a 2500-acre disposal area encompassed by a 6-mile perimeter dike. The dike was constructed by depositing select borrow material in water about 10 ft deep. Dike construction was interrupted on several occasions because large mud waves formed during dredged material placement along the dike alignment preventing the spill barge from discharging dredged material in the proper location. A dredge was used to remove these mud waves and allow construction to continue. One of the most difficult tasks during construction was joining the perimeter dikes together near the end of construction. Tidal fluctuations interfered with the final linkage for several days. Once the dredged material was placed along the dike alignment, draglines were used to construct a riprap protected sand fill levee and roadway around the

containment area. A typical cross section of the main levee after construction of the Craney Island Disposal Area is shown in Figure 6.

16. The Craney Island Disposal Area was originally designed to contain dredged material from the Hampton Roads area. The design was an economical alternative to transporting and ocean dumping the dredged material. The perimeter dikes have been constructed to about el 20 ft msl of dredge material within the containment area has been raised to an average elevation of 15 ft msl. To allow for improved management and storage capacity for dredged material, the dikes will be raised to about el 30 ft msl with the site being subdivided into three 800-acre containment areas.

Construction Experience by Others

17. Mobile District personnel visited several flood control levees in the New Orleans and Galveston area that were successfully constructed above water. Small toe dikes were used to contain the dredged material during construction. The new work dredged material used to construct the dikes contained varying amounts of sand and clay. Dike subsidence caused by lateral spreading and consolidation of peat and the very soft foundation soils have caused problems with this type of construction in the New Orleans area. After the embankments were allowed to settle, the side slopes were reshaped and the crest heights raised. Dike construction using clay balls (balls formed when large clay cuttings roll along the dredge pipe and developed into various sizes and shapes) have been successful in these areas. Clay balls can be stacked on very steep slopes with the voids between the clay balls filled with sand, silt, and clay. This construction technique forms a strong clay matrix immediately which is capable of supporting the light-weight equipment necessary to reshape the dikes.

18. Construction experience by personnel of the Coastal Engineering Research Center, Fort Belvoir, Virginia, indicated that several embankments have been successfully constructed above and below water with new work dredged material, but no information was available concerning the design and construction procedures used. Construction personnel indicated that if enough sand was available and if clay balls would form and stay together without eroding and/or abrading into small pieces, a dike could be constructed in water 8 to 10 ft deep with moderate current velocities.

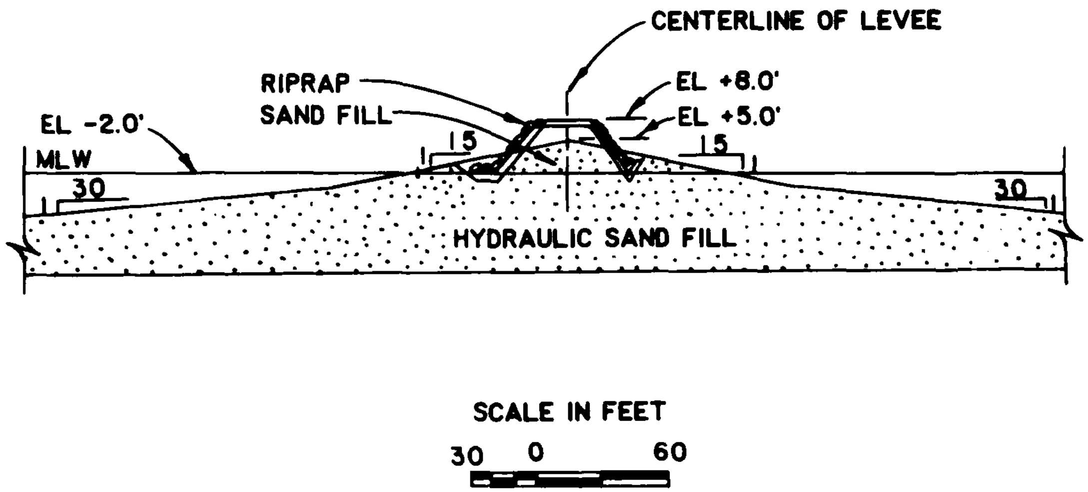

Figure 6. Cross section of main levee-Craney Island disposal area

19. In an attempt to validate some of the proposed construction techniques during the design phase, the Mobile District decided to construct a test embankment along a section of the proposed dike alignment. An area was chosen where foundation conditions and dredged material fill were considered to be the "worst case". A description of the test embankment and results are given later in this report.

PART IV: DESIGN OF RETAINING DIKES

Introduction

20. Authorization to construct and maintain an access channel for deep draft ships and barge traffic into Theodore Industrial Park was provided in October 1976 by Section 112 of the Water Resources Development Act of 1976 (PL 94-587). This plan called for modifications of the Federal project for the Mobile Harbor, Alabama, to include (1) a channel branching from the Mobile Ship Channel in Mobile Bay extending northwesterly to the western shore of Mobile Bay and then inland by land cut, (2) an anchorage and turning area along the channel at the bay shoreline, (3) a trapezoidal shaped ship turning basin within the Theodore Industrial Park, and (4) a barge canal extending another 6500 ft inland. This work was authorized by the Board of Engineers for Rivers and Harbors in May 1976 and approved by the Chief of Engineers in January 1977 to proceed with the Phase II study and preconstruction planning which provided the design criteria, construction methods, and cost for the proposed project.

21. Project location. Mobile Bay is located in the Gulf of Mexico approximately 120 miles east of New Orleans, Louisiana. The Theodore Ship Channel is located about midway between Mobile, Alabama, and the Gulf of Mexico on the western bayshore as shown in Figure 7. The existing Mobile Ship Channel is about 31 miles long, beginning at the bay entrance and terminating at the lower reach of the Mobile River. Theodore Ship Channel extends in a northwesterly direction from Mobile Ship Channel for about 5.3 miles to the western shore of Mobile Bay. From the shoreline, it extends inland about 1.9 miles to a ship turning basin in Theodore Industrial Park. The ship channel, turning basin, and barge canal are shown in Figure 2.

22. Design of the Theodore Ship Channel dictated the use of many necessary engineering disciplines and numerous design considerations before construction could actually start. Hydraulic model testing, environmental monitoring, and geotechnical investigations were part of the broad areas of consideration.

Hydraulic Model Testing

23. Hydraulic model testing was provided by the WES (TR H-75-13).[1] A

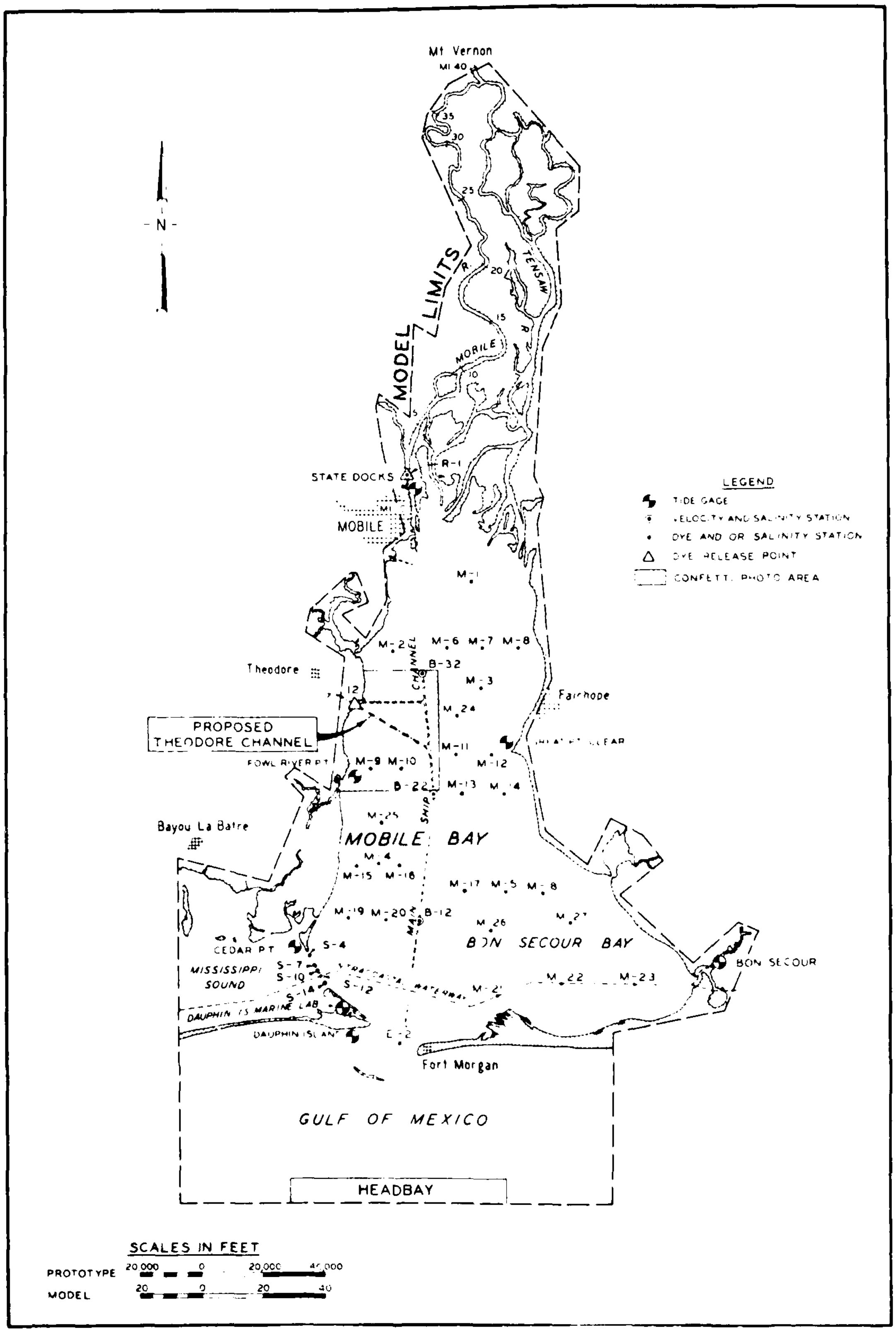

Figure 7. Location map

fixed-bed model of Mobile Bay was constructed, simulating an area of about 268 square miles. The model included the tributaries of the Tensaw and Mobile Rivers and an area beyond Dauphin Island into the Gulf of Mexico of about 40 miles shown in Figure 7. The hydraulic model was equipped with the necessary instrumentation to provide an accurate reproduction and measurement of the tides, tidal currents, salination, fresh water inflows, density effects, and other important prototype phenomena.

24. The purpose of the study was to determine the effects of the ship channel and dredged material containment area on flow patterns that would affect subsequent maintenance dredging and the oyster industry at the lower end of Mobile Bay. Nine island configurations were considered for the disposal island. The hydraulic model tests furnished to the Mobile District contained a rating system which incorporated parameters such as navigation, economics, environmental effects and esthetics. An analysis conducted by the Mobile District, indicated that a triangular shaped island located west of the Mobile Ship Channel and north of the proposed Theodore Ship Channel, as shown in Figure 8, was the most desirable.

Environmental Considerations

25. Prior to construction of Gaillard Island, an environmental impact statement was provided by the Mobile District. The statement addressed the environmental concerns associated with the construction of the project in relation to the physical alteration of the Mobile Bay system, loss of natural resources, and water quality consideration. A model was constructed by the WES (TR H-75-13) to evaluate the effects of the Theodore Channel and Gaillard Island on circulation and salinity. From the model studies, it was determined that an offshore island would minimize the concentration of existing salinity patterns in the Bay. Since construction of the dikes for the new disposal island was to be accomplished using new work dredged material, the Mobile District concluded, that construction and operation of the project would not cause significant long-term adverse effects on the quality of the bay waters. It was further concluded that water quality would only be impaired briefly from suspended solids and turbidity during the construction and stabilization period.

26. An environmental monitoring program was established to verify the

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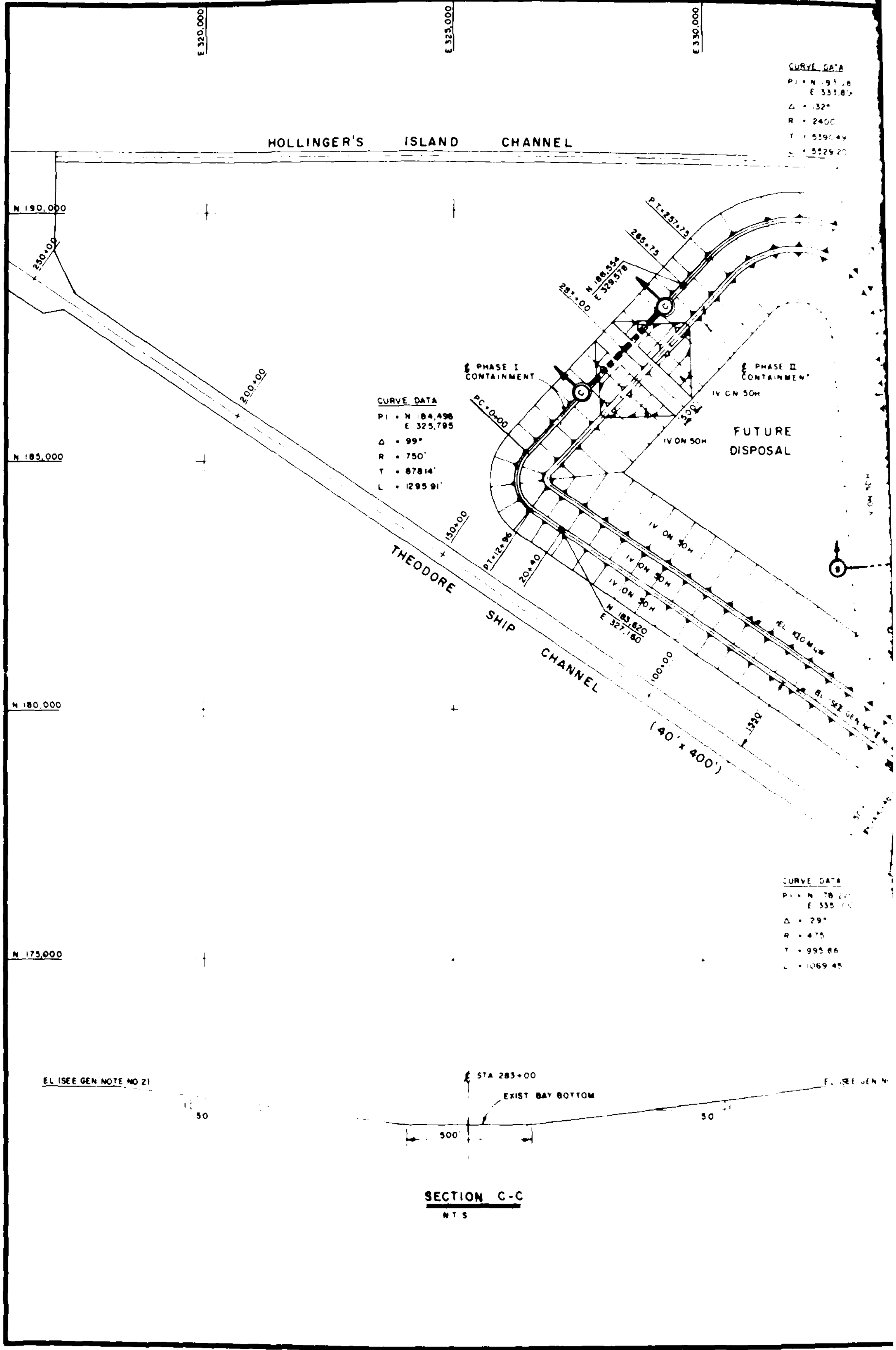

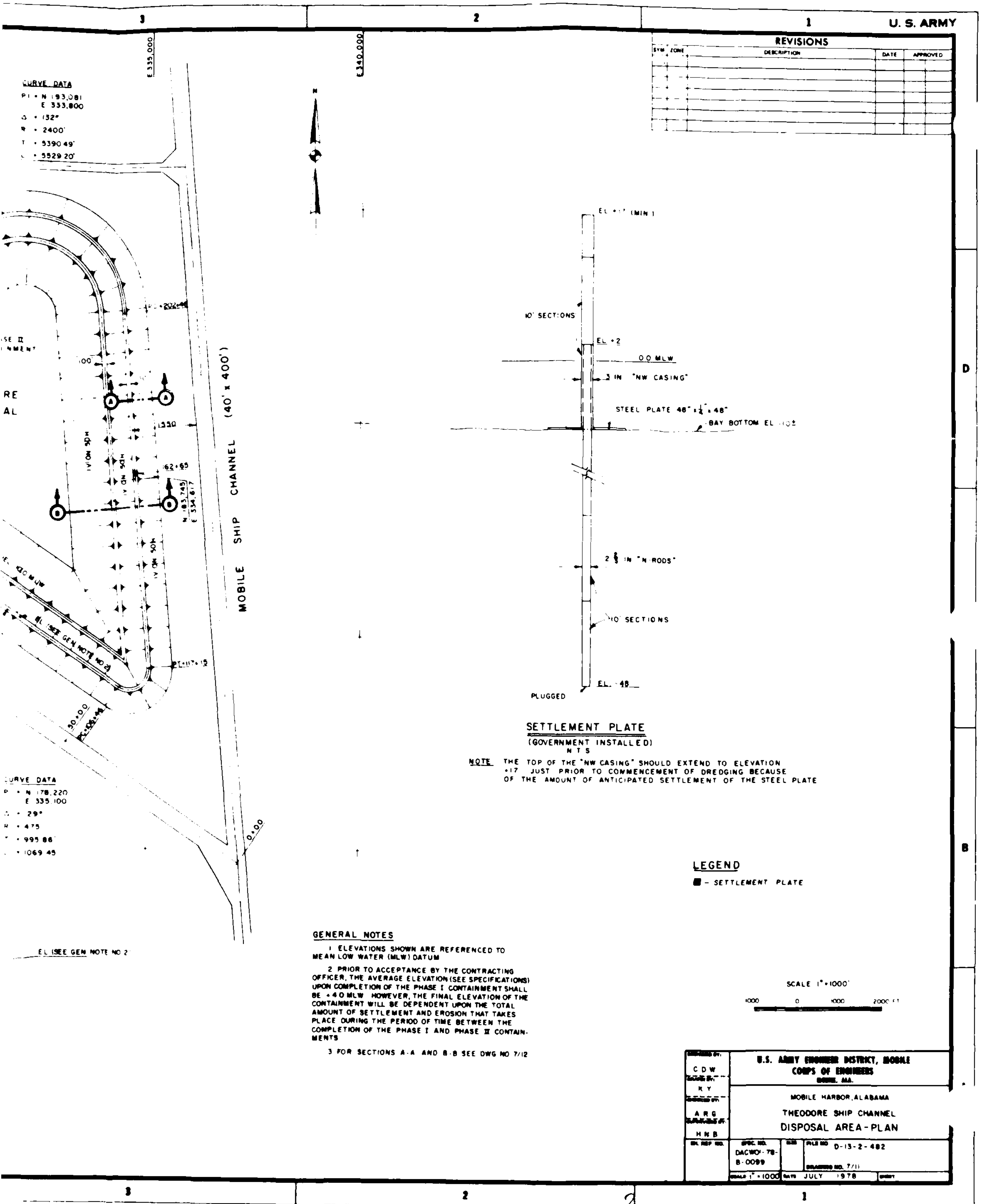

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GENERAL NOTES
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3 FOR SECTIONS A-A AND B-B SEE DWG NO 7/12
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U.S. ARMY ENGINEER DISTRICT, MOBILE
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Figure 8

hydraulic model predictions and to determine the environmental impact resulting from construction of the project. The monitoring program consisted of baseline studies conduced from October 1977 to October 1978 to document existing conditions of the area. Monitoring for the project continued for about three years following the baseline study which had included one full seasonal cycle after the project was constructed.

27. Elements monitored in the program included turbidity, salinity, temperature, dissolved oxygen, submerged grasses, macroinfauna and demersal fauna. Dissolved oxygen was also monitored in the land cut section of the channel. Turbidity and mud flows were checked periodically during construction. An environmental report is being prepared by the Mobile District.

Gaillard Island Test Fill

28. During the planning and design phase, the Mobile District decided to construct a test fill along the proposed alignment. After careful examination of the boring logs and subsurface data, a decision was made to excavate material from about sta 40+00 in the channel and to deposit this material at about sta 90+00 along the dike alignment. Figure 9 shows the location of the excavated area, the test fill section, and a profile plot of the surface elevation data collected from June 1975 to March 1977. Earlier attempts to construct a dike with a bucket dragline failed because of rapid subsidence. The final section was constructed with a hydraulic dredge; the fill material consisted of very soft bay bottom deposits and a considerable amount of oyster shells that were subsequently mined by local oyster shell suppliers. The locations chosen for the test fill and excavation sections were considered to be "worst case" conditions. The test embankment was constructed to about el 2 ft mlw; however, after a heavy windstorm and consolidation and spreading of the soft dike and foundation material, the dike had settled about 1 ft during the first month after construction and about 3 ft during the first year. Two years after construction, the dike settled a total of 5 ft as a result of settlement and erosion. The shell dredging occurred subsequent to this and the entire fill was removed leaving a hole in the bay bottom. The conclusions from this test were that an embankment could be constructed over the worst probable foundation conditions using the worst probable fill materials. Even though the embankment test section settled or eroded below mean low water, the

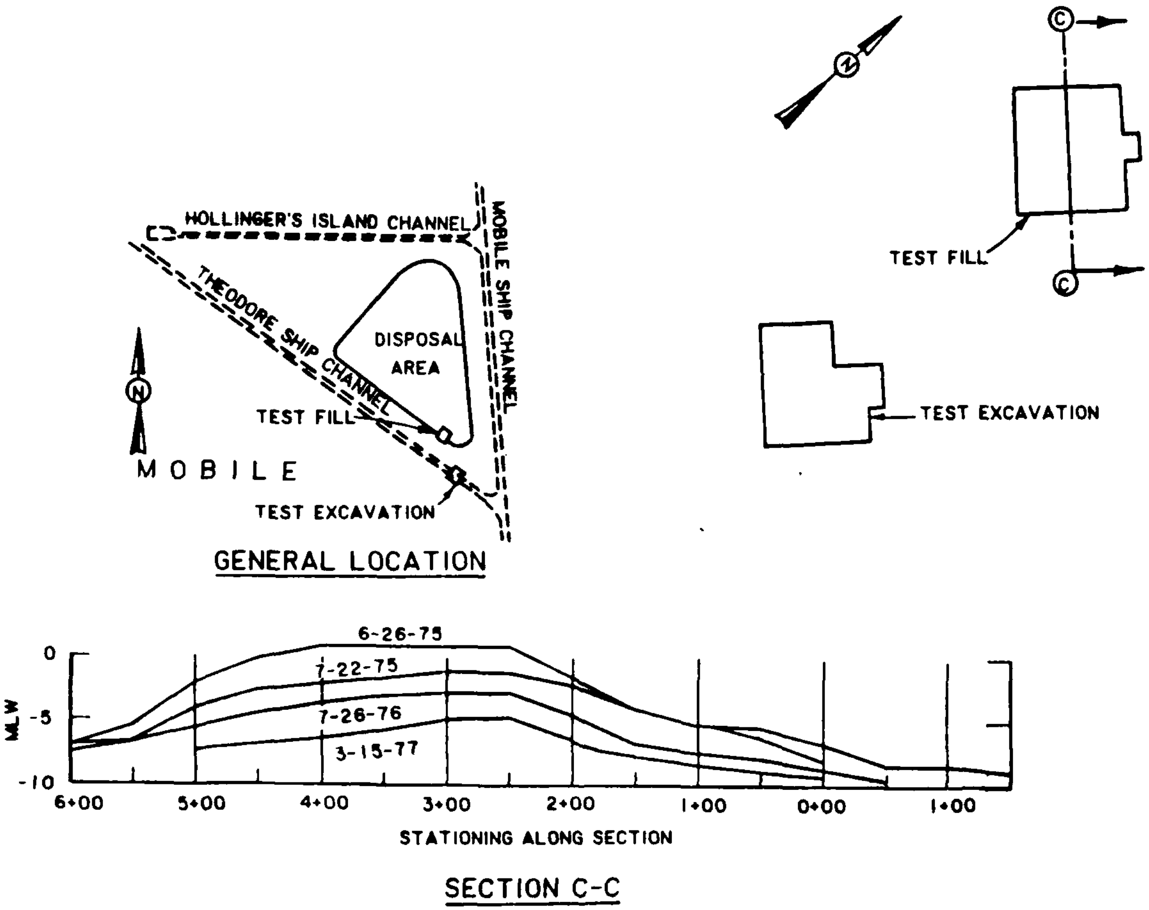


Figure 9. Theodore Ship channel test fill

embankment slopes before and at various times after construction were about the same, indicating that a stable slope was somewhere between 1V to 40H and 1V to 50H.

Proposed Dike Design

29. The initial design concept was to hydraulically place land-cut dredged material along the peripheral rim of the proposed disposal area, to about el+2 ft mlw as the first phase of construction. The material would then be shaped to about el+4 ft mlw with draglines placed on the fill. It was assumed that the embankment base width would vary from 1000 to 1200 ft with side slopes varying from 1V:30H to 1V:50H. This small dike would serve to retain the fine-grained material dredged from the bay bottom; in addition to serving as the foundation for the planned dike raising in Phase Two. During Phase Two the retaining dikes will be raised to el 10 ft mlw. Shown in Figure 8 is a plan view of the proposed dike design depicting the first and second phase construction slopes and limits of the proposed shore protection. As shown in Figure 8, a 500-ft-wide weir or gap was proposed to be left open during dike construction and closed at the end of construction. A cross-section of the proposed weir, dike, and shore protection is shown in Figures 8, 10, and 11, respectively.

Geology

30. The Theodore Ship Channel is located in the Pine Meadows subdivision of the East Gulf Coastal Plain Section. This region ranges in elevation from sea level to about el+100 ft msl and is characterized by low rolling hills developed on Pleistocene and Holocene terrace alluvial and beach deposits. These deposits overlie older Miocene and Pliocene beds which form the high ground that flanks Mobile Bay to the east and west. The Holocene deposits are normally 20 ft thick except in Mobile Bay where they are 150 ft thick. Lithologically, the Pleistocene and Holocene deposits consist of white, gray, orange, and brown very fine to coarse-grained gravelly sands which are partly carbonaceous. Very soft to firm clay beds also occur with these beds making up a large portion of the material underlying the Mobile Bay. Dredged material excavation occurred in these Pleistocene and Holocene deposits.

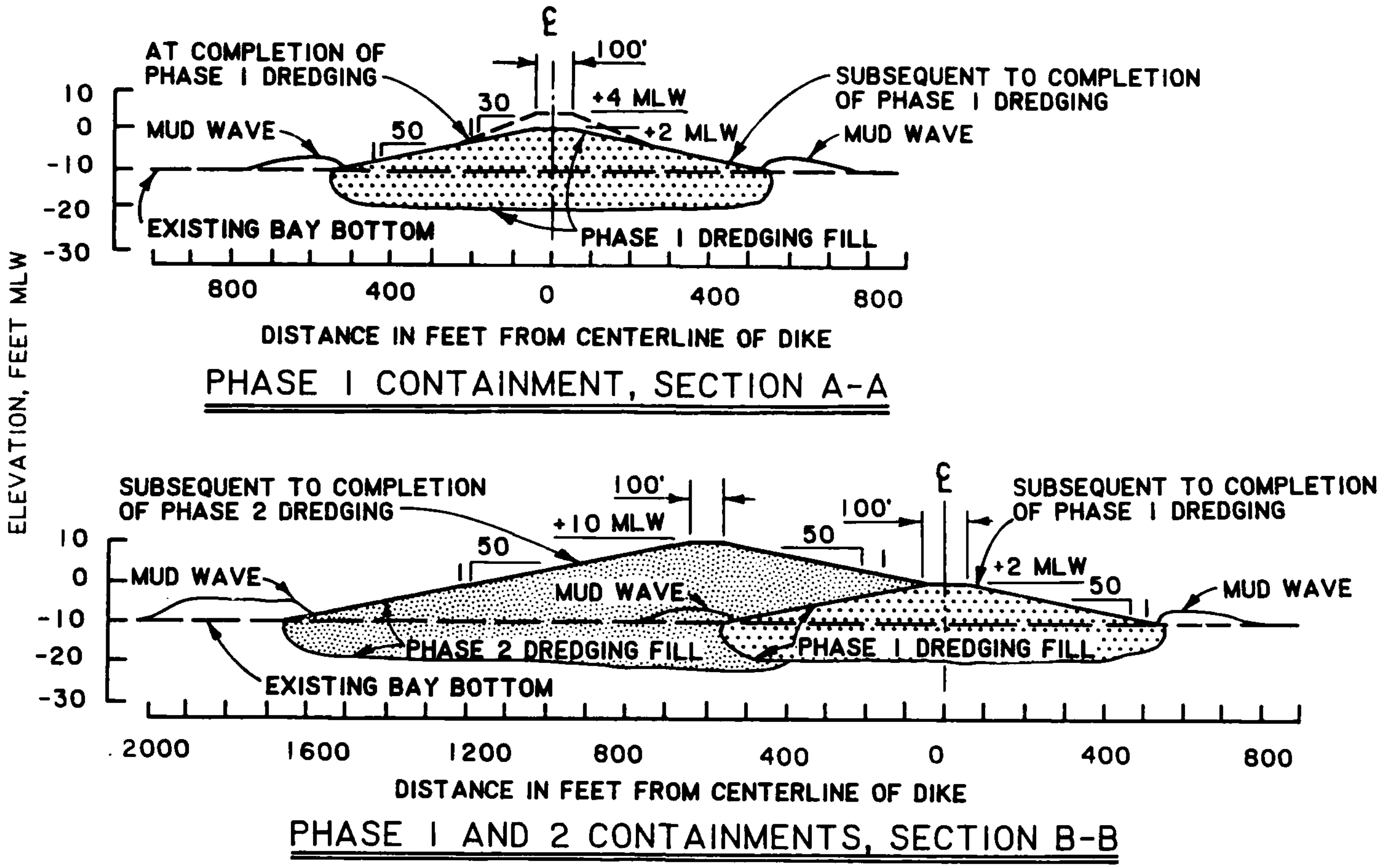


Figure 10. Theodore Ship Channel Phase I and Phase II

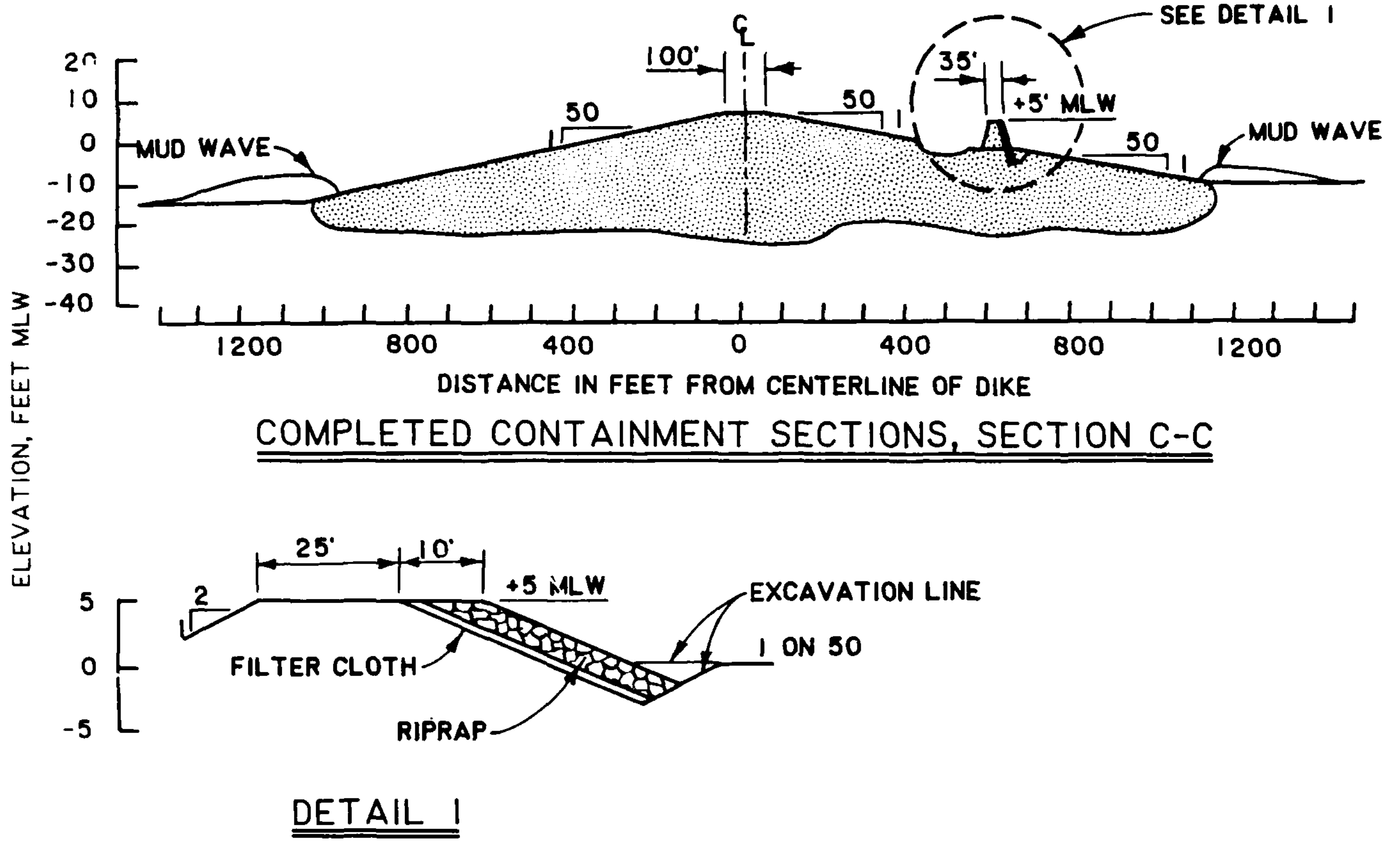


Figure 11. Theodore Ship channel completed dike and rip rap protection

31. Prior to construction, a geological and subsurface soil investigation was conducted by the Mobile District and is reported in reference 2.

Soil Description

32. The description of the soils to be removed from the Theodore Ship Channel have been divided into two classifications for discussion. These two classifications are land-cut and bay-cut soils.

a. Land-cut soils. Material defined as land-cut soils may be subdivided into those from the barge channel extension and those from the ship channel and turning basin.

(1) Barge channel extension. Soils from the barge channel extension area will not be discussed in this report since these were not used to construct the dikes. They were dredged and placed in a nearby upland containment area.

(2) Ship channel and turning basin. Soils from the ship channel ranged from fat, highly plastic clays (CH) to poorly graded sands (SP). The sands varied from very loose to medium dense near the surface and generally increased in density with depth. The clays were gray in color and ranged from very soft to very very stiff. A generalized profile of the soils (to the maximum dredged depth of about el -44 ft mlw in the ship channel) consisted of 10 ft of silty or clayey sand (SM/SC) at the surface and underlain by 10 to 25 ft of either a poorly graded silty sand (SP-SM), or a soft fat clay (CH), or a combination of both. Underlying these soils was generally a firm to a very stiff fat clay (CH) which became stiffer with depth. A few borings indicated the presence of a poorly graded sand (SP) instead of the clay below about el -14 ft mlw. The soils dredged from these areas were considered to be a better construction material than those from the bay-cut area, since they contained a greater amount of sand. The sandy soils (SC, SM, SP-SM, SP) comprised approximately 48 percent of all material dredged from the ship channel and turning basin area. The remaining 52 percent was predominantly a fat clay (CH) with small lens of low plasticity clay (CL).

b. Bay-cut soils. The soils from the bay-cut area were predominantly fat, highly plastic clays (CH) with isolated pockets of shells and fine sand. The percentage of sand in these clays were generally less than that found in the land-cut clays. The bay-cut clays were gray in color and varied in consistency from soft to stiff. The clays were normally consolidated with a high degree of sensitivity. Generally, the upper 4 to 6 ft of material in this area was flocculated with a consistency of "thick soup". Below this very soft material was a soft fat clay (CH) which varied in thickness from 15 to 20 ft and contained pockets of sand and shells. The remaining soil extending down to the final cut excavation, was a medium to stiff clay which became firmer with depth. Intermittent sand and silt lens up to 2 ft thick were sandwiched in the clay (CH). In an area near the shore of the turning basin, the presence of sand was noted on some of the boring logs to a depth of several feet.

Subsurface Investigation

33. An extensive exploratory soil boring program conducted for the foundation design consisted of making 107 borings. Soil borings were located from 500 to 1000 ft along the ship channel and dike alignment on 500 to 1000 ft intervals as shown in Appendix D of Phase II General Design Memorandum (GDM), Design Memorandum No. 2, Mobile District. Subsurface investigations were conducted with both Vibracore and split-spoon type samplers. Samples in the bay were taken with a Vibracore sampler to a depth of 30 ft and with a split-spoon sampler below 30 ft. Samples in the land-cut area were obtained either with a Vibracore in the upper 30 ft and with a split-spoon below that or, where the water was above the soil surface, the split-spoon sample was used entirely.

Laboratory testing

34. Most of the Vibracore samples were classified in the field; whereas, the split-spoon samples were sent to the South Atlantic Division (SAD) laboratory for classification and/or water content determinations. Some of the samples were tested by private firms. Atterberg limits, gradation, and moisture contents were determined for selected Vibracore samples. A Torvane device was utilized to assist in determining and evaluating the material consistency. Most of the laboratory testing conducted during the Special Report and Phase II GDM(2) stage on Theodore Ship Channel consisted of water contents, Atterberg limits, and grain-size distribution. In addition, Q, R, and $\bar{R}$ triaxial tests and direct shear tests were conducted on select samples to evaluate the strength and consolidation characteristics. The results of the laboratory tests are presented in Appendix D of Phase II GDM(2). Most of the laboratory data has been included in a geotechnical data base discussed later in this report.

Proposed Shore Protection

35. The shore protection proposed consisted of both riprap and vegetation. Riprap was to be placed along the east leg of the island adjacent to the Mobile Ship Channel and around the northern and southern edges also adjacent to the Mobile Ship Channel. The other sides of the island located to the west and away from the long reaches of Mobile Bay and the ship traffic were to be protected by vegetative cover only. A plan view of the shore protection proposed is shown in Figure 12. The riprap section was to be constructed after the main dike section was built to grade. A cross-sectional view of the proposed shore protection is shown in Figure 11.

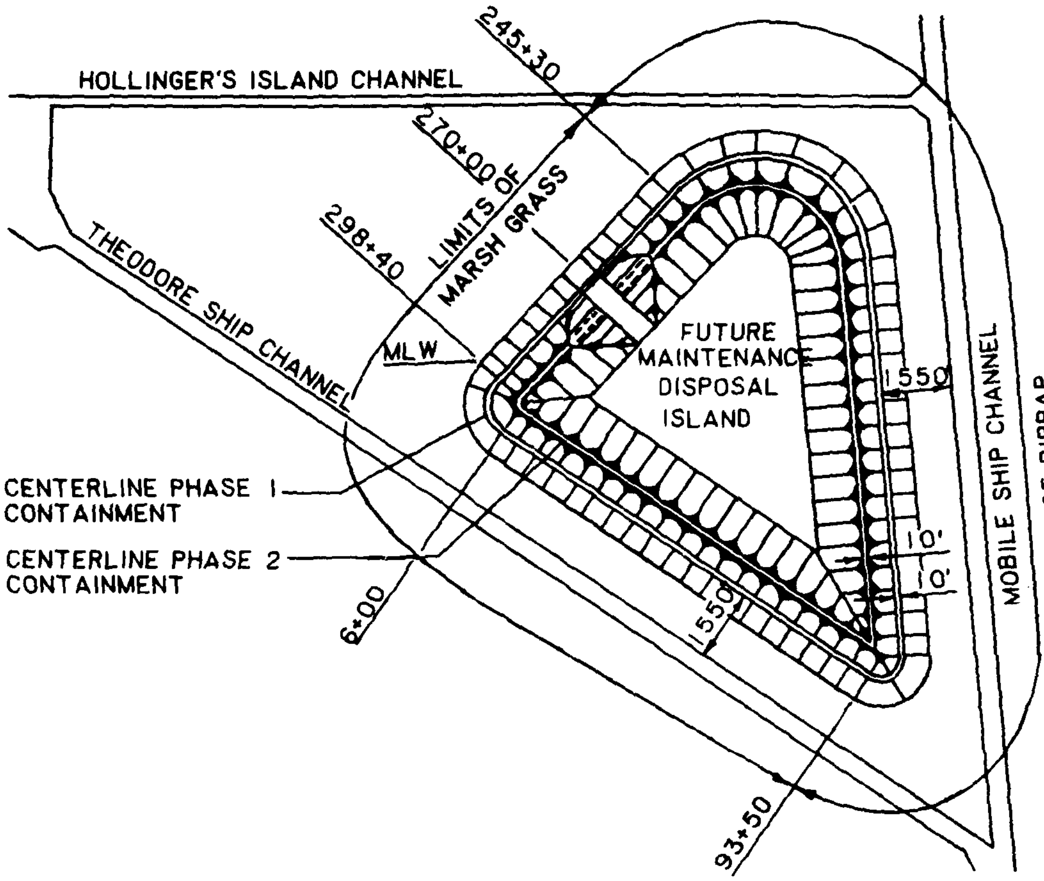


Figure 12. Plan view of proposed design and shoreline protection for Theodore Ship Channel Disposal Island

PART V: CONSTRUCTION OF CONTAINMENT DIKES

Introduction

36. During the construction of the containment dikes a number of problems had to be solved. The solution of these problems required a cooperative effort between the dredging contractor and the MDO. Work began on 24 May 1979 with clearing and grubbing of the land-cut areas. The work was completed 828 days later on 28 August 1981. Approximately 33.5 million cubic yards of dredged material was either barge hauled or hydraulically pumped over 7 miles to the construction site. The dredging contractor was the Bean Dredging Corporation of New Orleans, Louisiana.

Clearing and Grubbing

37. Clearing and grubbing the construction limits of the ship channel, the turning basin, and the diked area was the first priority. Documentation of the construction activities for the barge canal and upland containment area dikes will not be discussed in this report. Clearing and grubbing of the upland construction area proceeded in an easterly manner and consisted of removing all obstructions by hauling away or burning. Work on the upbank drainage protected drainage ditches, slope grading, and grassing of the slopes proceeded prior to and during the dredging operations.

Hydraulic Dredging Equipment

38. The major hydraulic dredging equipment consisted of two cutter-head dredges, three booster pumps, and approximately 7 miles of 27-in diameter dredge pipe. Assisting the hydraulic dredges was a dust-pan dredge which was used to remove the soft bay bottom deposits from the Theodore Ship Channel and dispose it about 1500 ft away along the south leg of the disposal island. A number of crew boats, dozers, fork-lifts, draglines, cranes, skidders, barges, spud barges, and spoil discharge barges were used to assist in this operation.

Description of cutter-head dredges

39. Two hydraulic cutter-head dredges were used. Both dredges, the Jim Bean and the Dave Blackburn, were capable of excavating to the maximum

required dredge elevation of -42 ft mlw. The Jim Bean was moved in from Tampa, Florida, to begin dredging on 29 November 1979 and remained until completion on 28 August 1981, with the exemption of a temporary move to another project from 17 April 1980 to 3 January 1981. The Dave Blackburn was moved in from New Orleans, Louisiana, and began dredging on 8 January 1980 and remained on the project until completion on 28 July 1981.

40. The Jim Bean dredge was designed and constructed by the Bean Dredging Corporation in 1974 at a cost of about $13 million. The Jim Bean is a 9200-BHP diesel-powered dredge with many modern features; such as electrohydraulic controls, hydraulic winches and motors, and electronic range and depth recording equipment. The dredge is sixty-five ft wide and 262 ft long and capable of dredging in fairly rough open water. The estimated dredging capacity is about 1450 cu yd per hour at a discharge pressure of from 220 to 240 psi through a 29-in. diameter inlet and a 27-in. diameter discharge pipe. Three on-board centrifugal pumps and one booster pump were used to pump dredged material from the turning basin to Gaillard Island over a distance of about 7 miles. The booster pump was located about halfway between the dredge and the spill barge. The dredge ladder or boom for the cutter-head was about 140 ft long. Operating costs for this dredge were estimated to be about $1200 per hour with an average pumping rate of about 900,000 cu yd per month.

41. The Dave Blackburn dredge cost about $3 million to build in 1957. This dredge was originally owned by the Corps of Engineers (New Orleans District) and later sold to the Bean Dredging Corporation. The Dave Blackburn is a 3750-BHP diesel-powered dredge with an inlet diameter of 29-in. and a discharge diameter of 27-in. and is capable of dredging and pumping about 1200 cu yd of material per hour at a discharge pressure of from 70 to 150 psi. The dredge is 180 ft long, 52 ft wide, and sits low in the water; therefore, restricting its use in rough water. The ladder or boom length for this dredge was about 86 ft long which was adequate for the 42-ft dredging depth required. Operating costs were estimated to be about $900 per hour with an average pumping rate of about 700,000 cu yd per month. Because the Dave Blackburn had only one centrifugal pump on board, the first booster pump had to be positioned close to the dredge with the second booster pump positioned about half way to the spill barge.

Description of dust pan dredge

42. The Lenel Bean, a dust-pan dredge, was moved to the project site at

the request and expense of the Bean Dredging Corporation. Dust-pan dredges were designed primarily to remove point bar deposits of sand in the Mississippi River; however, the Bean Dredging Corporation believed that the use of dust-pan dredge could efficiently remove the soft clay deposits. After considerable discussion as to the environmental impact of using a dust-pan dredge to remove soft clay deposits, it was decided that dust-pan dredge could be used on the outer portion of the cut adjacent to the ship channel where the materials were extremely soft and considered unsuitable for use in dike construction. It was also decided that the high pressure water jets used to break up and stir the material prior to being sucked in to the dust pan could be used; however, the valuable oyster beds downstream required careful monitoring.

43. The Lenel Bean pulled itself forward and backward along the channel alignment with long cables anchored in the deeper and stiffer clays. The dredge was located and positioned electronically by an onboard computer and two electronic survey points located on the western shore of Mobile Bay. Dust pan dredges are usually controlled by the use of propellers; however, in this case both stern anchor lines and propellers were used. The dredge would scoop up bottom material 1 to 2 feet deep and 30 feet wide on each pass which was approximately one thousand feet long.

44. The Lenel Bean was capable of dredging an average of 1,200,000 cu yd of material per month from the Theodore Ship Channel. The dredge was designed to pump material a maximum distance of 2500 ft without the use of a booster pump. The Lenel Bean is a relatively new and modern dredge with a 3600 BHP diesel motor with a centrifugal pump that has a 40 in. diameter suction line and a 38 in. diameter discharge line. The Lenel also has a 750 BHP jet pump that is used to stir the material beneath the dust pan. The Lenel Bean is 252 ft long and 40 ft wide with a ladder length of 79 ft.

45. The Lenel Bean was used on the outer portion of the cut area adjacent to the Mobile Ship Channel. The primary reason for experimenting with a dust pan dredge was to reduce costs. The unexpected escalation in fuel costs which occurred during the contract period required the contractor to investigate ways to reduce the costs. The Lenel Bean was used since the material in this portion of the channel was too soft for use in the construction of the dikes and the water was fairly calm. The dredged material was pumped about 1500 ft to the southeast corner of the containment area and over the outer

dike. The material was placed at this location to strengthen the corner against wave attack. The use of the Lenel Bean was successful in reducing costs.

Booster pumps

46. Three large pumps were used to assist the Jim Bean and Dave Blackburn dredges. Each booster was appropriately located along the 27-in. diameter pipeline to keep the dredged material moving. Each booster pump was diesel-powered and mounted on a 40 ft wide and 140 ft long barge. One of the booster pump barges contained one centrifugal pump and a 3600-BHP diesel engine while the other barges contained two centrifugal pumps and either a 3600 or 4000 BHP diesel engine. The 3600-BHP booster pump was capable of providing a discharge pressure of about 200 psi, while the 7200 BHP pump provided a pressure of about 250 psi and the 8000-BHP pump provided a discharge pressure of from 290-335 psi. The 3600- and 7200-BHP pumps were about 9 years old, while the 8000-BHP pump was new. Each booster pump was valued at approximately $1.5 million. Operating cost for the 3600-BHP pump was about $150 per hour while the operating costs for the 7200- and 8000-BHP pumps was about $200 per hour a piece. Each booster pump was capable of maintaining the necessary pumping rate required of the Jim Bean or Dave Blackburn dredges. The pumps required continual repair because of the high sand content contained in the dredged material and long pumping distances required. The booster pumps were monitored constantly to detect breaks in the pipeline. The dredging crews were in constant radio contact with the booster barge work crews to prevent pump damage which could result from cavitation and/or a break in the pipeline.

Discharge Barges

47. Two specially constructed discharge barges were designed by Bean Dredging to assist in placement of the dredged fill. The discharge barges were 220 ft long, 60 ft wide and capable of discharging over a distance of 280 ft through a 27 in. diameter pipe. A photograph of the discharge barges is shown in Figure A10. Mounted on the barge was a 140 ft boom that was winch operated to raise and lower the discharge pipe to the desired height. Positioning and locating the barge was controlled by anchors and vertical spud poles that could be raised and lowered in the soft bay bottom. Tow boats were

also used to change the barge and anchor location when the barge moved too far off the dike alignment. These boom mounted discharge barges were some of the largest ever constructed for the Corps of Engineers.

Associated equipment

48. There were over 20 different crew and tug boats used on the project during construction. Over 20 flat-deck barges were used to haul dredged material from the turning basin to Gaillard Island. Equipment used to assist in this operation included a bucket dredge barge, dragline barges, crane barges, derrick barges, spud barges, fuel barges, and equipment barges. Several dozers and survey skiffs, a survey boat, a skidder, and a forklift were used in clearing, grubbing and handling the dredge pipe. Nine large draglines were used at various times throughout the project for clearing, grubbing, handling dredge pipe and equipment; in addition, to loading the barges with dredged material from the turning basin. This listing includes only the major items generally reported by the contractors; however, a large number of small items (i.e. trucks, pumps, motors, welding machines, tools, etc.) were used which will not be discussed in this report.

Hydraulic Dredge Construction Sequence and Placement Techniques

49. Construction of the Theodore Ship Channel proceeded easterly from the upland construction limits within the turning basin in Theodore Industrial Park. The hydraulic dredges utilized were the Jim Bean, Dave Blackburn, and the Lenel Bean. Each dredge operated within the Theodore Ship Channel at various times throughout the project. The initial plan was to construct an outside perimeter dike, during Phase I, and then construct a higher dike on the inside during Phase II as shown in Figure 10. However as dike construction progressed different sections of the dike constructed during Phase I either settled or were overtopped by wave wash, thus requiring the initial plan be altered. Instead of building up the Phase I dike during Phase II with a dragline as planned, dredged material for the second pass was needed on top and to the inside of the dike to compensate for the settlement and overtopping which had occurred.

50. The Jim Bean dredge began dredging at the mouth of Deere Creek on 29 November 1979 at Station 220+00 and proceeded in a westerly direction. The dike construction for Gaillard Island began with the Jim Bean depositing

dredged material at dike station 268+00 and proceeding in a northerly direction. Initial pumping distances were about 10,000 ft, but as the Jim Bean dredge moved inland and the discharge barge moved north along the dike perimeter, a maximum pipeline distance of 34,565 ft was recorded. The first dredging operation report was recorded on 29 November 1979; however, the contractor had been working previously to this date for 190 days clearing, grubbing, and preparing the equipment. Appendix B contains a listing of the Contractor Inspection Reports (CIR), Dredge Operation Reports (DOR), dates worked, and other essential dredging operation data.

51. The Jim Bean worked at the Theodore project during two different time periods: from 29 November 1979 through 17 April 1980 and from 3 January 1981 through the completion of the project on 28 August 1981. During excavation, the dredge would swing the cutterhead from side to side in a large sweeping motion controlled by winches which were connected to large side anchors embedded in the channel bottom. The elevation of the cutterhead was controlled by lowering or raising the ladder with large winches. The sandy materials would tend to flow toward the cutterhead, as the excavation proceeded; however, the stiff clays would form vertical faces as high as 10 to 20 ft. The initial height of the vertical clay faces which would form in front of the cutterhead would depend on the depth of cut and consistency of the material but the vertical clay faces would eventually slough off. Since a hydraulic dredge cannot make a slope cut, it was necessary to over cut the toe of the slope during each pass. When the vertical face sloughing of the material would occur, the soil would fill in the overcut and result in a sloped surface along the side of the channel. Illustrated in Figure 13 is the overcutting construction technique used for a typical cross-section of Theodore ship channel. Side slopes of 1V to 2H were determined to be the steepest stable channel slopes which would remain without sloughing. Before the channel was cut to the final elevation of -42 ft mlw, the dredge had to make a maximum of three long parallel shallow cuts along the channel alignment.

52. Prior to the dredges moving into the turning basin, draglines working from the bank and from barges removed the landcut material down to about el -10 ft mlw. Upon entering the turning basin the dredges used the same procedure previously described to strip away the bottom material in 10- to 20-ft cuts down to el -42 ft mlw. When the Jim Bean returned to the project in January 1981, it worked in the turning basin and completed the work that the

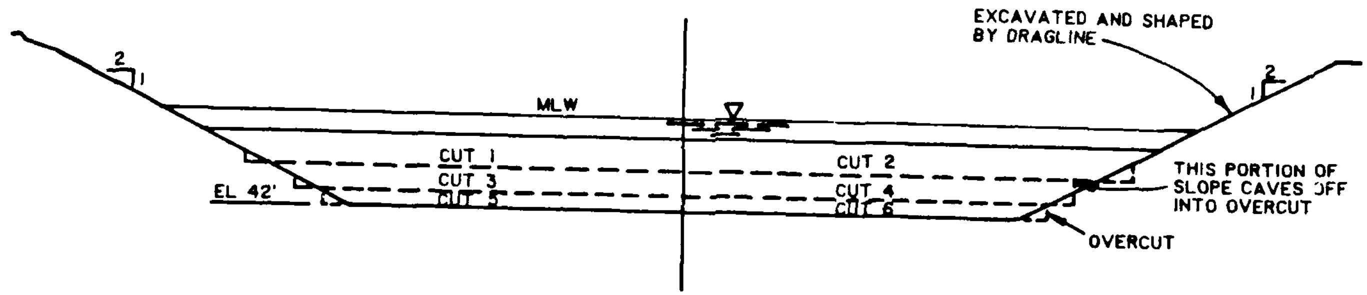


Figure 13. Typical hydraulic dredge channel excavation scheme

Dave Blackburn had not been able to complete. The Jim Bean started to dredge the soft channel materials at the mouth of the Theodore Ship Channel, where it meets with the Mobile Channel, but it was decided that it might be more cost-effective to bring in the Lenel Bean to complete the work.

53. A more complete description of the dredged material placement sequence along the dike alignment is tabulated in Table 1. In addition, Figures 14, 15, and 16 contain a graphical illustration of the dredged material placement sequence for the Jim Bean, Dave Blackburn, Lenel Bean and barge haul operations, respectively.

Dave Blackburn dredge

54. The Dave Blackburn dredge was moved to the Theodore Ship Channel project on 8 January 1980 and it worked continuously, except for minor breakdowns and maintenance repairs, until 28 July 1981. The Dave Blackburn started dredging sandy material at station 222+50 and proceeded toward the western shore before moving into the turning basin. Once the turning basin was completed, the Dave Blackburn moved back into the ship Channel and continued to dredge out areas where the best dike-building materials were located. The Dave Blackburn started dumping dredged material along the Gaillard Island dike alignment between stations 291+00 to 291+75 and then moved to the northernmost rim of Gaillard Island and continued depositing material in a southerly direction to station 203+00. A complete description of the placement sequence is outlined in Table 1 and graphically represented in Figure 15.

Hydraulic dredge-spill barge placement

55. Placement of the dredged material from the Jim Bean and Dave Blackburn dredges was controlled by personnel located on the disposal or spill barge. Material was placed at a minimum distance of 280 ft from the floating barge into three large mounds. One mound was located on the dike centerline with the other two mounds on each side of the centerline. The discharge was maintained from 3 to 8 ft above the water surface. Although there was some speculation as to whether the discharge should have been kept lower to reduce segregation and loss of fines, it was not believed significant. Once the centerline of the dike appeared to be from 2 to 3 ft above the water surface, the barge operator would winch the barge over approximately 100 ft to either side of the centerline and raise that portion of the dike. An energy dissipater was used on the end of the dredge pipe to reduce the formation of large holes in the dike fill; however, it was not completely successful. Discharge of

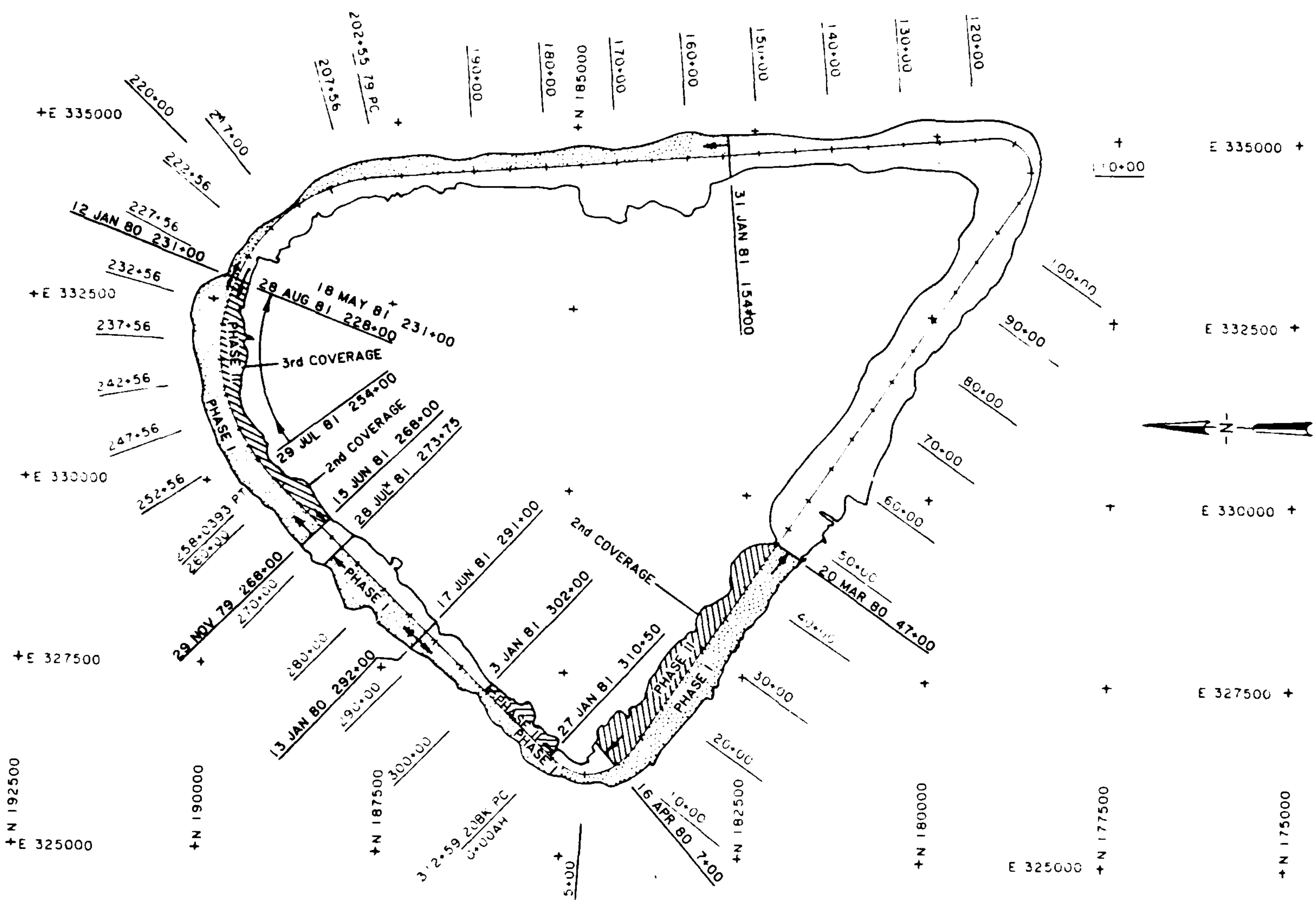


Figure 14. Dredged material placement sequence for Jim Bean Dredge

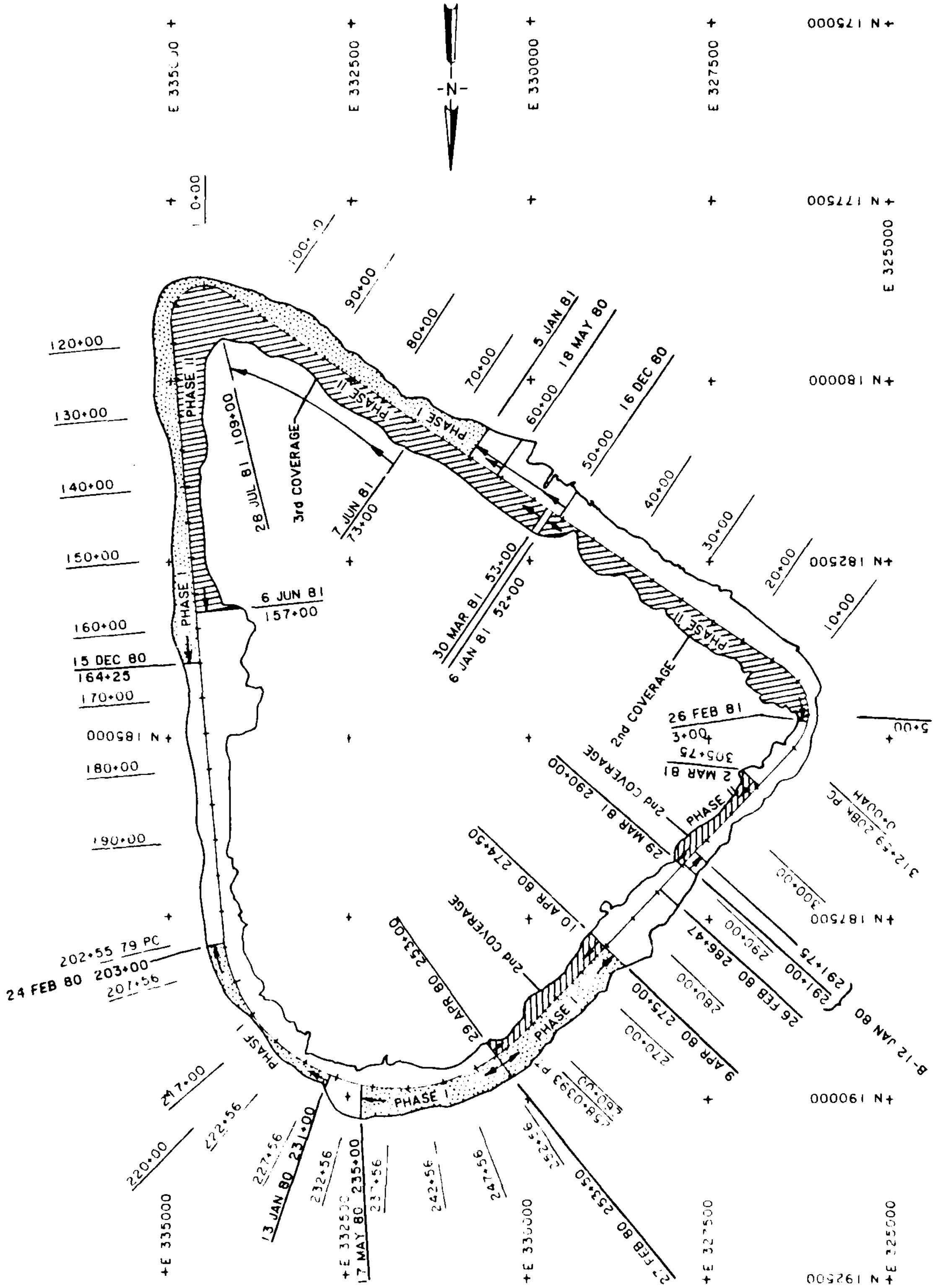
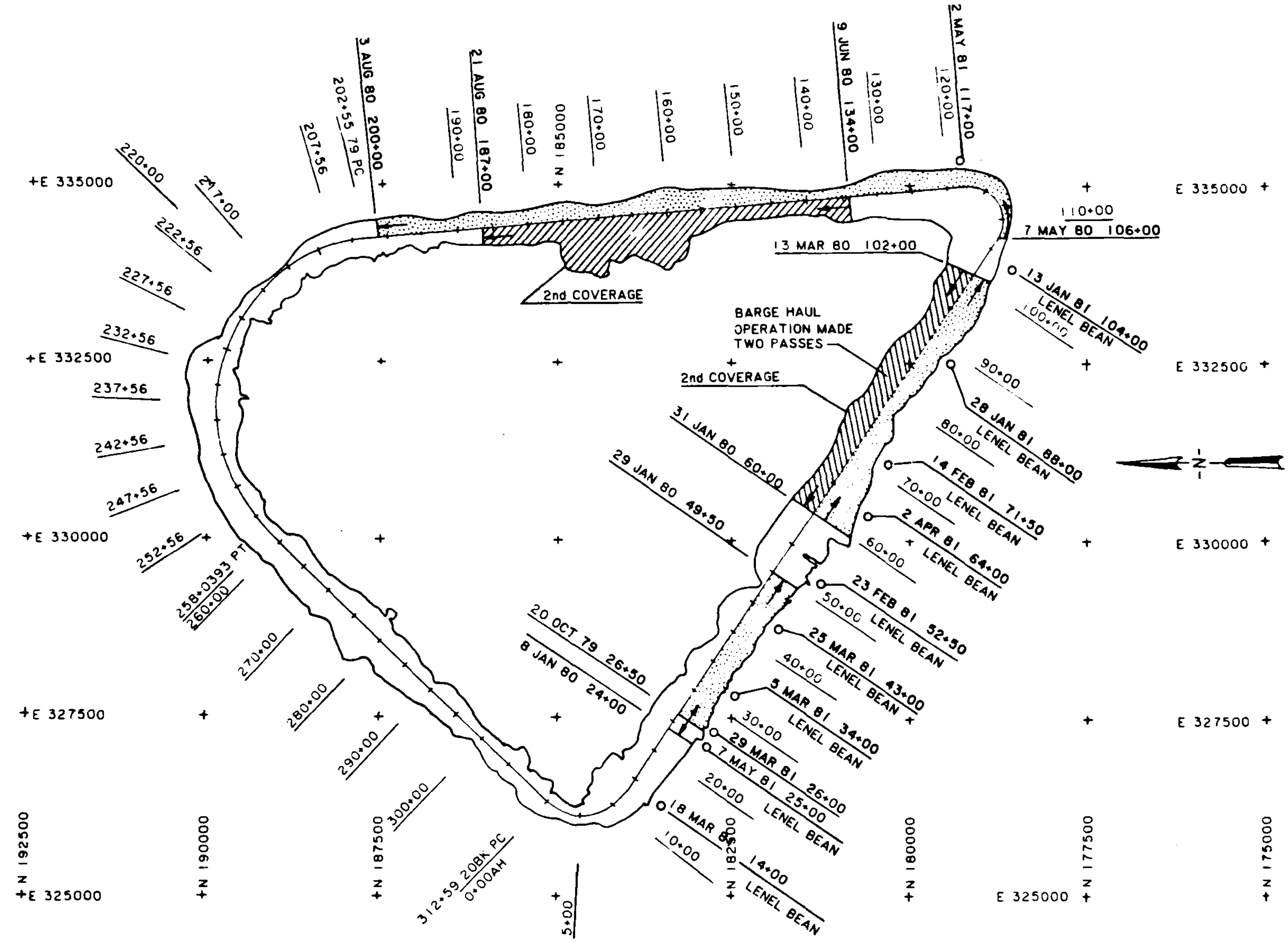


Figure 15. Dredged material placement sequence for Dave Blackburn Dredge



NOTE : O INDICATES LOCATION OF END OF LENEL BEAN DREDGE.
ARROW HEAD INDICATES DUMP DIRECTION OF BARGE HAUL OPERATION.

Figure 16. Dredged material placement sequence for Lenel Bean Dredge and barge haul operation

sandy materials would usually leave larger holes in the dike surface; whereas, material containing clay balls when discharged would stack up in large mounds with slopes of about 1V to 1H. When the required elevation was reached (about 2 to 3 ft above mlw), a person or low ground pressure equipment could work on the surface. However, if the bay bottom materials surfaced as a result of a mud wave, it would be several weeks before a crust would form strong enough to walk on.

56. During the first phase of construction, the spill barge was able to float along the centerline of the proposed dike alignment, but when subsequent fill was placed, the spill barge had to be positioned on the outside perimeter of the dike. The spill barge had difficulty getting close enough to the dike to place the material because of the shallow water depths over the extremely flat dike slopes of the initial dikes. Towboats were used to push the spill barge ashore during high tides and also to reposition them at new dump locations. To prevent any dredged material from running back into the bay, small diversion dikes were constructed which directed the dredge material back into the containment area.

Hydraulic dredge-spill barge problems

57. The construction of dikes using hydraulic dredged material in open water of a depth of 10 ft is highly dependent on the successful operation of the spill barge. The remote location of the discharge barge and lack of experienced operating personnel contributed to many of the problems that occurred, but overall supervision of the project was satisfactory. Proper placement of the dredged material for constructing dikes on soft founiation requires forceful preplanning, observation and supervision of the placement techniques. Many of the operational problems occurred on weekends and at night when the contractor's first-line supervisors were not available to make the proper decisions. The spill barge operator would sometimes deposit material all weekend in the same location without moving the discharge pipe causing mud displacement failures. These failures would not only displace the soft bay bottom materials to either side of the dike, but they would displace the material under and around the spill barge often requiring a tow-boat to pull the barge out of the mud. Once a shallow dike failure occurred, the soft bay bottom material would become entrapped and mixed with the fill material to such an extent that several weeks would be required before personnel could cross these areas. On one weekend the dredge pipe separated near station

207+00, which was about 500 to 600 ft from the spill barge with several thousand yards of dredged material being deposited before the discharge barge operator could get permission to make the necessary repairs. This incident cost the CE valuable time and several thousand yards of good fill suitable for use in the dike construction.

58. Survey control points were located by the contractor by using bamboo poles 30 ft long and 4 inches in diameter pushed into the soft bay mud. Quite often these poles would be accidentally knocked over by crew boats, towboats, barge traffic, heavy seas, or just simply float out of the mud. The bamboo poles needed holes drilled into the cellular compartments to reduce floatation. Three survey poles were located every 500 ft along the proposed dike alignment, with one pole on the centerline and the other two located about 250 ft to either side of the dike centerline. Small pen-lite flashlight bulbs and dry cell batteries were taped to the bamboo poles so the spill and haul barges could work at night. Once the embankment was constructed, the contractor's survey team was required to reestablish the three survey control poles on the dike and provide the CE with a profile of the constructed embankment both above and below the water surface.

Lenel Bean - Dust Pan Dredge

59. The Lenel Bean was brought to the project at the contractor's expense to determine if the very soft bay clays could be dredged more cost-effectively with a dust pan dredge than with a cutterhead dredge. There was considerable discussion as to how the contractor planned to operate the dust pan dredge before the Mobile District would allow the dredge to operate in the Mobile Bay. One of the major concerns was the high pressure water jets, which are used to stir the soft materials, might destroy the oyster beds downstream; therefore, it was agreed that the use of the water jets would be closely monitored. The dust pan dredge worked like an underwater elevator scraper loader that moved along the bottom scooping up soft material to a depth of one foot which was then sucked into the dust pan.

60. The required pumping distances for the dredged material varied from a minimum of about 1625 ft to a maximum of 3265 ft with an average distance of about 2100 ft. As the Lenel Bean advanced along the channel, the spill barge was moved along the south dike. Since the dredged material was very soft, it was not suitable for dike construction. Photographs in Appendix A show the placement of the dredged material. Even though the bay material was very

soft, the clay balls which were formed were dredged and pumped to the disposal area as shown in Figure A28. Small "row" dikes, as shown in Figure A27, had to be constructed along the crest of the existing dike to prevent soft dredged material from flowing back into Mobile Bay.

61. The locations for the end of the floating dredge pipe are shown in Figure 16. The floating pipeline was used between the Lenel Bean and the disposal island. A positioning barge was used along the shore of the disposal island to connect the floating pipeline with a section of shore pipe. The shore pipe was equipped with a valved wye which allowed material to be discharged at two alternate locations. All discharge locations were landward of the small "row" dikes.

Barge haul operation

62. The contractor elected to excavate a portion of the dredged material with land based and floating draglines. The material was loaded onto barges and ferried to Gaillard Island for off loading. Before the contractor could implement this excavation and hauling operation, an approved excavation and dumping plan was required by the Mobile District. Dredged material placement, location, width and depth of fill were agreed upon by both the contractor and the Mobile District before the operation began.

63. Description of draglines and associated equipment. Five different land based draglines were used at various times to excavate material from the land cut area in the ship channel and turning basin. During the conduct of this work no more than two draglines worked at any one time on the bank and only one floating bucket dredge was utilized. Draglines operating on the bank consisted of two Bucyrus Erie 88B, two Limas, and a Manitowoc 4600, each with a 6-cu yd bucket and 120-ft long boom. The floating bucket dredge had a 6-cu yd dragline clam bucket and 120-ft long boom and was mounted on a self-propelled spud barge. Shown in Figure A6 is a dragline on the bank of the turning basin loading a flat top steel deck barge. The deck barges were 40 ft wide and 140 ft long. The volume of dredged material contained in the barge was estimated by the displacement of the barge. After the barges were loaded, tow boats ferried the barges to Gaillard Island for off loading.

64. A special dragline and spud barge was used to unload the material. The special dragline consisted of a dozer blade, instead of a bucket, to scrape the material off. Special 4-ft long standoffs were welded to the spud barge so that when the dragline blade scraped the dredged material off the

barge it would fall between the haul barge and spud barge. As the dredged material was being unloaded from the haul barge, the tow boats remained with the barge to position it in front of the dragline to expedite unloading. The dragline was positioned on wooden mats so that it could move along the top of the spud barge to better distribute the dredged material on the bay bottom. Figure A7 shows a towboat positioning the haul barge alongside the spud barge. Shown in Figure A8 is a dragline reloading dredged material from a haul barge to construct the first phase of a perimeter dike. The barge haul-placement operation consisted of a spud barge, three or four towboats, a dragline, and at least twelve deck barges.

65. Barge haul construction sequence and placement technique. The construction sequence was to excavate dredged material from the turning basin and haul it to Gaillard Island and off load the dredged material to construct the perimeter dikes. Table 1 contains a listing of the excavation dates and dredged material placement stations or the various dredges. In the turning basin draglines positioned on the bank at el +22 ft mlw excavated material down to about el - 6 ft mlw; then a bucket dredge was used to excavate the material down to about el -10 ft mlw with the cutterhead dredges completing the excavation to el -42 ft mlw. Material excavated by the draglines and bucket dredge was hauled by deck barge to the dike alignment and placed in about 8 to 10 ft of water by the dragline mounted on the spud barge. Dredged material was placed along the dike alignment for 250 ft on either side of the centerline to an elevation no higher than -4 ft mlw. It was believed that 4 ft of water was sufficient to allow the spill barge from the cutterhead dredge to operate. Placement of sufficient material at the proper location was accomplished by moving the spud barge transverse to the longitudinal axis of the dike alignment. As the spud and haul barges would move across the dike alignment, dredged material would fall in the area between the very narrow barges to such an extent that the material would stack up above the water line and make it difficult for the spud barge to move. This procedure made it difficult to get an even distribution of dredged material over the area to be covered. In addition, trying to keep the spud barge on the dike alignment at night or during bad weather was difficult. Problems were complicated by not being able to identify the depth of previously placed dredged material and the loss of survey markers disturbed by the tow boats and barges. Because this

technique did not provide an even distribution of dredged material, a satisfactory estimation of fill placement could not be made.

Problems Encountered by Contractor

Introduction

66. Several problems plagued the contractor throughout construction of the Gaillard Island Dredged Material Disposal Area. Survey Control, establishment of vegetation on construction slopes, overland drainage structures, fuel price escalation, dredged material distribution, and weather conditions were some of the major problems encountered by the contractor.

Survey control

67. The project was not only very large, but it was located 2 to 3 miles offshore with the Theodore Ship Channel located parallel to the south leg of Gaillard Island. The original baseline established by the CE was destroyed during clearing operations and had to be reestablished. Restoration of the baseline was hampered by the continual changes in the channel alignment and other minor control problems during early phases of the contract.

Vegetation establishment on construction slopes

68. The contractor had a difficult time establishing vegetation along the land-cut channel slopes. On areas where sod was used the contractor was successful in maintaining the channel slopes, however, where seed was used even though it was fertilized and mulched was not very successful. The slopes of the channels consisted of very fine sandy silts and layers of clay that were highly erodible and low in nutrients. The contractor had to mulch and seed the slopes several times before he was able to establish a satisfactory vegetative cover. In addition, several deep rivulets were created by overbank flow. This occurred primarily in areas where the top of the bank did not have a berm to prevent overland flow.

Drainage structures in barge canal

69. A number of concrete drainage structures along the barge canal were partially destroyed because of excessive overland flow of water from the surrounding Theodore Industrial Park area. The side slopes of the barge canal were a problem to maintain because they contained layers of fine sandy silt and clays that were highly erodible. Many of these structures have been

redesigned and repaired before they would operate successfully. However, construction of the barge canal was not within the scope of this study.

Dredged material distribution

70. Open water disposal of hydraulically discharged fine-grained dredged material in moving water has always been a problem. Aerial photographs taken during construction indicated continual turbidity around and south of the Island. Local oyster fishermen were concerned that fine silt and clay-size particles would drift into the very productive oyster beds and destroy them. Therefore, the MDO conducted a study to determine the extent of the turbidity plume downstream from Gaillard Island.

Plume study

71. A "turbidity plume study" was conducted by Timothy Sullivan, of the MDO. The purpose of the study was to determine the thickness and aerial extent of a turbidity plume which could result from open water discharge of hydraulically dredged fine-grained materials. Lead line and sonar profiles were conducted near two channel stations: 120+00 and 130+00. These observations were conducted before (30 January 1981) and after (11 March 1981) the Lenel Bean had cut the channel to a depth of 27.5 msl and the full width of 400 ft. Lead line and sonar profiles were conducted from Gaillard Island south across Theodore Channel, a distance of over 2500 ft. These profiles were made prior to and after dredging had begun in the channel. Differences were observed between the sonar profile and lead line profile. Samples of the plume material were taken with a special sampling bucket. The wet densities were found to vary from 62.9 to 80.5 lb/ft^3 with an average of 70 lb/ft^3. The top surface of the sedimented dredged plume material was smooth; whereas, the lead line or original bay bottom was more irregular with sharp breaks caused by existing depressions and mounds. The depth of sedimented material diminished with distance away from the Island. Prior to work at channel stations 120+00 and 130+00, the layer of sedimented dredged material was an average of about 4 ft deep near the dike toe and less than 1 ft deep at a distance of 2500 ft south of the dike; however, material had accumulated in low areas near the dike toe as deep as 7 ft. After the Lenel Bean dredged the channel to a depth of 27.5 msl, sonar readings indicated that there was approximately an 8 to 9 ft of sedimented dredged material (70 pcf) covering the relatively uneven channel bottom. The material would not cause any navigational problems since the ships could easily pass through this soft "fluff", however, if the ship relied

upon sonar profile to determine the safe depth, then the ships would hesitate to enter the channel. This material lies very flat in the bottom of the ship channel and seems to cling to the channel side slopes in a blanket about 1 ft thick.

72. It was concluded from this investigation that the suspended clay-size particles were temporarily dispersed in the water south of Gaillard Island and would eventually flocculate out a distance of 3000 ft or less. The natural Bay bottom is very soft and exhibits the same properties, very soft surficial soil layers (70 pcf), in areas that have never been dredged. The Bay is shallow and after a storm, depending on the amount of fresh and salt water available, the Bay may stay murky over periods of months. It was also concluded from this study that a leadline survey is more accurate than a sonar survey and should be used as the basis for estimating pay.

Weather conditions

73. During the 828 days required to dredge the Theodore Channel, the contractor was forced to discontinue dredging operations for only about one half day on 12 September 1980 because of Hurricane Frederick. Weather conditions did not change the hydraulic dredging activities, except for minor thunderstorms, high seas, and fog that occasionally prevented shift changes, repairs, and dredge pipeline work. Weather prevented the barge haul operation from hauling dredged material on several occasions because of poor visibility and high seas. On occasions weather conditions prevented the contractor survey teams from replacing the dike channel survey control markers. Neither weather conditions (except Hurricane Frederick), tidal fluctuations, nor current conditions in Mobile Bay prevented the contractor from dredging during the contract period.

Fuel escalation cost

74. The dredging operations consume vast quantities of diesel fuel. An important consideration in the dredging costs for a project of this size is possible escalation of fuel price within the contract duration. The contract used for this project did not have a fuel price escalation clause and thus was not modified even though fuel cost increased from $0.38 per gallon in March 1979 (when the contract was awarded) to over $1.00 per gallon (at the completion of the contract). Fuel costs rose by more than $0.50 per gallon during the first year and then remained between $0.95 to $1.00 per gallon for the rest of the contract period.

75. In an attempt to minimize fuel costs, the contractor tried to purchase and store large quantities of fuel; however, storage became a problem. Implementation of the barge haul operation in the land-cut and the innovative ideal of utilizing a dust pan dredge to remove the soft bay materials helped to minimize contractors costs.

PART VI: ASSESSMENT AND CORRELATION OF SOIL DREDGING DATA FOR DISPOSAL DIKE

Introduction

76. After the 6 mile long perimeter dike was constructed for Gaillard Island the immediate concern centered upon the resistance of the dike to the forces of nature. Initially, there was some concern as to whether the dike could be constructed using the fine-grain dredged materials available from the channel. Once the dike was constructed the primary concerns were with settlement of the dike and erosion or scour around the dike toe. Immediately after dike construction survey profiles and soil borings were made to correlate embankment slopes and soil characteristics. Permanent bench marks and piezometers were installed to monitor the long-term behavior of the embankment.

Dike Cross-Section and Contour Maps

77. Survey profiles and cross-sectional data were taken by the dredging contractor immediately after dike construction for the first and second phases. The location of the dike cross-sections contained in Appendix D, are shown in Figure 17. Dike surface contour maps were developed from aerial photographs by the MDO and are shown in Appendix E. The aerial photographs were not shown in this report. The cross-sections shown in Appendix D included only the final survey for the second phase of construction. To aid in correlating the underlying soil data to the dike profiles boring logs have been plotted on the cross-sections shown in Appendix D, and matched the closest station to where the boring was made. The soil borings are located in Figure 18. An attempt was made to locate the original bay bottom and any dike displacement from the boring log data. The dotted or dashed line shown on each Figure in Appendix D was based on a bay bottom contour map prepared by USGS (1976). During post construction, the Mobile District made ground surface reconnaissance surveys in 1981 of the surface soils. The results of the these surveys are shown in Figure 19.

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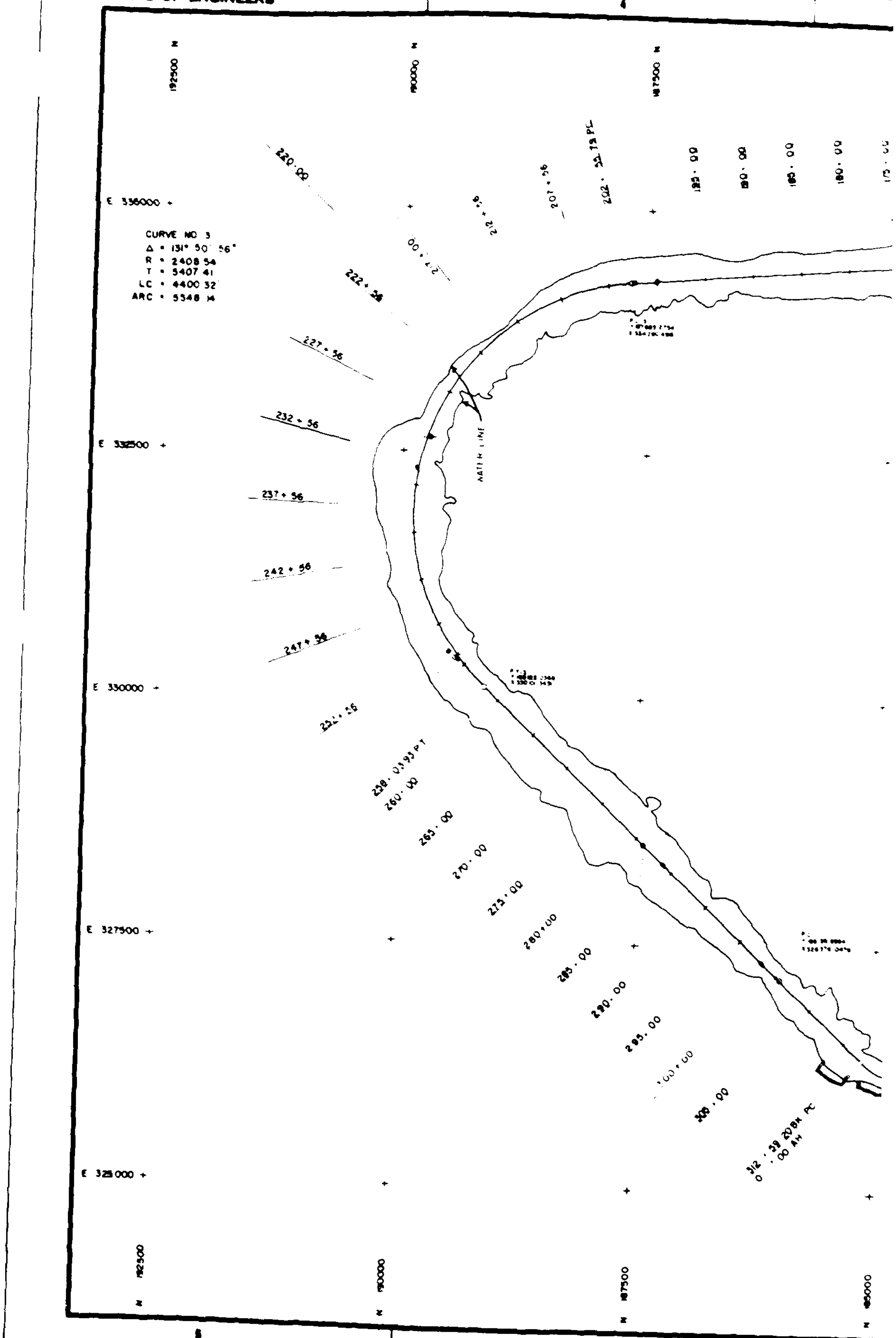

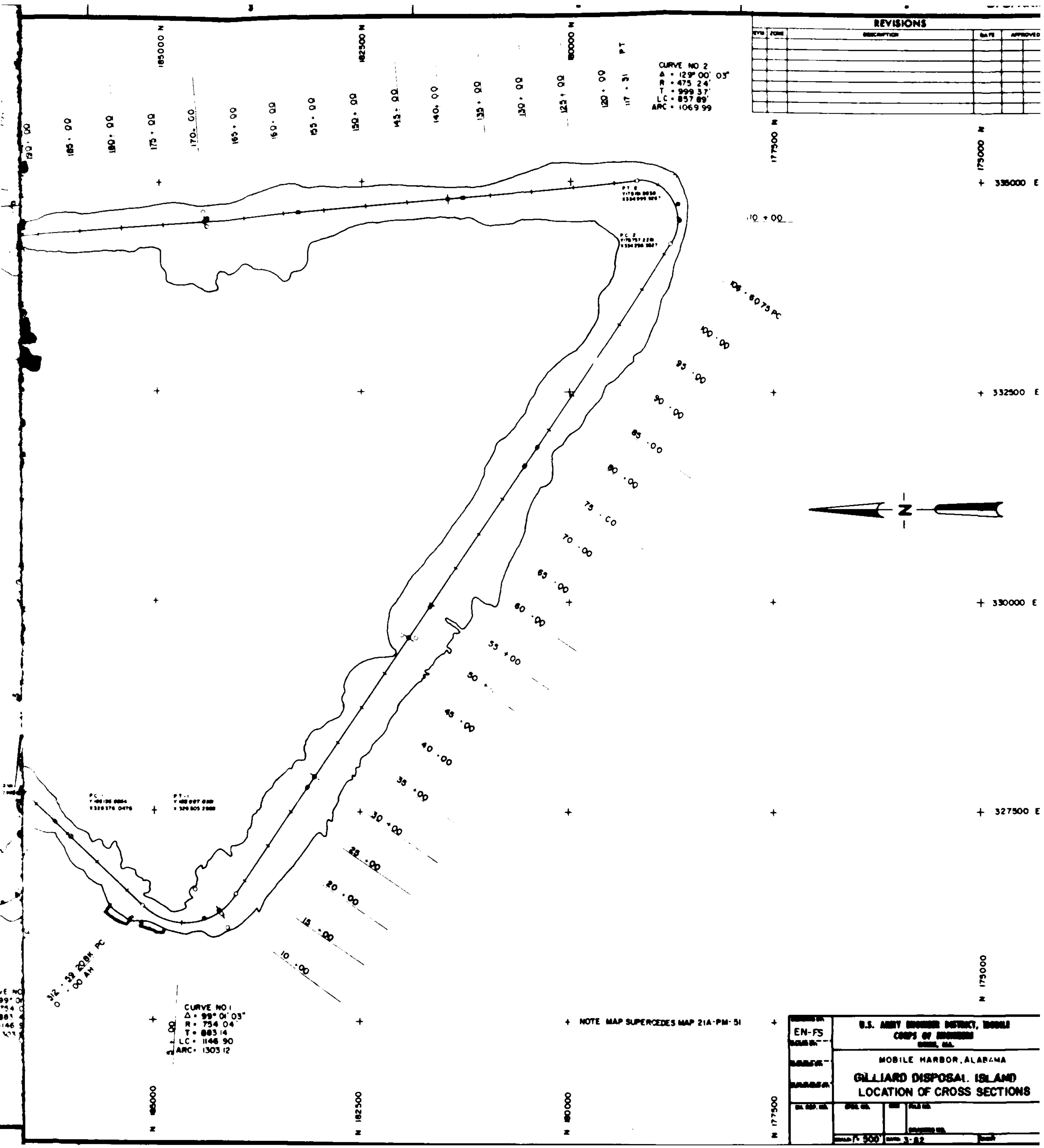

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335000 E
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330000 E
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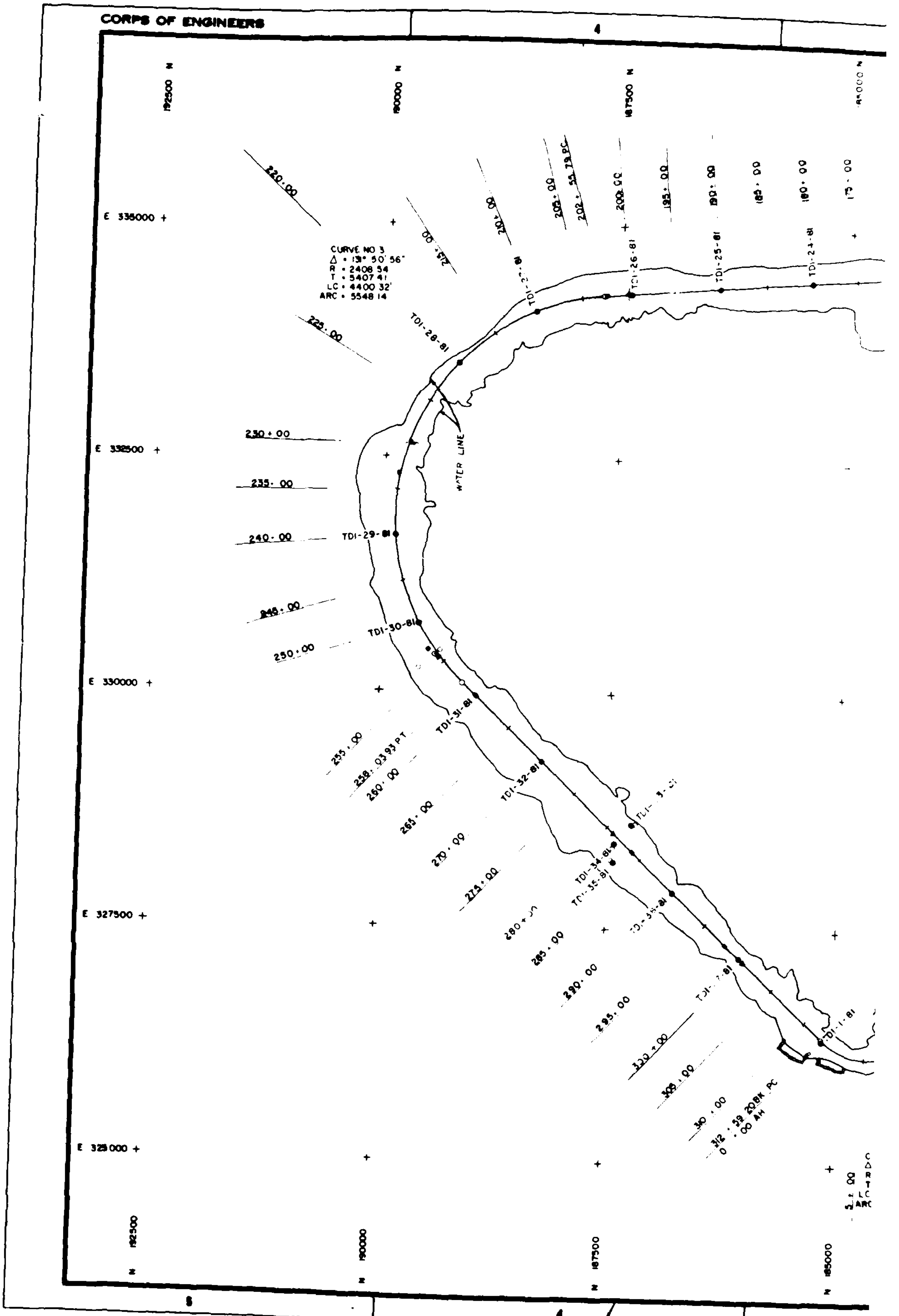
GILLIARD DISPOSAL ISLAND
LOCATION OF CROSS SECTIONS
1" = 500'
3-82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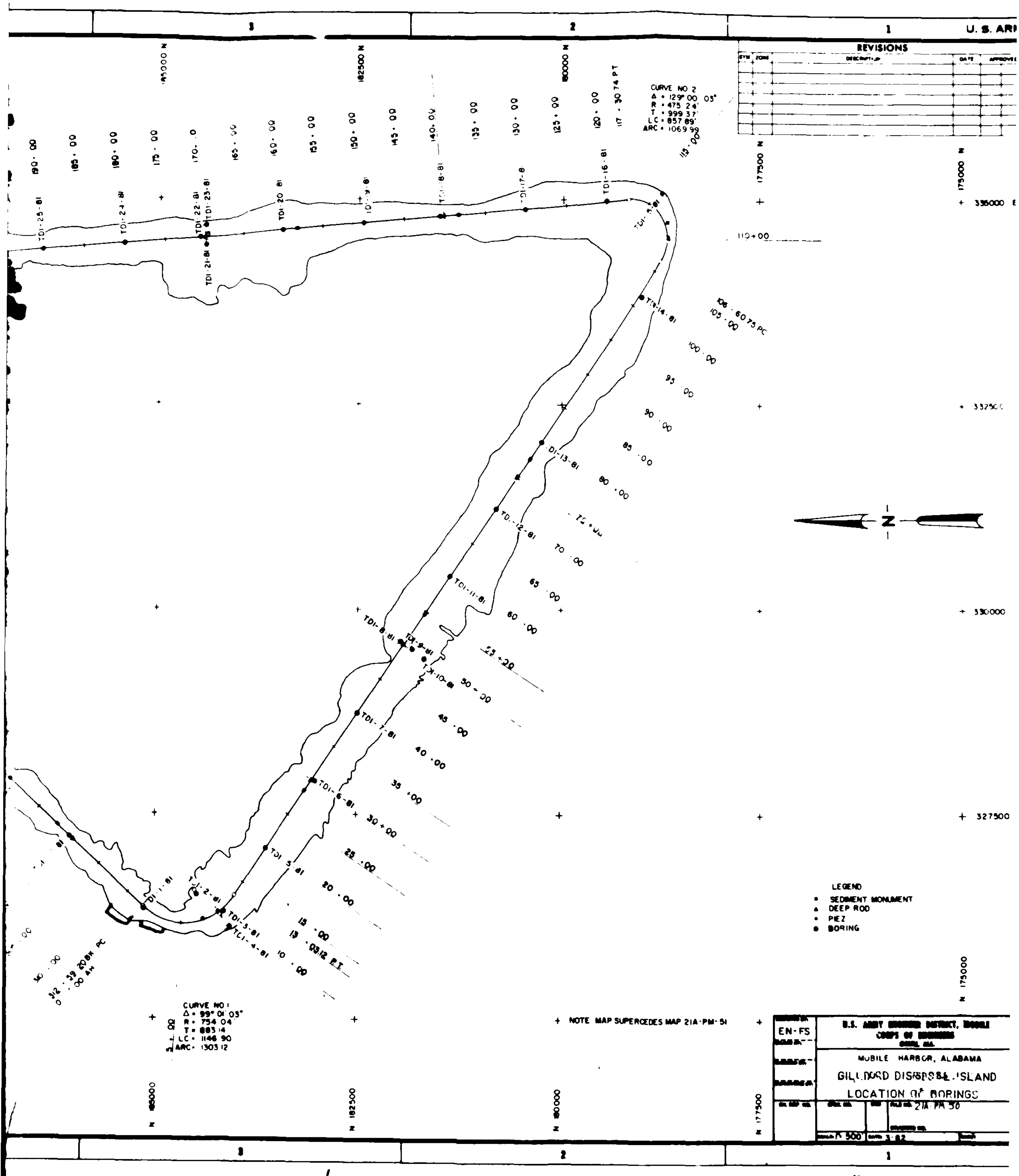
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GILLIARD DISPOSAL ISLAND
LOCATION OF BORINGS
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1"=500'
3-82
REVISIONS
LEGEND
SEDIMENT MONUMENT
DEEP ROD
PIEZ
BORING
NOTE MAP SUPERCEDES MAP 21A-PM-51
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117+30.74 PT
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330000
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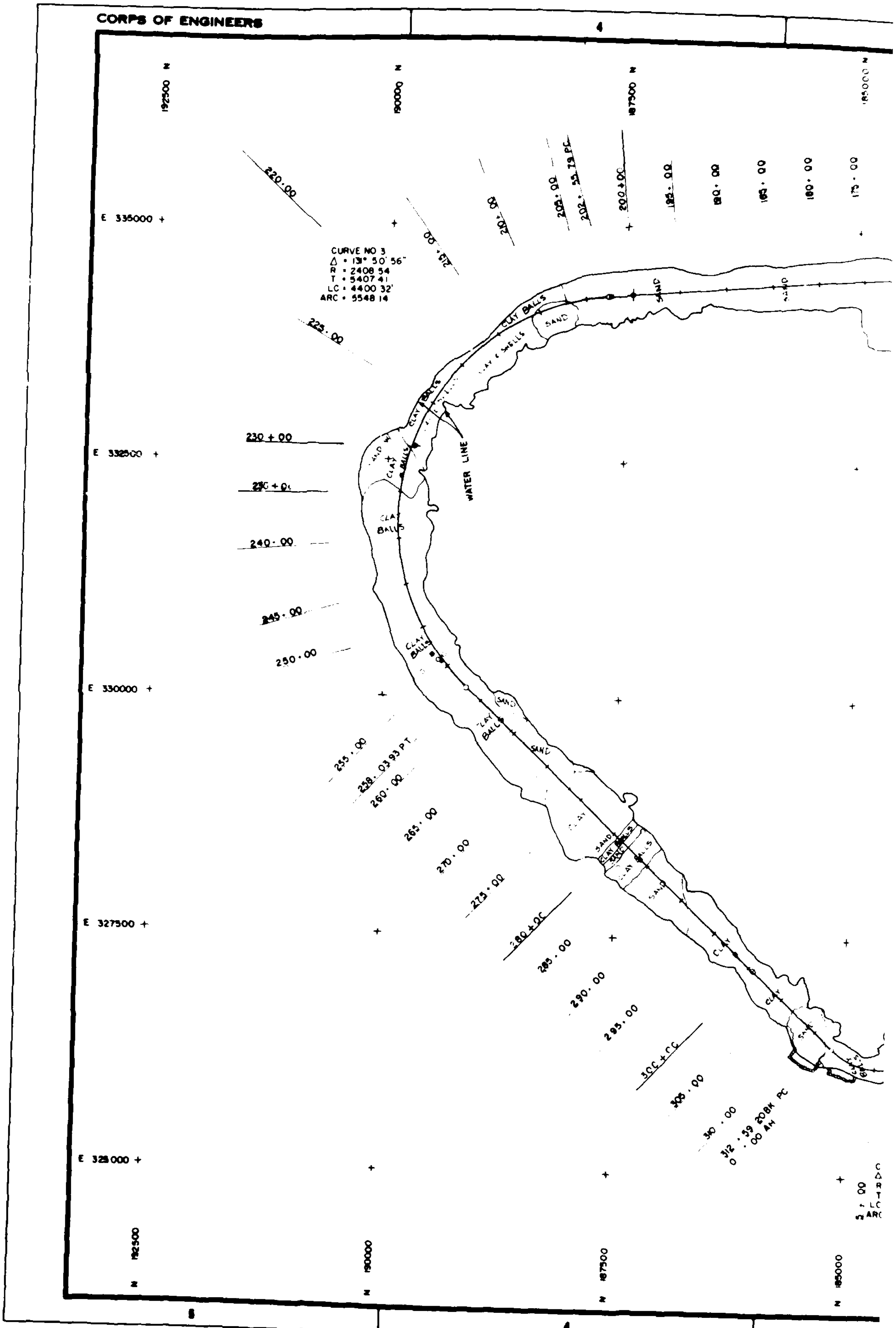
Figure 18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LC = 4400.32'
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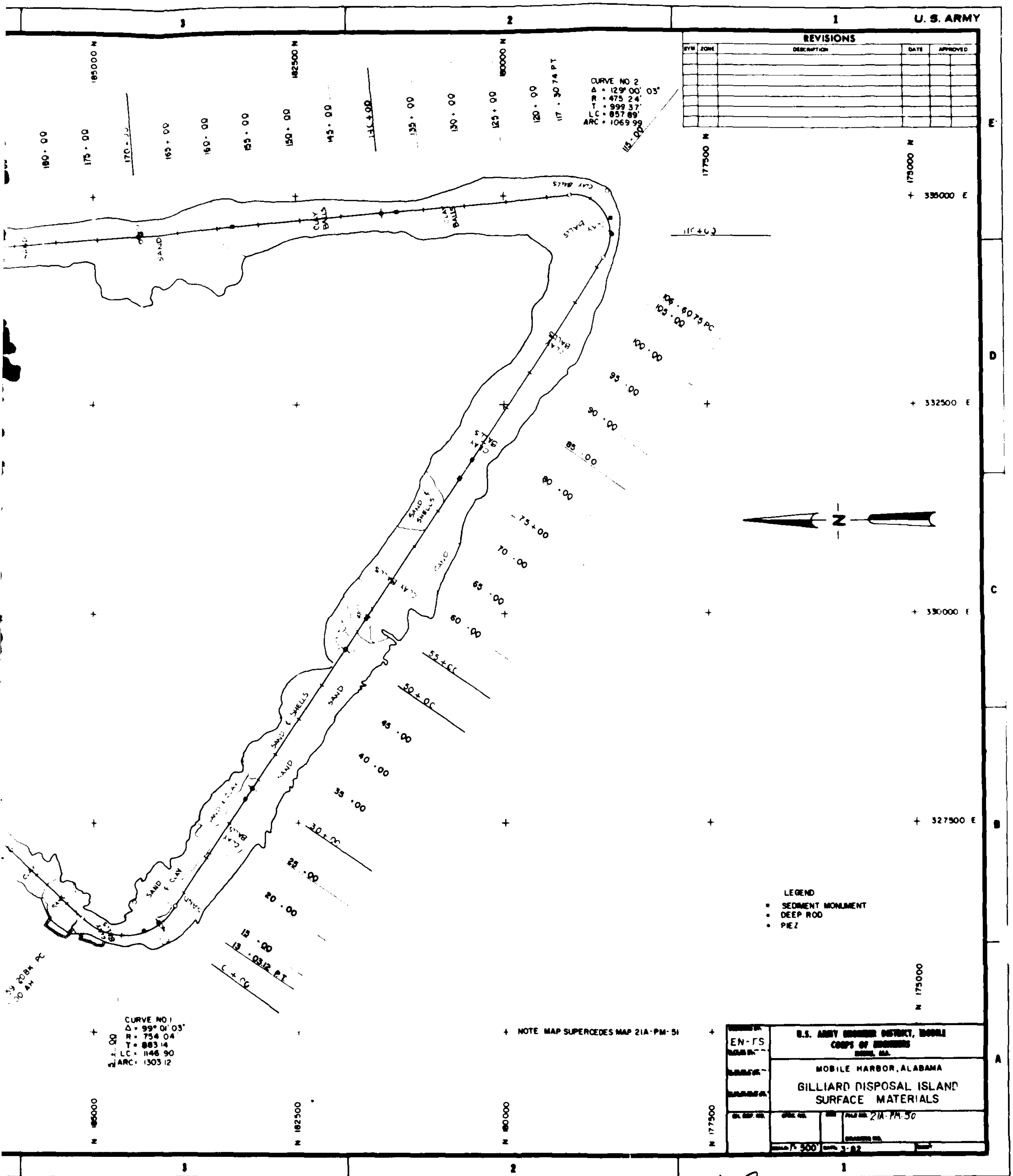
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R = 754 04
T = 883 14
LC = 1146 90
ARC = 1303 12
LEGEND
SEDIMENT MONUMENT
DEEP ROD
PIEZ
NOTE MAP SUPERCEDES MAP 21A-PM-51
SAND
CLAY BALLS
SAND & SHELLS
SAND & CLAY
MOBILE HARBOR, ALABAMA
GILLIARD DISPOSAL ISLAND
SURFACE MATERIALS
21A-PM-50
EN-FS
3-82

Figure 19

Embankment Slopes After Barge Haul and Hydraulic Dredged Material Placement

78. After different phases of the barge haul operation were completed an attempt was made to determine depth and slope of the fill. Since the fill was to be placed only to -4 ft mlw it was very difficult to conduct a sonar profile; therefore, it was necessary to locate the surface of the fill with a survey rod. It was found that the fill did not have a smooth surface, rather it was very hummocky and rough. The slopes were very steep immediately after placement with some locations approaching a 1V:1H slope. Since all of the barge haul material came from the land-cut portion of the Theodore Ship Channel, the stiff consistency of the clay material was assumed to contribute to the steep slopes and hummocky surface of the submerged fill. In some places, the material placed by the barge haul operation was above the water surface.

79. Once the dredging contractor had completed the dike system for Gaillard Island, he was required to provide the Mobile District with cross-section of the dike at select locations. These cross-sections are contained in Appendix D. After the Contractor was finished the Mobile District made soil borings through the completed dike. A log of these borings is shown at the appropriate dike locations in Appendix D. The slopes, depths of fill, and predominant fill material for the dikes are tabulated in Table 2. The elevations of the original bay bottom before and after construction are also tabulated in Table 2.

80. The fill material varied from a clean sand to clay balls with a sand, silt, and shell matrix. Slopes above the water surface were usually steeper, depending on the type of fill, than the slopes below the water surface. Slopes made of sand generally were flat with slopes varying from 1V:1H. Figure A16 is a photograph which shows a 1V:1H slope constructed from clay balls.

81. Below the water surface, dike slopes constructed primarily of sand averaged about 1V:61H on the inside and 1V:53H on the outside. Some slopes constructed from fine sands, silts and soft clays were as flat as 1V:250H. The slopes constructed from clay balls were steeper with slopes averaging about 1V:32H on the inside and 1V:45H on the outside. The steeper clay ball slopes experienced more erosion than the flatter sandy slopes. The erosion generally consisted of the creation of small vertical scarps which eroded

quite rapidly. Figure A17 is a photograph showing these small vertical scarps.

82. The original bay bottom varied from about el -8.0 to el -12.0 ft mlw with an average of el -9.0 ft mlw prior to construction. As a result of construction, the bay bottom soils were displaced both laterally and vertically. In some areas mixing of the displaced bottom soils and dike fill material occurred. After construction the surface elevation of the original bay bottom materials varied from about -5 ft to -21 ft mlw which indicates an upward movement of bottom materials by about 4 ft in some locations and a downward movement of about 12 ft in other locations.

Dredged Material Volume Removed from Theodore Ship Channel

83. Dredged material was removed from Theodore Ship Channel by both barge haul and hydraulic dredging operations. The daily records for the dredging operations are tabulated in Appendix B. Bar graphs designed to illustrate the volume of dredged material removed from the landcut and baycut portions of the ship channel are shown in Figures 20 through 23. Each bar on the graph represents a horizontal distance of 500 ft along the channel while the vertical height represents the total volume removed from that particular reach. Volumes of sand, silt, clay or shell dredged in each reach are shown as segments of the bar. Unfortunately the bar segments are not identified as to which segment represents what type of material. Further modification of the program would be required to identify and illustrate the individual soil types on these plots.

84. A bar graph of the dredged material cut volumes made by the barge haul operation for the land-cut portion of the ship channel is shown in Figure 20 and the bay-cut portion is shown in Figure 21. It can be seen in this illustration that the barge haul operation was utilized primarily for excavating dredged material from the turning basin. Excavation along other portions of the landcut and baycut made by the barge haul operation was primarily for the purpose of shaping the side slopes and smoothing out high ground along the bottom of the ship channel.

85. Dredged material cut by the hydraulic dredging operation are shown in a bar graph plot in Figure 22 for the landcut portion of the ship channel and Figure 23 for the baycut portion. These plots represent dredged material

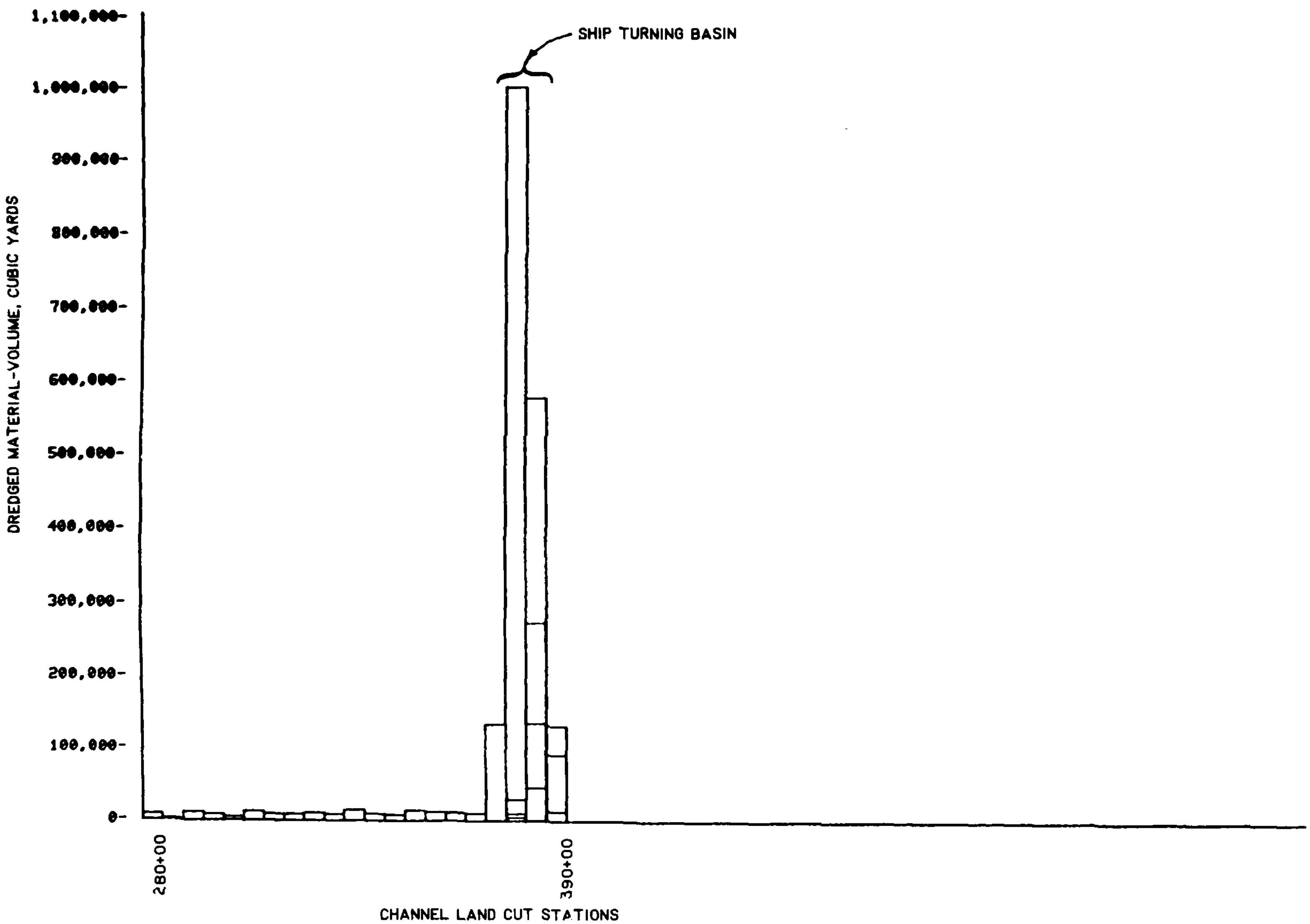


Figure 20. Dredged material volume, cu yd, versus channel land cut stations, bargehaul operations

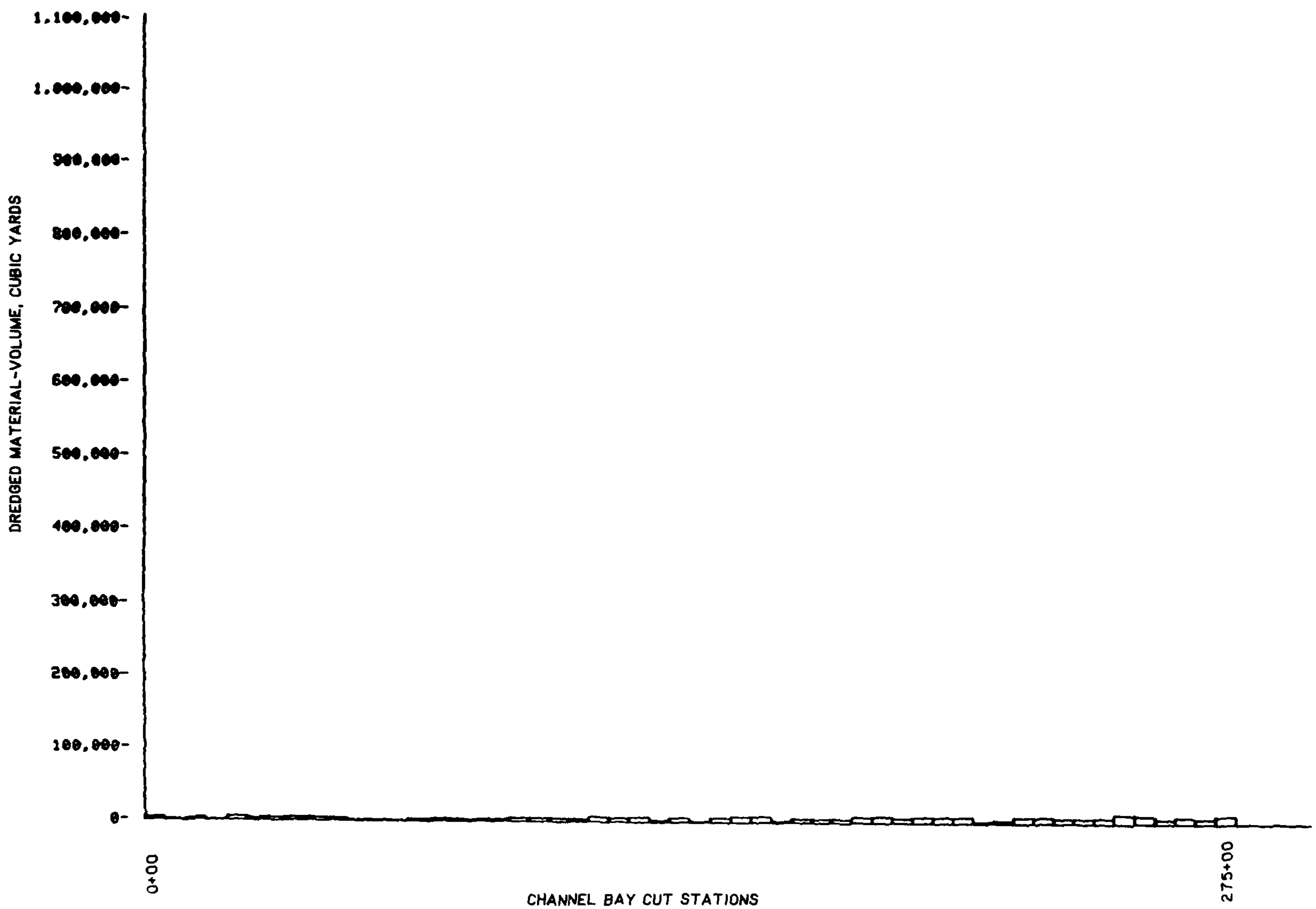


Figure 21. Dredged material volume, cu yd, versus channel bay cut stations, bargehaul operations

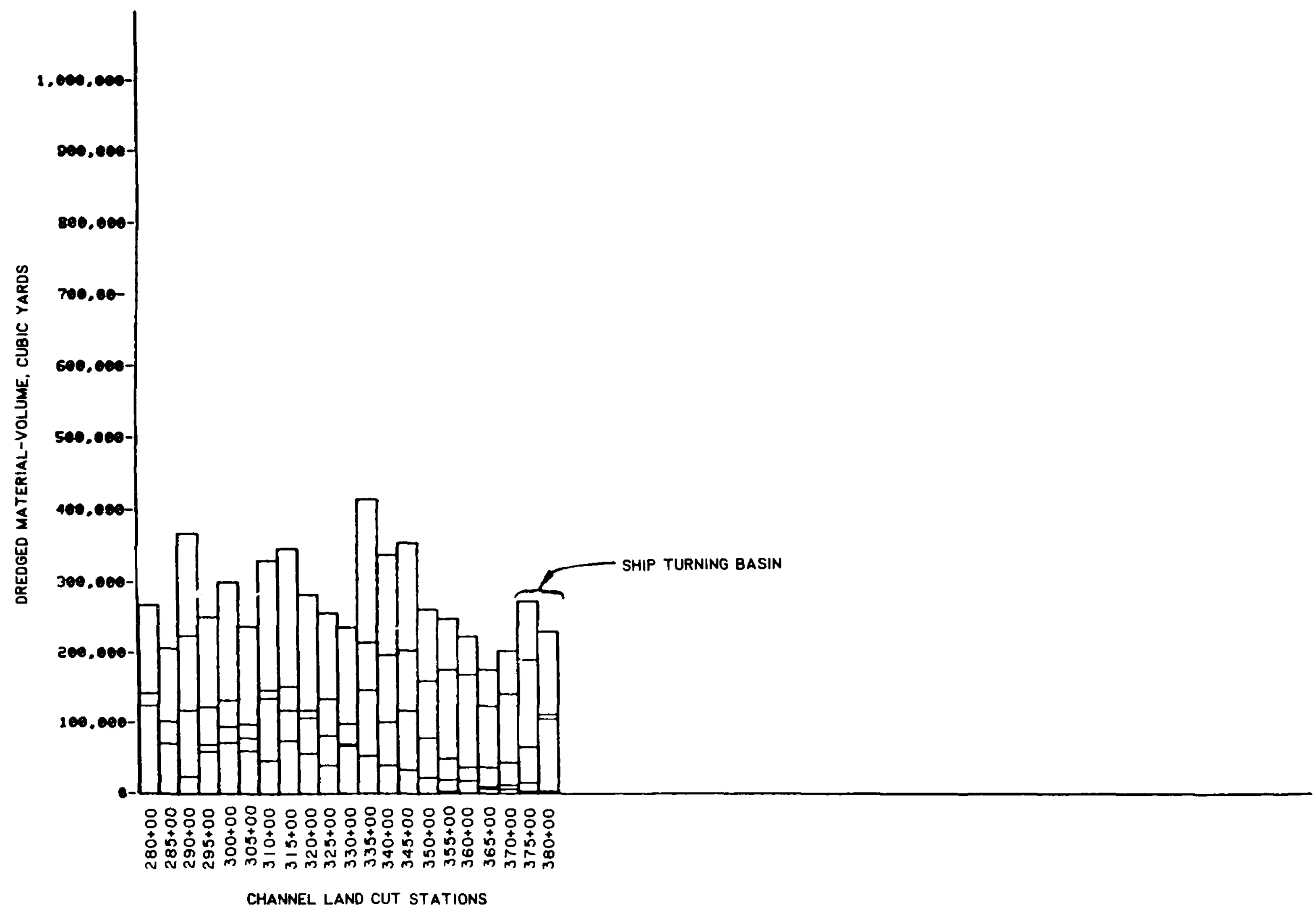


Figure 22. Dredged material volume, cu yd, versus channel land cut stations, hydraulic dredging

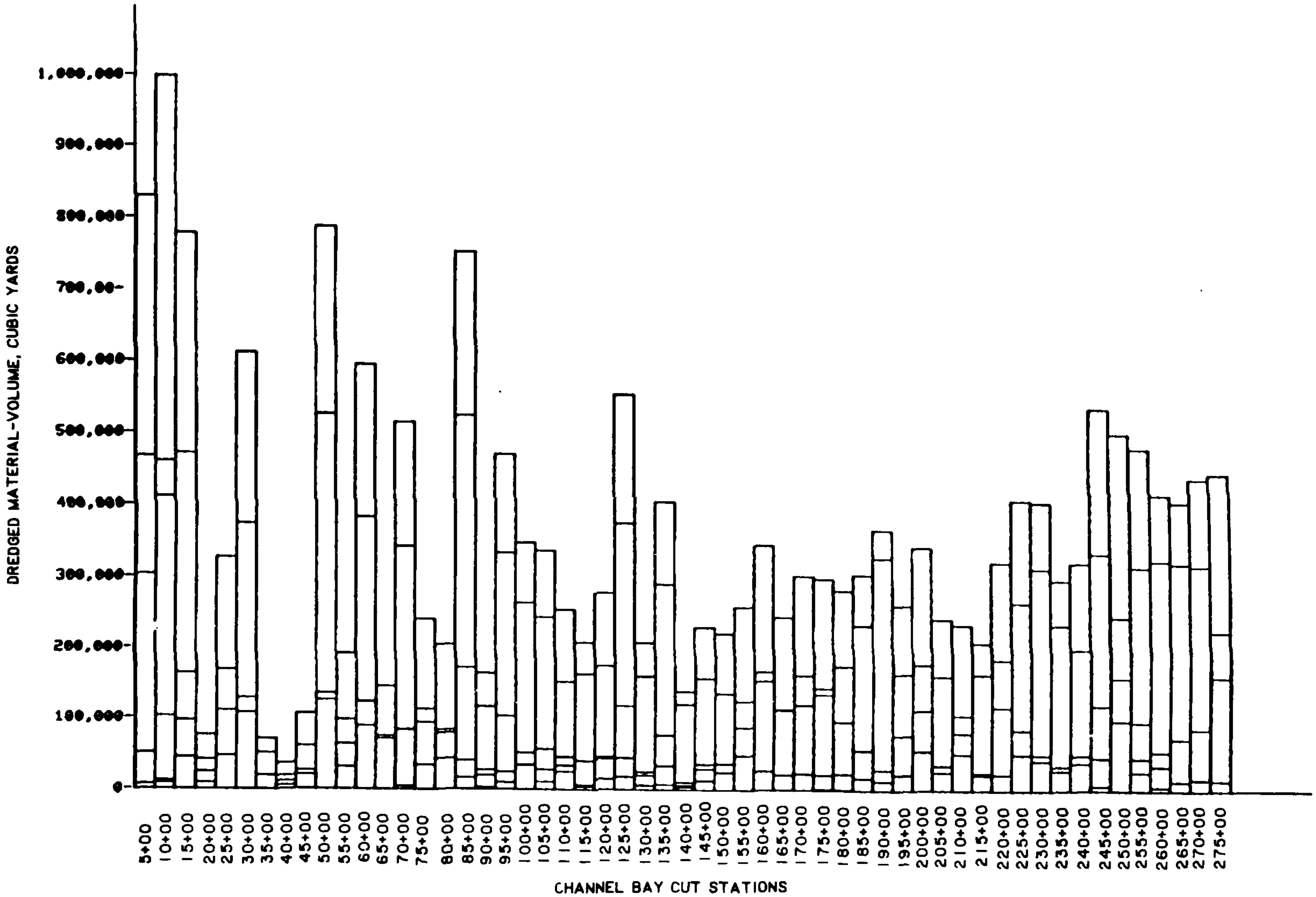


Figure 23. Dredged material volume, cu yd, versus channel bay cut stations, hydraulic dredging

volumes dredged by all three dredges (Jim Bean, Dave Blackburn and Lenel Bean). These plots indicate the distribution of cut volumes recorded along the ship channel alignment is not evenly distributed. The large increase in the bar graph volumes near the Mobile Ship Channel is a reflection of the side cast dredging over the years that has left a low ridge of dredged material adjacent to and parallel to the Mobile Ship Channel. The low volume indicated near station 45+00 was caused by dredged material excavated from this location in an earlier experiment for a trial test section that was discussed earlier in this report. Other low and high volumes reflected in this bar graph could have been caused by previous oyster shell mining by local shell suppliers. There seems to be a more even distribution of dredged material cut volumes (Figures 22 and 23) nearer to the landcut and in the landcut areas of the ship channel.

86. Total dredged material volumes cut by both the barge haul and the hydraulic dredge operation from Theodore Ship Channel are shown tabulated in Table 4. A total of 27,956,126 cubic yard of dredged material was reported removed by the contractor's daily reports from both the landcut and baycut portions of the Theodore Ship Channel. The predicted volume was calculated to be about 31,105,000 cubic yards. This figure was used in the contract advertisement. The predicted baycut dredged material volumes and the cut volumes reported by the contractor's daily reports were almost identical but there was about a 2 million cubic yard difference between the predicted volumes and the volumes reported by the contractor for the landcut. This loss of material may be attributed to a number of factors such as inadequate surveys and/or accumulative mathematical errors or accumulative survey errors in the volume calculations reported in the daily record. A 10 percent loss of volume for the landcut portion of the ship channel is not as easy to justify as would be an equivalent loss in the baycut; therefore, there must be an error either in the calculations or the dredged material volumes reported by the different dredging operations.

PART VII: DREDGED MATERIAL VOLUMES DETERMINED IN GAILLARD ISLAND DIKE AND CONTAINMENT AREA

87. Determination of dredged material volumes placed in the dike sections and containment area at Gaillard Island was made from Dredge Operation Reports for each of the dredging operations. The volumes as reported were compared with these calculated from survey cross-sections and boring log data. Total volumes of dredged material determined for the south, east, and west legs of the island for barge haul and hydraulic dredging are shown in Figures 24 through 28. Each one bar in these Figures represents a 500-ft segment of dike length. Even though the dredged material was reported and plotted in segments of sand, silt, and clay, etc., these values were not identified in the plots.

88. Shown in Figures 24 and 25 is volume of dredged material deposited by the barge haul operation along the south and east dike alignment. There was no fill placed along the west dike alignment by the barge haul operation. The barge haul operation was responsible for placing 2,260,325 cubic yards of dredged material along the south and east dike alignment. The dredged material fill volumes for the south, east, and west legs of the island are shown in Figures 26 and 27 for the hydraulic dredges. The dump locations along the south and east sides of the island for the Lenel Bean can be easily identified by the sharp rises in the bar in these Figures.

89. The total volume of dredged material taken from the channel and placed in each of three legs of the dike and in the containment area was determined from the hydraulic dredging records. A listing of the dredged material volumes for the bay-cut, land-cut, and fill volumes for each leg and the containment area for each dredging operation, along with the soil types, material dumped in the containment area from the Lenel Bean consisted of about 75 percent fine-grain soils and 25 percent shell with practically no sand.

90. The total volume of hydraulic and barge haul fill for each leg of the island was determined to be about 10.2, 5.5, and 7.0 million cubic yards for the south, east, and west leg, respectively. It was also determined that about 5.3 million cubic yards, or about 19 percent of the total volume excavated and placed, was stored within the confines of Gaillard Island. Therefore, about 350 acres of dredged material in the southeastern corner of the containment area was exposed above mls.

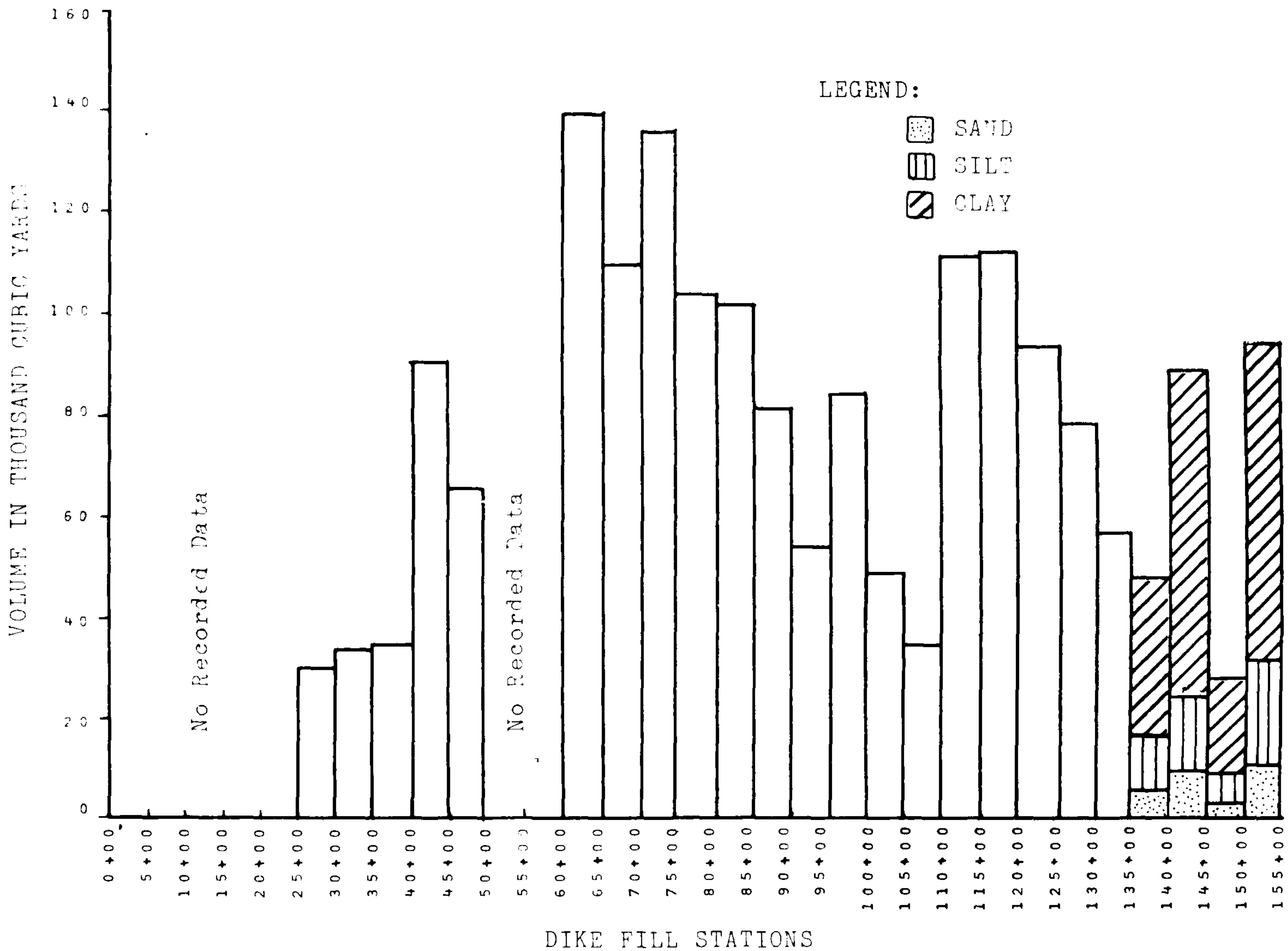


Figure 24. Recorded volumes of barge hauled dredged material in dike fill (Stations 0+00 thru 155+00)

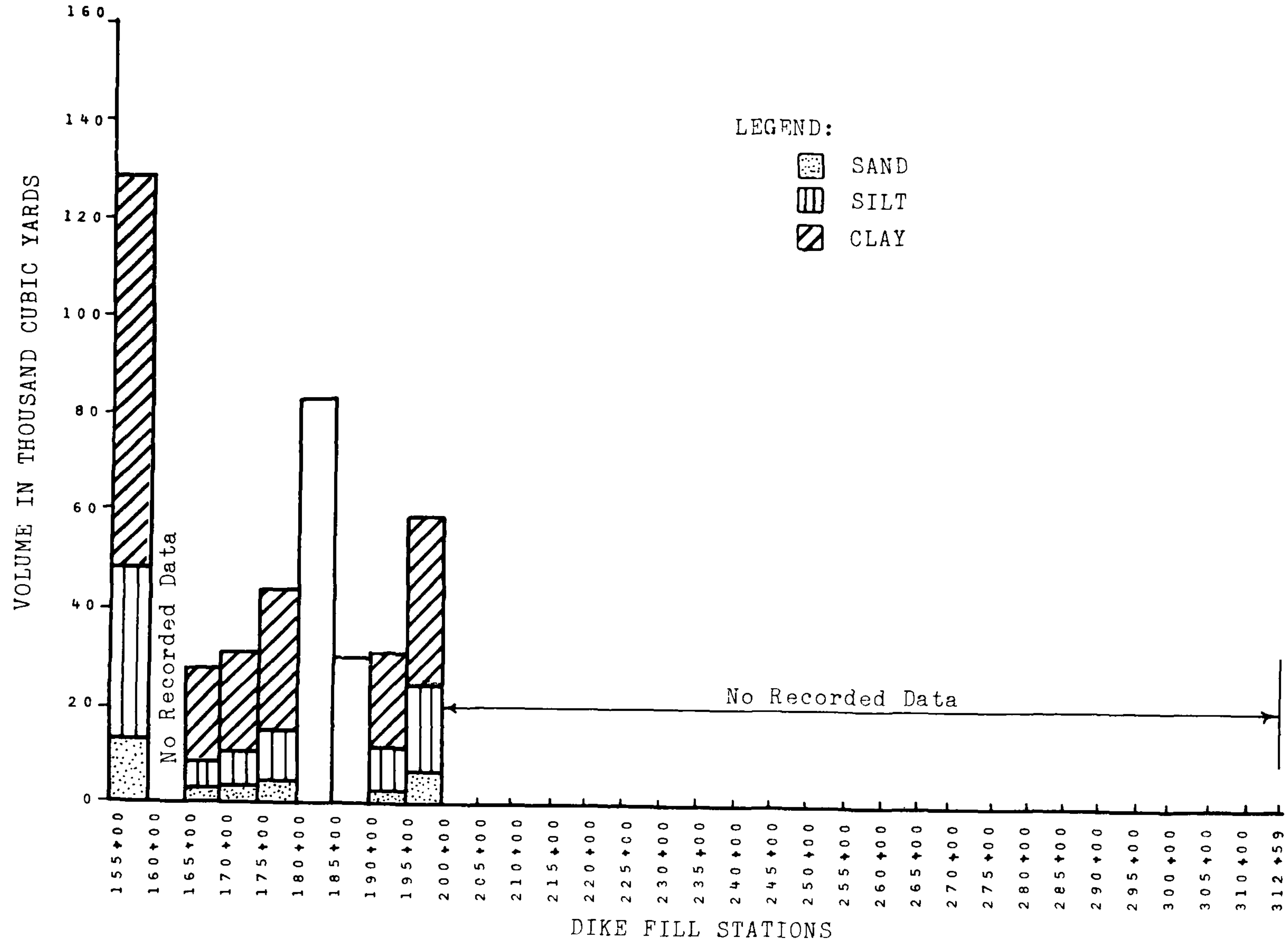


Figure 25. Recorded volumes of barge hauled dredged material in dike fill (Stations 155+00 thru 312+59)

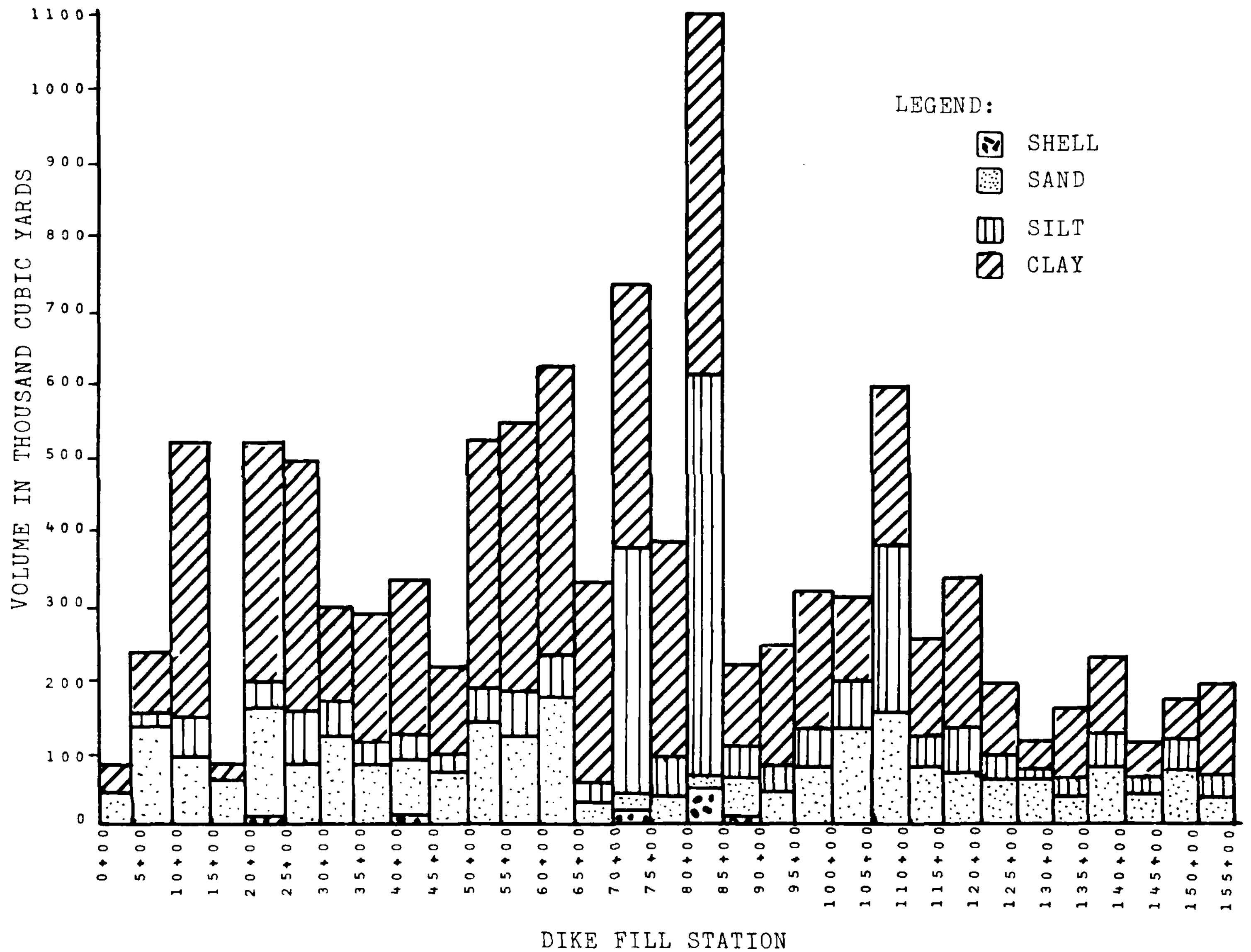


Figure 26. Recorded volumes of hydraulically placed dredged material in dike fill (Stations 0+00 thru 155+00)

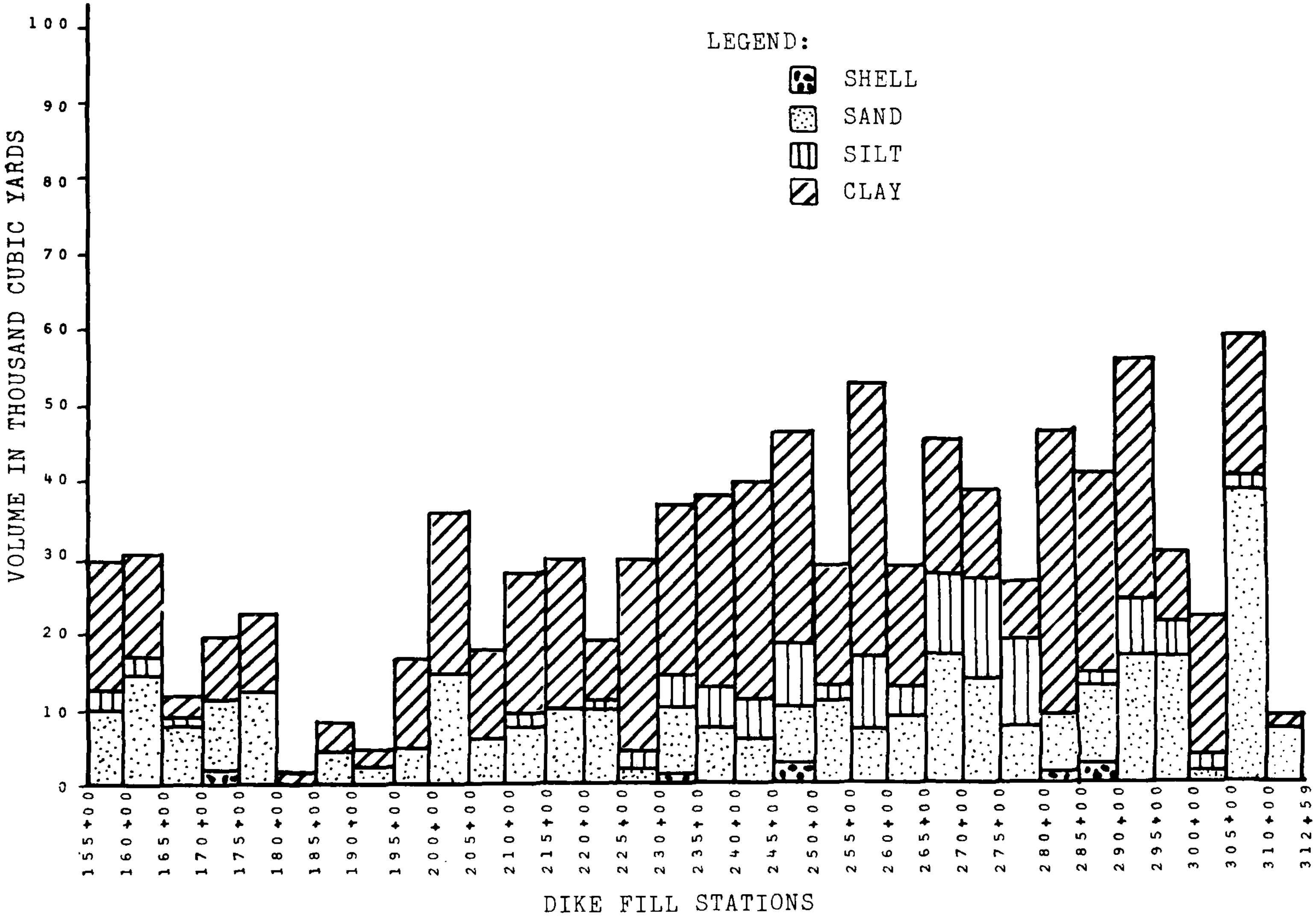


Figure 27. Recorded volumes of hydraulically placed dredged material in dike fill (Stations 155+00 thru 312+59)

Retention of Dredged Material in the Dike and Containment Area

91. After construction, it was determined from the dike elevation contour maps that approximately 320 acres of surface area was exposed above mlw; thus providing a containment area of about 1300 acres for future dredged material storage. About 350 acres of dredged material in the southeastern corner of the containment area is exposed above mlw. It was estimated from the final dike cross-section end areas that approximately 17.4 million cubic yards of dredged material was located within the perimeter dike and about 10.8 million cubic yards was estimated to be contained within the containment area, for a total dredged material volume of 28.2 million cubic yards. These volumes could be misleading since volumes after placement are often different than in situ volumes. If it is assumed a volume change of 1.3, then the actual material cut from the channel would be 13.4 million cubic yards; if a volume change of 1.5 actual' / occurred, then the actual volume cut from the channel would be only 7.2 million cubic yards.

92. The Lenel Bean dredge excavated about 5.3 million cubic yards of material that was dumped directly into the containment area; therefore, it is assumed that the remaining 1.9 million cubic yards resulted from spillover from perimeter dike construction. The total amount of channel cut material estimated (from island cross-section) to construct the perimeter dike and estimated to be inside the containment area was about 20.6 million cubic yards. The total gross measured volume of channel cut dredged material determined from the Channel survey cross-sections was about 33.5 million cubic yards.

93. The retention rate is calculated by dividing the volume of dredged material estimated from cross section of the dike fill and containment area, 20.6 million cubic yards, by the total volume of material cut from the channel, 33.5 million cubic yards shown tabulated in Table 4. Therefore the retention rate was determined to be about 61 percent which means about 39 percent of the channel cut material was unaccounted for after construction. A difference of 39 percent is relatively low considering the large volumes of clays and silts present in the channel and soft foundation soils of the containment Island. If the total dredged material volume reported by the contractor's daily records, 28 million cubic yards, was used to determine the retention rate then the retention rate increases to 74 percent and the amount

of material unaccounted for is only 26 percent.

94. It is believed that the soils lost during construction were the fine silts and clays which were carried away in suspension by the bay currents. Based on studies performed by the Mobile District, these materials would not have travelled more than about 2500 ft to 3000 ft from the outer boundary of the island before being precipitated by the sea water. Some of the dredged material may have traveled down the Mobile Ship Channel; however, there were no appreciable changes in the navigation depths.

95. Dredged material volumes estimated by the government prior to construction, volumes reported by the contractor from dredging records, actual volumes paid for, and the gross volumes estimated from cross sections are tabulated in Table 4. The government's final estimate for the channel cut, differed from the Contractor's estimate by about 0.6% based on final cross-sections. The gross over cut volume was about 7 percent above the pay volumes. The volumes reported in the Contractor's daily records were about 16 percent less than the gross volumes, and about 11 percent less than the pay volumes. Government estimates of bay-cut volumes and that reported and surveyed and paid for were in very close agreement; whereas the gross overcut volumes in the bay-cut were about 8 to 9 percent more than these values. Volumes estimated by the government in the land-cut agreed fairly well with the yardage paid the contractor and the yardages measured from the cross-sections; however, the volumes reported in the Contractor's daily records indicated a volume of about 26 to 29 percent less. This large difference is partly attributed to an 0.8 million cubic yards difference between barge haul volumes reported by the contractor and the yardage paid by the government.

96. A breakdown of the volumes dredged for each dredging operation for both the bay-cut and land-cut is also shown in Table 4 along with the dredging cost. The volumes for each dredging operation shown in the column for Yardage Paid the Contractor in Table 4 were adjusted by the MDO according to the daily records. Bay-cut excavation cost were $0.88 per cubic yard and land-cut cost were $2.216 per cubic yard. Total dredging cost for 31,293,786 cubic yards of material was $42,844,732.77.

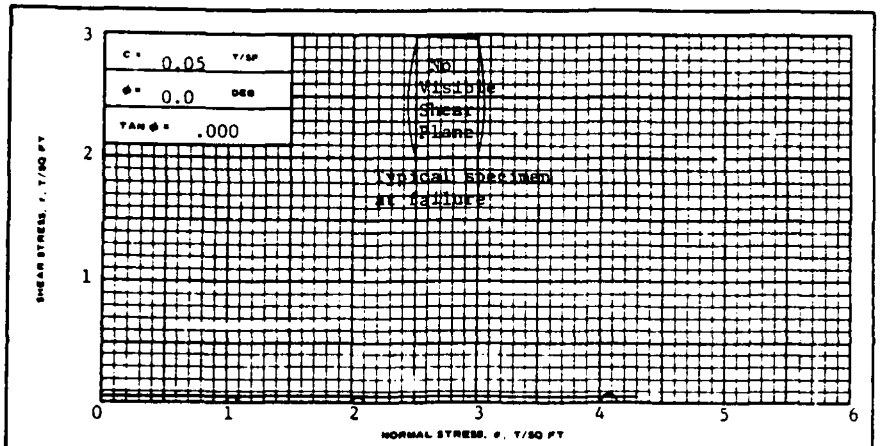
Geotechnical Investigation

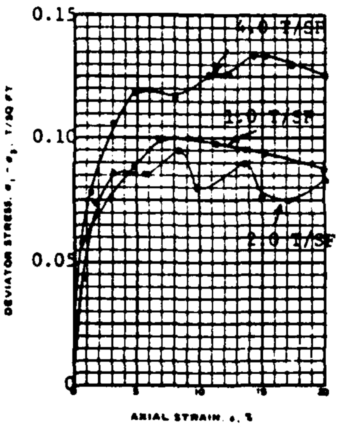
Field and laboratory tests

97. The subsurface investigation conducted by the Mobile District drill crew personnel consisted of making standard penetration tests and obtaining 3-inch diameter undisturbed Shelby tube samples. The results of these tests are shown on the survey cross-sections in Appendix D. The locations of the borings are shown in Figure 17. Thirty seven boring logs have been plotted on the dike cross-sections shown in Appendix D at the stations closest to the actual boring locations. Twenty-nine of the soil borings were located on the longitudinal dike centerline and 8 were offset on either side of the dike centerline. During the drilling operations, an attempt was made to establish the elevation of the original bay bottom. Drilling and sample collection were very difficult because all Standard Penetration tests and Shelby-tube sampling was conducted using a portable tripod. Site mobility along the dike centerline was also hampered because of soft surface conditions. Field and laboratory soil classifications, water contents, Atterberg limits, and gradations were conducted on the disturbed samples obtained from the Standard Penetration tests. Q and $\bar{R}$ triaxial shear strength tests were conducted on undisturbed soil samples taken from the Shelby tubes. The results of the triaxial tests are shown in Figures 28 through 33. The triaxial samples were taken primarily from potentially weak foundation areas that contained clayey (CH) soils. The locations of these weak foundation areas were determined from Standard Penetration tests. The results from the Q tests indicated shear strengths in the range of 0.05 to 0.06 tsf with an undrained internal friction angle, ϕ, of 0 deg. The $\bar{R}$ tests indicated an undrained cohesion that ranged from 0.0 to 0.20 tsf and an undrained friction angle that varied from 10 to 14.5 deg. The effective $\bar{R}$ cohesion varied from 0 to 0.10 tsf, with an effective internal friction angle, that varied from 20.5 to 24 deg.

98. Field vane shear strength tests were conducted at select locations along the dike alignment by using a 2.5-in. wide by 4.5-in. long vane with a 0.75-in. taper. Table 5 contains a tabulation of boring numbers, locations, elevation, and corrected shear strength determinations for each vane shear test. The in situ vane shear strength varied from 0.03 to 0.39 tsf in the soft dike and foundation soils. The vane shear tests were conducted in areas that were considered to be soft and weak, i.e., potential failure zones.

WORK ORDER NO. 2952
REQ. NO. 95-81-F & M





SPECIMEN NO.			1	2	3
INITIAL	WATER CONTENT, %	w_o	73.5	69.5	56.8
	DRY DENSITY LB/CU FT	γ_{d_o}	56.4	58.6	64.7
	SATURATION, %	S_o	100.0	100.0	95.6
	VOID RATIO	e_o	1.987	1.877	1.604
BEFORE SHEAR	WATER CONTENT, %	w_c	--	--	--
	DRY DENSITY LB/CU FT	γ_{d_c}	--	--	--
	SATURATION, %	S_c	--	--	--
	VOID RATIO	e_c	--	--	--
	FINAL BACK PRESSURE, T/SQ FT	u_o	--	--	--
MINOR PRINCIPAL STRESS, T/SQ FT		σ_3	1.00	2.00	4.00
MAXIMUM DEVIATOR STRESS, T/SQ FT		$(\sigma_1 - \sigma_3)_{max}$	0.10	0.10	0.13
TIME TO $(\sigma_1 - \sigma_3)_{max}$, MIN		t_f	9	11	19
ULTIMATE DEVIATOR STRESS, T/SQ FT		$(\sigma_1 - \sigma_3)_{ult}$	0.09	0.08	0.13
INITIAL DIAMETER, IN.		D_o	1.38	1.38	1.38
INITIAL HEIGHT, IN.		H_o	3.08	3.08	3.08

CONTROLLED-Strain(.75%/min) TEST

DESCRIPTION OF SPECIMENS (Visual) Gray fat clay (CH) with a trace of sand

LL 58 | PL 21 | PI 37 | Gs 2.70 | TYPE OF SPECIMEN Undisturbed | TYPE OF TEST Q

REMARKS: Gradation analysis not requested.

