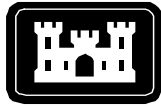


Appendix A

Geophysical Surveys



**U. S. ARMY CORPS OF ENGINEERS
MOBILE DISTRICT**

Offshore Sand Borrow Investigation, Phases 1 and 2

Geotechnical Engineering Report

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1.0 INTRODUCTION

In 2005, Hurricane Katrina caused widespread damage along the Mississippi and Louisiana Gulf coasts. The Mississippi Coastal Improvement Plan was developed by the Mobile District, USACE, in conjunction with other Federal and State agencies, to help mitigate future damage along the Mississippi Gulf coast caused by hurricanes and their associated tidal surge flooding.

As part of the Comprehensive Plan, Mississippi's barrier island chain was evaluated for ways to restore it to pre-Katrina form with the overall purpose to restore its natural ability to reduce the impact of hurricanes striking the Mississippi Gulf coast. Storm events and natural sediment transport have eroded and reshaped the barrier islands into their present configuration.

This report chronicles Mobile District's geophysical and geotechnical investigation to find suitable sand borrow sources for use on the Mississippi Barrier Islands. The investigation spans more than 5 years, beginning in 2006 with initial beach sampling from the islands and concluding in 2011 with the identification of borrow areas. Multiple agencies were involved in this investigation, including the U.S. Geological Survey (USGS), the National Park Service (NPS), and the State of Mississippi. Investigative methods included geophysical surveying and geotechnical sampling.

The focus for this report is on the investigative steps taken to identify suitable sand sources for use on and around the different islands. Each island has different sediment requirements based on engineering and biological considerations, and the report includes grain size, shape, and color information for each one. Initial placement designs were used to help establish quantities needed for each project site. However, all mentions of placement locations and borrow area shapes or dimensions are initial considerations for planning only and do not necessarily reflect their final designs. Extensive modeling is being conducted to determine optimal borrow area locations, orientations, and dimensions that will maximize sand quality and quantity while reducing potential side effects due to wave action. These final designs will not be included in this report. All figures are subject to change.

Should any questions arise concerning this report or the assumed scope of work, please contact Michael FitzHarris, Geotechnical and Dam Safety Section, (251) 690-3488. This office should be notified if there are any significant changes in the scope and/or siting of this project.

1.1 PROJECT DESCRIPTION

The Comprehensive Barrier Island Restoration Plan was developed to restore the sediment budget for the Mississippi Barrier Islands using appropriate coastal engineering designs that would maximize island chain stability while minimizing impacts to the local environment. This chain of barrier islands is located between 6 and 12 miles south of the Mississippi Gulf coastal counties of Hancock, Harrison, and Jackson Counties and consists of five natural islands and one man-made island. From west to east, the natural islands are Cat Island, West Ship Island, East Ship Island, Horn Island, and Petit Bois Island. The man-made island is Disposal Area 10 and it is located between Horn Island and Petit Bois Island. It was created as disposal area for dredged material from local projects such as the Pascagoula shipping channel. Major inlets within the island system are Ship Island Pass, Camille Cut, Dog Keys Pass, Horn Island Pass, and Petit Bois Pass. The locations of the islands, along with the location of the local navigation channels, are shown in Figure 1.1.1. In this figure, Ship Island is shown as two separate islands. It was breached during Hurricane Camille (AUG 1969) and has remained as two separate islands since that time. Historic maps also show that Ship Island has been breached in hurricanes prior to Camille, but natural processes have closed the breaches. Except for Cat Island, all the islands are wholly owned by the National Park Service (NPS) and are within the Gulf Islands National Seashore. Cat Island is partly owned by the NPS, with most of the island under private ownership. The NPS' guidelines for nourishment within the park boundaries stated that only sediment removed from the sediment budget due to anthropogenic activities (e.g. channel dredging) could be restored to the littoral zone. Sediment that was removed due to natural transport processes (i.e. storms, long shore currents, etc.) would not be restored. A study was conducted to determine the sediment budget loss due to anthropogenic activity within the NPS boundary and it was established at 22 million cubic yards of sand. This was based on historical dredging records for that area. This constraint means that only 22 million cubic yards of sand can be placed within the NPS-controlled area of the barrier islands. Cat Island is not completely included in this quantity. Figure 1.1.2 shows the boundaries of the Mississippi section of Gulf Islands National Seashore.

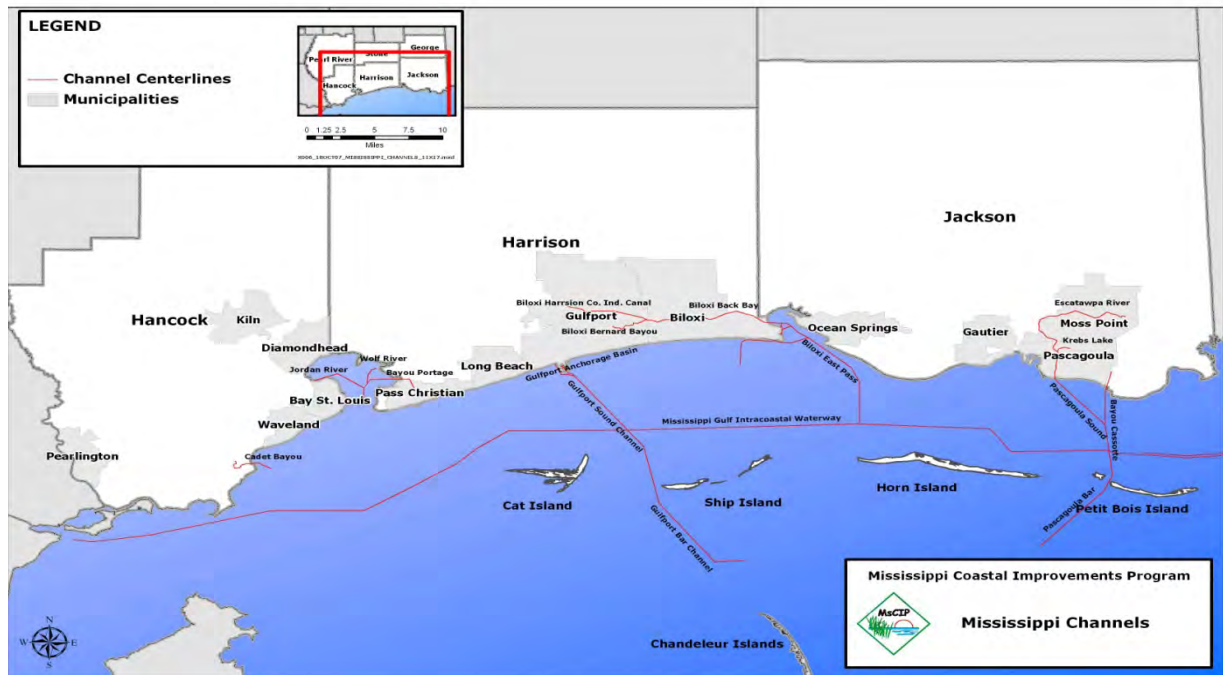


Figure 1.1.1 – The locations of the Mississippi Barrier Islands and navigation channels in the local vicinity.



Figure 1.1.2- Boundaries of the Mississippi section of the Gulf Islands National Seashore

Several projects fall within the purview of this geotechnical investigation. The main projects are:

- Beach nourishment on the northern side of West Ship Island;
- Closure of Camille Cut to reconnect East and West Ship Islands;
- Beach nourishment on Cat Island;
- East Ship Island south beach nourishment

1.2 OBJECTIVES

The objectives of this report are:

- To outline the procedures used to determine suitable sand borrow source locations;
- To identify potential borrow areas and provide estimates on borrow area sand quantities, average D50 grain size, percent fine material, general Munsell color, and general grain angularity.

1.3 SCOPE OF WORK

The scope of work for this geotechnical engineering study was derived from the project requirements and includes the following technical approaches:

- Identify grain size, shape, and color needed for placement sites;
- Conduct Geophysical exploration to identify potential borrow areas;
- Conduct Geotechnical sampling of identified areas to validate geophysical survey data models and refine sediment boundaries;
- Conduct geotechnical testing of samples for grain size, angularity, percent fine material, calcium carbonate content, and color;
- Identify areas with suitable borrow material

1.3.1 BEACH AND ISLAND SEDIMENT SAMPLING

Several beach sediment sampling events were conducted to identify the necessary grain size, color, and shape needed for the fill material used in the Barrier Island projects. The samples from these events established the baseline material characteristics required for the fill material. Section 3.2 details these sediment sampling events.

1.3.2 GEOPHYSICAL SURVEYS

The USGS, in conjunction with the USACE, National Park Service (NPS), and the State of Mississippi, conducted two major geophysical surveys in the areas surrounding the barrier islands. The two main purposes of the survey were to gather information about the natural migration of the islands and to identify possible sources of sandy material. Section 4.0 details these surveys.

1.3.3 GEOTECHNICAL INVESTIGATION

Four hundred and twelve (412) vibracore borings were drilled during two phases of sampling in 2010 and 2011. Phase One sampling locations were initially identified during the preceding

geophysical surveys (see Section 4.0) and were augmented and altered during the Phase One geotechnical investigation in 2010 based on the real-time results of the sampling. Phase Two sampling locations were collected from areas containing data gaps from the Phase One sampling. Borings containing suitable material for use in the project placement areas were sampled. All other material was disregarded. The samples obtained from the geotechnical investigation were utilized to perform geotechnical analyses, which included mechanical sieve analysis for grain size distribution, percentage of fine material, qualitative Munsell color classification of sediments, and qualitative sediment grain shape classification. These test results helped determine if a particular borrow area met the fill characteristics criteria established during the beach and island sediment sampling events. Section 5.0 details this investigation.

2.0 GEOLOGICAL SETTING**2.1 GULF COASTAL PLAIN**

The study area for this geotechnical report is a subset of the MsCIP study area and includes the barrier islands and surrounding waters off the Mississippi coast and south of Alabama's western end of Dauphin Island.

The coastal area of Mississippi is part of the Gulf Coastal Plain which extends from Florida westward to Texas. This plain includes the barrier island chain which lies 6 to 12 miles offshore and that is of interest for this project. This island chain consists of the following islands: (east to west) Petit Bois, Horn, East Ship, West Ship, and Cat Islands. It was first thought of this area to be remnants of topographic highs of the upland surface that had been separated from the mainland by marine inundation as the Gulf Coast slowly subsided (McGee, 1891). However, this interpretation was proven to be incorrect after accurately dating and correlating the stratigraphy and sediments of the Coastal Plains through core sampling (Morton, 1977). Interpretations of these cores led to indicate the gradual near shore sediment aggradation that led to the formation of the narrow, sandy platform belt over the lower muddy-sandy near shore deposits (Otvos, 1985). This near surface deposit stratigraphy of the Mississippi-Alabama Shelf is the product of the fluvial-deltaic deposition during sea level lowstands that have occurred since the late Pleistocene, 3.5 million years ago (mya). The gulfward growth of the deltas during the glacio-eustatic fluctuations in sea level produced stacked, off-lapped sedimentary sequences derived from the Mississippi, Pearl, Pascagoula, Tombigbee, Alabama, and west Florida river watersheds. During the late Pleistocene, deltaic loads from the fluvial systems produced differential rates of subsidence of the shelf which acts as the primary mechanism for fluvial orientation and shelf geometry (Bartek et al, 2004). During this time period, sea level changes associated with global glacial action caused a transgressive-regressive sequence reworking sand along the coast. The last glacial period created a coastline near the edge of the continental shelf. As the ice began to melt, the associated sea level rise and wave action began to form the exposed sand into barrier islands with replenishment to this system coming from the east associated with sediments from the Apalachicola River that contribute to the barrier islands in northwest Florida westward into Alabama along Dauphin Island.

The sediment supply of the Gulf Coastal Plain is sourced by the long shore littoral drift moving from the southeast to the west along with Mobile Bay's huge ebb-tidal delta, which receives sand intermixed with dominant mud from the Bay interior by powerful tidal

currents. This sediment supply moves westward along the northern Gulf of Mexico or the Gulf Coastal Plain. A relic late Pleistocene barrier ridge on the western flank of the Bay entrance became the intermediate base that enabled continued westward sand transport by littoral drift and currents off, and parallel with, the mainland shore which sourced sediment for the northern Gulf of Mexico barrier islands (Otvos, 1981). The relics of the earliest islands are buried under deltaic deposits and preserved west of the Square Handkerchief Shoals, approximately 2-3 miles south of Bay St. Louis, MS. The littoral drift reaches Petit Bois and the other islands via the shoals and ebb-tide deltas south of the inter-island passes (Otvos, 1985). However, growth of the St. Bernard sub-deltas of the Mississippi River south of Hancock and Harrison Counties in Mississippi resulted in the cutoff of the littoral drift west of Ship Island approximately 4,000 years ago (Frazer, 1967).

2.2 JACKSON, HARRISON, AND HANCOCK COUNTIES

The Geologic Map of Mississippi (Moore, 1976), published by the Mississippi Geological Survey, identifies three strata, or formations, that underlie the three subject counties north of the barrier islands. These include the alluvial/coastal deposits of Holocene age, the Citronelle formation of Pliocene/Pleistocene age, and the Pascagoula/Hattiesburg formation of Miocene age. Otvos (1986, 1992, and 2005) further defines the various formations and provides information to their depositional environment. These formations and environments also apply to the barrier islands concerning this project. The later work addresses the presence of, or lack of, sand and other sediments along the coast, in the Mississippi Sound and near the barrier islands.

Within the Mississippi Sound, Holocene-aged deposits form thin, muddy strata that cover the older Pleistocene formations. These include alluvial, estuarine, and lagoonal-bay deposits. Sampling studies have shown the strata to contain particle sizes from colloidal to sand size depending on the energy associated with its depositional environment (Upshaw, Creath and Brooks, 1966).

The transgressive-regressive sequence, which reworked the sand and other sediments along the coast, resulted in three formations that correlate from the alluvium along the coast to the barrier islands: the Prairie, Biloxi, and Gulfport formations. The Gulfport and Prairie formations are generally very sandy and have some economic value because of this characteristic. A generalized geologic map of the Mississippi coast based on these studies is shown in Figure 2.1, (after Otvos, 1997). The Prairie formation is found just landward of the

SECTION 2

Offshore Sand Borrow Investigation, Phases 1 & 2 Geological Setting

coast in all three counties, while the Gulfport formation is found along the beaches and barrier islands.

The Plio/Pleistocene Citronelle formation outcrops northward of the late Pleistocene formations. Utilizing outcrop, boring, and fossil data from numerous locations, the Citronelle formation has been characterized as upland, alluvial/fluvial deposit that covers much of the study area. It consists predominantly of silt and sand with some gravelly deposits. The source of the sand came from rivers that drained to the Gulf coast. Where paleo-streams and rivers have been incised into the underlying Miocene formation, Citronelle has formed thicker sequences than its general sedimentary deposits that cover much of the three counties. The northern portions of the three counties contain limited outcrops of the Miocene-aged Pascagoula/Hattiesburg formation. This formation contains inter-bedded clay, silt, and sand, and is exposed along river valleys that have incised through the younger Citronelle formation which overlies it.

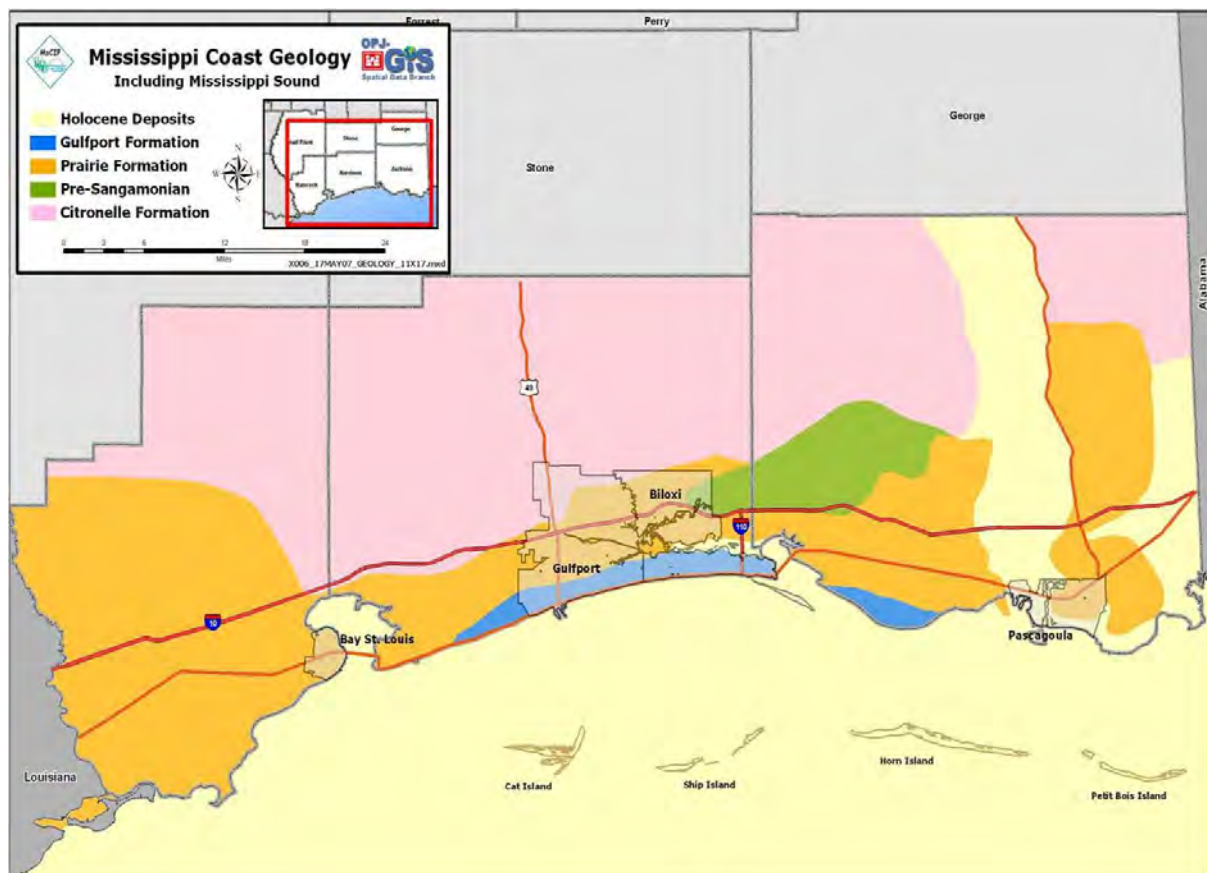


Figure 2.3.1.1 - Generalized Geologic Map of Coastal Mississippi (After Otvos, 1997)

2.3 SITE-SPECIFIC SOIL CONDITIONS

Hand auger and grab samples at the various placement sites and on the barrier islands indicate that the soil profile generally contains clean, poorly-graded, medium- to fine-grained quartz sand (SP) with very little fine material (silts and clays). Grain size varied among the islands, but did not exceed a medium grain size. Site sampling was mostly surficial and did not exceed 6 ft deep. Section 3 discusses fill compatibility as it relates to local site conditions and the sampling events used to determine grain size, angularity, percent fines, and color for each site.

3.0 PLACEMENT SITE FIELD INVESTIGATIONS

Characteristics of the native material at the placement sites are critical to determining the fill characteristics required to meet the project's requirements. Before any borrow area investigation could begin in earnest, sediments at the placement sites had to be analyzed to determine their characteristics.

3.1 FILL COMPATIBILITY REQUIREMENTS

Fill material should match native material as closely as possible to ensure stability and minimize environmental impacts due to changes in material characteristics. Color, grain size, shape, and carbonate content all affect the engineering and environmental characteristics of the fill. General guidelines for identification of compatible borrow were also reviewed as described in the National Oceanic and Atmospheric Administration's (NOAA) "Beach Nourishment: A Guideline for Local Government Officials".

3.1.1 COLOR

The color of beach sand is an issue not only for aesthetics, but it also affects marine life. The thermal properties of the sand are directly related to the absorption of solar energy from the sun, which in turn affects the temperature of the sand. Darker sand absorbs more solar energy, making it warmer than lighter colored sand, which reflects the solar energy. Temperature plays a role in determining the gender of sea turtle hatchlings. Researchers have discovered that the warmer the sand, the higher the percentage of female sea turtle hatchlings (Hayes, G.C.; et al.). For this investigation, the Munsell color test was used to qualitatively characterize each sample. A Munsell color value, hue, and chroma were assigned to each sample. For the purposes of classifying the color of large borrow areas, the Munsell value is used because it describes the material's lightness on a continuous scale from 1 to 10. 1 is black and 10 is white, with shades of gray in between. Therefore, the value gives an indication to the lightness of the sediment, regardless of its actual color, thus simplifying comparisons of samples. Because moisture affects color, wet and dry color characterization was done for each sample. For this report, an area-weighted average Munsell value was used for describing the sediment for borrow areas and placement areas when possible.

3.1.2 GRAIN SIZE

The grain size, or gradation, of the sand is a significant factor because particle size affects beach stability. Larger grain sizes require relatively greater energy to move in comparison to smaller grains, so coarser sands increase beach stability. Existing beach sediments are typically in a state of equilibrium with energy from waves and currents because the sediments finer than those in equilibrium will be eroded by waves and currents, leaving only the proper particle size based on existing conditions (Dean, 1974 and 1991). Although grain size distribution curves were determined for all samples, the median grain size, or D50, is the value used to compare grain sizes for different borrow areas to the native beaches' sand. Initially, average grain sizes for the placement areas and borrow areas were determined arithmetically. Upon further refinement of the borrow areas, area weighted averages were determined for the borrow areas. Therefore, when possible, an area-weighted average D50 was used for describing the sediment for borrow areas and placement areas.

3.1.3 GRAIN ANGULARITY

The angularity, or roundness, of individual grains affects sediment settling and motion initiation. The sand found on the barrier islands is typically a sub-angular to rounded shape, which is expected with sand grains that have been transported for long distances. Higher angular sand grains tend to pack tightly together and make a harder beach surface, while rounded sand grains tend to be less compressed and form a softer surface. These variations in the firmness of the surface will affect the use of the islands by many types of fauna. Nesting sea turtles prefer sand that is loosely packed for nesting. The more rounded sand grains allow for easier nest digging by the turtles. Changes in the firmness of the beaches will also affect the benthic community at the shoreline, which will in turn influence the use of the beaches by shorebirds. USACE and NPS personnel quantitatively compared a representative sample from each boring sample to a Geotechnical Gauge containing different degrees of angularity to determine the overall angularity of that sample.

3.1.4 CARBONATE CONTENT

Beach sands can be broadly categorized by their chemical composition into either carbonate (CaCO_3) beaches or siliciclastic/quartz (SiO_2) beaches. Carbonate content is important because carbonate sands perform differently from silica sands due to different intraparticle porosities, density, bulk density, and structural integrity of carbonate grains (Halley, 2000). Weathering of carbonates can produce sediments with higher concentrations of silt- and clay-

sized material resulting in cementation of grains and elevated turbidity. Carbonate content was generally not an issue with this investigation because the vast majority of sand located was siliciclastic / quartz with very little shell fragments.

3.1.5 FINE MATERIAL CONTENT

The Unified Soil Classification System (USCS) defines fine material as any sediment that passes through a U.S. Standard #200 sieve. This fine sediment can be either silt or clay particles. Fine material affects the overall quality of the sand. It increases turbidity in the nearshore area and, in significant amounts, can alter the engineering properties of the sand. Aesthetically, quartz sand with a high percentage of fine material tends to look dirty and is not appealing to beachgoers. Therefore, clean quartz sand with less than 5% fine sediment is the target material. The NPS was willing to allow up to 10% fine material on beaches (15% in the nearshore area), but generally the goal was to identify sands with less than 10% fine material for these projects. Depending on the type of dredge used for the project, some fine materials can be washed out during dredging and placement. Therefore, some allowance was given to the percentage of fine sediment to be greater than 5% within samples and still be considered acceptable.

3.2 BARRIER ISLAND SEDIMENT INVESTIGATIONS

Multiple beach and island sediment sampling events took place between 2006 and 2011. Their purpose was to identify the native materials' characteristics in order to determine the best matching fill for the projects and to gain a better understanding of the islands themselves.

3.2.1 2006 BEACH SEDIMENT INVESTIGATIONS

During initial stages of the Barrier Island Plan in 2006, geologists and biologists from the USACE Mobile District took sand samples from various locations on beaches on all the Mississippi islands except for Cat Island. Cat Island was not included in the project plan at this time. These samples were analyzed for color using Munsell Color Charts and for angularity by qualitative comparison using a McCollough Geotechnical Gauge. The samples were not lab-tested for grain size distribution. The results of the sampling indicated that the majority of the sediments were poorly graded quartz sand, light gray in color, with sub-angular to rounded particle shape. The results of the sampling are shown in Table 3.2.1.1.

SECTION 3

Offshore Sand Borrow Investigation, Phases 1 & 2 Placement Site Field Investigations

The locations for the 2006 and 2009 sampling events are shown in Figures 3.2.1.1 thru 3.2.1.5 of Appendix A. Aerial imagery maps of sample locations are in Appendix A.

SAND SAMPLES - MISSISSIPPI BARRIER ISLANDS - 9/27/2006					
Sample #	Location	Latitude	Longitude	Description	Color
HI-1-06	North beach of Horn Island See Appendix A, Fig 3.2.1.4	30.2376	-88.6674	Medium, poorly-graded sand, SP	white, 2.5Y 8/1
HI-2-06	South beach of Horn Island See Appendix A, Fig 3.2.1.4	30.2329	-88.6725	Medium, poorly-graded sand, SP	lt. grey, 2.5Y 7/2
PB-3-06	North beach Petit Bois Island See Appendix A, Fig 3.2.1.5	30.2023	-88.4653	Medium, poorly-graded sand, SP	lt. grey, 2.5Y 7/2
PB-4-06	South beach Petit Bois Island See Appendix A, Fig 3.2.1.5	30.2001	-88.467	Medium, poorly-graded sand, SP	lt. grey, 2.5Y 7/2
ES-5-06	North beach East Ship Island See Appendix A, Fig 3.2.1.3	30.2441	-88.8803	Medium, poorly-graded sand, SP	lt. grey, 2.5Y 7/2
ES-6-06	South beach East Ship Island See Appendix A, Fig 3.2.1.3	30.2418	-88.8784	Medium, poorly-graded sand, SP	lt. grey, 2.5Y 7/1
ES-7-06	South beach East Ship Island See Appendix A, Fig 3.2.1.3	30.2423	-88.8785	Organic Peat	black, 5Y 2.5/2
WS-8-06	South beach West Ship Isl. See Appendix A, Fig 3.2.1.2	30.2072	-88.9721	Medium, poorly-graded sand, SP, contains some dark particles	lt. grey, 2.5Y 7/1
WS-9-06	Central part West Ship Island See Appendix A, Fig 3.2.1.2	30.2105	-88.9721	Medium, poorly-graded sand, SP, mix of light and dark particles	dk. Grey, 5Y 4/1
WS-10-06	North beach W. Ship Island at Pier See Appendix A, Fig 3.2.1.2	30.2127	-88.9717	Medium, poorly-graded sand, SP	lt. brownish grey, 2.5Y 6/2

Table 3.2.1.1 – Munsell Color Analyses of Beach Samples from Horn, Petit Bois, East Ship, and West Ship Islands taken in 2006

3.2.2 2009 BEACH SEDIMENT INVESTIGATIONS

In 2009, a sampling event was completed on all the islands, including Cat Island. This event was performed by personnel from the USACE Mobile District, accompanied by a coastal geomorphologist from the NPS Regional Office in Atlanta, GA. In addition to determining the Munsell color and particle shape, the samples were taken to a soils laboratory for mechanical grain size analyses. The samples were analyzed using methods contained in ASTM D-422, “Mechanical Analysis of Soils”. Selected results of the grain size analyses are shown in Table 3.2.2.1 and complete results are shown in Appendix A. The sampling locations and the results of the qualitative color and particle shape classification are shown in Table 3.2.2.2.

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Sample ID	Sample Location	USCS	Percentages Passing Sieves					D ₅₀
			#20	#40	#60	#100	#200	
CI-1-09	Cat Island - East Shore Spit See Appendix A, Fig 3.2.1.1	SP	100	94	6.6	0.2	0.2	0.3275
CI-2-09	Cat Island – E. Shore S. Spit See Appendix A, Fig 3.2.1.1	SP	100	96.4	17	0.9	0.2	0.3129
WSI-1-09	West Ship Island – Dock See Appendix A, Fig 3.2.1.2	SP	99.4	40.2	7.9	0.2	0	0.4735
WSI-2-09	West Ship Island - South East See Appendix A, Fig 3.2.1.2	SP	100	96.7	14.3	0	0	0.316
WSI-3-09	West Ship Island - East North See Appendix A, Fig 3.2.1.2	SP	99.7	79.7	9.8	0.7	0.2	0.341
WSI-4-09	West Ship Island - East South See Appendix A, Fig 3.2.1.2	SP	100	96.1	27	3.1	0.1	0.2988
ES-1-09	E. Ship Isl. - West End South See Appendix A, Fig 3.2.1.3	SP	100	95.7	13.2	0.4	0.2	0.3183
ES-2-09	East Ship Island - East North See Appendix A, Fig 3.2.1.3	SP	100	90.9	14.7	0.3	0.1	0.3209
ES-3-09	East Ship Island - East South See Appendix A, Fig 3.2.1.3	SP	100	91.2	12.3	0.3	0.3	0.3237
HI-1-09	Horn Island - Center North See Appendix A, Fig 3.2.1.4	SP	99.9	31.4	1.6	0.4	0.4	0.5088
HI-2-09	Horn Island - Center South See Appendix A, Fig 3.2.1.4	SP	100	76.1	2.8	0.1	0	0.3539
HI-3-09	Horn Island - East North See Appendix A, Fig 3.2.1.4	SP	100	81.5	7.1	0.2	0	0.3414
HI-4-09	Horn Island - East South See Appendix A, Fig 3.2.1.4	SP	99.9	89.9	11.5	0.3	0.2	0.3259
HI-5-09	Horn Island – Sand Spit East See Appendix A, Fig 3.2.1.4	SP	100	92.3	9.9	0.4	0.3	0.3255
S-1-09	Sand Island (DA-10)- South Shore See Appendix A, Fig 3.2.1.5	SP	100	88.4	6.2	0.4	0.4	0.3337
PBI-1-09	Petit Bois Isl. - North Center See Appendix A, Fig 3.2.1.5	SP	98.7	59.5	6.3	0.7	0.6	0.3888
PBI-2-09	Petit Bois Isl. - South Center See Appendix A, Fig 3.2.1.5	SP	99.9	84.4	6.4	0.4	0.4	0.3382
PBI-3-09	Petit Bois Island - North East See Appendix A, Fig 3.2.1.5	SP	99.9	83.9	8	0.5	0.2	0.3371
PBI-4-09	Petit Bois Island - South East See Appendix A, Fig 3.2.1.5	SP	99.9	71.1	4.7	0.8	0.8	0.3613

Table 3.2.2.1– 2009 Beach Samples Gradation Data

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Name	Location	Latitude	Longitude	Angularity	Wet color code	Wet color	Dry color code	Dry color
CI-1-09	Cat Island - East shore north spit See Appendix A, Fig 3.2.1.1	30.24744	-89.065957	Sub-angular to rounded	2.5Y 7/2	Lt. Gray	2.5Y 8/1	Lt. Gray
CI-2-09	Cat Island - East shore south spit See Appendix A, Fig 3.2.1.1	30.212874	-89.085645	Sub-angular to rounded	2.5Y 7/2	Lt. Gray	2.5Y 7/1	Lt. Gray
WSI-1-09	West Ship Island - Boat dock north shore - See Appendix A, Fig 3.2.1.2	30.212801	-88.971456	Sub-angular to rounded	GLE Y1 5/N	Gray	GLE Y1 5/N	Gray
WSI-2-09	West Ship Island - End of boardwalk, south shore See Appendix A, Fig 3.2.1.2	30.207668	-88.972008	Sub-angular to rounded	5Y 7/1	Lt. Gray	5Y 7/1	Lt. Gray
WSI-2A-09	West Ship Island - End of boardwalk, south shore See Appendix A, Fig 3.2.1.2	30.207668	-88.972008	Sub-angular to rounded	GLE Y1 4/N	Dark gray	GLE Y1 5/N	Gray
WSI-3-09	West Ship Island - East end on north shore See Appendix A, Fig 3.2.1.2	30.219334	-88.943008	Sub-angular to rounded	2.5Y 7/1	Lt. Gray	2.5Y 7/1	Lt. Gray
WSI-4-09	West Ship Island - East end on south shore See Appendix A, Fig 3.2.1.2	30.217771	-88.941908	Sub-angular to rounded	GLE Y1 5/N	Gray	GLE Y1 5/N	Gray
ES-1-09	East Ship Island - West tip See Appendix A, Fig 3.2.1.3	30.232522	-88.893823	Sub-angular to rounded	2.5Y 7/2	Lt. Gray	2.5Y 7/1	Lt. Gray
ES-2-09	East Ship Island - East end on north shore See Appendix A, Fig 3.2.1.3	30.244648	-88.880641	Sub-angular to rounded	2.5Y 7/1	Lt. Gray	2.5Y 7/1	Lt. Gray
ES-3-09	E Ship Isl. - East end south shore See Appendix A, Fig 3.2.1.3	30.241771	-88.873645	Sub-angular to rounded	2.5Y 7/1	Lt. Gray	2.5Y 7/1	Lt. Gray
HI-1-09	Horn Isl. - Boat dock north shore See Appendix A, Fig 3.2.1.4	30.237523	-88.667247	Sub-angular to rounded	2.5Y 7/2	Lt. Gray	2.5Y 7/2	Lt. Gray
HI-2-09	Horn Island - End of path from boat dock on south shore See Appendix A, Fig 3.2.1.4	30.230631	-88.67218	Sub-angular to rounded	2.5Y 7/2	Lt. Gray	2.5Y 8/1	Lt. Gray
HI-3-09	Horn Island - Eastern end on north shore See Appendix A, Fig 3.2.1.4	30.225408	-88.588682	Sub-angular to rounded	5Y 5/1	Gray	5Y 5/1	Gray

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Name	Location	Latitude	Longitude	Angularity	Wet color code	Wet color	Dry color code	Dry color
HI-4-09	Horn Island - Eastern end on south shore See Appendix A, Fig 3.2.1.4	30.222977	-88.588228	Sub-angular to rounded	2.5Y 7/1	Lt. Gray	2.5Y 7/1	Lt. Gray
HI-5-09	Horn Island - Sand Spit east of eastern end of island See Appendix A, Fig 3.2.1.4	30.231314	-88.56119	Sub-angular to rounded	5Y 5/2	Olive gray	5Y 7/1	Lt. Gray
S-1-09	Sand Island (DA-10)- South shore See Appendix A, Fig 3.2.1.5	30.222838	-88.524765	Sub-angular to rounded	2.5Y 7/1	Lt. Gray	2.5Y 7/1	Lt. Gray
PBI-1-09	Petit Bois Island - North shore in center of island See Appendix A, Fig 3.2.1.5	30.204569	-88.47165	Sub-angular to rounded	2.5Y 7/1	Lt. Gray	2.5Y 7/1	Lt. Gray
PBI-2-09	Petit Bois Island - South shore in center of island See Appendix A, Fig 3.2.1.5	30.201675	-88.473103	Sub-angular to rounded	2.5Y 7/1	Lt. Gray	2.5Y 7/1	Lt. Gray
PBI-3-09	Petit Bois Isl. - East end north shore See Appendix A, Fig 3.2.1.5	30.210826	-88.414782	Sub-angular to rounded	2.5Y 7/2	Lt. Gray	2.5Y 7/1	Lt. Gray
PBI-4-09	Petit Bois Isl. - East end south shore See Appendix A, Fig 3.2.1.5	30.207911	-88.41232	Sub-angular to rounded	2.5Y 7/1	Lt. Gray	2.5Y 7/1	Lt. Gray

Table 3.2.2.2 – Location, Color, and Particle Shape of 2009 Beach samples

Note: Colors in Table 3.2.2.2 differ from the colors listed on the lab reports in Appendix A because the lab did not conduct a color analysis using a Munsell Soil Color Chart.

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Offshore Sand Borrow Investigation, Phases 1 and 2 Placement Site Field Investigations

3.2.3 2010 BEACH SEDIMENT INVESTIGATIONS

Beaches are relatively high energy environments compared to the interior portions of the islands and the variation of sediment grain size across the islands was not known. Two transects were established; one on West Ship Island and another on Horn Island. Each transect had 11 sample locations spaced across the island from the Sound to the Gulf. Each location was sampled from the surface to a depth of one foot. Each sample was sent to an engineering laboratory for a grain size analysis. In addition, an equal amount of sediment from each sample, from each of the islands, was composited into an additional sample for a separate analysis. The intent of the composite samples was to characterize the entire island along that transect. The location of the samples taken at West Ship Island and Horn Island are plotted on imagery in Figures 3.2.3.1 and 3.2.3.2, respectively. Native material for both islands proved to be poorly-graded, quartz sand with trace fine material. For West Ship Island, the results indicate that the average D50 grain size is larger on the northern side of the island (0.349 mm) as compared to the southern side (0.288 mm), and that the percent of fine material passing the #200 sieve was slightly lower on the northern side as compared to the southern side of the island. Selected results of the grain size analyses are shown in Tables 3.2.3.1 and 3.2.3.2, with complete results included in Appendix A.

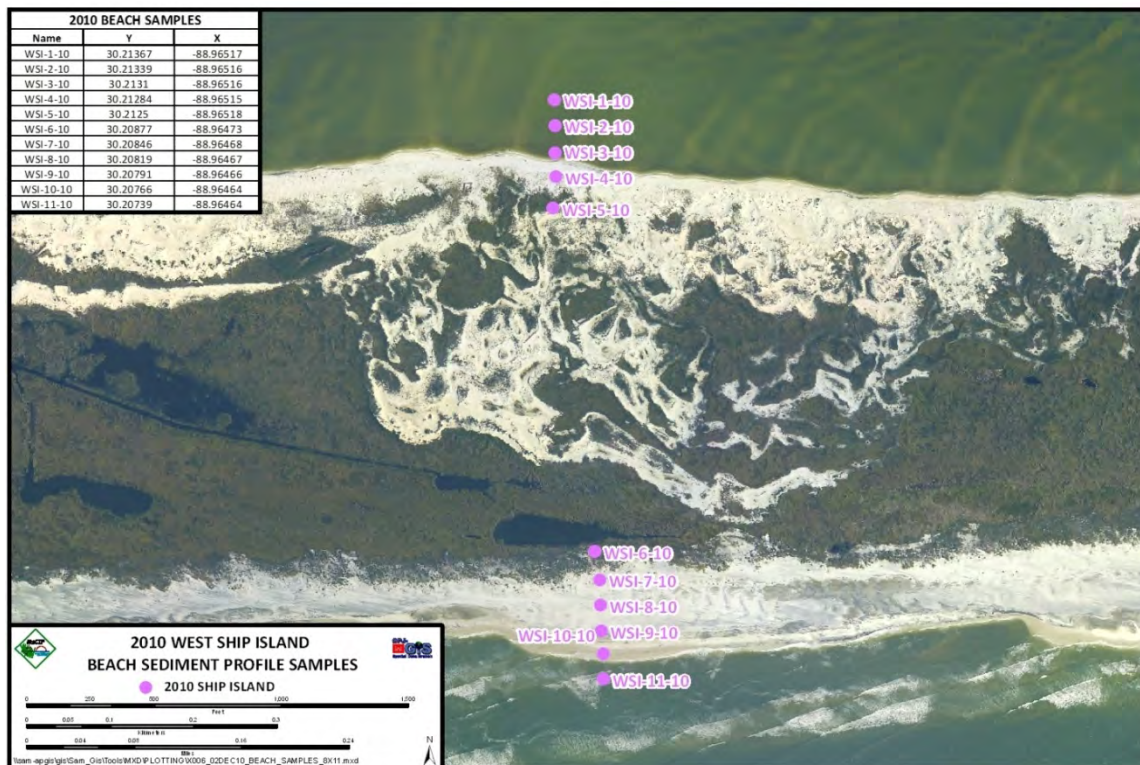


Figure 3.2.3.1 – Location of sampling locations for 2010 West Ship Island beach transect.

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USACE Sample #	USCS	Percentages Passing Sieves					D50 mm
		#20	#40	#60	#100	#200	
BI-SIB-1-10 (a.k.a. WSI-1-10)	SP	99.8	77.6	17.6	3.9	1	0.3346
BI-SIB-2-10 (a.k.a. WSI-2-10)	SP	99.6	70.6	13.1	3.4	1.4	0.3535
BI-SIB-3-10 (a.k.a. WSI-3-10)	SP	94.4	45	7.2	0.7	0.6	0.4504
BI-SIB-4-10 (a.k.a. WSI-4-10)	SP	99.8	69	7.3	5.5	0.3	0.3638
BI-SIB-5-10 (a.k.a. WSI-5-10)	SP	99.9	97.3	53	10.7	0.9	0.2426
BI-SIB-6-10 (a.k.a. WSI-6-10)	SP	100	99	47	2.4	0.2	0.2567
BI-SIB-7-10 (a.k.a. WSI-7-10)	SP	100	95	39.4	5.6	2.7	0.2756
BI-SIB-8-10 (a.k.a. WSI-8-10)	SP	99.8	84.8	32.3	5.4	1.7	0.2983
BI-SIB-9-10 (a.k.a. WSI-9-10)	SP	100	95.8	27.8	7.6	1.3	0.2988
BI-SIB-10-10 (a.k.a. WSI-10-10)	SP	99.8	70.2	8.9	5.8	0.5	0.3596
BI-SIB-11-10 (a.k.a. WSI-11-10)	SP	99.6	95.5	68.7	5.3	1.1	0.2147
BI-SIB-10 COMP	SP	99.4	81.7	29.5	9.8	0.9	0.3095

Table 3.2.3.1 – Results of Grain Size Analyses, Transects at West Ship Island; Depths from 0.0 to 1.0 feet

For Horn Island, the sampling results indicated that the D50 grain size is slightly larger on the northern side of the island (0.349 mm) as compared to the southern side (0.284 mm), and that there is a small spike in grain size in the northern third of the island. The percent of fine material passing the #200 sieve was lower in the middle of the island as compared to the northern and southern sides of the island, but all three areas still contained less than 3% fines.

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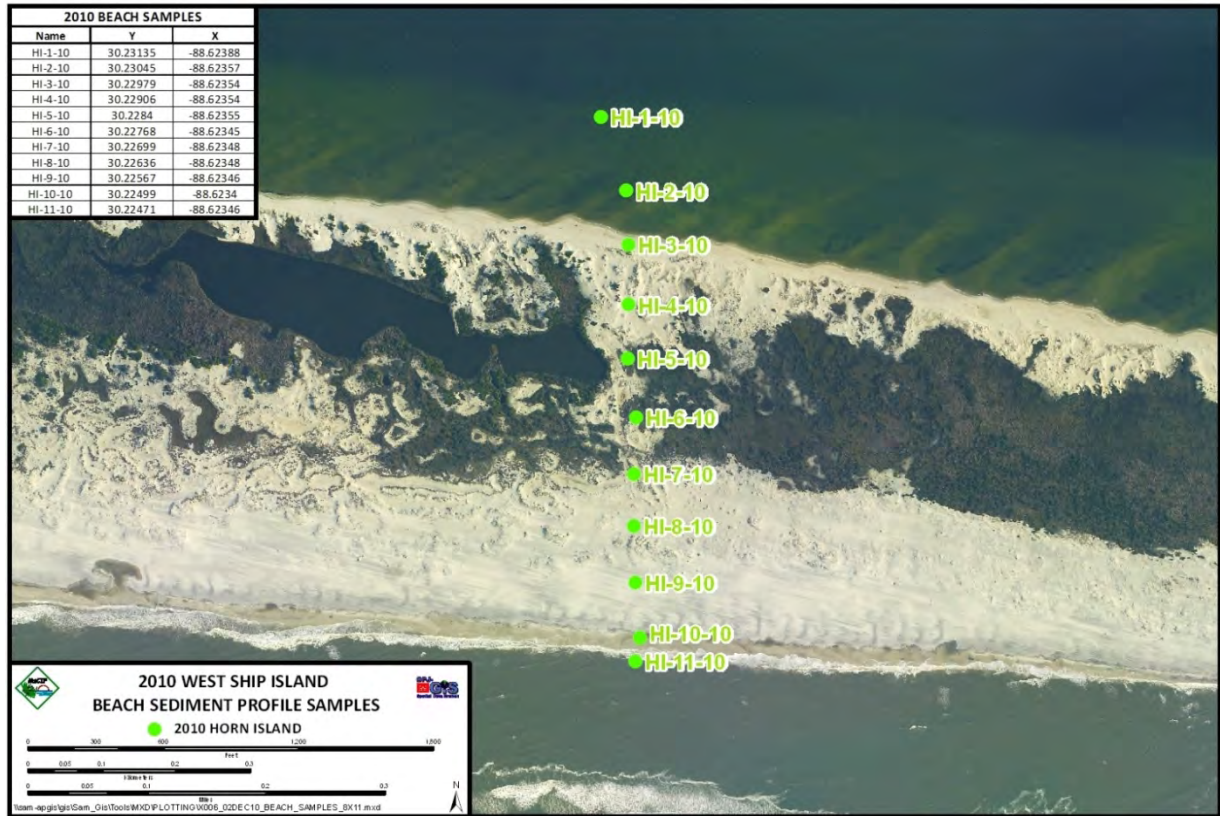


Figure 3.2.3.2 - Location of sampling locations for 2010 Horn Island beach transect.

USACE Sample #	USCS	Percentages Passing Sieves					D50 mm
		#20	#40	#60	#100	#200	
BI-HIB-1-10 (a.k.a. HI-1-10)	SP	99.9	75.9	17.9	1.3	1	0.3362
BI-HIB-2-10 (a.k.a. HI-2-10)	SP	98.2	50	7.3	0.6	0.3	0.425
BI-HIB-3-10 (a.k.a. HI-3-10)	SP	99.1	37.8	1.2	1	0.2	0.4801
BI-HIB-4-10 (a.k.a. HI-4-10)	SP	99.7	37.8	0.9	0.7	0.3	0.4795
BI-HIB-5-10 (a.k.a. HI-5-10)	SP	99.7	55.8	5.1	0.5	0.2	0.4018
BI-HIB-6-10 (a.k.a. HI-6-10)	SP	100	79.2	13.3	0.9	0.3	0.3372
BI-HIB-7-10 (a.k.a. HI-7-10)	SP	99.5	72.5	12.5	1	0.2	0.3499
BI-HIB-8-10 (a.k.a. HI-8-10)	SP	99.7	86	19.6	6.7	0.2	0.321
BI-HIB-9-10 (a.k.a. HI-9-10)	SP	99.9	89.8	21.2	8	0.5	0.3147
BI-HIB-10-10 (a.k.a. HI-10-10)	SP	99.5	83.7	15.8	0.9	0.6	0.3275
BI-HIB-11-10 (a.k.a. HI-11-10)	SP	99.7	92.9	38.7	16.2	1	0.2809
BI-HIB-10 COMP	SP	99.5	69.2	12.3	1.1	0.6	0.3571

Table 3.2.3.2 – Results of Grain Size Analyses, Transects at Horn Island with Depths from 0.0 to 1.0 feet

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Further discussions within the Engineering team led to another round of sampling on West Ship Island (Figure 3.2.3.3). These samples were taken as composites, with depths ranging from 4.0 to 5.0 feet below ground surface. The purpose of these samples was to determine if there were any significant differences in sediment characteristics because of the sample's stratigraphic depth. The samples' coordinates and selected results of the gradation analysis are shown in Table 3.2.3.3.

The results do not indicate a significant change in material type (poorly-graded quartz sand) from the surface to the target depth of 4.0 – 5.0 ft below ground surface. Results did indicate that grain size was slightly larger on the southern side of the island.

USACE Sample #	Latitude	Longitude	Depth (ft)	USCS	< #200 (%)	D50 (mm)
WSI-5-10A	30.20877	-88.96473	0.0 - 1.5	SP	0.4	0.3681
WSI-5-10B	30.20877	-88.96473	1.5 - 3.0	SP	0.9	0.3369
WSI-5-10C	30.20877	-88.96473	3.0 - 4.5	SP	0.4	0.3168
WSI-12-10A	30.211333	-88.965078	1.0 - 2.0	SP	0.5	0.3287
WSI-12-10B	30.211333	-88.965078	2.0 - 3.0	SP	0.2	0.2654
WSI-12-10C	30.211333	-88.965078	3.0 - 4.0	SP	0.4	0.2786
WSI-13-10A	30.210011	-88.964875	1.0 - 2.0	SP	0.1	0.3381
WSI-13-10B	30.210011	-88.964875	2.0 - 3.0	SP	2.9	0.2661
WSI-13-10C	30.210011	-88.964875	3.0 - 4.0	SP	0.6	0.2722
WSI-13-10D	30.210011	-88.964875	4.0 - 5.0	SP	0.2	0.317

Table 3.2.3.3 - Results of Grain Size Analyses, Transect at West Ship Island, Depth 0.0 to 5.0 feet

Figure 3.2.3.3 shows the layout of the 2010 samples on West Ship Island. Gradation curves are included in Appendix A.

Both sampling events demonstrate that the majority of sediment on the islands is poorly graded, medium to fine grained sand. However, the aerial photos illustrate that other finer grained material (clays and/or silts) can be found surficially on both islands. These are encountered mostly on the interior of the islands.

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Figure 3.2.3.3 - Sampling locations for 2010 West Ship Island transect.

3.2.4 2011 DA-10 SAMPLING

Three grab samples were taken from the DA-10 island in 2011 to further characterize the sediment on the island. As expected, the island contained very clean, poorly-graded quartz sand with less than 2% fine material. Table 3.2.4.1 shows the lab results for the samples. Figure 3.2.4.1 shows the layout of the samples on the island. Lab reports are included in Appendix A.

USACE Sample #	Latitude	Longitude	Depth (ft)	USCS	< #200 (%)	D50 (mm)
BI-DA10-15-11	30.222764	-88.524672	1	SP	1.0	0.3937
BI-DA10-16-11	30.222764	-88.519922	1	SP	1.0	0.2998
BI-DA10-17-11	30.222764	-88.515101	1	SP	1.2	0.3244

Table 3.2.4.1 - Results of Grain Size Analyses, Beach Grab Samples at DA-10

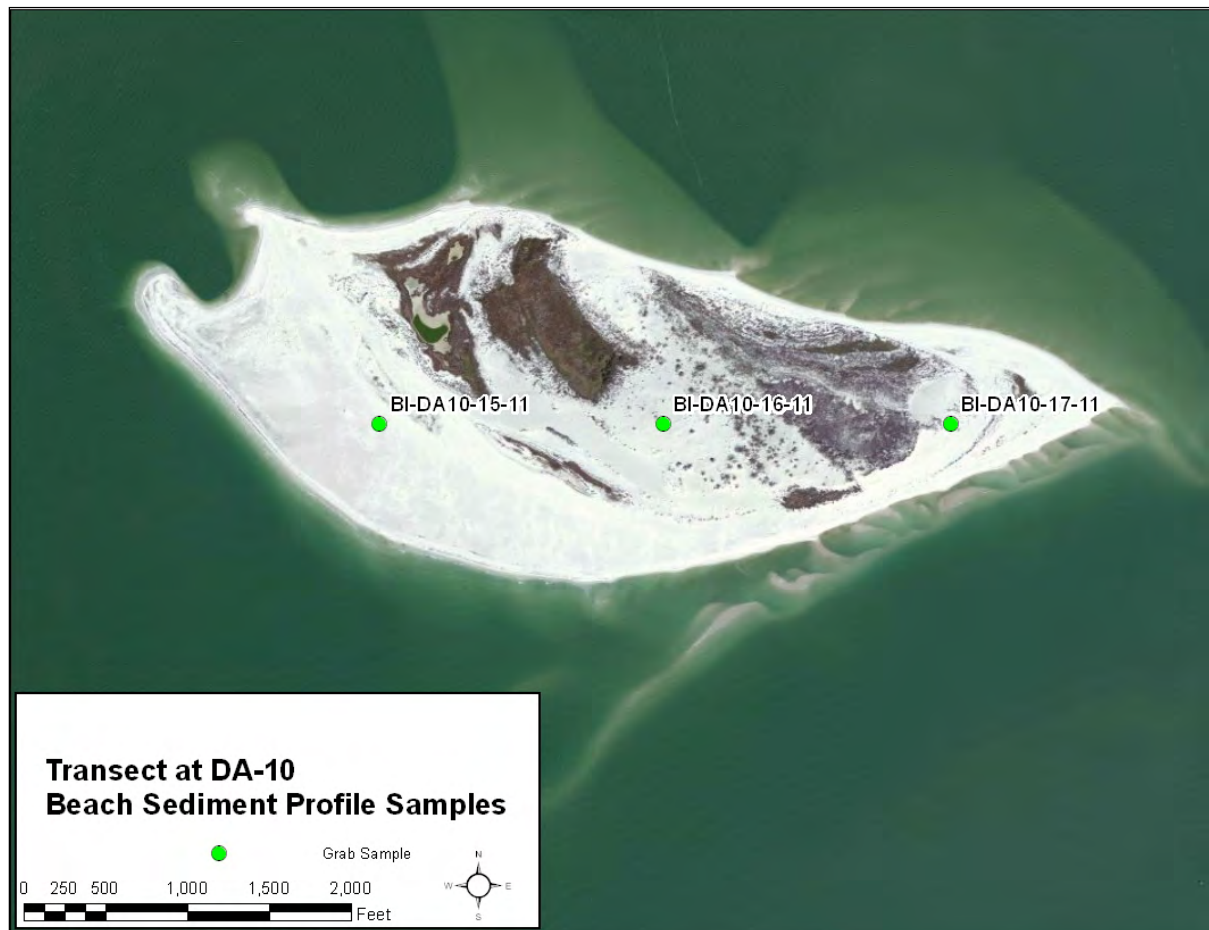


Figure 3.2.4.1 - Sampling locations for 2011 DA-10 transect.

3.2.5 BEACH SEDIMENT SAMPLING CONCLUSION

The island sampling events from 2006 to 2011 helped to evaluate the different sediment gradations throughout the barrier islands and helped to characterize the different placement sites for the upcoming projects. Table 3.2.5.1 is a summarized listing of the surficial sediments for Cat Island, West and East Ship Islands, Horn Island, DA-10, and Petit Bois Island. D50 values for Cat Island, Petit Bois Island, and DA-10 were calculated using an arithmetic mean of the D50s of the grab samples taken on the islands (Table 3.2.2.1 and Table 3.2.4.1). Horn Island's and West Ship Island's composite sample D50s were used to represent the average D50 on these islands. The Camille Cut placement site was not sampled directly to determine grain size. Rather, grain size information from the western tip of East Ship Island (ES-1-09) and the eastern tip of West Ship Island (WSI-4-09) were used as proxies. As such, Camille Cut fill should have a D₅₀ grain size greater than 0.28 mm,

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ranging to as large as 0.34 mm, to most closely match the native material on the tips of East and West Ship Islands.

Location	USCS	Average D ₅₀ (mm)	Average Dry Munsell Value	Average Shape
Cat Island	SP	0.32	7	Sub-Angular to Rounded
West Ship Island (eastern tip)	SP	0.32	6	Sub-Angular to Rounded
West Ship Island (Composite Sample)	SP	0.31	6	Sub-Angular to Rounded
East Ship Island (western tip)	SP	0.32	7	Sub-Angular to Rounded
Horn Island (Composite Sample)	SP	0.36	7	Sub-Angular to Rounded
Petit Bois Island	SP	0.36	7	Sub-Angular to Rounded
DA-10	SP	0.34	7	Sub-Angular to Rounded

Table 3.2.5.1 – Surficial sediment information for barrier islands

4.0 GEOPHYSICAL INVESTIGATION

Geophysical surveying was conducted by the USGS to identify areas with sandy material. This section details this investigation.

4.1 BACKGROUND

Since 2007, the United States Geological Survey (USGS) has conducted geophysical surveys in collaboration with the National Park Service (NPS) within Gulf Islands National Seashore park boundaries as part of the USGS Northern Gulf of Mexico (NGOM) Ecosystem Change and Hazard Susceptibility project. See Figure 4.1.1.

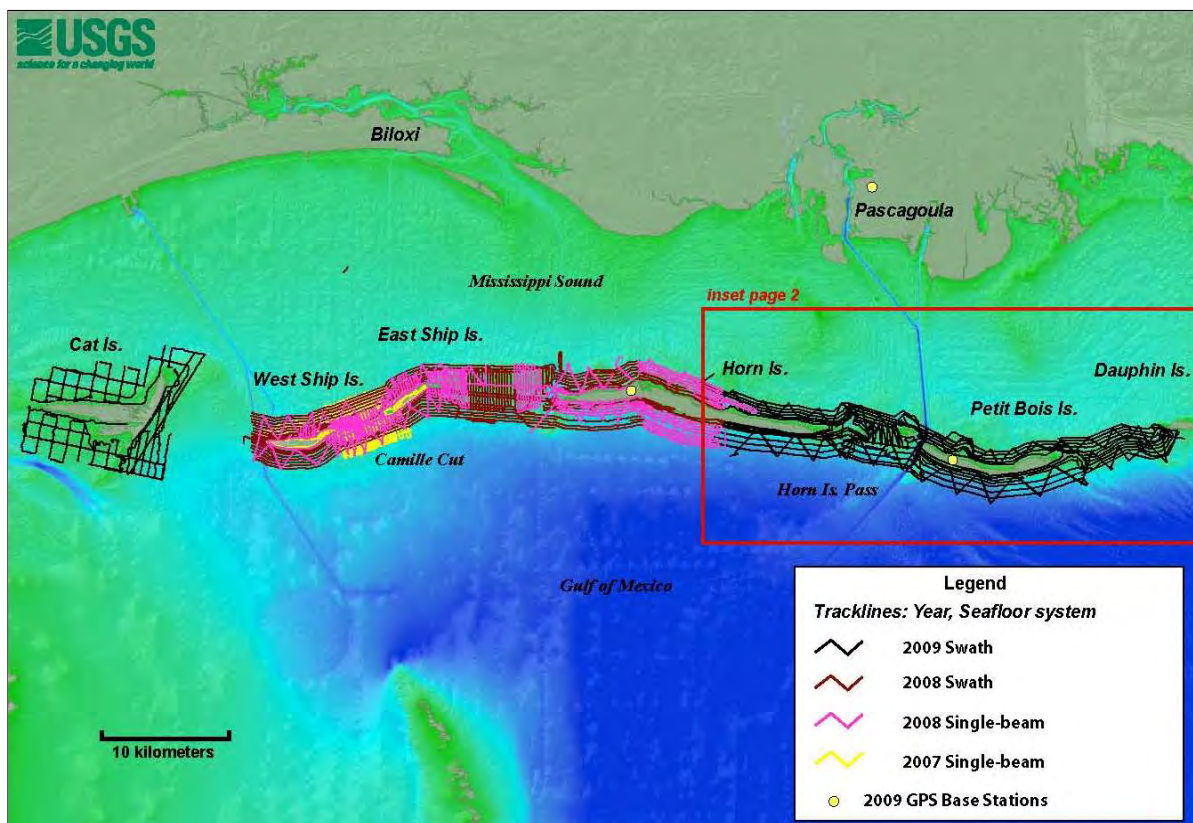


Figure 4.1.1 – Past geophysical surveys conducted by the USGS at Gulf Islands National Seashore.

In 2009, the Corps of Engineers entered into an Interagency Agreement with the United States Geological Survey (USGS) to gain a better understanding of the availability of potential borrow areas containing suitable, high quality sand. This additional work would complement the ongoing USGS NGOM study effort by expanding data coverage beyond the park's boundaries while collaborating with the USACE for vibracore boring sampling to validate the geophysical interpretations. The overall intent was for the geophysical data to be collected by the USGS and integrated with the vibracores collected by the USACE "to

provide a detailed understanding of the regional shallow stratigraphy and the lithology of its various units” (Twichell et al., 2011).

Meetings between the USACE and the USGS led to the identification of areas of interest deemed to be geologically conducive to large sand deposits. Areas within the NPS boundaries were off limits. Figure 4.1.2 shows the areas selected for additional geophysical investigation by the USGS. These areas were not within park boundaries, but were adjacent to previous and ongoing investigations for the NPS.

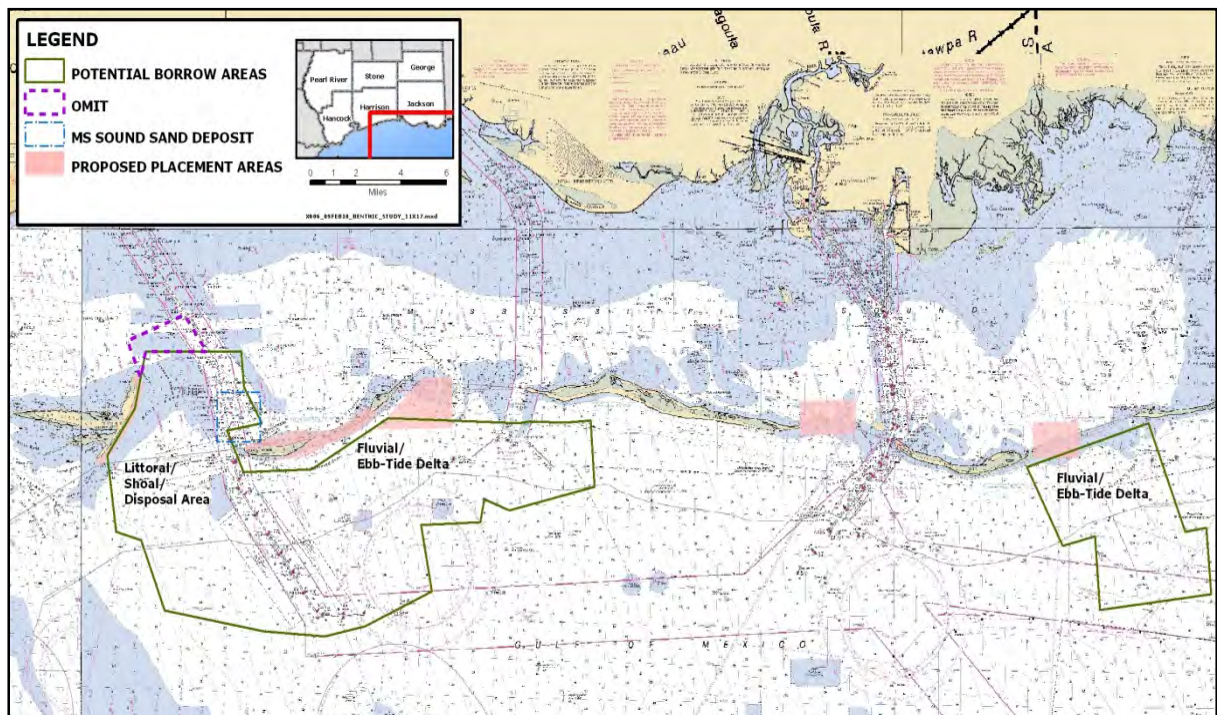


Figure 4.1.2 – Areas designated for geophysical survey to identify potential sand borrow sites.

The entire region was then divided into three general Study Areas: seaward of Ship Island and Horn Island (Study Area 1); seaward of Petit Bois Pass (Study Area 2); and within Ship Island Pass, adjacent to Cat Island (Study Area 3). Figure 4.1.3 shows the Study Areas (black outlines), the tracklines of the geophysical surveys conducted by the USGS for this study and the NGOM study, and the general location of the USACE’s Phase I borings.

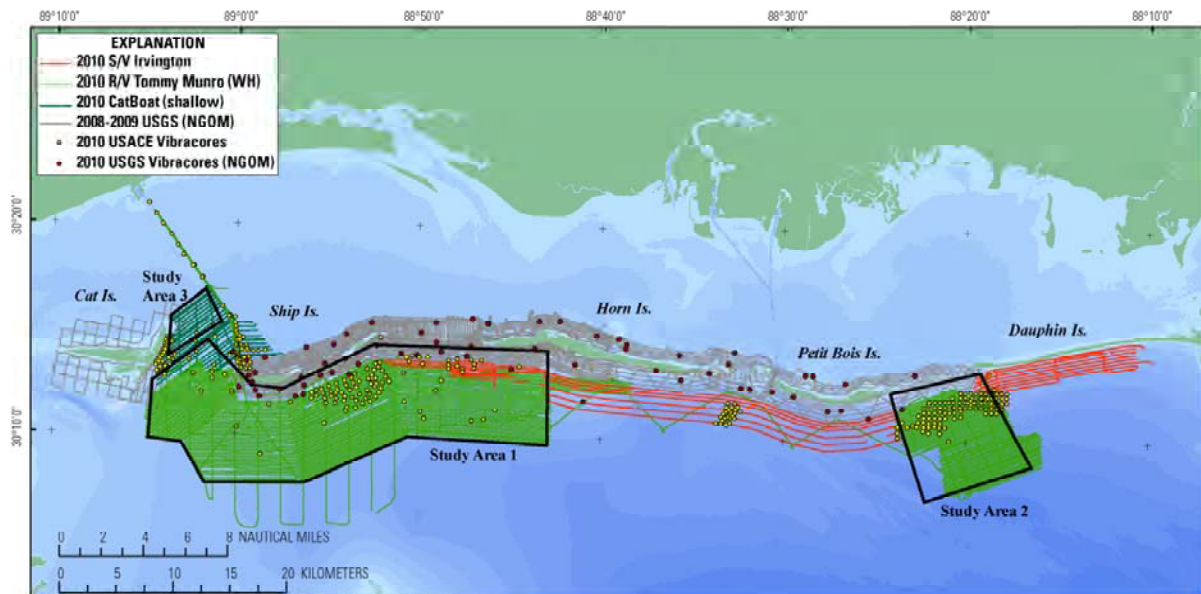


Figure 4.1.3 Map showing the tracklines for geophysical data collected. Vibracores collected by the USACE for the MsCIP project and the USGS for the Northern Gulf of Mexico (NGOM) project are shown. Main features were separated into three Study Areas (From Twichell et al. 2011).

4.2 SURVEY METHODOLOGY

In March of 2010, the USGS conducted two surveys covering approximately 300 square kilometers of the inner continental shelf offshore of the western Mississippi barrier islands, along the Gulfport Navigation Channel, portions of Mississippi Sound near Ship Island Pass, and south of Petit Bois Pass (Figure 4.4). The first survey cruise was conducted during March 3-17 and was staffed primarily by the Woods Hole Science Center. The second survey cruise was conducted March 19-29 and was staffed by the USGS, St. Petersburg, FL. The University of Southern Mississippi's research vessel, *R/V Tommy Munro*, was used to collect the large offshore sections. In addition, the USGS research vessel, *R/V Gilbert*, a USGS 8-m Glacier Bay catamaran, surveyed the shallower Study Area 3, while the Corps of Engineers survey vessel, *S/V Irvington*, assisted by surveying the nearshore area between Study Area 1 and 2 and east of Study Area 2. Much of this survey area abuts the seaward edge of a survey completed by the USGS in 2008 and 2009 (NGOM survey) and extends from 1 to 3 km seaward of the island chain, approximately 8 to 13 km offshore. Positions of the ship and geophysical data were determined using Differential Global Positioning System (DGPS) navigation, with an antenna mounted directly above the interferometric-sonar head on the starboard side of the vessel. During acquisition, the survey vessels maintained speeds between 1.5 and 2.5 m/s.

Study Area 1 was the largest study area. Data were collected along approximately 2,000 km of tracklines spaced approximately 150 m apart in the shore-parallel direction, and about 2 km apart in the shore-perpendicular direction as shown in Figure 4.2.1.

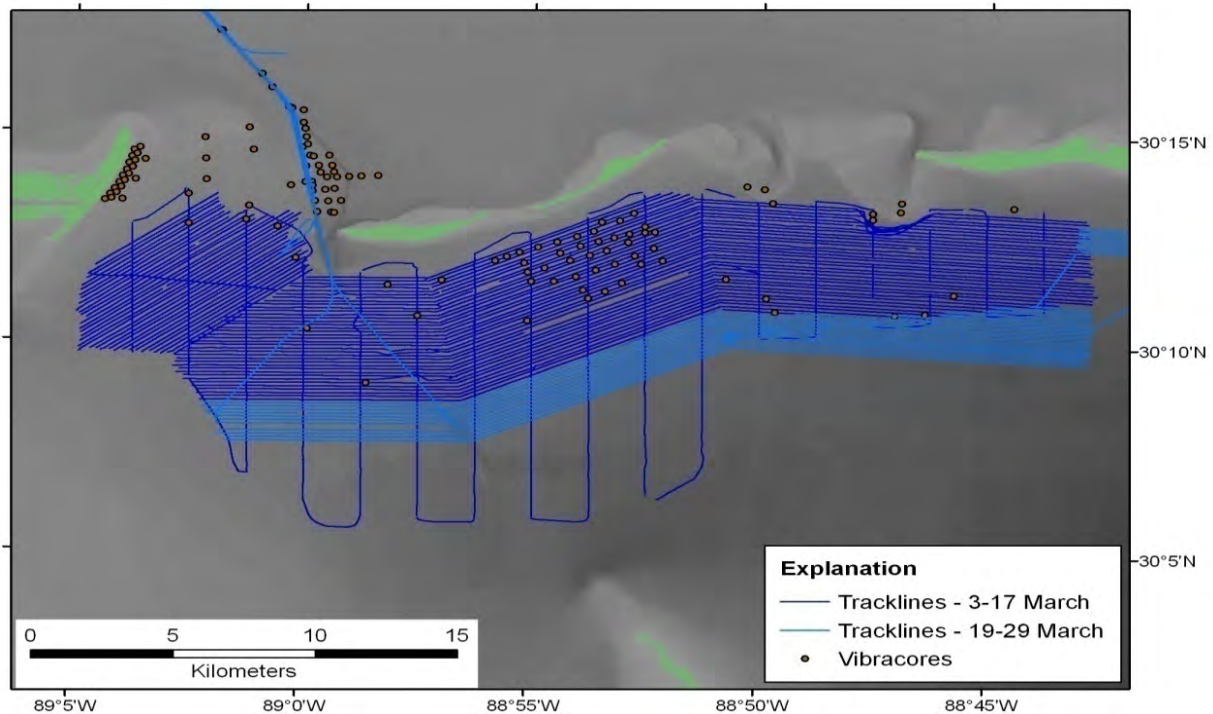


Figure 4.2.1 - Tracklines along which geophysical data (Chirp seismic-reflection, swath bathymetry, and sidescan sonar) were collected as well as locations of vibracores collected by the U.S. Army Corps of Engineers in the western survey area.

Shore-parallel, trackline spacing was chosen to ensure at least a 10% overlap of adjacent sidescan sonar swaths. The sidescan system produces a large swath width, typically between 150 and 200 m. Shore-perpendicular tracklines were used to facilitate internal comparison and correlation of bathymetric and chirp seismic-reflection data with shore-parallel versus shore-perpendicular orientations (Twichell et al., 2011). Interferometric-sonar, sidescan-sonar, and Chirp seismic-reflection systems were deployed simultaneously during all the cruises. However, all three were not necessarily collected for the entire length of the tracklines. During the first leg of Study Area 1, interferometric-sonar, sidescan-sonar, and Chirp seismic-reflection data were acquired along 1,321 km, 1,332 km, and 1,523 km of trackline, respectively. During the second leg of Study Area 1, interferometric-sonar, sidescan-sonar, and Chirp seismic-reflection data were acquired along 445 km, 455 km, and 492 km of trackline, respectively. Processed bathymetric soundings yielded a final bathymetric surface area of about 265 km², which was gridded at a resolution of 50 m per pixel. The total area imaged with sidescan sonar was approximately 260 km² with gray-

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scale GeoTIFF images of the mosaics produced at 1 and 5 meter resolutions. Approximately 2,015 km of high-resolution Chirp seismic-reflection profiles were collected. A 1,500 m/s speed of sound was used to convert the vertical scale of the seismic data from milliseconds of two-way travel time to depths in meters. Grid surface calculations were used to compute the thickness and volume of different stratigraphic units. Gas was extensive in the sediment under much of the western part of Study Area 1 and limited interpretation of deeper horizons. Figure 4.2.2 shows this phenomenon.

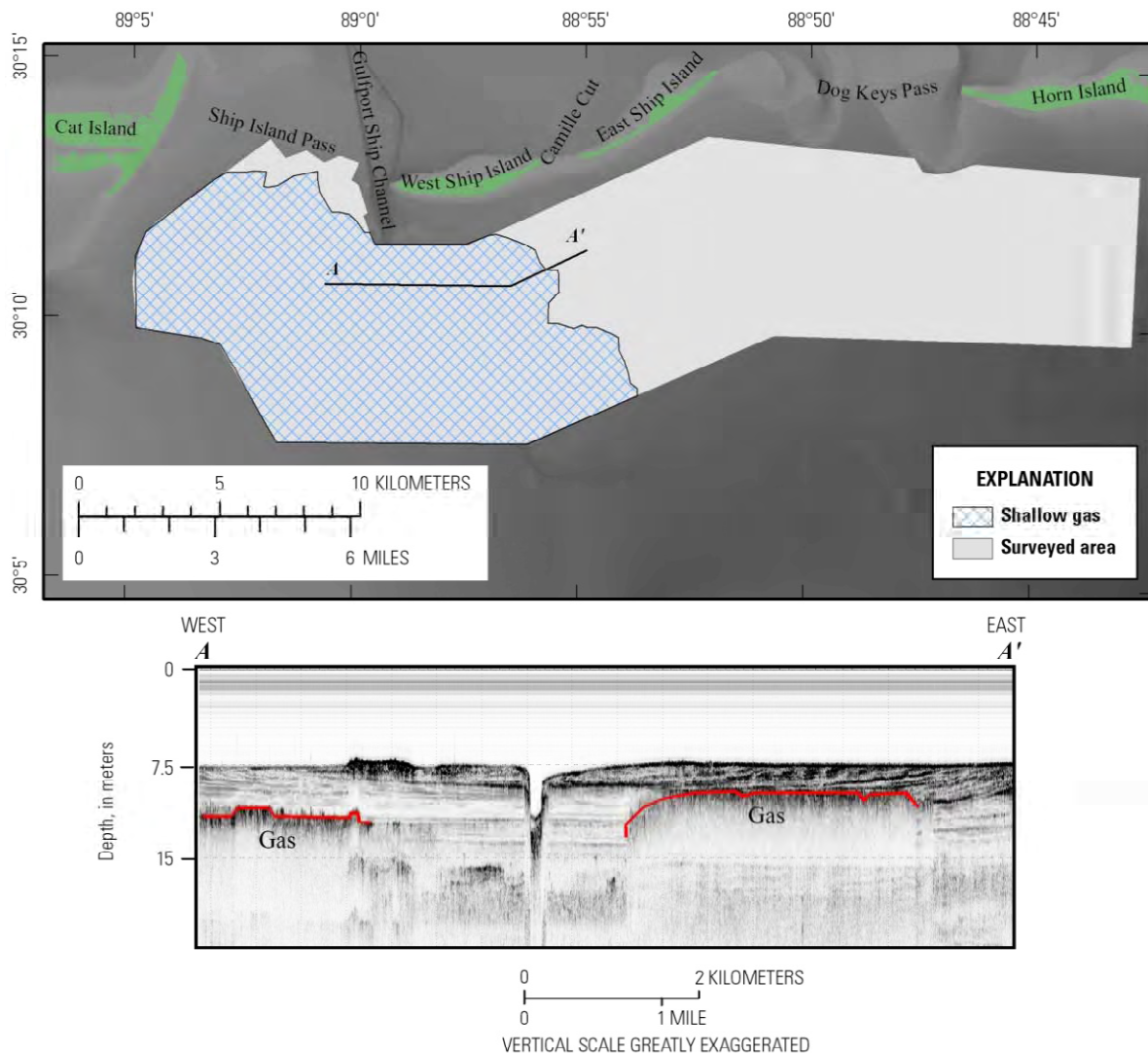


Figure 4.2.2. Map showing the extent of the survey area affected by shallow gas (gray polygon) and an example profile showing the blanking of the deeper stratigraphy by gas (from Twichell et al., 2011)

Data collection for Study Area 2 and 3 progressed in similar fashion, but at a smaller scale. Further descriptions of the equipment, acquisition techniques, and data processing used in this survey are documented in Pendleton and others (2011), Forde and others (in press) and

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Pfeiffer and others (2011). The USGS Open-File Report 2011-1173, The Shallow Stratigraphy and Sand Resources Offshore of the Mississippi Barrier Islands, summarizes the complete geophysical investigation process and presents the investigation's results (Twichell et al., 2011).

4.3 CONCLUSIONS AND RECOMMENDATIONS FROM GEOPHYSICAL INVESTIGATION

At the conclusion of the March 2010 geophysical surveys, the USGS provided initial field interpretations of the data and also identified initial boring locations to gather physical samples of the sediments for inspection and classification to empirically validate their field interpretations. These recommendations were based on an area having the potential for large deposits of sand that could be economically dredged and used for the Barrier Island Project. Examples of the field interpretations are shown in Figures 4.3.1 and 4.3.2.

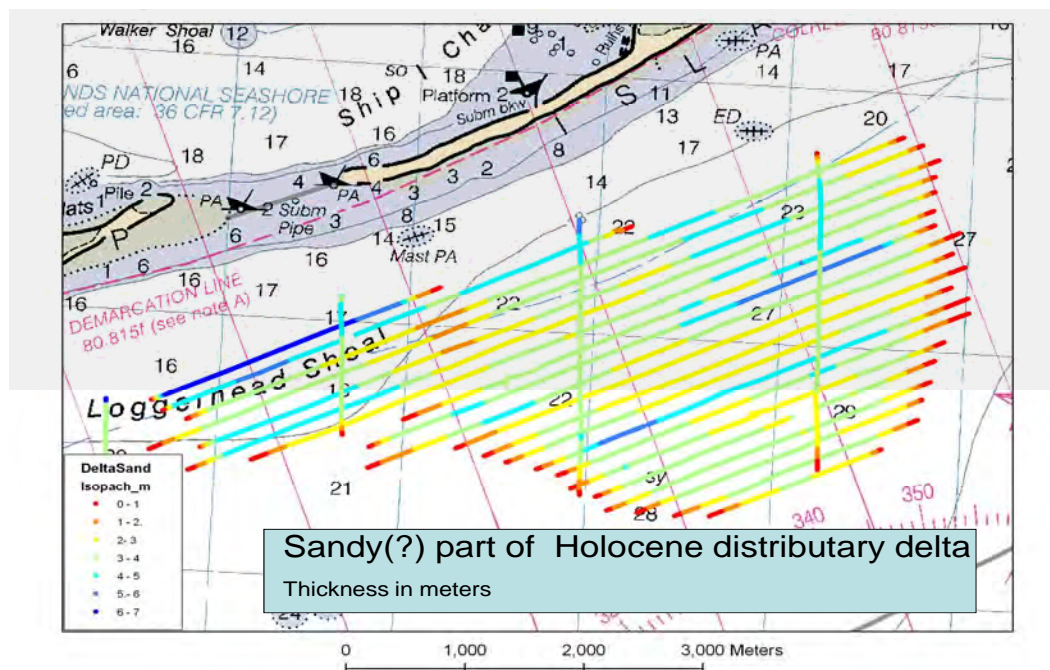


Figure 4.3.1 – Example isopach of area south of Camille Cut and East Ship Island designated as Ship Island study area, part of USGS' Study Area 1.

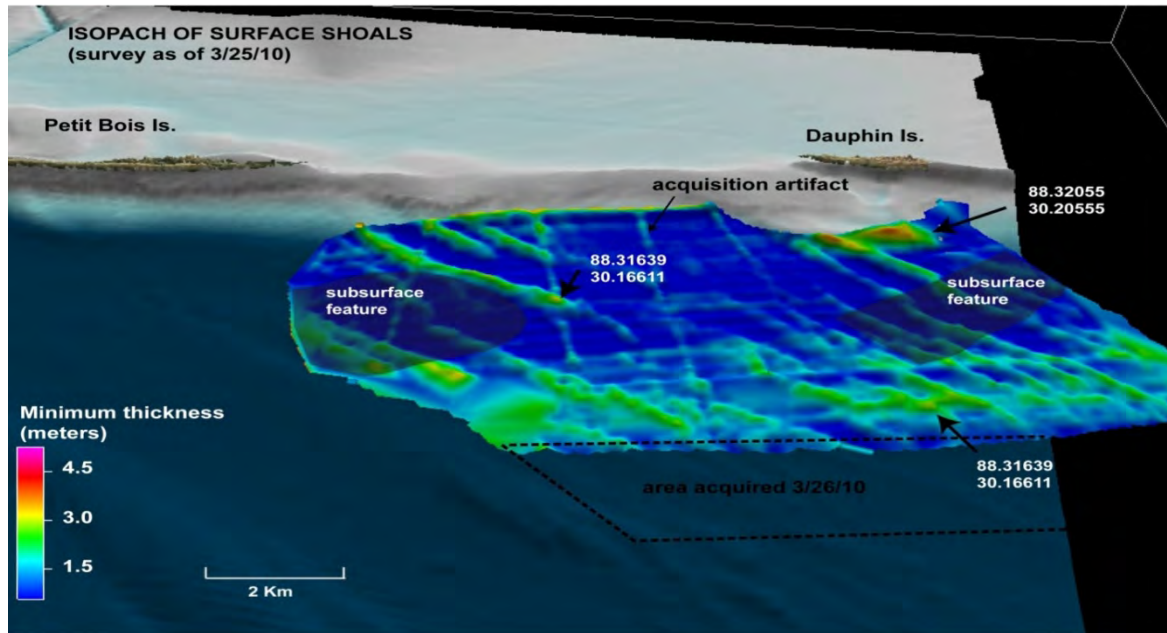


Figure 4.3.2 – Initial interpretation of geophysical data indicating sandy shoals south of Petit Bois Pass and designated as Petit Bois Pass study

The USGS identified potential sand sources in the three study areas (Figure 4.3.3) and estimated quantities of useable sand in each one (Table 4.3.1).

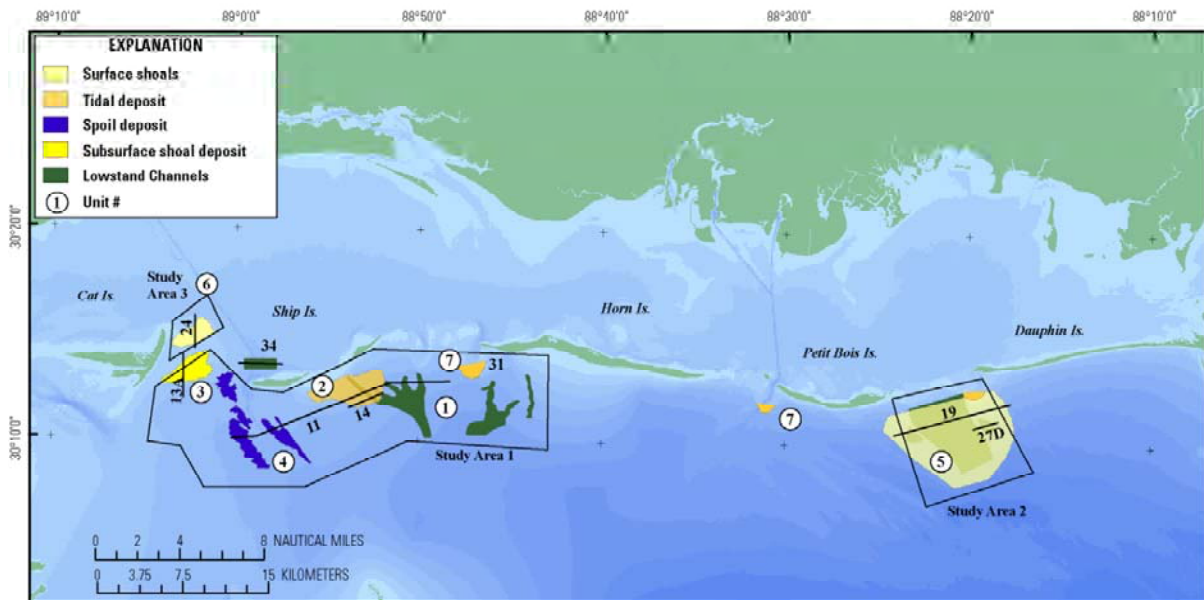


Figure 4.3.3 Locations of potential sand resources identified in this study. Each deposit is assigned a unit number that corresponds to textural information in Table 4.3.1 (from Twichell et al., 2011)

Unit Number	Study Area	Deposit	Total volume (x 10 ⁶ km ³)	Volume of deposit > 1 m thick (x 10 ⁶ km ³)	Proximity to Camille Cut (km)	Sediment cover (m)	Median grain-size range (mm)	Estimated sand (%)
1	1	Lowstand Channels	97*	70*	3-17	>3	0.1694-0.2778	25-75
2	1	Loggerhead Shoal and Tidal Delta	40	29	1.5-6	0	0.1409-0.3360	92-95
3	1	Ship Island Pass Shoal	7*	4*	9-14	<1	0.1275-0.1992	94-97
4	1	Dredge Spoil	11	2	8-10	0	0.1991-0.2030	30-96
5	2	Petit Bois Shoals	56	2-22	52	0	0.2300-0.2800	>90
6	3	Cat Island Shoal	25	20	10	0	0.1850-0.1900	88-97
7	1	Modern ebb-deltas	>6 each	>4 each	11, 33, 50	0	0.1600-0.2300	94-99

* Volumes only for the part of the deposit within the Study Area.

Table 4.3.1- Characteristics of potential sand-resource deposits located on the shelf offshore of the barrier islands off the western Mississippi coast. The unit number corresponds to the circled numbers in Figure 4.3.3. (Table 4.1 from Twichell et al., 2011)

While several recommended areas may contain potential borrow material, three primary areas were of interest because of their location, potential volume of the available material, and habitat designation. These areas of interest were Ship Island, Petit Bois Pass, and Cat Island.

These locations were sampled with vibracore borings to obtain physical samples of the material and to correlate with the geophysical data. Geologists classified the sediments and made initial observations of grain size and color. These boring locations covered several different areas near the islands, extending from near Cat Island (not in the Park) eastward to Petit Bois Pass. This vibracore sampling is described in greater detail in Section 5.2. The westernmost area that was surveyed is shown in Figure 4.3.4, along with recommended boring locations based on initial field interpretation of the geophysical data. The recommended borings were used to validate the geophysical model and were not necessarily meant to find suitable material. Rather, they were positioned to determine different material types that the geophysical surveys had identified. A separate layout of recommended borings was provided for the eastern portion that included the area south of Petit Bois Pass (Figure 4.3.5).

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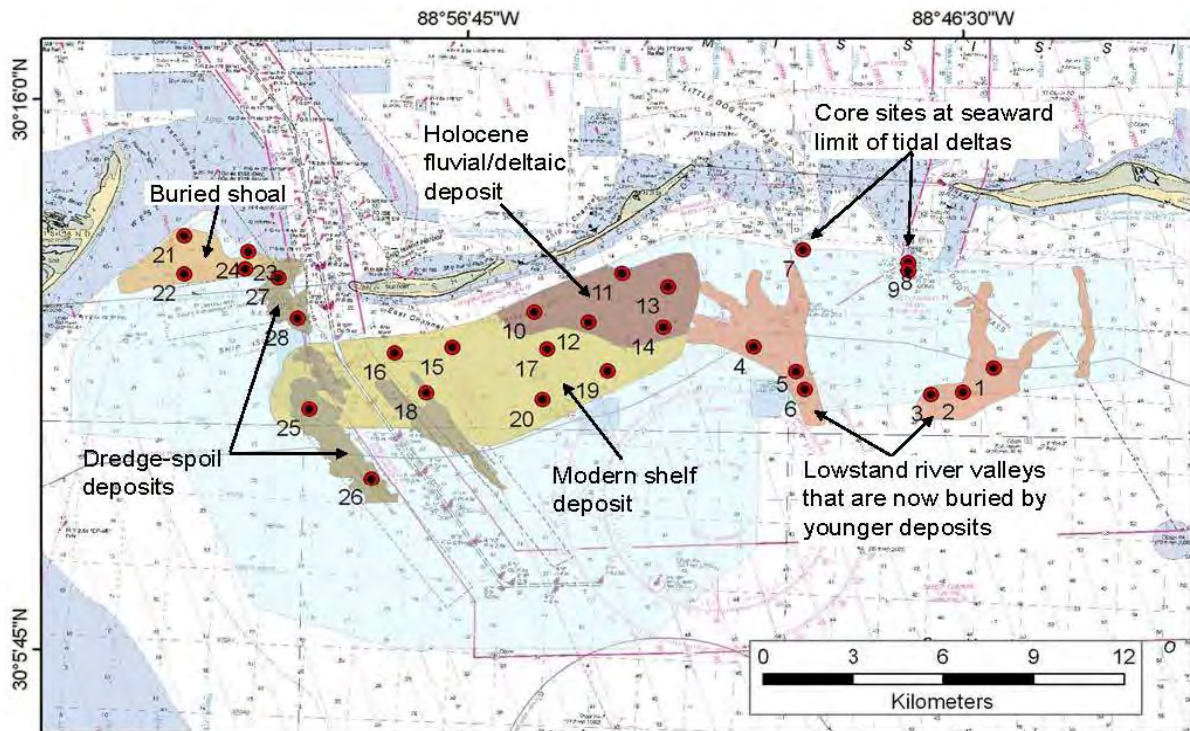


Figure 4.3.4 – Initial field interruptions of geophysical data with recommended boring proof locations, western area of investigation

The interpretations identified in Figures 4.3.3 and 4.3.4 were included in several different study areas. The buried shoal (#3) and dredge spoil deposits (#4) between Cat and West Ship Islands were included in the Ship Island Pass study area. The modern shelf and Holocene fluvial/deltaic deposits south of West Ship Island were included in the Ship Island study area and the remaining core sites to the east were all included in the Dog Keys Pass study area. Other study areas not identified as potential borrow sites but falling within the limits of Figure 4.3.4 are the Gulfport Channel, Mississippi Sound, and Dog Keys Pass. Figure 4.3.5 provides the recommended boring locations for Petit Bois Pass in Study Area 2.

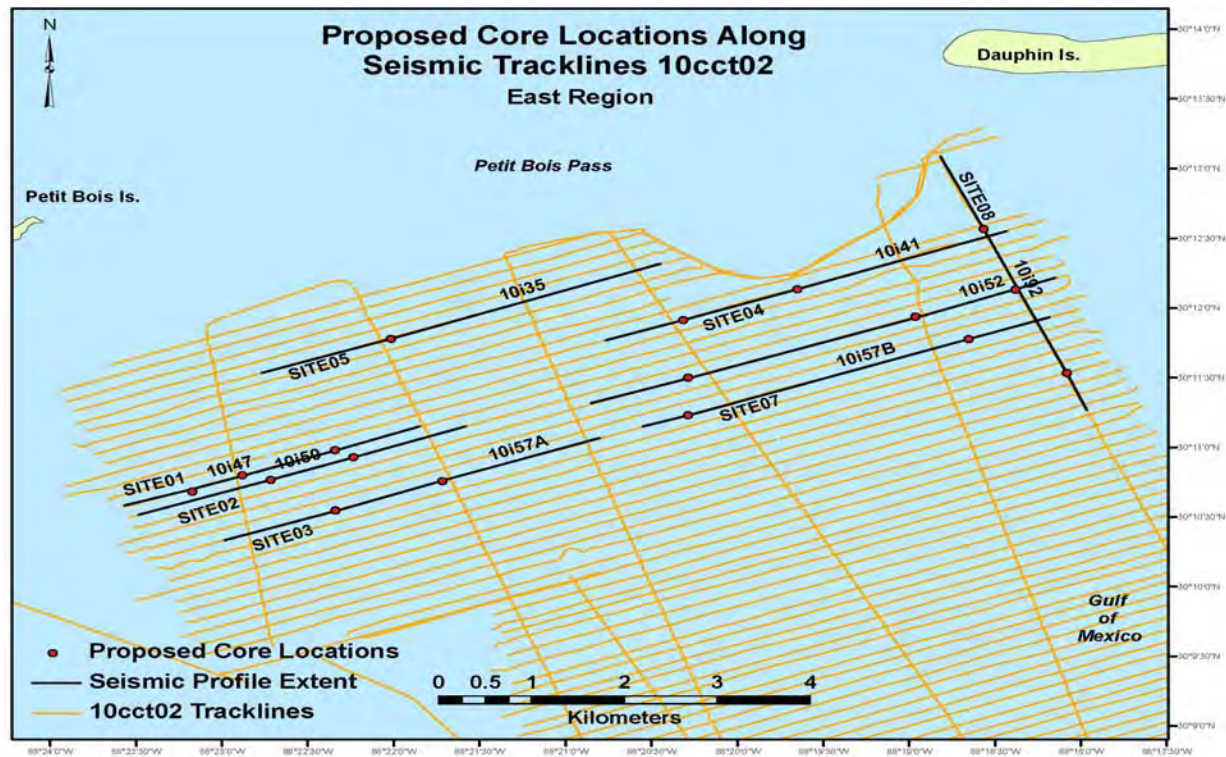


Figure 4.3.5 – Initial field interruptions of geophysical data with recommended boring proof locations, eastern area of investigation

The shoals south of Camille Cut and the fluvial/deltaic deposit that lies south of East Ship Island represent the largest target areas for use in Camille Cut and at East Ship Island. The deposit stretches along the front of East Ship Island for 9 km, is up to 5 km wide, and reaches 5.7 m in thickness. The deposit is 1.5 to 6 km from the Camille Cut restoration area. Seismic data show that this sandy deposit is exposed on the sea floor for much of its extent (Twichell et al., 2011). The dimensions of this deposit indicate it contains the required quantity of sediment for the Camille Cut area, while the geophysical interpretations, borings, and field classification indicate the material meets the proper criteria for sand restoration.

Another large deposit of interest was identified as Petit Bois Shoals, shown in Figures 4.3.2 and 4.3.3. Flocks (2010) has described these shoals as a combination of ebb tidal delta and fluvial deposits. The fluvial deposits are not considered part of the ebb tidal delta and “do not contribute significantly to the littoral system that maintains the islands.”

The shoal system and ebb-tidal delta contain > 90% sand. The delta contains moderately well-sorted, medium sand with a 2.3 - 4 m thickness. However, removal of sediment within the inlet would “disrupt the littoral system”. The shoal systems, on the other hand, “do not contribute significantly to the littoral system”. The shoals contain poorly-sorted, medium

sand and range in thickness from 2 - 5 m, surrounded by a 1 - 2 m mantle of poorly-sorted, sandy silt. The shoal sands “originate from the same fluvial sources and are genetically related to barrier islands.” (Flocks et al. 2010) Based on these data interpretations and dimensions, the Petit Bois Pass is a suitable potential borrow area.

Another area of interest for borrow was offshore from the east face of Cat Island. This area is within Ship Island Pass, but was given a separate study designation as the Cat Island study area. Although the geophysical surveys could not be performed in the shallow water of the study area, survey lines as completed in Ship Island Pass and other prior work by Otvos (1975) indicated that shoals in the Pass extend westward to Cat Island. Based on these previous studies and the USGS data interpretations, the east face of Cat Island is another good source for a potential borrow site.

A final potential borrow area was determined from bathymetry work conducted as part of a separate sediment budget study. This study identified a mound of sediments south of Horn Island Pass (the eastern-most #7 on Figure 4.3.3) that was located within a permitted offshore dredged material disposal area (Byrnes, oral comm.). Considering the source of the dredged material, this mound was added as a study area, designated as Horn Island Pass, with potential borrow resources.

For a more detailed discussion of the surveys, see the USGS Open-File Report 2011-1173, The Shallow Stratigraphy and Sand Resources Offshore of the Mississippi Barrier Islands, (Twichell et al., 2011).

5.0 GEOTECHNICAL SAMPLING

Following the geophysical surveys, sediment sampling was completed in two phases: the first phase in 2010 and the second phase in 2011. The various locations were provided with designations as follows: Gulfport Channel – GC; Mississippi Sound – MS; Cat Island – CI; Ship Island Pass – SP; Ship Island – SI; Dog Keys Pass – DK; Horn Island Pass – HP; and Petit Bois Pass – PB. These abbreviations also apply to vibracore boring designations and their respective samples.

1. Phase 1 included all recommended boring sites identified by the USGS' initial field interpretations of the geophysical data collected in 2010. This phase of sampling consisted of 369 borings and included sites from Cat Island eastward to Petit Bois Pass. A site south of Horn Island Pass was also included after results from the sediment budget study indicated that a potential deposit of sand was located there. This sand was believed to be a historical disposal site where sediments from Horn Island Pass were placed.
2. Phase 2 was performed during the summer of 2011. This phase was added to fill data gaps for the Cat Island and Petit Bois Pass borrow sites, and to obtain data for an active dredged material site for Horn Island Pass designated as Disposal Area 10 (DA-10). The initial borrow site proposed for Cat Island had negative findings based on modeling of wave-focusing caused by the excavation of the borrow material. Three other sites were proposed, but none were recommended because of a lack of sufficient boring data. Borings were added to obtain the data needed, but then all three sites were eliminated because of the results of the borings. However, these results did provide a revised borrow site designated as Cat Borrow Site 4, considered the best alternative. Borings were added to the existing array at Petit Bois Pass to further define the proposed sites. This additional information enabled the calculation of the volume of sand that could effectively be dredged from the site. The last site investigated during Phase 2 was at DA-10 where there was no available boring data. This site was considered after Phase I work did not identify sufficient quantities of sand with a grain size coarse enough to readily provide the final gradation of sand desired for placement.

Figure 5.0.1 shows the both Phase I and II boring locations from Cat Island in the west to Petit Bois Pass in the east.

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Figure 5.0.1 – General locations of vibracore borings completed for the geotechnical investigation.

5.1 SAMPLING PROCEDURES AND PROTOCOL

Core samples were obtained using a vibrocore sampler with a 20-foot core barrel. The core barrel is vibrated downward through the sediments and the core is retained in a three-inch diameter inner sleeve. Photographs of the operation with the vibrocore sampler used for this investigation are shown in Appendix C, Figures 5.1.1, 5.1.2, and 5.1.3. Figure 5.1.1 is the vibrocore unit lying on its side on the deck of the vessel used during sampling. The red unit at the top of the vibrocore barrel, to the right side of the photograph, is a hydraulically-driven concentric motor. When in operation, the motor produces a rapid vibration that is transmitted to an attached 20-foot core barrel, shown in the photographs. This barrel runs vertically through the center of the derrick's four legs and the center of the base plate. The core barrel has an inner sleeve constructed of clear plastic that is inserted prior to sampling and is held in place by a stainless steel shoe that screws onto the bottom of the core barrel. A metal catcher is also placed in the end of the sample tube, prior to the shoe being screwed on. It prevents the sample from falling out of the barrel. The entire unit is lifted from the deck by a crane, or an A-frame, and lowered into the water until its four foot pads are resting on the sea floor (Figure 5.1.2). The vibratory motor is activated and the vibrations transmitted down the barrel cause liquefaction of the sediments. Gravity pushes the core barrel down into the sediment. A core of the sediment slides up into the inner sleeve as the core barrel penetrates the underlying formation. This 20-foot penetration usually takes less than 60 seconds. When full penetration is complete, or the barrel will not penetrate any further, the unit is shut down. The vibratory unit is lifted first, pulling the core barrel up with it. When the vibratory unit slides to the top of the derrick, the entire unit is then lifted back onto the deck and laid on its side. The shoe is removed and the plastic inner tube containing the sample can be removed. Figure 5.1.3 shows the inner sampler sleeve being removed with the sediment sample inside. After the plastic sample tube is removed from the core barrel, it is laid on a table, the metal catcher is removed from the bottom end, and the plastic tube is sawed open with a circular saw to expose the entire sediment core. The geologist then logged the lithology and characteristics of the core, photographed it, and bagged samples as needed (Figure 5.1.4). After initial onsite inspection of the sample, a decision could be made as to the suitability of the sand for use in the project.

Both the Mobile District and the NPS had geologists or geotechnical engineers on the vessel during all sampling to make field determinations of the material. Figure C.4 in Appendix C is a photograph of core being inspected and logged by NPS and USACE personnel. If the quality of the sand was deemed suitable by the initial on-site inspection, the limits of the area defined by the geophysical survey were gridded with holes to better quantify the deposit and

to provide samples for quality parameters. If the initial cores did not contain suitable sand, that area would not receive any additional coring investigation.

Geotechnical testing was conducted only on sediment samples that were perceived by the on-site geologist to be of potentially suitable material for use. Therefore, some borings did not have any geotechnical testing conducted on the recovered material other than the Geologist's field classification. Recoveries that included thick clay or silt strata were typically disregarded for sampling.

For potentially suitable samples, a mechanical sieve analysis was conducted on the sediment using the following sieve sizes: 0.375-in., Standard U.S. #4, #10, #20, #40, #60, #100, and #200. A grain size distribution curve was drawn for each sample. The Coefficient of Uniformity (C_u) and the coefficient of curvature (C_c) were calculated, as well as the D_{10} , D_{15} , D_{30} , D_{50} , D_{60} , D_{85} , and D_{90} grain sizes. The percentages of coarse, medium, and fine sand were calculated, in addition to the percentage of fine material (clays and silts). A USCS classification and material description were also assigned to each sample. Appendix D through L contain the field boring logs for each vibracore boring, followed by the respective laboratory testing worksheets as applicable.

Wet and dry Munsell Color classification and grain angularity classification were conducted by Mobile District personnel with aid from the NPS. Appendix C contains tables for each field sample with its color, select grain size information, and shape. If the borings in an area did not show any potential for use as a borrow area, either because the material was unsuitable or the distribution of the suitable material was too dispersed to design an effective borrow area, that study area was discounted. Initially, non-weighted average D_{50} values were calculated for remaining borrow areas. Initial quantity calculations were also performed to ensure that enough material was available in the area to make it worthwhile. Further wave modeling and hydrodynamic modeling were conducted in areas that showed potential for sufficient suitable material. Borrow area shapes and cut depths were refined to optimize the mining of the suitable material for the borrow areas (Cat, Ship, DA-10, and Petit Bois East & West). This refinement has led, in most cases, to a reduced quantity of available material from the initial estimate. The borrow area statistics in Section 6.0 are based on these updated borrow area designs.

5.2 SAMPLE LOCATIONS AND FINDINGS**5.2.1 GULFPORT CHANNEL**

The sediments along the sides and below the bottom of the Gulfport Navigation Channel were sampled to determine if their material could be used as a borrow source if the channel is widened or deepened in the future. Previous investigations of the channel have included numerous borings to characterize the sediments as part of channel dredging operations. Twenty-nine (29) Phase I vibracore borings were completed along the channel alignment for this project. Of these 29 borings, eight (8) Phase I borings were identified based on results of the USGS geophysical survey. The results of the new borings indicated that very limited amounts of sand were located over scattered areas. Most of the sediments observed in the samples contained silts or clays and would not be useful for the project. Another fifteen (15) Phase I borings were cored in one selected area based on data obtained during a geotechnical investigation for the existing channel alignment. The final six (6) Phase I borings were cored near the Gulfport Harbor to verify that sediment composition in that area was not suitable for beneficial use. This material was too fine-grained for the project. Unfortunately, the borings did not indicate suitable material in large enough quantities for use in the project. The general layout of the borings completed for Gulfport Channel is shown in Figure 5.2.1.1. Table 5.2.1 in Appendix C provides the coordinates of the borings, the Unified Soil Classification System designation of the sample, the Munsell Color designations for wet and dry samples, and data from the laboratory gradation analyses. Additional information, including boring logs and full gradation information, is included in Appendix D.

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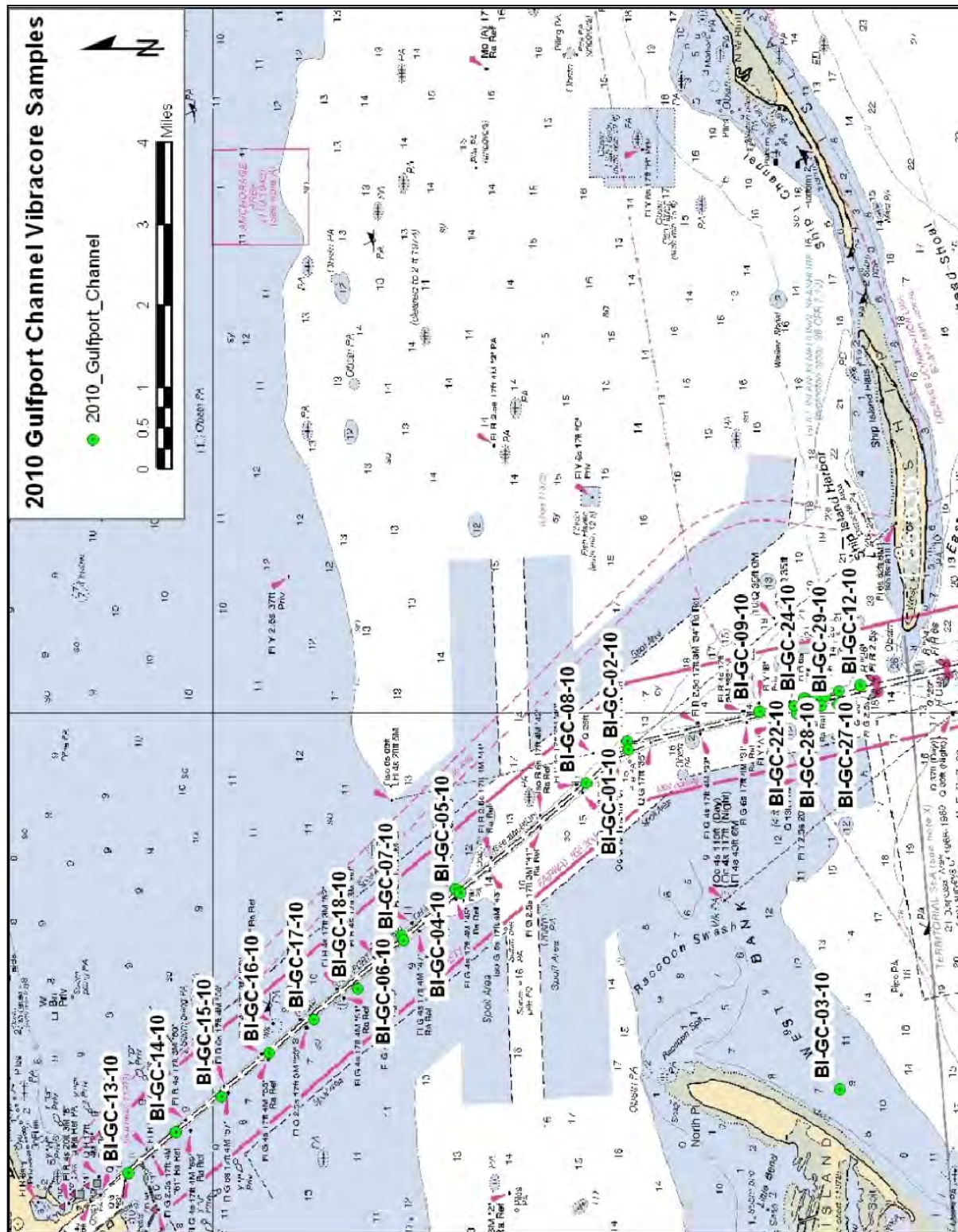


Figure 5.2.1.1 – General layout of the vibracore borings completed for Gulfport Channel.

5.2.2 CAT ISLAND

Potential borrow sites were investigated offshore of the eastern beach at Cat Island. Geophysical surveys indicated that extensive sand deposits were available in this area. Initially, thirty-three (33) borings were completed during Phase I sampling and confirmed the existence of the sand. An additional forty-five (45) borings were completed during Phase II of this investigation. Phase II was implemented in the summer of 2011 after 3D modeling on all potential borrow sites showed adverse wave effects would occur if desired cut depths were used during dredging. Although extensive sand deposits were identified, the recommended area will have an average cut depth of approximately five (5) feet to minimize effects of wave refraction over the site after excavation. The Phase II borings identified approximately 2.1 million cubic yards of sand available, from an area of approximately 282 acres, for dredging and placement on the beach at Cat Island. The area-weighted, average D50 grain size is 0.20 mm and the predominant color is light gray (with a Munsell Value of 6) for these samples. This area is also within the designated threatened species habitat for the Gulf Sturgeon. However, the volume of material to be removed will be relatively low and, due to the widespread availability of the sand in this area, a very shallow borrow excavation can help minimize disruption of the habitat. The general layout of the borings completed for the investigation for borrow material for Cat Island is shown in Figure 5.2.2.1.

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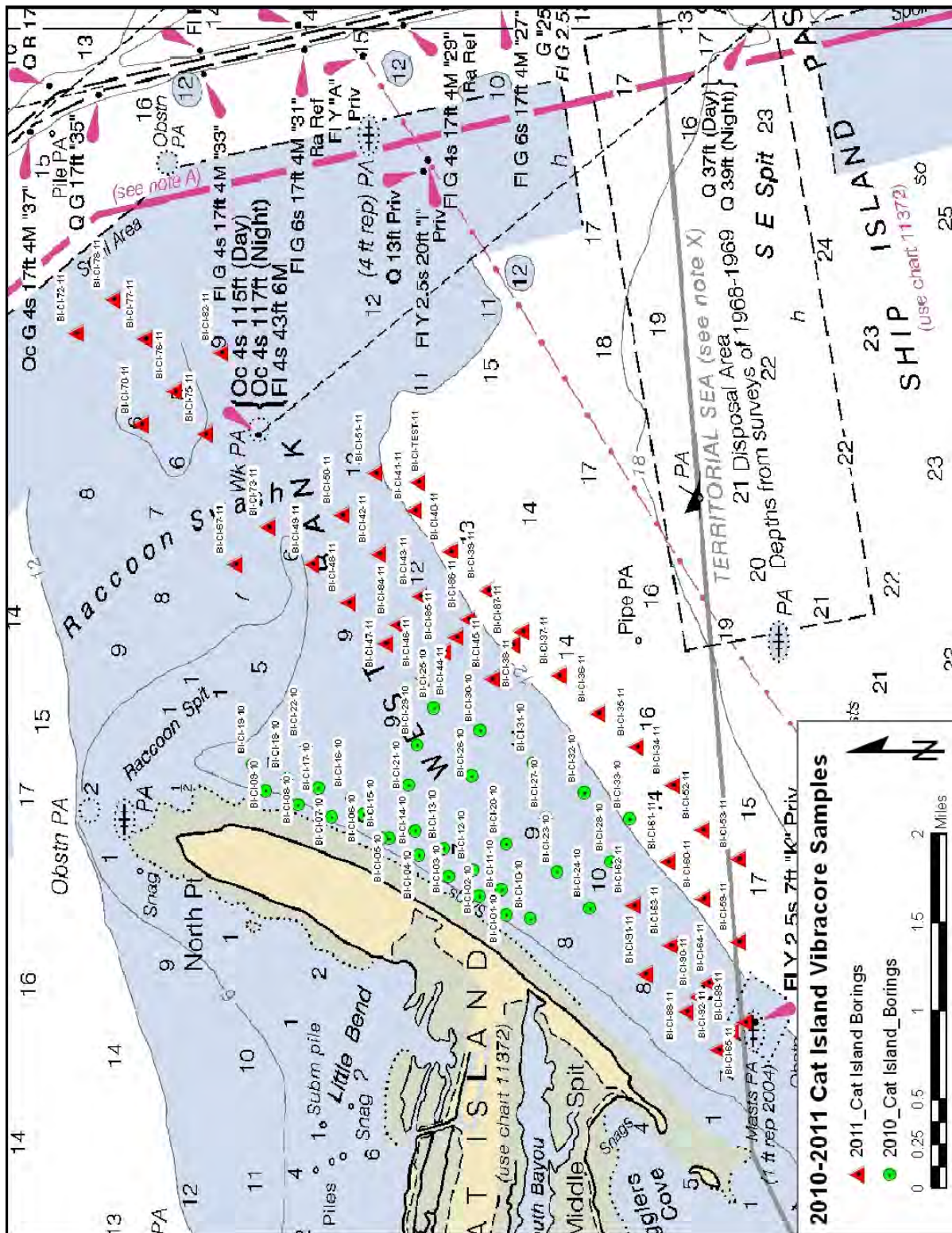


Figure 5.2.2.1 – General layout of the borings completed for the investigation for borrow material at Cat Island.

After modeling was completed, the proposed borrow area for Cat Island was modified to the polygon shown in Figure 6.1. Table 5.2.2 in Appendix C provides the coordinates of the borings, the Unified Soil Classification System designation of the sample, the Munsell Color designations for wet and dry samples, and grain size data from the laboratory gradation analyses. Boring logs and full lab gradation data are included in Appendix E.

5.2.3 MISSISSIPPI SOUND

Previous investigations have revealed that some areas in Mississippi Sound, near West Ship Island, have large sand deposits at the surface suitable for beach re-nourishment (Oivanki, 1995). This same localized area was described by Otvos (1975/76) as sandy, while most of the surface sediments in this area of the Sound are described as muddy. A previous geotechnical investigation by the USACE also confirmed the presence of this sand deposit. The boundaries of the sand deposit were defined by the USGS's geophysical investigation and a series of sixteen (16) Phase One borings were completed to validate the geophysical data. An additional fourteen (14) Phase I borings were completed to further delineate the deposit. Unfortunately, the sand from this area is finer-grained than desired for these projects. Also, it is located in a designated threatened species habitat for the Gulf Sturgeon. While this information would not preclude the use of this material, it would make it less desirable for potential borrow sites. The general layout of the borings completed for Mississippi Sound is shown in Figure 5.2.3.1. Table 5.2.3 in Appendix C provides the coordinates of the borings, the Unified Soil Classification System designation of the sample, the Munsell Color designations for wet and dry samples, and data from the laboratory gradation analyses. Boring logs and full lab gradation information, is included in Appendix F.

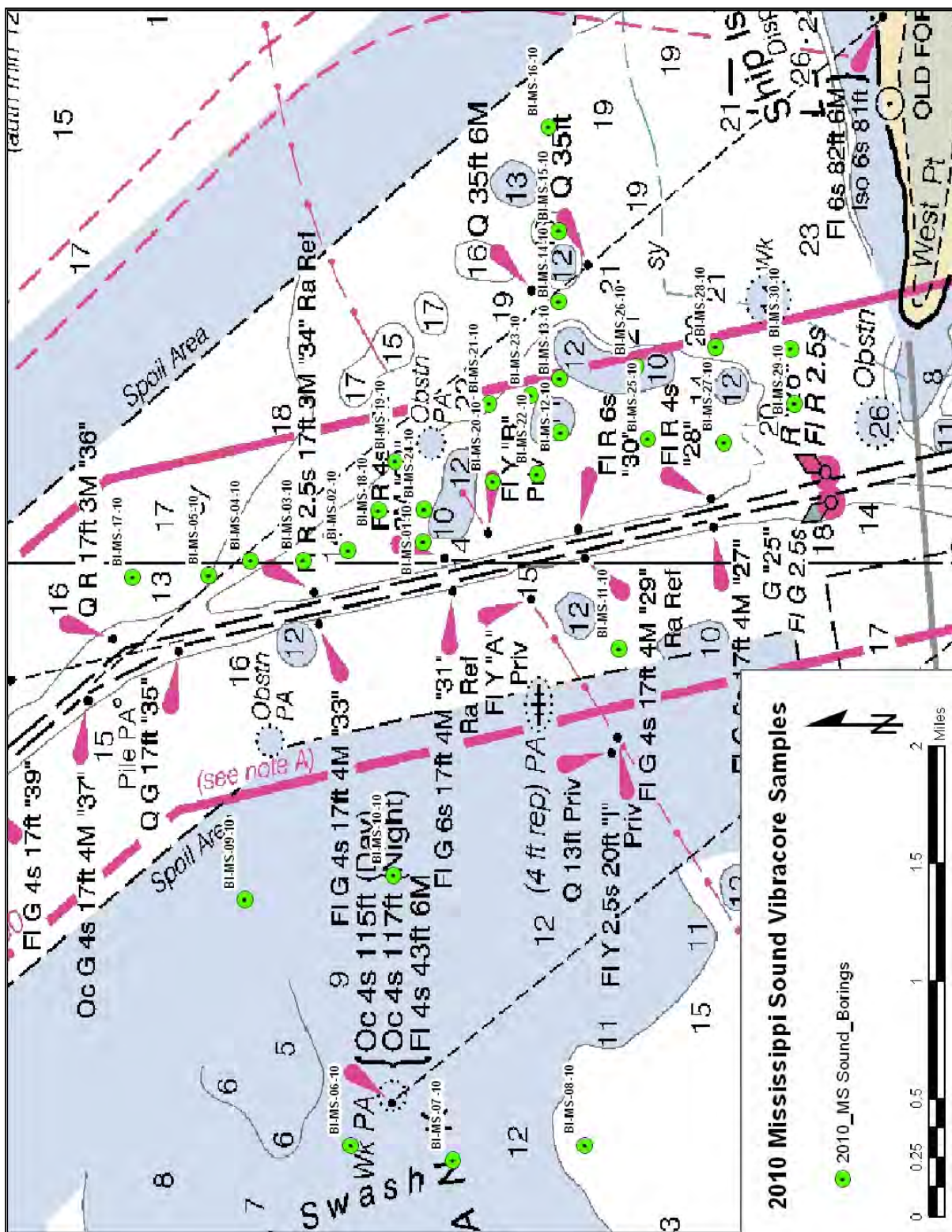


Figure 5.2.3.1 - General layout of the borings completed for the investigation for borrow material from Mississippi Sound.

5.2.4 SHIP ISLAND PASS

The USGS geophysical team surveyed the area located between the western edge of the Gulfport Navigation Channel and Cat Island. Historically, this zone should be in an active littoral drift of sand westward from Ship Island(s) to Cat Island. The survey was expected to locate a very large deposit of sand associated with an ebb tidal delta just south of the western tip of West Ship Island. However, neither the geophysical surveys nor vibracore borings supported this expectation. Potential sand deposit locations on the northern portion of the pass were consistent with the area identified by Otvos (1975/76). The geophysical surveys also confirmed the presence of shoals in this area (Twichell et al., 2011). Ten (10) Phase I borings were completed to define and confirm the extent of the deposit. Unfortunately, the grain size was finer than desired for placement. The unweighted D50 for this study area was 0.16 mm. Also, like other sand deposits north of the islands, the area is within the designated threatened species habitat for the Gulf Sturgeon. However, the material located adjacent to the western tip of West Ship Island (Ship Island Pass borrow area in Table 6.1) was approved for placement on the northern shore of West Ship Island by the NPS because it is composed mostly of material migrating westward from the island. The old Gulfport Channel acts as a sink and fills up as the island's material moves westward as part of the natural migration of the entire island to the west. This material had been used in previous NPS beach nourishment projects on the island. No borings were taken in this sand body, however. Instead, a proxy sample was taken from the north side of West Ship Island. The material consists of poorly graded, medium- to fine-grained, sand-sized quartz with an unweighted D50 of 0.48 mm, with percent fines being less than 5%. Dry Munsell value is 6. This borrow area is estimated at approximately 20.8 acres in size with approximately 480,000 cy of material available. Figure 6.2 shows the approximate outline of the borrow area. The general layout of the borings completed for Ship Island Pass is shown in Figure 5.2.4.1. Table 5.2.4 in Appendix C provides the coordinates of the borings, the Unified Soil Classification System designation of the sample, the Munsell Color designations for both wet and dry samples, and the laboratory gradation analyses data. Boring logs and full gradation information are included in Appendix G.

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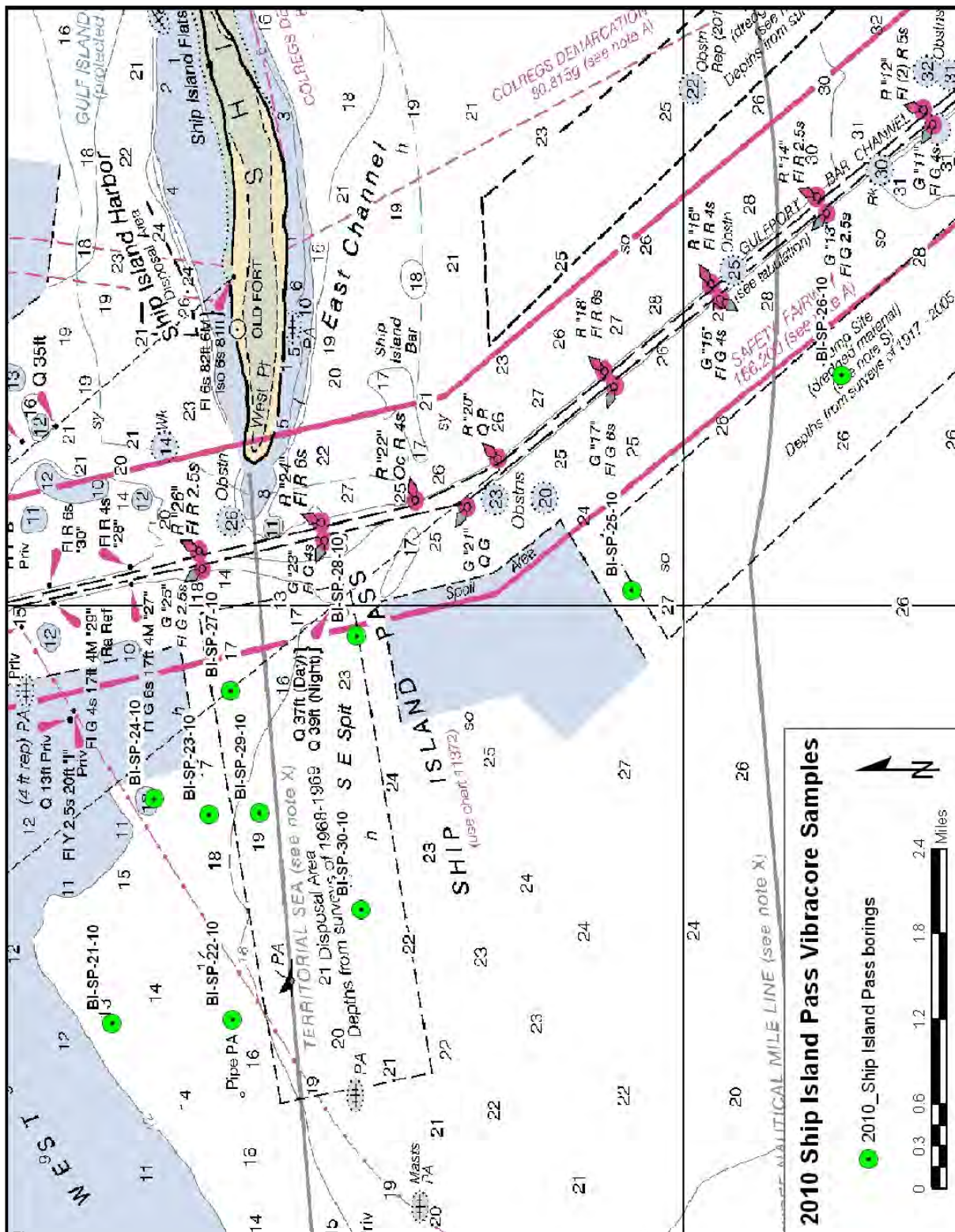


Figure 5.2.4.1 - General layout of the borings completed for Ship Island Pass

5.2.5 SHIP ISLAND

At the completion of the geophysical surveys and the initial field interpretations, one of the primary targets identified was an area south of Camille Cut and East Ship Island (Figure 5.2.5.1). Using the survey data, the USGS identified eleven (11) locations for Phase One borings. These borings indicated a large expanse of quality sand. Therefore, fifty-four (54) additional Phase I borings were completed to fully define the sand deposit. Initial analysis of the boring data indicated that approximately twenty-two (22) million cubic yards of fine-grained sand was available from two locations within that general area. This area was selected for further analyses by computer modeling to predict any adverse effects from wave refraction caused by use of the area as a borrow site. Wave and hydrodynamic modeling indicated that the footprint of the borrow area needed to be altered to reduce potential impacts on the fill placed in Camille Cut. As borrow area design progressed and modeling showed a need to reduce and reshape the borrow area, the new borrow area estimate was whittled down to 1.2 mcy with an average D50 grain size of 0.21 mm, a dry Munsell color of light gray, and a dry Munsell value of 7. The D50 grain size of the sand is smaller than desired for a potential borrow source. Potential solutions to make this borrow site more suitable may include applying overfill to mitigate erosional losses or mixing with sand from other borrow sites to increase the average D50. The general layout of completed borings is shown in Figure 5.2.5.1. Table 5.2.5 in Appendix C provides the coordinates of the borings, the Unified Soil Classification System designation of the samples, the Munsell Color designations for wet and dry samples, and data from the laboratory gradation analyses. Boring logs and full lab gradation information is included in Appendix H.

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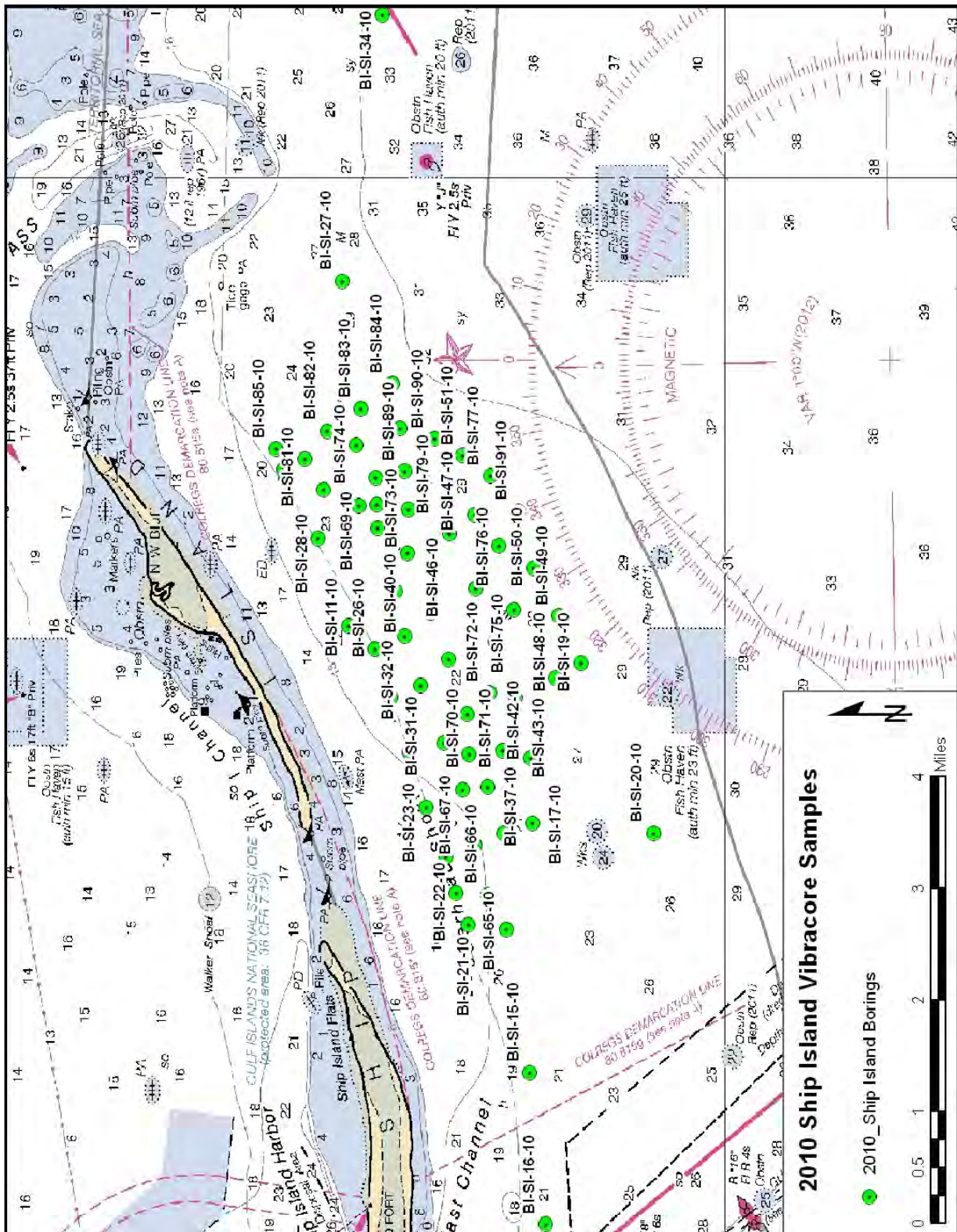


Figure 5.2.5.1 – General layout of the Ship Island borings completed for the investigation.

5.2.6 DOG KEYS PASS

Two separate, well-defined ebb tidal deltas located east of East Ship Island and to the west of Horn Island are associated with Little Dog Keys Pass and Dog Keys Pass (Figure 5.2.6.1). These deltas were believed to contain large volumes of high quality sand, but the exact conditions of littoral sediment transport relationships were not well defined. This area was added for further investigation in an updated sediment budget to determine if sediment transport was terminating southward and extending these deltas. The geophysical survey provided updated bathymetry and information on the extent of the deposits. The USGS located twelve (12) Phase One borings to validate their geophysical data. An additional 12 (12) Phase I borings were added to further define the limits of the sand deposit, for a total of twenty-four (24) Phase I borings. The sand is of good quality, but indications show it is within the active littoral system. Therefore, it will not be considered for use as borrow. The general layout of the boring program for Dog Keys Pass is shown in Figure 5.2.6.1. Table 5.2.6 in Appendix C provides the coordinates of the borings taken in the area, the Unified Soil Classification System designation of the sample, the Munsell Color designations for wet and dry samples, and select data from the laboratory gradation analyses. Boring logs and full gradation information are included in Appendix I.

Offshore Sand Borrow Investigation, Phases 1 & 2 Geotechnical Investigation

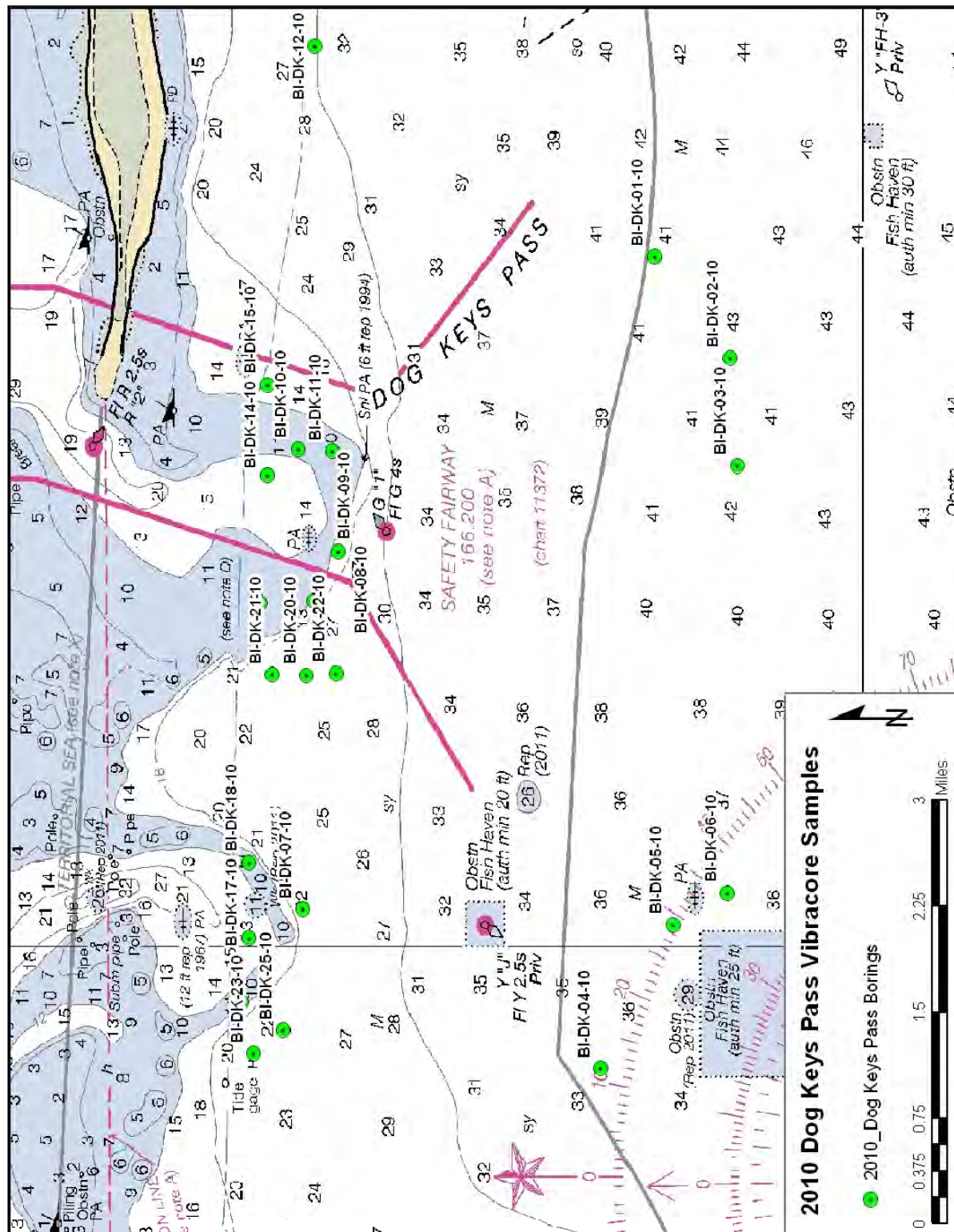


Figure 5.2.6.1 - General layout of the borings completed for the Dog Keys Pass area.

5.2.7 HORN ISLAND PASS

Horn Island Pass was not selected initially as an area to investigate for borrow sites because of the distance to potential placements and indications that all potential sand deposits would be in the active littoral zone. However, during the study of the sediment budget for the barrier islands, it was noted that a mound of sediment just south of Horn Island Pass had the potential for sand resources. This mound was created by the disposal of dredged material from the bar channel section of the Pass where much of the dredged material was sand. Twenty-six (26) Phase I borings were completed to characterize the nature of the material in the mound. Sand was present in the upper portion of the area. Approximately 1.6 million cubic yards of sand are estimated to be available for placement into project areas. The unweighted, average D50 grain size is 0.26 mm and the predominant dry Munsell color is light gray. Unfortunately, the anthropogenic-nature of the deposition of the sediment has created discontinuous sandy layers. Also, the sand thickness decreases rapidly as you approach the edge of the mound. This would make dredging difficult in this area. This area has not been entirely ruled out as a borrow area, but is not being considered at this time unless additional investigation is conducted. The general layout of the borings is shown in Figure 5.2.7.1. Table 5.2.7 in Appendix C provides the coordinates of the borings, the Unified Soil Classification System designation of the samples, the Munsell Color designations for wet and dry samples, and data from the laboratory gradation analyses. Boring logs and full lab gradation information is included in Appendix J.

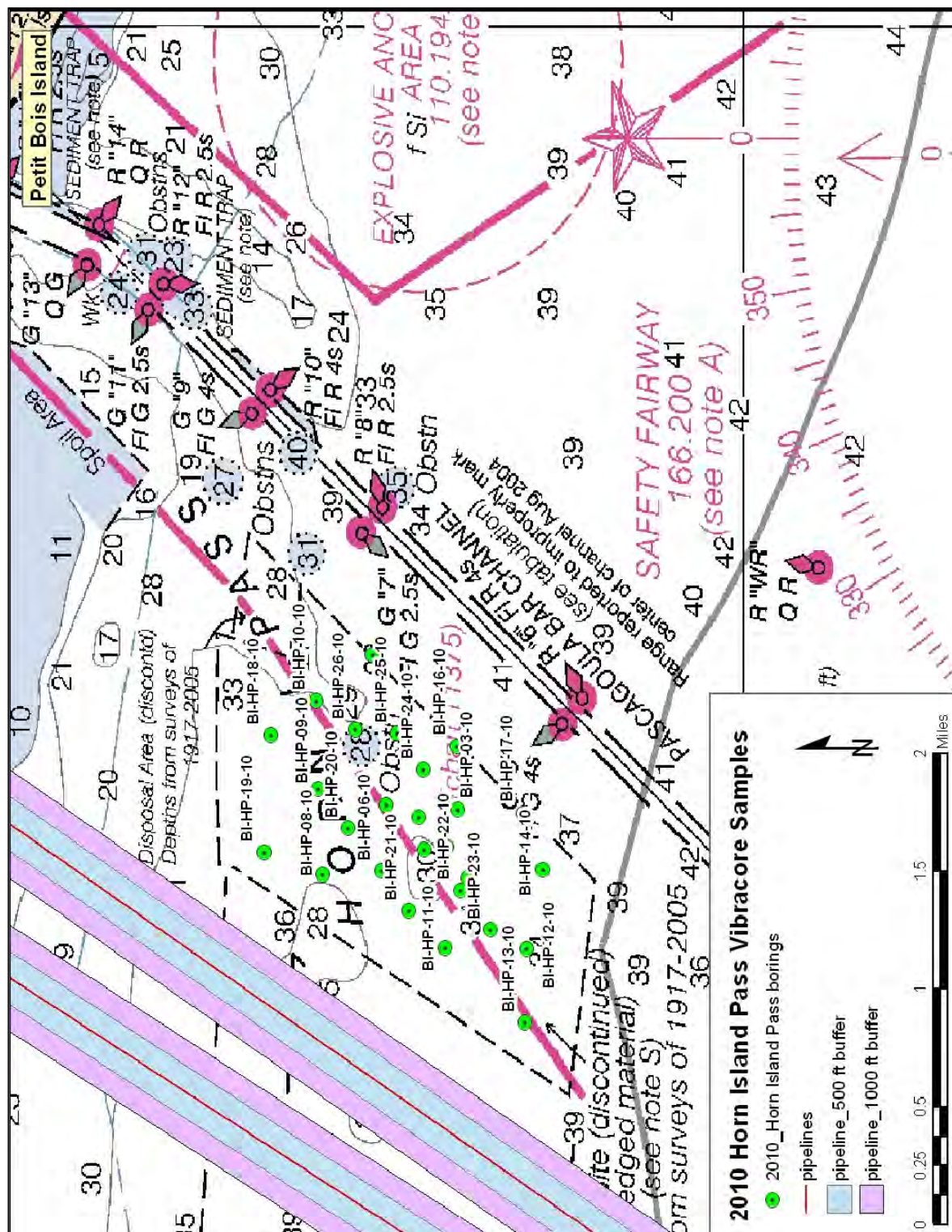


Figure 5.2.7.1 - General layout of the borings completed for the investigation of borrow material from Horn Island Pass area. Initial potential borrow area outlined in orange.

5.2.8 DISPOSAL AREA 10 (DA-10)

In Phase II of the geotechnical investigation, an additional site location was investigated as a potential borrow site. Phase II was instituted after modeling proved cut depths in the initial potential borrow areas would create too much wave refraction and affect the stability of the islands after sand placement. To reach the desired volume for sand placement, Disposal Area 10 (DA-10) was added to the list of potential sites. This borrow site is located less than one mile northwest of the western tip of Petit Bois Island. DA-10 is the remains of a dredged material disposal site that was created originally to provide sediment to the littoral system. However, studies have shown that it contributes little to no material to the system, resulting in the creation of a stable island. This area was modeled before coring which showed borrowing material would have minimal effects on wave action in the area. It has good potential for a borrow source because of its location, material quality, and its minimal effect on wave action in the area, as determined by modeling. The area-weighted average D50 grain size is 0.32 mm and dry Munsell color is predominantly light gray with an average dry Munsell value of 7. There are approximately 5.1 million cubic yards available. Unfortunately, DA-10 is a nesting area for threatened shorebirds on the southern beach and wintering areas for other birds. The stability of the island is crucial to the existence of these birds. This has been taken into account when determining the depth and volume of material to be removed from this area. The general layout of the borings completed for the investigation is shown in Figure 5.2.8.1. Table 5.2.8 in Appendix C provides the coordinates of the borings, the Unified Soil Classification System designation of the sample, the Munsell Color designations for wet and dry samples, and data from the laboratory gradation analyses. Boring logs and full lab gradation information are included in Appendix K.

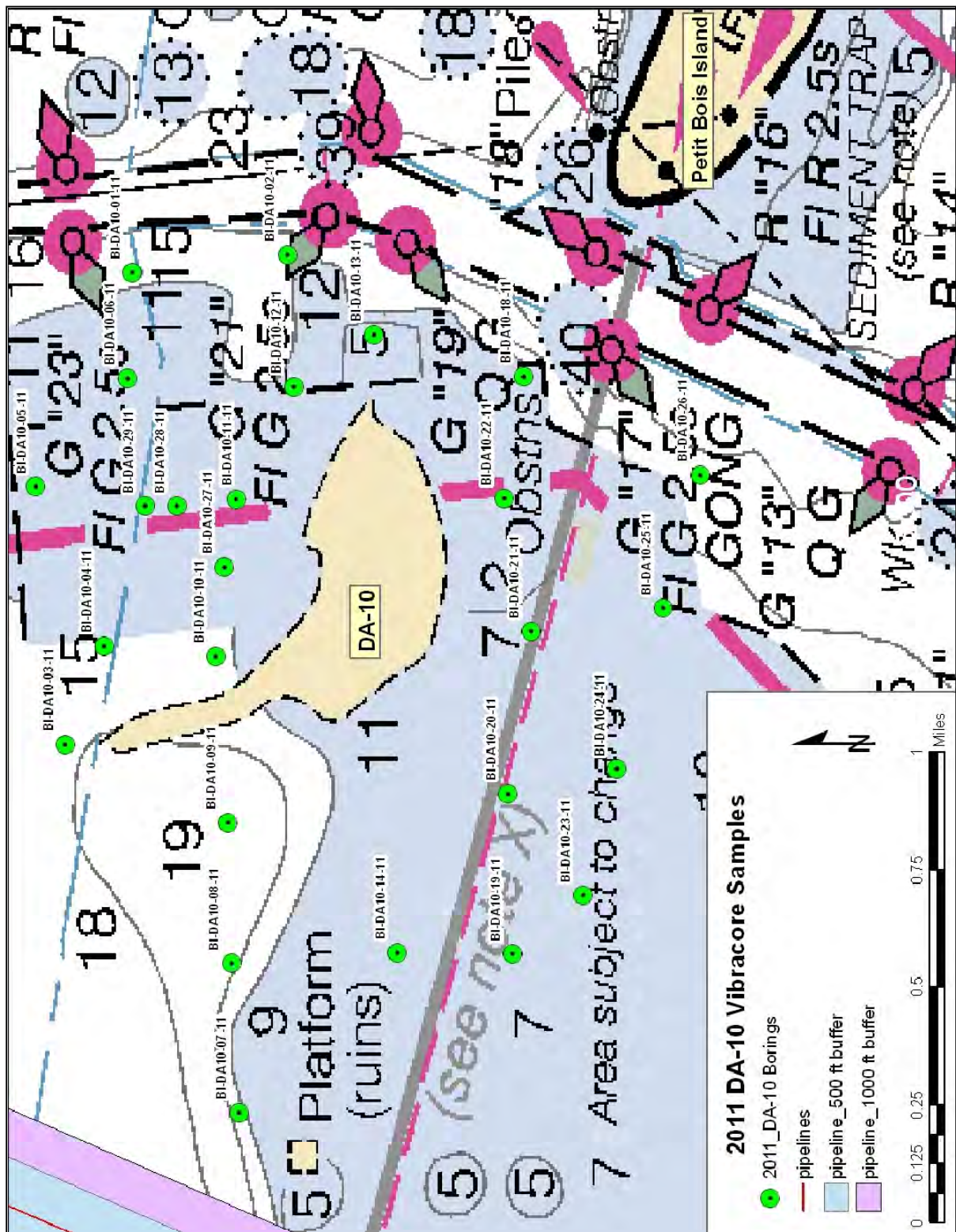


Figure 5.2.8.1 - General layout of the borings completed for the Phase Two investigation for borrow material from Disposal Area 10.

5.2.9 PETIT BOIS PASS

The USGS geophysics team surveyed the area south of Petit Bois Pass to locate sand for placement into the littoral system of the Pass. Petit Bois Pass extends from Petit Bois Island eastward to Dauphin Island, which is located in Alabama. The initial field interpretations of the geophysical survey indicated that large deposits of sand were present in the area, mostly in the eastern portions. Seventeen (17) Phase I borings were completed and located very high quality sand in some areas. An additional eighty-nine (89) borings were completed to fully outline the deposit. Based on the result of these borings, approximately 15.9 million cubic yards of sand were located in two separate zones with an average D50 of 0.33 mm. The eastern zone contains approximately 11.7 million cubic yards and the western zone contains approximately 4.3 million cubic yards. Dry Munsell color ranges from light gray to white. The western zone contains a higher percentage of shell fragments than the sand in the eastern zone, but not enough for concern with turbidity after placement. Seventeen (17) borings were completed in the Petit Bois area during the Phase II sampling to fill in data gaps found during modeling. A general layout of the borings is shown in Figures 5.2.9.1, 5.2.9.2, and 5.2.9.3. Table 5.2.9 in Appendix C provides the coordinates of the borings, the Unified Soil Classification System designation of the sample, the Munsell Color designations for wet and dry samples, and data from the laboratory gradation analyses. Boring logs and full lab gradation information is included in Appendix L.

Offshore Sand Borrow Investigation, Phases 1 & 2 Geotechnical Investigation

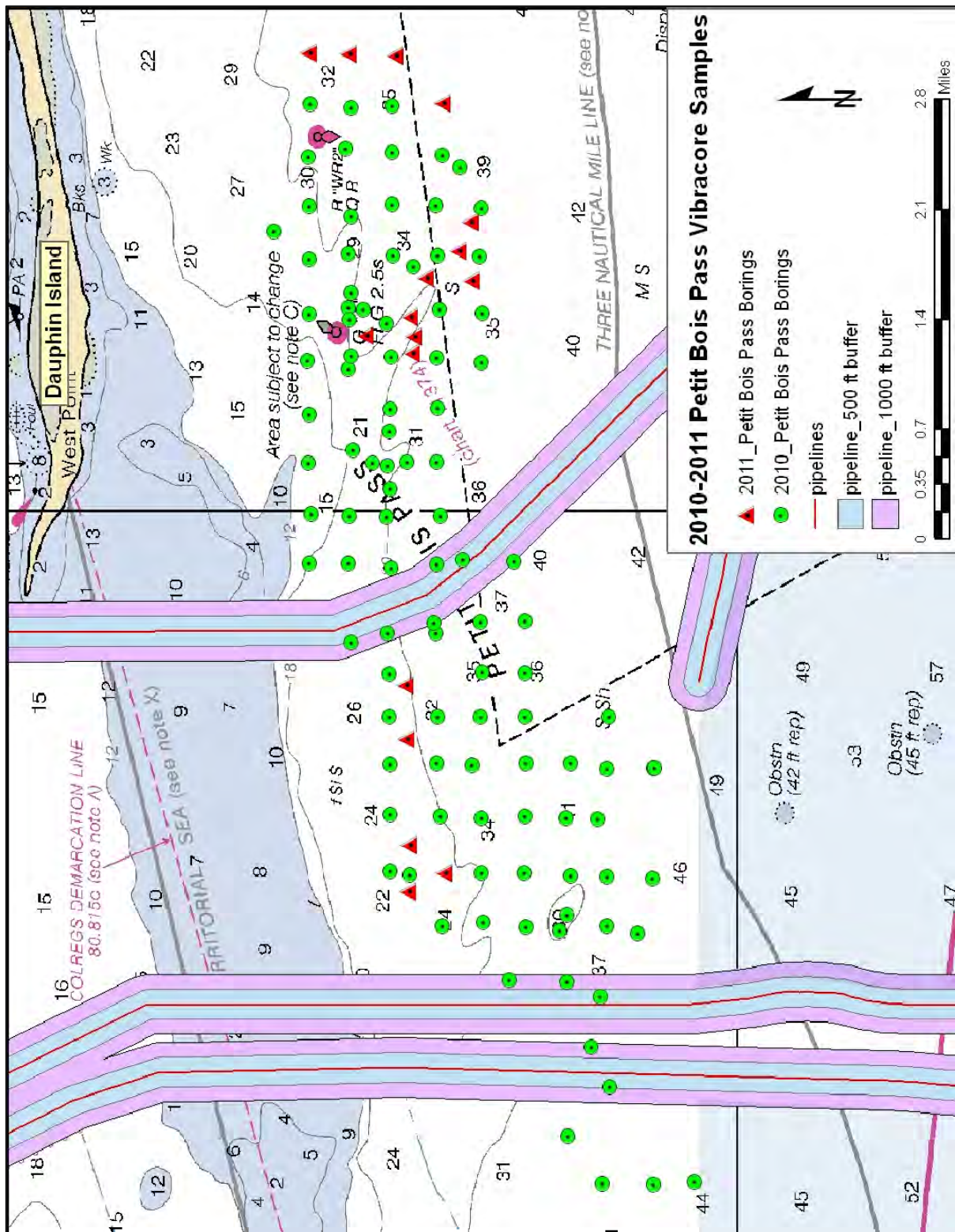


Figure 5.2.9.1 - General layout of the borings completed for the investigation for borrow material from the Petit Bois Pass area.

SECTION 5

Offshore Sand Borrow Investigation, Phases 1 & 2 Geotechnical Investigation

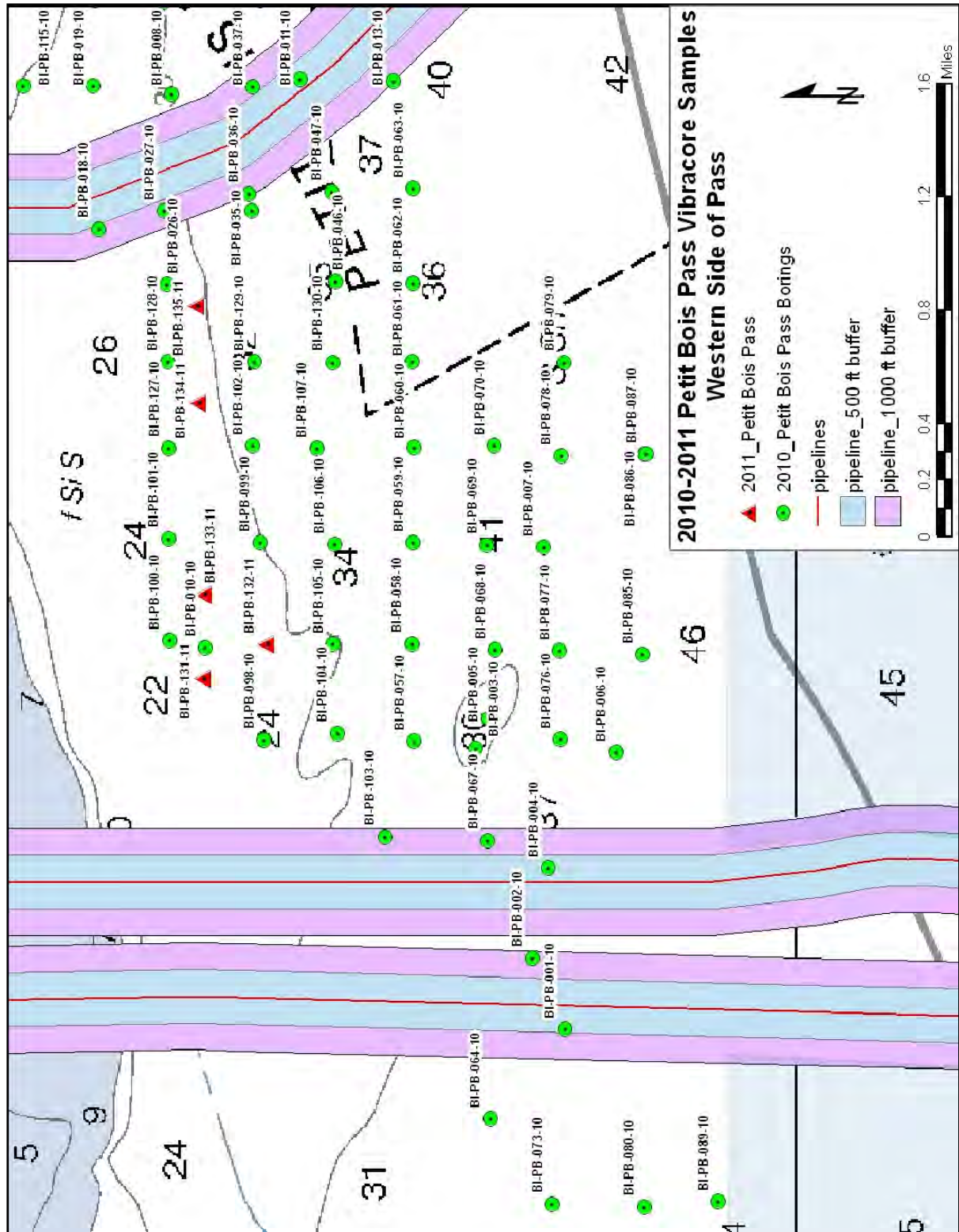


Figure 5.2.9.2 - General layout of the borings completed for the investigation for borrow material from the western half of Petit Bois Pass area.

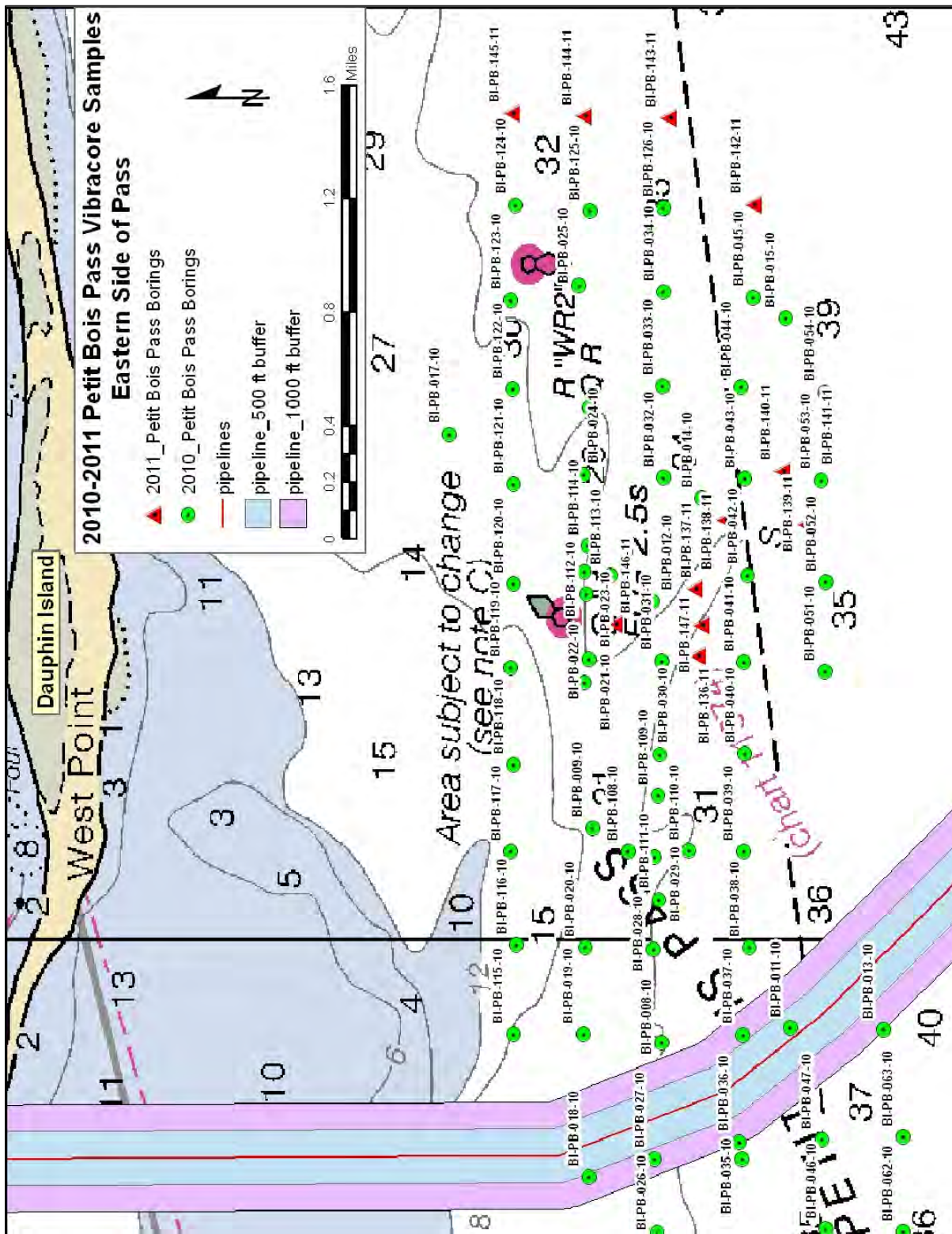


Figure 5.2.9.3 - General layout of the borings completed for the investigation for borrow material from the eastern half of the Petit Bois Pass area.

6.0 IDENTIFIED BORROW AREAS

USACE Mobile identified several potential borrow areas based on its cooperative geophysical investigation with the USGS and validated the findings with a two-phase geotechnical investigation. Additional modeling is being conducted to determine the hydrodynamic effects of removing the borrow material. Based on the modeling results thus far, the shape and dimensions of the borrow areas have been reconfigured to maximize sand recovery while minimizing environmental impacts. The following figures do not necessarily represent the final design for the borrow areas, as modeling and other factors may contribute to alterations of the final design. Table 6.1 contains the current borrow area statistics.

Cat Island, Ship Island, DA-10, and Petit Bois East and West borrow areas have been modeled and their boundaries identified. Using their updated shapes and projected dredging cut depths, their projected volumes have been calculated. Area dimensions include the footprint of the estimated fall-in of the side slopes after dredging. Table 6.1 summarizes this information.

Table 6.1 Borrow Area statistics

<i>Borrow Area</i>	<i>Effective Volume (Mcy)</i>	<i>Area (Acres)</i>	<i>D50 (mm)</i>	<i>Area-weighted Percent Fines</i>	<i>Dry Munsell Value</i>
Cat Island	2.1	282	0.20	5	6
Ship Island Pass ¹	0.45	20.9	0.48	< 1	6
Ship Island	1.2	83	0.21	5	7
DA-10	5.1	357	0.33	2	7
Petit Bois West	4.3	587	0.32	4	6
Petit Bois East	11.7	753	0.33	7	6
Total	24.9				

¹Ship Island Pass borrow material D50 and percent fines is derived from a proxy sample taken from the north shore of West Ship Island (see Section 5.2.4 Ship Island Pass for discussion).

This section includes maps of each area with the borings assigned colors based on the suitability of the material in the core. The borings are broken down into “Suitable”, “Unsuitable”, and several categories of “Borderline” based on grain size, sand thickness, and percentage of fines. These maps show the spatial relationship between the borings and the borrow areas.

Cat Island

Cat Island borrow area has been reduced in size and its orientation changed because of wave and hydrodynamic modeling. Figure 6.1 shows a simplified spatial analysis of the 2010-2011 borings surrounding the proposed borrow area. The new borrow area is approximately 282 acres with an estimated volume of 2.1 mcy at an average cut depth of 5 feet. It has an average D50 of 0.20 mm and a dry Munsell value of 6. The average percentage of fines is expected to be 5%.

SECTION 6

Offshore Sand Borrow Investigation, Phases 1 & 2 IDENTIFIED BORROW AREAS

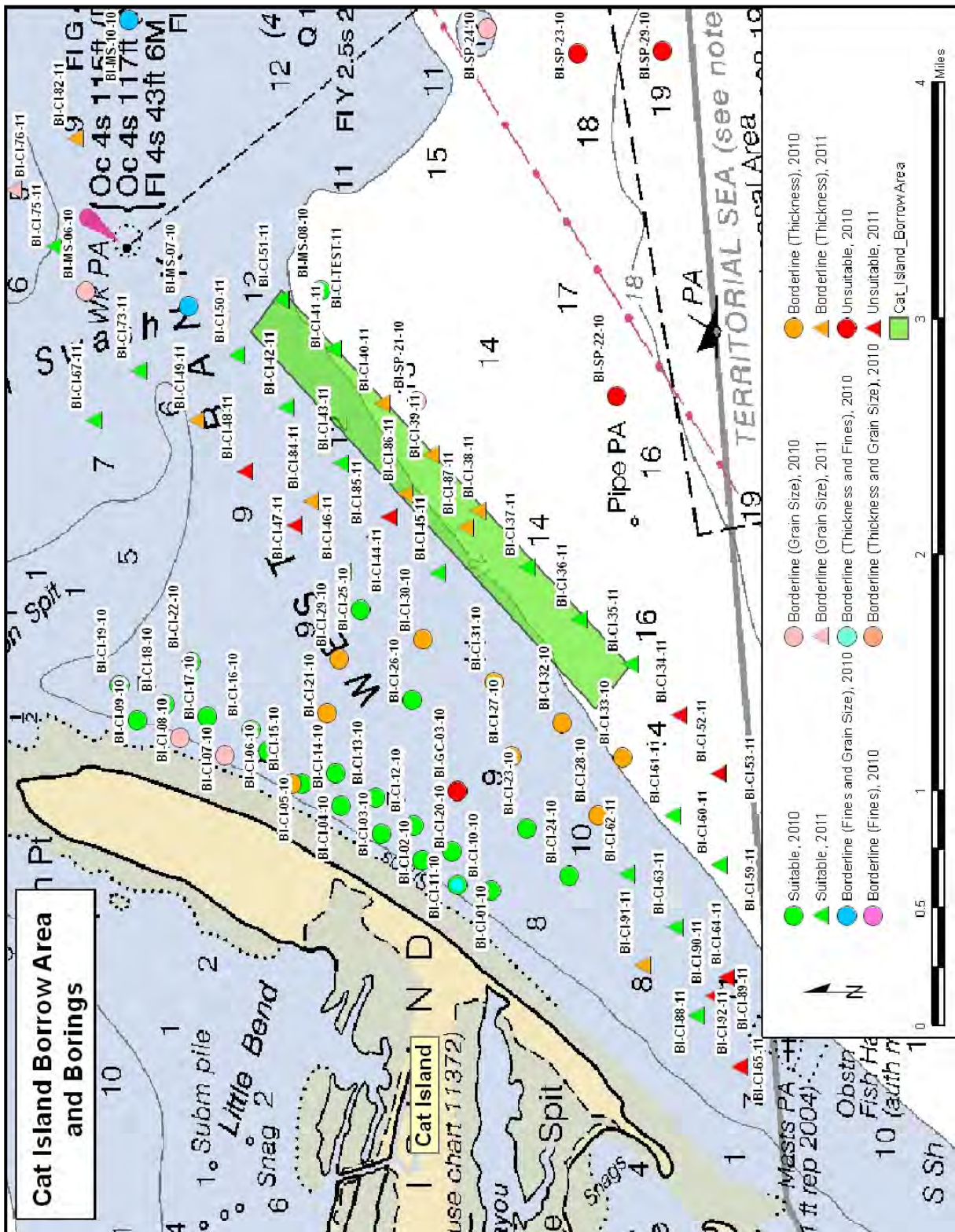


Figure 6.1 Cat Island Borrow Area

Ship Island Pass

As discussed in Section 5.2.4, material for placement on the north shore of West Ship Island was identified at the western end of the island, in the vicinity of the old navigation channel. Figure 6.2 shows the final location, orientation, and general shape of the borrow area. The borrow area volume is estimated at approximately 450,000 cy with an area of approximately 20.9 acres. The proxy D50 grain size is 0.48 mm and the dry Munsell value is 6. The average percentage of fine material is expected to be less than 1%.

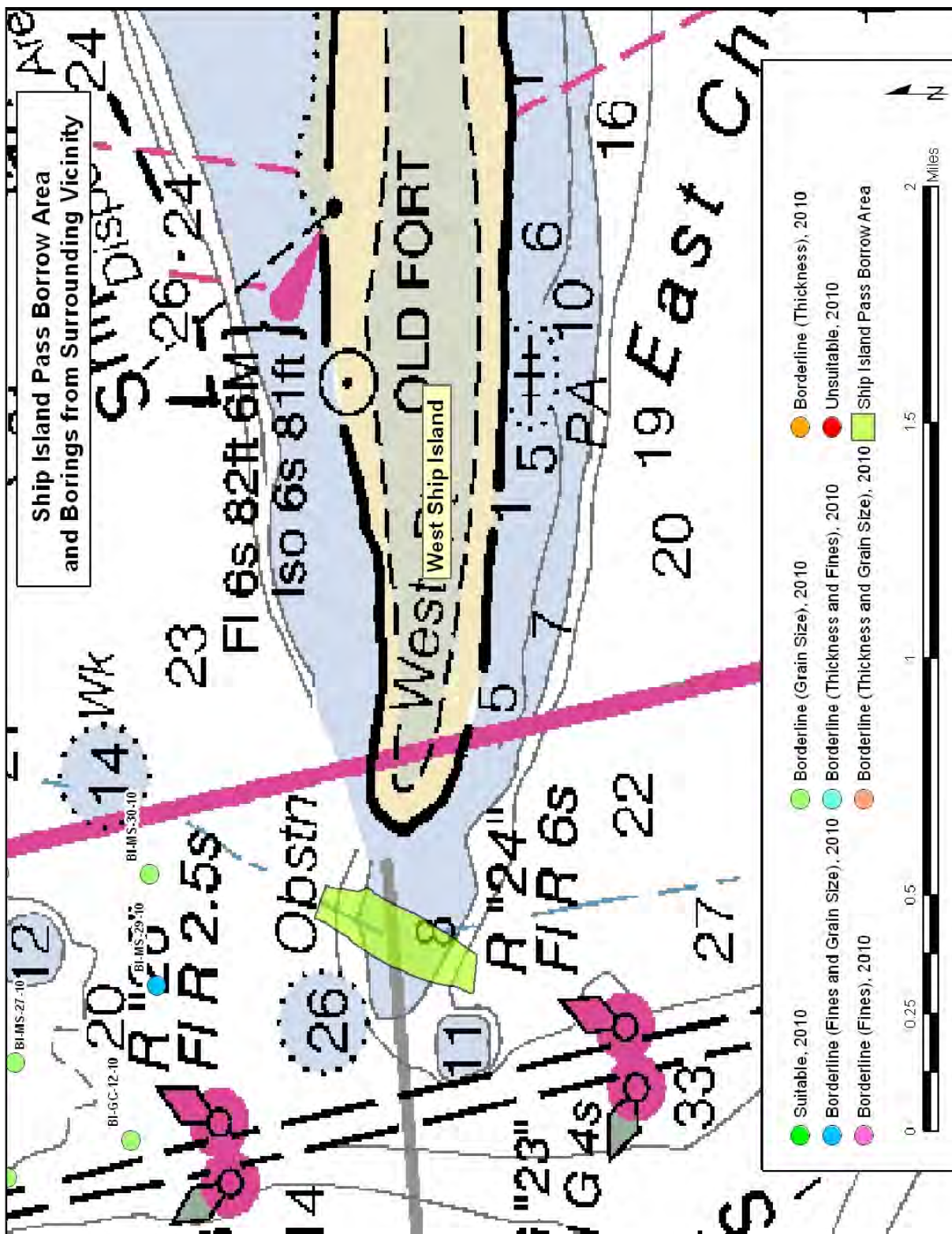


Figure 6.2 Ship Island Pass Borrow Area for north shore placement on West Ship Island

Ship Island

The potential borrow area identified south of Ship Island has fine grain size sand and is limited in its use within the Camille Cut project. Figure 6.3 shows a simplified spatial analysis of the 2010 borings surrounding the proposed borrow area.

Wave and hydrodynamic modeling reduced the size of the initial borrow area. It is approximately 600 feet wide (north-south direction) and 6,000 feet wide (east-west direction) covering a total area of approximately 96 acres with an average cut thickness of approximately 8 ft. It has an estimated volume of 1.2 million cubic yards and average D50 grain size of 0.21 mm. Dry Munsell color is expected to range from light brownish gray to light gray with an average dry Munsell value of 7. The average percentage of fines is expected to be less than 5%.

SECTION 6

Offshore Sand Borrow Investigation, Phases 1 & 2 IDENTIFIED BORROW AREAS

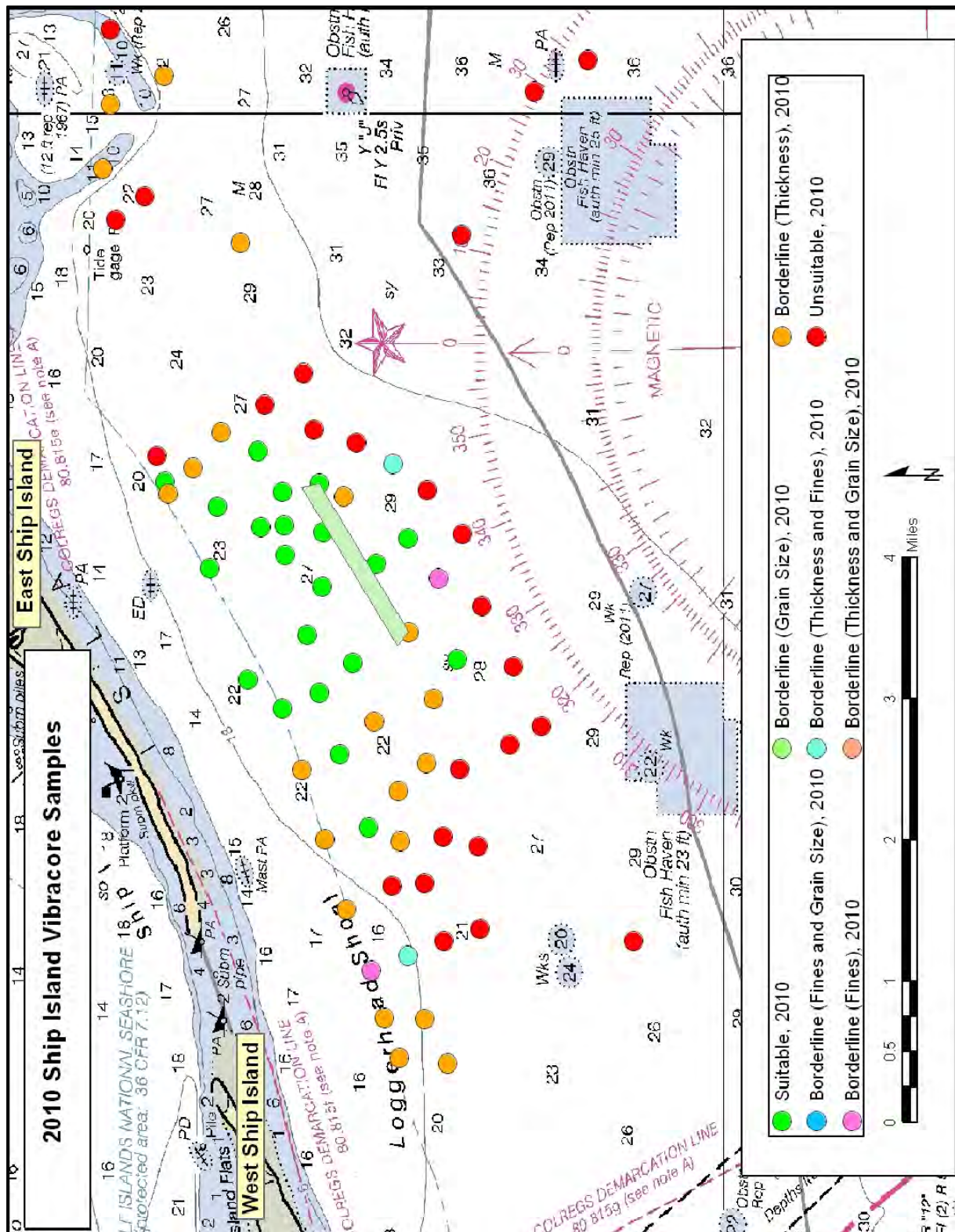


Figure 6.3 - Ship Island Borrow Area with borings

SECTION 6

Offshore Sand Borrow Investigation, Phases 1 & 2 IDENTIFIED BORROW AREAS

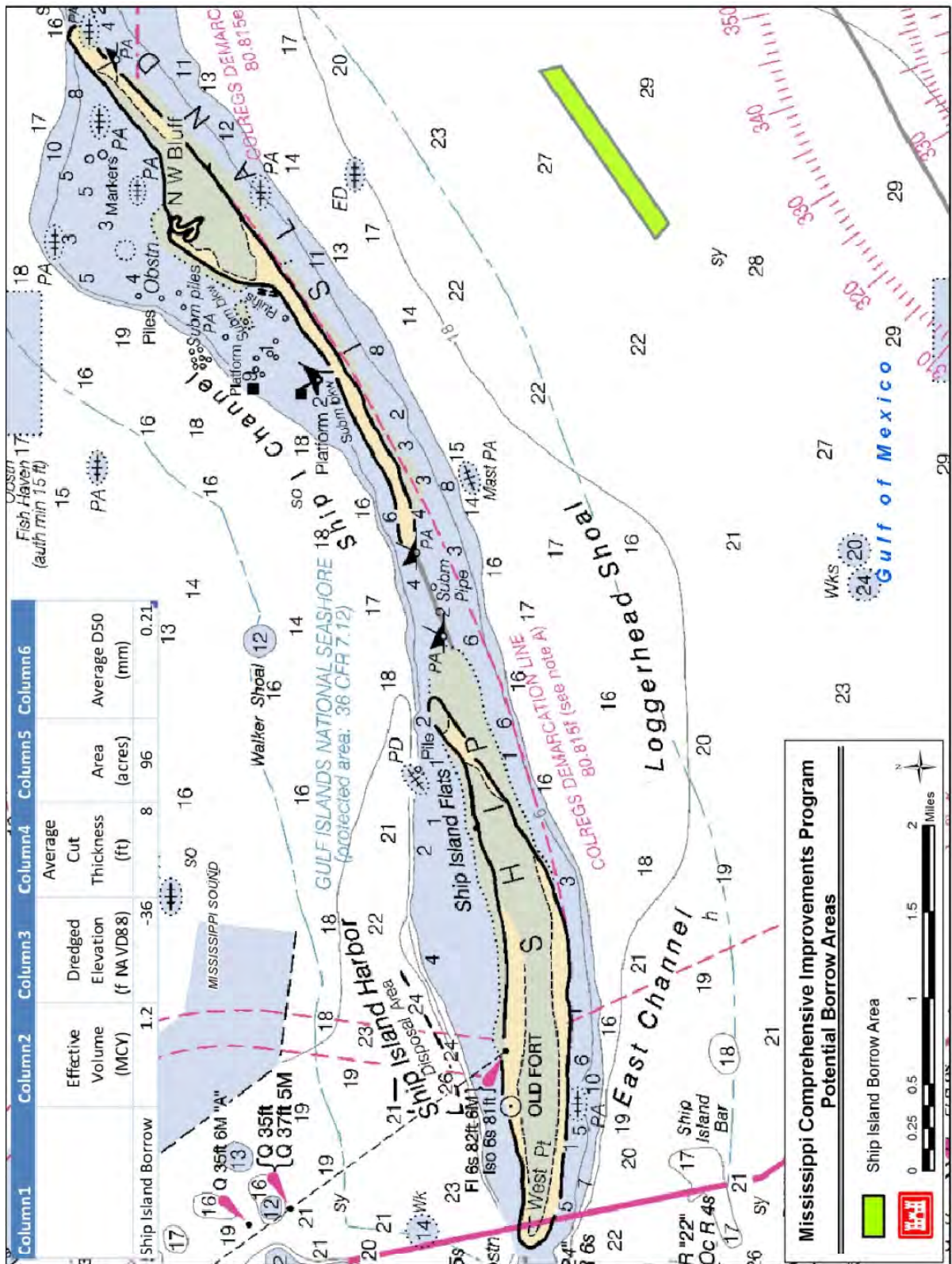


Figure 6.4 - Ship Island Borrow Area

DA-10

Due to modeling of hydrodynamics within the area and the influence of wildlife habitat, DA-10 borrow area has been altered in size and shape from its original scope. Figure 6.4 shows the layout of the borrow area with a simplified spatial analysis of the borings taken in the area.

The borrow area statistics are shown in Figure 6.5. The borrow area is approximately 357 acres with an estimated volume of 5.1 million cubic yards at an average cut thickness of 14 feet. The thickness is greater than the other borrow areas because part of the island above the water line will be removed. Its average D50 is 0.33 mm. Dry Munsell color is expected to range from light brownish gray to light gray, with a dry Munsell value of 7. The average percentage of fines is expected to be less than 2%.

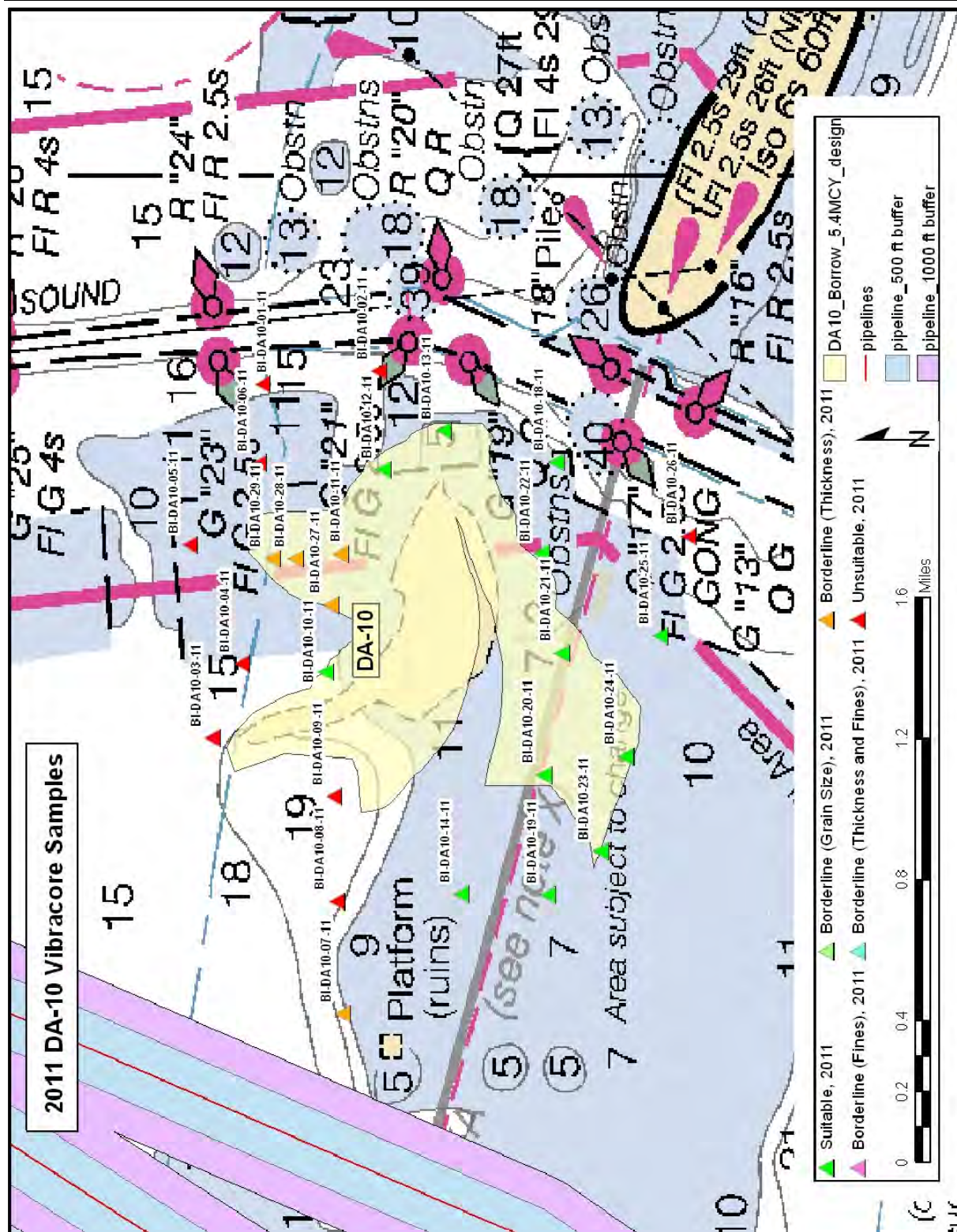


Figure 6.4 - DA-10 Borrow Area

Offshore Sand Borrow Investigation, Phases 1 & 2

IDENTIFIED BORROW AREAS

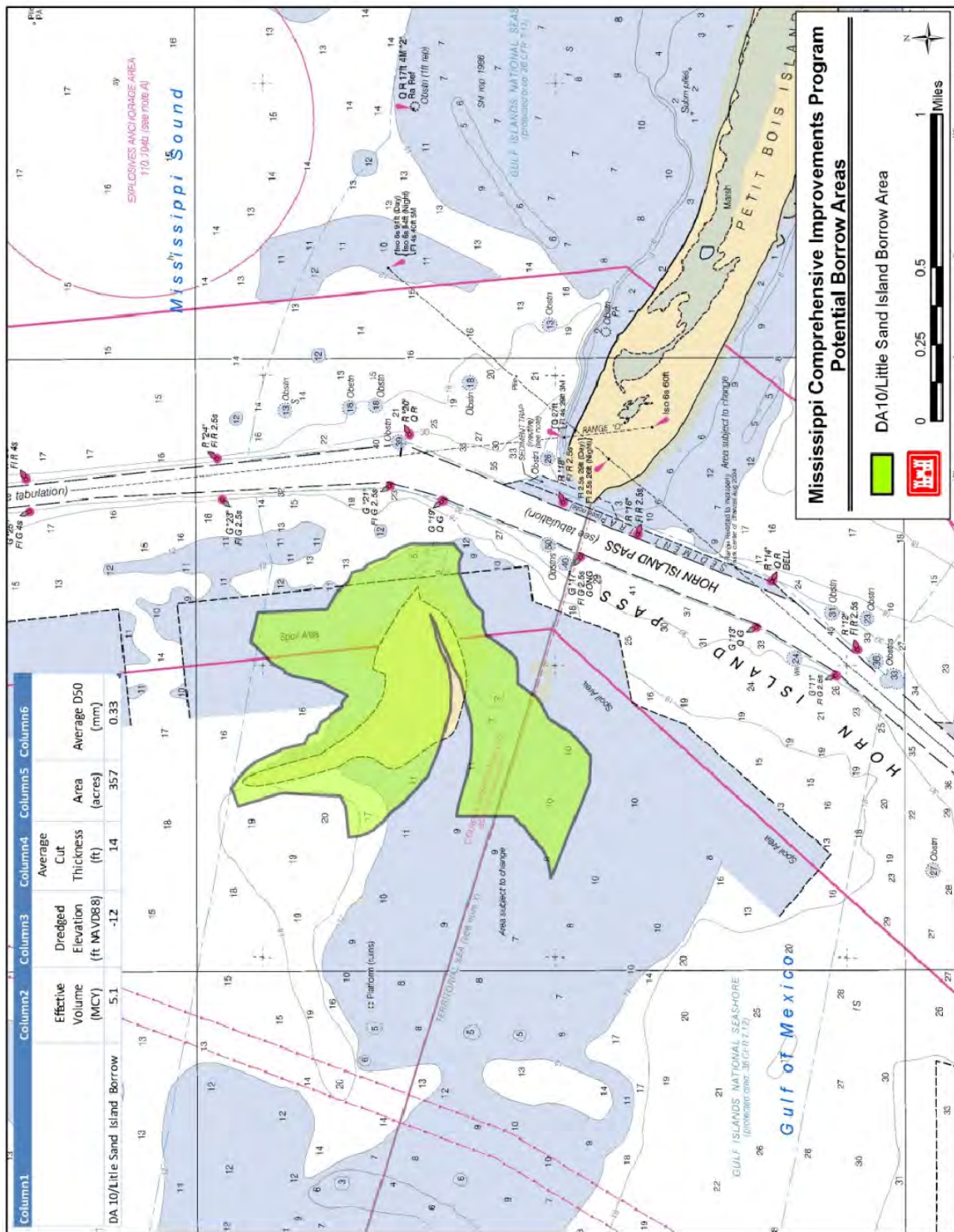


Figure 6.5 - DA-10 Borrow Area

Petit Bois West and East

Modeling of the Petit Bois borrow area has altered the shape of both the East and West areas to better fit the sand deposits and minimize wave refraction. Figure 6.5 shows a simplified spatial analysis of the 2010 and 2011 borings overlaying the proposed borrow areas.

Figure 6.6 shows the newest borrow area configurations and has two inset tables with breakdowns of different areas within each borrow area based on depth of cut. They represent the different cut depths needed to achieve the desired quantities of sand. Petit Bois West has an effective volume of 4.3 mcy, an average cut thickness of 6 ft, and an area of 587 acres. The D50 grain size still averages 0.32 mm and the dry Munsell value is 6. For Petit Bois East, the effective volume is 11.7 mcy with an average cut thickness of 10 ft, and an area of 753 acres. The D50 grain size averages 0.33 mm and the dry Munsell value is 6. The average percentage of fines is expected to be slightly higher in the east (7%) as compared to the west (4%).

Offshore Sand Borrow Investigation, Phases 1 & 2

IDENTIFIED BORROW AREAS

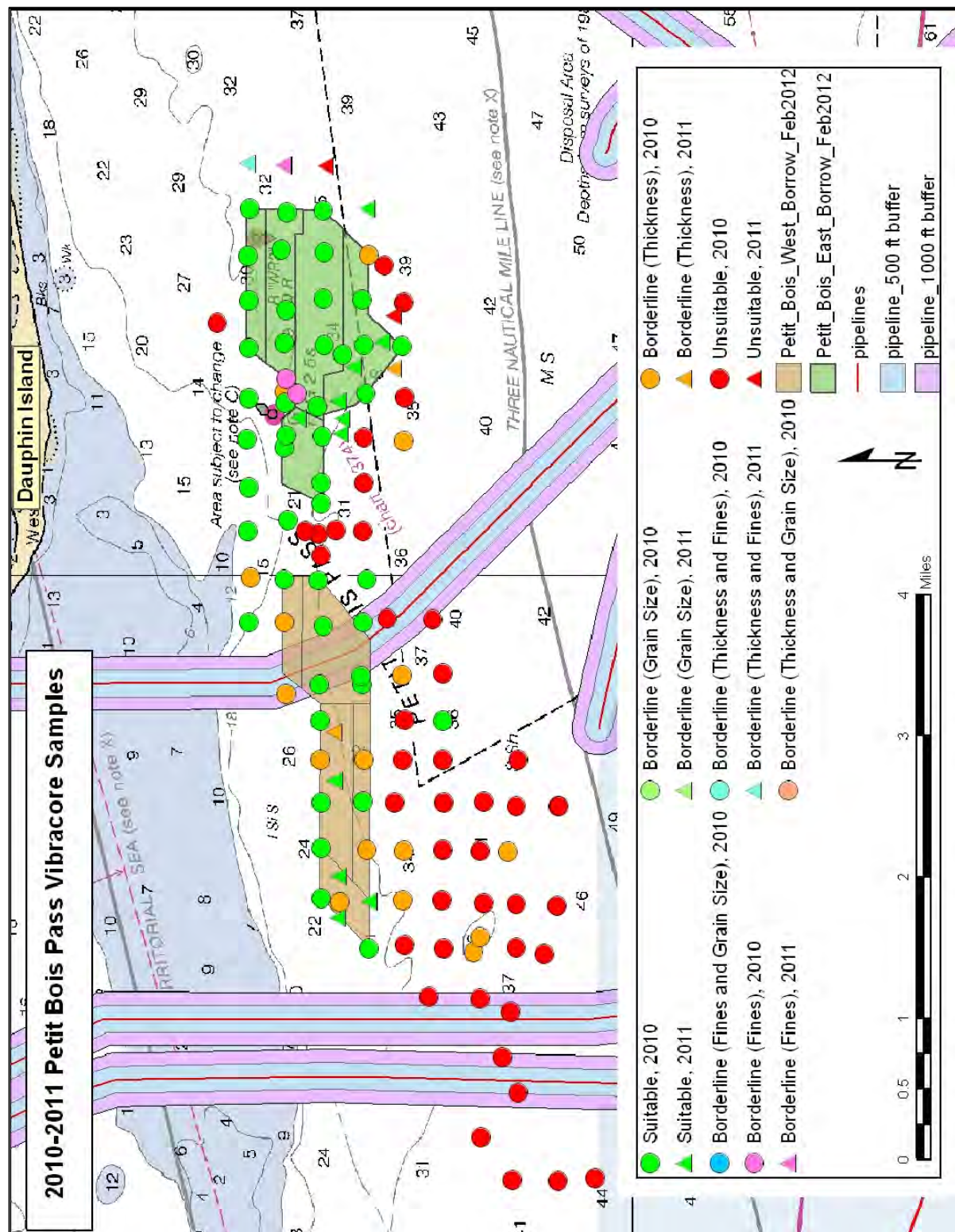


Figure 6.6 - Petit Bois Borrow Areas

SECTION 6

Offshore Sand Borrow Investigation, Phases 1 & 2 IDENTIFIED BORROW AREAS

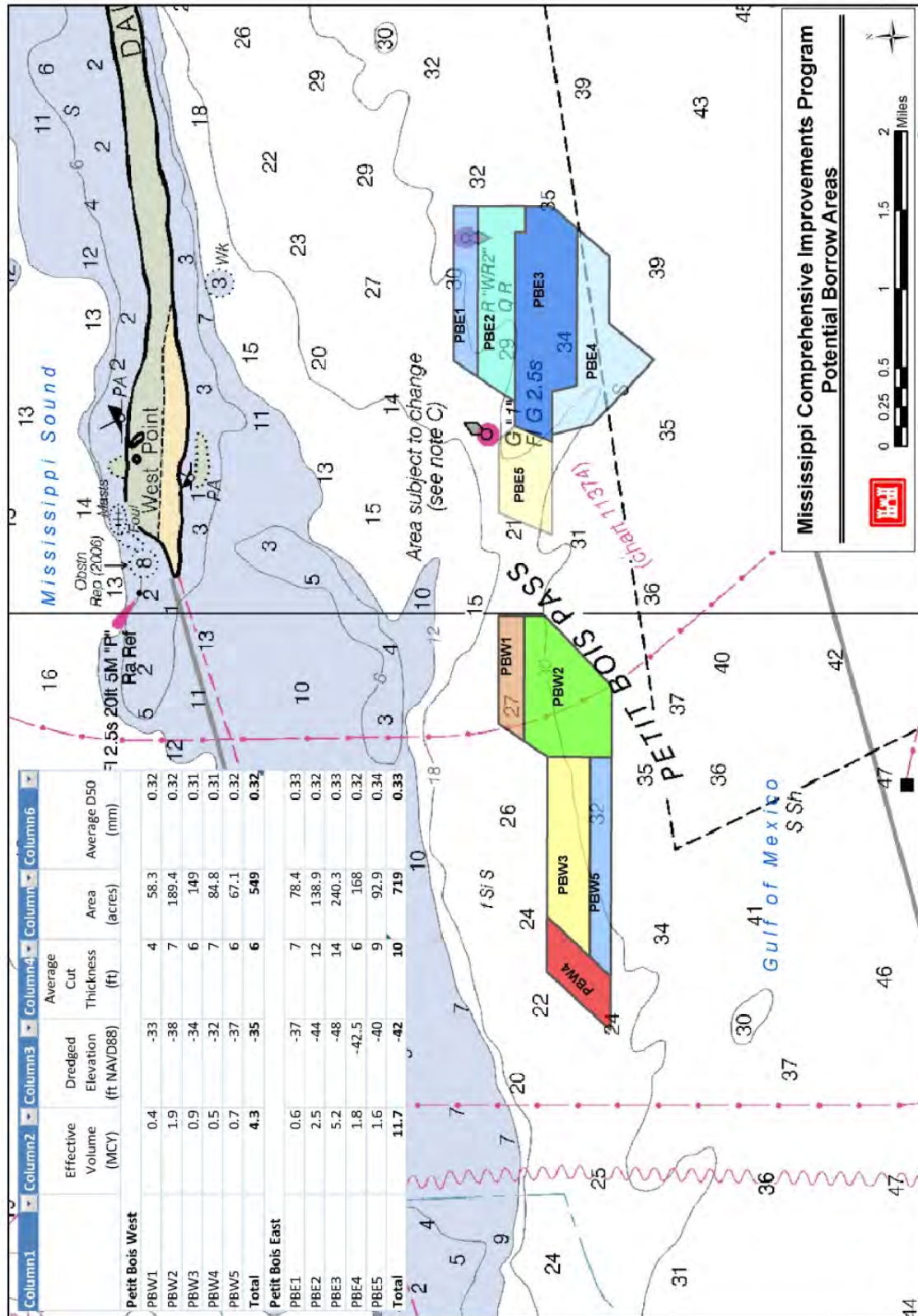


Figure 6.7 - Petit Bois Borrow Areas

7.0 CONCLUSION

From 2006 through 2011, Mobile District conducted an extensive geophysical and geotechnical investigation of the area surrounding the Mississippi Barrier Islands with the intent of identifying sediment characteristics of the islands and locating compatible sediment for nourishment projects on and around the islands.

Beginning in 2006, grab samples were taken on each island in the barrier island chain to identify each island's sediment characteristics in order to gain an understanding of the system as a whole. This information was critical to determining the type of sediment needed for island restoration projects in the area.

This was followed up with a geophysical investigation conducted in conjunction with the USGS in 2010 to identify offshore sand bodies that had the potential to be used as borrow sources.

Following the geophysical investigation in 2010, vibracore borings were taken along Gulfport Channel, in Mississippi Sound, adjacent to Cat Island, in Ship Island Pass, south of Ship Island, in Dog Keys Pass, in Horn Island Pass, and in Petit Bois Pass. These borings capitalized on the information provided by the geophysical investigation to locate sand sources and delineate potential borrow areas. Additional vibracore borings were taken in 2011 to further delineate borrow areas and to investigate the disposal area, DA-10, as a potential sand source.

Potential borrow areas were identified in the vicinity of Cat Island, Ship Island, DA-10, and Petit Bois Pass. A fifth borrow area, adjacent to West Ship Island, has already been utilized. These areas have undergone refinement through modeling, but are still subject to change as new data becomes available. Overall, approximately 24.9 mcy of useable sand were identified for use in the barrier island projects.

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APPENDIX A

BEACH SEDIMENT INVESTIGATION

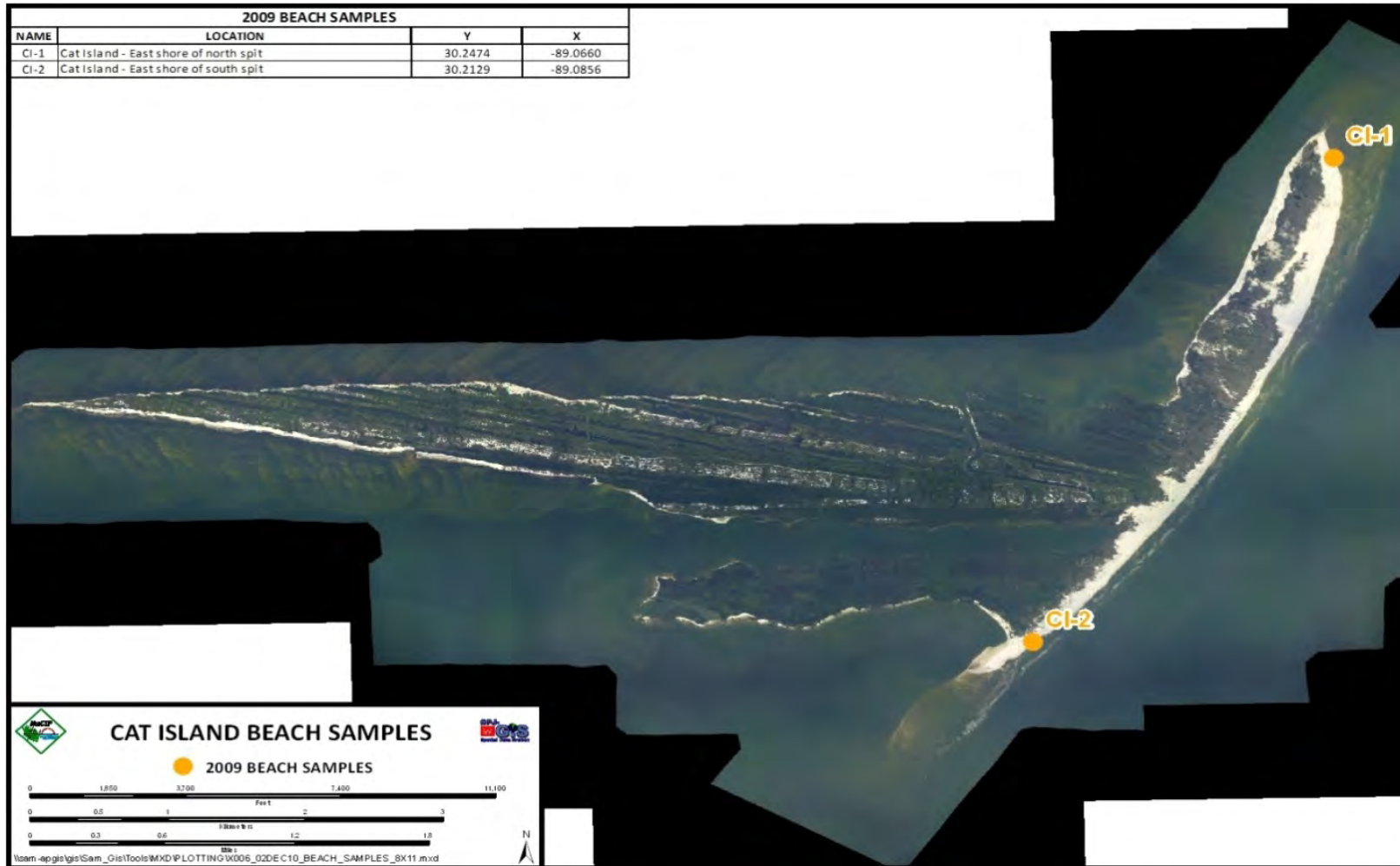
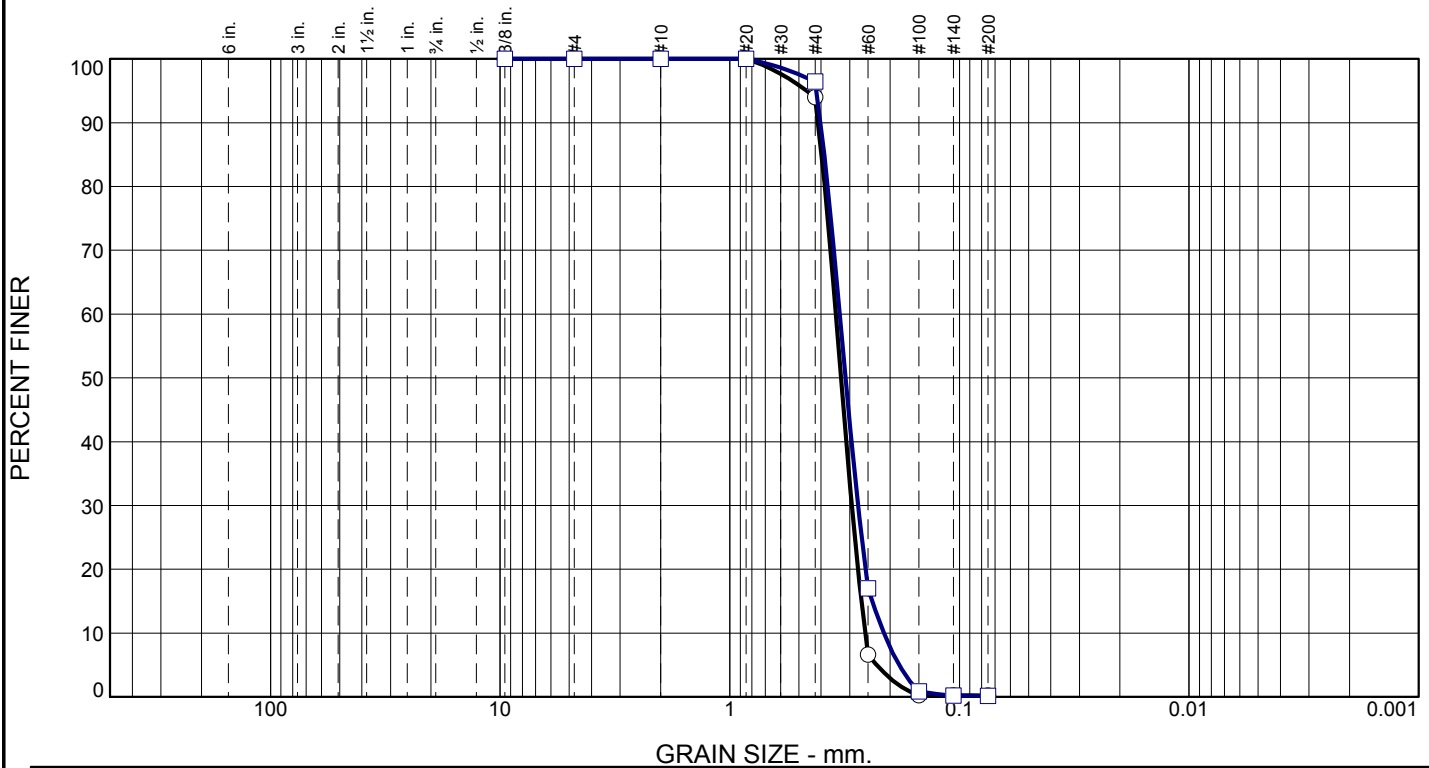


Figure 3.2.1.1 – Cat Island beach sampling locations, 2009

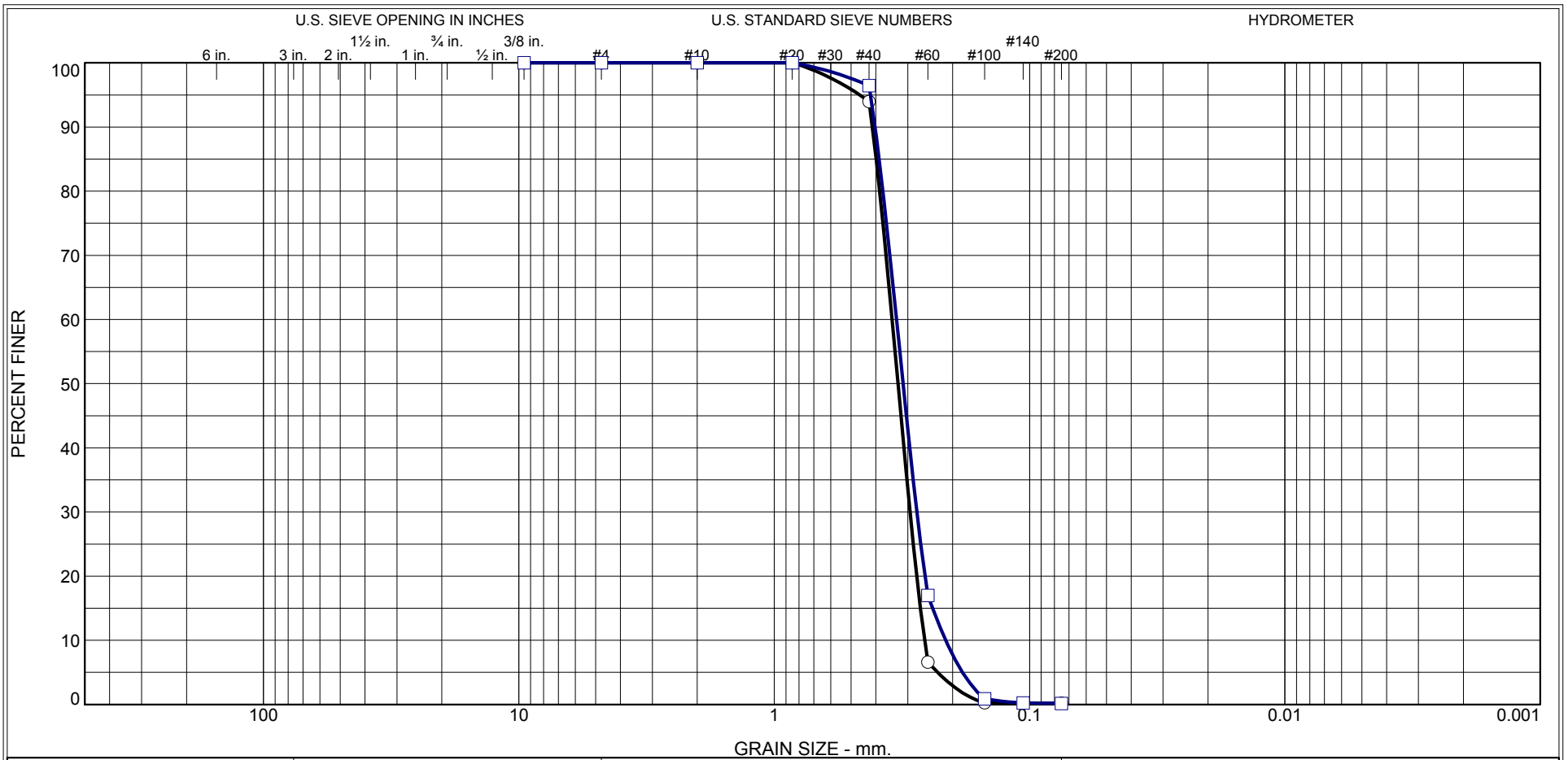
Particle Size Distribution Report



	% +3"		% Gravel		% Sand			% Fines		
			Coarse	Fine	Coarse	Medium	Fine	Silt		Clay
○	0.0		0.0	0.0	0.0	6.0	93.8	0.2		
□	0.0		0.0	0.0	0.0	3.6	96.2	0.2		
×	LL	PL	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c	C _u
○			0.3983	0.3451	0.3275	0.2939	0.2675	0.2576	0.97	1.34
□			0.3879	0.3318	0.3129	0.2764	0.2398	0.2130	1.08	1.56

Material Description	USCS	AASHTO
○ SAND, (SP), fine grained, white, dry	SP	
□ SAND, (SP), fine grained, white, dry	SP	

Project No. 0921230023 Client: U.S. Army Corps of Engineers Project: Mississippi Island ○ Location: Sample - CI-1 - East Shore Spill Sample Number: Lab # 4205 □ Location: Sample - CI-2 - East Shore South Spill Sample Number: Lab # 4205	Remarks: ○ Tested: 11/16/09 □ Tested: 11/16/09
Thompson Engineering Mobile, Alabama	Figure



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay

Location	Source	Sample #	Depth/Elev.	Material Description
○ Sample - CI-1 - East Shore Spill	CI - Samples	Lab # 4205		SAND, (SP), fine grained, white, dry
□ Sample - CI-2 - East Shore South Spill	CI - Samples	Lab # 4205		SAND, (SP), fine grained, white, dry

Project No. 0921230023	Client U.S. Army Corps of Engineers	Figure	Thompson Engineering Mobile, Alabama
Particle Size Distribution Report			
Mississippi Island			

Tested By: J.Maddox-G.Fancher Checked By: R.Byrd

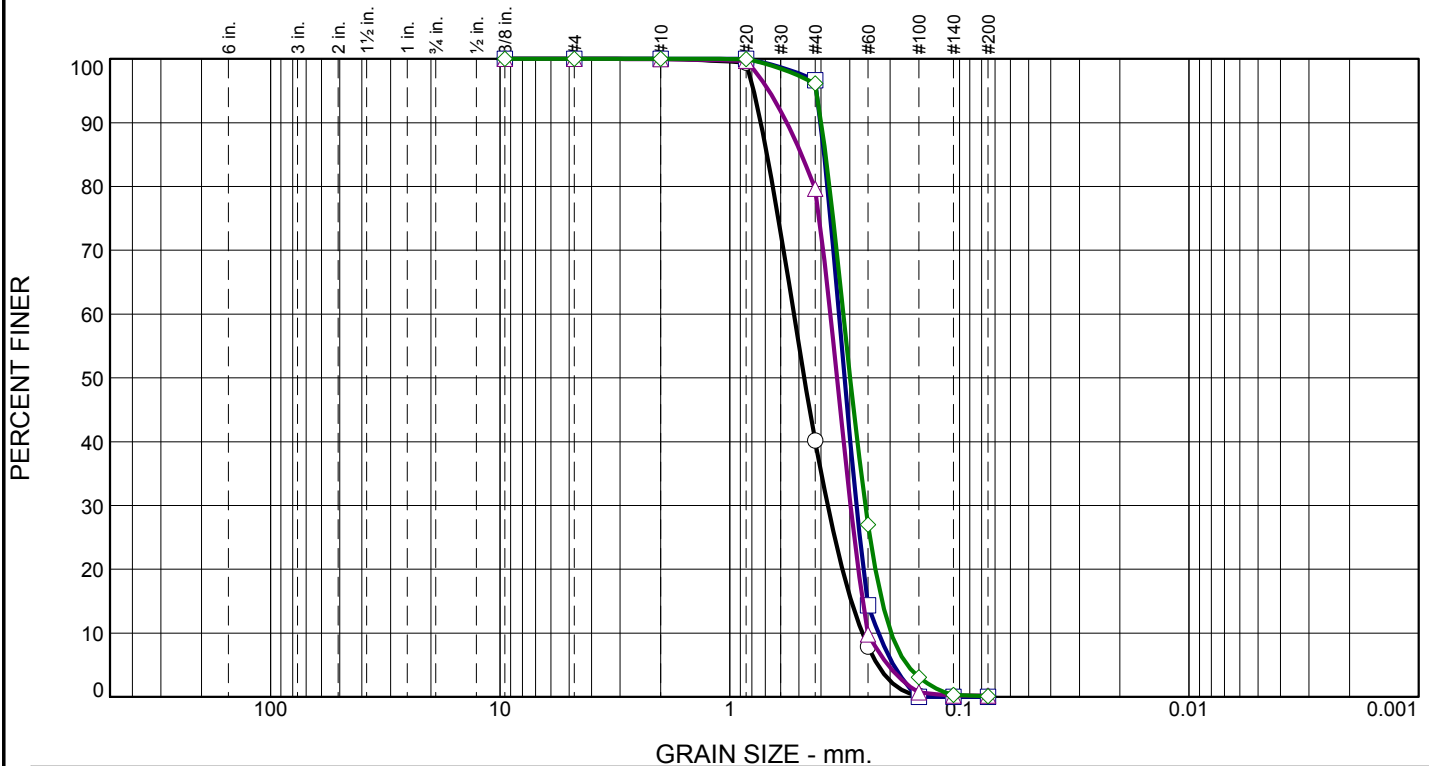
APPENDIX A

Offshore Sand Borrow Investigation, Phases 1 & 2 Beach Sediment Investigation



Figure 3.2.1.2 – West Ship Island beach sampling locations, 2006 and 2009. Samples 8, 9, and 10 correspond to WS-8-06-06, WS-9-06-06, and WS-10-06-06 in Table 3.2.1.1.

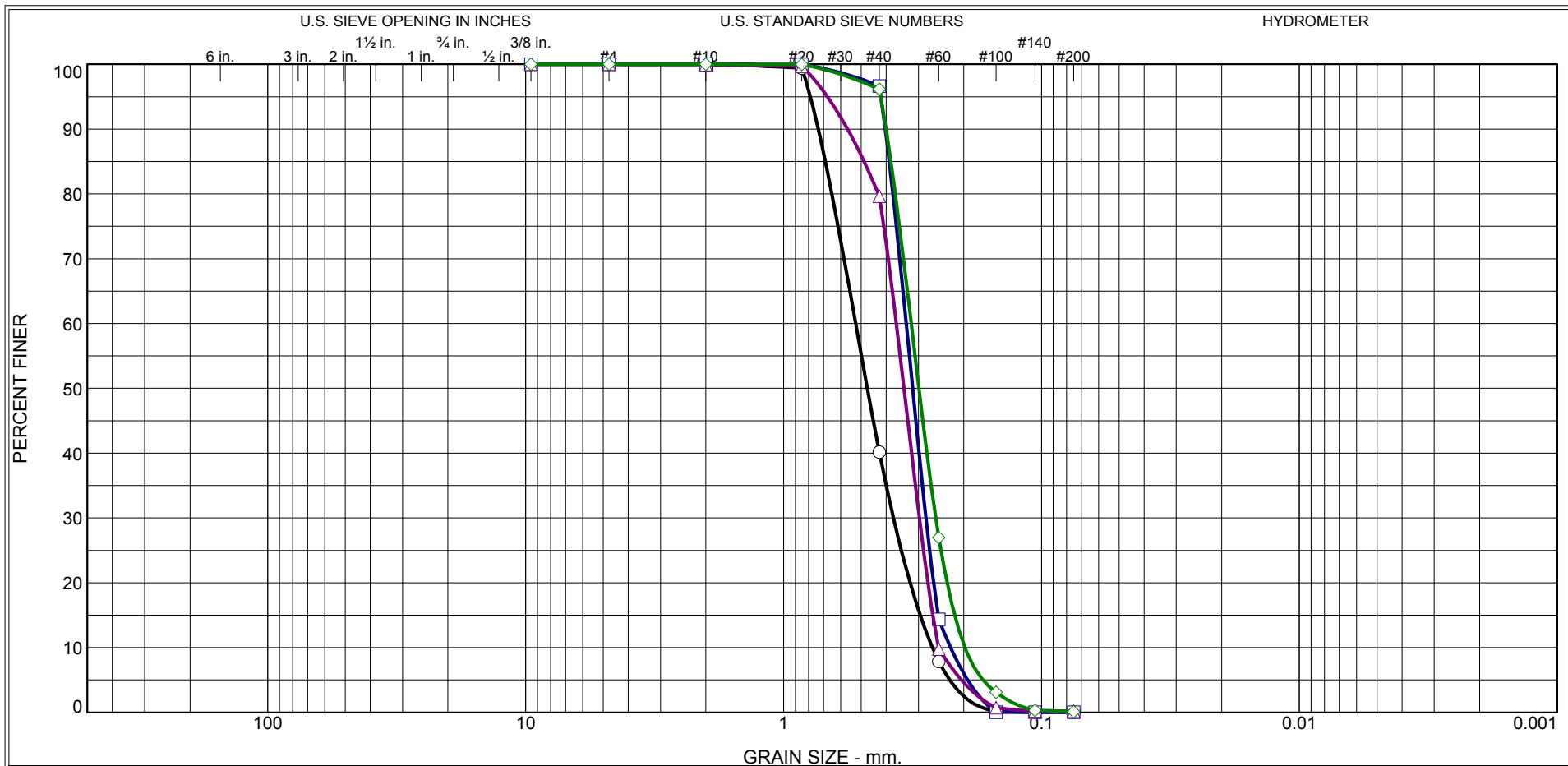
Particle Size Distribution Report



	% +3"		% Gravel		% Sand			% Fines		
			Coarse	Fine	Coarse	Medium	Fine	Silt		Clay
○	0.0		0.0	0.0	0.0	59.8	40.2	0.0		
□	0.0		0.0	0.0	0.0	3.3	96.7	0.0		
△	0.0		0.0	0.0	0.0	20.3	79.5	0.2		
◇	0.0		0.0	0.0	0.0	3.9	96.0	0.1		
×	LL	PL	D85	D60	D50	D30	D15	D10	Cc	Cu
○			0.6880	0.5253	0.4735	0.3747	0.2953	0.2648	1.01	1.98
□			0.3886	0.3343	0.3160	0.2807	0.2515	0.2251	1.05	1.49
△			0.4871	0.3649	0.3410	0.2975	0.2639	0.2507	0.97	1.46
◇			0.3830	0.3199	0.2988	0.2569	0.2171	0.1980	1.04	1.62

Material Description	USCS	AASHTO
○ Sand, (SP), fine grained, with trace organics, white, dry	SP	
□ SAND, (SP), fine grained, white, dry	SP	
△ SAND, (SP), fine grained, with trace shell, white, dry	SP	
◇ SAND, (SP), fine grained, white, dry	SP	

Project No. 0921230023 Client: U.S. Army Corps of Engineers Project: Mississippi Island Location: Sample - WSI-1 - Dock Sample Number: Lab # 4205 Location: Sample - WSI-2 - South East Sample Number: Lab # 4205 Location: Sample - WSI-3 - East North Sample Number: Lab # 4205 Location: Sample - WSI-4 - East South Sample Number: Lab # 4205	Remarks: △ Tested: 11/16/09 ◇ Tested: 11/16/09
Thompson Engineering Mobile, Alabama	Figure



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay

Location	Source	Sample #	Depth/Elev.	Material Description
○ Sample - WSI-1 - Dock	WSI-Samples	Lab # 4205		Sand, (SP), fine grained, with trace organics, white, dry
□ Sample - WSI-2 - South East	WSI-Samples	Lab # 4205		SAND, (SP), fine grained, white, dry
△ Sample - WSI-3 - East North	WSI-Samples	Lab # 4205		SAND, (SP), fine grained, with trace shell, white, dry
◇ Sample - WSI-4 - East South	WSI-Samples	Lab # 4205		SAND, (SP), fine grained, white, dry

Project No. 0921230023	Client U.S. Army Corps of Engineers	Figure	Thompson Engineering Mobile, Alabama
Particle Size Distribution Report Mississippi Island			

Tested By: J.Maddox-G.Fancher Checked By: R.Byrd

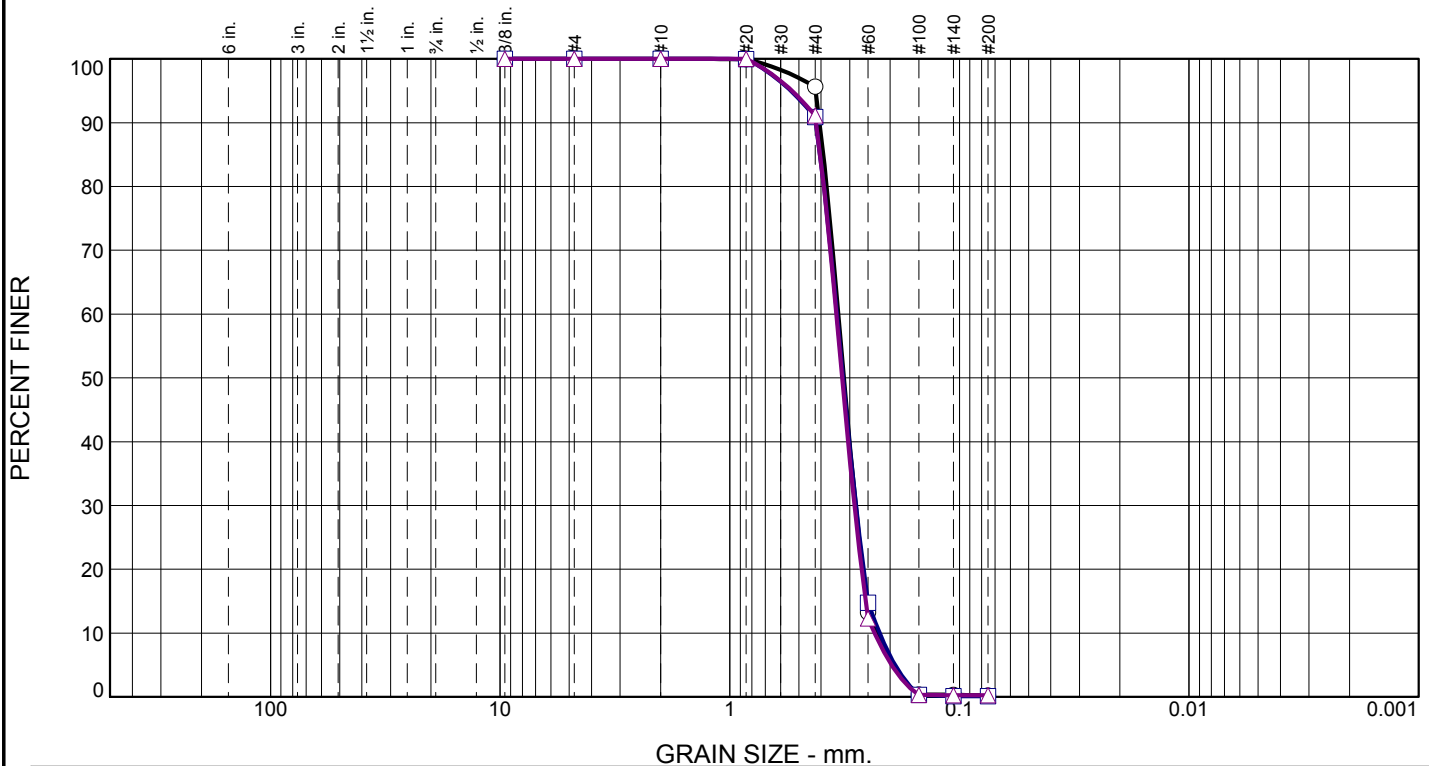
APPENDIX A

Offshore Sand Borrow Investigation, Phases 1 & 2 Beach Sediment Investigation



Figure 3.2.1.3 – East Ship Island beach sampling locations, 2006 and 2009. Samples 5, 6, and 7 correspond to ES-5-06-06, ES-6-06-06, and ES-7-06-06 in Table 3.2.1.1.

Particle Size Distribution Report



	% +3"		% Gravel		% Sand			% Fines		
			Coarse	Fine	Coarse	Medium	Fine	Silt		Clay
○	0.0		0.0	0.0	0.0	4.3	95.5	0.2		
□	0.0		0.0	0.0	0.0	9.1	90.8	0.1		
△	0.0		0.0	0.0	0.0	8.8	90.9	0.3		
×	LL	PL	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c	C _u
○			0.3915	0.3367	0.3183	0.2829	0.2539	0.2293	1.04	1.47
□			0.4040	0.3412	0.3209	0.2823	0.2507	0.2227	1.05	1.53
△			0.4040	0.3434	0.3237	0.2864	0.2563	0.2343	1.02	1.47

Material Description	USCS	AASHTO
○ SAND, (SP), fine grained, white, dry	SP	
□ SAND, (SP), fine grained, white, dry	SP	
△ SAND, (SP), fine grained, white, dry	SP	

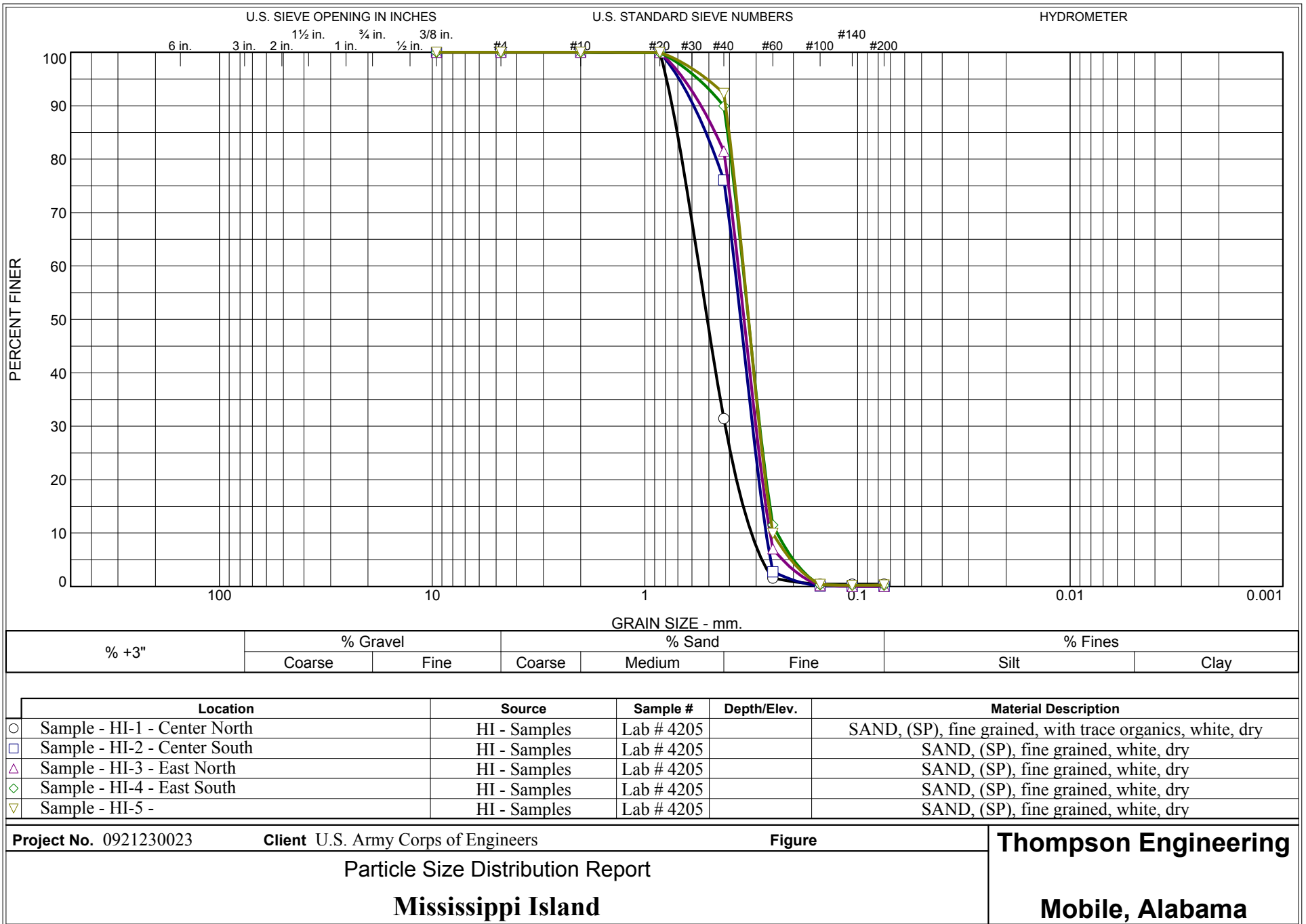
Project No. 0921230023 Client: U.S. Army Corps of Engineers Project: Mississippi Island ○ Location: Sample - ES-1 - West End South Sample Number: Lab # 4205 □ Location: Sample - ES-2 - East North Sample Number: Lab # 4205 △ Location: Sample - ES-3 - East South Sample Number: Lab # 4205	Remarks: ○ Tested: 11/16/09 □ Tested: 11/16/09 △ Tested: 11/16/09
Thompson Engineering Mobile, Alabama	Figure

APPENDIX A

Offshore Sand Borrow Investigation, Phases 1 & 2 Beach Sediment Investigation

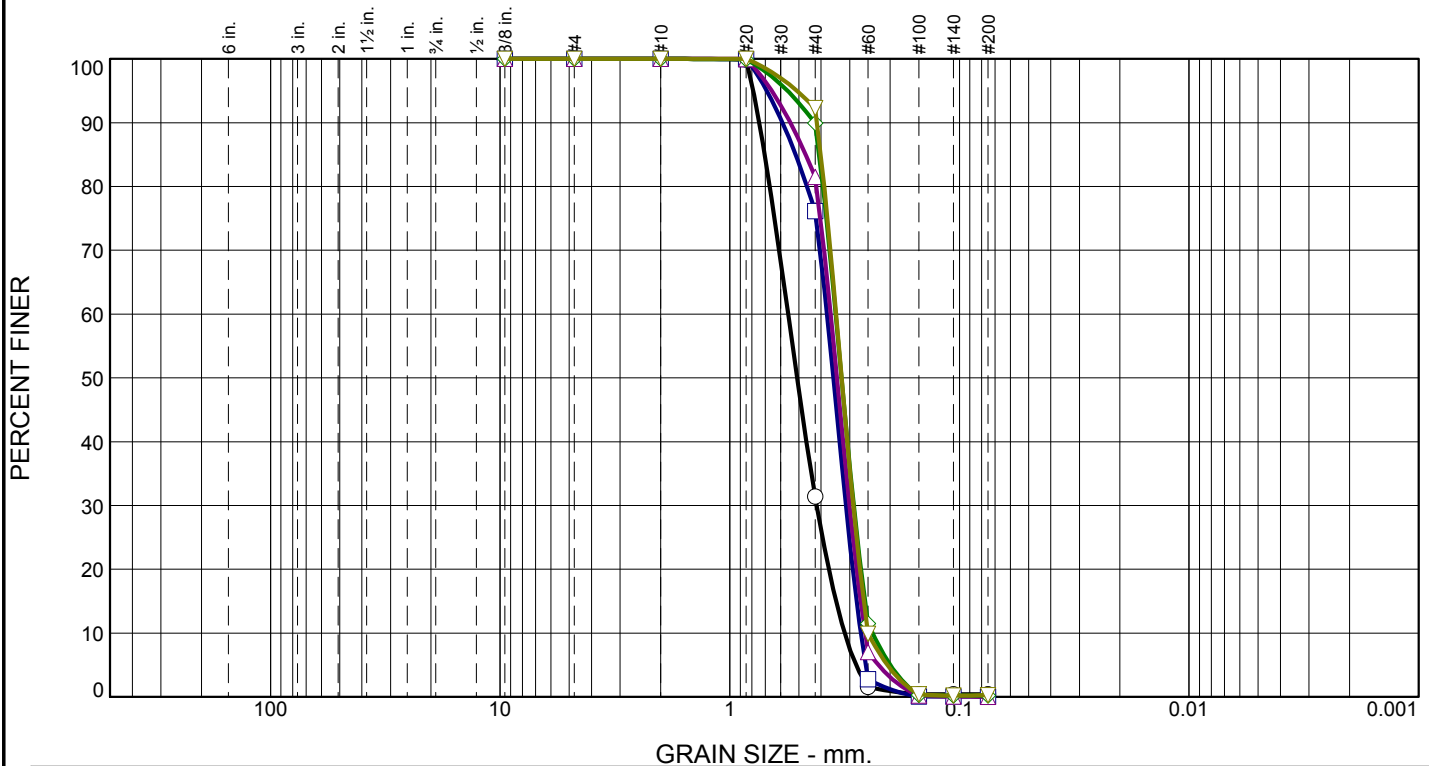


Figure 3.2.1.4 – Horn Island beach sampling locations, 2006 and 2009. Samples 1 and 2 correspond to HI-1-06-06 and HI-2-06 in Table 3.2.1.1.



Tested By: J.Maddox-G.Fancher **Checked By:** R.Byrd

Particle Size Distribution Report



	% +3"		% Gravel		% Sand			% Fines		
			Coarse	Fine	Coarse	Medium	Fine	Silt		Clay
○	0.0		0.0	0.0	0.0	68.6	31.0	0.4		
□	0.0		0.0	0.0	0.0	23.9	76.1	0.0		
△	0.0		0.0	0.0	0.0	18.5	81.5	0.0		
◇	0.0		0.0	0.0	0.0	10.1	89.7	0.2		
▽	0.0		0.0	0.0	0.0	7.7	92.0	0.3		
×	LL	PL	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c	C _u
○			0.7042	0.5566	0.5088	0.4185	0.3445	0.3158	1.00	1.76
□			0.5167	0.3775	0.3539	0.3117	0.2805	0.2692	0.96	1.40
△			0.4672	0.3636	0.3414	0.3007	0.2696	0.2578	0.96	1.41
◇			0.4078	0.3458	0.3259	0.2883	0.2582	0.2390	1.01	1.45
▽			0.4015	0.3443	0.3255	0.2898	0.2614	0.2502	0.98	1.38

Material Description	USCS	AASHTO
○ SAND, (SP), fine grained, with trace organics, white, dry	SP	
□ SAND, (SP), fine grained, white, dry	SP	
△ SAND, (SP), fine grained, white, dry	SP	
◇ SAND, (SP), fine grained, white, dry	SP	
▽ SAND, (SP), fine grained, white, dry	SP	

Project No. 0921230023 Client: U.S. Army Corps of Engineers Project: Mississippi Island ○ Location: Sample - HI-1 - Center North Sample Number: Lab # 4205 □ Location: Sample - HI-2 - Center South Sample Number: Lab # 4205 △ Location: Sample - HI-3 - East North Sample Number: Lab # 4205 ◇ Location: Sample - HI-4 - East South Sample Number: Lab # 4205 ▽ Location: Sample - HI-5 - Sample Number: Lab # 4205 Thompson Engineering Mobile, Alabama	Remarks: ○ Tested: 11/16/09 □ Tested: 11/16/09 △ Tested: 11/16/09 ◇ Tested: 11/16/09 ▽ Tested: 11/16/09 Figure
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Tested By: J.Maddox-G.Fancher

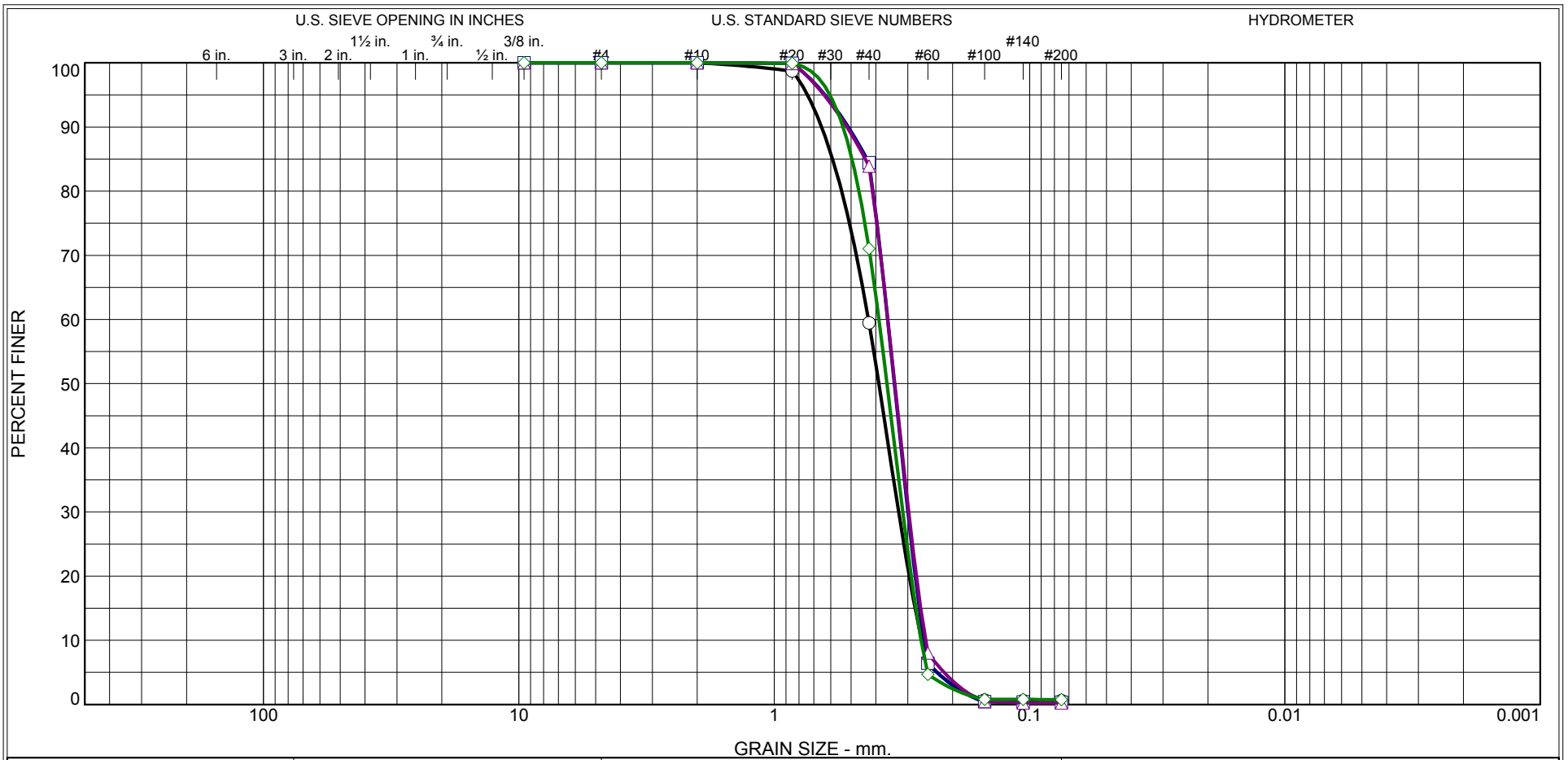
Checked By: R.Byrd

APPENDIX A

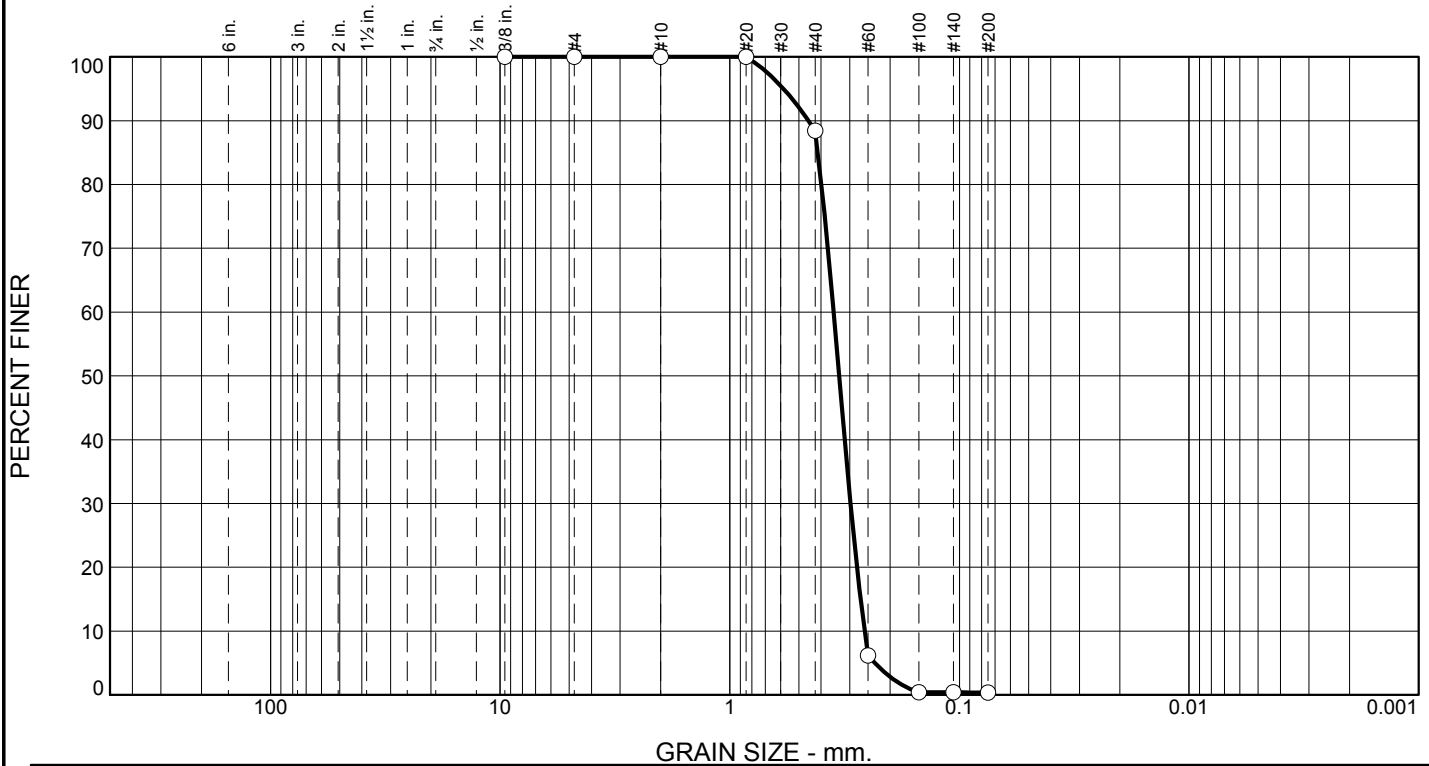
Offshore Sand Borrow Investigation, Phases 1 & 2 Beach Sediment Investigation



Figure 3.2.1.5 – Sand and Petit Bois Island beach sampling locations, 2006 and 2009. Samples 3 and 4 correspond to PB-3-06 and PB-4-06 in Table 3.2.1.1.