PROJECT Theodore Ship Channel
Gaillard Disposal Island
AREA: 1 Foundation Material for Dike
Sta. 10+00 | SAMPLE NO. --
DEPTH/ELEV 32.0'-34.5'
LABORATORY SADEN-FL | DATE 9 Nov 1981

TRIAXIAL COMPRESSION TEST REPORT

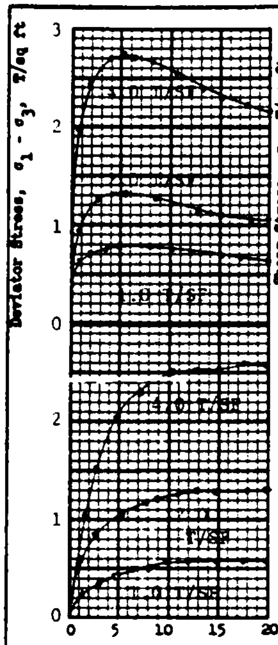
ENG FORM NO. 2089 REV JUNE 1970 PREVIOUS EDITION IS OBSOLETE TRANSLUCENT (EM 1110-2-1906)

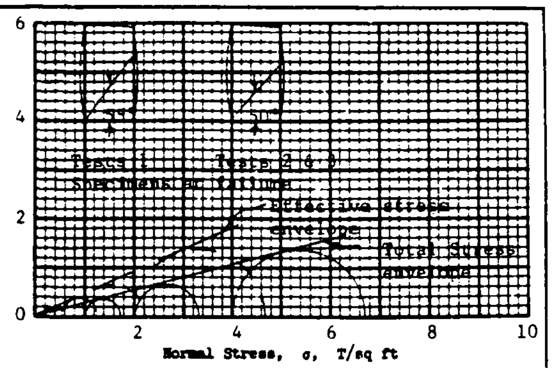
DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY,
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30061

Figure 28. Triaxial compression test report on Q test for samples at Sta 10+00 and 32.0 - 34.5 ft depth

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30061

Reqn No. 95-81-F & M
Work Order No. 2952





Shear Strength Parameters

	Total	Effective
ϕ =	14.5	24.0
tan ϕ =	.259	.445
c =	0.0	0.0 T/sq ft

Method of saturation: Back Pressure

☐ Controlled stress

☒ Controlled strain

Test No.			1	2	3	
Initial	Water content	w_o	61.2 %	62.5 %	61.3 %	%
	Void ratio	e_o	1.683	1.697	1.712	
	Saturation	S_o	98.2 %	99.5 %	96.7 %	%
	Dry density, lb/cu ft	γ_d	62.8	62.5	62.2	
Before Shear	Water content	w_c	44.5 %	38.0 %	33.7 %	%
	Void ratio	e_c	1.202	1.025	0.911	
	Saturation	S_c	100.0 %	100.0 %	100.0 %	%
	Final back pressure, T/sq ft	u_o	5.00	5.00	5.00	
Final	Water content	w_f	44.5 %	38.0 %	33.7 %	%
	Void ratio	e_f	1.202	1.025	0.911	
Minor principal stress, T/sq ft		σ_3	1.00	2.00	4.00	
Max deviator stress, T/sq ft		$(\sigma_1-\sigma_3)_{max}$	0.77	1.32	2.73	
Time to failure, min		t_f	45	50	45	
Rate of strain, percent/min			0.11	0.11	0.11	
% Strain at $(\sigma_1-\sigma_3)$ Max			4.74	5.27	4.92	
Ult deviator stress, T/sq ft		$(\sigma_1-\sigma_3)_{ult}$	0.70	1.09	2.32	
Initial diameter, in.		D_o	1.38	1.38	1.38	
Initial height, in.		H_o	3.08	3.08	3.08	

Type of test: $\bar{R}$	Type of specimen: Undisturbed		
Visual Classification: Gray fat clay (CH) with a trace of sand			
LL 58	PL 21	PI 37	—	G_s 2.70

Remarks: Gradation analysis not requested.

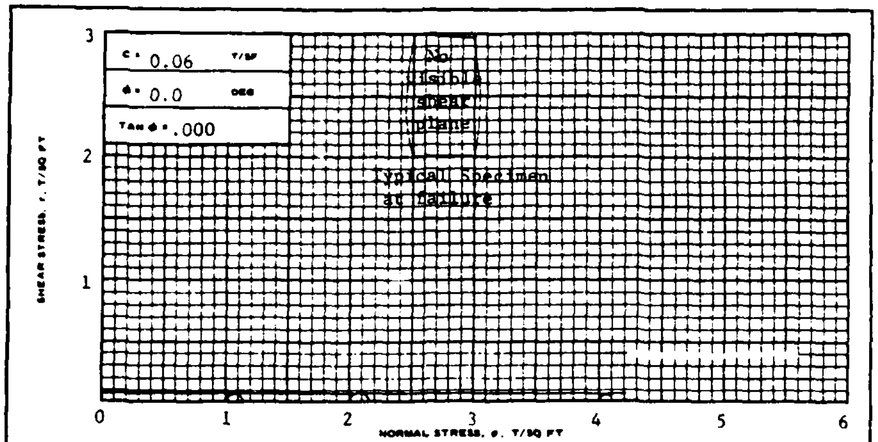
Project: Theodore Ship Channel, Gaillard Disposal Island
Area: Foundation Material for Dike
Sta. No. 10+00 | Sample No. --
Depth 32.0'-34.5' | Date 9 November 1981

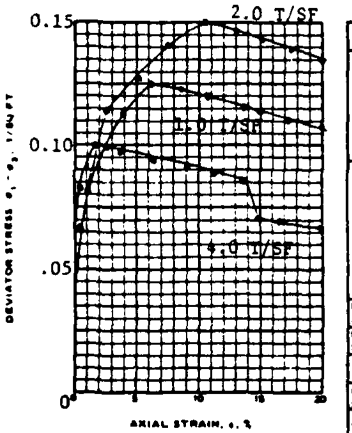
TRIAXIAL COMPRESSION TEST REPORT

ENG FORM 2089 (EM 1110-2-1902) PREVIOUS EDITIONS ARE OBSOLETE

Figure 29. Triaxial compression test report on $\bar{R}$ tests for samples of Sta 10+00 and 32.0 - 34.5 ft depth

WORK ORDER NO. 2952
REQ. NO. 95-81-F&M





SPECIMEN NO.		1	2	3
INITIAL: WATER CONTENT, %	w_o	81.7	82.8	84.4
INITIAL: DRY DENSITY LB/CU FT	γ_{d_o}	51.6	51.3	50.5
INITIAL: SATURATION, %	S_o	98.0	98.4	98.0
INITIAL: VOID RATIO	e_o	2.217	2.238	2.291
BEFORE SHEAR: WATER CONTENT, %	w_c	---	---	---
BEFORE SHEAR: DRY DENSITY LB/CU FT	γ_{d_c}	---	---	---
BEFORE SHEAR: SATURATION, %	S_c	---	---	---
BEFORE SHEAR: VOID RATIO	e_c	---	---	---
BEFORE SHEAR: FINAL BACK PRESSURE, T/SQ FT	u_o	---	---	---
MINOR PRINCIPAL STRESS, T/SQ FT	σ_3	1.00	2.00	4.00
MAXIMUM DEVIATOR STRESS, T/SQ FT	$(\sigma_1 - \sigma_3)_{max}$	0.13	0.15	0.10
TIME TO $(\sigma_1 - \sigma_3)_{max}$, MIN	t_1	8	14	2
ULTIMATE DEVIATOR STRESS, T/SQ FT	$(\sigma_1 - \sigma_3)_{ult}$	0.11	0.14	0.07
INITIAL DIAMETER, IN.	D_o	1.38	1.38	1.38
INITIAL HEIGHT, IN.	H_o	3.08	3.08	3.08

CONTROLLED-strain(.77%/min.) TEST

DESCRIPTION OF SPECIMENS Gray, fat clay (CH) w/a little sand

LL	PL	PI	G_s	TYPE OF SPECIMEN	TYPE OF TEST
75	29	46	2.66	Undisturbed	Q

REMARKS: Gradation analysis not requested.

PROJECT Theodore Ship Channel
Area: Gaillard Disposal Island
Foundation Material for Dike
[redacted] Sta.No.50+00 SAMPLE NO. --
DEPTH/ELEV ---
LABORATORY SADEN-FL DATE 10 Nov 1981

TRIAXIAL COMPRESSION TEST REPORT

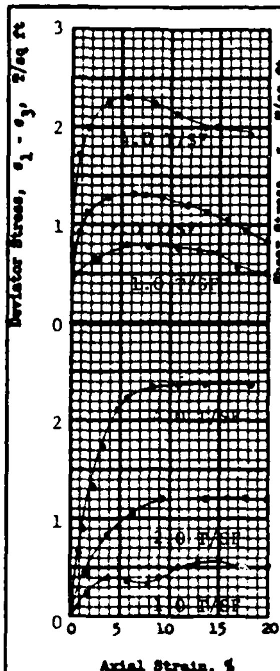
ENG FORM NO. 2089 REV JUNE 1970 PREVIOUS EDITION IS OBSOLETE TRANSLUCENT (EM 1110-2-1906)

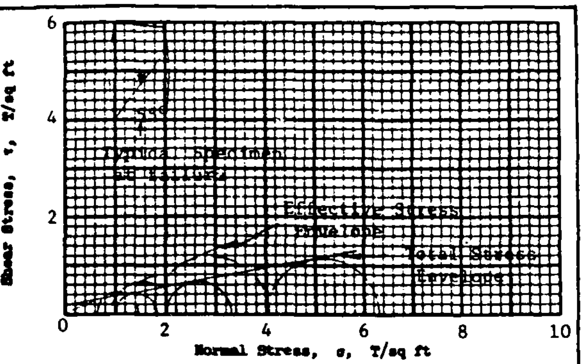
DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY,
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30061

Figure 30. Triaxial compression test report on Q test for samples at Sta 50+00 and undetermined depth

WORK ORDER NO. 2952
REQN. NO. 95-81-F&M

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY,
CORPS OF ENGINEERS, 611 SOUTH COBB DR.,MARIETTA, GA. 30061





Shear Strength Parameters

	Total	Effective
ϕ =	10.5	23.5°
tan ϕ =	.185	.435
c =	0.20	0.0 T/sq ft

Method of saturation Back Pressure

☐ Controlled stress
☒ Controlled strain

Test No.			1	2	3	
Initial	Water content	w_o	89.5 %	86.5 %	85.3 %	%
	Void ratio	e_o	2.380	2.335	2.335	
	Saturation	S_o	100.0 %	98.6 %	97.3 %	%
	Dry density, lb/cu ft	γ_d	49.1	49.8	49.8	
Before Shear	Water content	w_c	64.0 %	52.1 %	40.5 %	%
	Void ratio	e_c	1.702	1.387	1.078	
	Saturation	S_c	100.0 %	100.0 %	100.0 %	%
	Final back pressure, T/sq ft	u_o	5.00	5.00	5.00	
Final	Water content	w_f	64.0 %	52.1 %	40.5 %	%
	Void ratio	e_f	1.702	1.387	1.078	
Minor principal stress, T/sq ft		σ_3	1.00	2.00	4.00	
Max deviator stress, T/sq ft		$(\sigma_1-\sigma_3)_{max}$	0.81	1.32	2.31	
Time to failure, min		t_f	50	55	45	
Rate of strain, percent/min			0.11	0.11	0.11	
% Strain at $(\sigma_1-\sigma_3)_{max}$			5.43	6.00	5.16	
Ult deviator stress, T/sq ft		$(\sigma_1-\sigma_3)_{ult}$	0.69	1.06	2.00	
Initial diameter, in.		D_o	1.38	1.38	1.38	
Initial height, in.		H_o	3.08	3.08	3.08	

Type of test R		Type of specimen Undisturbed			
Visual Classification	Gray, fat clay (CH) w/a little sand				
LL 75	PL 29	PI 46	--	G_s 2.66	

Remarks
Gradation analysis
not requested.

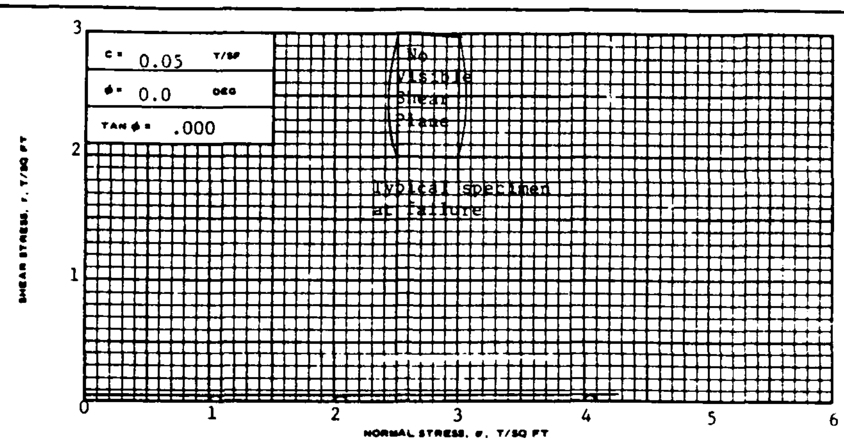
Project	Theodore Ship Channel Gaillard Disposal Island
Area	Foundation Material for Dike
Sta.No.50+00	Sample No. --
Depth El ---	Date 10 Nov 1981

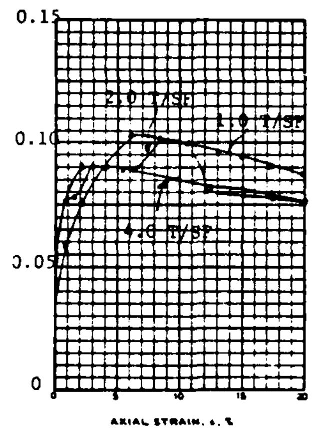
TRIAXIAL COMPRESSION TEST REPORT

Figure 31. Triaxial compression test report on R test for samples at Sta 50+00 and undetermined depth

WORK ORDER NO. 2952
Req. No. 95-81-F & M

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30061





SPECIMEN NO.			1	2	3
INITIAL	WATER CONTENT, %	w_o	58.6	57.6	56.0
	DRY DENSITY LB/CU FT	γ_{d_o}	64.8	65.2	66.4
	SATURATION, %	S_o	98.7	98.1	98.1
	VOID RATIO	e_o	1.610	1.594	1.548
BEFORE SHEAR	WATER CONTENT, %	w_c	--	--	--
	DRY DENSITY LB/CU FT	γ_{d_c}	--	--	--
	SATURATION, %	S_c	--	--	--
	VOID RATIO	e_c	--	--	--
	FINAL BACK PRESSURE, T/SQ FT	u_o	--	--	--
MINOR PRINCIPAL STRESS, T/SQ FT		σ_3	1.00	2.00	4.00
MAXIMUM DEVIATOR STRESS, T/SQ FT		$(\sigma_1 - \sigma_3)_{max}$	0.10	0.10	0.09
TIME TO $(\sigma_1 - \sigma_3)_{max}$, MIN		t_1	8	11	4
ULTIMATE DEVIATOR STRESS, T/SQ FT		$(\sigma_1 - \sigma_3)_{ult}$	0.09	0.08	0.08
INITIAL DIAMETER, IN.		D_o	1.38	1.38	1.38
INITIAL HEIGHT, IN.		H_o	3.08	3.08	3.08

CONTROLLED- Strain (.74%/min) TEST

DESCRIPTION OF SPECIMENS Gray fat clay (CH) with some sand

LL 69	PL 22	PI 47	Gs 2.71	TYPE OF SPECIMEN Undisturbed	TYPE OF TEST Q

REMARKS Gradation analysis not requested.

PROJECT Theodore Ship Channel
AREA: Gaillard Disposal Island
Foundation Material for Dike
~~XXXXXX~~Sta.296+00 SAMPLE NO --
DEPTH ~~XXXX~~ 32.0'-34.5'
LABORATORY SADEN-FL DATE 9 November 198[illegible]

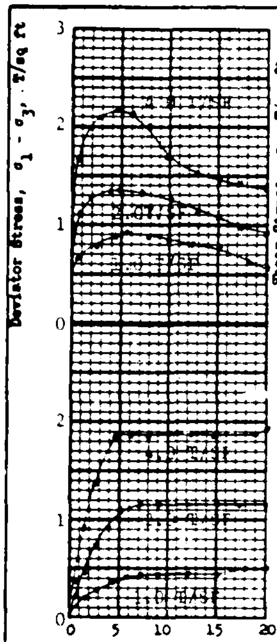
TRIAXIAL COMPRESSION TEST REPORT

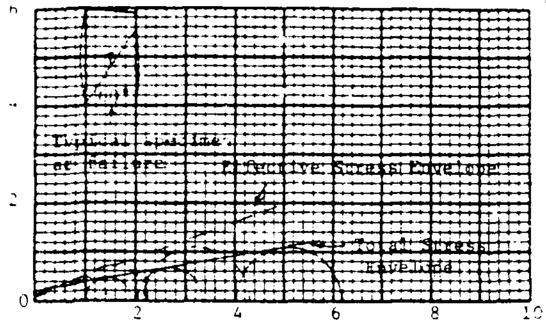
ENG FORM NO. 2089 REV JUNE 1970 PREVIOUS EDITION IS OBSOLETE TRANSLUCENT (EM 1110-2-1906)

Figure 32. Triaxial compression test report on Q test for samples at Sta 296+00 at 32.0 - 34.5 ft depth

Reqn No. 95-81-F & M
Work Order No. 2952

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30061





Shear Strength Parameters

	Total	Effective
ϕ =	10.0	20.5
tan ϕ =	.176	.374
c =	0.20	0.10* T/sq ft

Method of saturation Back Pressure

☐ **Controlled stress**

☒ **Controlled strain**

Test No.			1	2	3	
Initial	Water content	w_o	59.3 %	58.7 %	61.2 %	%
	Void ratio	e_o	1.651	1.654	1.711	
	Saturation	S_o	97.4 %	96.2 %	96.9 %	%
	Dry density, lb/cu ft	γ_d	63.8	63.7	62.4	
Before Shear	Water content	w_c	44.2 %	38.2 %	33.1 %	%
	Void ratio	e_c	1.199	1.034	.897	
	Saturation	S_c	100.0 %	100.0 %	100.0 %	%
	Final back pressure, T/sq ft	u_o	5.00	5.00	5.00	
Final	Water content	w_f	44.2 %	38.2 %	33.1 %	%
	Void ratio	e_f	1.199	1.034	.897	
Minor principal stress, T/sq ft		σ_3	1.00	2.00	4.00	
Max deviator stress, T/sq ft		$(\sigma_1-\sigma_3)_{max}$	0.92	1.36	2.18	
Time to failure, min		t_f	50	45	40	
Rate of strain, percent/min			0.10	0.11	0.11	
% Strain at $(\sigma_1-\sigma_3)_{max}$			5.13	4.78	4.44	
Ult deviator stress, T/sq ft		$(\sigma_1-\sigma_3)_{ult}$	0.76	1.06	1.45	
Initial diameter, in.		D_o	1.38	1.38	1.38	
Initial height, in.		H_o	3.08	3.08	3.08	

Type of test $\bar{R}$ | **Type of specimen** Undisturbed

Visual **Classification** Gray fat clay (CH) with some sand

LL 69 | **PL** 22 | **PI** 47 | -- | G_s 2.71

Remarks 1. Gradation analysis not requested.
2. *Apparent effective cohesion questionable for design computations.

Project Theodore Ship Channel
Gaillard Disposal Island

Area Foundation Material for Dike

Sta No. 296+00 | **Sample No.** --

Depth 32.0'-34.5' | **Date** 9 November 1981

TRIAXIAL COMPRESSION TEST REPORT

Figure 33. Triaxial compression test report on $\bar{R}$ test for samples of Sta 296+00 at 32.0 - 34.5 ft depth

99. Gradation tests were conducted on 42 soil samples taken from the dike fill and foundation soils. The gradation curves for these soil samples are not contained in this report; however, they are available through the Mobile District Office. Most of the soil samples selected for the gradation tests were poorly graded, medium to fine sands with generally less than 10 to 15 percent silt and clay-size material.

Change in Soil Characteristics from Channel to Dike

100. There was a considerable change in the soil characteristics as they existed in the channel before dredging and after they were barge hauled and/or hydraulically pumped into the dike cross-section. An attempt was made to construct the dike cross-section with land-cut materials that contained primarily sand and stiff clays. The existing materials in the channel were alluvial deposits of sands, silts, clays, and small amounts of oyster shell and gravel. These natural materials were layered and fairly dense in the land-cut and loose in the bay-cut with the clays being normally consolidated. As a result of these materials being dredged, transported, and deposited as dike fill, the density significantly decreased with a subsequent increase in volume. It was assumed that the land-cut materials increased in volume, by about 30 percent and the bay-cut materials increased by about 50 percent. The sandy materials appeared to be cleaner, indicating a portion of the fines was washed out during dredging and placement. Large piles of clay balls formed at the end of the dredge pipes which required moving the hydraulic spill barge more than when placing sand. The slopes of these clay ball piles was very steep with repose angles of 45 deg. The clay ball normally ranged in size from 2 to 4 inches in diameter, but occasionally balls 12 to 16 inches in diameter came through the dredge pipe. As the photograph in Figure A20 shows some of the clay balls were very large. The consistency of the clay balls varied depending on the location from which it was dredged. The clay balls formed from land-cut materials were generally stiff and formed a surface firm enough to walk on immediately after placement, while, clay balls formed from the bay-cut materials formed a surface which required several days of drying before supporting a man. All clay ball surfaces were hard after drying and difficult to walk on. The clay balls surfaces cracked and weathered with the clay balls breaking into small pieces filling the surface voids. Voids

between clay balls below the surface were usually filled with sand, silt, and shell.

101. It was suspected the natural soils might contain a high percentage of Montmorillonite clay minerals which would have a tendency to disintegrate when resubmerged in water after it dried out. Considerable erosion has been observed since construction along the outside perimeter of the dike at corners of the island. The material used to construct the dike at these locations was clay balls which exhibits a tendency to erode rapidly. The areas that were constructed from clay balls could support vegetation quicker than areas constructed from sand. It was observed that if the clay balls were not allowed to dry after dredging, they seemed to erode less rapidly. The soft bay bottom deposits that were dredged by the Lenel Bean and deposited within the containment area formed a dry, hard, thick crust where the surface water has drained. Proper management of the containment area would likely improve the strength of the confined material and increase the containment areas long-term storage capacity.

Instrumentation

102. After the island was constructed, the Mobile District selected 12 locations along the dike alignment to be instrumented and monitored on a regular long-term basis. A plan view of the instrument locations is shown in Figure 34. Each location contained 12 surface settlement monuments, 12 deep settlement rods, and 16 piezometers. The purpose of the settlement monuments and deep rods was to determine the rate of settlement of the dike surface in relationship to the dike foundation. The purpose of the piezometers was to measure pore pressures in the foundation materials in the event of future dike raisings. The only instrumentation data reported by the Mobile District was settlement data from the 12 surface settlement monuments. This data is shown graphically in Appendix F. A land and hydrographic survey was performed at each instrument location. The profiles made from this survey are shown in Appendix G.

Settlement or subsidence

103. The settlement observations for the 12 surface settlement monuments are shown graphically in Figure 35. Presenting the data in this manner, illustrates the linear relationship between dike settlement and time. This relationship can be expressed as follows:

$$S = c \log t \tag{1}$$

where

S = settlement, in.

t = time, months (at end of construction)

c = constant (varies from 1.6 to 13.3 with an average of 7.5)

Equation (1) can be expressed in terms of settlement as a percentage of the dike height as follows:

$$P = 100\ c_1 \log t \tag{2}$$

where

$c_1 = c/H$

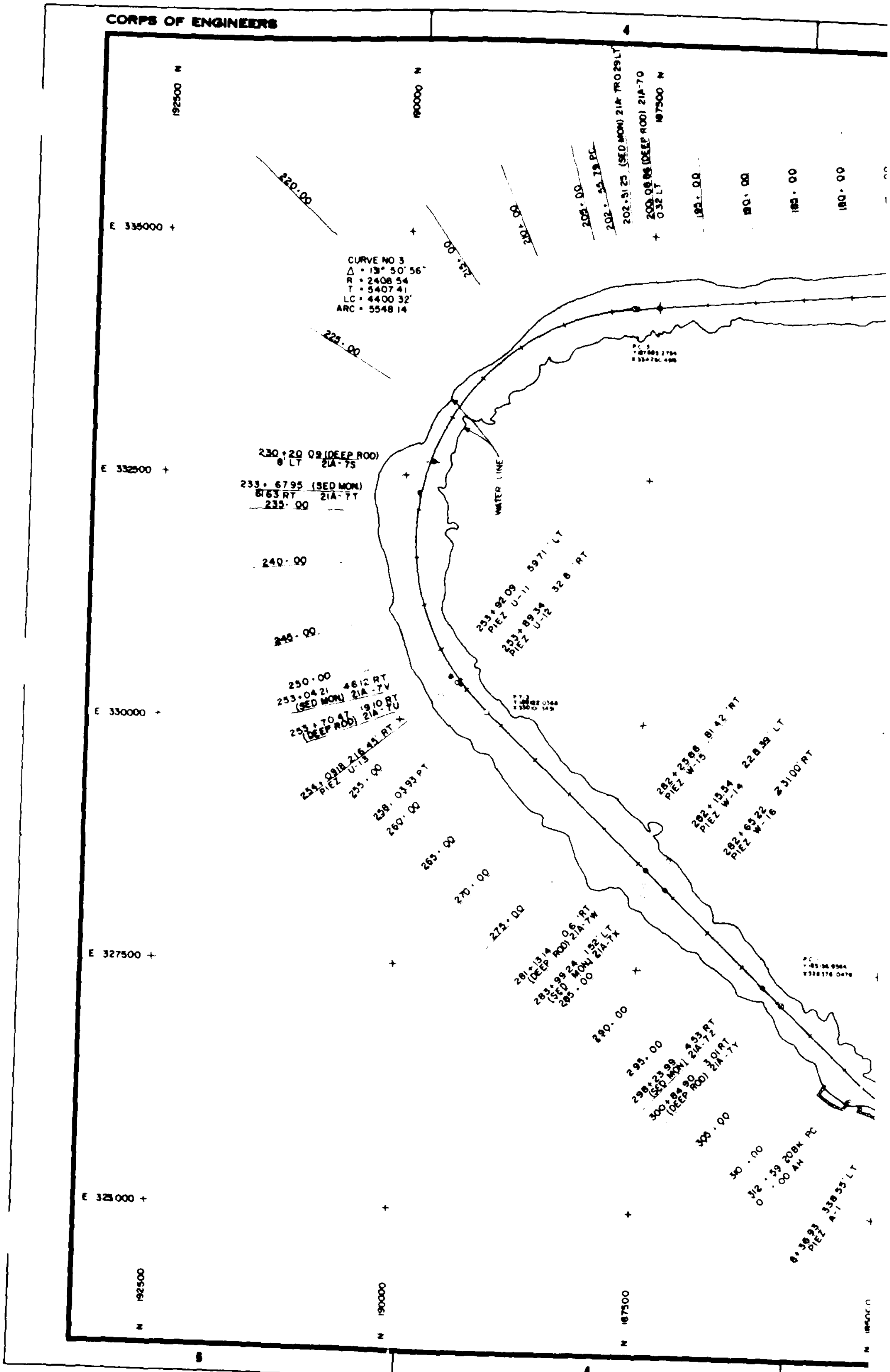
H = height of embankment, ft

where c_1 varies from 0.0083 to 0.07 with an average value of 0.04. An approximation of the average settlement of an embankment 16 ft high would be about 4 percent of the dike height or 7.7 in. after the first year. Consolidation of the dike and foundation materials will continue to take place for many years before complete consolidation is achieved.

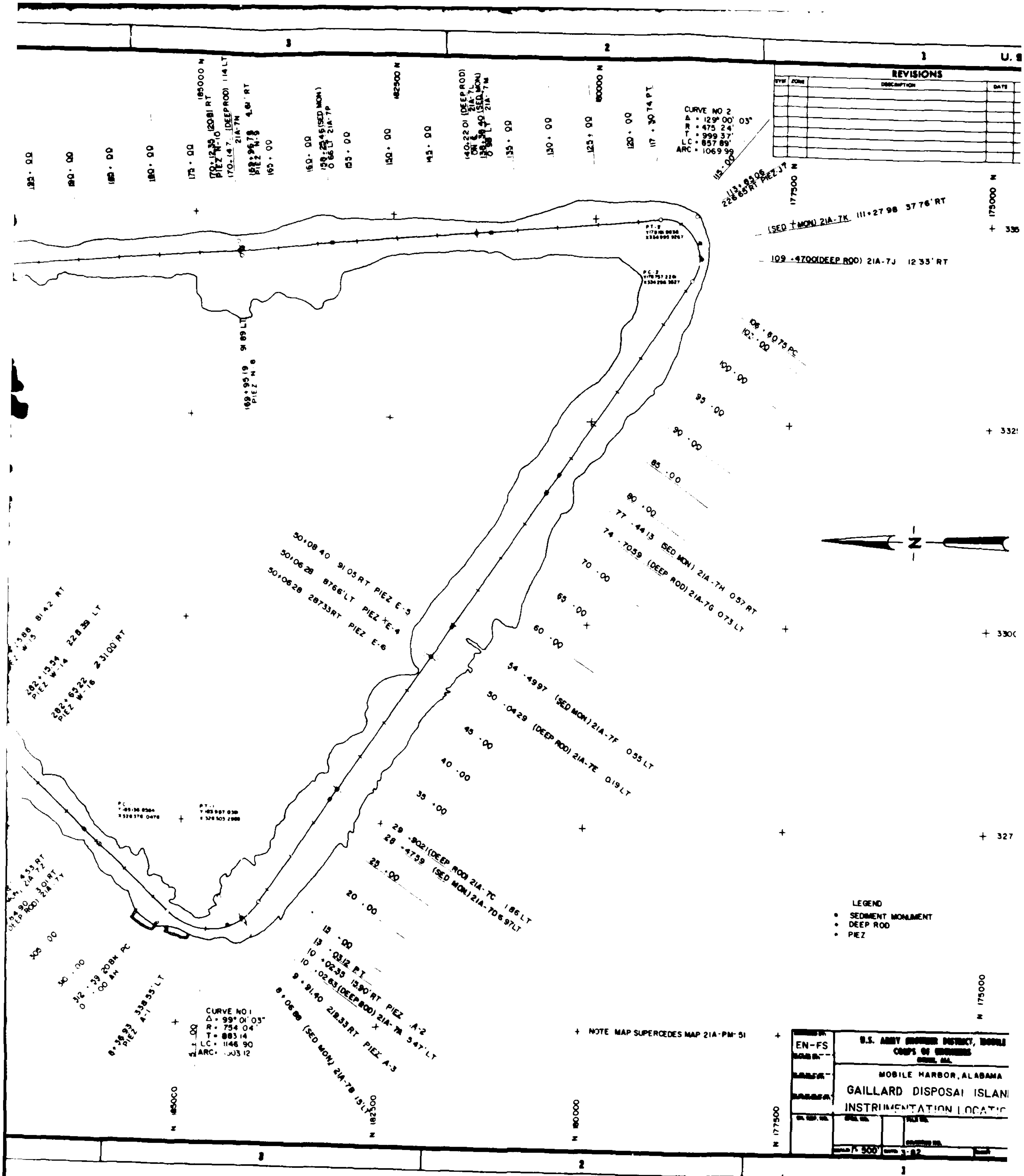
104. The data plotted in Figure 35 indicates a settlement at station 253, of about 20 inches has occurred where the initial dike height was about el +12 ft mlw. Of the twelve locations monitored, seven are continuing to settle rapidly with an average settlement of about 14 inches/year. The consolidation rate will decline with time. Five of the locations monitored exhibited significant reduction in the rate of consolidation. Three of these locations are near the west corner of the island, at station 8, 28, and 298, which are in areas with considerably stronger foundation soils. One of the other locations of low subsidence is on the east dike where the fill depth was much too shallow because of previously placed dredged material. The other location was located in the area of the construction spillway which was filled with clean sand.

Theoretical consolidation analysis

105. A consolidation analysis was performed utilizing the data obtained by the Mobile District during the foundation investigation as part of the design phase. Table 6 contains a summary the consolidation data used in the analysis. An example of the calculations used to predict the amount of



CORPS OF ENGINEERS
CURVE NO 3
Δ = 13° 50' 56"
R = 2408 54
T = 5407 41
LC = 4400 32'
ARC = 5548 14
E 335000
E 332500
E 330000
E 327500
E 325000
192500
190000
187500
WATER LINE
230+20 09 (DEEP ROD) 8' LT 21A-7S
233+67 95 (SED MON) 81 63 RT 21A-7T
235·00
240·00
245·00
250·00
253+04 21 46 12 RT (SED MON) 21A-7V
253+70 47 19 10 RT (DEEP ROD) 21A-7U
255·00
260·00
265·00
270·00
275·00
290·00
295·00
300·00
310·00
220·00
225·00
215·00
210·00
205·00
195·00
190·00
185·00
180·00
202+51 25 (SED MON) 21A-7R 0 29 LT
200+08 86 (DEEP ROD) 21A-7Q 0 32 LT
253+92 09 59 71' LT PIEZ U-11
253+89 34 32 8' RT PIEZ U-12
282+25 86 81 42' RT PIEZ W-15
282+15 54 22 8 39' LT PIEZ W-14
282+63 22 23 100' RT PIEZ W-16
281+13 14 0 6' RT (DEEP ROD) 21A-7W
283+99 24 1 52' LT (SED MON) 21A-7X
298+23 99 4 53 RT (SED MON) 21A-7Z
300+84 90 3 01 RT (DEEP ROD) 21A-7Y
312+39 208K PC 0+00 AH
0+38 93 338 55' LT PIEZ A-1
5
4



REVISIONS
CURVE NO 2
Δ = 129° 00' 03"
R = 475 24'
T = 999 37'
LC = 857 89'
ARC = 1069 99
CURVE NO 1
Δ = 99° 01' 03"
R = 754 04'
T = 883 14
LC = 1146 90
(SED MON) 21A-7K 111+27 98 37 76' RT
109 +4700 (DEEP ROD) 21A-7J 12 33' RT
77 +44 13 (SED MON) 21A-7H 0 57 RT
74 +70 59 (DEEP ROD) 21A-7G 0 73 LT
54 +49 97 (SED MON) 21A-7F 0 55 LT
50 +04 29 (DEEP ROD) 21A-7E 0 19 LT
50+08 40 91 05 RT PIEZ E-5
50+06 28 87 66' LT PIEZ E-4
50+06 28 287 33 RT PIEZ E-6
29 +90 21 (DEEP ROD) 21A-7C 1 86 LT
28 +47 59 (SED MON) 21A-7D 6 97 LT
13 +03 12 P.T.
10 +02 35 13 90' RT PIEZ A-2
10 +02 63 (DEEP ROD) 21A-7A 5 47' LT
9 +91 40 218 33 RT PIEZ A-3
8 +06 08 (SED MON) 21A-7B 15 LT
169+95 19 91 89 LT PIEZ N-8
LEGEND
SEDIMENT MONUMENT
DEEP ROD
PIEZ
NOTE MAP SUPERCEDES MAP 21A-PM-51
EN-FS
MOBILE HARBOR, ALABAMA
GAILLARD DISPOSAL ISLAN

Figure

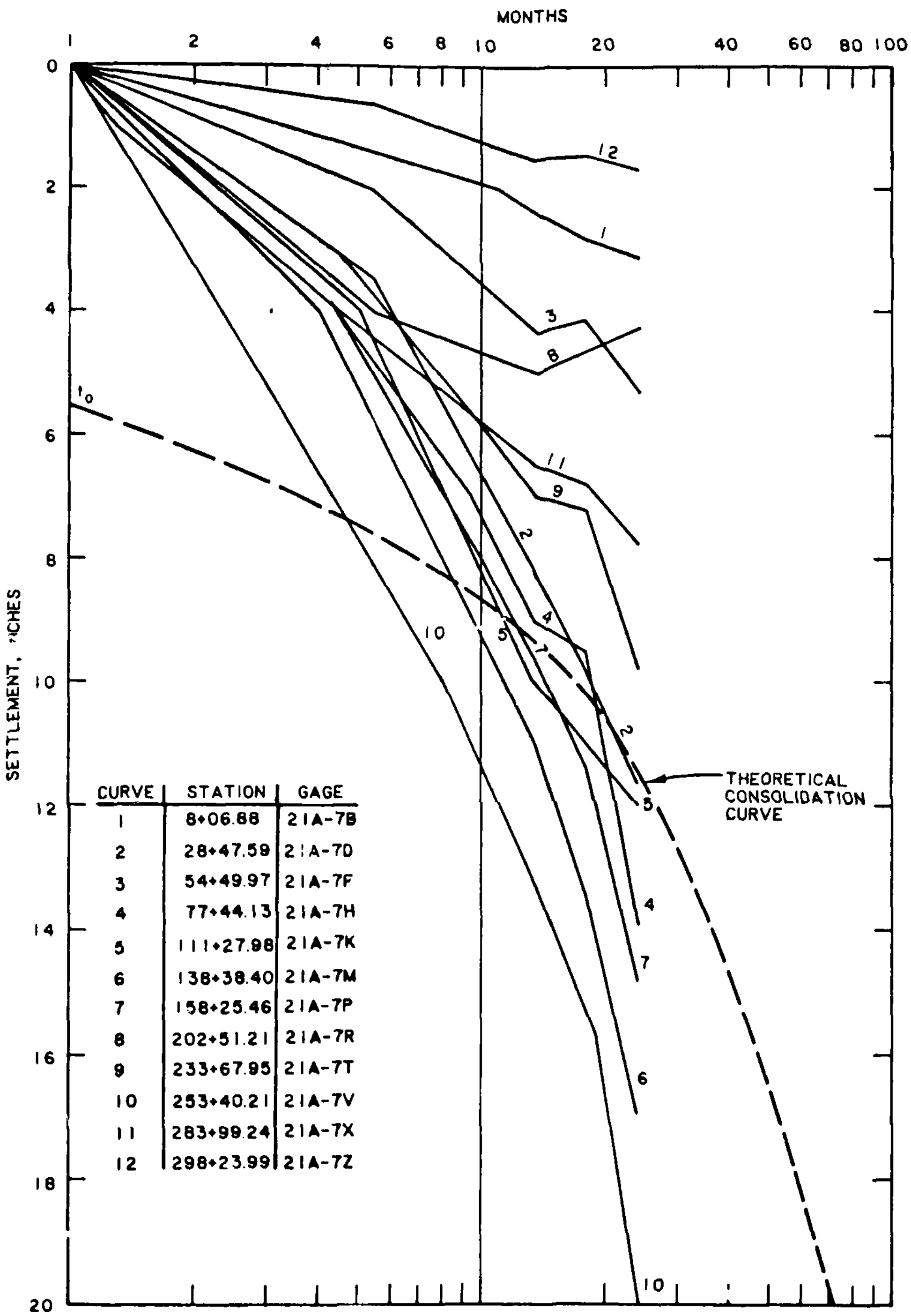


Figure 35. Subsidence of sediment measurements versus time on semilog plot and theoretical consolidation curve

consolidation for the embankment and foundation are shown in Table 7. The stresses likely generated with the foundation as a result of construction, the embankments were evaluated using Figures 36 and 37. The average coefficient of consolidation was estimated to be 0.015 ft^2 per day based on MDO laboratory consolidation tests. Because of the relative thickness of the soft foundation soils, an assumption of one-dimensional drainage was used. Consolidation within an embankment 16 ft high was predicted to be about 31 inches while the consolidation of a 31 ft thick soft clay foundation soil, was estimated to be about 78, for a total settlement of 109 inches of about 9.1 ft. Included in Table 8 are values for the percentage of consolidation, U; time factors, T; and example calculations for the rate of consolidation. A theoretical consolidation rate curve is shown in Figure 38 with the range of actual dike for the first two years shown. It was estimated that it may take over 800 years for complete dike and foundation settlement to occur.

106. Figure 35 shows a plot of the predicted consolidation values and the measured settlements. The predicted curve and an average of the settlement values are in good agreement. Consolidation predicted at the end of construction was about 5.5 inches, where t_o equaled about two years. The average settlement measured two years after construction was about 7.7 inches, which makes a total of 13.2 inches. This value represents about 10 percent of the total predicted consolidation.

Embankment Slope Stability Analysis

107. A slope stability analysis was conducted for a typical dike and foundation cross-section shown in Figure 39. The analysis was made assuming end-of-construction strength parameters and loading conditions. Shear strength data used in the analysis is summarized in Table 9. Shear strength values selected for use in this analysis was based on laboratory and field data, in addition, considerable experience with projects in the area. The cohesion value selected for the silt embankment was 0.005 tsf with an angle of internal friction of 13 deg. The cohesive strength selected for the embankment foundation was 0.05 tsf and an angle of internal friction of 0 deg. The results of the stability analyses are shown in Figure 39. As shown in this figure, the minimum factor of safety was computed to be 3.06 and the next lowest safety factor of 4.99. Both of these slip surfaces were tangent to

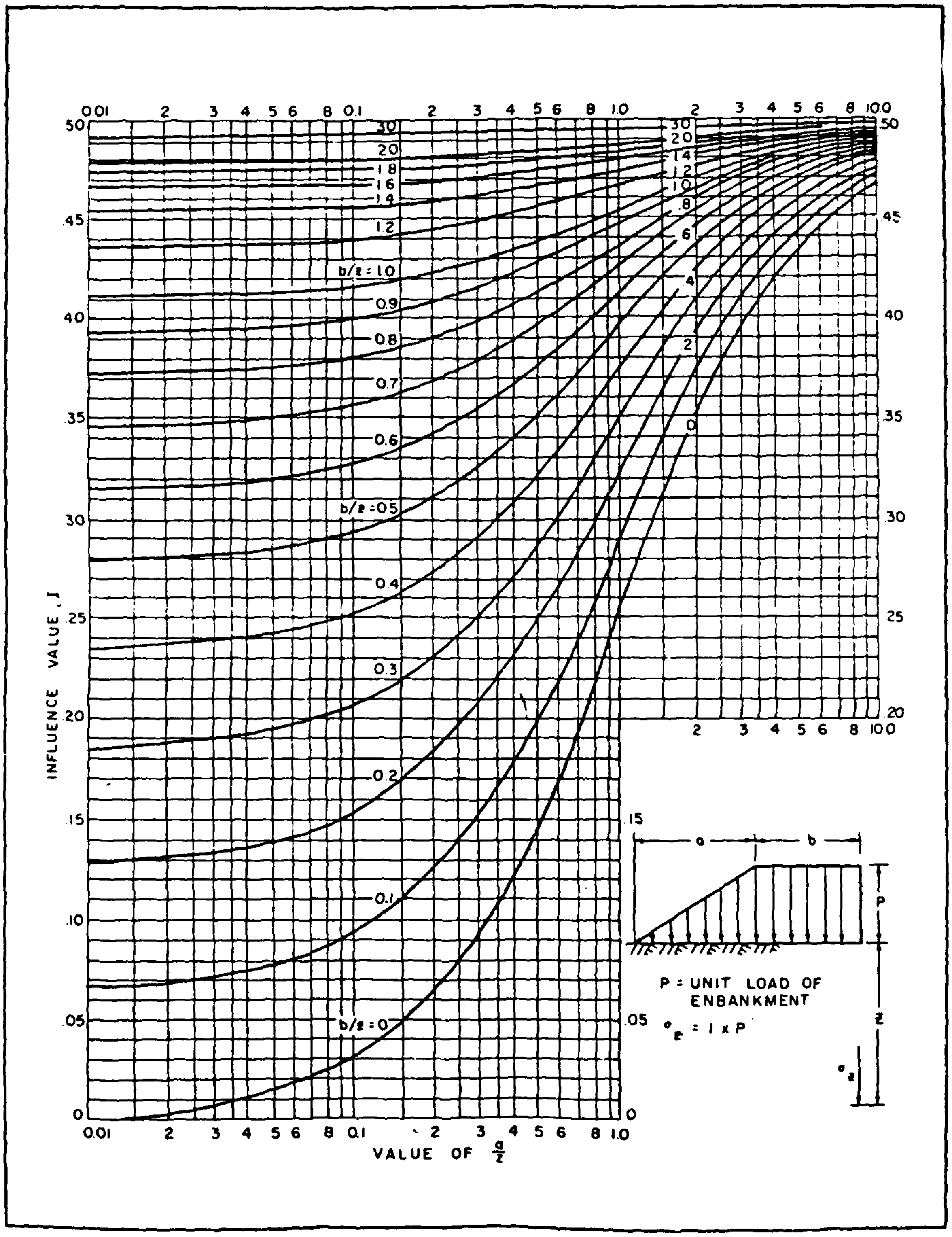


Figure 36. Influence value for vertical stress under embankment load of infinite length

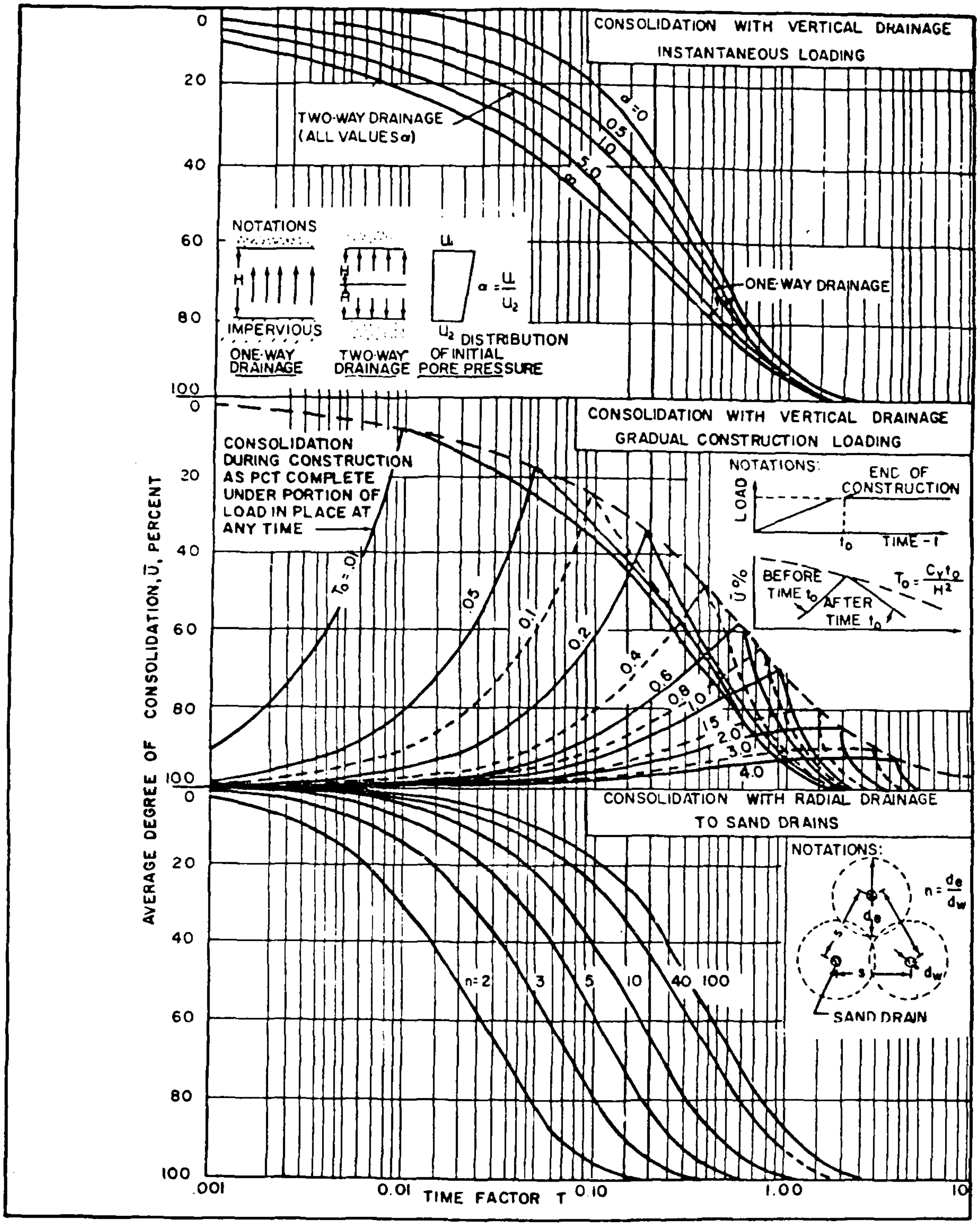


Figure 37. Time factors for consolidation analysis

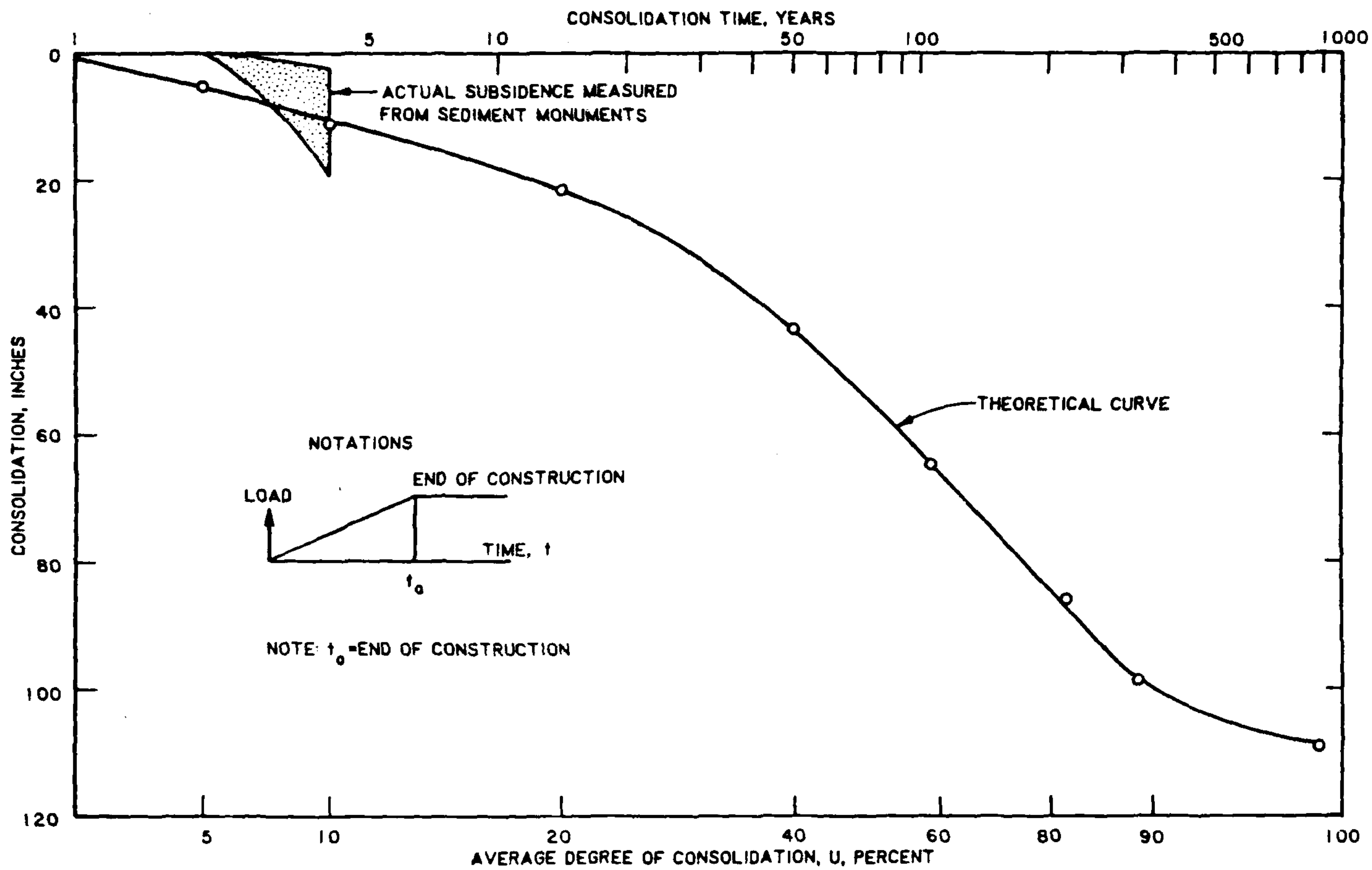


Figure 38. Predicted consolidation and percent consolidation and actual subsidence versus time

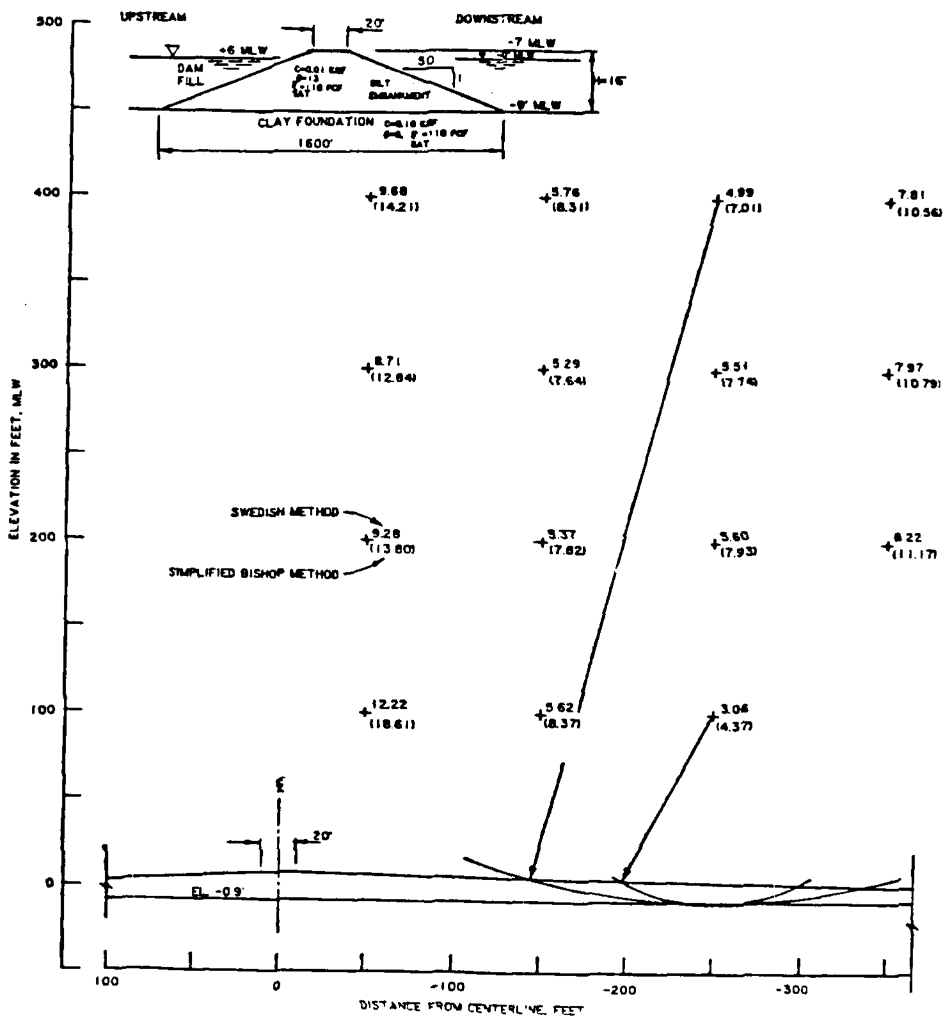


Figure 39. Slope stability analysis

-9 ft mlw which corresponds to the dike and the foundation surface. Based on the relatively high factors of safety from the stability analysis and the fact that the embankment has not failed within the two years since construction, chances of failure are not likely.

Embankment Protection

108. Significant dike settlement and erosion could result in a failure of the retaining dike with a subsequent loss confined dredged material. Should a dike failure occur, the soft confined material area would probably erode very rapidly; therefore, it was proposed that the east dike and the north and south corners of the island be protected with a 4 ft high, embankment sloped to 1V on 3H and protected with riprap. A cross-section of the proposed embankment is shown in Figure 11. It was also suggested that select marsh grasses be established on the west and south dikes and the west corner to resist erosion.

109. Immediately after construction of the first phase of the perimeter dike, successful vegetation plots were established. After the perimeter dike was completed, continued experimentation was conducted by the WES to develop proper planting procedures and techniques. Construction of a riprap and geotextile protected embankment is presently proceeding on the perimeter dike at Gaillard Island.

PART VIII: CONCLUSIONS AND RECOMMENDATIONS

110. It is concluded that the dike design and construction techniques employed in building of Gaillard Island area were satisfactory. During construction, the embankment experienced several small localized displacement failures and mud waves that caused the soft bay bottom clays to mix with the new dredged material. Slope stability analyses were conducted on a representative dike cross-section and it was concluded that a minimum factor of safety against a rotational failure of 3.06 existed. Vegetation has been planted to enhance erosion protection. A riprap dike is presently being constructed to prevent overtopping of the constructed dikes.

111. Based on a consolidation analyses of the embankment and foundation soils it is estimated that over 800 years would be required for consolidation to be complete. Average settlement of the dikes two years after construction was about 13.2 inches. Laboratory consolidation data coupled with conventional consolidation analysis was found to adequately predict the settlement of the embankment.

112. It was concluded that without the data base management system (DBMS) designed by WES, it would have been extremely difficult to handle the 828 days of data generated from the three dredges. Use of the DBMS made it possible to record and present the dredging records in a usable form. In addition, the DBMS made it possible to monitor the volumes and percentage of sand, silts, clays, shell, and gravels that were excavated and filled in each leg of the island. Retention rates of the total volume of dredged material in the dike and containment area was about 61 percent. The 39 percent unaccounted for the total 33.5 million cubic yards of dredged material was not unreasonable since 95 percent of bay-cut and 52 percent of the in channel and turning basin material was of fine silts and clays. About 20.6 million cubic yards of dredged material was estimated to have remained in the island during construction and about 12.9 million cubic yards was unaccounted for.

113. There was a considerable difference in the consistency of the channel-cut materials after they were barge hauled or hydraulically placed in the dike. Stiff clays that formed into clay balls as they rolled along the dredge pipe made good construction fill material which formed dike slopes greater than 1V on 1H. Sand, silts, and loose clays usually filled the voids between the clay balls, thus providing for a stronger and more impermeable

dike. It was found that clay balls from stiff clays could support some loads immediately after placement. The clay balls ranged in size from 2 to 4 inches with occasional balls as large as 12 to 16 inches. After the clay balls dried they became very hard and cracked and weathered with a subsequent filling of the surface voids.

114. The dikes made from clays, silts, and sands varied from an average slope of about 1H:32H to 1V:45H. Dikes constructed primarily from sand varied from an average slope of 1V:53H to 1V:61H. Dikes constructed from clay balls had more identifiable scarped slopes which eroded more readily than dikes constructed of sand. Slopes of dikes made from clay balls supported vegetation better than slopes constructed from sand. Sands hydraulically placed usually appeared to be very clean which indicated the fines were probably washed out during placement. Since the completion of construction in August 1981, significant erosion has occurred on the outboard slope of dikes at the island's three corners.

115. It was concluded that the barge haul method used to excavate sand and stiff clay was successful. The dust pan dredge was effective in excavating the soft clay deposits in Mobile Bay.

116. It is recommended:

- a. The Mobile District implement a dredged material management plan to preserve Gaillard Island as an area for future storage of maintenance dredged material. Since dredged material containment areas are limited in the Mobile area, it is important that this disposal area be properly managed.
- b. Continue to monitor the settlement monuments at intervals not to exceed once a year.
- c. The DBMS should be utilized in determining contract estimates and to document the dredging operation and performance. The DBMS should be used to record the type, volume, and geotechnical classification of the dredged materials.
- d. The Corps of Engineers should encourage the contractors to maintain and provide more accurate records of material volumes, cut and fill stations, and soil types.

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AD-A173 512 VERIFICATION OF DESIGN AND CONSTRUCTION TECHNIQUES FOR GAILLARD ISLAND DR..(U) ARMY ENGINEER WATERWAYS EXPERIMENT STATION VICKSBURG MS GEOTE.. 2/5

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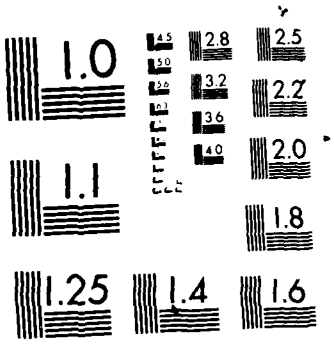

MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

Table 1

Dredged Material Placement and Construction Sequence

Placement Dates		Dike Fill Stations	
Start	Stop	Start	Stop
	JIM BEAN DREDGE		
29 Nov 79	12 Jan 80	268+00	231+00
13 Jan 80	20 Mar 80	292+00	47+00
20 Mar 80	16 Apr 80	47+00	7+00
3 Jan 81	27 Jan 81	302+00	310+50
31 Jan 81	18 May 81	154+00	231+00
19 May 81	15 Jun 81	231+00	268+00
17 Jun 81	28 Jul 81	291+00	273+75
29 Jul 81	28 Aug 81	254+00	228+00
	DAVE BLACKBURN DREDGE		
8 Jan 80	12 Jan 80	291+00	291+75
13 Jan 80	24 Feb 80	231+00	203+00
27 Feb 80	9 Apr 80	253+50	275+00
10 Apr 80	29 Apr 80	274+50	253+00
30 Apr 80	17 May 80	253+00	235+00
18 May 80	15 Dec 80	61+00	164+25
16 Dec 80	5 Jan 81	50+00	65+00
6 Jan 81	26 Feb 81	52+00	3+00
2 Mar 81	29 Mar 81	305+75	290+00
30 Mar 81	6 Jun 81	53+00	157+00
7 Jun 81	28 Jul 81	73+00	109+00
	LENEL BEAN DREDGE (DUST PAN)		
13 Jan 81		104+00	
28 Jan 81		88+00	
14 Feb 81		71+50	
25 Feb 81		52+50	
5 Mar 81		34+00	
18 Mar 81		14+00	
25 Mar 81		43+00	
29 Mar 81		26+00	
2 Apr 81		64+00	
2 May 81		117+00	
7 May 81		25+00	
	BARGE HAUL OPERATION		
20 Oct 79	29 Jan 80	26+50	49+50
8 Jan 80	8 Jan 80	26+50	24+00
31 Jan 80	13 Apr 80	60+00	102+00

TABLE 2

Gaillard Disposal Island

Dike Slopes, Fill Depths, and Material Types

		Inside		Outside		Elevation, ft			
Boring	Station	Offset ft	Slope	Offset ft	Slope	Original Bay Bottom (mlw)	Dike Centerline	Bay Bottom (Boring) (mlw)	Type of Material*
TD1-1-81	0+06	--	1:35	5	1:35	-9.0	4.9	-14.5	Clay Balls
TD1-2-81	8+37	340	1:80	--	--	-9.0	3.2	-10.0	Clay Balls
TD1-3-81	10+02	--	1:80	15	1:35	-9.6	8.0	-21.2	Sand
TD1-4-81	9+91	--	--	205	1:35	-16.8	2.7	-15.4	Sand
TD1-5-81	20+00	℄	1:55	℄	1:30	-10.0	8.2	--	Sand
TD1-6-81	30+00	--	1:55	15	1:40	-11.8	--	-10.1	Clay Balls
TD1-7-81	40+00	℄	1:55	℄	1:70	-12.0	6.4	-17.0	Sand
TD1-8-81	50+06	90	1:55	--	--	-11.0	6.4	-8.6	Sand&Shells
TD1-9-81	50+08	--	--	90	1:55	-11.8	5.0	-9.2	Sand
TD1-10-81	50+06	--	--	290	1:60	-12.0	1.5	-8.2	Sand
TD1-11-81	60+00	℄	1:35	℄	1:85	-11.0	11.2	-19.4	Clay Balls
TD1-12-81	70+00	℄	1:20	℄	1:70	-9.0	8.0	-9.7	Clay Balls
TD1-13-81	80+00	℄	1:20	℄	1:40	-9.0	8.7	-21.0	Clay Balls
TD1-14-81	101+50	--	--	40	1:45	-9.0	7.9	-8.4	Clay Balls
TD1-15-81	113+85	--	--	225	1:55	-10.0	2.2	-5.0	Clay Balls
TD1-16-81	120+00	℄	--	℄	1:65	-11.0	6.4	-13.0	Clay Balls
TD1-17-81	130+00	℄	--	℄	1:55	-9.0	5.1	-12.8	Clay Balls
TD1-18-81	140+00	℄	1:25	℄	1:30	-9.0	9.0	-8.8	Clay Balls
TD1-19-8.	150+00	--	1:15	40	1:40	-8.8	8.0	-5.8	Clay Balls
TD1-20-81	160+00	℄	1:170	℄	1:90	-9.6	4.6	-7.0	Sand
TD1-21-81	169+95	90	1:250	--	--	-9.0	3.5	-5.4	Sand
TD1-22-81	169+97	--	1:250	5	1:40	-9.0	3.5	-10.0	Sand
TD1-23-81	170+12	--	--	120	1:40	-9.0	2.5	-11.0	Sand
TD1-24-81	180+00	℄	1:85	℄	1:45	-9.0	7.7	-7.0	Sand
TD1-25-81	190+00	℄	1:75	℄	1:55	-9.3	4.1	-11.1	Sand
TD1-26-81	200+00	℄	1:80	℄	1:45	-9.0	4.2	-11.0	Sand
TD1-27-81	210+00	℄	1:45	℄	1:50	-9.0	5.4	-7.9	Sand
TD1-28-81	220+00	℄	1:25	℄	1:35	-8.0	6.0	-9.0	Clay Balls
TD1-29-81	240+00	℄	1:25	℄	1:30	-10.0	12.5	-10.0	Clay Balls
TD1-30-81	250+00	℄	1:15	℄	1:40	-10.0	11.3	--	Clay Balls
TD1-31-81	260+00	℄	1:25	℄	1:20	-10.0	12.9	--	Clay Balls
TD1-32-81	270+00	℄	1:70	℄	1:75	-10.0	5.0	-13.0	Sand
TD1-33-81	282+15	210	1:35	--	--	-10.1	2.5	-10.8	Clay Balls
TD1-34-81	282+25	--	--	80	1:30	-10.0	2.2	-13.0	Clay Balls
TD1-35-81	282+65	--	--	230	1:70	-10.0	0.7	-15.8	Clay Balls
TD1-36-81	290+00	℄	1:30	℄	1:70	-10.0	8.2	-18.8	Sand
TD1-37-81	300+00	℄	1:30	℄	1:60	-10.4	5.8	--	Clay

* Visual observation of surface

Table 3

Dredged Material Volumes, Soil Types, and Percent Distribution

Location		Volume Million cu yd	Soil Type, Percent Distribution* Sand	Silt	Clay	Shell	Gravel
Barge Haul Cut Operation							
Landcut		2.3	35	15	49	0.3	
Hydraulic Dredge Cut Operation							
Jim Bean	- Landcut	0.9	48	1.7	47	--	--
	- Baycut	6.9	29	7.5	60	1.0	0.1
Dave Blackburn	- Landcut	5.3	32	17	50	0.4	--
	- Baycut	7.4	20	23	55	1.4	--
Lenel Bean	- Baycut	5.3	0.1	5.6	69	25	--
Total Volume		28.0					
Hydraulic Dredge Cut Operation							
Baycut		19.6	18	13	61	8	--
Landcut		6.1	35	15	49	0.3	--
Total Volume		28.0					
Barge Haul Fill Operation							
South Dike Leg		1.1	35	15	49	0.3	
East Dike Leg		1.2	35	15	49	0.3	
Total Volume		2.3					
Hydraulic Dredge Fill Operation							
South Dike Leg		9.1	21	21	56	1	--
East Dike Leg		4.3	38	9	53	0.4	0.2
West Dike Leg		7.0	28	14	56	1	--
Inside Dike Containment Area (Lenel Bean Dredge)		5.3	0.1	5.6	69	25	--
Total Volume		28.0					

* Soil percentages estimates because of lack of good daily records of soils types and percentages.

Table 4

Dredged Material Volumes

Total Volume	Contract Advertised Government Estimate Cubic Yards	Reported by Contractor Only Dredge Reports Cubic Yards	Channel Cut Cross-Section Yardage Paid Contractor Cubic Yards	Channel Cut Cross-Section Gross Yardage Including Overcut Dredged by Contractor Cubic Yards
Baycut	19,573,000	19,577,429	19,837,047	21,598,302
Landcut	11,532,000	8,378,697	11,456,738	11,935,933
Total	31,105,000	27,956,126	31,293,786	33,534,235

Breakdown by Dredge Operation

Barge Haul Operation				
Landcut	-	2,260,325	3,129,379	
Jim Bean Dredge Landcut	-	867,992	969,231	Mobile District adjusted these yardage according to percentage dredged on daily records by each dredging operation
Baycut	-	6,867,337	7,386,210	
Dave Blackburn Dredge				
Landcut	-	5,250,380	5,622,742	
Baycut	-	7,367,619	7,958,761	
Lenel Bean Dredge Baycut	-	5,342,473	6,227,463	
		27,956,126	*31,293,786	

Dredging Cost to Government

Location	Cost Per Yard		Pay Yards Cubic Yards		Amount Paid Contractor
Baycut	$0.88	X	19,837,047	=	17,456,601.36
Landcut	2.216	X	11,456,738	=	25,388,131.41
			Total Cost	=	42,844,732.77

Table 5

Vane Shear Data, Gaillard Disposal Island

Boring No.	Location	Elevation mlw	Field Vane Shear Strength, tsf Not Corrected*	Corrected**
TDI-3-81	sta 10+02	-23.84	0.34	0.27
TDI-9-81	sta 50+0[illegible]	-14.72	0.13	0.10
TDI-12-81	sta 70+00	-16.39	0.12	0.10
TDI-15-81	sta 113+85	-12.40	0.17	0.14
TDI-18-81	sta 140+00	-13.31	0.21	0.17
		-17.71	0.39	0.31
TDI-22-81	sta 169+97	-14.96	0.07	0.06
		-18.96	0.23	0.18
TDI-26-81	sta 200+00	-14.61	0.07	0.06
		-19.61	0.13	0.10
TDI-34-81	sta 282+26	-18.60	0.03	0.02
TDI-37-81	sta 300+00	-26.5	0.13	0.10

* Vane shear testing conducted between Sep 1981 and Nov 1981 (after fill completion)

** Corrected by Bjerrum's recommended curve (Ref. 3) for average PI of 50% from which a correction factor of 0.8 was obtained.

TABLE 6

Summary of Consolidation Test Data

Boring	Sample	Depth (ft)	e_o	$P_2 = 0.5\ T/ft^2$ e_2	$P_2 = 0.37\ T/ft^2$ e_2	Consolidation Coefficient CV ft^2/day
UND-2-75	1	4.0 - 6.0	3.974	2.58	2.65	0.021
UND-2-75	2	6.0 - 8.0	3.806	2.66	2.85	0.019
UND-2-75	4	10.0 - 12.0	3.249	2.40	2.60	0.014
UND-2-75	6	14.0 - 16.0	3.323	2.40	2.60	0.011
UND-2-75	8	18.0 - 20.0	3.141	2.560	2.70	0.013
UND-2-75	10	22.0 - 24.0	3.141	2.550	2.65	0.011

TABLE 7

Consolidation Calculated for Embankment and Foundation

A. Embankment Consolidation

Pressure at P_A = (7 ft) (100 pcf) + (1 ft) (37.5 pcf) = 738 pcf

P_A = 0.37 TSF

From above e_2 = 2.6 and $e_1 = e_o$ = 3.3

Consolidation $\Delta H = H_1\left(\frac{e_1 - e_2}{1 + e_o}\right) = 16\left(\frac{3.3 - 2.6}{1 + 3.3}\right)$ = 2.6 ft or 31 inches

B. Foundation Consolidation

Pressure at Dike Base P_1 = (7 ft) (100 pcf) + (9 ft) (37.5 pcf)

P_1 = 1038 psf

Where a = 800 ft, b = 10 ft $a/Z = \frac{800 \text{ ft}}{15.5 \text{ ft}} = 51.6 > 10$; $b/Z = \frac{10}{15.5} = 0.65$

From the Influence Chart 5-5 of NAV FAV 7.1, I = 0.33

Then the Dike Vertical Stress at B = O_B = ZIP, = (2) (0.38) (1038 psf) = 685 psf

Overburden Pressure from Bay Bottom Materials = P_O = (15.5 ft) (25 pcf) = 388 psf

Sum of Pressure at $P_B = P_O = O_B$ = 388 psf + 685 psf = 1073 psf or about 0.5 tsf

From Table Above e_o = 3.3 and e_2 = 2.4

Then $\Delta H = H_2\left(\frac{e_o - e_2}{1 + e_o}\right) = 31\left(\frac{3.3 = 2.4}{1 + 3.3}\right)$ = 6.5 ft or 78 inches

Total Consolidation of Dike and Foundation = 31 in. + 78 in. = 109 in. or 9.1 ft

TABLE 8

Theoretical Consolidation Analysis

Percent Consolidation %	Time Factor T	Time Days	Years	Consolidation Inches
5	0.004	628 = t_o	2	5.5
10	0.01	1,470	4	10.9
20	0.035	5,150	14	22
40	0.125	18,410	50	44
60	0.26	30,290	105	65
80	0.55	81,000	222	87
90	0.8	117,800	323	98
100	2.0	295,000	806	109

*Sample Calculation

$$T_o = \frac{t_o C_v}{H^2} = \frac{t_o C_v}{H_e + H_T}$$

Where

C_v = 0.015 ft^2/day consolidation coefficient

H_e = 16 ft, height of dike

H_T = 31 ft, thickness of clay layer

t_o = 628 days, consolidation period

$$T_o = \frac{(628 \text{ days})(0.015 \text{ ft}^2/\text{day})}{(16 + 31)^2} = 0.00426$$

$$t_{20} = \frac{H^2 T_{20}}{C_v}$$

$$t_{20} = \frac{(16 + 31)^2 (0.035)}{(0.015)} = 5,150 \text{ days}$$

*See Figure 36 (used NAV-FAC DM7-Fig 6-6)

Table 9

Shear Strength Test Data

Boring No.	Field Vane: Corrected Vane Strength (Q)	Laboratory Tests: uu (Q)	cu (R)	Drained (S)
TDI-3-81	0.27	0.05	Ø = 14.5 c = 0	Ø = 24 c = 0
TDI-9-81	0.10	0.06	Ø = 10.5 c = .20	Ø = 23.5 c = 0
TDI-12-81	0.10			
TDI-15-81	0.14			
TDI-18-81	0.17 0.31			
TDI-22-81	0.06 0.18			
TDI-26-81	0.06 0.10			
TDI-34-81	0.02			
TDI-37-81	0.10	0.05	Ø = 10 c = 0.20	Ø = 20.5 c = 0.10
Mean	0.13			

Selected Shear Strength Design Data

	Soil Type	Description	Density pcf, γ_{sat}	Q: c_{ksf}	Q: ϕ_{deg}	R: c (ksf)	R: Ø (deg)	S: c (ksf)	S: Ø (deg)
	Silt sand	loose	110	0	26	0	19	0	28
EM	Silt	none plastic and loose	110	0.01	13	0.01	13	0	20
FN	Clay	very soft	110	0.10	0	0.20	10	0	20

APPENDIX A: PHOTOGRAPHS OF CONSTRUCTION SEQUENCE AND TECHNIQUES

1. This appendix is included to illustrate photographically the construction sequence of Gaillard Island Dredged Material Containment Area.

Figure A1. Hydraulic model testing conducted at WES to determine optimum island shape

Figure A2. Downtown mobile showing congested harbor facilities looking north along Mobile River

Figure A3. A view of the mouth of Deere Creek looking west at Theodore, AL, before construction

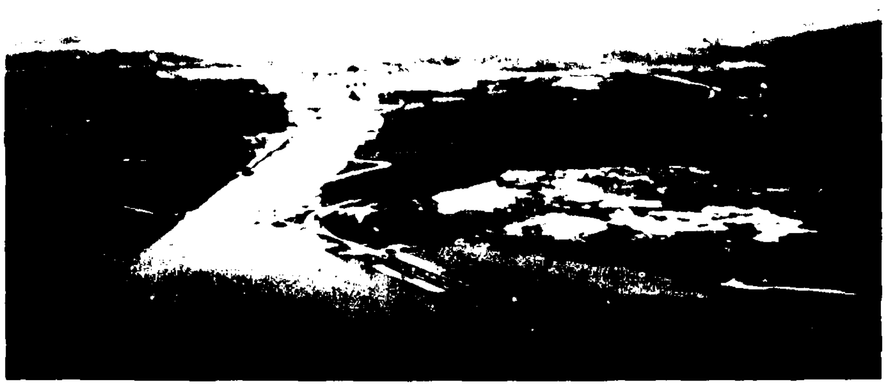

Figure A4. A view of the mouth of Deere Creek looking west during dredge operations for the Theodore Industrial Park

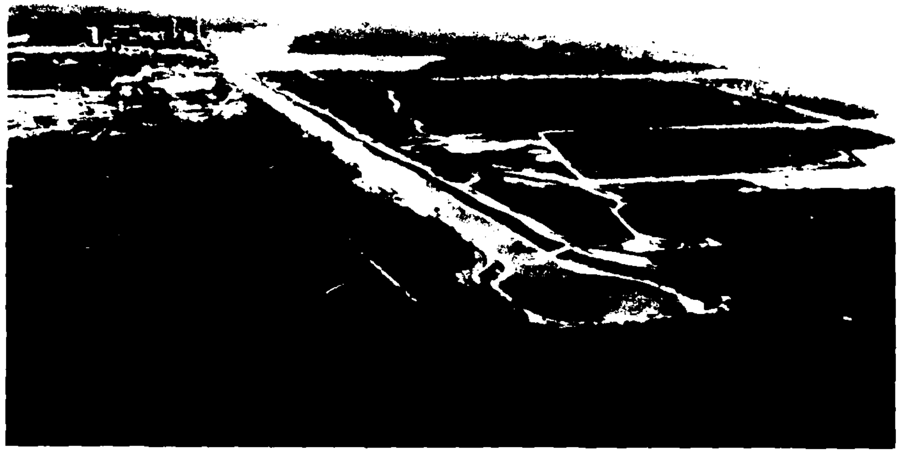

Figure A5. A view of the barge canal looking east toward the mount of Deere Creek, the Theodore Industrial Park, and the ship turning basin

Figure A6. Dragline sitting on the bank excavating material from the ship turning basin and loading it onto a barge used to haul material to Gaillard Island

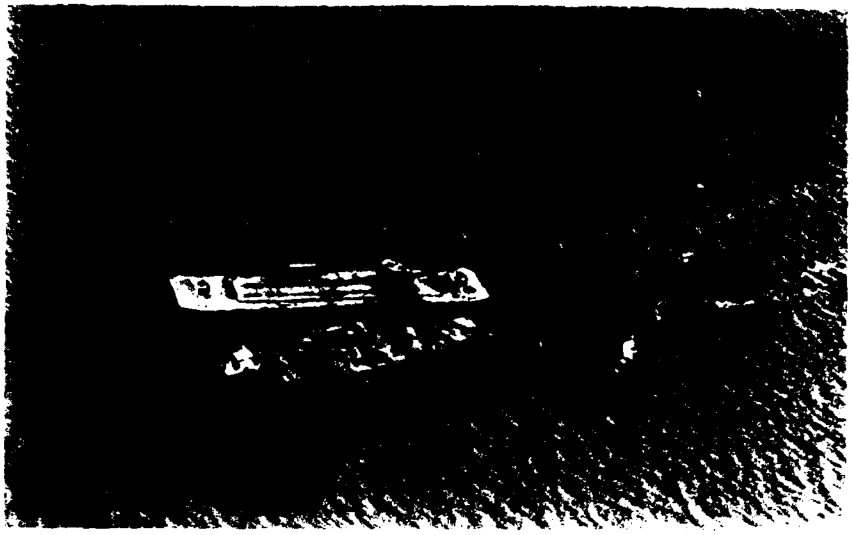

Figure A7. Barge load of material being positioned along spud barge and dragline used to unload barge material along dike alignment

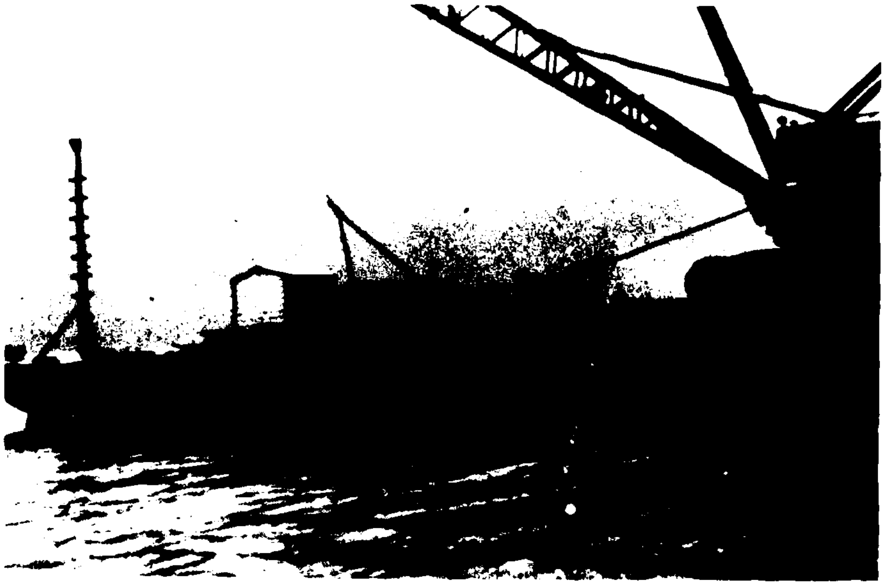

Figure A8. Dragline dragging material from barge to construct the first four feet of perimeter dike

Figure A9. Looking east toward the mouth of Deere Creek showing the Dave Blackburn dredge excavating dredged material from ship turning basin

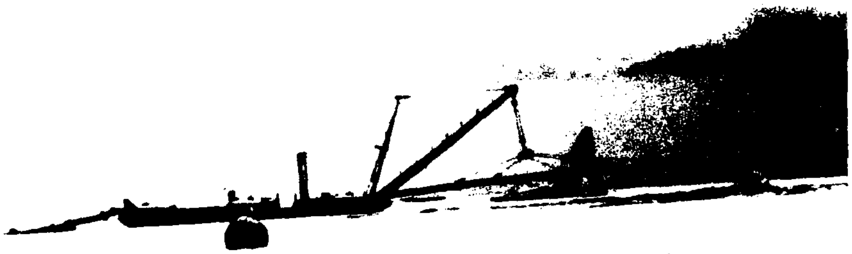

Figure A10. Dredged material being discharged along the dike alignment from a specially constructed discharge barge

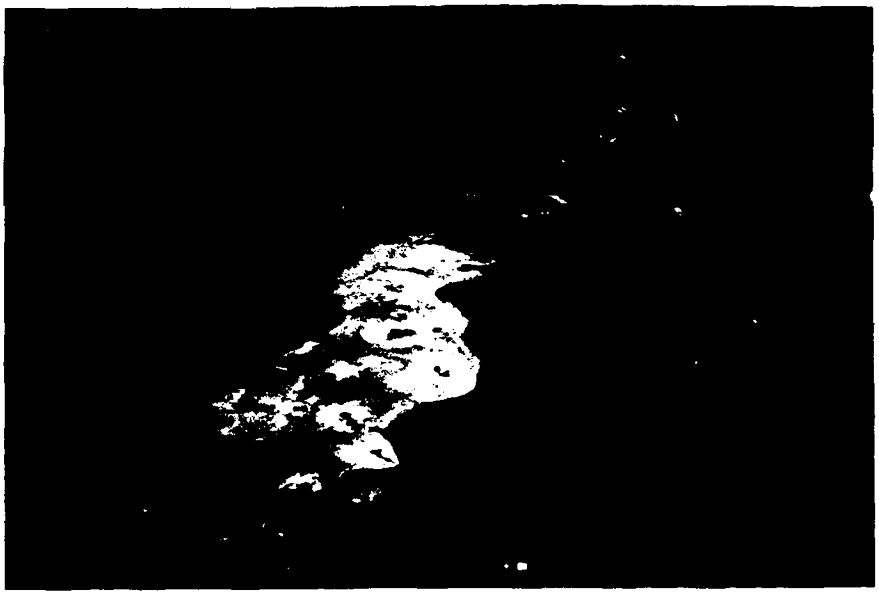

Figure A11. Construction of the dike during the initial placement of dredged material

Figure A12. A ground view showing dike construction and clay balls after the dike has achieved a height of about 6 ft

Figure A13. An aerial view looking north showing dike construction during the first pass

Figure A14. A ground view of the dike after the first pass showing the flat natural beaches and the rapid accumulation of drift wood

Figure A15. An experimental vegetation plot planted after the first pass of dredged material

Figure A16. An accumulation of clay balls that stacked up in a mound with 1 on 1 side slopes

Figure A17. A vertical scarp near the shoreline caused by erosion

Figure A18. Clay balls that have dried out above the shoreline

Figure A19. Clay balls embedded with reef shells experience erosion along the shoreline

Figure A20. A very large clay ball that survived through several thousand feet of dredge pipe

Figure A21. Very soft plastic clay ball found along the sandy beaches

Figure A22. Clay balls located away from the shoreline dry out into very hard pieces that are difficult to break

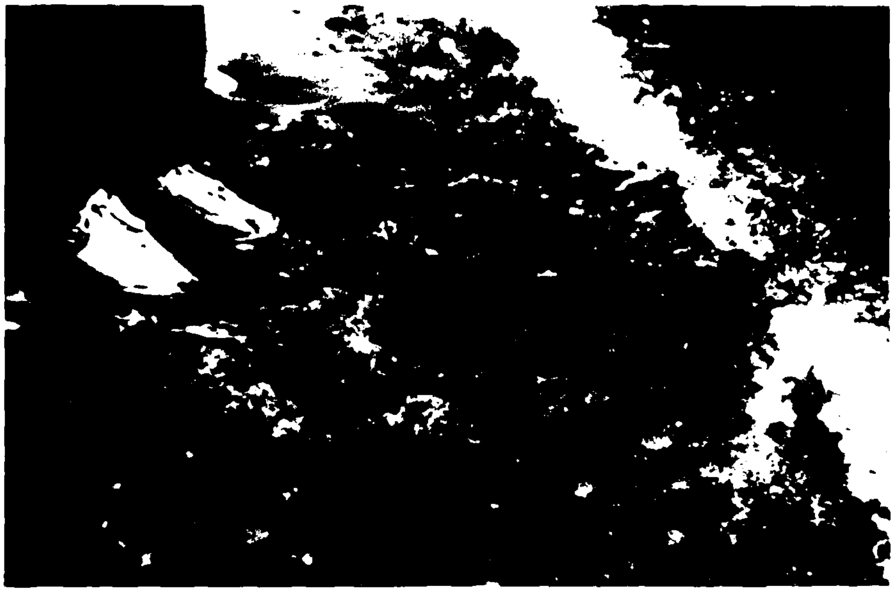

Figure A23. Stiff to very soft clay balls and sand found along the beaches withstand erosion very well

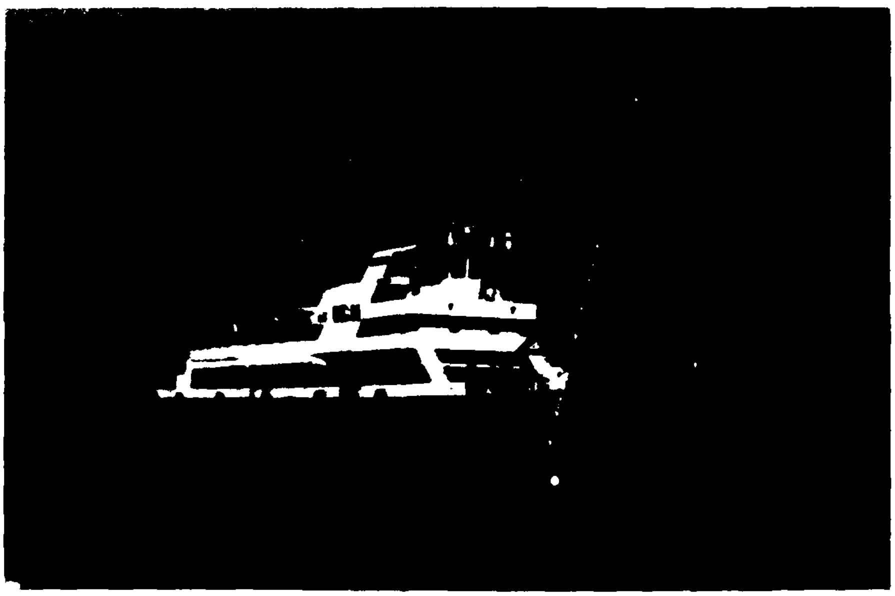

Figure A24. Lenel Bean dust pan dredge that was used to dredge very soft dredged material from the channel

Figure A25. Dust pan dredge depositing dredge material into the southeast corner of Gaillard Island with discharge barge shown in center of photograph

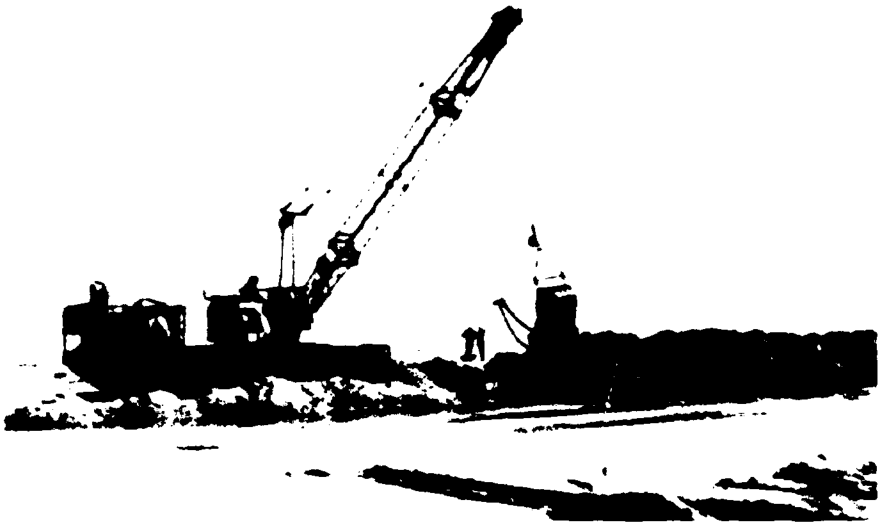

Figure A26. Quality marsh dragline constructing a small dike along the crest of the main dike to prevent dredged material from the dust pan dredge from reentering the channel

Figure A27. Dust pan dredge dumping dredged material into Gaillard Island containment area

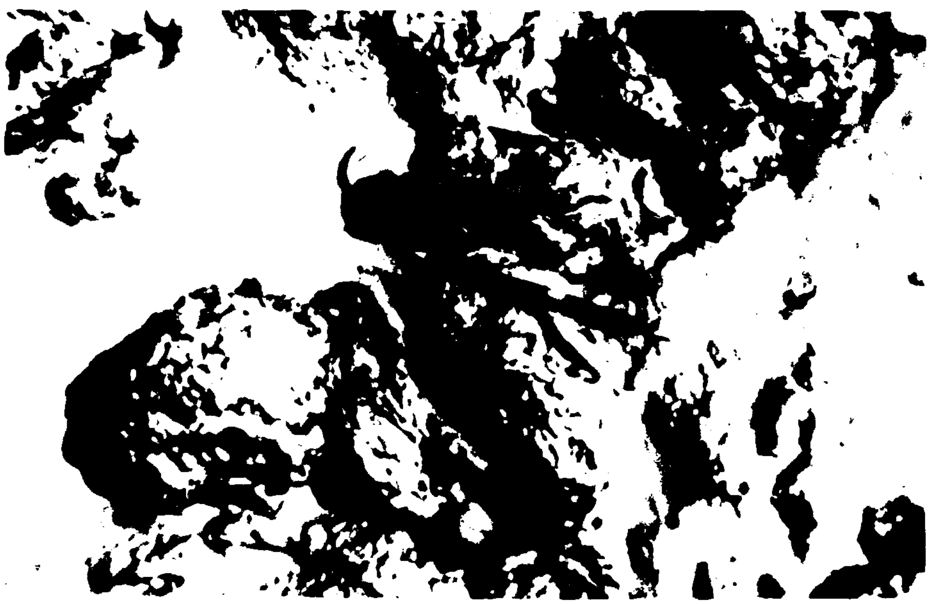

Figure A28. Very soft clay balls dredged by the dust pan dredge

Figures A29. Close-up view of the high pressure water nozzles located in the cutterhead for the dust pan dredge (nozzles were not used on this project)

Figure A30. An infrared aerial view of Gaillard Island looking north two months after construction completed, Mobile Ship Channel located to right of the island

APPENDIX B: DEVELOPMENT OF DATA BASE MANAGEMENT SYSTEM AND DATA COLLECTION PROCEDURES

Introduction

1. When WES began to document the design and construction activities at Theodore Industrial Park on 21 May 1980, the contractor had been working 364 days on a contract that would eventually last for 828 days before completion. The contractor was providing the CE with large volumes of dredging records and survey reports that were difficult to collect and file, and were almost impossible to evaluate and analyze very rapidly. Therefore, the WES devised a very simple method of cataloging the dredging records by transcribing the data into a data base file that could be accessed very easily by a row and column matrix.

Data records provided by the contractor

2. Four daily reports were submitted to the Mobile Area Office by the dredging contractor and one daily report was supplied by the CE inspector. Reports submitted by the contractor consisted of a Dredging Contractor's Daily Inspection or Dredge Operation Report (DOR) (MOB Form 720, Figure B-1); Contractor Operation Report (COR) (MOB Form 4267, Figure B-2); Contractor Inspection Report (CIR) (MOB Form 696, Figure B-3); and during the barge haul operation, the contractor submitted a Drag/Haul Operations Report (Figure B-4). MOB Form 720 was prepared for each of the dredges by survey personnel and approved by each of the dredge boat Captains before being sent to the Dredge Civil Engineer who was located in an office trailer on shore. The Dredge Civil Engineer then prepared an MOB Form 4267 on each dredge and one CIR (MOB Form 696) that summarizes the entire project daily activities, including the barge haul operation reports.

3. All equipment, attendant equipment, personnel, dredges, dredge cut and fill stations, classification of materials being dredged, production rates, time worked, fuel, oil and water, meteorology, etc., are items reported on a daily basis in these reports. To more effectively manage these data, the Theodore Ship Channel Dredging Data Base Management System (DBMS) was developed and these daily records were transcribed into the system. A schematic of the different data files organized for this purpose is shown in a flow chart

in Appendix B, Figure B-5. Each of these categories will be discussed in the following paragraphs.

4. Dredging history file. The dredging history file was initiated by the Mobile District several years ago and information recorded for each dredging contract was used to estimate anticipated future dredge work projects. Information for this file was recorded on 5- by 7-in. cards and kept in the Construction and Operations Division office files. The dredge history file developed for the Theodore Ship Channel DBMS is shown in Figure B-6.

5. Geotechnical data file. Prior to design and construction, an extensive subsurface investigation was conducted by taking borehole soil samples in the land cut and bay cut areas of Theodore Ship Channel and the ship turning basin by the Mobile District drill crew. Borehole samples were also taken along the proposed dike alignment for Gaillard Island. Soil samples were recorded by borehole number, depth, and location, and then were classified before being sent to the soils laboratory for further testing. Because the geotechnical data file was so large it was not shown in this report but is available on magnetic tape files stored at WES. A sample format of the file stored at WES is shown in Figure B-7.

6. Bid schedule results. The bid schedule results for the dredging contract consisted of the Government's estimated cost and a list of the three lowest bid prices for each work item shown in Figure B-8. The lowest bid ($29,430,910) was submitted by T. L. James Dredging Contractor. After the bids were opened, the low-bid contractor claimed a mathematical error in his bid calculation and submitted a second estimate with the corrected figures. After several months of deliberation, the Mobile District refused to accept the corrected bid. The second lowest bidder was Bean Dredging Corporation with a bid of$48,971,921. The Mobile District advertised the contract on 6 July 1978, opened the bids on 29 August 1978, but because of the controversy with the lowest bidder, the contractor was not given notice to proceed until 3 May 1979. During this delay, fuel cost began to escalate because of the OPEC fuel crisis in the Middle East. Land cut excavation was bid in at a unit price of $2.216 per cu yd and the bay cut excavation was bid in at $0.88 per cu yd.

7. Plant and equipment schedule and attendant plant and equipment. During the early stages of cataloging dredging data, the main plant and equipment was listed in the plant and equipment schedule and attendant plant and

equipment. Figures B-9 and B-10 show a listing of the type information obtained on each plant and major equipment associated with the dredging operation. Collection of this information was too time consuming and was not within the scope of work for this report; therefore, it was agreed between WES and the Mobile District that this part of the DBMS for Gaillard Island would be discontinued for this project. Figures 11 and 12 are the complete data collection format of all dredge operation data that was collected and stored on magnetic tape at WES. It was decided by WES and Mobile that these data were not in the scope of work for this report. The data and program can be used for future projects if it is deemed necessary.

8. Meteorology data. The daily weather was reported on the CIR and these data transcribed into a meteorology data file shown formatted in rows and columns in Figure B-1. These data were taken directly from the Mobile Register newspaper by the Dredge Civil Engineer who was responsible for filling out the CIR. The weather reported in the newspaper comes from a weather station located at Mobile Airport, 10 miles west of Mobile. The CIR's are sequentially numbered and dated from the beginning of the project; all data files are referenced to these numbers. The meteorology data file includes maximum and minimum tidal fluctuations, maximum and minimum temperatures, variation in accumulative precipitation (24 hrs), visibility, sky conditions, wind directions and velocities, and wave heights. Where data are not shown or zeroes appear, data were not reported on the CIR. A note of what the abbreviations at the head of each column stand for is shown on the first page of Figure B-1. A weather classification was assigned by the Dredge Civil Engineer each day, based on the effect the weather may have had on the performance of the contract work. An explanation of these various classifications (A, B, C, D, or others) is shown in Figure B-3.

Hydraulic Excavation

Dredge operations

9. Jim Bean. The dredge Jim Bean began dredging on 29 November 1979, 190 days after the contractor was awarded the contract. During the first 190 days, the contractor was clearing and grubbing, moving buildings, building a work area, surveying, and welding dredge pipe together. Data were transcribed from MOB Form 720 (DOR), MOB Form 4267 (COR), and MOB Form 696 (CIR),

and printed in the format shown in Figure B-2. An explanation of the abbreviations that head each column is shown for each of these tabulations. Tabulation of the data in the format shown was agreed upon by both the WES and Mobile District engineers as the most convenient and useful format to quickly analyze the data. The DOR numbers for each dredge represents the number of days the dredge worked. The Jim Bean dredge was absent from 17 April 1980 to 3 January 1981 when it was sent to Tampa, Florida. The Jim Bean worked a total of 380 days. Most of the columns in the format printed in Figure B-2 are self explanatory.

10. Dave Blackburn. The data base file format for the Dave Blackburn dredge is essentially the same as that written for the Jim Bean and shown tabulated in Figure B-3. DOR No. 1 began on CIR No. 230 or 230 days into the dredging contract. The Dave Blackburn dredge began work on 8 January 1980 and worked on the Theodore project until 28 July 1981 (568 days) moving more dredged material than any of the other dredges during the project.

11. Lenel Bean (dust-pan). The data file for the Lenel Bean dredge was the same as the file for the Jim Bean and Dave Blackburn. The Lenel Bean began dredging on 22 December 1980, 579 days into the contract and completed dredging on 7 May 1981, 139 days later. Records for the Lenel Bean dredge are shown tabulated in Figure B-4.

Mechanical Excavation

Barge haul operation combined

12. Dredging records from two land-based dredges and a floating bucket dredge used in the barge haul operation are shown combined in Figure B-5. All land-based draglines loaded barges-listed as barge type VII; the floating bucket dredge loaded barge type VIII. The barge haul operation began 20 October 1979 on the 132nd day of the contract and worked continuously until 7 August 1980, 310 days later.

DREDGING CONTRACTOR'S DAILY INSPECTION REPORT

DISTRICT Mobile, AL

27" Inch Pipeline Dredge Blackbird

Power, Type Diesel HP 4000

GENERAL DATA

Date or period 8-28-80 Character of work: ~~Maintenance~~ or New Work

Exact location of work: Theodore Ship Channel

Average depth (feet and tenths) before dredging: -13± ; after dredging: -24±

Character of material and percentage of each: Gravel ___ Sand 20 Clay 75

Mud ___ Silt 5 Hardpan ___ Stone ___ Shell ___ Other ___

Number of shifts worked per day: 2 Number of persons in crew: 65

Weather: WL / Hot Scattered Showers

	TODAY	THIS MONTH	TODATE
NET YARDAGE..............................	9586	547,953	4,070,529

ATTENDANT PLANT

ITEM: Barges 24, 25, Pontoons 22, 23, 81 Fuel No Supply KS-132 [illegible] BT-6, Skipper [illegible] Chief [illegible], [illegible]

Dredging Ranges Established by Contractor

Type: Poles, Buoys, Fixed, Etc., Poles & Buoys

Are adequate controls being maintained to provide proper dredge cut and limits of spoil disposal, as reflected in the Special Provisions of the Specifications under paragraph entitled LAYOUT OF WORK? Yes ___ No ___

Location in reference to Government-established Ranges: E 350' N. of ℄

DIKES: Elev. ___ Base ___ Crown ___ Number, type and location of Waste Weirs ___

Are dikes being maintained? ✓ Is all spoil material being retained within diked area? ___

Dikes constructed this date: Location 98+00 Length in ft. ___

SPOIL: Designate area being used. South Leg

SAFETY: Are daily Safety Surveys made of dredge and attendant plant? Yes ___ No ___

By whom? Name A Guerardo Title Supt Deficiencies Noted: None

Deficiencies Corrected: ___

Verbal Instructions Received: (list any instructions given by Gov't Personnel on deficiencies, etc., with action to be taken.) ___

Conditions differing in any respect from those indicated upon the Plans or within the Specifications: ___

Name and Titles of Visitors and their comments on the work: ___

Name of Contractor: Bean Dredging Cont. No: DACW01-79-C-0135

CONTRACTOR'S CERTIFICATION: I certify that the above report is complete and correct and that all material and equipment used and work performed during this reporting period were in strict compliance with the Contract Plans and Specifications, except as noted above.

[signature]

Contractor's Approved Authorized Representative

Figure B1. Dredging contractor's daily inspection report, dredge operation report

REPORT OF OPERATIONS—PIPELINE, DIPPER OR BUCKET DREDGES

THRU: SAM-CP	TO: SAM-DE	FROM: FC-MO	
DREDGE	NAME AND TYPE: Lewis Beau - Diesel	SIZE: PIPELINE 27 in dia disch	DIPPER OR BUCKET
	HORSEPOWER OF DREDGE PUMP: 3600	SUCTION PIPE AT	CUTTER OR BUCKET / PROPULSION: 2 D399 Cats
	NUMBER OF CREW MEMBERS: DREDGE 47, SHORE 6, OTHER PLANT, TOTAL 53	WORK SCHEDULE: SHIFTS PER DAY 3	DAYS PER WEEK 7
PROJECT AND BAR	NAME: Theodore Ship Channel	AUTH DIMENSIONS: WIDTH 300-400, DEPTH -42	OVERDEPTH -44
	LOCATION (include station numbers): Sta 15+00 - 77+00 Upper Reach		
CHARACTER OF MATERIAL	ABSOLUTE DENSITY G M/liter	IN PLACE DENSITY G M/liter	VOIDS RATIO
	GRAIN SIZE D- MM D MM D MM		GEOLOGICAL CLASSIFICATION
CONTRACT OR DREDGING ORDER	NUMBER: DACW01-79-C-0135	☒ CONTRACTOR ☐ HIRED LABOR	TOTAL NO OF DAYS ON WHICH WORK WAS DONE: 35
CHANNEL CONDITION	AVERAGE DEPTH: BEFORE DREDGING -7, AFTER DREDGING -15	MINIMUM SOUNDING: BEFORE DREDGING	AFTER DREDGING
RIVER STAGE	MINIMUM -.3	TIME / MAXIMUM / TIME	GAGE LOCATION: Mobile Fuel Docks
WEATHER CONDITION	(clear, clouds, rain, snow, and fog): Clear w/light Haze	VISIBILITY: 8 mi	WIND (maximum velocity & direction): 5 S

WORK PERFORMED

ITEM	UNIT	QUANTITY
AVERAGE WIDTH OF CUT	FEET	30
TOTAL ADVANCE THIS PERIOD	FEET	17,300
TOTAL ADV. PREVIOUS TO THIS PERIOD	FEET	270,850
TOTAL ADVANCE TO DATE	FEET	287,150
FLOATING PIPE 2125 SHORE PIPE 1142		
TOTAL LENGTH OF DISCHARGE PIPE	FEET	2735
AVERAGE LIFT	FEET	5
AVERAGE PUMP SPEED	R P M	220
AVG DREDGED PER PUMP HR. GROSS	CU YDS	
SCOWS LOADED	NUMBER	
AVERAGE LOAD PER SCOW	CU YDS	

CUBIC YARDS REMOVED

AMOUNT DREDGED THIS PERIOD: (1) GROSS (computed amount)	53,775
(2) CREDITED (pay place)	
AMOUNT PREVIOUSLY REPORTED: (1) GROSS (computed amount)	1,351,972
(2) CREDITED (pay place)	
TOTAL AMOUNT DREDGED TO DATE: (1) GROSS (computed amount)	1,405,750
(2) CREDITED (pay place)	

ATTENDANT PLANT

ITEM	NAME OR NUMBER	HOURS
Derrick	Richard	24
Crew Boat	R.B. ...	
Survey	...	
Barge	Skipper	
"	2 Spuds	
"	Spud	
"	2 ...	
"	2 Spud (Fabric)	
"	...	
...	... Boat	
Dozer	D-3 Cat	24

NUMBER OF INSPECTIONS	BY DISTRICT PERSONNEL	BY DIV & OCE PERSONNEL
CONTRACT USE ONLY	HAS AN ... CHANGE ORDER ... ☐ NO ☐ YES	IF YES ...

DISTRIBUTION OF TIME

EFFECTIVE WORKING TIME (chargeable to cost of work)	HOURS MIN
PUMPING OR DREDGING	17 15
PCT OF EFFECTIVE RENTAL TIME %	
BOOSTER (in line) Hrs Min	
NON-EFFECTIVE WORKING TIME (chargeable to cost of work)	
HANDLING PIPE LINES	
HANDLING ANCHOR LINES	1 15
CLEARING PUMP AND PIPE LINE	
CLEARING CUTTER OR SUCTION HEAD	1 15
WAITING FOR SCOWS	
TO AND FROM WHARF OR ANCHORAGE	
CHANGING LOCATION OF PLANT ON JOB	4 00
LOSS DUE TO OPPOSING NATURAL ELEMENTS	
LOSS DUE TO PASSING VESSELS	
SHORE LINE AND SHORE WORK	
WAITING FOR BOOSTER	
MINOR OPER REPAIRS (explain in remarks)	20
WAITING FOR ATTENDANT PLANT	
PREPARATION AND MAKING UP TOW	
TRANSFERRING PLANT BETWEEN WORKS	
LAY TIME OFF SHIFT AND SATURDAYS	
SUNDAYS AND HOLIDAYS	
FIRE DRILL	
MISCELLANEOUS (explain in remarks)	
TOTAL NON EFFECTIVE WORKING TIME	6 45
PCT OF NON EFFECTIVE RENTAL TIME %	
TOTAL EFFECTIVE AND NON-EFFECTIVE TIME	
PCT OF TOTAL TIME IN PERIOD	
LOST TIME	
MAJOR REPAIRS AND ALTERATIONS	
CESSATION	
COLLISIONS	
MISCELLANEOUS (explain in remarks)	
TOTAL LOST TIME	
PERCENTAGE OF TOTAL TIME %	
TOTAL TIME IN PERIOD	24 00

ENG FORM 4267 — REPLACES ENG FORM 28 ... WHICH ARE OBSOLETE — (Signature and Remarks required on reverse side)

Figure B2. Report of operations sheet

CONTRACTOR'S DAILY INS''CTION REPORT (ER 1180-1-6, dtd 30 Jun ., Part 6)	DATE Thursday 28 Aug. 1980	REPORT NO. 463

CONTRACT NUMBER AND NAME OF CONTRACTOR	DESCRIPTION AND LOCATION OF THE WORK
C.F.Bean Dredging Corporation DACW01-79-C-0135	Dredging in bay sta. 210+00 to sta. 274+00 land cut sta. 274+00 to sta. 382+44 dumping with spill barge.

WEATHER CLASSIFICATION:

- **CLASS A** No interruptions of any kind from weather conditions occurring on this or previous shifts.
- **CLASS B** Weather occurred during this shift that caused a complete stoppage of all work.
- **CLASS C** Weather occurred during this shift that caused a partial stoppage of work.
- **CLASS D** Weather overhead excellent or suitable during shift. Work completely stopped due to results of previous adverse weather.
- **CLASS E** Weather overhead excellent or suitable during shift but work partially stopped due to previous adverse manner.
- **OTHER** Explain.

CLASSIFICATION: CLASS A

TEMPERATURE: MAX 70 MIN 87

PRECIPITATION: 0.05 INCHES

CONTRACTOR/SUBCONTRACTORS AND AREA OF RESPONSIBILITY FOR WORK PERFORMED TODAY *(Attach list of items of equipment either idle or working as appropriate.)*

a. C.F.Bean Dredging Corporation-Dredge:Dave Blackburn,Booster:Bean #24,Bean #25,Bean
b. #3, Tugs:Quarter Horse,Chief Corum,Tim Millet,Ken Mar II,Crane Barge,Anchor Barge
c. #22,Anchor #23,A Frame Skidder 560,Anchor #81,Fuel #40,Spill Barge #537,Spill Barge
d. BT6,Spud Barge M-508,Deck WFR,Deck TRAC,Deck FMAR,Deck TTAC,KS 522,Equip. D-5 Cat.
e. 3900 Manitowoc, 88-B Pettibone, D-5 Cat Carry All, Crewboat Peter T.
f. B)MaHarrey/Houston-Manitowoc 4600 dragline.
g. C)Batson Turf Farms-Grassing.

1. WORK PERFORMED TODAY: *(Indicate location and description of work performed. Refer to work performed by prime and/or subcontractors by letter in Table above.)*

Established reports,worked on quantities and drawings. Took check section in side disposal area. Spill Barge with Dredge Dave Blackburn dumping on South Leg Phase I Sta. 98+00. Bean #3 in pipe yard loaded on to barge. Took X-Section for Dredge cut. Pipe Yard welded on Bean #3. Worked on rock box.

2. TYPE AND RESULTS OF INSPECTION: *(Indicate whether P-Preparatory, I-Initial, or F-Follow-up and include satisfactory work completed or deficiencies with action to be taken.)*

P. Cloudy, winds S. Easterly 6-12, seas 0-3, rough, visibility 10 miles.

3. TESTS REQUIRED BY PLANS AND/OR SPECIFICATIONS PERFORMED AND RESULTS OF TESTS

none

Sheet 1 of 2

Figure B3. Contractor's daily inspection report

4. VERBAL INSTRUCTIONS RECEIVED: *(List any instructions given by Government personnel on construction deficiencies, retesting required, etc. with action to be taken.)*

none

5. REMARKS: *(Cover any conflicts in plans, specifications or instructions, acceptability of incoming materials, offsite surveillance activities, progress of work, delays, causes and extent thereof, days of no work with reasons for same.)*

Inspector on jobsite Mr. W.J. Brewton. Mr. Ad Dekluiver, Mech. Eng., Mr. G.J. Alber Maint. Mgr. Bean Dredging Corp., on jobsite.
Mr. Bob Hutt, Louisiana Dock, on jobsite this date.

6. SAFETY: *(Include any infractions of approved safety plan, safety manual or instructions from Government personnel. Specify corrective action taken.)*

none

INSPECTOR

Donald J. Barras, Project Engineer

CONTRACTOR'S CERTIFICATION: I certify that the above report is complete and correct and that all material and equipment used, work performed and tests conducted during this reporting period were in strict compliance with the contract plans and specifications except as noted above.

Donald J. Barras, Project Engineer

CONTRACTOR'S APPROVED AUTHORIZED REPRESENTATIVE

Sheet 2 of 2

Figure B3 (Concluded)

	This week Estimate	This week Actual	Previous Weeks Estimate	Previous Weeks Actual	Totals Estimate	Totals Actual
Production Gross	[illegible]	57553	1,092,600	1,563,186	1,149,000	1,570,739
Production Paid						
Service Hours	[illegible]	118.00	4438.00	4438.00	4556.00	4596.00
Dredging Hours	[illegible]		3011.65		3185.20	
Efficiency	[illegible]		69%		69%	
Production Per Hour	[illegible]		360		368	
Total Number of Loads	[illegible]	100	2129	2049	2129	2149
Average Load per Barge	[illegible]	576	535	616	585	615
Fuel Used						

Drag/Haul Operation

Job: Tchefuncte Ship Channel, Job No. 75

Total Advertised Quantity: 11,459,094 cys (Land Cut)

Bucket Dredge: Manitowoc 4600 Land Machine Bucket Size: 6 cy

Type of Barges: 1)
2)

Tugs: Type 1:
Type 2:

Week No: ___ From June 9 to June 15 1980

General Data	Monday 6-9	Tuesday 6-10	Wednesday 6-11	Thursday 6-12	Friday 6-13	Saturday 6-14	Sunday 6-15
Running Time							
Station to Station	374+00 East	373+00 East	372+00 East	372+00 East	371+00 East	371+00 East	371+00 East
Soil Description	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Digging Depth							
Loading Time Type 1							
Loading Time Type 2							
Sailing Time							
Unloading Time Type 1							
Unloading Time Type 2							
Sailing Distance V.V. In St. M.							
Number of Loads Type 1	13	16	17	11	18	15	16
Number of Loads Type 2							
Disposal Location	134+00	136+00	137+00	137+00	139+00	140+00	141+00
Repair Time	3.40	0.10					
Production Gross	8,110	8,920	9,348	6,050	7,130	8,635	9,470
Production Paid							

Specified Delays	This Week	Prev. Weeks	Total
1. Shifting Dredge			
2. Shifting Anchors			
3. Repair Engine Room			
4. Repair Deck	3.50	449.15	452
5. Repair Bucket			
6. Disposal			
7. Weather: Fog			
7. Weather: Wind			
7. Weather: Seas			
7. Weather: Rain			
8. No Barges			
9.			
10.			
11.			
12. Traffic			
13. Trash			
14. Changing Wires			
15. Miscellaneous			
16. TOTALS			

Remarks:

Bean Dredging Corporation

One Shell Square, Suite 3700
New Orleans, Louisiana 70139
Telephone 504 581 1580
Telex 58 4270
ITT 460037 Bean UI
Cable Seabean

Figure B4. Drag/haul operations report

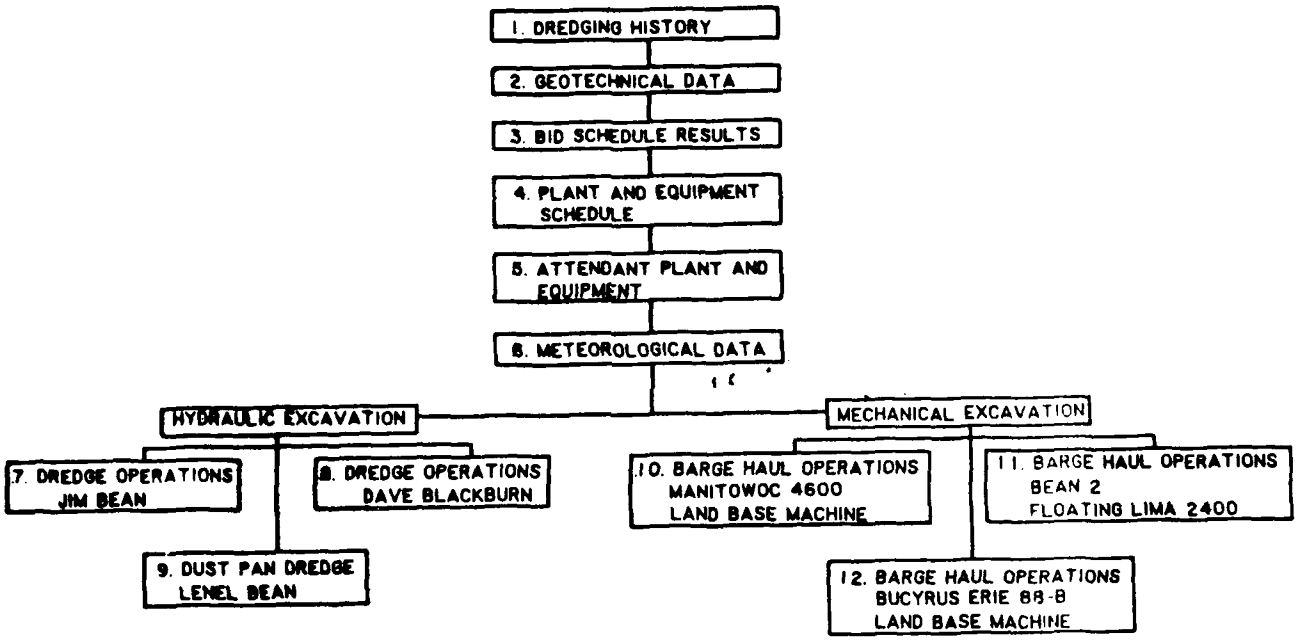

Figure B5. Theodore Ship Channel dredging data base management system

DREDGING HISTORY

ITEM	DESCRIPTION
1. DIVISION:	SOUTH ATLANTIC DIVISION
2. DISTRICT:	MOBILE
3. AREA OFFICE:	MOBILE AREA OFFICE
4. AREA ENGINEER:	PAUL WARREN
5. PROJECT:	THEODORE SHIP CHANNEL THEODORE INDUSTRIAL PARK
6. TYPE WORK:	NEW WORK DREDGING
7. GENERAL LOCATION:	THEODORE, ALABAMA
8. COUNTY:	MOBILE
9. BID INVITATION NO.:	DACW01-78-B-0099
10. AMENDMENT NO.:	
11. CONTRACTOR:	BEAN DREDGING CORPORATION ONE SHELL SQUARE SUITE 3700 NEW ORLEANS, LA 70139 PH: 504-581-1583
12. CONTRACT NUMBER:	DACW01-79-C-0135
13. LIQUID DAMAGE COST PER DAY:	
14. FINAL PAY ESTIMATE:	
15. CONTRACT PAYMENT:	
16. SUPERVISION AND ADM COST:	
17. ENG & DESIGN COST:	
18. LIQUIDATED DAMGS ASSED:	

ITEM	DESCRIPTION
19. TOTAL GOVT COST:	
20. CONTRIBUTED FUNDS:	
21. AUTHORIZED DIMENSIONS WIDTH, FT: 400 DEPTH, FT: MLW: -42.0 OVERDEPTH: FT: MLW: -44.0 SLOPES: 1:2	

AMENDMENTS

1. Not Available
2.
3.
4.

TIME SCHEDULE OF EVENTS

ITEM	DESCRIPTION	DATE
1.	ENVIRO CLEARANCE:	
2.	ADVERTISING DATE:	6 Jul 78
3.	BID OPENING:	29 Aug 78
4.	AWARD:	Mar 79
5.	NOTICE TO PROC:	3 May 79
6.	ACK NOT TO PROC:	NA
7.	COMMENCEMENT:	24 May 79
8.	SCHEDULED COMPL:	Jan 82
9.	ACTUAL COMPL:	28 Aug 81
10.		

Figure B6. Dredge history file

GEOTECHNICAL DATA

BORING HOLE RECORD

CARD SEQ.	RECORD TYPE NO.	CASE ID	HOLE ID	DATE	LOCATION STATION	TOP HOLE DATUM EL MLW	DEPTH FROM TOP HOLE FT	INTERVAL THICK-NESS FT	CONSISTENCY	COLOR	CLASSIFICATION USCS

SHELL	GRAVEL	SAND	SILT	CLAY	SAMPLE ID	SAMPLE METHOD	DISPOSAL SLOPES

TEST SAMPLE RECORD

CARD SEQ.	RECORD TYPE NO.	CASE ID	HOLE ID	SAMPLE ID	DEPTH FROM TOP HOLE FT	CLASSIFICATION USCS	GRAVEL	SAND	FINE	LL	PL	SPECIFIC GRAVITY	NATURAL WATER CONTENT %

NATURAL DENSITY PCF	DRY DENSITY PCF	TYPE SHEAR TEST	COHESION C, PSF	ANGLE INTERNAL FRICTION ϕ	PERMEABILITY K, cm/sec	COHESION C_u, PSF

Figure B7. Format for geotechnical data file

BID SCHEDULE RESULTS

	WORK ITEM	ESTIMATED QUANTITY	UNIT	GOVERNMENT ESTIMATE UNIT PRICE $	GOVERNMENT ESTIMATE ESTIMATED AMOUNT $	LOWEST BID UNIT PRICE	LOWEST BID ESTIMATED AMOUNT $	2ND LOWEST BID UNIT PRICE	2ND LOWEST BID ESTIMATED AMOUNT $	3RD LOWEST BID UNIT PRICE	3RD LOWEST BID ESTIMATED AMOUNT $
1.	MOBILIZATION AND DEMOBILIZATION	1	1		1,622,394		8,000,000		6,000,000		4,250,000
2.	CLEARING AND GRUBBING	1			177,810		5,000,000		1[illegible],000		1,250,000
3.	SEEDING	17.82 acres		630	11,214	700	12,460	1,165	[illegible],737	720	12,816
4.	MULCHING	13.82 acres		340	4,692	300	4,140	390	[illegible],382	400	5,520
5.	WATERING	125.03 tons		5.2	650	8	1,000	5.20	650	6.00	750
6.	LANDCUT EXCAVATION	11,573.000		2.4212	27,921,278	0.88	10,147,160	2.216	25,[illegible],912	2.26	26,062,320
7.	BAYCUT EXCAVATION	19,573,000		0.8951	17,519,792	0.55	10,765,150	0.880	17,[illegible],240	1.07	20,943,110
8											
9.											
10.											
11.											
12.											
	TOTAL BID				$47,257,830		$29,430,910		$48,[illegible]1,921		$52,524,516

Figure B8. Bid schedule results

PLANT AND EQUIPMENT SCHEDULE

ITEM	EQUIPMENT TYPE	NAME	IDENTIFYING NUMBER	INSIDE PIPE DIAM IN.	HORSEPOWER BHP	TYPE OF POWER	ESTIMATED CAPACITY CU YD/MO	DISCHARGE PRESSURE AT PUMP PSI
1	Hydraulic Dredge	Jim Bean	--	27	9200	Diesel	700,000	222-240
2	Hydraulic Dredge	Dave Blackburn	--	27	3750	Diesel	900,000	70-150
3	Dust Pan Dredge	Lenel Bean	--	27	3600	Diesel	1,200,000	26
4	Booster Pump	--	20	27	3600	Diesel	--	200
5	Booster Pump	--	24	27	7200	Diesel	--	250
6	Booster Pump	--	25	27	8000	Diesel	--	290-335
7	Bucket Dredge	Bean 2	Lima 2400	--	--	Diesel	120,000	--
8	Dragline Dredge	Manitowoc	4600	--	--	Diesel	120,000	--
9	Dragline Dredge	Bucyrus Erie	888	--	--	Diesel	120,000	--

ITEM	LENGTH FT	WIDTH FT	[illegible]	CONDITION 1 THRU 10	LOCATION PRIOR TO CONTRACT	LADDER OR BOOM LENGTH FT	CENTRIFUGAL PUMPS ON BOARD	BUCKET CAPACITY CU YD
1	262	65	[illegible]	10	Tampa, FL	140	3	--
2	180	52	[illegible]	7	New Orleans, LA	86	1	--
3	250	40	[illegible]	10	New Orleans, LA	79	*2	--
4	140	40	[illegible]	7	New Orleans, LA	--	2	--
5	140	40	[illegible]	7	New Orleans, LA	--	2	--
6	140	40	[illegible]	10	New Orleans, LA	--	2	--
7	140	40	[illegible]	7	New Orleans, LA	120	--	6
8	--	--	[illegible]	7	New Orleans, LA	120	--	6
9	--	--	[illegible]	7	New Orleans, LA	120	--	6

* New pump

Figure B9. Plant and equipment schedule

ATTENDANT PLANT AND EQUIPMENT (TYPICAL SAMPLE RECORD)

CONTRACTORS INSPECTION REPORT	DATE	MISCELLANEOUS: HOURS WORKED HR	MISCELLANEOUS: CLEARING, GRUBBING, AND SEEDING WORK ITEMS 2 THRU 5 ATTENDANT EQUIPMENT ITEMS	BARGE HAUL OPERATIONS: HOURS WORKED HR	BARGE HAUL OPERATIONS: WORKED ITEM 6 LANDCUT ATTENDENT EQUIPMENT ITEMS
274	21 Feb 80	24	Dragline D-6 Dozer dump truck, farm tractor and disc	10	Bean 2 dragline, 6 flat deck barges, spud barge and dragline, 2 tug boats, crew boat

DREDGE OPERATION REPORT NO.	HOURS WORKED HR, MIN	HYDRAULIC DREDGING OPERATION: WORK ITEM 7 BAY CUT ATTENDANT EQUIPMENT ITEMS	WORK ITEM 6 LAND CUT	REMARKS
85	24	[illegible] Bean Dredge, Booster Pump [illegible] 20, crew boat, survey boat, [illegible] tug boats, forklift, D-6 [illegible], 3 welding machines, [illegible] barge	No Work	Cloudy to fair nc adverse conditions
45	24	--	Dave Blackburn Dredge Booster Pump No. 24 and 25 Spill Barge, Tug Boat, Survey Boat A-Frame Crane	

Figure B10. Attendant plant and equipment (typical record sample)

7. DREDGE OPERATIONS—JIM BEAN

CONTRACTORS INSPECTION REPORT (CIR)	DREDGE OPERATION REPORT	DATE	DREDGE NAME	CREW MEMBERS			WORK SCHEDULE		DREDGING - STATION - CUT		
				DREDGE	SHORE	OTHER PLANT	SHIFTS	DAYS PER WK	SIDE	START	STOP
	NO.			NO.	NO.	NO.			¢	STA.	STA.

DISPOSAL FILL		CHARACTER OF CUT MATERIAL					TOTAL DAYS WORKED	CHANNEL CONDITION			
								AVERAGE DEPTH		MINIMUM SOUNDING	
FILL START	FILL STOP	CLAY	SAND	SILT	SHELL	GRAVEL		BEFORE DREDGING	AFTER DREDGING	BEFORE DREDGING	AFTER DREDGING
STA.	STA.	%	%	%	%	%		MLW	MLW	MLW	MLW

WORK PERFORMED												
AVG WIDTH CUT	ADVANCE THIS PERIOD	FLOATING PIPE	SHORE PIPE	AVERAGE PUMP SPEED	AMOUNT DREDGED THIS PERIOD	BANK CUT	PONTOONS	PIECES OF PIPE	NIPPLES	ELBOWS	RUBBER LINE	HEIGHT OF DISCHARGE
FT	FT	FT	FT	RPM	CY YD	FT	NO.	NO.	NO.	NO.	FT	FT

DISTRIBUTION OF TIME AND FUEL									
HANDLING PIPE LINES	HANDLING ANCHOR LINE	CLEAN PUMP PIPELINE	CLEAN SUCTION CUTTER	CHANGE LOCATION	OPPOSING NATURAL ELEMENTS	PASSING VESSELS	SHORELINE WORK	BOOSTER	MINOR OPER. REPAIRS

DISTRIBUTION OF TIME AND FUEL (CONTINUED)													REMARKS
PREP. TOW	HOLIDAYS	FIRE DRILL	MISC.	LOST TIME	RUNNING TIME	DREDGE FUEL USED	BOOSTER FUEL USED	BOOSTER FUEL USED	LUBRICANT OIL USED	LUBRICANT GREASE USED	WATER USED	FUEL COST PER GAL	

Figure B11. Dredge operations - Jim Bean

9. BARGE HAUL OPERATION - BUCKET DREDGE

CIR	DATE	DREDGE OR DRAGLINE NAME	SERVICE OR RUNNING TIME	DREDGING - STATION			DISPOSAL FILL		CHARACTER OF CUT			DIGGING DEPTH
				SIDE OF	CUT START	CUT STOP	FILL START	FILL STOP	CLAY	SAND	SILT	
			HR, MIN	¢	STA	STA	STA	STA	%	%	%	FT

TYPE 1 LOADING TIME	TYPE 2 LOADING TIME	SAILING TIME	TYPE 1 UNLOADING TIME	TYPE 2 UNLOADING TIME	SAILING DISTANCE	TYPE 1 NO. LOADS	TYPE 2 NO. LOADS	PRODUCTION GROSS	FUEL USED
HR, MIN	HR, MIN	HR, MIN	HR, MIN	HR, MIN	MILES			CU YD	GAL

SPECIFIED DELAYS			TIME DISTRIBUTION				REMARKS
1. SHIFTING DREDGE	2. SHIFTING ANCHORS	3-5. MISC REPAIRS	7. WEATHER FOG, WIND, SEAS, RAIN	8. NO BARGES	12-15. MISC DELAYS	DREDGING TIME	
HR, MIN	HR, MIN	HR, NUN	HR, MIN	HR, MIN	HR, MIN	HR, MIN	

Figure B12. Barge haul operation - bucket dredge

Table B1

Meteorology Data

CIR	DATE	M-MLW	TIME	X-MLW	TIME	SKY-COND	VISIB	WND-S	DIR	CL	X-T	M-T	PRECP	W-HGT
1	24MAY79									A	86	72		
2	25MAY79									A	85	70		
3	26MAY79									A	87	69		
4	27MAY79									A	86	70		
5	28MAY79									A	85	72		
6	29MAY79									A	85	71		
7	30MAY79									A	88	69		
8	31MAY79									A	86	70		
9	01JUN79									A	89	76		
10	02JUN79									A	87	71		
11	03JUN79									A	87	71		
12	04JUN79									A	90	76		
13	05JUN79									A	90	74		
14	06JUN79									A	89	73		
15	07JUN79									A	88	74		
16	08JUN79									A	90	72		
17	09JUN79									A	89	74		
18	10JUN79									A	88	73		
19	11JUN79									A	88	74		
20	12JUN79									A	88	74		
21	13JUN79									A	88	74		
22	14JUN79									A	88	74		
23	15JUN79									A	89	74		
24	16JUN79									A	90	75		
25	17JUN79									A	90	75		
26	18JUN79									A	90	75		
27	19JUN79									A	90	75		
28	20JUN79									A	90	74		
29	21JUN79									A	95	75		
30	22JUN79									A	90	75		
31	23JUN79									A	90	75		
32	24JUN79									A	89	74	1.0	
33	25JUN79									A	90	75		
34	26JUN79									A	90	75		
35	27JUN79									A	90	75		
36	28JUN79									A	90	75		
37	29JUN79									A	90	75	1.0	
38	30JUN79									A	95	75		

(continued)

Table B1 (continued)

Meteorology Data

CIR	DATE	M-MLW	TIME	X-MLW	TIME	SKY-COND	VISIB	WND-S	DIR	CL	X-T	M-T	PRECP	W-HGT
39	01JUL79		0		0					A	90	75		
40	02JUL79		0		0					A	92	75		
41	03JUL79		0		0					A	95	75		
42	04JUL79		0		0					A	95	75		
43	05JUL79		0		0					A	95	75		
44	06JUL79		0		0					A	95	75		
45	07JUL79		0		0					A	90	75	0.5	
46	08JUL79		0		0					A	90	75	1.0	
47	09JUL79		0		0					C	80	75	1.0	
48	10JUL79		0		0					C	82	76	0.5	
49	10JUL79		0		0					B	80	72	2.0	
50	10JUL79		0		0					C	81	74	1.0	
51	10JUL79		0		0					E	90	76	TR	
52	10JUL79		0		0					BE	92	80	1.0	
53	10JUL79		0		0					BE	90	80	1.0	
54	10JUL79		0		0					BE	90	80	0.25	
55	10JUL79		0		0					CE	89	80	0.15	
56	10JUL79		0		0					BE	88	79	0.50	
57	10JUL79		0		0					BE	86	76	1.0	
58	20JUL79		0		0					BE	85	74	0.5	
59	20JUL79		0		0					E	95	78	0	
60	20JUL79		0		0					CE	95	75	0.25	
61	20JUL79		0		0					BE	83	72	1.25	
62	20JUL79		0		0					CE	86	73	0.25	
63	20JUL79		0		0					E	88	74	TR	
64	20JUL79		0		0					E	85	76	TR	
65	20JUL79		0		0					E	86	76	0	
66	20JUL79		0		0					E	90	75	0	
67	20JUL79		0		0					E	95	74	0	
68	30JUL79		0		0					A	90	75	0	
69	31JUL79		0		0					A	92	76	0	

(continued)

Table B1 (continued)

Meteorology Data

CIR	DATE	M-MLW	TIME	X-MLW	TIME	SKY-COND	VISIB	WND-S	DIR	CL	X-T	M-T	PRECP	W-HGT
70	01AUG79		0		0					A	94	74	0	
71	01AUG79		0		0					A	95	75	0	
72	01AUG79		0		0					A	90	75	0	
73	01AUG79		0		0						0	0		
74	01AUG79		0		0						0	0		
75	01AUG79		0		0						0	0		
76	01AUG79		0		0					A	93	72	0	
77	01AUG79		0		0					A	93	74	0	
78	01AUG79		0		0					A	93	73	0	
79	10AUG79		0		0					A	93	74	0	
80	10AUG79		0		0					A	91	72	0.5	
81	10AUG79		0		0					A	94	75	0	
82	10AUG79		0		0					A	92	72	0	
83	10AUG79		0		0					A	93	72	0	
84	10AUG79		0		0					A	90	71	0	
85	10AUG79		0		0					A	89	70	0	
86	10AUG79		0		0					A	90	70	0	
87	10AUG79		0		0					A	89	69	0	
88	10AUG79		0		0					A	89	70	0	
89	20AUG79		0		0					A	90	72	0	
90	21AUG79		0		0					A	91	70	0	
91	22AUG79		0		0					A	90	69	TR	
92	23AUG79		0		0	PCY		V		C	91	72	0.25	
93	24AUG79		0		0	PCY		V		C	90	71	0.48	
94	25AUG79		0		0	PCY		V		C	87	71	0.13	
95	26AUG79		0		0	PCY				C	81	72	1.64	
96	27AUG79		0		0	PCY				C	79	72	0.10	
97	28AUG79		0		0	PCY				C	89	73	TR	
98	29AUG79		0		0	PCY				C	90	72	TR	
99	30AUG79		0		0	PCY				C	92	73	0.17	
100	31AUG79		0		0	PCY				C	91	74	TR	

(continued)

Table B1 (continued)

Meteorology Data

CIR	DATE	M-MLW	TIME	X-MLW	TIME	SKY-COND	VISIB	WND-S	DIR	CL	X-T	M-T	PRECP	W-HGT
101	01SEP79		0		0	PCY				C	89	72	1.26	
102	02SEP79		0		0	PCY				C	87	74	0.07	
103	03SEP79		0		0	PCY				C	88	72	0.12	
104	04SEP79		0		0	PCY				C	89	70	0	
105	05SEP79		0		0	PCY				C	91	72	0	
106	06SEP79		0		0	PCY				C	92	70	0	
107	07SEP79		0		0						0	0		
108	08SEP79		0		0	PCY				C	90	72	0	
109	09SEP79		0		0	PCY				C	91	72	0	
110	10SEP79		0		0	C				C	92	70	0	
111	11SEP79		0		0	PC				C	91	70	TR	
112	12SEP79		0		0	CL				B	88	72	0.10	
113	13SEP79		0		0	PC				D	80	70	TR	
114	14SEP79		0		0						0	0		
115	15SEP79		0		0	PC				E	90	70	0.12	
116	16SEP79		0		0	PCY-R				E	90	70	0	
117	17SEP79		0		0	C				E	90	70	0	
118	18SEP79		0		0	C				E	91	70	0	
119	19SEP79		0		0	C				E	90	70	0	
120	20SEP79		0		0	PCY-R				E	85	70	TR	
121	21SEP79		0		0	PCY-R				E	85	70	0.12	
122	22SEP79		0		0	C				E	86	70	0	
123	23SEP79		0		0	PCY				E	75	65	0	
124	24SEP79		0		0	PCY				E	70	60	0	
125	25SEP79		0		0	PCY				E	70	60	0	
126	26SEP79		0		0	PCY				E	75	70	0	
127	27SEP79		0		0	PCY				E	77	72	TR	
128	28SEP79		0		0	PCY				E	78	73	0	
129	29SEP79		0		0	C				E	85	65	0	
130	30SEP79		0		0	C				F	37	66	0	

(continued)

Table B1 (continued)

Meteorology Data

CIR	DATE	M-MLW	TIME	X-MLW	TIME	SKY-COND	VISIB	WND-S	DIR	CL	X-T	M-T	PRECP	W-HGT
131	01OCT79		0		0	C				E	85	65	0	
132	02OCT79		0		0	C				E	87	65	0	
133	03OCT79		0		0	C				E	88	71	0	
134	04OCT79		0		0	PC				E	87	72	TR	
135	05OCT79		0		0	C				E	87	49	0	
136	06OCT79		0		0	C				E	85	57	0	
137	07OCT79		0		0	C				E	83	52	0	
138	08OCT79		0		0	F				C	82	57	0	
139	09OCT79		0		0	C				C	82	57	0	
140	10OCT79		0		0	C				C	75	52	0	
141	11OCT79		0		0	C				C	75	50	0	
142	12OCT79		0		0	C				C	77	58	0	
143	12OCT79		0		0	C				C	79	57	0	
144	12OCT79		0		0	C				C	76	60	0	
145	12OCT79		0		0	C				C	79	59	0	
146	12OCT79		0		0	C				C	79	63	0	
147	12OCT79		0		0	C				C	82	68	0	
148	12OCT79		0		0	C				C	84	69	0	
149	12OCT79		0		0	C				C	87	67	0	
150	20OCT79		0		0	C				C	85	68	0	
151	20OCT79		0		0	C				C	84	69	0	
152	20OCT79		0		0	CY				C	85	67	0	
153	20OCT79		0		0	C				C	69	43	0	
154	20OCT79		0		0	C				C	69	46	0	
155	20OCT79		0		0	C				C	67	43	0	
156	20OCT79		0		0	C				C	83	69	0	
157	20OCT79		0		0	C				C	80	71	0	
158	20OCT79		0		0	C				C	84	72	0	
159	29OCT79		0		0	C				C	87	65	0	
160	30OCT79		0		0	CY				C	84	72	0	
161	31OCT79		0		0	R				C	77	62	2.8	

(continued)

Table B1 (continued)

Meteorelogy Data

CIR	DATE	M-MLW	TIME	X-MLW	TIME	SKY-COND	VISIB	WND-S	DIR	CL	X-T	M-T	PRECP	W-HGT
162	01NOV79		0		0	R				C	62	43	2.13	
163	02NOV79		0		0	C				C	69	53	0	
164	03NOV79		0		0	C				C	67	49	0	
165	04NOV79		0		0	C				A	66	47	0	
166	05NOV79		0		0	C				C	70	44	0	
167	06NOV79		0		0	C				C	71	42	0	
168	07NOV79		0		0	C				C	70	48	0	
169	08NOV79		0		0	C				C	73	46	0	
170	09NOV79		0		0	CY				A	70	40	0	
171	10NOV79		0		0	CY				A	65	40	1.8	
172	11NOV79		0		0	CY				A	66	43	0	
173	12NOV79		0		0	C				A	65	42	0	
174	13NOV79		0		0	C				A	65	38	0	
175	14NOV79		0		0	C				A	61	37	0	
176	15NOV79		0		0	C				A	61	36	0	
177	16NOV79		0		0	C				A	64	36	0	
178	17NOV79		0		0	C				A	64	40	0	
179	18NOV79		0		0	C				A	70	40	0	
180	19NOV79		0		0	C - F				A	83	62	0	
181	20NOV79		0		0	C - F				A	79	59	0	
182	21NOV79		0		0	C				A	75	62	0	
183	22NOV79		0		0	C - CY				A	79	62	0	
184	23NOV79		0		0	CY-R				A	62	44	1.03	
185	24NOV79		0		0	CY-R				C	69	53	1.08	
186	25NOV79		0		0	CY-R				C	50	40	1.05	
187	26NOV79		0		0	C				A	75	50	0	
188	27NOV79		0		0	C				A	75	40	0	
189	28NOV79		0		0	C				A	50	32	TR	
190	29NOV79	0	800	0.5	2200	C	5	15	NNE	A	52	32	0	
191	30NOV79	0	800	0.5	2000	C	15	5	NNE	A	57	30	0	

(continued)

Table B1 (continued)

Meteorology Data

CIR	DATE	M-MLW	TIME	X-MLW	TIME	SKY-COND	VISIB	WND-S	DIR	CL	X-T	M-T	PRECP	W-HGT
192	01DEC79	1.0	800	0.0	1800	C	15	5-8	N	A	54	26	0	
193	02DEC79	- .6	800	0.0	1800	C	15	5-10	NNE	A	57	37	0	
194	03DEC79	- 1.0	800	- 0.2	1800	CY	15	10	NNE	A	54	31	0	
195	04DEC79	- 0.5	700	+ 1.5	2300	C	15	5	NNE	A	65	30	0	
196	05DEC79	+ 0.5	1200	+ 1.2	400	C	10			A	70	35	0	
197	06DEC79	0.0	300	+ 0.8	1500	CY-R	0-2			C	64	57	TR	
198	07DEC79	+ .1	800	+ .4	1600	C	U/L	5-10	NNE	A	50	35	0	
199	08DEC79	+ .4	800	.0	1600	C	U/L			A	64	44	0	
200	09DEC79		0		0	C	U/L	5-10	NNE	A	64	44	0	
201	10DEC79		0		0	C	10	5-8	NNE	C	65	47	0	
202	11DEC79		0		0	C-F	10	2-8	VAR	C	65	47	0	
203	12DEC79		0		0	PCY-F	5	2-8	VAR	C	70	45	TR	
204	13DEC79		0		0	F-R	0	2-5	SE	C	74	60	1.04	
205	14DEC79	.0	700	+ 1.0	1600	CY-R	5	15-20	NNE	C	50	40	TR	
206	15DEC79	+ 0.4	1900	+ 1.5	700	CY-R	0	15-20	NNE	C	50	35	1.07	
207	16DEC79		0		0	CY-R	5	10-15	NNE	C	50	35	TR	
208	17DEC79	- 1.2	800		0	C	12	15-20	N	A	45	32	0	
209	18DEC79		0		0	C	12	1-4	NE	A	50	22	0	
210	19DEC79		0		0	PCY	5	1-4	NE	A	57	29	0	
211	20DEC79		0		0	C	4	1-4	NE	A	60	36	0	
212	21DEC79		0		0	C	4	5-10	NNE	A	63	42	0	
213	22DEC79		0		0	PCY	4	4-8	NE	A	58	52	0	
214	23DEC79		0		0	CY-R	5	10-20	SSE	A	35	60	0	
215	24DEC79		0		0	C	5	2-6	SSE	A	35	55	0	
216	25DEC79		0		0	C	6	5-10	W	A	35	55	0	
217	26DEC79		0		0	C	10	2-6	NE	A	60	35	0	
218	27DEC79		0		0	CY	10	2-4	NE	A	65	33	0	
219	28DEC79		0		0	C	10	2-6	ENE	A	60	42	0	
220	29DEC79		0		0	CY	8	2-6	ENE	A	65	45	TR	
221	30DEC79		0		0	CY	10	10-15	NW	A	55	46	0	
222	31DEC79		0		0	C	10	12-15	NW	A	58	45	0	

(continued)

Table B1 (continued)

Meteorology Data

CIR	DATE	M-MLW	TIME	X-MLW	TIME	SKY-COND	VISIB	WND-S	DIR	CL	X-T	M-T	PRECP	W-HGT
223	01JAN80		0		0	C	10	2-6	ENE	A	53	35	0	
224	02JAN80		0		0	C	10	2-6	ENE	A	55	35	0	
225	03JAN80		0		0	PCY	10	4-8	E	A	55	35	0	
226	04JAN80		0		0	CY	10	15-20	NW	A	55	35	0	
227	05JAN80		0		0	CY	10	15-20	NW	A	55	35	0	
228	06JAN80		0		0	CY	10	12-18	ESE	A	55	30	0	
229	07JAN80		0		0	CY-F	4	8-10	ESE	A	55	68	0.26	
230	08JAN80		0		0	F	1	5-10	VAR	A	60	50	01	
231	09JAN80		0		0	F	2	5-10	ESE	C	65	52	0	
232	10JAN80		0		0	CY-F	0-3	8-12	VAR	C	68	50	TR	
233	11JAN80		0		0	CY-F-R	0-6	15-20	VAR	C	69	62	1.78	
234	12JAN80		0		0	CY	10	5-15	N	A	61	47	0	
235	13JAN80		0		0	CY	2	5-15	NNE	A	61	53	0	
236	14JAN80		0		0	CY	10	6-12	E	A	62	51	0	
237	15JAN80		0		0	PCY	10	5-10	NE	A	71	48	0	
238	16JAN80		0		0	CY-R	5	8-14	SE	C	66	58	.13	
239	17JAN80		0		0	CY-F-R	1	8-14	SE	C	70	64	1.07	
240	18JAN80		0		0	CY-F	0-5	3-12	VAR	A	73	62	.01	
241	19JAN80		0		0	CY	10	8-14	ENE	A	74	51	0	
242	20JAN80		0		0	CY-F	0-10	8-14	E	A	75	49	0	
243	21JAN80		0		0	CY-F	0-10	5-10	NE	A	67	53	0	
244	22JAN80		0		0	CY-F	0-8	6-12	SSE	C	72	63	0.40	
245	23JAN80		0		0	CY	10	10-16	NW	A	51	41	0	
246	24JAN80		0		0	C	10	8-14	WSW	A	60	34	0	
247	25JAN80		0		0	CY	0-10	12-18	SW	C	61	53	TR	
248	26JAN80		0		0	CY-F-R	0	6-12	SE	C	61	56	0.61	
249	27JAN80		0		0	CY	10	6-12	NW	A	60	45	0	
250	28JAN80		0		0	CY	10	6-12	NE	A	60	47	0	
251	29JAN80		0		0	CY	10	6-12	E	A	66	46	0	
252	30JAN80		0		0	PCY	2-10	6-12	E	A	72	45	0	
253	31JAN80		0		0	PCY-R	10	10-20	NW	A	66	46	.33	

(continued)

Table B1 (continued)

Meteorology Data

CIR	DATE	M-MLW	TIME	X-MLW	TIME	SKY-COND	VISIB	WND-S	DIR	CL	X-T	M-T	PRECP	W-HGT
254	01FEB80		0		0	PCY	10	8-16	N	A	42	25	0	
255	02FEB80		0		0	PCY	10	5-10	NE	A	42	24	0	
256	03FEB80		0		0	PCY	10	3-6	NE	A	53	30	0	
257	04FEB80		0		0	PCY	10	3-6	NE	A	53	31	0	
258	05FEB80		0		0	CY-R	10	8-12	SE	C	60	34	.02	
259	06FEB80		0		0	PCY	10	8-10	NW	A	56	42	.54	
260	07FEB80		0		0	PCY	10	10-12	NE	A	51	28	0	
261	08FEB80		0		0	CY	10	8-14	N	A	59	37	0	
262	09FEB80		0		0	CY-F	0.25	6-16	N	A	62	50	.54	
263	10FEB80		0		0	PCY-R	10	6-12	NNW	A	43	35	.01	
264	11FEB80		0		0	CY	10	6-12	NW	A	50	26	0	
265	12FEB80		0		0	CY	10	5-10	N	A	49	36	0	
266	13FEB80		0		0	CY	0-5	5-10	E	A	50	41	0	
267	14FEB80		0		0	CY	5-10	10-15	S	A	67	42	0	
268	15FEB80		0		0	CY	0-5	10-15	S	A	71	46	TR	
269	16FEB80		0		0	CY-R	0-5	15-25	NW	C	60	40	1.0	
270	17FEB80		0		0	PCY-R	5-10	15-20	NW	C	46	25	.01	
271	18FEB80		0		0	PCY	10	5-10	SE	A	54	26	0	
272	19FEB80		0		0	PCY	0-6	7-14	SE	A	62	42	0	
273	20FEB80		0		0	CY	0-8	8-14	S	A	74	57	0	
274	21FEB80		0		0	CY-F	0-2	8-16	S	C	73	60	TR	
275	22FEB80		0		0	CY-F	0-1	8-12	S	C	72	67	.05	
276	23FEB80		0		0	CY-F	0-2	5-10	SW	C	81	62	0	
277	24FEB80		0		0	CY-F	0-5	5-10	SW	C	75	62	0	
278	25FEB80		0		0	C	0-10	15-30	NW	C	66	53	0	
279	26FEB80		0		0	C	0-10	15-20	NW	C	50	32	0	
280	27FEB80		0		0	PCY	0-8	5-15	SW	C	61	32	0	
281	28FEB80		0		0	PCY	0-8	8-14	SW	C	71	45	0	
282	29FEB80		0		0	PCY	0-8	5-15	SW	C	73	53	0	

(continued)

Table B1 (continued)

Meteorology Data

CIR	DATE	M-MLW	TIME	X-MLW	TIME	SKY-COND	VISIB	WND-S	DIR	CL	X-T	M-T	PRECP	W-HGT
283	01MAR80		0		0	PCY	0-15	10-25	NW	C	67	38		
284	02MAR80		0		0	C	0-15	10-20	N	C	40	23	0	
285	03MAR80		0		0	C	0-15	8-15	S	A	55	23	0	
286	04MAR80		0		0	PCY	0-10	8-16	ENE	C	62	36	0	
287	05MAR80		0		0	CY-R	0-10	10-18	NW	A	80	62	.43	
288	06MAR80		0		0	CY-F	0-8	8-15	NE	C	76	46	0	
289	07MAR80		0		0	CY-F-R	0-5	8-14	ESE	C	72	63	.20	
290	08MAR80		0		0	CY-F-R	0-5	8-18	S	C	83	71	.15	
291	09MAR80		0		0	CY-F-R	0-10	10-15	S	C	75	65	.08	
292	10MAR80		0		0	CY-F-R	0-5	10-20	NW	C	83	66	.14	
293	11MAR80		0		0	CY-F	0-8	8-16	NE	C	77	62	0	
294	12MAR80		0		0	CY-F-R	0-6	10-20	S	C	76	66	.20	
295	13MAR80		0		0	PCY	10-15	10-20	NW	C	85	64	0	
296	14MAR80		0		0	C	10	6-12	N	C	85	64	0	
297	15MAR80		0		0	PCY	10	10-15	SW	C	73	53	0	
298	16MAR80		0		0	PCY	10	10-25	SW	A	72	55	0	
299	17MAR80		0		0	CY-R	0-10	12-15	S	C	76	64	2.8	
300	18MAR80		0		0	PCY	10	10-18	N	C	65	46	0	
301	19MAR80		0		0	CY-R	0-10	10-15	SE	C	70	48	.05	
302	20MAR80		0		0	CY-F-R	0-2	10-20	S	C	79	62	.08	
303	21MAR80		0		0	CY-R	2-10	12-20	NW	C	72	55	.47	
304	22MAR80		0		0	PCY	4-10	10-20	SE	C	77	47	0	
305	23MAR80		0		0	PCY	4-10	10-20	SE	C	77	47	0	
306	24MAR80		0		0	PCY-R	10	12-20	S	C	84	62	.04	
307	25MAR80		0		0	PCY	5	5-10	ESE	A	72	46	0	
308	26MAR80		0		0	CY-R	10	5-15	E	C	60	54	.63	
309	27MAR80		0		0	CY	0-10	5-15	SE	C	66	55	0	
310	28MAR80		0		0	CY-R	0-2	5-15	E	C	68	52	4.0	
311	29MAR80		0		0	CY-R	2	8-16	S	C	66	60	.81	
312	30MAR80		0		0	CY-R	10	8-16	S	C	71	58	1.40	
313	31MAR80		0		0	C	10	6-12	W	C	71	50	0	

(continued)

Table B1 (continued)