Particle Size Distribution Report

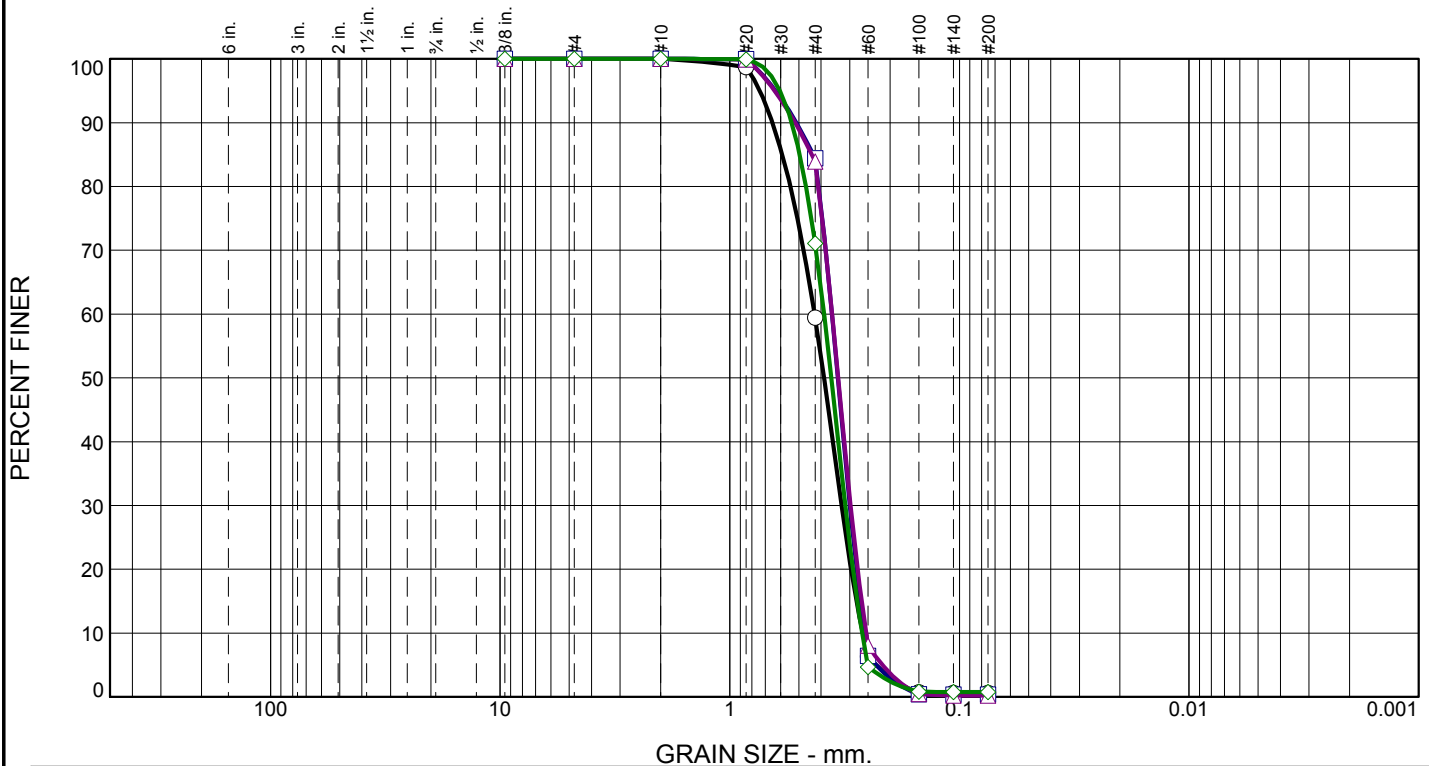


	% +3"		% Gravel		% Sand			% Fines		
			Coarse	Fine	Coarse	Medium	Fine	Silt		Clay
○	0.0		0.0	0.0	0.0	11.6	88.0	0.4		
×	LL	PL	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c	C _u
○			0.4136	0.3530	0.3337	0.2976	0.2696	0.2591	0.97	1.36

Material Description	USCS	AASHTO
○ SAND, (SP), fine grained, white, dry	SP	

Project No. 0921230023 Client: U.S. Army Corps of Engineers Project: Mississippi Island Location: Sample - S-1 Sample Number: Lab # 4205	Remarks: ○ Tested: 11/16/09
Thompson Engineering Mobile, Alabama	Figure

Particle Size Distribution Report



	% +3"		% Gravel		% Sand			% Fines		
			Coarse	Fine	Coarse	Medium	Fine	Silt		Clay
○	0.0		0.0	0.0	0.0	40.5	58.9	0.6		
□	0.0		0.0	0.0	0.0	15.6	84.0	0.4		
△	0.0		0.0	0.0	0.0	16.1	83.7	0.2		
◇	0.0		0.0	0.0	0.0	28.9	70.3	0.8		
×	LL	PL	D85	D60	D50	D30	D15	D10	Cc	Cu
○			0.5905	0.4273	0.3888	0.3256	0.2808	0.2642	0.94	1.62
□			0.4328	0.3591	0.3382	0.2998	0.2702	0.2590	0.97	1.39
△			0.4392	0.3585	0.3371	0.2976	0.2669	0.2552	0.97	1.40
◇			0.4957	0.3885	0.3613	0.3138	0.2788	0.2659	0.95	1.46

Material Description	USCS	AASHTO
○ SAND, (SP), fine grained, white, dry	SP	
□ SAND, (SP), fine grained, white, dry	SP	
△ SAND, (SP), fine grained, with trace shell, white, dry	SP	
◇ SAND, (SP), fine grained, white, dry	SP	

Project No. 0921230023 Client: U.S. Army Corps of Engineers Project: Mississippi Island ○ Location: Sample - PBI-1 - North Center Sample Number: Lab # 4205 □ Location: Sample - PBI-2 - South Center Sample Number: Lab # 4205 △ Location: Sample - PBI-3 - North East Sample Number: Lab # 4205 ◇ Location: Sample - PBI-4 - South East Sample Number: Lab # 4205	Remarks: ○ Tested: 11/16/19 □ Tested: 11/16/09
Thompson Engineering Mobile, Alabama	Figure

Tested By: J.Maddox-G.Fancher Checked By: R.Byrd

APPENDIX A

Offshore Sand Borrow Investigation, Phases 1 & 2 Beach Sediment Investigation

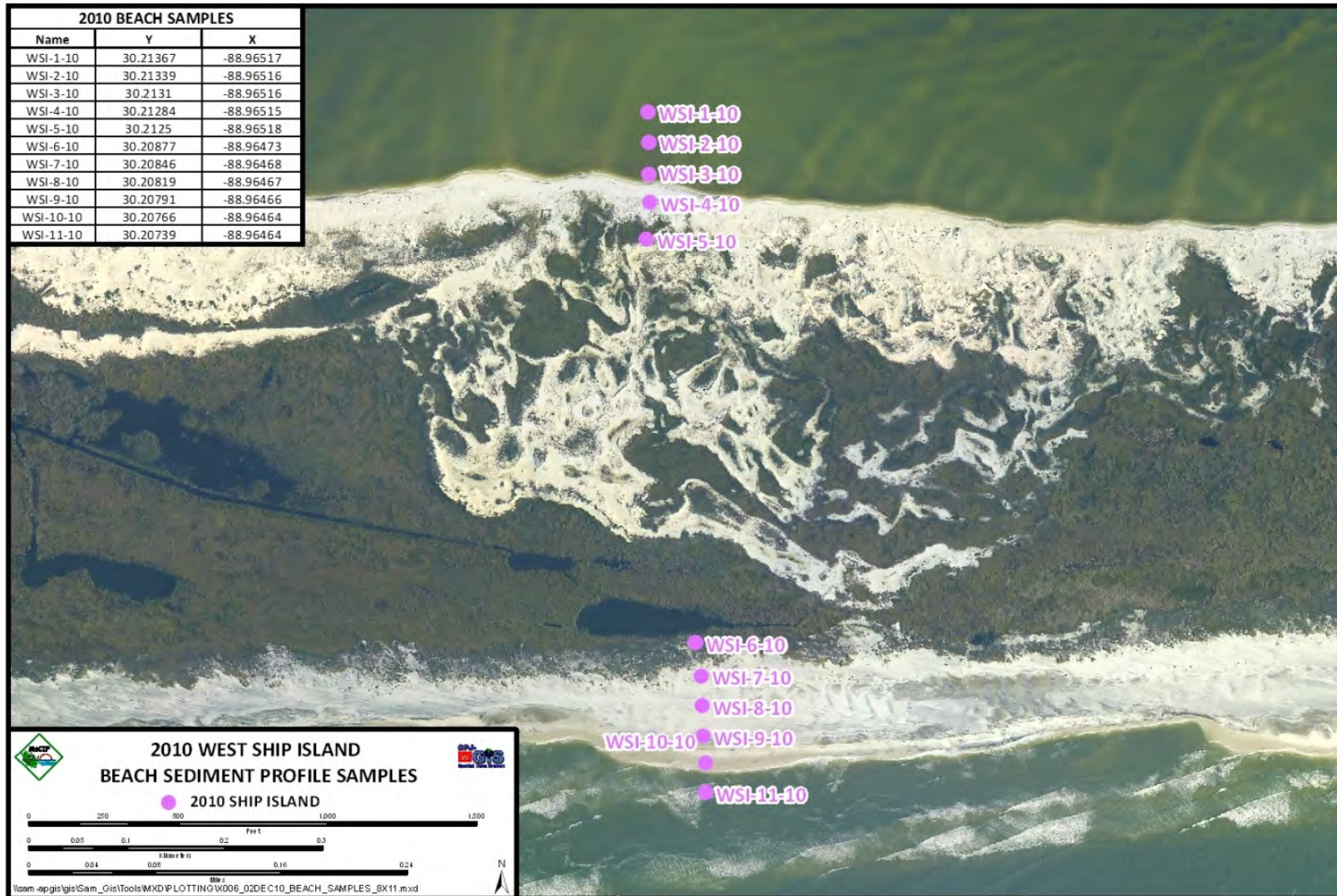
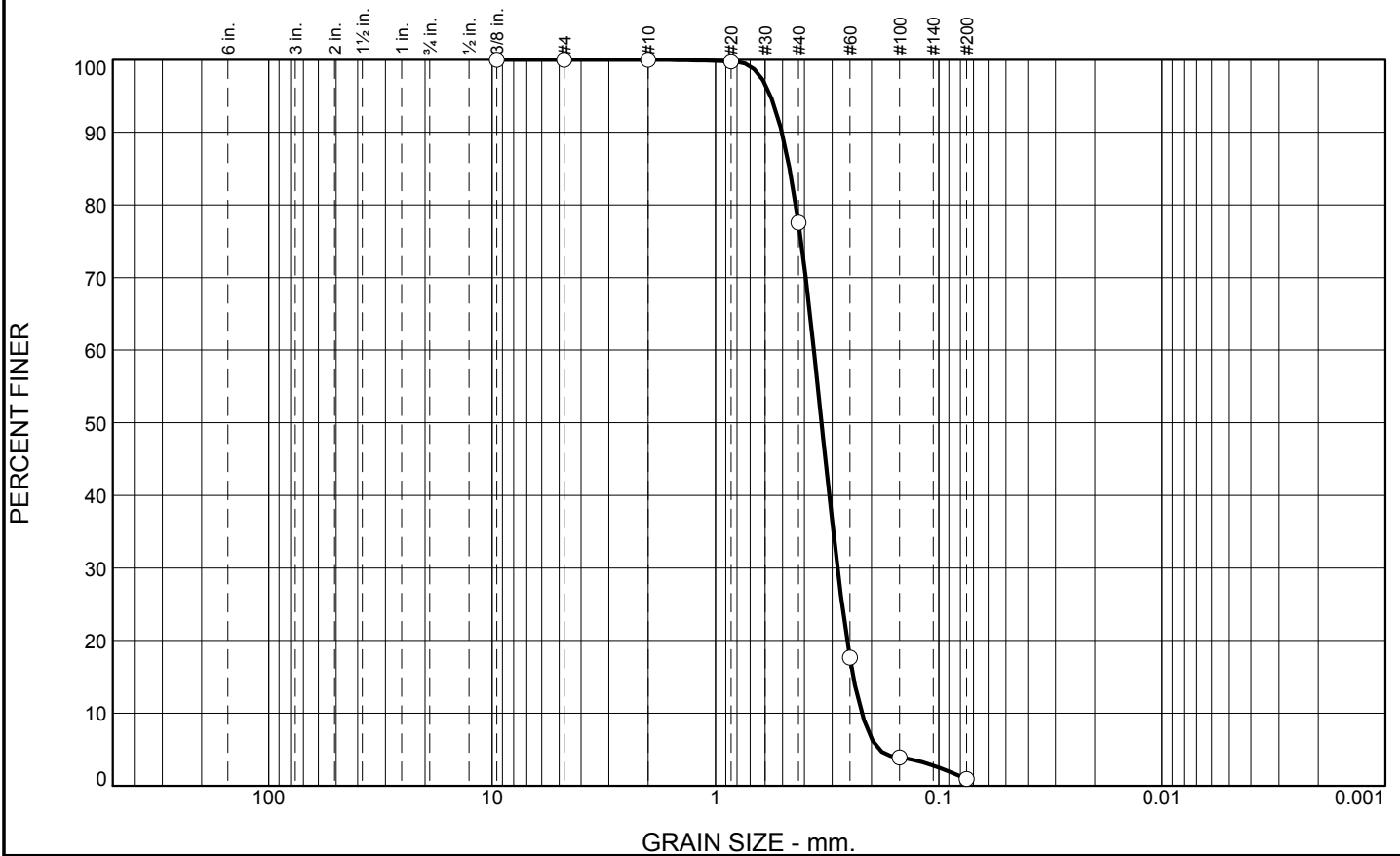


Figure 3.2.3.1 – Sampling locations for 2010 West Ship Island beach transect. These samples are labeled with the prefix BI-SIB in Table 3.2.3.1.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	22.4	76.6	1.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.8		
#40	77.6		
#60	17.6		
#100	3.9		
#200	1.0		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.5040

D₈₅= 0.4652

D₆₀= 0.3626

D₅₀= 0.3346

D₃₀= 0.2838

D₁₅= 0.2413

D₁₀= 0.2211

C_u= 1.64

C_c= 1.00

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-SIB-1-10
Sample Number: TE Lab ID: 4607.01

Date: 8/4/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

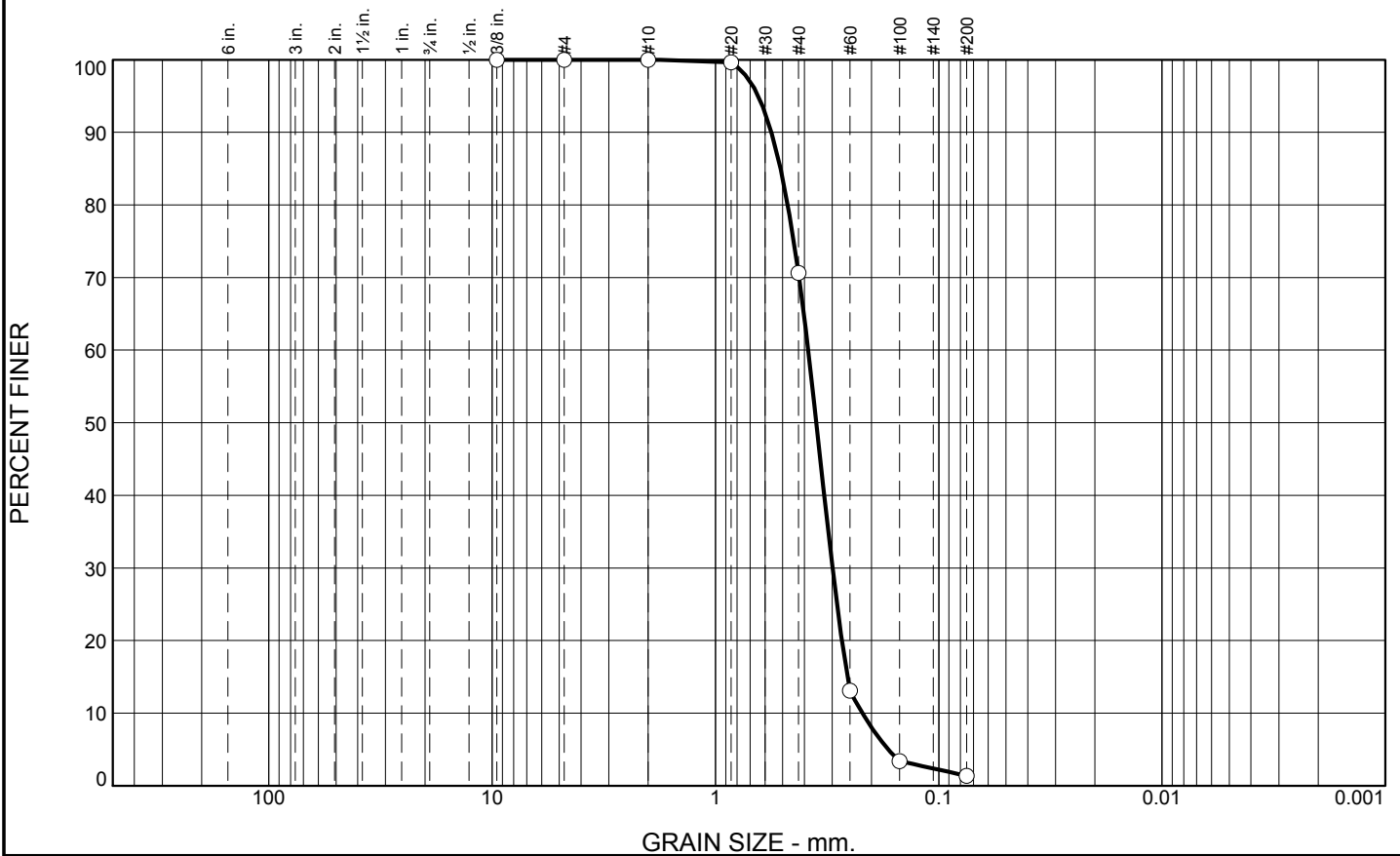
Project No: 10-2123-0009

Report No. Revised 8/18

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	29.4	69.2	1.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.6		
#40	70.6		
#60	13.1		
#100	3.4		
#200	1.4		

* (no specification provided)

Material Description		
SAND, (SP), medium to fine grained		
<div> <div> Atterberg Limits PL= LL= PI= </div> <div> Coefficients D₉₀= 0.5611 D₈₅= 0.5107 D₆₀= 0.3847 D₅₀= 0.3535 D₃₀= 0.2989 D₁₅= 0.2563 D₁₀= 0.2197 C_u= 1.75 C_c= 1.06 </div> <div> Classification USCS= SP AASHTO= </div> <div> Remarks CADD CODE = CH10D965 </div> </div>		

Location: USACE Sample # BI-SIB-2-10
Sample Number: TE Lab ID: 4607.02

Date: 8/4/10

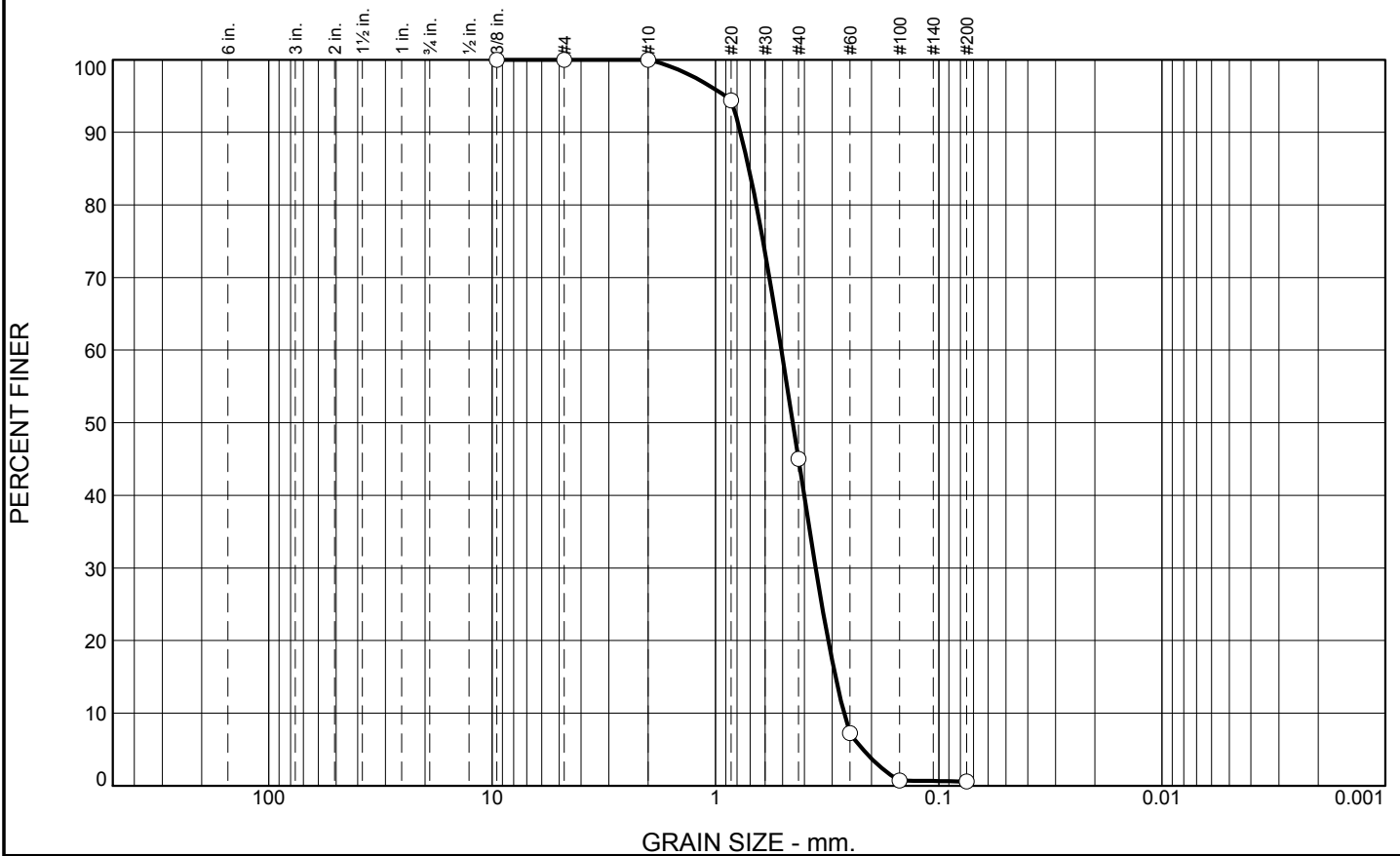
Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 **Report No.** Revised 8/18

Tested By: R.Martin

Checked By: R.Byrd
A-20

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	55.0	44.4	0.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	94.4		
#40	45.0		
#60	7.2		
#100	0.7		
#200	0.6		

* (no specification provided)

Material Description		
SAND, (SP), medium to fine grained		
<div> <div> Atterberg Limits PL= LL= PI= </div> <div> Coefficients D₉₀= 0.7735 D₈₅= 0.7088 D₆₀= 0.5066 D₅₀= 0.4504 D₃₀= 0.3559 D₁₅= 0.2898 D₁₀= 0.2655 C_u= 1.91 C_c= 0.94 </div> <div> Classification USCS= SP AASHTO= </div> <div> Remarks CADD CODE = CH10D965 </div> </div>		

Location: USACE Sample # BI-SIB-3-10
Sample Number: TE Lab ID: 4607.03

Date: 8/4/10

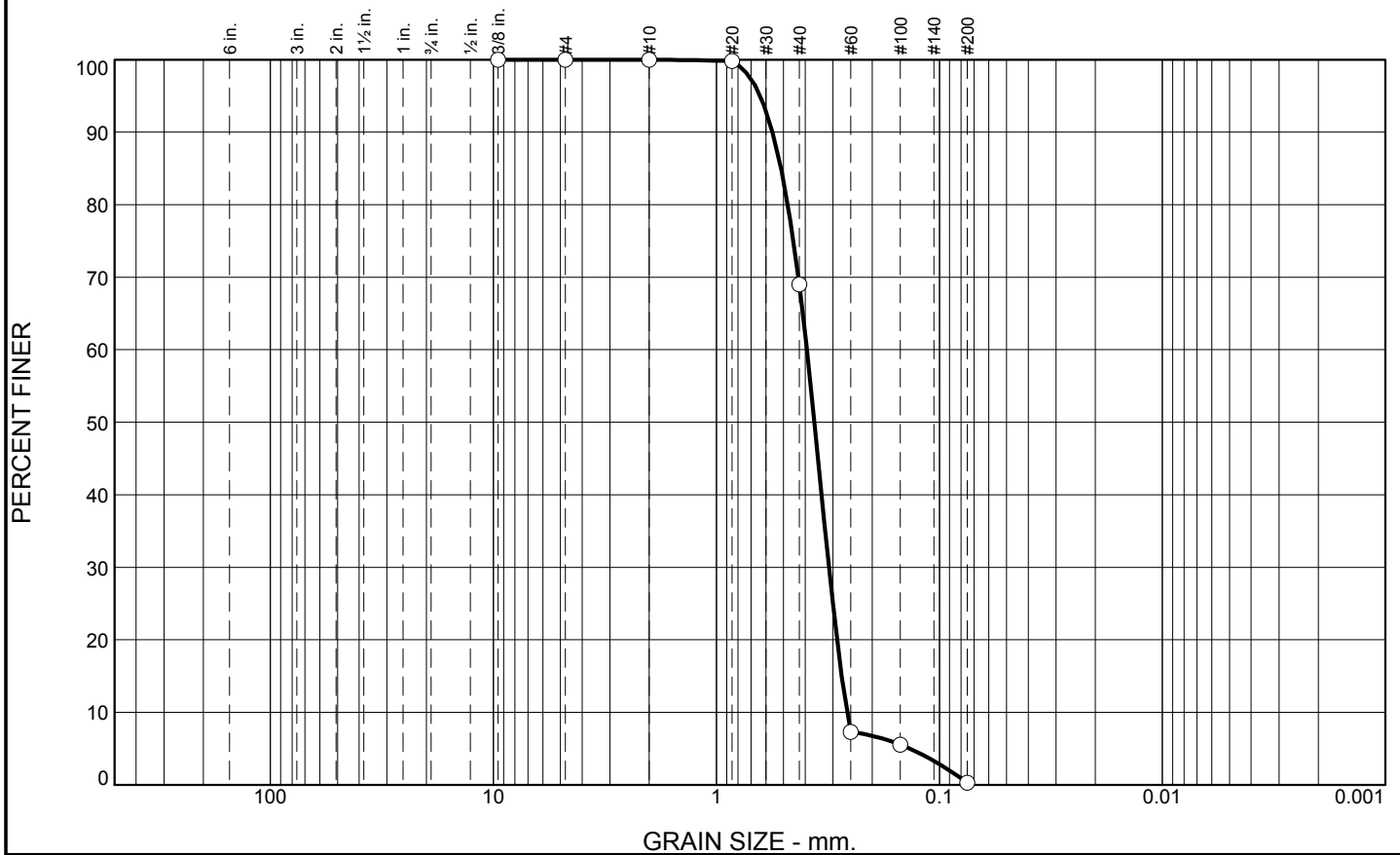
Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 **Report No.** Revised 8/18

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	31.0	68.7	0.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.8		
#40	69.0		
#60	7.3		
#100	5.5		
#200	0.3		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained, with trace organics

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.5602 D₈₅= 0.5129 D₆₀= 0.3933
D₅₀= 0.3638 D₃₀= 0.3126 D₁₅= 0.2742
D₁₀= 0.2594 C_u= 1.52 C_c= 0.96

Classification

USCS= SP AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-SIB-4-10
Sample Number: TE Lab ID: 4607.04

Date: 8/4/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

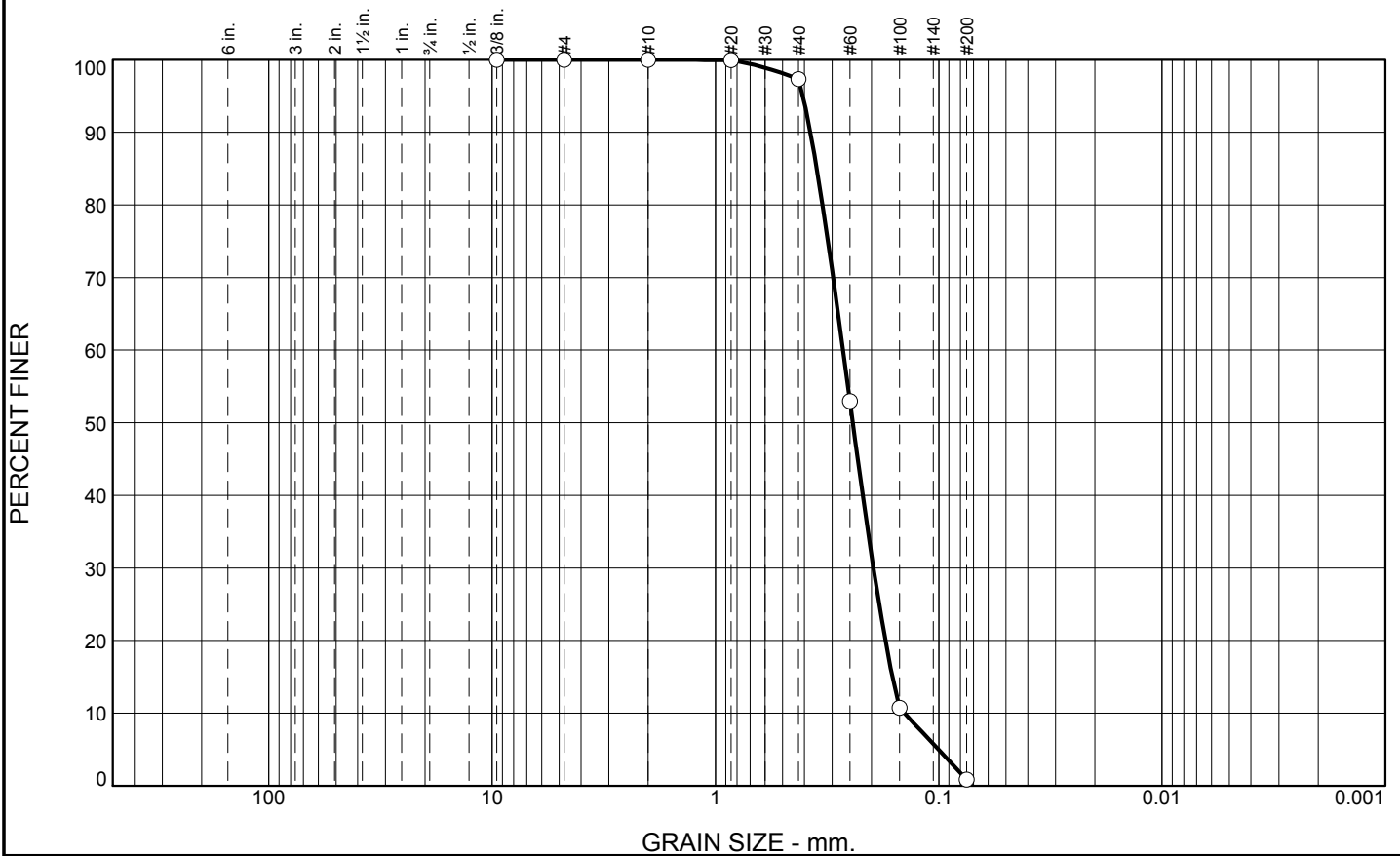
Project No: 10-2123-0009

Report No. Revised 8/18

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	2.7	96.4	0.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	97.3		
#60	53.0		
#100	10.7		
#200	0.9		

* (no specification provided)

<u>Material Description</u>		
SAND, (SP), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.3759	D ₈₅ = 0.3517	D ₆₀ = 0.2683
D ₅₀ = 0.2426	D ₃₀ = 0.1962	D ₁₅ = 0.1613
D ₁₀ = 0.1425	C _u = 1.88	C _c = 1.01
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-SIB-5-10
Sample Number: TE Lab ID: 4607.05

Date: 8/4/10

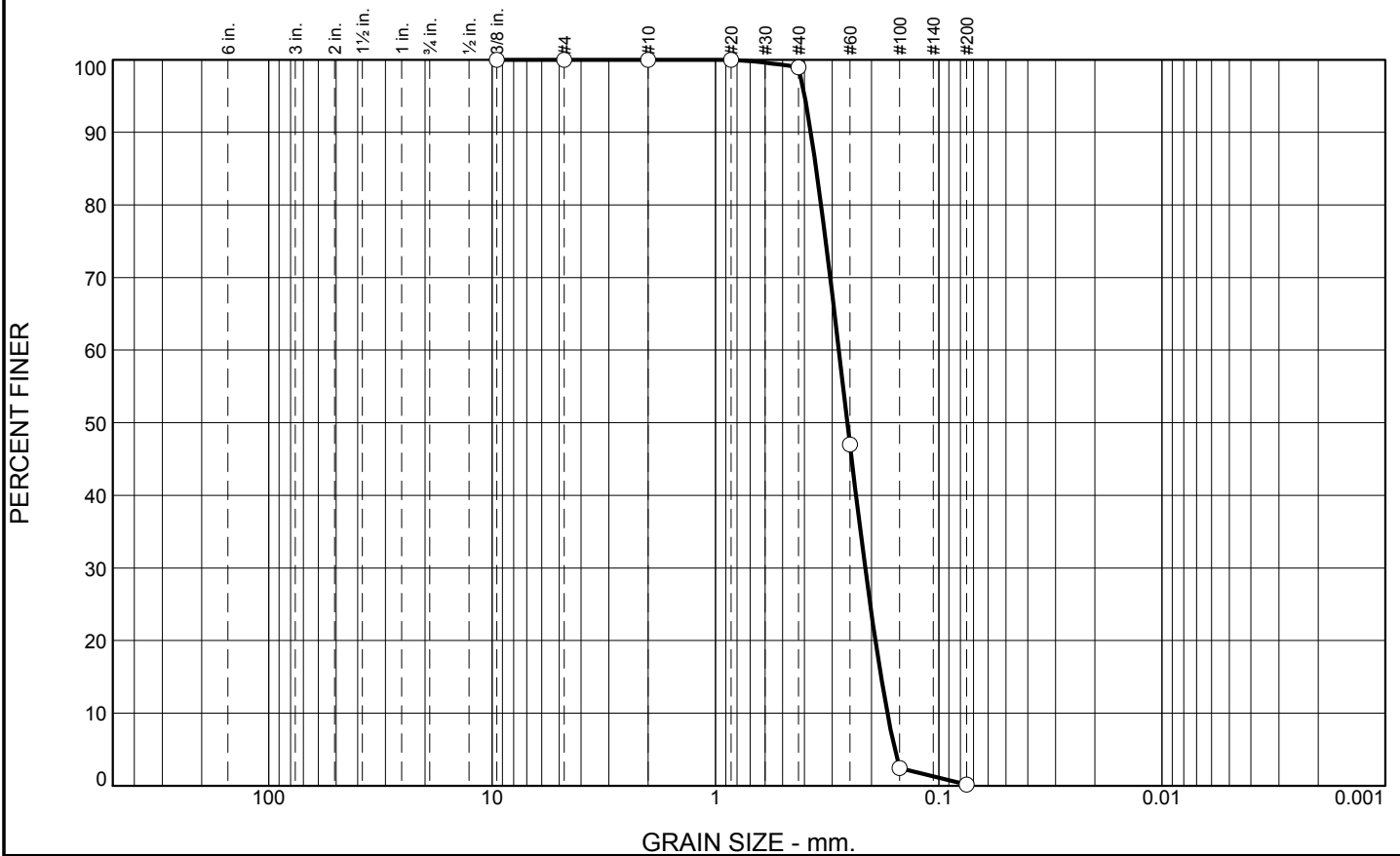
Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009
Report No. Revised 8/18

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.0	98.8	0.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	100.0		
#40	99.0		
#60	47.0		
#100	2.4		
#200	0.2		

* (no specification provided)

Material Description		
SAND, (SP), fine grained		
<div> <div> Atterberg Limits PL= LL= PI= </div> <div> Coefficients D₉₀= 0.3744 D₈₅= 0.3540 D₆₀= 0.2801 D₅₀= 0.2567 D₃₀= 0.2134 D₁₅= 0.1813 D₁₀= 0.1699 C_u= 1.65 C_c= 0.96 </div> <div> Classification USCS= SP AASHTO= </div> <div> Remarks CADD CODE = CH10D965 </div> </div>		

Location: USACE Sample # BI-SIB-6-10
Sample Number: TE Lab ID: 4607.06

Date: 8/4/10

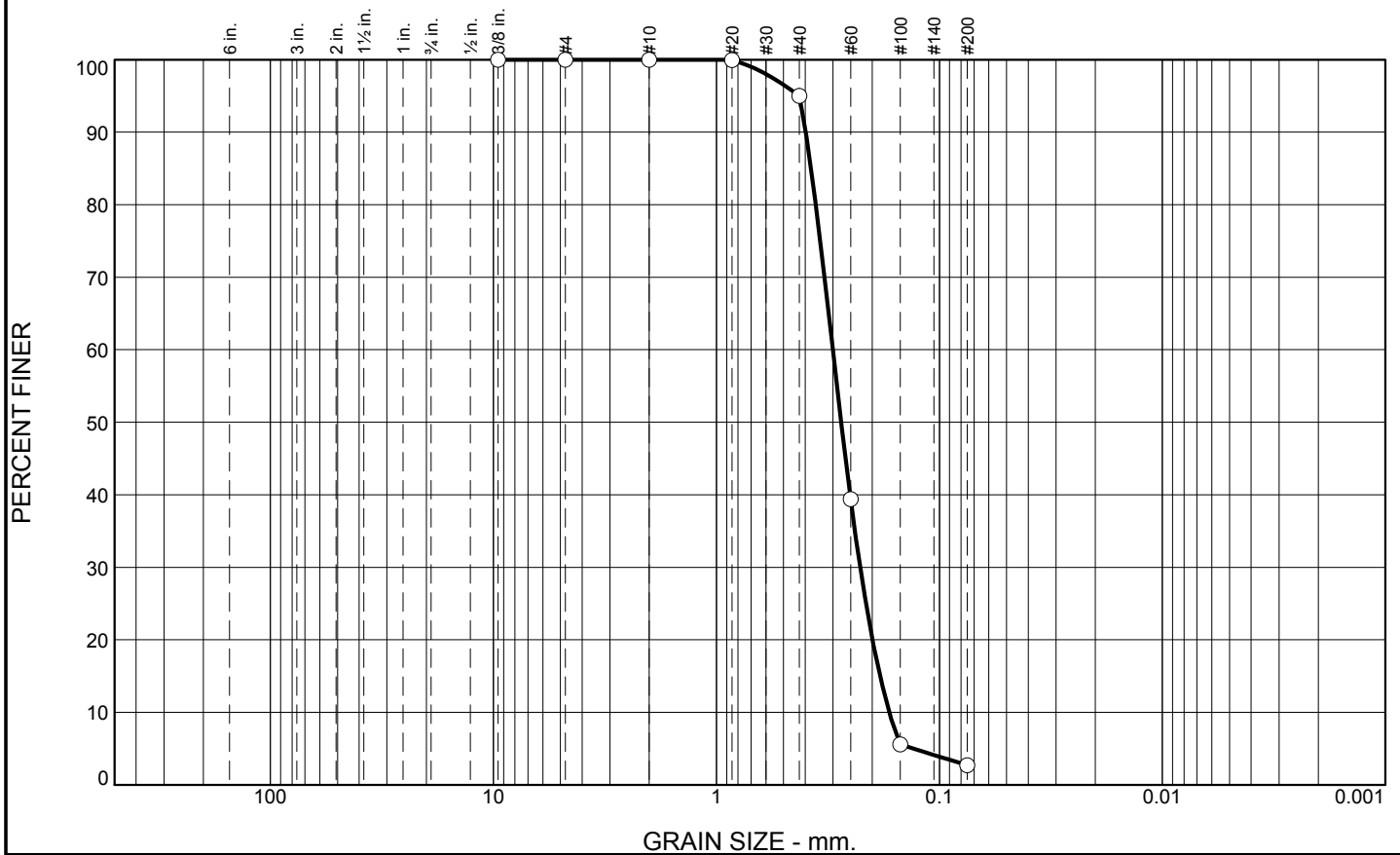
Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 **Report No.** Revised 8/18

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	5.0	92.3	2.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	100.0		
#40	95.0		
#60	39.4		
#100	5.6		
#200	2.7		

* (no specification provided)

Material Description
 SAND, (SP), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.3981 D₈₅= 0.3768 D₆₀= 0.3003
 D₅₀= 0.2756 D₃₀= 0.2266 D₁₅= 0.1846
 D₁₀= 0.1679 C_u= 1.79 C_c= 1.02

Classification
 USCS= SP AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-SIB-7-10
 Sample Number: TE Lab ID: 4607.07

Date: 8/4/10

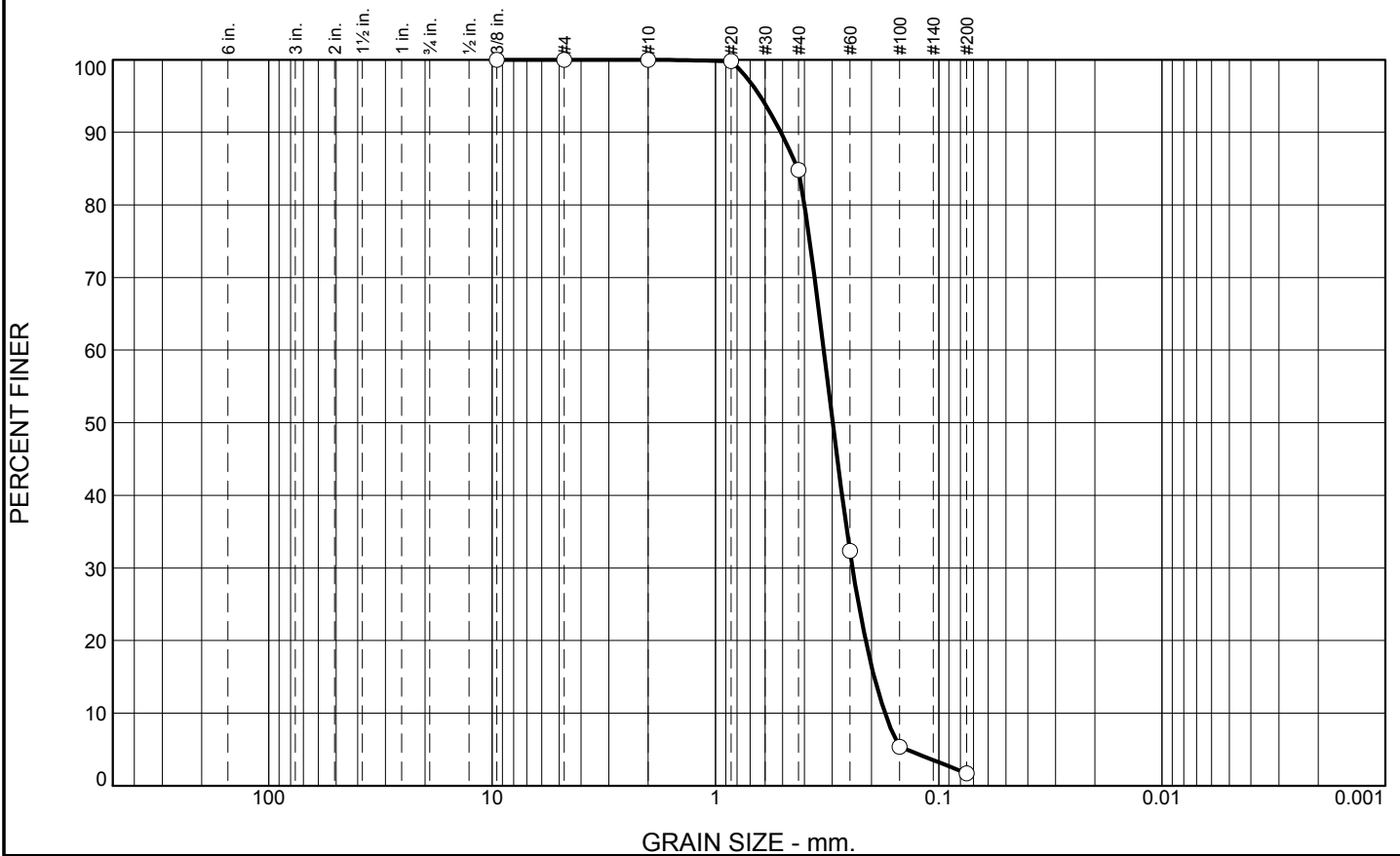
Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 **Report No.** Revised 8/18

Tested By: R.Martin Checked By: R.Byrd
 A-25

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	15.2	83.1	1.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.8		
#40	84.8		
#60	32.3		
#100	5.4		
#200	1.7		

* (no specification provided)

<u>Material Description</u>		
SAND, (SP), medium to fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.5093	D ₈₅ = 0.4276	D ₆₀ = 0.3272
D ₅₀ = 0.2983	D ₃₀ = 0.2434	D ₁₅ = 0.1947
D ₁₀ = 0.1741	C _u = 1.88	C _c = 1.04
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-SIB-8-10
Sample Number: TE Lab ID: 4607.08

Date: 8/4/10

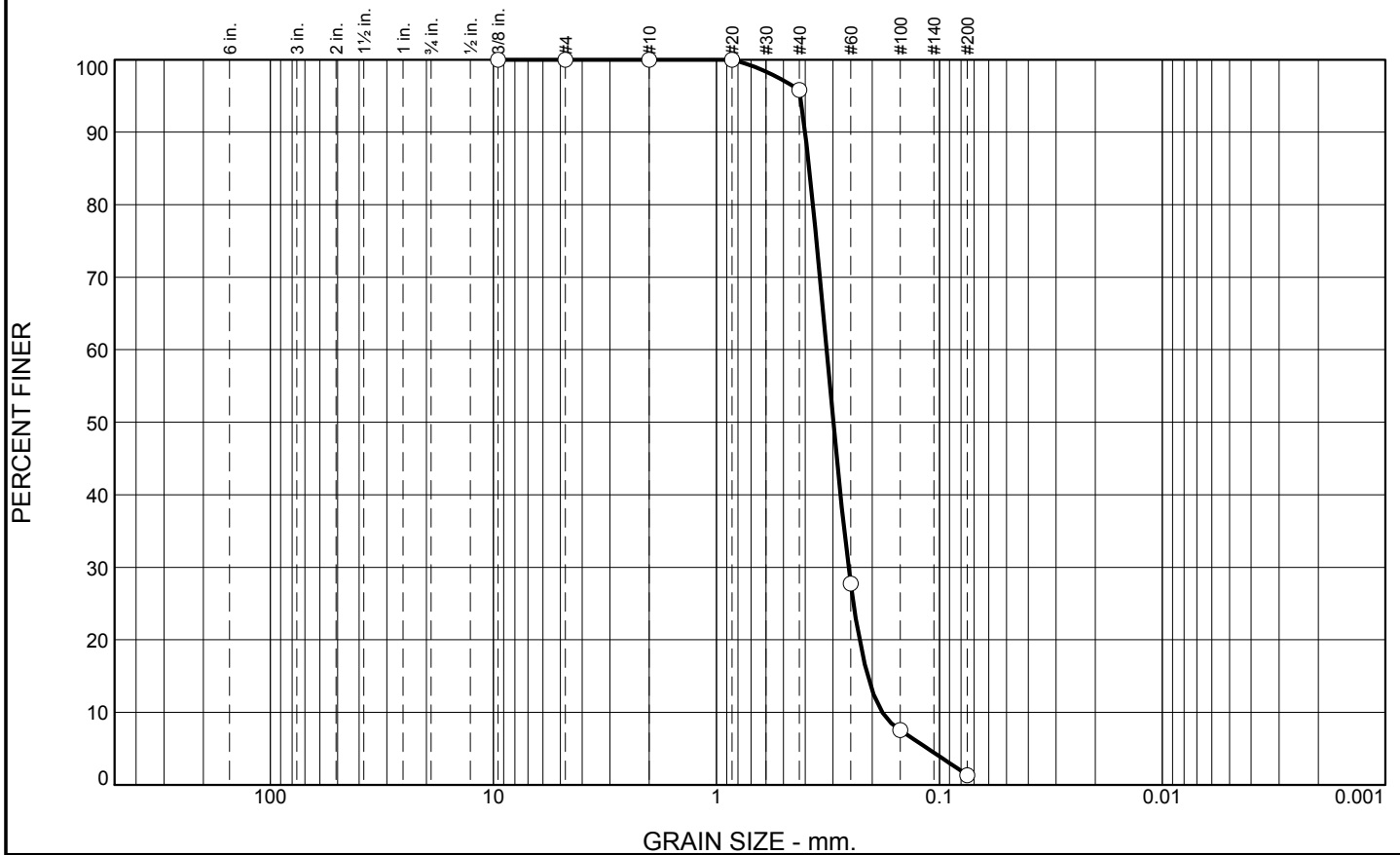
Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009
Report No. Revised 8/18

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	4.2	94.5	1.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	100.0		
#40	95.8		
#60	27.8		
#100	7.6		
#200	1.3		

* (no specification provided)

Material Description
 SAND, (SP), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.4009 D₈₅= 0.3840 D₆₀= 0.3203
 D₅₀= 0.2988 D₃₀= 0.2554 D₁₅= 0.2097
 D₁₀= 0.1806 C_u= 1.77 C_c= 1.13

Classification
 USCS= SP AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-SIB-9-10
Sample Number: TE Lab ID: 4607.09

Date: 78/4/10

Thompson Engineering

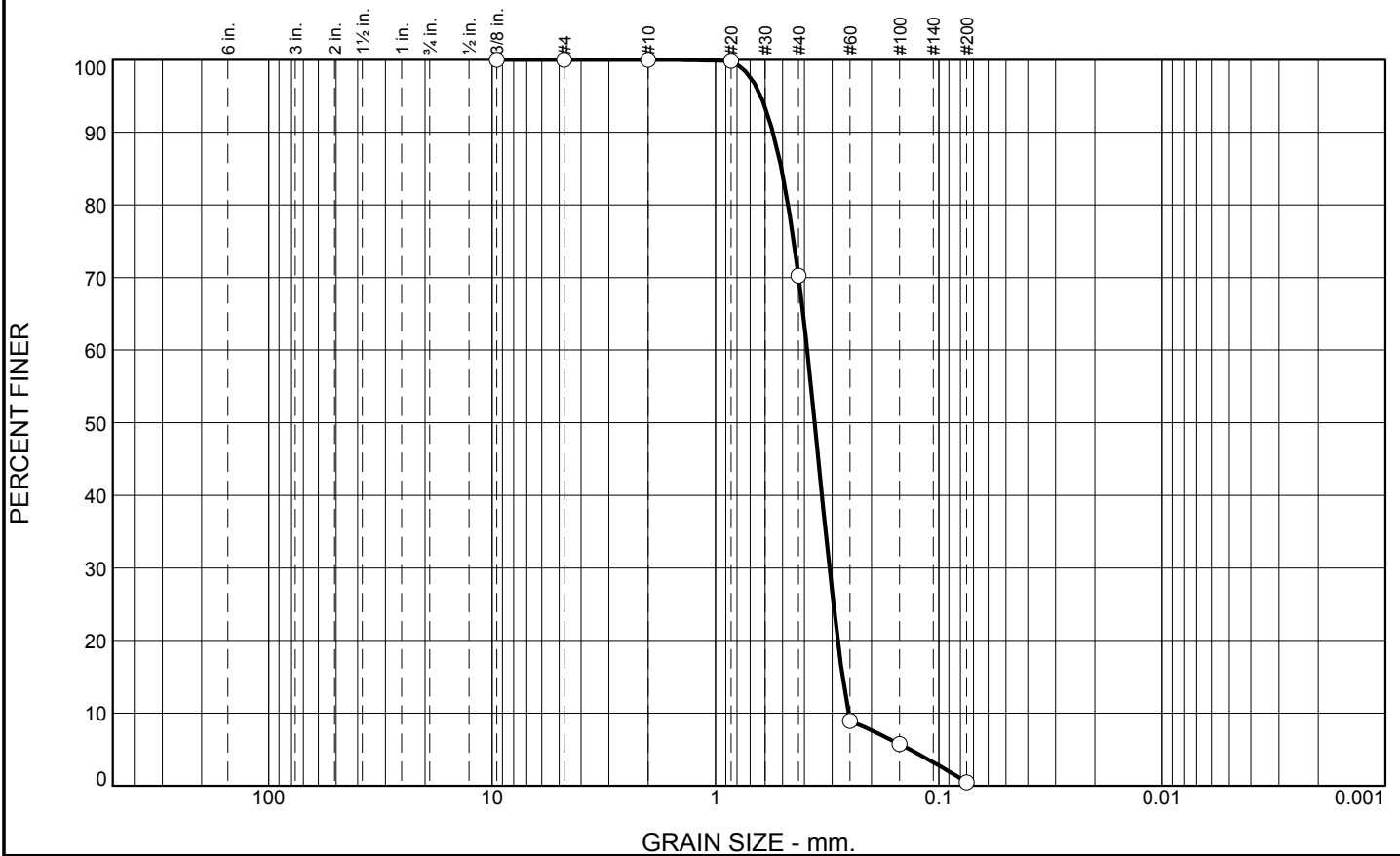
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 **Report No.** Revised 8/18

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	29.8	69.7	0.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.8		
#40	70.2		
#60	8.9		
#100	5.8		
#200	0.5		

* (no specification provided)

<u>Material Description</u>		
SAND, (SP), medium to fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.5523	D ₈₅ = 0.5060	D ₆₀ = 0.3888
D ₅₀ = 0.3596	D ₃₀ = 0.3084	D ₁₅ = 0.2694
D ₁₀ = 0.2538	C _u = 1.53	C _c = 0.96
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-SIB-10-10
Sample Number: TE Lab ID: 4607.10

Date: 8/4/10

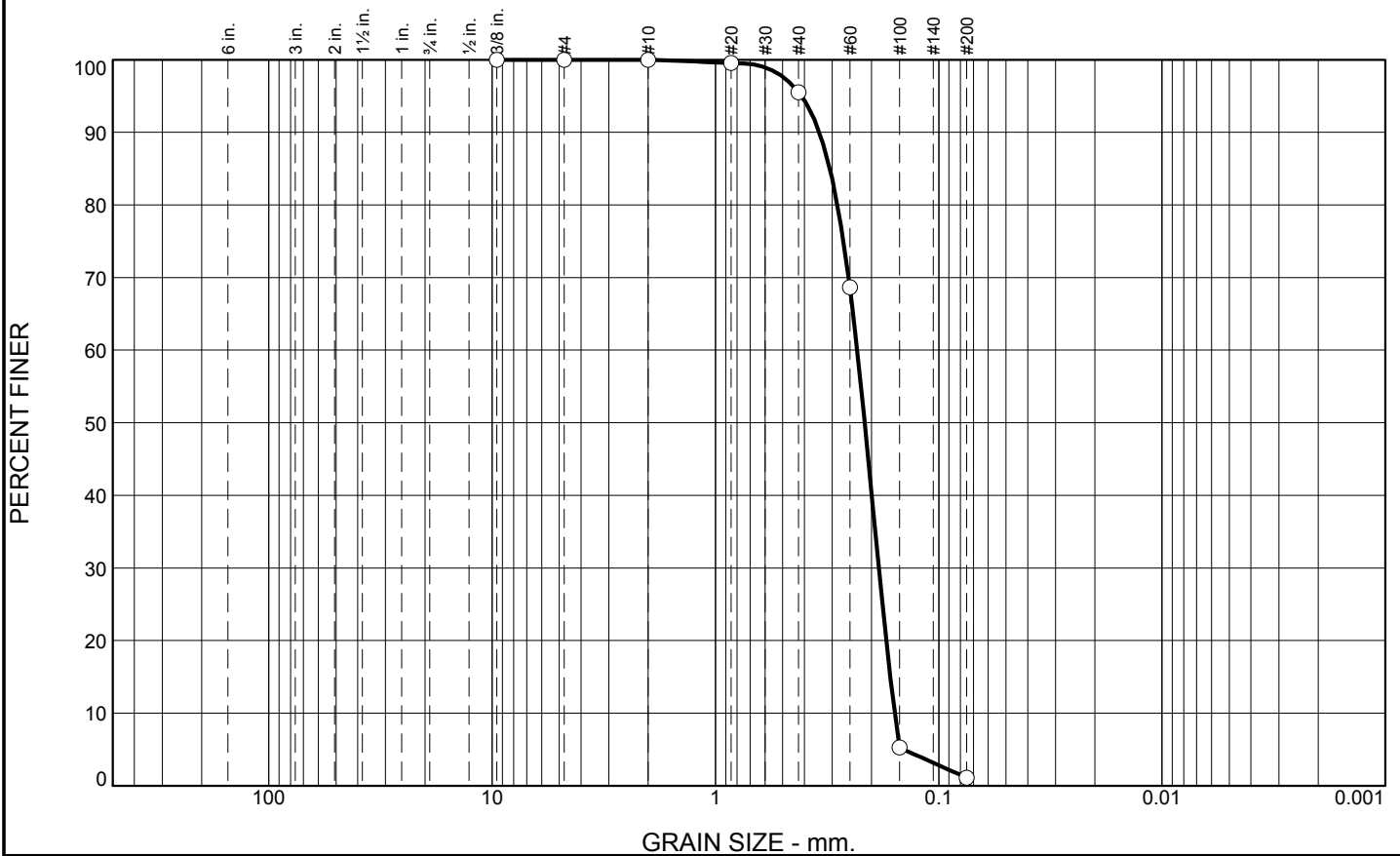
Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009
Report No. Revised 8/18

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	4.5	94.4	1.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.6		
#40	95.5		
#60	68.7		
#100	5.3		
#200	1.1		

* (no specification provided)

Material Description

SAND, (SP), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.3422

D₈₅= 0.3073

D₆₀= 0.2319

D₅₀= 0.2147

D₃₀= 0.1856

D₁₅= 0.1649

D₁₀= 0.1576

C_u= 1.47

C_c= 0.94

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-SIB-11-10
Sample Number: TE Lab ID: 4607.11

Date: 8/4/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

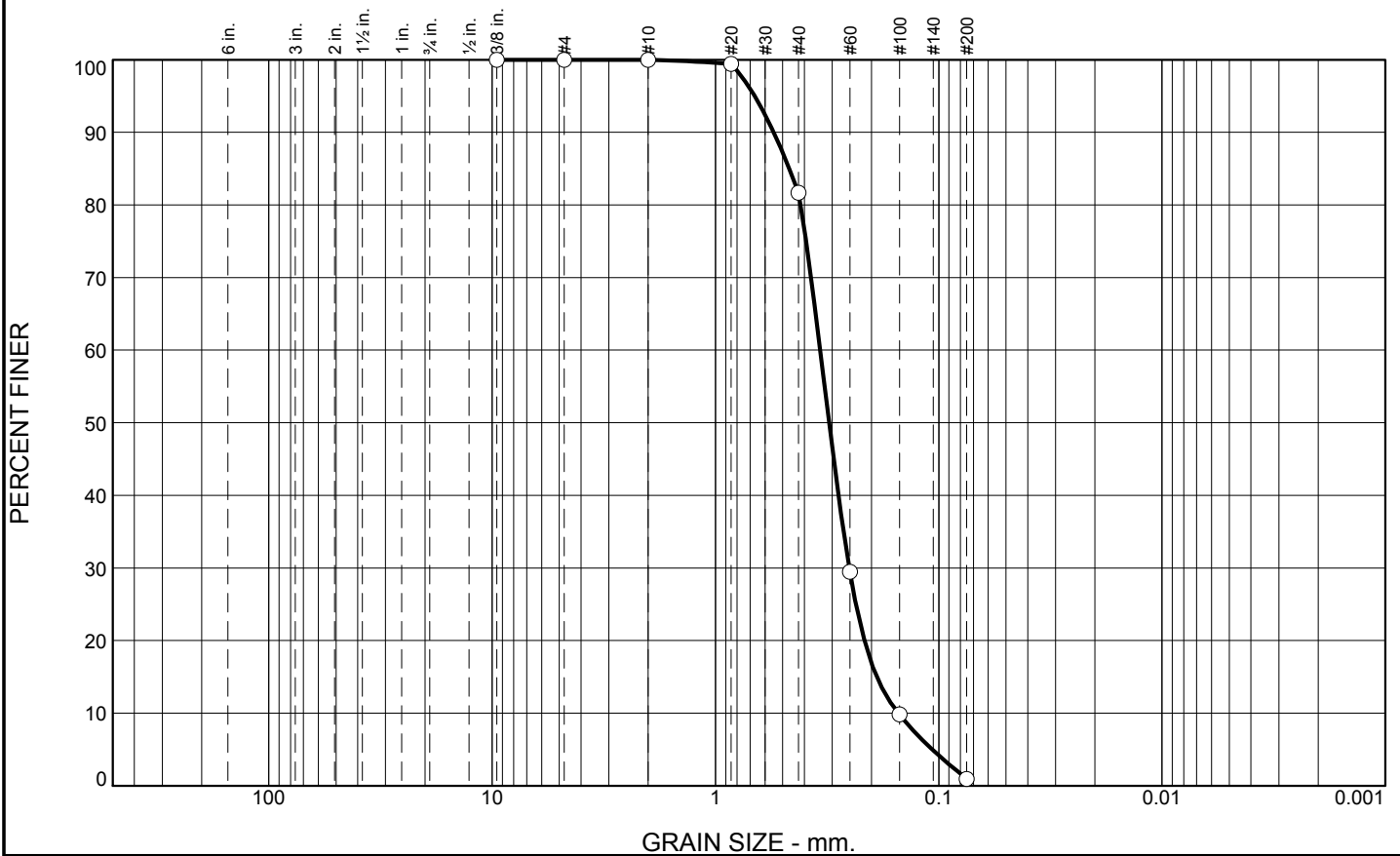
Project No: 10-2123-0009

Report No. Revised 8/18

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	18.3	80.8	0.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.4		
#40	81.7		
#60	29.5		
#100	9.8		
#200	0.9		

* (no specification provided)

Material Description		
SAND, (SP), medium to fine grained		
<div> <div> Atterberg Limits </div> <div> PL= </div> <div> LL= </div> <div> PI= </div> </div>		
<div> <div> Coefficients </div> <div> D₉₀= 0.5485 </div> <div> D₅₀= 0.3095 </div> <div> D₁₀= 0.1517 </div> <div> D₈₅= 0.4670 </div> <div> D₃₀= 0.2517 </div> <div> C_u= 2.24 </div> <div> D₆₀= 0.3395 </div> <div> D₁₅= 0.1896 </div> <div> C_c= 1.23 </div> </div>		
<div> <div> Classification </div> <div> USCS= SP </div> <div> AASHTO= </div> </div>		
<div> <div> Remarks </div> <div> CADD CODE = CH10D965 </div> </div>		

Location: USACE Sample # BI-SIB-10 - Composite Samples
Sample Number: TE Lab ID: 4607.12

Date: 8/4/10

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009
Report No. Revised 8/18

Tested By: R.Martin

Checked By: R.Byrd

APPENDIX A

Offshore Sand Borrow Investigation, Phases 1 & 2 Beach Sediment Investigation

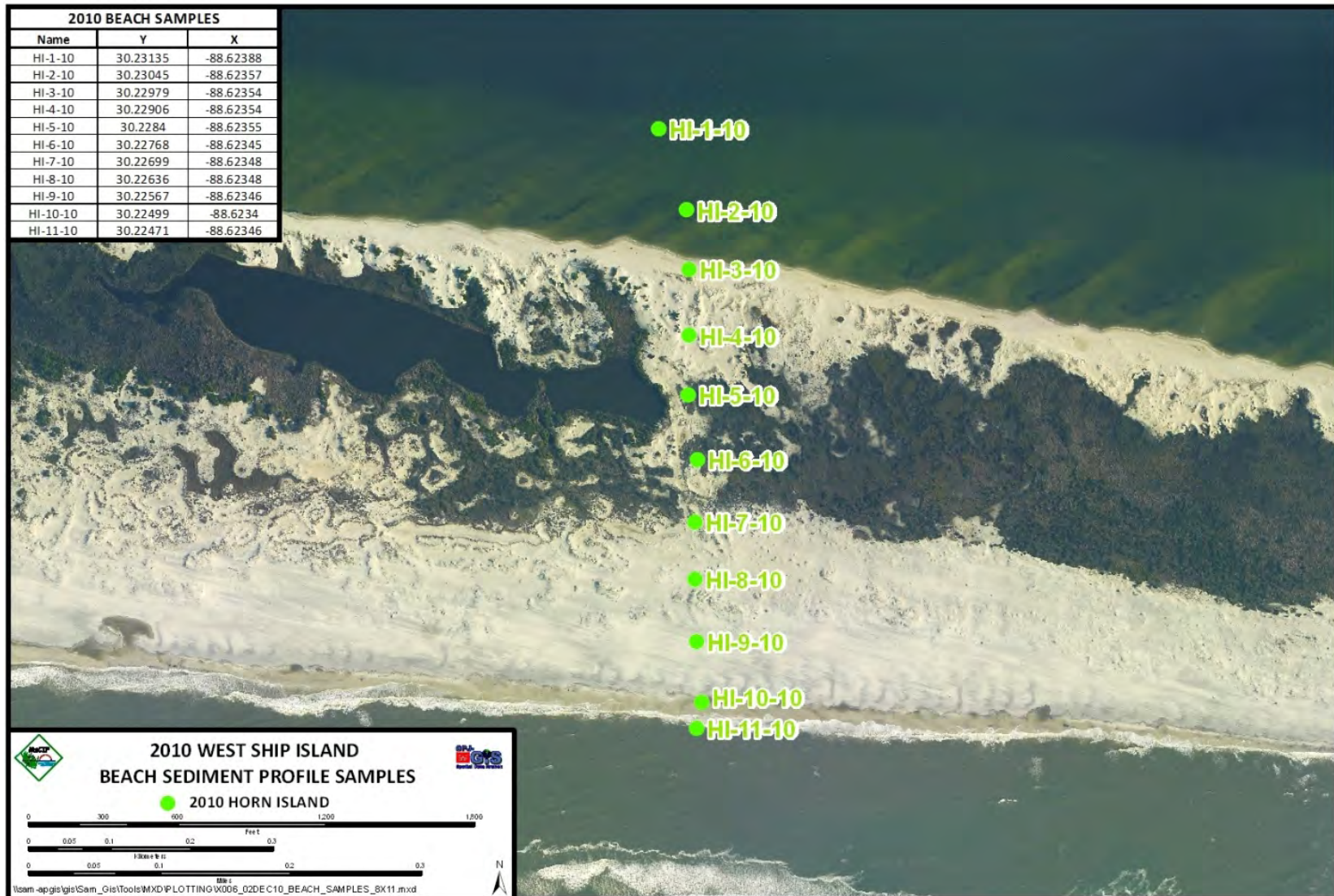
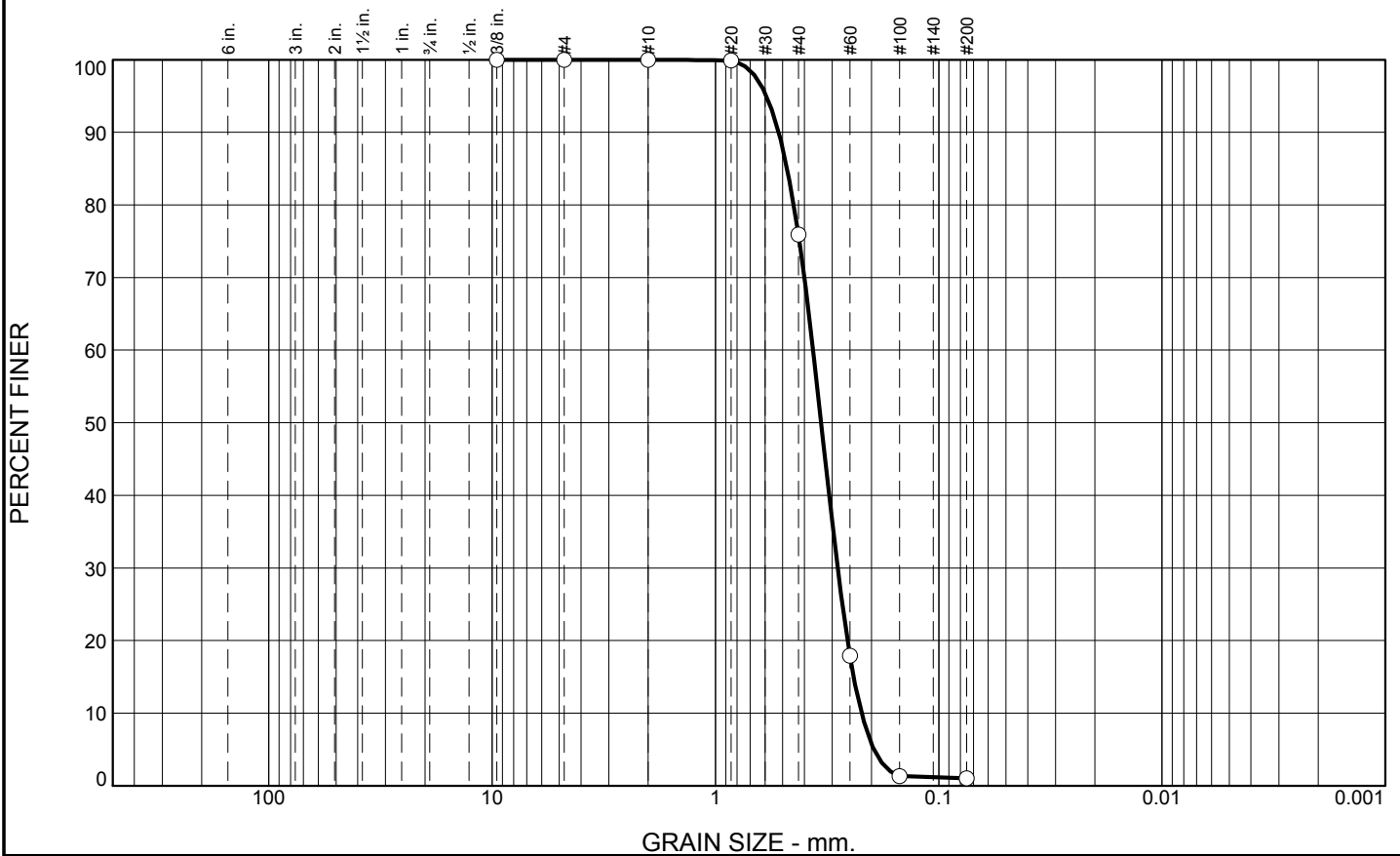


Figure 3.2.3.2 - Sampling locations for 2010 Horn Island beach transect. These samples are labeled with the prefix BI-HIB in Table 3.2.3.2.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	24.1	74.9	1.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	75.9		
#60	17.9		
#100	1.3		
#200	1.0		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.5205

D₈₅= 0.4773

D₆₀= 0.3657

D₅₀= 0.3362

D₃₀= 0.2834

D₁₅= 0.2406

D₁₀= 0.2217

C_u= 1.65

C_c= 0.99

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-HIB-1-10
Sample Number: TE Lab ID: 4607.13

Date: 8/4/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

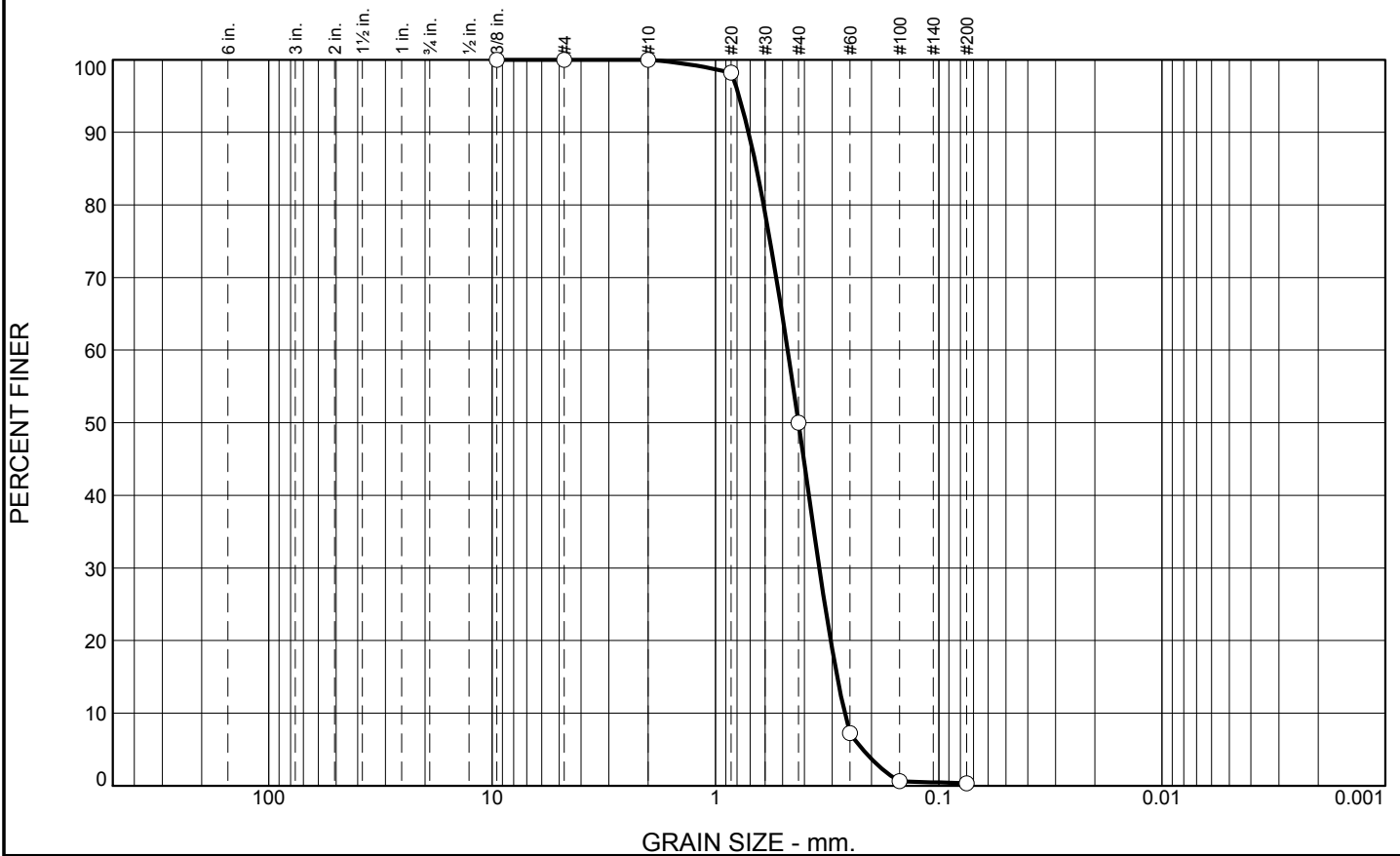
Project No: 10-2123-0009

Report No. Revised 8/18

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	50.0	49.7	0.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	98.2		
#40	50.0		
#60	7.3		
#100	0.6		
#200	0.3		

* (no specification provided)

Material Description
 SAND, (SP), medium to fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.7112 D₈₅= 0.6550 D₆₀= 0.4746
 D₅₀= 0.4250 D₃₀= 0.3427 D₁₅= 0.2849
 D₁₀= 0.2635 C_u= 1.80 C_c= 0.94

Classification
 USCS= SP AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-HIB-2-10
Sample Number: TE Lab ID: 4607.14

Date: 8/4/10

Thompson Engineering

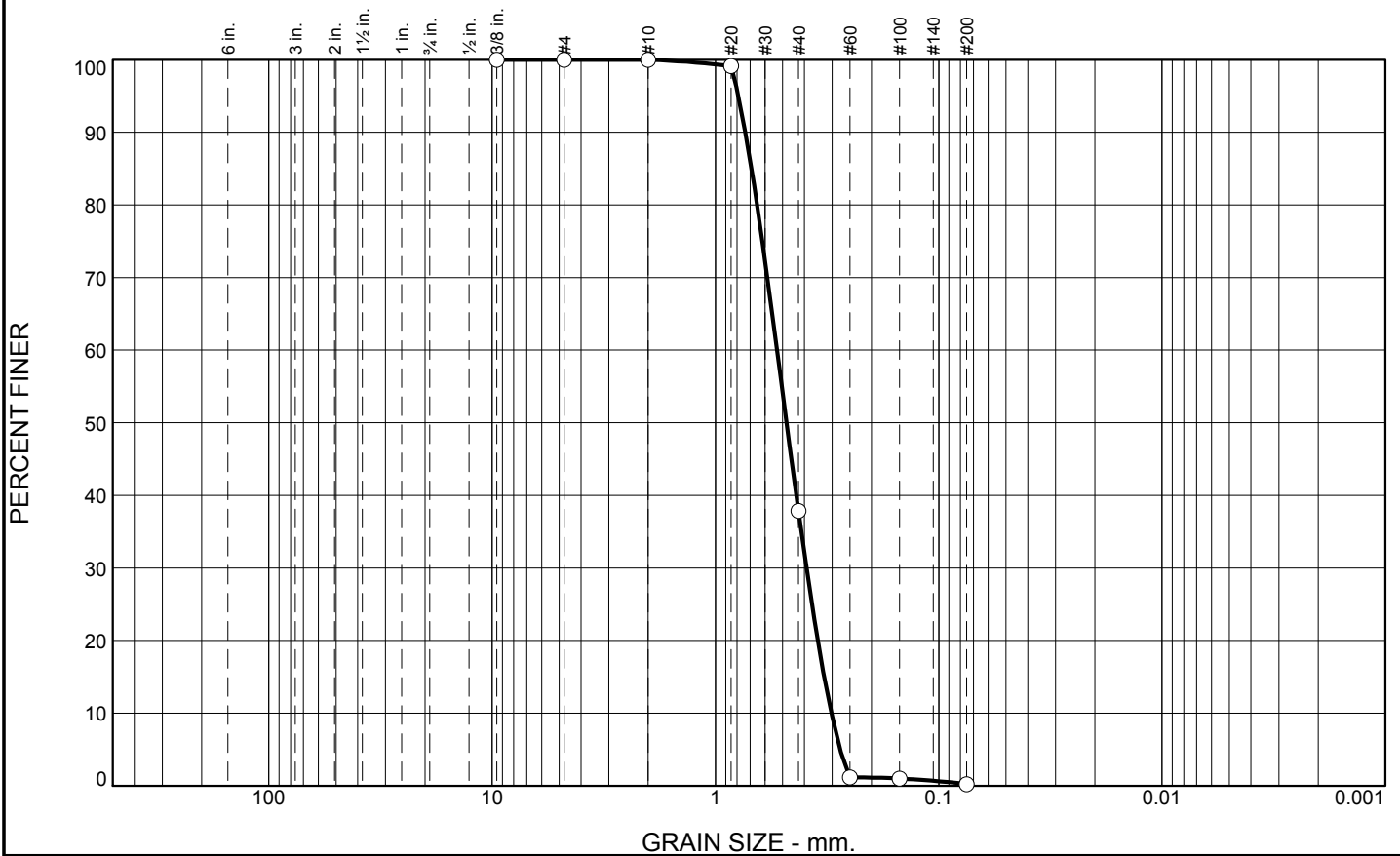
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 **Report No.** Revised 8/18

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	62.2	37.6	0.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.1		
#40	37.8		
#60	1.2		
#100	1.0		
#200	0.2		

* (no specification provided)

<u>Material Description</u>		
SAND, (SP), medium to fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.7353	D ₈₅ = 0.6902	D ₆₀ = 0.5296
D ₅₀ = 0.4801	D ₃₀ = 0.3911	D ₁₅ = 0.3258
D ₁₀ = 0.3024	C _u = 1.75	C _c = 0.96
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-HIB-3-10
Sample Number: TE Lab ID: 4607.15

Date: 8/4/10

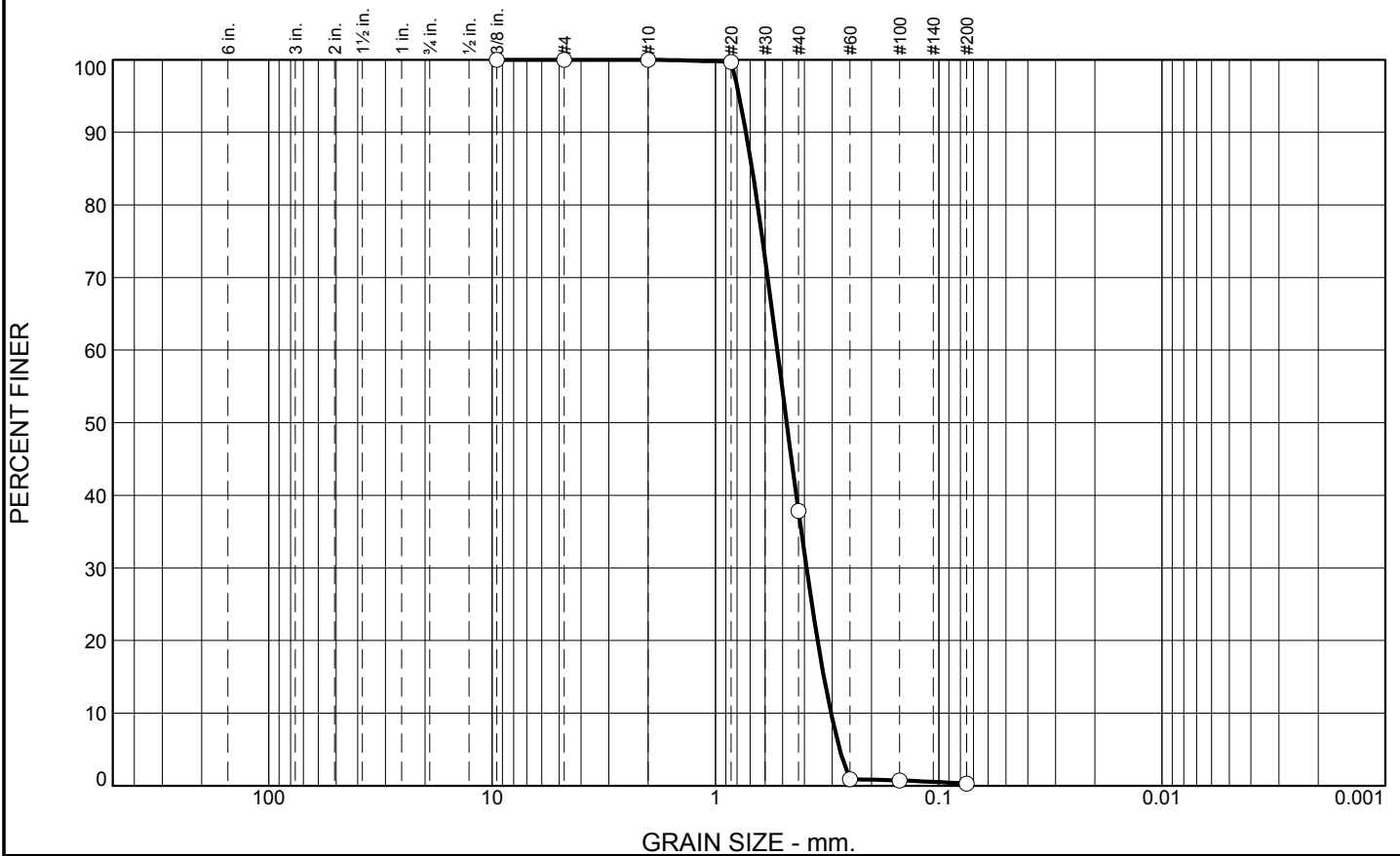
Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009
Report No. Revised 8/18

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	62.2	37.5	0.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.7		
#40	37.8		
#60	0.9		
#100	0.7		
#200	0.3		

* (no specification provided)

<u>Material Description</u>		
SAND, (SP), medium to fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.7302	D ₈₅ = 0.6862	D ₆₀ = 0.5284
D ₅₀ = 0.4795	D ₃₀ = 0.3914	D ₁₅ = 0.3267
D ₁₀ = 0.3035	C _u = 1.74	C _c = 0.96
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-HIB-4-10
Sample Number: TE Lab ID: 4607.16

Date: 8/4/10

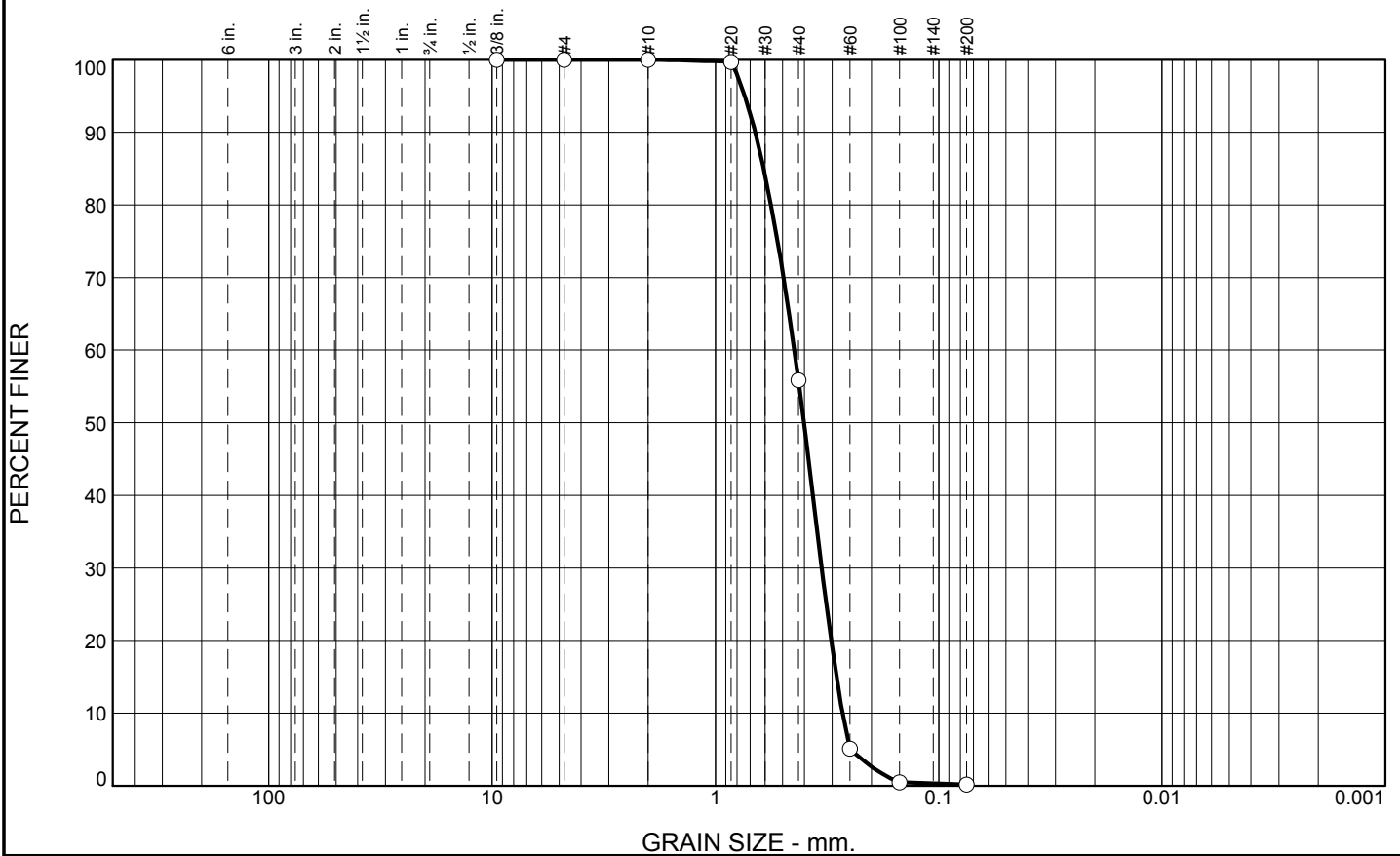
Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009
Report No. Revised 8/18

Tested By: R.Martin

Checked By: R.Martin

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	44.2	55.6	0.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.7		
#40	55.8		
#60	5.1		
#100	0.5		
#200	0.2		

* (no specification provided)

Material Description
SAND, (SP), medium to fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.6638 D₈₅= 0.6081 D₆₀= 0.4433
 D₅₀= 0.4018 D₃₀= 0.3342 D₁₅= 0.2868
 D₁₀= 0.2697 C_u= 1.64 C_c= 0.93

Classification
 USCS= SP AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-HIB-5-10
 Sample Number: TE Lab ID: 4607.17

Date: 8/4/10

Thompson Engineering

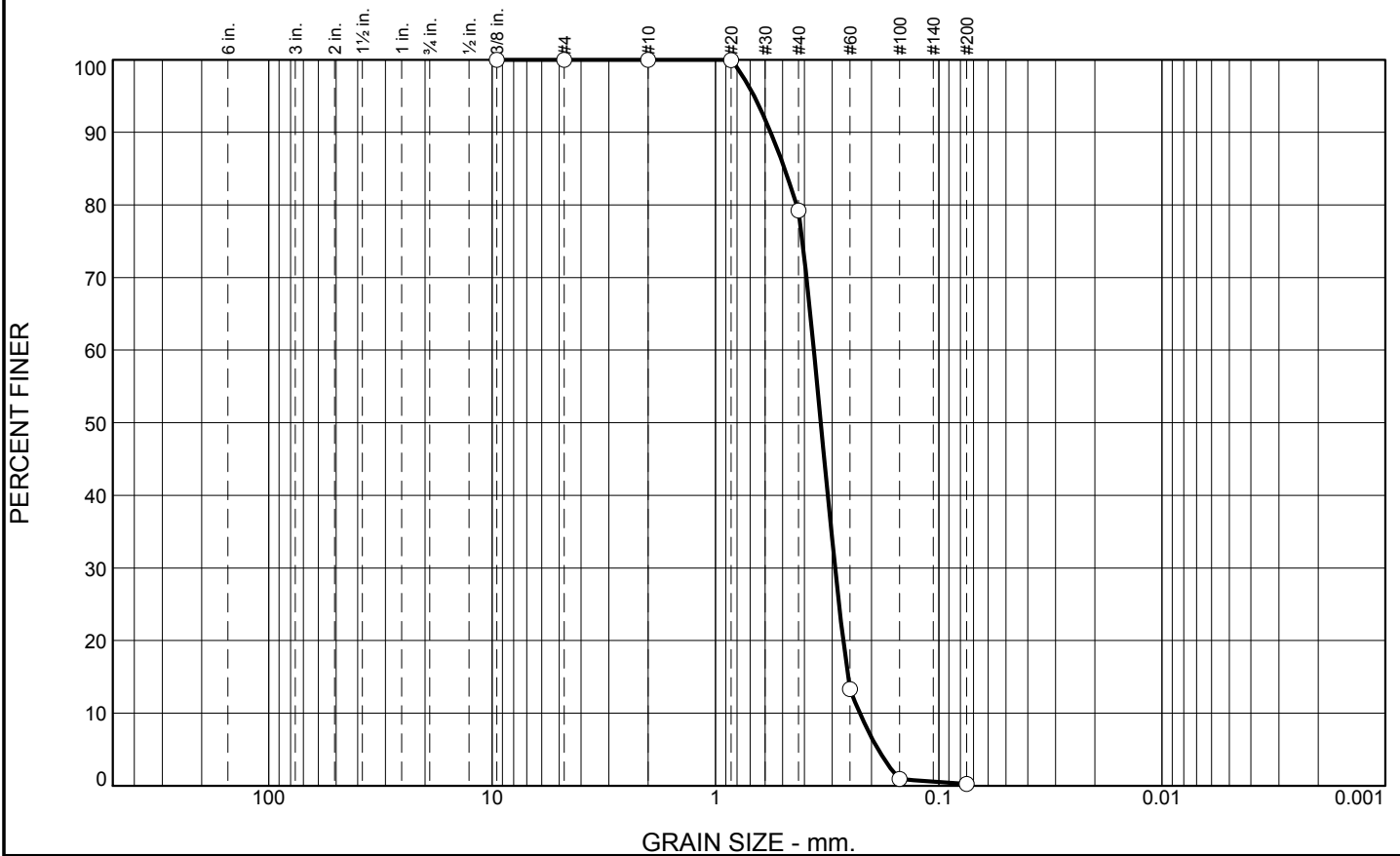
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 **Report No.** Revised 8/18

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	20.8	78.9	0.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	100.0		
#40	79.2		
#60	13.3		
#100	0.9		
#200	0.3		

* (no specification provided)

Material Description		
SAND, (SP), medium to fine grained, with trace organics		
<div> <div> Atterberg Limits PL= LL= PI= </div> <div> Coefficients D₉₀= 0.5655 D₈₅= 0.4903 D₆₀= 0.3626 D₅₀= 0.3372 D₃₀= 0.2912 D₁₅= 0.2548 D₁₀= 0.2255 C_u= 1.61 C_c= 1.04 </div> <div> Classification USCS= SP AASHTO= </div> <div> Remarks CADD CODE = CH10D965 </div> </div>		

Location: USACE Sample # BI-HIB-6-10
Sample Number: TE Lab ID: 4607.18

Date: 8/4/10

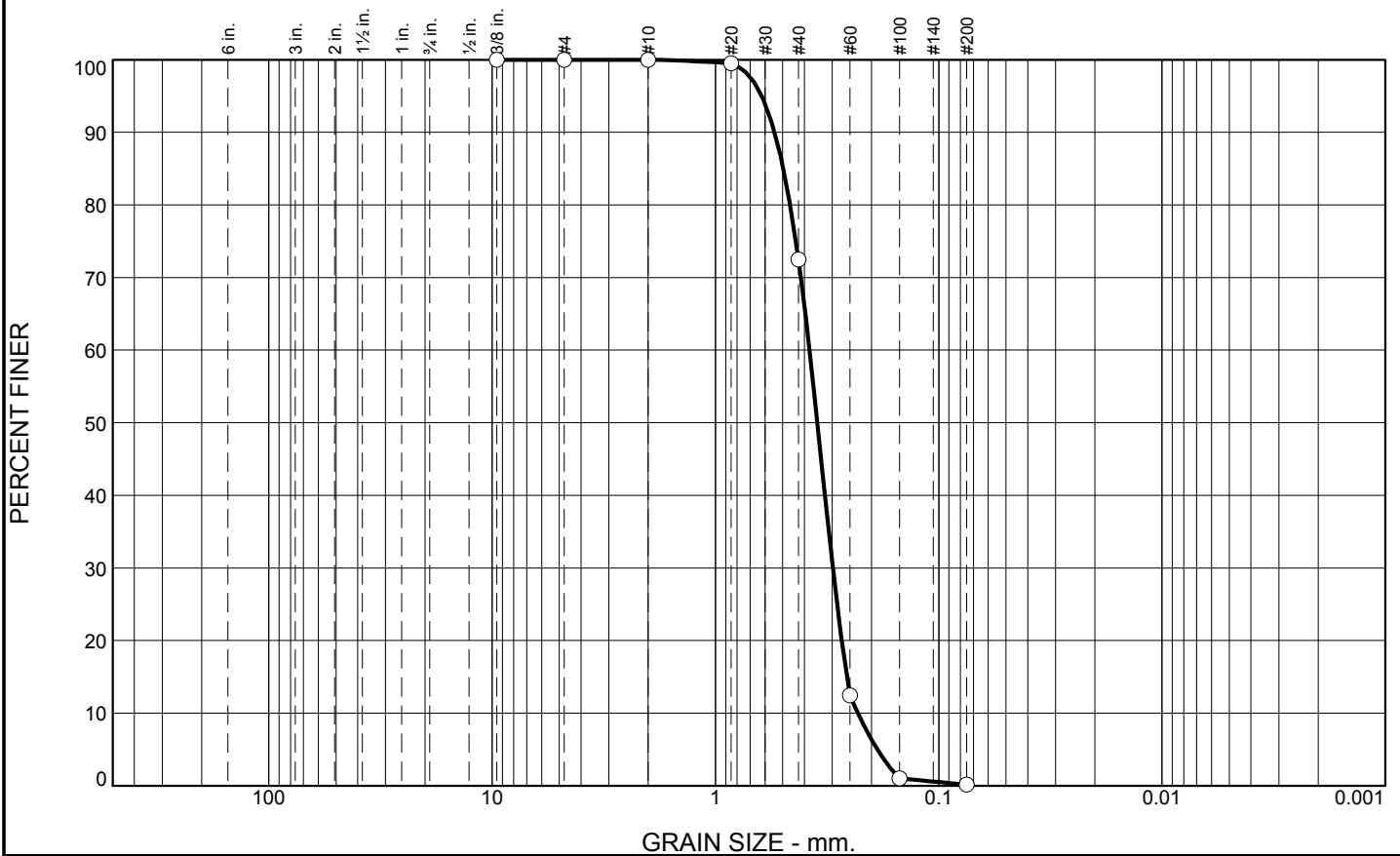
Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 **Report No.** Revised 8/18

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	27.5	72.3	0.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.5		
#40	72.5		
#60	12.5		
#100	1.0		
#200	0.2		

* (no specification provided)

<u>Material Description</u>		
SAND, (SP), medium to fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.5429	D ₈₅ = 0.4963	D ₆₀ = 0.3794
D ₅₀ = 0.3499	D ₃₀ = 0.2978	D ₁₅ = 0.2579
D ₁₀ = 0.2302	C _u = 1.65	C _c = 1.02
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-HIB-7-10
Sample Number: TE Lab ID: 4607.19

Date: 8/4/10

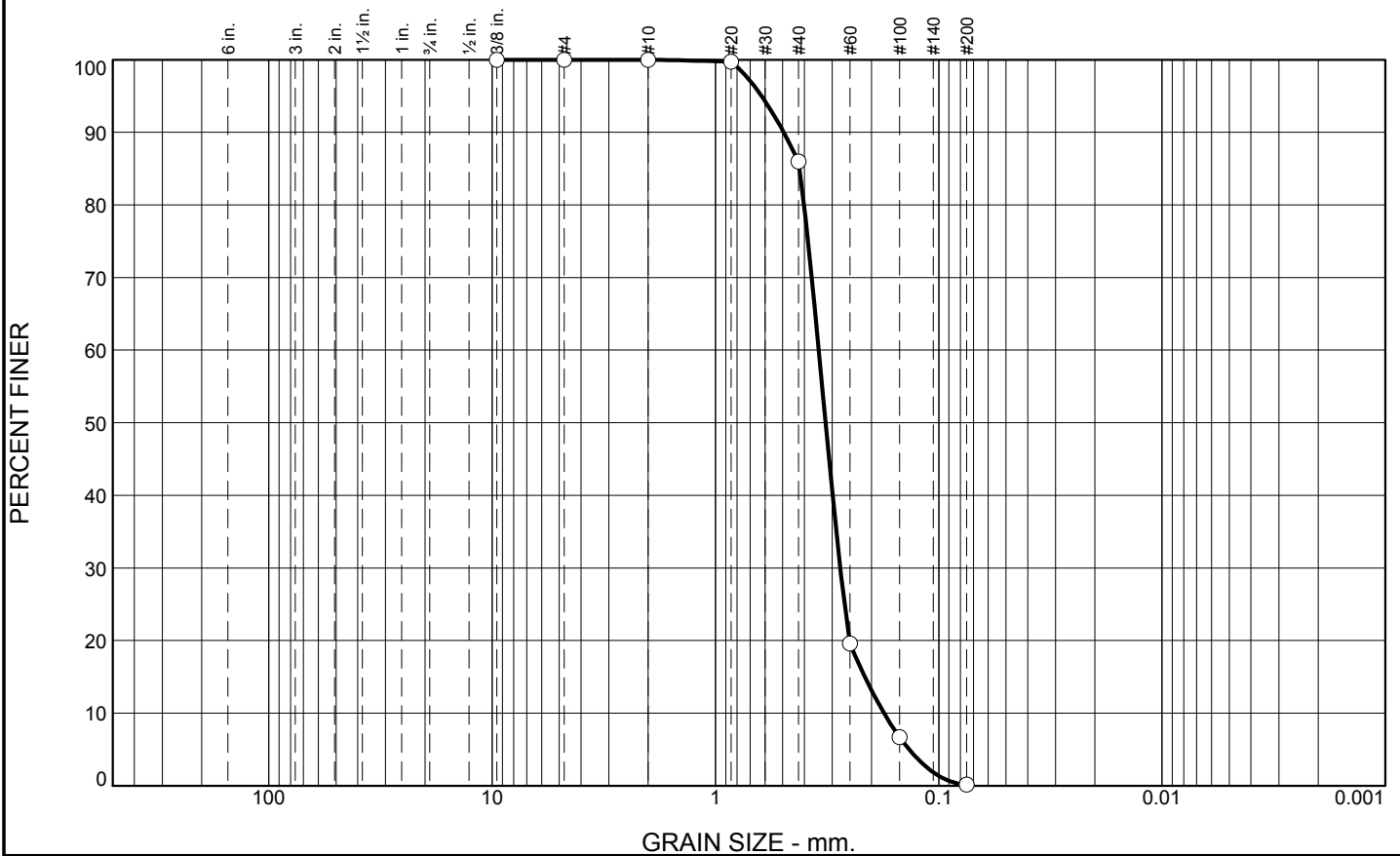
Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009
Report No. Revised 8/18

Tested By: R.Martin

Checked By: R.Byrd
A-38

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	14.0	85.8	0.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.7		
#40	86.0		
#60	19.6		
#100	6.7		
#200	0.2		

* (no specification provided)

<u>Material Description</u>		
SAND, (SP), medium to fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.4946	D ₈₅ = 0.4209	D ₆₀ = 0.3445
D ₅₀ = 0.3210	D ₃₀ = 0.2761	D ₁₅ = 0.2144
D ₁₀ = 0.1759	C _u = 1.96	C _c = 1.26
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-HIB-8-10
Sample Number: TE Lab ID: 4607.20

Date: 8/4/10

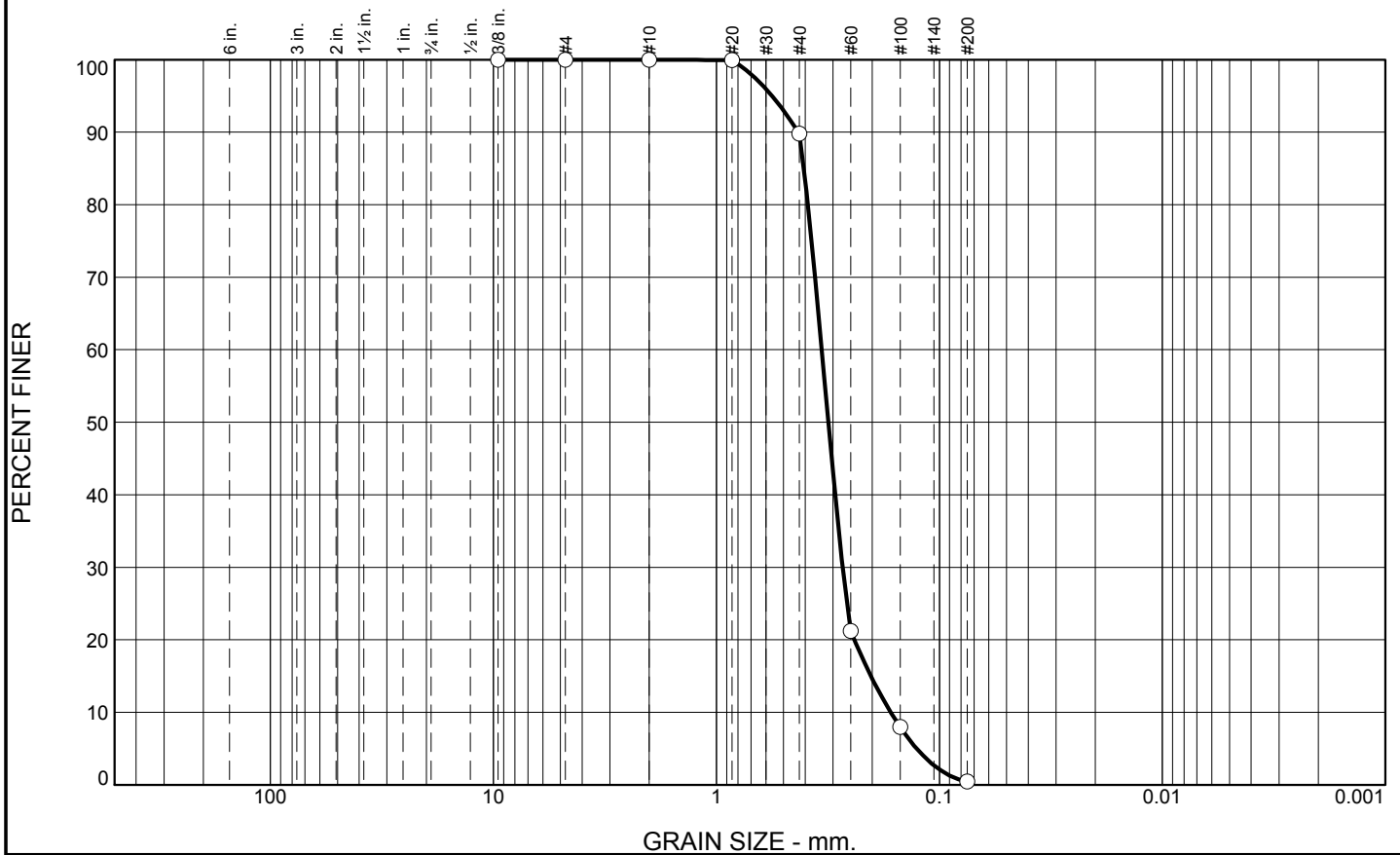
Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009
Report No. Revised 8/18

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	10.2	89.3	0.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	89.8		
#60	21.2		
#100	8.0		
#200	0.5		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.4288

D₈₅= 0.4060

D₆₀= 0.3369

D₅₀= 0.3147

D₃₀= 0.2715

D₁₅= 0.2028

D₁₀= 0.1655

C_u= 2.04

C_c= 1.32

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-HIB-9-10
Sample Number: TE Lab ID: 4607.21

Date: 8/4/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

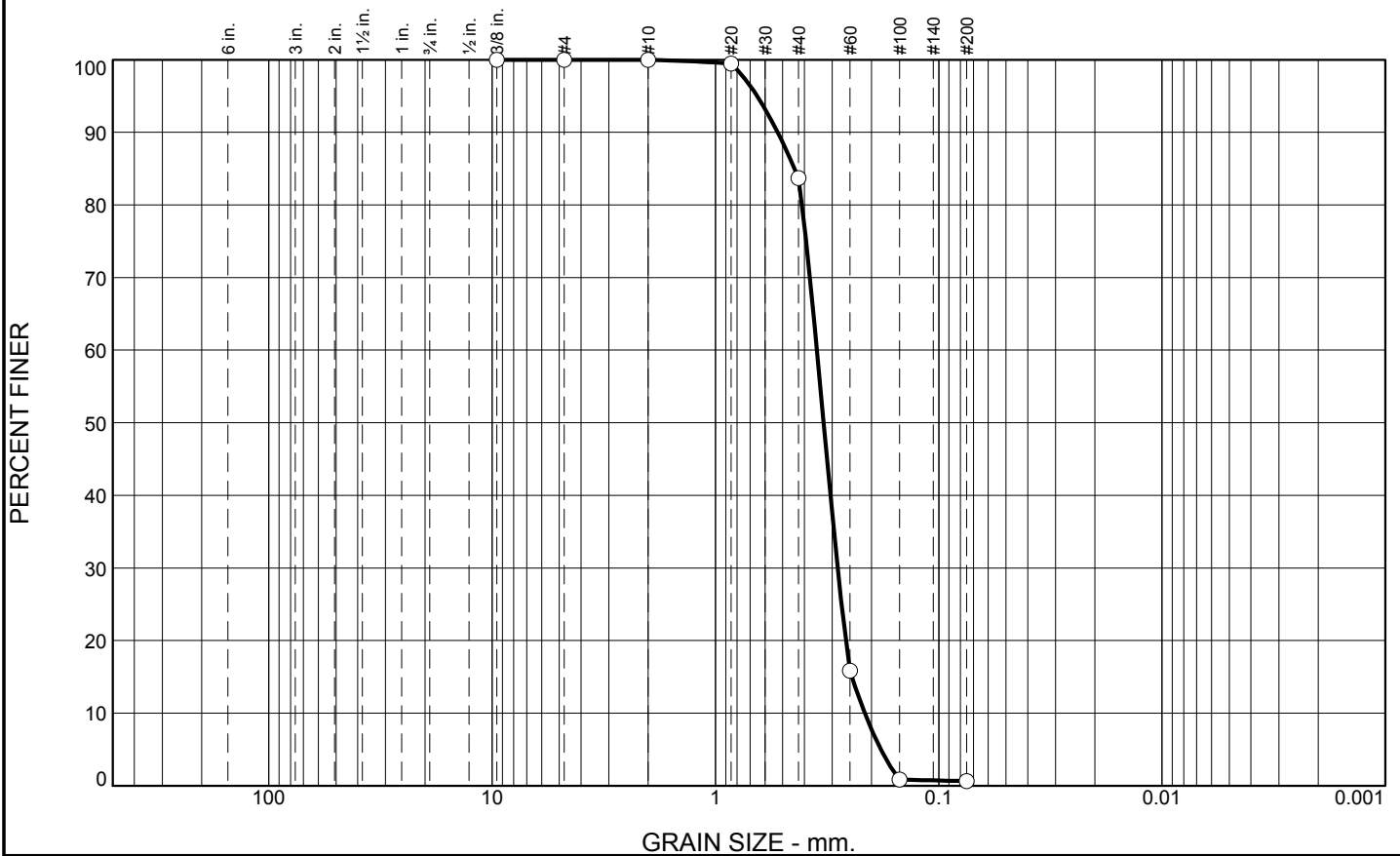
Project No: 10-2123-0009

Report No. Revised 8/18

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	16.3	83.1	0.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.5		
#40	83.7		
#60	15.8		
#100	0.9		
#200	0.6		

* (no specification provided)

Material Description
 SAND, (SP), medium to fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.5260 D₈₅= 0.4428 D₆₀= 0.3512
 D₅₀= 0.3275 D₃₀= 0.2835 D₁₅= 0.2449
 D₁₀= 0.2143 C_u= 1.64 C_c= 1.07

Classification
 USCS= SP AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-HIB-10-10
 Sample Number: TE Lab ID: 4607.22

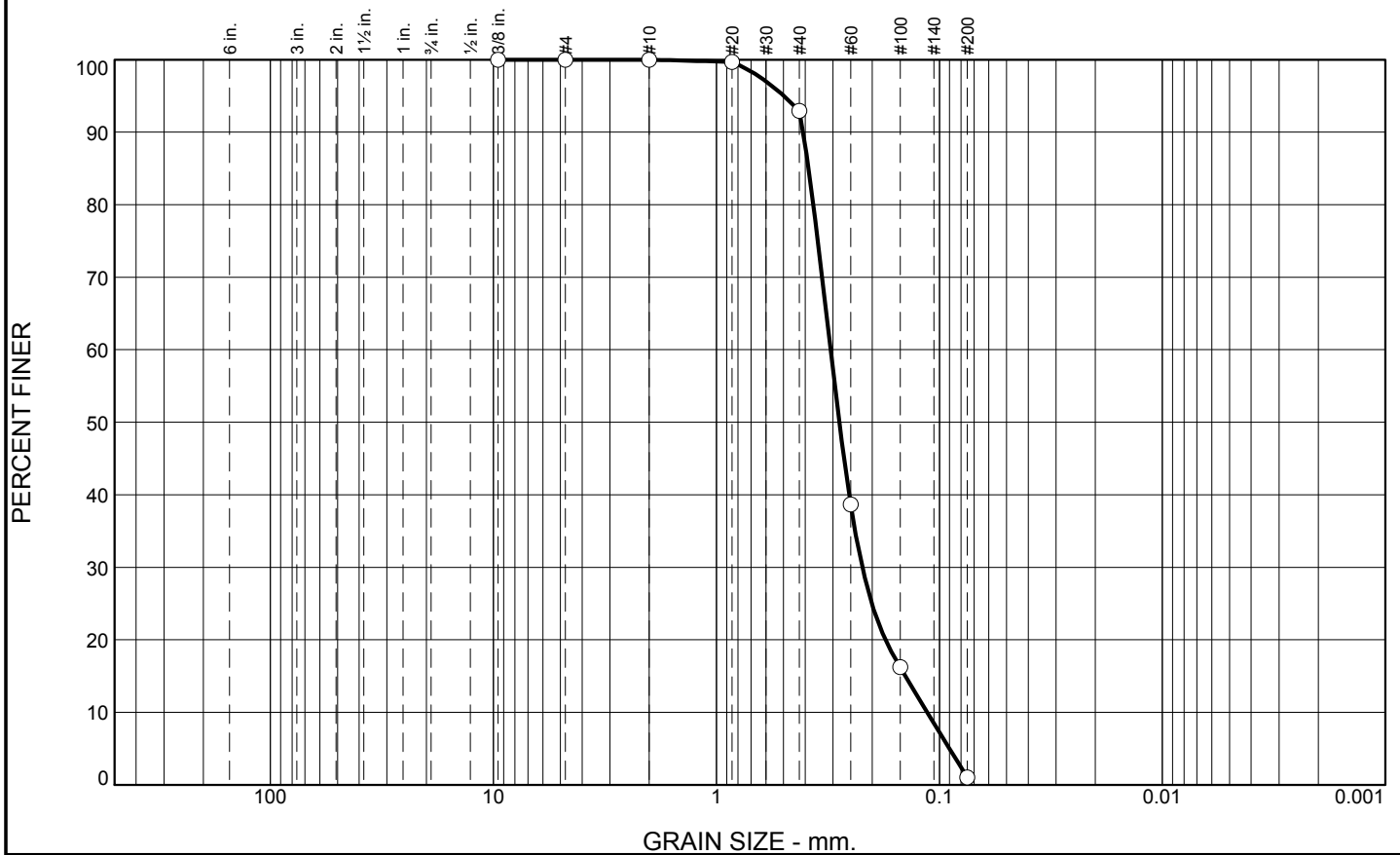
Date: 8/4/10

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
 Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
 Project No: 10-2123-0009 Report No. Revised 8/18

Tested By: R.Martin Checked By: R.Byrd
 A-41

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	7.1	91.9	1.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.7		
#40	92.9		
#60	38.7		
#100	16.2		
#200	1.0		

* (no specification provided)

Material Description

SAND, (SP), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.4091

D₈₅= 0.3867

D₆₀= 0.3074

D₅₀= 0.2809

D₃₀= 0.2217

D₁₅= 0.1421

D₁₀= 0.1134

C_u= 2.71

C_c= 1.41

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-HIB-11-10
Sample Number: TE Lab ID: 4607.23

Date: 8/4/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

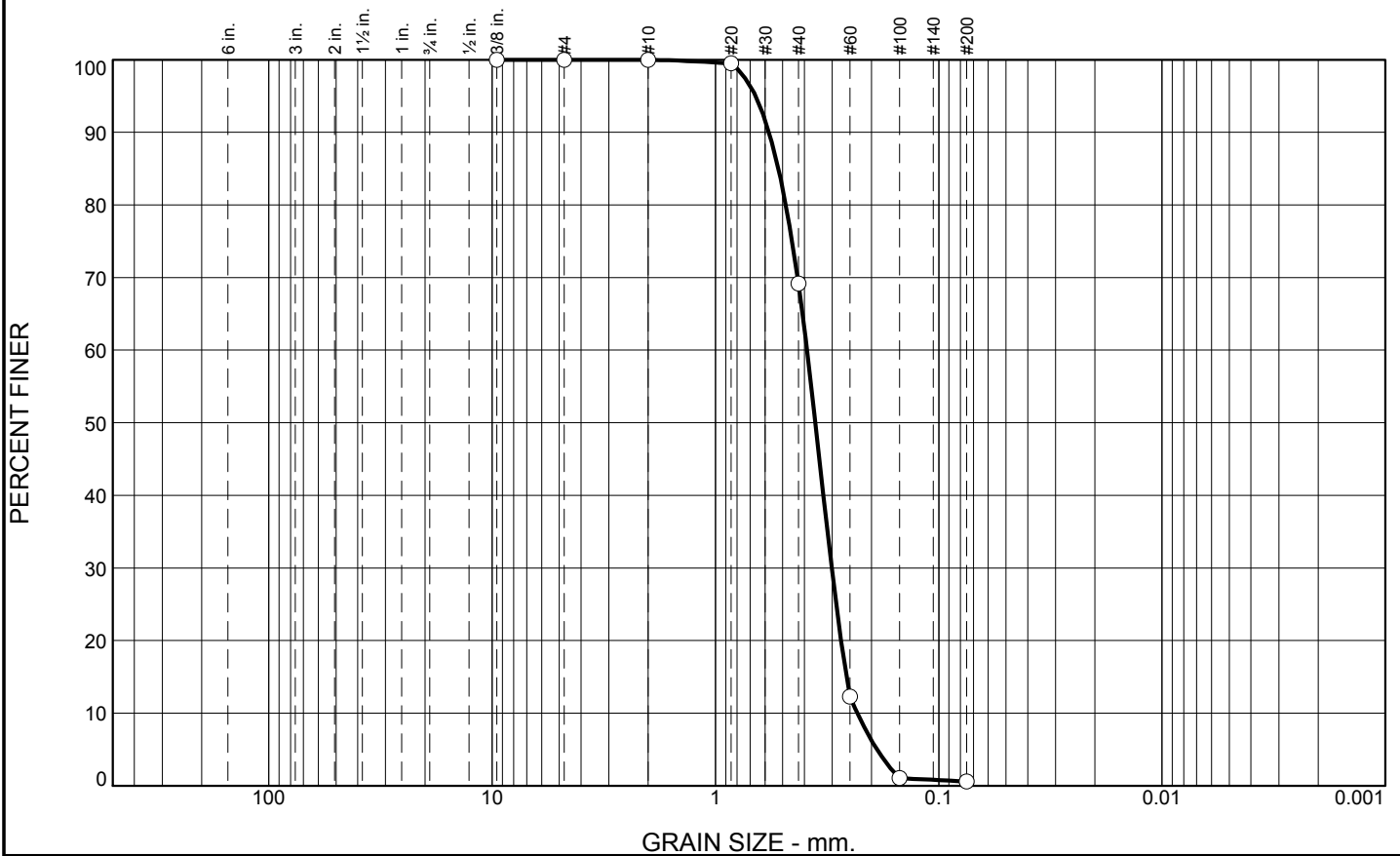
Project No: 10-2123-0009

Report No. Revised 8/18

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	30.8	68.6	0.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.5		
#40	69.2		
#60	12.3		
#100	1.1		
#200	0.6		

* (no specification provided)

Material Description

SAND, (SP), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.5754

D₈₅= 0.5221

D₆₀= 0.3894

D₅₀= 0.3571

D₃₀= 0.3013

D₁₅= 0.2589

D₁₀= 0.2315

C_u= 1.68

C_c= 1.01

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-HIB-10 - Composite Samples
Sample Number: TE Lab ID: 4607.24

Date: 8/4/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Report No. Revised 8/18

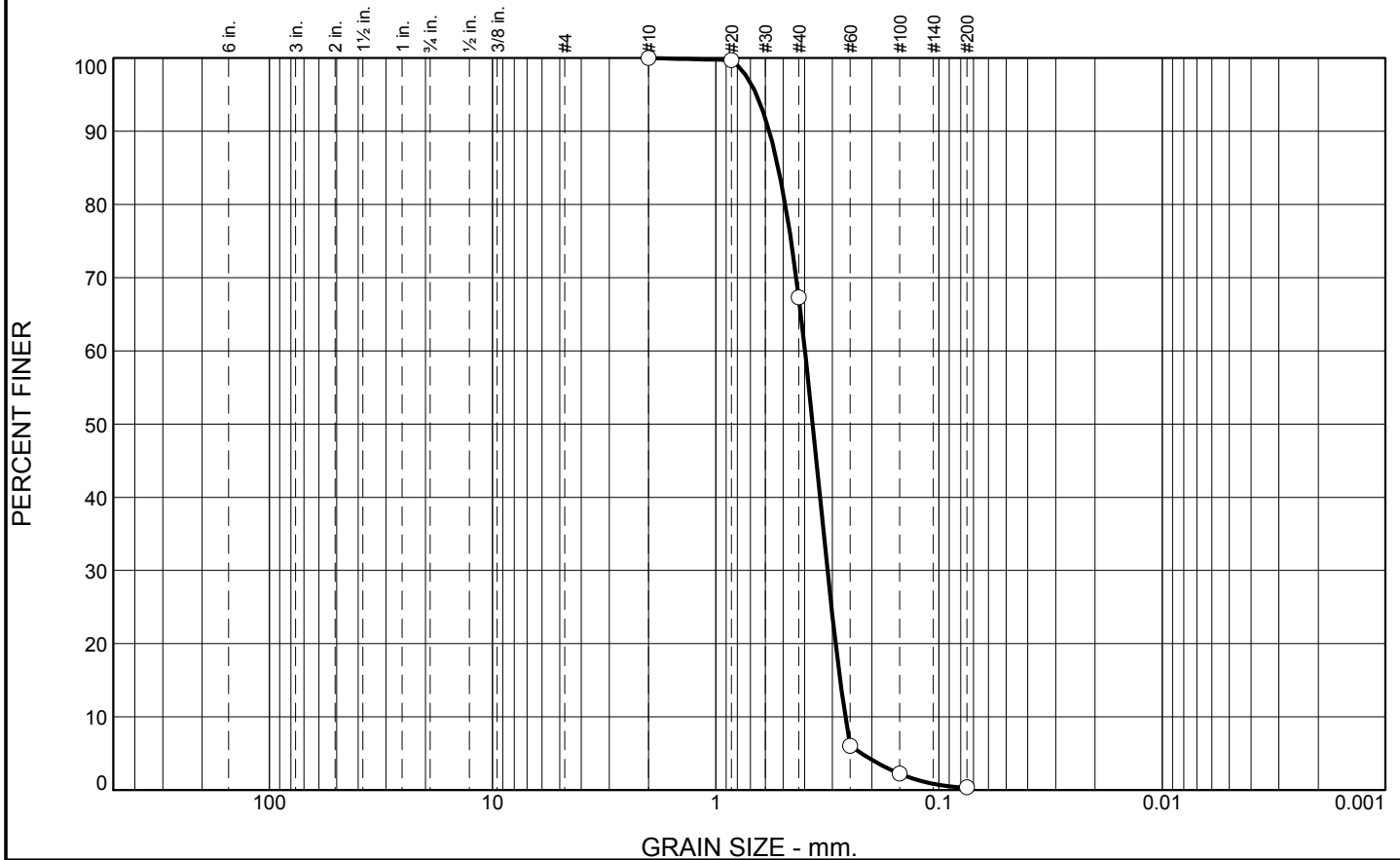
Tested By: R.Martin

Checked By: R.Byrd



Figure 3.2.3.3 - Sampling locations for 2010 West Ship Island transect.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	32.7	66.9	0.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#10	100.0		
#20	99.7		
#40	67.3		
#60	6.0		
#100	2.3		
#200	0.4		

* (no specification provided)

Material Description
 SAND, (SP), medium to fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.5758 D₈₅= 0.5253 D₆₀= 0.3986
 D₅₀= 0.3681 D₃₀= 0.3157 D₁₅= 0.2774
 D₁₀= 0.2631 C_u= 1.51 C_c= 0.95

Classification
 USCS= SP AASHTO=

Remarks

Location: USACE Sample # WSI-5-10-10 A
 Sample Number: TE Lab ID: 4737.01

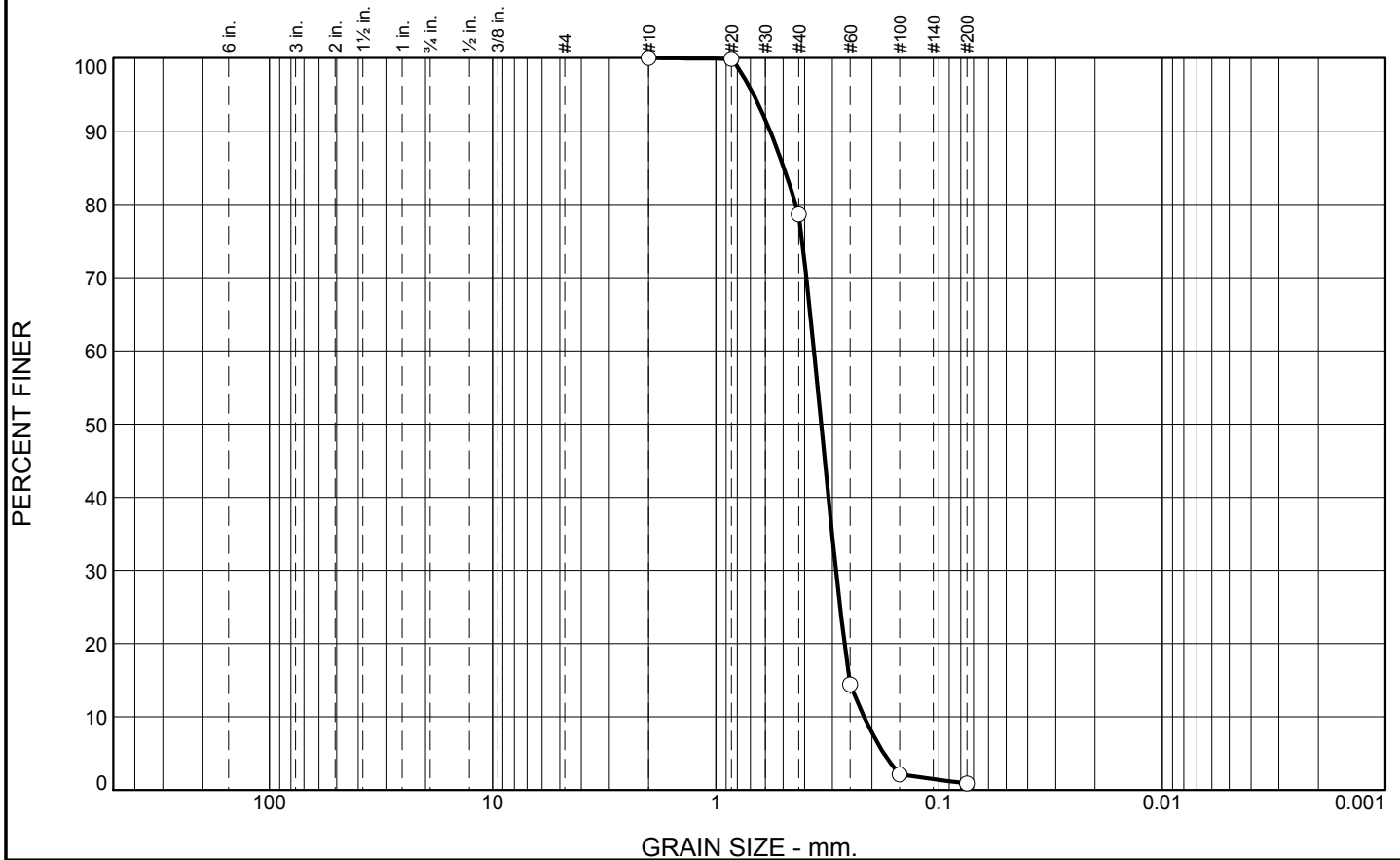
Depth: 0.0 - 1.5 (ft.)

Date: 10/14/10

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 **Report No.**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	21.4	77.7	0.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#10	100.0		
#20	99.9		
#40	78.6		
#60	14.5		
#100	2.1		
#200	0.9		

* (no specification provided)

Material Description
 SAND, (SP), medium to fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.5710 D₈₅= 0.4959 D₆₀= 0.3630
 D₅₀= 0.3369 D₃₀= 0.2896 D₁₅= 0.2516
 D₁₀= 0.2165 C_u= 1.68 C_c= 1.07

Classification
 USCS= SP AASHTO=

Remarks

Location: USACE Sample # WSI-5-10-10 B
 Sample Number: TE Lab ID: 4737.02

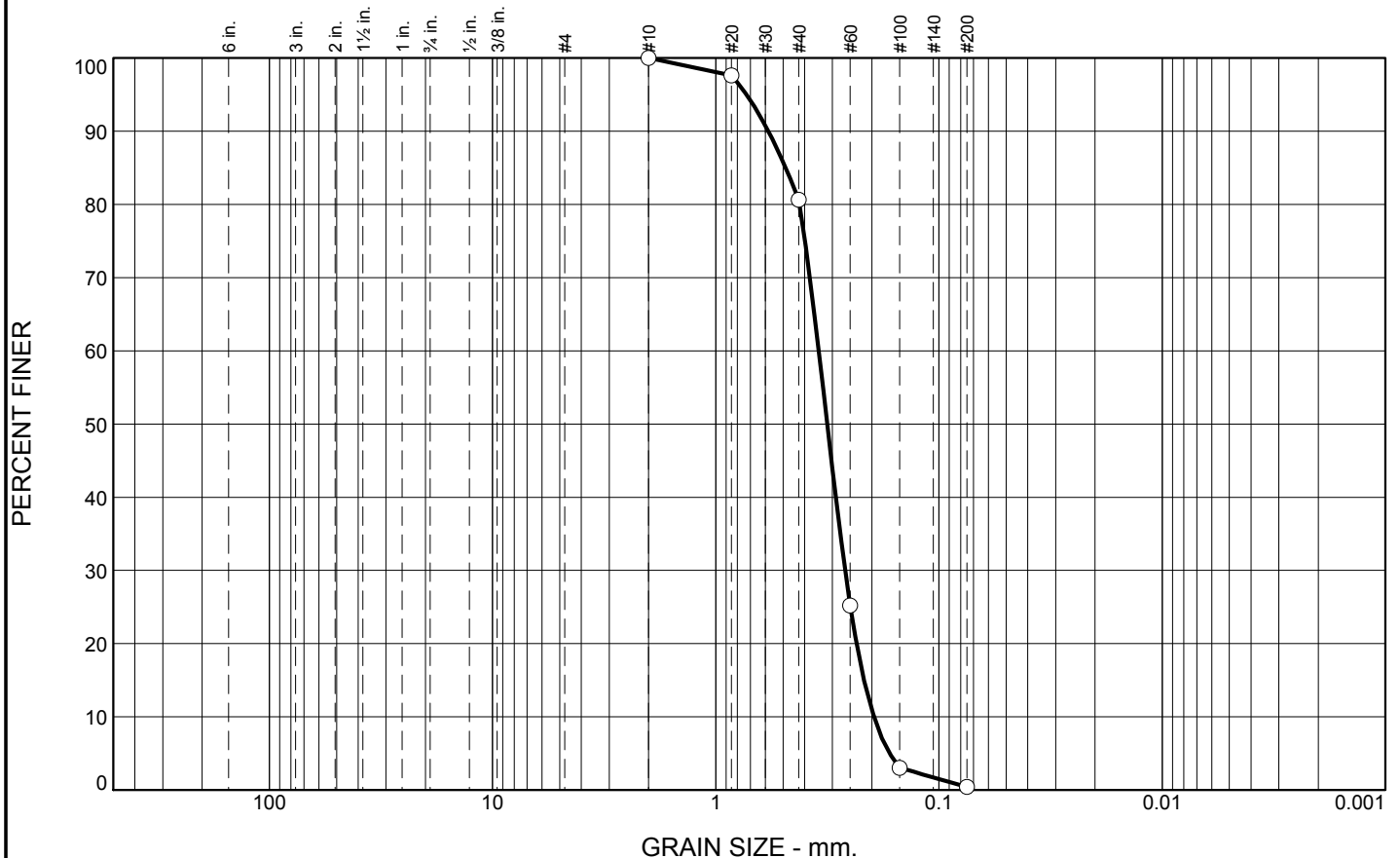
Depth: 1.5 - 3.0 (ft.)

Date: 10/14/10

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 **Report No.**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	19.4	80.2	0.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#10	100.0		
#20	97.6		
#40	80.6		
#60	25.2		
#100	3.0		
#200	0.4		

* (no specification provided)

Material Description
 SAND, (SP), medium to fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.5820 D₈₅= 0.4866 D₆₀= 0.3457
 D₅₀= 0.3168 D₃₀= 0.2634 D₁₅= 0.2167
 D₁₀= 0.1956 C_u= 1.77 C_c= 1.03

Classification
 USCS= SP AASHTO=

Remarks

Location: USACE Sample # WSI-5-10-10 C
 Sample Number: TE Lab ID: 4737.03

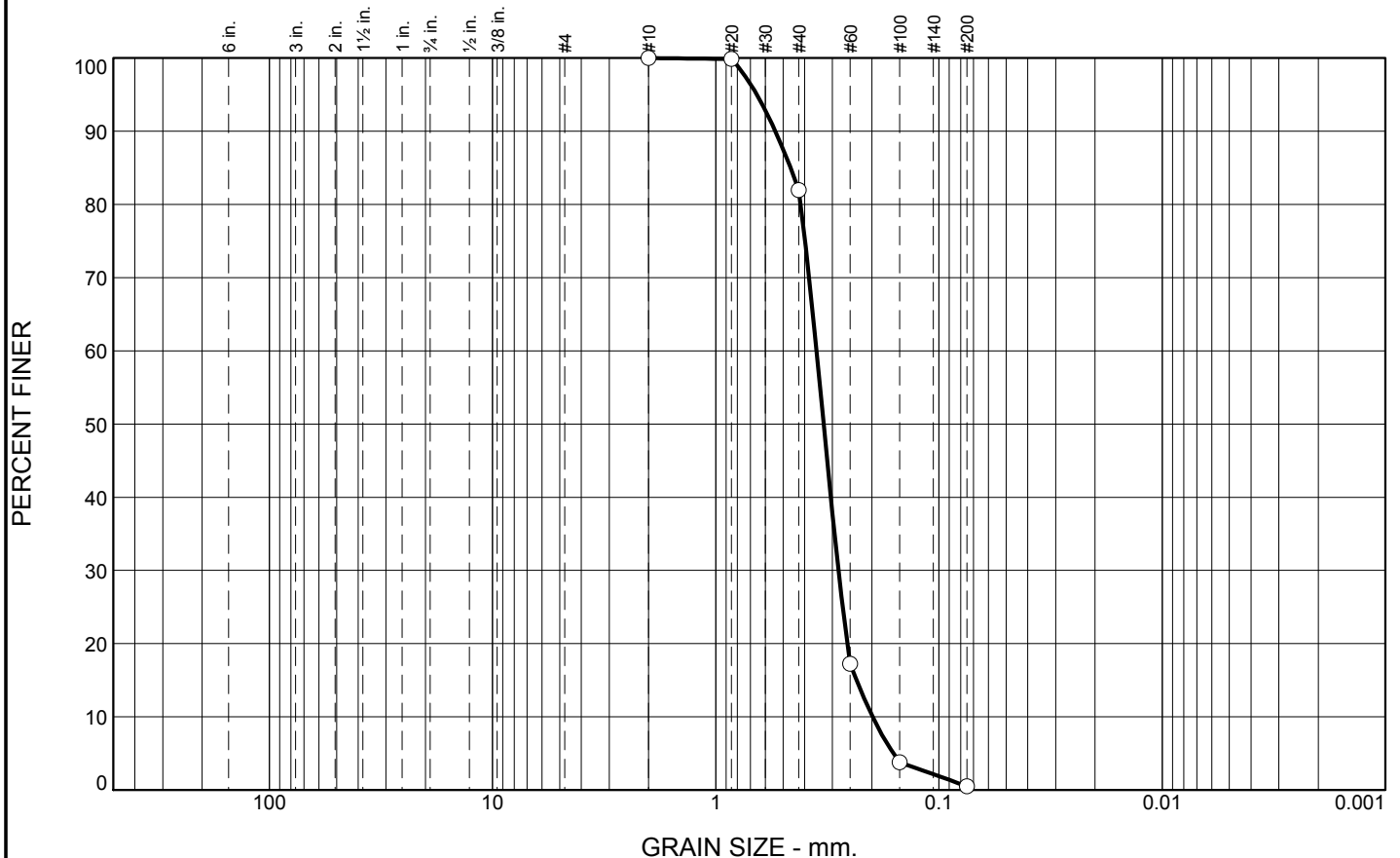
Depth: 3.0 - 4.5 (ft.)

Date: 10/14/10

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 **Report No.**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	18.1	81.4	0.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#10	100.0		
#20	99.9		
#40	81.9		
#60	17.3		
#100	3.8		
#200	0.5		

* (no specification provided)

Material Description
SAND, (SP), medium to fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.5411 D₈₅= 0.4627 D₆₀= 0.3537
D₅₀= 0.3287 D₃₀= 0.2823 D₁₅= 0.2341
D₁₀= 0.1983 C_u= 1.78 C_c= 1.14

Classification
USCS= SP AASHTO=

Remarks

Location: USACE Sample # WSI-12-10-10 A
Sample Number: TE Lab ID: 4737.04

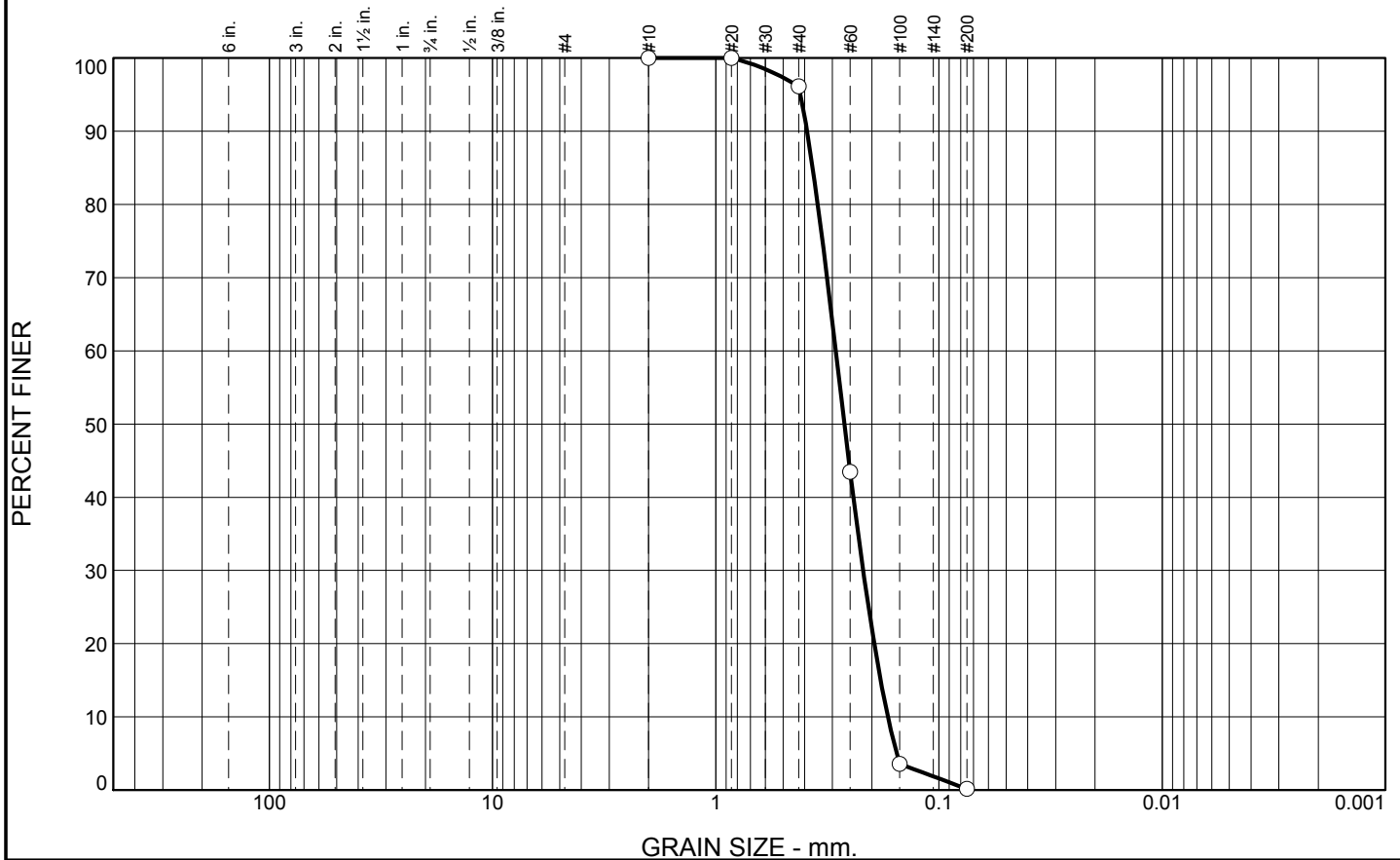
Depth: 1.0 - 2.0 (ft.)

Date: 10/14/10

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 **Report No.**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	3.9	95.9	0.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#10	100.0		
#20	100.0		
#40	96.1		
#60	43.5		
#100	3.6		
#200	0.2		

* (no specification provided)

Material Description
 SAND, (SP), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.3899 D₈₅= 0.3680 D₆₀= 0.2901
 D₅₀= 0.2654 D₃₀= 0.2187 D₁₅= 0.1827
 D₁₀= 0.1696 C_u= 1.71 C_c= 0.97

Classification
 USCS= SP AASHTO=

Remarks

Location: USACE Sample # WSI-12-10-10 B
 Sample Number: TE Lab ID: 4737.05

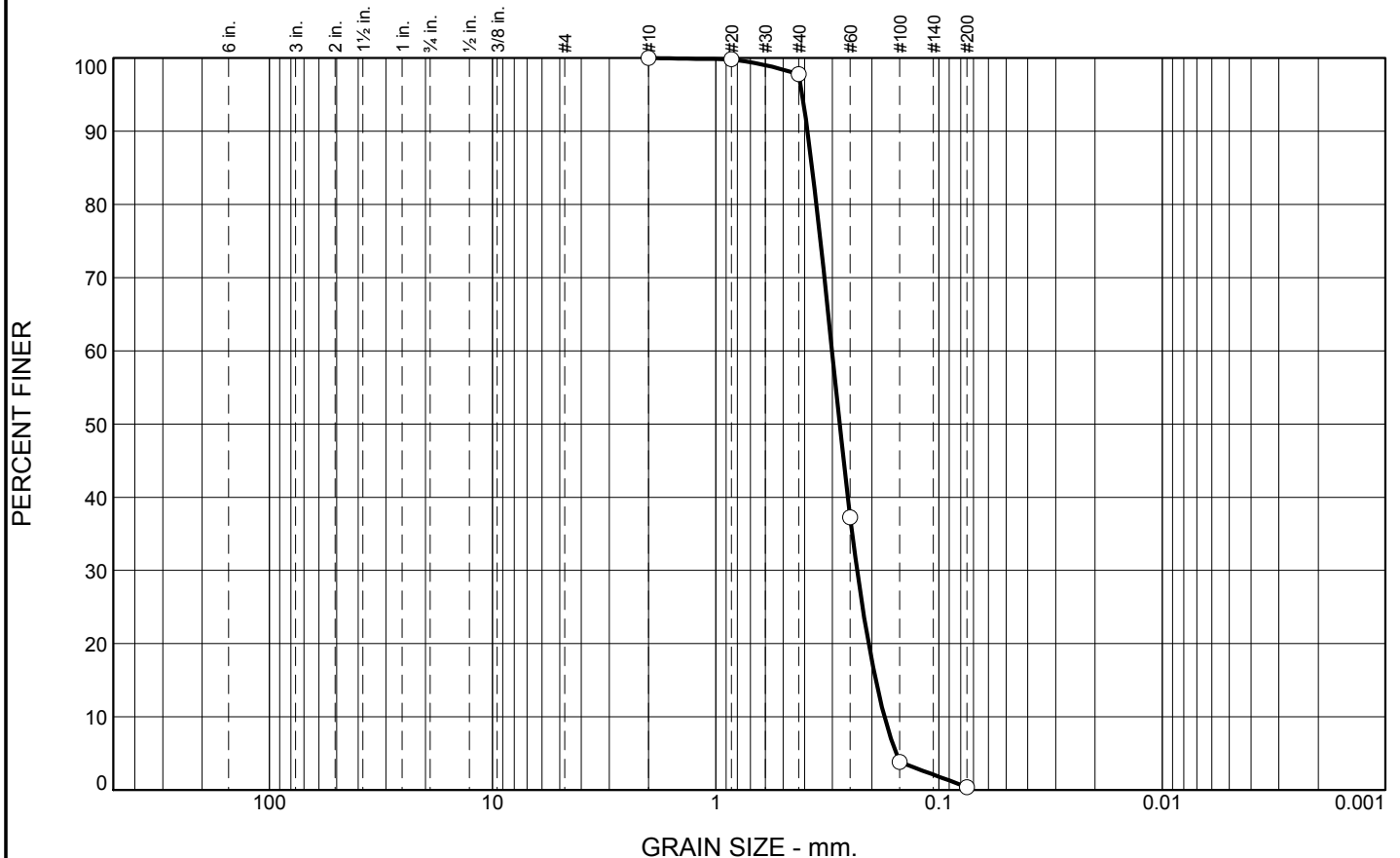
Depth: 2.0 - 3.0 (ft.)

Date: 10/14/10

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 **Report No.**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	2.2	97.4	0.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#10	100.0		
#20	99.8		
#40	97.8		
#60	37.3		
#100	3.8		
#200	0.4		

* (no specification provided)

Material Description
 SAND, (SP), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.3882 D₈₅= 0.3700 D₆₀= 0.3015
 D₅₀= 0.2786 D₃₀= 0.2327 D₁₅= 0.1920
 D₁₀= 0.1755 C_u= 1.72 C_c= 1.02

Classification
 USCS= SP AASHTO=

Remarks

Location: USACE Sample # WSI-12-10-10 C
 Sample Number: TE Lab ID: 4737.06

Depth: 3.0 - 4.0 (ft.)

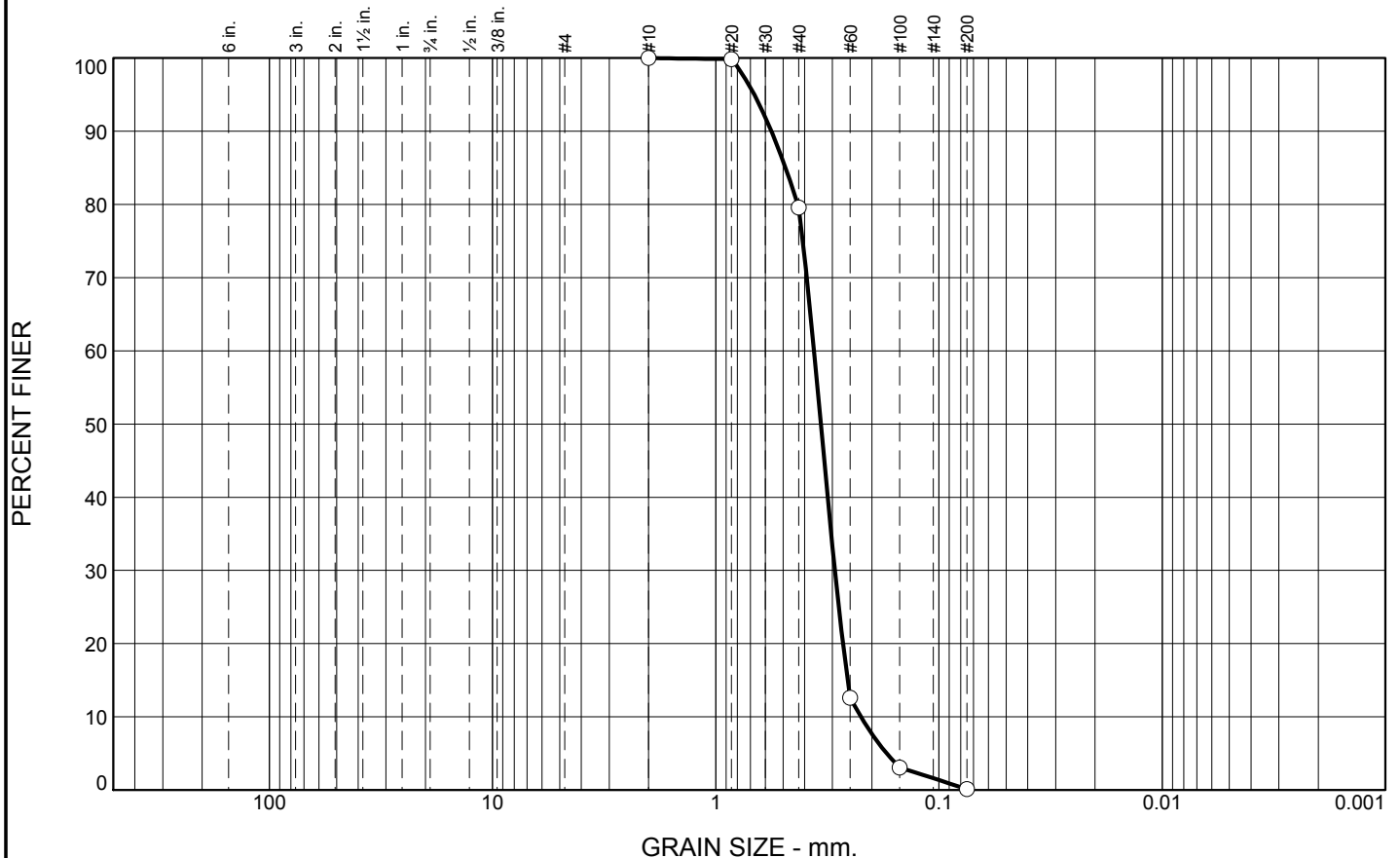
Date: 10/14/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 **Report No.**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	20.4	79.5	0.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#10	100.0		
#20	99.9		
#40	79.6		
#60	12.6		
#100	3.1		
#200	0.1		

* (no specification provided)

Material Description
 SAND, (SP), medium to fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.5635 D₈₅= 0.4873 D₆₀= 0.3629
 D₅₀= 0.3381 D₃₀= 0.2929 D₁₅= 0.2568
 D₁₀= 0.2237 C_u= 1.62 C_c= 1.06

Classification
 USCS= SP AASHTO=

Remarks

Location: USACE Sample # WSI-13-10-10 A
 Sample Number: TE Lab ID: 4737.07

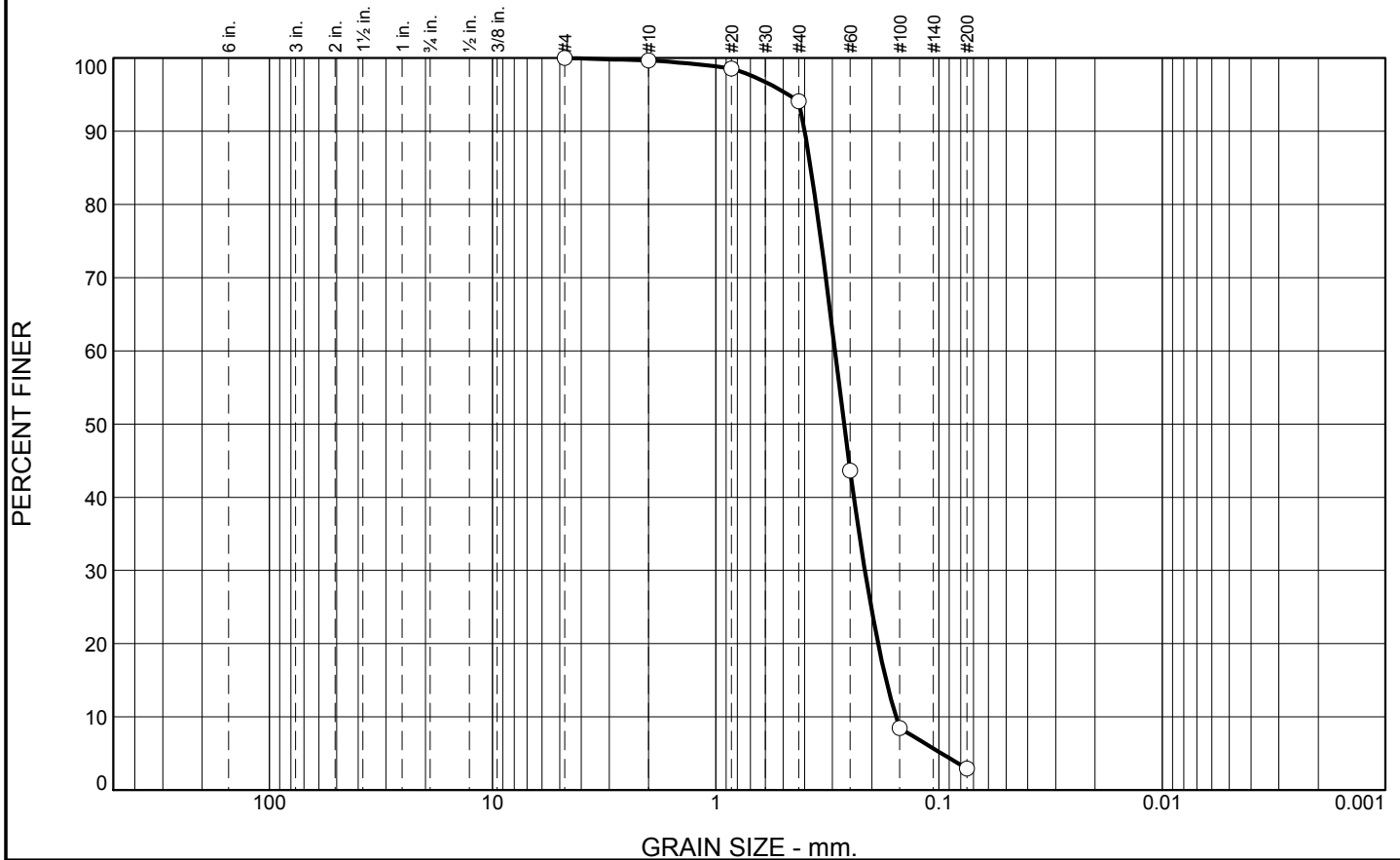
Depth: 1.0 - 2.0 (ft.)

Date: 10/14/10

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 **Report No.**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.3	5.6	91.2	2.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	99.7		
#20	98.6		
#40	94.1		
#60	43.7		
#100	8.5		
#200	2.9		

* (no specification provided)

Material Description

SAND, (SP), fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.3997 D₈₅= 0.3755 D₆₀= 0.2925
D₅₀= 0.2661 D₃₀= 0.2148 D₁₅= 0.1726
D₁₀= 0.1559 C_u= 1.88 C_c= 1.01

Classification

USCS= SP AASHTO=

Remarks

Location: USACE Sample # WSI-13-10-10 B
Sample Number: TE Lab ID: 4737.08

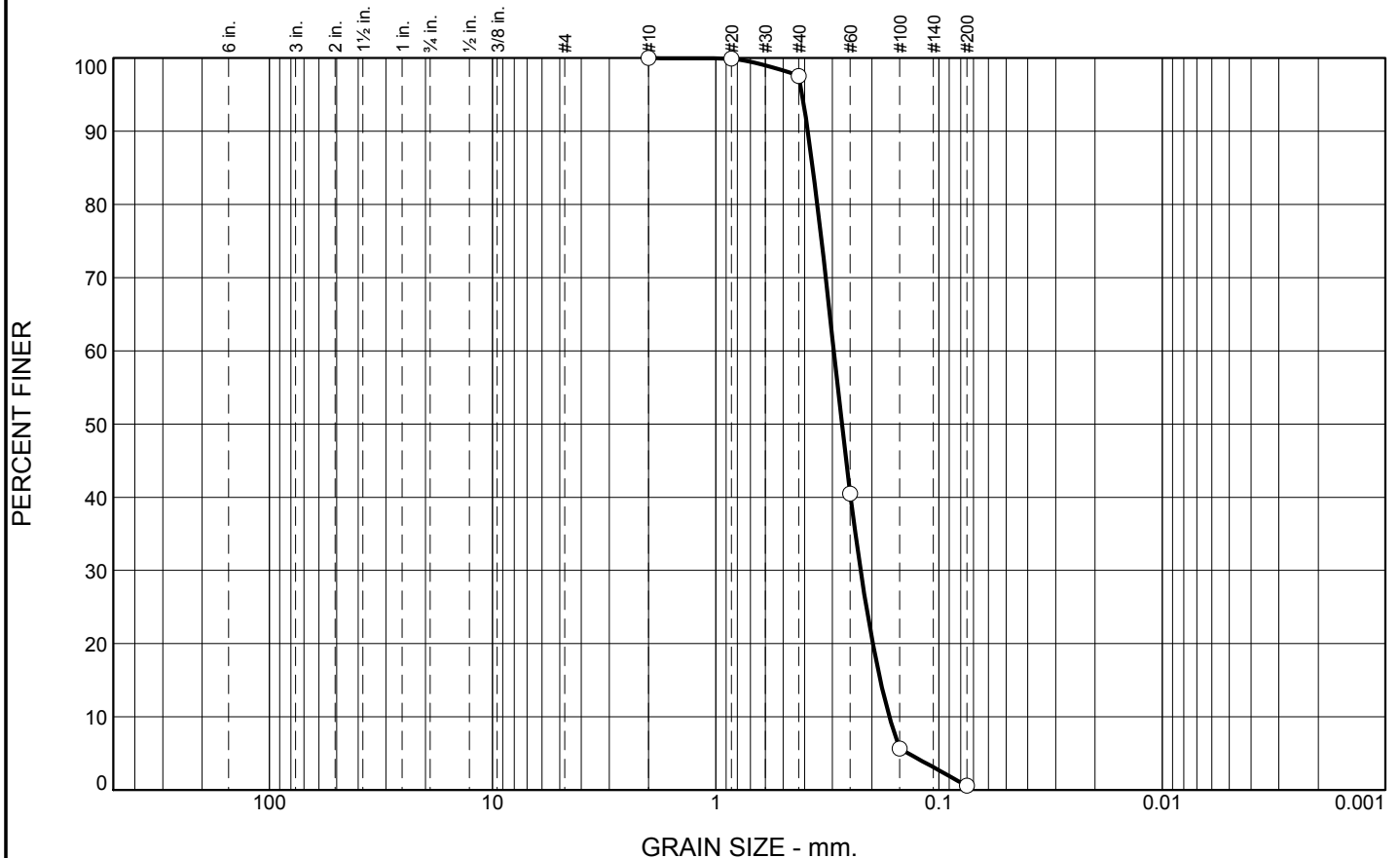
Depth: 2.0 - 3.0 (ft.)

Date: 10/14/10

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 **Report No.**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	2.4	97.0	0.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#10	100.0		
#20	99.9		
#40	97.6		
#60	40.5		
#100	5.6		
#200	0.6		

* (no specification provided)

Material Description

SAND, (SP), fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.3870 D₈₅= 0.3677 D₆₀= 0.2960
D₅₀= 0.2722 D₃₀= 0.2245 D₁₅= 0.1833
D₁₀= 0.1669 C_u= 1.77 C_c= 1.02

Classification

USCS= SP AASHTO=

Remarks

Location: USACE Sample # WSI-13-10-10 C
Sample Number: TE Lab ID: 4737.09

Depth: 3.0 - 4.0 (ft.)

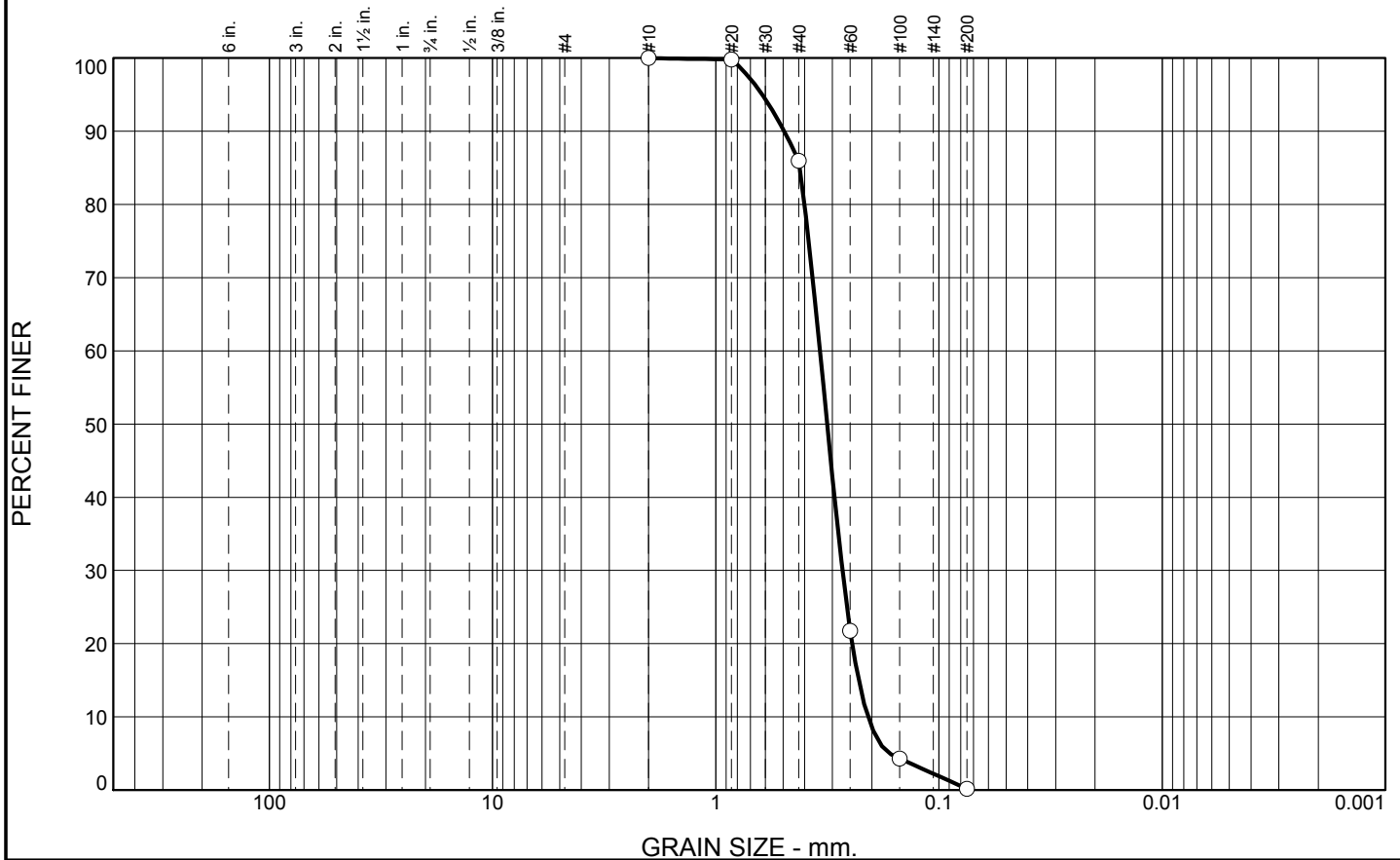
Date: 10/14/10

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Report No.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	14.0	85.8	0.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#10	100.0		
#20	99.8		
#40	86.0		
#60	21.7		
#100	4.3		
#200	0.2		

* (no specification provided)

Material Description
 SAND, (SP), medium to fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.4939 D₈₅= 0.4207 D₆₀= 0.3413
 D₅₀= 0.3170 D₃₀= 0.2708 D₁₅= 0.2291
 D₁₀= 0.2082 C_u= 1.64 C_c= 1.03

Classification
 USCS= SP AASHTO=

Remarks

Location: USACE Sample # WSI-13-10-10 D
 Sample Number: TE Lab ID: 4737.10

Depth: 4.0 - 5.0 (ft.)

Date: 10/14/10

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 **Report No.**

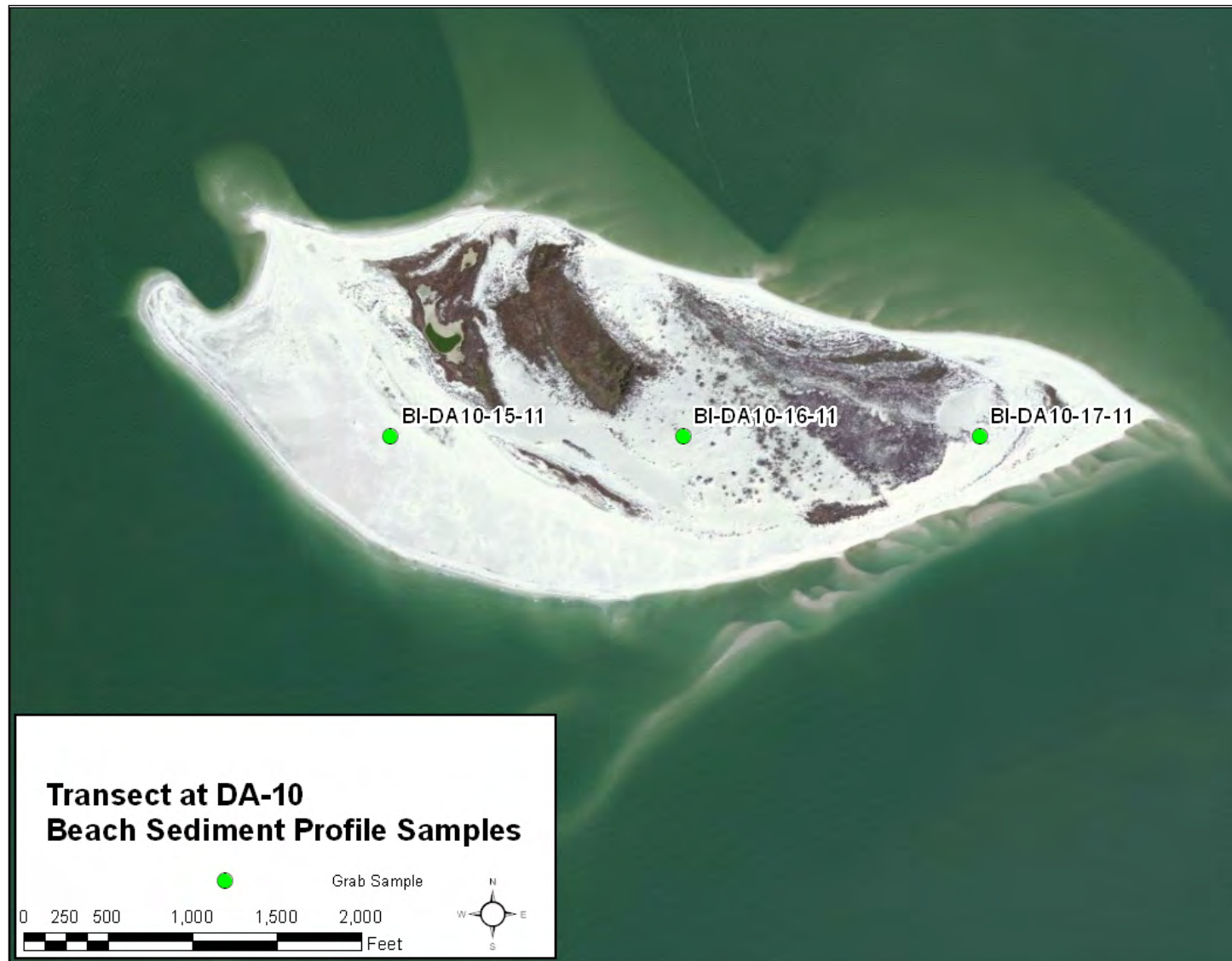
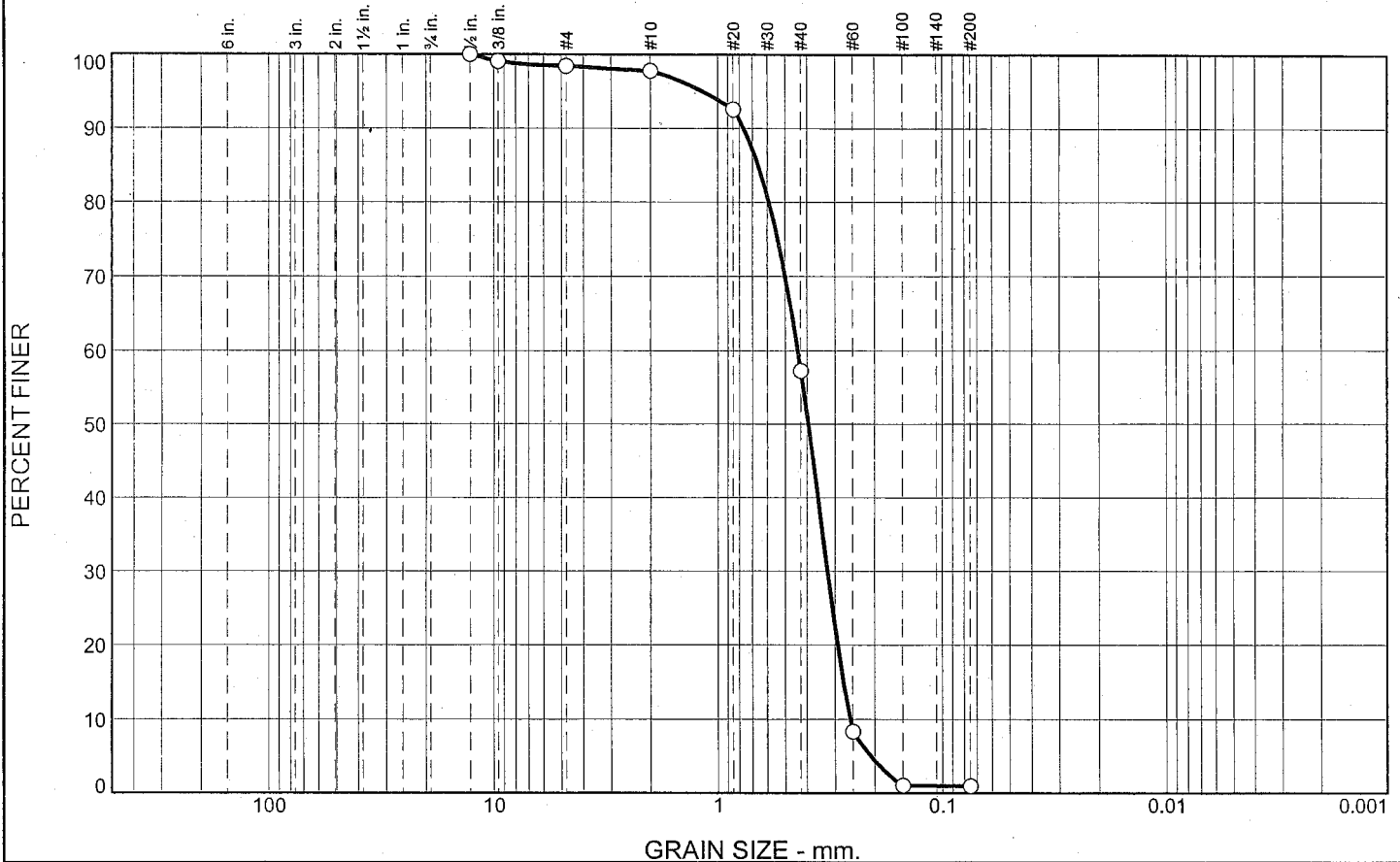


Figure 3.2.4.1 – Grab Sample locations for 2011 DA-10 sampling transect.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.6	0.6	40.5	56.3	1.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.5	100.0		
.375	99.1		
#4	98.4		
#10	97.8		
#20	92.6		
#40	57.3		
#60	8.4		
#100	1.0		
#200	1.0		

* (no specification provided)

Material Description
Medium to fine SAND, with trace shell

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.7646 D₈₅= 0.6592 D₆₀= 0.4383
D₅₀= 0.3937 D₃₀= 0.3238 D₁₅= 0.2751
D₁₀= 0.2567 C_u= 1.71 C_c= 0.93

Classification
USCS= SP AASHTO=

Remarks

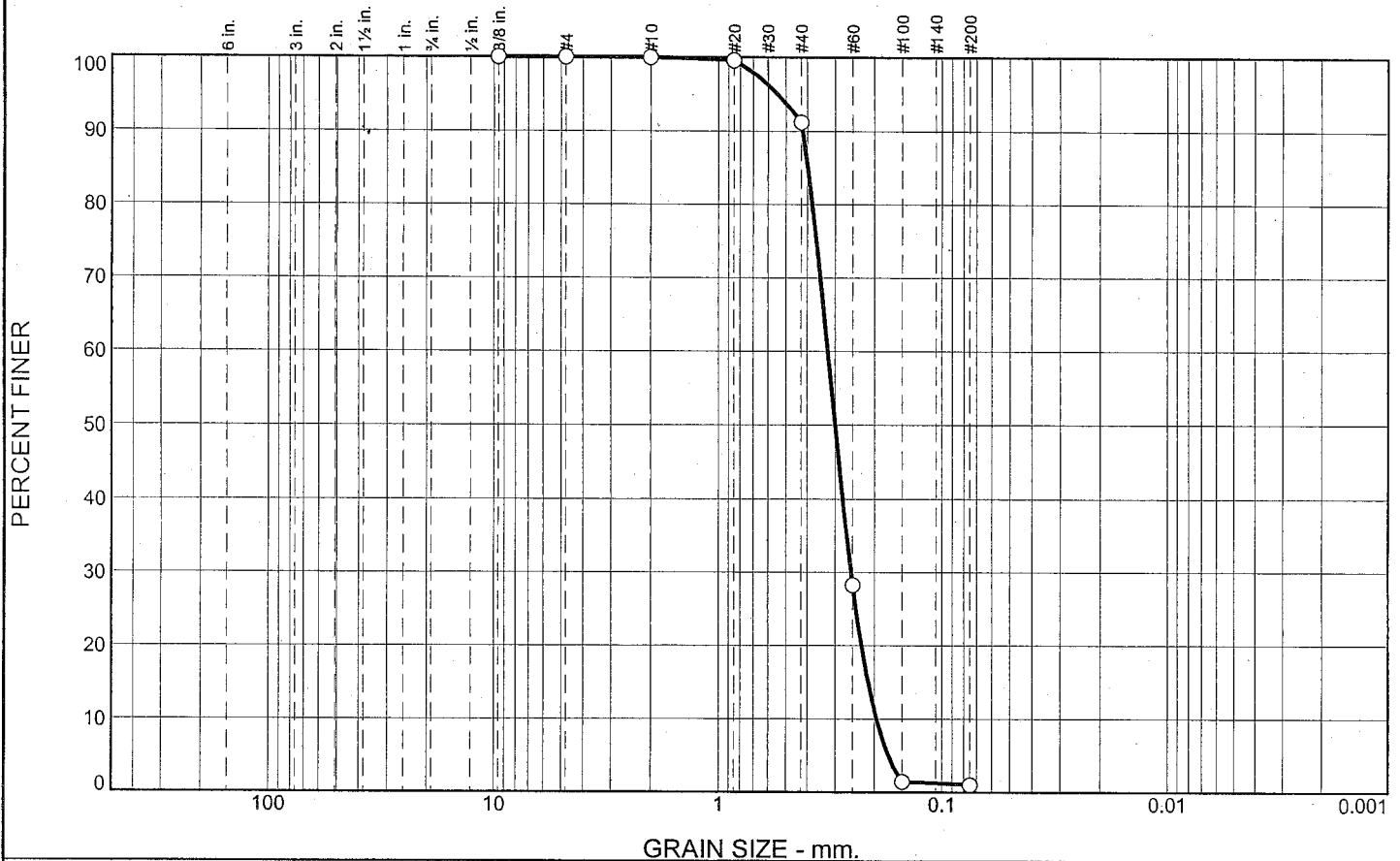
Location: BI-DA-10-15-11
Sample Number: 4981.01

Date: 4/26/11

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 **Report No.**

Particle Size Distribution Report



GRAIN SIZE - mm.

% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	8.8	90.2	1.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.6		
#40	91.2		
#60	28.2		
#100	1.5		
#200	1.0		

* (no specification provided)

Material Description

Fine SAND

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.4188 D₈₅= 0.3974 D₆₀= 0.3233
D₅₀= 0.2998 D₃₀= 0.2543 D₁₅= 0.2135
D₁₀= 0.1959 C_u= 1.65 C_c= 1.02

Classification

USCS= SP AASHTO=

Remarks

Location: BI-DA-10-16-11
Sample Number: 4981.02

Date: 4/26/11

Thompson Engineering

Mobile, Alabama

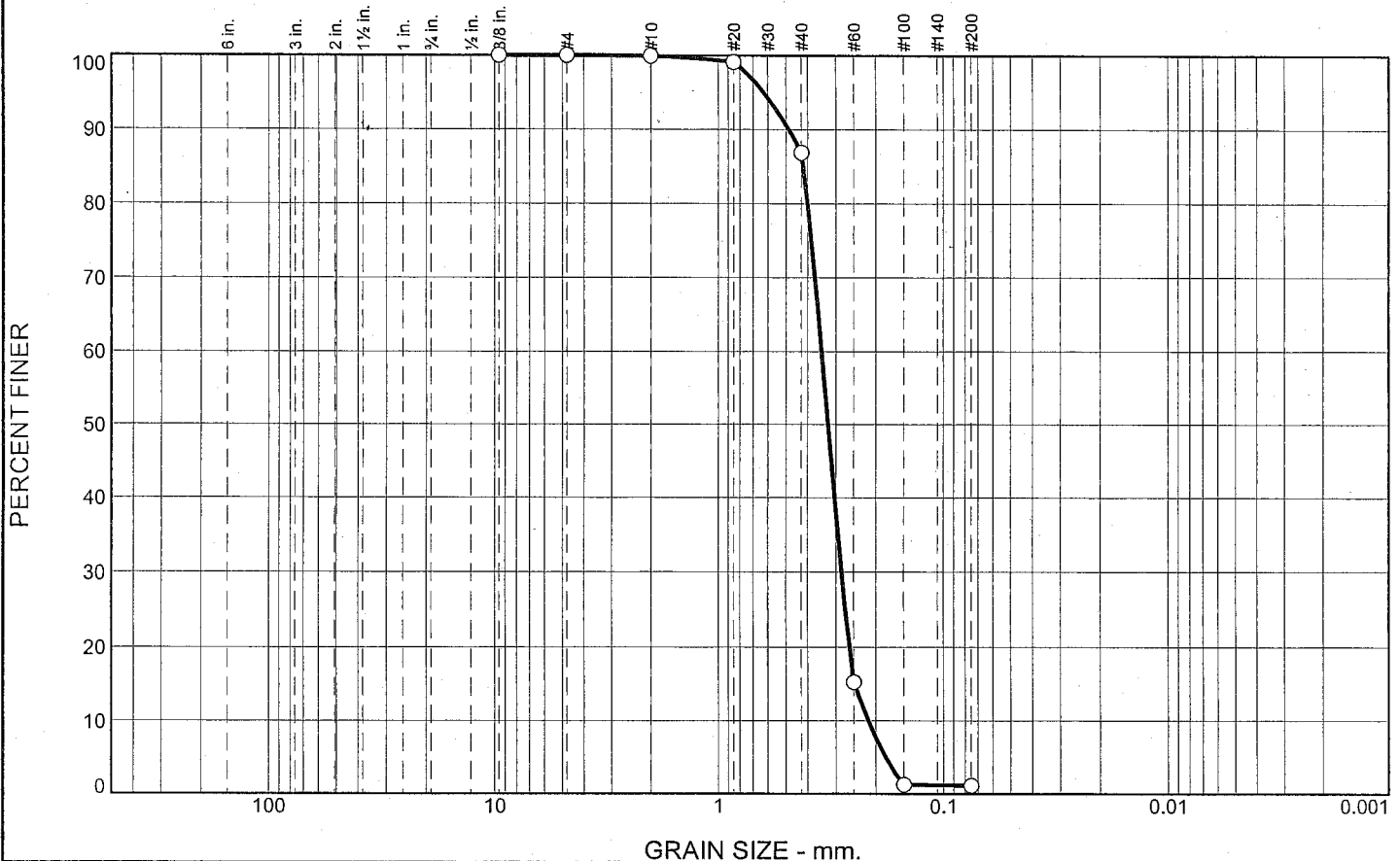
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Report No.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	13.0	85.7	1.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.1		
#40	86.9		
#60	15.3		
#100	1.3		
#200	1.2		

* (no specification provided)

Material Description
Medium to fine SAND

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.4850 D₈₅= 0.4175 D₆₀= 0.3465
D₅₀= 0.3244 D₃₀= 0.2831 D₁₅= 0.2482
D₁₀= 0.2156 C_u= 1.61 C_c= 1.07

Classification
USCS= SP AASHTO=

Remarks

Location: BI-DA-10-17-11
Sample Number: 4981.03

Date: 4/26/11

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 Report No.

APPENDIX B

GEOPHYSICAL INVESTIGATION

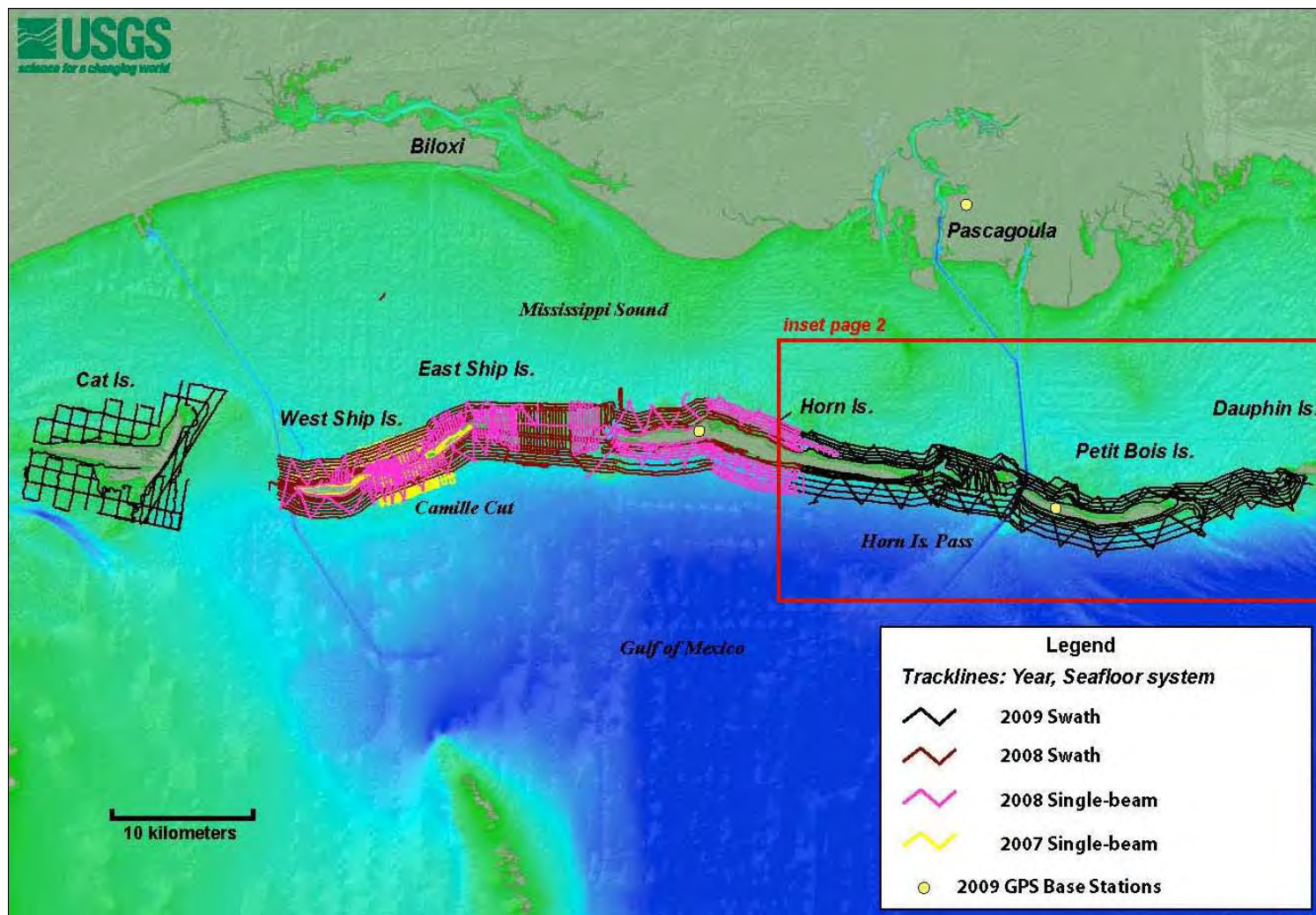


Figure 4.1.1 – Past geophysical surveys conducted by the USGS at Gulf Islands National Seashore.

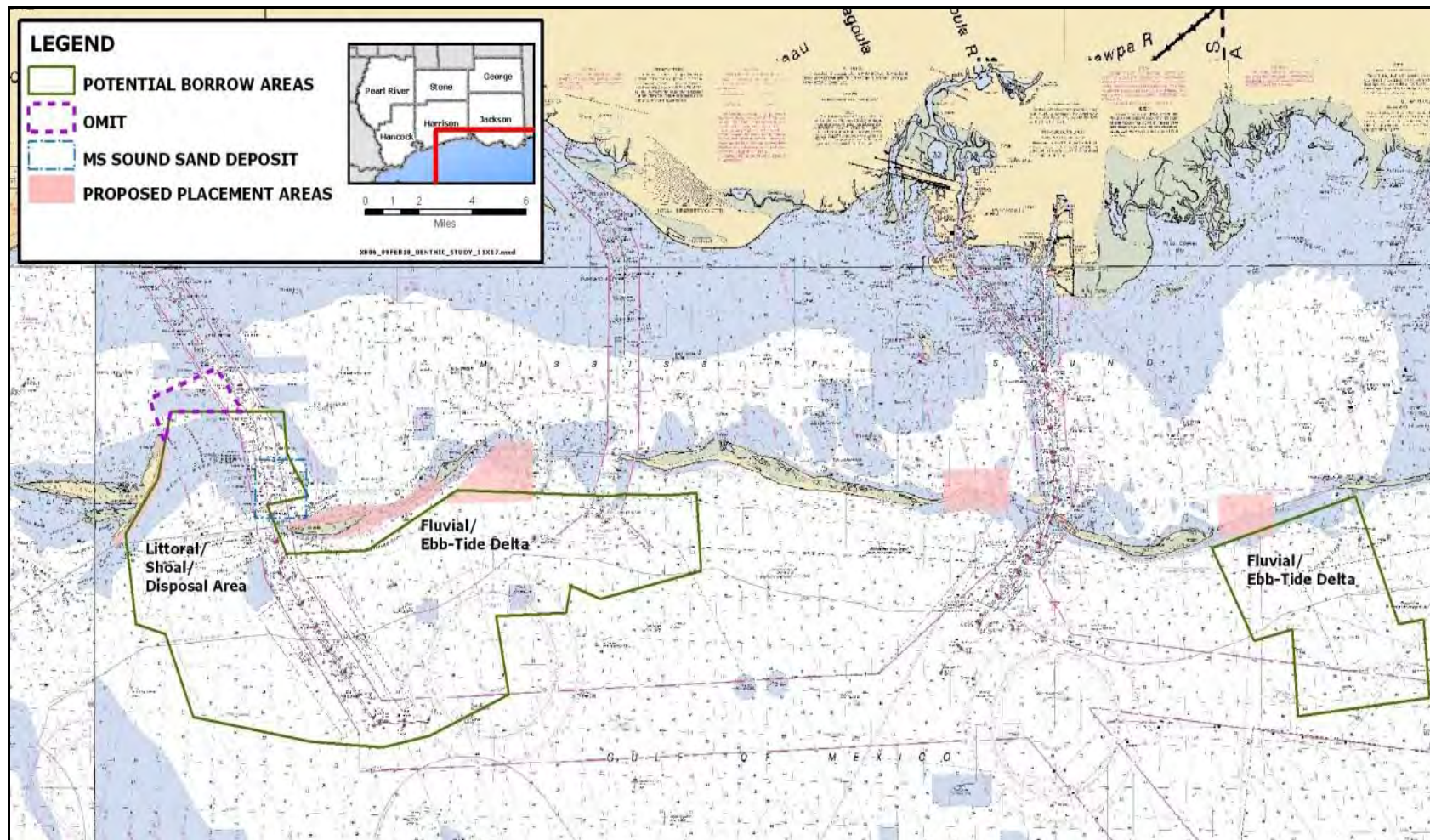


Figure 4.1.2 – Areas designated for geophysical survey to identify potential sand borrow sites.

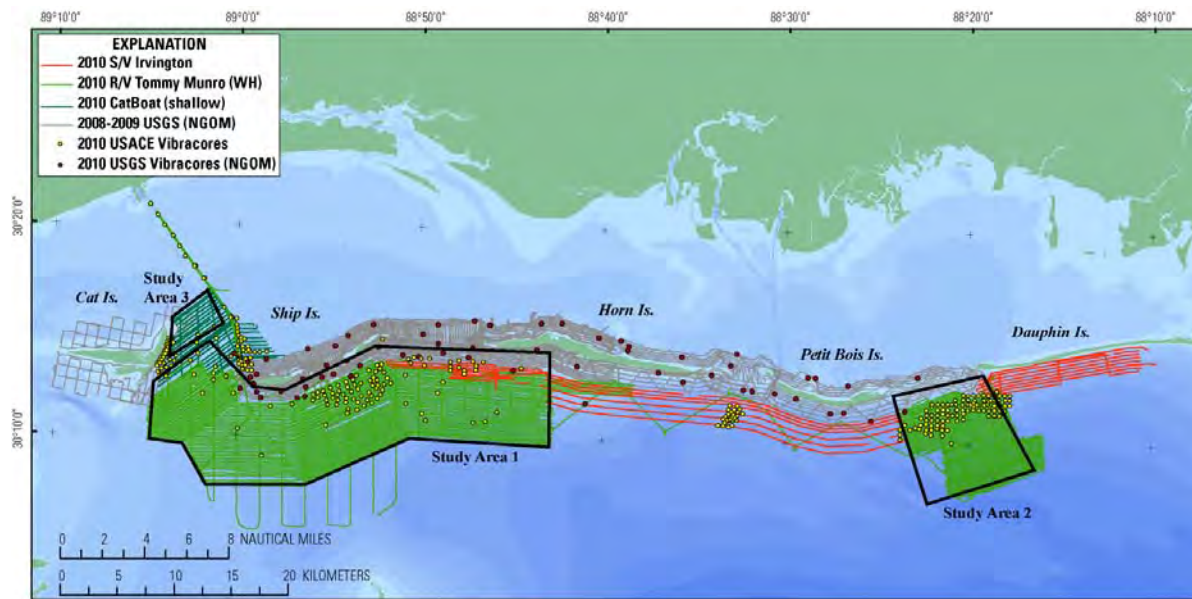


Figure 4.1.3 Map showing the tracklines for geophysical data collected. Vibracores collected by the USACE for the MsCIP project and the USGS for the Northern Gulf of Mexico (NGOM) project are shown. Main features were separated into three Study Areas (From Twichell et al. 2011).

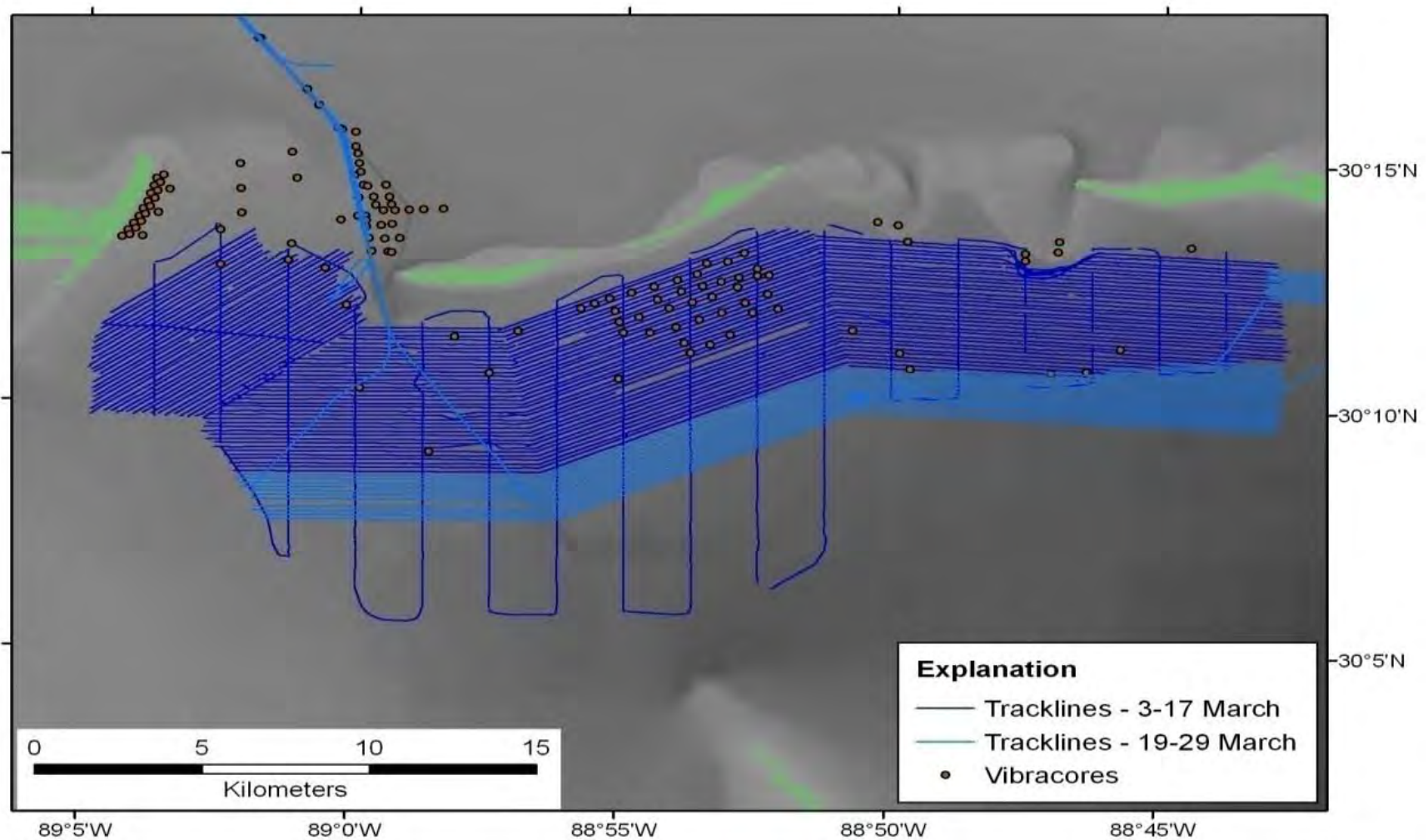


Figure 4.2.1 - Tracklines along which geophysical data (Chirp seismic-reflection, swath bathymetry, and side scan sonar) were collected as well as locations of vibracores collected by the U.S. Army Corps of Engineers in the western survey area.

Offshore Sand Borrow Investigation, Phases 1 & 2 GEOPHYSICAL INVESTIGATION

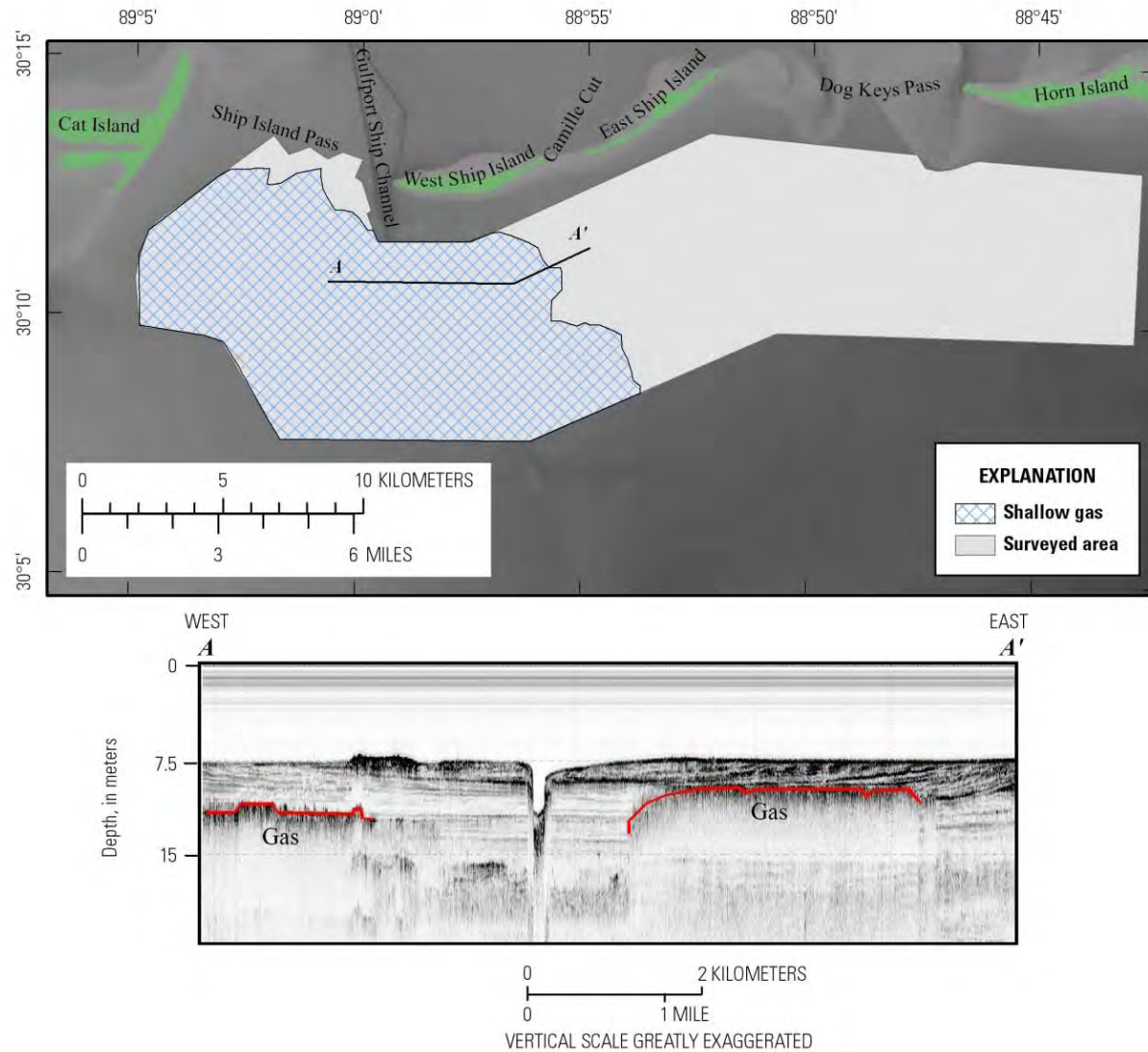


Figure 4.2.2. Map showing the extent of the survey area affected by shallow gas (gray polygon) and an example profile showing the blanking of the deeper stratigraphy by gas (from Twichell et al., 2011)

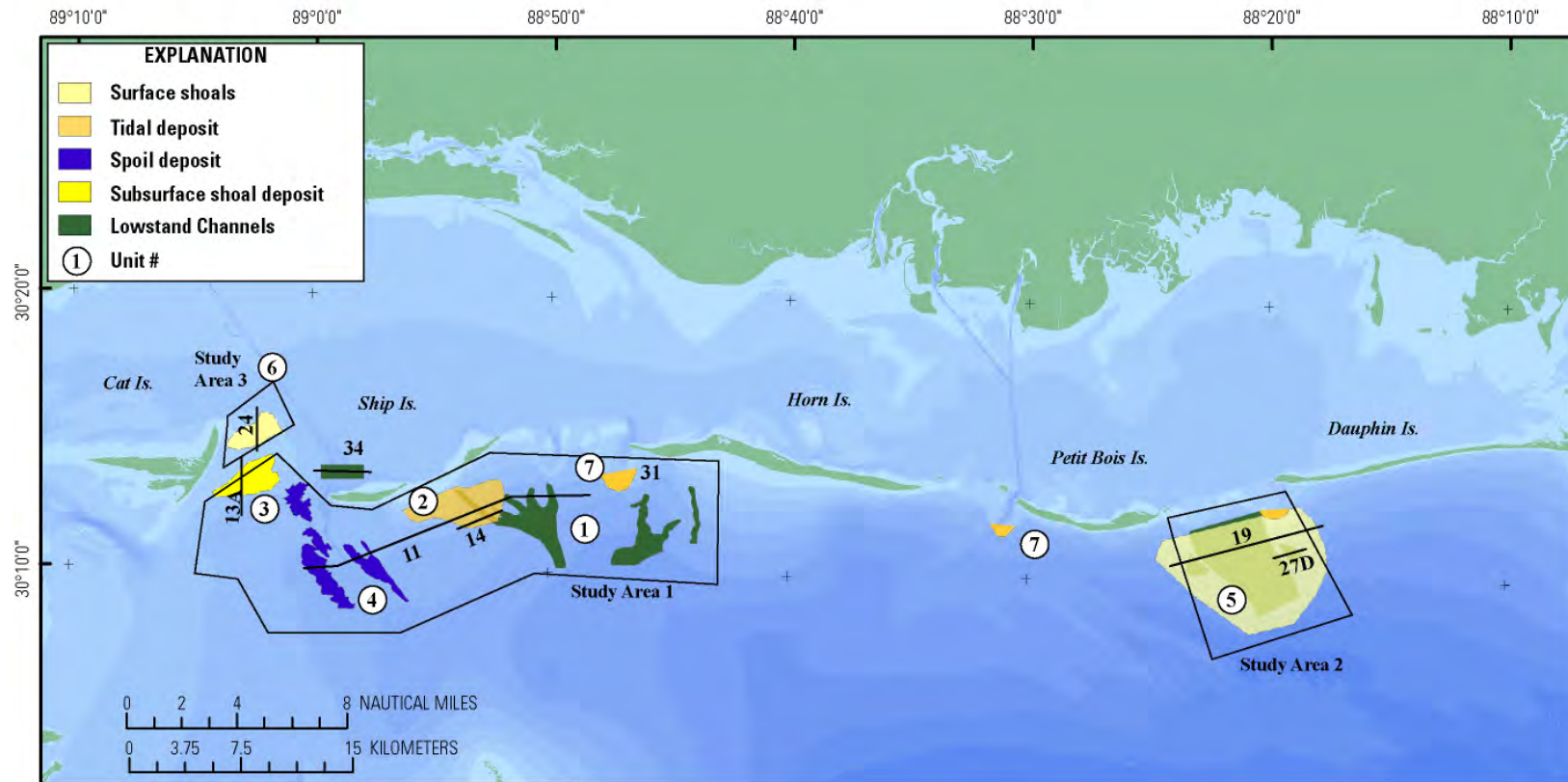


Figure 4.3.3 Locations of potential sand resources identified in this study. Each deposit is assigned a unit number that corresponds to textural information in Table 4.3.1 (from Twichell et al., 2011)

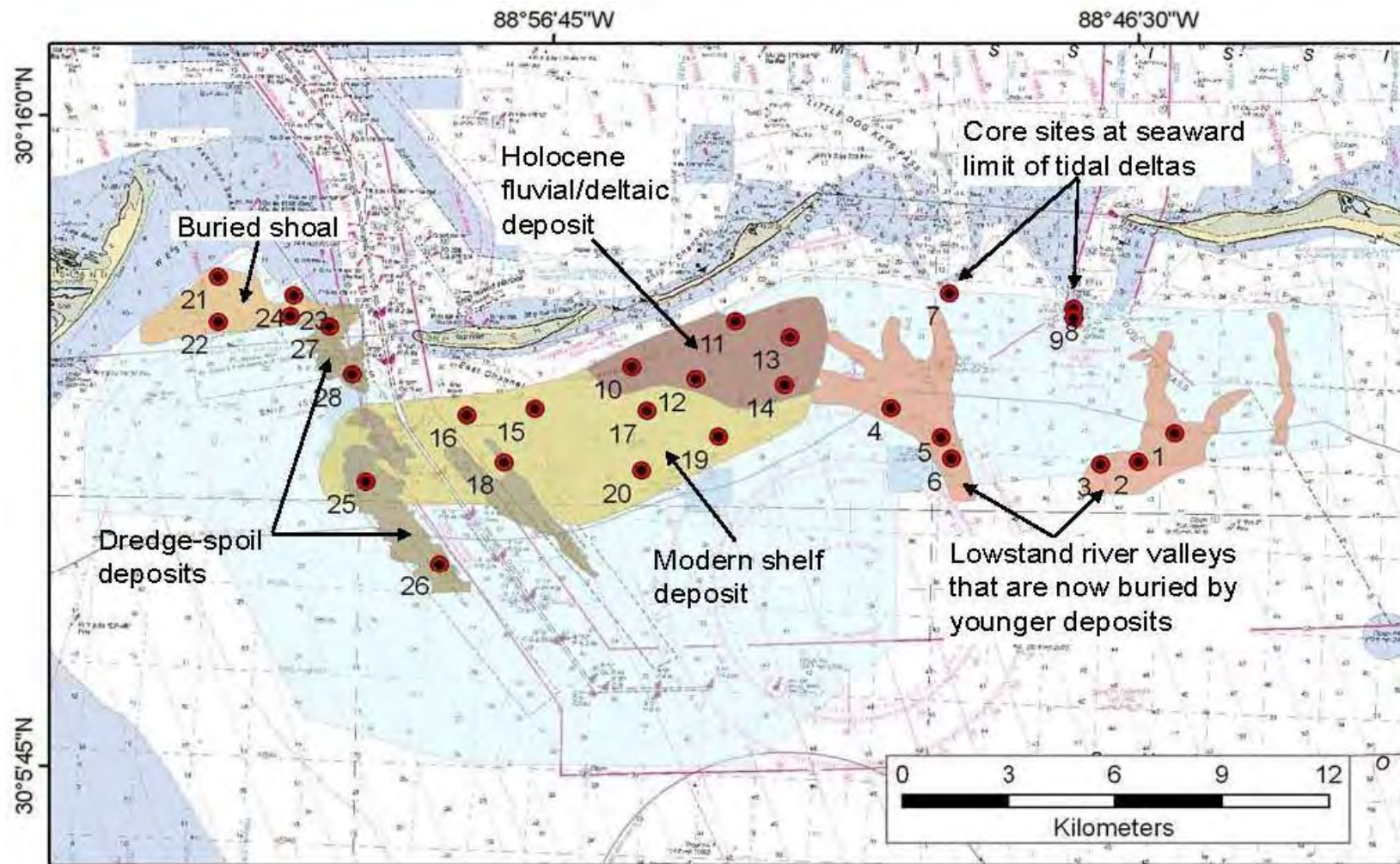


Figure 4.3.4 – Initial field interruptions of geophysical data with recommended boring proof locations, western area of investigation

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Figure 5.1.1 – VibraCore unit on the deck of the vessel. The unit is lifted from the deck by a crane and lowered to the bottom.



Figure 5.1.2 – VibraCore sampler has been lowered to the bottom and the vibratory unit is activated to push the sample tube into the upper 20 feet of sediment



Figure 5.1.3 – The inner sleeve of the VibraCore containing the sediment sample is removed



Figure 5.1.4 – Personnel for the USACE and the NPS inspect and log the sample after the inner sleeve is cut open.

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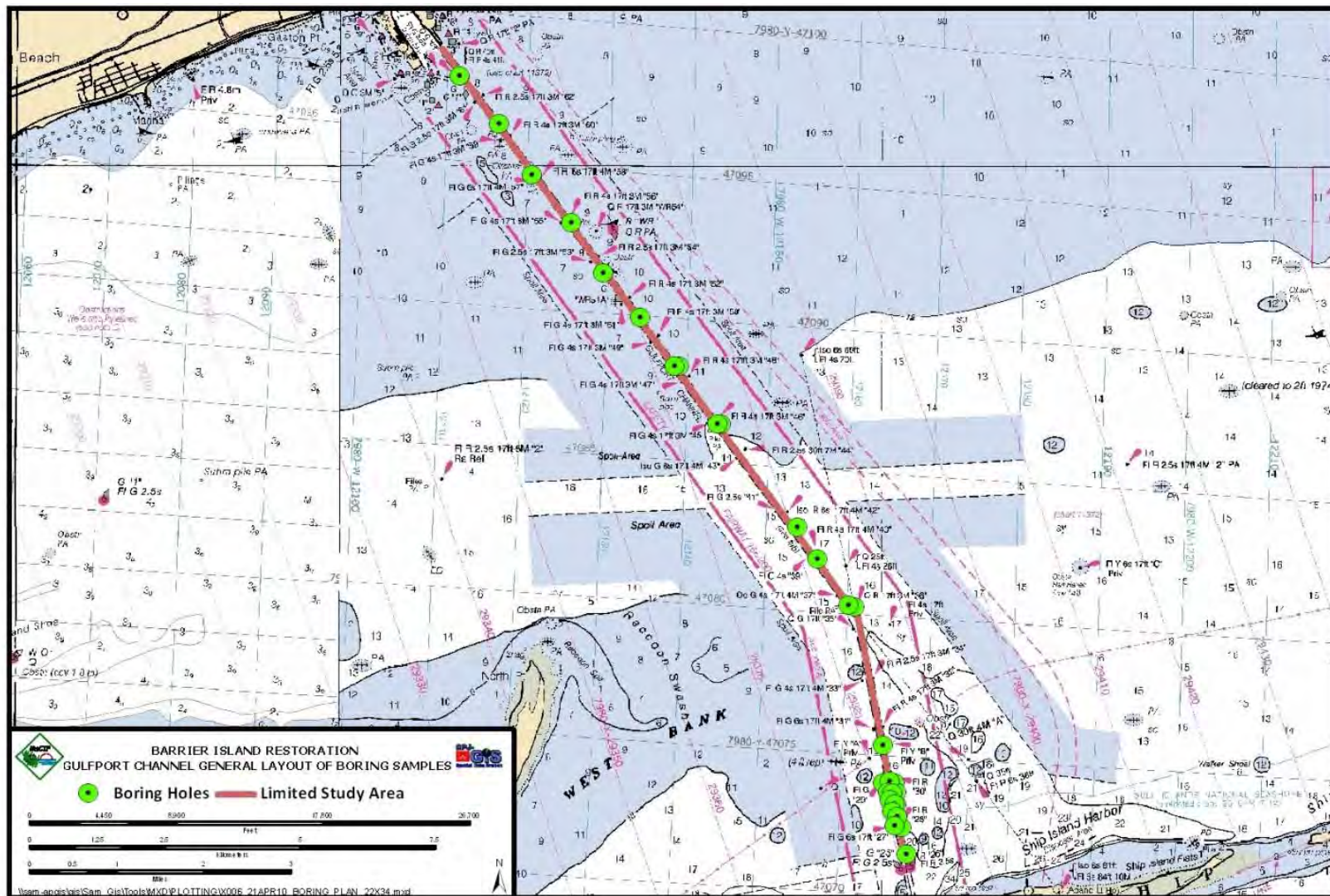


Figure 5.2.1 – General layout of the VibraCore borings completed for Gulfport Channel.

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TABLE 5.2.1 - MISSISSIPPI BARRIER ISLAND VIBRACORE SAMPLES - GULFPORT CHANNEL													
BORING	SAMPLE DEPTH (ft BGS)	LOCATION	LATITUDE	LONGITUDE	USCS	ANGULARITY	WET COLOR CODE	WET COLOR	DRY COLOR CODE	DRY COLOR	D ₅₀	% FINES	CaCO3
BI-GC-1-10		GULFPORT CHANNEL	30.26019	-89.00484	CL	NO SAMPLE TAKEN							
BI-GC-2-10		GULFPORT CHANNEL	30.26000	-89.00639	CL	NO SAMPLE TAKEN							
BI-GC-3-10A	15.0 - 17.0	GULFPORT CHANNEL	30.27306	-89.01639	SM	CLAY FINES	10YR 4/2	DK GRAYISH BROWN	10YR 5/3	BROWN	0.1083	18.1	NO
BI-GC-3-10B	17.0 - 19.0	GULFPORT CHANNEL			SM	SUBANGULAR TO ROUNDED	2.5Y 4/2	DK GRAYISH BROWN	10YR 4/2	DK GRAYISH BROWN	0.0995	17.3	NO
BI-GC-4-10		GULFPORT CHANNEL	30.29052	-89.03094	CL	NO SAMPLE TAKEN							
BI-GC-5-10		GULFPORT CHANNEL	30.28971	-89.03165	CL	NO SAMPLE TAKEN							
BI-GC-6-10		GULFPORT CHANNEL	30.3001	-89.03927	CL	NO SAMPLE TAKEN							
BI-GC-7-10		GULFPORT CHANNEL	30.29972	-89.04005	CL	NO SAMPLE TAKEN							
BI-GC-8-10A	10.42 - 15.42	GULFPORT CHANNEL	30.26748	-89.01228	SP-SM	SUBANGULAR TO ROUNDED	WHITE PAGE 2.5Y/8	WHITE	10YR 7/1	LT GRAY	0.2412	5.2	NO
BI-GC-8-10B	15.42 - 19.17	GULFPORT CHANNEL			SP	SUBANGULAR TO ROUNDED	WHITE PAGE 2.5Y/8.5	WHITE	WHITE PAGE 10YR 9/1	WHITE	0.2889	1.7	NO
BI-GC-9-10A	0.0 - 5.0	GULFPORT CHANNEL	30.23676	-88.99945	SP	SUBANGULAR TO ROUNDED	5Y 5/1	GRAY	2.5Y 6/1	GRAY	0.1923	2.9	NO
BI-GC-9-10B	5.0 - 9.0	GULFPORT CHANNEL			SP-SM	SUBANGULAR TO ROUNDED	5Y 5/1	GRAY	5Y 7/1	LT. GRAY	0.1612	7.7	NO
BI-GC-9-10C	9.08 - 10.0	GULFPORT CHANNEL			CL	SUBANGULAR TO ROUNDED	5Y 4/1	DK GRAY	5Y 5/1	GRAY	*	58.8	YES
BI-GC-9-10D	10.0 - 14.0	GULFPORT CHANNEL			SP-SM	SUBANGULAR TO ROUNDED	5Y 5/1	GRAY	5Y 6/1	GRAY	0.1477	7.3	YES
BI-GC-10-10A	0.0 - 4.33	GULFPORT CHANNEL	30.23017	-88.99987	SP-SM	SUBANGULAR TO ROUNDED	5Y 5/1	GRAY	5Y 6/1	GRAY	0.1819	7.0	NO
BI-GC-10-10B	5.75 - 11.75	GULFPORT CHANNEL			SP	SUBANGULAR TO ROUNDED	5Y 6/1	GRAY	5Y 7/1	LT. GRAY	0.1921	4.8	NO
BI-GC-11-10A	0.0 - 5.0	GULFPORT CHANNEL	30.22261	-88.99595	SP	SUBANGULAR TO ROUNDED	5Y 6/1	GRAY	5Y 7/1	LT. GRAY	0.2064	1.9	NO
BI-GC-11-10B	5.0 - 10.0	GULFPORT CHANNEL			SP	SUBANGULAR TO ROUNDED	5Y 5.5/1	GRAY	5Y 7.5/1	LT. GRAY	0.1909	2.0	NO
BI-GC-11-10C	10.0 - 15.0	GULFPORT CHANNEL			SP	SUBANGULAR TO ROUNDED	5Y 5/1	GRAY	5Y 7/1	LT. GRAY	0.1929	2.3	NO
BI-GC-12-10-A	0.0 - 5.0	GULFPORT CHANNEL	30.21882	-88.99483	SP	SUBANGULAR TO ROUNDED	5Y 6/1	GRAY	2.5Y 7/1	LT. GRAY	0.2260	3.7	NO
BI-GC-12-10B	5.0 - 10.0	GULFPORT CHANNEL			SP	SUBANGULAR TO ROUNDED	5Y 5/1	GRAY	5Y 6.5/1	GRAY	0.1738	3.6	NO
BI-GC-12-10C	10.0 - 14.0	GULFPORT CHANNEL			SP-SM	SUBANGULAR TO ROUNDED	5Y 6/1	GRAY	2.5Y 6.5/1	GRAY	0.1867	6.8	NO
BI-GC-13-10		GULFPORT CHANNEL	30.34838	-89.08134	CL	NO SAMPLE TAKEN							
BI-GC-14-10		GULFPORT CHANNEL	30.33999	-89.07405	CL	NO SAMPLE TAKEN							
BI-GC-15-10		GULFPORT CHANNEL	30.33186	-89.00784	CL	NO SAMPLE TAKEN							
BI-GC-16-10		GULFPORT CHANNEL	30.3234	-89.00004	CL	NO SAMPLE TAKEN							
BI-GC-17-10A	10.7 - 13.2	GULFPORT CHANNEL	30.1556	-89.05412	SP-SM	SUBANGULAR TO ROUNDED	10YR 5/1	GRAY	10YR 5/1	GRAY	0.1250	9.4	NO
BI-GC-17-10A (CLAY LENS)		GULFPORT CHANNEL				CLAY FINES	GLE Y1 3/5GY	VERY DK GREEN GRAY	GLE Y1 3/5GY	VERY DK GREEN GRAY			
BI-GC-18-10A	13.8 - 19.0	GULFPORT CHANNEL	30.30768	-89.04685	SP-SM	SUBANGULAR TO ROUNDED	10YR 4/1	DK GRAY	10YR 6/1	GRAY	0.1924	5.5	NO
BI-GC-19-10A	0.0 - 5.0	GULFPORT CHANNEL	30.22645	-88.99714	SP	SUBANGULAR TO ROUNDED	2.5Y 6/2	LT BROWNISH GRAY	2.5Y 7/2	LT GRAY	0.2667	2.8	NO
BI-GC-19-10B	5.0 - 10.0	GULFPORT CHANNEL			SP	SUBANGULAR TO ROUNDED	2.5Y 6/1	GRAY	2.5Y 7/1	LT GRAY	0.2753	2.3	NO
BI-GC-19-10C	10.0 - 15.0	GULFPORT CHANNEL			SP	SUBANGULAR TO ROUNDED	2.5Y 6/1	GRAY	2.5Y 7.5/1	LT GRAY	0.2955	2.4	NO
BI-GC-19-10D	15.0 - 19.0	GULFPORT CHANNEL			SP	SUBANGULAR TO ROUNDED	5Y 6/1	GRAY	2.5Y 7/1	LT GRAY	0.2526	3.6	NO
BI-GC-20-10A	5.0 - 9.0	GULFPORT CHANNEL	30.22853	-88.99733	SP-SM	SUBANGULAR TO ROUNDED	5Y 5/1	GRAY	2.5Y 7/2	LT GRAY	0.1752	8.4	NO

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TABLE 5.2.1 (cont'd) MISSISSIPPI BARRIER ISLAND VIBRACORE SAMPLES - GULFPORT CHANNEL													
BORING	SAMPLE DEPTH (ft BGS)	LOCATION	LATITUDE	LONGITUDE	USCS	ANGULARITY	WET COLOR CODE	WET COLOR	DRY COLOR CODE	DRY COLOR	D ₅₀	% FINES	CaCO3
BI-GC-20-10B	9.0 - 13.0	GULFPORT CHANNEL			SP	SUBANGULAR TO ROUNDED	5Y 5/1	GRAY	2.5Y 7/2	LT GRAY	0.1744	3.6	NO
BI-GC-21-10A	3.0 – 5.0	GULFPORT CHANNEL	30.22879	-88.99724	SP-SM	SUBANGULAR TO ROUNDED	5Y 5/1	GRAY	2.5Y 7/2	LT GRAY	0.1863	6.5	NO
BI-GC-21-10B	6.5 - 10.5	GULFPORT CHANNEL			SP-SM	SUBANGULAR TO ROUNDED	5Y 5/1	GRAY	2.5Y 7/2	LT GRAY	0.1848	8.1	NO
BI-GC-22-10A	5.0 – 7.0	GULFPORT CHANNEL	30.23055	-88.99846	SM	SUBANGULAR TO ROUNDED	2.5Y 4/1	DK GRAY	2.5Y 5/2	GRAYISH BROWN	0.0991	28.4	NO
BI-GC-23-10A	0.0 - 4.1	GULFPORT CHANNEL	30.22871	-88.99871	SM	SUBANGULAR TO ROUNDED	2.5Y 4/1	DK GRAY	2.5Y 5.5/2	GRAYISH BROWN	0.1607	19	NO
BI-GC-23-10B	4.1 - 7.0	GULFPORT CHANNEL			SM	CLAY FINES	2.5Y 5/1	GRAY	2.5Y 6/2	LT BROWNISH GRAY	0.1085	27.9	NO
BI-GC-23-10C	9.0 - 11.0	GULFPORT CHANNEL			SM	CLAY FINES	2.5Y 4/2	DK GRAYISH BROWN	2.5Y 6/2	LT BROWNISH GRAY	0.0874	39.7	NO
BI-GC-24-10A	5.4 - 9.5	GULFPORT CHANNEL	30.22847	-88.99781	SM	CLAY FINES	2.5Y 4/1	DK GRAY	2.5Y 5.5/2	GRAYISH BROWN	0.1239	18.8	NO
BI-GC-25-10A	4.4 - 10.0	GULFPORT CHANNEL	30.22733	-88.99844	SM	SUBANGULAR TO ROUNDED	5Y 4/1	DK GRAY	2.5Y 6/2	LT BROWNISH GRAY	0.1386	14.7	YES
BI-GC-25-10B	10.0 - 16.0	GULFPORT CHANNEL			SP	SUBANGULAR TO ROUNDED	5Y 6/1	GRAY	2.5Y 7/1	LT GRAY	0.1877	3.7	YES
BI-GC-26-10	0.0 - 6.0	GULFPORT CHANNEL	30.22664	-88.99749	CL	NO SAMPLE TAKEN							
BI-GC-27-10A	6.0 - 11.8	GULFPORT CHANNEL	30.22578	-88.99845	SP	SUBANGULAR TO ROUNDED	5Y 6/1	GRAY	2.5Y 7/1	LT GRAY	0.2398	3.1	NO
BI-GC-27-10B	0.0 - 5.0	GULFPORT CHANNEL			SP-SM	SUBANGULAR TO ROUNDED	5Y 6/1	GRAY	5Y 7/1	LT GRAY	0.2513	5.5	NO
BI-GC-28-10A	0.0 – 5.0	GULFPORT CHANNEL	30.22504	-88.99672	SP	SUBANGULAR TO ROUNDED	5Y 6/1	GRAY	2.5Y 7/1	LT GRAY	0.2485	2.3	YES
BI-GC-28-10B	5.0 - 10.0	GULFPORT CHANNEL			SP	SUBANGULAR TO ROUNDED	5Y 6/1	GRAY	5Y 7/1	LT GRAY	0.2168	1.5	YES
BI-GC-28-10C	10.0 - 15.0	GULFPORT CHANNEL			SP-SM	SUBANGULAR TO ROUNDED	5Y 5/1	GRAY	2.5Y 7/1	LT GRAY	0.2365	8.4	YES
BI-GC-28-10D	15.0 – 19.3	GULFPORT CHANNEL			SP-SM	SUBANGULAR TO ROUNDED	5Y 6.5/1	GRAY	2.5Y 7/1	LT GRAY	0.1994	6.4	NO
BI-GC-29-10A	0.0 - 5.0	GULFPORT CHANNEL	30.22294	-88.99812	SP	SUBANGULAR TO ROUNDED	2.5Y 6/1	GRAY	5Y 7/1	LT GRAY	0.2213	2.3	YES
BI-GC-29-10B	5.0 - 10.0	GULFPORT CHANNEL			SP	SUBANGULAR TO ROUNDED	5Y 6/1	GRAY	5Y 7/1	LT GRAY	0.21	1.7	YES
BI-GC-29-10C	10.0 - 15.0	GULFPORT CHANNEL			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 5.5/1	GRAY	2.5Y 7/1	LT GRAY	0.2088	6.9	NO

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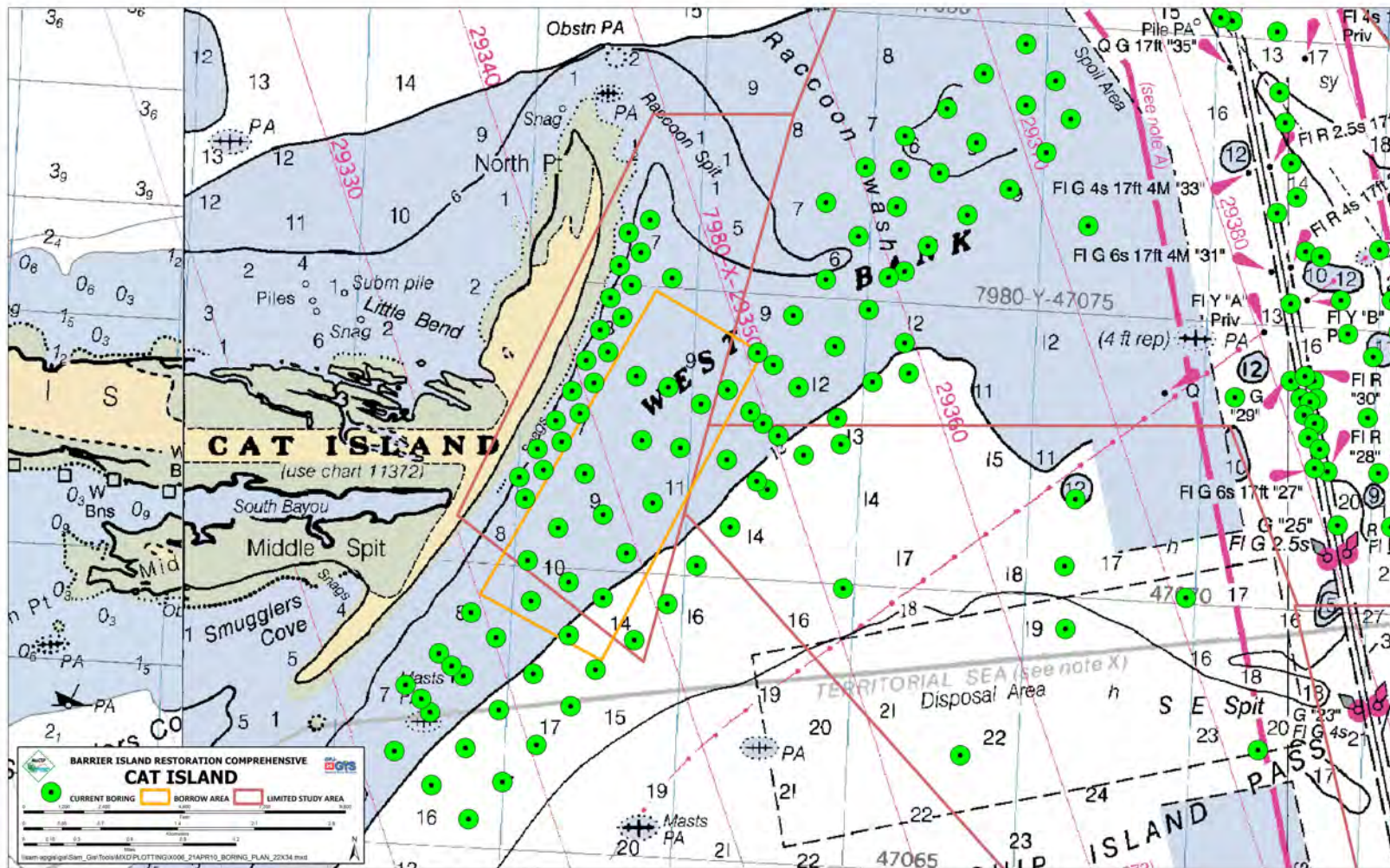


Figure 5.3.1 – General layout of the borings completed for the investigation for borrow material at Cat Island. Initial potential borrow area outlined in orange.

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TABLE 5.2.2 MISSISSIPPI BARRIER ISLAND VIBRACORE SAMPLES – CAT ISLAND													
BORING	SAMPLE DEPTH (ft BGS)	LOCATION	LATITUDE	LONGITUDE	USCS	ANGULARITY	WET COLOR CODE	WET COLOR	DRY COLOR CODE	DRY COLOR	D ₅₀	% FINES	CaCO3
BI-CI-1-10A	0.0 - 5.0	CAT ISLAND	30.22249	-89.07220	SP	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 6/2	LT BROWNISH GRAY	0.2246	2.2	NO
BI-CI-1-10B	5.0 - 10.0	CAT ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 4/2	DK GRAYISH BROWN	2.5Y 6/2	LT BROWNISH GRAY	0.2306	3.6	NO
BI-CI-1-10C	10.0 - 15.1	CAT ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 5/1	GRAYISH BROWN	2.5Y 6/1	GRAY	0.2049	5.1	NO
BI-CI-2-10A	0.0 - 5.0	CAT ISLAND	30.22467	-89.07069	SP	SUBANGULAR TO ROUNDED	2.5Y 4/2	DK GRAYISH BROWN	2.5Y 6/2	LT BROWNISH GRAY	0.2094	3.3	NO
BI-CI-2-10B	5.0 - 11.1	CAT ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 4/1	DK GRAY	2.5Y 7/1	LT GRAY	0.1761	5.7	NO
BI-CI-3-10A	0.0 - 4.5	CAT ISLAND	30.22721	-89.06908	SP	SUBANGULAR TO ROUNDED	2.5Y 4/2	DL GRAYISH BROWN	2.5Y 5/2	GRAYISH BROWN	0.208	4.9	NO
BI-CI-3-10B	4.5 - 9.0	CAT ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 6/1	GRAY	2.5Y 6.5/1	LT GRAY	0.1782	1.6	NO
BI-CI-3-10C	9.0 - 13.5	CAT ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 5/1	GRAY	2.5Y 6.5/1.5	LT GRAY	0.115	7.7	NO
BI-CI-4-10A	0.0 - 5.5	CAT ISLAND	30.22964	-89.06734	SP	SUBANGULAR TO ROUNDED	2.5Y 4/2	DK GRAYISH BROWN	2.5Y 5/2	GRAYISH BROWN	0.1821	4.7	NO
BI-CI-4-10B	5.5 - 11.0	CAT ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 5/1	GRAY	2.5Y 6.5/1	LT GRAY	0.1832	4.7	NO
BI-CI-5-10A	0.0 - 5.0	CAT ISLAND	30.23206	-89.06596	SP	SUBANGULAR TO ROUNDED	2.5Y 4/1.5	DK GRAYISH BROWN	2.5Y 5/2	GRAYISH BROWN	0.2079	4.7	NO
BI-CI-5-10B	5.0 - 10.6	CAT ISLAND			SP-SM	SUBANGULAR TO ROUNDED	5Y 5/1	GRAY	2.5Y 7/1	LT GRAY	0.1401	8.5	NO
BI-CI-6-10A	0.0 - 3.0	CAT ISLAND	30.23415	-89.06401	SP-SM	SUBANGULAR TO ROUNDED	2.5Y 4/1.5	DK GRAYISH BROWN	2.5Y 5/2	GRAYISH BROWN	0.2154	5.3	NO
BI-CI-6-10B	3.0 - 7.0	CAT ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 3/2	VERY DK GRAYISH BROWN	2.5Y 5.5/2	BROWNISH GRAY	0.193	3.1	NO
BI-CI-6-10C	7.0 - 12.0	CAT ISLAND			SP-SM	SUBANGULAR TO ROUNDED	5Y 5.5/1	GRAY	2.5Y 7/1	LT GRAY	0.1824	5.4	NO
BI-CI-7-10A	2.5 - 6.0	CAT ISLAND	30.23680	-89.06425	SP	SUBANGULAR TO ROUNDED	2.5Y 4/2	GRAY	2.5Y 6/2	LT BROWNISH GRAY	0.1871	3.4	NO
BI-CI-7-10B	6.0 - 9.0	CAT ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 6.5/1.5	LT GRAY	0.1949	1	NO
BI-CI-7-10C	9.0 - 12.6	CAT ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 5/1	GRAY	2.5Y 7/1	LT GRAY	0.1709	6.6	NO
BI-CI-8-10A	0.0 - 2.0	CAT ISLAND	30.23953	-89.06321	SP-SM	SUBANGULAR TO ROUNDED	5Y 4/2	OLIVE GRAY	2.5Y 5/2	GRAYISH BROWN	0.1918	11.8	NO
BI-CI-8-10B	2.0 - 4.0	CAT ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 4/1	DK GRAY	2.5Y 5/1	GRAY	0.1845	6.9	NO
BI-CI-8-10C	4.0 - 8.0	CAT ISLAND			SP	SUBANGULAR TO ROUNDED	5Y 5/1	GRAY	2.5Y 6/1	GRAY	0.1879	3	NO
BI-CI-8-10D	8.0 - 12.5	CAT ISLAND			SP	SUBANGULAR TO ROUNDED	5Y 6/1	GRAY	2.5Y 7/1	LT GRAY	0.1881	3.9	NO
BI-CI-9-10A	0.0 - 2.0	CAT ISLAND	30.24217	-89.06210	SP-SM	SUBANGULAR TO ROUNDED	5Y 5/2	OLIVE GRAY	2.5Y 5/2	GRAYSIH BROWN	0.2226	8	NO
BI-CI-9-10B	2.0 - 6.0	CAT ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 6/2	LT BROWNISH GRAY	0.2105	10.7	NO
BI-CI-9-10C	6.0 - 10.9	CAT ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 6/1	GRAY	2.5Y 7/1	LT GRAY	0.1704	6	NO
BI-CI-10-10A	0.0 - 5.0	CAT ISLAND	30.22046	-89.07259	SP	SUBANGULAR TO ROUNDED	2.5Y 4/2	DK GRAYISH BROWN	2.5Y 5/2	GRAYISH BROWN	0.2463	4.6	NO
BI-CI-10-10B	5.0 - 11.9	CAT ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 6/1	GRAY	2.5Y 7/1	LT GRAY	0.2187	3.3	NO
BI-CI-11-10A	0.0 - 5.0	CAT ISLAND	30.22286	-89.07017	SP	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 6/2	LT BROWNISH GRAY	0.2382	2.8	NO
BI-CI-11-10B	5.0 - 10.0	CAT ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 6/2	LT BROWNISH GRAY	0.2124	2.6	NO
BI-CI-11-10C	10.0 - 14.4	CAT ISLAND			SP-SM	SUBANGULAR TO ROUNDED	5Y 5/1	GRAY	2.5Y 6.5/1	LT GRAY	0.1394	8.6	NO
BI-CI-12-10A	0.0 - 5.0	CAT ISLAND	30.22521	-89.06856	SP	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 6.5/1	LT GRAY	0.2185	3.2	NO
BI-CI-12-10B	5.0 - 10.8	CAT ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 5/1	GRAY	2.5Y 6/1	GRAY	0.1633	5.7	NO
BI-CI-13-10A	0.0 - 4.5	CAT ISLAND	30.22755	-89.06685	SP	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 6/2	LT BROWNISH GRAY	0.1939	4.4	NO
BI-CI-13-10B	4.5 - 9.0	CAT ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 6/1	GRAY	2.5Y 7/1	LT GRAY	0.1663	3.2	NO
BI-CI-13-10C	9.0 - 13.5	CAT ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 5/1	GRAY	5Y 6/2	LT OLIVE GRAY	0.1442	6.5	NO
BI-CI-14-10A	0.0 - 5.5	CAT ISLAND	30.22996	-89.06534	SP	SUBANGULAR TO ROUNDED	5Y 5/1	GRAY	2.5Y 6.5/1.5	LT GRAY	0.2038	4.3	NO

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TABLE 5.2.2 MISSISSIPPI BARRIER ISLAND VIBRACORE SAMPLES – CAT ISLAND													
BORING	SAMPLE DEPTH (ft BGS)	LOCATION	LATITUDE	LONGITUDE	USCS	ANGULARITY	WET COLOR CODE	WET COLOR	DRY COLOR CODE	DRY COLOR	D ₅₀	% FINES	CaCO3
BI-CI-14-10B	5.5 - 11.0	CAT ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 4/1	DK GRAY	2.5Y 6/2	LT BROWNISH GRAY	0.161	7.2	NO
BI-CI-15-10A	0.0 - 5.0	CAT ISLAND	30.23269	-89.06400	SP	SUBANGULAR TO ROUNDED	2.5Y 4/1	DK GRAY	2.5Y 4.5/2	GRAYISH BROWN	0.1985	4.7	NO
BI-CI-15-10B	5.0 - 9.0	CAT ISLAND			SP	SUBANGULAR TO ROUNDED	5Y 5/1	GRAY	2.5Y 6/2	LT BROWNISH GRAY	0.1599	4.8	NO
BI-CI-16-10A	0.0 - 3.0	CAT ISLAND	30.23521	-89.06267	SP-SM	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 5/3	LT OLIVE BROWN	0.2112	5.7	NO
BI-CI-16-10B	3.0 - 7.0	CAT ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 4/2	DK GRAYISH BROWN	2.5Y 6/2	LT BROWNISH GRAY	0.2192	2.1	NO
BI-CI-16-10C	7.0 - 12.0	CAT ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 4/1.5	DK GRAYISH BROWN	2.5Y 6/1	GRAY	0.199	3.6	NO
BI-CI-17-10A	0.0 - 3.0	CAT ISLAND	30.23788	-89.06188	SP-SM	SUBANGULAR TO ROUNDED	2.5Y 5/1.5	GRAYISH BROWN	2.5Y 5/2	GRAYISH BROWN	0.1989	8	NO
BI-CI-17-10B	3.0 -8.0	CAT ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 6/2	LT BROWNISH GRAY	10YR 6.5/2	LT BROWNISH GRAY	0.197	2.7	NO
BI-CI-17-10C	8.0 - 11.1	CAT ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 5/1	GRAY	2.5Y 7/1	LT GRAY	0.1753	3.5	NO
BI-CI-18-10A	0.0 - 3.0	CAT ISLAND	30.24044	-89.06111	SP-SM	SUBANGULAR TO ROUNDED	5Y 4/2	OLIVE GRAY	2.5Y 5/2	GRAYISH BROWN	0.2218	9.4	NO
BI-CI-18-10B	3.0 - 8.0	CAT ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 4/2	DK GRAYISH BROWN	2.5Y 6/2	LT BROWNISH GRAY	0.2017	3.2	NO
BI-CI-18-10C	8.0 - 10.6	CAT ISLAND			SP	SUBANGULAR TO ROUNDED	5Y 5/1	GRAY	2.5Y 7/1.5	LT GRAY	0.1698	3.7	NO
BI-CI-19-10A	0.0 - 2.0	CAT ISLAND	30.24325	-89.05994	SP-SM	SUBANGULAR TO ROUNDED	5Y 4/2	OLIVE GRAY	2.5Y 5/2	GRAYISH BROWN	0.2044	7	NO
BI-CI-19-10B	2.0 - 6.0	CAT ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 6/2	LT BROWNISH GRAY	0.2103	5.8	NO
BI-CI-19-10C	6.0 - 11.0	CAT ISLAND			SP	SUBANGULAR TO ROUNDED	5Y 5/1	GRAY	2.5Y 7/1	LT GRAY	0.1799	3.3	NO
BI-CI-20-10A	0.0 - 3.0	CAT ISLAND	30.22249	-89.06643	SP	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 6/2	LT BROWNISH GRAY	0.2595	3.3	NO
BI-CI-20-10B	3.0 - 8.0	CAT ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 4/2	DK GRAYISH BROWN	2.5Y 5/2	GRAYISH BROWN	0.2053	2	NO
BI-CI-20-10C	8.0 - 13.0	CAT ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 4/1	GRAY	2.5Y 6/1	GRAY	0.164	6.2	NO
BI-CI-21-10A	0.0 - 2.0	CAT ISLAND	30.23053	-89.06167	SP-SM	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 6/2	LT BROWNISH GRAY	0.2347	5.5	NO
BI-CI-21-10B	3.0 - 5.0	CAT ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 4/2	DK GRAYISH BROWN	2.5Y 7/2	LT GRAY	0.213	2.7	NO
BI-CI-21-10C	5.0 - 9.0	CAT ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 5/1	GRAY	2.5Y 7/1	LT GRAY	0.1826	2.4	NO
BI-CI-22-10A	0.0 - 4.0	CAT ISLAND	30.23886	-89.05849	SP-SM	SUBANGULAR TO ROUNDED	5Y 4/2	OLIVE GRAY	2.5Y 6/2	LT BROWNISH GRAY	0.2843	5.7	NO
BI-CI-22-10B	4.0 - 6.0	CAT ISLAND			SP	SUBANGULAR TO ROUNDED	5Y 5/1	GRAY	2.5Y 6/2	LT BROWNISH GRAY	0.1783	2.7	NO
BI-CI-22-10C	6.0 - 11.0	CAT ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 4/2	DK GRAYISH BROWN	2.5Y 5/2	GRAYISH BROWN	0.2164	5.5	NO
BI-CI-23-10A	0.0 - 4.0	CAT ISLAND	30.21826	-89.06871	SP	SUBANGULAR TO ROUNDED	5Y 4/3	OLIVE	5Y 6/2	LT OLIVE GRAY	0.2389	2.9	NO
BI-CI-23-10B	4.0 - 8.0	CAT ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 4/2	DK GRAYISH BROWN	2.5Y 6/1	GRAY	0.2681	1.8	NO
BI-CI-23-10C	8.0 - 11.5	CAT ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 4/2	DK GRAYISH BROWN	2.5Y 6/1	GRAY	0.2531	5.2	NO
BI-CI-24-10A	0.0 - 4.0	CAT ISLAND	30.21563	-89.07166	SP	SUBANGULAR TO ROUNDED	5Y 4/2	OLIVE GRAY	5Y 6/2	LT OLIVE GRAY	0.2373	2.9	NO
BI-CI-24-10B	4.0 - 8.0	CAT ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 7/1	LT GRAY	0.2849	1.8	NO
BI-CI-24-10C	8.0 - 11.8	CAT ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 4/2	DK GRAYISH BROWN	2.5Y 7/1	LT GRAY	0.1913	9.3	YES
BI-CI-25-10A	0.0 - 4.0	CAT ISLAND	30.21386	-89.06791	SP	SUBANGULAR TO ROUNDED	2.5Y 4/3	OLIVE BROWN	2.5Y 6/2	LT BROWNISH GRAY	0.2084	3.6	NO
BI-CI-25-10B	4.0 - 8.0	CAT ISLAND			SP	SUBANGULAR TO ROUNDED	5Y 4/2	OLIVE GRAY	5Y 6/2	LT OLIVE GRAY	0.2002	2.9	NO
BI-CI-25-10C	8.0 - 12.4	CAT ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 4/2	DK GRAYISH BROWN	2.5Y 6/1	GRAY	0.1789	4.9	YES
BI-CI-26-10A	0.0 - 4.0	CAT ISLAND	30.21919	-89.06433	SP	SUBANGULAR TO ROUNDED	2.5Y 4/3	OLIVE BROWN	2.5Y 6/2	LT BROWNISH GRAY	0.2642	2.5	NO
BI-CI-26-10B	4.0 - 8.0	CAT ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 4/2	DK GRAYISH BROWN	2.5Y 6/2	LT BROWNISH GRAY	0.2753	2.6	NO
BI-CI-26-10C	8.0 - 11.8	CAT ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 4/2	DK GRAYISH BROWN	2.5Y 6/1	GRAY	0.2750	3.2	NO
BI-CI-27-10A	0.0 - 4.0	CAT ISLAND	30.22528	-89.06084	SP	SUBANGULAR TO ROUNDED	2.5Y 3/2	VERY DK GRAYISH BROWN	2.5Y 5/2	GRAYISH BROWN	0.2025	3.3	NO

APPENDIX C

Offshore Sand Borrow Investigation, Phases 1 & 2

GEOTECHNICAL INVESTIGATION

TABLE 5.2.2 MISSISSIPPI BARRIER ISLAND VIBRACORE SAMPLES – CAT ISLAND													
BORING	SAMPLE DEPTH (ft BGS)	LOCATION	LATITUDE	LONGITUDE	USCS	ANGULARITY	WET COLOR CODE	WET COLOR	DRY COLOR CODE	DRY COLOR	D ₅₀	% FINES	CaCO3
BI-CI-27-10B	4.0 - 8.3	CAT ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 4/2	DK GRAYISH BROWN	2.5Y 6/1	GRAY	0.1844	6.2	NO
BI-CI-28-10A	0.0 - 4.0	CAT ISLAND	30.22977	-89.05835	SP	SUBANGULAR TO ROUNDED	5Y 3/2	DK OLIVE GRAY	5Y 5/1	GRAY	0.2185	4.6	NO
BI-CI-28-10B	4.0 - 8.3	CAT ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 4/2	DK GRAYISH BROWN	2.5Y 6/1	GRAY	0.1850	5.5	NO
BI-CI-29-10A	0.0 - 2.0	CAT ISLAND	30.22842	-89.05531	SP-SM	SUBANGULAR TO ROUNDED	5Y 3/2	DK OLIVE GRAY	5Y 5/2	OLIVE GRAY	0.2145	5.6	NO
BI-CI-29-10B	2.0 - 6.7	CAT ISLAND			SP	SUBANGULAR TO ROUNDED	5Y 3/2	DK OLIVE GRAY	5Y 5/2	OLIVE GRAY	0.1910	4.2	NO
BI-CI-30-10A	0.0 - 2.0	CAT ISLAND	30.22459	-89.05715	SP-SM	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	5Y 3/2	DK OLIVE GRAY	0.2091	8.1	NO
BI-CI-30-10B	2.0 - 5.0	CAT ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	5Y 5/1	GRAY	0.1971	3.8	NO
BI-CI-30-10C	5.0 - 7.9	CAT ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 4/2	DK GRAYISH BROWN	2.5Y 6/1	GRAY	0.1858	3.6	NO
BI-CI-31-10A	0.0 - 4.0	CAT ISLAND	30.22030	-89.05978	SP	SUBANGULAR TO ROUNDED	5Y 3/2	DK OLIVE GRAY	5Y 6/1	GRAY	0.2368	4.0	NO
BI-CI-31-10B	4.0 - 7.3	CAT ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 4/2	DK GRAYISH BROWN	2.5Y 6/1	GRAY	0.2315	3.9	NO
BI-CI-32-10A	0.0 - 5.0	CAT ISLAND	30.21610	-89.06225	SP	SUBANGULAR TO ROUNDED	5Y 4/2	OLIVE GRAY	5Y 6/2	LT OLIVE GRAY	0.2477	2.8	NO
BI-CI-32-10B	5.0 - 8.3	CAT ISLAND			SP	SUBANGULAR TO ROUNDED	5Y 5/1	GRAY	5Y 7/1	LT GRAY	0.2094	4.0	NO
BI-CI-32-10C	8.3 - 9.5	CAT ISLAND			SP-SM	SUBANGULAR TO ROUNDED	5Y 4/2	OLIVE GRAY	5Y 6/2	LT OLIVE GRAY	0.1690	5.5	YES
BI-CI-32-10D	9.5 - 12.2	CAT ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 4/2	DK GRAYISH BROWN	2.5Y 6/2	LT BROWNISH GRAY	0.1695	6.6	YES
BI-CI-33-10A	0.0 - 4.0	CAT ISLAND	30.21239	-89.06438	SP	SUBANGULAR TO ROUNDED	2.5Y 4/2	DK GRAYISH BROWN	2.5Y 6/1	GRAY	0.2008	3.8	NO
BI-CI-33-10B	4.0 - 8.0	CAT ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 4/2	DK GRAYISH BROWN	2.5Y 6/1	GRAY	0.1903	3.6	NO
BI-CI-33-10C	8.0 - 8.8	CAT ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 4/2	DK GRAYISH BROWN	2.5Y 6/1	GRAY	0.1810	4.6	NO
PHASE II VIBRACORE SAMPLING - CAT ISLAND													
BI-CI-34-11		CAT ISLAND	30.20893	-89.06174	CL	UNSUITABLE MATERIAL. FIELD CLASSIFICATION ONLY. NO SAMPLE RETAINED FOR LAB CLASSIFICATION.							
BI-CI-35-11A	0.0 - 4.0	CAT ISLAND	30.21189	-89.05862	SP	SUBANGULAR TO ROUNDED	5Y 5/1	LT TO MED GREY	5Y 6/1	GREY	0.1936	3.8	NA
BI-CI-35-11B	4.0 - 7.8	CAT ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 5/2	GREYISH BROWN	2.5Y 7/2	LT GREY WITH SOME BROWN	0.1943	2.8	NA
BI-CI-36-11A	0.0 - 5.0	CAT ISLAND	30.21504	-89.05586	SP	SUBANGULAR TO ROUNDED	5Y 5/2	MED OLIVE GREY	5Y 6/2	LT OLIVE GREY	0.1949	4	NA
BI-CI-36-11B	5.0 - 10.0	CAT ISLAND			SP	SUBANGULAR TO ROUNDED	5Y 5/2	MED OLIVE GREY	5Y 7/1	LT GREY	0.1764	3.4	NA
BI-CI-36-11C	10.0 - 12.3	CAT ISLAND			SP-SM	SUBANGULAR TO ROUNDED	5Y 5/2	MED OLIVE GREY	5Y 6/1	LT TO MED GREY	0.1619	8.2	NA
BI-CI-37-11A	0.0 - 5.0	CAT ISLAND	30.21820	-89.05270	SP	SUBANGULAR TO ROUNDED	5Y 4/2	MED TO DARK OLIVE GREY	2.5Y 6/2	LT BROWNISH GREY	0.2229	4.2	NA
BI-CI-37-11B	5.0 - 10.0	CAT ISLAND			SP	SUBANGULAR TO ROUNDED	5Y 5/2	MED OLIVE GREY	5Y 7/1	LT GREY	0.2549	3.4	NA
BI-CI-38-11A	0.0 - 4.8	CAT ISLAND	30.22127	-089.04916	SP	SUBANGULAR TO ROUNDED	2.5Y 6/2	LT BROWNISH GREY	2.5Y 4/2	LIGHT OLIVE BROWN TO OLIVE BROWN	0.2072	4.4	NA
BI-CI-38-11B	5.6 - 10.5	CAT ISLAND			SP	SUBANGULAR TO ROUNDED	5Y 4/1	DARK GREY	5Y 7/1	LT GREY	0.1886	3.6	NA
BI-CI-39-11A	1.0 - 6.0	CAT ISLAND	30.22410	-89.04576	SP-SM	SUBANGULAR TO ROUNDED	5Y 4/2	MED TO DARK OLIVE GREY	5Y 6/2	LT OLIVE GREY	0.1997	5	NA
BI-CI-39-11B	6.0 - 10.5	CAT ISLAND			SP	SUBANGULAR TO ROUNDED	5Y 3/2	DARK OLIVE GREY	5Y 6/2	LT OLIVE GREY	0.1802	4.3	NA
BI-CI-40-11A	2.0 - 7.0	CAT ISLAND	30.22714	-89.04259	SP	SUBANGULAR TO ROUNDED	5Y 5/2	MED OLIVE GREY	2.5Y 7/1	LT GREY	0.2062	3.1	NA
BI-CI-41-11A	0.0 - 2.1	CAT ISLAND	30.23011	-89.03926	SP-SM	SUBANGULAR TO ROUNDED	5Y 3/2	DARK OLIVE GREY	5Y 4/2	MED TO DARK OLIVE GREY	0.1975	8.9	NA
BI-CI-41-11B	2.1 - 4.3	CAT ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 4/2	DARK GREYISH BROWN	2.5Y 5/2	GREYISH BROWN	0.2158	3.9	NA
BI-CI-41-11C	4.3 - 10.9	CAT ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 4/3	OLIVE BROWN	2.5Y 7/2	LT GREY WITH SOME BROWN	0.2118	3.1	NA

APPENDIX C

Offshore Sand Borrow Investigation, Phases 1 & 2

GEOTECHNICAL INVESTIGATION

TABLE 5.2.2 MISSISSIPPI BARRIER ISLAND VIBRACORE SAMPLES – CAT ISLAND													
BORING	SAMPLE DEPTH (ft BGS)	LOCATION	LATITUDE	LONGITUDE	USCS	ANGULARITY	WET COLOR CODE	WET COLOR	DRY COLOR CODE	DRY COLOR	D ₅₀	% FINES	CaCO3
BI-CI-42-11A	0.0 - 2.2	CAT ISLAND	30.23301	-89.04282	SM	SUBANGULAR TO ROUNDED	2.5Y 3/2	VERY DARK GREYISH BROWN	2.5Y 4/2	LIGHT OLIVE BROWN TO OLIVE BROWN	0.1942	13.6	NA
BI-CI-42-11B	2.2 - 3.3	CAT ISLAND			SP-SM	SUBANGULAR TO ROUNDED	5Y 3/2	DARK OLIVE GREY	5Y 4/2	MED TO DARK OLIVE GREY	0.1952	10.6	NA
BI-CI-42-11C	3.3 - 7.7	CAT ISLAND			SP	SUBANGULAR TO ROUNDED	5Y 4/2	MED TO DARK OLIVE GREY	5Y 6/1	LT TO MED GREY	0.172	4.8	NA
BI-CI-43-11A	0.0 - 4.5	CAT ISLAND	30.22966	-89.04625	SP-SM	SUBANGULAR TO ROUNDED	5Y 3/2	DARK OLIVE GREY	5Y 5/2	MED OLIVE GREY	0.1972	7	NA
BI-CI-43-11B	4.5 - 9.5	CAT ISLAND			SP	SUBANGULAR TO ROUNDED	5Y 5/1	MED TO DARK GREY	5Y 7/1	LT GREY	0.2126	2.2	NA
BI-CI-43-11C	9.5 - 13.9	CAT ISLAND			SP	SUBANGULAR TO ROUNDED	5Y 5/1	MED TO DARK GREY	5Y 7/1	LT GREY	0.19	3.3	NA
BI-CI-44-11		CAT ISLAND	30.22668	-89.04961	CL	UNSUITABLE MATERIAL. FIELD CLASSIFICATION ONLY. NO SAMPLE RETAINED FOR LAB CLASSIFICATION.							
BI-CI-45-11A	0.0 - 2.0	CAT ISLAND	30.22372	-89.05301	SP-SM	SUBANGULAR TO ROUNDED	5Y 3/2	DARK OLIVE GREY	5Y 4/2	MED TO DARK OLIVE GREY	0.198	8.4	NA
BI-CI-45-11B	2.0 - 7.0	CAT ISLAND			SP	SUBANGULAR TO ROUNDED	5Y 5/1	MED TO DARK GREY	5Y 6/2	LT OLIVE GREY	0.1915	4.1	NA
BI-CI-45-11C	7.0 - 12.4	CAT ISLAND			SP-SM	SUBANGULAR TO ROUNDED	5Y 5/1	MED TO DARK GREY	5Y 6/2	LT OLIVE GREY	0.1771	6.4	NA
BI-CI-46-11A	0.0 - 4.0	CAT ISLAND	30.22945	-89.05294	SP-SM	SUBANGULAR TO ROUNDED	5Y 3/2	DARK OLIVE GREY	5Y 4/2	MED TO DARK OLIVE GREY	0.1986	6.9	NA
BI-CI-46-11B	4.0 - 9.0	CAT ISLAND			SP	SUBANGULAR TO ROUNDED	5Y 4/1	DARK GREY	5Y 6/1	LT TO MED GREY	0.2257	2.1	NA
BI-CI-46-11C	9.0 - 13.4	CAT ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 5/2	GREYISH BROWN	2.5Y 7/1	LT OLIVE BROWN	0.2114	2	NA
BI-CI-47-11		CAT ISLAND	30.23249	-89.05011	SM	UNSUITABLE MATERIAL. FIELD CLASSIFICATION ONLY. NO SAMPLE RETAINED FOR LAB CLASSIFICATION.							
BI-CI-48-11		CAT ISLAND	30.23553	-89.04676	SC	UNSUITABLE MATERIAL. FIELD CLASSIFICATION ONLY. NO SAMPLE RETAINED FOR LAB CLASSIFICATION.							
BI-CI-49-11A	0.0 - 4.4	CAT ISLAND	30.23849	-89.04367	SP-SM	SUBANGULAR TO ROUNDED	5Y 3/2	DARK OLIVE GREY	5Y 5/2	MED OLIVE GREY	0.2361	8.5	NA
BI-CI-49-11B	4.4 - 9.3	CAT ISLAND			SP	SUBANGULAR TO ROUNDED	5Y 4/2	MED TO DARK OLIVE GREY	5Y 6/2	LT OLIVE GREY	0.1799	4.4	NA
BI-CI-50-11A	0.0 - 1.5	CAT ISLAND	30.23602	-89.03962	SP-SM	SUBANGULAR TO ROUNDED	5Y 3/2	DARK OLIVE GREY	5Y 5/2	MED OLIVE GREY	0.2023	10.4	NA
BI-CI-50-11B	2.0 - 4.0	CAT ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 3/3	VERY PALE BROWN	2.5Y 3/3	DARK OLIVE BROWN	0.1975	7.8	NA
BI-CI-50-11C	5.0 - 10.0	CAT ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 4/2	DARK GREYISH BROWN	2.5Y 6/2	LT BROWNISH GREY	0.195	3.5	NA
BI-CI-51-11A	0.0 - 1.7	CAT ISLAND	30.23331	-89.03622	SM	SUBANGULAR TO ROUNDED	5Y 3/2	DARK OLIVE GREY	5Y 5/2	MED OLIVE GREY	0.1895	13.5	NA
BI-CI-51-11B	1.7 - 6.7	CAT ISLAND			SP	SUBANGULAR TO ROUNDED	5Y 4/2	MED TO DARK OLIVE GREY	5Y 6/2	LT OLIVE GREY	0.1854	4.2	NA
BI-CI-51-11C	6.7 - 12.6	CAT ISLAND			SP-SM	SUBANGULAR TO ROUNDED	5Y 3/2	DARK OLIVE GREY	2.5Y 6/2	LT OLIVE BROWN	0.1752	7	NA
BI-CI-52-11		CAT ISLAND	30.20650	-089.06538	CL	UNSUITABLE MATERIAL. FIELD CLASSIFICATION ONLY. NO SAMPLE RETAINED FOR LAB CLASSIFICATION.							
BI-CI-53-11		CAT ISLAND	30.20350	-89.06773	CH	UNSUITABLE MATERIAL. FIELD CLASSIFICATION ONLY. NO SAMPLE RETAINED FOR LAB CLASSIFICATION.							
BI-CI-59-11		CAT ISLAND	30.20318	-89.07452	CH	UNSUITABLE MATERIAL. FIELD CLASSIFICATION ONLY. NO SAMPLE RETAINED FOR LAB CLASSIFICATION.							
BI-CI-60-11A	0.0 - 3.5	CAT ISLAND	30.20644	-89.07098	SP	SUBANGULAR TO ROUNDED	2.5Y 4/2	DARK GREYISH BROWN	2.5Y 6/2	LT BROWNISH GREY	0.2226	4.8	NA
BI-CI-60-11B	3.5 - 7.5	CAT ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 4/2	LT OLIVE BROWN TO OLIVE BROWN	2.5Y 7/2	LT GREY WITH SOME BROWN	0.2043	5.4	NA
BI-CI-61-11A	0.0 - 4.0	CAT ISLAND	30.20931	-89.06792	SP	SUBANGULAR TO ROUNDED	2.5Y 3/2	VERY DARK GREYISH BROWN	2.5Y 5/2	LIGHT OLIVE YELLOW BROWN	0.2066	4.8	NA
BI-CI-61-11B	4.0 - 7.2	CAT ISLAND			SP	SUBANGULAR TO ROUNDED	5Y 4/2	MED TO DARK OLIVE GREY	2.5Y 6/2	LT OLIVE BROWN	0.1925	3.3	NA
BI-CI-62-11A	0.0 - 5.0	CAT ISLAND	30.21210	-89.07150	SP	SUBANGULAR TO ROUNDED	2.5Y 4/2	LT OLIVE BROWN TO OLIVE BROWN	2.5Y 5/2	LIGHT OLIVE YELLOW BROWN	0.2268	1.6	NA
BI-CI-62-11B	5.0 - 10.0	CAT ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 5/2	GREYISH BROWN	2.5Y 6/2	LT OLIVE BROWN	0.1865	4.1	NA
BI-CI-63-11A	0.0 - 4.0	CAT ISLAND	30.20911	-89.07479	SP-SM	SUBANGULAR TO ROUNDED	2.5Y 4/2	LT OLIVE BROWN TO OLIVE BROWN	2.5Y 5/2	LIGHT OLIVE YELLOW BROWN	0.403	7.8	NA

APPENDIX C

Offshore Sand Borrow Investigation, Phases 1 & 2

GEOTECHNICAL INVESTIGATION

TABLE 5.2.2 MISSISSIPPI BARRIER ISLAND VIBRACORE SAMPLES – CAT ISLAND													
BORING	SAMPLE DEPTH (ft BGS)	LOCATION	LATITUDE	LONGITUDE	USCS	ANGULARITY	WET COLOR CODE	WET COLOR	DRY COLOR CODE	DRY COLOR	D ₅₀	% FINES	CaCO3
BI-CI-63-11B	4.0 - 8.2	CAT ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 5/2	GREYISH BROWN	2.5Y 6/2	LT OLIVE BROWN	0.203	2.8	NA
BI-CI-63-11C	8.2 - 9.0	CAT ISLAND			SP-SM	SUBANGULAR TO ROUNDED	5Y 4/2	MED TO DARK OLIVE GREY	2.5Y 5.5/2	LIGHT OLIVE TO OLIVE BROWN	0.1592	8.2	NA
BI-CI-64-11		CAT ISLAND	30.20597	-89.07787	CL	UNSUITABLE MATERIAL. FIELD CLASSIFICATION ONLY. NO SAMPLE RETAINED FOR LAB CLASSIFICATION.							
BI-CI-65-11		CAT ISLAND	30.20299	-89.08102	CH	UNSUITABLE MATERIAL. FIELD CLASSIFICATION ONLY. NO SAMPLE RETAINED FOR LAB CLASSIFICATION.							
BI-CI-67-11A	0.0 - 2.0	CAT ISLAND	30.24479	-89.04367	SP	SUBANGULAR TO ROUNDED	5Y 6/2	LT OLIVE GREY	5Y 6/2	LT OLIVE GREY	0.2123	2.7	NA
BI-CI-67-11B	2.0 - 6.5	CAT ISLAND			SP-SM	SUBANGULAR TO ROUNDED	5Y 5/2	MED OLIVE GREY	5Y 4/2	MED TO DARK OLIVE GREY	0.1999	9.4	NA
BI-CI-67-11C	6.5 - 11.5	CAT ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 2.5/1	BLACK	2.5Y 5/2	LT OLIVE YELLOW BROWN	0.204	3	NA
BI-CI-67-11D	11.5 - 14.5	CAT ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 4/1	DARK GREY	2.5Y 6/1	MED GREY	0.193	2.3	NA
BI-CI-70-11A	0.0 - 2.9	CAT ISLAND	30.25251	-89.03226	SP	SUBANGULAR TO ROUNDED	5Y 4/2	MED TO DARK OLIVE GREY	2.5Y 6/2	LT BROWNISH GREY	0.2047	1.7	NA
BI-CI-70-11B	2.9 - 6.0	CAT ISLAND			SP-SM	SUBANGULAR TO ROUNDED	5Y 3/2	DARK OLIVE GREY	2.5Y 5/2	LT OLIVE YELLOW BROWN	0.1829	7.3	NA
BI-CI-72-11A	0.0 - 2.9	CAT ISLAND	30.257799	-089.024790	SP-SM	SUBANGULAR TO ROUNDED	5Y 4/2	MED TO DARK OLIVE GREY	5Y 5/2	MED OLIVE GREY	0.1866	5.5	NA
BI-CI-73-11A	0.0 - 2.6	CAT ISLAND	30.24203	-89.04061	SP	SUBANGULAR TO ROUNDED	5Y 6/2	LT OLIVE GREY	5Y 4/2	MED TO DARK OLIVE GREY	0.2021	3.2	NA
BI-CI-73-11B	2.6 - 7.6	CAT ISLAND			SM	SUBANGULAR TO ROUNDED	2.5Y 3/2	VERY DARK GREYISH BROWN	2.5Y 4/2	LT OLIVE BROWN TO OLIVE BROWN	0.2044	14.1	NA
BI-CI-73-11C	7.6 - 10.0	CAT ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 3/3	DARK OLIVE BROWN	2.5Y 5/2	LT OLIVE YELLOW BROWN	0.2022	8.3	NA
BI-CI-75-11A	0.0 - 3.0	CAT ISLAND	30.24724	-89.03297	SP	SUBANGULAR TO ROUNDED	2.5Y 4/2	DARK GREYISH BROWN	2.5Y 6/2	LT OLIVE BROWN	0.2077	2.1	NA
BI-CI-75-11B	3.0 - 8.0	CAT ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 3/2	VERY DARK GREYISH BROWN	2.5Y 4/4	MED OLIVE BROWN	0.2007	10	NA
BI-CI-75-11C	8.0 - 13.0	CAT ISLAND			SM	SUBANGULAR TO ROUNDED	2.5Y 4/2	DARK GREYISH BROWN	2.5Y 4/2	LT OLIVE BROWN TO OLIVE BROWN	0.1729	13.2	NA
BI-CI-75-11D	13.0 - 15.9	CAT ISLAND			SP-SM	SUBANGULAR TO ROUNDED	5Y 4/2	MED TO DARK OLIVE GREY	2.5Y 5/2	LT OLIVE YELLOW BROWN	0.1821	7.7	NA
BI-CI-76-11A	0.0 - 2.2	CAT ISLAND	30.24972	-89.02946	SP	SUBANGULAR TO ROUNDED	2.5Y 4/2	DARK GREYISH BROWN	2.5Y 7/2	LT GREY WITH SOME BROWN	0.1973	2.1	NA
BI-CI-76-11B	2.2 - 7.2	CAT ISLAND			SM	SUBANGULAR TO ROUNDED	2.5Y 3/2	VERY DARK GREYISH BROWN	2.5Y 5/2	LT OLIVE YELLOW BROWN	0.1764	12.1	NA
BI-CI-76-11C	9.0 - 11.6	CAT ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 3/2	VERY DARK GREYISH BROWN	2.5Y 5/2	LIGHT OLIVE YELLOW BROWN	0.1837	5.8	NA
BI-CI-77-11A	0.0 - 5.0	CAT ISLAND	30.25215	-89.025215	SP	SUBANGULAR TO ROUNDED	2.5Y 5/1	MED GREY	5Y 6/1	MED GREY	0.1924	2.4	NA
BI-CI-78-11A	0.0 - 3.5	CAT ISLAND	30.25479	-89.02200	SP	SUBANGULAR TO ROUNDED	2.5Y 4/2	DARK GREYISH BROWN	2.5Y 5/2	LIGHT OLIVE YELLOW BROWN	0.1836	4.1	NA
BI-CI-82-11A	0.0 - 3.0	CAT ISLAND	30.24591	-89.02634	SP-SM	SUBANGULAR TO ROUNDED	5Y 3/2	DARK OLIVE GREY	2.5Y 5/2	LIGHT OLIVE YELLOW BROWN	0.1921	7.1	NA
BI-CI-82-11B	6.5 - 11.5	CAT ISLAND			SP	SUBANGULAR TO ROUNDED	5Y 4/2	MED TO DARK OLIVE GREY	2.5Y 6/2	LT OLIVE BROWN	0.1954	4.3	NA
BI-CI-82-11C	11.5 - 16.1	CAT ISLAND			SP	SUBANGULAR TO ROUNDED	5Y 5/1	LT TO MED GREY	2.5Y 7/1	LT GREY	0.1828	2.8	NA
BI-CI-84-11		CAT ISLAND	30.23149	-89.04862	SM	UNSUITABLE MATERIAL. FIELD CLASSIFICATION ONLY. NO SAMPLE RETAINED FOR LAB CLASSIFICATION.							
BI-CI-85-11		CAT ISLAND	30.22764	-89.05079	CL	UNSUITABLE MATERIAL. FIELD CLASSIFICATION ONLY. NO SAMPLE RETAINED FOR LAB CLASSIFICATION.							
BI-CI-86-11A	0.0 - 3.0	CAT ISLAND	30.22569	-89.04816	SP-SM	SUBANGULAR TO ROUNDED	5Y 2.5/1	BLACK	5Y 6/1	GREY	0.182	10.7	NA
BI-CI-86-11B	3.0 - 6.9	CAT ISLAND			SP	SUBANGULAR TO ROUNDED	5Y 4/2	MED TO DARK OLIVE GREY	2.5Y 5/2	LT OLIVE YELLOW BROWN	0.196	3.3	NA
BI-CI-87-11A	0.0 - 4.0	CAT ISLAND	30.22195	-89.05019	SP	SUBANGULAR TO ROUNDED	5Y 4/2	MED TO DARK OLIVE GREY	2.5Y 6/2	LT BROWNISH GREY	0.1972	4.1	NA
BI-CI-87-11B	4.0 - 7.5	CAT ISLAND			SP	SUBANGULAR TO ROUNDED	5Y 4/1	DARK GREY	2.5Y 6/1	MED GREY	0.1859	3.5	NA

APPENDIX C

Offshore Sand Borrow Investigation, Phases 1 & 2

GEOTECHNICAL INVESTIGATION

TABLE 5.2.2 MISSISSIPPI BARRIER ISLAND VIBRACORE SAMPLES – CAT ISLAND													
BORING	SAMPLE DEPTH (ft BGS)	LOCATION	LATITUDE	LONGITUDE	USCS	ANGULARITY	WET COLOR CODE	WET COLOR	DRY COLOR CODE	DRY COLOR	D ₅₀	% FINES	CaCO3
BI-CI-88-11A	0.0 - 4.0	CAT ISLAND	30.20780	-89.08019	SP-SM	SUBANGULAR TO ROUNDED	5Y 4/2	MED TO DARK OLIVE GREY	2.5Y 5/2	LIGHT OLIVE YELLOW BROWN	0.2283	8.5	NA
BI-CI-88-11B	4.0 - 9.5	CAT ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 5/1	MED GREY	2.5Y 7/1	LT GREY	0.2044	4.5	NA
BI-CI-89-11		CAT ISLAND	30.20408	-89.08185	CL	UNSUITABLE MATERIAL. FIELD CLASSIFICATION ONLY. NO SAMPLE RETAINED FOR LAB CLASSIFICATION.							
BI-CI-90-11		CAT ISLAND	30.20678	-89.07899	CH	UNSUITABLE MATERIAL. FIELD CLASSIFICATION ONLY. NO SAMPLE RETAINED FOR LAB CLASSIFICATION.							
BI-CI-91-11A	0.0 - 3.0	CAT ISLAND	30.21116	-89.07715	SP-SM	SUBANGULAR TO ROUNDED	5Y 4/2	MED TO DARK OLIVE GREY	2.5Y 5/2	LIGHT OLIVE YELLOW BROWN	0.2172	5.2	NA
BI-CI-91-11B	3.0 - 6.0	CAT ISLAND			SP	SUBANGULAR TO ROUNDED	5Y 6/1	GREY	5Y 4/1	DARK GREY	0.2064	2.6	NA
BI-CI-91-11C	6.0 - 7.8	CAT ISLAND			SP	SUBANGULAR TO ROUNDED	5Y 5/1	LT TO MED GREY	2.5Y 7/1	LT GREY	0.2099	1.7	NA
BI-CI-92-11		CAT ISLAND	30.20521	-89.08334	CH	UNSUITABLE MATERIAL. FIELD CLASSIFICATION ONLY. NO SAMPLE RETAINED FOR LAB CLASSIFICATION.							