Meteorology Data

CIR	DATE	M-MLW	TIME	X-MLW	TIME	SKY-COND	VISIB	WND-S	DIR	CL	X-T	M-T	PRFCP	W-HGT
314	01APR80		0		0	C	10	5-10	E	A	72	50	0	
315	02APR80		0		0	CY-R	0-3	7-14	VAR	C	62	57	2.16	
316	03APR80		0		0	CY-R-F	8	6-14	SW	C	70	60	1.09	
317	04APR80		0		0	PCY-R	8	8-14	NW	A	75	66	.08	
318	05APR80		0		0	PCY	10	6-12	NW	A	70	47	0	
319	06APR80		0		0	PCY	10	7-14	SE	A	72	49	0	
320	07APR80		0		0	CY-R	3-8	7-14	SE	C	71	61	.32	
321	08APR80		0		0	CY	10	8-15	S	C	85	67	.79	
322	09APR80		0		0	PCY	10	6-16	VAR	C	80	54	0	
323	10APR80		0		0	C	10	6-12	S	A	84	52	0	
324	11APR80		0		0	CY-R	1-7	10-20	S	C	78	58	.10	
325	12APR80		0		0	CY-R	0-5	10-20	S	C	69	58	2.52	
326	13APR80		0		0	CY-R	0-8	15-30	S	C	71	61	7.88	
327	14APR80		0		0	PCY	10	8-12	W	C	61	44	0	
328	15APR80		0		0	C	10	8-16	W	A	73	50	0	
329	16APR80		0		0	C	10	8-12	S	A	75	45	0	
330	17APR80		0		0	C	10	5-10	ESE	A	77	48	0	
331	18APR80		0		0	CY-R	0-8	8-14	SE	C	68	53	.89	
332	19APR80	+ 0.1	600	+ 2.4	1400	PCY	10	6-12	E	C	75	56	0	
333	20APR80	+ 0.6	100	+ 2.0	1400	C	0-10	5-10	NE	A	82	55	0	
334	21APR80	+ 0.5	500	+ 2.0	1730	C	10	LIGHT	VAR	A	88	58	0	
335	22APR80	+ 0.6	500	+ 1.8	1400	C	10	LIGHT	VAR	A	89	62	0	
336	23APR80	+ 0.5	500	+ 1.8	1700	C	10	5-10	SE	A	87	63	0	
337	24APR80	+ 1.0	700	+ 1.7	2000	C	10	5-10	SE	A	82	58	0	
338	25APR80		0		0	PCY	10	10-18	S	A	82	64	0	
339	26APR80		0		0	PCY	10	10-20	S	A	84	68	.60	
340	27APR80		0		0	PCY	10	10-18	NW	A	70	58	0	
341	28APR80		0		0	PCY	10	10-16	NW	A	74	50	0	
342	29APR80	+ 0.8	0	+ 1.6	1100	PCY	10	10-16	NW	A	82	57	0	
343	30APR80	+ 0.8	100	+ 1.1	430	PCY	10	8-12	SE	A	81	61	0	

(continued)

Table B1 (continued)

Meteorology Data

CIR	DATE	M-MLW	TIME	X-MLW	TIME	SKY-COND	VISIB	WND-S	DIR	CL	X-T	M-T	PRECP	W-HGT
344	01MAY80	+ 0.7	2200	+ 1.7	900	PCY-F	10	8-12	SE	A	79	65	0	
345	02MAY80	+ 0.8	100	+ 2.0	1400	CY	0-8	10	SE	A	81	61	0.58	
346	03MAY80	+ 0.5	100	+ 2.0	1400	PCY-R	0-8	0-15	NE	A	81	63	1.0	
347	04MAY80	+ 0.5	100	+ 1.4	1700	PCY	0-6	0-5	E	A	81	60	0	
348	05MAY80	+ 0.6	0	+ 1.9	1700	PCY	0-5	LIGHT	VAR	A	83	56	0	
349	06MAY80	+ 0.3	500	+ 1.9	1800	PCY-F	2-10	4-10	NW	A	88	60	0	
350	07MAY80	+ 0.4	800	+ 2.0	1600	PCY-F	2-10	8-20	SE	A	85	67	0	
351	08MAY80	+ 0.8	400	+ 1.9	1800	PCY	0-10	5-15	SW	C	84	66	0.11	
352	09MAY80	+ 0.5	500	+ 1.7	1700	PCY	0-10	4-12	N	C	80	59	.11	
353	10MAY80	+ 0.7	500	+ 1.6	1300	PCY	0-10	5-15		A	80	55	0	
354	11MAY80	+ .8	1900	+ 1.5	0	PCY	0-10	6-12		A	80	57	0	
355	12MAY80	+ 1.1	1600	+ 1.6	1100	PCY	10	10-20	S	A	86	69	0	
356	13MAY80	+ 0.4	2200	+ 2.1	1000	CY	10	12-22	S	A	80	70	.03	
357	14MAY80	+ .5	0	+ 2.1	1200	CY	10	8-15	SW	A	81	72	.54	
358	15MAY80	+ 0.4	100	+ 1.7	700	CY	0-8	8-20	SE	C	80	68	.30	
359	16MAY80	+ 1.0	600	+ 2.5	0	CY	0-4	12-25	VAR	C	76	68	2.90	
360	17MAY80	+ 1.2	100	+ 2.2	700	CY	0-4	15-25	VAR	C	76	66	6.08	
361	18MAY80	+ 0.8	100	+ 1.5	1700	CY	2-6	6-12	S	C	84	65	.05	
362	19MAY80	+ 0.8	300	+ 2.1	1400	CY	0-8	5-10	S	C	81	68	0.43	
363	20MAY80	+ 1.1	500	+ 2.0	2400	PCY-R	0-8	6-12	SW	A	84	67	1.55	
364	21MAY80	+ 0.5	500	+ 1.7	2200	PCY	0-10	6-15	VAR	A	85	64	0	
365	22MAY80	+ 0.8	600	+ 1.8	900	PCY	0-10	5-15	SE	A	84	67	0.06	
366	23MAY80	+ 1.3	200	+ 2.0	1700	PCY	10	4-12	SW	C	84	69	0.14	
367	24MAY80	+ 1.4	1800	+ 1.8	1100	PCY	10	5-10	SW	A	89	68	0	
368	25MAY80	+ 1.5	1500	+ 1.2	900	PCY	0-10	5-10	SW	C	93	70	0	
369	26MAY80	+ 1.2	1600	+ 1.5	1900	PCY	0-10	6-12	SE	A	89	66	0.92	
370	27MAY80	+ 1.2	1200	+ 1.8	2400	PCY	10	6-12	NE	A	89	69	0	
371	28MAY80	+ 0.3	2200	+ 2.2	900	PCY	10	6-12	SE	A	88	70	0	
372	29MAY80	+ 0.9	2200	+ 2.5	1200	PCY	10	6-12	S	A	86	68	0	
373	30MAY80	+ 1.0	2200	+ 2.0	1300	PCY	10	5-10	S	A	86	67	0	
374	31MAY80	+ 1.0	2200	+ 2.6	1100	PCY	10	10-15	S	A	88	67	0	

(continued)

Table B1 (continued)

Meteorology Data

CIR	DATE	M-MLW	TIME	X-MLW	TIME	SKY-COND	VISIB	WND-S	DIR	CL	X-T	M-T	PRECP	W-HGT
375	01JUN80		0		0	PCY	10	8-14	S	A	88	68	0	
376	02JUN80	+ 0.9	1200	+ 2.5	1700	PCY	10	6-12	S	A	86	68	0	
377	03JUN80	+ 0.9	300	+ 2.4	1200	PCY	10	8-15	SE	A	90	67	0	
378	04JUN80	+ 0.9	300	+ 2.4	1500	PCY	10	6-10	S	A	93	66	0	
379	05JUN80	+ 0.9	2400	+ 1.9	1800	PCY	10	5-10	S	A	93	70	0	
380	06JUN80	+ 0.8	400	+ 1.6	1300	PCY	10	7-14	S	A	93	71	0	
381	07JUN80	+ 0.9	300	+ 1.6	1000	PCY	10	8-16	S	A	93	74	0	
382	08JUN80	+ 0.7	2200	+ 1.6	100	PCY-R	10	8-16	SW	A	96	76	0.03	
383	09JUN80	+ 0.8	300	+ 8.0	2200	PCY	10	6-12	NE	A	83	69	0.02	
384	10JUN80	+ 1.0	2400	+ 1.1	300	PCY	10	8-10	N	A	89	60	0	
385	11JUN80	0.0	2400	+ 1.2	600	PCY	10	2-6	NE	A	93	64	0	
386	12JUN80	0.0	2400	+ 1.9	1000	PCY	10	5-15	E	A	94	66	0	
387	13JUN80	0.0	2400	+ 2.1	1100	PCY	10	5-10	SE	A	94	66	0	
388	14JUN80	+ 0.7	330	+ 1.9	830	PCY	15	5-10	S	A	91	71	0	
389	15JUN80	+ 0.5	1200	+ 1.4	700	PCY	10	5-10	S	A	92	73	0	
390	16JUN80	+ 0.6	1200	+ 2.6	1500	PCY	10	10-15	SE	A	92	68	0	
391	17JUN80	+ 0.5	200	+ 2.0	1400	PCY	10	5-15	SW	A	95	70	0	
392	18JUN80	+ 0.7	100	+ 1.9	1600	PCY	10	5-15	SW	A	93	75	0.26	
393	19JUN80	+ 0.8	100	+ 1.9	1700	PCY-R	0-10	4-12	VAR	C	94	72	1.41	
394	20JUN80	+ 0.8	200	+ 1.3	1200	PCY	10	5-15	SW	A	90	71	0.02	
395	21JUN80	+ 0.8	400	+ 1.8	1000	PCY	10	5-10	SE	A	93	76	0	
396	22JUN80	0.7	100	1.5	1100	PCY	10	5-10	S	A	93	73	0.02	
397	23JUN80	+ 0.4	2000	+ 1.9	800	PCY	0-10	5-10	S	A	89	73	0.55	
398	24JUN80	+ 0.5	2200	+ 8.0	1800	PCY	0-10	15-20	SNW	C	90	72	0.30	
399	25JUN80	+ 0.7	1100	+ 1.2	1500	PCY	0-10	10-15	SW	A	89	79	0.02	
400	26JUN80	+ 0.1	1900	+ 2.0	1000	PCY	0-10	6-10	W	A	90	78	0	
401	27JUN80		0		0	PCY	10	4-12	SW	A	90	76	0.01	
402	28JUN80	+ 0.1	0	+ 1.5	1630	PCY	10	4-12	S	A	91	73	0.01	
403	29JUN80	+ 0.4	0	+ 2.5	0	PCY	10	8-14	S	A	93	76	0	
404	30JUN80	+ 0.4	0	+ 1.9	1300	PCY	10	7-14	SW	A	96	79	0	

(continued)

Table B1 (continued)

Meteorology Data

CIR	DATE	M-MLW	TIME	X-MLW	TIME	SKY-COND	VISIB	WND-S	DIR	CL	X-T	M-T	PRECP	W-HGT
405	01JUL80	0.0	0	+ 1.4	1100	PCY	10	6-10	VAR	A	98	77	0	
406	02JUL80	0.0	300	+ 1.2	1400	C	10	10	VAR	A	94	76	0	
407	03JUL80		0		0	C	10	5-10	SE	A	95	76	0	
408	04JUL80	+ 1.3	0	+ 1.4	0	C	10	6-12	SW	A	94	75	0	
409	05JUL80	+ 0.6	0	+ 1.6	1000	C	12	6-12	SW	A	96	76	0	
410	06JUL80	+ 1.0	9100	+ 1.5	1100	C	12	5-10	SW	A	98	75	0	
411	07JUL80		0		0						0	0		
412	08JUL80		0		0						0	0		
413	09JUL80		0		0						0	0		
414	10JUL80		0		0						0	0		
415	11JUL80		0		0						0	0		
416	12JUL80		0		0						0	0		
417	13JUL80		0		0						0	0		
418	14JUL80		0		0						0	0		
419	15JUL80		0		0						0	0		
420	16JUL80		0		0						0	0		
421	17JUL80		0		0						0	0		
422	18JUL80		0		0						0	0		
423	19JUL80		0		0						0	0		
424	20JUL80		0		0	PCY-R	10	7-14	SE	A	82	75	1.29	
425	21JUL80		0		0	PCY-R	8	8-16	S	A	85	74	0.57	
426	22JUL80		0		0	PCY-R	10	5-15	S	A	86	74	0.48	
427	23JUL80		0		0	PCY-R	8	8-15	SW	C	81	74	0.86	
428	24JUL80		0		0	PCY	10	8-15	SW	A	90	74	0	
429	25JUL80		0		0	PCY	8	5-10	S	A	92	82	0	
430	26JUL80		0		0	PCY	10		ESE	A	86	75	0	
431	27JUL80		0		0	PCY-R	10	6-12	SW	A	92	75	0.53	
432	28JUL80		0		0	CY-R	8	6-12	W	C	86	73	0.39	
433	29JUL80		0		0	PCY-R	10	5-10	NW	C	92	73	0.17	
434	30JUL80		0		0	C	10	5-10	W	A	94	73	0	
435	31JUL80		0		0	C-R	10	5-10	SW	A	92	75	0.29	

(continued)

Table B1 (continued)

Meteorology Data

CIR	DATE	M-MLW	TIME	X-MLW	TIME	SKY-COND	VISIB	WND-S	DIR	CL	X-T	M-T	PRECP	W-HGT
436	01AUG80		0		0	C	10	6-10	SW	A	91	74	0	
437	02AUG80		0		0	C	10	5-10	S	A	92	74	0	
438	03AUG80		0		0	PCY-R	10	8-16	SW	C	92	74	0.35	
439	04AUG80		0		0	C	10	8-16	S	A	92	74	0	
440	05AUG80		0		0	C	10	4-12	S	A	93	75	0	
441	06AUG80		0		0	PCY	10		SW	A	95	75	0	0-1
442	07AUG80		0		0	PCY	10	10-15	E	A	95	76	0	2-3
443	08AUG80		0		0	PCY-R	10	10-20	E	C	94	76	0.50	2-4
444	09AUG80		0		0	PCY	10	10-20	E	A	95	73	0	2-4
445	10AUG80		0		0	PCY	10	8-14	SE	A	93	82	0	2-4
446	11AUG80		0		0	PCY-R	10	8-14	VAR	C	85	73	1.00	2-4
447	12AUG80		0		0	PCY-R	10	10	SE	C	93	74	1.31	1-3
448	13AUG80		0		0	PCY	10	8-14	S	A	92	77	0.01	1-2
449	14AUG80		0		0	PCY-R	10	8-14	SW	A	91	76	0.78	1-3
450	15AUG80		0		0	PCY-R	10	6-14	S	C	91	75	1.16	1-2
451	16AUG80		0		0	CY-R	0-10	6-12	S	C	91	74	0.90	1-3
452	17AUG80		0		0	CY-R	10	5-12	S	A	91	75	0.03	1-2
453	18AUG80		0		0	PCY	10	5-12	S	A	94	76	0	0-1
454	19AUG80		0		0	PCY	10	5-12	SW	A	93	76	0	
455	20AUG80		0		0	PCY	10	3-6	VAR	A	95	77	0	
456	21AUG80		0		0	PCY	10	5-10	W	A	98	78	0	
457	22AUG80		0		0	PCY	10	6-12	W	A	98	78	0	
458	23AUG80		0		0	PCY	10	6-12	N	A	95	75	0	1-2
459	24AUG80		0		0	PCY-R	10	5-10	E	A	92	76	0.47	0-2
460	25AUG80		0		0	PCY-R	10	5-10	SE	A	92	73	0.77	1-3
461	26AUG80		0		0	PCY	10	6-12	SE	A	91	70	0	0-1
462	27AUG80		0		0	PCY	10	6-12	SE	A	88	71	TR.	0-1
463	28AUG80		0		0	PCY-R	10	6-12	SE	A	87	70	0.05	0-3
464	29AUG80	+1.0	2400	+1.6	1800	CL	12	06-12	SE	A	89	70	TR.	0-3
465	30AUG80	+1.0	0	+1.6	1800	PC	10	06-12	SE	A	89	70	TR.	0-3
466	31AUG80	+0.9	1200	+1.8	1600	PC	10	06-12	SE	A	92	80	0	1-3

(continued)

Table B1 (continued)

Meteorology Data

CIR	DATE	M-MLW	TIME	X-MLW	TIME	SKY-COND	VISIB	WND-S	DIR	CL	X-T	M-T	PRECP	W-HGT
467	01SEP80	+0.7	0	+2.0	0	PC	10	04-08	SE	A	93	73	0	0-1
468	02SEP80	+1.6	2400	+2.1	800	PC	10	06-12	SE	A	92	73	0.50	0-3
469	03SEP80	+1.3	900	+2.2	1400	PC	10	05-15	SE	A	87	73	0.37	0-4
470	04SEP80	+1.5	0	+2.1	0	PC	10	10-20	SE	A	85	73	0.50	0-4
471	05SEP80	+1.9	300	+2.4	800	PC	10	10-15	SE	A	91	73	0	0-3
472	06SEP80	+0.7	180	+2.0	800	PC	10	04-08	SE	A	93	72	0	0-1
473	07SEP80	+0.9	1900	+1.5	600	PC	10	03-06	V	A	95	73	0	0
474	08SEP80	+0.2	2000	+1.8	1000	PC	10	06-08	V	A	97	73	TR.	0
475	09SEP80	+0.8	2000	+1.5	1200	PC	10	05-10	SE	A	98	75	0	0
476	10SEP80	+0.8	0	+1.5	0	PC	10	10	N	A	99	74	0	0
477	11SEP80	+0.8	700	+1.5	1400	PC	10	05-10	NE	A	96	73	0	0
478	12SEP80	+1.2	0	+1.7	1600	PC	10	07-14	SE	A	92	73	0	1-2
479	13SEP80	+0.8	1000	+1.8	2400	PC	10	05-12	ESE	A	94	73	0	1-3
480	14SEP80	+1.4	600	+1.8	300	PC	10	03-10	NE	A	96	72	0	0-3
481	15SEP80	+0.9	1200	+1.9	300	PC	10	05-10	E	A	96	73	0	2-3
482	16SEP80	+1.5	2130	+1.8	2300	PC	10	10-15	V	A	94	75	0	0-3
483	17SEP80	+0.8	1900	+2.4	400	CLOUDY	10	10-15	SE	C	79	74	1.26	0-3
484	18SEP80	+0.6	1515	+1.6	2400	CLOUDY	8	10	S	A	85	69	0.75	0-3
485	19SEP80	+0.5	1800	+2.3	700	CLOUDY	10	LIGHT	V	A	85	72	2.73	0
486	20SEP80	+0.3	2000	+2.1	1000	PC	10	10	SE	A	90	75	0.34	0-2
487	21SEP80	+0.3	2000	+2.1	1000	PC	10	06-15	E	A	91	75	0	0
488	22SEP80	+0.9	1830	+2.3	800	PC	10	05-10	SE	A	92	75	0	0
489	23SEP80	+1.1	2200	+2.3	800	PC	10	08-12	V	A	92	73	0	0
490	24SEP80	+1.5	2400	+2.2	1400	PC	15	06-10	SE	A	93	74	0	0-1
491	25SEP80	+1.4	700	+2.2	1500	PC	10	05-10	SW	A	87	74	0.67	0-1
492	26SEP80	+0.6	1000	+1.8	2200	PC	10	05-10	SW	A	88	72	0	0-1
493	27SEP80	+0.7	1000	+1.9	2200	PC	10	07-12	V	A	89	68	0	0-1
494	28SEP80	+0.8	1000	+2.0	2400	PC	10	06-12	N	A	90	67	0.23	0-3
495	29SEP80	+0.9	1200	+2.5	400	PC	10	06-12	S	A	92	74	0.02	0-2
496	30SEP80	+0.4	1400	+2.4	500	CLOUDY	8	07-14	NW	A	78	72	0.76	0-2

(continued)

Table B1 (continued)

Meteorology Data

CIR	DATE	M-MLW	TIME	X-MLW	TIME	SKY-COND	VISIB	WND-S	DIR	CL	X-T	M-T	PRECP	W-HGT
497	01OCT80	+0.8	1100	+1.7	400	CLEAR	10	05-12	SW	A	77	65	0	0-3
498	02OCT80	+0.6	1600	+1.9	600	CLEAR	10	08-16	NW	A	84	62	0	
499	03OCT80	+0.2	2100	+1.2	200	CLEAR	10	08-14	NW	A	79	56	0	
500	04OCT80	+0.5	2400	+1.6	1000	CLEAR	10	06-12	SE	A	77	50	0	
501	05OCT80	+0.0	2000	+1.2	400	CLEAR	10	08-16	NW	A	75	56	0	
502	06OCT80	+0.0	2400	+0.9	1400	CLEAR	10	06-12	NE	A	75	48	0	1-3
503	07OCT80	+0.4	2400	+1.0	1500	CLEAR	10	LIGHT	V	A	79	48	0	0
504	08OCT80	+0.9	800	+1.2	2300	CLEAR	10	LIGHT	V	A	84	51	0	0
505	09OCT80	+0.6	600	+1.4	2230	CLEAR	10	00-05	V	A	86	54	0	0
506	10OCT80	+0.2	0	+1.5	0	CLEAR	10	LIGHT	V	A	88	58	0	0
507	11OCT80	+0.9	0	+1.4	0	CLEAR	10	LIGHT	V	A	89	61	0	0
508	12OCT80	+0.0	0	+1.5	0	CLEAR	10	04-08	NW	A	77	51	0	0
509	13OCT80	+0.0	0	+0.6	0	CLEAR	10	04-08	NE	A	76	47	0	0
510	14OCT80	+0.3	0	+1.5	0	CLEAR	10	06-12	SE	A	82	46	0	0
511	15OCT80	-0.2	0	+1.9	0	CLEAR	10	10-16	SE	A	85	57	0	
512	16OCT80	+0.8	0	+2.5	0	PC	10	10-16	SE	A	82	67	0.21	0
513	17OCT80	+0.8	0	+2.5	0	CLOUDY	10	10-20	S	A	86	70	TR.	0
514	18OCT80	+0.5	0	+2.3	0	CLOUDY	10	05-15	S	A	82	76	TR.	0
515	19OCT80	+0.5	0	+2.5	0	CLOUDY	10	07-15	NW	A	79	68	0.18	0
516	20OCT80	+0.2	0	+1.0	0	CLOUDY	10	02-10	N	A	70	53	0	0
517	21OCT80	+0.8	0	+1.6	0	CLOUDY	10	03-07	NE	A	73	53	0	0
518	22OCT80	+0.6	0	+1.5	0	PC	10	04-08	E	A	81	58	0	0-1
519	23OCT80	+0.8	0	+2.1	0	PC	10	04-08	SE	A	83	62	0.01	0-1
520	24OCT80	+0.7	0	+2.0	0	CLOUDY	10	12-16	S	A	78	64	0.05	0-1
521	25OCT80	+0.0	0	+1.1	0	PC	10	10-20	NW	A	66	44	0.01	0-2
522	26OCT80		0		0	PC	10	12-15	E	A	72	41	0	0
523	27OCT80		0		0	PC	10	10-18	S	A	80	51	0	0-2
524	28OCT80	+0.5	0	+2.8	0	CLOUDY	01-05	08-12	W	A	76	67	1.65	0-1
525	29OCT80	+0.9	0	+2.2	0	CLOUDY	00-05	08-16	N	A	60	54	0.79	0-2
526	30OCT80		0		0	CLOUDY	8	05-16	N	A	61	49	0	0-2
527	31OCT80	+0.0	0	+0.9	0	PC	10	05-10	NE	A	69	41	0	0-1

(continued)

Table B1 (continued)

Meteorology Data

CIR	DATE	M-MLW	TIME	X-MLW	TIME	SKY-COND	VISIB	WND-S	DIR	CL	X-T	M-T	PRECP	W-HGT
528	01NOV80	+0.2	0	+1.2	0	PC	10	05-10	N	A	74	40	0	0-1
529	02NOV80	+0.2	0	+1.2	0	PC	10	05-10	NE	A	77	46	0	0
530	03NOV80	+0.2	0	+1.2	0	PC	10	05-10	N	A	75	48	0	0
531	04NOV80	+0.2	0	+1.4	0	PC	10	05-10	N	A	81	53	0	0
532	05NOV80	+0.4	0	+1.2	0	CLEAR	10	05-10	N	A	73	43	0	0
533	06NOV80	+0.2	0	+1.2	0	CLEAR	10	05-10	V	A	76	44	0	0
534	07NOV80	+0.3	0	+1.6	0	CLEAR	10	07-14	SW	A	79	53	0	0-1
535	08NOV80	+1.2	0	+2.2	0	CLEAR	10	06-12	SW	A	80	53	0	0-1
536	09NOV80	+0.2	0	+2.0	0	CLEAR	10	10-15	SW	A	81	51	0	0-1
537	10NOV80	+0.2	0	+2.2	0	CLEAR	10	05-10	NE	A	78	55	0	0
538	11NOV80	+0.3	0	+1.7	0	CLOUDY	10	07-14	E	A	72	56	0	0-1
539	12NOV80	+0.5	0	+1.8	0	PC	10	15-20	E	A	70	52	0	0
540	13NOV80	+0.4	0	+2.6	0	CLOUDY	10	10-20	SE	A	80	58	0	0-3
541	14NOV80	+1.3	0	+2.8	0	CLOUDY	10	10-15	SE	A	82	65	0	0-2
542	15NOV80	+1.4	0	+2.6	0	PC	10	10-20	SE	A	80	60	0	0-4
543	16NOV80	+1.4	0	+1.8	0	PC	10	10-15	SE	A	80	60	0	0-3
544	17NOV80	+1.7	0	+2.7	0	CLOUDY	10	10-20	W	A	78	65	0.02	0-3
545	18NOV80	+0.8	0	+2.6	0	CLOUDY	10	12-22	NW	A	52	45	0	0-2
546	19NOV80	+0.2	0	+0.7	0	CLEAR	10	05-10	NW	A	54	33	0	0-1
547	20NOV80	-0.3	0	+1.2	0	CLEAR	10	06-10	NE	A	60	32	0	0-1
548	21NOV80	-0.6	0	+1.4	0	PC	10	06-12	N	A	62	31	0	0-1
549	22NOV80	-0.5	0	+1.9	0	CLOUDY	10	06-12	NE	A	55	49	0.01	0-2
550	23NOV80	+0.9	0	+2.6	0	CLOUDY	10	10-20	SE	A	69	51	0.58	2-4
551	24NOV80	+0.0	0	+2.5	0	CLOUDY	10	10-15	NW	A	57	54	0	0-1
552	25NOV80	+0.3	0	+0.7	0	CLOUDY	10	06-12	NE	A	55	45	0	0-1
553	26NOV80	+0.5	0	+1.9	0	CLOUDY	10	10-20	NE	A	55	46	1.19	0
554	27NOV80	+0.0	0	+2.3	0	CLOUDY	10	07-15	W	A	58	40	0.05	0-3
555	28NOV80	+0.2	0	+2.0	0	CLOUDY	10	10-20	W	A	54	35	0	0-3
556	29NOV80	0.0	0	+1.0	0	PC	10	5	NW	A	60	30	0	0-1
557	30NOV80	+0.4	0	+1.3	0	CLEAR	10	5	NW	A	68	37	0	0

(continued)

Table B1 (continued)

Meteorology Data

CIR	DATE	M-MLW	TIME	X-MLW	TIME	SKY-COND	VISIB	WND-S	DIR	CL	X-T	M-T	PRECP	W-HGT
558	01DEC80	+0.4	0	+1.8	0	CLEAR	10	5	NW	A	73	45	0	0
559	02DEC80	+0.8	0	+1.9	0	CLEAR	10	05-10	NW	A	77	57	0	0-4
560	03DEC80	+0.0	0	+1.7	0	CLEAR	10	08-12	N	A	60	40	0	0-2
561	04DEC80	+0.3	0	+1.3	0	CLEAR	10	10	SE	A	67	37	0	0-2
562	05DEC80	+0.6	0	+1.7	0	CL	10	0-5	NE	A	72	42	0	0
563	06DEC80	0.6	0	1.7	0	PC	10	5-10	SE	A	74	49	0	0
564	07DEC80	0.7	0	2.3	0	PC	10	0-10	SE	A	75	49	0	0-1
565	08DEC80	0.6	0	2.7	0	PC	10	0-10	S	A	77	54	0	0
566	09DEC80	0.5	0	2.7	0	CL	0-7	12-20	SW	A	77	65	0.21	0-1
567	10DEC80		0		0	CL	10	8-14	NW	A	68	48	0.50	0-2
568	11DEC80		0		0	CL	10	5-10	N	A	58	34	0	0-1
569	12DEC80	-0.1	0	1.6	0	CL	10	4-8	W	A	66	33	0	0
570	13DEC80	0.3	0	1.5	0	CL	10	5-10	W	A	67	37	0	0
571	14DEC80	-0.2	0	1.3	0	PC	10	8-12	N	A	64	43	0	0-2
572	15DEC80		0	1.0	0	PC	10	5-10	S	A	67	31	0	0-1
573	16DEC80	0.8	0	1.2	0	PC	10	5-10	W	A	63	51	0.05	0-2
574	17DEC80	0.0	0	1.2	0	CL	10	8-10	N	A	58	36	0	0-2
575	18DEC80	0	0	1.6	0	CL	10	6-12	S	A	65	36	0	0
576	19DEC80	0.1	0	1.6	0	PC	10	6-12	S	A	73	47	0	0
577	20DEC80	-0.5	0		0	PC	10	10-20	N	A	62	37	0	0-2
578	21DEC80	-0.2	0	0.8	0	PC	10	8-10	N	A	49	32	0	0-2
579	22DEC80	-0.5	0	1.8	0	PC	10	3-10	NE	A	58	30	0	0
580	23DEC80	0	0	1.9	0	PC	10	5-15	S	A	67	43	0	0
581	24DEC80	0.5	0	2.0	0	CL	10	4-12	S	A	60	30	0.02	0-1
582	25DEC80	-1.2	0	0.5	0	PC	10	10-20	N	A	43	29	0	0-3
583	26DEC80	-0.2	0	1.4	0	PC	10	5-15	N	A	50	28	0	1-2
584	27DEC80	-0.2	0	0.5	0	CL	8	15-25	N	A	50	33	0	0-1
585	28DEC80	0.3	0	0.7	0	PC	10	6-12	N	A	58	27	0	0-2
586	29DEC80	-0.3	0	0.6	0	CL	10	4-12	NE	A	66	36	0	0-1
587	30DEC80	-0.4	0	0.6	0	PC	10	6-14	NE	A	54	39	0	0-2
588	31DEC80	-0.1	0	1.1	0	PC	10	6-12	N	A	63	28	0	0

(continued)

Table B1 (continued)

Meteorology Data

CIR	DATE	M-MLW	TIME	X-MLW	TIME	SKY-COND	VISIB	WND-S	DIR	CL	X-T	M-T	PRECP	W-HGT
589	1JAN81	-0.1	0	1.2	0	PC	10	6-12	NW	A	67	35	0	0-2
590	02JAN81	-0.5	0	0.7	0	PC	10	8-16	NW	A	59	33	0	0-1
591	03JAN81	-0.4	0	0.8	0	F	10	10	N	A	64	31	0	0-1
592	4JAN81	-0.6	0	1.3	0	F	10	10-16	N	A	61	41	0	0-2
593	5JAN81	-0.3	0	0.5	0	F	10	6-12	NE	A	48	28	0	0-1
594	6JAN81	0	0	1.6	0	CY	10	6-12	S	A	56	35	0	0-1
595	7JAN81	0	0	1.7	0	PC	10	0-2	N	A	54	39	0.61	10-16
596	8JAN81	0.2	0	1.6	0	F	10	10	V	A	55	28	0	0
597	9JAN81	0.2	0	1.7	0	PC	10	2-5	N	A	55	32	0	0
598	10JAN81	-0.8	0	0.4	0	CL	10	10-20	N	A	51	31	0	0-2
599	11JAN81	-0.3	0	0.4	0	CL	10	10-16	N	A	49	23	0	0-1
600	12JAN81	0	0	-0.5	0	CL	10	4-12	N	A	40	20	0	0-2
601	13JAN81	0	0	1.0	0	CL	10	4-10	W	A	52	17	0	0-2
602	14JAN81	0.0	0	1.6	0	CY	8	6-12	W	A	60	34	0	0
603	15JAN81	0.0	0	1.4	0	PC	0-4	6-12	NW	A	60	34	0	0
604	16JAN81	0.0	0	1.0	0	CL	10	6-12	N	A	53	34	0	1-3
605	17JAN81	-0.5	0	0.6	0	CL	10	6-12	N	A	46	26	0	0-2
606	18JAN81	-1.1	0	0.8	0	CL	10	10-20	N	A	55	22	0	1-3
607	19JAN81	- 0.9	0	1.2	0	PC	10	2-5	NE	A	58	30	0	0-1
608	20JAN81	-0.9	0	1.2	0	CL	5	10-30	SW	A	54	31	0.36	3-4
609	21JAN81	- 0.2	0	1.2	0	CY	10	6-13	NW	A	43	41	0	1-3
610	22JAN81	0.0	0	1.4	0	CY	10	6-12	NW	A	51	41	0	0-1
611	23JAN81	0.0	0	1.4	0	PC	10	4-10	NW	A	57	36	0	0-1
612	24JAN81	0.5	0	1.4	0	PC	10	4-12	W	A	63	31	0	0-1
613	25JAN81	0.4	0	1.4	0	PC	10	5-10	S	A	68	35	0	0-1
614	26JAN81	0.4	0	1.4	0	CY	10	10-15	S	A	71	44	0	0-1
615	27JAN81		0		0	CL	10	10-15	W	A	73	52	0	0-1
616	28JAN81		0		0	C	10	5-10	N	A	66	45	0.22	0
617	29JAN81	0.6	0	1.6	0	CY	10	5-10	S	A	69	38	0	0-1
618	30JAN81	0.6	0	1.9	0	PC	10	2-6	V	A	72	50	0.01	0-1
619	31JAN81		0		0	PC	10	12-18	E	A	51	46	0.01	0-2

(continued)

Table B1 (continued)

Meteorology Data

CIR	DATE	M-MLW	TIME	X-MLW	TIME	SKY-COND	VISIB	WND-S	DIR	CL	X-T	M-T	PRECP	W-HGT
620	01FEB81		0		0	CL	10	0-3	S	A	73	50	0.38	0-3
621	02FEB81		0		0	C	10	15-25	W	A	48	32	0	0-2
622	03FEB81		0		0	C	10	6-12	NW	A	48	20	0	0-1
623	04FEB81		0		0	PC	10	6-12	N	A	52	35	0	0-1
624	05FEB81		0		0	CL	8	6-12	N	A	47	32	0.10	0-2
625	06FEB81	0.5	0	1.8	0	CL	8	5-10	S	A	48	40	1.61	0-2
626	07FEB81	0.8	0	1.4	0	CL	8		S	A	56	46	0.01	0-1
627	08FEB81	0.6	0	2.0	0	CL	8	10-20	N	A	0	0	0	0-2
628	09FEB81	0.5	0	1.5	0	PC	8	6-15	S	A	60	35	0	0-2
629	10FEB81	0.5	0	2.8	0	CY	4	12-32	S	A	63	53	5.16	2-4
630	11FEB81	- 0.4	0	1.9	0	PC	8	10-30	N	C	60	32	0	2-4
631	12FEB81	-1.0	0	0.5	0	PC	10	6-12	N	A	43	18	0	0-2
632	13FEB81		0		0	CY	8	10-12	NE	A	43	29	0	0-2
633	14FEB81	-0.3	0	-0.7	0	CL	8	5-12	NE	A	57	42	0	0-2
634	15FEB81	-0.3	0	1.9	0	CL	7	6-12	E	A	61	50	0.09	0-1
635	16FEB81	0.8	0	2.0	0	CL	7	10-15	NE	A	67	56	0.61	0-1
636	17FEB81	0.8	0	2.0	0	CY	0.4	8-14	SE	A	73	58	0.10	0-1
637	18FEB81	0.7	0	2.0	0	CL	0-4		V	A	74	36	T	0
638	19FEB81	0.5	0	1.8	0	PC	0-6	2-5	SW	A	77	51	0	0-1
639	20FEB81	0.4	0	1.6	0	PC	0-6	10-15	NW	A	79	56	0	0-1
640	21FEB81	0.5	0	1.4	0	CY	0-2	6-12	S	C	78	53	0	0-2
641	22FEB81	-0.9	0	0.5	0	CL	10	10-15	S	A	64	57	0.10	0-1
642	23FEB81	0.5	0	1.0	0	PC	10	10-20	W	A	70	43	0	0-2
643	24FEB81	0.5	0	0.9	0	PC	2-10	6-12	NW	A	75	41	0	0-1
644	25FEB81	0.5	0	1.6	0	PCF	0-8	6-12	SW	A	75	47	0	0-1
645	26FEB81	0.2	0	1.0	0	PC	0-8	0-2	V	A	80	51	0	0-1
646	27FEB81	0.3	0	1.6	0	CYF	1-8	5-10	S	A	82	48	0	0-1
647	28FEB81	0.3	0	1.7	0	CY	0-6	6-12	SW	A	76	49	0	0-1

(continued)

Table B1 (continued)

Meteorology Data

CIR	DATE	M-MLW	TIME	X-MLW	TIME	SKY-COND	VISIB	WND-S	DIR	CL	X-T	M-T	PRECP	W-HGT
648	01MAR81	0.9	0	1.9	0	CL	8	12-18	SW	A	75	58	0	0-1
649	02MAR81	0.2	0	2.0	0	CL	8	6-12	NW	A	73	52	T	0-1
650	03MAR81	0.0	0	2.1	0	CY	10	6-12	SE	A	69	45	0	0-1
651	04MAR81	0.4	0	1.7	0	CY	8	15-25	S	A	72	58	T	0-2
652	05MAR81	0.8	0	2.0	0	CL	8	15-25	NW	A	77	55	0.3	0-2
653	06MAR81	-0.2	0	1.4	0	C	8	6-12	N	A	67	42	0	0-2
654	07MAR81	0.3	0	1.4	0	CL	8	5-10	E	A	62	51	0	
655	08MAR81	0.2	0	1.0	0	CY	10	5-12	N	A	68	48	0	0-2
656	09MAR81	0.2	0	0.7	0	PC	10	6-12	NE	A	70	42	0	0-1
657	10MAR81	0.3	0	1.2	0	PC	8	8-10	NW	A	67	40	0	0-1
658	11MAR81	0.0	0	1.2	0	PC	10	6-12	N	A	72	40	0	0-1
659	12MAR81	0.0	0	1.6	0	F	10	6-12	V	A	69	46	0	0-1
660	13MAR81	0.0	0	1.2	0	PC	8	4-6	V	A	70	45	0	0-1
661	14MAR81	0.0	0	1.2	0	CL	10	6-12	N	A	77	50	0	0-1
662	15MAR81	0.0	0	0.9	0	PC	2-8	6-12	N	A	63	51	0	0-1
663	16MAR81	0.0	0	1.6	0	CL	10	15-25	NW	A	72	52	0	0-2
664	17MAR81	0.3	0	1.8	0	PC	10	10-18	S	A	70	40	0	0-2
665	18MAR81	1.2	0	2.5	0	PC	10	15-35	SW	C	80	58	0	0-3
666	19MAR81	-0.3	0	0.5	0	CL	10	15-30	SE	C	64	40	0	2-4
667	20MAR81	0.0	0	0.7	0	PC	10	6-12	E	A	68	48	0	0-1
668	21MAR81	0.4	0	1.5	0	PC	10	6-12	SE	A	70	48	0	0-1
669	22MAR81	0.2	0	2.2	0	PC	8	10-20	SE	C	70	50	0	0-2
670	23MAR81	0.0	0	0.5	0	PC	10	10-20	SE	A	64	48	0	0-1
671	24MAR81	-0.6	0	0.5	0	CL	10	6-14	N	A	69	40	0	0-1
672	25MAR81	-0.3	0	0.6	0	CL	8	0-8	E	A	71	41	0	0-1
673	26MAR81	0.0	0	1.4	0	PC	6-10	2-15	SE	A	72	40	0	0-2
674	27MAR81	0.0	0	1.5	0	CL	6-10	6-15	SE	A	75	42	0	0-1
675	28MAR81	-0.1	0	1.6	0	PC	10	8-20	SE	A	77	54	0	0-2
676	29MAR81	0.5	0	3.0	0	C	5-8	5-20	SE	A	72	63	1.5	1-4
677	30MAR81	1.7	0	2.5	0	PC	10	6-14	SE	A	84	35	0	0-1
678	31MAR81	1.5	0	2.0	0	C-FOG	0-2	5-12	SE	A	78	58	0	0-1

(continued)

Table B1 (continued)

Meteorology Data

CIR	DATE	M-MLW	TIME	X-MLW	TIME	SKY-COND	VISIB	WND-S	DIR	CL	X-T	M-T	PRECP	W-HGT
679	01APR81	0.5	0	1.5	0	PC	8	8-14	NW	A	70	58	0	0-2
680	02APR81	0.2	0	1.7	0	CL	10	6-18	V	A	83	50	0	0-2
681	03APR81	0.5	0	1.5	0	PC	8	5-25	SE	A	73	65	0	0-3
682	04APR81	1.0	0	2.1	0	CL	10	8-18	NW	A	78	63	0	0-2
683	05APR81	0.0	0	2.0	0	CL	10	6-15	NW	A	75	63	0	0-2
684	06APR81	0.0	0	1.4	0	CL	10	6-18	E	A	75	45	0	0-1
685	07APR81	0.3	0	1.8	0	PC	10	10-20	SE	A	75	47	0	0-2
686	08APR81	0.5	0	2.3	0	PC	10	10-20	SE	A	76	53	0	0-2
687	09APR81	0.6	0	2.0	0	PC	10	10-20	S	A	82	63	0	0-2
688	10APR81	0.3	0	2.3	0	PC-FOG	0-8	6-20	SE	A	76	61	0	0-2
689	11APR81	0.5	0	2.1	0	PC-FOG	1-8	6-18	SE	A	79	63	0	0-1
690	12APR81	0.4	0	2.0	0	PC-FOG	1-8	6-18	SE	A	79	62	0	0-2
691	13APR81	0.7	0	1.5	0	CL	10	0-15	SE	A	80	64	0	0-1
692	14APR81	0.6	0	1.4	0	CL	8	6-18	N	A	80	63	0	0-2
693	15APR81	0.5	0	1.3	0	CL	8	8-18	SE	A	85	62	0	0-1
694	16APR81	0.7	0	1.4	0	PC	8	10-18	SE	A	85	62	0	0-1
695	17APR81	0.8	0	1.6	0	CL	10	7-15	SE	A	83	62	0	0-2
696	18APR81	1.0	0	1.6	0	CL	4-10	2-15	SE	A	84	64	0	0-2
697	19APR81	0.9	0	1.6	0	PC	10			A	85	61	0	0-1
698	20APR81	1.0	0	1.7	0	PC	8	6-18	NW	A	87	65	0	0-1
699	21APR81	0.8	0	1.9	0	PC	6-8	2-14	S	A	83	65	0	0-1
700	22APR81	0.8	0	2.0	0	PC	8	4-16	SE	A	81	61	0.01	1-2
701	23APR81	0.8	0	2.5	0	PC	8	4-16	SE	A	86	68	0	1-2
702	24APR81	0.5	0	1.8	0	PC	8	0-4	N	A	86	68	0	0-1
703	25APR81	0.5	0	2.2	0	PC	8	0-4	NE	A	81	62	0	0-1
704	26APR81	0.1	0	2.0	0	CL	10	4-12	NE	A	83	62	0	0-1
705	27APR81	0.2	0	1.9	0	CL	10	4-14	SE	A	84	55	0	0-1
706	28APR81	0.6	0	2.0	0	PC	8	5-15	SE	A	85	62	0	0-2
707	29APR81	0.7	0	1.6	0	C	8	10-18	S	A	83	62	1.00	0-2
708	30APR81	0.8	0	1.6	0	PC	6	2-10	V	A	89	64	0	0-2

(continued)

Table B1 (continued)

Meteorology Data

CIR	DATE	M-MLW	TIME	X-MLW	TIME	SKY-COND	VISIB	WND-S	DIR	CL	X-T	M-T	PRECP	W-HGT
709	01MAY81	0.6	0	1.1	0	CL	10	5-15	N	A	89	64	0	0-2
710	02MAY81	0.7	0	1.9	0	CL	10	6-16	N	A	87	61	0	0-2
711	03MAY81	1.2	0	2.4	0	C	6	10-22	SE	A	81	51	0	0-2
712	04MAY81	1.1	0	2.7	0	C	6	12-25	SE	A	81	61	0	1-3
713	05MAY81	0.4	0	1.3	0	PC	10	0-5	SE	A	82	68	7.50	1-3
714	06MAY81	0.7	0	2.0	0	PC	6	5-15	V	A	67	62	0.58	1-3
715	07MAY81	0.4	0	2.5	0	C	8	6-20	V	A	75	62	0	0-2
716	08MAY81	0.0	0	2.3	0	PC	8	2-15	N	A	79	58	0	2-[illegible]
717	09MAY81	0.4	0	2.3	0	PC	8	6-10	SE	A	80	60	0	1-2
718	10MAY81	0.4	0	2.3	0	PC	[illegible]	5-15	SE	A	82	60	0	1-2
719	11MAY81	0.0	0	1.2	0	CL	10	4-14	NE	A	83	62	0	0-2
720	12MAY81	0.1	0	1.9	0	CL	10	8	N	A	80	58	0	0
721	13MAY81	0.5	0	1.0	0	CL	10	14	SE	A	83	35	0	0-1
722	14MAY81	0.9	0	1.4	0	C	8	6-15	SE	A	82	61	0	0-1
723	15MAY81	0.5	0	1.0	0	CL	10	8-16	NE	A	83	62	0	0-2
724	16MAY81	0.7	0	1.8	0	CL	10	5-20	SE	A	74	60	0	1-2
725	17MAY81	0.9	0	1.9	0	PC	10	5-20	SE	A	77	60	0	1-2
726	18MAY81	0.5	0	1.9	0	PC	8	8-15	S	A	80	61	0	0-2
727	19MAY81	0.9	0	2.2	0	C	4-8	12-22	S	C	78	67	2.00	1-3
728	20MAY81	0.4	0	1.8	0	C	8	10-20	NW	A	80	66	0	1-2
729	21MAY81	0.0	0	1.5	0	PC	8	12-20	NW	A	79	63	0	1-2
730	22MAY81	0.0	0	1.8	0	CL	10	0-5	N	A	85	65	0	0-1
731	23MAY81	0.3	0	1.9	0	PC	8	2-10	SE	A	82	63	0	1-2
732	24MAY81	0.5	0	2.1	0	C		12-20	SE	A	82	61	0	1-3
733	25MAY81	0.6	0	2.2	0	PC	8	8-12	S	A	84	71	0	1-2
734	26MAY81	1.1	0	2.2	0	C	8	5-12	SW	A	86	70	1.50	1-3
735	27MAY81	1.1	0	2.0	0	PC	10	10-20	E	A	86	67	0	1-2
736	28MAY81	0.7	0	1.5	0	CL	10	2-10	SW	A	88	66	0	0
737	29MAY81	1.0	0	1.5	0	C	10	4-12	SW	A	88	68	0.5	0-2
738	30MAY81	0.5	0	1.6	0	C	10	2-10	SE	A	89	69	0	0-1
739	31MAY81	0.4	0	1.8	0	C	10	6-12	S	A	83	67	0	0

(continued)

Table B1 (continued)

Meteorology Data

CIR	DATE	M-MLW	TIME	X-MLW	TIME	SKY-COND	VISIB	WND-S	DIR	CL	X-T	M-T	PRECP	W-HGT
740	01JUN81		0		0	CL	5	8-18	S	A	82	68	0	1-3
741	02JUN81	0.7	0	2.2	0	PC	8	12-18	SE	A	89	74	0	1-2
742	03JUN81	0.2	0	2.3	0	CL	6	12-18	S	A	91	74	0	1-2
743	04JUN81	0.1	0	2.6	0	PC	8	14-20	S	A	90	73	0	1-3
744	05JUN81	0.2	0	2.6	0	PC	8	12-18	S	A	89	72	0	1-3
745	06JUN81	1.0	0	2.5	0	PC	8	15-20	SW	A	92	78	0	1-2
746	07JUN81	0.6	0	2.5	0	CL	6	5-12	V	A	90	72	0	0-1
747	08JUN81	0.8	0	1.8	0	CL	6	0-20	SE	A	92	78	0	0-2
748	09JUN81	0.6	0	1.8	0	PC	8	4-18	SE	A	92	73	0	0-3
749	10JUN81	0.8	0	1.5	0	CL	8	6-16	SE	A	94	78	1.0	1-3
750	11JUN81	0.8	0	1.8	0	PC	8	6-16	SE	A	92	74	0	1-3
751	12JUN81	0.9	0	1.9	0	PC	8	8-18	SE	A	90	80	0	1-3
752	13JUN81	0.7	0	2.1	0	PC	10	8-20	SE	A	92	78	0	2-4
753	14JUN81	0.8	0	2.3	0	PC	10	8-20	SE	A	92	74	0	1-3
754	15JUN81	0.5	0	2.2	0	C	10	4-16	SE	A	93	74	0	1-2
755	16JUN81	0.3	0	2.2	0	PC	10	6-10	N	A	93	71	0	0-1
756	17JUN81	0.1	0	1.8	0	PC	10	4-10	N	A	95	76	0	0-1
757	18JUN81	0.0	0	2.0	0	PC	8	4-10	NE	A	96	76	0	0-1
758	19JUN81	0.0	0	1.8	0	PC	8	0-10	NE	A	96	76	0	0-1
759	20JUN81	0.2	0	2.0	0	C	10	4-15	SW	A	95	77	0	0-1
760	21JUN81	0.3	0	1.8	0	PC	8	2-12	SW	A	96	75	0	0-1
761	22JUN81	0.4	0	1.7	0	PC	10	0-10	W	A	95	75	0	0-1
762	23JUN81	0.4	0	1.8	0	CL	8	4-12	V	A	93	74	0	0-1
763	24JUN81	0.6	0	1.7	0	CL	8	4-15	S	A	94	73	0	0-1
764	25JUN81	0.3	0	1.4	0	CL	8	4-12	V	A	95	75	T	0-1
765	26JUN81	0.8	0	1.3	0	CL	8	4-16	V	A	92	75	0.04	0-2
766	27JUN81	0.4	0	1.3	0	PC	8	2-12	NE	A	92	69	0.04	0-2
767	28JUN81	0.4	0	1.8	0	CL	5	2-15	V	A	93	71	0	0-2
768	29JUN81	0.7	0	2.4	0	CL	6	10-18	SE	A	93	70	3.0	0-2
769	30JUN81	1.0	0	2.4	0	C	8	2-18	SE	A	94	72	0	0-2

(continued)

Table B1 (continued)

Meteorology Data

CIR	DATE	M-MLW	TIME	X-MLW	T'ME	SKY-COND	VISIB	WND-S	DIR	CL	X-T	M-T	PRECP	W-HGT
770	01JUL81	0.4	0	2.8	0	CL	6	6-15	SE	A	85	71	0.21	0-2
771	02JUL81	0.7	0	2.7	0			6-18	SE	A	84	70	0	0-2
772	03JUL81	0.6	0	2.9	0	CL	8	10-20	SE	A	84	72	T	1-2
773	04JUL81		0		0			6-14	SE	A	88	69	0	0-2
774	05JUL81	0.7	0	2.3	0	CL	8	15-25	S	A	90	70	1.00	1-3
775	06JUL81	1.0	0	2.1	0	PC	8	12-18	S	A	90	74	0.24	1-2
776	07JUL81	0.8	0	1.7	0	C	10	8-16	SE	A	92	72	0	0-2
777	08JUL81	0.8	0	1.5	0	C	10	0-12	N	A	96	74	0	0-1
778	09JUL81	0.8	0	1.3	0	PC	10	10-45	SE	A	95	71	0	1-4
779	10JUL81	0.8	0	1.5	0	CL	6	8-16	N	A	94	72	T	1-3
780	11JUL81	0.8	0	1.9	0	PC	8	6-12	NE	A	94	72	0	1-3
781	12JUL81	0.5	0	1.9	0	C	10	6-14	S	A	93	72	0	0-2
782	13JUL81	0.3	0	1.7	0	C	10	2-12	SW	A	96	73	0.10	0-1
783	14JUL81	0.3	0	1.5	0	C	10	6-16	S	A	98	74	0	0-3
784	15JUL81	0.3	0	1.8	0	C	10	4-14	S	A	98	75	0	0-2
785	16JUL81	0.3	0	1.5	0	C	10	3-16	S	A	100	77	0	1-3
786	17JUL81	0.0	0	2.0	0					A	99	73	0	
787	18JUL81	0.4	0	1.9	0	PC	10	1-15	S	A	99	74	T	0-2
788	19JUL81	0.0	0	1.9	0	C	10	7-14	S	A	98	76	0	0-1
789	20JUL81	0.4	0	1.7	0	PC	8	10-50	S	A	98	75	0.01	1-4
790	21JUL81	0.5	0	1.5	0	C	10	8-16	V	A	97	75	0	1-2
791	22JUL81	0.4	0	1.3	0	CL	8	6-14	W	A	100	76	0	0-2
792	23JUL81	0.7	0	1.2	0	C	10	6-12	S	A	99	76	0	0-2
793	24JUL81	1.0	0	1.3	0	PC	10	4-16	S	A	99	76	0	0-2
794	25JUL81	0.7	0	1.8	0	PC	10	4-15	S	A	95	78	T	0-1
795	26JUL81	0.7	0	1.9	0	CL	8	6-12	SE	A	98	76	T	0-1
796	27JUL81	0.7	0	2.3	0	CL	6	6-14	SE	A	97	74	T	0-1
797	28JUL81	0.9	0	2.3	0	CL	8	5-10	NE	A	98	74	T	
798	29JUL81	0.3	0	2.3	0	CL	8	5-10	NW	A	100	77	0	
799	30JUL81	0.2	0	2.3	0	CL	8	10	NW	A	90	71	0.10	
800	31JUL81	0.2	0	2.3	0	CL	8	0-15	SE	A	95	75	0	

(continued)

Table B1 (concluded)

Meteorology Data

CIR	DATE	M-MLW	TIME	X-MLW	TIME	SKY-COND	VISIB	WND-S	DIR	CL	X-T	M-T	PRECP	W-HGT
801	01AUG81	0.2	0	2.3	0	CL	8	15	SE	A	98	76	0	
802	02AUG81	0.8	0	1.8	0	CL	8	10	SE	A	97	73	0	
803	03AUG81	0.2	0	1.8	0	CL	8			A	99	73	0	
804	04AUG81		0		0	CL	8	5	SE	A	96	74	0	
805	05AUG81	1.1	0	2.0	0	CL	8	5	E	A	98	75	0	
806	06AUG81	1.1	0	2.0	0	CL	8	5	SE	A	88	70	0	
807	07AUG81	1.1	0	1.9	0	CL	8	5-15	SE	A	88	72	0.03	
808	08AUG81	0.7	0	2.0	0	CL	7	5-15	SW	A	89	73	0.01	
809	09AUG81	0.8	0	1.5	0	CL	8	5-10	SW	A	88	72	0.01	
810	10AUG81	0.8	0	1.8	0	CL	8	5-10	SW	A	89	72	0	
811	11AUG81	1.3	0	2.2	0	CL	8	10	SE	A	93	74	0	
812	12AUG81		0	2.2	0	CL	8	10	SE	A	98	73	T	
813	13AUG81	0.9	0	2.2	0	CL	7	15	E	A	95	72	T	
814	14AUG81	0.4	0	2.3	0	CL	8	0-5	SE	A	98	80	0	
815	15AUG81	0.4	0	2.2	0	CL	8	10	SE	A	98	72	0	
816	16AUG81	0.4	0	2.2	0	CL	8	15	SE	A	98	74	0	
817	17AUG81	0.7	0	2.2	0	CL	8	5	SE	A	99	72	0	
818	18AUG81	0.5	0	2.1	0	CL	7	20	W	A	92	70		
819	19AUG81	0.5	0	2.0	0	CL	8	10	SE	A	95	76		
820	20AUG81	1.7	0	2.2	0	CL	8	10	SE	A	98	78	T	
821	21AUG81	0.7	0	1.9	0	CL	8	10	N	A	98	78		
822	22AUG81	0.7	0	2.1	0	CL	8	10	E	A	99	79		
823	23AUG81	0.7	0	2.1	0	CL	8	10	E	A	94	72		
824	24AUG81	0.7	0	2.3	0	CL	8	10	N	A	91	73		
825	25AUG81	0.7	0	2.5	0	CL	8	15	NE	A	91	72		
826	26AUG81	0.7	0	2.5	0	CL	8	0-15	E	A	90	71		
827	27AUG81	0.8	0	2.5	0	CL	8	15	NE	A	84	71		
828	28AUG81		0		0	CL	8	10	SE	A	85	71	T	

Note: CIR - Contractors Inspection Report
M-MLW - Minimum Low Water
X-MLW - Maximum Low Water
SKY-COND - Sky Conditions
VISIB - Visibility, miles
WND-S DIR - Wind Velocity (mph) and Direction
CL - Weather Classification Explained on CIR
X-T - Maximum Temperature, F
M-T - Minimum Temperature, F
PRECP - Accumulative Rainfall (24 hrs), in.
W-HGT - Wave Height, ft

Table B2

DREDGE OPERATIONS - JIM BEAN
CONTRACT NO. 01-79-C-0135

CIR	DOR	DATE	CREW	CL	*STATION-CUT* START	STOP	DISPOSAL-FILL START	STOP	CHARACTER-OF-CUT-MATERIAL CLAY %	SAND %	SILT %	SHELL %	GRVL %	***CHANNEL*** AVERAGE DEPTH BEFORE MLW	AFTER MLW	***WORK-PERFORMED*** BANK CUT- FT	WIDTH CUT- FT	ADV. PD FT	FLOAT PIPE FT	SHORE PIPE FT	AMOUNT DREDGED CU-YDS
190	1	29NOV79	42	S	220+00	220+40	268+00	268+00	74	10	16	0	0	- 9.0	- 25.0	17.5	310	40	2510	7510	6200
191	2	30NOV79	42	S	220+40	221+70	267+00	267+00	74	10	16	0	0	- 9.0	- 25.0	14.0	310	130	1700	9820	27881
192	3	01DEC79	42	S	221+70	223+70	266+50	266+50	74	10	16	0	0	- 9.0	- 25.0	16.0	310	200	1700	9820	36741
193	4	02DEC79	42	S	223+70	224+10	264+50	266+50	74	10	16	0	0	- 9.0	- 25.0	16.0	310	40	1700	9820	7348
194	5	03DEC79	42	S	224+10	225+35	264+00	264+00	74	10	16	0	0	- 9.0	- 25.0	0.	310	125	1700	9820	22963
195	6	04DEC79	42	S	225+75	226+75	264+00	264+00	74	10	16	0	0	- 9.0	- 25.0	0.	310	140	1700	9820	25718
196	7	05DEC79	42	S	226+75	226+75	264+00	264+00	0	0	0	0	0	- 9.0	- 25.0	11.0	310	0	1600	9820	0
197	8	06DEC79	42	S	226+75	226+75	264+00	264+	0	0	0	0	0	- 9.0	- 25.0	11.0	310	0	1600	9820	0
198	9	07DEC79	42	S	226+75	228+30	264+00	264+00	74	10	16	0	0	- 9.0	- 20.0	11.0	310	155	1800	9820	19575
199	10	08DEC79	42	S	228+30	229+80	265+00	265+00	81	13	6	0	0	- 9.0	- 20.0	11.0	400	150	1800	9820	18944
200	11	09DEC79	42	S	229+80	230+50	265+00	265+00	81	13	6	0	0	- 9.0	- 20.0	14.0	400	70	1800	9820	8841
201	12	10DEC79	42	S	230+50	231+00	263+00	263+00	81	13	6	0	0	- 8.5	- 20.0	14.5	310	50	2000	9820	6602
202	13	11DEC79	50	S	231+00	232+00	257+75	257+75	81	13	6	0	0	- 8.5	- 22.5	14.0	310	100	2200	9820	16074
203	14	12DEC79	50	S	232+00	232+25	257+75	257+75	81	13	6	0	0	- 8.0	- 22.5	14.0	310	25	2200	10370	4162
204	15	13DEC79	50	S	232+25	233+45	257+50	257+50	81	13	6	0	0	- 8.5	- 22.5	14.0	310	120	2500	10370	19289
205	16	14DEC79	50	S	233+45	234+75	257+25	257+25	81	13	6	0	0	- 8.5	- 22.0	14.0	310	130	2700	10370	20896
206	17	15DEC79	50	S	234+75	236+65	257+00	257+00	83	17	0	0	0	8.5	22.5	14.0	310	190	2700	10370	30540
207	18	16DEC79	50	S	236+65	238+00	257+00	257+00	80	20	0	0	0	- 8.0	- 22.5	14.5	310	135	2700	10920	22475
208	19	17DEC79	58	S	238+00	238+55	252+50	252+50	80	20	0	0	0	- 8.0	- 22.5	14.5	310	55	2750	10920	9156
209	20	18DEC79	58	S	238+55	239+25	251+50	251+50	80	20	0	0	0	- 8.0	- 22.5	14.5	310	70	2750	10920	11654
210	21	19DEC79	58	S	239+25	240+55	249+00	249+00	68	22	10	0	0	- 8.0	- 20.0	12.0	310	130	2850	10920	17911
211	22	20DEC79	58	S	240+55	241+10	249+00	249+00	68	22	10	0	0	- 8.0	- 20.0	12.0	310	55	2850	10920	7579
212	23	21DEC79	58	S	241+10	241+55	248+00	248+00	68	22	10	0	0	- 8.0	- 20.0	12.0	310	45	2850	10920	6200
213	24	22DEC79	58	S	241+55	243+55	248+00	248+00	52	36	12	0	0	- 7.5	- 20.0	12.5	310	200	2850	10920	28701
214	25	23DEC79	58	S	243+55	245+55	247+50	247+50	52	36	12	0	0	- 7.5	- 20.0	12.5	310	230	3350	10920	33009
215	26	24DEC79	58	S	245+55	247+30	247+00	247+00	33	38	29	0	0	- 7.5	- 20.0	12.5	310	145	2850	11920	29810
216	27	25DEC79	58	S	247+30	249+40	246+50	246+50	33	38	29	0	0	- 7.5	- 20.0	12.5	310	210	3050	11920	30139
217	28	26DEC79	58	S	249+40	251+55	246+00	246+00	[illegible]	11	[illegible]	0	0	- 7.5	- 20.0	12.5	310	215	3920	11550	30856
218	29	27DEC79	58	S	251+55	252+70	243+00	243+00	48	19	33	0	0	- 7.5	- 22.0	14.5	310	115	3440	12600	19145
219	30	28DEC79	58	S	252+70	254+10	237+00	237+00	48	19	33	0	0	- 7.0	- 24.0	17.0	310	140	3240	12600	27326
220	31	29DEC79	58	S	254+10	255+40	236+00	236+	44	19	37	0	0	- 7.0	- 24.0	17.0	310	130	3240	12600	25374
221	32	30DEC79	55	S	255+40	256+10	235+00	235+00	65	5	30	0	0	- 7.0	- 24.0	17.0	310	70	3640	12600	13663
222	33	31DEC79	58	S	256+10	257+00	234+00	234+00	65	5	30	0	0	- 6.5	- 24.0	17.5	310	90	3305	15750	18083

(continued)

Table B2 (continued)

DREDGE OPERATIONS - JIM BEAN
CONTRACT NO. [illegible]1-79-C-0155

CIR	JOB	DATE	OPERS	CL	*STATION-CUT* START	STOP	DISPOSAL-FILL START	STOP	CHARACTER-OF-CUT-MATERIAL CLAY %	SAND %	SILT %	SHELL %	GRVL %	***CHANNEL*** AVERAGE DEPTH BEFORE MLW	AFTER MLW	***WORK-PERFORMED*** BANK CUT- FT	WIDTH CUT- FT	ADV. PD FT	FLOAT PIPE FT	SHORE PIPE FT	AMOUNT DREDGED CU-YDS
223	34	01JAN80	58	S	[illegible]	257+10	234+00	234+[illegible]			0	0	0	- 6.5	- 24.0	0.	310	0	3305	15750	0
224	35	02JAN80	58	S	257+00	257+00	234+00	234+00	0	0	0	0	0	- 6.5	- 24.0	0.	310	0	3305	15750	0
225	36	03JAN80	58	S	257+00	257+15	234+00	234+00	65	5	30	0	0	- 6.5	- 24.0	17.5	310	15	3625	15750	3014
226	37	04JAN80	58	S	257+15	257+80	233+00	234+00	65	5	30	0	0	- 6.5	- 24.0	17.5	310	65	3545	15750	13060
227	38	05JAN80	58	S	257+80	258+20	233+00	233+[illegible]	90	5	5	0	0	- 6.5	- 24.0	17.5	310	110	3545	15750	22101
228	39	06JAN80	61	S	258+20	259+50	233+00	233+[illegible]	90	5	5	0	0	- 6.0	- 22.5	16.5	310	60	3745	15750	13367
229	40	07JAN80	61	S	259+50	259+95	233+00	233+00	90	5	5	0	0	- 6.0	- 21.5	15.5	310	45	3745	15750	8008
230	41	08JAN80	61	S	259+95	260+10	233+[illegible]	233+[illegible]	90	5	5	0	0	- 6.0	- 21.5	15.5	310	15	3745	15750	2669
231	42	09JAN80	61	S	260+10	260+65	232+50	232+50	60	25	15	0	0	- 5.0	- 20.5	15.5	310	55	3745	15750	9788
232	43	10JAN80	61	S	260+65	262+00	232+50	232+50	60	25	15	0	0	- 5.0	- 20.5	15.5	310	135	4045	15750	24025
233	44	11JAN80	61	S	262+00	262+45	232+00	232+00	60	25	15	0	0	- 5.0	- 20.5	15.5	310	45	4045	15750	8008
234	45	12JAN80	61	S	262+45	263+30	231+50	231+50	60	25	15	0	0	- 4.0	- 20.5	16.5	310	85	4045	15750	16103
235	46	13JAN80	61	S	220+00	219+70	292+00	292+00	60	25	15	0	0	11.0	- 20.5	16.5	310	30	2270	9030	3961
236	47	14JAN80	61	S	219+70	218+00	292+00	292+00	74	10	16	0	0	- 9.0	- 20.5	11.5	310	170	2270	9635	22446
237	48	15JAN80	75	S	218+00	215+40	292+50		74	10	16	0	0	- 9.0	- 20.5	11.5	310	260	2270	9635	31007
238	49	16JAN80	75	S	215+40	213+30	293+00		74	10	16	0	0	- 9.0	- 20.5	11.5	280	150	2470	9635	19081
239	50	17JAN80	75	S	213+40	212+50	294+00		74	10	16	0	0	- 9.0	- 20.5	11.5	310	130	2820	9485	17164
240	51	18JAN80	75	S	212+50	210+85	294+50	294+50	10	74	16	0	0	- 9.0	- 20.5	11.5	310	165	2720	9485	21786
241	52	19JAN80	75	S	210+85	209+35	296+50	296+50	10	74	16	0	0	- 9.0	- 20.5	11.5	310	150	2950	9485	19806
242	53	20JAN80	75	S	209+35	207+95	297+50	297+50	10	74	16	0	0	- 9.0	- 20.5	11.5	310	140	2850	9785	18486
243	54	21JAN80	75	S	207+95	206+80	298+00	297+00	74	10	16	0	0	- 9.0	- 20.5	11.5	310	115	2880	9755	12968
244	55	22JAN80	75	N	213+50	211+50	298+50	298+50	10	74	16	0	0	- 9.0	- 23.0	13.5	280	200	2780	9755	26030
245	56	23JAN80	75	N	211+50	210+90	298+50	298+50	10	74	16	0	0	- 9.0	- 23.0	14.0	280	60	2780	9755	3711
246	57	24JAN80	75	N	210+90	210+00	299+00	299+00	10	74	16	0	0	- 9.0	- 23.0	14.0	280	90	3080	9755	13066
247	58	25JAN80	75	N	210+00	209+30	299+00		10	74	16	0	0	- 9.0	- 23.0	14.0	280	170	3080	8400	24681
248	59	26JAN80	75	N	[illegible]+30	[illegible]+65	299+00	299+00	10	74	16	0	0	- 9.0	- 23.0	14.0	280	135	2985	0	21219
249	60	27JAN80	75		[illegible]+65	219+15	299+50	299+50	2	94	4	0	0	- 23.0	- 36.0	13.0	470	150	2950	8435	36556
250	61	28JAN80	75		219+15	217+45	305+00	305+00	2	94	4	0	0	- 25.0	- 36.0	11.0	400	170	2950	8435	32551
251	62	29JAN80	75	C	217+45	215+85	306+00	306+00	2	94	4	0	0	- 24.0	- 36.0	12.0	470	160	3500	8435	33422
252	63	30JAN80	75	C	215+85	214+15	307+00	307+00	2	94	4	0	0	- 25.0	- 36.0	11.0	470	170	3900	8435	32552
253	64	31JAN80	75		214+15	212+75	309+00	309+00	2	94	4	0	0	- 25.0	- 36.0	11.0	470	140	4000	8435	26807

(continued)

Table B2 (continued)

DREDGE OPERATIONS - JIM BEAN
CONTRACT NO. 01-79-C-0175

CIR	DOR	DATE	CREW	CL	*STATION-CUT* START	STOP	DISPOSAL-FILL START	STOP	CHARACTER-OF-CUT-MATERIAL CLAY %	SAND %	SILT %	SHELL %	GR/L %	***CHANNEL*** AVERAGE DEPTH BEFORE MLW	AFTER MLW	***WORK-PERFORMED*** BANK CUT- FT	WIDTH CUT- FT	ADV. PD FT	FLOAT PIPE FT	SHORE PIPE FT	AMOUNT DREDGED CU-YDS
254	65	01FEB80	75		212+75	211+65	310+00	310+00	2	94	4	0	0	- 25.0	- 33.0	8.0	470	110	4000	8435	15318
255	66	02FEB80	72	C	211+65	209+55	311+00	311+00	2	94	4	0	0	- 25.0	- 33.0	8.0	470	210	4150	7385	29244
256	67	03FEB80	72	C	209+55	211+50	1+00	208+70	2	94	4	0	0	- 25.0	- 33.0	8.0	470	195	2800	6885	21125
257	68	04FEB80	72	C	216+40	215+80	4+00	4+00	2	94	4	0	0	- 36.0	- 42.0	6.0	380	260	2925	710	21955
258	69	05FEB80	72	C	215+80	213+30	6+00	6+00	2	94	4	0	0	- 36.0	- 42.0	6.0	380	250	3200	6835	21111
259	70	06FEB80	72	C	213+30	209+75	7+00	7+00	3	93	4	0	0	- 36.0	- 42.0	6.0	380	355	3300	6835	29977
260	71	07FEB80	72	C	209+75	214+50	8+00	8+00	3	93	4	0	0	- 36.0	- 43.0	6.0	380	245	3300	6835	13651
261	72	08FEB80	72	C	219+50	220+00	9+00	9+00	3	93	4	0	0	- 36.0	- 42.0	6.0	400	50	2315	6800	4222
262	73	09FEB80	72		220+00	221+00	9+50	9+50	75	10	15	0	0	- 25.0	- 42.0	10.5	380	100	2415	6800	18278
263	74	10FEB80	72	C	221+00	221+95	210+00	210+00	75	10	15	0	0	- 25.0	- 42.0	17.0	380	95	2615	6800	23926
264	75	11FEB80	72	C	221+95	222+50	10+50	10+50	75	10	15	0	0	- 25.0	- 42.0	17.0	293	55	2615	6800	10147
265	76	12FEB80	72	N	222+50	224+05	11+00	11+00	75	10	15	0	0	- 9.0	- 26.0	17.0	300	155	2070	7385	22278
266	77	13FEB80	72	N	224+05	225+45	11+00	11+00	75	10	15	0	0	- 9.0	- 29.0	20.0	300	140	1970	7385	31111
267	78	14FEB80	72	N	225+45	226+85	11+00	11+00	75	10	15	0	0	- 8.5	- 27.0	18.5	300	140	2270	7385	28777
268	79	15FEB80	72	N	225+85	223+15	11+50	11+50	75	10	15	0	0			19.0	300	130	2670	7385	27444
269	80	16FEB80	71	N	228+15	229+95	13+00	13+00	75	10	15	0	0	- 8.5	- 27.0	18.5	290	180	2870	7385	35766
270	81	17FEB80	71	N	229+95	231+45	13+00	13+00	75	10	15	0	0	- 8.5	- 27.5	19.0	300	150	2870	7385	31667
271	82	18FEB80	71	N	231+45	233+10	13+00	13+00	75	10	15	0	0	- 8.0	- 27.0	19.0	290	165	3170	8435	33672
272	83	19FEB80	71	N	233+10	234+50	14+00	14+00	75	10	15	0	0	- 8.0	- 27.0	19.0	290	140	3170	8435	28570
273	84	20FEB80	71	N	234+50	235+05	14+00	14+00	75	10	15	0	0	- 8.0	- 27.0	19.0	290	55	3170	8435	11224
274	85	21FEB80	71	N	235+05	235+20	18+00	18+00	60	10	15	0	0	- 8.0	- 27.0	19.0	310	15	3170	8435	3272
275	86	22FEB80	71	F	222+50	223+75	21+00	21+00	60	10	15	0	0	- 25.0	- 37.0	12.0	460	125	2850	7740	25556
276	87	23FEB80	71	C	223+75	224+95	21+00	21+00	60	10	15	0	0	- 26.0	- 40.0	14.0	465	120	2850	7740	29933
277	88	24FEB80	64	C	224+95	226+15	22+00	22+00	70	10	15	0	0	- 25.0	- 40.0	15.0	465	120	2950	7705	31000
278	89	25FEB80	64	C	226+15	227+20	22+00	22+00	70	10	15	0	0	- 25.0	- 40.0	15.0	465	105	3250	7705	27125
279	90	26FEB80	64	C	227+20	228+40	23+00	23+00	80	10	10	0	0	- 25.0	- 39.0	15.0	465	120	3505	7850	31000
280	91	27FEB80	64	C	228+40	229+00	23+00	23+00	80	10	10	0	0	- 22.0	- 37.0	15.0	512	60	2705	8900	17067
281	92	28FEB80	64	C	229+00	230+00	24+00	24+00	80	10	10	0	0	- 23.5	- 35.0	11.5	512	100	1955	9950	21807
282	93	29FEB80	64	C	230+00	231+70	24+00	24+00	80	10	10	0	0	- 24.0	- 35.5	11.5	512	170	1955	9950	37073

(continued)

Table B2 (continued)

[illegible] - JIM [illegible]
[illegible]

CTN	DDR	DATE	CREW	CL	*STATION-CUT* START	STOP	DISPOSAL-FILL START	STOP	CHARACTER-OF-CUT-MATERIAL CLAY %	SAND %	SILT %	SHELL %	GRVL %	***CHANNEL*** AVERAGE DEPTH BEFORE MLW	AFTER MLW	BANK CUT- FT	WIDTH CUT- FT	ADV. RD FT	WORK-PERFORMED FLOAT PIPE FT	SHORE PIPE FT	AMOUNT DREDGED CU-YDS
283	[illegible]	[illegible]	69	C	231+[illegible]	232+[illegible]5	[illegible]	27+[illegible]	80	10	[illegible]	0	0	- 24.0	- 37.0	13.0	512	115	3455	9950	28349
284	[illegible]	02MAR80	69	C	232+35	233+[illegible]	[illegible]	[illegible]	[illegible]	10	10	0	0	- 24.5	- 38.0	13.5	512	95	3455	9950	24320
285	95	03MAR80	69	C	2[illegible]3+90	222+10	31+00	31+00	80	10	10	0	0	- 24.0	- 43.0	19.0	494	115	2855	9950	18972
286	97	04MAR80	69	C	222+10	223+15	31+[illegible]	31+[illegible]	80	10	10	0	0	- 37.0	- 43.0	6.0	475	105	2655	9950	11083
287	98	05MAR80	69	C	223+15	225+15	37+[illegible]	37+[illegible]	80	10	10	0	0	- 39.0	- 44.0	5.0	475	200	2655	9950	17593
288	99	06MAR80	69	C	225+15	226+75	38+00	38+0[illegible]	80	10	10	0	0	- 39.0	- 44.0	5.0	475	160	2655	9950	14074
289	100	07MAR80	69	C	226+75	22[illegible]+90	38+50	38+5[illegible]	80	10	10	0	0	- 38.0	- 44.0	6.0	460	215	2655	9950	21978
290	101	08MAR80	69	C	22[illegible]+90	231+3[illegible]	39+[illegible]	39+[illegible]	80	10	10	0	0	- 35.0	- 44.0	9.0	475	240	2855	9950	38000
291	102	09MAR80	75	C	231+30	233+50	39+50	39+50	80	10	10	0	0	- 37.5	- 44.0	6.5	475	220	2990	9950	25157
292	103	10MAR80	77	C	233+50	235+90	41+50	41+50	75	10	10	0	0	- 37.0	- 44.0	7.0	375	185	3190	9950	28421
293	104	11MAR80	77	N	235+90	237+75	42+00	42+00	75	10	10	0	0	- 8.0	- 24.0	16.0	275	185	3190	11100	30148
294	105	12MAR80	77	N	237+75	239+50	42+50	42+50	75	10	10	0	0	- 8.0	- 25.0	17.0	275	175	3190	11100	30301
295	106	13MAR80	77	N	239+50	24[illegible]+65	42+50	42+50	70	15	15	0	0	- 8.0	- 25.0	17.0	275	115	3090	11100	19912
296	107	14MAR80	77	N	240+65	242+60	43+50	43+50	70	10	10	0	0	- 8.0	- 25.0	17.0	275	195	3390	11100	33763
297	108	15MAR80	77	N	242+60	244+50	44+00	44+00	70	10	10	0	0	- 8.0	- 24.0	16.0	275	190	3690	11000	30963
298	109	16MAR80	77	N	244+50	246+05	44+50	44+50	70	10	10	0	0	- 8.0	- 23.0	15.0	275	155	3890	11000	23680
299	110	17MAR80	73	N	246+05	246+65	44+50	44+50	70	10	10	0	0	- 8.0	- 23.0	15.0	275	60	3790	11000	9167
300	111	18MAR80	73	N	246+65		44+50	44+50	70	15	15	0	0	- 8.0	- 23.0	0.	275	0	3890	11000	0
301	112	19MAR80	73	N	246+65	247+65	45+00	45+00	70	15	15	0	0	- 8.0	- 24.0	16.0	275	100	3890	11000	16296
302	113	20MAR80	73	N	247+65	249+30	47+00	47+00	70	15	15	0	0	- 8.0	- 24.0	16.0	275	165	4075	11000	26888
303	114	21MAR80	73	N	249+30	235+25	47+00	47+00	70	15	15	0	0	- 8.0	- 25.0	16.0	275	140	2190	11000	23837
304	115	22MAR80	73	C	235+25	236+75	46+00	46+00	70	15	15	0	0	- 25.0	- 35.0	10.0	486	150	2090	11000	27000
305	116	23MAR80	73	C	236+75	238+35	43+00	43+00	70	15	15	0	0	- 25.0	- 35.0	10.0	486	160	2090	11000	28800
306	117	24MAR80	73	C	238+[illegible]	239+[illegible]5	42+[illegible]	42+[illegible]	[illegible]	[illegible]	[illegible]	0	0	- 25.0	- 35.0	10.0	486	60	2090	11000	10800
307	118	25MAR80	73	C	238+95	239+40	41+00	41+00	70	15	15	0	0	- 25.0	- 35.0	10.0	486	45	2090	11000	8100
308	119	26MAR80	73	C	239+40	241+00	40+00	40+00	70	15	15	0	0	- 25.0	- 36.0	11.0	486	160	2090	11000	31680
309	120	27MAR80	73	C	241+00	242+1[illegible]	39+00	3[illegible]+00	[illegible]	15	15	0	0	- 25.0	- 37.0	12.0	486	115	2640	11000	24840
310	121	[illegible]MAR80	73	C	24[illegible]+15	24[illegible]+7[illegible]	38+00	38+[illegible]	70	15	15	0	0	- 25.0	- 36.0	11.0	486	155	2640	11000	30690
311	122	29MAR80	73	C	243+70	244+80	36+00	36+[illegible]	70	15	15	0	0	- 25.0	- 37.0	12.0	486	110	2540	9950	23760
312	123	30MAR80	73	C	244+[illegible]	246+[illegible]	35+[illegible]	35+[illegible]	70	15	15	0	0	- 25.0	- 35.0	10.0	486	120	2540	9950	21600
313	124	31MAR80	73	C	24[illegible]+[illegible]	245+50	34+50	34+[illegible]	[illegible]	[illegible]	25	0	0	- 25.0	- 36.0	11.0	562	60	2440	9950	13738

(continued)

Table B2 (continued)

DREDGE OPERATIONS - JIM BEAN
CONTRACT NR. 01-79-C-0175

CIR	JCN	DATE	CREW	CL	STATION-CUT START	STATION-CUT STOP	DISPOSAL-FILL START	DISPOSAL-FILL STOP	CLAY %	SAND %	SILT %	SHELL %	GRVL %	AVERAGE DEPTH BEFORE MLW	AVERAGE DEPTH AFTER MLW	BANK CUT- FT	WIDTH CUT- FT	ADV. PD FT	FLOAT PIPE FT	SHORE PIPE FT	AMOUNT DREDGED CU-YDS
314	125	01APR80	74	C	246+60	248+20	34+00	34+00	20	26	25	0	0	-25.0	-35.0	10.0	462	160	2505	9950	33303
315	126	02APR80	74	C	248+20	249+75	33+50	33+50	49	26	25	0	0	-25.0	-35.0	10.0	562	155	2505	9950	32269
316	127	03APR80	74	C	249+75	235+45	33+00	33+00	49	26	25	0	0	-25.0	-35.0	10.0	562	155	1925	10500	23699
317	128	04APR80	74	C	235+45	239+55	23+00	33+00	49	26	25	0	0	-35.0	-42.0	7.0	390	310	2125	10500	31344
318	129	05APR80	74	C	239+55	240+15	26+00	26+00	49	26	25	0	0	-35.0	-42.0	7.0	390	160	2625	10500	16178
319	130	06APR80	64	C	240+15	242+40	25+00	25+00	49	26	25	0	0	-35.0	-42.0	7.0	390	225	2825	10500	22750
320	131	07APR80	64	C	242+40	245+30	20+00	20+00	10	80	10	0	0	-35.0	-42.0	7.0	390	290	3425	10500	29322
321	132	08APR80	64	C	245+30	247+80	18+00	18+00	10	80	10	0	0	-35.0	-42.0	7.0	390	250	4025	10500	25277
322	133	09APR80	64	C	247+80	249+65	14+00	14+00	10	80	10	0	0	-35.0	-42.0	7.0	390	185	0	0	13706
323	134	10APR80	64		249+65	241+30	13+00	13+00	10	80	10	0	0	-35.0	-42.0	7.0	390	235	3700	9450	27477
324	135	11APR80	64		241+50	243+10	11+00	11+00	50	25	0	0	0	-8.0	-30.0	22.0	390	160	4325	9450	29600
325	136	12APR80	64		243+10	244+10	11+00	11+00	50	25	0	0	0	-8.0	-30.0	22.0	390	100	4175	9450	31778
326	137	13APR80	64		244+10	244+70	10+00	10+00	50	25	0	0	0	-8.0	-30.0	22.0	390	60	4675	9450	19066
327	138	14APR80	64		244+70	245+60	9+00	9+00	40	38	11	0	0	-8.0	-31.0	23.0	390	90	3825	9450	29900
328	139	15APR80	64		245+60	246+60	8+00	8+00	40	33	11	0	0	-8.0	-28.0	20.0	390	100	4025	9450	28889
329	140	16APR80	64		246+60	247+60	7+00	7+00	40	38	11	0	0	-8.0	-30.0	22.0	390	100	3525	9450	31778
330	141	17APR80	64		247+60	249+15	26+00	26+00	25	25	50	0	0	-8.0	-28.0	20.0	390	150	3675	9450	44778
591	143	03JAN81	53	C	371+36	371+46	302+00		35	65	0	0	0	-23.0	-35.0	12.0	405	10	1550	24800	1067
592	144	04JAN81	53	C	371+46	372+31	305+00		35	65	0	0	0	-27.0	-35.0	8.0	405	85	1950	24564	9563
593	145	05JAN81	53	C	372+31	372+99	305+00		85	15	0	0	0	-27.0	-35.0	8.0	405	68	2150	24560	10200
594	146	06JAN81	53	C	372+99	373+74	305+00		75	25	0	0	0	-25.0	-38.0	13.0	405	75	2150	24590	14625
595	147	07JAN81	53	C	373+74	374+50	307+00		75	25	0	0	0	-22.5	-38.0	15.5	405	76	2725	22140	17670
596	148	08JAN81	53	C	374+50	375+00	307+00		75	25	0	0	0	-22.5	-38.0	15.5	405	50	2470	22395	11625
597	149	09JAN81	53	C	375+00	375+40	307+00		25	75	0	0	0	-24.2	-38.0	13.8	425	40	1870	22945	8689
598	150	10JAN81	68	C	375+40	376+25	307+00		35	65	0	0	0	-24.1	-36.0	11.9	425	85	1970	22990	15906
599	151	11JAN81	68	C	376+25	376+95	307+00		35	65	0	0	0	-23.0	-35.0	12.0	425	70	1970	23035	13222
600	152	12JAN81	68	C	376+95	377+55	307+00		35	65	0	0	0	-19.0	-34.0	15.0	425	60	2170	23115	14167
601	153	13JAN81	68	C	377+55	378+35	307+00		35	65	0	0	0	-19.0	-33.0	14.0	425	80	2170	23115	17630
602	154	14JAN81	58	C	378+35	378+65	307+00		35	65	0	0	0	-14.0	-32.0	18.0	470	30	2170	23190	9400
603	155	15JAN81	58	C	378+35	378+84	307+00		35	65	0	0	0	-12.0	-34.0	22.0	425	40	2370	23190	7523
604	156	16JAN81	58	C	378+84	379+45	307+00		25	75	0	0	0	-12.0	-33.0	21.0	450	61	2470	23190	21350
605	157	17JAN81	58	C	379+45	379+65	307+00		25	75	0	0	0	-12.0	-33.0	21.0	450	20	2470	23290	7000
606	158	18JAN81	58	C	379+65	380+30	307+00		25	75	0	0	0	-11.0	-31.0	20.0	450	65	2470	23290	21444
607	159	19JAN81	58	C	380+30	380+85	308+90	309+40	15	85	0	0	0	-10.5	-33.0	0.	450	55	2470	23370	20625
608	160	20JAN81	58	C	380+85	381+24	309+40	309+90	15	85	0	0	0	-9.5	-33.0	0.	450	39	2570	23390	14625
609	161	21JAN81	63	C	381+21	381+66	381+24	310+50	15	85	0	0	0	-9.5	-33.0	0.	330	62	2570	23457	17117
610	162	22JAN81	58	C	381+86	382+74	310+50	310+50	15	85	0	0	0	-10.5	-30.0	0.	305	88	2570	23457	15322
611	163	23JAN81	58	C	382+74	383+36	310+50	310+50	99	1	0	0	0	-10.0	-22.0	0.	320	160	2570	23457	9846
612	164	24JAN81	58	C	371+25	371+50	310+50	310+50	99	1	0	0	0	-36.3	-43.0	0.	400	25	1550	23457	2481
613	165	25JAN81	58	C	371+50	371+50	310+50	310+50	0	0	0	0	0			0.	0	0	0	0	0
614	166	26JAN81	58	C	371+50	371+50	310+50	310+50	0	0	0	0	0			0.	0	0	0	0	0
615	167	27JAN81	58	C	371+50	371+50	310+50	310+50	0	0	0	0	0			0.	0	0	0	0	0
616	168	28JAN81	58	C	371+50	371+50			0	0	0	0	0			0.	0	0	0	0	0
617	169	29JAN81	63	C	371+50	371+50			0	0	0	0	0			0.	0	0	0	0	0
618	170	30JAN81	53	C	371+50	371+50			0	0	0	0	0			0.	0	0	0	0	0
619	171	31JAN81	[illegible]	C	371+[illegible]	[illegible]	[illegible]	[illegible]	100	0	0	0	0	-35.0	-43.0	0.	425	95	2945	30220	11963

(continued)

Table B2 (continued)

DREDGE OPERATIONS - JIM [illegible]
CONTRACT NO. 01-79-C-0135

CIR	DOR	DATE	CREW	CL	*STATION-CUT* START	STOP	DISPOSAL-FILL START	STOP	CHARACTER-OF-CUT-MATERIAL CLAY %	SAND %	SILT %	SHELL %	GRVL %	***CHANNEL*** AVERAGE DEPTH BEFORE MLW	AFTER MLW	***WORK-PERFORMED*** BANK CUT- FT	WIDTH CUT- FT	ADV. PD FT	FLOAT PIPE FT	SHORE PIPE FT	AMOUNT DREDGED CU-YDS
620	172	01FEB81	58	C	372+45	374+20	154+00	154+20	100	0	0	0	0	-34.0	-43.0	0.	425	175	3245	30200	22887
621	173	02FEB81	58	C	374+20	375+25	154+20	154+20	100	0	0	0	0	-32.0	-43.0	0.	450	105	3345	30200	15750
622	174	03FEB81	63	C	375+25	376+15	159+00	159+00	100	0	0	0	0	-37.0	-43.0	0.	425	90	3245	30200	8500
623	175	04FEB81	68	C	376+15	377+70	159+00	159+25	60	40	0	0	0	-33.0	-43.0	0.	425	155	3445	30200	24398
624	176	05FEB81	68	C	377+70	378+70	159+00	159+25	55	45	0	0	0	-33.0	-43.0	0.	425	100	3545	30200	15741
625	177	06FEB81	64	C	378+70	379+15	159+50	159+75	70	30	0	0	0	-33.0	-43.0	0.	440	45	3545	30200	7333
626	178	07FEB81	64	C	379+15	380+65	159+75	160+50	85	15	0	0	0	-33.0	-43.0	0.	425	150	3545	30200	23611
627	179	08FEB81	64	C	380+65	381+80	160+50	161+00	90	10	0	0	0	-33.0	-43.0	0.	425	115	3745	30200	18102
628	180	09FEB81	64	C	381+80	381+80	161+00	161+00	90	10	0	0	0			0.	0	0	3745	30200	0
629	181	10FEB81	64	C	381+80	382+45	161+00	161+75	95	5	0	0	0	-32.0	-43.0	0.	430	65	3745	30200	9711
630	182	11FEB81	64		10+10	9+25	161+25	161+50	10	80	10	0	0	-11.0	-25.0	0.	390	93	3900	30200	16970
631	183	12FEB81	64		9+25	9+25	161+50	8+20	5	85	10	0	0			0.	390	105	3900	30200	21233
632	184	13FEB81	64		8+20	7+05	161+75	161+85	5	95	10	0	0			0.	390	115	3900	30200	21594
633	185	14FEB81	64		7+05	5+75	161+85	161+95	5	85	10	0	0	-8.0	-18.0	0.	375	130	3900	30200	18055
634	186	15FEB81	64		5+75	4+40	161+95	162+25	5	85	10	0	0	-8.0	-22.0	0.	375	135	3900	30200	26250
635	187	16FEB81	64		381+24	382+64	162+25	162+25	5	85	10	0	0	-9.0	-21.0	0.	375	140	3900	30200	25278
636	188	17FEB81	64		381+24	381+94	162+25	162+40	5	85	10	0	0	-9.0	-24.0	0.	375	70	4100	30200	14583
637	189	18FEB81	64		381+24	381+29	162+40	162+55	5	85	10	0	0	-7.0	0	0.	375	75	4100	30200	3630
638	190	19FEB81	64		6+55	0+70	162+55	162+55	5	85	10	0	0	-7.0	-24.0	0.	375	85	4100	30200	20069
639	191	20FEB81	64		0+70	0+20	166+00	166+25	5	85	10	0	0	-9.0	24.0	0.	375	240	3800	30200	21671
640	192	21FEB81	64		9+10	7+95	166+25	166+40	5	85	10	0	0	-24.0	-37.0	0.	335	115	3800	30200	19549
641	193	22FEB81	64		7+95	5+90	166+55	166+55	15	75	10	0	0	-23.0	-37.0	0.	335	205	3800	30200	35609
642	194	23FEB81	64		5+90	4+80	166+70	166+70	15	75	10	0	0	-22.0	-37.0	0.	335	110	4120	30200	20472
643	195	24FEB81	64		4+[illegible]	3+40	166+70	166+90	75	15	10	0	0	-22.0	-37.0	0.	335	175	4120	30200	22022
644	196	25FEB81	64		4+05	3+00	177+50	177+50	75	15	10	0	0	-22.0	-39.5	0.	335	105	4220	30200	12717
645	197	26FEB81	64		3+00	3+00	171+45	171+45	75	15	10	0	0	22.0	39.5	0.	0	0	3705	30200	0
646	198	27FEB81	64		3+00	2+80	171+45	171+45	75	15	10	0	0	-23.0	-37.0	0.	335	20	3705	30200	3722
647	199	28FEB81	64		[illegible]	1+90	171+[illegible]	171+75	75	15	10	0	0	-24.0	-39.0	0.	300	90	3755	30200	19500

(continued)

Table B2 (continued)

DREDGE OPERATIONS - JIM BEAN
CONTRACT NO. [illegible]1-79-C-0135

CIR	DOR	DATE	CREW	CL	*STATION-CUT* START	STOP	DISPOSAL-FILL START	STOP	CHARACTER-OF-CUT-MATERIAL CLAY %	SAND %	SILT %	SHELL %	GRVL %	***CHANNEL*** AVERAGE DEPTH BEFORE MLW	AFTER MLW	***WORK-PERFORMED*** BANK CUT- FT	WIDTH CUT- FT	ADV. PD FT	FLOAT PIPE FT	SHORE PIPE FT	AMOUNT DREDGED CU-YDS
648	200	01MAR81	64		1+90	1+25	171+75	171+[illegible]5	75	15	10	0	0	- 24.0	- 32.0	0.	390	65	4170	30395	14083
649	201	02MAR81	64		[illegible]+35	8+75	171+85	172+[illegible]5	15	75	0	0	10	- 10.0	- 24.0	0.	390	85	3670	30395	13195
650	202	03MAR81	64	C	9+75	7+75	172+00	172+15	15	75	0	0	10	- 11.0	- 27.0	0.	350	100	3570	30395	20740
651	203	04MAR81	64	C	7+75	6+95	172+15	173+[illegible]	15	75	0	0	10	- 11.0	- 26.0	0.	525	80	3720	30395	23333
652	204	05MAR81	64	C	6+95	6+50	173+00	173+[illegible]0	15	75	0	0	10	- 10.0	- 26.0	0.	525	45	3705	30395	14000
653	205	06MAR81	64	C	6+50	5+40	173+00	173+50	50	45	0	0	5	- 10.0	- 25.0	0.	500	110	3705	30395	30556
654	206	07MAR81	64	C	5+40	4+15	173+50	174+[illegible]0	50	45	5	0	0	- 10.0	- 25.0	0.	500	125	3705	30395	32407
655	207	08MAR81	64	C	4+15	3+30	174+50	174+50	55	45	0	0	0	- 11.5	- 25.0	0.	500	85	3705	30395	21250
656	208	09MAR81	64	C	3+30	1+80	159+00	159+00	45	55	0	0	0	- 12.0	- 25.0	0.	500	150	3675	30395	36111
657	209	10MAR81	64	C	1+80	0+80	158+50	176+60	45	55	0	0	0	- 10.0	- 25.0	0.	500	100	3270	30895	27778
658	210	11MAR81	64	C	0+80	0+40	177+00	177+00	45	55	0	0	0	- 10.0	- 25.0	0.	500	120	3270	30895	31111
659	211	12MAR81	64	C	9+00	7+90	177+00	177+50	45	55	0	0	0	- 10.0	- 25.0	0.	500	150	3270	30895	31815
660	212	13MAR81	64	C	7+90	6+60	177+50	178+00	45	55	0	0	0	- 26.0	- 38.0	0.	500	130	3270	30895	28889
661	213	14MAR81	64	C	6+60	5+30	178+00	178+50	45	55	0	0	0	- 25.0		0.	530	130	3070	30895	30622
662	214	15MAR81	64	C	5+30	4+00	178+50	179+00	45	55	0	0	0	- 25.0		0.	530	130	3070	30895	33174
663	215	16MAR81	64	C	4+00	2+05	179+50	179+50	45	55	0	0	0	- 25.0	- 38.0	0.	530	195	3070	30895	40171
664	216	17MAR81	64	C	2+05	1+09	179+50	181+50	45	55	0	0	0	- 25.0	- 38.0	0.	530	96	3070	30895	19789
665	217	18MAR81	64	C	1+09	0+50	184+50	184+50	45	55	0	0	0	- 25.0	- 38.0	0.	530	59	3070	30895	15055
666	218	19MAR81	64	C	0+50	0+55	185+50	185+50	45	55	0	0	0	- 25.0	- 38.0	0.	530	105	3270	30895	26794
667	219	20MAR81	64	C	0+60	1+50	186+50		45	55	0	0	0	- 11.0	- 25.0	0.	530	115	3270	30895	31408
668	220	21MAR81	64		1+50	2+00	187+50	2+55	45	55	0	0	0	- 10.0	- 25.0	0.	425	105	3470	30895	24583
669	221	22MAR81	64		2+55	3+00	190+00		45	55	0	0	0	- 10.0	- 25.0	0.	365	75	3470	30895	12067
670	222	23MAR81	64		0+90	1+80	192+00		45	55	0	0	0	- 25.0	- 37.0	0.	530	90	3470	30895	21200
671	223	24MAR81	64		1+80	2+30	194+00		45	55	0	0	0	- 25.0	- 37.0	0.	440	50	3470	30895	9378
672	224	25MAR81	64		2+30	2+60	198+00		45	55	0	0	0	- 25.0	- 37.0	0.	350	30	3470	30895	4667
673	225	26MAR81	64		2+10	3+00	200+00		45	55	0	0	0	- 15.0	- 25.0	0.	480	90	3470	30895	14400
674	226	27MAR81	64		3+00	4+75	201+50		45	55	0	0	0	- 15.0	- 24.0	0.	450	175	2470	30895	26250
675	227	28MAR81	64		4+75	6+90	203+50	204+50	45	55	0	0	0	- 12.0	- 24.0	0.	420	215	2570	30895	40133
676	[illegible]	[illegible]MAR81	64		6+90	9+30	204+50	204+50	30	70	0	0	0	- 15.0	- 24.0	0.	385	240	2870	30895	30800
677	229	30MAR81	64		9+30	12+35	200+00	200+00	35	65	0	0	0	- 15.0	- 25.0	0.	300	305	3050	30595	37278
678	230	31MAR81	64		12+35	14+40	200+00	200+00	55	45	0	0	0	- 11.0	- 25.0	0.	230	205	3425	30595	24448

(continued)

Table B2 (continued)

[illegible]
CONTRACT NO. 01-79-C-0135

CIR	DOR	DATE	CREW	CL	*STATION-CUT* START	STOP	DISPOSAL-FILL START	STOP	CHARACTER-OF-CUT-MATERIAL CLAY %	SAND %	SILT %	SHELL %	GRVL %	***CHANNEL*** AVERAGE DEPTH BEFORE MLW	AFTER MLW	***WORK-PERFORMED*** BANK CUT- FT	WIDTH CUT- FT	ADV. PD FT	FLOAT PIPE FT	SHORE PIPE FT	AMOUNT DREDGED CU-YDS
679	231	01APR81	64		14+40	15+65	196+00	200+00	70	30	0	0	0	- 10.0	- 24.0	0.	230	125	3425	30595	14907
680	232	02APR81	64		15+65	16+65	198+00	198+00	80	20	0	0	0	- 25.0		0.	125	150	1630	30595	14907
681	233	03APR81	64		2+50	3+35	198+00	198+00	80	20	0	0	0	- 24.0	- 36.0	0.	415	135	1425	30595	24900
682	234	04APR81	64		3+35	4+25	198+00	198+00	60	40	0	0	0	- 24.0	- 37.0	0.	415	40	1425	30595	7993
683	235	05APR81	64		4+25	6+00	198+00	198+00	65	35	0	0	0	- 24.0	- 37.0	0.	415	175	1425	30595	34968
684	236	06APR81	64		6+00	7+55	198+00	199+50	65	35	0	0	0	- 24.0	- 37.0	0.	415	155	1675	30595	30971
685	237	07APR81	64		7+55	10+15	199+00	201+50	75	25	0	0	0	- 24.0	- 37.0	0.	340	260	1975	30595	42563
686	238	08APR81	64		10+15	12+80	201+50	203+25	75	25	0	0	0	- 24.0	- 37.0	0.	300	265	2285	30595	35333
687	239	09APR81	64		12+80	15+05	203+25	203+30	75	25	0	0	0	- 24.0	- 37.0	0.	275	225	2520	30595	27500
688	240	10APR81	64		15+05	16+30	203+80	203+80	75	25	0	0	0	24.0	37.0	0.	255	350	2420	30595	25972
689	241	11APR81	64		9+75	6+10	203+80	203+80	95	5	0	0	0	- 37.0	- 43.0	0.	390	365	2520	30595	31633
690	242	12APR81	64		6+10	2+90	207+00		95	5	0	0	0	- 37.0	- 43.0	0.	390	320	2920	30595	27733
691	243	13APR81	64	W	1+70	0+90	209+00		95	5	0	0	0	38.0	43.0	0.	390	200	0	0	22534
692	244	14APR81	64	W	0+90		211+00	211+00	0	0	0	0	0			0.	0	0	0	0	0
693	245	15APR81	64	W	0+90		211+00	211+00	0	0	0	0	0			0.	0	0	0	0	0
694	246	16APR81	64	W	0+90		211+00	211+00	0	0	0	0	0			0.	0	0	0	0	0
695	247	17APR81	64	W	0+90		211+00	211+00	0	0	0	0	0			0.	0	0	0	0	0
696	248	18APR81	64	W	0+90		211+00	211+00	0	0	0	0	0			0.	0	0	0	0	0
697	249	19APR81	64	W	0+90	0+75	211+00	211+00	95	5	0	0	0	23.0	39.0	0.	290	15	2926	30595	3467
698	250	20APR81	64		001+10		211+00	211+00	99	0	0	0	0	19.0	36.0	0.	390	60	2920	11795	14733
699	251	21APR81	64		1+30	0+90	211+00	211+00	100	0	0	0	0	- 5.0	37.0	0.	390	115	3020	30595	30106
700	252	22APR81	64	W	0-60	- 1+20	211+00	211+00	100	0	0	0	0	- 22.0	- 39.0	0.	390	60	2020	30595	14733
701	253	23APR81	64	S	2+50	8+00	212+00		25	75	0	0	0	- 22.0	- 41.0	0.	200	150	3120	30595	21111
702	254	24APR81	64		9+75	9+10	213+00		80	20	0	0	0	39.0	44.0	0.	120	265	1405	30595	20606
703	255	25APR81	64	C	9+00	6+85	214+00	214+00	80	20	0	0	0	38.0	43.0	0.	450	215	1405	30595	17917
704	256	26APR81	64	C	6+85	3+85	214+00	214+50	50	50	0	0	0	37.0	43.0	0.	450	300	1405	30595	30000
705	257	27APR81	64	C	3+85	1+15	214+50	214+50	50	50	0	0	0	38.0	43.0	0.	515	270	2905	30595	25750
706	258	28APR81	64	C	1+15	0-30	215+00	215+00	50	50	0	0	0	37.0	43.0	0.	515	250	3405	30595	28611
707	259	29APR81	64	C	0-30	- 3+90	215+50	215+50	25	75	0	0	0			0.	375	360	3205	30595	25000
708	260	30APR81	64		1+80	3+35	218+00	218+00	100	0	0	0	0	32.0	43.0	0.	575	155	1605	30595	18489

(continued)

Table B2 (continued)

DREDGE OPERATIONS - JIM BEAN
CONTRACT NR. 01-72-C-0135

CIR	DOR	DATE	CREW	CL	*STATION-CUT* START	STOP	DISPOSAL-FILL START	STOP	CHARACTER-OF-CUT-MATERIAL CLAY %	SAND %	SILT %	SHELL %	GR/L %	***CHANNEL*** AVERAGE BEFORE MLW	DEPTH AFTER MLW	***WORK-PERFORMED*** BANK CUT- FT	WIDTH CUT- FT	ADV. FD FT	FLOAT PIPE FT	SHORE PIPE FT	AMOUNT DREDGED CU-YDS
709	261	01MAY81	64	E	5+25	4+[illegible]	218+00	218+[illegible]	[illegible]	[illegible]	[illegible]	0	0	37.0	43.0	0.	400	115	2005	30595	10222
710	262	02MAY81	64		006+50		218+50	218+50	100	0	0	0	0	38.0	43.0	0.	400	0	2005	30595	21851
711	263	03MAY81	64	E	7+45		218+50	218+50	100	0	0	0	0	37.0	43.0	0.	400	325	2405	30595	28889
712	264	04MAY81	64	E	10+70	14+00	221+50	221+50	100	0	0	0	0	37.0	43.0	0.	400	330	0	30595	24444
713	265	05MAY81	64		371+21	373+46	221+50	221+50	50	25	25	0	0	40.5	43.0	0.	220	509	1990	30595	24311
714	266	06MAY81	64		373+46	379+01	221+50	221+50	50	25	25	0	0	40.5	43.0	0.	400	555	2220	30595	3222
715	267	07MAY81	64		379+01	382+44	221+50	221+50	50	25	25	0	0	41.0	43.0	0.	400	472	2790	30595	6029
716	268	08MAY81	64		369+92	366+42	221+50	221+50	50	50	0	0	0	40.5	43.0	0.	400	350	34619	30595	5185
717	269	09MAY81	64		366+42	363+35	221+50	221+50	50	25	25	0	0	40.5	43.0	0.	200	307	0	30595	3411
718	270	10MAY81	64	S	251+75	251+90	221+50	221+50	15	85	0	0	0	20.0	35.0	0.	200	15	0	0	1667
719	271	11MAY81	64	S	251+90	252+80	222+25	222+25	15	85	0	0	0	20.0	35.0	0.	235	90	0	0	11750
720	272	12MAY81	64	S	252+80	255+10	236+00	236+00	85	15	0	0	0	20.0	35.0	0.	250	230	1895	16280	31944
721	273	13MAY81	64	S	255+10	257+10	225+00	225+00	100	0	0	0	0	20.0	35.0	0.	250	200	2095	16280	35185
722	274	14MAY81	64		257+10	258+70	226+75	226+75	100	0	0	0	0	20.0	35.0	0.	250	160	3195	15280	29630
723	275	15MAY81	64		258+70	260+40	227+50	227+50	35	0	0	15	0	20.0	35.0	0.	250	170	3160	15280	31481
724	276	16MAY81	64	S	260+40	262+70	227+50	227+75	90	10	0	0	0	20.0	35.0	0.	250	230	3160	15280	40464
725	277	17MAY81	64	S	262+70	265+55	229+00	228+00	99	0	0	0	0	20.0	35.0	0.	250	285	3360	15280	39583
726	278	18MAY81	64	S	265+55	267+15	231+00	231+00	80	0	0	20	0	16.0	35.0	0.	250	160	3560	15280	28280
727	279	19MAY81	64	S	267+15	268+30	233+00		80	0	0	20	0	14.0	35.0	0.	250	115	0	0	22955
728	280	20MAY81	64		268+30	269+93	235+00	235+00	70	20	0	10	0	- 14.0	- 35.0	0.	250	153	3960	15280	28333
729	281	21MAY81	64		269+93	271+49	237+00		70	20	0	10	0	- 19.0	- 34.0	0.	250	166	4060	15280	27666
730	282	22MAY81	64		263+50	264+29	237+00	237+00	70	30	0	0	0	- 1.0	- 25.0	0.	250	170	3760	15280	25073
731	283	23MAY81	64		264+29	264+80	240+00		70	30	0	0	0	- 1.0	- 27.0	0.	275	51	3760	15280	9916
732	284	24MAY81	64		264+80	265+68	241+00		70	30	0	0	0	- 1.0	- 27.0	0.	275	88	3125	15280	25415
733	285	25MAY81	64		265+68	266+73	243+00		70	30	0	0	0	- 2.0	- 25.0	0.	275	105	3125	15280	24597
734	286	26MAY81	64		266+73	267+89	245+00	245+00	70	30	0	0	0			0.	275	116	3125	15280	27174
735	287	27MAY81	64	N	267+89	268+90	246+30	246+30	80	20	0	0	0	- 3.0	- 25.0	0.	300	101	3125	15280	24689
736	288	28MAY81	64		263+00	267+95	246+30	248+50	80	20	0	0	0	0.0	- 23.0	0.	300	105	3405	15200	25667
737	289	29MAY81	64	N	269+95	270+60	249+50	249+50	0	0	0	0	0	0.0	- 24.0	0.	335	65	1505	17380	19336
738	290	30MAY81	64	N	270+60	271+75	250+30	250+30	70	30	0	0	0	- 20.0	- 30.0	0.	300	115	1705	17380	17250
739	291	31MAY81	64	N	271+75	272+40	252+30	252+30	60	40	0	0	0	- 20.0	- 34.0	0.	300	135	2305	17380	20083

(continued)

Table B2 (continued)

DREDGE OPERATIONS - JIM BEAN
CONTRACT NO. 01-79-C-0135

CIR	DOR	DATE	CREW	CL	*STATION-CUT* START	STOP	DISPOSAL-FILL START	STOP	CHARACTER-OF-CUT-MATERIAL CLAY %	SAND %	SILT %	SHELL %	GRVL %	***CHANNEL*** AVERAGE DEPTH BEFORE MLW	AFTER MLW	***WORK-PERFORMED*** BANK CUT- FT	WIDTH CUT- FT	ADV. PD FT	FLOAT PIPE FT	SHORE PIPE FT	AMOUNT DREDGED CU-YDS
740	292	01JUN81	64	S	273+10	274+50	254+30	254+30	0	[illegible]	0	0	0	- 22.0	- 35.0	0.	290	140	2305	17380	19548
741	293	02JUN81	64		274+50	276+65	254+30	254+30	0	100	0	0	0	- 23.0	- 34.0	0.	240	215	2305	17380	21022
742	294	03JUN81	64		276+65	279+30	254+30	256+00	50	50	0	0	0	- 21.0	- 35.0	0.	210	265	2805	17380	28856
743	295	04JUN81	64		279+30	280+90	257+00	257+00	50	20	0	0	0	- 23.0	- 35.0	0.	270	160	3105	17380	19200
744	296	05JUN81	64		280+90	282+00	257+00	257+00	100	0	0	0	0	- 22.5	- 35.0	0.	375	110	3205	16380	19097
745	297	06JUN81	64		282+00	283+20	257+00	257+00	100	0	0	0	0	- 23.0	- 35.0	0.	375	120	3405	16380	20000
746	298	07JUN81	64		283+20	284+65	257+00	258+00	100	0	0	0	0	- 22.5	- 35.0	0.	375	145	3405	16380	25174
747	299	08JUN81	64		284+65	285+85	257+30	257+30	50	50	0	0	0	- 21.0	- 35.0	0.	375	120	3605	16380	23333
748	300	09JUN81	64		285+85	287+90	257+30	259+00	70	30	0	0	0	- 26.0	- 35.0	0.	375	205	3705	15380	25625
749	301	10JUN81	64		286+50	287+15	261+50	261+50	40	60	0	0	0	- 35.0	- 42.0	0.	305	225	3805	15380	17792
750	302	11JUN81	64		287+15	271+70	263+00	263+00	15	85	0	0	0	- 30.0	- 43.0	0.	365	265	2005	15380	14813
751	303	12JUN81	64		271+70	274+55	264+50		20	80	0	0	0	- 23.2	- 35.0	0.	230	285	2005	15380	28665
752	304	13JUN81	64		274+55	277+55	266+50	266+50	0	[illegible]	0	0	0	- 21.0	- 35.0	0.	230	300	2005	15380	28111
753	305	14JUN81	64		270+65	271+10	267+30	267+30	30	70	0	0	0	- 35.0	- 43.0	0.	420	230	1805	14380	22935
754	306	15JUN81	64		271+10	272+70	268+00	268+00	10	90	0	0	0	- 35.0	- 43.0	0.	420	160	1805	14380	21404
755	307	16JUN81	64		272+70	274+80	280+00		30	70	0	0	0	- 35.0	- 43.0	0.	420	210	2105	13380	24500
756	308	17JUN81	64		274+80	277+60	291+00	291+00	10	90	0	0	0	- 35.0	- 42.0	0.	370	280	2305	13380	26859
757	309	18JUN81	64		277+60	279+10	290+00	289+50	10	90	0	0	0	- 35.0	- 42.0	0.	345	150	2355	13380	13417
758	310	19JUN81	64				289+50	289+50	0	0	0	0	0			0.	0	0	2355	13380	0
759	311	20JUN81	64		279+10	281+20	289+50	289+50	10	90	0	0	0	- 34.5	- 42.0	0.	320	210	2355	13380	9955
760	312	21JUN81	64		281+20	283+95	289+50	289+50	10	90	0	0	0	- 35.0	- 42.0	0.	320	275	2655	13380	13037
761	313	22JUN81	64		287+05	283+95	287+00		10	90	0	0	0	- 35.0	- 42.0	0.	320	310	0	0	14696
762	314	23JUN81	64		287+05	287+00	285+00	285+00	10	90	0	0	0	- 35.0	- 42.0	0.	265	225	1755	11380	17263
763	315	24JUN81	64		252+15	255+30	283+50	283+50	90	10	0	0	0	- 26.0	- 35.0	0.	250	315	2055	11380	26250
764	316	25JUN81	65		255+30	258+75	283+50	283+50	100	0	0	0	0	- 26.0	- 35.0	0.	250	316	2355	11380	26250
765	317	26JUN81	65		258+75	262+08	283+50	283+50	100	0	0	0	0			0.	250	233	2655	11380	24666
766	318	27JUN81	65		262+08	265+25	283+00		65	35	0	0	0			0.	250	387	0	0	28666
767	319	28JUN81	65		265+25	267+50	282+00	282+00	65	35	0	0	0	- 27.0	- 35.0	0.	250	355	1195	11380	26296
768	320	29JUN81	65		267+50	270+60	280+75	280+75	65	35	0	0	0	- 25.0	- 35.0	0.	390	295	2155	11380	23163
769	321	30JUN81	65		251+65	253+30	280+75	280+75	65	35	0	0	0	- 35.0	- 42.0	0.	425	195	2555	11380	24556

(continued)

Table B2 (continued)

DREDGE OPERATIONS - [illegible]
CONTRACT NO. 11-79-C-0135

CIR	DOP	DATE	CREW	CL	*STATION-CUT* START	*STATION-CUT* STOP	DISPOSAL-FILL START	DISPOSAL-FILL STOP	CHARACTS-OF-CUT-MATERIAL CLAY %	SAND %	SILT %	SHELL %	GRVL %	***CHANNEL*** AVERAGE DEPTH BEFORE MLW	AVERAGE DEPTH AFTER MLW	***WORK-PERFORMED*** BANK CUT- FT	WIDTH CUT- FT	ADV. PD FT	FLOAT PIPE FT	SHORE PIPE FT	AMOUNT DREDGED CU-YDS
770	322	01JUL81	65		253+90	256+85	279+00	279+00	65	35	0	0	0	- 35.0	- 42.0	0.	400	305	0	0	31630
771	323	02JUL81	65		256+85	260+30	278+50	278+50	65	35	0	0	0	- 35.0	- 42.5	0.	400	345	3325	11500	38333
772	324	03JUL81	65		260+30	262+05	278+00	278+00	65	35	0	0	0	- 35.0	- 42.5	0.	400	235	3525	11500	26111
773	325	04JUL81	65		262+65	265+05	278+00	278+00	65	35	0	0	0	- 35.0	- 43.0	0.	400	240	3825	11500	24889
774	326	05JUL81	65		265+05	268+20	286+50	286+50	65	35	0	0	0	- 35.0	- 42.0	0.	400	315	3825	11500	32667
775	327	06JUL81	65		268+20	272+60	286+50	286+50	65	35	0	0	0	- 35.0	- 42.0	0.	400	240	3925	11500	21333
776	328	07JUL81	65		250+60	252+30	286+25	286+25	100	0	0	0	0	15.0	26.0	0.	300	170	2725	11500	20778
777	329	08JUL81	65		252+30	253+05	285+40	285+40	75	0	0	25	0	5.0	30.0	0.	300	175	2625	11500	20833
778	330	09JUL81	65		253+05	254+20	285+10	285+10	75	0	0	25	0			0.	300	115	2625	11500	26833
779	331	10JUL81	65		254+20	255+70	285+00	285+00	75	0	0	25	0	10.0	30.0	0.	300	150	2625	11500	33333
780	332	11JUL81	65		240+00	241+10	284+75	284+75	0	0	0	0	****	33.0	42.0	0.	180	240	2925	11500	21854
781	333	12JUL81	65		242+15	245+35	284+50	284+50	75	0	0	25	0	32.0	42.0	0.	200	320	2725	11500	23650
782	334	13JUL81	65		240+60	243+50	286+50	286+50	90	10	0	0	0	27.0	42.0	0.	140	290	2725	11500	22555
783	335	14JUL81	65		243+50	246+15	286+25	286+25	90	10	0	0	0	30.0	42.0	0.	248	265	2725	11500	29288
784	336	15JUL81	65		246+15	248+25	285+80	285+80	90	10	0	0	0	30.0	43.0	0.	300	210	2725	11500	30333
785	337	16JUL81	65		248+25	250+40	285+35	285+35	90	10	0	0	0	30.0	43.3	0.	300	215	2725	11500	31772
786	338	17JUL81	65		250+40	252+10	284+90	284+90	90	10	0	0	0	26.5	42.0	0.	310	170	3025	11500	30254
787	339	18JUL81	65		252+10	253+50	284+90	284+90	85	0	0	15	0	29.5	44.0	0.	320	140	3025	11500	24059
788	340	19JUL81	65		253+50	255+20	284+90	284+50	95	0	0	5	0	30.0	43.0	0.	300	170	3025	11500	24556
789	341	20JUL81	65		255+20	256+90	284+50	284+10	90	10	0	0	0	30.0	42.0	0.	300	170	3125	11500	28333
790	342	21JUL81	65		740+00	240+45	290+00	283+85	90	10	0	0	0	40.0	42.0	0.	400	165	2525	11500	11213
791	343	22JUL81	65		240+45	249+15	283+70	283+70	90	10	0	0	0	39.5	42.0	0.	400	870	2525	11500	32222
792	344	23JUL81	65		255+00	255+45	283+35	283+35	90	10	0	0	0	35.0	42.0	0.	50	45	3125	7350	0
793	345	24JUL81	65	C	127+95	129+90	283+15	283+15	90	10	0	0	0	25.0	35.0	0.	470	195	3125	7350	33944
794	346	25JUL81	65	C	129+90	131+55	283+00	283+00	95	5	0	0	0			0.	470	165	3125	7350	31594
795	347	26JUL81	65	C	131+55	133+05	280+50	280+50	95	5	0	0	0	25.0	36.5	0.	470	150	3325	7350	30028
796	348	27JUL81	65	C	133+05	134+95	274+00	274+00	95	5	0	0	0	26.0	36.5	0.	470	190	3625	7350	25589
797	349	28JUL81	65	C	134+95	135+55	273+75	273+75	95	5	0	0	0	25.0	36.5	0.	470	110	2825	8400	21062
798	350	29JUL81	65	C	135+55	136+75	254+00	254+00	95	5	0	0	0	26.0	37.0	0.	470	120	2825	8400	22977
799	351	30JUL81	65	C	136+75	137+90	249+00	249+00	95	5	0	0	0	26.0	36.5	0.	470	115	3625	7350	29018
800	352	31JUL81	65	C	137+90	138+95	243+00	243+00	95	5	0	0	0	27.0	37.0	0.	470	105	3025	8400	18278

(continued)

Table B2 (concluded)

[illegible]
CONTRACT NO. 1-[illegible]-C-[illegible]

CIR	DOR	DATE	CREW	CL	*STATION-CUT* START	STOP	DISPOSAL-FILL START	STOP	CHARACTER-OF-CUT-MATERIAL CLAY %	SAND %	SILT %	SHELL %	GRAV %	***CHANNEL*** SURFACE DEPTH BEFORE MLW	AFTER MLW	***WORK-PERFORMED*** BANK CUT- FT	WIDTH CUT- FT	ADV. FT	FLOAT PIPE FT	SHORE PIPE FT	AMOUNT DREDGED CU-YDS
801	357	01AUG81	65	C	138+95	14[illegible]	241+[illegible]	241+[illegible]	95	5	[illegible]	[illegible]	0	27.0	37.0	0.	470	125	3325	8400	20889
802	354	02AUG81	65	C	14[illegible]+20	141+25	241+00	241+[illegible]	95	5	0	0	[illegible]	27.0	37.0	0.	470	105	3625	8400	18278
803	355	03AUG81	65	C	141+25	14[illegible]	241+[illegible]	241+[illegible]	95	5	[illegible]	0	0	27.0	37.0	0.	470	55	2625	8400	9574
804	356	04AUG81	65	C	141+[illegible]	141+80	250+[illegible]	250+[illegible]	0	[illegible]	[illegible]	0				0.	0	0	0	0	0
805	357	05AUG81	65	C	141+[illegible]	[illegible]	[illegible]	[illegible]	95	5	[illegible]	[illegible]	0	27.0	37.0	0.	470	20	2425	9450	4874
806	358	06AUG81	65	C	142+08	143+25	249+50	249+50	50	[illegible]	0	50	0	27.0	37.5	0.	470	117	2425	9450	21385
807	359	07AUG81	65	C	143+25	144+00	249+50	249+50	95	[illegible]	0	5	0	25.0	36.0	0.	470	75	3145	9450	14361
808	360	08AUG81	65	C	144+00	145+25	247+00	247+00	95	0	[illegible]	5	0	25.0	36.0	0.	470	125	3445	9450	23925
809	361	09AUG81	65	C	145+25	14[illegible]+75	24[illegible]	24[illegible]	85	0	0	15	0	25.0	36.0	0.	470	150	3445	9450	27416
810	362	10AUG81	65	C	146+75	14[illegible]	245+00	245+[illegible]	35	[illegible]	0	15	0	[illegible]	[illegible]	[illegible]	[illegible]	155	3795	9450	24283
811	363	11AUG81	65	C	148+[illegible]	14[illegible]	244+50	244+50	85	15	0	0	0	26.0	36.0	0.	470	150	3795	9450	26111
812	364	12AUG81	65	C	148+30	149+30	244+50	244+50	20	60	20	0	0	30.0	37.0	0.	470	110	3875	9450	13404
813	365	13AUG81	55	C	150+90	152+30	244+50	241+50	30	0	20	0	0	2[illegible].0	35.0	0.	470	185	3930	9490	20392
814	366	14AUG81	65	C	127+45	129+00	241+00	241+00	80	[illegible]	20	0	0	36.0	42.0	0.	410	155	4130	9490	14122
815	367	15AUG81	65	C	129+00	132+25	240+00	240+00	80	0	20	0	0	36.0	42.0	0.	410	325	4130	9490	29611
816	368	16AUG81	65	C	132+25	135+25	239+00	239+00	30	10	10	0	0	36.0	42.0	0.	410	300	3730	9490	27333
817	369	17AUG81	65	C	135+25	137+85	237+00	237+00	80	10	10	0	0	36.0	42.0	0.	410	260	3230	10500	23689
818	370	18AUG81	65	C	137+85	140+85	237+00	237+00	75	15	10	0	0	37.0	43.0	0.	410	250	0	0	22777
819	371	19AUG81	55	C	140+85	142+45	236+50	236+50	65	25	10	0	0	37.0	43.5	0.	410	210	2730	10540	20727
820	372	20AUG81	65		142+45	144+00	235+00	235+00	40	50	10	0	0	36.0	42.5	0.	410	155	2830	10540	15299
821	373	21AUG81	65		144+00	145+85	233+50	233+50	0	100	0	0	0	36.0	42.0	0.	410	185	3030	10540	16855
822	374	22AUG81	65		145+95	147+35	232+50	232+50	30	60	0	0	0	36.0	42.0	0.	410	150	3030	10540	13666
823	375	23AUG81	65		147+35	148+30	232+50	232+50	10	90	0	0	0	36.0	42.5	0.	410	145	3430	10540	14312
824	376	24AUG81	65		148+80	150+95	231+00	231+00	10	15	75	0	0	36.0	42.5	0.	410	215	3630	10540	10589
825	377	25AUG81	65		152+95	153+75	230+00	230+00	30	50	20	0	0	36.5	42.0	0.	450	230	3130	11670	27869
826	378	26AUG81	65		153+75	154+00	230+00	230+00	50	50	0	0	0	35.5	42.0	0.	410	224	3130	11670	20606
827	377	27AUG81	65		154+60	160+00	229+00	229+00	0	20	80	0	0	39.0	43.0	0.	410	540	3430	11670	32800
828	373	28AUG81	65		144+[illegible]	145+[illegible]	124+[illegible]	128+00	80	100	2	0	0	33.0	42.0	0.	90	110	3430	11670	3667

Note: CIR - Contractors Inspection Report
DOR - Dredge Operation Report
CREW - Total Crew
CL - Center Line: S & N indicate work south or north of center line

Table B3

DREDGE OPERATIONS - DAVE BLACKBURN
CONTRACT NR. 11-77-C-0135

CIR	DOR	DATE	CREW	CL	*STATION-CUT* START	STOP	DISPOSAL-FILL START	STOP	CHARACTER-OF-CUT-MATERIAL CLAY %	SAND %	SILT %	SHELL %	GRVL %	***CHANNEL*** AVERAGE DEPTH BEFORE MLW	AFTER MLW	WORK-PERFORMED BANK CUT- FT	WIDTH CUT- FT	ADV. FT	FLOAT PIPE FT	SHORE PIPE FT	AMOUNT DREDGED CU-YDS
230	1	[illegible]JAN80	42	N	222+50	221+66	291+00	291+00	80	10	10	0	0	- 9.5	- 25.0	16.5	303	94	1730	9450	10596
231	2	09JAN80	42	N	221+66	220+11	291+00	291+00	80	10	10	0	0	- 8.5	- 25.0	16.5	303	155	1930	9450	27838
232	3	10JAN80	42	N	220+11	218+32	290+50	291+00	52	48	0	0	0	- 9.0	- 25.0	16.5	303	179	1930	9450	33312
233	4	11JAN80	42	N	218+32	216+40	291+00	291+50	52	49	0	0	0	- 9.0	- 25.0	16.0	303	177	2130	9450	31186
234	5	12JAN80	45	N	216+60	214+24	291+75	291+75	52	43	0	0	0	- 9.5	- 25.0	15.5	303	236	2380	9450	43818
235	6	13JAN80	45	N	214+24	213+50	231+00	231+00	52	48	0	0	0	- 9.0	- 25.0	15.5	303	74	2380	9450	0
236	7	14JAN80	45	S	263+50	264+50	231+00	231+00	93	7	0	0	0	- 1.5	- 25.0	15.5	303	120	2230	16800	12477
237	8	15JAN80	45	S	264+50	264+81	231+00	231+00	93	7	0	0	0	- 2.5	- 25.0	23.5	303	31	2280	16800	9021
238	9	16JAN80	45	S	264+81	265+81	231+00	231+00	93	7	0	0	0	- 2.5	- 30.0	27.5	288	100	2280	16800	26905
239	10	17JAN80	45	S	265+81	266+27	231+00	231+00	92	7	0	0	0	- 2.5	- 30.0	27.5	288	46	2580	16800	12756
240	11	18JAN80	45	S	266+27	266+27	231+00	231+00	0	0	0	0	0			0.	0	0	0	0	0
241	12	19JAN80	45	S	266+27	266+27	231+00	231+00	0	0	0	0	0			0.	0	0	0	0	0
242	13	20JAN80	52	S	266+27	266+31	229+00	229+00	93	7	0	0	0	- 2.5	-20.0	17.5	288	4	2370	16800	896
243	14	21JAN80	52	S	266+31	267+43	229+00	229+00	93	7	0	0	0	- 2.5	-20.0	17.5	288	112	2470	16800	25086
244	15	22JAN80	52	S	267+43	268+29	228+00	228+00	93	7	0	0	0	- 2.5	- 20.0	17.5	310	96	2870	16800	20228
245	16	23JAN80	52	S	268+29	269+29	228+50	228+50	93	7	0	0	0	- 2.5	- 20.0	17.5	310	100	3170	16800	23620
246	17	24JAN80	52	S	269+29	269+93	228+50	228+50	93	7	0	0	0	- 2.5	- 20.0	17.5	310	64	3170	16800	15117
247	18	25JAN80	48	S	269+93	270+27	224+50	224+50	33	67	0	0	0	- 2.5	- 20.0	18.5	310	34	2920	17850	8198
248	19	26JAN80	48	S	270+27	271+08	224+25	224+25	33	67	0	0	0	- 1.0	- 20.0	19.0	310	81	2920	17850	19634
249	20	27JAN80	48	S	271+08	271+37	224+00	224+00	33	67	0	0	0	- 2.5	- 20.0	19.0	310	79	3120	17850	19150
250	21	28JAN80	48	S	271+37	272+34	224+00	224+00	33	67	0	0	0	- 2.5	- 20.0	19.0	310	47	3120	17850	11393
251	22	29JAN80	48	S	272+34	272+79	221+00	221+00	57	67	0	0	0	- 1.0	- 20.0	19.0	310	45	3120	17850	11035
252	23	30JAN80	48	S	272+79	273+74	221+00	221+00	33	67	0	0	0	- 1.0	- 20.0	19.0	310	25	3620	17850	23446
253	24	31JAN80	48	S	273+74	274+42	220+00	220+00	59	41	0	0	0	- 1.0	- 20.0	19.0	310	68	3620	17850	16728

(continued)

Table B3 (continued)

DREDGE OPERATIONS - DAVE BLACKBURN
CONTRACT NR. [illegible]-79-C-0155

CIR	DOR	DATE	CREW	CL	*STATION-CUT* START	STOP	DISPOSAL-FILL START	STOP	CHARACTER-OF-CUT-MATERIAL CLAY %	SAND %	SILT %	SHELL %	GRVL %	***CHANNEL*** AVERAGE BEFORE MLW	DEPTH AFTER MLW	BANK CUT-FT	****WORK-PERFORMED**** WIDTH CUT-FT	ADV. PD FT	FLOAT PIPE FT	SHORE PIPE FT	AMOUNT DREDGED CU-YDS
254	25	01FEB80	55	S	274+42	275+13	219+50	219+50	59	41	0	0	0	- 1.0	- 20.0	19.0	310	71	3770	17950	17338
255	26	02FEB80	55	S	275+13	275+97	219+00	219+00	59	41	0	0	0	- 1.0	- 20.0	19.0	310	84	3770	17850	20025
256	27	03FEB80	55	S	275+97	276+73	218+50	218+50	59	41	0	0	0	- 1.0	- 20.0	19.0	310	76	3920	17850	17593
257	28	04FEB80	55	S	276+73	277+27	218+00	218+00	59	41	0	0	0	- 1.0	- 20.0	19.0	280	54	3520	18900	12579
258	29	05FEB80	55	S	277+27	278+02	217+50	217+50	59	41	0	0	0	- 1.0	- 20.0	19.0	280	75	3720	18900	18833
259	30	06FEB80	47	S	278+02	278+74	217+00	217+00	59	41	0	0	0	- 0.5	- 20.0	19.5	278	72	3720	18900	16913
260	31	07FEB80	47	S	278+74	279+33	216+50	216+50	59	41	0	0	0	- 0.5	- 20.0	19.5	288	59	3720	18900	13859
261	32	08FEB80	47	S	279+33	280+19	216+00	216+00	59	41	0	0	0	- 0.5	- 20.0	19.5	288	86	3720	18900	18559
262	33	09FEB80	47	S	280+19	281+20	215+50	215+50	35	65	0	0	0	- 0.5	- 20.0	19.5	223	101	4020	18900	14007
263	34	10FEB80	47	S	281+20	282+33	215+00	215+00	35	65	0	0	0	- 10.0	- 20.0	19.5	288	113	4020	18900	12284
264	35	11FEB80	47	S	282+33	283+60	214+50	214+50	35	65	0	0	0	- 10.0	- 20.0	19.0	223	127	4020	18900	18223
265	36	12FEB80	49	S	283+60	284+07	214+50	214+50	35	65	0	0	0	- 10.0	- 20.0	19.5	223	57	4420	18900	8129
266	37	13FEB80	49	N	272+00	273+14	213+00	213+00	70	3	27	0	0	- 1.0	- 20.0	19.0	288	114	3720	18900	14182
267	38	14FEB80	49	N	273+14	274+23	211+50	211+50	70	3	27	0	0	- 0.7	- 20.0	19.5	400	109	3720	18900	19332
268	39	15FEB80	48	N	274+23	274+68	210+00	210+00	70	3	27	0	0	- 0.7	- 20.0	19.3	400	45	3720	18900	17687
269	40	16FEB80	48	N	274+68	275+55	208+50	208+50	59	41	0	0	0	- 0.7	- 20.0	19.3	235	87	3920	18900	44567
270	41	17FEB80	48	N	275+55	276+68	207+00	207+00	59	41	0	0	0	- 0.7	- 20.0	19.3	235	113	3920	18900	18827
271	42	18FEB80	48	N	276+68	277+98	205+50	205+50	59	41	0	0	0	- 0.7	- 20.0	19.3	213	130	3920	18900	19236
272	43	19FEB80	48	N	277+98	279+30	205+50	205+50	59	41	0	0	0	0.7	- 20.0	19.3	213	132	3570	19950	17638
273	44	20FEB80	48	N	279+30	280+97	205+00	205+00	35	65	0	0	0	- 10.0	- 20.0	13.0	213	167	3570	19950	22676
274	45	21FEB80	48	N	280+97	283+08	204+50	204+50	35	65	0	0	0	6.0	- 20.0	14.6	213	211	3770	19950	20144
275	46	22FEB80	48	N	283+08	284+25	204+00	204+00	0	0	0	0	0	- 22.0	- 28.0	6.0	213	117	3770	19950	13322
276	47	23FEB80	48	S	283+41	285+41	284+06	203+50	0	0	0	0	0	- 2.0	- 28.0	18.0	213	200	3770	19950	20178
277	48	24FEB80	48	S	285+41	286+27	203+00	203+00	99	0	1	0	0	- 5.0	- 27.0	22.0	213	86	3870	19950	15425
278	49	25FEB80	48	S	286+27	206+47	201+37	256+47	99	0	1	0	0	- 5.0	- 27.0	22.0	213	20	3870	19950	8328
279	50	26FEB80	48	S	256+97	286+69	286+47	261+75	99	0	1	0	0	- 1.0	- 25.0	24.0	213	22	1700	15750	4204
280	51	27FEB80	48	S	286+69	288+13	253+50	253+50	99	0	1	0	0	- 1.0	- 25.0	24.0	213	144	1800	15750	29039
281	52	28FEB80	48	S	288+13	289+06	254+00	254+00	99	0	1	0	0	- 5.0	- 25.0	24.0	213	93	1900	15750	15737
282	53	29FEB80	51	S	[illegible]	290+49	255+00	255+00	99	0	1	0	0	- 5.0	- 25.0	24.0	213	143	2000	15750	22212

(continued)

Table B3 (continued)

DREDGE OPERATOR NO - DAVE BLACKBURN
[illegible] - 79 - C - [illegible]

CUT NO		DATE	CREW	CL	STATION-CUT START	STATION-CUT STOP	DISPOSAL-FILL START	DISPOSAL-FILL STOP	CLAY %	SAND %	SILT %	SHELL %	GRAVEL %	CHANNEL AVERAGE DEPTH BEFORE DRDG	CHANNEL DEPTH AFTER DRDG	DEPTH CUT FT	WIDTH CUT FT	AVG. [illegible] FT	FLOAT PIPE FT	SHORE PIPE FT	AMOUNT DREDGED CU-YDS
283	[illegible]	[illegible]	51	S	290+49	291+62	255+50	255+50	54	8	38	0	0	- 5.0	- 25.0	20.0	213	119	2100	15750	19132
284	55	[illegible]MAR80	51	S	291+62	292+79	255+00	255+00	54	8	38	0	0	- 5.0	- 25.0	20.0	213	132	2300	15730	23143
285	56	[illegible]MAR80	51	S	292+99	294+30	256+50	256+50	54	8	38	0	0	- 5.0	- 25.0	20.0	213	131	2200	15730	22398
286	57	[illegible]	51	S	[illegible]	295+77	257+00	257+00	54	[illegible]	38	0	0	- 5.0	- 25.0	20.0	213	147	2200	15730	27181
287	59	[illegible]	51	S	295+77	296+87	257+50	257+50	54	8	38	0	0	- 5.0	- 25.0	20.0	213	110	2300	15730	21472
288	[illegible]	[illegible]MAR80	51	S	296+87	[illegible]+62	258+00	258+[illegible]	54	[illegible]	[illegible]	0	0	- 5.0	- 25.0	20.0	213	155	2680	15750	31890
289	60	7MAR80	50	S	298+42	299+93	258+50	258+50	54	3	38	0	0	- 5.0	- 25.0	20.0	213	150	2730	15750	32095
290	61	[illegible]MAR80	50	S	299+98	301+54	259+00	259+00	54	8	38	0	0	- 5.0	- 25.0	20.0	213	156	2880	15750	35389
291	62	[illegible]MAR80	50	S	301+54	302+65	259+50	259+50	55	8	37	0	0	- 5.0	- 25.0	20.0	213	111	3530	15750	25625
292	63	10MAR80	50	S	302+65	303+85	260+00	260+00	55	8	37	0	0	- 5.0	- 25.0	20.0	268	120	3730	15750	30833
293	64	11MAR80	50	S	303+25	304+75	[illegible]+50	[illegible]+50	55	8	37	0	0	- 5.0	- 25.0	20.0	[illegible]	90	3830	15750	23920
294	[illegible]	12MAR80	50	S	304+75	305+60	270+00	270+00	55	8	37	0	0	- 5.0	- 25.0	20.0	268	85	3930	15750	22591
295	65	13MAR80	50	S	305+60	305+95	270+50	270+50	30	35	35	0	0	+ 2.0	- 25.0	27.0	213	35	4130	15750	9394
296	67	14MAR80	50	S	305+95	306+89	262+50	262+50	30	35	35	0	0	+ 2.0	- 25.0	28.0	213	94	4230	15750	26605
297	63	15MAR80	49	S	306+89	307+20	263+00	263+00	62	13	0	0	0	14.5	- 25.0	14.0	167	31	2130	15750	15663
297	63	15MAR80	49	S	286+20	286+92	263+00	263+00	82	18	0	0	0	+ 4.5	- 25.0	29.5	167	72	2130	15750	10463
298	69	16MAR80	49	S	286+92	289+32	263+50	263+00	82	18	0	0	0	- 25.0	- 39.0	13.0	167	240	2430	15750	20338
299	70	17MAR80	49	S	289+32	291+31	264+00	264+00	82	18	0	0	0	- 25.0	- 38.0	13.0	177	188	2530	15750	16863
300	71	18MAR80	49	S	291+31	295+03	264+50	264+50	50	50	0	0	0	- 25.0	- 34.0	9.0	172	372	2930	15750	22506
301	72	19MAR80	49	S	295+03	298+37	265+00	265+00	50	50	0	0	0	- 25.0	- 34.0	9.0	172	334	3630	15750	20207
302	73	20MAR80	49	N	298+37	301+67	268+00	268+00	50	50	0	0	0	- 25.0	- 34.0	9.0	172	330	3930	15750	19965
303	74	21MAR80	49	N	301+67	305+17	268+50	268+50	95	5	0	0	0	- 25.0	- 35.0	10.0	172	350	4280	15750	23345
304	75	22MAR80	43	N	305+17	307+26	269+00	269+00	31	59	10	0	0	- 25.0	- 34.0	9.0	172	209	4480	15750	15200
305	76	23MAR80	49	N	307+26	308+27	269+50	269+50	31	59	10	0	0	+ 7.0	- 25.0	32.0	250	101	4630	15750	29065
306	77	24MAR80	48	N	308+27	308+47	269+50	269+50	31	59	10	0	0	+ 7.0	- 25.0	32.0	240	20	4650	15750	5968
307	78	25MAR80	48	N	308+47	308+47	269+50	269+50	31	59	10	0	0	+ 7.0	- 25.0	0.	0	0	2400	17850	0
308	79	26MAR80	48	N	308+47	309+18	270+00	270+00	31	59	10	0	0	+ 8.0	- 24.0	32.0	0	71	2400	17850	20764
309	80	27MAR80	45	N	309+18	309+51	270+50	270+50	31	59	10	0	0	+ 8.0	- 26.0	34.0	240	63	2500	17850	20916
310	81	[illegible]	44	[illegible]	[illegible]	310+[illegible]	271+00	310+72	[illegible]	59	10	0	0	+ 8.0	- 25.0	33.0	240	51	2600	17850	17274
311	82	[illegible]	45	[illegible]	310+[illegible]	311+14	271+50	271+50	31	59	10	0	0	+ 8.0	- 24.0	32.0	240	86	2700	17850	28861
312	[illegible]	[illegible]MAR80	45	N	311+14	311+53	272+00	272+00	31	59	10	0	0	+ 8.0	- 25.0	33.0	240	45	2700	17850	21281
313	[illegible]	[illegible]MAR80	44	N	311+53	312+68	272+50	272+50	31	59	10	0	0	+ 8.0	- 24.0	32.0	240	25	2800	17850	25658

(continued)

Table B3 (continued)

[illegible] OPERATIONS - DAVE BLACKBURN
CONTRACT NO. [illegible]

CIP	[illegible]	DATE	[illegible]	CL	•STATION-CUT• START	STOP	DISPOSAL-FILL START	STOP	CHARACTER-OF-CUT-MATERIAL CLAY %	SAND %	SILT %	SHELL %	OTHER %	•••CHANNEL••• AVERAGE BEFORE MLW	DEPTH AFTER MLW	BANK CUT FT	••••WORK-PERFORMED•••• WIDTH CUT FT	ADV. DR FT	FLOAT PIPE FT	SHORE PIPE FT	AMOUNT DREDGED CU-YDS
314	[illegible]	[illegible]	45	N	312+[illegible]	313+[illegible]	274+00	274+00	31	59	10	0	0	+ 5.0	- 24.0	29.0	240	52	[illegible]	17850	16181
315	[illegible]	02APR80	45	N	313+[illegible]	314+[illegible]	274+50	274+[illegible]	31	59	10	0	0	+ 8.0	- 24.0	32.0	240	[illegible]	2900	17850	27290
316	[illegible]	[illegible]	45	N	314+[illegible]	314+84	275+00	275+[illegible]	[illegible]	20	[illegible]	0	0	+ [illegible].5	- 24.0	32.0	240	26	3050	17850	25475
317	88	04APR80	47	N	314+[illegible]	315+76	275+00	275+00	[illegible]	20	[illegible]	0	0	+ 8.5	- 23.[illegible]	31.[illegible]	240	24	3050	17850	29295
318	89	05APR80	47	N	315+76	316+[illegible]	275+00	275+[illegible]	[illegible]	[illegible]	[illegible]	0	0	+ 6.0	- 24.0	30.0	240	[illegible]	3150	17850	29790
319	90	06APR80	47	N	316+[illegible]	317+60	275+00	275+[illegible]	[illegible]	20	80	0	0	+ [illegible]	- 22.0	30.0	240	22	3250	17850	24533
320	91	07APR80	47	N	317+60	317+90	275+00	275+00	0	20	80	0	0	+ [illegible]	- 2[illegible].0	30.0	240	30	3350	17850	9000
321	92	08APR80	47	N	317+90	318+40	275+00	275+00	0	20	80	0	0	+ 5.0	- 25.0	30.0	240	50	3350	17850	13400
322	93	09APR80	47	N	318+[illegible]	319+00	275+00	275+[illegible]	0	20	80	0	0	+ 5.0	- 26.0	31.0	240	50	3450	17850	15022
32[illegible]	94	10APR80	47	N	319+[illegible]	319+[illegible]	274+50	274+50	0	20	80	0	0	+ [illegible]	- 24.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	29800
324	95	11APR80	45	N	319+[illegible]	320+25	274+50	274+50	0	20	80	0	0	- 11.0	- 23.0	[illegible]	240	55	3650	17850	11483
325	96	12APR80	46	N	320+25	321+00	274+50	274+50	0	20	80	0	0	- 10.0	- 21.0	27.0	240	75	3650	17850	17333
326	97	13APR80	45	N	321+00	321+55	274+00	274+[illegible]	0	20	80	0	0	+ 2.0	- 21.5	24.0	240	55	3650	17850	12467
327	98	14APR80	45	N	321+55	322+55	273+50	274+00	0	20	80	0	0	- 10.0	- 22.0	24.0	250	100	3750	17850	22222
328	99	15APR80	45	N	322+55	323+65	273+50	270+00	0	20	80	0	0	- 10.0	- 22.0	24.0	250	110	3850	17850	23426
329	100	16APR80	46	N	323+65	324+75	270+00	269+50	0	20	80	0	0	- 10.0	- 23.0	23.0	250	110	3600	17850	23426
330	101	17APR80	45	N	324+75	325+75	269+50	269+00	0	20	80	0	0		- 23.0	23.0	250	100	3600	17850	21296
331	102	18APR80	53	N	325+75	327+86	268+50	268+50	0	20	80	0	0	- 2.0	- 23.0	2[illegible].0	240	211	3600	17850	39167
332	103	19APR80	53	N	327+86	329+38	268+50	269+50	0	20	[illegible]	0	0	+ 2.5	- 22.0	21.0	240	152	3750	17850	34620
333	104	20APR80	53	N	32[illegible]+[illegible]	330+31	267+50	267+50	21	72	7	0	0	+ 1.0	- 22.0	23.0	240	93	3400	17850	23982
334	105	21APR80	53	N	330+31	330+93	267+00	267+00	21	72	7	0	0	+ 2.0	- 21.0	23.0	275	62	3550	17850	16461
335	106	22APR80	53	N	330+93	331+60	266+50	266+50	21	72	7	0	0	+ 2.[illegible]	- [illegible]	23.[illegible]	2[illegible]	67	3750	17850	16841
335	107	23APR80	53	N	306+50	308+34			21	72	7	0	0			0.	177	184	1550	17850	12254
336	[illegible]	23APR80	53	N	331+60	331+98	266+00	266+00	21	72	7	0	0	- [illegible]	- [illegible]	[illegible]	177	[illegible]	1550	17850	14481
337	[illegible]	[illegible]	53	N	308+34	311+[illegible]	256+50	256+00	31	59	10	0	0	- 25.0	- 34.0	9.0	177	325	1950	17850	20039
338	[illegible]	25APR80	52	N	311+50	314+34	254+00	254+00	31	59	10	0	0	- 25.0	- 34.0	9.0	177	295	2450	17850	21594
339	110	26APR80	45	S	314+34		254+00	254+00	0	0	0	0	0			0.	0	0	2865	17850	0
340	111	27APR80	42	S	314+34		254+00	254+00	0	0	0	0	0			0.	0	0	2865	17850	0
341	[illegible]	[illegible]	42	S	[illegible]+[illegible]	[illegible]	[illegible]	25[illegible]	31	59	10	0	0	- 24.0	- 34.0	[illegible].0	177	[illegible]	2865	17850	14354
342	[illegible]	[illegible]	42	S	314+[illegible]	[illegible]	253+00	25[illegible]	31	59	10	0	0	- 25.0	- 35.0	11.0	177	[illegible]	3065	17850	21388
343	114	[illegible]	42	S	317+[illegible]	[illegible]	250+50	25[illegible]	31	59	10	0	0	- 23.0	- 33.0	10.0	177	303	3565	17850	20873

(continued)

Table B3 (continued)

DREDGE OPERATIONS - DAVE [illegible]
CONTRACT NR. [illegible]1-79-C-0175

CIR	DOR	DATE	CREW	CL	*STATION-CUT* START	STOP	DISPOSAL-FILL START	STOP	CHARACTER-OF-CUT-MATERIAL CLAY %	SAND %	SILT %	SHELL %	GRVL %	***CHANNEL*** AVERAGE BEFORE MLW	DEPTH AFTER MLW	BANK CUT- FT	***WORK-PERFORMED*** WIDTH CUT- FT	ADV. PD FT	FLOAT PIPE FT	SHORE PIPE FT	AMOUNT DREDGED CU-YDS
344	115	01MAY80	48	N	320+23	322+55	250+00	250+00	20	0	80	0	0	- 24.0	- 33.0	9.0	177	152	3765	17850	9990
345	116	02MAY80	48	S	322+55	325+42	249+50	249+50	20	0	80	0	0	- 23.0	- 33.0	10.0	177	287	4115	17850	19824
346	117	03MAY80	45	S	325+42	327+90	249+00	249+00	20	0	80	0	0	- 23.0	- 33.0	10.0	177	248	4265	18900	17130
347	118	04MAY80	48	N	327+90	330+40	248+50	248+50	20	0	80	0	0	- 22.0	- 32.0	10.0	177	250	5065	18900	23497
348	119	05MAY80	48	N	330+40	331+61	243+00	243+00	20	0	80	0	0	- 21.0	- 33.0	12.0	177	181	3115	21000	14144
349	120	06MAY80	48	N	331+61	332+43	242+00	242+50	72	14	14	0	0	- 1.0	- 25.0	24.0	302	82	3315	21000	24675
350	121	07MAY80	48	N	332+43	332+98	243+00	242+00	72	14	14	0	0		- 23.0	23.0	302	55	3815	21000	15369
351	122	08MAY80	48	N	332+98	333+71	241+50	241+50	72	14	14	0	0	+ 4.0	- 26.0	30.0	302	73	3815	21000	27639
352	123	09MAY80	48	S	333+71	334+43	241+00	341+00	72	14	14	0	0	+ 3.0	- 23.0	26.0	302	72	3715	21000	25872
353	124	10MAY80	48	S	334+46	335+05	240+50	240+50	72	14	14	0	0	+ 3.0	27.0	27.0	302	59	3815	21000	21337
354	125	11MAY80	49	S	335+05	335+55	240+00	240+00	72	14	14	0	0	+ 4.0	- 23.0	27.0	302	50	4215	21000	18495
355	126	12MAY80	49	S	335+55	336+46	238+00	238+00	72	14	14	0	0	+ 3.0	- 23.0	26.0	302	91	4315	21000	24828
356	127	13MAY80	49	S	336+46	338+09	237+50	237+50	72	14	14	0	0	+ 2.0	- 23.0	25.0	302	163	4615	21000	22031
357	128	14MAY80	49	S	338+09	339+29	237+00	237+00	72	14	14	0	0	+ 1.0	- 24.0	25.0	302	120	4715	21000	20378
358	129	15MAY80	49	S	339+29	340+10	236+50	236+50	72	14	14	0	0	+ 1.0	- 23.0	24.0	302	81	4915	21000	20700
359	130	16MAY80	49	S	340+10	341+10	236+00	236+00	72	14	14	0	0	+ 1.0	- 23.0	23.0	302	100	4915	21000	24609
360	131	17MAY80	51	N	341+10	341+73	235+50	235+50	62	27	11	0	0		- 23.0	23.0	302	63	5315	21000	18012
361	132	18MAY80	51	S	341+73	342+12	61+00	61+00	62	27	11	0	0	+ 1.0	- 24.0	24.0	302	39	5315	21000	11241
362	133	19MAY80	51	S	342+12	342+74	61+50	61+50	62	27	11	0	0	+ 1.0	- 27.0	27.0	302	62	3915	23100	18197
363	134	20MAY80	51	S	342+74	343+52	62+00	62+00	62	27	11	0	0		- 25.0	27.0	302	78	4215	23100	23507
364	135	21MAY80	51	N	343+52	344+67	62+50	62+50	62	27	11	0	0	- 2.0	- 25.0	27.0	302	115	4215	23100	32980
365	136	22MAY80	51	S	344+67	345+42	63+00	63+00	62	27	11	0	0	- 2.0	- 24.0	22.0	302	75	4315	23100	19404
366	137	23MAY80	51	S	345+42	346+18	63+50	63+50	62	27	11	0	0	- 2.0	- 24.5	22.5	302	76	4415	23100	20007
367	138	24MAY80	51	S	346+18	347+03	64+00	64+00	62	27	11	0	0	- 2.0	- 24.6	23.0	302	85	4515	23100	17710
368	139	25MAY80	51	S	347+03	348+13	64+50	64+50	62	27	11	0	0	- 1.0	- 24.0	25.0	302	110	4615	23100	19880
369	140	26MAY80	51	S	348+13	349+40	64+50	64+50	62	27	11	0	0	- 1.0	- 25.0	27.0	302	127	5115	23100	21548
370	141	27MAY80	51	N	349+40	350+70	64+50	64+50	62	27	11	0	0	- 1.0	- 24.0	25.0	287	130	3065	23100	19354
371	142	28MAY80	51	S	350+70	352+00	64+50	64+50	62	27	11	0	0	- 2.0	- 24.0	29.0	287	130	3065	23100	22260
372	143	29MAY80	51	S	352+00	353+25	64+50	64+50	62	27	11	0	0	- 2.0	- 26.0	26.0	287	125	3215	23100	24739
373	144	30MAY80	51	S	353+25	353+60	64+75	64+75	72	14	14	0	0	2.5	36.5	12.0	278	35	1265	23100	13649
374	145	31MAY80	51	[illegible]	331+40	[illegible]3+60	65+00	64+00	72	14	14	0	0	- 2.0	- 34.0	10.0	287	220	950	23100	27258

(continued)

Table B3 (continued)