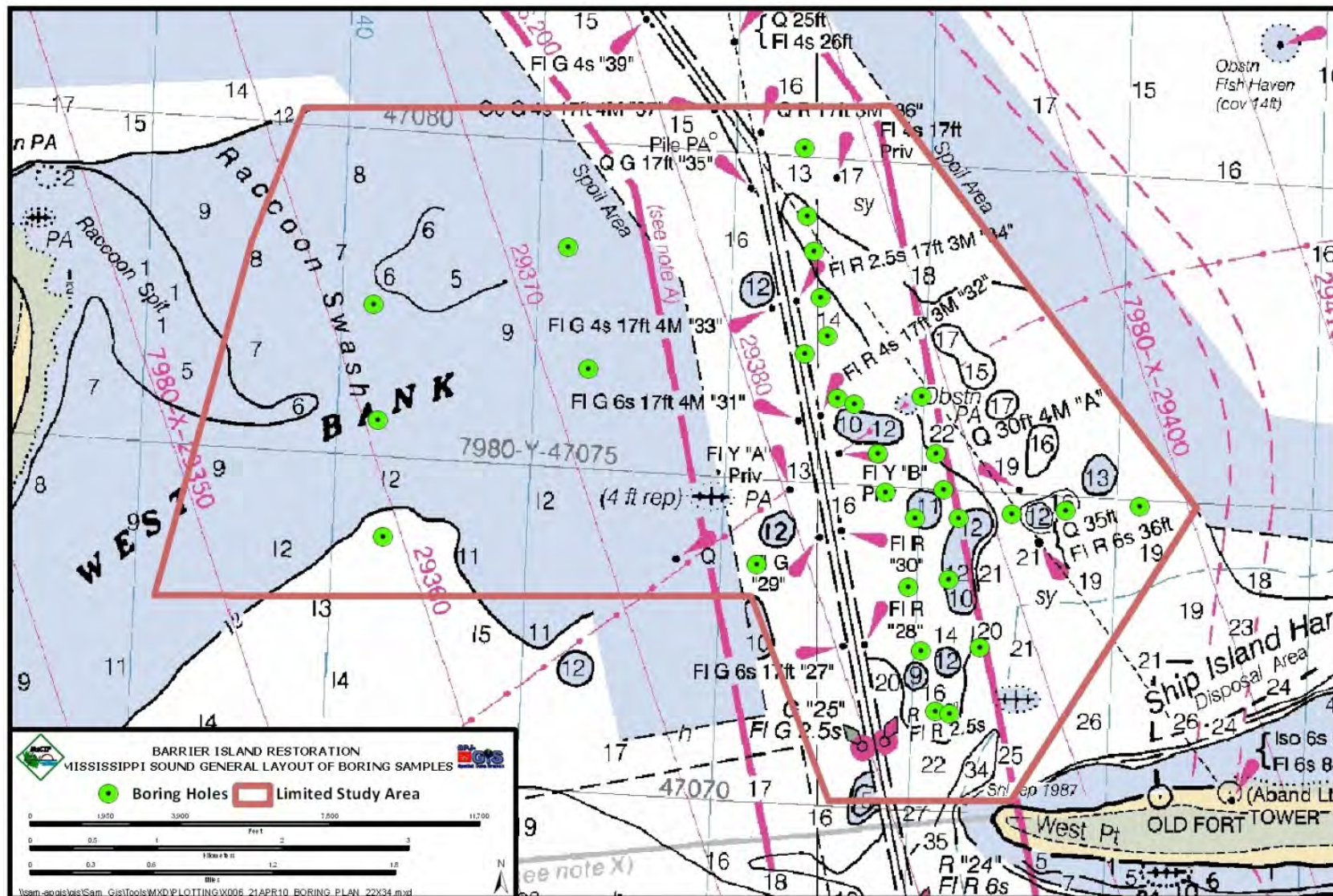


Figure 5.4.1 - General layout of the borings completed for the investigation for borrow material from Mississippi Sound.

APPENDIX C

Offshore Sand Borrow Investigation, Phases 1 & 2

GEOTECHNICAL INVESTIGATION

TABLE 5.4.1 - MISSISSIPPI BARRIER ISLAND VIBRACORE SAMPLES - MISSISSIPPI SOUND													
BORING	SAMPLE DEPTH (ft BGS)	LOCATION	LATITUDE	LONGITUDE	USCS	ANGULARITY	WET COLOR CODE	WET COLOR	DRY COLOR CODE	DRY COLOR	D ₅₀	% FINES	CaCO3
BI-MS-1-10A	0.0 - 2.0	MISSISSIPPI SOUND	30.24085	-88.99857	SM	CLAY FINES	10YR 3/1	VERY DK GRAY	10YR 5/2	GRAYISH BROWN	0.1920	13.5	NO
BI-MS-1-10B	2.0 - 7.0	MISSISSIPPI SOUND			SP	SUBANGULAR TO ROUNDED	10YR 5/1	GRAY	2.5Y 6/1	GRAY	0.1630	4.8	YES
BI-MS-1-10C	7.0 - 10.67	MISSISSIPPI SOUND			SP-SM	SUBANGULAR TO ROUNDED	10YR 5/1	GRAY	2.5Y 7/1	LT GRAY	0.1876	5.7	YES
BI-MS-2-10A	0.0 -2.0	MISSISSIPPI SOUND	30.24549	-88.99913	SM	CLAY FINES	10YR 3/1	VERY DK GRAY	10YR 5/2	GRAYISH BROWN	0.2115	15.1	NO
BI-MS-2-10B	2.0 - 7.0	MISSISSIPPI SOUND			SP	SUBANGULAR TO ROUNDED	10YR 6/1	GRAY	10YR 6/1	GRAY	0.1841	3.7	NO
BI-MS-2-10C	7.0 - 12.0	MISSISSIPPI SOUND			SP-SM	SUBANGULAR TO ROUNDED	10YR 5/1	GRAY	10YR 5/1	GRAY	0.1717	5.8	NO
BI-MS-3-10A	0.0 - 5.5	MISSISSIPPI SOUND	30.24822	-88.99974	SP-SM	CLAY FINES	10YR 4/1	DK GRAY	10YR 5/1	GRAY	0.1790	6.6	NO
BI-MS-3-10B	5.58 - 12.0	MISSISSIPPI SOUND			SP-SM	CLAY FINES	10YR 4/1	DK GRAY	10YR 5/1	GRAY	0.1856	7.9	NO
BI-MS-04-10A	10.5 - 12.1	MISSISSIPPI SOUND	30.25146	-89.99975	SM	SUBANGULAR TO ROUNDED	2.5Y 6/2	LT BROWNISH GRAY	10YR 7/2	LT GRAY	0.1105	18.2	NO
BI-MS-5-10		MISSISSIPPI SOUND	30.25402	-89.00066	CL	NO SAMPLE TAKEN							
BI-MS-6-10A	0.0 - 3.0	MISSISSIPPI SOUND	30.24532	-89.03575	SP	ANGULAR TO SUBANGULAR	10YR 6/1	GRAY	10YR 6/1	GRAY	0.1984	2.2	NO
BI-MS-6-10B	3.0 - 10.5	MISSISSIPPI SOUND			SM	CLAY FINES	10YR 5/1	GRAY	10YR 5/1	GRAY	0.1871	15.7	NO
BI-MS-6-10C	10.5 - 14.3	MISSISSIPPI SOUND			SP-SM	ANGULAR TO SUBANGULAR	10YR 6/1	GRAY	10YR 6/1	GRAY	0.1872	5.3	YES
BI-MS-7-10A	0.0 - 5.0	MISSISSIPPI SOUND	30.23904	-89.03667	SM	CLAY FINES	10YR 4/1	DK GRAY	10YR 4/1	DK GRAY	0.1850	20.0	NO
BI-MS-7-10B	5.0 - 10.0	MISSISSIPPI SOUND			SP	SUBANGULAR TO ROUNDED	10YR 6/1	GRAY	10YR 6/1	GRAY	0.1976	3.9	NO
BI-MS-7-10C	10.0 - 14.0	MISSISSIPPI SOUND			SP-SM	SUBANGULAR TO ROUNDED	10YR 6/1	GRAY	10YR 6/1	GRAY	0.1216	8.1	NO
BI-MS-8-10A	1.5 - 6.5	MISSISSIPPI SOUND	30.2309	-89.03573	SP	SUBANGULAR TO ROUNDED	10YR 5/1	GRAY	10YR 5/1	GRAY	0.2066	4.6	NO
BI-MS-8-10B	6.5 - 11.5	MISSISSIPPI SOUND			SP	SUBANGULAR TO ROUNDED	10YR 6/1	GRAY	10YR 6/1	GRAY	0.2027	3.5	NO
BI-MS-9-10A	0.0 - 5.0	MISSISSIPPI SOUND	30.25179	-89.02062	SP	SUBANGULAR TO ROUNDED	10YR 5/1	GRAY	10YR 5/1	GRAY	0.1824	3.9	NO
BI-MS-10-10A	0.0 - 3.0	MISSISSIPPI SOUND	30.24269	-89.0191	SM	CLAY FINES	10YR 4/1	DK GRAY	10YR 4/1	DK GRAY	0.1849	14.0	NO
BI-MS-10-10B	4.2 - 8.0	MISSISSIPPI SOUND			SP-SM	CLAY FINES	10YR 4/1	DK GRAY	10YR 4/1	DK GRAY	0.1711	11.9	NO
BI-MS-10-10C	8.0 - 15.7	MISSISSIPPI SOUND			SP-SM	SUBANGULAR TO ROUNDED	10YR 6/1	GRAY	10YR 6/1	GRAY	0.1840	6.1	NO
BI-MS-11-10A	0.0 - 4.08	MISSISSIPPI SOUND	30.22879	-89.00516	SP-SM	CLAY FINES	10YR 6/1	DK GRAY	10YR 4/2	DK GRAYISH BROWN	0.1935	10.1	NO
BI-MS-12-10A	0.0 - 3.0	MISSISSIPPI SOUND	30.23237	-88.99186	SM	CLAY FINES	10YR 4/1	DK GRAY	10YR 4/1	DK GRAY	0.1246	18.4	NO
BI-MS-12-10B	4.0 - 6.67	MISSISSIPPI SOUND			SM	CLAY FINES	10YR 4/1	DK GRAY	10YR 4/1	DK GRAY	0.1525	26.4	NO
BI-MS-12-10C	6.67 - 11.47	MISSISSIPPI SOUND			SM	CLAY FINES	10YR 4/1	DK GRAY	10YR 4/1	DK GRAY	0.1492	14.3	YES
BI-MS-13-10A	0.0 - 4.5	MISSISSIPPI SOUND	30.23244	-88.98853	SP-SM	SUBANGULAR TO ROUNDED	10YR 6/1	GRAY	10YR 6/1	GRAY	0.1873	7.4	NO
BI-MS-13-10B	4.5 - 9.5	MISSISSIPPI SOUND			SM	CLAY FINES	10YR 4/1	DK GRAY	10YR 5/1	GRAY	0.1408	23.0	YES
BI-MS-13-10C	9.5 - 13.5	MISSISSIPPI SOUND			SP-SM	SUBANGULAR TO ROUNDED	10YR 5/1	GRAY	10YR 5/2	GRAYISH BROWN	0.1248	13.3	NO
BI-MS-14-10A	13.0 - 17.67	MISSISSIPPI SOUND	30.23248	-88.9838	SP-SM	SUBANGULAR TO ROUNDED	10YR 5/1	GRAY	10YR 5/1	GRAY	0.1951	10.1	YES
BI-MS-15-10		MISSISSIPPI SOUND	30.23248	-88.97948	CL	NO SAMPLE TAKEN							
BI-MS-16-10A	4.3 - 8.2	MISSISSIPPI SOUND	30.23312	-88.97308	SP-SM	SUBANGULAR TO ROUNDED	5Y 4.5/1	GRAY	2.5Y 6/2	LT BROWNISH GRAY	0.2346	5.0	NO
BI-MS-17-10		MISSISSIPPI SOUND	30.25888	-89.00077	CL	NO SAMPLE TAKEN							
BI-MS-18-10A	1.5 - 6.5	MISSISSIPPI SOUND	30.24360	-88.99667	SP	SUBANGULAR TO ROUNDED	5Y 5/1	GRAY	5Y 7/1	LT GRAY	0.1983	4.8	NO
BI-MS-18-10B	6.5 - 11.5 (ft.)	MISSISSIPPI SOUND			SP	ANGULAR TO SUBANGULAR	5Y 5.5/1	GRAY	5Y 7/1	LT GRAY	0.1864	2.4	NO
BI-MS-18-10C	11.5 - 14.5	MISSISSIPPI SOUND			SP	SUBANGULAR TO ROUNDED	5Y 5/1	GRAY	5Y 6/1	GRAY	0.1694	4.0	NO
BI-MS-19-10A	3.0 - 8.0	MISSISSIPPI SOUND	30.24253	-88.99361	SP	SUBANGULAR TO ROUNDED	2.5Y 5/1	GRAY	2.5Y 7/1	LT GRAY	0.2212	2.6	NO
BI-MS-19-10B	8.0 - 13.5	MISSISSIPPI SOUND			SM	SUBANGULAR TO ROUNDED	2.5Y 5/1	GRAY	2.5Y 7/1	LT GRAY	0.1582	12.1	NO
BI-MS-20-10A	0.0 - 5.0 (ft.)	MISSISSIPPI SOUND	30.23656	-88.99491	SP-SM	SUBANGULAR TO ROUNDED	5Y 4/1	DK GRAY	2.5Y 6/1	GRAY	0.1497	7.0	NO

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Offshore Sand Borrow Investigation, Phases 1 & 2

GEOTECHNICAL INVESTIGATION

TABLE 5.4.1 (cont'd) - MISSISSIPPI BARRIER ISLAND VIBRACORE SAMPLES - MISSISSIPPI SOUND													
BORING	SAMPLE DEPTH (ft BGS)	LOCATION	LATITUDE	LONGITUDE	USCS	ANGULARITY	WET COLOR CODE	WET COLOR	DRY COLOR CODE	DRY COLOR	D ₅₀	% FINES	CaCO3
BI-MS-20-10B	6.4 - 11.4	MISSISSIPPI SOUND			SP	SUBANGULAR TO ROUNDED	5Y 5/1	GRAY	2.5Y 6.5/1	GRAY	0.1636	4.1	NO
BI-MS-20-10C	11.4 - 14.2	MISSISSIPPI SOUND			SP	SUBANGULAR TO ROUNDED	5Y 5.5/1	GRAY	2.5Y 6/1	GRAY	0.1693	3.8	NO
BI-MS-21-10A	0.0 - 5.0	MISSISSIPPI SOUND	30.23678	-88.9901	SP	SUBANGULAR TO ROUNDED	5Y 5/1	GRAY	2.5Y 6/1	GRAY	0.1678	3.6	NO
BI-MS-21-10B	5.0 - 9.5	MISSISSIPPI SOUND			SP-SM	SUBANGULAR TO ROUNDED	5Y 5/1	GRAY	2.5Y 6/1	GRAY	0.1481	5.6	NO
BI-MS-22-10A	0.0 - 5.0	MISSISSIPPI SOUND	30.23381	-88.99444	SP-SM	SUBANGULAR TO ROUNDED	2.5Y 4/1	DK GRAY	5Y 5/2	OLIVE GRAY	0.1722	6.1	NO
BI-MS-22-10B	5.0 - 10.0	MISSISSIPPI SOUND			SP	SUBANGULAR TO ROUNDED	2.5Y 5/1	GRAY	5Y 7/1	LT GRAY	0.2009	3.2	NO
BI-MS-23-10A	0.0 - 5.0	MISSISSIPPI SOUND	30.23419	-88.98959	SP	SUBANGULAR TO ROUNDED	2.5Y 4/1	DK GRAY	5Y 6/1	GRAY	0.1867	3.8	NO
BI-MS-23-10B	5.0 - 10.0	MISSISSIPPI SOUND			SP	SUBANGULAR TO ROUNDED	2.5Y 4/1	DK GRAY	5Y 6/1	GRAY	0.1827	3.7	NO
BI-MS-23-10C	10.0 - 16.3	MISSISSIPPI SOUND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 5/1	GRAY	5Y 6/1	GRAY	0.1797	6.8	NO
BI-MS-24-10A	0.0 - 5.0	MISSISSIPPI SOUND	30.24077	-88.99658	SP-SM	CLAY FINES	2.5Y 4/1	DK GRAY	5Y 6/1	GRAY	0.1577	10.7	NO
BI-MS-24-10B	5.0 - 10.0	MISSISSIPPI SOUND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 4/1	DK GRAY	5Y 6/1	GRAY	0.1382	6.0	YES
BI-MS-24-10C	10.0 - 13.7	MISSISSIPPI SOUND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 5/1	GRAY	2.5Y 6/1	GRAY	0.1569	5.6	NO
BI-MS-25-10A	0.0 - 5.0	MISSISSIPPI SOUND	30.22699	-88.99223	SP	ANGULAR TO SUBANGULAR	2.5Y 5/1	GRAY	5Y 6/1	GRAY	0.2529	3.7	NO
BI-MS-25-10B	5.0 - 10.4	MISSISSIPPI SOUND			SP	SUBANGULAR TO ROUNDED	2.5Y 5/1	GRAY	2.5Y 7/1	LT GRAY	0.2133	3.8	NO
BI-MS-25-10C	10.4 - 13.5	MISSISSIPPI SOUND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 5/1	GRAY	2.5Y 7/1	LT GRAY	0.1960	6.2	NO
BI-MS-25-10D	13.5 - 18.9	MISSISSIPPI SOUND			SM	CLAY FINES	2.5Y 3/1	VERY DK GRAY	5Y 5/1	GRAY	0.0947	38.0	NO
BI-MS-26-10A	0.0 - 5.0	MISSISSIPPI SOUND	30.22774	-88.98778	SP	SUBANGULAR TO ROUNDED	2.5Y 4/2	DK GRAYISH BROWN	2.5Y 6/2	LT BROWNISH GRAY	0.2363	3.2	NO
BI-MS-26-10B	5.0 - 10.0	MISSISSIPPI SOUND			SP	SUBANGULAR TO ROUNDED	2.5Y 5/1	GRAY	5Y 6/1	GRAY	0.2042	2.6	NO
BI-MS-26-10C	15.0 - 19.3	MISSISSIPPI SOUND			SP	SUBANGULAR TO ROUNDED	2.5Y 5/1	GRAY	2.5Y 7/1	LT GRAY	0.1934	2.7	NO
BI-MS-26-10D	10.0 - 15.0	MISSISSIPPI SOUND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 5/1	GRAY	2.5Y 7/1	LT GRAY	0.1910	5.9	NO
BI-MS-27-10A	0.0 - 5.0	MISSISSIPPI SOUND	30.22235	-88.99146	SP	SUBANGULAR TO ROUNDED	2.5Y 5/1	GRAY	2.5Y 7/1	LT GRAY	0.2328	2.3	NO
BI-MS-27-10B	5.0 - 10.0	MISSISSIPPI SOUND			SP	SUBANGULAR TO ROUNDED	2.5Y 5/1	GRAY	2.5Y 7/1	LT GRAY	0.2597	1.7	NO
BI-MS-27-10C	10.0 - 13.1	MISSISSIPPI SOUND			SP	SUBANGULAR TO ROUNDED	2.5Y 5/1	GRAY	5Y 7/1	LT GRAY	0.1973	4.0	NO
BI-MS-27-10D	13.1 - 14.7	MISSISSIPPI SOUND			SM	CLAY FINES	2.5Y 3/1	VERY DK GRAY	2.5Y 5/2	GRAYISH BROWN	0.1044	27.5	NO
BI-MS-28-10A	0.0 - 5.0	MISSISSIPPI SOUND	30.22283	-88.98662	SP	ANGULAR TO SUBANGULAR	2.5Y 5/2	GRAYISH BROWN	5Y 6/1	GRAY	0.2370	4.1	NO
BI-MS-28-10B	5.0 - 10.0	MISSISSIPPI SOUND			SP	SUBANGULAR TO ROUNDED	2.5Y 5/1	GRAY	5Y 7/1	LT GRAY	0.2412	2.5	NO
BI-MS-28-10C	10.0 - 15.0	MISSISSIPPI SOUND			SP	SUBANGULAR TO ROUNDED	2.5Y 5/1	GRAY	5Y 7/1	LT GRAY	0.2564	3.0	NO
BI-MS-28-10D	15.0 - 19.0	MISSISSIPPI SOUND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 5/1	GRAY	5Y 7/1	LT GRAY	0.2016	5.7	NO
BI-MS-29-10A	0.0 - 4.0	MISSISSIPPI SOUND	30.21802	-88.99009	SP	ANGULAR TO SUBANGULAR	2.5Y 6/1	GRAY	5Y 7/1	LT GRAY	0.2525	3.3	NO
BI-MS-29-10B	4.0 - 6.0	MISSISSIPPI SOUND			SM	CLAY FINES	2.5Y 3/1	VERY DK GRAY	5Y 5/1	GRAY	0.0950	33.3	YES
BI-MS-29-10C	6.0 - 10.6	MISSISSIPPI SOUND			SP	SUBANGULAR TO ROUNDED	5Y 6/1	GRAY	2.5Y 7/1	LT GRAY	0.1790	3.8	NO
BI-MS-29-10D	10.6 - 15.2	MISSISSIPPI SOUND			SP-SM	ANGULAR TO SUBANGULAR	5Y 4/1	DK GRAY	5Y 6/1	GRAY	0.2116	8.1	YES
BI-MS-30-10A	0.0 - 4.5	MISSISSIPPI SOUND	30.21823	-88.98669	SM	CLAY FINES	5Y 4/1	DK GRAY	2.5Y 5/2	GRAYISH BROWN	0.1601	17.4	NO
BI-MS-30-10B	4.5 - 10.0	MISSISSIPPI SOUND			SP-SM	SUBANGULAR TO ROUNDED	5Y 5/1	GRAY	2.5Y 7/1	LT GRAY	0.1550	7.2	NO
BI-MS-30-10C	10.0 - 15.5	MISSISSIPPI SOUND			SP-SM	SUBANGULAR TO ROUNDED	5Y 6/1	GRAY	2.5Y 7/1	LT GRAY	0.2532	7.0	NO
BI-MS-30-10D	15.5 - 19.1	MISSISSIPPI SOUND			SP-SM	CLAY FINES	5Y 3/1	VERY DK GRAY	5Y 3/1	VERY DK GRAY	0.1651	20.1	NO

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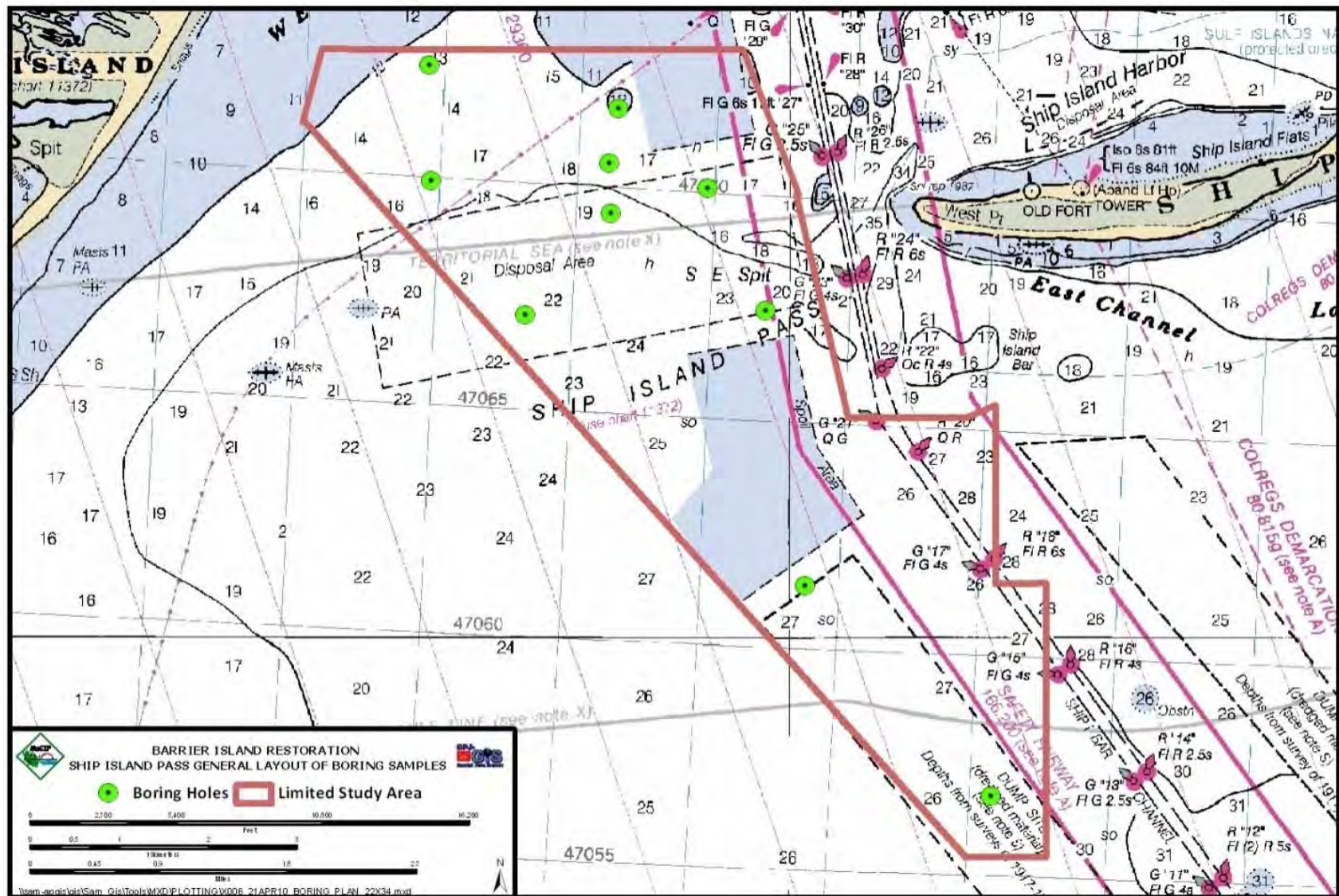


Figure 5.5.1 - General layout of the borings completed for the investigation for borrow material from Ship Island Pass

APPENDIX C

Offshore Sand Borrow Investigation, Phases 1 & 2

GEOTECHNICAL INVESTIGATION

TABLE 5.5.1 - MISSISSIPPI BARRIER ISLAND VIBRACORE SAMPLES - SHIP ISLAND PASS													
BORING	SAMPLE DEPTH (ft BGS)	LOCATION	LATITUDE	LONGITUDE	USCS	ANGULARITY	WET COLOR CODE	WET COLOR	DRY COLOR CODE	DRY COLOR	D ₅₀	% FINES	CaCO3
BI-SP-21-10A	0.0 - 5.0	SHIP ISLAND PASS	30.22499	-89.04251	SP-SM	SUBANGULAR TO ROUNDED	10YR 5/1	GRAY	10YR 5/1	GRAY	0.192	5.4	NO
BI-SP-21-10B	5.0 - 10.0	SHIP ISLAND PASS			SP	SUBANGULAR TO ROUNDED	10YR 6/1	GRAY	10YR 6/1	GRAY	0.1894	3.4	NO
BI-SP-22-10A	0.0 - 6.3	SHIP ISLAND PASS	30.21275	-89.04214	CL	CLAY FINES	5Y 3/1	VERY DK GRAY	2.5Y 5/1	GRAY	-	95.3	NO
BI-SP-22-10B	6.3 - 12.5	SHIP ISLAND PASS			SM	SUBANGULAR TO ROUNDED	5Y 4/2	OLIVE GRAY	2.5Y 6/2	LT BROWNISH GRAY	0.0932	21.9	YES
BI-SP-22-10C	12.5 - 18.2	SHIP ISLAND PASS			SM	CLAY FINES	5Y 3/2	DK OLIVE GRAY	2.5Y 5/2	GRAYISH BROWN	0.0762	48.8	YES
BI-SP-23-10A	0.0 - 5.0	SHIP ISLAND PASS	30.21513	-89.02116	CL	CLAY FINES	5Y 3/1	VERY DK GRAY	2.5Y 5/2	GRAYISH BROWN	-	88.7	NO
BI-SP-23-10B	5.0 - 9.5	SHIP ISLAND PASS			SP-SM	SUBANGULAR TO ROUNDED	5Y 4/2	OLIVE GRAY	2.5Y 61/	LT BROWNISH GRAY	0.1275	11.9	NO
BI-SP-23-10C	9.5 - 14.9	SHIP ISLAND PASS			SM	CLAY FINES	5Y 3/2	DK OLIVE GRAY	2.5Y 5/2	GRAYISH BROWN	0.0943	36.9	YES
BI-SP-24-10A	0.0 - 5.0	SHIP ISLAND PASS	30.22068	-89.01957	SP	SUBANGULAR TO ROUNDED	5Y 5/2	OLIVE GRAY	2.5Y 7/2	LT GRAY	0.1931	3.8	NO
BI-SP-24-10B	5.0 - 11.1	SHIP ISLAND PASS			SP	SUBANGULAR TO ROUNDED	5Y 5/2	OLIVE GRAY	2.5Y 7/2	LT GRAY	0.1992	4	NO
BI-SP-24-10C	11.1 - 14.6	SHIP ISLAND PASS			SM	CLAY FINES	5Y 3/1	VERY DK GRAY	2.5Y 5/2	GRAYISH BROWN	0.0763	48.8	YES
BI-SP-25-10		SHIP ISLAND PASS	30.17198	-88.99827	CL	NO SAMPLE TAKEN							
BI-SP-26-10		SHIP ISLAND PASS	30.15056	-88.97627	CL	NO SAMPLE TAKEN							
BI-SP-27-10A	0.0 - 5.5	SHIP ISLAND PASS	30.2129	-89.00952	SP	SUBANGULAR TO ROUNDED	5Y 5/1	GRAY	2.5Y 7/1	LT GRAY	0.203	3.6	YES
BI-SP-27-10B	5.5 - 13.7	SHIP ISLAND PASS			CL	CLAY FINES	5Y 3/1	VERY DK GRAY	2.5Y 5/2	GRAYISH BROWN	-	70.8	YES
BI-SP-28-10A	0.0 - 4.3	SHIP ISLAND PASS	30.20001	-89.00292	SP	SUBANGULAR TO ROUNDED	5Y 5/1	GRAY	2.5Y 7/1	LT GRAY	0.1991	4.2	YES
BI-SP-28-10B	4.3 - 9.0	SHIP ISLAND PASS			SP	SUBANGULAR TO ROUNDED	5Y 5/1	GRAY	2.5Y 7/2	LT GRAY	0.2619	3.8	NO
BI-SP-28-10C	9.0 - 16.5	SHIP ISLAND PASS			CL	CLAY FINES	5Y 3/1	VERY DK GRAY	2.5Y 5/2	GRAYISH BROWN	-	77.5	YES
BI-SP-29-10		SHIP ISLAND PASS	30.20991	-89.02098	CL	NO SAMPLE TAKEN							
BI-SP-30-10		SHIP ISLAND PASS	30.19953	-89.0309	CL	NO SAMPLE TAKEN							

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GEOTECHNICAL INVESTIGATION

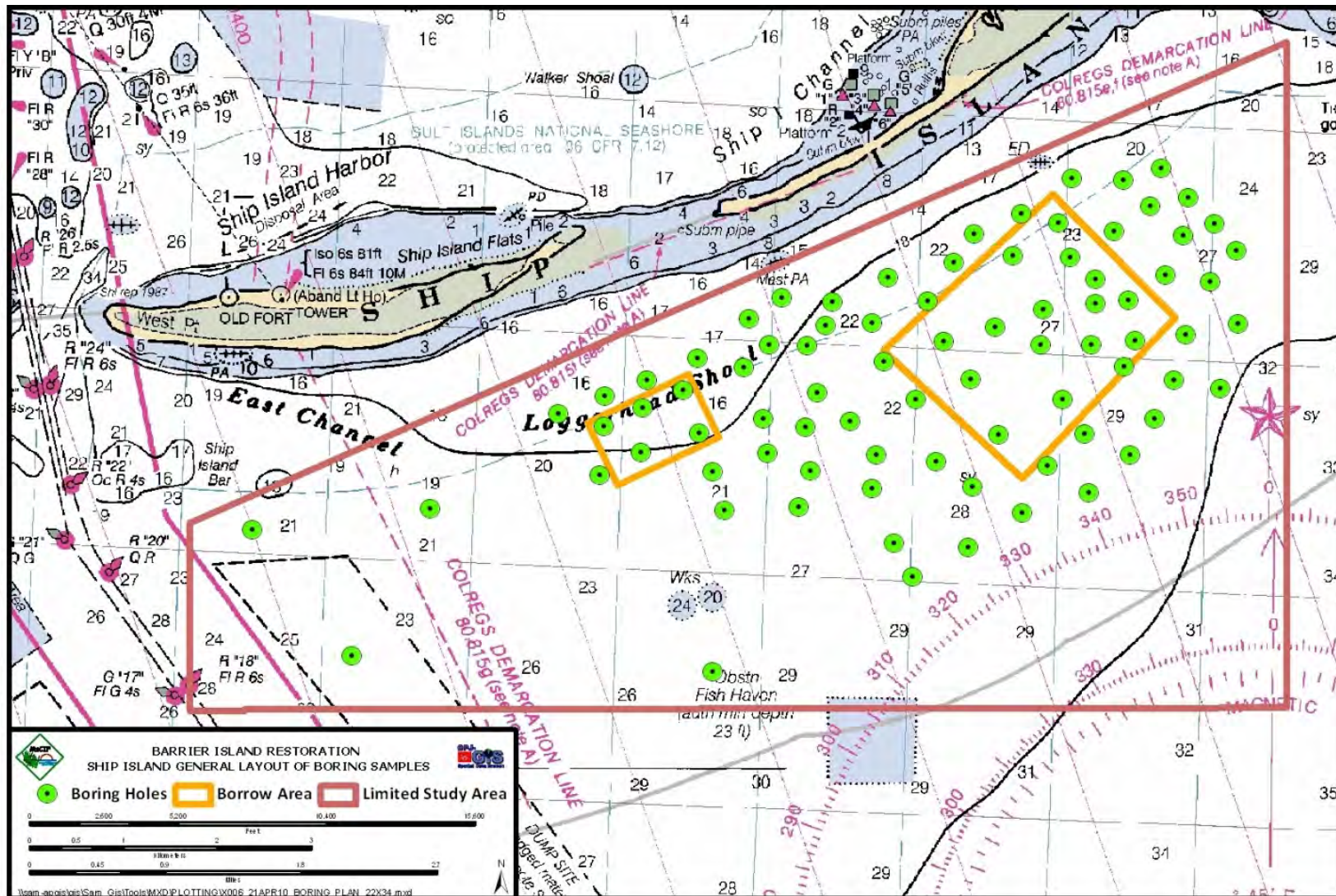


Figure 5.6.1 – General layout of the borings completed for the investigation for borrow material from Ship Island area. Initial potential borrow area outlined in orange.

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Offshore Sand Borrow Investigation, Phases 1 & 2

GEOTECHNICAL INVESTIGATION

TABLE 5.6.1 - MISSISSIPPI BARRIER ISLAND VIBRACORE SAMPLES – SHIP ISLAND													
BORING	SAMPLE DEPTH (ft BGS)	LOCATION	LATITUDE	LONGITUDE	USCS	ANGULARITY	WET COLOR CODE	WET COLOR	DRY COLOR CODE	DRY COLOR	D ₅₀	% FINES	CaCO3
BI-SI-10-10A	0.0 - 2.0	SHIP ISLAND	30.20275	-88.92101	SP	SUBANGULAR TO ROUNDED	5Y 5/2	OLIVE GRAY	2.5Y 7/2	LT GRAY	0.192	2.5	NO
BI-SI-10-10B	2.0 - 4.4	SHIP ISLAND			SM	SUBANGULAR TO ROUNDED	5Y 4/2	DK OLIVE GRAY	5Y 6/2	LT OLIVE GRAY	0.1477	21	YES
BI-SI-10-10C	4.4 - 11.0	SHIP ISLAND			SP-SM	SUBANGULAR TO ROUNDED	5Y 5/1	GRAY	2.5Y 7/2	LT GRAY	0.1847	5.2	NO
BI-SI-11-10A	0.0 - 5.0	SHIP ISLAND	30.2154	-88.89114	SM	SUBANGULAR TO ROUNDED	5Y 4/2	DK OLIVE GRAY	5Y 6/2	LT OLIVE GRAY	0.1853	12.5	YES
BI-SI-11-10B	5.0 - 11.5	SHIP ISLAND			SP-SM	SUBANGULAR TO ROUNDED	5Y 5/2	OLIVE GRAY	2.5Y 6/2	LT BROWNISH GRAY	0.1726	6.4	NO
BI-SI-12-10A	0.0 - 4.7	SHIP ISLAND	30.19998	-88.90254	SP	SUBANGULAR TO ROUNDED	5Y 5/1	GRAY	2.5Y 7/1	LT GRAY	0.1948	3.2	NO
BI-SI-12-10B	4.7 - 8.5	SHIP ISLAND			SP-SM	SUBANGULAR TO ROUNDED	5Y 5/2	OLIVE GRAY	2.5Y 6/2	LT BROWNISH GRAY	0.1609	10.3	NO
BI-SI-13-10A	0.0 - 5.0	SHIP ISLAND	30.2117	-88.87539	SP	SUBANGULAR TO ROUNDED	5Y 6/1	GRAY	2.5Y 7/1	LT GRAY	0.2476	2.3	NO
BI-SI-13-10B	5.0 - 10.0	SHIP ISLAND			SP	SUBANGULAR TO ROUNDED	5Y 6/1	GRAY	2.5Y 7/1	LT GRAY	0.2046	2.3	NO
BI-SI-13-10C	10.0 - 13.2	SHIP ISLAND			SP-SM	SUBANGULAR TO ROUNDED	5Y 5/1	GRAY	5Y 7/2	LT GRAY	0.165	5.9	NO
BI-SI-14-10A	0.0 - 4.0	SHIP ISLAND	30.19906	-88.87673	SP-SM	SUBANGULAR TO ROUNDED	5Y 6/1	GRAY	5Y 7/1	LT GRAY	0.2196	6.5	NO
BI-SI-14-10B	4.0 - 8.0	SHIP ISLAND			SP-SM	SUBANGULAR TO ROUNDED	5Y 6/1	GRAY	2.5Y 7/1	LT GRAY	0.1838	6.3	NO
BI-SI-14-10C	8.0 - 12.0	SHIP ISLAND			SM	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 6/2	LT BROWNISH GRAY	0.1542	13.9	NO
BI-SI-14-10D	12.0 - 16.5	SHIP ISLAND			SM	SUBANGULAR TO ROUNDED	5Y 4/1	DK GRAY	2.5Y 5/2	GRAYISH BROWN	0.1646	19.8	YES
BI-SI-15-10		SHIP ISLAND	30.19191	-88.949	CL	NO SAMPLE TAKEN							
BI-SI-16-10		SHIP ISLAND	30.18987	-88.96874	CL	NO SAMPLE TAKEN							
BI-SI-17-10		SHIP ISLAND	30.19159	-88.91666	CL	NO SAMPLE TAKEN							
BI-SI-18-10		SHIP ISLAND	30.17764	-88.95805	CL	NO SAMPLE TAKEN							
BI-SI-19-10		SHIP ISLAND	30.18535	-88.8959	CL	NO SAMPLE TAKEN							
BI-SI-20-10		SHIP ISLAND	30.17595	-88.91795	CL	NO SAMPLE TAKEN							
BI-SI-21-10A	0.0 - 4.0	SHIP ISLAND	30.19969	-88.92995	SP-SM	SUBANGULAR TO ROUNDED	5Y 5.5/1	GRAY	2.5Y 6/2	LT BROWNISH GRAY	0.2043	7.3	NO
BI-SI-21-10B	4.0 - 8.3	SHIP ISLAND			SP-SM	SUBANGULAR TO ROUNDED	5Y 7/1	LT GRAY	2.5Y 7/1	LT GRAY	0.2756	6.5	NO
BI-AI-21-10C	8.3 - 11.2	SHIP ISLAND			SM	CLAY FINES	5Y 4/2	OLIVE GRAY	2.5Y 5/2	GRAYISH BROWN	0.1631	29.6	NO
BI-SI-22-10A	0.0 - 4.0	SHIP ISLAND	30.20147	-88.92578	SP-SM	SUBANGULAR TO ROUNDED	5Y 6/1	GRAY	2.5Y 7/1	LT GRAY	0.2160	6.8	NO
BI-S-22-10B	4.0 - 8.0	SHIP ISLAND			SP-SM	SUBANGULAR TO ROUNDED	5Y 4.5/1	DK GRAY	2.5Y 6/2	LT BROWNISH GRAY	0.1913	9.4	NO
BI-SI-22-10C	8.0 - 9.6	SHIP ISLAND			SM	CLAY FINES	5Y 4/1	DK GRAY	2.5Y 5/2	GRAYISH BROWN	0.1741	23.7	NO
BI-SI-23-10A	0.0 - 2.4	SHIP ISLAND	30.20538	-88.91467	SP-SM	SUBANGULAR TO ROUNDED	5Y 5.5/1	GRAY	2.5Y 7/1	LT GRAY	0.2174	5.5	NO
BI-SI-23-10B	2.4 - 5.6	SHIP ISLAND			SM	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 6/2	LT BROWNISH GRAY	0.1837	15.1	NO
BI-SI-24-10A	0.0 - 4.0	SHIP ISLAND	30.20754	-88.90753	SP-SM	SUBANGULAR TO ROUNDED	5Y 5/1	GRAY	2.5Y 6/2	LT BROWNISH GRAY	0.2043	5.7	NO
BI-SI-24-10B	4.0 - 7.7	SHIP ISLAND			SP-SM	SUBANGULAR TO ROUNDED	5Y 6/1	GRAY	2.5Y 7/1	LT GRAY	0.2187	7.5	NO
BI-SI-25-10A	0.0 -3.5	SHIP ISLAND	30.20993	-88.90041	SP	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 7/1	LT GRAY	0.2183	3.9	NO
BI-SI-25-10B	3.5 - 7.0	SHIP ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 6/1	GRAY	2.5Y 7/1	LT GRAY	0.1942	4.5	NO
BI-SI-25-10C	7.0 - 8.3	SHIP ISLAND			SM	SUBANGULAR TO ROUNDED	5Y 4/1	DK GRAY	2.5Y 6/2	LT BROWNISH GRAY	0.1592	14.1	NO
BI-SI-26-10A	0.0 - 6.0	SHIP ISLAND	30.21192	-88.89412	SP	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 7/1	LT GRAY	0.2343	3.5	NO
BI-SI-26-10B	6.0 - 12.0	SHIP ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5 5/2	GRAYISH BROWN	2.5Y 7/1	LT GRAY	0.1792	7.4	NO
BI-SI-26-10C	12.0 - 16.2	SHIP ISLAND			SM	SUBANGULAR TO ROUNDED	5Y 4/1	DK GRAY	2.5Y 5/2	GRAYISH BROWN	0.1856	21.5	NO
BI-SI-27-10A	0.0 - 1.2	SHIP ISLAND	30.21618	-88.88464	SM	CLAY FINES	2.5Y 3/1	VERY DK GRAY	2.5Y 5/2	GRAYISH BROWN	0.2002	32.3	YES

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GEOTECHNICAL INVESTIGATION

TABLE 5.6.1 (cont'd) - MISSISSIPPI BARRIER ISLAND VIBRACORE SAMPLES – SHIP ISLAND													
BORING	SAMPLE DEPTH (ft BGS)	LOCATION	LATITUDE	LONGITUDE	USCS	ANGULARITY	WET COLOR CODE	WET COLOR	DRY COLOR CODE	DRY COLOR	D ₅₀	% FINES	CaCO3
BI-SI-27-10B	1.2 - 6.6	SHIP ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 4/1	DK GRAY	2.5Y 6/2	LT BROWNISH GRAY	0.2039	11.3	NO
BI-SI-27-10C	8.3 - 11.7	SHIP ISLAND			SP-SM	SUBANGULAR TO ROUNDED	5Y 5/1	GRAY	2.5Y 6/2	LT BROWNISH GRAY	0.2659	10	NO
BI-SI-28-10A	0.0 - 1.3	SHIP ISLAND	30.2193	-88.87977	SM	CLAY FINES	5Y 3/1	VERY DK GRAY	2.5Y 4/2	DK GRAYISH BROWN	0.0862	40.6	YES
BI-SI-28-10B	1.3 - 5.1	SHIP ISLAND			SP-SM	SUBANGULAR TO ROUNDED	5Y 5/2	OLIVE GRAY	2.5Y 6/2	LT BROWNISH GRAY	0.2735	10.8	NO
BI-SI-28-10C	5.1 - 10.0	SHIP ISLAND			SM	SUBANGULAR TO ROUNDED	2.5Y 6/1	GRAY	2.5Y 7/1	LT GRAY	0.2149	12.2	YES
BI-SI-28-10D	10.0 - 14.0	SHIP ISLAND			SP-SM	SUBANGULAR TO ROUNDED	5Y 5/1	GRAY	5Y 7/1	LT GRAY	0.2430	8.6	NO
BI-SI-29-10A	0.0 - 4.0	SHIP ISLAND	30.19908	-88.9147	SP	SUBANGULAR TO ROUNDED	5Y 5/1	GRAY	2.5Y 6/2	LT BROWNISH GRAY	0.2063	2.8	NO
BI-SI-29-10B	4.0 - 8.5	SHIP ISLAND			SM	SUBANGULAR TO ROUNDED	5Y 3/2	DK OLIVE GRAY	2.5Y 5/2	GRAYISH BROWN	0.1523	20	NO
BI-SI-30-10A	0.0 - 5.0	SHIP ISLAND	30.20303	-88.90634	SP-SM	SUBANGULAR TO ROUNDED	5Y 5/1	GRAY	2.5Y 6/2	LT BROWNISH GRAY	0.1830	5.6	NO
BI-SI-30-10B	5.0 - 10.0	SHIP ISLAND			SP-SM	SUBANGULAR TO ROUNDED	5Y 5/1	GRAY	2.5Y 7/1	LT GRAY	0.2146	5.9	NO
BI-SI-30-10C	10.0 - 13.0	SHIP ISLAND			SM	SUBANGULAR TO ROUNDED	5Y 4/1	DK GRAY	2.5Y 6/2	LT BROWNISH GRAY	0.1547	15.6	NO
BI-SI-31-10A	0.0 - 5.0	SHIP ISLAND	30.20604	-88.89898	SP-SM	SUBANGULAR TO ROUNDED	5Y 6/1	GRAY	2.5Y 7/1	LT GRAY	0.2057	7.3	NO
BI-SI-31-10B	5.0 - 10.5	SHIP ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 6/1	GRAY	2.5Y 7/1	LT GRAY	0.1912	4.1	NO
BI-SI-31-10C	10.5 - 13.5	SHIP ISLAND			SM	SUBANGULAR TO ROUNDED	5Y 5/1	GRAY	2.5Y 6/2	LT BROWNISH GRAY	0.1271	13.5	NO
BI-SI-32-10A	0.0 - 5.0	SHIP ISLAND	30.20814	-88.89248	SP	SUBANGULAR TO ROUNDED	5Y 6/1	GRAY	2.5Y 7/2	LT GRAY	0.2115	3.3	NO
BI-SI-32-10B	5.0 - 10.0	SHIP ISLAND			SP	SUBANGULAR TO ROUNDED	5Y 5/1	GRAY	2.5Y 7/1	LT GRAY	0.1631	4.6	NO
BI-SI-32-10C	10.0 - 15.3	SHIP ISLAND			SP-SM	SUBANGULAR TO ROUNDED	5Y 5/1	GRAY	5Y 7/1	LT GRAY	0.1496	7.1	NO
BI-SI-32-10D	15.3 - 18.9	SHIP ISLAND			SM	CLAY FINES	5Y 4/1	DK GRAY	2.5Y 6/2	LT BROWNISH GRAY	0.1601	12.9	YES
BI-SI-33-10A	0.0 - 4.7	SHIP ISLAND	30.20933	-88.88662	SP-SM	SUBANGULAR TO ROUNDED	5Y 5/1	GRAY	5Y 7/1	LT GRAY	0.2204	5.5	NO
BI-SI-33-10B	4.7 - 9.4	SHIP ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 6/1	GRAY	2.5Y 7/1	LT GRAY	0.1598	4.8	NO
BI-SI-33-10C	9.4 - 13.3	SHIP ISLAND			SM	SUBANGULAR TO ROUNDED	5Y 3/1	VERY DK GRAY	2.5Y 4/2	DK GRAYISH BROWN	0.1591	12.6	NO
BI-SI-34-10A	0.0 - 3.6	SHIP ISLAND	30.21101	-88.812	SM	SUBANGULAR TO ROUNDED	5Y 5/1	GRAY	2.5Y 6/2	LT BROWNISH GRAY	0.1999	15.8	NO
BI-SI-34-10B	3.6 - 8.0	SHIP ISLAND			SP-SM	SUBANGULAR TO ROUNDED	5Y 6/1	GRAY	2.5Y 7/1	LT GRAY	0.1952	9.2	NO
BI-SI-34-10C	8.0 - 13.0	SHIP ISLAND			SP	SUBANGULAR TO ROUNDED	5Y 6/1	GRAY	2.5Y 7/1	LT GRAY	0.1871	4.8	NO
BI-SI-35-10A	0.6 - 5.0	SHIP ISLAND	30.21406	-88.87554	SP-SM	SUBANGULAR TO ROUNDED	2.5Y 6/1	GRAY	5Y 7/1	LT GRAY	0.2383	10.5	NO
BI-SI-35-10B	5.0 - 10.0	SHIP ISLAND			SP-SM	SUBANGULAR TO ROUNDED	5Y 6/1	GRAY	2.5Y 7/1	LT GRAY	0.2374	8.1	NO
BI-SI-35-10C	10.0 - 13.4	SHIP ISLAND			SP-SM	SUBANGULAR TO ROUNDED	5Y 6/1	GRAY	2.5Y 7/1	LT GRAY	0.2054	9.5	NO
BI-SI-36-10A	0.0 - 3.5	SHIP ISLAND	30.19534	-88.91796	SP-SM	SUBANGULAR TO ROUNDED	5Y 5/1	GRAY	2.5Y 6/2	LT BROWNISH GRAY	0.1671	9.7	NO
BI-SI-37-10A	0.0 - 5.7	SHIP ISLAND	30.19732	-88.91199	SM	SUBANGULAR TO ROUNDED	5Y 4/1	DK GRAY	2.5Y 5/1	GRAY	0.1658	19.7	NO
BI-SI-38-10A	0.0 - 2.0	SHIP ISLAND	30.20245	-88.89542	SP-SM	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 6/2	LT BROWNISH GRAY	0.1831	5.8	NO
BI-SI-38-10B	4.5 - 9.5	SHIP ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 6/2	LT BROWNISH GRAY	2.5Y 7/1	LT GRAY	0.1926	5.3	NO
BI-SI-38-10C	9.5 - 12.8	SHIP ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 6/2	LT BROWNISH GRAY	0.1673	9.1	NO
BI-SI-38-10D	12.8 - 15.9	SHIP ISLAND			SM	SUBANGULAR TO ROUNDED	2.5Y 4/1	DK GRAY	2.5Y 4/2	DK GRAYISH BROWN	0.1499	25.5	YES
BI-SI-39-10A	0.0 - 6.0	SHIP ISLAND	30.2047	-88.88942	SP-SM	SUBANGULAR TO ROUNDED	2.5Y 6/1	GRAY	2.5Y 7/1	LT GRAY	0.2030	6	NO
BI-SI-39-10B	6.0 - 12.0	SHIP ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 6/2	LT BROWNISH GRAY	2.5Y 6/2	LT BROWNISH GRAY	0.1798	8.9	NO
BI-SI-39-10C	12.0 - 15.6	SHIP ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 4/2	DK GRAYISH BROWN	2.5Y 6/2	LT BROWNISH GRAY	0.1994	11.4	YES
BI-SI-40-10A	0.0 - 6.5	SHIP ISLAND	30.20777	-88.8168	SP-SM	SUBANGULAR TO ROUNDED	2.5Y 6/2	LT BROWNISH GRAY	2.5Y 7/2	LT GRAY	0.2273	5.1	NO

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GEOTECHNICAL INVESTIGATION

TABLE 5.6.1 (cont'd) - MISSISSIPPI BARRIER ISLAND VIBRACORE SAMPLES – SHIP ISLAND													
BORING	SAMPLE DEPTH (ft BGS)	LOCATION	LATITUDE	LONGITUDE	USCS	ANGULARITY	WET COLOR CODE	WET COLOR	DRY COLOR CODE	DRY COLOR	D ₅₀	% FINES	CaCO3
BI-SI-40-10B	6.5 - 13.2	SHIP ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 7/2	LT GRAY	0.1872	6.8	NO
BI-SI-40-10C	13.2 - 17.1	SHIP ISLAND			SP-SM	SUBANGULAR TO ROUNDED	5Y 4/1	DK GRAY	2.5Y 5/2	GRAYISH BROWN	0.2159	10.5	YES
BI-SI-41-10A	0.0 - 5.0	SHIP ISLAND	30.2119	-88.87193	SP-SM	SUBANGULAR TO ROUNDED	2.5Y 6/2	LT BROWNISH GRAY	2.5Y 7/1	LT GRAY	0.2353	10.4	NO
BI-SI-41-10B	5.0 - 11.4	SHIP ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 7/1	LT GRAY	2.5Y 7/1	LT GRAY	0.2164	6	NO
BI-SI-42-10		SHIP ISLAND	30.19185	-88.90818	CL	NO SAMPLE TAKEN							
BI-SI-43-10		SHIP ISLAND	30.19371	-88.90035	CL	NO SAMPLE TAKEN							
BI-SI-44-10A	0.0 - 4.0	SHIP ISLAND	30.19637	-88.89318	SP-SM	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 6/2	LT BROWNISH GRAY	0.1791	6.7	NO
BI-SI-44-10B	4.0 - 8.5	SHIP ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 6/2	LT BROWNISH GRAY	2.5Y 7/1	LT GRAY	0.2159	3.9	NO
BI-SI-44-10C	12.0 - 15.4	SHIP ISLAND			SM	SUBANGULAR TO ROUNDED	2.5Y 4/2	DK GRAYISH BROWN	2.5Y 5/2	GRAYISH BROWN	0.2105	12	NO
BI-SI-45-10A	0.0 - 5.0	SHIP ISLAND	30.19892	-88.88628	SP-SM	SUBANGULAR TO ROUNDED	5Y 6/1	GRAY	2.5Y 7/1	LT GRAY	0.2102	6.6	NO
BI-SI-45-10B	5.0 - 9.4	SHIP ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 5/2	GRAYISH BROWN	0.1895	7.5	NO
BI-SI-45-10C	11.5 - 15.9	SHIP ISLAND			SM	SUBANGULAR TO ROUNDED	2.5Y 4/1	DK GRAY	2.5Y 5/2	GRAYISH BROWN	0.1884	15.7	NO
BI-SI-46-10A	0.0 - 5.0	SHIP ISLAND	30.20233	-88.87922	SP	SUBANGULAR TO ROUNDED	2.5Y 6/2	LT BROWNISH GRAY	2.5Y 7/1	LT GRAY	0.226	4.9	NO
BI-SI-46-10B	5.0 - 11.4	SHIP ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 7/1	LT GRAY	0.1903	8.1	NO
BI-SI-46-10C	11.4 - 15.4	SHIP ISLAND			SM	SUBANGULAR TO ROUNDED	2.5Y 4/2	DK GRAYISH BROWN	2.5Y 5/2	GRAYISH BROWN	0.1904	16	NO
BI-SI-47-10A	0.7 - 5.0	SHIP ISLAND	30.20559	-88.87237	SP-SM	SUBANGULAR TO ROUNDED	2.5Y 6/2	LT BROWNISH GRAY	2.5Y 7/1	LT GRAY	0.2676	6.4	NO
BI-SI-47-10B	5.0 - 9.7	SHIP ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 7/1	LY GRAY	0.1967	6.8	NO
BI-SI-48-10		SHIP ISLAND	30.18855	-88.89783	CL	NO SAMPLE TAKEN							
BI-SI-49-10		SHIP ISLAND	30.1882	-88.88981	CL	NO SAMPLE TAKEN							
BI-SI-50-10A	3.7 - 9.8	SHIP ISLAND	30.19141	-88.88363	SM	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 6/2	LT BROWNISH GRAY	0.1757	15.7	NO
BI-SI-51-10A	1.8 - 5.0	SHIP ISLAND	30.20059	-88.86903	SP-SM	SUBANGULAR TO ROUNDED	2.5Y 4/2	DK GRAYISH BROWN	2.5Y 6/2	LT BROWNISH GRAY	0.1931	5.7	NO
BI-SI-51-10B	5.0 - 10.4	SHIP ISLAND			SM	SUBANGULAR TO ROUNDED	2.5Y 4/2	DK GRAYISH BROWN	2.5Y 6/2	LT BROWNISH GRAY	0.174	15.5	NO
BI-SI-62-10A	0.0 - 2.0	SHIP ISLAND	30.22386	-88.87085	SP-SM	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 6/2	LT BROWNISH GRAY	0.2472	9.6	YES
BI-SI-62-10B	2.0 - 7.0	SHIP ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 7/1	LT GRAY	2.5Y 7/1	LT GRAY	0.2734	5.2	NO
BI-SI-62-10C	7.0 - 12.6	SHIP ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 7/1	LT GRAY	2.5Y 8/1	WHITE	0.2996	3.7	NO
BI-SI-65-10A	0.0 - 6.1	SHIP ISLAND	30.195	-88.93044	SM	SUBANGULAR TO ROUNDED	2.5Y 4/1	DK GRAY	2.5Y 5/2	GRAYISH BROWN	0.2089	12.7	YES
BI-SI-66-10A	0.0 - 5.0	SHIP ISLAND	30.19732	-88.92593	SP	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 7/2	LT GRAY	0.2383	3.5	NO
BI-SI-66-10B	5.0 - 8.6	SHIP ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 7/2	LT GRAY	0.2635	4.4	NO
BI-SI-67-10A	0.0 - 3.7	SHIP ISLAND	30.20066	-88.19232	SP	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 7/2	LT GRAY	0.2558	4.7	NO
BI-SI-68-10A	0.0 - 4.0	SHIP ISLAND	30.2116	-88.8784	SP	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 7/2	LT GRAY	0.2992	4.1	NO
BI-SI-68-10B	4.0 - 8.0	SHIP ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 6/2	LT BROWNISH GRAY	2.5Y 7/2	LT GRAY	0.2942	3.3	NO
BI-SI-68-10C	8.0 - 12.2	SHIP ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 7/2	LT GRAY	0.2232	3.9	NO
BI-SI-69-10A	1.4 - 5.4	SHIP ISLAND	30.2186	-88.87349	SP	SUBANGULAR TO ROUNDED	2.5Y 7/1	LT GRAY	2.5Y 7/1	LT GRAY	0.2027	4.1	NO
BI-SI-69-10B	5.4 - 9.4	SHIP ISLAND			SM	SUBANGULAR TO ROUNDED	2.5Y 7/1	LT GRAY	2.5Y 7/1	LT GRAY	0.1891	21.4	NO
BI-SI-69-10C	9.4 - 13.3	SHIP ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 7/1	LT GRAY	2.5Y 7/1	LT GRAY	0.1907	4.7	NO
BI-SI-70-10A	0.0 - 4.5	SHIP ISLAND	30.19978	-88.90777	SP	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 7/1	LT GRAY	0.1831	3.9	NO
BI-SI-71-10		SHIP ISLAND	30.19547	-88.90723	CL	NO SAMPLE TAKEN							

APPENDIX C

Offshore Sand Borrow Investigation, Phases 1 & 2

GEOTECHNICAL INVESTIGATION

TABLE 5.6.1 (cont'd) - MISSISSIPPI BARRIER ISLAND VIBRACORE SAMPLES – SHIP ISLAND													
BORING	SAMPLE DEPTH (ft BGS)	LOCATION	LATITUDE	LONGITUDE	USCS	ANGULARITY	WET COLOR CODE	WET COLOR	DRY COLOR CODE	DRY COLOR	D ₅₀	% FINES	CaCO3
BI-SI-72-10A	0.0 - 6.7	SHIP ISLAND	30.19716	-88.89977	SP	SUBANGULAR TO ROUNDED	2.5Y 6/1	GRAY	2.5Y 7/1	LT GRAY	0.2112	3.5	NO
BI-SI-72-10B	10.4 - 12.5	SHIP ISLAND			SM	SUBANGULAR TO ROUNDED	2.5Y 4/2	DK GRAYISH BROWN	2.5Y 6/2	LT BROWNISH GRAY	0.1573	15.3	NO
BI-SI-73-10A	0.3 - 5.3	SHIP ISLAND	30.20769	-88.87598	SP	SUBANGULAR TO ROUNDED	2.5Y 6/2	LT BROWNISH GRAY	2.5Y 7/2	LT GRAY	0.1920	4.9	NO
BI-SI-73-10B	5.3 - 11.3	SHIP ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 6/1	GRAY	2.5Y 7/1	LT GRAY	0.1835	4.4	YES
BI-SI-73-10C	11.3 - 14.9	SHIP ISLAND			SM	SUBANGULAR TO ROUNDED	2.5Y 4/2	DK GRAYISH BROWN	2.5Y 4/3	OLIVE BROWN	0.1636	19.1	YES
BI-SI-74-10A	1.3 - 6.3	SHIP ISLAND	30.24438	-88.86775	SP-SM	SUBANGULAR TO ROUNDED	2.5Y 6/1	GRAY	2.5Y 7/1	LT GRAY	0.1821	5.7	NO
BI-SI-74-10B	6.3 - 12.0	SHIP ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 7/1	LT GRAY	0.1775	6.1	NO
BI-SI-75-10A	0.0 - 5.5	SHIP ISLAND	30.19397	-88.8891	SP	SUBANGULAR TO ROUNDED	2.5Y 6/1	GRAY	2.5Y 7/1	LT GRAY	0.1929	1.4	NO
BI-SI-75-10B	5.5 - 11.0	SHIP ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 7/1	LT GRAY	0.1698	4.9	NO
BI-SI-75-10C	15.9 - 18.7	SHIP ISLAND			SM	SUBANGULAR TO ROUNDED	2.5Y 4/1	DK GRAY	2.5Y 5/2	GRAYISH BROWN	0.1746	12.5	YES
BI-SI-76-10A	0.7 - 6.0	SHIP ISLAND	30.19591	-88.88074	SP	SUBANGULAR TO ROUNDED	2.5Y 6/1	GRAY	2/5Y 7/1	LT GRAY	0.2245	3.3	NO
BI-SI-76-10B	6.0 - 11.2	SHIP ISLAND			SM	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 7/1	LT GRAY	0.1591	24.1	NO
BI-SI-77-10A	2.3 - 8.6	SHIP ISLAND	30.19704	88.87171	SP-SM	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 6/2	LT BROWNISH GRAY	0.154	10.7	NO
BI-SI-77-10B	12.2 - 16.1	SHIP ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 6/2	LT BROWNISH GRAY	0.2548	6.9	YES
BI-SI-79-10A	1.3 - 4.4	SHIP ISLAND	30.20866	-88.86558	SP-SM	SUBANGULAR TO ROUNDED	2.5Y 4/2	DK GRAYISH BROWN	2.5Y 6/2	LT BROWNISH GRAY	0.1757	9.3	NO
BI-SI-79-10B	4.4 - 8.9	SHIP ISLAND			SM	SUBANGULAR TO ROUNDED	2.5Y 4/2	DK GRAYISH BROWN	2.5Y 5/2	GRAYISH BROWN	0.1408	26.6	YES
BI-SI-80-10A	2.8 - 7.8	SHIP ISLAND	30.22362	-88.8721	SP	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 7/2	LT GRAY	0.2219	4.7	NO
BI-SI-80-10B	7.8 - 12.8	SHIP ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 7/2	LT GRAY	0.1965	5.4	NO
BI-SI-80-10C	12.8 - 15.2	SHIP ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 5/1	GRAY	2.5Y 7/1	LT GRAY	0.1902	5.5	NO
BI-SI-81-10A	2.3 - 7.3	SHIP ISLAND	30.22103	-88.86949	SP-SM	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 7/2	LT GRAY	0.1986	10.6	YES
BI-SI-81-10B	7.3 - 13.3	SHIP ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 5/1	GRAY	2.5Y 7/1	LT GRAY	0.1859	9.7	NO
BI-SI-82-10A	2.0 - 8.4	SHIP ISLAND	30.21817	88.86584	SP-SM	SUBANGULAR TO ROUNDED	2.5Y 5.2	GRAYISH BROWN	2.5Y 6/2	LT BROWNISH GRAY	0.1829	5.9	NO
BI-SI-82-10B	8.4 - 13.3	SHIP ISLAND			SM	SUBANGULAR TO ROUNDED	2.5Y 4/2	DK GRAYISH BROWN	2.5Y 6/2	LT BROWNISH GRAY	0.162	22.7	NO
BI-SI-83-10A	1.5 - 5.0	SHIP ISLAND	30.21373	-88.86298	SM	SUBANGULAR TO ROUNDED	2.5Y 4/2	DK GRAYISH BROWN	2.5Y 6/2	LT BROWNISH GRAY	0.1764	12.1	NO
BI-SI-84-10		SHIP ISLAND	30.20967	-88.85976	CL	NO SAMPLE TAKEN							
BI-SI-85-10A	0.0 - 1.5	SHIP ISLAND	30.2248	-88.86817	SM	SUBANGULAR TO ROUNDED	7.5YR 4/1	DK GRAY	2.5Y 5/1	GRAY	0.1522	16.7	YES
BI-SI-85-10B	5.4 - 10.9	SHIP ISLAND			SM	SUBANGULAR TO ROUNDED	7.5YR 3/1	VERY DK GRAY	2.5Y 5/2	GRAYISH BROWN	0.1807	12.9	YES
BI-SI-89-10A	0.0 - 5.0	SHIP ISLAND	30.20807	-88.8711	SP	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 7/1	LT GRAY	0.2027	2.8	YES
BI-SI-89-10B	5.0 - 10.0	SHIP ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 5/1	GRAY	2.5Y 7/1	LT GRAY	0.1924	3.7	YES
BI-SI-89-10C	10.0 - 13.5	SHIP ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 6/2	LT BROWNISH GRAY	0.1844	4.7	NO
BI-SI-89-10D	13.5 - 18.3	SHIP ISLAND			SM	SUBANGULAR TO ROUNDED	2.5Y 4/2	DK GRAYISH BROWN	2.5Y 4/3	OLIVE BROWN	0.1732	20.3	YES
BI-SI-90-10A	1.6 - 4.9	SHIP ISLAND	30.20428	-88.86686	SP-SM	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 6/2	LT BROWNISH GRAY	0.1727	9.9	NO
BI-SI-91-10A	2.9 - 5.9	SHIP ISLAND	30.19342	-88.87624	SP-SM	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 6/2	LT BROWNISH GRAY	0.1738	6.2	NO
BI-SI-91-10B	5.9 - 11.7	SHIP ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 4/2	DK GRAYISH BROWN	2.5Y 6/2	LT BROWNISH GRAY	0.1533	7.3	NO
BI-SI-91-10C	11.7 - 15.7	SHIP ISLAND			SM	SUBANGULAR TO ROUNDED	2.5Y 4/2	DK GRAYISH BROWN	2.5Y 5/2	GRAYISH BROWN	0.1179	12.2	NO

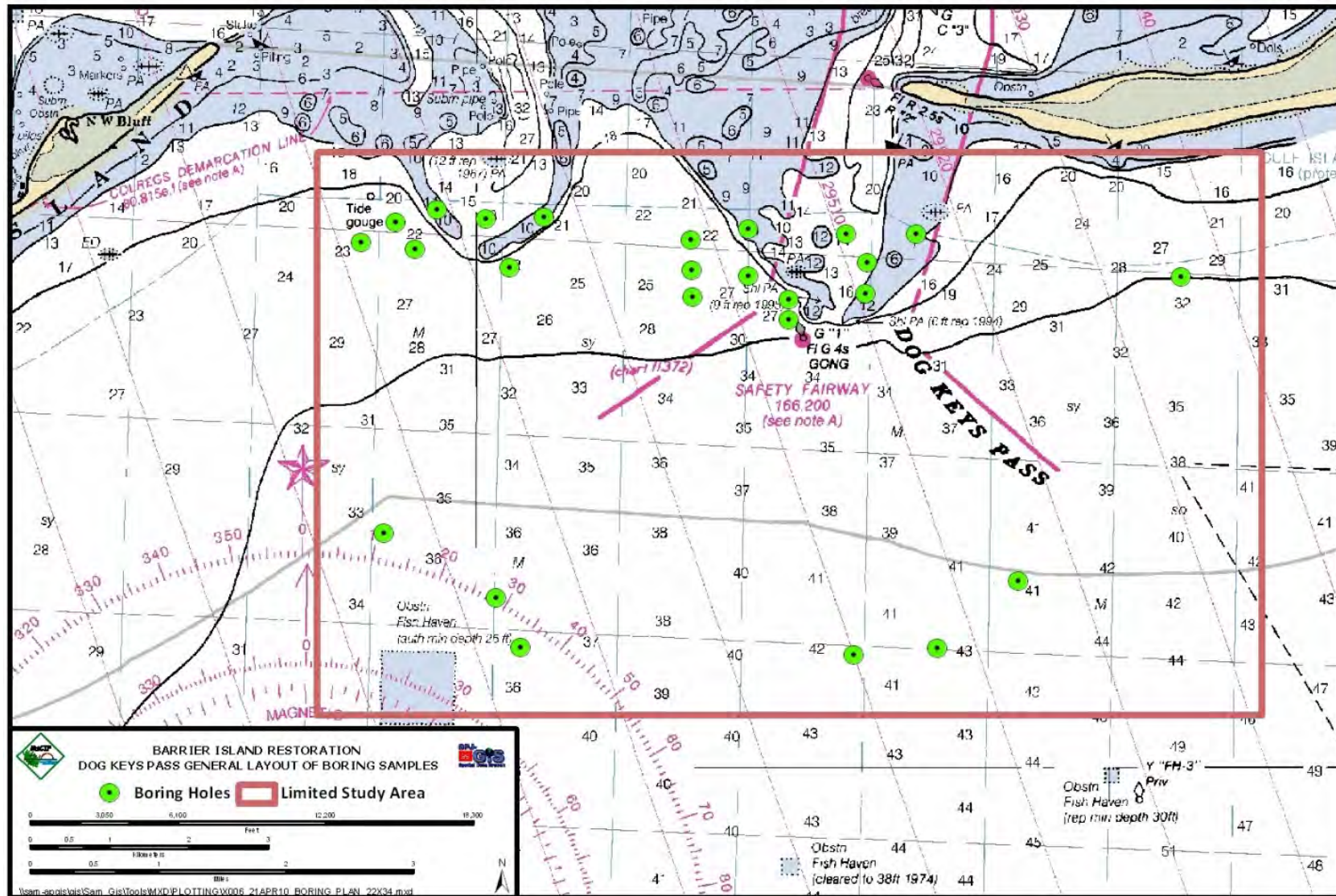


Figure 5.7.1 - General layout of the borings completed for the investigation for borrow material from Dog Keys Pass area.

APPENDIX C

Offshore Sand Borrow Investigation, Phases 1 & 2

GEOTECHNICAL INVESTIGATION

TABLE 5.7.1 - MISSISSIPPI BARRIER ISLAND VIBRACORE SAMPLES – DOG KEYS PASS													
NAME	SAMPLE DEPTH (ft BGS)	LOCATION	LATITUDE	LONGITUDE	USCS	ANGULARITY	WET COLOR CODE	WET COLOR	DRY COLOR CODE	DRY COLOR	D ₅₀	% FINES	CaCO3
BI-DK-1-10		DOG KEYS PASS	30.18796	-88.76256	CL	NO SAMPLE TAKEN							
BI-DK-2-10A	5.6 - 10.5	DOG KEYS PASS	30.18029	-88.77293	SM	CLAY FINES	2.5Y 4/2	DK GRAYISH BROWN	2.5Y 5/2	GRAYISH BROWN	0.2772	17.3	YES
BI-DK-2-10B	12.0 - 14.0	DOG KEYS PASS			SM	SUBANGULAR TO ROUNDED	2.5Y 4/2	DK GRAYISH BROWN	2.5Y 5/2	GRAYISH BROWN	0.1817	14.9	NO
BI-DK-2-10C	14.0 - 17.2	DOG KEYS PASS			SM	SUBANGULAR TO ROUNDED	2.5Y 4/2	DK GRAYISH BROWN	2.5Y 6/2	LT BROWNISH GRAY	0.1694	16.9	NO
BI-DK-3-10A	7.6 - 13.0	DOG KEYS PASS	30.17949	-88.78397	SP-SM	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 5/2	GRAYISH BROWN	0.1874	8.4	YES
BI-DK-3-10B	13.0 - 18.2	DOG KEYS PASS			SP-SM	CLAY FINES	2.5Y 5/2	GRAYISH BROWN	2.5Y 6/2	LT BROWNISH GRAY	0.1995	5.7	NO
BI-DK-4-10A	10.0 - 13.5	DOG KEYS PASS	30.19348	-88.8456	SP-SM	SUBANGULAR TO ROUNDED	2.5Y 5/1	GRAY	2.5Y 5/2	GRAYISH BROWN	0.2235	7.9	YES
BI-DK-4-10B	13.5 - 17.7	DOG KEYS PASS			SP-SM	SUBANGULAR TO ROUNDED	5Y 5/1	GRAY	2.5Y 5/2	GRAYISH BROWN	0.2245	8.0	YES
BI-DK-4-10C	17.2 - 19.7	DOG KEYS PASS			SP-SM	CLAY FINES	2.5Y 4/2	DK GRAYISH BROWN	2.5Y 5/2	GRAYISH BROWN	0.2778	10.6	NO
BI-DK-5-10		DOG KEYS PASS	30.18607	-88.83091	CL	NO SAMPLE TAKEN							
BI-DK-6-10A	14.5 - 16.5	DOG KEYS PASS	30.18053	-88.82766	SM	CLAY FINES	2.5Y 3/1	VERY DK GRAY	2.5Y 4/2	DK GRAYISH BROWN	0.1337	24.6	NO
BI-DK-6-10B	16.5 - 20.0	DOG KEYS PASS			SM	CLAY FINES	2.5Y 3/1	VERY DK GRAY	2.5Y 4/2	DK GRAYISH BROWN	0.1703	12.9	NO
BI-DK-7-10A	0.0 - 4.3	DOG KEYS PASS	30.22398	-88.82932	SP	SUBANGULAR TO ROUNDED	5Y 5/2	OLIVE GRAY	5Y 7/1	LT GRAY	0.1696	4.3	NO
BI-DK-8-10A	0.0 - 5.0	DOG KEYS PASS	30.22033	-88.79269	SP	SUBANGULAR TO ROUNDED	5Y 6/2	LT OLIVE GRAY	5Y 7/1	LT GRAY	0.1923	1.6	NO
BI-DK-8-10B	5.0 - 10.5	DOG KEYS PASS			SP-SM	SUBANGULAR TO ROUNDED	5Y 6/2	LT OLIVE GRAY	5Y 7/1	LT GRAY	0.1542	7.0	YES
BI-DK-8-10C	10.5 - 12.4	DOG KEYS PASS			SP-SM	SUBANGULAR TO ROUNDED	5Y 4/2	OLIVE GRAY	2.5Y 6/2	LT BROWNISH GRAY	0.1154	9.9	YES
BI-DK-9-10A	0.0 - 2.8	DOG KEYS PASS	30.22033	-88.79269	SP-SM	SUBANGULAR TO ROUNDED	5Y 4/2	OLIVE GRAY	2.5Y 6/2	LT BROWNISH GRAY	0.1257	9.8	YES
BI-DK-10-10A	0.0 - 4.3	DOG KEYS PASS	30.22446	-88.78223	SP	SUBANGULAR TO ROUNDED	2.5Y 7/2	LT GRAY	2.5Y 7/1	LT GRAY	0.1633	4.1	NO
BI-DK-10-10B	4.3 - 8.6	DOG KEYS PASS			SP	SUBANGULAR TO ROUNDED	2.5Y 6/1	GRAY	5Y 7/1	LT GRAY	0.1863	3.3	NO
BI-DK-11-10A	0.0 - 5.0	DOG KEYS PASS	30.22095	-88.78249	SP	SUBANGULAR TO ROUNDED	5Y 6/1	GRAY	2.5Y 7/1	LT GRAY	0.2376	1.7	NO
BI-DK-11-10B	5.0 - 10.0	DOG KEYS PASS			SP	SUBANGULAR TO ROUNDED	5Y 6/1	GRAY	5Y 7/1	LT GRAY	0.1972	3.9	NO
BI-DK-11-10C	10.0 - 13.9	DOG KEYS PASS			SP-SM	SUBANGULAR TO ROUNDED	5Y 5/1	GRAY	5Y 7/1	LT GRAY	0.1844	5.9	YES
BI-DK-12-10		DOG KEYS PASS	30.22268	-88.74105	CL	NO SAMPLE TAKEN							
BI-DK-13-10A	0.0 - 5.0	DOG KEYS PASS	30.22833	-88.79799	SP	SUBANGULAR TO ROUNDED	2.5Y 6/2	LT BROWNISH GRAY	2.5Y 7/1	LT GRAY	0.2361	2.0	NO
BI-DK-13-10B	5.0 - 10.6	DOG KEYS PASS			SM	SUBANGULAR TO ROUNDED	5Y 6/1	GRAY	5Y 7/1	LT GRAY	0.2167	13.4	NO
BI-DK-14-10A	0.0 - 4.0	DOG KEYS PASS	30.22758	-88.7849	SP	SUBANGULAR TO ROUNDED	2.5Y 7/2	LT GRAY	2.5Y 7/1	LT GRAY	0.2256	1.8	NO
BI-DK-14-10B	4.0 - 8.0	DOG KEYS PASS			SP	SUBANGULAR TO ROUNDED	5Y 5/1	GRAY	5Y 7/1	LT GRAY	0.2119	3.1	NO
BI-DK-14-10C	8.0 - 11.4	DOG KEYS PASS			SM	SUBANGULAR TO ROUNDED	5Y 5/1	GRAY	2.5Y 6/2	LT BROWNISH GRAY	0.1560	15.4	YES
BI-DK-15-10A	0.0 - 4.0	DOG KEYS PASS	30.22761	-88.77568	SP-SM	SUBANGULAR TO ROUNDED	5Y 6.5/1	GRAY	2.5Y 7/1	LT GRAY	0.2119	5.6	YES
BI-DK-15-10B	4.0 - 8.2	DOG KEYS PASS			SP-SM	SUBANGULAR TO ROUNDED	5Y 5/1	GRAT	5Y 7/1	LT GRAY	0.1869	5.9	YES
BI-DK-16-10A	0.0 - 5.2	DOG KEYS PASS	30.23025	-88.83878	SP	SUBANGULAR TO ROUNDED	2.5Y 6/2	LT BROWNISH GRAY	2.5Y 7/1	LT GRAY	0.2467	2.0	NO
BI-DK-16-10B	5.2 - 9.0	DOG KEYS PASS			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 6/2	LT BROWNISH GRAY	0.1741	10.5	NO
BI-DK-17-10A	0.0 - 5.0	DOG KEYS PASS	30.22951	-88.83221	SP	SUBANGULAR TO ROUNDED	5Y 6/1	GRAY	5Y 7/1	LT GRAY	0.2120	2.6	NO
BI-DK-18-10A	0.0 - 3.5	DOG KEYS PASS	30.22952	-88.82453	SP	SUBANGULAR TO ROUNDED	5Y 5/1	GRAY	5Y 7/1	LT GRAY	0.1944	2.9	NO
BI-DK-19-10A	0.0 - 6.0	DOG KEYS PASS	30.2228	-88.79779	SP	SUBANGULAR TO ROUNDED	2.5Y 7/1	LT GRAY	7.5YR 8/1	WHITE	0.3276	1.3	NO
BI-DK-19-10B	6.0 - 12.4	DOG KEYS PASS			SP	SUBANGULAR TO ROUNDED	2.5Y 6/1	GRAY	2.5Y 7/1	LT GRAY	0.2991	2.7	NO
BI-DK-19-10C	12.4 - 14.1	DOG KEYS PASS			SM	SUBANGULAR TO ROUNDED	2.5Y 4/2	DK GRAYISH BROWN	2.5Y 6/2	LT BROWNISH GRAY	0.1497	18.8	YES

APPENDIX C

Offshore Sand Borrow Investigation, Phases 1 & 2

GEOTECHNICAL INVESTIGATION

TABLE 5.7.1 (cont'd) - MISSISSIPPI BARRIER ISLAND VIBRACORE SAMPLES – DOG KEYS PASS													
NAME	SAMPLE DEPTH (ft BGS)	LOCATION	LATITUDE	LONGITUDE	USCS	ANGULARITY	WET COLOR CODE	WET COLOR	DRY COLOR CODE	DRY COLOR	D ₅₀	% FINES	CaCO3
BI-DK-20-10		DOG KEYS PASS	30.22355	-88.80536	CL	NO SAMPLE TAKEN							
BI-DK-21-10		DOG KEYS PASS	30.22705	-88.80534	CL	NO SAMPLE TAKEN							
BI-DK-22-10		DOG KEYS PASS	30.22053	-88.80579	CL	NO SAMPLE TAKEN							
BI-DK-23-10		DOG KEYS PASS	30.22896	-88.84407	CL	NO SAMPLE TAKEN							
BI-DK-25-10		DOG KEYS PASS	30.22596	-88.84169	CL	NO SAMPLE TAKEN							

Offshore Sand Borrow Investigation, Phases 1 & 2

GEOTECHNICAL INVESTIGATION

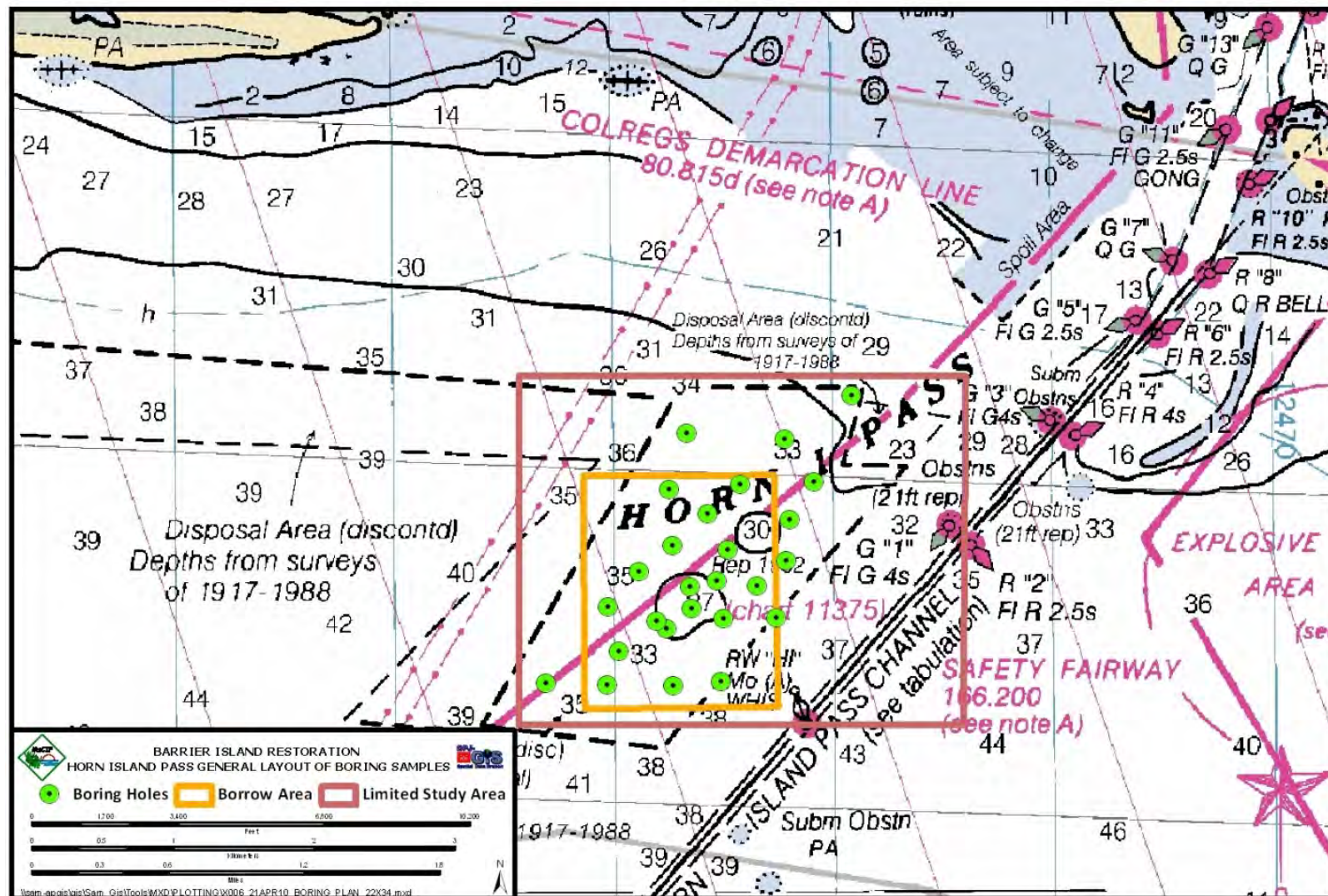


Figure 5.8.1 - General layout of the borings completed for the investigation of borrow material from Horn Island Pass area. Initial potential borrow area outlined in orange.

APPENDIX C

Offshore Sand Borrow Investigation, Phases 1 & 2

GEOTECHNICAL INVESTIGATION

TABLE 5.8.1 - MISSISSIPPI BARRIER ISLAND VIBRACORE SAMPLES – HORN ISLAND PASS													
NAME	SAMPLE DEPTH (ft BGS)	LOCATION	LATITUDE	LONGITUDE	USCS	ANGULARITY	WET COLOR CODE	WET COLOR	DRY COLOR CODE	DRY COLOR	D ₅₀	% FINES	CaCO3
BI-HP-1-10A	0.0 - 5.0	HORN ISLAND PASS	30.18621	-88.55043	SP-SM	SUBANGULAR TO ROUNDED	2.5Y 5/1	GRAY	2.5Y 7/1	LT GRAY	0.2890	8.2	NO
BI-HP-1-10B	5.0 - 9.9	HORN ISLAND PASS			SP	SUBANGULAR TO ROUNDED	2.5Y 5/1	GRAY	2.5Y 7/1	LT GRAY	0.3016	2.4	NO
BI-HP-2-10A	0.0 - 3.3	HORN ISLAND PASS	30.18353	-88.55217	SP	SUBANGULAR TO ROUNDED	2.5Y 4/2	DK GRAYISH BROWN	2.5Y 6/2	LT BROWNISH GRAY	0.2829	2.0	NO
BI-HP-2-10B	3.3 - 5.9	HORN ISLAND PASS			SM	SUBANGULAR TO ROUNDED	2.5Y 3/2	VERY DK GRAYISH BROWN	2.5Y 5/1	GRAY	0.2290	15.2	NO
BI-HP-3-10A	0.0 - 2.9	HORN ISLAND PASS	30.18417	-88.54793	SP-SM	SUBANGULAR TO ROUNDED	2.5Y 6/1	GRAY	2.5Y 7/2	LT GRAY	0.3041	5.6	NO
BI-HP-3-10B	2.9 - 5.8	HORN ISLAND PASS			SP	SUBANGULAR TO ROUNDED	5Y 5/1	GRAY	2.5Y 7/2	LT GRAY	0.2557	3.4	NO
BI-HP-4-10A	0.0 - 4.2	HORN ISLAND PASS	30.18659	-88.54844	SP-SM	SUBANGULAR TO ROUNDED	2.5Y 6/1	GRAY	2.5Y 7/1	LT GRAY	0.2800	6.6	NO
BI-HP-4-10B	4.2 -8.5	HORN ISLAND PASS			SM	SUBANGULAR TO ROUNDED	2.5Y 6/2	LT BROWNISH GRAY	2.5Y 7/2	LT GRAY	0.2732	12.5	NO
BI-HP-4-10C	8.5 - 11.2	HORN ISLAND PASS			SM	CLAY FINES	2.5Y 2.5/1	BLACK	2.5Y 4/2	DK GRAYISH BROWN	0.1803	29.3	NO
BI-HP-5-10A	0.0 - 4.8	HORN ISLAND PASS	30.18858	-88.54765	SP-SM	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 7/1	LT GRAY	0.2803	6.7	NO
BI-HP-6-10A	0.0 - 4.3	HORN ISLAND PASS	30.18886	-88.55173	SP-SM	SUBANGULAR TO ROUNDED	2.5Y 3/2	VERY DK GRAYISH BROWN	2.5Y 6/1	GRAY	0.2996	5.9	NO
BI-HP-7-10A	0.0 - 3.1	HORN ISLAND PASS	30.18484	-88.55027	SP	SUBANGULAR TO ROUNDED	2.5Y 4/1	DK GRAY	2.5Y 7/1	LT GRAY	0.2982	3.2	NO
BI-HP-7-10B	3.1 - 6.2	HORN ISLAND PASS			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 3/2	VERY DK GRAYISH BROWN	2.5Y 7/1	LT GRAY	0.2463	6.2	NO
BI-HP-8-10A	0.0 - 5.1	HORN ISLAND PASS	30.19244	-88.55197	SP	SUBANGULAR TO ROUNDED	2.5Y 4/2	DK GRAYISH BROWN	2.5Y 7/1	LT GRAY	0.2849	1.6	NO
BI-HP-9-10A	0.0 - 1.4	HORN ISLAND PASS	30.19274	-88.54668	SM	SUBANGULAR TO ROUNDED	2.5Y 3/2	VERY DK GRAYISH BROWN	2.5Y 5/2	GRAYISH BROWN	0.2278	12.7	NO
BI-HP-10-10A	0.0 - 2.8	HORN ISLAND PASS	30.19288	-88.54127	SP	SUBANGULAR TO ROUNDED	2.5Y 4/2	DK GRAYISH BROWN	2.5Y 7/1	LT GRAY	0.2922	3.2	NO
BI-HP-10-10B	2.8 - 5.6	HORN ISLAND PASS			SP	SUBANGULAR TO ROUNDED	2.5Y 4/1	DK GRAY	2.5Y 7/1	LT GRAY	0.2576	3.5	NO
BI-HP-11-10A	0.0 - 5.1	HORN ISLAND PASS	30.18497	-88.55648	SP	SUBANGULAR TO ROUNDED	2.5Y 4/1	DK GRAY	2.5Y 7/1	LT GRAY	0.2854	4.5	NO
BI-HP-11-10B	5.1 - 6.2	HORN ISLAND PASS			SM	CLAY FINES	2.5Y 2.5/1	BLACK	2.5Y 5/1	GRAY	0.2161	16.8	NO
BI-HP-12-10A	0.0 - 3.0	HORN ISLAND PASS	30.17997	-88.55652	SM	SUBANGULAR TO ROUNDED	10YR 4/1	DK GRAY	2.5Y 7/1	LT GRAY	0.2691	12.3	NO
BI-HP-12-10B	3.0 - 6.0	HORN ISLAND PASS			SP-SM	SUBANGULAR TO ROUNDED	5Y 5/2	OLIVE GRAY	2.5Y 7/1	LT GRAY	0.2371	6.4	NO
BI-HP-13-10A	0.0 - 3.2	HORN ISLAND PASS	30.18005	-88.56105	SP	SUBANGULAR TO ROUNDED	2.5Y 6/1	GRAY	2.5Y 7/2	LT GRAY	0.2888	2.1	NO
BI-HP-14-10A	0.0 - 2.5	HORN ISLAND PASS	30.17988	-88.55166	SP-SM	CLAY FINES	5Y 4/2	OLIVE GRAY	5Y 6/2	LT OLIVE GRAY	0.2388	6.7	NO
BI-HP-15-10		HORN ISLAND PASS	30.18942	-88.53846	SC	NO SAMPLE TAKEN							
BI-HP-16-10A	0.0 - 1.5	HORN ISLAND PASS	30.18423	-88.54405	SP-SM	CLAY FINES	2.5Y 4/2	DK GRAYISH BROWN	2.5Y 7/2	LT GRAY	0.2508	7	NO
BI-HP-16-10B	1.5 - 3.0	HORN ISLAND PASS			SM	CLAY FINES	2.5Y 4/2	DK GRAYISH BROWN	2.5Y 4/3	OLIVE BROWN	0.1831	26.7	NO
BI-HP-17-10		HORN ISLAND PASS	30.18016	-88.54816	SC	NO SAMPLE TAKEN							
BI-HP-18-10		HORN ISLAND PASS	30.18016	-88.54816	SC	NO SAMPLE TAKEN							
BI-HP-19-10		HORN ISLAND PASS	30.19606	-88.55061	SC	NO SAMPLE TAKEN							
BI-HP-20-10A	0.0 - 1.6	HORN ISLAND PASS	30.19091	-88.5491	SP-SM	SUBANGULAR TO ROUNDED	5Y 4/2	OLIVE GRAY	2.5Y 7/1	LT GRAY	0.2632	9.5	NO
BI-HP-21-10A	0.0 - 3.0	HORN ISLAND PASS	30.18721	-88.5542	SP	SUBANGULAR TO ROUNDED	2.5Y 6/1	GRAY	2.5Y 8/1	WHITE	0.2786	2.9	NO
BI-HP-21-10B	3.0 - 5.9	HORN ISLAND PASS			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 6/2	LT BROWNISH GRAY	2.5Y 7/2	LT GRAY	0.2702	7.9	NO
BI-HP-22-10A	0.0 - 3.0	HORN ISLAND PASS	30.18402	-88.55291	SP	SUBANGULAR TO ROUNDED	5Y 5/2	OLIVE GRAY	2.5Y 7/1	LT GRAY	0.2733	2.3	NO
BI-HP-22-10B	3.0 - 6.4	HORN ISLAND PASS			SP-SM	SUBANGULAR TO ROUNDED	5Y 5/2	OLIVE GRAY	2.5Y 7/1	LT GRAY	0.2499	9.2	NO
BI-HP-23-10A	0.0 - 3.4	HORN ISLAND PASS	30.18217	-88.55531	SP	SUBANGULAR TO ROUNDED	2.5Y 5/1	GRAY	2.5Y 7/1	LT GRAY	0.2524	3.1	NO

APPENDIX C

Offshore Sand Borrow Investigation, Phases 1 & 2

GEOTECHNICAL INVESTIGATION

TABLE 5.8.1 (cont'd) - MISSISSIPPI BARRIER ISLAND VIBRACORE SAMPLES – HORN ISLAND PASS													
NAME	SAMPLE DEPTH (ft BGS)	LOCATION	LATITUDE	LONGITUDE	USCS	ANGULARITY	WET COLOR CODE	WET COLOR	DRY COLOR CODE	DRY COLOR	D ₅₀	% FINES	CaCO3
BI-HP-23-10B	3.4 - 4.2	HORN ISLAND PASS			SM	CLAY FINES	2.5Y 4/1	DK GRAY	2.5Y 6/2	LT BROWNISH GRAY	0.2126	12	NO
BI-HP-24-10A	0.0 - 3.4	HORN ISLAND PASS	30.18626	-88.5455	SP-SM	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 6/2	LT BROWNISH GRAY	0.2625	5.5	NO
BI-HP-24-10B	3.4 - 6.7	HORN ISLAND PASS			SP-SM	SUBANGULAR TO ROUNDED	2.Y 4/2	DK GRAYISH BROWN	2.5Y 7/1	LT GRAY	0.2557	7.1	NO
BI-HP-25-10A	0.0 - 2.5	HORN ISLAND PASS	30.18788	-88.5433	SP-SM	CLAY FINES	2.5Y 5/2	GRAYISH BROWN	2.5Y 7/1	LT GRAY	0.2544	5.4	NO
BI-HP-26-10A	0.0 - 4.0	HORN ISLAND PASS	30.19048	-88.54306	SP	SUBANGULAR TO ROUNDED	5Y 5/2	OLIVE GRAY	2.5Y 7/1	LT GRAY	0.2459	2.1	NO

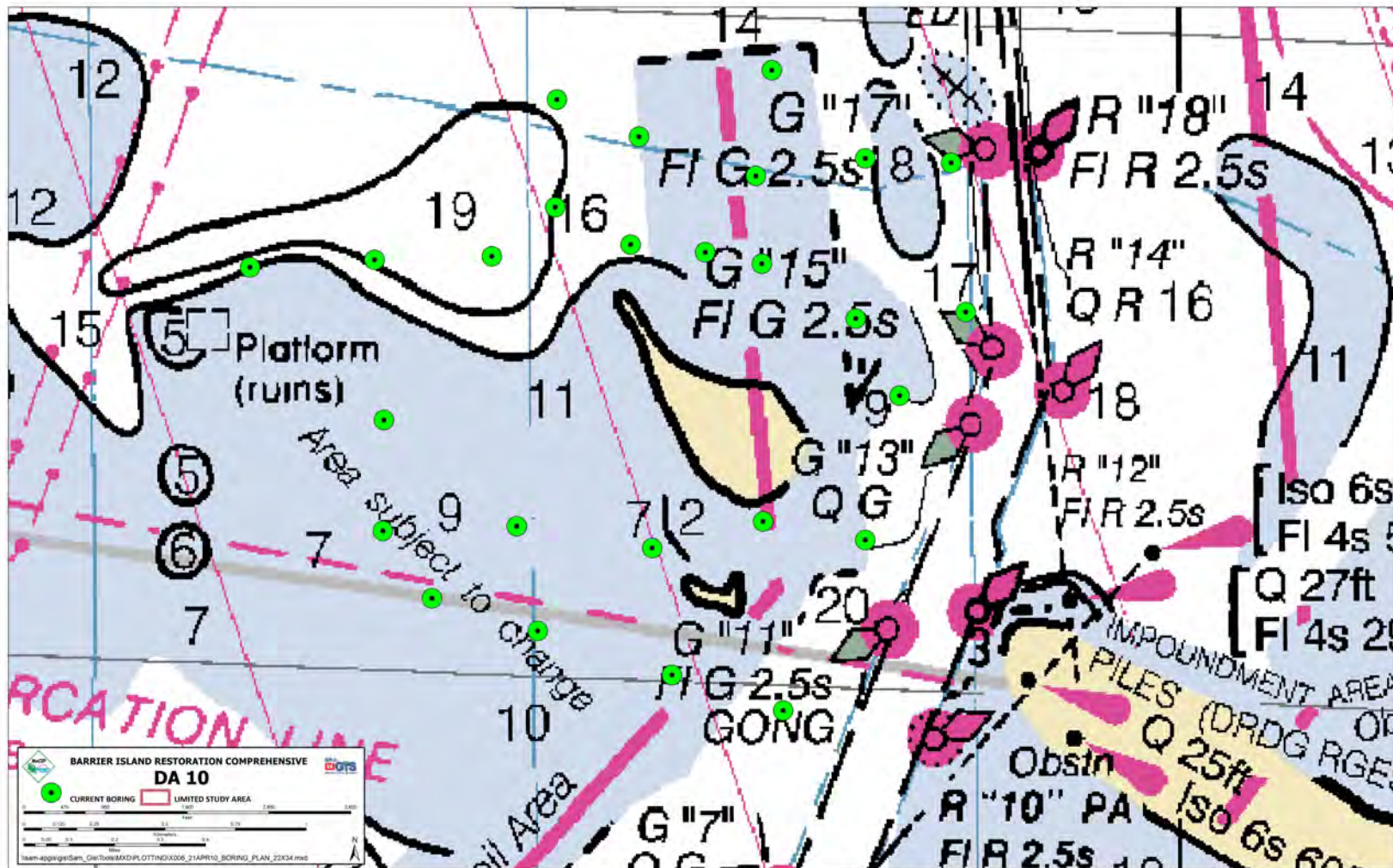


Figure 5.9.1 - General layout of the borings completed for the investigation for borrow material from DA-10.

APPENDIX C

Offshore Sand Borrow Investigation, Phases 1 & 2

GEOTECHNICAL INVESTIGATION

TABLE 5.9.1 - MISSISSIPPI BARRIER ISLAND VIBRACORE SAMPLES - DISPOSAL AREA 10													
NAME	SAMPLE DEPTH (ft BGS)	LOCATION	LATITUDE	LONGITUDE	USCS	ANGULARITY	WET COLOR CODE	WET COLOR	DRY COLOR CODE	DRY COLOR	D ₅₀	% FINES	CaCO ₃
BI-DA10-1-11A	0.0 - 1.5	DISPOSAL AREA 10	30.23021	-88.50841	SP	SUBANGULAR TO SUBROUNDED	2.5Y 5/2	GREYISH BROWN	2.5Y 6/2	LT BROWNISH GREY	0.3492	1.3	NA
BI-DA10-2-11		DISPOSAL AREA 10	30.22545	-88.50788		NO SAMPLE TAKEN							
BI-DA10-3-11		DISPOSAL AREA 10	30.23226	-88.52292		NO SAMPLE TAKEN							
BI-DA10-4-11		DISPOSAL AREA 10	30.23107	-88.51990		NO SAMPLE TAKEN							
BI-DA10-5-11A	0.0 - 2.3	DISPOSAL AREA 10	30.23318	-88.51500	SP	SUBANGULAR TO SUBROUNDED	2.5Y 5/2	GREYISH BROWN	2.5Y 6/2	LT BROWNISH GREY	0.3243	2.0	NA
BI-DA10-6-11		DISPOSAL AREA 10	30.23036	-88.51167		NO SAMPLE TAKEN							
BI-DA10-7-11A	0.0 - 5.0	DISPOSAL AREA 10	30.22694	-088.5342398	SP	SUBANGULAR TO SUBROUNDED	2.5Y 5/2	GREYISH BROWN	2.5Y 7/2	LT GREY WITH SOME BROWN	0.4019	0.7	NA
BI-DA10-8-11		DISPOSAL AREA 10	30.22717	-88.52965		NO SAMPLE TAKEN							
BI-DA10-9-11		DISPOSAL AREA 10	30.22727	-88.52533		NO SAMPLE TAKEN							
BI-DA10-10-11A	1.7 - 6.7	DISPOSAL AREA 10	30.22763	-88.52022	SP	SUBANGULAR TO SUBROUNDED	2.5Y 3/2	VERY DARK GREYISH BROWN	10YR 6/2	LT BROWNISH GREY WITH SOME YELLOW	0.3060	3.1	NA
BI-DA10-10-11B	6.7 - 7.6	DISPOSAL AREA 10			SP	SUBANGULAR TO SUBROUNDED	7.5YR 2.5/1	BLACK	10YR 4/2	DARK GREYISH BROWN	0.2718	3.0	NA
BI-DA0-10-11C	8.0 - 13.5	DISPOSAL AREA 10			SP	SUBANGULAR TO SUBROUNDED	7.5YR 3/1	VERY DARK GREY	10YR 4/2	DARK GREYISH BROWN	0.2889	2.8	NA
BI-DA10-11-11A	0.0 - 5.0	DISPOSAL AREA 10	30.22701	-88.51539	SP	SUBANGULAR TO SUBROUNDED	2.5Y 6/2	LT BROWNISH GREY	2.5Y 7/2	LT GREY WITH SOME BROWN	0.3430	1.4	NA
BI-DA10-11-11B	5.0 - 9.7	DISPOSAL AREA 10			SP	SUBANGULAR TO SUBROUNDED	2.5Y 6/2	LT BROWNISH GREY	2.5Y 7/2	LT GREY WITH SOME BROWN	0.3380	2.4	NA
BI-DA10-12-11A	0.0 - 4.0	DISPOSAL AREA 10	30.22525	-88.51193	SP	SUBANGULAR TO SUBROUNDED	2.5Y 6/2	LT BROWNISH GREY	2.5Y 7/2	LT GREY WITH SOME BROWN	0.3053	2.0	NA
BI-DA10-12-11B	4.0 - 8.0	DISPOSAL AREA 10			SP	SUBANGULAR TO SUBROUNDED	2.5Y 5/2	GREYISH BROWN	2.5Y 7/2	LT GREY WITH SOME BROWN	0.2972	4.1	NA
BI-DA10-12-11C	8.0 - 12.0	DISPOSAL AREA 10			SP	SUBANGULAR TO SUBROUNDED	2.5Y 5/2	GREYISH BROWN	2.5Y 7/2	LT GREY WITH SOME BROWN	0.3417	3.7	NA
BI-DA10-12-11D	12.0 - 17.4	DISPOSAL AREA 10			SP-SM	SUBANGULAR TO SUBROUNDED	2.5Y 5/2	GREYISH BROWN	2.5Y 7/2	LT GREY WITH SOME BROWN	0.3292	5.2	NA
BI-DA10-13-11A	0.0 - 3.5	DISPOSAL AREA 10	30.22279	-88.51033	SP	SUBANGULAR TO SUBROUNDED	2.5Y 5/3	LT TO MED OLIVE BROWN	2.5Y 6/3	LT YELLOWISH BROWN	0.3125	0.8	NA
BI-DA10-13-11B	3.5 - 6.0	DISPOSAL AREA 10			SP	SUBANGULAR TO SUBROUNDED	2.5Y 5/3	LT TO MED OLIVE BROWN	2.5Y 6/2	LT BROWNISH GREY	0.3058	1.3	NA
BI-DA10-13-11C	6.0 - 9.5	DISPOSAL AREA 10			SP	SUBANGULAR TO SUBROUNDED	2.5Y 5/2	GREYISH BROWN	2.5Y 6/2	LT BROWNISH GREY	0.3237	3.2	NA
BI-DA10-13-11D	9.5 - 13.0	DISPOSAL AREA 10			SP	SUBANGULAR TO SUBROUNDED	2.5Y 6/2	LT BROWNISH GREY	2.5Y 7/1	LT GREY	0.3204	4.5	NA
BI-DA10-13-11E	13.0 - 15.8	DISPOSAL AREA 10			SP-SM	SUBANGULAR TO SUBROUNDED	2.5Y 6/1	LT TO MED GREY	2.5Y 7/1	LT GREY	0.3302	8.1	NA
BI-DA10-14-11A	0.0 - 4.6	DISPOSAL AREA 10	30.22206	-088.5293184	SP	SUBANGULAR TO SUBROUNDED	2.5Y 6/1	LT TO MED GREY	2.5Y 7/1	LT GREY	0.3497	0.5	NA
BI-DA10-14-11B	7.0 - 12.1	DISPOSAL AREA 10			SP	SUBANGULAR TO SUBROUNDED	2.5Y 6/2	LT BROWNISH GREY	2.5Y 7/1	LT GREY	0.3010	4.0	NA
BI-DA10-18-11A	0.0 - 5.0	DISPOSAL AREA 10	30.21819	-88.51161	SP	SUBANGULAR TO SUBROUNDED	2.5Y 5/2	GREYISH BROWN	2.5Y 7/2	LT GREY WITH SOME BROWN	0.3321	1.5	NA
BI-DA10-18-11B	5.0 - 10.0	DISPOSAL AREA 10			SP	SUBANGULAR TO SUBROUNDED	2.5Y 6/1	LT TO MED GREY	2.5Y 7/1	LT GREY	0.3527	2.7	NA
BI-DA10-18-11C	10.0 - 14.5	DISPOSAL AREA 10			SP	SUBANGULAR TO SUBROUNDED	2.5Y 6/1	LT TO MED GREY	2.5Y 7/1	LT GREY	0.3366	3.6	NA
BI-DA10-19-11A	0.0 - 4.0	DISPOSAL AREA 10	30.21852	-88.52937	SP	SUBANGULAR TO SUBROUNDED	2.5Y 5/2	GREYISH BROWN	2.5Y 7/2	LT GREY WITH SOME BROWN	0.2854	1.6	NA
BI-DA10-19-11B	4.0 - 8.0	DISPOSAL AREA 10			SP	SUBANGULAR TO SUBROUNDED	5Y 5/1	LT TO MED GREY WITH SOME OLIVE	2.5Y 7/2	LT GREY WITH SOME BROWN	0.2760	3.5	NA
BI-DA10-19-11C	8.0 - 12.0	DISPOSAL AREA 10			SP	SUBANGULAR TO SUBROUNDED	5Y 5/1	LT TO MED GREY WITH SOME OLIVE	2.5Y 7/2	LT GREY WITH SOME BROWN	0.3211	1.5	NA
BI-DA10-19-11D	12.0 - 16.0	DISPOSAL AREA 10			SP	SUBANGULAR TO SUBROUNDED	2.5Y 5/1	MED GREY	2.5Y 7/2	LT GREY WITH SOME BROWN	0.3323	1.6	NA
BI-DA10-19-11E	16.0 - 19.2	DISPOSAL AREA 10			SP	SUBANGULAR TO SUBROUNDED	2.5Y 6/1	LT TO MED GREY	2.5Y 7/1	LT GREY	0.3350	1.9	NA
BI-DA10-20-11A	0.0 - 4.0	DISPOSAL AREA 10	30.21866	-88.52444	SP	SUBANGULAR TO SUBROUNDED	2.5Y 5/2	GREYISH BROWN	2.5Y 6/2	LT BROWNISH GREY	0.3214	1.1	NA
BI-DA10-20-11B	4.0 - 8.0	DISPOSAL AREA 10			SP	SUBANGULAR TO SUBROUNDED	2.5Y 5/2	GREYISH BROWN	2.5Y 7/1	LT GREY	0.3564	1.9	NA
BI-DA10-20-11C	8.0 - 12.0	DISPOSAL AREA 10			SP	SUBANGULAR TO SUBROUNDED	2.5Y 5/2	GREYISH BROWN	2.5Y 7/2	LT GREY WITH SOME BROWN	0.3176	2.7	NA

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Offshore Sand Borrow Investigation, Phases 1 & 2

GEOTECHNICAL INVESTIGATION

TABLE 5.9.1 (cont'd) - MISSISSIPPI BARRIER ISLAND VIBRACORE SAMPLES - DISPOSAL AREA 10													
NAME	SAMPLE DEPTH (ft BGS)	LOCATION	LATITUDE	LONGITUDE	USCS	ANGULARITY	WET COLOR CODE	WET COLOR	DRY COLOR CODE	DRY COLOR	D ₅₀	% FINES	CaCO3
BI-DA10-20-11D	12.0 - 16.0	DISPOSAL AREA 10			SP	SUBANGULAR TO SUBROUNDED	2.5Y 5/2	GREYISH BROWN	2.5Y 6/2	LT BROWNISH GREY	0.2525	4.5	NA
BI-DA10-21-11A	0.0 - 4.0	DISPOSAL AREA 10	30.21795	-88.51945	SP	SUBANGULAR TO SUBROUNDED	2.5Y 5/2	GREYISH BROWN	2.5Y 7/2	LT GREY WITH SOME BROWN	0.3218	1.2	NA
BI-DA10-21-11B	4.0 - 8.0	DISPOSAL AREA 10			SP	SUBANGULAR TO SUBROUNDED	2.5Y 6/1	LT TO MED GREY	2.5Y 7/1	LT GREY	0.3334	2.4	NA
BI-DA10-21-11C	8.0 - 12.0	DISPOSAL AREA 10			SP	SUBANGULAR TO SUBROUNDED	5Y 6/1	LT TO MED GREY	5Y 7/1	LT GREY WITH SOME OLIVE	0.3256	3.1	NA
BI-DA10-21-11D	12.0 - 17.4	DISPOSAL AREA 10			SP	SUBANGULAR TO SUBROUNDED	5Y 6/1	LT TO MED GREY	5Y 7/1	LT GREY WITH SOME OLIVE	0.2759	4.2	NA
BI-DA10-22-11A	0.0 - 4.0	DISPOSAL AREA 10	30.21879	-88.51537	SP	SUBANGULAR TO SUBROUNDED	5Y 5/1	LT TO MED GREY WITH SOME OLIVE	2.5Y 7/2	LT GREY WITH SOME BROWN	0.3236	1.0	NA
BI-DA10-22-11B	4.0 - 8.0	DISPOSAL AREA 10			SP	SUBANGULAR TO SUBROUNDED	5Y 5/1	LT TO MED GREY WITH SOME OLIVE	2.5Y 7/2	LT GREY WITH SOME BROWN	0.3044	2.3	NA
BI-DA10-22-11C	8.0 - 11.5	DISPOSAL AREA 10			SP	SUBANGULAR TO SUBROUNDED	5Y 7/1	LT GREY	5Y 8/1	WHITE	0.4041	4.6	NA
BI-DA10-23-11A	0.0 - 4.0	DISPOSAL AREA 10	30.21637	-88.52757	SP	SUBANGULAR TO SUBROUNDED	2.5Y 5/2	GREYISH BROWN	2.5Y 7/2	LT GREY WITH SOME BROWN	0.3011	0.9	NA
BI-DA10-23-11B	4.0 - 8.0	DISPOSAL AREA 10			SP	SUBANGULAR TO SUBROUNDED	2.5Y 5/2	GREYISH BROWN	2.5Y 7/1	LT GREY	0.3061	1.2	NA
BI-DA10-23-11C	8.0 - 12.0	DISPOSAL AREA 10			SP-SM	SUBANGULAR TO SUBROUNDED	2.5Y 5/1	GREY	5Y 7/1	LT GREY WITH SOME OLIVE	0.2796	6.5	NA
BI-DA10-23-11D	12.0 - 15.7	DISPOSAL AREA 10			SP-SM	SUBANGULAR TO SUBROUNDED	2.5Y 5/1	GREY	5Y 7/1	LT GREY WITH SOME OLIVE	0.2473	5.7	NA
BI-DA10-24-11A	0.0 - 4.0	DISPOSAL AREA 10	30.21532	-88.52368	SP-SM	SUBANGULAR TO SUBROUNDED	2.5Y 6/1	LT TO MED GREY	2.5Y 7/1	LT GREY	0.2844	5.0	NA
BI-DA10-24-11B	4.0 - 8.0	DISPOSAL AREA 10			SP	SUBANGULAR TO SUBROUNDED	2.5Y 6/1	LT TO MED GREY	2.5Y 7/1	LT GREY	0.2657	3.6	NA
BI-DA10-24-11C	8.0 - 11.4	DISPOSAL AREA 10			SP	SUBANGULAR TO SUBROUNDED	2.5Y 6/1	LT TO MED GREY	2.5Y 7/1	LT GREY	0.2437	4.9	NA
BI-DA10-25-11A	0.0 - 5.0	DISPOSAL AREA 10	30.21390	-88.51874	SP	SUBANGULAR TO SUBROUNDED	5Y 5/1	LT TO MED GREY WITH SOME OLIVE	2.5Y 7/2	LT GREY WITH SOME BROWN	0.2837	1.7	NA
BI-DA10-25-11B	5.0 - 10.0	DISPOSAL AREA 10			SP	SUBANGULAR TO SUBROUNDED	2.5Y 6/1	LT TO MED GREY	2.5Y 7/1	LT GREY	0.2558	3.2	NA
BI-DA10-25-11C	10.0 - 14.5	DISPOSAL AREA 10			SP	SUBANGULAR TO SUBROUNDED	5Y 5/1	LT TO MED GREY WITH SOME OLIVE	2.5Y 7/2	LT GREY WITH SOME BROWN	0.3322	1.2	NA
BI-DA10-26-11		DISPOSAL AREA 10	30.21276	-88.51464		NO SAMPLE TAKEN							
BI-DA10-27-11A	0.0 - 4.0	DISPOSAL AREA 10	30.22738	-88.51747	SP	SUBANGULAR TO SUBROUNDED	5Y 5/1	LT TO MED GREY WITH SOME OLIVE	2.5Y 7/2	LT GREY WITH SOME BROWN	0.3266	1.0	NA
BI-DA10-27-11B	4.0 - 7.5	DISPOSAL AREA 10			SP	SUBANGULAR TO SUBROUNDED	5Y 5/1	LT TO MED GREY WITH SOME OLIVE	2.5Y 7/2	LT GREY WITH SOME BROWN	0.3419	1.8	NA
BI-DA10-28-11A	0.0 - 5.0	DISPOSAL AREA 10	30.22883	-88.51560	SP	SUBANGULAR TO SUBROUNDED	5Y 5/1	LT TO MED GREY WITH SOME OLIVE	2.5Y 7/2	LT GREY WITH SOME BROWN	0.3090	0.7	NA
BI-DA10-28-11B	5.0 - 9.3	DISPOSAL AREA 10			SP	SUBANGULAR TO SUBROUNDED	5Y 5/1	LT TO MED GREY WITH SOME OLIVE	2.5Y 7/2	LT GREY WITH SOME BROWN	0.2896	1.9	NA
BI-DA10-29-11A	0.0 - 6.7	DISPOSAL AREA 10	30.22981	-88.51560	SP	SUBANGULAR TO SUBROUNDED	2.5Y 5/2	GREYISH BROWN	2.5Y 7/1	LT GREY	0.3426	1.1	NA

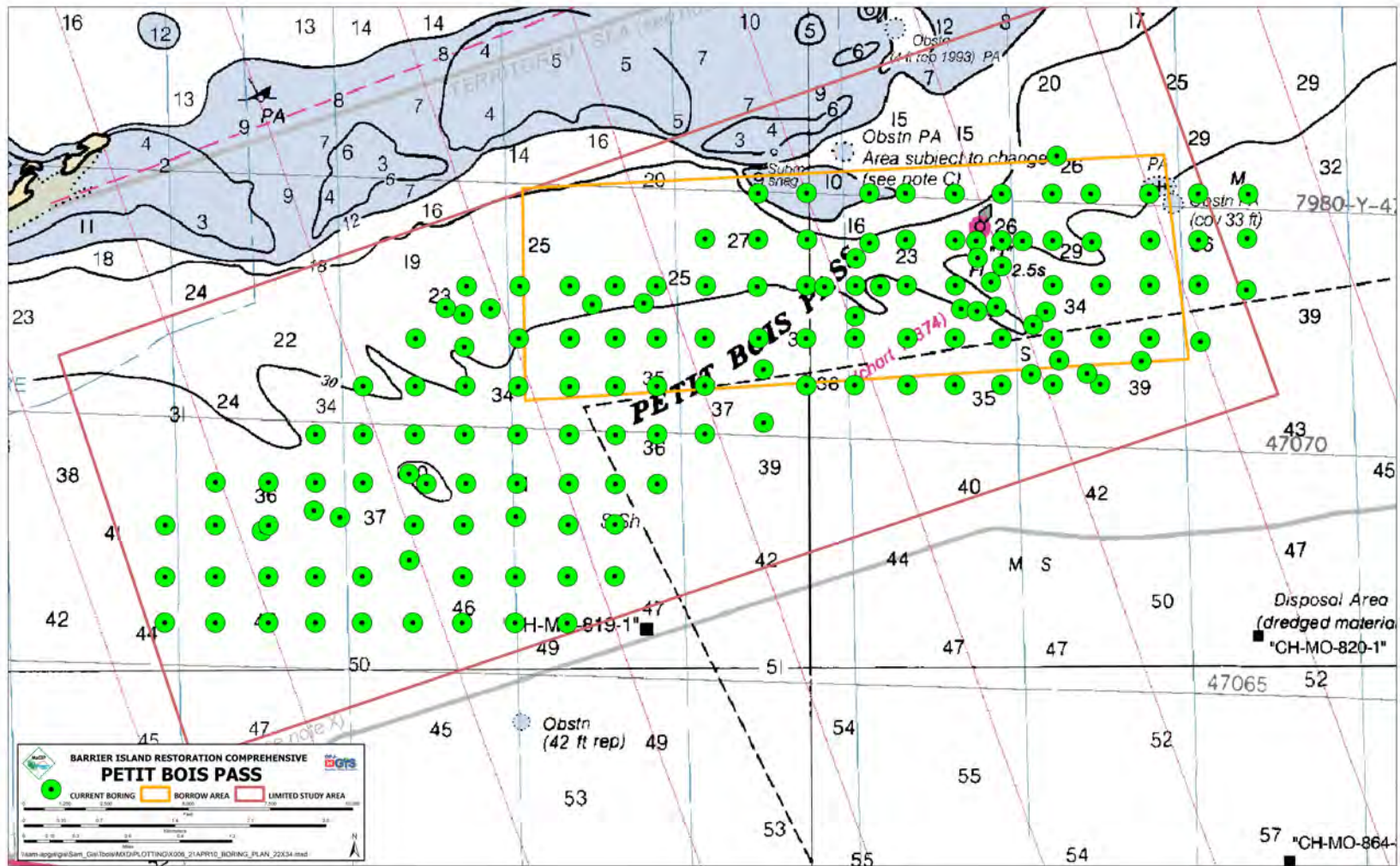


Figure 5.10.1 - General layout of the borings completed for the investigation for borrow material from Petit Bois Island area. Initial potential borrow area outlined in orange.

APPENDIX C

Offshore Sand Borrow Investigation, Phases 1 & 2

GEOTECHNICAL INVESTIGATION

TABLE 5.10.1 - MISSISSIPPI BARRIER ISLAND VIBRACORE SAMPLES - PETIT BOIS PASS													
NAME	SAMPLE DEPTH (ft BGS)	LOCATION	LATITUDE	LONGITUDE	USCS	ANGULARITY	WET COLOR CODE	WET COLOR	DRY COLOR CODE	DRY COLOR	D50 (mm)	% FINES	CaCO3
BI-PB-1-10A	6.0 - 10.3	PETIT BOIS ISLAND	30.17844	-88.38620	SM	SUBANGULAR TO ROUNDED	2.5Y 4/2	DK GRAYISH BROWN	2.5Y 6/2	LT BROWNISH GRAY	0.2522	13.3	NO
BI-PB-1-10B	10.3 - 15.7	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 6/1	GRAY	2.5Y 7/1	LT GRAY	0.2622	2.9	NO
BI-PB-2-10A	7.6 - 13.3	PETIT BOIS ISLAND	30.18007	-88.38155	SM	SUBANGULAR TO ROUNDED	2.5Y 4/2	DK GRAYISH BROWN	2.5Y 65/2	GRAYISH BROWN	0.2445	14.6	NO
BI-PB-3-10A	0.0 - 3.5	PETIT BOIS ISLAND	30.18298	-88.37183	SP	SUBANGULAR TO ROUNDED	2.5Y 5/1	GRAY	2.5Y 7/1	LT GRAY	0.2451	2.3	NO
BI-PB-3-10B	3.0 - 6.7	PETIT BOIS ISLAND			SC	SUBANGULAR TO ROUNDED	2.5Y 3/2	VERY DK GRAYISH BROWN	2.5Y 5/2	GRAYISH BROWN	0.2086	16.8	NO
BI-PB-4-10A	8.0 - 12.0	PETIT BOIS ISLAND	30.17924	-88.37780	SM	SUBANGULAR TO ROUNDED	2.5Y 4/2	DK GRAYISH BROWN	2.5Y 5/2	GRAYISH BROWN	0.2455	16.2	NO
BI-PB-4-10B	12.0 - 17.7	PETIT BOIS ISLAND			SM	SUBANGULAR TO ROUNDED	2.5Y 4/1	DK GRAY	2.5Y 6/2	LT BROWNISH GRAY	0.1947	12.1	NO
BI-PB-4-10C	17.7 - 20.0	PETIT BOIS ISLAND			SM	SUBANGULAR TO ROUNDED	2.5Y 4/1	DK GRAY	2.5Y 5/2	GRAYISH BROWN	0.1898	19.1	NO
BI-PB-5-10A	0.0 - 6.6	PETIT BOIS ISLAND	30.18230	-88.37035	SP	SUBANGULAR TO ROUNDED	2.5Y 5/1	GRAY	2.5Y 7/2	LT GRAY	0.2821	1.9	NO
BI-PB-6-10A	4.2 - 8.2	PETIT BOIS ISLAND	30.17579	-88.37206	SM	SUBANGULAR TO ROUNDED	2.5Y 4/2	DK GRAYISH BROWN	2.5Y 5/2	GRAYISH BROWN	0.2386	16.1	NO
BI-PB-6-10B	8.2 - 13.2	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 6/1	GRAY	2.5Y 7/1	LT GRAY	0.2785	3.4	NO
BI-PB-6-10C	13.2 - 18.6	PETIT BOIS ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 6/1	GRAY	2.5Y 7/1	LT GRAY	0.2879	5.0	NO
BI-PB-7-10A	0.0 - 3.5	PETIT BOIS ISLAND	30.17950	-88.36157	SP	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 7/1	LT GRAY	0.2794	1.6	NO
BI-PB-7-10B	3.5 - 7.5	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 7/1	LT GRAY	0.3157	1.5	NO
BI-PB-8-10A	0.0 - 6.0	PETIT BOIS ISLAND	30.19848	-88.33844	SP	SUBANGULAR TO ROUNDED	2.5Y 7/1	LT GRAY	2.5Y 8/1	WHITE	0.3816	1.7	NO
BI-PB-8-10B	6.0 - 12.0	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 7/1	LT GRAY	2.5Y 8/1	WHITE	0.397	1.7	NO
BI-PB-8-10C	12.0 - 16.9	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 6/2	LT BROWNISH GRAY	0.3718	4.3	NO
BI-PB-9-10A	0.0 - 6.7	PETIT BOIS ISLAND	30.20201	-88.32751	SP	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 7/2	LT GRAY	0.2871	3.0	NO
BI-PB-9-10B	7.6 - 12.6	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 6/2	LT BROWNISH GRAY	2.5Y 7/2	LT GRAY	0.3432	2.5	NO
BI-PB-9-10C	12.6 - 15.2	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 7/2	LT GRAY	0.3513	2.4	NO
BI-PB-10-10A	0.0 - 3.5	PETIT BOIS ISLAND	30.19676	-88.36670	SP	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 6/2	LT BROWNISH GRAY	0.2788	4.9	NO
BI-PB-10-10B	3.5 - 7.0	PETIT BOIS ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 6/2	LT BROWNISH GRAY	0.3014	6.3	NO
BI-PB-11-10		PETIT BOIS ISLAND	30.19180	-88.33768	CH	NO SAMPLE TAKEN							
BI-PB-12-10A	0.0 - 6.0	PETIT BOIS ISLAND	30.19896	-88.31590	SP-SM	SUBANGULAR TO ROUNDED	2.5Y 7/2	LT GRAY	2.5Y 7/2	LT GRAY	0.3257	6.3	NO
BI-PB-12-10B	6.0 - 12.0	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 7/2	LT GRAY	2.5Y 8/1	WHITE	0.3292	4.3	NO
BI-PB-12-10C	12.0 - 18.3	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 8/1	WHITE	2.5Y 8/1	WHITE	0.3286	2.0	NO
BI-PB-13-10		PETIT BOIS ISLAND	30.18716	-88.33778	CH	NO SAMPLE TAKEN							
BI-PB-14-10A	0.0 - 6.0	PETIT BOIS ISLAND	30.19641	-88.31064	SP	SUBANGULAR TO ROUNDED	2.5Y 7/2	LT GRAY	2.5Y 7/2	LT GRAY	0.3521	3.5	NO
BI-PB-14-10B	6.0 - 12.0	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 7/1	LT GRAY	2.5Y 8/1	WHITE	0.371	2.7	NO
BI-PB-14-10C	12.0 - 17.4	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	10YR 6/1	GRAY	2.5Y 7/1	LT GRAY	0.3535	4.6	NO
BI-PB-15-10A	4.7 - 9.0	PETIT BOIS ISLAND	30.19217	-88.30146	SP	SUBANGULAR TO ROUNDED	2.5Y 8/1	WHITE	2.5Y 8/1	WHITE	0.3772	1.5	NO
BI-PB-15-10B	9.0 - 12.1	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 6/1	GRAY	2.5Y 7/1	LT GRAY	0.3500	1.9	NO
BI-PB-16-10A	0.0 - 2.5	PETIT BOIS ISLAND	30.20221	-88.30602	SP-SM	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 6/2	LT BROWNISH GRAY	0.304	7.8	NO
BI-PB-16-10B	2.5 - 8.5	PETIT BOIS ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 7/2	LT GRAY	2.5Y 7/2	LT GRAY	0.3312	6.8	NO
BI-PB-16-10C	8.5 - 15.0	PETIT BOIS ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 7/2	LT GRAY	2.5Y 7/2	LT GRAY	0.3364	5.1	NO
BI-PB-16-10D	15.0 - 20.0	PETIT BOIS ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 5/1	GRAY	2.5Y 6/2	LT BROWNISH GRAY	0.3067	7.4	NO
BI-PB-17-10		PETIT BOIS ISLAND	30.20932	-88.30739	CH	NO SAMPLE TAKEN							

APPENDIX C

Offshore Sand Borrow Investigation, Phases 1 & 2

GEOTECHNICAL INVESTIGATION

TABLE 5.10.1 (cont'd) - MISSISSIPPI BARRIER ISLAND VIBRACORE SAMPLES - PETIT BOIS PASS													
NAME	SAMPLE DEPTH (ft BGS)	LOCATION	LATITUDE	LONGITUDE	USCS	ANGULARITY	WET COLOR CODE	WET COLOR	DRY COLOR CODE	DRY COLOR	D50 (mm)	% FINES	CaCO3
BI-PB-18-10A	0.0 - 3.3	PETIT BOIS ISLAND	30.20221	-88.34531	SP	SUBANGULAR TO ROUNDED	10YR 5/3	YELLOWISH BROWN	10YR 6/2	LT BROWNISH GRAY	0.3090	3.4	NO
BI-PB-18-10B	3.3 - 6.6	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	10YR 5/3	YELLOWISH BROWN	10YR 6/2	LT BROWNISH GRAY	0.3036	4.1	NO
BI-PB-19-10A	0.0 - 4.3	PETIT BOIS ISLAND	30.20248	-88.33801	SP	SUBANGULAR TO ROUNDED	2.5Y 7/1	LT GRAY	2.5Y 7/2	LT GRAY	0.3382	1.9	NO
BI-PB-19-10B	4.3 - 8.6	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 7/1	LT GRAY	2.5Y 8/1	WHITE	0.3338	2.0	NO
BI-PB-20-10A	0.0 - 4.4	PETIT BOIS ISLAND	30.20240	-88.33336	SP	SUBANGULAR TO ROUNDED	2.5Y 6/1	GRAY	2.5Y 7/2	LT GRAY	0.3183	2.3	NO
BI-PB-20-10B	4.0 - 8.0	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 7/1	LT GRAY	2.5Y 7/2	LT GRAY	0.3265	1.9	NO
BI-PB-20-10C	8.0 - 12.0	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	5Y 7/1	LT GRAY	2.5Y 7/2	LT GRAY	0.3176	2.0	NO
BI-PB-20-10D	12.0 - 17.0	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 6/1	GRAY	2.5Y 7/1	LT GRAY	0.3032	3.4	NO
BI-PB-21-10A	0.0 - 4.0	PETIT BOIS ISLAND	30.20242	-88.32005	SP	SUBANGULAR TO ROUNDED	2.5Y 7/1	LT GRAY	2.5Y 7/1	LT GRAY	0.3387	1.7	NO
BI-PB-21-10B	4.0 - 8.0	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 7/1	LT GRAY	2.5Y 7/1	LT GRAY	0.3309	1.9	NO
BI-PB-21-10C	8.0 - 11.4	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 7/1	LT GRAY	2.5Y 7/2	LT GRAY	0.3319	2.9	NO
BI-PB-21-10D	11.4 - 14.5	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 6/2	LT BROWNISH GRAY	2.5Y 7/2	LT GRAY	0.3225	6.3	NO
BI-PB-21-10E	14.5 - 18.5	PETIT BOIS ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 7/1	LT GRAY	2.5Y 7/2	LT GRAY	0.3838	8.9	NO
BI-PB-22-10A	0.0 - 5.3	PETIT BOIS ISLAND	30.20220	-88.31886	SP	SUBANGULAR TO ROUNDED	2.5Y 6/1	GRAY	2.5Y 7/1	LT GRAY	0.3445	2.6	NO
BI-PB-22-10B	5.3 - 10.6	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 7/1	LT GR	2.5Y 7/1	LT GRAY	0.3622	2.3	NO
BI-PB-22-10C	10.6 - 13.6	PETIT BOIS ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 7/1	LT GRAY	2.5Y 7/2	LT GRAY	0.3345	6.5	NO
BI-PB-22-10D	13.6 - 17.0	PETIT BOIS ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 7/1	LT GRAY	2.5Y 7/2	LT GRAY	0.3895	10.1	NO
BI-PB-22-10E	17.0 - 18.6	PETIT BOIS ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 7/2	LT GRAY	2.5Y 8/1	WHITE	0.3815	5.8	NO
BI-PB-23-10A	0.0 - 3.2	PETIT BOIS ISLAND	30.20243	-88.31441	SP-SM	SUBANGULAR TO ROUNDED	2.5Y 6/2	LT BROWNISH GRAY	2.5Y 7/1	LT GRAY	0.3479	6.1	NO
BI-PB-23-10B	3.2 - 6.4	PETIT BOIS ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 6/1	GRAY	2.5Y 7/1	LT GRAY	0.3649	5.9	NO
BI-PB-24-10A	0.0 - 3.6	PETIT BOIS ISLAND	30.20246	-88.30944	SP	SUBANGULAR TO ROUNDED	2.5Y 6/2	LT BROWNISH GRAY	2.5Y 7/2	LT GRAY	0.3373	2.0	NO
BI-PB-24-10B	3.6 - 8.6	PETIT BOIS ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 6/1	GRAY	2.5Y 7/2	LT GRAY	0.3315	6.4	NO
BI-PB-24-10C	8.6 - 13.6	PETIT BOIS ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 7/2	LT GRAY	2.5Y 7/2	LT GRAY	0.3435	5.3	NO
BI-PB-24-10D	13.6 - 18.2	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 7/1	LT GRAY	2.5Y 7/2	LT GRAY	0.3472	4.8	NO
BI-PB-25-10A	0.0 - 0.3	PETIT BOIS ISLAND	30.20272	-88.29980	SP-SM	SUBANGULAR TO ROUNDED	2.5Y 6/2	LT BROWNISH GRAY	2.5Y 7/2	LT GRAY	0.3509	7.2	NO
BI-PB-25-10B	0.3 - 4.3	PETIT BOIS ISLAND			SM	SUBANGULAR TO ROUNDED	2.5Y 5/1	GRAY	2.5Y 5/2	GRAYISH BROWN	0.3200	13.6	NO
BI-PB-25-10C	4.3 - 8.3	PETIT BOIS ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 5/1	GRAY	2.5Y 6/2	LT BROWNISH GRAY	0.3300	6.1	NO
BI-PB-25-10D	8.3 - 12.3	PETIT BOIS ISLAND			SM	SUBANGULAR TO ROUNDED	2.5Y 4/1	DK GRAY	2.5Y 5/2	GRAYISH BROWN	0.3195	12.3	NO
BI-PB-25-10E	12.3 - 15.8	PETIT BOIS ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 4/1	DK GRAY	2.5Y 5/2	GRAYISH BROWN	0.3191	11.0	NO
BI-PB-26-10A	0.0 - 2.0	PETIT BOIS ISLAND	30.19872	-88.34816	SP-SM	SUBANGULAR TO ROUNDED	2.5Y 2.5/1	BLACK	2.5Y 3/2	VERY DK GRAYISH BROWN	0.2776	6.0	NO
BI-PB-26-10B	2.0 - 7.0	PETIT BOIS ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 3/2	VERY DK GRAYISH BROWN	2.5Y 4/2	DARK GRAYISH BROWN	0.2524	6.5	NO
BI-PB-26-10C	7.0 - 12.0	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 3/3	DARK OLIVE BROWN	2.5Y 5/2	GRAYISH BROWN	0.2625	3.9	NO
BI-PB-27-10A	0.0 - 5.0	PETIT BOIS ISLAND	30.19885	-88.34438	SP-SM	SUBANGULAR TO ROUNDED	2.5Y 5/3	LIGHT OLIVE BROWN	2.5Y 6/2	LIGHT BROWNISH GRAY	0.3163	5.3	NO
BI-PB-27-10B	5.0 - 10.0	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 7/2	LIGHT GRAY	0.3351	1.7	NO
BI-PB-28-10A	0.0 - 5.0	PETIT BOIS ISLAND	30.19891	-88.33370	SP	SUBANGULAR TO ROUNDED	2.5Y 6/1	GRAY	2.5Y 7/1	LT GRAY	0.2468	1.7	NO
BI-PB-28-10B	5.0 - 10.0	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 6/1	GRAY	2.5Y 7/1	LT GRAY	0.2646	1.9	NO
BI-PB-28-10C	10.0 - 15.0	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 6/1	GRAY	2.5Y 7/1	LT GRAY	0.2917	2.5	NO

APPENDIX C

Offshore Sand Borrow Investigation, Phases 1 & 2

GEOTECHNICAL INVESTIGATION

TABLE 5.10.1 (cont'd) - MISSISSIPPI BARRIER ISLAND VIBRACORE SAMPLES - PETIT BOIS PASS													
NAME	SAMPLE DEPTH (ft BGS)	LOCATION	LATITUDE	LONGITUDE	USCS	ANGULARITY	WET COLOR CODE	WET COLOR	DRY COLOR CODE	DRY COLOR	D50 (mm)	% FINES	CaCO3
BI-PB-28-10D	15.0 - 19.2	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 6/1	GRAY	2.5Y 7/1	LT GRAY	0.3289	1.8	NO
BI-PB-29-10A	0.0 - 1.4	PETIT BOIS ISLAND	30.19887	-88.32897	SP	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 7/2	LT GRAY	0.3235	1.2	NO
BI-PB-30-10A	0.0 - 5.0	PETIT BOIS ISLAND	30.19859	-88.32372	SP	SUBANGULAR TO ROUNDED	2.5Y 6/2	LT BROWNISH GRAY	2.5Y 7/1	LT GRAY	0.4137	2.0	NO
BI-PB-30-10B	5.0 - 10.0	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	N 8.5/1	WHITE	N 9/1	WHITE	0.3812	1.8	NO
BI-PB-30-10C	10.0 - 14.9	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 6/1	GRAY	2.5Y 7/1	LT GRAY	0.3900	2.0	NO
BI-PB-31-10A	0.0 - 4.0	PETIT BOIS ISLAND	30.19849	-88.31895	SP-SM	SUBANGULAR TO ROUNDED	2.5Y 6/2	LT BROWNISH GRAY	2.5Y 7/2	LT GRAY	0.2805	6.2	NO
BI-PB-31-10B	4.0 - 7.0	PETIT BOIS ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 6/1	GRAY	2.5Y 7/1	LT GRAY	0.3229	6.2	NO
BI-PB-31-10C	7.0 - 8.7	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 6/2	LT BROWNISH GRAY	2.5Y 7/1	LT GRAY	0.3751	3.0	NO
BI-PB-31-10D	8.7 - 12.9	PETIT BOIS ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 5/2	GRAYISH BROWN	0.3258	8.9	NO
BI-PB-32-10A	0.5 - 1.1	PETIT BOIS ISLAND	30.19836	-88.30961	SP-SM	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	10YR 6/2	LT BROWNISH GRAY	0.3755	5.4	NO
BI-PB-32-10B	1.1 -6.1	PETIT BOIS ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 6/2	LT BROWNISH GRAY	2.5Y 7/2	LT GRAY	0.3764	6.8	NO
BI-PB-32-10C	6.1 - 11.1	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 7/2	LT GRAY	10YR 8/2	VERY PALE BROWN	0.4244	4.6	NO
BI-PB-32-10D	11.1 - 15.8	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 7/2	LT GRAY	2.5Y 7/2	LT GRAY	0.4576	3.0	NO
BI-PB-32-10E	15.8 - 19.8	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 6/1	GRAY	2.5Y 8/1	WHITE	0.4827	4.0	NO
BI-PB-33-10A	0.0 - 2.0	PETIT BOIS ISLAND	30.19843	-88.30490	SP	SUBANGULAR TO ROUNDED	10YR 4/1	DK GRAY	2.5Y 6/1	GRAY	0.3669	3.9	NO
BI-PB-33-10B	2.0 - 7.0	PETIT BOIS ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 4/1	DK GRAY	2.5Y 5/1	GRAY	0.3303	7.0	NO
BI-PB-33-10C	7.0 -11.0	PETIT BOIS ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 3/1	VERY DK GRAY	2.5Y 5/1	GRAY	0.3287	6.4	NO
BI-PB-33-10D	11.0 - 13.3	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 5/1	GRAY	2.5Y 6/1	GRAY	0.3221	3.8	NO
BI-PB-33-10E	13.3 - 19.1	PETIT BOIS ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 3/2	VERY DK GRAYISH BROWN	2.5Y 5/1	GRAY	0.3212	8.0	NO
BI-PB-34-10A	0.0 - 1.9	PETIT BOIS ISLAND	30.19838	-88.30013	SP	SUBANGULAR TO ROUNDED	2.5Y 5/1	GRAY	2.5Y 7/1	LT GRAY	0.3204	3.9	NO
BI-PB-34-10B	3.6 - 5.3	PETIT BOIS ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 4/1	DK GRAY	2.5Y 5/1	GRAY	0.2817	8.0	NO
BI-PB-34-10C	5.3 - 10.3	PETIT BOIS ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 3/2	VERY DK GRAYISH BROWN	2.5Y 5/1	GRAY	0.3174	7.5	NO
BI-PB-34-10D	10.3 - 15.3	PETIT BOIS ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 3/2	VERY DK GRAYISH BROWN	2.5Y 5/1	GRAY	0.3137	8.0	NO
BI-PB-34-10E	15.3 - 19.1	PETIT BOIS ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 2.5/1	BLACK	2.5Y 4/1	DK GRAY	0.3051	7.5	NO
BI-PB-35-10A	0.0 - 5.0	PETIT BOIS ISLAND	30.19439	-88.34438	SP	SUBANGULAR TO ROUNDED	10YR 3/3	DARK BROWN	10Y 5/3	BROWN	0.3460	1.5	NO
BI-PB-35-10B	5.0 - 10.0	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 5/3	LIGHT OLIVE BROWN	2.5Y 7/1	LIGHT GRAY	0.3141	1.1	NO
BI-PB-36-10A	0.0 - 5.0	PETIT BOIS ISLAND	30.19455	-88.34351	SP	SUBANGULAR TO ROUNDED	2.5Y 6/2	LIGHT BROWNISH GRAY	2.5Y 7/1	LIGHT GRAY	0.2874	1.9	NO
BI-PB-36-10B	5.0 - 10.0	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 6/2	LIGHT BROWNISH GRAY	2.5Y 7/1	LIGHT GRAY	0.3231	2.0	NO
BI-PB-36-10C	10.0 - 14.5	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 4/2	DARK GRAYISH BROWN	2.5Y 7/1	LIGHT GRAY	0.3423	3.9	NO
BI-PB-37-10A	0.0 - 5.0	PETIT BOIS ISLAND	30.19429	-88.33821	SP-SM	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 6/2	LT BROWNISH GRAY	0.3045	7.0	NO
BI-PB-37-10B	5.0 - 10.0	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 6/2	LT BROWNISH GRAY	2.5Y 7/1	LT GRAY	0.3385	2.0	NO
BI-PB-37-10C	10.0 - 15.0	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 6/1	GRAY	2.5Y 7/1	LT GRAY	0.3025	3.9	NO
BI-PB-38-10A	1.5 - 5.0	PETIT BOIS ISLAND	30.19426	-88.33366	SP-SM	SUBANGULAR TO ROUNDED	2.5Y 3/2	VERY DK GRAYISH BROWN	2.5Y 5/2	GRAYISH BROWN	0.2511	6.7	NO
BI-PB-38-10B	5.0 - 10.0	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 4/3	OLIVE BROWN	2.5Y7/2	LT GRAY	0.2721	2.6	NO
BI-PB-38-10C	10.0 - 15.0	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y6/2	LT BROWNISH GRAY	2.5Y 7/1	LT GRAY	0.3004	3.0	NO
BI-PB-38-10D	15.0 - 18.5	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 5/3	LT OLIVE BROWN	2.5Y 7/1	LT GRAY	0.3073	3.3	NO
BI-PB-40-10A	0.0 - 2.0	PETIT BOIS ISLAND	30.19423	-88.32391	SM	SUBANGULAR TO ROUNDED	2.5Y 3/3	VERY DK GRAYISH BROWN	2.5Y 5/3	LT OLIVE BROWN	0.2432	12.8	NO

APPENDIX C

Offshore Sand Borrow Investigation, Phases 1 & 2

GEOTECHNICAL INVESTIGATION

TABLE 5.10.1 (cont'd) - MISSISSIPPI BARRIER ISLAND VIBRACORE SAMPLES - PETIT BOIS PASS													
NAME	SAMPLE DEPTH (ft BGS)	LOCATION	LATITUDE	LONGITUDE	USCS	ANGULARITY	WET COLOR CODE	WET COLOR	DRY COLOR CODE	DRY COLOR	D50 (mm)	% FINES	CaCO3
BI-PB-42-10A	0.0 - 5.0	PETIT BOIS ISLAND	30.19417	-88.31483	SP-SM	SUBANGULAR TO ROUNDED	2.5Y 3/3	VERY DK GRAYISH BROWN	2.5Y 5/2	GRAYISH BROWN	0.2428	6.5	NO
BI-PB-42-10B	5.0 - 10.0	PETIT BOIS ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 4/1	DK GRAY	2.5Y 6/2	LT BROWNISH GRAY	0.2663	5.2	NO
BI-PB-42-10C	10.0 - 15.0	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	5Y 6/1	GRAY	5Y 8/1	WHITE	0.2570	3.7	NO
BI-PB-43-10A	0.0 - 5.0	PETIT BOIS ISLAND	30.19416	-88.30989	SP-SM	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 7/2	LT GRAY	0.3340	5.8	NO
BI-PB-43-10B	5.0 - 10.0	PETIT BOIS ISLAND			SM	SUBANGULAR TO ROUNDED	2.5Y 6/2	LT BROWNISH GRAY	2.5Y 7/2	LT GRAY	0.3060	12.4	NO
BI-PB-43-10C	15.0 - 20.0	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 5/1	GRAY	2.5Y 7/1	LT GRAY	0.2151	3.7	NO
BI-PB-44-10A	0.0 - 5.0	PETIT BOIS ISLAND	30.19417	-88.30531	SP	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 6/1	GRAY	0.3331	2.0	NO
BI-PB-44-10B	5.0 - 10.0	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 6/1	GRAY	2.5Y 7/1	LT GRAY	0.3428	2.1	NO
BI-PB-44-10C	10.0 - 15.0	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 7/2	GRAY	2.5Y 7/1	LT GRAY	0.3322	2.3	NO
BI-PB-44-10D	15.0 - 20.0	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 6/2	LT BROWNISH GRAY	2.5Y 7/1	LT GRAY	0.3566	3.6	NO
BI-PB-45-10A	0.0 - 5.0	PETIT BOIS ISLAND	30.19413	-88.30057	SP-SM	SUBANGULAR TO ROUNDED	5Y 3/2	VERY DK GRAYISH BROWN	5Y 5/2	GRAYISH BROWN	0.3949	6.0	NO
BI-PB-46-10		PETIT BOIS ISLAND	30.19009	-88.34798	CH	NO SAMPLE TAKEN							
BI-PB-47-10A	0.0 - 2.0	PETIT BOIS ISLAND	30.19031	-88.34341	SP	SUBANGULAR TO ROUNDED	2.5Y 4/3	OLIVE BROWN	2.5Y 6/2	LIGHT BROWNISH GRAY	0.3398	2.1	NO
BI-PB-47-10B	2.0 - 6.0	PETIT BOIS ISLAND			SM	SUBANGULAR TO ROUNDED	2.5Y 2.5/1	BLACK	2.5Y 4/2	DARK GRAYISH BROWN	0.1913	23.4	NO
BI-PB-51-10A	0.0 - 4.0	PETIT BOIS ISLAND	30.19016	-88.31949	SP-SM	SUBANGULAR TO ROUNDED	2.5Y 4/2	DARK GRAYISH BROWN	2.5Y 6/2	LIGHT BROWNISH GRAY	0.2282	5.3	NO
BI-PB-52-10A	5.0 - 10.0	PETIT BOIS ISLAND	30.19009	-88.31494	SP	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 7/1	LIGHT GRAY	0.2189	1.2	NO
BI-PB-52-10B	10.0 - 15.0	PETIT BOIS ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 6/2	LIGHT BROWNISH GRAY	2.5Y 8/1	WHITE	0.1937	6.1	NO
BI-PB-53-10A	0.0 - 5.0	PETIT BOIS ISLAND	30.19036	-88.30971	SM	SUBANGULAR TO ROUNDED	2.5Y 3/2	VERY DK GRAYISH BROWN	2.5Y 5/2	GRAYISH BROWN	0.2292	25.3	NO
BI-PB-53-10B	5.0 - 10.0	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 7/1	LIGHT GRAY	2.5Y 8/1	WHITE	0.2843	3.1	NO
BI-PB-53-10C	10.0 - 15.0	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 6/2	LIGHT BROWNISH GRAY	2.5Y 8/1	WHITE	0.2500	4.1	NO
BI-PB-53-10D	15.0 - 18.0	PETIT BOIS ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 8/1	WHITE	0.2058	6.3	NO
BI-PB-54-10A	0.0 - 1.5	PETIT BOIS ISLAND	30.19031	-88.30536	SP	SUBANGULAR TO ROUNDED	2.5Y 3/2	VERY DK GRAYISH BROWN	2.5Y 6/2	LIGHT BROWNISH GRAY	0.2663	4.2	YES
BI-PB-57-10		PETIT BOIS ISLAND	30.18609	-88.37147	CH	NO SAMPLE TAKEN							
BI-PB-58-10A	10.0 - 14.0	PETIT BOIS ISLAND	30.18622	-88.36650	SP-SM	SUBANGULAR TO ROUNDED	2.5Y 4/2	DARK GRAYISH BROWN	2.5Y 6/2	LIGHT BROWNISH GRAY	0.2564	5.2	NO
BI-PB-59-10A	10.0 - 13.0	PETIT BOIS ISLAND	30.18615	-88.36133	SP	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 7/1	LIGHT GRAY	0.2494	4.4	NO
BI-PB-60-10A	0.0 - 2.0	PETIT BOIS ISLAND	30.18609	-88.35645	CL	SUBANGULAR TO ROUNDED	2.5Y 2.5/1	BLACK	2.5Y 4/2	DARK GRAYISH BROWN	*	51.4	NO
BI-PB-61-10		PETIT BOIS ISLAND	30.18418	-88.35209	CH	NO SAMPLE TAKEN							
BI-PB-62-10A	0.0 - 1.5	PETIT BOIS ISLAND	30.18617	-88.34811	SM	SUBANGULAR TO ROUNDED	2.5Y 3/2	VERY DK GRAYISH BROWN	2.5Y 5/2	GRAYISH BROWN	0.1421	18.0	YES
BI-PB-63-10		PETIT BOIS ISLAND	30.18615	-88.34326	CH	NO SAMPLE TAKEN							
BI-PB-64-10A	11.0 - 12.8	PETIT BOIS ISLAND	30.18222	-88.39075	SM	SUBANGULAR TO ROUNDED	2.5Y 4/1	DK GRAY	2.5Y 5/2	GRAYISH BROWN	0.2997	12.9	NO
BI-PB-64-10B	12.8 - 15.8	PETIT BOIS ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 7/2	LT GRAY	0.2991	9.3	NO
BI-PB-64-10C	15.8 - 18.8	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 7/2	LT GRAY	0.3164	3.0	NO
BI-PB-67-10A	5.0 - 10.0	PETIT BOIS ISLAND	30.18234	-88.37656	SP	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 7/1	LIGHT GRAY	0.3025	2.4	NO
BI-PB-67-10B	10.0 - 15.0	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 4/2	DARK GRAYISH BROWN	2.5Y 6/2	LIGHT BROWNISH GRAY	0.2647	4.5	NO
BI-PB-68-10A	7.0 - 10.0	PETIT BOIS ISLAND	30.18195	-88.36682	SM	SUBANGULAR TO ROUNDED	2.5Y 3/2	VERY DK GRAYISH BROWN	2.5Y 5/2	GRAYISH BROWN	0.1633	16.0	NO
BI-PB-68-10B	10.0 - 15.0	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 7/1	LIGHT GRAY	0.2550	2.5	NO
BI-PB-68-10C	15.0 - 20.0	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 7/1	LIGHT GRAY	0.2504	4.4	NO

APPENDIX C

Offshore Sand Borrow Investigation, Phases 1 & 2

GEOTECHNICAL INVESTIGATION

TABLE 5.10.1 (cont'd) - MISSISSIPPI BARRIER ISLAND VIBRACORE SAMPLES - PETIT BOIS PASS													
NAME	SAMPLE DEPTH (ft BGS)	LOCATION	LATITUDE	LONGITUDE	USCS	ANGULARITY	WET COLOR CODE	WET COLOR	DRY COLOR CODE	DRY COLOR	D50 (mm)	% FINES	CaCO3
BI-PB-69-10		PETIT BOIS ISLAND	30.18238	-88.36146	CH	NO SAMPLE TAKEN							
BI-PB-70-10A	7.0 - 10.0	PETIT BOIS ISLAND	30.18200	-88.35640	SP	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 6/2	LIGHT BROWNISH GRAY	0.2226	4.1	NO
BI-PB-73-10A	13.8 - 18.3	PETIT BOIS ISLAND	30.17877	-88.39512	SP-SM	SUBANGULAR TO ROUNDED	2.5Y 6/1	GRAY	2.5Y 7/1	LT GRAY	0.1983	6.1	NO
BI-PB-76-10		PETIT BOIS ISLAND	30.17863	-88.37138	CH	NO SAMPLE TAKEN							
BI-PB-77-10		PETIT BOIS ISLAND	30.17866	-88.36686	CH	NO SAMPLE TAKEN							
BI-PB-78-10A	0.0 - 2.0	PETIT BOIS ISLAND	30.17859	-88.36569	SP-SM	SUBANGULAR TO ROUNDED	2.5Y 4/3	OLIVE BROWN	2.5Y 6/2	LIGHT BROWNISH GRAY	0.2775	6.0	NO
BI-PB-78-10B	7.0 - 10.0	PETIT BOIS ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 4/2	DARK GRAYISH BROWN	2.5Y 6/2	LIGHT BROWNISH GRAY	0.2008	6.9	NO
BI-PB-78-10C	10.0 - 13.5	PETIT BOIS ISLAND			SM	SUBANGULAR TO ROUNDED	2.5Y 3/2	VERY DK GRAYISH BROWN	2.5Y 5/2	GRAYISH BROWN	0.1569	18.3	NO
BI-PB-79-10		PETIT BOIS ISLAND	30.17843	-88.35213	CH	NO SAMPLE TAKEN							
BI-PB-80-10A	9.4 - 14.4	PETIT BOIS ISLAND	30.17451	-88.39547	SP	SUBANGULAR TO ROUNDED	2.5Y 6/1	GRAY	2.5Y 7/1	LT GRAY	0.2084	4.4	NO
BI-PB-80-10B	14.4 - 19.4	PETIT BOIS ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 7/1	LT GRAY	2.5Y 7/1	LT GRAY	0.1684	9.1	NO
BI-PB-89-10A	0.0 - 1.4	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 5/1	GRAY	2.5Y 7/1	LT GRAY	0.3500	3.4	NO
BI-PB-98-10A	0.0 - 5.0	PETIT BOIS ISLAND	30.19377	-88.37141	SP	SUBANGULAR TO ROUNDED	2.5Y 4/2	DARK GRAYISH BROWN	2.5Y 6/2	LIGHT BROWNISH GRAY	0.3274	4.2	NO
BI-PB-98-10B	5.0 - 10.0	PETIT BOIS ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 3/2	VERY DK GRAYISH BROWN	2.5Y 5/2	GRAYISH BROWN	0.2679	7.4	NO
BI-PB-98-10C	10.0 - 15.0	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 4/2	DARK GRAYISH BROWN	2.5Y 6/2	LIGHT BROWNISH GRAY	0.3191	4.5	NO
BI-PB-98-10D	15.0 - 17.5	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 4/2	DARK GRAYISH BROWN	2.5Y 6/2	LIGHT BROWNISH GRAY	0.2906	4.9	NO
BI-PB-99-10A	1.0 - 5.0	PETIT BOIS ISLAND	30.19397	-88.36133	SP-SM	SUBANGULAR TO ROUNDED	2.5Y 4/2	DARK GRAYISH BROWN	2.5Y 5/2	GRAYISH BROWN	0.3010	5.5	NO
BI-PB-99-10B	5.0 - 10.0	PETIT BOIS ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 4/2	DARK GRAYISH BROWN	2.5Y 6/2	LIGHT BROWNISH GRAY	0.2822	5.4	NO
BI-PB-100-10A	0.0 - 5.0	PETIT BOIS ISLAND	30.19860	-88.36634	SP	SUBANGULAR TO ROUNDED	2.5Y 3/2	VERY DK GRAYISH BROWN	2.5Y 4/2	DARK GRAYISH BROWN	0.3007	4.7	NO
BI-PB-100-10B	5.0 - 10.0	PETIT BOIS ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 3/2	VERY DK GRAYISH BROWN	2.5Y 5/2	GRAYISH BROWN	0.2993	6.5	NO
BI-PB-100-10C	10.0 - 15.0	PETIT BOIS ISLAND			SM	SUBANGULAR TO ROUNDED	5Y 3/2	DARK OLIVE GRAY	5Y 5/1	GRAY	0.2091	16.4	NO
BI-PB-101-10A	0.0 - 5.0	PETIT BOIS ISLAND	30.19873	-88.36121	SP	SUBANGULAR TO ROUNDED	2.5Y 2.5/1	BLACK	2.5Y 3/3	VERY DK GRAYISH BROWN	0.3773	1.4	NO
BI-PB-101-10B	5.0 - 10.0	PETIT BOIS ISLAND			SP-SM	SUBANGULAR TO ROUNDED	10YR 2/2	VERY DARK BROWN	2.5Y 2.5/1	BLACK	0.2789	5.5	NO
BI-PB-101-10C	10.0 - 11.0	PETIT BOIS ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 3/2	VERY DK GRAYISH BROWN	2.5Y 5/1	GRAY	0.2862	5.4	NO
BI-PB-102-10A	0.0 - 4.0	PETIT BOIS ISLAND	30.19432	-88.35639	SP-SM	SUBANGULAR TO ROUNDED	2.5Y 3/2	VERY DK GRAYISH BROWN	2.5Y 5/2	GRAYISH BROWN	0.3327	7.1	NO
BI-PB-102-10B	4.0 - 8.0	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 4/2	DARK GRAYISH BROWN	2.5Y 6/2	LIGHT BROWNISH GRAY	0.3295	3.1	NO
BI-PB-102-10C	8.0 - 11.0	PETIT BOIS ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 4/2	DARK GRAYISH BROWN	2.5Y 6/2	LIGHT BROWNISH GRAY	0.2562	7.3	NO
BI-PB-103-10		PETIT BOIS ISLAND	30.18760	-88.37637	CH	NO SAMPLE TAKEN							
BI-PB-104-10A	2.0 - 5.0	PETIT BOIS ISLAND	30.19001	-88.37107	SM	SUBANGULAR TO ROUNDED	2.5Y 3/2	VERY DK GRAYISH BROWN	2.5Y 4/2	DARK GRAYISH BROWN	0.1621	20.8	NO
BI-PB-104-10B	5.0 - 8.0	PETIT BOIS ISLAND			SM	SUBANGULAR TO ROUNDED	2.5Y 2.5/1	BLACK	2.5Y 3/2	VERY DK GRAYISH BROWN	0.1077	37.5	YES
BI-PB-105-10A	0.0 - 4.0	PETIT BOIS ISLAND	30.19023	-88.36653	SM	SUBANGULAR TO ROUNDED	2.5Y 4/2	DARK GRAYISH BROWN	2.5Y 6/1	GRAY	0.2091	12.8	NO
BI-PB-105-10B	4.0 - 8.0	PETIT BOIS ISLAND			SM	SUBANGULAR TO ROUNDED	2.5Y 3/2	VERY DK GRAYISH BROWN	2.5Y 5/2	GRAYISH BROWN	0.1917	23.0	YES
BI-PB-106-10A	2.0 - 5.0	PETIT BOIS ISLAND	30.19016	-88.36144	SP-SM	SUBANGULAR TO ROUNDED	2.5Y 3/1	VERY DARK GRAY	2.5Y 4/2	DARK GRAYISH BROWN	0.2503	9.2	NO
BI-PB-106-10B	5.0 - 9.5	PETIT BOIS ISLAND			SM	SUBANGULAR TO ROUNDED	5Y 3/2	DARK OLIVE GRAY	5Y 5/2	OLIVE GRAY	0.2584	19.3	YES
BI-PB-107-10		PETIT BOIS ISLAND	30.19107	-88.35654	CH	NO SAMPLE TAKEN							
BI-PB-109-10A	0.0 - 5.0	PETIT BOIS ISLAND	30.19857	-88.32651	SP	SUBANGULAR TO ROUNDED	5Y 4/2	DK GRAYISH BROWN	5Y 7/2	LT GRAY	0.3721	2.5	NO
BI-PB-109-10B	5.0 - 10.0	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 6/1	GRAY	2.5Y 7/1	LT GRAY	0.3340	2.4	NO

APPENDIX C

Offshore Sand Borrow Investigation, Phases 1 & 2

GEOTECHNICAL INVESTIGATION

TABLE 5.10.1 (cont'd) - TABLE 5.10.1 (cont'd) - MISSISSIPPI BARRIER ISLAND VIBRACORE SAMPLES - PETIT BOIS PASS													
NAME	SAMPLE DEPTH (ft BGS)	LOCATION	LATITUDE	LONGITUDE	USCS	ANGULARITY	WET COLOR CODE	WET COLOR	DRY COLOR CODE	DRY COLOR	D50 (mm)	% FINES	CaCO3
BI-PB-109-10C	10.0 - 13.0	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 7/1	LT GRAY	0.3316	2.8	NO
BI-PB-112-10A	1.0 - 5.0	PETIT BOIS ISLAND	30.20236	-88.31723	SP-SM	SUBANGULAR TO ROUNDED	5Y 6/1	GRAY	2.5Y 7/1	LT GRAY	0.2982	9.8	NO
BI-PB-112-10B	5.0 - 9.0	PETIT BOIS ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 6/2	LT BROWNISH GRAY	2.5Y 7/2	LT GRAY	0.3341	6.2	NO
BI-PB-112-10C	9.0 - 11.0	PETIT BOIS ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 6/1	GRAY	2.5Y 7/2	LT GRAY	0.3282	6.6	NO
BI-PB-113-10A	0.0 - 5.0	PETIT BOIS ISLAND	30.20024	-88.31478	SM	SUBANGULAR TO ROUNDED	5Y 2.5/1	GRAY	2.5Y 3/1	VERY DK GRAYISH BROWN	0.2867	17.2	NO
BI-PB-113-10B	5.0 - 10.0	PETIT BOIS ISLAND			SM	SUBANGULAR TO ROUNDED	5Y 4/2	DK GRAYISH BROWN	5Y 5/2	GRAYISH BROWN	0.2881	19.4	NO
BI-PB-113-10C	10.0 - 15.0	PETIT BOIS ISLAND			SM	SUBANGULAR TO ROUNDED	2.5Y 4/2	DK GRAYISH BROWN	2.5Y 6/1	GRAY	0.2677	20.8	NO
BI-PB-113-10D	15.0 - 17.5	PETIT BOIS ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 5/1	GRAY	2.5Y 6/1	GRAY	0.3099	9.9	NO
BI-PB-114-10A	0.0 - 5.0	PETIT BOIS ISLAND	30.20232	-88.31277	SM	SUBANGULAR TO ROUNDED	5Y 3/2	DARK OLIVE GRAY	5Y 5/2	OLIVE GRAY	0.2271	26.9	NO
BI-PB-114-10B	5.0 - 10.0	PETIT BOIS ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 7/2	LT GRAY	0.3357	6.7	NO
BI-PB-114-10C	10.0 - 15.0	PETIT BOIS ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 3/2	VERY DK GRAYISH BROWN	2.5Y 5/1	GRAY	0.3300	6.6	NO
BI-PB-114-10D	15.0 - 19.0	PETIT BOIS ISLAND			SM	SUBANGULAR TO ROUNDED	2.5Y 2.5/1	GRAY	2.5Y 4/1	DK GRAY	0.3039	13.8	NO
BI-PB-115-10A	0.0 - 4.0	PETIT BOIS ISLAND	30.20641	-88.33820	SP	SUBANGULAR TO ROUNDED	2.5Y 4/2	DK GRAYISH BROWN	2.5Y 6/2	LT BROWNISH GRAY	0.2381	2.2	YES
BI-PB-115-10B	4.0 - 8.0	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 6/2	LT BROWNISH GRAY	0.2206	4.8	NO
BI-PB-115-10C	8.0 - 11.5	PETIT BOIS ISLAND			SP-SM	SUBANGULAR TO ROUNDED	5Y 4/2	DK GRAYISH BROWN	5Y 6/2	LT BROWNISH GRAY	0.2853	5.5	NO
BI-PB-116-10A	0.0 - 5.0	PETIT BOIS ISLAND	30.20642	-88.33355	SP	SUBANGULAR TO ROUNDED	2.5Y 4/3	OLIVE BROWN	2.5Y 6/2	LT BROWNISH GRAY	0.3445	2.7	NO
BI-PB-116-10B	5.0 - 7.0	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 7/1	LT GRAY	0.2828	4.6	NO
BI-PB-117-10A	0.0 - 5.0	PETIT BOIS ISLAND	30.20638	-88.32749	SP	SUBANGULAR TO ROUNDED	2.5Y 6/1	GRAY	2.5Y 7/1	LT GRAY	0.3185	1.7	NO
BI-PB-117-10B	5.0 - 10.0	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	5Y 5/2	GRAYISH BROWN	5Y 7/1	LT GRAY	0.3146	1.8	YES
BI-PB-117-10C	10.0 - 15.0	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 5/1	GRAY	2.5Y 7/1	LT GRAY	0.2606	4.5	YES
BI-PB-117-10D	15.0 - 20.0	PETIT BOIS ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 3/1	VERY DK GRAY	2.5Y 5/2	GRAYISH BROWN	0.2042	9.8	NO
BI-PB-118-10A	0.0 - 5.0	PETIT BOIS ISLAND	30.20637	-88.32401	SP	SUBANGULAR TO ROUNDED	2.5Y 5/1	GRAY	2.5Y 7/1	LT GRAY	0.3080	1.6	NO
BI-PB-118-10B	5.0 - 10.0	PETIT BOIS ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 7/1	LT GRAY	0.3077	6.1	NO
BI-PB-118-10C	10.0- 15.0	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	5Y 5/2	GRAYISH BROWN	5Y 7/1	LT GRAY	0.3556	1.8	NO
BI-PB-118-10D	15.0 - 20.0	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	5Y 5/2	GRAYISH BROWN	5Y 7/1	LT GRAY	0.2905	2.5	NO
BI-PB-119-10A	0.0 - 5.0	PETIT BOIS ISLAND	30.20631	-88.31929	SP	SUBANGULAR TO ROUNDED	2.5Y 6/2	LT BROWNISH GRAY	2.5Y 7/1	LT GRAY	0.3342	1.3	NO
BI-PB-119-10B	5.0 - 10.0	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	5Y 5/2	GRAYISH BROWN	5Y 7/1	LT GRAY	0.3066	1.9	YES
BI-PB-119-10C	10 - 15.0	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	5Y 4/2	DK GRAYISH BROWN	5Y 7/1	LT GRAY	0.2323	2.3	NO
BI-PB-119-10D	15.0 - 20.0	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 4/1	DK GRAY	2.5Y 6/2	LT BROWNISH GRAY	0.3417	4.6	NO
BI-PB-120-10A	0.0 - 5.0	PETIT BOIS ISLAND	30.20628	-88.31477	SP	SUBANGULAR TO ROUNDED	2.5Y 5/3	LT OLIVE BROWN	2.5Y 6/2	LT BROWNISH GRAY	0.3030	4.1	NO
BI-PB-120-10B	5.0 - 10.0	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 4/3	OLIVE BROWN	2.5Y 6/2	LT BROWNISH GRAY	0.2990	3.5	NO
BI-PB-120-10C	10.0 15.0	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 5/1	GRAY	2.5Y 7/1	LT GRAY	0.2684	3.1	NO
BI-PB-121-10A	0.0 - 5.0	PETIT BOIS ISLAND	30.20628	-88.30990	SP	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 7/1	LT GRAY	0.2825	4.6	NO
BI-PB-121-10B	5.0 - 10.0	PETIT BOIS ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 4/3	OLIVE BROWN	2.5Y 7/1	LT GRAY	0.2726	10.4	NO
BI-PB-121-10D	10.0 - 15.0	PETIT BOIS ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 7/2	LT GRAY	0.3128	6.2	NO
BI-PB-121-10E	15.0 - 20.0	PETIT BOIS ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 7/2	LT GRAY	0.3051	6.1	NO
BI-PB-122-10A	1.0 - 5.0	PETIT BOIS ISLAND	30.20626	-88.30618	SP-SM	SUBANGULAR TO ROUNDED	2.5Y 5/1	GRAY	2.5Y 6/2	LT BROWNISH GRAY	0.3165	5.5	NO

APPENDIX C

Offshore Sand Borrow Investigation, Phases 1 & 2

GEOTECHNICAL INVESTIGATION

TABLE 5.10.1 (cont'd) - TABLE 5.10.1 (cont'd) - MISSISSIPPI BARRIER ISLAND VIBRACORE SAMPLES - PETIT BOIS PASS													
NAME	SAMPLE DEPTH (ft BGS)	LOCATION	LATITUDE	LONGITUDE	USCS	ANGULARITY	WET COLOR CODE	WET COLOR	DRY COLOR CODE	DRY COLOR	D50 (mm)	% FINES	CaCO3
BI-PB-122-10B	5.0 - 10.0	PETIT BOIS ISLAND			SM	SUBANGULAR TO ROUNDED	2.5Y 5/1	GRAY	2.5Y 7/1	LT GRAY	0.2590	12.8	NO
BI-PB-122-10C	10.0 - 15.0	PETIT BOIS ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 6/2	LT BROWNISH GRAY	2.5Y 7/2	LT GRAY	0.3229	6.5	NO
BI-PB-122-10D	15.0 - 16.5	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 5/1	GRAY	2.5Y 7/1	LT GRAY	0.3342	4.3	NO
BI-PB-123-10A	0.0 - 5.0	PETIT BOIS ISLAND	30.20622	-88.30055	SP	SUBANGULAR TO ROUNDED	2.5Y 6/2	LT BROWNISH GRAY	2.5Y 7/2	LT GRAY	0.3514	4.9	NO
BI-PB-123-10B	5.0 - 10.0	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 7/1	LT GRAY	2.5Y 8/1	WHITE	0.3001	3.2	NO
BI-PB-123-10C	10.0 - 15.0	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 7/1	LT GRAY	2.5Y 8/1	WHITE	0.2950	4.5	NO
BI-PB-124-10A	0.0 - 4.0	PETIT BOIS ISLAND	30.20593	-88.29567	SP	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 7/2	LIGHT GRAY	0.3364	4.8	NO
BI-PB-124-10B	4.0 - 8.0	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 5/2	GRAYISH BROWN	2.5Y 7/2	LIGHT GRAY	0.3274	3.8	NO
BI-PB-125-10A	0.0 - 5.0	PETIT BOIS ISLAND	30.20216	-88.29599	SP-SM	SUBANGULAR TO ROUNDED	2.5Y 3/2	VERY DK GRAYISH BROWN	2.5Y 5/2	GRAYISH BROWN	0.2642	8.9	NO
BI-PB-125-10B	5.0 - 10.0	PETIT BOIS ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 3/2	VERY DK GRAYISH BROWN	2.5Y 5/1	GRAY	0.3004	9.4	NO
BI-PB-126-10A	0.0 - 5.0	PETIT BOIS ISLAND	30.19839	-88.29581	SP-SM	SUBANGULAR TO ROUNDED	2.5Y 3/3	DARK OLIVE BROWN	2.5Y 5/2	GRAYISH BROWN	0.3272	9.1	NO
BI-PB-126-10B	5.0 - 10.0	PETIT BOIS ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 3/2	VERY DK GRAYISH BROWN	2.5Y 5/1	GRAY	0.3205	6.2	NO
BI-PB-126-10C	10.0 - 14.7	PETIT BOIS ISLAND			SP-SM	SUBANGULAR TO ROUNDED	2.5Y 4/2	DARK GRAYISH BROWN	2.5Y 5/1	GRAY	0.3173	11.0	NO
BI-PB-127-10A	0.0 - 5.0	PETIT BOIS ISLAND	30.19873	-88.35639	SP	SUBANGULAR TO ROUNDED	10YR 3/2	VERY DARK GRAYISH BROWN	10YR 4/2	DRAK GRAYISH BROWN	0.2883	2.4	NO
BI-PB-127-10B	5.0 - 10.0	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 3/3	DARK OLIVE BROWN	2.5Y 5/2	GRAYISH BROWN	0.2755	4.5	NO
BI-PB-128-10A	1.0 - 6.0	PETIT BOIS ISLAND	30.19873	-88.35203	SP	SUBANGULAR TO ROUNDED	2.5Y 3/3	DARK OLIVE BROWN	2.5Y 5/2	GRAYISH BROWN	0.2718	3.8	NO
BI-PB-129-10A	1.0 - 4.0	PETIT BOIS ISLAND	30.19434	-88.35203	SP	SUBANGULAR TO ROUNDED	2.5Y 4/3	OLIVE BROWN	2.5Y 6/2	LIGHT BROWNISH GRAY	0.3430	3.4	NO
BI-PB-129-10B	4.0 - 8.0	PETIT BOIS ISLAND			SP	SUBANGULAR TO ROUNDED	2.5Y 4/3	OLIVE BROWN	2.5Y 6/2	LIGHT BROWNISH GRAY	0.2957	4.7	NO
BI-PB-130-10		PETIT BOIS ISLAND	30.19027	-88.35214		NO SAMPLE TAKEN							
PHASE II VIBRACORE SAMPLING - PETIT BOIS ISLAND													
BI-PB-131-11A	0.0 - 3.3	PETIT BOIS ISLAND	30.19693	-88.36834	SP-SM	SUBANGULAR TO SUBROUNDED	5Y 6/2	LT OLIVE GREY	5Y 7/1	LT GREY	0.3095	6.5	NA
BI-PB-131-11B	3.3 - 8.3	PETIT BOIS ISLAND			SP-SM	SUBANGULAR TO SUBROUNDED	5Y 5/2	OLIVE GREY	2.5Y 6/2	LT BROWNISH GREY	0.2957	7.2	NA
BI-PB-132-11A	0.0 - 5.0	PETIT BOIS ISLAND	30.19366	-88.36657	SP	SUBANGULAR TO SUBROUNDED	5Y 4/1	DARK GREY	2.5Y 6/2	LT BROWNISH GREY	0.3099	4	NA
BI-PB-132-11B	5.0 - 10.0	PETIT BOIS ISLAND			SP-SM	SUBANGULAR TO SUBROUNDED	5Y 5/1	GREY	2.5Y 6/2	LT BROWNISH GREY	0.3122	5	NA
BI-PB-132-11C	10.0 - 14.8	PETIT BOIS ISLAND			SP	SUBANGULAR TO SUBROUNDED	5Y 5/2	OLIVE GREY	2.5Y 7/1	LT GREY WITH SOME YELLOW	0.3152	2.5	NA
BI-PB-133-11A	0.0 - 4.0	PETIT BOIS ISLAND	30.19686	-88.36402	SP-SM	SUBANGULAR TO SUBROUNDED	2.5Y 5/1	LT GREY TO MED GREY	2.5Y 7/1	LT GREY WITH SOME YELLOW	0.2741	6.6	NA
BI-PB-133-11B	4.0 - 8.0	PETIT BOIS ISLAND			SP	SUBANGULAR TO SUBROUNDED	2.5Y 5/2	GREYISH BROWN	2.5Y 6/2	LT BROWNISH GREY	0.2848	3.6	NA
BI-PB-133-11C	8.0 - 13.0	PETIT BOIS ISLAND			SP	SUBANGULAR TO SUBROUNDED	2.5Y 4/2	DARK GREYISH BROWN	2.5Y 6/2	LT BROWNISH GREY	0.2854	2.8	NA
BI-PB-134-11A	0.0 - 5.0	PETIT BOIS ISLAND	30.19717	-88.35423	SP	SUBANGULAR TO SUBROUNDED	5Y 3/2	DARK OLIVE GREY	2.5Y 4/2	DARK GREYISH BROWN	0.3037	4.7	NA
BI-PB-134-11B	5.0 - 8.0	PETIT BOIS ISLAND			SP-SM	SUBANGULAR TO SUBROUNDED	5Y 4/2	OLIVE GREY	2.5Y 5/2	GREYISH BROWN	0.2666	5.9	NA
BI-PB-135-11A	0.0 - 2.0	PETIT BOIS ISLAND	30.19726	-88.34927	SP-SM	SUBANGULAR TO SUBROUNDED	5Y 4/2	OLIVE GREY	2.5Y 5/2	GREYISH BROWN	0.3209	6.6	NA
BI-PB-135-11B	2.0 - 5.5	PETIT BOIS ISLAND			SP-SM	SUBANGULAR TO SUBROUNDED	5Y 4/1	DARK GREY	2.5Y 5/2	GREYISH BROWN	0.2445	8.4	NA
BI-PB-136-11A	0.0 - 3.0	PETIT BOIS ISLAND	30.19666	-88.31871	SP-SM	SUBANGULAR TO SUBROUNDED	5Y 4/2	DARK GREYISH BROWN	5Y 6/2	LT OLIVE GREY	0.261	5	NA

TABLE 5.10.1 (cont'd) - TABLE 5.10.1 (cont'd) - TABLE 5.10.1 (cont'd) - TABLE 5.10.1 (cont'd) - MISSISSIPPI BARRIER ISLAND VIBRACORE SAMPLES - PETIT BOIS ISLAND													
NAME	SAMPLE DEPTH (ft BGS)	LOCATION	LATITUDE	LONGITUDE	USCS	ANGULARITY	WET COLOR CODE	WET COLOR	DRY COLOR CODE	DRY COLOR	D50 (mm)	% FINES	CaCO3
BI-PB-136-11B	3.0 - 6.5	PETIT BOIS ISLAND			SP-SM	SUBANGULAR TO SUBROUNDED	5Y 4/2	DARK GREYISH BROWN	5Y 6/2	LT OLIVE GREY	0.3035	7.2	NA
BI-PB-137-11A	0.0 - 4.0	PETIT BOIS ISLAND	30.19683	-88.31532	SP	SUBANGULAR TO SUBROUNDED	5Y 5/2	GREYISH BROWN	5Y 7/1	LT TO MED GREY	0.2881	2.9	NA
BI-PB-137-11B	4.0 - 8.0	PETIT BOIS ISLAND			SP-SM	SUBANGULAR TO SUBROUNDED	5Y 5/1	GREY	2.5Y 6/2	LT BROWNISH GREY	0.2613	6.6	NA
BI-PB-137-11C	8.0 - 12.0	PETIT BOIS ISLAND			SP	SUBANGULAR TO SUBROUNDED	5Y 6/1	LT TO MED GREY	2.5Y 7/2	LT GREY WITH SOME BROWN	0.3004	4.9	NA
BI-PB-137-11D	12.0 - 16.9	PETIT BOIS ISLAND			SP	SUBANGULAR TO SUBROUNDED	5Y 6/1	LT TO MED GREY	2.5Y 8/1	WHITE	0.2937	4.4	NA
BI-PB-138-11A	0.0 - 5.0	PETIT BOIS ISLAND	30.19531	-88.31180	SP-SM	SUBANGULAR TO SUBROUNDED	2.5Y 6/1	LT TO MED GREY	5Y 6/1	MED GREY	0.289	8.6	NA
BI-PB-138-11B	5.0 - 10.0	PETIT BOIS ISLAND			SP	SUBANGULAR TO SUBROUNDED	2.5Y 6/1	LT TO MED GREY	5Y 6/1	MED GREY	0.3247	3.2	NA
BI-PB-138-11C	10.0 - 15.0	PETIT BOIS ISLAND			SP	SUBANGULAR TO SUBROUNDED	2.5Y 6/1	LT TO MED GREY	2.5Y 7/1	LT GREY WITH SOME YELLOW	0.3269	2.9	NA
BI-PB-138-11D	15.0 - 16.5	PETIT BOIS ISLAND			SP-SM	SUBANGULAR TO SUBROUNDED	2.5Y 5/1	GREY	2.5Y 7/1	LT GREY WITH SOME YELLOW	0.3135	5.7	NA
BI-PB-138-11E	16.5 - 18.5	PETIT BOIS ISLAND			SP-SM	SUBANGULAR TO SUBROUNDED	2.5Y 5/1	GREY	2.5Y 7/1	LT GREY WITH SOME YELLOW	0.266	11.4	NA
BI-PB-139-11A	0.0 - 2.0	PETIT BOIS ISLAND	30.19117	-88.31200	SP	SUBANGULAR TO SUBROUNDED	5Y 7/1	LIGHT GREY	2.5Y 8/1	WHITE	0.2581	2.7	NA
BI-PB-139-11B	2.0 - 4.0	PETIT BOIS ISLAND			SP	SUBANGULAR TO SUBROUNDED	5Y 7/1	LT GREY	2.5Y 8/1	WHITE	0.265	1.6	NA
BI-PB-139-11C	4.0 - 6.0	PETIT BOIS ISLAND			SP	SUBANGULAR TO SUBROUNDED	5Y 7/1	LT GREY	2.5Y 8/1	WHITE	0.2646	2.9	NA
BI-PB-140-11A	0.0 - 1.5	PETIT BOIS ISLAND	30.19233	-88.30930	SP-SM	SUBANGULAR TO SUBROUNDED	5Y 7/1	LIGHT GREY	2.5Y 8/1	WHITE	0.2568	9.1	NA
BI-PB-140-11B	1.5 - 5.2	PETIT BOIS ISLAND			SP	SUBANGULAR TO SUBROUNDED	5Y 7/1	LT GREY	2.5Y 8/1	WHITE	0.3158	3.9	NA
BI-PB-140-11C	5.2 - 10.5	PETIT BOIS ISLAND			SP	SUBANGULAR TO SUBROUNDED	5Y 7/1	LT GREY	2.5Y 8/1	WHITE	0.2991	3.9	NA
BI-PB-141-11		PETIT BOIS ISLAND	30.19121	-88.30662		NO SAMPLE TAKEN							
BI-PB-142-11A	0.0 - 2.8	PETIT BOIS ISLAND	30.19382	-88.29568	SP-SM	SUBANGULAR TO SUBROUNDED	5Y 3/2	DARK OLIVE GREY	5Y 6/2	LT OLIVE GREY	0.3546	6.1	NA
BI-PB-142-11B	2.8 - 7.8	PETIT BOIS ISLAND			SP	SUBANGULAR TO SUBROUNDED	5Y 3/2	DARK OLIVE GREY	5Y 5/2	GREYISH BROWN	0.3862	4.6	NA
BI-PB-142-11C	7.8 - 12.0	PETIT BOIS ISLAND			SP-SM	SUBANGULAR TO SUBROUNDED	5Y 4/1	DARK GREY	5Y 5/2	GREYISH BROWN	0.3635	7.5	NA
BI-PB-142-11D	12.0 - 15.2	PETIT BOIS ISLAND			SP	SUBANGULAR TO SUBROUNDED	5Y 5/1	GREY	5Y 6/1	MED GREY	0.3628	4	NA
BI-PB-143-11		PETIT BOIS ISLAND	30.19816	-88.29124		NO SAMPLE TAKEN							
BI-PB-144-11A	0.0 - 4.0	PETIT BOIS ISLAND	30.20246	-88.29115	SP-SM	SUBANGULAR TO SUBROUNDED	5Y 5/1	GREY	2.5Y 7/1	LT OLIVE BROWN	0.2664	7.1	
BI-PB-144-11B	4.0 - 8.0	PETIT BOIS ISLAND			SP-SM	SUBANGULAR TO SUBROUNDED	5Y 4/1	DARK GREY	2.5Y 6/2	LT OLIVE BROWN	0.2519	5.9	
BI-PB-144-11C	8.0 - 12.0	PETIT BOIS ISLAND			SM	SUBANGULAR TO SUBROUNDED	5Y 4/2	DARK GREYISH BROWN	2.5Y 5/1	OLIVE BROWN	0.2399	18.8	
BI-PB-144-11D	12.0 - 16.2	PETIT BOIS ISLAND			SM	SUBANGULAR TO SUBROUNDED	5Y 4/2	DARK GREYISH BROWN	2.5Y 5/2	LIGHT OLIVE YELLOW BROWN	0.3375	17.9	
BI-PB-145-11A	0.0 - 4.0	PETIT BOIS ISLAND	30.20616	-088.2910199	SP	SUBANGULAR TO SUBROUNDED	5Y 5/1	GREY	2.5Y 7/1	LT OLIVE BROWN	0.3263	4.1	
BI-PB-145-11B	4.0 - 7.3	PETIT BOIS ISLAND			SP	SUBANGULAR TO SUBROUNDED	5Y 6/1	LT TO MED GREY	5Y 7/1	LT OLIVE BROWN	0.3541	2.9	
BI-PB-145-11C	7.3 - 11.3	PETIT BOIS ISLAND			SM	SUBANGULAR TO SUBROUNDED	5Y 3/2	DARK OLIVE GREY	2.5Y 5/1	OLIVE BROWN	0.189	21.2	
BI-PB-146-11A	0.0 - 4.0	PETIT BOIS ISLAND	30.20093	-088.3171006	SP	SUBANGULAR TO SUBROUNDED	5Y 6/1	LT TO MED GREY	2.5Y 7/1	LT OLIVE BROWN	0.3493	3.8	

APPENDIX C

Offshore Sand Borrow Investigation, Phases 1 & 2

GEOTECHNICAL INVESTIGATION

TABLE 5.10.1 (cont'd) - MISSISSIPPI BARRIER ISLAND VIBRACORE SAMPLES - PETIT BOIS PASS													
NAME	SAMPLE DEPTH (ft BGS)	LOCATION	LATITUDE	LONGITUDE	USCS	ANGULARITY	WET COLOR CODE	WET COLOR	DRY COLOR CODE	DRY COLOR	D50 (mm)	% FINES	CaCO3
BI-PB-146-11B	4.0 - 8.0	PETIT BOIS ISLAND			SP-SM	SUBANGULAR TO SUBROUNDED	2.5Y 7/1	LT GREY WITH SOME YELLOW	2.5Y 7/1	LT OLIVE BROWN	0.3494	5.3	
BI-PB-146-11C	8.0 - 12.0	PETIT BOIS ISLAND			SP	SUBANGULAR TO SUBROUNDED	2.5Y 7/1	LT GREY WITH SOME YELLOW	2.5Y 7/1	LT OLIVE BROWN	0.3502	3.5	
BI-PB-146-11D	12.0 - 16.0	PETIT BOIS ISLAND			SP	SUBANGULAR TO SUBROUNDED	2.5Y 7/1	LT GREY WITH SOME YELLOW	2.5Y 7/1	LT OLIVE BROWN	0.3514	2.5	
BI-PB-146-11E	16.0 - 18.9	PETIT BOIS ISLAND			SP	SUBANGULAR TO SUBROUNDED	2.5Y 7/1	LT GREY WITH SOME YELLOW	2.5Y 8/1	LT OLIVE BROWN	0.3606	2.1	
BI-PB-147-11A	0.0 - 2.0	PETIT BOIS ISLAND	30.19646	-88.31718	SP	SUBANGULAR TO SUBROUNDED	5Y 5/2	GREYISH BROWN	2.5Y 6/2	LT OLIVE BROWN	0.2887	2	
BI-PB-147-11B	2.0 - 6.0	PETIT BOIS ISLAND			SP-SM	SUBANGULAR TO SUBROUNDED	5Y 4/2	DARK GREYISH BROWN	2.5Y 6/2	LT OLIVE BROWN	0.2033	6.2	
BI-PB-147-11C	6.0 - 8.2	PETIT BOIS ISLAND			SP	SUBANGULAR TO SUBROUNDED	5Y 3/2	DARK OLIVE GREY	2.5Y 5/2	LIGHT OLIVE YELLOW BROWN	0.3213	4.4	

Boring Designation BI-GC-01-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Gulfport Channel				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-GC-01-10		LOCATION COORDINATES E = 930,103 N = 276,494		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 0 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 22 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING		STARTED 06-22-10 COMPLETED 06-22-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -20.2 Ft.			
8. TOTAL DEPTH OF BORING 15.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-20.2	0.0		CLAY, lean, dark gray (CL)				
				NS			
-35.2	15.0		NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

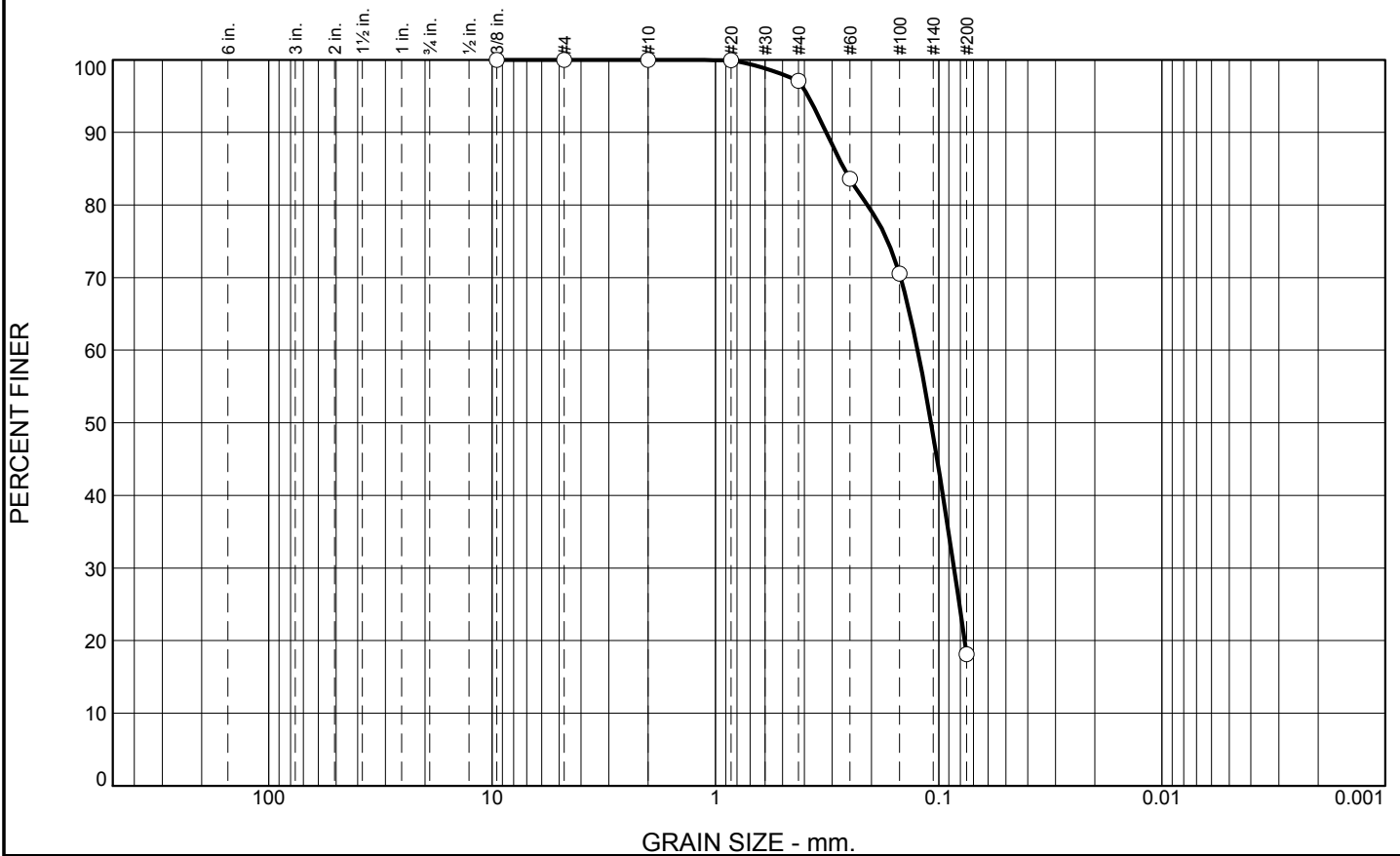
Boring Designation BI-GC-02-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Gulfport Channel				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-GC-02-10		LOCATION COORDINATES E = 929,649 N = 276,393		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 0		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 40 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 05-07-10		STARTED 05-07-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -39.6 Ft.			
8. TOTAL DEPTH OF BORING 20.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-39.6	0.0		CLAY, lean, dark gray (CL)				
				NS			
-59.6	20.0						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Boring Designation BI-GC-03-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Gulfport Channel				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-GC-03-10		LOCATION COORDINATES E = 910,631 N = 262,818		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 2	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		UNDISTURBED (UD) 0	
6. THICKNESS OF OVERBURDEN N/A				14. WATER DEPTH		22 Ft.	
7. DEPTH DRILLED INTO ROCK N/A				15. DATE BORING		STARTED 05-21-10	
8. TOTAL DEPTH OF BORING 19.1 Ft.				16. ELEVATION TOP OF BORING		COMPLETED 05-21-10	
				17. TOTAL RECOVERY FOR BORING		100%	
				18. SIGNATURE AND TITLE OF INSPECTOR		Mark Green, Geotechnical Engineer	
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-21.2	0.0		CLAY, lean, very soft, little fine-grained sand-sized quartz, greenish gray (CL)				
				NS			
-35.2	14.0		SAND, silty, mostly fine-grained sand-sized quartz, trace clay, lt. Green/gray (SM) At El. -36.2 Ft., mostly fine-grained sand-sized quartz, trace clay, trace organic matter, yellowish orange and brown mottled	A	Classification: SM Color: 10YR 5/3-brown D50: 0.1083 mm % Fines: 18.1		
-40.3	19.1		At El. -38.2 Ft., mostly fine-grained sand-sized quartz, trace clay, brown and dark gray	B	Classification: SM Color: 10YR 4/2-dark grayish brown D50: 0.0995 mm % Fines: 17.3		
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	2.9	79.0	18.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	97.1		
#60	83.6		
#100	70.5		
#200	18.1		

* (no specification provided)

Material Description

SILTY SAND, (SM), medium to fine grained, with clay pockets

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.3188 D₈₅= 0.2651 D₆₀= 0.1243
D₅₀= 0.1083 D₃₀= 0.0855 D₁₅=
D₁₀= C_u= C_c=

Classification

USCS= SM AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-GC-03-10A
Sample Number: TE Lab ID: 4489.15

Depth: 15.0 - 17.0 (ft.)

Date: 5/30/10

Thompson Engineering

Mobile, Alabama

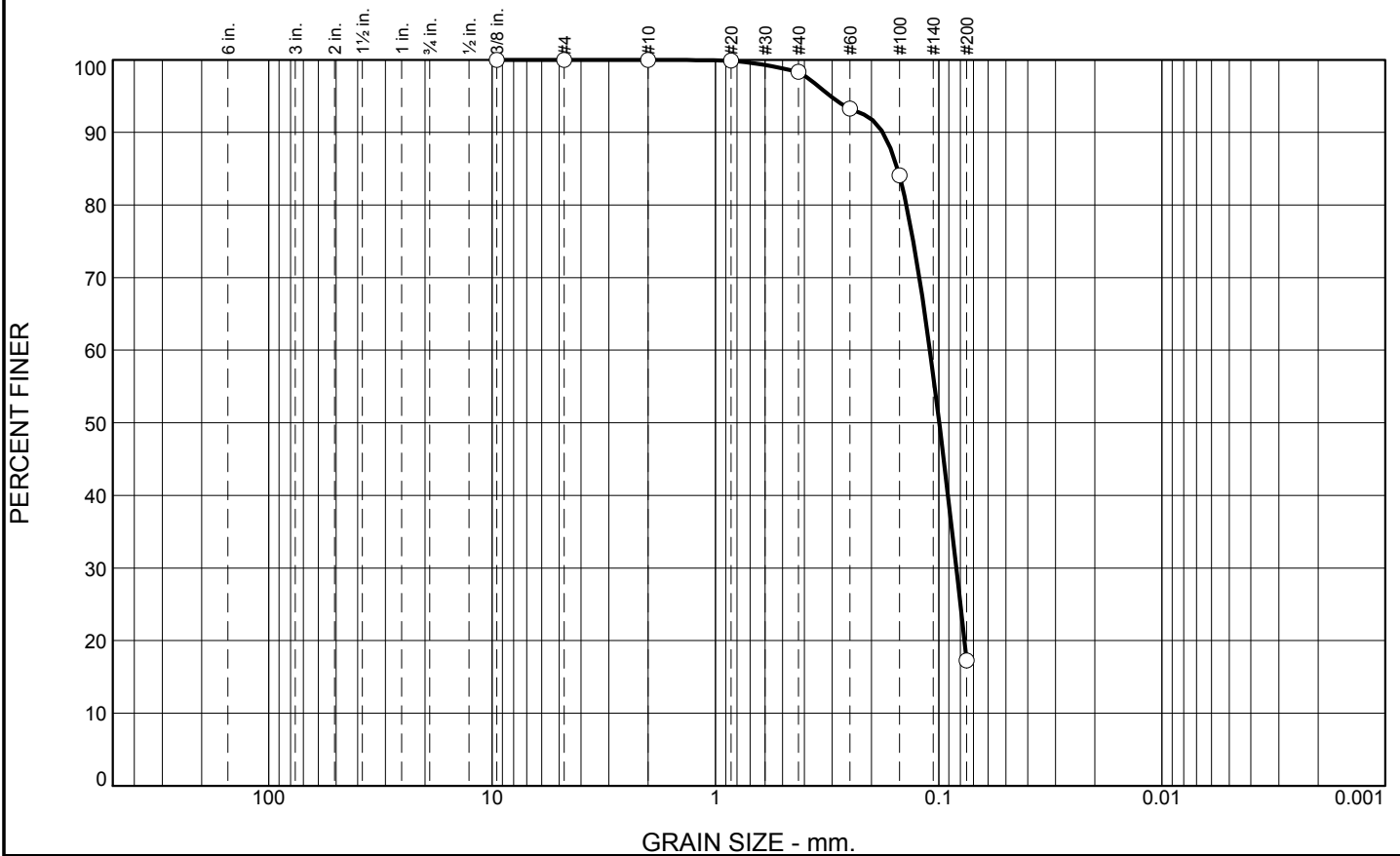
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.7	81.0	17.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	98.3		
#60	93.3		
#100	84.1		
#200	17.3		

* (no specification provided)

<u>Material Description</u>		
SILTY SAND, (SM), medium to fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.1780	D ₈₅ = 0.1530	D ₆₀ = 0.1096
D ₅₀ = 0.0995	D ₃₀ = 0.0835	D ₁₅ =
D ₁₀ =	C _u =	C _c =
<u>Classification</u>		
USCS= SM	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-GC-03-10B
Sample Number: TE Lab ID: 4489.16

Depth: 17.0 - 19.0 (ft.)

Date: 5/30/10

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-GC-04-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Gulfport Channel				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-GC-04-10		LOCATION COORDINATES E = 921,883 N = 287,538		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES		UNDISTURBED (UD) 0	
6. THICKNESS OF OVERBURDEN N/A		BEARING		14. WATER DEPTH 18 Ft.		15. DATE BORING 06-22-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -16.2 Ft.		COMPLETED 06-22-10	
8. TOTAL DEPTH OF BORING 19.1 Ft.				17. TOTAL RECOVERY FOR BORING 100%		18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist	
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-16.2	0.0		CLAY, lean, dark gray (CL)	NS			
-27.2	11.0		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, gray (SM)				
-35.3	19.1		NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Boring Designation BI-GC-05-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Gulfport Channel				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-GC-05-10		LOCATION COORDINATES E = 921,658 N = 287,244		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES		UNDISTURBED (UD) 0	
6. THICKNESS OF OVERBURDEN N/A		BEARING		14. WATER DEPTH 36 Ft.		15. DATE BORING 05-07-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -35.6 Ft.		COMPLETED 05-07-10	
8. TOTAL DEPTH OF BORING 17.8 Ft.				17. TOTAL RECOVERY FOR BORING 100%		18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist	
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-35.6	0.0		CLAY, lean, dark gray (CL)	NS			
-45.4	9.8		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, some shell fragments, gray (SM)				
-50.8	15.2		CLAY, lean, dark gray (CL)				
-53.4	17.8		NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Boring Designation BI-GC-06-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Gulfport Channel				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-GC-06-10		LOCATION COORDINATES E = 919,260 N = 291,027		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		UNDISTURBED (UD) 0	
6. THICKNESS OF OVERBURDEN N/A				14. WATER DEPTH		17 Ft.	
7. DEPTH DRILLED INTO ROCK N/A				15. DATE BORING		STARTED 06-22-10	
8. TOTAL DEPTH OF BORING 18.5 Ft.				16. ELEVATION TOP OF BORING -15.2 Ft.		COMPLETED 06-22-10	
				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-15.2	0.0		CLAY, lean, dark gray (CL)				
-32.4	17.2			NS			
-33.7	18.5		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, gray (SM)				
NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.							

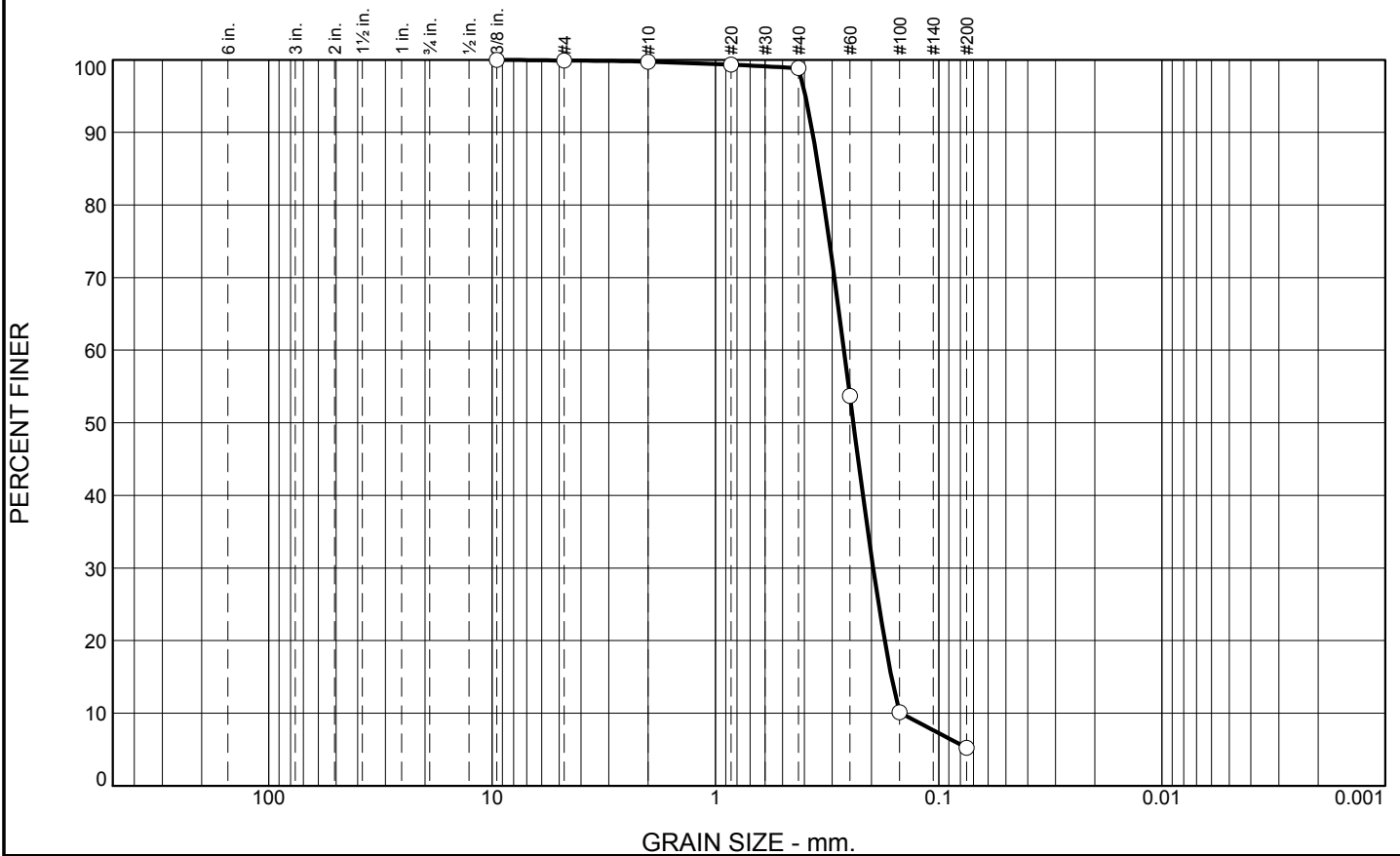
Boring Designation BI-GC-07-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Gulfport Channel				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-GC-07-10		LOCATION COORDINATES E = 919,013 N = 290,889		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 0 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		BEARING		13. TOTAL NUMBER CORE BOXES	
6. THICKNESS OF OVERBURDEN N/A				14. WATER DEPTH 36 Ft.			
7. DEPTH DRILLED INTO ROCK N/A				15. DATE BORING 05-07-10		STARTED 05-07-10 COMPLETED 05-07-10	
8. TOTAL DEPTH OF BORING 19.5 Ft.				16. ELEVATION TOP OF BORING -35.6 Ft.			
				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-35.6	0.0		CLAY, lean, dark gray (CL)				
				NS			
-55.1	19.5		NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Boring Designation BI-GC-08-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Gulfport Channel				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-GC-08-10		LOCATION COORDINATES E = 927,759 N = 279,149		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		14. WATER DEPTH 35 Ft.	
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 05-07-10		STARTED 05-07-10 COMPLETED 05-07-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -34.6 Ft.		17. TOTAL RECOVERY FOR BORING 100%	
8. TOTAL DEPTH OF BORING 19.2 Ft.				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-34.6	0.0		CLAY, lean, dark gray (CL)	NS			
-44.4	9.8		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, some shell fragments (SM)	A	Classification: SP-SM Color: 10YR 7/1-light gray D50: 0.2412 mm % Fines: 5.2		
-45.5	10.9		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, tan (SP)	B	Classification: SP Color: 10YR 9/1-white D50: 0.2889 mm % Fines: 1.7		
-53.8	19.2		NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.2	0.9	93.6	5.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.7		
#20	99.3		
#40	98.8		
#60	53.7		
#100	10.1		
#200	5.2		

* (no specification provided)

Material Description

SAND, (SP-SM), medium to fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.3676

D₈₅= 0.3450

D₆₀= 0.2657

D₅₀= 0.2412

D₃₀= 0.1966

D₁₅= 0.1629

D₁₀= 0.1474

C_u= 1.80

C_c= 0.99

Classification

USCS= SP-SM

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-GC-8-10A
Sample Number: TE Lab ID: 4461.08

Depth: 10.42 - 15.42 (ft)

Date: 5/13/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Mississippi Barrier Island Restoration Project
Contract No. W91278-10-D-0026 - Task 03

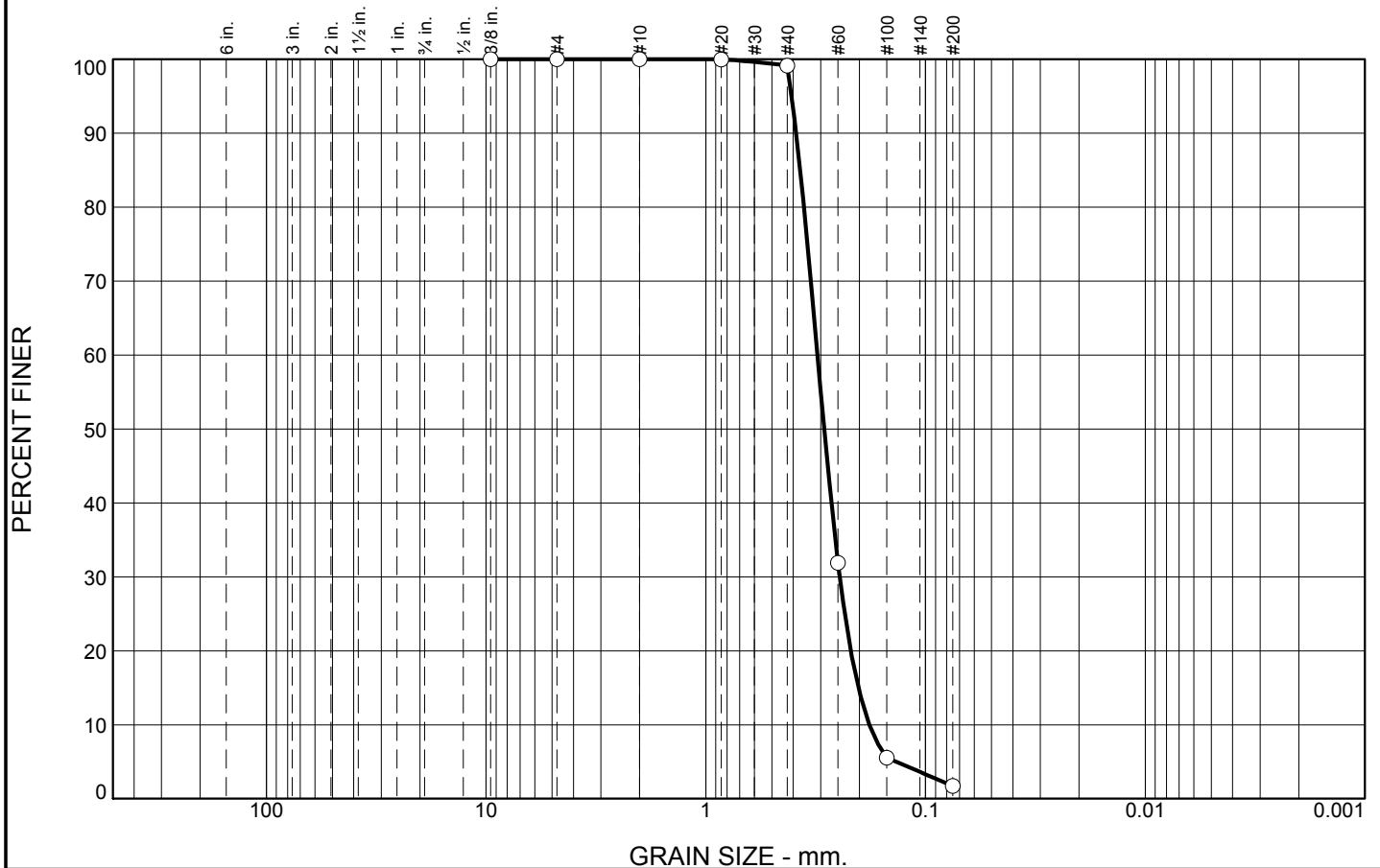
Project No: 1021230009

Figure

Tested By: J.Maddox/L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.9	97.4	1.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	100.0		
#40	99.1		
#60	31.9		
#100	5.6		
#200	1.7		

* (no specification provided)

<u>Material Description</u>		
SAND, (SP), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.3877	D ₈₅ = 0.3719	D ₆₀ = 0.3100
D ₅₀ = 0.2889	D ₃₀ = 0.2456	D ₁₅ = 0.2019
D ₁₀ = 0.1801	C _u = 1.72	C _c = 1.08
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-GC-8-10B
 Sample Number: TE Lab ID: 4461.09

Depth: 15.42 - 19.17 (ft)

Date:

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Mississippi Barrier Island Restoration Project
 Contract No. W91278-10-D-0026 - Task 03
Project No: 1021230009

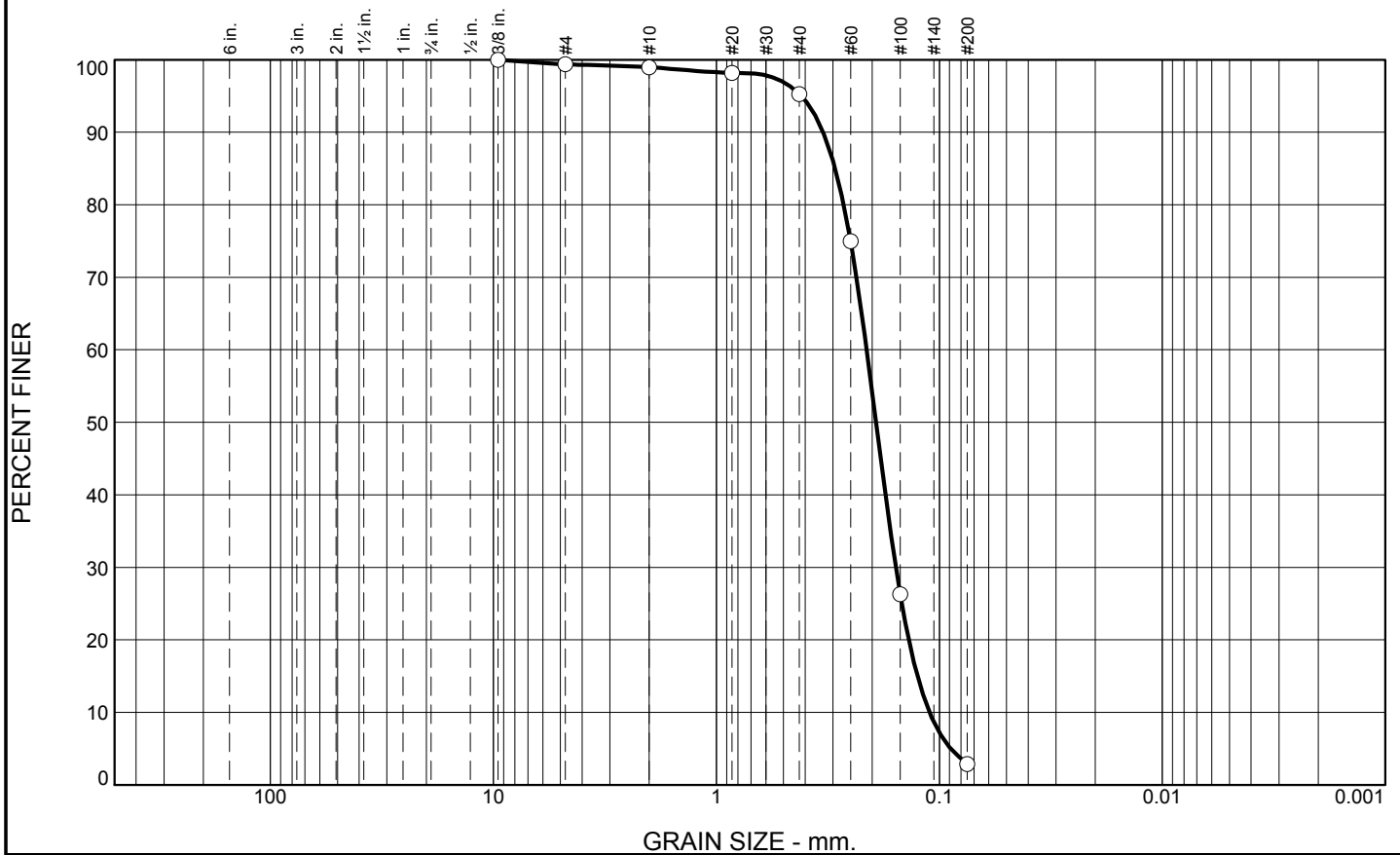
Figure

Boring Designation BI-GC-09-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Gulfport Channel				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-GC-09-10		LOCATION COORDINATES E = 931,793 N = 267,971		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 4		DISTURBED 0 UNDISTURBED (UD)	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 19.5 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 05-05-10		STARTED 05-05-10 COMPLETED 05-05-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -18.6 Ft.			
8. TOTAL DEPTH OF BORING 19.5 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR J. Krick, Geotechnical Engineer			

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-18.6	0.0				
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace shell fragments, gray (SP)	A	Classification: SP Color: 2.5Y 6/1-gray D50: 0.1923 mm % Fines: 2.9
				B	Classification: SP-SM Color: 5Y 7/1-light gray D50: 0.1612 mm % Fines: 7.7
-27.1	8.5			C	Classification: CL Color: 5Y 5/1-gray D50: mm % Fines: 58.8
			CLAY, fat, high plasticity, trace fine-grained sand-sized quartz, gray (CH)		
-29.6	11.0			D	Classification: SP-SM Color: 5Y 6/1-gray D50: 0.1477 mm % Fines: 7.3
			SAND, silty, some clay, gray (SM)		
-30.5	11.9			NS	
			SAND, clayey, mostly fine-grained sand-sized quartz, trace shell fragments, gray (SC)		
-36.6	18.0				
			CLAY, fat, little fine-grained sand-sized quartz, tan and gray (CH)		
-37.6	19.0				
-38.1	19.5				
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, gray (SP)		
NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.					

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.6	0.4	3.7	92.4	2.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.4		
#10	99.0		
#20	98.2		
#40	95.3		
#60	75.0		
#100	26.3		
#200	2.9		

* (no specification provided)

Material Description		
SAND, (SP), fine grained		
<div> <div> Atterberg Limits PL= LL= PI= </div> <div> Coefficients D₉₀= 0.3320 D₈₅= 0.2933 D₆₀= 0.2119 D₅₀= 0.1923 D₃₀= 0.1568 D₁₅= 0.1254 D₁₀= 0.1107 C_u= 1.91 C_c= 1.05 </div> <div> Classification USCS= SP AASHTO= </div> <div> Remarks CADD CODE = CH10D965 </div> </div>		

Location: USACE Sample # BI-GC-9-10A
Sample Number: TE Lab ID: 4461.04

Depth: 0.0 - 5.0 (ft)

Date: 5/13/10

Thompson Engineering
Mobile, Alabama

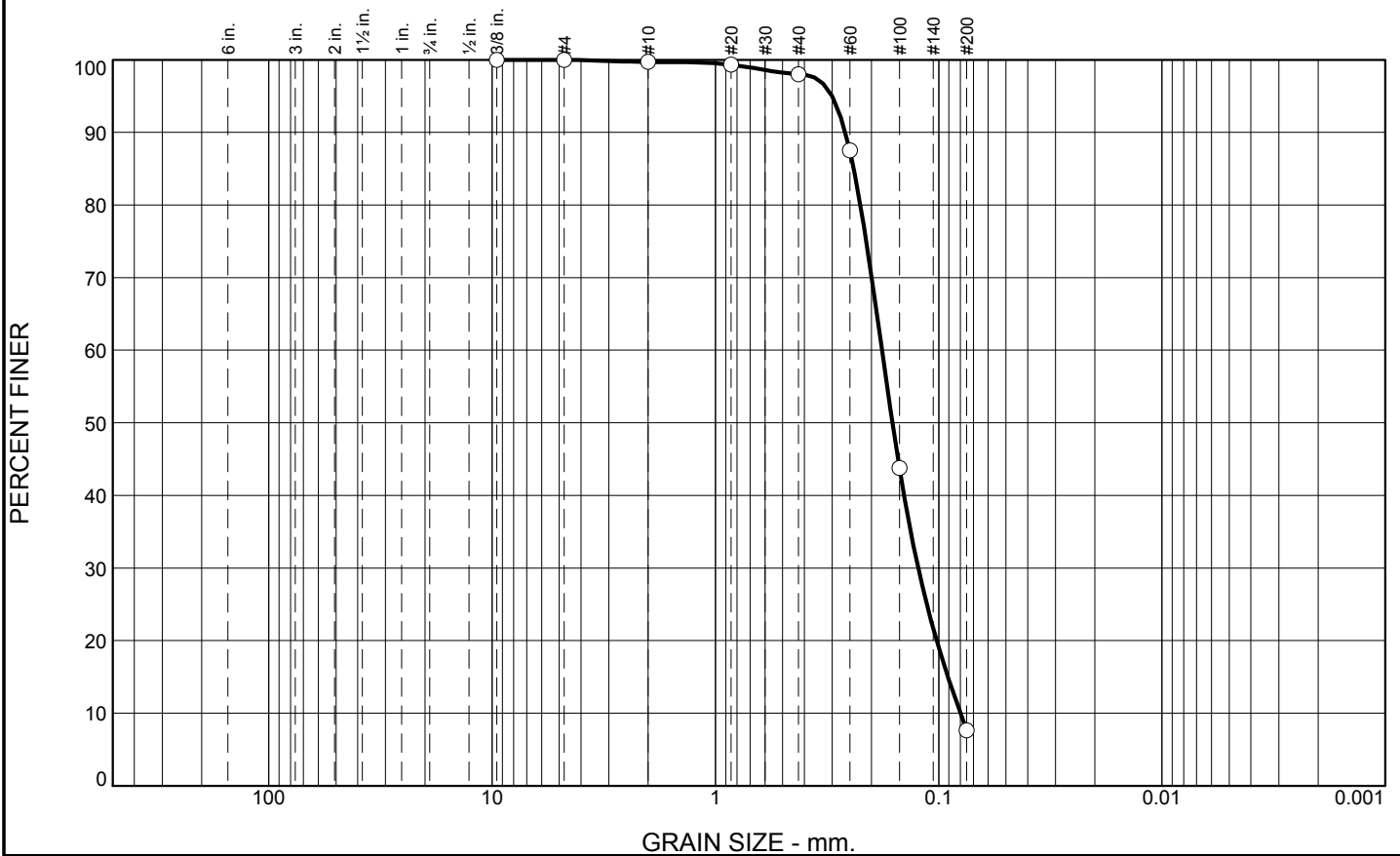
Client: US Army Corps of Engineers
Project: Mississippi Barrier Island Restoration Project
Contract No. W91278-10-D-0026 - Task 03
Project No: 1021230009

Figure

Tested By: J.Maddox/L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.3	1.7	90.3	7.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.7		
#20	99.3		
#40	98.0		
#60	87.5		
#100	43.8		
#200	7.7		

* (no specification provided)

Material Description

SAND, (SP-SM), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.2617

D₈₅= 0.2402

D₆₀= 0.1795

D₅₀= 0.1612

D₃₀= 0.1235

D₁₅= 0.0909

D₁₀= 0.0799

C_u= 2.25

C_c= 1.06

Classification

USCS= SP-SM

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-GC-9-10B
Sample Number: TE Lab ID: 4461.05

Depth: 5.0 - 9.0 (ft)

Date: 5/13/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Mississippi Barrier Island Restoration Project
Contract No. W91278-10-D-0026 - Task 03

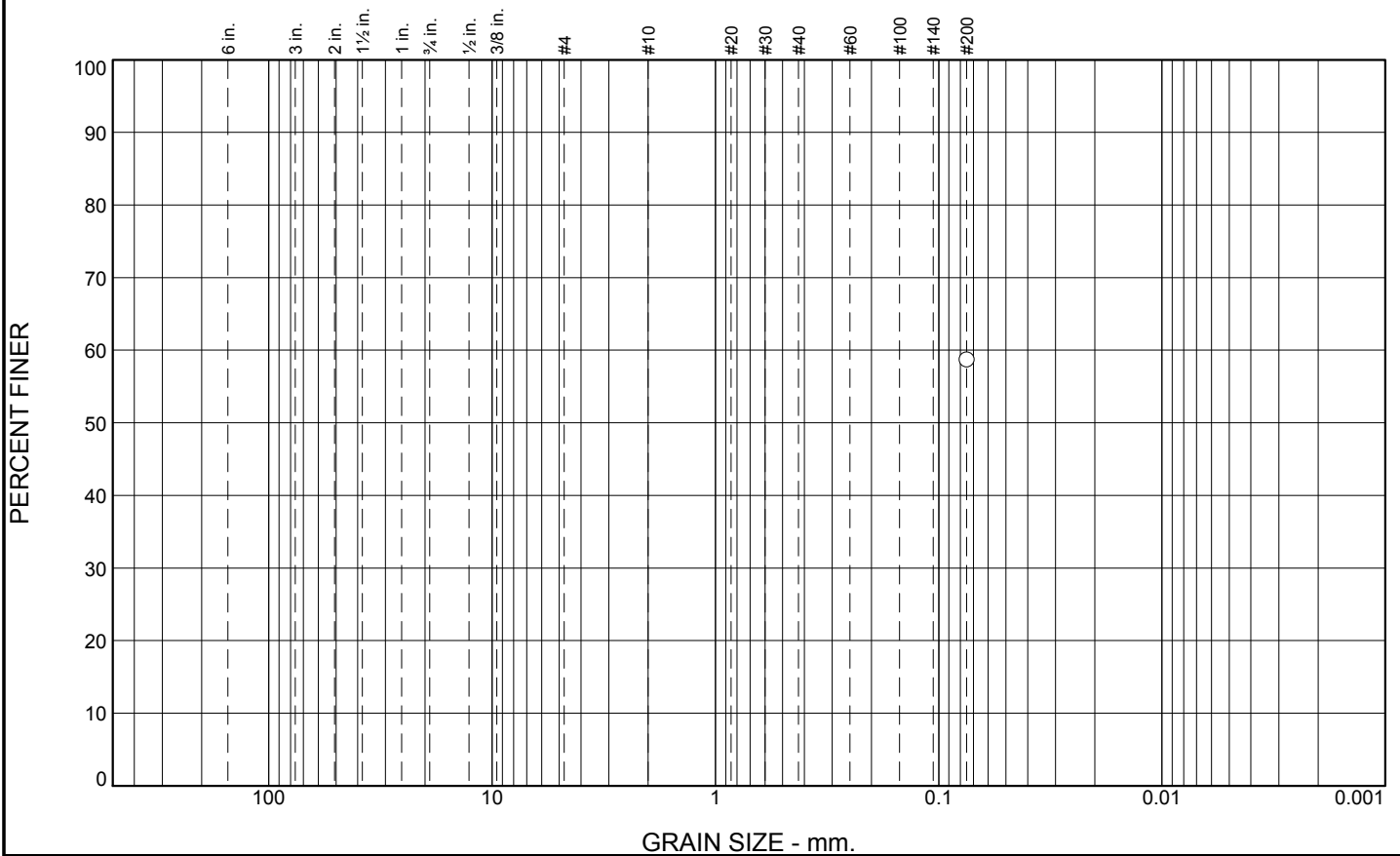
Project No: 1021230009

Figure

Tested By: J.Maddox/L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
						58.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#200	58.8		

* (no specification provided)

Material Description

SANDY CLAY, (CL)

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀=

D₈₅=

D₆₀=

D₅₀=

D₃₀=

D₁₅=

D₁₀=

C_u=

C_c=

Classification

USCS= CL

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-GC-9-10C
Sample Number: TE Lab ID: 4461.06

Depth: 9.08 - 10.0 (ft)

Date: 5/13/10

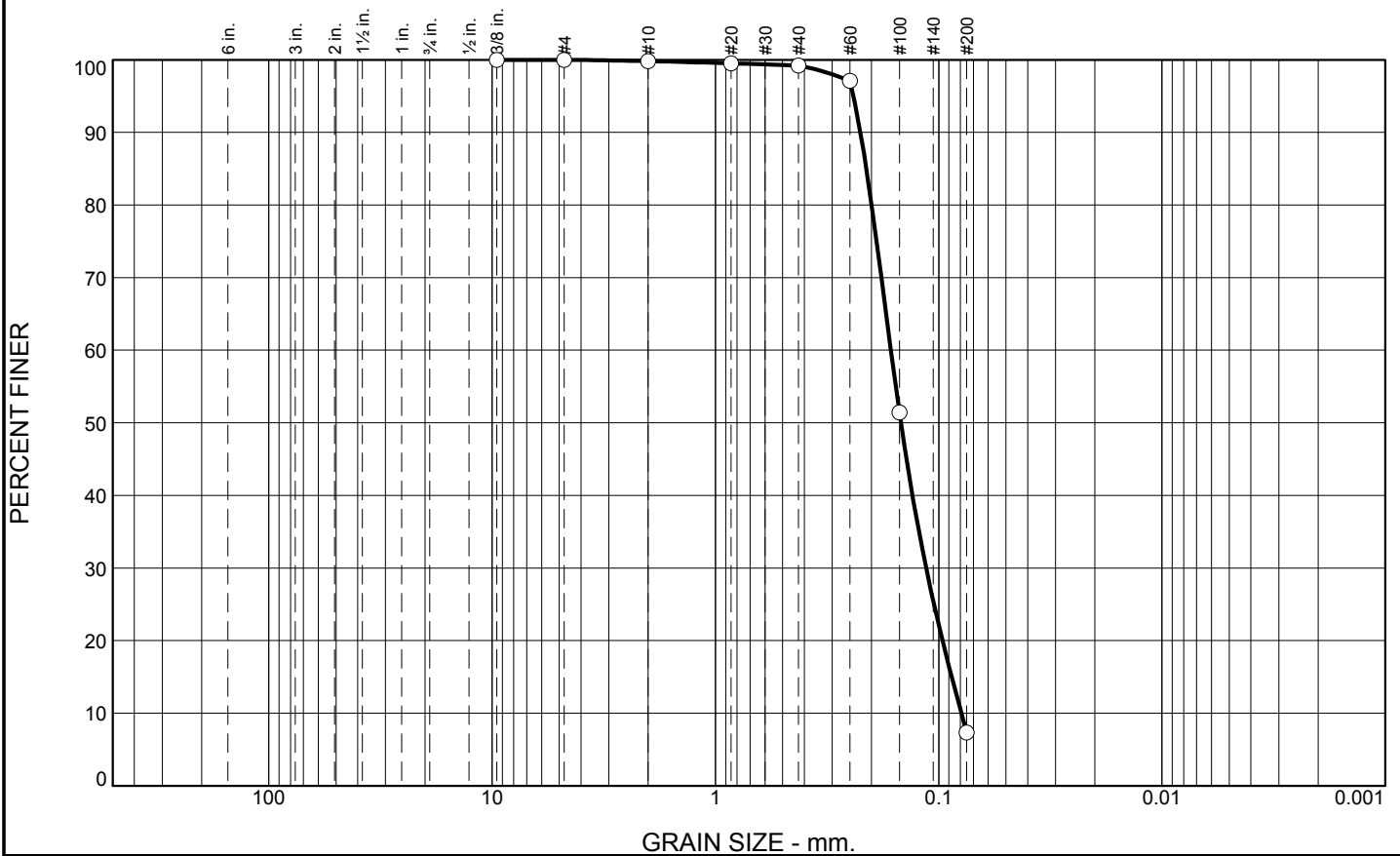
Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Mississippi Barrier Island Restoration Project
 Contract No. W91278-10-D-0026 - Task 03
Project No: 1021230009

Figure

Tested By: J.Maddox/R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	0.6	91.9	7.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.8		
#20	99.5		
#40	99.2		
#60	97.1		
#100	51.4		
#200	7.3		

* (no specification provided)

Material Description
SAND, (SP-SM), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.2241 D₈₅= 0.2110 D₆₀= 0.1638
 D₅₀= 0.1477 D₃₀= 0.1139 D₁₅= 0.0875
 D₁₀= 0.0792 C_u= 2.07 C_c= 1.00

Classification
 USCS= SP-SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-GC-9-10D
Sample Number: TE Lab ID: 4461.07

Depth: 10.0 - 14.0 (ft)

Date: 5/13/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Mississippi Barrier Island Restoration Project
 Contract No. W91278-10-D-0026 - Task 03
Project No: 1021230009

Figure

Tested By: J.Maddox/L.Stokes

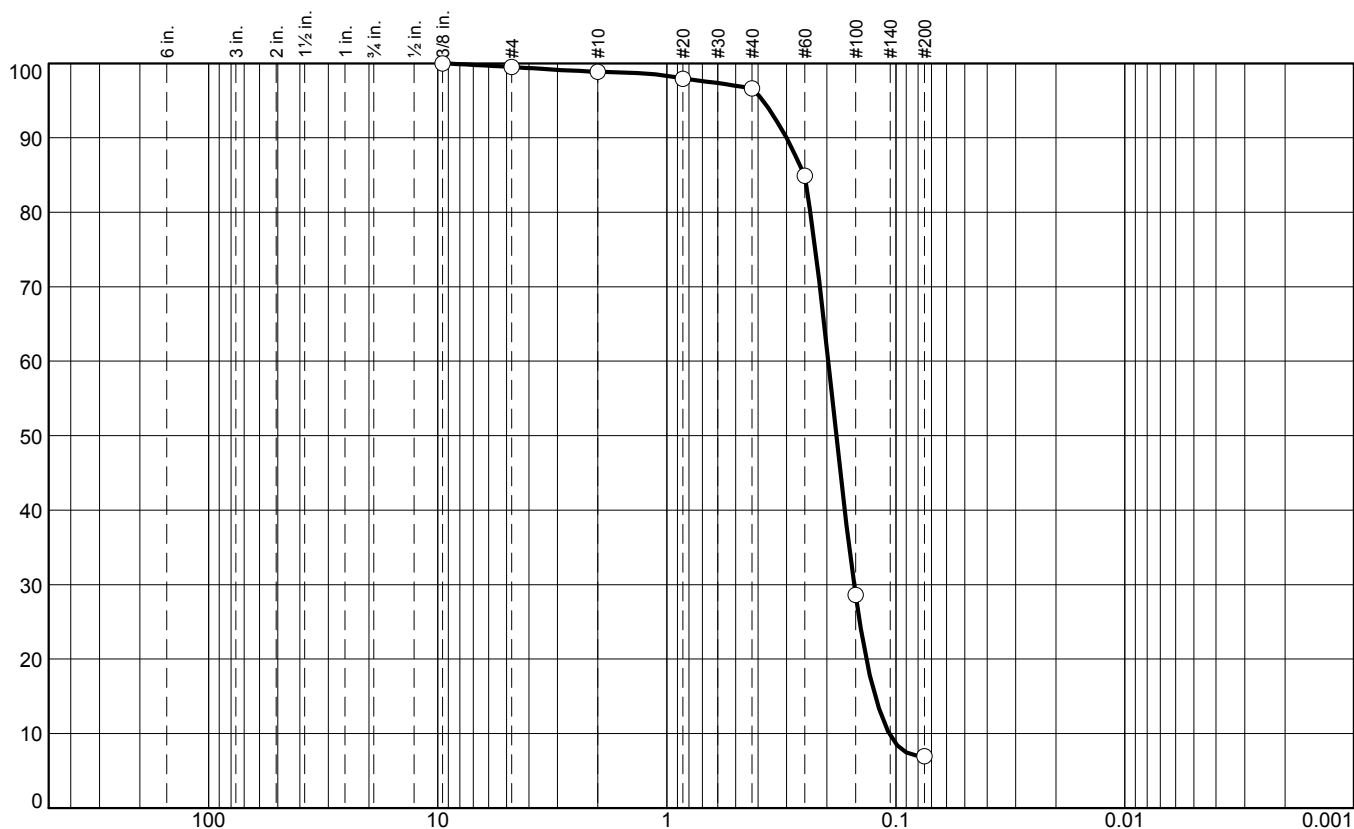
Checked By: R.Byrd

Boring Designation BI-GC-10-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Gulfport Channel				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-GC-10-10		LOCATION COORDINATES E = 931,657 N = 265,574		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 18.5 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 05-05-10		STARTED 05-05-10 COMPLETED 05-05-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -17.5 Ft.			
8. TOTAL DEPTH OF BORING 15.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR J. Krick, Geotechnical Engineer			

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-17.5	0.0				
-21.9	4.4		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt and shell fragments, gray (SP)	A	Classification: SP-SM Color: 5Y 6/1-gray D50: 0.1819 mm % Fines: 7
-22.7	5.2		CLAY, fat, high plasticity, trace sand and shell fragments, gray (CH)		
-23.0	5.5				
-23.4	5.9		SAND, silty, mostly fine-grained sand-sized quartz, little clay, trace shell fragments, gray (SM)	B	Classification: SP Color: 5Y 7/1-light gray D50: 0.1921 mm % Fines: 4.8
			CLAY, fat, high plasticity, trace sand and shell fragments, gray (CH)		
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, gray (SP)		
-29.4	11.9				
-29.7	12.2		CLAY, fat, high plasticity, trace fine-grained sand-sized quartz, gray (CH)	NS	
-32.5	15.0		SAND, silty, mostly fine-grained sand-sized quartz, with clay lenses (1/2 inch) every 0.5 ft. intervals, gray (SM)		
NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.					

PERCENT FINER



GRAIN SIZE - mm.

% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.5	0.6	2.3	89.6	7.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.5		
#10	98.9		
#20	97.9		
#40	96.6		
#60	84.9		
#100	28.6		
#200	7.0		

SAND, (SP-SM), fine grained

$$PL =$$

Atterberg Limits

$$LL =$$
$$PI =$$

Coefficients

$$D_{90} = 0.3003$$
$$D_{85} = 0.2509$$
$$D_{60} = 0.1973$$
$$D_{50} = 0.1819$$
$$D_{30}^{0.5} = 0.1522$$
$$D_{15}^{00} = 0.1231$$
$$D_{10}^{99} = 0.1069$$
$$C_U = 1.85$$
$$C_C = 1.10$$

Classification

USCS= SP-SM

AASHTO=

Remarks

CADD CODE = CH10D965

* (no specification provided)

Location: USACE Sample # BI-GC-10-10A

Sample Number: TE Lab ID: 4461.10

Depth: 0.0 - 4.33 (ft)

Date: 5/13/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Mississippi Barrier Island Restoration Project

Contract No. W91278-10-D-0026 - Task 03

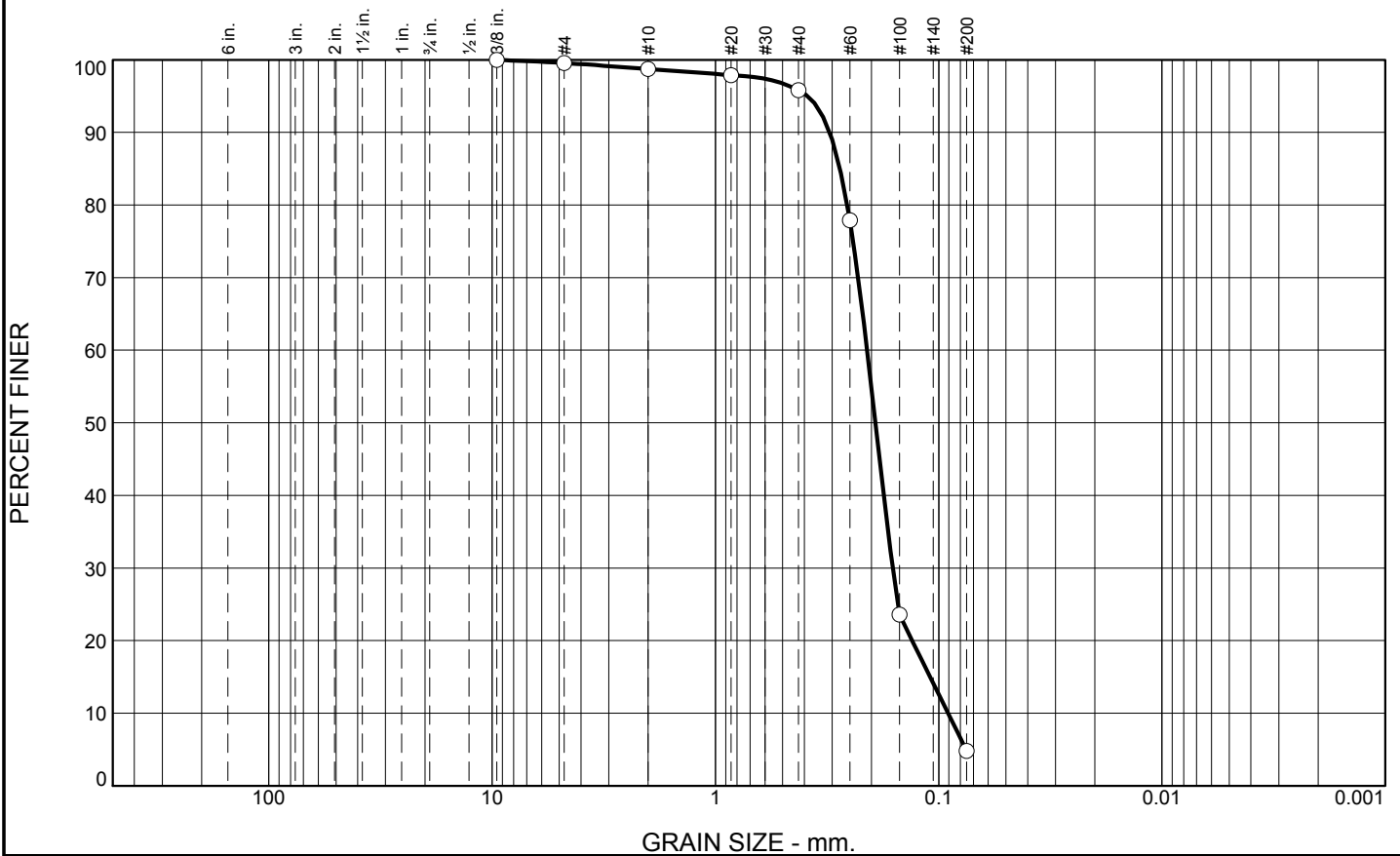
Project No: 1021230009

Figure

Tested By: J.Maddox/L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.4	0.9	2.9	91.0	4.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.6		
#10	98.7		
#20	97.9		
#40	95.8		
#60	77.9		
#100	23.6		
#200	4.8		

* (no specification provided)

Material Description		
SAND, (SP), fine grained		
<div> <div> Atterberg Limits </div> <div> PL= </div> <div> LL= </div> <div> PI= </div> </div>		
<div> <div> Coefficients </div> <div> D₉₀= 0.3079 </div> <div> D₅₀= 0.1921 </div> <div> D₁₀= 0.0908 </div> <div> D₈₅= 0.2769 </div> <div> D₃₀= 0.1607 </div> <div> C_u= 2.30 </div> <div> D₆₀= 0.2094 </div> <div> D₁₅= 0.1093 </div> <div> C_c= 1.36 </div> </div>		
<div> <div> Classification </div> <div> USCS= SP </div> <div> AASHTO= </div> </div>		
<div> <div> Remarks </div> <div> CADD CODE = CH10D965 </div> </div>		

Location: USACE Sample # BI-GC-10-10B
Sample Number: TE Lab ID: 4461.11

Depth: 5.75 - 11.75 (ft)

Date: 5/13/10

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Mississippi Barrier Island Restoration Project
Contract No. W91278-10-D-0026 - Task 03
Project No: 1021230009

Figure

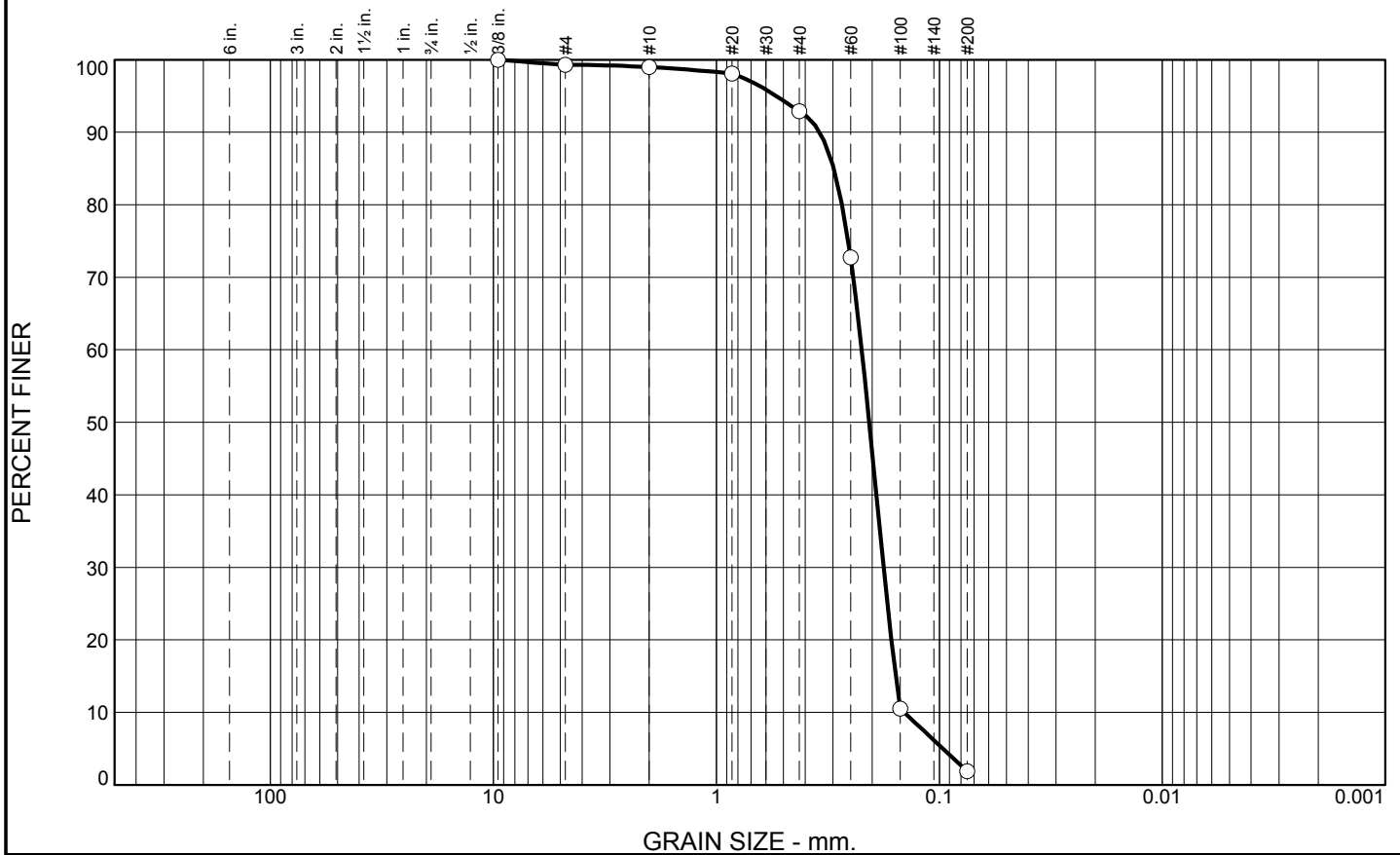
Tested By: J.Maddox/L.Stokes

Checked By: R.Byrd

Boring Designation BI-GC-11-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Gulfport Channel				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-GC-11-10		LOCATION COORDINATES E = 932,891 N = 262,823		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 21 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 05-05-10		STARTED 05-05-10 COMPLETED 05-05-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -20.0 Ft.			
8. TOTAL DEPTH OF BORING 19.5 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR J. Krick, Geotechnical Engineer			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-20.0	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little shell fragments, gray (SP)	A	Classification: SP Color: 5Y 7/1-light gray D50: 0.2064 mm % Fines: 1.9		
				B	Classification: SP Color: 5Y 2.5/1-black D50: 0.1909 mm % Fines: 2		
				C	Classification: SP Color: 5Y 7.5/1-light gray D50: 0.1929 mm % Fines: 2.3		
-35.4	15.4		At El. -34.2 Ft., woody material to El. -35.5 ft.				
			CLAY, fat, high plasticity, trace fine-grained sand-sized quartz, gray (CH)	NS			
-39.5	19.5						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.7	0.3	6.1	91.0	1.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.3		
#10	99.0		
#20	98.1		
#40	92.9		
#60	72.8		
#100	10.5		
#200	1.9		

* (no specification provided)

Material Description		
SAND, (SP), fine grained		
<div> <div> Atterberg Limits </div> <div> PL= </div> <div> LL= </div> <div> PI= </div> </div>		
<div> <div> Coefficients </div> <div> D₉₀= 0.3440 D₅₀= 0.2064 D₁₀= 0.1438 </div> <div> D₈₅= 0.2976 D₃₀= 0.1779 C_u= 1.55 </div> <div> D₆₀= 0.2229 D₁₅= 0.1570 C_c= 0.99 </div> </div>		
<div> <div> Classification </div> <div> USCS= SP </div> <div> AASHTO= </div> </div>		
<div> <div> Remarks </div> <div> CADD CODE = CH10D965 </div> </div>		

Location: USACE Sample # BI-GC-11-10A
Sample Number: TE Lab ID: 4461.01

Depth: 0.0 - 5.0 (ft)

Date: 5/13/10

Thompson Engineering
Mobile, Alabama

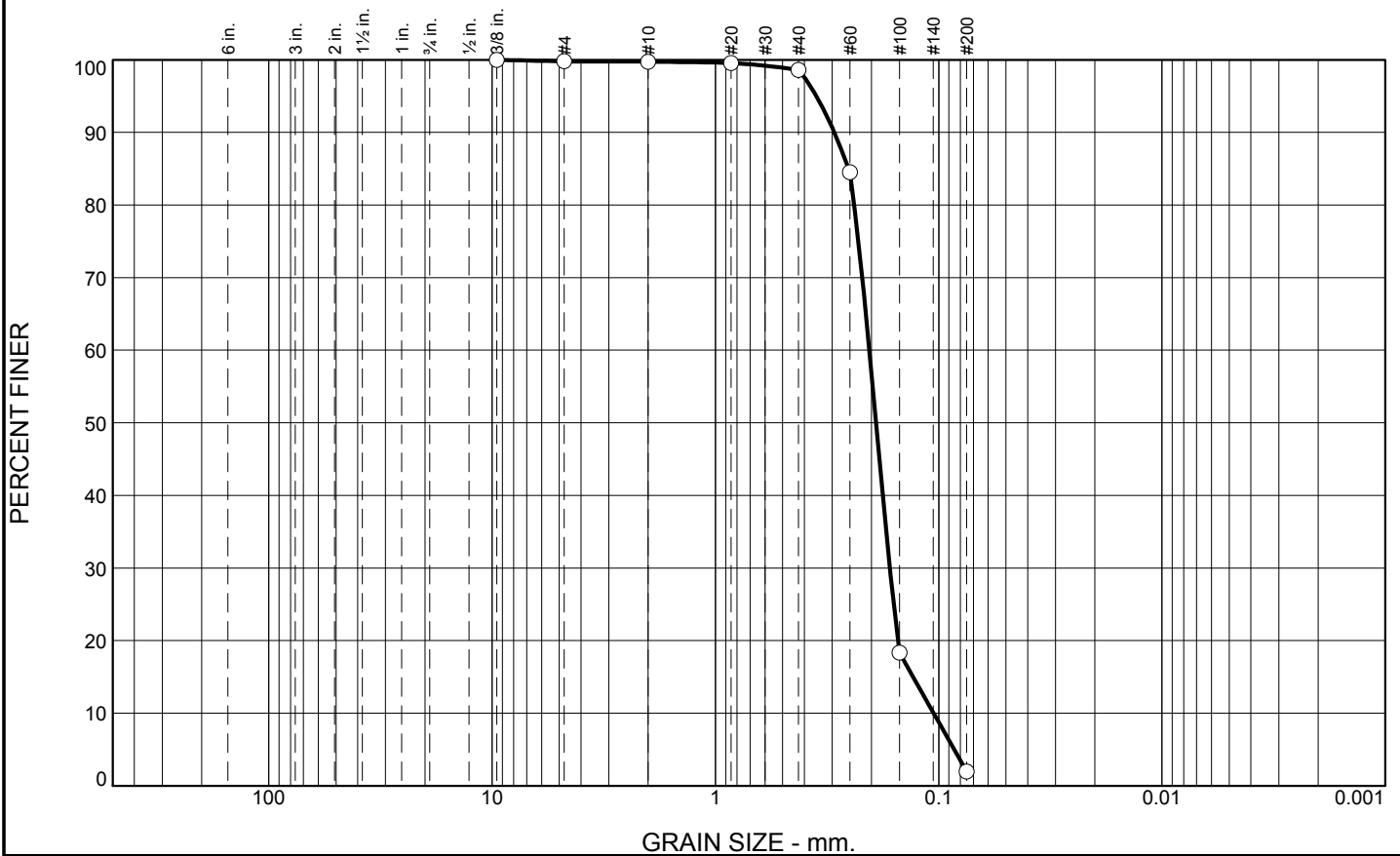
Client: US Army Corps of Engineers
Project: Mississippi Barrier Island Restoration Project
Contract No. W91278-10-D-0026 - Task 03
Project No: 1021230009

Figure

Tested By: J.Maddox/L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.1	1.1	96.6	2.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.8		
#10	99.7		
#20	99.6		
#40	98.6		
#60	84.5		
#100	18.3		
#200	2.0		

* (no specification provided)

Material Description		
SAND, (SP), fine grained		
<div> <div> Atterberg Limits PL= LL= PI= </div> <div> Coefficients D₉₀= 0.2934 D₈₅= 0.2532 D₆₀= 0.2046 D₅₀= 0.1909 D₃₀= 0.1655 D₁₅= 0.1303 D₁₀= 0.1054 C_u= 1.94 C_c= 1.27 </div> <div> Classification USCS= SP AASHTO= </div> <div> Remarks CADD CODE = CH10D965 </div> </div>		

Location: USACE Sample # BI-GC-11-10B
Sample Number: TE Lab ID: 4461.02

Depth: 5.0 - 10.0 (ft)

Date: 5/13/10

Thompson Engineering

Mobile, Alabama

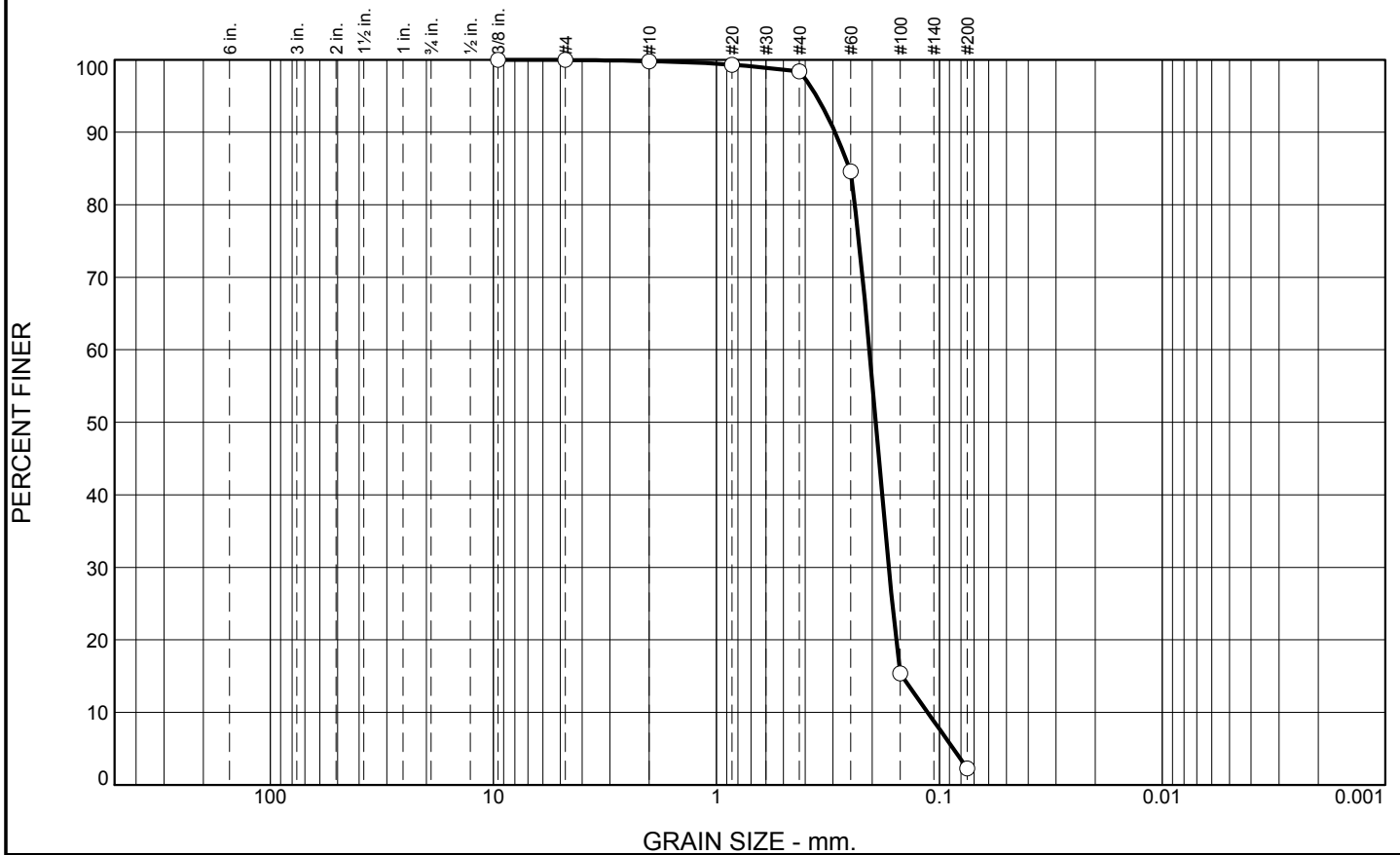
Client: US Army Corps of Engineers
Project: Mississippi Barrier Island Restoration Project
Contract No. W91278-10-D-0026 - Task 03
Project No: 1021230009

Figure

Tested By: J.Maddox/L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	1.4	96.1	2.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.8		
#20	99.3		
#40	98.4		
#60	84.6		
#100	15.4		
#200	2.3		

* (no specification provided)

Material Description
SAND, (SP), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.2938 D₈₅= 0.2526 D₆₀= 0.2061
 D₅₀= 0.1929 D₃₀= 0.1686 D₁₅= 0.1471
 D₁₀= 0.1129 C_u= 1.83 C_c= 1.22

Classification
 USCS= SP AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-GC-11-10C
Sample Number: TE Lab ID: 4461.03

Depth: 10.0 - 15.0 (ft)

Date: 5/13/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Mississippi Barrier Island Restoration Project
 Contract No. W91278-10-D-0026 - Task 03
Project No: 1021230009

Figure

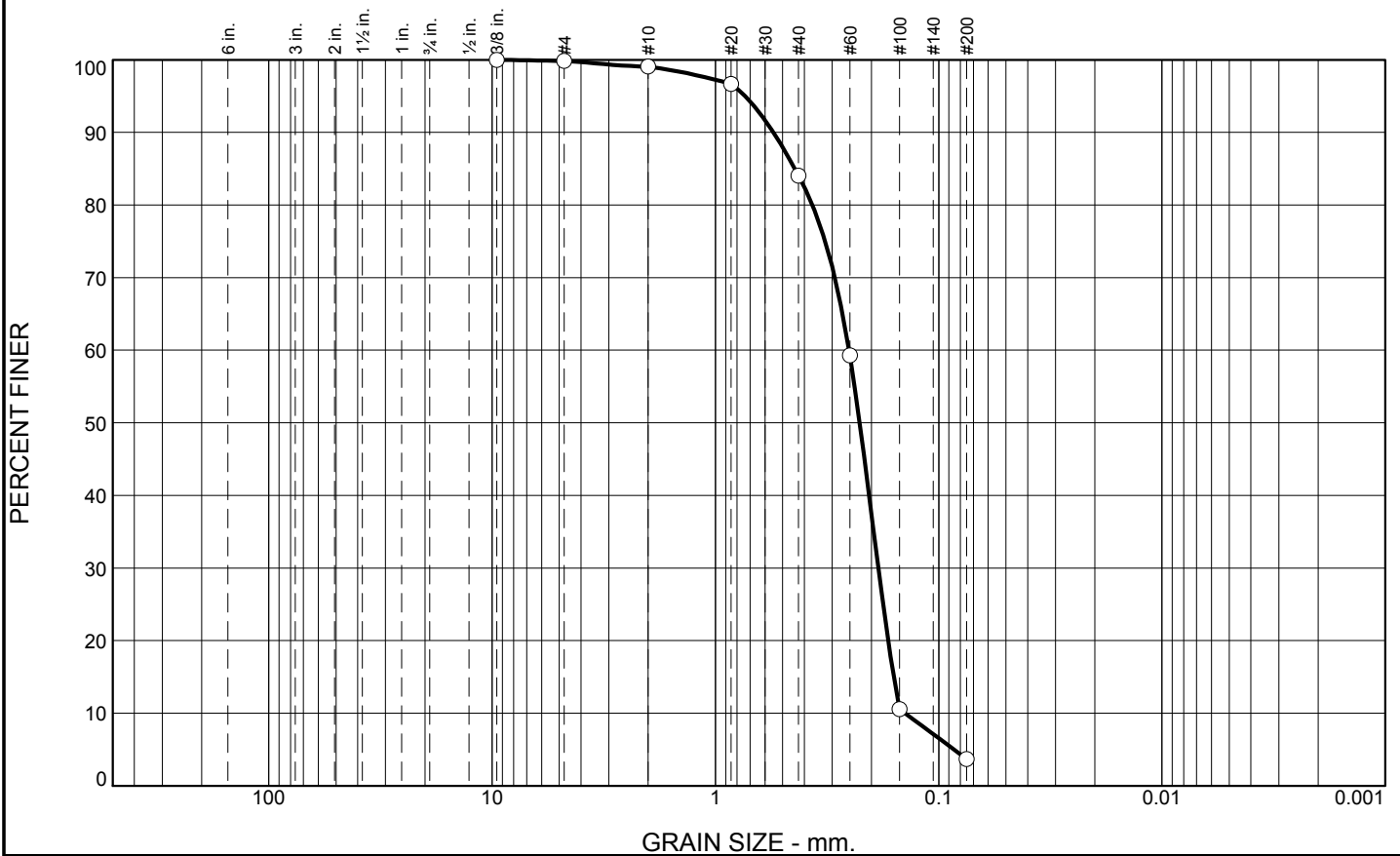
Tested By: J.Maddox/L.Stokes

Checked By: R.Byrd

Boring Designation BI-GC-12-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Gulfport Channel				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-GC-12-10		LOCATION COORDINATES E = 933,242 N = 261,444		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 0 UNDISTURBED (UD)	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 23 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 05-05-10		STARTED 05-05-10 COMPLETED 05-05-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -21.9 Ft.			
8. TOTAL DEPTH OF BORING 15.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR J. Krick, Geotechnical Engineer			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-21.9	0.0						
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace shell, gray (SP)	A	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.226 mm % Fines: 3.7		
				B	Classification: SP Color: 5Y 6.5/1-gray D50: 0.1738 mm % Fines: 3.6		
				C	Classification: SP-SM Color: 2.5Y 6.5/1-gray D50: 0.1867 mm % Fines: 6.8		
-35.9	14.0						
-36.9	15.0		SAND, silty, mostly fine-grained sand-sized quartz, gray (SM)	NS			
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.7	15.0	80.4	3.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.8		
#10	99.1		
#20	96.7		
#40	84.1		
#60	59.3		
#100	10.6		
#200	3.7		

* (no specification provided)

Material Description		
SAND, (SP), fine grained		
<div> <div> Atterberg Limits PL= LL= PI= </div> <div> Coefficients D₉₀= 0.5495 D₈₅= 0.4410 D₆₀= 0.2522 D₅₀= 0.2260 D₃₀= 0.1864 D₁₅= 0.1591 D₁₀= 0.1418 C_u= 1.78 C_c= 0.97 </div> <div> Classification USCS= SP AASHTO= </div> <div> Remarks CADD CODE = CH10D965 </div> </div>		

Location: USACE Sample # BI-GC-12-10A
Sample Number: TE Lab ID: 4461.12

Depth: 0.0 - 5.0 (ft)

Date: 5/13/10

Thompson Engineering
Mobile, Alabama

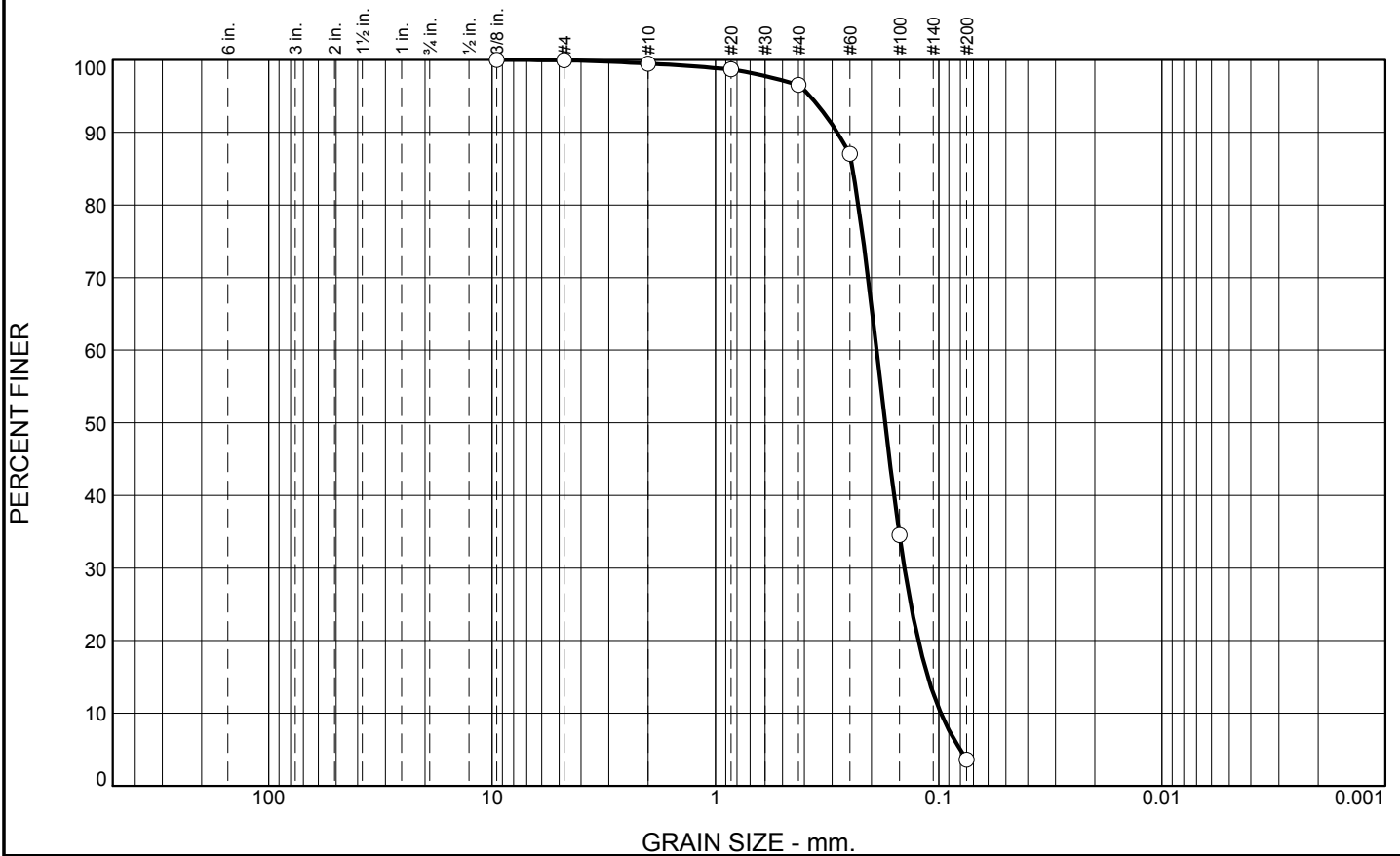
Client: US Army Corps of Engineers
Project: Mississippi Barrier Island Restoration Project
Contract No. W91278-10-D-0026 - Task 03
Project No: 1021230009

Figure

Tested By: J.Maddox/L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.4	3.0	92.9	3.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.5		
#20	98.7		
#40	96.5		
#60	87.1		
#100	34.5		
#200	3.6		

* (no specification provided)

Material Description		
SAND, (SP), fine grained		
<div> <div> Atterberg Limits PL= LL= PI= </div> <div> Coefficients D₉₀= 0.2847 D₈₅= 0.2431 D₆₀= 0.1897 D₅₀= 0.1738 D₃₀= 0.1424 D₁₅= 0.1119 D₁₀= 0.0979 C_u= 1.94 C_c= 1.09 </div> <div> Classification USCS= SP AASHTO= </div> <div> Remarks CADD CODE = CH10D965 </div> </div>		

Location: USACE Sample # BI-GC-12-10B
Sample Number: TE Lab ID: 4461.13

Depth: 5.0 - 10.0 (ft)

Date: 5/13/10

Thompson Engineering
Mobile, Alabama

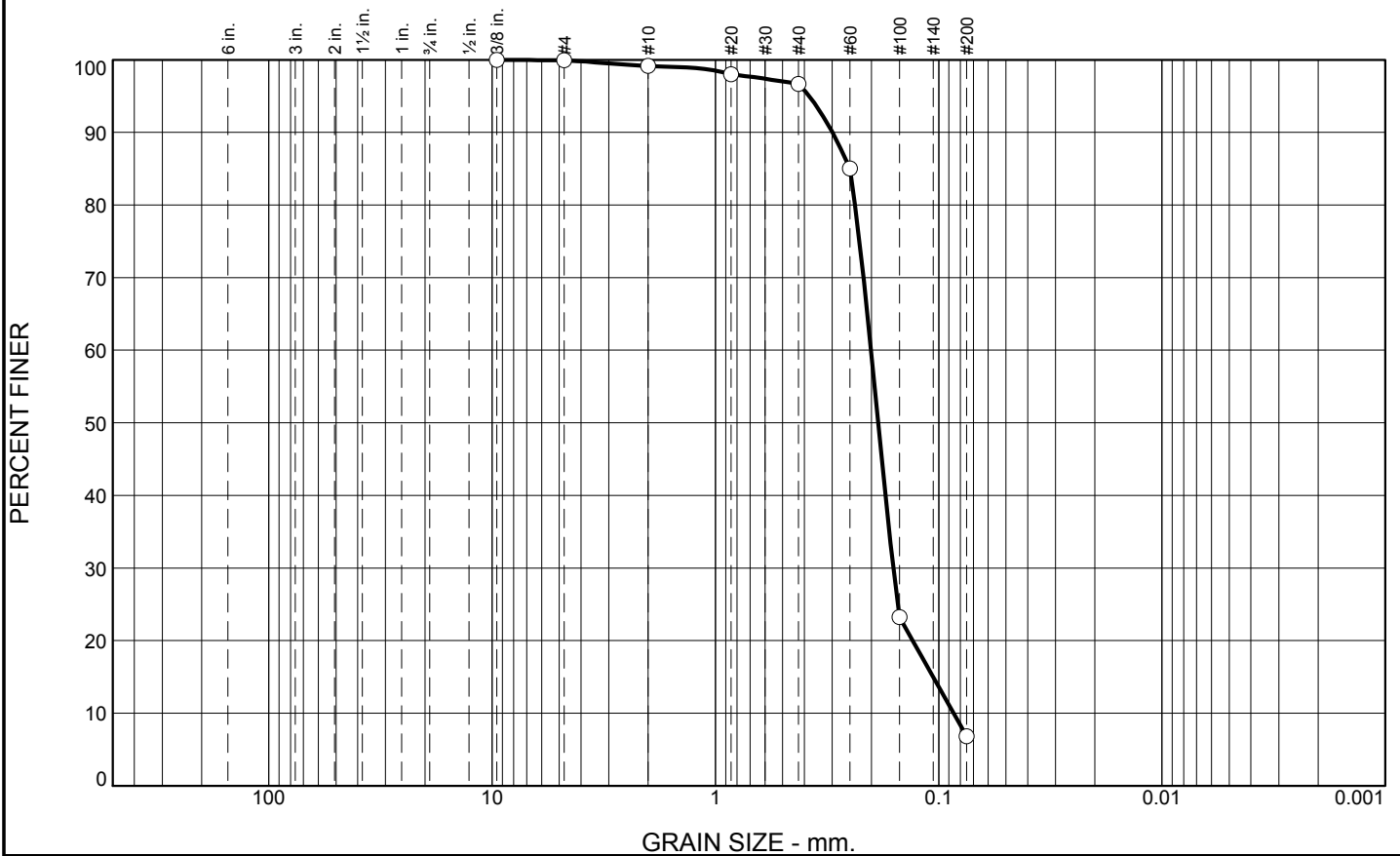
Client: US Army Corps of Engineers
Project: Mississippi Barrier Island Restoration Project
Contract No. W91278-10-D-0026 - Task 03
Project No: 1021230009

Figure

Tested By: J.Maddox/L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.8	2.4	89.9	6.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.1		
#20	98.0		
#40	96.7		
#60	85.0		
#100	23.2		
#200	6.8		

* (no specification provided)

Material Description
SAND, (SP-SM), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.2992 D₈₅= 0.2499 D₆₀= 0.2010
 D₅₀= 0.1867 D₃₀= 0.1598 D₁₅= 0.1059
 D₁₀= 0.0858 C_u= 2.34 C_c= 1.48

Classification
 USCS= SP-SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-GC-12-10C
Sample Number: TE Lab ID: 4461.14

Depth: 10.0 - 14.0 (ft)

Date: 5/13/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Mississippi Barrier Island Restoration Project
 Contract No. W91278-10-D-0026 - Task 03
Project No: 1021230009

Figure

Tested By: J.Maddox/L.Stokes

Checked By: R.Byrd

Boring Designation BI-GC-13-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Gulfport Channel				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-GC-13-10		LOCATION COORDINATES E = 906,022 N = 308,613		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 0		DISTURBED 0 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 34 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 05-07-10		STARTED 05-07-10 COMPLETED 05-07-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -33.6 Ft.			
8. TOTAL DEPTH OF BORING 18.3 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-33.6	0.0		CLAY, lean, dark gray (CL)				
-45.6	12.0						
-48.4	14.8		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt (SP) At El. -46.9 Ft., mostly coarse-grained sand-sized quartz, some fine gravel-sized quartz, trace clay				
-51.9	18.3		SAND, silty, mostly fine-grained sand-sized quartz, some silt (SM)				
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Boring Designation BI-GC-14-10

DRILLING LOG		DIVISION South Atlantic	INSTALLATION Mobile District	SHEET 1 OF 1 SHEETS
1. PROJECT Barrier Island Restoration Gulfport Channel		9. SIZE AND TYPE OF BIT N/A		
2. BORING DESIGNATION BI-GC-14-10		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore
3. DRILLING AGENCY Corps of Engineers - CESAM		12. TOTAL SAMPLES 0		13. TOTAL NUMBER CORE BOXES 0
4. NAME OF DRILLER Construction Solutions International, Inc.		14. WATER DEPTH 35 Ft.		15. DATE BORING 05-07-10
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		16. ELEVATION TOP OF BORING -34.7 Ft.		17. TOTAL RECOVERY FOR BORING 100%
6. THICKNESS OF OVERBURDEN N/A		18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist		
7. DEPTH DRILLED INTO ROCK N/A				
8. TOTAL DEPTH OF BORING 15.8 Ft.				

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-34.7	0.0		CLAY, lean, dark gray (CL)		
-45.2	10.5		SAND, clayey, mostly fine-grained sand-sized quartz, some clay, little silt (SC)		
-48.7	14.0		SAND, silty, mostly fine-grained sand-sized quartz, some silt (SM)		
-50.5	15.8		NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.		

Boring Designation BI-GC-15-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Gulfport Channel				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-GC-15-10		LOCATION COORDINATES E = 910,267 N = 302,595		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		UNDISTURBED (UD) 0	
6. THICKNESS OF OVERBURDEN N/A				14. WATER DEPTH		23 Ft.	
7. DEPTH DRILLED INTO ROCK N/A				15. DATE BORING		STARTED 05-07-10	
8. TOTAL DEPTH OF BORING 17.5 Ft.				16. ELEVATION TOP OF BORING -22.7 Ft.		COMPLETED 05-07-10	
				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-22.7	0.0		CLAY, lean, dark gray (CL)				
				NS			
-40.2	17.5						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

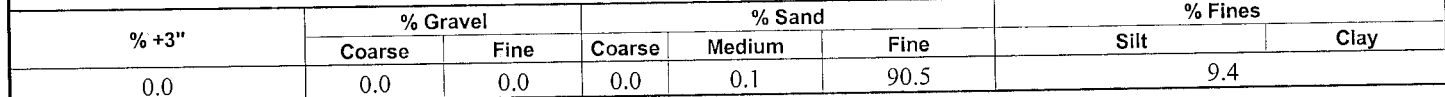
Boring Designation BI-GC-16-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Gulfport Channel				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-GC-16-10		LOCATION COORDINATES E = 912,722 N = 299,521		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		UNDISTURBED (UD) 0	
6. THICKNESS OF OVERBURDEN N/A				14. WATER DEPTH		36 Ft.	
7. DEPTH DRILLED INTO ROCK N/A				15. DATE BORING		STARTED 05-07-10	
8. TOTAL DEPTH OF BORING 20.0 Ft.				16. ELEVATION TOP OF BORING		COMPLETED 05-07-10	
				17. TOTAL RECOVERY FOR BORING		100%	
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-35.5	0.0		CLAY, lean, dark gray (CL)				
-52.2	16.7			NS			
-53.2	17.7		CLAY, organic-L, brown (OL)				
			SILT, inorganic-L, lt. gray (ML)				
-55.5	20.0						
NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.							

Boring Designation BI-GC-17-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Gulfport Channel				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-GC-17-10		LOCATION COORDINATES E = 914,584 N = 296,659		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 1	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		UNDISTURBED (UD) 0	
6. THICKNESS OF OVERBURDEN N/A				14. WATER DEPTH		24 Ft.	
7. DEPTH DRILLED INTO ROCK N/A				15. DATE BORING		STARTED 05-08-10	
8. TOTAL DEPTH OF BORING 13.2 Ft.				16. ELEVATION TOP OF BORING		COMPLETED 05-08-10	
				17. TOTAL RECOVERY FOR BORING		100%	
				18. SIGNATURE AND TITLE OF INSPECTOR		Marty Gates, Geologist	
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-24.1	0.0		CLAY, lean, dark gray (CL)	NS			
-34.8	10.7						
-37.3	13.2		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, little clay, trace organic matter (SM)	A	Classification: SP-SM Color: 10YR 5/1-gray D50: 0.125 mm % Fines: 9.4		
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

PERCENT FINER


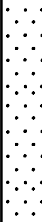



<u>Material Description</u>		
SAND, (SP-SM), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.2084	D ₈₅ = 0.1935	D ₆₀ = 0.1414
D ₅₀ = 0.1250	D ₃₀ = 0.0973	D ₁₅ = 0.0805
D ₁₀ = 0.0756	C _u = 1.87	C _c = 0.89
<u>Classification</u>		
USCS= SP-SM	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

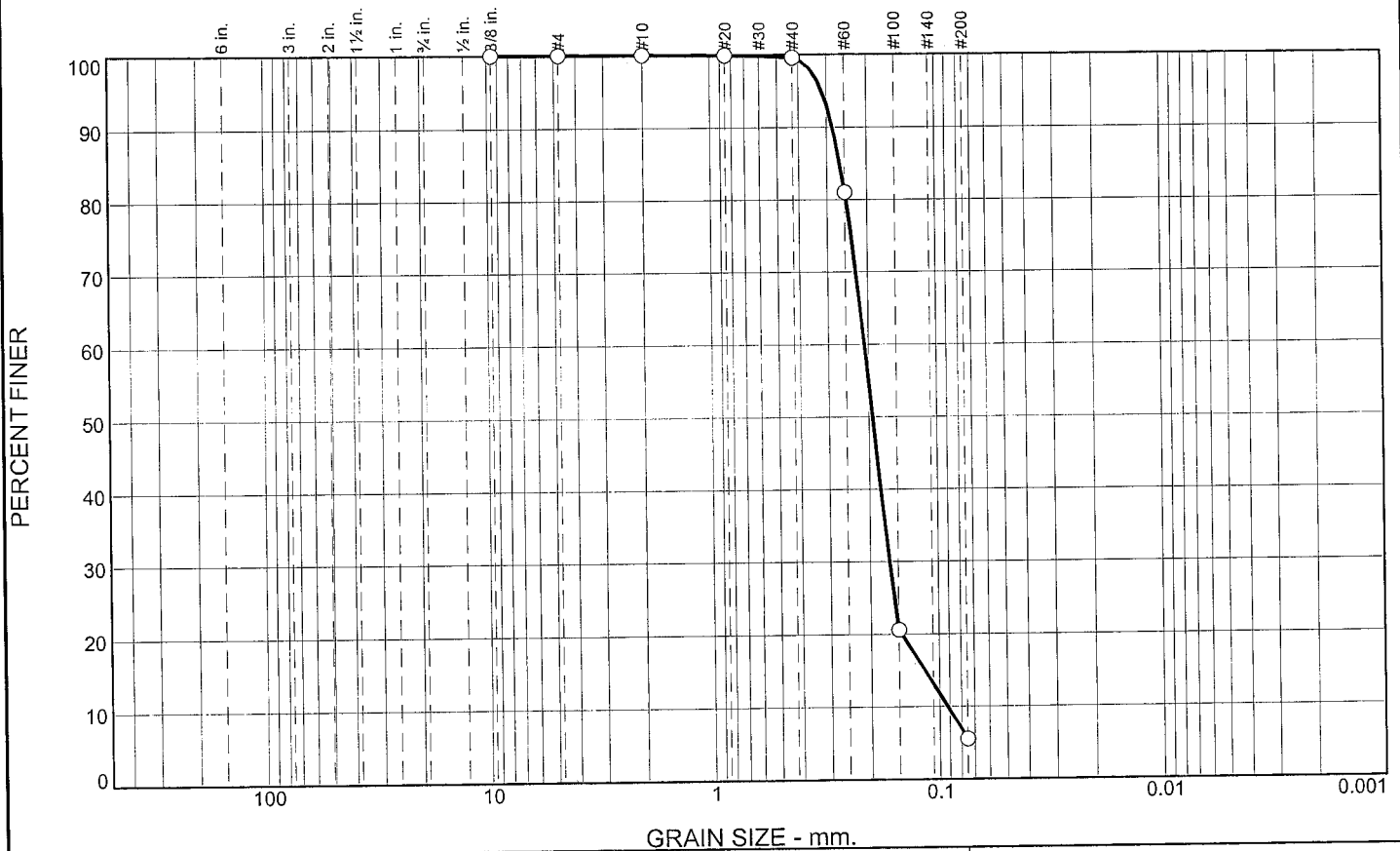
D-35

Boring Designation BI-GC-18-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Gulfport Channel				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-GC-18-10		LOCATION COORDINATES E = 916,873 N = 293,788		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 1 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 36 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING		STARTED 05-08-10 COMPLETED 05-08-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -36.1 Ft.			
8. TOTAL DEPTH OF BORING 20.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-36.1	0.0				
			CLAY, lean, dark gray (CL)	NS	
-49.9	13.8				
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little silt (SP)	A	Classification: SP-SM Color: 10YR 6/1-gray D50: 0.1924 mm % Fines: 5.5
-55.1	19.0				
-56.1	20.0		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, little clay (SM)	NS	
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.		

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.4	94.1	5.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	99.6		
#60	81.0		
#100	20.6		
#200	5.5		

* (no specification provided)

Material Description
SAND, (SP-SM), fine grained, trace shell

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.2823 D₈₅= 0.2621 D₆₀= 0.2077
D₅₀= 0.1924 D₃₀= 0.1641 D₁₅= 0.1160
D₁₀= 0.0921 C_u= 2.25 C_c= 1.41

Classification
USCS= SP-SM AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-GC-18-10A
Sample Number: TE Lab ID: 4473.13

Depth: 13.8 19.0 (ft)

Date: 5/17/10

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

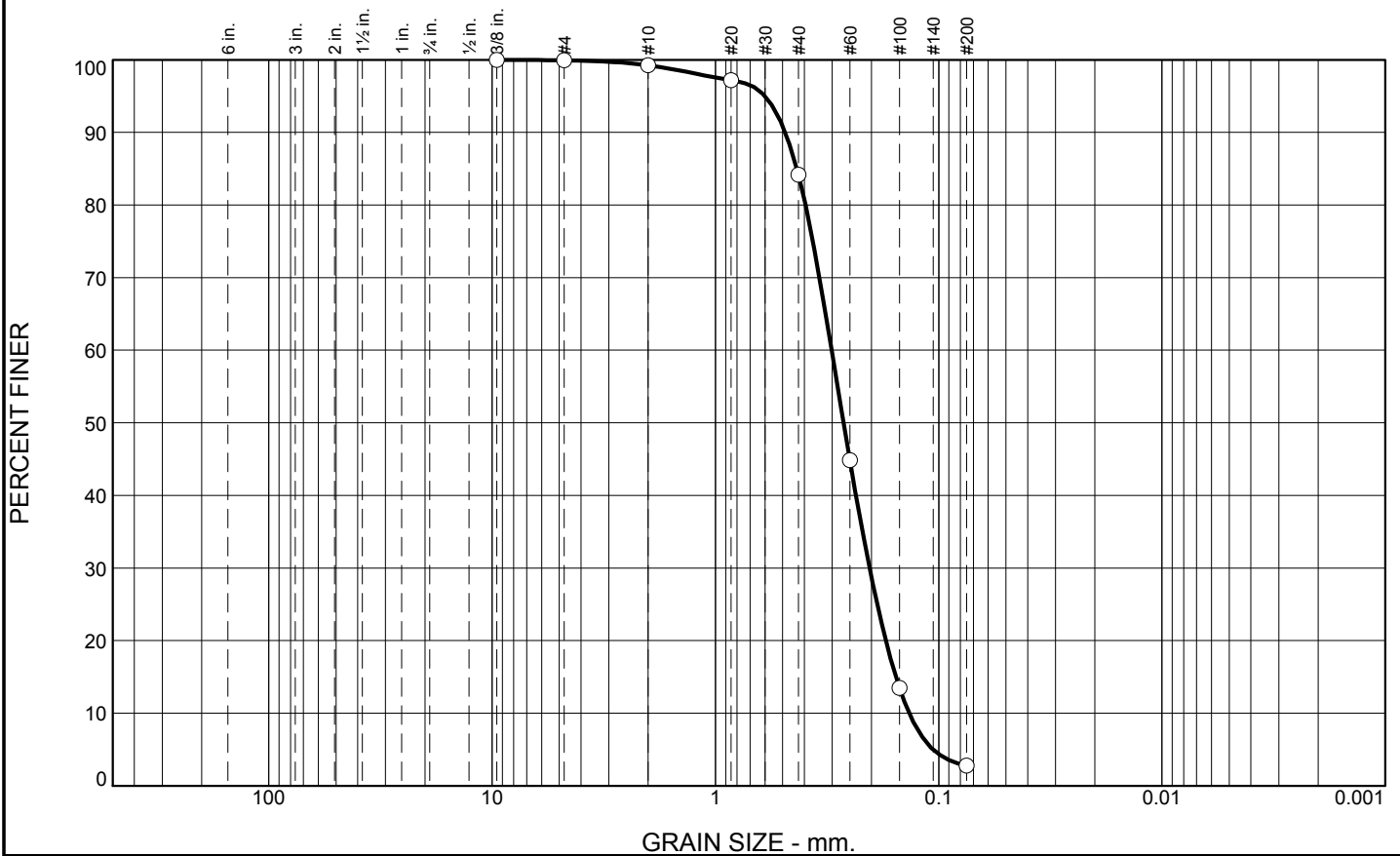
Tested By: L.Stokes Checked By: R.Byrd

Boring Designation BI-GC-19-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Gulfport Channel				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-GC-19-10		LOCATION COORDINATES E = 932,517 N = 264,220		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 4		DISTURBED 0 UNDISTURBED (UD)	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 21.5 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 05-21-10		STARTED 05-21-10 COMPLETED	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -20.5 Ft.			
8. TOTAL DEPTH OF BORING 19.5 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Mark Green, Geotechnical Engineer			

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-20.5	0.0				
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, little shell fragments, trace silt, gray and greenish gray (SP)	A	Classification: SP Color: 2.5Y 7/2-light gray D50: 0.2667 mm % Fines: 2.8
-25.5	5.0		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, trace shell fragments, gray (SP)	B	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.2753 mm % Fines: 2.3
-30.5	10.0		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, lt. gray (SP)	C	Classification: SP Color: 2.5Y 7.5/1-light gray D50: 0.2955 mm % Fines: 2.4
-35.5	15.0		SAND, poorly-graded, mostly fine-grained sand-sized quartz, lt. gray to gray (SP)	D	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.2526 mm % Fines: 3.6
-39.5	19.0		At El. -39.0 Ft., trace silt	NS	
-40.0	19.5		SAND, silty, with clay lenses (SM)		
NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.					

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.7	15.0	81.4	2.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.2		
#20	97.2		
#40	84.2		
#60	44.8		
#100	13.5		
#200	2.8		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained, with trace shell

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.4864

D₈₅= 0.4319

D₆₀= 0.3015

D₅₀= 0.2667

D₃₀= 0.2039

D₁₅= 0.1556

D₁₀= 0.1356

C_u= 2.22

C_c= 1.02

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-GC-19-10A
Sample Number: TE Lab ID: 4489.01

Depth: 0.0 - 5.0 (ft.)

Date: 5/28/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

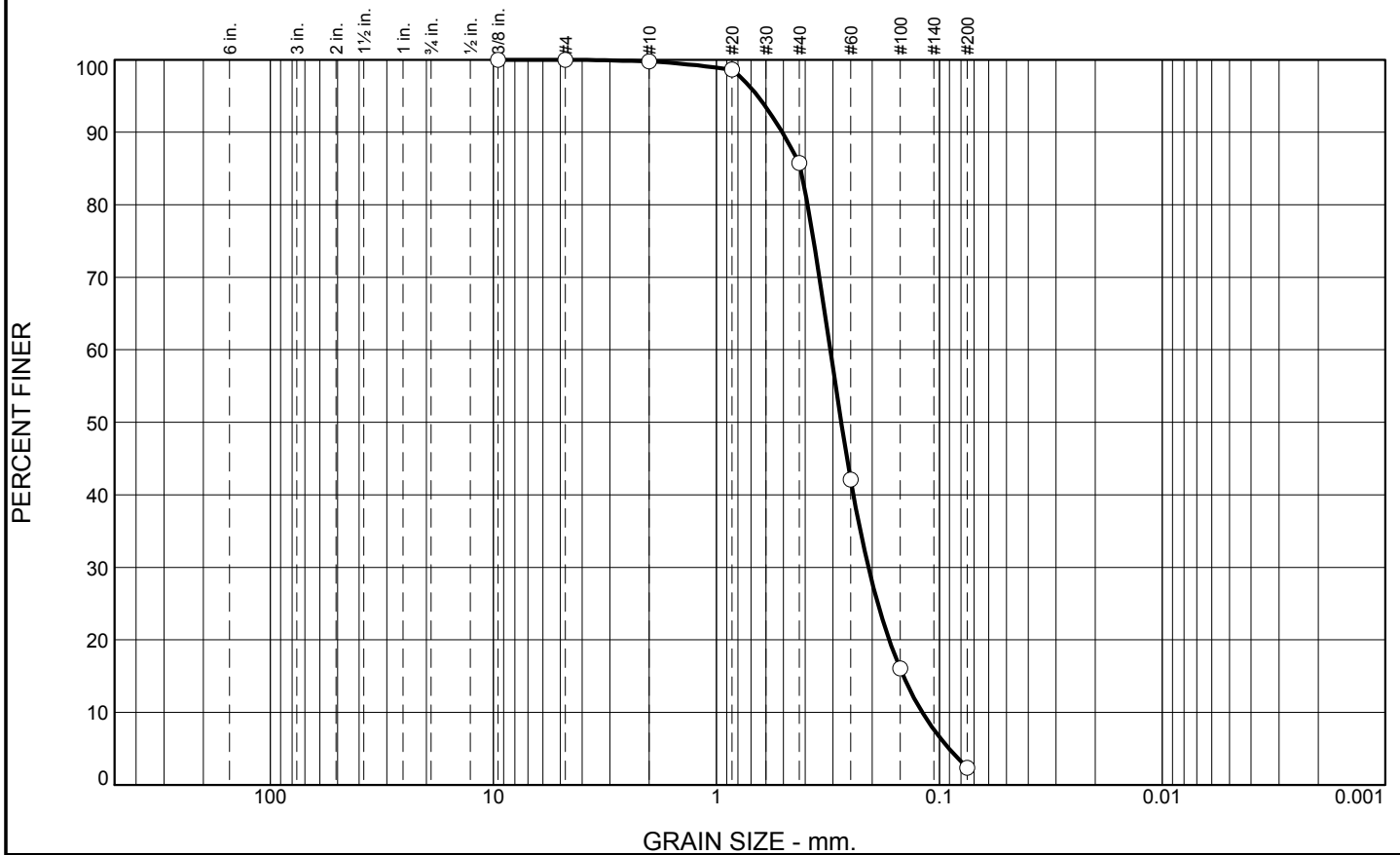
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	14.1	83.4	2.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.8		
#20	98.6		
#40	85.7		
#60	42.1		
#100	16.1		
#200	2.3		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained, with trace shell

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.5061

D₈₅= 0.4199

D₆₀= 0.3083

D₅₀= 0.2753

D₃₀= 0.2081

D₁₅= 0.1450

D₁₀= 0.1193

C_u= 2.58

C_c= 1.18

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10B965

Location: USACE Sample # BI-GC-19-10B
Sample Number: TE Lab ID: 4489.02

Depth: 5.0 - 10.0 (ft.)

Date: 5/28/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

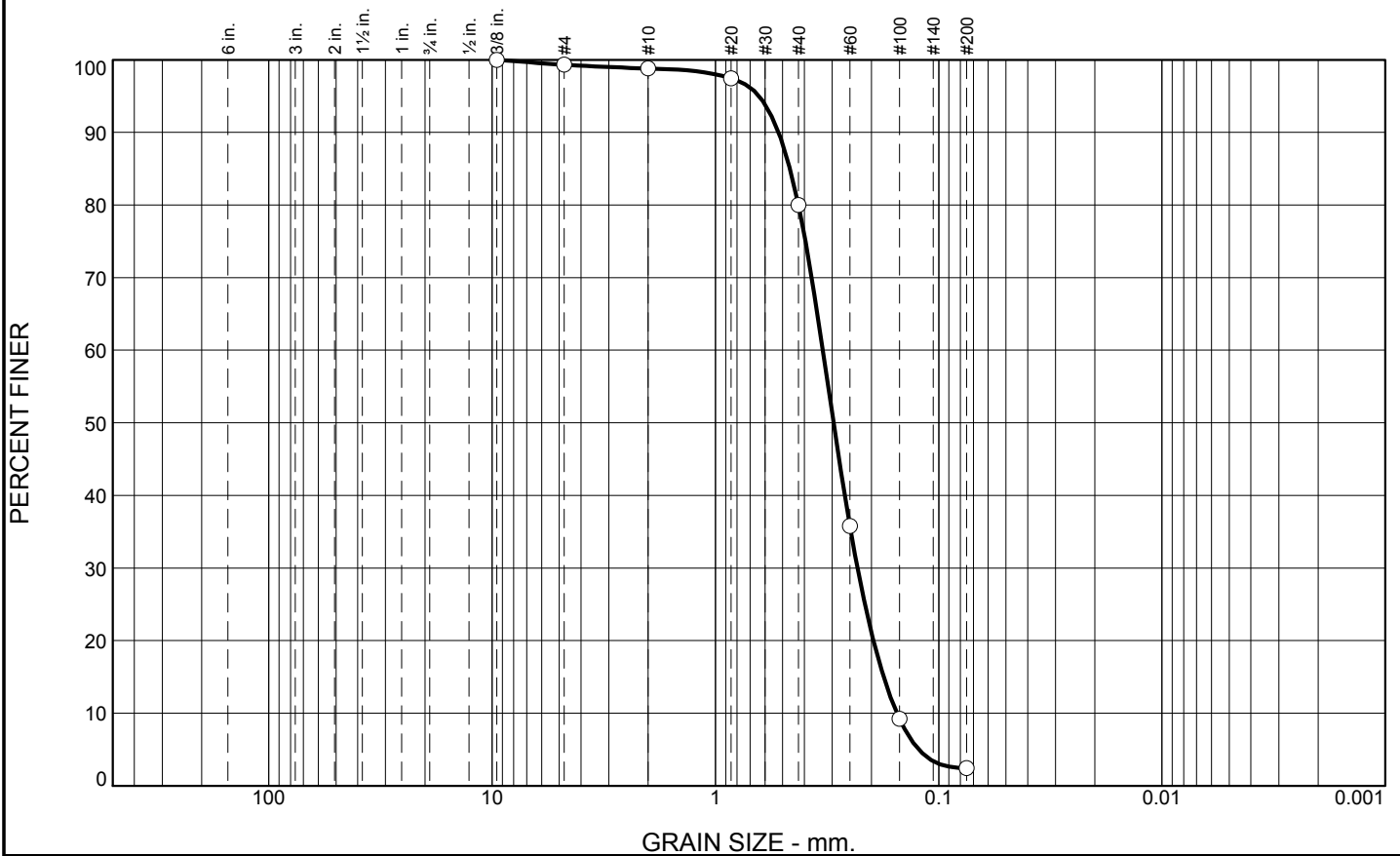
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.7	0.5	18.8	77.6	2.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.3		
#10	98.8		
#20	97.4		
#40	80.0		
#60	35.8		
#100	9.2		
#200	2.4		

* (no specification provided)

Material Description		
SAND, (SP), medium to fine grained, with trace shell		
<div> <div> Atterberg Limits PL= LL= PI= </div> <div> Coefficients D₉₀= 0.5212 D₈₅= 0.4637 D₆₀= 0.3303 D₅₀= 0.2955 D₃₀= 0.2311 D₁₅= 0.1764 D₁₀= 0.1539 C_u= 2.15 C_c= 1.05 </div> <div> Classification USCS= SP AASHTO= </div> <div> Remarks CADD CODE = CH10D965 </div> </div>		

Location: USACE Sample # BI-GC-19-10C
Sample Number: TE Lab ID: 4489.03

Depth: 10.0 - 15.0 (ft.)

Date: 5/28/10

Thompson Engineering
Mobile, Alabama

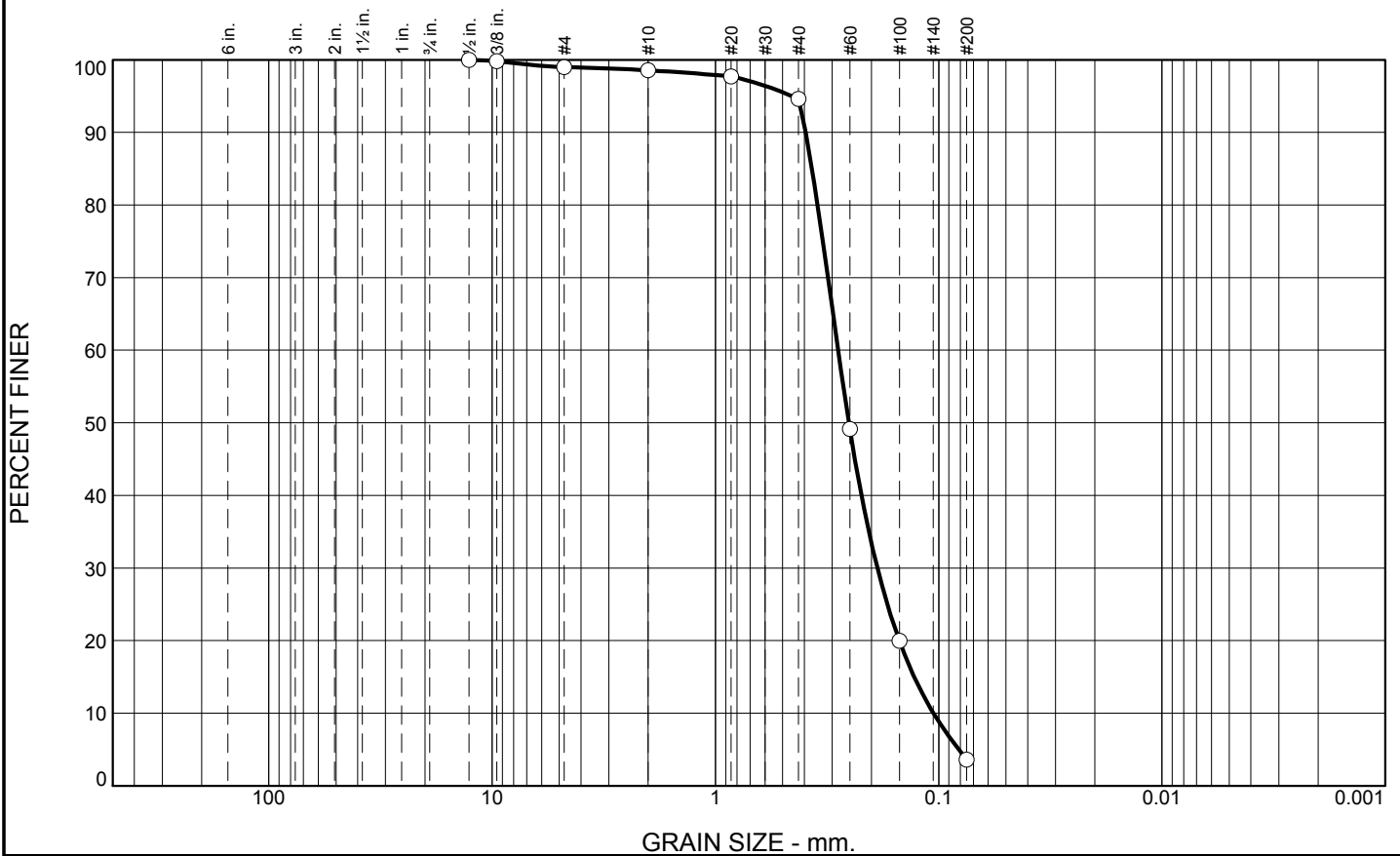
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.0	0.5	3.9	91.0	3.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.500	100.0		
.375	99.8		
#4	99.0		
#10	98.5		
#20	97.7		
#40	94.6		
#60	49.1		
#100	20.0		
#200	3.6		

* (no specification provided)

<u>Material Description</u>		
SAND, (SP), fine grained, with shell		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.3949	D ₈₅ = 0.3698	D ₆₀ = 0.2820
D ₅₀ = 0.2526	D ₃₀ = 0.1883	D ₁₅ = 0.1288
D ₁₀ = 0.1056	C _u = 2.67	C _c = 1.19
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-GC-19-10D
Sample Number: TE Lab ID: 4489.04

Depth: 15.0 - 19.0 (ft.)

Date: 5/28/10

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

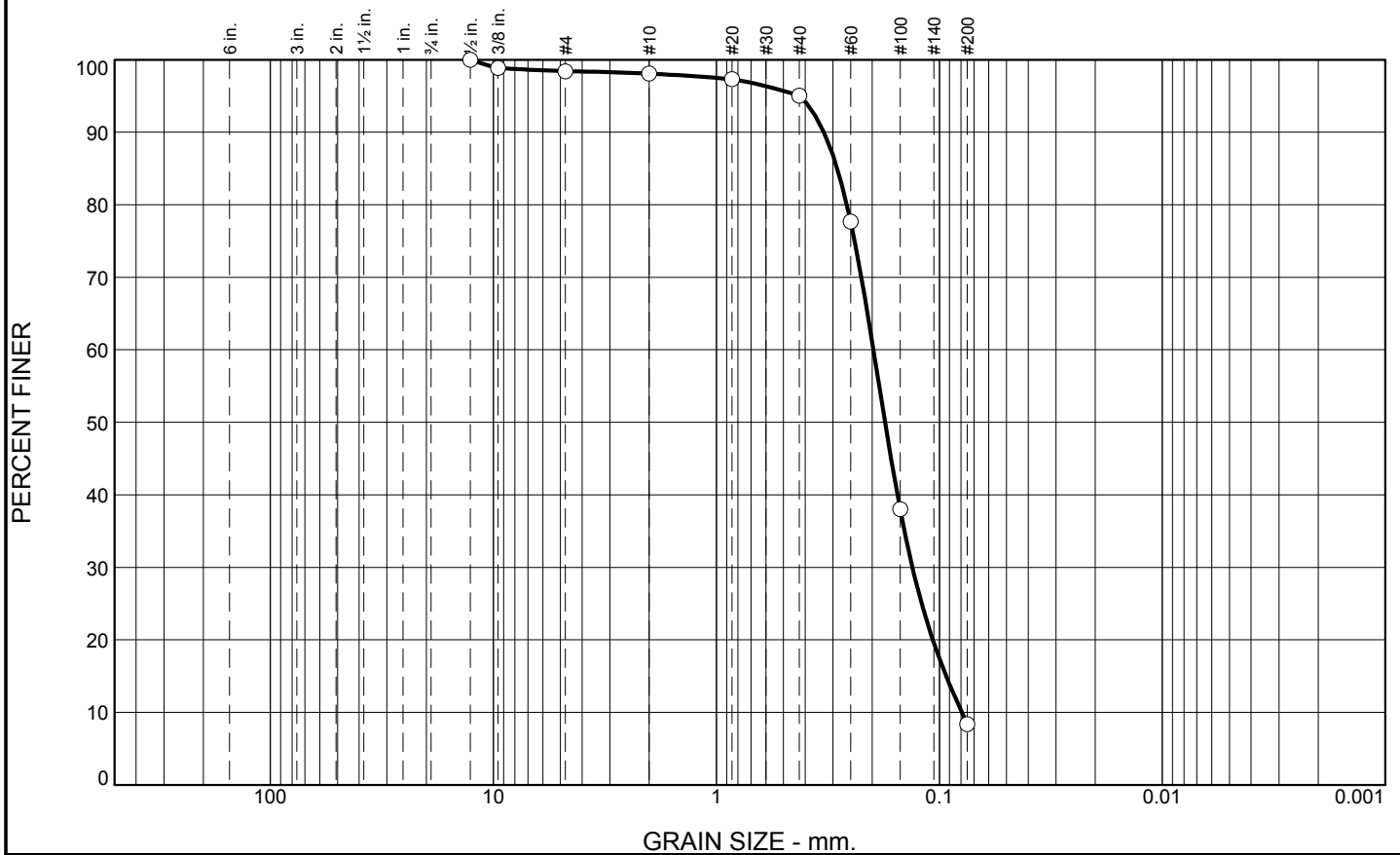
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-GC-20-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Gulfport Channel				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-GC-20-10		LOCATION COORDINATES E = 932,458 N = 264,977		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 0 UNDISTURBED (UD)	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 20 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-01-10		STARTED 06-01-10 COMPLETED 06-01-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -18.7 Ft.			
8. TOTAL DEPTH OF BORING 19.5 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-18.7	0.0		CLAY, lean, dark gray (CL)	NS			
-23.7	5.0		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little silt, trace shell fragments, lt. gray (SP)	A	Classification: SP-SM Color: 2.5Y 7/2-light gray D50: 0.1752 mm % Fines: 8.4		
-31.7	13.0			B	Classification: SP Color: 2.5Y 7/2-light gray D50: 0.1744 mm % Fines: 3.6		
-38.2	19.5		CLAY, lean, dark gray (CL)	NS			
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.6	0.3	3.1	86.6	8.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.500	100.0		
.375	98.9		
#4	98.4		
#10	98.1		
#20	97.3		
#40	95.0		
#60	77.7		
#100	38.0		
#200	8.4		

* (no specification provided)

Material Description
SAND, (SP-SM), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.3293 D₈₅= 0.2870 D₆₀= 0.1976
 D₅₀= 0.1752 D₃₀= 0.1321 D₁₅= 0.0932
 D₁₀= 0.0793 C_u= 2.49 C_c= 1.11

Classification
 USCS= SP-SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-GC-20-10A
Sample Number: TE Lab ID: 4519.17

Depth: 5.0 - 9.0 (ft.)

Date: 6/12/10

Thompson Engineering

Mobile, Alabama

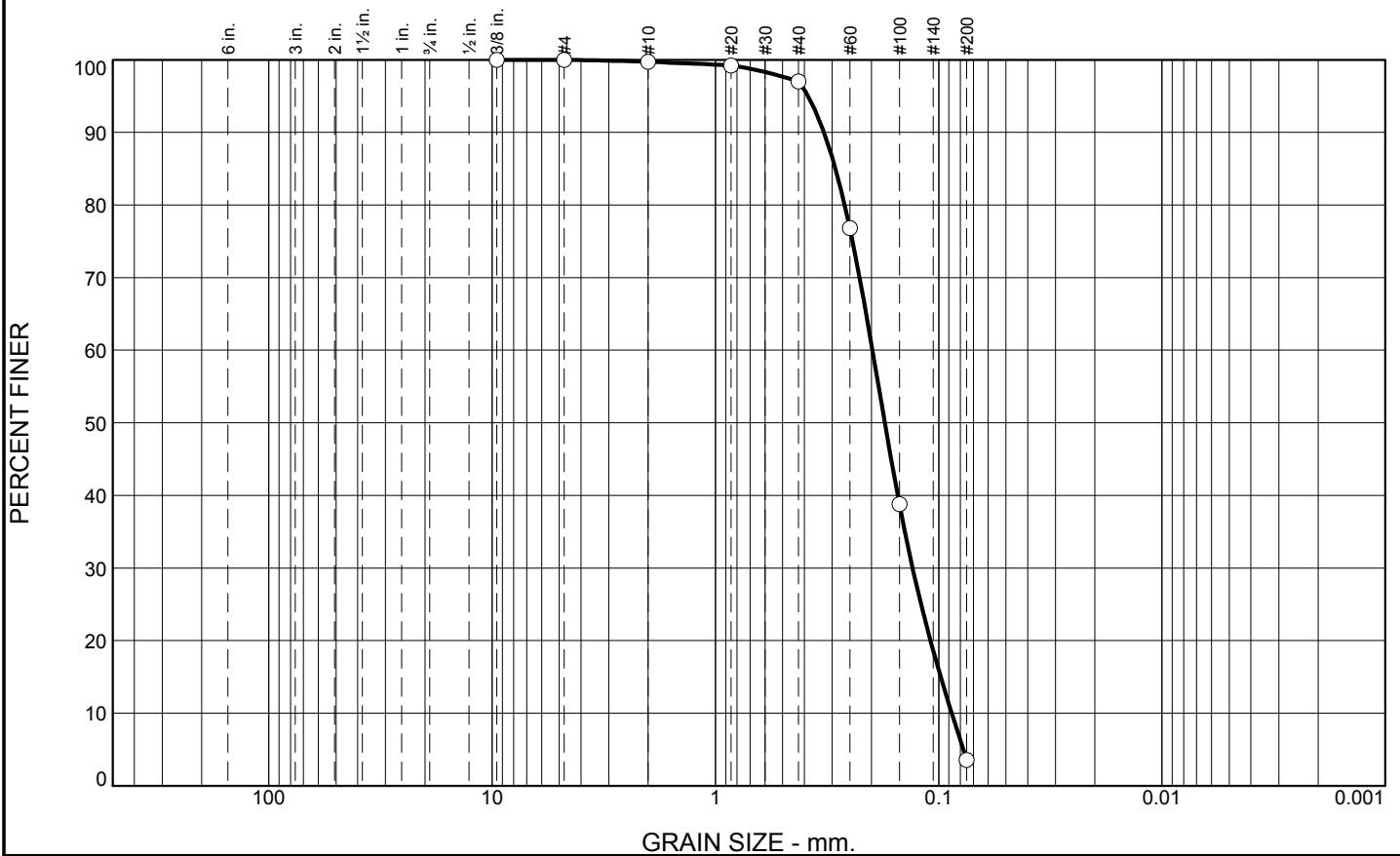
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.3	2.7	93.4	3.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.7		
#20	99.2		
#40	97.0		
#60	76.8		
#100	38.8		
#200	3.6		

* (no specification provided)

Material Description		
SAND, (SP), fine grained		
<div> <div> Atterberg Limits PL= LL= PI= </div> <div> Coefficients D₉₀= 0.3263 D₈₅= 0.2899 D₆₀= 0.1981 D₅₀= 0.1744 D₃₀= 0.1309 D₁₅= 0.0980 D₁₀= 0.0875 C_u= 2.26 C_c= 0.99 </div> <div> Classification USCS= SP AASHTO= </div> <div> Remarks CADD CODE = CH10D965 </div> </div>		

Location: USACE Sample # BI-GC-20-10B
 Sample Number: TE Lab ID: 4519.18

Depth: 9.0 - 13.0 (ft.)

Date: 6/12/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

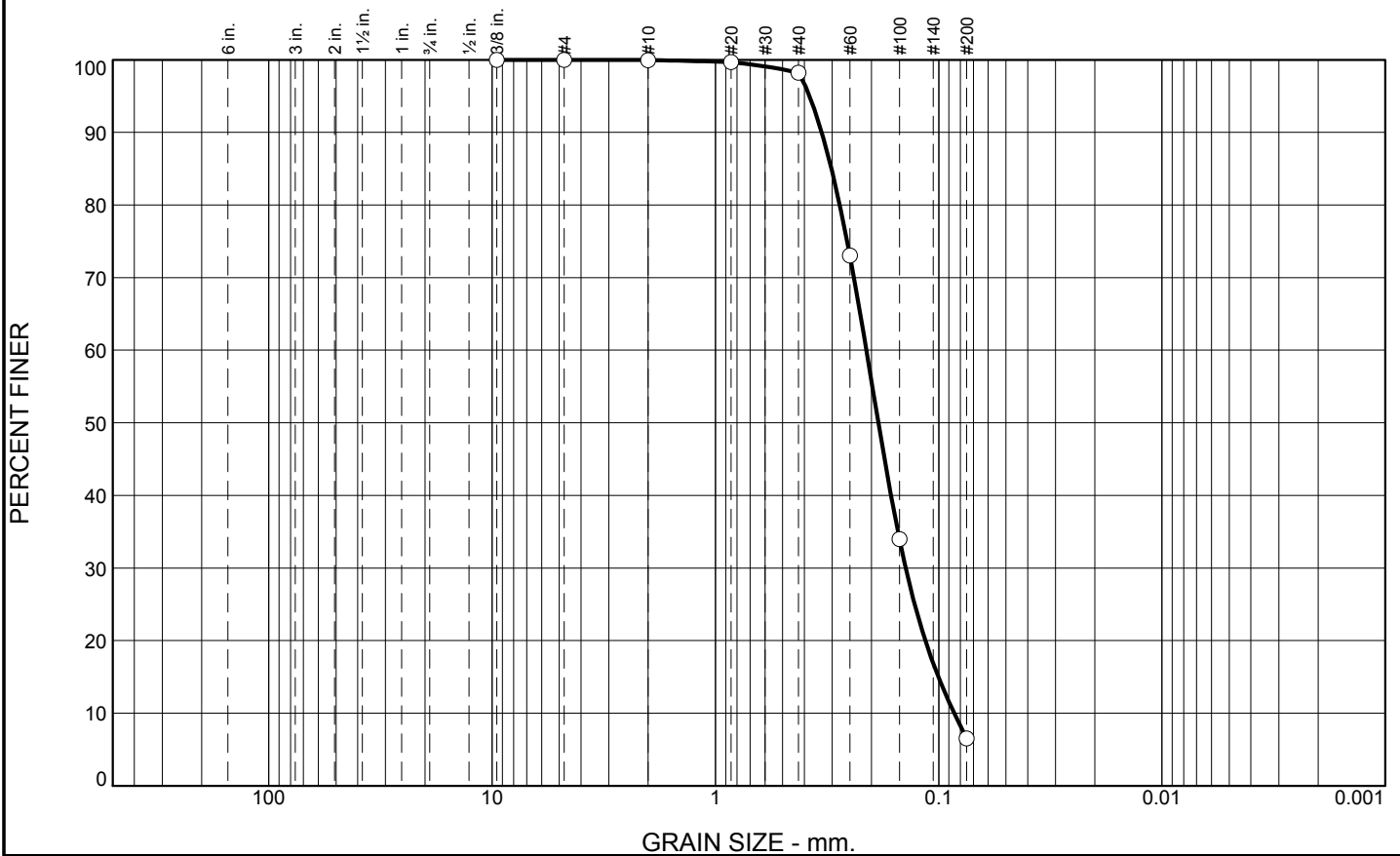
Tested By: R.Martin

Checked By: R.Byrd

Boring Designation BI-GC-21-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Gulfport Channel				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-GC-21-10		LOCATION COORDINATES E = 932,486 N = 265,071		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 20 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-01-10		STARTED 06-01-10 COMPLETED 06-01-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -18.8 Ft.			
8. TOTAL DEPTH OF BORING 16.7 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-18.8	0.0						
			CLAY, lean, dark gray (CL)	NS			
-21.8	3.0						
			SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, gray (SM)	A	Classification: SP-SM Color: 2.5Y 7/2-light gray D50: 0.1863 mm % Fines: 6.5		
-23.8	5.0						
			CLAY, lean, dark gray (CL)	NS			
-25.3	6.5						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little silt, trace shell fragments, lt. gray (SP)	B	Classification: SP-SM Color: 2.5Y 7/2-light gray D50: 0.1848 mm % Fines: 8.1		
-29.3	10.5						
			CLAY, lean, dark gray (CL)	NS			
-35.5	16.7						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.8	91.7	6.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.7		
#40	98.2		
#60	73.0		
#100	34.0		
#200	6.5		

* (no specification provided)

Material Description
SAND, (SP-SM), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.3340 D₈₅= 0.3022 D₆₀= 0.2109
 D₅₀= 0.1863 D₃₀= 0.1406 D₁₅= 0.1004
 D₁₀= 0.0852 C_u= 2.47 C_c= 1.10

Classification
 USCS= SP-SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-GC-21-10A
Sample Number: TE Lab ID: 4519.15

Depth: 3.0 - 5.0 (ft.)

Date: 6/12/10

Thompson Engineering

Mobile, Alabama

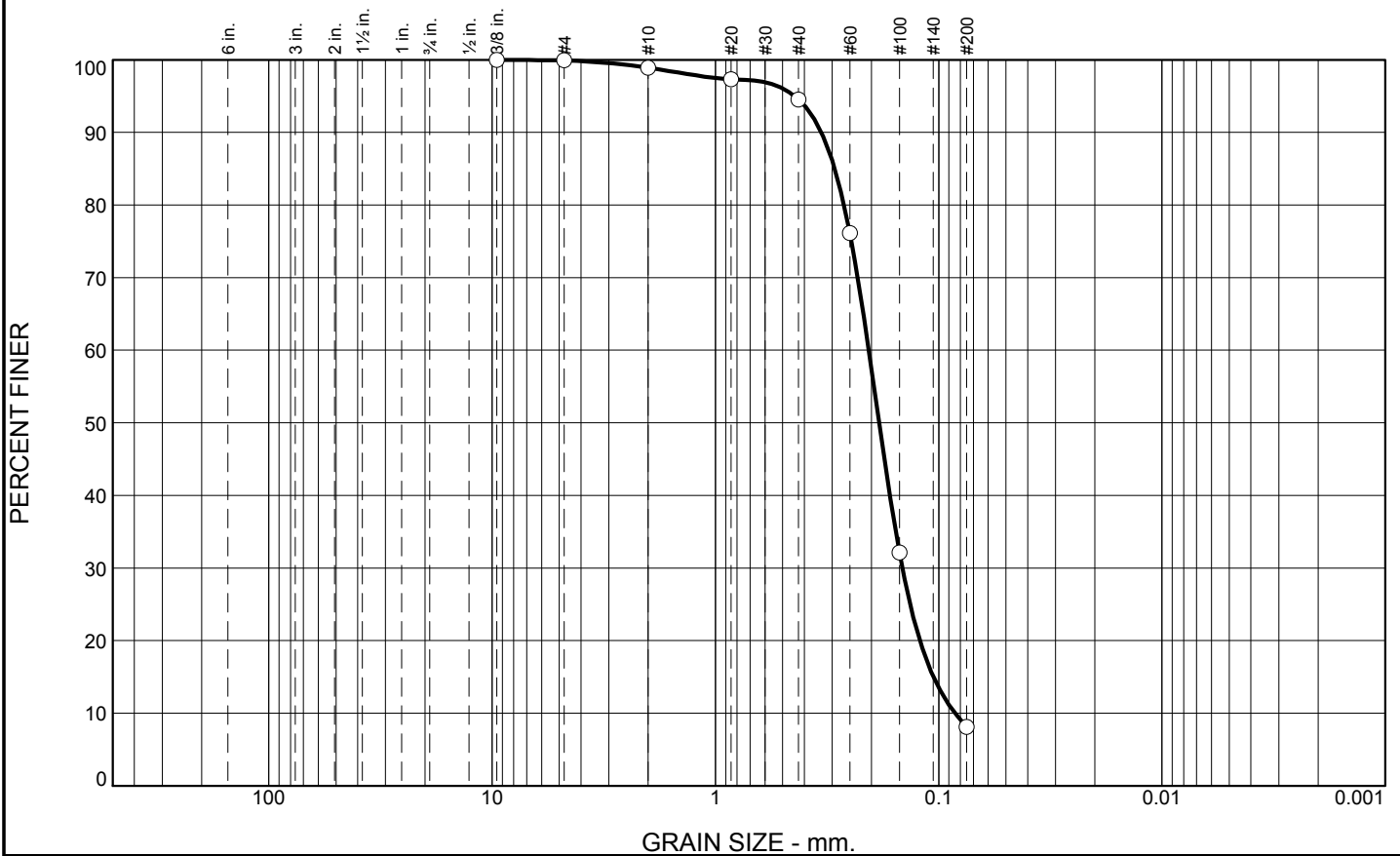
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	1.0	4.4	86.4	8.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	98.9		
#20	97.3		
#40	94.5		
#60	76.1		
#100	32.1		
#200	8.1		

* (no specification provided)

Material Description

SAND, (SP-SM), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.3351

D₈₅= 0.2921

D₆₀= 0.2058

D₅₀= 0.1848

D₃₀= 0.1456

D₁₅= 0.1056

D₁₀= 0.0844

C_u= 2.44

C_c= 1.22

Classification

USCS= SP-SM

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-GC-21-10B
Sample Number: TE Lab ID: 4519.16

Depth: 6.5 - 10.5 (ft.)

Date: 6/12/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Figure

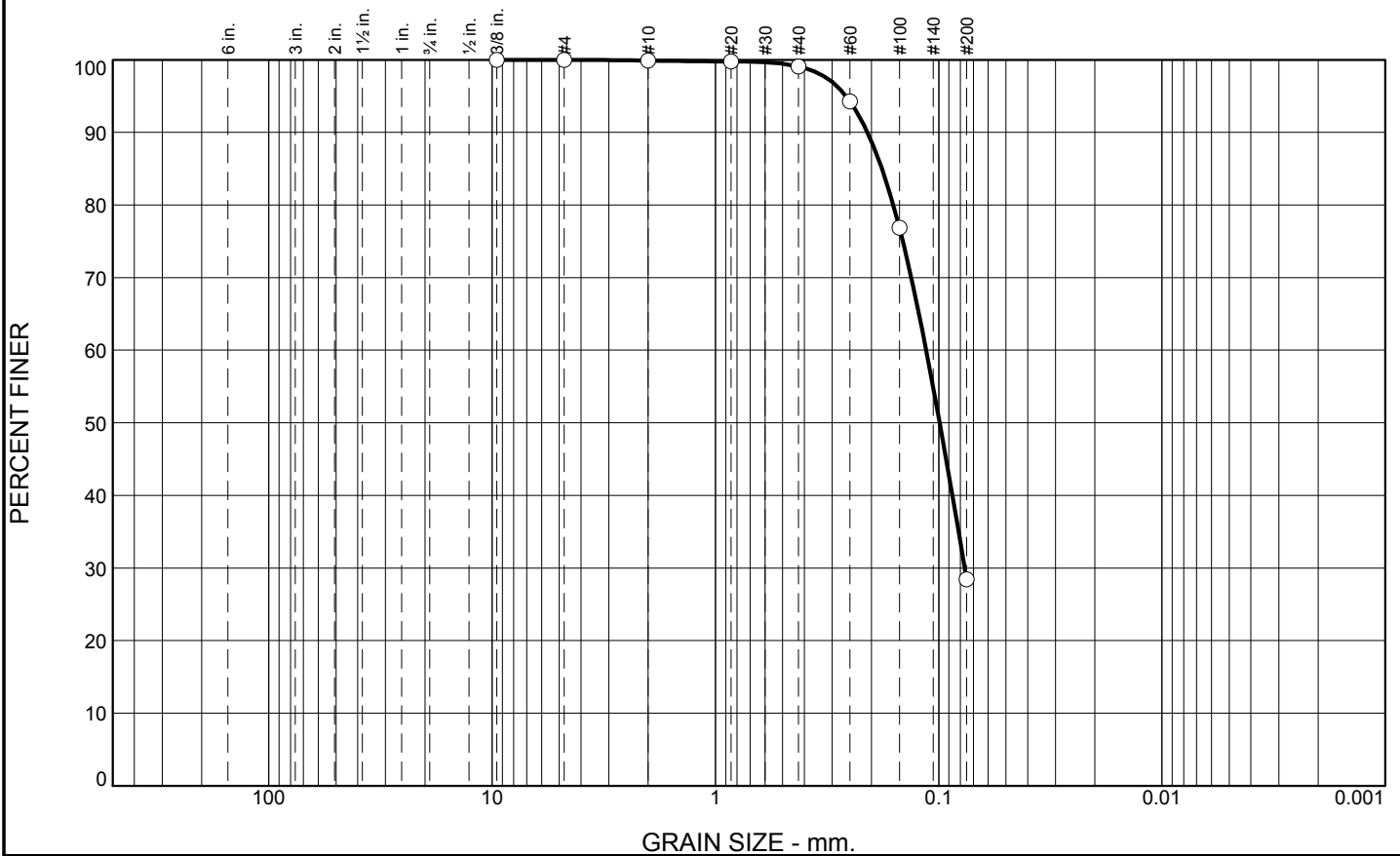
Tested By: R.Martin

Checked By: R.Byrd

Boring Designation BI-GC-22-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Gulfport Channel				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-GC-22-10		LOCATION COORDINATES E = 932,102 N = 265,711		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 1 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		BEARING		13. TOTAL NUMBER CORE BOXES	
6. THICKNESS OF OVERBURDEN N/A				14. WATER DEPTH 42 Ft.			
7. DEPTH DRILLED INTO ROCK N/A				15. DATE BORING		STARTED 06-10-10 COMPLETED 06-10-10	
8. TOTAL DEPTH OF BORING 15.1 Ft.				16. ELEVATION TOP OF BORING -41.4 Ft.			
				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-41.4	0.0						
-43.9	2.5		CLAY, lean, dark gray (CL)	NS			
-48.4	7.0		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace organic matter, lt. gray (SM)	A	Classification: SM Color: 2.5Y 5/2-grayish brown D50: 0.0991 mm % Fines: 28.4		
-56.5	15.1		CLAY, lean, dark gray (CL)	NS			
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	0.8	70.7	28.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.8		
#40	99.1		
#60	94.3		
#100	76.9		
#200	28.4		

* (no specification provided)

Material Description
SILTY SAND, (SM), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.2086 D₈₅= 0.1797 D₆₀= 0.1138
 D₅₀= 0.0991 D₃₀= 0.0765 D₁₅=
 D₁₀= C_u= C_c=

Classification
 USCS= SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-GC-22-10A
Sample Number: TE Lab ID: 4538.36

Depth: 5.0 - 7.0 (ft.)

Date: 6/19/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

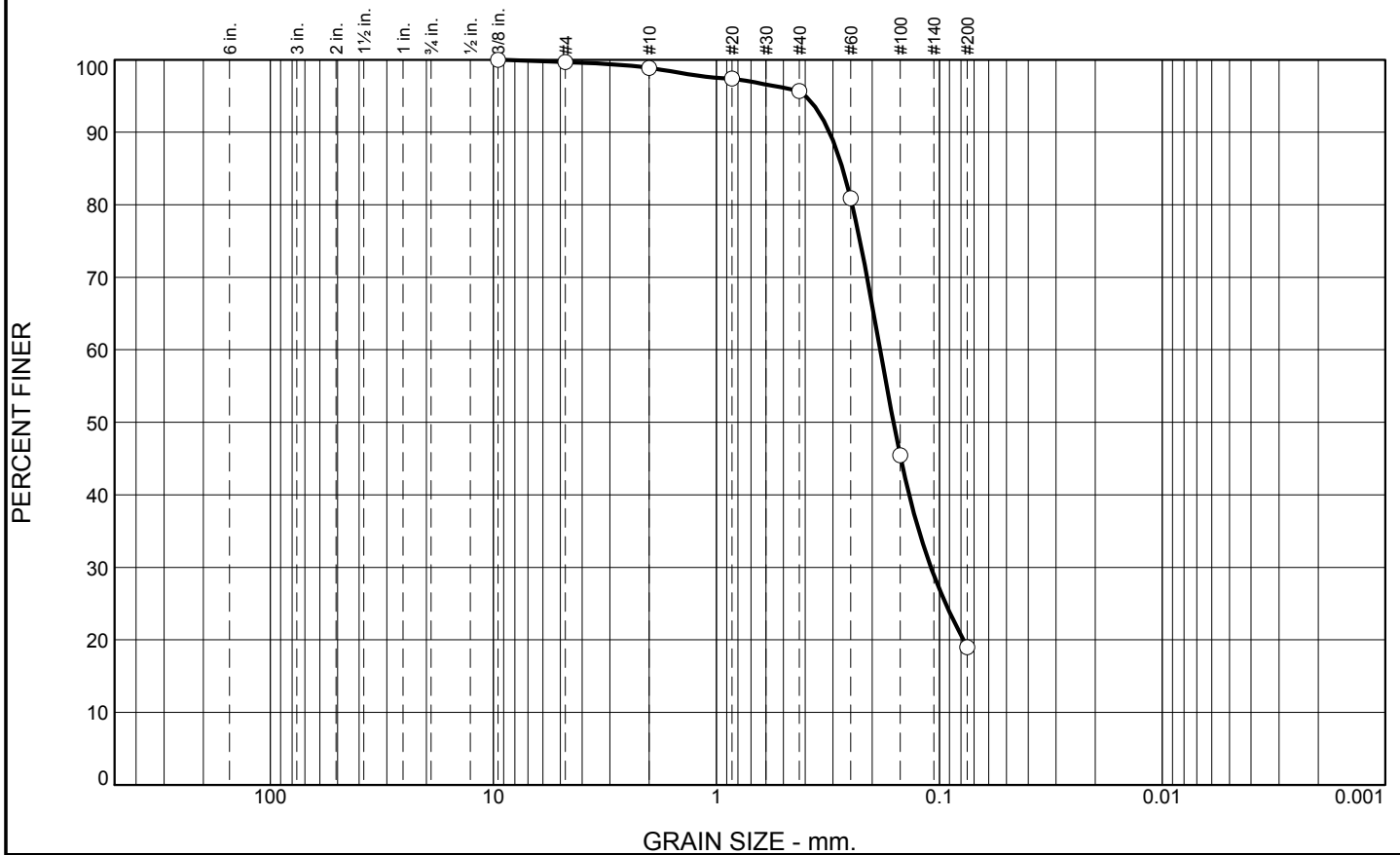
Tested By: R.Martin

Checked By: R.Byrd

Boring Designation BI-GC-23-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Gulfport Channel				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-GC-23-10		LOCATION COORDINATES E = 932,022 N = 265,042		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 32 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-10-10		STARTED 06-10-10 COMPLETED 06-10-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -31.3 Ft.			
8. TOTAL DEPTH OF BORING 13.9 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-31.3	0.0						
			SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments, gray (SM) At El. -35.4 Ft., brown	A	Classification: SM Color: 2.5Y 5.5/2-brownish gray D50: 0.1607 mm % Fines: 19		
				B	Classification: SM Color: 2.5Y 6/2-light brownish gray D50: 0.1085 mm % Fines: 27.9		
-38.3	7.0						
			CLAY, lean, dark gray (CL)	NS			
-40.3	9.0						
			SAND, silty, mostly fine to medium-grained sand-sized quartz (SM)	C	Classification: SM Color: 2.5Y 6/2-light brownish gray D50: 0.0874 mm % Fines: 39.7		
-42.3	11.0						
			CLAY, lean, dark gray (CL)	NS			
-45.2	13.9						
			NOTES:				
			1. Soils are field visually classified in accordance with the Unified Soils Classification System.				
			2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.3	0.8	3.2	76.7	19.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.7		
#10	98.9		
#20	97.4		
#40	95.7		
#60	80.9		
#100	45.4		
#200	19.0		

* (no specification provided)

Material Description
SILTY SAND, (SM), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.3108 D₈₅= 0.2714 D₆₀= 0.1844
 D₅₀= 0.1607 D₃₀= 0.1091 D₁₅=
 D₁₀= C_u= C_c=

Classification
 USCS= SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-GC-23-10A
Sample Number: TE Lab ID: 4538.33

Depth: 0.0 - 4.1 (ft.)

Date: 6/19/10

Thompson Engineering

Mobile, Alabama

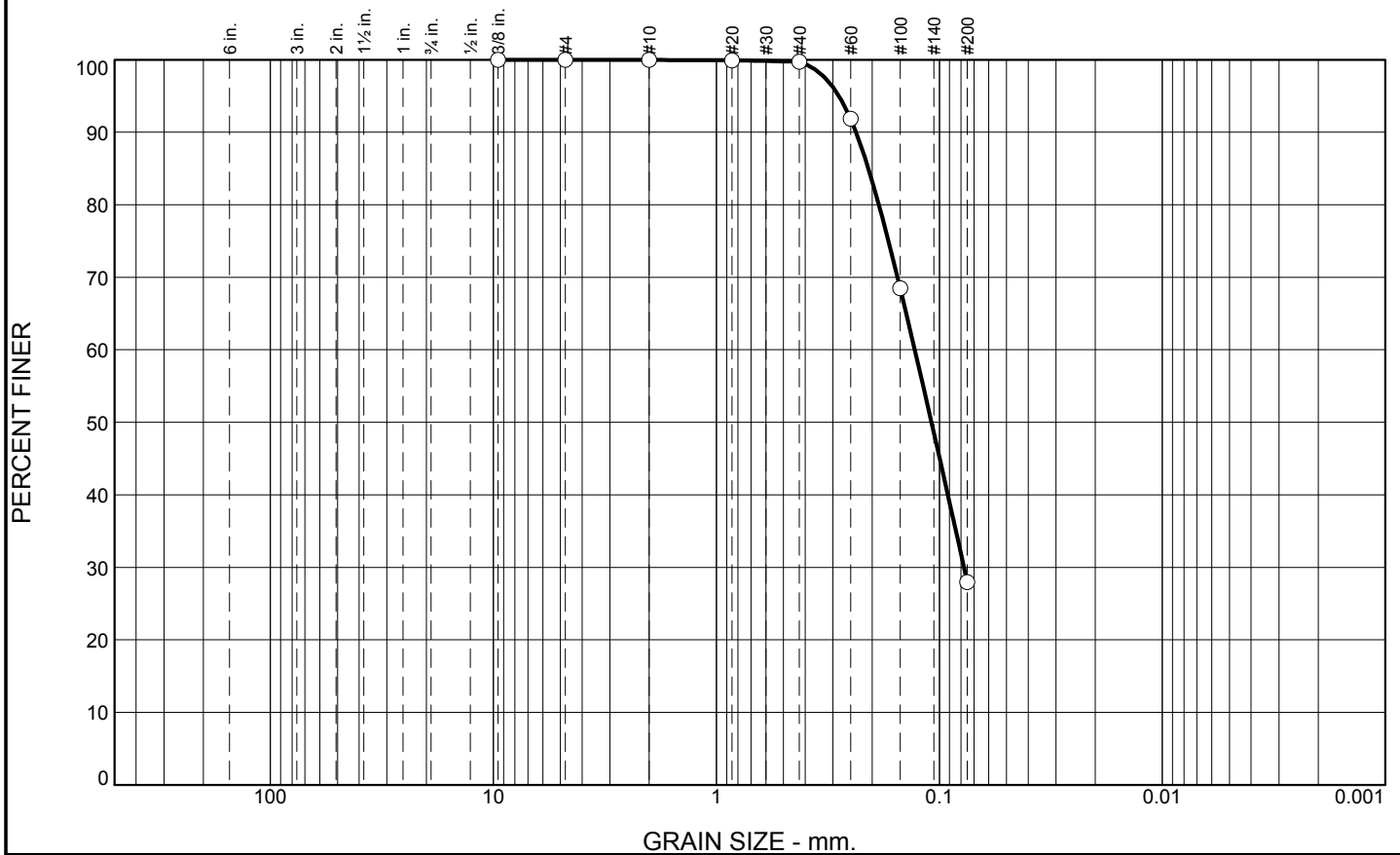
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.3	71.8	27.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	99.7		
#60	91.8		
#100	68.5		
#200	27.9		

* (no specification provided)

<u>Material Description</u>		
SILTY SAND, (SM), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.2364	D ₈₅ = 0.2082	D ₆₀ = 0.1289
D ₅₀ = 0.1085	D ₃₀ = 0.0776	D ₁₅ =
D ₁₀ =	C _u =	C _c =
<u>Classification</u>		
USCS= SM	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-GC-23-10B
Sample Number: TE Lab ID: 4538.34

Depth: 4.1 - 7.0 (ft.)

Date: 6/19/10

Thompson Engineering
Mobile, Alabama

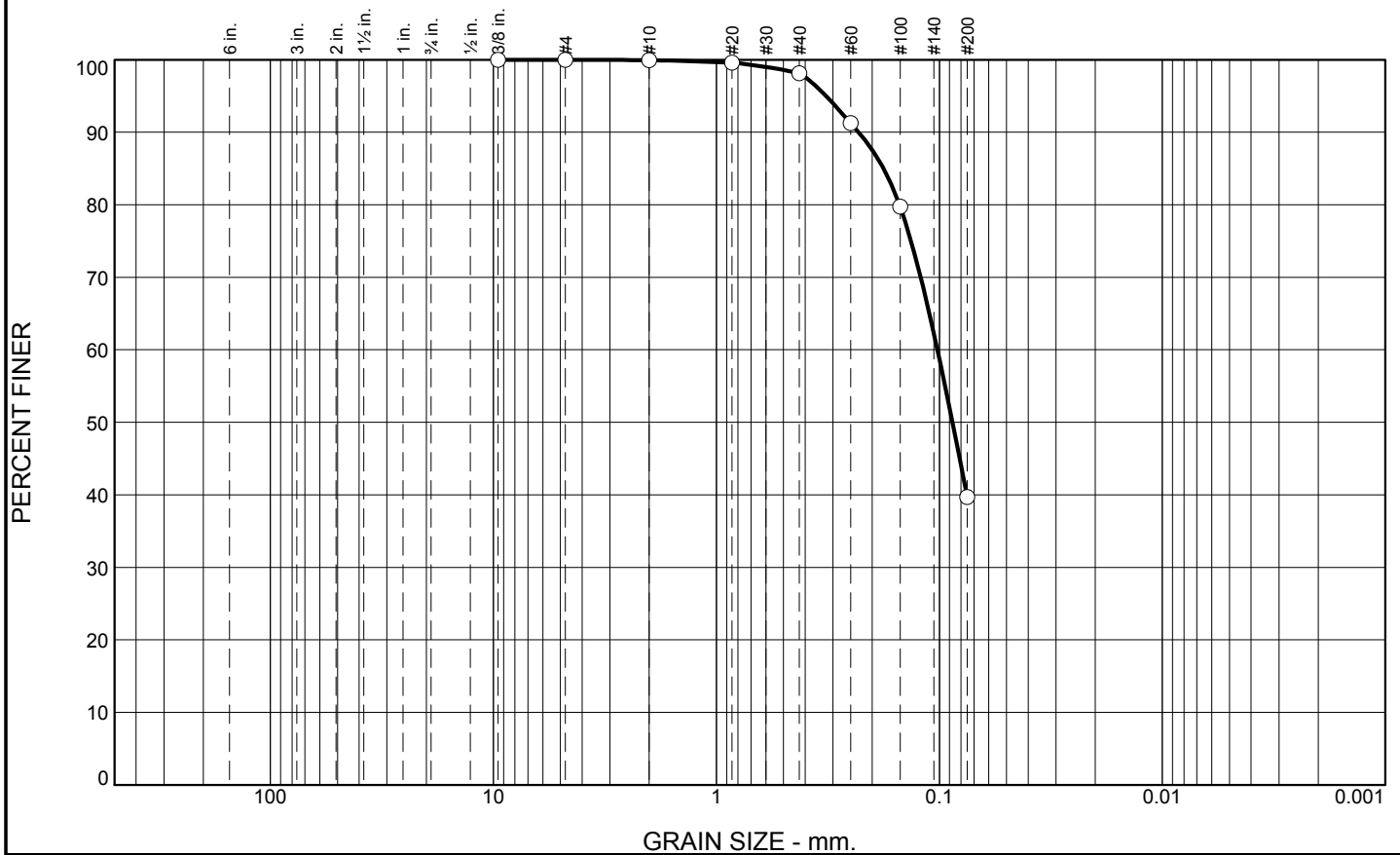
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	1.8	58.4	39.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.6		
#40	98.1		
#60	91.2		
#100	79.8		
#200	39.7		

* (no specification provided)

Material Description
SILTY SAND, (SM), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.2306 D₈₅= 0.1779 D₆₀= 0.1020
 D₅₀= 0.0874 D₃₀= D₁₅=
 D₁₀= C_u= C_c=

Classification
 USCS= SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-GC-23-10C
Sample Number: TE Lab ID: 4538.35

Depth: 9.0 - 11.0 (ft.)

Date: 6/19/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

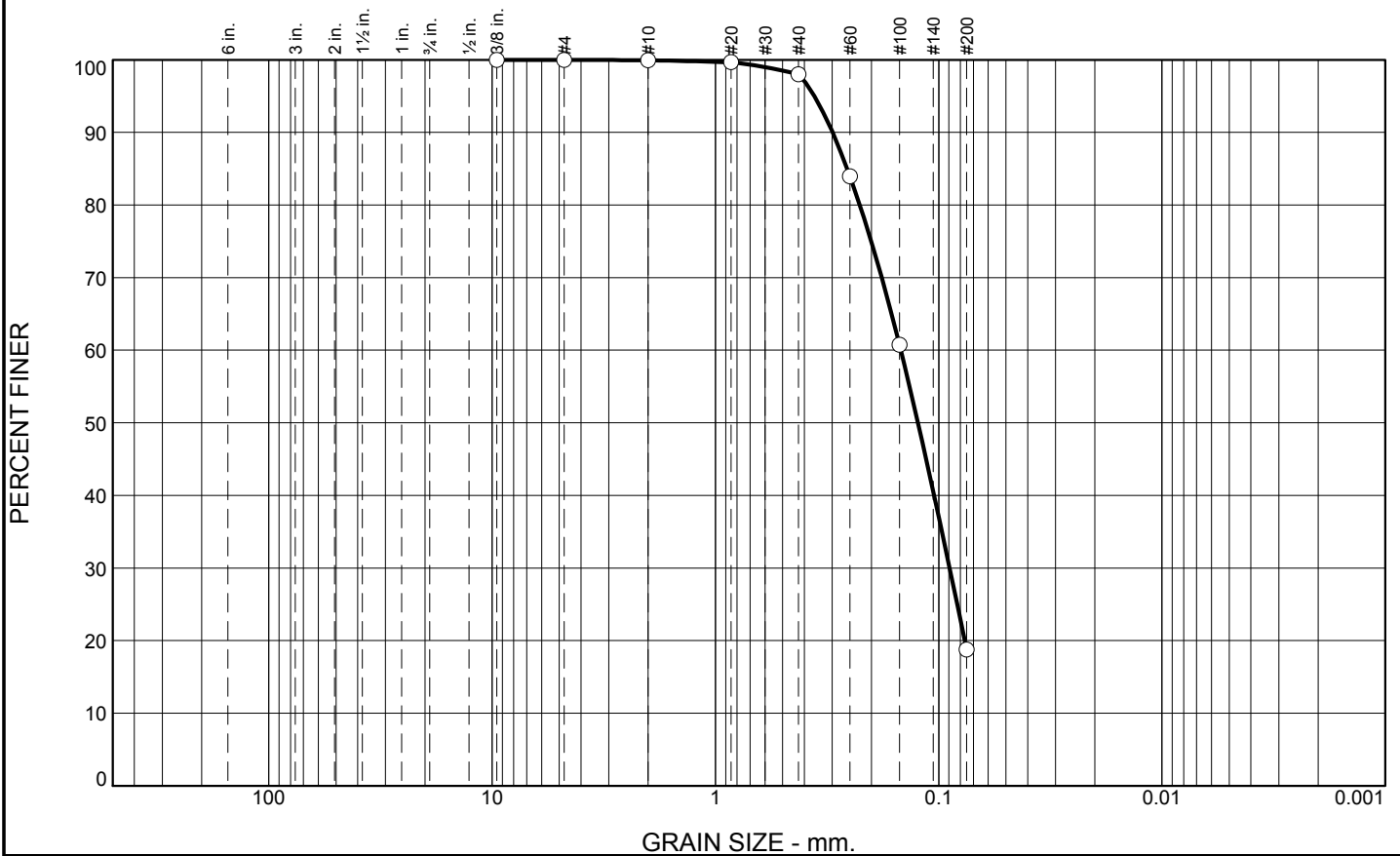
Tested By: R.Martin

Checked By: R.Byrd

Boring Designation BI-GC-24-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Gulfport Channel				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-GC-24-10		LOCATION COORDINATES E = 932,306 N = 264,954		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 1	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				DEG. FROM VERTICAL		BEARING	
6. THICKNESS OF OVERBURDEN N/A				13. TOTAL NUMBER CORE BOXES		14. WATER DEPTH 34 Ft.	
7. DEPTH DRILLED INTO ROCK N/A				15. DATE BORING		STARTED 06-10-10	
8. TOTAL DEPTH OF BORING 13.6 Ft.				16. ELEVATION TOP OF BORING -32.8 Ft.		COMPLETED 06-10-10	
				17. TOTAL RECOVERY FOR BORING 100%		18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist	
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-32.8	0.0		CLAY, lean, dark gray (CL)	NS			
-38.2	5.4		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments, gray (SM)	A	Classification: SM Color: 2.5Y 5.5/2-brownish gray D50: 0.1239 mm % Fines: 18.8		
-42.3	9.5		CLAY, lean, dark gray (CL)	NS			
-46.4	13.6		NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	1.9	79.2	18.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.7		
#40	98.0		
#60	84.0		
#100	60.7		
#200	18.8		

* (no specification provided)

Material Description		
SILTY SAND, (SM), fine grained		
<div> <div> Atterberg Limits </div> <div> PL= </div> <div> LL= </div> <div> PI= </div> </div>		
<div> <div> Coefficients </div> <div> D₉₀= 0.2986 </div> <div> D₅₀= 0.1239 </div> <div> D₁₀= </div> <div> D₈₅= 0.2572 </div> <div> D₃₀= 0.0894 </div> <div> C_u= </div> <div> D₆₀= 0.1479 </div> <div> D₁₅= </div> <div> C_c= </div> </div>		
<div> <div> Classification </div> <div> USCS= SM </div> <div> AASHTO= </div> </div>		
<div> <div> Remarks </div> <div> CADD CODE = CH10D965 </div> </div>		

Location: USACE Sample # BI-GC-24-10A
Sample Number: TE Lab ID: 4538.30

Depth: 5.4 - 9.5 (ft.)

Date: 6/19/10

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

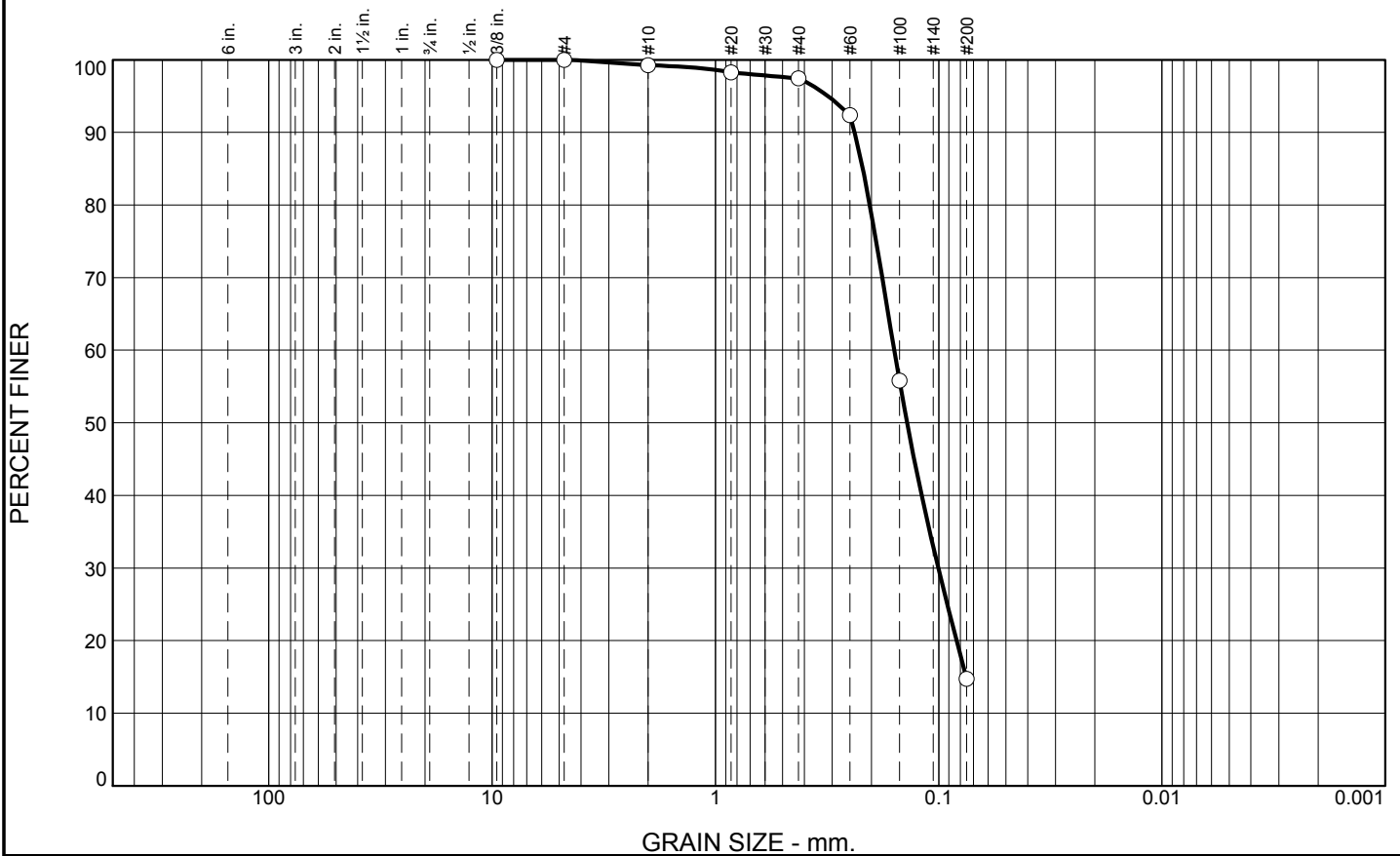
Tested By: R.Martin

Checked By: R.Byrd

Boring Designation BI-GC-25-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Gulfport Channel				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-GC-25-10		LOCATION COORDINATES E = 932,106 N = 264,540		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 0 UNDISTURBED (UD)	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 19 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-10-10		STARTED 06-10-10 COMPLETED 06-10-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -18.0 Ft.			
8. TOTAL DEPTH OF BORING 19.9 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-18.0	0.0						
			CLAY, lean, dark gray (CL)	NS			
-22.4	4.4						
			SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments, gray (SM)	A	Classification: SM Color: 2.5Y 6/2-light brownish gray D50: 0.1386 mm % Fines: 14.7		
-28.0	10.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little silt, trace shell fragments, lt. gray (SP)	B	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.1877 mm % Fines: 3.7		
-34.0	16.0						
			CLAY, lean, dark gray (CL)	NS			
-37.9	19.9						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.7	1.9	82.7	14.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.3		
#20	98.2		
#40	97.4		
#60	92.4		
#100	55.8		
#200	14.7		

* (no specification provided)

Material Description
SILTY SAND, (SM), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.2380 D₈₅= 0.2188 D₆₀= 0.1583
 D₅₀= 0.1386 D₃₀= 0.1004 D₁₅= 0.0754
 D₁₀= C_u= C_c=

Classification
 USCS= SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-GC-25-10A
Sample Number: TE Lab ID: 4538.31

Depth: 4.4 - 10.0 (ft.)

Date: 6/19/10

Thompson Engineering

Mobile, Alabama

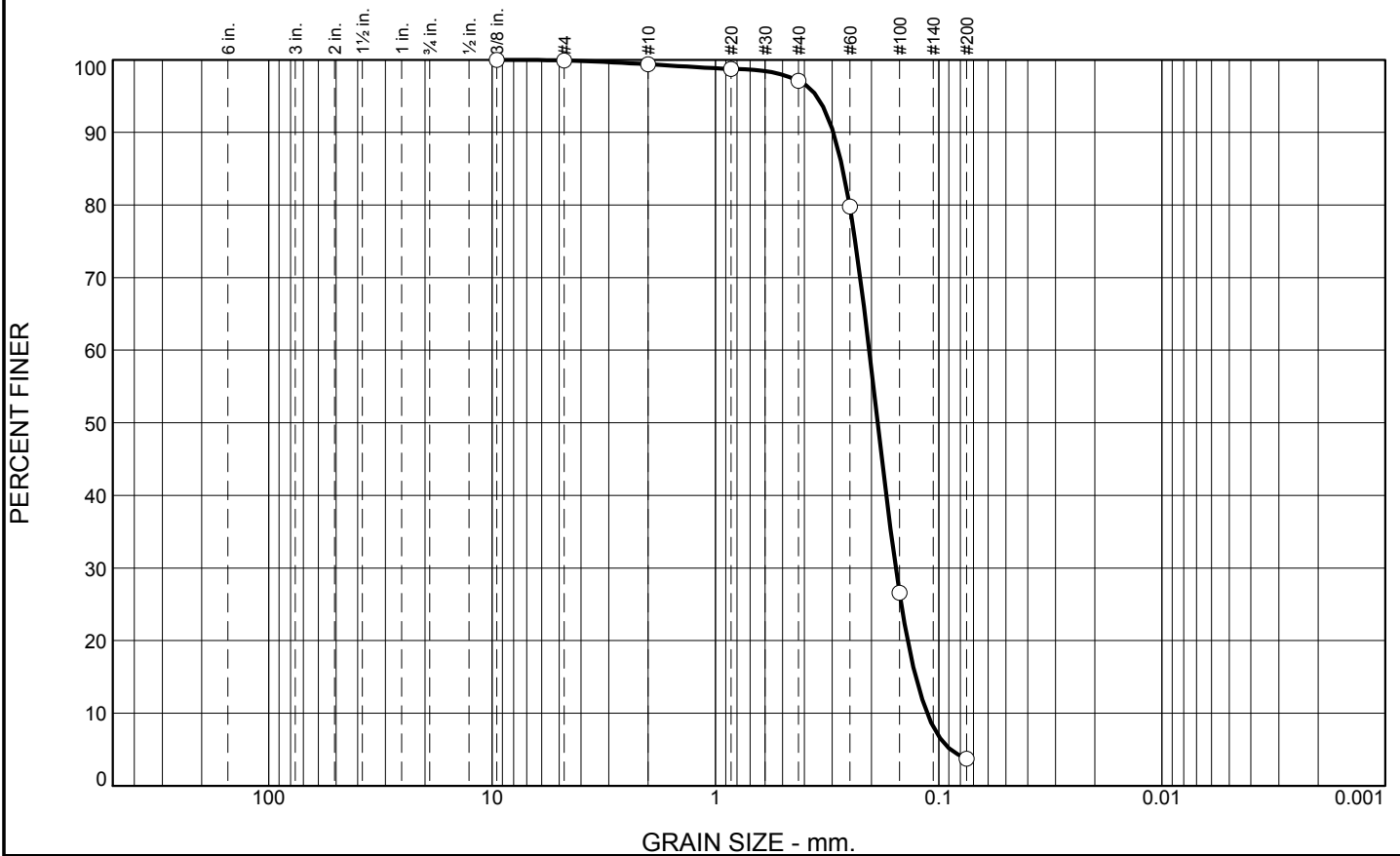
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.5	2.3	93.4	3.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.4		
#20	98.8		
#40	97.1		
#60	79.8		
#100	26.6		
#200	3.7		

* (no specification provided)

Material Description

SAND, (SP), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.2963

D₈₅= 0.2692

D₆₀= 0.2049

D₅₀= 0.1877

D₃₀= 0.1558

D₁₅= 0.1267

D₁₀= 0.1127

C_u= 1.82

C_c= 1.05

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-GC-25-10B
Sample Number: TE Lab ID: 4538.32

Depth: 10.0 - 16.0 (ft.)

Date: 6/19/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Figure

Tested By: R.Martin

Checked By: R.Byrd

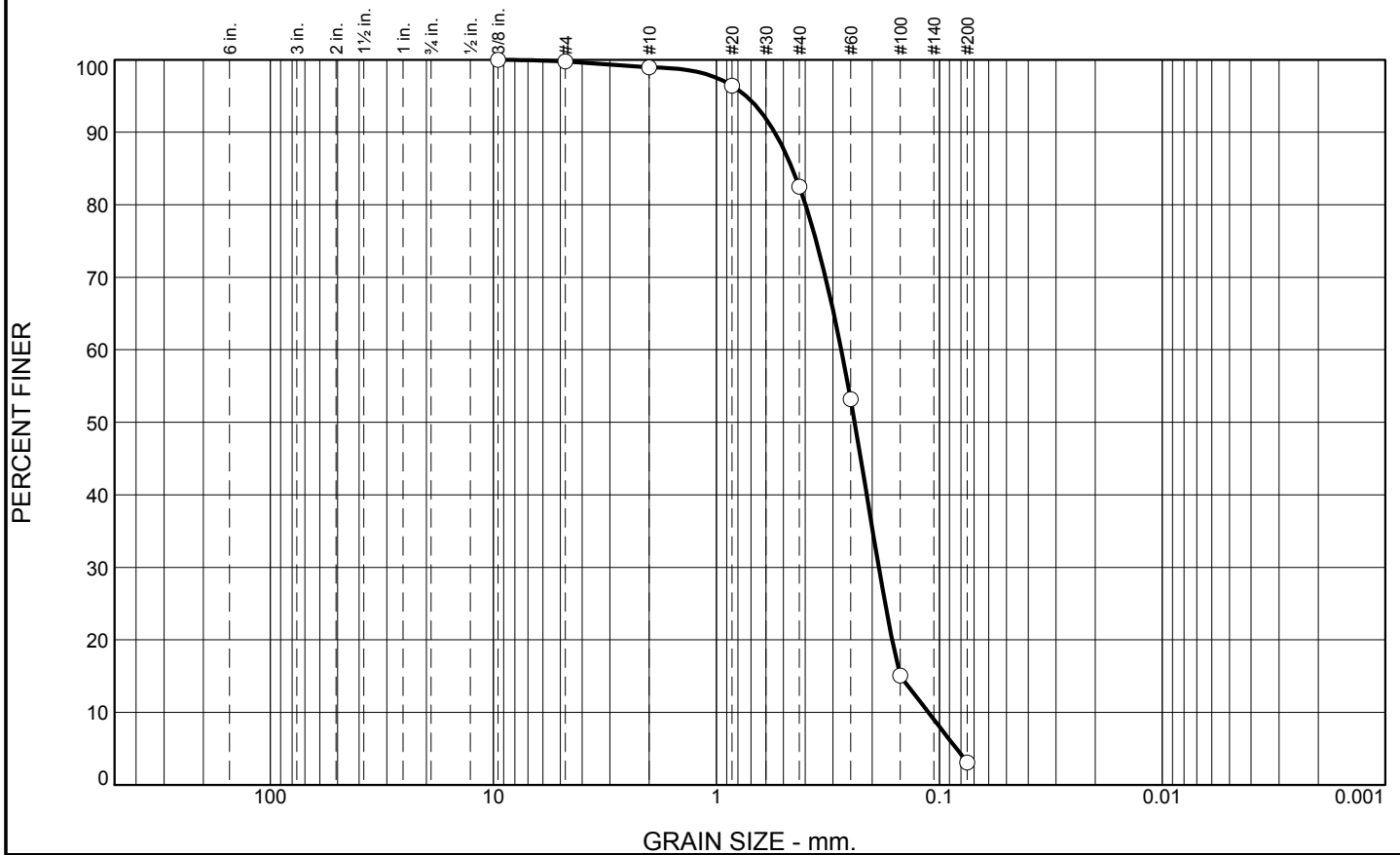
Boring Designation BI-GC-26-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Gulfport Channel				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-GC-26-10		LOCATION COORDINATES E = 932,406 N = 264,289		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES		UNDISTURBED (UD) 0	
6. THICKNESS OF OVERBURDEN N/A		BEARING		14. WATER DEPTH 43 Ft.		15. DATE BORING 06-10-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -41.9 Ft.		COMPLETED 06-10-10	
8. TOTAL DEPTH OF BORING 16.3 Ft.				17. TOTAL RECOVERY FOR BORING 100%		18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist	
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-41.9	0.0		CLAY, lean, dark gray (CL)				
				NS			
-58.2	16.3						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Boring Designation BI-GC-27-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Gulfport Channel				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-GC-27-10		LOCATION COORDINATES E = 932,102 N = 263,976		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 21 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-11-10		STARTED 06-11-10 COMPLETED 06-11-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -18.9 Ft.			
8. TOTAL DEPTH OF BORING 16.9 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-18.9	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, trace shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.2398 mm % Fines: 3.1		
				B	Classification: SP-SM Color: 5Y 7/1-light gray D50: 0.2513 mm % Fines: 5.5		
-30.7	11.8		CLAY, lean, dark gray (CL)	NS			
-35.8	16.9						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.3	0.7	16.5	79.4	3.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.7		
#10	99.0		
#20	96.4		
#40	82.5		
#60	53.2		
#100	15.1		
#200	3.1		

* (no specification provided)

<u>Material Description</u>		
SAND, (SP), medium to fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.5474	D ₈₅ = 0.4567	D ₆₀ = 0.2752
D ₅₀ = 0.2398	D ₃₀ = 0.1869	D ₁₅ = 0.1495
D ₁₀ = 0.1120	C _u = 2.46	C _c = 1.13
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-GC-27-10A
Sample Number: TE Lab ID: 4538.44

Depth: 0.0 - 6.0 (ft.)

Date: 6/19/10

Thompson Engineering
Mobile, Alabama

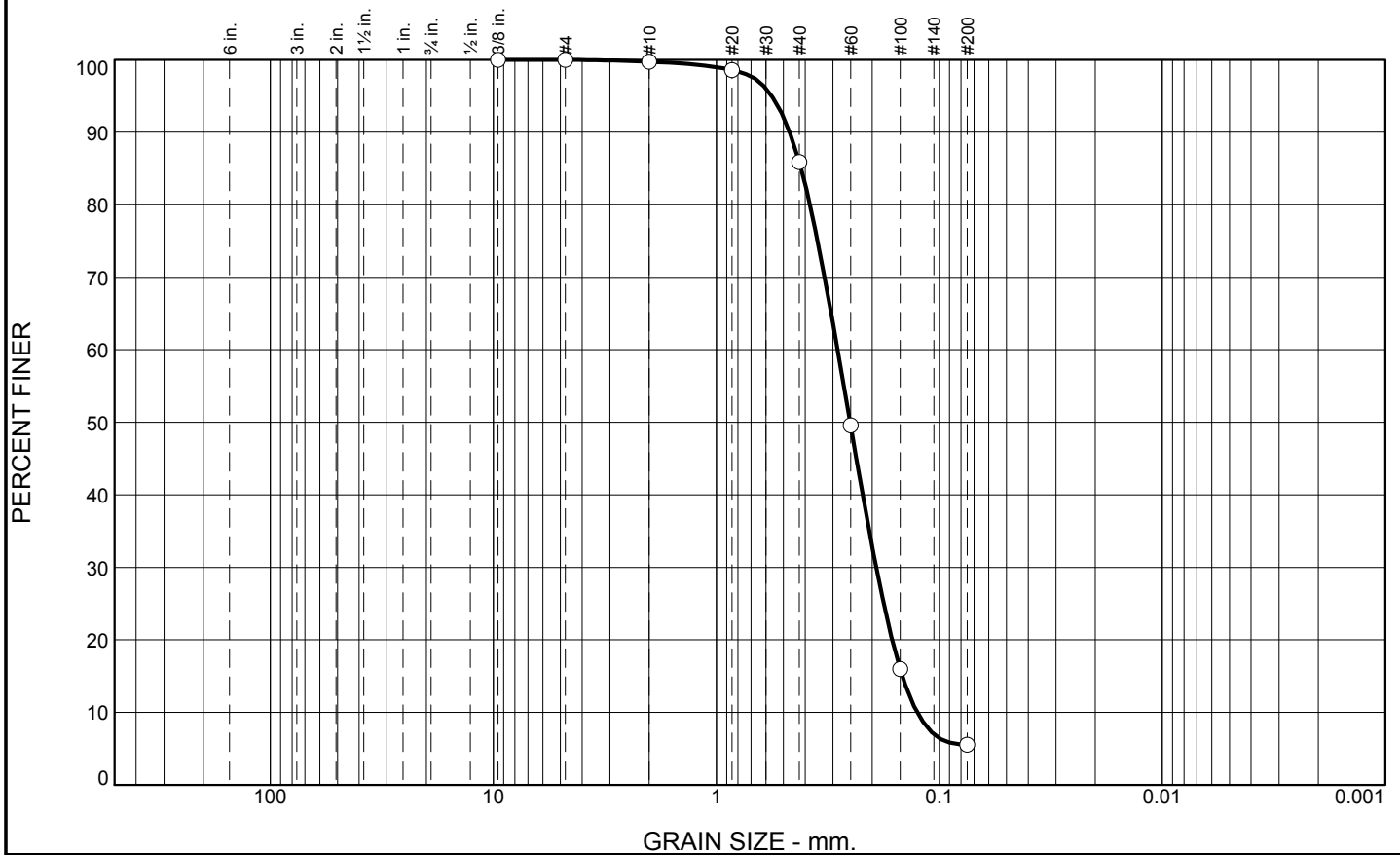
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.3	13.8	80.4	5.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.7		
#20	98.6		
#40	85.9		
#60	49.6		
#100	16.0		
#200	5.5		

* (no specification provided)

<u>Material Description</u>		
SAND, (SP-SM), medium to fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.4691	D ₈₅ = 0.4172	D ₆₀ = 0.2859
D ₅₀ = 0.2513	D ₃₀ = 0.1919	D ₁₅ = 0.1466
D ₁₀ = 0.1257	C _u = 2.27	C _c = 1.02
<u>Classification</u>		
USCS= SP-SM	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-GC-27-10B
Sample Number: TE Lab ID: 4538.45

Depth: 6.0 - 11.8 (ft.)

Date: 6/19/10

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

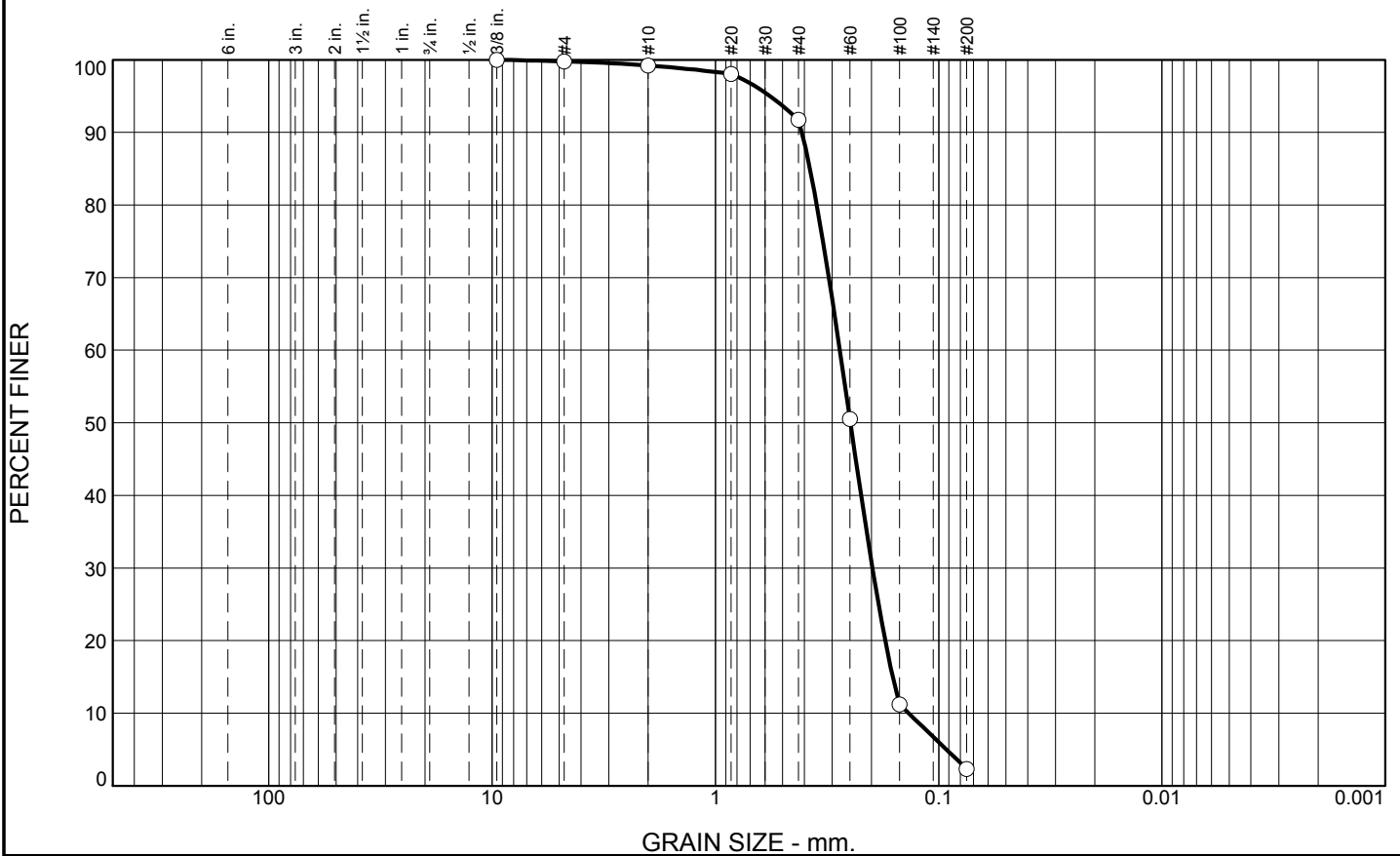
Tested By: R.Martin

Checked By: R.Byrd

Boring Designation BI-GC-28-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Gulfport Channel				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-GC-28-10		LOCATION COORDINATES E = 932,648 N = 263,706		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 4		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		14. WATER DEPTH 20 Ft.	
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-11-10		STARTED 06-11-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -17.8 Ft.		COMPLETED 06-11-10	
8. TOTAL DEPTH OF BORING 19.3 Ft.				17. TOTAL RECOVERY FOR BORING 100%		18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist	
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-17.8	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, trace shell (SP)	A	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.2485 mm % Fines: 2.3		
				B	Classification: SP Color: 5Y 7/1-light gray D50: 0.2168 mm % Fines: 1.5		
				C	Classification: SP-SM Color: 2.5Y 7/1-light gray D50: 0.2365 mm % Fines: 8.4		
				D	Classification: SP-SM Color: 2.5Y 7/1-light gray D50: 0.1994 mm % Fines: 6.4		
-37.1	19.3						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.6	7.5	89.4	2.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.8		
#10	99.2		
#20	98.1		
#40	91.7		
#60	50.5		
#100	11.2		
#200	2.3		

* (no specification provided)

Material Description		
SAND, (SP), fine grained		
<div> <div> Atterberg Limits PL= LL= PI= </div> <div> Coefficients D₉₀= 0.4106 D₈₅= 0.3774 D₆₀= 0.2772 D₅₀= 0.2485 D₃₀= 0.1981 D₁₅= 0.1607 D₁₀= 0.1364 C_u= 2.03 C_c= 1.04 </div> <div> Classification USCS= SP AASHTO= </div> <div> Remarks CADD CODE = CH10D965 </div> </div>		

Location: USACE Sample # BI-GC-28-10A
Sample Number: TE Lab ID: 4538.40

Depth: 0.0 - 5.0 (ft.)

Date: 6/19/10

Thompson Engineering
Mobile, Alabama

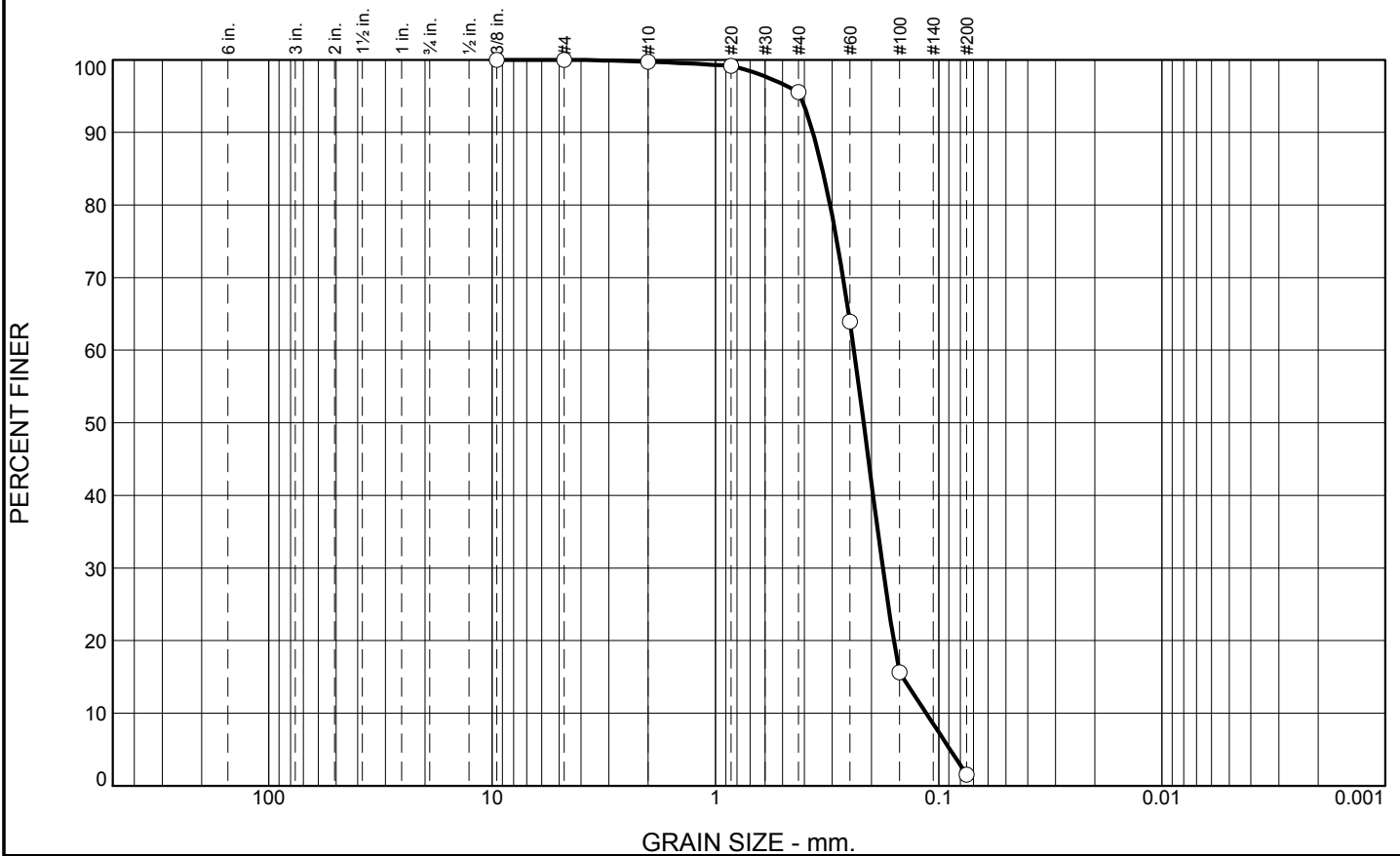
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.3	4.1	94.1	1.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.7		
#20	99.2		
#40	95.6		
#60	63.9		
#100	15.6		
#200	1.5		

* (no specification provided)

Material Description

SAND, (SP), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.3661

D₈₅= 0.3322

D₆₀= 0.2397

D₅₀= 0.2168

D₃₀= 0.1780

D₁₅= 0.1454

D₁₀= 0.1138

C_u= 2.11

C_c= 1.16

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-GC-28-10B
Sample Number: TE Lab ID: 4538.41

Depth: 5.0 - 10.0 (ft.)

Date: 6/19/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

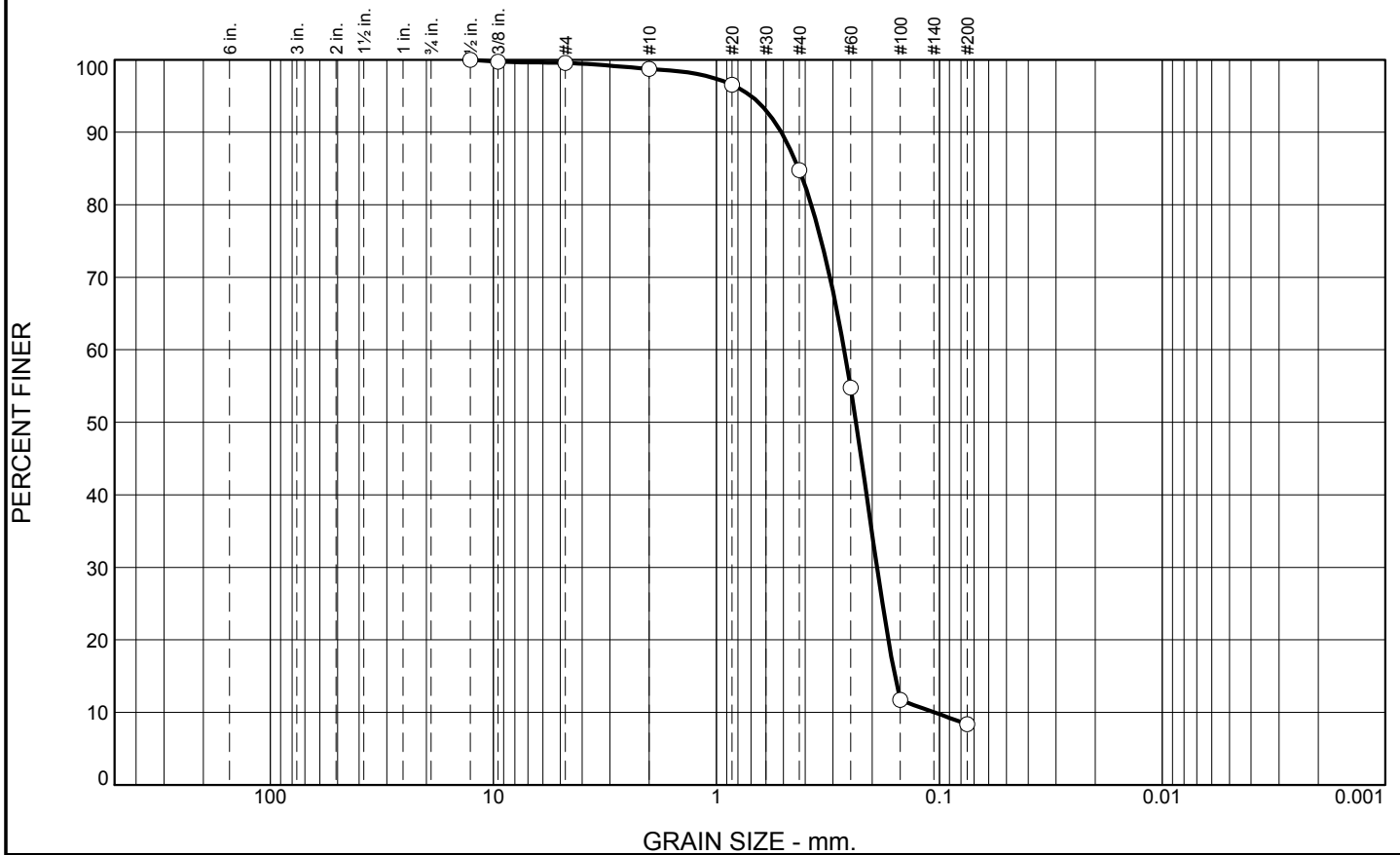
Project No: 10-2123-0009

Figure

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.4	0.9	13.9	76.4	8.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.500	100.0		
.375	99.7		
#4	99.6		
#10	98.7		
#20	96.5		
#40	84.8		
#60	54.8		
#100	11.7		
#200	8.4		

* (no specification provided)

Material Description
SAND, (SP-SM), medium to fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.5114 D₈₅= 0.4280 D₆₀= 0.2670
 D₅₀= 0.2365 D₃₀= 0.1904 D₁₅= 0.1582
 D₁₀= 0.1053 C_u= 2.53 C_c= 1.29

Classification
 USCS= SP-SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-GC-28-10C
Sample Number: TE Lab ID: 4538.42

Depth: 10.0 - 15.0 (ft.)

Date: 6/19/10

Thompson Engineering

Mobile, Alabama

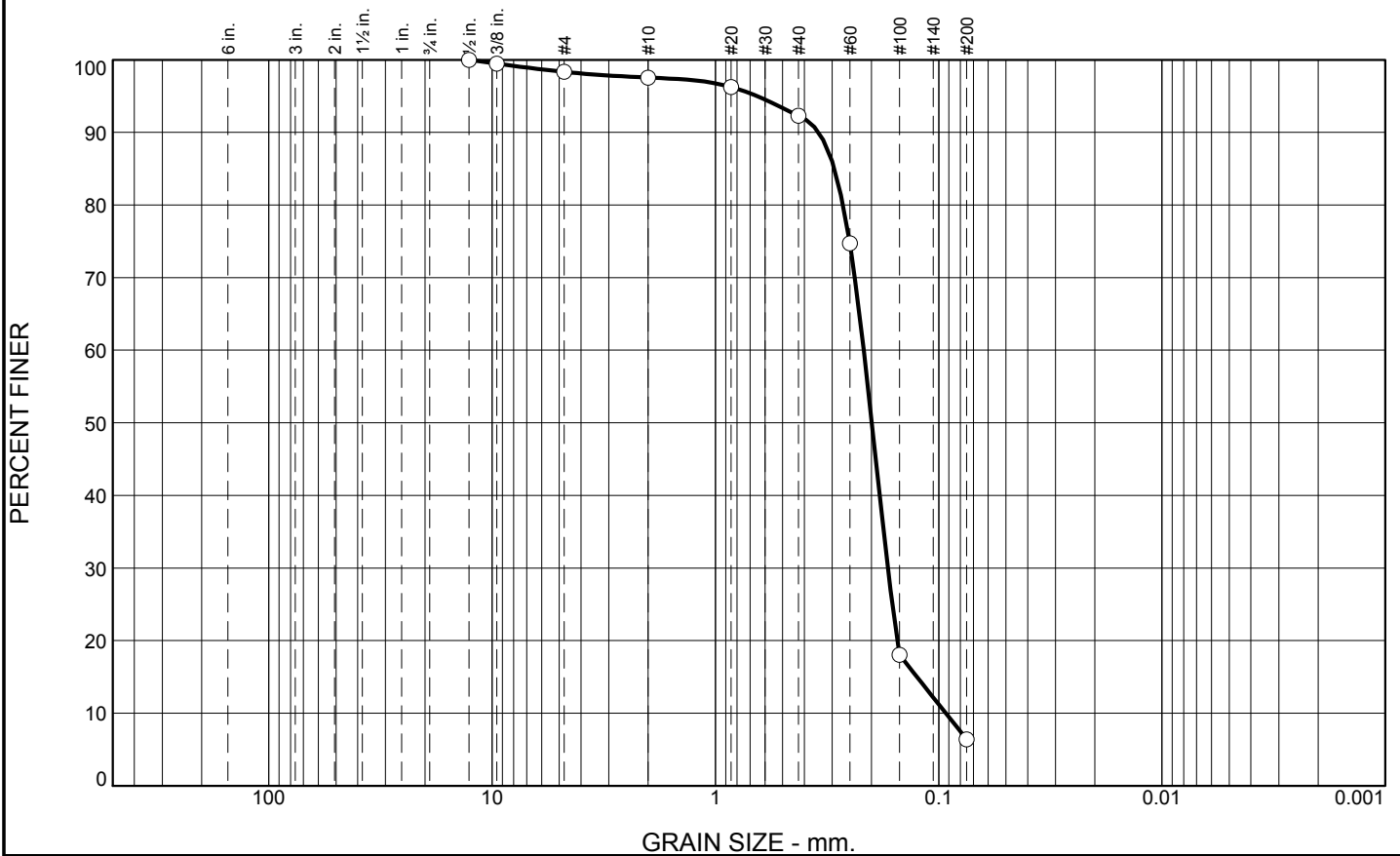
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.7	0.8	5.2	85.9	6.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.500	100.0		
.375	99.5		
#4	98.3		
#10	97.5		
#20	96.2		
#40	92.3		
#60	74.7		
#100	18.0		
#200	6.4		

* (no specification provided)

<u>Material Description</u>		
SAND, (SP-SM), fine grained, with trace shell		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.3446	D ₈₅ = 0.2933	D ₆₀ = 0.2167
D ₅₀ = 0.1994	D ₃₀ = 0.1690	D ₁₅ = 0.1252
D ₁₀ = 0.0929	C _u = 2.33	C _c = 1.42
<u>Classification</u>		
USCS= SP-SM	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-GC-28-10D
Sample Number: TE Lab ID: 4538.43

Depth: 15.0 - 19.3 (ft.)

Date: 6/19/10

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

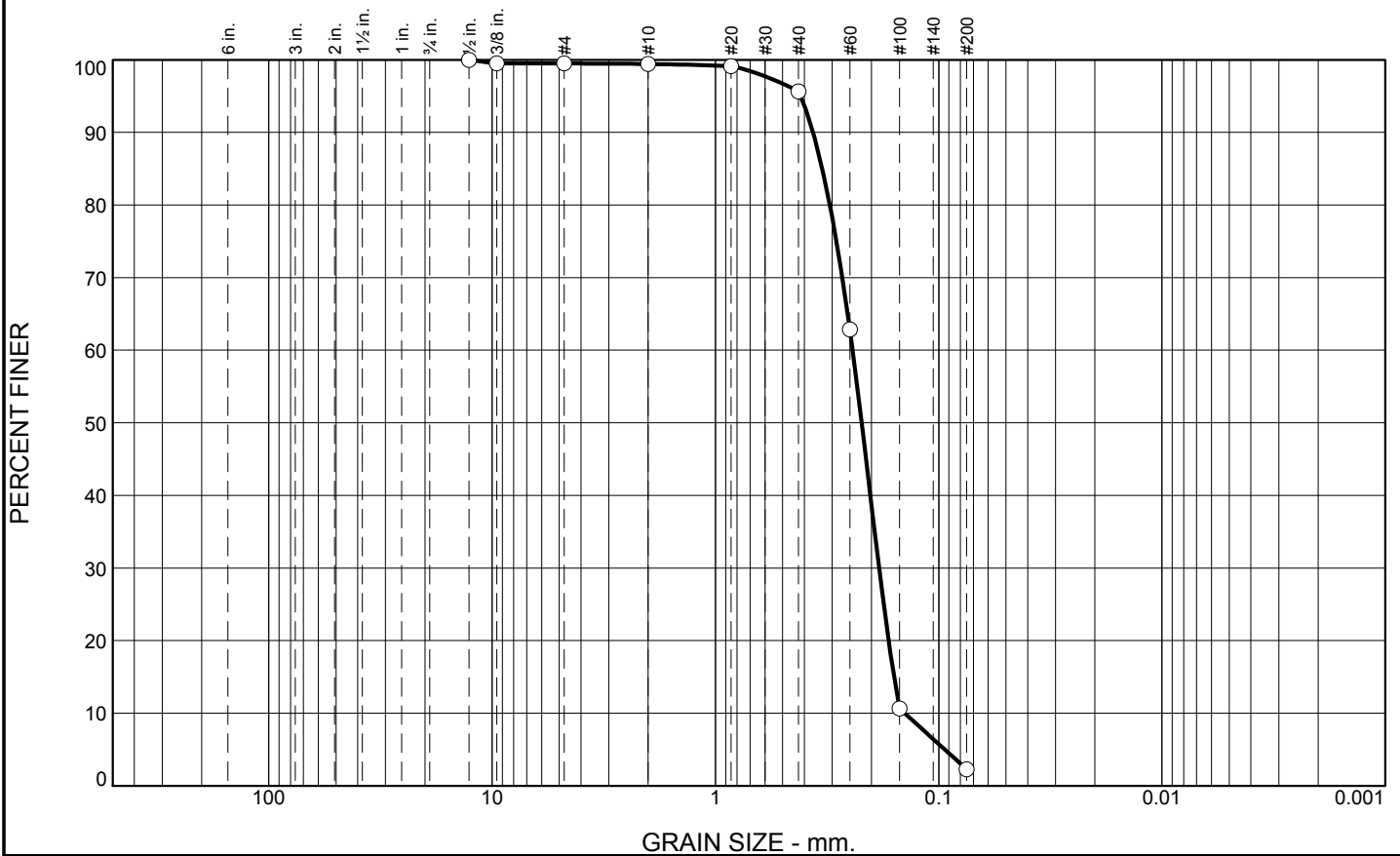
Tested By: R.Martin

Checked By: R.Byrd

Boring Designation BI-GC-29-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Gulfport Channel				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-GC-29-10		LOCATION COORDINATES E = 932,205 N = 262,943		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		14. WATER DEPTH 21 Ft.	
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-11-10		COMPLETED 06-11-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -18.7 Ft.		17. TOTAL RECOVERY FOR BORING 100%	
8. TOTAL DEPTH OF BORING 19.7 Ft.				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-18.7	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, trace shell fragments, lt. gray (SP)	A	Classification: SP Color: 5Y 7/1-light gray D50: 0.2213 mm % Fines: 2.3		
				B	Classification: SP Color: 5Y 7/1-light gray D50: 0.21 mm % Fines: 1.7		
				C	Classification: SP-SM Color: 2.5Y 7/1-light gray D50: 0.2088 mm % Fines: 6.9		
-33.7	15.0						
			CLAY, lean, dark gray (CL)	NS			
-38.4	19.7						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.5	0.1	3.8	93.3	2.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.500	100.0		
.375	99.5		
#4	99.5		
#10	99.4		
#20	99.1		
#40	95.6		
#60	62.9		
#100	10.6		
#200	2.3		

* (no specification provided)

Material Description		
SAND, (SP), fine grained		
<div> <div> Atterberg Limits </div> <div> PL= </div> <div> LL= </div> <div> PI= </div> </div>		
<div> <div> Coefficients </div> <div> D₉₀= 0.3655 </div> <div> D₅₀= 0.2213 </div> <div> D₁₀= 0.1422 </div> <div> D₈₅= 0.3322 </div> <div> D₃₀= 0.1849 </div> <div> C_u= 1.71 </div> <div> D₆₀= 0.2430 </div> <div> D₁₅= 0.1586 </div> <div> C_c= 0.99 </div> </div>		
<div> <div> Classification </div> <div> USCS= SP </div> <div> AASHTO= </div> </div>		
<div> <div> Remarks </div> <div> CADD CODE = CH10D965 </div> </div>		

Location: USACE Sample # BI-GC-29-10A
Sample Number: TE Lab ID: 4538.37

Depth: 0.0 - 5.0 (ft.)

Date: 6/19/10

Thompson Engineering
Mobile, Alabama

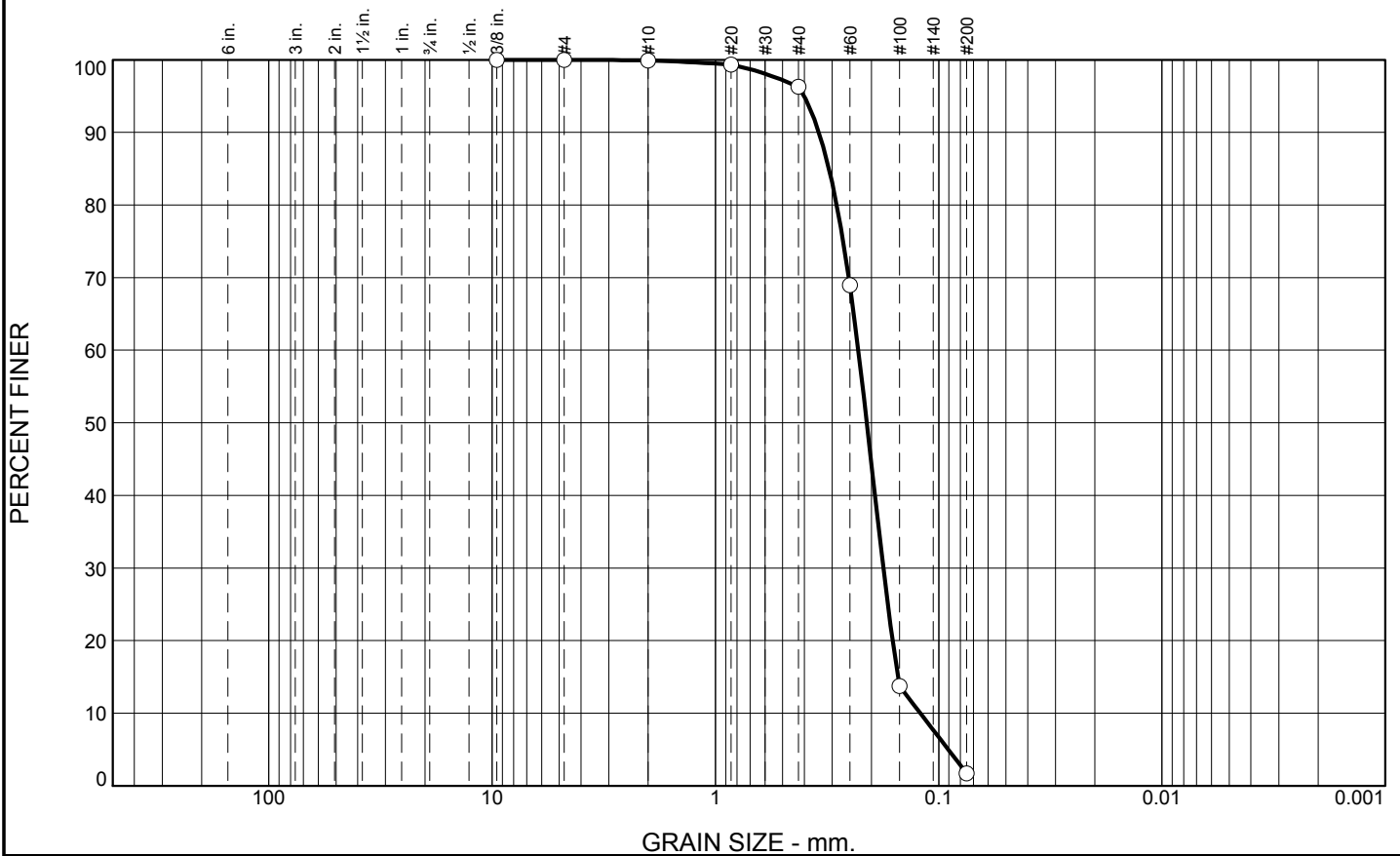
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	3.6	94.6	1.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.3		
#40	96.3		
#60	69.0		
#100	13.8		
#200	1.7		

* (no specification provided)

Material Description		
SAND, (SP), fine grained		
<div> <div> Atterberg Limits LL= PI= </div> <div> Coefficients D₉₀= 0.3438 D₅₀= 0.2100 D₁₀= 0.1208 C_u= 1.90 </div> <div> D₈₅= 0.3100 D₃₀= 0.1770 C_c= 1.13 </div> </div>		
Classification USCS= SP AASHTO=		
Remarks CADD CODE = CH10D965		

Location: USACE Sample # BI-GC-29-10B
Sample Number: TE Lab ID: 4538.38

Depth: 5.0 - 10.0 (ft.)

Date: 6/19/10

Thompson Engineering
Mobile, Alabama

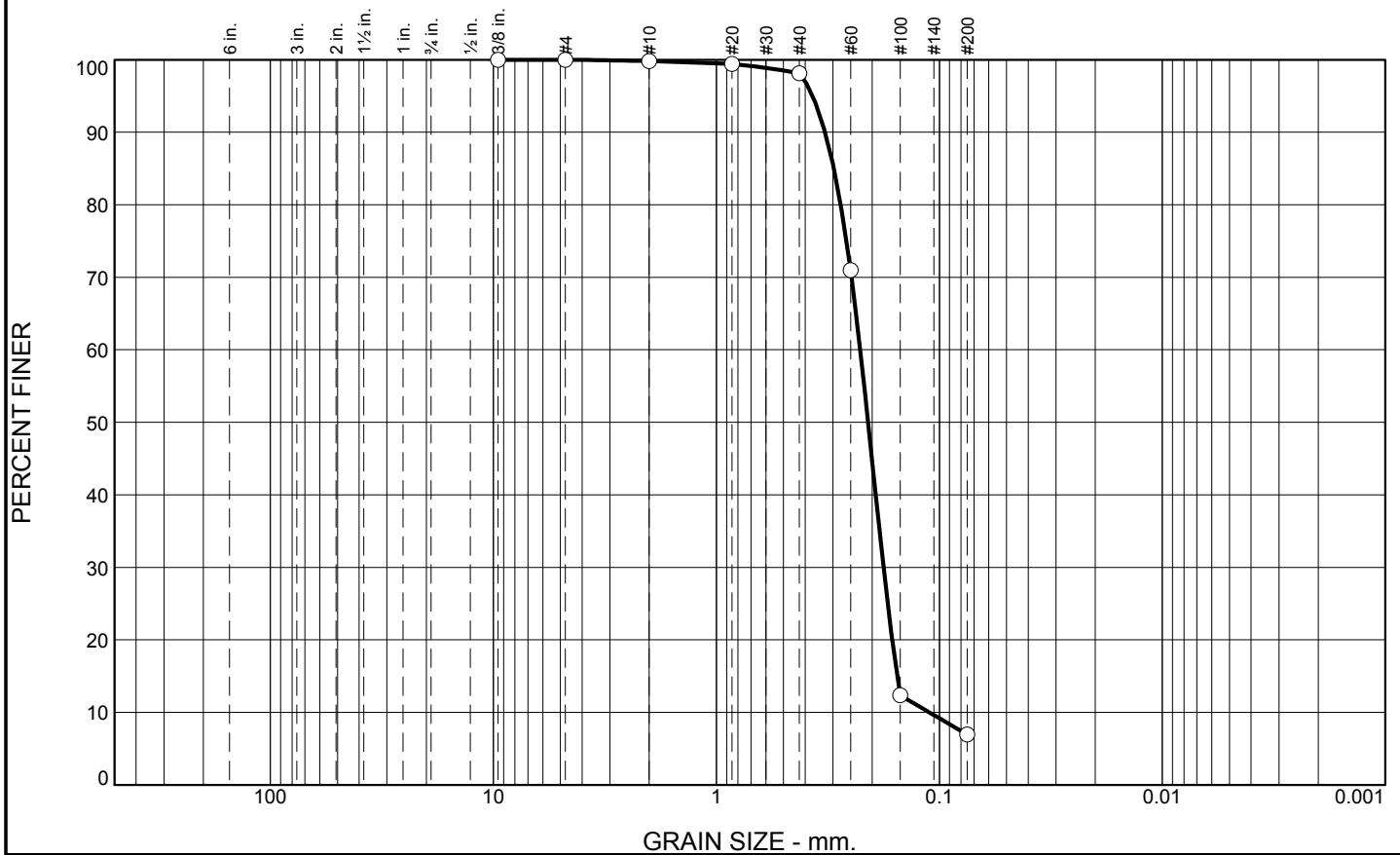
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	1.7	91.2	6.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.8		
#20	99.4		
#40	98.1		
#60	71.0		
#100	12.4		
#200	6.9		

* (no specification provided)

Material Description		
SAND, (SP-SM), fine grained		
<div> <div> Atterberg Limits PL= LL= PI= </div> <div> Coefficients D₉₀= 0.3252 D₈₅= 0.2972 D₆₀= 0.2264 D₅₀= 0.2088 D₃₀= 0.1780 D₁₅= 0.1547 D₁₀= 0.1109 C_u= 2.04 C_c= 1.26 </div> <div> Classification USCS= SP-SM AASHTO= </div> <div> Remarks CADD CODE = CH10D965 </div> </div>		

Location: USACE Sample # BI-GC-29-10C
 Sample Number: TE Lab ID: 4538.39

Depth: 10.0 - 15.0 (ft.)

Date: 6/19/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: R.Martin

Checked By: R.Byrd

APPENDIX E

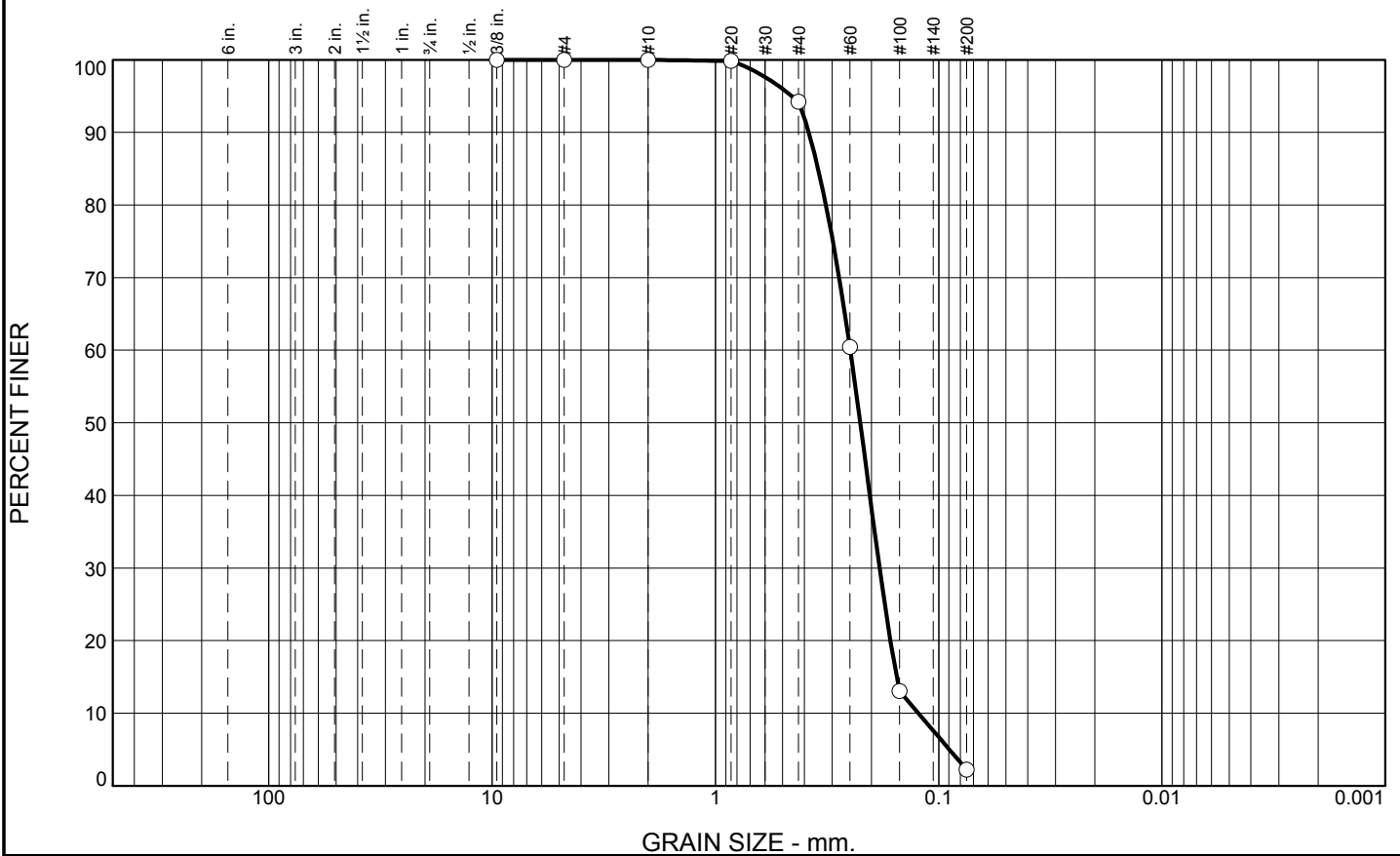
CAT ISLAND BORING LOGS AND LAB RESULTS

Boring Designation BI-CI-01-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-01-10		LOCATION COORDINATES E = 908,808 N = 262,822		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 9.5 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 05-19-10		STARTED 05-19-10 COMPLETED 05-19-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -8.6 Ft.			
8. TOTAL DEPTH OF BORING 15.1 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-8.6	0.0				
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, lt. brown (SP)	A	Classification: SP Color: 2.5Y 6/2-light brownish gray D50: 0.2246 mm % Fines: 2.2
				B	Classification: SP Color: 2.5Y 6/2-light brownish gray D50: 0.2306 mm % Fines: 3.6
-19.6	11.0		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace clay, trace shell fragments, lt. gray (SP)	C	Classification: SP-SM Color: 2.5Y 6/1-gray D50: 0.2049 mm % Fines: 5.1
-22.6	14.0				
-23.7	15.1		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little clay, gray (SP)		
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.		

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	5.8	92.0	2.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.8		
#40	94.2		
#60	60.4		
#100	13.1		
#200	2.2		

* (no specification provided)

Material Description		
SAND, (SP), fine grained		
<div> <div> Atterberg Limits </div> <div> PL= </div> <div> LL= </div> <div> PI= </div> </div>		
<div> <div> Coefficients </div> <div> D₉₀= 0.3821 </div> <div> D₅₀= 0.2246 </div> <div> D₁₀= 0.1233 </div> <div> D₈₅= 0.3468 </div> <div> D₃₀= 0.1840 </div> <div> C_u= 2.02 </div> <div> D₆₀= 0.2488 </div> <div> D₁₅= 0.1543 </div> <div> C_c= 1.10 </div> </div>		
<div> <div> Classification </div> <div> USCS= SP </div> <div> AASHTO= </div> </div>		
<div> <div> Remarks </div> <div> CADD CODE = CH10D965 </div> </div>		

Location: USACE Sample # BI-CI-1-10A
Sample Number: TE Lab ID: 4488.56

Depth: 0.0 - 5.0 (ft.)

Date: 5/27/10

Thompson Engineering
Mobile, Alabama

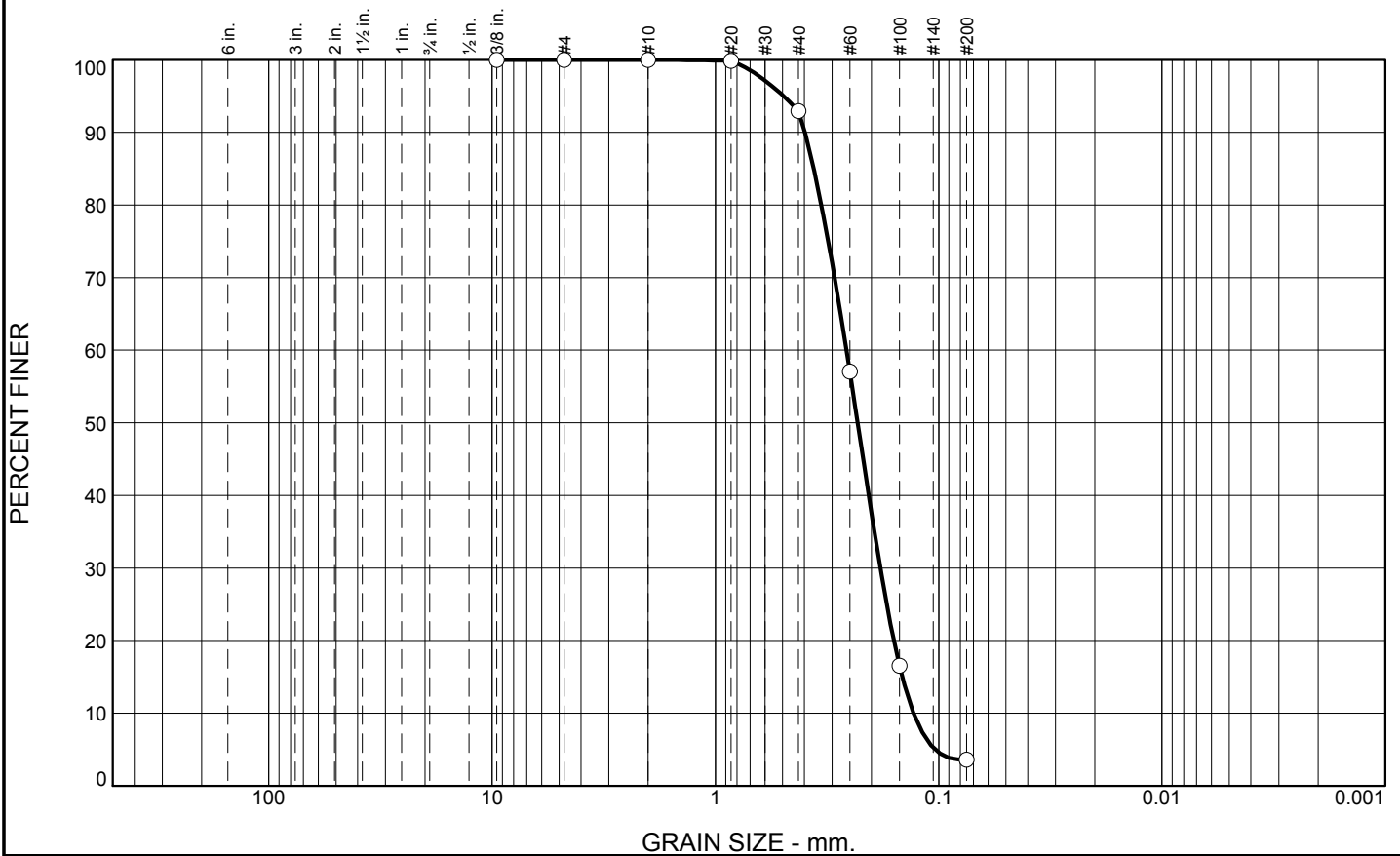
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	7.0	89.4	3.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	93.0		
#60	57.1		
#100	16.5		
#200	3.6		

* (no specification provided)

Material Description

SAND, (SP), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.3977

D₈₅= 0.3627

D₆₀= 0.2587

D₅₀= 0.2306

D₃₀= 0.1825

D₁₅= 0.1457

D₁₀= 0.1295

C_u= 2.00

C_c= 0.99

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-CI-1-10B
Sample Number: TE Lab ID: 4488.57

Depth: 5.0 - 10.0 (ft.)

Date: 5/27/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

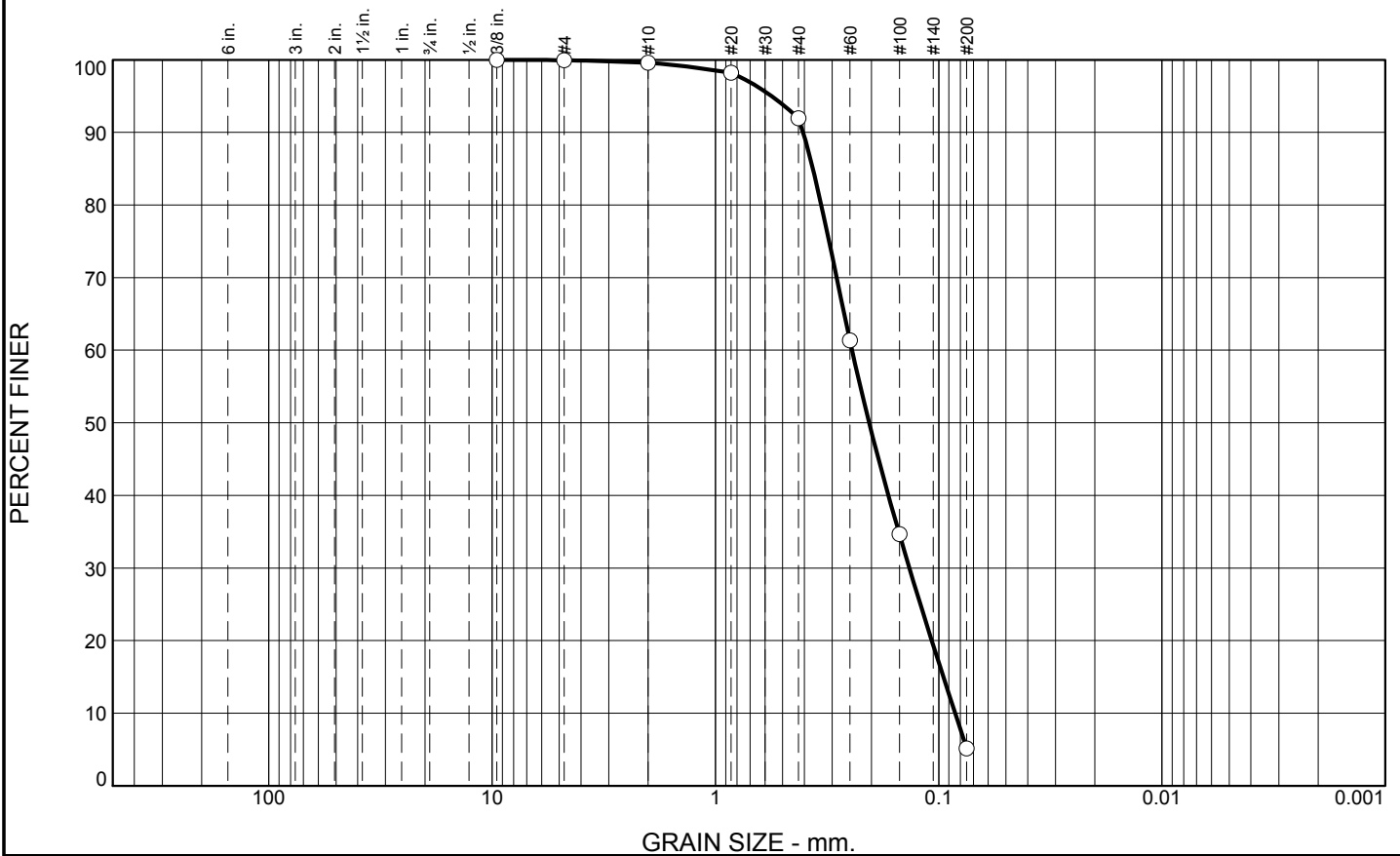
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.3	7.6	86.9	5.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.6		
#20	98.2		
#40	92.0		
#60	61.4		
#100	34.7		
#200	5.1		

* (no specification provided)

<u>Material Description</u>		
SAND, (SP-SM), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.4052	D ₈₅ = 0.3662	D ₆₀ = 0.2444
D ₅₀ = 0.2049	D ₃₀ = 0.1353	D ₁₅ = 0.0953
D ₁₀ = 0.0845	C _u = 2.89	C _c = 0.89
<u>Classification</u>		
USCS= SP-SM	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-CI-1-10C
Sample Number: TE Lab ID: 4488.58

Depth: 10.0 - 15.1 (ft.)

Date: 5/27/10

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

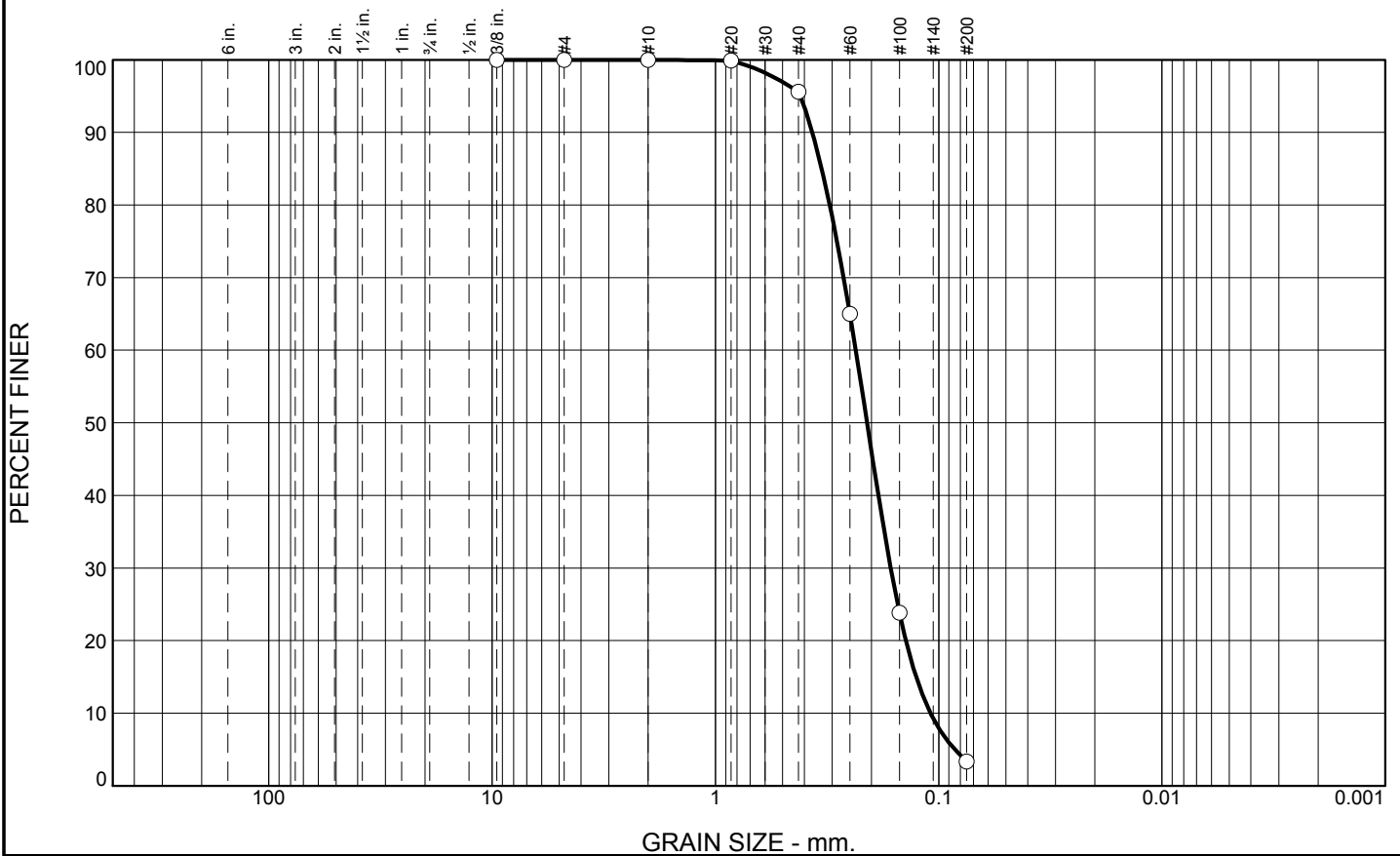
Checked By: R.Byrd

Boring Designation BI-CI-02-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-02-10		LOCATION COORDINATES E = 909,287 N = 263,614		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 10 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 05-19-10		STARTED 05-19-10 COMPLETED 05-19-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -8.8 Ft.			
8. TOTAL DEPTH OF BORING 11.1 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-8.8	0.0				
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, lt. brown (SP)	A	Classification: SP Color: 2.5Y 6/2-light brownish gray D50: 0.2094 mm % Fines: 3.3
-16.8	8.0				
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace clay, trace shell fragments, lt. gray (SP)	B	Classification: SP-SM Color: 2.5Y 7/1-light gray D50: 0.1761 mm % Fines: 5.7
-19.2	10.4				
-19.9	11.1		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little clay, trace shell fragments, gray (SP)		
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.		

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	4.4	92.3	3.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	95.6		
#60	65.0		
#100	23.8		
#200	3.3		

* (no specification provided)

Material Description

SAND, (SP), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.3682

D₈₅= 0.3341

D₆₀= 0.2353

D₅₀= 0.2094

D₃₀= 0.1642

D₁₅= 0.1262

D₁₀= 0.1089

C_u= 2.16

C_c= 1.05

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-CI-2-10A
Sample Number: TE Lab ID: 4488.62

Depth: 0.0 - 5.0 (ft.)

Date: 5/27/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

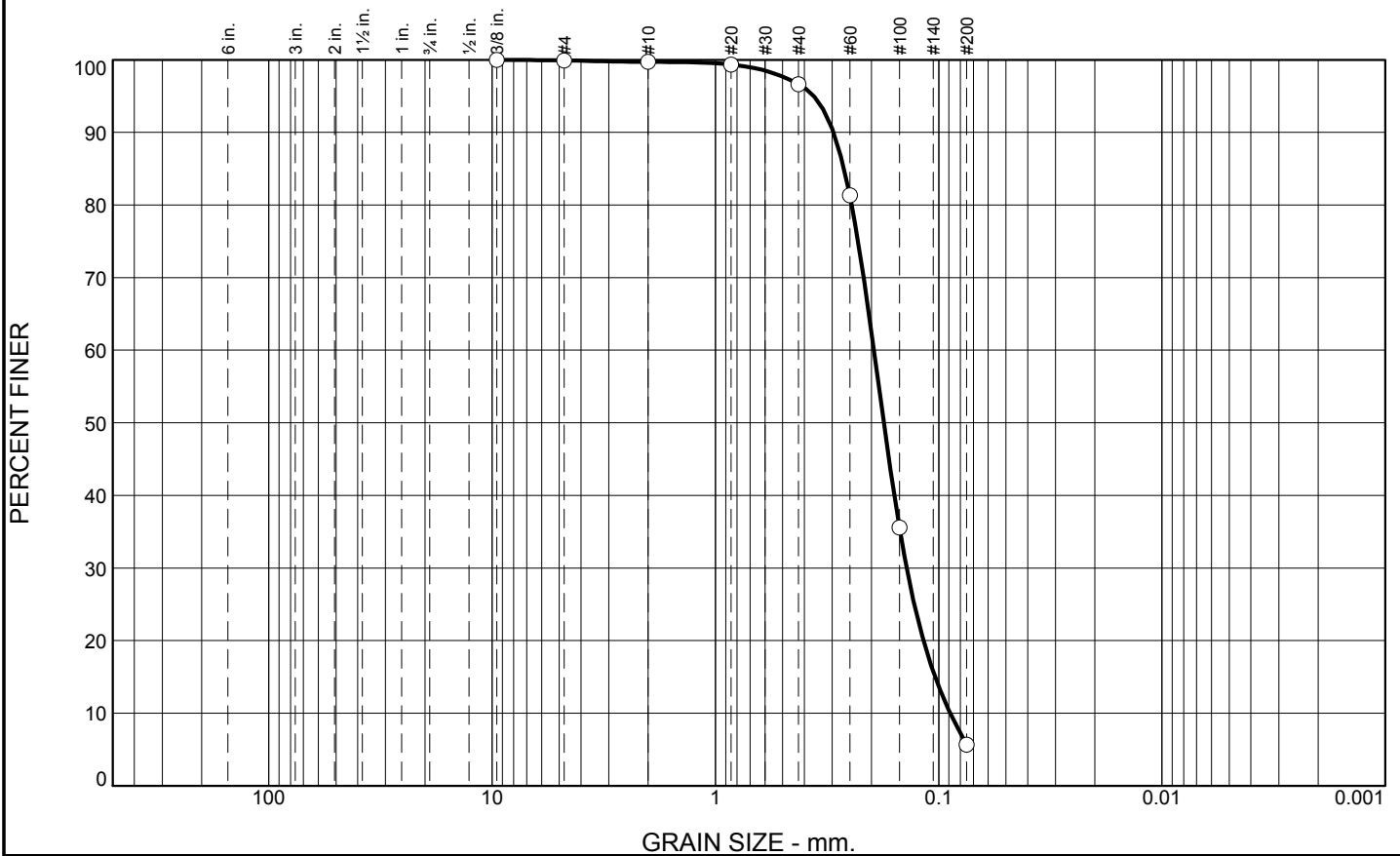
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.2	3.1	90.9	5.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.7		
#20	99.3		
#40	96.6		
#60	81.3		
#100	35.6		
#200	5.7		

* (no specification provided)

<u>Material Description</u>		
SAND, (SP-SM), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.2959	D ₈₅ = 0.2653	D ₆₀ = 0.1951
D ₅₀ = 0.1761	D ₃₀ = 0.1392	D ₁₅ = 0.1039
D ₁₀ = 0.0888	C _u = 2.20	C _c = 1.12
<u>Classification</u>		
USCS= SP-SM	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-CI-2-10B
Sample Number: TE Lab ID: 4488.63

Depth: 5.0 - 11.1 (ft.)

Date: 5/27/10

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

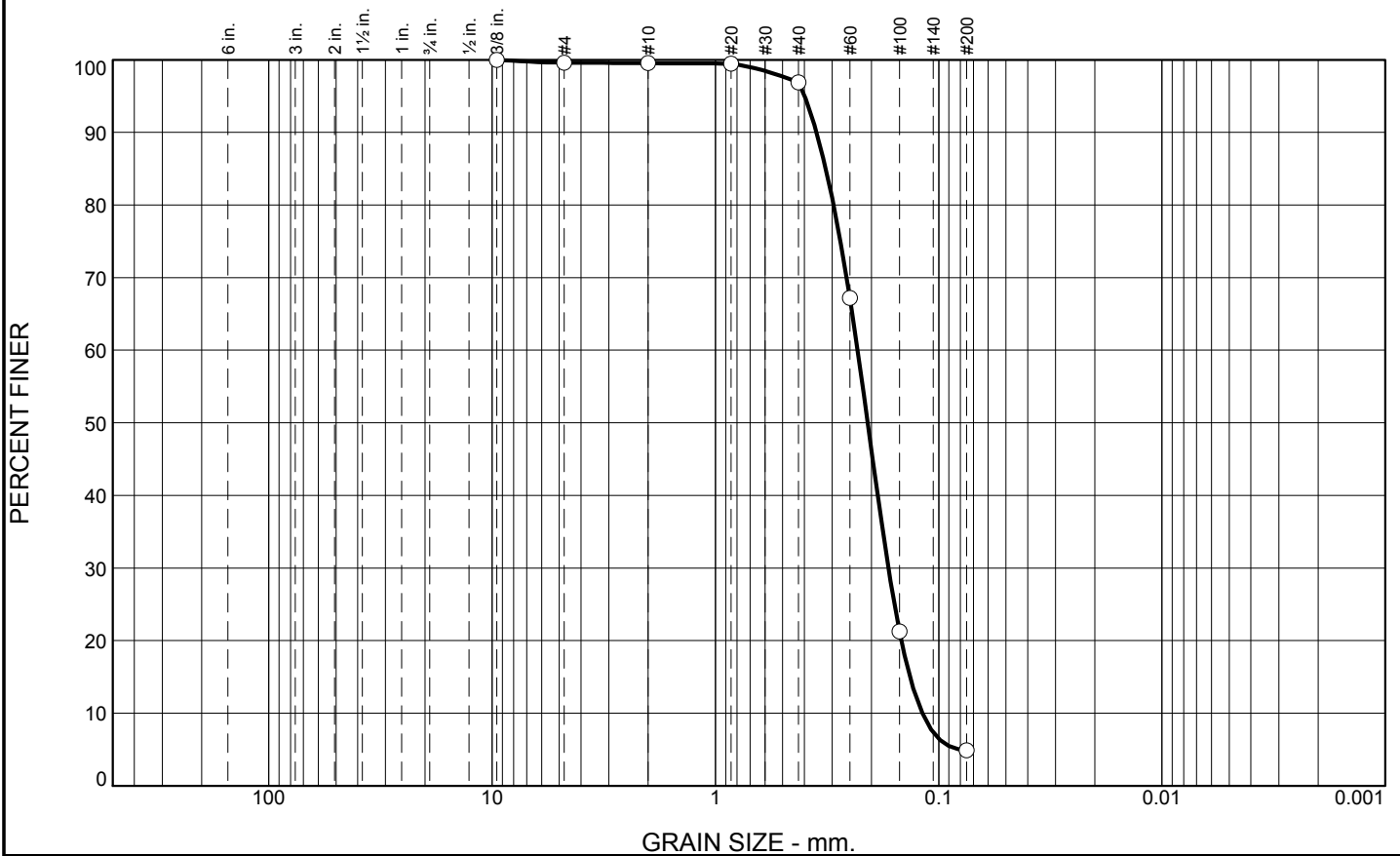
Tested By: L.Stokes

Checked By: R.Byrd

Boring Designation BI-CI-03-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-03-10		LOCATION COORDINATES E = 909,797 N = 264,536		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 0 UNDISTURBED (UD)	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 10 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 05-19-10		STARTED 05-19-10 COMPLETED 05-19-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -8.6 Ft.			
8. TOTAL DEPTH OF BORING 13.6 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-8.6	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, trace shell fragments, lt. brown (SP)	A	Classification: SP Color: 2.5Y 5/2-grayish brown D50: 0.208 mm % Fines: 4.9		
				B	Classification: SP Color: 2.5Y 6.5/1-gray D50: 0.1782 mm % Fines: 1.6		
-18.3	9.7		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace clay, trace shell fragments, lt. gray (SP)	C	Classification: SP-SM Color: 2.5Y 6.5/1.5-light gray D50: 0.115 mm % Fines: 7.7		
-22.2	13.6						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.4	0.1	2.6	92.0	4.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.6		
#10	99.5		
#20	99.5		
#40	96.9		
#60	67.2		
#100	21.3		
#200	4.9		

* (no specification provided)

Material Description		
SAND, (SP), fine grained, with trace shell		
<div> <div> Atterberg Limits PL= LL= PI= </div> <div> Coefficients D₉₀= 0.3524 D₈₅= 0.3203 D₆₀= 0.2309 D₅₀= 0.2080 D₃₀= 0.1680 D₁₅= 0.1346 D₁₀= 0.1184 C_u= 1.95 C_c= 1.03 </div> <div> Classification USCS= SP AASHTO= </div> <div> Remarks CADD CODE = CH10D965 </div> </div>		

Location: USACE Sample # BI-CI-3-10A
Sample Number: TE Lab ID: 4488.66

Depth: 0.0 - 4.5 (ft.)

Date: 5/27/10

Thompson Engineering
Mobile, Alabama

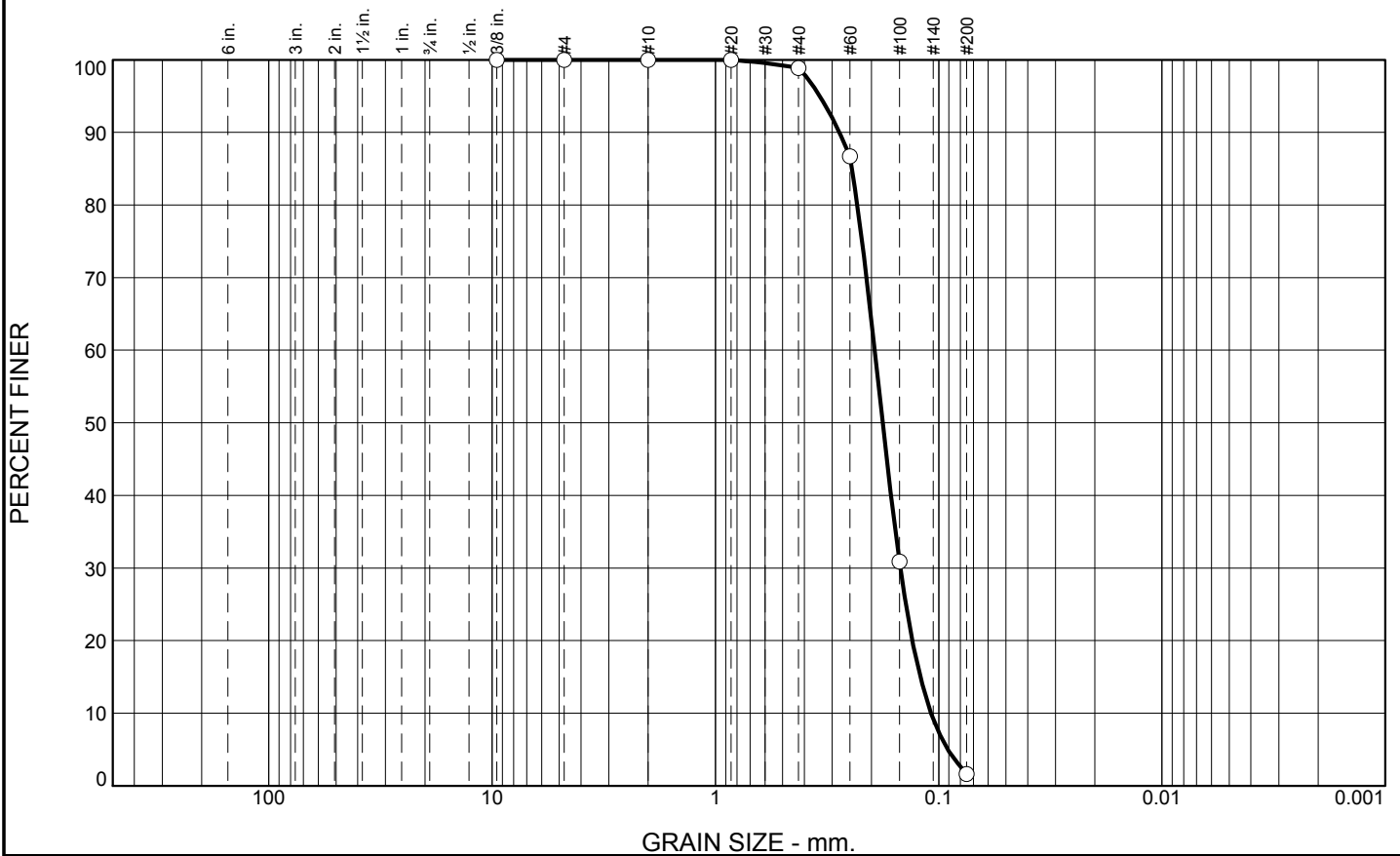
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.1	97.3	1.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	100.0		
#40	98.9		
#60	86.7		
#100	30.9		
#200	1.6		

* (no specification provided)

Material Description		
SAND, (SP), fine grained		
<div> <div> Atterberg Limits LL= </div> <div> Coefficients D₉₀= 0.2786 D₅₀= 0.1782 D₁₀= 0.1083 </div> <div> PI= D₈₅= 0.2447 D₃₀= 0.1486 C_u= 1.79 </div> <div> D₆₀= 0.1936 D₁₅= 0.1209 C_c= 1.05 </div> </div>		
Classification USCS= SP AASHTO=		
Remarks CADD CODE = CH10D965		

Location: USACE Sample # BI-CI-3-10B
Sample Number: TE Lab ID: 4488.67

Depth: 4.5 - 9.0 (ft.)

Date: 5/27/10

Thompson Engineering

Mobile, Alabama

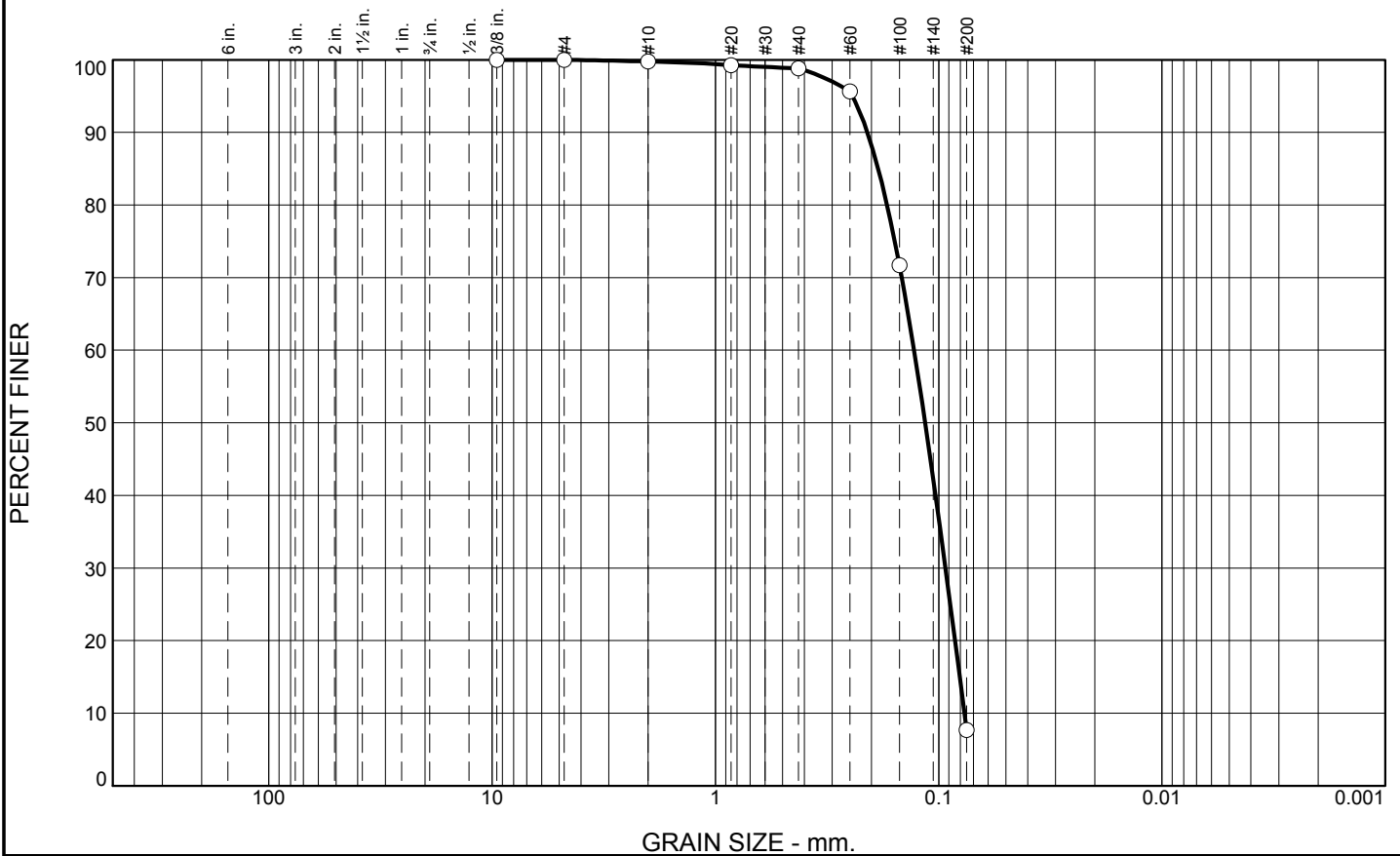
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	1.0	91.1	7.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.8		
#20	99.2		
#40	98.8		
#60	95.6		
#100	71.7		
#200	7.7		

* (no specification provided)

Material Description

SAND, (SP-SM), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.2087

D₈₅= 0.1867

D₆₀= 0.1289

D₅₀= 0.1150

D₃₀= 0.0933

D₁₅= 0.0805

D₁₀= 0.0767

C_u= 1.68

C_c= 0.88

Classification

USCS= SP-SM

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-CI-3-10C
Sample Number: TE Lab ID: 4488.68

Depth: 9.0 - 13.5 (ft.)

Date: 5/27/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Figure

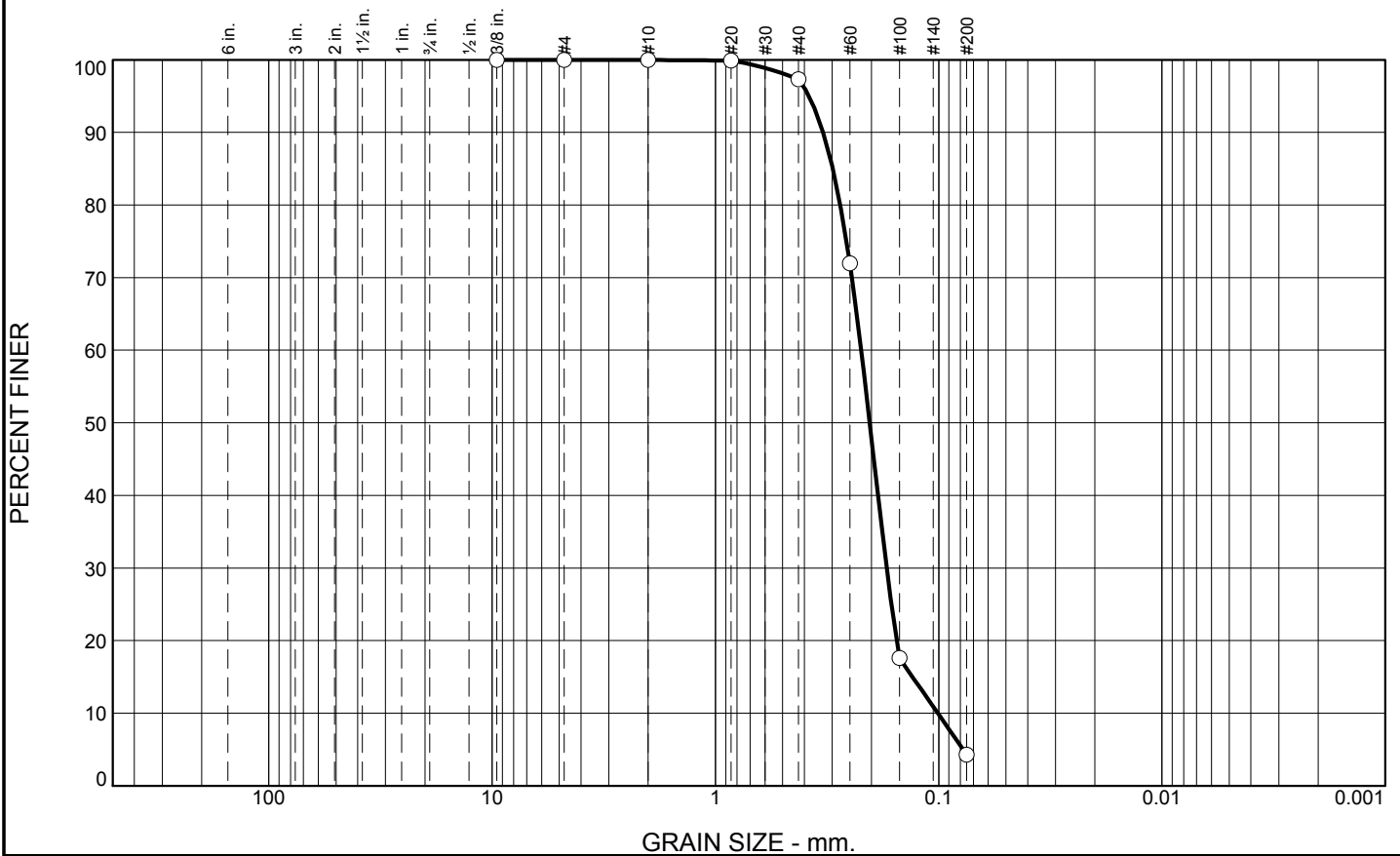
Tested By: L.Stokes

Checked By: R.Byrd

Boring Designation BI-CI-04-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-04-10		LOCATION COORDINATES E = 910,349 N = 265,419		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 10 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 05-19-10		STARTED 05-19-10 COMPLETED 05-19-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -8.6 Ft.			
8. TOTAL DEPTH OF BORING 11.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-8.6	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, trace shell fragments, lt. brown (SP)	A	Classification: SP Color: 2.5Y 5/2-grayish brown D50: 0.2038 mm % Fines: 4.3		
-15.4	6.8		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace clay, trace shell fragments, lt. gray (SP)	B	Classification: SP-SM Color: 2.5Y 6.5/1-gray D50: 0.161 mm % Fines: 7.2		
-19.6	11.0		At El. -18.3 Ft., mostly fine to medium-grained sand-sized quartz, little clay, trace shell fragments, gray				
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	2.7	93.0	4.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	97.3		
#60	72.0		
#100	17.6		
#200	4.3		

* (no specification provided)

<u>Material Description</u>		
SAND, (SP), fine grained		
PL=	<u>Atterberg Limits</u> LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.3291	D ₈₅ = 0.2980	D ₆₀ = 0.2224
D ₅₀ = 0.2038	D ₃₀ = 0.1710	D ₁₅ = 0.1310
D ₁₀ = 0.1010	C _u = 2.20	C _c = 1.30
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-CI-4-10A
Sample Number: TE Lab ID: 4488.74

Depth: 0.0 - 5.5 (ft.)

Date: 5/27/10

Thompson Engineering
Mobile, Alabama

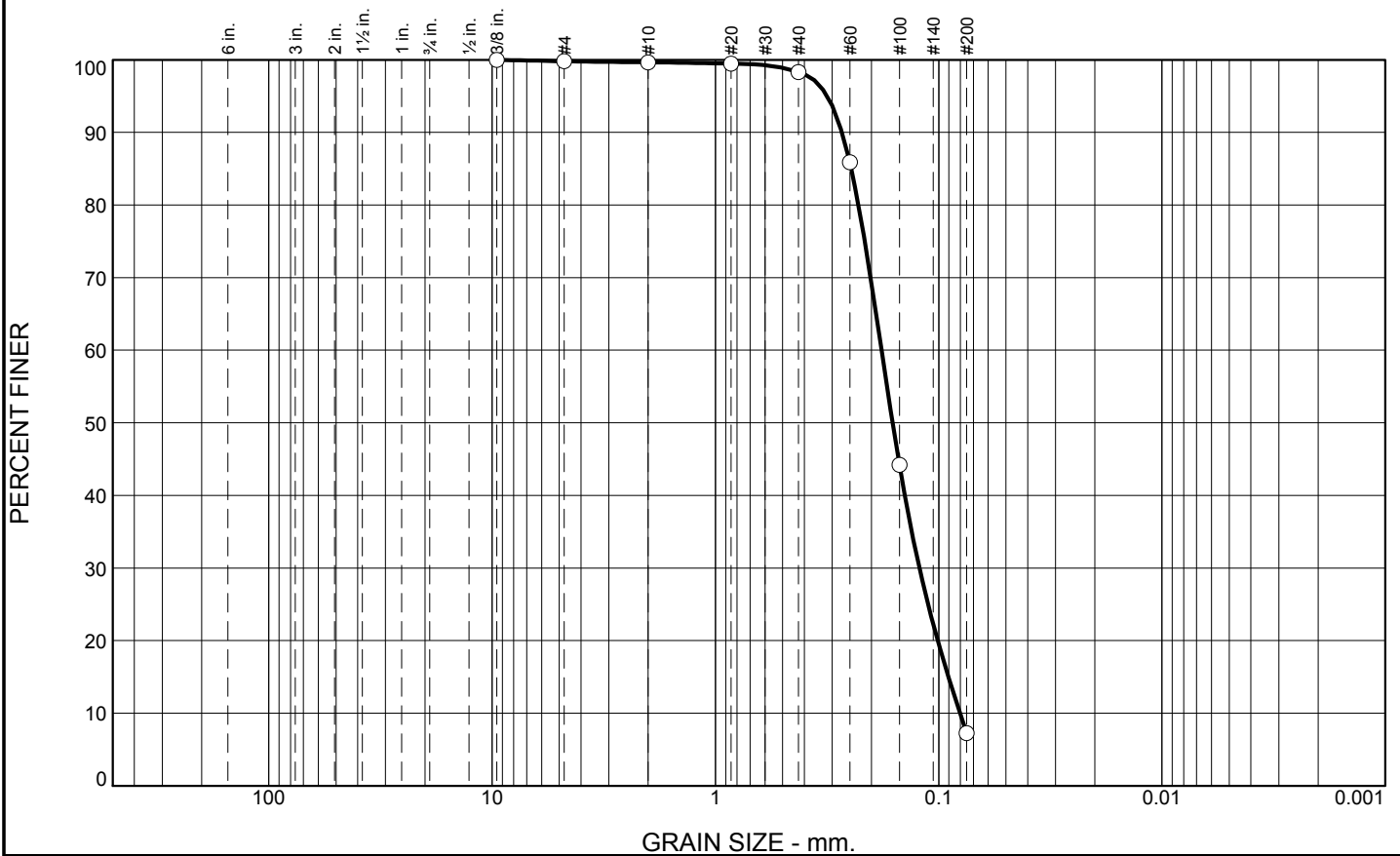
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.1	1.4	91.1	7.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.8		
#10	99.7		
#20	99.5		
#40	98.3		
#60	85.9		
#100	44.2		
#200	7.2		

* (no specification provided)

Material Description

SAND, (SP-SM), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.2711

D₈₅= 0.2464

D₆₀= 0.1803

D₅₀= 0.1610

D₃₀= 0.1220

D₁₅= 0.0905

D₁₀= 0.0803

C_u= 2.25

C_c= 1.03

Classification

USCS= SP-SM

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-CI-4-10B
Sample Number: TE Lab ID: 4488.75

Depth: 5.5 - 11.0 (ft.)

Date: 5/27/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Figure

Tested By: L.Stokes

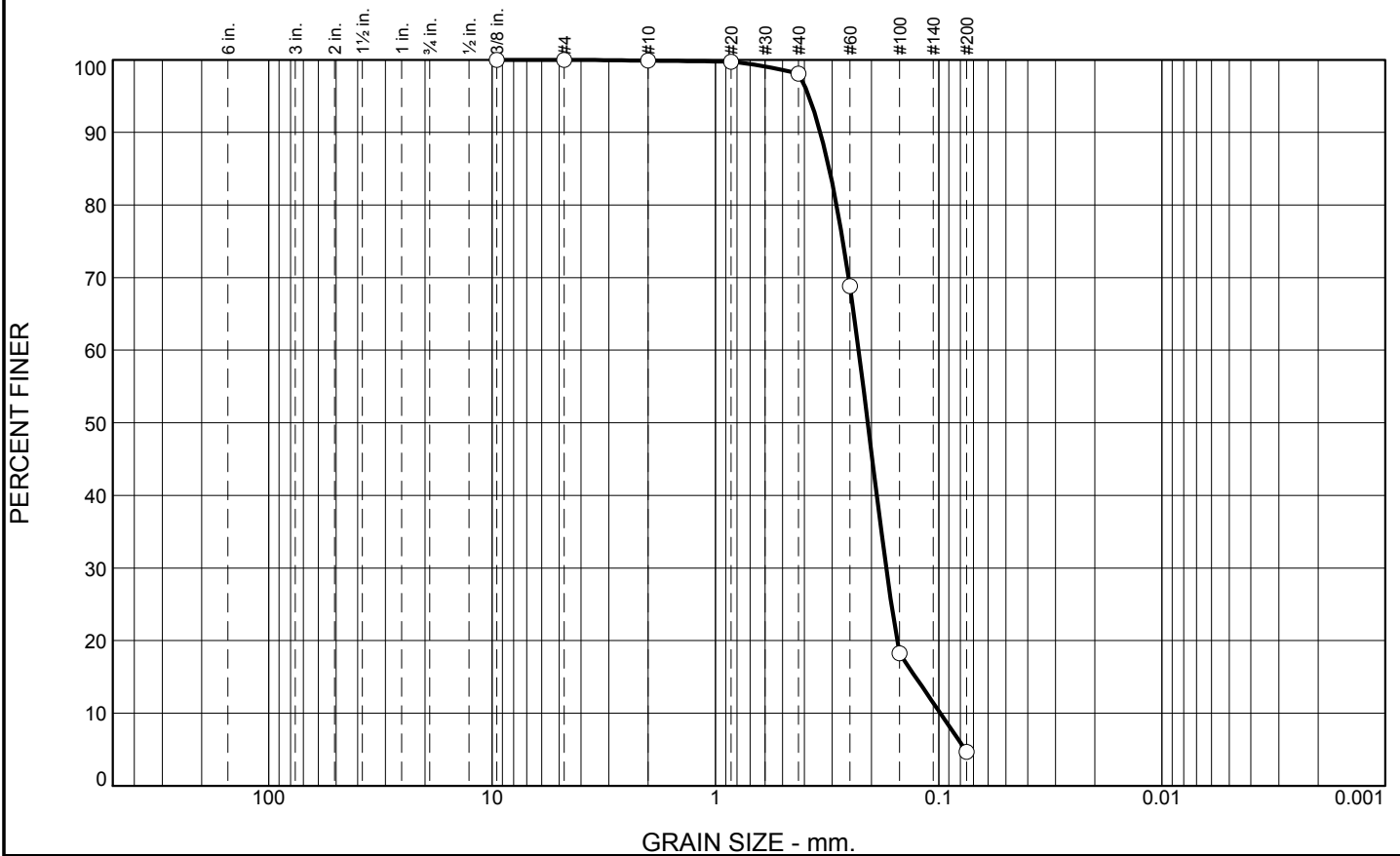
Checked By: R.Byrd

Boring Designation BI-CI-05-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-05-10		LOCATION COORDINATES E = 910,786 N = 266,298		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 10.5 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 05-19-10		STARTED 05-19-10 COMPLETED 05-19-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -9.0 Ft.			
8. TOTAL DEPTH OF BORING 10.6 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-9.0	0.0				
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, lt. brown (SP)	A	Classification: SP Color: 2.5Y 5/2-grayish brown D50: 0.2079 mm % Fines: 4.7
-16.9	7.9				
-18.0	9.0		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace clay, trace shell fragments, lt. gray (SP)	B	Classification: SP-SM Color: 2.5Y 7/1-light gray D50: 0.1401 mm % Fines: 8.5
-19.6	10.6		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little clay, trace shell fragments, gray (SP)	NS	
NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.					

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	1.8	93.4	4.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.7		
#40	98.1		
#60	68.8		
#100	18.3		
#200	4.7		

* (no specification provided)

<u>Material Description</u>		
SAND, (SP), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.3388	D ₈₅ = 0.3093	D ₆₀ = 0.2284
D ₅₀ = 0.2079	D ₃₀ = 0.1718	D ₁₅ = 0.1270
D ₁₀ = 0.0984	C _u = 2.32	C _c = 1.31
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-CI-5-10A
Sample Number: TE Lab ID: 4488.76

Depth: 0.0 - 5.0 (ft.)

Date: 5/27/10

Thompson Engineering
Mobile, Alabama

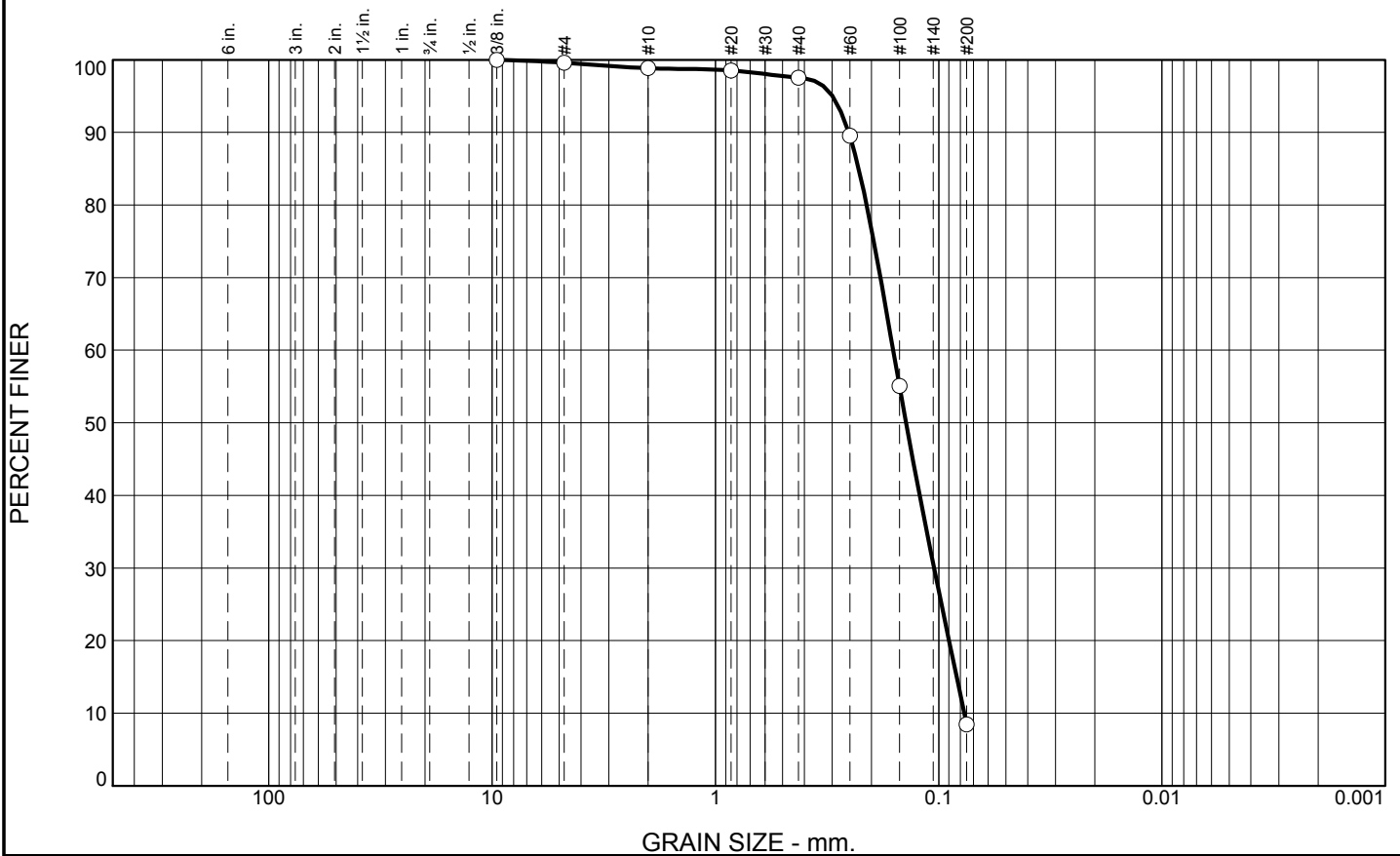
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.4	0.8	1.3	89.0	8.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.6		
#10	98.8		
#20	98.5		
#40	97.5		
#60	89.5		
#100	55.1		
#200	8.5		

* (no specification provided)

Material Description

SAND, (SP-SM), fine grained, with clay nodules

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.2527

D₈₅= 0.2282

D₆₀= 0.1600

D₅₀= 0.1401

D₃₀= 0.1049

D₁₅= 0.0832

D₁₀= 0.0768

C_u= 2.08

C_c= 0.89

Classification

USCS= SP-SM

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-CI-5-10B
Sample Number: TE Lab ID: 4488.77

Depth: 5.0 - 10.6 (ft.)

Date: 5/27/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Figure

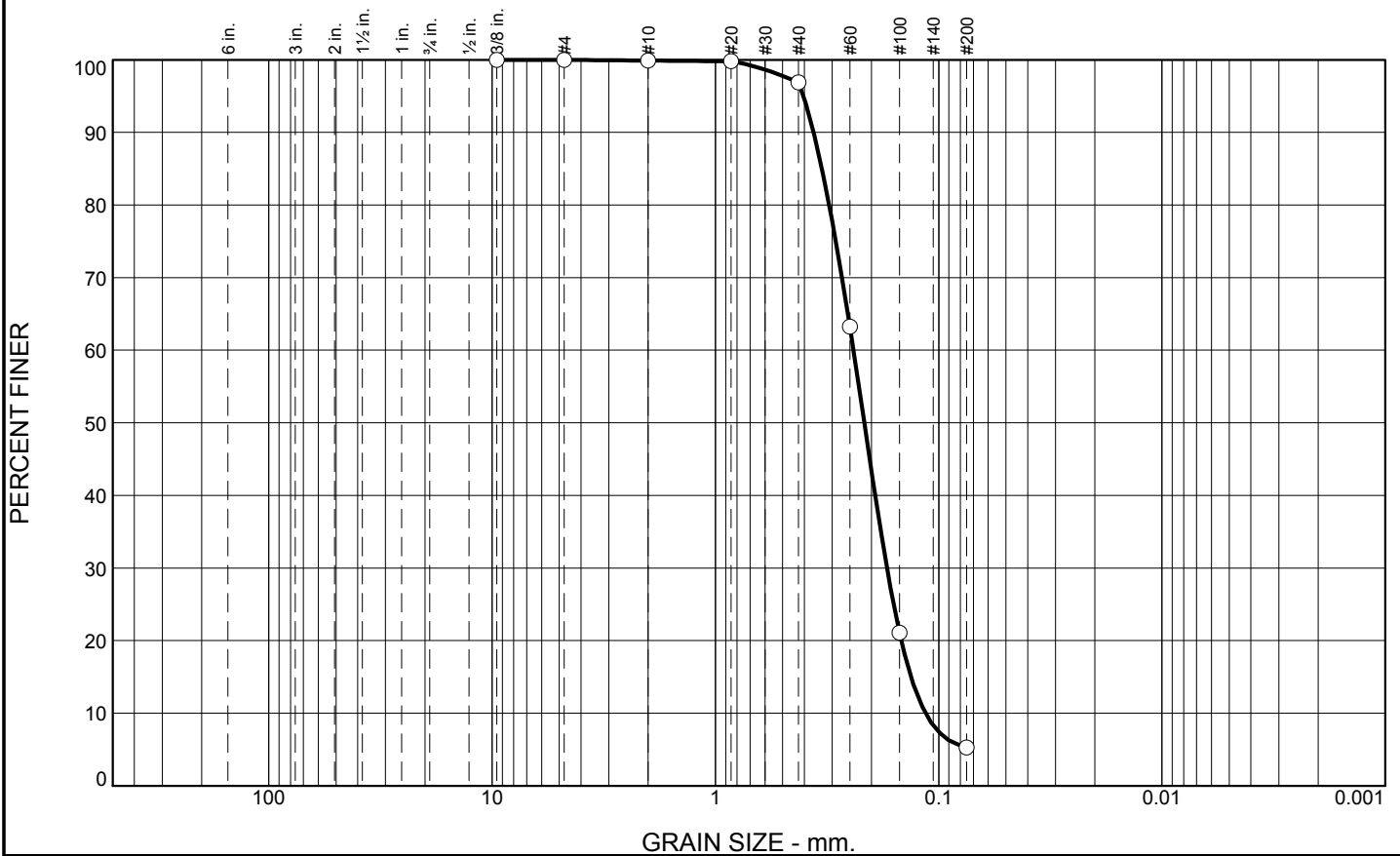
Tested By: L.Stokes

Checked By: R.Byrd

Boring Designation BI-CI-06-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-06-10		LOCATION COORDINATES E = 911,404 N = 267,057		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 11 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 05-20-10		STARTED 05-20-10 COMPLETED 05-20-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -9.8 Ft.			
8. TOTAL DEPTH OF BORING 13.2 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Mark Green, Geotechnical Engineer			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-9.8	0.0						
-12.8	3.0		SAND, silty, mostly fine-grained sand-sized quartz, trace shell fragments, gray (SM)	A	Classification: SP-SM Color: 2.5Y 7/2-light gray D50: 0.2154 mm % Fines: 5.3		
-21.8	12.0		SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace silt, trace shell fragments, gray and tan/brown (SP) At El. -16.8 Ft., mostly fine-grained sand-sized quartz, trace shell fragments, lt. gray to greenish gray	B	Classification: SP Color: 2.5Y 5.5/2-brownish gray D50: 0.193 mm % Fines: 3.1		
-23.0	13.2		SILT, inorganic-L, trace fine-grained sand-sized quartz, lt. green to gray (ML)	NS	Classification: SP-SM Color: 2.5Y 7/1-light gray D50: 0.1824 mm % Fines: 5.4		
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	3.0	91.6	5.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.8		
#40	96.9		
#60	63.2		
#100	21.1		
#200	5.3		

* (no specification provided)

Material Description		
SAND, (SP-SM), fine grained		
<div> <div> Atterberg Limits PL= LL= PI= </div> <div> Coefficients D₉₀= 0.3633 D₈₅= 0.3334 D₆₀= 0.2409 D₅₀= 0.2154 D₃₀= 0.1706 D₁₅= 0.1331 D₁₀= 0.1145 C_u= 2.10 C_c= 1.05 </div> <div> Classification USCS= SP-SM AASHTO= </div> <div> Remarks CADD CODE = CH10D965 </div> </div>		

Location: USACE Sample # BI-CI-6-10A
Sample Number: TE Lab ID: 4488.102

Depth: 0.0 - 3.0 (ft.)

Date: 5/27/10

Thompson Engineering
Mobile, Alabama

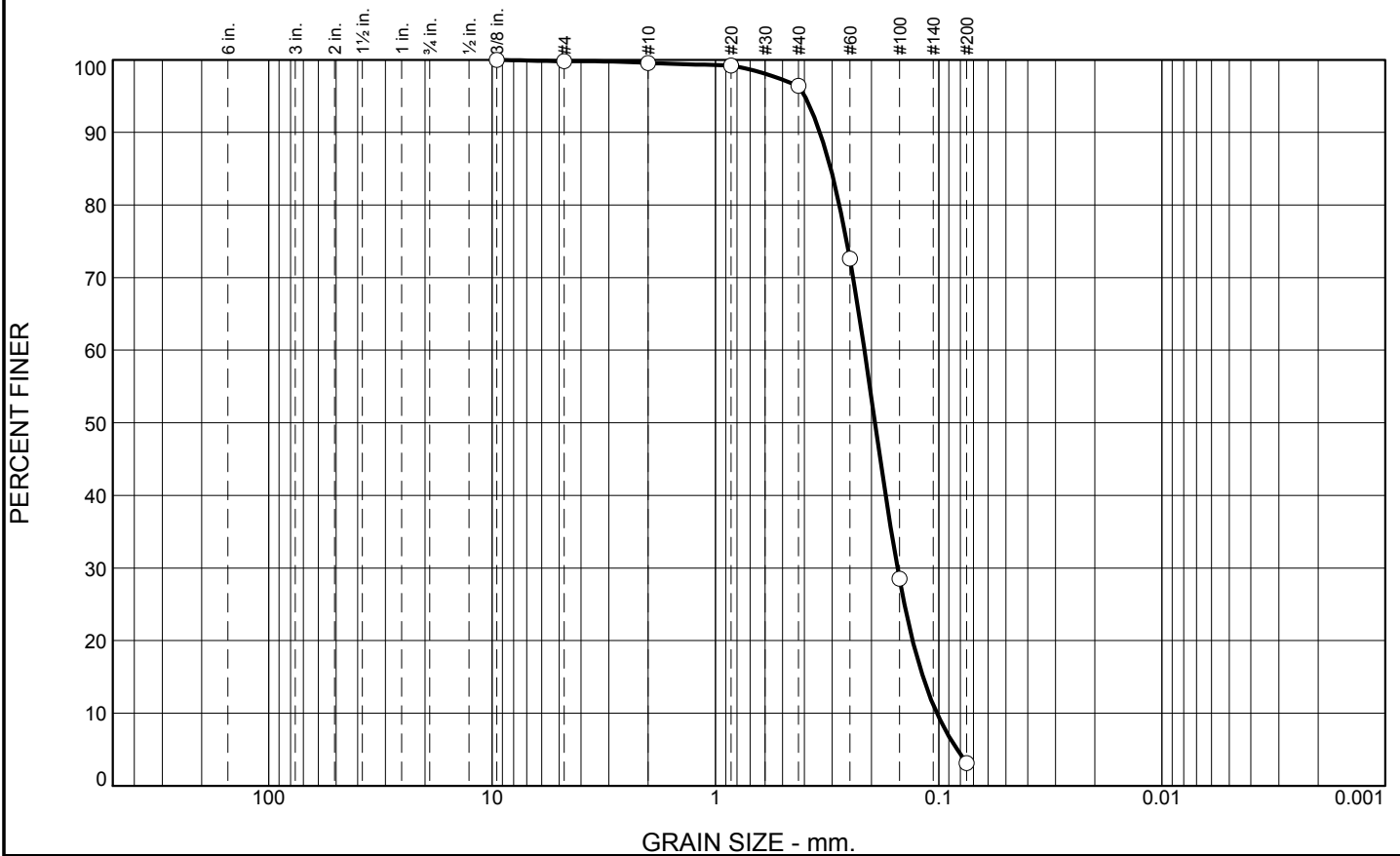
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.3	3.1	93.3	3.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.8		
#10	99.5		
#20	99.2		
#40	96.4		
#60	72.6		
#100	28.5		
#200	3.1		

* (no specification provided)

Material Description

SAND, (SP), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.3403

D₈₅= 0.3044

D₆₀= 0.2152

D₅₀= 0.1930

D₃₀= 0.1530

D₁₅= 0.1176

D₁₀= 0.1019

C_u= 2.11

C_c= 1.07

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-CI-6-10B
Sample Number: TE Lab ID: 4488.103

Depth: 3.0 - 7.0 (ft.)

Date: 5/27/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

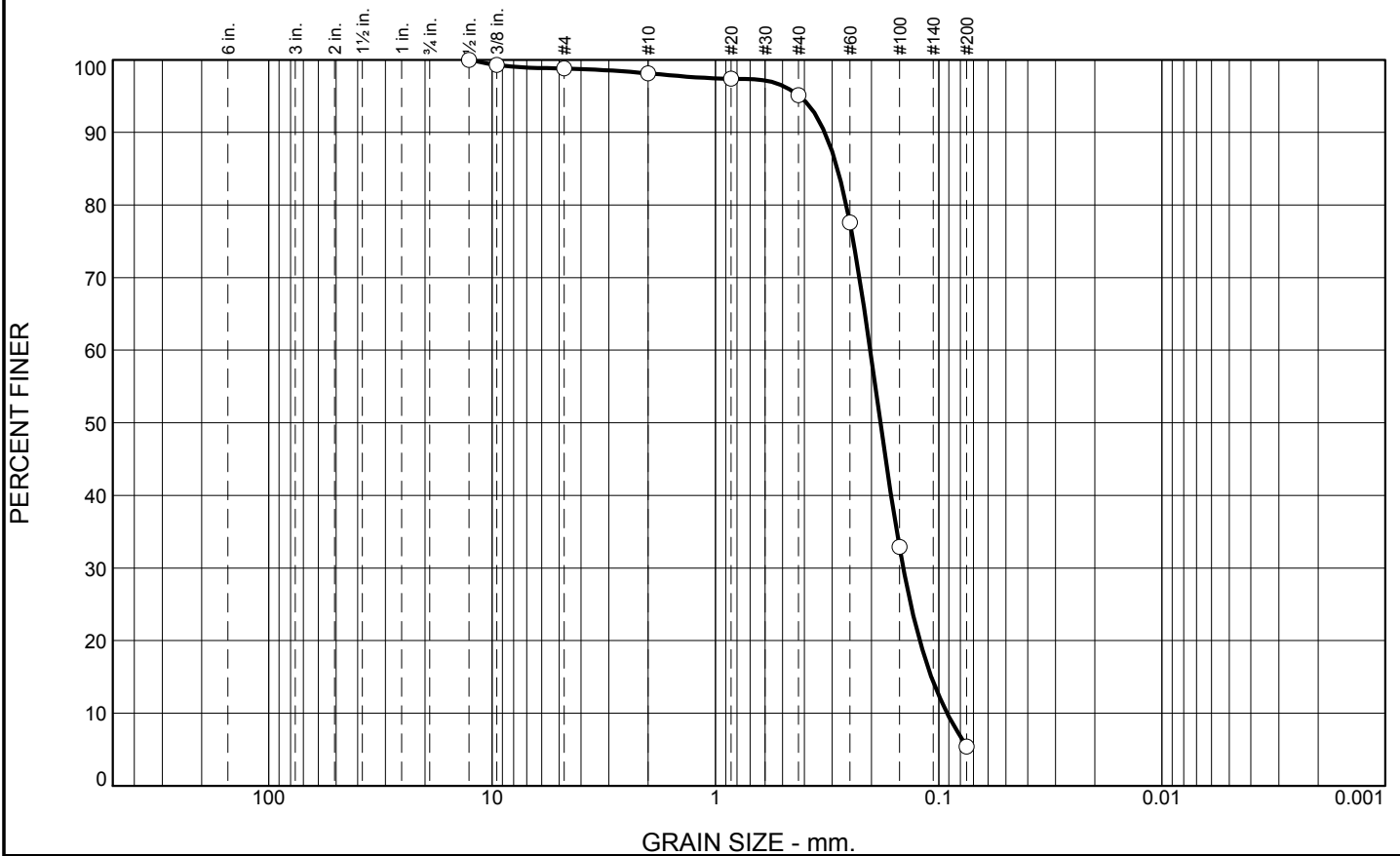
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.2	0.7	3.0	89.7	5.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.500	100.0		
.375	99.3		
#4	98.8		
#10	98.1		
#20	97.4		
#40	95.1		
#60	77.6		
#100	32.9		
#200	5.4		

* (no specification provided)

Material Description
SAND, (SP-SM), fine grained, with trace shell

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.3234 D₈₅= 0.2841 D₆₀= 0.2027
 D₅₀= 0.1824 D₃₀= 0.1442 D₁₅= 0.1079
 D₁₀= 0.0917 C_u= 2.21 C_c= 1.12

Classification
 USCS= SP-SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-CI-6-10C
Sample Number: TE Lab ID: 4488.104

Depth: 7.0 - 12.0 (ft.)

Date: 5/27/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

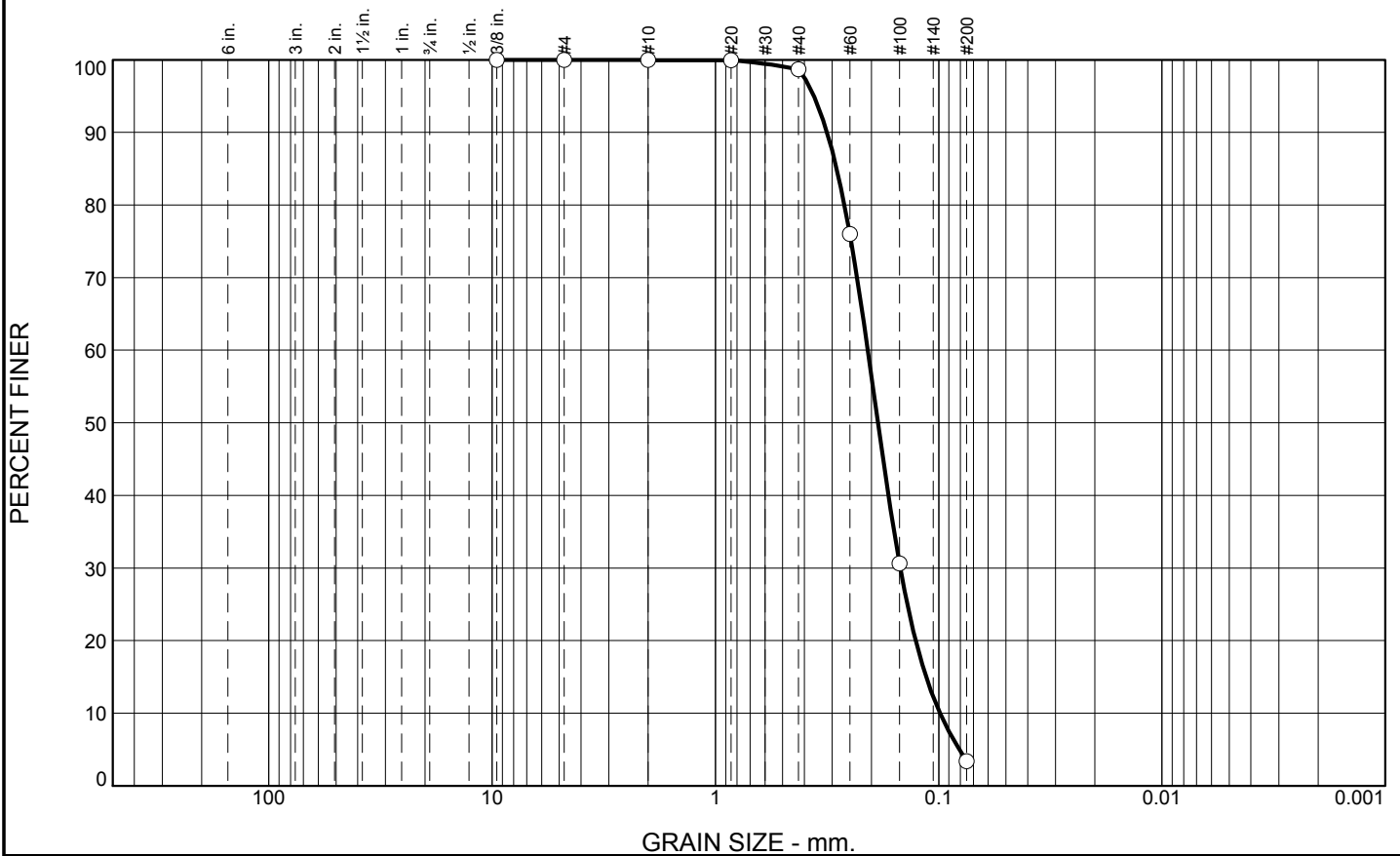
Tested By: L.Stokes

Checked By: R.Byrd

Boring Designation BI-CI-07-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-07-10		LOCATION COORDINATES E = 911,330 N = 268,021		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 11 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 05-20-10		STARTED 05-20-10 COMPLETED 05-20-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -9.8 Ft.			
8. TOTAL DEPTH OF BORING 12.6 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Mark Green, Geotechnical Engineer			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-9.8	0.0						
-12.3	2.5		SAND, silty, mostly fine-grained sand-sized quartz, trace shell, dark gray and greenish gray (SM)	NS			
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace silt, trace shell fragments, tan and gray (SP)	A	Classification: SP Color: 2.5Y 6/2-light brownish gray D50: 0.1871 mm % Fines: 3.4		
			At El. -15.8 Ft., mostly fine-grained sand-sized quartz, trace silt, trace shell fragments, tan, gray, and brown	B	Classification: SP Color: 2.5Y 6.5/1.5-light gray D50: 0.1949 mm % Fines: 1		
			At El. -18.8 Ft., mostly fine-grained sand-sized quartz, trace shell fragments, lt. gray	C	Classification: SP-SM Color: 2.5Y 7/1-light gray D50: 0.1709 mm % Fines: 6.6		
-22.4	12.6		NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.3	95.3	3.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	98.7		
#60	76.0		
#100	30.6		
#200	3.4		

* (no specification provided)

<u>Material Description</u>		
SAND, (SP), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.3162	D ₈₅ = 0.2863	D ₆₀ = 0.2078
D ₅₀ = 0.1871	D ₃₀ = 0.1487	D ₁₅ = 0.1139
D ₁₀ = 0.0987	C _u = 2.11	C _c = 1.08
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-CI-7-10A
Sample Number: TE Lab ID: 4488.96

Depth: 2.5 - 6.0 (ft.)

Date: 5/27/10

Thompson Engineering
Mobile, Alabama

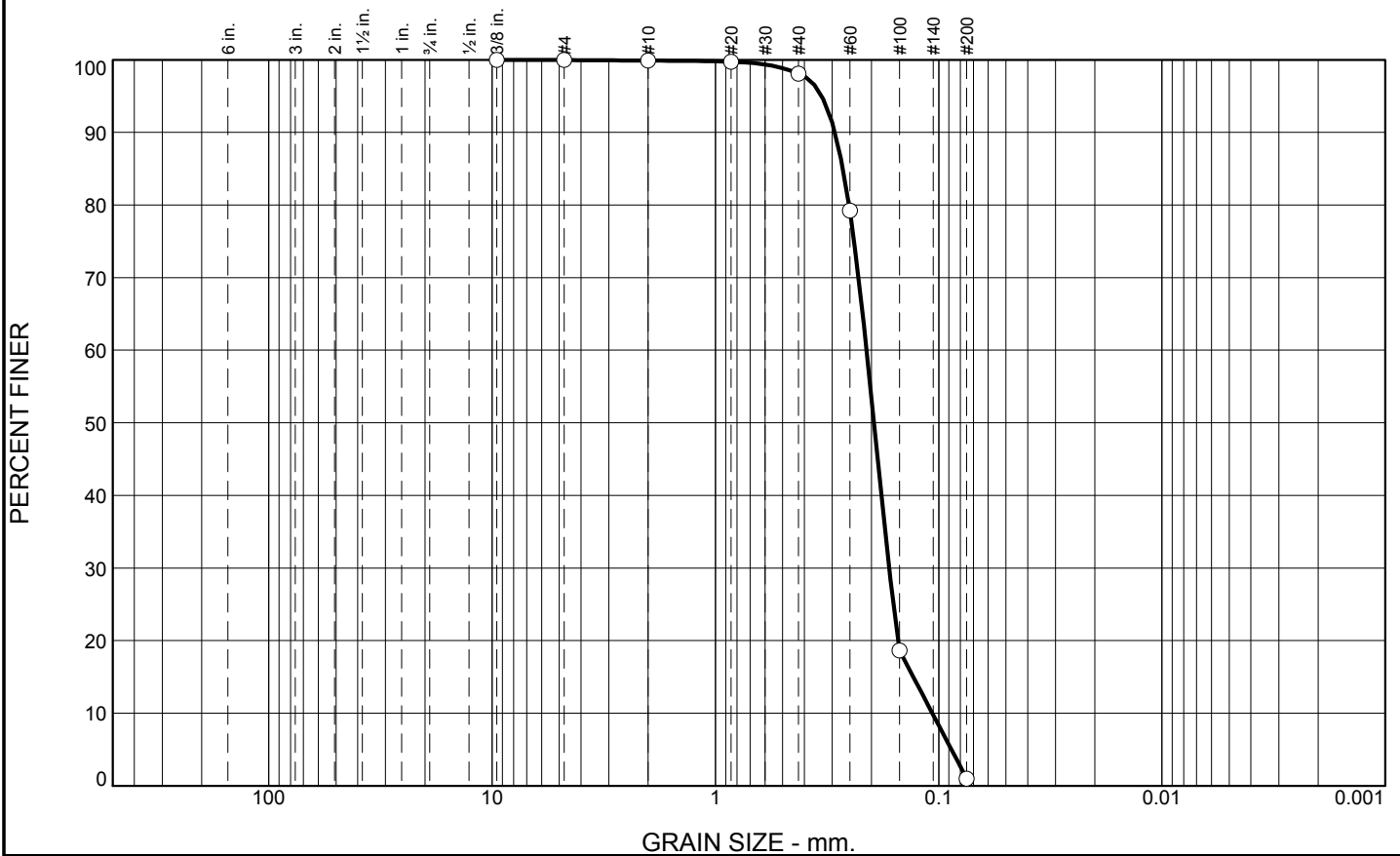
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	1.8	97.1	1.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.7		
#40	98.1		
#60	79.2		
#100	18.6		
#200	1.0		

* (no specification provided)

Material Description

SAND, (SP), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.2916

D₈₅= 0.2684

D₆₀= 0.2106

D₅₀= 0.1949

D₃₀= 0.1667

D₁₅= 0.1300

D₁₀= 0.1068

C_u= 1.97

C_c= 1.24

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-CI-7-10B
Sample Number: TE Lab ID: 4488.97

Depth: 6.0 - 9.0 (ft.)

Date: 5/27/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

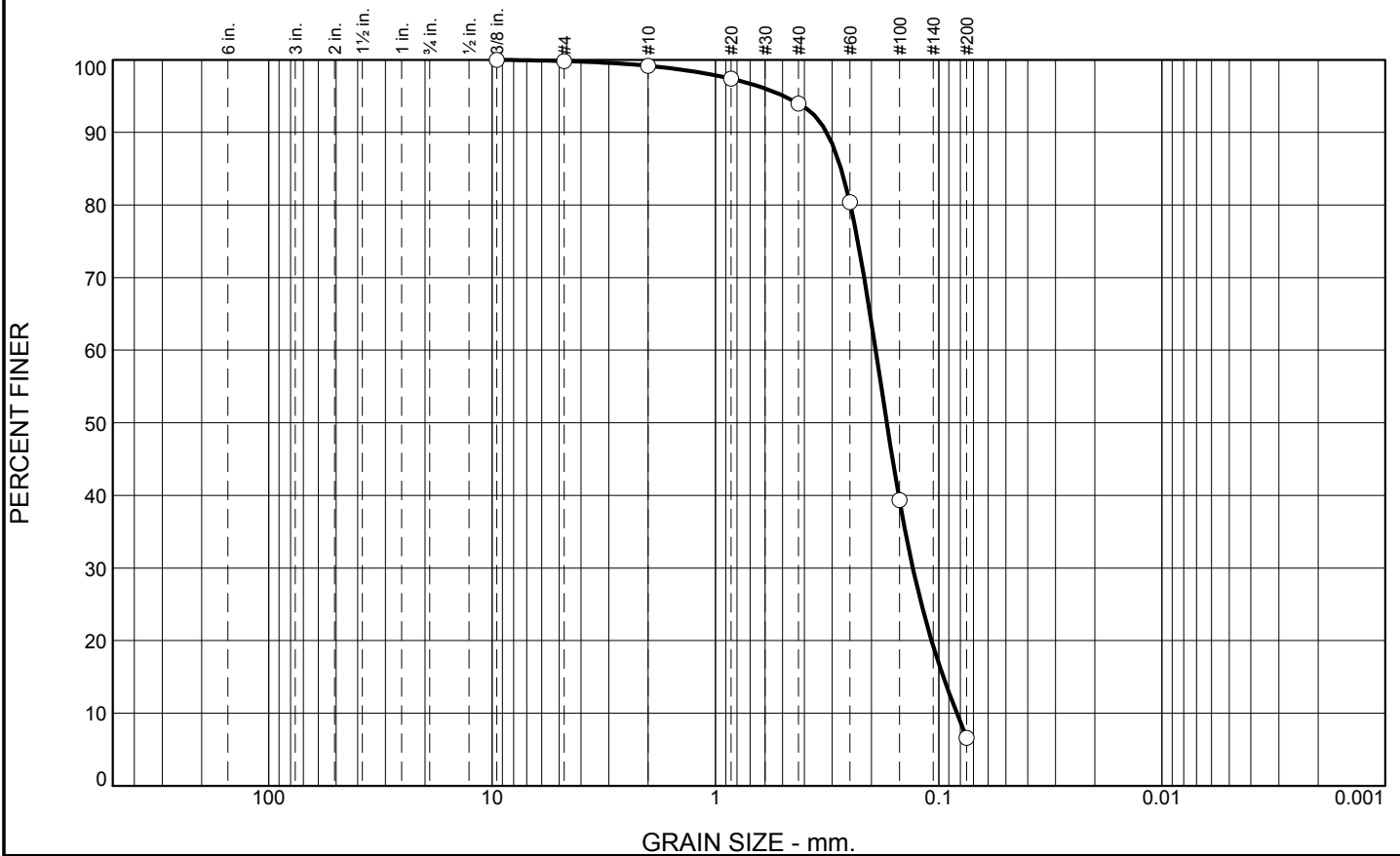
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.6	5.2	87.4	6.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.8		
#10	99.2		
#20	97.4		
#40	94.0		
#60	80.4		
#100	39.4		
#200	6.6		

* (no specification provided)

Material Description

SAND, (SP-SM), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.3173

D₈₅= 0.2734

D₆₀= 0.1916

D₅₀= 0.1709

D₃₀= 0.1306

D₁₅= 0.0954

D₁₀= 0.0830

C_u= 2.31

C_c= 1.07

Classification

USCS= SP-SM

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-CI-7-10C
Sample Number: TE Lab ID: 4488.98

Depth: 9.0 - 12.6 (ft.)

Date: 5/27/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Figure

Tested By: L.Stokes

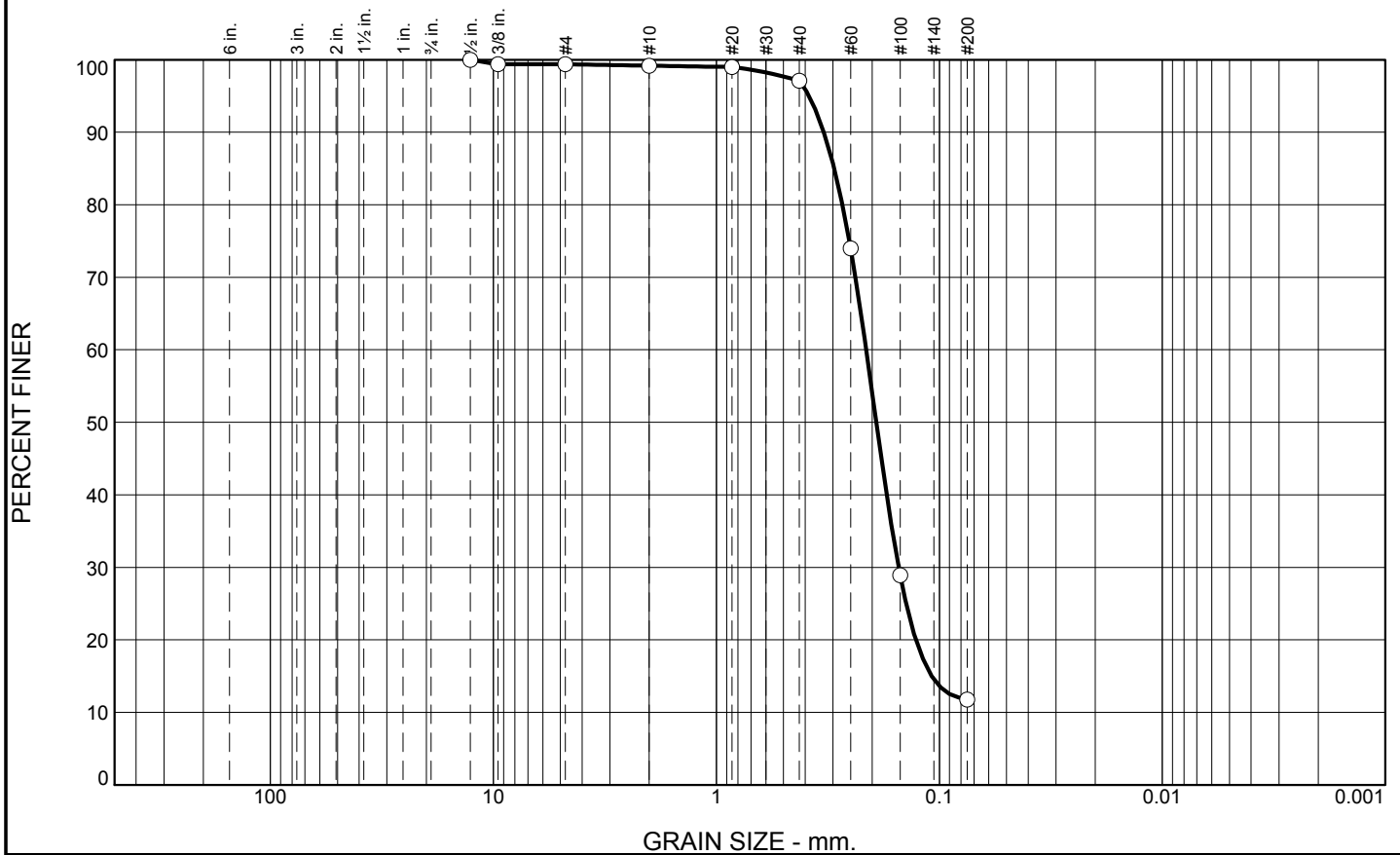
Checked By: R.Byrd

Boring Designation BI-CI-08-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-08-10		LOCATION COORDINATES E = 911,660 N = 269,013		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 11 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 05-20-10		STARTED 05-20-10 COMPLETED 05-20-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -9.9 Ft.			
8. TOTAL DEPTH OF BORING 12.5 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Mark Green, Geotechnical Engineer			

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-9.9	0.0				
-11.9	2.0		SAND, silty, mostly fine-grained sand-sized quartz, trace shell fragments, trace clay, dark gray and greenish gray (SM)	A	Classification: SP-SM Color: 2.5Y 5/2-grayish brown D50: 0.1918 mm % Fines: 11.8
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, some silt, trace shell fragments, gray and brown (SP)	B	Classification: SP-SM Color: 2.5Y 5/1-gray D50: 0.1845 mm % Fines: 6.9
				C	Classification: SP Color: 2.5Y 6/1-gray D50: 0.1879 mm % Fines: 3
				D	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.1881 mm % Fines: 3.9
-22.4	12.5		At El. -21.9 Ft., trace of wood fragments, gray to lt. gray		
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.		

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.6	0.2	2.1	85.3	11.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.500	100.0		
.375	99.4		
#4	99.4		
#10	99.2		
#20	99.0		
#40	97.1		
#60	74.0		
#100	28.9		
#200	11.8		

* (no specification provided)

Material Description

SAND, (SP-SM), fine grained, with clay nodules and trace shell

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.3296

D₈₅= 0.2961

D₆₀= 0.2130

D₅₀= 0.1918

D₃₀= 0.1523

D₁₅= 0.1082

D₁₀=

C_u=

C_c=

Classification

USCS= SP-SM

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-CI-8-10A
Sample Number: TE Lab ID: 4488.89

Depth: 0.0 - 2.0 (ft.)

Date: 5/27/10

Thompson Engineering

Mobile, Alabama

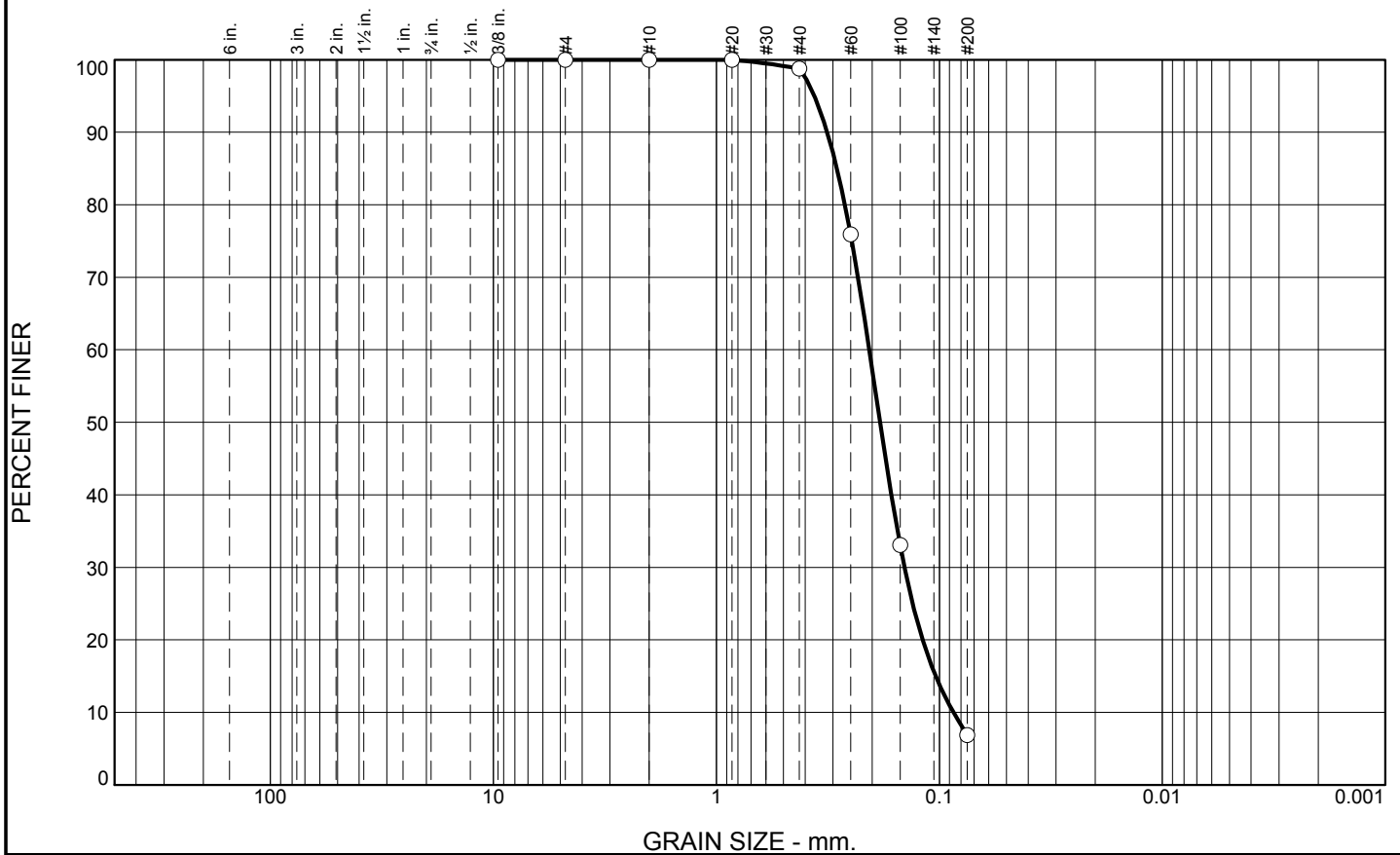
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.2	91.9	6.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	100.0		
#40	98.8		
#60	75.9		
#100	33.1		
#200	6.9		

* (no specification provided)

<u>Material Description</u>		
SAND, (SP-SM), fine grained		
PL=	<u>Atterberg Limits</u> LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.3182	D ₈₅ = 0.2879	D ₆₀ = 0.2063
D ₅₀ = 0.1845	D ₃₀ = 0.1434	D ₁₅ = 0.1039
D ₁₀ = 0.0865	C _u = 2.39	C _c = 1.15
<u>Classification</u>		
USCS= SP-SM	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-CI-8-10B
Sample Number: TE Lab ID: 4488.90

Depth: 2.0 - 4.0 (ft.)

Date: 5/27/10

Thompson Engineering
Mobile, Alabama

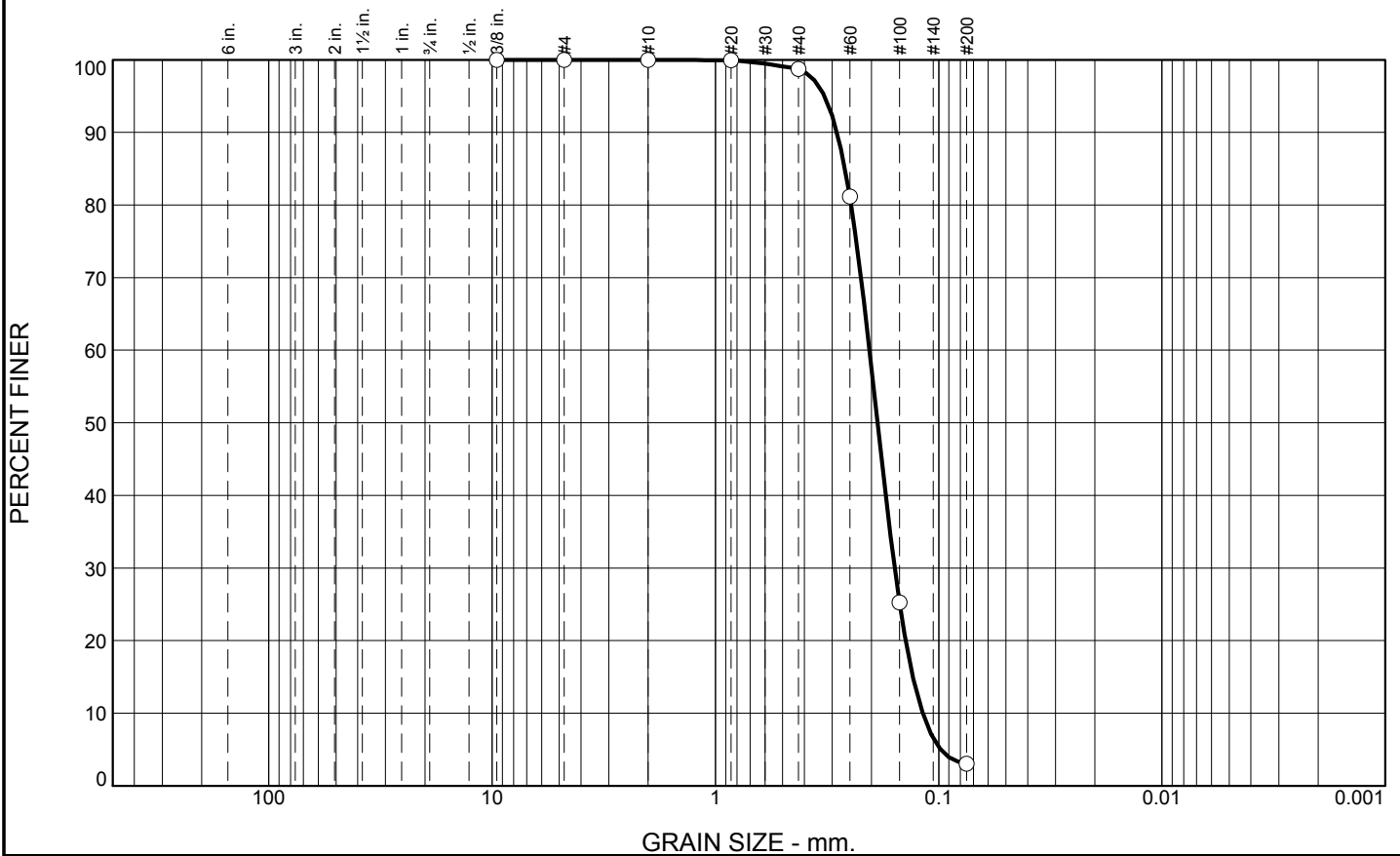
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.3	95.7	3.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	98.7		
#60	81.2		
#100	25.3		
#200	3.0		

* (no specification provided)

Material Description

SAND, (SP), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.2854

D₈₅= 0.2628

D₆₀= 0.2042

D₅₀= 0.1879

D₃₀= 0.1576

D₁₅= 0.1305

D₁₀= 0.1179

C_u= 1.73

C_c= 1.03

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-CI-8-10C
Sample Number: TE Lab ID: 4488.91

Depth: 4.0 - 8.0 (ft.)

Date: 5/27/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

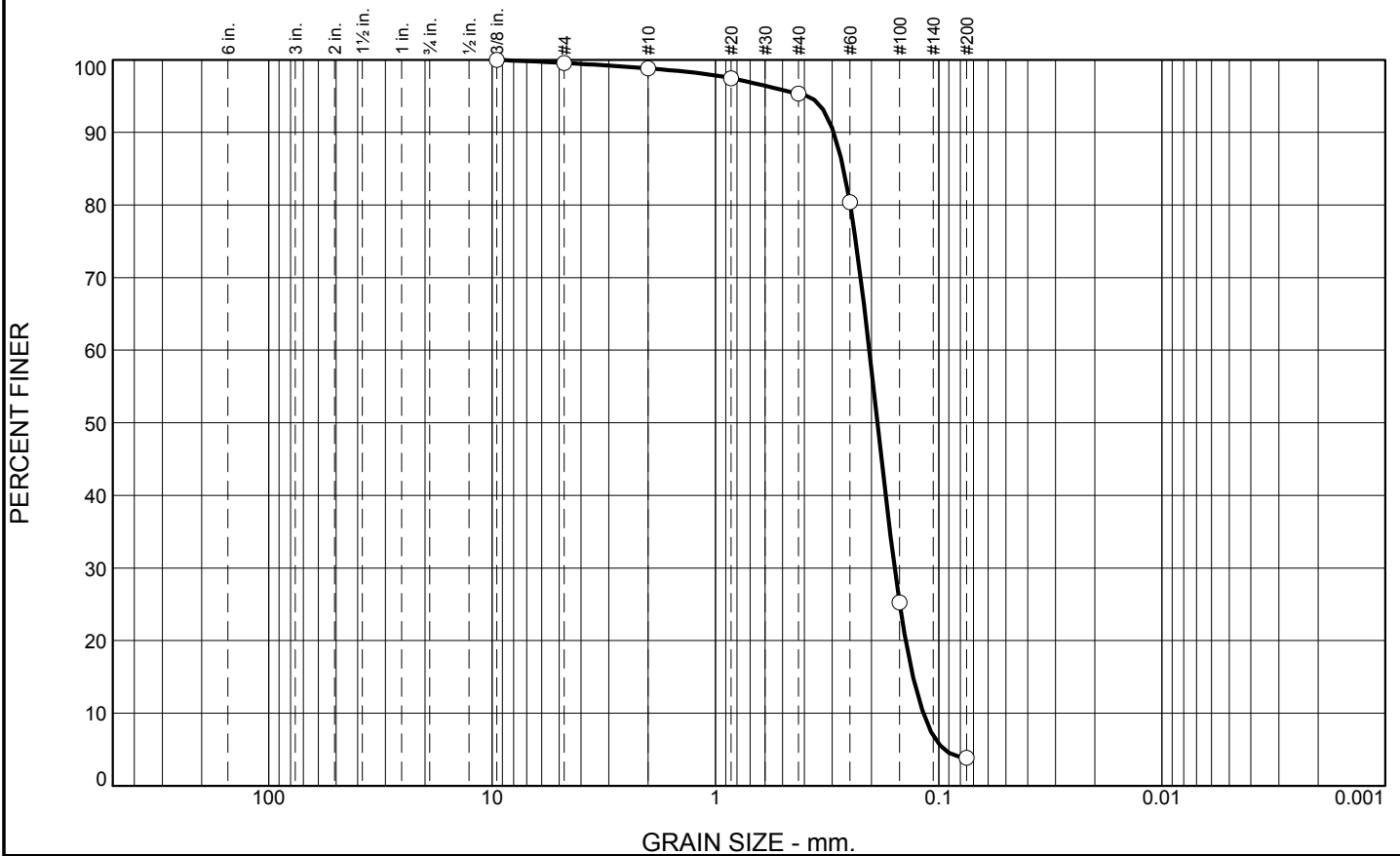
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.4	0.8	3.5	91.4	3.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.6		
#10	98.8		
#20	97.5		
#40	95.3		
#60	80.4		
#100	25.3		
#200	3.9		

* (no specification provided)

Material Description

SAND, (SP), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.2952

D₈₅= 0.2670

D₆₀= 0.2047

D₅₀= 0.1881

D₃₀= 0.1576

D₁₅= 0.1303

D₁₀= 0.1172

C_u= 1.75

C_c= 1.04

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-CI-8-10D
Sample Number: TE Lab ID: 4488.92

Depth: 8.0 - 12.5 (ft.)

Date: 5/27/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Figure

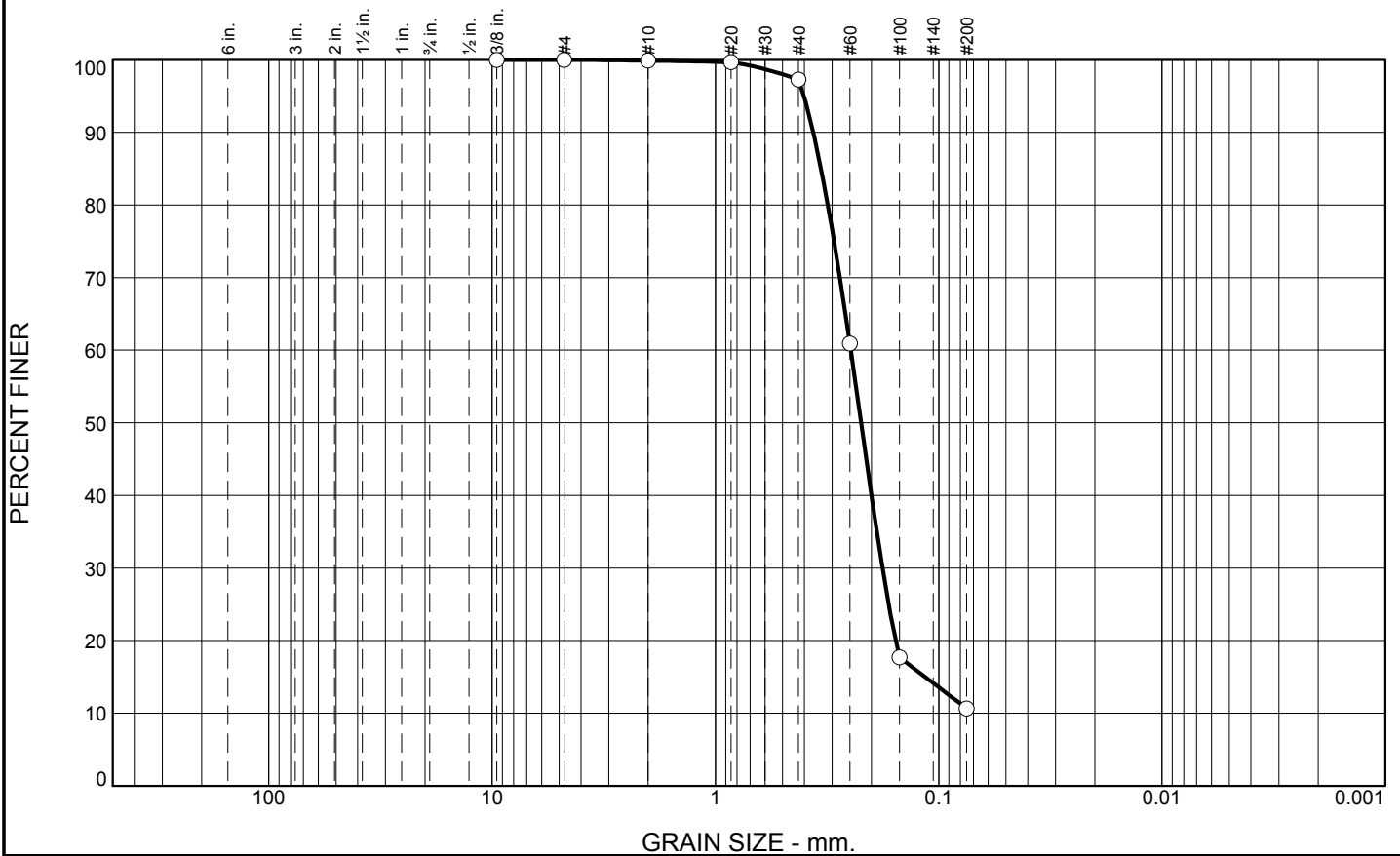
Tested By: L.Stokes

Checked By: R.Byrd

Boring Designation BI-CI-09-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-09-10		LOCATION COORDINATES E = 912,013 N = 269,972		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 10.5 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 05-20-10		STARTED 05-20-10 COMPLETED 05-20-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -9.5 Ft.			
8. TOTAL DEPTH OF BORING 10.9 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Mark Green, Geotechnical Engineer			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-9.5	0.0						
-11.5	2.0		SAND, silty, mostly fine-grained sand-sized quartz, trace shell fragments, dark gray and greenish gray (SM)	A	Classification: SP-SM Color: 2.5Y 5/2-grayish brown D50: 0.2226 mm % Fines: 10.7		
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace silt, trace shell fragments, gray and greenish gray (SP)	B	Classification: SP-SM Color: 2.5Y 6/2-light brownish gray D50: 0.2105 mm % Fines: 6		
			At El. -15.5 Ft., mostly fine-grained sand-sized quartz, trace shell fragments, lt. gray and gray	C	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.1704 mm % Fines: 4.2		
-20.4	10.9						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	2.6	86.6	10.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.7		
#40	97.3		
#60	60.9		
#100	17.7		
#200	10.7		

* (no specification provided)

<u>Material Description</u>		
SAND, (SP-SM), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.3644	D ₈₅ = 0.3365	D ₆₀ = 0.2475
D ₅₀ = 0.2226	D ₃₀ = 0.1786	D ₁₅ = 0.1150
D ₁₀ =	C _u =	C _c =
<u>Classification</u>		
USCS= SP-SM	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-CI-9-10A
Sample Number: TE Lab ID: 4488.83

Depth: 0.0 - 2.0 (ft.)

Date: 5/27/10

Thompson Engineering
Mobile, Alabama

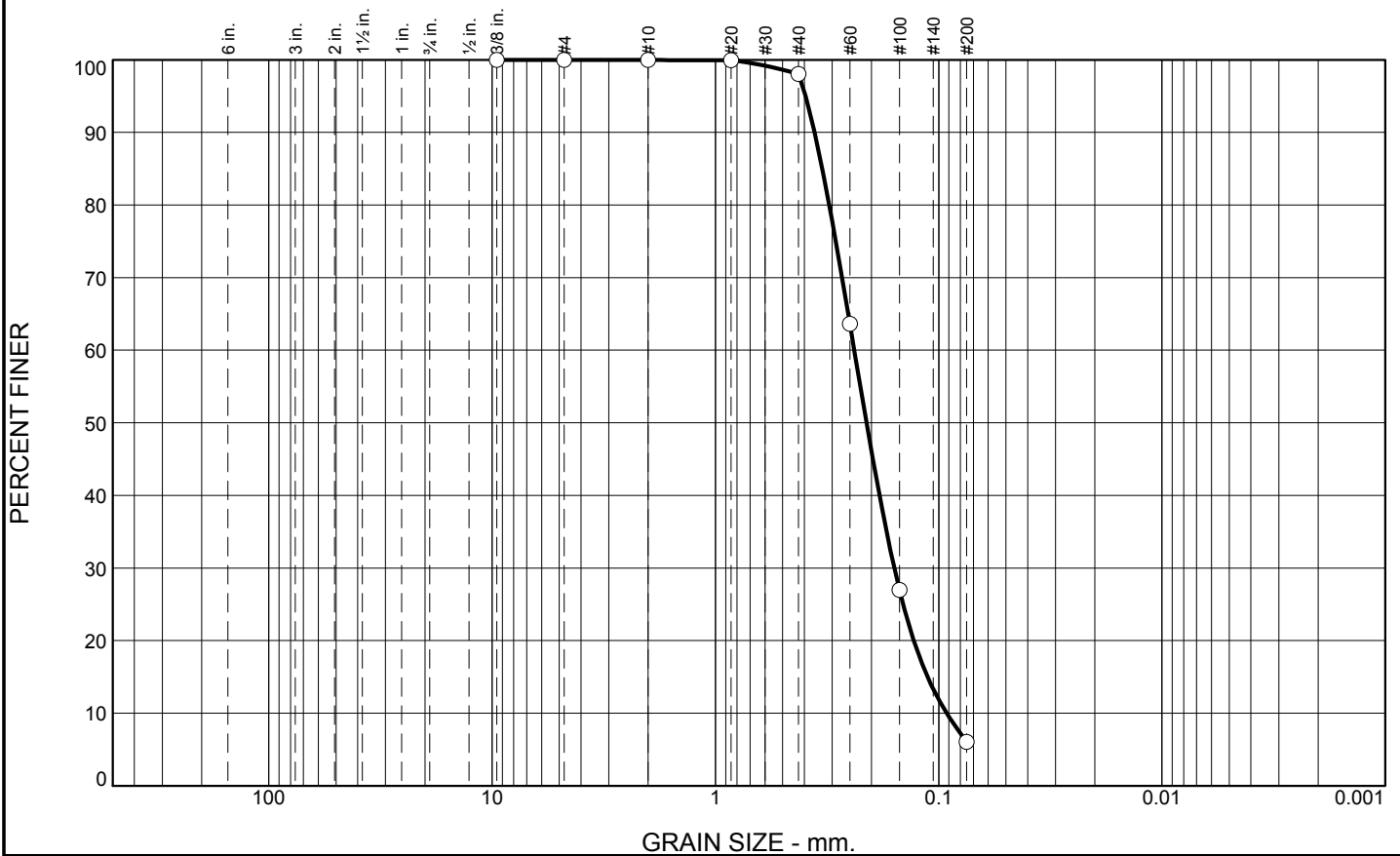
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	2.0	92.0	6.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	98.0		
#60	63.6		
#100	27.0		
#200	6.0		

* (no specification provided)

Material Description		
SAND, (SP-SM), fine grained		
<div> <div> Atterberg Limits PL= LL= PI= </div> <div> Coefficients D₉₀= 0.3596 D₈₅= 0.3321 D₆₀= 0.2389 D₅₀= 0.2105 D₃₀= 0.1582 D₁₅= 0.1122 D₁₀= 0.0922 C_u= 2.59 C_c= 1.14 </div> <div> Classification USCS= SP-SM AASHTO= </div> <div> Remarks CADD CODE = CH10D965 </div> </div>		

Location: USACE Sample # BI-CI-9-10B
Sample Number: TE Lab ID: 4488.84

Depth: 2.0 - 6.0 (ft.)