DREDGE OPERATIONS - DAVE BLACKBURN
CONTRACT NO. 01-79-C-0145

					STATION-CUT		DISPOSAL-FILL		CHARACTER-OF-CUT-MATERIAL					***CHANNEL***		************WORK-PERFORMED************					
CIR	DOR	DATE	CREW	CL	START	STOP	START	STOP	CLAY %	SAND %	SILT %	SHELL %	GRVL %	AVERAGE DEPTH BEFORE MLW	AVERAGE DEPTH AFTER MLW	BANK CUT- FT	WIDTH CUT- FT	ADV. PD FT	FLOAT PIPE FT	SHORE PIPE FT	AMOUNT DREDGED CU-YDS
375	145	01JUN80	51	S	333+60	335+95	065+25		72	14	14	0	0	- 1.0	- 34.0	15.0	287	235	1665	23100	28234
376	147	02JUN80	51	S	335+95	338+55	065+50		72	14	14	0	0	- 1.0	- 36.0	12.0	287	240	1965	23100	25835
377	148	03JUN80	51	S	338+55	340+10	065+75		72	14	14	0	0	+ 0.5	- 36.0	12.0	287	155	1965	23100	17981
378	149	04JUN80	51	S	340+10	341+00	066+00		85	10	5	0	0	+ 0.5	- 34.0	11.5	287	0	3315	23100	8998
379	150	05JUN80	51	S	341+00	342+55	066+25		85	10	5	0	0	- 0.1	- 36.1	11.5	287	155	3465	23100	15546
380	151	06JUN80	51	S	342+55	344+20	66+25	66+25	85	10	5	0	0	- 2.0	- 36.0	14.0	287	145	3665	23100	17702
381	152	07JUN80	51	S	344+20	345+85	66+25	66+25	85	10	5	0	0	- 3.0	- 36.0	11.5	287	165	3865	23100	18058
382	153	08JUN80	51	S	345+85	347+00	67+00	67+00	85	10	5	0	0	- 2.0	- 35.0	11.5	287	115	4015	23100	10949
383	154	09JUN80	51	S	347+00	348+25	67+00	67+00	85	10	5	0	0	- 2.0	- 35.0	11.5	287	125	4015	23100	12580
384	155	10JUN80	51	S	348+25	348+50	67+50	67+50	85	10	5	0	0	- 2.4	- 35.0	11.5	255	25	3150	23100	2454
385	156	11JUN80	51	S	348+50	348+90	68+00	68+00	85	10	5	0	0	- 2.2	- 35.0	11.5	255	40	3300	23100	3927
386	157	12JUN80	51	S	348+90	350+00	68+50	68+50	85	10	5	0	0	- 2.3	- 35.0	11.0	255	110	3300	23100	11428
387	158	13JUN80	51	S	350+00	351+50	69+00	69+00	85	10	5	0	0	- 10.0	- 44.0	10.0	275	150	3400	23100	15278
388	159	14JUN80	51	S	351+50	353+60	71+00	71+00	85	10	5	0	0	- 10.0	- 44.0	10.0	275	210	3400	24150	21389
389	160	15JUN80	51	S	353+60	354+15	71+50	71+50	85	10	5	0	0	- 10.0	- 25.0	15.0	275	55	4365	24150	8403
390	161	16JUN80	51	S	354+15	355+65	72+00	72+00	50	30	20	0	0	- 10.0	- 25.0	10.0	280	150	4365	24150	21982
391	162	17JUN80	51	S	355+65	357+40	73+00	73+00	50	30	20	0	0	- 10.0	- 25.0	15.0	280	175	4365	24150	25577
392	163	18JUN80	51	S	357+40	358+50	63+00		50	30	20	0	0	- 10.0	- 25.0	15.0	280	110	1615	26250	15931
393	164	19JUN80	51	S	358+50	359+70	64+00	64+00	50	45	5	0	0	- 10.0	- 25.0	15.0	280	120	2515	26250	17192
394	165	20JUN80	51	S	359+70	361+05	65+00	65+00	85	10	5	0	0	- 10.0	- 25.0	15.0	280	135	2465	26250	19230
395	166	21JUN80	51	S	361+05	362+25	65+50	65+50	85	10	5	0	0	- 10.0	- 24.0	14.0	250	120	2865	26250	16442
396	167	22JUN80	51	S	362+25	363+85	76+00	76+00	85	10	5	0	0	- 13.5	- 25.0	13.5	250	160	2965	26250	21364
397	168	23JUN80	51	S	363+85	365+35	76+50	76+50	85	10	5	0	0	- 15.0	- 26.0	15.0	250	150	3265	26250	21730
398	169	24JUN80	51	S	365+35	366+90	77+00	77+00	85	10	5	0	0	- 10.0	- 25.0	15.0	250	145	3365	26250	21663
399	170	25JUN80	51	S	366+90	367+25	77+00	77+00	85	10	5	0	0	- 15.1	- 25.1	15.0	250	45	3465	26250	6635
400	171	26JUN80	51	S	367+25	368+60	77+00	77+00	85	10	5	0	0	- 10.0	- 24.0	14.0	250	135	3565	26250	18535
401	172	27JUN80	51	S	368+60	368+70	77+00	77+00	85	10	5	0	0	- 10.0	- 24.0	14.0	250	10	3565	26250	1150
402	173	28JUN80	51	S	368+70	370+35	77+00	77+00	30	60	10	0	0	- 11.5	- 24.0	14.0	250	165	4015	26250	19861
403	174	29JUN80	51	S	370+35	371+75	77+00	77+00	30	60	10	0	0	- 11.5	- 24.0	12.5	260	140	4165	26250	17503
404	175	30JUN80	51	S	371+75	372+40	77+50	77+50	20	60	5	15	0	- 12.5	- 24.0	11.5	260	65	4265	26250	8005

(continued)

Table B3 (continued)

DREDGE OPERATIONS - DAVE BLACKBURN
CONTRACT NO. 01-79-C-0135

CIR	DOR	DATE	CREW	CL	*STATION-CUT* START	*STATION-CUT* STOP	DISPOSAL-FILL START	DISPOSAL-FILL STOP	CHARACTER-OF-CUT-MATERIAL CLAY %	SAND %	SILT %	SHELL %	GRVL %	***CHANNEL*** AVERAGE DEPTH BEFORE MLW	AVERAGE DEPTH AFTER MLW	***WORK-PERFORMED*** BANK CUT- FT	WIDTH CUT- FT	ADV. PD FT	FLOAT PIPE FT	SHORE PIPE FT	AMOUNT DREDGED CU-YDS
405	175	01JUL80	51	S	372+40	372+95	78+00	78+[illegible]	[illegible]	10	5	0	0	11.0	24.0	0.	260	95	1315	26250	10113
406	177	02JUL80	51	S	353+55	356+55	73+50	78+50	85	10	5	0	0	- 25.0	- 35.0	10.0	220	300	2665	26250	26879
407	178	03JUL80	51	S	356+55	359+20	79+00	79+00	85	10	5	0	0	- 25.0	- 35.0	10.0	240	255	2915	26250	24986
408	179	04JUL80	51	S	359+20	362+00	80+50	80+50	85	10	5	0	0	- 25.0	- 35.0	10.0	240	280	2700	26250	24889
409	180	05JUL80	51	S	362+00	364+00	80+50	80+50	55	10	5	0	0	- 25.0	- 35.0	10.0	240	200	3465	26250	17453
410	181	06JUL80	51	S	364+00	365+70	81+00	81+00	80	5	5	10	0	- 25.0	- 34.0	10.0	240	170	3465	26250	13450
411	182	07JUL80	51	S	365+70	367+95	81+50	81+50	75	10	5	10	0	- 25.0	- 35.0	10.0	240	225	3565	26250	18[illegible]3
412	183	08JUL80	51	S	367+95	369+75	82+50	82+50	75	10	5	10	0	- 25.0	- 35.0	10.0	240	190	3765	26250	16235
413	184	09JUL80	51	S	369+75	370+50	83+00	83+00	95	10	5	0	0	-11.0	23.0	12.0	240	135	1415	26250	10860
414	185	10JUL80	51	N	349+30	351+00	83+50	83+50	85	10	5	0	0	- 14.0	- 25.0	11.0	205	170	1515	26250	11081
415	186	11JUL80	51	N	351+00	352+75	83+50	83+50	85	10	5	0	0	- 13.0	- 25.0	12.0	140	175	1915	26250	12445
416	187	12JUL80	51	N	352+75	354+15	84+00	84+00	85	10	5	0	0	- 12.0	- 27.0	15.0	160	140	2015	26250	12444
417	188	13JUL80	51	N	354+15	355+60	84+00	84+00	35	10	5	0	0	- 12.0	- 26.0	14.9	80	145	2115	26250	6015
418	189	14JUL80	51	N	355+60	356+40	84+00	84+00	85	10	5	0	0	- 9.0	- 25.0	16.0	160	80	2115	26250	3793
419	190	15JUL80	51	N	356+40	357+50	84+50	84+50	85	10	5	0	0	- 10.0	- 27.0	17.0	80	110	2215	26250	5540
420	191	16JUL80	51	N	357+50	359+10	84+50	84+50	85	10	5	0	0	- 10.0	- 25.0	17.0	160	75	2315	26250	7253
421	192	17JUL80	51	N	359+10	359+85	85+00	85+00	85	10	5	0	0	- 10.0	- 26.0	17.0	160	75	2950	26250	3667
422	193	18JUL80	51	N					0	0	0	0	0			16.0	160	0	2950	26250	0
423	194	19JUL80	51	N					0	0	0	0	0			16.0	160	0	2950	26250	0
424	195	20JUL80	51	N					0	0	0	0	0			16.0	160	0	2950	26250	0
425	196	21JUL80	51	N	359+85	360+40	85+00	85+00	85	10	5	0	0	- 10.0	- 26.0	9.5	160	55	2950	26250	2770
426	197	22JUL80	51	N	360+40	362+05	85+00	85+00	85	10	5	0	0	- 10.0	- 26.0	16.0	80	165	2915	26250	7822
427	198	23JUL80	51	N	362+05	363+90	85+50	85+50	35	10	5	0	0	- 10.0	- 26.0	16.0	80	1[illegible]5	2915	26250	8770
428	199	24JUL80	51	N	363+90	365+20	86+00	86+00	85	10	5	0	0	- 10.0	- 25.0	15.0	80	180	3315	27300	5778
429	200	25JUL80	51	N	365+20	366+65	86+25	86+25	85	10	5	0	0	- 10.0	- 24.0	14.0	80	145	3415	27300	6015
430	201	26JUL80	51	N	366+65	367+75	86+25	86+50	85	10	5	0	0	- 10.0	- 24.0	14.0	80	110	3515	27300	4563
431	202	27JUL80	51	N	367+75	370+50	86+75	86+75	85	10	5	0	0	- 10.0	- 24.0	14.0	160	275	3515	27300	22815
432	203	28JUL80	51	N	370+50	373+10	87+00	87+00	85	10	5	0	0	- 11.0	- 25.0	14.0	160	250	3815	27300	21570
433	204	29JUL80	51	N	373+10	374+80	87+00	87+00	35	50	5	10	0	- 12.0	- 24.0	12.0	235	170	3915	28350	17755
434	205	30JUL80	51	N	374+80	376+10	87+50	87+50	85	10	5	0	0	- 12.0	- 24.0	12.0	235	130	4015	28350	13578
435	206	31JUL80	51	N	376+10	377+50	88+00	88+00	35	[illegible]	5	10	0	- 12.0	- 24.0	12.0	260	150	4215	28350	17333

(continued)

Table B3 (continued)

DREDGE OPERATIONS - DAVE BLACKBURN
CONTRACT NO. [illegible]

CIR	DOR	DATE	CREW	CL	*STATION-CUT* START	STOP	DISPOSAL-FILL START	STOP	CHARACTER-OF-CUT-MATERIAL CLAY %	SAND %	SILT %	SHELL %	GRVL %	***CHANNEL*** AVERAGE DEPTH BEFORE MLW	AFTER MLW	BANK CUT- FT	WIDTH CUT- FT	ADV. PD FT	FLOAT PIPE FT	SHORE PIPE FT	AMOUNT DREDGED CU-YDS
436	207	01AUG80	51	S	352+00		089+00		85	10	5	0	0	-12.0	-24.0	0.	260	60	4315	28350	6933
437	208	02AUG80	51	N	352+60	353+75	89+50	89+50	35	50	5	10	0	-24.0	-35.0	11.0	150	115	2165	28350	7028
438	209	03AUG80	51	N	353+75	355+15	90+00	90+00	85	10	5	0	0	-26.0	-36.0	10.0	120	140	2165	28350	6222
439	210	04AUG80	51	N	355+15	357+20	90+50	90+50	85	10	5	0	0	-26.0	-35.0	9.0	130	205	2315	28350	8883
440	211	05AUG80	51	N	357+20	359+80	91+00	91+00	85	10	5	0	0	-25.5	-36.0	10.5	130	240	2715	28350	13144
441	212	06AUG80	51	N	359+80	362+55	91+50	91+50	85	10	5	0	0	-26.0	-36.0	10.0	130	275	2300	28350	13000
442	213	07AUG80	51	N	362+55	365+15	92+00	92+00	85	10	5	0	0	-25.0	-36.0	11.0	130	260	3115	28350	13770
443	214	08AUG80	51	N	365+15	368+55	92+50	92+50	85	10	5	0	0	[illegible]	[illegible]	5.0	170	240	3265	28350	13096
444	215	09AUG80	51	N	368+55	370+45	92+50	92+50	85	10	5	0	0	[illegible]	-34.0	9.0	[illegible]	190	3665	28350	8233
445	216	10AUG80	51	N	370+45	370+45			0	0	0	0	0			0.	0	0	0	0	0
446	217	11AUG80	51	N	370+45	372+25	93+00	93+00	85	10	5	0	0	-25.0	-34.0	9.0	180	180	3765	28350	10800
447	218	12AUG80	51	N	372+25	374+80	93+00	93+00	85	10	5	0	0	[illegible]	-34.0	9.0	190	255	4065	28350	15300
448	219	13AUG80	51	C	352+00	352+50	93+00	93+00	85	10	5	0	0	-35.0	-41.0	6.0	240	50	1300	28350	11844
449	220	14AUG80	51	C	352+50	352+95	93+00	93+00	85	10	5	0	0	-35.0	-40.0	5.0	300	45	2315	28350	2500
450	221	15AUG80	51	C	352+95	354+20	93+50	93+50	85	10	5	0	0	-35.0	-42.0	7.0	300	125	2415	28350	9722
451	222	16AUG80	51	C	354+20	356+05	93+75	93+75	85	10	5	0	0	-35.0	-41.0	6.0	300	185	2615	28350	12333
452	223	17AUG80	51	C	356+05	358+55	94+00	94+00	85	10	5	0	0	-36.0	-42.0	6.0	300	250	2865	28350	16667
453	224	18AUG80	51	C	358+55	361+25	94+25	94+25	85	10	5	0	0	-35.0	-42.0	7.0	300	270	3165	28350	20950
454	225	19AUG80	51	C	361+25	363+65	94+50	94+50	35	50	5	10	0	-36.0	-42.0	6.0	300	240	3315	28350	16280
455	226	20AUG80	51	C	363+65	366+25	95+00	95+00	35	50	5	10	0	-36.0	-41.0	5.0	300	260	3615	28350	14444
456	227	21AUG80	51	C	366+25	368+70	95+50	95+50	35	50	5	10	0	-36.0	-41.0	5.0	300	245	3815	28350	13611
457	228	22AUG80	51	C	368+70	370+00	96+00	96+00	35	50	5	10	0	-36.0	-42.0	6.0	300	130	2515	28350	13000
458	229	23AUG80	51	C	[illegible]	363+90	96+50	96+50	35	50	5	10	0	-41.5	-43.5	2.0	300	225	3215	28350	22111
459	230	24AUG80	51	C	363+90	371+35	97+00	97+00	35	50	5	10	0	-41.5	-43.0	1.5	300	745	3615	28350	18962
460	231	25AUG80	51	N	327+00	328+35	97+25	97+25	75	20	5	0	0	-14.0	-25.0	11.0	0	135	0	28350	14166
461	232	26AUG80	51	N	328+35	330+03	97+50	97+50	75	20	5	0	0	-14.0	-25.0	11.0	0	168	0	26250	15810
462	233	27AUG80	51	N	330+03	332+03	97+75	97+75	75	20	5	0	0	-12.0	-25.0	13.0	0	200	0	26250	19556
463	234	28AUG80	51	N	332+02	332+95	98+00	98+00	75	20	5	0	0	-13.0	-24.0	11.0	0	93	0	26250	9586
464	235	29AUG80	51	N	332+95	334+35	98+25	98+25	75	20	5	0	0	-13.0	-25.0	11.0	0	140	0	26250	13688
465	236	30AUG80	51	N	334+35	335+77	98+50	98+50	75	20	5	0	0		-25.0	13.0	0	142	0	0	18698
466	237	31AUG80	51	N	335+77	337+40	98+75	98+75	75	20	5	0	0	-12.0	-25.0	0.	250	163	2500	26765	21817

(continued)

Table B3 (continued)

DREDGE OPERATIONS - [illegible]
CONTRACT NO. [illegible]

CIR	DOR	DATE	CREW	CL	*STATION-CUT* START	STOP	DISPOSAL-FILL START	STOP	CHARACTER-OF-CUT-MATERIAL CLAY %	SAND %	SILT %	SHELL %	GRVL %	***CHANNEL*** AVERAGE DEPTH BEFORE MLW	AFTER MLW	***WORK-PERFORMED*** BANK CUT- FT	WIDTH CUT- FT	ADV. PD FT	FLOAT PIPE FT	SHORE PIPE FT	AMOUNT DREDGED CU-YDS
467	238	01SEP80	51	N	337+40	339+40	99+00	99+00	75	10	15	0	0	- 13.0	- 25.0	12.0	0	200	0	0	24444
468	239	02SEP80	51	N	339+40	341+40	99+00	99+00	75	20	5	0	0		- 25.0	0.	185	200	2800	27815	17335
469	240	03SEP80	51	N	341+40	343+65	99+25	99+25	75	20	5	0	0		- 25.0	11.0	0	225	0	0	16638
470	241	04SEP80	51	N	343+65	344+00	99+25	99+25	75	20	5	0	0		- 25.0	0.	165	35	3050	27815	2588
471	242	05SEP80	51	N	344+00	345+40	99+50	99+50	75	20	5	0	0	- 12.0	- 25.0	0.	130	140	3050	27815	9639
472	243	06SEP80	51	N	345+40	347+20	99+75	99+75	75	20	5	0	0	- 13.0	- 25.0	0.	130	180	3365	27300	11267
473	244	07SEP80	51	N	347+20	349+15	100+00	100+00	75	20	5	0	0	- 14.0	- 25.0	0.	95	195	4565	27300	9056
474	245	08SEP80	0				100+25	100+25	75	20	5	0	0	- 25.0	- 36.0	0.	110	203	3715	27300	0
475	246	09SEP80	0		335+00		100+50	100+50	75	20	5	0	0	- 25.0	- 35.0	0.	60	183	3715	27300	4920
476	247	10SEP80	0		331+00		100+75	100+75	75	20	5	0	0	- 25.0	- 35.0	0.	90	350	3400	27815	12834
477	248	11SEP80	51	N	327+50	352+40	101+00	101+00	75	20	5	0	0	- 25.0	- 35.0	0.	138	322	3600	27815	18191
478	249	12SEP80	51	N	329+15	332+40	101+25	101+25	75	20	5	0	0	- 25.0	- 35.0	0.	185	325	2765	27300	22269
479	250	13SEP80	51	N	332+40	336+05	101+50	101+50	30	60	10	0	0	- 25.0	- 35.0	0.	220	365	2965	27300	29741
480	251	14SEP80	51	N	336+05	337+31	103+25	103+25	30	60	10	0	0	- 25.0	- 35.0	0.	220	126	3165	27300	10267
481	252	15SEP80	51	N	337+31	339+81	103+25	103+25	30	60	10	0	0	- 25.0	- 35.0	0.	210	250	3365	27300	19444
482	253	16SEP80	51	N	339+81	340+06	103+50	103+50	30	60	10	0	0	- 25.0	- 36.0	0.	185	25	3365	27300	1885
483	254	17SEP80	51	N	340+06	343+10	103+75	103+75	30	60	10	0	0	- 25.0	- 36.0	0.	185	304	3615	27300	22913
484	255	18SEP80	51	N	343+10	344+35	104+00	104+00	30	60	10	0	0	- 25.0	- 36.0	0.	185	125	3765	27300	9421
485	256	19SEP80	51	N	344+35	345+50	104+25	104+25	30	60	10	0	0	- 25.0	- 35.0	0.	185	115	1850	27300	15102
486	257	20SEP80	51	S	328+20	331+85	104+50	104+50	15	75	10	0	0	- 35.0	- 40.0	0.	300	365	1650	27300	18611
487	258	21SEP80	51	S	331+85	334+75	104+75	104+75	15	75	10	0	0	.	.	0.	300	290	2865	27300	16111
488	259	22SEP80	51	S	334+75	336+70	105+00	105+00	15	75	10	0	0	- 31.0	- 41.0	0.	300	195	2965	27300	15000
489	260	23SEP80	51	S	336+70	339+50	105+25	105+25	50	40	10	0	0	- 32.5	- 42.0	0.	300	280	3315	27300	29556
490	261	24SEP80	51	S	339+50	341+30	105+50	105+50	50	40	10	0	0	- 33.0	- 42.0	0.	300	230	3465	27300	23000
491	262	25SEP80	51	S	341+30	344+10	105+75	105+75	50	40	10	0	0	- 33.0	- 42.0	0.	300	230	3615	27300	23000
492	263	26SEP80	51	S	344+10	345+20	106+00	106+00	50	40	10	0	0	- 30.0	- 42.0	0.	300	110	3615	27300	11000
493	264	27SEP80	51	S	345+20	347+45	106+00	106+[illegible]	50	40	10	0	0	- 33.0	- 42.0	0.	300	225	3865	27300	22500
494	265	28SEP80	51	C	347+45	349+60	106+50	106+50	50	40	10	0	0	- 33.0	- 42.0	0.	300	215	4215	27300	21500
495	266	29SEP80	51	C	349+60	350+70	106+50	106+50	15	75	10	0	0	- 33.0	- 42.0	0.	300	110	4315	27300	11000
496	267	30SEP80	51	N	323+00	332+70	106+75	106+75	15	75	10	0	0	- 35.0	- 42.0	0.	140	470	2350	27300	19490

(continued)

Table B3 (continued)

DREDGE OPERATIONS - DAVE BLACKBURN
CONTRACT NO. 01-79-C-0135

					STATION-CUT		DISPOSAL-FILL		CHARACTER-OF-CUT-MATERIAL					***CHANNEL*** AVERAGE DEPTH		***WORK-PERFORMED***					
CIR	DOP	DATE	CREW	CL	START	STOP	START	STOP	CLAY %	SAND %	SILT %	SHELL %	GRVL %	BEFORE MLW	AFTER MLW	BANK CUT- FT	WIDTH CUT- FT	ADV. RO FT	FLOAT PIPE FT	SHORE PIPE FT	AMOUNT DREDGED CU-YDS
497	268	010CT80	51	N	332+70	337+20	107+00	107+00	15	75	10	0	0	-35.0	-42.0	0.	160	450	2750	27815	18667
498	269	020CT80	51	N	337+20	341+25	109+00	109+00	15	75	10	0	0	-35.0	-44.0	0.	160	405	3565	27300	21600
499	270	030CT80	51	N	341+25	344+50	109+25	109+25	15	75	10	0	0	-36.0	-44.0	0.	198	590	2815	27300	16503
500	271	040CT80	51	S	330+65	336+80	113+00	113+00	15	75	10	0	0	-41.0	-44.0	0.	300	615	3465	27300	15667
501	272	050CT80	51	S	336+80	342+95	113+25	113+25	15	75	10	0	0	-42.0	-44.0	0.	300	615	4065	27300	18667
502	273	060CT80	51	S	342+95	349+10	113+50	113+50	15	75	10	0	0	-42.0	-44.0	0.	300	615	4050	27815	19666
503	274	070CT80	51	C	349+10	350+65	114+50	114+50	15	75	10	0	0	-42.0	-44.0	0.	300	315	4350	27815	20511
504	275	080CT80	51	N	328+00	332+80	114+75	114+75	15	75	10	0	0	-42.0	-44.0	0.	230	480	2500	27815	9245
505	276	090CT80	51	N	332+80	339+90	115+00	115+00	15	75	10	0	0	-42.0	-44.0	0.	160	710	3065	27815	8415
506	277	100CT80	51	N	307+00	309+10	115+00	115+00	75	10	15	0	0	-13.5	-30.0	0.	195	210	2565	25200	25025
507	278	110CT80	51	N	309+10	310+00	115+00	115+00	75	10	15	0	0	-14.0	-30.0	0.	195	90	2460	25200	10400
508	279	120CT80	51	N	310+00	312+20	115+25	115+25	75	10	15	0	0	-13.5	-28.0	0.	203	220	2660	25200	24315
509	280	130CT80	51	N	312+20	314+50	115+50	115+50	75	10	15	0	0	-14.5	-28.0	0.	202	230	2860	25200	23230
510	281	140CT80	51	N	314+50	316+90	115+75	115+75	75	10	15	0	0	-15.0	-28.0	0.	195	240	3110	25200	21377
511	282	150CT80	51	N	316+90	318+40	116+25	116+25	34	45	21	0	0	-15.0	-28.0	0.	175	150	3260	25200	12639
512	283	160CT80	51	N	318+40	321+45	116+25	116+25	34	45	21	0	0	-15.0	-28.0	0.	175	305	3610	25200	25699
513	284	170CT80	51	N	321+45	324+45	116+50	116+50	34	45	21	0	0	-15.5	-29.0	0.	170	300	3810	25200	23611
514	285	180CT80	51	N	324+45	326+65	116+75	116+75	34	45	21	0	0	-13.8	-28.0	0.	150	220	4010	25200	17356
515	286	190CT80	51	C	307+50	307+90	117+50	117+50	34	45	21	0	0	-30.5	-37.0	0.	150	0	2260	25200	0
516	287	200CT80	51	C	307+90	310+30	118+00	118+00	57	33	10	0	0	-30.8	-38.0	0.	320	240	2360	25200	20480
517	288	210CT80	51	C	310+30	312+80	119+00	119+00	57	33	10	0	0	-30.5	-38.0	0.	320	250	2660	25200	22222
518	289	220CT80	51	C	312+80	315+60	120+00	120+00	45	45	10	0	0	-30.5	-38.0	0.	320	280	2860	25200	24889
519	290	230CT80	51	C	315+60	318+00	121+00	121+00	45	45	10	0	0	-30.5	-38.0	0.	320	240	2960	25200	21333
520	291	240CT80	51	C	318+00	321+00	122+00	122+00	45	45	10	0	0	-31.0	-38.0	0.	320	300	3060	25200	24889
521	292	250CT80	51	C	321+00	324+00	123+00	123+00	45	45	10	0	0	-31.0	-37.0	0.	320	300	3360	25200	21333
522	293	260CT80	51	C	324+00	327+05	124+00	124+00	30	60	10	0	0	-31.0	-37.0	0.	370	305	3560	25360	25077
523	294	270CT80	51	C	[illegible]	310+95	125+00	125+00	30	60	10	0	0	-38.0	-42.0	0.	310	340	2560	25200	19169
524	295	280CT80	51	C	310+95	315+60	125+50	126+00	30	60	10	0	0	-39.0	-42.0	0.	310	465	3060	25200	16017
525	296	290CT80	51	C	315+60	319+65	126+00	126+00	30	60	10	0	0	-38.0	-42.0	0.	310	405	3560	25200	18600
526	297	300CT80	51	C	319+65	324+25	[illegible]	126+75	30	60	10	0	0	-39.0	-42.0	0.	310	460	4010	25200	21126
527	298	310CT80	51	C	314+[illegible]	316+50	127+25	127+25	30	60	10	0	0	-42.0	-44.0	0.	310	525	3260	25200	20000

(continued)

Table B3 (continued)

DREDGE OPERATIONS - DAVE BLACKBURN
CONTRACT NR. 01-79-C-0135

CIR	DOY	DATE	CREW	CL	*STATION-CUT* START	STOP	DISPOSAL-FILL START	STOP	CHARACTER-OF-CUT-MATERIAL CLAY %	SAND %	SILT %	SHELL %	GRVL %	***CHANNEL*** AVERAGE DEPTH BEFORE MLW	AFTER MLW	***WORK-PERFORMED*** BANK CUT- FT	WIDTH CUT- FT	ADV. PD FT	FLOAT PIPE FT	SHORE PIPE FT	AMOUNT DREDGED CU-YDS
528	299	01NOV80	51	C	316+50	323+10	127+25	128+25	30	60	10	0	0	- 42.0	- 44.0	0.	310	560	3810	25200	15156
529	300	02NOV80	51	C	323+10	329+00	129+00	130+00	30	60	10	0	0	- 10.0	- 25.0	0.	320	0	3810	25200	0
530	301	03NOV80	51	N	286+10	287+35	130+00	130+00	30	60	10	0	0	- 15.0	- 30.0	0.	220	125	2060	23100	15972
531	302	04NOV80	51	N	287+35	288+65	130+00	130+00	30	60	10	0	0	- 10.0	- 30.0	0.	230	130	2260	23100	22148
532	303	05NOV80	51	N	288+65	289+65	132+00	132+00	80	10	10	0	0	- 10.0	- 30.0	0.	230	110	2760	22050	17037
533	304	06NOV80	51	N	289+65	290+85	133+00	133+00	60	20	20	0	0	- 10.0	- 30.0	0.	220	120	2510	22100	20444
534	305	07NOV80	51	N	290+85	291+95	133+50	133+50	60	20	20	0	0	- 10.0	- 30.0	0.	230	110	2610	22050	18741
535	306	08NOV80	51	N	291+95	293+10	134+00	134+00	70	20	10	0	0	- 10.0	- 30.0	0.	230	115	2610	22050	19592
536	307	09NOV80	51	N	293+10	294+10	134+50	134+50	70	20	10	0	0	- 8.0	- 28.0	0.	200	100	2610	22050	14815
537	308	10NOV80	51	N	294+10	295+10	135+00	135+00	70	20	10	0	0	- 8.0	- 28.0	0.	180	100	2610	22050	13333
538	309	11NOV80	51	N	295+10	296+10	135+50	135+50	70	20	10	0	0	- 8.0	- 28.0	0.	180	100	2710	22050	13333
539	310	12NOV80	51	N	296+10	297+35	135+75	135+75	70	20	10	0	0	- 8.0	- 28.0	0.	185	125	2810	22050	17130
540	311	13NOV80	51	N	297+35	297+75	135+75	135+75	70	20	10	0	0	- 12.0	- 30.0	0.	185	40	2810	22050	4933
541	312	14NOV80	51	N	297+75	299+55	136+00	136+00	20	60	20	0	0	- 12.0	- 28.0	0.	185	180	2910	22050	19733
542	313	15NOV80	51	N	299+55	302+05	136+25	136+25	20	60	20	0	0	- 12.0	- 27.0	0.	180	250	3160	22050	25000
543	314	16NOV80	51	N	302+05	304+20	136+50	136+50	20	60	20	0	0	- 12.0	- 28.0	0.	160	215	3260	22050	20385
544	315	17NOV80	51	N	304+20	306+75	136+75	136+75	10	70	20	0	0	- 12.0	- 28.0	0.	155	255	3360	22050	23422
545	316	18NOV80	51	C	286+95	287+95	137+50	137+50	60	20	20	0	0	- 25.0	- 38.0	0.	175	250	3360	22050	19444
546	317	19NOV80	51	C	287+95	289+65	138+50	138+50	60	20	20	0	0	- 30.0	- 38.0	0.	375	170	3510	22050	18889
547	318	20NOV80	51	C	289+65	290+85	139+50	139+50	30	50	20	0	0	- 32.0	- 40.0	0.	375	120	3410	22050	13333
548	319	21NOV80	51	C	290+85	292+60	140+50	140+50	30	50	20	0	0	- 31.5	- 40.0	0.	325	175	3410	22050	17905
549	320	22NOV80	51	C	292+60	294+95	141+50	141+50	30	50	20	0	0	- 33.0	- 40.0	0.	325	235	3810	22050	19801
550	321	23NOV80	51	C	294+95	296+45	142+50	142+50	30	50	20	0	0	- 31.0	- 40.0	0.	325	150	3910	22050	16250
551	322	24NOV80	51	C	295+45	298+75	143+50	143+50	30	50	20	0	0	- 32.0	- 39.0	0.	325	230	4160	22050	19380
552	323	25NOV80	51	C	298+75	301+35	144+00	144+50	30	50	20	0	0	- 32.0	- 39.0	0.	325	260	4510	22050	21907
553	324	26NOV80	51	C	301+35	304+50	145+00	145+00	20	60	20	0	0	- 32.5	- 39.0	0.	325	315	4810	22050	24646
554	325	27NOV80	51	C	304+50	307+50	146+50	146+50	20	60	20	0	0	- 33.0	- 39.0	0.	325	310	5010	22050	21667
554	325	27NOV80	52	C	304+50	307+50	146+50	146+50	20	60	20	0	0	- 33.0	- 39.0	0.	325	300	5010	22050	21667
555	326	28NOV80	51	C	307+50	308+50	147+50	147+50	20	60	20	0	0	- 38.0	- 43.0	0.	325	370	3710	22050	19019
555	326	28NOV80	52	C	307+50	308+50	147+50	147+50	20	60	20	0	0	- 38.0	- 43.0	0.	325	370	3710	22050	19019
556	327	29NOV80	51	C	289+00	293+45	148+50	148+50	10	60	30	0	0	- 40.0	- 43.0	0.	300	355	3710	22050	11833
557	328	30NOV80	51	C	293+45	293+50	149+50	149+50	10	60	30	0	0	- 40.0	- 43.0	0.	300	505	4160	22050	16833

(continued)

Table B3 (continued)

[illegible] OPERATIONS - DAVE BLACKBURN
CONTRACT NO. [illegible]-79-C-0135

CIR	DOY	DATE	CREW	CL	*STATION-CUT* START	STOP	DISPOSAL-FILL START	STOP	CHARACTER-OF-CUT-MATERIAL CLAY %	SAND %	SILT %	SHELL %	GRVL %	***CHANNEL*** AVERAGE DEPTH BEFORE MLW	AFTER MLW	***WORK-PERFORMED*** BANK CUT- FT	WIDTH CUT- FT	ADV. PD FT	FLOAT PIPE FT	SHORE PIPE FT	AMOUNT DREDGED CU-YDS
558	329	01DEC80	51	C	[illegible]	[illegible]	151+50	151+50	10	40	50	0	0	-40.5	-43.0	0.	300	550	4810	22050	18056
559	330	02DEC80	51	C	305+00	308+50	151+00	151+00	10	60	30	0	0	-41.0	-43.0	0.	300	0	4810	22050	0
560	331	03DEC80	51	N	251+10	252+80	151+50	151+50	40	40	20	0	0	-9.0	-24.0	0.	305	170	1010	18900	28806
561	332	04DEC80	51	N	252+80	254+15	152+50	152+50	40	40	20	0	0	-6.5	-27.0	0.	275	135	3310	18900	28188
562	333	05DEC80	52	N	254+15	254+98	154+00	154+00	40	40	20	0	0	6.5	27.0	0.	275	83	3110	18900	17330
563	334	06DEC80	52	N	254+98	256+20	156+00	156+00	40	40	20	0	0	6.0	27.0	0.	275	122	3110	18900	24852
564	335	07DEC80	52	N	256+20	257+10	156+50	156+50	40	40	20	0	0	6.0	26.0	0.	275	90	2860	17950	18333
565	335	08DEC80	52	N	257+10	258+55	157+50	157+50	40	40	20	0	0	6.0	26.0	0.	290	145	3010	17950	31148
566	337	09DEC80	53	N	258+55	259+80	158+50	158+50	40	40	20	0	0	4.0	25.0	0.	295	125	3160	17950	28681
567	338	10DEC80	53	N	259+80	260+85	160+00	160+00	90	5	5	0	0	2.5	25.0	0.	295	105	3160	17950	25813
568	339	11DEC80	53	N	260+85	261+60	161+00	161+00	90	5	5	0	0	2.0	22.0	0.	295	75	3360	17950	16389
569	340	12DEC80	53	N	261+60	262+35	162+00	162+00	90	5	5	0	0	2.0	22.0	0.	295	75	2950	17950	18847
570	341	13DEC80	54	N	262+35	263+10	163+00	163+00	90	5	5	0	0	2.0	25.0	0.	295	75	3360	17950	18847
571	342	14DEC80	54	N	263+10	263+80	164+00	164+00	90	5	5	0	0	2.0	26.0	0.	295	70	3360	17950	18356
572	343	15DEC80	54	N	263+80	264+05	164+25	164+25	90	5	5	0	0	2.0	27.0	0.	295	25	3360	17950	6829
573	344	16DEC80	54	S	151+50	153+35	50+00	50+00	50	40	10	0	0	12.0	27.0	0.	295	185	2450	5250	30319
574	345	17DEC80	54	S	153+35	155+80	51+00	51+00	50	40	10	0	0	12.0	27.0	0.	295	245	2530	5250	40153
575	346	18DEC80	54	S	155+80	158+10	52+00	52+00	40	50	10	0	0	12.0	27.0	0.	295	230	2530	5250	37694
576	347	19DEC80	53	S	158+10	160+50	54+00	54+00	40	50	10	0	0	-12.0	-27.0	0.	295	240	2730	5250	42611
577	348	20DEC80	53	S	160+50	162+80	56+00	56+00	40	50	10	0	0	-11.0	-28.0	0.	295	230	2730	5250	42720
578	349	21DEC80	54	S	162+80	164+60	57+00	57+00	40	50	10	0	0	-11.0	-26.0	0.	295	180	2730	5250	28500
579	350	22DEC80	54	S	164+60	167+25	58+00	58+00	60	30	10	0	0	-11.0	-26.0	0.	295	265	3080	5250	43431
580	351	23DEC80	54	S	167+25	170+00	59+00	59+00	60	30	10	0	0	-11.0	-26.0	0.	295	275	3045	5250	45069
581	352	24DEC80	54	S	170+00	172+35	50+00	50+00	60	30	10	0	0	-10.0	-26.0	0.	295	235	4500	5250	41081
582	353	25DEC80	54	S	172+35	174+75	51+00	51+00	60	30	10	0	0	-10.0	-26.0	0.	295	240	4300	5250	41956
583	354	26DEC80	54	S	174+75	177+75	52+00	52+00	70	20	10	0	0	-10.0	-23.0	0.	295	300	4600	5250	42611
584	355	27DEC80	54	S	177+75	179+[illegible]	54+00	54+00	60	30	10	0	0	-9.0	-24.0	0.	295	[illegible]	4900	5250	33577
585	355	28DEC80	54	S	[illegible]	[illegible]	56+00	56+00	60	30	10	0	0	-9.0	-24.0	0.	293	180	2275	5250	31557
586	357	29DEC80	54	N	155+10	157+55	58+00	58+00	60	30	10	0	0	-10.0	-28.0	0.	270	245	2275	5250	42[illegible]04
587	358	30DEC80	54	N	157+55	159+90	59+00	59+00	60	30	10	0	0	-10.0	-27.0	0.	270	235	2175	5250	39950
588	359	31DEC80	54	N	159+90	162+45	52+00	52+00	60	30	10	0	0	-11.0	-26.0	0.	280	255	2975	5250	39667

(continued)

Table B3 (continued)

DREDGE OPERATIONS - DAVE BLACKBURN
CONTRACT NR. 01-79-C-0135

CIR	DOW	DATE	CREW	CL	*STATION-CUT* START	STOP	DISPOSAL-FILL START	STOP	CHARACTER-OF-CUT-MATERIAL CLAY %	SAND %	SILT %	SHELL %	GRVL %	***CHANNEL*** AVERAGE DEPTH BEFORE MLW	AFTER MLW	***WORK-PERFORMED*** BANK CUT- FT	WIDTH CUT- FT	ADV. PC FT	FLOAT PIPE FT	SHORE PIPE FT	AMOUNT DREDGED CU-YDS
589	360	01JAN81	53	N	162+45	165+25	56+00	56+00	60	30	10	0	0	-10.0	-25.0	0.	275	280	3425	5250	42778
590	361	2JAN81	53	N	165+25	167+75	57+00	57+00	60	30	10	0	0	-10.0	-25.0	0.	270	270	3725	5250	40500
591	362	3JAN81	53	N	167+75	170+30	61+00	61+00	60	30	10	0	0	-10.0	-25.0	0.	275	235	4125	5250	35903
592	363	4JAN81	53	N	170+30	172+55	63+00	63+00	60	30	10	0	0	-10.0	-25.0	0.	275	225	4125	5250	34375
593	364	5JAN81	53	N	172+55	174+75	65+00	65+00	70	25	5	0	0	-10.0	-25.0	0.	275	220	4325	5250	33611
594	365	6JAN81	53	N	174+75	175+55	52+00	52+00	70	25	5	0	0	-25.0	-26.0	0.	288	180	3225	4200	25426
595	366	7JAN81	55	N	154+60	155+65	50+00	50+00	70	25	5	0	0	-24.0	-44.0	0.	275	155	3225	4200	31574
596	367	08JAN81	53	N	155+65	156+75	49+00	49+00	60	35	5	0	0	-24.0	-44.0	0.	275	110	3225	4200	22407
597	368	09JAN81	53	N	156+75	158+00	49+00	49+00	60	35	5	0	0	-26.0	-42.0	0.	275	125	3225	4200	20370
598	369	10JAN81	54	N	158+00	159+65	48+00	48+00	35	60	5	0	0	-27.0	-40.0	0.	260	165	3225	4200	20655
599	370	11JAN81	54	N	159+65	161+75	47+00	47+00	30	65	5	0	0	-27.0	-40.0	0.	260	210	2975	4200	26289
600	371	12JAN81	54	N	161+75	163+95	46+00	46+00	30	65	5	0	0	-27.0	-40.0	0.	260	220	2675	4200	27541
601	372	13JAN81	54	N	163+95	165+90	43+00	43+00	30	65	5	0	0	-27.0	-40.0	0.	260	195	3175	3150	24411
602	373	14JAN81	54	N	165+90	167+90	40+00	40+00	20	75	5	0	0	-26.0	-38.0	0.	260	300	3425	6575	34667
603	374	15JAN81	54	N	169+90	171+30	38+00	38+00	20	75	5	0	0	-26.0	-39.0	0.	285	240	3525	3150	32933
604	375	16JAN81	53	N	171+30	173+95	36+00	36+00	10	85	5	0	0	-26.0	-39.0	0.	285	265	3375	3150	36364
605	376	17JAN81	53	N	173+95	175+75	34+00	34+00	15	80	5	0	0	-10.0	-25.0	0.	268	200	3775	2100	24600
606	377	18JAN81	54	N	175+95	178+20	30+00	30+00	15	80	5	0	0	-10.0	-25.0	0.	275	225	3775	2100	34375
607	378	19JAN81	54	N	178+20	179+00	27+00	27+00	55	40	5	0	0	-24.0	-39.0	0.	160	150	2350	2100	22074
608	379	20JAN81	54	S	153+90	156+30	30+00	30+00	45	50	5	0	0	-27.0	-39.0	0.	160	240	2150	2100	17067
609	380	21JAN81	54	S	156+30	160+40	31+00	31+00	25	70	5	0	0	-30.0	-39.0	0.	160	410	2150	2100	21867
610	381	22JAN81	54	S	160+40	165+20	31+00	31+00	45	50	5	0	0	-27.0	-39.0	0.	160	480	3325	1050	34133
611	382	23JAN81	54	S	165+20	170+20	27+00	27+00	15	80	5	0	0	-26.0	-40.0	0.	160	500	3525	1050	41481
612	383	24JAN81	52	S	170+20	174+65	23+00	23+00	15	80	5	0	0	-24.0	-39.0	0.	160	445	3775	1050	34281
613	384	25JAN81	54	S	174+65	177+40	18+00	18+00	55	40	4	0	1	-23.0	-38.0	0.	160	275	4025	1050	24444
614	385	26JAN81	52	S	177+40	173+15	16+00	16+00	55	40	4	0	1	-23.0	-38.0	0.	160	75	4025	1050	6667
615	386	27JAN81	52						0	0	0	0	1			0.	0	0	0	0	0
616	387	28JAN81	52						0	0	0	0	0			0.	0	0	0	0	0
617	388	29JAN81	52						0	0	0	0	0			0.	0	0	0	0	0
618	389	30JAN81	52						0	0	0	0	0			0.	0	0	0	0	0
619	390	31JAN81	52						0	0	0	0	0			0.	0	0	0	0	0

(continued)

Table B3 (continued)

[illegible]

CIR	DOR	DATE	CREW	CL	STATION-CUT START	STATION-CUT STOP	DISPOSAL-FILL START	DISPOSAL-FILL STOP	CLAY %	SAND %	SILT %	SHELL %	GRVL %	CHANNEL AVERAGE DEPTH BEFORE MLW	CHANNEL AVERAGE DEPTH AFTER MLW	BANK CUT-FT	WIDTH CUT-FT	ADV. PD FT	FLOAT PIPE FT	SHORE PIPE FT	AMOUNT DREDGED CU-YDS
620	391	01FEB81	52						0	0	0	0	0			0.	0	0	0	0	0
621	392	02FEB81	52	C	154+20	154+90	10+00	10+00	65	30	5	0	0	-39.0	-44.0	0.	385	70	1450	1320	6417
622	393	03FEB81	65	C	154+90	159+70	10+50	10+50	65	30	5	0	0	-39.0	-43.5	0.	385	480	1900	1440	30800
623	394	04FEB81	66	C	159+70	165+20	9+00	9+00	5	95	0	0	0	-39.0	-43.0	0.	385	550	2200	1580	31370
624	395	05FEB81	65	C	165+20	171+20	19+00	19+00	5	95	0	0	0	-40.0	-43.5	0.	385	600	2200	2920	29944
625	396	06FEB81	66	N	175+55	176+45	22+00	22+00	5	95	0	0	0	-39.0	-43.0	0.	385	90	2200	3315	14937
626	397	07FEB81	65	N	176+45	179+55	22+00	22+00	70	30	0	0	0	-25.0	-38.0	0.	260	210	2200	3315	26289
627	398	08FEB81	66	N	179+00	179+30	22+00	22+00	60	40	0	0	0	-25.0	-38.0	0.	300	45	2200	3340	5000
628	399	09FEB81	66	N	179+30	181+10	22+00	22+00	70	30	0	0	0	-10.0	-27.0	0.	275	180	2200	3390	31167
629	400	10FEB81	65	N	181+10	183+15	22+25		60	40	0	0	0	-10.0	-27.0	0.	275	205	2400	3410	35495
630	401	11FEB81	66	N	183+15	185+35	22+50		30	70	0	0	0	-10.0	-27.0	0.	275	220	2400	3450	38092
631	402	12FEB81	65	N	185+35	186+80	22+75		95	0	5	0	0	-8.5	-27.0	0.	300	145	2600	3500	29806
632	403	13FEB81	66	S	173+15	173+85	23+00		95	0	5	0	0	-22.0	-41.0	0.	180	140	2600	3500	23256
633	404	14FEB81	66	S	180+50	180+90	24+00		95	0	5	0	0	-8.5	-27.0	0.	180	205	2025	0	24591
634	405	15FEB81	66	S	180+90	183+70	25+00		85	10	5	0	0	-9.0	-27.0	0.	180	280	2025	4815	33600
635	406	16FEB81	65	S	183+70	185+65	26+25	26+25	90	5	5	0	0	-9.0	-26.0	0.	275	195	2025	4915	33764
636	407	17FEB81	66	S	185+65	187+55	26+75	26+75	90	5	5	0	0	-9.0	-26.0	0.	280	190	2025	4965	33496
637	408	18FEB81	66	S	187+55	189+20	27+25	27+25	95	0	5	0	0	-9.0	-26.0	0.	290	165	2325	5015	30128
638	409	19FEB81	65	S	189+20	192+20	28+50	28+50	80	5	15	0	0	-10.0	-22.0	0.	275	300	2325	5140	36667
639	410	20FEB81	65	S	192+20	195+20	29+50	29+50	80	5	15	0	0	-10.0	-25.0	0.	250	300	2625	3240	41667
640	411	21FEB81	65	S	195+20	197+95	29+75	29+75	80	5	15	0	0	-10.0	-25.0	0.	250	275	2935	2115	38194
641	412	22FEB81	65	S	197+95	198+75	29+75		80	5	15	0	0	-10.0	-25.0	0.	250	175	1060	2115	21860
642	413	23FEB81	65	S	131+45	183+45	29+90	30+00	80	5	15	0	0	-26.0	-40.0	0.	250	200	1855	840	25926
643	414	24FEB81	65	S	183+45	185+25	5+50	5+50	85	5	10	0	0	-26.0	-40.0	0.	250	180	1855	840	23333
644	415	25FEB81	65	S	185+25	186+30	04+00		95	0	5	0	0	-26.0	-41.0	0.	250	155	1905	940	21528
645	416	26FEB81	65	S	186+80	188+50	3+00	3+00	95	0	5	0	0	-26.0	-41.0	0.	250	170	1905	940	23611
646	417	27FEB81	65	S	188+50	190+25	13+00	13+00	95	0	5	0	0	-24.0	-40.0	0.	235	175	2205	0	24370
647	418	28FEB81	65	N	187+50	189+40	13+00	13+00	95	0	5	0	0	-10.0	-25.0	0.	300	215	2275	470	34326

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AD-A173 512 VERIFICATION OF DESIGN AND CONSTRUCTION TECHNIQUES FOR 3/5
GAILLARD ISLAND DR..(U) ARMY ENGINEER WATERWAYS
EXPERIMENT STATION VICKSBURG MS GEOTE..
UNCLASSIFIED J FOWLER ET AL. AUG 86 WES/MP/GL-86-26 F/G 13/2 NL

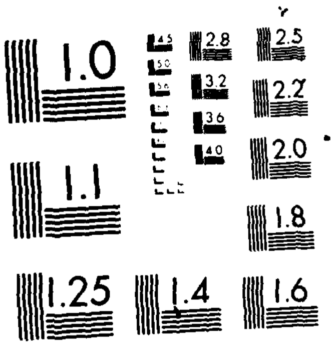

Table B3 (continued)

DREDGE OPERATIONS - BARE HEADQUARTERS
CONTRACT NR. 01-79-C-0175

CIR	DOR	DATE	CREW	CL	*STATION-CUT* START	STOP	DISPOSAL-FILL START	STOP	CHARACTER-OF-CUT-MATERIAL CLAY %	SAND %	SILT %	SHELL %	GRVL %	***CHANNEL*** AVERAGE DEPTH BEFORE MLW	AFTER MLW	BANK WIDTH CUT- FT	CUT- FT	ADV. PD FT	****WORK-PERFORMED**** FLOAT PIPE FT	SHORE PIPE FT	AMOUNT DREDGED CU-YDS
648	419	01MAR81	65	N	189+10	191+70	13+00	13+50	90	5	15	0	0	10.0	26.0	0.	200	260	2205	470	46222
649	420	02MAR81	65	N	191+70	193+05	305+75	305+75	15	80	5	0	0	10.0	25.0	0.	300	135	2370	390	22500
650	421	03MAR81	66	N	193+05	196+45	305+25	305+25	5	90	5	0	0	10.0	25.0	0.	300	340	2670	390	56667
651	422	04MAR81	66	N	196+45	199+95	305+25	305+25	5	90	5	0	0	10.0	25.0	0.	300	350	3020	390	58333
652	423	05MAR81	65	N	199+95	201+15	305+25	305+25	95	0	5	0	0	10.0	25.0	0.	281	205	0	0	31806
653	424	06MAR81	65	N	179+60	181+70	305+25	305+25	95	0	50	0	0	27.0	41.0	0.	225	210	1260	390	24500
654	425	07MAR81	65	N	181+70	184+00	305+00	305+00	85	5	10	0	0	27.0	41.0	0.	225	230	1560	435	26833
655	426	08MAR81	65	N	184+00	186+30	305+00	305+00	85	5	10	0	0	27.0	41.0	0.	225	230	1860	435	26833
656	427	09MAR81	65	N	186+30	188+60	304+00	304+00	85	5	10	0	0	25.0	41.0	0.	225	230	2160	535	30667
657	428	10MAR81	65	N	188+60	190+35	301+50	301+50	85	5	10	0	0	26.0	42.0	0.	225	175	3030	580	23333
658	429	11MAR81	65	N	190+35	192+15	301+25		95	0	5	0	0	25.0	40.0	0.	225	180	3370	580	22500
659	430	12MAR81	65	N	192+15	194+45	301+00	301+00	90	0	10	0	0	25.0	40.0	0.	225	230	3720	580	28750
660	431	13MAR81	65	N	194+45	196+71	300+50	300+50	90	0	10	0	0	25.0	40.0	0.	225	226	4020	590	28333
661	432	14MAR81	65	N	196+71	198+95	300+25	300+25	60	30	10	0	0	25.0	40.0	0.	225	224	4320	580	28000
662	433	15MAR81	65	N	198+95	199+85	300+00	300+00	80	5	15	0	0	22.0	39.0	0.	225	185	1955	580	24708
663	434	16MAR81	65	S	191+75	194+10	300+00	300+00	90	0	10	0	0	25.0	40.0	0.	225	235	3720	580	29375
664	435	17MAR81	66	S	194+10	196+55	299+00	299+00	80	15	5	0	0	25.0	40.0	0.	225	245	4020	590	30625
665	436	18MAR81	65	S	196+55	198+55	299+00	299+00	80	15	5	0	0	25.0	40.0	0.	225	200	4320	580	25000
666	437	19MAR81	65	S	198+75	201+25	296+00	296+00	10	50	40	0	0	25.0	40.0	0.	304	270	4320	580	45556
667	438	20MAR81	66	S	201+25	202+20	295+00	295+00	90	5	5	0	0	25.0	40.0	0.	73	460	2570	580	18389
668	439	21MAR81	65	C	177+50	182+10	294+00	294+00	90	10	0	0	0	33.0	42.0	0.	350	225	3120	580	27702
669	440	22MAR81	65	C	182+10	189+95	293+00	293+00	90	10	0	0	0	40.0	43.0	0.	400	785	3920	580	34889
670	441	23MAR81	65	C	189+95	197+25	292+00	292+00	90	10	0	0	0	40.0	43.0	0.	400	730	4320	580	32444
671	442	24MAR81	65	C	197+25	199+00	291+50	291+50	90	10	0	0	0	25.0	40.0	0.	315	320	4620	580	26320
672	443	25MAR81	65	S	200+20	201+95	291+00	291+00	85	0	15	0	0	25.0	40.0	0.	235	175	0	0	22847
673	444	26MAR81	66	S	202+25	205+15	290+50	290+50	25	35	40	0	0	25.0	40.0	0.	305	210	3620	580	52555
674	445	27MAR81	65	S	205+15	206+50	290+00		10	40	50	0	0	10.0	25.0	0.	310	285	3470	580	49083
675	446	28MAR81	65	N	199+35	200+95	289+50	289+50	25	40	35	0	0	25.0	40.0	0.	280	0	3270	590	42125
676	447	29MAR81	65	N	200+90	203+65	289+00	289+00	80	15	5	0	0	25.0	40.0	0.	235	275	3270	590	35903
677	448	30MAR81	65	N	203+65	205+55	53+00	53+00	90	0	10	0	0	25.0	38.0	0.	240	190	2165	400	21956
678	449	31MAR81	65	N	205+55	206+80	53+50	53+50	75	10	15	0	0	10.0	25.0	0.	0	210	2165	400	29082

(continued)

Table B3 (continued)

[illegible] OPERATIONS - DAVE BLACKBURN
CONTRACT NO. 01-79-C-0135

CIR	DOP	DATE	CREW	CH	*STATION-CUT* START	STOP	DISPOSAL-FILL START	STOP	CHARACTER-OF-CUT-MATERIAL CLAY %	SAND %	SILT %	SHELL %	GR/L %	***CHANNEL*** AVERAGE DEPTH BEFORE MLW	AFTER MLW	***WORK-PERFORMED*** BANK CUT- FT	WIDTH CUT- FT	ADV. PD FT	FLOAT PIPE FT	SHORE PIPE FT	AMOUNT DREDGED CU-YDS
679	450	01APR81	55	S	[illegible]	202+25	53+50	53+50	90	0	10	0	0	- 25.0	- 40.0	0.	235	165	2165	750	21542
680	451	02APR81	65	S	202+25	204+50	54+50	54+50	95	0	5	0	0	- 25.0	- 40.0	0.	235	165	2165	750	21542
681	452	03APR81	55	S	204+60	206+40	54+50	54+50	95	0	5	0	0	- 25.0	- 40.0	0.	235	180	2165	750	23500
682	453	04APR81	65	S	206+40	206+75	55+00	55+00	90	0	10	0	0	- 40.0	- 43.0	0.	310	375	2065	990	27145
683	454	05APR81	55	C	201+10	205+50	56+00	56+00	[illegible]	0	[illegible]	0	0	- 40.0	- 43.0	0.	380	540	2265	990	22800
684	455	06APR81	65	C	205+50	207+50	58+00	58+00	70	0	30	0	0	- 28.0	- 40.0	0.	340	265	2265	990	15655
685	456	07APR81	65	S	113+15	110+75	58+50	58+50	80	0	20	0	0	- 28.0	- 40.0	0.	230	240	1705	990	24533
686	457	08APR81	65	S	110+75	107+85	58+50	58+50	80	0	20	0	0	- 25.0	- 40.0	0.	235	290	1405	990	37861
687	458	[illegible]	55	S	107+85	105+85	59+00	[illegible]	90	0	10	0	0	- 25.0	- 40.0	0.	235	[illegible]	1705	990	26111
688	459	10APR81	55	S	105+35	103+35	59+50	59+50	90	0	10	0	0	- 25.0	- 40.0	0.	235	200	1905	1190	26111
689	460	11APR81	65	S	103+85	101+65	59+50	59+50	95	0	5	0	0	- 25.0	- 40.0	0.	235	220	1905	1190	28722
690	461	12APR81	65	S	101+65	99+65	60+00	60+00	95	0	5	0	0	- 25.0	- 40.0	0.	235	200	2105	1190	26111
691	462	13APR81	65	S	99+65	97+70	60+00	60+00	95	0	5	0	0	- 25.0	- 40.0	0.	235	195	2305	1190	25458
692	463	14APR81	65	S	97+70	97+20	60+50	60+50	90	0	10	0	0	- 25.0	- 40.0	0.	235	180	1005	1190	23500
693	464	15APR81	65	N	111+95	110+50	60+50	60+50	95	0	5	0	0	- 25.0	- 40.0	0.	265	145	1305	1190	21347
694	465	16APR81	65	N	110+50	109+00	61+00	61+00	95	0	5	0	0	- 25.0	- 40.0	0.	265	150	1305	1190	22083
695	465	17APR81	65	N	109+00	107+40	61+50	61+50	95	0	5	0	0	- 25.0	- 40.0	0.	250	160	1605	1590	22222
696	467	18APR81	55	N	107+40	105+30	62+50	62+50	40	50	10	0	0	- 25.0	- 40.0	0.	235	210	1605	1360	27417
697	468	19APR81	65	N	105+30	102+65	63+50	63+50	0	90	10	0	0	- 25.0	- 40.0	0.	235	265	1905	1360	34597
698	469	20APR81	65	N	102+65	100+45	64+50	64+50	5	90	5	0	0	- 25.0	- 40.0	0.	235	220	2205	1360	28722
699	470	21APR81	65	N	100+45	98+25	65+00	65+00	85	5	10	0	0	- 25.0	- 40.0	0.	235	220	2605	1360	28722
700	471	22APR81	55	N	98+25	96+40	68+00	68+00	90	0	10	0	0	- 25.0	- 40.0	0.	235	185	[illegible]	1360	24153
701	472	23APR81	65	N	96+40	94+95	69+00	69+00	90	0	10	0	0	- 25.0	- 40.0	0.	235	145	2260	580	18931
702	473	24APR81	65	S	97+20	96+10	70+00	70+00	90	0	10	0	0	- 25.0	- 40.0	0.	235	185	2795	580	24153
703	474	25APR81	65	S	96+10	93+55	71+00	71+00	90	0	10	0	0	- 25.0	- 40.0	0.	235	245	2795	580	31986
704	475	26APR81	65	S	93+65	91+45	71+50	71+50	95	0	5	0	0	- 25.0	- 40.0	0.	235	220	2965	580	28722
705	476	27APR81	65	S	91+45	89+45	73+00	73+00	95	0	5	0	0	- 25.0	- 40.0	0.	235	205	2965	580	26764
706	477	28APR81	65	S	89+40	85+90	75+00	75+00	95	0	5	0	0	- 25.0	- 40.0	0.	235	250	2965	580	32639
707	478	29APR81	65	S	86+95	84+75	77+00	77+00	95	0	5	0	0	- 25.0	- 40.0	0.	235	215	2965	580	28069
708	479	30APR81	65	S	84+75	83+10	79+00	79+00	95	0	5	0	0	- 25.0	- 40.0	0.	235	275	2965	580	35903

(continued)

Table B3 (continued)

DREDGE OPERATIONS - DAVE BLACKBURN
CONTRACT NR. 01-79-C-0135

					STATION-CUT		DISPOSAL-FILL		CHARACTER-OF-CUT-MATERIAL					***CHANNEL***		************WORK-PERFORMED************					
														AVERAGE	DEPTH	BANK	WIDTH	ADV.	FLOAT	SHORE	AMOUNT
CIP	DUR	DATE	CREW	CL	START	STOP	START	STOP	CLAY	SAND	SILT	SHELL	GRVL	BEFORE	AFTER	CUT-	CUT-	RD	PIPE	PIPE	DREDGED
									%	%	%	%	%	MLW	MLW	FT	FT	FT	FT	FT	CU-YDS
709	480	01MAY81	65	S	[illegible]	72+10	80+50	80+50	25	0	5	0	0	- 25.0	- 40.0	0.	235	290	2765	580	37700
710	481	02MAY81	65	S	72+10	76+25	83+00	83+00	25	0	5	0	0	- 25.0	- 40.0	0.	235	285	2765	580	37050
711	482	03MAY81	65	S	76+25	72+75	86+00	86+00	10	45	45	0	0	- 25.0	- 40.0	0.	235	330	2675	580	43083
712	483	04MAY81	65	S	72+95	63+95	90+00	90+00	10	45	45	0	0	- 25.0	- 40.0	0.	235	400	2765	580	52222
713	484	05MAY81	65	S	63+95	65+65	98+00	98+00	10	10	80	0	0	- 25.0	- 40.0	0.	235	330	2665	580	43083
714	485	06MAY81	65	N	75+00	76+00	102+00	102+00	30	30	40	0	0	- 25.0	- 40.0	0.	235	275	2665	580	35903
715	486	07MAY81	65	N	76+00	73+50	102+00	102+00	30	30	40	0	0	- 25.0	- 40.0	0.	235	280	2665	580	36556
716	487	08MAY81	65	N	73+50	81+30	103+00	103+00	25	25	50	0	0	- 25.0	- 40.0	0.	235	250	2065	580	32639
717	488	09MAY81	65	N	81+30	84+05	105+00	105+00	25	25	50	0	0	- 25.0	- 40.0	0.	235	275	2465	580	35903
718	489	10MAY81	65	N	84+05	86+15	107+00	107+00	25	25	50	0	0	- 25.0	- 40.0	0.	235	210	2865	580	27417
719	490	11MAY81	65	N	86+15	87+80	108+00	108+00	40	30	30	0	0	- 25.0	- 40.0	0.	235	165	3150	580	21541
720	491	12MAY81	65	N	87+30	89+25	109+00	109+00	40	30	30	0	0	- 25.0	- 40.0	0.	235	145	2805	580	18931
721	492	13MAY81	65	N	89+25	91+10	110+00	110+00	40	30	30	0	0	- 25.0	- 40.0	0.	235	185	3005	580	24153
722	493	14MAY81	65	N	91+10	93+50	111+00	111+00	40	30	30	0	0	- 25.0	- 40.0	0.	235	240	3255	580	31333
723	494	15MAY81	65	C	78+30	81+70	111+00	111+00	50	20	30	0	0	- 25.0	- 40.0	0.	320	410	1905	580	23495
724	495	16MAY81	65	C	81+70	88+15	112+00	112+00	90	0	10	0	0	- 40.0	- 43.0	0.	380	645	2205	580	27233
725	496	17MAY81	65	C	88+15	95+80	113+00	113+00	90	0	10	0	0	- 40.0	- 43.0	0.	380	765	2305	580	32300
726	497	18MAY81	65	C	95+80	103+15	114+00	114+00	90	0	10	0	0	- 40.0	- 43.0	0.	380	735	2305	580	31033
727	498	19MAY81	65	C	103+15	110+90	115+00	115+00	90	0	10	0	0	- 40.0	- 43.0	0.	380	775	3255	580	32722
728	499	20MAY81	65	C	110+90	113+40	116+50	116+50	90	0	10	0	0	- 40.0	- 43.0	0.	380	340	3480	580	22306
729	500	21MAY81	65	S	114+55	116+25	118+00	118+00	50	0	50	0	0	- 25.0	- 42.0	0.	210	170	3310	580	22478
730	501	22MAY81	65	S	116+25	118+45	119+50	119+50	50	15	25	10	0	- 25.0	- 42.0	0.	210	220	3310	580	29089
731	502	23MAY81	65	S	118+45	120+80	120+50	120+50	50	15	25	10	0	- 25.0	- 42.0	0.	210	235	3610	580	31072
732	503	24MAY81	65	S	120+80	122+50	122+00	122+00	50	15	25	10	0	- 25.0	- 42.0	0.	210	170	4010	580	22478
733	504	25MAY81	65	S	122+50	124+50	123+50	123+50	50	15	25	10	0	- 27.0	- 42.0	0.	210	200	3055	580	23333
734	505	26MAY81	65	S	124+50	126+40	130+00	130+00	50	15	25	10	0	- 27.0	- 42.0	0.	210	190	3255	580	22167
735	506	27MAY81	65	N	113+50	114+10	133+00	133+00	60	15	25	10	0	- 27.0	- 40.0	0.	210	130	1705	580	14234
736	507	28MAY81	65	N	114+10	116+25	136+00	136+00	60	15	25	10	0	- 27.0	- 40.0	0.	210	215	1705	580	21739
737	508	29MAY81	65	N	116+25	117+20	138+00	138+00	60	10	20	5	0	- 27.0	- 42.0	0.	210	195	2355	580	22750
738	509	30MAY81	65	N	117+20	119+70	140+00	140+00	60	15	25	0	0	- 27.0	- 41.0	0.	210	170	2755	580	18511
739	510	31MAY81	65	N	119+70	122+30	145+00	145+00	75	0	25	0	0	- 27.0	- 41.0	0.	210	210	3355	580	22867

(continued)

Table B3 (continued)

CONTRACT N . 01-79-C-0135

CIR	DOR	DATE	CREW	CL	*STATION-CUT* START	STOP	DISPOSAL-FILL START	STOP	CHARACTER-OF-CUT-MATERIAL CLAY %	SAND %	SILT %	SHELL %	GR/L %	***CHANNEL*** AVERAGE BEFORE MLW	DEPTH AFTER MLW	***WORK-PERFORMED*** BANK CUT- FT	WIDTH CUT- FT	ADV. RN FT	FLOAT PIPE FT	SHORE PIPE FT	AMOUNT DREDGED CU-YDS
740	511	01JUN81	65	N	122+00	123+55	148+00	148+00	75	0	25	0	0	-27.0	-42.0	0.	210	155	2755	580	18083
741	512	02JUN81	65	N	123+55	125+15	151+00	151+00	75	0	25	0	0	-27.0	-42.0	0.	210	160	3055	580	18667
742	513	03JUN81	66	N	125+15	126+75	152+00	152+00	75	0	25	0	0	-27.0	-42.0	0.	210	160	3255	580	18667
743	514	04JUN81	65	N	126+75	127+25	153+00	153+00	75	0	25	0	0	-27.0	-42.0	0.	235	200	2455	580	15834
744	515	05JUN81	65	N	114+50	115+30	155+00	155+00	90	0	10	0	0	-42.0	-43.5	0.	380	540	2755	580	21644
745	516	06JUN81	65	C	118+00	124+60	157+00	157+00	90	0	10	0	0	-41.0	-43.5	0.	380	560	3355	580	23222
746	517	07JUN81	55	N	75+00	73+75	73+00	73+00	50	0	50	0	0	-25.0	-40.0	0.	235	390	1265	300	27779
747	518	08JUN81	66	N	73+75	70+50	75+00	75+00	60	[illegible]	40	0	0	-25.0	-40.0	0.	235	325	1465	425	42431
748	519	09JUN81	66	N	70+50	66+60	75+00	75+00	60	0	40	0	0	-25.0	-40.0	0.	235	390	1865	450	50917
749	520	10JUN81	65	N	66+60	62+60	73+00	73+00	60	0	40	0	0	-25.0	-40.0	0.	235	400	2365	450	52222
750	521	11JUN81	65	N	62+60	59+35	73+00	73+00	60	0	40	0	0	-25.0	-40.0	0.	235	325	2715	450	42431
751	522	12JUN81	65	N	59+35	55+89	73+00	73+00	40	0	60	0	0	-25.0	-40.0	0.	235	346	3165	450	45172
752	523	13JUN81	65	N	55+89	52+35	73+00	73+00	40	0	60	0	0	-25.0	-40.0	0.	235	354	3415	450	46217
753	524	14JUN81	66	S	63+90	61+25	73+00	73+00	60	0	40	0	0	-25.0	-40.0	0.	235	365	2520	450	47652
754	525	15JUN81	65	S	61+25	56+35	74+00	74+00	30	0	70	0	0	-27.0	-40.0	0.	235	490	3020	450	55443
755	526	16JUN81	65	S	56+35	51+55	74+00	74+00	30	0	70	0	0	-25.0	-39.0	0.	235	480	3420	450	58489
756	527	17JUN81	65	C	78+30	74+15	74+00	74+00	25	0	75	0	0	-25.0	-39.0	0.	320	550	1455	590	32222
757	528	18JUN81	65	C	74+15	65+15	74+00	74+00	25	0	75	0	0	-40.0	-42.5	0.	380	900	2255	600	31667
758	529	19JUN81	65	C	65+15	57+55	74+00	74+00	25	0	75	0	0	-39.5	-41.5	0.	380	750	1185	600	21393
759	530	20JUN81	65	N	51+35	50+20	74+00	74+00	20	0	60	20	0	-39.0	-42.0	0.	310	720	1585	600	26803
760	531	21JUN81	65	N	50+20	47+00	74+00	74+00	20	0	60	20	0	-28.0	-40.0	0.	200	320	1985	600	28444
761	532	22JUN81	65	N	47+00	43+95	74+00	74+00	15	0	50	35	0	-28.0	-40.0	0.	200	305	2385	600	27111
762	533	23JUN81	65	N	43+95	40+80	85+00	85+00	15	0	50	35	0	-27.0	-40.0	0.	200	315	2385	750	30303
763	534	24JUN81	65	N	40+20	37+25	87+50	87+50	15	0	50	35	0	-26.0	-40.0	0.	200	285	3315	410	27444
764	535	25JUN81	65	N	37+95	34+15	83+50	87+50	15	0	50	35	0	-26.0	-39.0	0.	225	380	3665	410	33250
765	536	26JUN81	65	S	52+20	46+50	83+50	83+50	15	0	50	35	0	-29.5	-40.0	0.	0	485	2160	410	41582
766	537	27JUN81	65	S	[illegible]	41+15	83+50	83+50	25	0	75	0	0	-27.0	-39.0	0.	230	420	2460	410	50089
767	538	28JUN81	65	S	41+15	36+35	87+50	83+50	35	0	65	0	0	-27.0	-39.0	0.	230	480	3310	410	49067
768	539	29JUN81	65	C	54+[illegible]	50+65	83+50	83+50	40	0	60	0	0	-40.0	-42.0	0.	305	640	1915	410	34112
769	540	30JUN81	65	C	50+65	41+4[illegible]	83+50	83+50	40	0	60	0	0	-40.0	-43.0	0.	350	225	2965	410	39056

(continued)

Table B3 (concluded)

DREDGE OPERATIONS - DAVE BLACKBURN
CONTRACT NR. 01-79-C-0135

CIR	DOR	DATE	CREW	CL	*STATION-CUT* START	*STATION-CUT* STOP	DISPOSAL-FILL START	DISPOSAL-FILL STOP	CHARACTER-OF-CUT-MATERIAL CLAY %	SAND %	SILT %	SHELL %	GRVL %	***CHANNEL*** AVERAGE DEPTH BEFORE MLW	AVERAGE DEPTH AFTER MLW	*****WORK-PERFORMED***** BANK CUT- FT	WIDTH CUT- FT	ADV. RD FT	FLOAT PIPE FT	SHORE PIPE FT	AMOUNT DREDGED CU-YDS
770	541	01JUL81	65	C	-41+40	33+35	83+50	83+50	30	0	70	0	0	29.5	30.0	0.	305	870	3265	410	39249
771	542	02JUL81	65	S	32+65	28+25	108+50	108+50	20	0	80	0	0	29.5	39.0	0.	230	440	2020	610	35607
772	543	03JUL81	65	S	28+25	23+20	108+50	108+50	35	0	65	0	0	-29.9	-39.0	0.	230	505	2720	610	41298
773	544	04JUL81	66	S	23+20	18+15	108+50	108+50	35	0	65	0	0	-30.6	-40.0	0.	225	505	3040	510	39558
774	545	05JUL81	65	S	14+15	10+55	83+50	83+50	30	0	70	0	0	-31.0	-40.0	0.	270	450	3340	510	35267
775	546	06JUL81	66	N	32+50	29+40	83+50	83+50	35	0	65	0	0	-30.5	-40.0	0.	230	445	1620	510	35212
776	547	07JUL81	65	N	29+40	24+50	83+50	83+50	30	0	70	0	0	-29.4	-39.0	0.	270	420	2090	510	40071
777	548	08JUL81	66	N	24+50	20+15	83+50	83+50	35	0	65	0	0	-29.4	-39.0	0.	230	435	2740	510	35573
778	549	09JUL81	65	N	20+15	15+90	83+50	83+50	35	0	65	0	0	-31.0	-40.0	0.	225	425	3140	510	31875
779	550	10JUL81	66	C	-33+35	30+75	83+50	83+50	35	0	65	0	0	-30.0	-39.0	0.	265	530	1940	510	31228
780	551	11JUL81	65	C	-30+75	22+70	83+50	83+50	30	0	70	0	0	-32.0	-42.0	0.	380	805	2740	510	33989
781	552	12JUL81	65	C	22+70	14+30	83+50	83+50	35	0	65	0	0	-40.0	-43.0	0.	380	840	3390	510	35467
782	553	13JUL81	65	C	14+30	13+85	109+00	109+00	40	0	60	0	0	-40.0	-43.0	0.	250	285	1830	610	23593
783	554	14JUL81	65	N	10+90	7+10	109+00	109+00	40	0	60	0	0	-30.0	-40.0	0.	240	370	1830	610	32889
784	555	15JUL81	65	N	7+10	4+25	109+00	109+00	40	0	60	0	0	-34.0	-40.0	0.	235	480	1730	610	31989
785	556	16JUL81	66	S	9+80	7+50	109+00	109+00	40	0	60	0	0	-30.0	-40.0	0.	300	230	1730	510	25556
786	557	17JUL81	65	S	7+50	5+00	83+50	83+50	40	0	55	5	0	-26.0	-39.0	0.	280	250	2030	510	33704
787	558	18JUL81	65	S	5+00	3+40	83+50	83+50	40	0	55	5	0	-27.0	-40.0	0.	225	160	2030	510	17333
788	559	19JUL81	66	S	3+40	2+55	83+50	83+50	40	0	50	10	0	27.0	40.0	0.	200	360	1930	690	27541
789	560	20JUL81	65	S	5+25	3+15	83+50	83+50	40	0	50	10	0	-26.0	-38.0	0.	310	210	2380	690	28933
790	561	21JUL81	65	S	3+15	- 1+60	83+50	83+50	40	0	50	10	0	-25.0	-39.0	0.	150	475	2680	690	36944
791	562	22JUL81	65	C	13+65	8+35	83+50	83+50	75	0	20	5	0	-25.0	-40.0	0.	350	690	1730	690	35333
792	563	23JUL81	65	C	8+35	4+00	83+50	83+50	75	0	20	5	0	-39.0	-43.0	0.	400	715	2130	690	35061
793	564	24JUL81	65	S	3+20	- 1+90	109+00	109+00	70	0	20	5	0	-40.0	-43.0	0.	340	220	2930	690	34756
794	565	25JUL81	65	C	70+[illegible]	55+60	83+50	83+50	20	0	80	0	0	-42.0	-43.0	0.	390	140	1705	510	16044
795	566	26JUL81	65	C	58+60	46+45	83+50	83+50	20	0	80	0	0	-41.0	-43.0	0.	380	215	2605	510	34200
796	567	27JUL81	65	C	46+45	36+20	83+50	83+50	20	0	80	0	0	-41.0	-43.0	0.	380	25	3355	510	29852
797	568	28JUL81	65	C	36+20	35+30	83+50	83+50	20	0	80	0	0	-41.0	-43.0	0.	380	120	3355	510	3378

Note: CIR - Contractors Inspection Report
DOR - Dredge Operation Report
CREW - Total Crew
CL - Center Line: S & N indicate work south or north of center line

Table B4

DREDGE OPERATIONS [illegible]
CONTRACT NO. [illegible]

CIT	NO	DATE	REA	CL	*STATION-CUT* START	STOP	DISPOSAL-FILL START	STOP	CHARACTER OF CUT MATERIAL CLAY	SAND	SILT	SHELL	GRVL	***CHANNEL*** AVERAGE DEPTH BEFORE MLW	DEPTH AFTER MLW	WORK-PERFORMED BANK CUT- FT	WIDTH CUT- FT	ADV. PD FT	FLOAT PIPE FT	SHORE PIPE FT	AMOUNT DREDGED CU-YDS
579	1	22DEC80	53	S	43+00	[illegible]	104+00	[illegible]	75		25	0				0.	37	0	1950	842	0
580	2	[illegible]	53	S	43+00	41+00	104+00	104+00	40	0	50	10	0			0.	30	0	1950	842	42666
581	3	24DEC80	53	S	4[illegible]+00	41+00	104+00	104+00	40	0	50	10	0			0.	30	968	1950	842	32000
582	4	25DEC80	53	S	43+00	41+00	104+00	104+00	40		50	10	0	-12.0	-16.0	0.	30	220	2125	842	14222
583	5	25DEC80	53	S	49+00	41+00	104+00	104+00	30		20	60	0	-17.0	-22.0	0.	30	0	2125	842	35555
584	6	27DEC80	53	S	49+00	41+00	104+00	104+00	85	0	0	15	0	-22.0	-25.0	0.	30	22	2125	842	32777
585	7	28DEC80	53	S	49+00	41+00	104+00	104+00	90	0	0	10	0	-22.0	-26.0	0.	30	72	2125	842	30222
586	8	29DEC80	53	S	49+00	41+00	104+00	104+00	90	0	0	10	0	-22.0	-26.0	0.	30	14	2125	842	39822
587	9	30DEC80	53	S	49+00	41+00	104+00	104+00	90	0	0	10	0	-11.0		0.	30	0	2125	842	0
588	10	31DEC80	53	S	49+00	41+00	104+00	104+00	90	0	0	10	0	-15.0	19.0	0.	30	128	2125	842	47999
589	11	01JAN81	53	S	49+00	41+00	104+00	104+00	90	0	0	10	0	-7.0	-25.0	0.	30	126	2125	856	45888
590	12	02JAN81	53	S	49+00	59+00	104+00	104+00	90	0	0	10	0	-10.0	-14.0	0.	30	160	2125	842	63333
591	13	03JAN81	53	S	49+00	59+00	104+00	104+00	90	0	0	10	0	-14.0	-18.0	0.	30	160	2125	1054	41777
592	14	04JAN81	53	S	49+00	59+00	104+00	104+00	75	0	0	25	0	-14.0	-18.0	0.	30	50	2125	1065	22222
593	15	05JAN81	53	S	49+00	59+00	104+00	104+00	75	0	0	25	0	-14.0	-1[illegible]	0.	30	10	2125	1065	4444
594	16	06JAN81	53	S	49+00	59+00	104+00	104+00	75	0	0	25	0	-18.0	-22.0	0.	30	90	2125	1065	40000
595	17	07JAN81	53	S	49+00	59+00	104+00	104+00	75	0	0	25	0	-7.0	-10.0	0.	30	36	2125	1065	12000
596	18	08JAN81	53	S	49+00	59+00	104+00	104+00	75	0	0	25	0	-10.0	-19.0	0.	30	110	2125	1065	36666
597	19	09JAN81	53	S	49+00	59+00	104+00	104+00	75	0	0	25	0	-13.0	-21.0	0.	30	94	1925	1090	32888
598	20	10JAN81	53	S	49+00	47+50	104+00	104+00	75	0	0	25	0	-17.0	-24.0	0.	30	76	1925	1090	25499
598	201	0[illegible]JAN81	53	S	49+00	47+50			0	0	0	0	0			11.9	0	0	0	0	0
599	21	11JAN81	53	S	49+00	59+00	104+00	104+00	75	0	0	25	0	-21.0	-26.0	0.	30	73	2125	1115	26000
600	22	12JAN81	53	S	49+00	59+00	104+00	104+00	75	0	0	25	0			0.	30	86	2125	1115	28777
601	23	13JAN81	53	S	49+00	59+00	104+00	104+00	75	0	0	25	0			0.	30	63	2125	1115	26000
602	24	14JAN81	53	S	51+00	59+00	88+00	38+00	75	0	0	25	0			0.	30	59	2125	700	22111
604	25	16JAN81	53	S	53+00	68+00	88+00	38+00	75	0	0	25	0			0.	30	200	2125	800	85556
605	27	17JAN81	53	S	[illegible]	[illegible]	[illegible]	[illegible]	75	0	0	25	0			0.	30	160	2125	800	74444
606	[illegible]	[illegible]	53	S	[illegible]	6[illegible]+10	[illegible]	[illegible]	85	0	0	15	0			0.	30	180	2375	1000	79997
607	[illegible]	[illegible]	53		[illegible]	63+[illegible]	[illegible]	[illegible]	85	0	0	15	0	-25.0	-27.0	0.	30	200	2125	1025	62221
608	30	20JAN81	53		[illegible]	77+00	[illegible]	[illegible]	85	0	0	15	0	-16.0	-22.0	0.	30	122	2125	1125	44165
609	31	21JAN81	53		[illegible]	77+00	[illegible]	38+00	85	0	0	15	0	-7.0	-16.0	0.	30	108	2125	1155	54000
610	32	22JAN81	53		68+00	77+00	88+00	88+00	85	0	0	15	0	-7.0	-16.0	0.	30	56	2125	1115	24889
611	33	23JAN81	53		[illegible]	75+[illegible]	[illegible]	[illegible]	75	0	0	25	0	-16.0	-24.0	0.	30	96	2125	1112	42666
612	[illegible]	24JAN81	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	75	0	0	25	0	-20.0	-27.0	0.	30	96	2125	1142	36445
[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	75	0	0	25	0	-7.0	-15.0	0.	30	123	2125	1142	53778
[illegible]	[illegible]	[illegible]	53		[illegible]	[illegible]	[illegible]	38+00	75	0	0	25	0	-11.0	-19.0	0.	30	100	2125	1142	44444
[illegible]	[illegible]	[illegible]	53		[illegible]	[illegible]	[illegible]	[illegible]	75	0	0	25	0	-15.0	-19.0	0.	30	70	2125	1142	31111
[illegible]	[illegible]	28JAN81	53		[illegible]	[illegible]	[illegible]	[illegible]	75	0	0	25	0	-19.0	-26.0	0.	30	125	2125	1192	51000
[illegible]	[illegible]	29JAN81	[illegible]		[illegible]	[illegible]	71+[illegible]	71+50	75	0	0	25	0	-9.0	-16.0	0.	30	113	2125	1192	46000
[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	77+00	71+[illegible]	[illegible]	75	0	0	25	0	-9.0	-16.0	0.	30	103	2125	1192	37000
[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	75	0	0	25	0	-13.0	-20.0	0.	30	338	2125	1025	45333

(continued)

Table B4 (continued)

CONTRACT NO. [illegible]

					STATION-CUT		DISPOSAL-FILL		CHARACTER-OF-CUT-MATERIAL					AVERAGE DEPTH (CHANNEL)		*WORK-PERFORMED*					
CUM	DAY	DATE	CHAN.	CT	START	END	START	END	CLAY %	SAND %	SILT %	SHELL %	GRAVEL %	BEFORE MLW	AFTER MLW	SAND CUT-FT	WIDTH CUT-FT	ADV. FT	FLOAT PIPE FT	SHORE PIPE FT	AMOUNT DREDGED CU-YDS
620	42	1FEB81	52		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	25	0	20.0	26.0	0.	30	90	2125	1075	39000
621	43	2FEB81	53		85+00	75+00	71+50	71+50	75	0	[illegible]	25	0	9.0	13.0	0.	30	153	2125	1075	54000
622	44	3FEB81	53		85+00	74+00	71+50	71+50	70	0	0	30	0	13.0	17.0	0.	30	55	2125	1075	24444
623	45	4FEB81	52		85+00	79+00	71+50	71+50	70	0	0	30	0	13.0	21.0	0.	30	77	2175	910	34221
624	46	5FEB81	52		85+00	76+00	71+50	71+50	70	[illegible]	[illegible]	30	0	17.0	25.0	0.	30	63	2125	910	30222
625	47	6FEB81	52		85+00	76+00	71+50	71+50	70	[illegible]	[illegible]	[illegible]	0	25.0	29.0	0.	30	72	2025	910	27000
626	48	7FEB81	52	S	85+00	94+50	71+50	71+50	70	0	0	30	0	9.0	13.0	0.	30	400	2125	910	63667
627	49	8FEB81	52	S	85+00	95+00	71+50	71+50	70	0	0	30	0	13.0	16.0	0.	30	110	2175	910	37777
628	50	9FEB81	52	S	85+00	94+50	71+75	71+75	70	0	0	30	0	16.0	20.0	0.	30	20	2175	935	37111
629	51	10FEB81	52	S	85+00	94+50	71+50	71+50	65	0	0	35	0	20.0	23.0	0.	30	20	2175	925	21944
630	52	11FEB81	52	S	85+00	94+50	71+50	71+50	60	0	0	40	0	20.0	24.0	0.	30	48	2175	925	21111
631	53	12FEB81	52	S	85+00	94+50	71+50	[illegible]	60	[illegible]	[illegible]	40	0	20.0	27.0	0.	30	57	2175	985	22167
632	54	13FEB81	52	S	85+00	94+50	71+50	71+50	70	0	0	30	0	24.0	27.0	0.	30	74	2175	925	26556
633	55	14FEB81	52	S	94+50	104+50	71+50	52+50	70	0	0	30	0	9.0	13.0	0.	30	119	2125	985	47722
634	56	15FEB81	52	S	94+00	104+00	52+50	52+50	80	0	0	20	0	9.0	16.0	0.	30	158	2175	1050	60944
635	57	16FEB81	52	S	94+00	104+00	52+50	52+50	70	0	0	30	0	16.0	20.0	0.	30	103	2175	1100	42555
636	58	17FEB81	52	S	94+00	104+00	52+50	52+50	75	0	0	25	0	16.0	23.0	0.	30	124	2200	1125	44334
637	59	18FEB81	52	S	94+00	104+00	52+50	52+50	70	0	0	30	0	23.0	28.0	0.	30	95	2175	1125	30611
638	60	19FEB81	52	S	94+00	104+00	52+50	52+50	80	0	0	20	0	10.0	13.0	0.	30	145	2175	1125	41500
639	61	20FEB81	52	S	104+00	114+00	52+50	52+50	70	0	0	30	0	10.0	16.0	0.	30	137	2175	1150	45500
640	62	21FEB81	52	S	104+00	114+00	52+50	52+50	70	0	0	30	0	13.0	20.0	0.	30	74	2175	1150	36167
641	63	22FEB81	52	S	104+00	114+50	52+50	52+50	70	0	0	30	0	16.0	23.0	0.	30	116	2175	1200	43167
642	64	23FEB81	52	S	104+00	114+50	52+50	52+50	65	0	0	35	0	20.0	26.0	0.	30	95	2175	1200	31500
643	65	24FEB81	52	S	104+00	125+00	52+50	34+00	80	0	0	20	0	10.0	12.0	0.	30	147	2175	1200	36167
644	66	25FEB81	52	S	125+00	114+50	34+00	34+00	[illegible]	0	0	20	0	10.0	18.0	0.	30	[illegible]	2175	1025	61833
645	67	26FEB81	52	S	125+00	114+50	34+00	34+00	70	0	0	30	0	18.0	21.0	0.	30	137	2175	1025	45500
646	68	27FEB81	52	S	125+00	114+50	34+00	34+00	70	0	10	20	0	18.0	24.0	0.	30	34	2175	1025	28000
647	69	28FEB81	52	S	125+00	114+50	34+00	34+00	70	0	10	20	0	21.0	24.0	0.	30	94	2175	1025	27833

(continued)

Table B4 (continued)

[illegible] LEVEL BEAN

[illegible]

CIP	DOR	DATE	CREW	CL	STATION-CUT START	STATION-CUT STOP	DISPOSAL-FILL START	DISPOSAL-FILL END	CHARACTER OF CUT MATERIAL CLAY %	SAND %	SILT %	SHELL %	GRVL %	AVERAGE CHANNEL DEPTH BEFORE MLW	AVERAGE CHANNEL DEPTH AFTER MLW	BANK CUT FT	WIDTH CUT FT	ADV. FT	FLOAT PIPE FT	SHORE PIPE FT	AMOUNT DREDGED CU-YDS
64[illegible]	70	[illegible]MAR81	52	S	125+[illegible]	135+00	34+[illegible]	34+[illegible]	70	[illegible]	[illegible]	30	0	-1[illegible].0	-1[illegible]	0.	3[illegible]	1[illegible]	2175	1025	44445
649	71	02MAR81	52	S	125+00	135+00	34+00	34+[illegible]	70	[illegible]	[illegible]	30	0	-12.0	-1[illegible].0	0.	30	90	2175	1025	35555
650	72	03MAR81	52	S	125+00	135+00	34+00	34+[illegible]	70	0	[illegible]	30	0	-16.0	-2[illegible].0	0.	30	90	2175	1050	40000
651	73	04MAR81	52	S	125+00	135+00	34+00	34+[illegible]	[illegible]	1	[illegible]	[illegible]	0	-20.0	-2[illegible].0	0.	30	140	2175	1050	46666
652	74	05MAR81	52	S	125+00	135+00	34+[illegible]	34+[illegible]	[illegible]	[illegible]	10	20	0	-23.	-25.0	0.	30	1[illegible]	2175	1050	22221
653	75	06MAR81	52	S	1[illegible]+[illegible]	1[illegible]+00	14+00	14+[illegible]	60	[illegible]	10	30	0	-23.0	-2[illegible].0	0.	30	2[illegible]	2175	1050	55555
654	76	07MAR81	52	S	125+[illegible]	1[illegible]	14+00	14+[illegible]	[illegible]	[illegible]	10	25	0	-12.0	-19.0	0.	30	1[illegible]	2175	1050	55554
655	77	08MAR81	52	S	135+00	145+00	14+00	14+00	65	0	10	25	0	-19.0	-23.0	0.	30	1[illegible]	2175	1050	46666
656	78	09MAR81	52	N	145+00	14[illegible]+50	14+00	14+00	65	0	10	25	0	-23.0	-25.0	0.	30	142	2175	1050	35999
657	79	10MAR81	52	N	135+[illegible]	144+50	14+[illegible]	14+[illegible]	65	[illegible]	10	25	0	-12.0	-15.[illegible]	0.	30	81	2175	1050	26833
658	80	11MAR81	52	S	135+00	144+50	14+00	14+00	60	[illegible]	10	30	0	-15.0	-1[illegible].0	0.	30	22	2175	1050	30667
[illegible]	[illegible]1	[illegible]	[illegible]	[illegible]	[illegible]	14[illegible]+[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	15	0	-18.0	-24.0	0.	30	81	2175	1050	26833
660	82	13MAR81	52	[illegible]	133+00	150+00	14+00	14+00	70	0	10	20	0	-10.0	-12.0	0.	30	35	2175	1050	22611
661	83	14MAR81	52	S	145+00	150+00	14+00	14+00	70	0	10	20	0	-10.0	-18.0	0.	30	100	2175	1050	31666
662	84	15MAR81	52	S	145+00	152+00	14+00	14+00	70	0	10	20	0	-15.0	-24.0	0.	30	147	2175	1100	49000
663	85	16MAR81	52	N	146+50	152+00	14+00	14+00	70	0	10	20	0	-10.0	-12.0	0.	30	78	2175	1075	24889
664	85	17MAR81	52	N	146+50	152+00	14+00	14+00	70	0	10	20	0	-12.0	-21.0	0.	30	123	2075	1075	41000
665	87	18MAR81	52	N	146+50	152+00	14+00	14+00	80	0	0	20	0	-18.0	-21.0	0.	30	49	2075	1075	16166
666	88	19MAR81	52	N	108+00	117+00	43+00	43+00	70	0	10	20	0	-9.0	-12.0	0.	30	93	1925	1000	24833
667	89	20MAR81	52	N	108+00	117+00	43+00	43+00	60	0	10	30	0	-9.0	-18.0	0.	30	144	1925	1000	48000
668	90	21MAR81	52	N	10[illegible]+00	117+00	43+00	43+00	60	0	10	30	0	-15.0	-24.0	0.	30	135	1925	1000	45000
669	91	22MAR81	52	N	99+00	1[illegible]7+00	43+00	43+00	60	0	10	30	0	-9.0	-12.0	0.	30	117	2125	1000	39000
670	92	23MAR81	52	N	99+00	108+00	43+00	43+00	60	0	10	30	0	-12.0	-18.0	0.	30	144	2175	1000	48000
671	93	24MAR81	52	N	99+00	108+00	43+00	43+00	60	0	10	30	0	-18.0	-24.0	0.	30	144	2175	1060	48000
672	94	25MAR81	52	N	99+00	1[illegible]8+00	43+00	43+00	60	0	10	30	0	-24.0	-26.0	0.	30	154	2175	1000	34222
673	95	26MAR81	52	N	117+00	130+00	26+00	26+00	65	0	10	25	0	-12.0	-19.0	0.	30	221	2175	1000	72220
674	96	27MAR81	52	N	117+00	130+00	26+00	26+00	60	0	10	30	0	-18.0	-23.0	0.	30	208	2175	1000	57777
675	97	28MAR81	52	N	130+00	135+00	26+00	26+00	60	0	10	30	0	-10.0	-21.0	0.	30	239	2175	1000	63665
676	98	29MAR81	52	N	91+00	99+00	26+00	26+00	60	0	10	30	0	-21.0	-23.0	0.	30	71	2175	1000	26554
677	[illegible]	[illegible]MAR81	52	N	[illegible]+00	[illegible]+[illegible]	[illegible]+[illegible]	[illegible]+00	60	0	10	30	0	-14.0	-22.0	0.	30	168	1625	1530	51554
678	1[illegible]	31MAR81	52	N	91+[illegible]	[illegible]+[illegible]	64+00	64+00	60	[illegible]	10	30	0	-10.0	-20.0	0.	30	117	1625	1530	37777

(continued)

Table B4 (concluded)

CIR	DOR	DATE	CREW	CL	STATION-CUT START	STATION-CUT STOP	STATION-FILL START	STATION-FILL STOP	CONTRACT CUT CY	SAND %	SILT %	SHELL %	ROCK %	AVERAGE DEPTH BEFORE MLW	AVERAGE DEPTH AFTER MLW	BANK CUT FT	WIDTH CUT FT	ADV. PD FT	FLOAT PIPE FT	SHORE PIPE FT	AMOUNT DREDGED CU-YDS
679	101	1APR81	52	N	[illegible]	91+[illegible]	64+[illegible]	64+[illegible]	55		10	55	0	-21.0	-24.0	0.	30	45	1625	1530	21666
680	102	2APR81	52	N	56+00	91+00	64+00	64+[illegible]	55		10	55	0	-21.0	-24.0	0.	30	20	2510	1000	6667
681	103	3APR81	52	S	31+00	40+[illegible]	117+[illegible]	[illegible]	75	0	10	15	0	-9.0	-15.0	0.	30	170	3265	1025	43334
682	104	4APR81	52	S	31+00	40+[illegible]	117+[illegible]	[illegible]	75		10	15	0	-11.0	-15.0	0.	30	60	3265	1075	29000
683	105	5APR81	52	S	31+00	40+00	117+00	117+00	75		10	15	0	-15.0	-21.0	0.	30	110	3265	1220	36666
684	106	6APR81	52	S	30+00	40+00	117+[illegible]	117+00	75		10	15	0	-21.0	-24.0	0.	30	120	1700	1180	59998
685	107	7APR81	52		21+[illegible]	40+00	117+	117+00	[illegible]		10	25	0	-24.0	-27.0	0.	30	132	1700	1180	46333
686	108	8APR81	52	S	21+00	30+00	117+00	117+00	[illegible]		10	30	0	-12.0	-18.0	0.	30	90	1765	1255	33000
687	109	9APR81	52	S	21+00	30+00	117+00	117+00	60		10	30	0	-15.0	-21.0	0.	30	135	1765	1280	45000
688	110	10APR81	52	S	19+00	30+00	117+00	117+00	60		10	30	0	-18.0	-24.0	0.	30	45	1765	1280	15000
689	111	11APR81	52	S	21+00	30+00	117+00	117+00	60		10	30	0	-9.0	-15.0	0.	30	0	1765	0	0
690	112	12APR81	52	S	11+00	21+00	117+00	117+00	60	0	10	30	0	-12.0	-18.0	0.	30	170	1765	1280	56667
691	113	13APR81	52	S	11+00	21+00	117+00	117+00	60	0	10	30	0	-18.0	-24.0	0.	30	177	1765	1280	36667
692	114	14APR81	52	S	11+00	21+00	117+00	117+00	60		10	30	0	-21.0	-26.0	0.	30	170	1765	1280	45333
693	115	15APR81	52	S	11+00	0+00	117+00	117+00	60	0	10	30	0	-9.0	-12.0	0.	30	97	1765	1280	26250
694	116	16APR81	52	S	11+00	0+00	117+00	117+00	60	0	10	30	0	-9.0	-15.0	0.	30	181	1765	1300	60266
695	117	17APR81	52	S	11+00	0+00	117+00	117+00	60	0	10	30	0	-15.0	-22.0	0.	30	231	1765	1300	62270
696	118	18APR81	52	N	12+50	0+00	117+00	117+00	60	0	10	30	0	-13.0	-15.0	0.	30	319	1765	1300	31932
697	119	19APR81	52	N	12+50	0+00	117+00	117+00	60	0	10	30	0	-13.0	-23.0	0.	30	173	1765	1330	54238
698	120	20APR81	52	N	12+50	0+00	117+00	117+00	60	0	10	30	0	-21.0	-23.0	0.	30	58	1765	1330	12900
699	121	21APR81	52	N	12+50	25+50	117+00	117+00	60	0	10	30	0	-10.0	-12.0	0.	30	129	1715	1330	28732
700	122	22APR81	52	N	12+50	25+50	117+00	117+00	60	0	10	30	0	-10.0	-15.0	0.	30	117	1715	1355	33221
701	123	23APR81	52	N	12+50	25+50	117+00	117+00	60	0	10	30	0	-15.0	-18.0	0.	30	156	1715	1355	52000
702	124	24APR81	52	N	12+50	25+50	117+00	117+00	60	0	10	30	0	-18.0	-21.0	0.	30	65	1715	1355	21666
703	125	25APR81	52	N	25+50	40+00	117+00	117+00	60	0	10	30	0	-9.0	-12.0	0.	30	0	1715	1355	61666
704	126	26APR81	52	N	25+50	40+00	117+00	117+00	60	0	10	30	0	-12.0	-15.0	0.	30	87	1715	1355	29000
705	127	27APR81	52	N	25+50	40+00	117+00	117+00	60	0	10	30	0	-15.0	-18.0	0.	30	233	1715	1355	57999
706	128	28APR81	52	N	25+50	40+00	117+00	117+00	60	0	10	30	0	-18.0	-21.0	0.	30	246	1715	1355	67666
707	129	29APR81	52	N	26+00	35+00	117+00	117+00	60		10	30	0	-27.0	-30.0	0.	30	156	1715	1355	51333
708	130	30APR81	52	N	26+00	13+00	117+00	117+00	60		10	30	0	-23.0	-26.0	0.	30	170	1715	1355	43333
709	131	01MAY81	52	N	26+00	13+00	117+00	117+00	70		10	20	0	-23.0	-29.0	0.	30	233	1715	1355	59333
710	132	02MAY81	52	S	22+00	10+25	117+00	117+00	70	0	10	20	0	-25.0	-30.0	0.	30	214	1715	1355	60888
711	133	03MAY81	52	N	125+00	137+00	25+00	25+00	60	0	10	30	0	-22.0	-25.0	0.	30	44	1800	1500	19277
712	134	04MAY81	52	N	125+00	137+00	25+00		60	0	10	30	0	-22.0	-27.0	0.	30	214	1765	1500	24000
713	135	05MAY81	52	N	125+00	114+00	25+00		70	0	10	20	0	-24.5	-27.0	0.	30	[illegible]	1715	1500	27554
714	136	06MAY81	52	N	125+00	114+00	25+00		70	0	10	[illegible]	0	-25.0	-27.0	0.	30	277	1765	1500	25554
715	137	07MAY81	52	N	137+00	147+00	25+00		60	0	10	30	0	-24.0	-[illegible]	0.	30	[illegible]	1765	1500	9777

Note: CIR - Contractors Inspection Report
DOR - Dredge Operation Report
CREW - Total Crew
CL - Center Line: S & L indicate work south or north of center line

Table B5

Barge Haul Operation Combined

BARGE-TYPE	DATE	CIR-NR	CUT-STRT	CUT-STOP	FILL-STRT	FILL-STOP	GEO-TECH %'S CLAY	SILT	SAND	T1	CUBIC-YDS
VII	2OCT79	132	-	-	25+50	26+50	0	0	0	13	4732
VII	3OCT79	133	-	-	26+50	27+00	0	0	0	12	4368
VII	4OCT79	134	-	-	27+00	27+50	0	0	0	10	3640
VII	5OCT79	135	-	-	27+50	27+50	0	0	0	10	3640
VII	6OCT79	136	-	-	27+50	27+75	0	0	0	11	4004
VII	7OCT79	137	-	-	27+75	28+00	0	0	0	12	4368
VII	8OCT79	138	348+00	-	28+00	-	0	0	0	60	2184
VII	9OCT79	139	348+00	357+00	28+00	-	0	0	0	50	750
VII	10OCT79	140	-	-	28+50	-	0	0	0	80	1200
VII	11OCT79	141	-	-	28+50	-	0	0	0	11	1650
VII	11DEC79	202	-	-	31+00	31+50	0	0	0	70	3500
VII	12DEC79	203	-	-	31+50	31+75	0	0	0	50	2500
VII	13DEC79	204	-	-	32+00	32+25	0	0	0	70	3500
VII	14DEC79	205	-	-	32+25	32+50	0	0	0	70	3500
VII	15DEC79	206	-	-	-	-	0	0	0	40	2000
VII	16DEC79	207	-	-	-	-	0	0	0	12	6000
VII	17DEC79	208	-	-	32+50	33+00	0	0	0	90	4500
VII	18DEC79	209	-	-	38+00	-	0	0	0	90	4500
VII	19DEC79	210	-	-	33+00	33+50	0	0	0	10	5000
VII	20DEC79	211	-	-	34+00	34+50	0	0	0	70	3500
VII	21DEC79	212	-	-	35+00	36+00	0	0	0	13	6500
VII	22DEC79	213	-	-	36+00	-	0	0	0	10	5000
VII	23DEC79	214	-	-	38+00	-	0	0	0	13	6500
VII	24DEC79	215	-	-	38+00	-	0	0	0	10	5000
VII	26DEC79	217	-	-	38+00	-	0	0	0	30	1500
VII	27DEC79	218	-	-	38+00	-	0	0	0	30	720
VII	29DEC79	220	-	-	39+00	39+50	0	0	0	90	5400
VII	30DEC79	221	-	-	40+00	-	0	0	0	12	7200
VII	31DEC79	222	-	-	40+00	40+50	0	0	0	13	7800

(continued)

Table B5 (continued)

Barge Haul Operation Combined

BARGE-TYPE	DATE	CIR-NR	CUT-STRT	CUT-STOP	FILL-STRT	FILL-STOP	GEO-TECH %'S CLAY	SILT	SAND	T1	CUBIC-YDS
VII	1JAN80	223	-	-	41+00	-	0	0	0	13	7800
VII	2JAN80	224	-	-	41+00	41+50	0	0	0	13	7800
VII	3JAN80	225	-	-	41+50	42+00	0	0	0	14	8400
VII	4JAN80	226	-	-	42+00	-	0	0	0	10	6000
VII	5JAN80	227	-	-	42+00	-	0	0	0	12	7200
VII	6JAN80	228	-	-	42+00	-	0	0	0	12	7200
VII	7JAN80	229	-	-	-	-	0	0	0	12	7200
VII	8JAN80	230	-	-	24+00	-	0	0	0	30	1800
VII	9JAN80	231	-	-	42+50	-	0	0	0	80	4800
VII	10JAN80	232	-	-	42+50	43+00	0	0	0	12	7200
VII	11JAN80	233	-	-	43+50	44+00	0	0	0	12	7200
VII	12JAN80	234	-	-	44+00	-	0	0	0	10	6000
VII	13JAN80	235	-	-	44+00	44+50	0	0	0	10	6000
VII	14JAN80	236	-	-	45+00	-	0	0	0	11	6600
VII	15JAN80	237	-	-	45+00	45+50	0	0	0	11	0
VII	16JAN80	238	-	-	45+50	-	0	0	0	80	4800
VII	17JAN80	239	-	-	45+50	-	0	0	0	80	4800
VII	18JAN80	240	-	-	45+50	46+00	0	0	0	50	3000
VII	19JAN80	241	-	-	46+00	-	0	0	0	12	7200
VII	20JAN80	242	-	-	47+00	47+50	0	0	0	90	5400
VII	21JAN80	243	-	-	47+50	-	0	0	0	17	10200
VII	22JAN80	244	-	-	-	-	0	0	0	14	8400
VII	27JAN80	249	-	-	47+50	47+50	0	0	0	30	1800
VII	28JAN80	250	-	-	48+00	-	0	0	0	18	10800
VII	29JAN80	251	-	-	49+50	-	0	0	0	19	11400
VII	30JAN80	252	-	-	60+00	-	0	0	0	16	9600
VII	31JAN80	253	-	-	60+00	-	0	0	0	70	4060

(continued)

Table B5 (continued)

Barge Haul Operation Combined

BARGE-TYPE	DATE	CIR-NR	CUT-STRT	CUT-STOP	FILL-STRT	FILL-STOP	GEO-TECH %'S CLAY	SILT	SAND	T1	CUBIC-YDS
VII	1FEB80	254	-	-	60+00	-	0	0	0	50	2900
VII	2FEB80	255	-	-	61+00	-	0	0	0	15	8700
VII	3FEB80	256	-	-	61+00	-	0	0	0	19	10000
VII	4FEB80	257	-	-	61+00	-	0	0	0	17	8750
VII	5FEB80	258	-	-	62+00	-	0	0	0	19	10500
VII	6FEB80	259	-	-	62+00	-	0	0	0	16	8700
VII	7FEB80	260	-	-	63+00	-	0	0	0	22	11900
VII	8FEB80	261	-	-	64+00	-	0	0	0	27	14600
VII	9FEB80	262	-	-	65+00	-	0	0	0	20	9400
VII	10FEB80	263	-	-	68+00	-	0	0	0	16	7300
VII	11FEB80	264	-	-	69+00	-	0	0	0	26	13100
VII	12FEB80	265	-	-	69+00	-	0	0	0	23	12100
VII	13FEB80	266	-	-	71+00	-	0	0	0	22	11100
VII	14FEB80	267	-	-	71+00	-	0	0	0	19	9800
VII	15FEB80	268	-	-	72+00	-	0	0	0	22	11320
VII	16FEB80	269	-	-	73+00	-	0	0	0	19	9800
VII	17FEB80	270	-	-	74+00	-	0	0	0	15	7800
VII	18FEB80	271	-	-	74+00	-	0	0	0	27	10050
VII	19FEB80	272	-	-	74+00	-	0	0	0	28	17000
VII	20FEB80	273	-	-	75+00	-	0	0	0	20	12200
VII	21FEB80	274	-	-	78+00	-	0	0	0	50	3100
VII	22FEB80	275	-	-	81+00	-	0	0	0	13	7900
VII	23FEB80	276	-	-	82+00	-	0	0	0	90	5400
VII	24FEB80	277	-	-	82+00	-	0	0	0	10	5900
VII	25FEB80	278	-	-	83+00	-	0	0	0	16	9600
VII	26FEB80	279	-	-	83+00	-	0	0	0	15	8300
VII	27FEB80	280	-	-	83+00	-	0	0	0	20	12200

(continued)

Table B5 (continued)

Barge Haul Operation Combined

BARGE-TYPE	DATE	CIR-NR	CUT-STRT	CUT-STOP	FILL-STRT	FILL-STOP	GEO-TECH %'S CLAY	SILT	SAND	T1	CUBIC-YDS
VII	3MAR80	285	-	-	86+00	-	0	0	0	90	5200
VII	4MAR80	286	-	-	86+00	-	0	0	0	20	12400
VII	5MAR80	287	-	-	98+00	-	0	0	0	25	14900
VII	6MAR80	288	-	-	98+00	-	0	0	0	20	11400
VII	7MAR80	289	-	-	91+00	-	0	0	0	11	6400
VII	8MAR80	290	-	-	92+00	-	0	0	0	50	2900
VII	9MAR80	291	-	-	99+00	-	0	0	0	15	8550
VII	10MAR80	292	-	-	100+00	-	0	0	0	17	10600
VII	11MAR80	293	-	-	101+00	-	0	0	0	13	8100
VII	12MAR80	294	-	-	101+00	-	0	0	0	10	5900
VII	13MAR80	295	-	-	102+00	-	0	0	0	21	11300
VII	14MAR80	296	-	-	100+00	-	0	0	0	20	12200
VII	15MAR80	297	-	-	98+00	-	0	0	0	10	9800
VII	16MAR80	298	-	-	97+00	-	0	0	0	13	8000
VII	17MAR80	299	-	-	-	-	0	0	0	80	5000
VII	20MAR80	302	-	-	95+00	-	0	0	0	13	7650
VII	21MAR80	303	-	-	94+00	-	0	0	0	18	10900
VII	22MAR80	304	-	-	88+00	-	0	0	0	20	11800
VII	23MAR80	305	-	-	83+00	-	0	0	0	22	13500
VII	24MAR80	306	-	-	75+00	-	0	0	0	22	13300
VII	25MAR80	307	-	-	70+00	-	0	0	0	29	11200
VII	26MAR80	308	-	-	69+00	-	0	0	0	21	12200
VII	27MAR80	309	-	-	66+00	-	0	0	0	22	13900
VII	28MAR80	310	-	-	62+00	-	0	0	0	18	10900
VII	29MAR80	311	-	-	60+00	-	0	0	0	20	11800
VII	30MAR80	312	-	-	70+00	-	0	0	0	12	7400
VII	31MAR80	313	-	-	73+00	-	0	0	0	13	9315

(continued)

Table B5 (continued)

Barge Haul Operation Combined

BARGE-TYPE	DATE	CIR-NR	CUT-STRT	CUT-STOP	FILL-STRT	FILL-STOP	GEO-TECH %'S CLAY	SILT	SAND	T1	CUBIC-YDS
VII	1APR80	314	-	-	75+00	-	0	0	0	14	9900
VII	2APR80	315	-	-	77+00	-	0	0	0	13	9300
VII	3APR80	316	-	-	83+00	-	0	0	0	80	6000
VII	4APR80	317	-	-	88+00	-	0	0	0	13	9000
VII	5APR80	318	-	-	94+00	-	0	0	0	12	8800
VII	6APR80	319	-	-	98+00	-	0	0	0	90	6800
VII	7APR80	320	-	-	98+00	-	0	0	0	11	9300
VII	8APR80	321	-	-	98+00	-	0	0	0	40	3000
VII	9APR80	322	-	-	95+00	-	0	0	0	80	6000
VII	10APR80	323	-	-	94+00	-	0	0	0	13	9300
VII	11APR80	324	-	-	92+00	-	0	0	0	16	10600
VII	12APR80	325	-	-	90+00	-	0	0	0	14	9700
VII	13APR80	326	-	-	87+00	-	0	0	0	11	8100
VII	14APR80	327	-	-	84+00	-	0	0	0	13	9400
VII	15APR80	328	-	-	80+00	-	0	0	0	80	6000
VII	16APR80	329	-	-	78+00	-	0	0	0	13	9350
VII	17APR80	330	-	-	78+00	-	0	0	0	11	8250
VII	18APR80	331	-	-	77+00	-	0	0	0	10	7500
VII	20APR80	332	-	-	88+00	-	0	0	0	60	4500
VII	21APR80	334	-	-	77+00	-	0	0	0	11	8300
VII	22APR80	335	-	-	76+00	-	0	0	0	11	8300
VII	23APR80	336	-	-	74+00	-	0	0	0	12	9000
VII	24APR80	337	-	-	71+00	-	0	0	0	14	10500
VII	25APR80	338	-	-	69+00	-	0	0	0	23	13900
VII	26APR80	339	-	-	67+00	-	0	0	0	25	15300
VII	27APR80	340	-	-	60+00	-	0	0	0	24	15100
VII	28APR80	341	-	-	64+00	-	0	0	0	18	11800
VII	29APR80	342	-	-	69+00	-	0	0	0	20	12700
VII	30APR80	343	-	-	74+00	-	0	0	0	19	11750

(continued)

Table B5 (continued)

Barge Haul Operation Combined

BARGE-TYPE	DATE	CIR-NR	CUT-STRT	CUT-STOP	FILL-STRT	FILL-STOP	GEO-TECH %'S CLAY	SILT	SAND	T1	CUBIC-YDS
VII	1MAY80	344	-	-	77+00	-	0	0	0	21	13500
VII	2MAY80	345	-	-	84+00	-	0	0	0	28	17500
VII	3MAY80	346	-	-	86+00	-	0	0	0	24	15750
VII	4MAY80	347	-	-	88+00	-	0	0	0	22	14300
VII	5MAY80	348	-	-	-	-	0	0	0	20	1300
VII	6MAY80	349	-	-	-	-	0	0	0	18	11200
VII	7MAY80	350	-	-	106+00	-	0	0	0	27	17650
VII	8MAY80	351	-	-	108+00	-	0	0	0	27	16700
VII	9MAY80	352	-	-	110+00	-	0	0	0	22	14700
VII	10MAY80	353	-	-	110+00	-	0	0	0	21	14700
VII	11MAY80	354	-	-	111+00	-	0	0	0	20	14400
VII	12MAY80	355	-	-	111+00	-	0	0	0	17	12600
VII	13MAY80	356	-	-	112+00	112+50	0	0	0	22	15500
VII	14MAY80	357	-	-	112+50	113+00	0	0	0	20	14000
VII	15MAY80	358	-	-	113+00	113+50	0	0	0	16	11000
VII	16MAY80	359	-	-	113+50	-	0	0	0	22	14900
VII	17MAY80	360	-	-	115+00	-	0	0	0	14	9500
VII	18MAY80	361	-	-	115+00	-	0	0	0	17	12400
VII	19MAY80	362	-	-	116+00	116+50	0	0	0	19	13600
VII	20MAY80	363	-	-	116+50	117+00	0	0	0	23	15800
VII	21MAY80	364	-	-	117+00	-	0	0	0	30	17100
VII	22MAY80	365	-	-	118+00	118+50	0	0	0	23	14100
VII	23MAY80	366	-	-	118+50	119+00	0	0	0	22	14500
VII	24MAY80	367	-	-	119+00	120+00	0	0	0	22	15500
VII	25MAY80	368	-	-	120+00	120+50	0	0	0	19	12700
VII	26MAY80	369	-	-	120+50	-	0	0	0	21	13700
VII	27MAY80	370	-	-	120+50	-	0	0	0	19	12700
VII	28MAY80	371	-	-	122+00	123+00	0	0	0	20	13800
VII	29MAY80	372	-	-	123+00	124+00	0	0	0	13	8900
VII	30MAY80	373	-	-	124+00	124+50	0	0	0	22	15300
VII	31MAY80	374	-	-	124+50	125+00	0	0	0	24	16400

(continued)

Table B5 (continued)

Barge Haul Operation Combined

BARGE-TYPE	DATE	CIR-NR	CUT-STRT	CUT-STOP	FILL-STRT	FILL-STOP	GEO-TECH %'S CLAY	SILT	SAND	T1	CUBIC-YDS
VII	1JUN80	375	-	-	125+00	126+00	0	0	0	22	15300
VII	2JUN80	376	-	-	126+00	127+00	0	0	0	21	14300
VII	3JUN80	377	-	-	127+00	128+00	0	0	0	26	16000
VII	4JUN80	378	-	-	128+00	128+50	0	0	0	28	17800
VII	5JUN80	379	-	-	128+50	-	0	0	0	24	14400
VII	6JUN80	380	-	-	130+00	131+00	0	0	0	21	13700
VII	7JUN80	381	-	-	131+00	-	0	0	0	22	14200
VII	8JUN80	382	-	-	133+00	-	0	0	0	24	15600
VII	9JUN80	383	374+00	374+00	134+00	134+00	60	30	10	13	8110
VII	10JUN80	384	373+00	373+00	136+00	136+00	60	30	10	16	8920
VII	11JUN80	385	372+00	372+00	137+00	137+00	60	30	10	17	9248
VII	12JUN80	386	372+00	372+00	137+00	137+00	60	30	10	11	6050
VII	13JUN80	387	371+00	371+00	139+00	139+00	60	30	10	12	7130
VII	14JUN80	388	371+00	371+00	140+00	140+00	60	30	10	15	8625
VII	15JUN80	389	371+00	371+00	141+00	141+00	60	30	10	16	9470
VII	16JUN80	390	372+00	372+00	141+00	141+00	60	30	10	16	8950
VII	17JUN80	391	372+00	372+00	142+00	142+00	60	30	10	10	5750
VII	18JUN80	392	373+00	373+00	142+00	142+00	60	30	10	16	9392
VII	19JUN80	393	373+00	373+00	143+00	143+00	60	30	10	15	7635
VII	20JUN80	394	373+00	373+00	144+00	144+00	60	30	10	20	10580
VII	21JUN80	395	374+00	374+00	148+00	148+00	60	30	10	19	9995
VII	22JUN80	396	374+00	374+00	149+00	149+00	60	30	10	15	7800
VII	23JUN80	397	374+00	374+00	150+00	150+00	60	30	10	20	9860
VII	24JUN80	398	374+00	374+00	151+00	151+00	60	30	10	13	6669
VII	25JUN80	399	374+00	374+00	152+00	152+00	60	30	10	15	7995
VII	26JUN80	400	374+00	374+00	153+00	153+00	60	30	10	15	7830
VII	27JUN80	401	374+00	374+00	154+00	154+00	60	30	10	12	6300
VII	28JUN80	402	374+00	374+00	154+00	154+00	60	30	10	21	10689
VII	29JUN80	403	374+00	374+00	154+00	154+00	60	30	10	19	9975
VII	30JUN80	404	373+00	373+00	156+00	156+00	60	30	10	18	8892

(continued)

Table B5 (continued)

Barge Haul Operation Combined

BARGE-TYPE	DATE	CIR-NR	CUT-STRT	CUT-STOP	FILL-STRT	FILL-STOP	GEO-TECH %'S CLAY	SILT	SAND	T1	CUBIC-YDS
VII	1JUL80	405	372+00	373+00	158+00	158+00	60	30	10	17	8500
VII	2JUL80	406	372+00	372+00	159+00	159+00	60	30	10	18	92522
VII	3JUL80	407	371+00	371+00	168+00	168+00	60	30	10	17	8823
VII	4JUL80	408	370+00	370+00	168+00	168+00	60	30	10	14	7434
VII	5JUL80	409	370+00	370+00	171+00	171+00	60	30	10	19	9880
VII	6JUL80	410	370+00	370+00	173+00	173+00	60	30	10	17	8908
VII	7JUL80	411	371+00	371+00	175+00	175+00	60	30	10	15	7800
VII	8JUL80	412	372+00	372+00	176+00	176+00	60	30	10	20	10180
VII	9JUL80	413	371+00	371+00	177+00	177+00	60	30	10	90	4905
VII	10JUL80	414	371+00	371+00	177+00	177+00	60	30	10	70	3500
VII	11JUL80	415	372+00	372+00	178+00	178+00	60	30	10	11	4300
VII	12JUL80	416	373+00	373+00	180+00	180+00	60	30	10	25	11300
VII	13JUL80	417	374+00	374+00	181+00	181+00	60	30	10	21	10200
VII	14JUL80	418	374+00	374+00	180+00	180+00	60	30	10	16	8396
VII	15JUL80	419	373+00	373+00	180+00	180+00	60	30	10	15	7710
VII	16JUL80	420	373+00	373+00	182+00	182+00	60	30	10	16	8624
VII	17JUL80	421	373+00	373+00	182+00	182+00	60	30	10	16	8576
VII	18JUL80	422	372+50	372+00	184+00	184+00	60	30	10	15	7695
VII	19JUL80	423	372+00	372+00	184+00	184+00	60	30	10	90	4950
VII	20JUL80	424	371+00	371+00	186+00	186+00	60	30	10	90	4437
VII	21JUL80	425	372+00	372+00	187+00	187+00	60	30	10	12	6276
VII	22JUL80	426	372+00	372+00	189+00	189+00	60	30	10	21	10773
VII	23JUL80	427	372+00	372+00	190+00	190+00	60	30	10	13	6656
VII	24JUL80	428	372+00	372+00	191+00	191+00	60	30	10	13	7008
VII	25JUL80	429	372+00	372+00	192+00	192+00	60	30	10	15	9145
VII	26JUL80	430	372+00	372+00	193+00	193+00	60	30	10	16	8288
VII	27JUL80	431	SE-TB	SE-TB	195+00	195+00	60	30	10	18	9520
VII	28JUL80	432	SE-TB	SE-TB	196+00	196+00	60	30	10	16	7460
VII	29JUL80	433	SE-TB	SE-TB	197+00	197+00	60	30	10	14	6900
VII	30JUL80	434	W-TB	SE-TB	198+00	198+00	60	30	10	18	6500
VII	31JUL80	435	S-TB	SE-TB	199+00	199+00	60	30	10	12	5870
VII	1AUG80	436	S-TB	SE-TB	199+00	199+00	60	30	10	15	7450
VII	2AUG80	437	S-TB	SE-TB	200+00	200+00	60	30	10	16	8400
VII	3AUG80	438	S-TB	SE-TB	200+00	200+00	60	30	10	15	7800
VII	4AUG80	439	SW-TB	SE-TB	-	-	60	30	10	14	6340
VII	5AUG80	440	SW-TB	SE-TB	-	-	60	30	10	70	2800
VII	6AUG80	441	SW-TB	SE-TB	-	-	60	30	10	90	3810
VII	7AUG80	442	SW-TB	SE-TB	-	-	60	30	10	20	1130

Table B5 (concluded)

Barge Haul Operation Combined

BARGE-TYPE	DATE	CIR-NR	CUT-STRT	CUT-STOP	FILL-STRT	FILL-STOP	GEO-TECH %'S CLAY	SILT	SAND	T1	CUBIC-YDS
VIII	9JUN80	383	380+00	380+00	134+00	134+00	80	10	10	80	4990
VIII	10JUN80	384	380+00	380+00	136+00	136+00	80	10	10	10	5580
VIII	11JUN80	385	380+00	380+00	137+00	137+00	30	10	10	80	5352
VIII	12JUN80	386	380+00	380+00	137+00	137+00	80	10	10	50	2750
VIII	13JUN80	387	380+00	380+00	139+00	139+00	80	10	10	50	2970
VIII	14JUN80	388	379+00	379+00	140+00	140+00	80	10	10	90	5175
VIII	15JUN80	389	379+00	379+00	141+00	141+00	80	10	10	80	4730
VIII	16JUN80	390	378+00	378+00	141+00	141+00	80	10	10	90	5040
VIII	17JUN80	391	378+00	370+00	142+00	142+00	80	10	10	40	2310
VIII	18JUN80	392	370+00	370+00	142+00	142+00	80	10	10	70	4108
VIII	19JUN80	393	370+00	370+00	143+00	143+00	80	10	10	70	3565
VIII	20JUN80	394	370+00	370+00	144+00	144+00	80	10	10	80	4220
VIII	21JUN80	395	370+00	370+00	148+00	148+00	80	10	10	80	4205
VIII	22JUN80	396	371+00	371+00	149+00	149+00	80	10	10	10	5200
VIII	23JUN80	397	371+00	371+00	150+00	150+00	80	10	10	80	3940
VIII	24JUN80	398	379+00	379+00	151+00	151+00	80	10	10	30	1531
VIII	25JUN80	399	379+00	379+00	152+00	152+00	30	10	10	90	4805
VIII	26JUN80	400	379+00	379+00	153+00	153+00	30	10	10	80	4170
VIII	27JUN80	401	379+00	379+00	154+00	154+00	80	10	10	12	6300
VIII	28JUN80	402	379+00	379+00	154+00	154+00	80	10	10	14	7111
VIII	29JUN80	403	379+00	379+00	154+00	154+00	80	10	10	13	6825
VIII	30JUN80	404	378+00	378+00	156+00	156+00	80	10	10	14	6908
VIII	1JUL80	405	377+00	377+00	158+00	158+00	80	10	10	17	5500
VIII	2JUL80	406	377+00	377+00	159+00	159+00	80	10	10	10	5148
VIII	3JUL80	407	377+00	377+00	168+00	168+00	80	10	10	10	5177
VIII	4JUL80	408	376+00	376+00	169+00	169+00	80	10	10	12	6366
VIII	5JUL80	409	376+00	376+00	171+00	171+00	80	10	10	11	5720
VIII	6JUL80	410	380+00	380+00	173+00	173+00	80	10	10	12	6292
VIII	7JUL80	411	379+00	379+00	175+00	175+00	80	10	10	10	5200
VIII	8JUL80	412	379+00	379+00	176+00	176+00	80	10	10	15	7715
VIII	14JUL80	418	375+00	375+00	180+00	180+00	0	0	0	20	1104
VIII	15JUL80	419	376+00	376+00	180+00	180+00	0	0	0	13	1104
VIII	16JUL80	420	377+00	377+00	182+00	182+00	0	0	0	70	3776
VIII	17JUL80	421	377+00	377+00	182+00	182+00	0	0	0	60	3224
VIII	18JUL80	422	274+00	274+00	184+00	184+00	0	0	0	80	4105
VIII	19JUL80	423	274+00	274+00	184+00	184+00	0	0	0	30	1650
VIII	20JUL80	424	275+00	275+00	186+00	186+00	0	0	0	60	2963
VIII	21JUL80	425	276+00	276+00	187+00	187+00	0	0	0	10	524

*Note: T1 - Number of barge loads

APPENDIX C: PERFORMANCE OF BARGE HAUL AND HYDRAULIC DREDGE OPERATIONS

Introduction

1. The performance of the barge haul and hydraulic dredge operation was evaluated based on the accumulative production rate in cubic yards versus days work. Further evaluation was made by dividing the effective time worked each day into the number of cubic yards of dredged material dredged each day. These values were then accumulated and plotted for each day of operation. This type of plot provides a better evaluation of production by each dredge or operation.

Barge haul operation

2. Accumulative cubic yards of dredged material versus days worked is shown plotted in Figure C-1. Effective time worked for this operation was not recorded. This plot shows all of the barge haul operation that was loaded from draglines located on the bank and from floating bucket dredges. This plot indicates that the barge haul operation was slow getting started but near the end of this operation two land based draglines and one floating bucket dredge made a considerable improvement in the amount of dredged material hauled to Gaillard Island. The linear portion of the curve beginning at about the 50th day represents the production rate of one dragline and one bucket dredge. Prior to this time only one dragline was working on the bank. The average production for the entire curve averaged about 9500 cu yd per day. All of the barge haul operation consisted of landcut dredged material. The total number of CIR records was 275 but there were only 237 days worked during this operation.

Jim Bean Dredge

3. Accumulative cubic yards of dredged material versus days worked is shown plotted in Figure C-2. The total cubic yards per day divided by the effective time in the dredge worked each day is shown accumulated and plotted versus the number of days worked in Figure C-3. The plot in Figure C-2 indicates the production rate for the Jim Bean Dredge averaged about 20,500 cubic yards of dredged material per day. Figure C-3 indicates that the Jim Bean dredge produced an average effective time production of 1277 cubic yards per hour per day.

Dave Blackburn Dredge

4. Figure C-4 shows a plot of accumulative cubic yards of dredged material versus days worked. Figure C-5 shows the total cubic yards of dredged material divided by the effective time worked each day and accumulated and plotted versus days worked. During the early phases of the contract the Dave Blackburn dredged primarily in the landcut portion of Theodore Ship Channel. Dredged material pumped these long distances from the landcut consisted of about 50 percent sand and 50 percent clay and silt with large quantities of clay balls forming in the dredge pipe. These materials were pumped at a production rate of about 17,000 cubic yards per day. Dredged material pumped from the Bay cut consisted of soft clays and silts with smaller amounts of sand and the production rate was considerably higher at about 28,400 cubic yards per day. Figure C-5 indicates that the Dave Blackburn produced an effective time production rate of about 1043 cubic yards per hour per day in the landcut materials and about 1433 cubic yards per hour per day in the bay-cut materials. The average production rate was about 1276 cubic yards per hour per day for the entire project which was about the same production indicated for the Jim Bean Dredge.

Lenel Bean Dredge

5. Figure C-6 shows a plot of the accumulative cubic yards of dredged material plotted versus days worked for the dust pan dredge Lenel Bean. The Lenel Bean dredged only the very soft baycut material in Theodore Ship Channel, where the pumping distances were always about the same; therefore, the dredge production rate was very linear and did not vary much during the time it spent in Theodore Ship Channel. The production rate for the Lenel Dredge was about 39,000 cubic yards of dredged material per day. The effective time production rate determined from Figure C-7 indicates that the Lenel was capable of pumping about 2800 cubic yards per hour per day.

Discussion

6. These production data indicate that the most productive dredge in the very soft bay clays was the Lenel Bean dredge at 39,000 cubic yards per day whereas the Dave Blackburn dredge averaged about 22,700 cubic yards per day for the land-cut and bay-cut combined. This production was only slightly better than the average production rate of the Jim Bean, 20,500 cubic yards per day. The extra booster pumps for the Dave Blackburn contributed to its better performance over the newer more powerful Jim Bean Dredge. Pumping

distances and dredged material consistency and type had a considerable influence on the production rates of each dredge. The Jim Bean and Dave Blackburn dredges averaged about the same effective time production rate of 1276 cubic yards per hour per day but the Lenel Bean Dredge was over twice this amount with about 2800 cubic yards per hour per day. Production rate of the barge haul operation was about 9500 cubic yards per day which was second to the Lenel Bean Dredge.

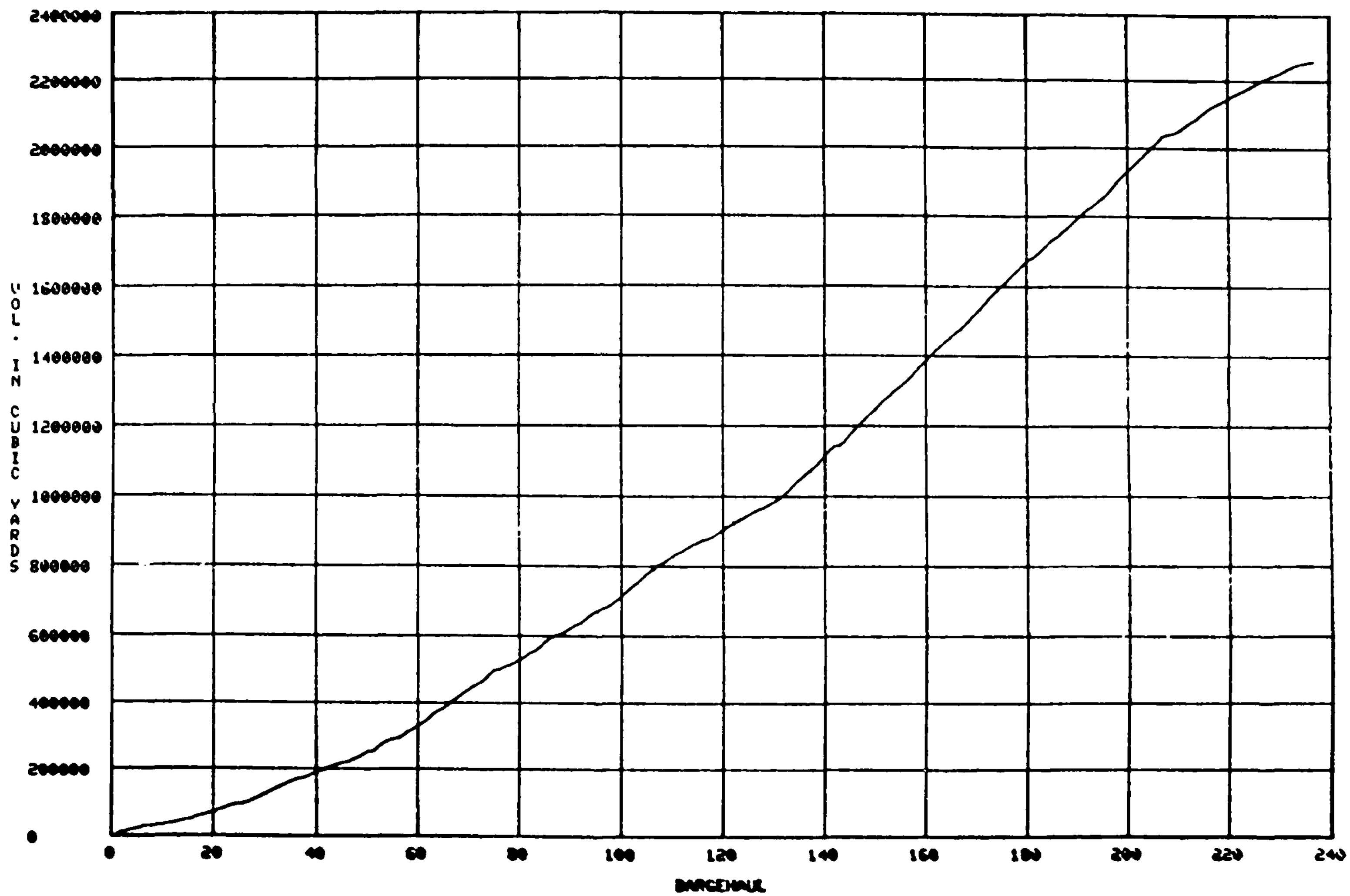

Figure C1. Accumulative cubic yards versus days worked for barge haul operation

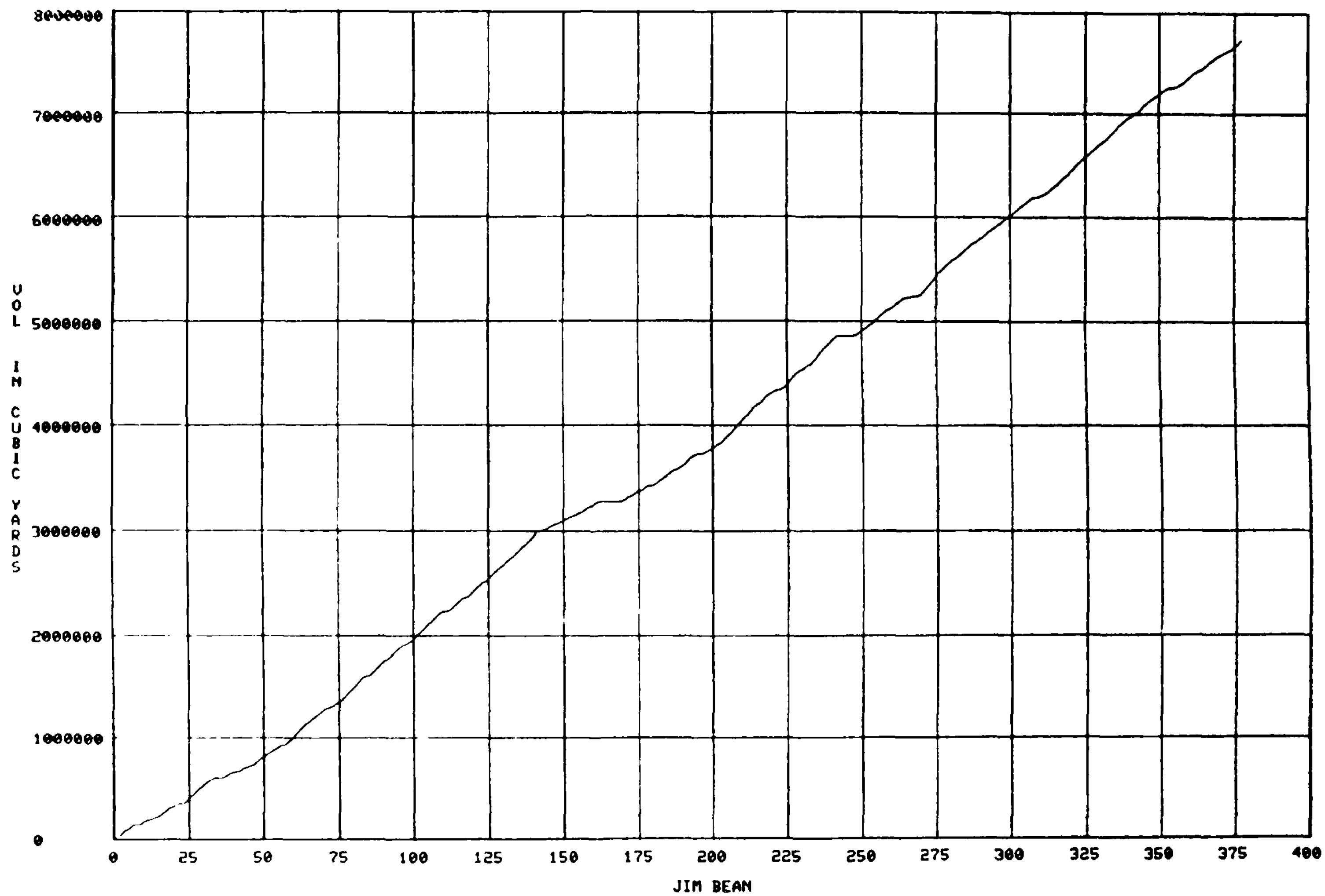

Figure C2. Accumulative cubic yards versus days worked for Jim Bean Dredge

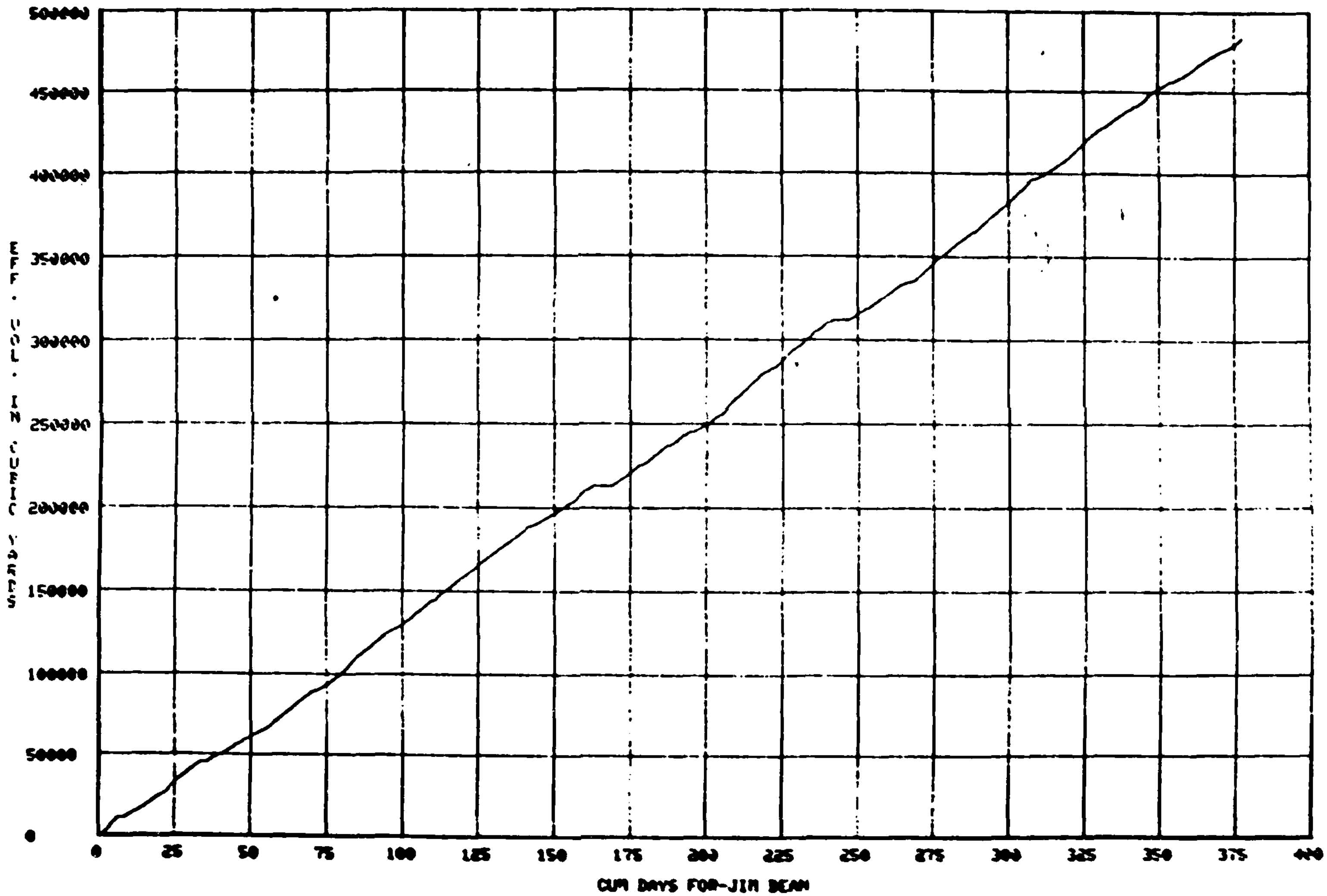

Figure C3. Accumulative cubic yards/effective time versus days worked for Jim Bean Dredge

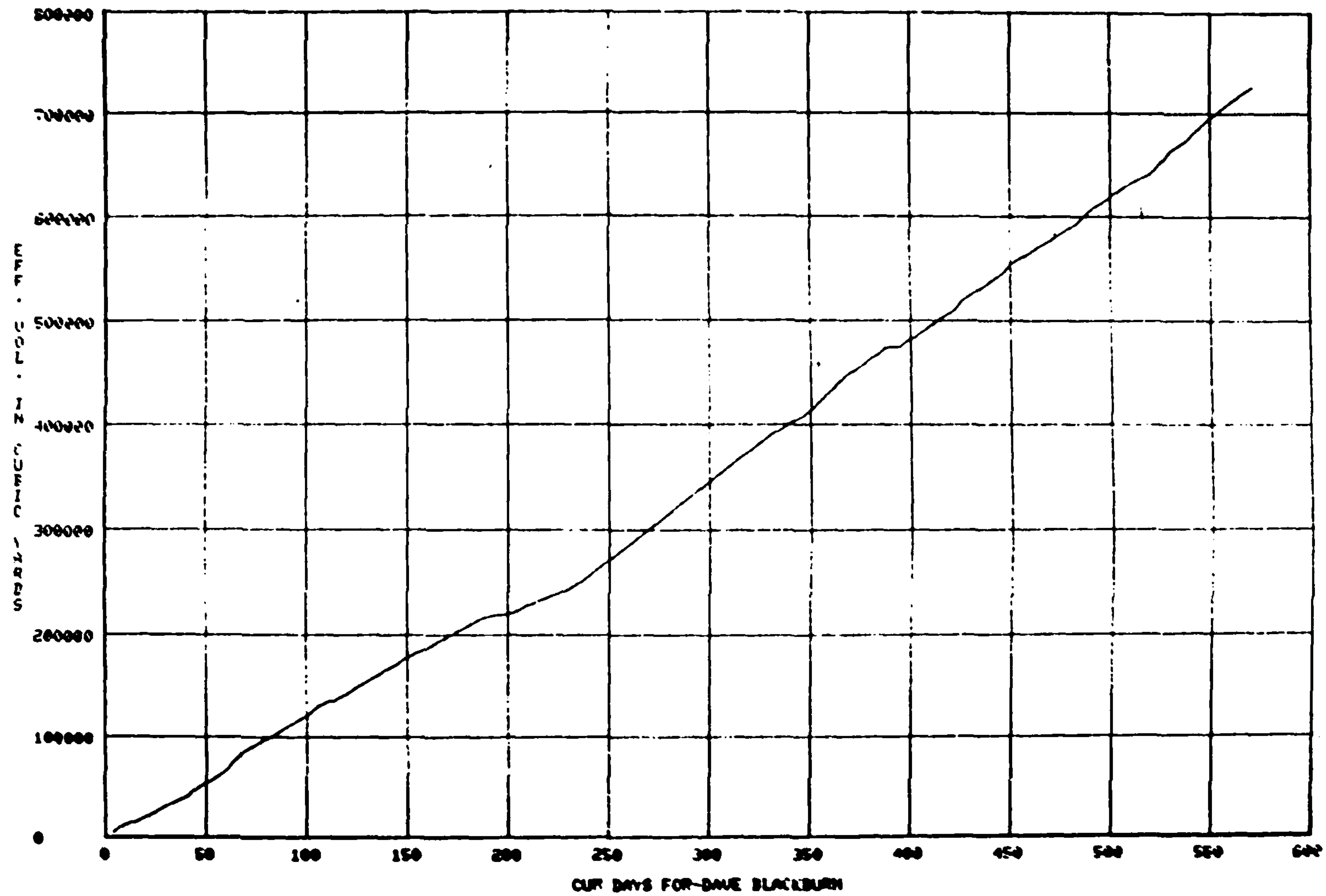

Figure C4. Accumulative cubic yards/effective time versus days worked for Dave Blackburn Dredge

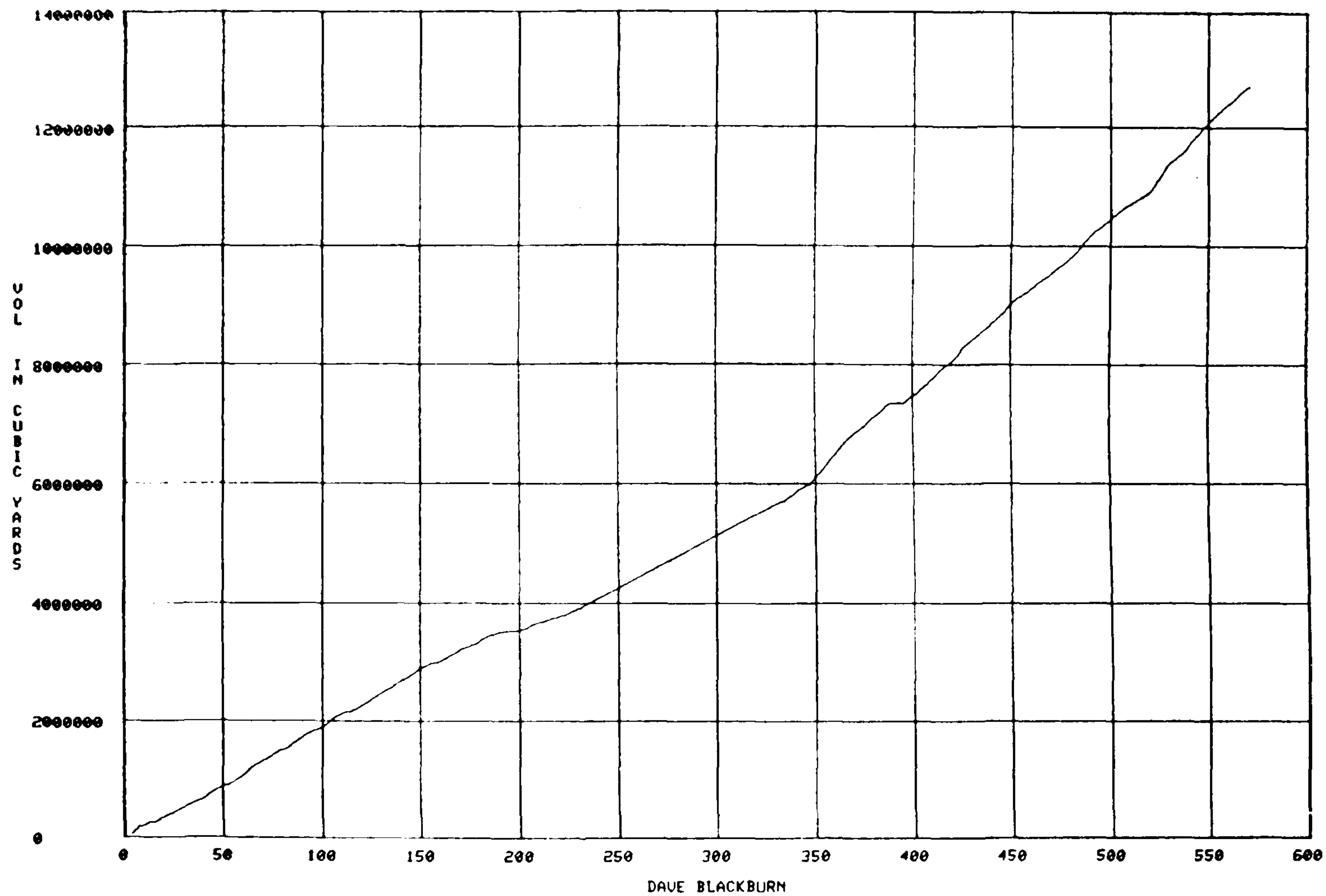

Figure C5. Accumulative cubic yards versus days worked for Dave Blackburn Dredge

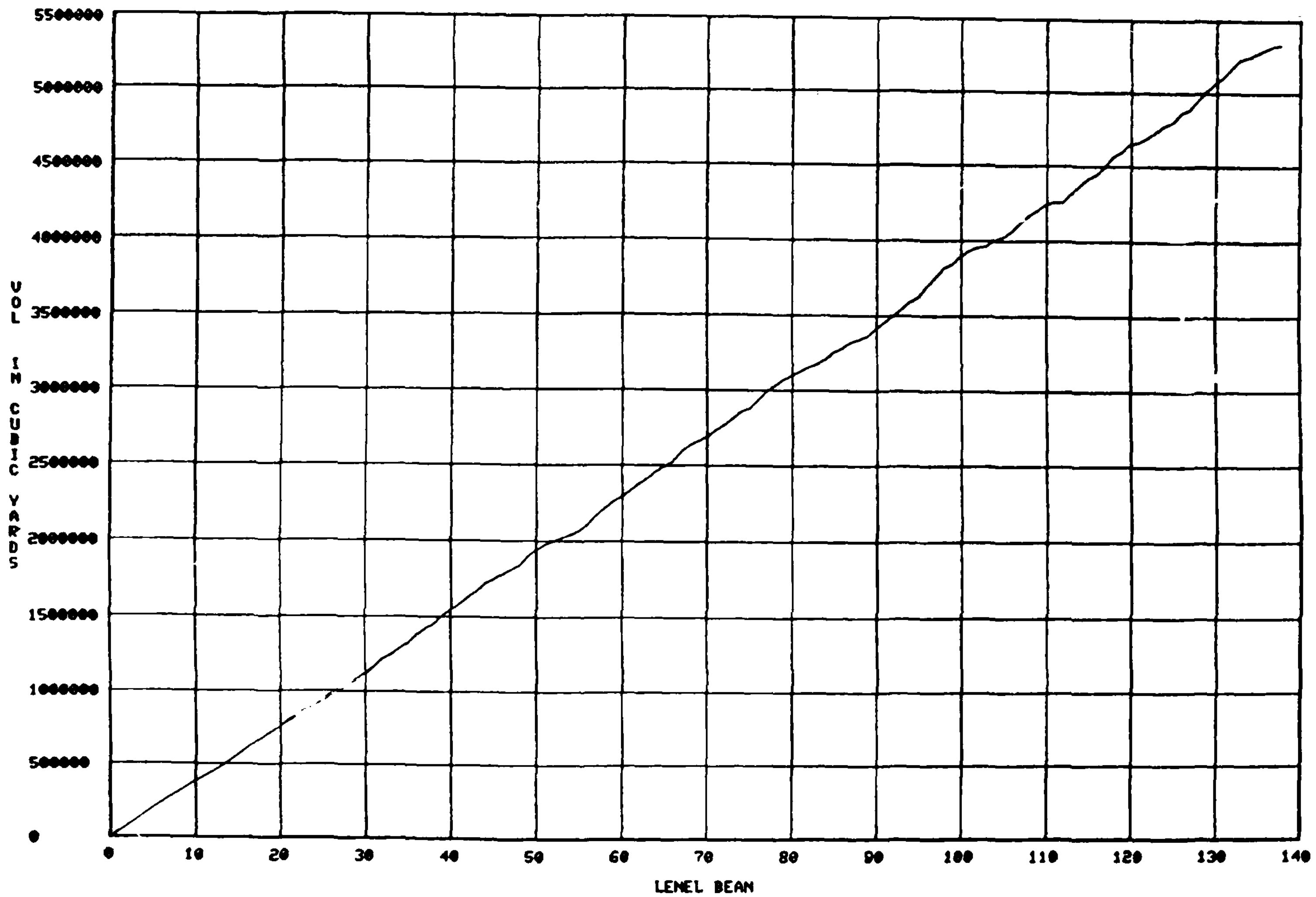

Figure C6. Accumulative cubic yards versus days worked for Lenel Bean Dredge

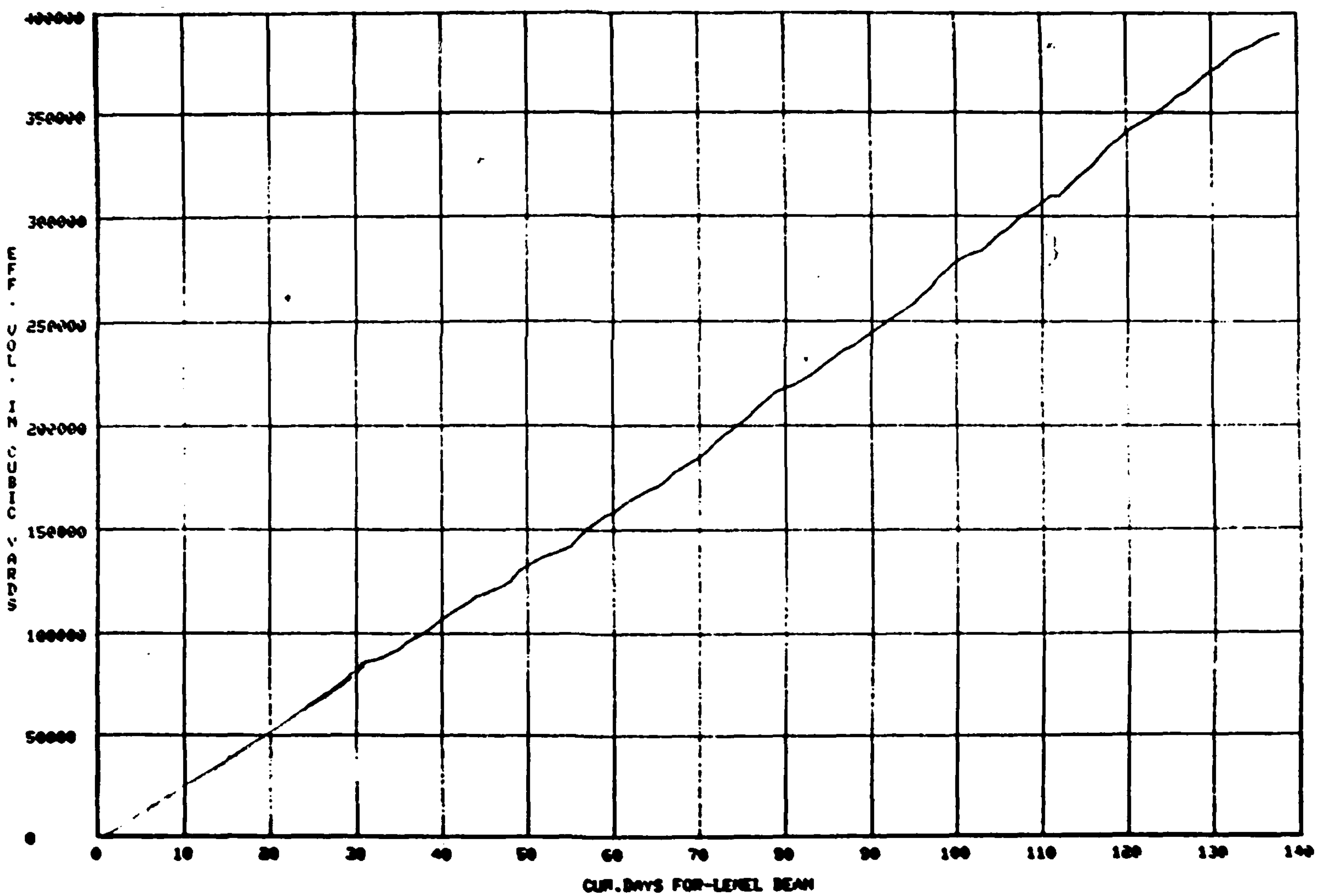

Figure C7. Accumulative cubic yards/effective time versus days worked for Lenel Bean Dredge

APPENDIX D: GAILLARD DISPOSAL ISLAND CONTAINMENT DIKE END-OF-CONSTRUCTION CROSS SECTIONS

1. This appendix includes a total of 45 end-of-construction survey cross sections selected at various stations located along the dike alignment. Figure D1 shows the location of the cross sections and D2-D46 includes the cross sections selected. Boring logs were plotted on dike cross sections that were nearest to boring log station. Standard split spoon blow counts, Atterberg limits and water contents will be provided by the Mobile District in their report review. (Per telephone conversation with Johnnie Taylor).