Date: 5/27/10

Thompson Engineering
Mobile, Alabama

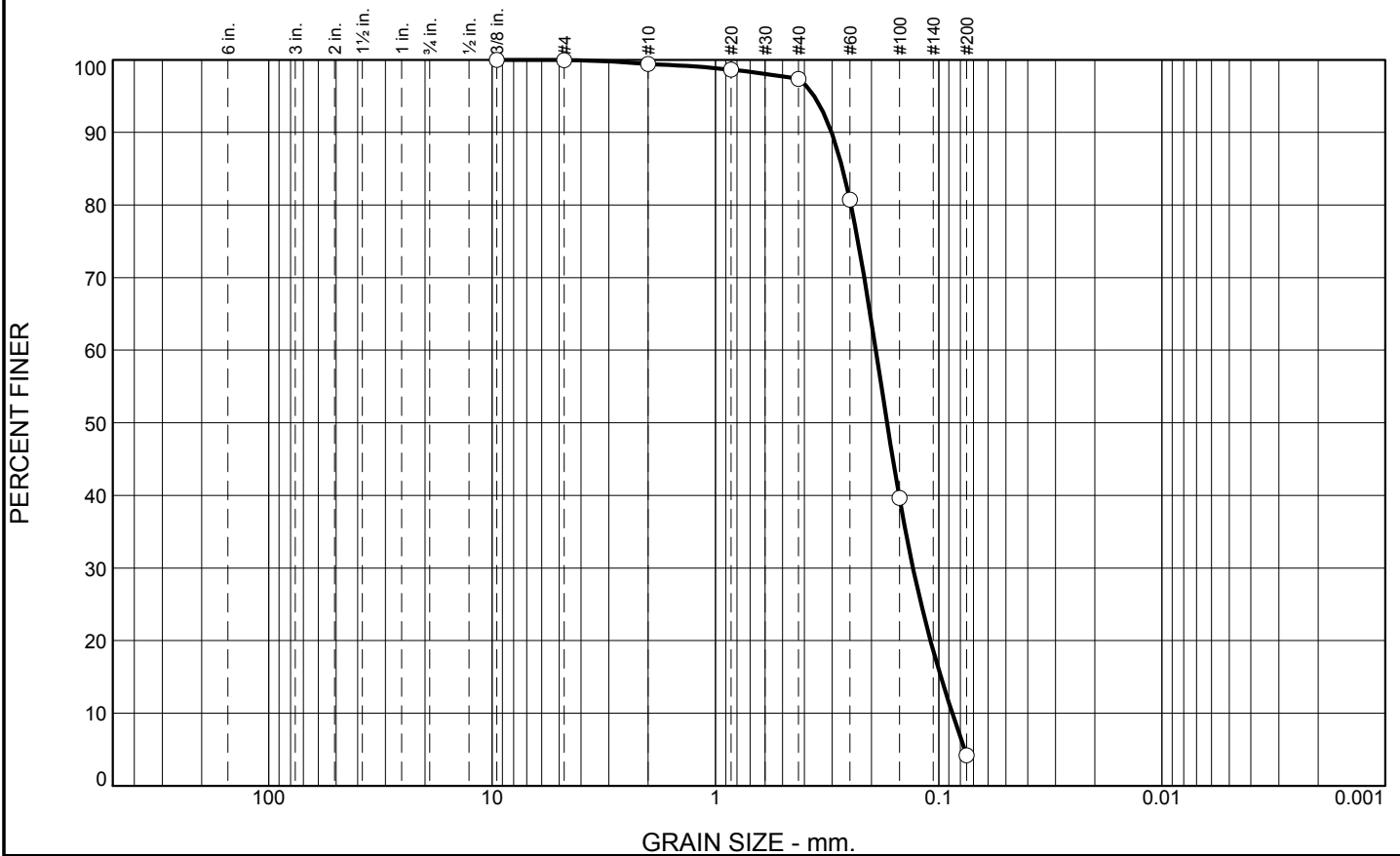
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.6	2.0	93.2	4.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.4		
#20	98.6		
#40	97.4		
#60	80.7		
#100	39.6		
#200	4.2		

* (no specification provided)

<u>Material Description</u>		
SAND, (SP), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.3017	D ₈₅ = 0.2694	D ₆₀ = 0.1914
D ₅₀ = 0.1704	D ₃₀ = 0.1304	D ₁₅ = 0.0978
D ₁₀ = 0.0869	C _u = 2.20	C _c = 1.02
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-CI-9-10C
Sample Number: TE Lab ID: 4488.85

Depth: 6.0 - 10.9 (ft.)

Date: 5/27/10

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

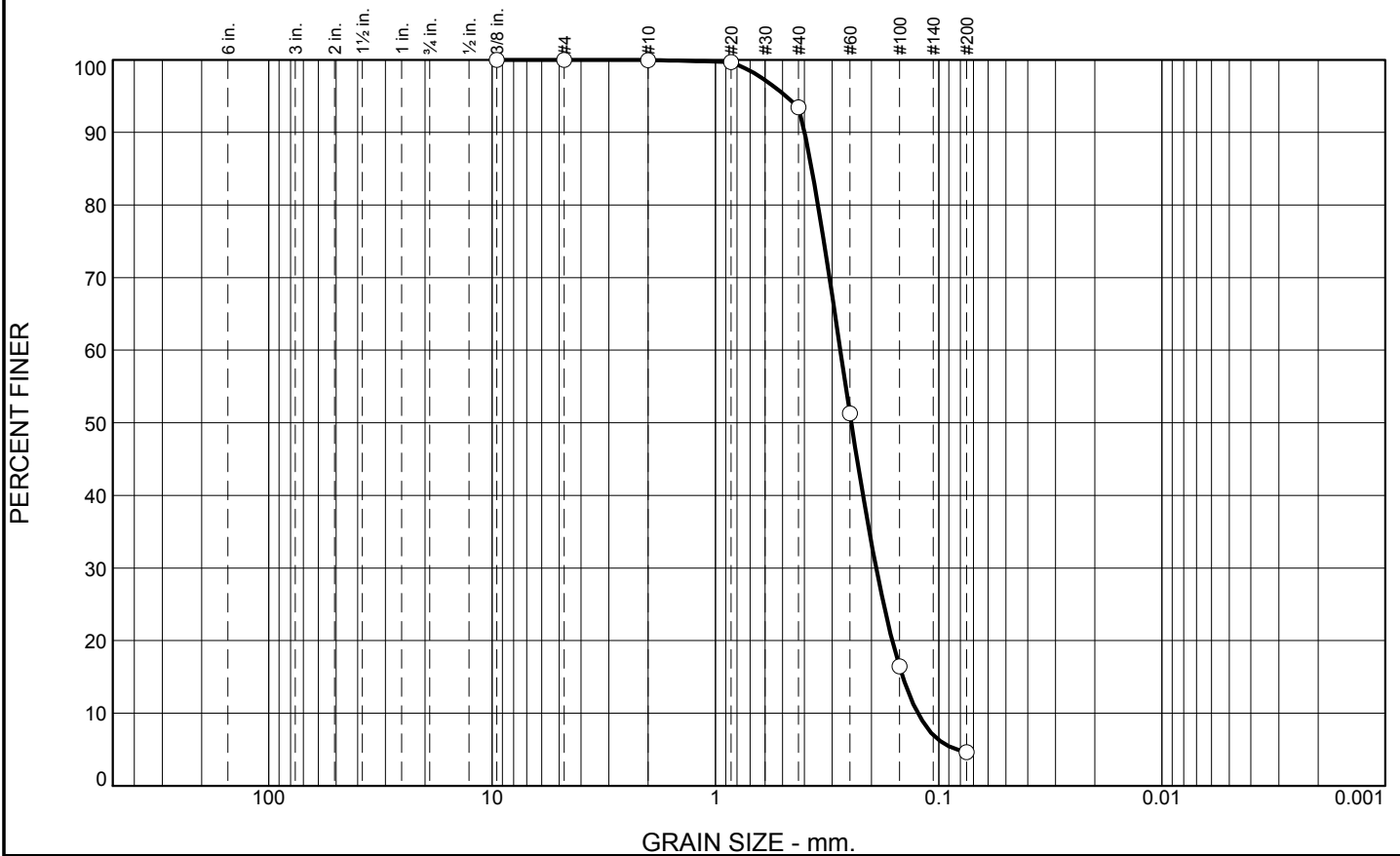
Tested By: L.Stokes

Checked By: R.Byrd

Boring Designation BI-CI-10-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-10-10		LOCATION COORDINATES E = 902,367 N = 262,098		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 10 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 05-19-10		STARTED 05-19-10 COMPLETED 05-19-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -9.1 Ft.			
8. TOTAL DEPTH OF BORING 11.9 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-9.1	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, trace shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 5/2-grayish brown D50: 0.2463 mm % Fines: 4.6		
				B	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.2187 mm % Fines: 3.3		
-19.4	10.3						
-21.0	11.9		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace clay, trace shell fragments, lt. gray (SP)				
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	6.6	88.8	4.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.7		
#40	93.4		
#60	51.3		
#100	16.4		
#200	4.6		

* (no specification provided)

<u>Material Description</u>		
SAND, (SP), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.3996	D ₈₅ = 0.3708	D ₆₀ = 0.2757
D ₅₀ = 0.2463	D ₃₀ = 0.1906	D ₁₅ = 0.1450
D ₁₀ = 0.1241	C _u = 2.22	C _c = 1.06
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-CI-10-10A
Sample Number: TE Lab ID: 4488.54

Depth: 0.0 - 5.0 (ft.)

Date: 5/27/10

Thompson Engineering
Mobile, Alabama

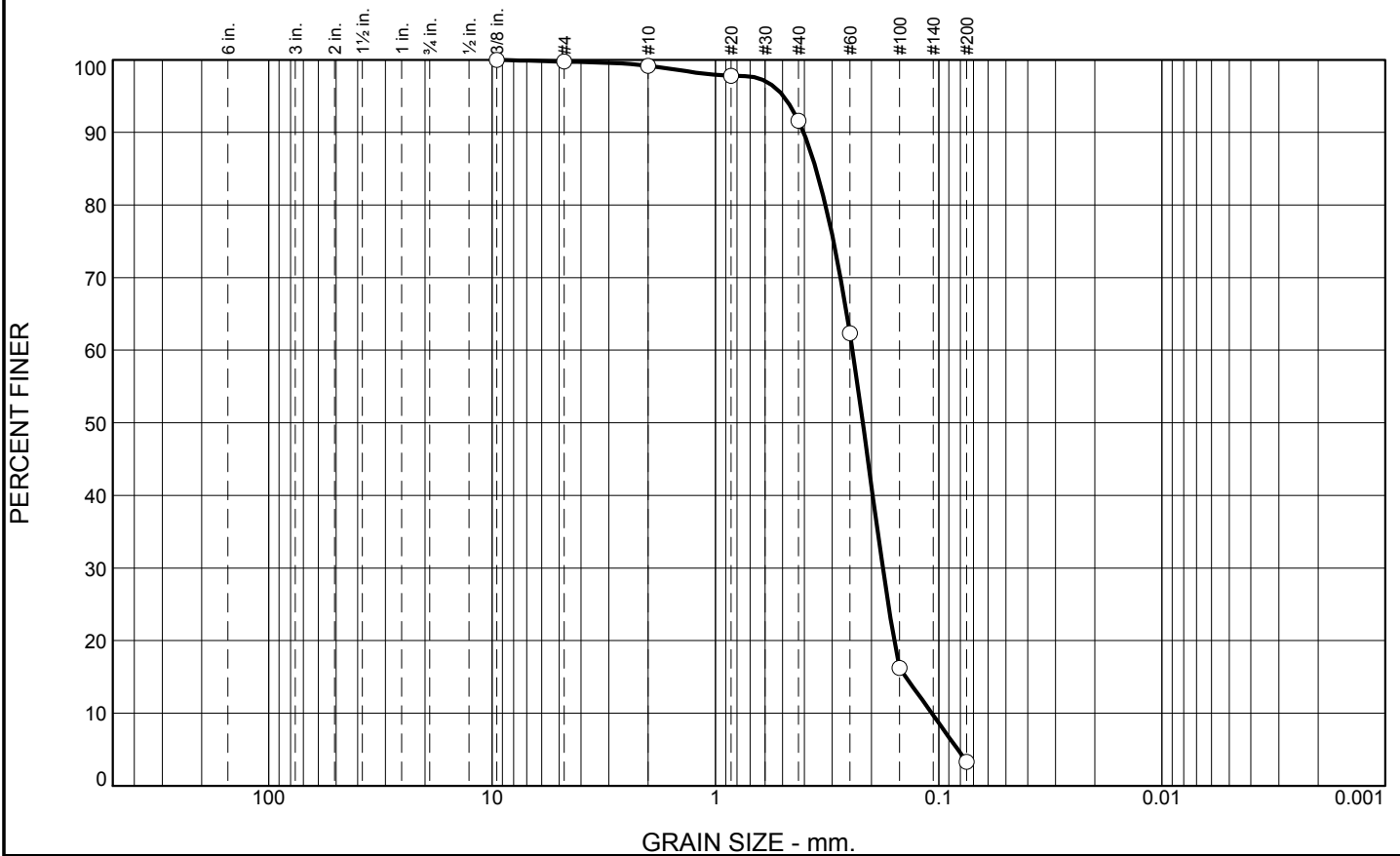
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.6	7.6	88.3	3.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.8		
#10	99.2		
#20	97.8		
#40	91.6		
#60	62.3		
#100	16.2		
#200	3.3		

* (no specification provided)

Material Description
SAND, (SP), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.4034 D₈₅= 0.3549 D₆₀= 0.2434
 D₅₀= 0.2187 D₃₀= 0.1779 D₁₅= 0.1404
 D₁₀= 0.1074 C_u= 2.27 C_c= 1.21

Classification
 USCS= SP AASHTO=

Remarks
 CADD CODE = Ch10D965

Location: USACE Sample # BI-CI-10-10B
Sample Number: TE Lab ID: 4488.55

Depth: 5.0 - 11.9 (ft.)

Date: 5/27/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

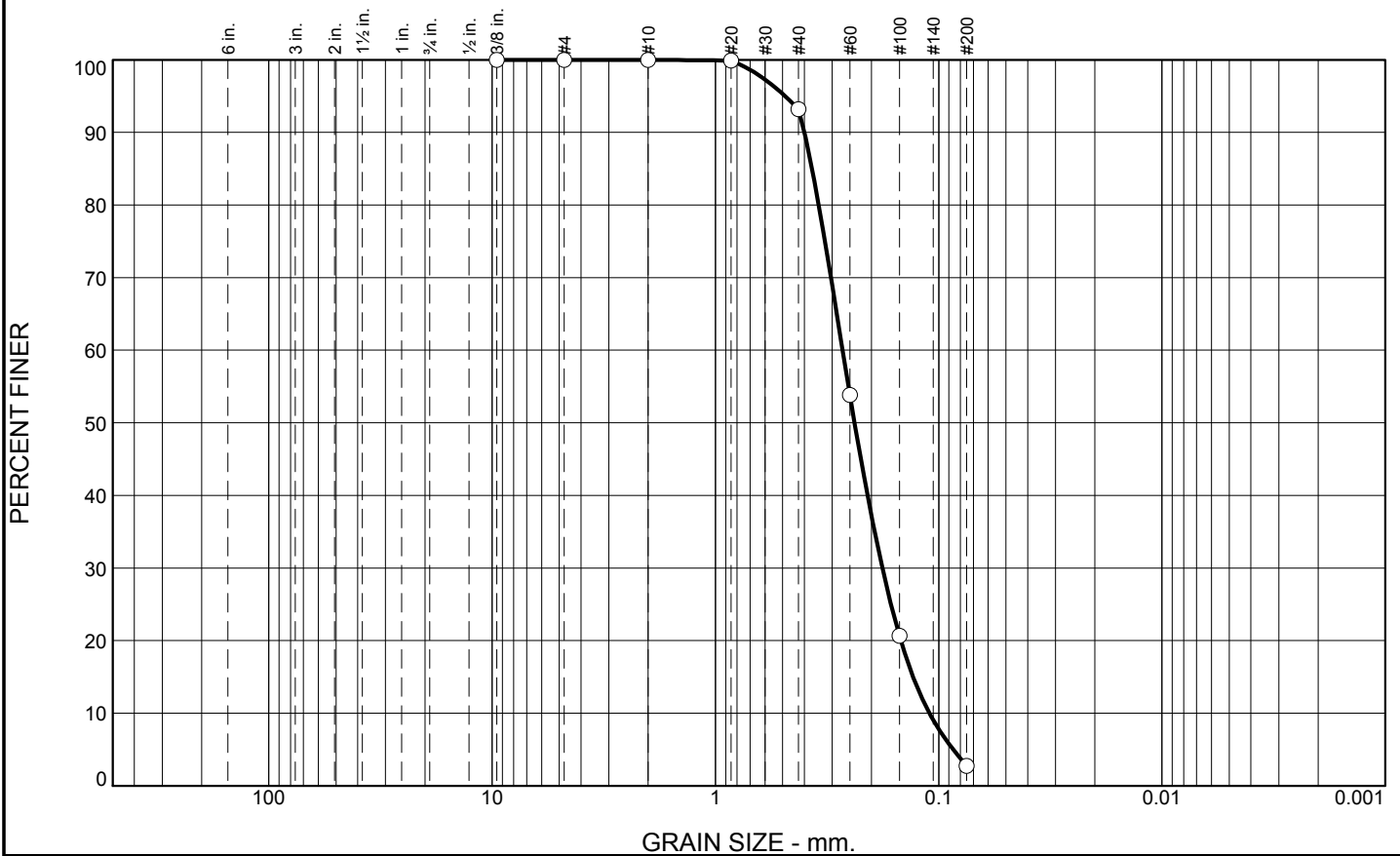
Checked By: R.Byrd

Boring Designation BI-CI-11-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-11-10		LOCATION COORDINATES E = 909,450 N = 262,955		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 11 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 05-19-10		STARTED 05-19-10 COMPLETED 05-19-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -10.0 Ft.			
8. TOTAL DEPTH OF BORING 14.4 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-10.0	0.0				
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, lt. brown (SP)	A	Classification: SP Color: 2.5Y 6/2-light brownish gray D50: 0.2382 mm % Fines: 2.8
				B	Classification: SP Color: 2.5Y 6/2-light brownish gray D50: 0.2124 mm % Fines: 2.6
				C	Classification: SP-SM Color: 2.5Y 6.5/1-gray D50: 0.1394 mm % Fines: 8.6
-19.1	9.1				
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace clay, trace shell fragments, lt. gray (SP)		
-24.4	14.4				
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.		

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	6.8	90.4	2.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	93.2		
#60	53.8		
#100	20.7		
#200	2.8		

* (no specification provided)

Material Description		
SAND, (SP), fine grained		
<div> <div> Atterberg Limits PL= LL= PI= </div> <div> Coefficients D₉₀= 0.3999 D₈₅= 0.3694 D₆₀= 0.2694 D₅₀= 0.2382 D₃₀= 0.1788 D₁₅= 0.1303 D₁₀= 0.1101 C_u= 2.45 C_c= 1.08 </div> <div> Classification USCS= SP AASHTO= </div> <div> Remarks CADD CODE = CH10D965 </div> </div>		

Location: USACE Sample # BI-CI-11-10A
Sample Number: TE Lab ID: 4488.59

Depth: 0.0 - 5.0 (ft.)

Date: 5/27/10

Thompson Engineering
Mobile, Alabama

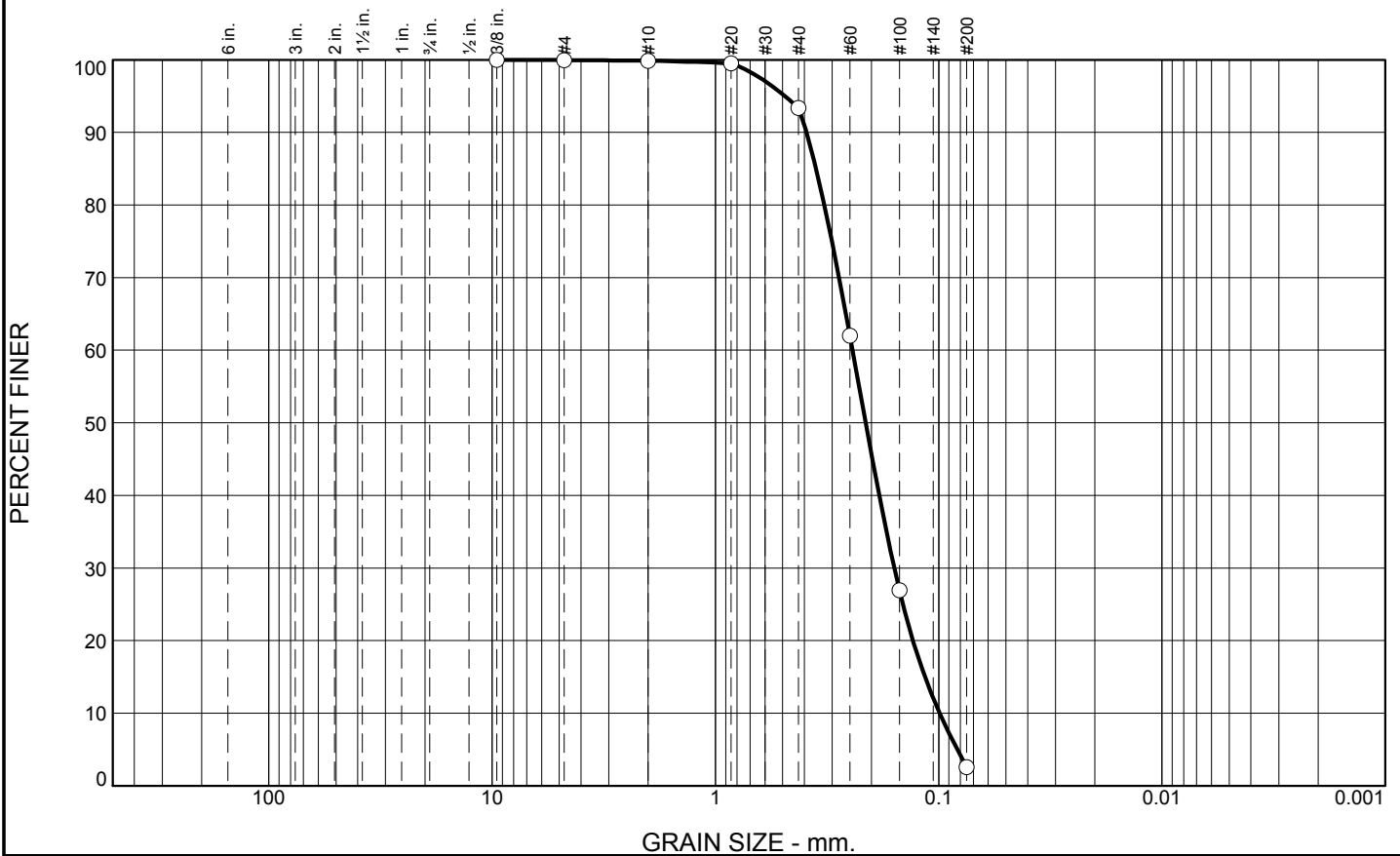
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	6.6	90.7	2.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.5		
#40	93.3		
#60	62.0		
#100	26.9		
#200	2.6		

* (no specification provided)

Material Description

SAND, (SP), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.3914

D₈₅= 0.3543

D₆₀= 0.2432

D₅₀= 0.2124

D₃₀= 0.1582

D₁₅= 0.1152

D₁₀= 0.0991

C_u= 2.46

C_c= 1.04

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-CI-11-10B
Sample Number: TE Lab ID: 4488.60

Depth: 5.0 - 10.0 (ft.)

Date: 5/27/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

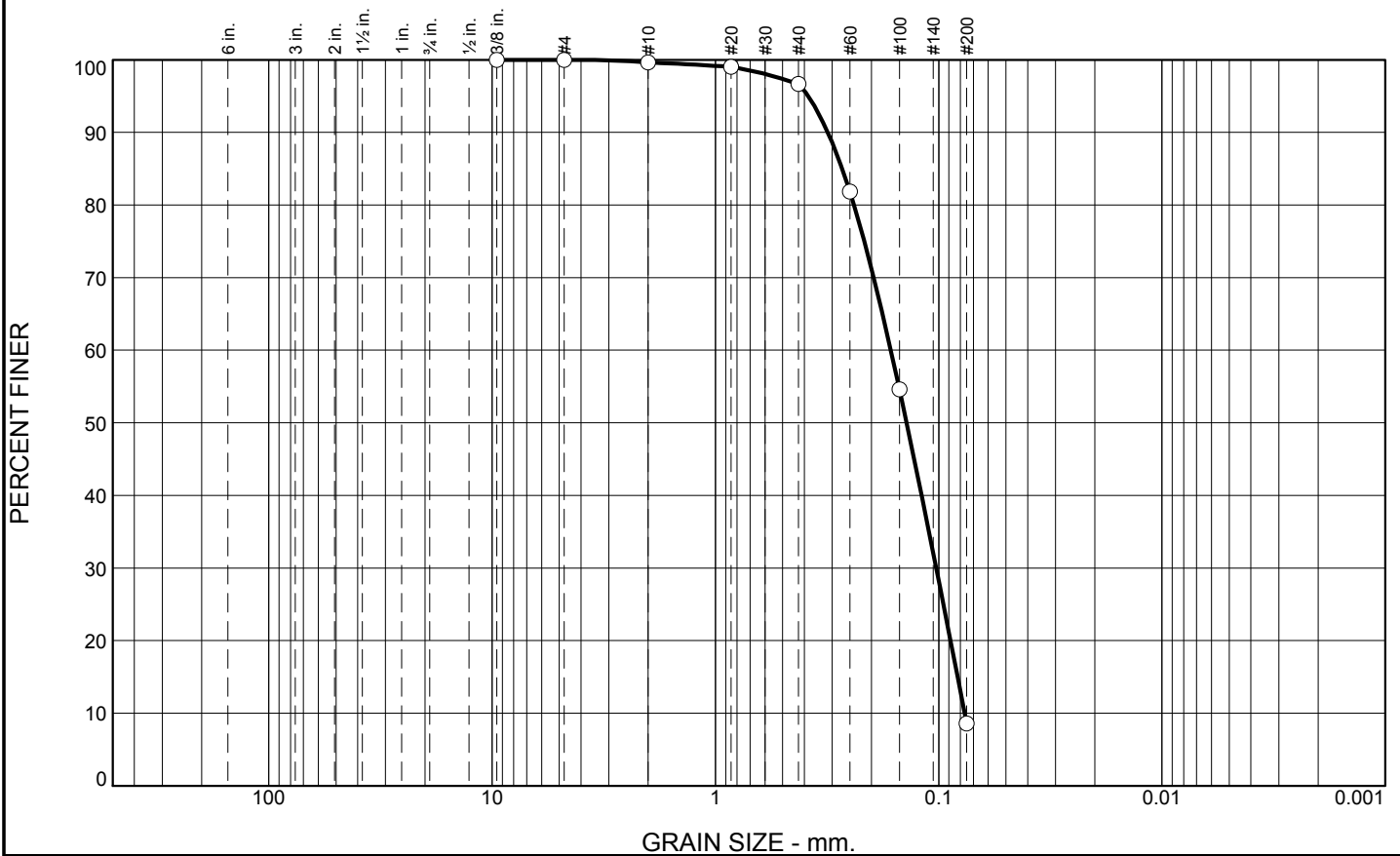
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.4	2.9	88.1	8.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.6		
#20	99.0		
#40	96.7		
#60	81.8		
#100	54.6		
#200	8.6		

* (no specification provided)

<u>Material Description</u>		
SAND, (SP-SM), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.3137	D ₈₅ = 0.2706	D ₆₀ = 0.1640
D ₅₀ = 0.1394	D ₃₀ = 0.1026	D ₁₅ = 0.0823
D ₁₀ = 0.0766	C _u = 2.14	C _c = 0.84
<u>Classification</u>		
USCS= SP-SM	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-CI-11-10C
Sample Number: TE Lab ID: 4488.61

Depth: 10.0 - 14.4 (ft.)

Date: 5/27/10

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

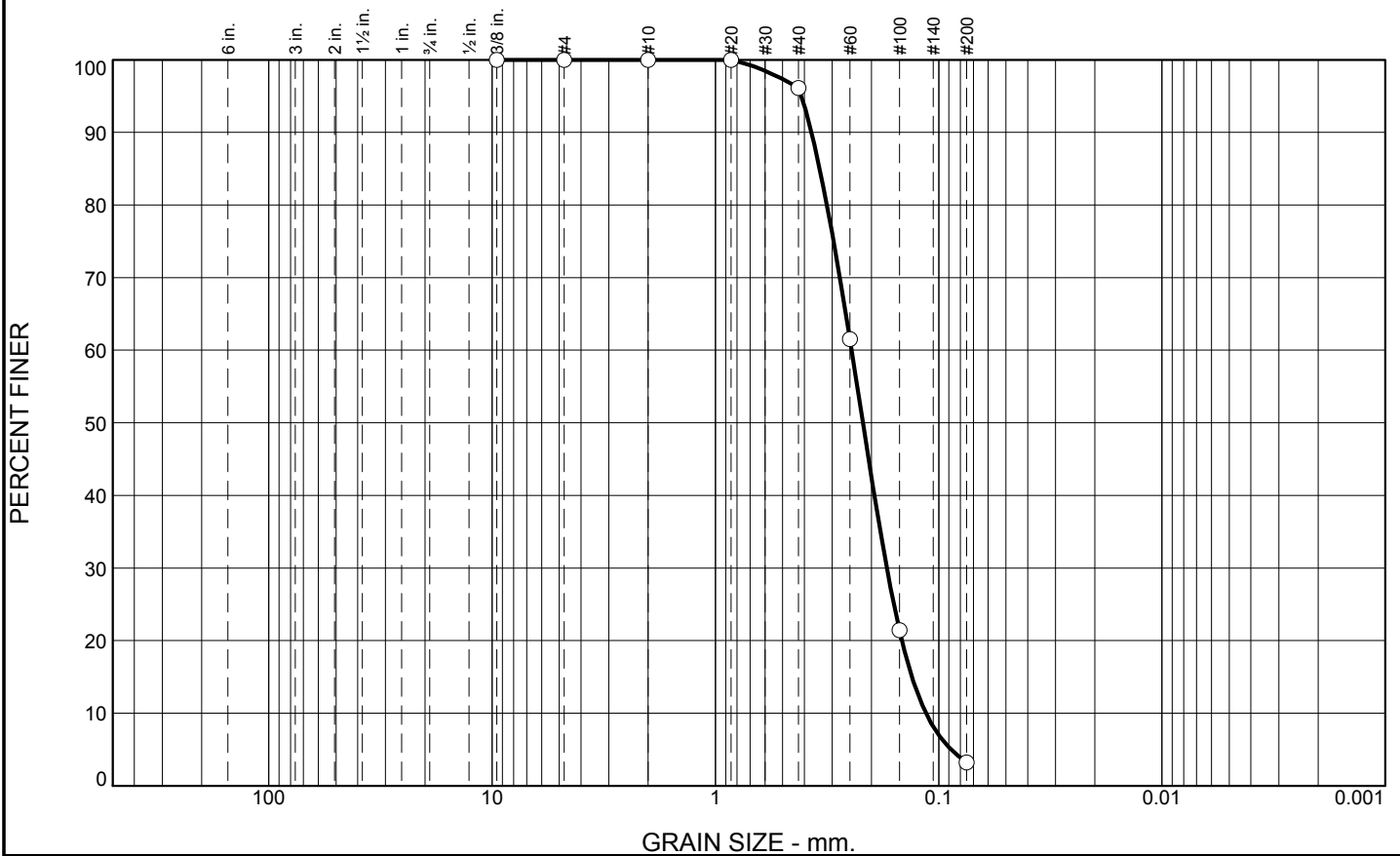
Tested By: L.Stokes

Checked By: R.Byrd

Boring Designation BI-CI-12-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-12-10		LOCATION COORDINATES E = 909,960 N = 263,809		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 10.5 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 05-19-10		STARTED 05-19-10 COMPLETED 05-19-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -9.2 Ft.			
8. TOTAL DEPTH OF BORING 10.8 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-9.2	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, lt. brown (SP)	A	Classification: SP Color: 2.5Y 6.5/1-gray D50: 0.2185 mm % Fines: 3.2		
-15.3	6.1		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace clay, trace shell fragments, lt. gray (SP)	B	Classification: SP-SM Color: 2.5Y 6/1-gray D50: 0.1633 mm % Fines: 5.7		
-19.0	9.8						
-20.0	10.8		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little clay, trace shell fragments, gray (SP)				
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	3.9	92.9	3.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	100.0		
#40	96.1		
#60	61.5		
#100	21.4		
#200	3.2		

* (no specification provided)

Material Description		
SAND, (SP), fine grained		
<div> <div> Atterberg Limits LL= PI= </div> <div> Coefficients D₉₀= 0.3715 D₅₀= 0.2185 D₁₀= 0.1141 D₈₅= 0.3412 D₃₀= 0.1708 C_u= 2.15 D₆₀= 0.2455 D₁₅= 0.1318 C_c= 1.04 </div> </div>		
Classification USCS= SP AASHTO=		
Remarks CADD CODE = CH10D965		

Location: USACE Sample # BI-CI-12-10A
Sample Number: TE Lab ID: 4488.64

Depth: 0.0 - 5.0 (ft.)

Date: 5/27/10

Thompson Engineering

Mobile, Alabama

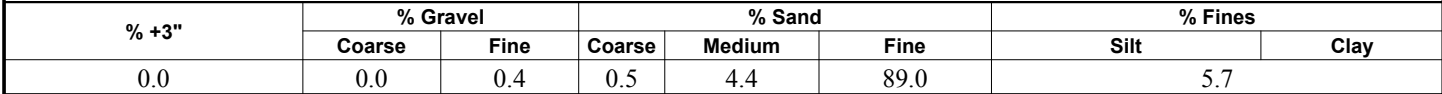
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

PERCENT FINER



<u>Material Description</u>		
SAND, (SP-SM), fine grained, with trace shell		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.2948	D ₈₅ = 0.2587	D ₆₀ = 0.1835
D ₅₀ = 0.1633	D ₃₀ = 0.1239	D ₁₅ = 0.0929
D ₁₀ = 0.0830	C _u = 2.21	C _c = 1.01
<u>Classification</u>		
USCS= SP-SM	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

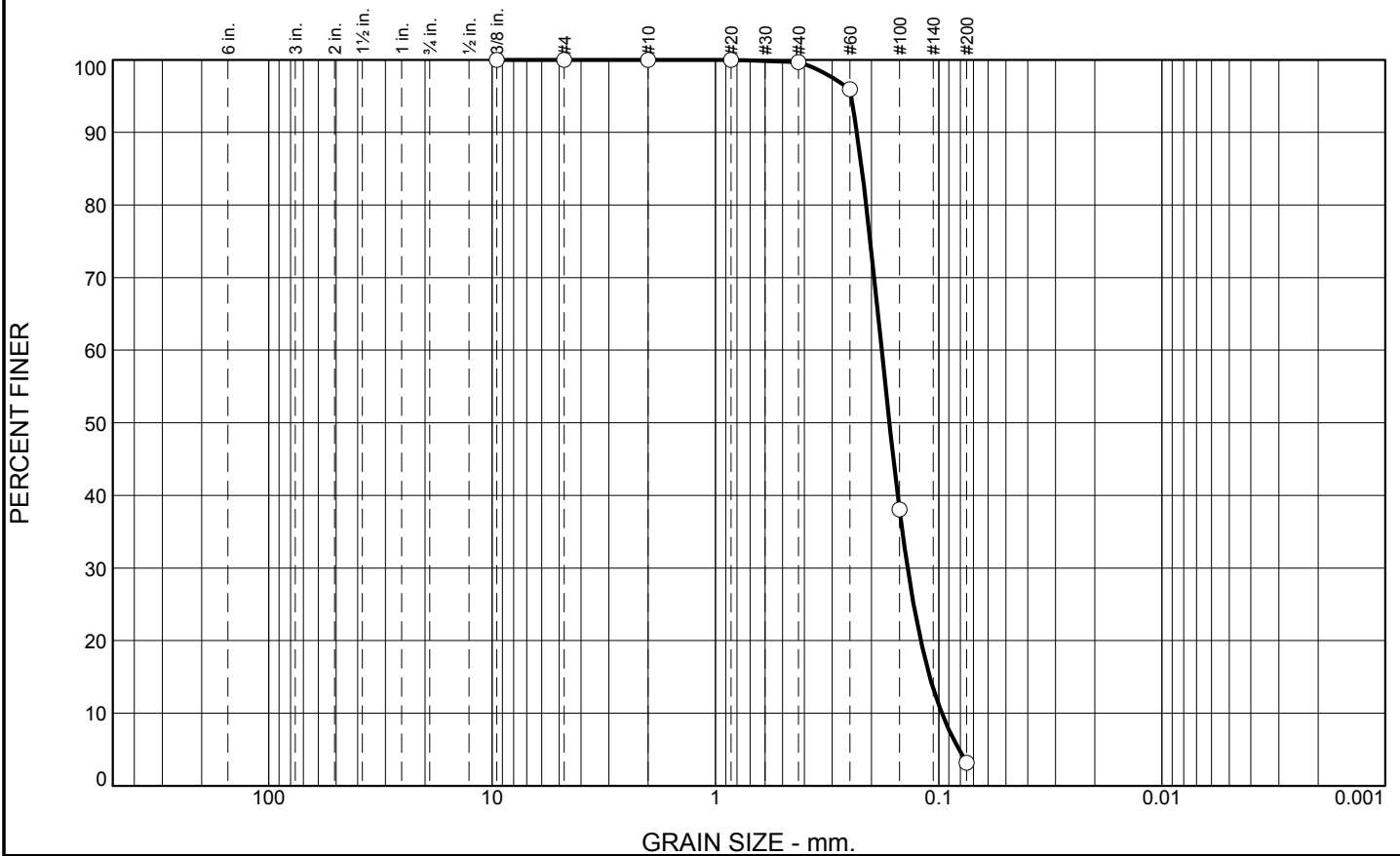
E-45

Boring Designation BI-CI-13-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-13-10		LOCATION COORDINATES E = 910,502 N = 264,658		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 10.5 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 05-19-10		STARTED 05-19-10 COMPLETED 05-19-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -9.1 Ft.			
8. TOTAL DEPTH OF BORING 13.5 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-9.1	0.0				
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, trace shell fragments, lt. brown (SP)	A	Classification: SP Color: 2.5Y 6/2-light brownish gray D50: 0.1939 mm % Fines: 4.4
				B	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.1663 mm % Fines: 3.2
-19.6	10.5		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace clay, trace shell fragments, lt. gray (SP)	C	Classification: SP-SM Color: 5Y 6/2-light olive gray D50: 0.1442 mm % Fines: 6.5
-21.9	12.8				
-22.6	13.5		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little clay, trace shell fragments, gray (SP)		
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.		

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.3	96.5	3.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	100.0		
#40	99.7		
#60	95.9		
#100	38.1		
#200	3.2		

* (no specification provided)

Material Description		
SAND, (SP), fine grained		
<div> <div> Atterberg Limits </div> <div> PL= </div> <div> LL= </div> <div> PI= </div> </div>		
<div> <div> Coefficients </div> <div> D₉₀= 0.2324 </div> <div> D₅₀= 0.1663 </div> <div> D₁₀= 0.0969 </div> <div> D₈₅= 0.2211 </div> <div> D₃₀= 0.1379 </div> <div> C_u= 1.86 </div> <div> D₆₀= 0.1800 </div> <div> D₁₅= 0.1097 </div> <div> C_c= 1.09 </div> </div>		
<div> <div> Classification </div> <div> USCS= SP </div> <div> AASHTO= </div> </div>		
<div> <div> Remarks </div> <div> CADD CODE = CH10D965 </div> </div>		

Location: USACE Sample # BI-CI-13-10B
Sample Number: TE Lab ID: 4488.70

Depth: 4.5 - 9.0 (ft.)

Date: 5/27/10

Thompson Engineering
Mobile, Alabama

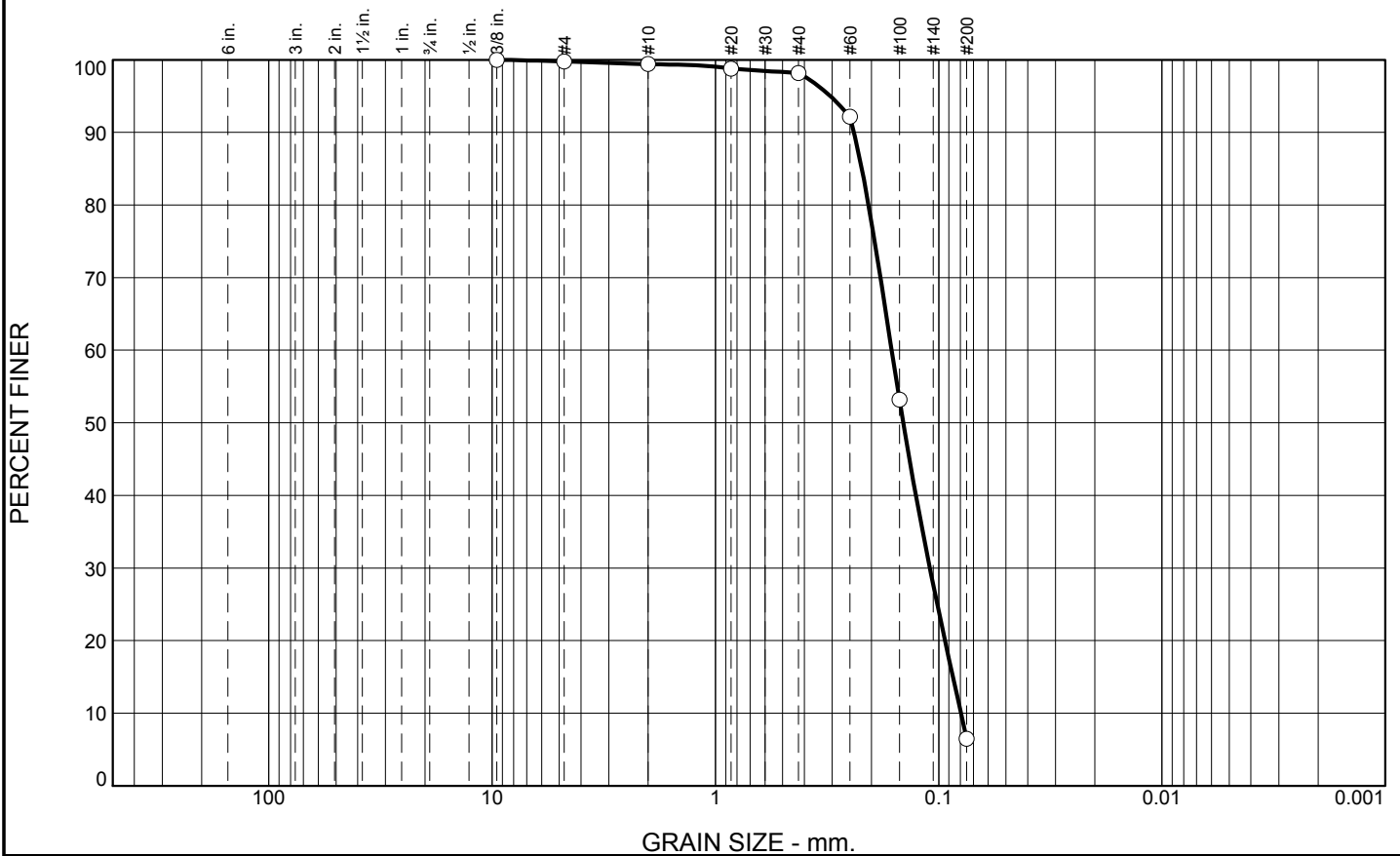
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.4	1.2	91.7	6.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.8		
#10	99.4		
#20	98.8		
#40	98.2		
#60	92.2		
#100	53.2		
#200	6.5		

* (no specification provided)

Material Description
SAND, (SP-SM), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.2396 D₈₅= 0.2209 D₆₀= 0.1625
 D₅₀= 0.1442 D₃₀= 0.1096 D₁₅= 0.0864
 D₁₀= 0.0795 C_u= 2.04 C_c= 0.93

Classification
 USCS= SP-SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-CI-13-10C
Sample Number: TE Lab ID: 4488.71

Depth: 9.0 - 13.5 (ft.)

Date: 5/27/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

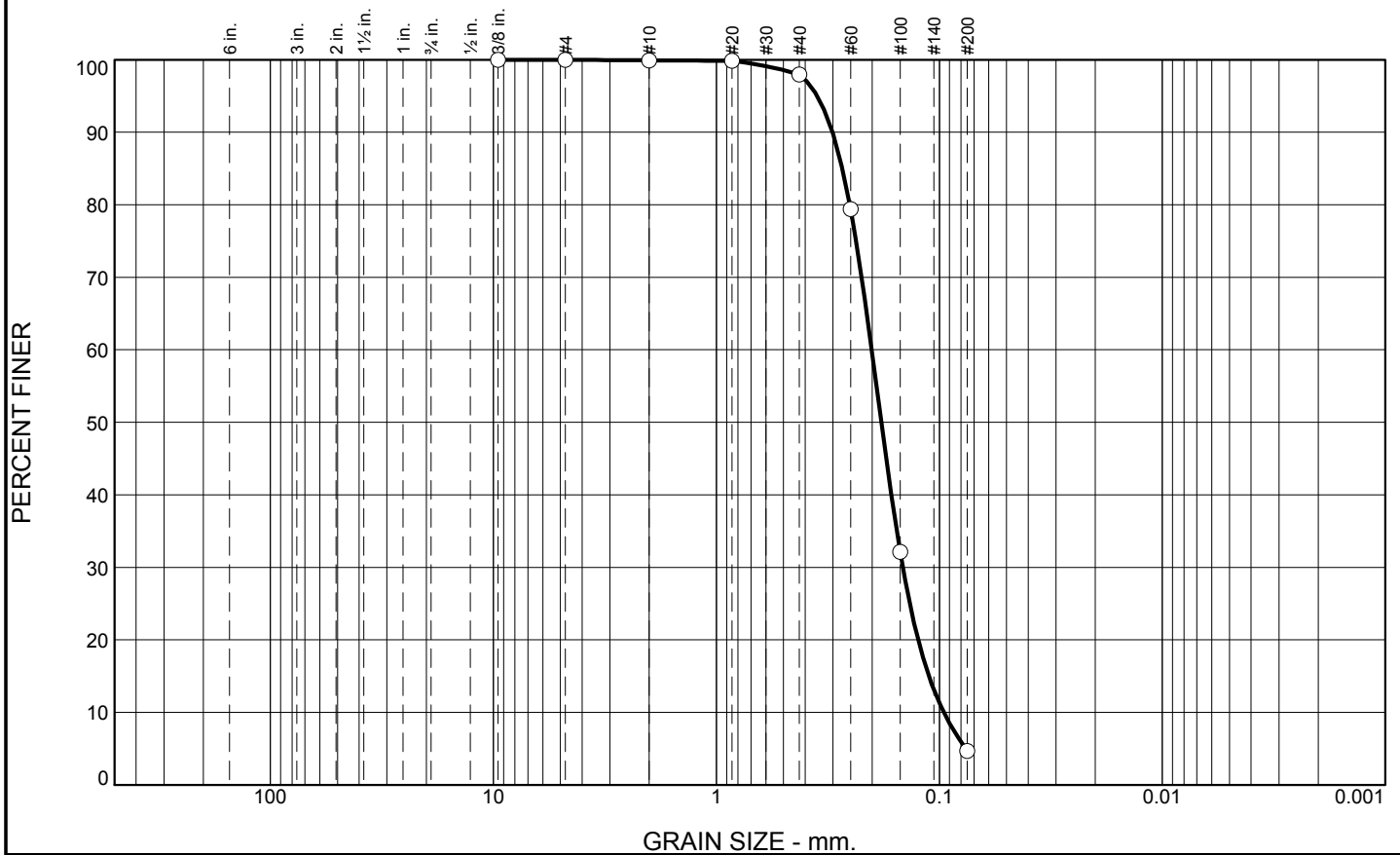
Tested By: L.Stokes

Checked By: R.Byrd

Boring Designation BI-CI-14-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-14-10		LOCATION COORDINATES E = 910,981 N = 265,534		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 10.5 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 05-19-10		STARTED 05-19-10 COMPLETED 05-19-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -9.1 Ft.			
8. TOTAL DEPTH OF BORING 11.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-9.1	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, lt. brown (SP)	A	Classification: SP Color: 2.5Y 6.5/1.5-light gray D50: 0.1821 mm % Fines: 4.7		
-17.1	8.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace clay, trace shell fragments, lt. gray (SP)	B	Classification: SP Color: 2.5Y 6/2-light brownish gray D50: 0.1832 mm % Fines: 4.7		
-20.1	11.0						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	1.9	93.3	4.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.9		
#40	98.0		
#60	79.4		
#100	32.1		
#200	4.7		

* (no specification provided)

Material Description
SAND, (SP), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.3014 D₈₅= 0.2723 D₆₀= 0.2012
 D₅₀= 0.1821 D₃₀= 0.1459 D₁₅= 0.1114
 D₁₀= 0.0956 C_u= 2.11 C_c= 1.11

Classification
 USCS= SP AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-CI-14-10A
Sample Number: TE Lab ID: 4488.72

Depth: 0.0 - 5.5 (ft.)

Date: 5/27/10

Thompson Engineering

Mobile, Alabama

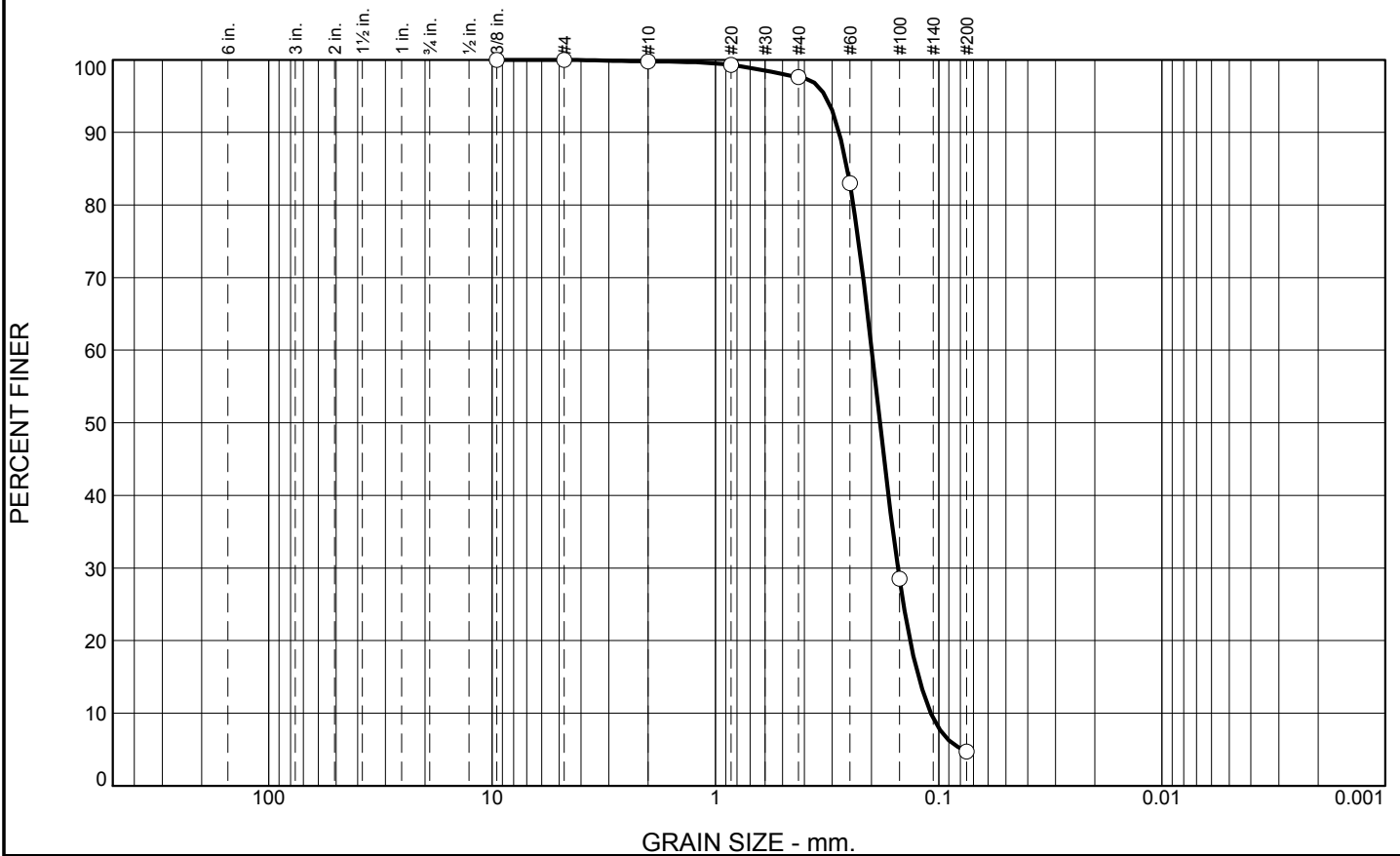
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	2.2	92.9	4.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.8		
#20	99.3		
#40	97.6		
#60	83.0		
#100	28.5		
#200	4.7		

* (no specification provided)

Material Description		
SAND, (SP), fine grained		
<div> <div> Atterberg Limits LL= PI= </div> <div> Coefficients D₉₀= 0.2791 D₈₅= 0.2568 D₆₀= 0.1995 D₅₀= 0.1832 D₃₀= 0.1524 D₁₅= 0.1231 D₁₀= 0.1084 C_u= 1.84 C_c= 1.07 </div> <div> Classification USCS= SP AASHTO= </div> <div> Remarks CADD CODE = CH10D965 </div> </div>		

Location: USACE Sample # BI-CI-14-10B
Sample Number: TE Lab ID: 4488.73

Depth: 5.5 - 11.0 (ft.)

Date: 5/27/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

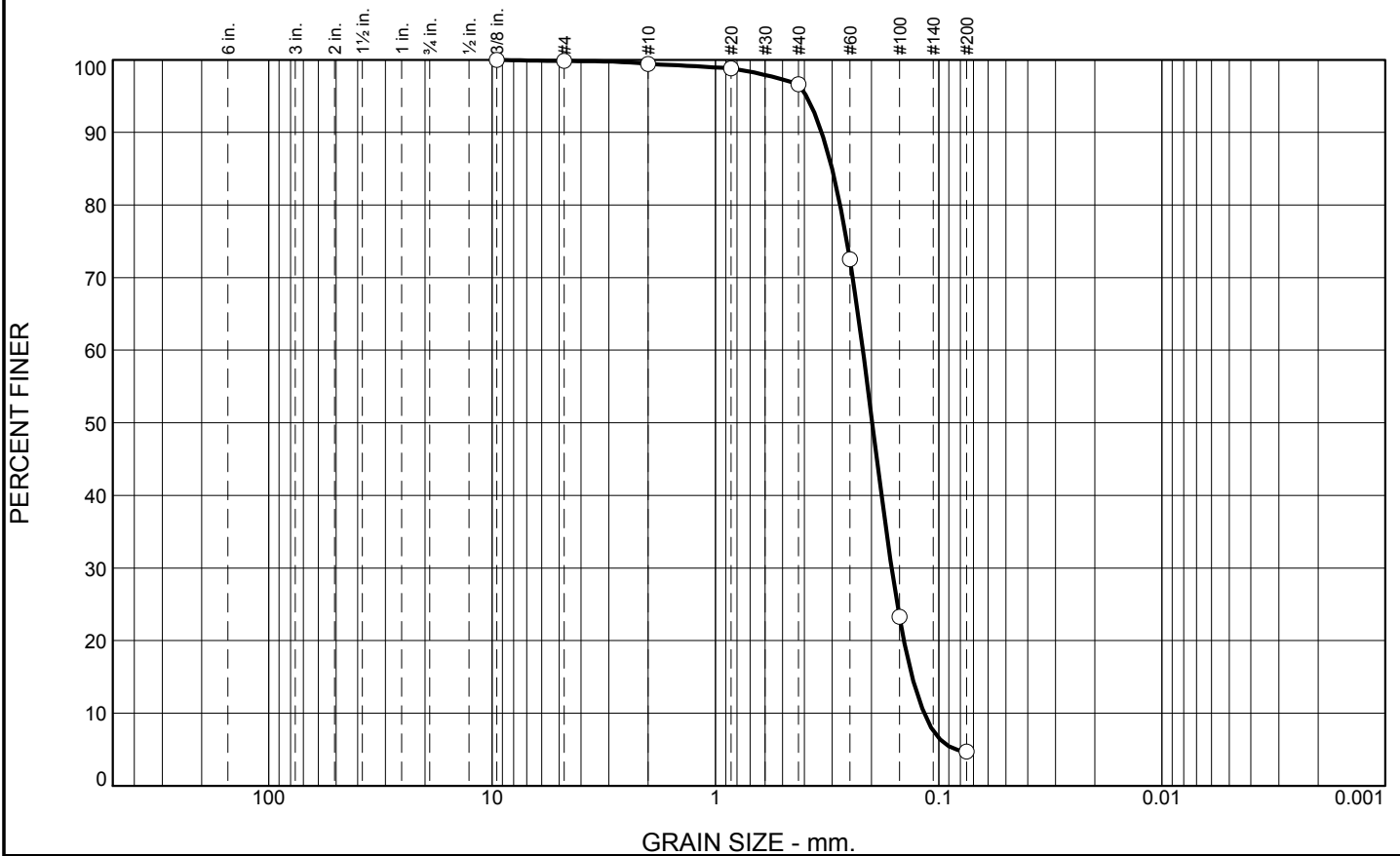
Tested By: L.Stokes

Checked By: R.Byrd

Boring Designation BI-CI-15-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-15-10		LOCATION COORDINATES E = 910,786 N = 266,526		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 10.5 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 05-19-10		STARTED 05-19-10 COMPLETED 05-19-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -9.1 Ft.			
8. TOTAL DEPTH OF BORING 9.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-9.1	0.0						
-12.1	3.0		SAND, silty, mostly fine-grained sand-sized quartz, trace organic matter, brown (SM)	A	Classification: SP Color: 2.5Y 4.5/2- D50: 0.1985 mm % Fines: 4.7		
-18.1	9.0		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, trace organic matter, lt. brown (SP) At El. -16.1 Ft., mostly fine to medium-grained sand-sized quartz, trace clay, trace shell fragments, lt. gray	B	Classification: SP Color: 2.5Y 6/2-light brownish gray D50: 0.1599 mm % Fines: 4.8		
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.4	2.8	91.9	4.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.8		
#10	99.4		
#20	98.8		
#40	96.6		
#60	72.5		
#100	23.3		
#200	4.7		

* (no specification provided)

Material Description		
SAND, (SP), fine grained		
<div> <div> Atterberg Limits </div> <div> PL= </div> <div> LL= </div> <div> PI= </div> </div>		
<div> <div> Coefficients </div> <div> D₉₀= 0.3342 </div> <div> D₅₀= 0.1985 </div> <div> D₁₀= 0.1163 </div> <div> D₈₅= 0.3002 </div> <div> D₃₀= 0.1626 </div> <div> C_u= 1.88 </div> <div> D₆₀= 0.2186 </div> <div> D₁₅= 0.1315 </div> <div> C_c= 1.04 </div> </div>		
<div> <div> Classification </div> <div> USCS= SP </div> <div> AASHTO= </div> </div>		
<div> <div> Remarks </div> <div> CADD CODE = CH10D965 </div> </div>		

Location: USACE Sample # BI-CI-15-10A
Sample Number: TE Lab ID: 4488.78

Depth: 0.0 - 5.0 (ft.)

Date: 5/27/10

Thompson Engineering
Mobile, Alabama

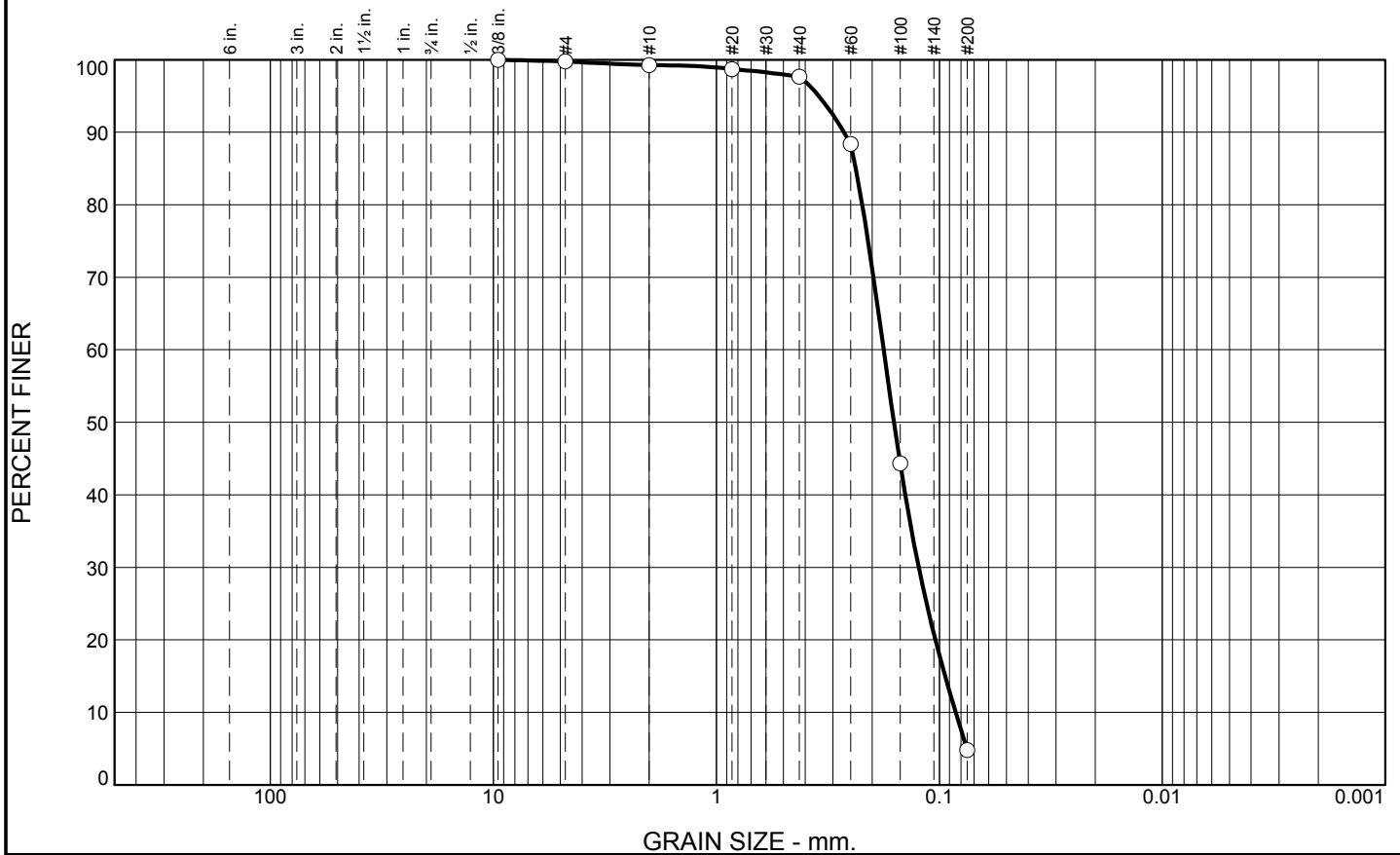
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.3	0.4	1.6	92.9	4.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.7		
#10	99.3		
#20	98.7		
#40	97.7		
#60	88.4		
#100	44.3		
#200	4.8		

* (no specification provided)

Material Description		
SAND, (SP), fine grained		
<div> <div> Atterberg Limits PL= LL= PI= </div> <div> Coefficients D₉₀= 0.2678 D₈₅= 0.2370 D₆₀= 0.1778 D₅₀= 0.1599 D₃₀= 0.1238 D₁₅= 0.0943 D₁₀= 0.0845 C_u= 2.10 C_c= 1.02 </div> <div> Classification USCS= SP AASHTO= </div> <div> Remarks CADD CODE = CH10D965 </div> </div>		

Location: USACE Sample # BI-CI-15-10B
Sample Number: TE Lab ID: 4488.79

Depth: 5.0 - 9.0 (ft.)

Date: 5/27/10

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

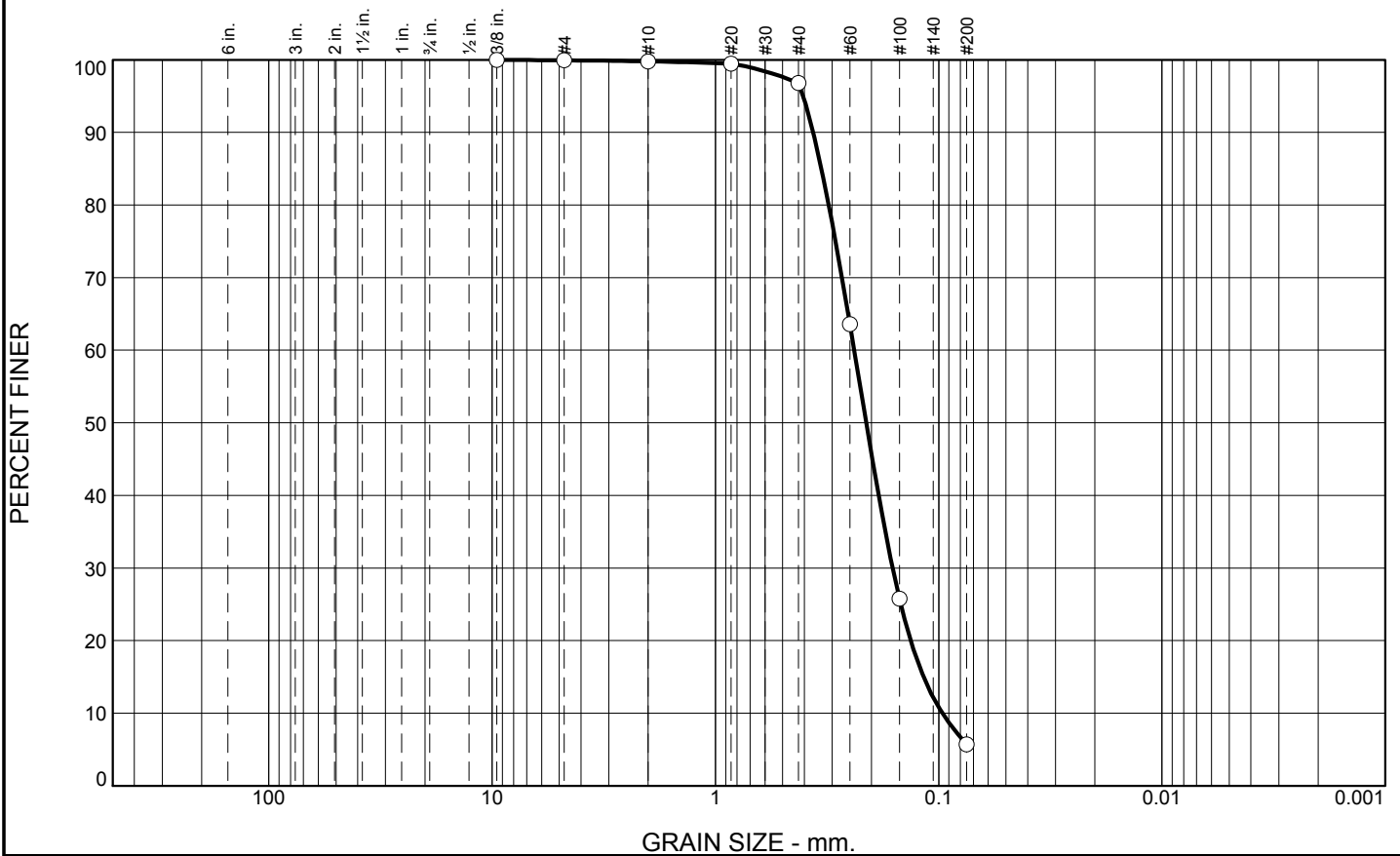
Tested By: L.Stokes

Checked By: R.Byrd

Boring Designation BI-CI-16-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-16-10		LOCATION COORDINATES E = 911,828 N = 267,442		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 11 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 05-20-10		STARTED 05-20-10 COMPLETED 05-20-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -9.8 Ft.			
8. TOTAL DEPTH OF BORING 13.1 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Mark Green, Geotechnical Engineer			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-9.8	0.0						
-12.8	3.0		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, trace shell, trace of clay lenses, dark gray and gray (SP-SM)	A	Classification: SP-SM Color: 2.5Y 5/3-light olive brown D50: 0.2112 mm % Fines: 5.7		
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace shell fragments, trace silt, gray and tan (SP)	B	Classification: SP Color: 2.5Y 6/2-light brownish gray D50: 0.2192 mm % Fines: 2.1		
			At El. -16.8 Ft., mostly fine-grained sand-sized quartz, little shell fragments, gray to lt. gray	C	Classification: SP Color: 2.5Y 6/1-gray D50: 0.199 mm % Fines: 3.6		
-22.9	13.1			NS			
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.1	3.0	91.1	5.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.8		
#20	99.5		
#40	96.8		
#60	63.6		
#100	25.8		
#200	5.7		

* (no specification provided)

Material Description

SAND, (SP-SM), fine grained, with trace shell

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.3650 D₈₅= 0.3352 D₆₀= 0.2391
D₅₀= 0.2112 D₃₀= 0.1609 D₁₅= 0.1169
D₁₀= 0.0963 C_u= 2.48 C_c= 1.12

Classification

USCS= SP-SM AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-CI-16-10A
Sample Number: TE Lab ID: 4488.99

Depth: 0.0 - 3.0 (ft.)

Date: 5/27/10

Thompson Engineering

Mobile, Alabama

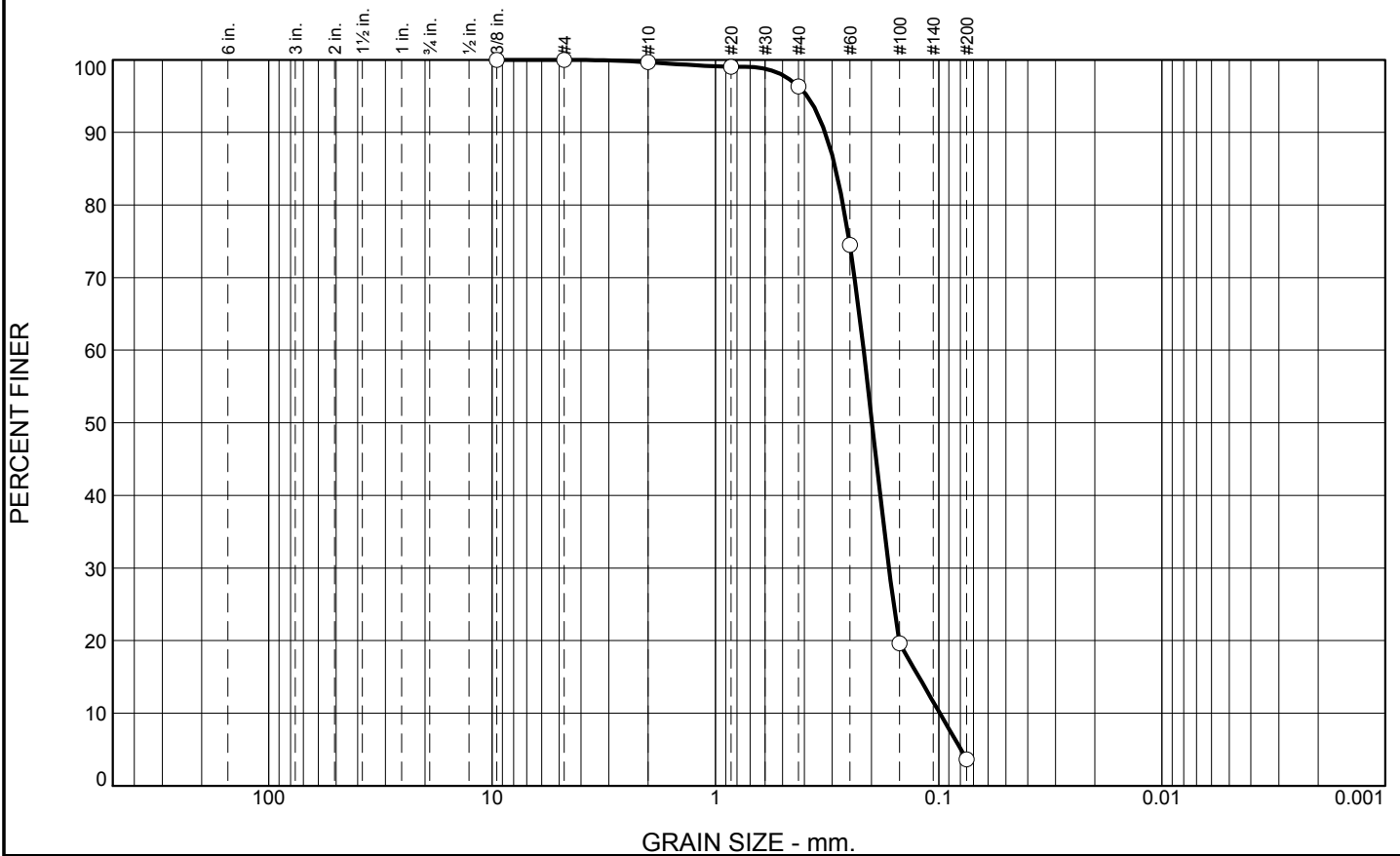
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.3	3.4	92.7	3.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.7		
#20	99.1		
#40	96.3		
#60	74.5		
#100	19.6		
#200	3.6		

* (no specification provided)

Material Description

SAND, (SP), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.3223

D₈₅= 0.2896

D₆₀= 0.2169

D₅₀= 0.1990

D₃₀= 0.1671

D₁₅= 0.1227

D₁₀= 0.0988

C_u= 2.19

C_c= 1.30

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-CI-16-10C
Sample Number: TE Lab ID: 4488.101

Depth: 7.0 - 12.0 (ft.)

Date: 5/27/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

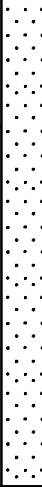
Project No: 10-2123-0009

Figure

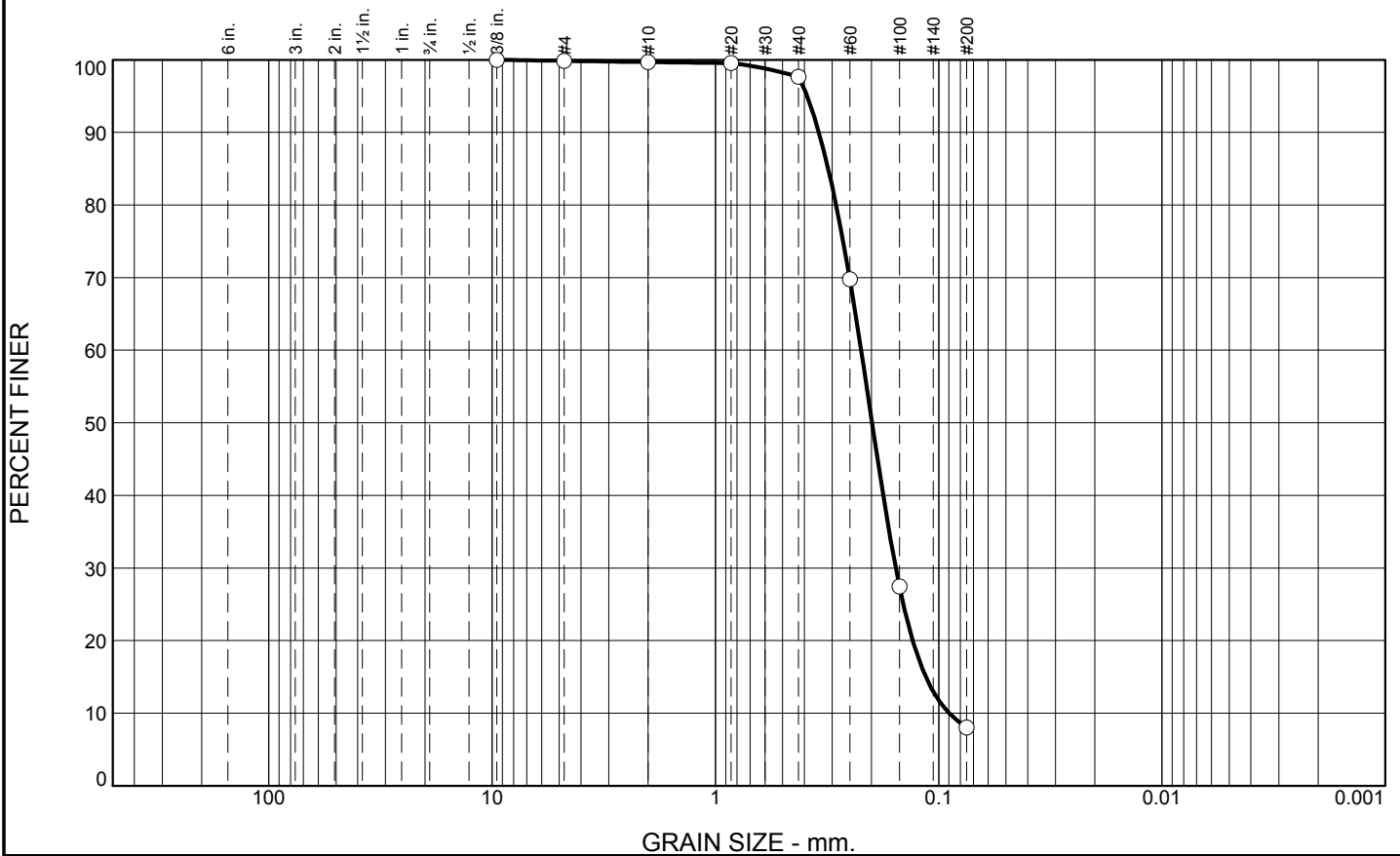
Tested By: L.Stokes

Checked By: R.Byrd

Boring Designation BI-CI-17-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-17-10		LOCATION COORDINATES E = 912,079 N = 268,412		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 0 UNDISTURBED (UD)	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 11 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 05-20-10		STARTED 05-20-10 COMPLETED 05-20-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -9.9 Ft.			
8. TOTAL DEPTH OF BORING 11.1 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Mark Green, Geotechnical Engineer			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-9.9	0.0						
-12.9	3.0		SAND, poorly-graded, mostly fine-grained sand-sized quartz, little silt, trace shell frags, greenish gray (SP)	A	Classification: SP-SM Color: 2.5Y 5/2-grayish brown D50: 0.1989 mm % Fines: 8		
-17.9	8.0		SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace silt, trace shell fragments, greenish gray and tan (SP)	B	Classification: SP Color: 10YR 6.5/2- D50: 0.197 mm % Fines: 2.7		
-21.0	11.1		SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace shell fragments, tan and gray (SP)	C	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.1753 mm % Fines: 3.5		
			At El. -20.6 Ft., trace of organics (wood)				
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.2	2.0	89.7	8.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.7		
#20	99.6		
#40	97.7		
#60	69.8		
#100	27.4		
#200	8.0		

* (no specification provided)

<u>Material Description</u>		
SAND, (SP-SM), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.3438	D ₈₅ = 0.3124	D ₆₀ = 0.2226
D ₅₀ = 0.1989	D ₃₀ = 0.1558	D ₁₅ = 0.1143
D ₁₀ = 0.0897	C _u = 2.48	C _c = 1.22
<u>Classification</u>		
USCS= SP-SM	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-CI-17-10A
Sample Number: TE Lab ID: 4488.93

Depth: 0.0 - 3.0 (ft.)

Date: 5/27/10

Thompson Engineering
Mobile, Alabama

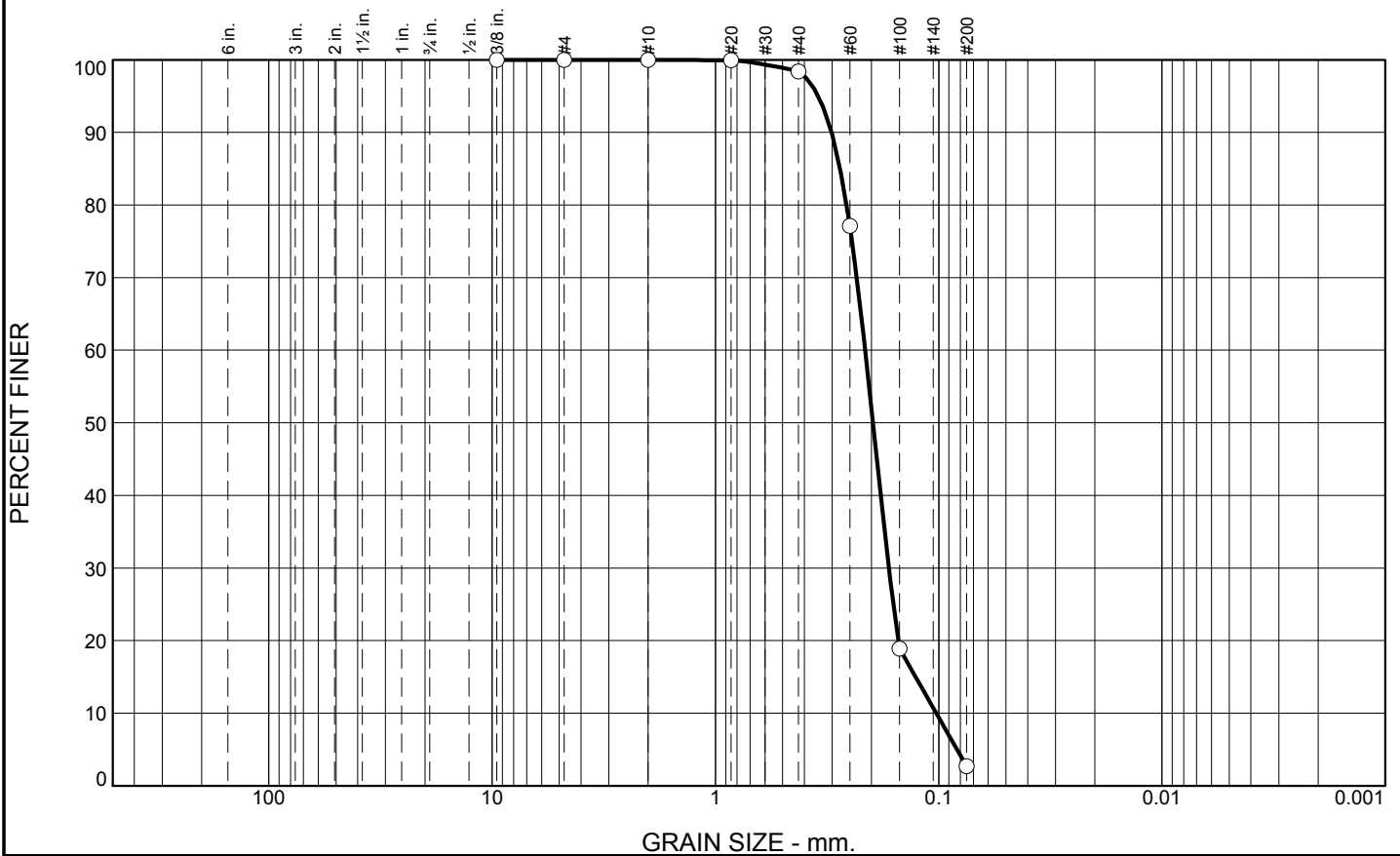
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.6	95.7	2.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	100.0		
#40	98.4		
#60	77.1		
#100	18.9		
#200	2.7		

* (no specification provided)

Material Description		
SAND, (SP), fine grained		
<div> <div> Atterberg Limits PL= LL= PI= </div> <div> Coefficients D₉₀= 0.3018 D₈₅= 0.2764 D₆₀= 0.2136 D₅₀= 0.1970 D₃₀= 0.1672 D₁₅= 0.1269 D₁₀= 0.1025 C_u= 2.08 C_c= 1.28 </div> <div> Classification USCS= SP AASHTO= </div> <div> Remarks CADD-CODE = CH10D965 </div> </div>		

Location: USACE Sample # BI-CI-17-10B
Sample Number: TE Lab ID: 4488.94

Depth: 3.0 -8.0 (ft.)

Date: 5/27/10

Thompson Engineering
Mobile, Alabama

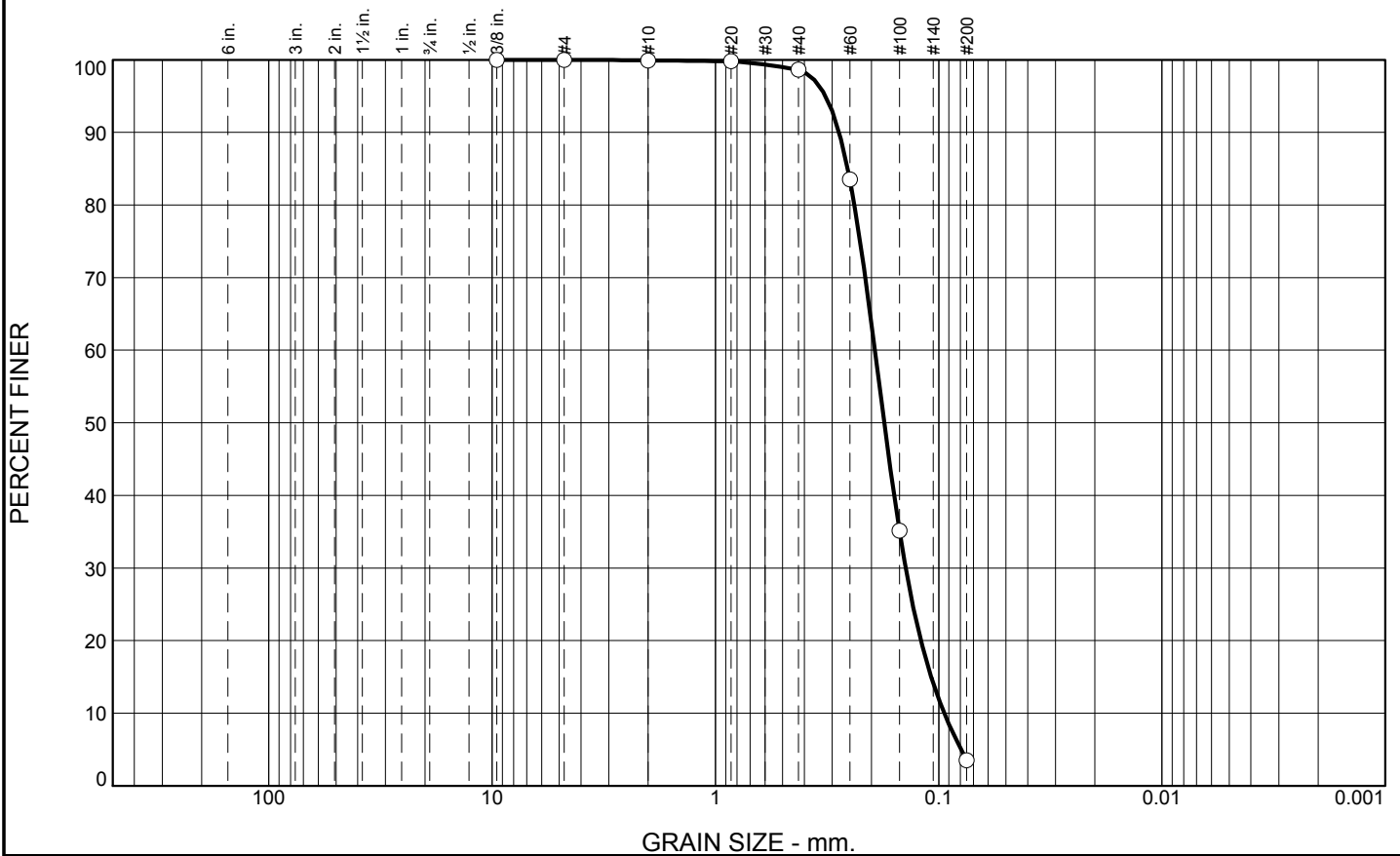
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	1.3	95.1	3.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.8		
#40	98.6		
#60	83.5		
#100	35.1		
#200	3.5		

* (no specification provided)

Material Description

SAND, (SP), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.2793

D₈₅= 0.2555

D₆₀= 0.1932

D₅₀= 0.1753

D₃₀= 0.1407

D₁₅= 0.1081

D₁₀= 0.0945

C_u= 2.04

C_c= 1.08

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-CI-17-10C
Sample Number: TE Lab ID: 4488.95

Depth: 8.0 - 11.1 (ft.)

Date: 5/27/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Figure

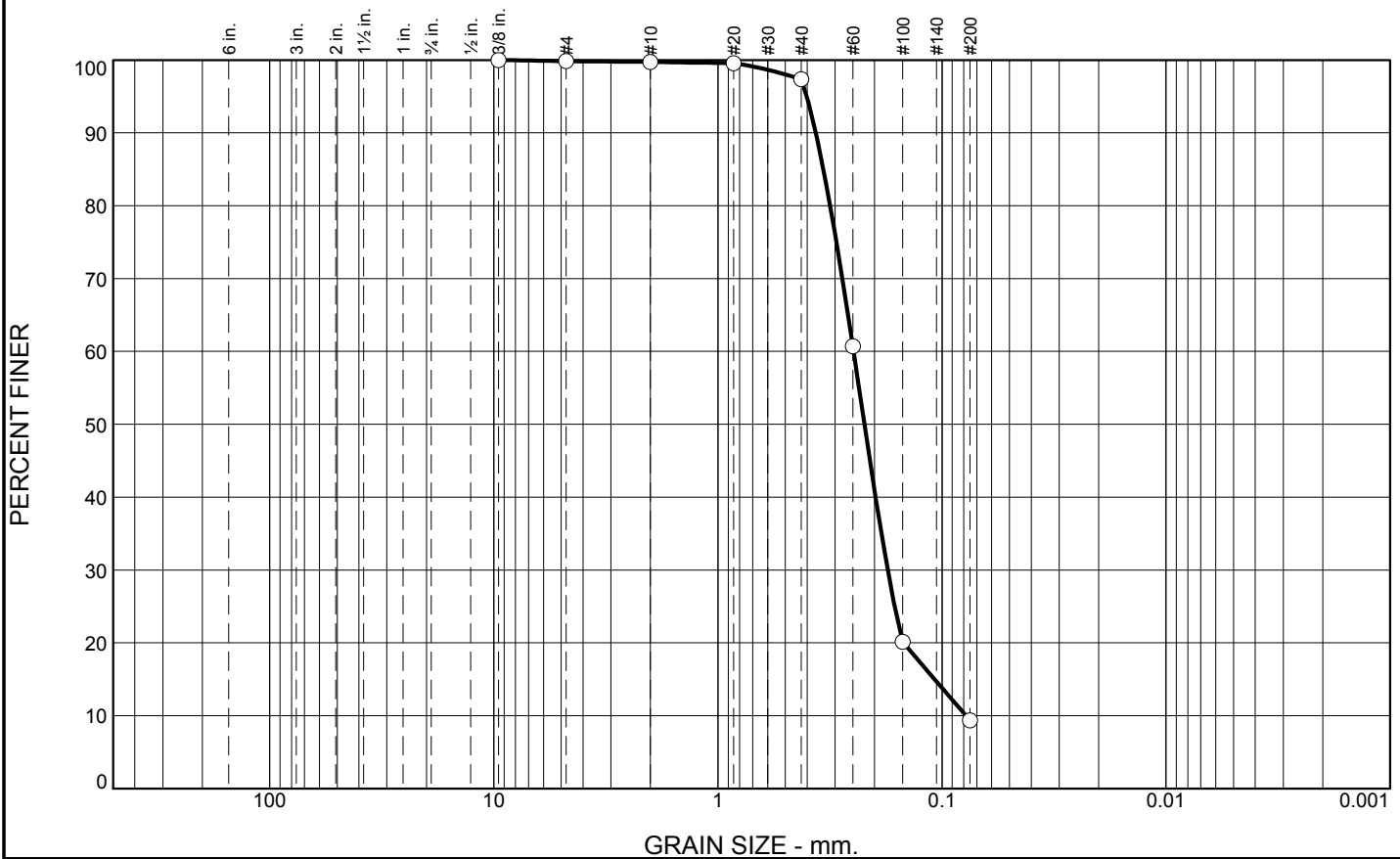
Tested By: L.Stokes

Checked By: R.Byrd

Boring Designation BI-CI-18-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-18-10		LOCATION COORDINATES E = 912,324 N = 269,343		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 10.5 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 05-20-10		STARTED 05-20-10 COMPLETED 05-20-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -9.5 Ft.			
8. TOTAL DEPTH OF BORING 10.6 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Mark Green, Geotechnical Engineer			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-9.5	0.0						
-12.5	3.0		SAND, silty, mostly fine-grained sand-sized quartz, trace shell fragments, dark gray and greenish gray (SM)	A	Classification: SP-SM Color: 2.5Y 5/2-grayish brown D50: 0.2218 mm % Fines: 9.4		
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace shell fragments, trace silt, gray (SP)	B	Classification: SP Color: 2.5Y 6/2-light brownish gray D50: 0.2017 mm % Fines: 3.2		
-20.1	10.6		At El. -17.5 Ft., mostly fine-grained sand-sized quartz, trace shell fragments, trace silt, lenses of organic stained fines, gray and brown	C	Classification: SP Color: 2.5Y 7/1.5- D50: 0.1698 mm % Fines: 3.7		
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.1	2.4	87.9	9.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.8		
#10	99.7		
#20	99.6		
#40	97.3		
#60	60.7		
#100	20.1		
#200	9.4		

* (no specification provided)

<u>Material Description</u>		
SAND, (SP-SM), fine grained, with trace shell		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.3657	D ₈₅ = 0.3382	D ₆₀ = 0.2481
D ₅₀ = 0.2218	D ₃₀ = 0.1747	D ₁₅ = 0.1079
D ₁₀ = 0.0782	C _u = 3.17	C _c = 1.57
<u>Classification</u>		
USCS= SP-SM	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-CI-18-10A
Sample Number: TE Lab ID: 4488.86

Depth: 0.0 - 3.0 (ft.)

Date: 5/27/10

Thompson Engineering
Mobile, Alabama

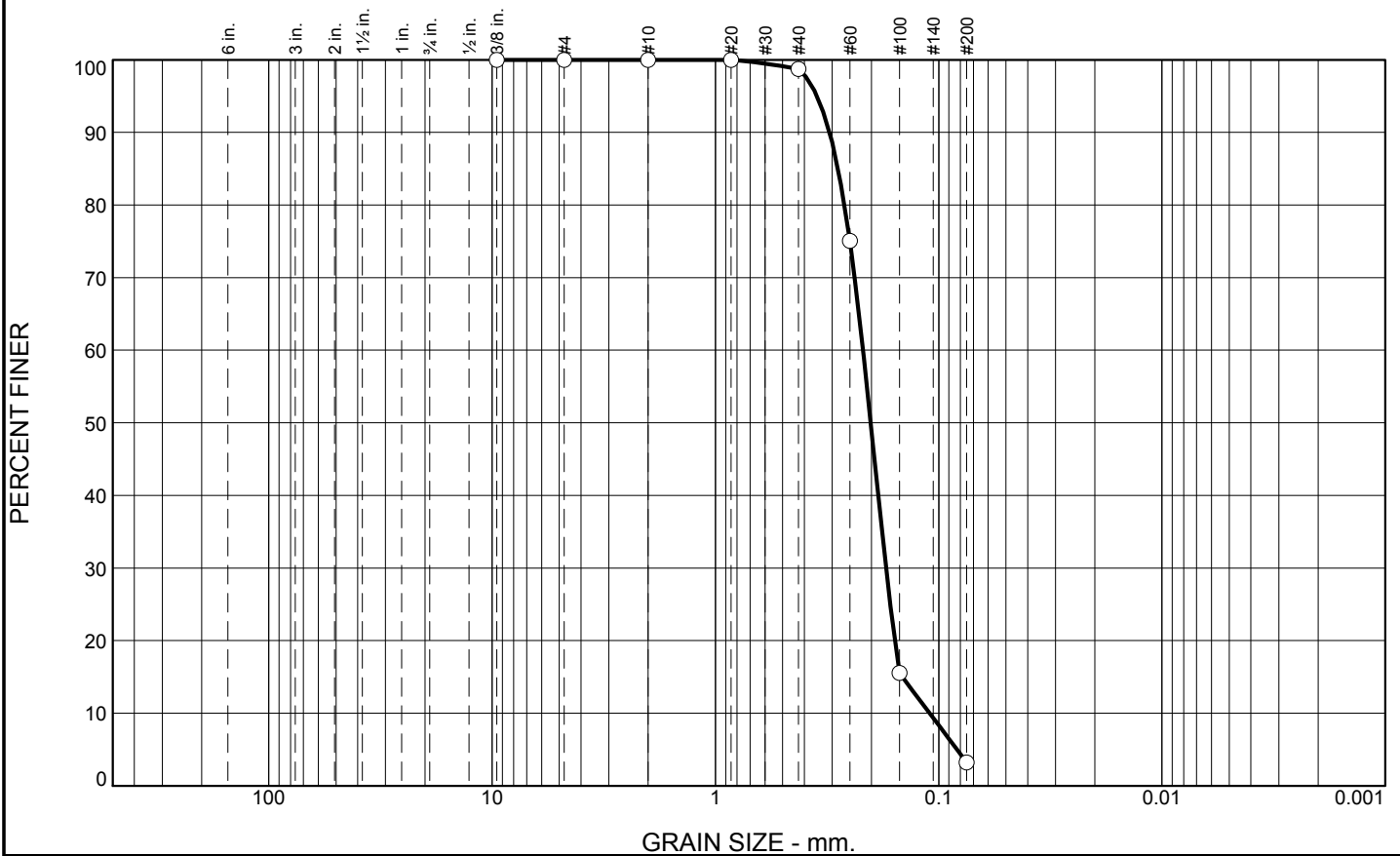
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.3	95.5	3.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	100.0		
#40	98.7		
#60	75.1		
#100	15.5		
#200	3.2		

* (no specification provided)

Material Description		
SAND, (SP), fine grained		
<div> <div>PL=</div> <div>Atterberg Limits</div> <div>LL=</div> <div>PI=</div> </div>		
<div> <div> D₉₀= 0.3081 D₅₀= 0.2017 D₁₀= 0.1098 </div> <div> Coefficients D₈₅= 0.2825 D₃₀= 0.1721 C_u= 1.99 </div> <div> D₆₀= 0.2183 D₁₅= 0.1455 C_c= 1.24 </div> </div>		
<div> <div>USCS= SP</div> <div>Classification</div> <div>AASHTO=</div> </div>		
<div> <div>Remarks</div> <div>CADD CODE = CH10D965</div> </div>		

Location: USACE Sample # BI-CI-18-10B
Sample Number: TE Lab ID: 4488.87

Depth: 3.0 - 8.0 (ft.)

Date: 5/27/10

Thompson Engineering
Mobile, Alabama

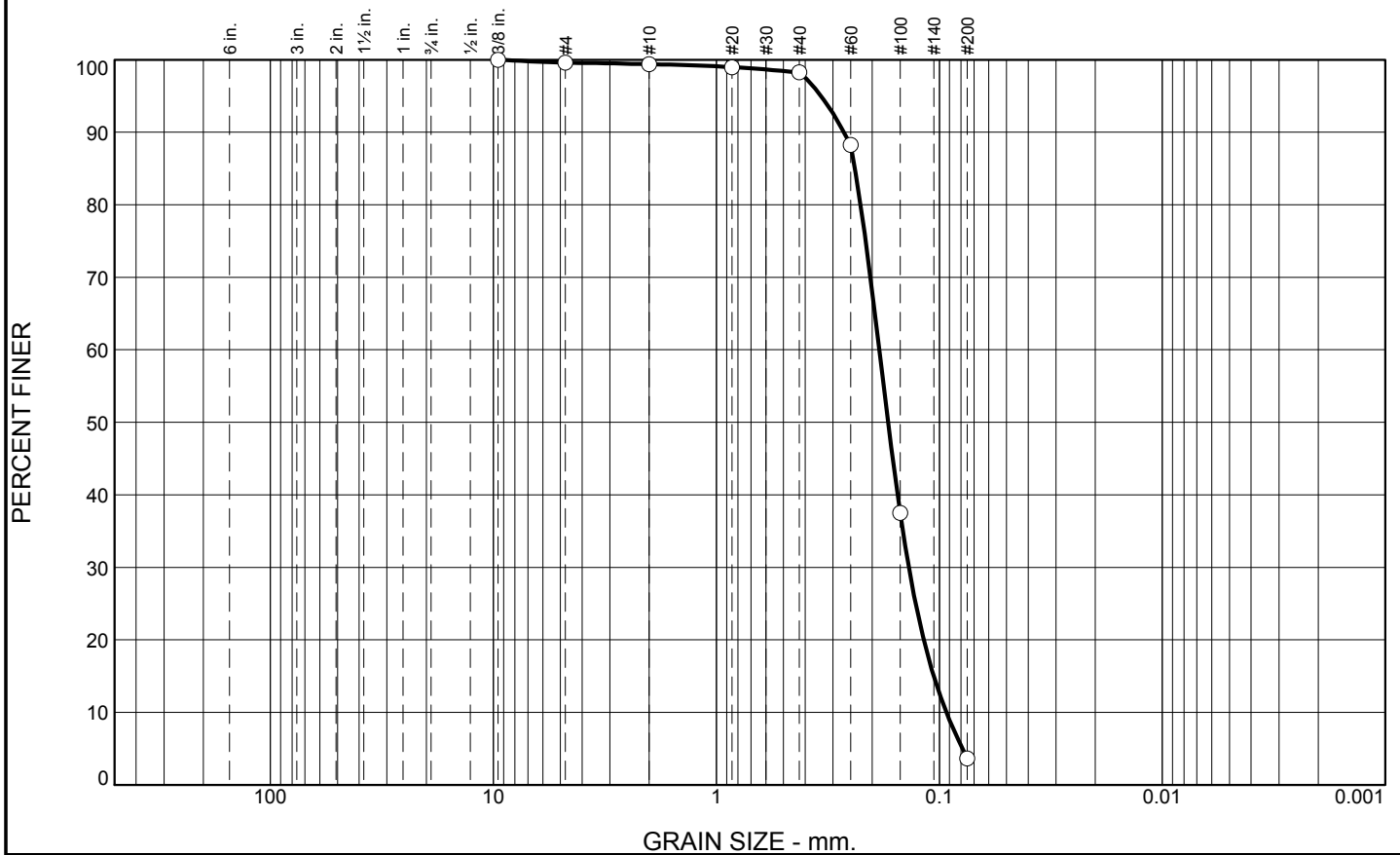
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.4	0.2	1.1	94.6	3.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.6		
#10	99.4		
#20	99.0		
#40	98.3		
#60	88.2		
#100	37.5		
#200	3.7		

* (no specification provided)

Material Description		
SAND, (SP), fine grained		
<div> <div> Atterberg Limits </div> <div> PL= </div> <div> LL= </div> <div> PI= </div> </div>		
<div> <div> Coefficients </div> <div> D₉₀= 0.2679 </div> <div> D₅₀= 0.1698 </div> <div> D₁₀= 0.0930 </div> <div> C_u= 2.00 </div> </div>		
<div> <div> Classification </div> <div> USCS= SP </div> <div> AASHTO= </div> </div>		
<div> <div> Remarks </div> <div> CADD CODE = CH10D965 </div> </div>		

Location: USACE Sample # BI-CI-18-10C
Sample Number: TE Lab ID: 4488.88

Depth: 8.0 - 10.6 (ft.)

Date: 5/27/10

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

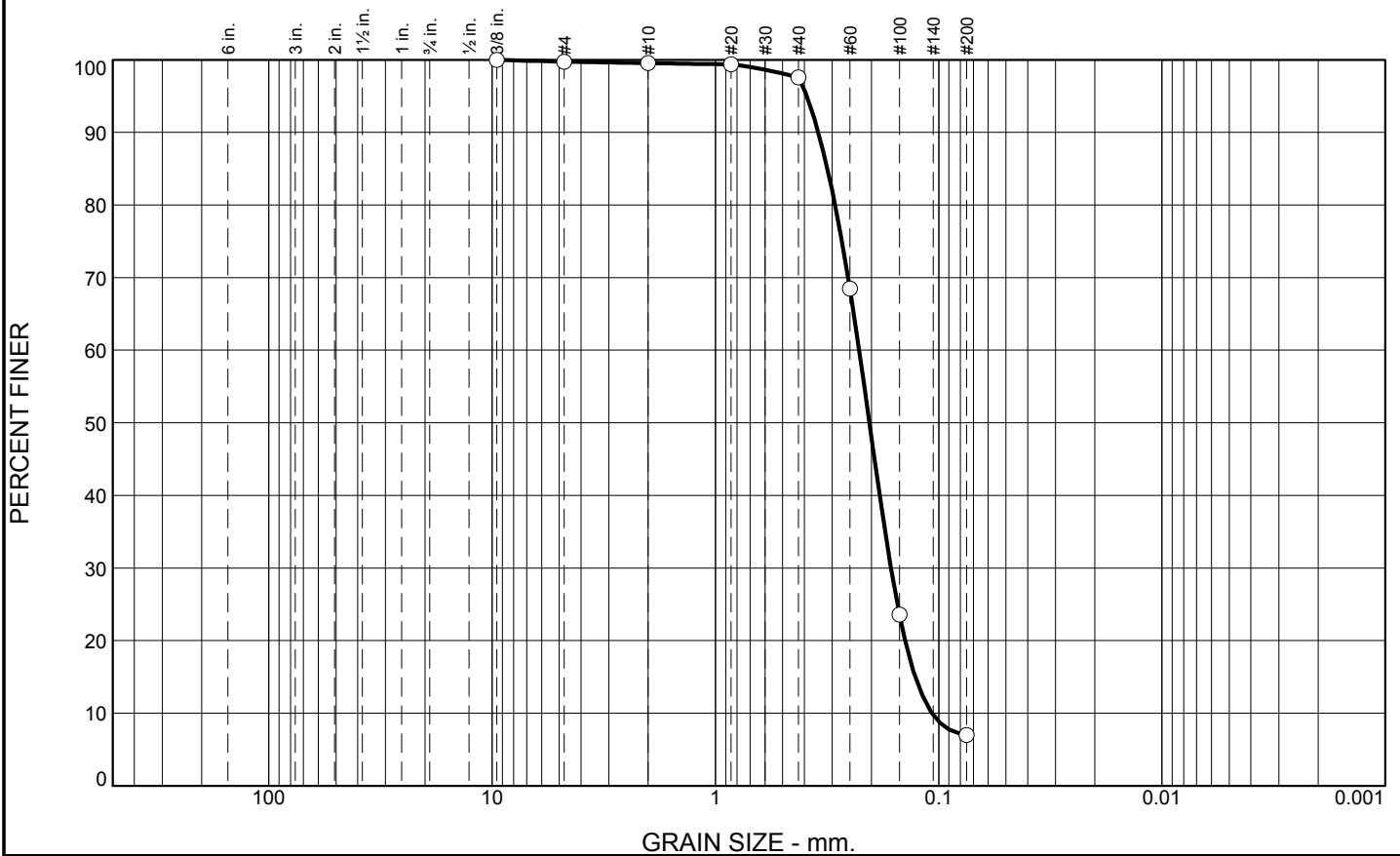
Tested By: L.Stokes

Checked By: R.Byrd

Boring Designation BI-CI-19-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-19-10		LOCATION COORDINATES E = 912,696 N = 270,364		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 10 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 05-20-10		STARTED 05-20-10 COMPLETED 05-20-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -9.0 Ft.			
8. TOTAL DEPTH OF BORING 11.5 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Mark Green, Geotechnical Engineer			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-9.0	0.0						
-11.0	2.0		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, trace shell fragments, trace organic matter, dark gray to greenish gray (SP-SM)	A	Classification: SP-SM Color: 2.5Y 5/2-grayish brown D50: 0.2044 mm % Fines: 7		
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace shell fragments, trace silt, greenish gray (SP)	B	Classification: SP-SM Color: 2.5Y 6/2-light brownish gray D50: 0.2103 mm % Fines: 5.8		
			At El. -15.0 Ft., mostly fine-grained sand-sized quartz, trace shell fragments, trace silt, lt. greenish gray	C	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.1799 mm % Fines: 3.3		
-20.0	11.0						
-20.5	11.5		SAND, clayey, gray (SC)	NS			
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.3	0.2	1.9	90.6	7.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.7		
#10	99.5		
#20	99.4		
#40	97.6		
#60	68.5		
#100	23.6		
#200	7.0		

* (no specification provided)

Material Description
SAND, (SP-SM), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.3460 D₈₅= 0.3150 D₆₀= 0.2272
 D₅₀= 0.2044 D₃₀= 0.1637 D₁₅= 0.1274
 D₁₀= 0.1073 C_u= 2.12 C_c= 1.10

Classification
 USCS= SP-SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-CI-19-10A
Sample Number: TE Lab ID: 4488.80

Depth: 0.0 - 2.0 (ft.)

Date: 5/27/10

Thompson Engineering

Mobile, Alabama

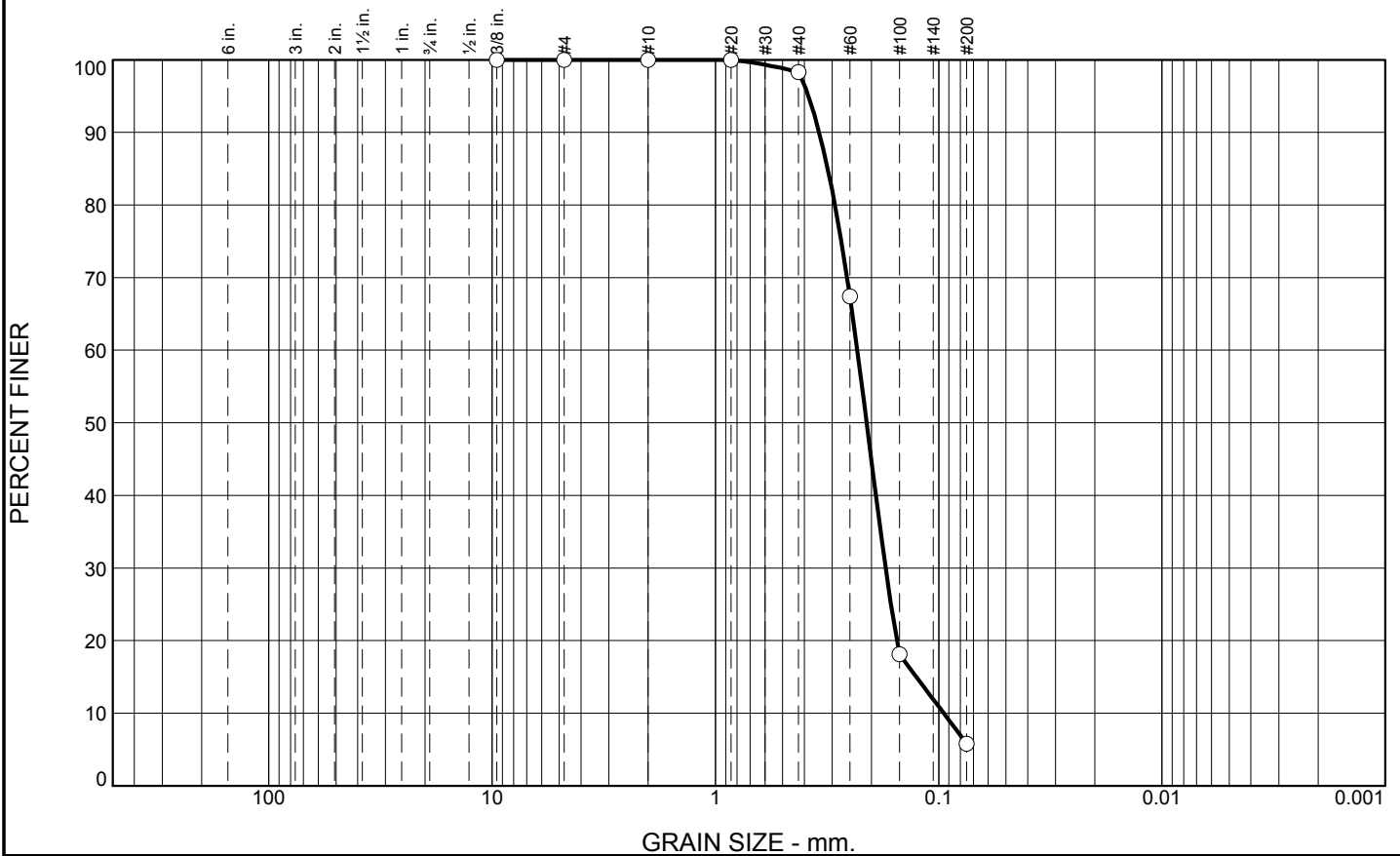
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.7	92.5	5.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	100.0		
#40	98.3		
#60	67.4		
#100	18.1		
#200	5.8		

* (no specification provided)

Material Description

SAND, (SP-SM), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.3428

D₈₅= 0.3139

D₆₀= 0.2316

D₅₀= 0.2103

D₃₀= 0.1730

D₁₅= 0.1259

D₁₀= 0.0950

C_u= 2.44

C_c= 1.36

Classification

USCS= SP-SM

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-CI-19-10B
Sample Number: TE Lab ID: 4488.81

Depth: 2.0 - 6.0 (ft.)

Date: 5/27/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

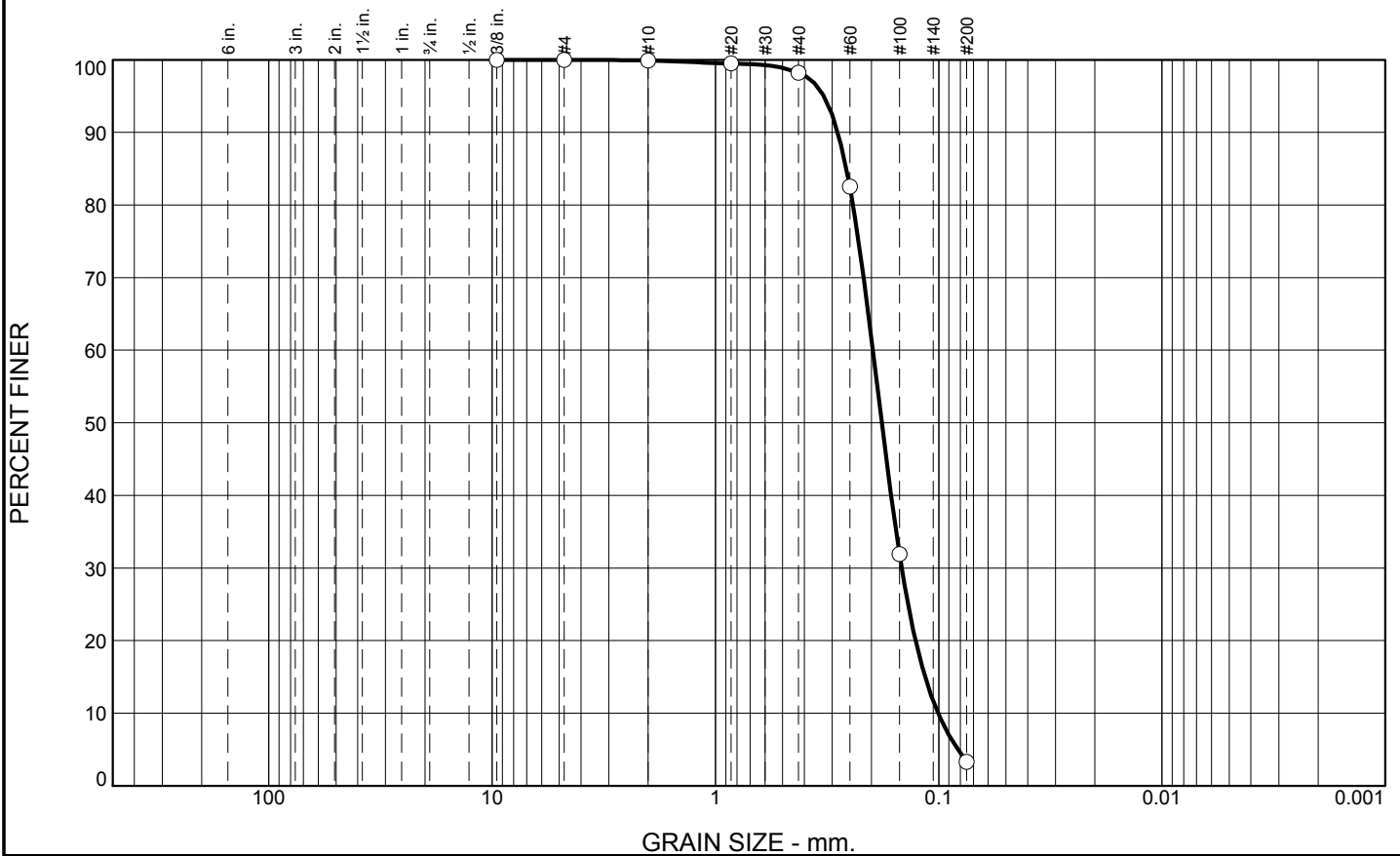
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	1.7	94.9	3.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.5		
#40	98.2		
#60	82.5		
#100	31.9		
#200	3.3		

* (no specification provided)

Material Description
 SAND, (SP), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.2831 D₈₅= 0.2590 D₆₀= 0.1972
 D₅₀= 0.1799 D₃₀= 0.1466 D₁₅= 0.1151
 D₁₀= 0.1007 C_u= 1.96 C_c= 1.08

Classification
 USCS= SP AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-CI-19-10C
 Sample Number: TE Lab ID: 4488.82

Depth: 6.0 - 11.0 (ft.)

Date: 5/27/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

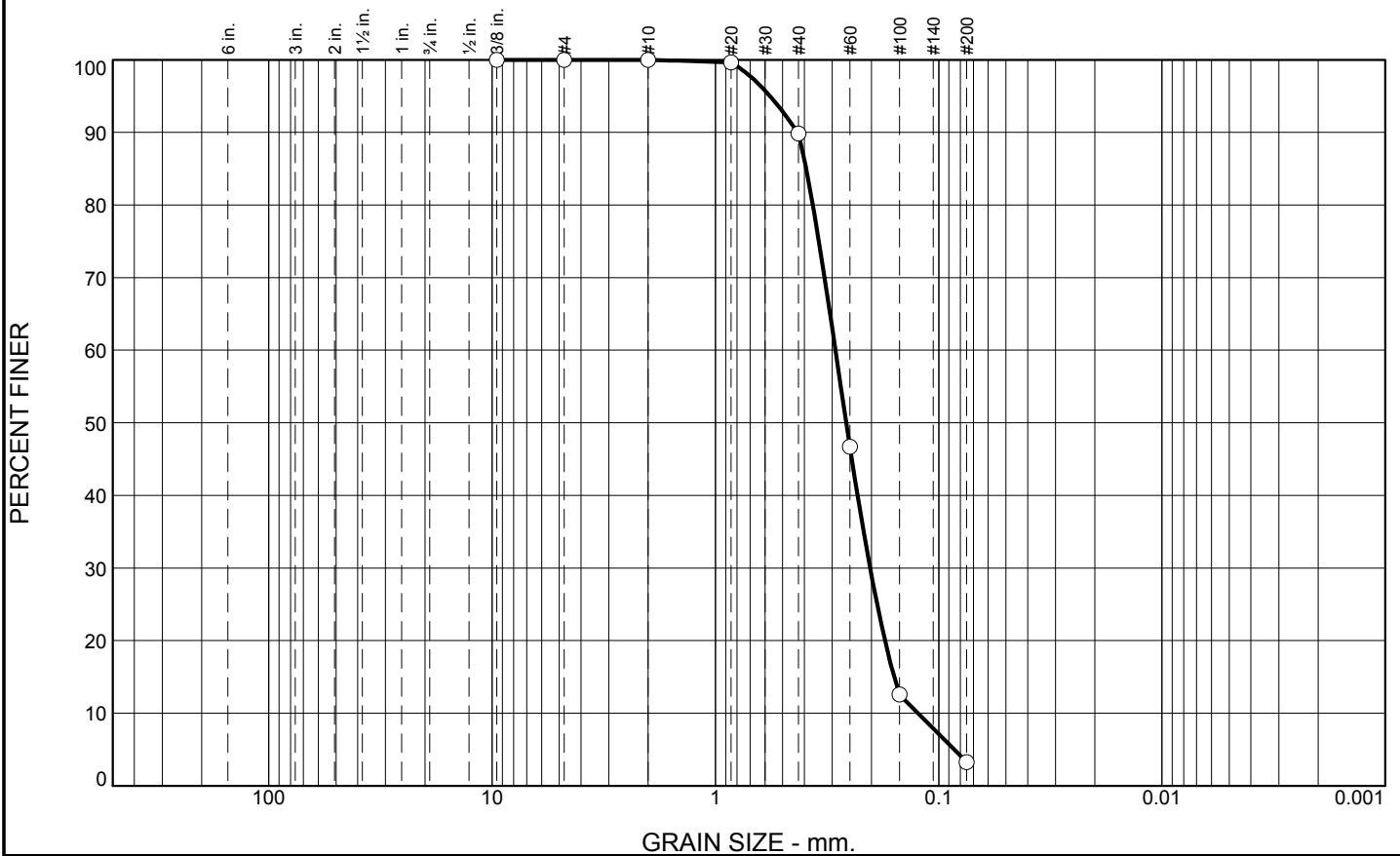
Tested By: L.Stokes

Checked By: R.Byrd

Boring Designation BI-CI-20-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-20-10		LOCATION COORDINATES E = 910,631 N = 262,818		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 11 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 05-21-10		COMPLETED 05-21-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -10.1 Ft.			
8. TOTAL DEPTH OF BORING 13.4 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Mark Green, Geotechnical Engineer			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-10.1	0.0						
-13.1	3.0		SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace silt, trace shell fragments, greenish gray (SP)	A	Classification: SP Color: 2.5Y 6/2-light brownish gray D50: 0.2595 mm % Fines: 3.3		
-18.1	8.0		SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace silt, trace shell fragments, gray and tan (SP)	B	Classification: SP Color: 2.5Y 5/2-grayish brown D50: 0.2053 mm % Fines: 2		
-23.1	13.0		SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace clay, trace shell fragments, greenish gray to gray (SP)	C	Classification: SP-SM Color: 2.5Y 6/1-gray D50: 0.164 mm % Fines: 6.2		
-23.5	13.4		SAND, silty, greenish gray (SM)	NS			
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	10.2	86.5	3.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.6		
#40	89.8		
#60	46.7		
#100	12.6		
#200	3.3		

* (no specification provided)

<u>Material Description</u>		
SAND, (SP), medium to fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.4286	D ₈₅ = 0.3927	D ₆₀ = 0.2899
D ₅₀ = 0.2595	D ₃₀ = 0.2029	D ₁₅ = 0.1584
D ₁₀ = 0.1238	C _u = 2.34	C _c = 1.15
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-CI-20-10A
Sample Number: TE Lab ID: 4489.11

Depth: 0.0 - 3.0 (ft.)

Date: 5/30/10

Thompson Engineering
Mobile, Alabama

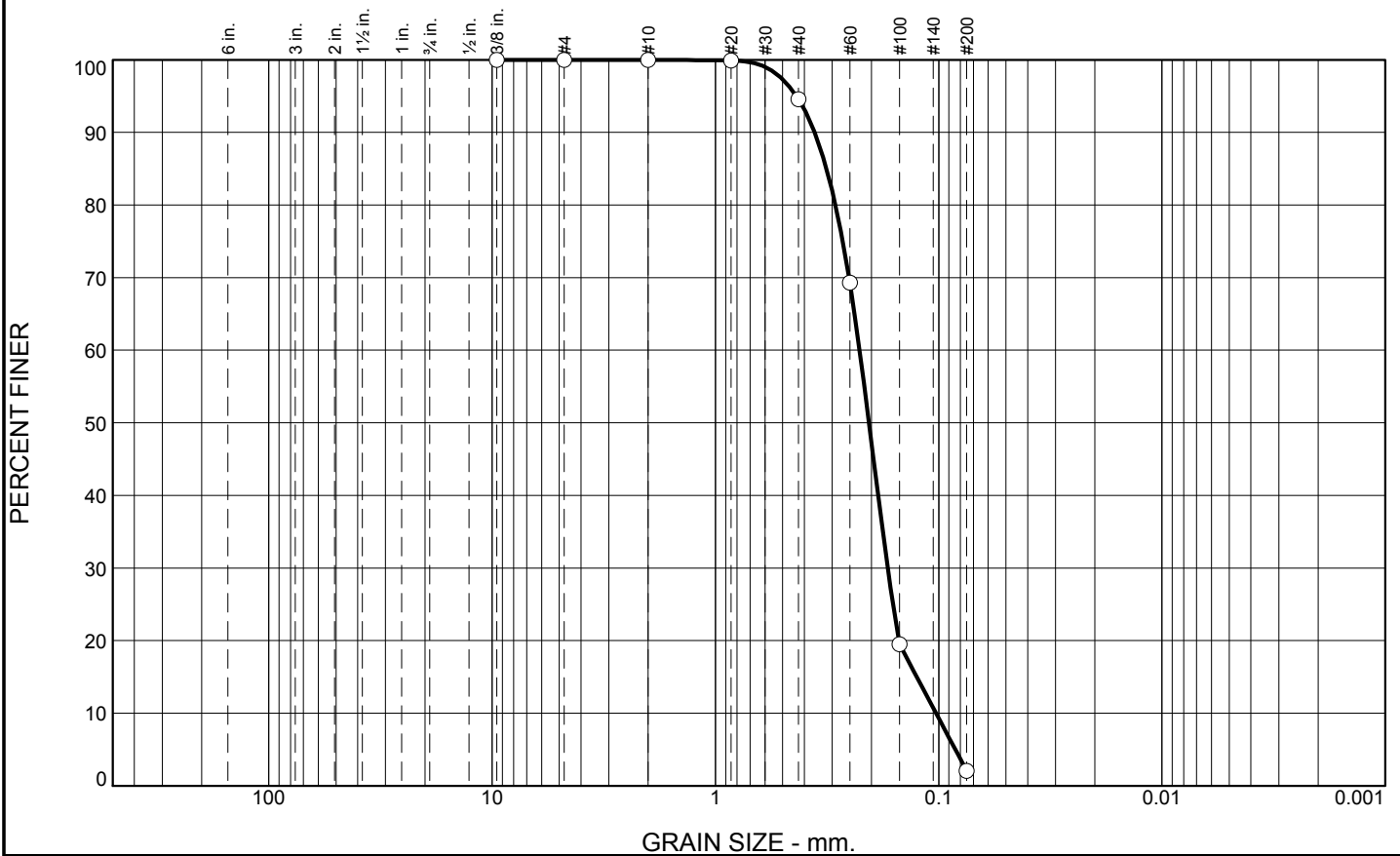
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	5.4	92.6	2.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	94.6		
#60	69.3		
#100	19.5		
#200	2.0		

* (no specification provided)

Material Description

SAND, (SP), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.3594

D₈₅= 0.3180

D₆₀= 0.2262

D₅₀= 0.2053

D₃₀= 0.1692

D₁₅= 0.1254

D₁₀= 0.1028

C_u= 2.20

C_c= 1.23

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-CI-20-10B
Sample Number: TE Lab ID: 4489.12

Depth: 3.0 - 8.0 (ft.)

Date: 5/30/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

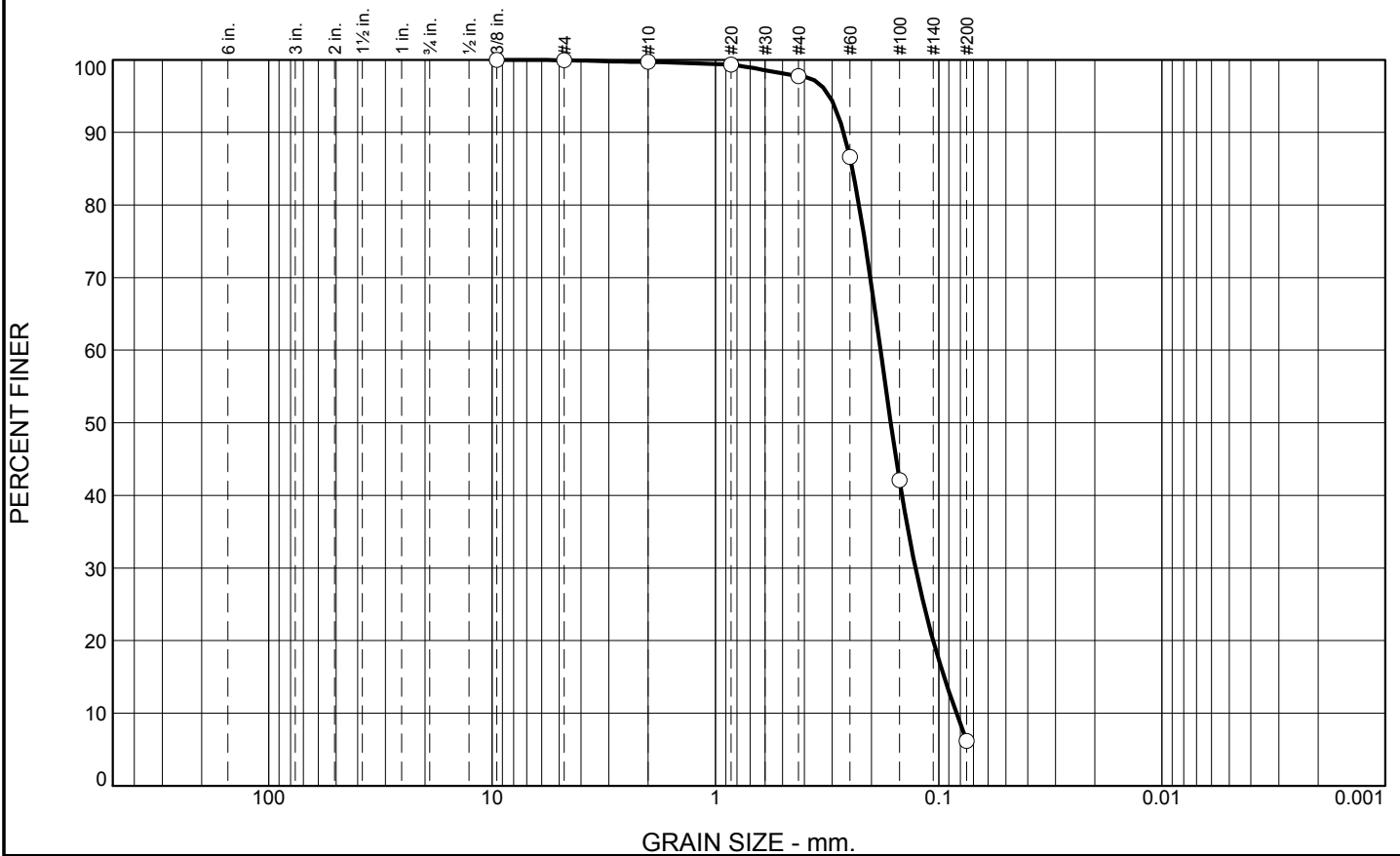
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.2	1.9	91.6	6.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.7		
#20	99.3		
#40	97.8		
#60	86.6		
#100	42.1		
#200	6.2		

* (no specification provided)

Material Description
SAND, (SP-SM), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.2664 D₈₅= 0.2438 D₆₀= 0.1823
 D₅₀= 0.1640 D₃₀= 0.1270 D₁₅= 0.0946
 D₁₀= 0.0833 C_u= 2.19 C_c= 1.06

Classification
 USCS= SP-SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-CI-20-10C
Sample Number: TE Lab ID: 4489.13

Depth: 8.0 - 13.0 (ft.)

Date: 5/30/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

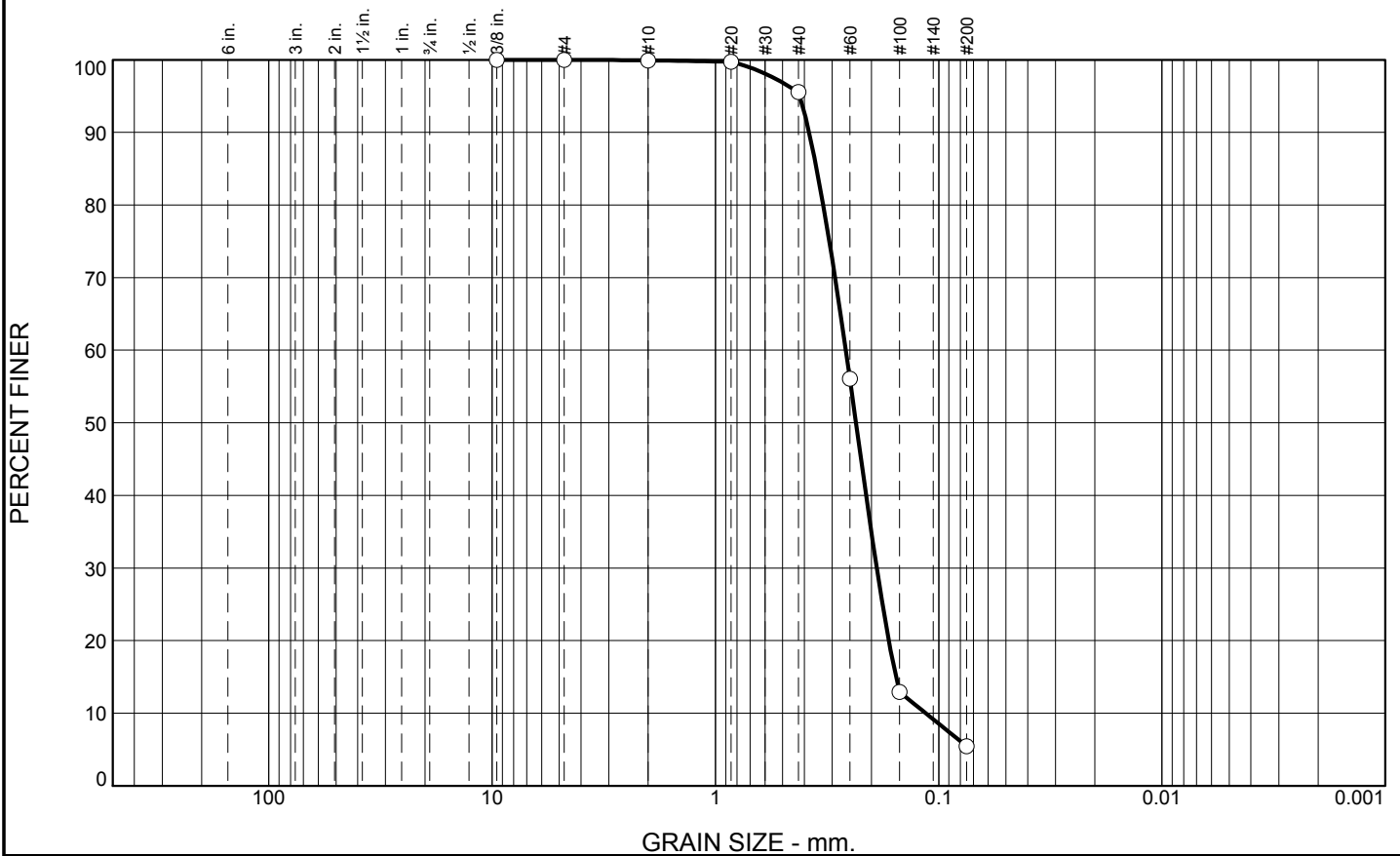
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-CI-21-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-21-10		LOCATION COORDINATES E = 912,140 N = 265,729		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 11 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 05-21-10		STARTED 05-21-10 COMPLETED 05-21-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -10.1 Ft.			
8. TOTAL DEPTH OF BORING 10.4 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Mark Green, Geotechnical Engineer			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-10.1	0.0						
-12.1	2.0		SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace shell fragments, trace of clay lenses, greenish gray (SP)	A	Classification: SP-SM Color: - D50: 0.2347 mm % Fines: 5.5		
-13.1	3.0		CLAY, lean, trace fine-grained sand-sized quartz, gray and brown (CL)	NS			
-19.1	9.0		SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace silt, trace shell fragments, greenish gray (SP) At El. -15.1 Ft., mostly fine-grained sand-sized quartz, trace shell fragments, trace silt, gray	B	Classification: SP Color: - D50: 0.213 mm % Fines: 2.7		
				C	Classification: SP Color: - D50: 0.1826 mm % Fines: 2.4		
-20.5	10.4		SAND, silty, mostly fine-grained sand-sized quartz, trace clay, dark gray (SM)	NS			
NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.							

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	4.4	90.0	5.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.7		
#40	95.5		
#60	56.1		
#100	12.9		
#200	5.5		

* (no specification provided)

<u>Material Description</u>		
SAND, (SP-SM), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.3808	D ₈₅ = 0.3521	D ₆₀ = 0.2607
D ₅₀ = 0.2347	D ₃₀ = 0.1895	D ₁₅ = 0.1555
D ₁₀ = 0.1144	C _u = 2.28	C _c = 1.20
<u>Classification</u>		
USCS= SP-SM	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-CI-21-10A
Sample Number: TE Lab ID: 4489.08

Depth: 0.0 - 2.0 (ft.)

Date: 5/28/10

Thompson Engineering
Mobile, Alabama

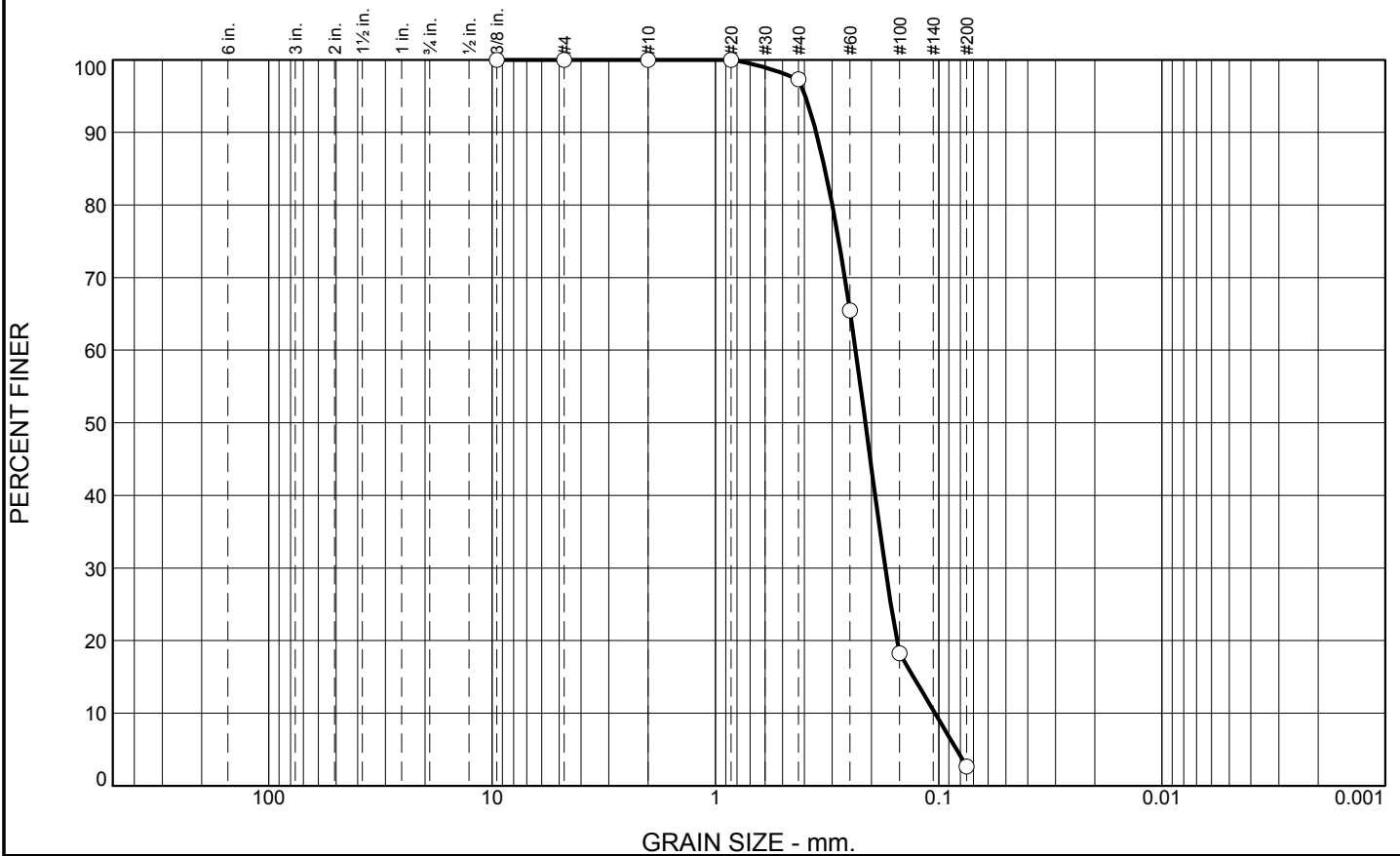
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	2.7	94.6	2.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	100.0		
#40	97.3		
#60	65.5		
#100	18.3		
#200	2.7		

* (no specification provided)

Material Description		
SAND, (SP), fine grained		
<div> <div> Atterberg Limits PL= LL= PI= </div> <div> Coefficients D₉₀= 0.3538 D₈₅= 0.3235 D₆₀= 0.2357 D₅₀= 0.2130 D₃₀= 0.1735 D₁₅= 0.1297 D₁₀= 0.1039 C_u= 2.27 C_c= 1.23 </div> <div> Classification USCS= SP AASHTO= </div> <div> Remarks CADD CODE = CH10D965 </div> </div>		

Location: USACE Sample # BI-CI-21-10B
Sample Number: TE Lab ID: 4489.09

Depth: 3.0 - 5.0 (ft.)

Date: 5/28/10

Thompson Engineering
Mobile, Alabama

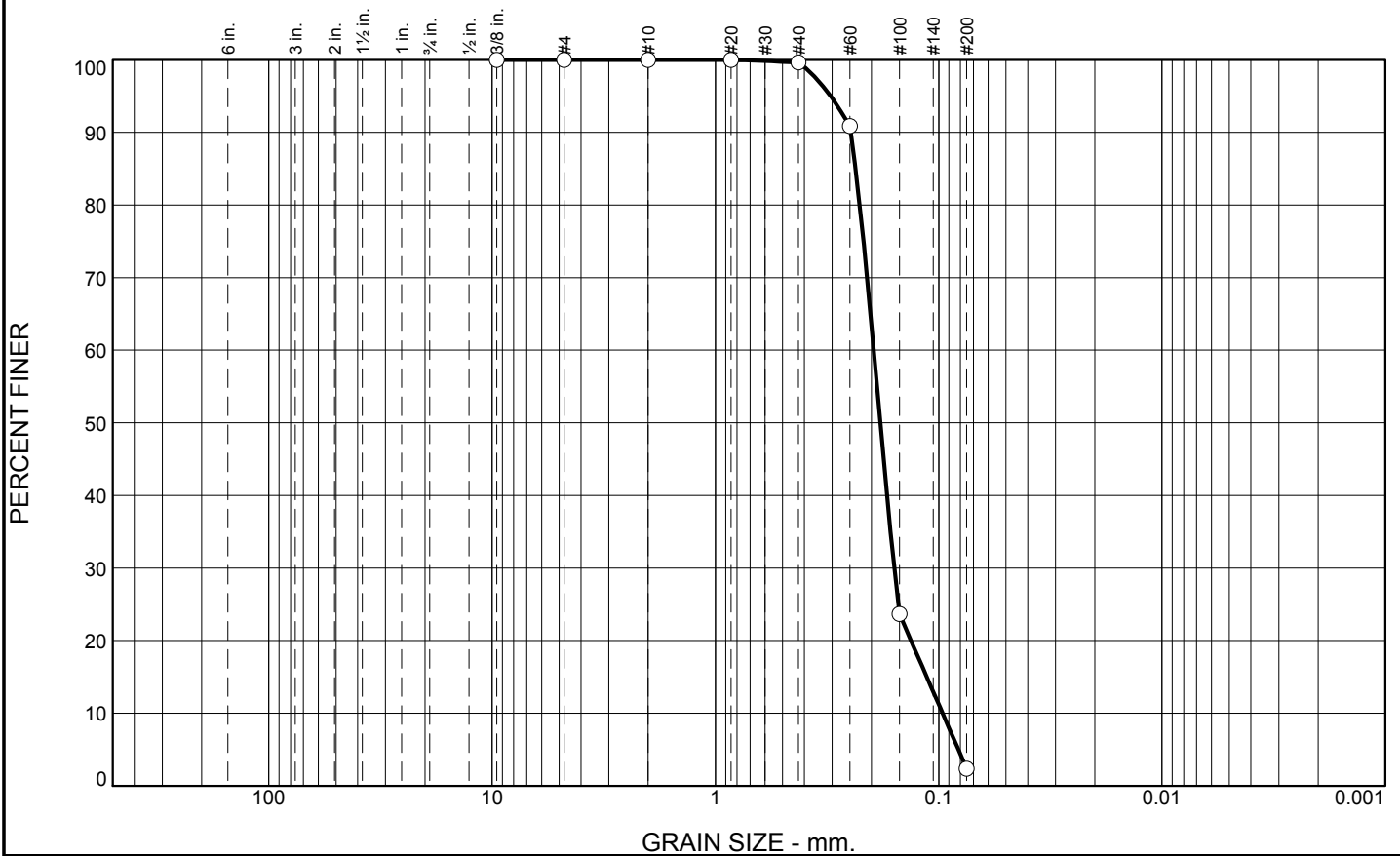
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.4	97.2	2.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	100.0		
#40	99.6		
#60	90.9		
#100	23.7		
#200	2.4		

* (no specification provided)

Material Description		
SAND, (SP), fine grained		
<div> <div> Atterberg Limits PL= LL= PI= </div> <div> Coefficients D₉₀= 0.2476 D₈₅= 0.2356 D₆₀= 0.1954 D₅₀= 0.1826 D₃₀= 0.1582 D₁₅= 0.1132 D₁₀= 0.0962 C_u= 2.03 C_c= 1.33 </div> <div> Classification USCS= SP AASHTO= </div> <div> Remarks CADD CODE = CH10D965 </div> </div>		

Location: USACE Sample # BI-CI-21-10C
Sample Number: TE Lab ID: 4489.10

Depth: 5.0 - 9.0 (ft.)

Date: 5/30/10

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

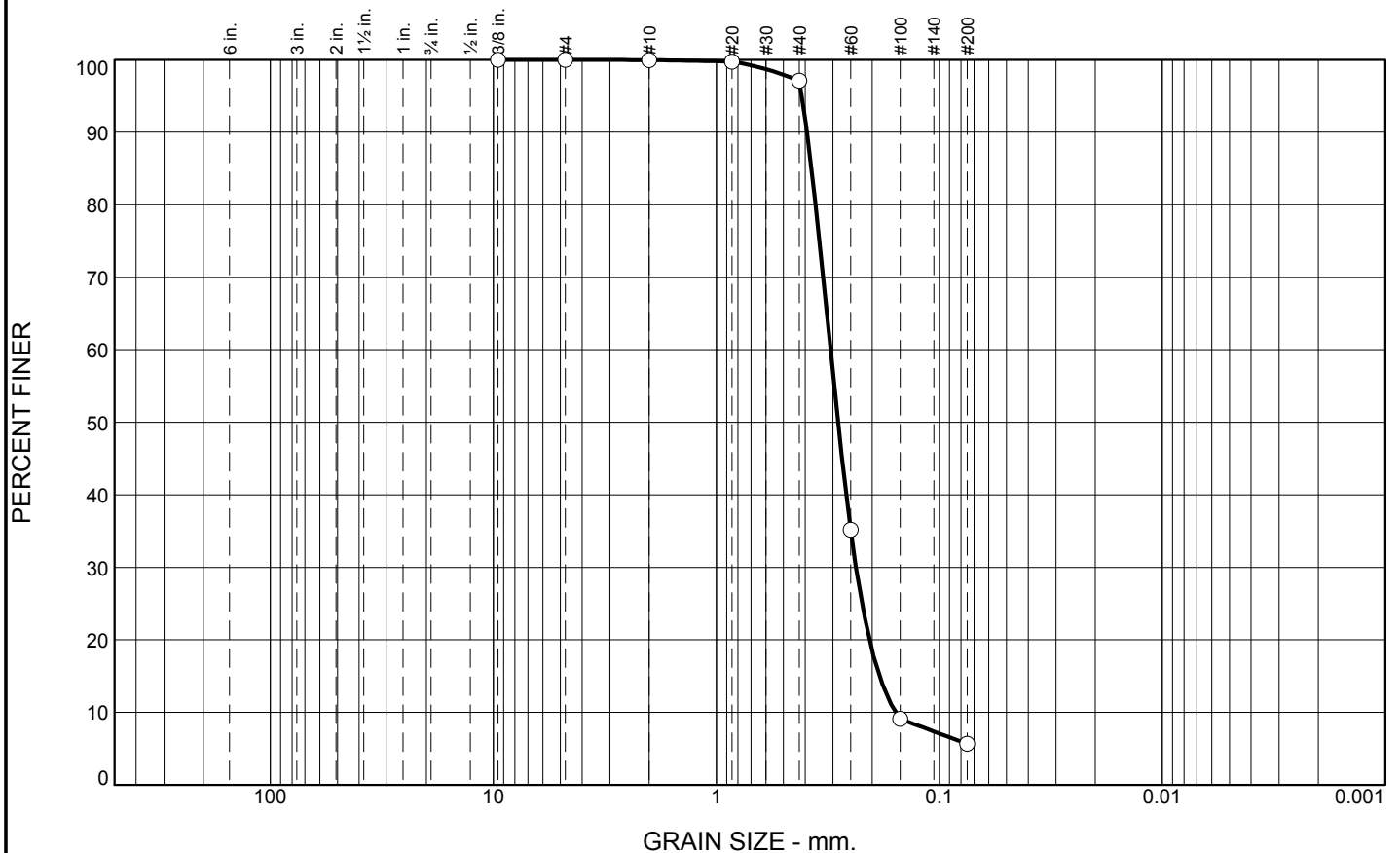
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-CI-22-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-22-10		LOCATION COORDINATES E = 913,150 N = 268,766		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 0 UNDISTURBED (UD)	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 10 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 05-21-10		STARTED 05-21-10 COMPLETED	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -9.0 Ft.			
8. TOTAL DEPTH OF BORING 11.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Mark Green, Geotechnical Engineer			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-9.0	0.0						
-13.0	4.0		SAND, silty, mostly Geotechnical Engineer fine-grained sand-sized 0 quartz NS = Sample not submitted for laboratory analysis from this interval, trace shell fragments, trace organic matter, dark gray to gray (SM)	A	Classification: SP-SM Color: 2.5Y 6/2-light brownish gray D50: 0.2843 mm % Fines: 5.7		
-20.0	11.0		SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace silt, trace shell fragments, trace organic matter, dark gray and brownish tan (SP) At El. -15.0 Ft., mostly fine-grained sand-sized quartz, trace silt, trace shell fragments, gray and lt. gray	B	Classification: SP Color: 2.5Y 6/2-light brownish gray D50: 0.1783 mm % Fines: 2.7		
				C	Classification: SP-SM Color: 2.5Y 5/2-grayish brown D50: 0.2164 mm % Fines: 5.5		
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	2.8	91.4	5.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.7		
#40	97.1		
#60	35.2		
#100	9.1		
#200	5.7		

* (no specification provided)

Material Description		
SAND, (SP-SM), fine grained, with trace shell		
<div> <div> Atterberg Limits PL= LL= PI= </div> <div> Coefficients D₉₀= 0.3927 D₈₅= 0.3748 D₆₀= 0.3072 D₅₀= 0.2843 D₃₀= 0.2366 D₁₅= 0.1856 D₁₀= 0.1570 C_u= 1.96 C_c= 1.16 </div> <div> Classification USCS= SP-SM AASHTO= </div> <div> Remarks CADD CODE = CH10D965 </div> </div>		

Location: USACE Sample # BI-CI-22-10A
Sample Number: TE Lab ID: 4489.05

Depth: 0.0 - 4.0 (ft.)

Date: 5/28/10

Thompson Engineering
Mobile, Alabama

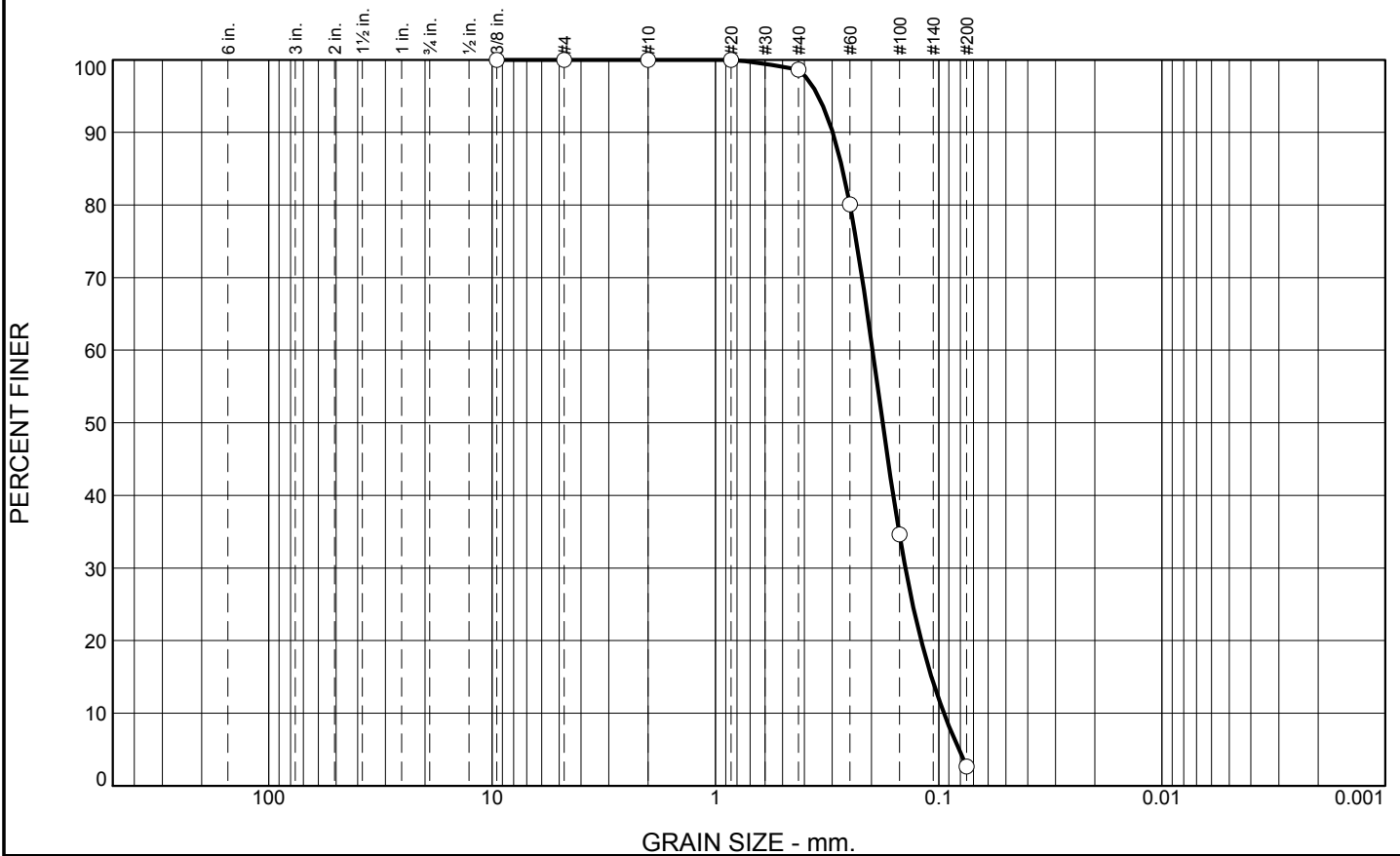
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.4	95.9	2.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	100.0		
#40	98.6		
#60	80.1		
#100	34.6		
#200	2.7		

* (no specification provided)

Material Description		
SAND, (SP), fine grained		
<div> <div>PL=</div> <div> <div>Atterberg Limits</div> <div>LL=</div> <div>PI=</div> </div> </div>		
<div> <div> <div>D₉₀= 0.2984</div> <div>D₅₀= 0.1783</div> <div>D₁₀= 0.0948</div> </div> <div> <div>Coefficients</div> <div> <div>D₈₅= 0.2700</div> <div>D₃₀= 0.1410</div> <div>C_u= 2.09</div> </div> </div> </div>		
<div> <div> <div>D₆₀= 0.1979</div> <div>D₁₅= 0.1078</div> <div>C_c= 1.06</div> </div> </div>		
<div> <div> <div>Classification</div> <div>USCS= SP</div> <div>AASHTO=</div> </div> </div>		
<div> <div> <div>Remarks</div> <div>CADD CODE = CH10D965</div> </div> </div>		

Location: USACE Sample # BI-CI-22-10B
Sample Number: TE Lab ID: 4489.06

Depth: 4.0 - 6.0 (ft.)

Date: 5/28/10

Thompson Engineering
Mobile, Alabama

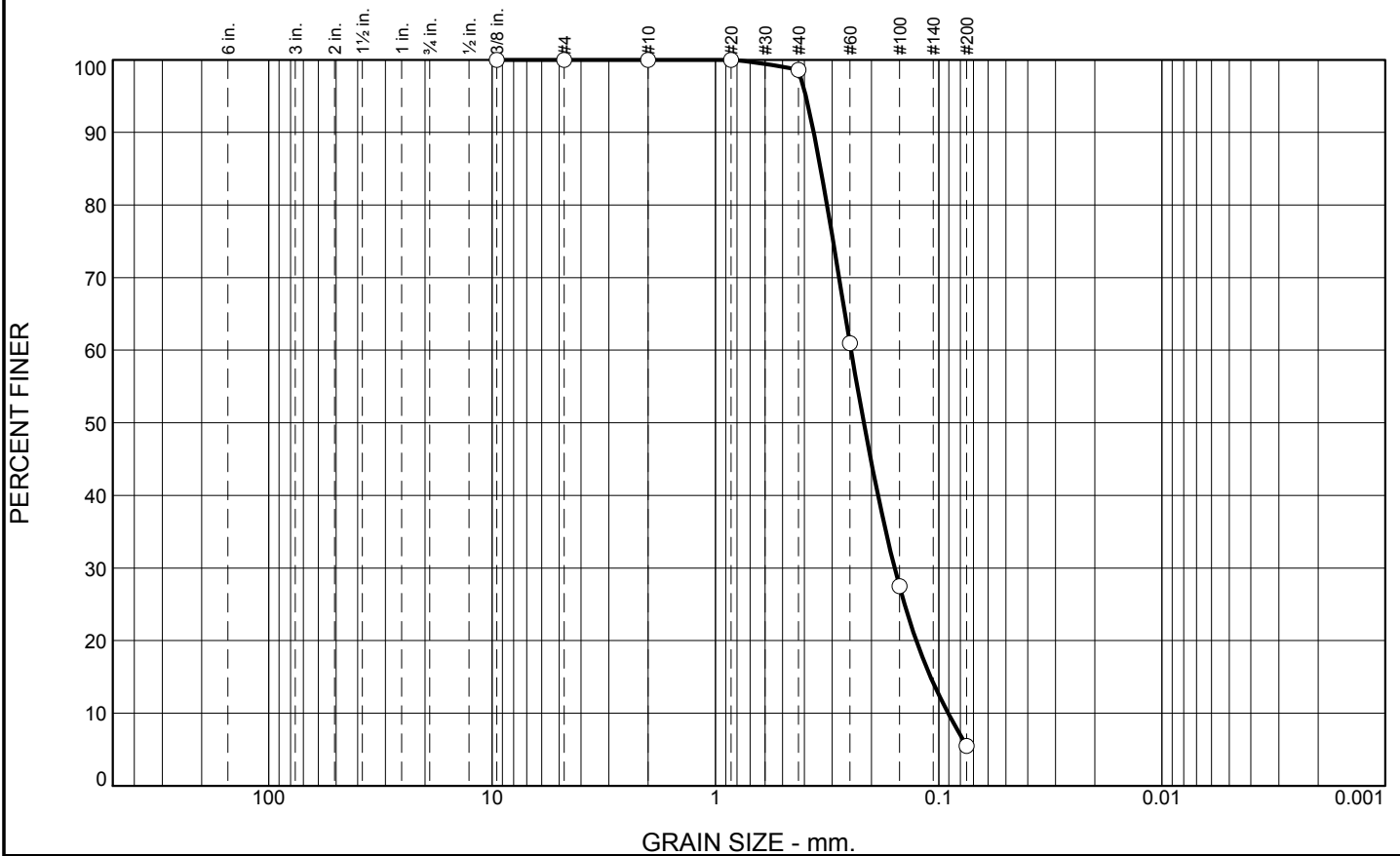
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.4	93.1	5.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	100.0		
#40	98.6		
#60	61.0		
#100	27.5		
#200	5.5		

* (no specification provided)

Material Description		
SAND, (SP-SM), fine grained		
<div> <div> Atterberg Limits PL= LL= PI= </div> <div> Coefficients D₉₀= 0.3628 D₈₅= 0.3377 D₆₀= 0.2469 D₅₀= 0.2164 D₃₀= 0.1576 D₁₅= 0.1088 D₁₀= 0.0907 C_u= 2.72 C_c= 1.11 </div> <div> Classification USCS= SP-SM AASHTO= </div> <div> Remarks CADD CODE = CH10D965 </div> </div>		

Location: USACE Sample # BI-CI-22-10C
Sample Number: TE Lab ID: 4489.07

Depth: 6.0 - 11.0 (ft.)

Date: 5/28/10

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

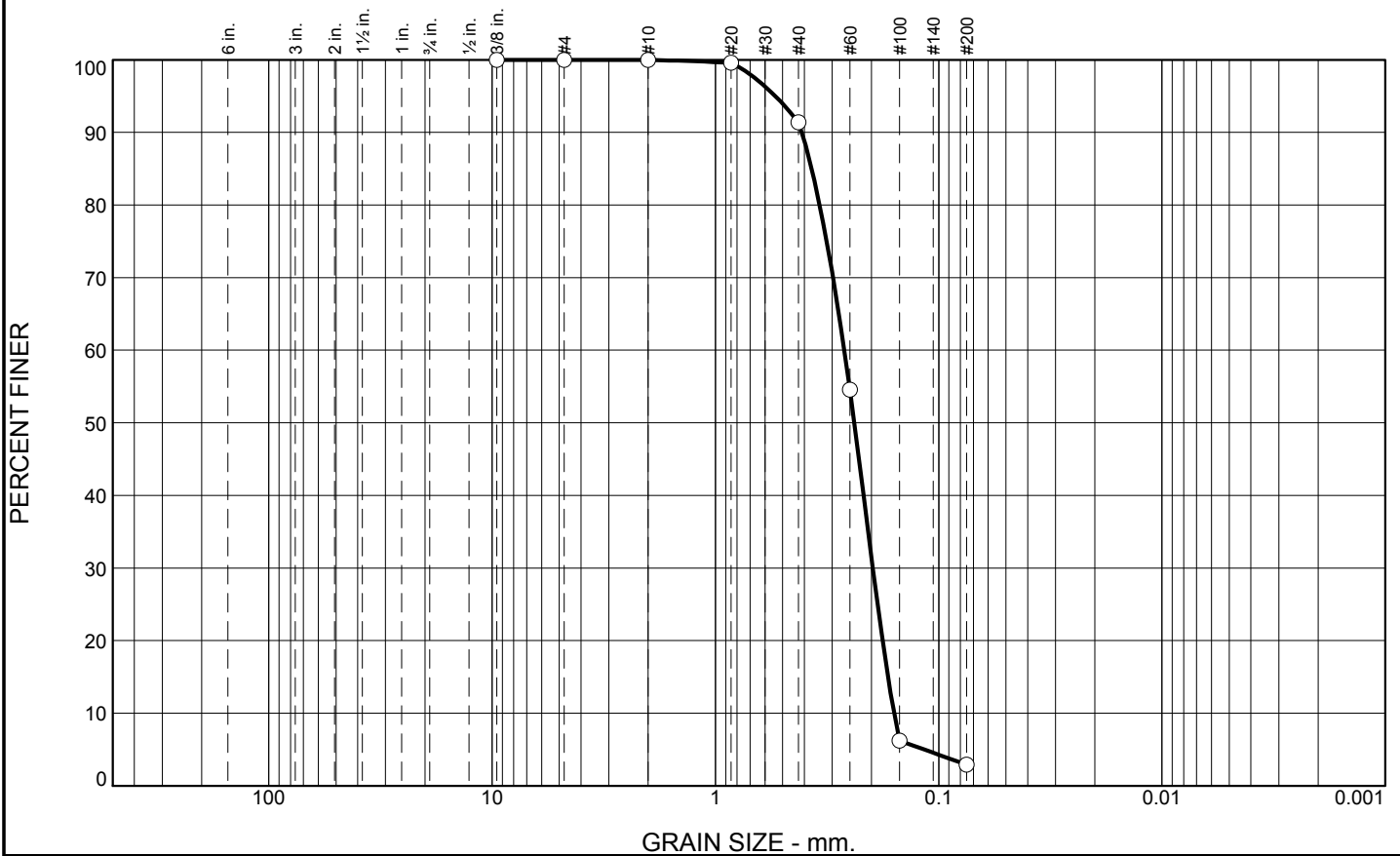
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-CI-23-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-23-10		LOCATION COORDINATES E = 909,907 N = 261,281		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 11 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 08-21-10		STARTED 08-21-10 COMPLETED 08-21-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -10.4 Ft.			
8. TOTAL DEPTH OF BORING 11.5 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Mark Green, Geotechnical Engineer			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-10.4	0.0						
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace silt, trace shell fragments, dark gray (SP)	A	Classification: SP Color: 5Y 6/2-light olive gray D50: 0.2389 mm % Fines: 2.9		
				B	Classification: SP Color: 2.5Y 6/1-gray D50: 0.2681 mm % Fines: 1.8		
			At El. -18.4 Ft., lt. brown and gray At El. -19.0 Ft., little silt	C	Classification: SP-SM Color: 2.5Y 6/1-gray D50: 0.2531 mm % Fines: 5.2		
-21.9	11.5						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	8.6	88.5	2.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.6		
#40	91.4		
#60	54.6		
#100	6.2		
#200	2.9		

* (no specification provided)

Material Description
SAND, (SP), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.4107 D₈₅= 0.3710 D₆₀= 0.2647
 D₅₀= 0.2389 D₃₀= 0.1974 D₁₅= 0.1688
 D₁₀= 0.1586 C_u= 1.67 C_c= 0.93

Classification
 USCS= SP AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-CI-23-10A
Sample Number: TE Lab ID: 4660.07

Depth: 0.0 - 4.0 (ft.)

Date: 9/1/10

Thompson Engineering

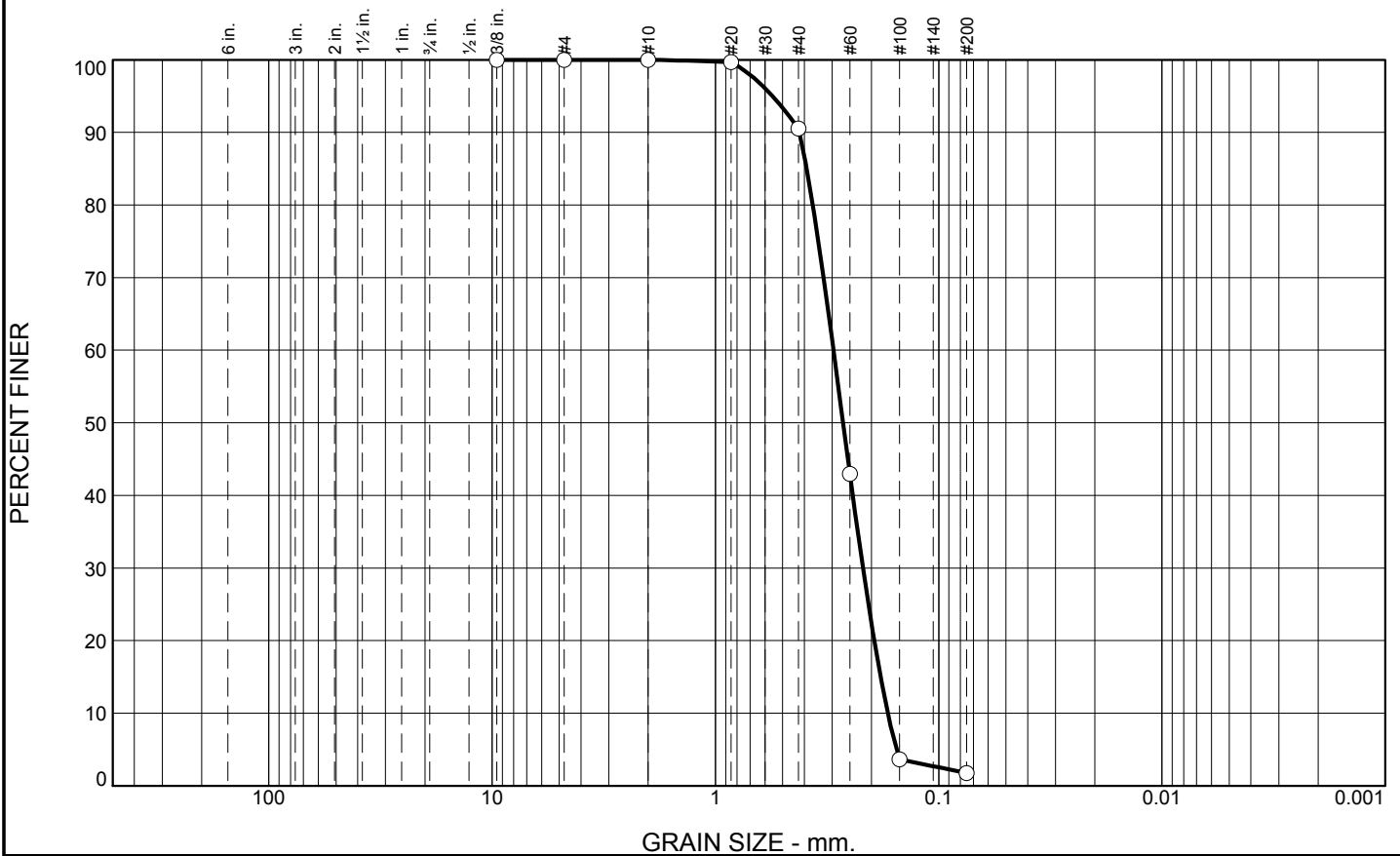
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 **Report No.**

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	9.5	88.7	1.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.7		
#40	90.5		
#60	43.0		
#100	3.6		
#200	1.8		

* (no specification provided)

Material Description

SAND, (SP), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.4212

D₈₅= 0.3907

D₆₀= 0.2958

D₅₀= 0.2681

D₃₀= 0.2184

D₁₅= 0.1821

D₁₀= 0.1691

C_u= 1.75

C_c= 0.95

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-CI-23-10B
Sample Number: TE Lab ID: 4660.08

Depth: 4.0 - 8.0 (ft.)

Date: 9/1/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

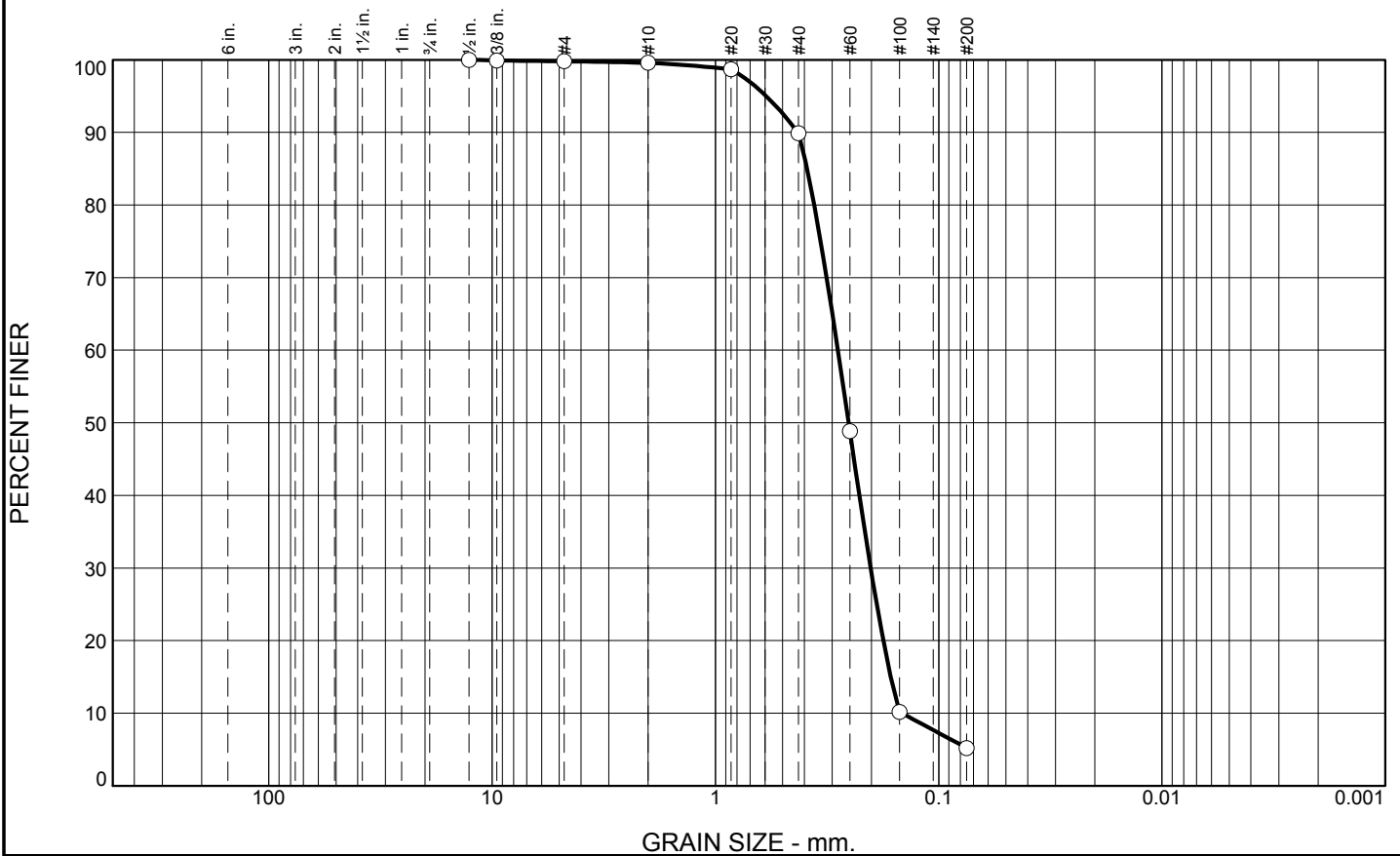
Project No: 10-2123-0009

Report No.

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.2	9.7	84.7	5.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.500	100.0		
.375	99.9		
#4	99.8		
#10	99.6		
#20	98.7		
#40	89.9		
#60	48.9		
#100	10.2		
#200	5.2		

* (no specification provided)

Material Description
SAND, (SP-SM), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.4276 D₈₅= 0.3892 D₆₀= 0.2828
 D₅₀= 0.2531 D₃₀= 0.2018 D₁₅= 0.1641
 D₁₀= 0.1461 C_u= 1.94 C_c= 0.99

Classification
 USCS= SP-SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-CI-23-10C
Sample Number: TE Lab ID: 4660.09

Depth: 8.0 - 11.5 (ft.)

Date: 9/1/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 **Report No.**

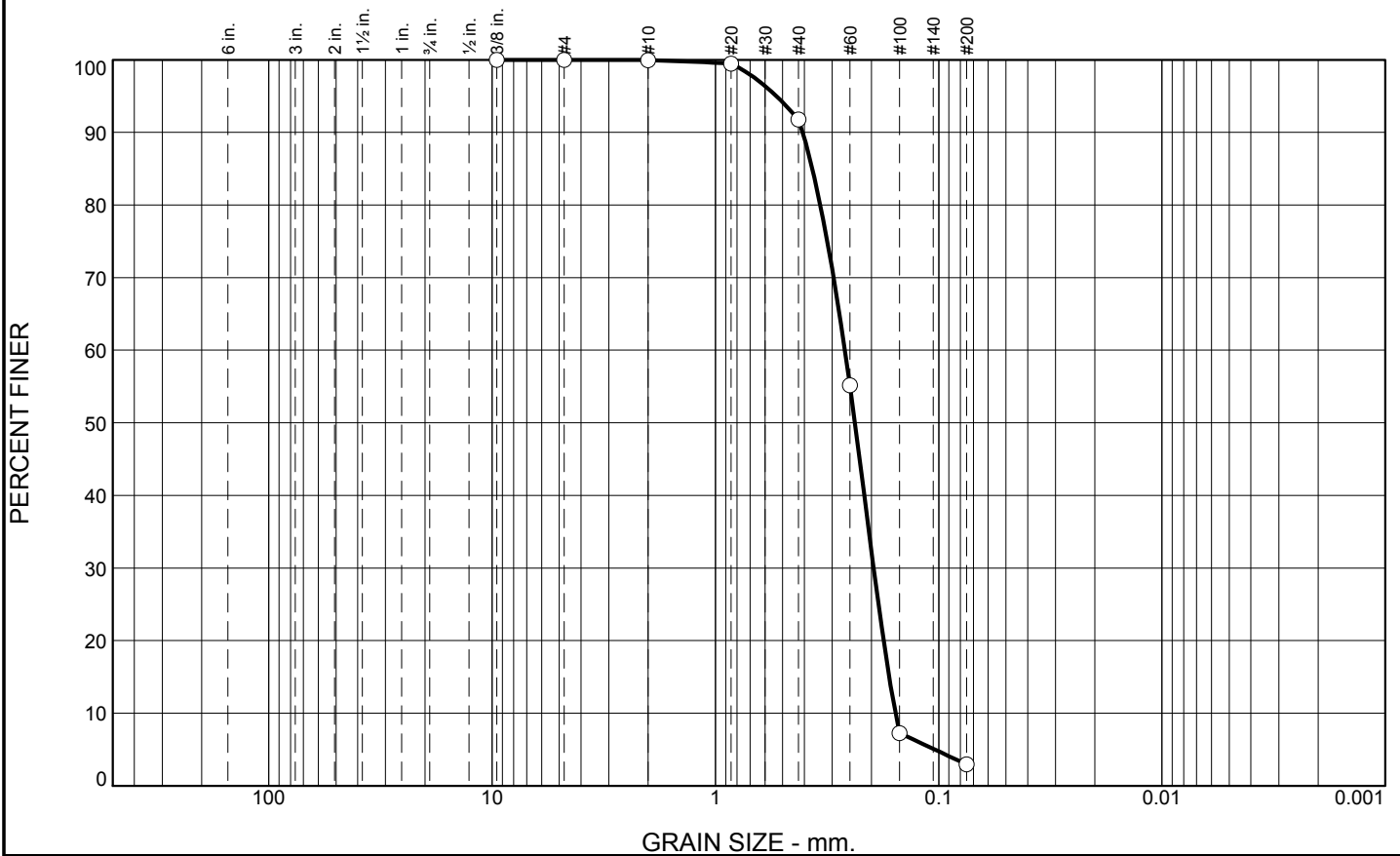
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-CI-24-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-24-10		LOCATION COORDINATES E = 908,974 N = 260,326		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 11.3 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 08-21-10		STARTED 08-21-10 COMPLETED 08-21-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -10.5 Ft.			
8. TOTAL DEPTH OF BORING 13.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Mark Green, Geotechnical Engineer			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-10.5	0.0						
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace shell fragments, trace of sea grass from 0-2 ft., lt. gray and gray (SP)	A	Classification: SP Color: 5Y 6/2-light olive gray D50: 0.2373 mm % Fines: 2.9		
				B	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.2849 mm % Fines: 1.8		
				C	Classification: SP-SM Color: 2.5Y 7/1-light gray D50: 0.1913 mm % Fines: 9.3		
-22.5	12.0						
-23.5	13.0		SAND, silty, mostly fine-grained sand-sized quartz, some silt, trace shell fragments, dark gray (SM)	NS			
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	8.2	88.9	2.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.5		
#40	91.8		
#60	55.2		
#100	7.3		
#200	2.9		

* (no specification provided)

Material Description

SAND, (SP), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.4072

D₈₅= 0.3682

D₆₀= 0.2630

D₅₀= 0.2373

D₃₀= 0.1957

D₁₅= 0.1668

D₁₀= 0.1563

C_u= 1.68

C_c= 0.93

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-CI-24-10A
Sample Number: TE Lab ID: 4660.10

Depth: 0.0 - 4.0 (ft.)

Date: 9/1/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

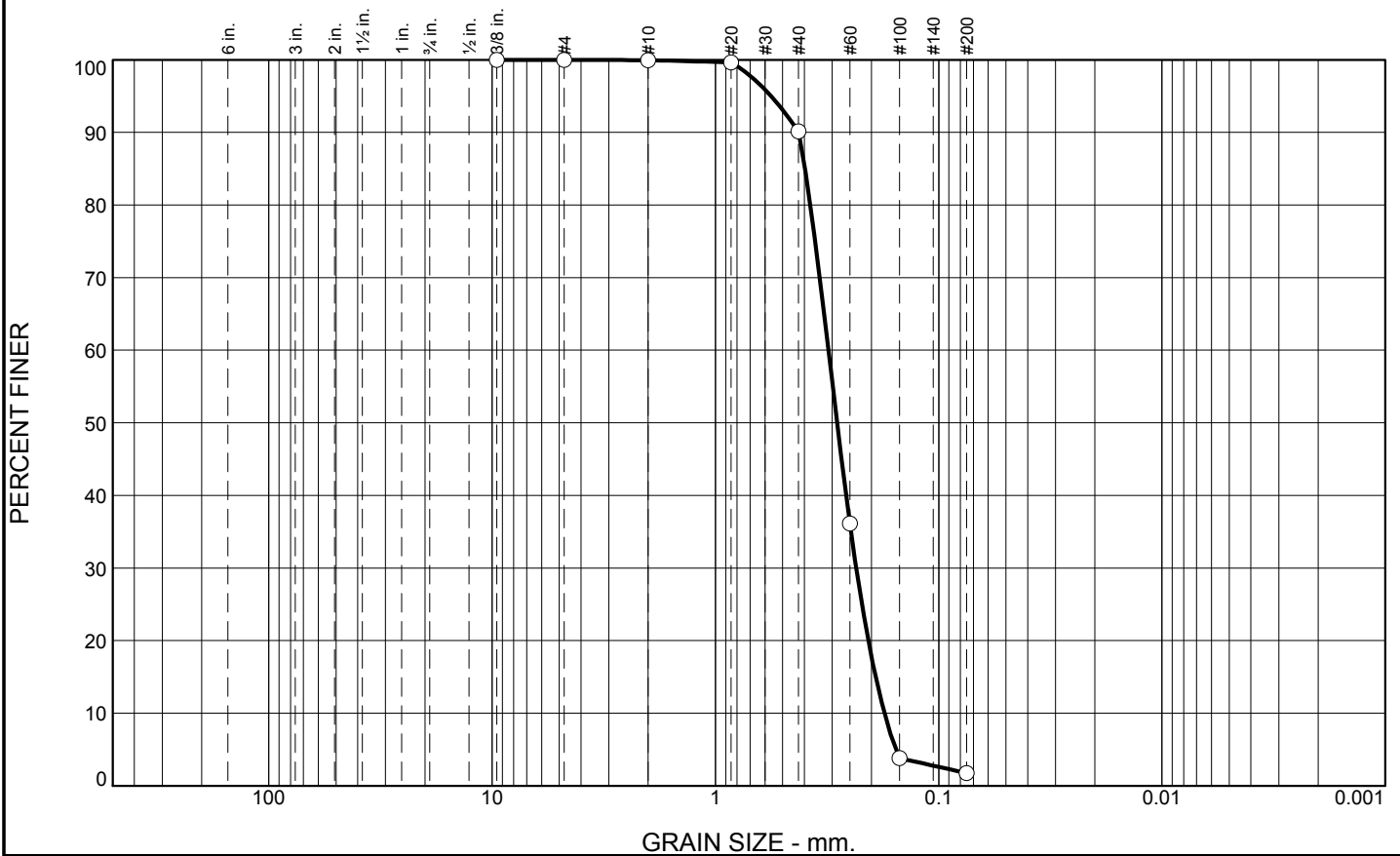
Project No: 10-2123-0009

Report No.

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	9.7	88.4	1.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.6		
#40	90.2		
#60	36.1		
#100	3.8		
#200	1.8		

* (no specification provided)

Material Description
SAND, (SP), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.4241 D₈₅= 0.3976 D₆₀= 0.3114
 D₅₀= 0.2849 D₃₀= 0.2341 D₁₅= 0.1917
 D₁₀= 0.1751 C_u= 1.78 C_c= 1.01

Classification
 USCS= SP AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-CI-24-10B
Sample Number: TE Lab ID: 4660.11

Depth: 4.0 - 8.0 (ft.)

Date: 9/01/10

Thompson Engineering

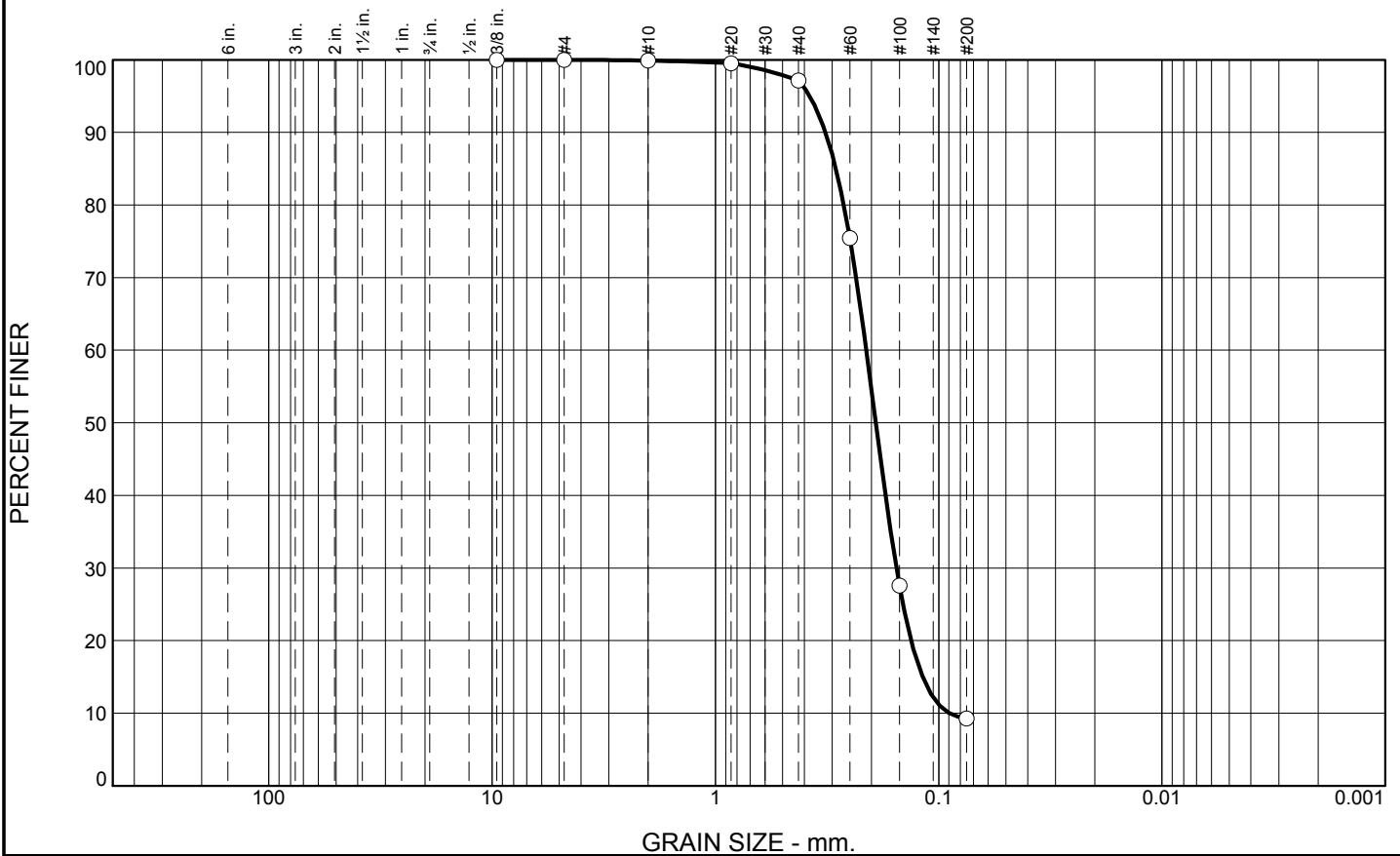
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 **Report No.**

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	2.8	87.8	9.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.5		
#40	97.1		
#60	75.5		
#100	27.6		
#200	9.3		

* (no specification provided)

Material Description
SAND, (SP-SM), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.3212 D₈₅= 0.2886 D₆₀= 0.2111
 D₅₀= 0.1913 D₃₀= 0.1548 D₁₅= 0.1180
 D₁₀= 0.0897 C_u= 2.35 C_c= 1.26

Classification
 USCS= SP-SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-CI-24-10C
Sample Number: TE Lab ID: 4660.12

Depth: 8.0 - 11.8 (ft.)

Date: 9/1/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 **Report No.**

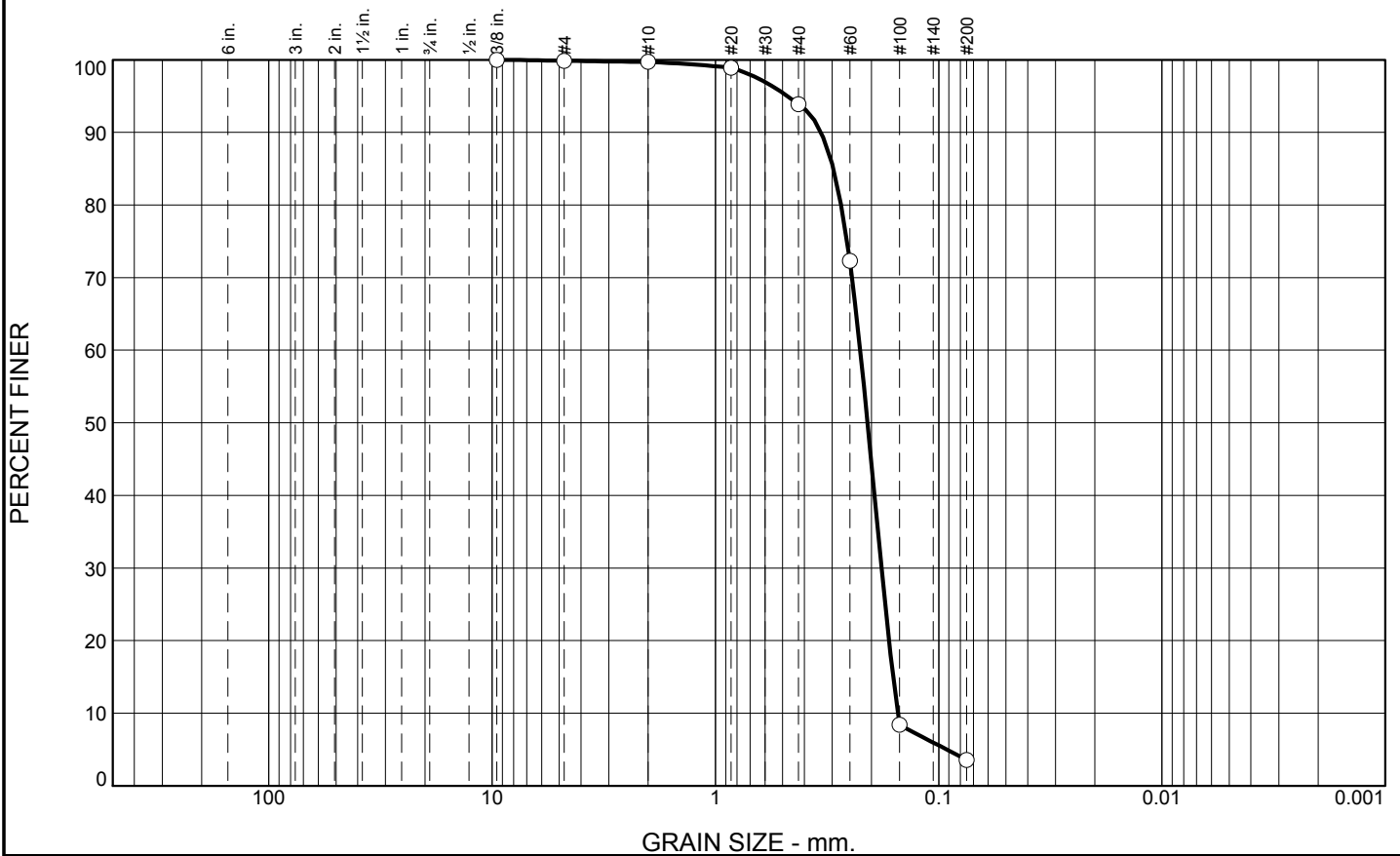
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-CI-25-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-25-10		LOCATION COORDINATES E = 914,147 N = 264,968		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 13 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 08-21-10		STARTED 08-21-10 COMPLETED 08-21-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -12.2 Ft.			
8. TOTAL DEPTH OF BORING 13.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Mark Green, Geotechnical Engineer			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-12.2	0.0						
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, little shell fragments (SP)	A	Classification: SP Color: 2.5Y 6/2-light brownish gray D50: 0.2084 mm % Fines: 3.6		
				B	Classification: SP Color: 5Y 6/2-light olive gray D50: 0.2002 mm % Fines: 2.9		
				C	Classification: SP-SM Color: 2.5Y 6/1-gray D50: 0.1789 mm % Fines: 4.9		
-24.6	12.4						
-25.2	13.0		SAND, clayey, mostly fine-grained sand-sized quartz, some clay, trace shell fragments, dark gray (SC)	NS			
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.2	5.8	90.3	3.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.7		
#20	98.9		
#40	93.9		
#60	72.3		
#100	8.4		
#200	3.6		

* (no specification provided)

Material Description

SAND, (SP), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.3362

D₈₅= 0.2964

D₆₀= 0.2246

D₅₀= 0.2084

D₃₀= 0.1804

D₁₅= 0.1600

D₁₀= 0.1526

C_u= 1.47

C_c= 0.95

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-CI-25-10A
Sample Number: TE Lab ID: 4660.04

Depth: 0.0 - 4.0 (ft.)

Date: 9/1/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

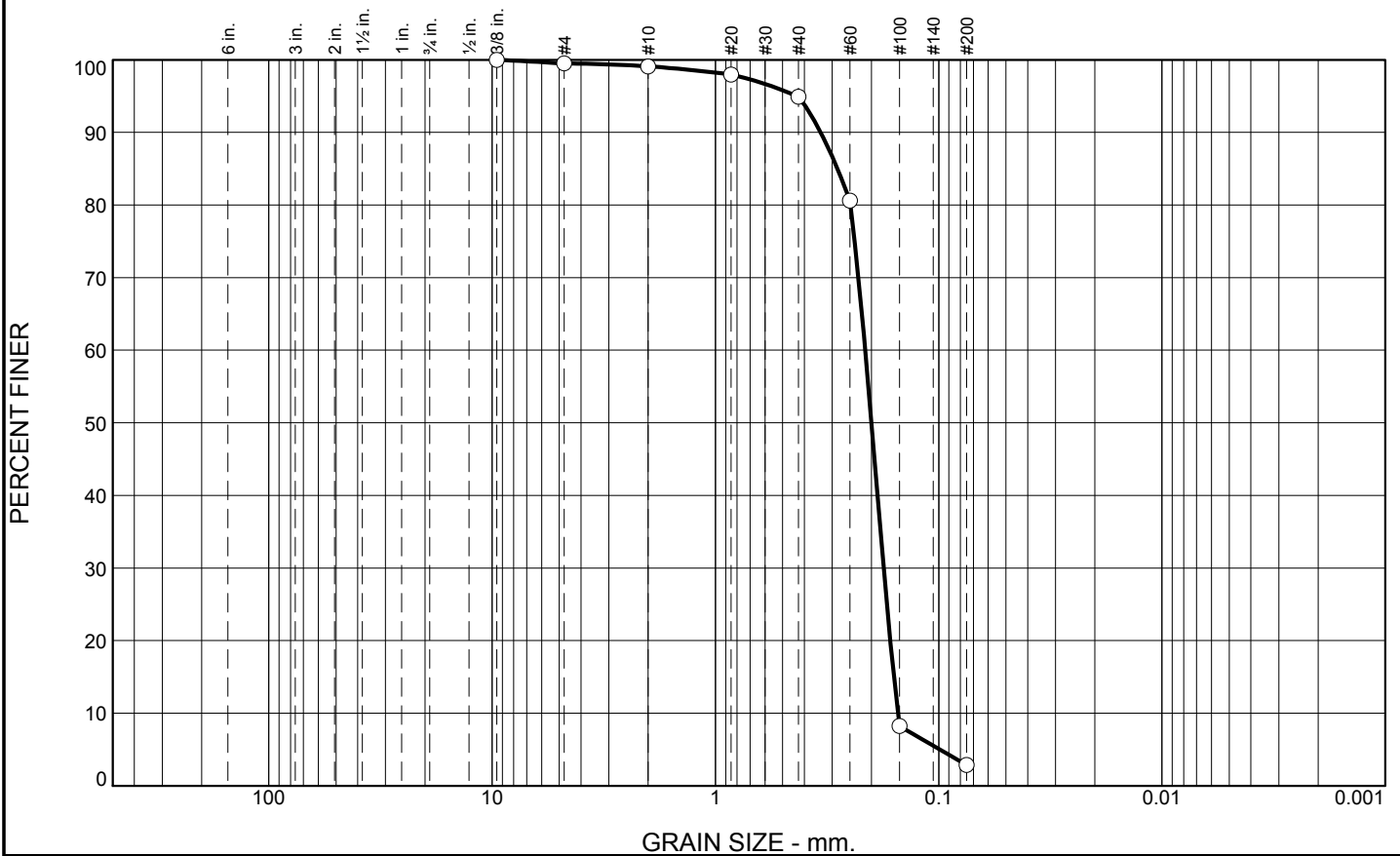
Project No: 10-2123-0009

Report No.

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.5	0.4	4.2	92.0	2.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.5		
#10	99.1		
#20	98.0		
#40	94.9		
#60	80.6		
#100	8.2		
#200	2.9		

* (no specification provided)

Material Description
SAND, (SP), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.3379 D₈₅= 0.2841 D₆₀= 0.2134
 D₅₀= 0.2002 D₃₀= 0.1765 D₁₅= 0.1588
 D₁₀= 0.1524 C_u= 1.40 C_c= 0.96

Classification
 USCS= SP AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-CI-25-10B
Sample Number: TE Lab ID: 4660.05

Depth: 4.0 - 8.0 (ft.)

Date: 9/1/10

Thompson Engineering

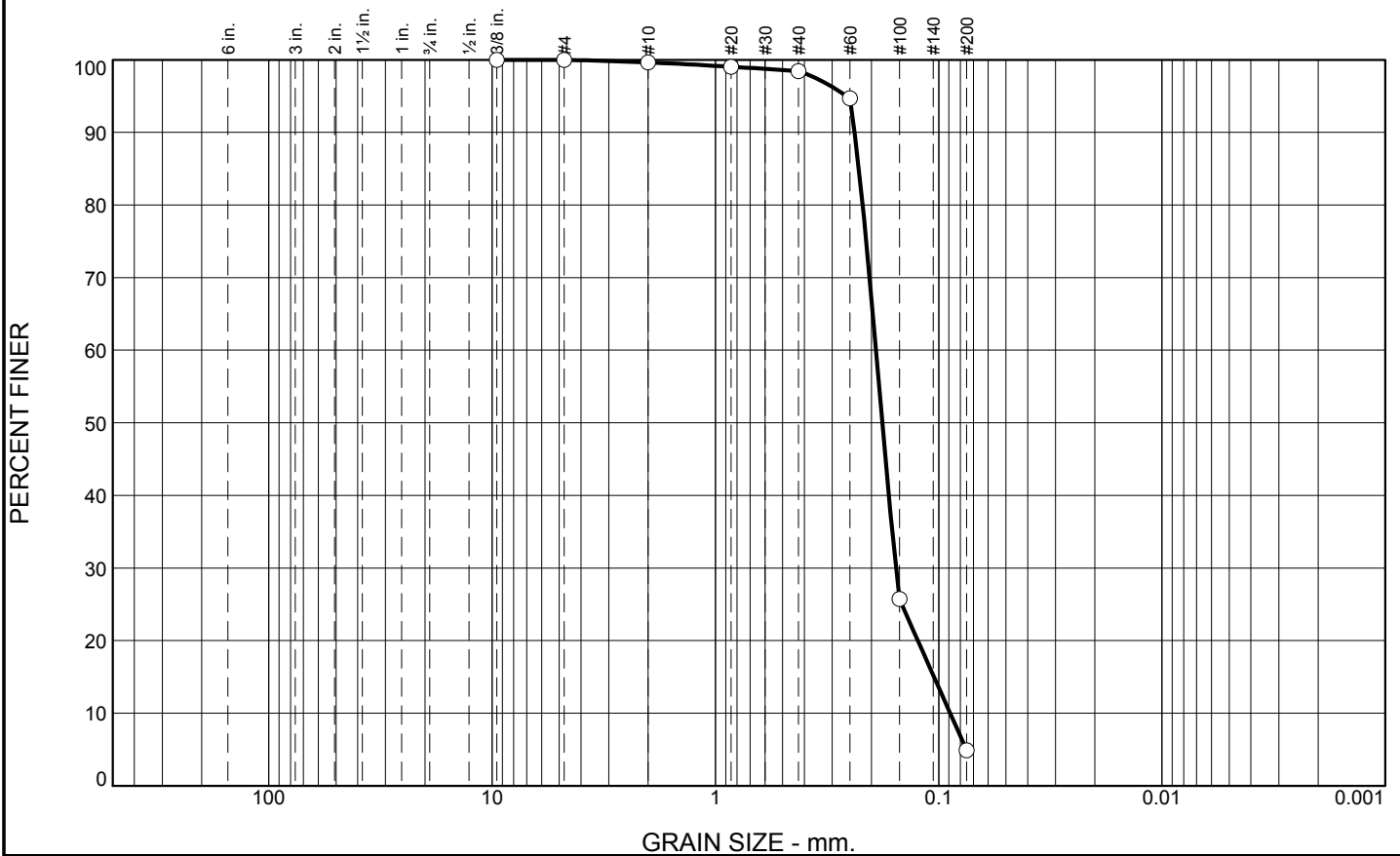
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 **Report No.**

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.4	1.2	93.5	4.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.6		
#20	99.0		
#40	98.4		
#60	94.7		
#100	25.7		
#200	4.9		

* (no specification provided)

<u>Material Description</u>		
SAND, (SP), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.2380	D ₈₅ = 0.2278	D ₆₀ = 0.1910
D ₅₀ = 0.1789	D ₃₀ = 0.1554	D ₁₅ = 0.1050
D ₁₀ = 0.0889	C _u = 2.15	C _c = 1.42
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-CI-25-10C
Sample Number: TE Lab ID: 4660.06

Depth: 8.0 - 12.4 (ft.)

Date: 9/1/10

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009
Report No.

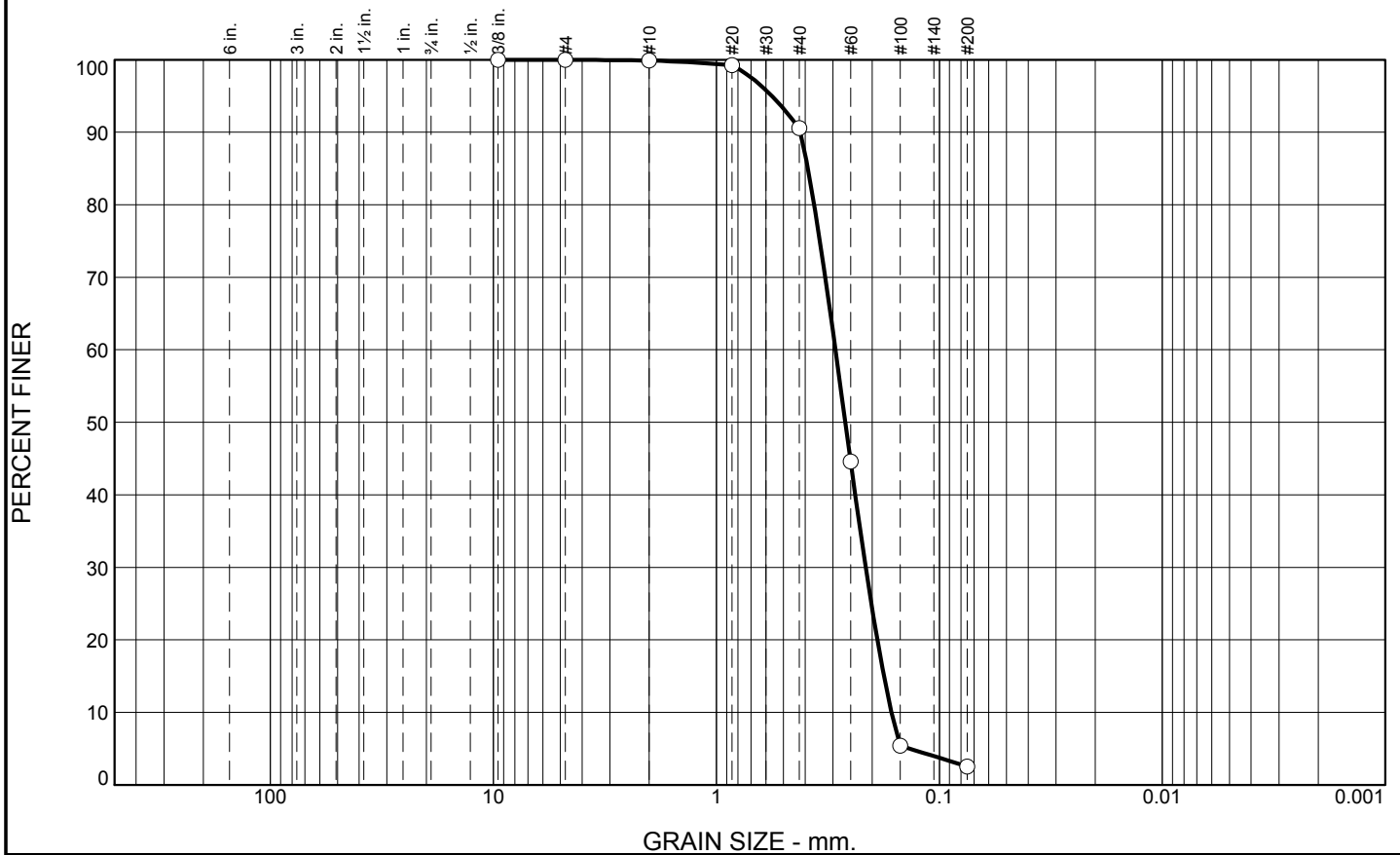
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-CI-26-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-26-10		LOCATION COORDINATES E = 912,398 N = 263,829		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 12 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 08-21-10		STARTED 08-21-10 COMPLETED 08-21-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -11.6 Ft.			
8. TOTAL DEPTH OF BORING 11.8 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Mark Green, Geotechnical Engineer			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-11.6	0.0						
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace shell fragments, trace silt, w/ traces of dark gray lenses of silt, lt. gray (SP)	A	Classification: SP Color: 2.5Y 6/2-light brownish gray D50: 0.2642 mm % Fines: 2.5		
				B	Classification: SP Color: 2.5Y 6/2-light brownish gray D50: 0.2753 mm % Fines: 2.6		
				C	Classification: SP Color: 2.5Y 6/1-gray D50: 0.275 mm % Fines: 3.2		
-23.4	11.8						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	9.3	88.1	2.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.3		
#40	90.6		
#60	44.6		
#100	5.4		
#200	2.5		

* (no specification provided)

Material Description
SAND, (SP), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.4207 D₈₅= 0.3892 D₆₀= 0.2923
 D₅₀= 0.2642 D₃₀= 0.2140 D₁₅= 0.1773
 D₁₀= 0.1640 C_u= 1.78 C_c= 0.96

Classification
 USCS= SP AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-CI-26-10A
Sample Number: TE Lab ID: 4660.13

Depth: 0.0 - 4.0 (ft.)

Date: 9/1/10

Thompson Engineering

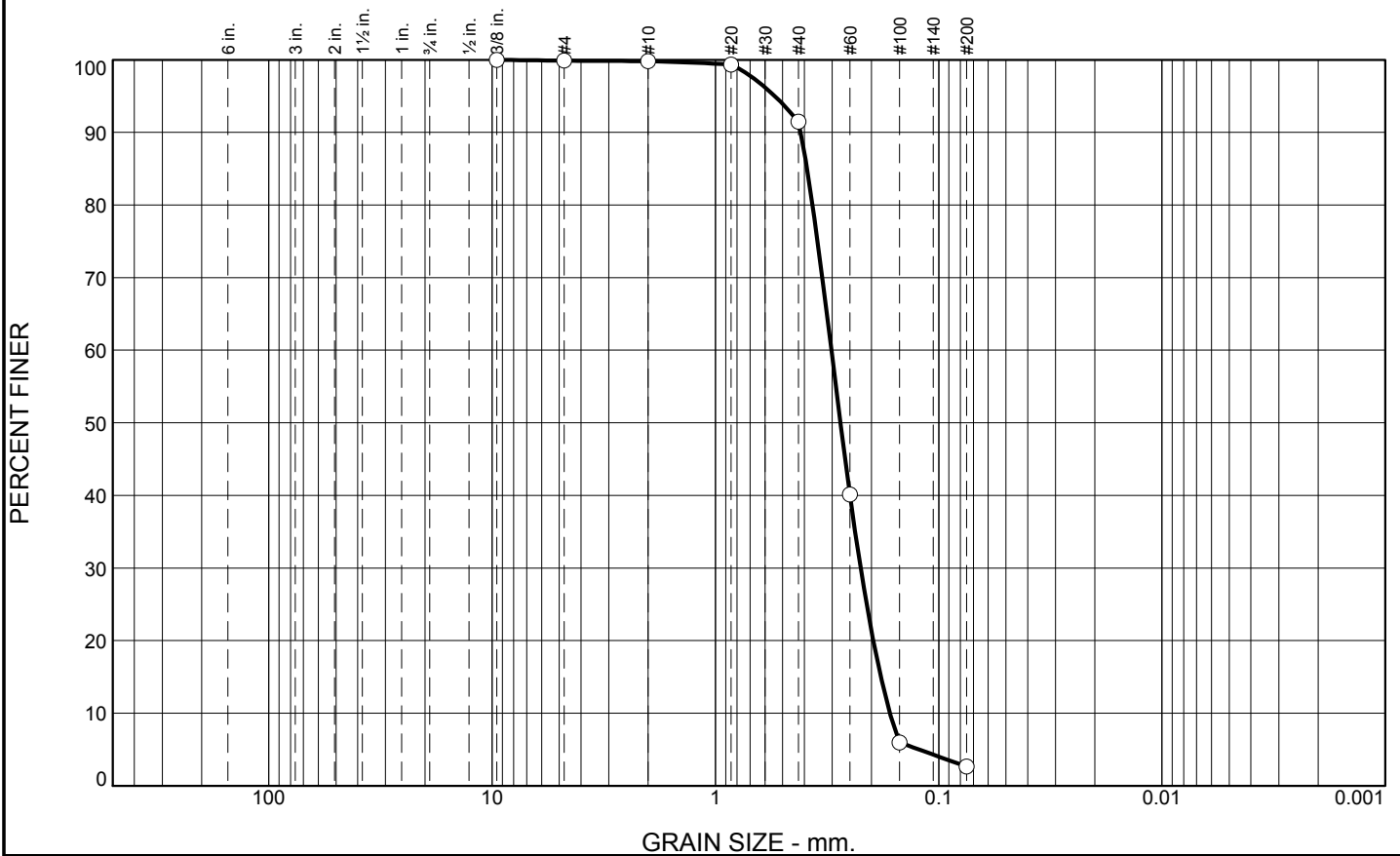
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 **Report No.**

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.1	8.3	88.9	2.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.8		
#20	99.3		
#40	91.5		
#60	40.1		
#100	6.0		
#200	2.6		

* (no specification provided)

Material Description		
SAND, (SP), fine grained		
<div> <div> Atterberg Limits PL= LL= PI= </div> <div> Coefficients D₉₀= 0.4156 D₈₅= 0.3891 D₆₀= 0.3022 D₅₀= 0.2753 D₃₀= 0.2237 D₁₅= 0.1817 D₁₀= 0.1654 C_u= 1.83 C_c= 1.00 </div> <div> Classification USCS= SP AASHTO= </div> <div> Remarks CADD CODE = CH10D965 </div> </div>		

Location: USACE Sample # BI-CI-26-10B
Sample Number: TE Lab ID: 4660.14

Depth: 4.0 - 8.0 (ft.)

Date: 9/1/10

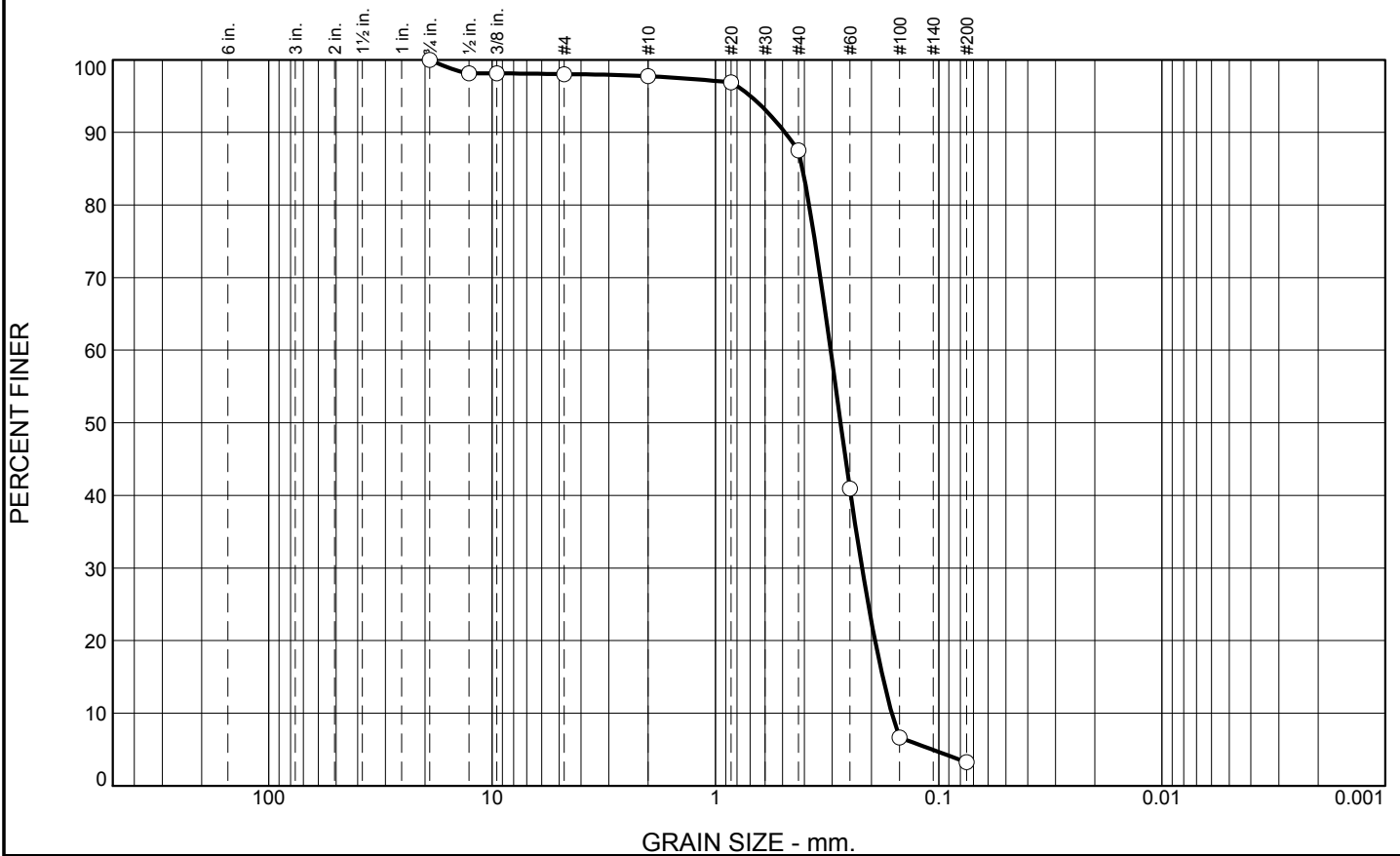
Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009
Report No.

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	2.0	0.3	10.2	84.3	3.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.750	100.0		
.500	98.1		
.375	98.1		
#4	98.0		
#10	97.7		
#20	96.9		
#40	87.5		
#60	40.9		
#100	6.7		
#200	3.2		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained, with trace shell

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.4879

D₈₅= 0.4082

D₆₀= 0.3047

D₅₀= 0.2750

D₃₀= 0.2204

D₁₅= 0.1783

D₁₀= 0.1623

C_u= 1.88

C_c= 0.98

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-CI-26-10C
Sample Number: TE Lab ID: 4660.15

Depth: 8.0 - 11.8 (ft.)

Date: 9/1/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Report No.

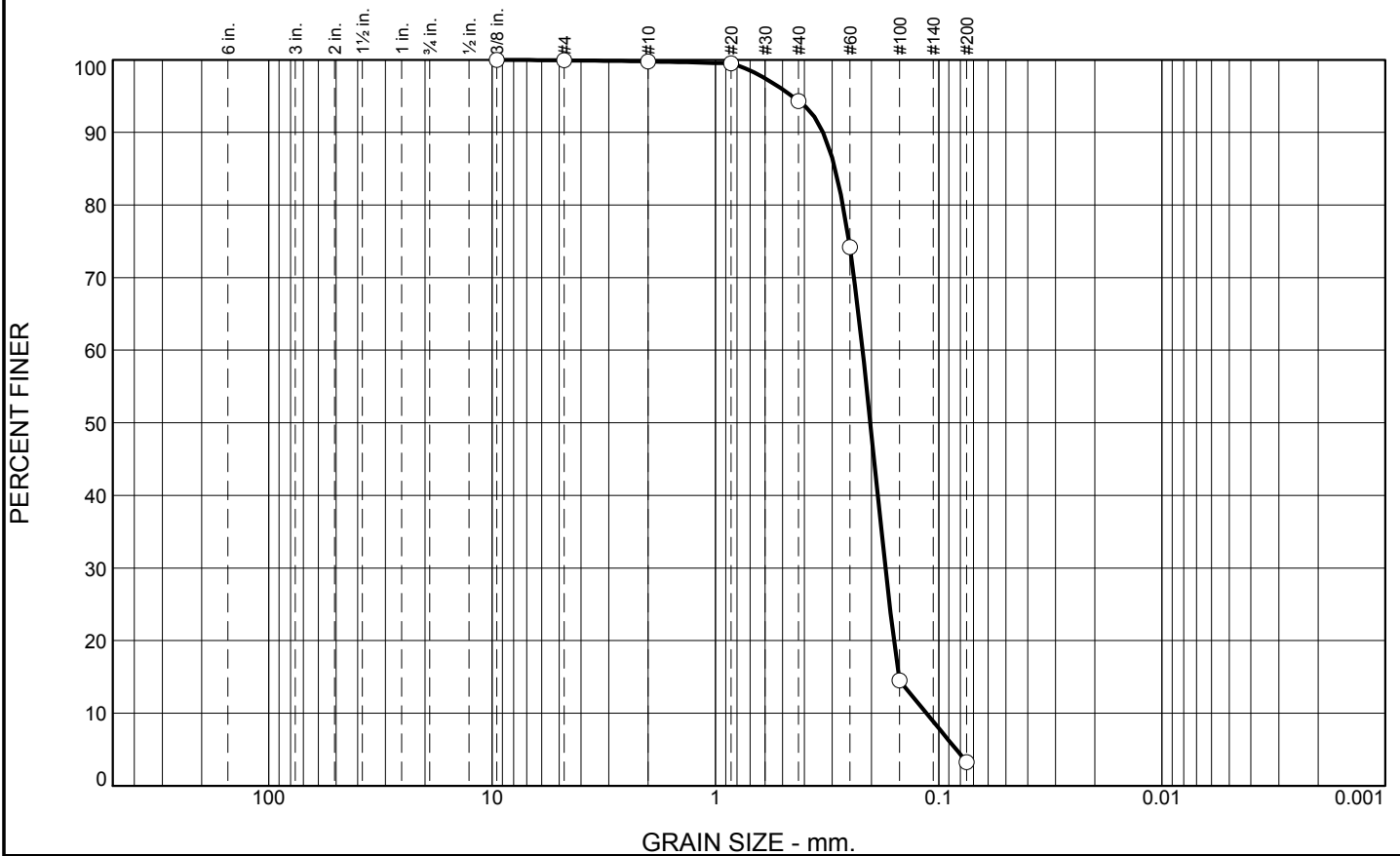
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-CI-27-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-27-10		LOCATION COORDINATES E = 911,292 N = 261,616		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 12 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 08-22-10		STARTED 08-22-10 COMPLETED 08-22-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -11.3 Ft.			
8. TOTAL DEPTH OF BORING 8.3 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Mark Green, Geotechnical Engineer			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-11.3	0.0						
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace shell fragments, trace of silt 5 - 6 ft. (SP)	A	Classification: SP Color: 2.5Y 5/2-grayish brown D50: 0.2025 mm % Fines: 3.3		
				B	Classification: SP-SM Color: 2.5Y 6/1-gray D50: 0.1844 mm % Fines: 6.2		
-19.6	8.3						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.1	5.5	91.0	3.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.8		
#20	99.5		
#40	94.3		
#60	74.2		
#100	14.5		
#200	3.3		

* (no specification provided)

Material Description
SAND, (SP), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.3293 D₈₅= 0.2910 D₆₀= 0.2193
 D₅₀= 0.2025 D₃₀= 0.1732 D₁₅= 0.1508
 D₁₀= 0.1135 C_u= 1.93 C_c= 1.21

Classification
 USCS= SP AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-CI-27-10A
Sample Number: TE Lab ID: 4660.24

Depth: 0.0 - 4.0 (ft.)

Date: 9/1/10

Thompson Engineering

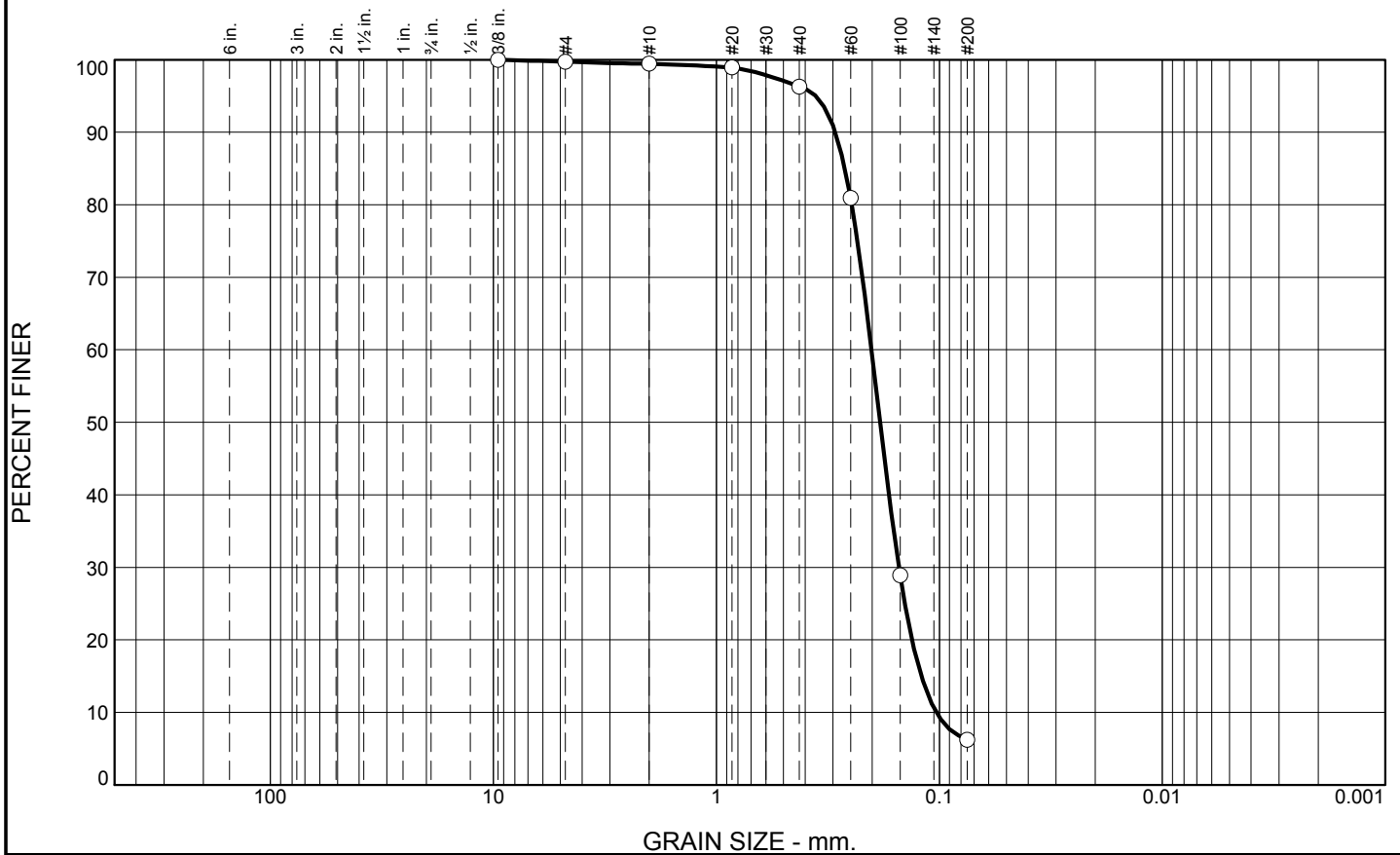
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 **Report No.**

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.3	0.3	3.1	90.1	6.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.7		
#10	99.4		
#20	99.0		
#40	96.3		
#60	80.9		
#100	28.9		
#200	6.2		

* (no specification provided)

Material Description
SAND, (SP-SM), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.2929 D₈₅= 0.2652 D₆₀= 0.2016
 D₅₀= 0.1844 D₃₀= 0.1519 D₁₅= 0.1203
 D₁₀= 0.1032 C_u= 1.95 C_c= 1.11

Classification
 USCS= SP-SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-CI-27-10B
Sample Number: TE Lab ID: 4660.25

Depth: 4.0 - 8.3 (ft.)

Date: 9/1/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 **Report No.**

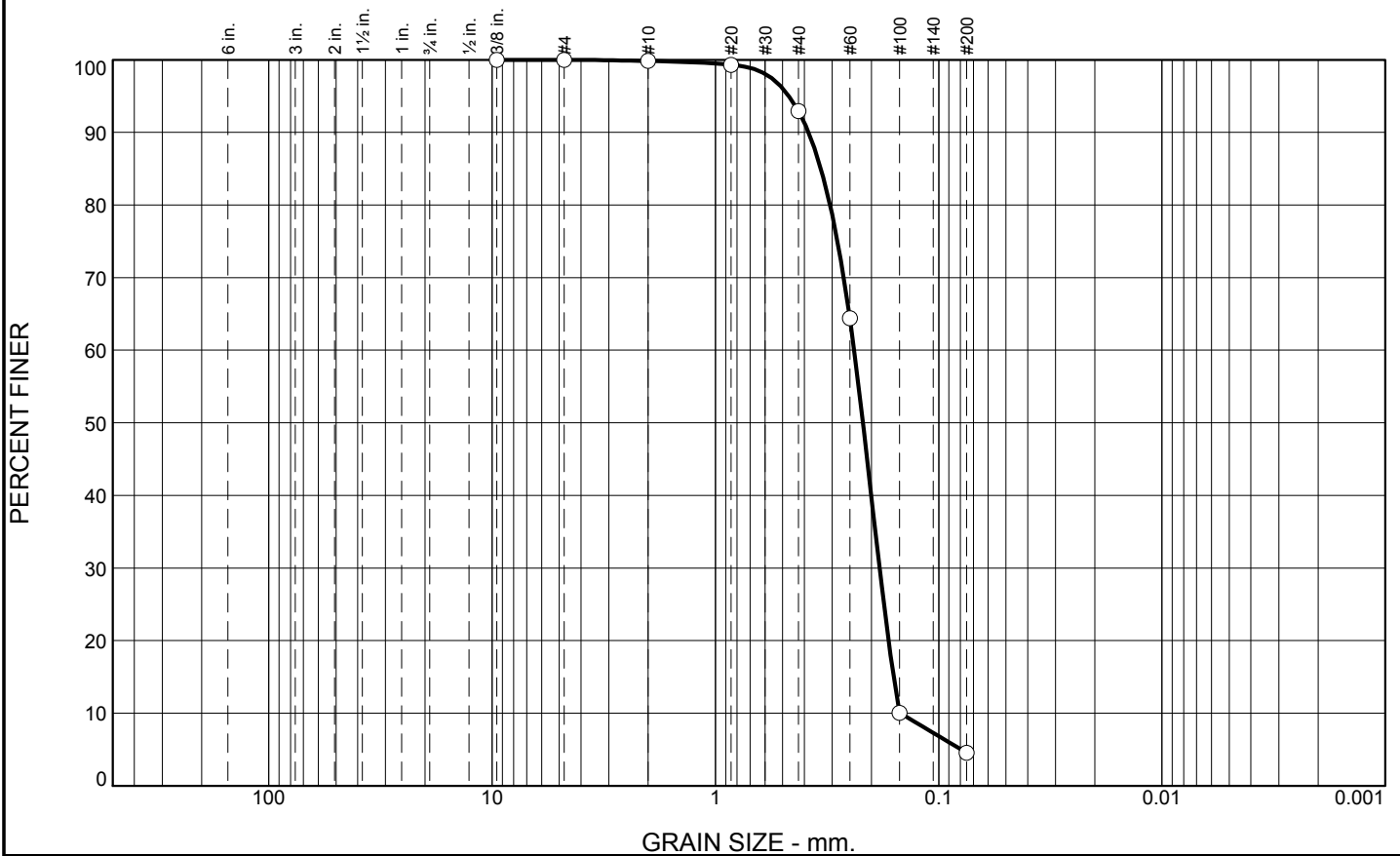
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-CI-28-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-28-10		LOCATION COORDINATES E = 910,157 N = 259,680		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 11.5 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 08-22-10		STARTED 08-22-10 COMPLETED 08-22-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -10.6 Ft.			
8. TOTAL DEPTH OF BORING 8.3 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Mark Green, Geotechnical Engineer			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-10.6	0.0						
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace silt, trace shell fragments, trace of sea grass, dark gray (SP)	A	Classification: SP Color: 5Y 5/1-gray D50: 0.2185 mm % Fines: 4.6		
-14.6	4.0		SAND, poorly-graded, mostly fine-grained sand-sized quartz, lt. gray (SP)	B	Classification: SP-SM Color: 2.5Y 6/1-gray D50: 0.185 mm % Fines: 5.5		
-18.9	8.3						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	6.9	88.3	4.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.8		
#20	99.3		
#40	92.9		
#60	64.4		
#100	10.1		
#200	4.6		

* (no specification provided)

Material Description		
SAND, (SP), fine grained		
<div> <div> Atterberg Limits </div> <div> PL= </div> <div> LL= </div> <div> PI= </div> </div>		
<div> <div> Coefficients </div> <div> D₉₀= 0.3830 </div> <div> D₅₀= 0.2185 </div> <div> D₁₀= 0.1488 </div> <div> D₈₅= 0.3369 </div> <div> D₃₀= 0.1840 </div> <div> C_u= 1.61 </div> <div> D₆₀= 0.2393 </div> <div> D₁₅= 0.1592 </div> <div> C_c= 0.95 </div> </div>		
<div> <div> Classification </div> <div> USCS= SP </div> <div> AASHTO= </div> </div>		
<div> <div> Remarks </div> <div> CADD CODE = CH10D965 </div> </div>		

Location: USACE Sample # BI-CI-28-10A
Sample Number: TE Lab ID: 4660.20

Depth: 0.0 - 4.0 (ft.)

Date: 9/1/10

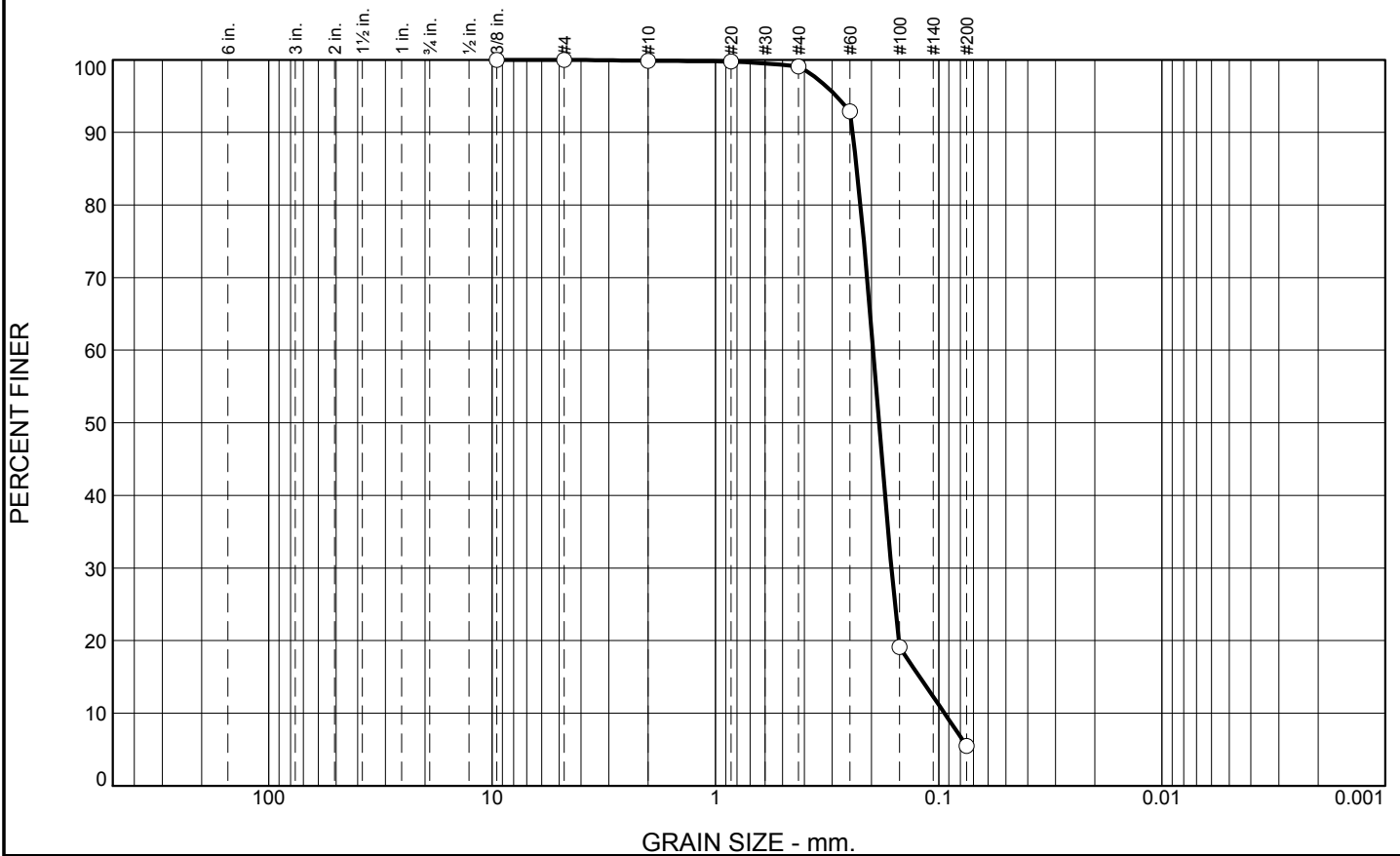
Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009
Report No.

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	0.8	93.6	5.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.8		
#40	99.1		
#60	92.9		
#100	19.1		
#200	5.5		

* (no specification provided)

Material Description

SAND, (SP-SM), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.2429

D₈₅= 0.2327

D₆₀= 0.1967

D₅₀= 0.1850

D₃₀= 0.1629

D₁₅= 0.1216

D₁₀= 0.0943

C_u= 2.08

C_c= 1.43

Classification

USCS= SP-SM

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-CI-28-10B
Sample Number: TE Lab ID: 4660.21

Depth: 4.0 - 8.3 (ft.)

Date: 9/1/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Report No.

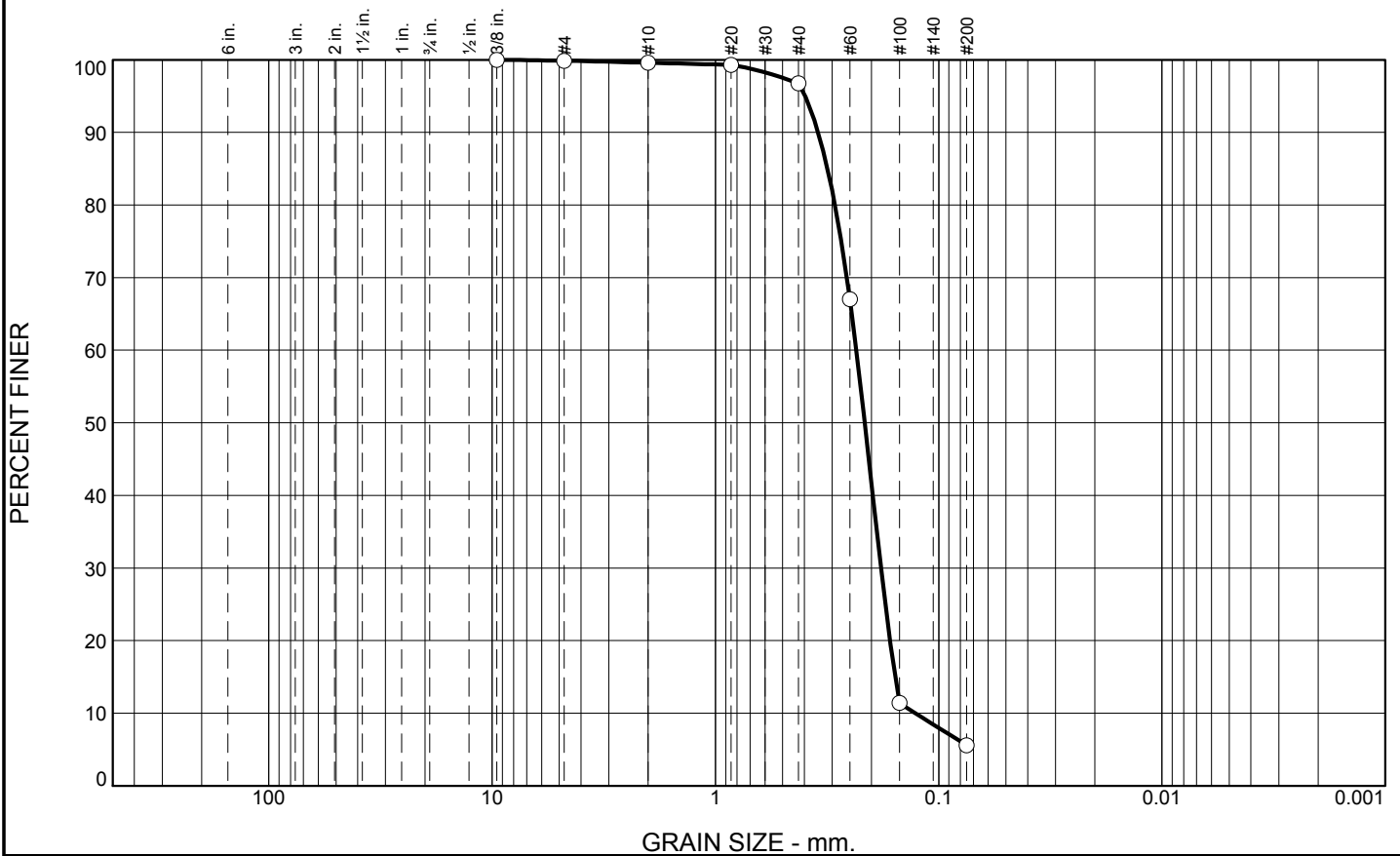
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-CI-29-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-29-10		LOCATION COORDINATES E = 913,188 N = 265,460		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 13 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 08-22-10		STARTED 08-22-10 COMPLETED 08-22-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -12.1 Ft.			
8. TOTAL DEPTH OF BORING 6.7 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Mark Green, Geotechnical Engineer			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-12.1	0.0						
-14.1	2.0		SAND, silty, mostly fine-grained sand-sized quartz, some silt, trace shell fragments, dark gray and gray (SM)	A	Classification: SP-SM Color: 5Y 5/2-olive gray D50: 0.2145 mm % Fines: 5.6		
-18.8	6.7		SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace silt (SP)	B	Classification: SP Color: 5Y 5/2-olive gray D50: 0.191 mm % Fines: 4.2		
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.3	2.8	91.2	5.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.6		
#20	99.3		
#40	96.8		
#60	67.0		
#100	11.4		
#200	5.6		

* (no specification provided)

Material Description
SAND, (SP-SM), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.3465 D₈₅= 0.3146 D₆₀= 0.2339
 D₅₀= 0.2145 D₃₀= 0.1813 D₁₅= 0.1567
 D₁₀= 0.1270 C_u= 1.84 C_c= 1.11

Classification
 USCS= SP-SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-CI-29-10A
Sample Number: TE Lab ID: 4660.22

Depth: 0.0 - 2.0 (ft.)

Date: 9/1/10

Thompson Engineering

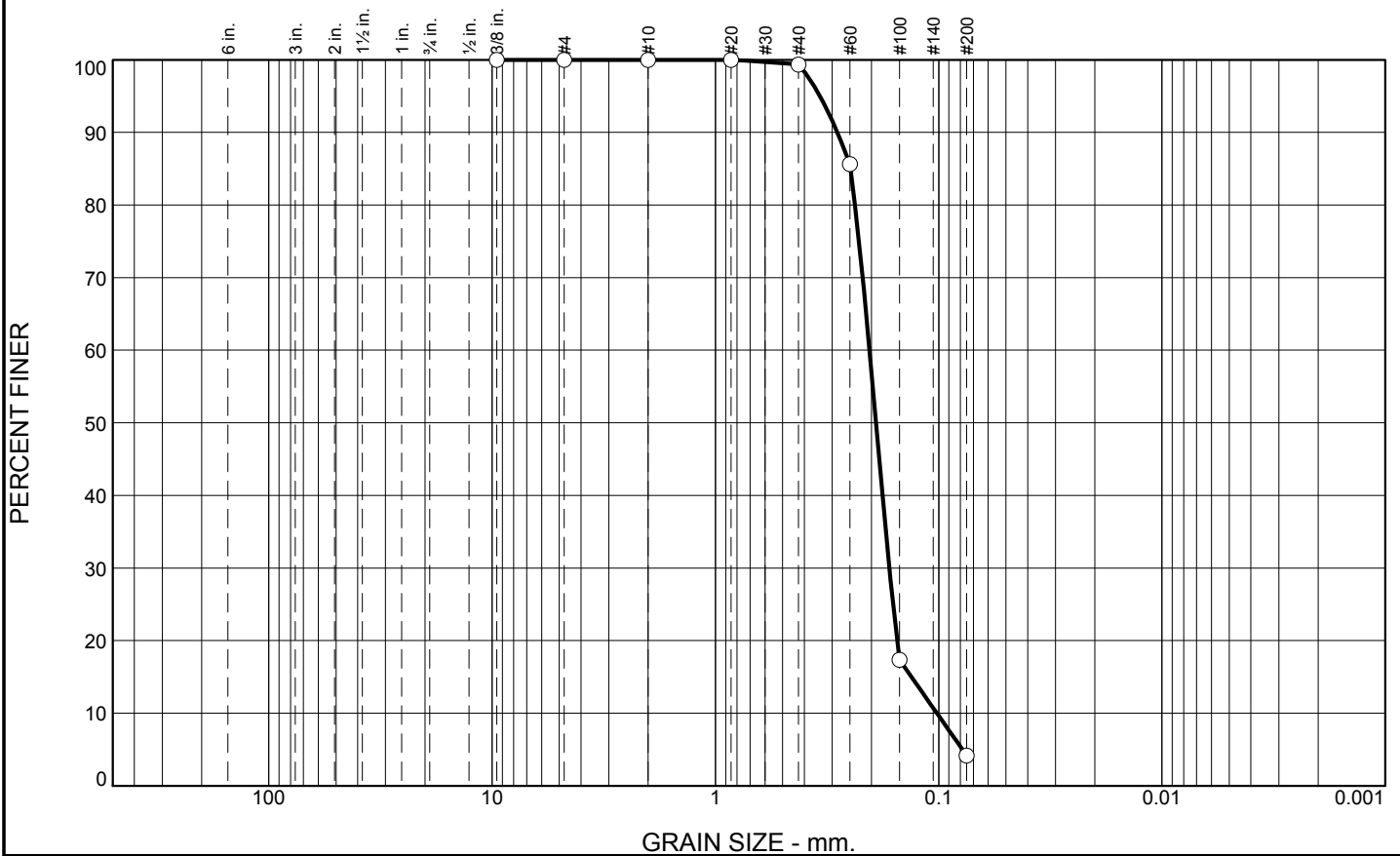
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 **Report No.**

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.7	95.1	4.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	100.0		
#40	99.3		
#60	85.6		
#100	17.4		
#200	4.2		

* (no specification provided)

Material Description

SAND, (SP), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.2842

D₈₅= 0.2484

D₆₀= 0.2042

D₅₀= 0.1910

D₃₀= 0.1664

D₁₅= 0.1325

D₁₀= 0.1019

C_u= 2.00

C_c= 1.33

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-CI-29-10B
Sample Number: TE Lab ID: 4660.23

Depth: 2.0 - 6.7 (ft.)

Date: 9/1/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Report No.

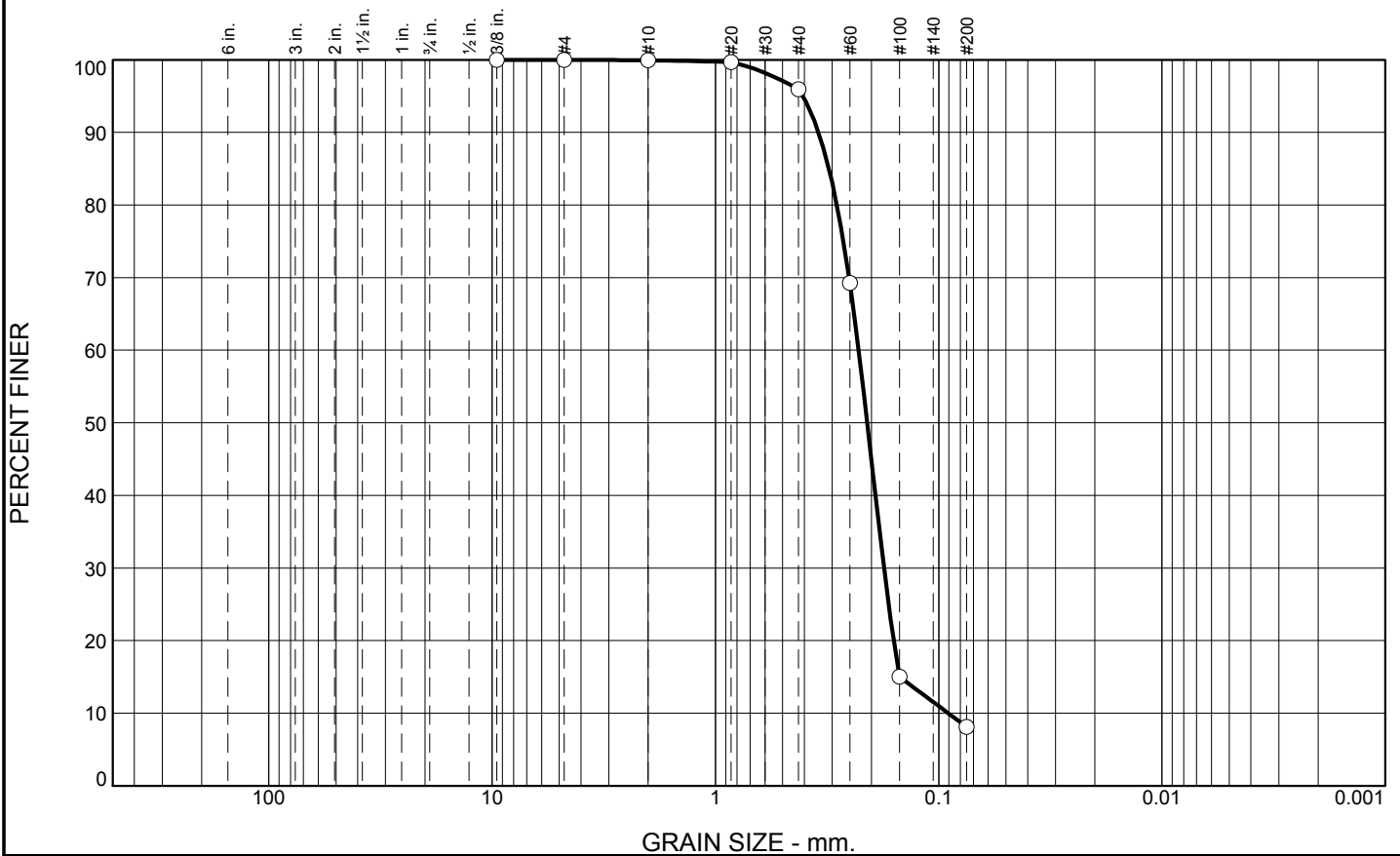
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-CI-30-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-30-10		LOCATION COORDINATES E = 913,563 N = 263,576		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 13.3 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 08-22-10		STARTED 08-22-10 COMPLETED 08-22-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -12.5 Ft.			
8. TOTAL DEPTH OF BORING 7.9 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Mark Green, Geotechnical Engineer			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-12.5	0.0						
-14.5	2.0		SAND, silty, mostly fine-grained sand-sized quartz, some silt, trace shell fragments, dark gray and gray (SM)	A	Classification: SP-SM Color: 5Y 3/2-dark olive gray D50: 0.2091 mm % Fines: 8.1		
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace silt (SP)	B	Classification: SP Color: 5Y 5/1-gray D50: 0.1971 mm % Fines: 3.8		
				C	Classification: SP Color: 2.5Y 6/1-gray D50: 0.1858 mm % Fines: 3.6		
-20.4	7.9						
NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.							

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	4.0	87.8	8.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.7		
#40	95.9		
#60	69.3		
#100	15.0		
#200	8.1		

* (no specification provided)

Material Description
SAND, (SP-SM), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.3453 D₈₅= 0.3101 D₆₀= 0.2283
 D₅₀= 0.2091 D₃₀= 0.1758 D₁₅= 0.1496
 D₁₀= 0.0907 C_u= 2.52 C_c= 1.49

Classification
 USCS= SP-SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-CI-30-10A
Sample Number: TE Lab ID: 4660.26

Depth: 0.0 - 2.0 (ft.)

Date: 9/1/10

Thompson Engineering

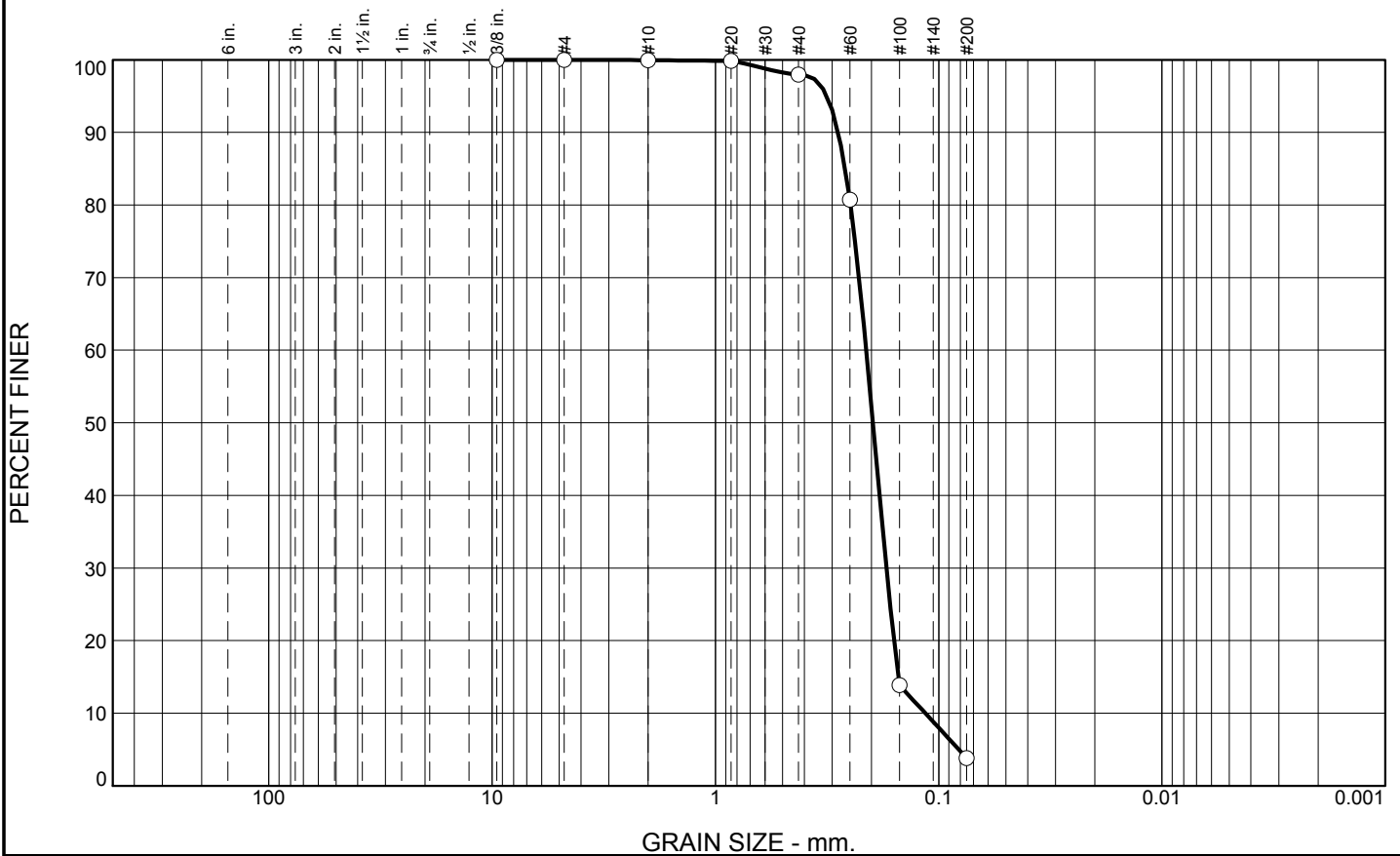
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 **Report No.**

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	1.9	94.2	3.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.8		
#40	98.0		
#60	80.7		
#100	13.9		
#200	3.8		

* (no specification provided)

Material Description

SAND, (SP), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.2819

D₈₅= 0.2623

D₆₀= 0.2112

D₅₀= 0.1971

D₃₀= 0.1715

D₁₅= 0.1517

D₁₀= 0.1149

C_u= 1.84

C_c= 1.21

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-CI-30-10B
Sample Number: TE Lab ID: 4660.27

Depth: 2.0 - 5.0 (ft.)

Date: 9/1/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

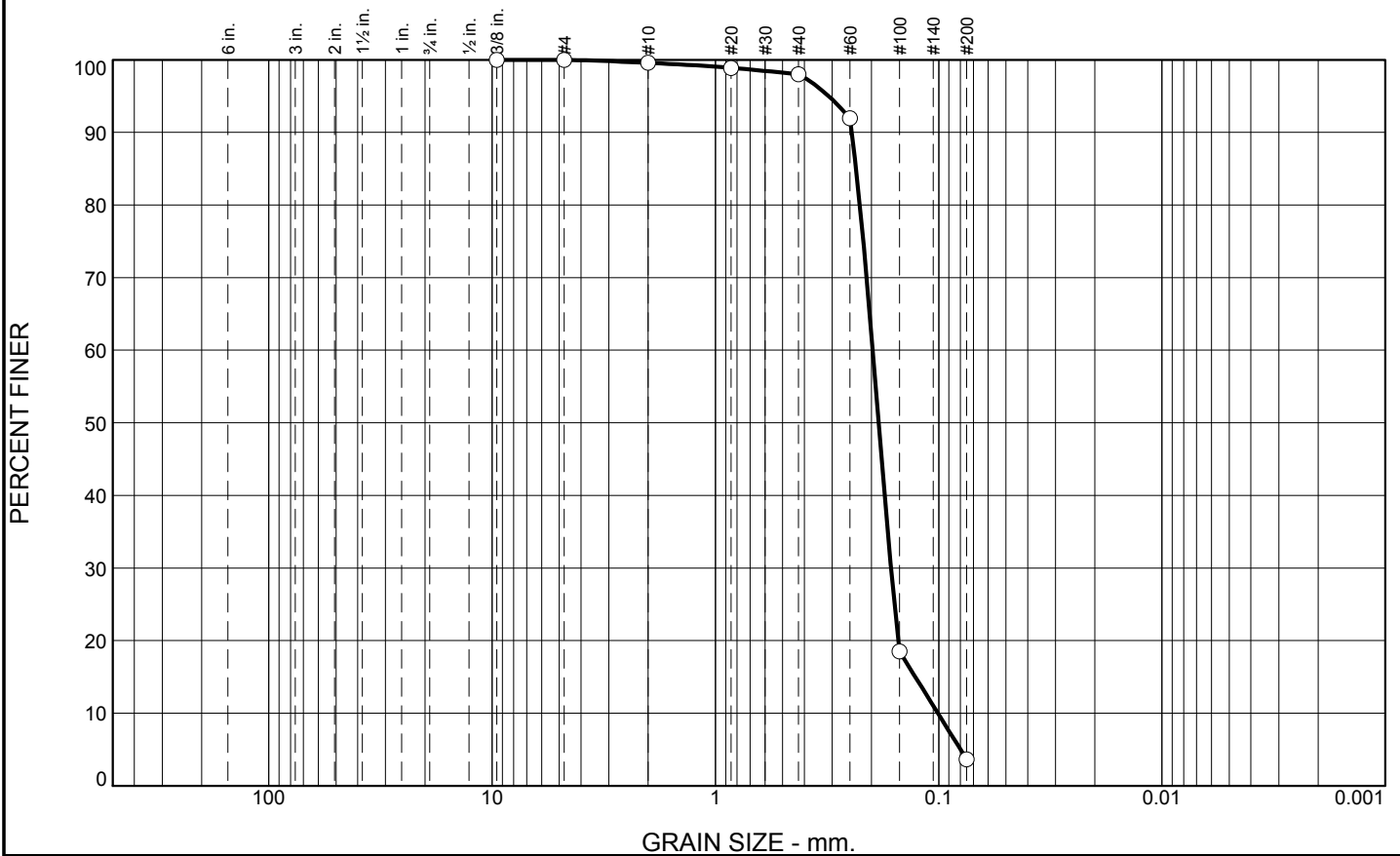
Project No: 10-2123-0009

Report No.

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.4	1.6	94.4	3.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.6		
#20	98.9		
#40	98.0		
#60	91.9		
#100	18.5		
#200	3.6		

* (no specification provided)

Material Description
SAND, (SP), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.2451 D₈₅= 0.2344 D₆₀= 0.1975
 D₅₀= 0.1858 D₃₀= 0.1636 D₁₅= 0.1273
 D₁₀= 0.1009 C_u= 1.96 C_c= 1.34

Classification
 USCS= SP AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-CI-30-10C
Sample Number: TE Lab ID: 4660.28

Depth: 5.0 - 7.9 (ft.)

Date: 9/1/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 **Report No.**

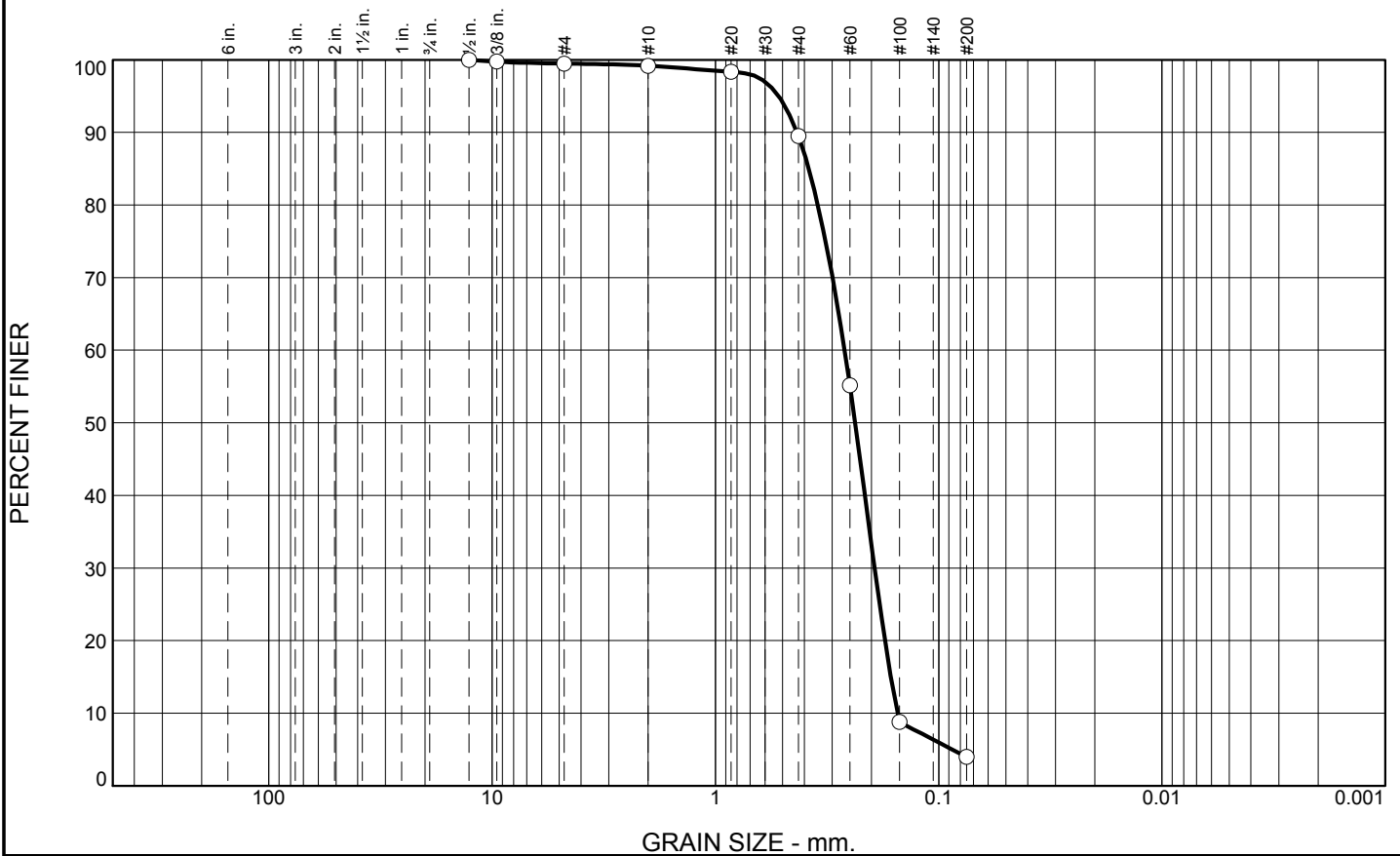
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-CI-31-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-31-10		LOCATION COORDINATES E = 912,729 N = 262,017		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 13.3 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 08-22-10		STARTED 08-22-10 COMPLETED 08-22-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -12.6 Ft.			
8. TOTAL DEPTH OF BORING 7.3 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Mark Green, Geotechnical Engineer			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-12.6	0.0						
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace wood debris, trace shell fragments, w/ silty sand lenses, lt. gray and gray (SP)	A	Classification: SP Color: 5Y 6/1-gray D50: 0.2368 mm % Fines: 4		
				B	Classification: SP Color: 2.5Y 6/1-gray D50: 0.2315 mm % Fines: 3.9		
-19.9	7.3						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.5	0.3	9.7	85.5	4.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.500	100.0		
.375	99.7		
#4	99.5		
#10	99.2		
#20	98.3		
#40	89.5		
#60	55.2		
#100	8.8		
#200	4.0		

* (no specification provided)

<u>Material Description</u>		
SAND, (SP), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.4311	D ₈₅ = 0.3823	D ₆₀ = 0.2638
D ₅₀ = 0.2368	D ₃₀ = 0.1938	D ₁₅ = 0.1640
D ₁₀ = 0.1529	C _u = 1.72	C _c = 0.93
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-CI-31-10A
Sample Number: TE Lab ID: 4660.29

Depth: 0.0 - 4.0 (ft.)

Date: 9/1/10

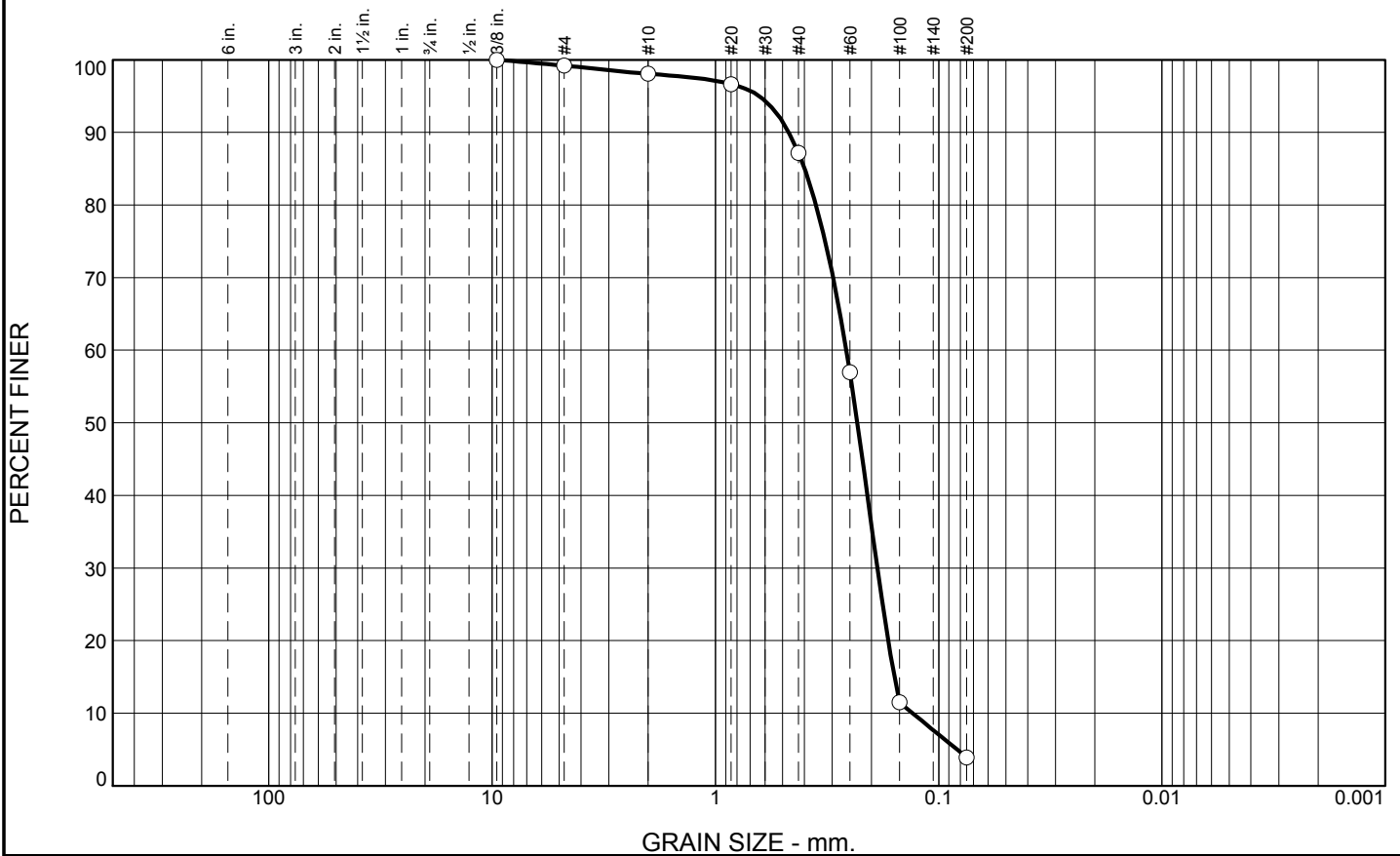
Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009
Report No.

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.8	1.1	10.9	83.3	3.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.2		
#10	98.1		
#20	96.6		
#40	87.2		
#60	57.0		
#100	11.5		
#200	3.9		

* (no specification provided)

Material Description
 SAND, (SP), medium to fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.4691 D₈₅= 0.3990 D₆₀= 0.2592
 D₅₀= 0.2315 D₃₀= 0.1883 D₁₅= 0.1580
 D₁₀= 0.1309 C_u= 1.98 C_c= 1.05

Classification
 USCS= SP AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-CI-31-10B
Sample Number: TE Lab ID: 4660.30

Depth: 4.0 - 7.3 (ft.)

Date: 9/1/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 **Report No.**

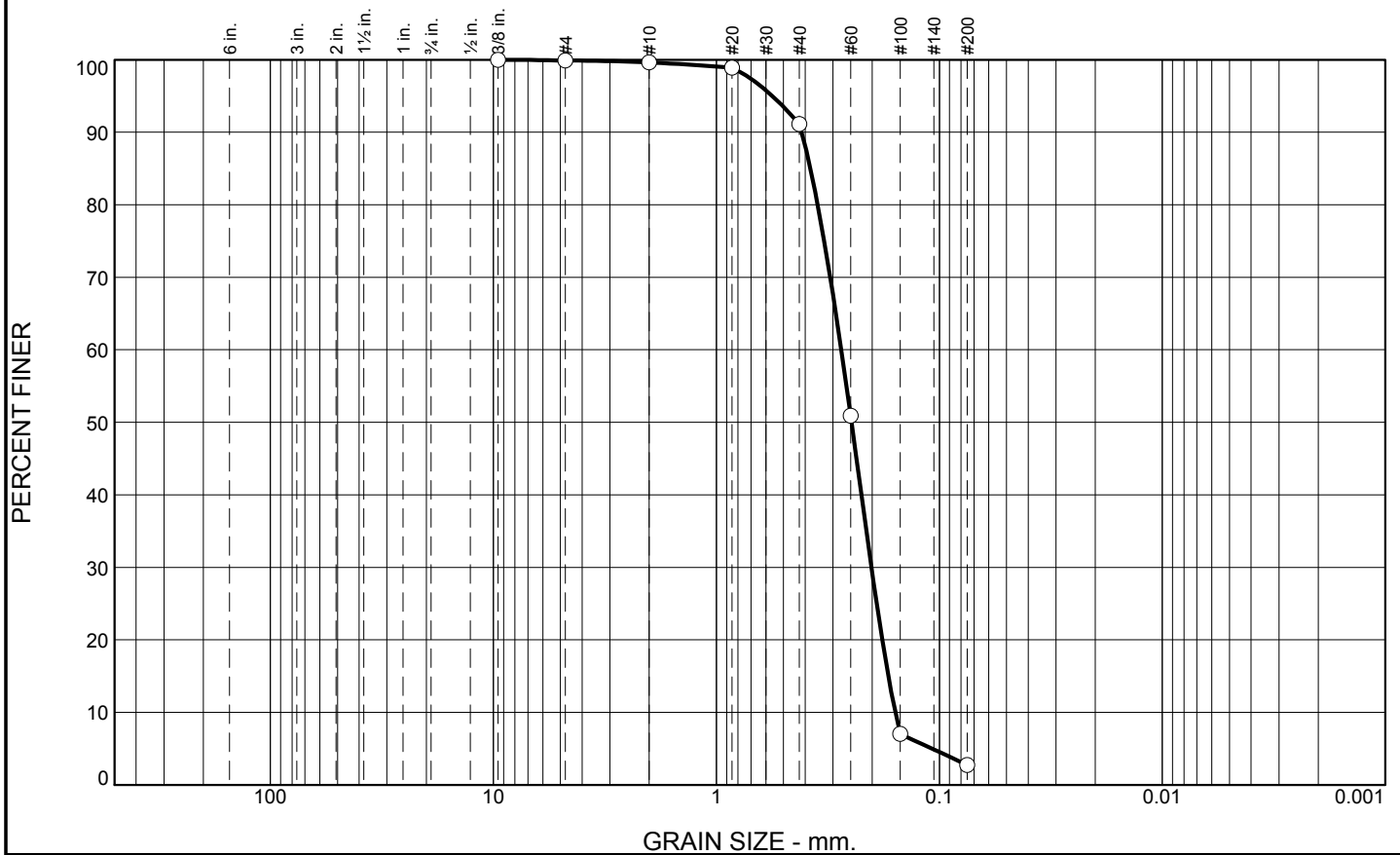
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-CI-32-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-32-10		LOCATION COORDINATES E = 911,946 N = 260,491		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 4		DISTURBED 0 UNDISTURBED (UD)	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 13.3 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 08-21-10		STARTED 08-21-10 COMPLETED 08-21-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -13.1 Ft.			
8. TOTAL DEPTH OF BORING 12.2 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Mark Green, Geotechnical Engineer			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-13.1	0.0						
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace silt, trace shell fragments, lt. gray and gray (SP)	A	Classification: SP Color: 5Y 6/2-light olive gray D50: 0.2477 mm % Fines: 2.8		
				B	Classification: SP Color: 5Y 7/1-light gray D50: 0.2094 mm % Fines: 4		
			At El. -21.4 Ft., little silt	C	Classification: SP-SM Color: 5Y 6/2-light olive gray D50: 0.169 mm % Fines: 5.5		
-22.6	9.5						
			SAND, silty, mostly fine-grained sand-sized quartz, some silt, trace shell fragments, gray (SM)	D	Classification: SP-SM Color: 2.5Y 6/2-light brownish gray D50: 0.1695 mm % Fines: 6.6		
-25.3	12.2						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.3	8.5	88.3	2.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.6		
#20	98.9		
#40	91.1		
#60	50.9		
#100	7.0		
#200	2.8		

* (no specification provided)

Material Description
SAND, (SP), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.4149 D₈₅= 0.3789 D₆₀= 0.2753
 D₅₀= 0.2477 D₃₀= 0.2016 D₁₅= 0.1694
 D₁₀= 0.1577 C_u= 1.75 C_c= 0.94

Classification
 USCS= SP AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-CI-32-10A
Sample Number: TE Lab ID: 4660.16

Depth: 0.0 - 5.0 (ft.)

Date: 9/1/10

Thompson Engineering

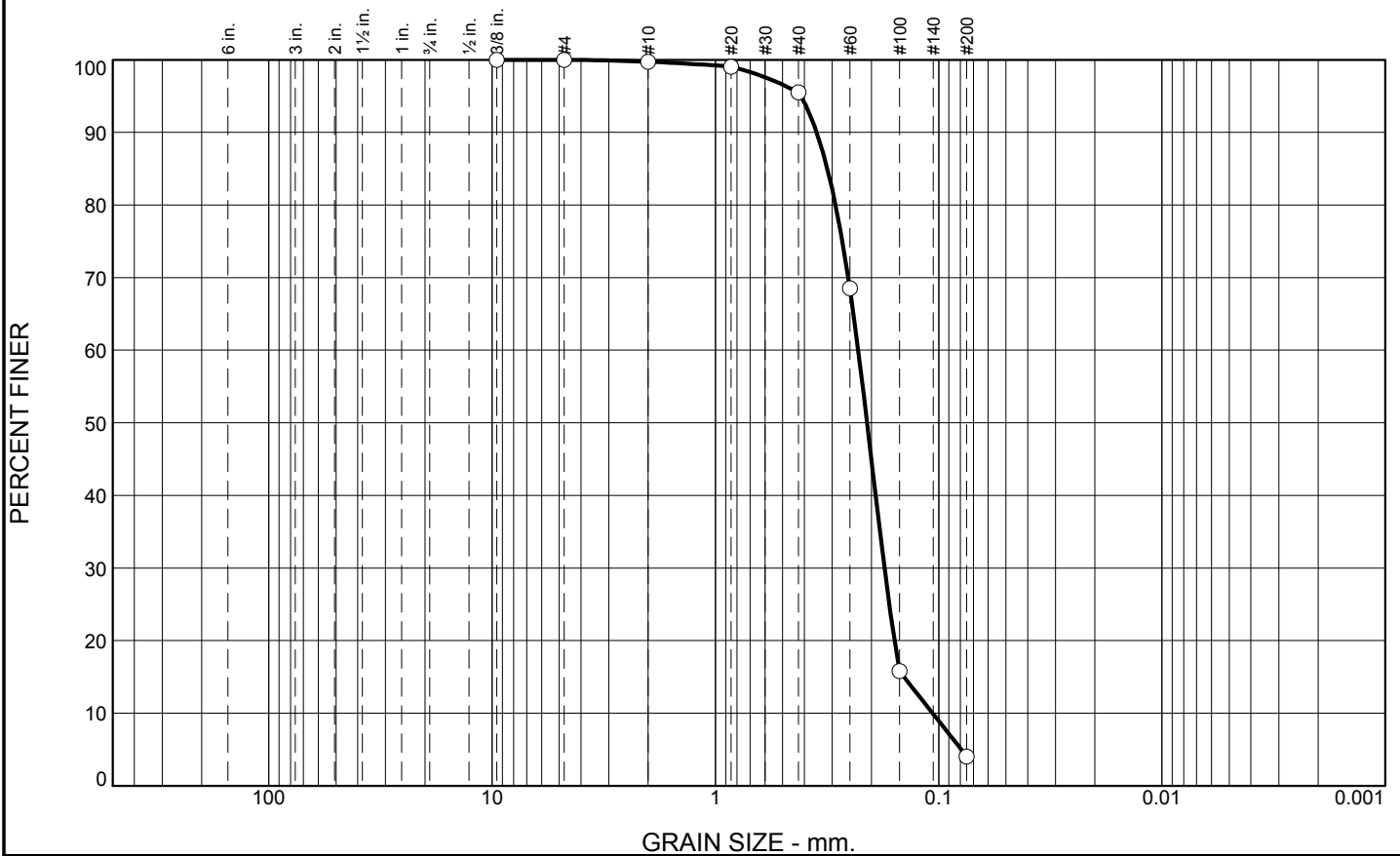
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 **Report No.**

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.3	4.2	91.5	4.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.7		
#20	99.1		
#40	95.5		
#60	68.5		
#100	15.8		
#200	4.0		

* (no specification provided)

Material Description

SAND, (SP), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.3516

D₈₅= 0.3150

D₆₀= 0.2294

D₅₀= 0.2094

D₃₀= 0.1749

D₁₅= 0.1432

D₁₀= 0.1066

C_u= 2.15

C_c= 1.25

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-CI-32-10B
Sample Number: TE Lab ID: 4660.17

Depth: 5.0 - 8.3 (ft.)

Date: 9/1/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

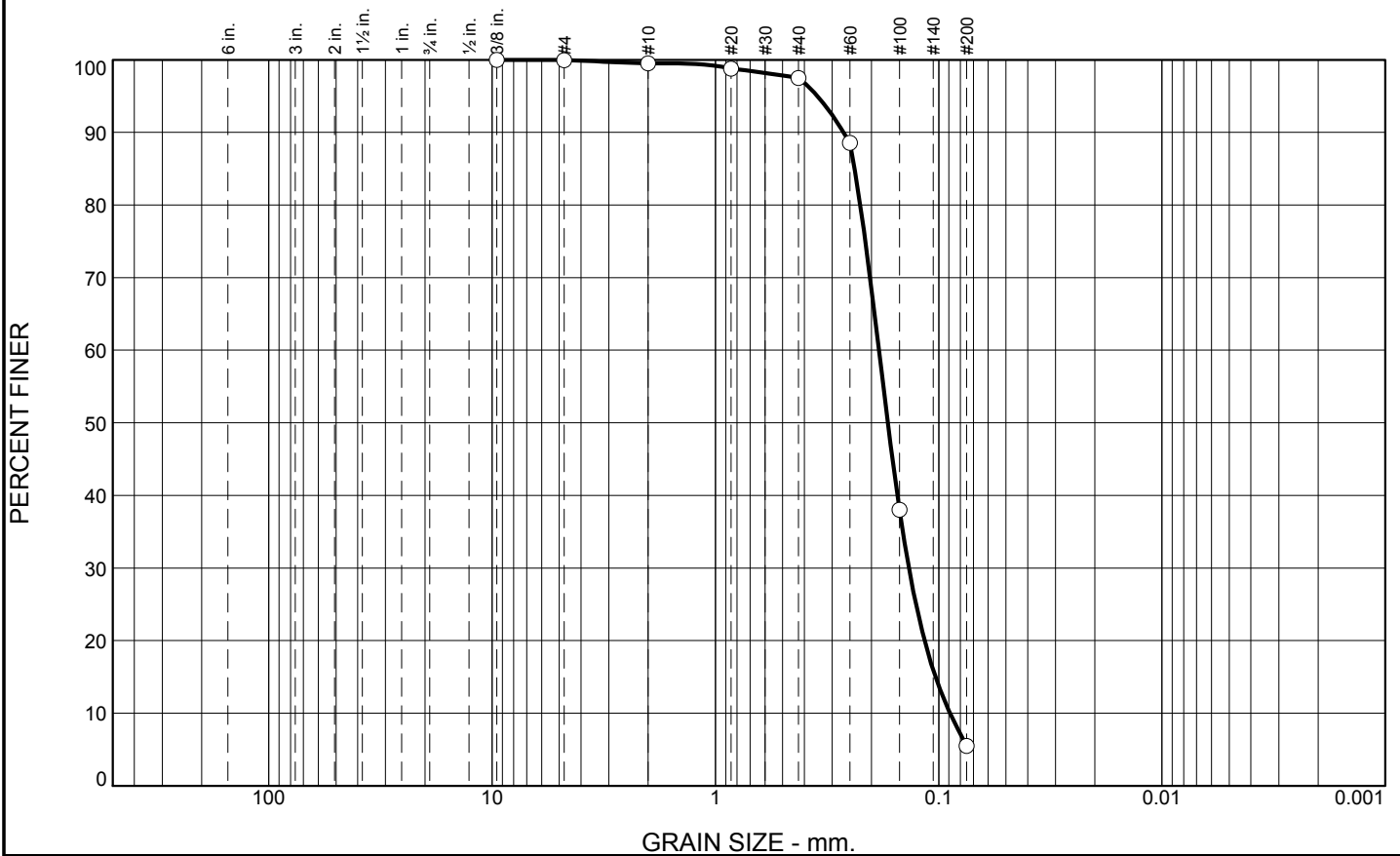
Project No: 10-2123-0009

Report No.

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.5	2.0	92.0	5.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.5		
#20	98.8		
#40	97.5		
#60	88.6		
#100	38.0		
#200	5.5		

* (no specification provided)

Material Description

SAND, (SP-SM), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.2665

D₈₅= 0.2380

D₆₀= 0.1852

D₅₀= 0.1690

D₃₀= 0.1360

D₁₅= 0.1034

D₁₀= 0.0890

C_u= 2.08

C_c= 1.12

Classification

USCS= SP-SM

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-CI-32-10C
Sample Number: TE Lab ID: 4660.18

Depth: 8.3 - 9.5 (ft.)

Date: 9/1/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

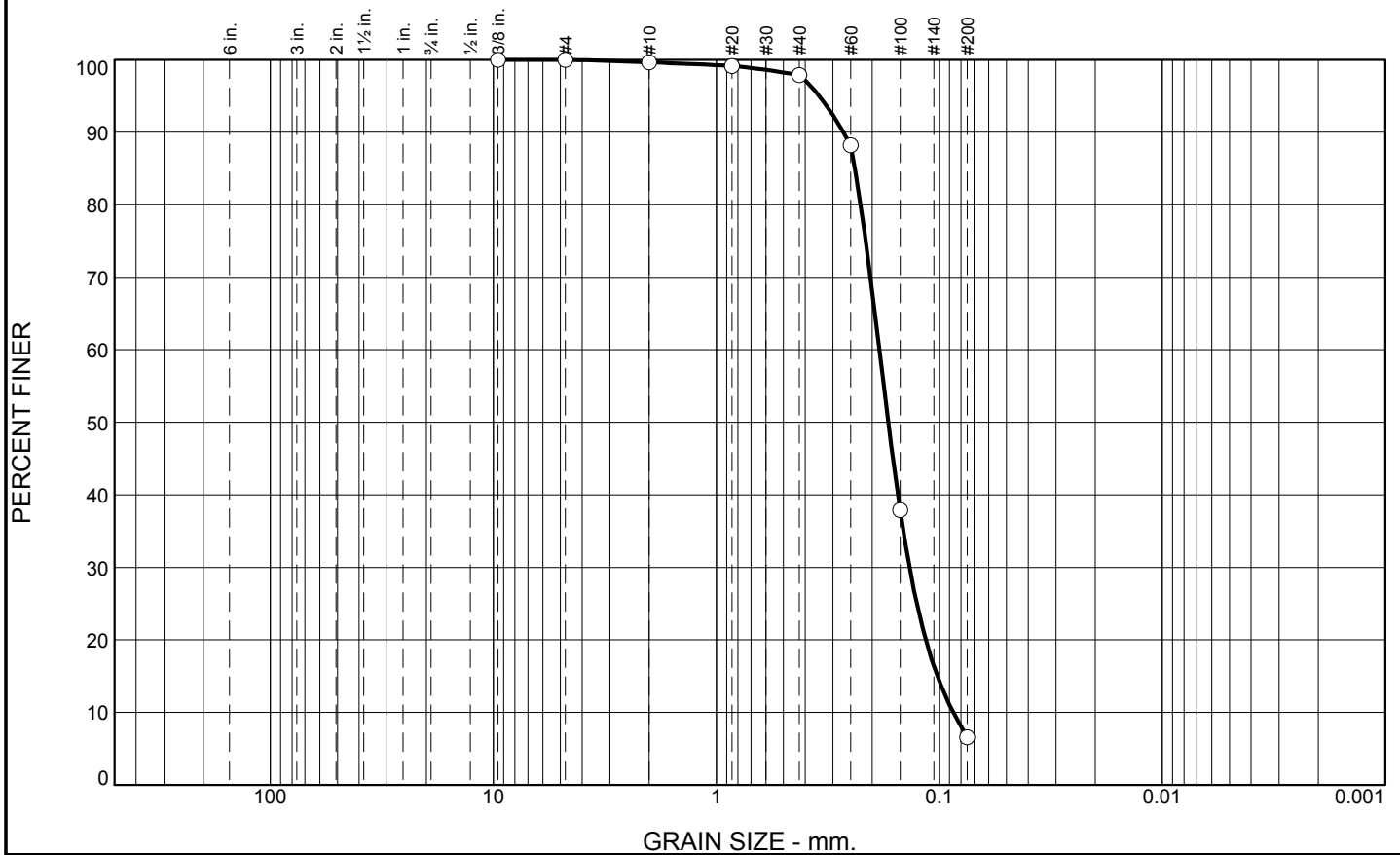
Project No: 10-2123-0009

Report No.

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.4	1.7	91.3	6.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.6		
#20	99.1		
#40	97.9		
#60	88.2		
#100	37.9		
#200	6.6		

* (no specification provided)

Material Description
SAND, (SP-SM), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.2693 D₈₅= 0.2392 D₆₀= 0.1858
 D₅₀= 0.1695 D₃₀= 0.1361 D₁₅= 0.1022
 D₁₀= 0.0866 C_u= 2.15 C_c= 1.15

Classification
 USCS= SP-SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-CI-32-10D
Sample Number: TE Lab ID: 4660.19

Depth: 9.5 - 12.2 (ft.)

Date: 9/1/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 **Report No.**

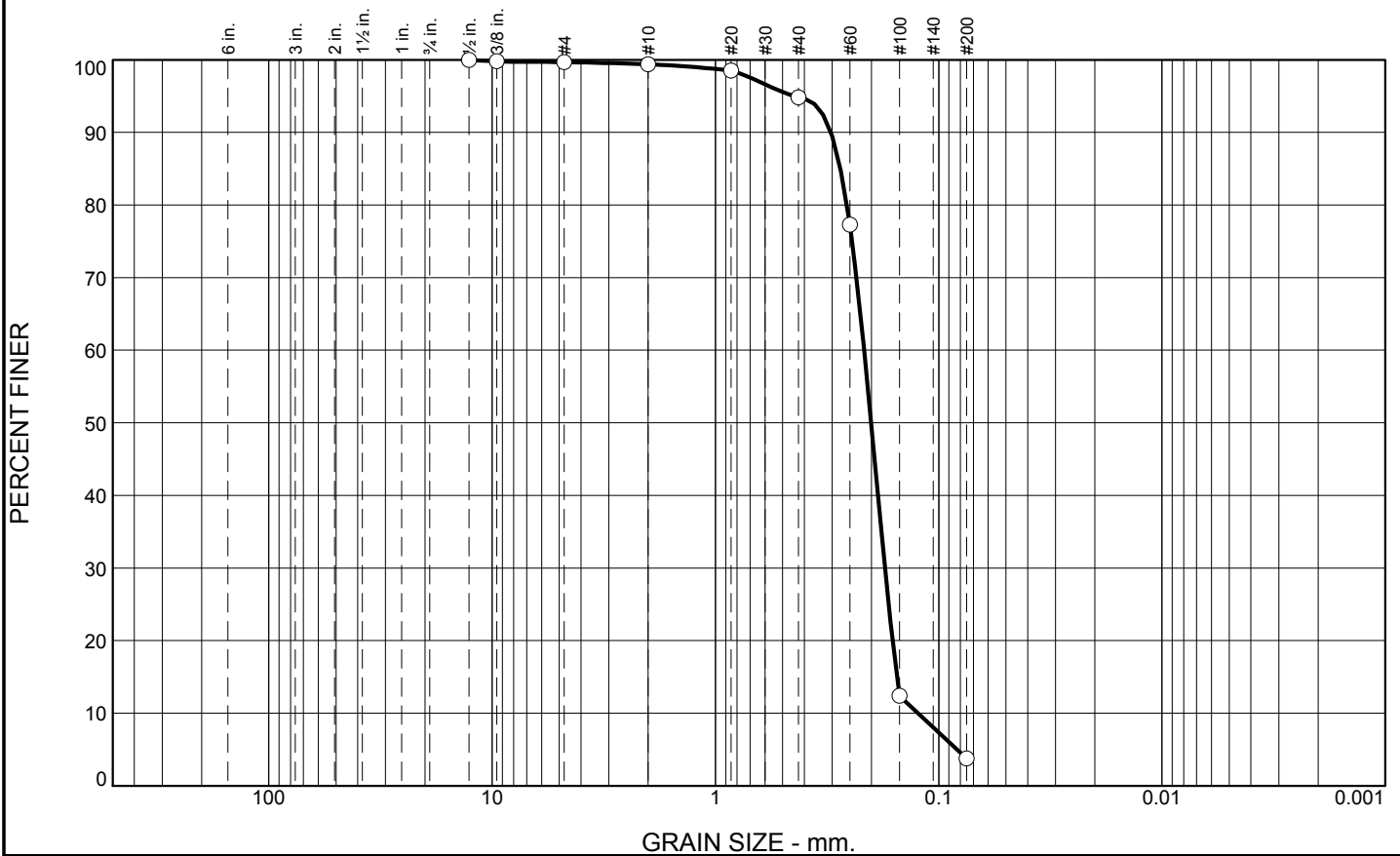
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-CI-33-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-33-10		LOCATION COORDINATES E = 911,271 N = 259,143		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 14.5 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 08-21-10		STARTED 08-21-10 COMPLETED 08-21-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -13.6 Ft.			
8. TOTAL DEPTH OF BORING 11.9 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Mark Green, Geotechnical Engineer			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-13.6	0.0						
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 6/1-gray D50: 0.2008 mm % Fines: 3.8		
				B	Classification: SP Color: 2.5Y 6/1-gray D50: 0.1903 mm % Fines: 3.6		
-22.4	8.8						
			CLAY, fat, some fine-grained sand-sized quartz, trace shell fragments, greenish gray - green (CH)	C	Classification: SP Color: 2.5Y 6/1-gray D50: 0.181 mm % Fines: 4.6		
-25.5	11.9						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.3	0.3	4.6	91.0	3.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.500	100.0		
.375	99.8		
#4	99.7		
#10	99.4		
#20	98.5		
#40	94.8		
#60	77.3		
#100	12.4		
#200	3.8		

* (no specification provided)

Material Description

SAND, (SP), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.3039

D₈₅= 0.2755

D₆₀= 0.2158

D₅₀= 0.2008

D₃₀= 0.1741

D₁₅= 0.1539

D₁₀= 0.1238

C_u= 1.74

C_c= 1.13

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-CI-33-10A
Sample Number: TE Lab ID: 4660.01

Depth: 0.0 - 4.0 (ft.)

Date: 9/1/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

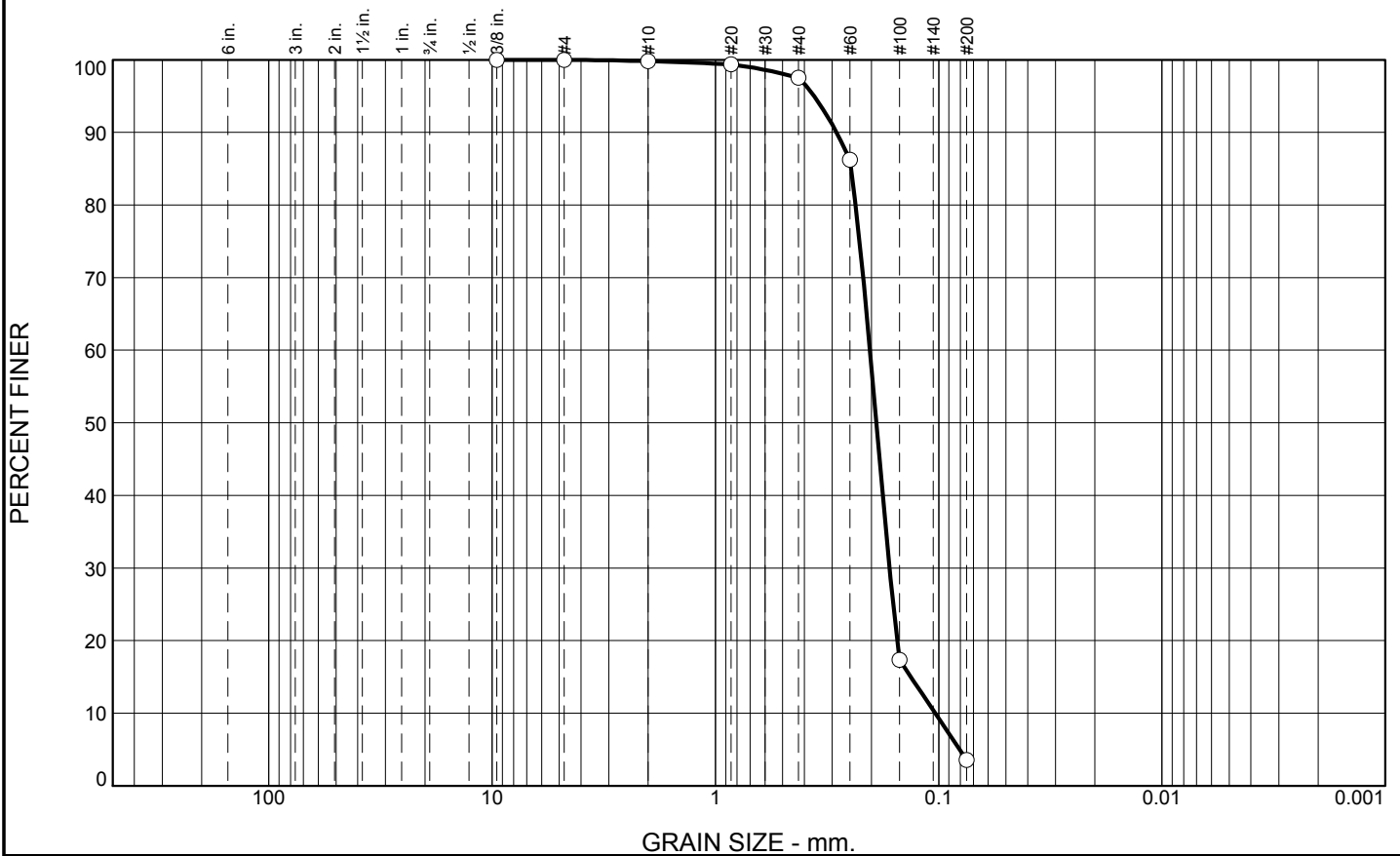
Project No: 10-2123-0009

Report No.

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	2.3	93.9	3.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.8		
#20	99.4		
#40	97.5		
#60	86.2		
#100	17.3		
#200	3.6		

* (no specification provided)

Material Description

SAND, (SP), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.2869

D₈₅= 0.2468

D₆₀= 0.2033

D₅₀= 0.1903

D₃₀= 0.1661

D₁₅= 0.1333

D₁₀= 0.1037

C_u= 1.96

C_c= 1.31

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-CI-33-10B
Sample Number: TE Lab ID: 4660.02

Depth: 4.0 - 8.0 (ft.)

Date: 9/1/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

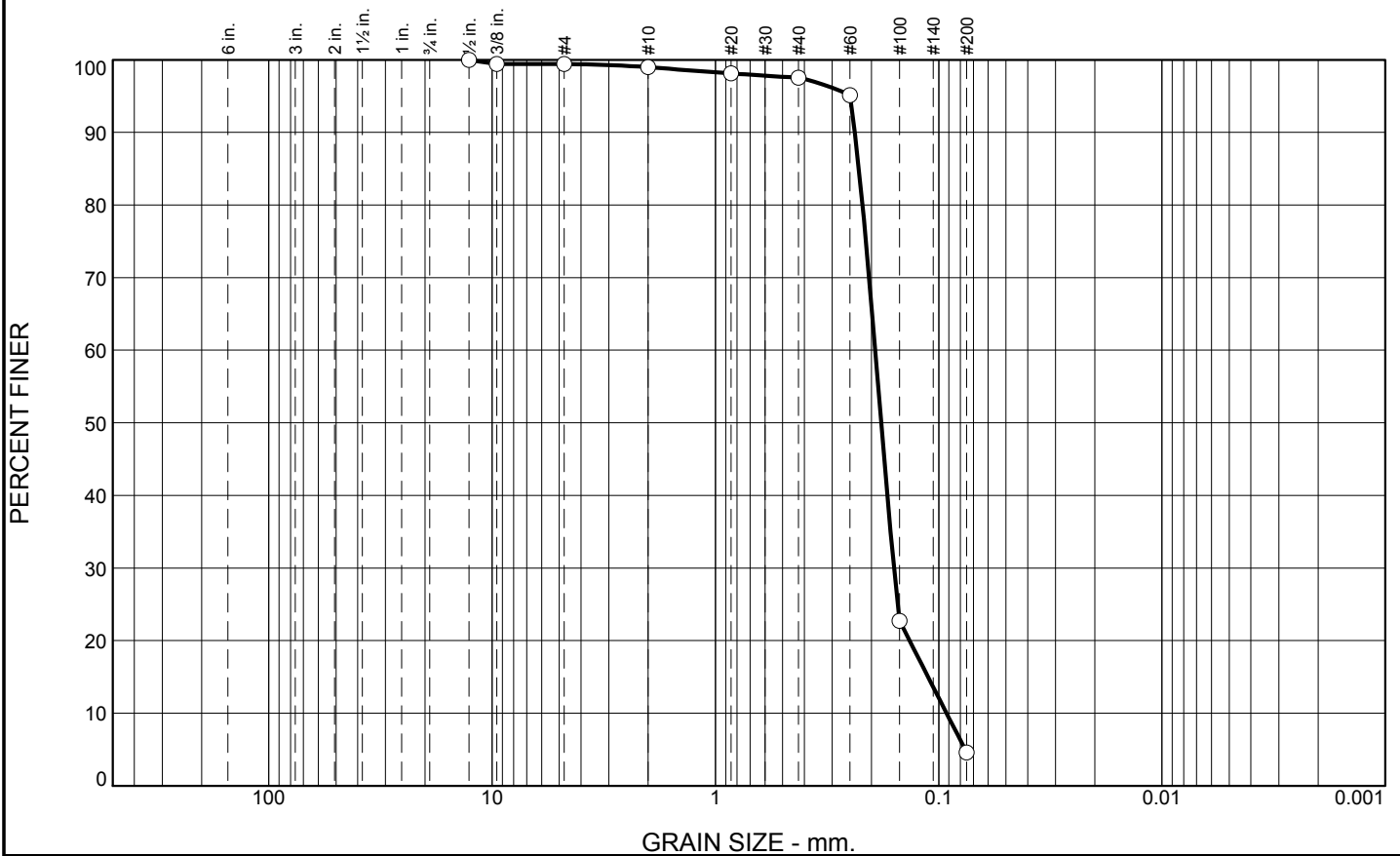
Project No: 10-2123-0009

Report No.

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.6	0.4	1.5	92.9	4.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.500	100.0		
.375	99.4		
#4	99.4		
#10	99.0		
#20	98.1		
#40	97.5		
#60	95.1		
#100	22.7		
#200	4.6		

* (no specification provided)

Material Description
SAND, (SP), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.2374 D₈₅= 0.2277 D₆₀= 0.1925
 D₅₀= 0.1810 D₃₀= 0.1587 D₁₅= 0.1116
 D₁₀= 0.0922 C_u= 2.09 C_c= 1.42

Classification
 USCS= SP AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-CI-33-10C
Sample Number: TE Lab ID: 4660.03

Depth: 8.0 - 8.8 (ft.)

Date: 9/1/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 **Report No.**

Tested By: G.Fancher

Checked By: R.Byrd

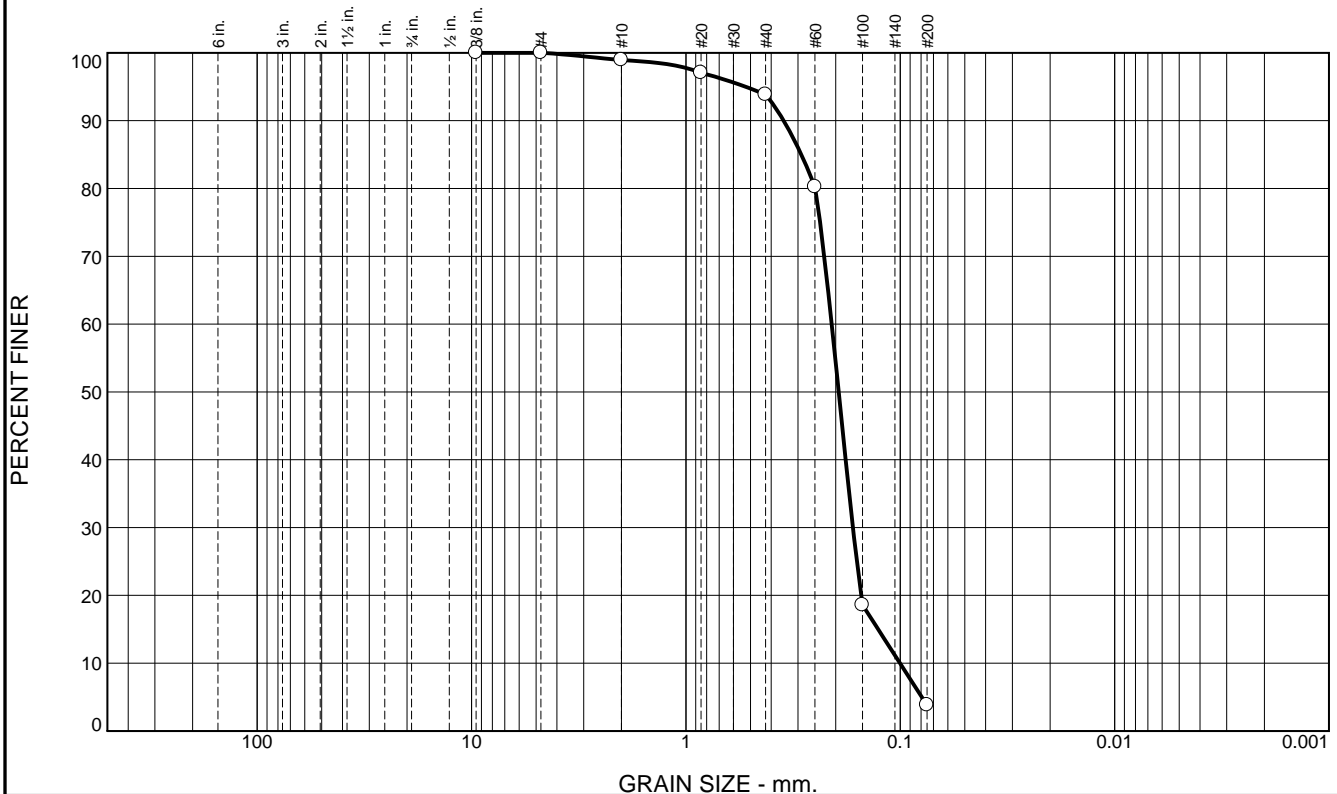
Boring Designation BI-CI-34-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-34-11		LOCATION COORDINATES E = 912,102 N = 257,883		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 0		DISTURBED 0 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 17.8 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-27-11		STARTED 06-27-11 COMPLETED 06-27-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -16.4 Ft.			
8. TOTAL DEPTH OF BORING 15.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Michele Johnson, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-16.4	0.0						
-19.1	2.7		CLAY, lean, trace shell fragments, dark gray (CL)				
-22.3	5.9		SAND, poorly-graded, some clay, gray (SP)				
-31.4	15.0		CLAY, lean, trace sand, gray (CL) At El. -25.6 Ft., trace shell fragments, gray	NS			
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Boring Designation BI-CI-35-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-35-11		LOCATION COORDINATES E = 913,090 N = 258,958		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 17.2 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-27-11		STARTED 06-27-11 COMPLETED 06-27-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -15.7 Ft.			
8. TOTAL DEPTH OF BORING 15.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Michele Johnson, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-15.7	0.0						
			SAND, poorly-graded, mostly medium-grained sand-sized quartz, trace shell fragments, gray (SP)	A	Classification: SP Color: 5Y 6/1-gray D50: 0.1936 mm % Fines: 3.8		
-20.5	4.8		SAND, poorly-graded, mostly medium-grained sand-sized quartz, trace organic matter, gray (SP)	B	Classification: SP Color: 2.5Y 5/2-grayish brown D50: 0.1943 mm % Fines: 2.8		
-24.2	8.5		SAND, silty, trace fine-grained shell fragments, trace shell fragments, dark gray (SM)	NS			
-27.0	11.3		CLAY, lean, trace shell fragments, dark gray (CL)				
-30.7	15.0						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	1.0	5.1	90.1	3.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.0		
#20	97.0		
#40	93.9		
#60	80.2		
#100	18.6		
#200	3.8		

* (no specification provided)

Material Description		
SAND (SP), fine grained		
PL=	Atterberg Limits LL=	PI=
D ₉₀ = 0.3501	Coefficients D ₈₅ = 0.2897	D ₆₀ = 0.2087
D ₅₀ = 0.1936	D ₃₀ = 0.1663	D ₁₅ = 0.1269
D ₁₀ = 0.1003	C _u = 2.08	C _c = 1.32
USCS= SP	Classification AASHTO=	
Remarks		

Location: USACE Sample # BI-CI-35A-11
Sample Number: TE Lab ID: 5054.81

Depth: 0.0 - 4.0 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

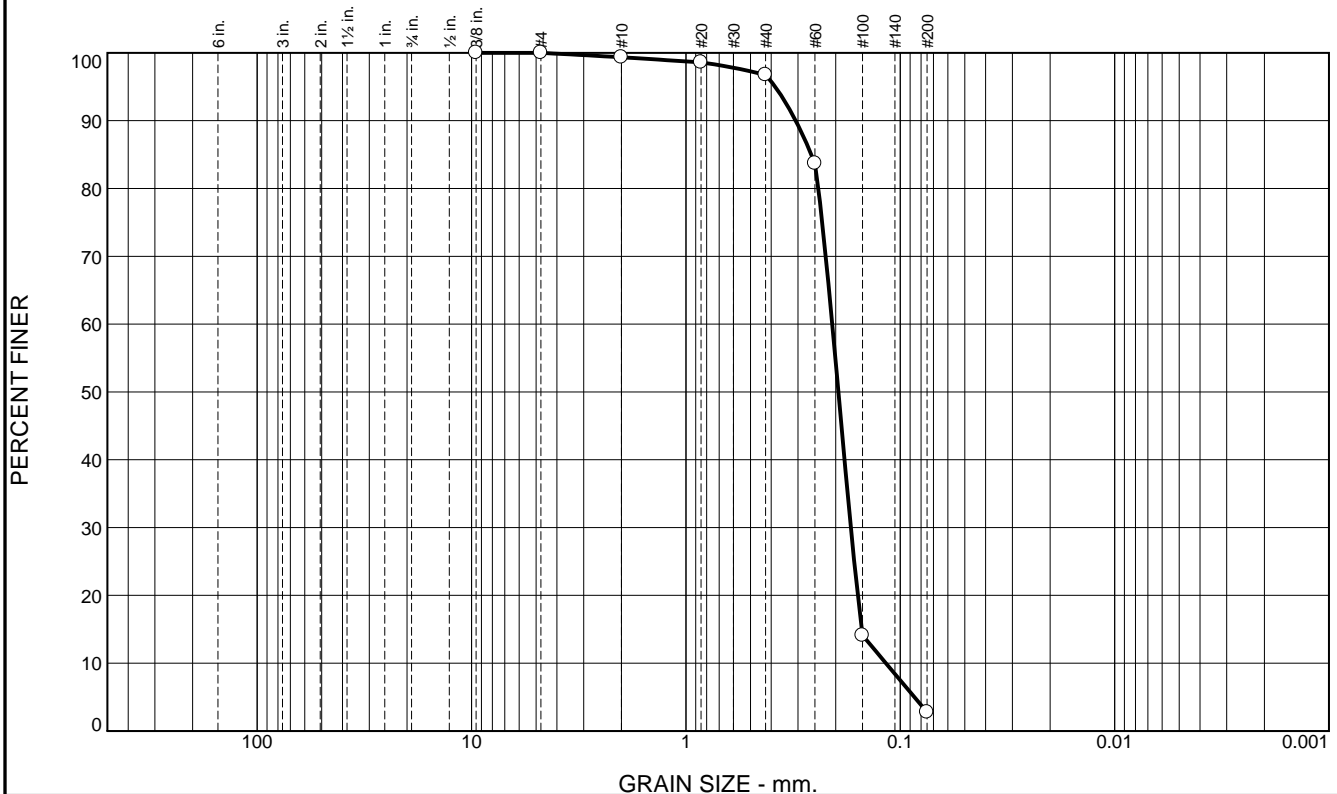
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.7	2.6	93.9	2.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.3		
#20	98.6		
#40	96.7		
#60	83.7		
#100	14.1		
#200	2.8		

* (no specification provided)

Material Description		
SAND (SP), fine grained		
PL=	Atterberg Limits LL=	PI=
D ₉₀ = 0.3077	Coefficients D ₈₅ = 0.2600	D ₆₀ = 0.2075
D ₅₀ = 0.1943	D ₃₀ = 0.1701	D ₁₅ = 0.1513
D ₁₀ = 0.1167	C _u = 1.78	C _c = 1.19
USCS= SP	Classification AASHTO=	
Remarks		

Location: USACE Sample # BI-CI-35B-11
Sample Number: TE Lab ID: 5054.82

Depth: 4.0 - 8.5 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

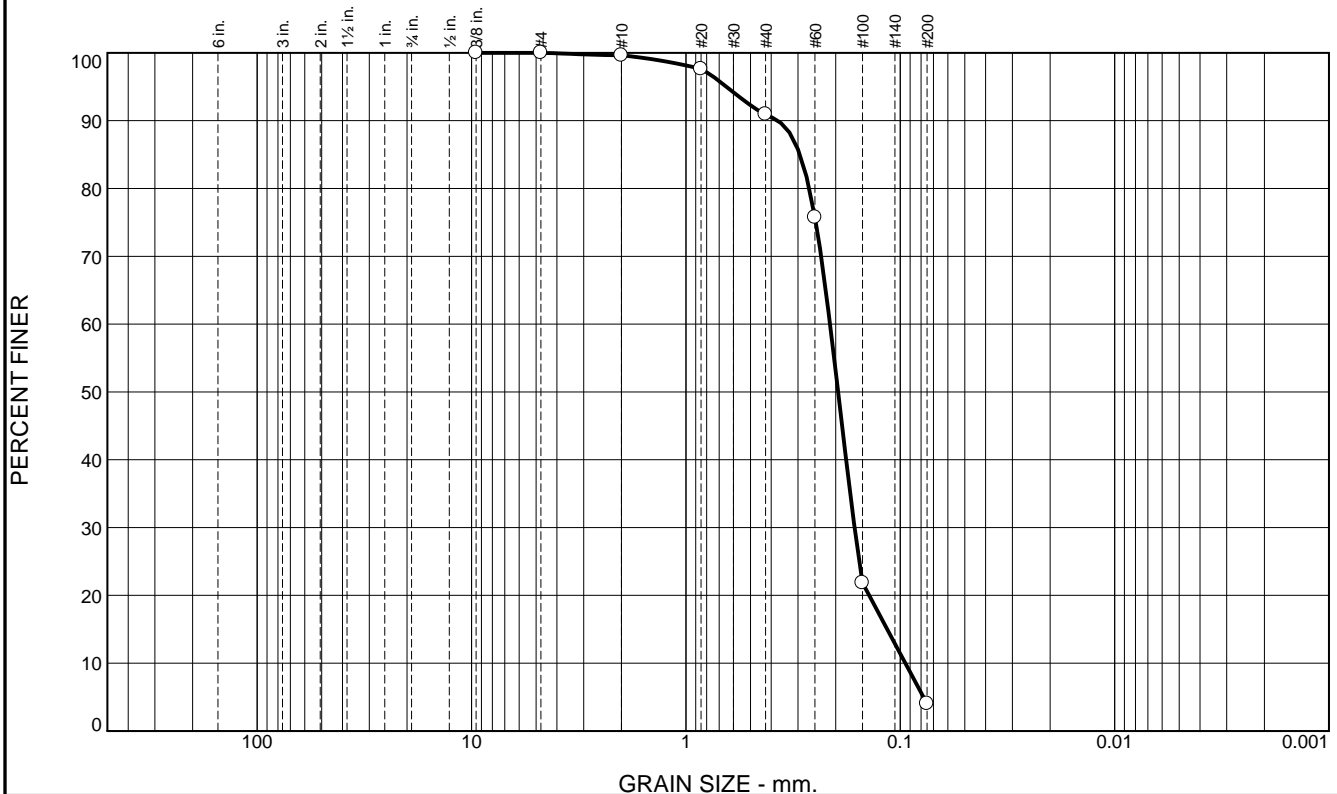
Project No: 11-2116-0057

Figure

Boring Designation BI-CI-36-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-36-11		LOCATION COORDINATES E = 913,964 N = 260,102		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 15.5 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-24-11		STARTED 06-24-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -15.4 Ft.		COMPLETED 06-24-11	
8. TOTAL DEPTH OF BORING 13.8 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Rhonda Capes, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-15.4	0.0						
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace shell fragments, lt. gray (SP)	A	Classification: SP Color: 5Y 5/2-olive gray D50: 0.1949 mm % Fines: 4		
				B	Classification: SP Color: 5Y 5/2-olive gray D50: 0.1764 mm % Fines: 3.4		
				C	Classification: SP-SM Color: 5Y 5/2-olive gray D50: 0.1619 mm % Fines: 8.2		
-27.7	12.3						
-29.2	13.8		SAND, silty, mostly fine-grained sand-sized quartz, some silt, trace clay, dark gray (SM)	NS			
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.4	8.7	86.9	4.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.6		
#20	97.6		
#40	90.9		
#60	75.7		
#100	21.8		
#200	4.0		

<u>Material Description</u>		
SAND (SP), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.3730	D ₈₅ = 0.2940	D ₆₀ = 0.2126
D ₅₀ = 0.1949	D ₃₀ = 0.1634	D ₁₅ = 0.1150
D ₁₀ = 0.0947	C _u = 2.24	C _c = 1.33
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		

* (no specification provided)

Location: USACE Sample # BI-CI-36A-11
Sample Number: TE Lab ID: 5054.56

Depth: 0.0 - 5.0 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

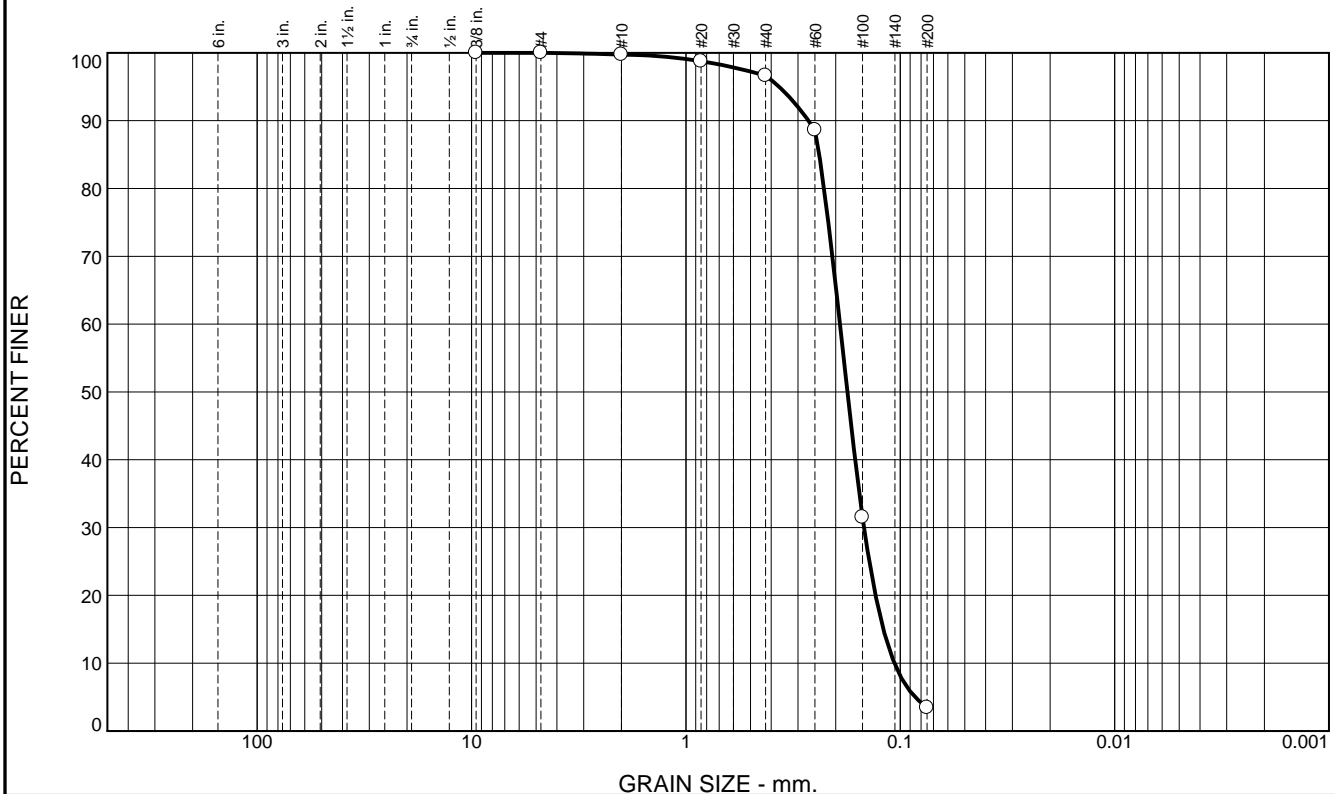
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.3	3.1	93.2	3.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.7		
#20	98.8		
#40	96.6		
#60	88.6		
#100	31.5		
#200	3.4		

* (no specification provided)

Material Description
SAND (SP), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.2683 D₈₅= 0.2390 D₆₀= 0.1910
 D₅₀= 0.1764 D₃₀= 0.1477 D₁₅= 0.1199
 D₁₀= 0.1065 C_u= 1.79 C_c= 1.07

Classification
 USCS= SP AASHTO=

Remarks

Location: USACE Sample # BI-CI-36B-11
 Sample Number: TE Lab ID: 5054.57

Depth: 5.0 - 10.0 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

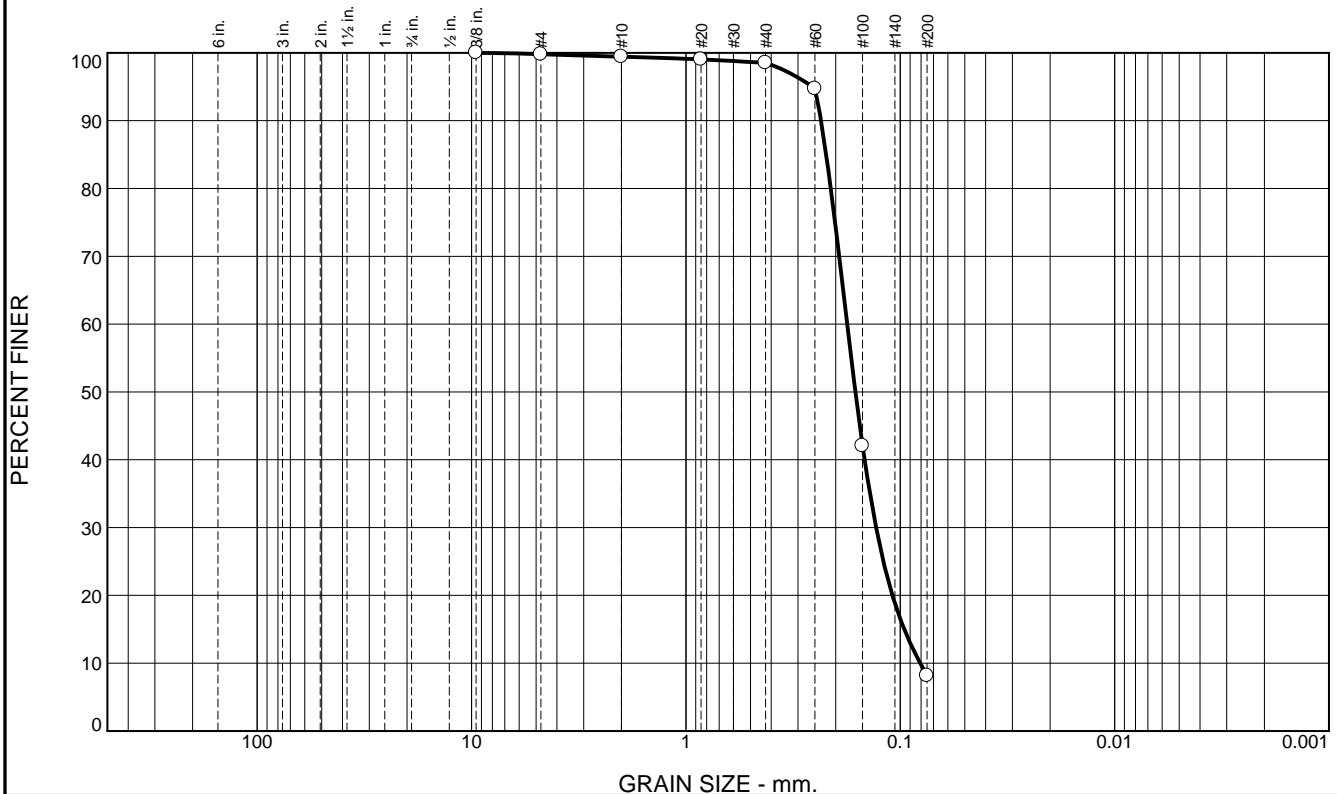
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
 Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.4	0.9	90.3	8.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.8		
#10	99.4		
#20	99.0		
#40	98.5		
#60	94.7		
#100	42.1		
#200	8.2		

* (no specification provided)

<u>Material Description</u>		
Slightly silty SAND (SP-SM), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.2343	D ₈₅ = 0.2215	D ₆₀ = 0.1768
D ₅₀ = 0.1619	D ₃₀ = 0.1297	D ₁₅ = 0.0958
D ₁₀ = 0.0807	C _u = 2.19	C _c = 1.18
<u>Classification</u>		
USCS= SP-SM	AASHTO=	
<u>Remarks</u>		

Location: USACE Sample # BI-CI-36C-11
Sample Number: TE Lab ID: 5054.58

Depth: 10.0 - 12.3 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

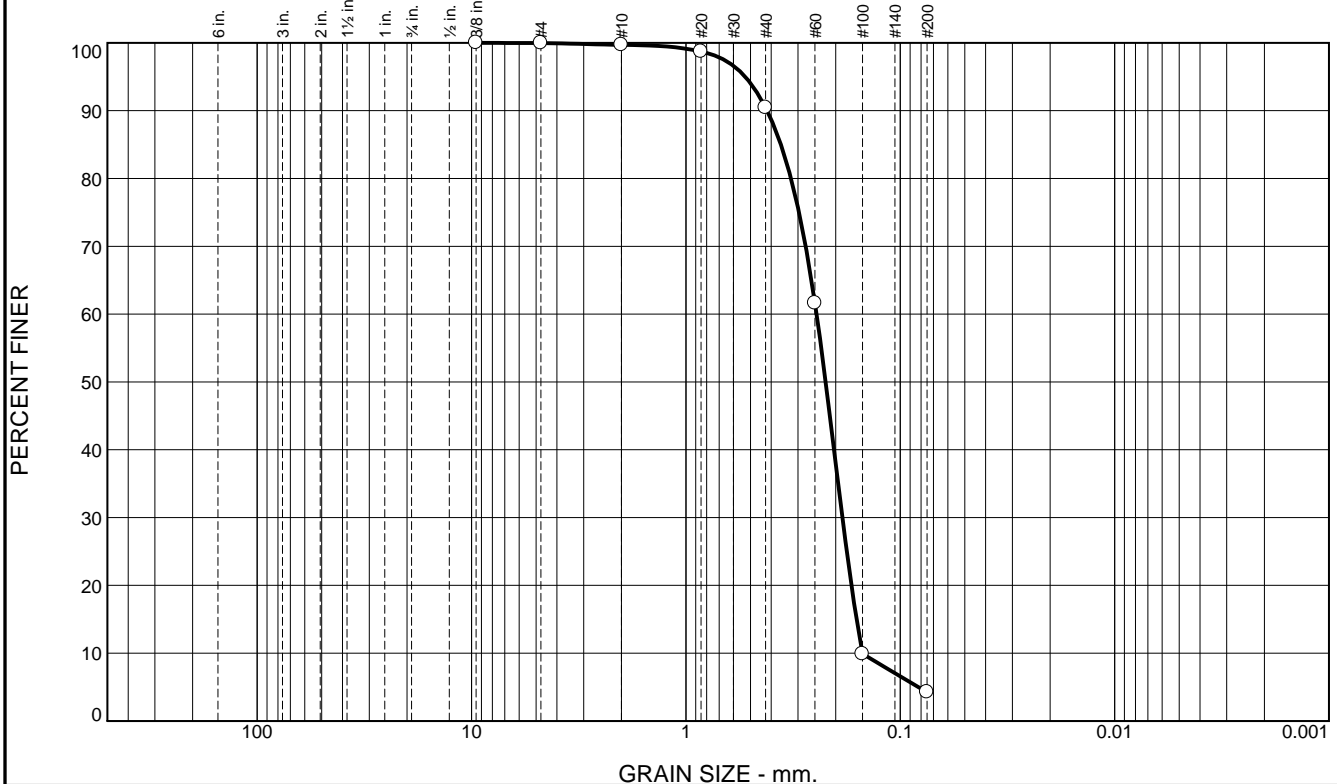
Project No: 11-2116-0057

Figure

Boring Designation BI-CI-37-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-37-11		LOCATION COORDINATES E = 914,964 N = 261,249		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES		14. WATER DEPTH 15 Ft.	
6. THICKNESS OF OVERBURDEN N/A		7. DEPTH DRILLED INTO ROCK N/A		15. DATE BORING 06-24-11		COMPLETED 06-24-11	
8. TOTAL DEPTH OF BORING 11.3 Ft.				16. ELEVATION TOP OF BORING -14.8 Ft.		17. TOTAL RECOVERY FOR BORING 100%	
				18. SIGNATURE AND TITLE OF INSPECTOR Rhonda Capes, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-14.8	0.0						
-16.4	1.6		SAND, silty, mostly fine-grained sand-sized quartz, little silt, trace shell fragments, gray (SM)	A	Classification: SP Color: 5Y 4/2-olive gray D50: 0.2229 mm % Fines: 4.2		
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, gray (SP)	B	Classification: SP Color: 5Y 5/2-olive gray D50: 0.2549 mm % Fines: 3.4		
			At El. -23.3 Ft., thin layer of clay	NS			
-26.1	11.3		NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.3	9.3	86.2	4.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.7		
#20	98.7		
#40	90.4		
#60	61.6		
#100	9.9		
#200	4.2		

* (no specification provided)

<u>Material Description</u>		
SAND (SP), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.4182	D ₈₅ = 0.3606	D ₆₀ = 0.2457
D ₅₀ = 0.2229	D ₃₀ = 0.1861	D ₁₅ = 0.1600
D ₁₀ = 0.1502	C _u = 1.64	C _c = 0.94
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		

Location: USACE Sample # BI-CI-37A-11
Sample Number: TE Lab ID: 5054.59

Depth: 0.0 - 5.0 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

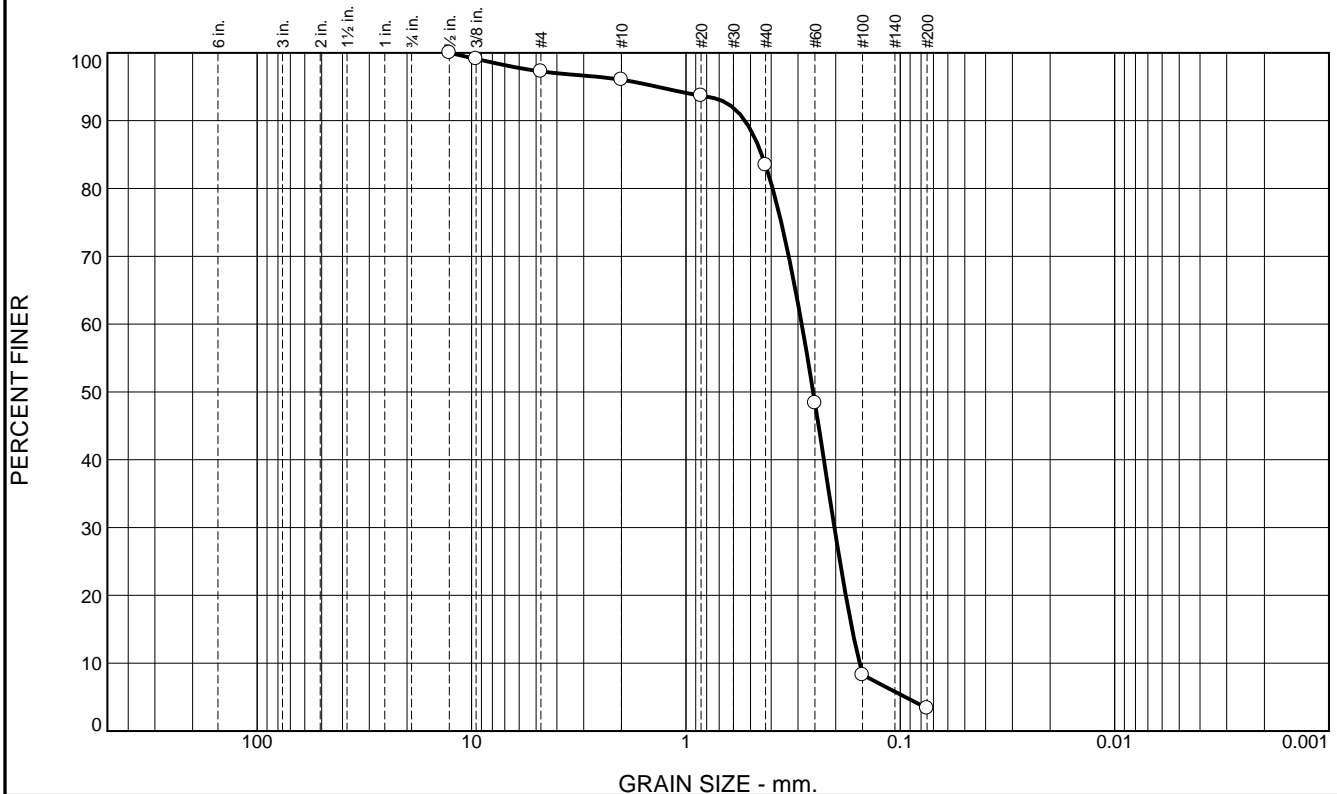
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	2.7	1.3	12.5	80.1	3.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.5	100.0		
.375	99.1		
#4	97.3		
#10	96.0		
#20	93.7		
#40	83.5		
#60	48.4		
#100	8.3		
#200	3.4		

* (no specification provided)

Material Description		
SAND (SP), medium to fine grained		
<div> <div> Atterberg Limits PL= LL= PI= </div> <div> Coefficients D₉₀= 0.5298 D₈₅= 0.4423 D₆₀= 0.2884 D₅₀= 0.2549 D₃₀= 0.2028 D₁₅= 0.1677 D₁₀= 0.1549 C_u= 1.86 C_c= 0.92 </div> <div> Classification USCS= SP AASHTO= </div> <div> Remarks </div> </div>		

Location: USACE Sample # BI-CI-37B-11
Sample Number: TE Lab ID: 5054.60

Depth: 5.0 - 10.0 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

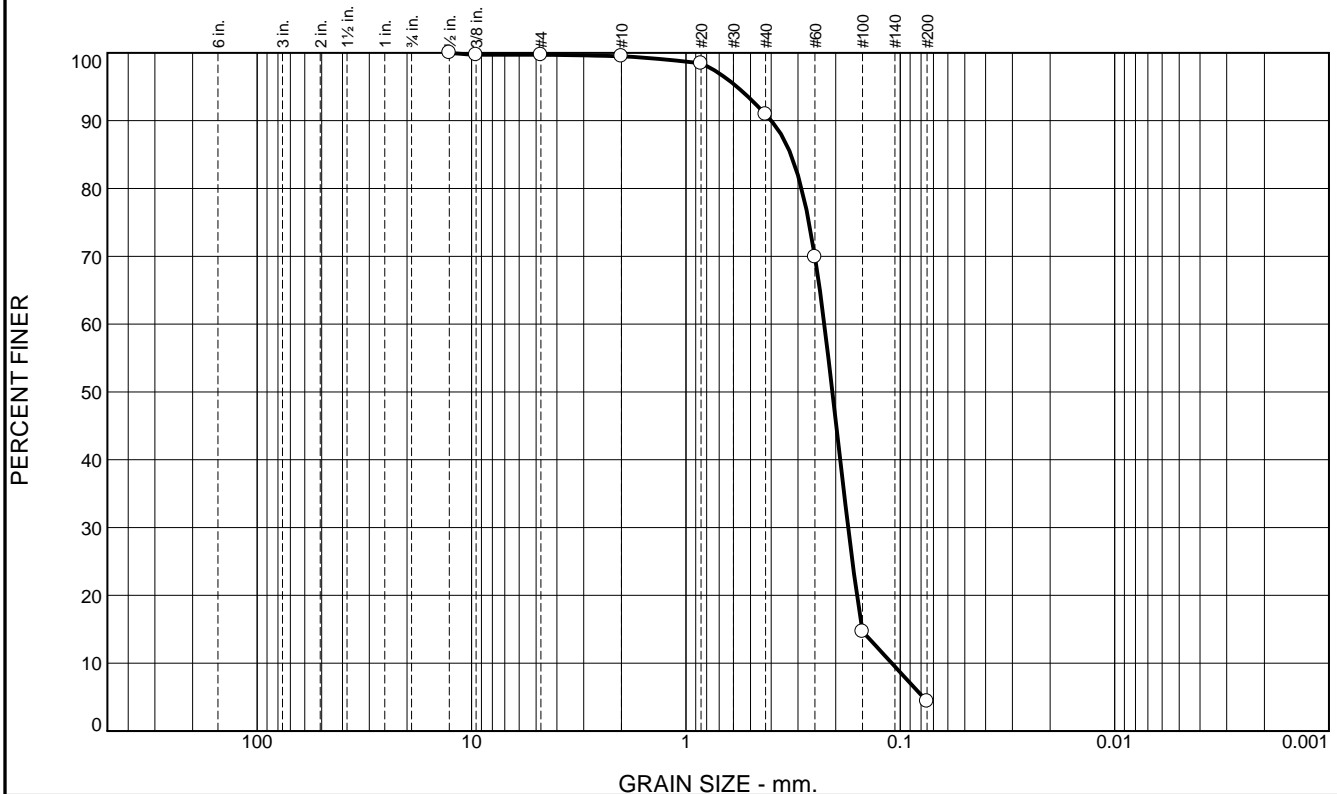
Project No: 11-2116-0057

Figure

Boring Designation BI-CI-38-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-38-11		LOCATION COORDINATES E = 916,084 N = 262,363		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		BEARING		13. TOTAL NUMBER CORE BOXES	
6. THICKNESS OF OVERBURDEN N/A		7. DEPTH DRILLED INTO ROCK N/A		8. TOTAL DEPTH OF BORING 13.1 Ft.		14. WATER DEPTH 14 Ft.	
						15. DATE BORING 06-24-11	
						16. ELEVATION TOP OF BORING -13.8 Ft.	
						17. TOTAL RECOVERY FOR BORING 100%	
						18. SIGNATURE AND TITLE OF INSPECTOR Rhonda Capes, Geologist	
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-13.8	0.0						
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, lt. gray (SP)	A	Classification: SP Color: 2.5Y 6/2-light brownish gray D50: 0.2072 mm % Fines: 4.4		
-18.6	4.8						
-19.4	5.6		CLAY, lean, dark gray (CL)	NS			
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, lt. gray (SP)	B	Classification: SP Color: 5Y 4/1-dark gray D50: 0.1886 mm % Fines: 3.6		
-24.3	10.5						
			SAND, clayey, mostly fine-grained sand-sized quartz, some clay, dark gray (SC)	NS			
-26.9	13.1						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.3	0.2	8.6	86.5	4.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.5	100.0		
.375	99.7		
#4	99.7		
#10	99.5		
#20	98.4		
#40	90.9		
#60	69.9		
#100	14.7		
#200	4.4		

* (no specification provided)

Material Description		
SAND (SP), fine grained		
<div> <div> Atterberg Limits </div> <div> PL= LL= PI= </div> </div>		
<div> <div> Coefficients </div> <div> D₉₀= 0.4000 D₈₅= 0.3237 D₆₀= 0.2262 D₅₀= 0.2072 D₃₀= 0.1750 D₁₅= 0.1506 D₁₀= 0.1095 C_u= 2.06 C_c= 1.24 </div> </div>		
<div> <div> Classification </div> <div> USCS= SP AASHTO= </div> </div>		
<div> <div> Remarks </div> </div>		

Location: USACE Sample # BI-CI-38A-11
Sample Number: TE Lab ID: 5054.61

Depth: 0.0 - 4.8 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

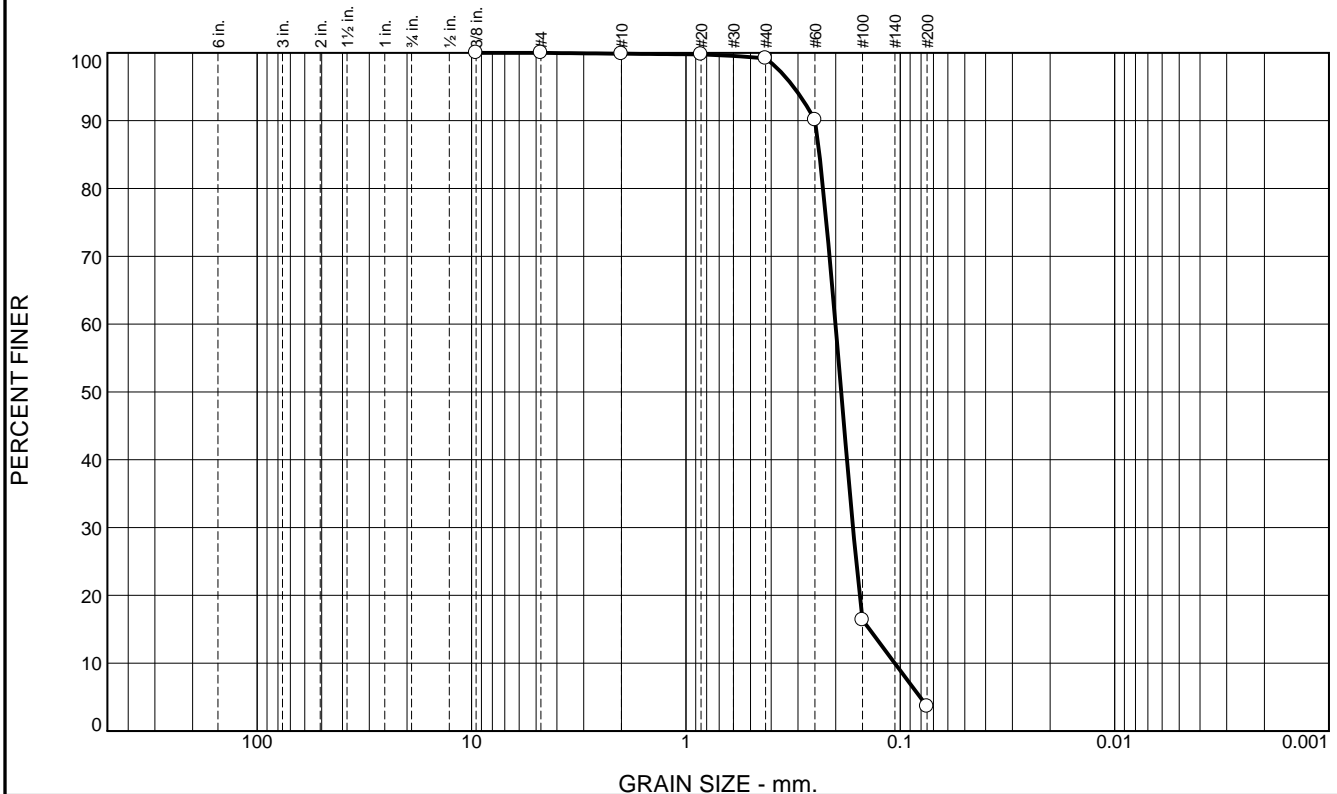
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	0.7	95.6	3.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.8		
#40	99.2		
#60	90.1		
#100	16.4		
#200	3.6		

* (no specification provided)

Material Description		
SAND (SP), fine grained		
PL=	Atterberg Limits LL=	PI=
D ₉₀ = 0.2497	Coefficients D ₈₅ = 0.2384	D ₆₀ = 0.2005
D ₅₀ = 0.1886	D ₃₀ = 0.1662	D ₁₅ = 0.1393
D ₁₀ = 0.1061	C _u = 1.89	C _c = 1.30
USCS= SP	Classification AASHTO=	
Remarks		

Location: USACE Sample # BI-CI-38B-11
Sample Number: TE Lab ID: 5054.62

Depth: 5.6 - 10.5 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

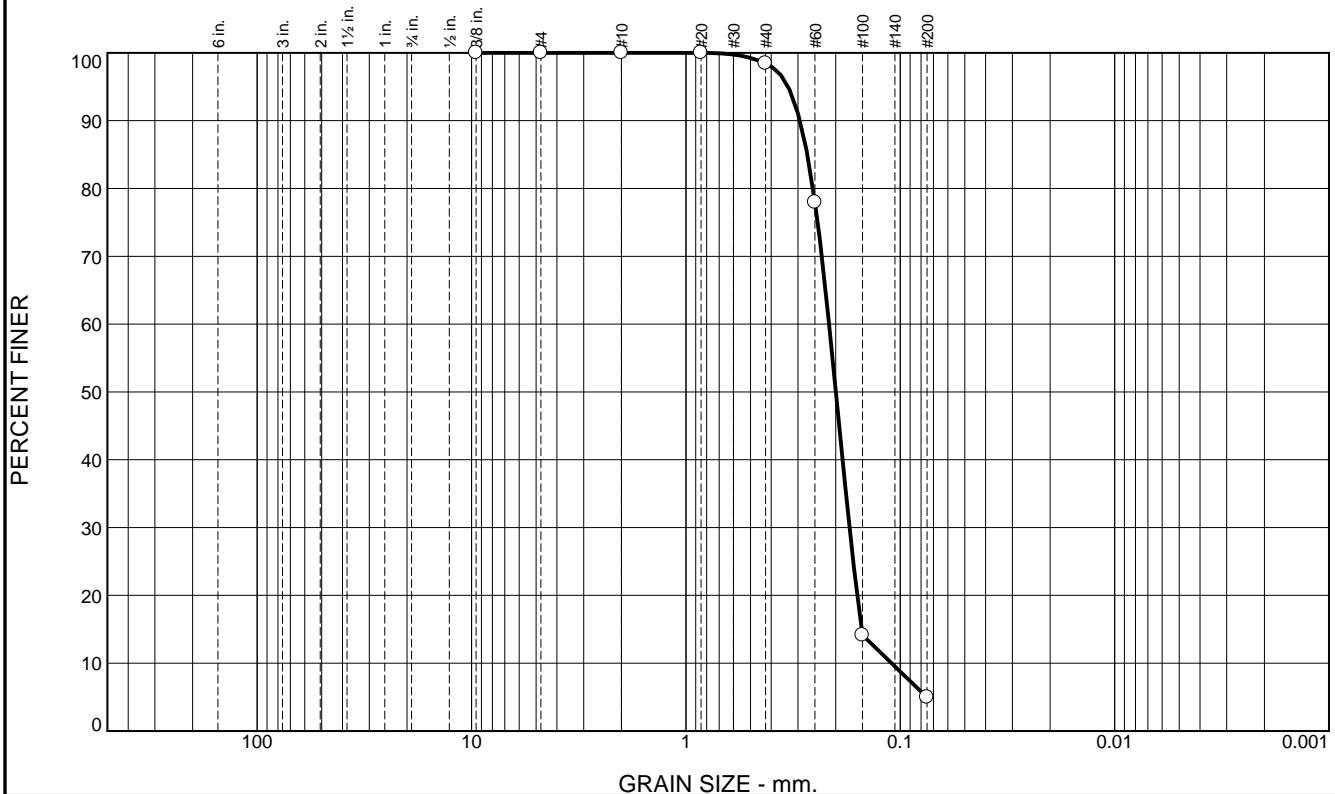
Project No: 11-2116-0057

Figure

Boring Designation BI-CI-39-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-39-11		LOCATION COORDINATES E = 917,160 N = 263,391		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		UNDISTURBED (UD) 0	
6. THICKNESS OF OVERBURDEN N/A				14. WATER DEPTH 15.2 Ft.		15. DATE BORING 06-25-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -14.4 Ft.		COMPLETED 06-25-11	
8. TOTAL DEPTH OF BORING 12.5 Ft.				17. TOTAL RECOVERY FOR BORING 100%		18. SIGNATURE AND TITLE OF INSPECTOR Rhonda Capes, Geologist	
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-14.4	0.0						
-15.4	1.0		SAND, silty, mostly fine-grained sand-sized quartz, little silt, dark gray (SM)	NS			
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, lt. gray (SP)	A	Classification: SP-SM Color: 5Y 4/2-olive gray D50: 0.1997 mm % Fines: 5		
			At El. -22.2 Ft., mostly fine-grained sand-sized quartz, some shell fragments, lt. gray	B	Classification: SP Color: 5Y 3/2-dark olive gray D50: 0.1802 mm % Fines: 4.3		
-24.9	10.5						
-26.9	12.5		SAND, clayey, mostly fine-grained sand-sized quartz, some clay, dark gray (SC)	NS			
NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.							

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.6	93.4	5.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	100.0		
#40	98.4		
#60	78.0		
#100	14.1		
#200	5.0		

* (no specification provided)

<u>Material Description</u>		
Slightly silty SAND (SP-SM), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.2940	D ₈₅ = 0.2714	D ₆₀ = 0.2148
D ₅₀ = 0.1997	D ₃₀ = 0.1725	D ₁₅ = 0.1514
D ₁₀ = 0.1098	C _u = 1.96	C _c = 1.26
<u>Classification</u>		
USCS= SP-SM	AASHTO=	
<u>Remarks</u>		

Location: USACE Sample # BI-CI-39A-11
Sample Number: TE Lab ID: 5054.72

Depth: 1.0 - 6.0 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

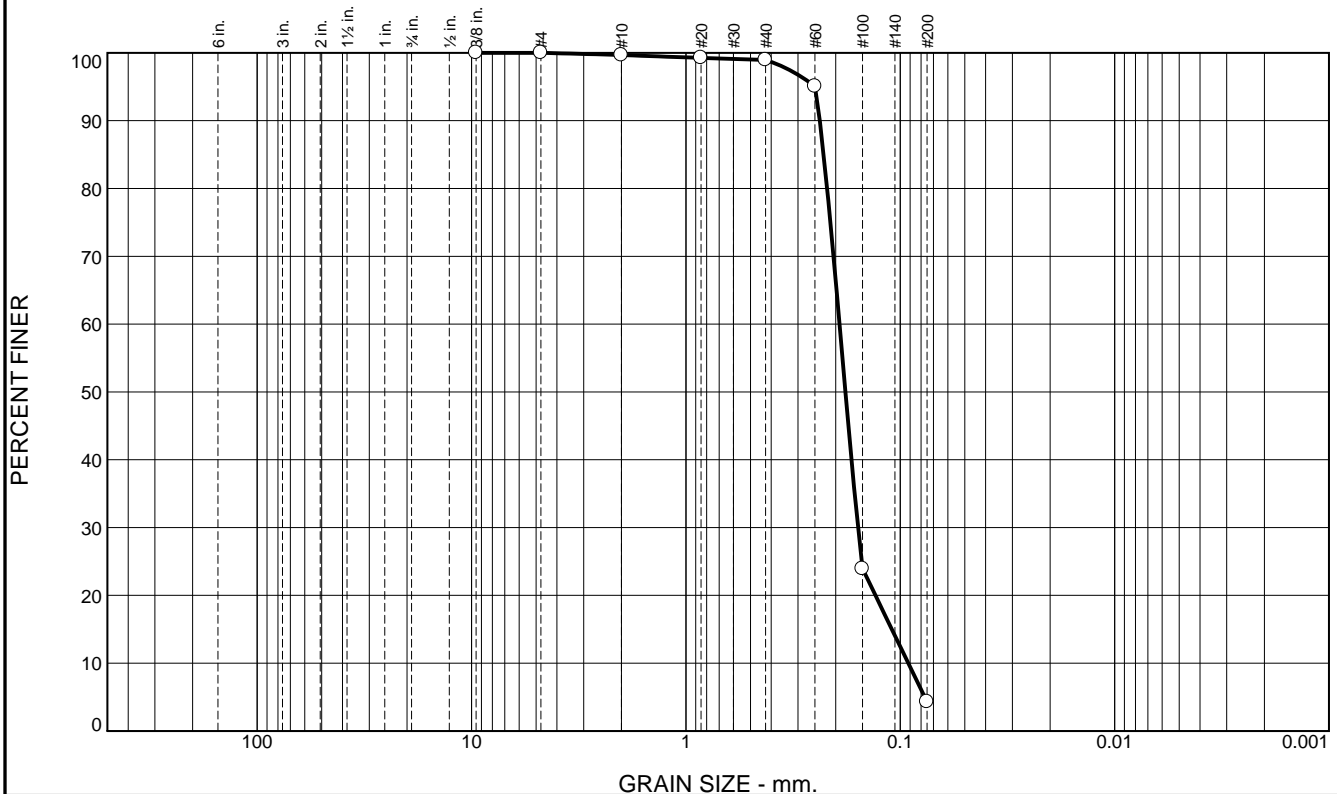
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.3	0.7	94.7	4.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.7		
#20	99.3		
#40	99.0		
#60	95.1		
#100	23.9		
#200	4.3		

* (no specification provided)

Material Description		
SAND (SP), fine grained		
<div> <div> Atterberg Limits </div> <div> PL= </div> <div> LL= </div> <div> PI= </div> </div>		
<div> <div> Coefficients </div> <div> D₉₀= 0.2375 </div> <div> D₅₀= 0.1802 </div> <div> D₁₀= 0.0917 </div> </div>		
<div> <div> Classification </div> <div> USCS= SP </div> <div> AASHTO= </div> </div>		
<div> Remarks </div>		

Location: USACE Sample # BI-CI-39B-11
Sample Number: TE Lab ID: 5054.73

Depth: 6.0 - 10.5 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

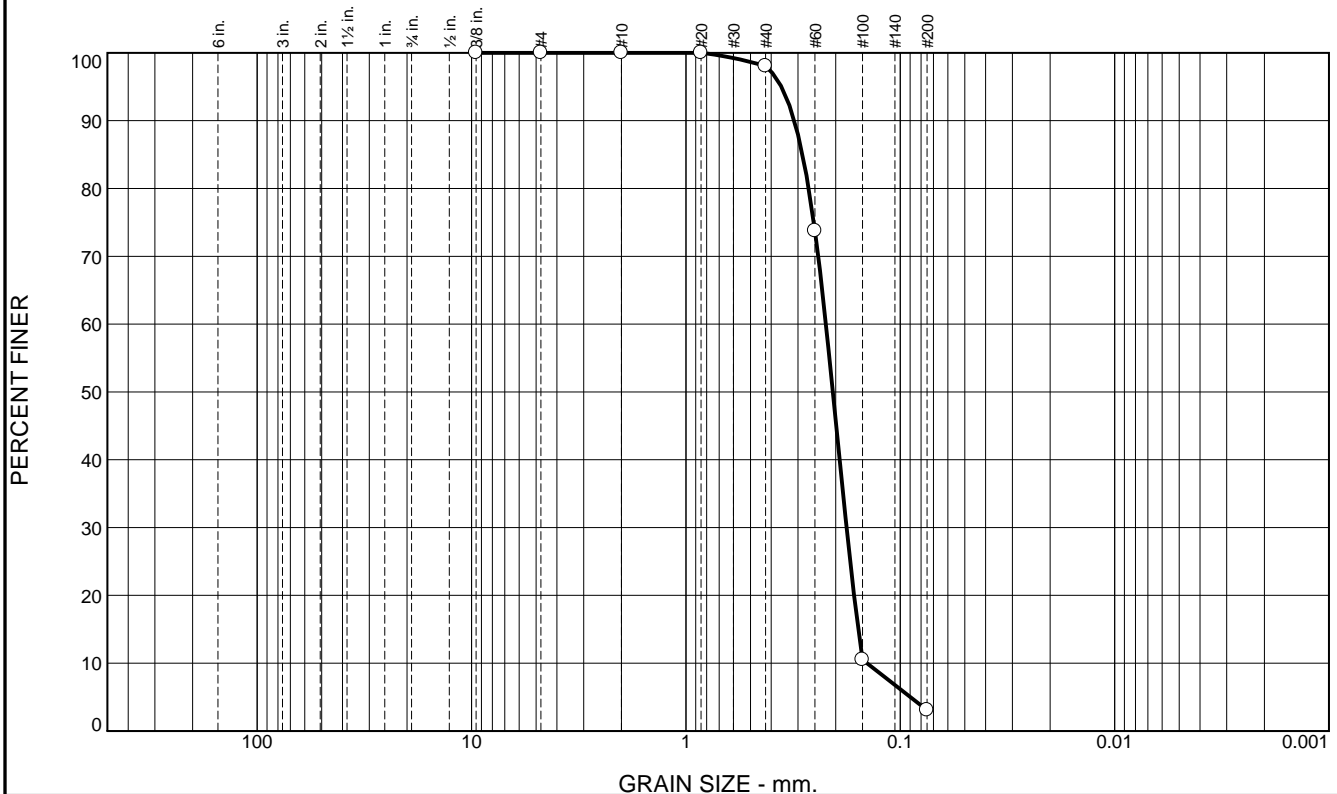
Project No: 11-2116-0057

Figure

Boring Designation BI-CI-40-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-40-11		LOCATION COORDINATES E = 918,163 N = 264,494		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 1	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				DEG. FROM VERTICAL		BEARING	
6. THICKNESS OF OVERBURDEN N/A				13. TOTAL NUMBER CORE BOXES		UNDISTURBED (UD) 0	
7. DEPTH DRILLED INTO ROCK N/A				14. WATER DEPTH 15 Ft.		15. DATE BORING 06-25-11	
8. TOTAL DEPTH OF BORING 14.6 Ft.				16. ELEVATION TOP OF BORING -14.1 Ft.		COMPLETED 06-25-11	
				17. TOTAL RECOVERY FOR BORING 100%		18. SIGNATURE AND TITLE OF INSPECTOR Rhonda Capes, Geologist	
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-14.1	0.0						
-15.8	1.7		SAND, silty, mostly fine-grained sand-sized quartz, little silt, gray and brown (SM)	NS			
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, lt. gray (SP)	A	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.2062 mm % Fines: 3.1		
-23.3	9.2						
-25.0	10.9		SAND, silty, mostly fine-grained sand-sized quartz, some silt, little clay, gray (SM)	NS			
-26.2	12.1		SAND, clayey, mostly fine-grained sand-sized quartz, some clay, dark gray (SC)				
-28.7	14.6		SAND, silty, mostly fine-grained sand-sized quartz, some silt, gray (SM)				
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	2.0	94.9	3.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	100.0		
#40	98.0		
#60	73.7		
#100	10.5		
#200	3.1		

* (no specification provided)

<u>Material Description</u>		
SAND (SP), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.3123	D ₈₅ = 0.2860	D ₆₀ = 0.2223
D ₅₀ = 0.2062	D ₃₀ = 0.1780	D ₁₅ = 0.1570
D ₁₀ = 0.1431	C _u = 1.55	C _c = 1.00
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		

Location: USACE Sample # BI-CI-40A-11
Sample Number: TE Lab ID: 5054.74

Depth: 2.0 - 7.0 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

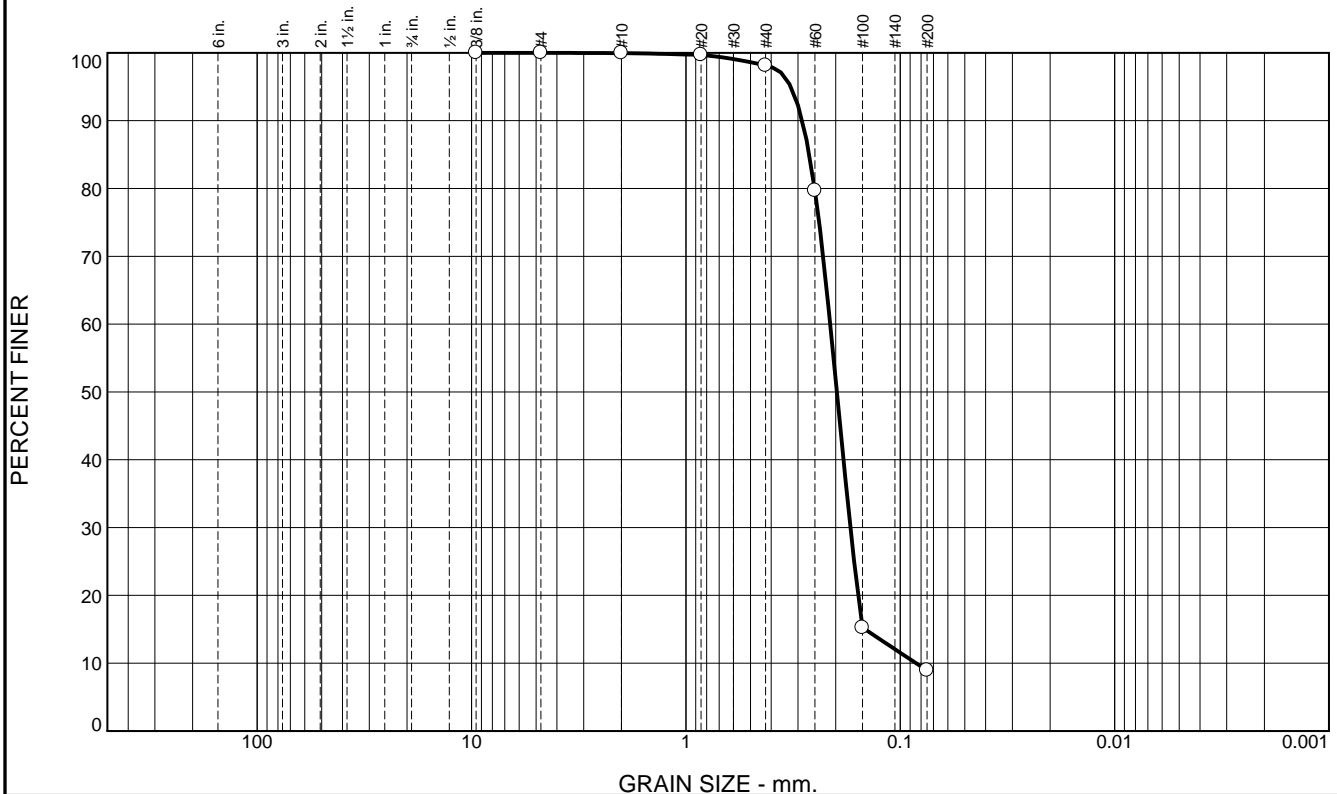
Project No: 11-2116-0057

Figure

Boring Designation BI-CI-41-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-41-11		LOCATION COORDINATES E = 919,217 N = 265,573		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 15.2 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-25-11		STARTED 06-25-11 COMPLETED 06-25-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -14.3 Ft.			
8. TOTAL DEPTH OF BORING 10.9 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Rhonda Capes, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-14.3	0.0						
-16.4	2.1		SAND, silty, mostly fine-grained sand-sized quartz, some silt, trace clay, gray (SM)	A	Classification: SP-SM Color: 5Y 3/2-dark olive gray D50: 0.1975 mm % Fines: 8.9		
-18.6	4.3		SAND, silty, mostly fine-grained sand-sized quartz, some silt, gray (SM)	B	Classification: SP Color: 2.5Y 4/2-dark grayish brown D50: 0.2158 mm % Fines: 3.9		
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace shell fragments, lt. gray (SP)	C	Classification: SP Color: 2.5Y 4/3-olive brown D50: 0.2118 mm % Fines: 3.1		
-25.2	10.9			NS			
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.9	89.2	8.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.7		
#40	98.1		
#60	79.7		
#100	15.2		
#200	8.9		

* (no specification provided)

<u>Material Description</u>		
Slightly silty SAND (SP-SM), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.2868	D ₈₅ = 0.2658	D ₆₀ = 0.2122
D ₅₀ = 0.1975	D ₃₀ = 0.1708	D ₁₅ = 0.1463
D ₁₀ = 0.0844	C _u = 2.51	C _c = 1.63
<u>Classification</u>		
USCS= SP-SM	AASHTO=	
<u>Remarks</u>		

Location: USACE Sample # BI-CI-41A-11
Sample Number: TE Lab ID: 5054.75

Depth: 0.0 - 2.1 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

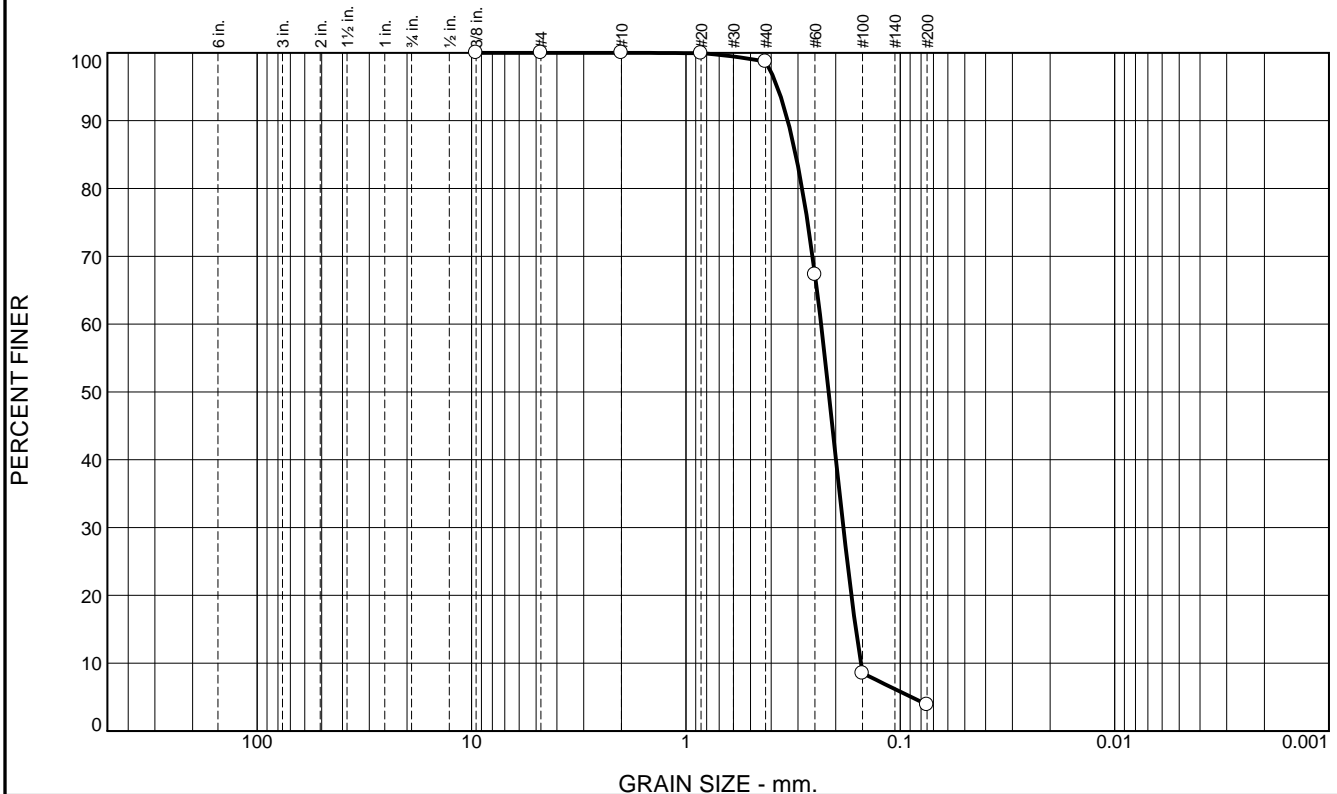
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.3	94.8	3.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	100.0		
#40	98.7		
#60	67.3		
#100	8.5		
#200	3.9		

* (no specification provided)

Material Description		
SAND (SP), fine grained		
<div> <div> Atterberg Limits </div> <div> PL= LL= PI= </div> </div>		
<div> <div> Coefficients </div> <div> D₉₀= 0.3349 D₈₅= 0.3078 D₆₀= 0.2342 D₅₀= 0.2158 D₃₀= 0.1842 D₁₅= 0.1612 D₁₀= 0.1527 C_u= 1.53 C_c= 0.95 </div> </div>		
<div> <div> Classification </div> <div> USCS= SP AASHTO= </div> </div>		
<div> Remarks </div>		

Location: USACE Sample # BI-CI-41B-11
Sample Number: TE Lab ID: 5054.76

Depth: 2.1 - 4.3 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

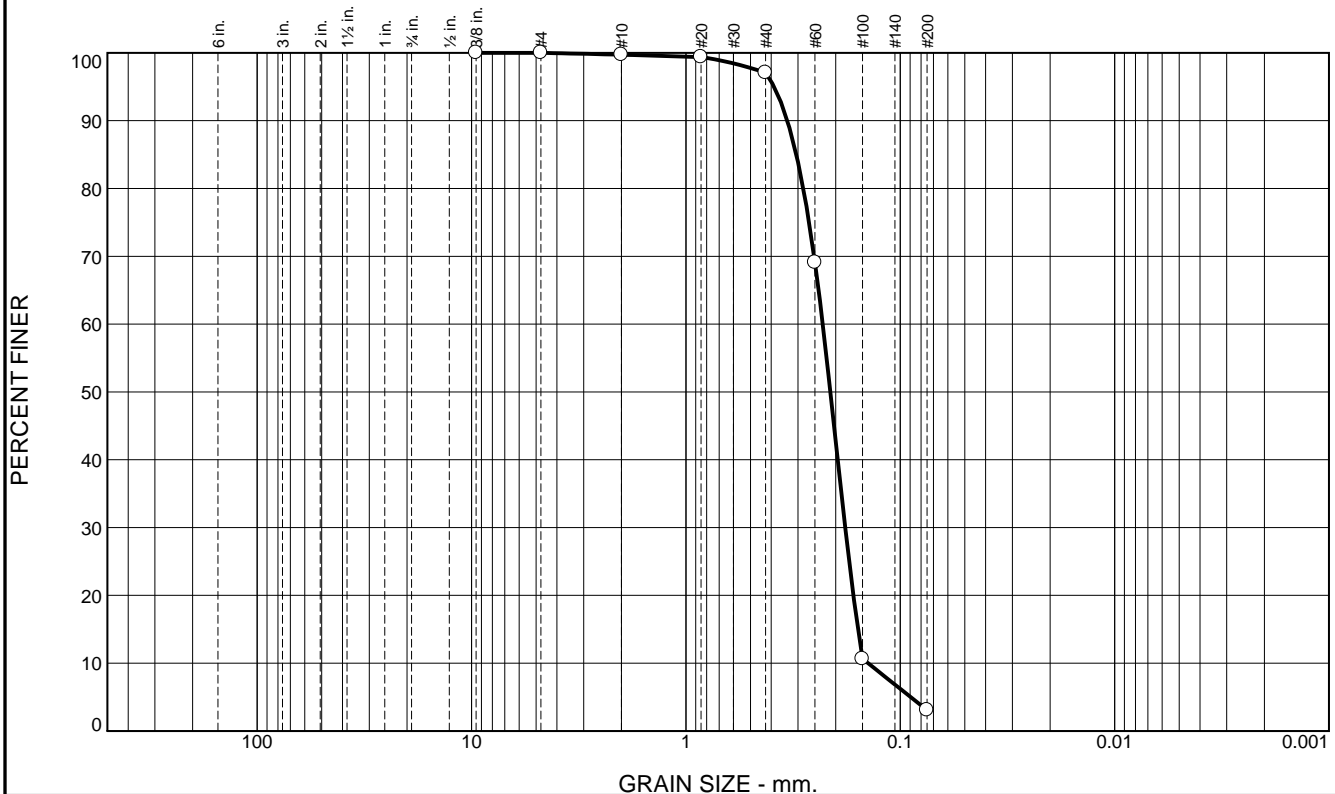
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.3	2.6	94.0	3.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.7		
#20	99.4		
#40	97.1		
#60	69.1		
#100	10.6		
#200	3.1		

* (no specification provided)

Material Description
SAND (SP), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.3366 D₈₅= 0.3056 D₆₀= 0.2300
 D₅₀= 0.2118 D₃₀= 0.1806 D₁₅= 0.1575
 D₁₀= 0.1414 C_u= 1.63 C_c= 1.00

Classification
 USCS= SP AASHTO=

Remarks

Location: USACE Sample # BI-CI-41C-11
 Sample Number: TE Lab ID: 5054.77

Depth: 4.3 - 9.3 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
 Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

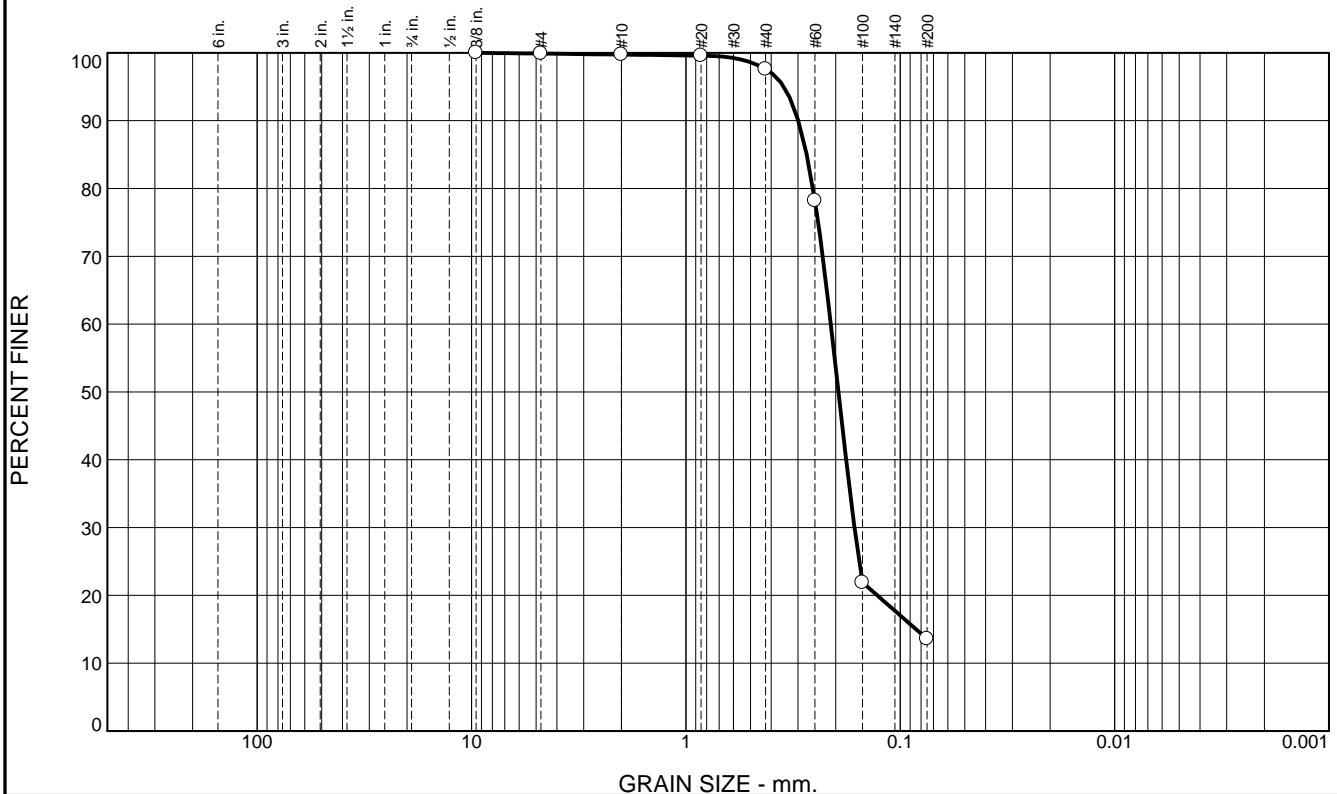
Figure

Boring Designation BI-CI-42-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-42-11		LOCATION COORDINATES E = 918,095 N = 266,629		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 14 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-24-11		STARTED 06-24-11 COMPLETED 06-24-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -13.2 Ft.			
8. TOTAL DEPTH OF BORING 15.1 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Rhonda Capes, Geologist			

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-13.2	0.0				
-15.4	2.2		SAND, silty, mostly fine-grained sand-sized quartz, some silt, little clay, gray (SM)	A	Classification: SM Color: 2.5Y 4/2-dark grayish brown D50: 0.1942 mm % Fines: 13.6
-16.5	3.3		SAND, silty, mostly fine-grained sand-sized quartz, some silt, gray (SM)	B	Classification: SP-SM Color: 5Y 3/2-dark olive gray D50: 0.1952 mm % Fines: 10.6
-20.9	7.7		SAND, poorly-graded, mostly fine-grained sand-sized quartz, gray (SP)	C	Classification: SP Color: 5Y 4/2-olive gray D50: 0.172 mm % Fines: 4.8
-22.2	9.0		At El. -18.4 Ft., mostly fine-grained sand-sized quartz, lt. gray		
-25.2	12.0		CLAY, lean, dark gray (CL)	NS	
-28.3	15.1		SAND, silty, mostly fine-grained sand-sized quartz, some silt, trace clay, gray (SM)		
			SAND, poorly-graded, mostly medium-grained sand-sized quartz, little shell fragments, lt. gray (SP)		
			At El. -26.7 Ft., mostly fine-grained sand-sized quartz, lt. gray		
NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.					

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.2	2.1	84.0	13.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.7		
#20	99.6		
#40	97.6		
#60	78.2		
#100	21.9		
#200	13.6		

* (no specification provided)

Material Description
Silty SAND (SM), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.2994 D₈₅= 0.2734 D₆₀= 0.2108
 D₅₀= 0.1942 D₃₀= 0.1635 D₁₅= 0.0843
 D₁₀= C_u= C_c=

Classification
 USCS= SM AASHTO=

Remarks

Location: USACE Sample # BI-CI-42A-11
 Sample Number: TE Lab ID: 5054.63

Depth: 0.0 - 2.2 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

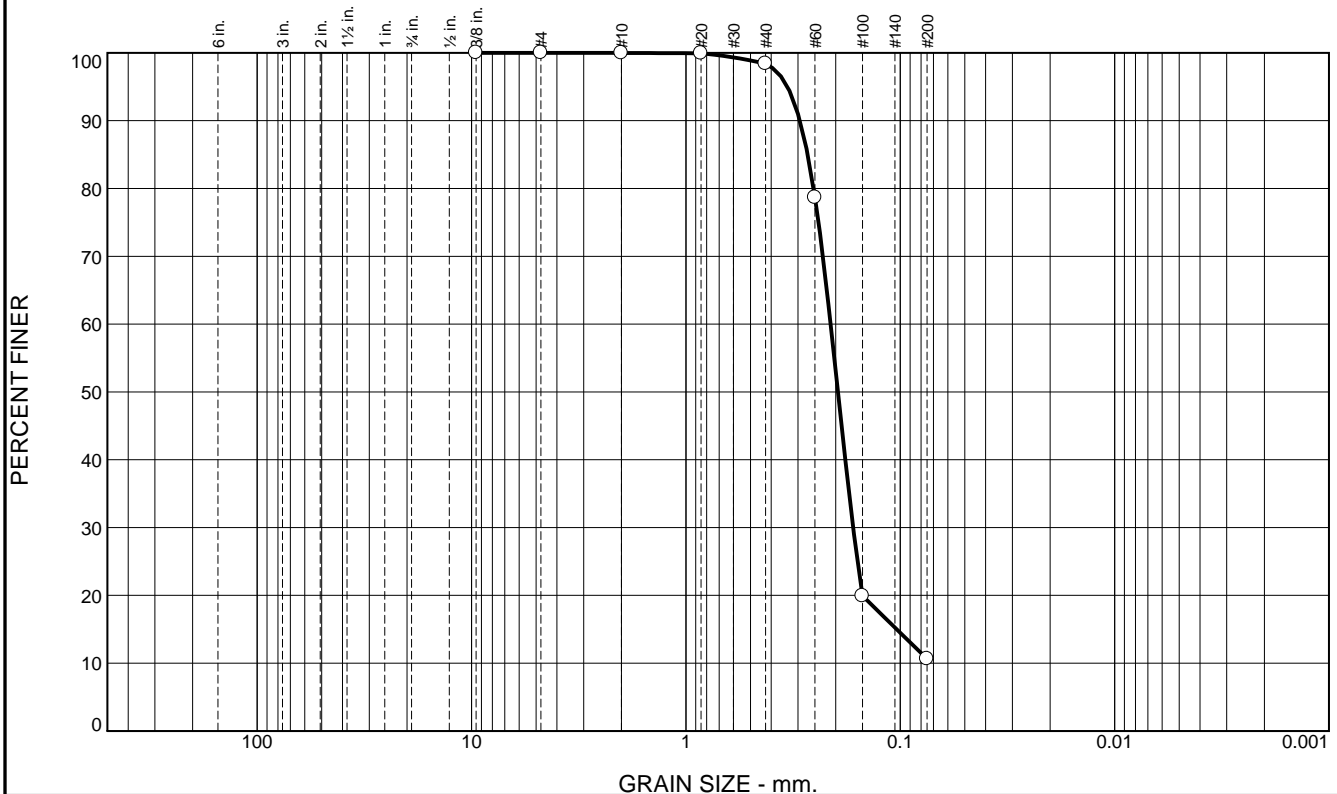
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
 Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.6	87.8	10.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	98.4		
#60	78.7		
#100	19.9		
#200	10.6		

* (no specification provided)

<u>Material Description</u>		
Slightly silty SAND (SP-SM), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.2941	D ₈₅ = 0.2705	D ₆₀ = 0.2112
D ₅₀ = 0.1952	D ₃₀ = 0.1659	D ₁₅ = 0.1039
D ₁₀ =	C _u =	C _c =
<u>Classification</u>		
USCS= SP-SM	AASHTO=	
<u>Remarks</u>		

Location: USACE Sample # BI-CI-42B-11
Sample Number: TE Lab ID: 5054.64

Depth: 2.2 - 3.3 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

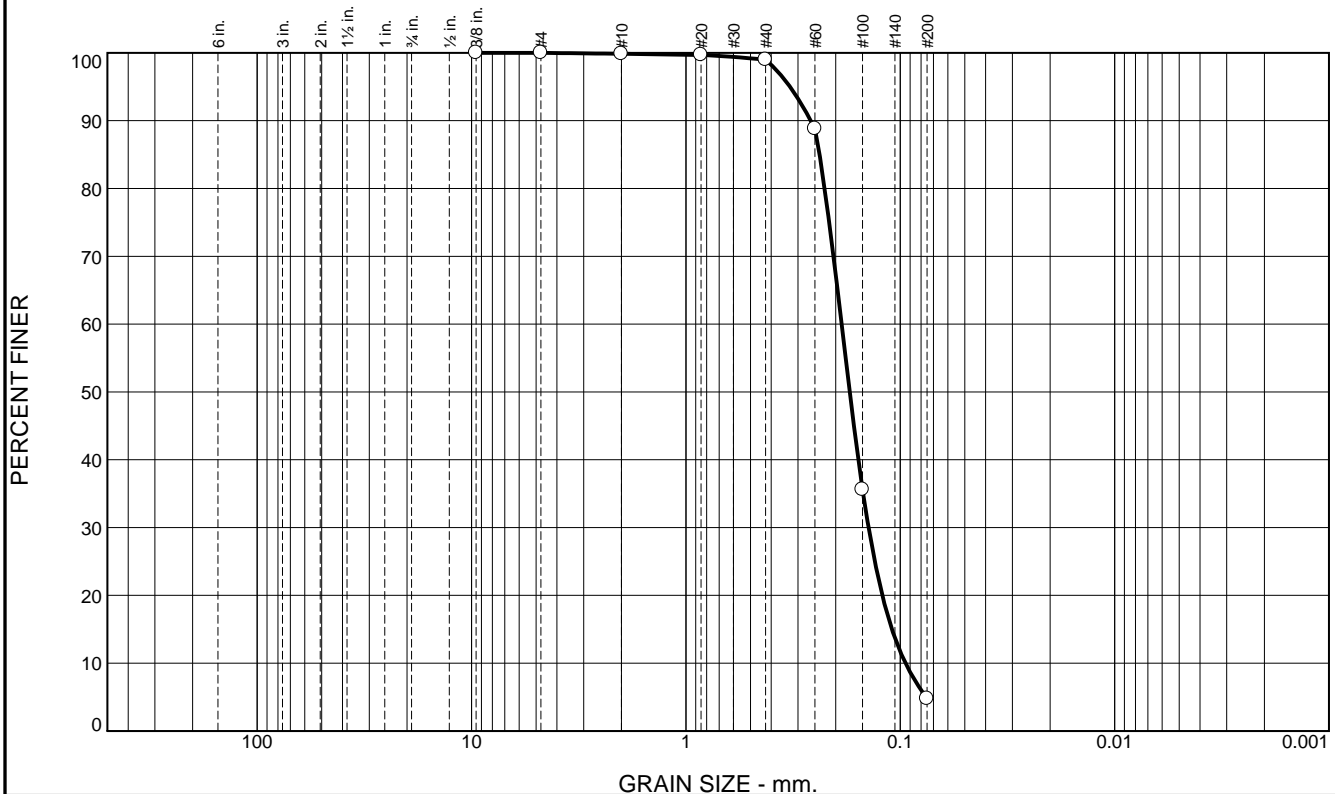
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	0.9	94.2	4.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.7		
#40	99.0		
#60	88.8		
#100	35.6		
#200	4.8		

* (no specification provided)

Material Description		
SAND (SP), fine grained		
<div> <div> Atterberg Limits PL= LL= PI= </div> <div> Coefficients D₉₀= 0.2616 D₈₅= 0.2381 D₆₀= 0.1876 D₅₀= 0.1720 D₃₀= 0.1407 D₁₅= 0.1094 D₁₀= 0.0946 C_u= 1.98 C_c= 1.12 </div> <div> Classification USCS= SP AASHTO= </div> <div> Remarks </div> </div>		

Location: USACE Sample # BI-CI-42C-11
Sample Number: TE Lab ID: 5054.65

Depth: 3.3 - 7.7 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

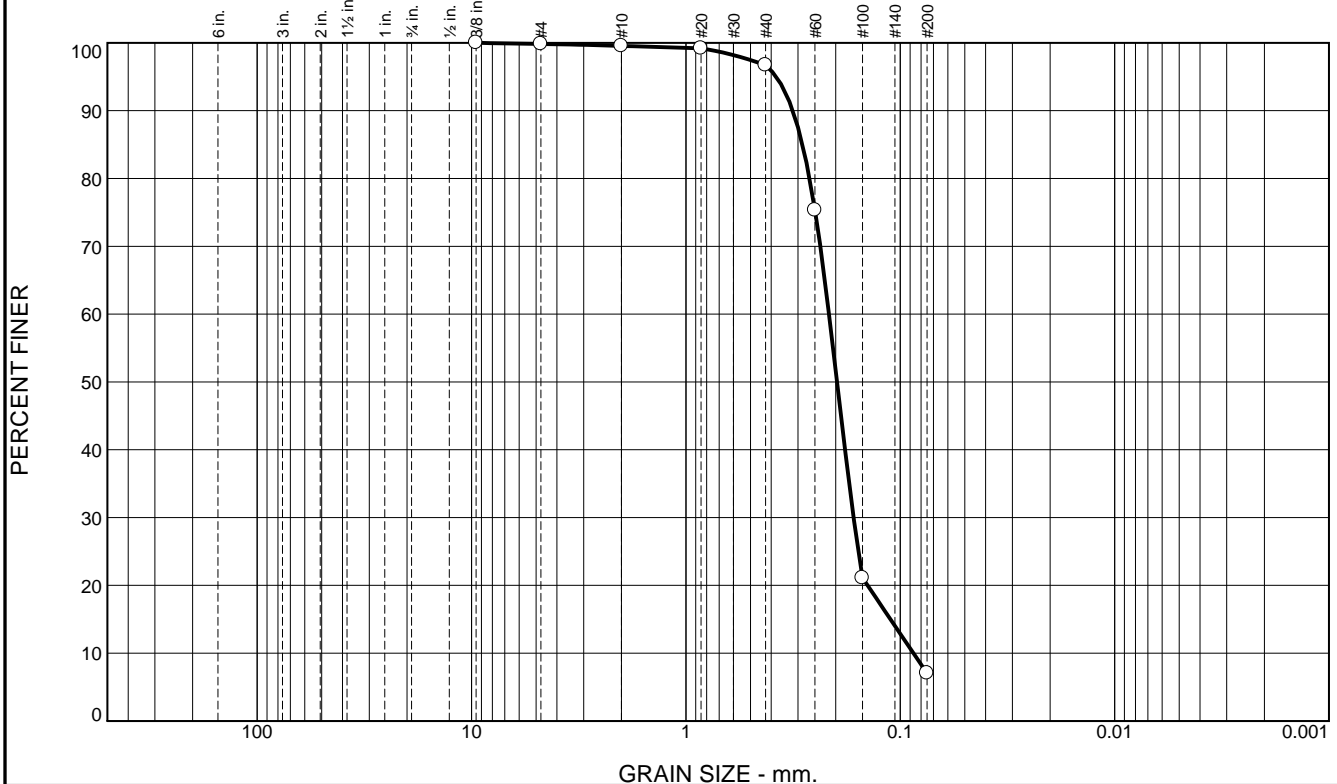
Project No: 11-2116-0057

Figure

Boring Designation BI-CI-43-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-43-11		LOCATION COORDINATES E = 917,009 N = 265,413		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 13.5 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-24-11		STARTED 06-24-11 COMPLETED 06-24-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -13.0 Ft.			
8. TOTAL DEPTH OF BORING 17.2 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Rhonda Capes, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-13.0	0.0						
			SAND, silty, mostly fine-grained sand-sized quartz, some silt, dark gray (SM)	A	Classification: SP-SM Color: 5Y 3/2-dark olive gray D50: 0.1972 mm % Fines: 7		
-17.5	4.5						
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, lt. gray (SP)	B	Classification: SP Color: 5Y 5/1-gray D50: 0.2126 mm % Fines: 2.2		
				C	Classification: SP Color: 5Y 5/1-gray D50: 0.19 mm % Fines: 3.3		
-26.9	13.9						
-27.9	14.9		CLAY, lean, dark gray (CL)				
			SAND, clayey, mostly fine-grained sand-sized quartz, some clay, dark gray (SC)	NS			
-30.2	17.2						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.3	2.8	89.7	7.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.8		
#10	99.5		
#20	99.2		
#40	96.7		
#60	75.3		
#100	21.1		
#200	7.0		

* (no specification provided)

<u>Material Description</u>		
Slightly silty SAND (SP-SM), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.3174	D ₈₅ = 0.2861	D ₆₀ = 0.2150
D ₅₀ = 0.1972	D ₃₀ = 0.1651	D ₁₅ = 0.1111
D ₁₀ = 0.0868	C _u = 2.48	C _c = 1.46
<u>Classification</u>		
USCS= SP-SM	AASHTO=	
<u>Remarks</u>		

Location: USACE Sample # BI-CI-43A-11
Sample Number: TE Lab ID: 5054.66

Depth: 0.0 - 4.5 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

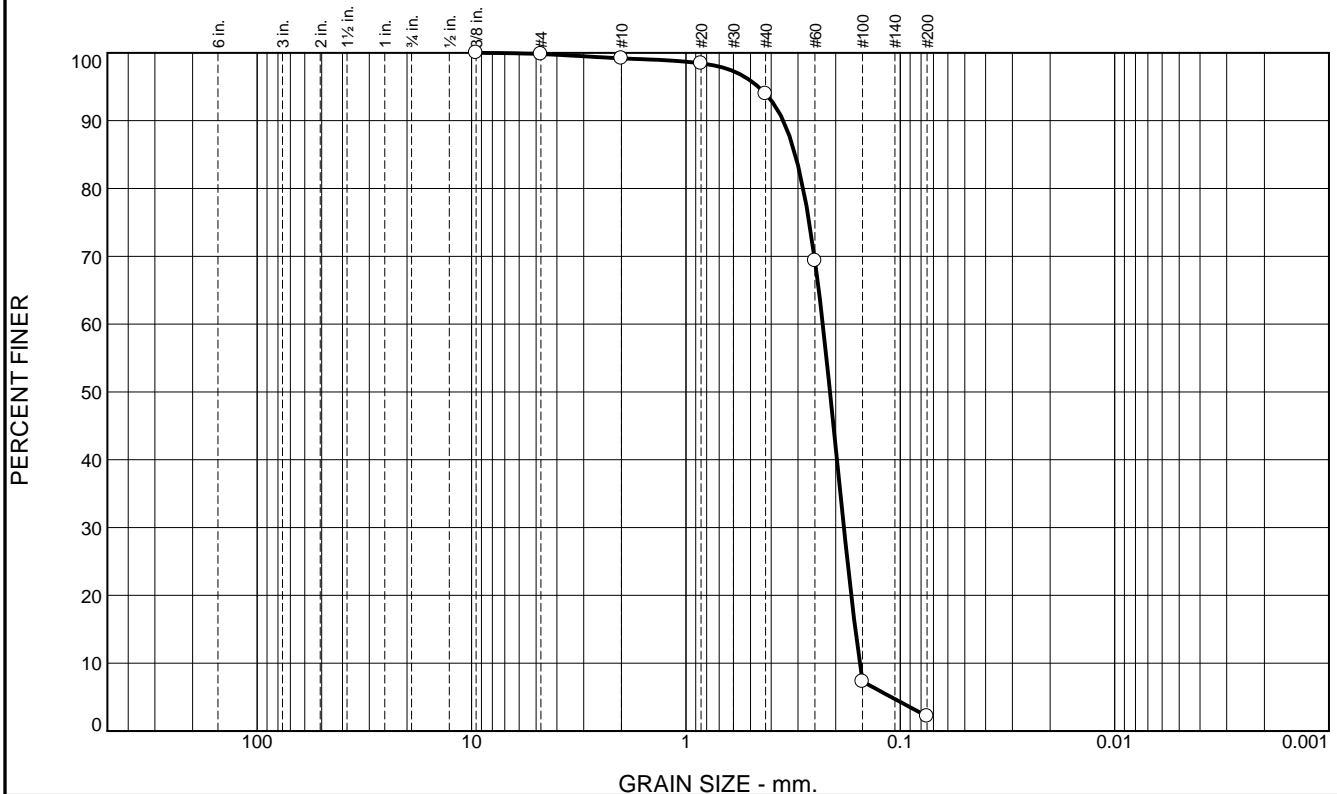
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.6	5.3	91.7	2.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.8		
#10	99.2		
#20	98.4		
#40	93.9		
#60	69.3		
#100	7.3		
#200	2.2		

* (no specification provided)

Material Description		
SAND (SP), fine grained		
PL=	Atterberg Limits LL=	PI=
D ₉₀ = 0.3513	Coefficients D ₈₅ = 0.3092	D ₆₀ = 0.2300
D ₅₀ = 0.2126	D ₃₀ = 0.1832	D ₁₅ = 0.1621
D ₁₀ = 0.1545	C _u = 1.49	C _c = 0.94
USCS= SP	Classification AASHTO=	
Remarks		

Location: USACE Sample # BI-CI-43B-11
Sample Number: TE Lab ID: 5054.67

Depth: 4.5 - 9.5 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

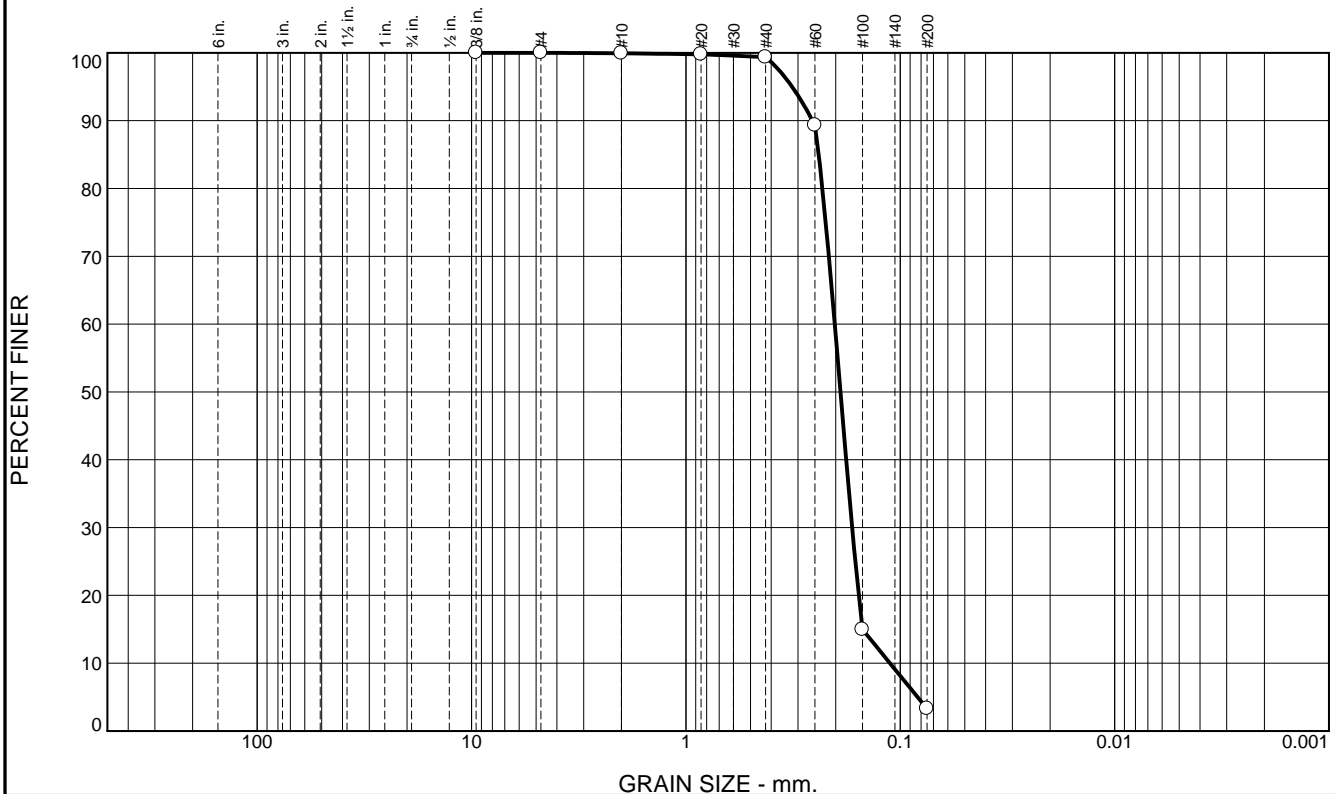
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	0.5	96.1	3.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.8		
#40	99.4		
#60	89.3		
#100	15.0		
#200	3.3		

* (no specification provided)

Material Description		
SAND (SP), fine grained		
PL=	Atterberg Limits LL=	PI=
D ₉₀ = 0.2567	Coefficients D ₈₅ = 0.2403	D ₆₀ = 0.2019
D ₅₀ = 0.1900	D ₃₀ = 0.1677	D ₁₅ = 0.1501
D ₁₀ = 0.1117	C _u = 1.81	C _c = 1.25
USCS= SP	Classification AASHTO=	
Remarks		

Location: USACE Sample # BI-CI-43C-11
Sample Number: TE Lab ID: 5054.68

Depth: 9.5 - 13.9 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Boring Designation BI-CI-44-11

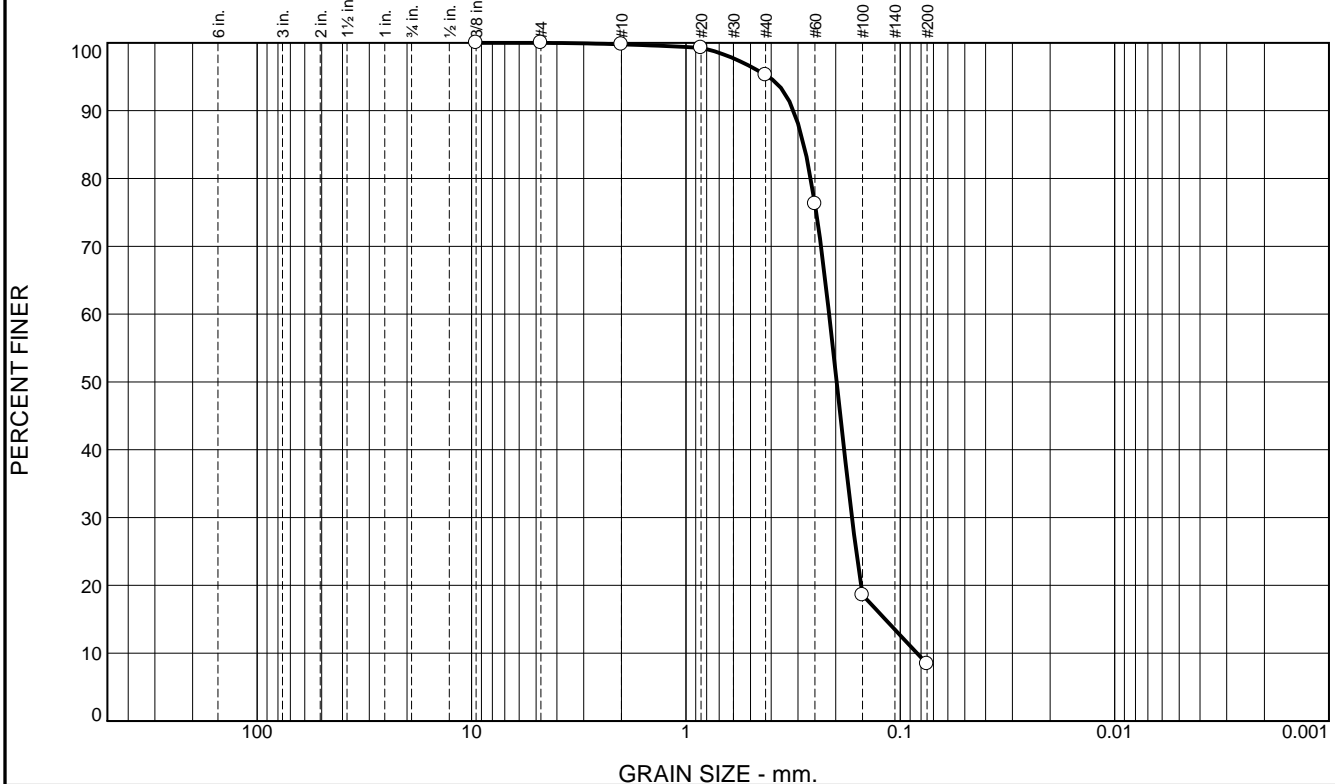
DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-44-11		LOCATION COORDINATES E = 915,946 N = 264,331		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 13.5 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-24-11		STARTED COMPLETED 06-24-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -13.2 Ft.			
8. TOTAL DEPTH OF BORING 12.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Rhonda Capes, Geologist			

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-13.2	0.0				
-14.2	1.0		SAND, clayey, mostly fine-grained sand-sized quartz, some clay, dark gray (SC)		
			CLAY, lean, dark gray (CL)		
-16.3	3.1				
			SAND, silty, mostly fine-grained sand-sized quartz, some silt, gray (SM)		
-18.2	5.0				
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, lt. gray (SP)	NS	
-22.5	9.3				
-23.7	10.5		CLAY, lean, dark gray (CL)		
-24.7	11.5		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, gray (SP)		
-25.2	12.0		SAND, clayey, mostly fine-grained sand-sized quartz, gray (SC)		
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.		

Boring Designation BI-CI-45-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-45-11		LOCATION COORDINATES E = 914,870 N = 263,257		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 13.6 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-24-11		STARTED 06-24-11 COMPLETED 06-24-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -13.5 Ft.			
8. TOTAL DEPTH OF BORING 12.4 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Rhonda Capes, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-13.5	0.0						
-15.5	2.0		SAND, silty, mostly fine-grained sand-sized quartz, trace clay, gray (SM)	A	Classification: SP-SM Color: 5Y 3/2-dark olive gray D50: 0.198 mm % Fines: 8.4		
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace silt, lt. gray (SP)	B	Classification: SP Color: 5Y 5/1-gray D50: 0.1915 mm % Fines: 4.1		
				C	Classification: SP-SM Color: 5Y 5/1-gray D50: 0.1771 mm % Fines: 6.4		
-25.9	12.4						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	4.5	86.9	8.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.8		
#20	99.3		
#40	95.3		
#60	76.3		
#100	18.6		
#200	8.4		

* (no specification provided)

<u>Material Description</u>		
Slightly silty SAND (SP-SM), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.3150	D ₈₅ = 0.2821	D ₆₀ = 0.2146
D ₅₀ = 0.1980	D ₃₀ = 0.1680	D ₁₅ = 0.1175
D ₁₀ = 0.0835	C _u = 2.57	C _c = 1.57
<u>Classification</u>		
USCS= SP-SM	AASHTO=	
<u>Remarks</u>		

Location: USACE Sample # BI-CI-45A-11
Sample Number: TE Lab ID: 5054.69

Depth: 0.0 - 2.0 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

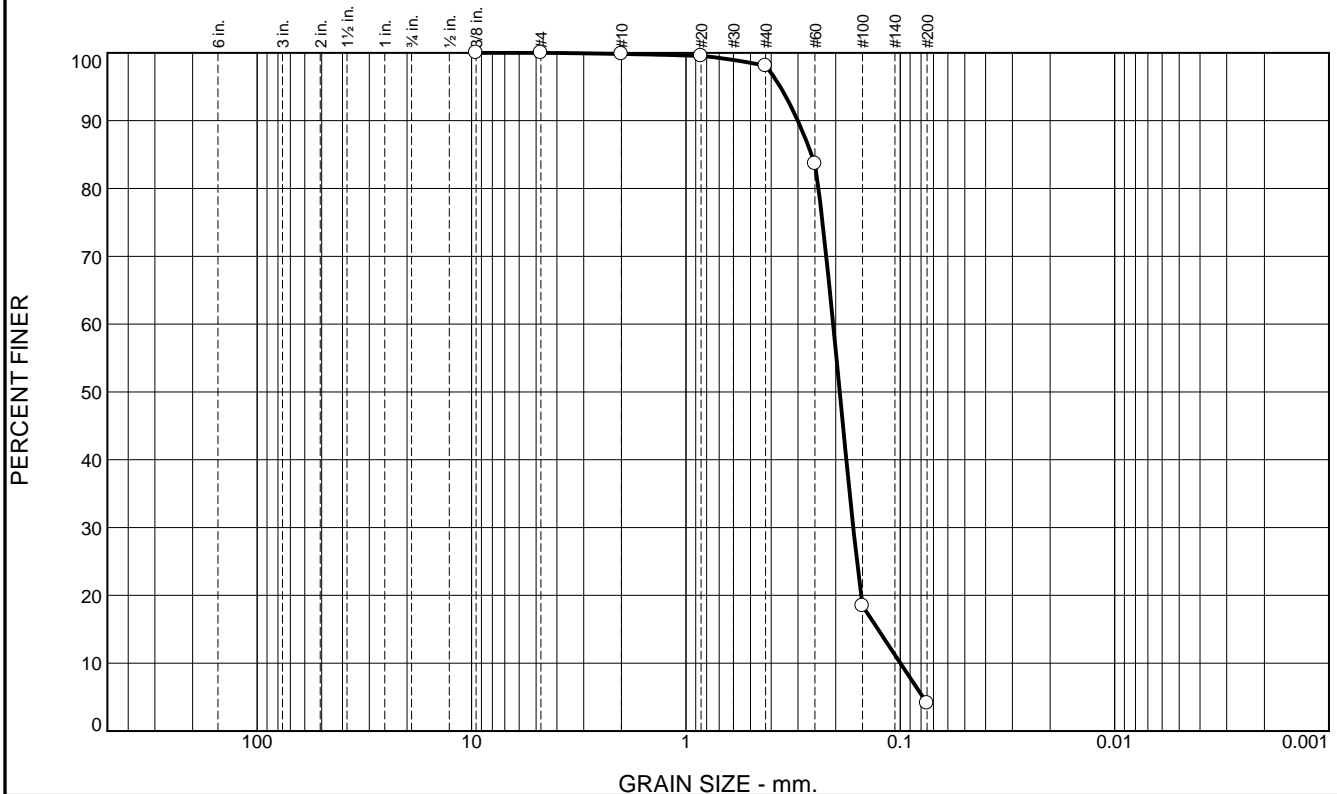
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	1.7	94.0	4.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.8		
#20	99.6		
#40	98.1		
#60	83.7		
#100	18.4		
#200	4.1		

* (no specification provided)

Material Description		
SAND (SP), fine grained		
<div> <div> Atterberg Limits PL= LL= PI= </div> <div> Coefficients D₉₀= 0.3009 D₈₅= 0.2592 D₆₀= 0.2055 D₅₀= 0.1915 D₃₀= 0.1657 D₁₅= 0.1270 D₁₀= 0.0998 C_u= 2.06 C_c= 1.34 </div> <div> Classification USCS= SP AASHTO= </div> <div> Remarks </div> </div>		

Location: USACE Sample # BI-CI-45B-11
Sample Number: TE Lab ID: 5054.70

Depth: 2.0 - 7.0 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

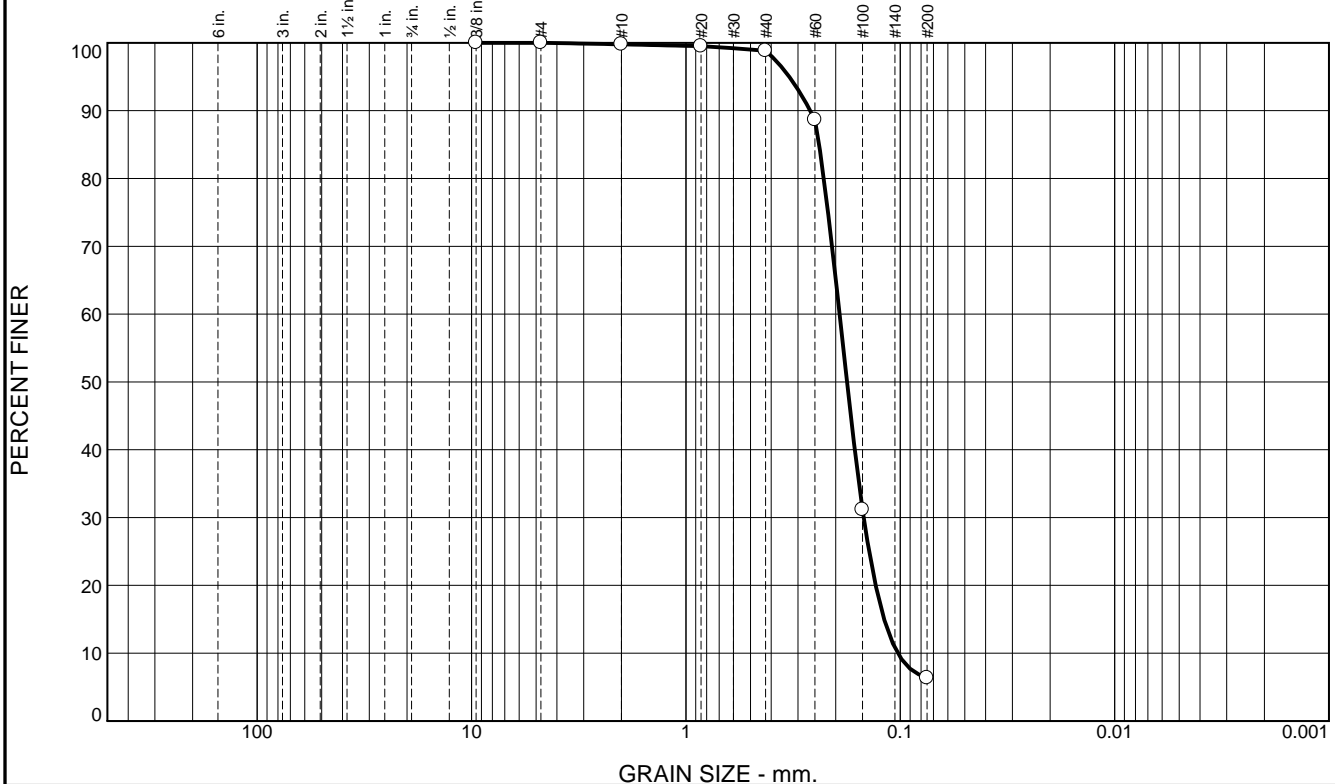
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	1.0	92.4	6.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.8		
#20	99.5		
#40	98.8		
#60	88.7		
#100	31.2		
#200	6.4		

* (no specification provided)

<u>Material Description</u>		
Slightly silty SAND (SP-SM), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.2631	D ₈₅ = 0.2393	D ₆₀ = 0.1918
D ₅₀ = 0.1771	D ₃₀ = 0.1482	D ₁₅ = 0.1189
D ₁₀ = 0.1027	C _u = 1.87	C _c = 1.11
<u>Classification</u>		
USCS= SP-SM	AASHTO=	
<u>Remarks</u>		

Location: USACE Sample # BI-CI-45C-11
Sample Number: TE Lab ID: 5054.71

Depth: 7.0 - 12.0 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Boring Designation BI-CI-46-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-46-11		LOCATION COORDINATES E = 914,896 N = 265,341		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 12.5 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-23-11		STARTED 06-23-11 COMPLETED 06-23-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -12.3 Ft.			
8. TOTAL DEPTH OF BORING 18.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Rhonda Capes, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-12.3	0.0						
			SAND, silty, mostly fine-grained sand-sized quartz, some silt, gray (SM)	A	Classification: SP-SM Color: 5Y 3/2-dark olive gray D50: 0.1986 mm % Fines: 6.9		
-16.3	4.0		SAND, poorly-graded, mostly fine-grained sand-sized quartz, lt. gray (SP)	B	Classification: SP Color: 5Y 4/1-dark gray D50: 0.2257 mm % Fines: 2.1		
			At El. -20.0 Ft., mostly medium-grained sand-sized quartz, trace shell fragments, lt. gray	C	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.2114 mm % Fines: 2		
-25.7	13.4		CLAY, lean, trace shell fragments, trace fine-grained sand, dark gray (CL)	NS			
-30.3	18.0						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

PERCENT FINER



% +3"

% Gravel	
0	100
10	90
20	80
30	70
40	60
50	50
60	40
70	30
80	20
90	10
100	0

•

% Sand

% Fines

21

0.0

Coarse

Fine

Coast	
-------	--

Medium

Find

6.9

**SIEVE
SIZE**

PERCENT
FINER

SPEC.*
PERCENT

PASS?
(X=NO)

Slightly silty SAND (SP-SM), fine grained

Atterberg Limits

$$PI =$$

Coefficients

$$D_{60} = 0.2145$$
$$D_{15} = 0.1334$$
$$C_{C=O} = 1.44$$

Classification

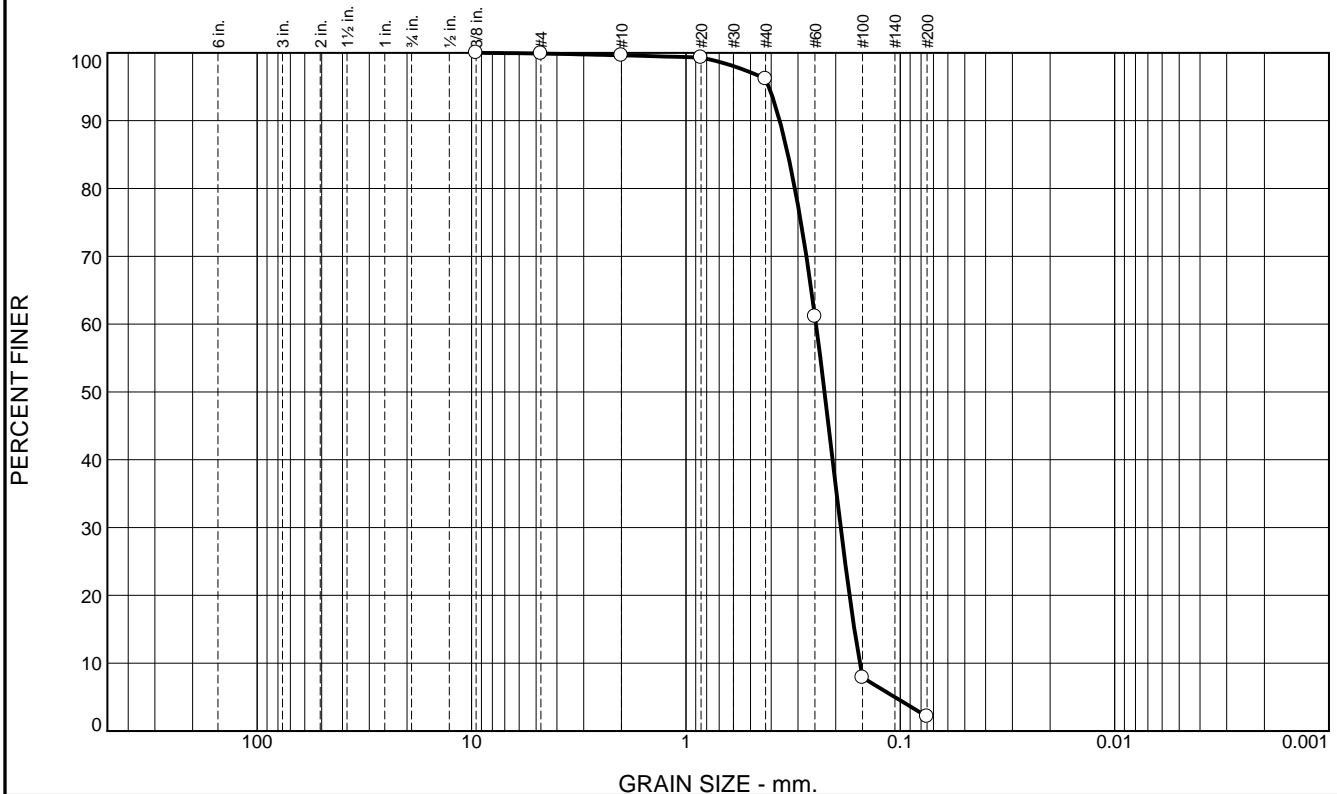
AASHTO=

Remarks

Date: 7/18/11

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.3	3.4	94.1	2.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.6		
#20	99.3		
#40	96.2		
#60	61.1		
#100	7.9		
#200	2.1		

* (no specification provided)

Material Description		
SAND (SP), fine grained		
PL=	Atterberg Limits LL=	PI=
D ₉₀ = 0.3653	Coefficients D ₈₅ = 0.3343	D ₆₀ = 0.2473
D ₅₀ = 0.2257	D ₃₀ = 0.1895	D ₁₅ = 0.1637
D ₁₀ = 0.1543	C _u = 1.60	C _c = 0.94
USCS= SP	Classification AASHTO=	
Remarks		

Location: USACE Sample # BI-CI-46B-11
Sample Number: TE Lab ID: 5054.39

Depth: 4.0 - 9.0 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

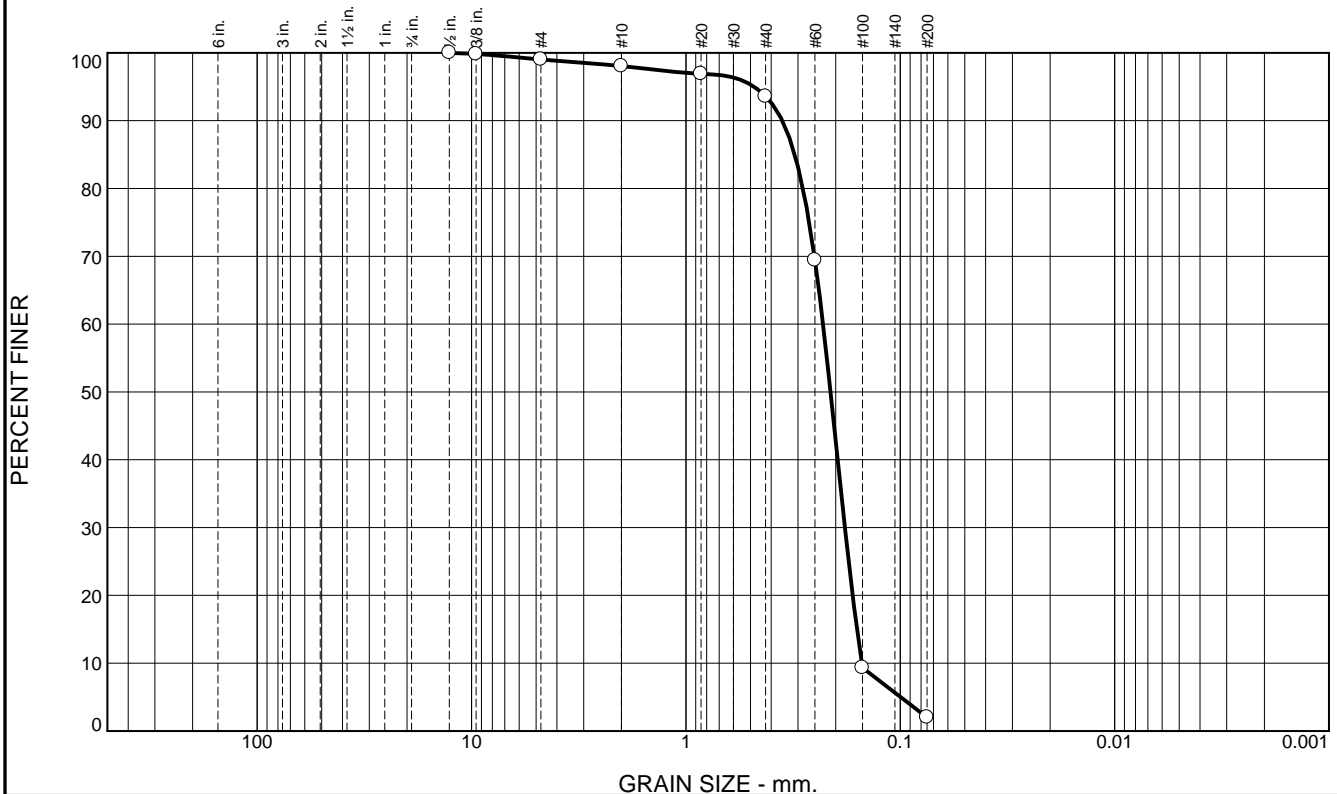
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.0	1.0	4.4	91.6	2.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.5	100.0		
.375	99.8		
#4	99.0		
#10	98.0		
#20	96.9		
#40	93.6		
#60	69.4		
#100	9.3		
#200	2.0		

* (no specification provided)

<u>Material Description</u>		
SAND (SP), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.3550	D ₈₅ = 0.3109	D ₆₀ = 0.2293
D ₅₀ = 0.2114	D ₃₀ = 0.1812	D ₁₅ = 0.1593
D ₁₀ = 0.1512	C _u = 1.52	C _c = 0.95
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		

Location: USACE Sample # BI-CI-46C-11
Sample Number: TE Lab ID: 5054.40

Depth: 9.0 - 13.4 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Boring Designation BI-CI-47-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-47-11		LOCATION COORDINATES E = 915,793 N = 266,445		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 12 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-23-11		STARTED COMPLETED 06-23-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -11.9 Ft.			
8. TOTAL DEPTH OF BORING 14.8 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Rhonda Capes, Geologist			

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-11.9	0.0				
			SAND, silty, mostly fine-grained sand-sized quartz, some clay, trace shell fragments, dark gray (SM)		
-15.4	3.5				
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, lt. gray (SP)		
-19.6	7.7				
-19.9	8.0		CLAY, lean, dark gray (CL)		
-21.7	9.8		SAND, poorly-graded, mostly fine-grained sand-sized quartz, lt. gray (SP)		
-22.1	10.2		CLAY, lean, dark gray (CL)		
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace shell fragments, gray (SP)		
-25.5	13.6				
-26.7	14.8		CLAY, lean, dark gray (CL)		
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.		

Boring Designation BI-CI-48-11

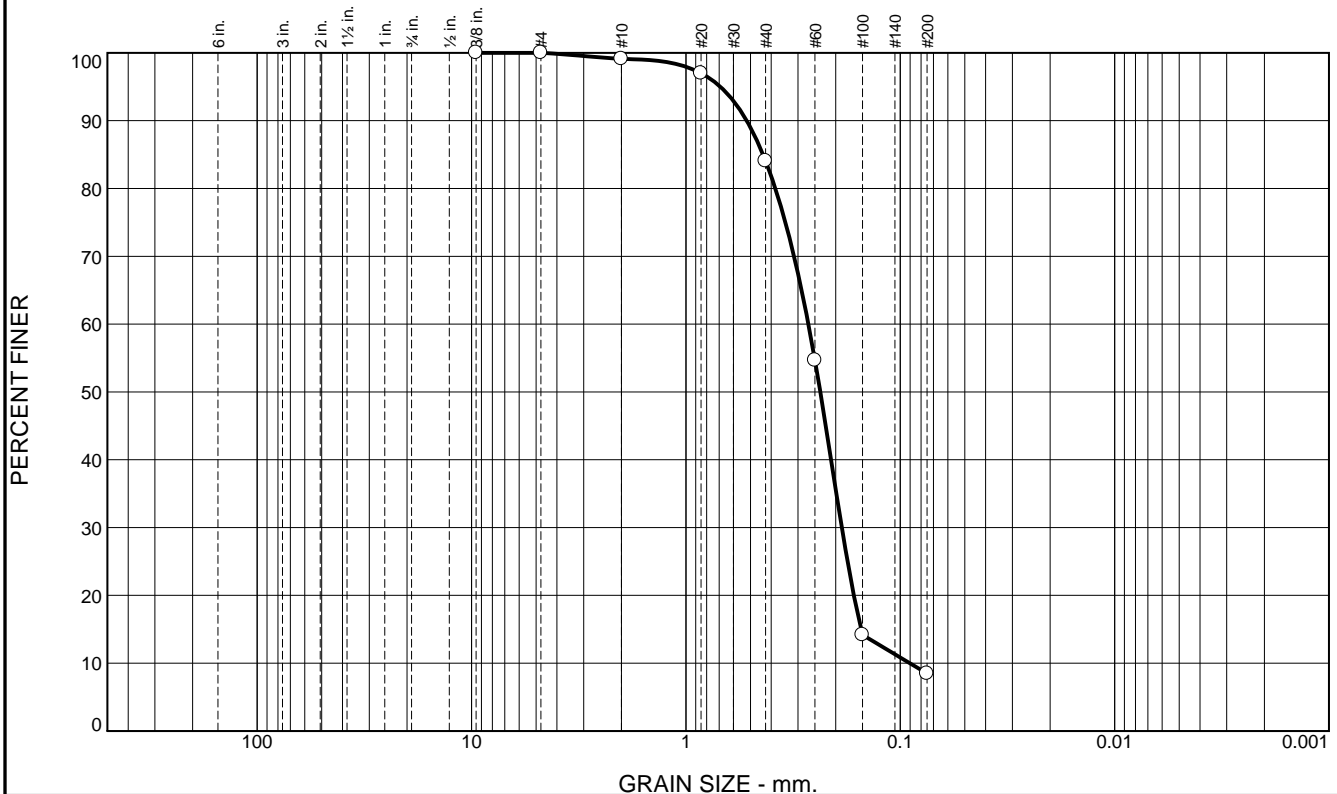
DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-48-11		LOCATION COORDINATES E = 916,852 N = 267,548		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 0		DISTURBED 0 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 12 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-23-11		STARTED 06-23-11 COMPLETED 06-23-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -11.8 Ft.			
8. TOTAL DEPTH OF BORING 17.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Rhonda Capes, Geologist			

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-11.8	0.0				
-12.1	0.3				
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, lt. gray (SP)		
			SAND, clayey, mostly fine-grained sand-sized quartz, some clay, gray (SC)		
-16.3	4.5				
-17.8	6.0		CLAY, lean, dark gray (CL)		
			SAND, silty, mostly fine-grained sand-sized quartz, some silt, dark gray (SM)		
-21.8	10.0			NS	
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, lt. gray (SP)		
			At El. -24.8 Ft., mostly fine to medium-grained sand-sized quartz, trace shell fragments, lt. gray		
-28.8	17.0				
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.		

Boring Designation BI-CI-49-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-49-11		LOCATION COORDINATES E = 917,830 N = 268,623		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 9.3 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-23-11		STARTED 06-23-11 COMPLETED 06-23-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -8.2 Ft.			
8. TOTAL DEPTH OF BORING 9.3 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Rhonda Capes, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-8.2	0.0						
-9.2	1.0		SAND, poorly-graded, mostly fine-grained sand-sized quartz, gray (SP)				
			SAND, silty, mostly fine-grained sand-sized quartz, little silt, gray (SM)	A	Classification: SP-SM Color: 5Y 3/2-dark olive gray D50: 0.2361 mm % Fines: 8.5		
-12.6	4.4						
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, lt. gray (SP)	B	Classification: SP Color: 5Y 4/2-olive gray D50: 0.1799 mm % Fines: 4.4		
-17.5	9.3						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.9	15.0	75.6	8.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.1		
#20	97.0		
#40	84.1		
#60	54.7		
#100	14.2		
#200	8.5		

* (no specification provided)

Material Description

Slightly silty SAND (SP-SM), medium to fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.5202

D₈₅= 0.4367

D₆₀= 0.2684

D₅₀= 0.2361

D₃₀= 0.1873

D₁₅= 0.1523

D₁₀= 0.0902

C_u= 2.97

C_c= 1.45

Classification

USCS= SP-SM

AASHTO=

Remarks

Location: USACE Sample # BI-CI-49A-11
Sample Number: TE Lab ID: 5054.41

Depth: 0.0 - 4.4 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

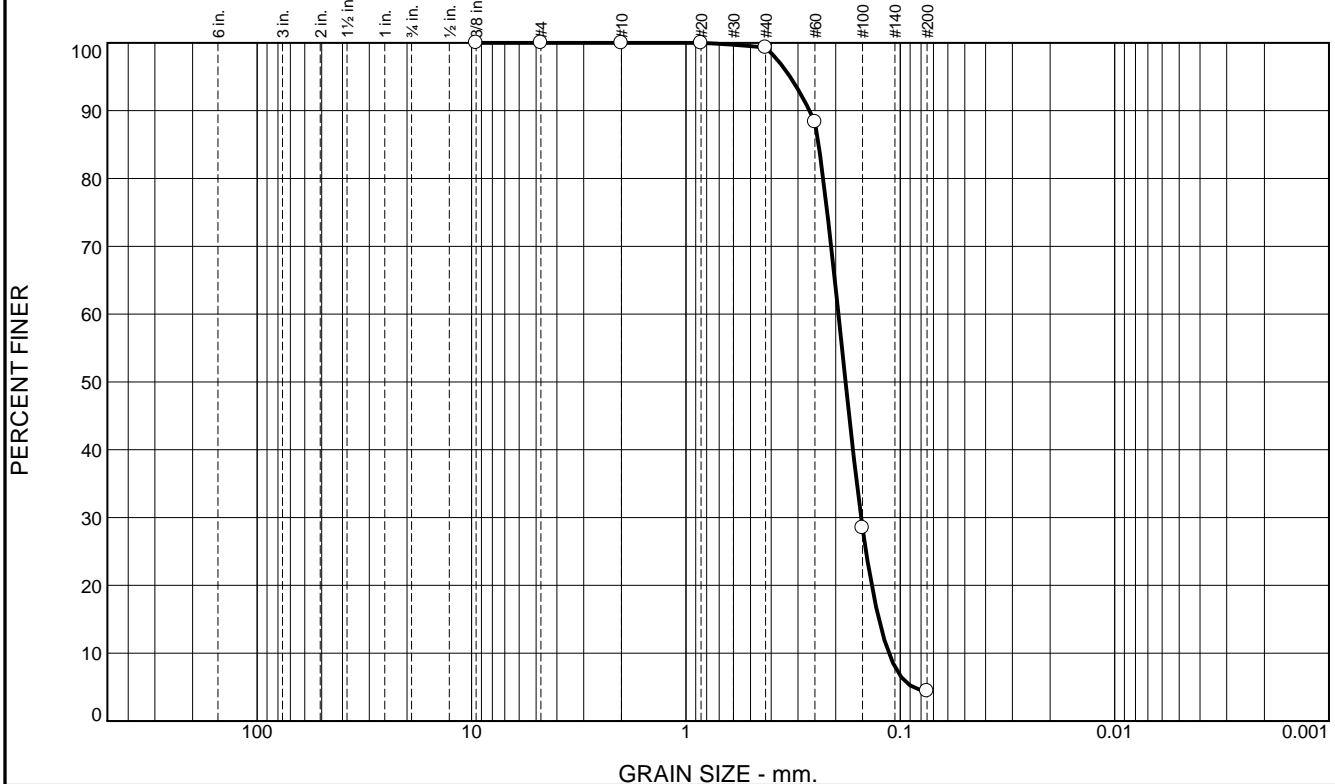
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.7	94.9	4.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	100.0		
#40	99.3		
#60	88.3		
#100	28.5		
#200	4.4		

* (no specification provided)

<u>Material Description</u>		
SAND (SP), fine grained		
PL=	<u>Atterberg Limits</u> LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.2652	D ₈₅ = 0.2406	D ₆₀ = 0.1942
D ₅₀ = 0.1799	D ₃₀ = 0.1523	D ₁₅ = 0.1259
D ₁₀ = 0.1130	C _u = 1.72	C _c = 1.06
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		

Location: USACE Sample # BI-CI-49B-11
Sample Number: TE Lab ID: 5054.42

Depth: 4.4 - 9.3 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

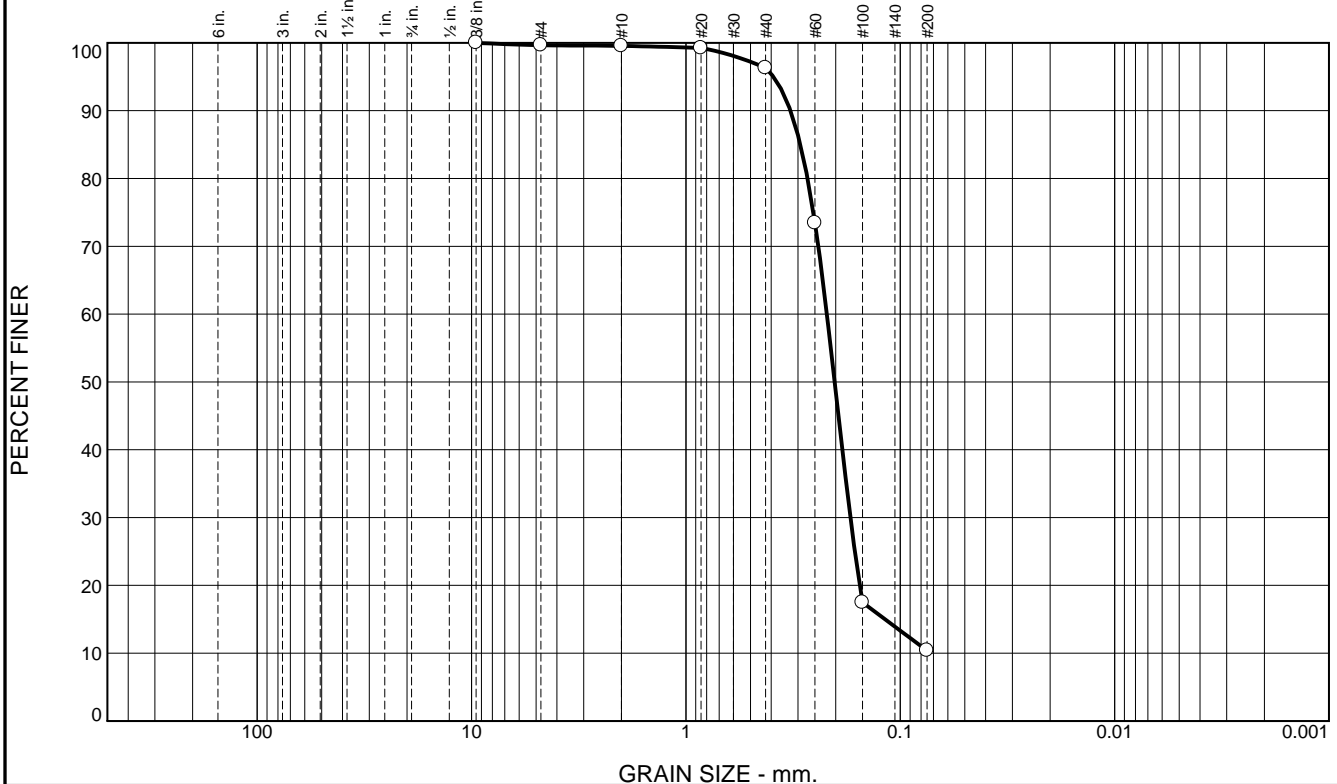
Figure

Boring Designation BI-CI-50-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-50-11		LOCATION COORDINATES E = 919,107 N = 267,722		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 14 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-24-11		STARTED 06-24-11 COMPLETED 06-24-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -13.2 Ft.			
8. TOTAL DEPTH OF BORING 13.9 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Rhonda Capes, Geologist			

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-13.2	0.0				
-15.2	2.0		SAND, silty, mostly fine-grained sand-sized quartz, some silt, little clay, dark gray (SM)	A	Classification: SP-SM Color: 5Y 3/2-dark olive gray D50: 0.2023 mm % Fines: 10.4
				NS	
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace silt, gray (SP)	B	Classification: SP-SM Color: 2.5Y 3/3-dark olive brown D50: 0.1975 mm % Fines: 7.8
			At El. -17.2 Ft., mostly fine-grained sand-sized quartz, lt. gray	NS	
				C	Classification: SP Color: 2.5Y 4/2-dark grayish brown D50: 0.195 mm % Fines: 3.5
-23.2	10.0				
			SAND, silty, mostly fine-grained sand-sized quartz, little silt, gray (SM)	NS	
-26.6	13.4				
-27.1	13.9		At El. -26.2 Ft., mostly fine-grained sand-sized quartz, some silt, gray		
			CLAY, lean, trace clay, dark gray (CL)		
NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.					

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.3	0.2	3.2	85.9	10.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.7		
#10	99.5		
#20	99.2		
#40	96.3		
#60	73.4		
#100	17.5		
#200	10.4		

<u>Material Description</u>		
Slightly silty SAND (SP-SM), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.3253	D ₈₅ = 0.2927	D ₆₀ = 0.2200
D ₅₀ = 0.2023	D ₃₀ = 0.1708	D ₁₅ = 0.1178
D ₁₀ =	C _u =	C _c =
<u>Classification</u>		
USCS= SP-SM	AASHTO=	
<u>Remarks</u>		

* (no specification provided)

Location: USACE Sample # BI-CI-50A-11
Sample Number: TE Lab ID: 5054.53

Depth: 0.0 - 1.5 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

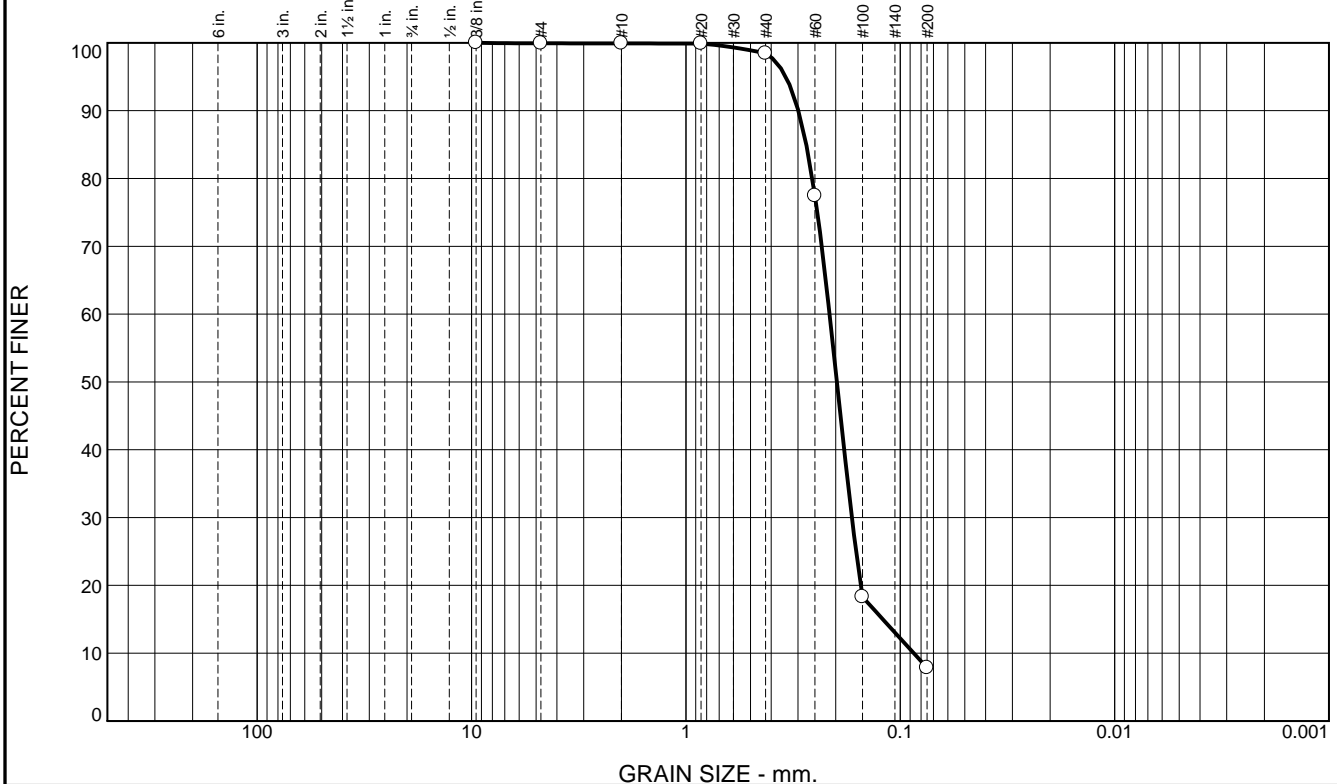
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.0	1.4	90.7	7.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.9		
#20	99.9		
#40	98.5		
#60	77.4		
#100	18.3		
#200	7.8		

* (no specification provided)

Material Description
Slightly silty SAND (SP-SM), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.2991 D₈₅= 0.2746 D₆₀= 0.2137
 D₅₀= 0.1975 D₃₀= 0.1682 D₁₅= 0.1206
 D₁₀= 0.0865 C_u= 2.47 C_c= 1.53

Classification
 USCS= SP-SM AASHTO=

Remarks

Location: USACE Sample # BI-CI-50B-11
 Sample Number: TE Lab ID: 5054.54

Depth: 2.0 - 4.0 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

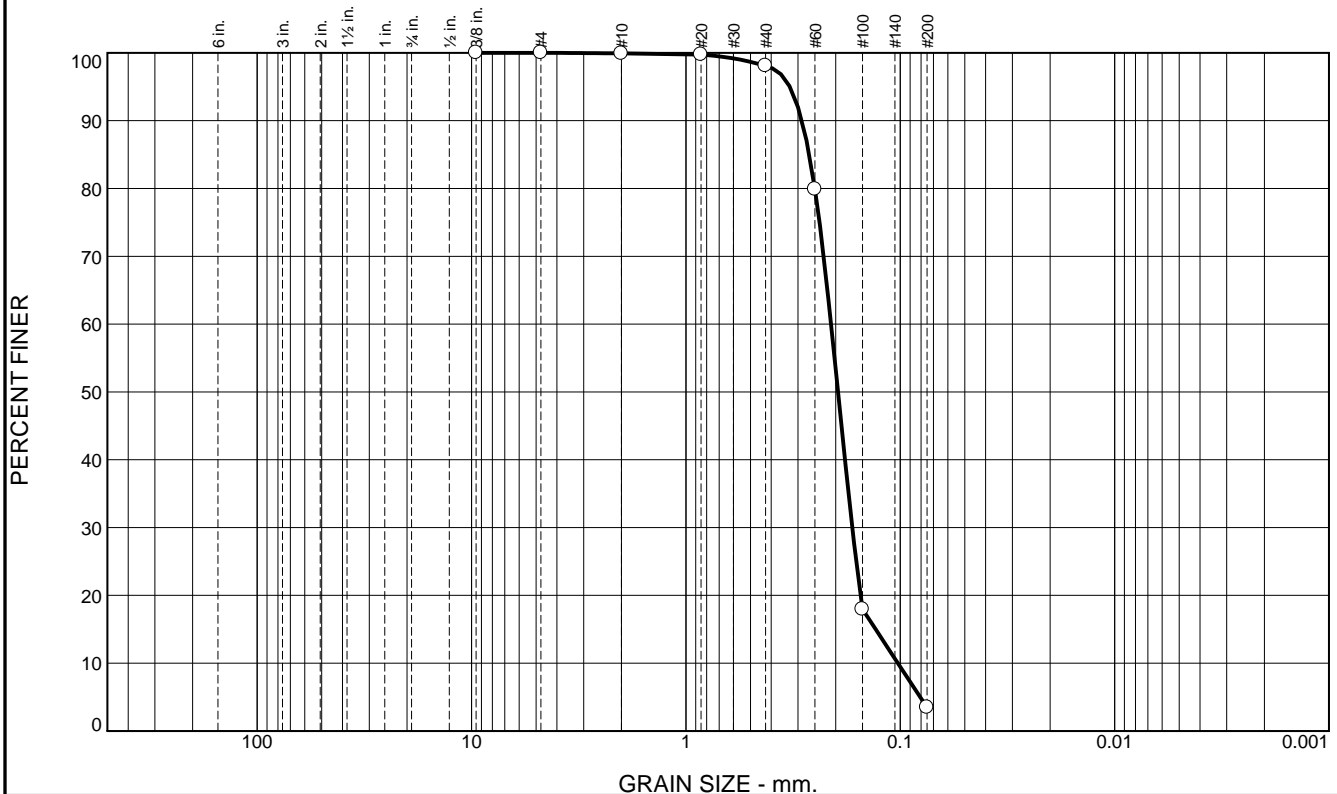
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
 Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	1.8	94.6	3.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.7		
#40	98.1		
#60	79.9		
#100	17.9		
#200	3.5		

* (no specification provided)

Material Description		
SAND (SP), fine grained		
PL=	Atterberg Limits LL=	PI=
D ₉₀ = 0.2879	Coefficients D ₈₅ = 0.2659	D ₆₀ = 0.2102
D ₅₀ = 0.1950	D ₃₀ = 0.1674	D ₁₅ = 0.1304
D ₁₀ = 0.1026	C _u = 2.05	C _c = 1.30
USCS= SP	Classification AASHTO=	
Remarks		

Location: USACE Sample # BI-CI-50C-11
Sample Number: TE Lab ID: 5054.55

Depth: 5.0 - 10.0 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

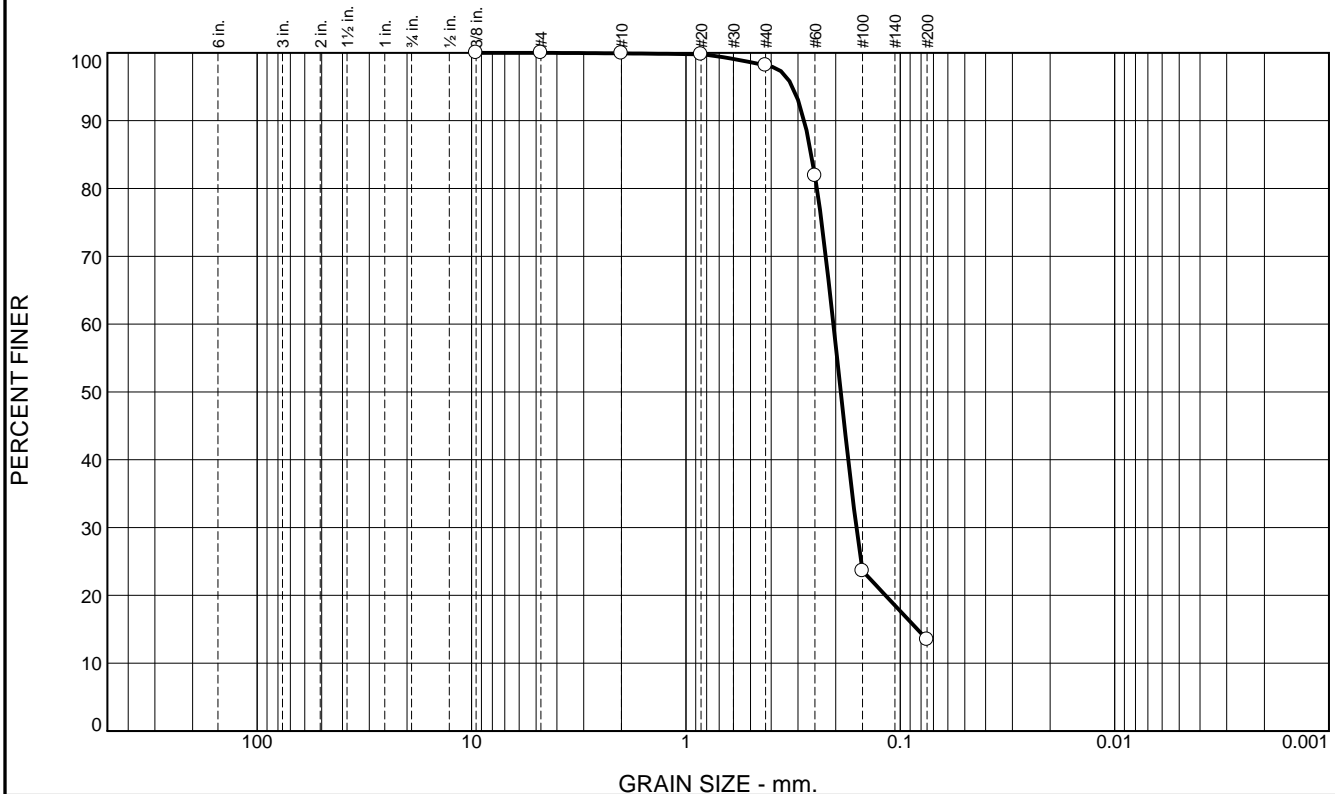
Project No: 11-2116-0057

Figure

Boring Designation BI-CI-51-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-51-11		LOCATION COORDINATES E = 920,179 N = 266,735		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 15 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-25-11		STARTED 06-25-11 COMPLETED 06-25-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -13.9 Ft.			
8. TOTAL DEPTH OF BORING 14.6 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Rhonda Capes, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-13.9	0.0						
-15.6	1.7		SAND, silty, mostly fine-grained sand-sized quartz, trace clay, gray (SM)	A	Classification: SM Color: 5Y 3/2-dark olive gray D50: 0.1895 mm % Fines: 13.5		
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace silt, gray (SP)	B	Classification: SP Color: 5Y 4/2-olive gray D50: 0.1854 mm % Fines: 4.2		
				C	Classification: SP-SM Color: 2.5Y 6/2-light brownish gray D50: 0.1752 mm % Fines: 7		
-26.5	12.6						
-28.5	14.6		SAND, silty, mostly fine-grained sand-sized quartz, some silt, little clay, gray (SM)	NS			
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	1.7	84.7	13.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.8		
#40	98.2		
#60	81.9		
#100	23.6		
#200	13.5		

* (no specification provided)

Material Description
Silty SAND (SM), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.2808 D₈₅= 0.2598 D₆₀= 0.2050
 D₅₀= 0.1895 D₃₀= 0.1602 D₁₅= 0.0832
 D₁₀= C_u= C_c=

Classification
 USCS= SM AASHTO=

Remarks

Location: USACE Sample # BI-CI-51A-11
 Sample Number: TE Lab ID: 5054.78

Depth: 0.0 - 1.7 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

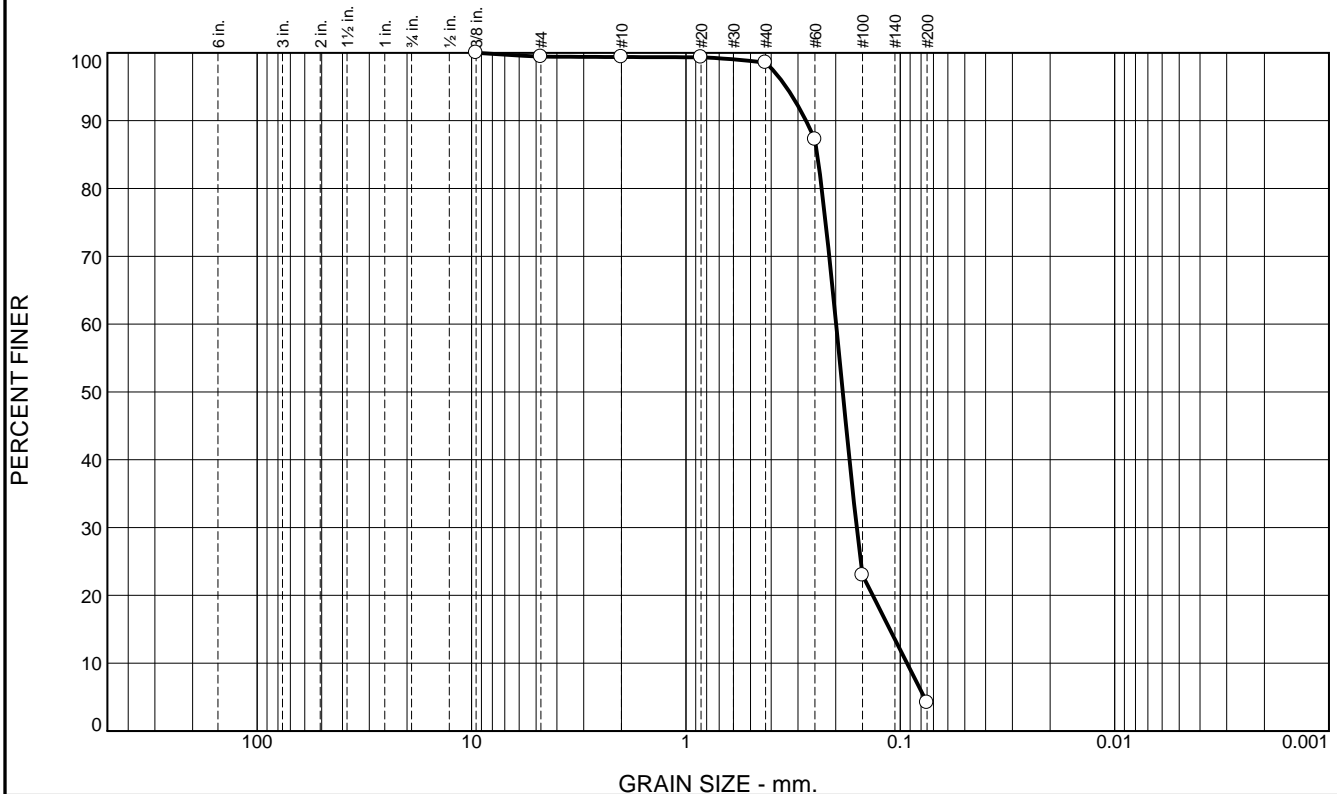
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
 Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.6	0.0	0.8	94.4	4.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.4		
#10	99.4		
#20	99.3		
#40	98.6		
#60	87.2		
#100	23.0		
#200	4.2		

* (no specification provided)

<u>Material Description</u>		
SAND (SP), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.2754	D ₈₅ = 0.2440	D ₆₀ = 0.1991
D ₅₀ = 0.1854	D ₃₀ = 0.1597	D ₁₅ = 0.1118
D ₁₀ = 0.0930	C _u = 2.14	C _c = 1.38
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		

Location: USACE Sample # BI-CI-51B-11
Sample Number: TE Lab ID: 5054.79

Depth: 1.7 - 6.7 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

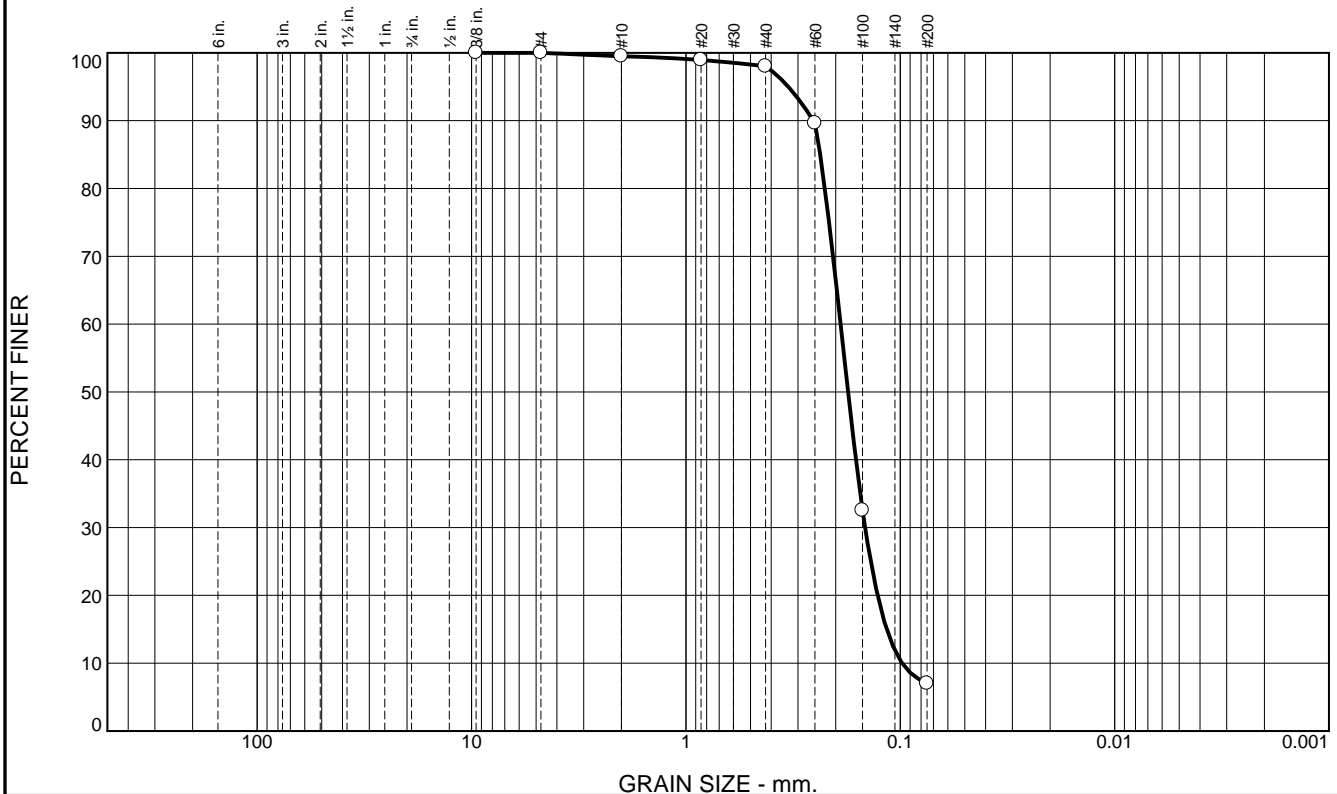
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.5	1.5	91.0	7.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.5		
#20	98.9		
#40	98.0		
#60	89.6		
#100	32.5		
#200	7.0		

* (no specification provided)

<u>Material Description</u>		
Slightly silty SAND (SP-SM), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.2543	D ₈₅ = 0.2365	D ₆₀ = 0.1897
D ₅₀ = 0.1752	D ₃₀ = 0.1460	D ₁₅ = 0.1157
D ₁₀ = 0.0980	C _u = 1.94	C _c = 1.15
<u>Classification</u>		
USCS= SP-SM	AASHTO=	
<u>Remarks</u>		

Location: USACE Sample # BI-CI-51C-11
Sample Number: TE Lab ID: 5054.80

Depth: 6.7 - 11.7 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Boring Designation BI-CI-52-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-52-11		LOCATION COORDINATES E = 910,950 N = 257,002		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc				12. TOTAL SAMPLES		DISTURBED UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 18 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-27-11		STARTED COMPLETED 06-27-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -16.6 Ft.			
8. TOTAL DEPTH OF BORING 17.4 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Michele Johnson, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-16.6	0.0						
			CLAY, lean, little fine-grained sand, dark gray (CL)				
-22.0	5.4						
-23.5	6.9		SAND, silty, some fine-grained sand, dark gray (SM)				
			CLAY, lean, little fine-grained sand, dark gray (CL)	NS			
-31.8	15.2						
-34.0	17.4		SAND, silty, some sand, trace shell fragments, dark gray (SM)				
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Boring Designation BI-CI-53-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-53-11		LOCATION COORDINATES E = 910,206 N = 255,912		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc				12. TOTAL SAMPLES		DISTURBED UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		BEARING		13. TOTAL NUMBER CORE BOXES	
6. THICKNESS OF OVERBURDEN N/A				14. WATER DEPTH 19.8 Ft.			
7. DEPTH DRILLED INTO ROCK N/A				15. DATE BORING 06-28-11		STARTED COMPLETED 06-28-11	
8. TOTAL DEPTH OF BORING 13.3 Ft.				16. ELEVATION TOP OF BORING -17.8 Ft.			
				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Michele Johnson, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-17.8	0.0						
			CLAY, fat, discontinue sand, dark gray (CH)	NS			
-29.4	11.6						
-31.1	13.3		CLAY, lean, trace sand, dark gray (CL)				
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

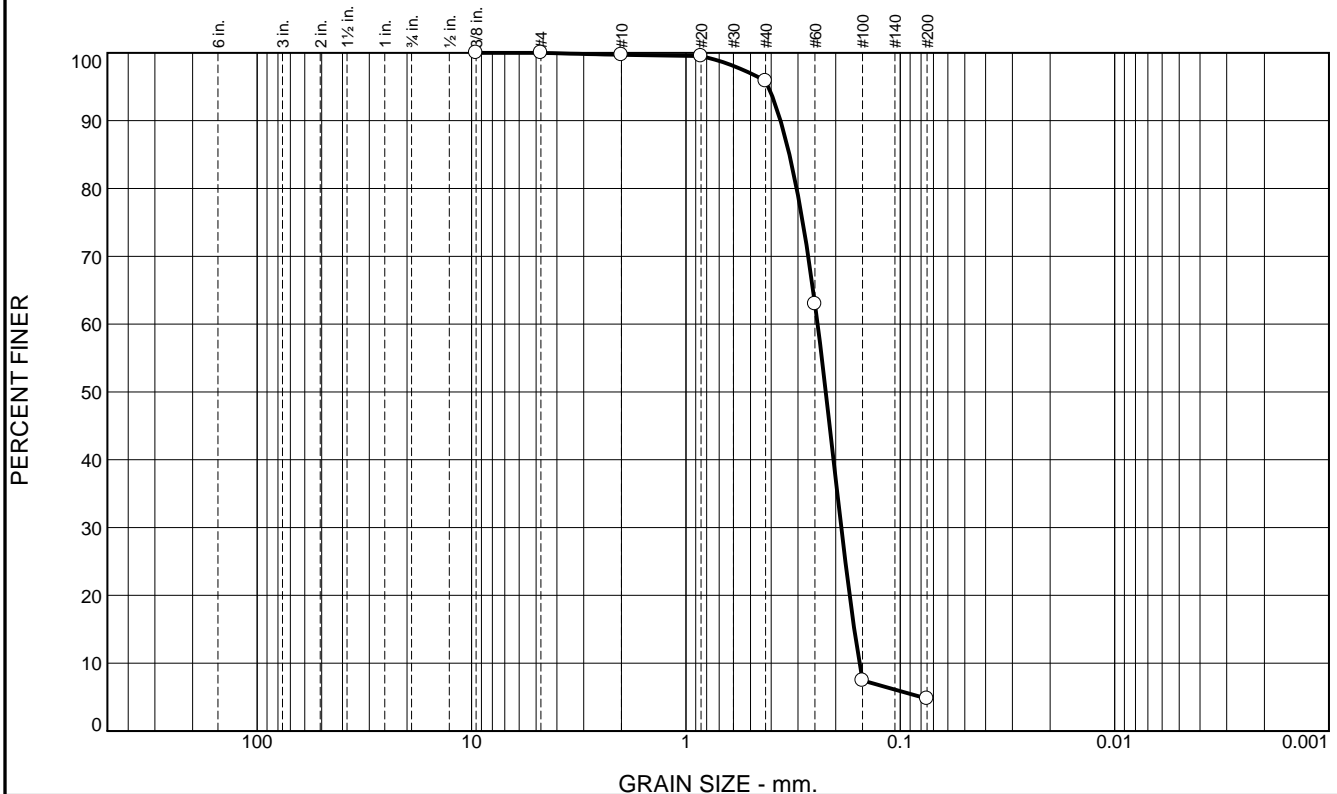
Boring Designation BI-CI-59-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-59-11		LOCATION COORDINATES E = 908,061 N = 255,917		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc				12. TOTAL SAMPLES		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		14. WATER DEPTH 15.5 Ft.	
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING		STARTED 06-28-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -13.5 Ft.		COMPLETED 06-28-11	
8. TOTAL DEPTH OF BORING 12.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%		18. SIGNATURE AND TITLE OF INSPECTOR Michele Johnson, Geologist	
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-13.5	0.0						
-14.9	1.4		CLAY, lean, some fine-grained sand, dark gray (CL)				
			CLAY, fat, dark gray (CH)				
			At El. -20.6 Ft., trace shell fragments, dark gray	NS			
-25.5	12.0						
NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.							

Boring Designation BI-CI-60-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-60-11		LOCATION COORDINATES E = 909,182 N = 256,984		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 15.9 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-28-11		STARTED 06-28-11 COMPLETED 06-28-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -13.9 Ft.			
8. TOTAL DEPTH OF BORING 12.9 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Michele Johnson, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-13.9	0.0						
			SAND, poorly-graded with silt, some sand, trace shell fragments, gray (SP-SM)	A	Classification: SP Color: 2.5Y 4/2-dark grayish brown D50: 0.2226 mm % Fines: 4.8		
-17.4	3.5						
			SAND, silty, some fine-grained silt, gray (SM)	B	Classification: SP-SM Color: 2.5Y 7/2-light gray D50: 0.2043 mm % Fines: 5.4		
				NS			
-26.8	12.9						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.3	3.8	91.1	4.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.7		
#20	99.5		
#40	95.9		
#60	63.0		
#100	7.4		
#200	4.8		

* (no specification provided)

Material Description		
SAND (SP), fine grained		
<div> <div> Atterberg Limits PL= LL= PI= </div> <div> Coefficients D₉₀= 0.3620 D₈₅= 0.3291 D₆₀= 0.2431 D₅₀= 0.2226 D₃₀= 0.1883 D₁₅= 0.1639 D₁₀= 0.1550 C_u= 1.57 C_c= 0.94 </div> <div> Classification USCS= SP AASHTO= </div> <div> Remarks </div> </div>		

Location: USACE Sample # BI-CI-60A-11
Sample Number: TE Lab ID: 5054.92

Depth: 0.0 - 3.5 (ft)

Date: 7/15/11

Thompson Engineering

Mobile, Alabama


Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

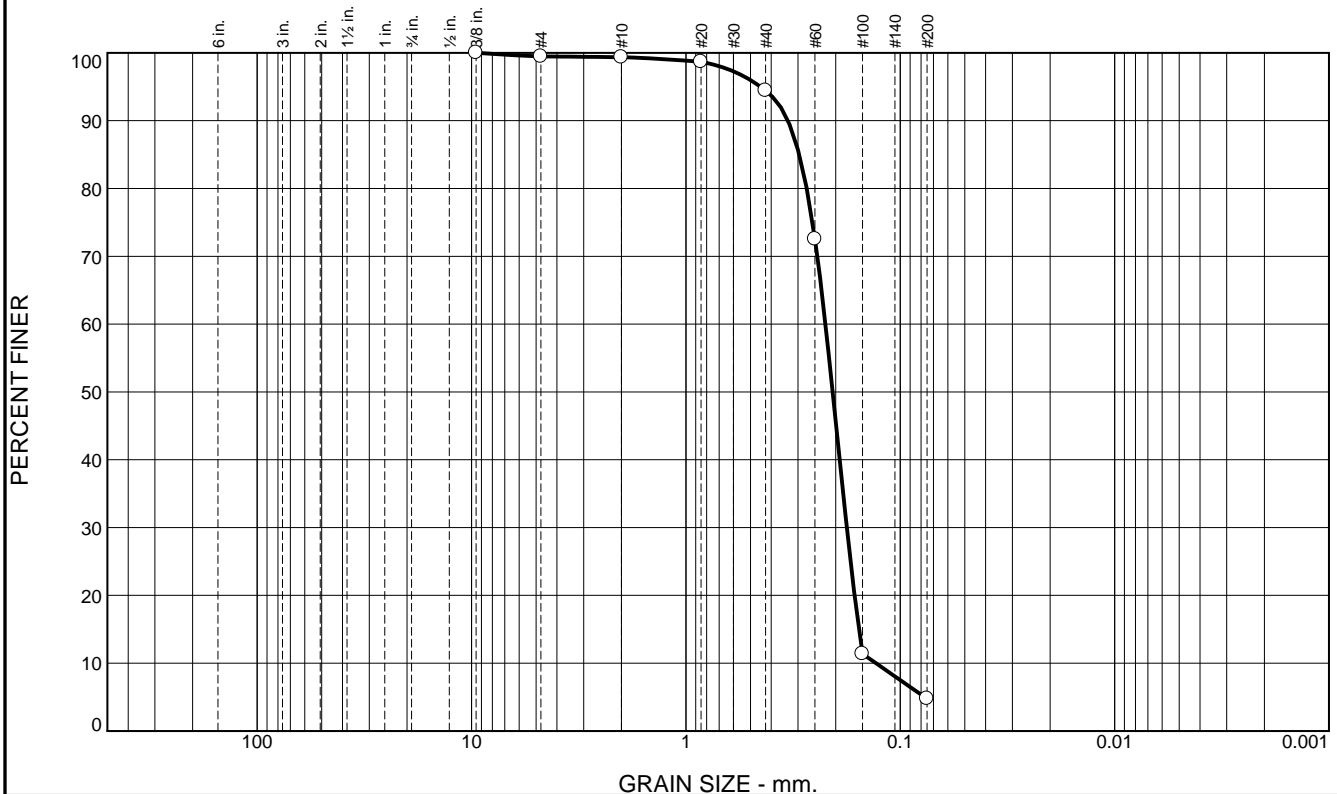
Project No: 11-2116-0057

Figure

Boring Designation BI-CI-61-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-61-11		LOCATION COORDINATES E = 910,150 N = 258,026		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 14.6 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-28-11		STARTED 06-28-11 COMPLETED 06-28-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -13.4 Ft.			
8. TOTAL DEPTH OF BORING 12.4 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Michele Johnson, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-13.4	0.0						
			SAND, poorly-graded, trace shell fragments, gray (SP) At El. -17.4 Ft., trace shell fragments, gray	A	Classification: SP Color: 2.5Y 5/2-grayish brown D50: 0.2066 mm % Fines: 4.8		
				B	Classification: SP Color: 2.5Y 6/2-light brownish gray D50: 0.1925 mm % Fines: 3.3		
				NS			
-25.8	12.4						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.5	0.1	5.0	89.6	4.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.5		
#10	99.4		
#20	98.7		
#40	94.4		
#60	72.5		
#100	11.4		
#200	4.8		

* (no specification provided)

Material Description		
SAND (SP), fine grained		
<div> <div> Atterberg Limits PL= LL= PI= </div> <div> Coefficients D₉₀= 0.3345 D₈₅= 0.2963 D₆₀= 0.2234 D₅₀= 0.2066 D₃₀= 0.1775 D₁₅= 0.1559 D₁₀= 0.1299 C_u= 1.72 C_c= 1.09 </div> <div> Classification USCS= SP AASHTO= </div> <div> Remarks </div> </div>		

Location: USACE Sample # BI-CI-61A-11
Sample Number: TE Lab ID: 5054.85

Depth: 0.0 - 4.0 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

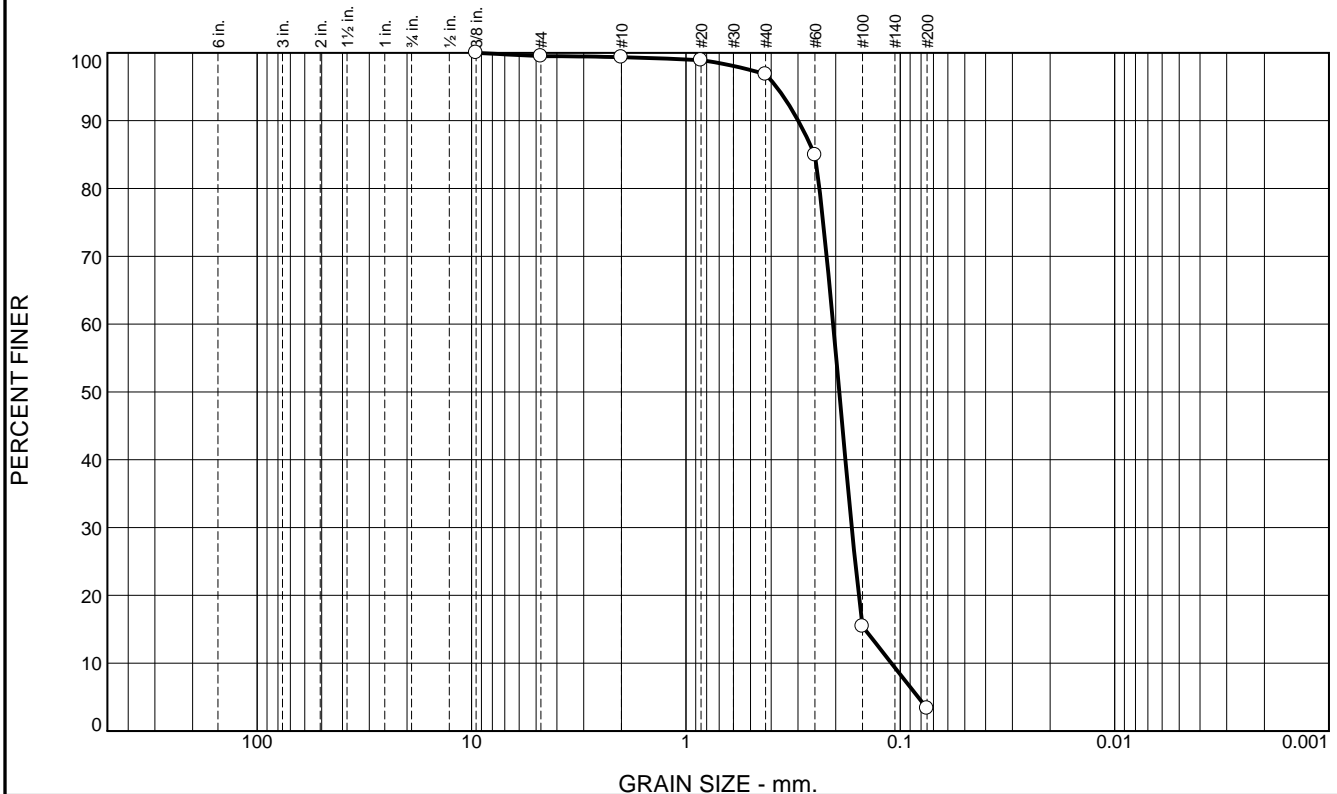
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.5	0.1	2.6	93.5	3.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.5		
#10	99.4		
#20	98.9		
#40	96.8		
#60	84.9		
#100	15.4		
#200	3.3		

* (no specification provided)

Material Description		
SAND (SP), fine grained		
<div> <div> Atterberg Limits </div> <div> PL= LL= PI= </div> </div>		
<div> <div> Coefficients </div> <div> D₉₀= 0.2996 D₈₅= 0.2505 D₆₀= 0.2055 D₅₀= 0.1925 D₃₀= 0.1684 D₁₅= 0.1465 D₁₀= 0.1100 C_u= 1.87 C_c= 1.26 </div> </div>		
<div> <div> Classification </div> <div> USCS= SP AASHTO= </div> </div>		
<div> <div> Remarks </div> </div>		

Location: USACE Sample # BI-CI-61B-11
Sample Number: TE Lab ID: 5054.86

Depth: 4.0 - 7.1 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

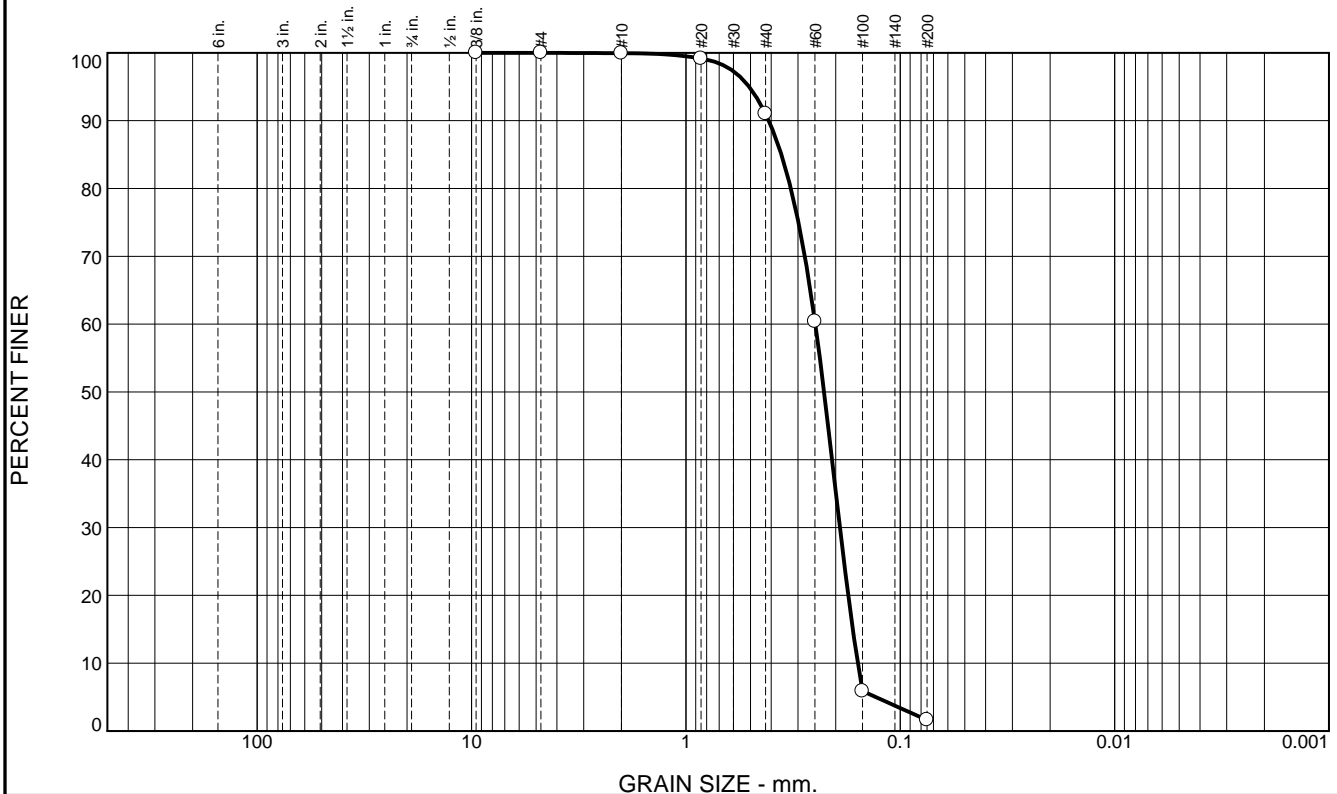
Project No: 11-2116-0057

Figure

Boring Designation BI-CI-62-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-62-11		LOCATION COORDINATES E = 909,022 N = 259,043		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 11.9 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-28-11		STARTED 06-28-11 COMPLETED 06-28-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -10.8 Ft.			
8. TOTAL DEPTH OF BORING 10.3 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Michele Johnson, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-10.8	0.0						
			SAND, poorly-graded, trace shell fragments, gray (SP)	A	Classification: SP Color: 2.5Y 5/2-grayish brown D50: 0.2268 mm % Fines: 1.6		
			At El. -15.8 Ft., trace shell fragments, gray	B	Classification: SP Color: 2.5Y 6/2-light brownish gray D50: 0.1865 mm % Fines: 4.1		
-21.1	10.3						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	8.9	89.4	1.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.2		
#40	91.0		
#60	60.4		
#100	5.9		
#200	1.6		

* (no specification provided)

Material Description
SAND (SP), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.4108 D₈₅= 0.3586 D₆₀= 0.2491
 D₅₀= 0.2268 D₃₀= 0.1911 D₁₅= 0.1666
 D₁₀= 0.1579 C_u= 1.58 C_c= 0.93

Classification
 USCS= SP AASHTO=

Remarks

Location: USACE Sample # BI-CI-62A-11
 Sample Number: TE Lab ID: 5054.87

Depth: 0.0 - 5.0 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

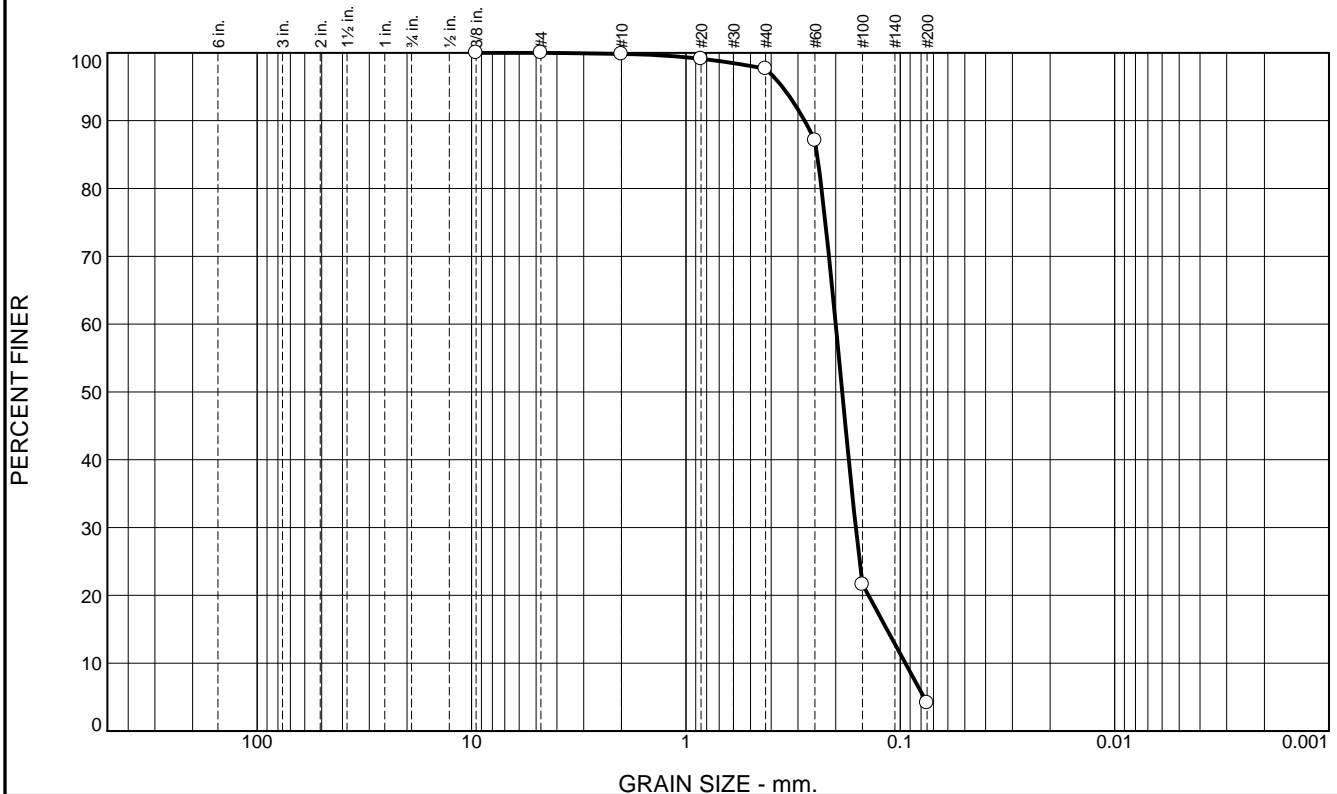
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
 Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	2.1	93.6	4.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.8		
#20	99.1		
#40	97.7		
#60	87.1		
#100	21.6		
#200	4.1		

* (no specification provided)

Material Description		
SAND (SP), fine grained		
PL=	Atterberg Limits LL=	PI=
D ₉₀ = 0.2796	Coefficients D ₈₅ = 0.2444	D ₆₀ = 0.1999
D ₅₀ = 0.1865	D ₃₀ = 0.1613	D ₁₅ = 0.1154
D ₁₀ = 0.0947	C _u = 2.11	C _c = 1.37
USCS= SP	Classification AASHTO=	
Remarks		

Location: USACE Sample # BI-CI-62B-11
Sample Number: TE Lab ID: 5054.88

Depth: 5.0 - 10.0 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

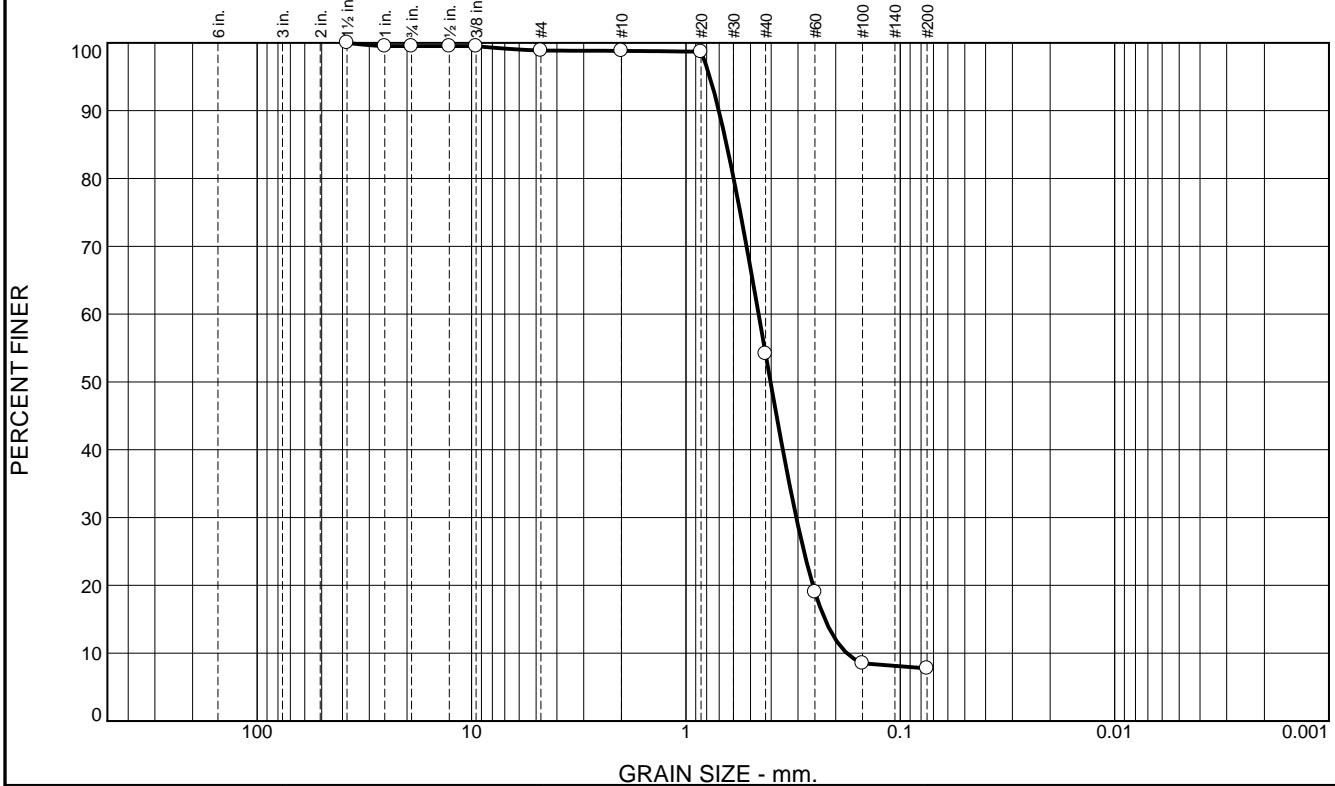
Project No: 11-2116-0057

Figure

Boring Designation BI-CI-63-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-63-11		LOCATION COORDINATES E = 907,980 N = 257,957		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 11.8 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-28-11		STARTED 06-28-11 COMPLETED 06-28-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -11.4 Ft.			
8. TOTAL DEPTH OF BORING 12.3 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Michele Johnson, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-11.4	0.0						
			SAND, poorly-graded, trace shell fragments, gray (SP) At El. -15.4 Ft., trace shell fragments, lt. gray	A	Classification: SP-SM Color: 2.5Y 5/2-grayish brown D50: 0.403 mm % Fines: 7.8		
				B	Classification: SP Color: 2.5Y 6/2-light brownish gray D50: 0.203 mm % Fines: 2.8		
				C	Classification: SP-SM Color: 2.5Y 5.5/2-brownish gray D50: 0.1592 mm % Fines: 8.2		
				NS			
-23.7	12.3						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.5	0.6	0.1	44.7	46.3	7.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.5	100.0		
1	99.5		
.75	99.5		
.5	99.5		
.375	99.5		
#4	98.9		
#10	98.8		
#20	98.7		
#40	54.1		
#60	19.0		
#100	8.5		
#200	7.8		

* (no specification provided)

Material Description

Slightly silty SAND (SP-SM), medium to fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.7020 D₈₅= 0.6456 D₆₀= 0.4579
D₅₀= 0.4030 D₃₀= 0.3058 D₁₅= 0.2247
D₁₀= 0.1774 C_u= 2.58 C_c= 1.15

Classification

USCS= SP-SM AASHTO=

Remarks

Location: USACE Sample # BI-CI-63A-11
Sample Number: TE Lab ID: 5054.89

Depth: 0.0 - 4.0 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

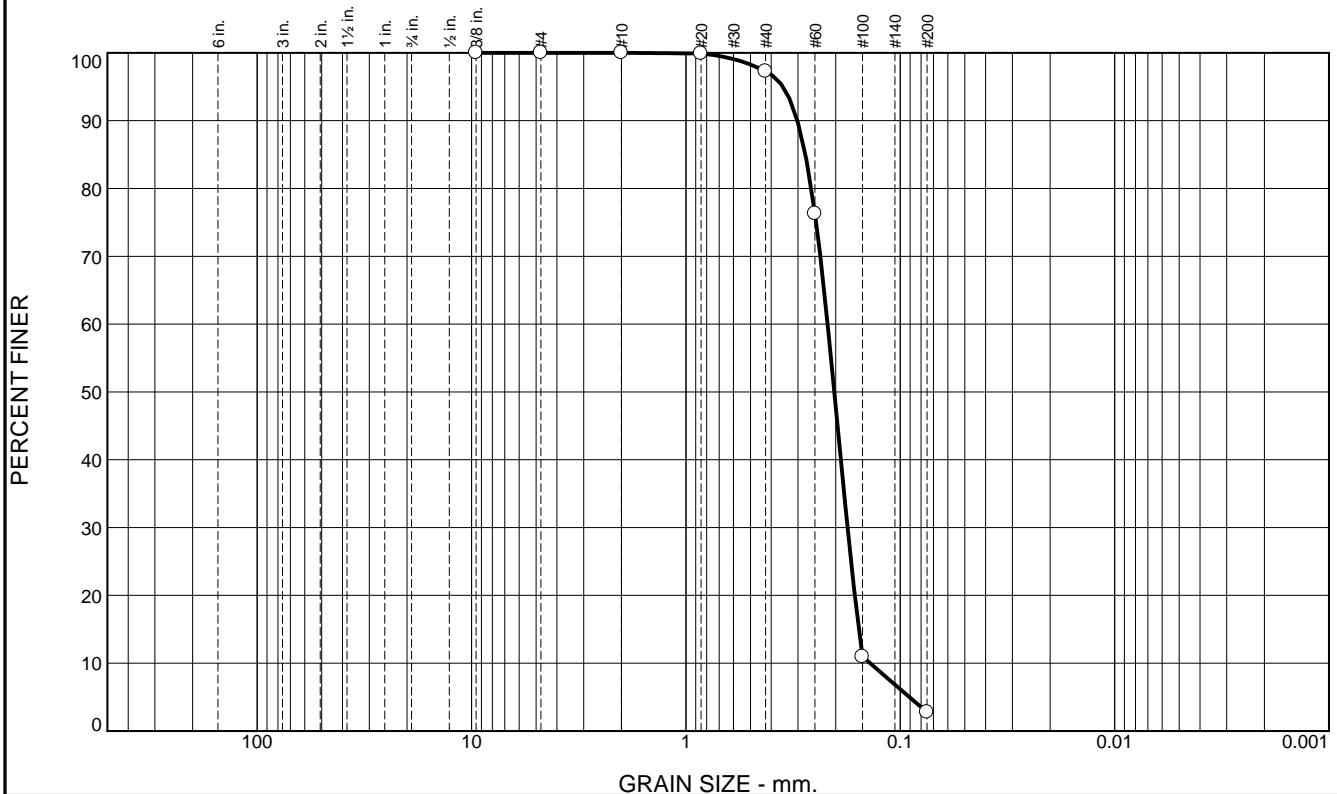
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	2.7	94.5	2.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	97.3		
#60	76.3		
#100	11.0		
#200	2.8		

* (no specification provided)

<u>Material Description</u>		
SAND (SP), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.3023	D ₈₅ = 0.2772	D ₆₀ = 0.2182
D ₅₀ = 0.2030	D ₃₀ = 0.1762	D ₁₅ = 0.1561
D ₁₀ = 0.1383	C _u = 1.58	C _c = 1.03
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		

Location: USACE Sample # BI-CI-63B-11
Sample Number: TE Lab ID: 5054.90

Depth: 4.0 - 8.2 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

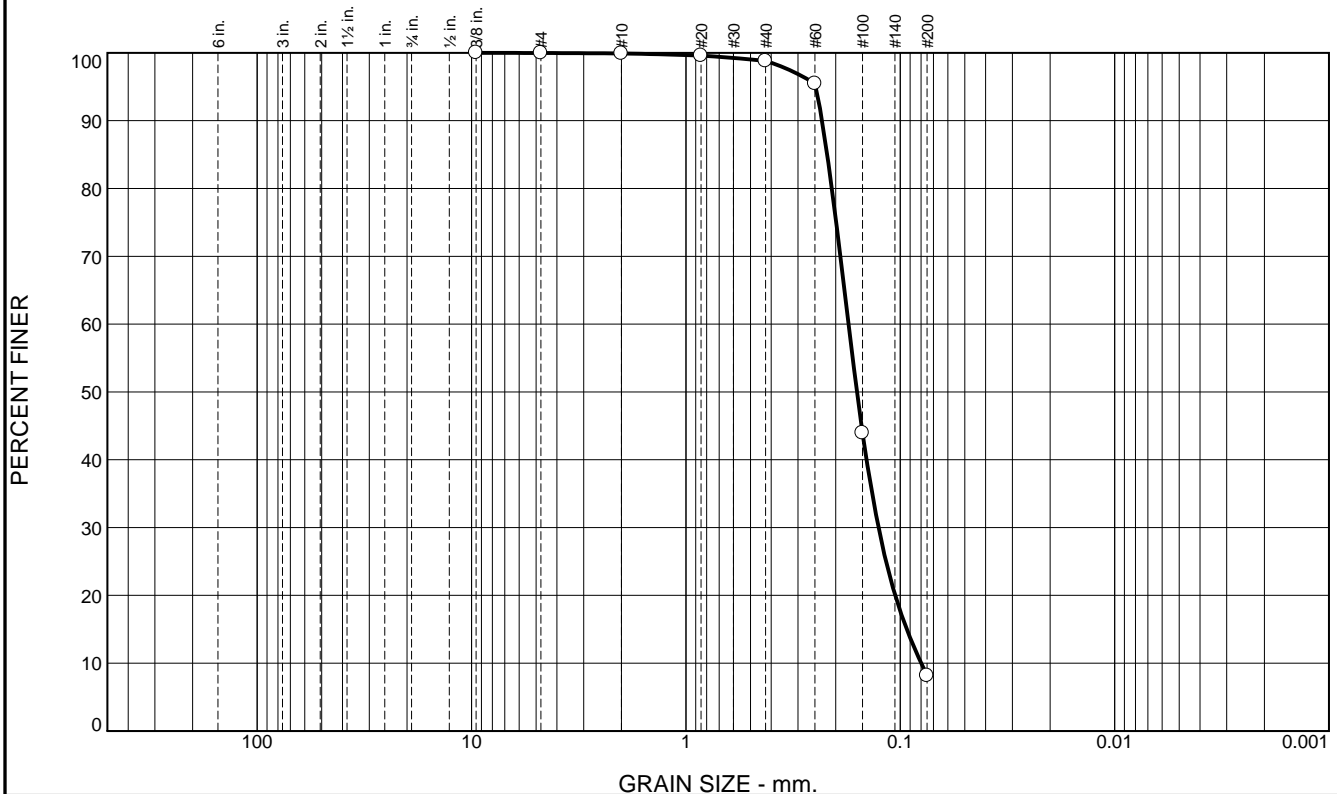
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	1.1	90.6	8.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.6		
#40	98.8		
#60	95.5		
#100	43.9		
#200	8.2		

* (no specification provided)

Material Description

Slightly silty SAND (SP-SM), medium to fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.2317

D₈₅= 0.2191

D₆₀= 0.1743

D₅₀= 0.1592

D₃₀= 0.1264

D₁₅= 0.0933

D₁₀= 0.0798

C_u= 2.18

C_c= 1.15

Classification

USCS= SP-SM

AASHTO=

Remarks

Location: USACE Sample # BI-CI-63C-11
Sample Number: TE Lab ID: 5054.91

Depth: 8.2 - 9.0 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Boring Designation BI-CI-64-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-64-11		LOCATION COORDINATES E = 907,005 N = 256,817		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc				12. TOTAL SAMPLES		DISTURBED 0 UNDISTURBED (UD)	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 12.6 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-28-11		STARTED 06-28-11 COMPLETED 06-28-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -11.9 Ft.			
8. TOTAL DEPTH OF BORING 10.9 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Michele Johnson, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-11.9	0.0		CLAY, lean, dark gray (CL)	NS			
-20.2	8.3						
-20.7	8.8		SAND, poorly-graded, mostly medium-grained sand-sized quartz, gray (SP)				
-22.8	10.9		CLAY, fat, dark gray (CH)				
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

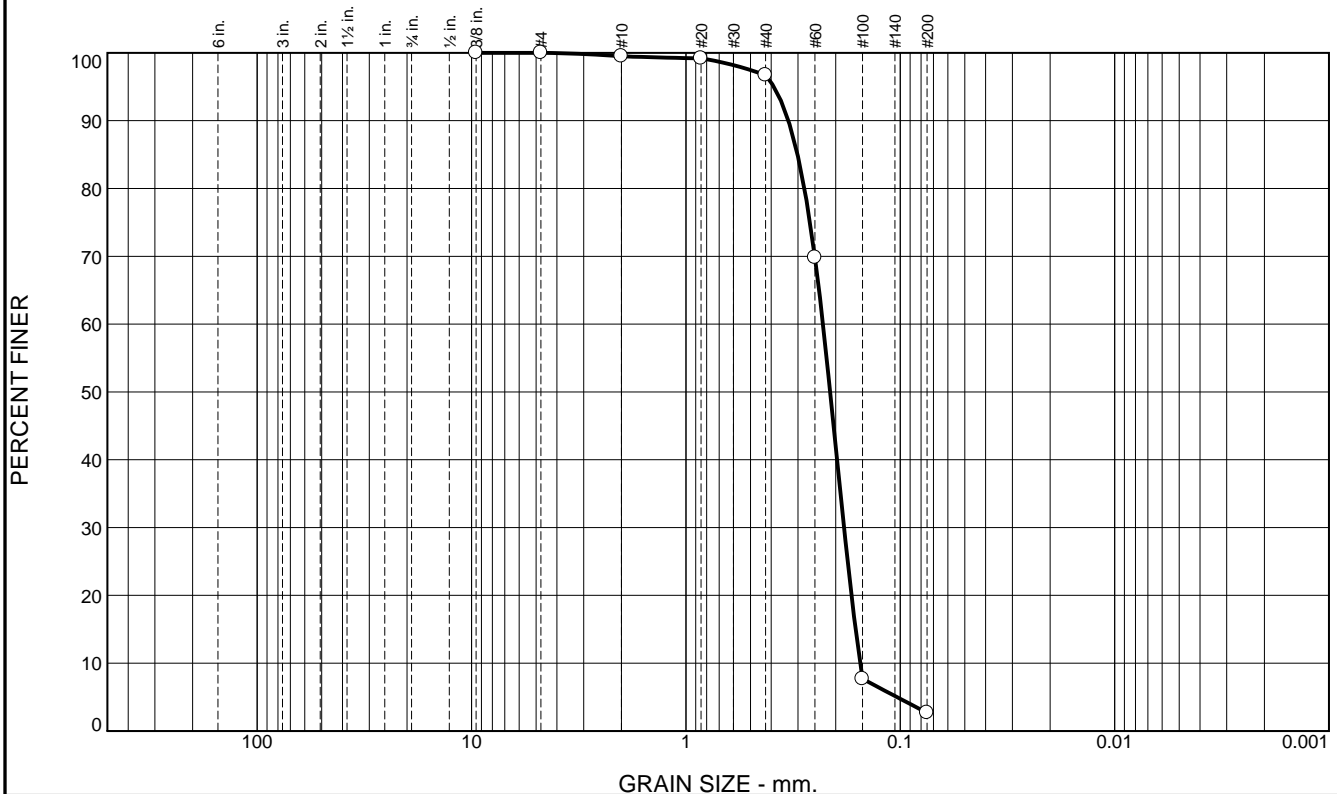
Boring Designation BI-CI-65-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-65-11		LOCATION COORDINATES E = 906,007 N = 255,736		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc		12. TOTAL SAMPLES		DISTURBED		UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		BEARING		13. TOTAL NUMBER CORE BOXES	
6. THICKNESS OF OVERBURDEN N/A		7. DEPTH DRILLED INTO ROCK N/A		8. TOTAL DEPTH OF BORING 11.7 Ft.		14. WATER DEPTH 11.6 Ft.	
						15. DATE BORING STARTED 06-28-11 COMPLETED 06-28-11	
						16. ELEVATION TOP OF BORING -11.0 Ft.	
						17. TOTAL RECOVERY FOR BORING 100%	
						18. SIGNATURE AND TITLE OF INSPECTOR Michele Johnson, Geologist	
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-11.0	0.0						
-13.0	2.0		CLAY, lean, dark gray (CL)	NS			
			CLAY, fat, dark gray (CH)				
-22.7	11.7						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Boring Designation BI-CI-67-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-67-11		LOCATION COORDINATES E = 917,834 N = 270,914		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 4		DISTURBED 4 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 10 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-23-11		STARTED 06-23-11 COMPLETED 06-23-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -9.6 Ft.			
8. TOTAL DEPTH OF BORING 14.5 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Rhonda Capes, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-9.6	0.0						
-11.6	2.0		SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace shell fragments, gray and black (SP)	A	Classification: SP Color: 5Y 6/2-light olive gray D50: 0.2123 mm % Fines: 2.7		
-16.1	6.5		SAND, silty, mostly fine-grained sand-sized quartz, trace silt, gray (SM)	B	Classification: SP-SM Color: 5Y 4/2-olive gray D50: 0.1999 mm % Fines: 9.4		
-24.1	14.5		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, some shell fragments, gray (SP) At El. -18.6 Ft., mostly fine-grained sand-sized quartz, lt. gray	C	Classification: SP Color: 2.5Y 5/2-grayish brown D50: 0.204 mm % Fines: 3		
				D	Classification: SP Color: 2.5Y 6/1-gray D50: 0.193 mm % Fines: 2.3		
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.5	2.8	94.0	2.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.5		
#20	99.2		
#40	96.7		
#60	69.8		
#100	7.7		
#200	2.7		

* (no specification provided)

Material Description
SAND (SP), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.3327 D₈₅= 0.3016 D₆₀= 0.2295
 D₅₀= 0.2123 D₃₀= 0.1829 D₁₅= 0.1616
 D₁₀= 0.1539 C_u= 1.49 C_c= 0.95

Classification
 USCS= SP AASHTO=

Remarks

Location: USACE Sample # BI-CI-67A-11
 Sample Number: TE Lab ID: 5054.43

Depth: 0.0 - 2.0 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

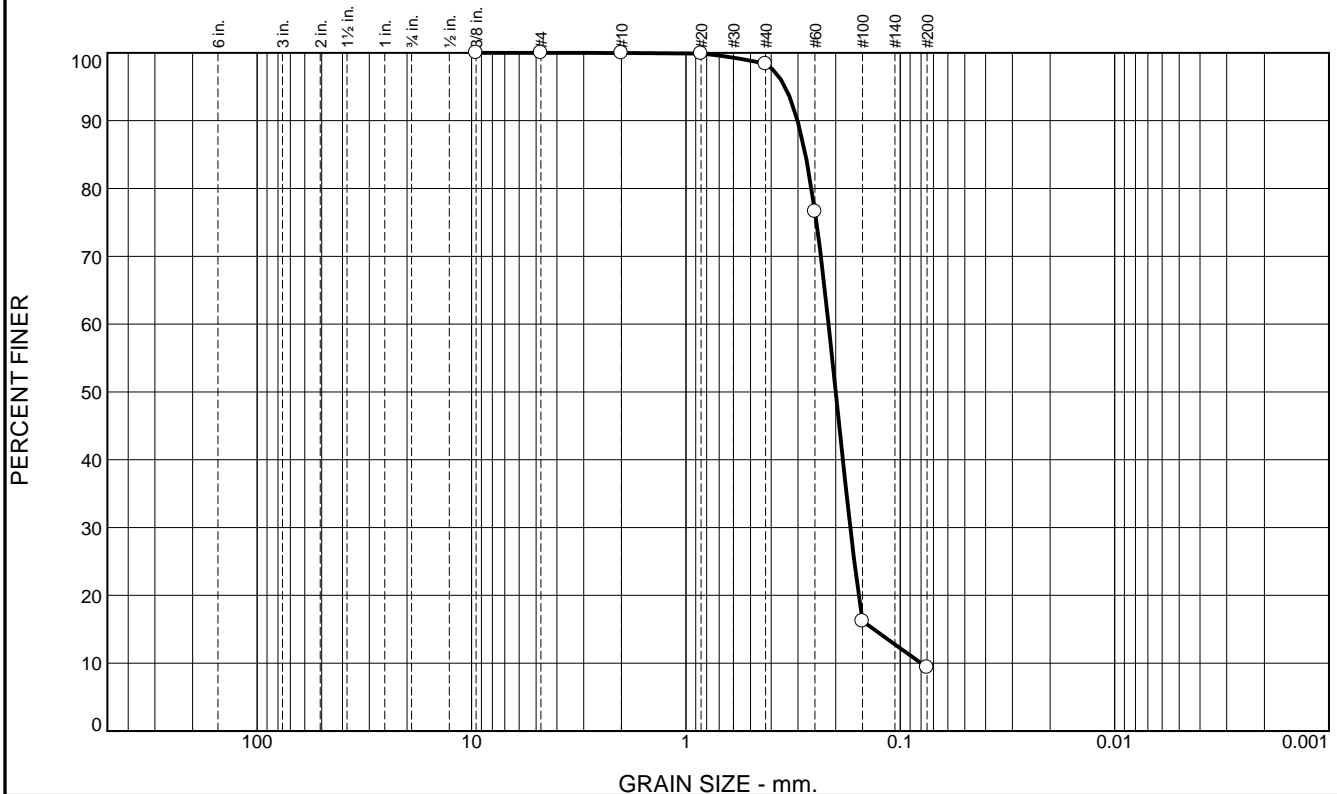
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
 Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.6	89.0	9.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	98.4		
#60	76.6		
#100	16.2		
#200	9.4		

* (no specification provided)

<u>Material Description</u>		
Slightly silty SAND (SP-SM), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.3017	D ₈₅ = 0.2770	D ₆₀ = 0.2160
D ₅₀ = 0.1999	D ₃₀ = 0.1711	D ₁₅ = 0.1329
D ₁₀ = 0.0800	C _u = 2.70	C _c = 1.69
<u>Classification</u>		
USCS= SP-SM	AASHTO=	
<u>Remarks</u>		

Location: USACE Sample # BI-CI-67B-11
Sample Number: TE Lab ID: 5054.44

Depth: 2.0 - 6.5 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

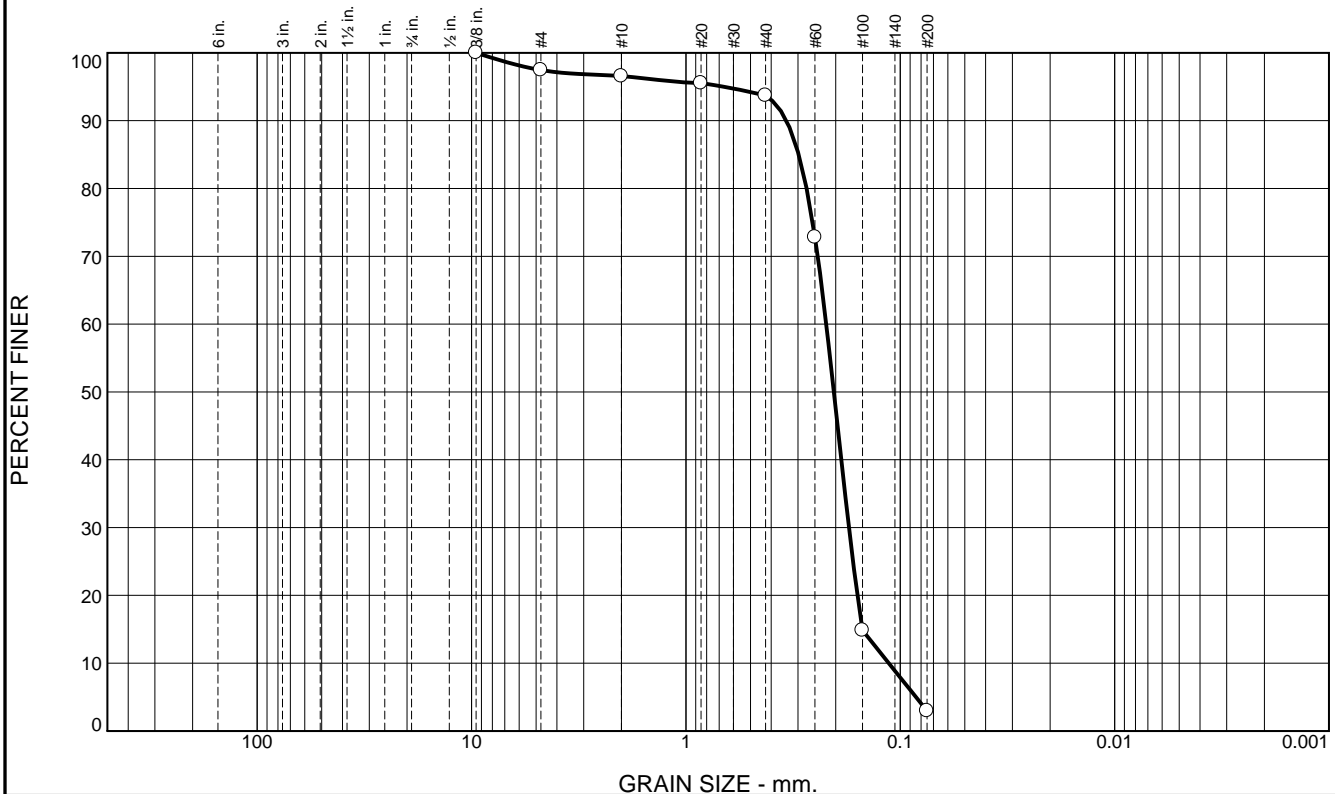
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	2.5	0.9	2.9	90.7	3.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	97.5		
#10	96.6		
#20	95.5		
#40	93.7		
#60	72.8		
#100	14.8		
#200	3.0		