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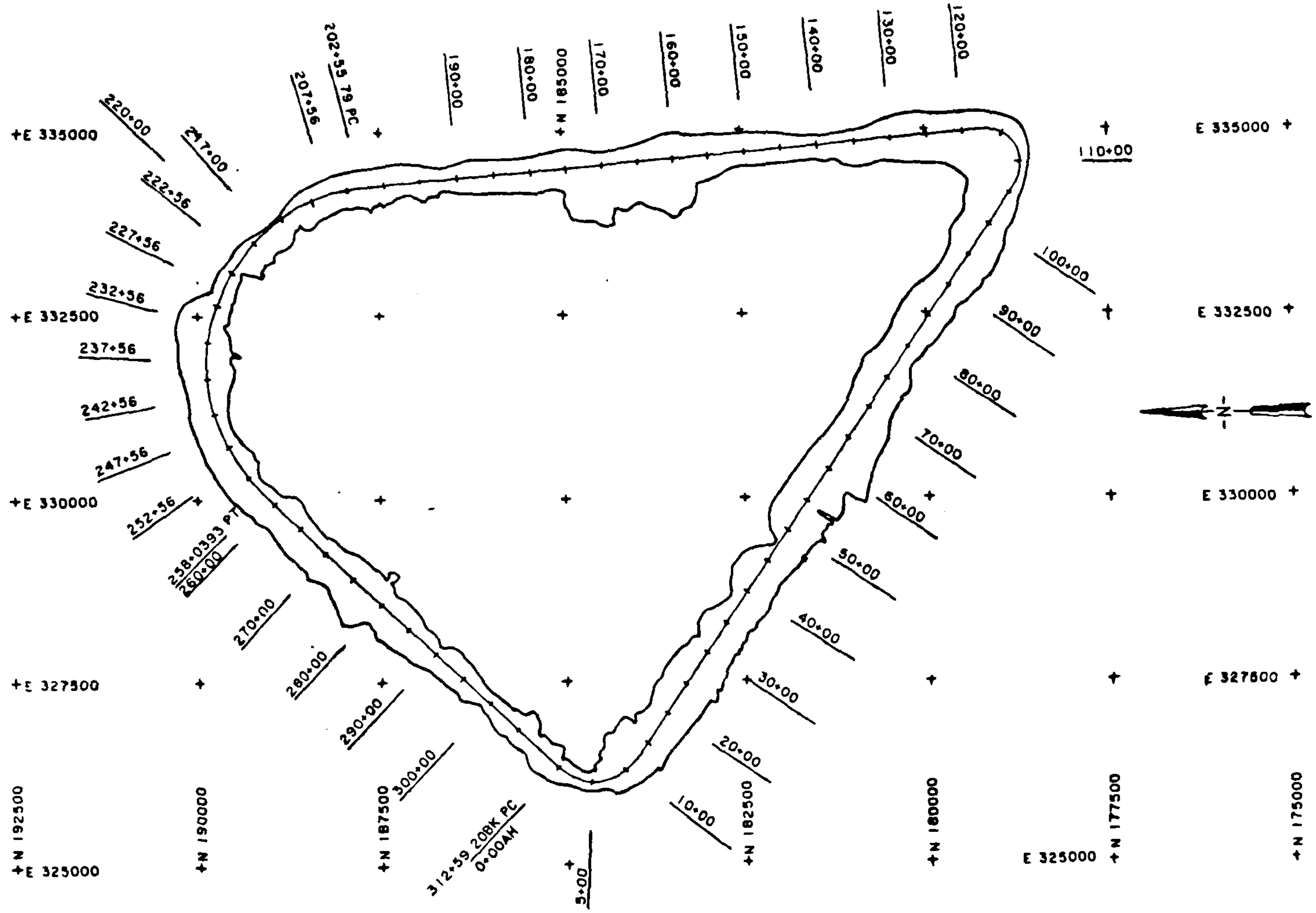
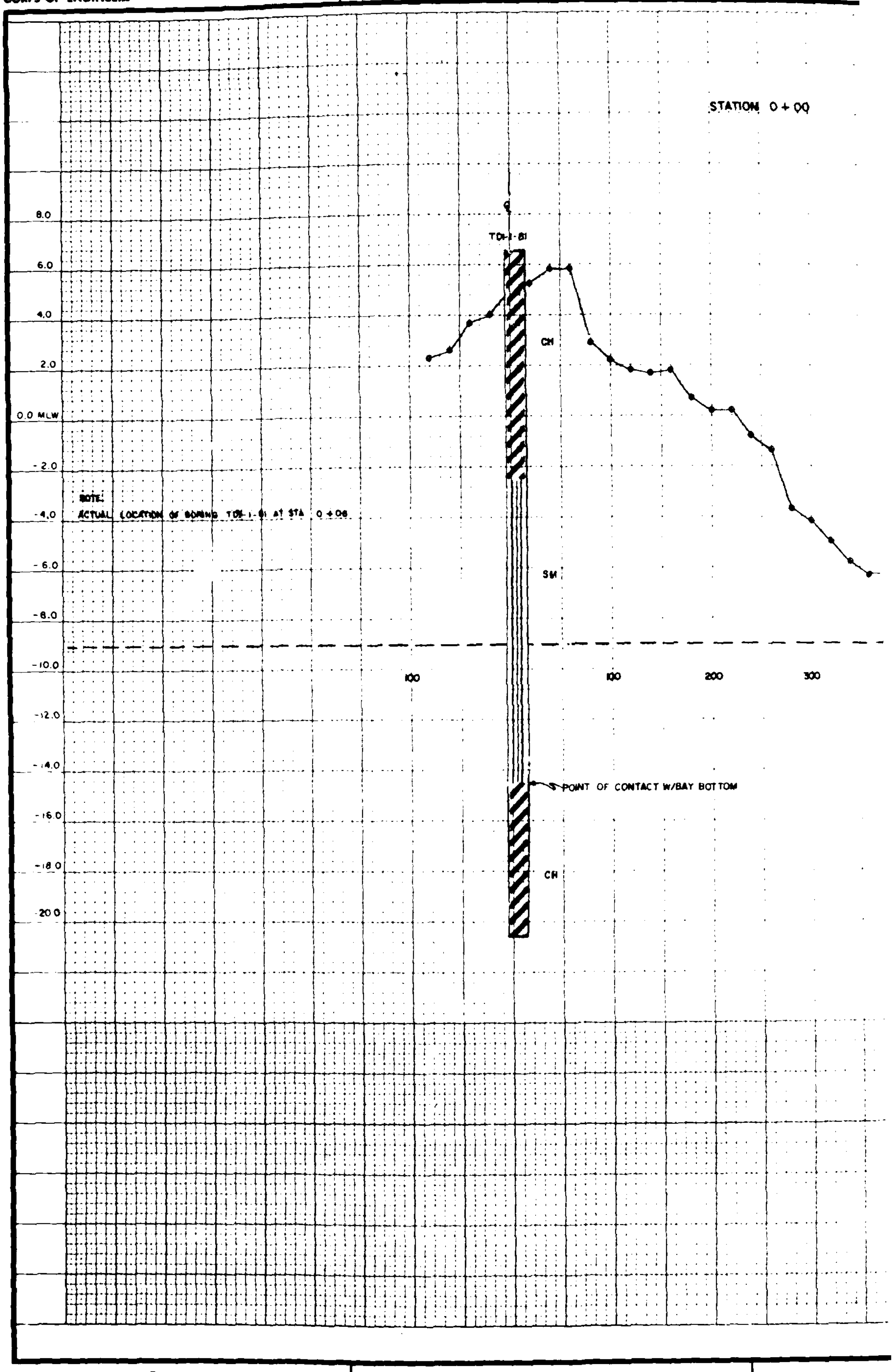


Figure D1. Location map for end of construction cross sections for Figures D2 through D46

CORPS OF ENGINEERS

4



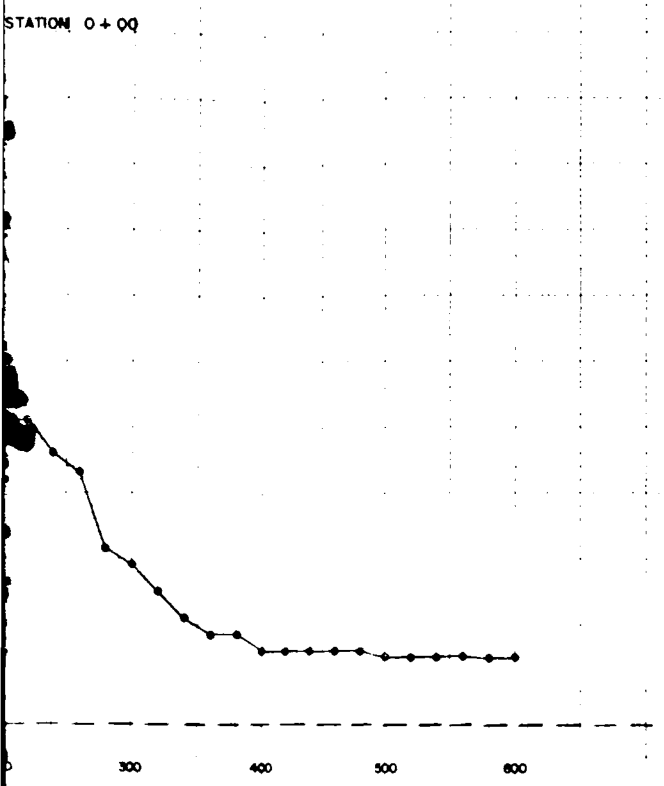
5

4

U. S. ARMY

REVISIONS

SYM	ZONE	DESCRIPTION	DATE	APPROVED



ELEVATIONS REFERENCED TO MEAN LOW WATER (MLW) DATUM

U. S. ARMY ENGINEER DISTRICT, MOBILE
CORPS OF ENGINEERS
MOBILE, ALA.

GAILLARD DISPOSAL ISLAND
END-OF-CONSTRUCTION

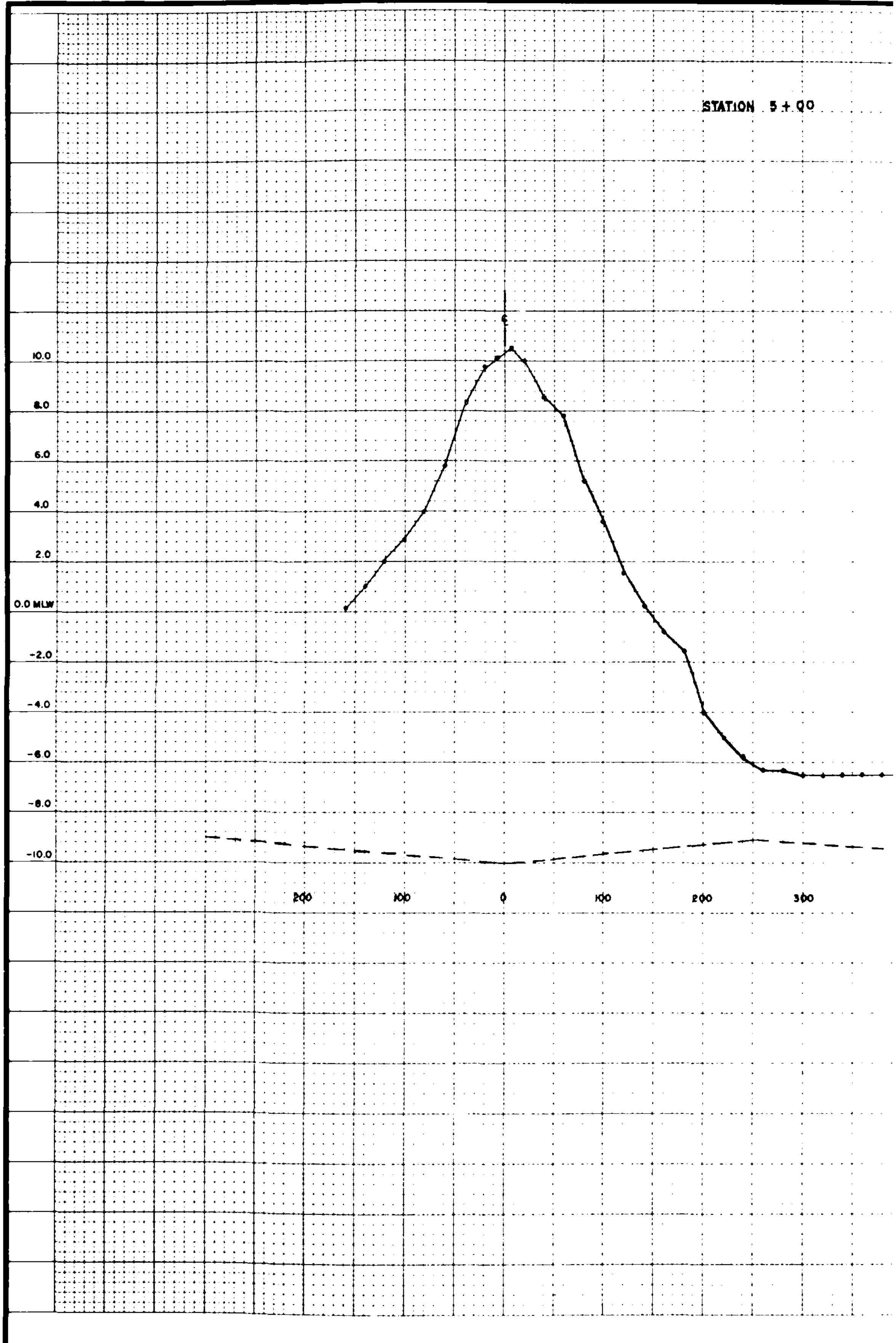
CROSS SECTIONS

DESIGNED BY EN-FS
DRAWN BY
CHECKED BY
SUBMITTED BY
SH REF NO
SPEC NO
FILE NO
DRAWING NO
SCALE
DATE AUGUST 1981
SHEET 1 OF 45

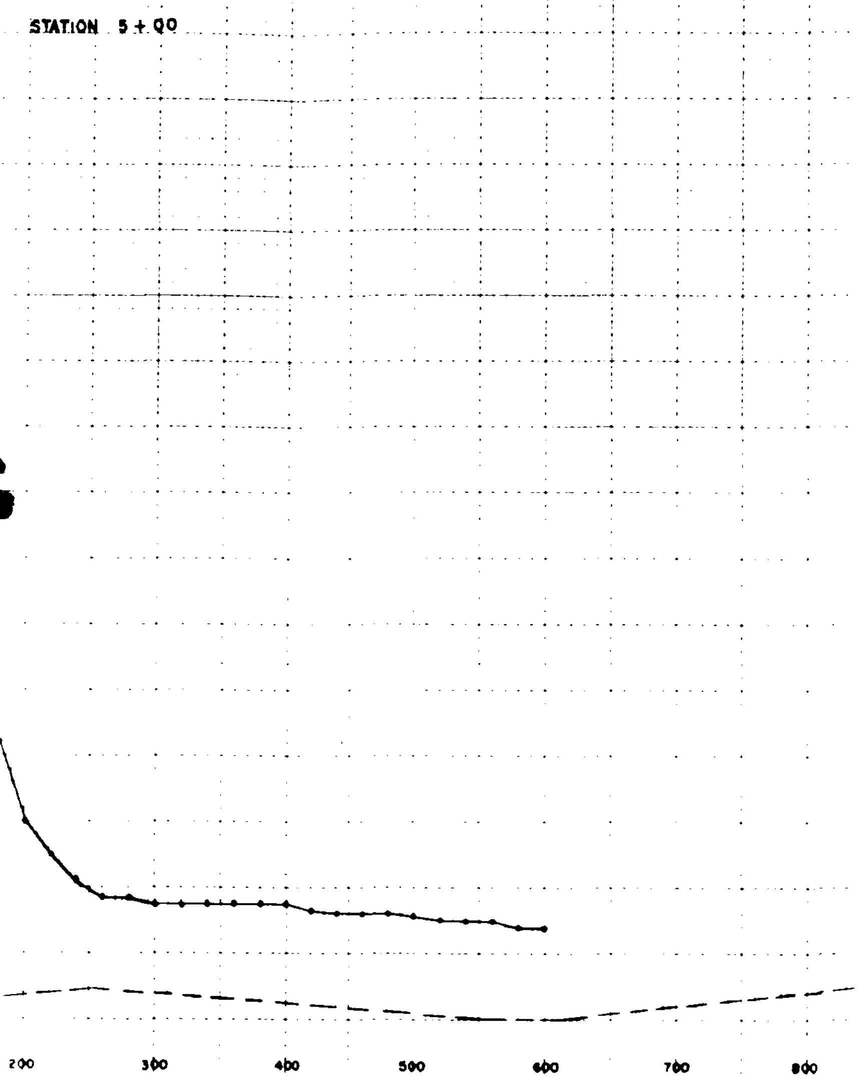
2

Figure D2

CORPS OF ENGINEERS



U. S. ARMY



ELEVATIONS REFERENCED TO MEAN LOW WATER (MLW) DATUM

EN-FS

U. S. ARMY ENGINEER DISTRICT, MOBILE
CORPS OF ENGINEERS
MOBILE, ALA.

GAILLARD DISPOSAL ISLAND
END-OF CONSTRUCTION

CROSS SECTIONS

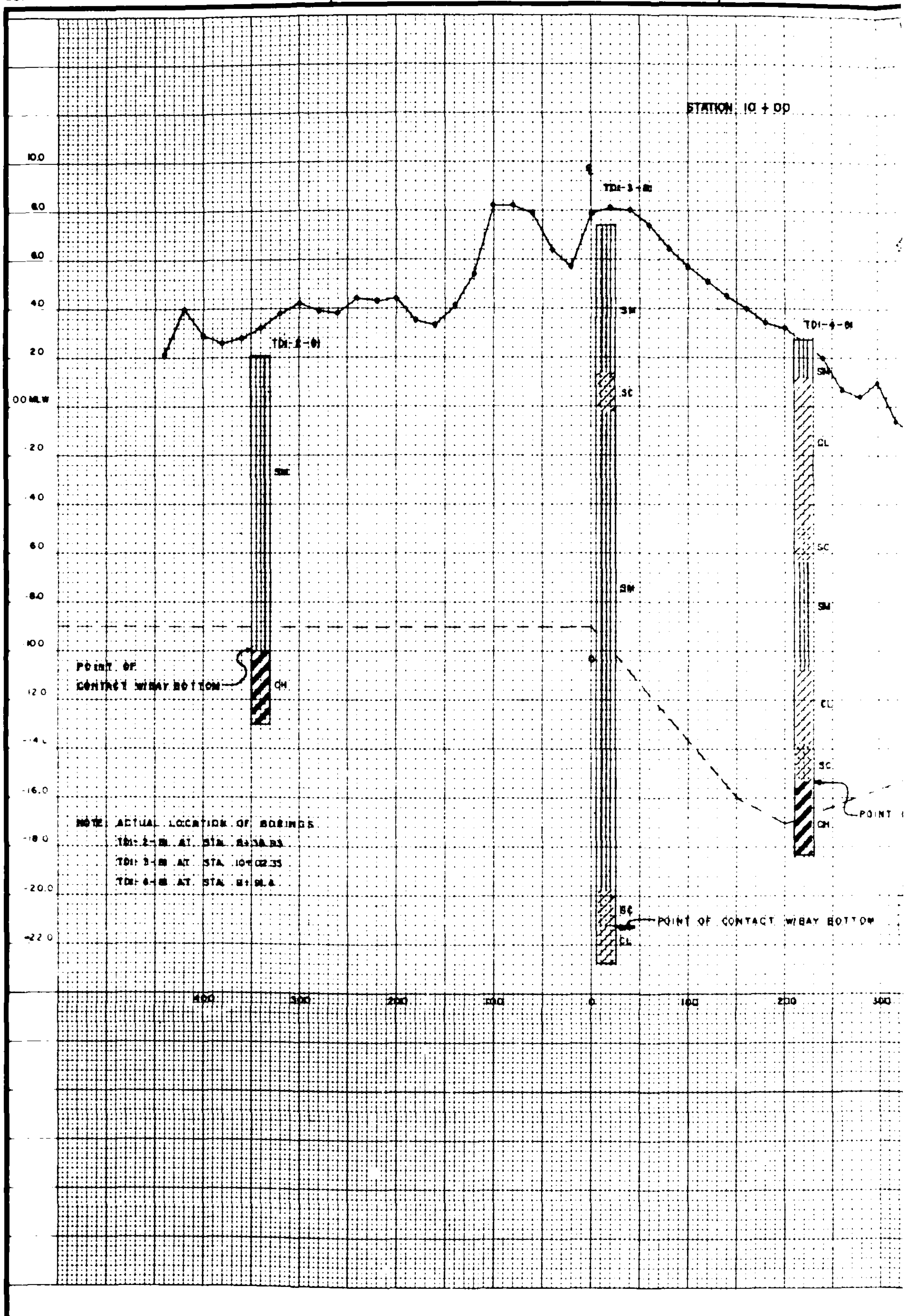
AUGUST 1981

2 OF 45

Figure D3

CORPS OF ENGINEERS

4



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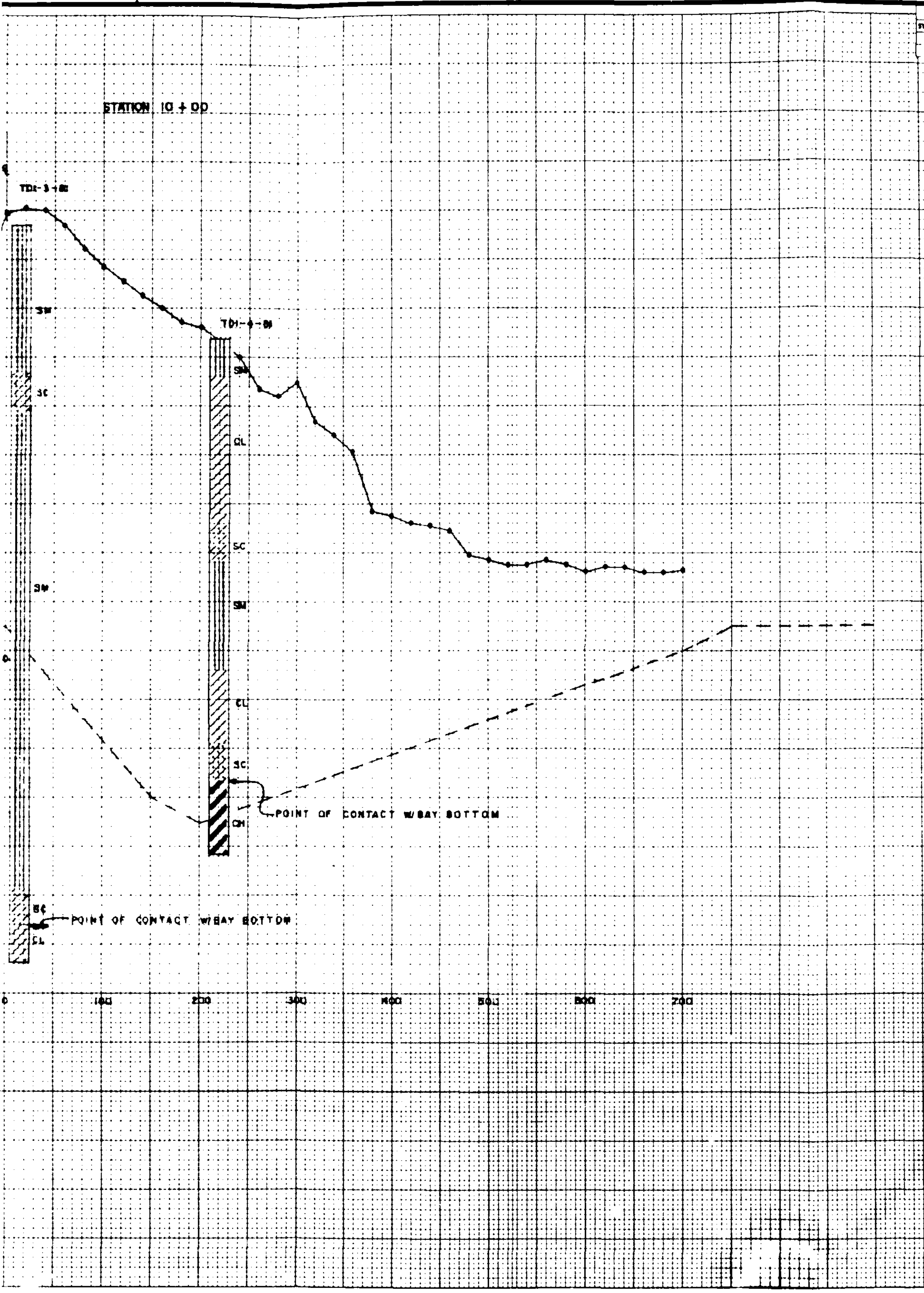
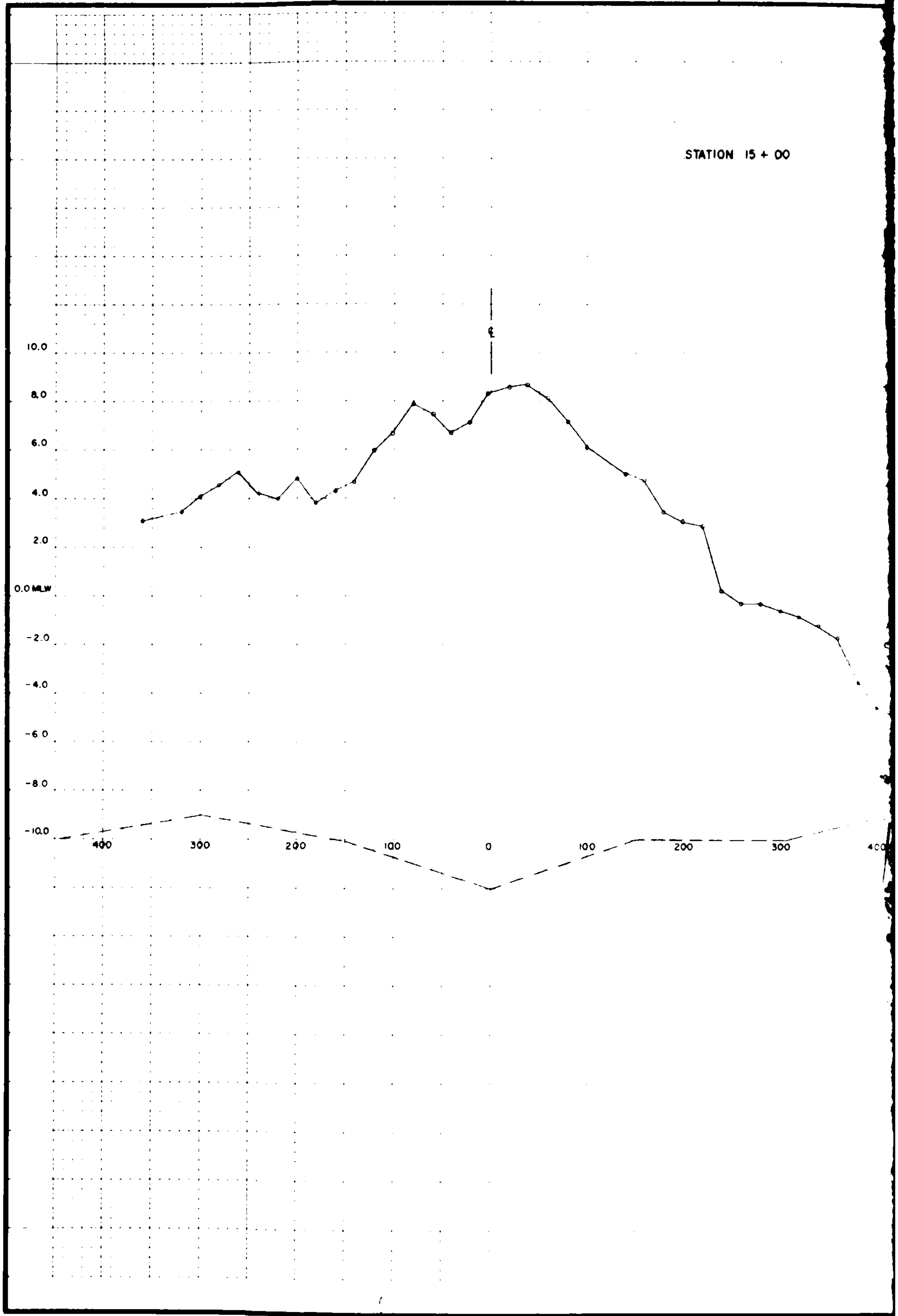
4



ELEVATIONS REFERENCED TO MEAN LOW WATER (MLW) DATUM

DESIGNED BY EN-FS	U. S. ARMY ENGINEER DISTRICT, M CORPS OF ENGINEERS MOBILE, ALA.
DRAWN BY	
CHECKED BY	GAILLARD DISPOSAL ISLA END OF CONSTRUCTION
SUPERVISED BY	CROSS SECTIO
DN. REF. NO.	SPEC. NO. FILE NO. DRAWING NO. SCALE DATE AUGUST 1981 SHEET

Figure 15

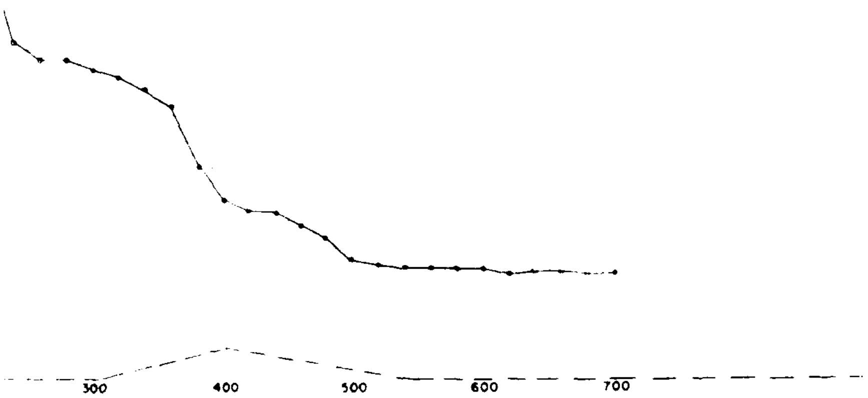

STATION 15 + 00
℄
10.0
8.0
6.0
4.0
2.0
0.0 MLW
-2.0
-4.0
-6.0
-8.0
-10.0
400
300
200
100
0
100
200
300
400

3	2	1	U. S. ARMY

REVISIONS

SYM	ZONE	DESCRIPTION	DATE	APPROVED

ON 15 + 00



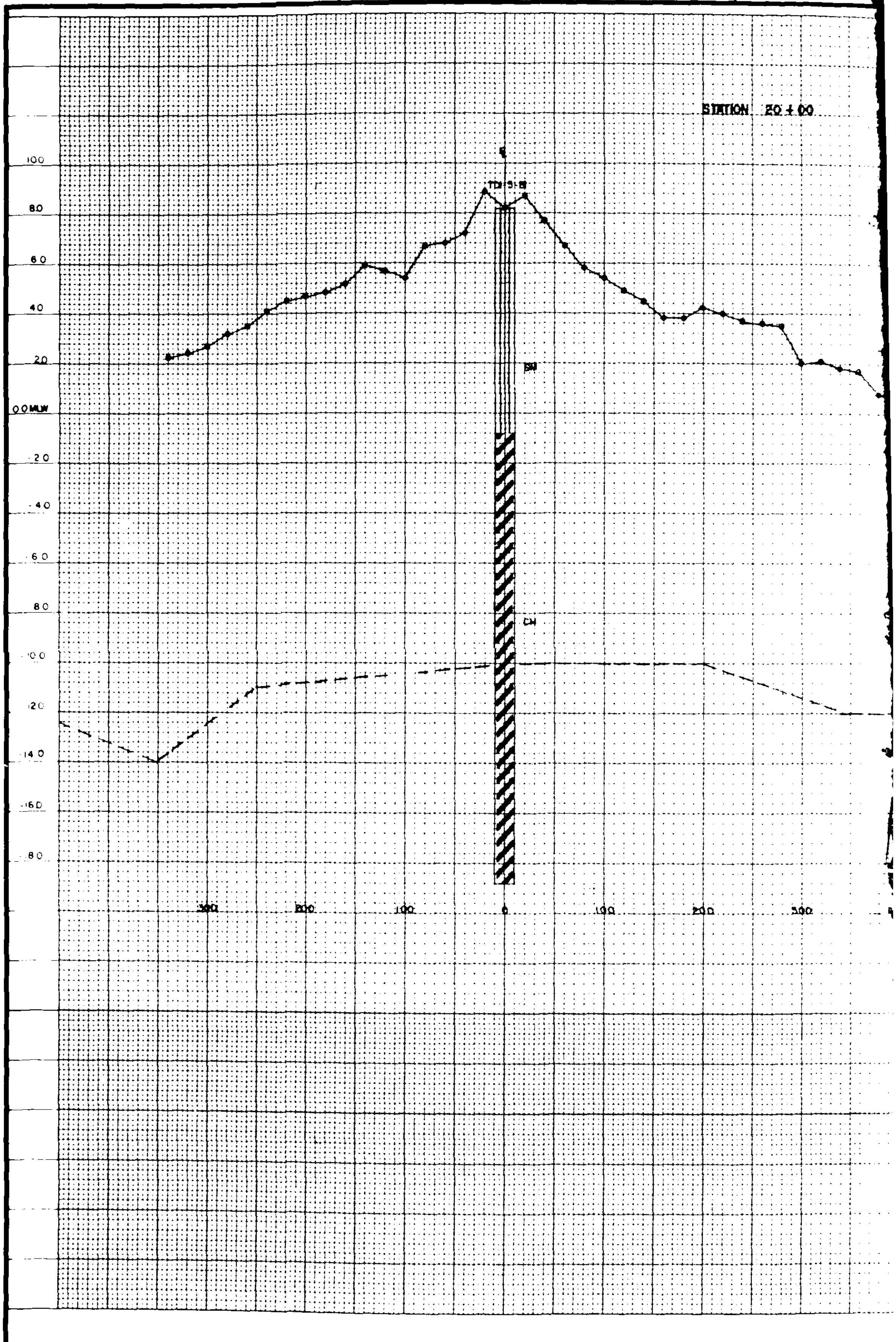
ELEVATIONS REFERENCED TO MEAN LOW WATER (MLW) DATUM

DESIGNED BY EN-FS	U. S. ARMY ENGINEER DISTRICT, MOBILE CORPS OF ENGINEERS MOBILE, ALA.
DRAWN BY	GAILLARD DISPOSAL ISLAND END-OF-CONSTRUCTION
CHECKED BY	
SUPERVISED BY	CROSS SECTIONS
SH. REF. NO.	SPEC. NO. / SIZE / FILE NO. / DRAWING NO.
	SCALE / DATE AUGUST 1981 / SHEET 4 OF 45

3	2	1

Figure D5

CORPS OF ENGINEERS



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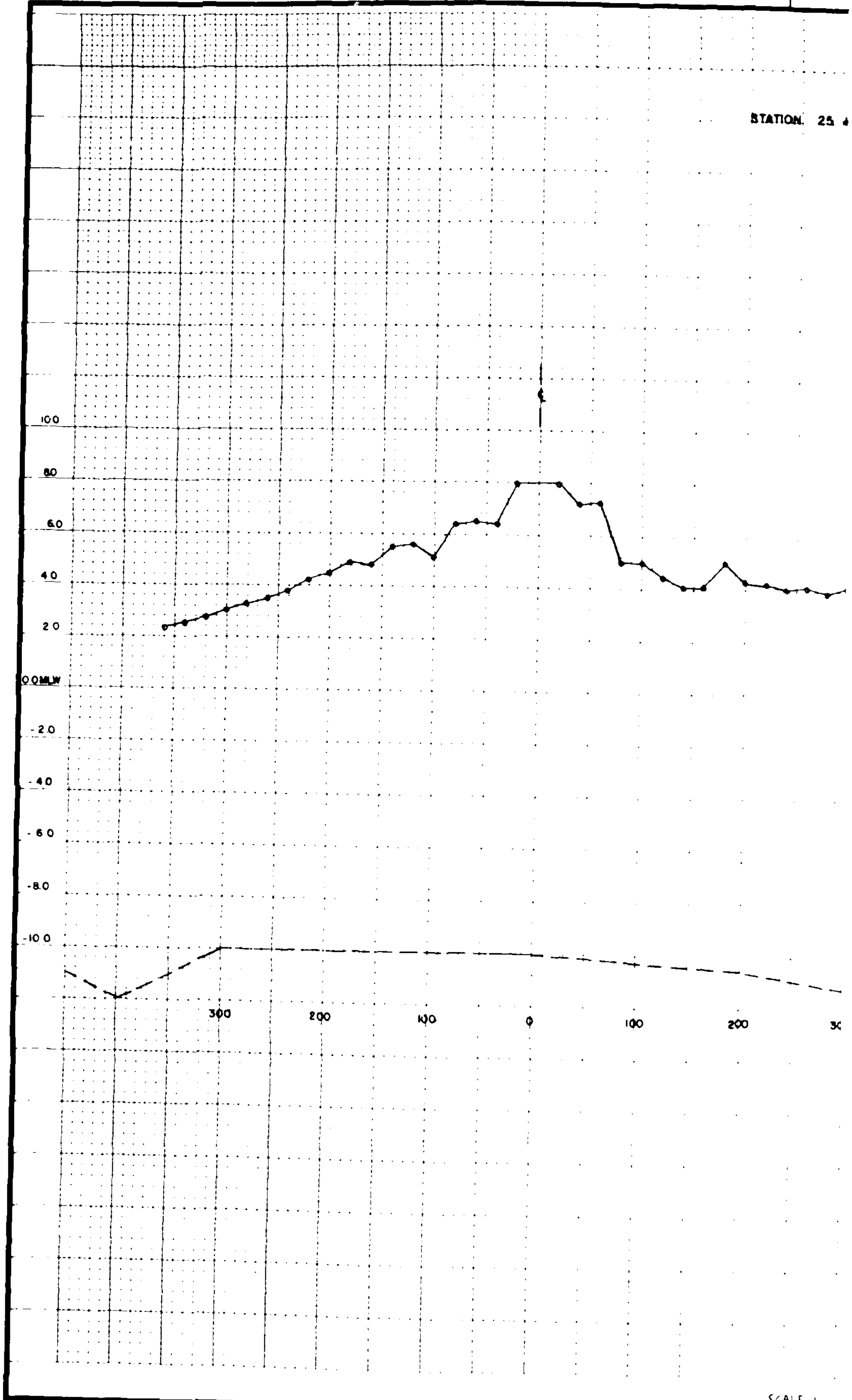
ELEVATIONS REFERENCED TO MEAN LOW WATER (MLW) DATUM

DESIGNED BY EN-FS	U. S. ARMY ENGINEER DISTRICT, CORPS OF ENGINEERS MOBILE, ALA.
DRAWN BY	GAILLARD DISPOSAL IS END OF CONSTRUCTION
CHECKED BY	
SUPERVISED BY	CROSS SECTIO
SH REF NO	SPEC. NO / SIZE / FILE NO / DRAWING NO / SCALE / DATE AUGUST 1981

Figure D6

CORPS OF ENGINEERS

4



SCALE

5

4

ELEVATIONS REFERENCED TO MEAN LOW WATER (MLW) DATUM

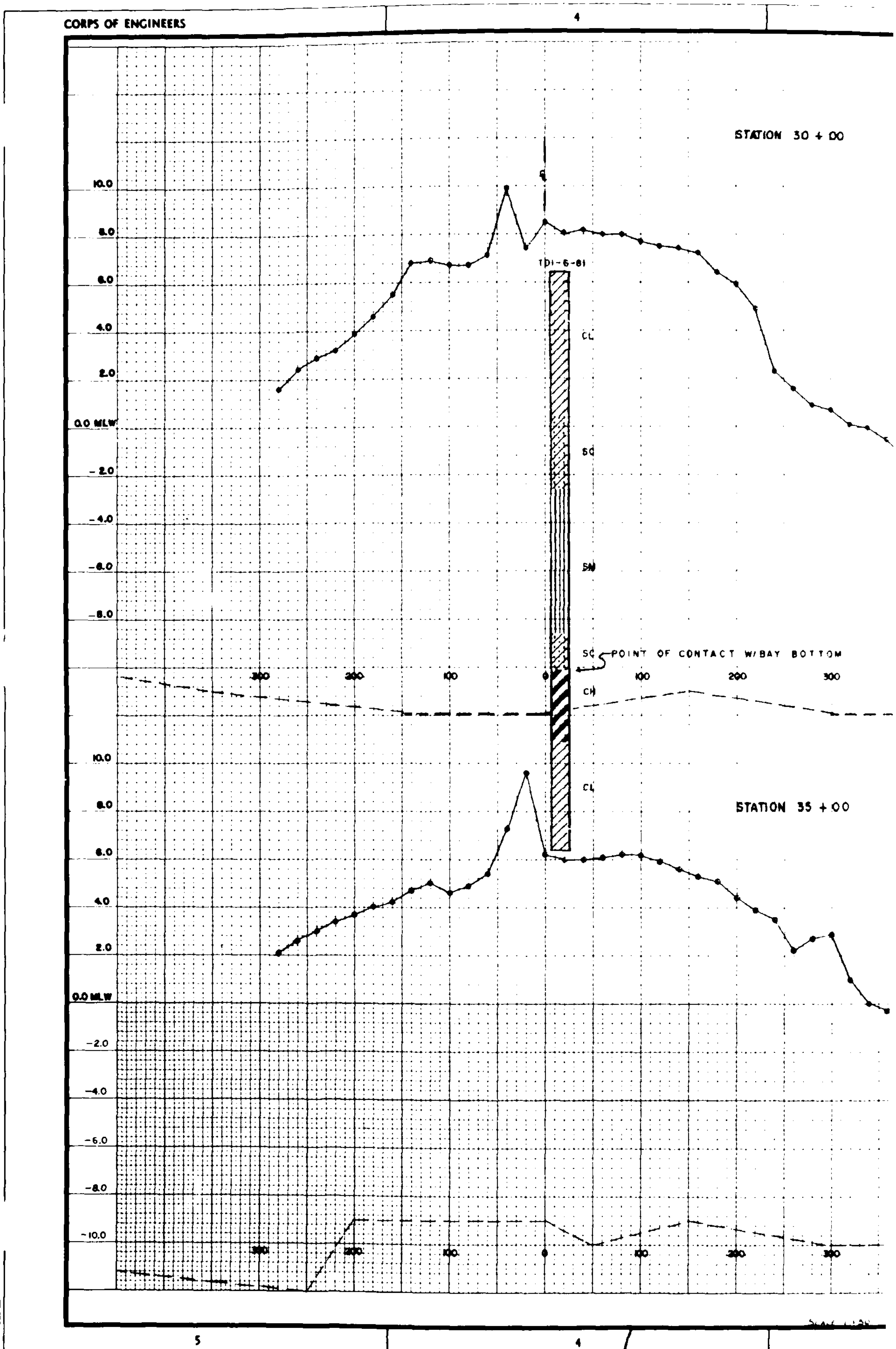
DESIGNED BY EN-FS

U. S. ARMY ENGINEER DISTRICT, MOBI
CORPS OF ENGINEERS
MOBILE, ALA.

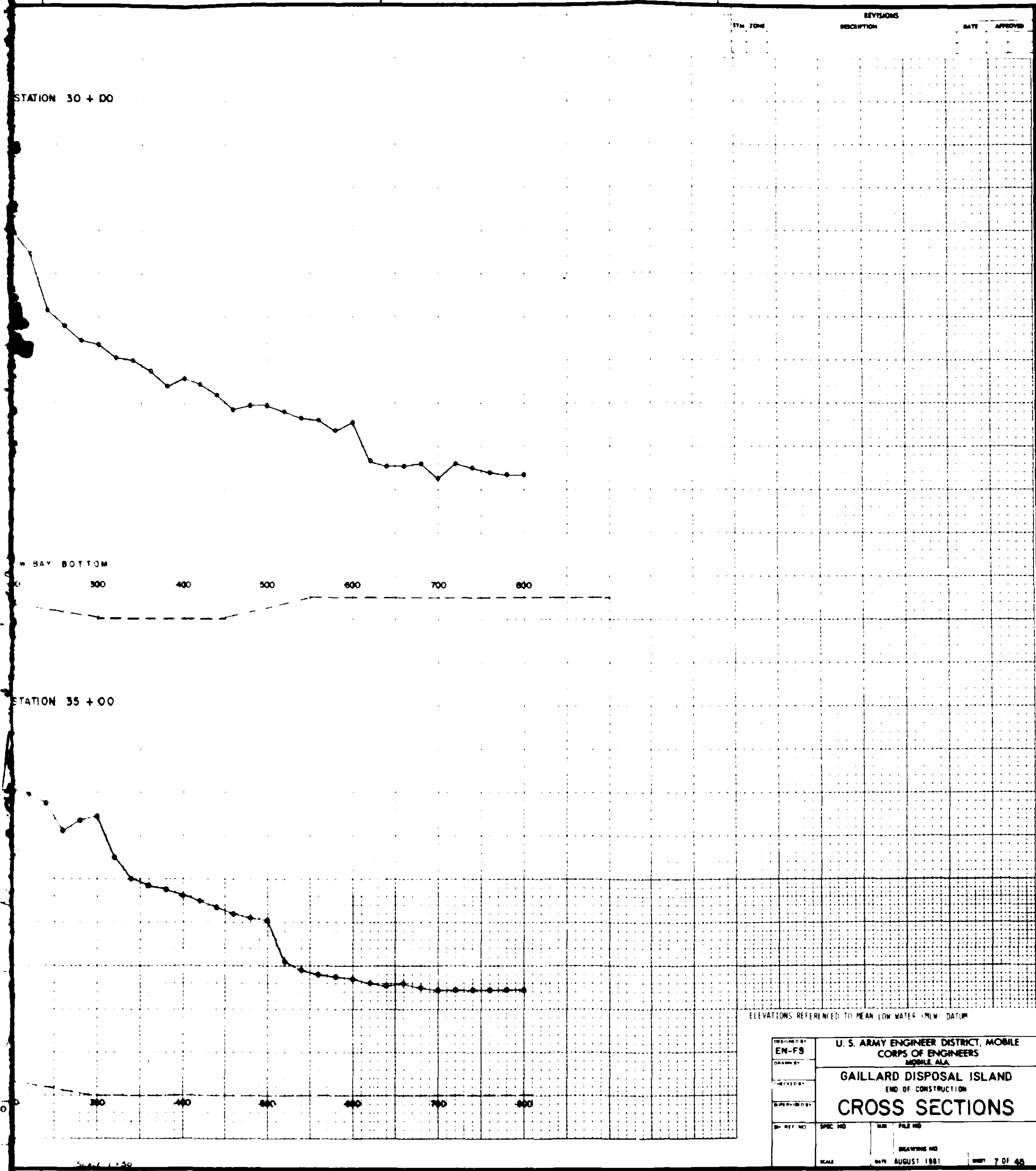
GAILLARD DISPOSAL ISLAN
END-OF-CONSTRUCTION
CROSS SECTIONS

DATE AUGUST 1981

Figure D7



CORPS OF ENGINEERS
4
STATION 30 + 00
10.0
8.0
6.0
4.0
2.0
0.0 MLW
- 2.0
-4.0
-6.0
-8.0
TD1-6-81
CL
SC
SM
SC
POINT OF CONTACT W/BAY BOTTOM
CH
CL
300
200
100
0
100
200
300
STATION 35 + 00
10.0
8.0
6.0
4.0
2.0
0.0 MLW
-2.0
-4.0
-6.0
-8.0
-10.0
300
200
100
0
100
200
300
5
4



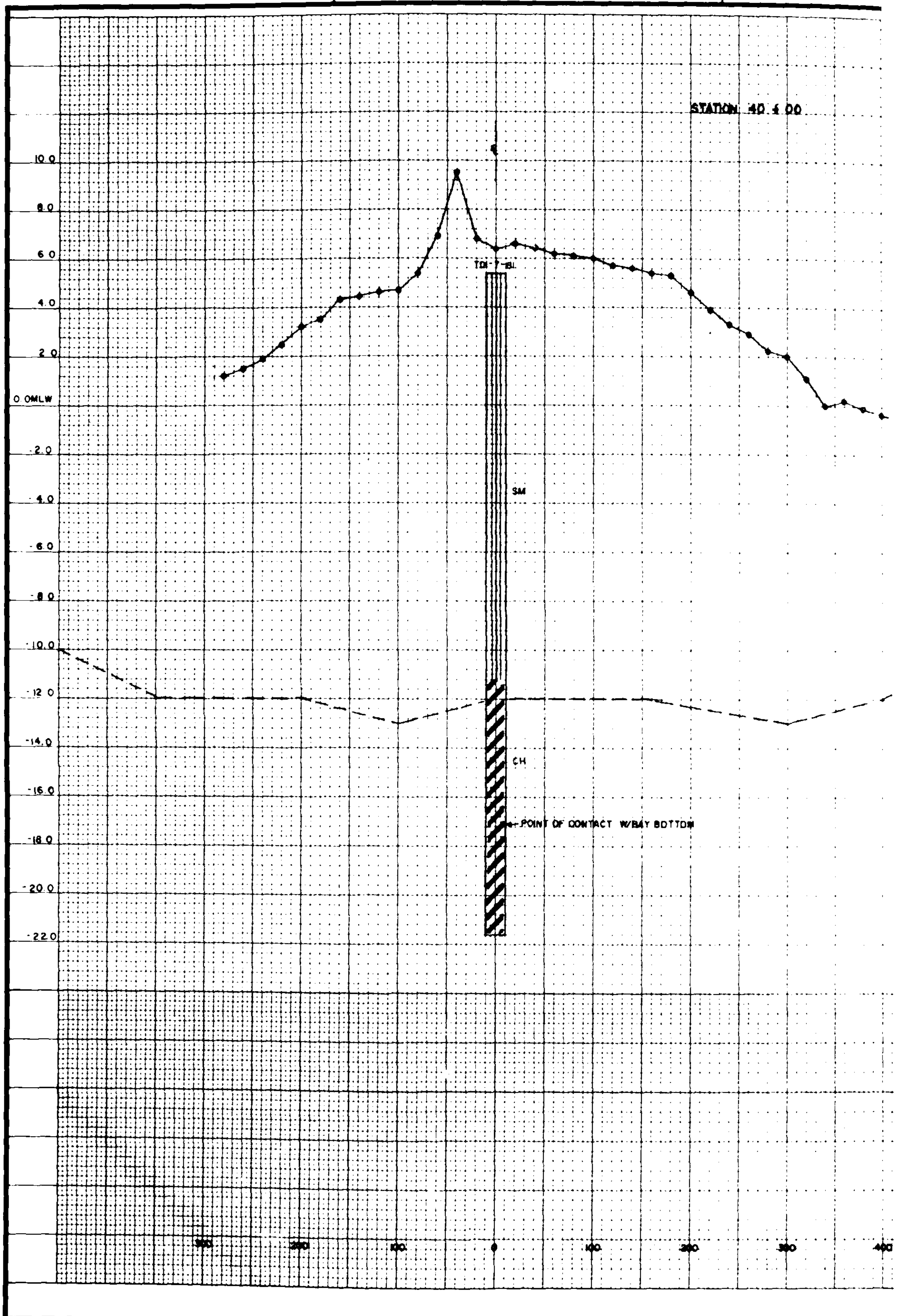
ELEVATIONS REFERENCED TO MEAN LOW WATER (MLW) DATUM

DESIGNED BY EN-FS	U. S. ARMY ENGINEER DISTRICT, MOBILE CORPS OF ENGINEERS MOBILE, ALA.
DRAWN BY / CHECKED BY / SUPERVISED BY	GAILLARD DISPOSAL ISLAND END OF CONSTRUCTION CROSS SECTIONS
DATE	AUGUST 1981
SHEET	7 OF 45

U. S. ARMY

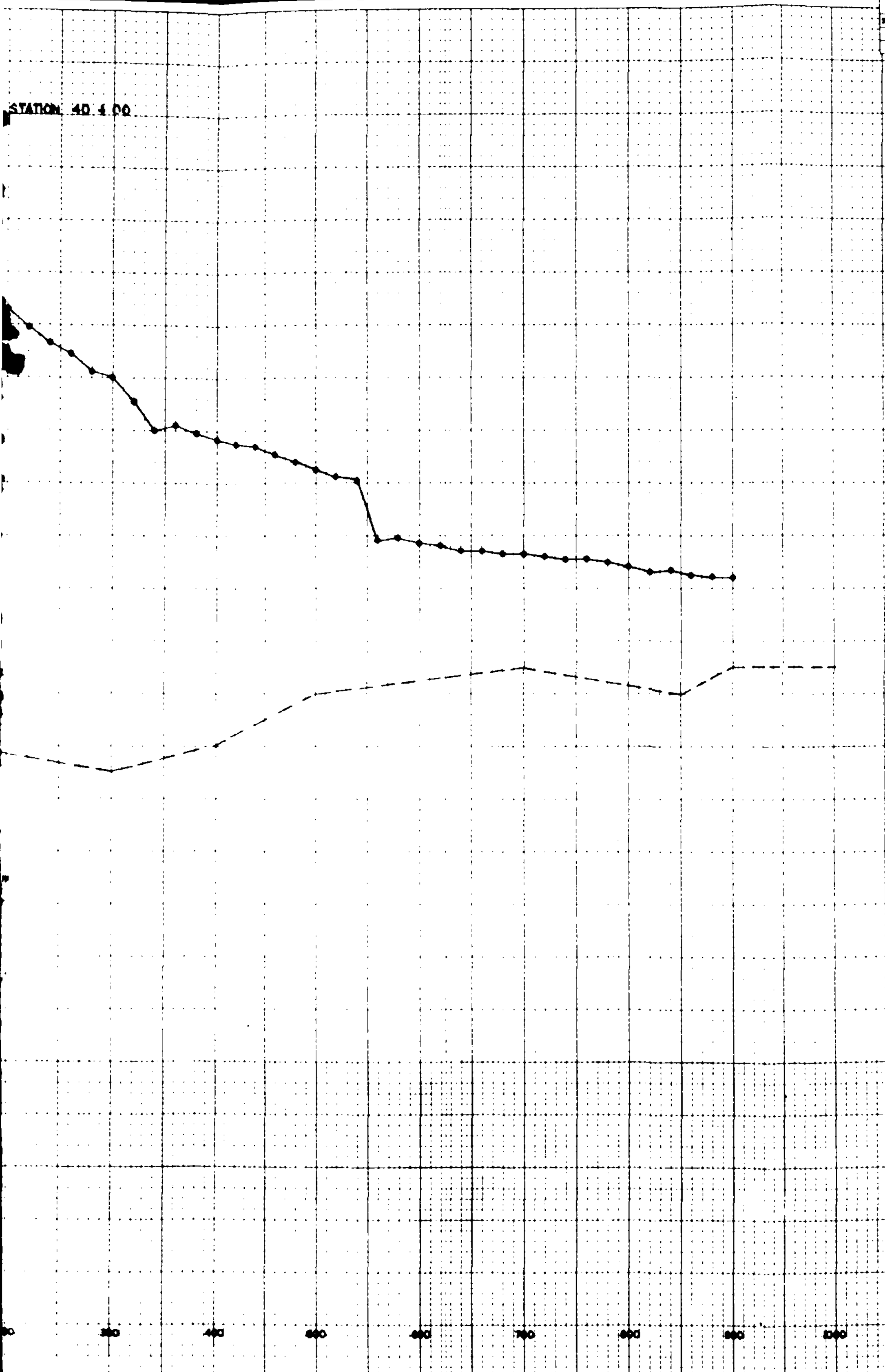
Figure D8

CORPS OF ENGINEERS



U. S. ARMY

REVISIONS				
SYM	ZONE	DESCRIPTION	DATE	APPROVED

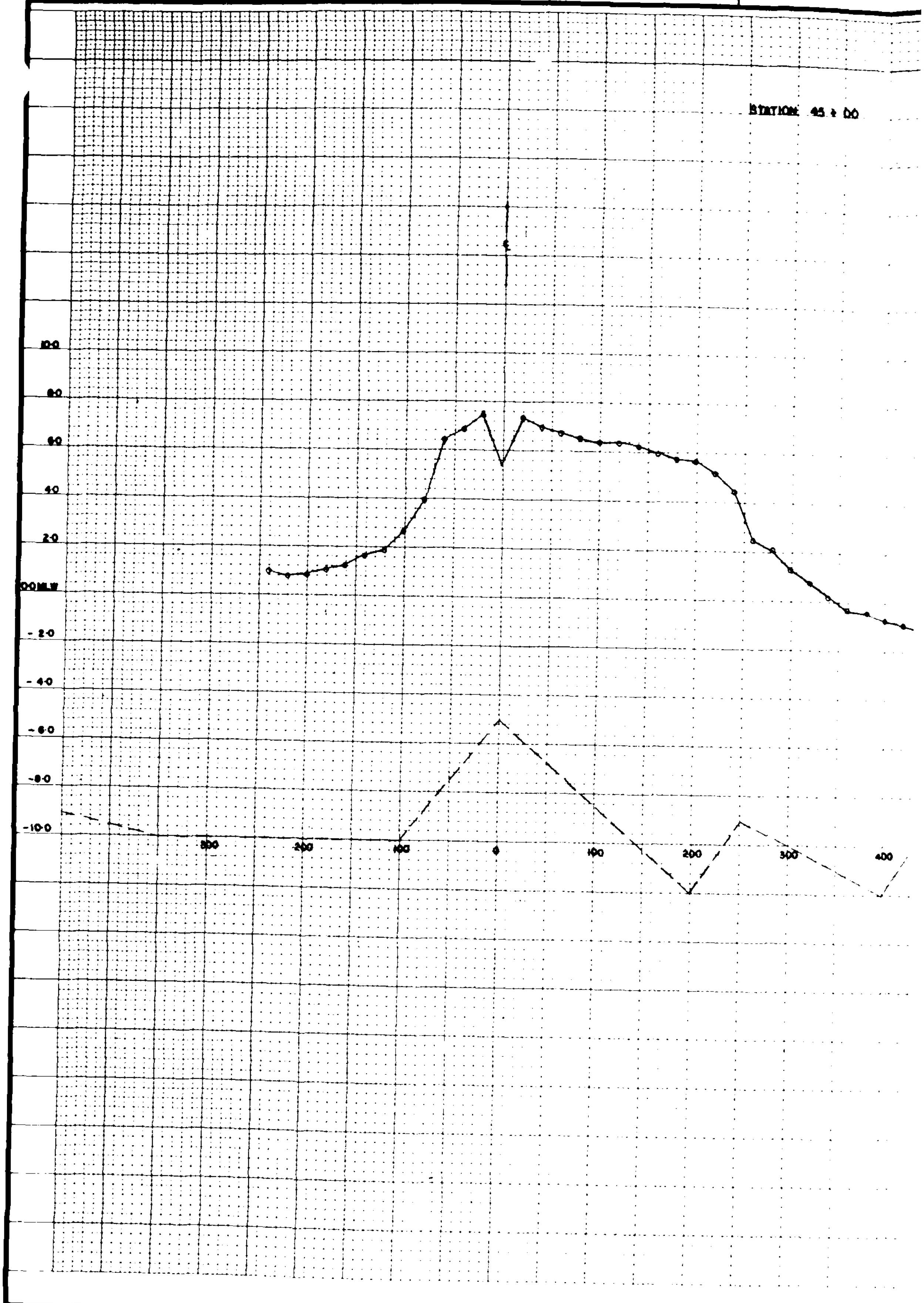


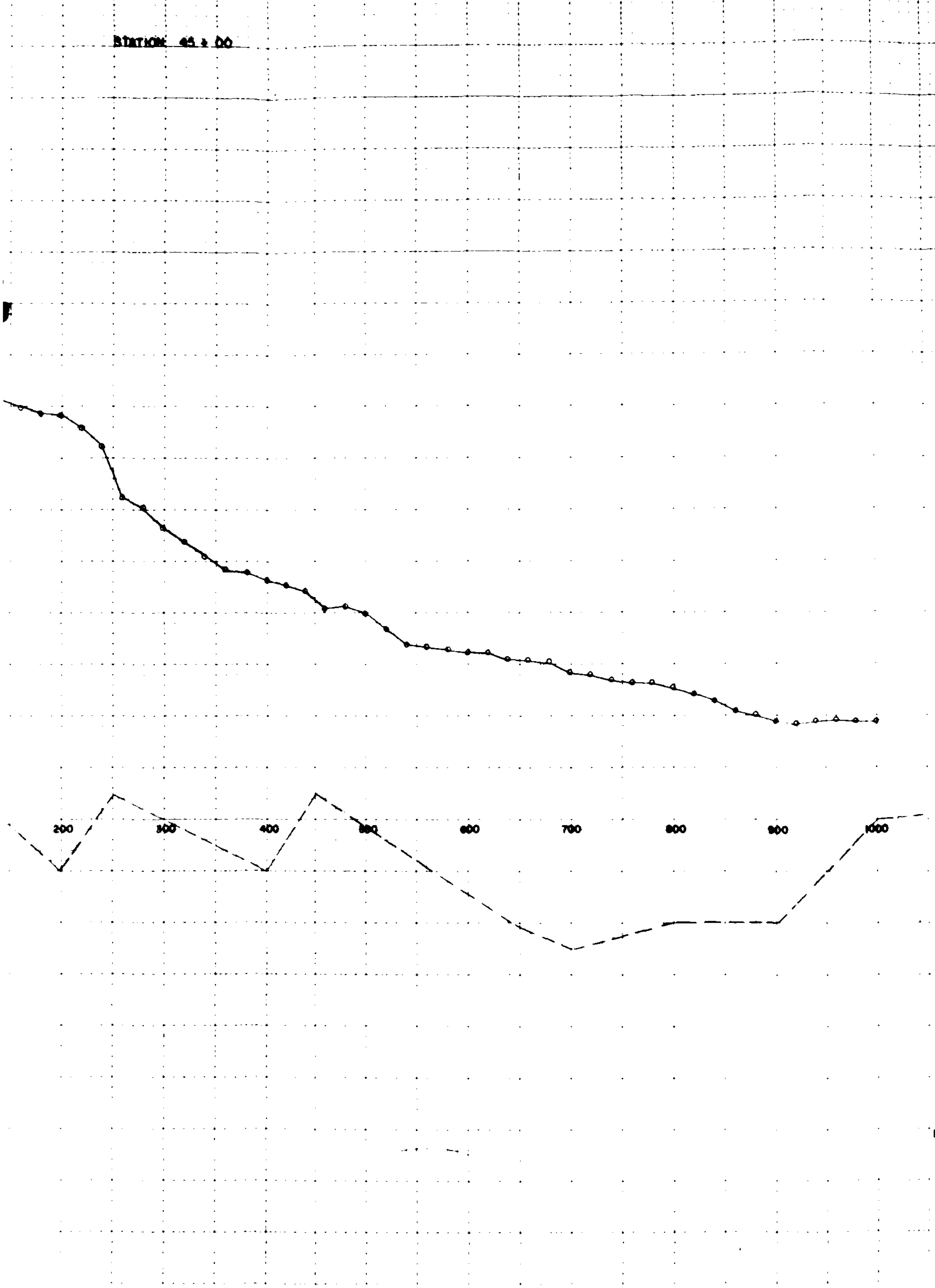
ELEVATIONS REFERENCED TO MEAN LOW WATER (MLW) DATUM

DESIGNED BY EN-FS	U. S. ARMY ENGINEER DISTRICT, MOBILE CORPS OF ENGINEERS MOBILE, ALA.
DRAWN BY	
CHECKED BY	GAILLARD DISPOSAL ISLAND CONTAINMENT DIKE
SUPERVISED BY	CROSS SECTIONS
DA REF NO	SPEC NO / SIZE / FILE NO
	DRAWING NO
	SCALE / DATE AUGUST 1981 / SHEET 8 OF 45

Figure D9

CORPS OF ENGINEERS

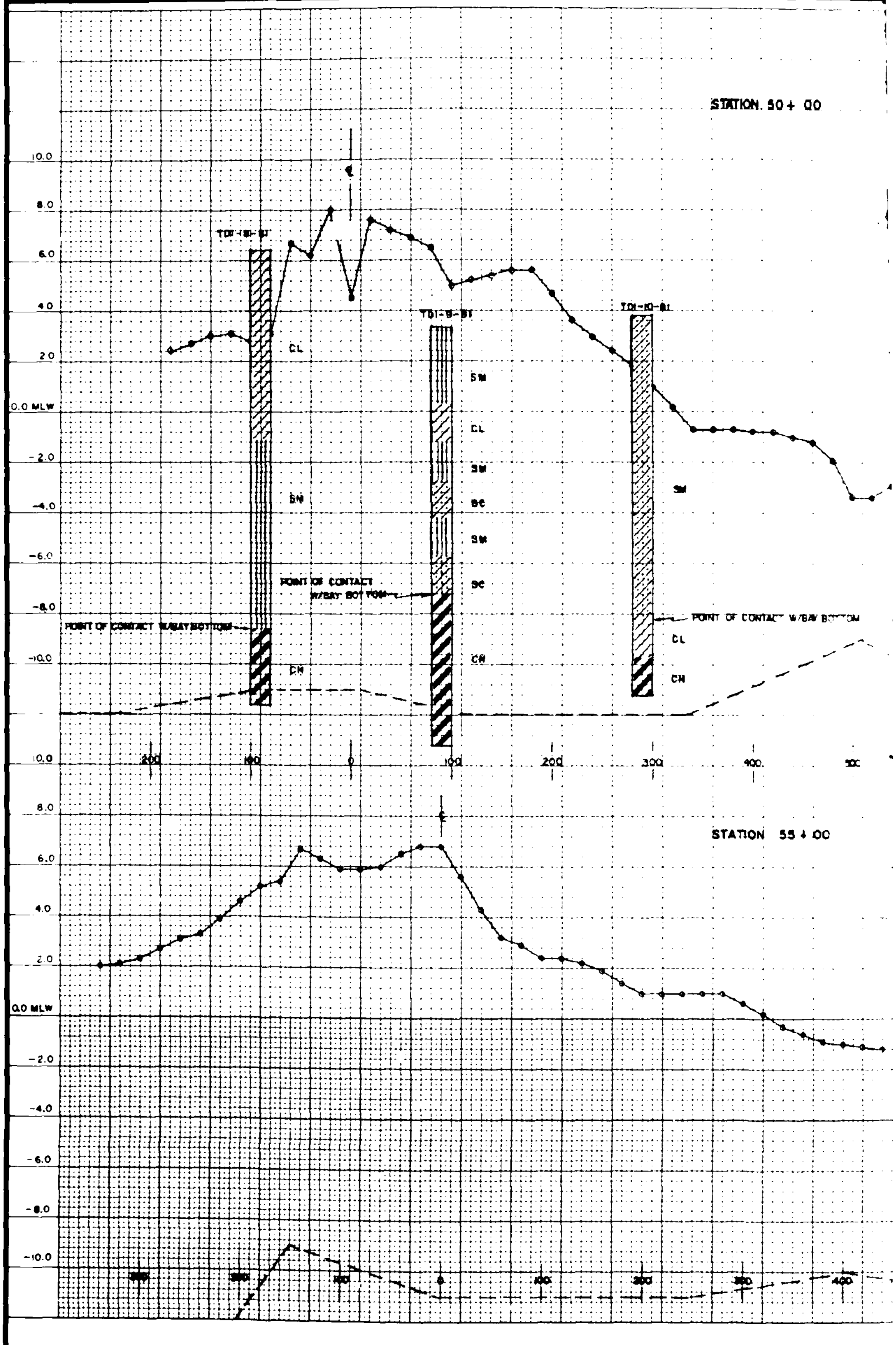




ELEVATIONS REFERENCED TO MEAN LOW WATER (MLW) DATUM

DESIGNED BY EN-FS	U. S. ARMY ENGINEER DISTRICT, MOBILE CORPS OF ENGINEERS MOBILE, ALA.
DRAWN BY	GAILLARD DISPOSAL ISLAND END-OF-CONSTRUCTION
CHECKED BY	
SUPERVISED BY	CROSS SECTIONS
DATE	AUGUST 1981 — SHEET 9 OF 45

Figure D10

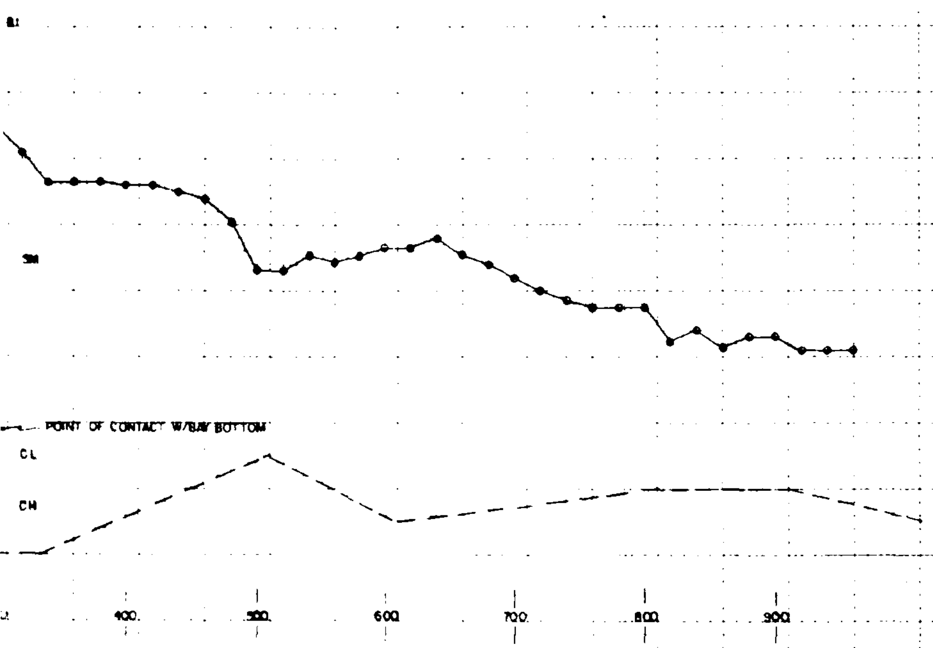

STATION 50 + 00
10.0
8.0
6.0
4.0
2.0
0.0 MLW
-2.0
-4.0
-6.0
-8.0
-10.0
TDI-8-81
TDI-9-81
TDI-10-81
CL
SM
CL
SM
SC
SM
SC
CH
SM
CL
CH
POINT OF CONTACT W/BAY BOTTOM
POINT OF CONTACT W/BAY BOTTOM
POINT OF CONTACT W/BAY BOTTOM
200
100
0
100
200
300
400
STATION 55 + 00
10.0
8.0
6.0
4.0
2.0
0.0 MLW
-2.0
-4.0
-6.0
-8.0
-10.0
100
0
100
200
300
400

3	2	1	U S ARMY

REVISIONS

DESCRIPTION DATE APPROVED

STATION 50 + 00



NOTE. ACTUAL LOCATION OF BORINGS
TDI-8-81 AT STA. 50+06.28
TDI-9-81 AT STA. 50+08.5
TDI-10-81 AT STA. 50+06.28

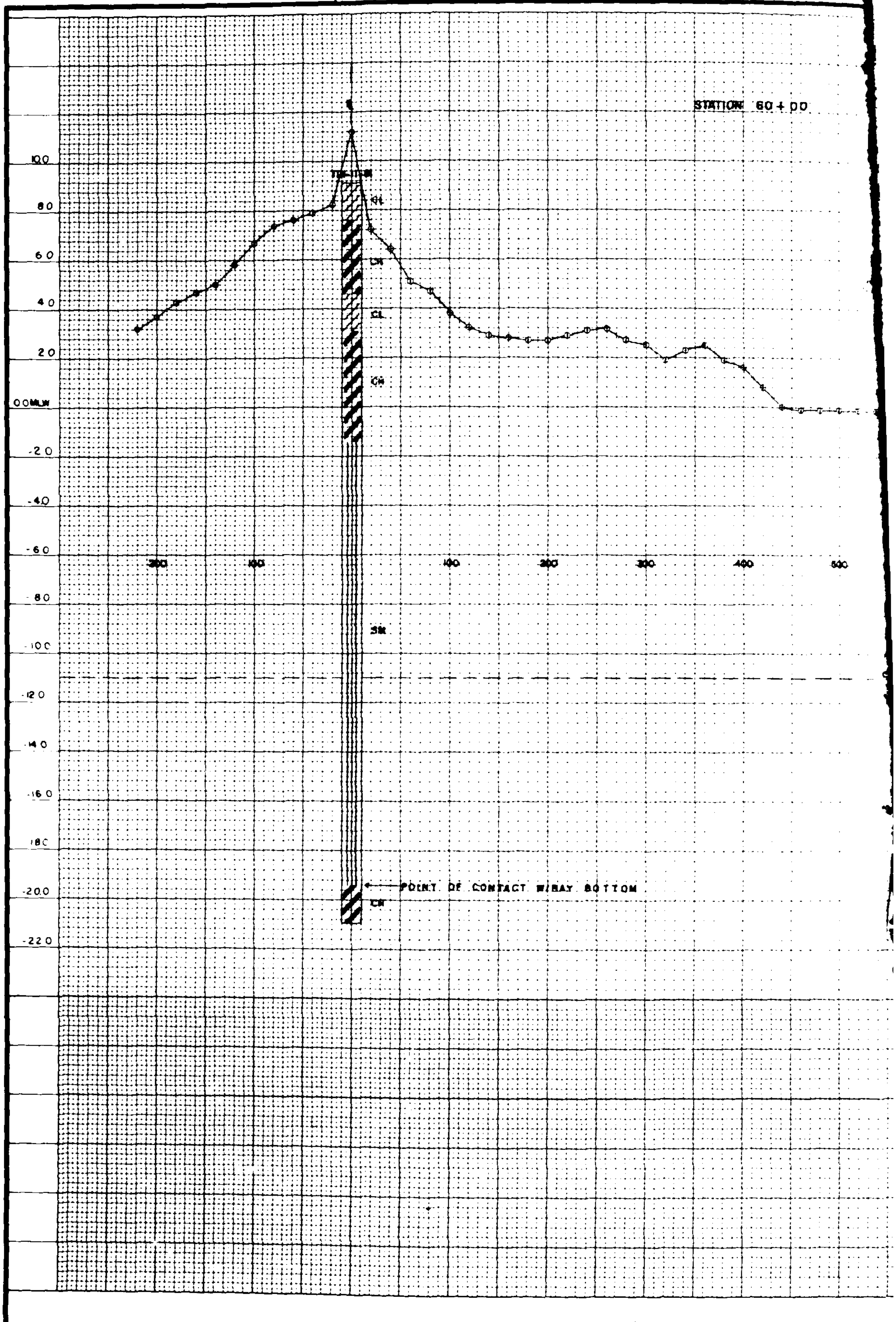
STATION 55 + 00

ELEVATIONS REFERENCED TO MEAN LOW WATER (MLW) DATUM

DESIGNED BY EN-FS	U. S. ARMY ENGINEER DISTRICT, MOBILE CORPS OF ENGINEERS MOBILE, ALA.
DRAWN BY	GAILLARD DISPOSAL ISLAND END-OF-CONSTRUCTION
CHECKED BY	CROSS SECTIONS
SUBMITTED BY	
DA REF. NO.	SPEC NO. / SIZE / FILE NO.
	SCALE / DATE AUGUST 1981 / DRAWING NO. / SHEET 10 OF 45

3	2	1

Figure D11


STATION 60+00
100
80
60
40
20
0.0 MLW
-20
-40
-60
-80
-100
-120
-140
-160
-180
-200
-220
200
100
100
200
300
400
500
CL
CH
CL
CH
SM
CH
POINT OF CONTACT W/BAY BOTTOM

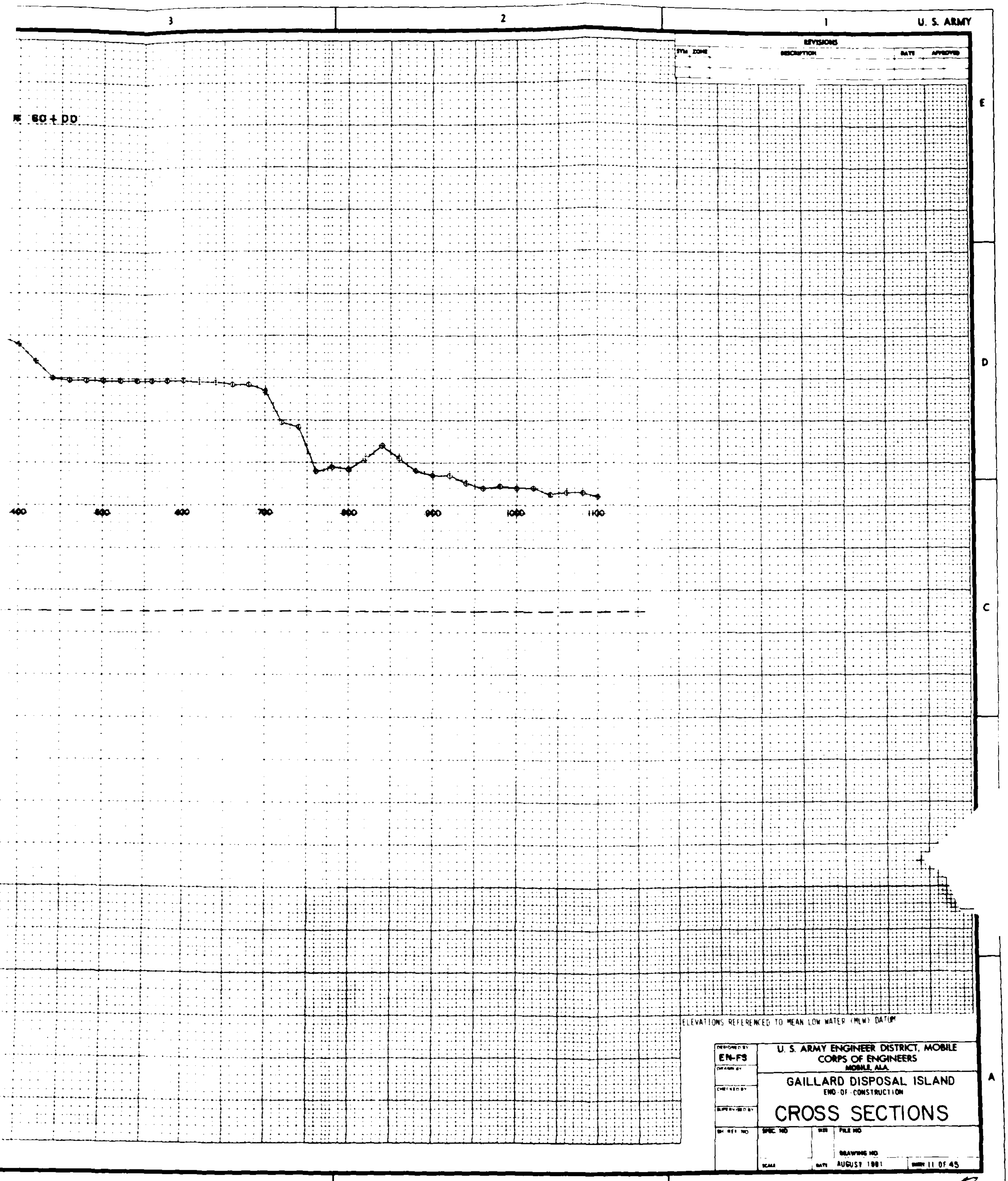
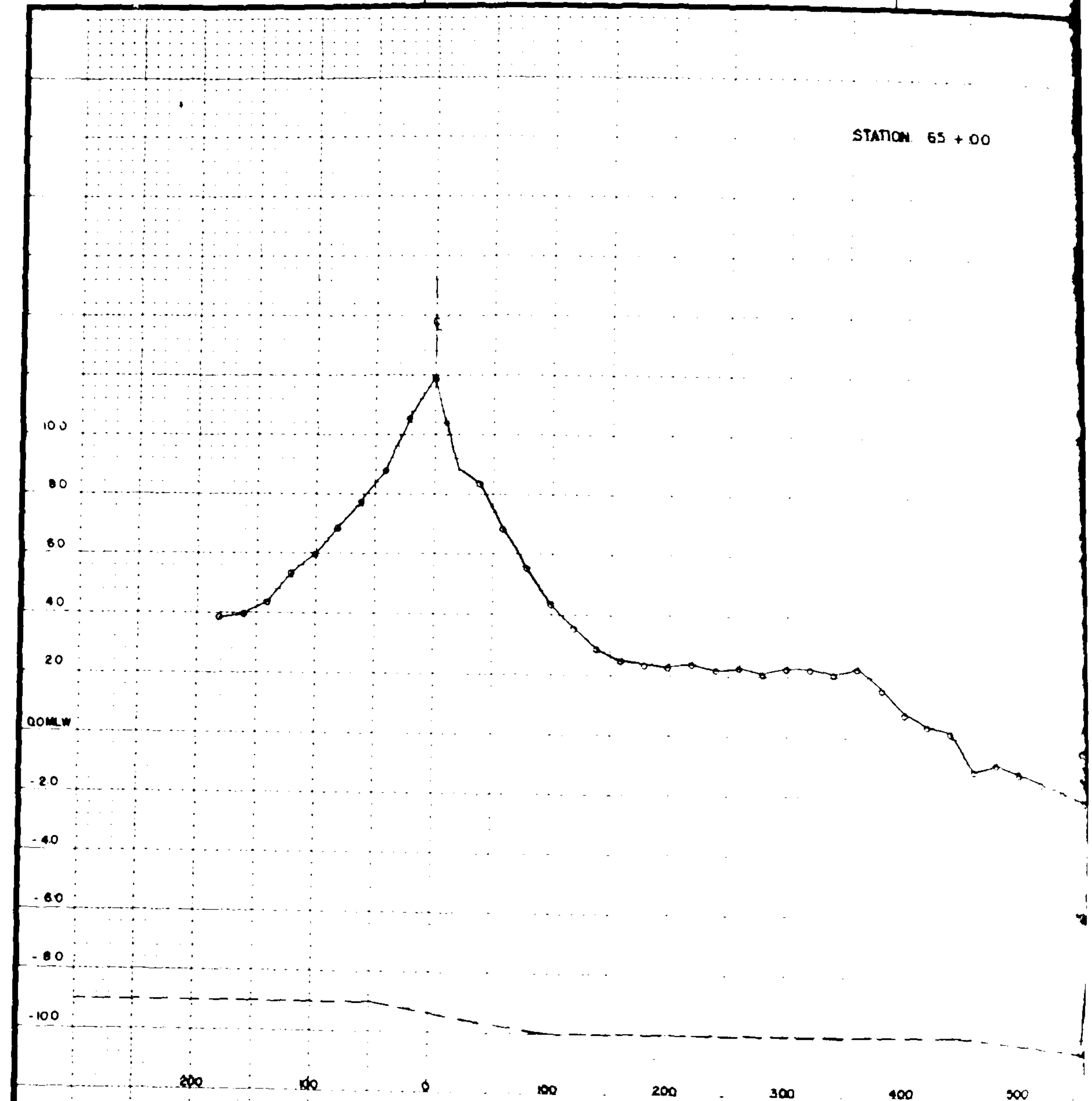

U. S. ARMY
REVISIONS
60 + 00
500
600
700
800
900
1000
1100
ELEVATIONS REFERENCED TO MEAN LOW WATER (MLW) DATUM
EN-FS
U. S. ARMY ENGINEER DISTRICT, MOBILE
CORPS OF ENGINEERS
MOBILE, ALA.
GAILLARD DISPOSAL ISLAND
END-OF-CONSTRUCTION
CROSS SECTIONS
AUGUST 1981
11 OF 45

Figure D12

CORPS OF ENGINEERS

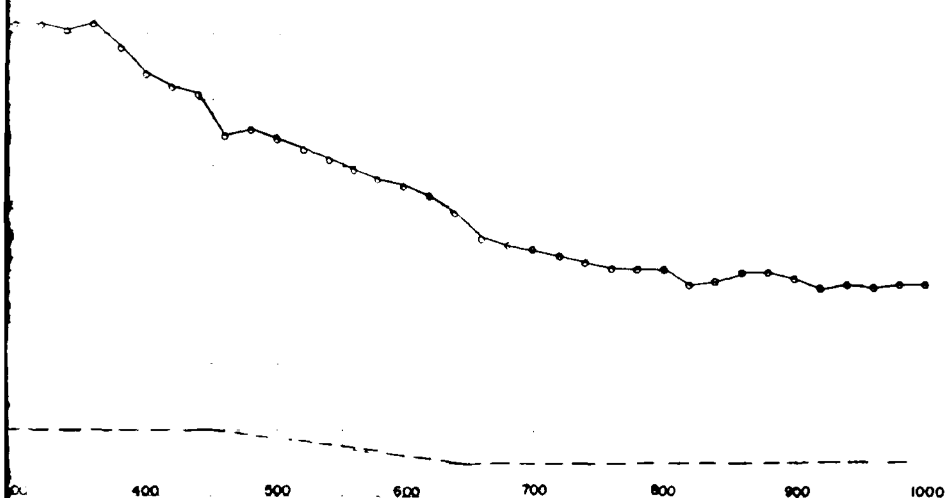


3	2	1	U. S.

REVISIONS

SYM	ZONE	DESCRIPTION	DATE

STATION 65 + 00

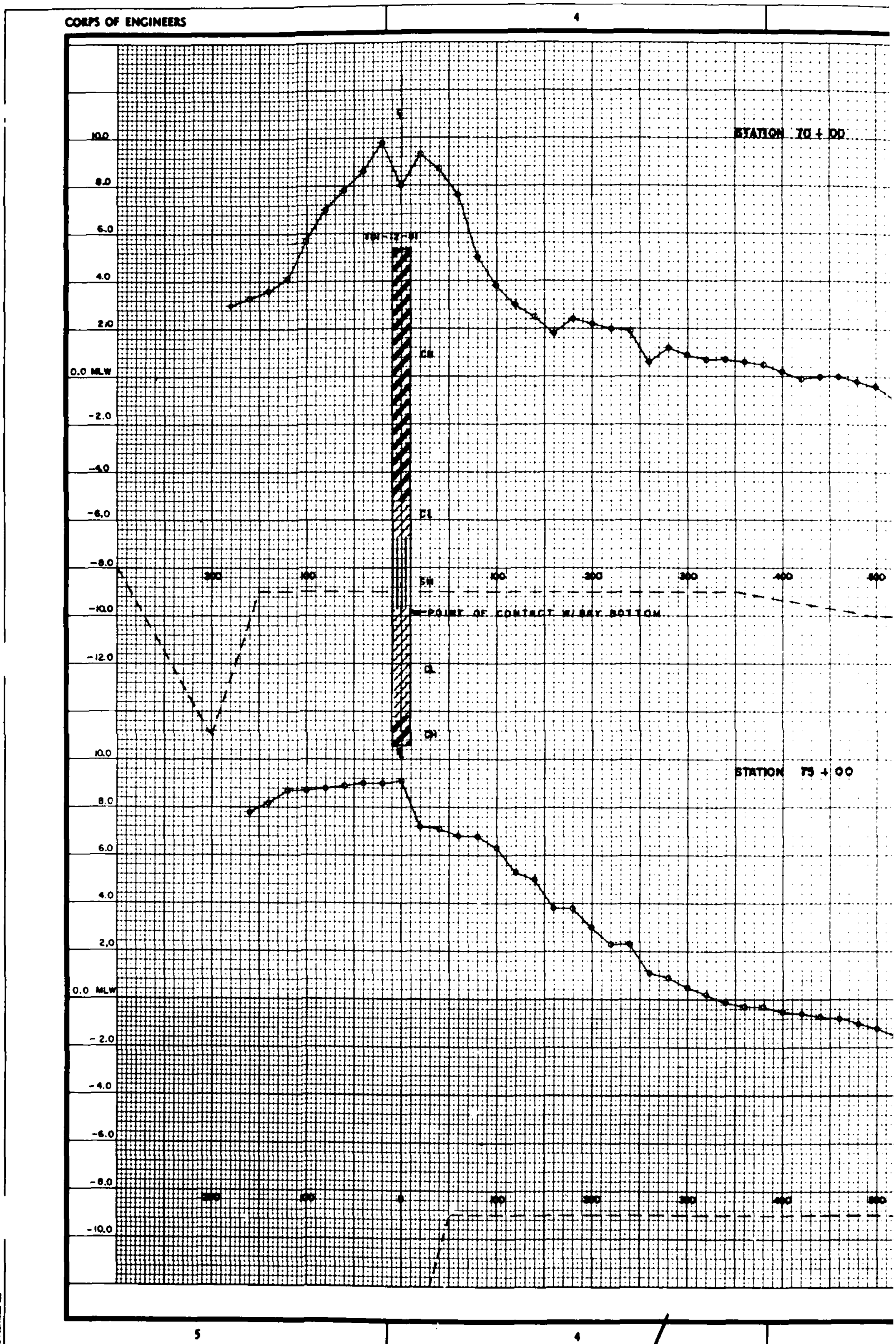


ELEVATIONS REFERENCED TO MEAN LOW WATER (MLW) DATUM

DESIGNED BY EN-FS	U. S. ARMY ENGINEER DISTRICT, MO CORPS OF ENGINEERS MOBILE, ALA.
DRAWN BY	GAILLARD DISPOSAL ISLA END-OF-CONSTRUCTION
CHECKED BY	
SUPERVISED BY	CROSS SECTIO
DH REF NO	SPEC NO / FILE NO / DRAWING NO / DATE AUGUST 1981

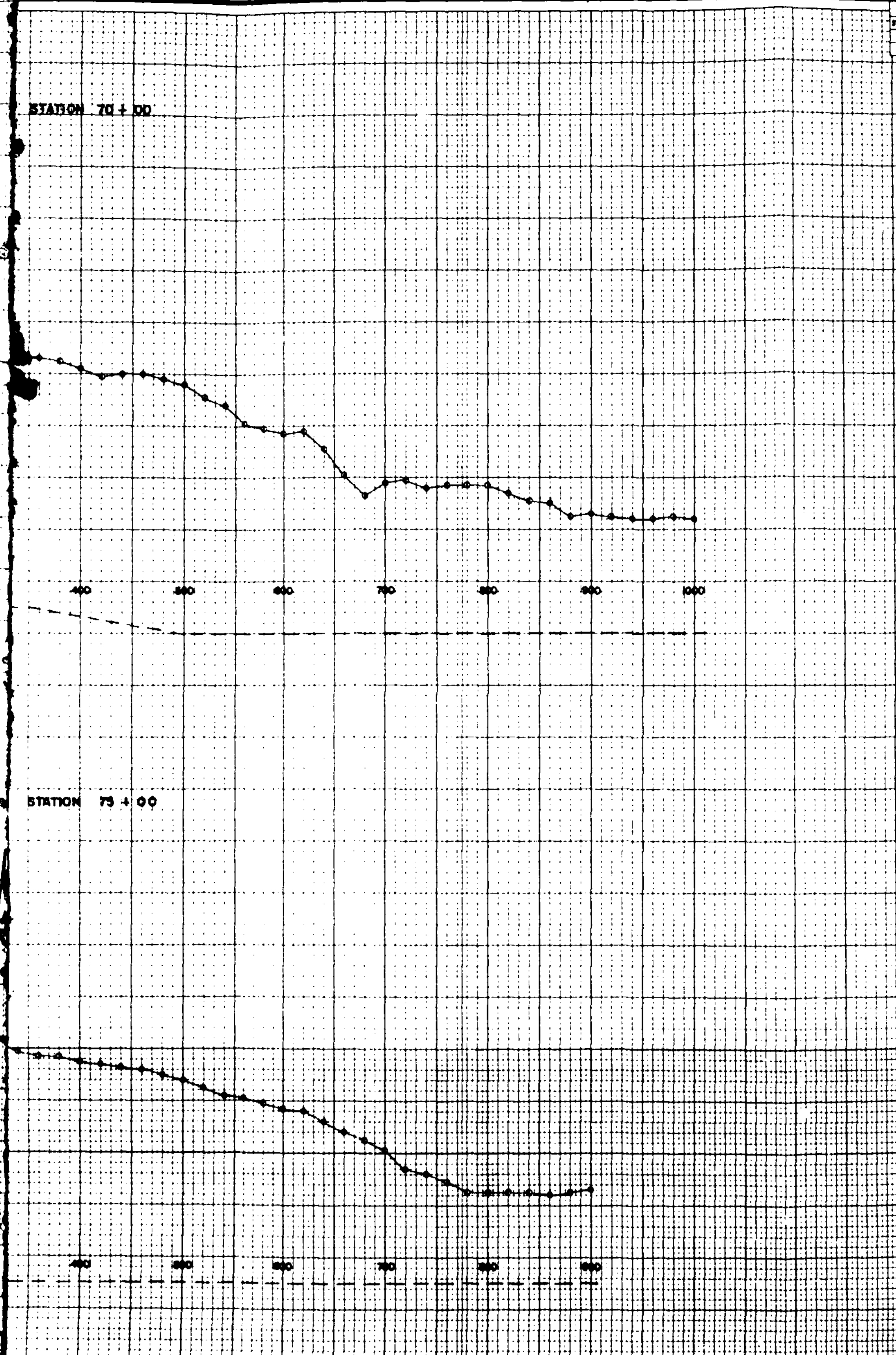
3	2	1

Figure D13


CORPS OF ENGINEERS
4
STATION 70 + 00
10.0
8.0
6.0
4.0
2.0
0.0 MLW
-2.0
-4.0
-6.0
-8.0
-10.0
-12.0
CH
CL
SM
POINT OF CONTACT W/BAY BOTTOM
CL
CH
200
100
100
200
300
400
500
STATION 75 + 00
10.0
8.0
6.0
4.0
2.0
0.0 MLW
-2.0
-4.0
-6.0
-8.0
-10.0
200
100
0
100
200
300
400
500
5
4

REVISIONS

SYM	ZONE	DESCRIPTION	DATE	APPROVED



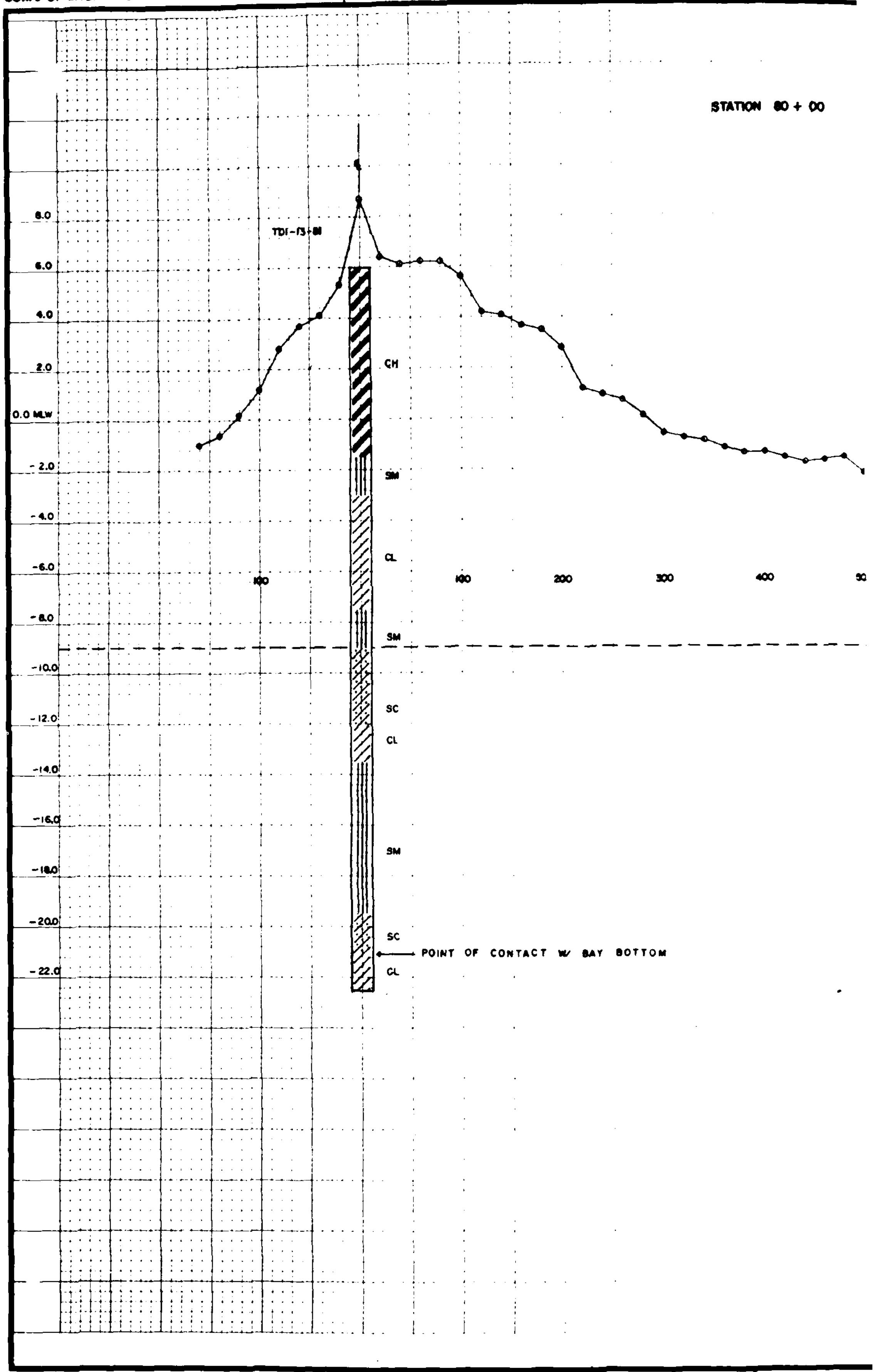
ELEVATIONS REFERENCED TO MEAN LOW WATER (MLW) DATUM

DESIGNED BY EN-FS	U. S. ARMY ENGINEER DISTRICT, MOBILE CORPS OF ENGINEERS MOBILE, ALA.
DRAWN BY	GAILLARD DISPOSAL ISLAND END-OF-CONSTRUCTION
CHECKED BY	
SUPERVISED BY	CROSS SECTIONS
DH REF NO	SPEC NO. — SIZE — FILE NO. — DRAWING NO.
	SCALE — DATE AUGUST 1981 — SHEET 13 OF 45

Figure D14

CORPS OF ENGINEERS

4



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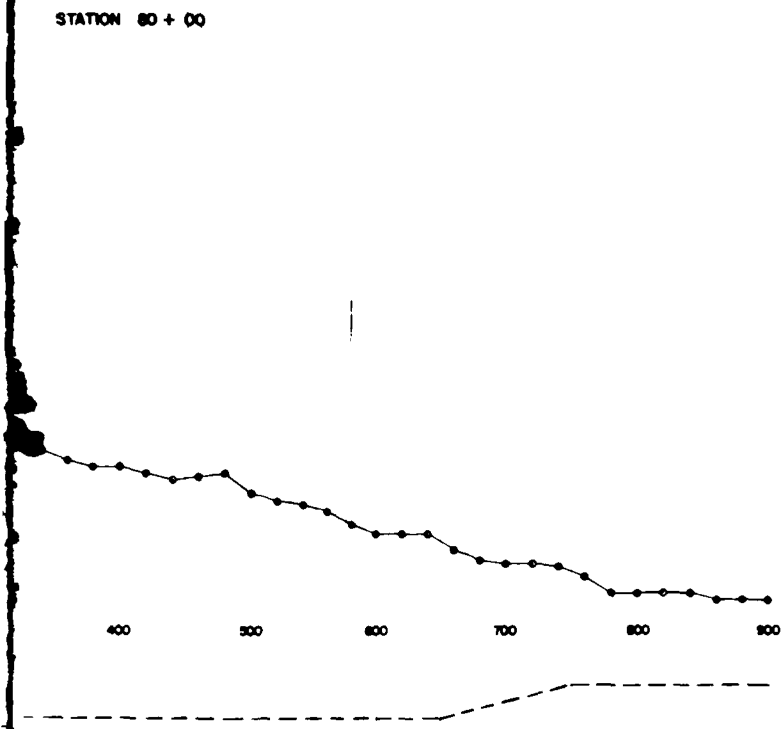
4

3 2 1 U. S. ARMY

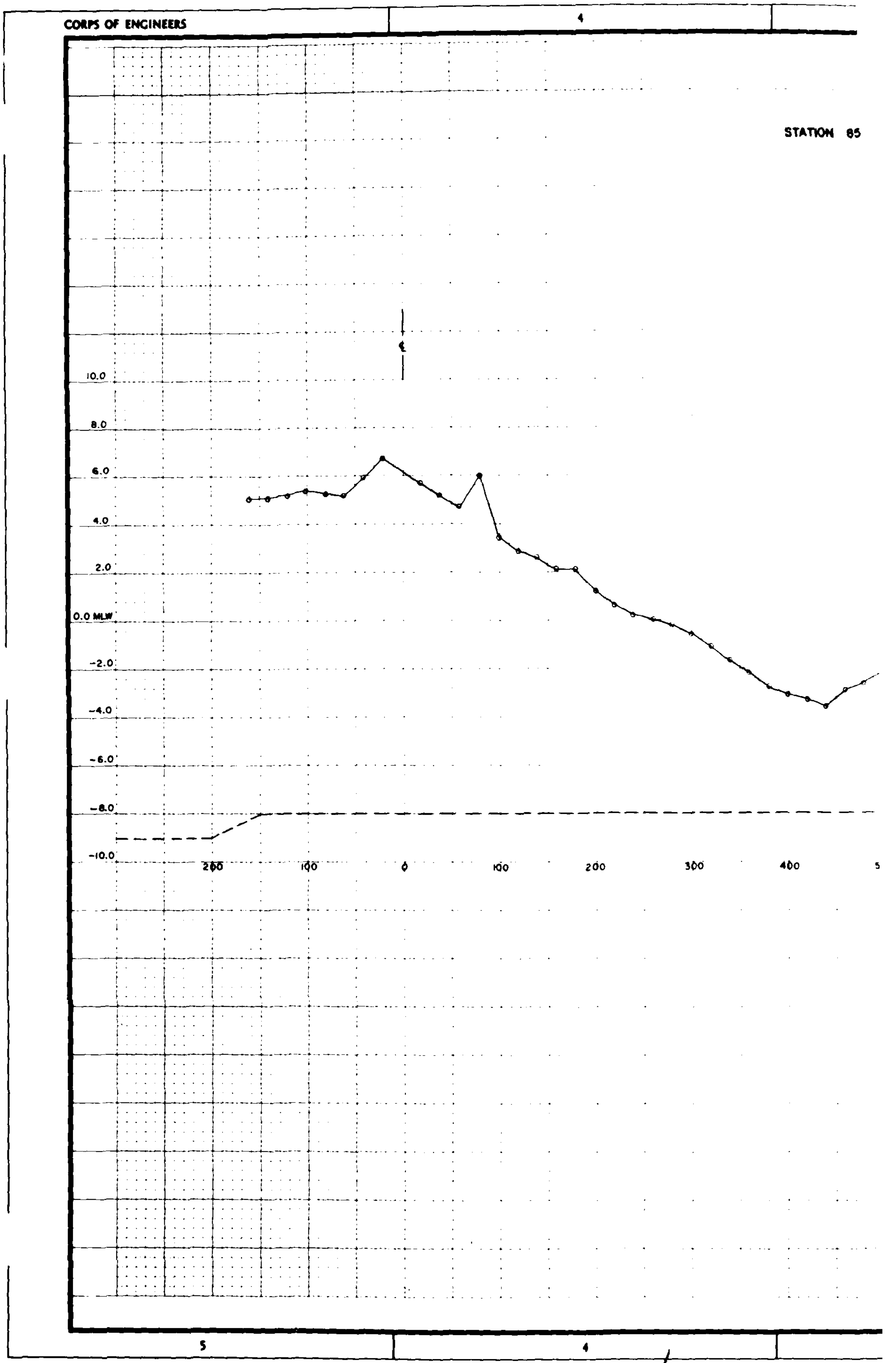


ELEVATIONS REFERENCED TO MEAN LOW WATER (MLW) DATUM

DESIGNED BY EN-FS	U. S. ARMY ENGINEER DISTRICT, MOBILE CORPS OF ENGINEERS MOBILE, ALA.
DRAWN BY	GAILLARD DISPOSAL ISLAND END-OF-CONSTRUCTION
CHECKED BY	CROSS SECTIONS
SUBMITTED BY	
DH REF NO	SPEC. NO. / FILE NO. / DRAWING NO.
	SCALE / DATE AUGUST 1981 / SHEET 14 OF 48

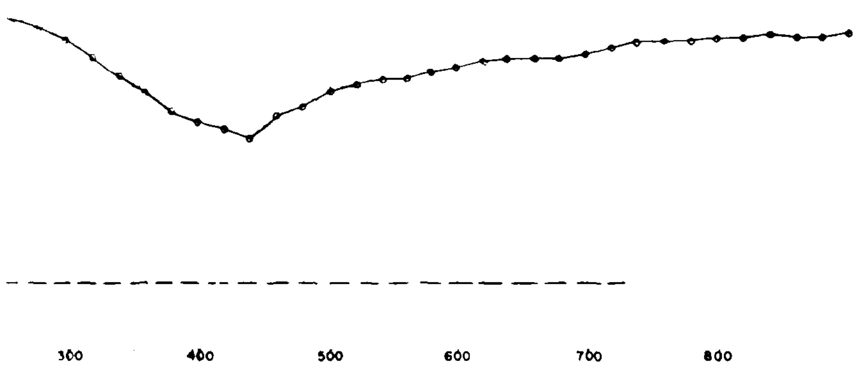
3 2 1

Figure D15



CORPS OF ENGINEERS
4
STATION 85
10.0
8.0
6.0
4.0
2.0
0.0 MLW
-2.0
-4.0
-6.0
-8.0
-10.0
200
100
0
100
200
300
400
5
4

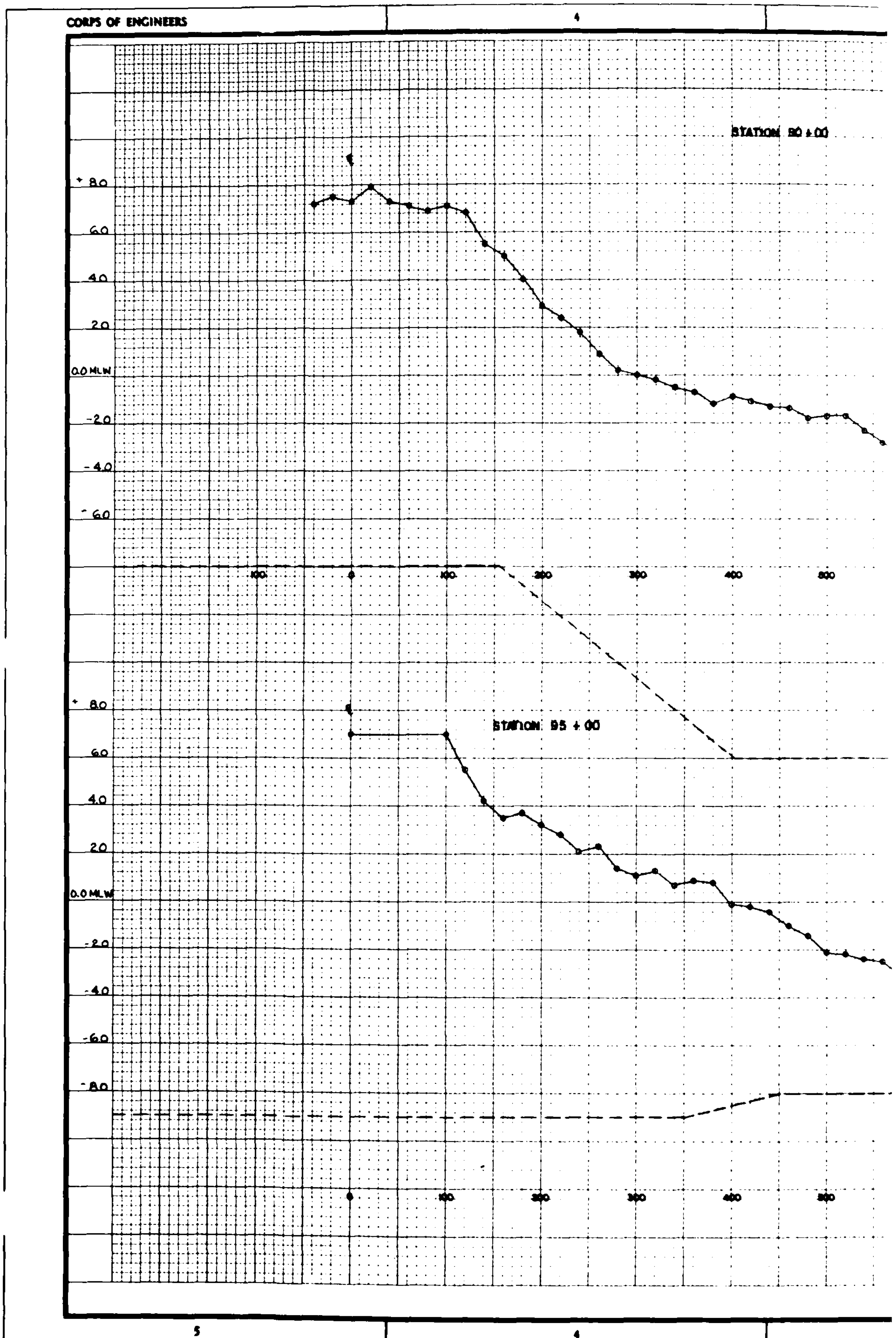
STATION 65 + 00

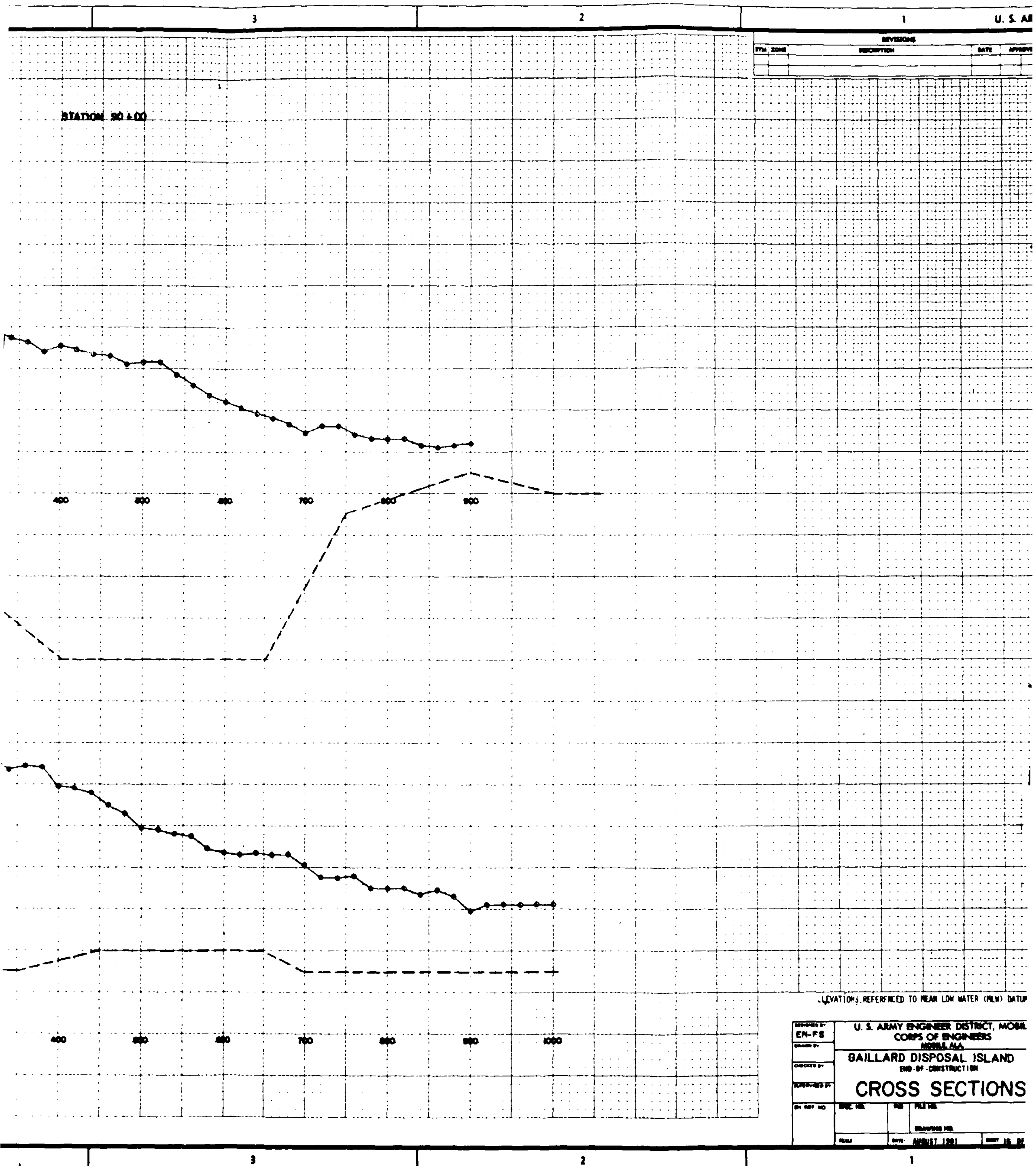


ELEVATIONS REFERENCED TO MEAN LOW WATER (MLW) DATUM

DESIGNED BY EN-FS	U. S. ARMY ENGINEER DISTRICT, M CORPS OF ENGINEERS MOBILE, ALA.
DRAWN BY	GAILLARD DISPOSAL ISLAN
CHECKED BY	END-OF-CONSTRUCTION
SUPERVISED BY	CROSS SECTION
SH REF NO	SPEC NO. / FILE NO. / DRAWING NO.
	SCALE / DATE AUGUST 1981 / SHEET

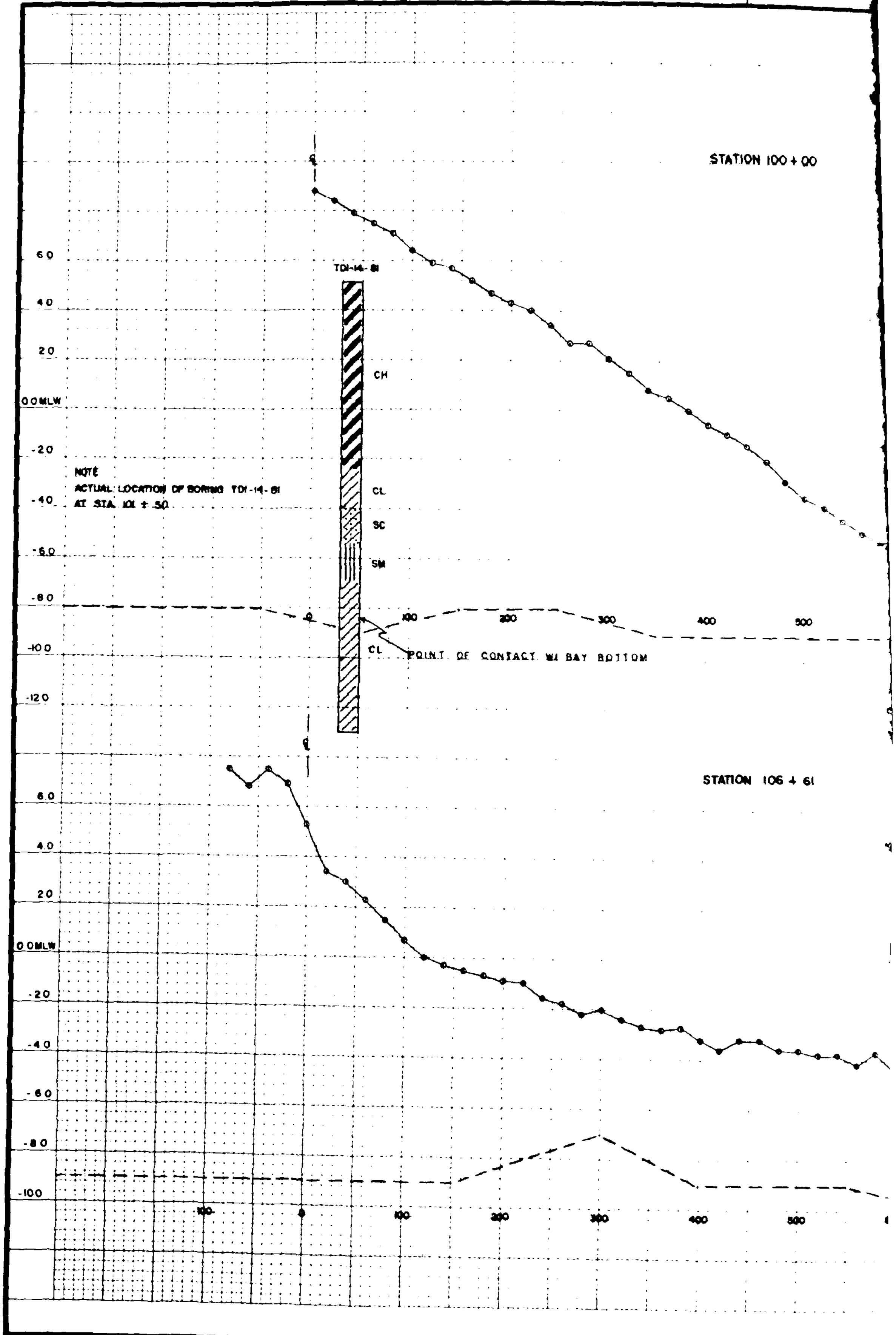
Figure D16


CORPS OF ENGINEERS
STATION 90 + 00
+8.0
6.0
4.0
2.0
0.0 MLW
-2.0
-4.0
-6.0
100
0
100
200
300
400
500
STATION 95 + 00
+8.0
6.0
4.0
2.0
0.0 MLW
-2.0
-4.0
-6.0
-8.0
0
100
200
300
400
500


3
2
1
U. S. A
REVISIONS
SYM
ZONE
DESCRIPTION
DATE
STATION 90+00
400
500
600
700
800
900
400
500
600
700
800
900
1000
ELEVATIONS REFERENCED TO MEAN LOW WATER (MLW) DATUM
EN-FS
U. S. ARMY ENGINEER DISTRICT, MOBIL
CORPS OF ENGINEERS
GAILLARD DISPOSAL ISLAND
END-OF-CONSTRUCTION
CROSS SECTIONS
AUGUST 1981
16

2 Figure D17

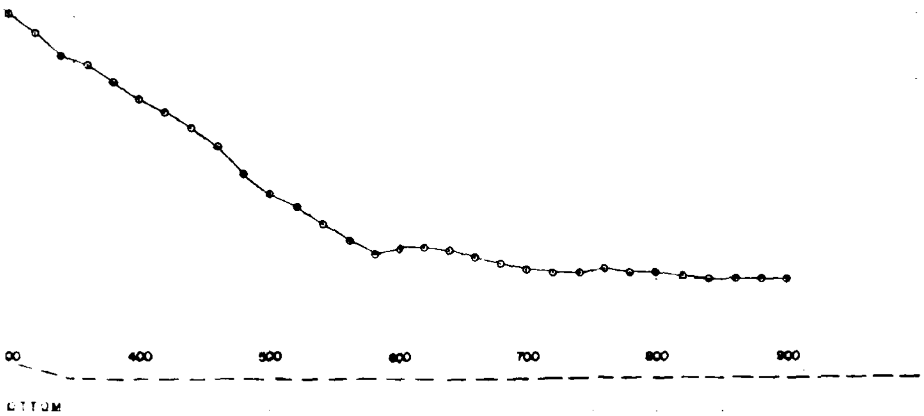
CORPS OF ENGINEERS



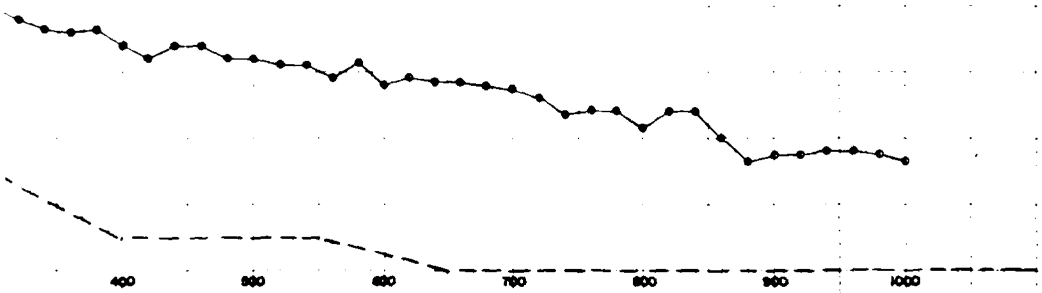
5 4

SYM	ZONE	REVISIONS DESCRIPTION	DATE

STATION 100 + 00



STATION 106 + 61



ELEVATIONS REFERENCED TO MEAN LOW WATER (MLW) DATU

U. S. ARMY ENGINEER DISTRICT, MO
CORPS OF ENGINEERS
MOBILE, ALA.

GAILLARD DISPOSAL ISLAND
END-OF-CONSTRUCTION

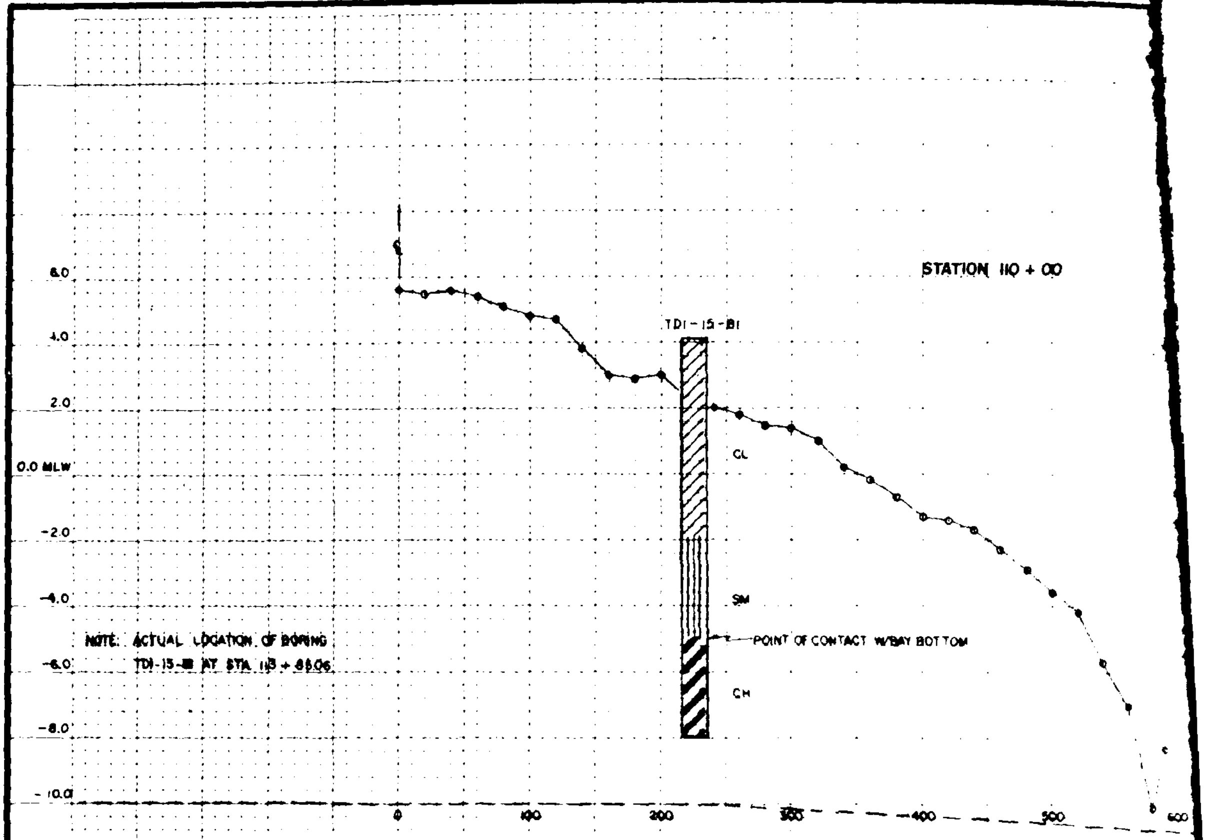
CROSS SECTION

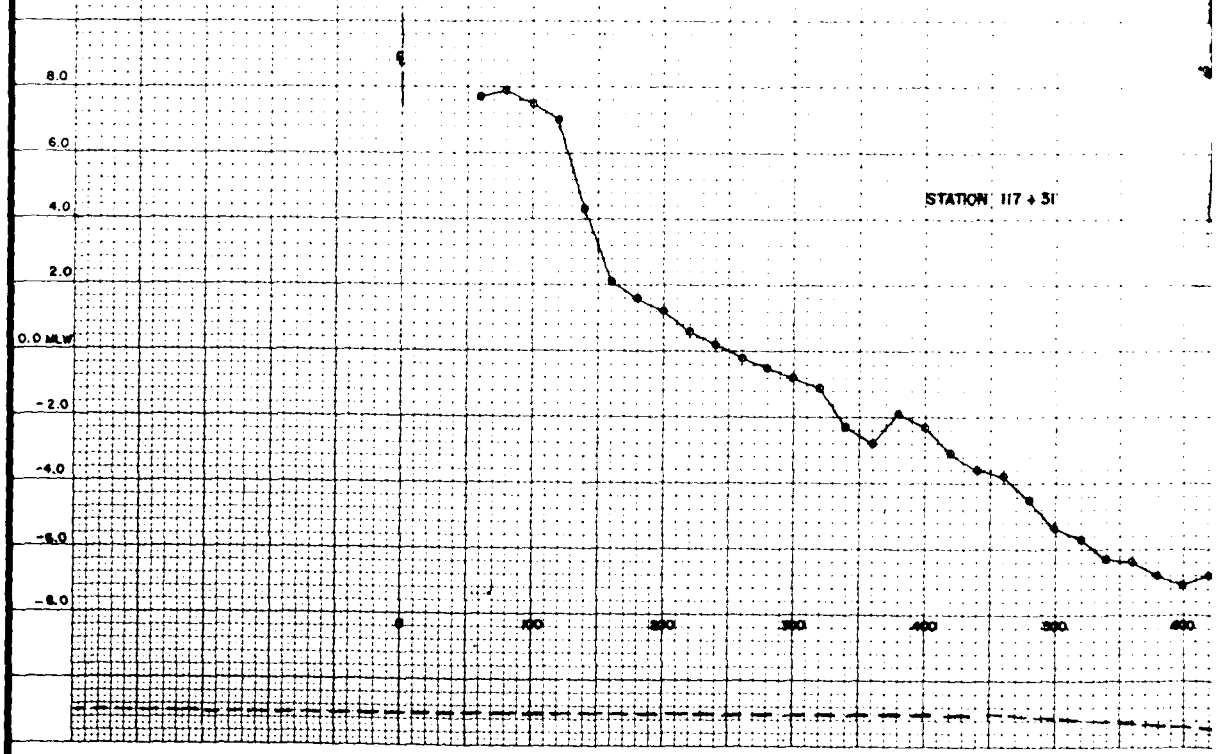
DESIGNED BY: EN-FS
DRAWN BY
CHECKED BY
SUPERVISED BY
EN REF NO
SPEC. NO.
FILE NO.
DRAWING NO.
SCALE
DATE AUGUST 1981
SHEET

Figure D18

CORPS OF ENGINEERS

4





5

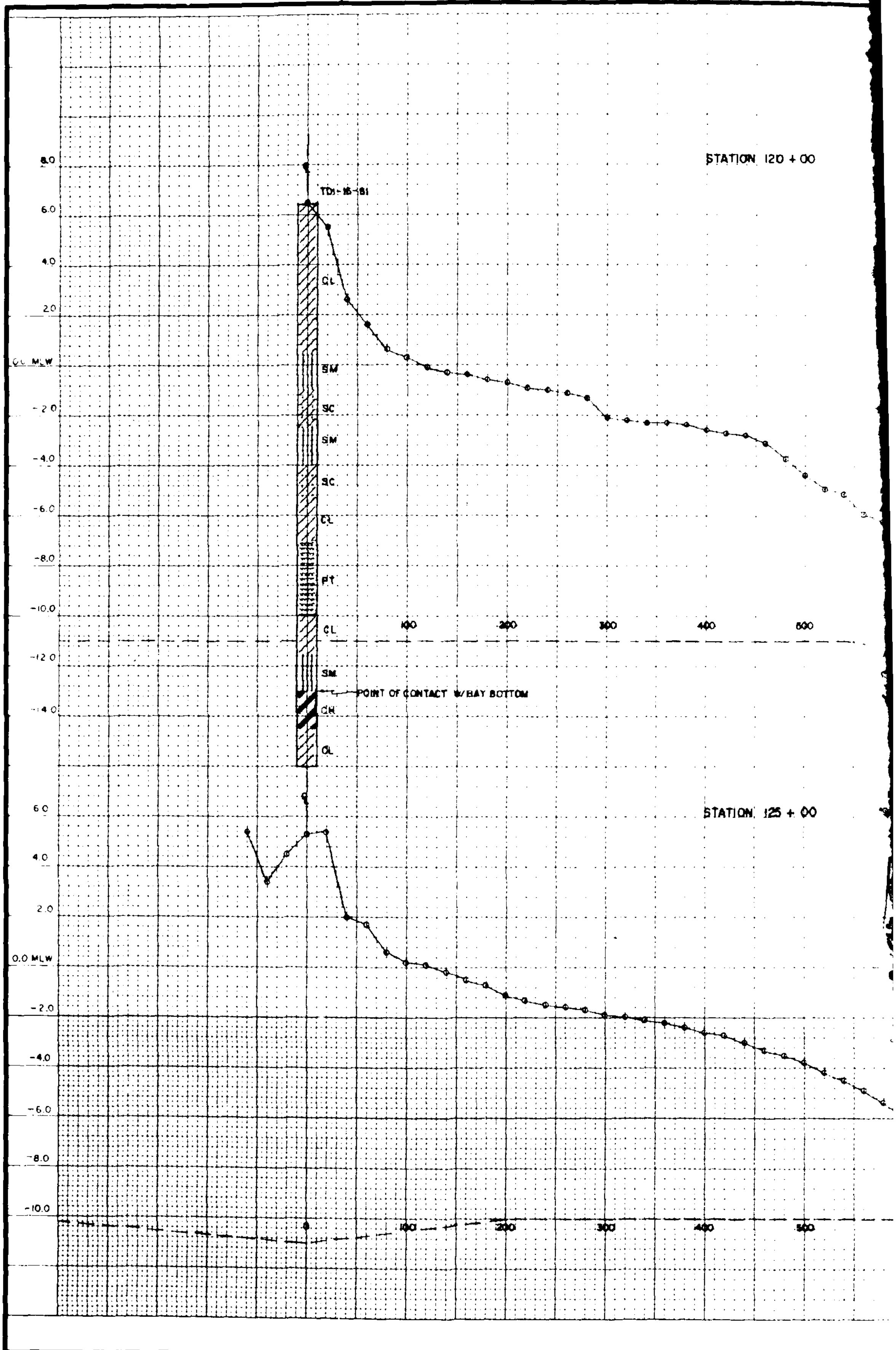
4

ELEVATIONS REFERENCED TO MEAN LOW WATER (MLW) DATUM

DESIGNED BY EN-FS	U. S. ARMY ENGINEER DISTRICT, MOBILE CORPS OF ENGINEERS MOBILE ALA.
DRAWN BY	GAILLARD DISPOSAL ISLAND END-OF-CONSTRUCTION
CHECKED BY	
SUPERVISED BY	CROSS SECTIONS
EN REF NO	SPEC. NO. / FILE NO. / DRAWING NO.
	SCALE / DATE AUGUST 1981 / SHEET 10 OF 65

2 Figure D19

CORPS OF ENGINEERS



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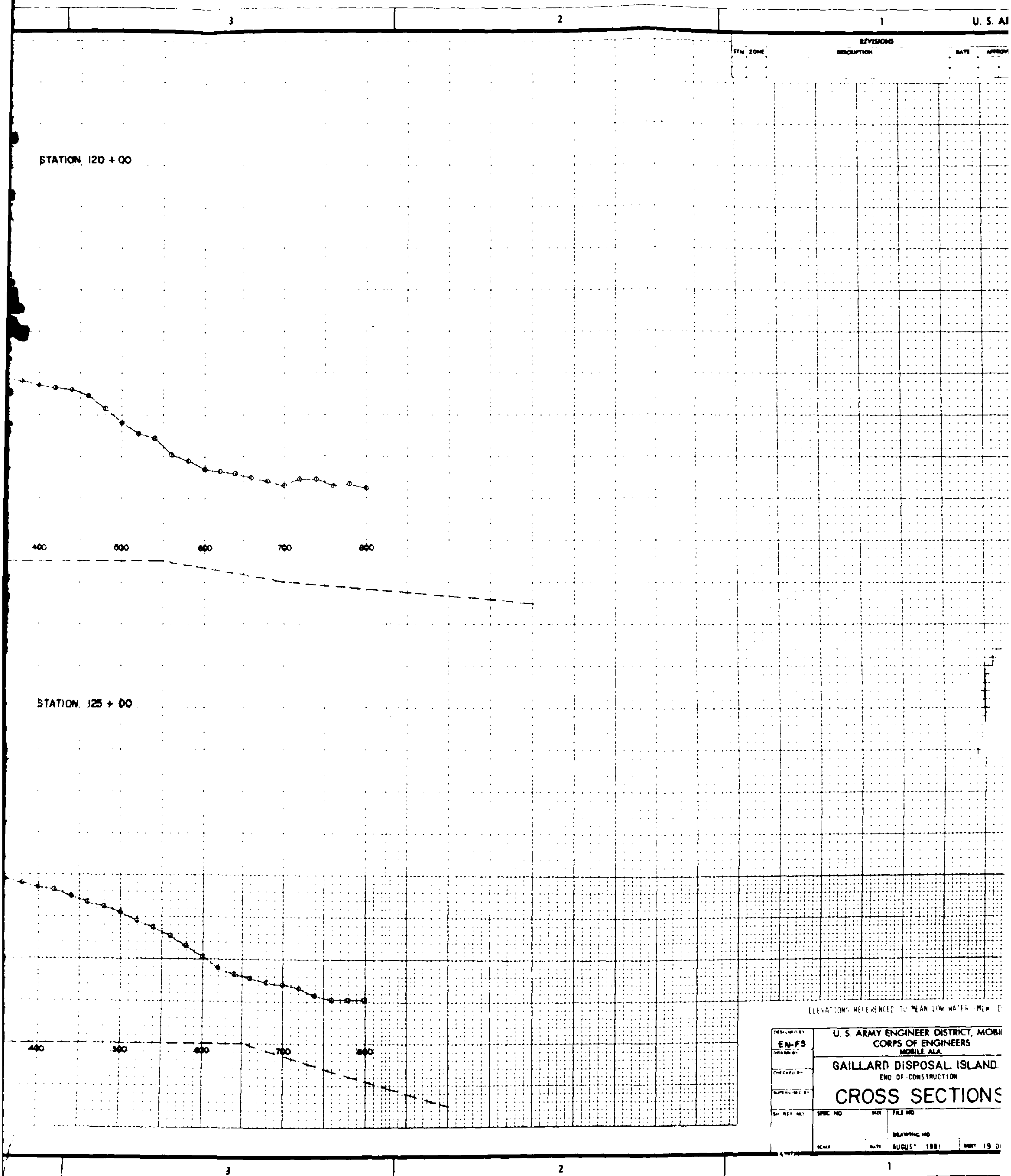
4



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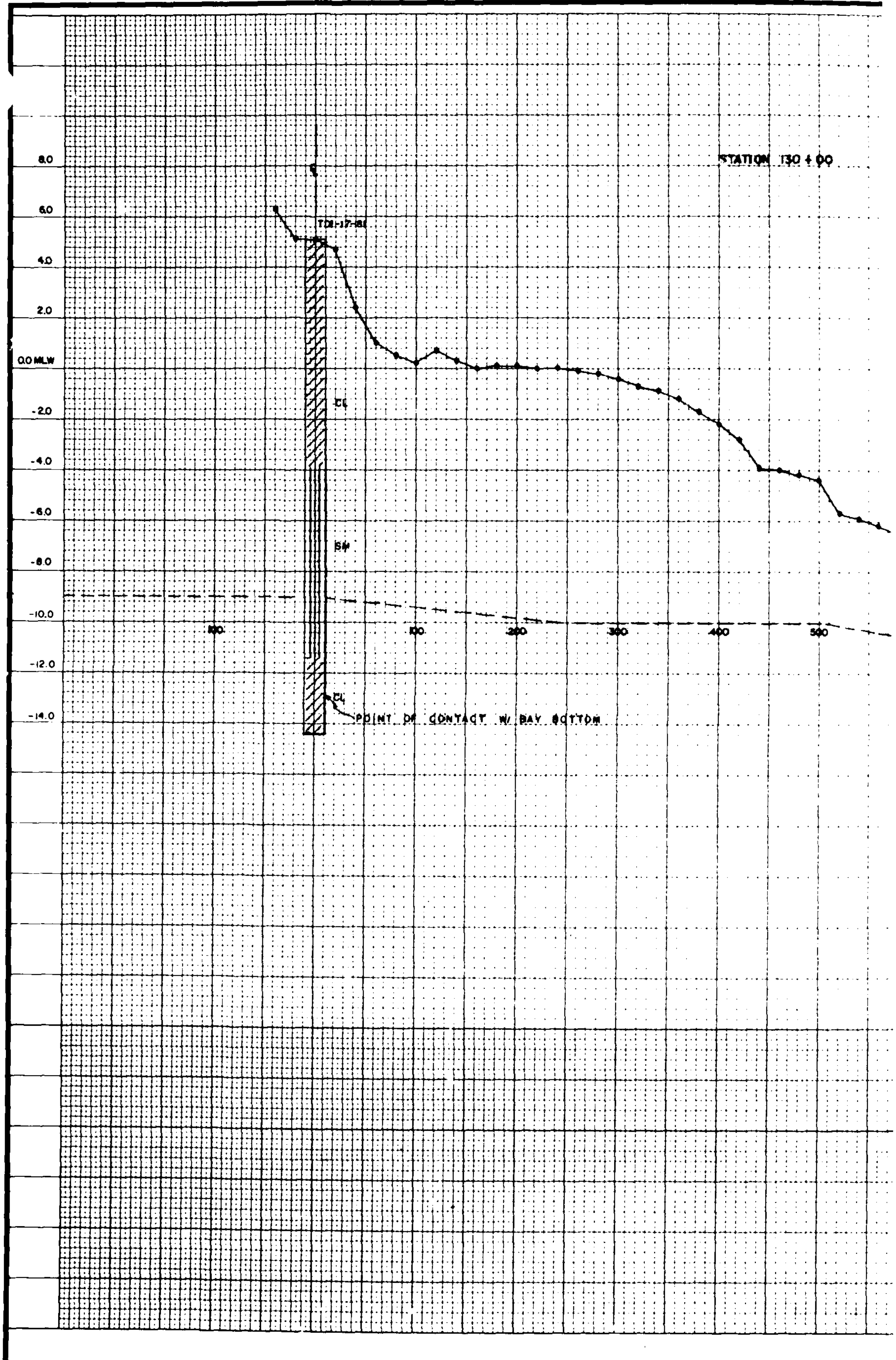
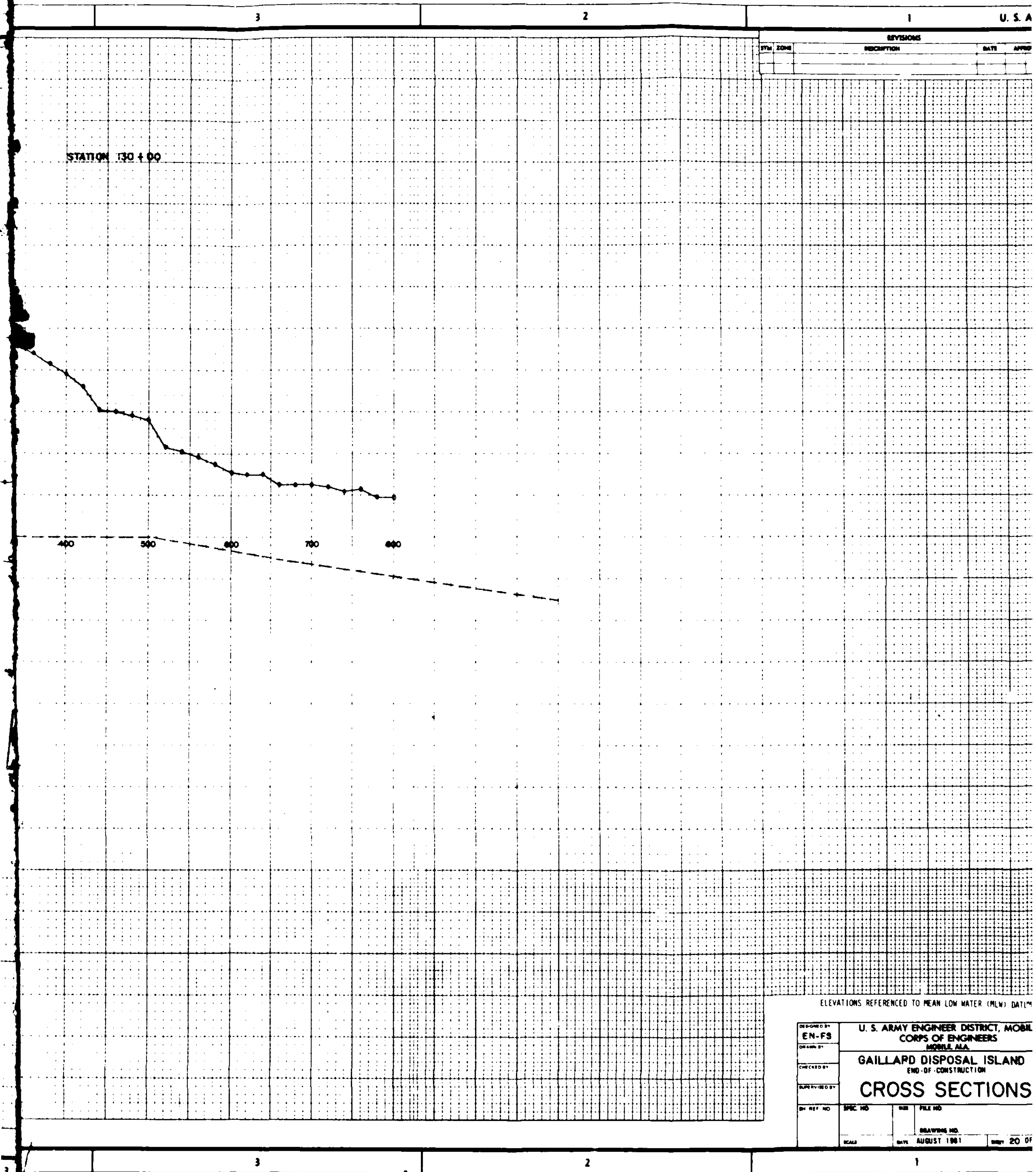
REVISIONS
SYM ZONE
DESCRIPTION
DATE
APPROV
STATION 120 + 00
400
500
600
700
800
STATION 125 + 00
400
500
600
700
800
ELEVATIONS REFERENCED TO MEAN LOW WATER (MLW) D
EN-FS
U. S. ARMY ENGINEER DISTRICT, MOBI
CORPS OF ENGINEERS
MOBILE ALA.
GAILLARD DISPOSAL ISLAND.
END OF CONSTRUCTION
CROSS SECTIONS
SPEC NO
FILE NO
DRAWING NO
AUGUST 1981
19 O

Figure D20

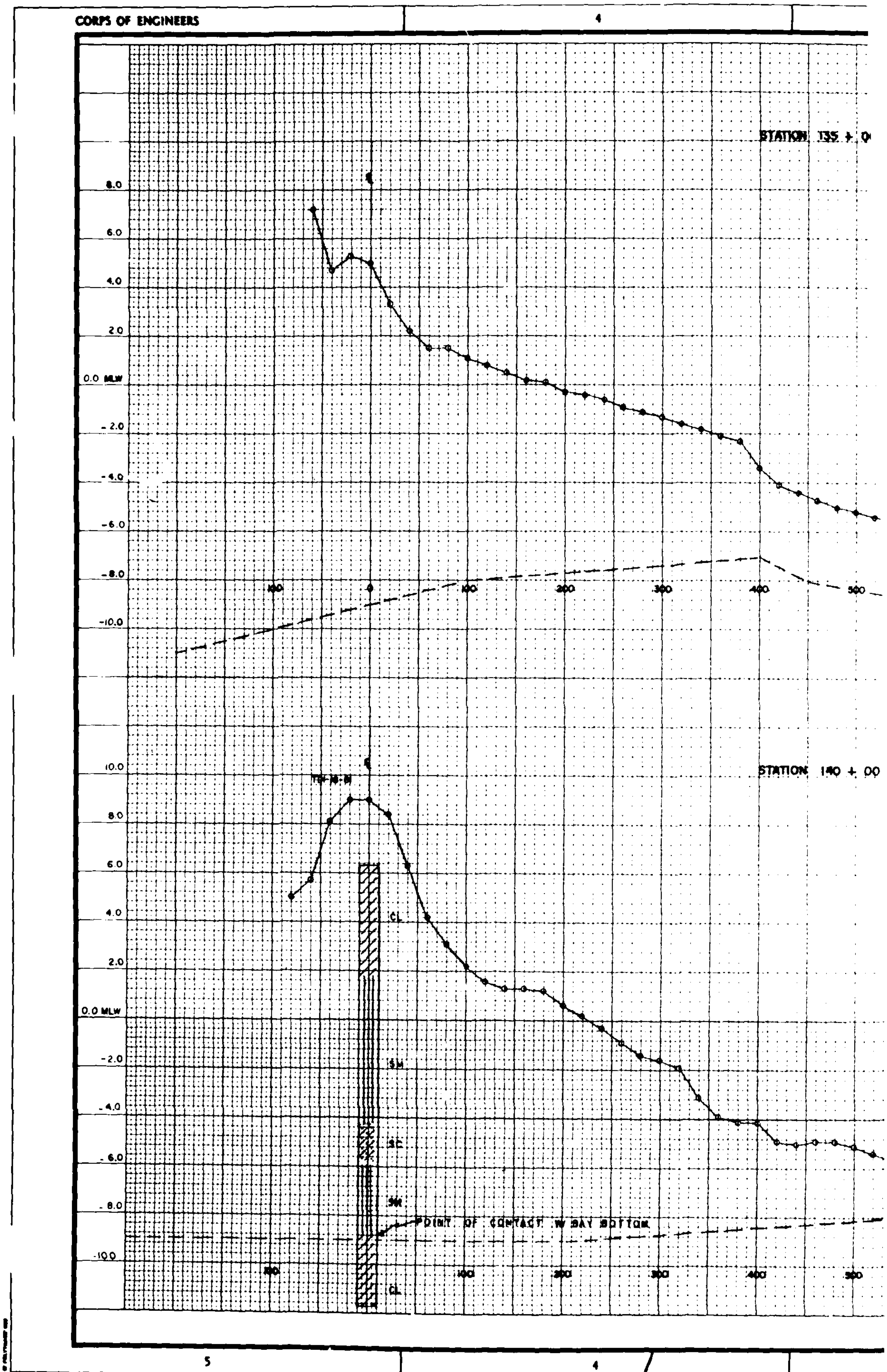
CORPS OF ENGINEERS

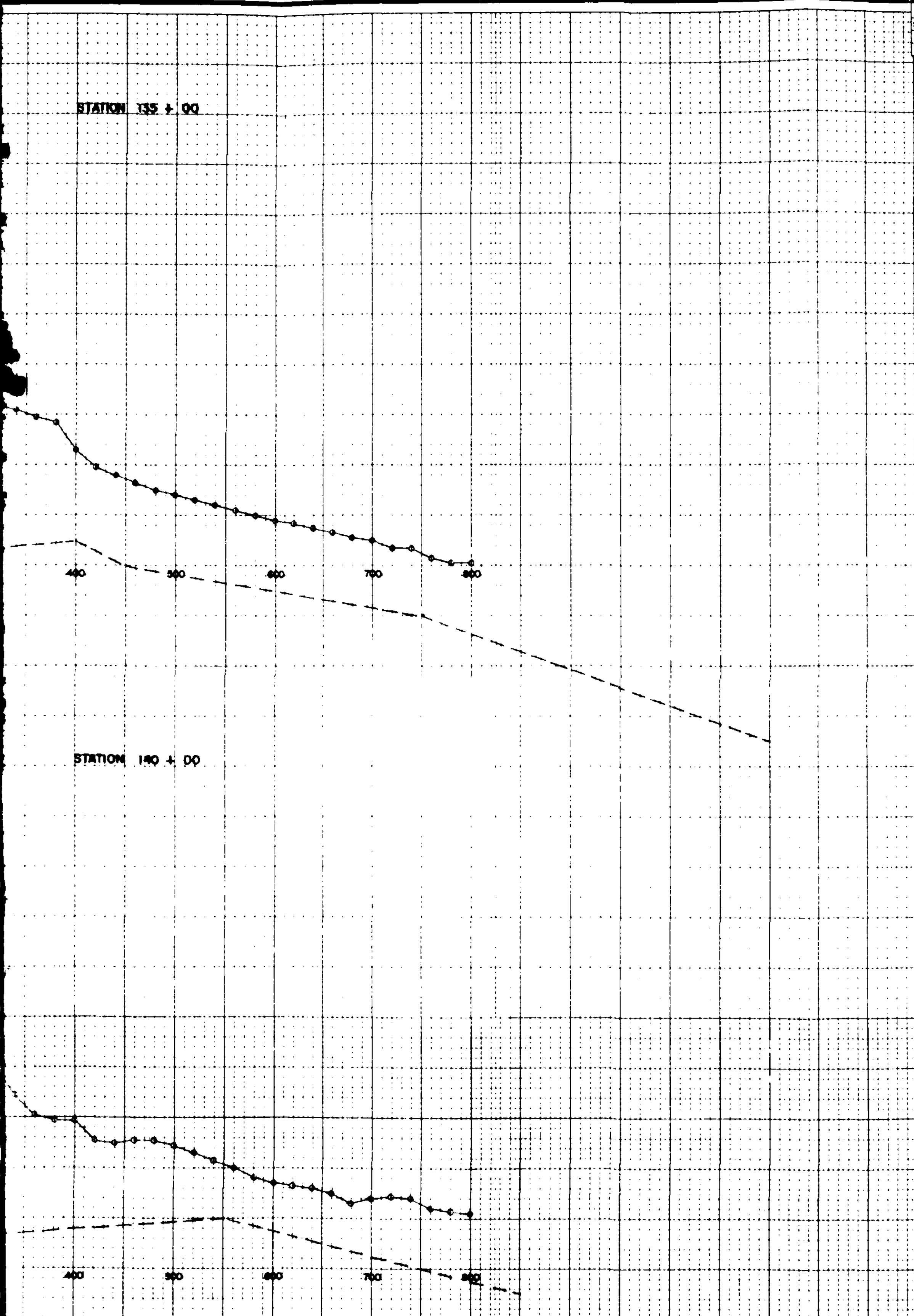




U. S. A
REVISIONS
SYM ZONE
DESCRIPTION
DATE
STATION 130 + 00
400
500
600
700
800
ELEVATIONS REFERENCED TO MEAN LOW WATER (MLW) DATUM
DESIGNED BY
EN-FS
DRAWN BY
CHECKED BY
SUPERVISED BY
U. S. ARMY ENGINEER DISTRICT, MOBIL
CORPS OF ENGINEERS
MOBILE, ALA.
GAILLARD DISPOSAL ISLAND
END-OF-CONSTRUCTION
CROSS SECTIONS
SPEC. NO.
FILE NO.
DRAWING NO.
SCALE
DATE AUGUST 1981
SHEET 20 OF
3
2
1

Figure D21

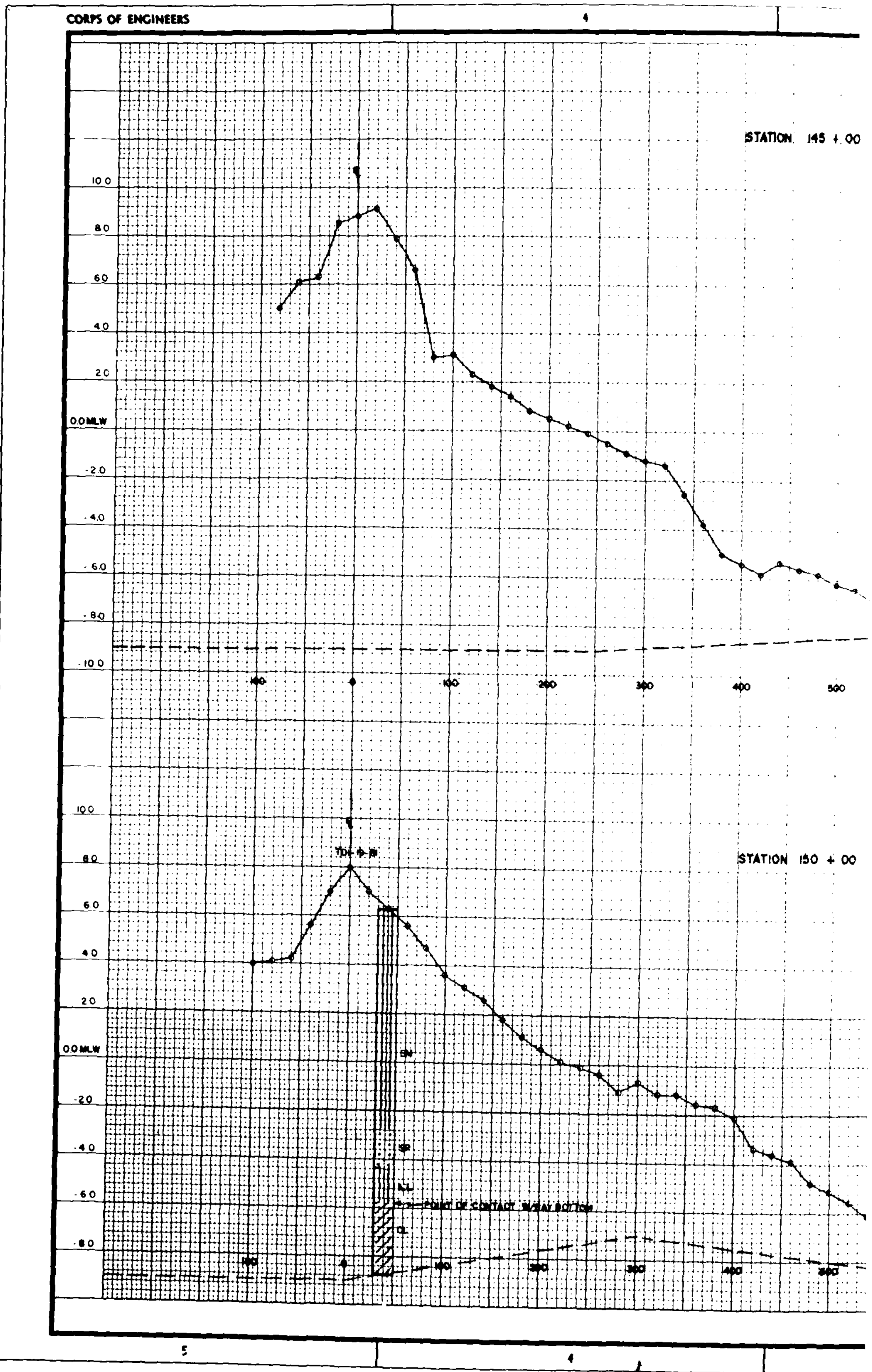

CORPS OF ENGINEERS
4
STATION 135 + 0
8.0
6.0
4.0
2.0
0.0 MLW
- 2.0
- 4.0
- 6.0
- 8.0
-10.0
100
0
100
200
300
400
500
STATION 140 + 00
10.0
8.0
6.0
4.0
2.0
0.0 MLW
- 2.0
- 4.0
- 6.0
- 8.0
-10.0
CL
SM
SC
SM
POINT OF CONTACT W BAY BOTTOM
CL
100
100
200
300
400
500
5
4



ELEVATIONS REFERENCED TO MEAN LOW WATER (MLW) DATUM

DESIGNED BY EN-FS	U. S. ARMY ENGINEER DISTRICT, MOBIL CORPS OF ENGINEERS MOBILE, ALA.
DRAWN BY	GAILLARD DISPOSAL ISLAND END-OF-CONSTRUCTION
CHECKED BY	
SUPERVISED BY	CROSS SECTIONS
SH. REF. NO.	SPEC. NO. / FILE NO. / DRAWING NO. / SCALE / DATE AUGUST 1981 / SHEET 21 OF

Figure D22


CORPS OF ENGINEERS
4
STATION 145 + 00
10.0
8.0
6.0
4.0
2.0
0.0 MLW
-2.0
-4.0
-6.0
-8.0
-10.0
100
100
200
300
400
500
STATION 150 + 00
10.0
8.0
6.0
4.0
2.0
0.0 MLW
-2.0
-4.0
-6.0
-8.0
SM
SP
ML
CL
POINT OF CONTACT W/BAY BOTTOM
100
100
200
300
400
500
5
4

3 | 2 | 1 | U. S. ARMY

REVISIONS			
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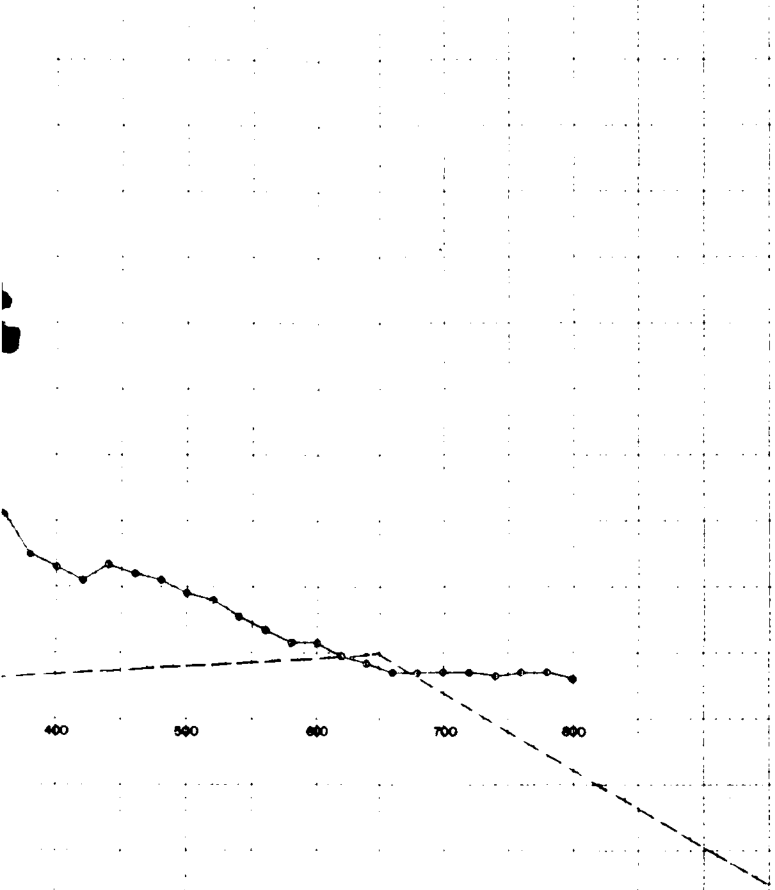
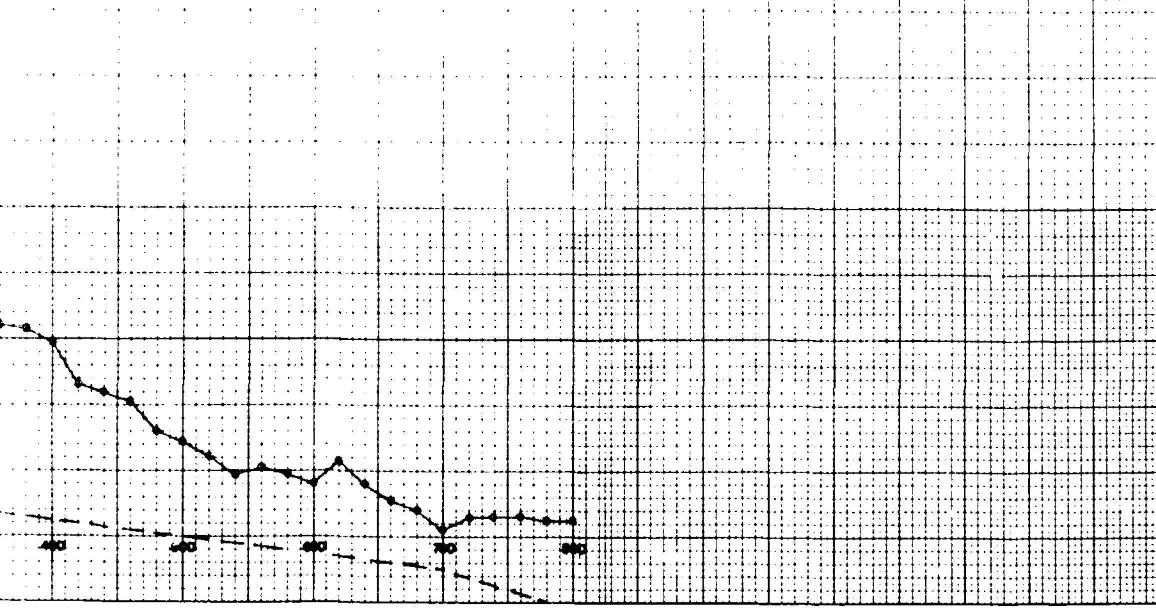
STATION 145 + 00



STATION 150 + 00



ELEVATIONS REFERENCED TO MEAN LOW WATER (MLW) DATUM

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SUPERVISED BY	CROSS SECTIONS
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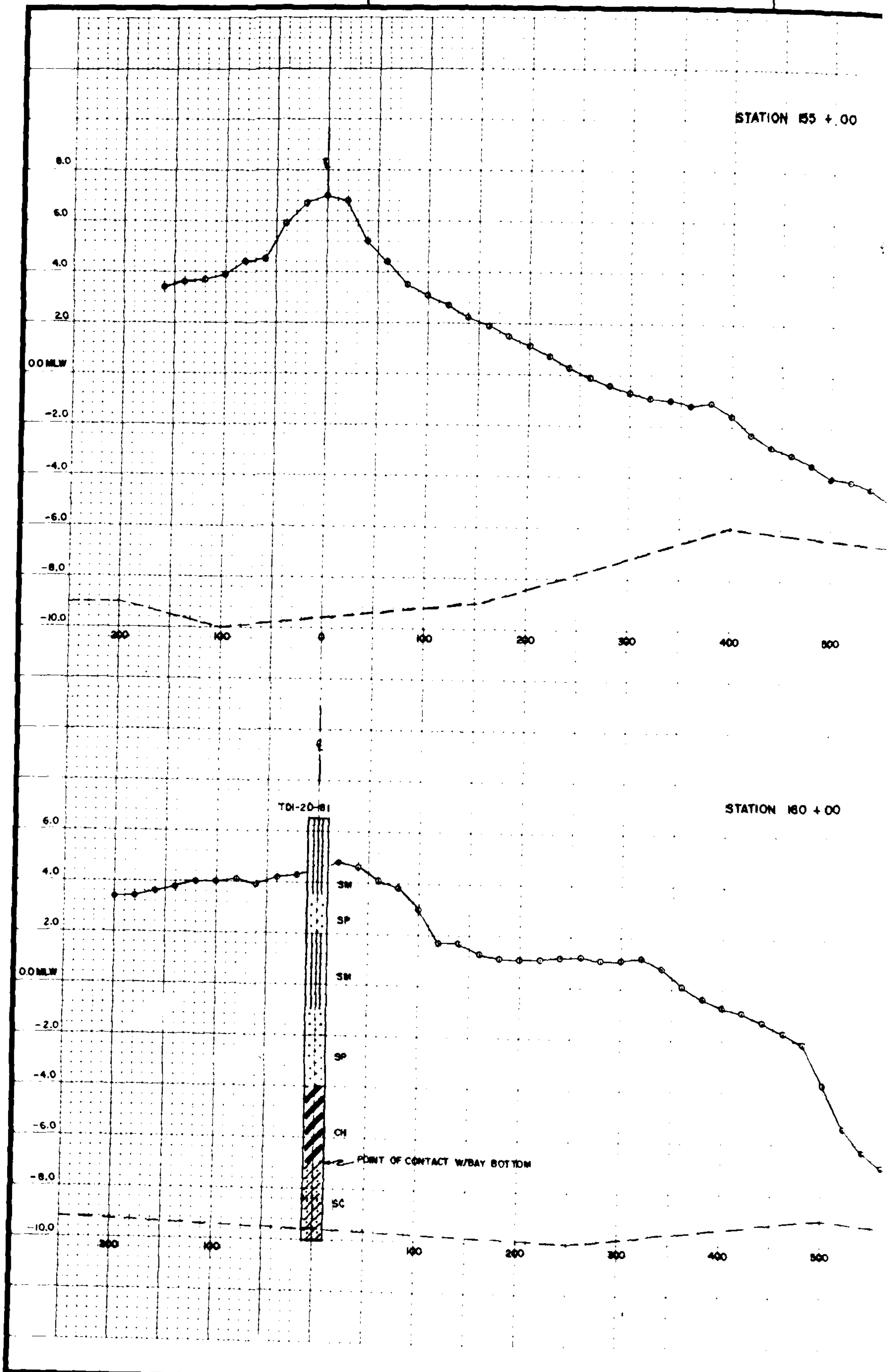
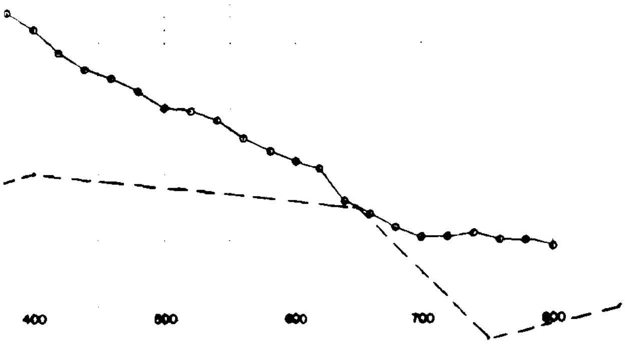

STATION 155 + .00
8.0
6.0
4.0
2.0
0.0 MLW
-2.0
-4.0
-6.0
-8.0
-10.0
200
100
0
100
200
300
400
500
STATION 160 + 00
TDI-20-181
6.0
4.0
2.0
0.0 MLW
-2.0
-4.0
-6.0
-8.0
-10.0
SM
SP
SM
SP
CH
POINT OF CONTACT W/BAY BOTTOM
SC
200
100
100
200
300
400
500

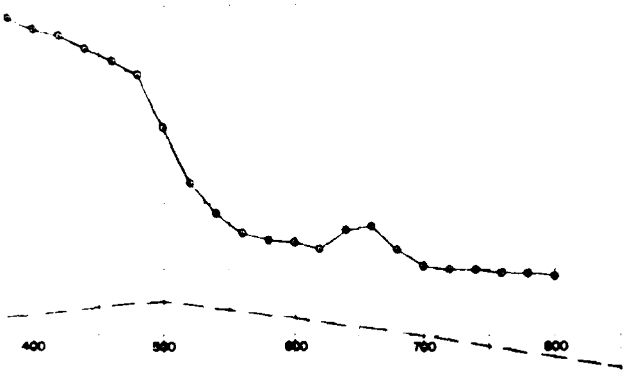
3	2	1	U. S. ARMY

REVISIONS				
SYM	ZONE	DESCRIPTION	DATE	APPROVED

STATION 155 + 00



STATION 160 + 00



ELEVATIONS REFERENCED TO MEAN LOW WATER (MLW) DATUM

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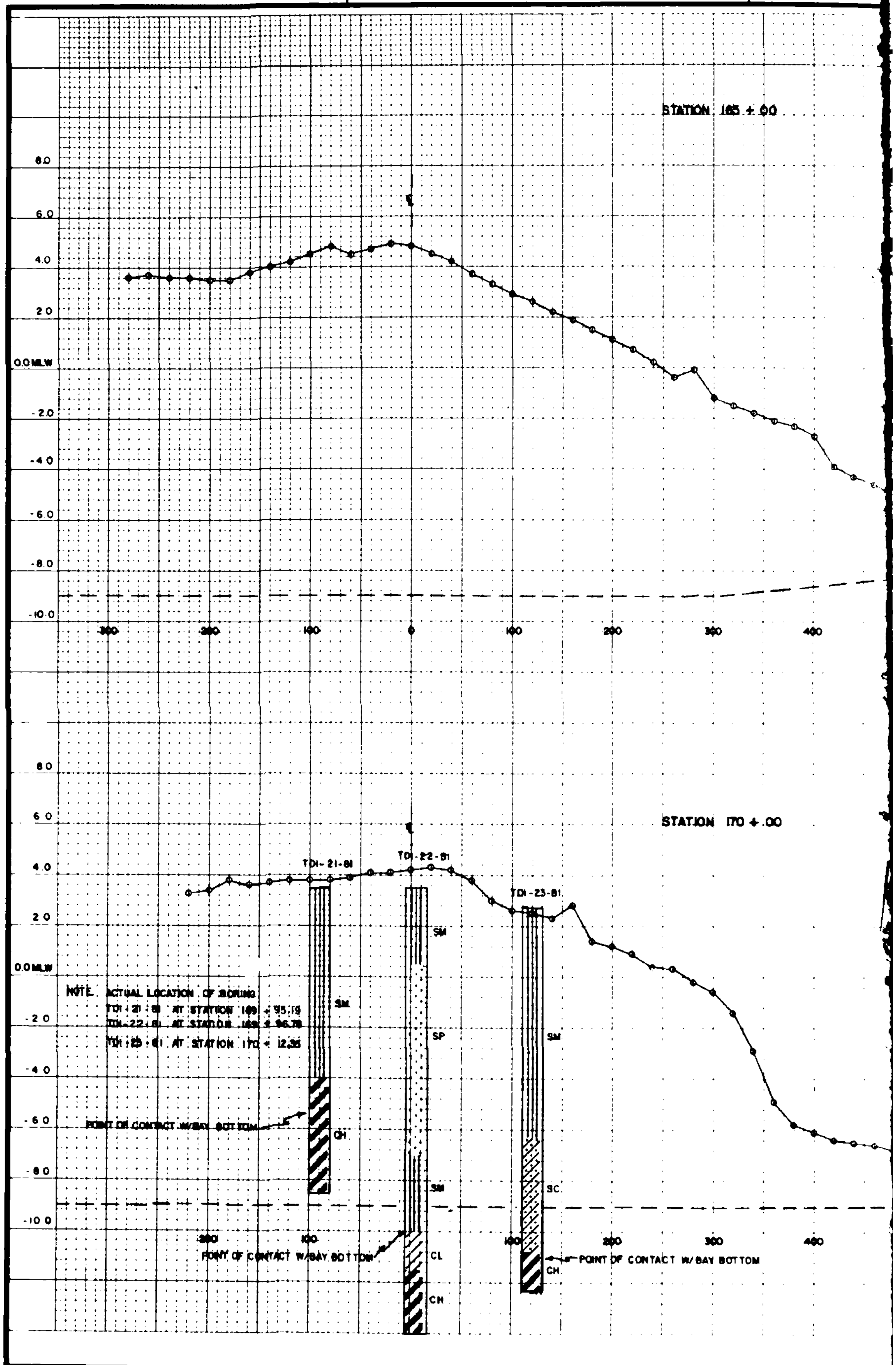
SUPERVISED BY	CROSS SECTIONS
SH REF NO	SPEC NO. / FILE NO. / DRAWING NO.
	SCALE / DATE AUGUST 1981 / SHEET 23 OF 45

3	2	1

Figure D24


STATION 165 + 00
8.0
6.0
4.0
2.0
0.0 MLW
-2.0
-4.0
-6.0
-8.0
-10.0
300
200
100
0
100
200
300
400
STATION 170 + .00
TDI-21-81
TDI-22-81
TDI-23-81
SM
SP
SC
CL
CH
NOTE. ACTUAL LOCATION OF BORING
TDI-21-81 AT STATION 169 + 95.19
TDI-22-81 AT STATION 169 + 96.78
TDI-23-81 AT STATION 170 + 12.36
POINT OF CONTACT W/BAY BOTTOM

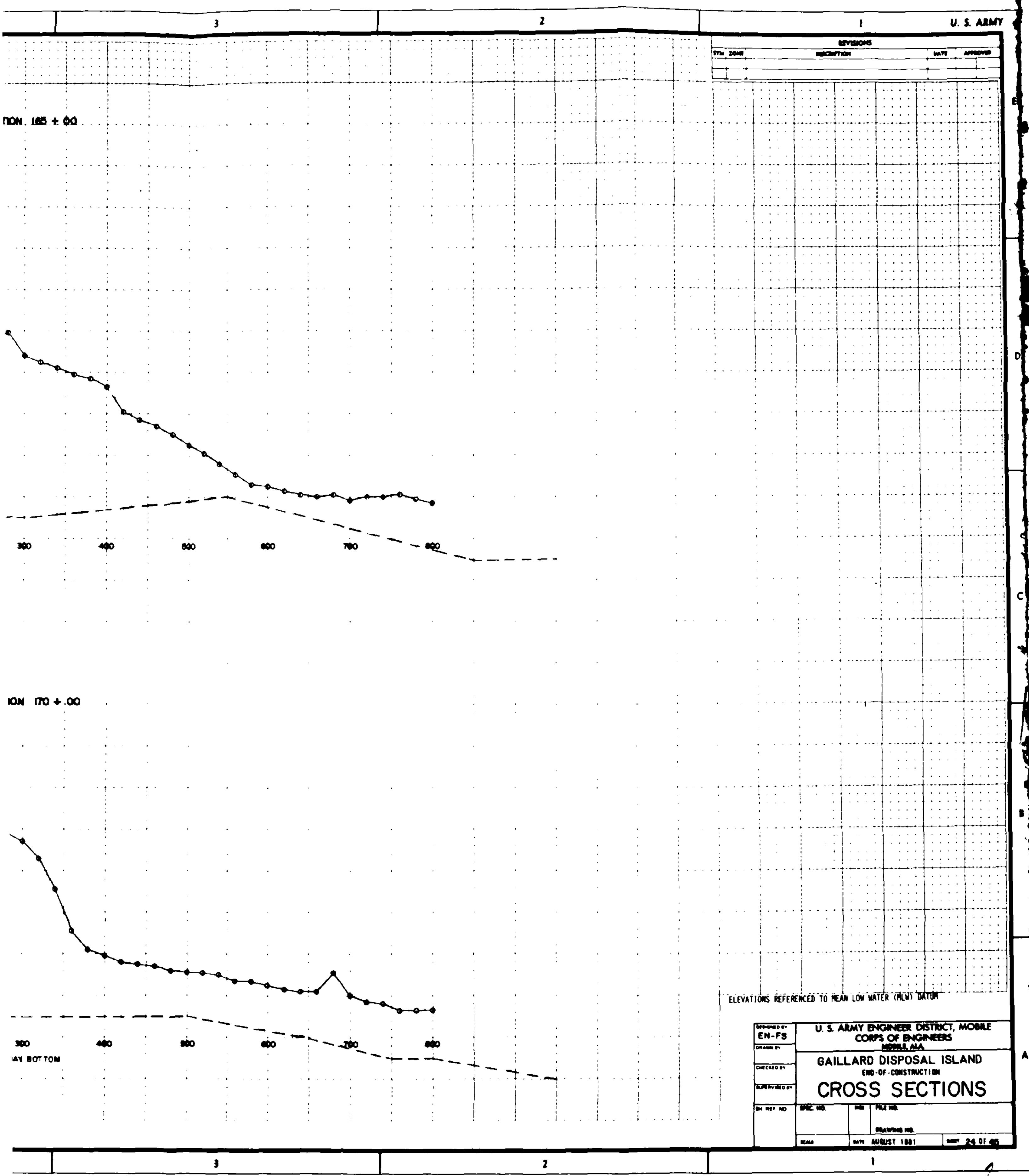
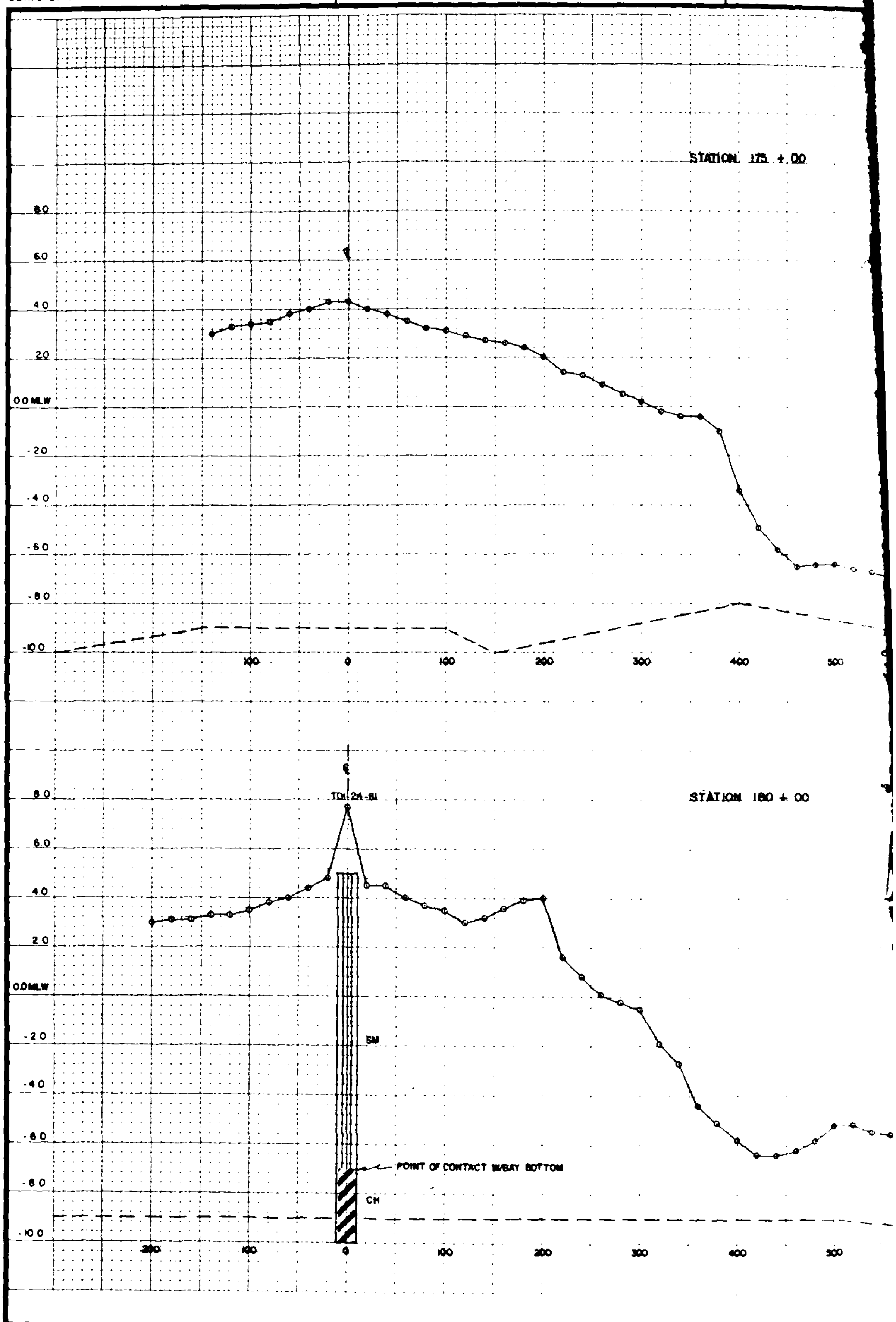
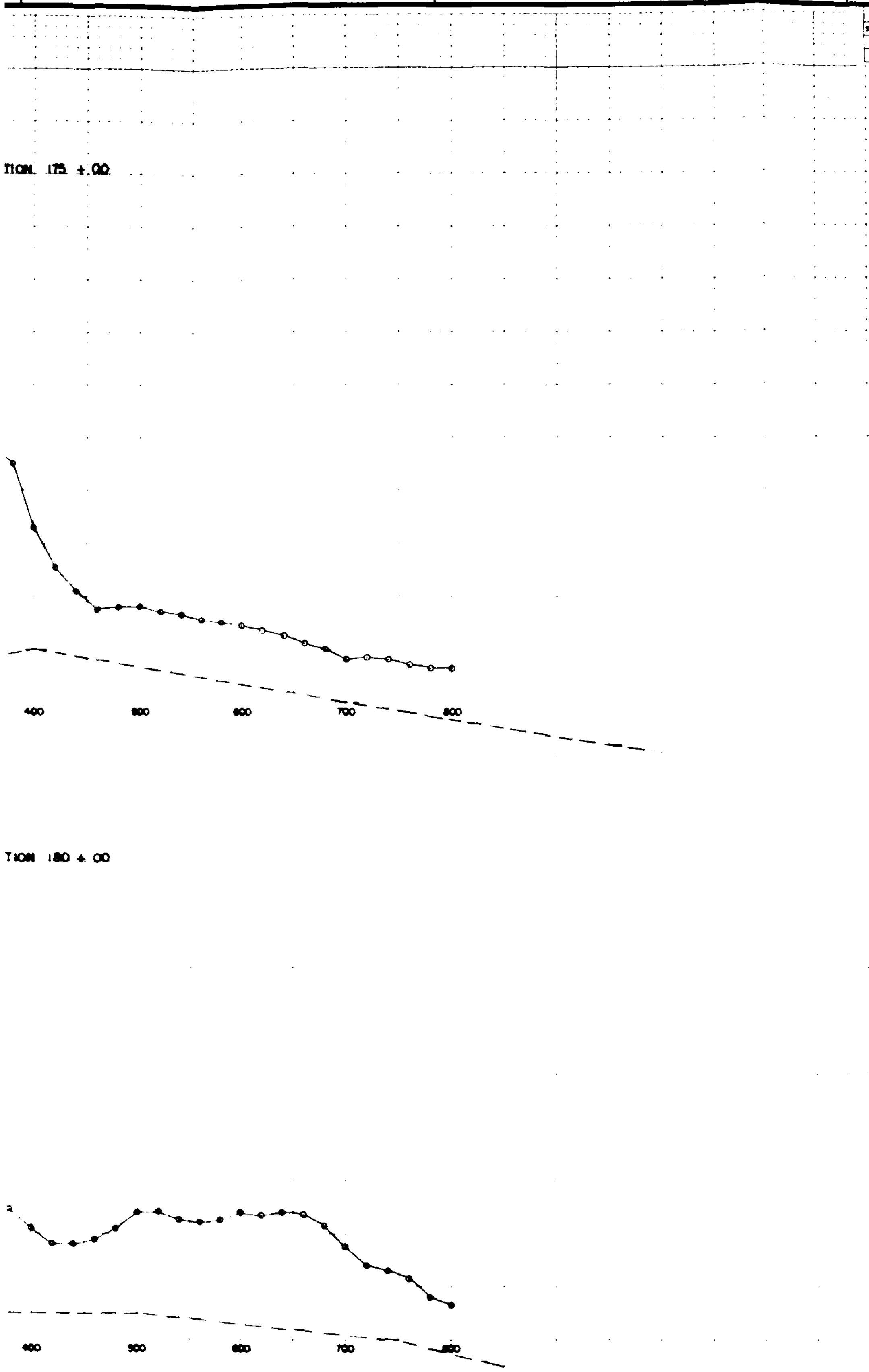

U. S. ARMY
REVISIONS
TION 165 + 00
300
400
500
600
700
800
ION 170 +.00
300
400
500
600
700
800
AY BOTTOM
ELEVATIONS REFERENCED TO MEAN LOW WATER (MLW) DATUM
EN-FS
U. S. ARMY ENGINEER DISTRICT, MOBILE
CORPS OF ENGINEERS
MOBILE, ALA.
GAILLARD DISPOSAL ISLAND
END-OF-CONSTRUCTION
CROSS SECTIONS
AUGUST 1981

Figure D25

CORPS OF ENGINEERS



5 4



U. S. ARMY

REVISIONS			
SYM ZONE	DESCRIPTION	DATE	APPROVED

ELEVATIONS REFERENCED TO MEAN LOW WATER (MLW) DATUM

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CORPS OF ENGINEERS
MOBILE, ALA.

GAILLARD DISPOSAL ISLAND
END-OF-CONSTRUCTION

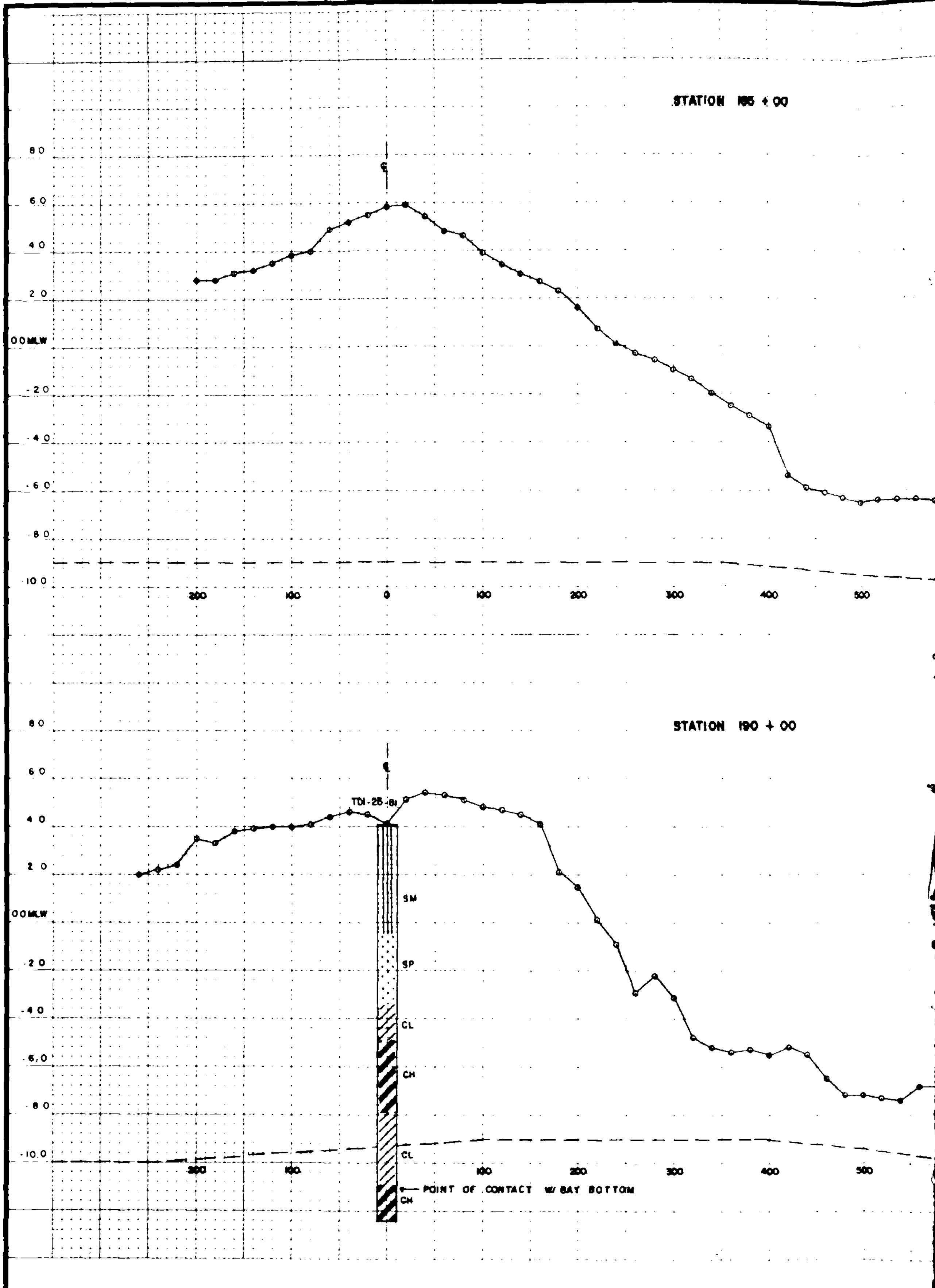
CROSS SECTIONS

DATE AUGUST 1981

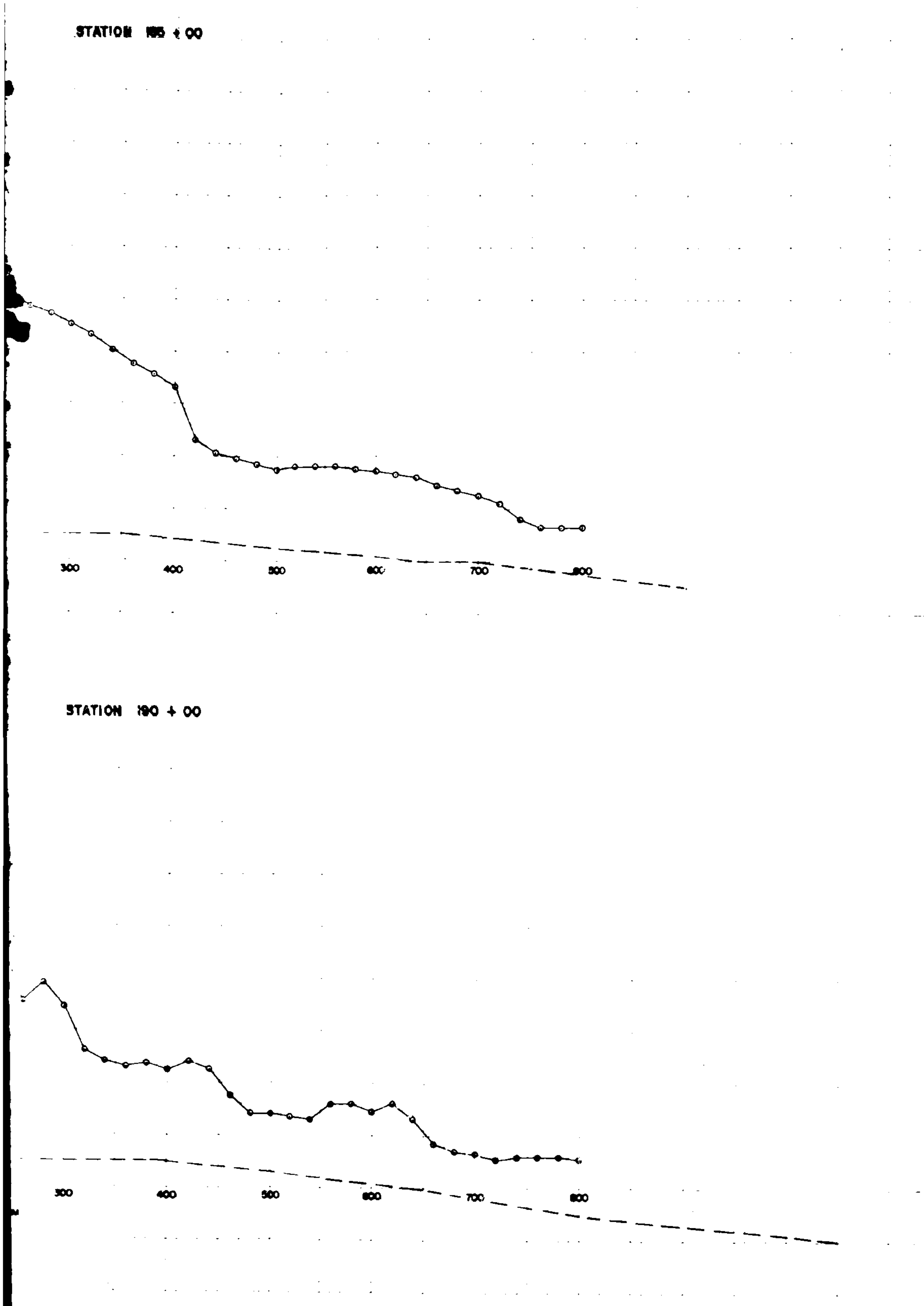
SHEET 25 OF 45

Figure D26

CORPS OF ENGINEERS | 4 | 3



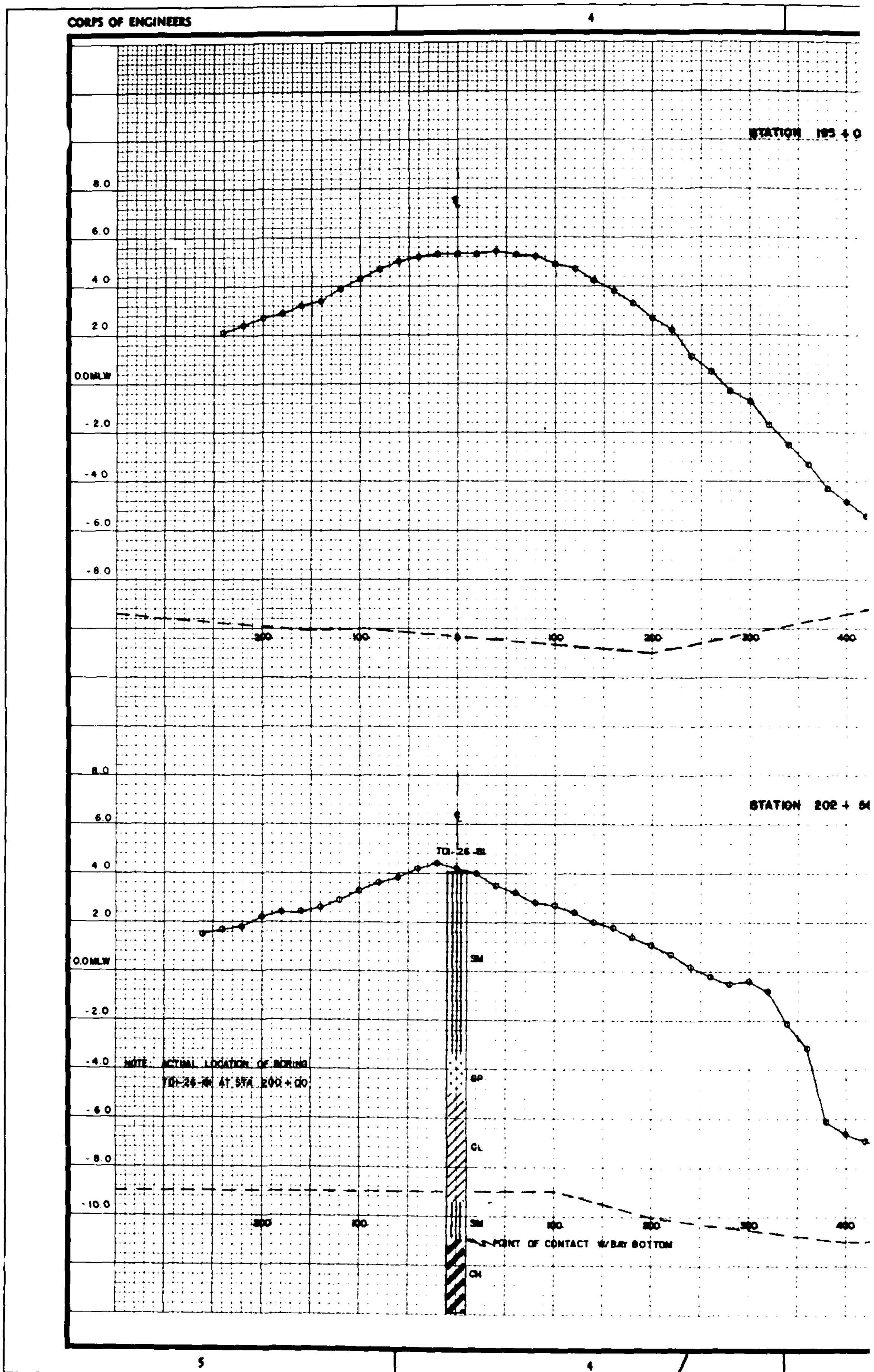
5 | 4 | 3



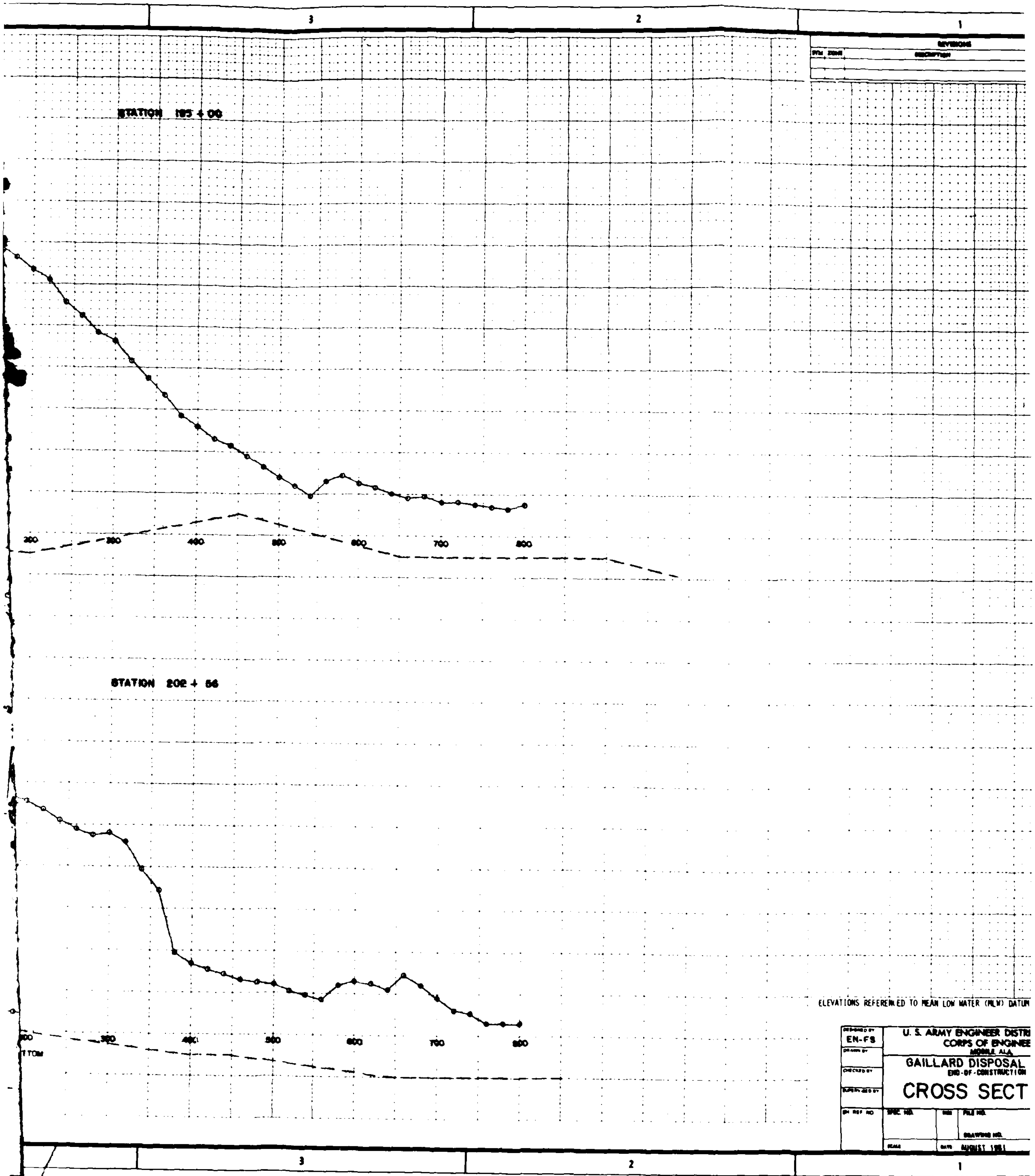
ELEVATIONS REFERENCED TO MEAN LOW WATER (MLW) DATUM

EN-F8	U. S. ARMY ENGINEER DISTRICT, MOB CORPS OF ENGINEERS MOBILE, ALA.
	GAILLARD DISPOSAL ISLAND END-OF-CONSTRUCTION
	CROSS SECTIONS
	DATE AUGUST 1981

Figure D27



CORPS OF ENGINEERS
4
STATION
8.0
6.0
4.0
2.0
0.0 MLW
-2.0
-4.0
-6.0
-8.0
200
100
100
200
300
400
STATION 202 +
TD-26-81
SM
SP
CL
SM
CH
POINT OF CONTACT W/BAY BOTTOM
-10.0
NOTE: ACTUAL LOCATION OF BORING TD-26-81 AT STA. 200 + 00
5
4

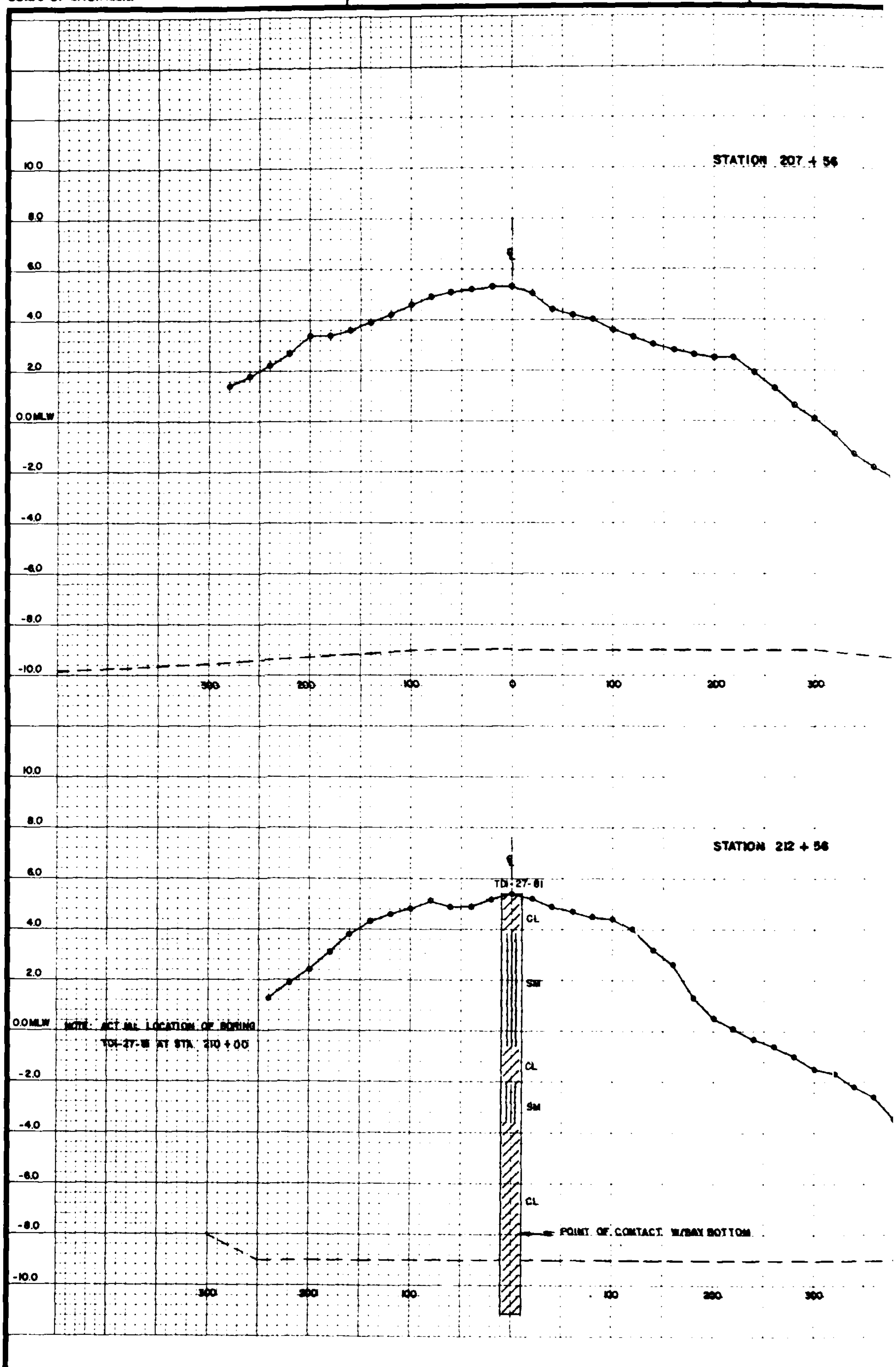


1

2 Figure D28

CORPS OF ENGINEERS

4



5

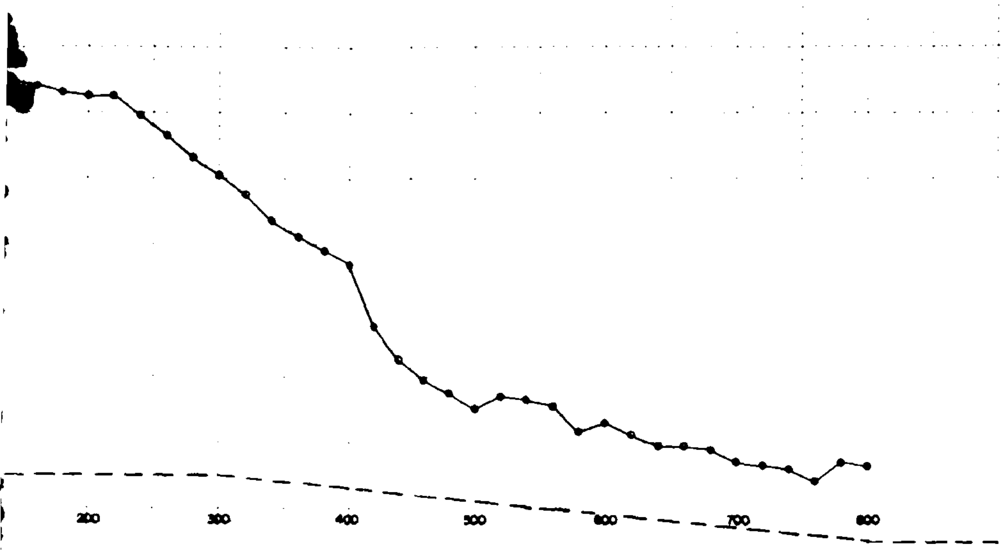
4

3 | 2 | 1 | U. S. ARM

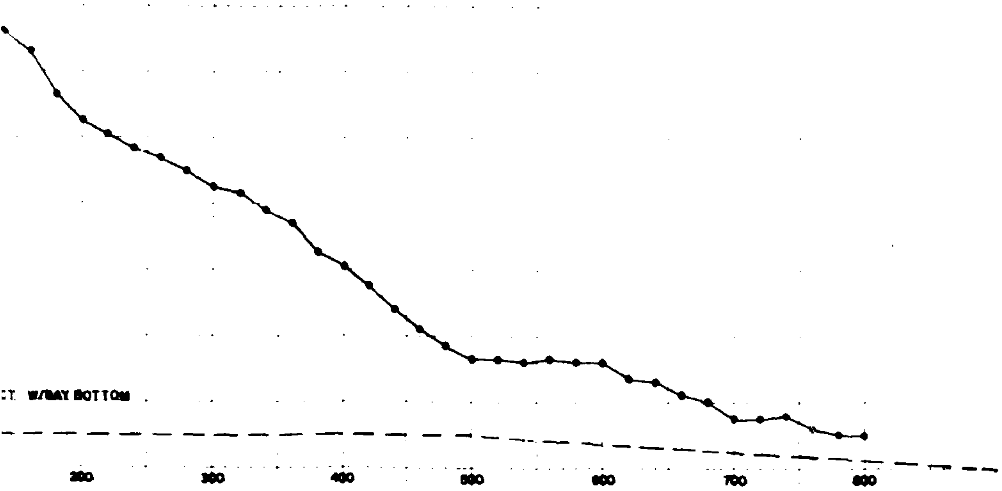
REVISIONS

SYM	ZONE	DESCRIPTION	DATE	APPROVED

STATION 207 + 56



STATION 212 + 56

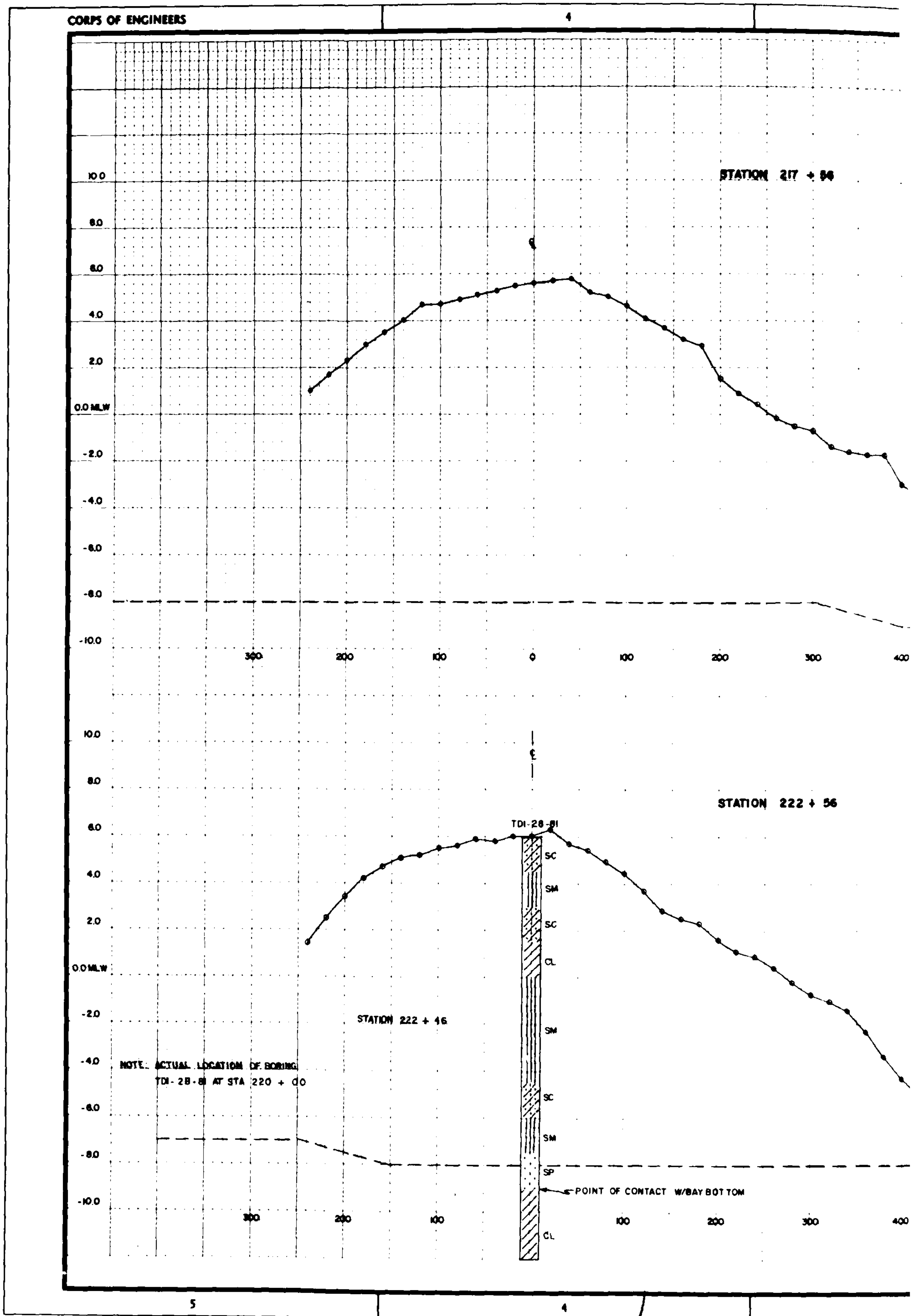


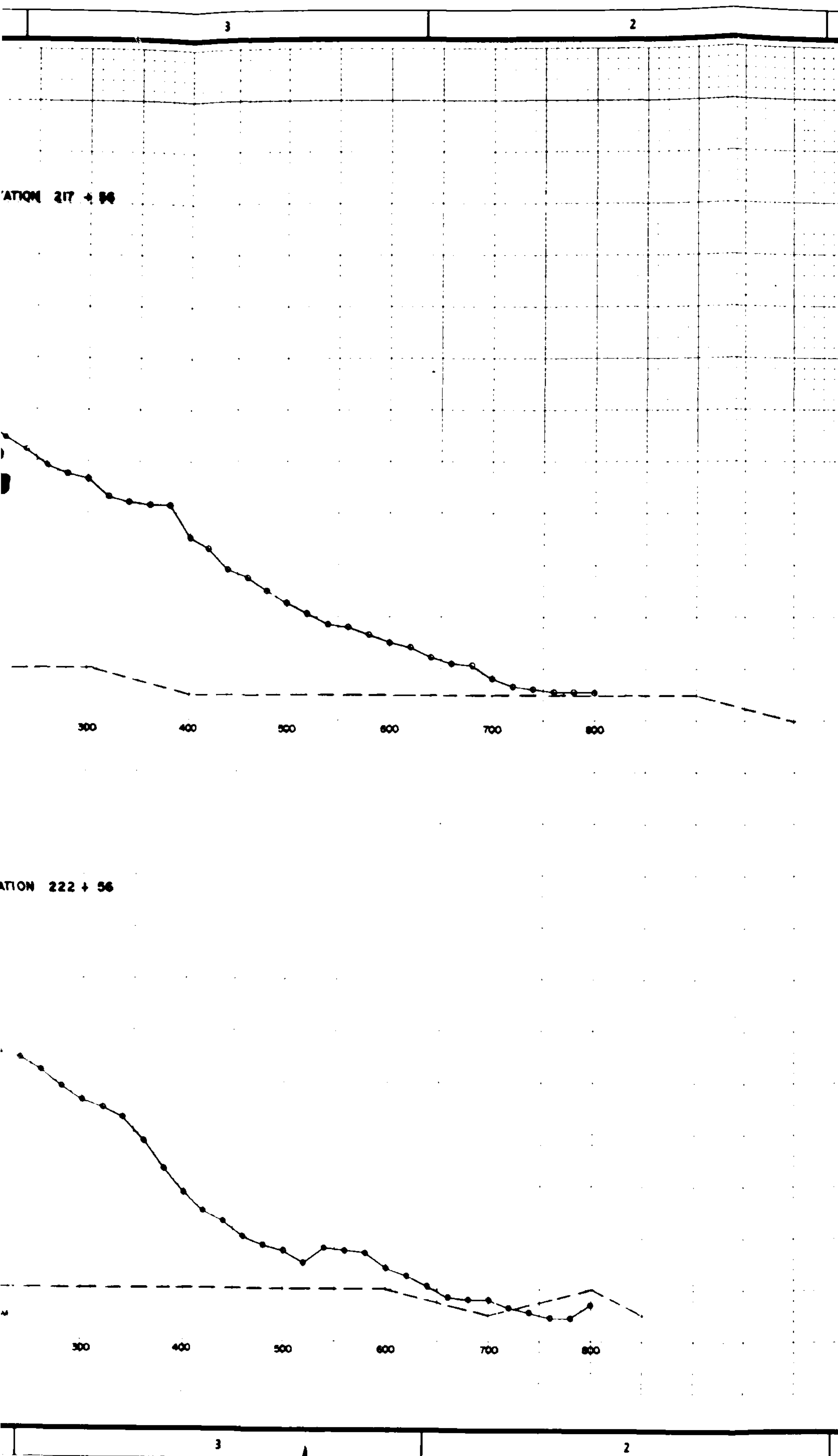
ELEVATIONS REFERENCED TO MEAN LOW WATER (MLW) DATUM

DESIGNED BY EN-FS	U. S. ARMY ENGINEER DISTRICT, MOBILE CORPS OF ENGINEERS MOBILE, ALA.
DRAWN BY	GAILLARD DISPOSAL ISLAND END-OF-CONSTRUCTION
CHECKED BY	CROSS SECTIONS
SUPERVISED BY	
DH REF NO	SPEC. NO. · SIZE · FILE NO. · DRAWING NO. · SCALE · DATE AUGUST 1981 · SHEET 28 OF

3 | 2 | 1

Figure D29


CORPS OF ENGINEERS
4
STATION 217 + 56
10.0
8.0
6.0
4.0
2.0
0.0 MLW
-2.0
-4.0
-6.0
-8.0
-10.0
300
200
100
0
100
200
300
400
STATION 222 + 56
TDI-28-81
SC
SM
SC
CL
SM
SC
SM
SP
CL
STATION 222 + 46
NOTE: ACTUAL LOCATION OF BORING TDI-28-81 AT STA 220 + 00
POINT OF CONTACT W/BAY BOTTOM
5
4



U. S. ARMY

REVISIONS

SYM	ZONE	DESCRIPTION	DATE	APPROVED

ELEVATIONS REFERENCED TO MEAN LOW WATER (MLW) DATUM

DESIGNED BY EN-FS

U. S. ARMY ENGINEER DISTRICT, MOBILE
CORPS OF ENGINEERS
MOBILE, ALA.

GAILLARD DISPOSAL ISLAND
END-OF-CONSTRUCTION

CROSS SECTIONS

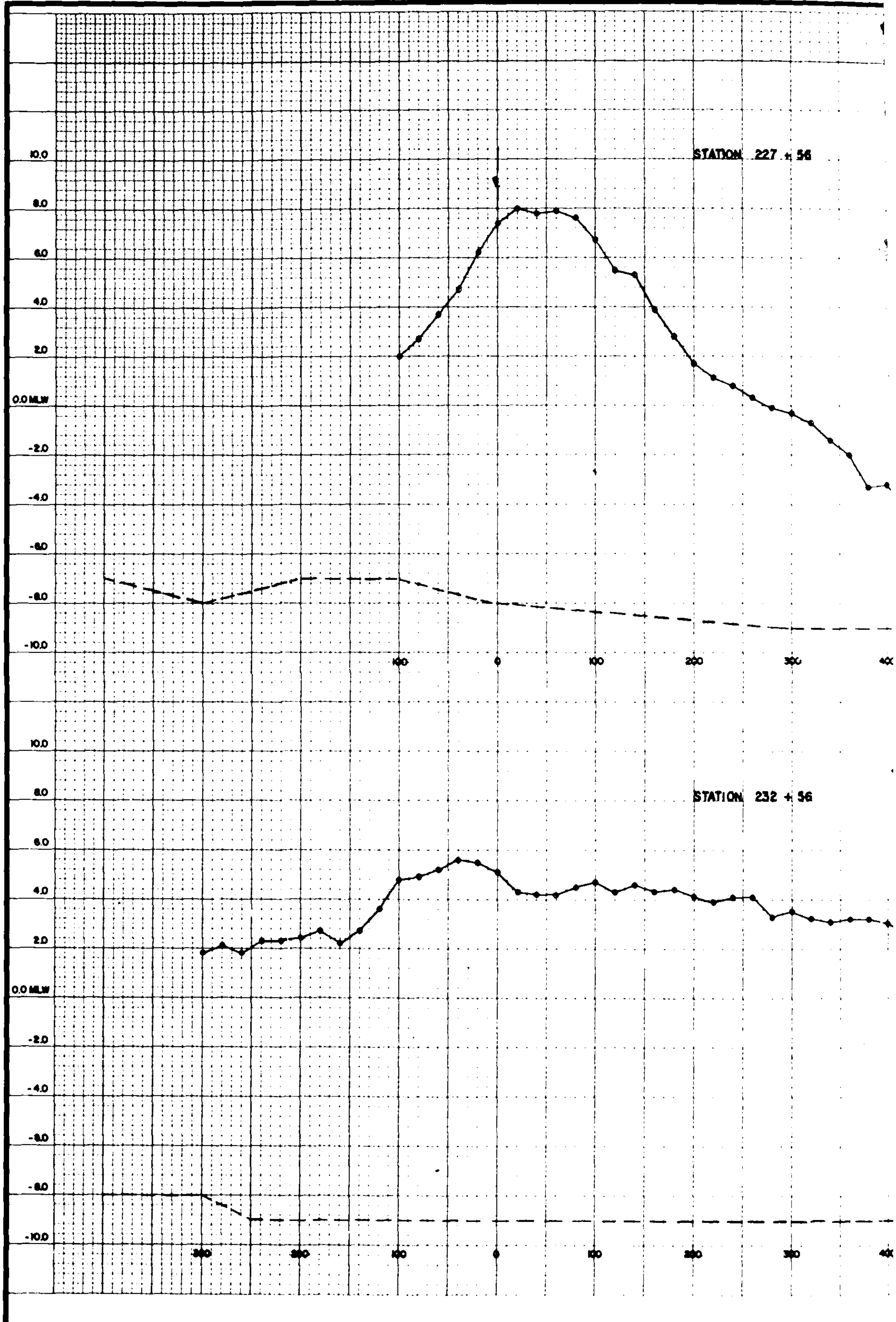
DATE AUGUST 1981 SHEET 29 OF 45

Figure D30

2

CORPS OF ENGINEERS

4



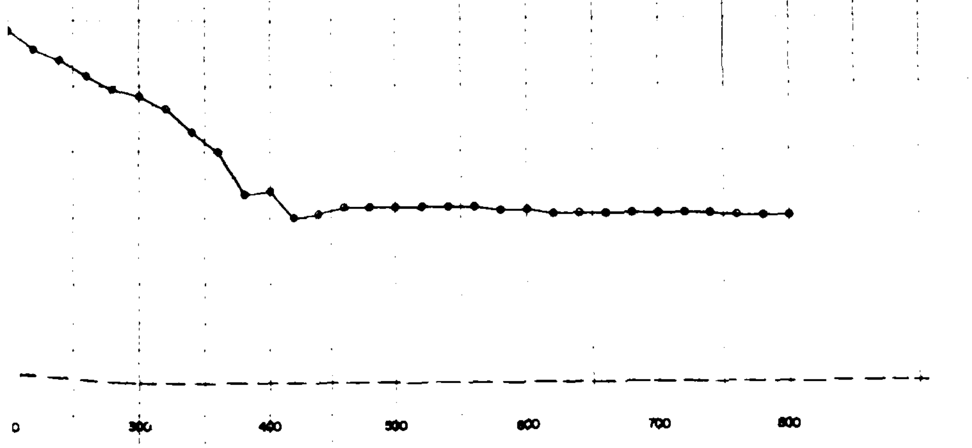
5

4

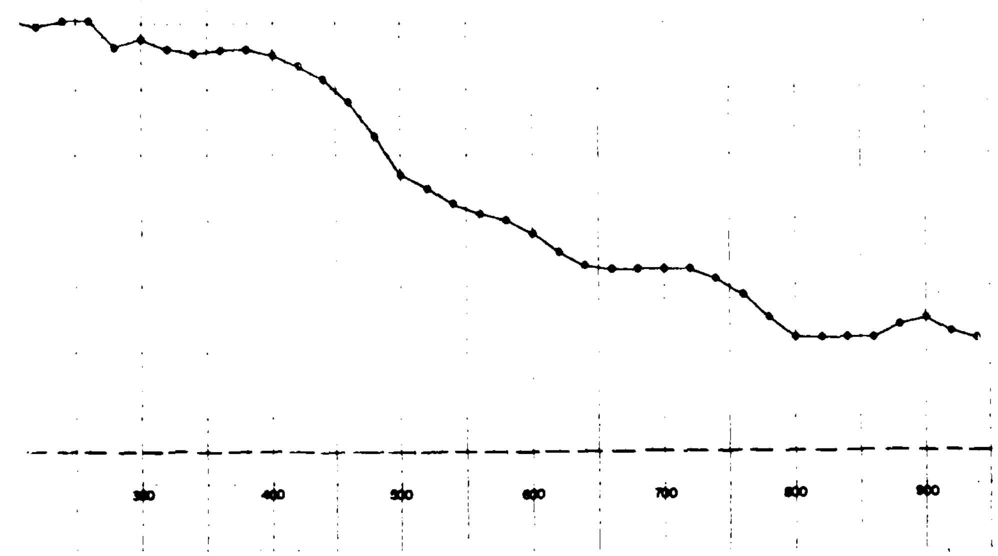
U. S. ARMY

REVISIONS				
SYM	ZONE	DESCRIPTION	DATE	APPROVED

STATION 227 + 56



STATION 232 + 56



ELEVATIONS REFERENCED TO MEAN LOW WATER (MLW) DATUM

DESIGNED BY EN-FS	U. S. ARMY ENGINEER DISTRICT, MOBILE CORPS OF ENGINEERS MOBILE, ALA.
DRAWN BY	GAILLARD DISPOSAL ISLAND END-OF-CONSTRUCTION
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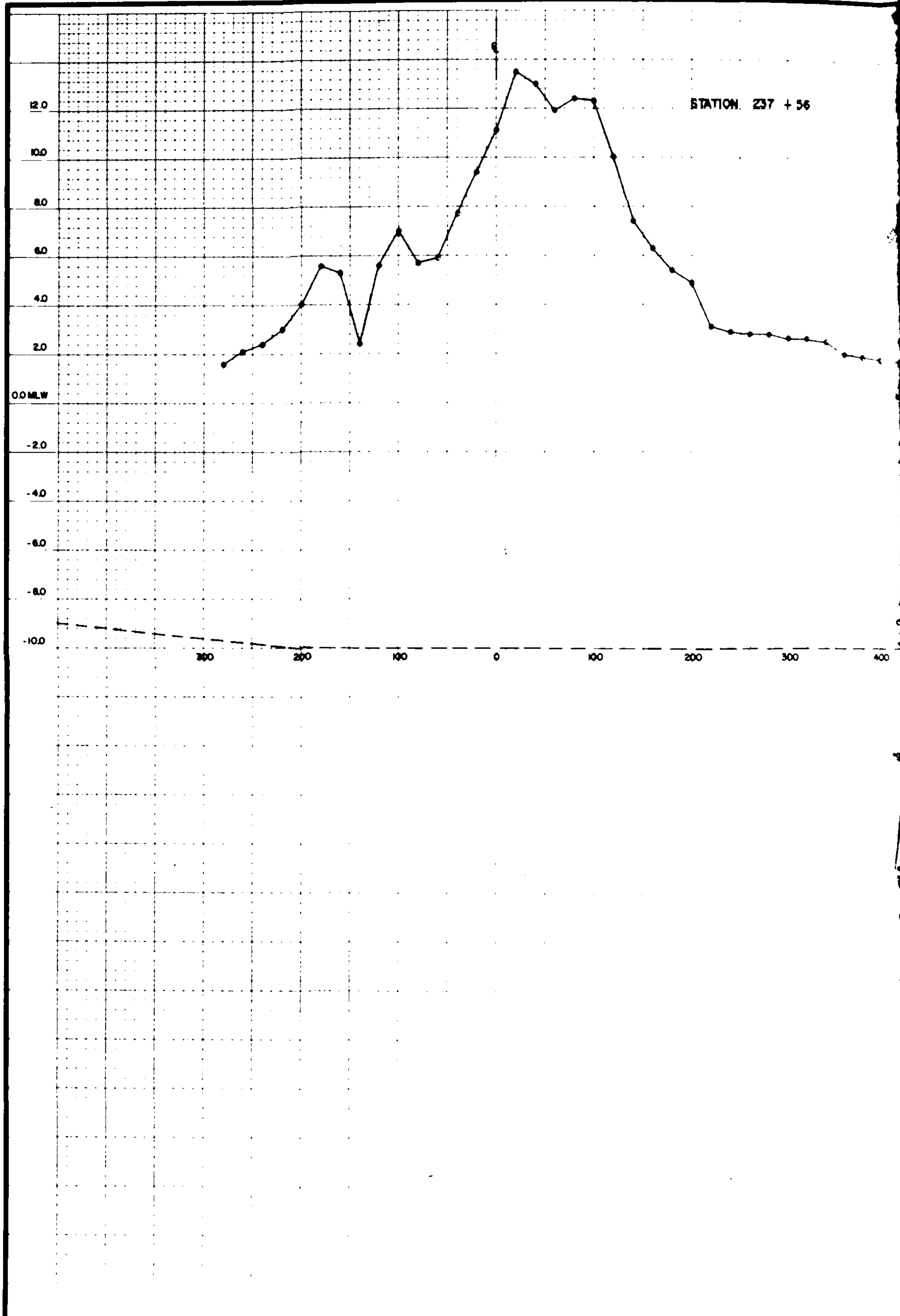
SUPERVISED BY	CROSS SECTIONS
SH REF NO	SPEC. NO. / FILE NO. / DRAWING NO.
	SCALE / DATE AUGUST 1981 / SHEET 30 OF 45

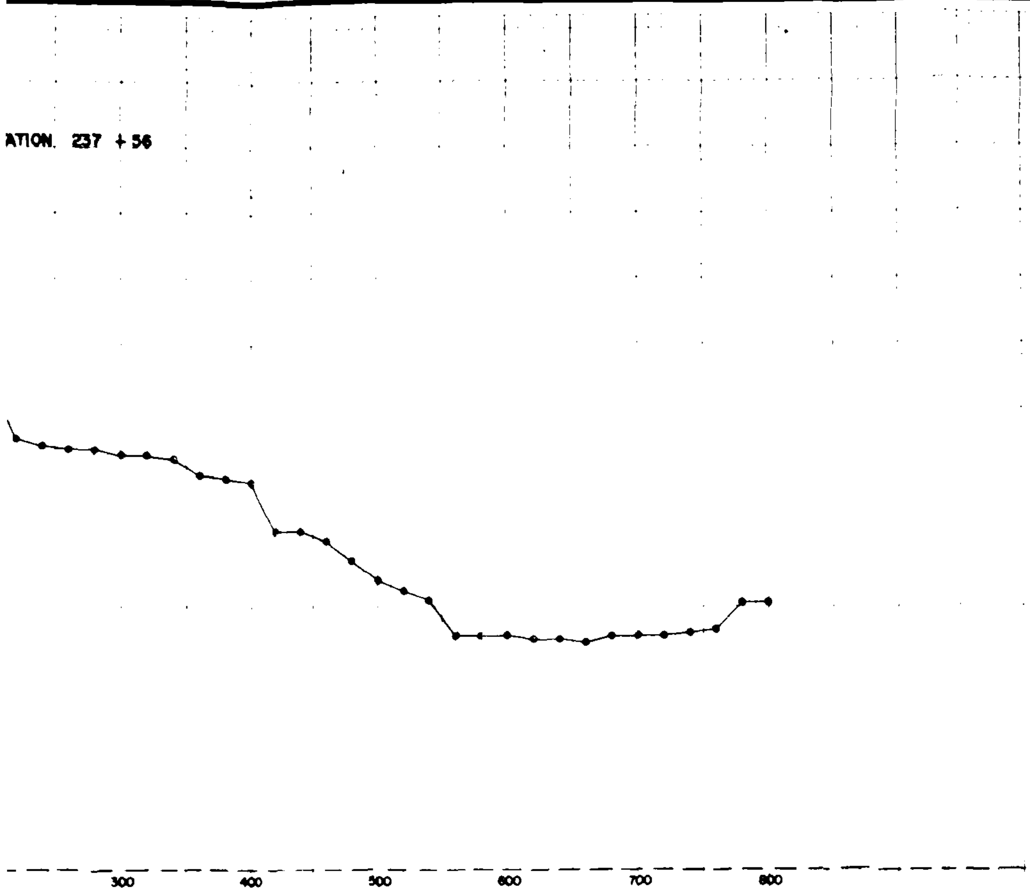
Figure D31

CORPS OF ENGINEERS



U. S. ARMY

REVISIONS				
SYM	ZONE	DESCRIPTION	DATE	APPROVED



ELEVATIONS REFERENCED TO MEAN LOW WATER (MLW) DATUM

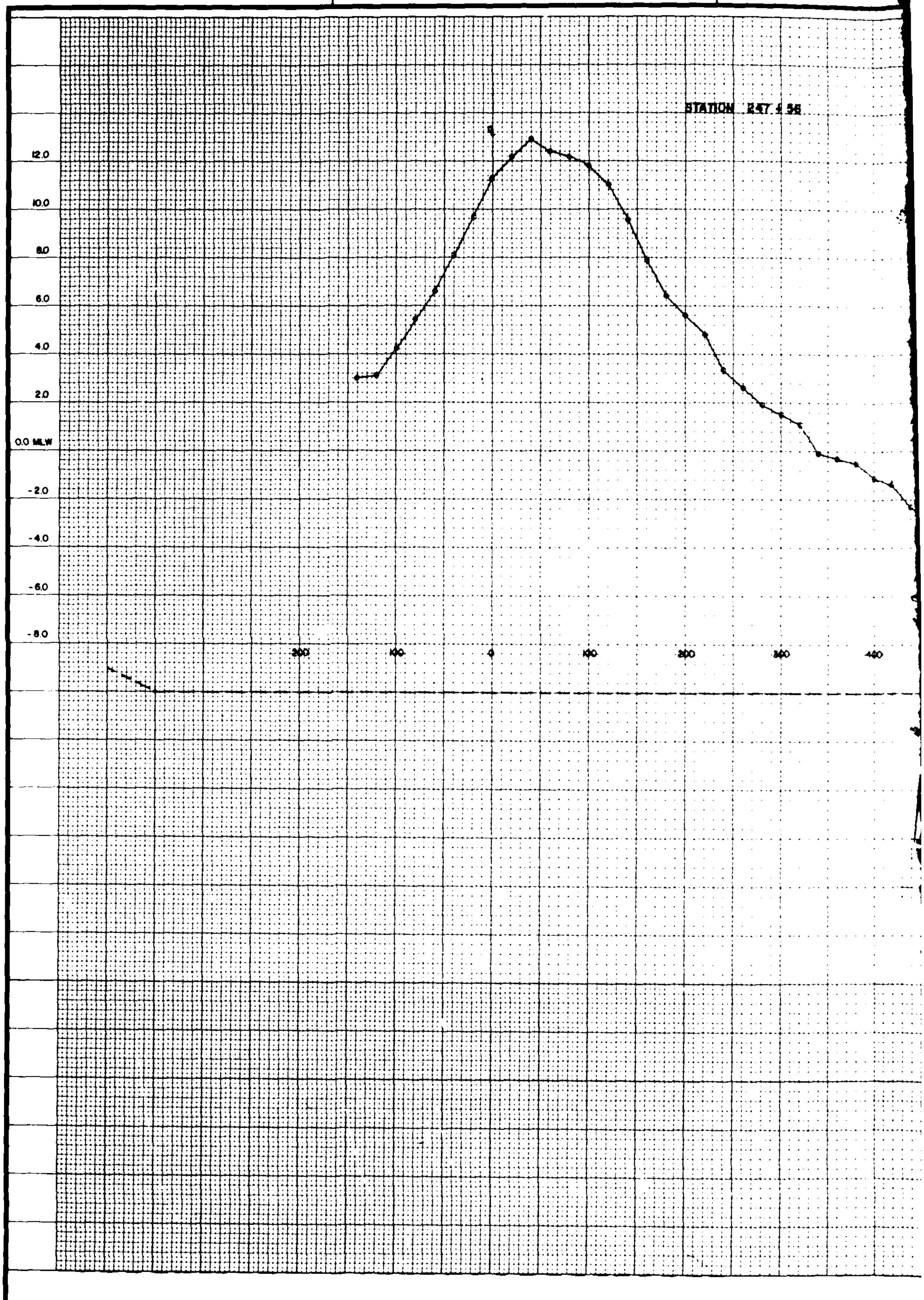
U. S. ARMY ENGINEER DISTRICT, MOBILE
CORPS OF ENGINEERS
MOBILE, ALA.

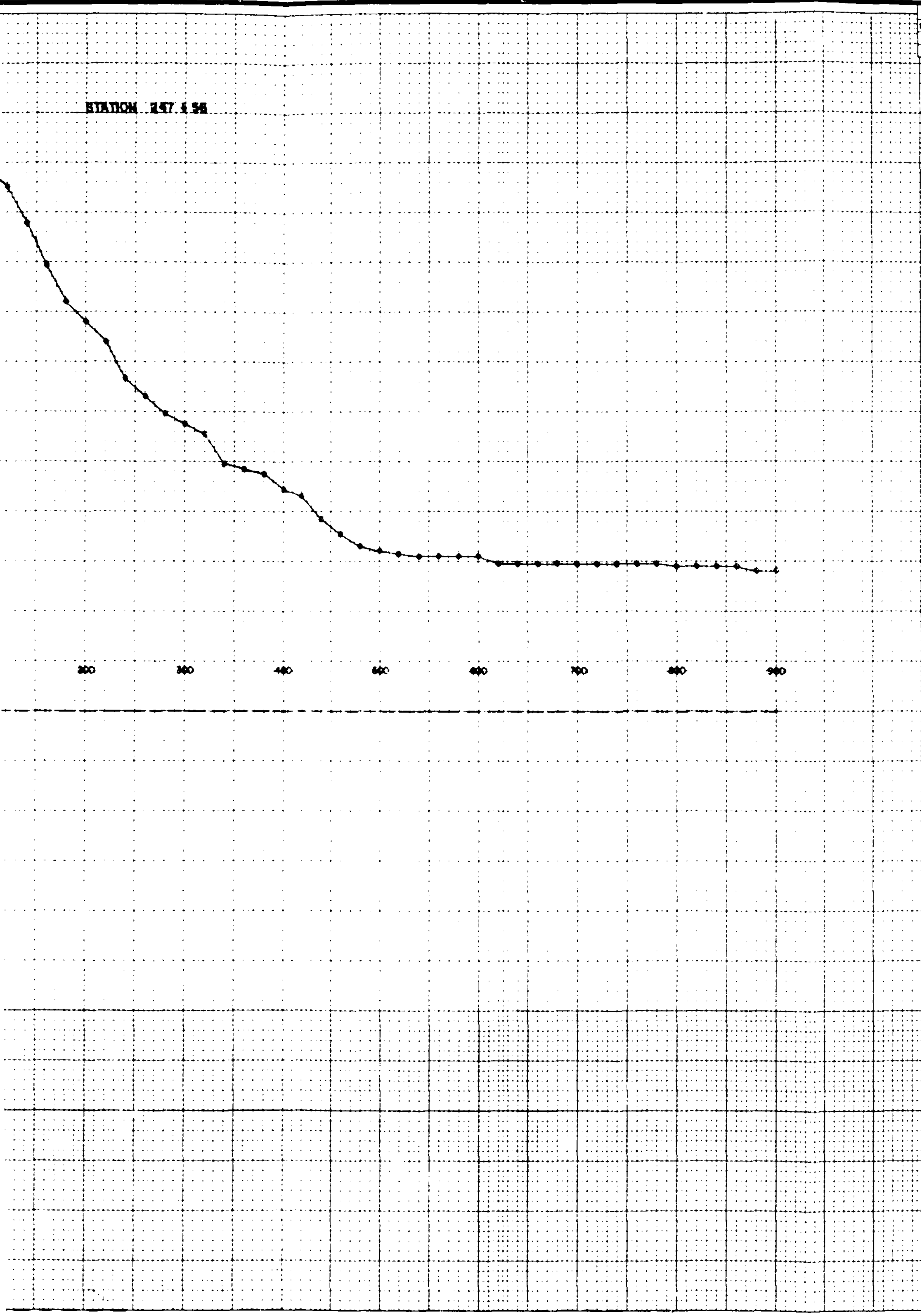
GAILLARD DISPOSAL ISLAND
END-OF-CONSTRUCTION

CROSS SECTIONS

AUGUST 1981 SHEET 31 OF 45

Figure D32

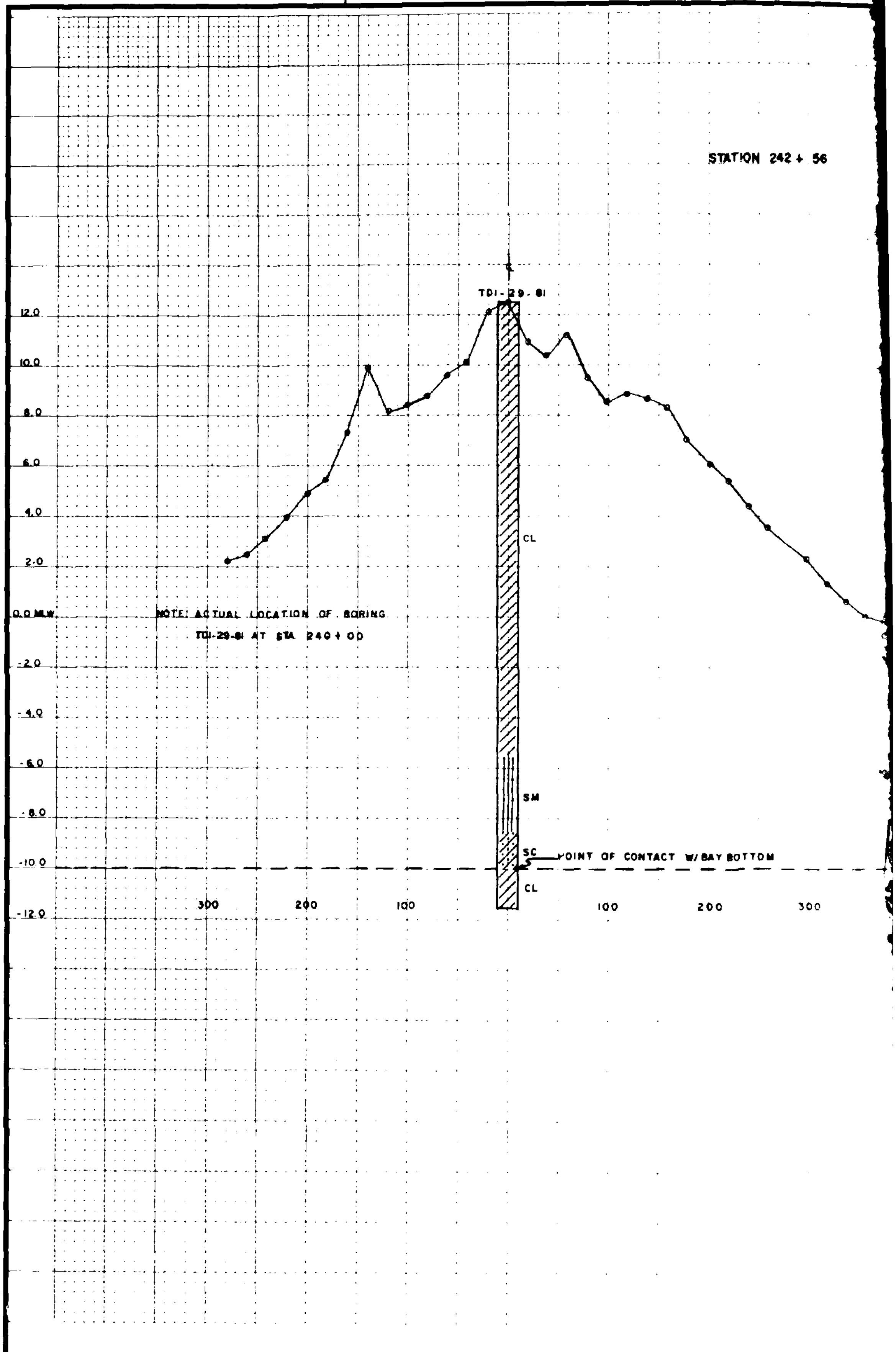

STATION 247 + 56
12.0
10.0
8.0
6.0
4.0
2.0
0.0 MLW
-2.0
-4.0
-6.0
-8.0
200
100
0
100
200
300
400



ELEVATIONS REFERENCED TO MEAN LOW WATER (MLW) DATUM

DESIGNED BY EN-FS	U S ARMY ENGINEER DISTRICT, M CORPS OF ENGINEERS MOBILE, ALA.
DRAWN BY	GAILLARD DISPOSAL ISLA END OF CONSTRUCTION CROSS SECTIO
CHECKED BY	
SUPERVISED BY	
SH. REF. NO.	SPEC. NO. / SIZE / FILE NO. / DRAWING NO. / SCALE / DATE AUGUST 1981 / SHEET

Figure D33


STATION 242 + 56
TDI-29-81
CL
SM
SC
CL
POINT OF CONTACT W/BAY BOTTOM
NOTE: ACTUAL LOCATION OF BORING
TDI-29-81 AT STA. 240 + 00
12.0
10.0
8.0
6.0
4.0
2.0
0.0 M.L.W.
-2.0
-4.0
-6.0
-8.0
-10.0
-12.0
300
200
100
100
200
300

AD-A173 512 VERIFICATION OF DESIGN AND CONSTRUCTION TECHNIQUES FOR GAILLARD ISLAND DR..(U) ARMY ENGINEER WATERWAYS EXPERIMENT STATION VICKSBURG MS GEOTE.. 4/5

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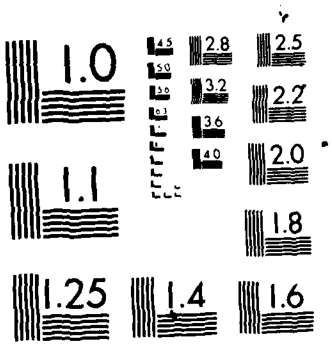

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NATIONAL BUREAU OF STANDARDS-1963-A

3	2	1	U. S. ARMY

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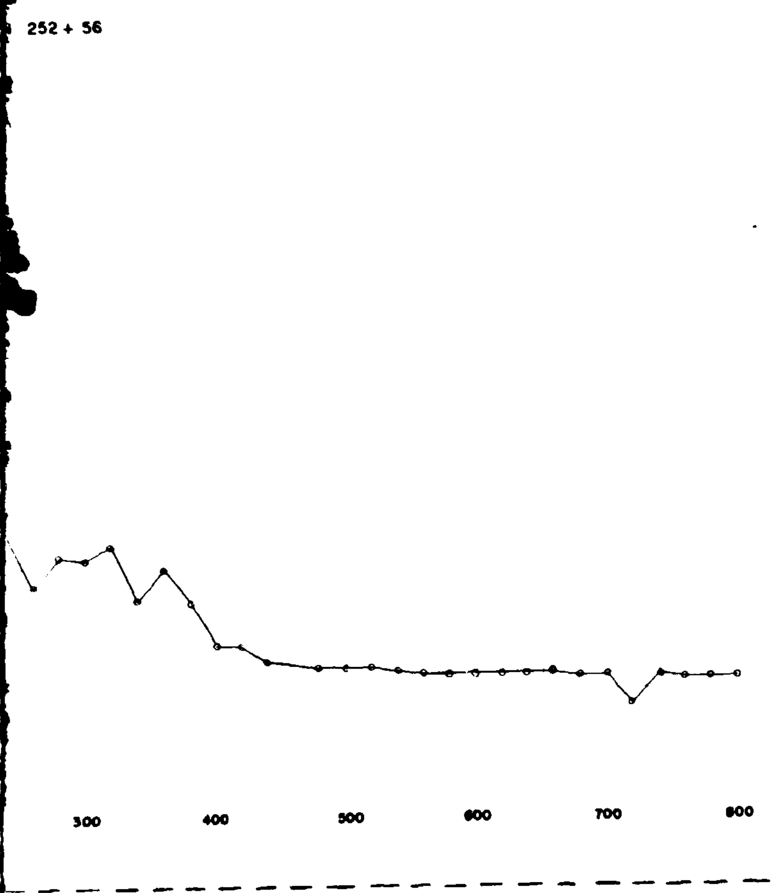
SYM	ZONE	DESCRIPTION	DATE	APPROVED



ELEVATIONS REFERENCED TO MEAN LOW WATER (MLW) DATUM

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SUPERVISED BY	CROSS SECTIONS
SH REF NO	SPEC. NO. / FILE NO. / DRAWING NO.
	SCALE / DATE AUGUST 1981 / SHEET 34 OF 4

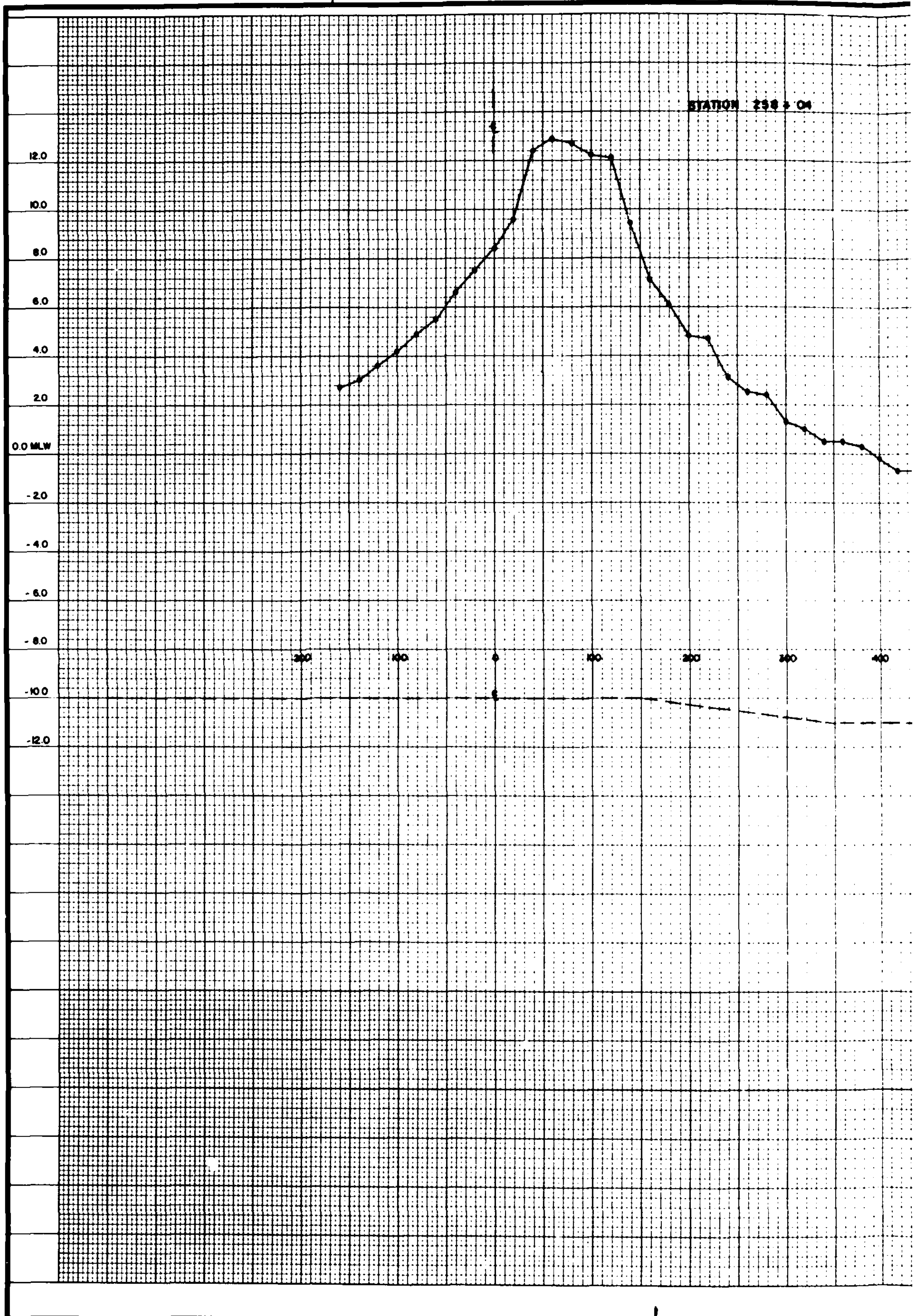
3	2	1

Figure D35

CORPS OF ENGINEERS

4

3



5

4

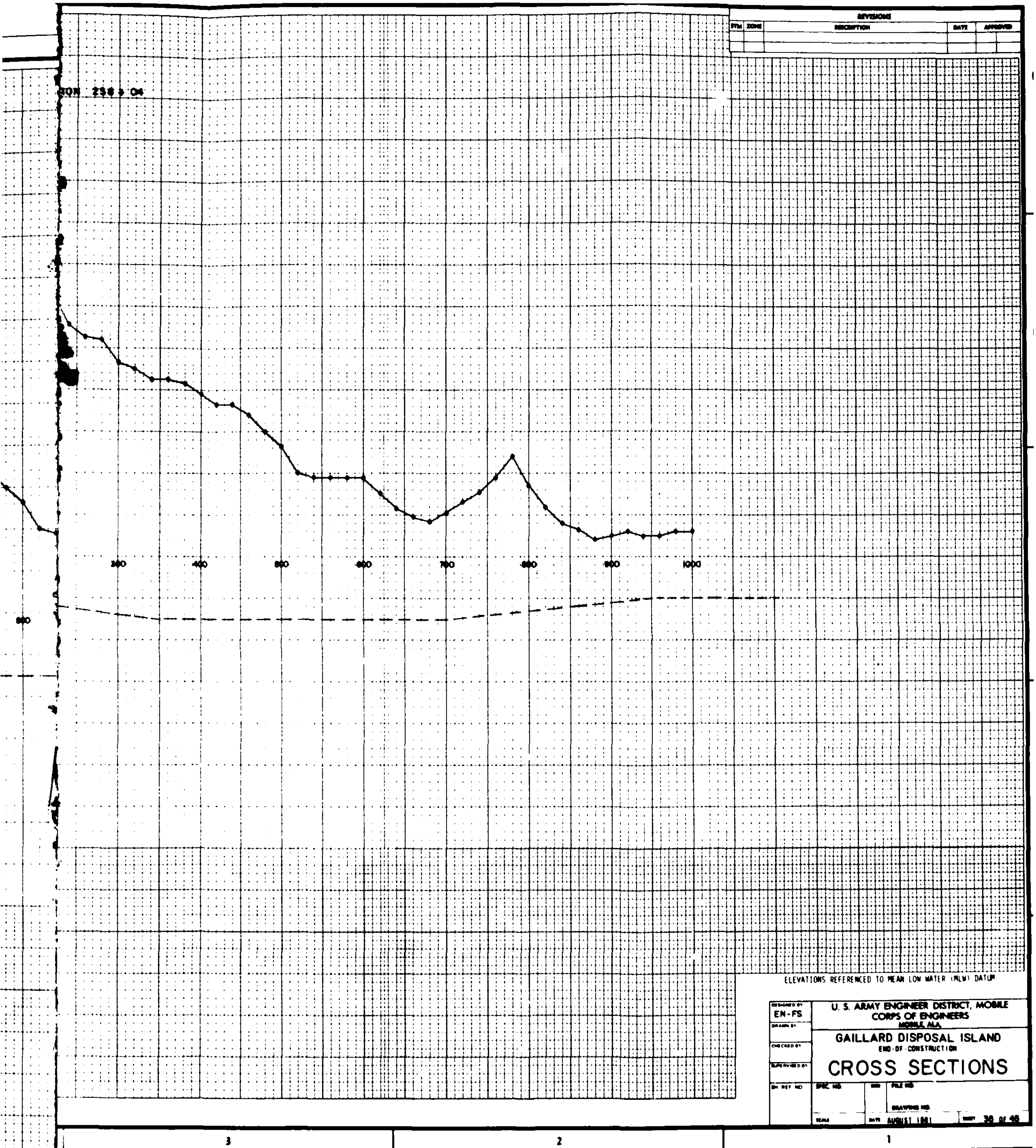
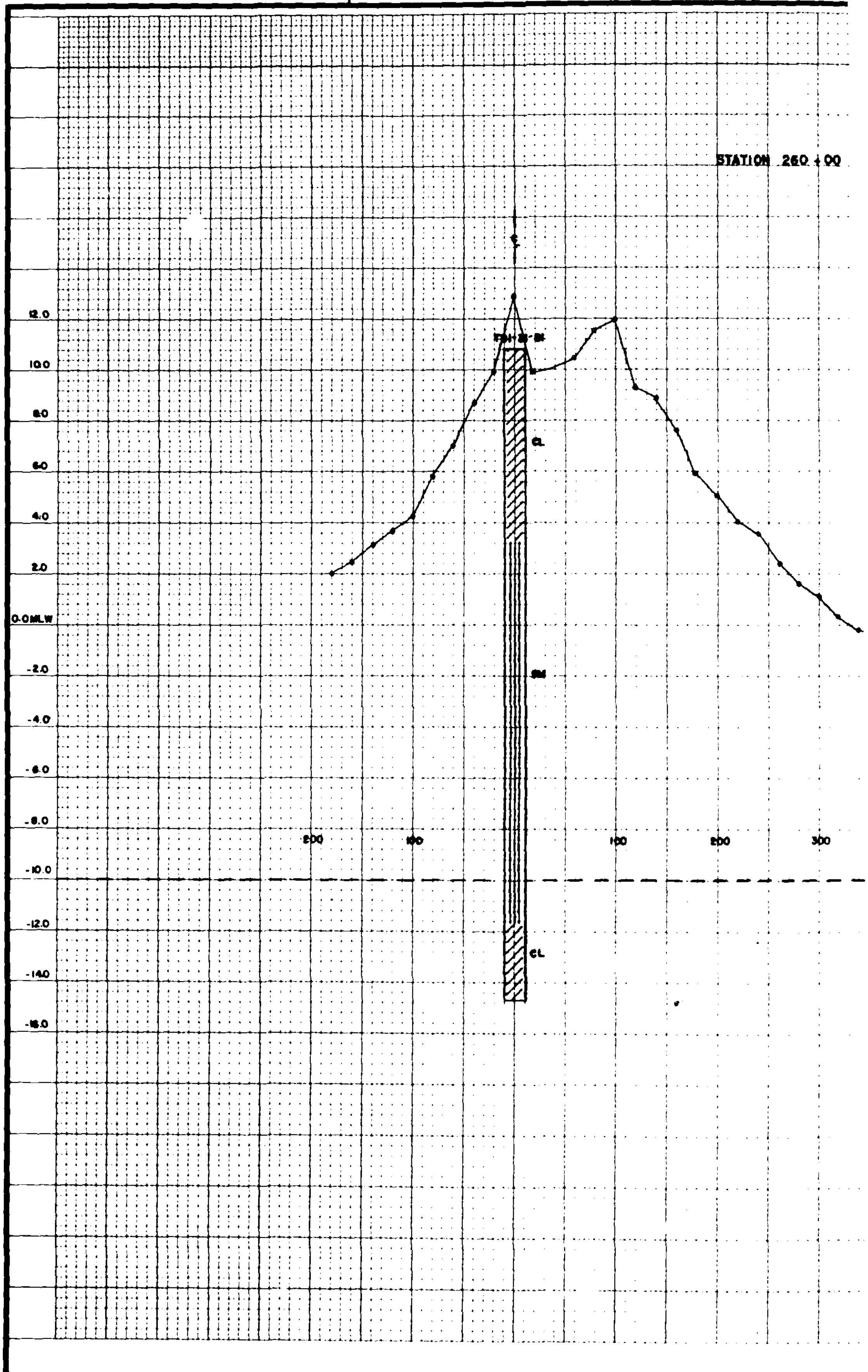
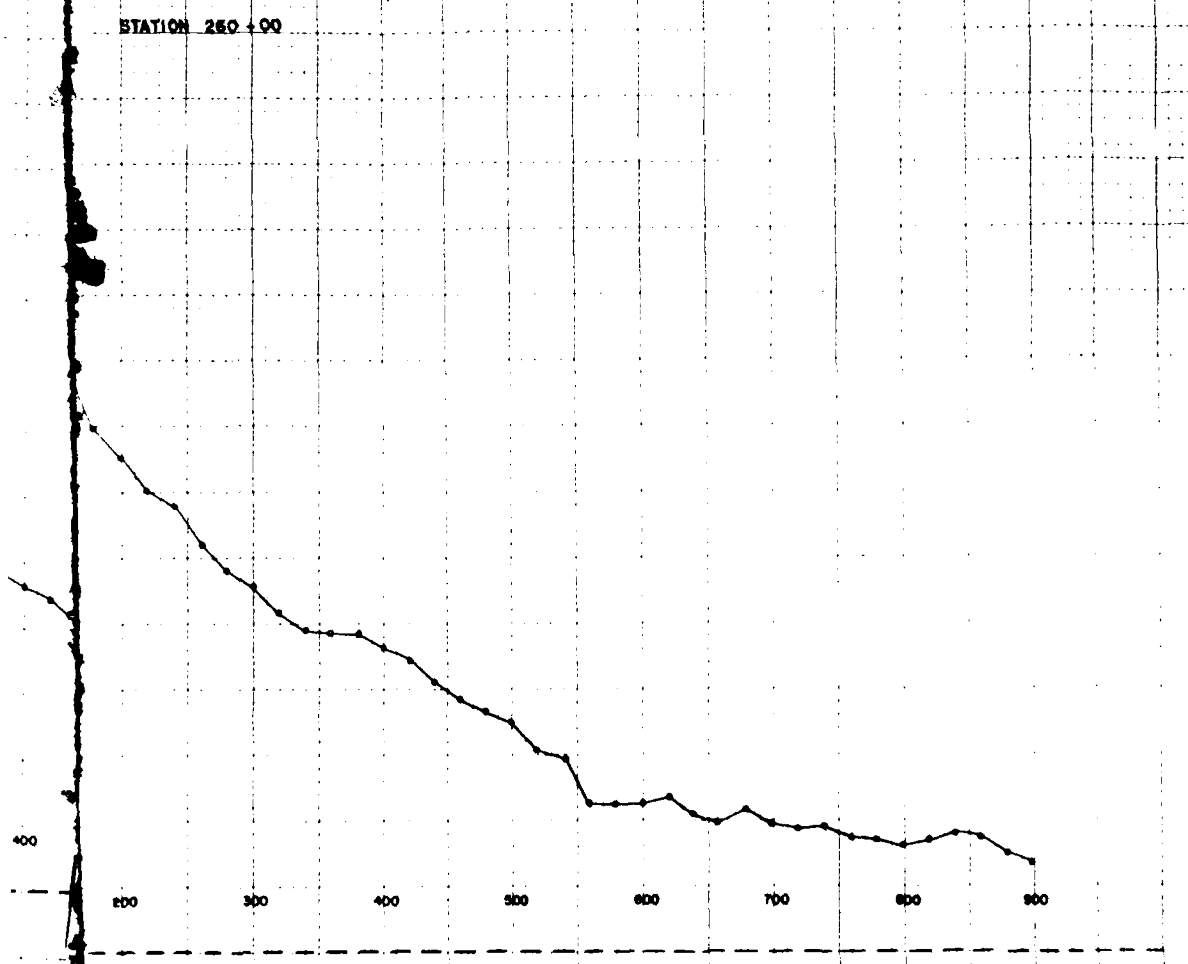

REVISIONS
SYM
ZONE
DESCRIPTION
DATE
APPROVED
300
400
500
600
700
800
900
1000
ELEVATIONS REFERENCED TO MEAN LOW WATER (MLW) DATUM
DESIGNED BY
EN-FS
DRAWN BY
CHECKED BY
SUPERVISED BY
U. S. ARMY ENGINEER DISTRICT, MOBILE
CORPS OF ENGINEERS
MOBILE, ALA.
GAILLARD DISPOSAL ISLAND
END-OF-CONSTRUCTION
CROSS SECTIONS
SPEC. NO.
FILE NO.
DRAWING NO.
SCALE
DATE
SHEET
3
2
1

Figure D36

CORPS OF ENGINEERS





ELEVATIONS REFERENCED TO MEAN LOW WATER (MLW) DATUM

EN-FS

U. S. ARMY ENGINEER DISTRICT, MOB

CORPS OF ENGINEERS

MOBILE, ALA.

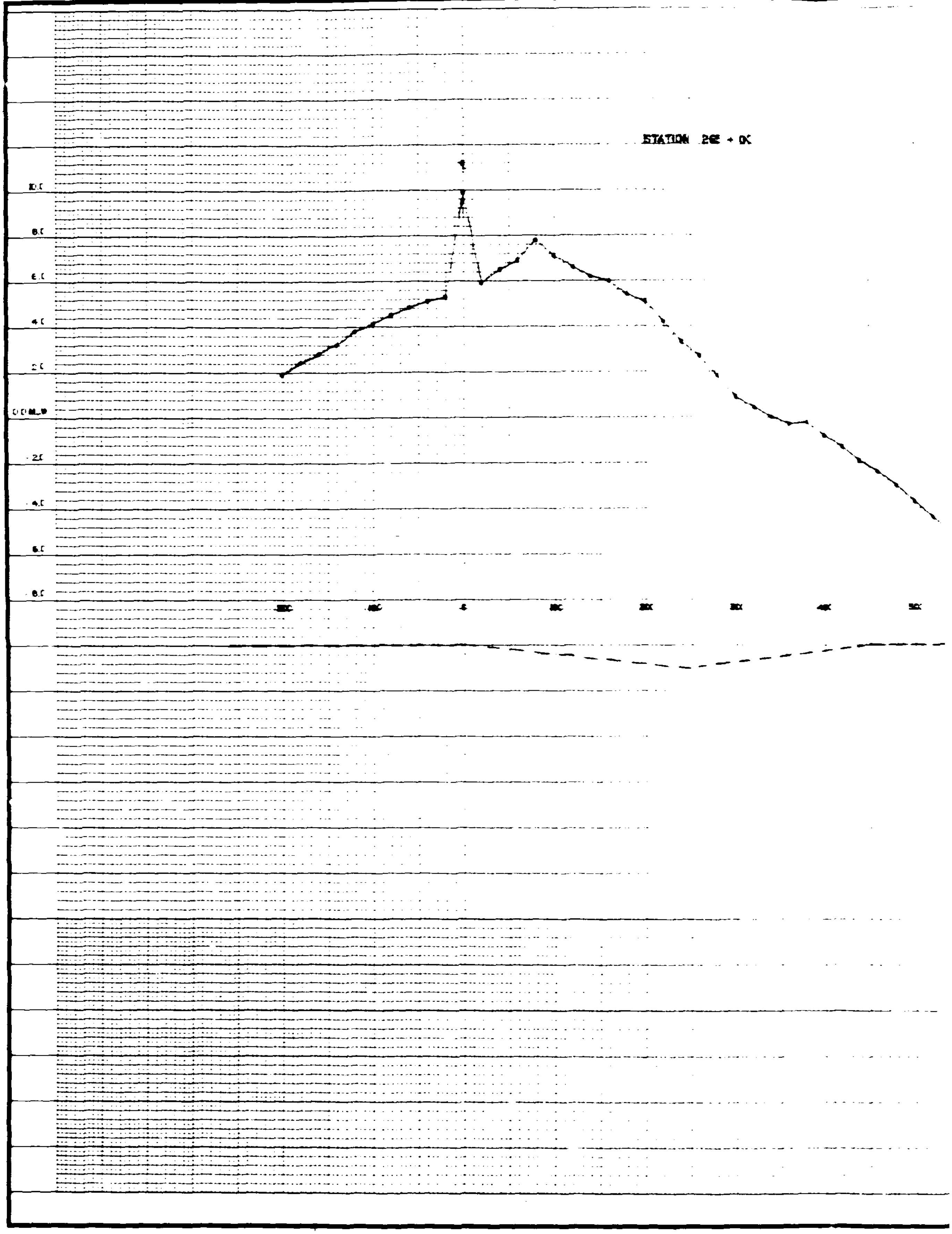
GAILLARD DISPOSAL ISLAN

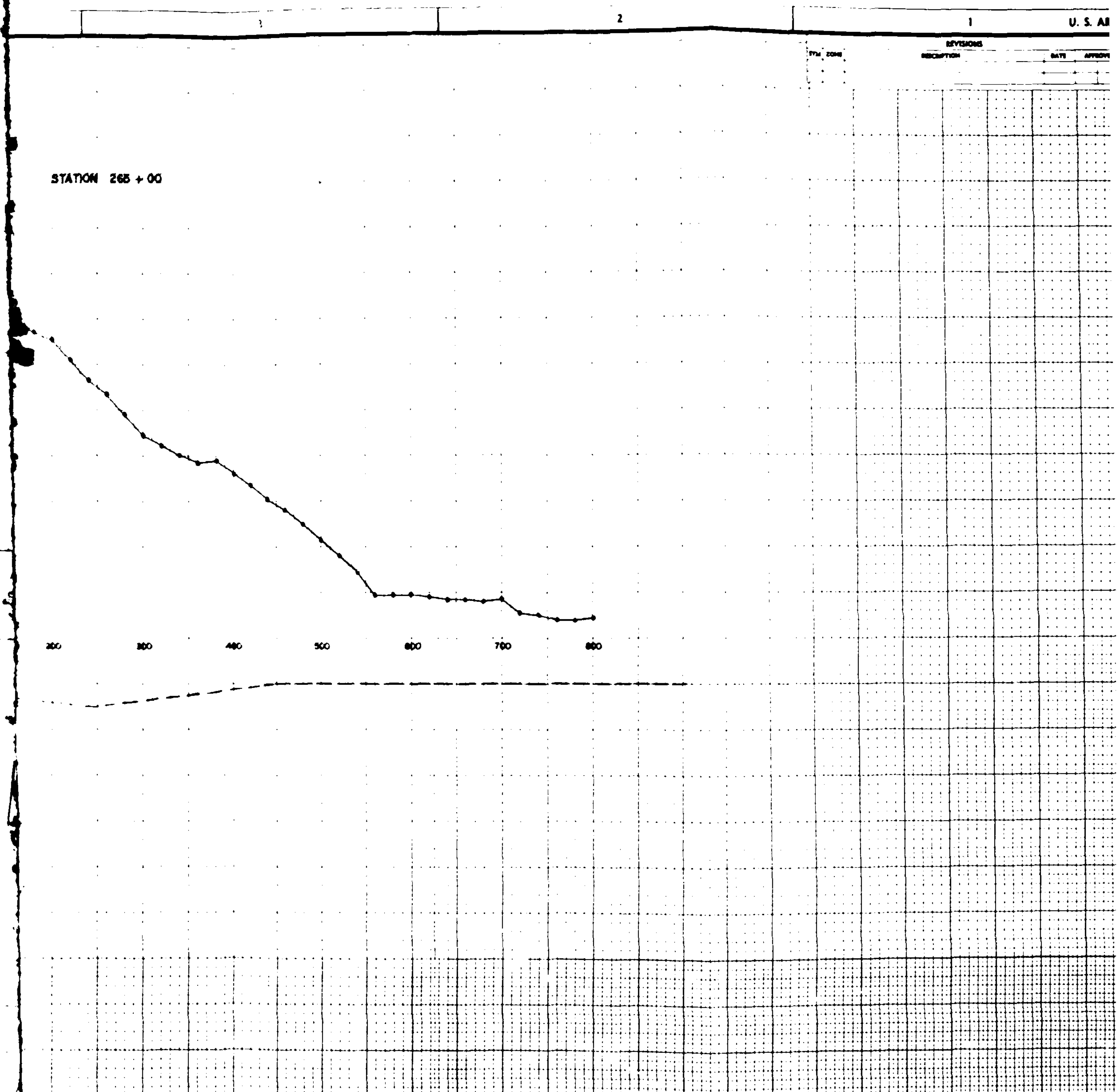
END-OF-CONSTRUCTION

CROSS SECTION

AUGUST 1981

Figure D37


STATION 26E + 0C



ELEVATIONS REFERENCED TO MEAN LOW WATER (MLW) DATUM

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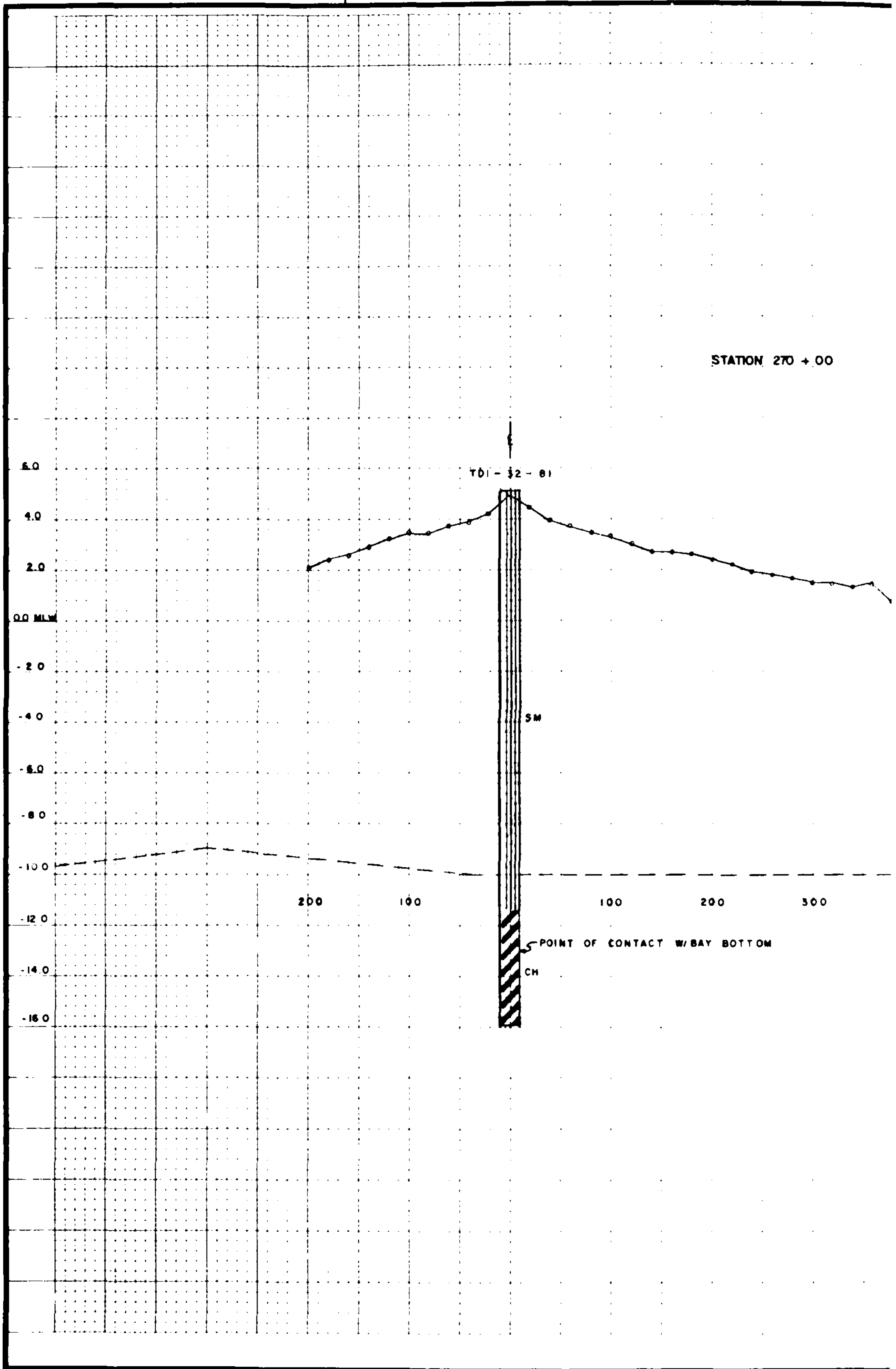
SUPERVISED BY	
DH REF NO	SPEC NO / FILE NO / DRAWING NO. / SCALE / DATE AUGUST 1981 / SHEET 37 OF

Figure D38

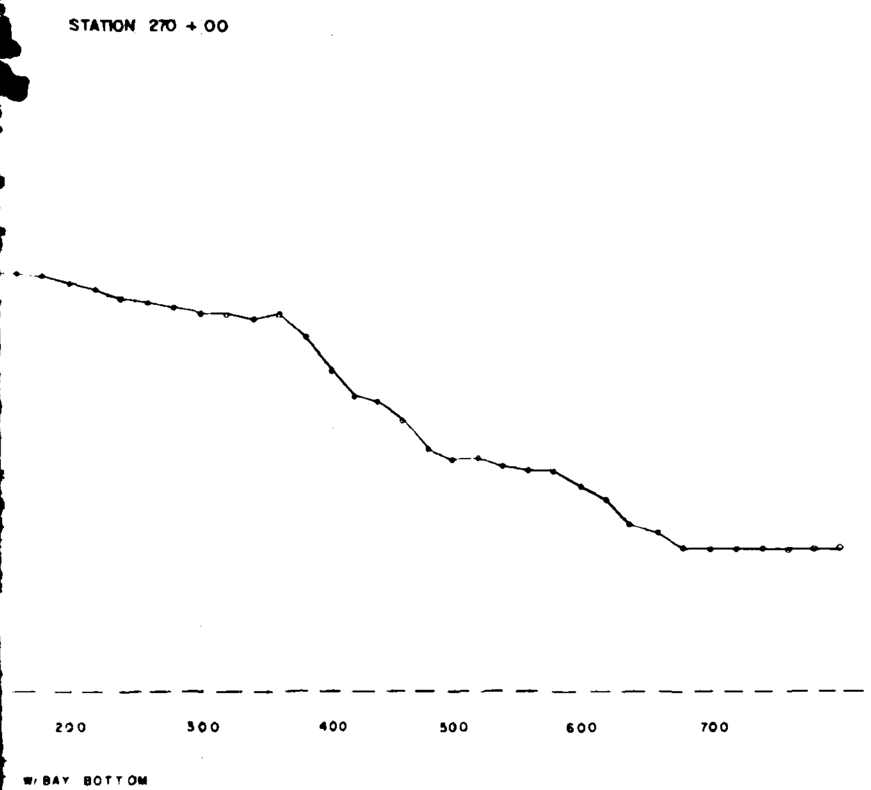
CORPS OF ENGINEERS

4



5

4



ELEVATIONS REFERENCED TO MEAN LOW WATER (MLW) DATUM

U. S. ARMY ENGINEER DISTRICT, MOBILE
CORPS OF ENGINEERS
MOBILE, ALA

EN-FS

GAILLARD DISPOSAL ISLAND
END-OF-CONSTRUCTION

CROSS SECTIONS

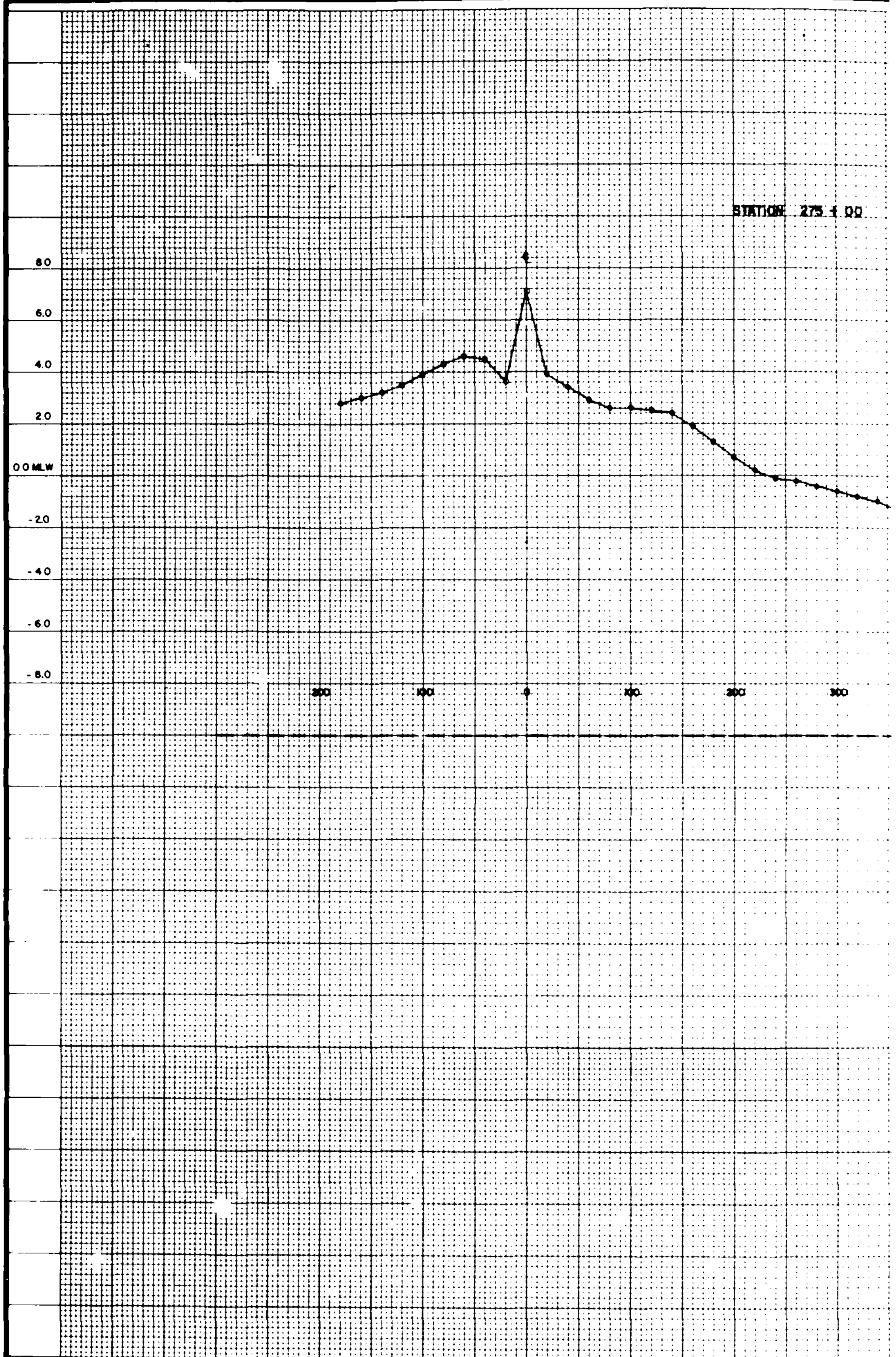
AUGUST 1981

SHEET 38 OF 46

Figure D39

CORPS OF ENGINEERS

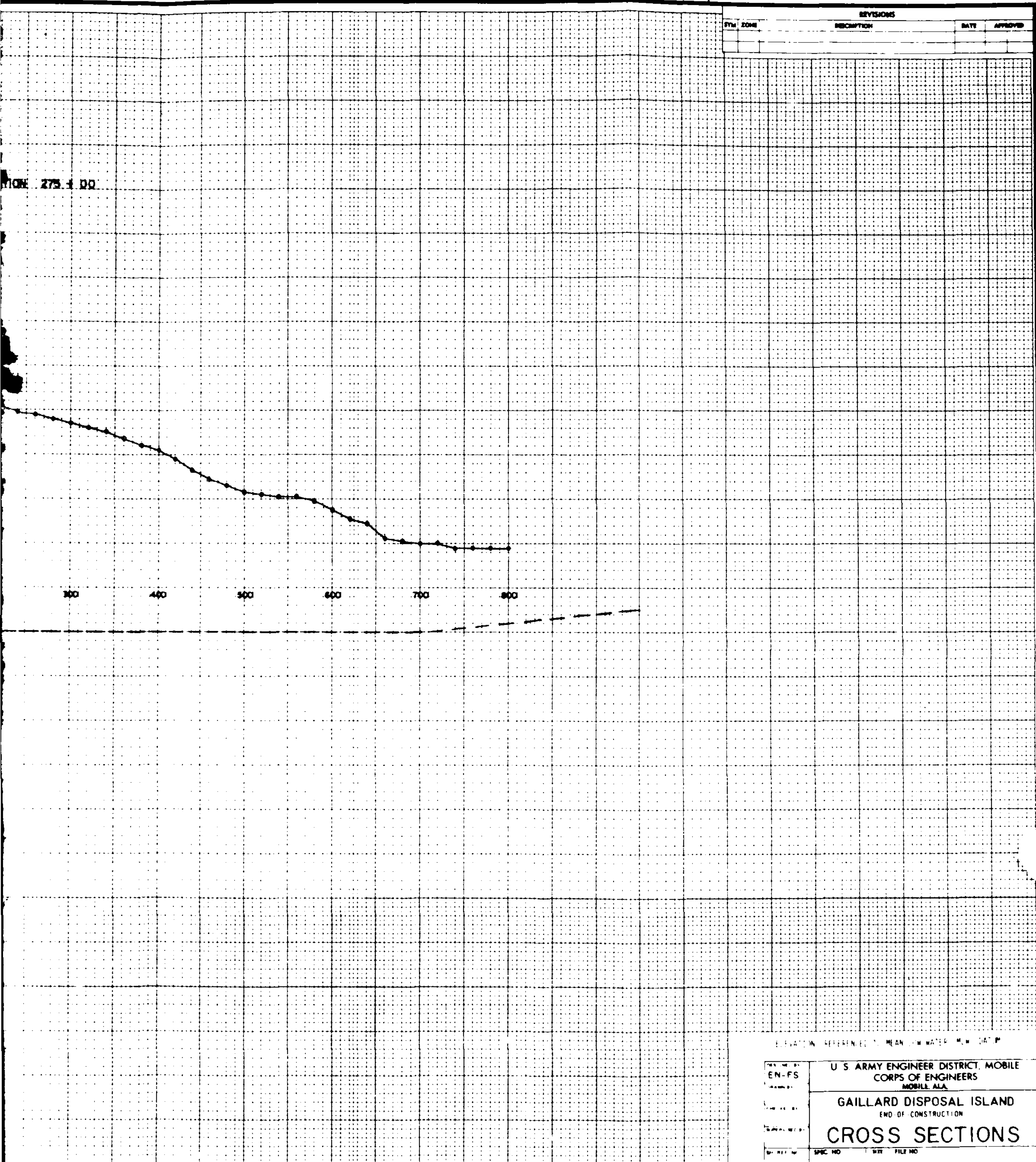
4



5

4

3	2	1	U. S. ARMY



ELEVATIONS REFERENCED TO MEAN LOW WATER (MLW) DATUM

EN-FS

U. S. ARMY ENGINEER DISTRICT, MOBILE
CORPS OF ENGINEERS
MOBILE, ALA.

GAILLARD DISPOSAL ISLAND
END OF CONSTRUCTION

CROSS SECTIONS

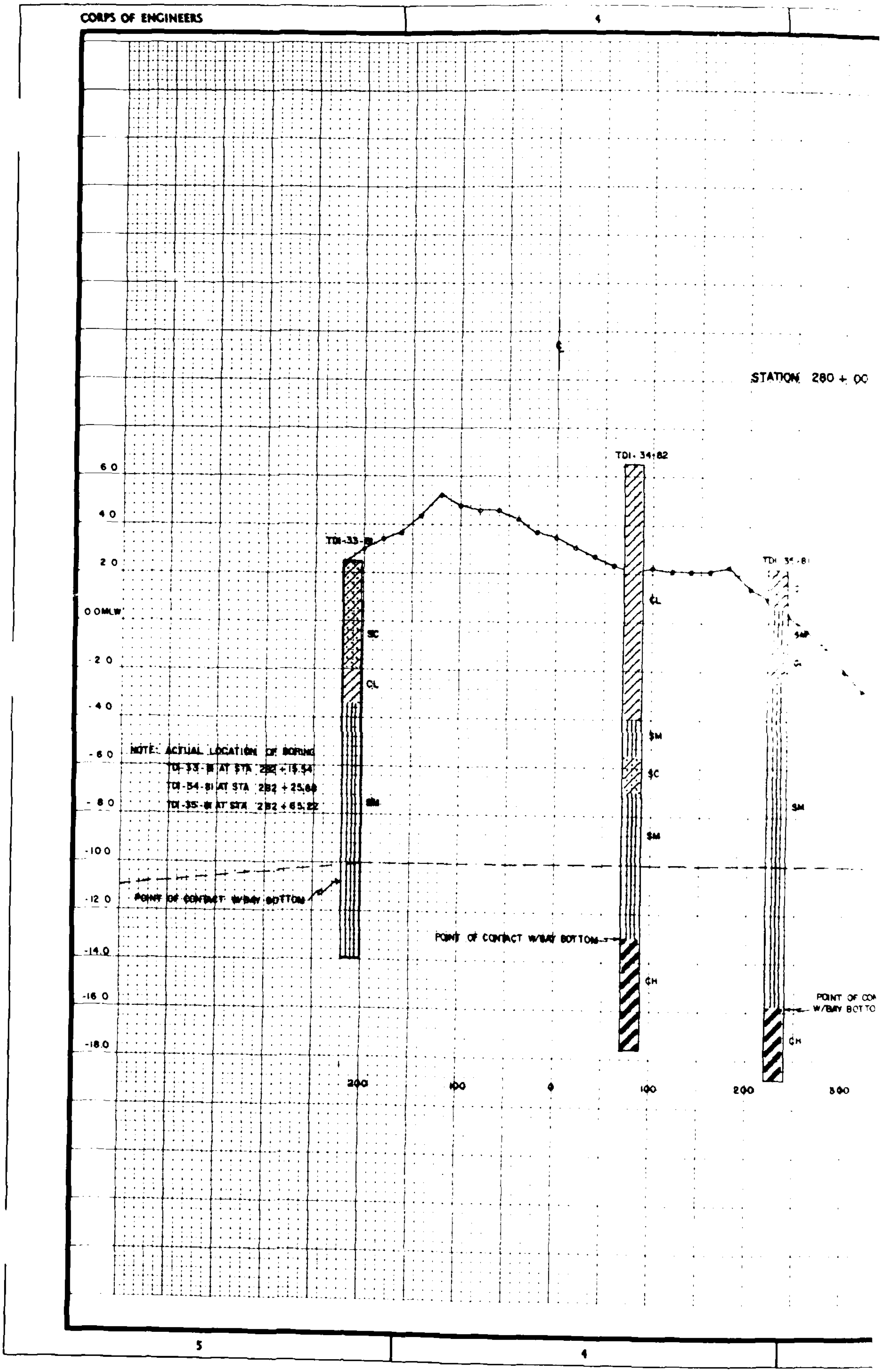
SPEC NO | SIZE | FILE NO

DRAWING NO

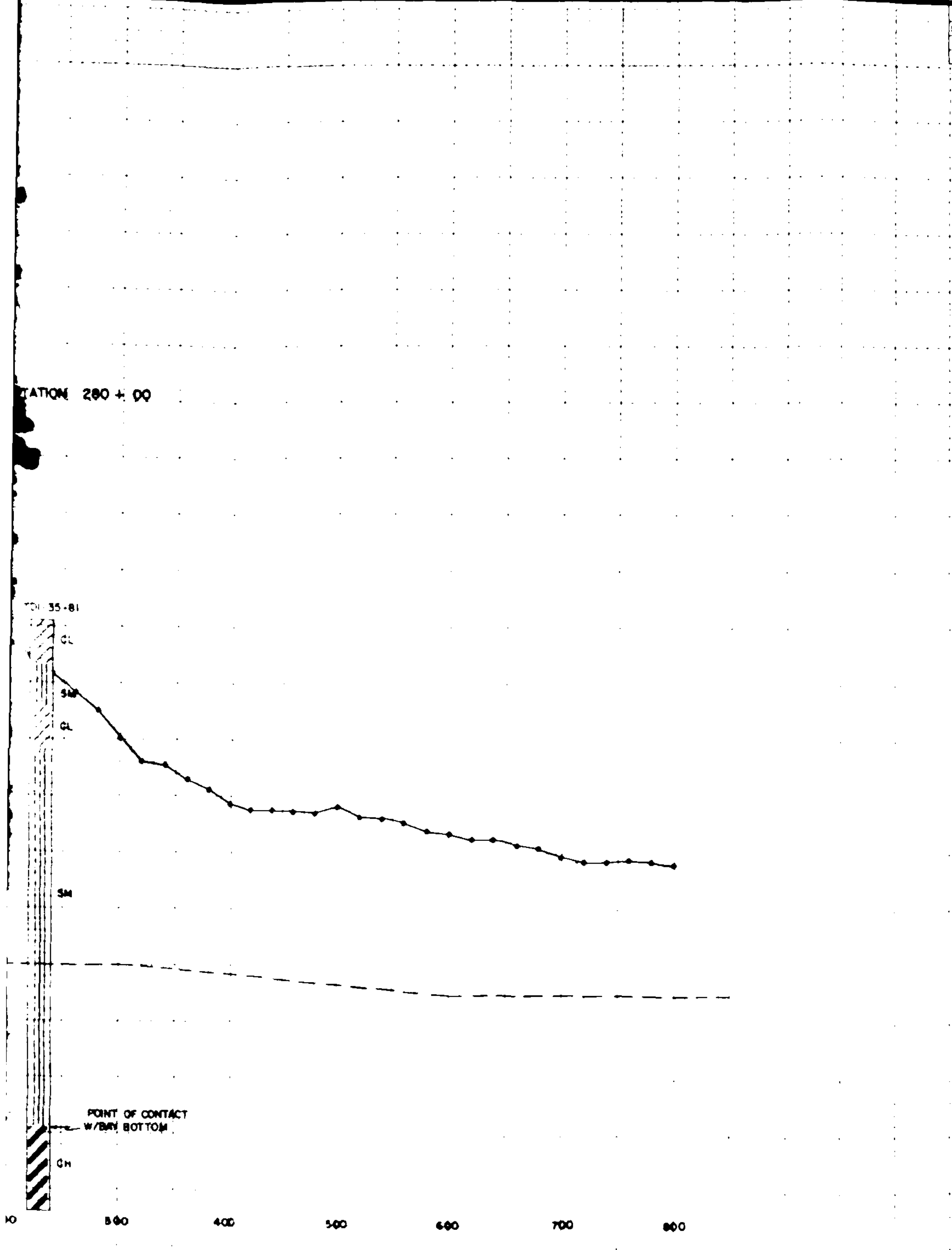
SCALE | DATE AUGUST 1981 | SHEET 39 OF 48

3	2	1

Figure D40



CORPS OF ENGINEERS
STATION 280 + 00
TDI-33-81
TDI-34-82
TDI-35-81
6.0
4.0
2.0
0.0 MLW
-2.0
-4.0
-6.0
-8.0
-10.0
-12.0
-14.0
-16.0
-18.0
SC
CL
SM
SC
SM
CH
NOTE: ACTUAL LOCATION OF BORING
TDI-33-81 AT STA 282 + 15.54
TDI-34-81 AT STA 282 + 25.68
TDI-35-81 AT STA 282 + 65.22
POINT OF CONTACT W/BAY BOTTOM
POINT OF CONTACT W/BAY BOTTOM
POINT OF CO
W/BAY BOTTO
200
100
0
100
200
300
5
4



ELEVATIONS REFERENCED TO MEAN LOW WATER (MLW) DA

U. S. ARMY ENGINEER DISTRICT, MO
CORPS OF ENGINEERS
MOBILE, ALA.

GAILLARD DISPOSAL ISLAN
END-OF-CONSTRUCTION

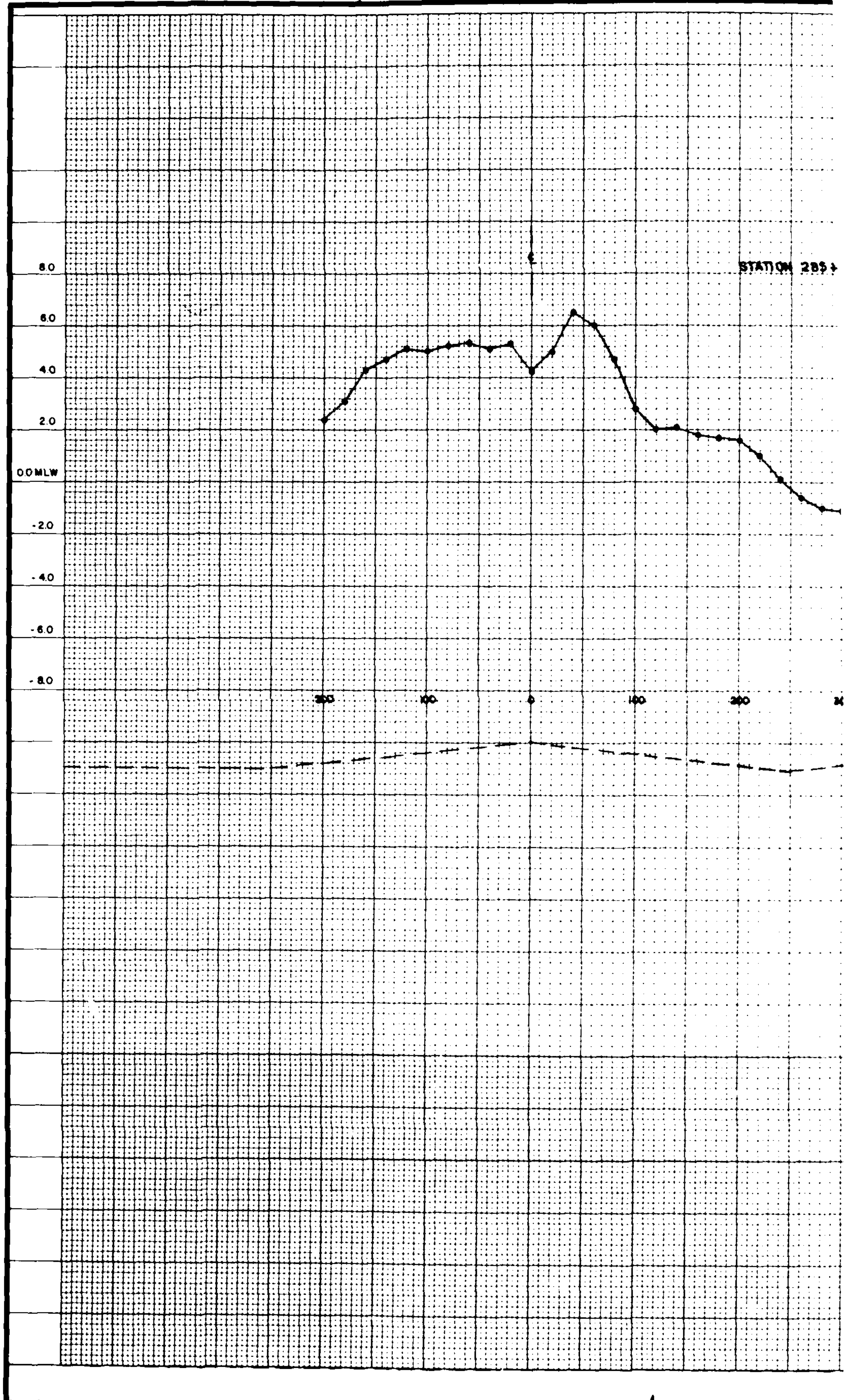
CROSS SECTIONS

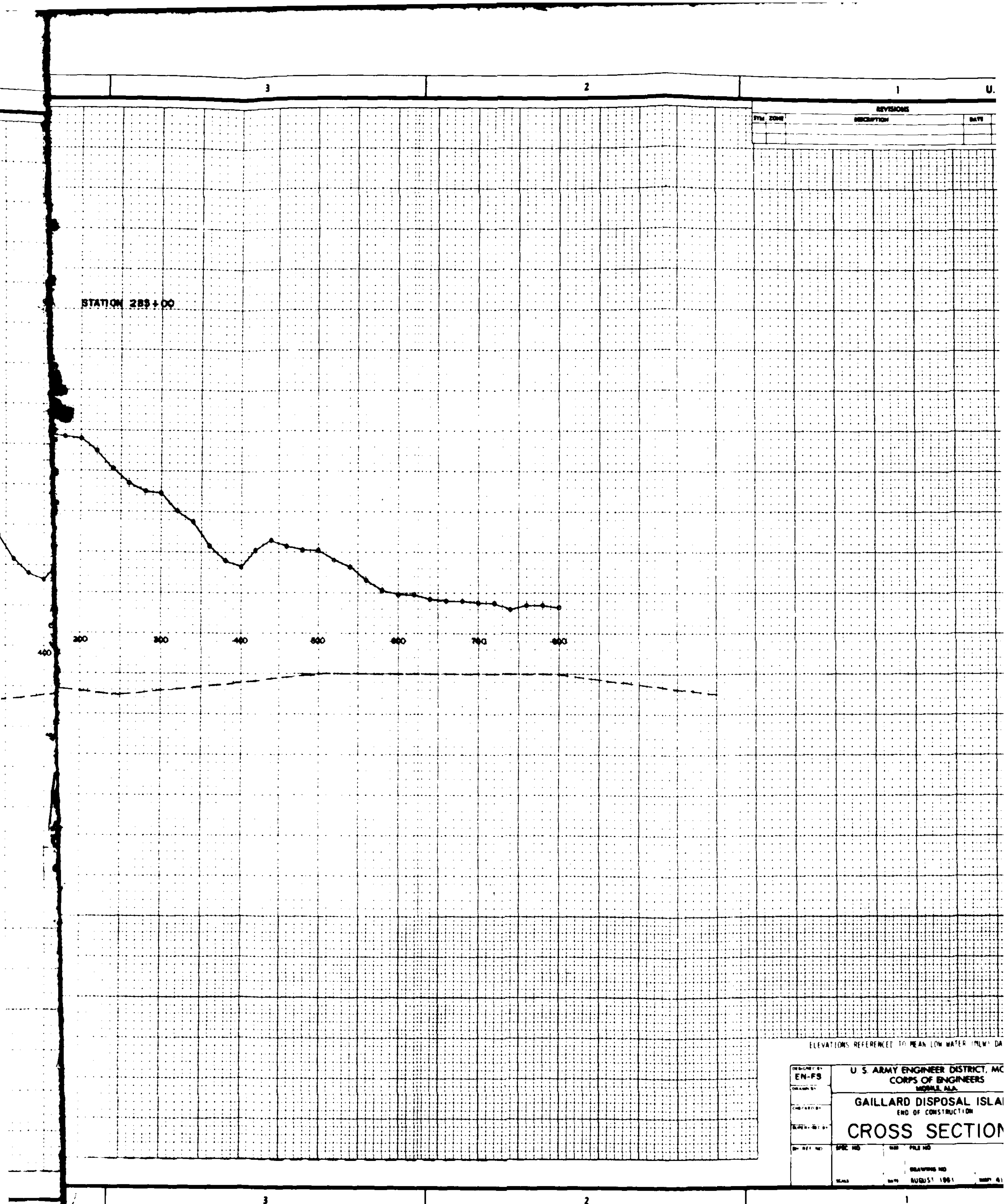
DESIGNED BY EN-FS

DATE AUGUST 1981

SHEET 40

Figure D41


STATION 285+
8.0
6.0
4.0
2.0
0.0 MLW
-2.0
-4.0
-6.0
-8.0
200
100
0
100
200

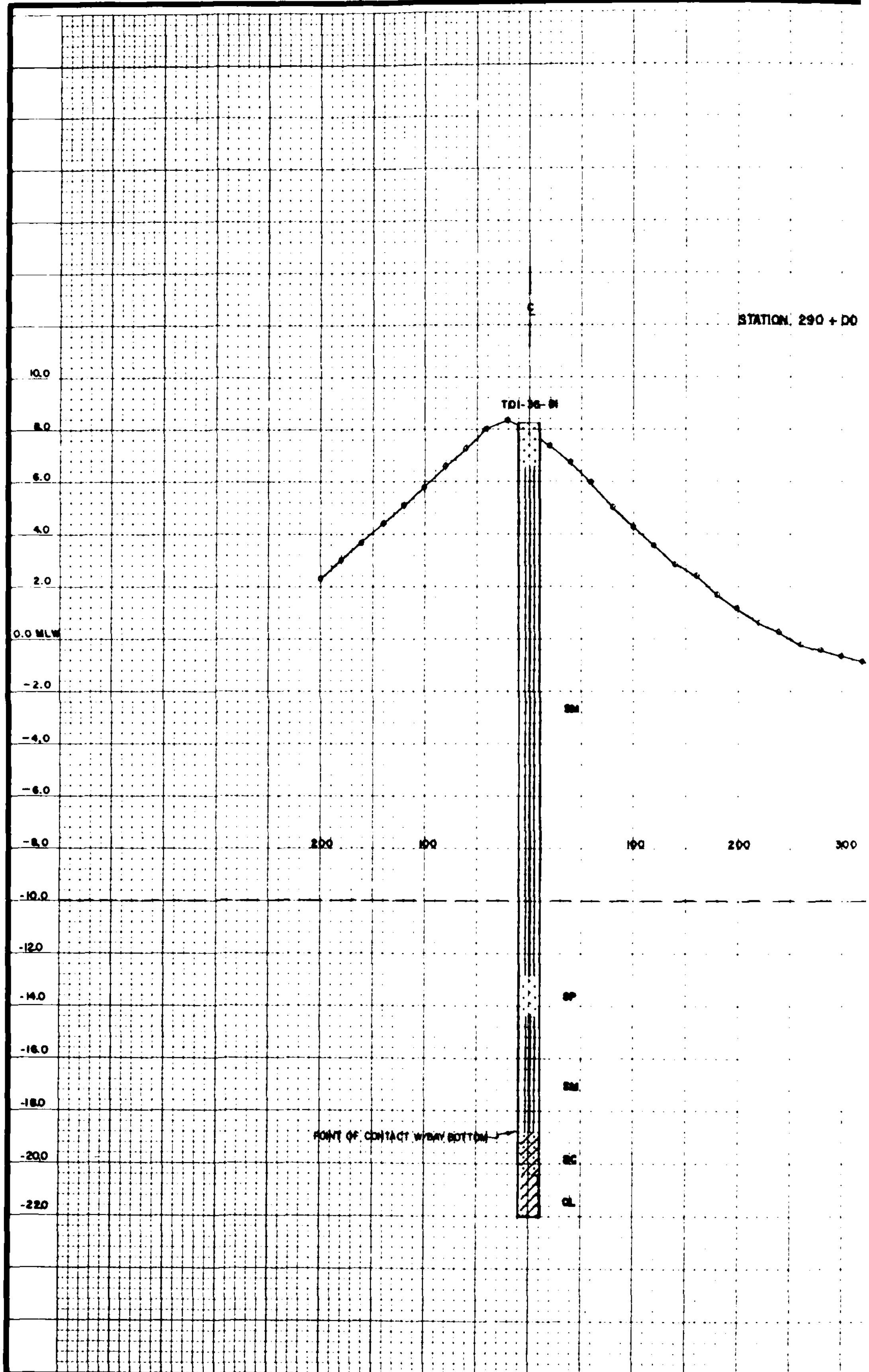


REVISIONS
DESCRIPTION
DATE
STATION 285+00
200
300
400
500
600
700
800
400
ELEVATIONS REFERENCED TO MEAN LOW WATER (MLW) DA
EN-FS
U. S. ARMY ENGINEER DISTRICT, MO
CORPS OF ENGINEERS
MOBILE, ALA.
GAILLARD DISPOSAL ISLA
END OF CONSTRUCTION
CROSS SECTIO
AUGUST