* (no specification provided)

Material Description		
SAND (SP), fine grained		
<div> <div>PL=</div> <div> <div>Atterberg Limits</div> <div>LL=</div> <div>PI=</div> </div> </div>		
<div> <div> <div>D₉₀= 0.3399</div> <div>D₅₀= 0.2040</div> <div>D₁₀= 0.1131</div> </div> <div> <div>Coefficients</div> <div>D₈₅= 0.2980</div> <div>D₃₀= 0.1735</div> <div>C_u= 1.96</div> </div> <div> <div>D₆₀= 0.2214</div> <div>D₁₅= 0.1503</div> <div>C_c= 1.20</div> </div> </div>		
<div> <div>USCS= SP</div> <div> <div>Classification</div> <div>AASHTO=</div> </div> </div>		
Remarks		

Location: USACE Sample # BI-CI-67C-11
Sample Number: TE Lab ID: 5054.45

Depth: 6.5 - 11.5 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

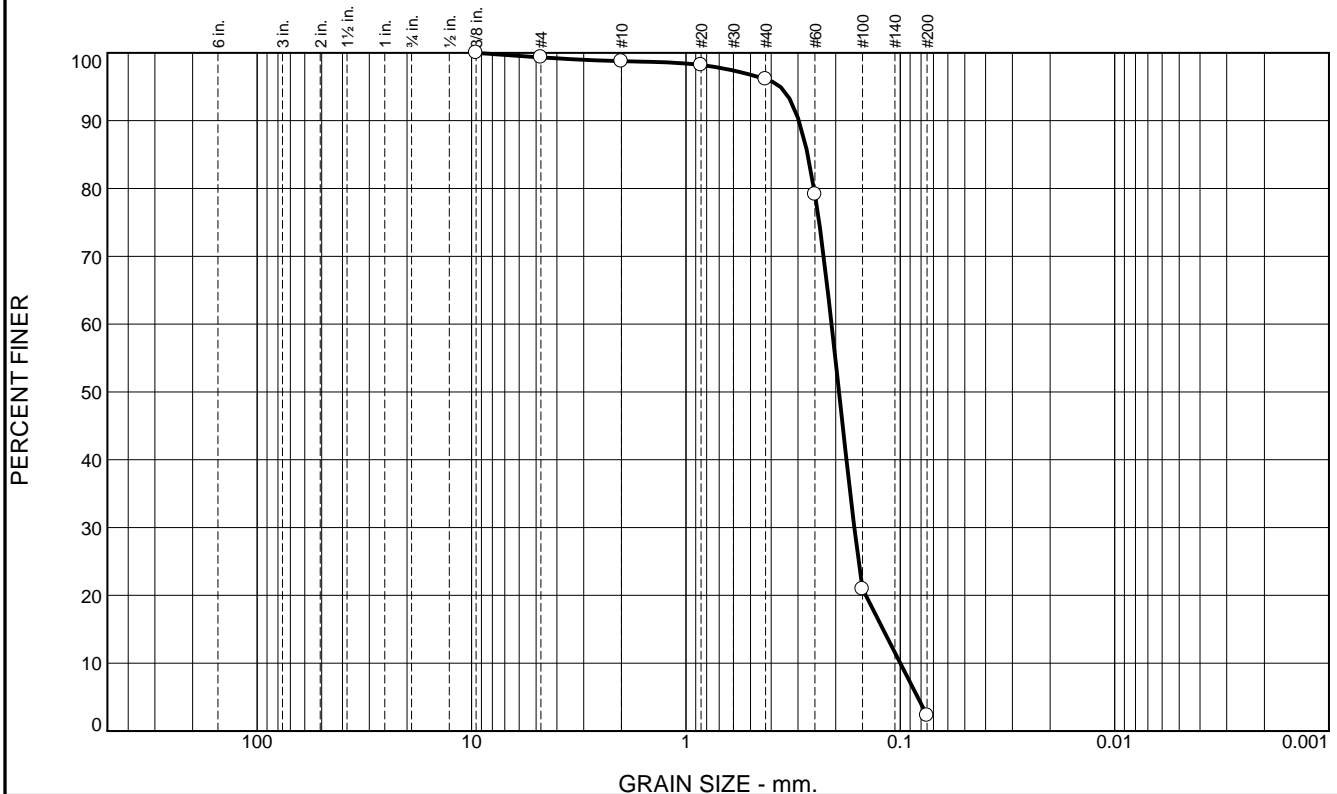
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.7	0.5	2.7	93.8	2.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.3		
#10	98.8		
#20	98.2		
#40	96.1		
#60	79.1		
#100	20.9		
#200	2.3		

* (no specification provided)

<u>Material Description</u>		
SAND (SP), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.2974	D ₈₅ = 0.2704	D ₆₀ = 0.2091
D ₅₀ = 0.1930	D ₃₀ = 0.1638	D ₁₅ = 0.1203
D ₁₀ = 0.0999	C _u = 2.09	C _c = 1.28
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		

Location: USACE Sample # BI-CI-67D-11
Sample Number: TE Lab ID: 5054.46

Depth: 11.5 - 14.5 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

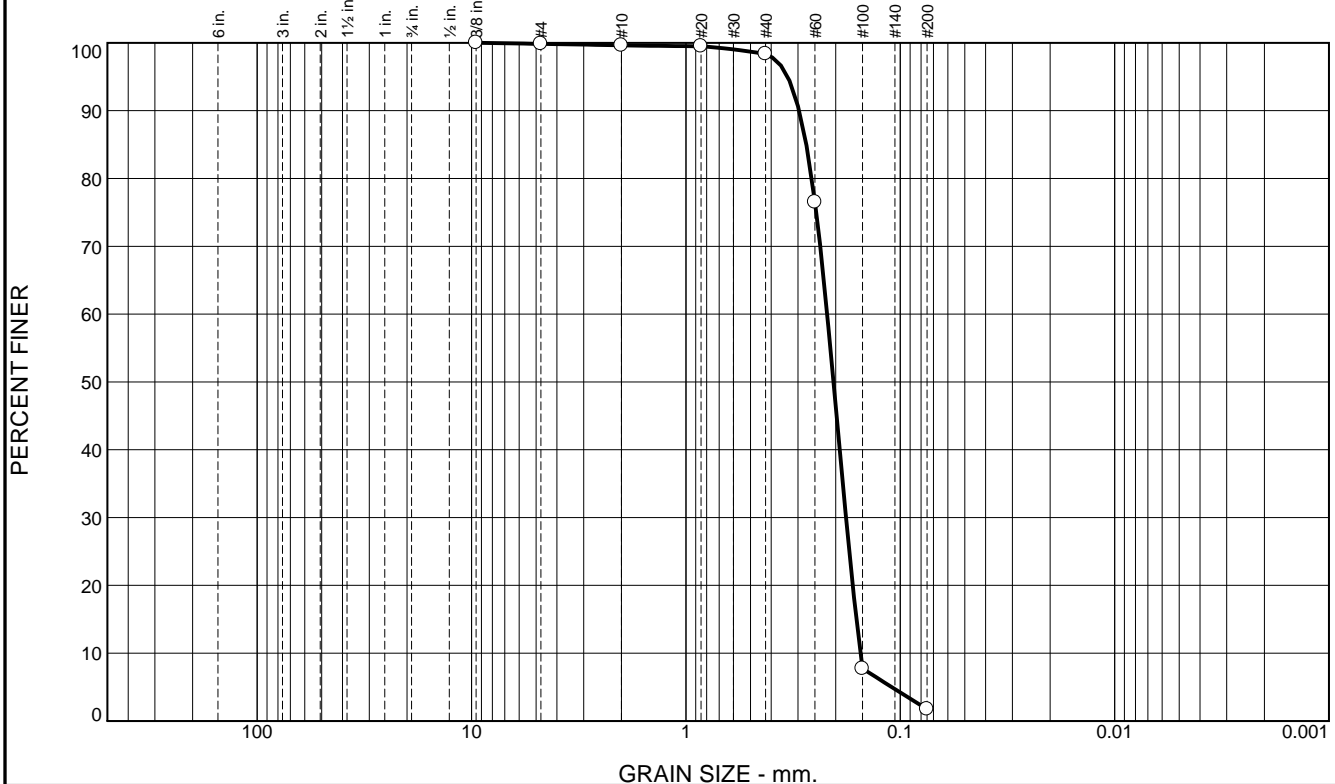
Project No: 11-2116-0057

Figure

Boring Designation BI-CI-70-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-70-11		LOCATION COORDINATES E = 921,442 N = 273,715		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 9 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-23-11		STARTED 06-23-11 COMPLETED 06-23-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -8.1 Ft.			
8. TOTAL DEPTH OF BORING 11.4 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Rhonda Capes, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-8.1	0.0						
-11.0	2.9		SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 6/2-light brownish gray D50: 0.2047 mm % Fines: 1.7		
-14.1	6.0		SAND, silty, mostly fine-grained sand-sized quartz, little silt, gray (SM)	B	Classification: SP-SM Color: 2.5Y 5/2-grayish brown D50: 0.1829 mm % Fines: 7.3		
-16.1	8.0		CLAY, lean, gray (CL)	NS			
-19.5	11.4		SAND, silty, mostly fine-grained sand-sized quartz, some silt, gray (SM)				
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.2	1.2	96.7	1.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.8		
#10	99.6		
#20	99.5		
#40	98.4		
#60	76.5		
#100	7.7		
#200	1.7		

* (no specification provided)

Material Description
SAND (SP), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.2966 D₈₅= 0.2745 D₆₀= 0.2193
 D₅₀= 0.2047 D₃₀= 0.1791 D₁₅= 0.1602
 D₁₀= 0.1534 C_u= 1.43 C_c= 0.95

Classification
 USCS= SP AASHTO=

Remarks

Location: USACE Sample # BI-CI-70A-11
 Sample Number: TE Lab ID: 5054.47

Depth: 0.0 - 2.9 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

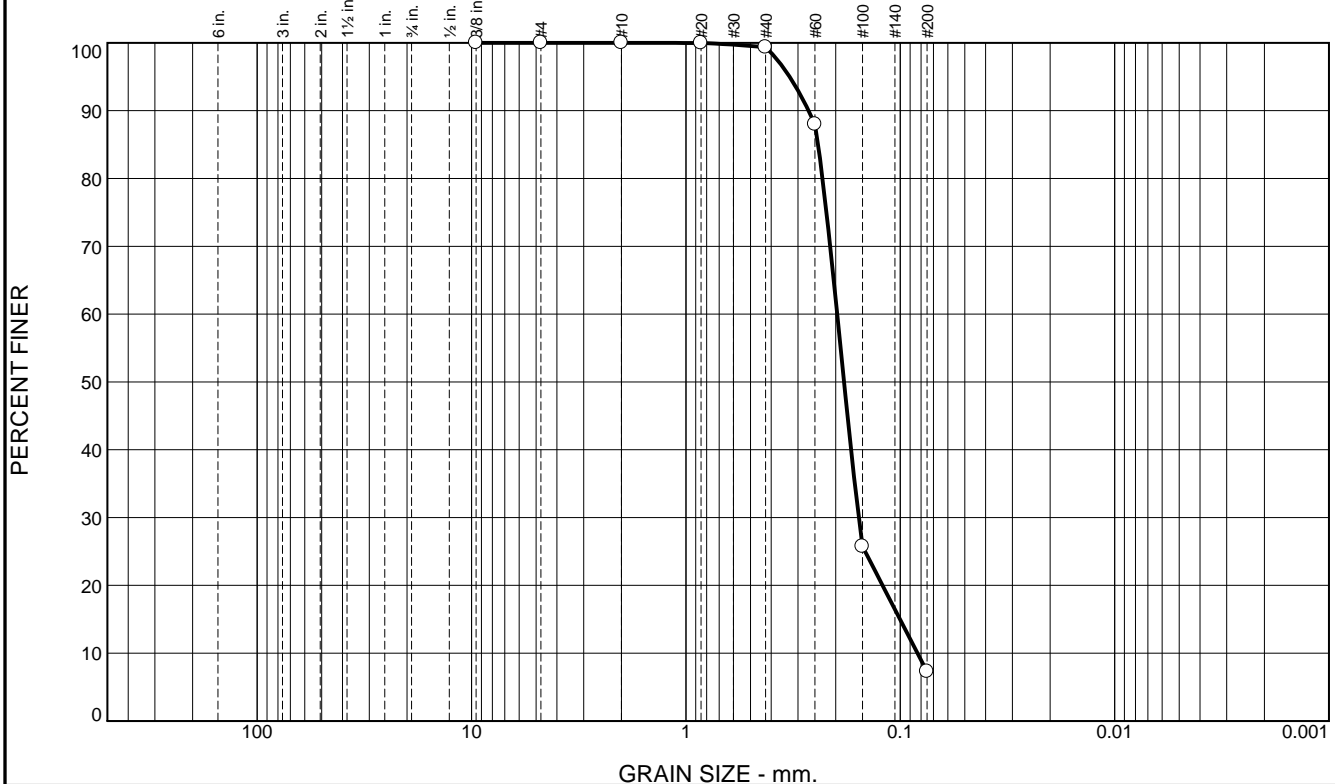
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
 Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.7	92.0	7.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	100.0		
#40	99.3		
#60	88.0		
#100	25.7		
#200	7.3		

<u>Material Description</u>		
Slightly silty SAND (SP-SM), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.2678	D ₈₅ = 0.2419	D ₆₀ = 0.1968
D ₅₀ = 0.1829	D ₃₀ = 0.1562	D ₁₅ = 0.1003
D ₁₀ = 0.0831	C _u = 2.37	C _c = 1.49
<u>Classification</u>		
USCS= SP-SM	AASHTO=	
<u>Remarks</u>		

* (no specification provided)

Location: USACE Sample # BI-CI-70B-11
Sample Number: TE Lab ID: 5054.48

Depth: 2.9 - 6.0 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama



Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

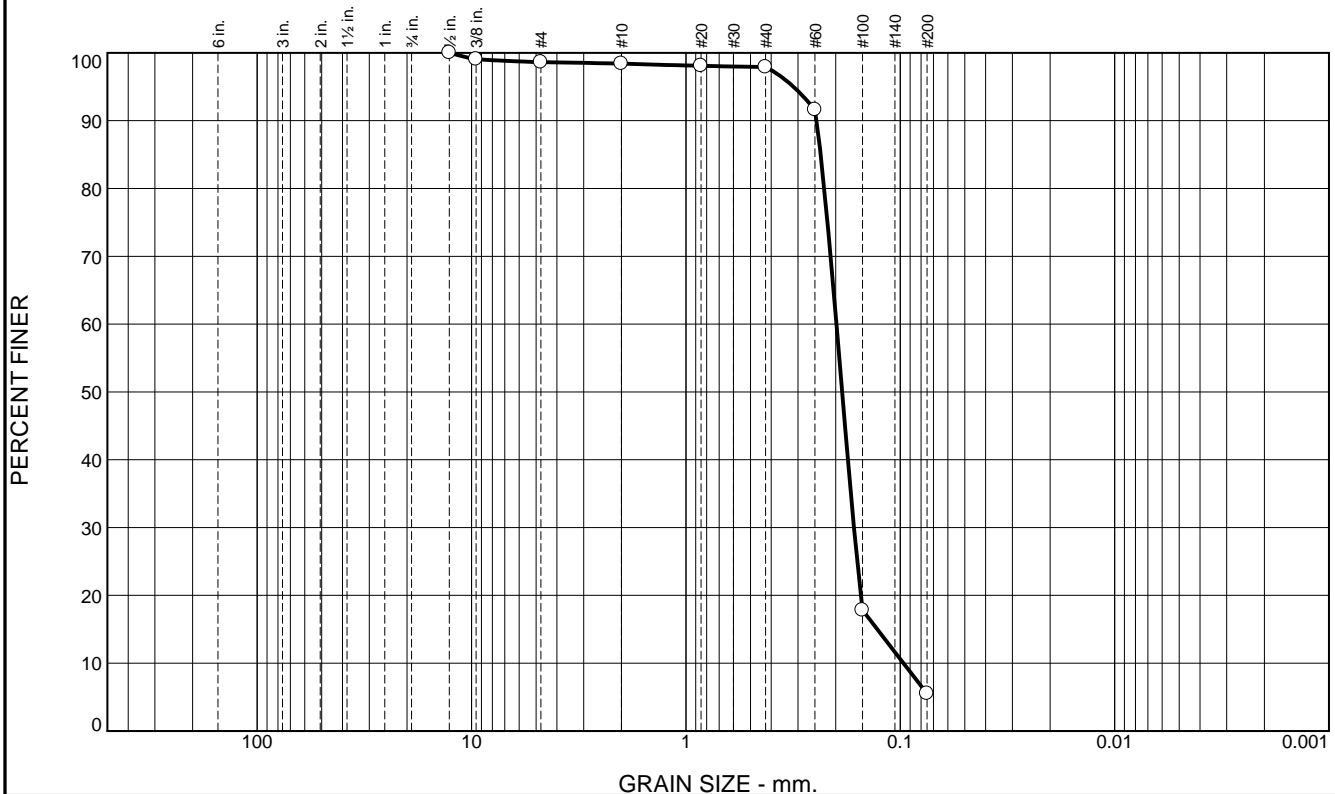
Project No: 11-2116-0057

Figure

Boring Designation BI-CI-72-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-72-11		LOCATION COORDINATES E = 923,804 N = 275,635		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 1		DISTURBED 1 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 12.5 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-23-11		STARTED 06-23-11 COMPLETED 06-23-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -11.5 Ft.			
8. TOTAL DEPTH OF BORING 13.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Rhonda Capes, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-11.5	0.0						
-14.4	2.9		SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace shell fragments, gray (SP)	A	Classification: SP-SM Color: 5Y 5/2-olive gray D50: 0.1866 mm % Fines: 5.5		
-24.5	13.0		CLAY, lean, dark gray (CL)	NS			
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.4	0.2	0.5	92.4	5.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.5	100.0		
.375	99.1		
#4	98.6		
#10	98.4		
#20	98.1		
#40	97.9		
#60	91.6		
#100	17.8		
#200	5.5		

* (no specification provided)

<u>Material Description</u>		
Slightly silty SAND (SP-SM), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.2460	D ₈₅ = 0.2352	D ₆₀ = 0.1983
D ₅₀ = 0.1866	D ₃₀ = 0.1645	D ₁₅ = 0.1281
D ₁₀ = 0.0966	C _u = 2.05	C _c = 1.41
<u>Classification</u>		
USCS= SP-SM	AASHTO=	
<u>Remarks</u>		

Location: USACE Sample # BI-CI-72A-11
Sample Number: TE Lab ID: 5054.49

Depth: 0.0 - 2.9 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

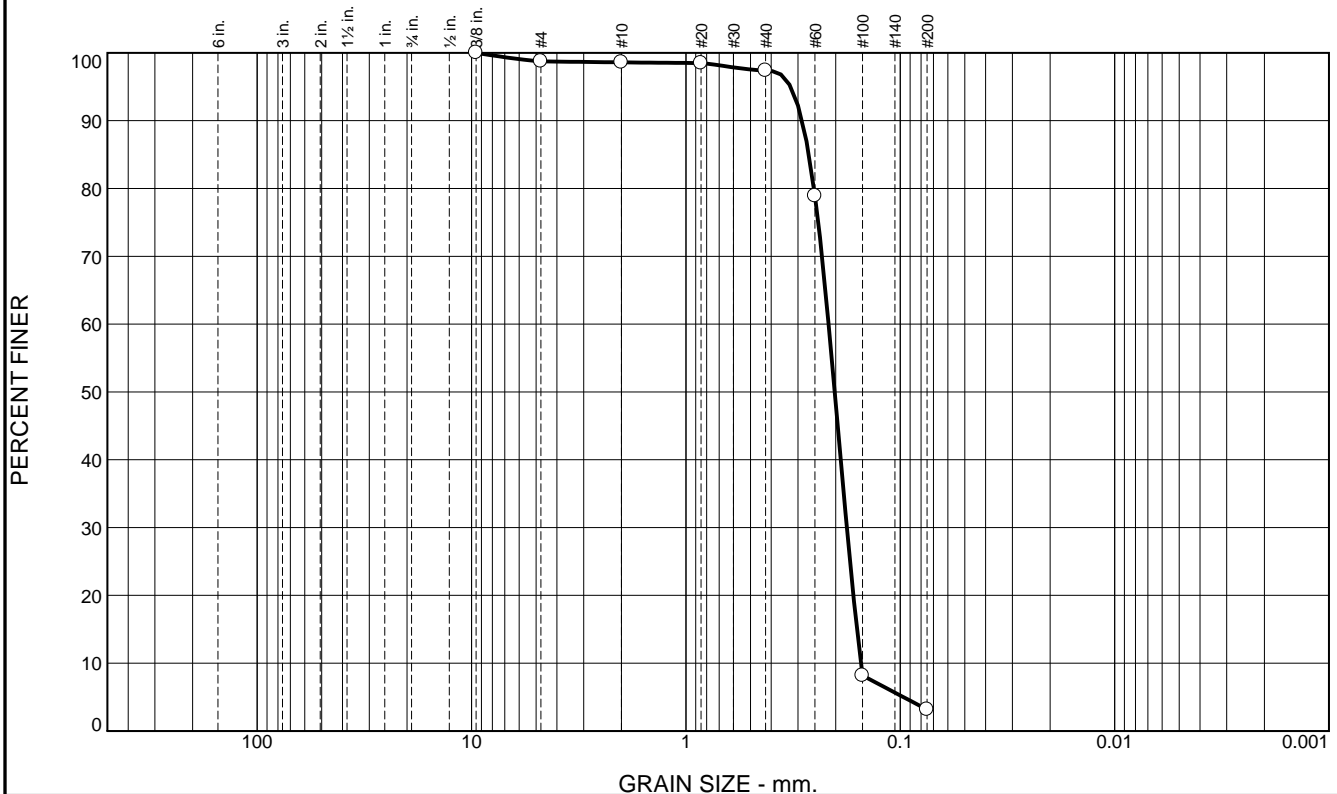
Project No: 11-2116-0057

Figure

Boring Designation BI-CI-73-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-73-11		LOCATION COORDINATES E = 918,798 N = 269,909		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 10 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-22-11		STARTED 06-22-11 COMPLETED 06-22-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -8.8 Ft.			
8. TOTAL DEPTH OF BORING 15.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Rhonda Capes, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-8.8	0.0						
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, gray (SP)	A	Classification: SP Color: 5Y 4/2-olive gray D50: 0.2021 mm % Fines: 3.2		
-11.4	2.6		SAND, silty, mostly fine-grained sand-sized quartz, some silt, gray (SM)	B	Classification: SM Color: 2.5Y 4/2-dark grayish brown D50: 0.2044 mm % Fines: 14.1		
				C	Classification: SP-SM Color: 2.5Y 5/2-grayish brown D50: 0.2022 mm % Fines: 8.3		
				NS			
-23.8	15.0						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.3	0.1	1.2	94.2	3.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	98.7		
#10	98.6		
#20	98.5		
#40	97.4		
#60	78.9		
#100	8.2		
#200	3.2		

* (no specification provided)

Material Description		
SAND (SP), fine grained		
<div> <div>PL=</div> <div> <div>Atterberg Limits</div> <div>LL=</div> <div>PI=</div> </div> </div>		
<div> <div> <div>D₉₀= 0.2873</div> <div>D₅₀= 0.2021</div> <div>D₁₀= 0.1526</div> </div> <div> <div>Coefficients</div> <div>D₈₅= 0.2670</div> <div>D₃₀= 0.1775</div> <div>C_u= 1.41</div> </div> <div> <div>D₆₀= 0.2159</div> <div>D₁₅= 0.1593</div> <div>C_c= 0.96</div> </div> </div>		
<div> <div>USCS= SP</div> <div> <div>Classification</div> <div>AASHTO=</div> </div> </div>		
<div> <div>Remarks</div> </div>		

Location: USACE Sample # BI-CI-73A-11
Sample Number: TE Lab ID: 5054.26

Depth: 0.0 -2.6 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

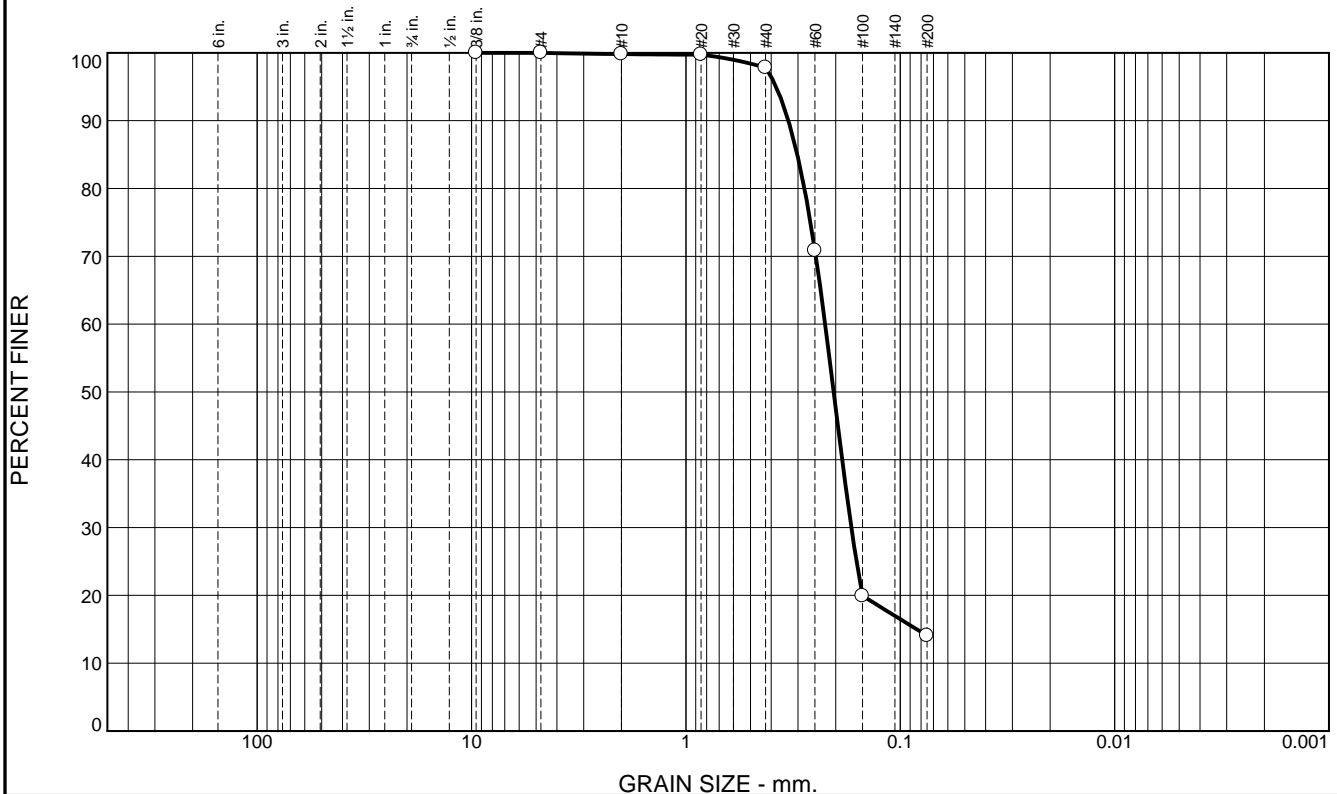
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	2.0	83.7	14.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.8		
#20	99.7		
#40	97.8		
#60	70.8		
#100	19.9		
#200	14.1		

* (no specification provided)

Material Description
Silty SAND (SM), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.3327 D₈₅= 0.3024 D₆₀= 0.2241
 D₅₀= 0.2044 D₃₀= 0.1691 D₁₅= 0.0838
 D₁₀= C_u= C_c=

Classification
 USCS= SM AASHTO=

Remarks

Location: USACE Sample # BI-CI-73B-11
 Sample Number: TE Lab ID: 5054.27

Depth: 2.6 - 7.6 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

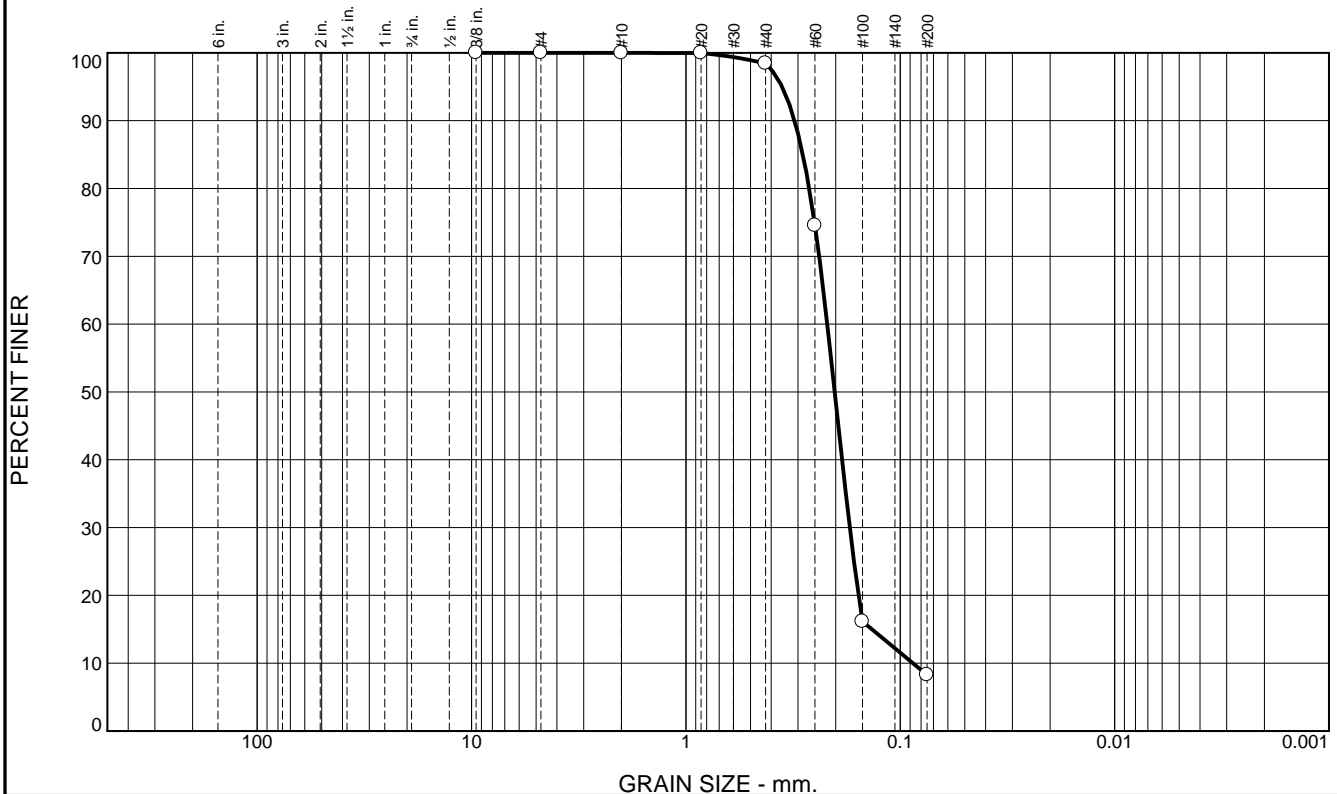
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
 Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.6	90.1	8.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	100.0		
#40	98.4		
#60	74.5		
#100	16.1		
#200	8.3		

* (no specification provided)

Material Description
Slightly silty SAND (SP-SM), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.3114 D₈₅= 0.2849 D₆₀= 0.2191
 D₅₀= 0.2022 D₃₀= 0.1720 D₁₅= 0.1356
 D₁₀= 0.0873 C_u= 2.51 C_c= 1.55

Classification
 USCS= SP-SM AASHTO=

Remarks

Location: USACE Sample # BI-CI-73C-11
 Sample Number: TE Lab ID: 5054.28

Depth: 7.6 - 10.0 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
 Mississippi Barrier Island Restoration Project

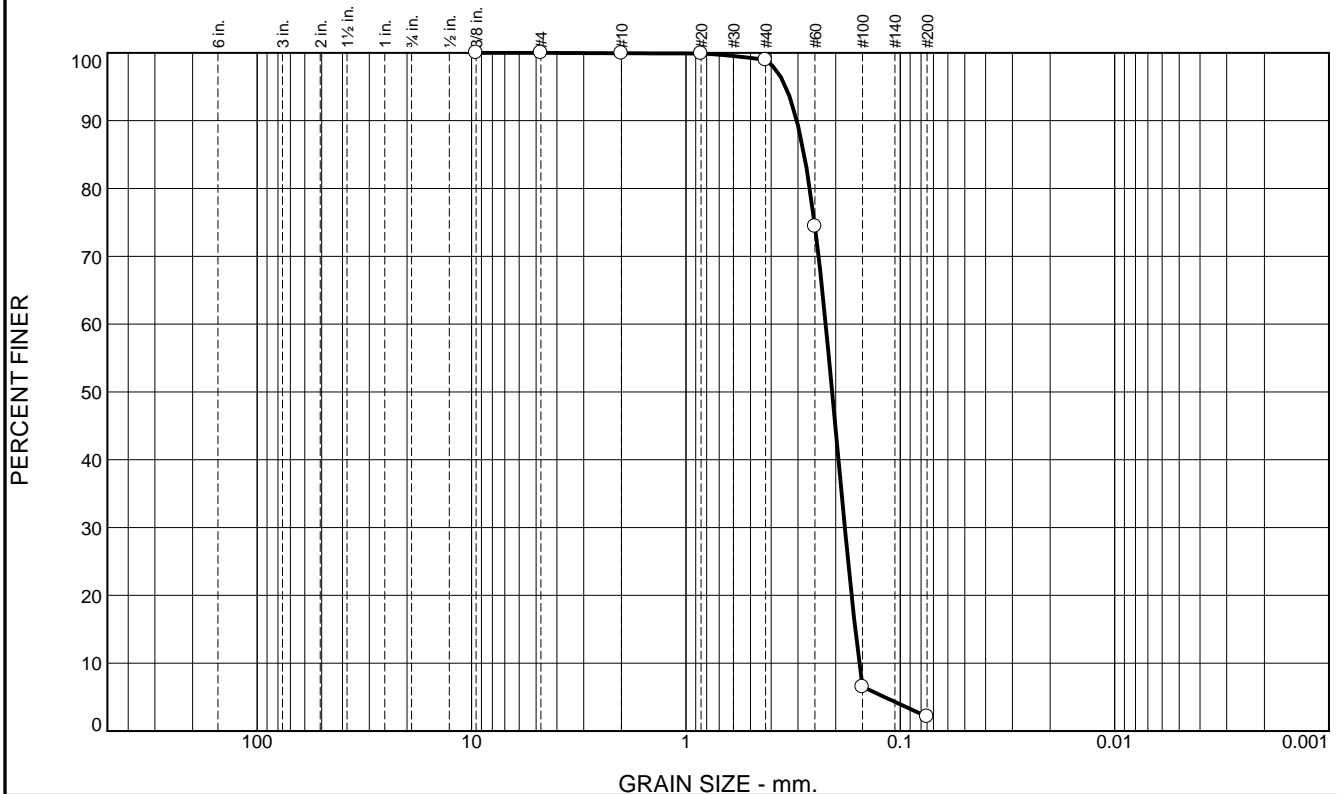
Project No: 11-2116-0057

Figure

Boring Designation BI-CI-75-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-75-11		LOCATION COORDINATES E = 921,214 N = 271,799		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 4		DISTURBED 4 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 9.5 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-22-11		STARTED 06-22-11 COMPLETED 06-22-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -8.8 Ft.			
8. TOTAL DEPTH OF BORING 15.9 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Rhonda Capes, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-8.8	0.0						
-11.8	3.0		SAND, poorly-graded, mostly fine-grained sand-sized quartz, gray (SP)	A	Classification: SP Color: 2.5Y 6/2-light brownish gray D50: 0.2077 mm % Fines: 2.1		
-16.8	8.0			B	Classification: SP-SM Color: 2.5Y 4/4-olive brown D50: 0.2007 mm % Fines: 10		
-24.7	15.9		SAND, silty, mostly fine-grained sand-sized quartz, some silt, some clay, dark gray (SM)	C	Classification: SM Color: 2.5Y 4/2-dark grayish brown D50: 0.1729 mm % Fines: 13.2		
				D	Classification: SP-SM Color: 2.5Y 5/2-grayish brown D50: 0.1821 mm % Fines: 7.7		
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	0.9	96.9	2.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.9		
#40	99.0		
#60	74.4		
#100	6.5		
#200	2.1		

* (no specification provided)

Material Description
SAND (SP), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.3039 D₈₅= 0.2810 D₆₀= 0.2228
 D₅₀= 0.2077 D₃₀= 0.1813 D₁₅= 0.1621
 D₁₀= 0.1552 C_u= 1.44 C_c= 0.95

Classification
 USCS= SP AASHTO=

Remarks

Location: USACE Sample # BI-CI-75A-11
 Sample Number: TE Lab ID: 5054.29

Depth: 0.0 - 3.0 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

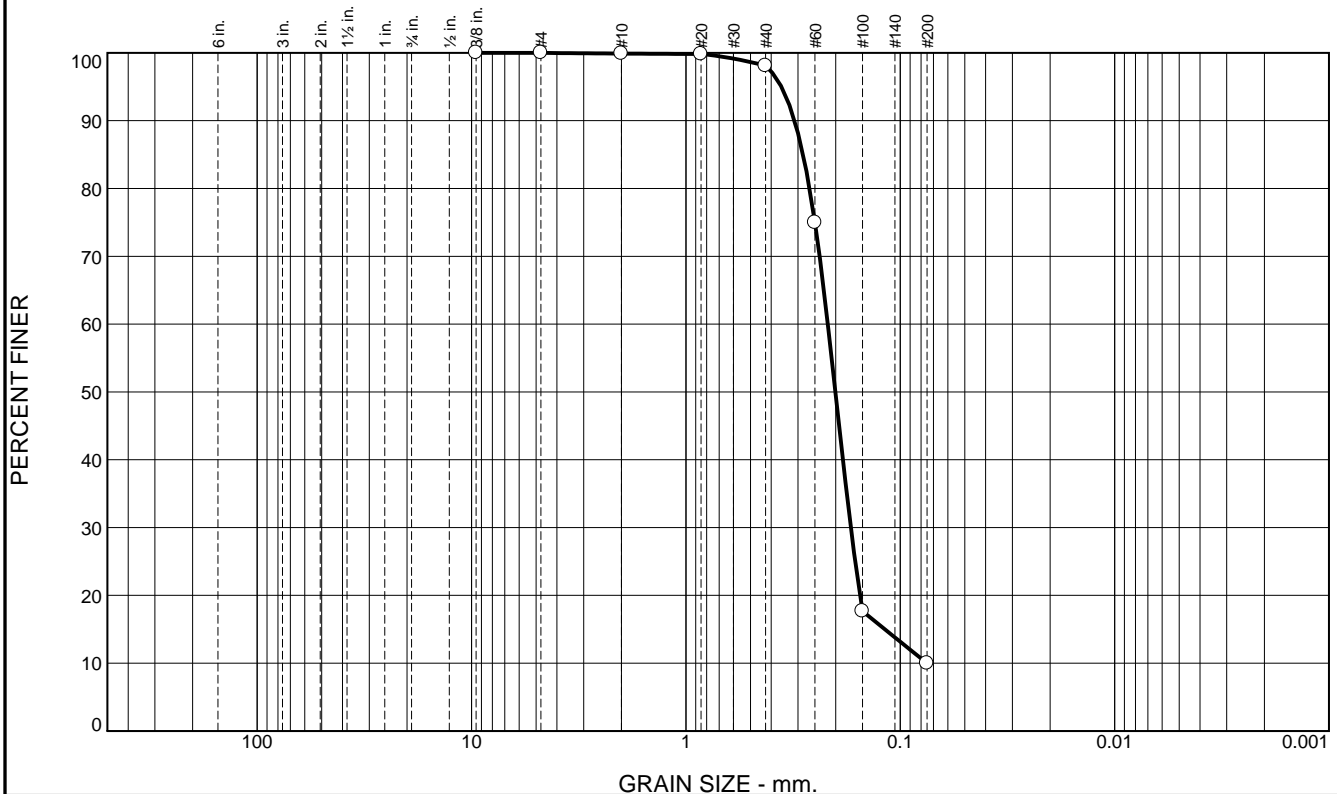
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
 Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	1.8	88.1	10.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.8		
#40	98.1		
#60	75.0		
#100	17.7		
#200	10.0		

* (no specification provided)

<u>Material Description</u>		
Slightly silty SAND (SP-SM), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.3115	D ₈₅ = 0.2842	D ₆₀ = 0.2178
D ₅₀ = 0.2007	D ₃₀ = 0.1700	D ₁₅ = 0.1180
D ₁₀ = 0.0751	C _u = 2.90	C _c = 1.77
<u>Classification</u>		
USCS= SP-SM	AASHTO=	
<u>Remarks</u>		

Location: USACE Sample # BI-CI-75B-11
Sample Number: TE Lab ID: 5054.30

Depth: 3.0 - 8.0 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

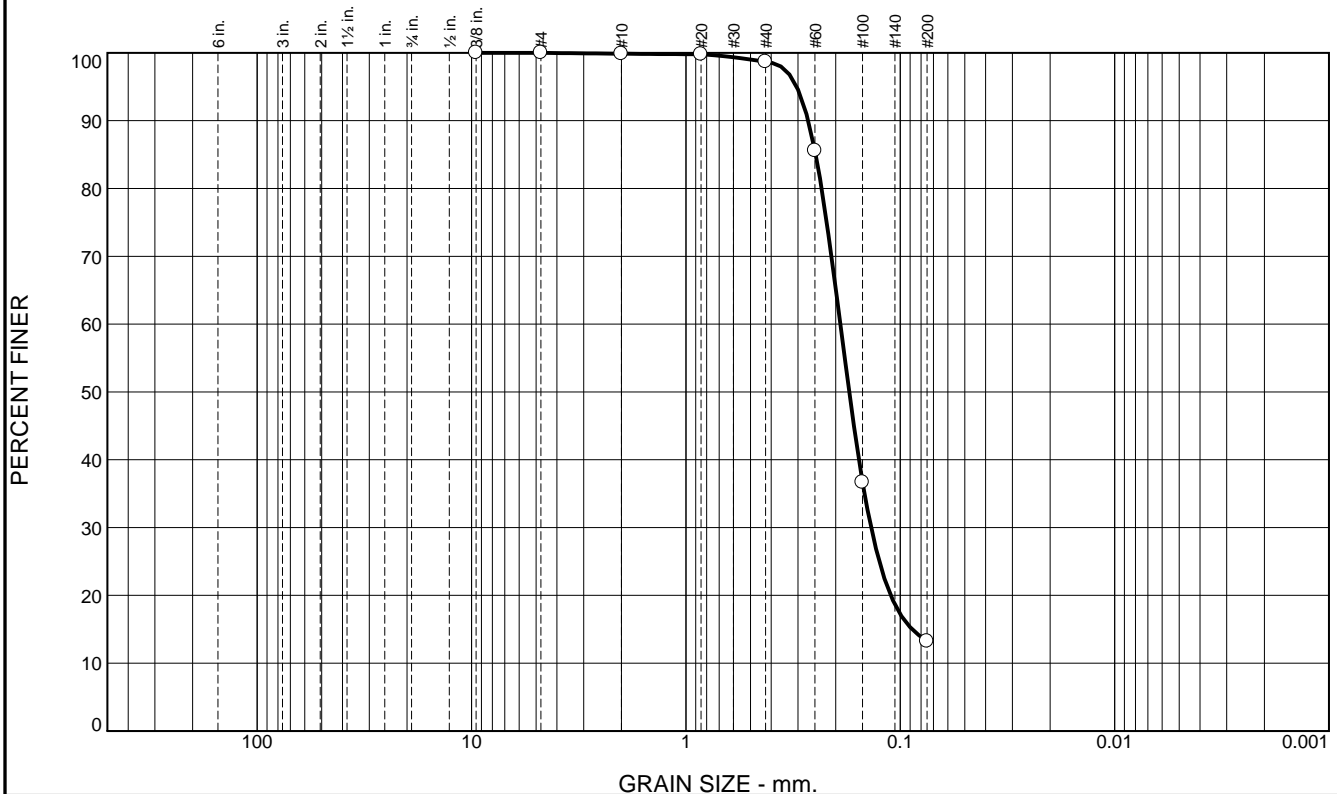
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	1.2	85.5	13.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.8		
#40	98.7		
#60	85.6		
#100	36.7		
#200	13.2		

<u>Material Description</u>		
Silty SAND (SM), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.2688	D ₈₅ = 0.2480	D ₆₀ = 0.1902
D ₅₀ = 0.1729	D ₃₀ = 0.1369	D ₁₅ = 0.0881
D ₁₀ =	C _u =	C _c =
<u>Classification</u>		
USCS= SM	AASHTO=	
<u>Remarks</u>		

* (no specification provided)

Location: USACE Sample # BI-CI-75C-11
Sample Number: TE Lab ID: 5054.31

Depth: 8.0 - 13.0 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

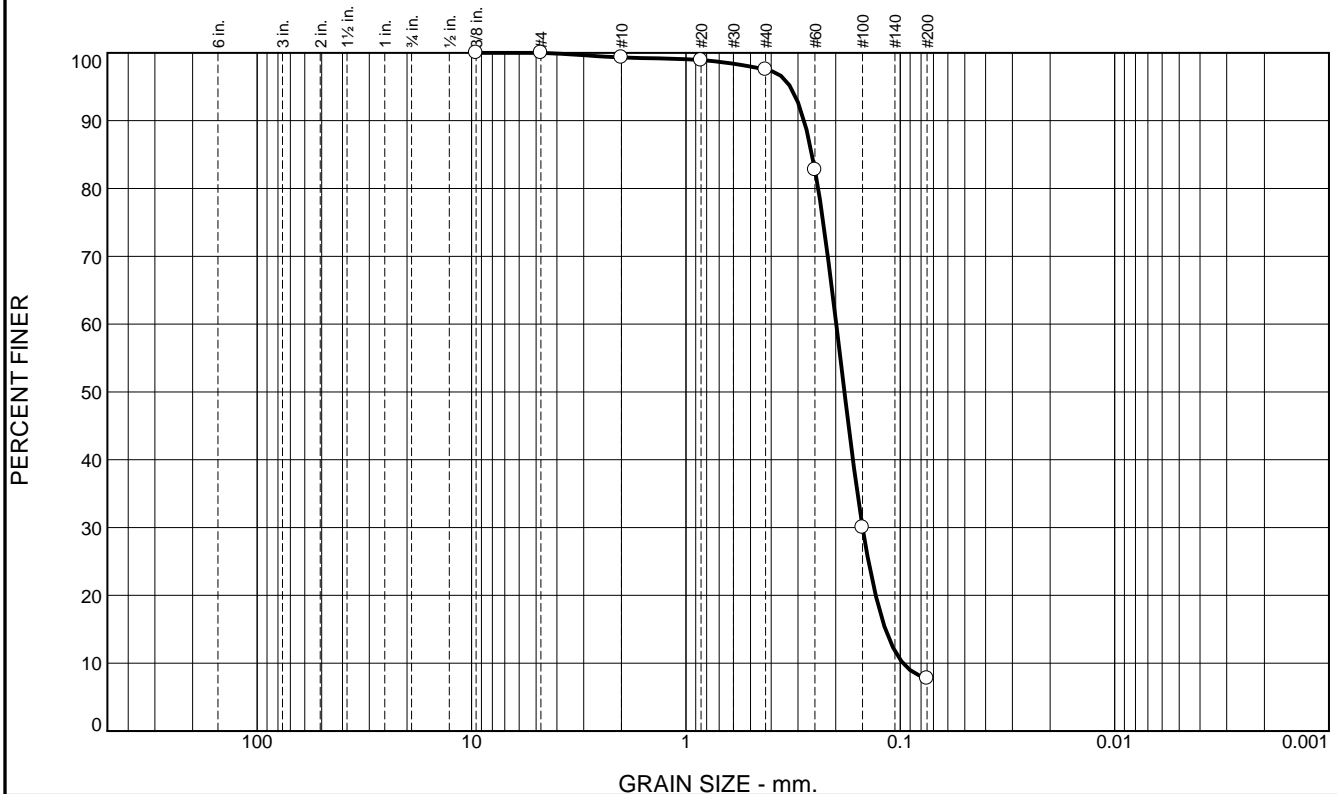
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.7	1.8	89.8	7.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.3		
#20	98.9		
#40	97.5		
#60	82.8		
#100	30.0		
#200	7.7		

* (no specification provided)

<u>Material Description</u>		
Slightly silty SAND (SP-SM), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.2812	D ₈₅ = 0.2579	D ₆₀ = 0.1988
D ₅₀ = 0.1821	D ₃₀ = 0.1500	D ₁₅ = 0.1172
D ₁₀ = 0.0971	C _u = 2.05	C _c = 1.16
<u>Classification</u>		
USCS= SP-SM	AASHTO=	
<u>Remarks</u>		

Location: USACE Sample # BI-CI-75D-11
Sample Number: TE Lab ID: 5054.32

Depth: 13.0 - 15.9 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

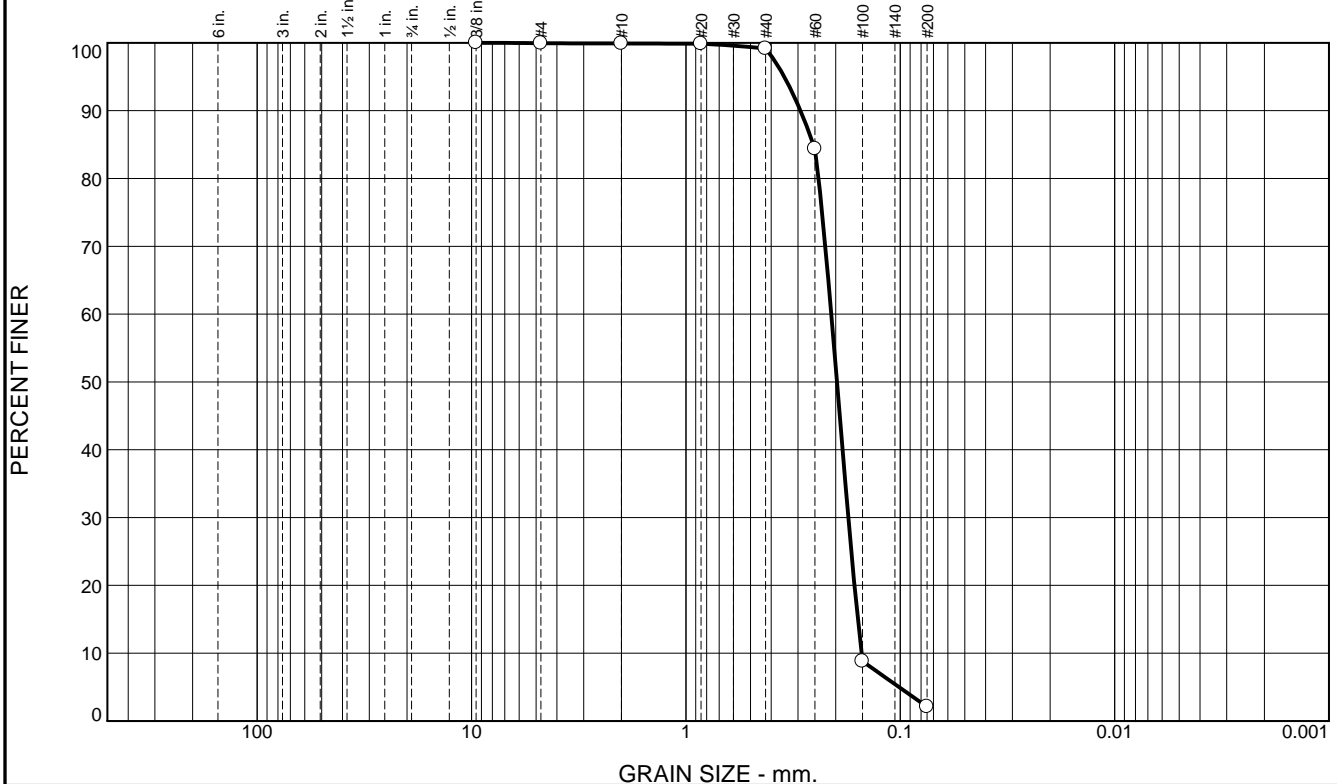
Project No: 11-2116-0057

Figure

Boring Designation BI-CI-76-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-76-11		LOCATION COORDINATES E = 922,324 N = 272,699		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 8.5 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-22-11		STARTED 06-22-11 COMPLETED 06-22-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -7.8 Ft.			
8. TOTAL DEPTH OF BORING 11.6 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Rhonda Capes, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-7.8	0.0						
-10.0	2.2		SAND, poorly-graded, mostly fine-grained sand-sized quartz, gray (SP)	A	Classification: SP Color: 2.5Y 7/2-light gray D50: 0.1973 mm % Fines: 2.1		
			SAND, silty, mostly fine-grained sand-sized quartz, some silt, gray (SM)	B	Classification: SM Color: 2.5Y 5/2-grayish brown D50: 0.1764 mm % Fines: 12.1		
			At El. -15.2 Ft., mostly fine-grained sand-sized quartz, some silt, trace clay, gray	NS			
			At El. -16.8 Ft., mostly fine-grained sand-sized quartz, some silt, gray	C	Classification: SP-SM Color: 2.5Y 5/2-grayish brown D50: 0.1837 mm % Fines: 5.8		
-19.4	11.6						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.0	0.7	97.1	2.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.9		
#20	99.9		
#40	99.2		
#60	84.3		
#100	8.8		
#200	2.1		

* (no specification provided)

Material Description		
SAND (SP), fine grained		
<div> <div> Atterberg Limits PL= LL= PI= </div> <div> Coefficients D₉₀= 0.2924 D₈₅= 0.2542 D₆₀= 0.2096 D₅₀= 0.1973 D₃₀= 0.1747 D₁₅= 0.1578 D₁₀= 0.1516 C_u= 1.38 C_c= 0.96 </div> <div> Classification USCS= SP AASHTO= </div> <div> Remarks </div> </div>		

Location: USACE Sample # BI-CI-76A-11
Sample Number: TE Lab ID: 5054.33

Depth: 0.0 - 2.2 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

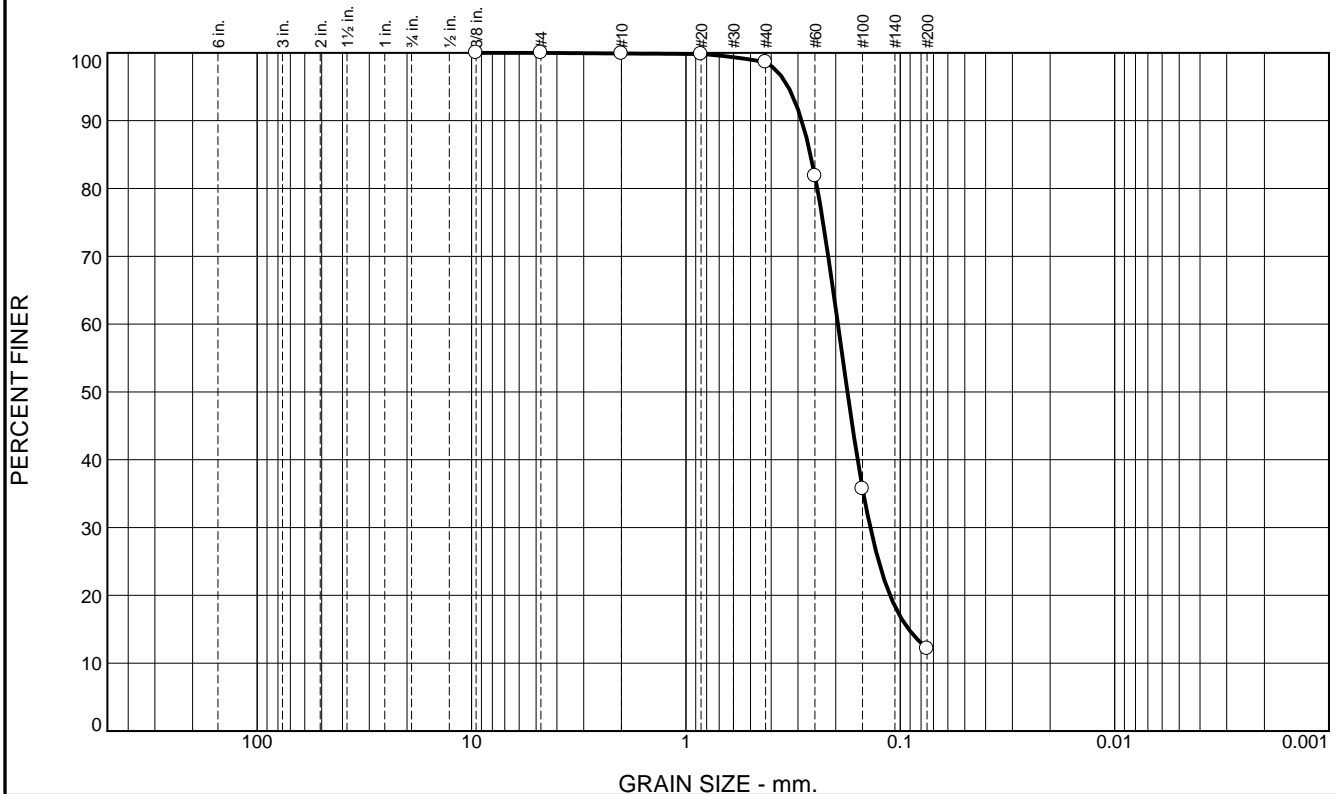
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	1.3	86.5	12.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.8		
#40	98.6		
#60	81.9		
#100	35.7		
#200	12.1		

* (no specification provided)

<u>Material Description</u>		
Silty SAND (SM), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.2883	D ₈₅ = 0.2622	D ₆₀ = 0.1953
D ₅₀ = 0.1764	D ₃₀ = 0.1381	D ₁₅ = 0.0913
D ₁₀ =	C _u =	C _c =
<u>Classification</u>		
USCS= SM	AASHTO=	
<u>Remarks</u>		

Location: USACE Sample # BI-CI-76B-11
Sample Number: TE Lab ID: 5054.34

Depth: 2.2 - 7.2 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

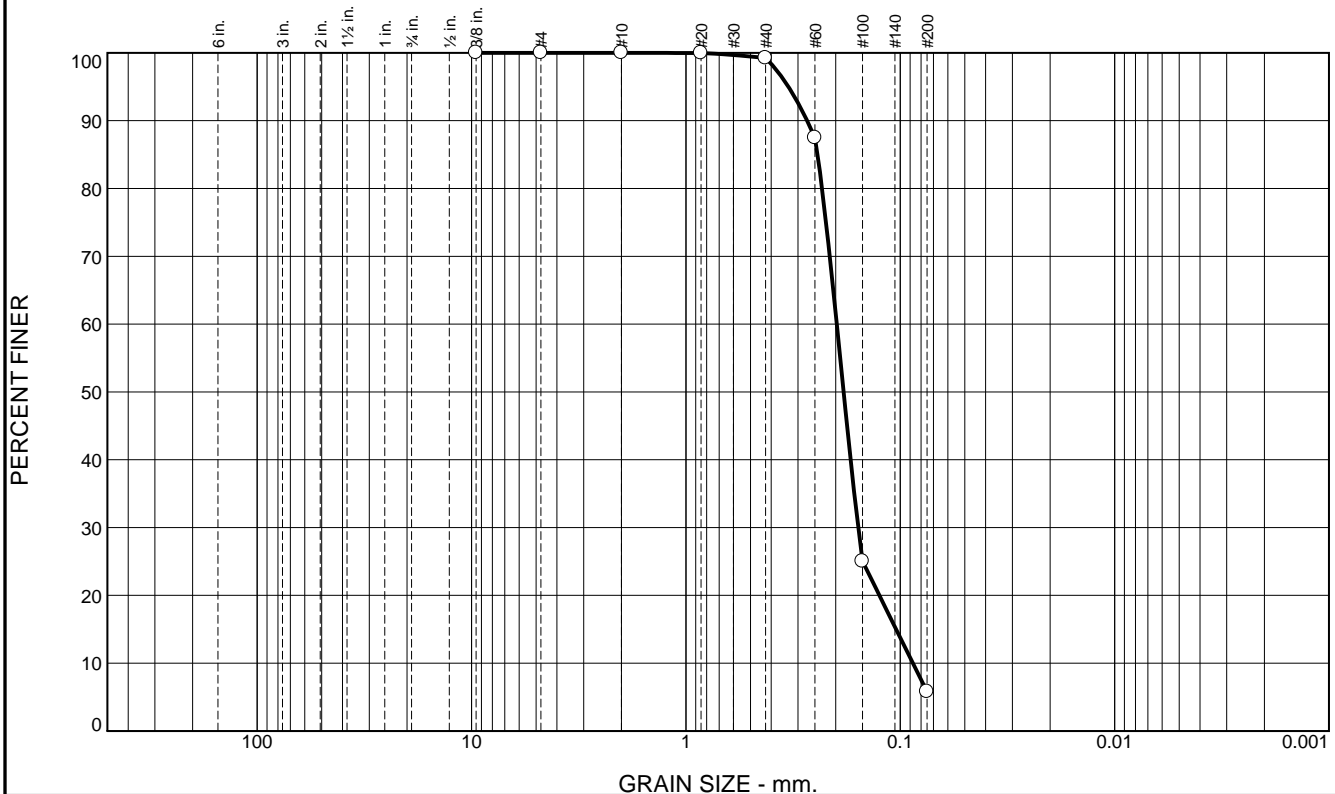
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.8	93.4	5.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	100.0		
#40	99.2		
#60	87.5		
#100	25.0		
#200	5.8		

* (no specification provided)

<u>Material Description</u>		
Slightly silty SAND (SP-SM), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.2721	D ₈₅ = 0.2433	D ₆₀ = 0.1977
D ₅₀ = 0.1837	D ₃₀ = 0.1571	D ₁₅ = 0.1045
D ₁₀ = 0.0873	C _u = 2.26	C _c = 1.43
<u>Classification</u>		
USCS= SP-SM	AASHTO=	
<u>Remarks</u>		

Location: USACE Sample # BI-CI-76C-11
Sample Number: TE Lab ID: 5054.35

Depth: 9.0 - 11.6 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

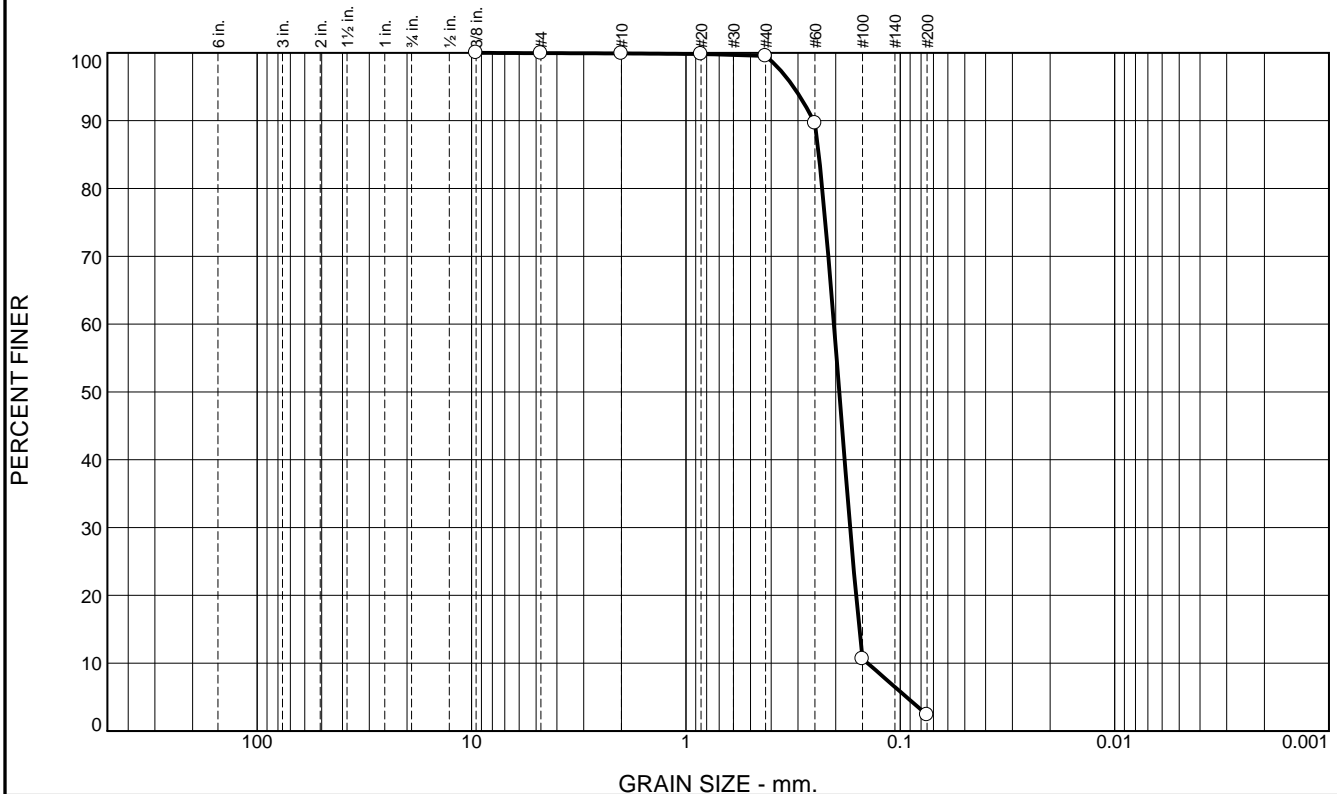
Project No: 11-2116-0057

Figure

Boring Designation BI-CI-77-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-77-11		LOCATION COORDINATES E = 923,666 N = 273,581		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 1		DISTURBED 1 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 9.3 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-22-11		STARTED 06-22-11 COMPLETED 06-22-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -8.6 Ft.			
8. TOTAL DEPTH OF BORING 13.3 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Rhonda Capes, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-8.6	0.0						
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, gray (SP)	A	Classification: SP Color: 5Y 6/1-gray D50: 0.1924 mm % Fines: 2.4		
-13.6	5.0						
-14.6	6.0		SAND, silty, mostly fine-grained sand-sized quartz, some silt, gray (SM)				
			CLAY, lean, dark gray (CL)	NS			
-21.9	13.3						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	0.4	97.1	2.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.8		
#40	99.5		
#60	89.6		
#100	10.6		
#200	2.4		

* (no specification provided)

Material Description		
SAND (SP), fine grained		
PL=	Atterberg Limits LL=	PI=
D ₉₀ = 0.2535	Coefficients D ₈₅ = 0.2401	D ₆₀ = 0.2038
D ₅₀ = 0.1924	D ₃₀ = 0.1714	D ₁₅ = 0.1552
D ₁₀ = 0.1421	C _u = 1.43	C _c = 1.01
USCS= SP	Classification AASHTO=	
Remarks		

Location: USACE Sample # BI-CI-77A-11
Sample Number: TE Lab ID: 5054.36

Depth: 0.0 - 5.0 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Boring Designation BI-CI-78-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-78-11		LOCATION COORDINATES E = 924,683 N = 274,539		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 1		DISTURBED 1 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		BEARING		13. TOTAL NUMBER CORE BOXES	
6. THICKNESS OF OVERBURDEN N/A				14. WATER DEPTH 11 Ft.			
7. DEPTH DRILLED INTO ROCK N/A				15. DATE BORING 06-22-11		STARTED 06-22-11 COMPLETED 06-22-11	
8. TOTAL DEPTH OF BORING 11.9 Ft.				16. ELEVATION TOP OF BORING -10.3 Ft.			
				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Rhonda Capes, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-10.3	0.0						
-12.3	2.0		SAND, poorly-graded, mostly fine-grained sand-sized quartz, gray (SP)	A	Classification: SP Color: 2.5Y 5/2-grayish brown D50: 0.1836 mm % Fines: 4.1		
-13.8	3.5		SAND, silty, mostly fine-grained sand-sized quartz, some silt, lt. gray (SM)				
			CLAY, lean, dark gray (CL)	NS			
-22.2	11.9						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

PERCENT FINER



% +3"

	% Gravel
1	100
2	100
3	100
4	100
5	100
6	100
7	100
8	100
9	100
10	100
11	100
12	100
13	100
14	100
15	100
16	100
17	100
18	100
19	100
20	100
21	100
22	100
23	100
24	100
25	100
26	100
27	100
28	100
29	100
30	100
31	100
32	100
33	100
34	100
35	100
36	100
37	100
38	100
39	100
40	100
41	100
42	100
43	100
44	100
45	100
46	100
47	100
48	100
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51	100
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74	100
75	100
76	100
77	100
78	100
79	100
80	100
81	100
82	100
83	100
84	100
85	100
86	100
87	100
88	100
89	100
90	100
91	100
92	100
93	100
94	100
95	100
96	100
97	100
98	100
99	100
100	100

•

% Sand

% Fines

21

0.0

Coarse

Fine

Coars

Medium

Fine

4.1

**SIEVE
SIZE**

PERCENT
FINER

SPEC.*
PERCENT

PASS?
(X=NO)

SAND (SP), fine grained

$$P_L =$$

Atterberg Limits

$$\frac{LL}{LL} =$$
$$PI =$$

Coefficients

$$D_{90} = 0.2398$$
$$D_{85} = 0.2301$$
$$D_{60} = 0.1950$$
$$D_{50} = 0.1836$$
$$D_{30} = 0.1617$$
$$D_{15}^{00} = 0.1204$$
$$D_{10}^{99} = 0.0969$$
$$C_u = 2.01$$
$$C_C = 1.38$$

Classification

USCS= SP

AASHTO=

Remarks

Location: USACE Sample # BI-CI-78A-11

Sample Number: TE Lab ID: 5054.37

Depth: 0.0 - 3.5 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

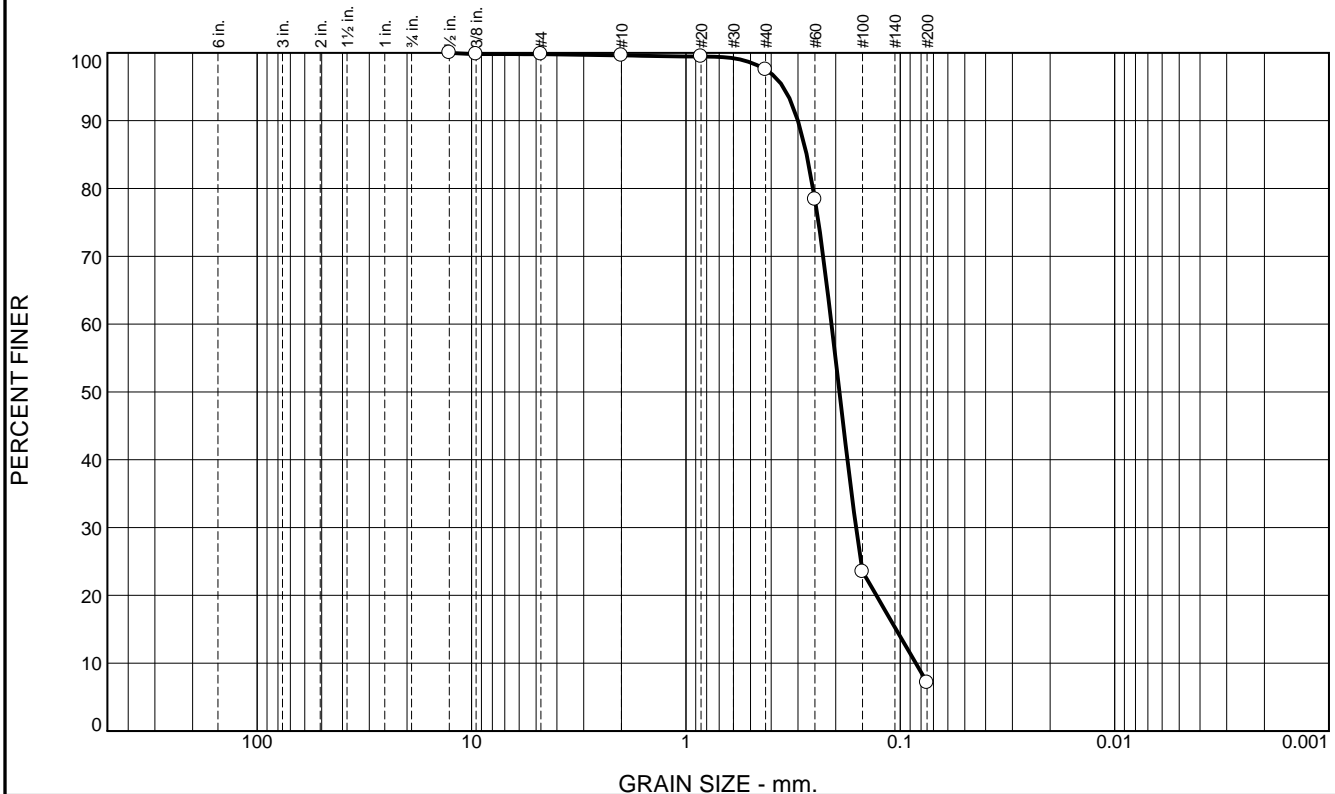
Project No: 11-2116-0057

Figure

Boring Designation BI-CI-82-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-82-11		LOCATION COORDINATES E = 923,307 N = 271,312		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 11.5 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-23-11		STARTED 06-23-11 COMPLETED 06-23-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -10.8 Ft.			
8. TOTAL DEPTH OF BORING 16.1 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Rhonda Capes, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-10.8	0.0						
-13.8	3.0		SAND, silty, mostly fine-grained sand-sized quartz, some silt, gray (SM)	A	Classification: SP-SM Color: 2.5Y 5/2-grayish brown D50: 0.1921 mm % Fines: 7.1		
-17.2	6.4		CLAY, lean, dark gray (CL)	NS			
-26.9	16.1		SAND, poorly-graded, mostly fine-grained sand-sized quartz, lt. gray (SP)	B	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.1954 mm % Fines: 4.3		
				C	Classification: SP Color: 2.5Y 6/2-light brownish gray D50: 0.1828 mm % Fines: 2.8		
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.2	2.1	90.4	7.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.5	100.0		
.375	99.8		
#4	99.8		
#10	99.6		
#20	99.5		
#40	97.5		
#60	78.4		
#100	23.5		
#200	7.1		

* (no specification provided)

Material Description		
Slightly silty SAND (SP-SM), fine grained		
<div> <div> Atterberg Limits PL= LL= PI= </div> <div> Coefficients D₉₀= 0.3005 D₈₅= 0.2735 D₆₀= 0.2092 D₅₀= 0.1921 D₃₀= 0.1608 D₁₅= 0.1046 D₁₀= 0.0846 C_u= 2.47 C_c= 1.46 </div> <div> Classification USCS= SP-SM AASHTO= </div> <div> Remarks </div> </div>		

Location: USACE Sample # BI-CI-82A-11
Sample Number: TE Lab ID: 5054.50

Depth: 0.0 - 3.0 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

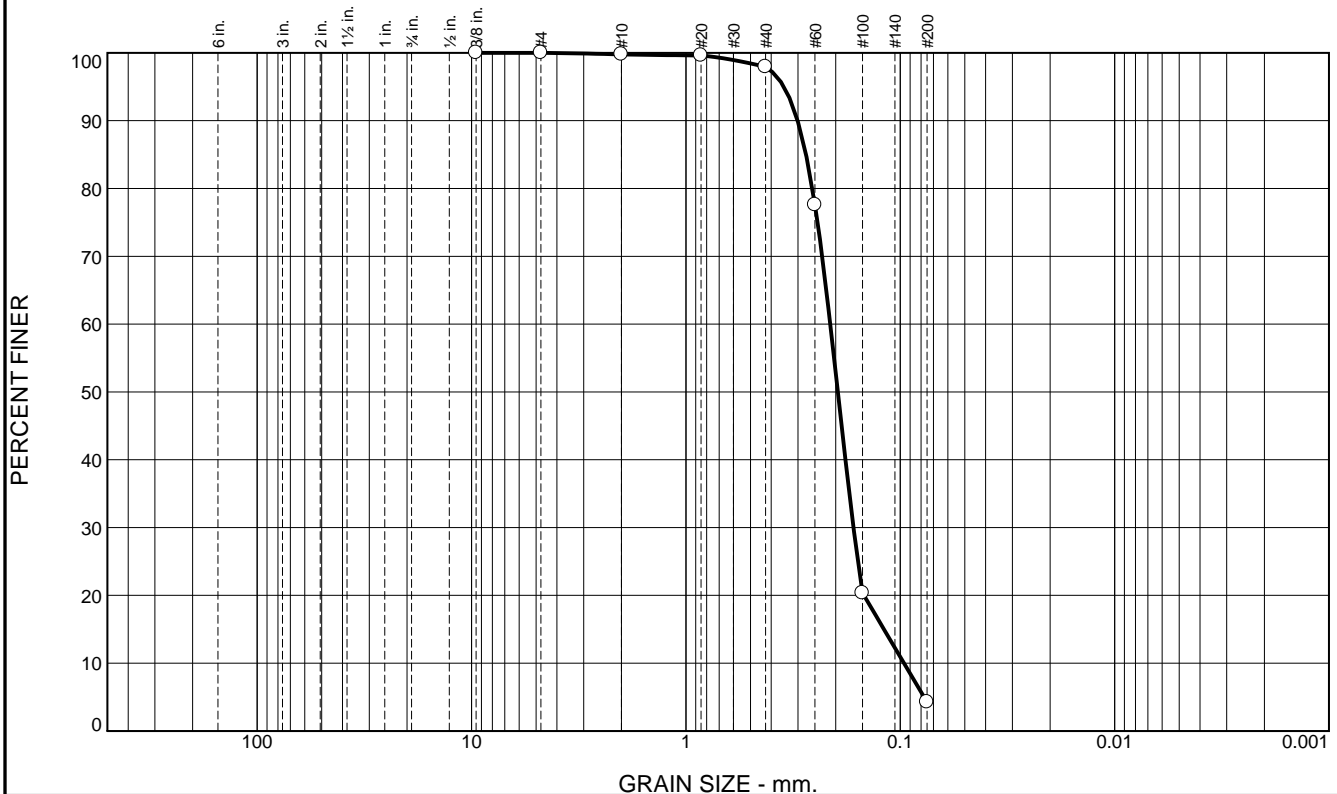
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	1.9	93.6	4.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.8		
#20	99.6		
#40	97.9		
#60	77.6		
#100	20.3		
#200	4.3		

* (no specification provided)

Material Description		
SAND (SP), fine grained		
PL=	Atterberg Limits LL=	PI=
D ₉₀ = 0.3014	Coefficients D ₈₅ = 0.2754	D ₆₀ = 0.2121
D ₅₀ = 0.1954	D ₃₀ = 0.1653	D ₁₅ = 0.1192
D ₁₀ = 0.0961	C _u = 2.21	C _c = 1.34
USCS= SP	Classification AASHTO=	
Remarks		

Location: USACE Sample # BI-CI-82B-11
Sample Number: TE Lab ID: 5054.51

Depth: 6.5 - 11.5 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

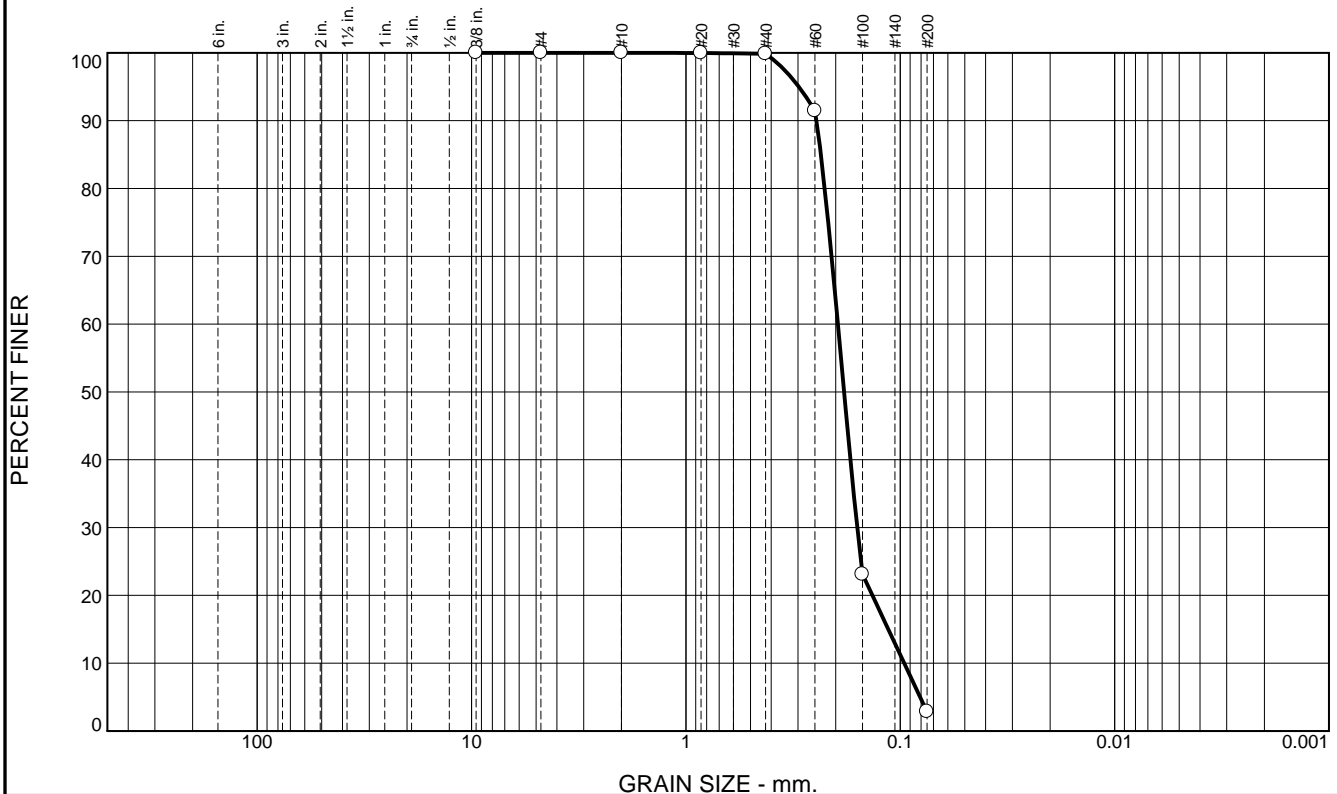
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.2	97.0	2.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	100.0		
#40	99.8		
#60	91.5		
#100	23.1		
#200	2.8		

* (no specification provided)

Material Description		
SAND (SP), fine grained		
<div> <div> Atterberg Limits </div> <div> PL= <div> LL= <div>PI=</div> </div> </div> </div>		
<div> <div> Coefficients </div> <div> D₉₀= 0.2461 <div> D₈₅= 0.2346 <div> D₆₀= 0.1953 </div> </div> </div> </div>		
<div> <div> Classification </div> <div> USCS= SP <div> AASHTO= <div> Remarks </div> </div> </div> </div>		

Location: USACE Sample # BI-CI-82C-11
Sample Number: TE Lab ID: 5054.52

Depth: 11.5 - 16.1 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Boring Designation BI-CI-84-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-84-11		LOCATION COORDINATES E = 916,262 N = 266,080		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED UNDISTURBED (UD)	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES		14. WATER DEPTH 12.3 Ft.	
6. THICKNESS OF OVERBURDEN N/A		7. DEPTH DRILLED INTO ROCK N/A		15. DATE BORING		STARTED 06-28-11 COMPLETED 06-28-11	
8. TOTAL DEPTH OF BORING 11.0 Ft.				16. ELEVATION TOP OF BORING -12.0 Ft.		17. TOTAL RECOVERY FOR BORING 100%	
				18. SIGNATURE AND TITLE OF INSPECTOR Michele Johnson, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-12.0	0.0						
-15.3	3.3		SAND, silty, some sand, trace shell fragments, dark gray (SM)	NS			
-20.3	8.3		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, gray (SP)				
-23.0	11.0		CLAY, lean, dark gray (CL)				
NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.							

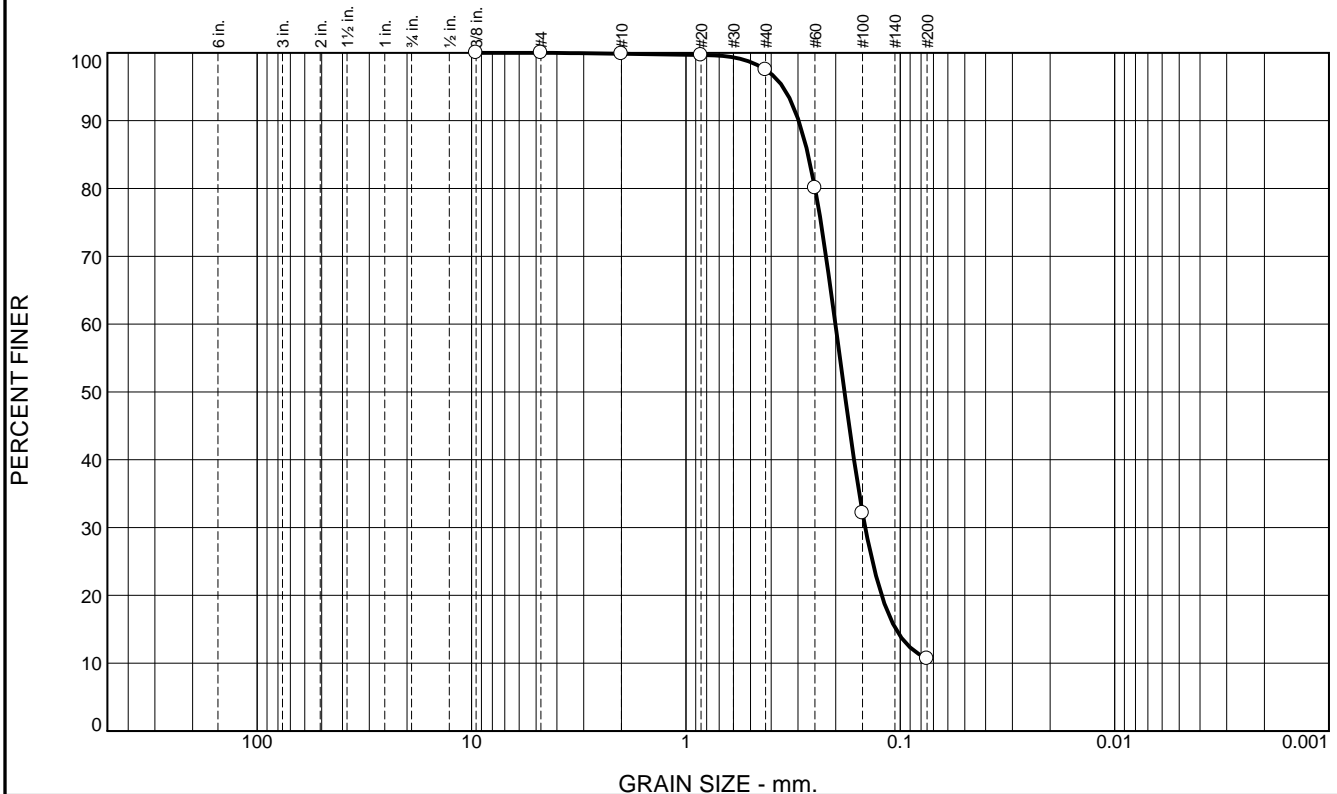
Boring Designation BI-CI-85-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-85-11		LOCATION COORDINATES E = 915,574 N = 264,681		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 13 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-28-11		COMPLETED 06-28-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -12.5 Ft.			
8. TOTAL DEPTH OF BORING 11.8 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Michele Johnson, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-12.5	0.0						
-14.4	1.9		SAND, silty, some fine-grained sand-sized sand, dark gray (SM)	NS			
			CLAY, lean, dark gray (CL)				
-19.4	6.9		CLAY, fat, dark gray (CH)				
-21.4	8.9		SAND, poorly-graded, mostly medium-grained sand-sized quartz, trace shell fragments, gray (SP)				
-24.3	11.8						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Boring Designation BI-CI-86-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-86-11		LOCATION COORDINATES E = 916,403 N = 263,970		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 14.6 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-28-11		STARTED 06-28-11 COMPLETED 06-28-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -12.4 Ft.			
8. TOTAL DEPTH OF BORING 6.9 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Michele Johnson, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-12.4	0.0						
-15.4	3.0		SAND, silty, trace shell fragments, dark gray (SM)	A	Classification: SP-SM Color: 5Y 6/1-gray D50: 0.182 mm % Fines: 10.7		
-19.3	6.9		SAND, poorly-graded, trace shell fragments, gray (SP)	B	Classification: SP Color: 2.5Y 5/2-grayish brown D50: 0.196 mm % Fines: 3.3		
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	2.4	86.8	10.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.7		
#40	97.5		
#60	80.1		
#100	32.2		
#200	10.7		

* (no specification provided)

<u>Material Description</u>		
Slightly silty SAND (SP-SM), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.2980	D ₈₅ = 0.2693	D ₆₀ = 0.2006
D ₅₀ = 0.1820	D ₃₀ = 0.1458	D ₁₅ = 0.1048
D ₁₀ =	C _u =	C _c =
<u>Classification</u>		
USCS= SP-SM	AASHTO=	
<u>Remarks</u>		

Location: USACE Sample # BI-CI-86A-11
Sample Number: TE Lab ID: 5054.101

Depth: 0.0 - 3.0 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

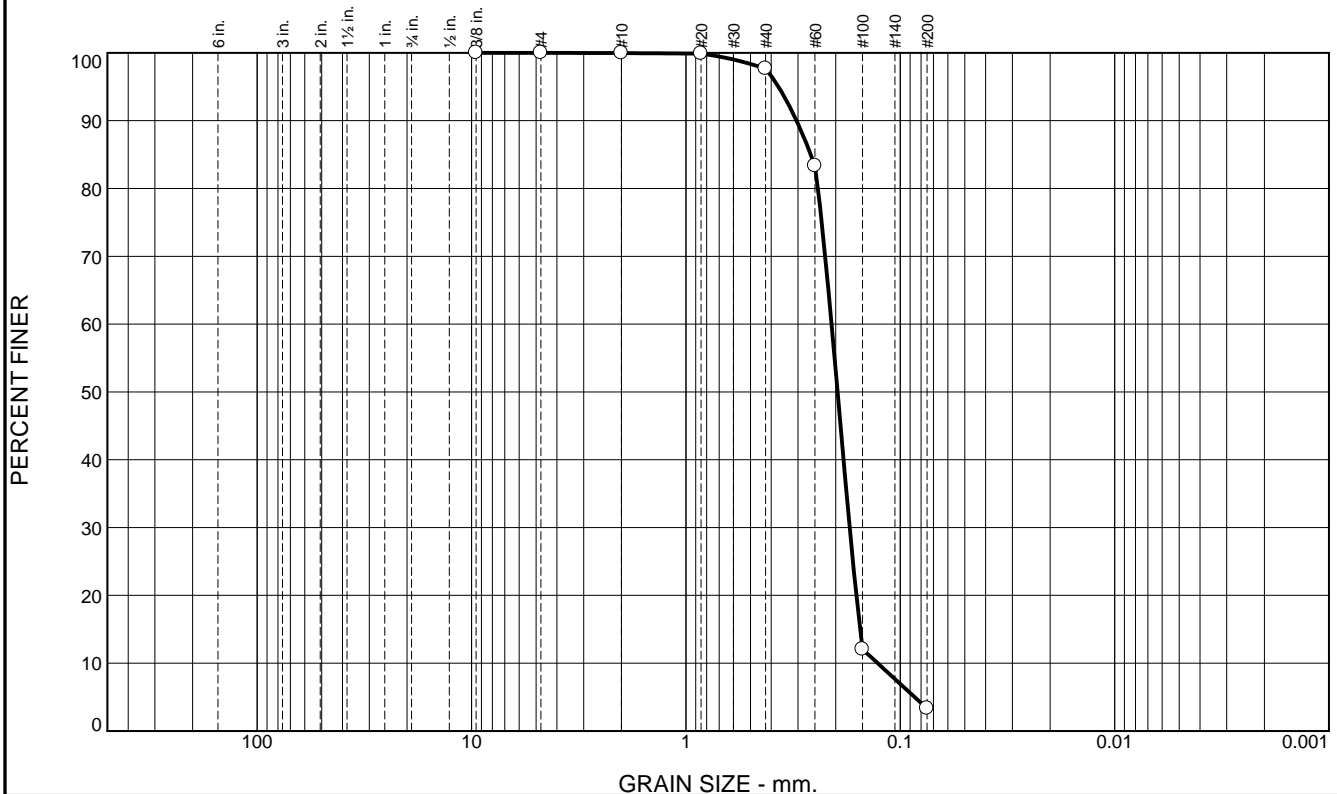
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	2.3	94.4	3.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	97.7		
#60	83.3		
#100	12.0		
#200	3.3		

* (no specification provided)

Material Description		
SAND (SP), fine grained		
<div> <div> Atterberg Limits PL= LL= PI= </div> <div> Coefficients D₉₀= 0.3050 D₈₅= 0.2616 D₆₀= 0.2090 D₅₀= 0.1960 D₃₀= 0.1722 D₁₅= 0.1540 D₁₀= 0.1275 C_u= 1.64 C_c= 1.11 </div> <div> Classification USCS= SP AASHTO= </div> <div> Remarks </div> </div>		

Location: USACE Sample # BI-CI-86B-11
Sample Number: TE Lab ID: 5054.102

Depth: 3.0 - 6.9 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

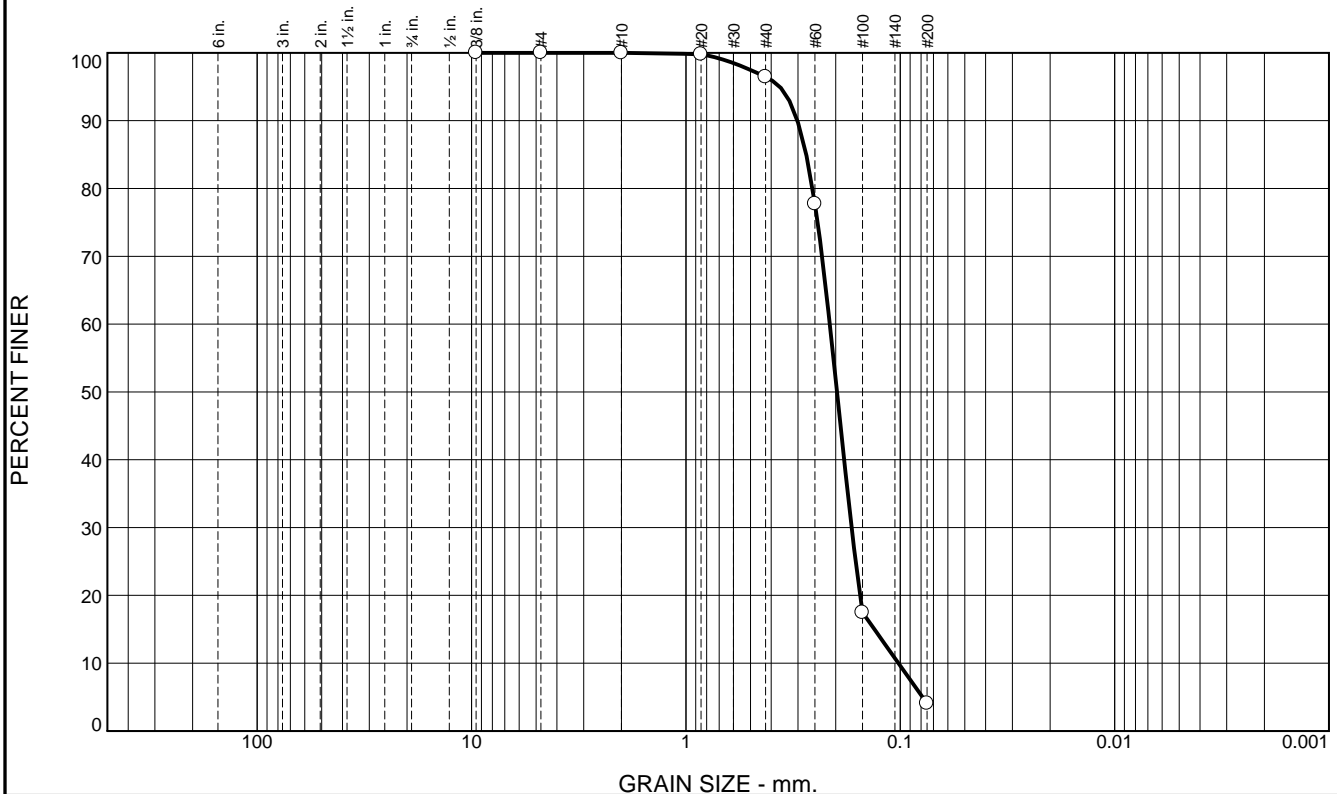
Project No: 11-2116-0057

Figure

Boring Designation BI-CI-87-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-87-11		LOCATION COORDINATES E = 915,759 N = 262,626		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		UNDISTURBED (UD) 0	
6. THICKNESS OF OVERBURDEN N/A				14. WATER DEPTH 13.2 Ft.		15. DATE BORING 06-28-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -12.5 Ft.		17. TOTAL RECOVERY FOR BORING 100%	
8. TOTAL DEPTH OF BORING 7.5 Ft.				18. SIGNATURE AND TITLE OF INSPECTOR Michele Johnson, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-12.5	0.0						
			SAND, poorly-graded, mostly medium-grained sand-sized quartz, some shell fragments, dark gray (SP)	A	Classification: SP Color: 2.5Y 6/2-light brownish gray D50: 0.1972 mm % Fines: 4.1		
			At El. -16.5 Ft., trace shell fragments, gray	B	Classification: SP Color: 2.5Y 6/1-gray D50: 0.1859 mm % Fines: 3.5		
-20.0	7.5						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	3.6	92.3	4.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.8		
#40	96.4		
#60	77.7		
#100	17.5		
#200	4.1		

<u>Material Description</u>		
SAND (SP), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.3021	D ₈₅ = 0.2748	D ₆₀ = 0.2131
D ₅₀ = 0.1972	D ₃₀ = 0.1687	D ₁₅ = 0.1321
D ₁₀ = 0.1020	C _u = 2.09	C _c = 1.31
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		

* (no specification provided)

Location: USACE Sample # BI-CI-87A-11
Sample Number: TE Lab ID: 5054.99

Depth: 0.0 - 4.0 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

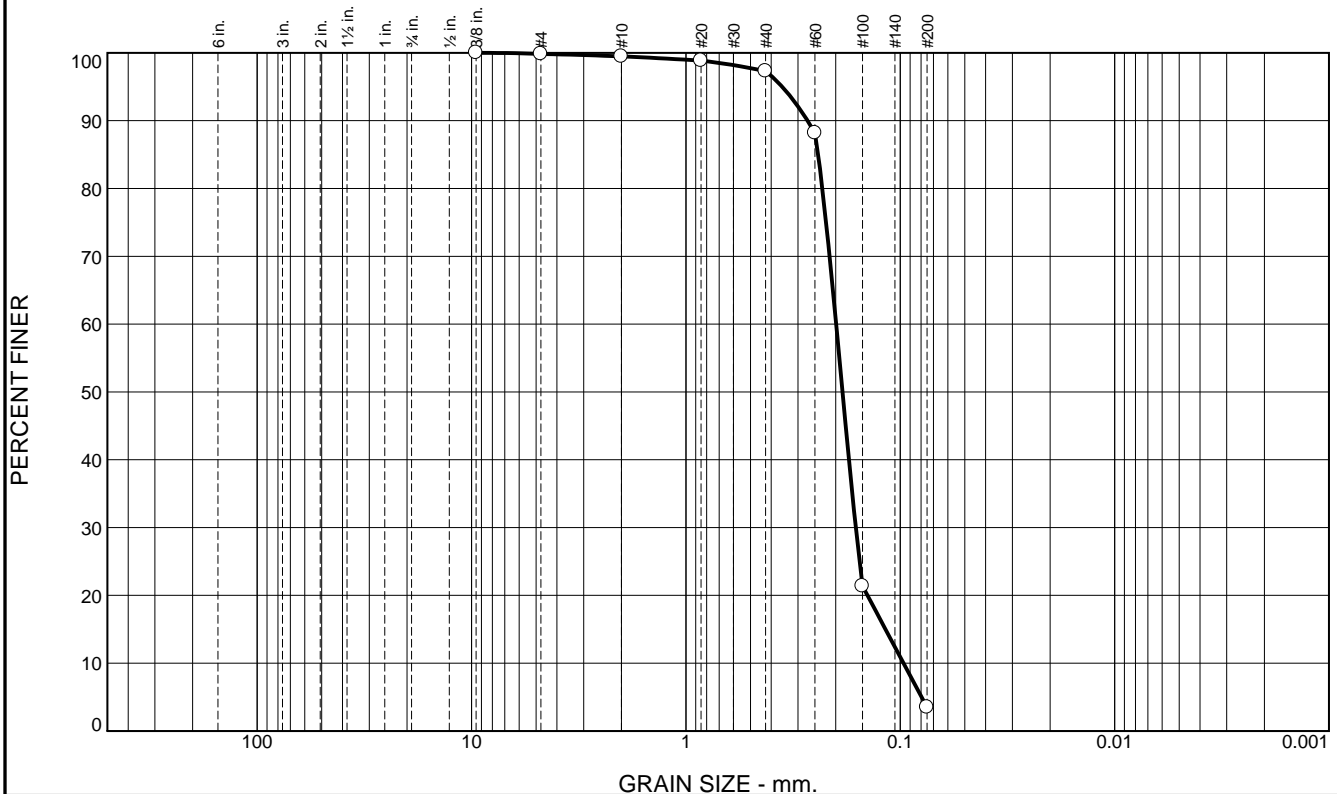
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.3	2.2	93.8	3.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.8		
#10	99.5		
#20	98.9		
#40	97.3		
#60	88.2		
#100	21.4		
#200	3.5		

* (no specification provided)

<u>Material Description</u>		
SAND (SP), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.2709	D ₈₅ = 0.2417	D ₆₀ = 0.1990
D ₅₀ = 0.1859	D ₃₀ = 0.1613	D ₁₅ = 0.1172
D ₁₀ = 0.0965	C _u = 2.06	C _c = 1.35
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		

Location: USACE Sample # BI-CI-87B-11
Sample Number: TE Lab ID: 5054.100

Depth: 4.0 - 7.5 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Boring Designation BI-CI-88-11

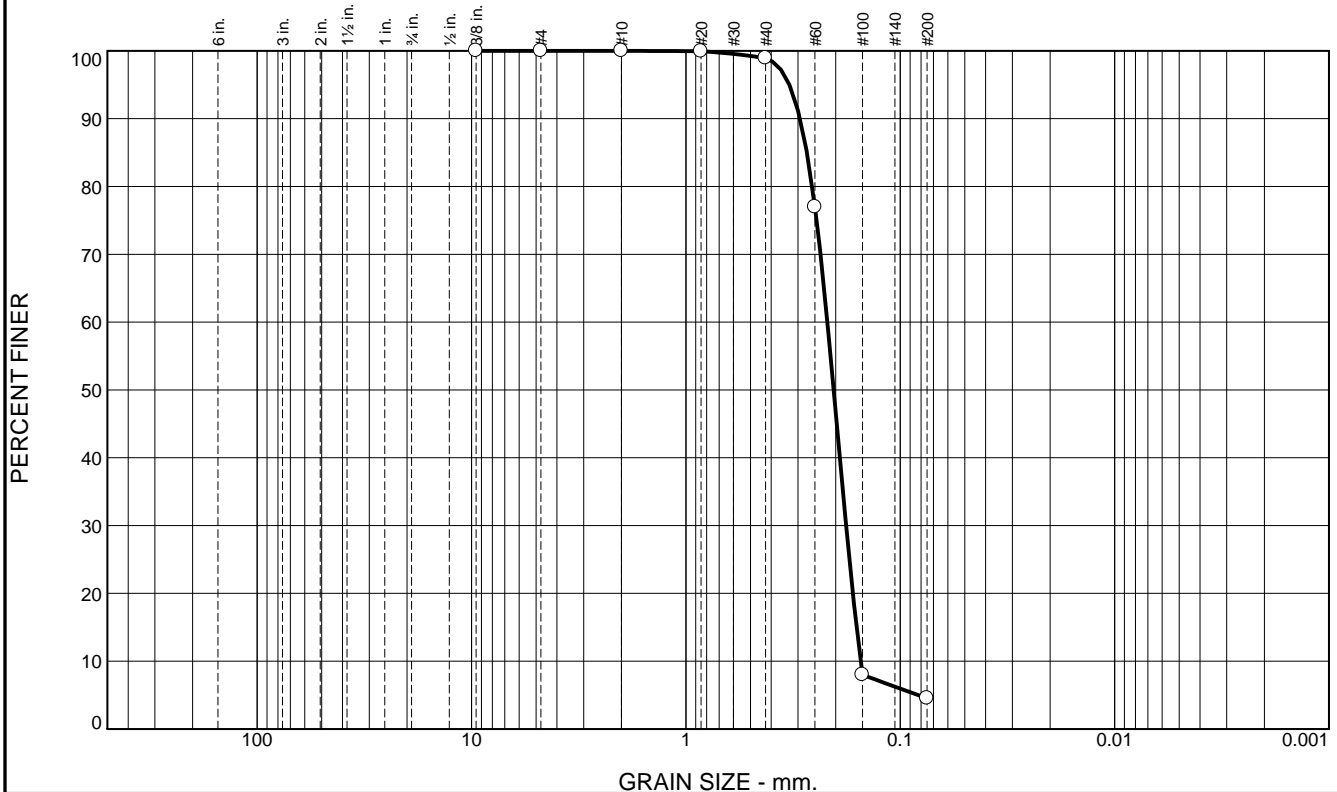
DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-88-11		LOCATION COORDINATES E = 906,273 N = 257,485		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 0 UNDISTURBED (UD)	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 11.9 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-28-11		STARTED 06-28-11 COMPLETED 06-28-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -10.1 Ft.			
8. TOTAL DEPTH OF BORING 11.2 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Michele Johnson, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-10.1	0.0						
			SAND, poorly-graded with silt, trace organic matter, trace shell fragments, gray (SP-SM)	A	Classification: SP-SM Color: 2.5Y 5/2-grayish brown D50: 0.2283 mm % Fines: 8.5		
			At El. -14.1 Ft., trace manufactured debris, gray	B	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.2044 mm % Fines: 4.5		
				NS			
-21.3	11.2						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

PERCENT FINER



<u>Material Description</u>		
Slightly silty SAND (SP-SM), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.3698	D ₈₅ = 0.3406	D ₆₀ = 0.2519
D ₅₀ = 0.2283	D ₃₀ = 0.1880	D ₁₅ = 0.1580
D ₁₀ = 0.1054	C _u = 2.39	C _c = 1.33
<u>Classification</u>		
USCS= SP-SM	AASHTO=	
<u>Remarks</u>		

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.1	94.4	4.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	98.9		
#60	77.0		
#100	8.0		
#200	4.5		

* (no specification provided)

<u>Material Description</u>		
SAND (SP), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.2937	D ₈₅ = 0.2727	D ₆₀ = 0.2188
D ₅₀ = 0.2044	D ₃₀ = 0.1788	D ₁₅ = 0.1599
D ₁₀ = 0.1530	C _u = 1.43	C _c = 0.96
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		

Location: USACE Sample # BI-CI-88B-11
Sample Number: TE Lab ID: 5054.95

Depth: 4.0 - 9.5 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Boring Designation BI-CI-89-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-89-11		LOCATION COORDINATES E = 905,746 N = 256,133		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 11.6 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING		STARTED 06-28-11 COMPLETED 06-28-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -9.9 Ft.			
8. TOTAL DEPTH OF BORING 10.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Michele Johnson, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-9.9	0.0						
-11.5	1.6		SAND, silty, trace shell fragments, gray (SM)	NS			
-13.6	3.7		SAND, clayey, some fine-grained silt, some clay, gray (SC)				
-19.9	10.0		CLAY, lean, mostly clay, dark gray (CL)				
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

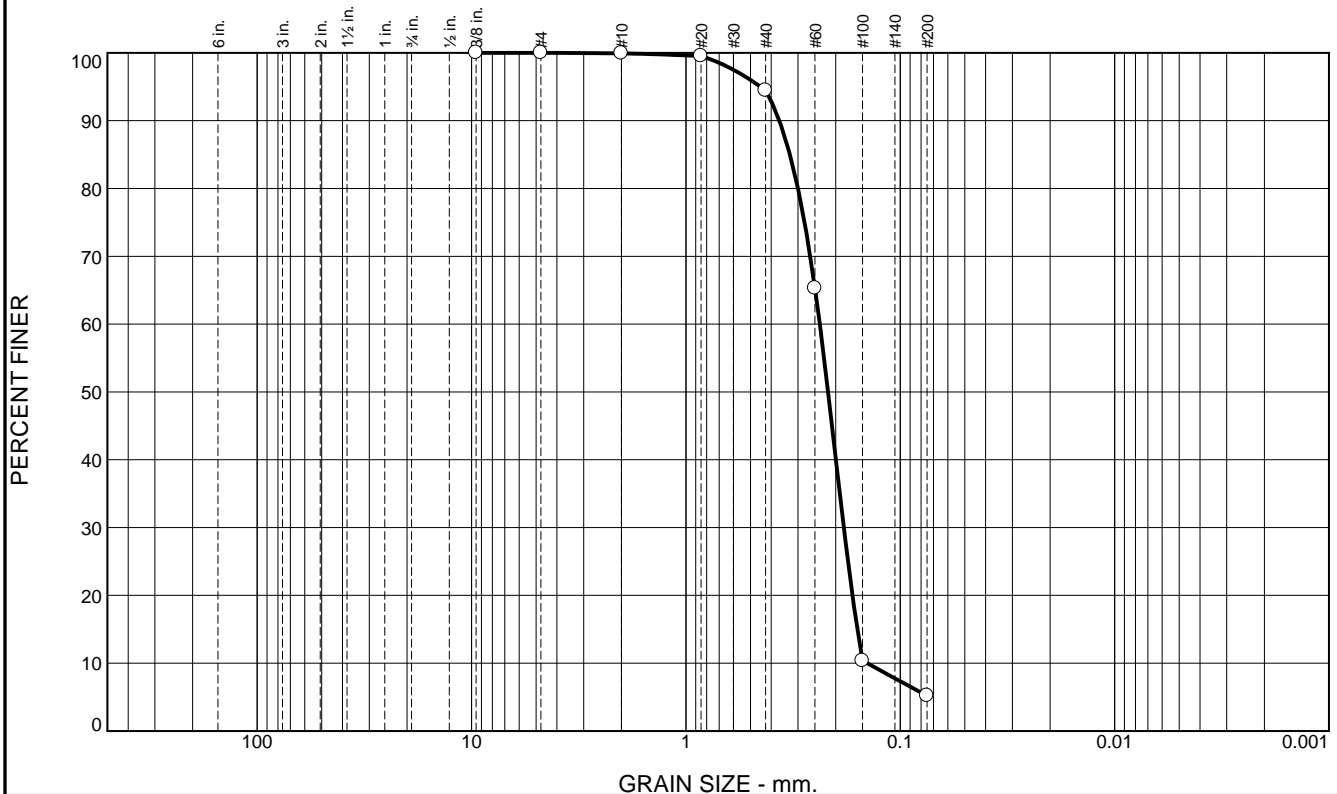
Boring Designation BI-CI-90-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-90-11		LOCATION COORDINATES E = 906,652 N = 257,113		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 0 UNDISTURBED (UD)	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 11.6 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-28-11		STARTED 06-28-11 COMPLETED 06-28-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -10.3 Ft.			
8. TOTAL DEPTH OF BORING 11.7 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Michele Johnson, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-10.3	0.0						
-11.0	0.7		CLAY, lean, dark gray (CL)				
-12.5	2.2		CLAY, fat, dark gray (CH)				
-13.3	3.0		CLAY, lean, dark gray (CL)				
			CLAY, fat, dark gray (CH)	NS			
-22.0	11.7						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Boring Designation BI-CI-91-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-91-11		LOCATION COORDINATES E = 907,236 N = 258,705		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 11.3 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-28-11		STARTED 06-28-11 COMPLETED 06-28-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -10.3 Ft.			
8. TOTAL DEPTH OF BORING 7.8 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Michele Johnson, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-10.3	0.0						
			SAND, poorly-graded, mostly medium-grained sand-sized quartz, gray (SP) At El. -13.3 Ft., trace shell fragments, gray	A	Classification: SP-SM Color: 2.5Y 5/2-grayish brown D50: 0.2172 mm % Fines: 5.2		
				B	Classification: SP Color: 5Y 4/1-dark gray D50: 0.2064 mm % Fines: 2.6		
-16.3	6.0						
			SAND, silty, trace shell fragments, dark gray (SM)	C	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.2099 mm % Fines: 1.7		
-18.1	7.8						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	5.5	89.2	5.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.5		
#40	94.4		
#60	65.3		
#100	10.4		
#200	5.2		

* (no specification provided)

Material Description
Slightly silty SAND (SP-SM), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.3667 D₈₅= 0.3274 D₆₀= 0.2374
 D₅₀= 0.2172 D₃₀= 0.1833 D₁₅= 0.1586
 D₁₀= 0.1429 C_u= 1.66 C_c= 0.99

Classification
 USCS= SP-SM AASHTO=

Remarks

Location: USACE Sample # BI-CI-91A-11
 Sample Number: TE Lab ID: 5054.96

Depth: 0.0 - 3.0 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

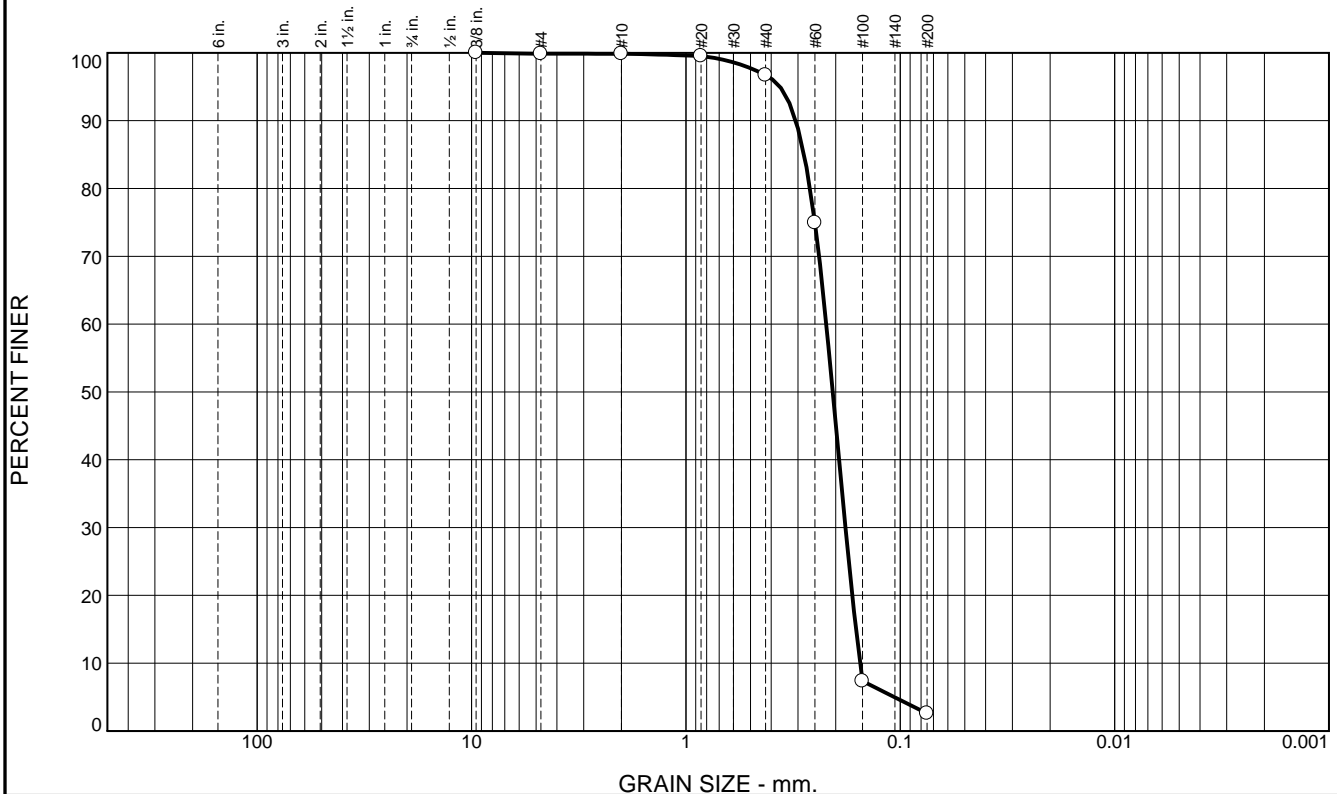
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
 Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.0	3.2	94.1	2.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.9		
#20	99.5		
#40	96.7		
#60	74.9		
#100	7.3		
#200	2.6		

* (no specification provided)

Material Description
SAND (SP), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.3076 D₈₅= 0.2813 D₆₀= 0.2214
 D₅₀= 0.2064 D₃₀= 0.1801 D₁₅= 0.1609
 D₁₀= 0.1540 C_u= 1.44 C_c= 0.95

Classification
 USCS= SP AASHTO=

Remarks

Location: USACE Sample # BI-CI-91B-11
 Sample Number: TE Lab ID: 5054.97

Depth: 3.0 - 6.0 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

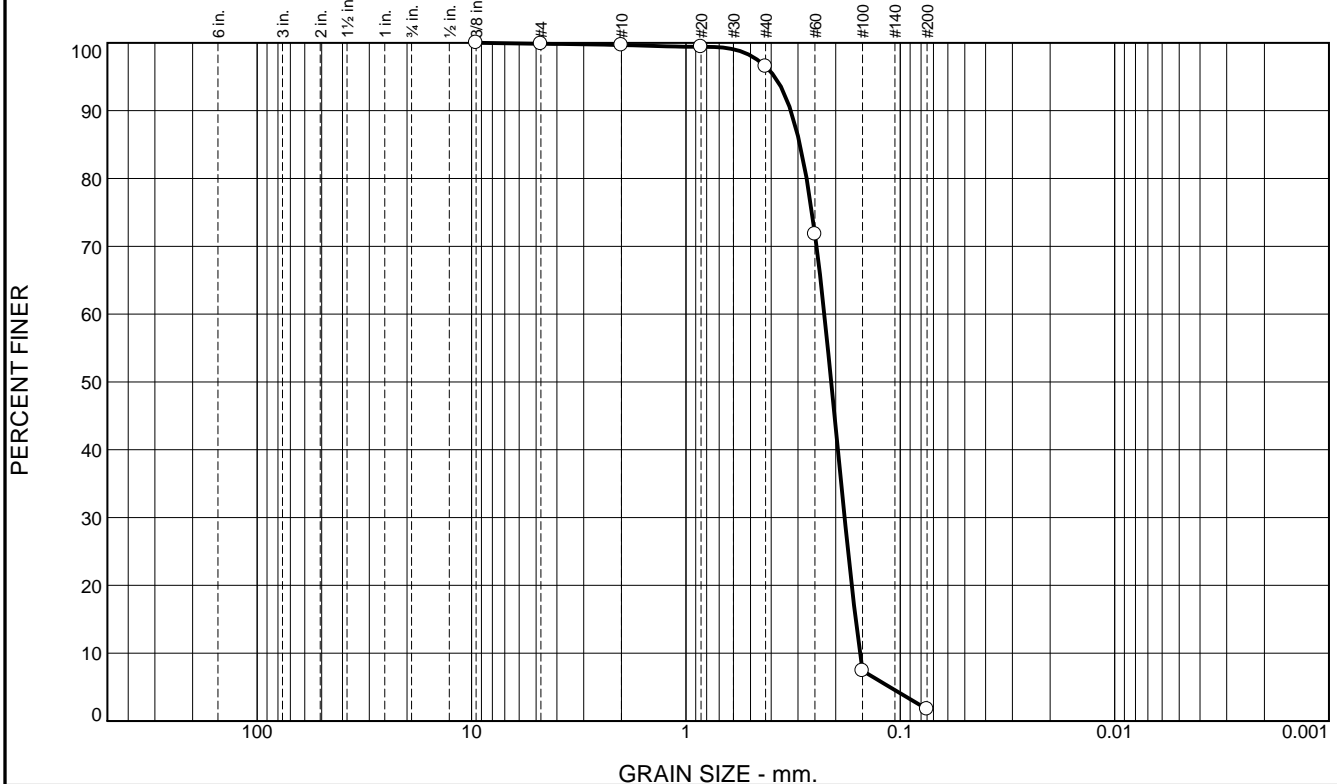
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
 Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.2	3.2	94.8	1.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.7		
#20	99.4		
#40	96.5		
#60	71.8		
#100	7.4		
#200	1.7		

* (no specification provided)

<u>Material Description</u>		
SAND (SP), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.3241	D ₈₅ = 0.2939	D ₆₀ = 0.2261
D ₅₀ = 0.2099	D ₃₀ = 0.1818	D ₁₅ = 0.1615
D ₁₀ = 0.1541	C _u = 1.47	C _c = 0.95
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		

Location: USACE Sample # BI-CI-91C-11
Sample Number: TE Lab ID: 5054.98

Depth: 6.0 - 7.8 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Boring Designation BI-CI-92-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Cat Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-CI-92-11		LOCATION COORDINATES E = 905,276 N = 256,545		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 10.6 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-28-11		STARTED COMPLETED 06-28-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -9.7 Ft.			
8. TOTAL DEPTH OF BORING 9.4 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Michele Johnson, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-9.7	0.0						
-10.1	0.4		SAND, silty, trace fine-grained sand-sized organic matter, trace organic matter, gray (SM)				
			CLAY, lean, some fine-grained sand, dark gray (CL)				
-13.2	3.5						
			CLAY, fat, dark gray (CH)	NS			
-19.1	9.4						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

APPENDIX F

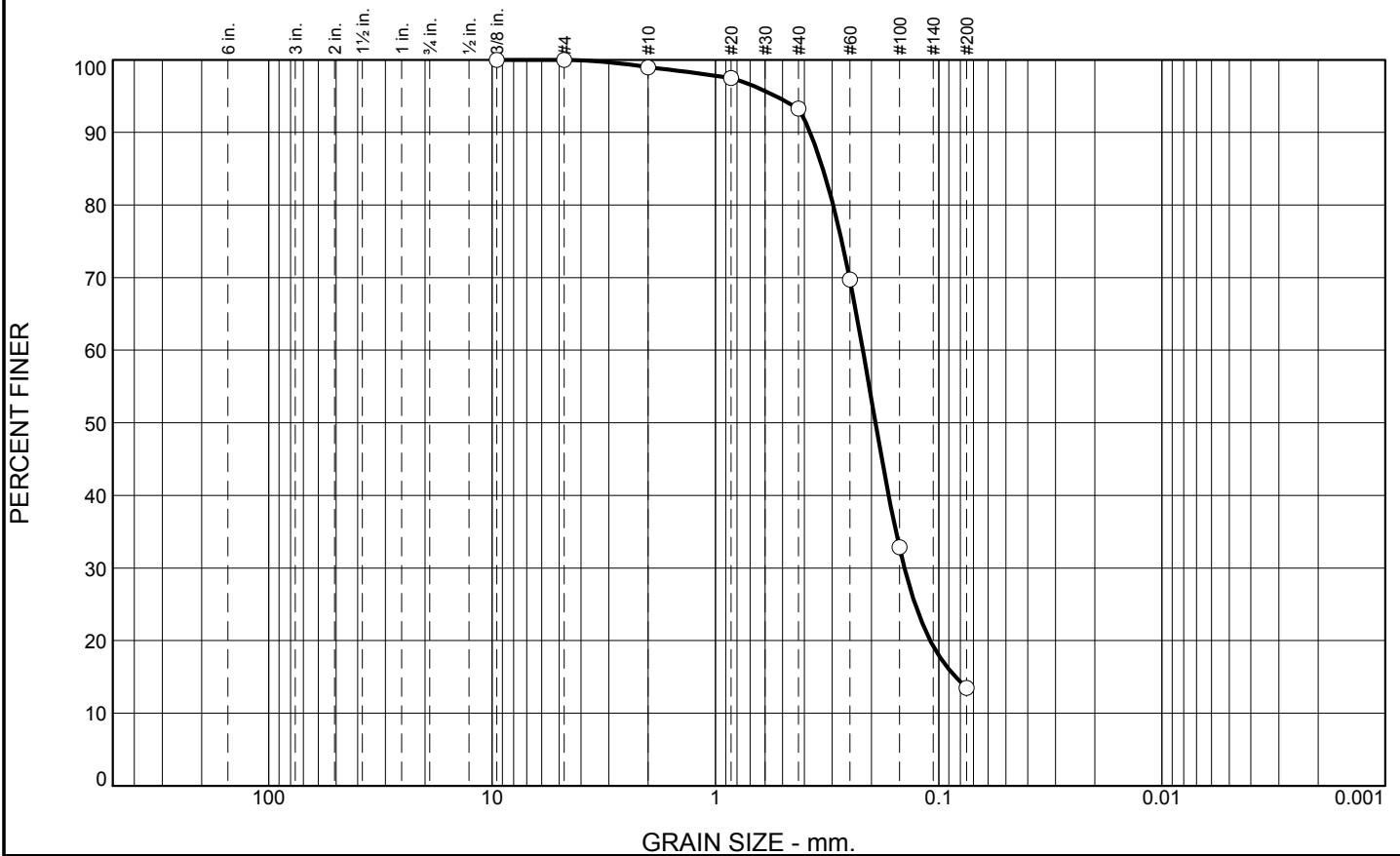
MISSISSIPPI SOUND BORING LOGS AND LAB RESULTS

Boring Designation BI-MS-01-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Mississippi Sound				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-MS-01-10		LOCATION COORDINATES E = 932,073 N = 269,458		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 16.7 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 05-06-10		STARTED 05-06-10 COMPLETED 05-06-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -16.1 Ft.			
8. TOTAL DEPTH OF BORING 14.2 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR J. Krick, Geotechnical Engineer			

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-16.1	0.0				
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little silt, trace shell fragments, gray (SP) At El. -18.1 Ft., discontinue silt	A	Classification: SM Color: 10YR 5/2-grayish brown D50: 0.192 mm % Fines: 13.5
				B	Classification: SP Color: 2.5Y 6.5/1-gray D50: 0.163 mm % Fines: 4.8
				C	Classification: SP-SM Color: 2.5Y 7/1-light gray D50: 0.1876 mm % Fines: 5.7
-26.9	10.8		SAND, silty, mostly fine-grained sand-sized quartz (SM)	NS	
-30.3	14.2				
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.		

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	1.0	5.7	79.8	13.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.0		
#20	97.5		
#40	93.3		
#60	69.7		
#100	32.8		
#200	13.5		

* (no specification provided)

Material Description

SILTY SAND, (SM), fine grained, with trace shell and clay pockets

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.3770

D₈₅= 0.3300

D₆₀= 0.2186

D₅₀= 0.1920

D₃₀= 0.1424

D₁₅= 0.0840

D₁₀=

C_u=

C_c=

Classification

USCS= SM

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-MS-1-10A
Sample Number: TE Lab ID: 4461.15

Depth: 0.0 - 2.0 (ft)

Date: 5/13/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Mississippi Barrier Island Restoration Project
Contract No. W91278-10-D-0026 - Task 03

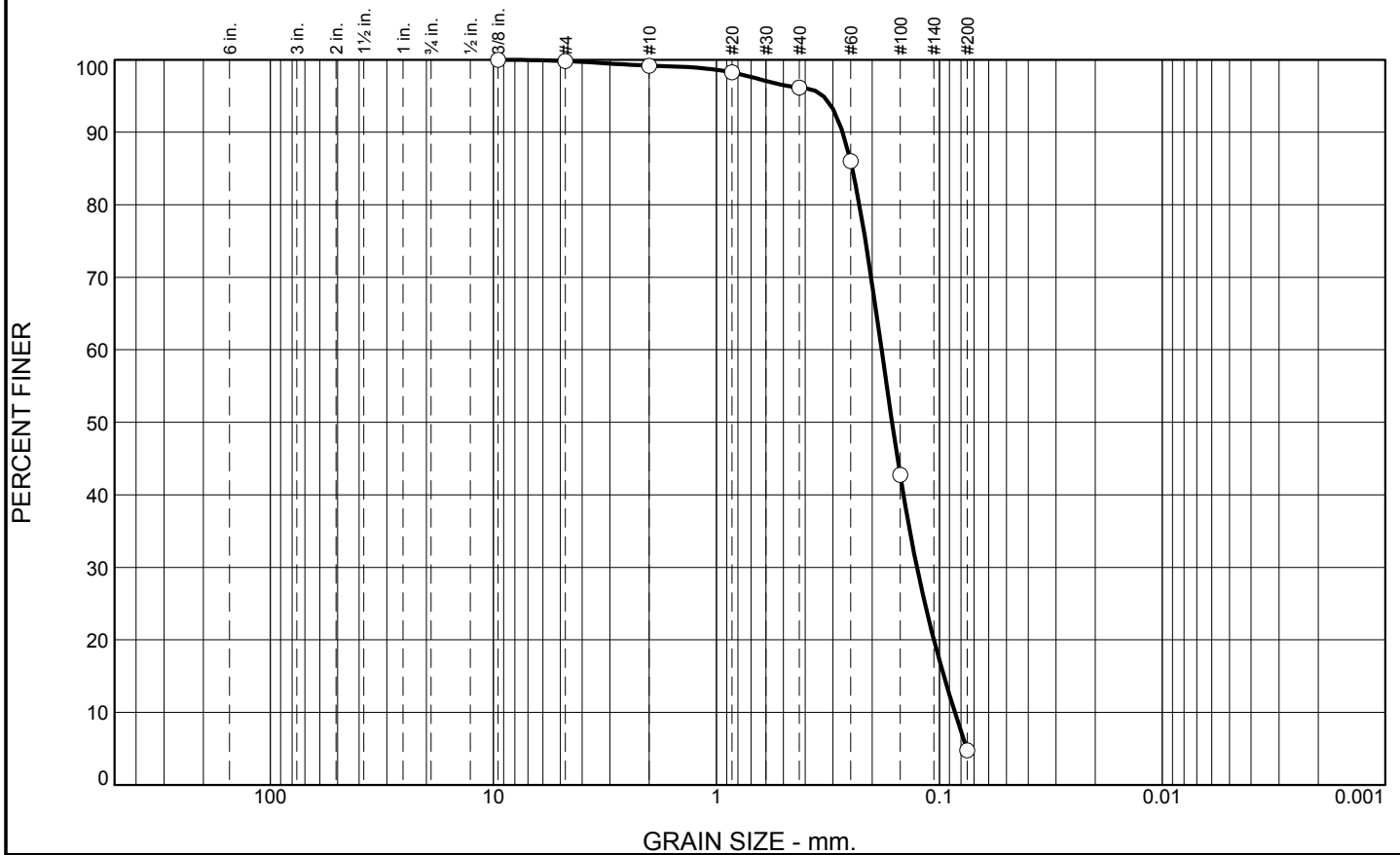
Project No: 1021230009

Figure

Tested By: J.Maddox/L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.6	3.1	91.3	4.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.8		
#10	99.2		
#20	98.3		
#40	96.1		
#60	86.0		
#100	42.7		
#200	4.8		

* (no specification provided)

Material Description		
SAND, (SP), fine grained		
<div> <div> Atterberg Limits PL= LL= PI= </div> <div> Coefficients D₉₀= 0.2713 D₈₅= 0.2458 D₆₀= 0.1816 D₅₀= 0.1630 D₃₀= 0.1260 D₁₅= 0.0955 D₁₀= 0.0852 C_u= 2.13 C_c= 1.03 </div> <div> Classification USCS= SP AASHTO= </div> <div> Remarks CADD CODE = CH10D965 </div> </div>		

Location: USACE Sample # BI-MS-1-10B
Sample Number: TE Lab ID: 4461.16

Depth: 2.0 -7.0 (ft)

Date: 5/13/10

Thompson Engineering
Mobile, Alabama

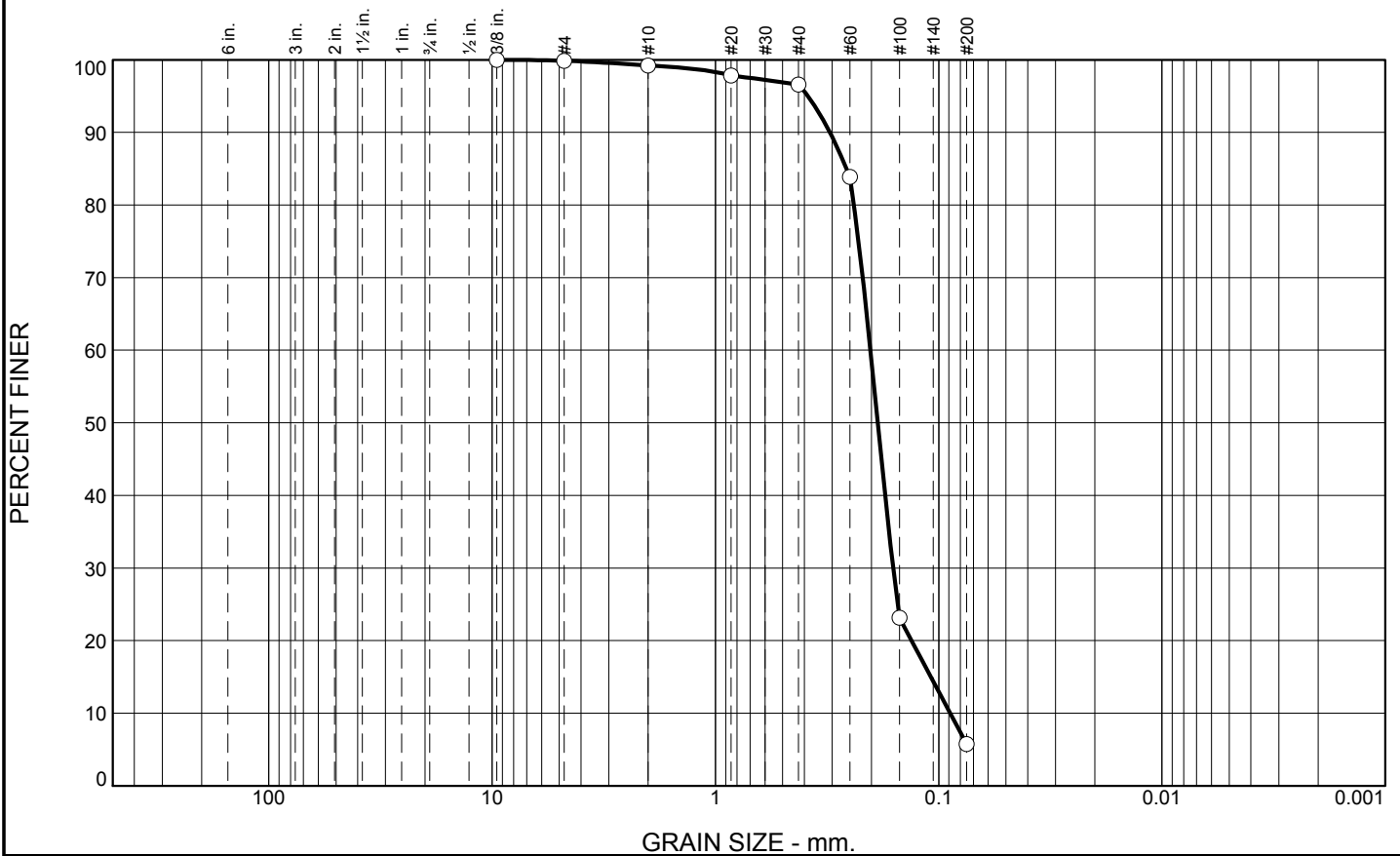
Client: US Army Corps of Engineers
Project: Mississippi Barrier Island Restoration Project
Contract No. W91278-10-D-0026 - Task 03
Project No: 1021230009

Figure

Tested By: J.Maddox/L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.7	2.6	90.9	5.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.2		
#20	97.8		
#40	96.6		
#60	83.9		
#100	23.1		
#200	5.7		

* (no specification provided)

Material Description

SAND, (SP-SM), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.3071

D₈₅= 0.2588

D₆₀= 0.2022

D₅₀= 0.1876

D₃₀= 0.1601

D₁₅= 0.1085

D₁₀= 0.0889

C_u= 2.28

C_c= 1.43

Classification

USCS= SP-SM

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-MS-1-10C
Sample Number: TE Lab ID: 4461.17

Depth: 7.0 - 10.67 (ft)

Date: 5/13/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Mississippi Barrier Island Restoration Project
Contract No. W91278-10-D-0026 - Task 03

Project No: 1021230009

Figure

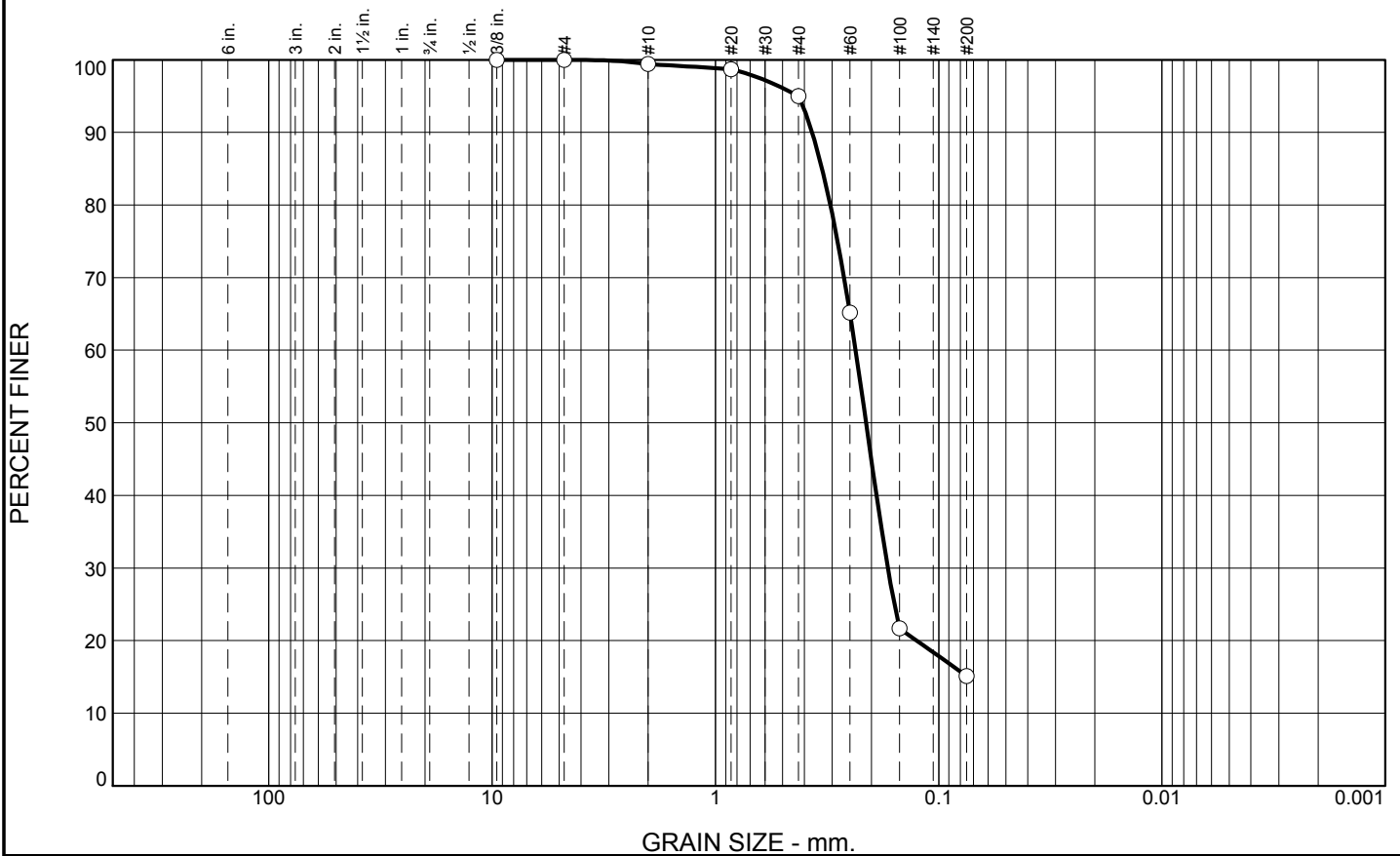
Tested By: J.Maddox/L.Stokes

Checked By: R.Byrd

Boring Designation BI-MS-02-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Mississippi Sound				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-MS-02-10		LOCATION COORDINATES E = 931,898 N = 271,145		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 0 UNDISTURBED (UD)	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 18 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 05-06-10		STARTED 05-06-10 COMPLETED 05-06-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -17.4 Ft.			
8. TOTAL DEPTH OF BORING 16.1 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR J. Krick, Geotechnical Engineer			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-17.4	0.0						
-19.4	2.0		SAND, silty, mostly fine-grained sand-sized quartz, trace shell fragments, gray (SM)	A	Classification: SM Color: 10YR 5/2-grayish brown D50: 0.2115 mm % Fines: 15.1		
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, trace shell fragments, gray (SP)	B	Classification: SP Color: 10YR 6/1-gray D50: 0.1841 mm % Fines: 3.7		
				C	Classification: SP-SM Color: 10YR 5/1-gray D50: 0.1717 mm % Fines: 5.8		
-29.4	12.0						
-33.5	16.1		SAND, silty, mostly fine-grained sand-sized quartz (SM)	NS			
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.6	4.4	79.9	15.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.4		
#20	98.7		
#40	95.0		
#60	65.2		
#100	21.7		
#200	15.1		

* (no specification provided)

Material Description		
SILTY SAND, (SM), fine grained, with clay pockets		
<div> <div> Atterberg Limits </div> <div> PL= </div> <div> LL= </div> <div> PI= </div> </div>		
<div> <div> Coefficients </div> <div> D₉₀= 0.3691 </div> <div> D₅₀= 0.2115 </div> <div> D₁₀= </div> <div> D₈₅= 0.3329 </div> <div> D₃₀= 0.1691 </div> <div> C_u= </div> <div> D₆₀= 0.2356 </div> <div> D₁₅= </div> <div> C_c= </div> </div>		
<div> <div> Classification </div> <div> USCS= SM </div> <div> AASHTO= </div> </div>		
<div> <div> Remarks </div> <div> CADD CODE = CH10D965 </div> </div>		

Location: USACE Sample # BI-MS-2-10A
Sample Number: TE Lab ID: 4461.18

Depth: 0.0 - 2.0 (ft)

Date: 5/13/10

Thompson Engineering
Mobile, Alabama

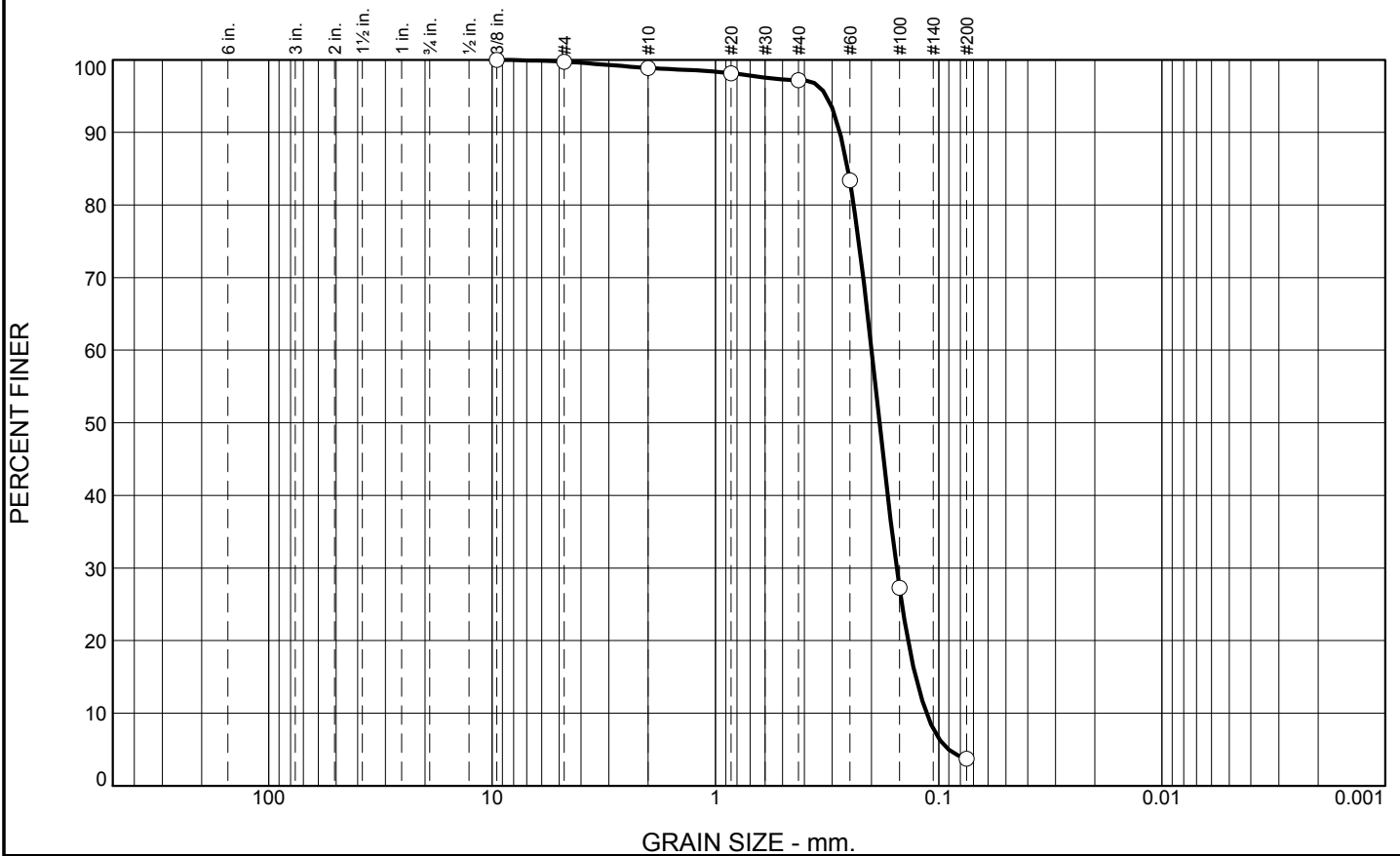
Client: US Army Corps of Engineers
Project: Mississippi Barrier Island Restoration Project
Contract No. W91278-10-D-0026 - Task 03
Project No: 1021230009

Figure

Tested By: J.Maddox/L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.3	0.8	1.7	93.5	3.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.7		
#10	98.9		
#20	98.2		
#40	97.2		
#60	83.4		
#100	27.3		
#200	3.7		

* (no specification provided)

Material Description		
SAND, (SP), fine grained		
<div> <div>PL=</div> <div> <div>Atterberg Limits</div> <div>LL=</div> <div>PI=</div> </div> </div>		
<div> <div> <div>D₉₀= 0.2768</div> <div>D₅₀= 0.1841</div> <div>D₁₀= 0.1135</div> </div> <div> <div>Coefficients</div> <div>D₈₅= 0.2553</div> <div>D₃₀= 0.1543</div> <div>C_u= 1.76</div> </div> <div> <div>D₆₀= 0.1998</div> <div>D₁₅= 0.1267</div> <div>C_c= 1.05</div> </div> </div>		
<div> <div>USCS= SP</div> <div>Classification</div> <div>AASHTO=</div> </div>		
<div> <div>Remarks</div> <div>CADD CODE = CH10D965</div> </div>		

Location: USACE Sample # BI-MS-2-10B
Sample Number: TE Lab ID: 4461.19

Depth: 2.0 - 7.0 (ft)

Date: 5/13/10

Thompson Engineering
Mobile, Alabama

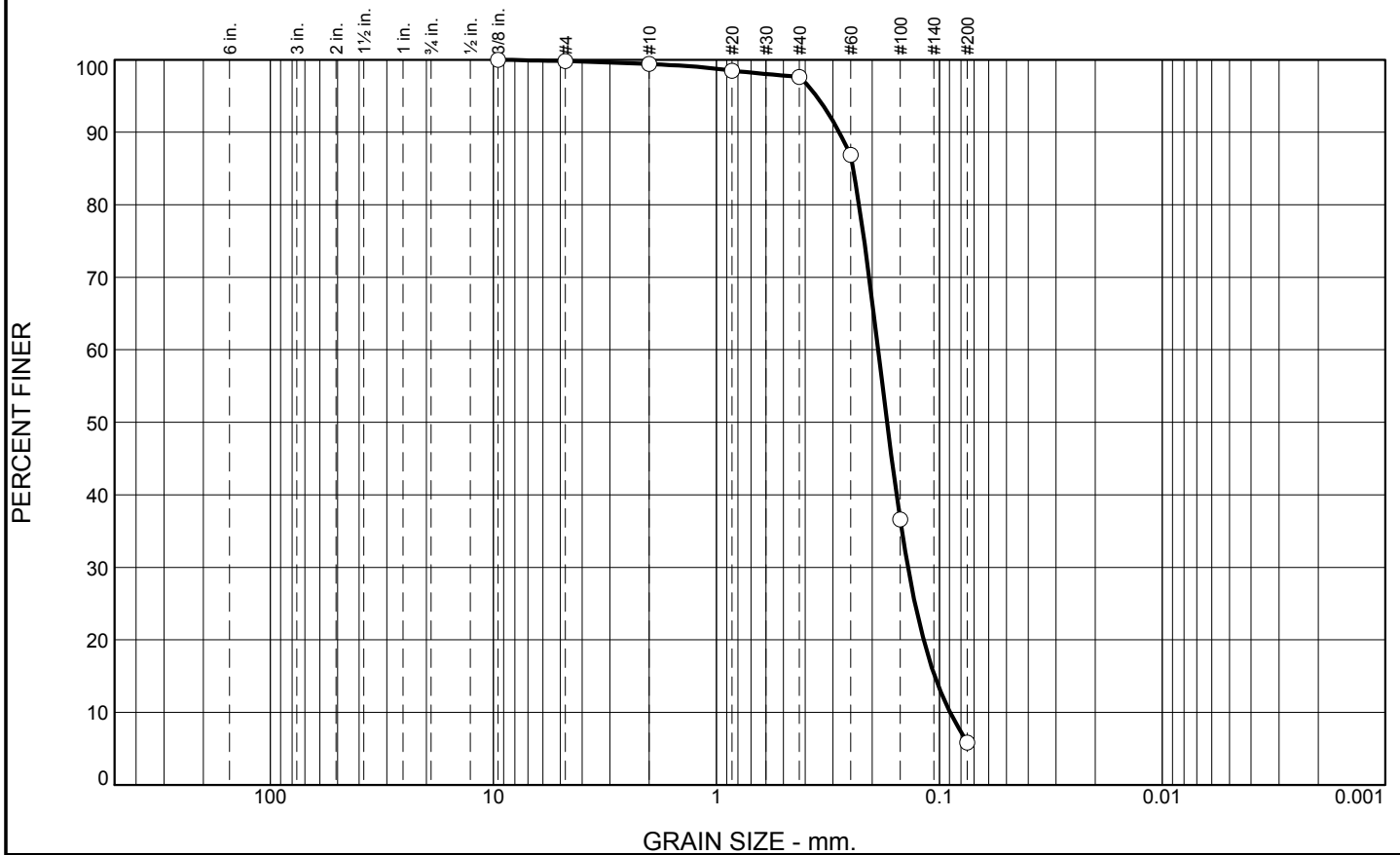
Client: US Army Corps of Engineers
Project: Mississippi Barrier Island Restoration Project
Contract No. W91278-10-D-0026 - Task 03
Project No: 1021230009

Figure

Tested By: J.Maddox/L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.4	1.8	91.8	5.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.8		
#10	99.4		
#20	98.5		
#40	97.6		
#60	86.9		
#100	36.6		
#200	5.8		

* (no specification provided)

Material Description

SAND, (SP-SM), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.2812

D₈₅= 0.2436

D₆₀= 0.1882

D₅₀= 0.1717

D₃₀= 0.1383

D₁₅= 0.1049

D₁₀= 0.0895

C_u= 2.10

C_c= 1.14

Classification

USCS= SP-SM

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-MS-2-10C
Sample Number: TE Lab ID: 4461.20

Depth: 7.0 - 12.0 (ft)

Date: 5/13/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Mississippi Barrier Island Restoration Project
Contract No. W91278-10-D-0026 - Task 03

Project No: 1021230009

Figure

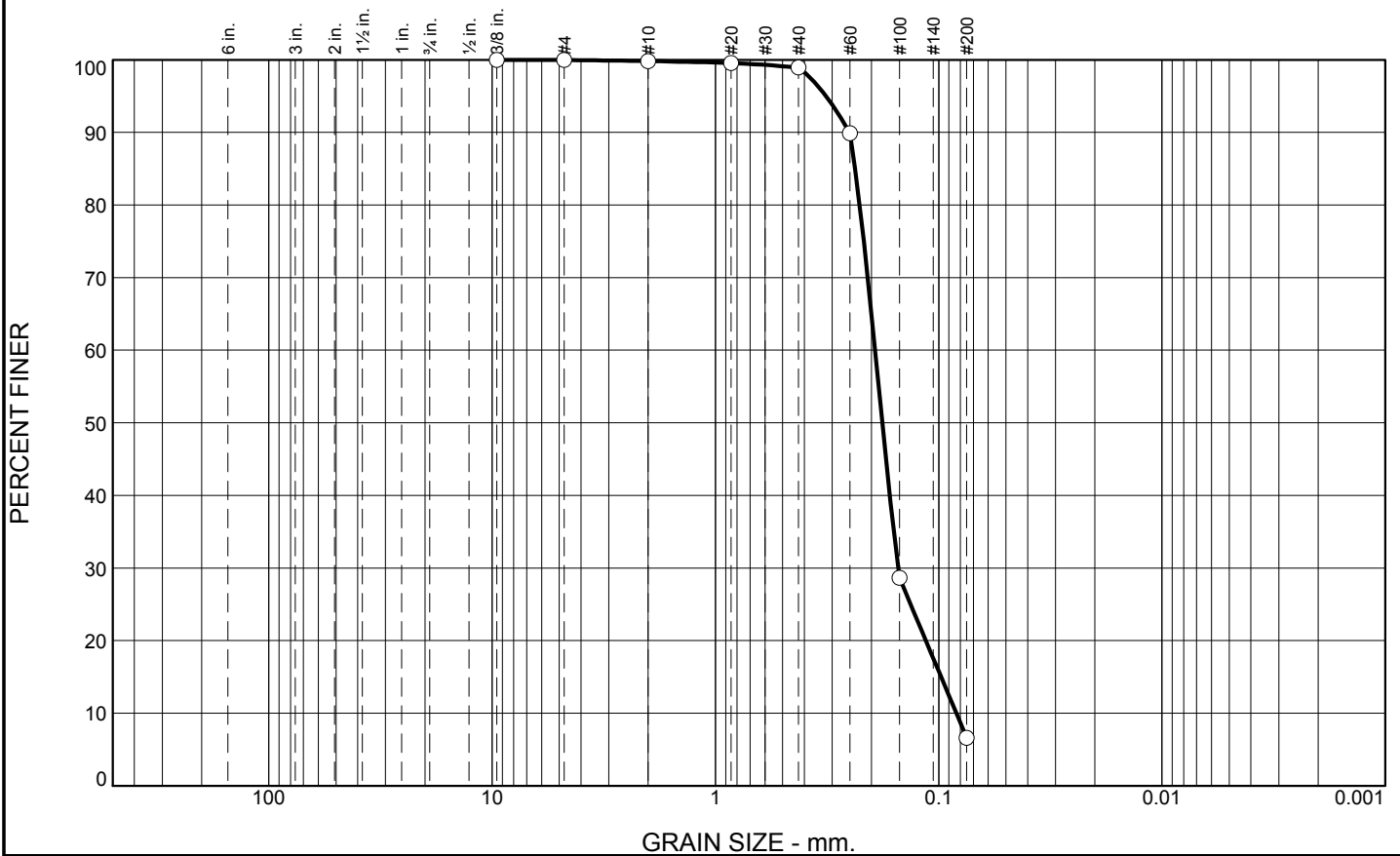
Tested By: J.Maddox/L.Stokes

Checked By: R.Byrd

Boring Designation BI-MS-03-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Mississippi Sound				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-MS-03-10		LOCATION COORDINATES E = 931,707 N = 272,139		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 0 UNDISTURBED (UD)	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 19 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 05-06-10		STARTED 05-06-10 COMPLETED 05-06-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -18.3 Ft.			
8. TOTAL DEPTH OF BORING 16.2 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR J. Krick, Geotechnical Engineer			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-18.3	0.0						
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace silt, trace shell fragments, gray (SP)	A	Classification: SP-SM Color: 10YR 5/1-gray D50: 0.179 mm % Fines: 6.6		
-23.9	5.6						
-25.0	6.7		SAND, silty, mostly fine-grained sand-sized quartz, gray (SM)	NS			
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little silt, trace shell fragments, gray (SP)	B	Classification: SP-SM Color: 10YR 5/1-gray D50: 0.1856 mm % Fines: 7.9		
-30.3	12.0						
-32.5	14.2		SAND, silty, mostly fine-grained sand-sized quartz, dark gray (SM)	NS			
-34.5	16.2		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little silt, gray and tan (SP)				
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	0.9	92.3	6.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.8		
#20	99.6		
#40	98.9		
#60	89.9		
#100	28.7		
#200	6.6		

* (no specification provided)

Material Description
SAND, (SP-SM), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.2512 D₈₅= 0.2368 D₆₀= 0.1928
 D₅₀= 0.1790 D₃₀= 0.1520 D₁₅= 0.0976
 D₁₀= 0.0834 C_u= 2.31 C_c= 1.44

Classification
 USCS= SP-SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-MS-3-10A
Sample Number: TE Lab ID: 4461.21

Depth: 0.0 - 5.5 (ft)

Date: 5/13/10

Thompson Engineering

Mobile, Alabama

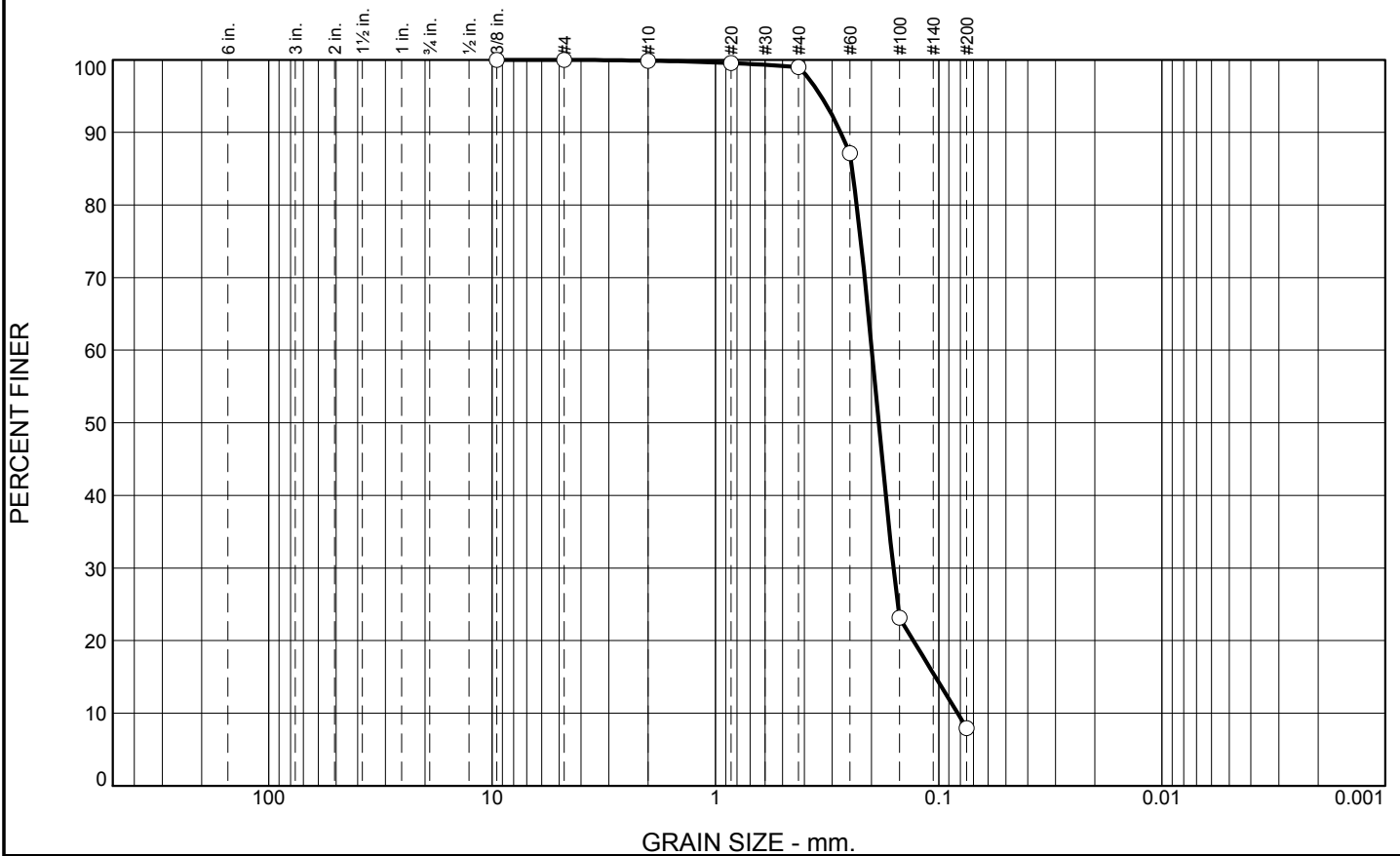
Client: US Army Corps of Engineers
Project: Mississippi Barrier Island Restoration Project
 Contract No. W91278-10-D-0026 - Task 03
Project No: 1021230009

Figure

Tested By: J.Maddox/L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	0.9	91.1	7.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.6		
#40	99.0		
#60	87.1		
#100	23.2		
#200	7.9		

* (no specification provided)

Material Description		
SAND, (SP-SM), fine grained		
<div> <div> Atterberg Limits PL= LL= PI= </div> <div> Coefficients D₉₀= 0.2749 D₈₅= 0.2443 D₆₀= 0.1993 D₅₀= 0.1856 D₃₀= 0.1596 D₁₅= 0.1034 D₁₀= 0.0823 C_u= 2.42 C_c= 1.55 </div> <div> Classification USCS= SP-SM AASHTO= </div> <div> Remarks CADD CODE = CH10D965 </div> </div>		

Location: USACE Sample # BI-MS-3-10B
Sample Number: TE Lab ID: 4461.22

Depth: 6.58 - 12.0 (ft)

Date: 5/13/10

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Mississippi Barrier Island Restoration Project
Contract No. W91278-10-D-0026 - Task 03
Project No: 1021230009

Figure

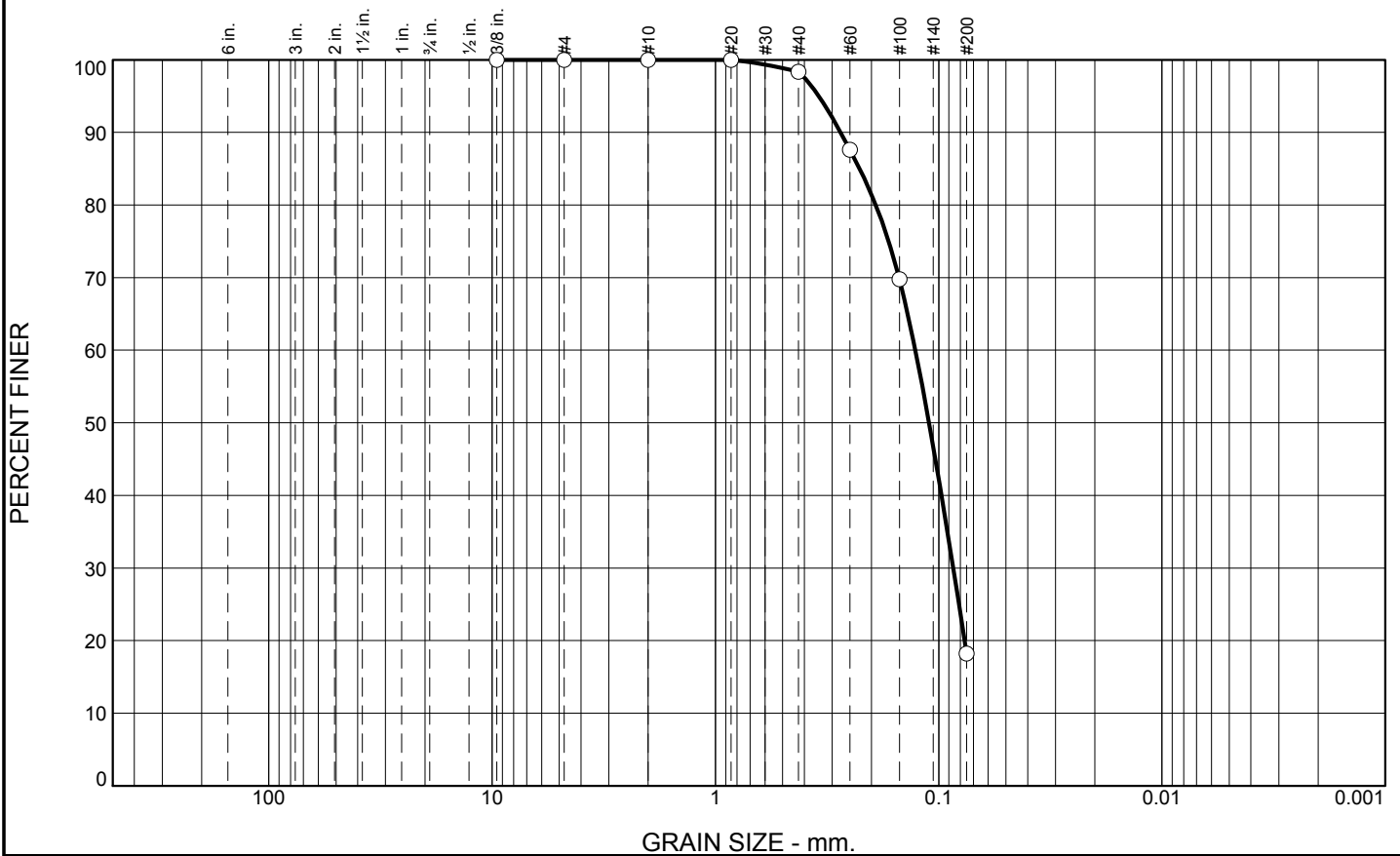
Tested By: J.Maddox/L.Stokes

Checked By: R.Byrd

Boring Designation BI-MS-04-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Mississippi Sound				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-MS-04-10		LOCATION COORDINATES E = 931,706 N = 273,317		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 1 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		BEARING		13. TOTAL NUMBER CORE BOXES	
6. THICKNESS OF OVERBURDEN N/A		7. DEPTH DRILLED INTO ROCK N/A		8. TOTAL DEPTH OF BORING 12.1 Ft.		14. WATER DEPTH 22 Ft.	
						15. DATE BORING STARTED 05-21-10 COMPLETED 05-21-10	
						16. ELEVATION TOP OF BORING -21.2 Ft.	
						17. TOTAL RECOVERY FOR BORING 100%	
						18. SIGNATURE AND TITLE OF INSPECTOR Mark Green, Geotechnical Engineer	
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-21.2	0.0		CLAY, lean, very soft, trace fine-grained sand-sized quartz (CL)	NS			
-31.7	10.5		SAND, silty, mostly fine-grained sand-sized quartz, trace clay, trace organic matter, Lt. gray, tan, and orange, mottled (SM)	A	Classification: SM Color: - D50: 0.1105 mm % Fines: 18.2		
-33.3	12.1		NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.6	80.2	18.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	100.0		
#40	98.4		
#60	87.6		
#100	69.8		
#200	18.2		

* (no specification provided)

<u>Material Description</u>		
SILTY SAND, (SM), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.2751	D ₈₅ = 0.2262	D ₆₀ = 0.1273
D ₅₀ = 0.1105	D ₃₀ = 0.0861	D ₁₅ =
D ₁₀ =	C _u =	C _c =
<u>Classification</u>		
USCS= SM	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-MS-04-10A
Sample Number: TE Lab ID: 4489.14

Depth: 10.5 - 12.1 (ft.)

Date: 5/30/10

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

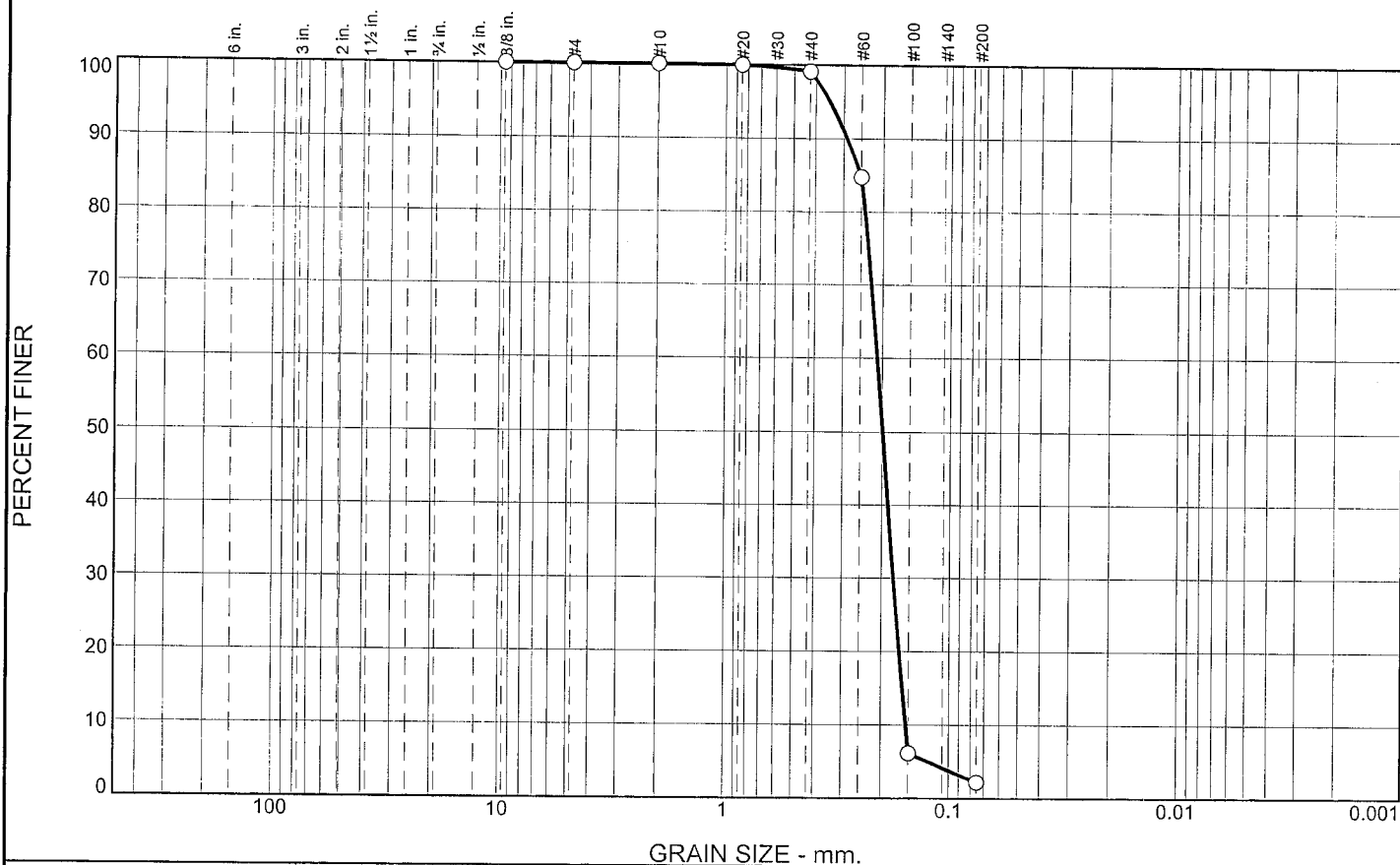
Boring Designation BI-MS-05-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Mississippi Sound				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-MS-05-10		LOCATION COORDINATES E = 931,420 N = 274,248		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES		UNDISTURBED (UD) 0	
6. THICKNESS OF OVERBURDEN N/A		BEARING		14. WATER DEPTH 21 Ft.		15. DATE BORING 05-08-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -21.4 Ft.		COMPLETED 05-08-10	
8. TOTAL DEPTH OF BORING 10.8 Ft.				17. TOTAL RECOVERY FOR BORING 100%		18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist	
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-21.4	0.0		CLAY, lean (CL)	NS			
-31.3	9.9						
-32.2	10.8		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt (SM)				
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Boring Designation BI-MS-06-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Mississippi Sound				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-MS-06-10		LOCATION COORDINATES E = 920,335 N = 271,102		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 9 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 05-10-10		STARTED 05-10-10 COMPLETED 05-10-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -8.1 Ft.			
8. TOTAL DEPTH OF BORING 14.3 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-8.1	0.0						
-11.1	3.0		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little silt, little shell fragments, lt. gray (SP)	A	Classification: SP Color: 10YR 6/1-gray D50: 0.1984 mm % Fines: 2.2		
-18.6	10.5		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, little shell fragments, gray (SM)	B	Classification: SM Color: 10YR 5/1-gray D50: 0.1871 mm % Fines: 15.7		
-22.4	14.3		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little shell fragments, trace silt, lt. gray (SP)	C	Classification: SP-SM Color: 10YR 6/1-gray D50: 0.1872 mm % Fines: 5.3		
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.	NS			

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.9	96.9	2.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	99.1		
#60	84.8		
#100	6.2		
#200	2.2		

* (no specification provided)

Material Description
SAND, (SP), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.2903 D₈₅= 0.2516 D₆₀= 0.2103
 D₅₀= 0.1984 D₃₀= 0.1767 D₁₅= 0.1605
 D₁₀= 0.1547 C_u= 1.36 C_c= 0.96

Classification
 USCS= SP AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-MS-6-10A
 Sample Number: TE Lab ID: 4473.01

Depth: 0.0 - 3.0 (ft)

Date: 5/17/10

Thompson Engineering

Mobile, Alabama

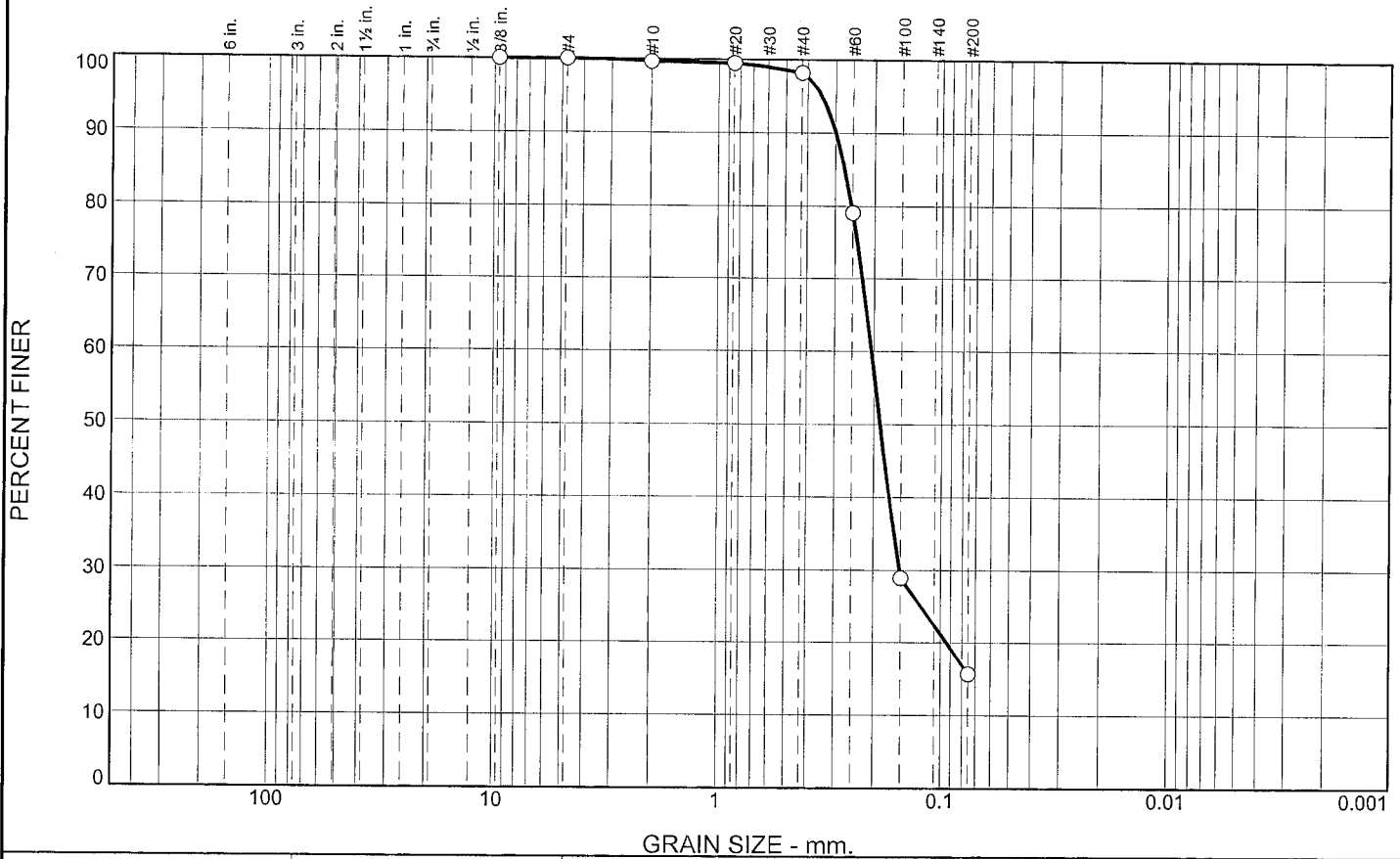
Client: US Army Corps of Engineers
 Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
 Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.3	1.5	82.5	15.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.7		
#20	99.5		
#40	98.2		
#60	79.1		
#100	28.9		
#200	15.7		

* (no specification provided)

Material Description

SILTY SAND, (SM), fine grained, with trace shell

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.2987

D₈₅= 0.2718

D₆₀= 0.2052

D₅₀= 0.1871

D₃₀= 0.1521

D₁₅=

D₁₀=

C_u=

C_c=

Classification

USCS= SM

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-MS-6-10B
Sample Number: TE Lab ID: 4473.02

Depth: 3.0 - 10.5 (ft)

Date: 5/17/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

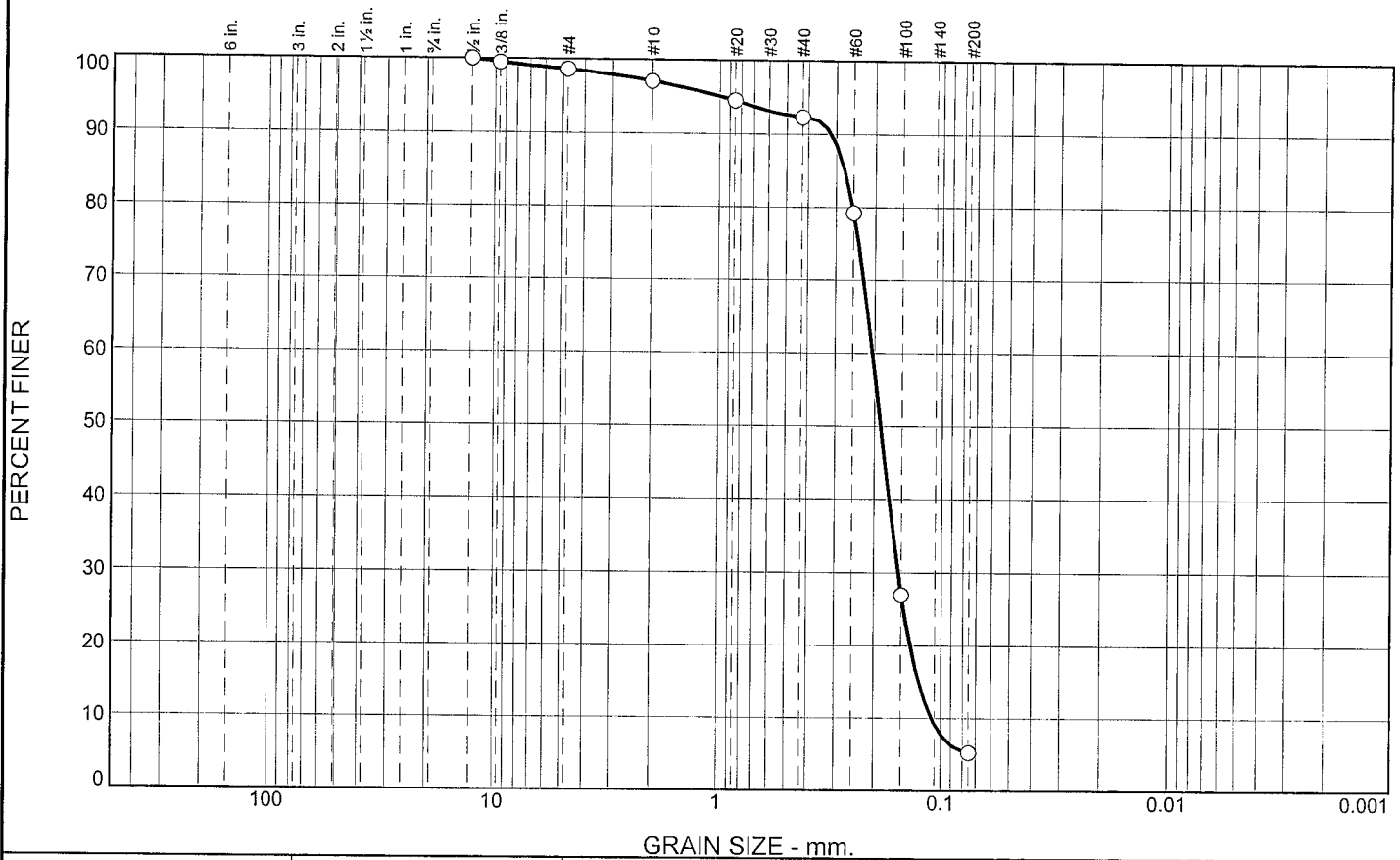
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.4	1.5	4.8	87.0	5.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.500	100.0		
.375	99.5		
#4	98.6		
#10	97.1		
#20	94.5		
#40	92.3		
#60	79.2		
#100	27.0		
#200	5.3		

* (no specification provided)

Material Description
SAND, (SP-SM), fine grained, with shell

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.3167 D₈₅= 0.2746 D₆₀= 0.2045
D₅₀= 0.1872 D₃₀= 0.1551 D₁₅= 0.1253
D₁₀= 0.1101 C_u= 1.86 C_c= 1.07

Classification
USCS= SP-SM AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-MS-6-10C
Sample Number: TE Lab ID: 4473.03

Depth: 10.5 - 14.3 (ft)

Date: 5/17/10

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

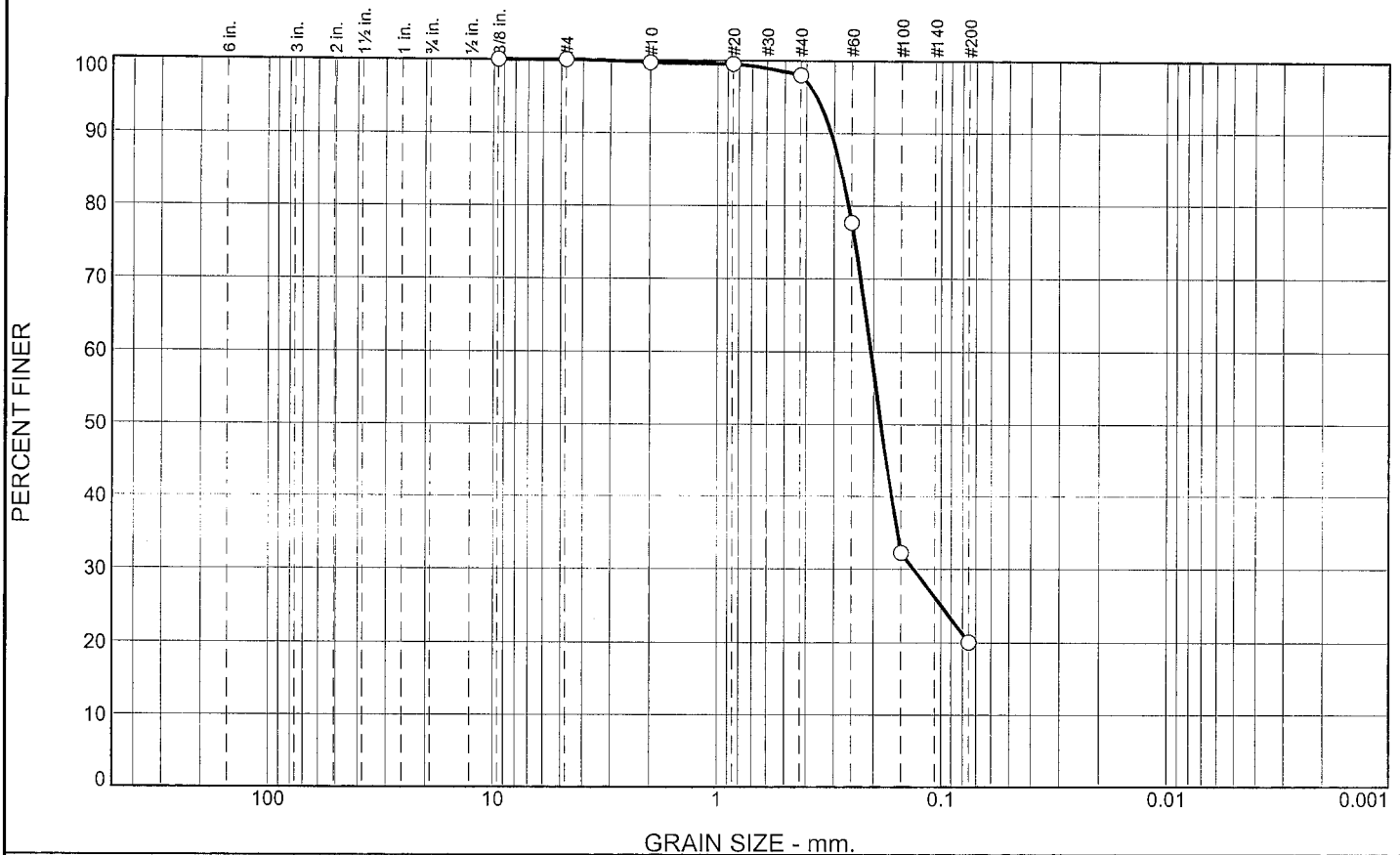
Figure

Tested By: L.Stokes Checked By: R.Byrd

Boring Designation BI-MS-07-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Mississippi Sound				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-MS-07-10		LOCATION COORDINATES E = 920,041 N = 268,819		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 12 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 05-08-10		STARTED 05-08-10 COMPLETED 05-08-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -12.3 Ft.			
8. TOTAL DEPTH OF BORING 14.5 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-12.3	0.0						
			SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments, brown (SM)	A	Classification: SM Color: 10YR 4/1-dark gray D50: 0.185 mm % Fines: 20		
-17.3	5.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace shell fragments, tan and lt. gray (SP)	B	Classification: SP Color: 10YR 6/1-gray D50: 0.1976 mm % Fines: 3.9		
				C	Classification: SP-SM Color: 10YR 6/1-gray D50: 0.1216 mm % Fines: 8.1		
-26.8	14.5						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.3	1.7	78.0	20.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.7		
#20	99.5		
#40	98.0		
#60	77.6		
#100	32.2		
#200	20.0		

* (no specification provided)

Material Description
SILTY SAND, (SM), fine grained, with trace shell

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.3094 D₈₅= 0.2795 D₆₀= 0.2050
 D₅₀= 0.1850 D₃₀= 0.1322 D₁₅=
 D₁₀= C_u= C_c=

Classification
 USCS= SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-MS-7-10A
 Sample Number: TE Lab ID: 4473.04

Depth: 0.0 - 5.0 (ft)

Date: 5/17/10

Thompson Engineering

Mobile, Alabama

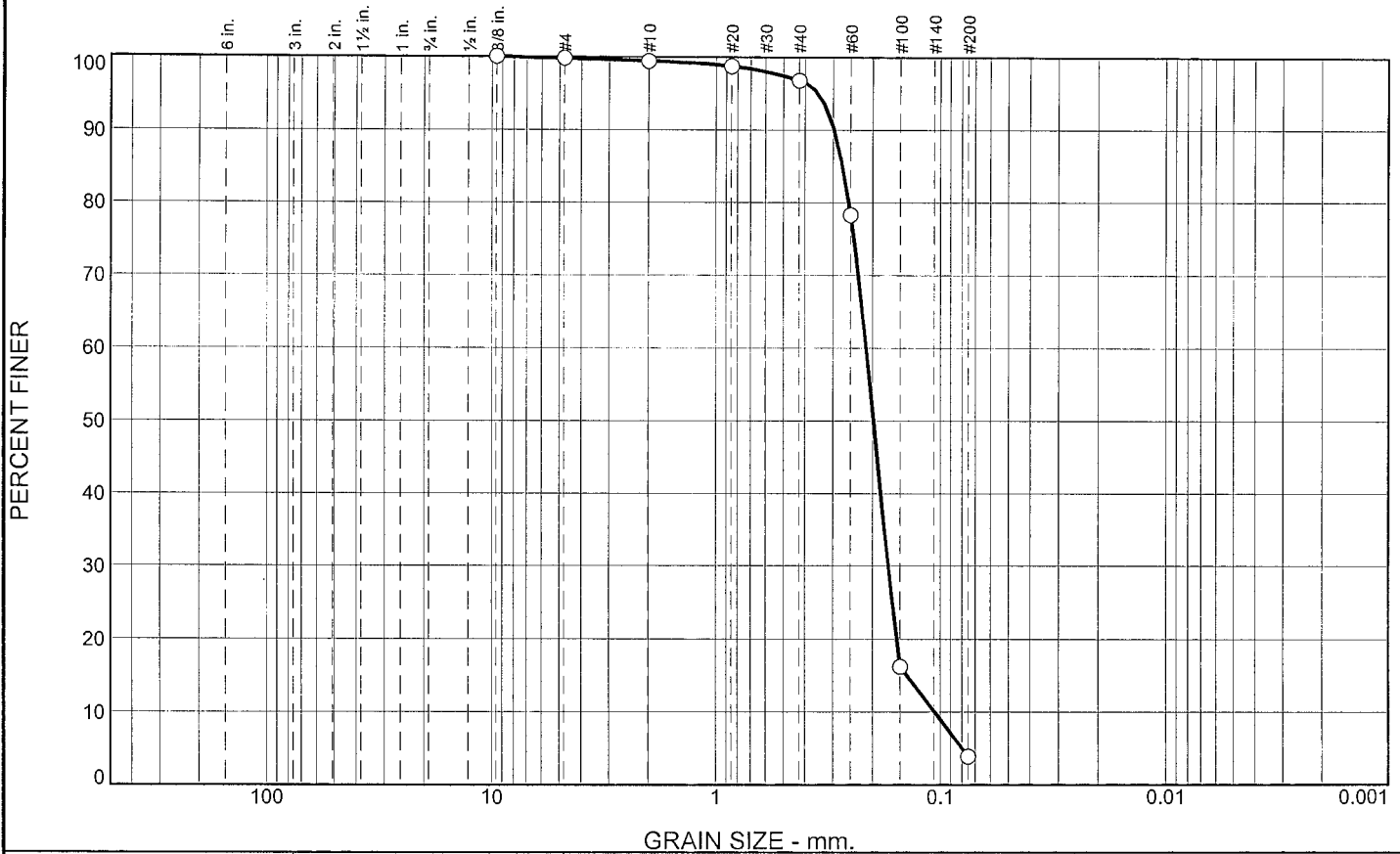
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.4	2.6	92.9	3.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.8		
#10	99.4		
#20	98.7		
#40	96.8		
#60	78.3		
#100	16.2		
#200	3.9		

* (no specification provided)

Material Description

SAND, (SP), fine grained, with shell

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.2969

D₈₅= 0.2719

D₆₀= 0.2131

D₅₀= 0.1976

D₃₀= 0.1699

D₁₅= 0.1401

D₁₀= 0.1056

C_u= 2.02

C_c= 1.28

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-MS-7-10B
Sample Number: TE Lab ID: 4473.05

Depth: 5.0 - 10.0 (ft)

Date: 5/17/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

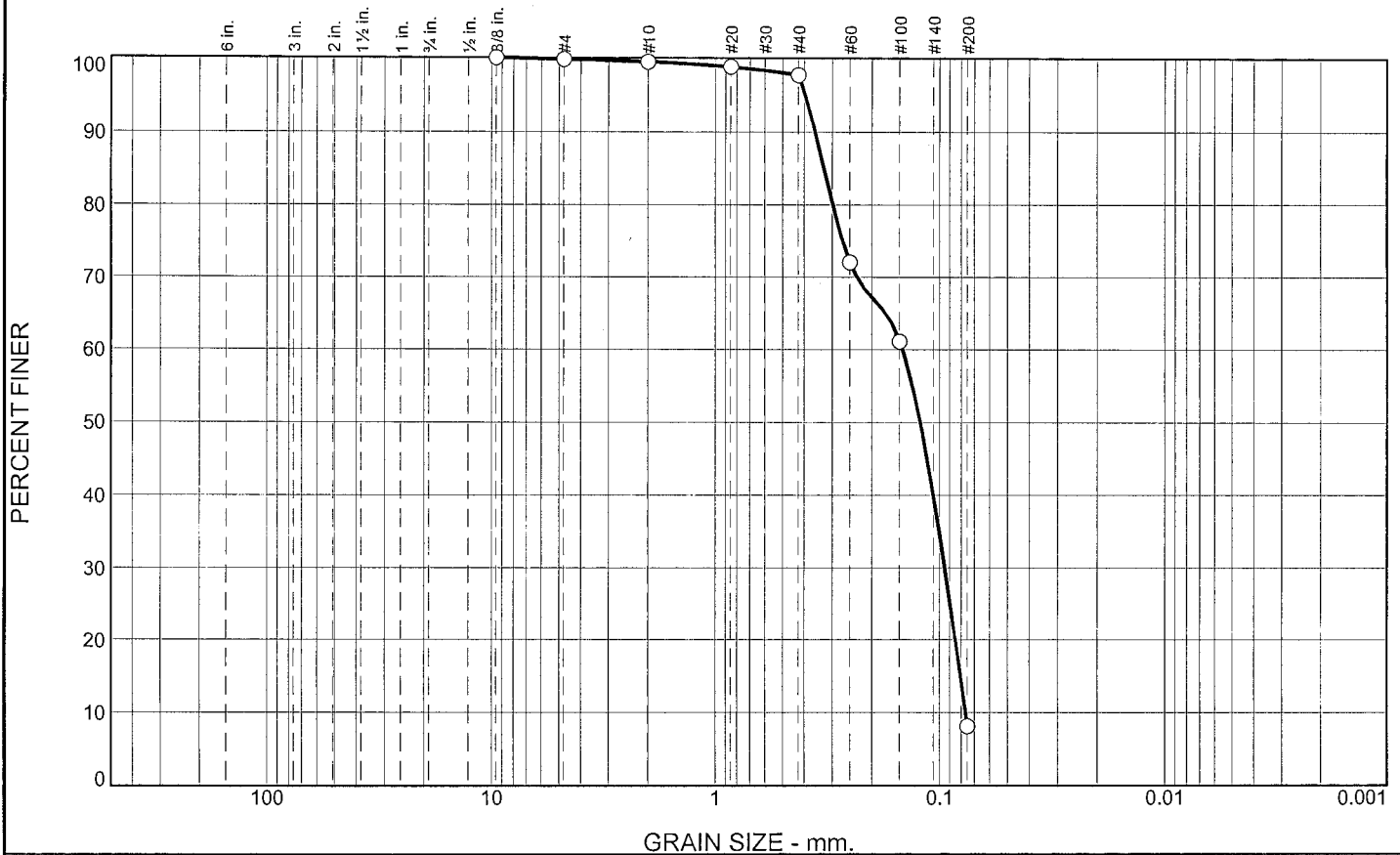
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.4	1.7	89.6	8.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.8		
#10	99.4		
#20	98.8		
#40	97.7		
#60	72.0		
#100	61.1		
#200	8.1		

* (no specification provided)

Material Description

SAND, (SP-SM), fine grained, with shell

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.3581

D₈₅= 0.3268

D₆₀= 0.1458

D₅₀= 0.1216

D₃₀= 0.0946

D₁₅= 0.0806

D₁₀= 0.0765

C_u= 1.91

C_c= 0.80

Classification

USCS= SP-SM

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-MS-7-10C
Sample Number: TE Lab ID: 4473.06

Depth: 10.0 - 14.0 (ft)

Date: 5/17/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Figure

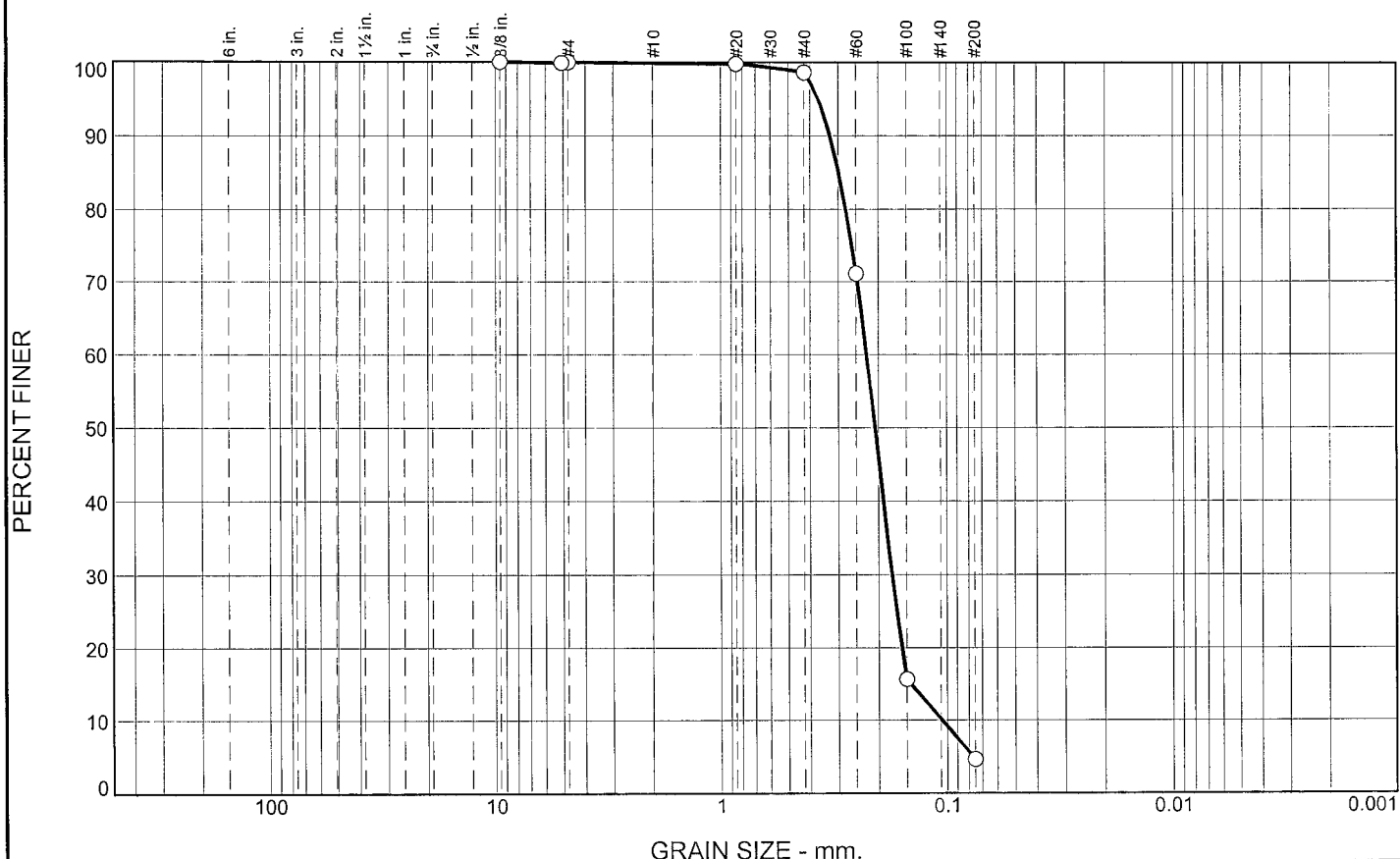
Tested By: L.Stokes

Checked By: R.Byrd

Boring Designation BI-MS-08-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Mississippi Sound				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-MS-08-10		LOCATION COORDINATES E = 920,332 N = 265,858		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 14 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 05-08-10		STARTED 05-08-10 COMPLETED 05-08-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -14.3 Ft.			
8. TOTAL DEPTH OF BORING 17.1 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-14.3	0.0						
-15.8	1.5		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, some shell fragments, gray (SM)	NS			
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little silt, little shell fragments, lt. gray and tan (SP)	A	Classification: SP Color: 10YR 5/1-gray D50: 0.2066 mm % Fines: 4.6		
				B	Classification: SP Color: 10YR 6/1-gray D50: 0.2027 mm % Fines: 3.5		
-25.8	11.5						
			CLAY, lean, trace fine to medium-grained sand-sized quartz, dark gray (CL)	NS			
-29.3	15.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little clay, little shell fragments, gray (SP)				
-31.4	17.1						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	1.3	94.0	4.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
0.20	99.9		
#4	100.0		
#20	99.7		
#40	98.6		
#60	71.1		
#100	15.6		
#200	4.6		

* (no specification provided)

<u>Material Description</u>		
SAND, (SP), fine grained, trace shell		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.3262	D ₈₅ = 0.2982	D ₆₀ = 0.2251
D ₅₀ = 0.2066	D ₃₀ = 0.1741	D ₁₅ = 0.1441
D ₁₀ = 0.1052	C _u = 2.14	C _c = 1.28
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-MS-8-10A
Sample Number: TE Lab ID: 4473.07

Depth: 1.5 - 6.5 (ft)

Date: 5/17/10

Thompson Engineering
Mobile, Alabama

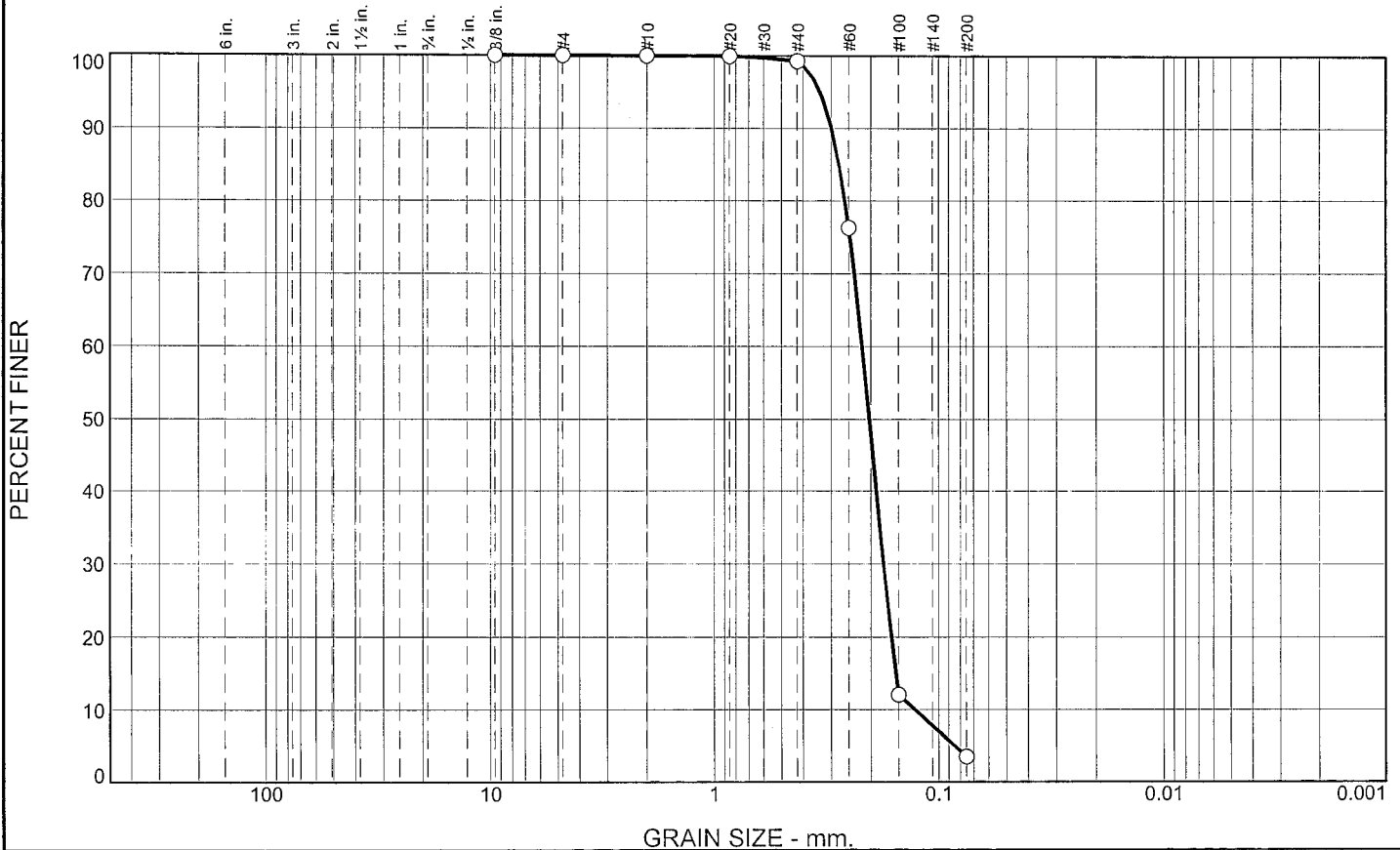
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.7	95.8	3.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	99.3		
#60	76.3		
#100	12.1		
#200	3.5		

* (no specification provided)

Material Description
SAND, (SP), fine grained, trace shell

Atterberg Limits
PL= LL= PI=

Coefficients
 D₉₀= 0.2988 D₈₅= 0.2763 D₆₀= 0.2181
 D₅₀= 0.2027 D₃₀= 0.1753 D₁₅= 0.1546
 D₁₀= 0.1271 C_u= 1.72 C_c= 1.11

Classification
USCS= SP AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-MS-8-10B
Sample Number: TE Lab ID: 4473.08

Depth: 6.5 - 11.5 (ft)

Date: 5/17/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

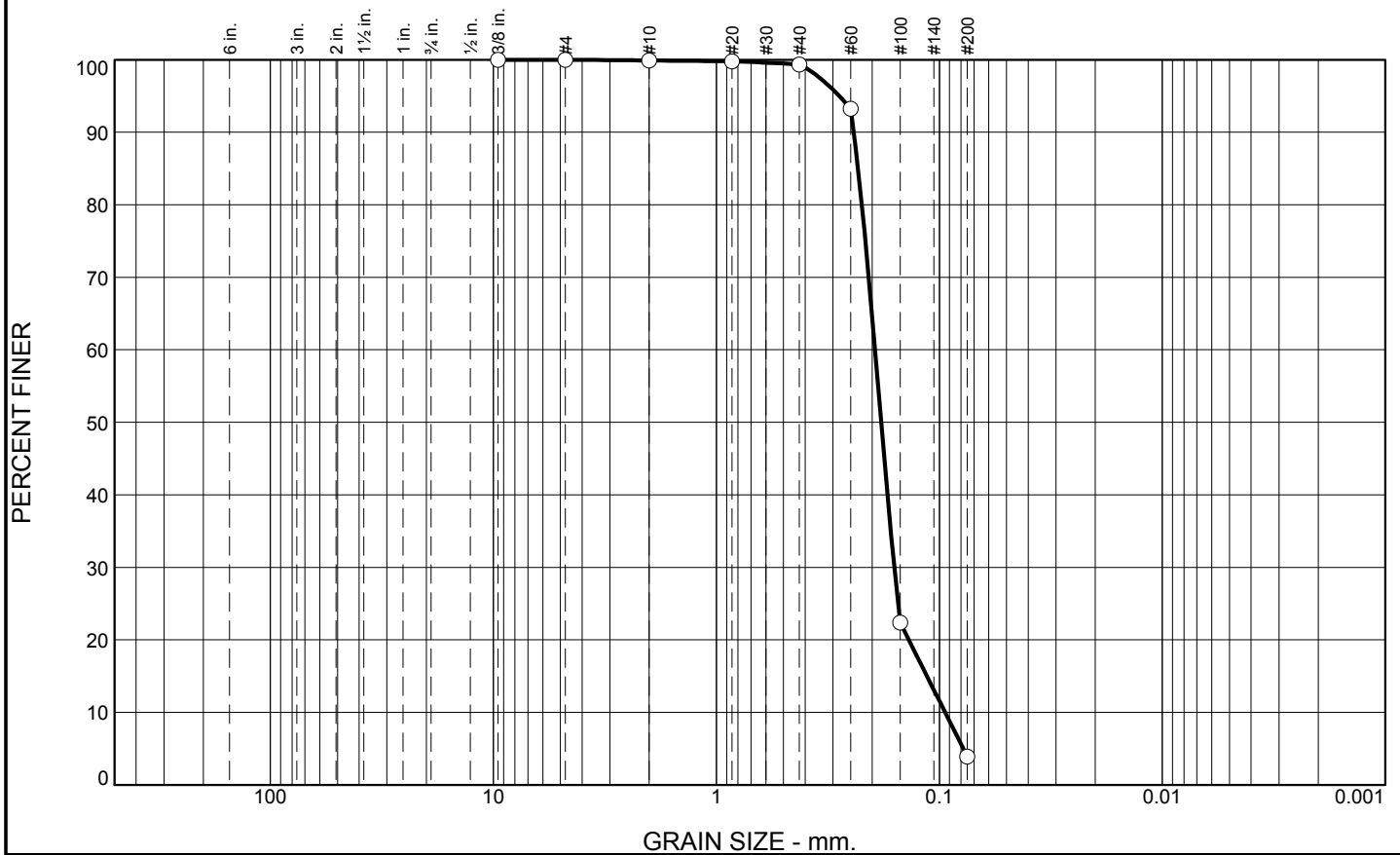
Tested By: L.Stokes Checked By: R.Byrd

Boring Designation BI-MS-09-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Mississippi Sound				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-MS-09-10		LOCATION COORDINATES E = 925,117 N = 273,447		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 1		DISTURBED 1 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 8 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 05-06-10		STARTED 05-06-10 COMPLETED 05-06-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -7.3 Ft.			
8. TOTAL DEPTH OF BORING 14.6 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR J. Krick, Geotechnical Engineer			

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-7.3	0.0				
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, trace shell fragments, gray (SP)	A	Classification: SP Color: 10YR 5/1-gray D50: 0.1824 mm % Fines: 3.9
-12.3	5.0		SAND, silty, mostly fine-grained sand-sized quartz, gray (SM)		
-16.3	9.0		CLAY, lean, dark gray (CL)	NS	
-20.8	13.5				
-21.9	14.6		SAND, silty, mostly fine-grained sand-sized quartz, trace shell fragments, gray (SM)		
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.		

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	0.5	95.5	3.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.8		
#40	99.4		
#60	93.2		
#100	22.4		
#200	3.9		

* (no specification provided)

<u>Material Description</u>		
SAND, (SP), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.2418	D ₈₅ = 0.2314	D ₆₀ = 0.1944
D ₅₀ = 0.1824	D ₃₀ = 0.1594	D ₁₅ = 0.1137
D ₁₀ = 0.0942	C _u = 2.06	C _c = 1.39
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-MS-9-10A
Sample Number: TE Lab ID: 4461.23

Depth: 0.0 - 5.0 (ft)

Date: 5/13/10

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Mississippi Barrier Island Restoration Project
Contract No. W91278-10-D-0026 - Task 03
Project No: 1021230009

Figure

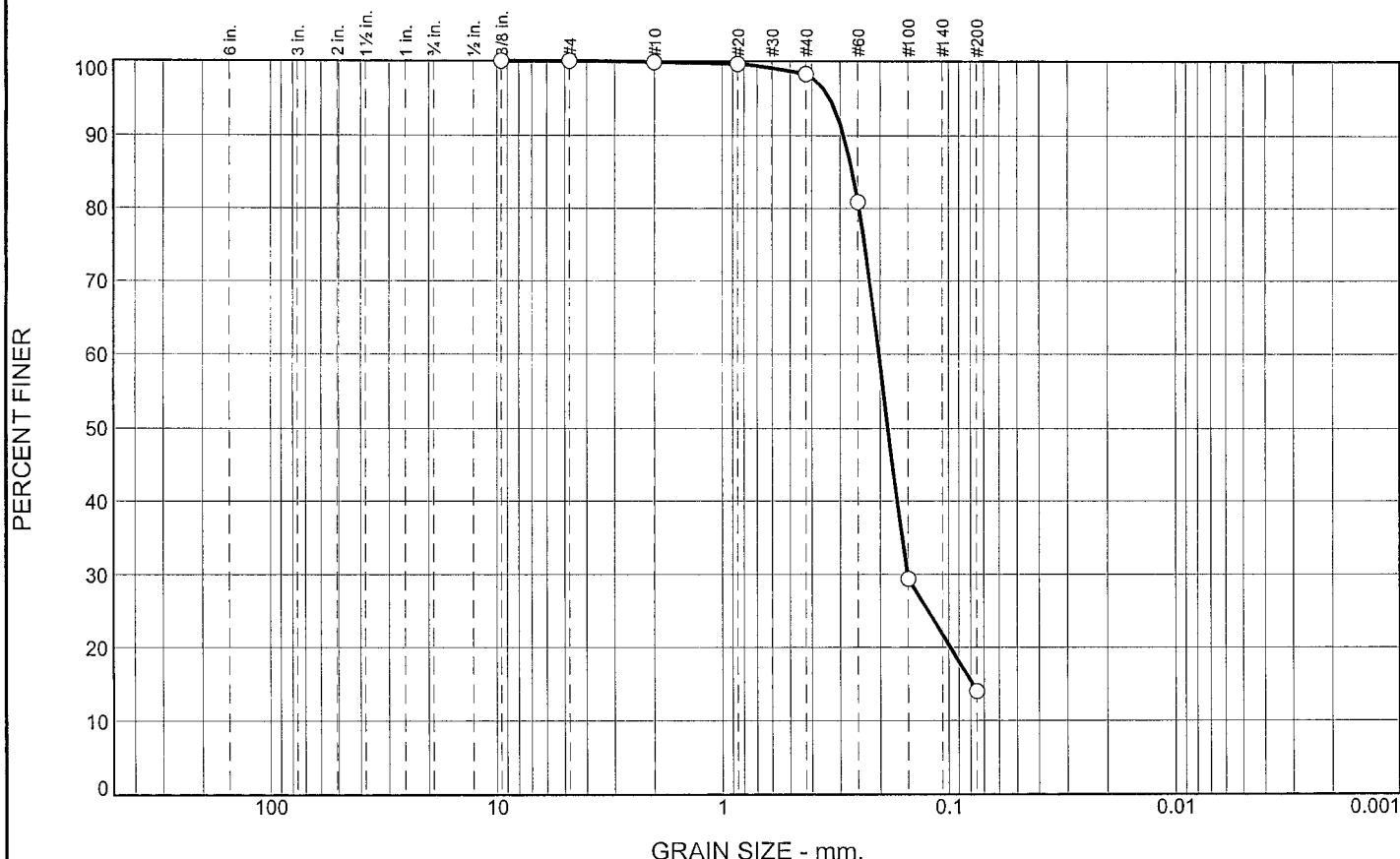
Tested By: J.Maddox/L.Stokes

Checked By: R.Byrd

Boring Designation BI-MS-10-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Mississippi Sound				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-MS-10-10		LOCATION COORDINATES E = 925,591 N = 270,137		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 12 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 05-08-10		STARTED 05-08-10 COMPLETED 05-08-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -12.1 Ft.			
8. TOTAL DEPTH OF BORING 15.7 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-12.1	0.0						
-15.1	3.0		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments, gray (SM)	A	Classification: SM Color: 10YR 4/1-dark gray D50: 0.1849 mm % Fines: 14		
-16.3	4.2		SILT, inorganic-L, trace fine to medium-grained sand-sized quartz, gray (ML)	NS			
-20.1	8.0		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, gray (SM)	B	Classification: SP-SM Color: 10YR 4/1-dark gray D50: 0.1711 mm % Fines: 11.9		
-27.8	15.7		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little silt, lt. gray (SP)	C	Classification: SP-SM Color: 10YR 6/1-gray D50: 0.184 mm % Fines: 6.1		
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	1.5	84.3	14.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.8		
#20	99.6		
#40	98.3		
#60	80.8		
#100	29.3		
#200	14.0		

* (no specification provided)

Material Description
SILTY SAND, (SM), fine grained, with trace shell

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.2896 D₈₅= 0.2649 D₆₀= 0.2023
 D₅₀= 0.1849 D₃₀= 0.1512 D₁₅= 0.0786
 D₁₀= C_u= C_c=

Classification
 USCS= SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-MS-10-10A
 Sample Number: TE Lab ID: 4473.09

Depth: 0.0 - 3.0 (ft)

Date: 5/17/10

Thompson Engineering

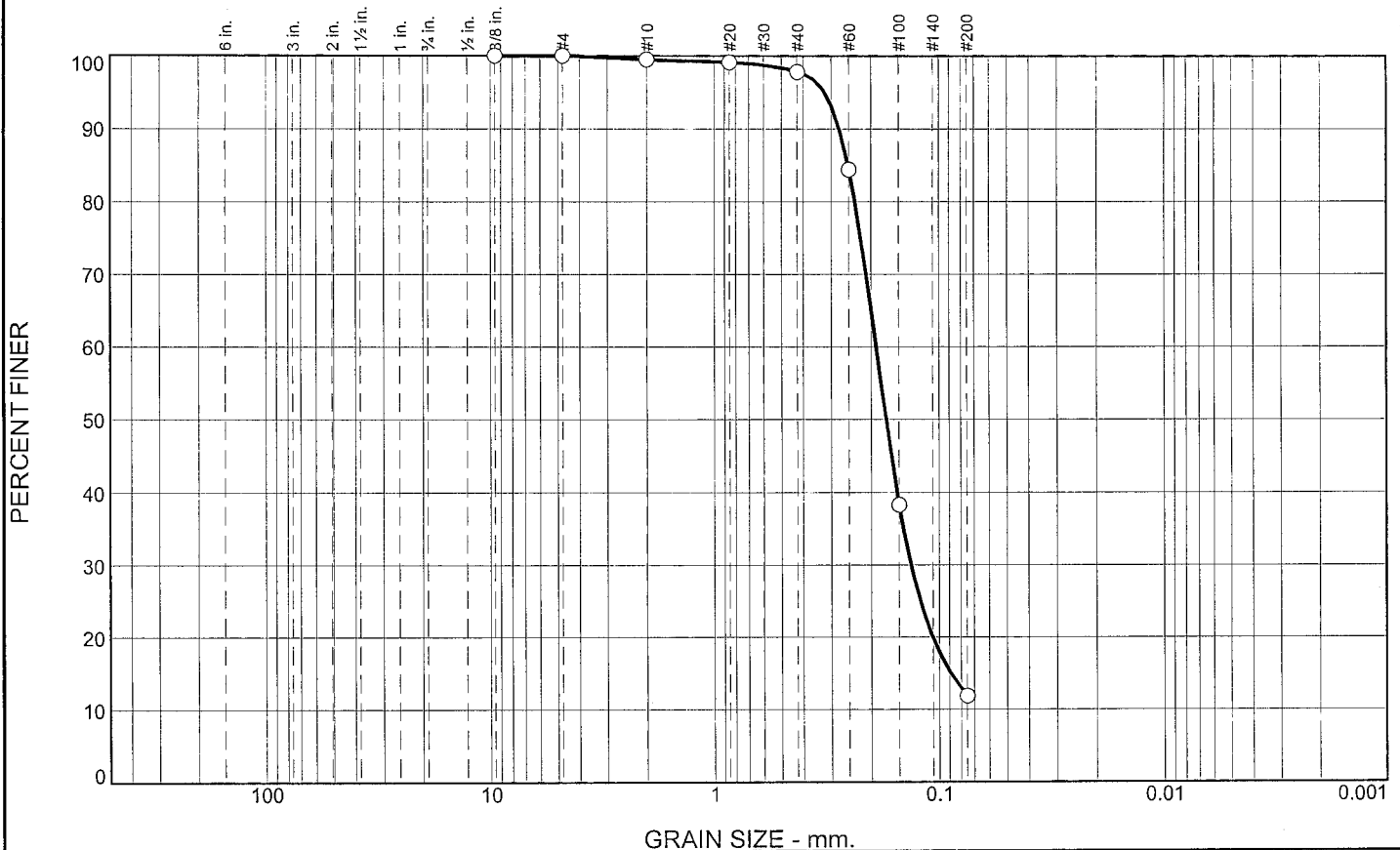
Mobile, Alabama

Client: US Army Corps of Engineers
 Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
 Project No: 10-2123-0009

Figure

Tested By: L.Stokes Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.5	1.7	85.9	11.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.5		
#20	99.1		
#40	97.8		
#60	84.4		
#100	38.3		
#200	11.9		

* (no specification provided)

Material Description
SAND, (SP-SM), fine grained, with trace shell

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.2764 D₈₅= 0.2522 D₆₀= 0.1895
 D₅₀= 0.1711 D₃₀= 0.1331 D₁₅= 0.0887
 D₁₀= C_u= C_c=

Classification
 USCS= SP-SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-MS-10-10B
 Sample Number: TE Lab ID: 4473.10

Depth: 4.2 - 8.0 (ft)

Date: 5/17/10

Thompson Engineering

Mobile, Alabama

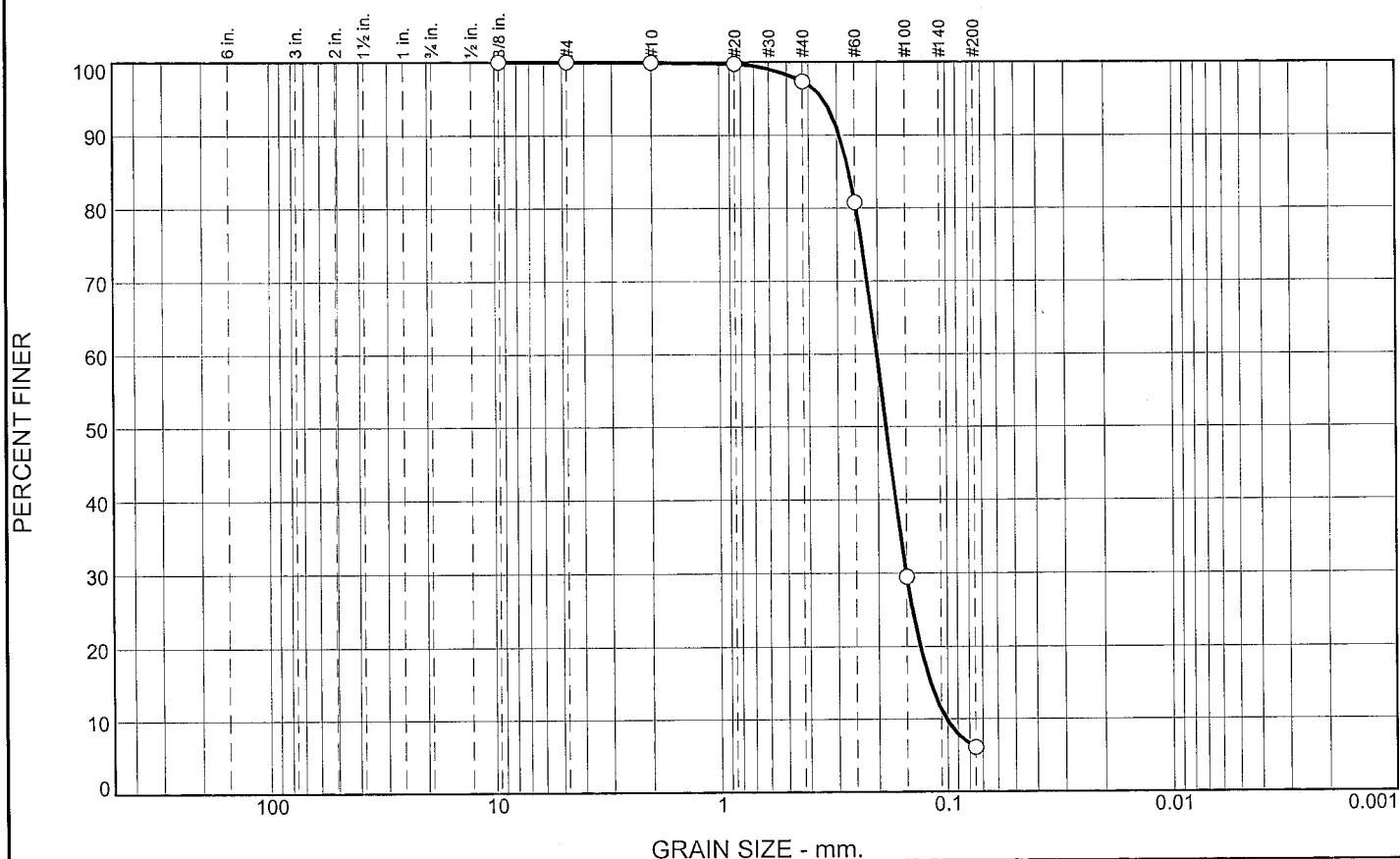
Client: US Army Corps of Engineers
 Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
 Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	2.6	91.2	6.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.7		
#40	97.3		
#60	80.7		
#100	29.5		
#200	6.1		

* (no specification provided)

Material Description
SAND, (SP-SM), fine grained, with trace shell

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.2928 D₈₅= 0.2659 D₆₀= 0.2015
 D₅₀= 0.1840 D₃₀= 0.1509 D₁₅= 0.1185
 D₁₀= 0.1010 C_u= 2.00 C_c= 1.12

Classification
 USCS= SP-SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-MS-10-10C
 Sample Number: TE Lab ID: 4473.11

Depth: 8.0 - 15.7 (ft)

Date: 5/17/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
 Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
 Project No: 10-2123-0009

Figure

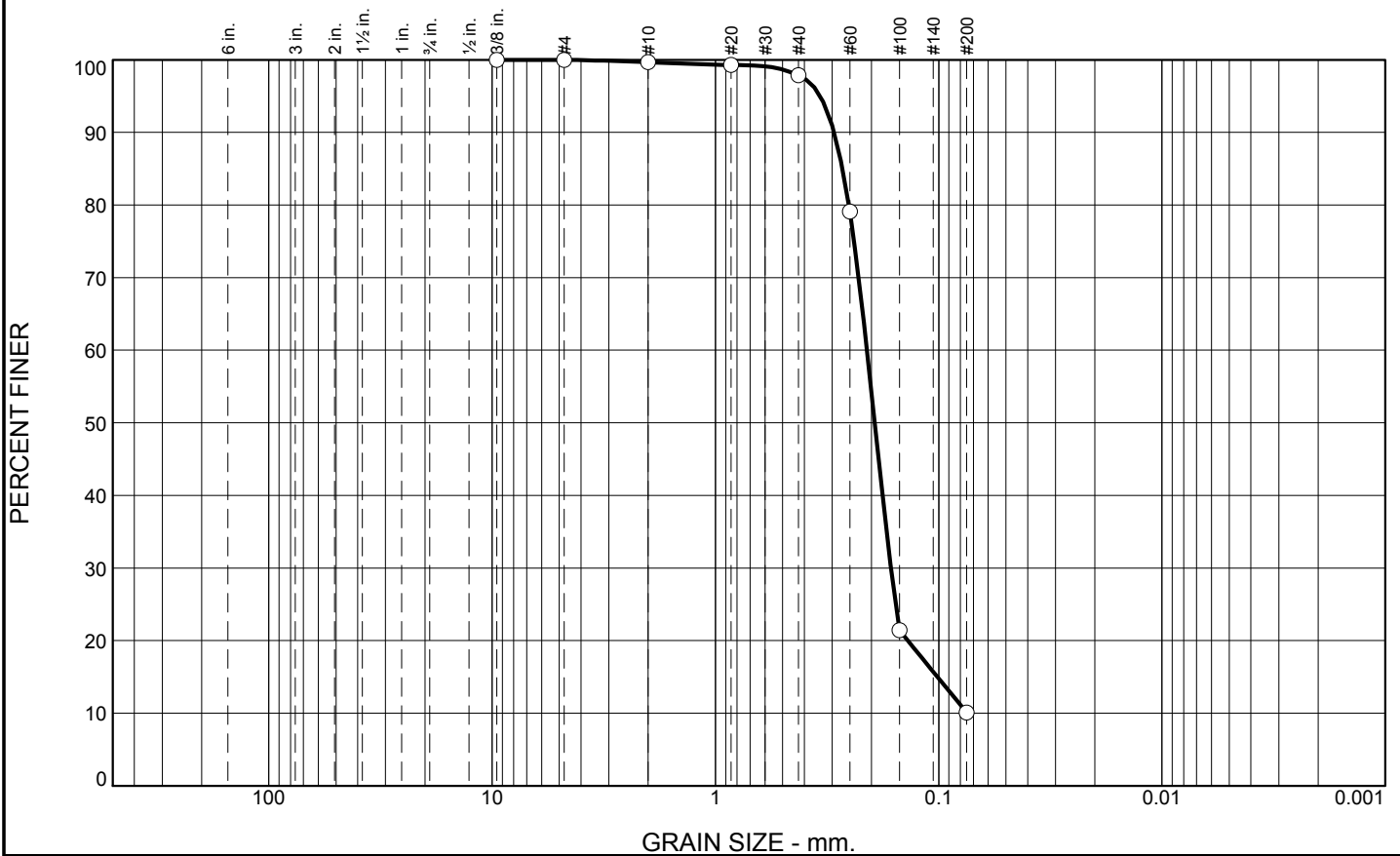
Tested By: L.Stokes

Checked By: R.Byrd

Boring Designation BI-MS-11-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Mississippi Sound				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-MS-11-10		LOCATION COORDINATES E = 929,985 N = 265,075		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 1	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		BEARING		UNDISTURBED (UD) 0	
6. THICKNESS OF OVERBURDEN N/A				13. TOTAL NUMBER CORE BOXES			
7. DEPTH DRILLED INTO ROCK N/A				14. WATER DEPTH 17 Ft.			
8. TOTAL DEPTH OF BORING 11.6 Ft.				15. DATE BORING 05-05-10		COMPLETED 05-05-10	
				16. ELEVATION TOP OF BORING -15.9 Ft.			
				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR J. Krick, Geotechnical Engineer			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-15.9	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments, gray (SP)	A	Classification: SP-SM Color: 10YR 4/2-dark grayish brown D50: 0.1935 mm % Fines: 10.1		
-20.2	4.3						
-20.6	4.6		SAND, silty, mostly fine-grained sand-sized quartz, some silt, gray (SM)				
			SAND, clayey, mostly fine-grained sand-sized quartz, gray (SC)	NS			
-27.5	11.6						
NOTES:							
1. Soils are field visually classified in accordance with the Unified Soils Classification System.							
2. NS = Sample not submitted for laboratory analysis from this interval.							

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.3	1.8	87.8	10.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.7		
#20	99.3		
#40	97.9		
#60	79.1		
#100	21.4		
#200	10.1		

* (no specification provided)

Material Description
SAND, (SP-SM), fine grained, with trace shell

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.2940 D₈₅= 0.2696 D₆₀= 0.2097
 D₅₀= 0.1935 D₃₀= 0.1637 D₁₅= 0.1013
 D₁₀= C_u= C_c=

Classification
 USCS= SP-SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-MS-11-10A
Sample Number: TE Lab ID: 4461.24

Depth: 0.0 - 4.08 (ft)

Date: 5/13/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Mississippi Barrier Island Restoration Project
 Contract No. W91278-10-D-0026 - Task 03
Project No: 1021230009

Figure

Tested By: J.Maddox/L.Stokes

Checked By: R.Byrd

Boring Designation BI-MS-12-10

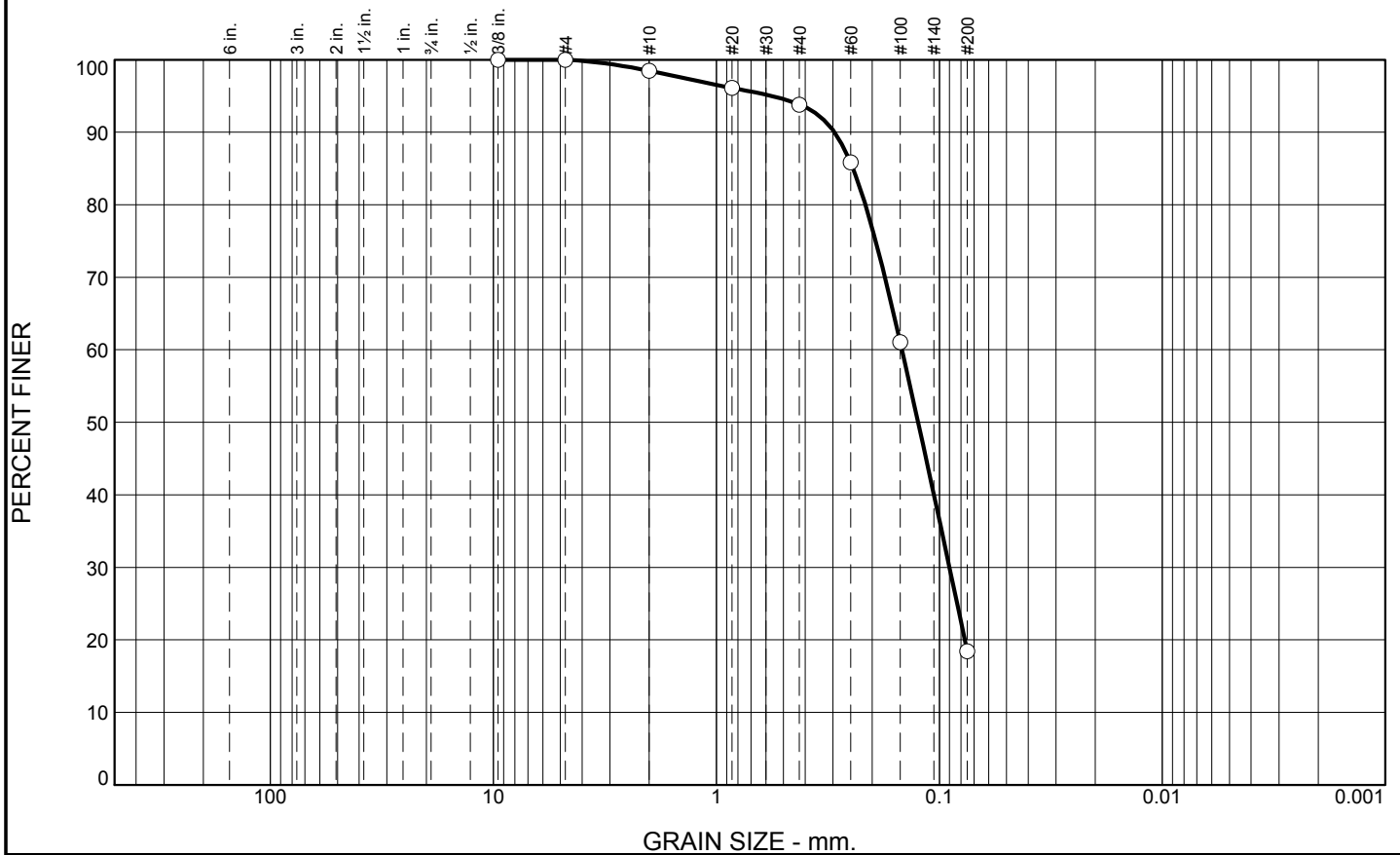
DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Mississippi Sound				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-MS-12-10		LOCATION COORDINATES E = 934,187 N = 266,371		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 0 UNDISTURBED (UD)	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 19 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 05-05-10		STARTED 05-05-10 COMPLETED 05-05-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -17.9 Ft.			
8. TOTAL DEPTH OF BORING 13.9 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR J. Krick, Geotechnical Engineer			

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-17.9	0.0				
			SAND, silty, mostly fine-grained sand-sized quartz, with lenses of fat clay, gray (SM)	A	Classification: SM Color: 10YR 4/1-dark gray D50: 0.1246 mm % Fines: 18.4
				B	Classification: SM Color: 10YR 4/1-dark gray D50: 0.1525 mm % Fines: 26.4
-24.7	6.8		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little silt, gray (SP)	C	Classification: SM Color: 10YR 4/1-dark gray D50: 0.1492 mm % Fines: 14.3
				NS	
-30.6	12.7		SAND, clayey, mostly fine-grained sand-sized quartz, gray (SC)		
-30.8	12.9				
-31.8	13.9		SAND, silty, mostly fine-grained sand-sized quartz, gray (SM)		

NOTES:

- Soils are field visually classified in accordance with the Unified Soils Classification System.
- NS = Sample not submitted for laboratory analysis from this interval.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	1.5	4.7	75.4	18.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	98.5		
#20	96.1		
#40	93.8		
#60	85.8		
#100	61.1		
#200	18.4		

* (no specification provided)

Material Description
SILTY SAND, (SM), fine grained, with clay pockets

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.2952 D₈₅= 0.2438 D₆₀= 0.1473
 D₅₀= 0.1246 D₃₀= 0.0901 D₁₅=
 D₁₀= C_u= C_c=

Classification
 USCS= SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-MS-12-10A
Sample Number: TE Lab ID: 4461.25

Depth: 0.0 - 3.0 (ft)

Date: 5/13/10

Thompson Engineering

Mobile, Alabama

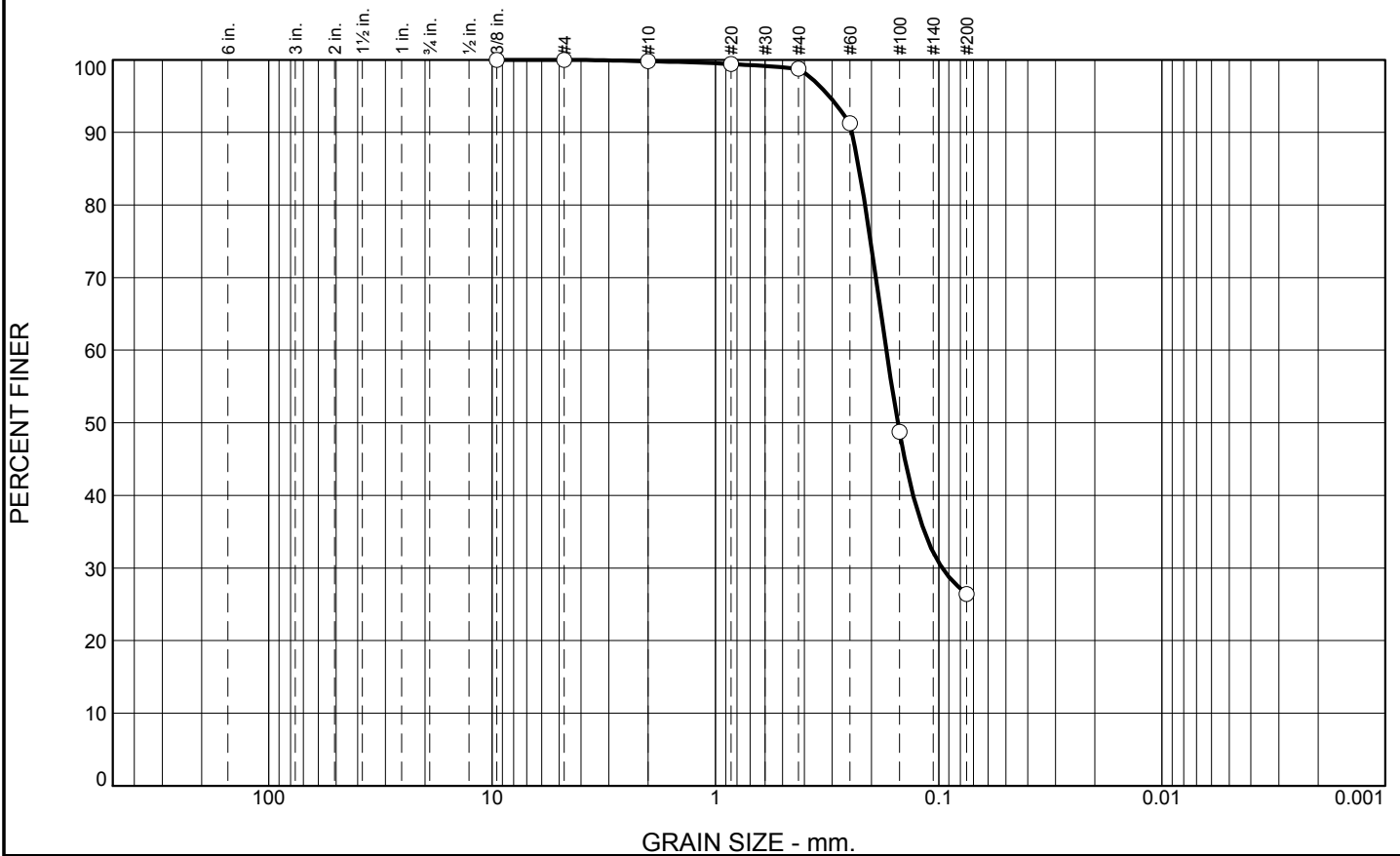
Client: US Army Corps of Engineers
Project: Mississippi Barrier Island Restoration Project
 Contract No. W91278-10-D-0026 - Task 03
Project No: 1021230009

Figure

Tested By: J.Maddox/L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	1.0	72.4	26.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.8		
#20	99.4		
#40	98.8		
#60	91.3		
#100	48.8		
#200	26.4		

* (no specification provided)

<u>Material Description</u>		
SILTY SAND, (SM), fine grained, with clay pockets		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.2447	D ₈₅ = 0.2276	D ₆₀ = 0.1716
D ₅₀ = 0.1525	D ₃₀ = 0.0964	D ₁₅ =
D ₁₀ =	C _u =	C _c =
<u>Classification</u>		
USCS= SM	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-MS-12-10B
Sample Number: TE Lab ID: 4461.26

Depth: 4.0 - 6.67 (ft)

Date: 5/13/10

Thompson Engineering
Mobile, Alabama

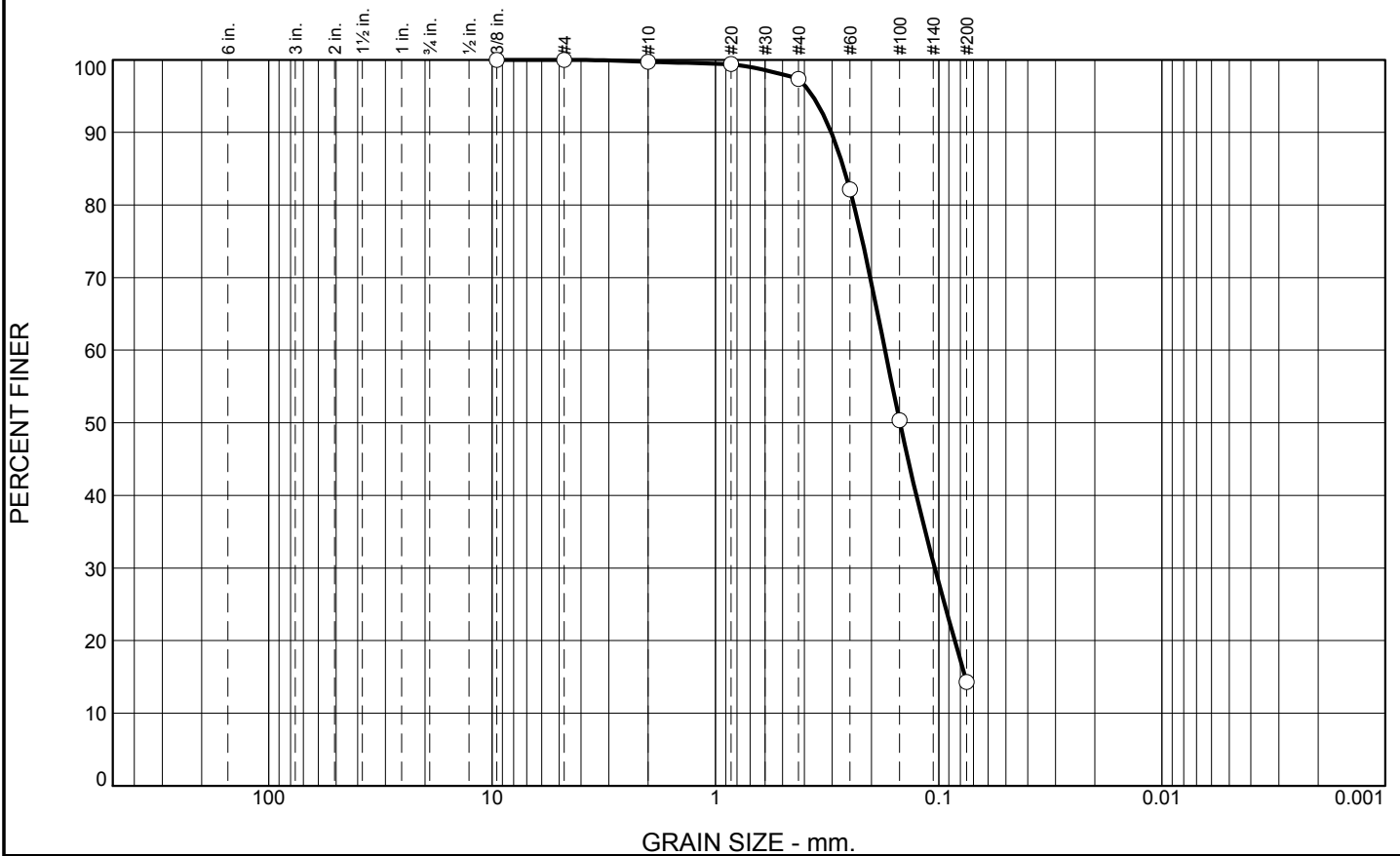
Client: US Army Corps of Engineers
Project: Mississippi Barrier Island Restoration Project
Contract No. W91278-10-D-0026 - Task 03
Project No: 1021230009

Figure

Tested By: J.Maddox/L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.3	2.3	83.1	14.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.7		
#20	99.4		
#40	97.4		
#60	82.2		
#100	50.3		
#200	14.3		

* (no specification provided)

Material Description

SILTY SAND, (SM), fine grained, with clay nodules

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.3027

D₈₅= 0.2657

D₆₀= 0.1740

D₅₀= 0.1492

D₃₀= 0.1041

D₁₅= 0.0762

D₁₀=

C_u=

C_c=

Classification

USCS= SM

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-MS-12-10C
Sample Number: TE Lab ID: 4461.27

Depth: 6.67- 11.47 (ft)

Date: 5/13/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Mississippi Barrier Island Restoration Project
Contract No. W91278-10-D-0026 - Task 03

Project No: 1021230009


Figure

Tested By: J.Maddox/L.Stokes

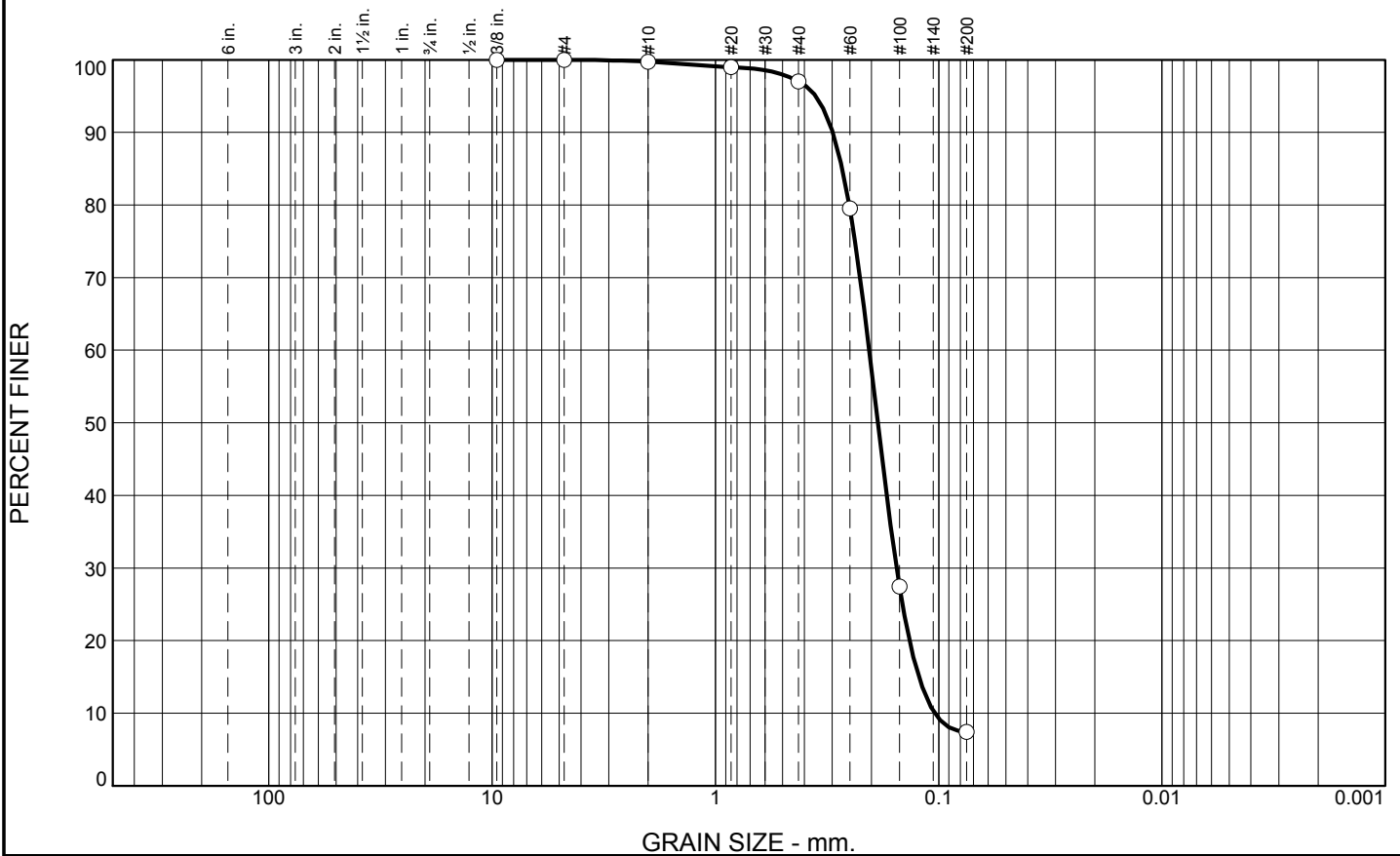
Checked By: R.Byrd

Boring Designation BI-MS-13-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Mississippi Sound				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-MS-13-10		LOCATION COORDINATES E = 935,239 N = 266,395		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 0 UNDISTURBED (UD)	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 17 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 05-06-10		STARTED 05-06-10 COMPLETED 05-06-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -16.6 Ft.			
8. TOTAL DEPTH OF BORING 13.6 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR J. Krick, Geotechnical Engineer			

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-16.6	0.0				
-20.2	3.6	 SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace shell fragments, gray (SP)		A	Classification: SP-SM Color: 10YR 6/1-gray D50: 0.1873 mm % Fines: 7.4
-21.2	4.6			B	Classification: SM Color: 10YR 5/1-gray D50: 0.1408 mm % Fines: 23
-30.2	13.6			C	Classification: SP-SM Color: 10YR 5/2-grayish brown D50: 0.1248 mm % Fines: 13.3
			NOTES:		
			1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.		