Figure D42

CORPS OF ENGINEERS

4



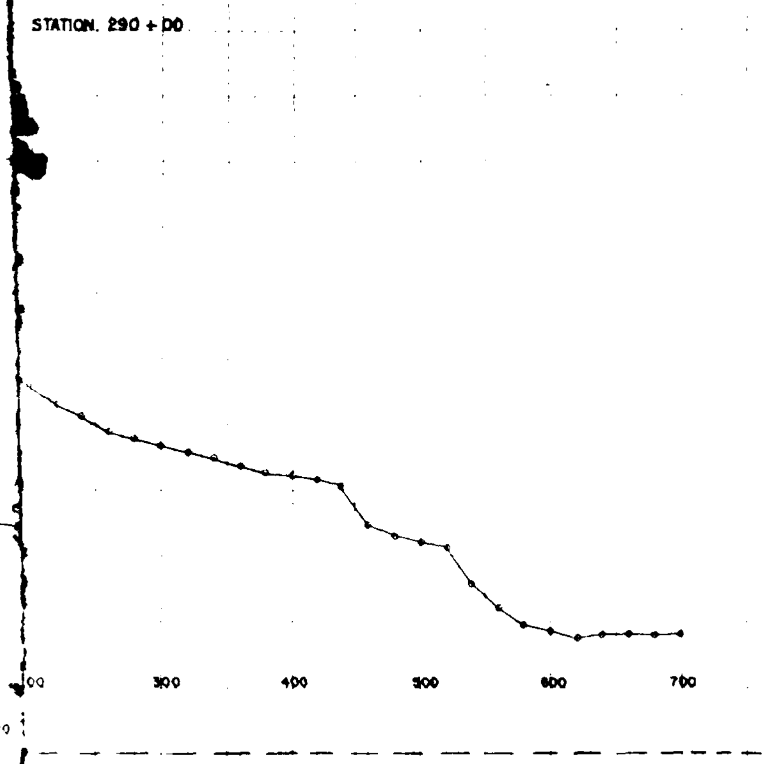
5

4

3 | 2 | 1 | U. S. A

REVISIONS

SYM	ZONE	DESCRIPTION	DATE	APPROV

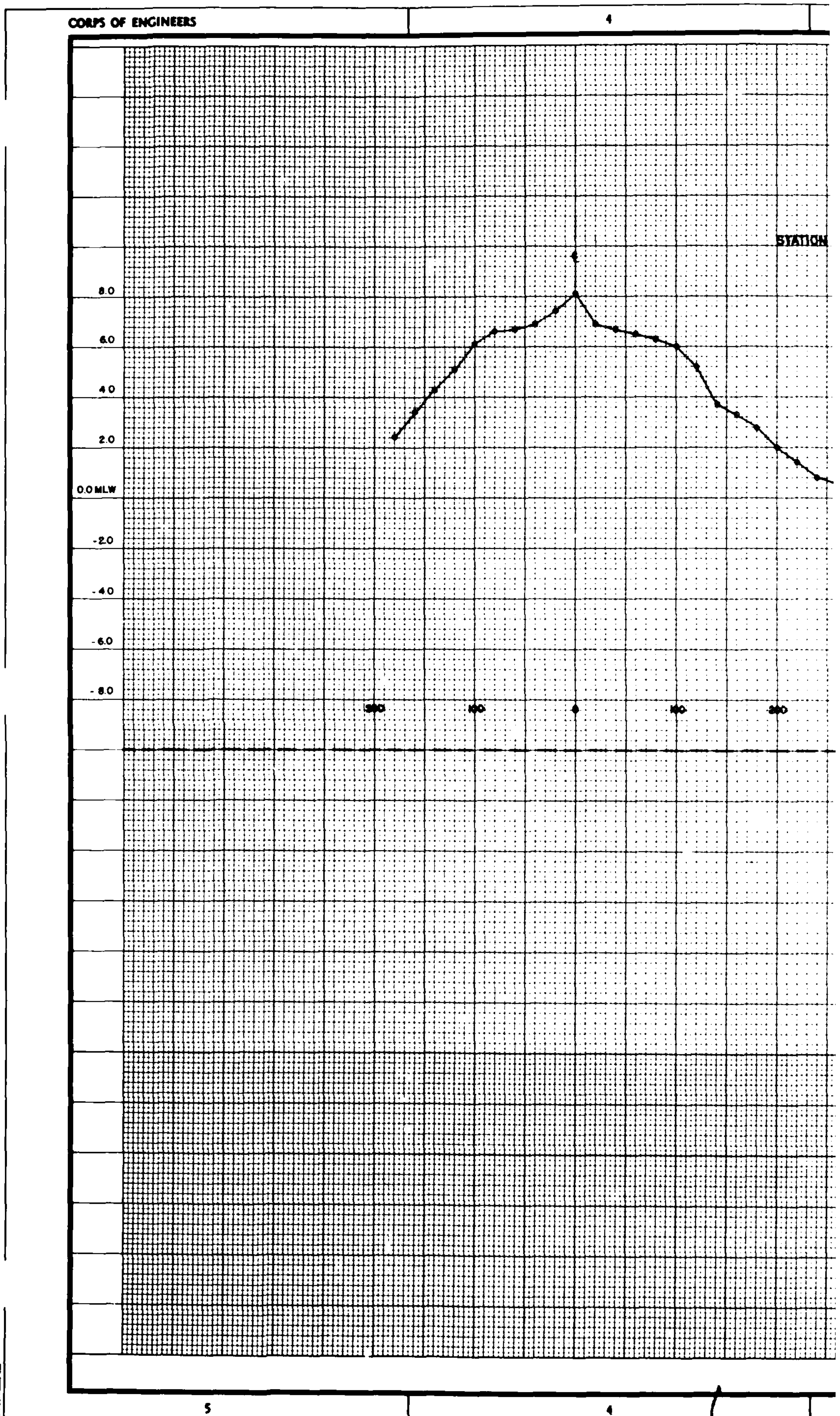


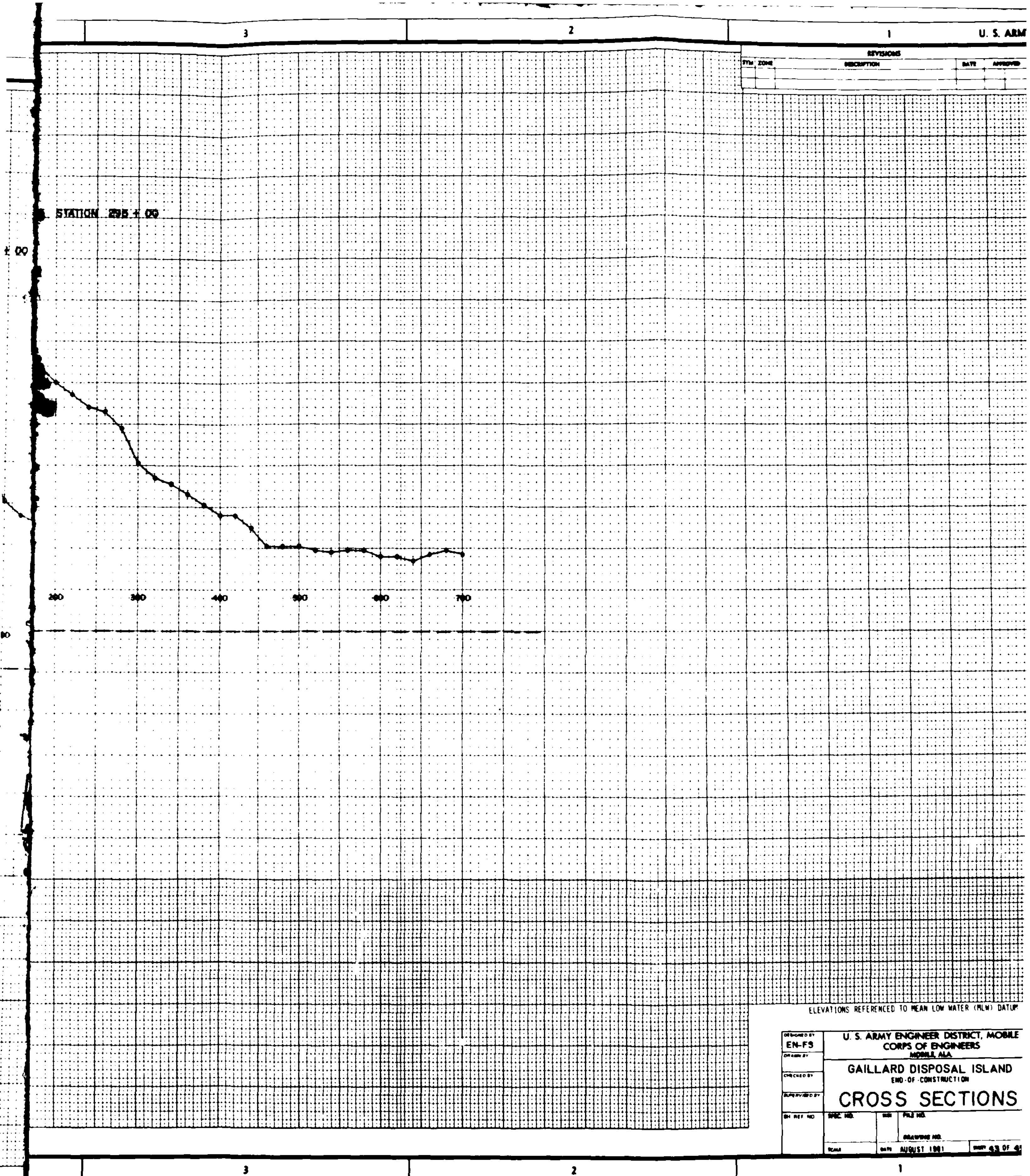
ELEVATIONS REFERENCED TO MEAN LOW WATER (MLW) DATUM

DESIGNED BY EN-FS	U. S. ARMY ENGINEER DISTRICT, MOBILE CORPS OF ENGINEERS MOBILE, ALA.
DRAWN BY	
CHECKED BY	GAILLARD DISPOSAL ISLAND END-OF-CONSTRUCTION
SUPERVISED BY	CROSS SECTIONS
EN REF NO	SPEC. NO. · FILE NO. · DRAWING NO.
	SCALE · DATE AUGUST 1981 · SHEET 42 OF 4

3 | 2 | 1

Figure D43

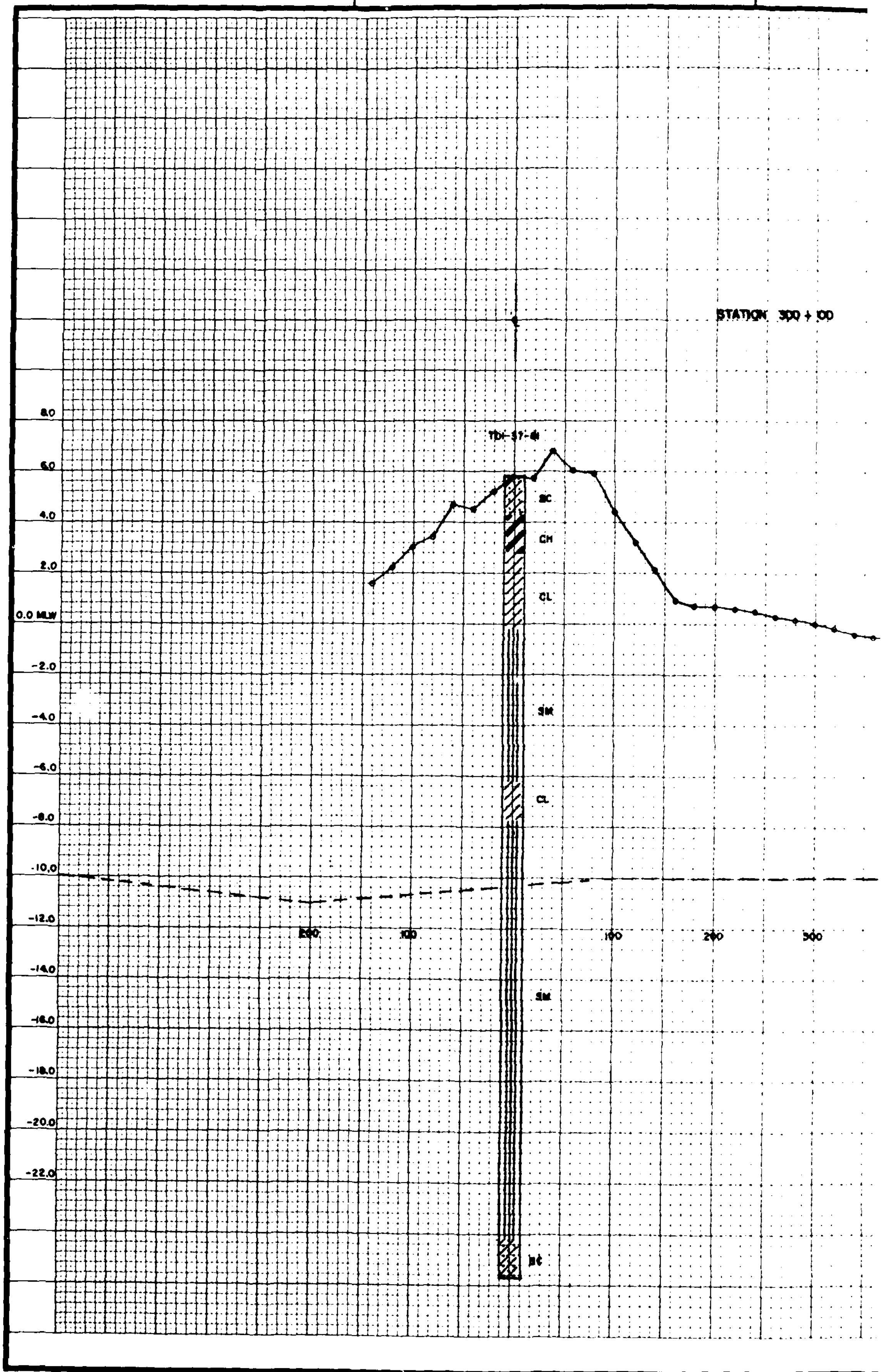

CORPS OF ENGINEERS
4
STATION
8.0
6.0
4.0
2.0
0.0 MLW
-2.0
-4.0
-6.0
-8.0
100
0
100
5
4

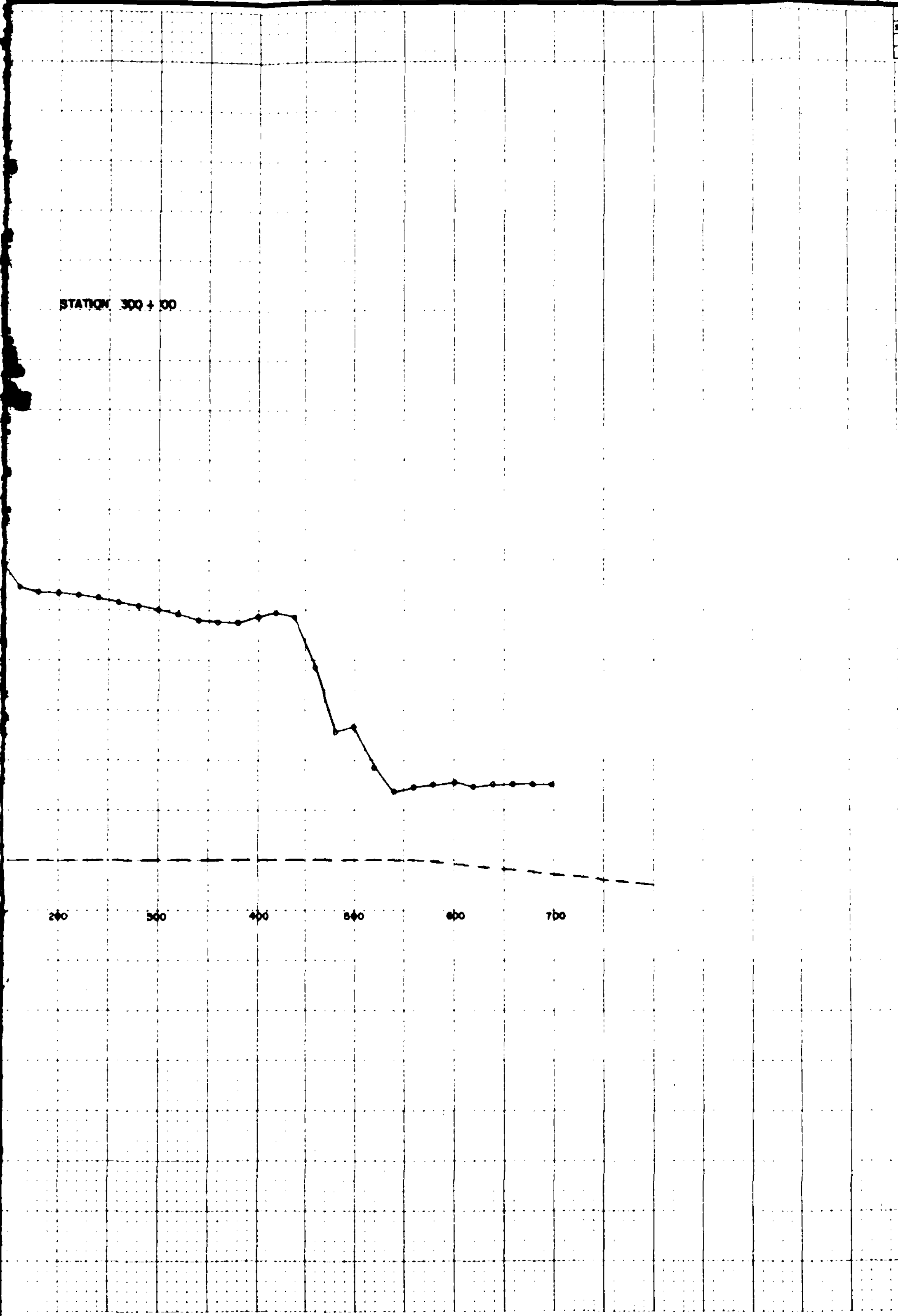


U. S. ARM
REVISIONS
SYM ZONE DESCRIPTION DATE APPROVED
STATION 295 + 00
200
300
400
500
600
700
ELEVATIONS REFERENCED TO MEAN LOW WATER (MLW) DATUM
DESIGNED BY EN-FS
DRAWN BY
CHECKED BY
SUPERVISED BY
U. S. ARMY ENGINEER DISTRICT, MOBILE
CORPS OF ENGINEERS
MOBILE, ALA.
GAILLARD DISPOSAL ISLAND
END-OF-CONSTRUCTION
CROSS SECTIONS
SPEC. NO.
FILE NO.
DRAWING NO.
SCALE
DATE AUGUST 1981
SHEET 43 OF 4
3
2
1

Figure D44

CORPS OF ENGINEERS





U. S. A

REVISIONS

ELEVATIONS REFERENCED TO MEAN LOW WATER (MLW) DATU

EN-FS

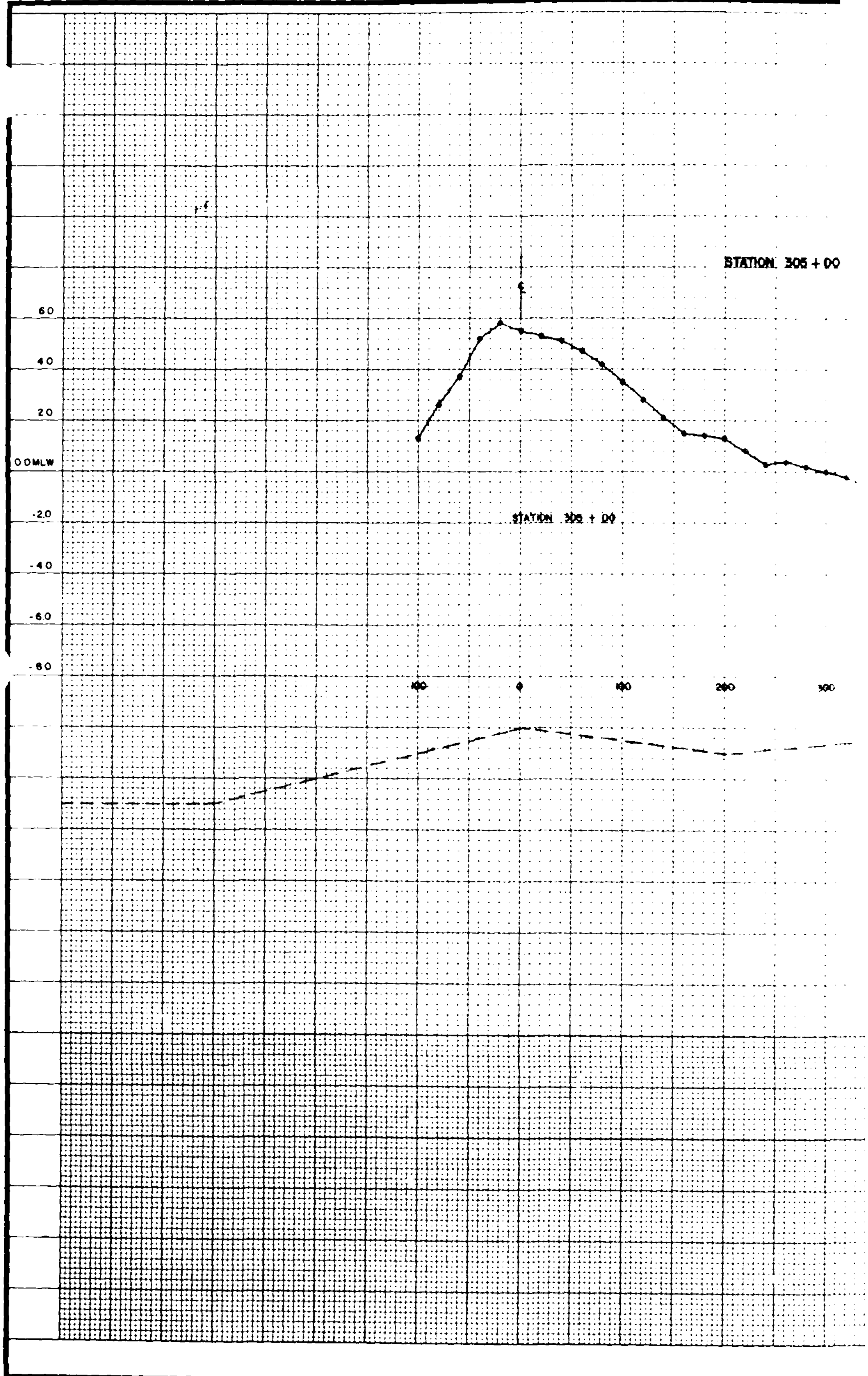
U. S. ARMY ENGINEER DISTRICT, MOBI
CORPS OF ENGINEERS
MOBILE ALA.

GAILLARD DISPOSAL ISLAN
END-OF-CONSTRUCTION

CROSS SECTIONS

AUGUST 1981

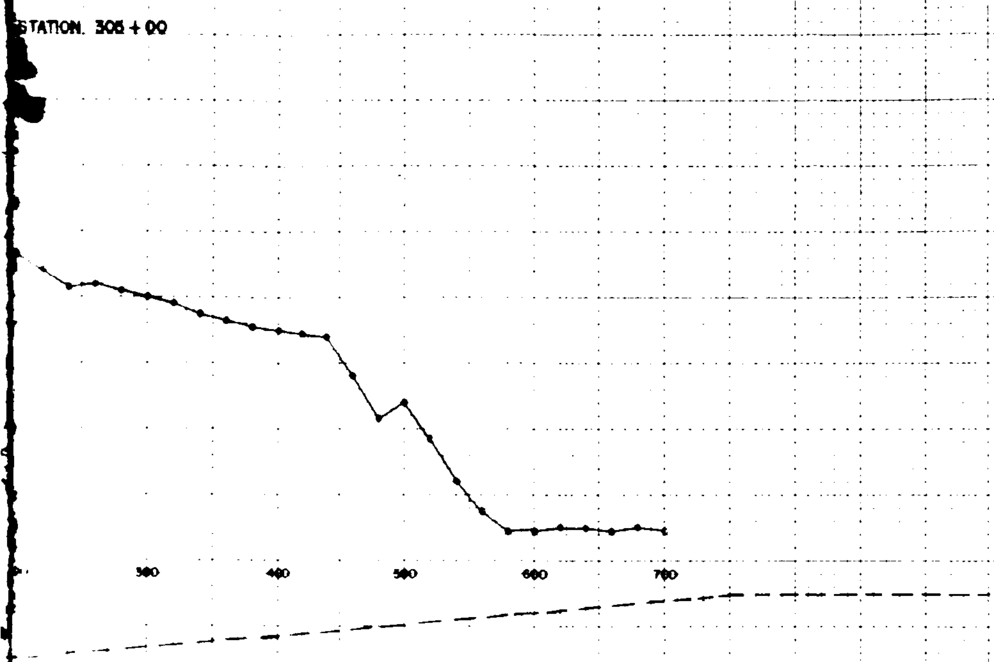
Figure D45


STATION 305 + 00
6.0
4.0
2.0
0.0 MLW
-2.0
-4.0
-6.0
-8.0
STATION 305 + 00
100
0
100
200
300

U. S. ARMY

REVISIONS

SYM	ZONE	DESCRIPTION	DATE	APPROVED



ELEVATIONS REFERENCED TO MEAN LOW WATER (MLW) DATUM

DESIGNED BY EN-FS	U. S. ARMY ENGINEER DISTRICT, MOBILE CORPS OF ENGINEERS MOBILE, ALA.
DRAWN BY	GAILLARD DISPOSAL ISLAND END-OF-CONSTRUCTION
CHECKED BY	
SUPERVISED BY	CROSS SECTIONS
DN REF NO	SPEC NO · SIZE · FILE NO
	DRAWING NO
	SCALE · DATE AUGUST 1981 · SHEET 45 OF 45

APPENDIX E: GAILLARD DISPOSAL ISLAND POST-CONSTRUCTION CONTOURS

1. This appendix includes 10 of 11 contour maps that were prepared after construction. The sixth contour map which included the center portion of this disposal island was not included because the materials deposited in this area were too flat and did not show much information. Figure E1 shows the contour map locations and E2 through E11 show the contour maps prepared.

TABLE OF CONTENTS

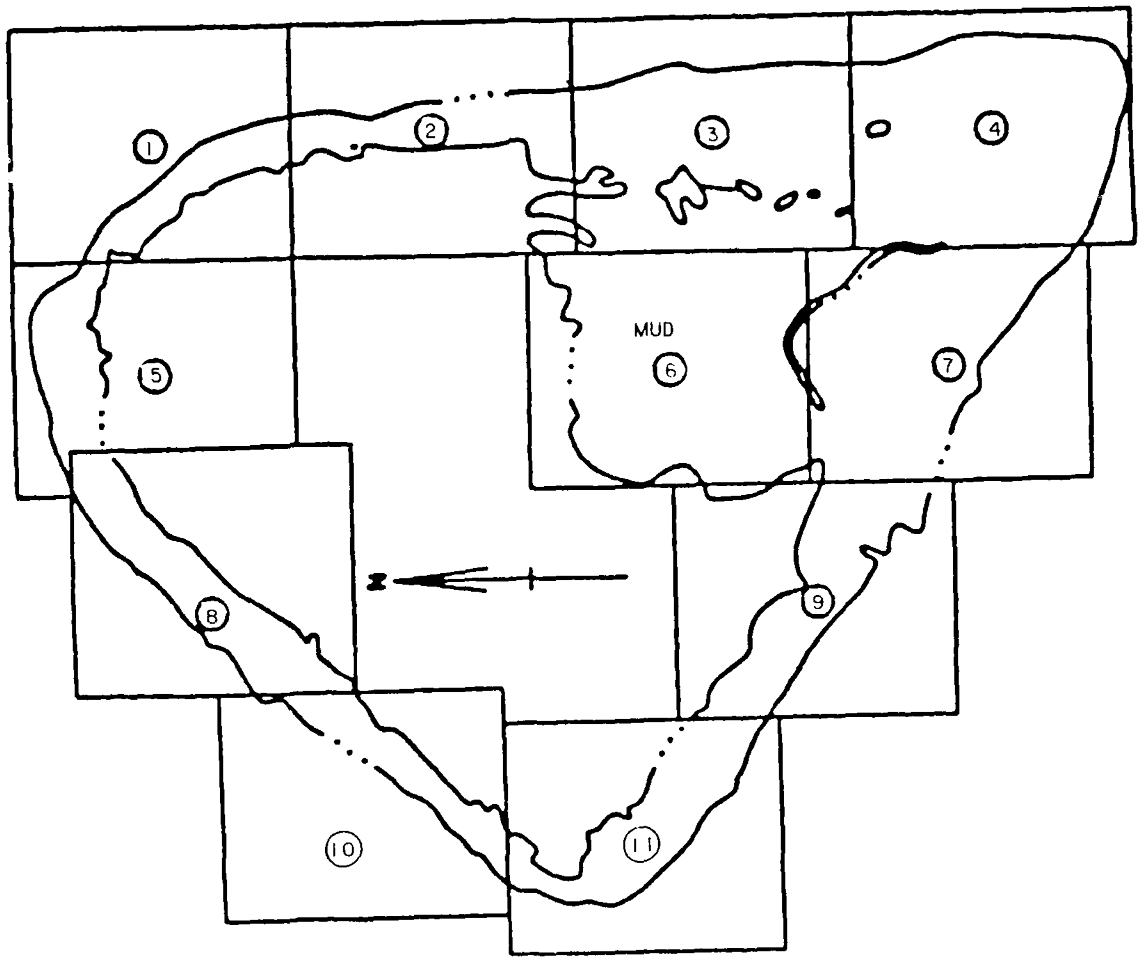
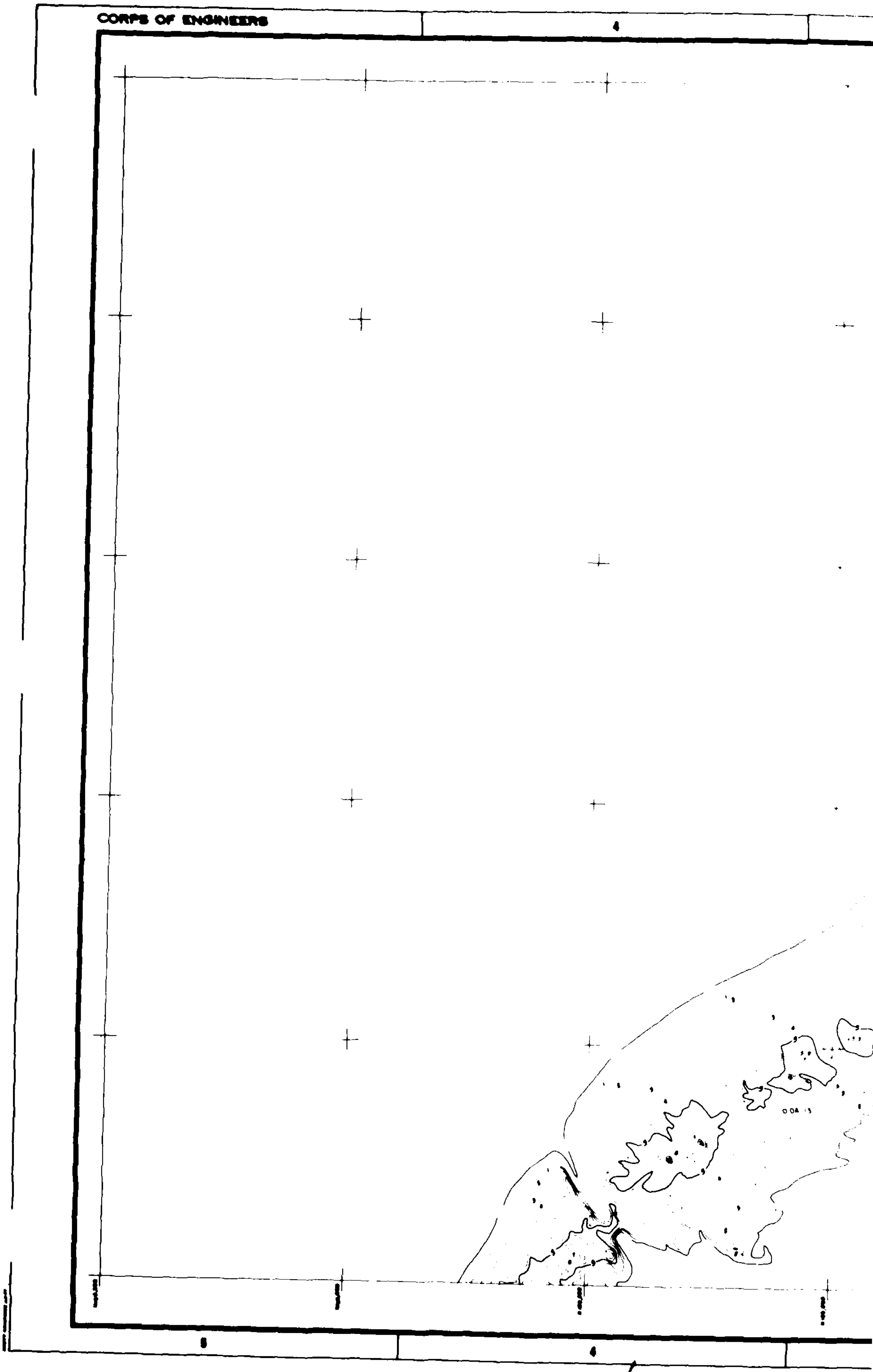
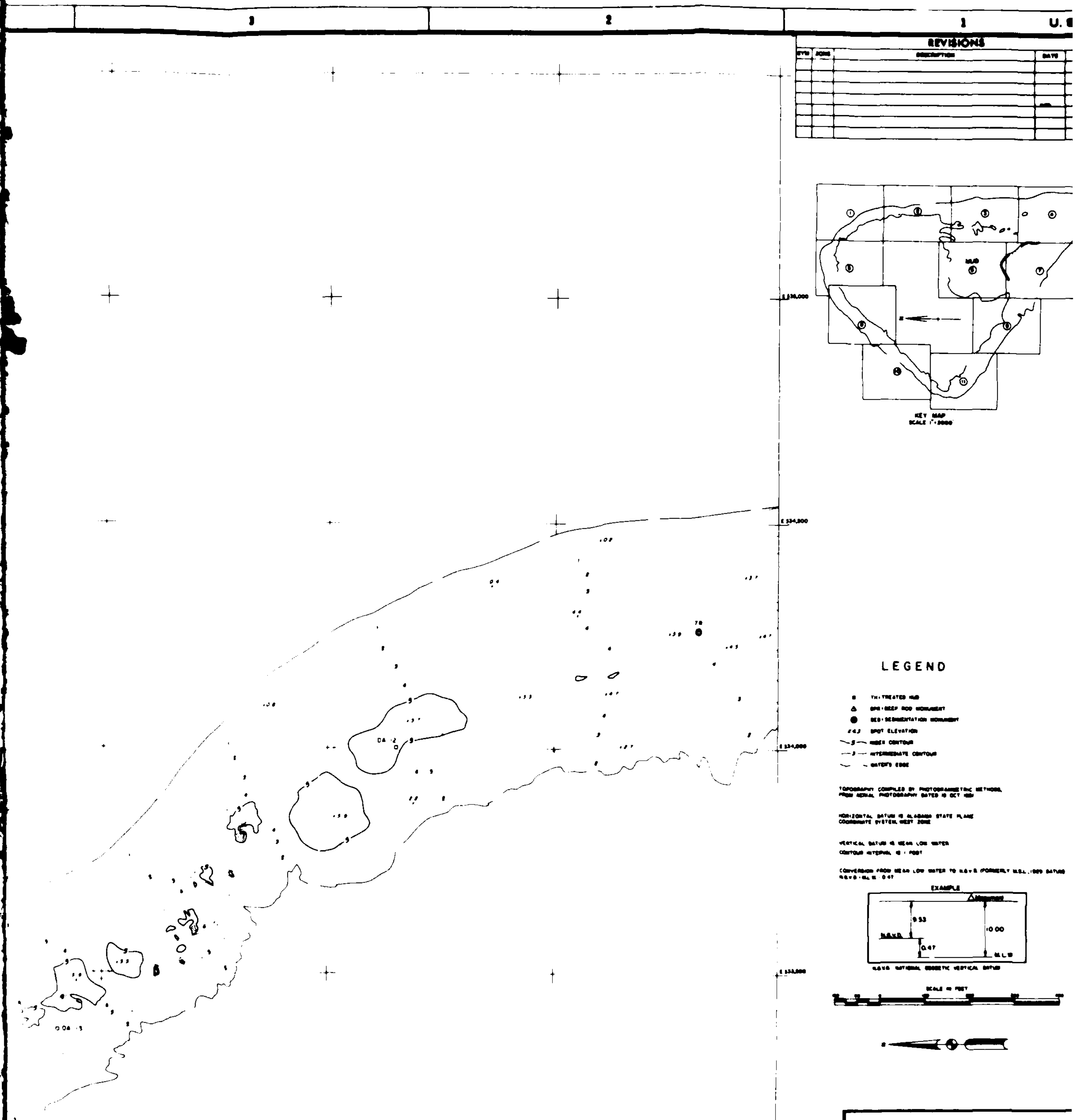


Figure E1. Key for survey contour maps for Figures E2 through E11


CORPS OF ENGINEERS
4
5
4



MOBILE HARBOR, ALABAMA

GAILLARD
DISPOSAL ISLAND

CONTOURS-POST CONSTRUCTI
Contour Map 1

CORPS OF ENGINEERS

4

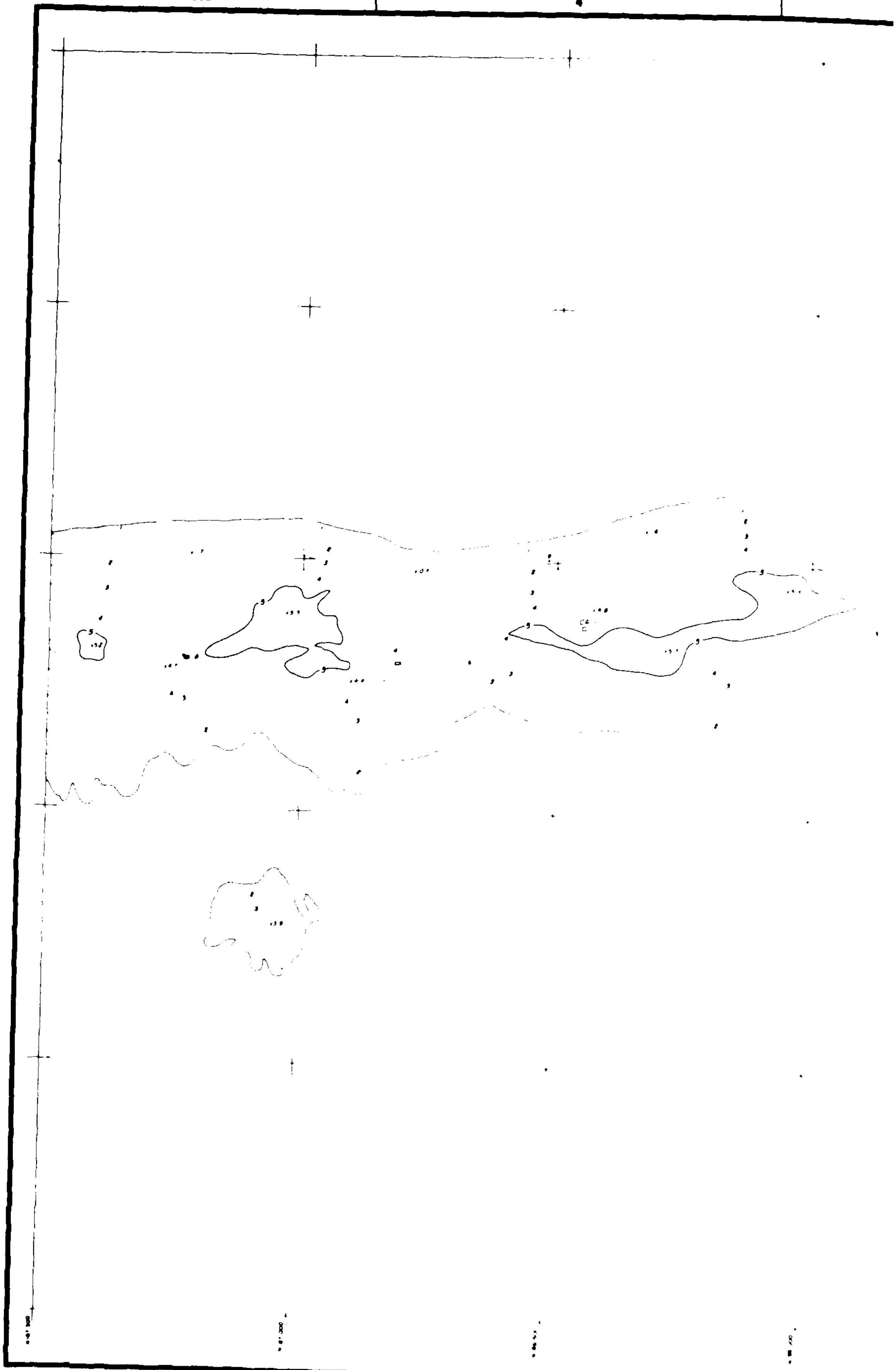
E

D

C

B

A



3

4

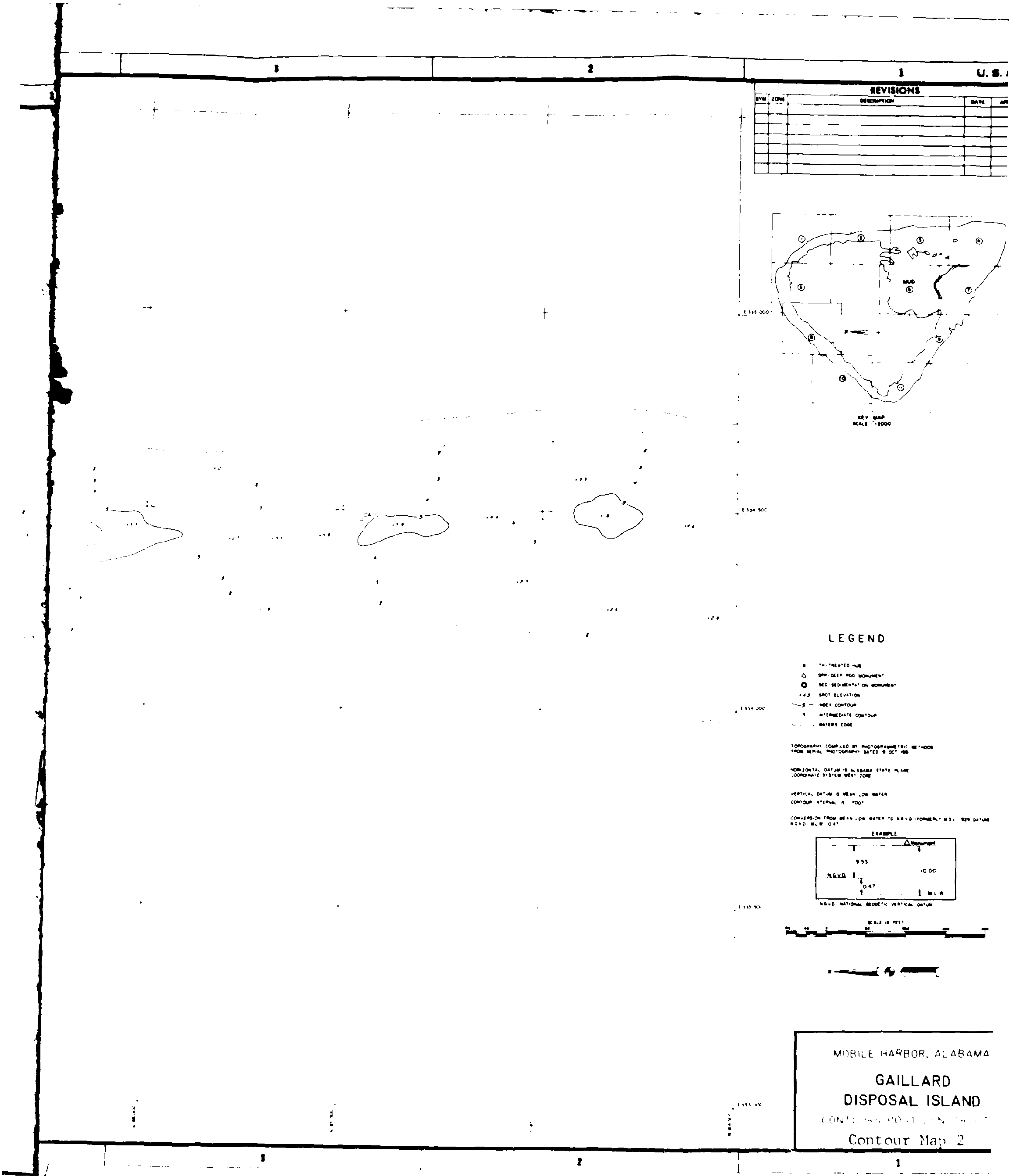
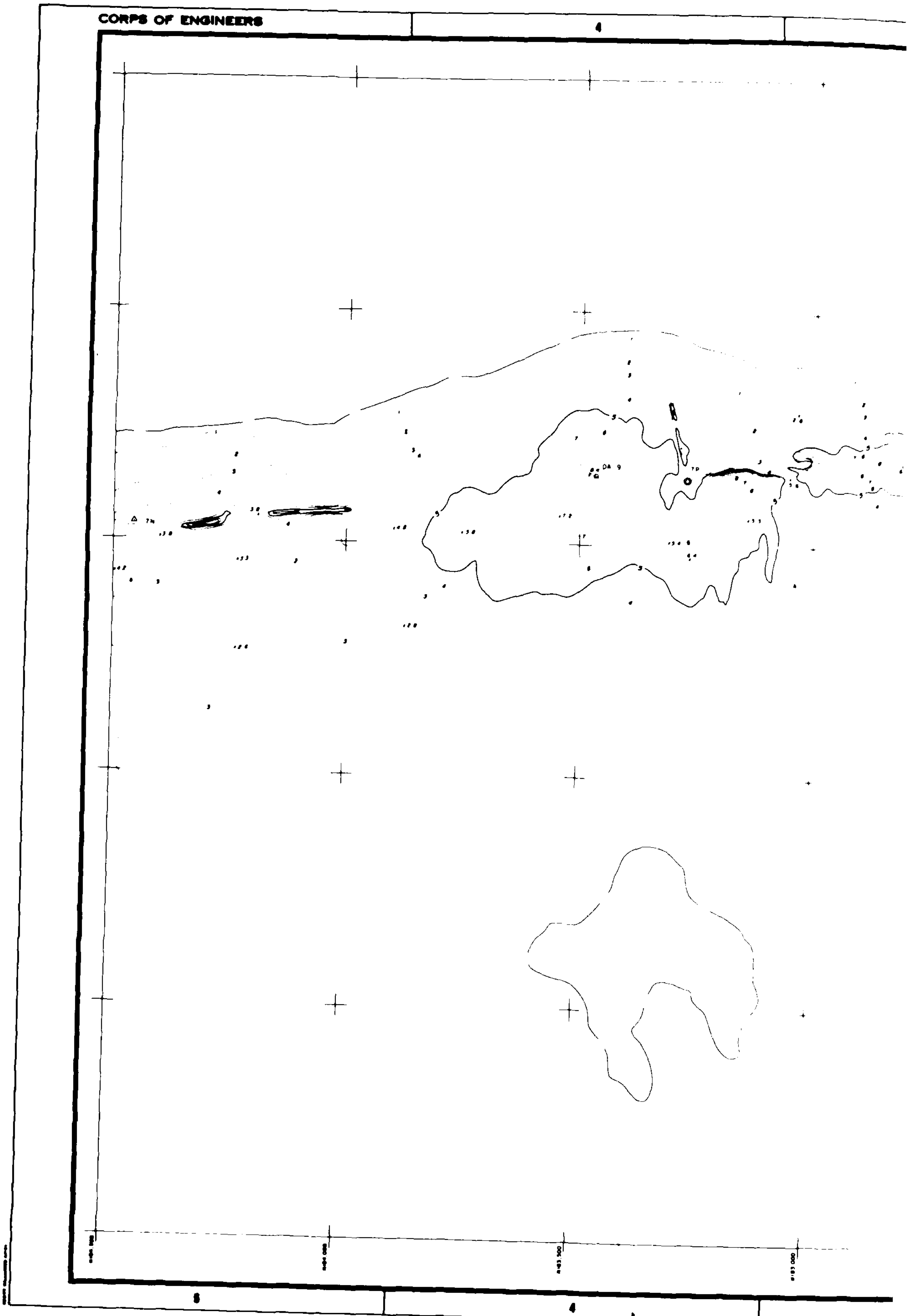

U. S.
REVISIONS
DESCRIPTION
DATE
KEY MAP
MUD
LEGEND
SPOT ELEVATION
INTERMEDIATE CONTOUR
EXAMPLE
Monument
9.53
10.00
N.G.V.D.
0.47
M.L.W.
MOBILE HARBOR, ALABAMA
GAILLARD
DISPOSAL ISLAND
Contour Map 2

Figure 13

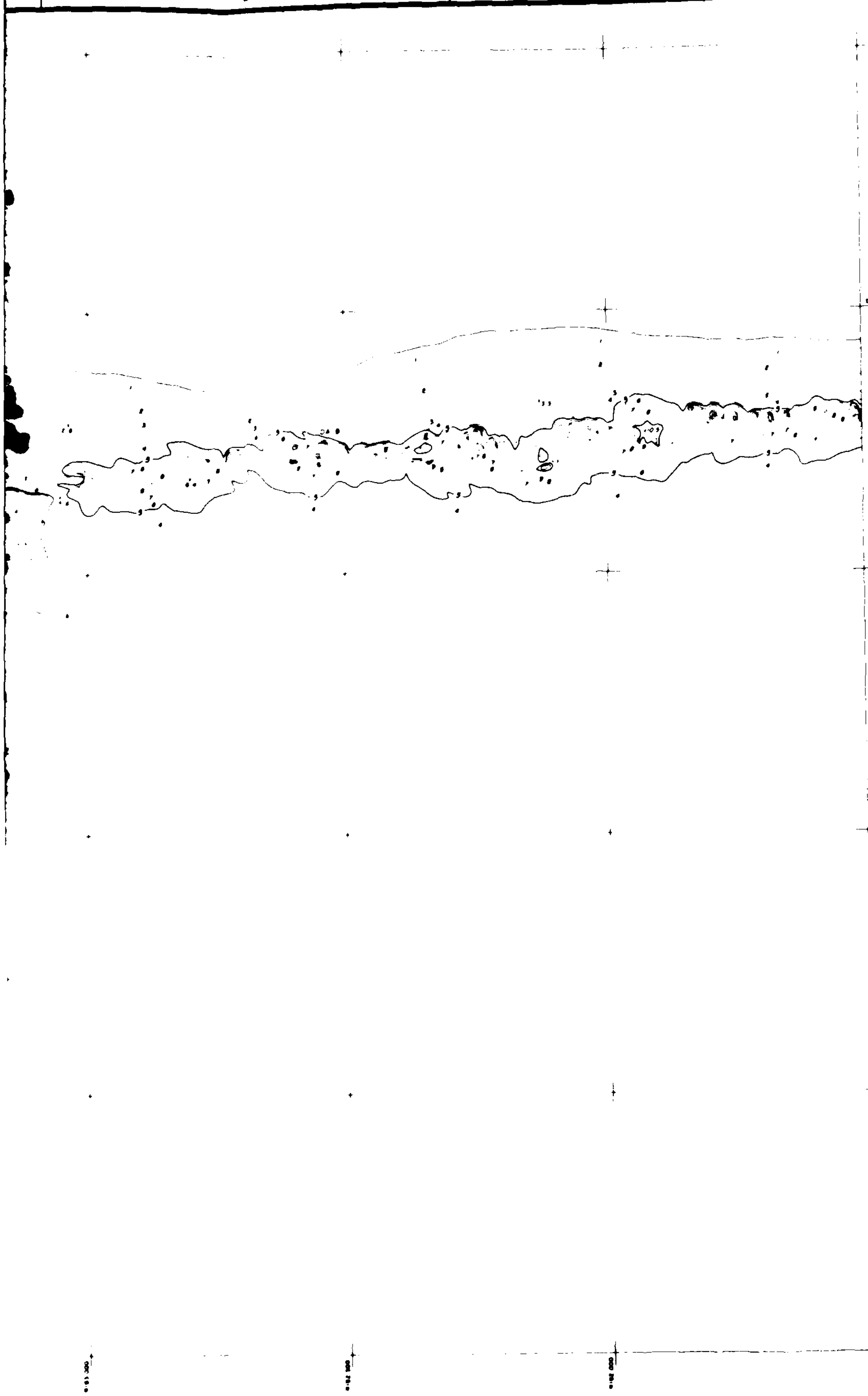


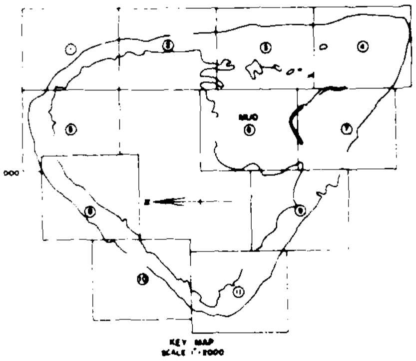
CORPS OF ENGINEERS
4
5
4

U. S. ARMY

REVISIONS

SYM	ZONE	DESCRIPTION	DATE	APPROVED

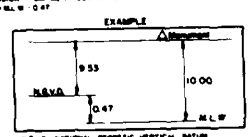




LEGEND

SPOT ELEVATION
INDEX CONTOUR
INTERMEDIATE CONTOUR
WATER'S EDGE

VERTICAL DATUM IS MEAN LOW WATER
CONTOUR INTERVAL IS 1 FOOT



SCALE IN FEET

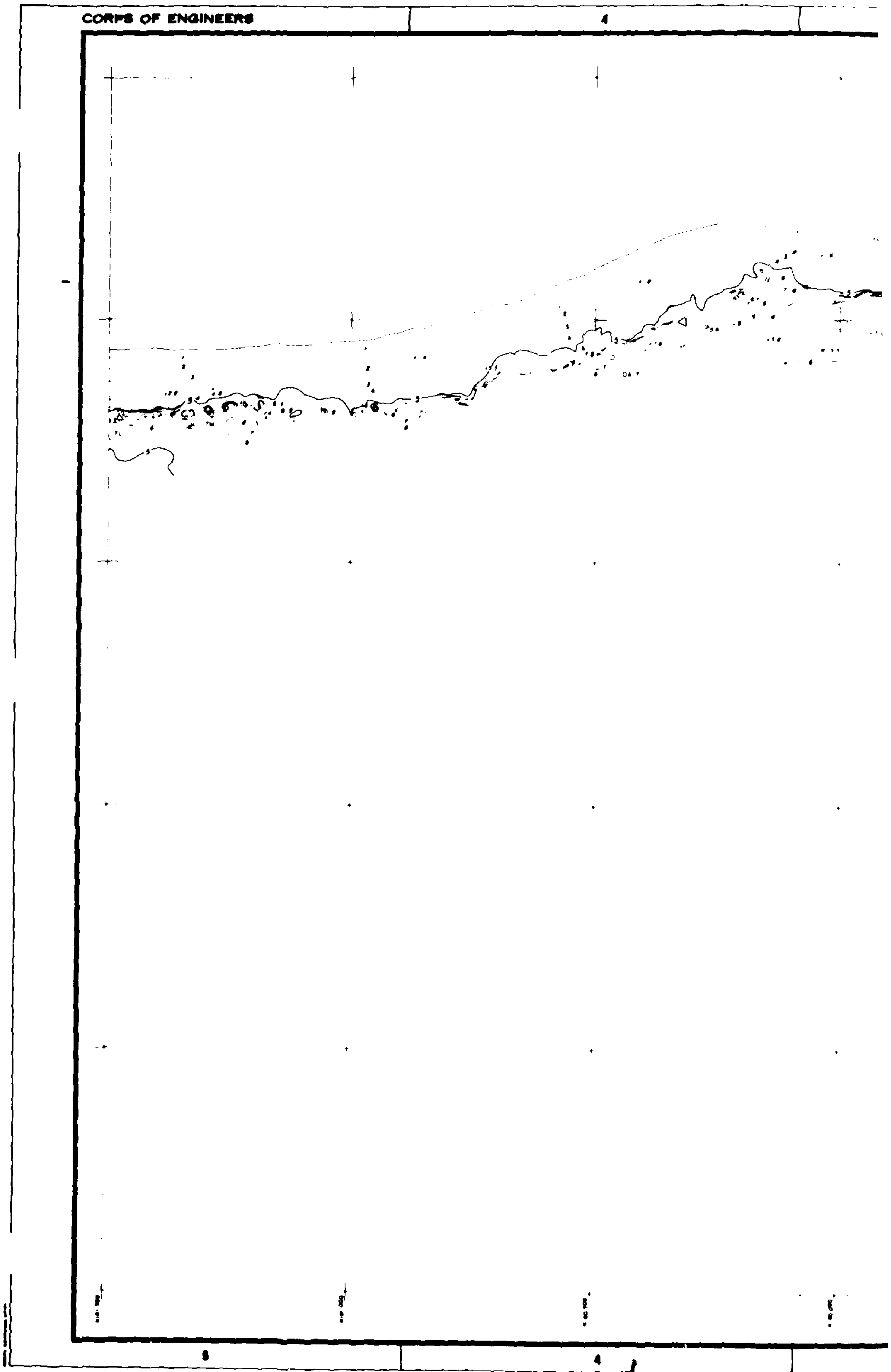
MOBILE HARBOR, ALABAMA

GAILLARD DISPOSAL ISLAND

CONTOURS-POST CONSTRUCTION

Contour Map 3

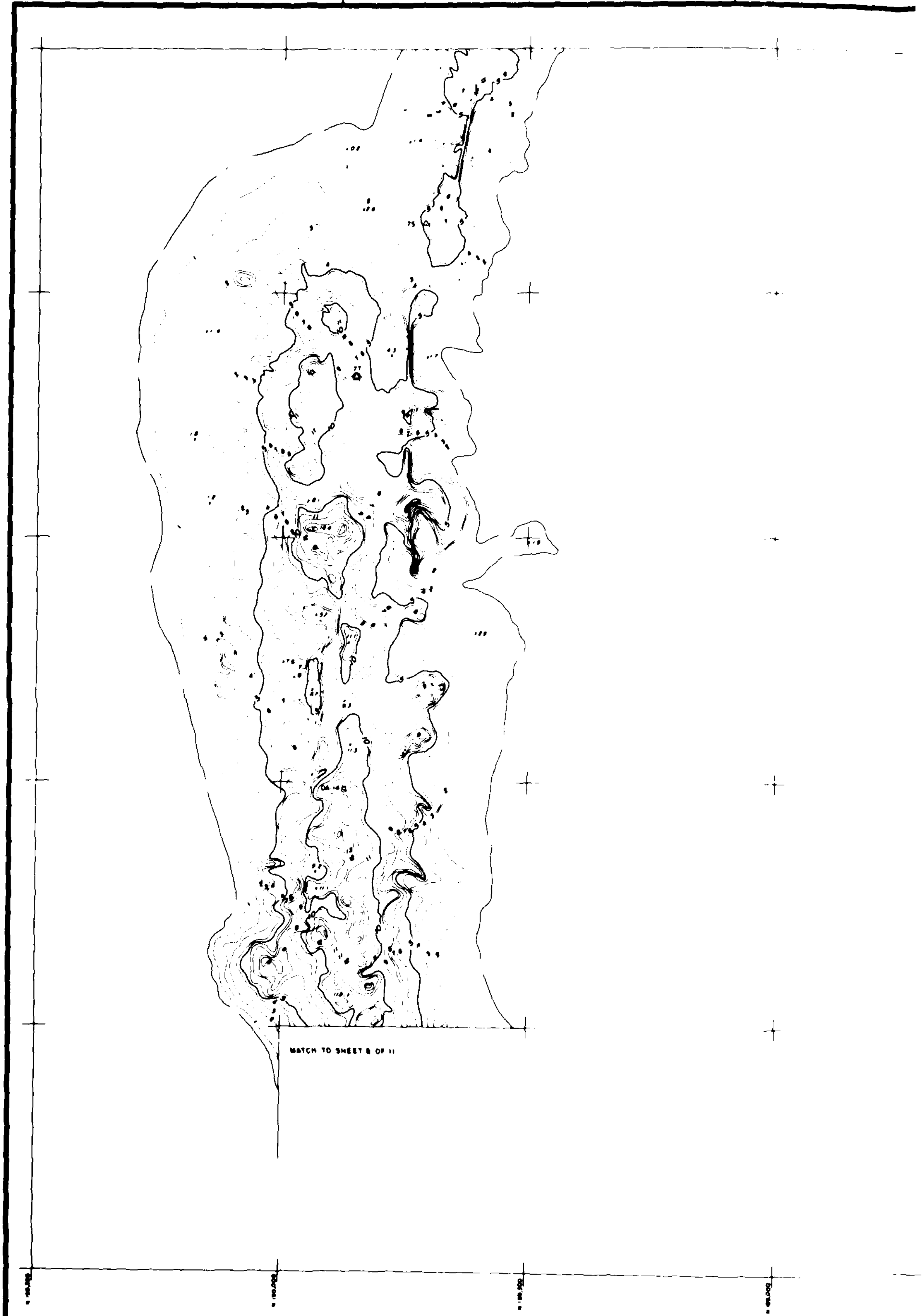
Figure E4


CORPS OF ENGINEERS
4
4

[illegible]

[illegible]

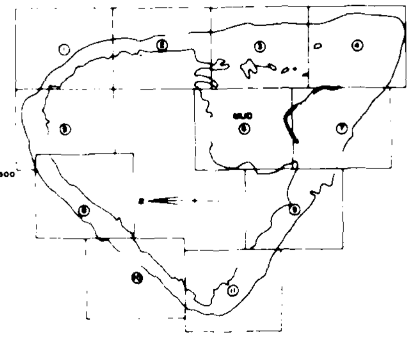
CORPS OF ENGINEERS



U. S. ARMY

REVISIONS

SYM	ZONE	DESCRIPTION	DATE	APPROVED



KEY MAP

LEGEND

SPOT ELEVATION

INTERMEDIATE CONTOUR

HORIZONTAL DATUM IS ALABAMA STATE PLANE COORDINATE SYSTEM, WEST ZONE

VERTICAL DATUM IS MEAN LOW WATER

CONTOUR INTERVAL IS 1 FOOT

EXAMPLE

9.53

10.00

0.47

SCALE IN FEET

MOBILE HARBOR, ALABAMA

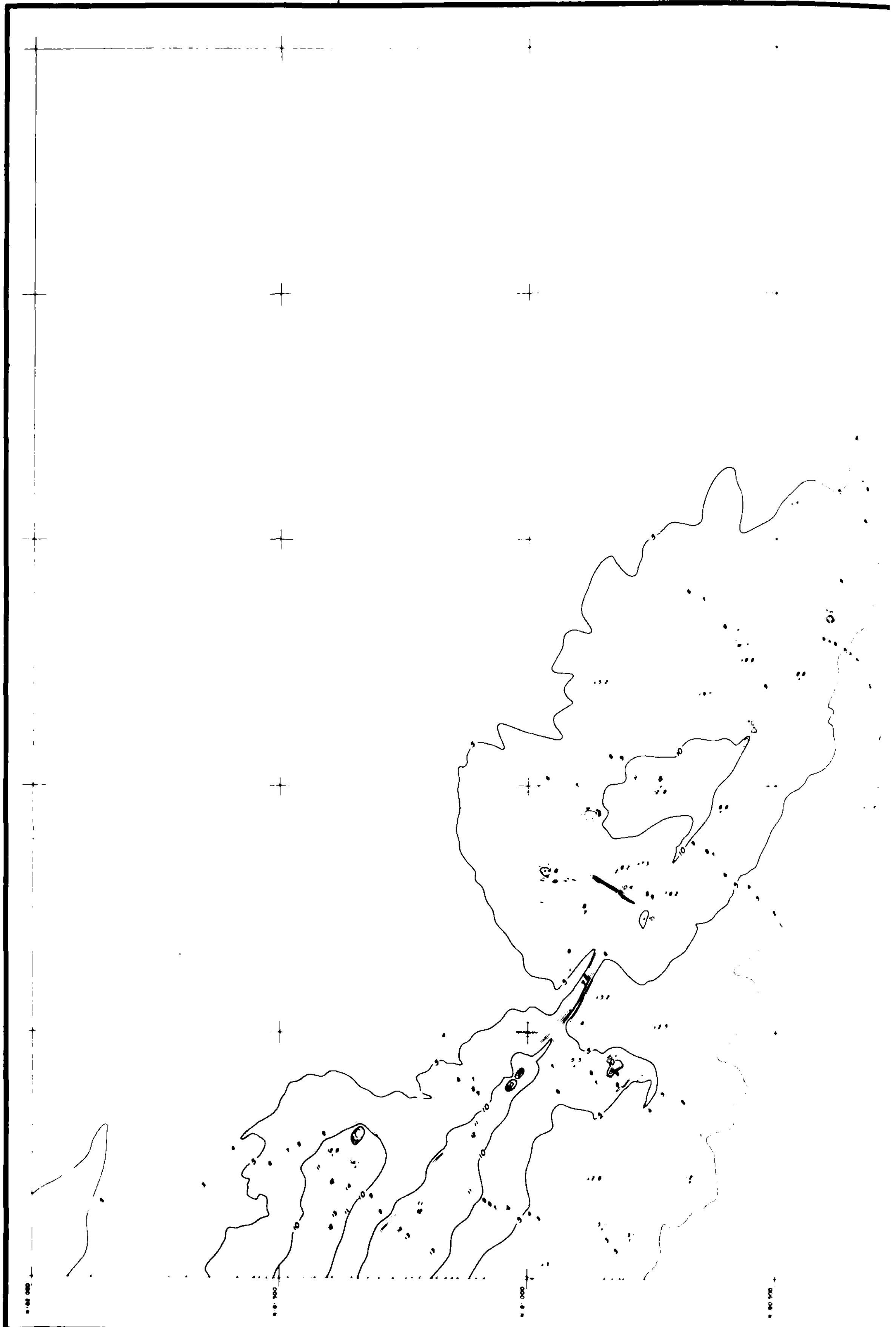
GAILLARD DISPOSAL ISLAND

CONTOURS-POST CONSTRUCTION

Contour Map 5

Figure E6

CORPS OF ENGINEERS | 4



5 | 4

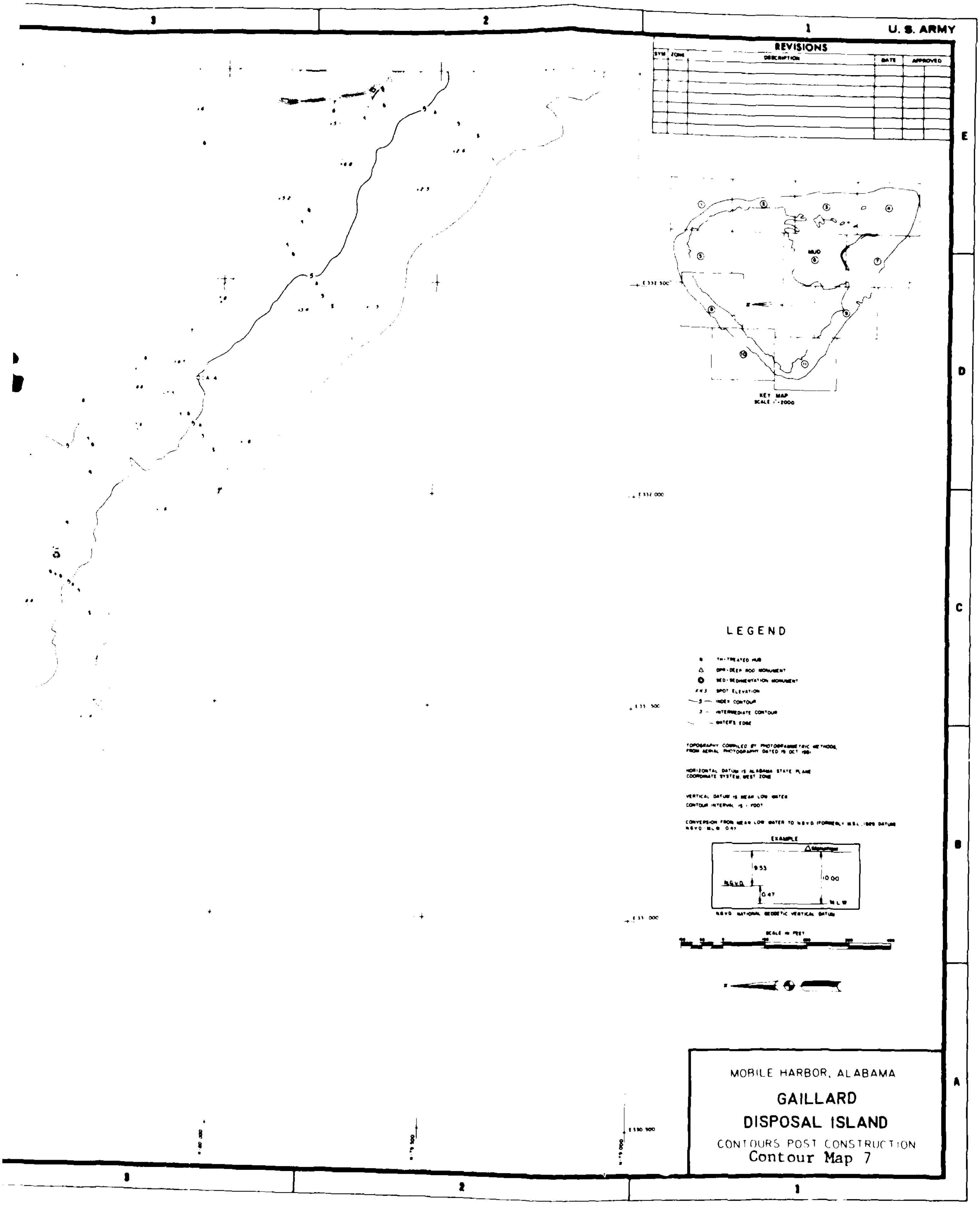
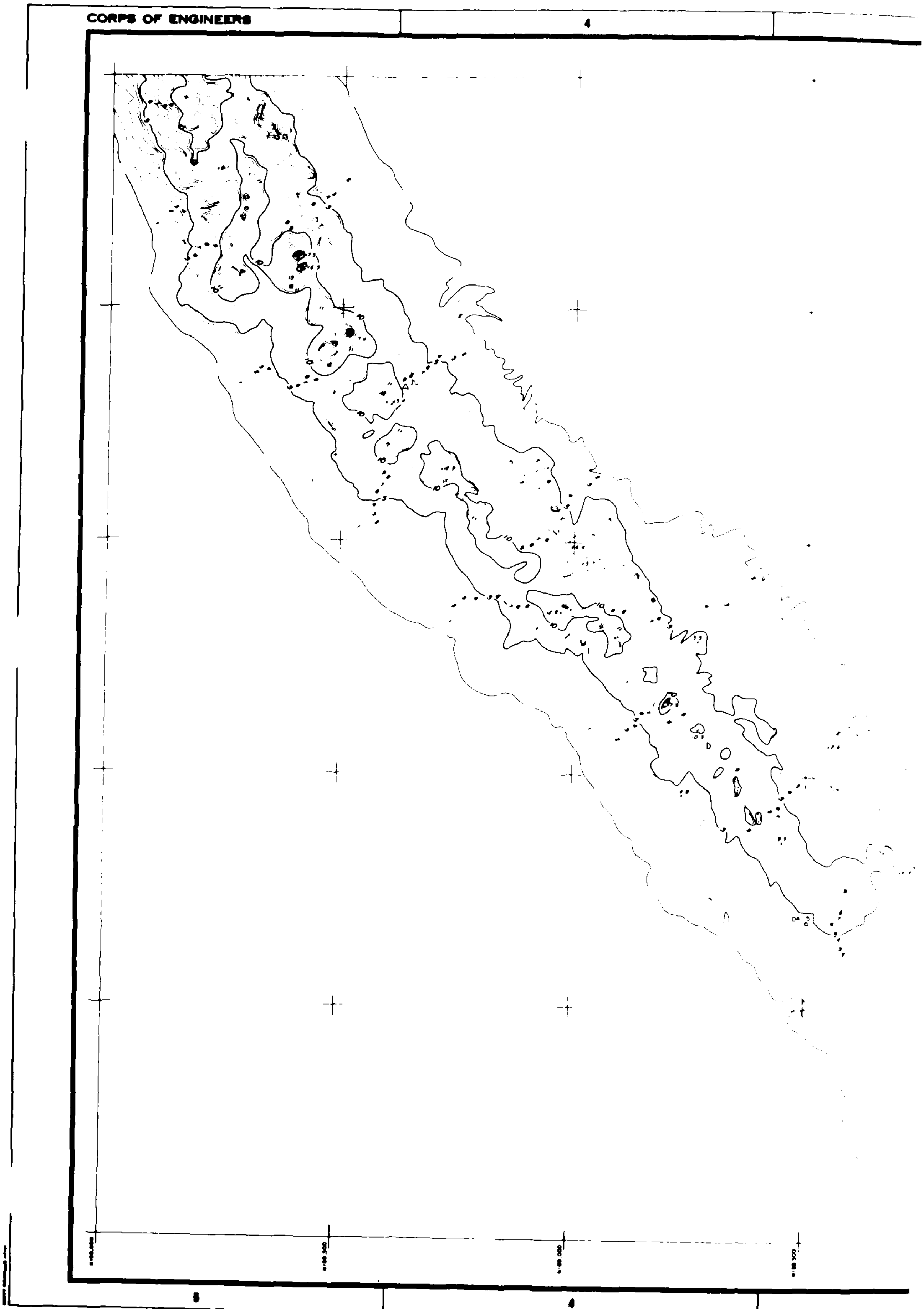
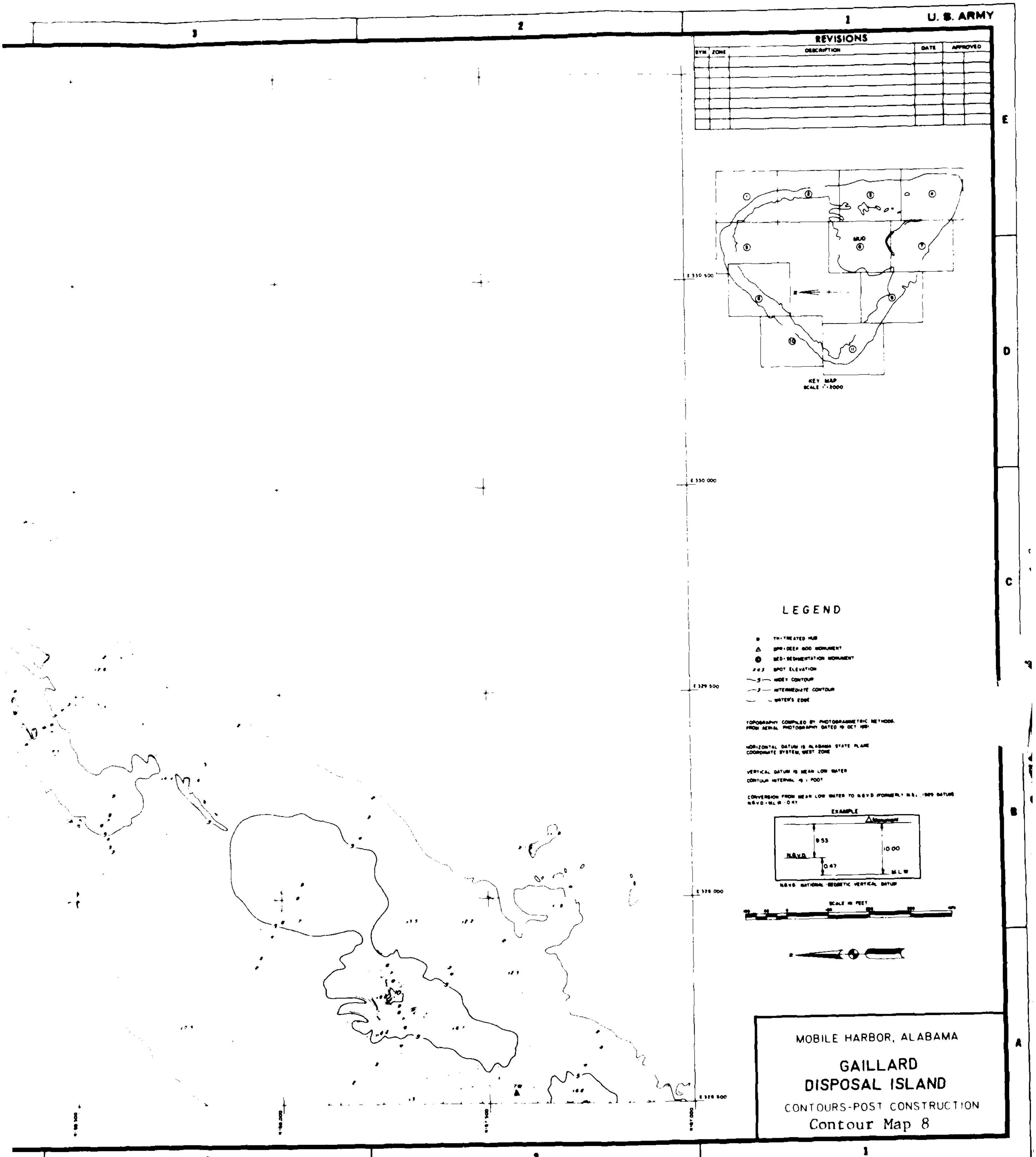

U. S. ARMY
REVISIONS
DESCRIPTION
DATE
APPROVED
KEY MAP
LEGEND
SPOT ELEVATION
INDEX CONTOUR
INTERMEDIATE CONTOUR
WATER'S EDGE
VERTICAL DATUM IS MEAN LOW WATER
EXAMPLE
9.53
10.00
0.47
MOBILE HARBOR, ALABAMA
GAILLARD
DISPOSAL ISLAND
CONTOURS POST CONSTRUCTION
Contour Map 7

Figure E7

2


CORPS OF ENGINEERS
4
5
4



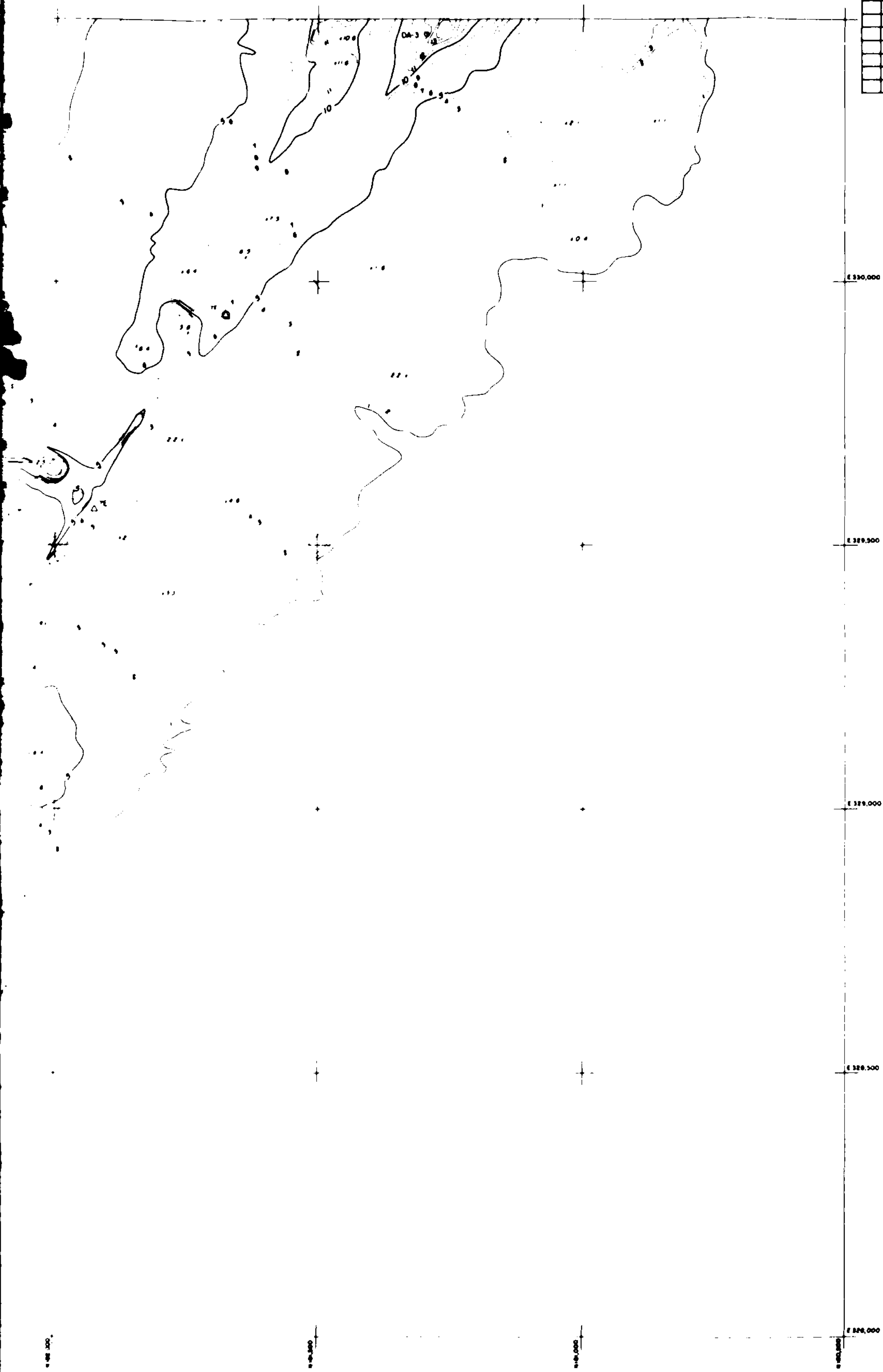
U. S. ARMY
REVISIONS
DESCRIPTION
DATE
APPROVED
KEY MAP
MUD
LEGEND
SPOT ELEVATION
INDEX CONTOUR
INTERMEDIATE CONTOUR
WATER'S EDGE
VERTICAL DATUM IS MEAN LOW WATER
CONTOUR INTERVAL IS 1 FOOT
EXAMPLE
9.53
10.00
N.G.V.D.
0.47
M.L.W.
SCALE IN FEET
MOBILE HARBOR, ALABAMA
GAILLARD
DISPOSAL ISLAND
CONTOURS-POST CONSTRUCTION
Contour Map 8

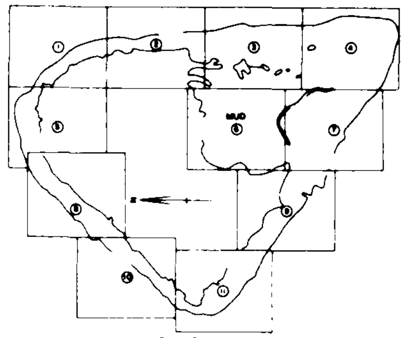
Figure E8


4
3
4

U. S. ARMY

REVISIONS				
SYM	ZONE	DESCRIPTION	DATE	APPROVED





KEY MAP
SCALE 1" : 2000

LEGEND

- TH - TREATED HUB
- DRM - DEEP ROD MONUMENT
- SED - SEDIMENTATION MONUMENT
- SPOT ELEVATION
- INDEX CONTOUR
- INTERMEDIATE CONTOUR
- WATER'S EDGE

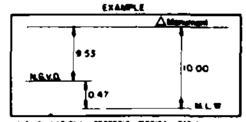
TOPOGRAPHY COMPILED BY PHOTOGRAMMETRIC METHODS FROM AERIAL PHOTOGRAPHY DATED 19 OCT 1981

HORIZONTAL DATUM IS ALABAMA STATE PLANE COORDINATE SYSTEM, WEST ZONE

VERTICAL DATUM IS MEAN LOW WATER
CONTOUR INTERVAL IS 1 FOOT

CONVERSION FROM MEAN LOW WATER TO N.G.V.D. (FORMERLY M.S.L. 1929 DATUM)
N.G.V.D. = M.L.W. - 0.47

EXAMPLE



N.G.V.D. NATIONAL GEODETIC VERTICAL DATUM

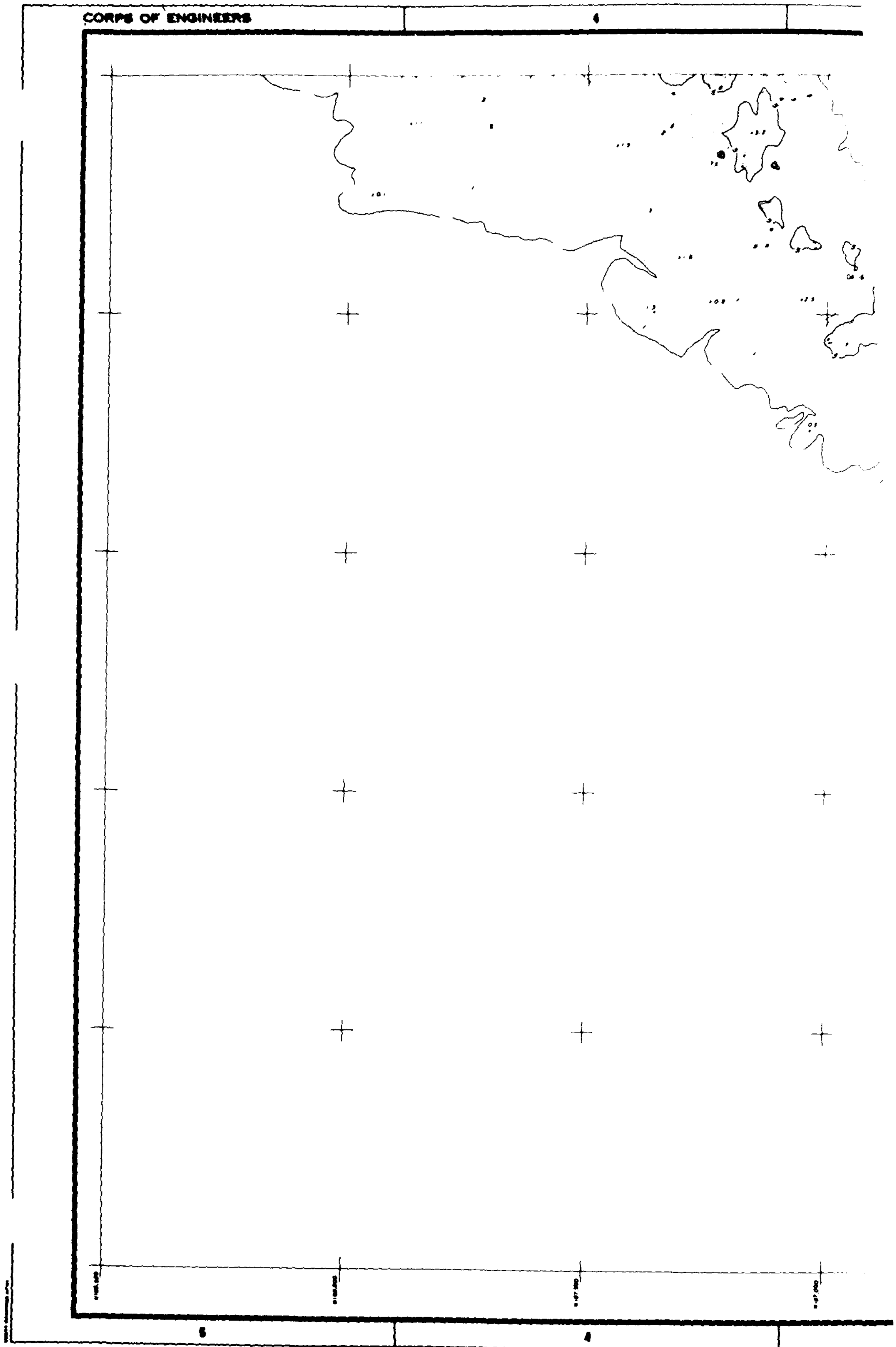
SCALE IN FEET

MOBILE HARBOR, ALABAMA

GAILLARD DISPOSAL ISLAND

CONTOURS-POST CONSTRUCTION
Contour Map 9

Figure E9


CORPS OF ENGINEERS
4
5
4

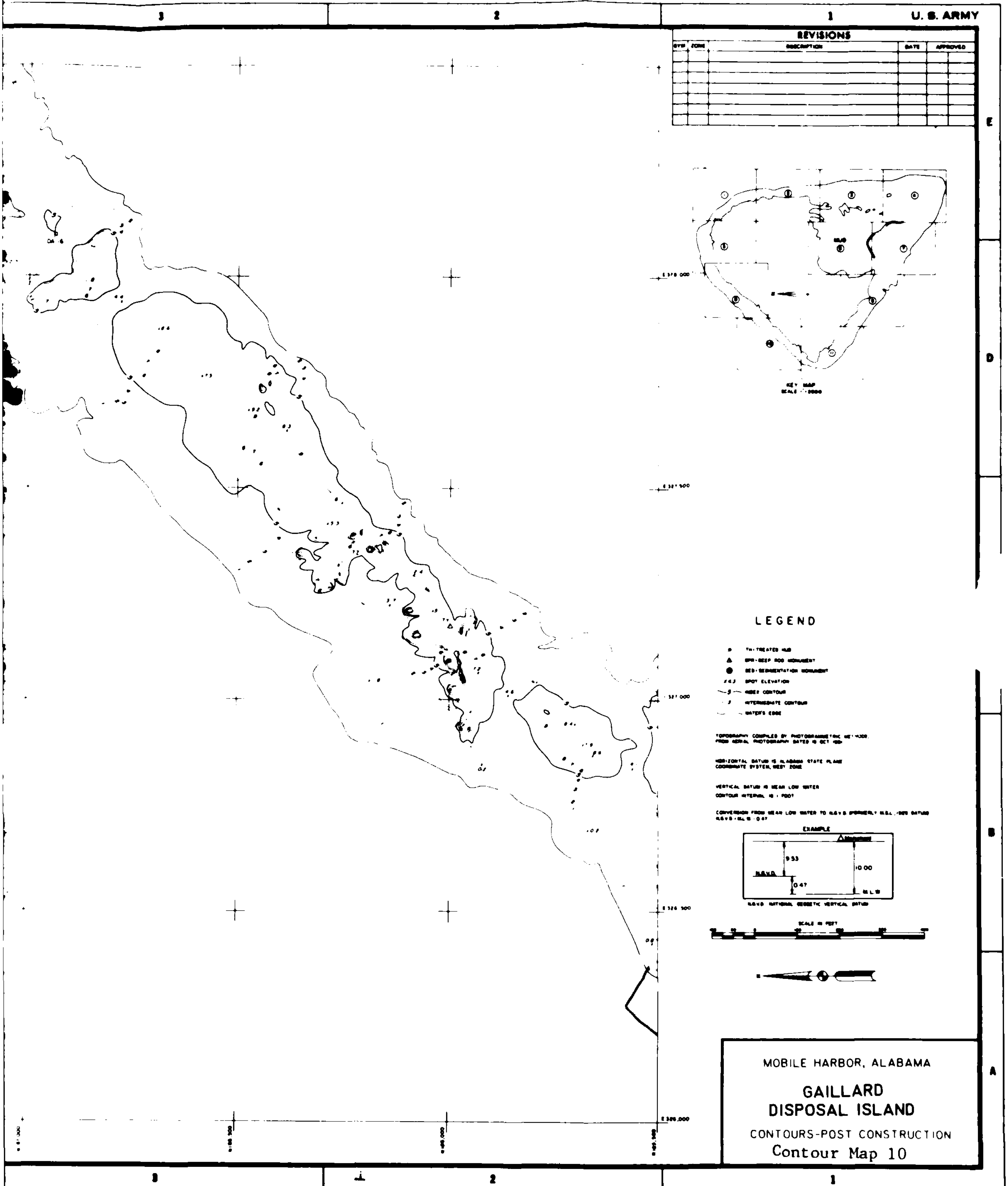
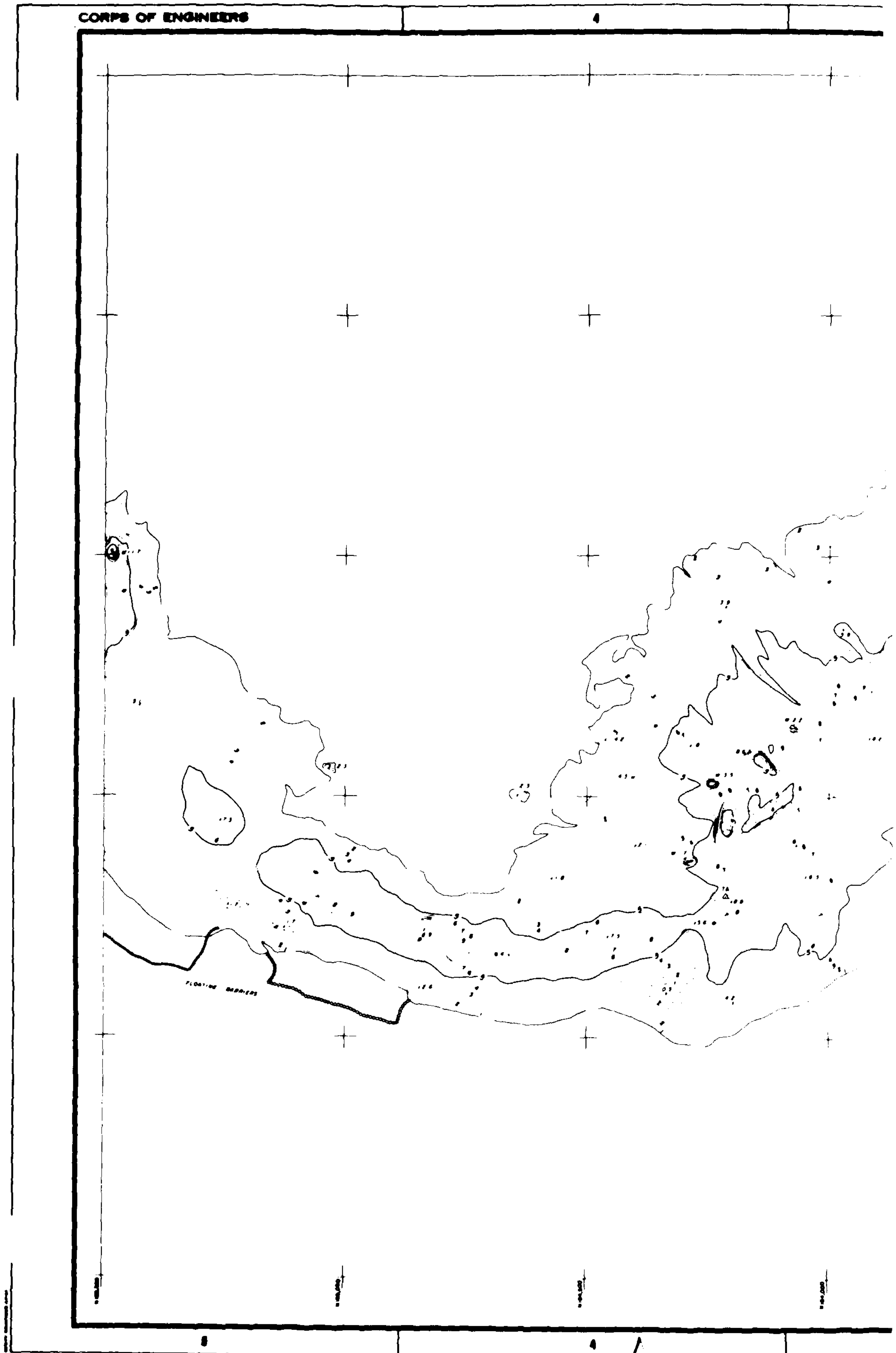

U. S. ARMY
REVISIONS
LEGEND
EXAMPLE
MOBILE HARBOR, ALABAMA
GAILLARD
DISPOSAL ISLAND
CONTOURS-POST CONSTRUCTION
Contour Map 10

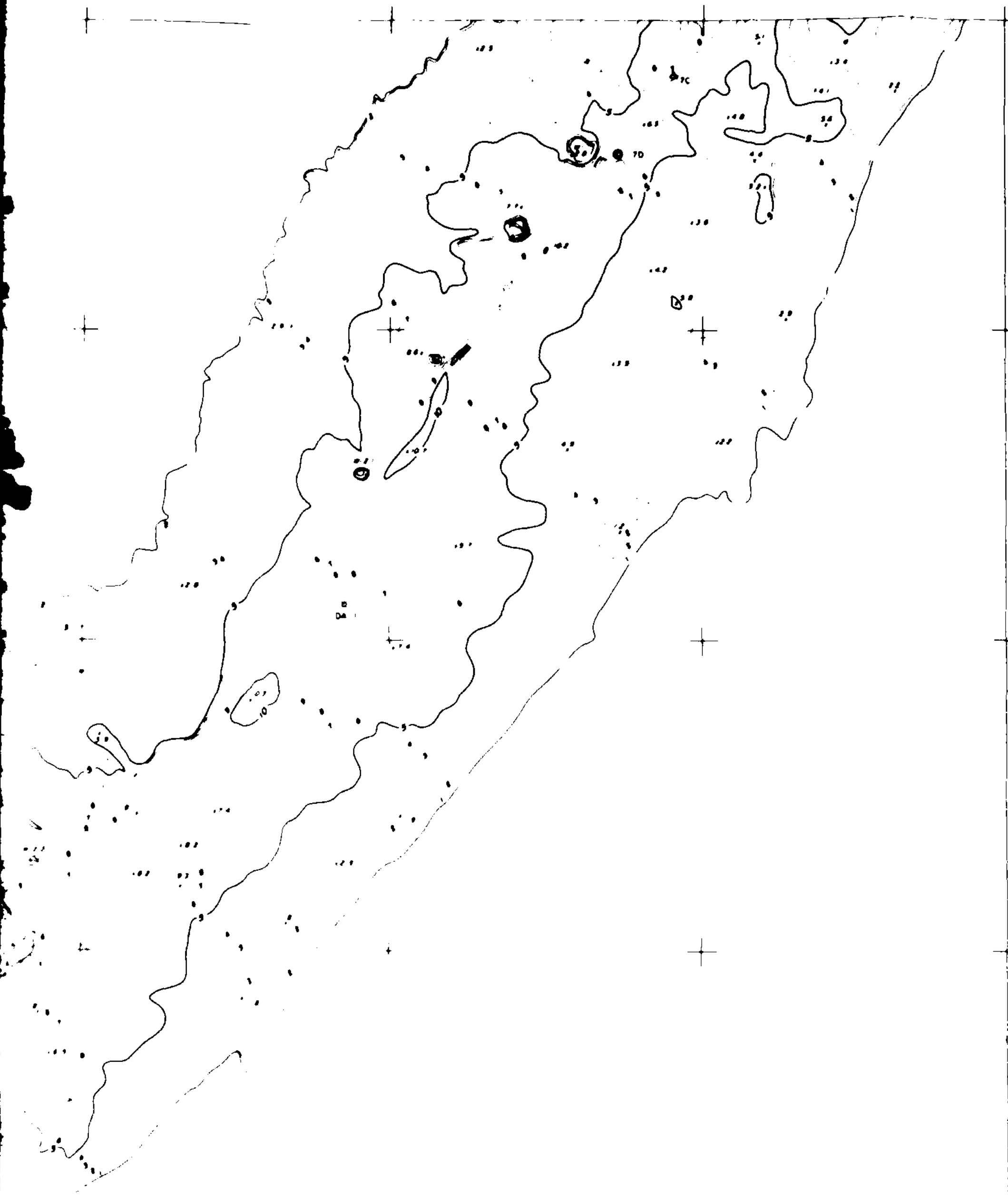
Figure E10

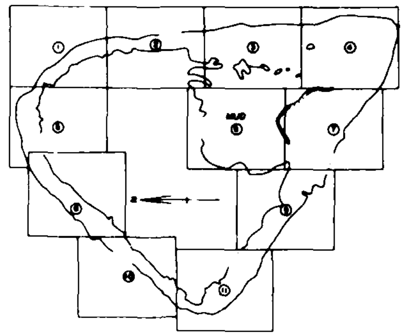

CORPS OF ENGINEERS
4
FLOATING BARRIERS
5
4

U. S. ARMY

REVISIONS

SYM	ZONE	DESCRIPTION	DATE	APPROVED





KEY MAP
SCALE 1":2000'

LEGEND

TH - TREATED HUB
DRM - DEEP ROD MONUMENT
SED - SEDIMENTATION MONUMENT
SPOT ELEVATION
INDEX CONTOUR
INTERMEDIATE CONTOUR
WATER'S EDGE

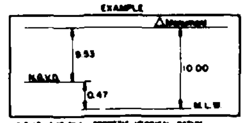
TOPOGRAPHY COMPILED BY PHOTOGRAMMETRIC METHODS FROM AERIAL PHOTOGRAPHY DATED 19 OCT 1981

HORIZONTAL DATUM IS ALABAMA STATE PLANE COORDINATE SYSTEM, WEST ZONE

VERTICAL DATUM IS MEAN LOW WATER
CONTOUR INTERVAL IS 1 FOOT

CONVERSION FROM MEAN LOW WATER TO N.G.V.D. (FORMERLY M.S.L. 1929 DATUM)
N.G.V.D. = M.L.W. - 0.47

EXAMPLE



N.G.V.D. - NATIONAL GEODETIC VERTICAL DATUM

SCALE IN FEET

MOBILE HARBOR, ALABAMA

GAILLARD
DISPOSAL ISLAND

CONTOURS-POST CONSTRUCTION

Contour Map 11

Figure E11

APPENDIX F: GAILLARD DISPOSAL ISLAND SETTLEMENT DATA

1. This appendix includes chronological subsidence data from 12 settlement monuments which can be located in Figure F1 and plotted in Figures F2 through F13. These data were collected from settlement monuments installed after construction was completed.

TABLE OF CONTENTS

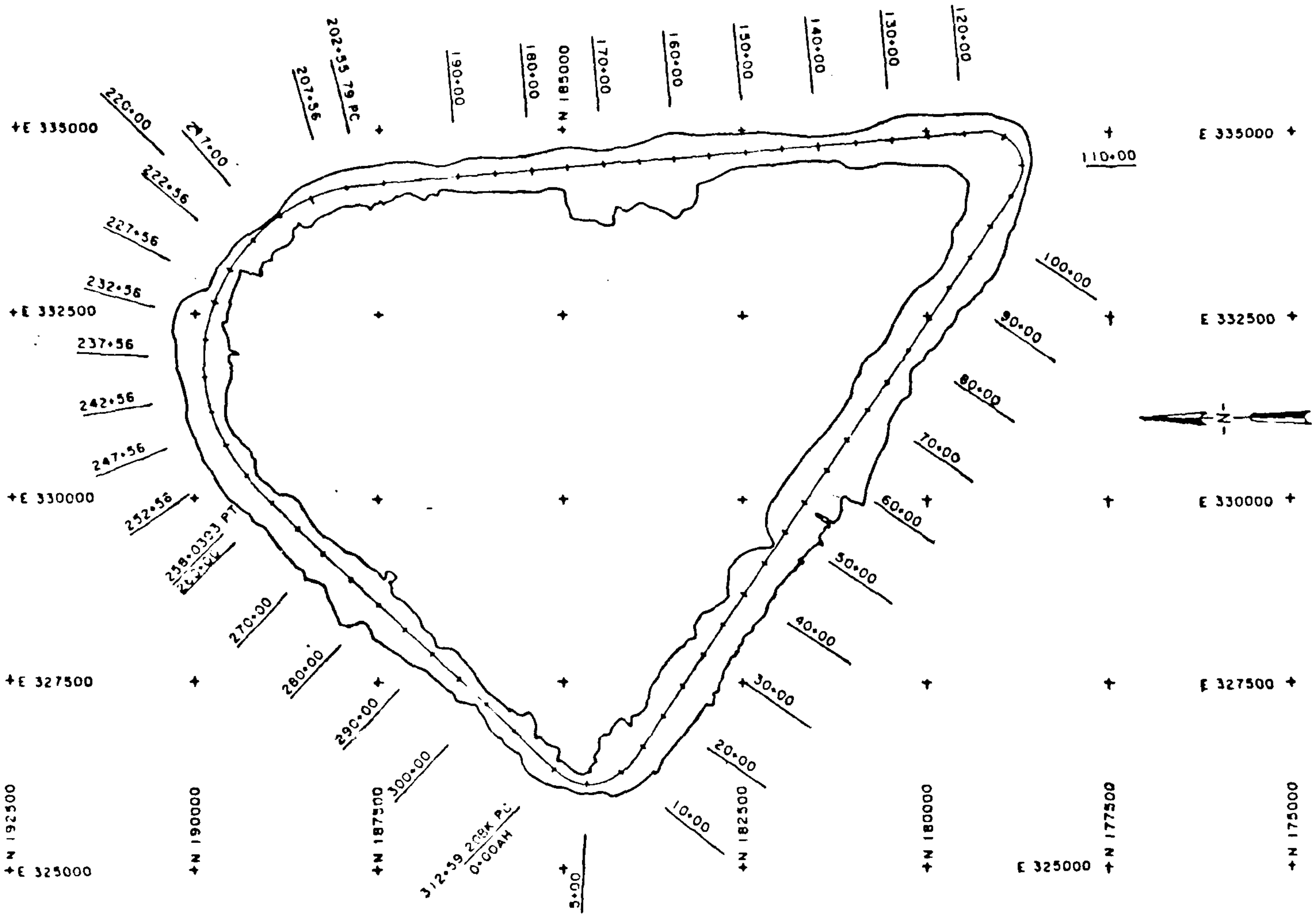
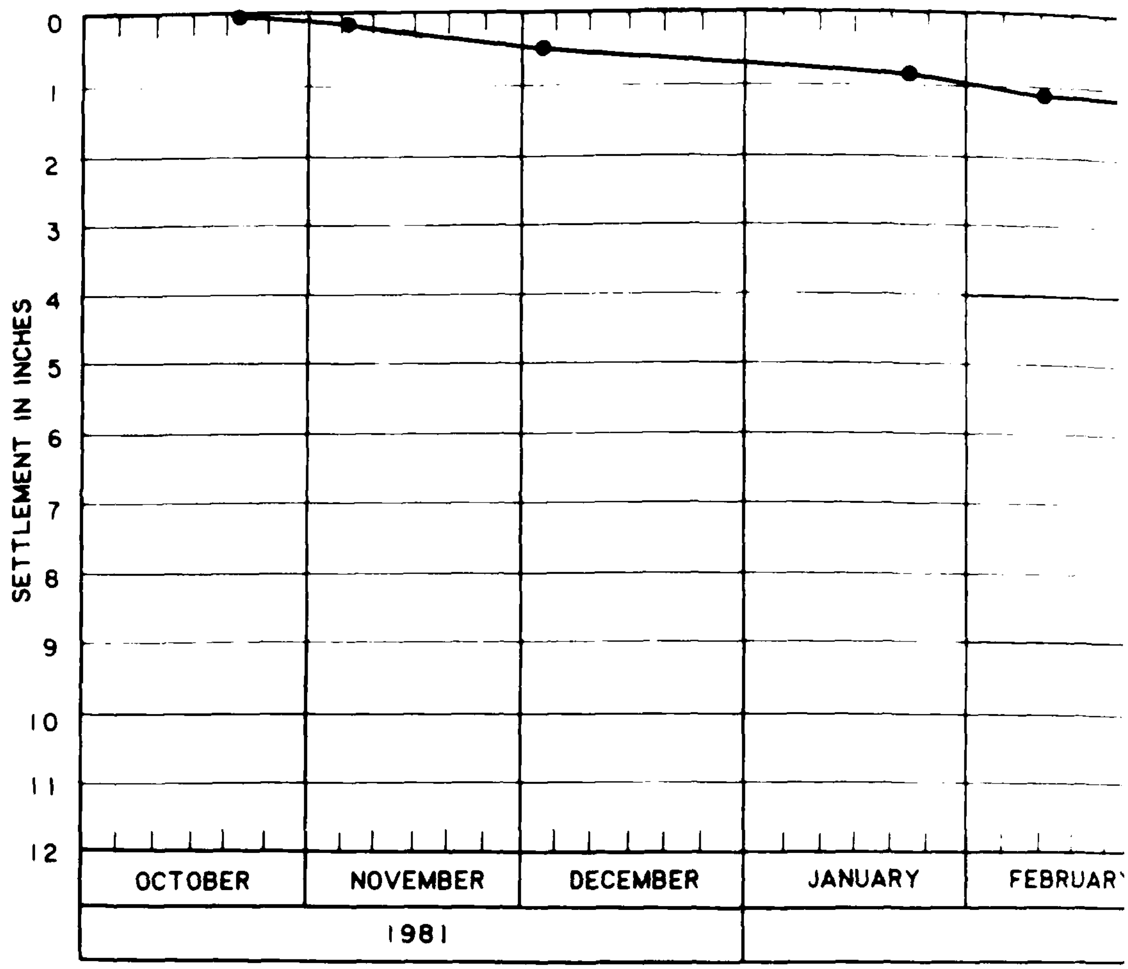
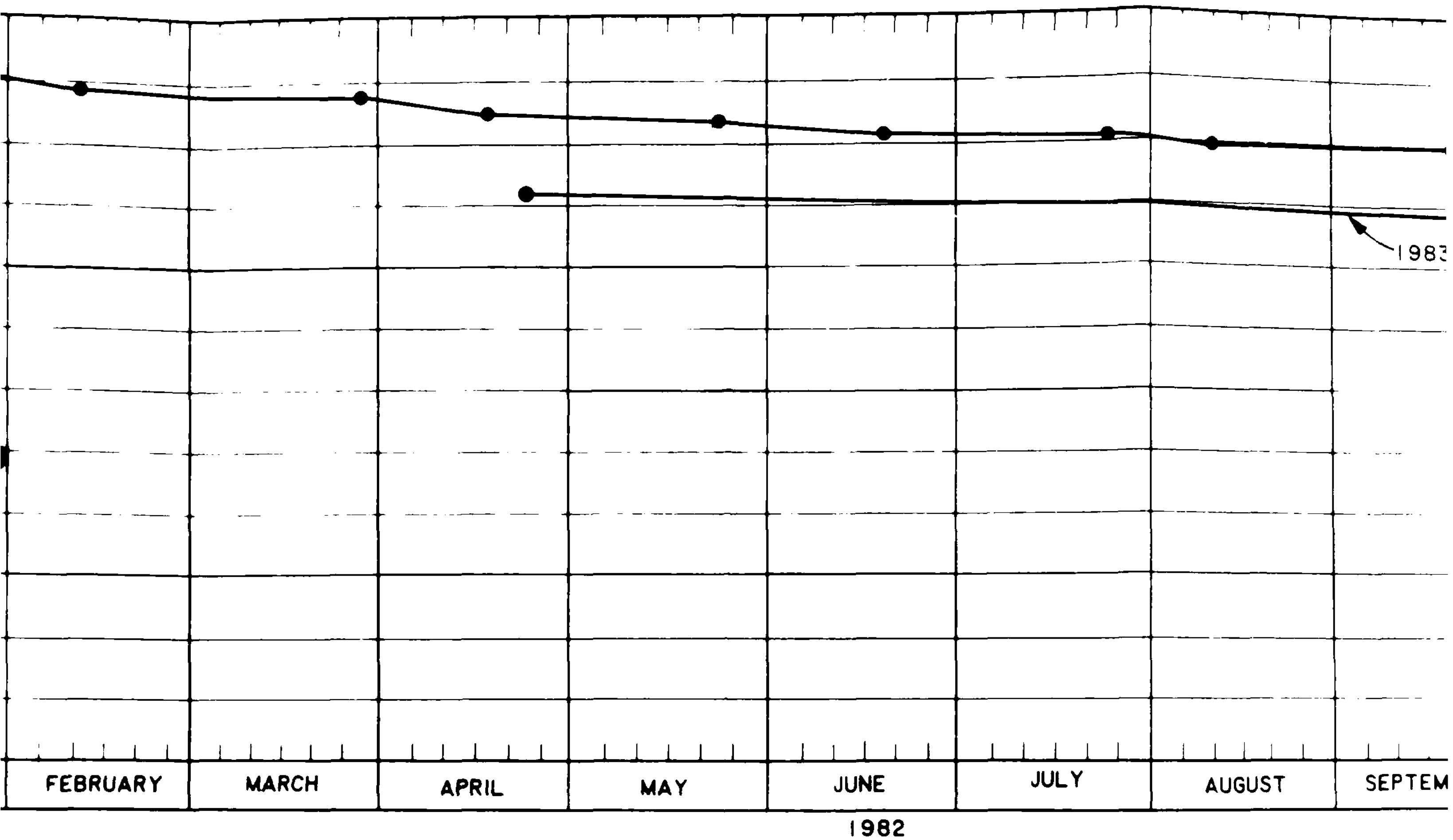


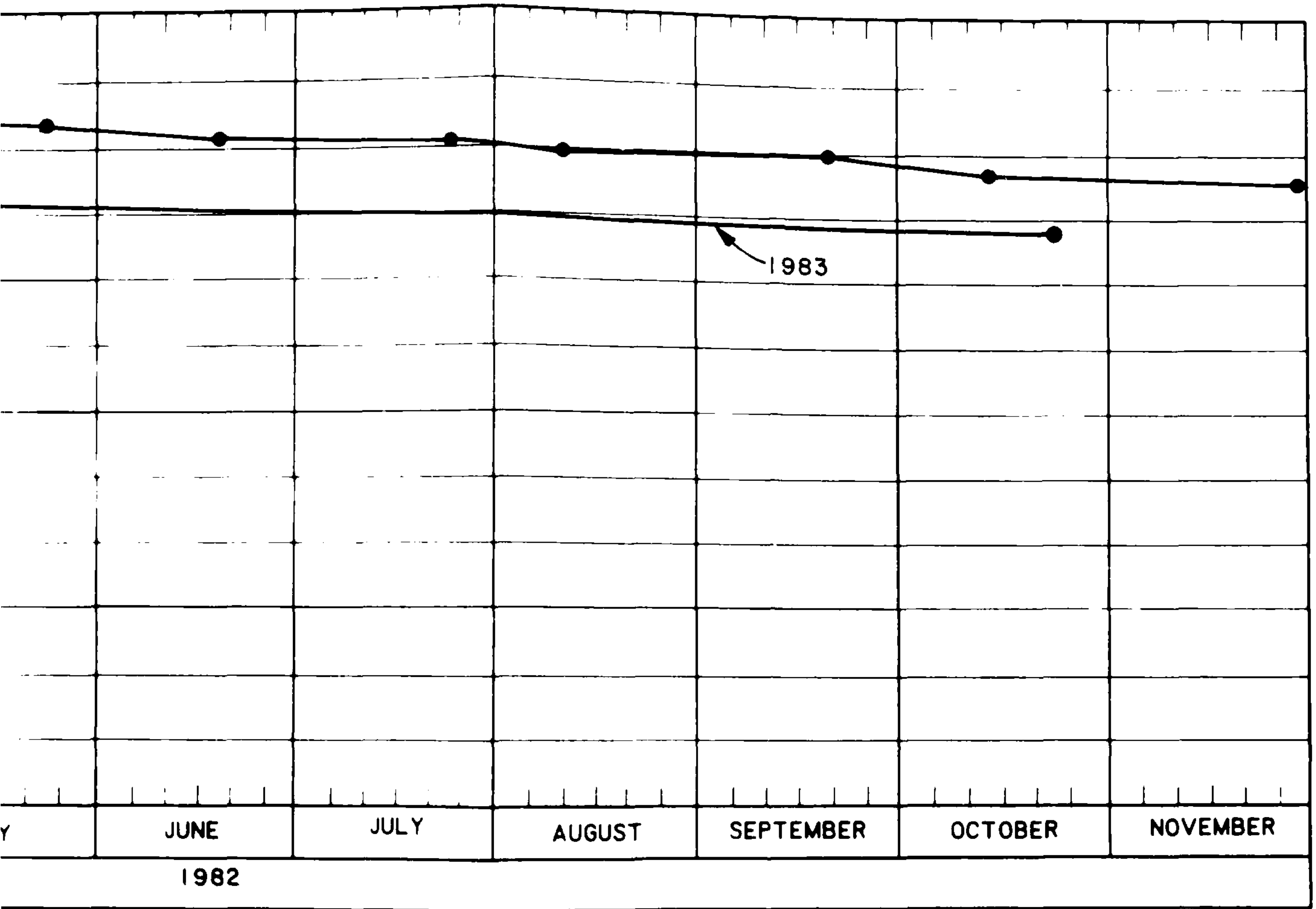
Figure F1. Location map for instrumentation for Figures F2 through F13



SETTLEMENT IN INCHES
0
1
2
3
4
5
6
7
8
9
10
11
12
OCTOBER
NOVEMBER
DECEMBER
JANUARY
FEBRUARY
1981



STATION 8+06.88 21A-7B



A-7B

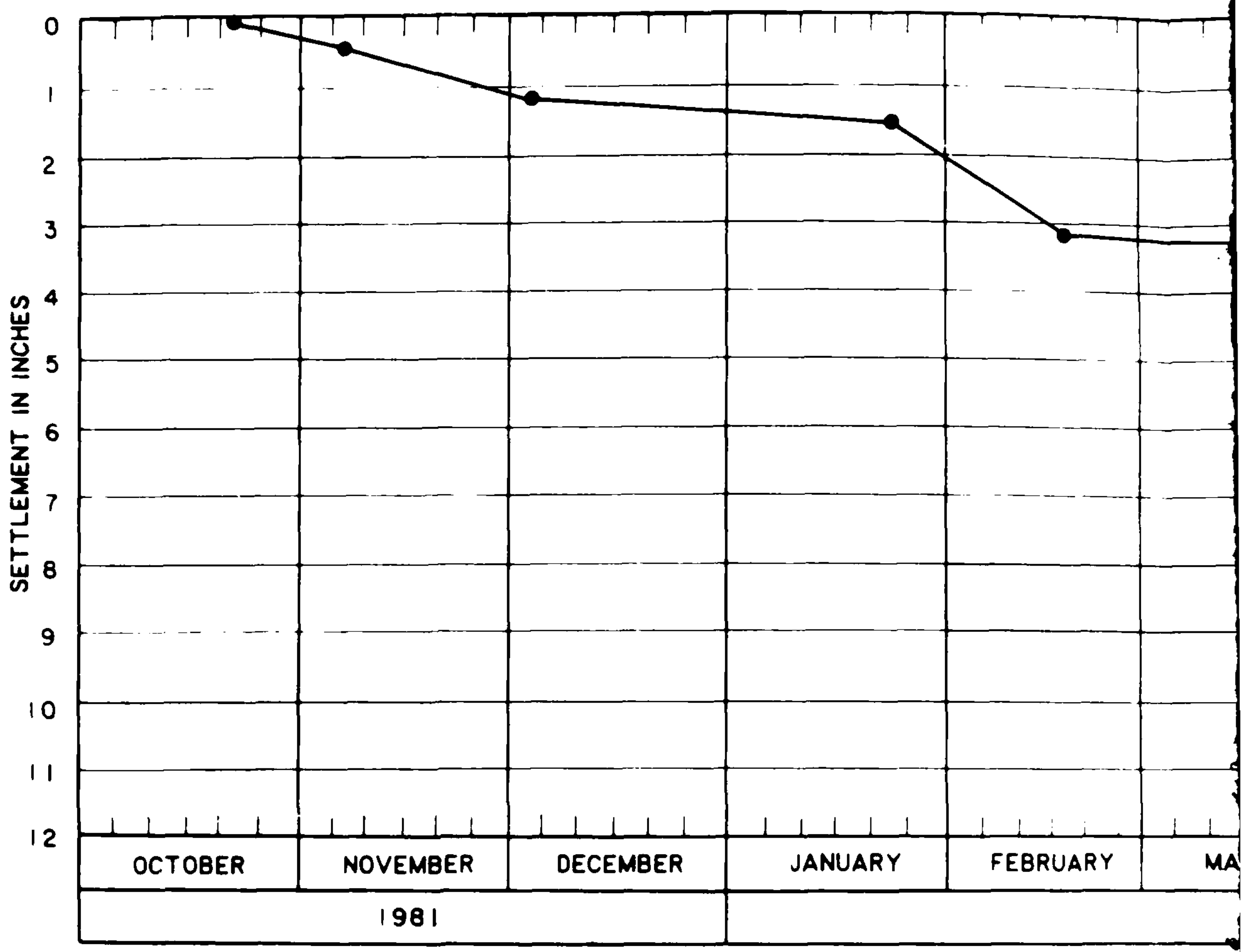
MOBILE HARBOR, ALABAMA

GAILLARD
DISPOSAL ISLAND

SETTLEMENT DATA

Figure F2

3



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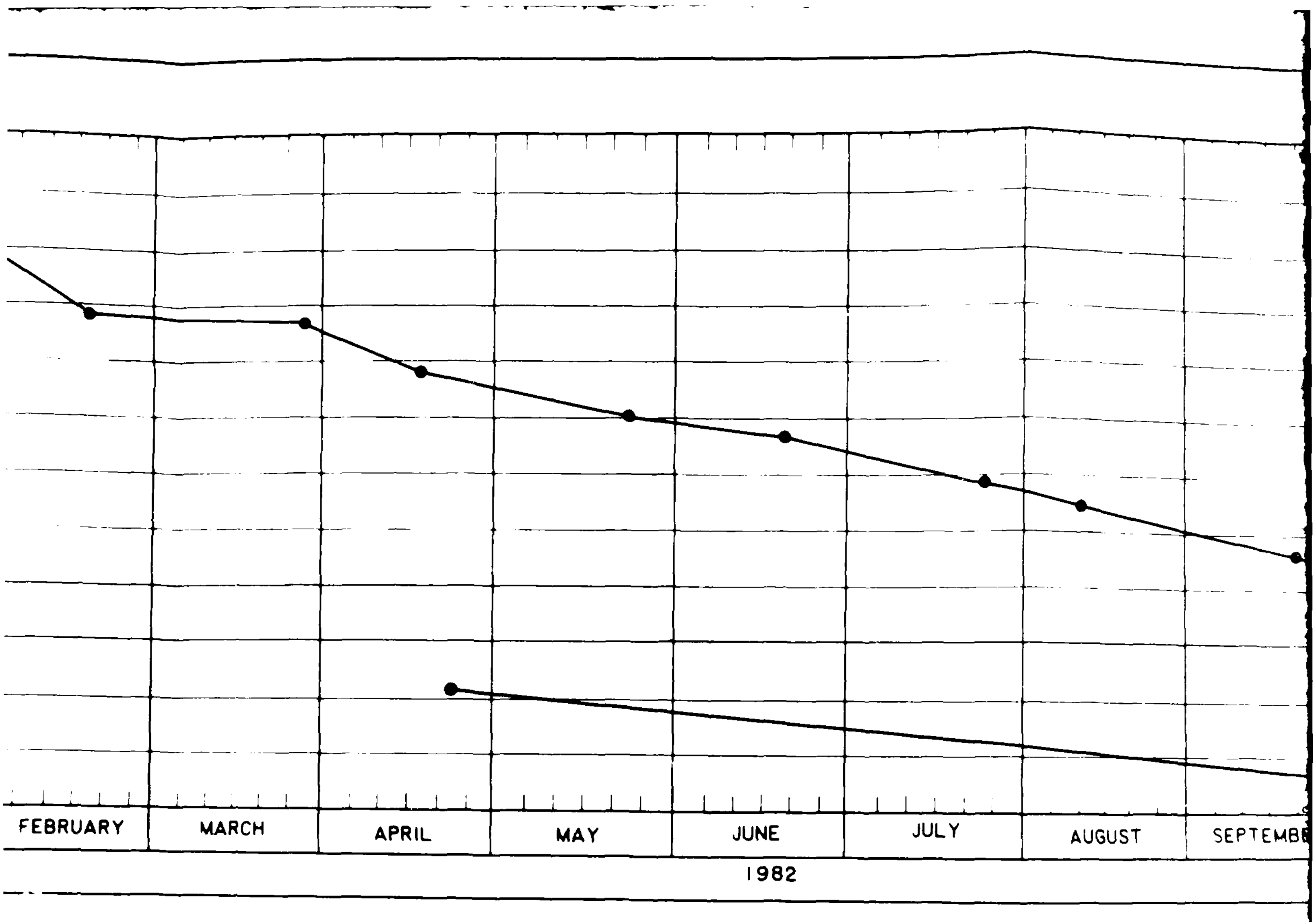

STATION 28+47.59 21A-7D

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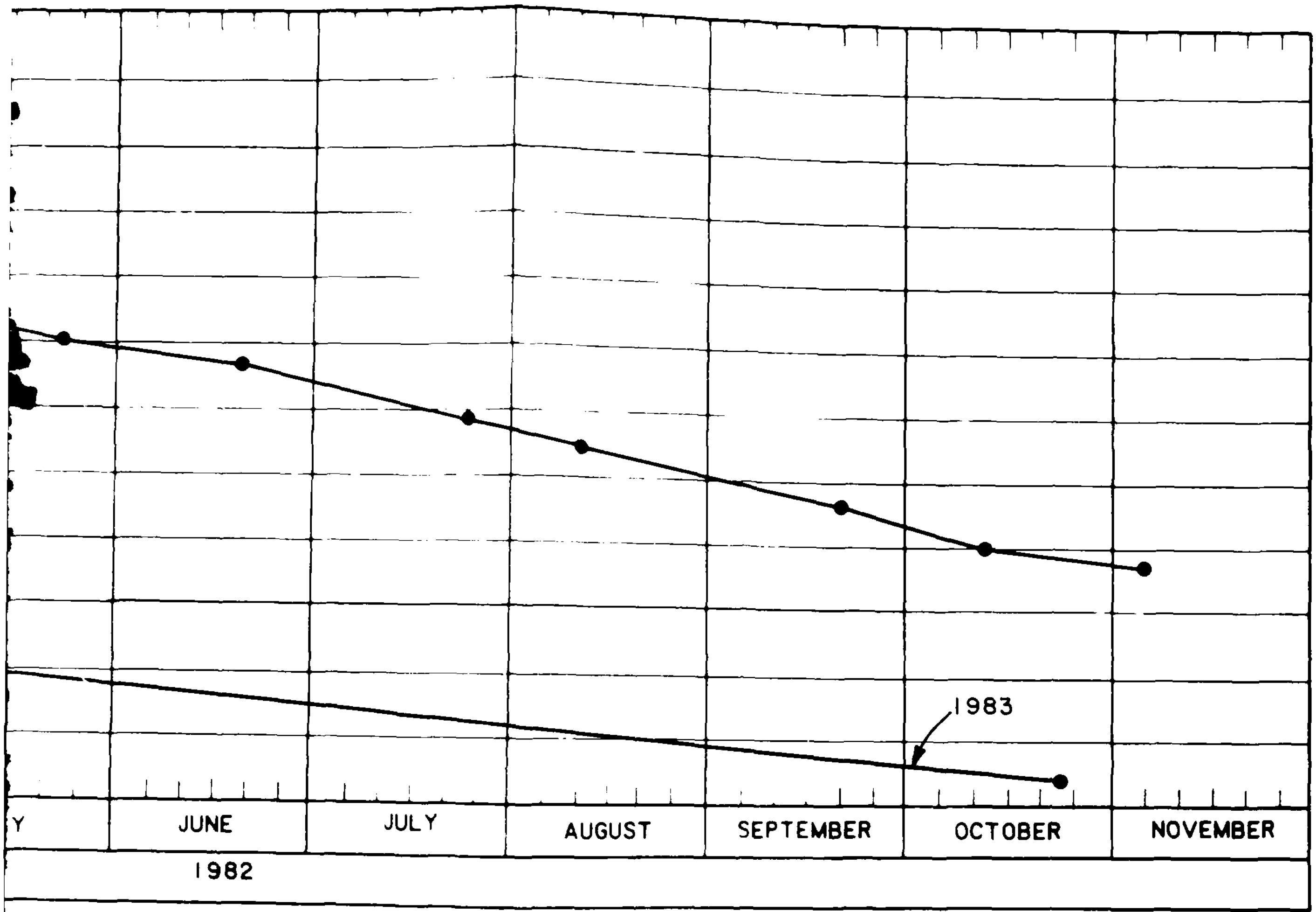


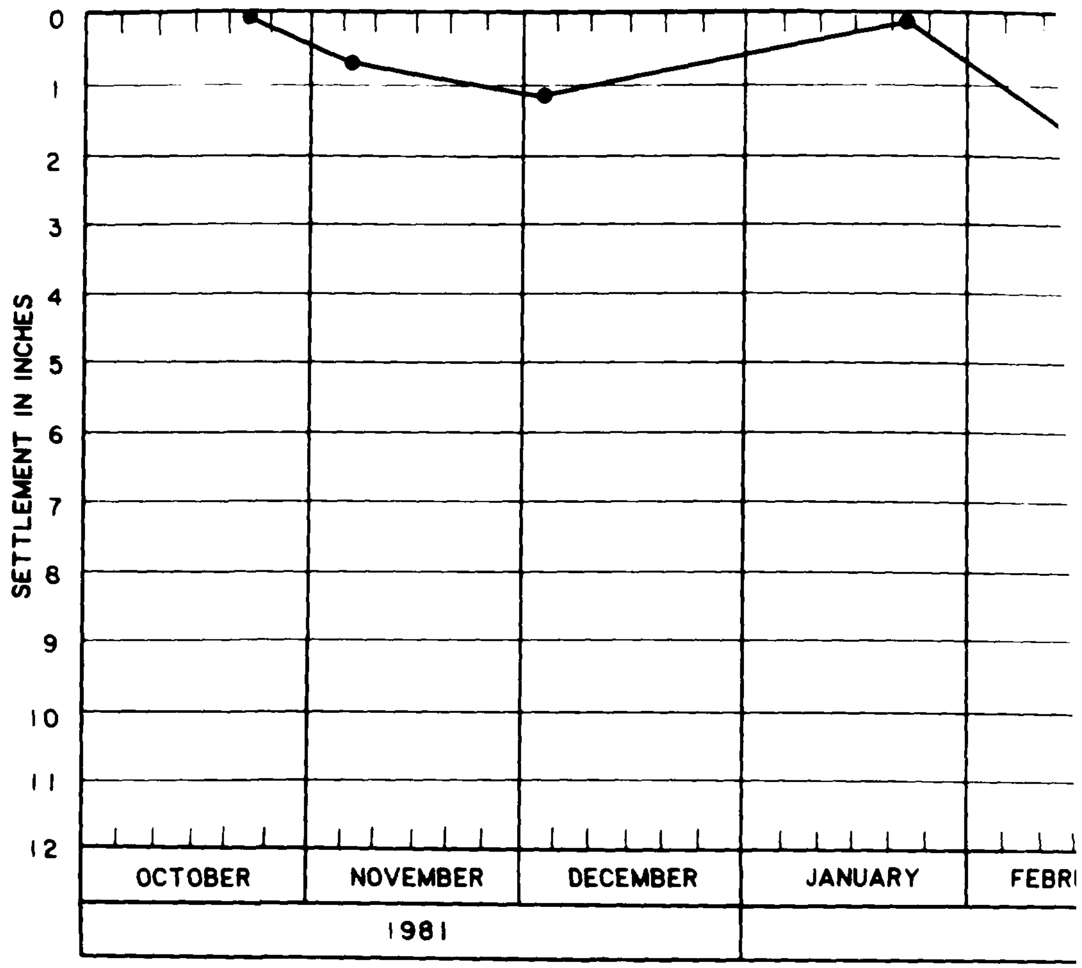
21A-7D

MOBILE HARBOR, ALABAMA

GAILLARD
DISPOSAL ISLAND

SETTLEMENT DATA

Figure F3



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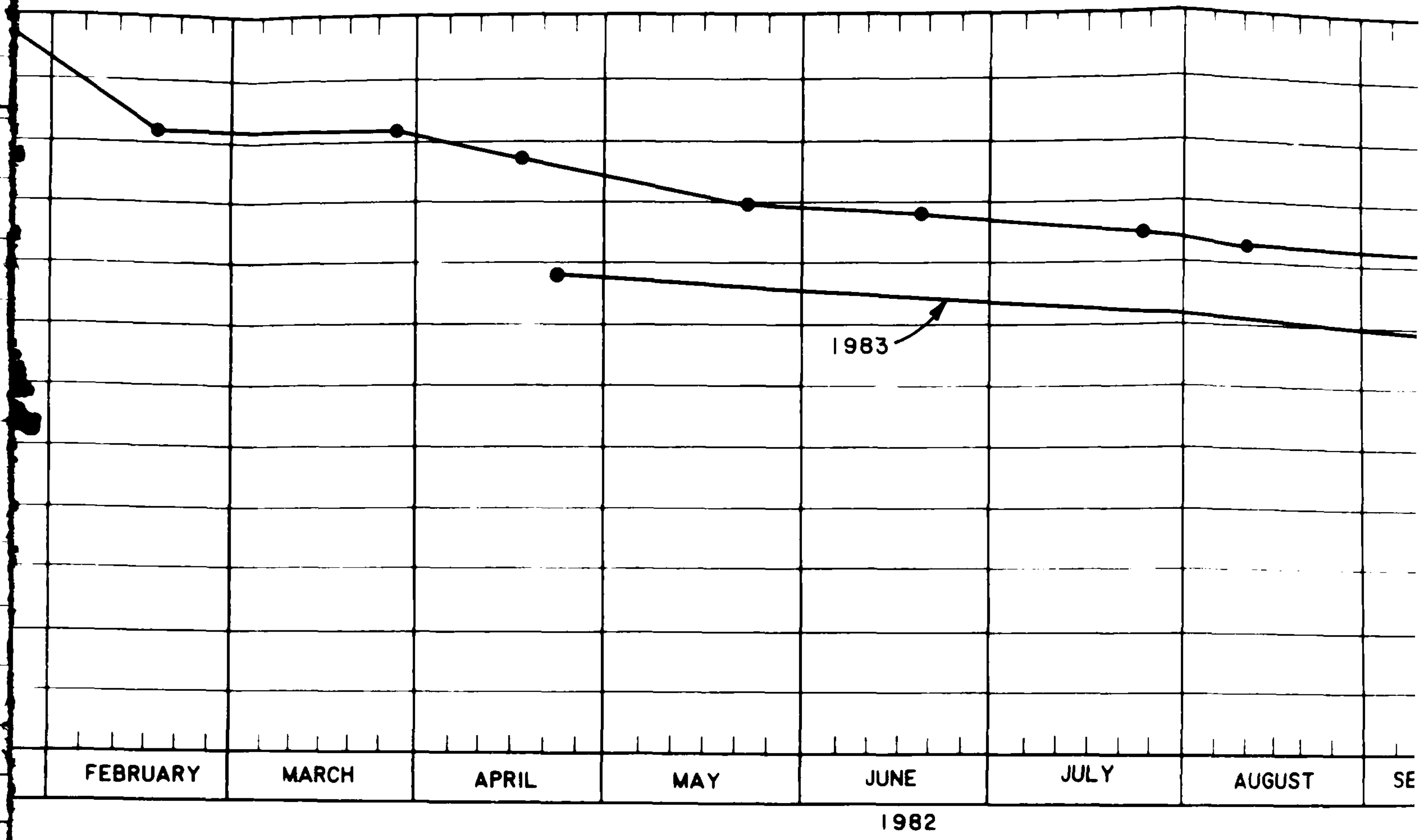

STATION 54+49.97 21A-7F

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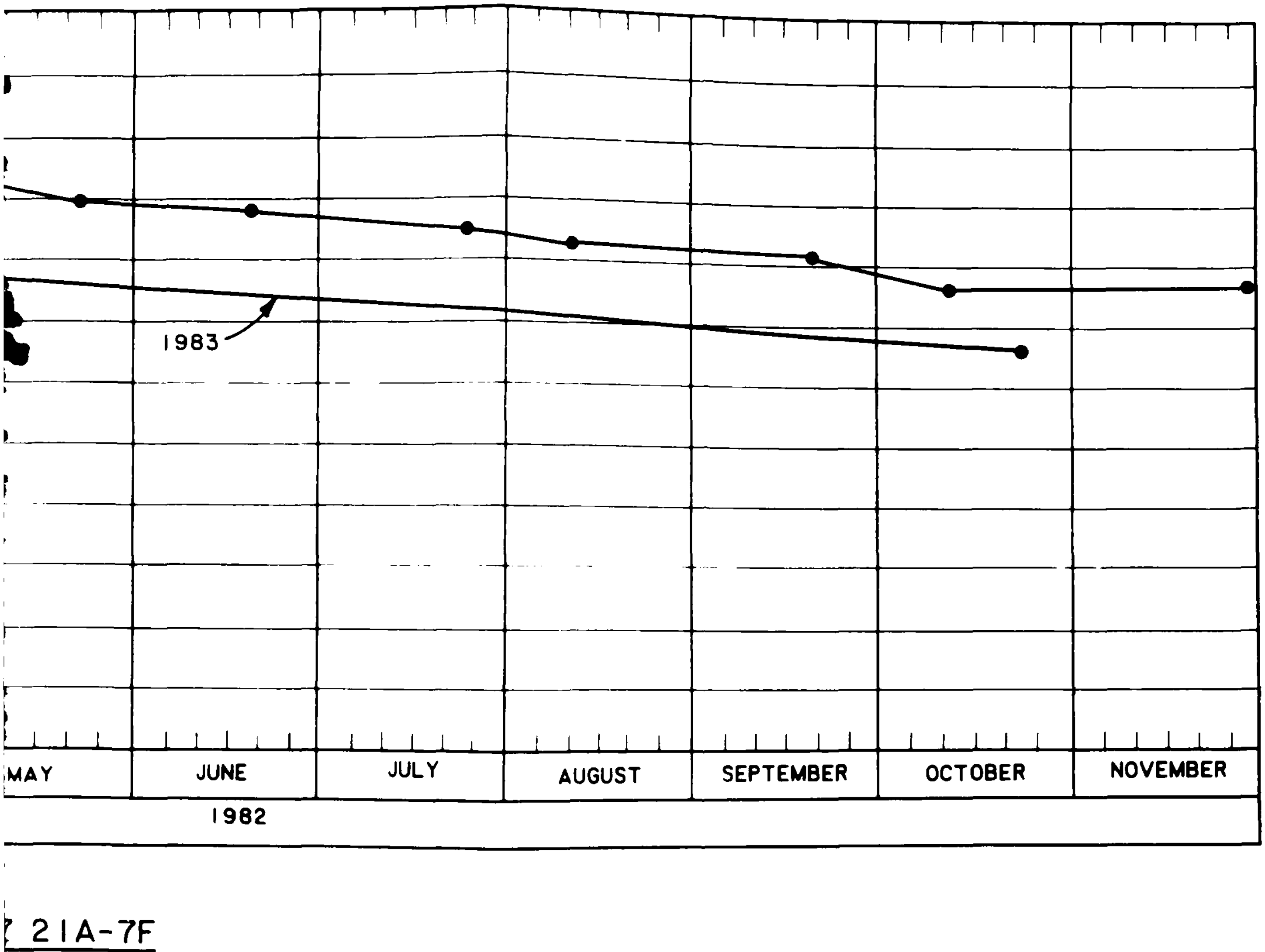
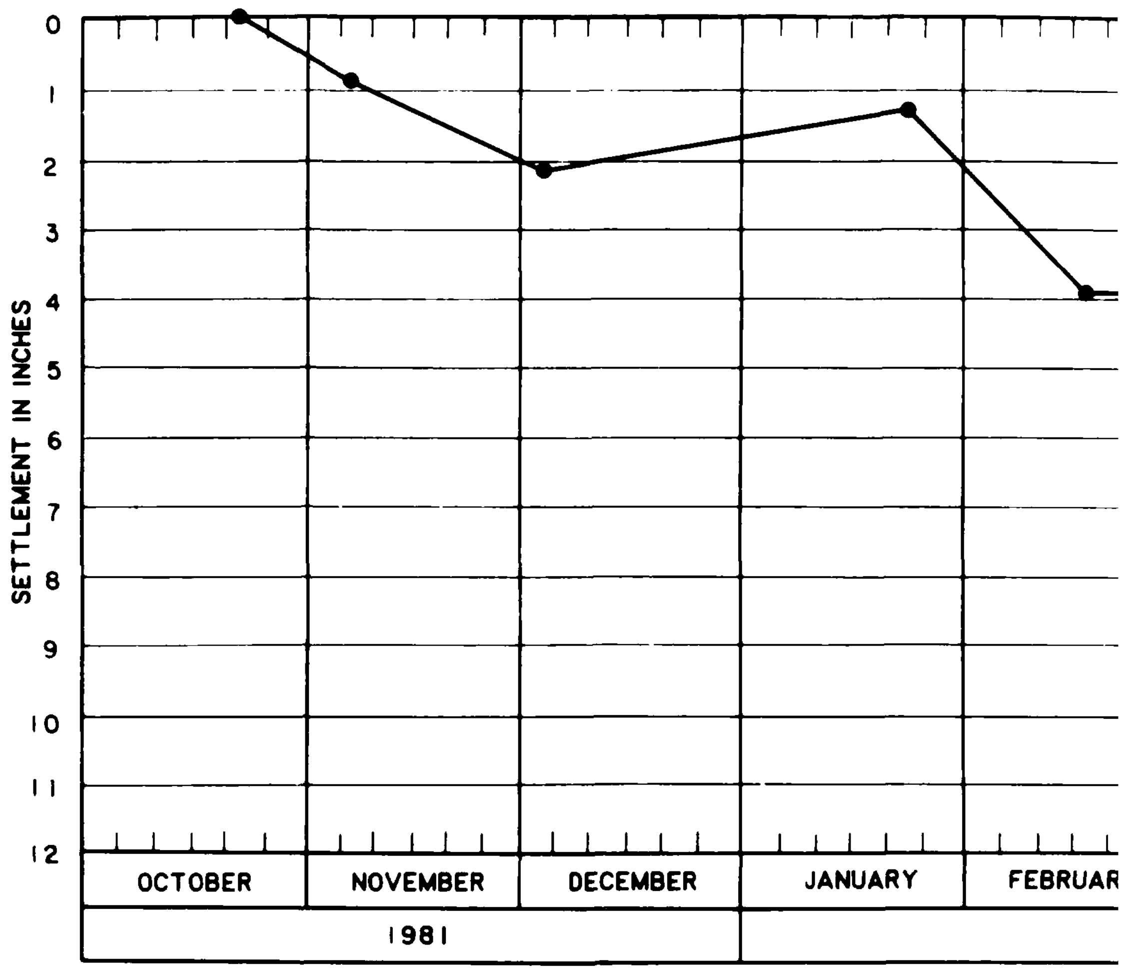


MOBILE HARBOR, ALABAMA

GAILLARD
DISPOSAL ISLAND

SETTLEMENT DATA

Figure F4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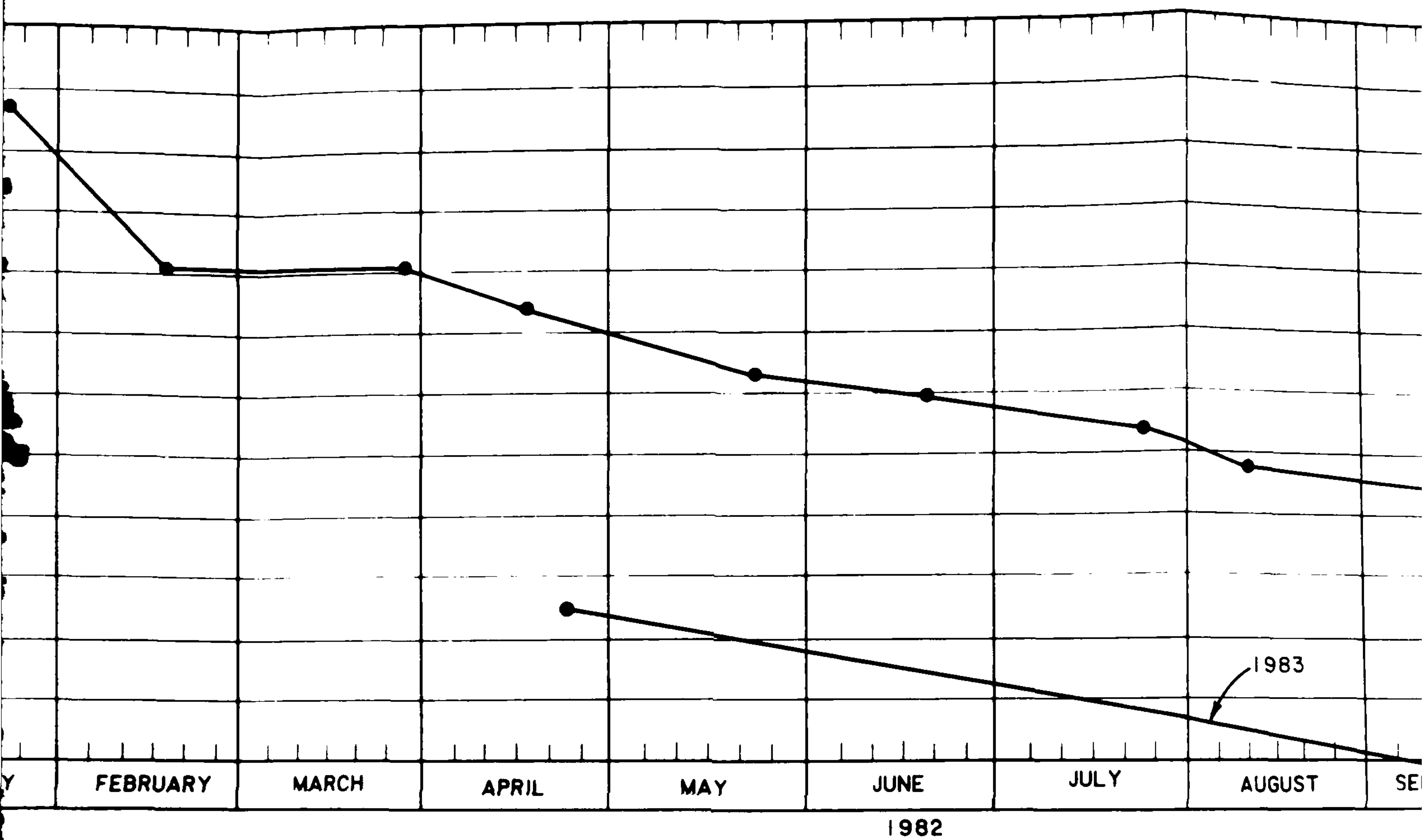

STATION 77+44.13 21A-7H

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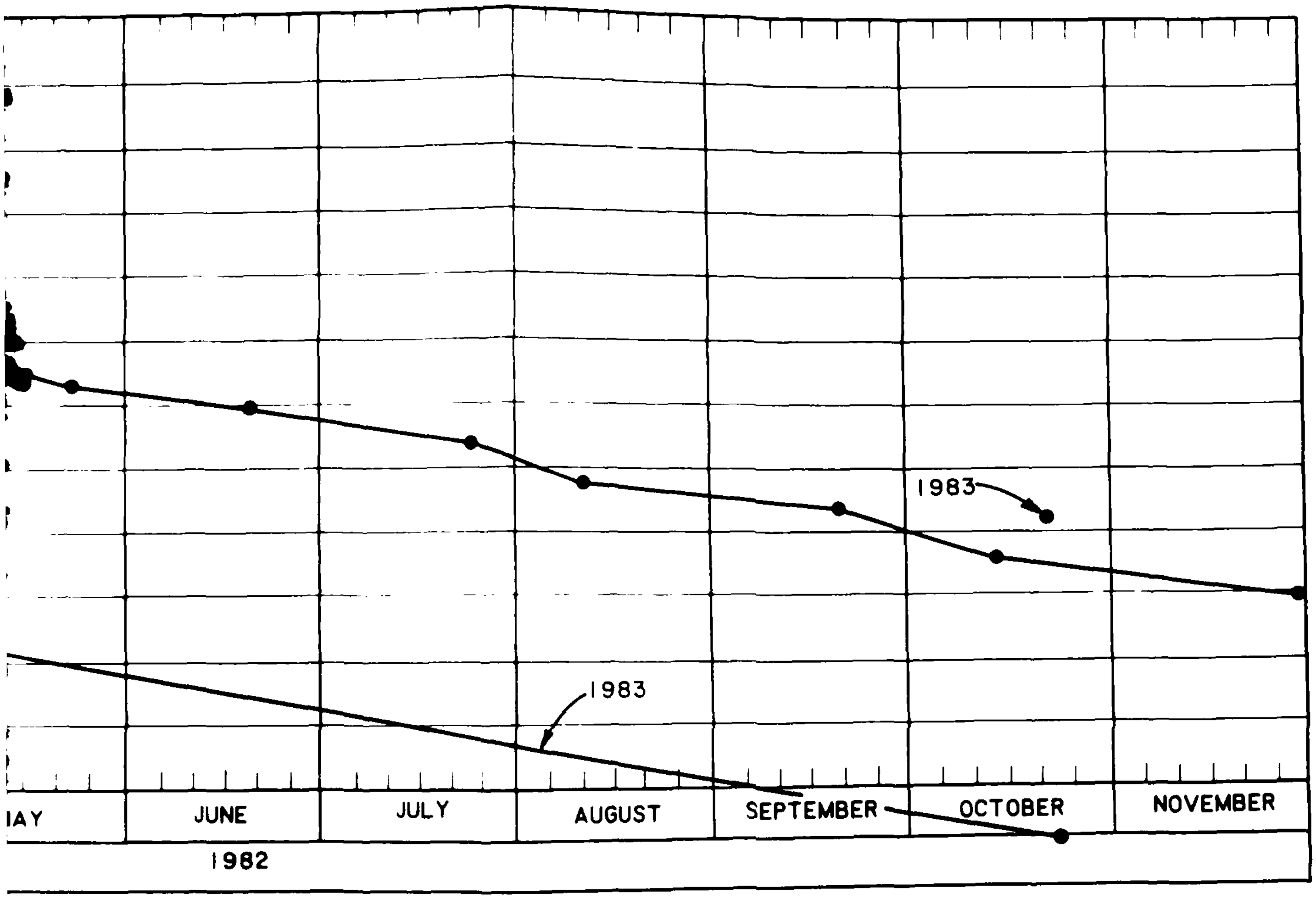


21A-7H

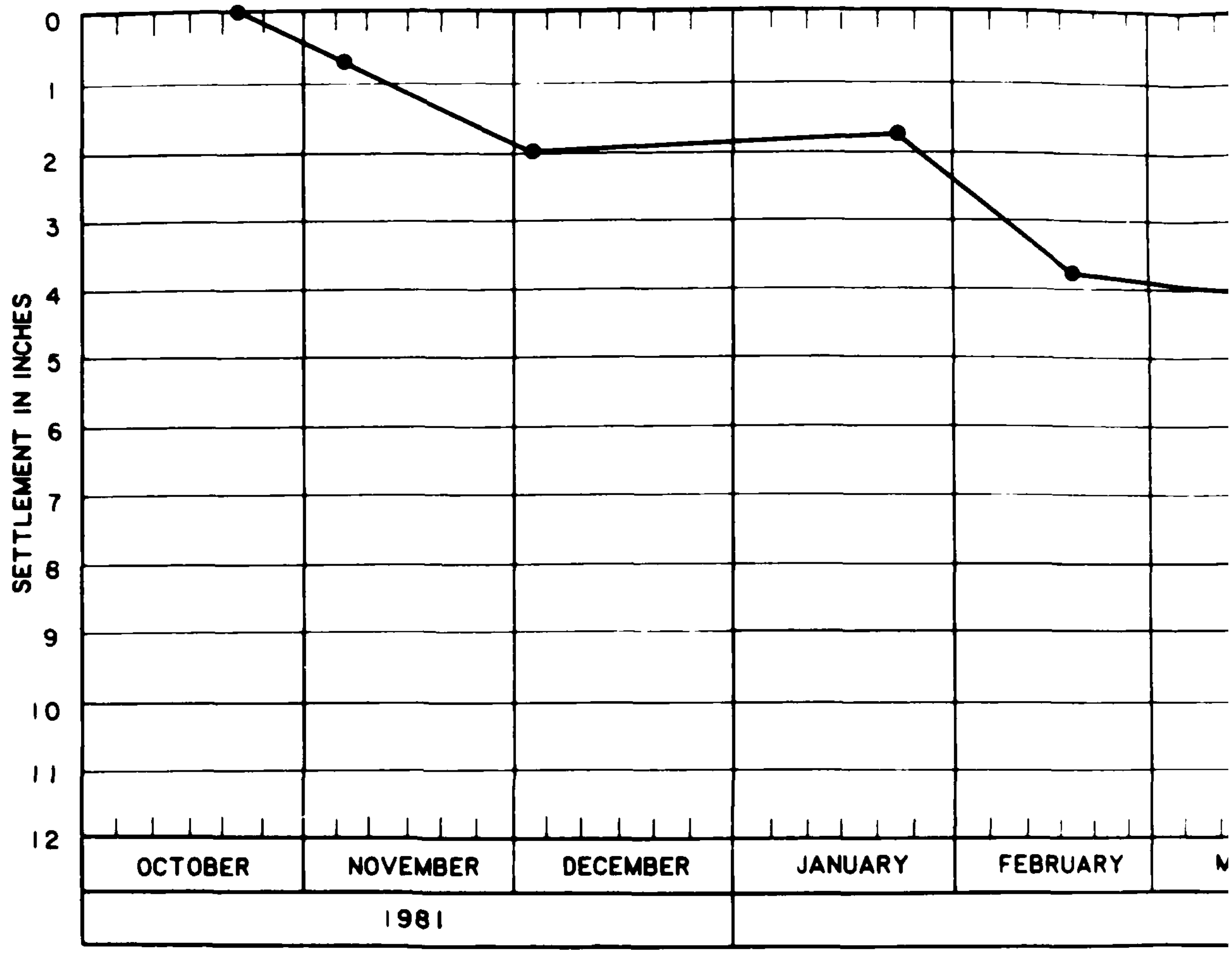
MOBILE HARBOR, ALABAMA

GAILLARD
DISPOSAL ISLAND

SETTLEMENT DATA

Figure F5

2 3



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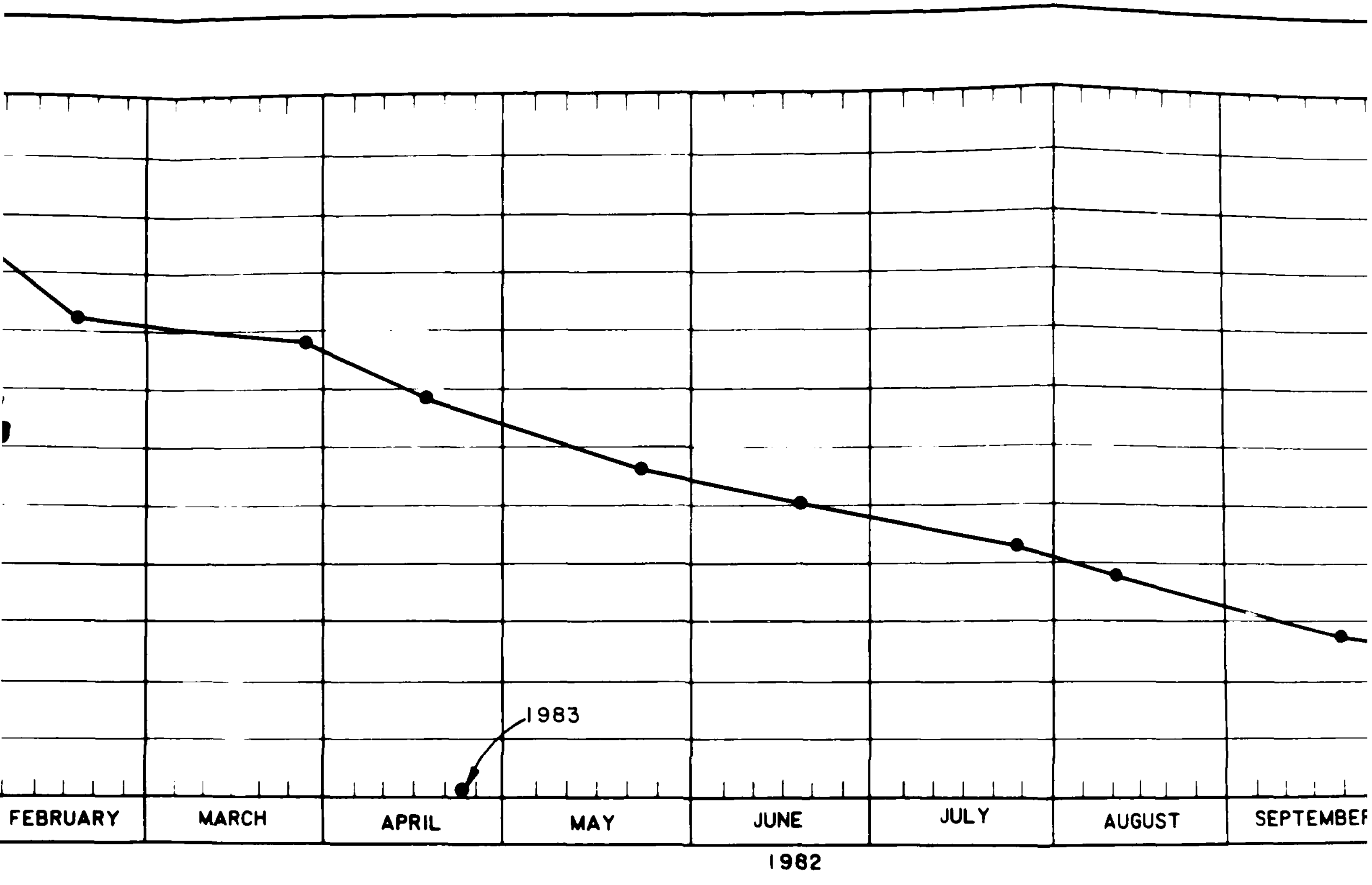

STATION 111+27.98 21A-7K

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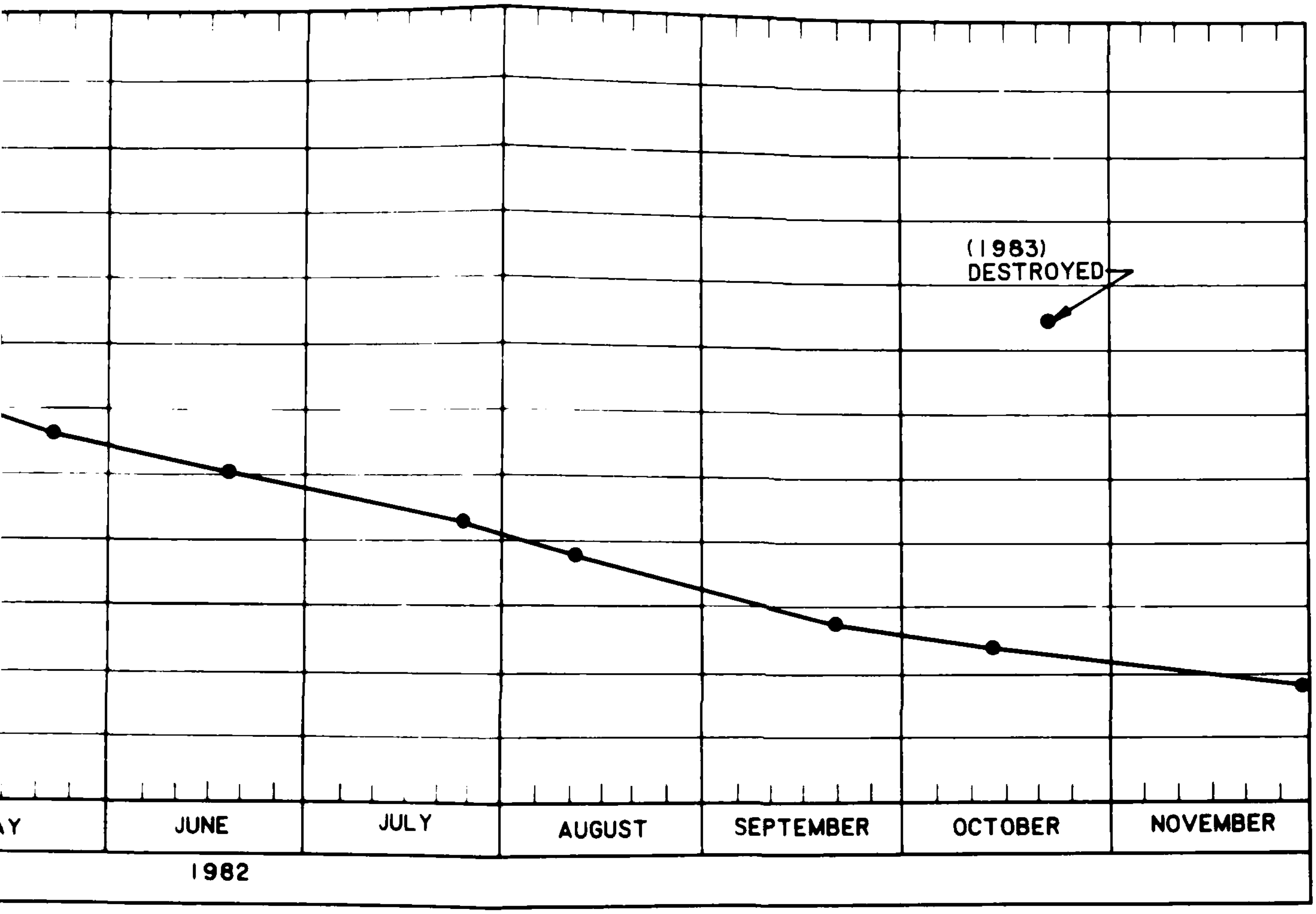


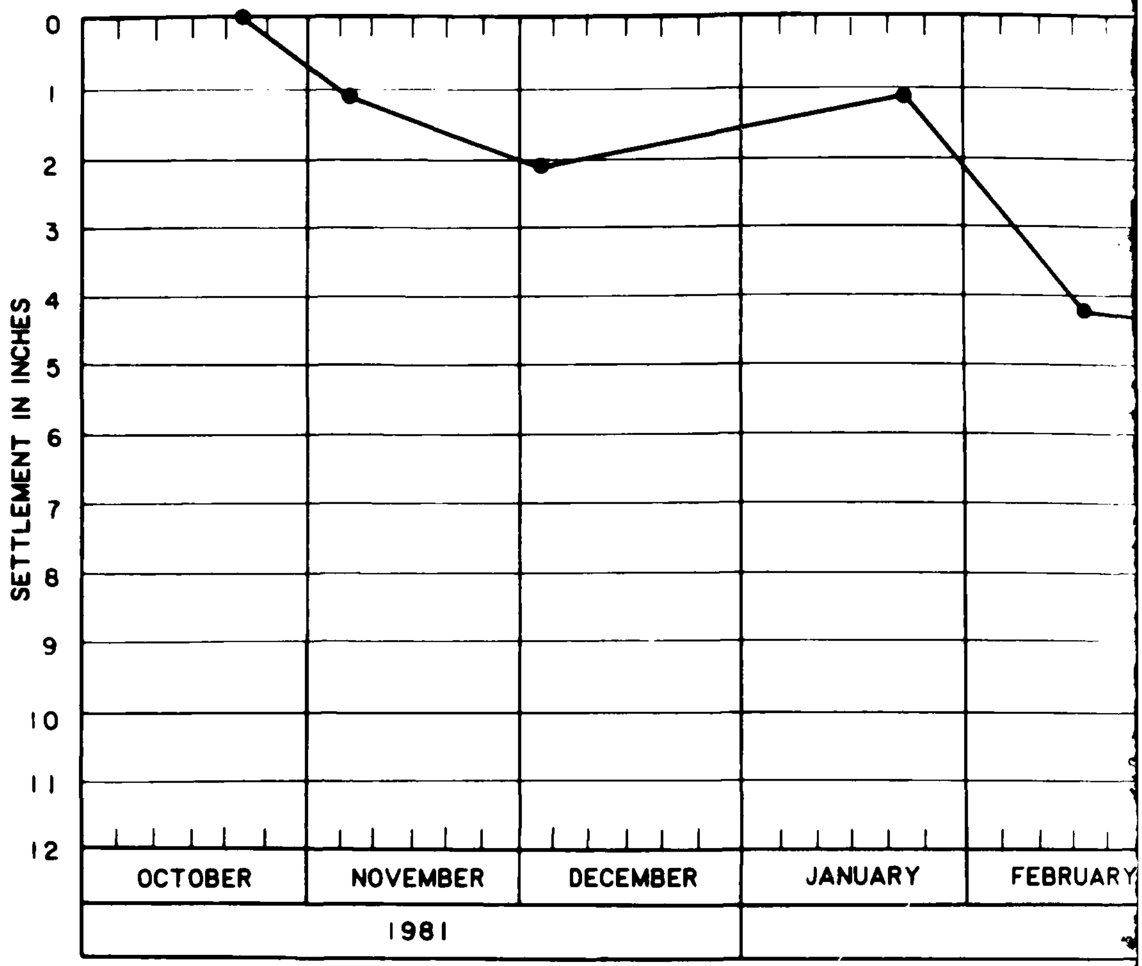
21A-7K

MOBILE HARBOR, ALABAMA

GAILLARD
DISPOSAL ISLAND

SETTLEMENT DATA

Figure F6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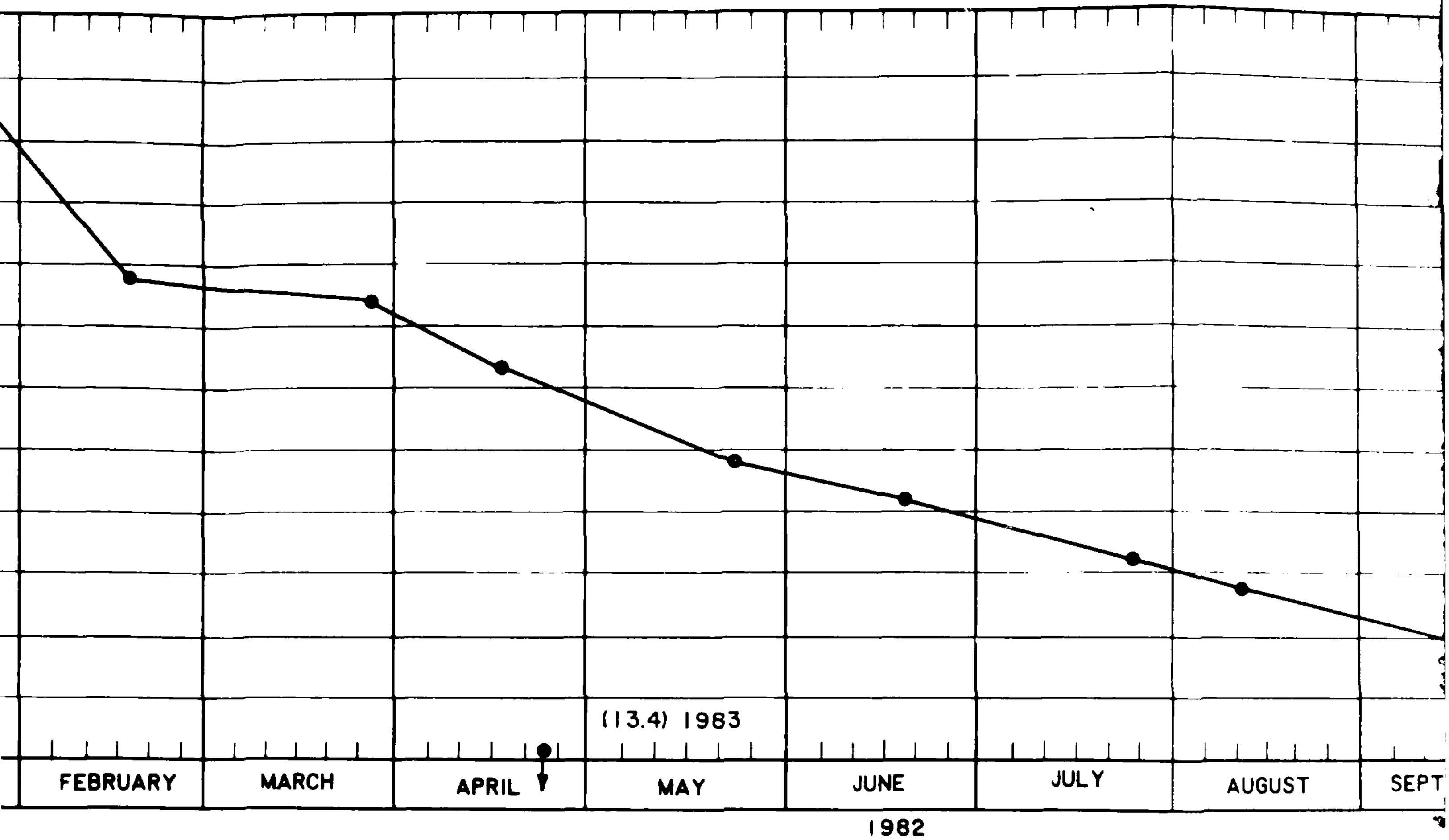

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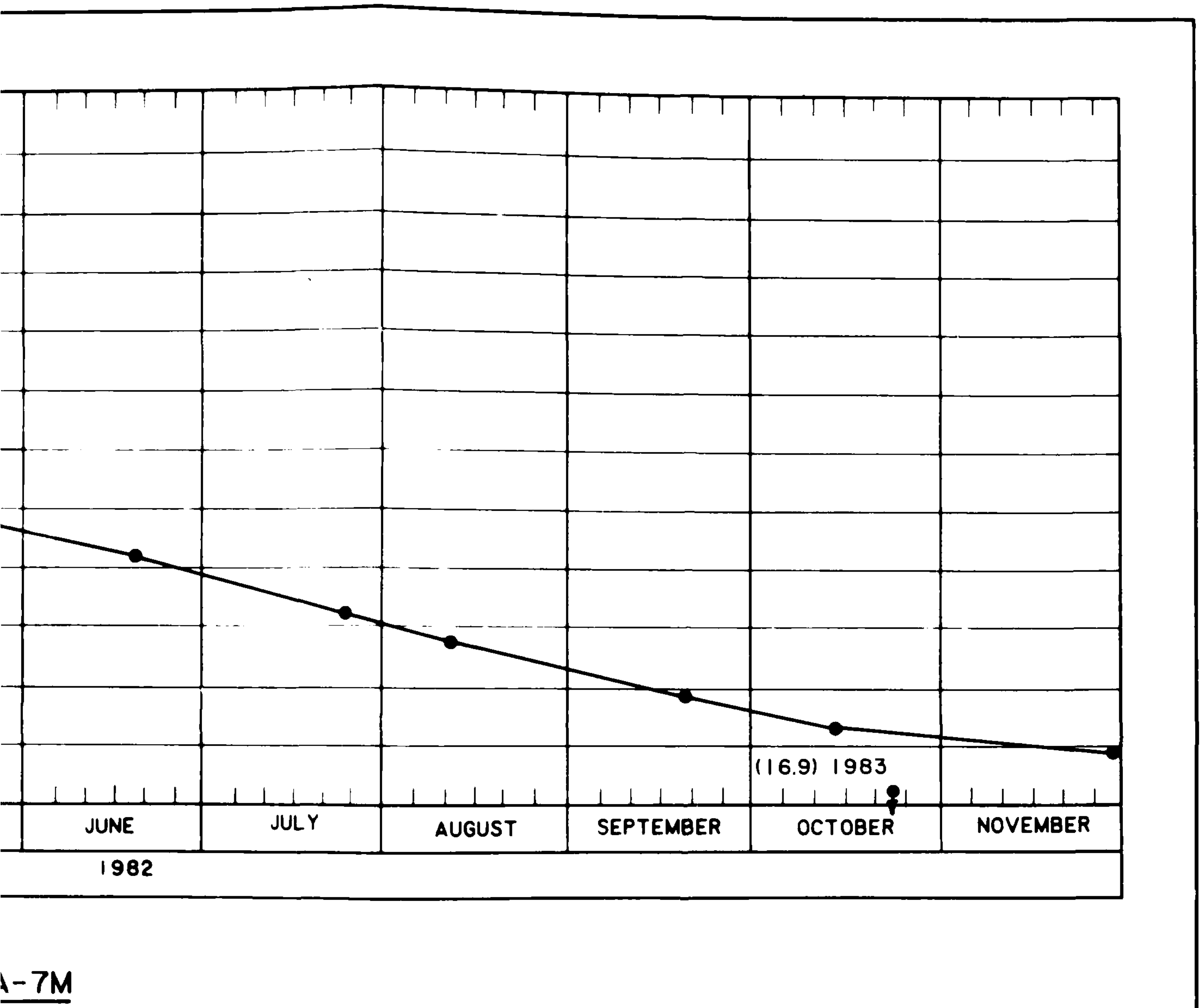
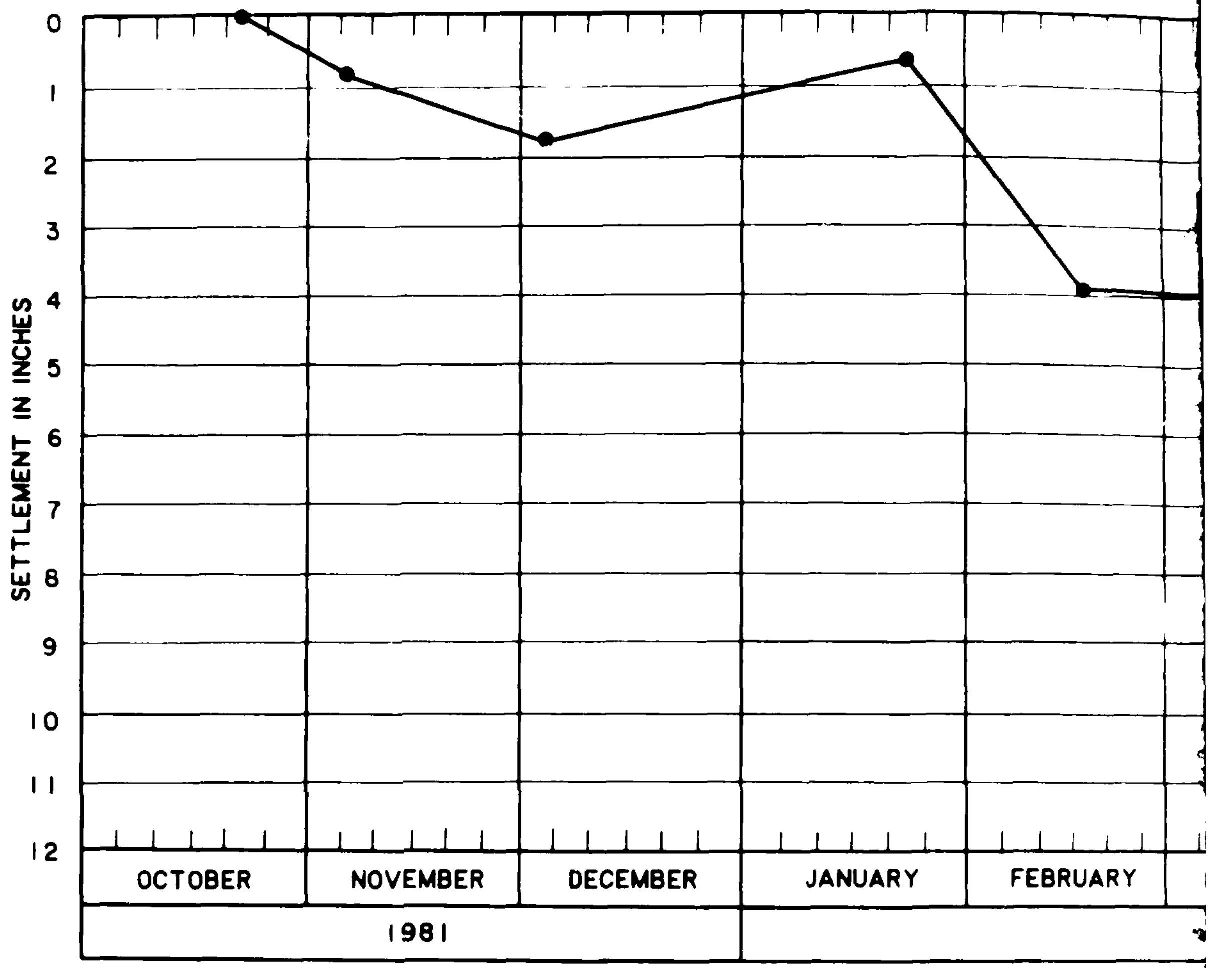


MOBILE HARBOR, ALABAMA

GAILLARD
DISPOSAL ISLAND

SETTLEMENT DATA

Figure F7



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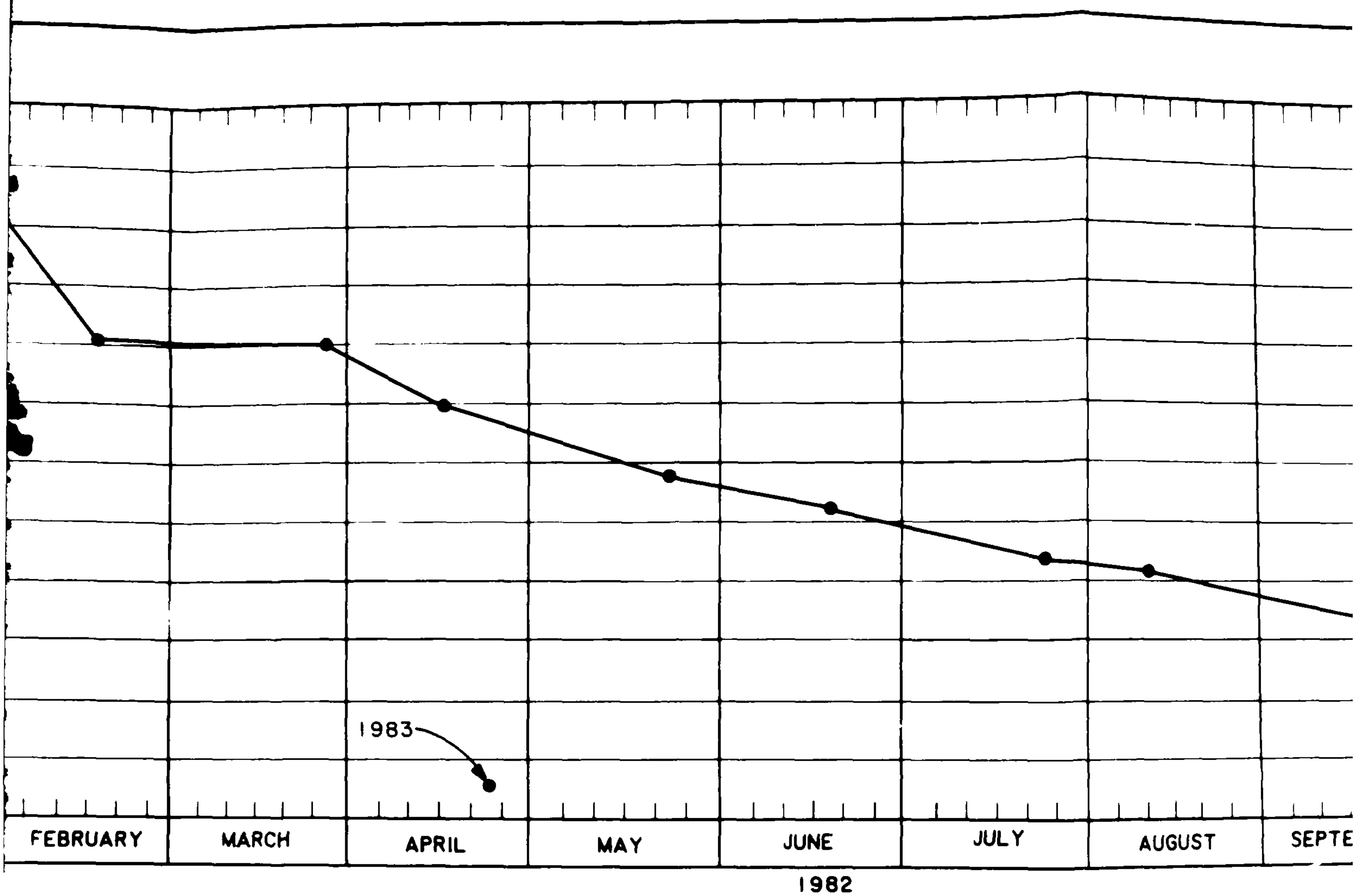
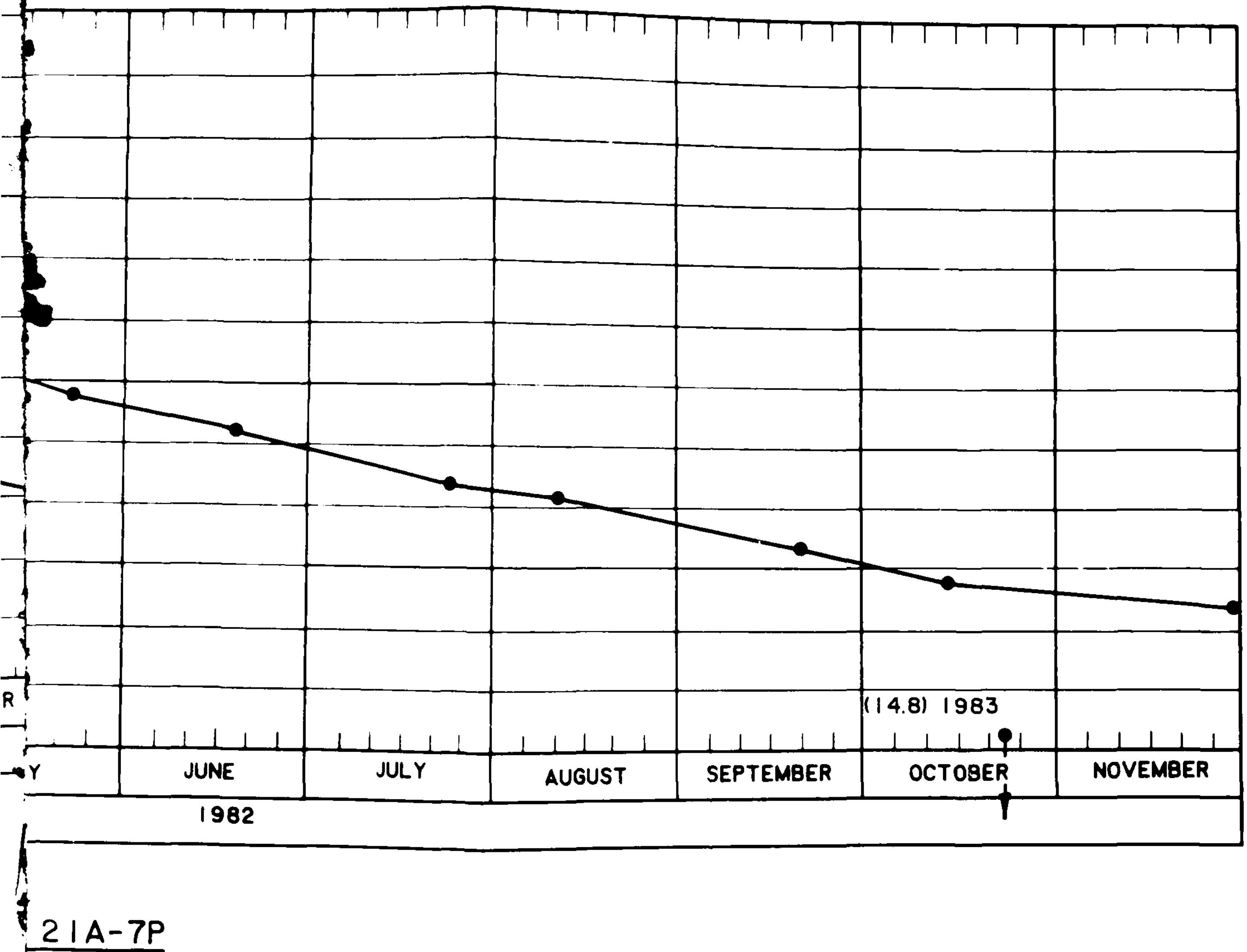


STATION 158+25.46 21A-7P

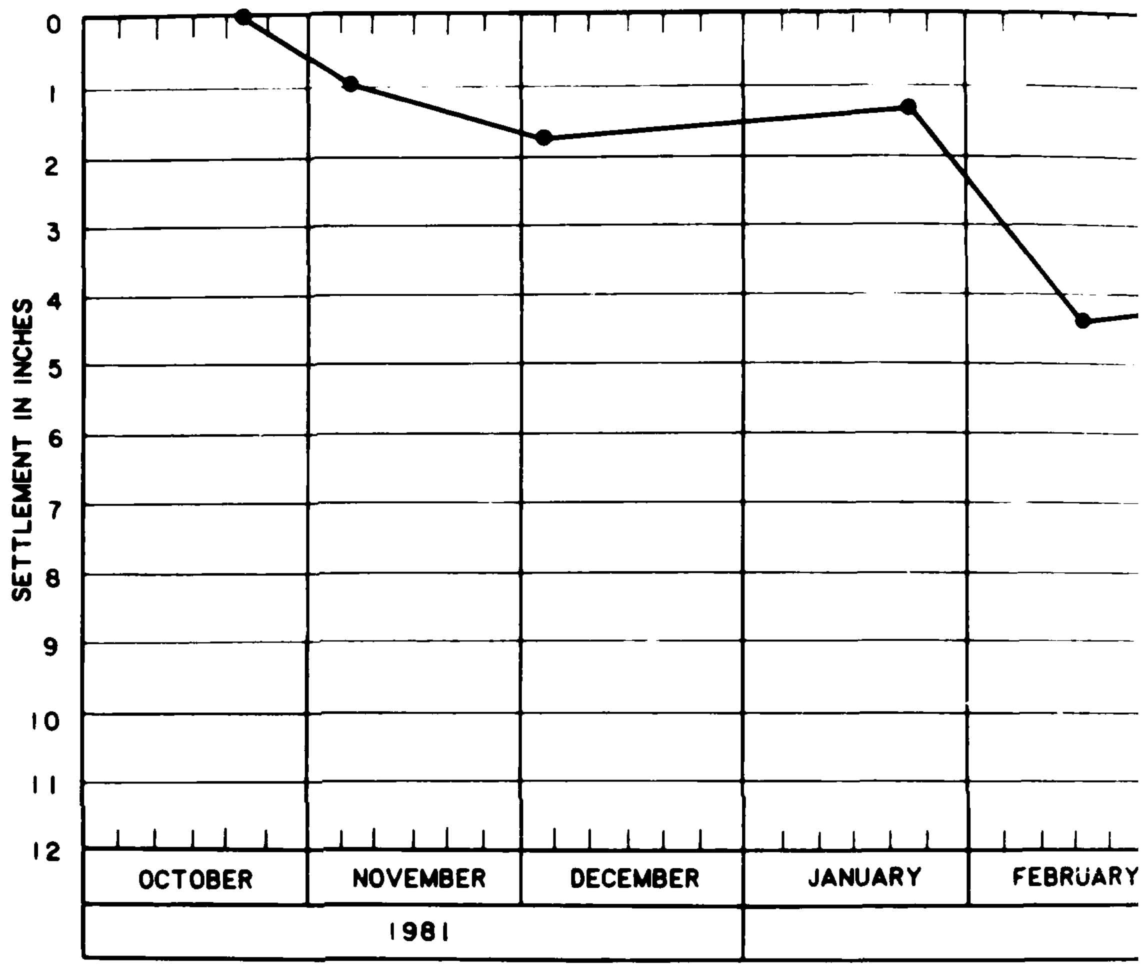


MOBILE HARBOR, ALABAMA

GAILLARD
DISPOSAL ISLAND

SETTLEMENT DATA

Figure F8



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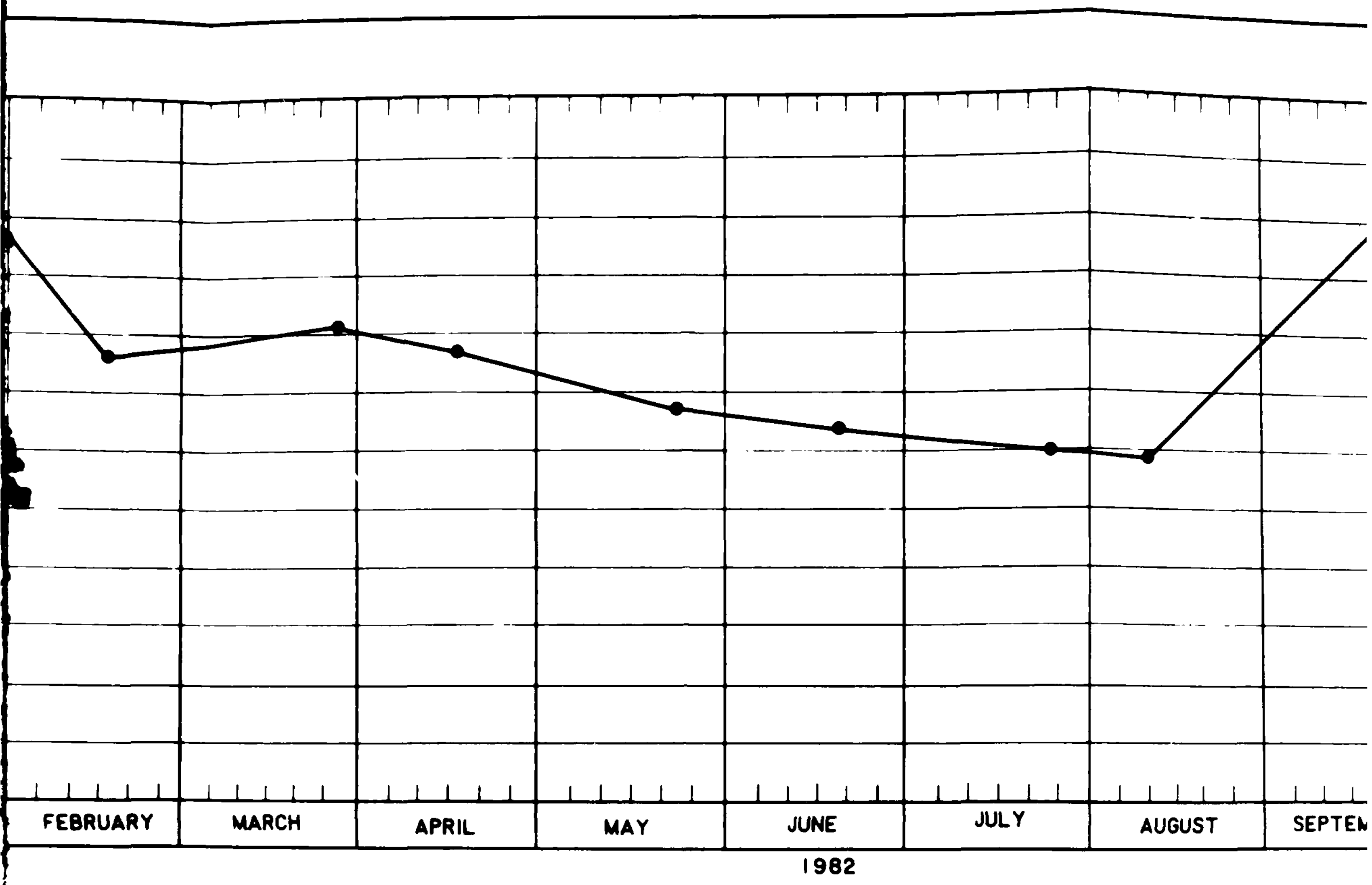

STATION 202+51.21 21A-7R

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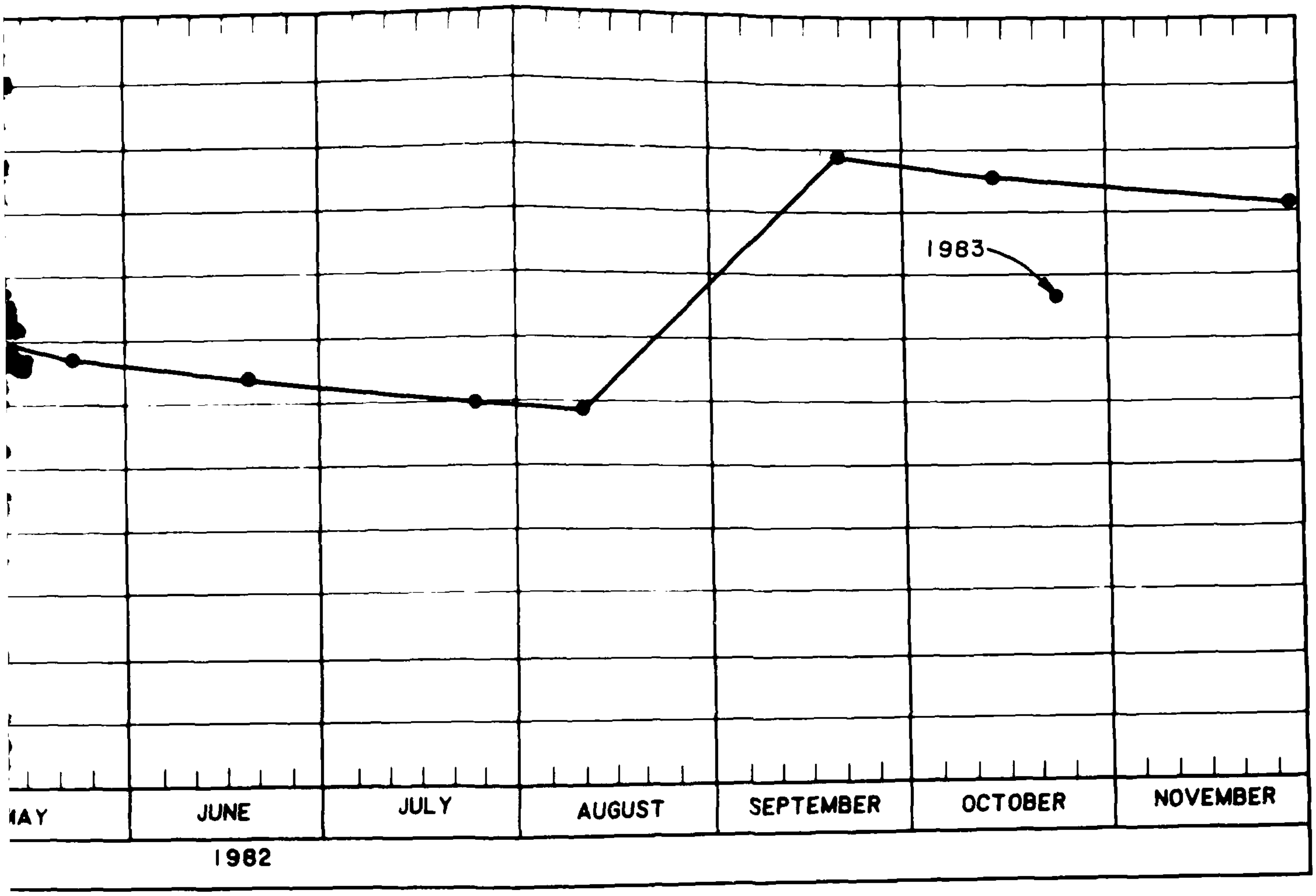


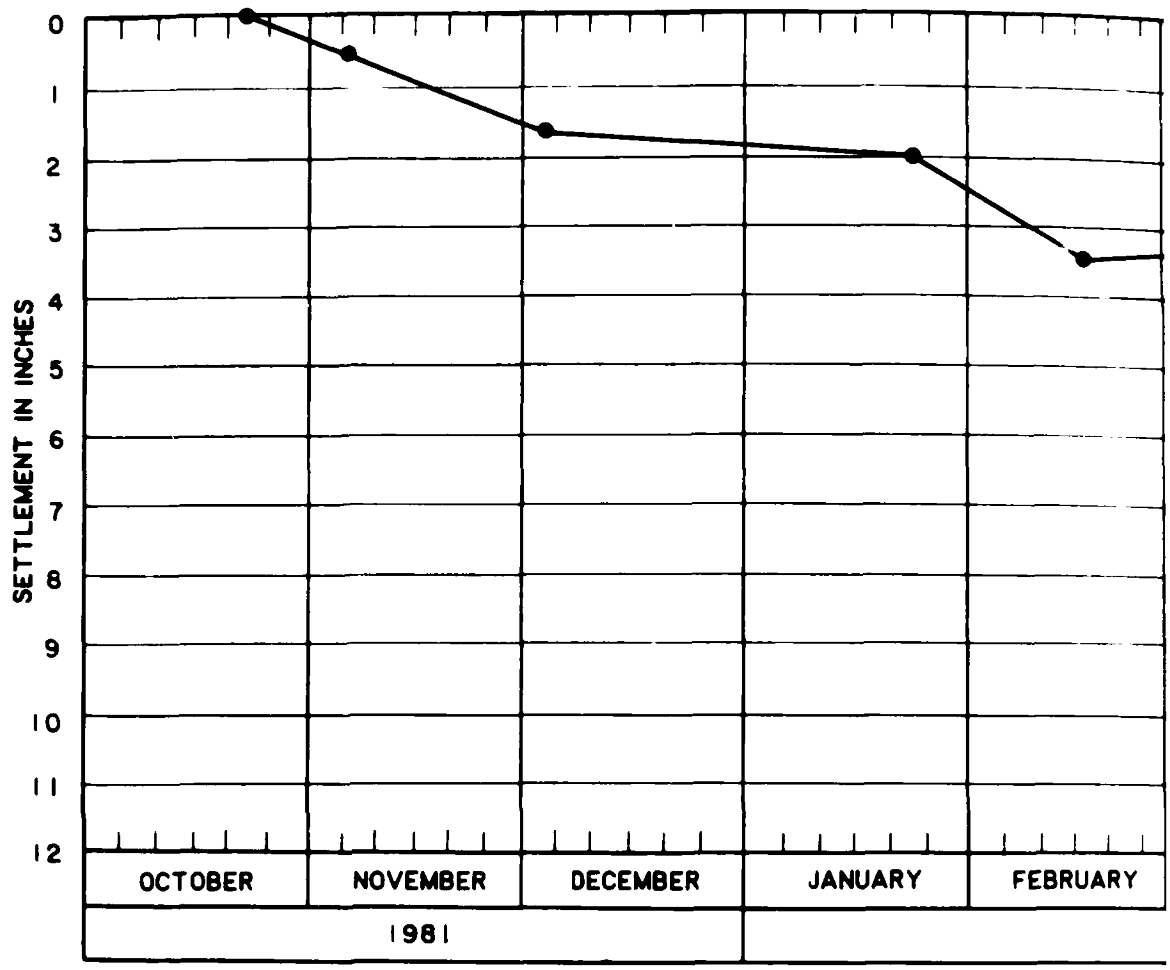
-1 21A-7R

MOBILE HARBOR, ALABAMA

GAILLARD
DISPOSAL ISLAND

SETTLEMENT DATA

Figure F9



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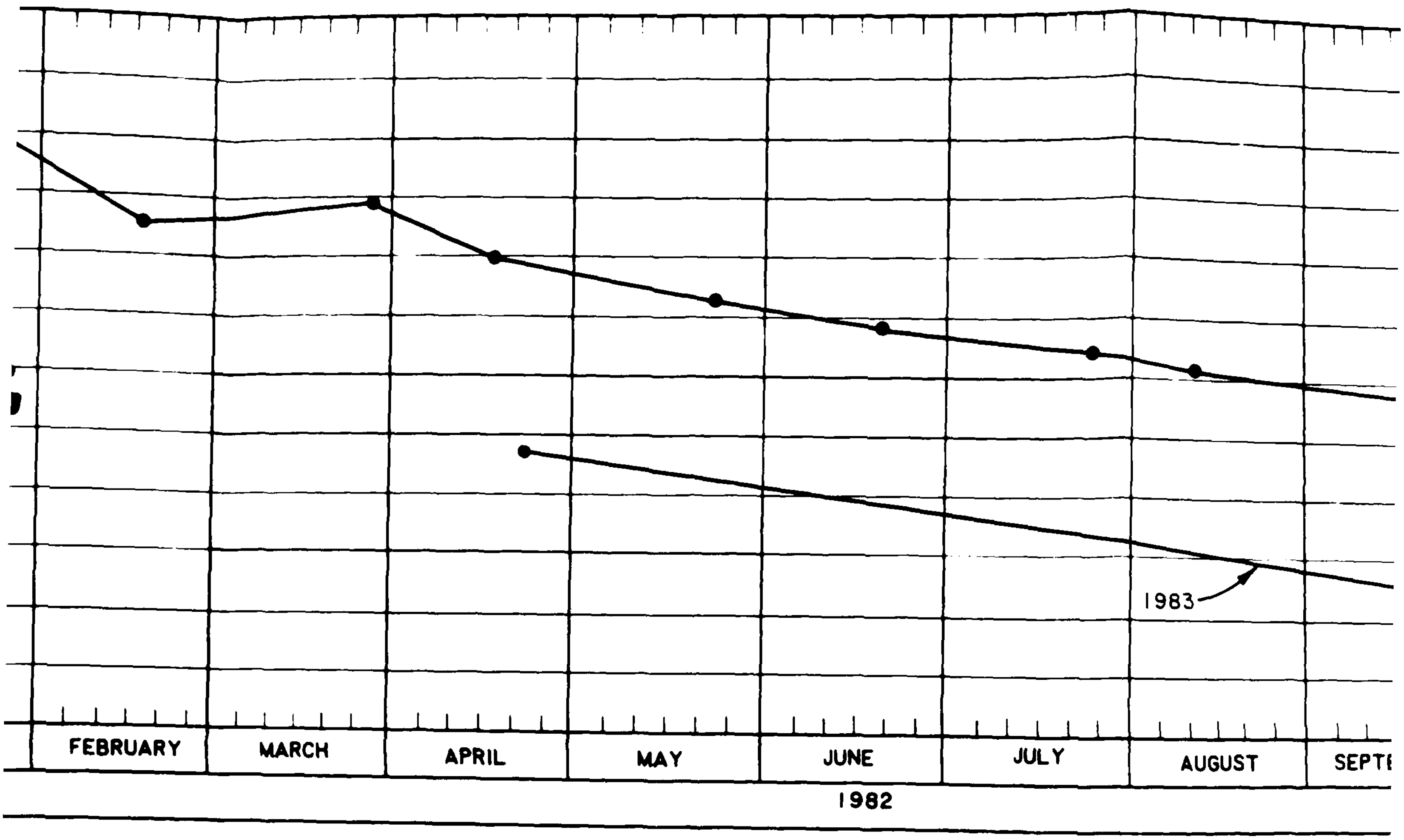

STATION 233+67.95 21A-7T

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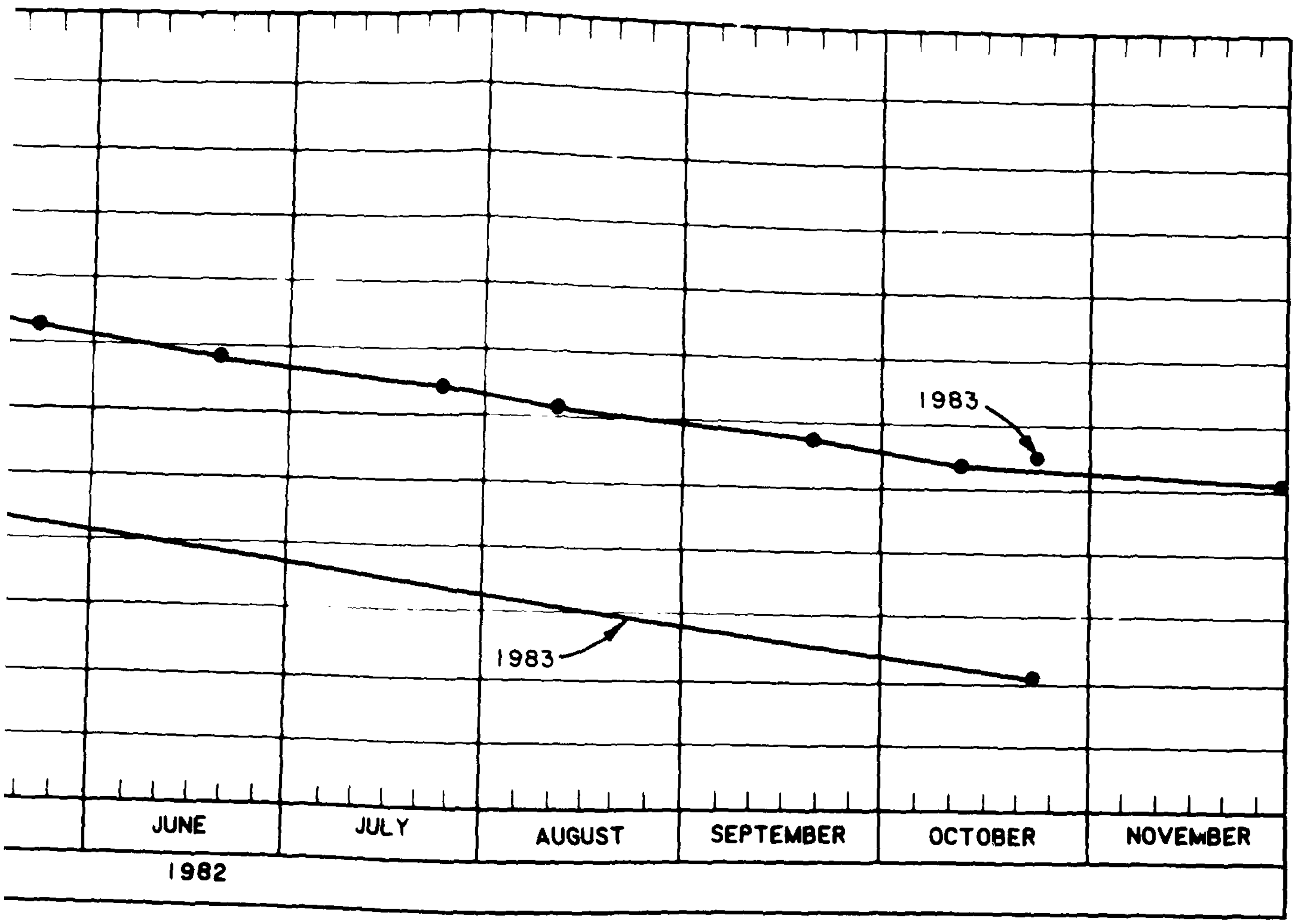


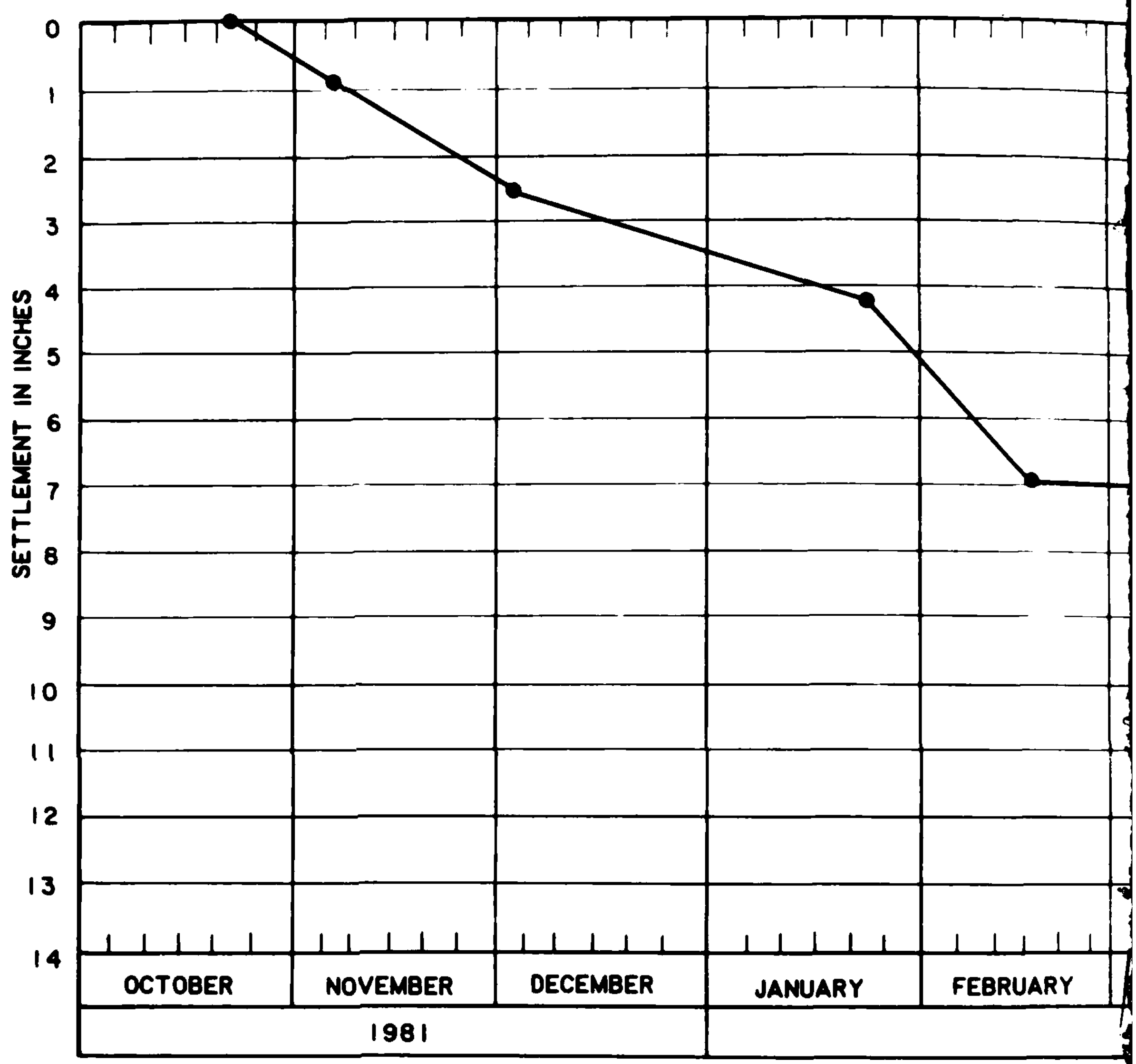
21A-7T

MOBILE HARBOR, ALABAMA

GAILLARD
DISPOSAL ISLAND

SETTLEMENT DATA

Figure F10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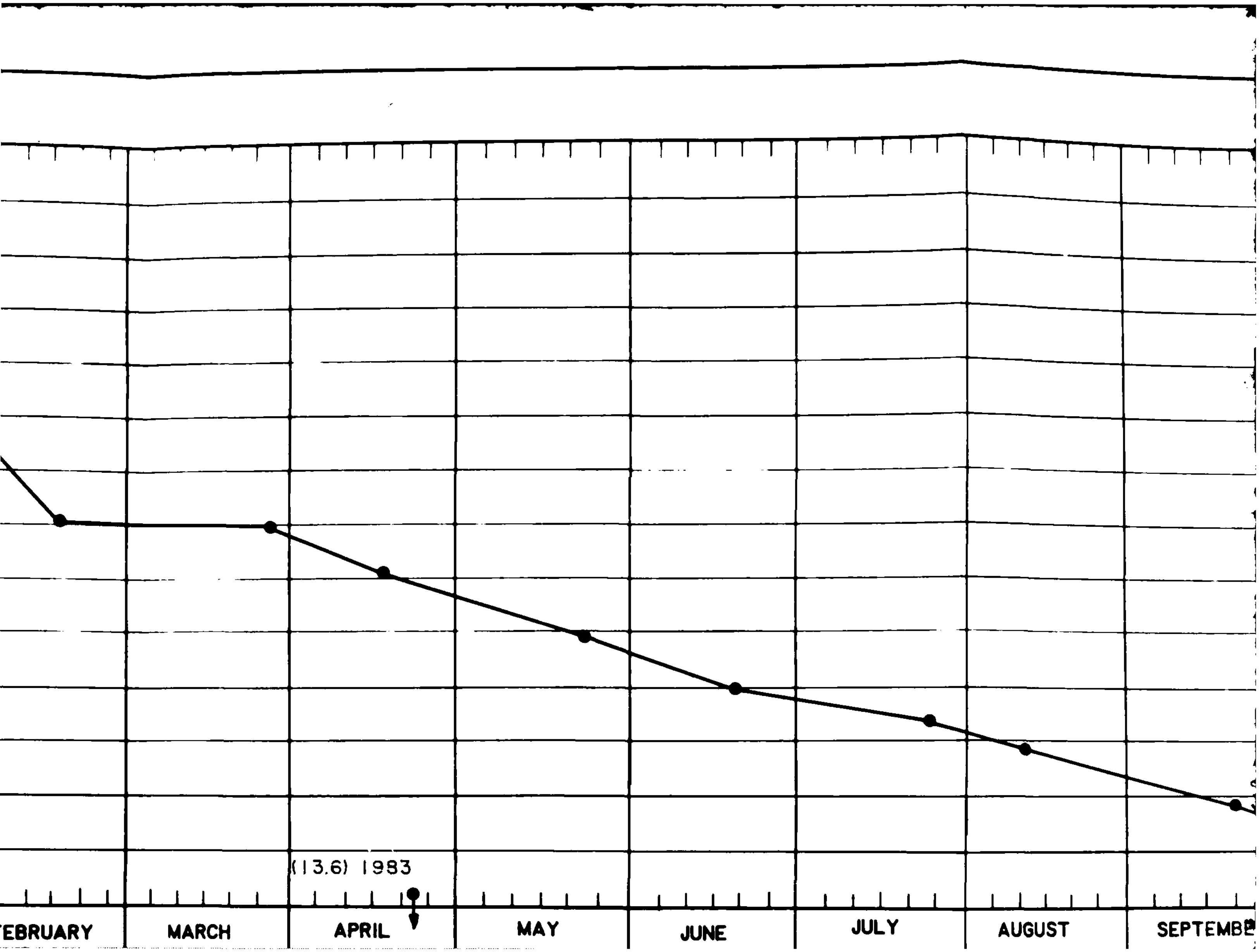

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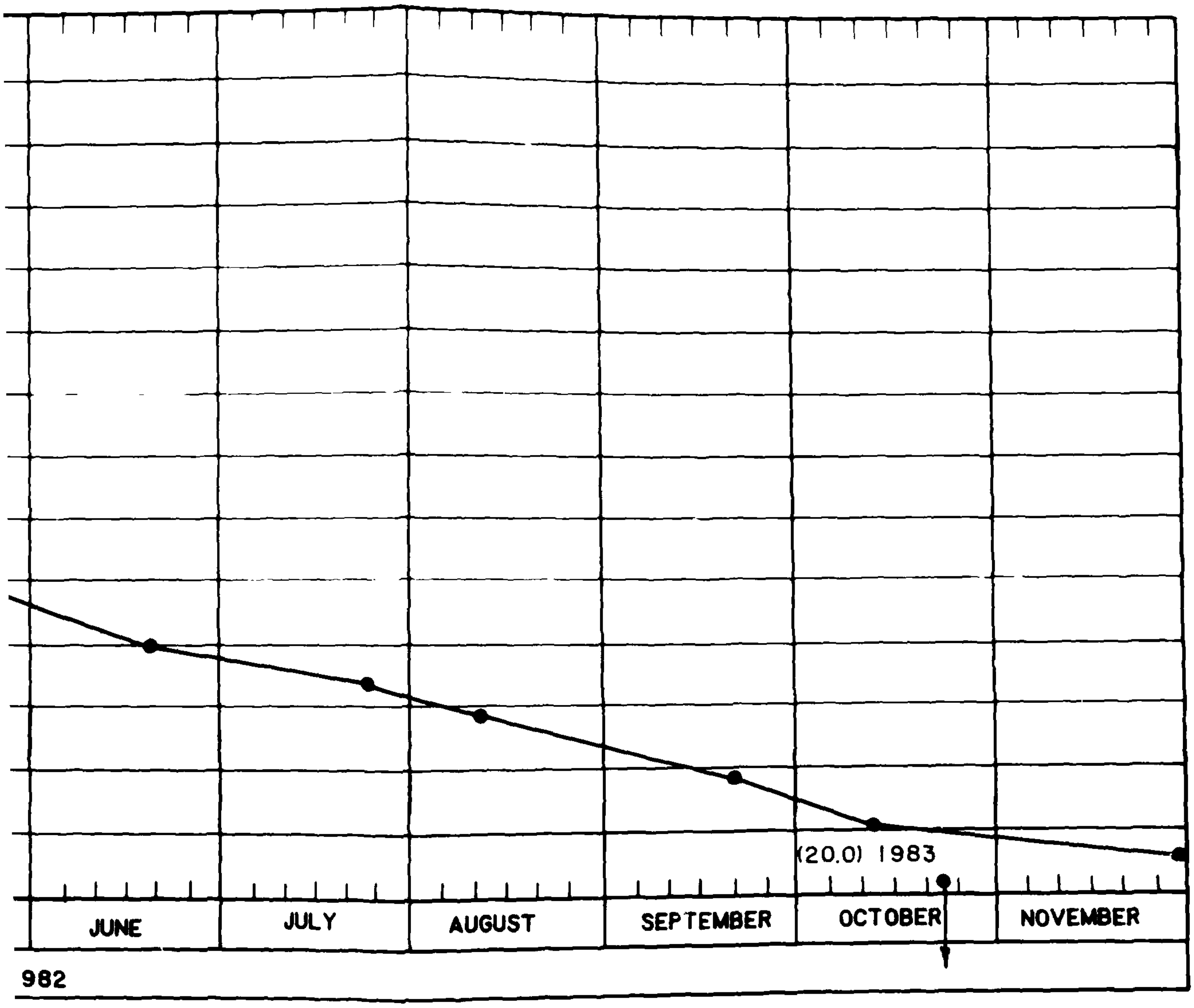


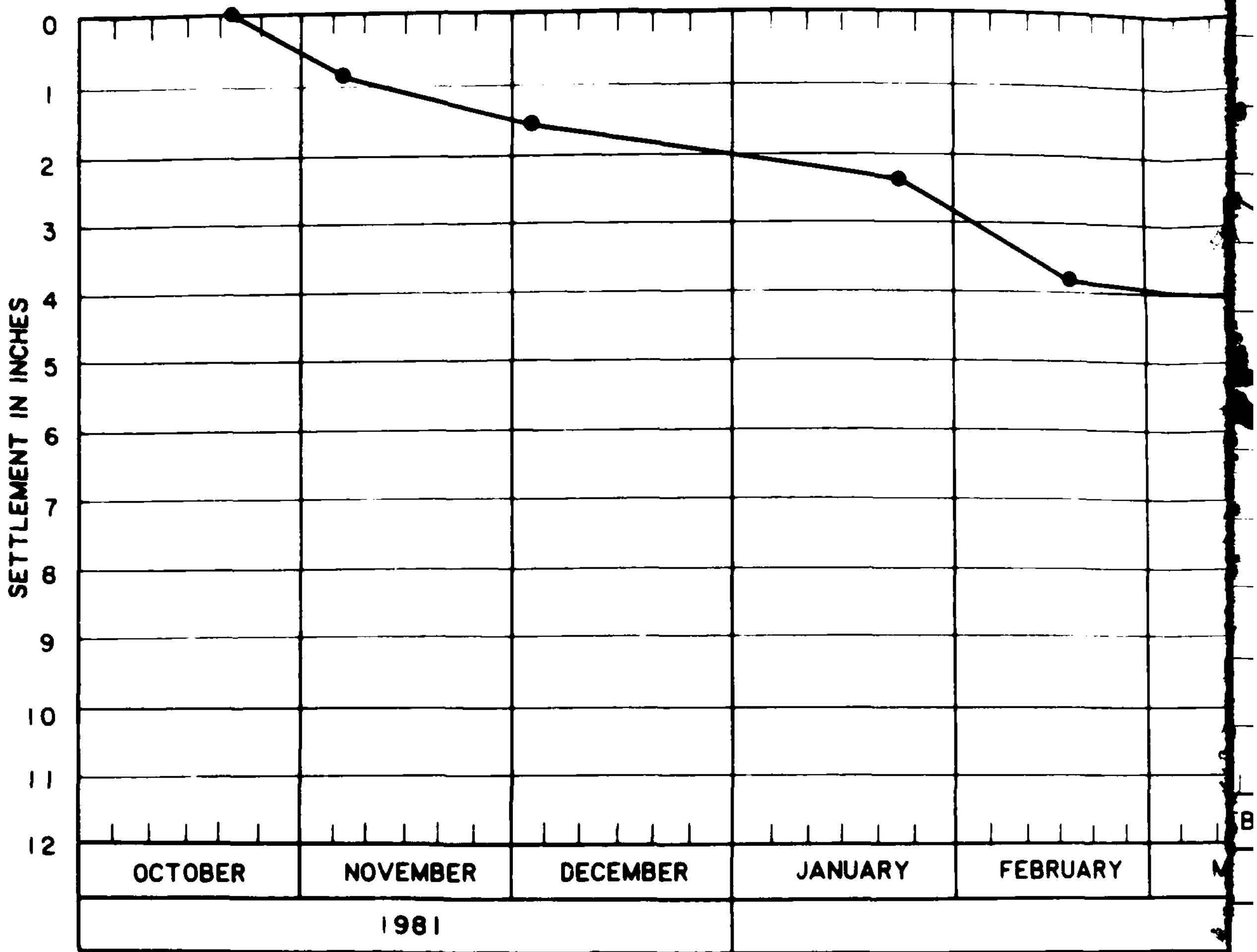
-7V

MOBILE HARBOR, ALABAMA

GAILLARD
DISPOSAL ISLAND

SETTLEMENT DATA

Figure F11



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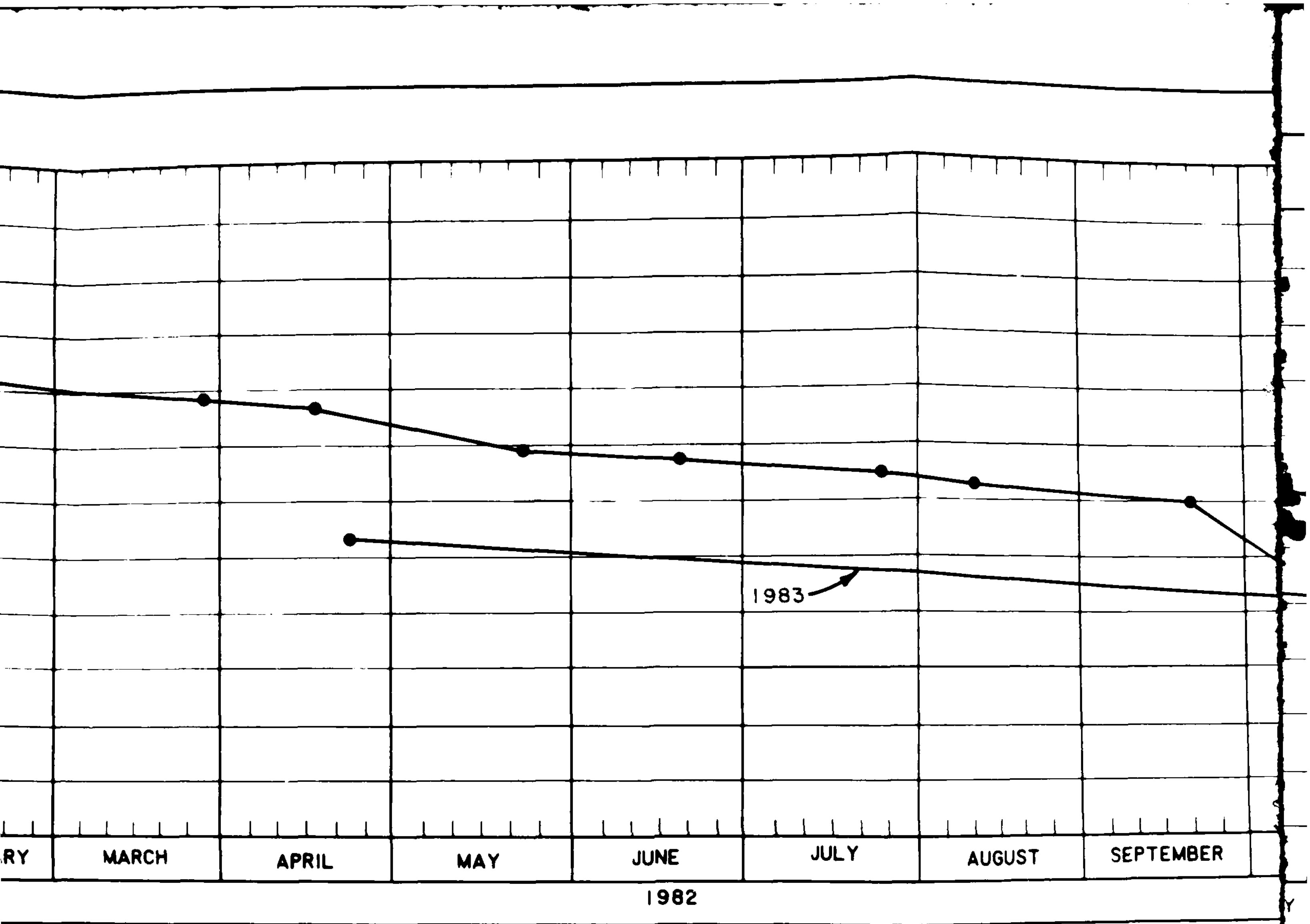

STATION 283+99.24 21A-7X

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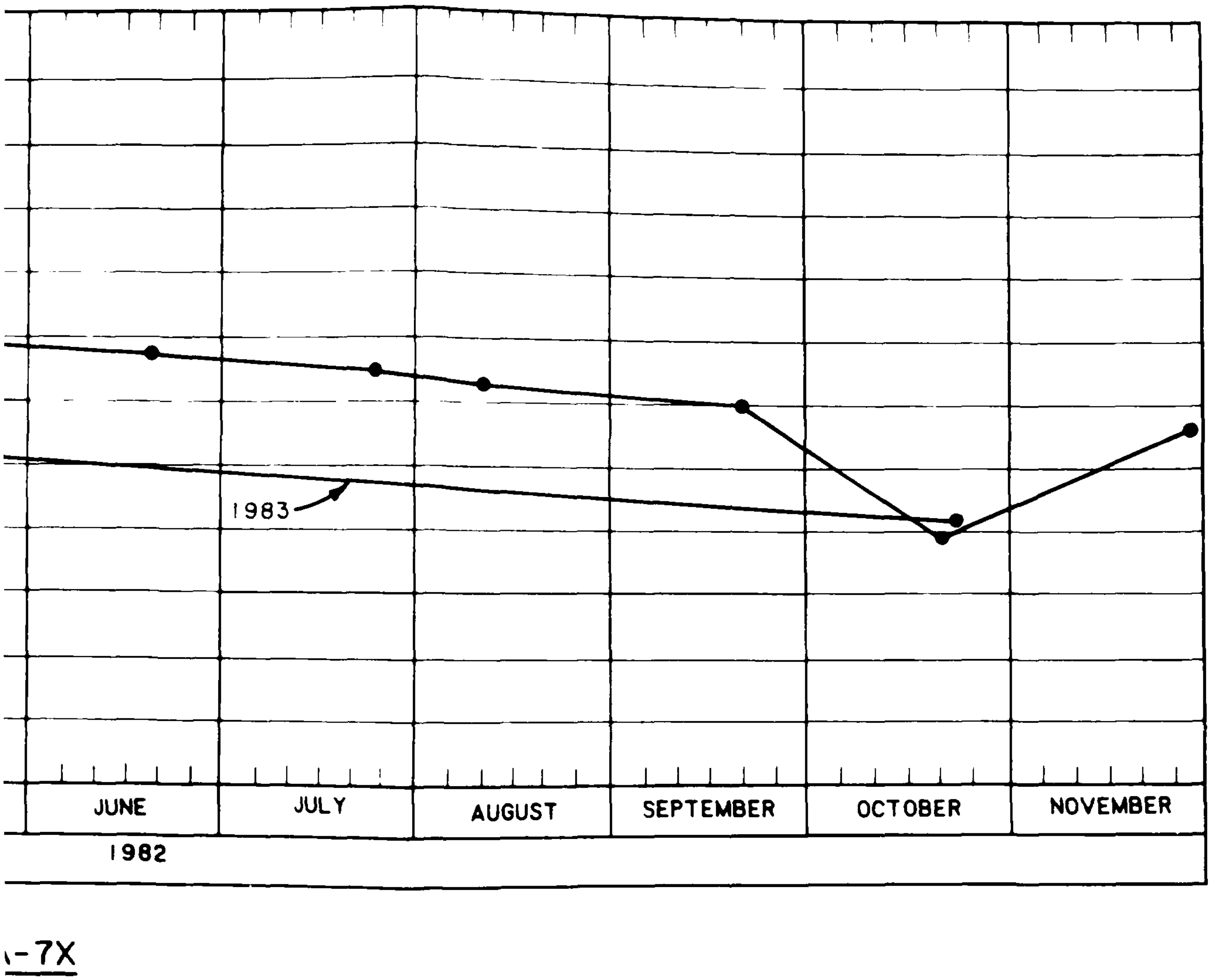
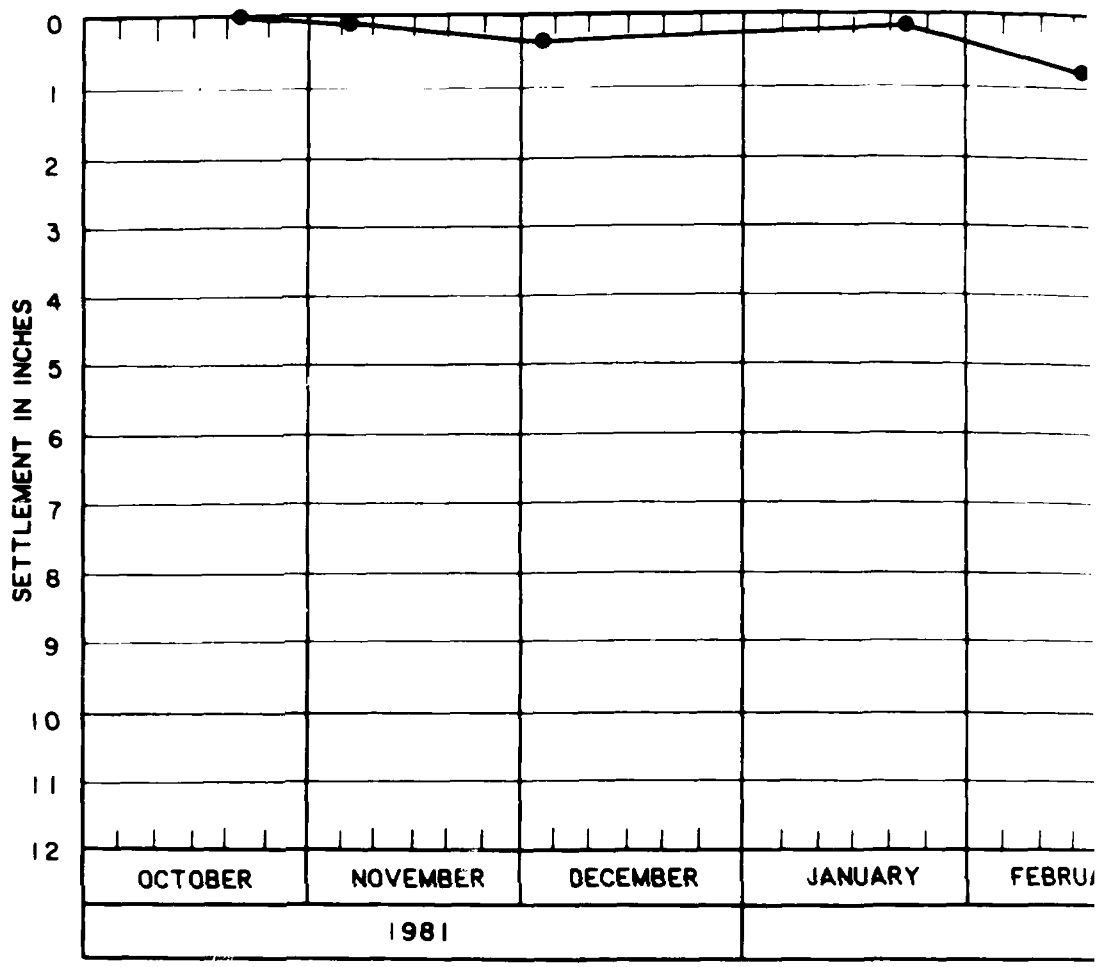


MOBILE HARBOR, ALABAMA

GAILLARD
DISPOSAL ISLAND

SETTLEMENT DATA

Figure F12



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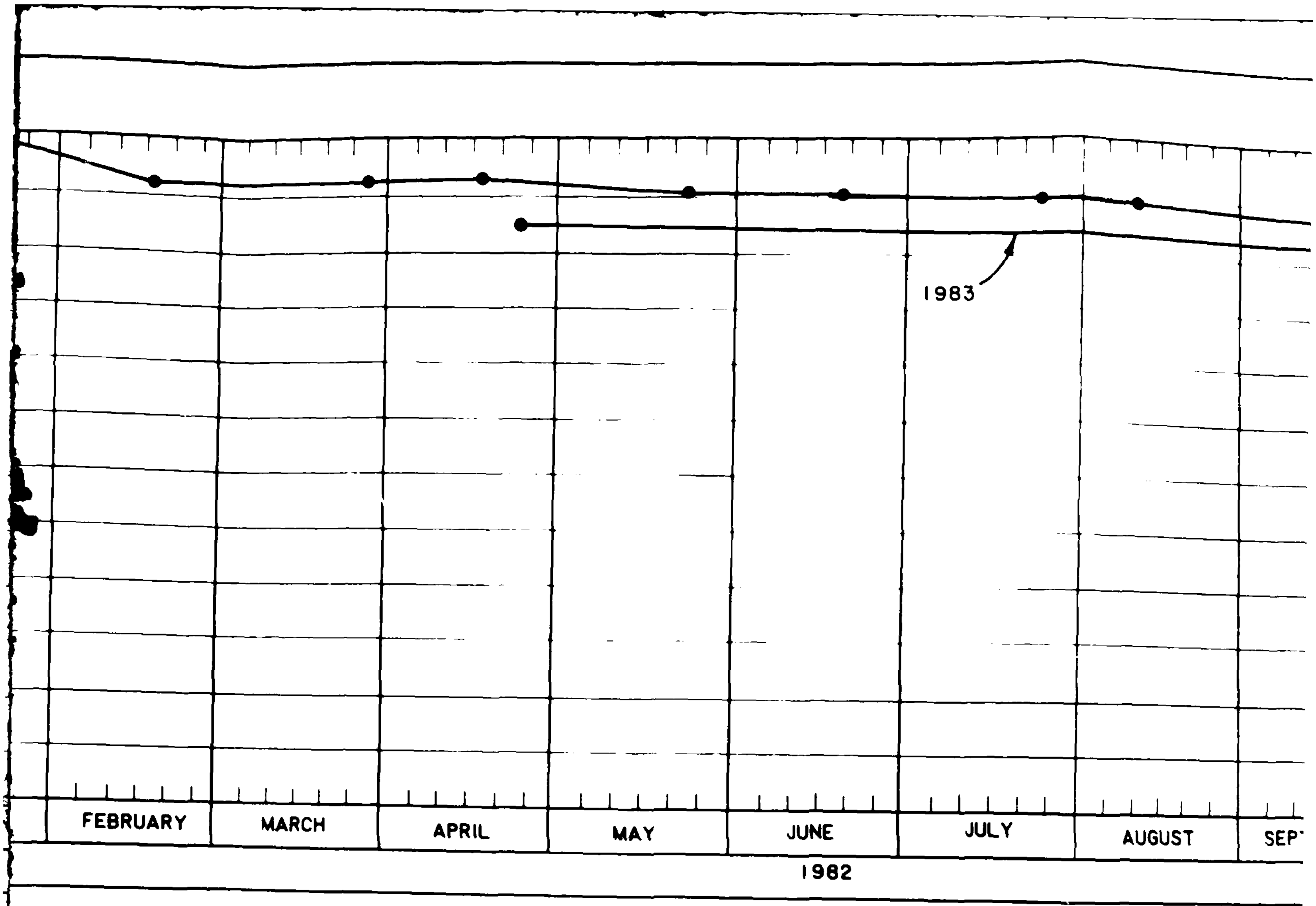

STATION 298+23.99 21A-7Z

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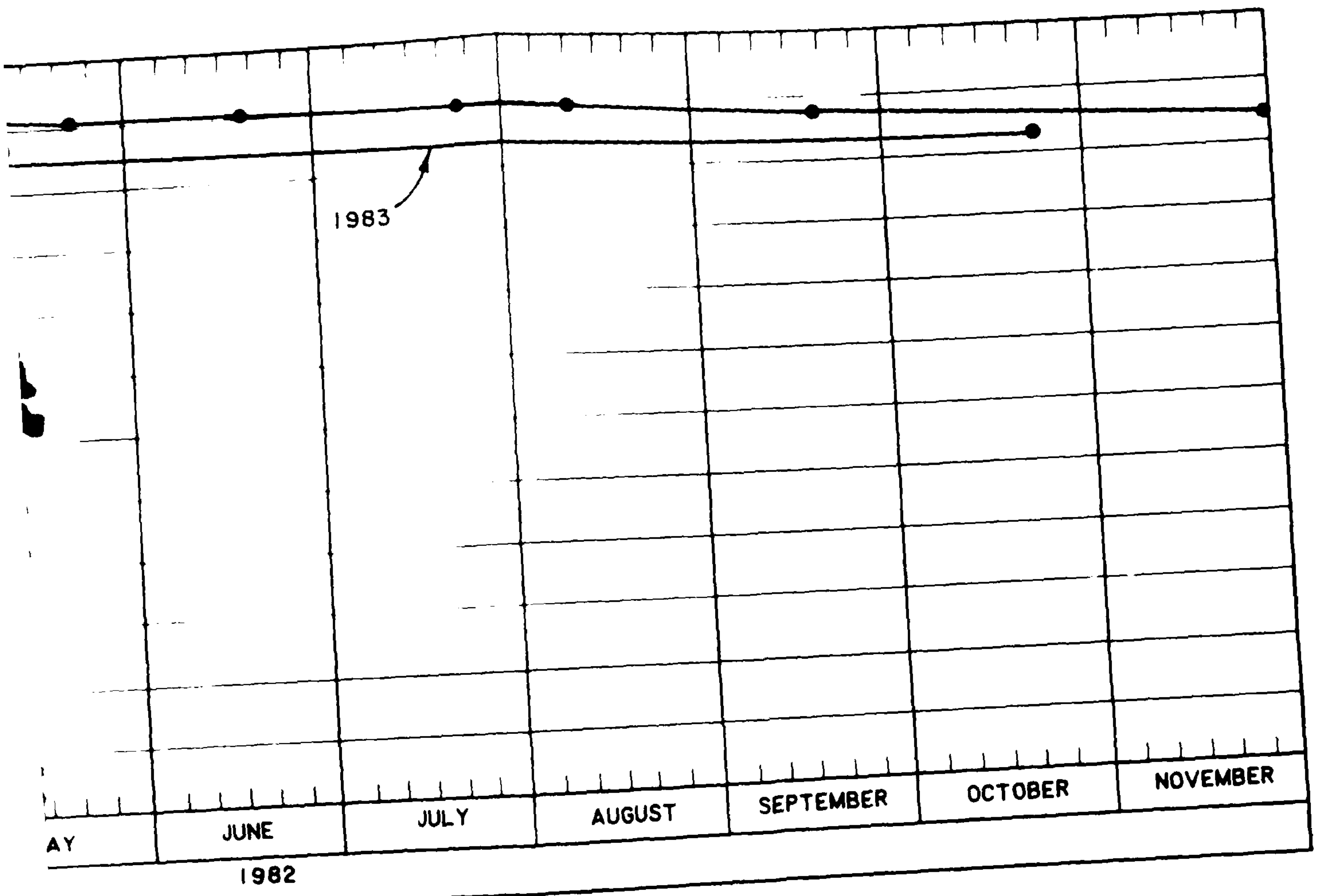

9 21A-7Z

MOBILE HARBOR, ALABAMA

GAILLARD
DISPOSAL ISLAND

SETTLEMENT DATA

Figure F13

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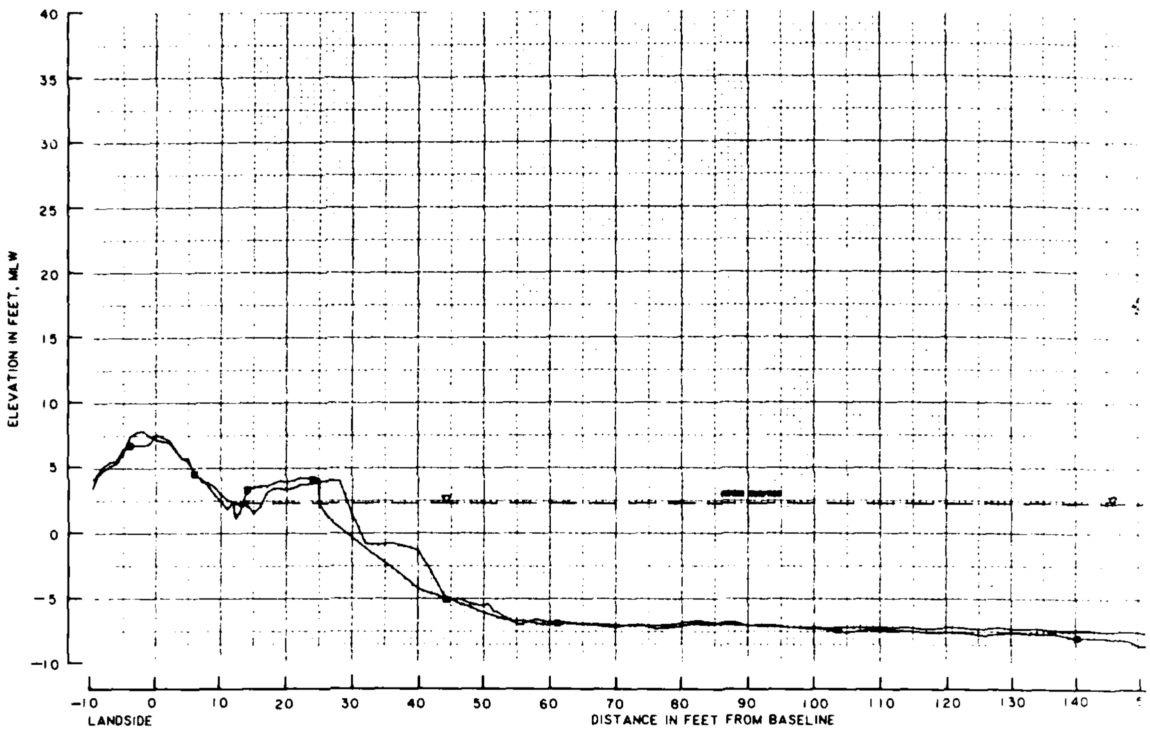
APPENDIX G: LAND AND HYDROGRAPHIC SURVEYS FOR GAILLARD ISLAND AND THEODORE SHIP CHANNEL

1. This appendix includes twelve land and hydrographic surveys of the Gaillard Island dike and ship channel near the locations chosen for the instrumentation installation. Figures G1 through G6 show the twelve profile plots of the dike shortly after construction and the most recent surveys available.

TABLE OF CONTENTS



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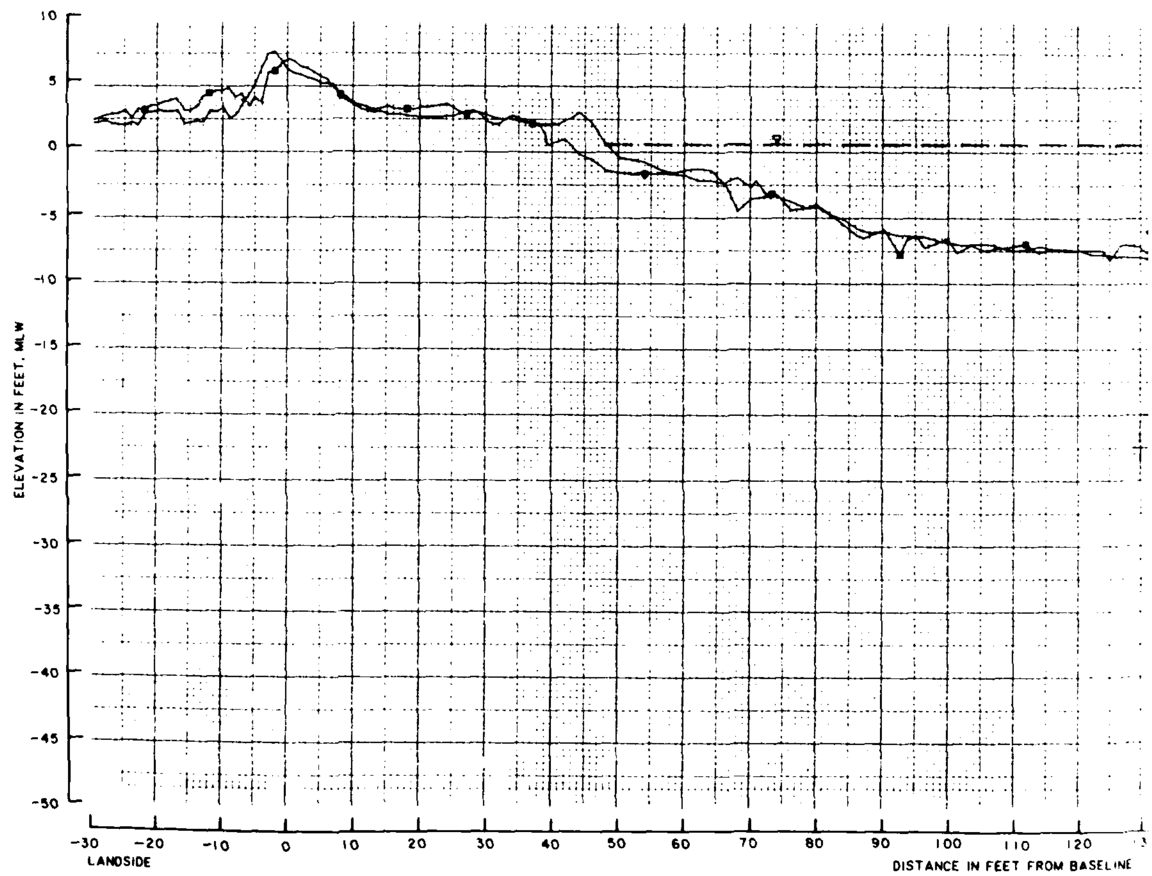

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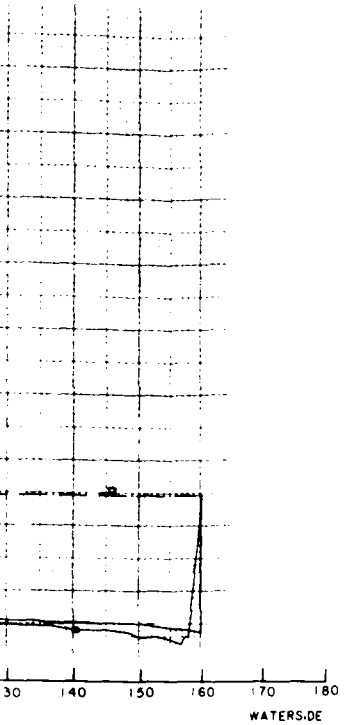
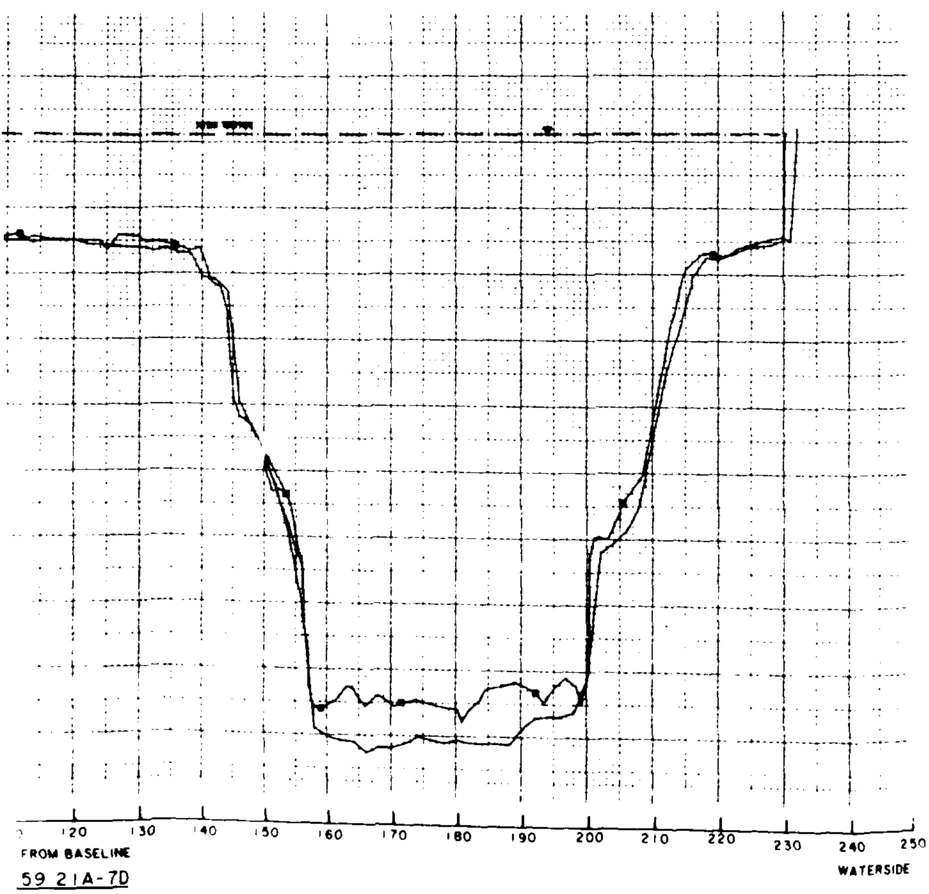


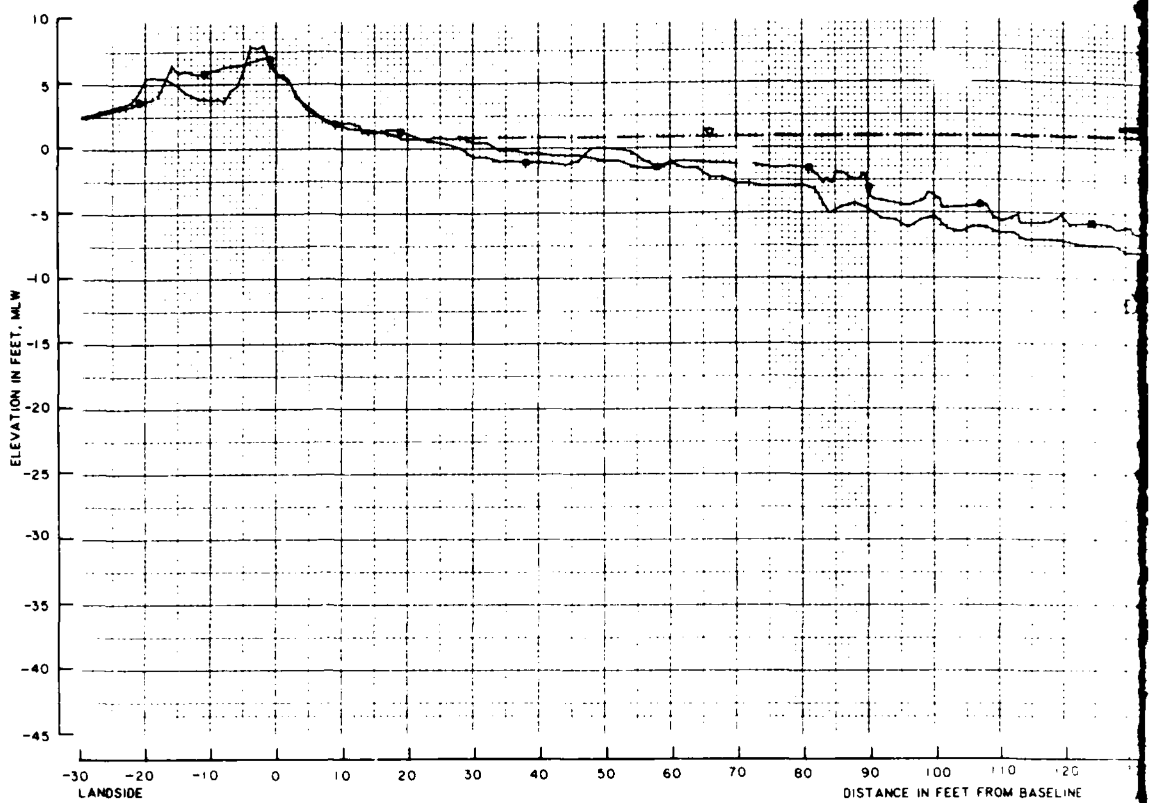


MOBILE HARBOR, ALABAMA

GAILLARD
DISPOSAL ISLAND

LAND AND HYDROGRAPHIC SURVEY

Figure G1



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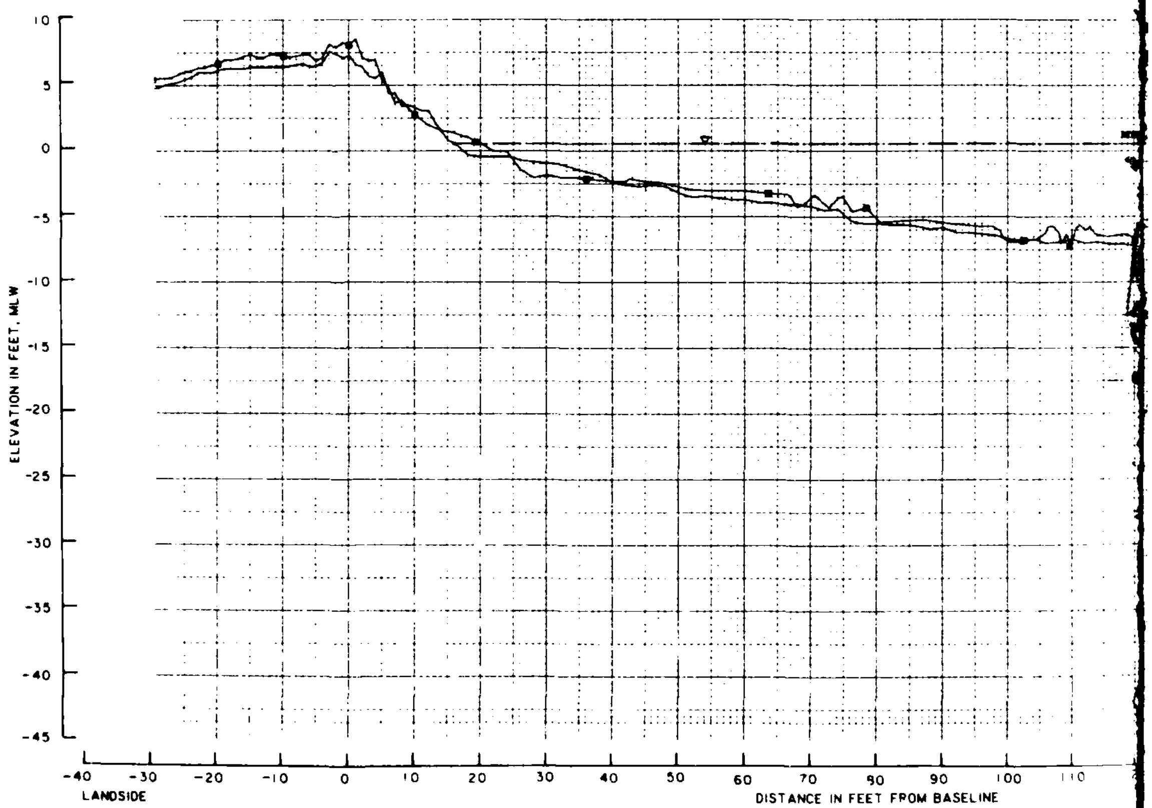

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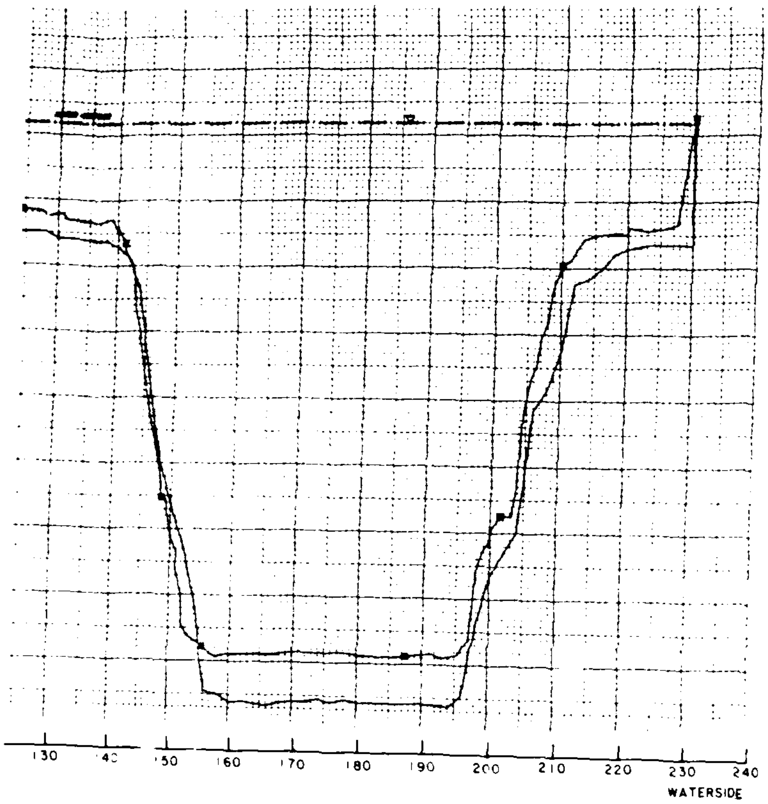

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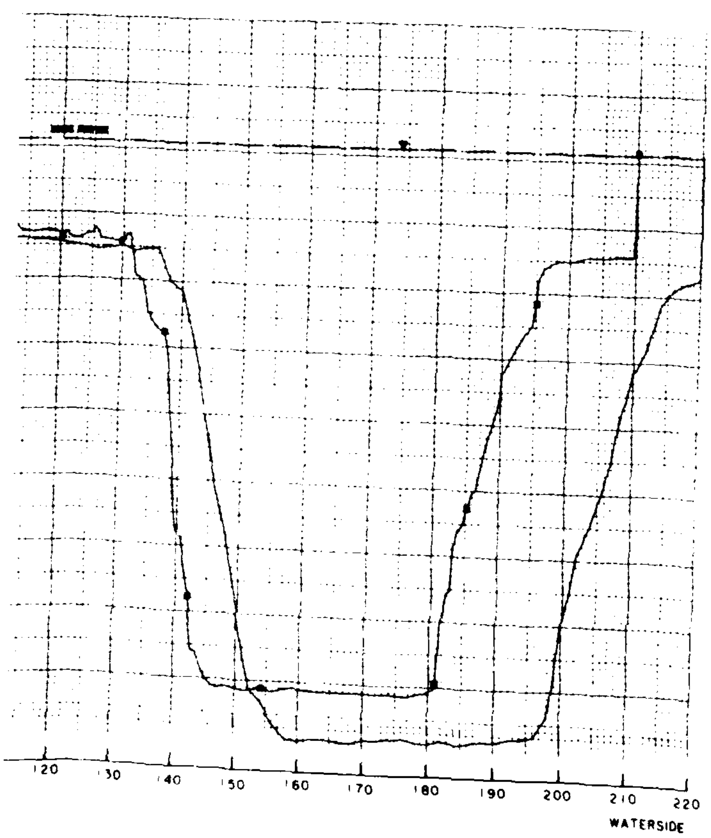
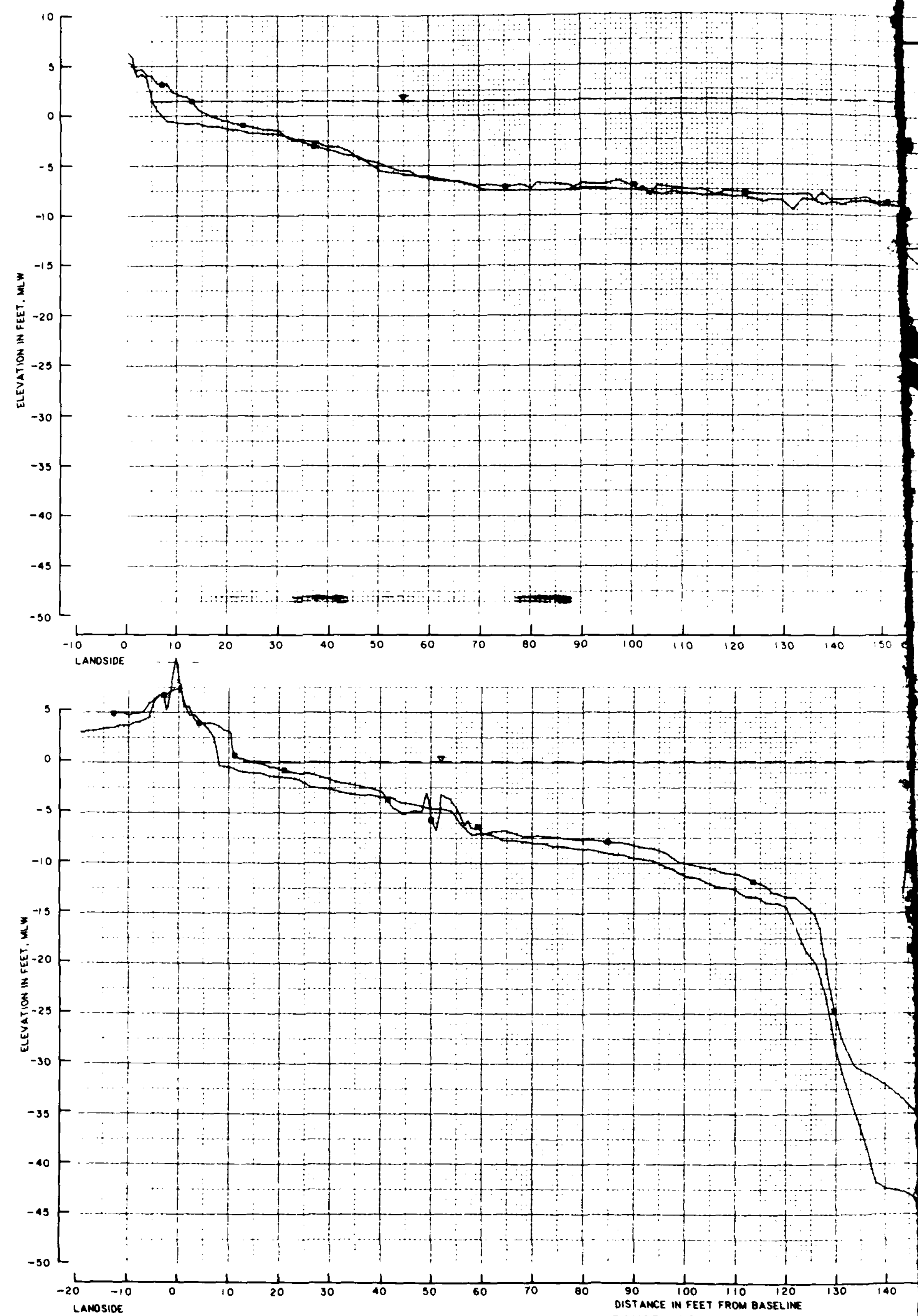


MOBILE HARBOR, ALABAMA

GAILLARD
DISPOSAL ISLAND

LAND AND HYDROGRAPHIC SURVEY

Figure G2



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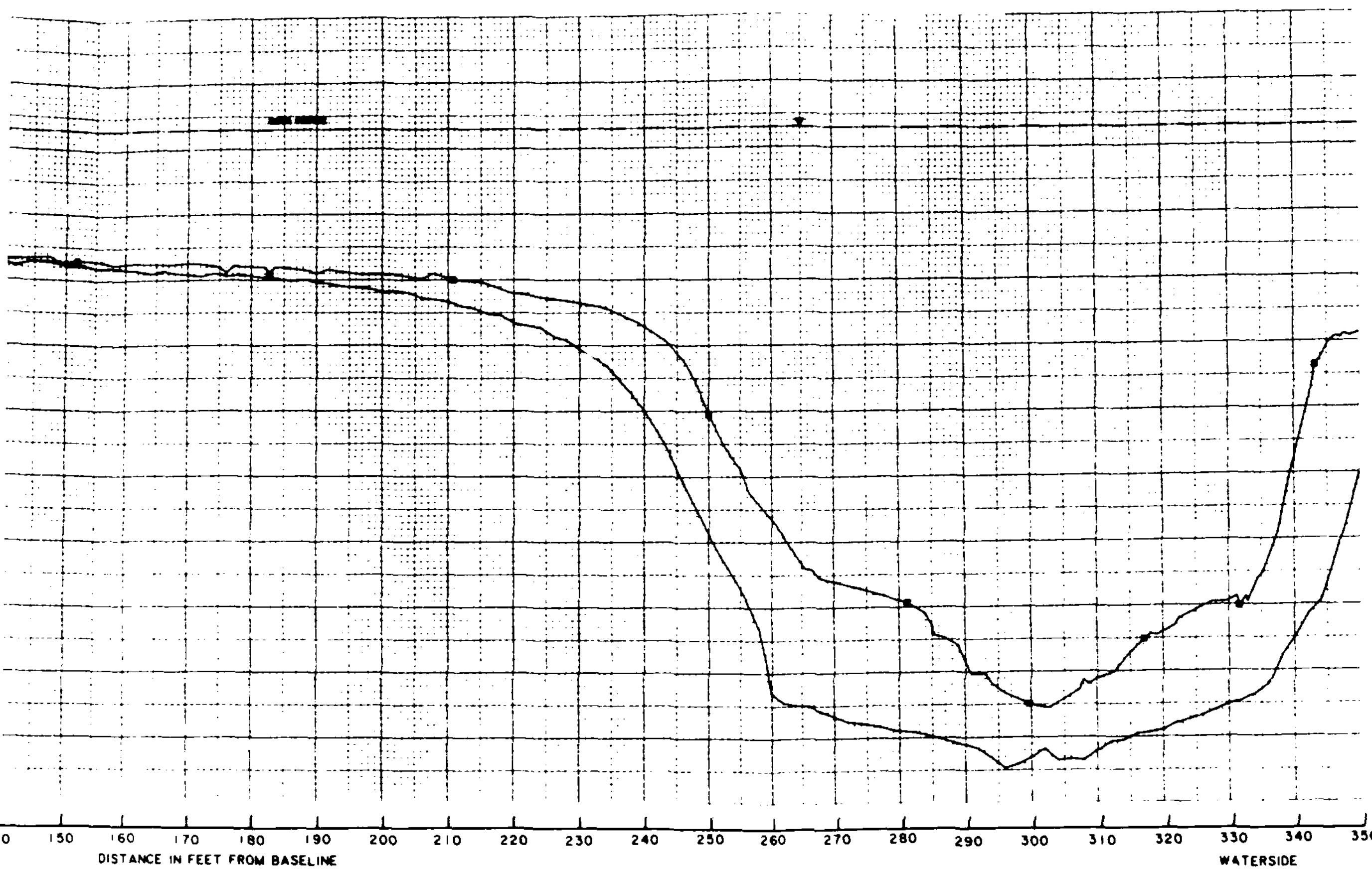

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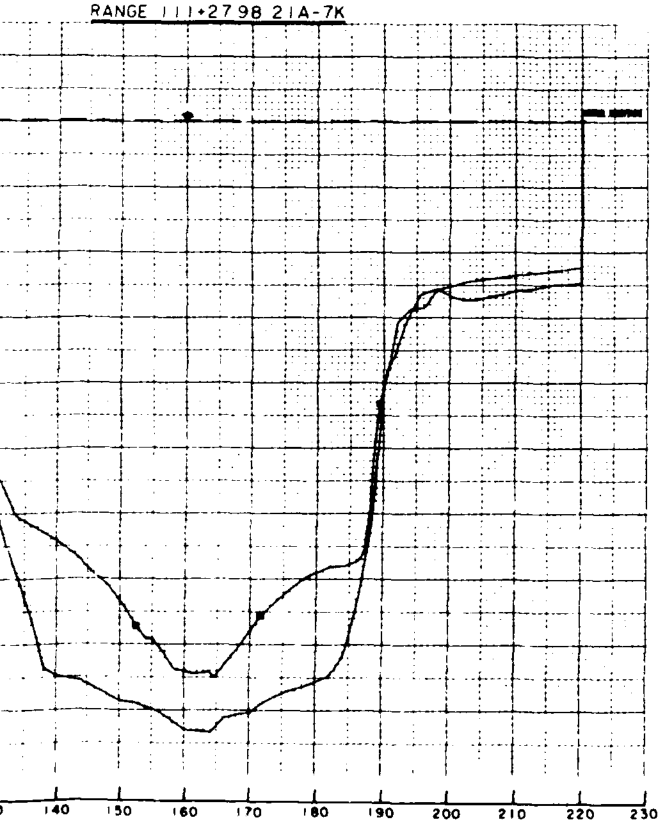

LEGEND

OCTOBER 1981 □——□——□

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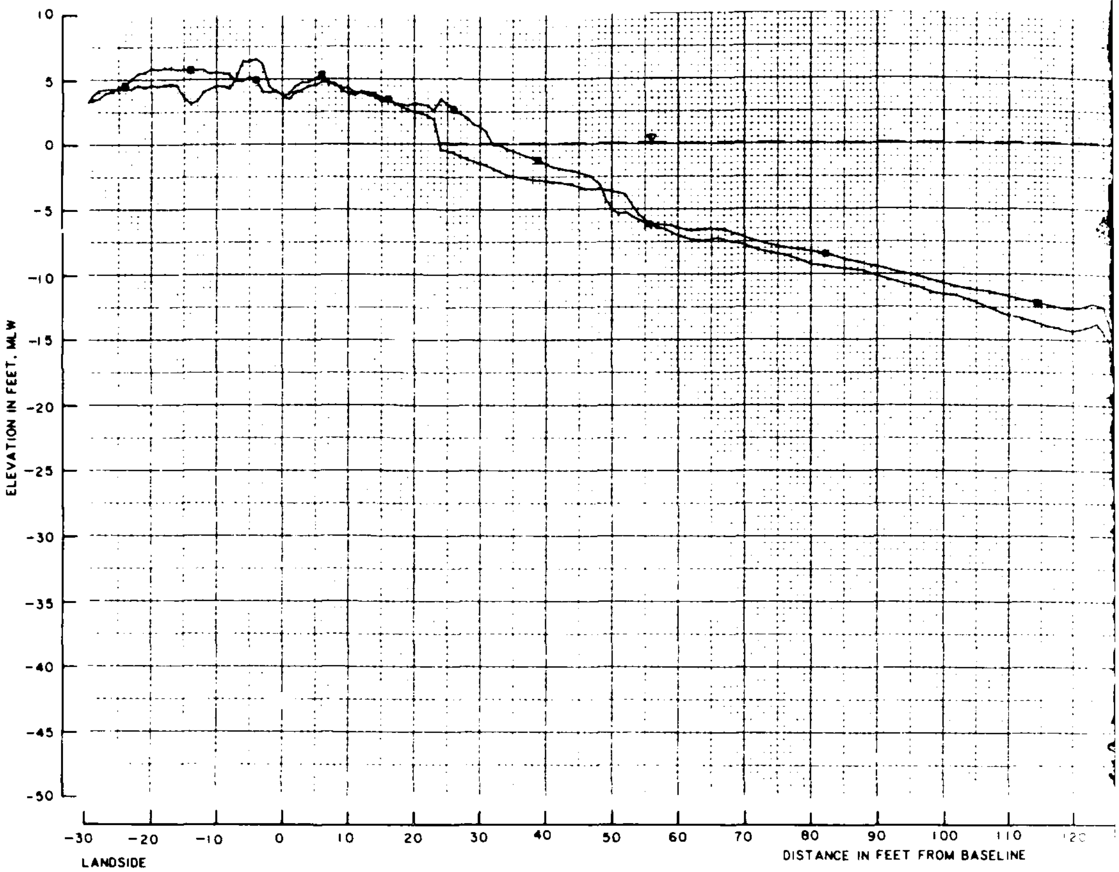
MOBILE HARBOR, ALABAMA

GAILLARD DISPOSAL ISLAND

LAND AND HYDROGRAPHIC SURVEY

Figure G3



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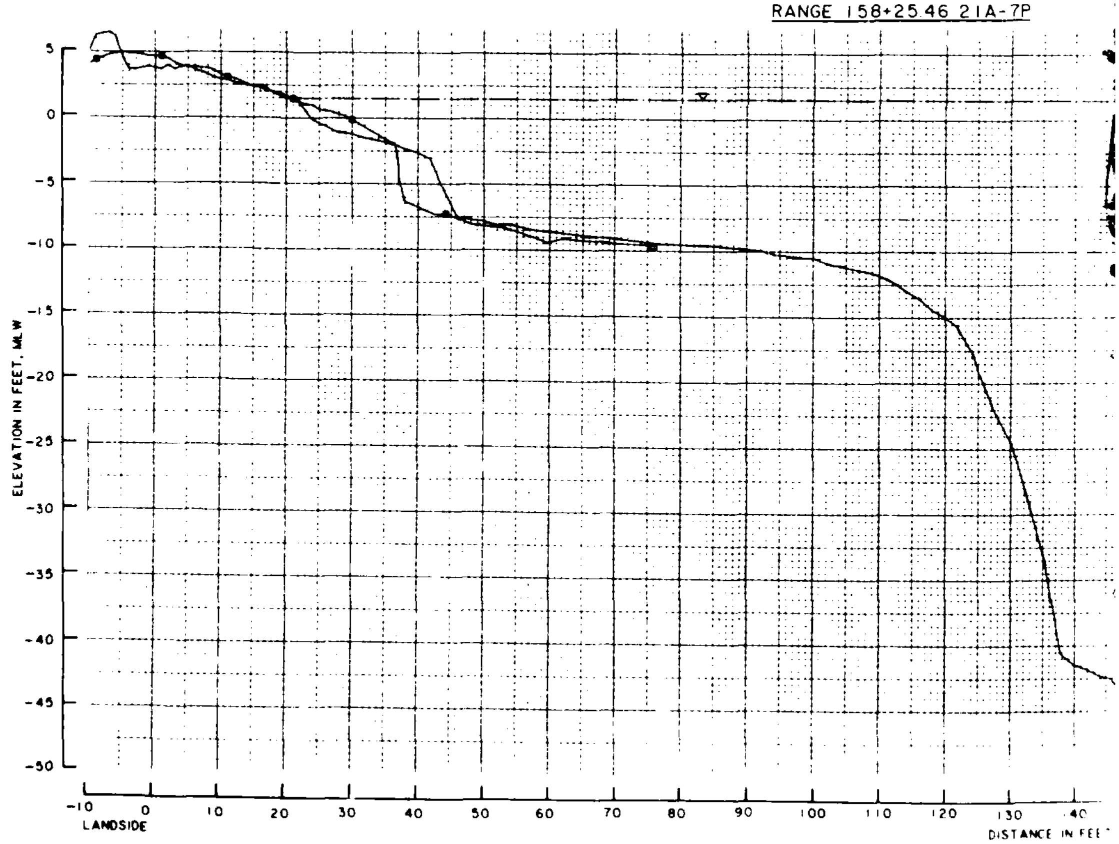
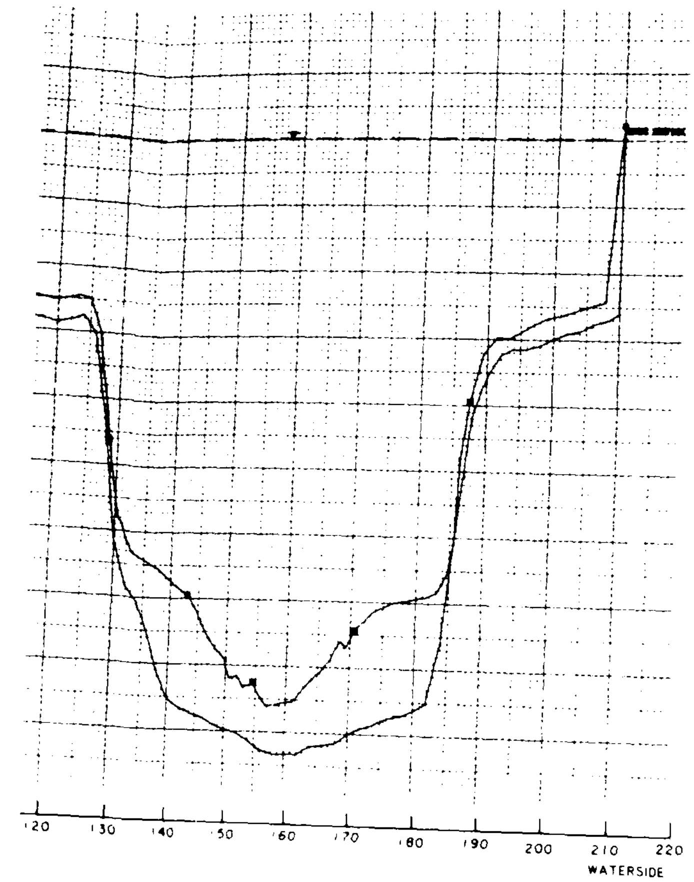


RANGE 202+



LEGEND
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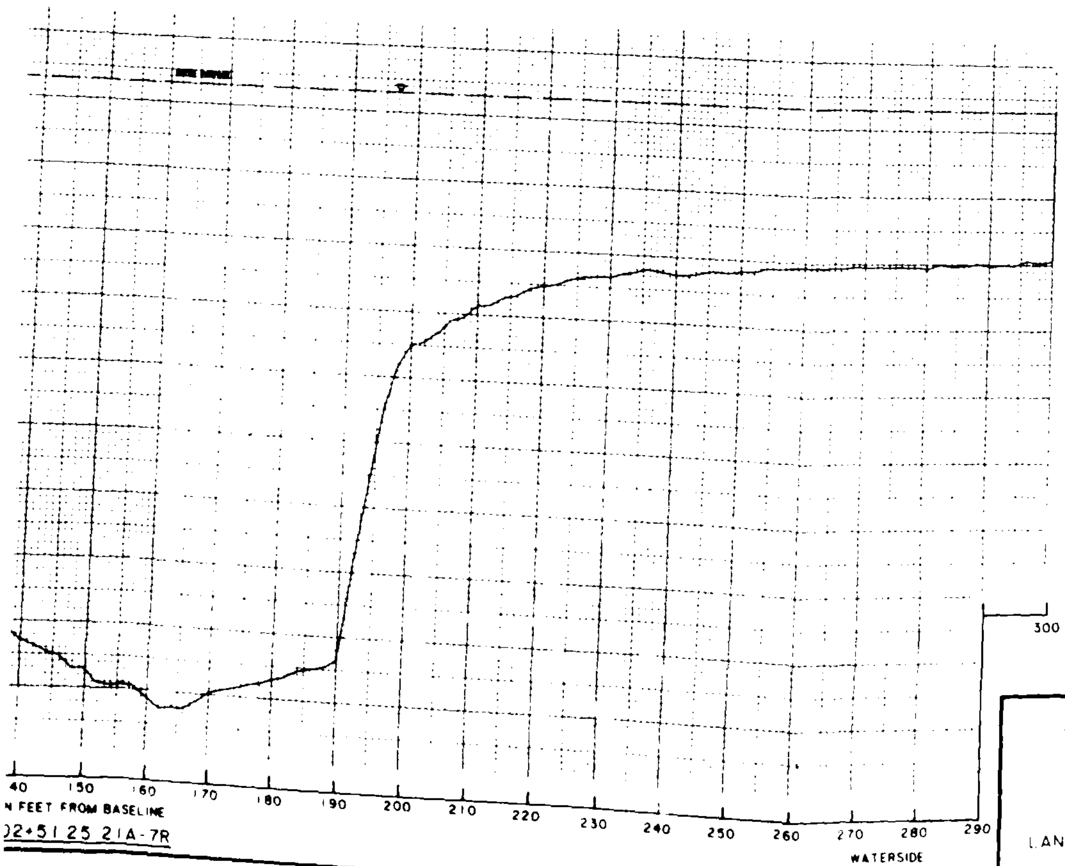
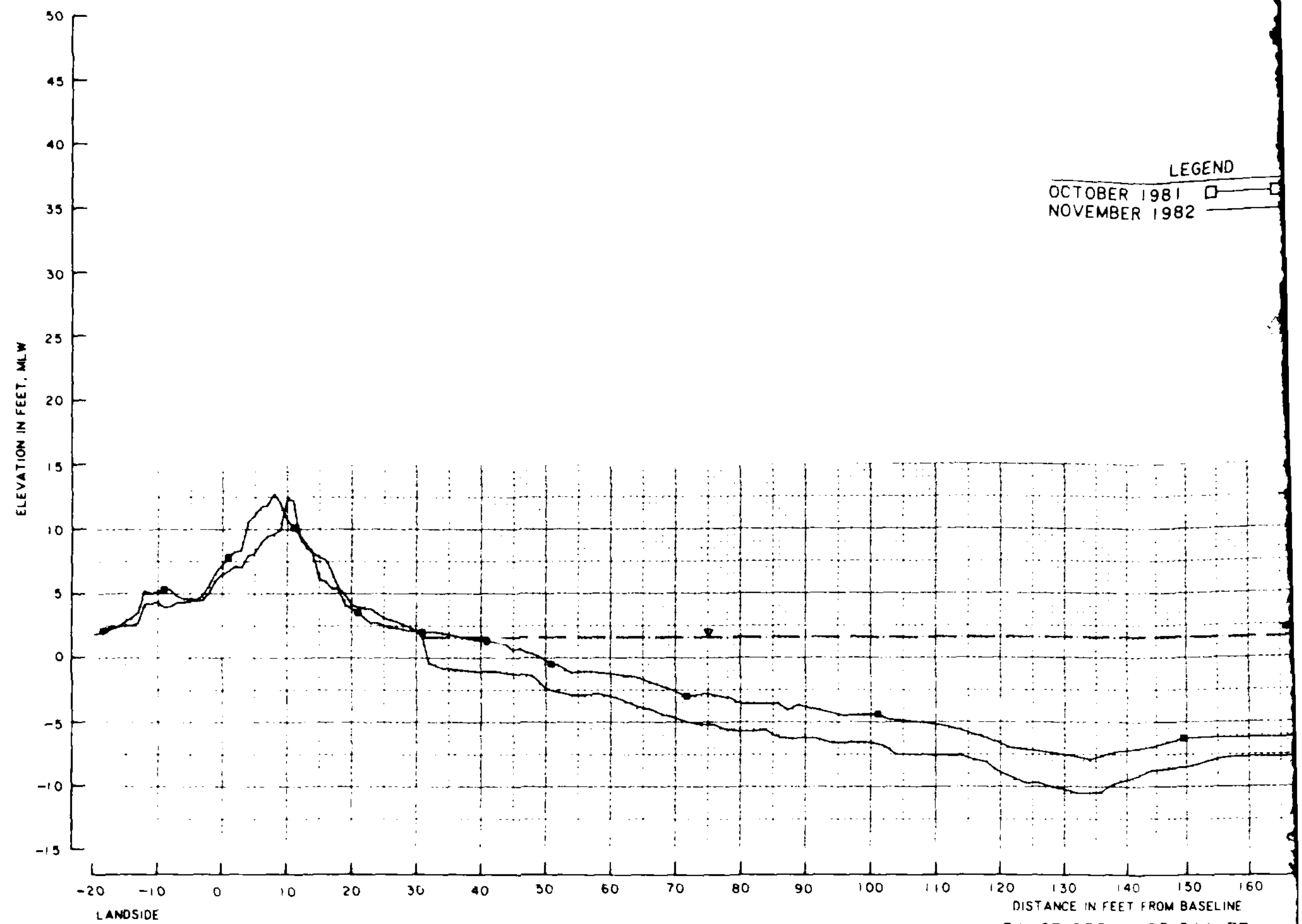


MOBILE HARBOR, ALABAMA

GAILLARD
DISPOSAL ISLAND

LAND AND HYDROGRAPHIC SURVEY

Figure C5



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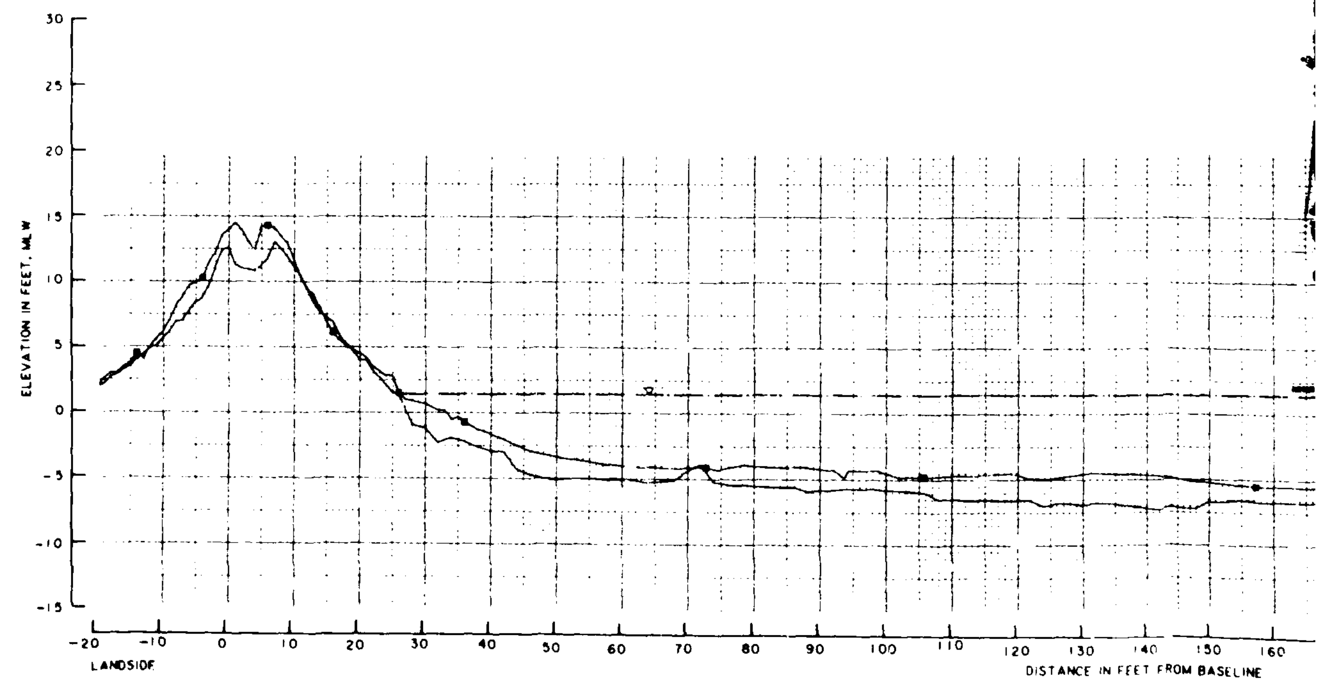

RANGE 253+0421 21A-7V

AD-A173 512 VERIFICATION OF DESIGN AND CONSTRUCTION TECHNIQUES FOR GAILLARD ISLAND DR..(U) ARMY ENGINEER WATERWAYS EXPERIMENT STATION VICKSBURG MS GEOTE.. 3/3

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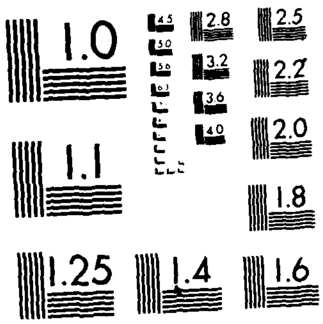

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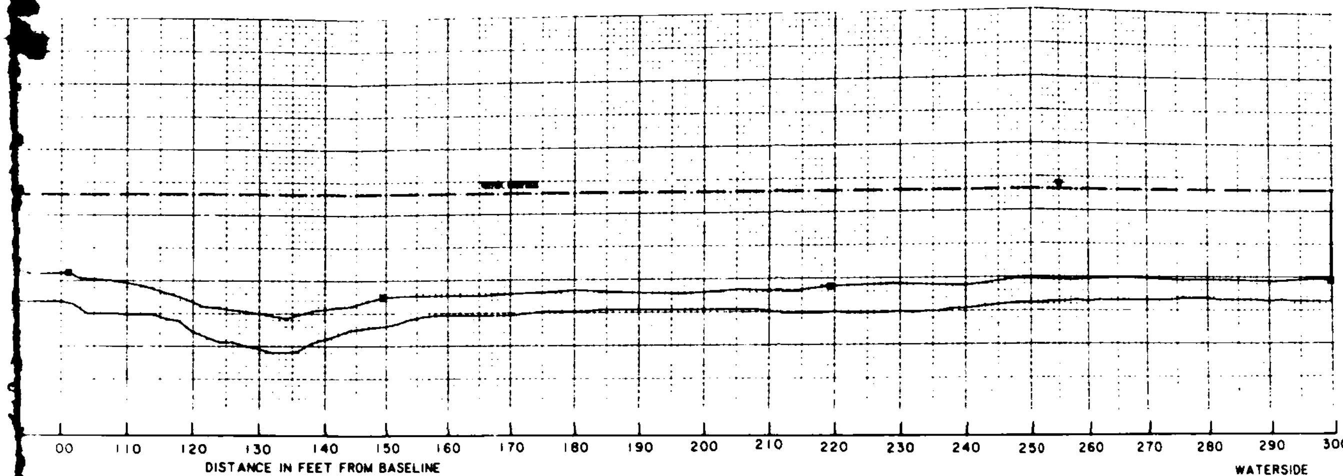

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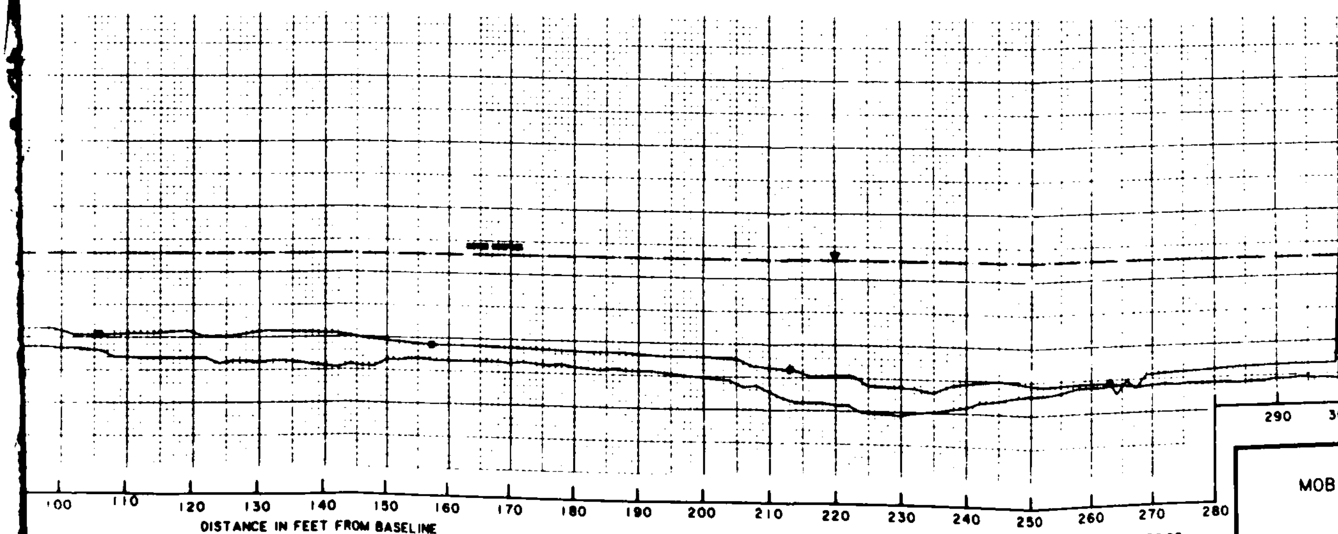
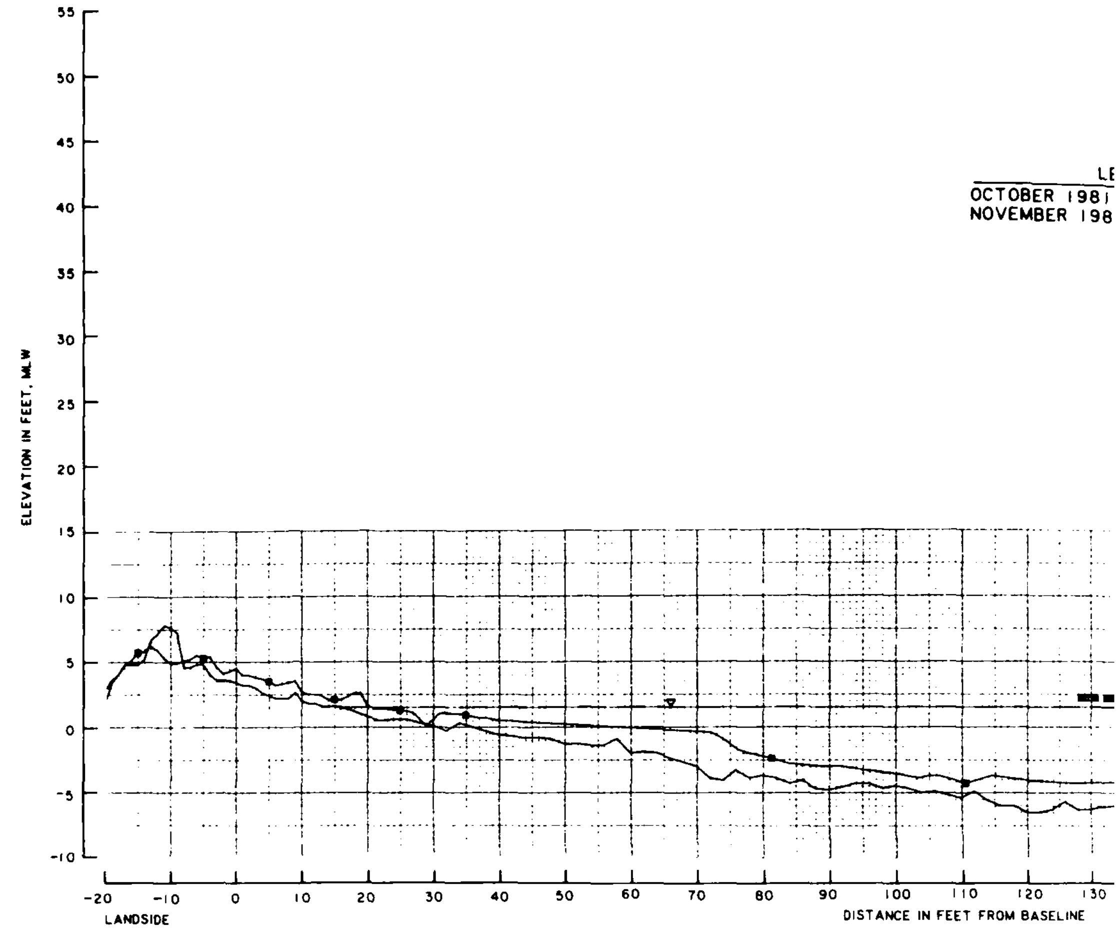


RANGE 253+04.21 21A-7V

MOBILE HARBOR, ALABAMA
GAILLARD
DISPOSAL ISLAND
LAND AND HYDROGRAPHIC SURVEY

Figure G5

C



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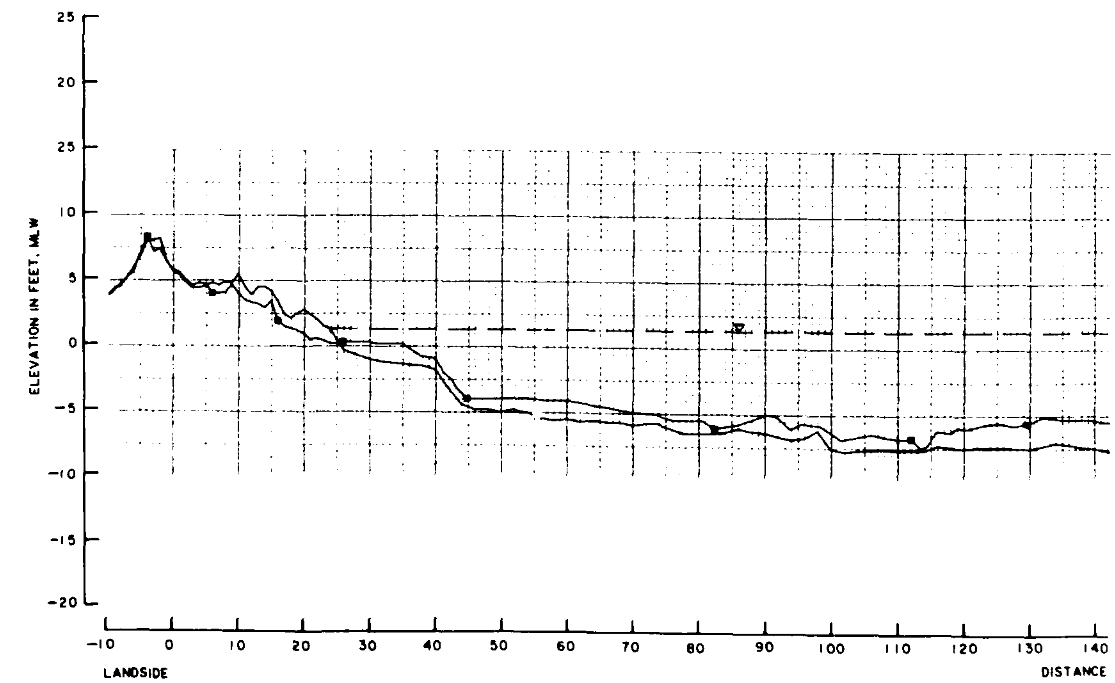
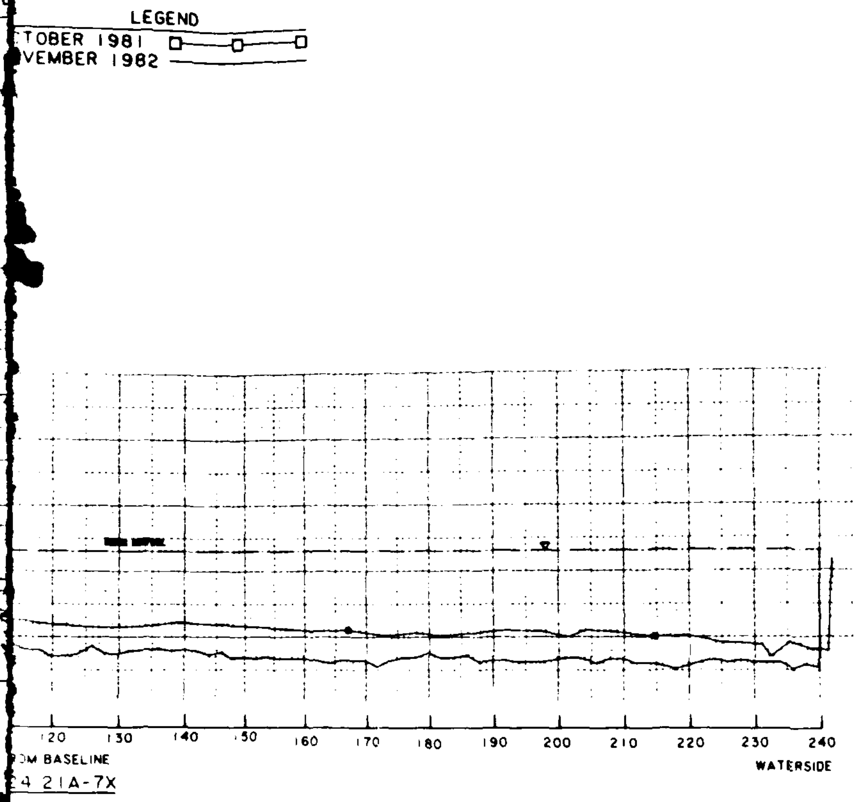
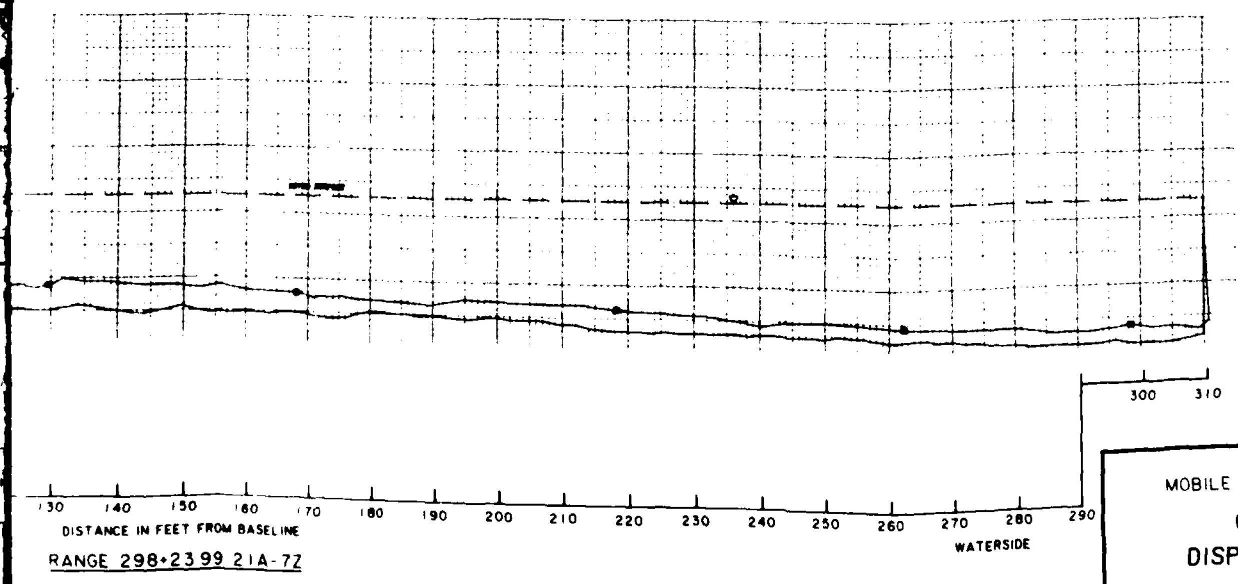


RANGE 2





MOBILE HARBOR, ALABAMA

GAILLARD

DISPOSAL ISLAND

LAND AND HYDROGRAPHIC SURVEY

Figure G6

DAT

FILM

2-8