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.3	2.7	89.6	7.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.7		
#20	99.0		
#40	97.0		
#60	79.5		
#100	27.4		
#200	7.4		

* (no specification provided)

<u>Material Description</u>		
SAND, (SP-SM), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.2983	D ₈₅ = 0.2704	D ₆₀ = 0.2048
D ₅₀ = 0.1873	D ₃₀ = 0.1545	D ₁₅ = 0.1227
D ₁₀ = 0.1043	C _u = 1.96	C _c = 1.12
<u>Classification</u>		
USCS= SP-SM	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-MS-13-10A
Sample Number: TE Lab ID: 4461.28

Depth: 0.0 - 4.5 (ft)

Date: 5/13/10

Thompson Engineering
Mobile, Alabama

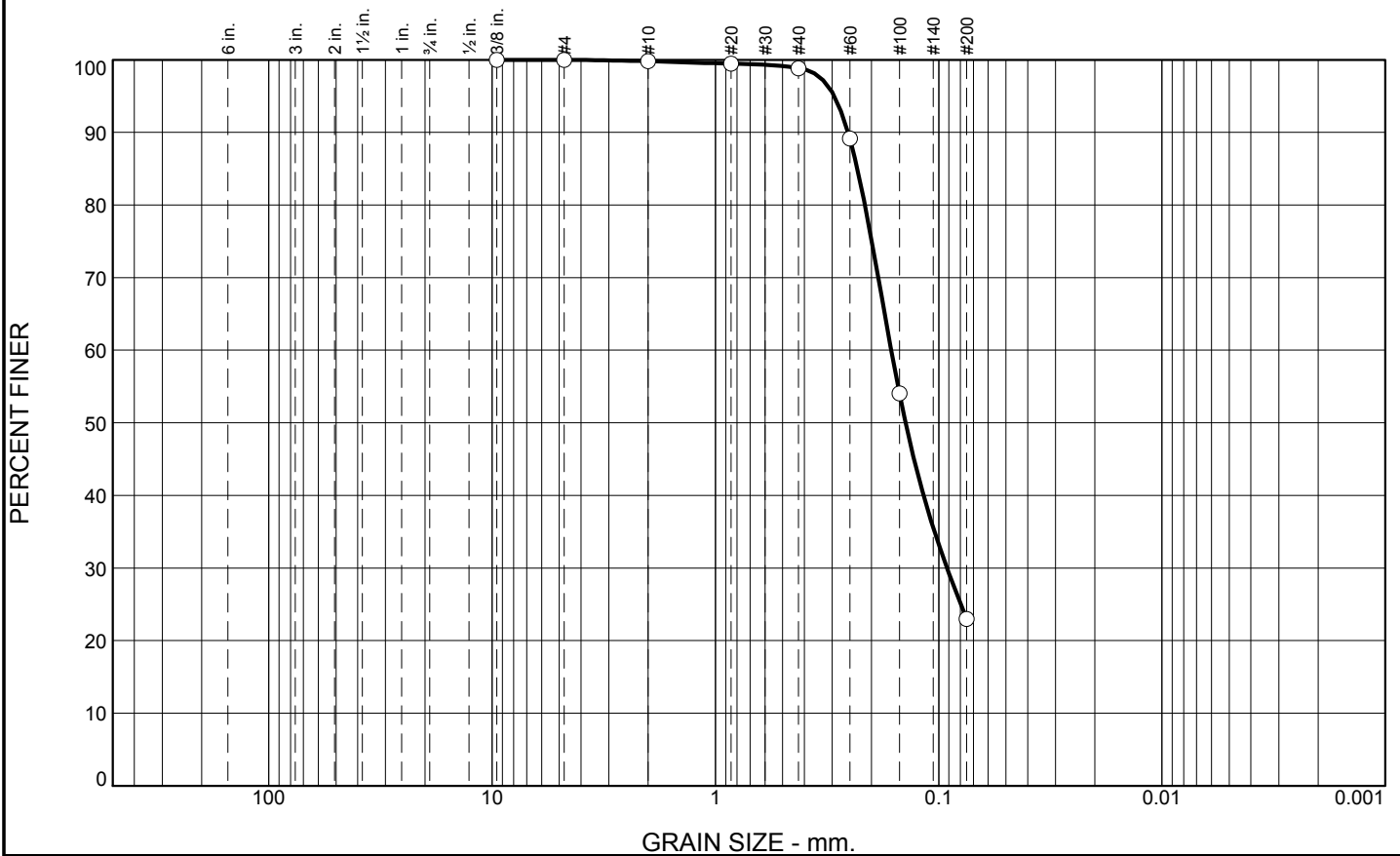
Client: US Army Corps of Engineers
Project: Mississippi Barrier Island Restoration Project
Contract No. W91278-10-D-0026 - Task 03
Project No: 1021230009

Figure

Tested By: J.Maddox/L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	1.0	75.8	23.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.8		
#20	99.5		
#40	98.8		
#60	89.2		
#100	54.0		
#200	23.0		

* (no specification provided)

Material Description
SILTY SAND, (SM), fine grained, with clay nodules

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.2544 D₈₅= 0.2315 D₆₀= 0.1633
 D₅₀= 0.1408 D₃₀= 0.0918 D₁₅=
 D₁₀= C_u= C_c=

Classification
 USCS= SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-MS-13-10B
Sample Number: TE Lab ID: 4461.29

Depth: 4.5 - 9.5 (ft)

Date: 5/13/10

Thompson Engineering

Mobile, Alabama

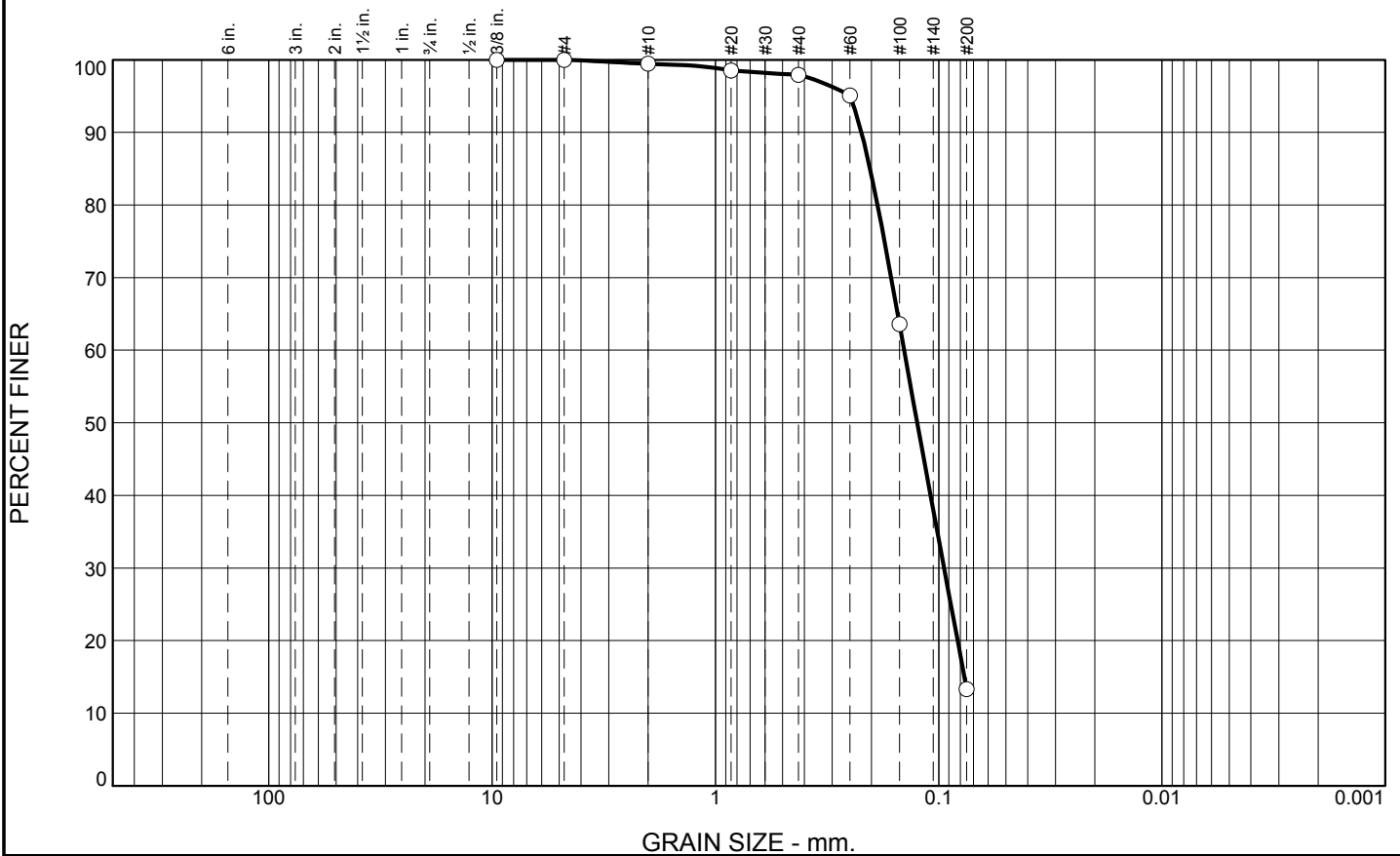
Client: US Army Corps of Engineers
Project: Mississippi Barrier Island Restoration Project
 Contract No. W91278-10-D-0026 - Task 03
Project No: 1021230009

Figure

Tested By: J.Maddox/L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.6	1.5	84.6	13.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.4		
#20	98.5		
#40	97.9		
#60	95.1		
#100	63.6		
#200	13.3		

* (no specification provided)

Material Description

SILTY SAND, (SM), fine grained, with clay nodules and trace shell

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.2219 D₈₅= 0.2031 D₆₀= 0.1429
D₅₀= 0.1248 D₃₀= 0.0947 D₁₅= 0.0768
D₁₀= C_u= C_c=

Classification

USCS= SM AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-MS-13-10C
Sample Number: TE Lab ID: 4461.30

Depth: 9.5 - 13.5 (ft)

Date: 5/13/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Mississippi Barrier Island Restoration Project
Contract No. W91278-10-D-0026 - Task 03
Project No: 1021230009

Figure

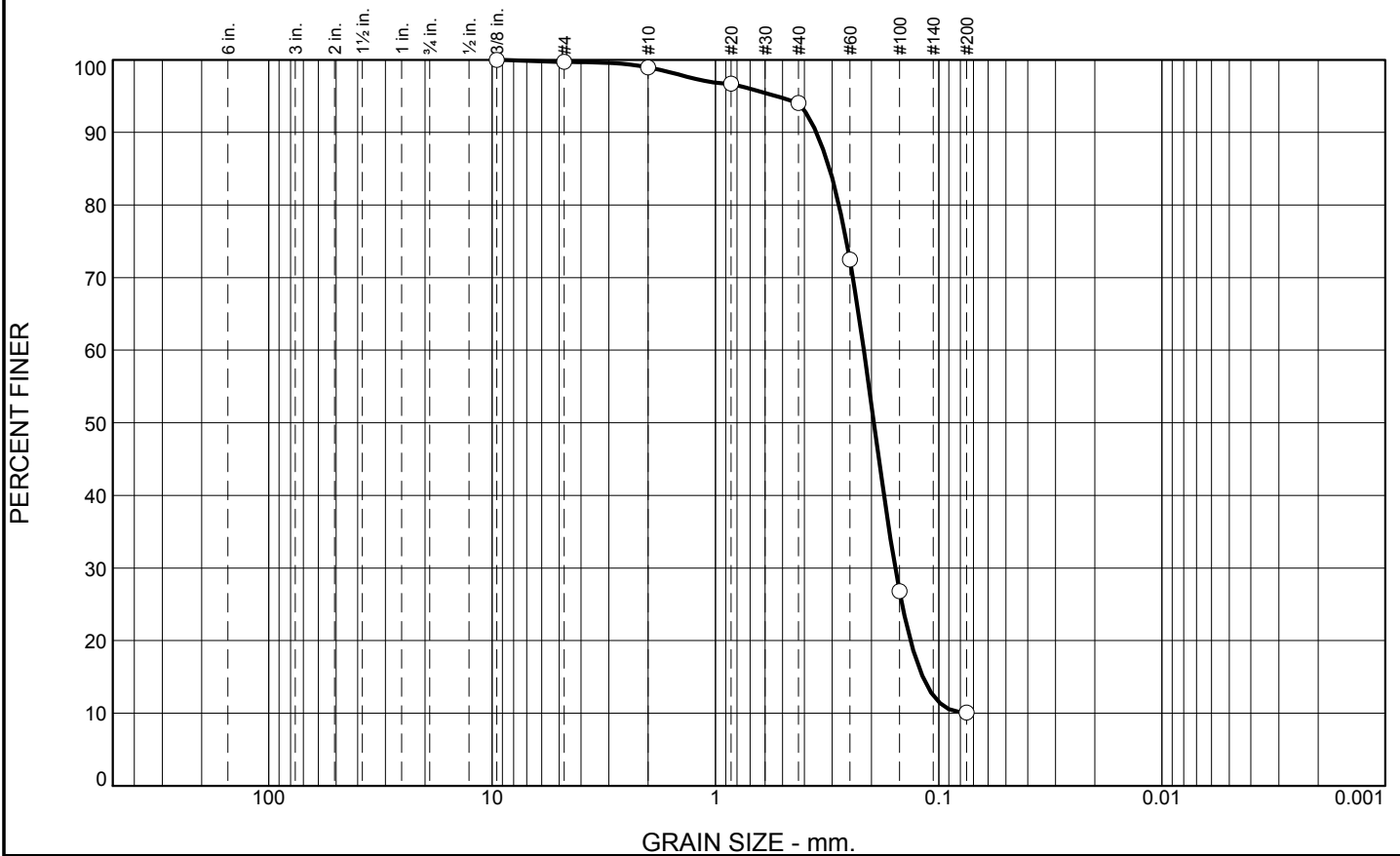
Tested By: J.Maddox/L.Stokes

Checked By: R.Byrd

Boring Designation BI-MS-14-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Mississippi Sound				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-MS-14-10		LOCATION COORDINATES E = 936,733 N = 266,407		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 1 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 24.5 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING		STARTED 05-06-10 COMPLETED 05-06-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -24.0 Ft.			
8. TOTAL DEPTH OF BORING 19.5 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR J. Krick, Geotechnical Engineer			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-24.0	0.0		CLAY, lean, dark gray (CL)	NS			
-37.0	13.0		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, trace shell fragments, gray (SP)	A	Classification: SP-SM Color: 10YR 5/1-gray D50: 0.1951 mm % Fines: 10.1		
-42.0	18.0		SAND, silty, mostly fine-grained sand-sized quartz, little clay (SM)	NS			
-43.5	19.5		NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.3	0.7	5.0	83.9	10.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.7		
#10	99.0		
#20	96.7		
#40	94.0		
#60	72.5		
#100	26.8		
#200	10.1		

* (no specification provided)

Material Description
SAND, (SP-SM), fine grained, with clay nodules

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.3531 D₈₅= 0.3082 D₆₀= 0.2165
 D₅₀= 0.1951 D₃₀= 0.1566 D₁₅= 0.1178
 D₁₀= C_u= C_c=

Classification
 USCS= SP-SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-MS-14-10A
Sample Number: TE Lab ID: 4461.31

Depth: 13.0 - 17.67 (ft)

Date: 5/13/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Mississippi Barrier Island Restoration Project
 Contract No. W91278-10-D-0026 - Task 03
Project No: 1021230009

Figure

Tested By: J.Maddox/L.Stokes

Checked By: R.Byrd

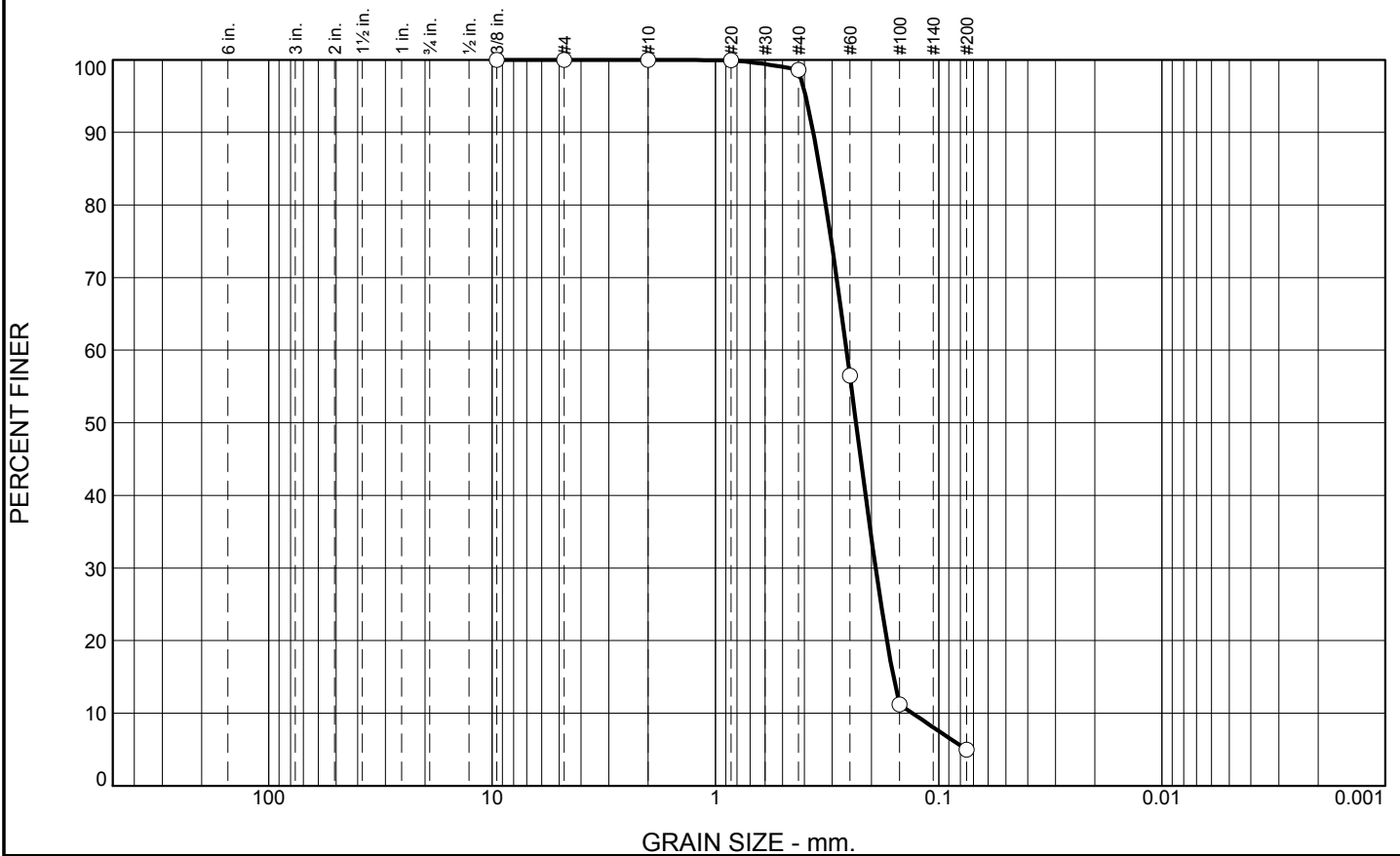
Boring Designation BI-MS-15-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Mississippi Sound				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-MS-15-10		LOCATION COORDINATES E = 938,097 N = 266,405		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		UNDISTURBED (UD) 0	
6. THICKNESS OF OVERBURDEN N/A				14. WATER DEPTH 21 Ft.		15. DATE BORING 05-11-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -20.0 Ft.		COMPLETED 05-11-10	
8. TOTAL DEPTH OF BORING 20.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%		18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist	
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-20.0	0.0		CLAY, lean, dark gray (CL)	NS			
-25.0	5.0		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, little clay, trace organic matter, gray (SM)				
-27.5	7.5		CLAY, lean, dark gray (CL)				
-31.0	11.0		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little silt, lt. gray (SP)				
-32.0	12.0		CLAY, lean, dark gray (CL)				
-37.5	17.5		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, little clay, lt. gray (SM)				
-40.0	20.0		NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Boring Designation BI-MS-16-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Mississippi Sound				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-MS-16-10		LOCATION COORDINATES E = 940,118 N = 266,636		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 1 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 20 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 05-11-10		STARTED 05-11-10 COMPLETED 05-11-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -19.0 Ft.			
8. TOTAL DEPTH OF BORING 20.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-19.0	0.0						
			CLAY, lean, dark gray (CL)	NS			
-23.3	4.3						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little silt, trace shell fragments, lt. gray (SP)	A	Classification: SP-SM Color: 2.5Y 6/2-light brownish gray D50: 0.2346 mm % Fines: 5		
-27.2	8.2						
-28.5	9.5		CLAY, lean, dark gray (CL)				
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little clay, trace silt, lt. gray (SP)				
-31.0	12.0						
			CLAY, lean, dark gray (CL)	NS			
-35.6	16.6						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt (SP)				
-39.0	20.0						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.4	93.6	5.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	98.6		
#60	56.5		
#100	11.2		
#200	5.0		

* (no specification provided)

<u>Material Description</u>		
Sand, (SP-SM), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.3644	D ₈₅ = 0.3404	D ₆₀ = 0.2588
D ₅₀ = 0.2346	D ₃₀ = 0.1917	D ₁₅ = 0.1595
D ₁₀ = 0.1313	C _u = 1.97	C _c = 1.08
<u>Classification</u>		
USCS= SP-SM	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-MS-16-10A
Sample Number: TE Lab ID: 4488.01

Depth: 4.3 - 8.2 (ft.)

Date: 5/27/10

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Boring Designation BI-MS-17-10

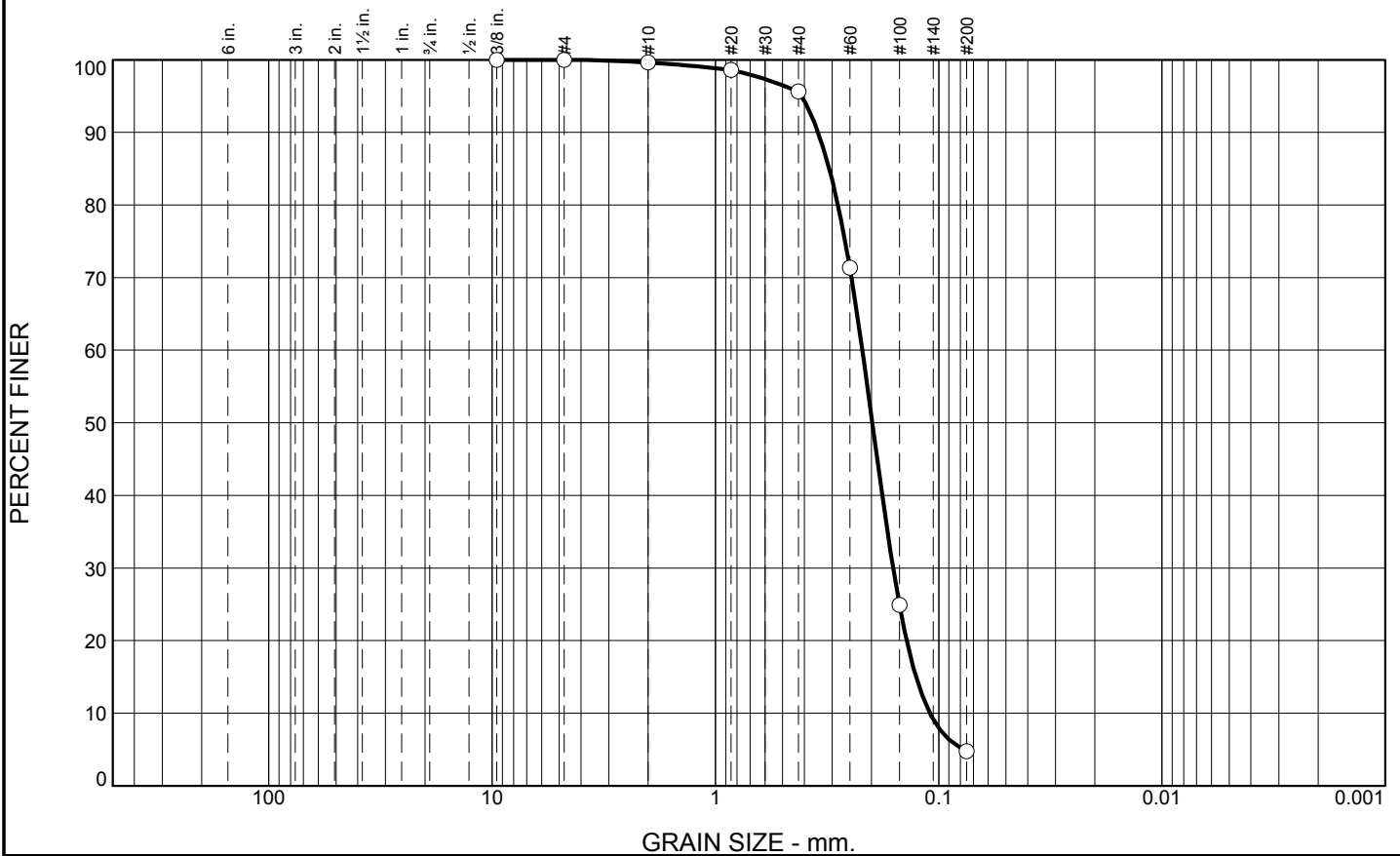
DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Mississippi Sound				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-MS-17-10		LOCATION COORDINATES E = 931,388 N = 275,950		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 0		DISTURBED 0 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 21 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 05-13-10		STARTED 05-13-10 COMPLETED 05-13-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -19.2 Ft.			
8. TOTAL DEPTH OF BORING 15.2 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-19.2	0.0		CLAY, lean, dark gray (CL)	NS			
-31.2	12.0						
-32.8	13.6		SAND, clayey, mostly fine to medium-grained sand-sized quartz, gray (SC)				
-34.4	15.2		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, lt. gray (SP)				
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Boring Designation BI-MS-18-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Mississippi Sound				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-MS-18-10		LOCATION COORDINATES E = 932,674 N = 270,457		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 20 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 05-13-10		STARTED 05-13-10 COMPLETED 05-13-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -18.3 Ft.			
8. TOTAL DEPTH OF BORING 17.5 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-18.3	0.0				
-19.8	1.5		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments, gray (SM)	NS	
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, trace shell fragments, lt. gray (SP)	A	Classification: SP Color: 5Y 7/1-light gray D50: 0.1983 mm % Fines: 4.8
				B	Classification: SP Color: 5Y 7/1-light gray D50: 0.1864 mm % Fines: 2.4
				C	Classification: SP Color: 5Y 6/1-gray D50: 0.1694 mm % Fines: 4
-32.8	14.5				
			CLAY, lean, dark gray (CL)	NS	
-35.3	17.0				
-35.8	17.5		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments, lt. gray (SM)		
NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.					

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.4	4.0	90.8	4.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.6		
#20	98.6		
#40	95.6		
#60	71.4		
#100	24.9		
#200	4.8		

* (no specification provided)

Material Description		
SAND, (SP), fine grained		
<div> <div> Atterberg Limits </div> <div> PL= </div> <div> LL= </div> <div> PI= </div> </div>		
<div> <div> Coefficients </div> <div> D₉₀= 0.3466 </div> <div> D₅₀= 0.1983 </div> <div> D₁₀= 0.1095 </div> <div> D₈₅= 0.3090 </div> <div> D₃₀= 0.1601 </div> <div> C_u= 2.01 </div> <div> D₆₀= 0.2198 </div> <div> D₁₅= 0.1263 </div> <div> C_c= 1.06 </div> </div>		
<div> <div> Classification </div> <div> USCS= SP </div> <div> AASHTO= </div> </div>		
<div> <div> Remarks </div> <div> CADD CODE = CH10D965 </div> </div>		

Location: USACE Sample # BI-MS-18-10A
Sample Number: TE Lab ID: 4488.02

Depth: 1.5 - 6.5 (ft.)

Date: 5/27/10

Thompson Engineering
Mobile, Alabama

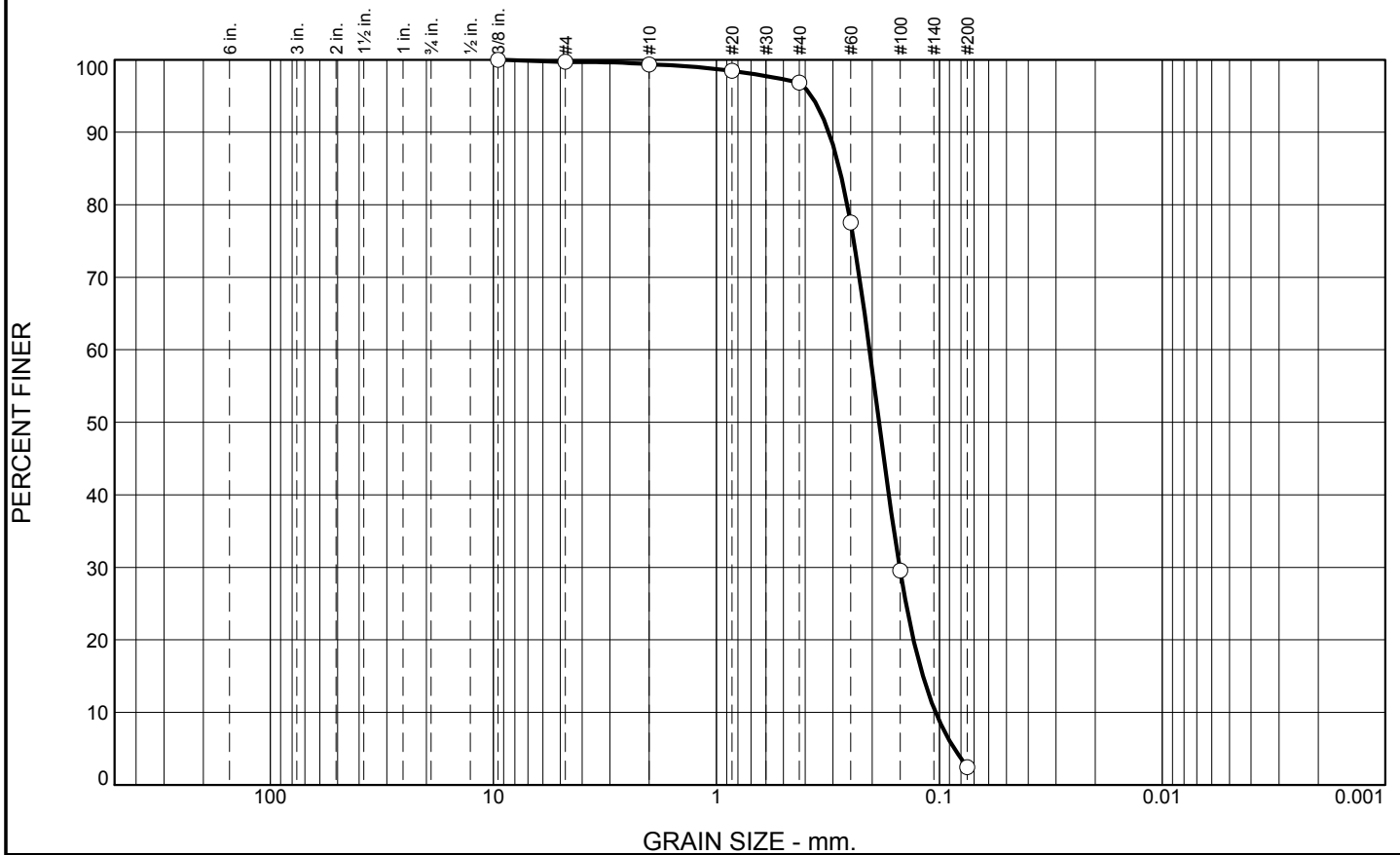
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.3	0.4	2.5	94.4	2.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.7		
#10	99.3		
#20	98.5		
#40	96.8		
#60	77.5		
#100	29.6		
#200	2.4		

* (no specification provided)

Material Description		
SAND, (SP), fine grained		
<div> <div> Atterberg Limits </div> <div> PL= </div> <div> LL= </div> <div> PI= </div> </div>		
<div> <div> Coefficients </div> <div> D₉₀= 0.3131 </div> <div> D₅₀= 0.1864 </div> <div> D₁₀= 0.1041 </div> <div> D₈₅= 0.2807 </div> <div> D₃₀= 0.1508 </div> <div> C_u= 1.98 </div> <div> D₆₀= 0.2057 </div> <div> D₁₅= 0.1185 </div> <div> C_c= 1.06 </div> </div>		
<div> <div> Classification </div> <div> USCS= SP </div> <div> AASHTO= </div> </div>		
<div> <div> Remarks </div> <div> CADD CODE = CH10D965 </div> </div>		

Location: USACE Sample # BI-MS-18-10B
Sample Number: TE Lab ID: 4488.03

Depth: 6.5 - 11.5 (ft.)

Date: 5/27/10

Thompson Engineering
Mobile, Alabama

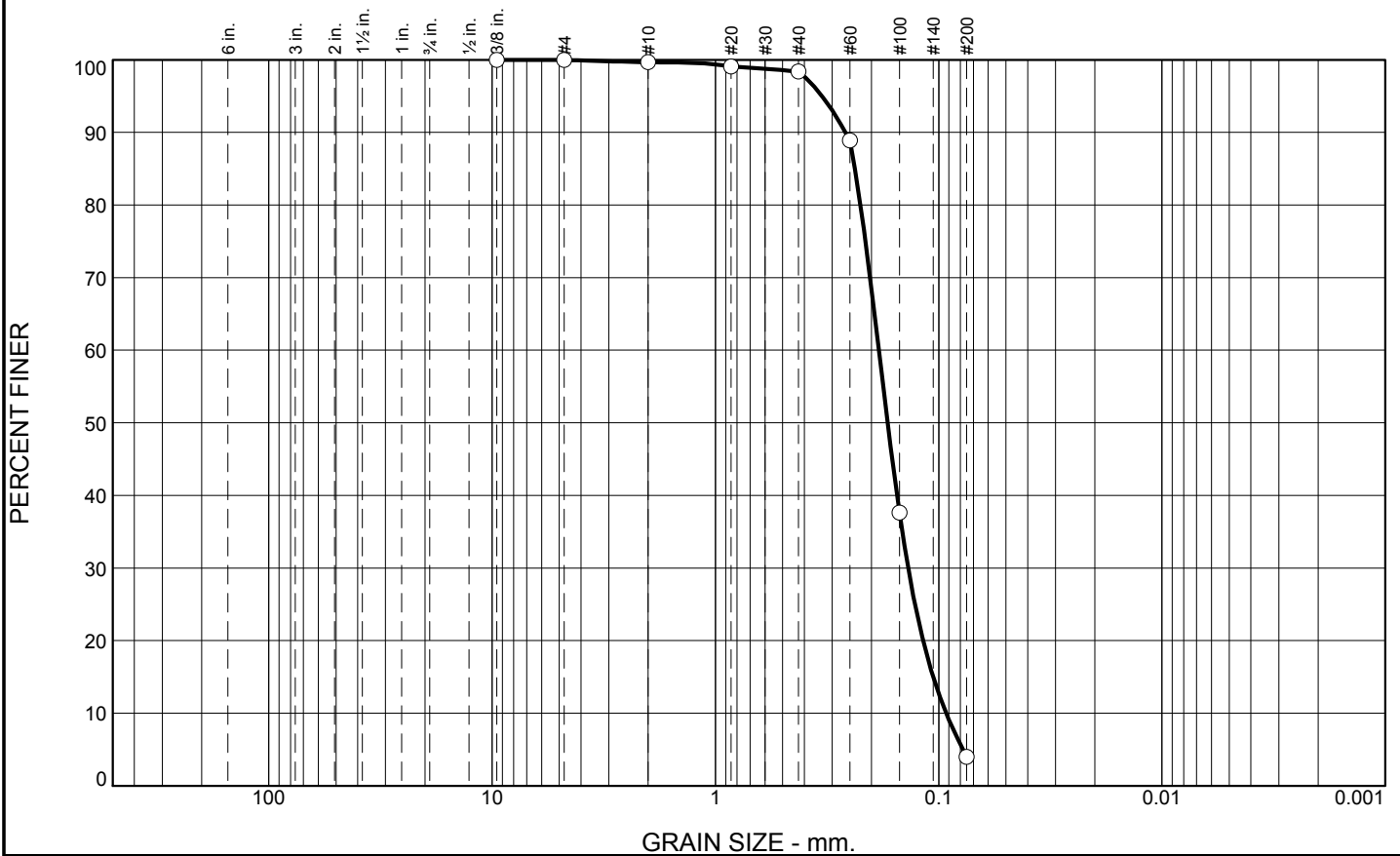
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.3	1.3	94.4	4.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.7		
#20	99.1		
#40	98.4		
#60	88.9		
#100	37.6		
#200	4.0		

* (no specification provided)

<u>Material Description</u>		
SAND, (SP), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.2615	D ₈₅ = 0.2373	D ₆₀ = 0.1854
D ₅₀ = 0.1694	D ₃₀ = 0.1370	D ₁₅ = 0.1059
D ₁₀ = 0.0926	C _u = 2.00	C _c = 1.09
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-MS-18-10C
Sample Number: TE Lab ID: 4488.04

Depth: 11.5 - 14.5 (ft.)

Date: 5/27/10

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

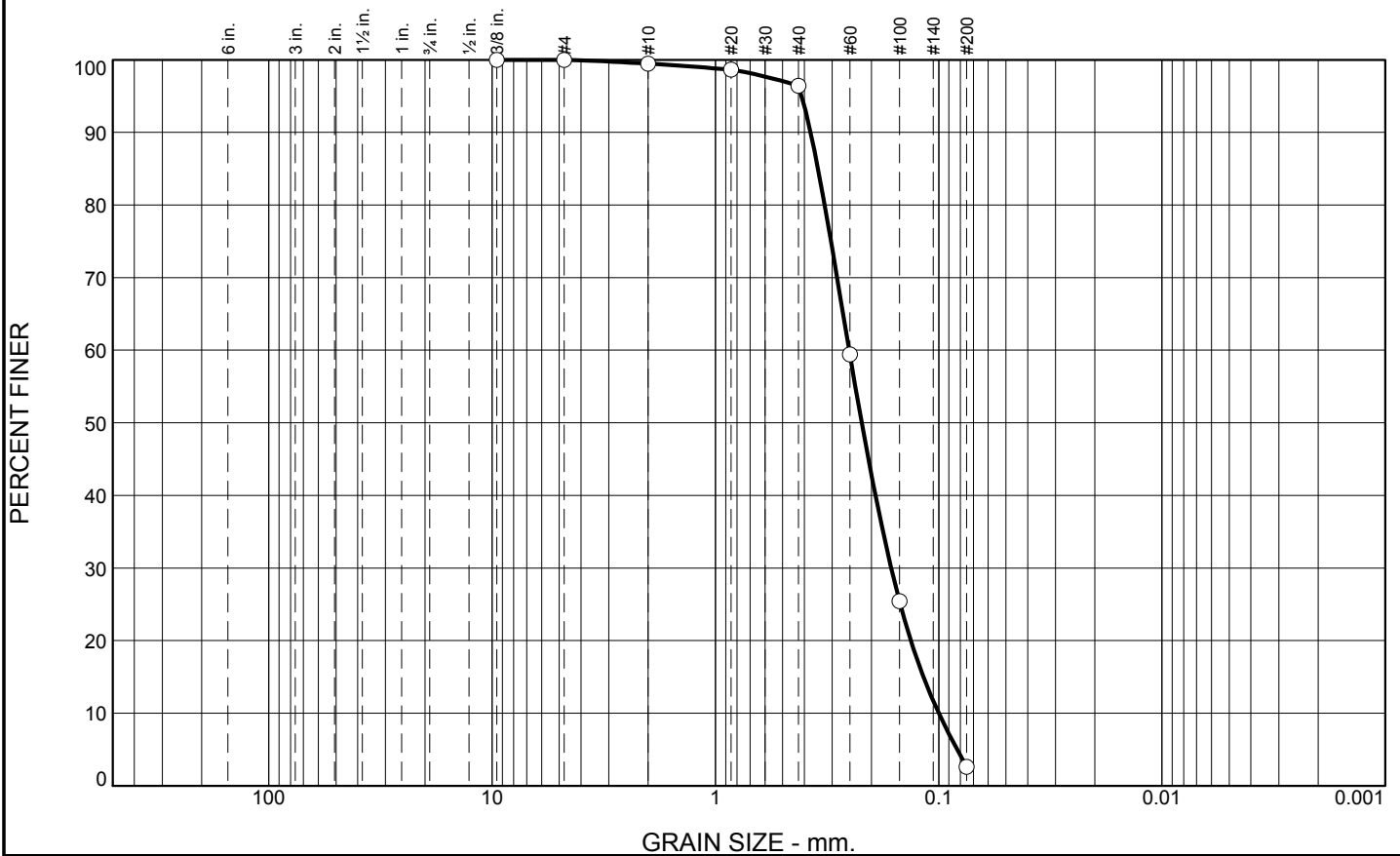
Tested By: L.Stokes

Checked By: R.Byrd

Boring Designation BI-MS-19-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Mississippi Sound				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-MS-19-10		LOCATION COORDINATES E = 933,640 N = 270,066		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		12. TOTAL SAMPLES 2		DISTURBED 2		VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		13. TOTAL NUMBER CORE BOXES		14. WATER DEPTH 23 Ft.	
4. NAME OF DRILLER Construction Solutions International, Inc.		5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		15. DATE BORING 05-14-10		COMPLETED 05-14-10	
6. THICKNESS OF OVERBURDEN N/A		7. DEPTH DRILLED INTO ROCK N/A		16. ELEVATION TOP OF BORING -21.9 Ft.		17. TOTAL RECOVERY FOR BORING 100%	
8. TOTAL DEPTH OF BORING 17.6 Ft.		18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist					
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-21.9	0.0						
-24.9	3.0		SAND, silty, mostly Geologist fine to medium-grained sand-sized 0 quartz NS = Sample not submitted for laboratory analysis from this interval, some silt, trace shell fragments, gray (SM)	NS			
-35.4	13.5		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, trace shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.2212 mm % Fines: 2.6		
-38.2	16.3		CLAY, lean, dark gray (CL)	NS			
-39.5	17.6		SILT, inorganic-L, brown (ML)				
NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.							

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.5	3.1	93.8	2.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.5		
#20	98.6		
#40	96.4		
#60	59.4		
#100	25.4		
#200	2.6		

* (no specification provided)

Material Description
SAND, (SP), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.3749 D₈₅= 0.3471 D₆₀= 0.2519
 D₅₀= 0.2212 D₃₀= 0.1633 D₁₅= 0.1171
 D₁₀= 0.0999 C_u= 2.52 C_c= 1.06

Classification
 USCS= SP AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-MS-19-10A
Sample Number: TE Lab ID: 4488.19

Depth: 3.0 - 8.0 (ft.)

Date: 5/27/10

Thompson Engineering

Mobile, Alabama

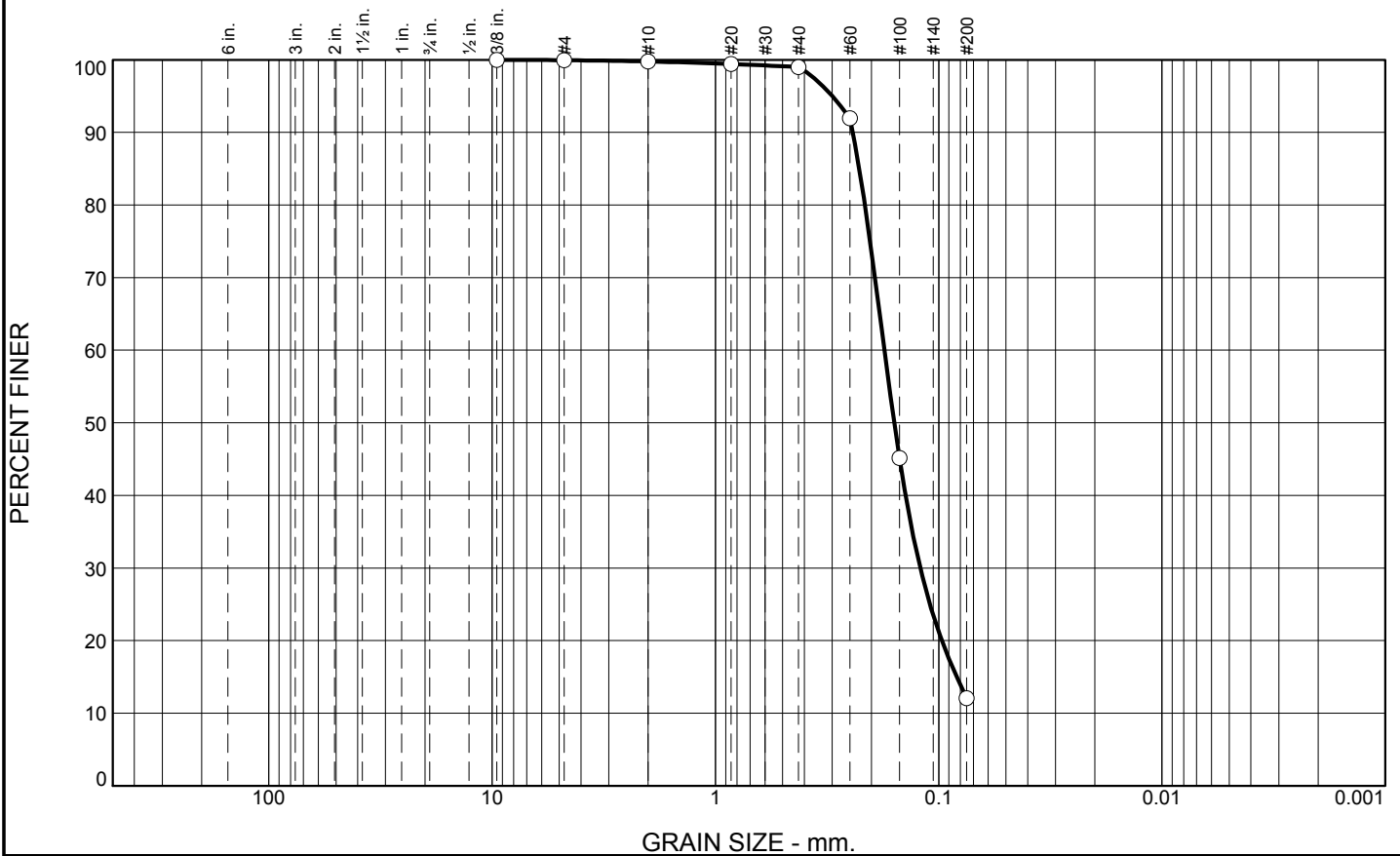
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.1	0.8	86.9	12.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.8		
#20	99.4		
#40	99.0		
#60	91.9		
#100	45.2		
#200	12.1		

* (no specification provided)

Material Description
SILTY SAND, (SM), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.2424 D₈₅= 0.2267 D₆₀= 0.1751
 D₅₀= 0.1582 D₃₀= 0.1209 D₁₅= 0.0830
 D₁₀= C_u= C_c=

Classification
 USCS= SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-MS-19-10B
Sample Number: TE Lab ID: 4488.20

Depth: 8.0 - 13.5 (ft.)

Date: 5/27/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

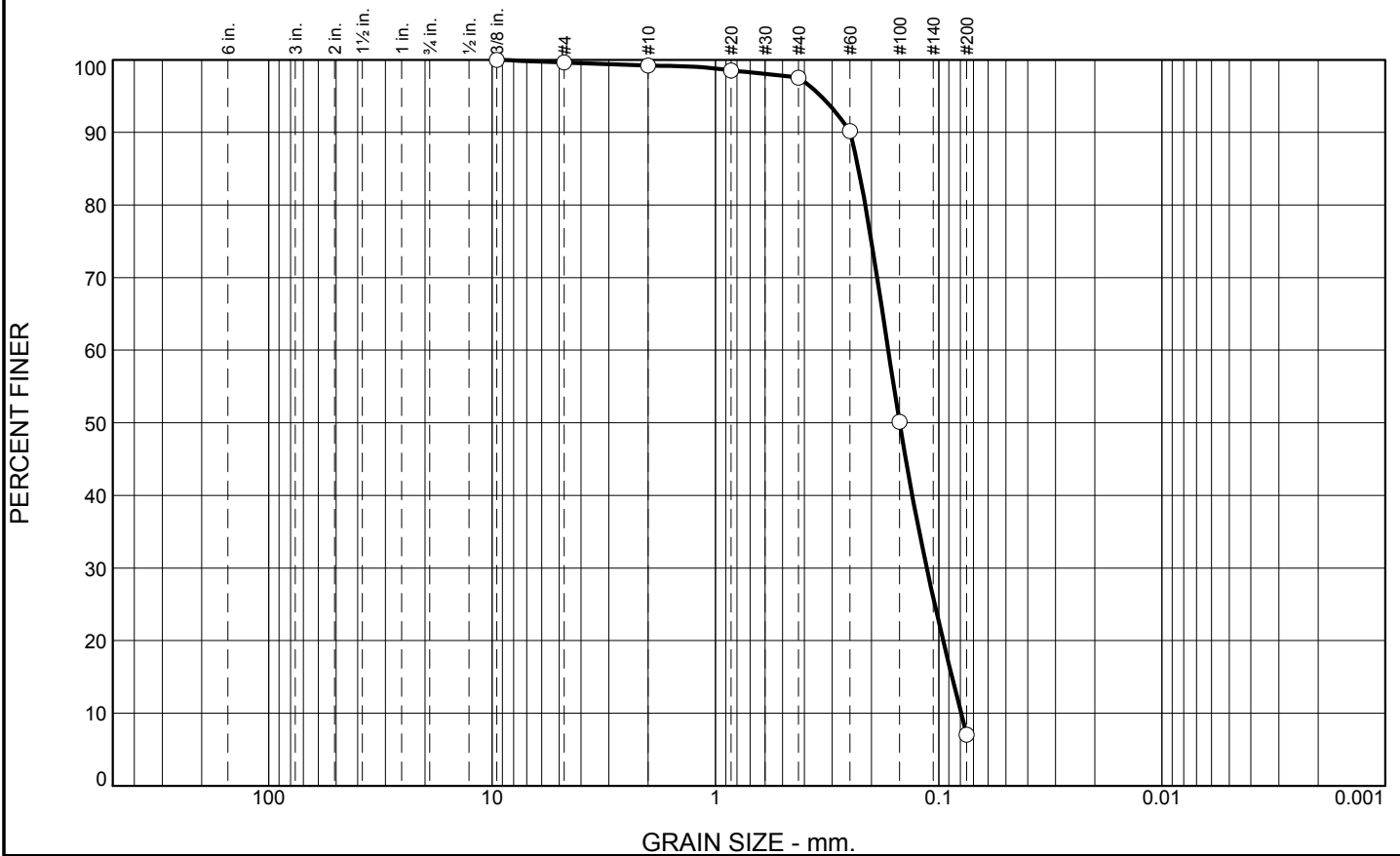
Checked By: R.Byrd

Boring Designation BI-MS-20-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Mississippi Sound				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-MS-20-10		LOCATION COORDINATES E = 933,226 N = 267,896		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 0 UNDISTURBED (UD)	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 21 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 05-13-10		STARTED 05-13-10 COMPLETED 05-13-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -19.6 Ft.			
8. TOTAL DEPTH OF BORING 16.6 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-19.6	0.0				
-20.6	1.0		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments, gray (SM)	A	Classification: SP-SM Color: 2.5Y 7/1-light gray D50: 0.1497 mm % Fines: 7
-24.6	5.0		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, trace shell fragments, lt. gray (SP)		
-26.0	6.4		CLAY, lean, dark gray (CL)	NS	
-33.8	14.2		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, trace shell fragments, lt. gray (SP)	B	Classification: SP Color: 2.5Y 6.5/1-gray D50: 0.1636 mm % Fines: 4.1
-35.4	15.8		CLAY, lean, dark gray (CL)	C	Classification: SP Color: 2.5Y 6/1-gray D50: 0.1693 mm % Fines: 3.8
-36.2	16.6		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments (SM)	NS	
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.		

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.4	0.4	1.7	90.5	7.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.6		
#10	99.2		
#20	98.5		
#40	97.5		
#60	90.2		
#100	50.2		
#200	7.0		

* (no specification provided)

Material Description
SAND, (SP-SM), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.2492 D₈₅= 0.2288 D₆₀= 0.1683
 D₅₀= 0.1497 D₃₀= 0.1131 D₁₅= 0.0872
 D₁₀= 0.0794 C_u= 2.12 C_c= 0.96

Classification
 USCS= SP-SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-MS-20-10A
Sample Number: TE Lab ID: 4488.05

Depth: 0.0 - 5.0 (ft.)

Date: 5/27/10

Thompson Engineering

Mobile, Alabama

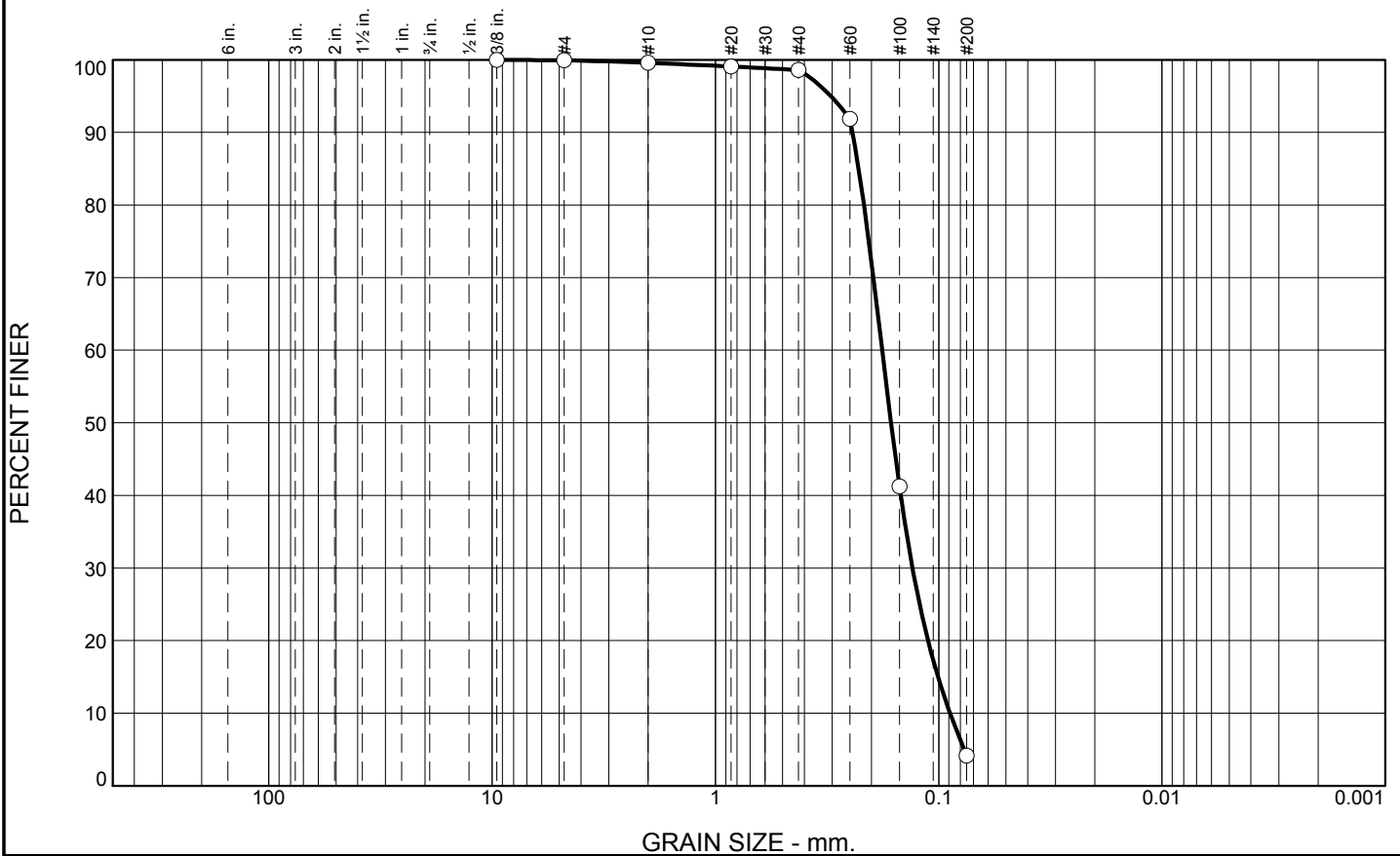
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.3	1.0	94.5	4.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.6		
#20	99.1		
#40	98.6		
#60	91.9		
#100	41.2		
#200	4.1		

* (no specification provided)

<u>Material Description</u>		
SAND, (SP), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.2431	D ₈₅ = 0.2282	D ₆₀ = 0.1792
D ₅₀ = 0.1636	D ₃₀ = 0.1311	D ₁₅ = 0.1008
D ₁₀ = 0.0890	C _u = 2.01	C _c = 1.08
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-MS-20-10B
Sample Number: TE Lab ID: 4488.06

Depth: 6.4 - 11.4 (ft.)

Date: 5/27/10

Thompson Engineering
Mobile, Alabama

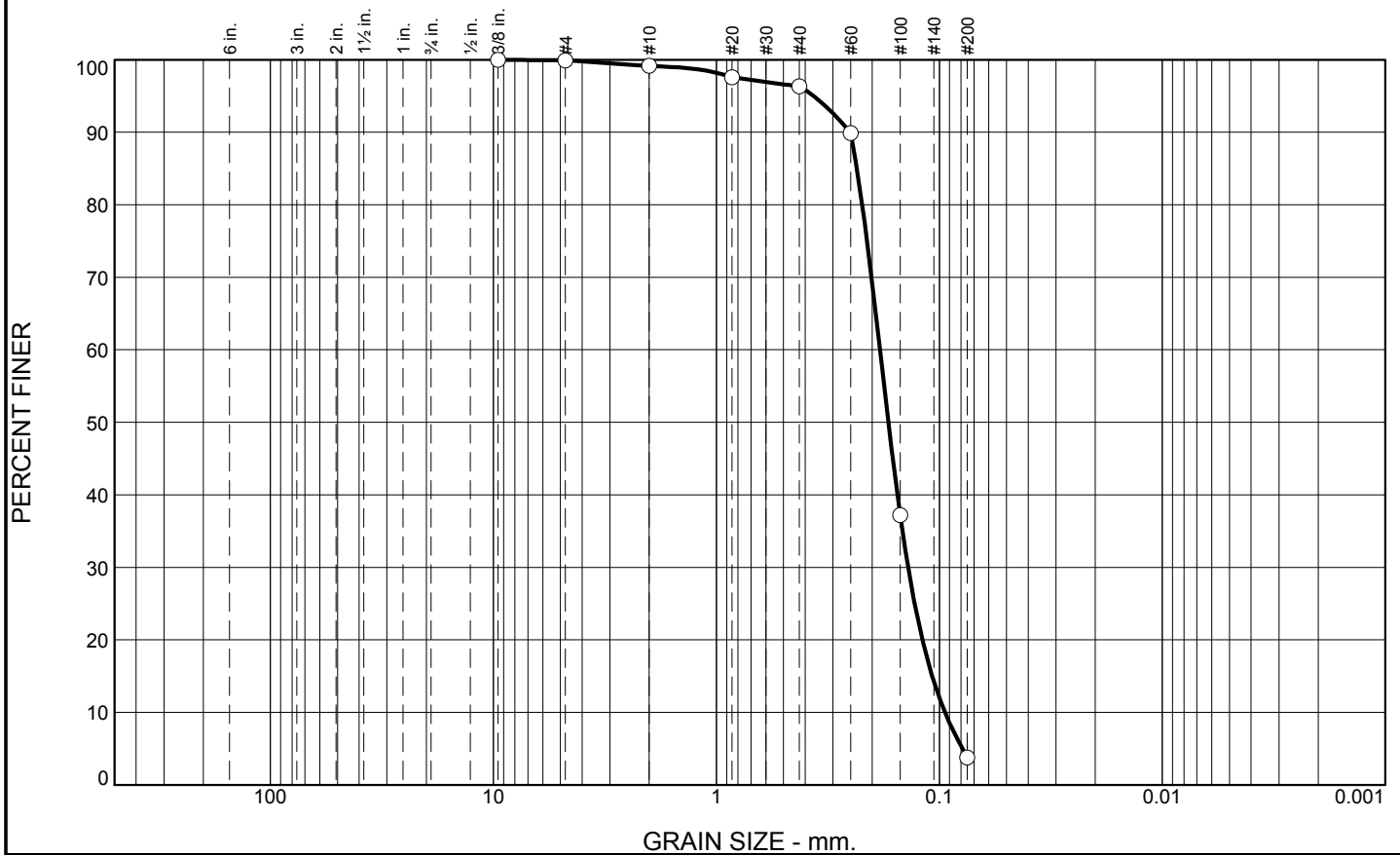
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.7	2.9	92.5	3.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.2		
#20	97.6		
#40	96.3		
#60	89.9		
#100	37.2		
#200	3.8		

* (no specification provided)

Material Description		
SAND, (SP), fine grained		
<div> <div> Atterberg Limits </div> <div> PL= </div> <div> LL= </div> <div> PI= </div> </div>		
<div> <div> Coefficients </div> <div> D₉₀= 0.2517 </div> <div> D₅₀= 0.1693 </div> <div> D₁₀= 0.0944 </div> <div> D₈₅= 0.2343 </div> <div> D₃₀= 0.1381 </div> <div> C_u= 1.96 </div> <div> D₆₀= 0.1846 </div> <div> D₁₅= 0.1078 </div> <div> C_c= 1.09 </div> </div>		
<div> <div> Classification </div> <div> USCS= SP </div> <div> AASHTO= </div> </div>		
<div> <div> Remarks </div> <div> CADD CODE = CH10D965 </div> </div>		

Location: USACE Sample # BI-MS-20-10C
Sample Number: TE Lab ID: 4488.07

Depth: 11.4 - 14.2 (ft.)

Date: 5/27/10

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

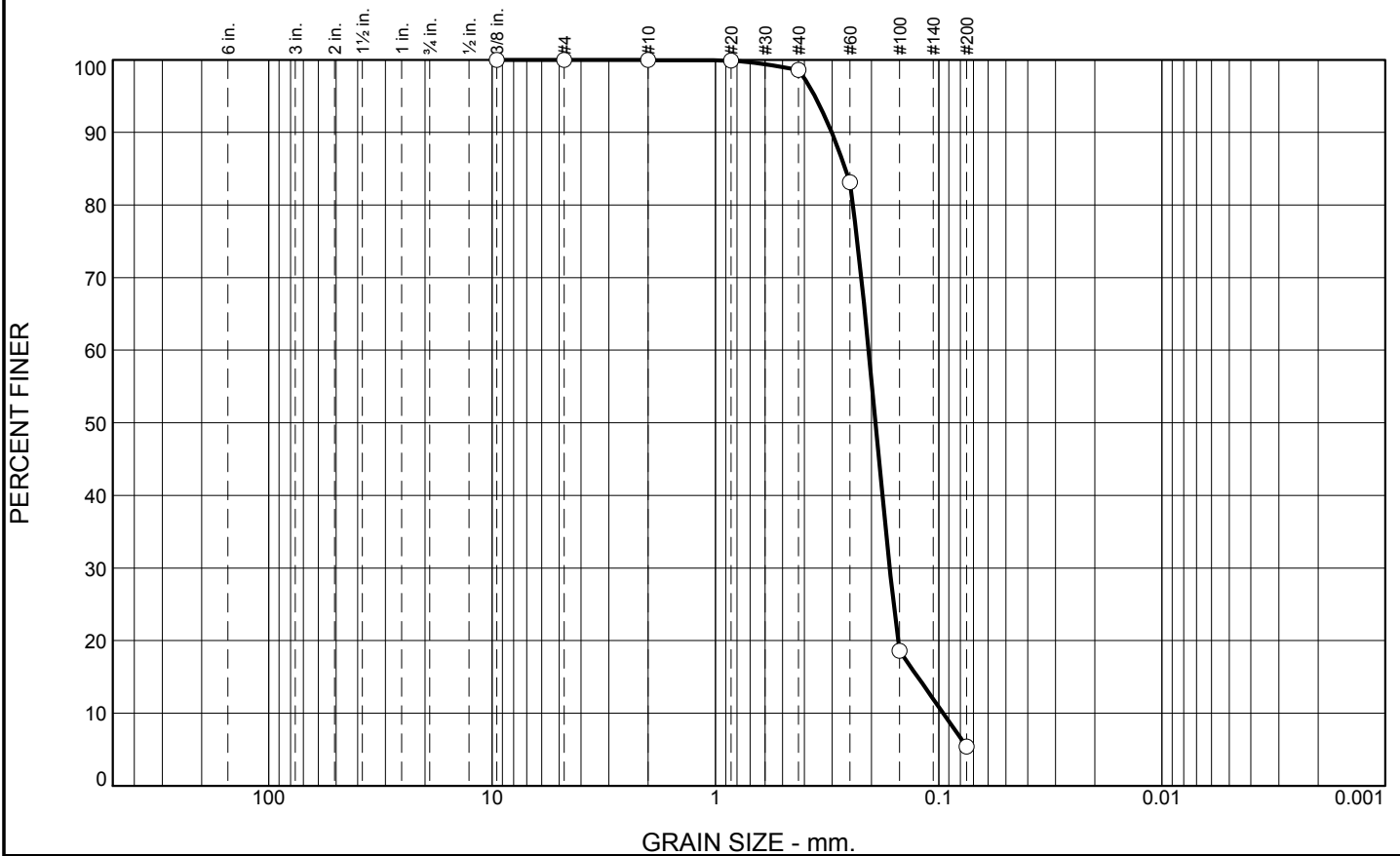
Tested By: L.Stokes

Checked By: R.Byrd

Boring Designation BI-MS-21-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Mississippi Sound				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-MS-21-10		LOCATION COORDINATES E = 934,745 N = 267,974		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 21 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 05-14-10		STARTED 05-14-10 COMPLETED 05-14-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -19.3 Ft.			
8. TOTAL DEPTH OF BORING 12.8 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-19.3	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, trace shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 6/1-gray D50: 0.1678 mm % Fines: 3.6		
				B	Classification: SP-SM Color: 2.5Y 6/1-gray D50: 0.1481 mm % Fines: 5.6		
-28.8	9.5						
-30.3	11.0		CLAY, lean, dark gray (CL)				
				NS			
-32.1	12.8		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, brown (SM)				
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.4	93.2	5.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	98.6		
#60	83.1		
#100	18.6		
#200	5.4		

* (no specification provided)

<u>Material Description</u>		
SAND, (SP-SM), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.3014	D ₈₅ = 0.2620	D ₆₀ = 0.2061
D ₅₀ = 0.1920	D ₃₀ = 0.1658	D ₁₅ = 0.1242
D ₁₀ = 0.0955	C _u = 2.16	C _c = 1.40
<u>Classification</u>		
USCS= SP-SM	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-SP-21-10A
Sample Number: TE Lab ID: 4461.32

Depth: 0.0 - 5.0 (ft)

Date: 5/13/10

Thompson Engineering
Mobile, Alabama

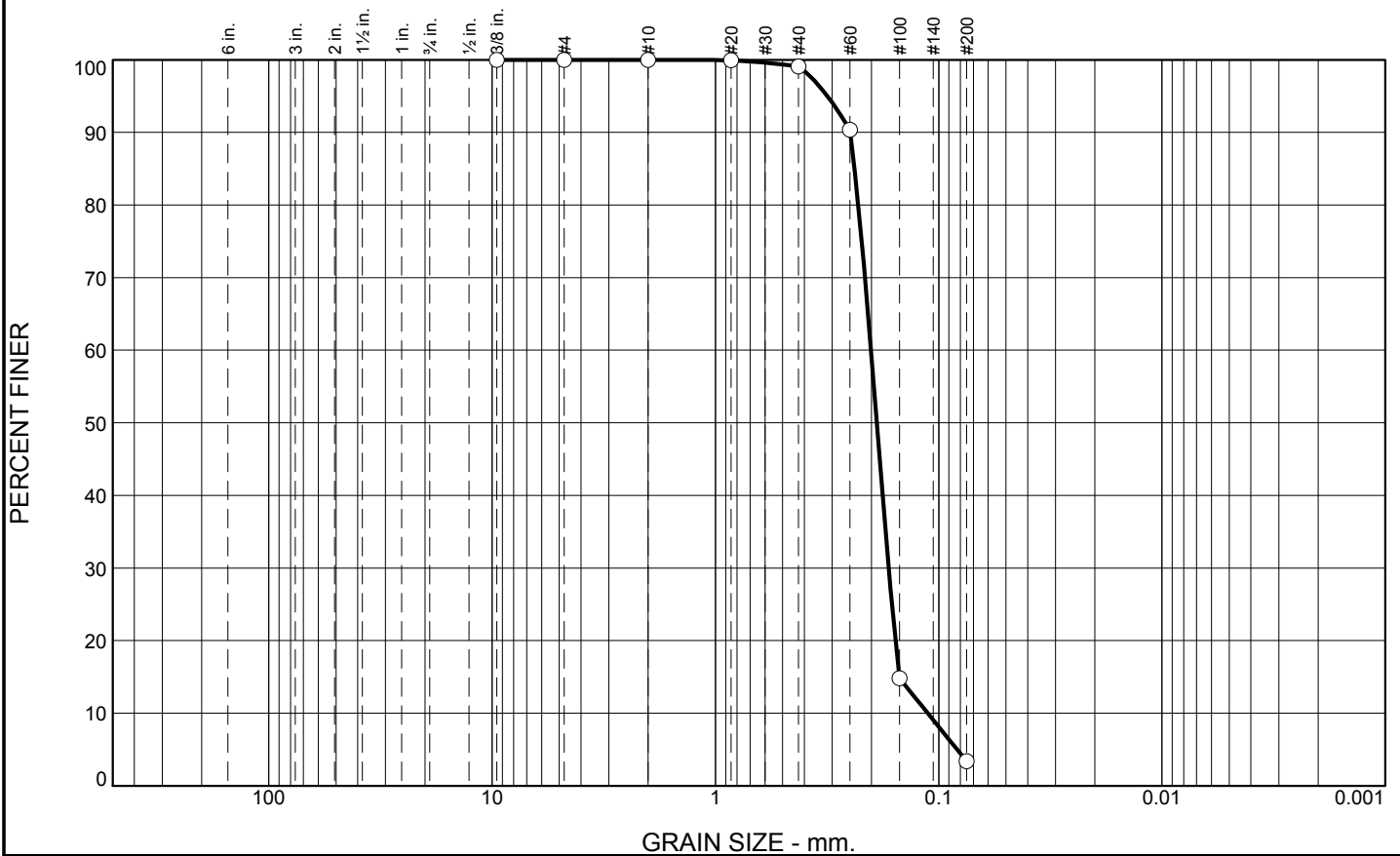
Client: US Army Corps of Engineers
Project: Mississippi Barrier Island Restoration Project
Contract No. W91278-10-D-0026 - Task 03
Project No: 1021230009

Figure

Tested By: J.Maddox/L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.9	95.7	3.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	99.1		
#60	90.3		
#100	14.8		
#200	3.4		

* (no specification provided)

<u>Material Description</u>		
SAND, (SP), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.2492	D ₈₅ = 0.2382	D ₆₀ = 0.2011
D ₅₀ = 0.1894	D ₃₀ = 0.1675	D ₁₅ = 0.1502
D ₁₀ = 0.1120	C _u = 1.80	C _c = 1.25
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-SP-21-10B
Sample Number: TE Lab ID: 4461.33

Depth: 5.0 - 10.0 (ft)

Date: 5/13/10

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Mississippi Barrier Island Restoration Project
Contract No. W91278-10-D-0026 - Task 03
Project No: 1021230009

Figure

Tested By: J.Maddox/L.Stokes

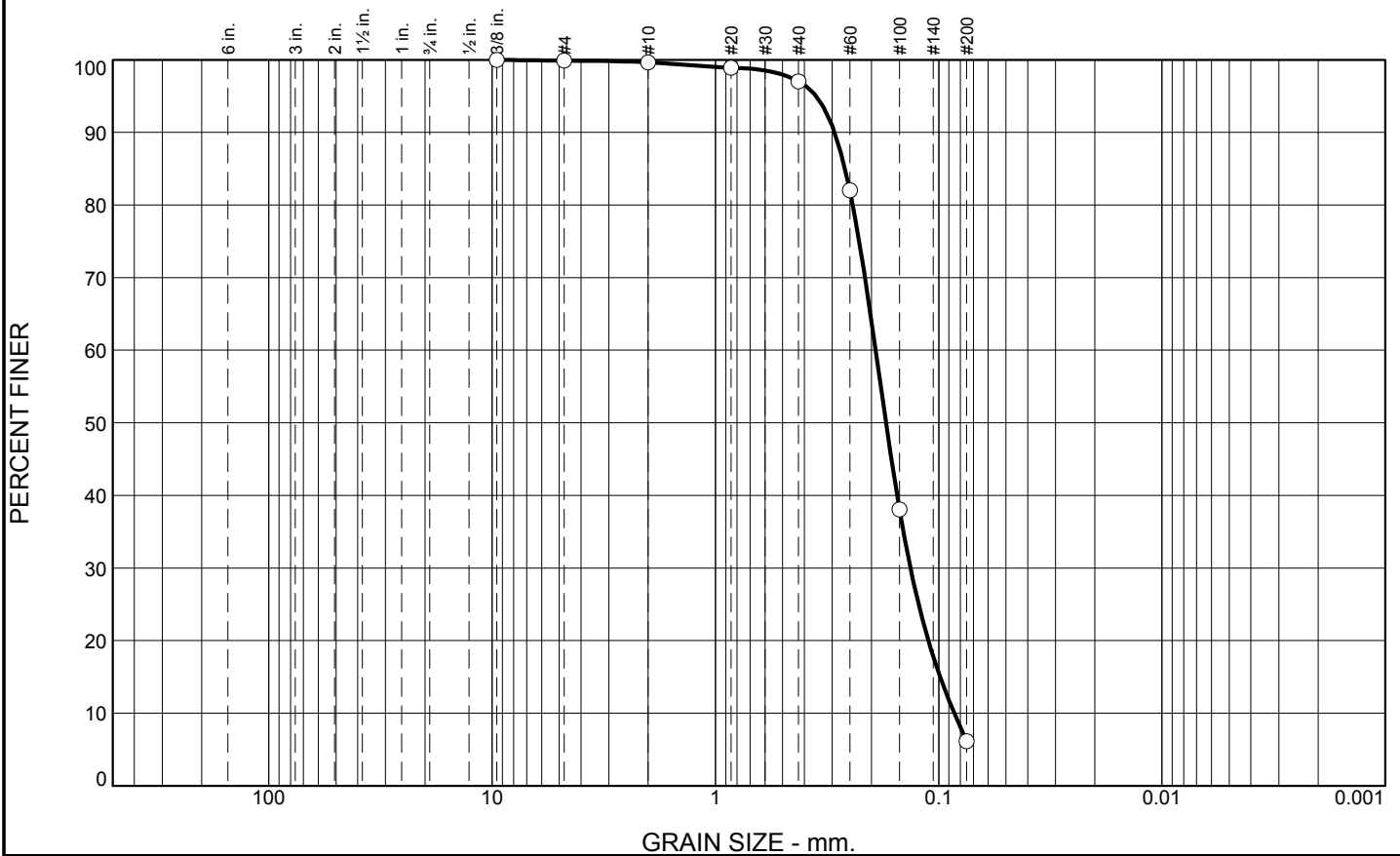
Checked By: R.Byrd

Boring Designation BI-MS-22-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Mississippi Sound				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-MS-22-10		LOCATION COORDINATES E = 933,373 N = 266,895		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		14. WATER DEPTH 19 Ft.	
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 05-13-10		STARTED 05-13-10 COMPLETED 05-13-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -17.7 Ft.		17. TOTAL RECOVERY FOR BORING 100%	
8. TOTAL DEPTH OF BORING 11.4 Ft.				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-17.7	0.0				
-18.7	1.0		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, gray (SM)	A	Classification: SP-SM Color: 5Y 5/2-olive gray D50: 0.1722 mm % Fines: 6.1
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, trace shell fragments, lt. gray (SP)	B	Classification: SP Color: 5Y 7/1-light gray D50: 0.2009 mm % Fines: 3.2
-27.9	10.2				
-28.7	11.0		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments, gray (SM)	NS	
-29.1	11.4		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace shell fragments, lt. gray (SP)		
NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.					

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.2	2.7	90.9	6.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.7		
#20	98.9		
#40	97.0		
#60	82.0		
#100	38.1		
#200	6.1		

* (no specification provided)

Material Description

SAND, (SP-SM)

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.2925

D₈₅= 0.2627

D₆₀= 0.1917

D₅₀= 0.1722

D₃₀= 0.1339

D₁₅= 0.0987

D₁₀= 0.0852

C_u= 2.25

C_c= 1.10

Classification

USCS= SP-SM

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-MS-22-10A
Sample Number: TE Lab ID: 4488.08

Depth: 0.0 - 5.0 (ft.)

Date: 5/27/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

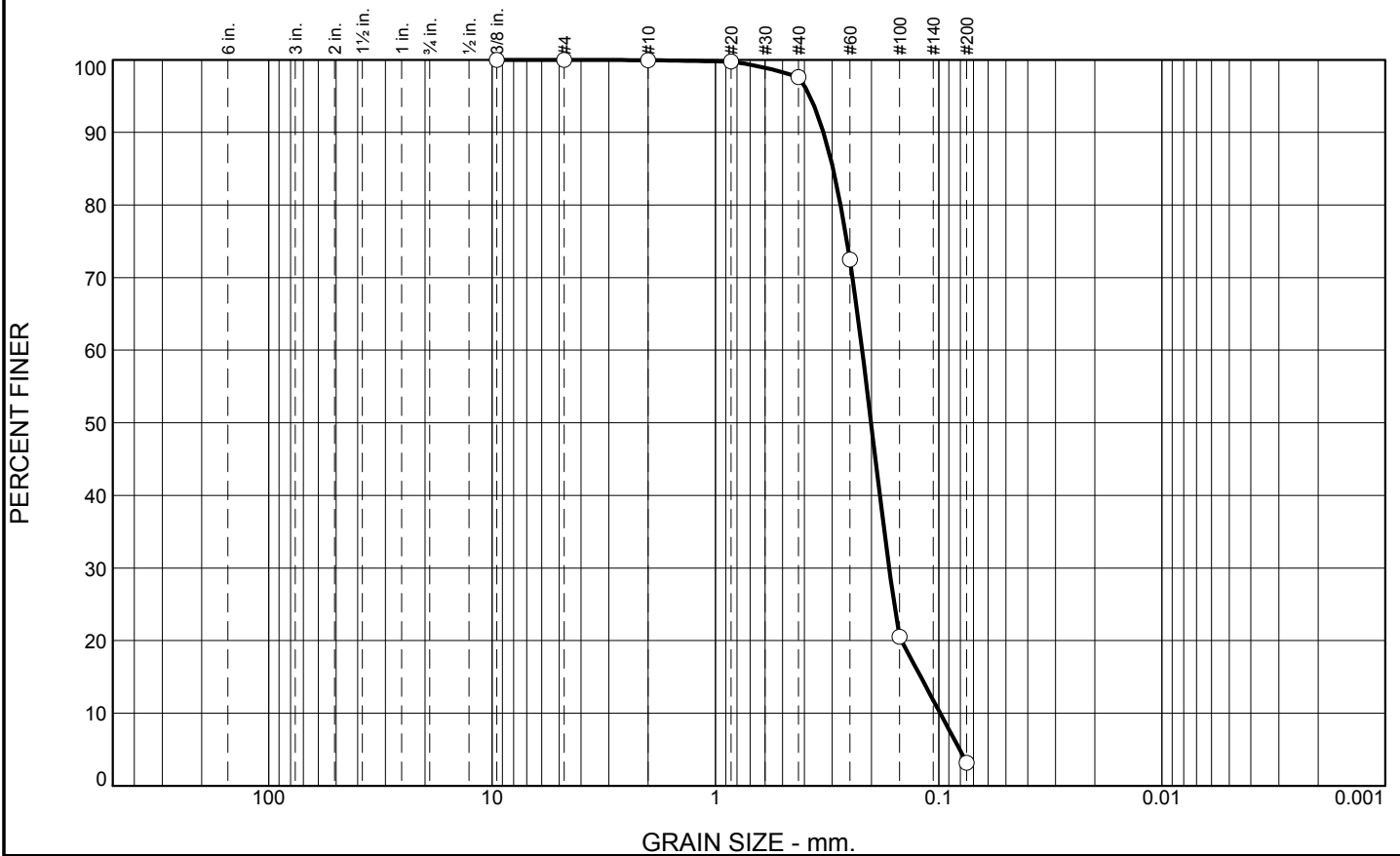
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	2.3	94.4	3.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.7		
#40	97.6		
#60	72.5		
#100	20.5		
#200	3.2		

* (no specification provided)

Material Description		
SAND, (SP), fine grained		
<div> <div> Atterberg Limits PL= LL= PI= </div> <div> Coefficients D₉₀= 0.3280 D₈₅= 0.2972 D₆₀= 0.2202 D₅₀= 0.2009 D₃₀= 0.1668 D₁₅= 0.1203 D₁₀= 0.0985 C_u= 2.24 C_c= 1.28 </div> <div> Classification USCS= SP AASHTO= </div> <div> Remarks CADD CODE = CH10D965 </div> </div>		

Location: USACE Sample # BI-MS-22-10B
Sample Number: TE Lab ID: 4488.09

Depth: 5.0 - 10.0 (ft.)

Date: 5/27/10

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

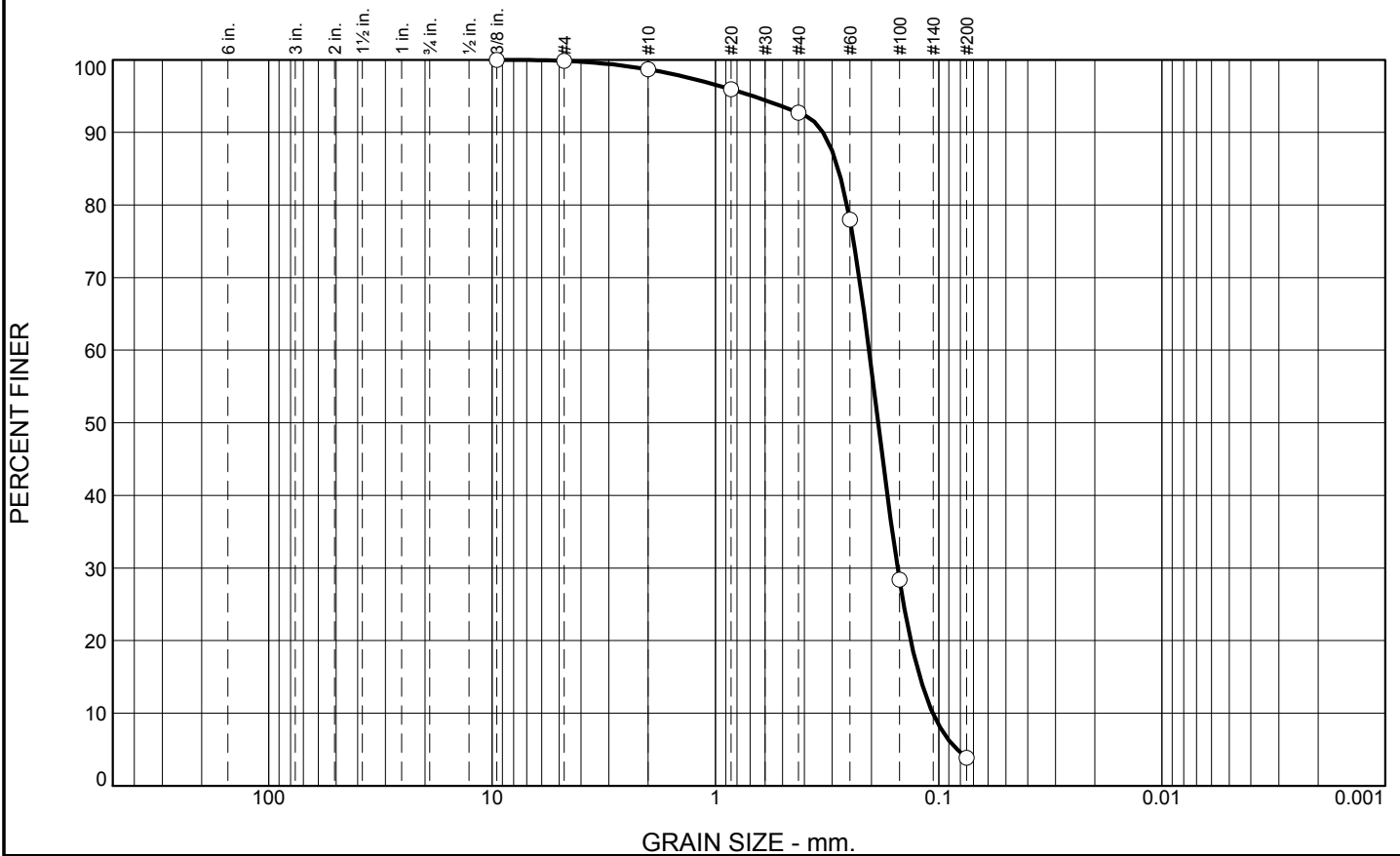
Tested By: L.Stokes

Checked By: R.Byrd

Boring Designation BI-MS-23-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Mississippi Sound				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-MS-23-10		LOCATION COORDINATES E = 934,905 N = 267,032		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		14. WATER DEPTH 22 Ft.	
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 05-14-10		STARTED 05-14-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -20.2 Ft.		COMPLETED 05-14-10	
8. TOTAL DEPTH OF BORING 16.6 Ft.				17. TOTAL RECOVERY FOR BORING 100%		18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist	
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-20.2	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, trace shell fragments, lt. gray (SP)	A	Classification: SP Color: 5Y 6/1-gray D50: 0.1867 mm % Fines: 3.8		
				B	Classification: SP Color: 5Y 6/1-gray D50: 0.1827 mm % Fines: 3.7		
				C	Classification: SP-SM Color: 5Y 6/1-gray D50: 0.1797 mm % Fines: 6.8		
-36.4	16.2						
-36.8	16.6			NS			
			SAND, clayey, mostly fine to medium-grained sand-sized quartz, some clay, trace shell fragments, gray (SC) NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	1.2	6.0	88.9	3.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	98.7		
#20	95.9		
#40	92.7		
#60	78.0		
#100	28.4		
#200	3.8		

* (no specification provided)

Material Description		
SAND, (SP), fine grained		
<div> <div> Atterberg Limits PL= LL= PI= </div> <div> Coefficients D₉₀= 0.3292 D₈₅= 0.2821 D₆₀= 0.2052 D₅₀= 0.1867 D₃₀= 0.1528 D₁₅= 0.1215 D₁₀= 0.1063 C_u= 1.93 C_c= 1.07 </div> <div> Classification USCS= SP AASHTO= </div> <div> Remarks CADD CODE = CH10D965 </div> </div>		

Location: USACE Sample # BI-MS-23-10A
Sample Number: TE Lab ID: 4488.12

Depth: 0.0 - 5.0 (ft.)

Date: 5/27/10

Thompson Engineering
Mobile, Alabama

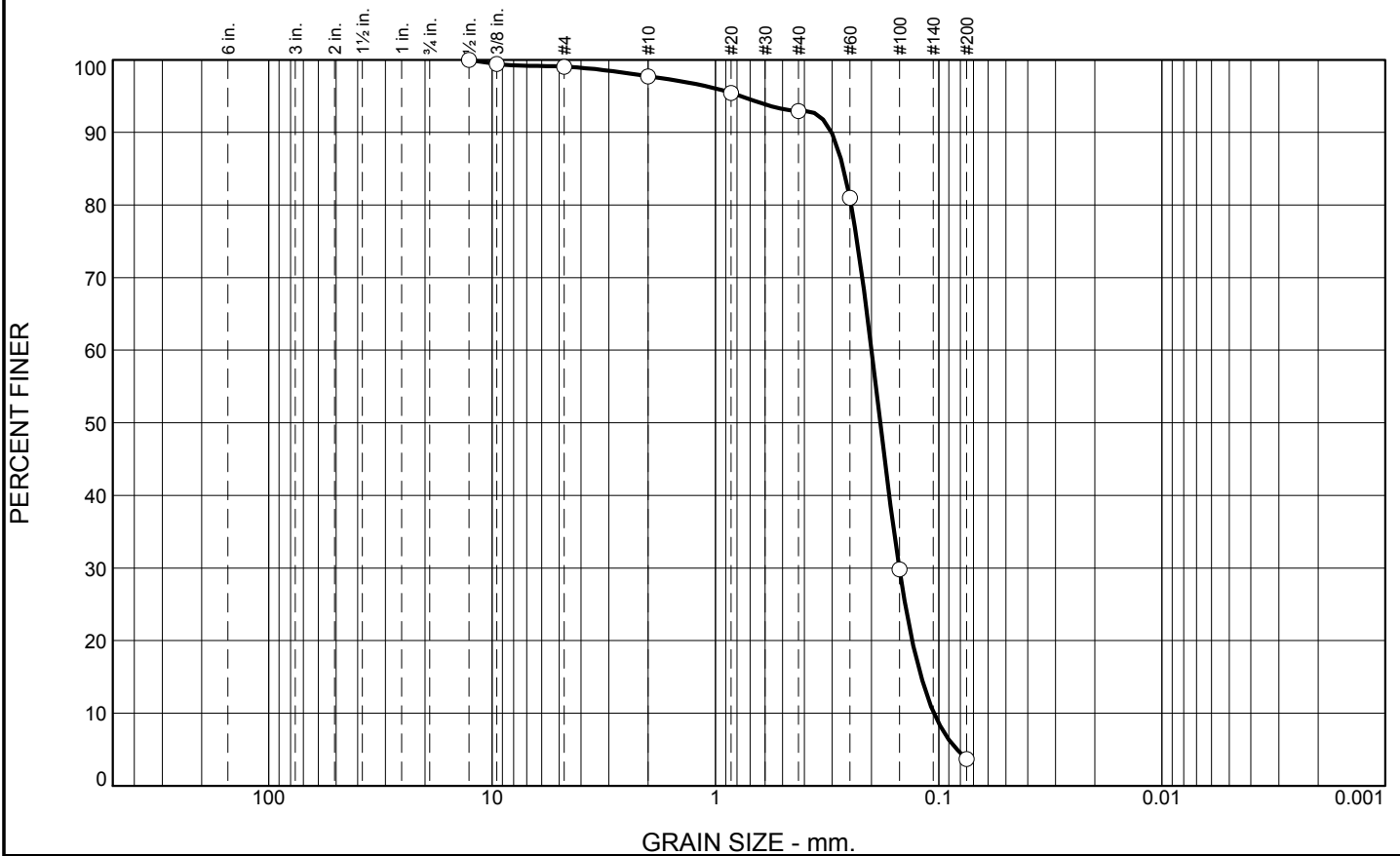
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.9	1.4	4.7	89.3	3.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.500	100.0		
.375	99.4		
#4	99.1		
#10	97.7		
#20	95.4		
#40	93.0		
#60	81.0		
#100	29.8		
#200	3.7		

* (no specification provided)

Material Description		
SAND, (SP), fine grained		
<div> <div> Atterberg Limits </div> <div> PL= </div> <div> LL= </div> <div> PI= </div> </div>		
<div> <div> Coefficients </div> <div> D₉₀= 0.3021 </div> <div> D₅₀= 0.1827 </div> <div> D₁₀= 0.1051 </div> <div> D₈₅= 0.2666 </div> <div> D₃₀= 0.1504 </div> <div> C_u= 1.90 </div> <div> D₆₀= 0.2000 </div> <div> D₁₅= 0.1198 </div> <div> C_c= 1.08 </div> </div>		
<div> <div> Classification </div> <div> USCS= SP </div> <div> AASHTO= </div> </div>		
<div> <div> Remarks </div> <div> CADD CODE = CH10D965 </div> </div>		

Location: USACE Sample # BI-MS-23-10B
Sample Number: TE Lab ID: 4488.13

Depth: 5.0 - 10.0 (ft.)

Date: 5/27/10

Thompson Engineering
Mobile, Alabama

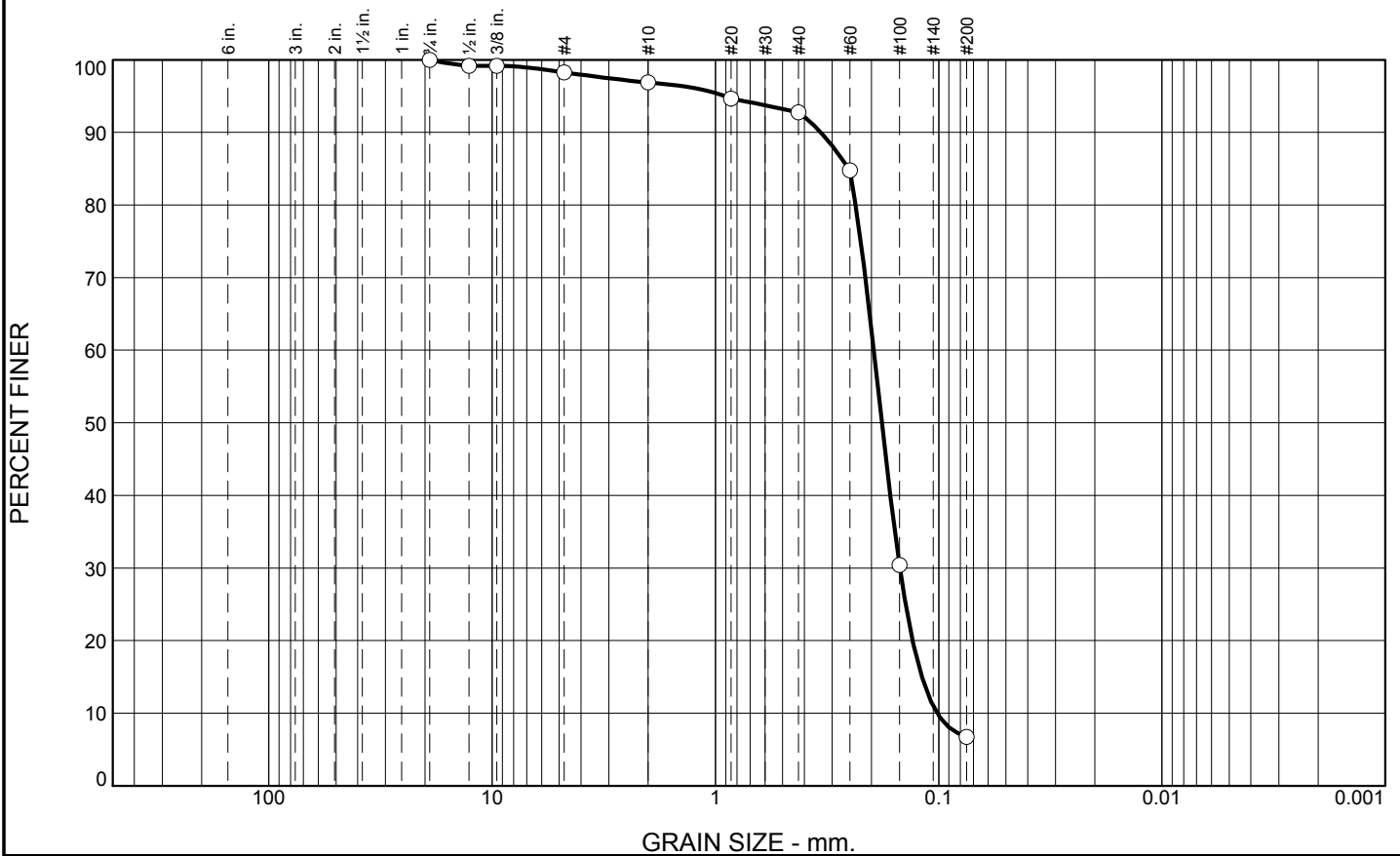
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.7	1.4	4.1	86.0	6.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.750	100.0		
.500	99.2		
.375	99.2		
#4	98.3		
#10	96.9		
#20	94.7		
#40	92.8		
#60	84.8		
#100	30.4		
#200	6.8		

* (no specification provided)

<u>Material Description</u>		
SAND, (SP-SM), fine grained, with trace shell		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.3378	D ₈₅ = 0.2530	D ₆₀ = 0.1954
D ₅₀ = 0.1797	D ₃₀ = 0.1494	D ₁₅ = 0.1189
D ₁₀ = 0.1017	C _u = 1.92	C _c = 1.12
<u>Classification</u>		
USCS= SP-SM	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-MS-23-10C
Sample Number: TE Lab ID: 4488.14

Depth: 10.0 - 16.3 (ft.)

Date: 5/27/10

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

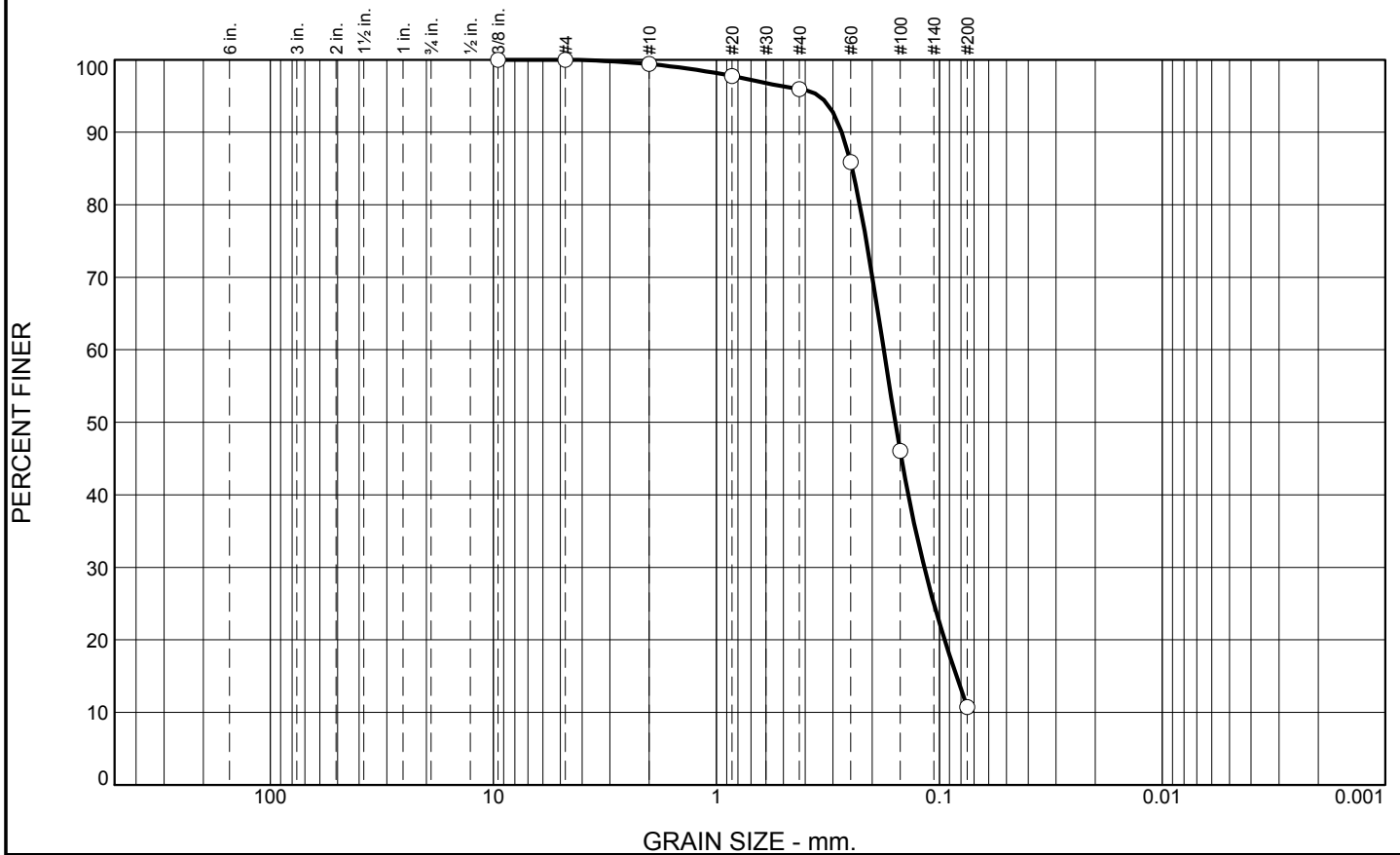
Tested By: L.Stokes

Checked By: R.Byrd

Boring Designation BI-MS-24-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Mississippi Sound				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-MS-24-10		LOCATION COORDINATES E = 932,701 N = 269,428		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 0 UNDISTURBED (UD)	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 19 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 05-15-10		STARTED 05-15-10 COMPLETED 05-15-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -17.0 Ft.			
8. TOTAL DEPTH OF BORING 15.5 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-17.0	0.0						
-19.3	2.3		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments, gray (SM)	A	Classification: SP-SM Color: 5Y 6/1-gray D50: 0.1577 mm % Fines: 10.7		
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, trace shell fragments, lt. gray (SP)	B	Classification: SP-SM Color: 5Y 6/1-gray D50: 0.1382 mm % Fines: 6		
				C	Classification: SP-SM Color: 2.5Y 6/1-gray D50: 0.1569 mm % Fines: 5.6		
-30.7	13.7						
-32.5	15.5		CLAY, lean, dark gray (CL)	NS			
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.6	3.5	85.2	10.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.4		
#20	97.8		
#40	95.9		
#60	85.9		
#100	46.0		
#200	10.7		

* (no specification provided)

Material Description
SAND, (SP-SM), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.2740 D₈₅= 0.2461 D₆₀= 0.1776
 D₅₀= 0.1577 D₃₀= 0.1168 D₁₅= 0.0838
 D₁₀= C_u= C_c=

Classification
 USCS= SP-SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-MS-24-10A
Sample Number: TE Lab ID: 4488.21

Depth: 0.0 - 5.0 (ft.)

Date: 5/27/10

Thompson Engineering

Mobile, Alabama

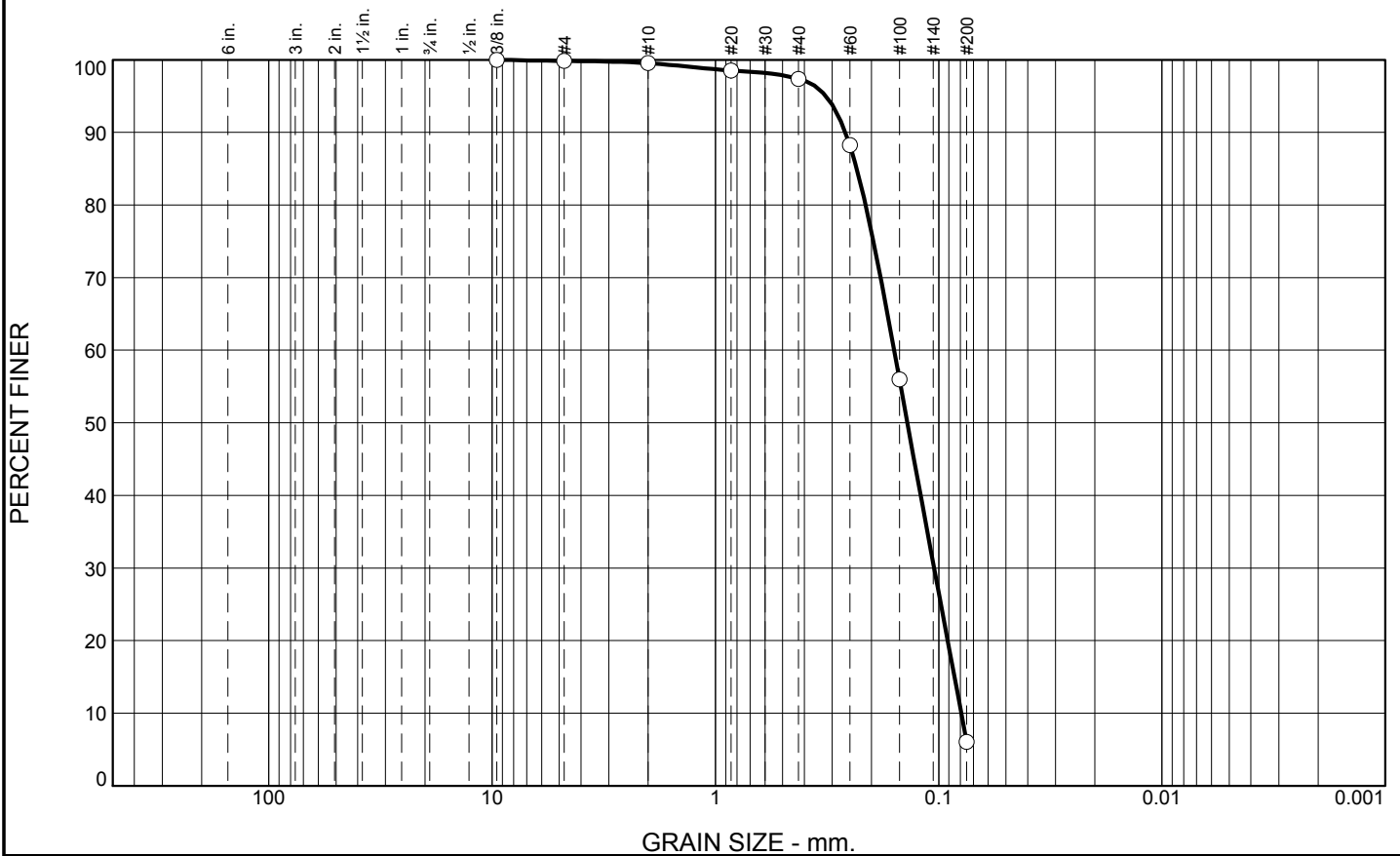
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.3	2.1	91.4	6.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.8		
#10	99.5		
#20	98.5		
#40	97.4		
#60	88.3		
#100	56.0		
#200	6.0		

* (no specification provided)

<u>Material Description</u>		
SAND, (SP-SM), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.2616	D ₈₅ = 0.2328	D ₆₀ = 0.1585
D ₅₀ = 0.1382	D ₃₀ = 0.1049	D ₁₅ = 0.0850
D ₁₀ = 0.0793	C _u = 2.00	C _c = 0.88
<u>Classification</u>		
USCS= SP-SM	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-MS-24-10B
Sample Number: TE Lab ID: 4488.22

Depth: 5.0 - 10.0 (ft.)

Date: 5/27/10

Thompson Engineering
Mobile, Alabama

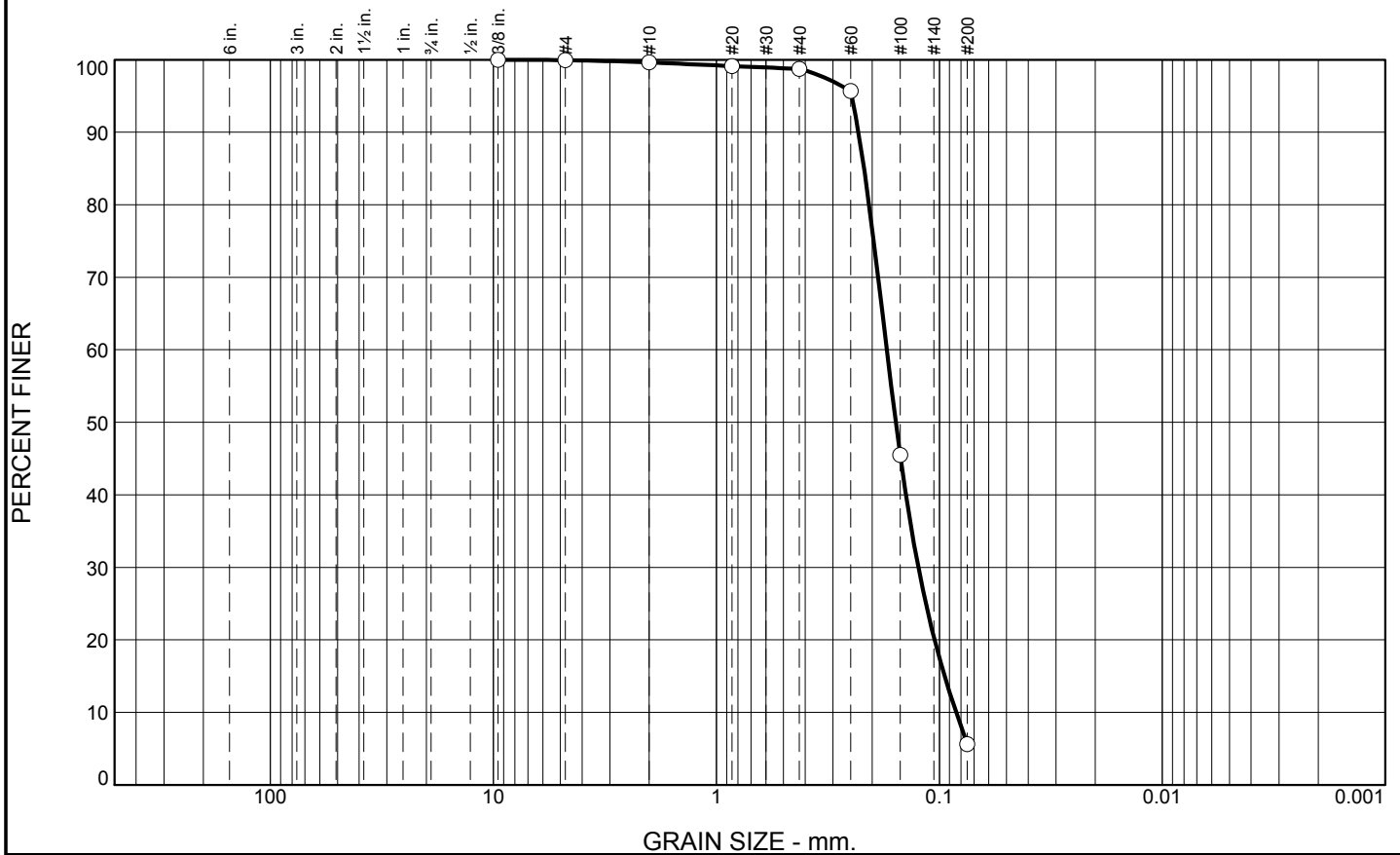
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.3	0.9	93.1	5.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.6		
#20	99.1		
#40	98.7		
#60	95.7		
#100	45.5		
#200	5.6		

* (no specification provided)

<u>Material Description</u>		
SAND, (SP-SM), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.2304	D ₈₅ = 0.2176	D ₆₀ = 0.1721
D ₅₀ = 0.1569	D ₃₀ = 0.1242	D ₁₅ = 0.0947
D ₁₀ = 0.0840	C _u = 2.05	C _c = 1.07
<u>Classification</u>		
USCS= SP-SM	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-MS-24-10C
Sample Number: TE Lab ID: 4488.23

Depth: 10.0 - 13.7 (ft.)

Date: 5/27/10

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

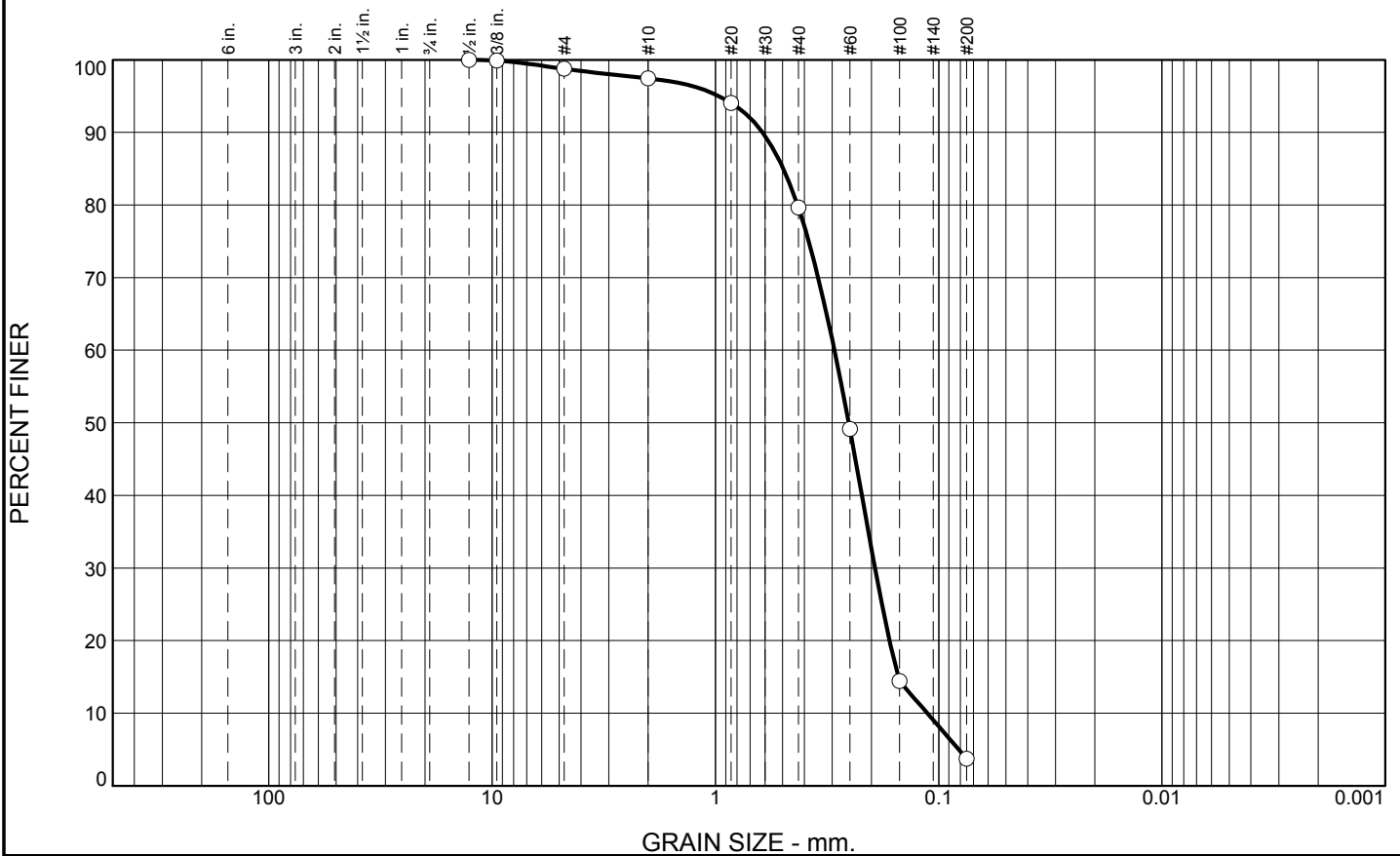
Tested By: L.Stokes

Checked By: R.Byrd

Boring Designation BI-MS-25-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Mississippi Sound				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-MS-25-10		LOCATION COORDINATES E = 934,068 N = 264,414		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 4		DISTURBED 4 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 23 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 05-18-10		STARTED 05-18-10 COMPLETED 05-18-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -22.2 Ft.			
8. TOTAL DEPTH OF BORING 18.9 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Ed Herman, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-22.2	0.0						
			SAND, poorly-graded, mostly medium-grained sand-sized quartz, some shell fragments, gray (SP)	A	Classification: SP Color: 5Y 6/1-gray D50: 0.2529 mm % Fines: 3.7		
				B	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.2133 mm % Fines: 3.8		
-32.6	10.4		SAND, silty, mostly medium-grained sand-sized quartz, some shell fragments, gray (SM)	C	Classification: SP-SM Color: 2.5Y 7/1-light gray D50: 0.196 mm % Fines: 6.2		
-35.6	13.4		SILT, inorganic-L, some medium-grained sand-sized quartz, with clay zones, dark gray (ML)	D	Classification: SM Color: 5Y 5/1-gray D50: 0.0947 mm % Fines: 38		
-41.1	18.9						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.2	1.4	17.8	75.9	3.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.500	100.0		
.375	99.9		
#4	98.8		
#10	97.4		
#20	94.0		
#40	79.6		
#60	49.2		
#100	14.4		
#200	3.7		

* (no specification provided)

<u>Material Description</u>		
SAND, (SP), fine grained, with trace shell		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.6151	D ₈₅ = 0.4964	D ₆₀ = 0.2929
D ₅₀ = 0.2529	D ₃₀ = 0.1930	D ₁₅ = 0.1518
D ₁₀ = 0.1125	C _u = 2.60	C _c = 1.13
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-MS-25-10A
Sample Number: TE Lab ID: 4488.24

Depth: 0.0 - 5.0 (ft.)

Date: 5/27/10

Thompson Engineering
Mobile, Alabama

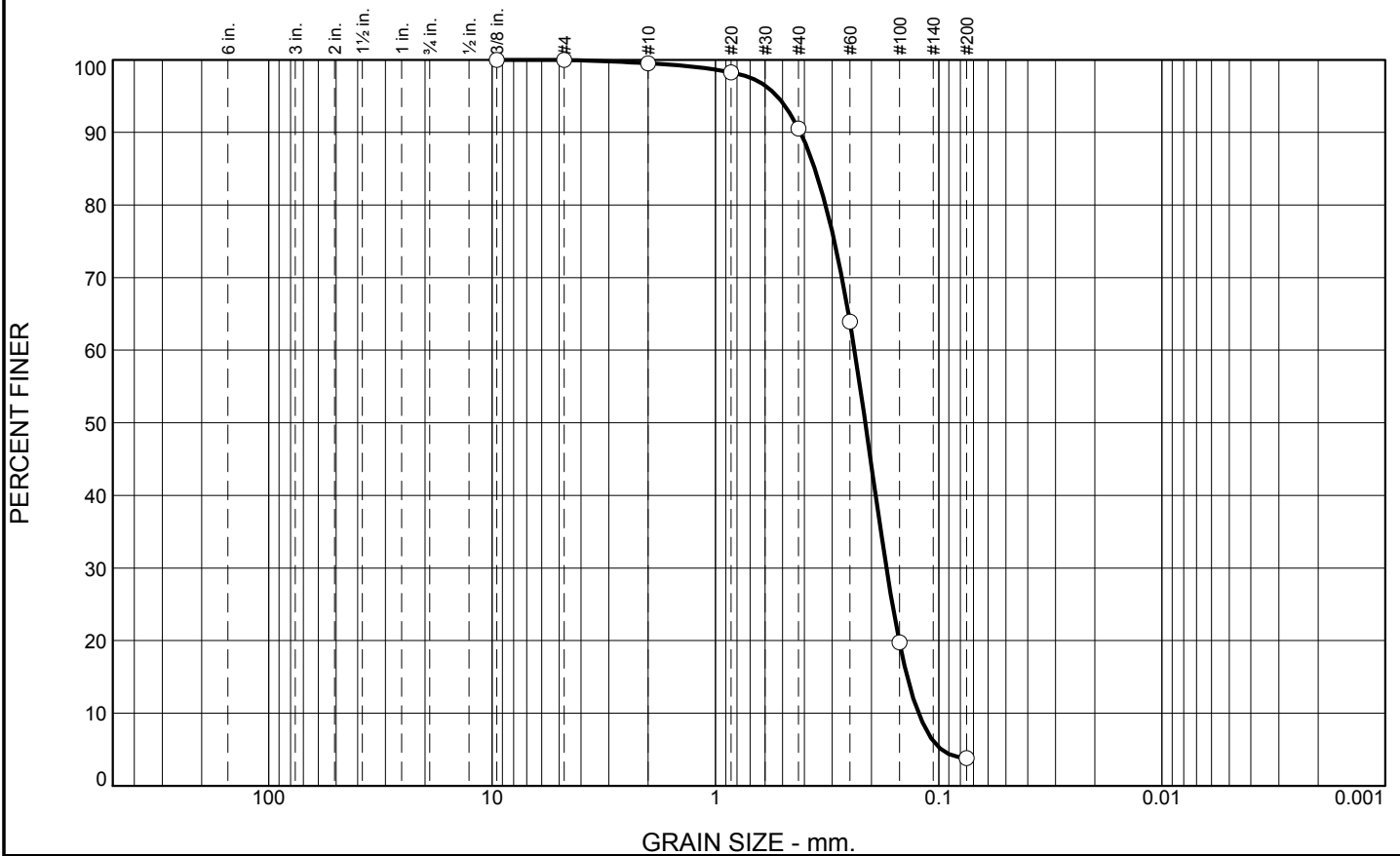
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.5	9.0	86.7	3.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.5		
#20	98.3		
#40	90.5		
#60	63.9		
#100	19.7		
#200	3.8		

* (no specification provided)

Material Description		
SAND, (SP), fine grained, with trace shell		
<div> <div> Atterberg Limits PL= LL= PI= </div> <div> Coefficients D₉₀= 0.4166 D₈₅= 0.3590 D₆₀= 0.2384 D₅₀= 0.2133 D₃₀= 0.1715 D₁₅= 0.1384 D₁₀= 0.1231 C_u= 1.94 C_c= 1.00 </div> <div> Classification USCS= SP AASHTO= </div> <div> Remarks CADD CODE = CH10D965 </div> </div>		

Location: USACE Sample # BI-MS-25-10B
Sample Number: TE Lab ID: 4488.25

Depth: 5.0 - 10.4 (ft.)

Date: 5/27/10

Thompson Engineering

Mobile, Alabama

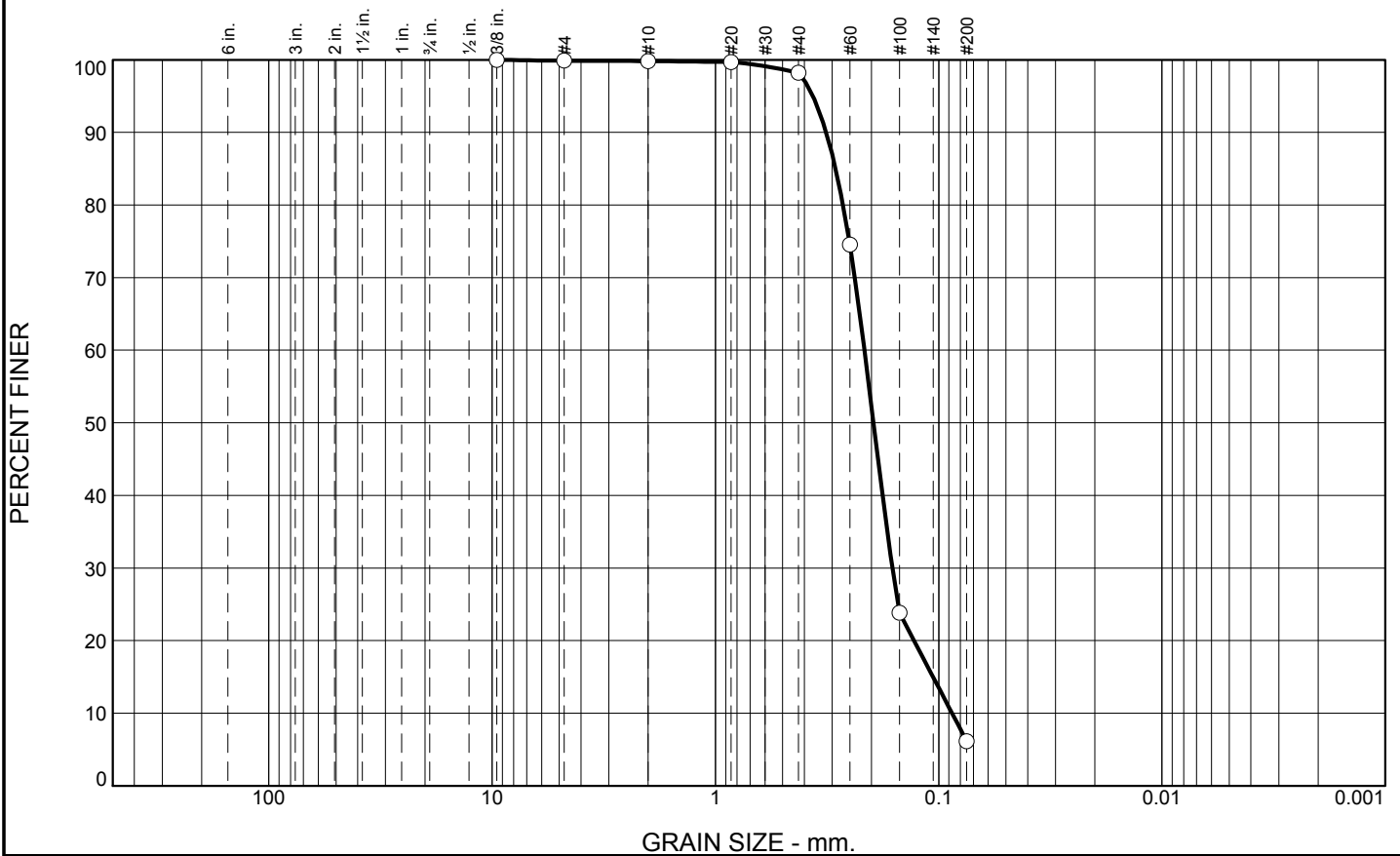
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.1	1.6	92.0	6.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.8		
#20	99.7		
#40	98.2		
#60	74.5		
#100	23.8		
#200	6.2		

* (no specification provided)

<u>Material Description</u>		
SAND, (SP-SM), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.3188	D ₈₅ = 0.2894	D ₆₀ = 0.2151
D ₅₀ = 0.1960	D ₃₀ = 0.1613	D ₁₅ = 0.1061
D ₁₀ = 0.0872	C _u = 2.47	C _c = 1.39
<u>Classification</u>		
USCS= SP-SM	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-MS-25-10C
Sample Number: TE Lab ID: 4488.26

Depth: 10.4 - 13.5 (ft.)

Date: 5/27/10

Thompson Engineering
Mobile, Alabama

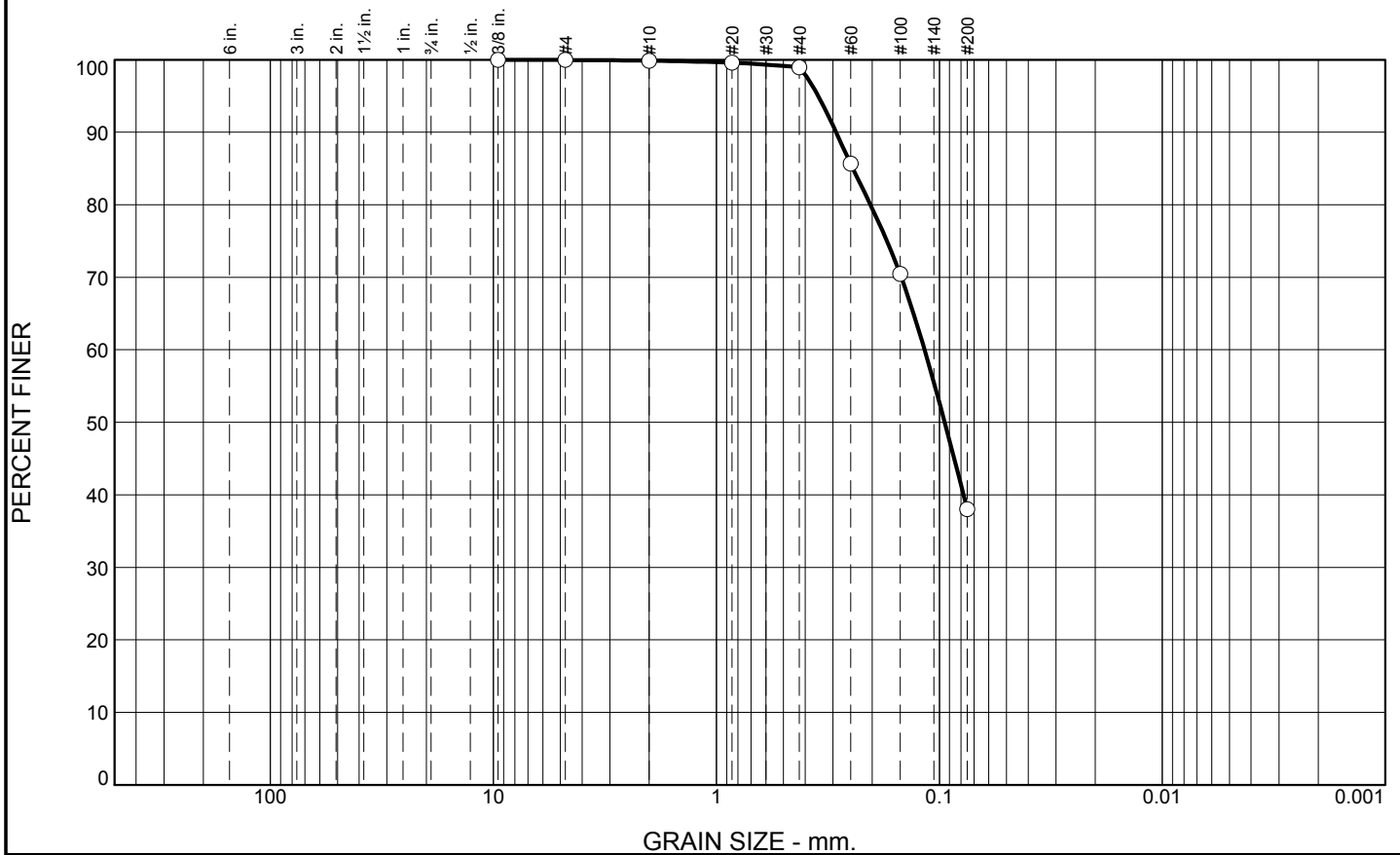
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	0.9	61.0	38.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.6		
#40	99.0		
#60	85.7		
#100	70.4		
#200	38.0		

* (no specification provided)

Material Description
SILTY SAND, (SM), fine grained, with clay nodules

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.2904 D₈₅= 0.2441 D₆₀= 0.1165
 D₅₀= 0.0947 D₃₀= D₁₅=
 D₁₀= C_u= C_c=

Classification
 USCS= SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-MS-25-10D
Sample Number: TE Lab ID: 4488.27

Depth: 13.5 - 18.9 (ft.)

Date: 5/27/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

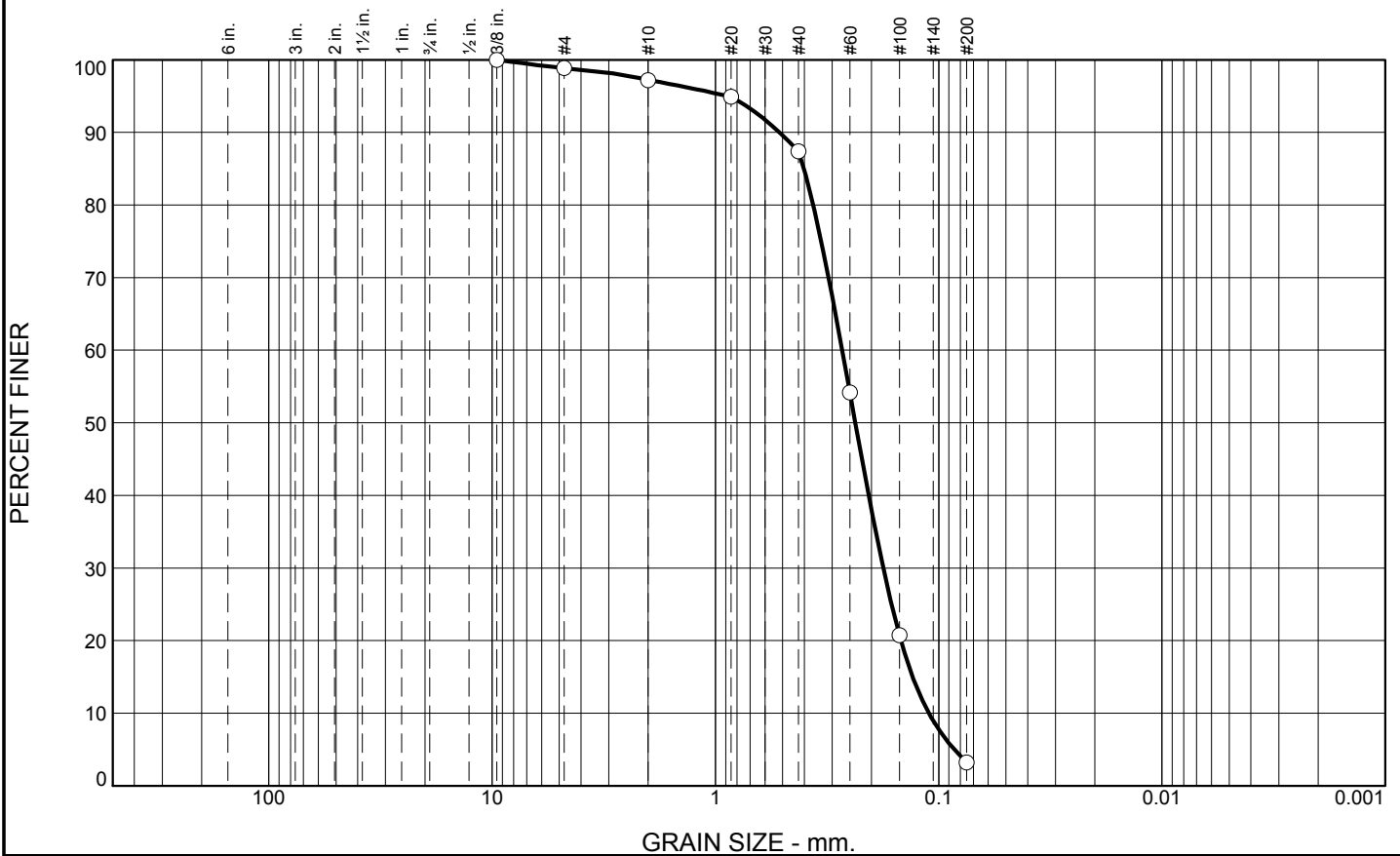
Tested By: L.Stokes

Checked By: R.Byrd

Boring Designation BI-MS-26-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Mississippi Sound				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-MS-26-10		LOCATION COORDINATES E = 935,474 N = 264,685		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 3	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		UNDISTURBED (UD) 0	
6. THICKNESS OF OVERBURDEN N/A				14. WATER DEPTH		21 Ft.	
7. DEPTH DRILLED INTO ROCK N/A				15. DATE BORING		STARTED 05-14-10	
8. TOTAL DEPTH OF BORING 19.3 Ft.				16. ELEVATION TOP OF BORING -19.2 Ft.		COMPLETED 05-14-10	
				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-19.2	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace clay, trace shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 6/2-light brownish gray D50: 0.2363 mm % Fines: 3.2		
				B	Classification: SP Color: 5Y 6/1-gray D50: 0.2042 mm % Fines: 2.6		
				C	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.1934 mm % Fines: 2.7		
				D	Classification: SP-SM Color: 2.5Y 7/1-light gray D50: 0.191 mm % Fines: 5.9		
-38.5	19.3						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.2	1.6	9.8	84.2	3.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	98.8		
#10	97.2		
#20	94.9		
#40	87.4		
#60	54.2		
#100	20.7		
#200	3.2		

* (no specification provided)

Material Description		
SAND, (SP), fine grained, with trace shell		
<div> <div> Atterberg Limits </div> <div> PL= </div> <div> LL= </div> <div> PI= </div> </div>		
<div> <div> Coefficients </div> <div> D₉₀= 0.5164 </div> <div> D₅₀= 0.2363 </div> <div> D₁₀= 0.1107 </div> <div> D₈₅= 0.4021 </div> <div> D₃₀= 0.1771 </div> <div> C_u= 2.44 </div> <div> D₆₀= 0.2706 </div> <div> D₁₅= 0.1308 </div> <div> C_c= 1.05 </div> </div>		
<div> <div> Classification </div> <div> USCS= SP </div> <div> AASHTO= </div> </div>		
<div> <div> Remarks </div> <div> CADD CODE = CH10D965 </div> </div>		

Location: USACE Sample # BI-MS-26-10A
Sample Number: TE Lab ID: 4488.105

Depth: 0.0 - 5.0 (ft.)

Date: 5/27/10

Thompson Engineering
Mobile, Alabama

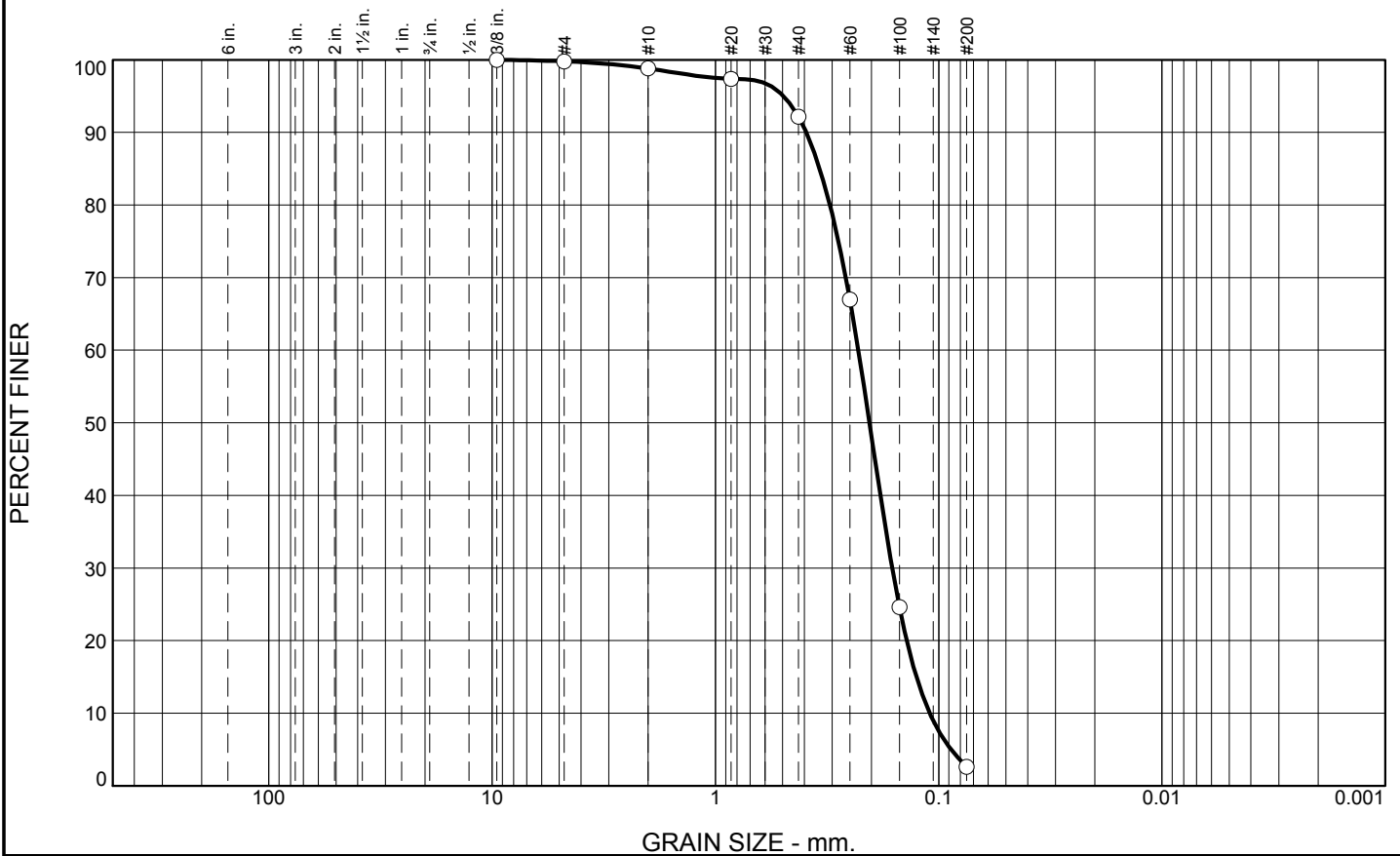
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	1.0	6.6	89.6	2.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.8		
#10	98.8		
#20	97.4		
#40	92.2		
#60	67.0		
#100	24.6		
#200	2.6		

* (no specification provided)

Material Description		
SAND, (SP), fine grained, with trace shell		
<div> <div> Atterberg Limits PL= LL= PI= </div> <div> Coefficients D₉₀= 0.3923 D₈₅= 0.3412 D₆₀= 0.2291 D₅₀= 0.2042 D₃₀= 0.1616 D₁₅= 0.1259 D₁₀= 0.1098 C_u= 2.09 C_c= 1.04 </div> <div> Classification USCS= SP AASHTO= </div> <div> Remarks CADD CODE = CH10D965 </div> </div>		

Location: USACE Sample # BI-MS-26-10B
Sample Number: TE Lab ID: 4488.106

Depth: 5.0 - 10.0 (ft.)

Date: 5/27/10

Thompson Engineering
Mobile, Alabama

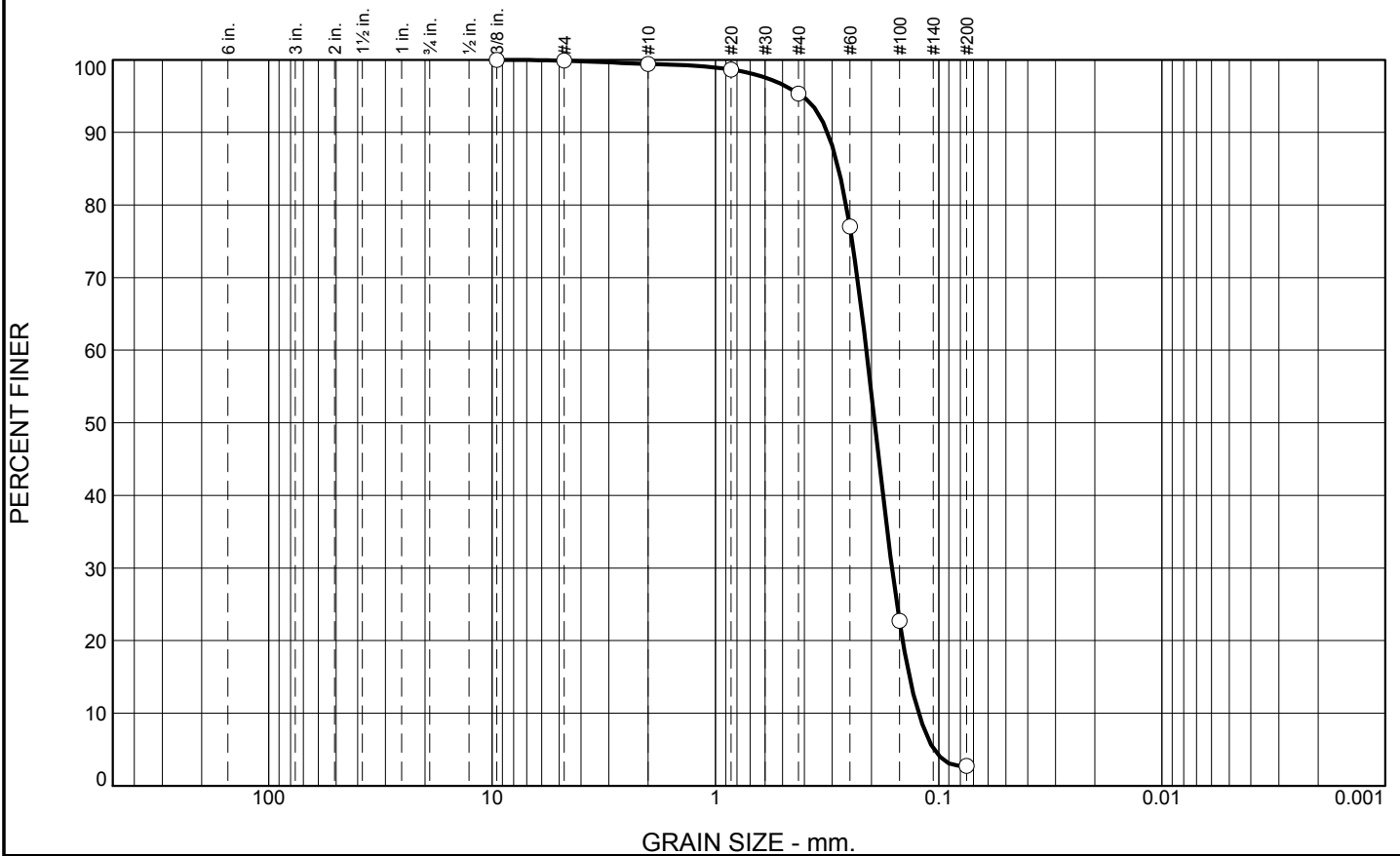
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.5	4.0	92.7	2.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.4		
#20	98.7		
#40	95.4		
#60	77.1		
#100	22.7		
#200	2.7		

* (no specification provided)

Material Description
SAND, (SP), fine grained, with trace shell

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.3146 D₈₅= 0.2809 D₆₀= 0.2109
 D₅₀= 0.1934 D₃₀= 0.1620 D₁₅= 0.1352
 D₁₀= 0.1230 C_u= 1.71 C_c= 1.01

Classification
 USCS= SP AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-MS-26-10C
Sample Number: TE Lab ID: 4488.107

Depth: 10.0 - 15.0 (ft.)

Date: 5/27/10

Thompson Engineering

Mobile, Alabama

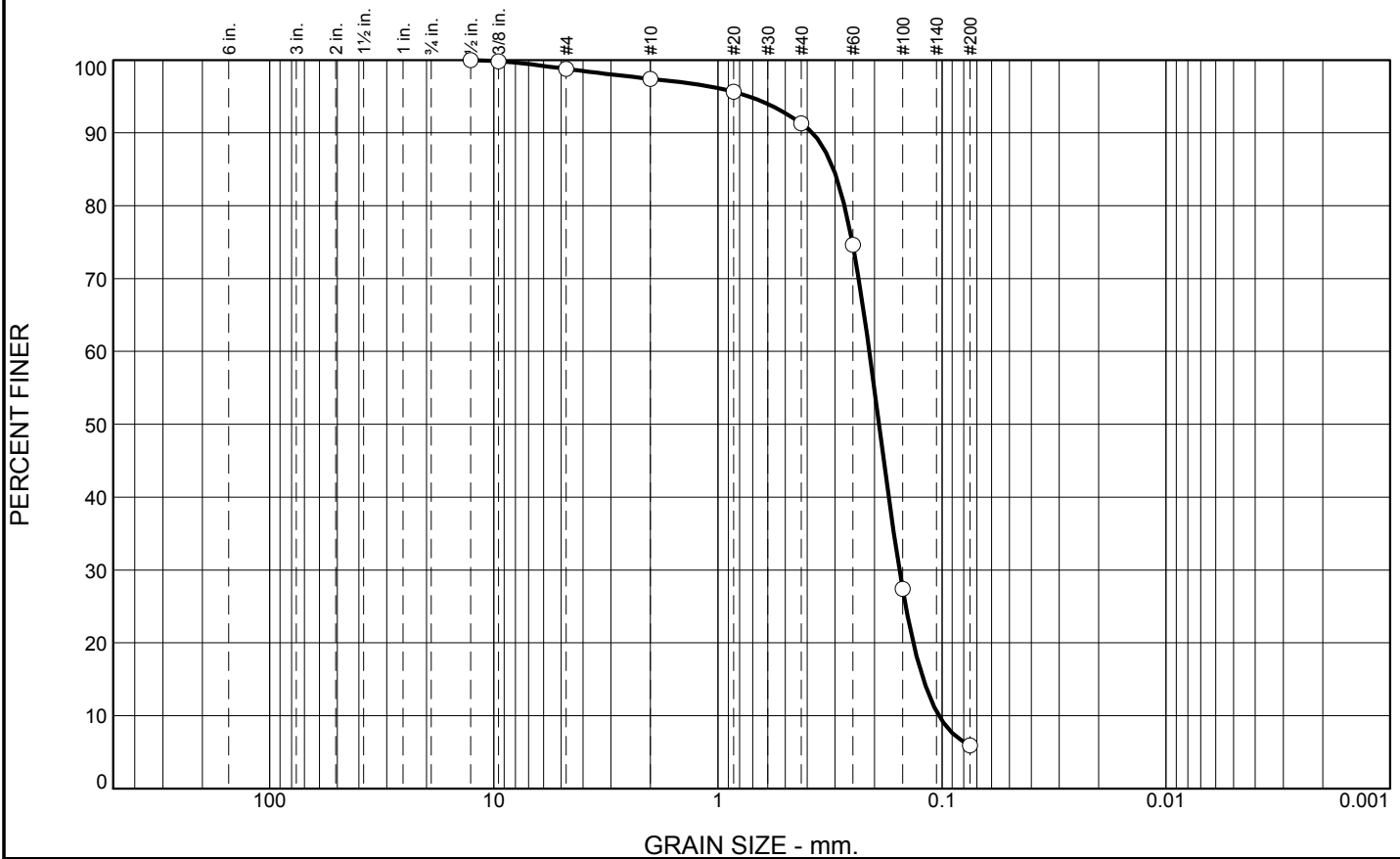
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.2	1.4	6.1	85.4	5.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.500	100.0		
.375	99.8		
#4	98.8		
#10	97.4		
#20	95.6		
#40	91.3		
#60	74.6		
#100	27.4		
#200	5.9		

* (no specification provided)

<u>Material Description</u>		
SAND, (SP-SM), fine grained, with trace shell		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.3788	D ₈₅ = 0.3048	D ₆₀ = 0.2111
D ₅₀ = 0.1910	D ₃₀ = 0.1549	D ₁₅ = 0.1212
D ₁₀ = 0.1033	C _u = 2.04	C _c = 1.10
<u>Classification</u>		
USCS= SP-SM	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Mislabeled. Should be sample BI-MS-26-10D

Location: USACE Sample # **BI-MS-26-10B**
Sample Number: TE Lab ID: 4488.108

Depth: 15.0 - 19.3 (ft.)

Date: 5/27/10

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

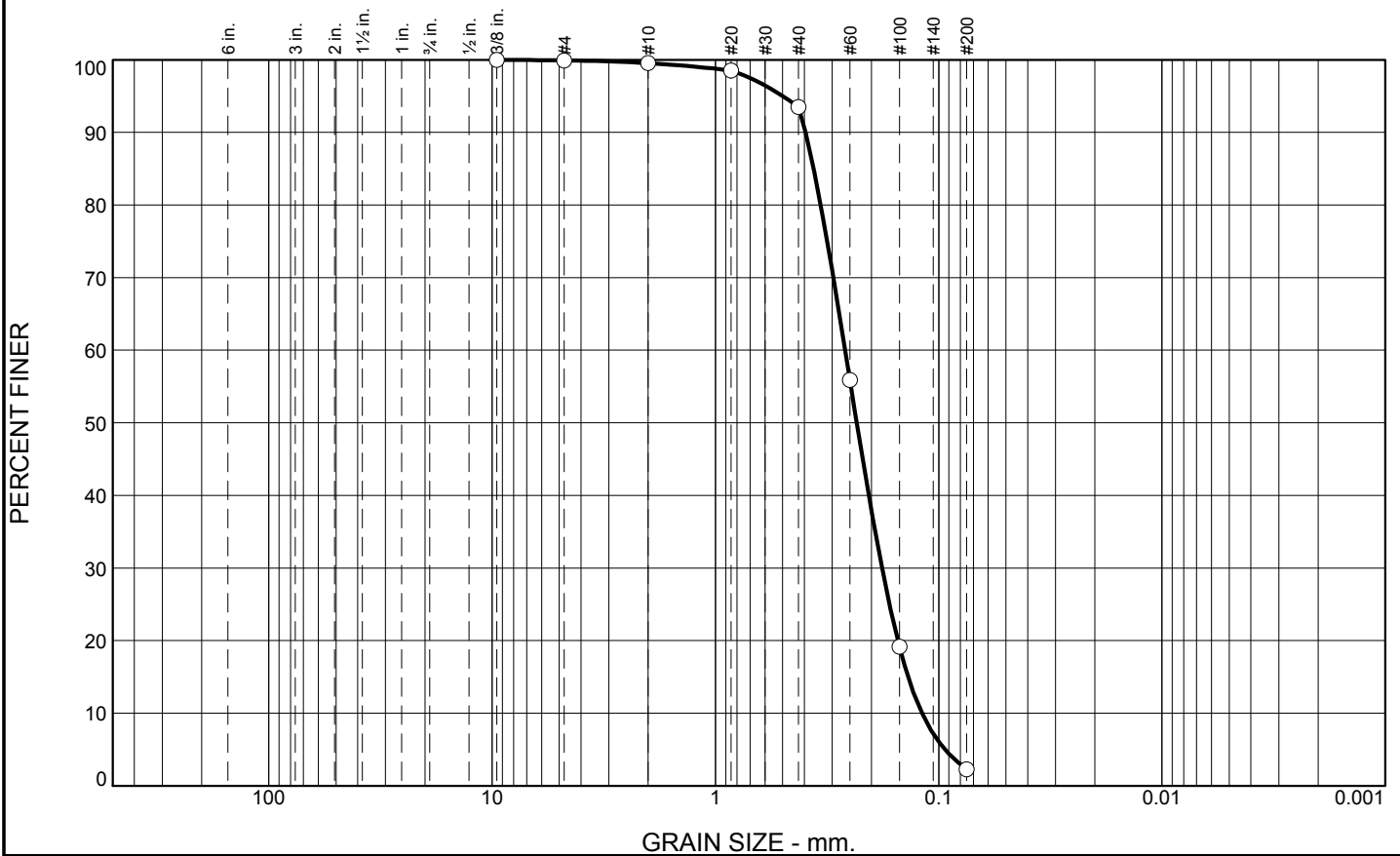
Tested By: L.Stokes

Checked By: R.Byrd

Boring Designation BI-MS-27-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Mississippi Sound				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-MS-27-10		LOCATION COORDINATES E = 934,309 N = 262,726		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 4		DISTURBED 4 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		BEARING		13. TOTAL NUMBER CORE BOXES	
6. THICKNESS OF OVERBURDEN N/A		7. DEPTH DRILLED INTO ROCK N/A		8. TOTAL DEPTH OF BORING 14.7 Ft.		14. WATER DEPTH 22.5 Ft.	
						15. DATE BORING STARTED 05-18-10 COMPLETED 05-18-10	
						16. ELEVATION TOP OF BORING -21.6 Ft.	
						17. TOTAL RECOVERY FOR BORING 100%	
						18. SIGNATURE AND TITLE OF INSPECTOR Ed Herman, Geologist	
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-21.6	0.0						
			SAND, poorly-graded, little silt, little shell fragments, gray (SP)	A	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.2328 mm % Fines: 2.3		
			At El. -26.6 Ft., some shell fragments, gray	B	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.2597 mm % Fines: 1.7		
			At El. -31.6 Ft., little silt, little shell fragments, gray	C	Classification: SP Color: 5Y 7/1-light gray D50: 0.1973 mm % Fines: 4		
-34.7	13.1						
-36.3	14.7		SAND, silty, with clay zones, dark gray (SM)	D	Classification: SM Color: 2.5Y 5/2-grayish brown D50: 0.1044 mm % Fines: 27.5		
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.4	6.0	91.2	2.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.5		
#20	98.5		
#40	93.5		
#60	55.9		
#100	19.1		
#200	2.3		

* (no specification provided)

Material Description
SAND, (SP), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.3952 D₈₅= 0.3632 D₆₀= 0.2625
 D₅₀= 0.2328 D₃₀= 0.1794 D₁₅= 0.1371
 D₁₀= 0.1188 C_u= 2.21 C_c= 1.03

Classification
 USCS= SP AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-MS-27-10A
Sample Number: TE Lab ID: 4488.28

Depth: 0.0 - 5.0 (ft.)

Date: 5/27/10

Thompson Engineering

Mobile, Alabama

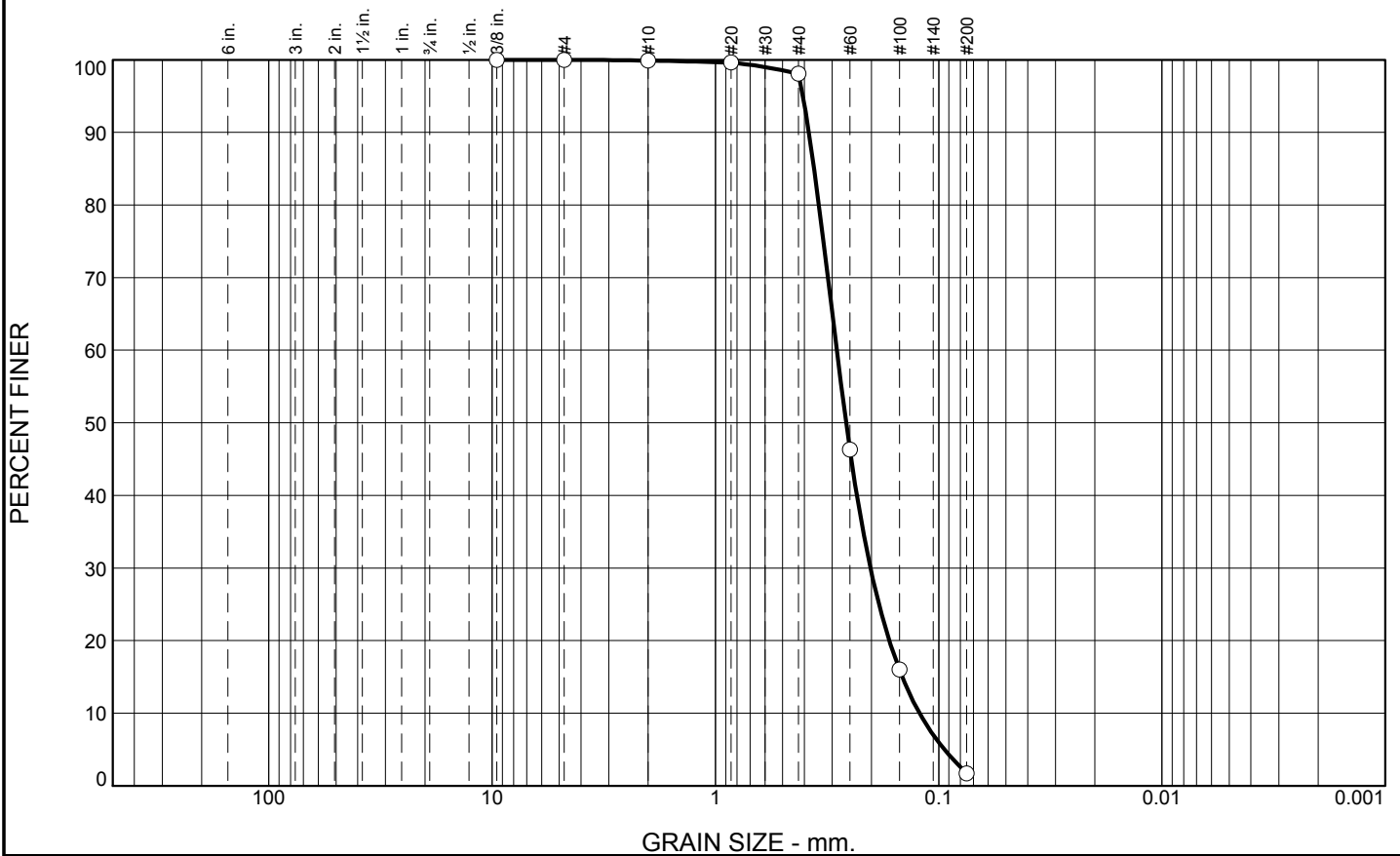
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	1.8	96.4	1.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.6		
#40	98.1		
#60	46.3		
#100	16.0		
#200	1.7		

* (no specification provided)

Material Description		
SAND, (SP), fine grained		
<div> <div> Atterberg Limits PL= LL= PI= </div> <div> Coefficients D₉₀= 0.3817 D₈₅= 0.3616 D₆₀= 0.2859 D₅₀= 0.2597 D₃₀= 0.2022 D₁₅= 0.1456 D₁₀= 0.1219 C_u= 2.34 C_c= 1.17 </div> <div> Classification USCS= SP AASHTO= </div> <div> Remarks CADD CODE = CH10D965 </div> </div>		

Location: USACE Sample # BI-MS-27-10B
Sample Number: TE Lab ID: 4488.29

Depth: 5.0 - 10.0 (ft.)

Date: 5/27/10

Thompson Engineering
Mobile, Alabama

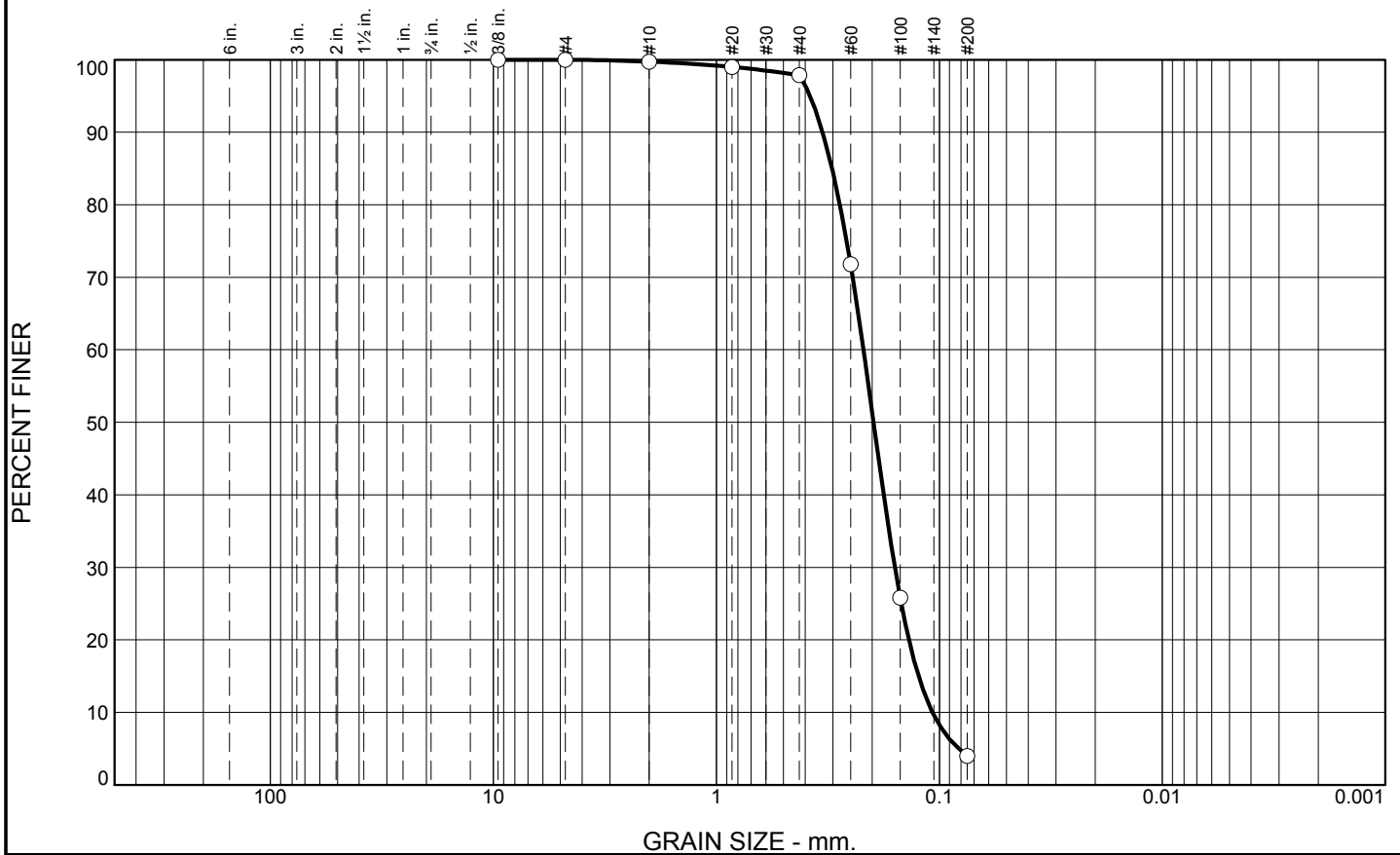
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.3	1.8	93.9	4.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.7		
#20	99.0		
#40	97.9		
#60	71.8		
#100	25.8		
#200	4.0		

* (no specification provided)

Material Description		
SAND, (SP), fine grained		
<div> <div> Atterberg Limits PL= LL= PI= </div> <div> Coefficients D₉₀= 0.3338 D₈₅= 0.3027 D₆₀= 0.2189 D₅₀= 0.1973 D₃₀= 0.1584 D₁₅= 0.1239 D₁₀= 0.1074 C_u= 2.04 C_c= 1.07 </div> <div> Classification USCS= SP AASHTO= </div> <div> Remarks CADD CODE = CH10D965 </div> </div>		

Location: USACE Sample # BI-MS-27-10C
Sample Number: TE Lab ID: 4488.30

Depth: 10.0 - 13.1 (ft.)

Date: 5/27/10

Thompson Engineering
Mobile, Alabama

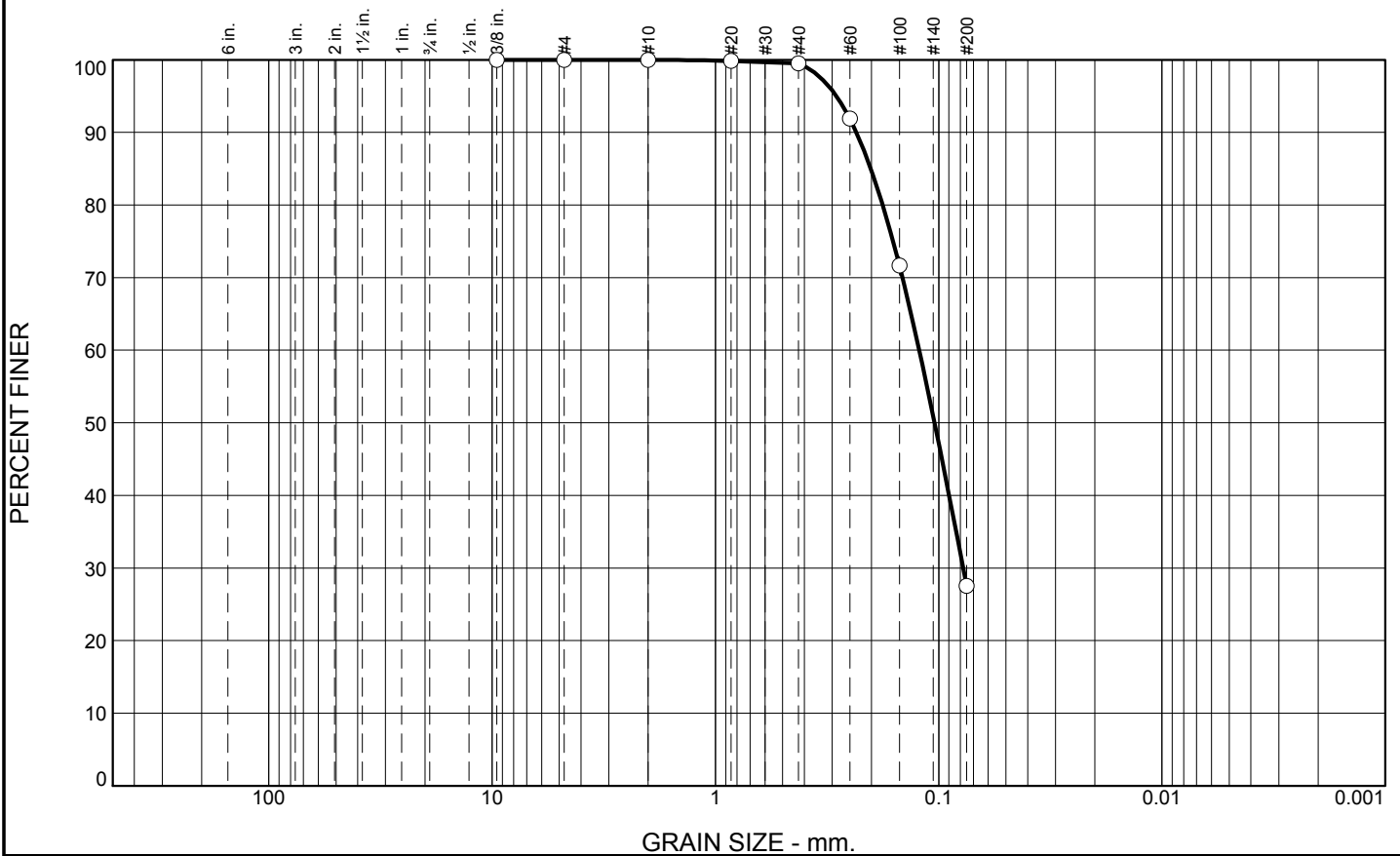
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.5	72.0	27.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.8		
#40	99.5		
#60	91.9		
#100	71.6		
#200	27.5		

* (no specification provided)

Material Description

SILTY SAND, (SM), fine grained, with clay nodules

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.2337

D₈₅= 0.2016

D₆₀= 0.1223

D₅₀= 0.1044

D₃₀= 0.0777

D₁₅=

D₁₀=

C_u=

C_c=

Classification

USCS= SM

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-MS-27-10D
Sample Number: TE Lab ID: 4488.31

Depth: 13.1 - 14.7 (ft.)

Date: 5/27/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Figure

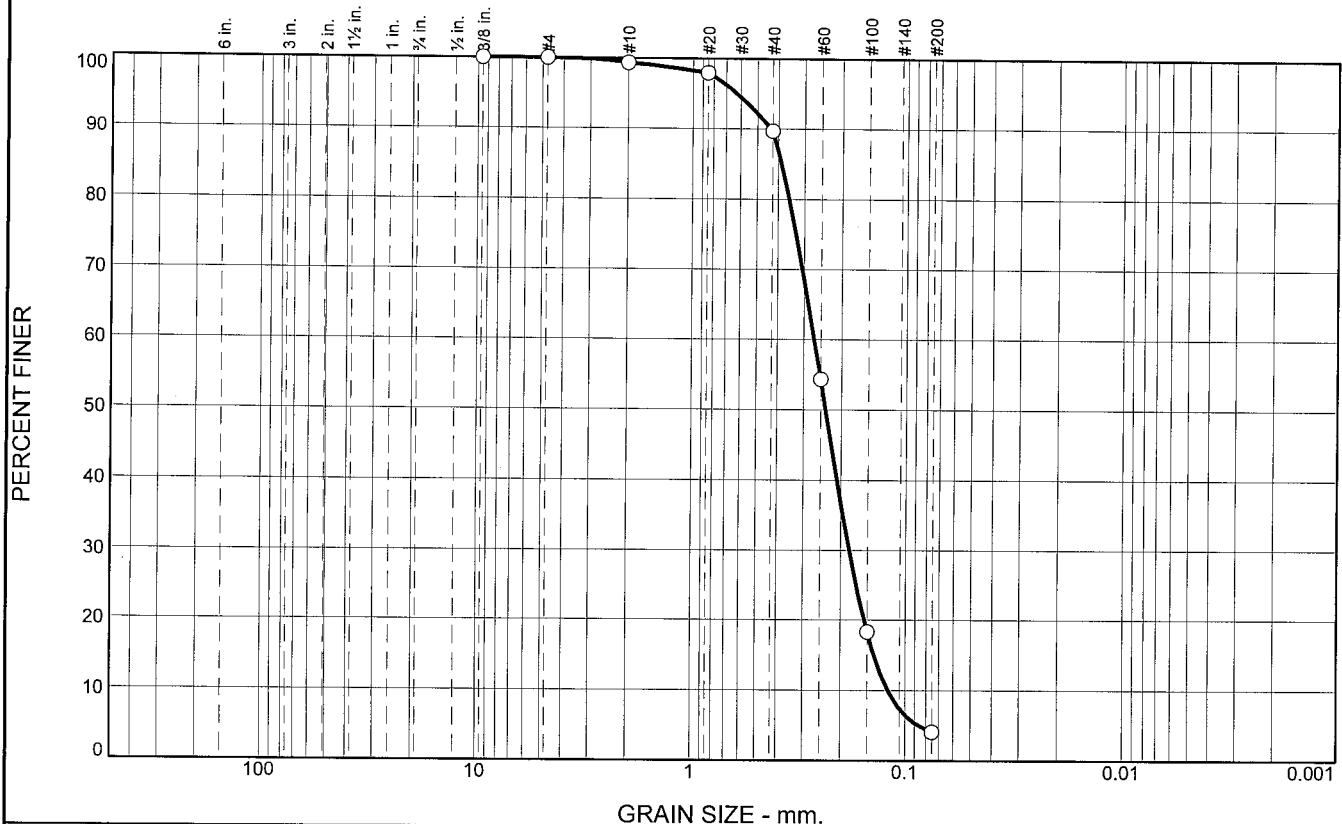
Tested By: L.Stokes

Checked By: R.Byrd

Boring Designation BI-MS-28-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Mississippi Sound				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-MS-28-10		LOCATION COORDINATES E = 935,837 N = 262,899		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 4		DISTURBED 0 UNDISTURBED (UD)	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 25 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 05-14-10		STARTED 05-14-10 COMPLETED 05-14-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -23.5 Ft.			
8. TOTAL DEPTH OF BORING 19.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-23.5	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace clay, trace shell fragments, lt. gray (SP)	A	Classification: SP Color: 5Y 6/1-gray D50: 0.237 mm % Fines: 4.1		
				B	Classification: SP Color: 5Y 7/1-light gray D50: 0.2412 mm % Fines: 2.5		
				C	Classification: SP Color: 5Y 7/1-light gray D50: 0.2564 mm % Fines: 3		
				D	Classification: SP-SM Color: 5Y 7/1-light gray D50: 0.2016 mm % Fines: 5.7		
-42.5	19.0						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.7	9.6	85.6	4.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.3		
#20	98.0		
#40	89.7		
#60	54.3		
#100	18.3		
#200	4.1		

* (no specification provided)

Material Description		
SAND, (SP), fine grained		
Atterberg Limits		
PL=	LL=	PI=
Coefficients		
D ₉₀ = 0.4337	D ₈₅ = 0.3858	D ₆₀ = 0.2686
D ₅₀ = 0.2370	D ₃₀ = 0.1822	D ₁₅ = 0.1395
D ₁₀ = 0.1200	C _u = 2.24	C _c = 1.03
Classification		
USCS= SP	AASHTO=	
Remarks		
CADD CODE = CH10D965		

Location: USACE Sample # BI-MS-28-10A
Sample Number: TE Lab ID: 4488.15

Depth: 0.0 - 5.0 (ft.)

Date: 5/27/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

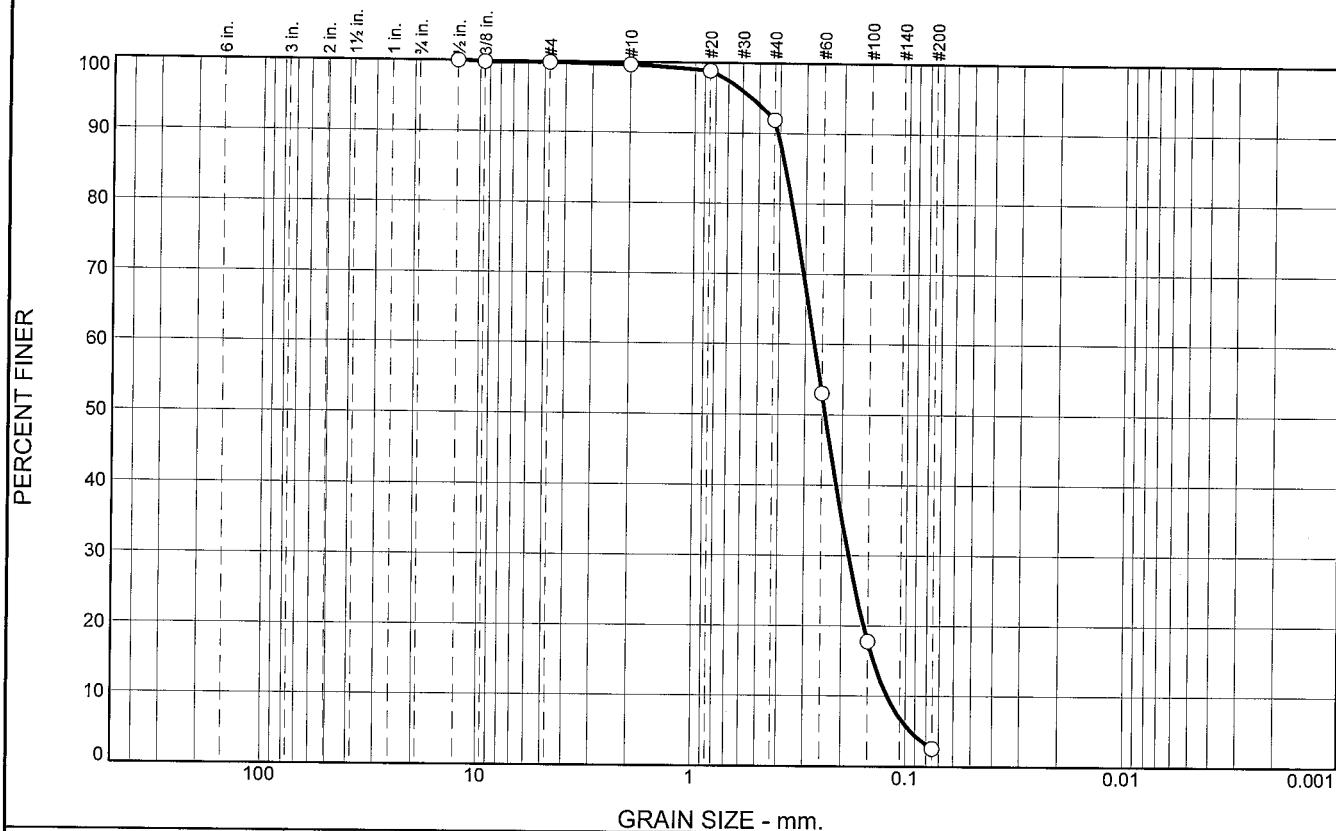
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.2	7.7	89.4	2.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.500	100.0		
.375	99.8		
#4	99.8		
#10	99.6		
#20	98.8		
#40	91.9		
#60	53.0		
#100	17.8		
#200	2.5		

* (no specification provided)

Material Description
SAND, (SP), fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.4090 D₈₅= 0.3755 D₆₀= 0.2719
D₅₀= 0.2412 D₃₀= 0.1851 D₁₅= 0.1408
D₁₀= 0.1216 C_u= 2.24 C_c= 1.04

Classification
USCS= SP AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-MS-28-10B
Sample Number: TE Lab ID: 4488.16

Depth: 5.0 - 10.0 (ft.)

Date: 5/27/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

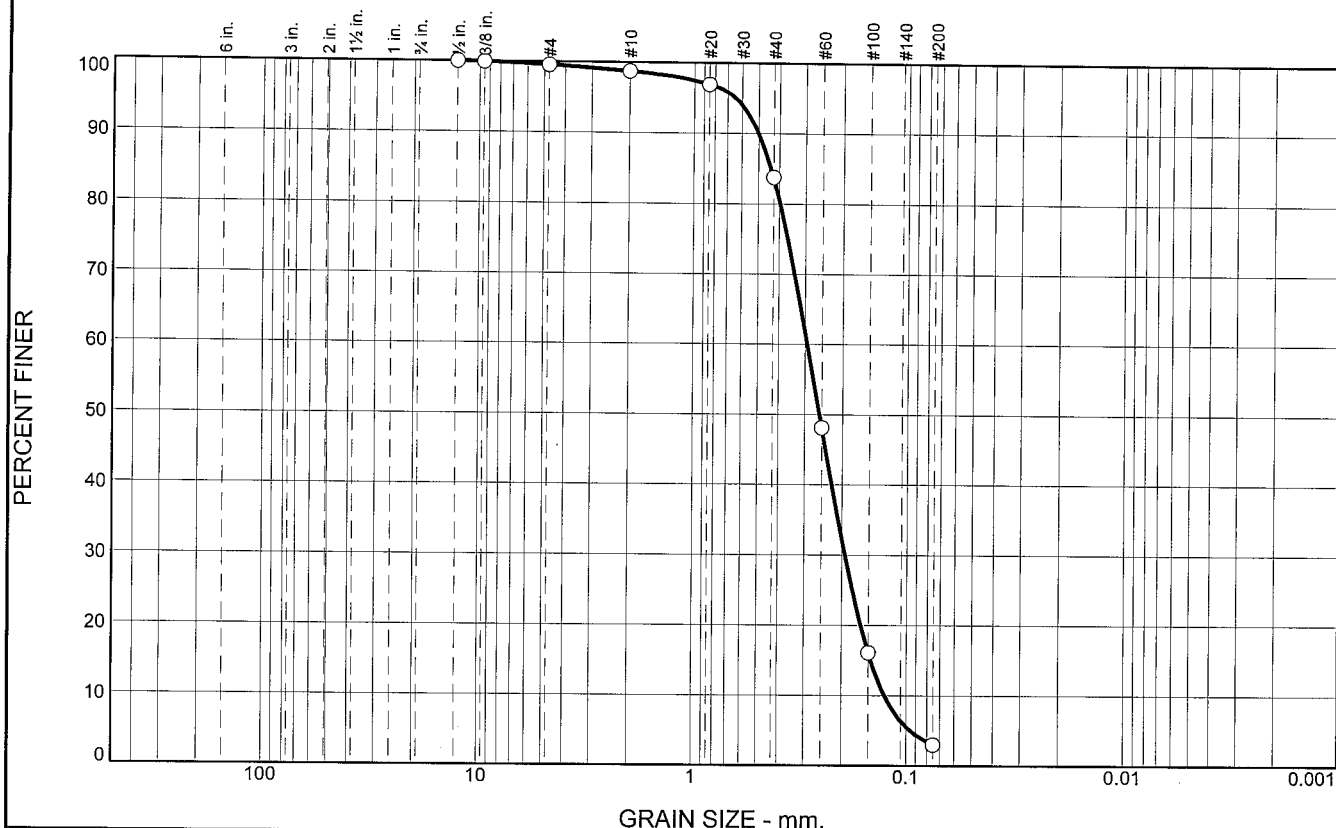
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.5	0.8	15.0	80.7	3.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.500	100.0		
.375	99.9		
#4	99.5		
#10	98.7		
#20	96.9		
#40	83.7		
#60	48.1		
#100	16.1		
#200	3.0		

* (no specification provided)

Material Description
SAND, (SP), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.5007 D₈₅= 0.4370 D₆₀= 0.2930
 D₅₀= 0.2564 D₃₀= 0.1934 D₁₅= 0.1461
 D₁₀= 0.1259 C_u= 2.33 C_c= 1.01

Classification
 USCS= SP AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-MS-28-10C
 Sample Number: TE Lab ID: 4488.17

Depth: 10.0 - 15.0 (ft.)

Date: 5/24/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project

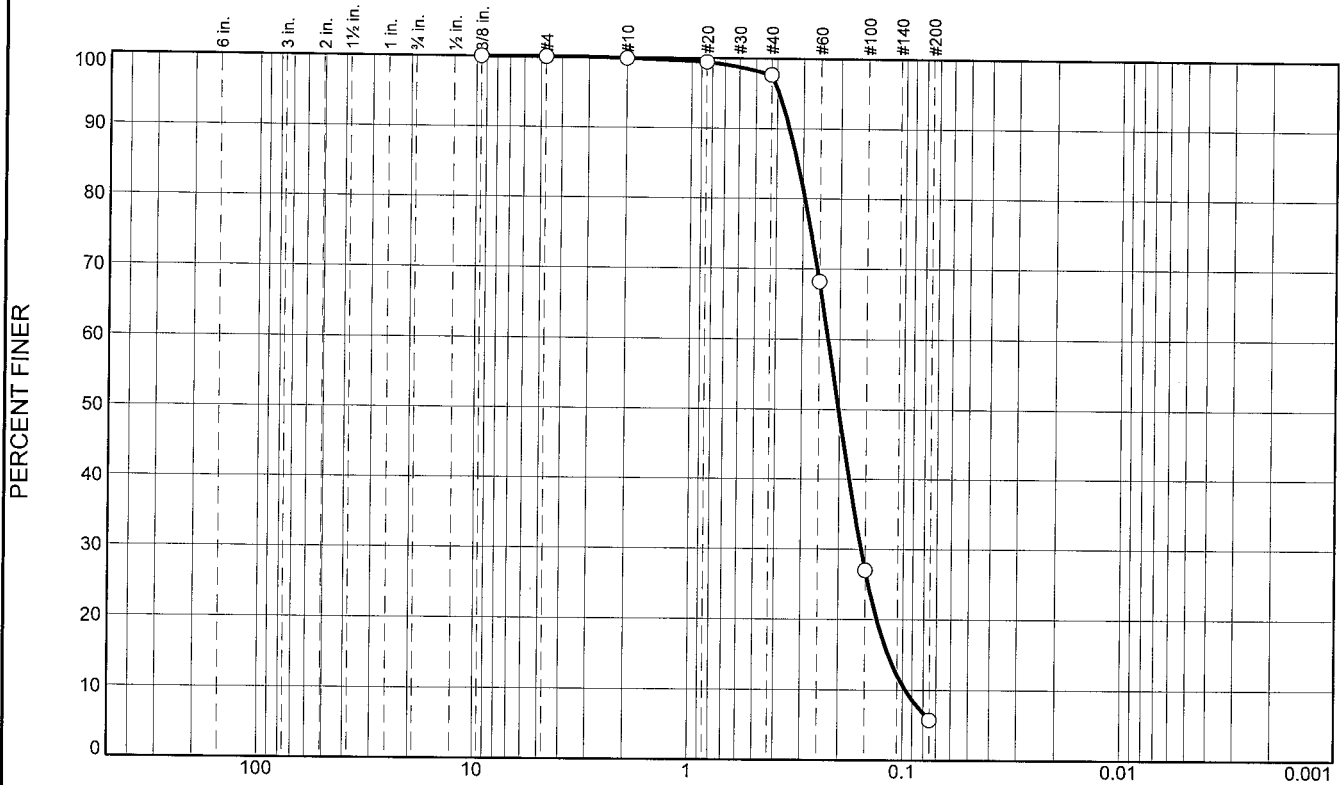
Project No: 10-2123-0009

Figure

Tested By: L. Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	2.1	92.0	5.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.8		
#20	99.4		
#40	97.7		
#60	68.2		
#100	27.0		
#200	5.7		

* (no specification provided)

Material Description
SAND, (SP-SM), fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.3490 D₈₅= 0.3182 D₆₀= 0.2264
D₅₀= 0.2016 D₃₀= 0.1570 D₁₅= 0.1166
D₁₀= 0.0969 C_u= 2.34 C_c= 1.12

Classification
USCS= SP-SM AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-MS-28-10D
Sample Number: TE Lab ID: 4488.18

Depth: 15.0 - 19.0 (ft.)

Date: 5/27/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Figure

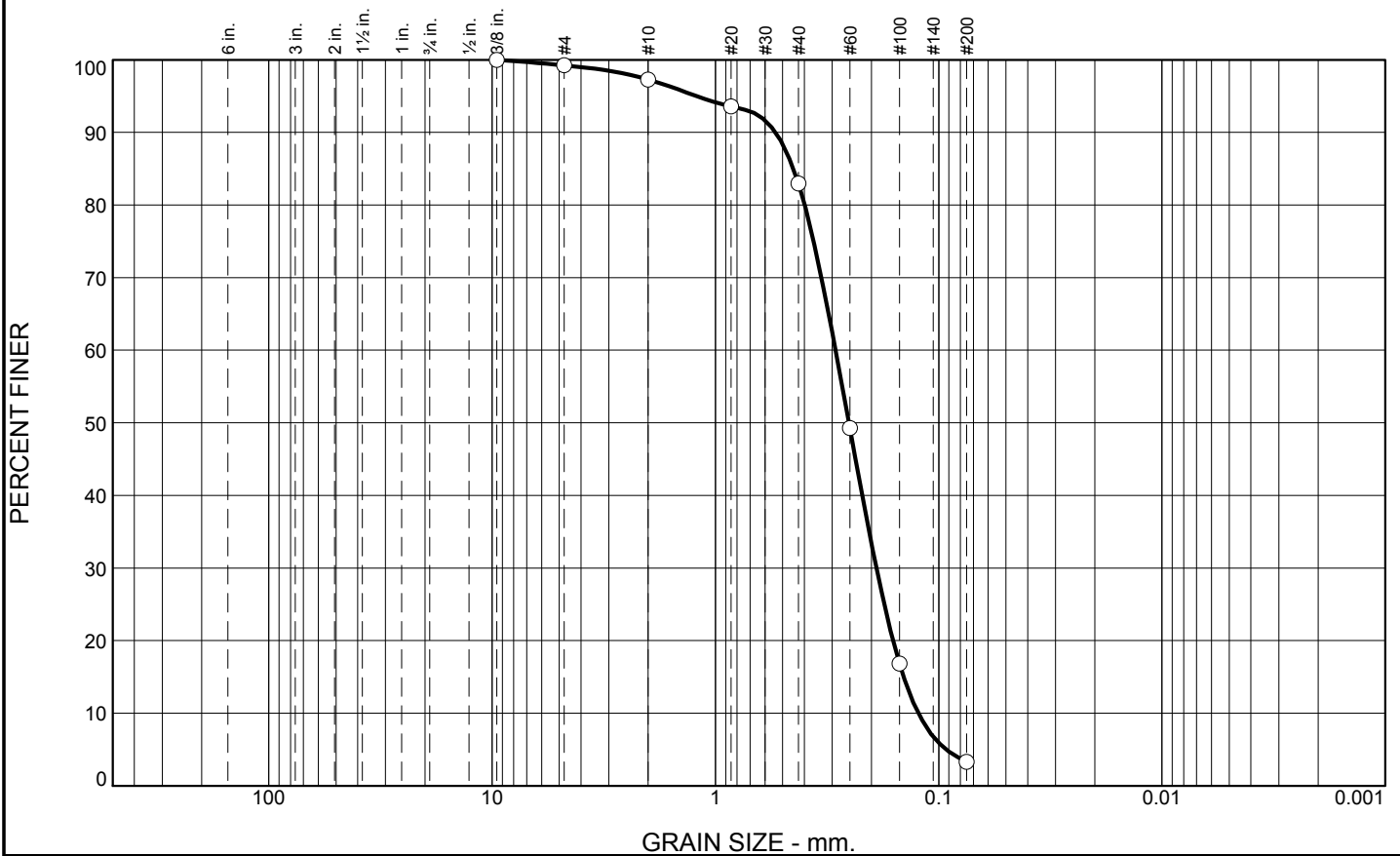
Tested By: L. Stokes

Checked By: R.Byrd

Boring Designation BI-MS-29-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Mississippi Sound				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-MS-29-10		LOCATION COORDINATES E = 934,739 N = 261,151		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 4		UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		14. WATER DEPTH 24 Ft.	
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 05-18-10		COMPLETED 05-18-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -22.9 Ft.		17. TOTAL RECOVERY FOR BORING 100%	
8. TOTAL DEPTH OF BORING 15.2 Ft.				18. SIGNATURE AND TITLE OF INSPECTOR Ed Herman, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-22.9	0.0						
-26.9	4.0		SAND, poorly-graded, mostly medium-grained sand-sized quartz, some shell fragments, gray (SP)	A	Classification: SP Color: 5Y 7/1-light gray D50: 0.2525 mm % Fines: 3.3		
-28.9	6.0		SAND, silty, mostly fine-grained sand-sized quartz, with clay layers, dark gray (SM)	B	Classification: SM Color: 5Y 5/1-gray D50: 0.095 mm % Fines: 33.3		
-33.5	10.6		SAND, poorly-graded, mostly medium-grained sand-sized quartz, some shell fragments, gray (SP)	C	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.179 mm % Fines: 3.8		
-38.1	15.2		SAND, silty, mostly medium-grained sand-sized quartz, some shell fragments, dark gray (SM)	D	Classification: SP-SM Color: 5Y 6/1-gray D50: 0.2116 mm % Fines: 8.1		
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.8	1.9	14.3	79.7	3.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.2		
#10	97.3		
#20	93.6		
#40	83.0		
#60	49.3		
#100	16.8		
#200	3.3		

* (no specification provided)

Material Description

SAND, (SP), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.5380

D₈₅= 0.4477

D₆₀= 0.2896

D₅₀= 0.2525

D₃₀= 0.1901

D₁₅= 0.1436

D₁₀= 0.1234

C_u= 2.35

C_c= 1.01

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-MS-29-10A
Sample Number: TE Lab ID: 4488.32

Depth: 0.0 - 4.0 (ft.)

Date: 5/27/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

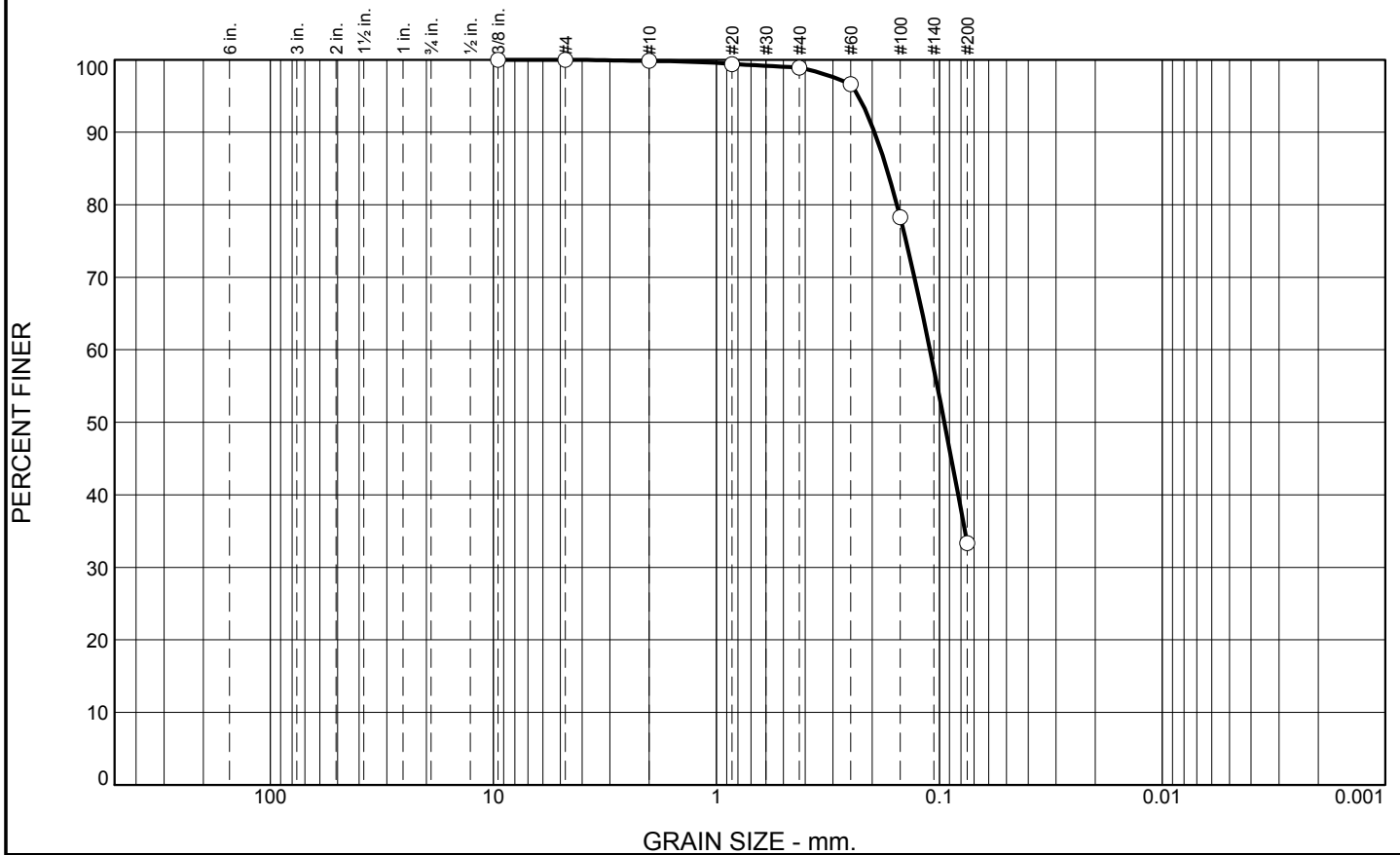
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	0.9	65.6	33.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.8		
#20	99.4		
#40	98.9		
#60	96.6		
#100	78.3		
#200	33.3		

* (no specification provided)

<u>Material Description</u>		
SILTY SAND, (SM), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.1954	D ₈₅ = 0.1724	D ₆₀ = 0.1102
D ₅₀ = 0.0950	D ₃₀ =	D ₁₅ =
D ₁₀ =	C _u =	C _c =
<u>Classification</u>		
USCS= SM	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-MS-29-10B
Sample Number: TE Lab ID: 4488.33

Depth: 4.0 - 6.0 (ft.)

Date: 5/27/10

Thompson Engineering
Mobile, Alabama

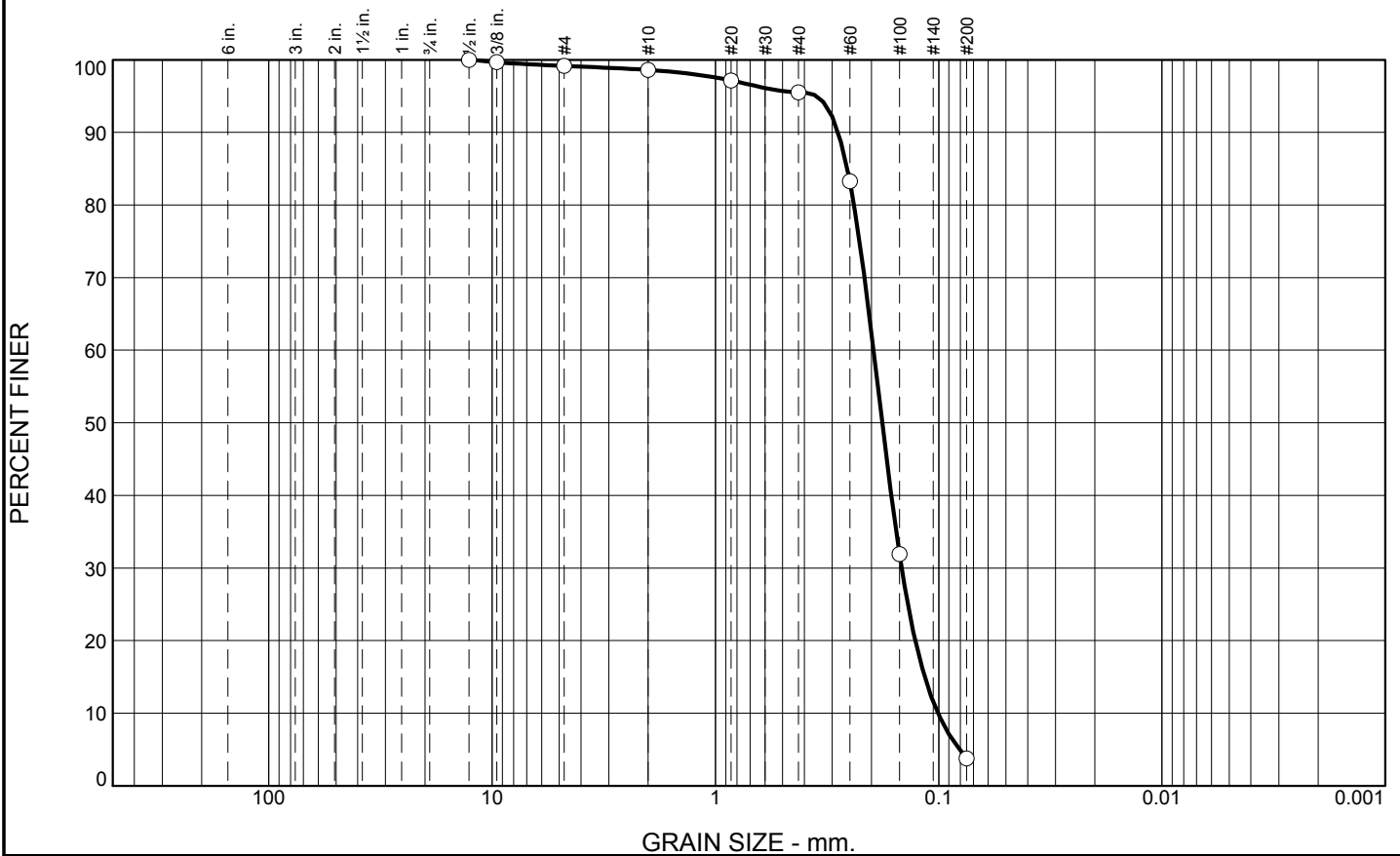
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.9	0.5	3.1	91.7	3.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.500	100.0		
.375	99.7		
#4	99.1		
#10	98.6		
#20	97.2		
#40	95.5		
#60	83.3		
#100	31.9		
#200	3.8		

* (no specification provided)

<u>Material Description</u>		
SAND, (SP), fine grained, with trace shell		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.2821	D ₈₅ = 0.2565	D ₆₀ = 0.1959
D ₅₀ = 0.1790	D ₃₀ = 0.1467	D ₁₅ = 0.1156
D ₁₀ = 0.1008	C _u = 1.94	C _c = 1.09
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-MS-29-10C
Sample Number: TE Lab ID: 4488.34

Depth: 6.0 - 10.6 (ft.)

Date: 5/27/10

Thompson Engineering
Mobile, Alabama

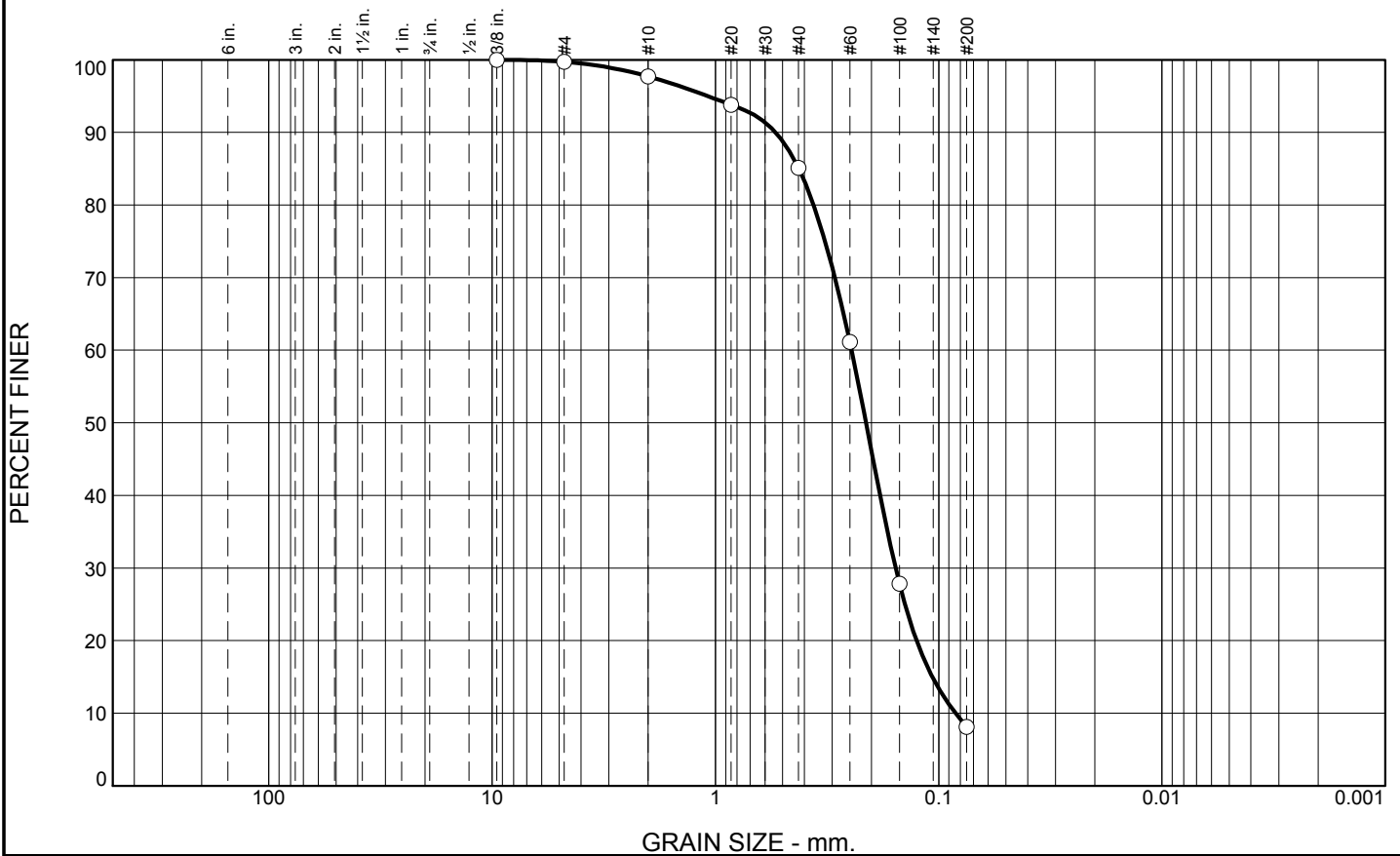
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.3	2.0	12.6	77.0	8.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.7		
#10	97.7		
#20	93.8		
#40	85.1		
#60	61.1		
#100	27.8		
#200	8.1		

* (no specification provided)

<u>Material Description</u>		
SAND, (SP-SM), fine grained, with trace shell		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.5375	D ₈₅ = 0.4234	D ₆₀ = 0.2456
D ₅₀ = 0.2116	D ₃₀ = 0.1560	D ₁₅ = 0.1069
D ₁₀ = 0.0840	C _u = 2.92	C _c = 1.18
<u>Classification</u>		
USCS= SP-SM	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-MS-29-10D
Sample Number: TE Lab ID: 4488.35

Depth: 10.6 - 15.2 (ft.)

Date: 5/27/10

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

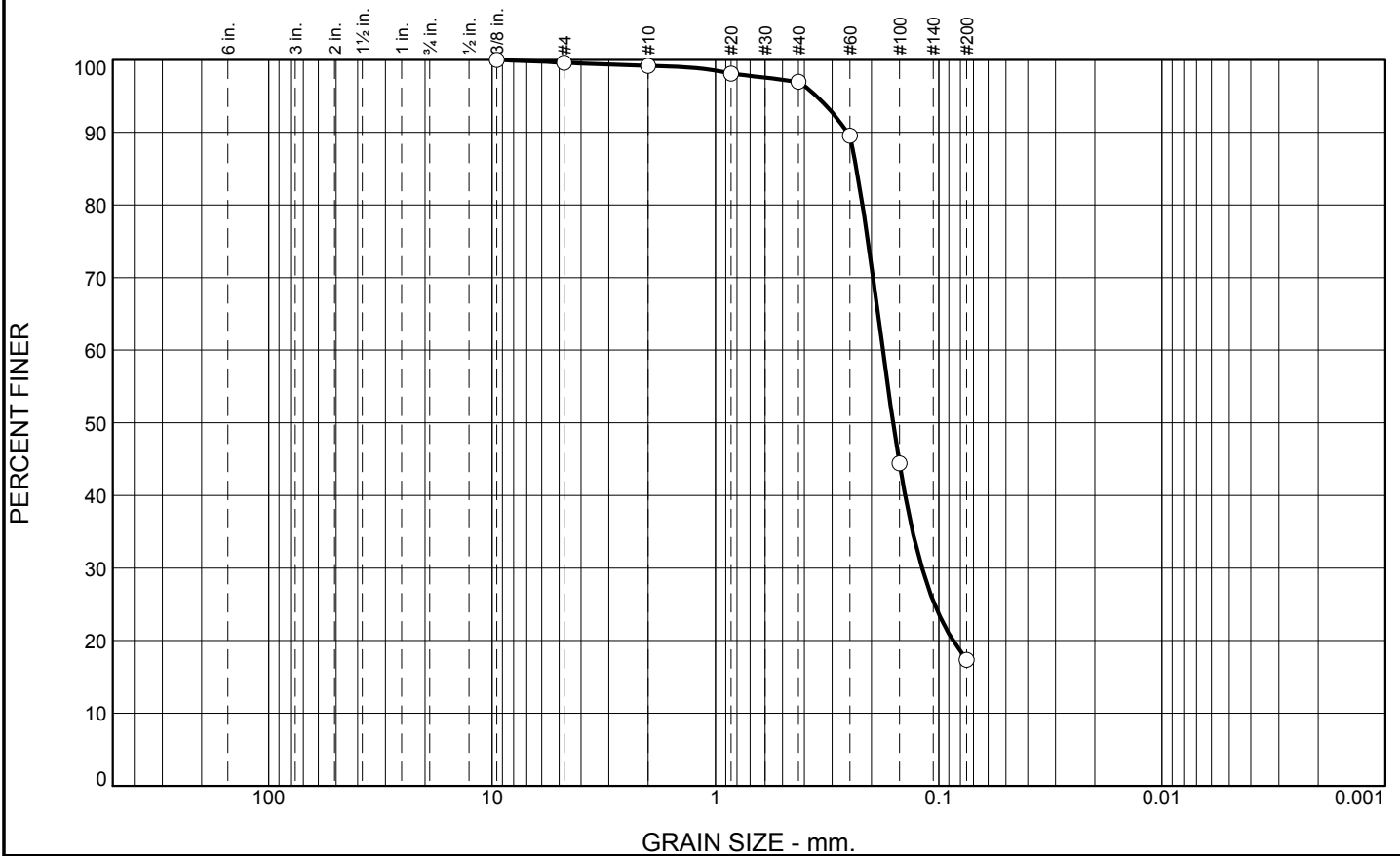
Checked By: R.Byrd

Boring Designation BI-MS-30-10

DRILLING LOG		DIVISION South Atlantic	INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS
1. PROJECT Barrier Island Restoration Mississippi Sound			9. SIZE AND TYPE OF BIT N/A		
2. BORING DESIGNATION BI-MS-30-10		LOCATION COORDINATES E = 935,813 N = 261,226		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83 VERTICAL NAVD88
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure <input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.		12. TOTAL SAMPLES		DISTURBED 4	UNDISTURBED (UD) 0
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL	BEARING	13. TOTAL NUMBER CORE BOXES	
6. THICKNESS OF OVERBURDEN N/A		14. WATER DEPTH 27 Ft.		15. DATE BORING STARTED 05-18-10 COMPLETED 05-18-10	
7. DEPTH DRILLED INTO ROCK N/A		16. ELEVATION TOP OF BORING -25.7 Ft.		17. TOTAL RECOVERY FOR BORING 100%	
8. TOTAL DEPTH OF BORING 19.1 Ft.		18. SIGNATURE AND TITLE OF INSPECTOR Ed Herman, Geologist			

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-25.7	0.0				
-30.2	4.5		SAND, silty, mostly fine-grained sand-sized quartz, some shell fragments, with clay lenses, dark gray (SM)	A	Classification: SM Color: 2.5Y 5/2-grayish brown D50: 0.1601 mm % Fines: 17.4
-35.7	10.0		SAND, silty, mostly fine-grained sand-sized quartz, with clay lenses, gray (SM)	B	Classification: SP-SM Color: 2.5Y 7/1-light gray D50: 0.155 mm % Fines: 7.2
-41.2	15.5		SAND, poorly-graded, mostly fine-grained sand-sized quartz, some shell fragments, gray (SP)	C	Classification: SP-SM Color: 2.5Y 7/1-light gray D50: 0.2532 mm % Fines: 7
-44.8	19.1		SAND, silty, mostly fine-grained sand-sized quartz, with clay lenses, dark gray (SM)	D	Classification: SP-SM Color: 5Y 3/1-very dark gray D50: 0.1651 mm % Fines: 20.1
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.		

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.4	0.4	2.2	79.6	17.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.6		
#10	99.2		
#20	98.1		
#40	97.0		
#60	89.5		
#100	44.4		
#200	17.4		

* (no specification provided)

<u>Material Description</u>		
SILTY SAND, (SM), medium to fine grained, with clay pockets		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.2560	D ₈₅ = 0.2335	D ₆₀ = 0.1778
D ₅₀ = 0.1601	D ₃₀ = 0.1188	D ₁₅ =
D ₁₀ =	C _u =	C _c =
<u>Classification</u>		
USCS= SM	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-MS-30-10A
Sample Number: TE Lab ID: 4488.36

Depth: 0.0 - 4.5 (ft.)

Date: 5/27/10

Thompson Engineering
Mobile, Alabama

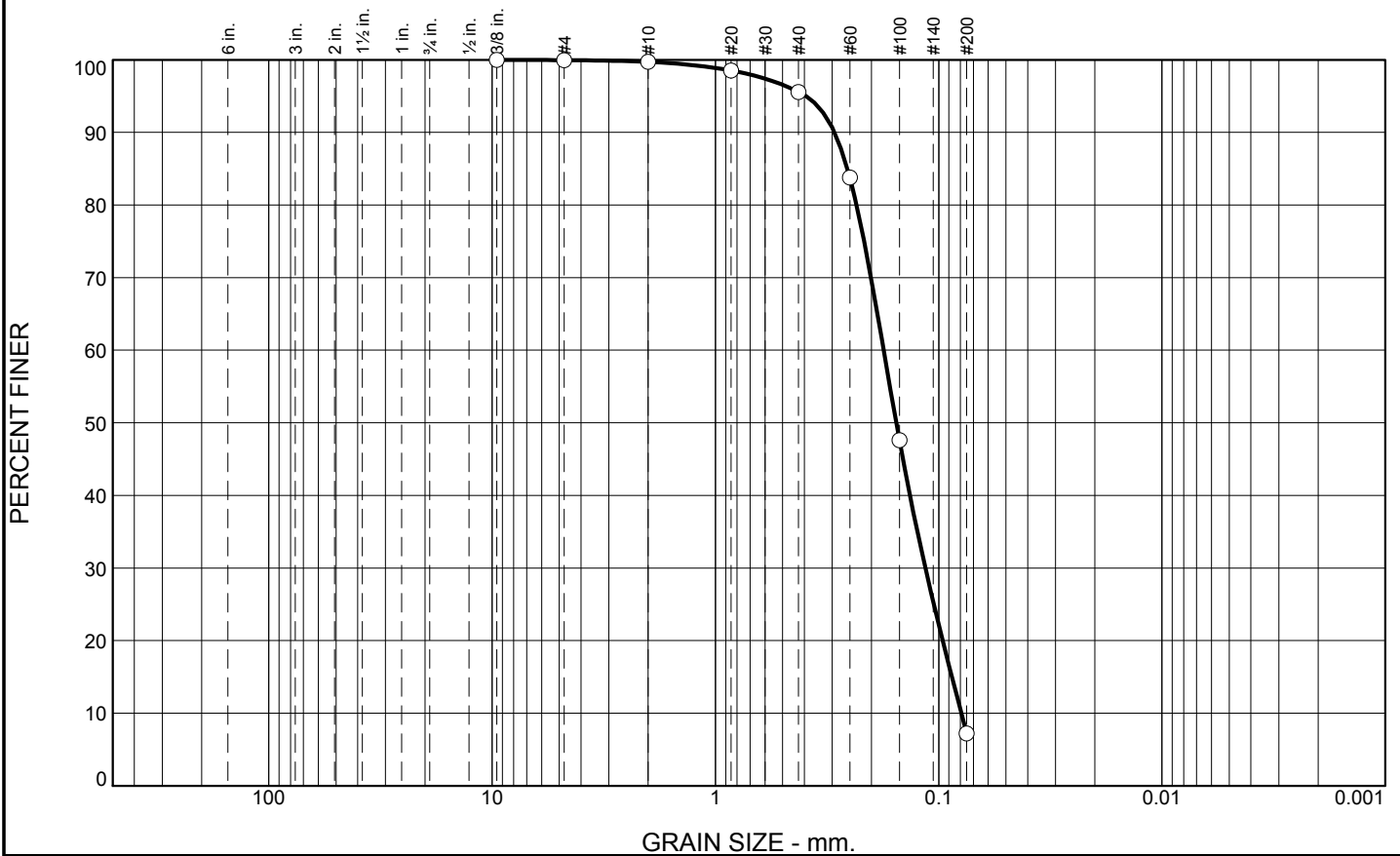
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.2	4.1	88.4	7.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.7		
#20	98.5		
#40	95.6		
#60	83.8		
#100	47.6		
#200	7.2		

* (no specification provided)

Material Description

SAND, (SP-SM), fine grained, with clay nodules and trace shell

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.2928

D₈₅= 0.2563

D₆₀= 0.1765

D₅₀= 0.1550

D₃₀= 0.1147

D₁₅= 0.0873

D₁₀= 0.0792

C_u= 2.23

C_c= 0.94

Classification

USCS= SP-SM

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-MS-30-10B
Sample Number: TE Lab ID: 4488.37

Depth: 4.5 - 10.0 (ft.)

Date: 5/27/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

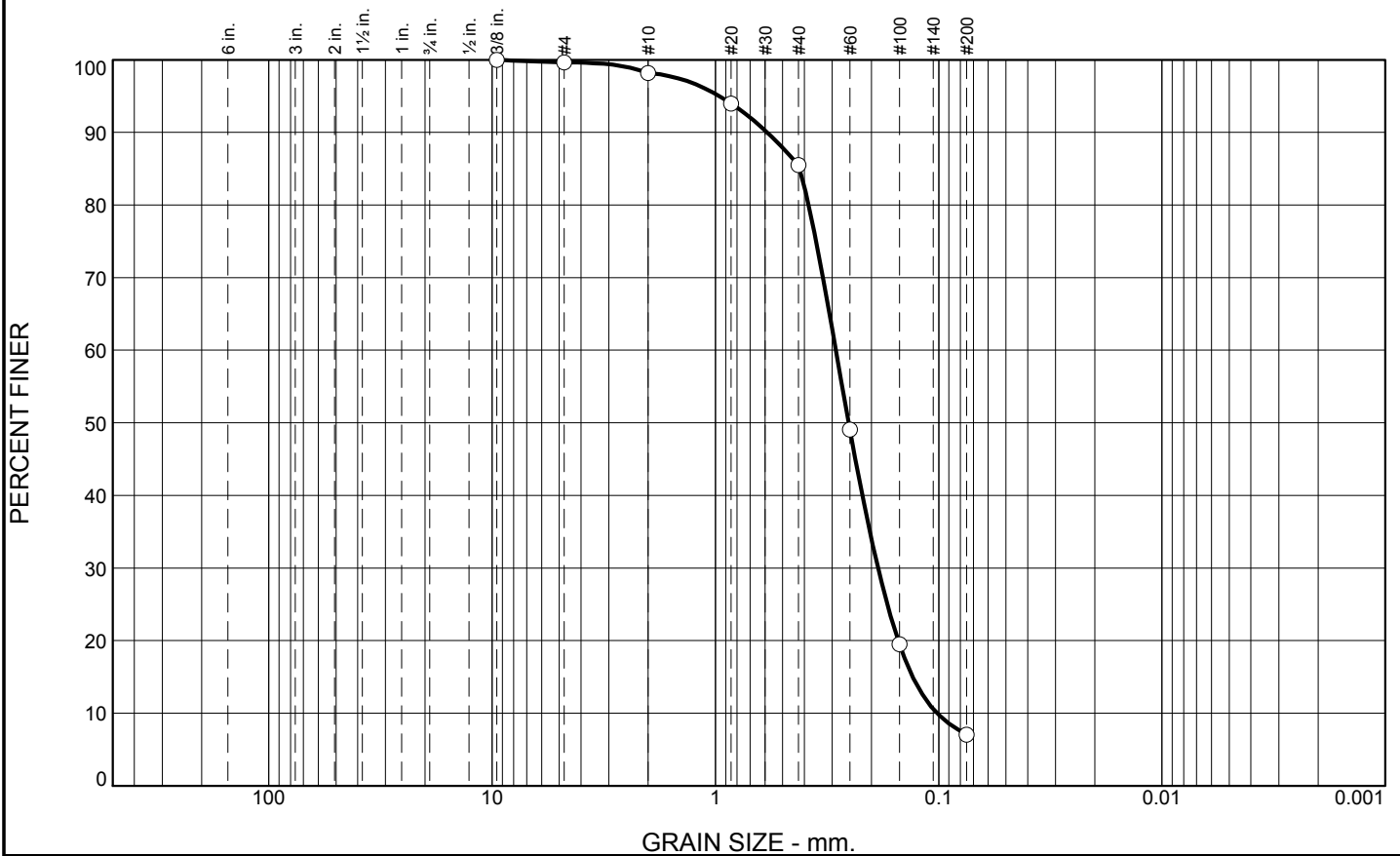
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.3	1.5	12.7	78.5	7.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.7		
#10	98.2		
#20	94.0		
#40	85.5		
#60	49.1		
#100	19.5		
#200	7.0		

* (no specification provided)

Material Description
SAND, (SP-SM), medium to fine grained, with trace shell

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.5862 D₈₅= 0.4204 D₆₀= 0.2887
 D₅₀= 0.2532 D₃₀= 0.1869 D₁₅= 0.1307
 D₁₀= 0.1017 C_u= 2.84 C_c= 1.19

Classification
 USCS= SP-SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-MS-30-10C
 Sample Number: TE Lab ID: 4488.38

Depth: 10.0 - 15.5 (ft.)

Date: 5/27/10

Thompson Engineering

Mobile, Alabama

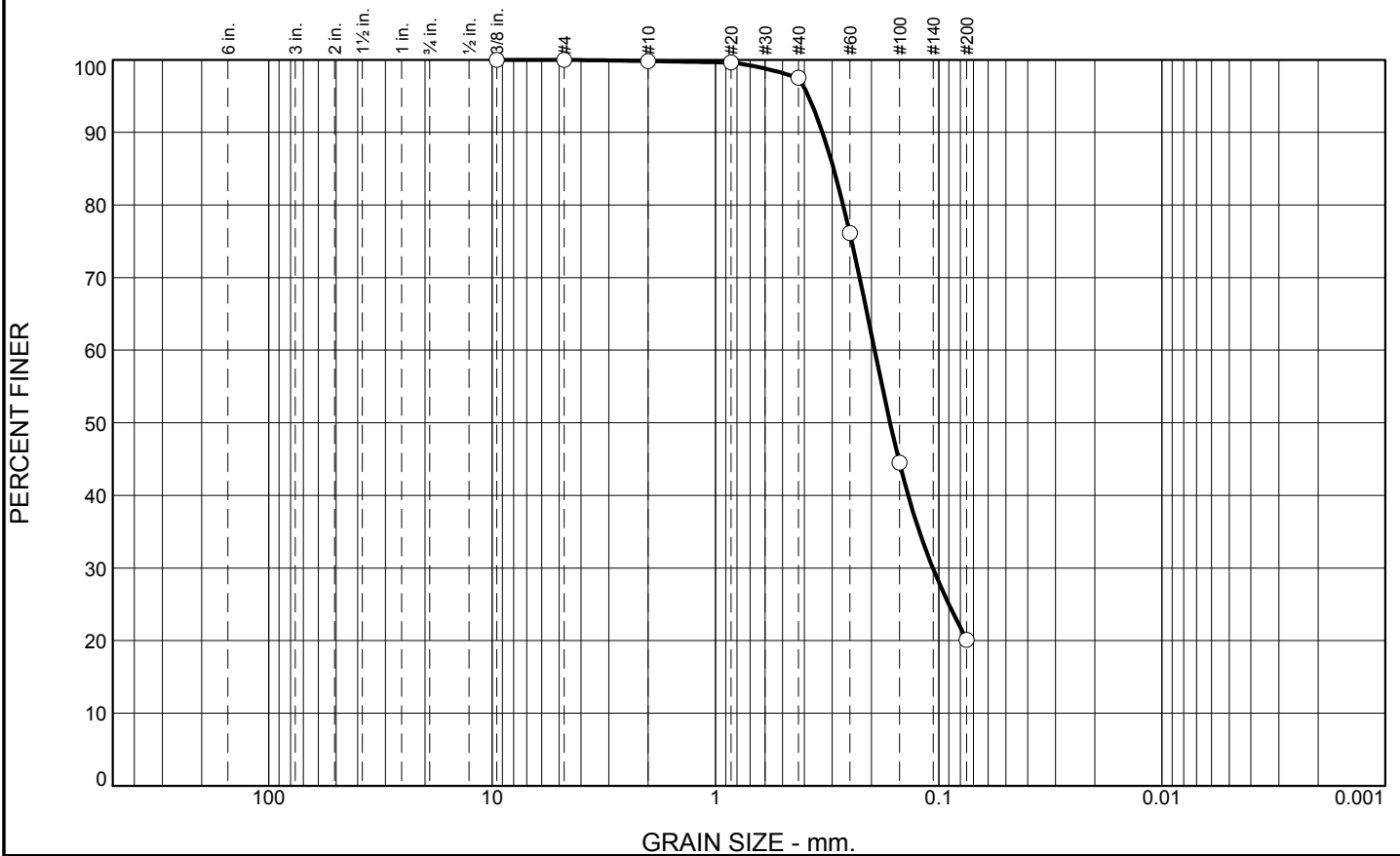
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	2.3	77.4	20.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.8		
#20	99.6		
#40	97.5		
#60	76.1		
#100	44.5		
#200	20.1		

* (no specification provided)

Material Description
SAND, (SP-SM), medium to fine grained, with clay nodules

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.3314 D₈₅= 0.2955 D₆₀= 0.1936
 D₅₀= 0.1651 D₃₀= 0.1063 D₁₅=
 D₁₀= C_u= C_c=

Classification
 USCS= SP-SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-MS-30-10D
Sample Number: TE Lab ID: 4488.39

Depth: 15.5 - 19.1 (ft.)

Date: 5/27/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

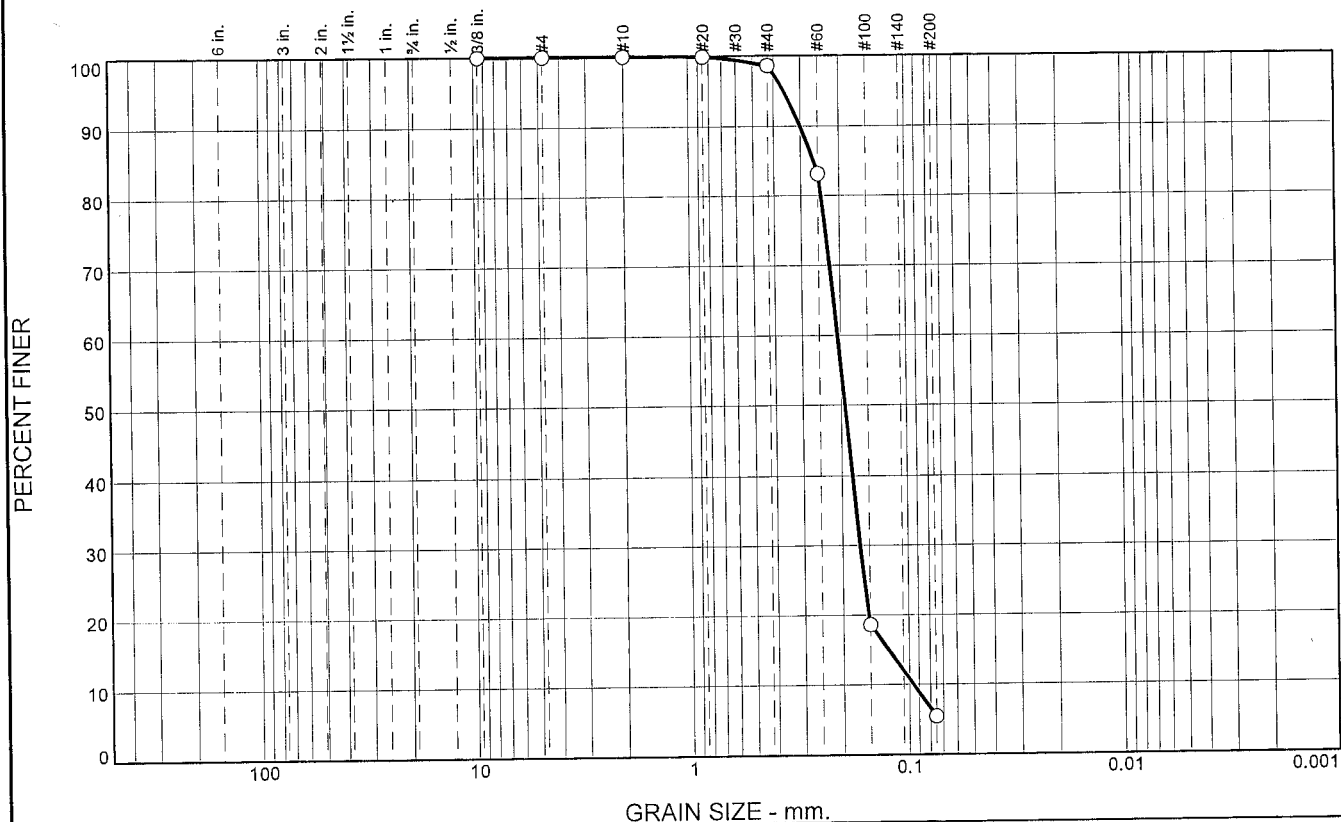
APPENDIX G

SHIP ISLAND PASS BORING LOGS AND LAB RESULTS

Boring Designation BI-SP-21-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island Pass				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SP-21-10		LOCATION COORDINATES E = 918,187 N = 263,712		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 15.6 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 05-06-10		STARTED 05-06-10 COMPLETED 05-06-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -14.9 Ft.			
8. TOTAL DEPTH OF BORING 13.2 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR J. Krick, Geotechnical Engineer			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-14.9	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace shell fragments, gray (SP)	A	Classification: SP Color: 10YR 5/1-gray D50: 0.192 mm % Fines: 5.4		
				B	Classification: SP Color: 10YR 6/1-gray D50: 0.1894 mm % Fines: 3.4		
-24.9	10.0		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments, gray (SP)	NS			
-28.1	13.2						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.4	93.2	5.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	98.6		
#60	83.1		
#100	18.6		
#200	5.4		

* (no specification provided)

<u>Material Description</u>		
SAND, (SP-SM), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.3014	D ₈₅ = 0.2620	D ₆₀ = 0.2061
D ₅₀ = 0.1920	D ₃₀ = 0.1658	D ₁₅ = 0.1242
D ₁₀ = 0.0955	C _u = 2.16	C _c = 1.40
<u>Classification</u>		
USCS= SP-SM	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-SP-21-10A
Sample Number: TE Lab ID: 4461.32

Depth: 0.0 - 5.0 (ft)

Date: 5/13/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Mississippi Barrier Island Restoration Project
Contract No. W91278-10-D-0026 - Task 03

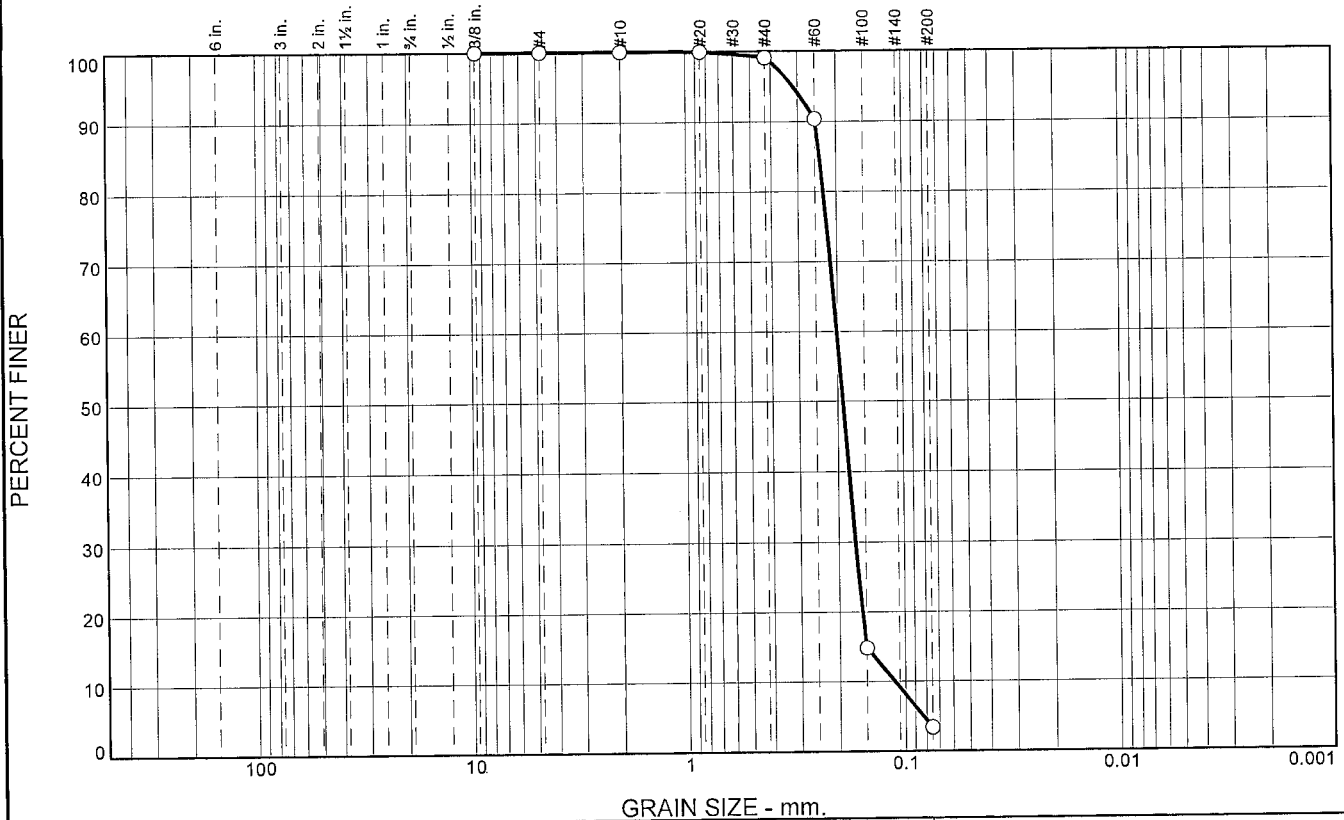
Project No: 1021230009

Figure

Tested By: J.Maddox/L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.9	95.7	3.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	99.1		
#60	90.3		
#100	14.8		
#200	3.4		

* (no specification provided)

Material Description
SAND, (SP), fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.2492 D₈₅= 0.2382 D₆₀= 0.2011
D₅₀= 0.1894 D₃₀= 0.1675 D₁₅= 0.1502
D₁₀= 0.1120 C_u= 1.80 C_c= 1.25

Classification
USCS= SP AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-SP-21-10B
Sample Number: TE Lab ID: 4461.33

Depth: 5.0 - 10.0 (ft)

Date: 5/13/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Mississippi Barrier Island Restoration Project
Contract No. W91278-10-D-0026 - Task 03

Project No: 1021230009

Figure

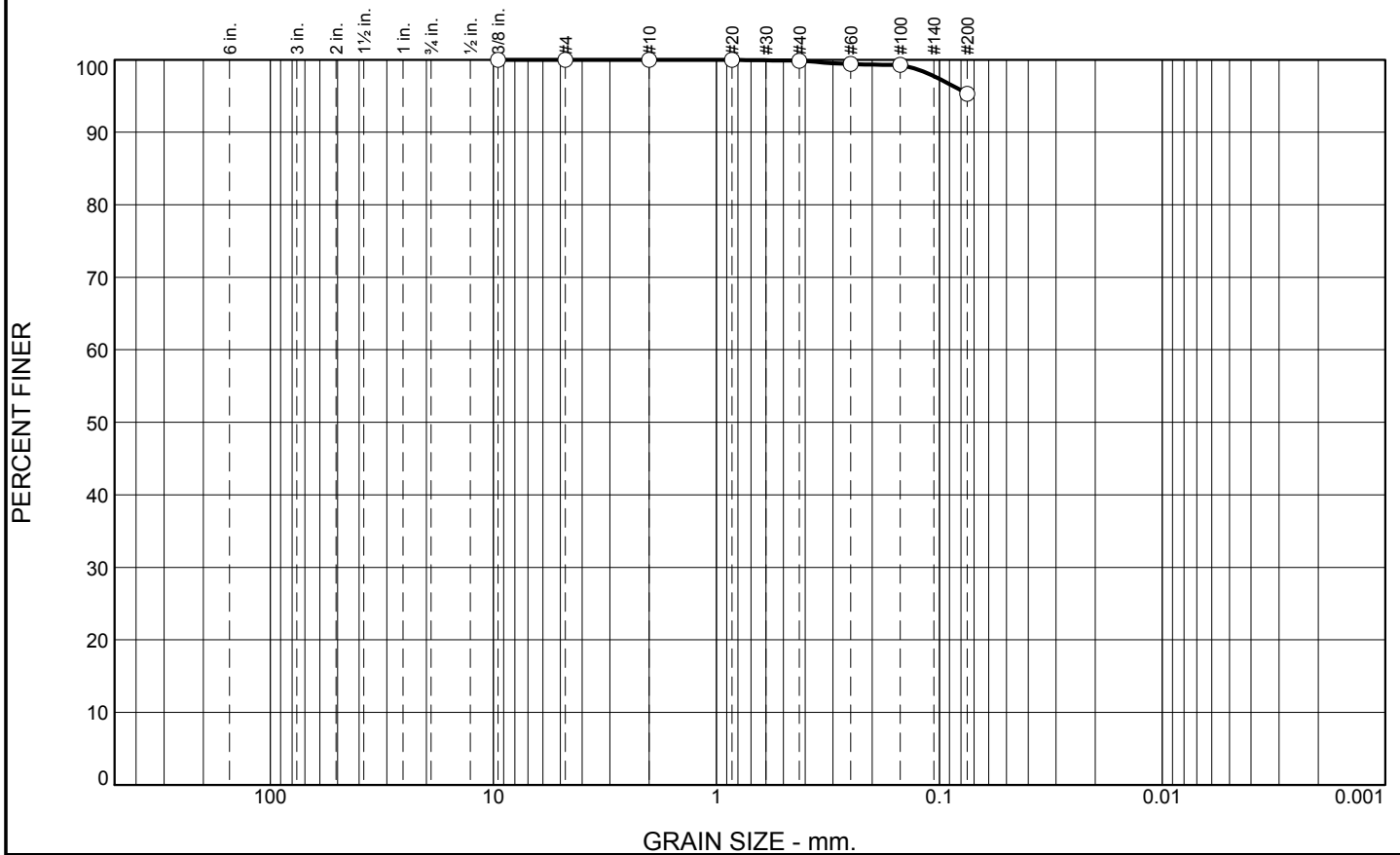
Tested By: J.Maddox/L.Stokes

Checked By: R.Byrd

Boring Designation BI-SP-22-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island Pass				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SP-22-10		LOCATION COORDINATES E = 918,296 N = 259,261		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 20 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 05-18-10		COMPLETED 05-18-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -18.5 Ft.			
8. TOTAL DEPTH OF BORING 18.2 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Ed Herman, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-18.5	0.0						
			CLAY, fat, dark gray (CH)	A	Classification: CL Color: 2.5Y 5/1-gray D50: mm % Fines: 95.3		
-24.8	6.3						
			SAND, clayey, mostly fine to medium-grained sand-sized quartz, dark gray (SC)	B	Classification: SM Color: 2.5Y 6/2-light brownish gray D50: 0.0932 mm % Fines: 21.9		
				C	Classification: SM Color: 2.5Y 5/2-grayish brown D50: 0.0762 mm % Fines: 48.8		
-36.7	18.2						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.1	4.6	95.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	100.0		
#40	99.9		
#60	99.4		
#100	99.3		
#200	95.3		

* (no specification provided)

Material Description
CLAY, (CL)

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= D₈₅= D₆₀=
D₅₀= D₃₀= D₁₅=
D₁₀= C_u= C_c=

Classification
USCS= CL AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-SP-22-10A
Sample Number: TE Lab ID: 4488.48

Depth: 0.0 - 6.3 (ft.)

Date: 5/27/10

Thompson Engineering
Mobile, Alabama

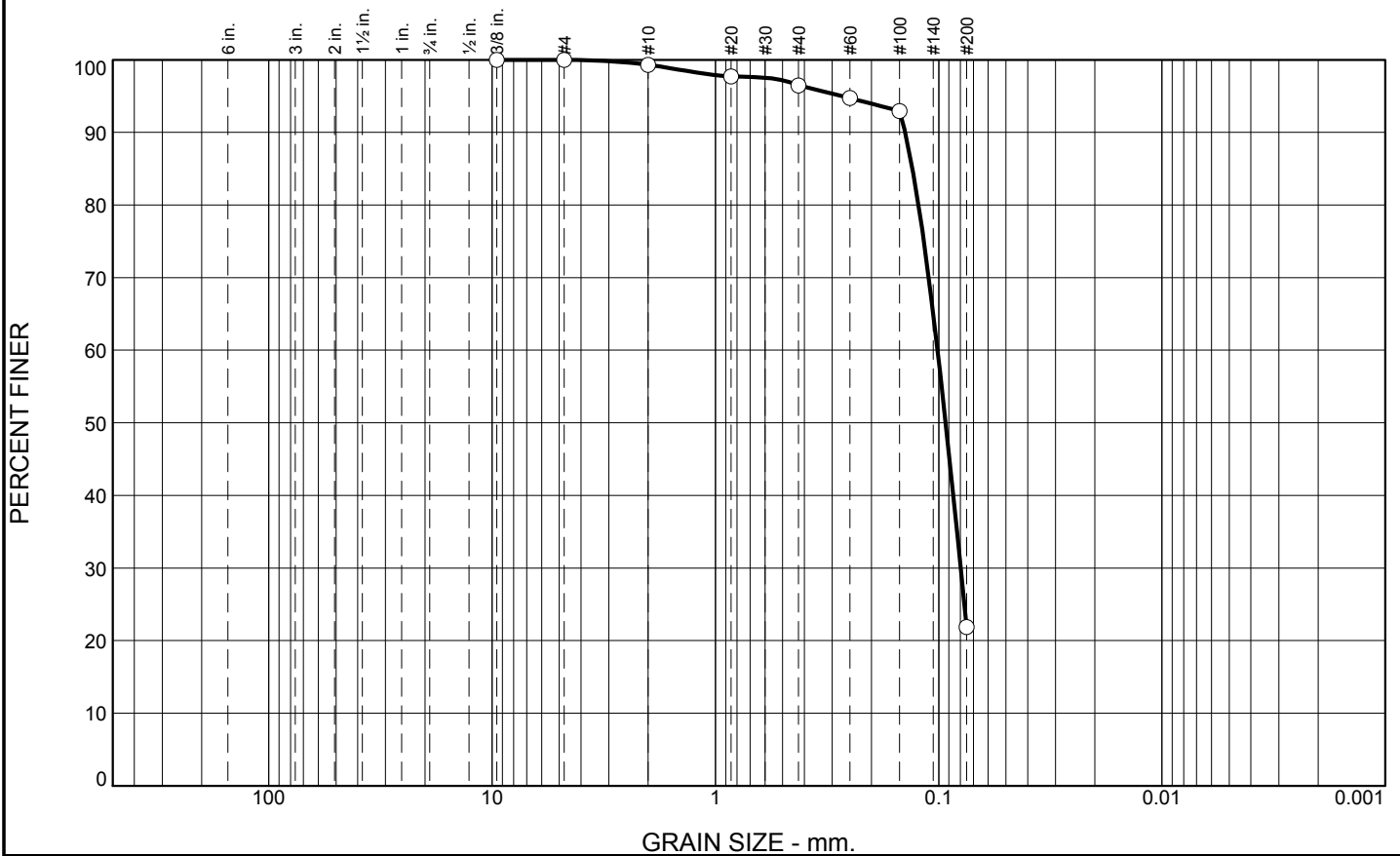
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.7	2.8	74.6	21.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.3		
#20	97.7		
#40	96.5		
#60	94.7		
#100	92.9		
#200	21.9		

* (no specification provided)

Material Description
SILTY SAND, (SM), fine grained, with trace shell

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.1414 D₈₅= 0.1310 D₆₀= 0.1013
 D₅₀= 0.0932 D₃₀= 0.0798 D₁₅=
 D₁₀= C_u= C_c=

Classification
 USCS= SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-SP-22-10B
Sample Number: TE Lab ID: 4488.49

Depth: 6.3 - 12.5 (ft.)

Date: 5/27/10

Thompson Engineering

Mobile, Alabama

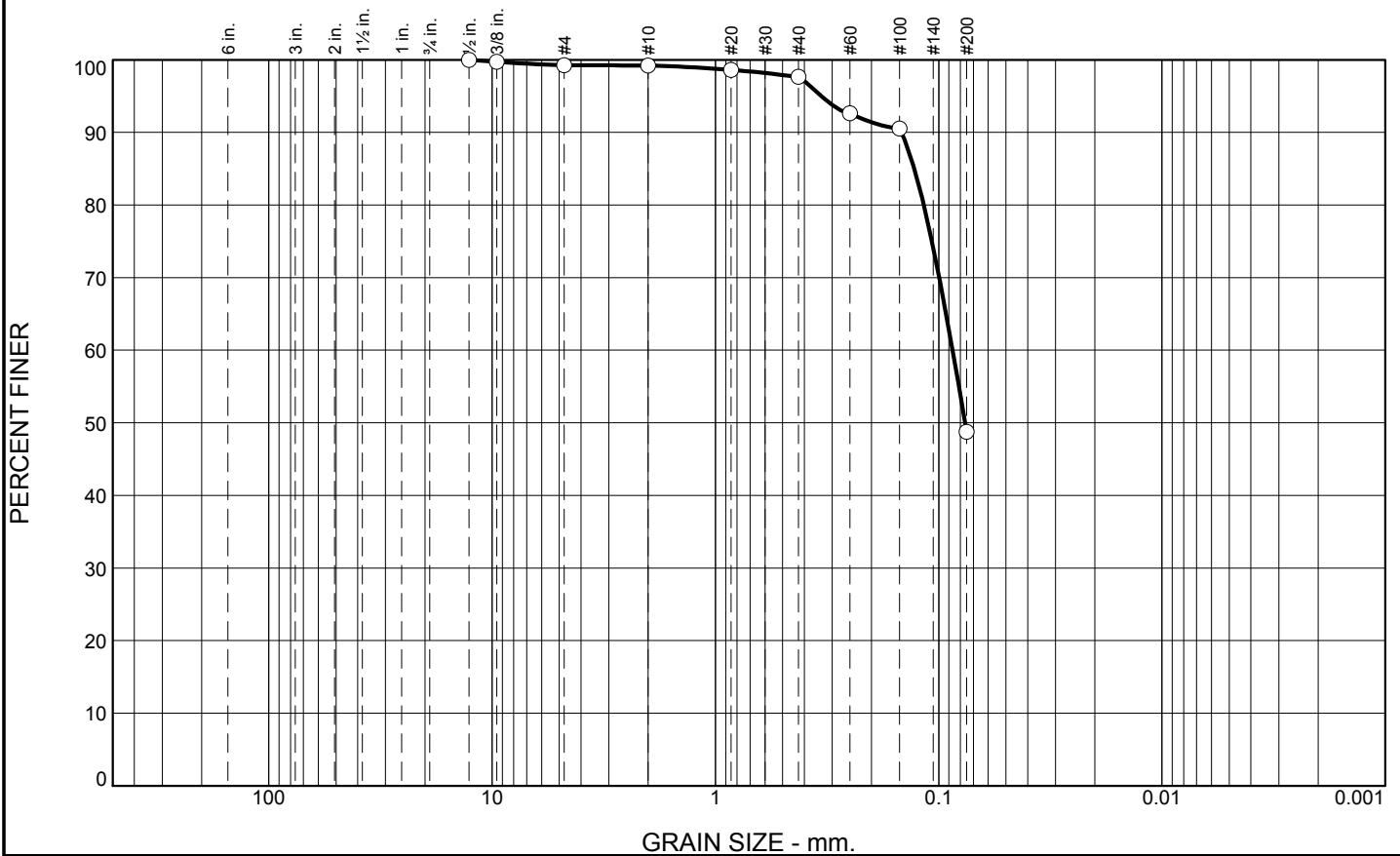
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.7	0.1	1.6	48.8	48.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.500	100.0		
.375	99.7		
#4	99.3		
#10	99.2		
#20	98.6		
#40	97.6		
#60	92.6		
#100	90.5		
#200	48.8		

* (no specification provided)

Material Description

SILTY SAND, (SM), fine grained, with trace shell and clay nodules

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.1470

D₅₀= 0.0762

D₁₀=

D₈₅= 0.1286

D₃₀=

C_u=

D₆₀= 0.0867

D₁₅=

C_c=

Classification

USCS= SM

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-SP-22-10C
Sample Number: TE Lab ID: 4488.50

Depth: 12.5 - 18.2 (ft.)

Date: 5/27/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009




Figure

Tested By: L.Stokes

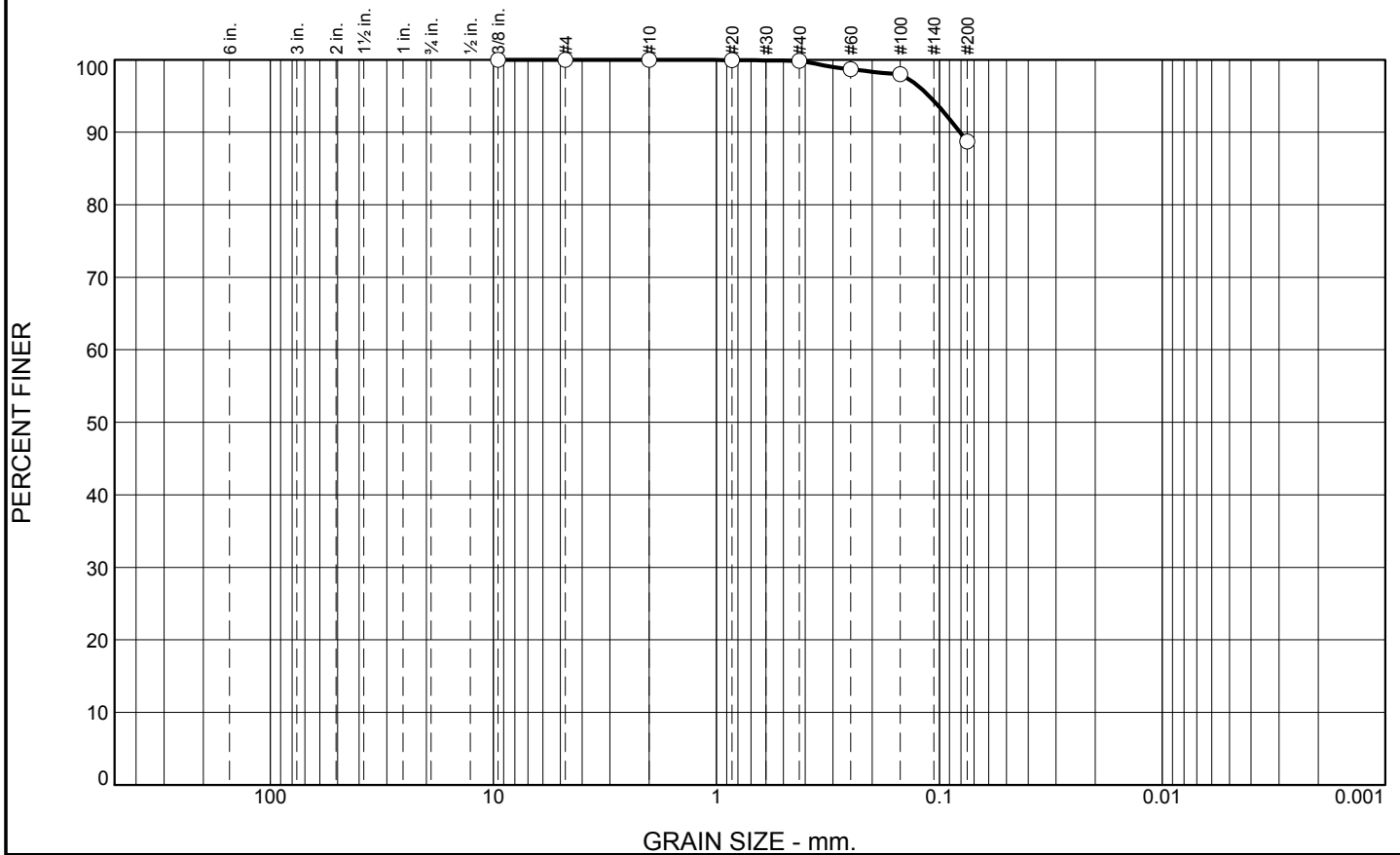
Checked By: R.Byrd

Boring Designation BI-SP-23-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island Pass				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SP-23-10		LOCATION COORDINATES E = 924,924 N = 260,115		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 21 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 05-18-10		STARTED 05-18-10 COMPLETED 05-18-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -19.5 Ft.			
8. TOTAL DEPTH OF BORING 14.9 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Ed Herman, Geologist			

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-19.5	0.0				
			CLAY, fat, dark gray (CH)	A	Classification: CL Color: 2.5Y 5/2-grayish brown D50: mm % Fines: 88.7
-24.5	5.0				
			SAND, silty, mostly fine-grained sand-sized quartz, little shell fragments, dark gray (SM)	B	Classification: SP-SM Color: 2.5Y 61/- D50: 0.1275 mm % Fines: 11.9
-29.0	9.5				
			SAND, clayey, mostly fine-grained sand-sized quartz, dark gray (SC)	C	Classification: SM Color: 2.5Y 5/2-grayish brown D50: 0.0943 mm % Fines: 36.9
-34.4	14.9				
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.		

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.1	11.2	88.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	100.0		
#40	99.9		
#60	98.7		
#100	98.0		
#200	88.7		

* (no specification provided)

Material Description
CLAY, (CL)

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.0808 D₈₅= D₆₀=
 D₅₀= D₃₀= D₁₅=
 D₁₀= C_u= C_c=

Classification
 USCS= CL AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-SP-23-10A
Sample Number: TE Lab ID: 4488.45

Depth: 0.0 - 5.0 (ft.)

Date: 5/27/10

Thompson Engineering

Mobile, Alabama

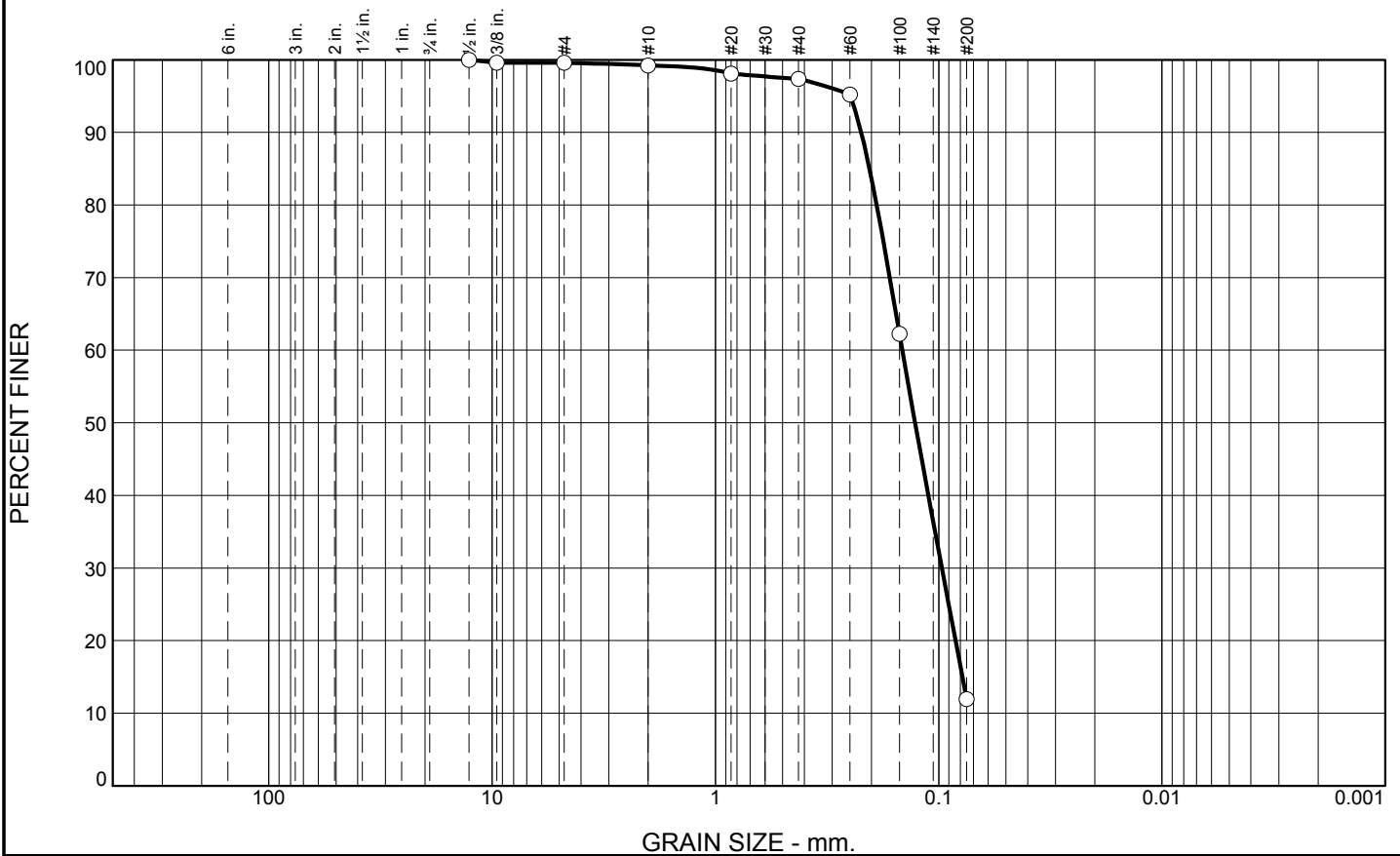
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.4	0.4	1.9	85.4	11.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.500	100.0		
.375	99.6		
#4	99.6		
#10	99.2		
#20	98.1		
#40	97.3		
#60	95.2		
#100	62.3		
#200	11.9		

* (no specification provided)

Material Description
SAND, (SP-SM), medium to fine grained, with trace shell

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.2223 D₈₅= 0.2042 D₆₀= 0.1456
 D₅₀= 0.1275 D₃₀= 0.0968 D₁₅= 0.0783
 D₁₀= C_u= C_c=

Classification
 USCS= SP-SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-SP-23-10B
Sample Number: TE Lab ID: 4488.46

Depth: 5.0 - 9.5 (ft.)

Date: 5/27/10

Thompson Engineering

Mobile, Alabama

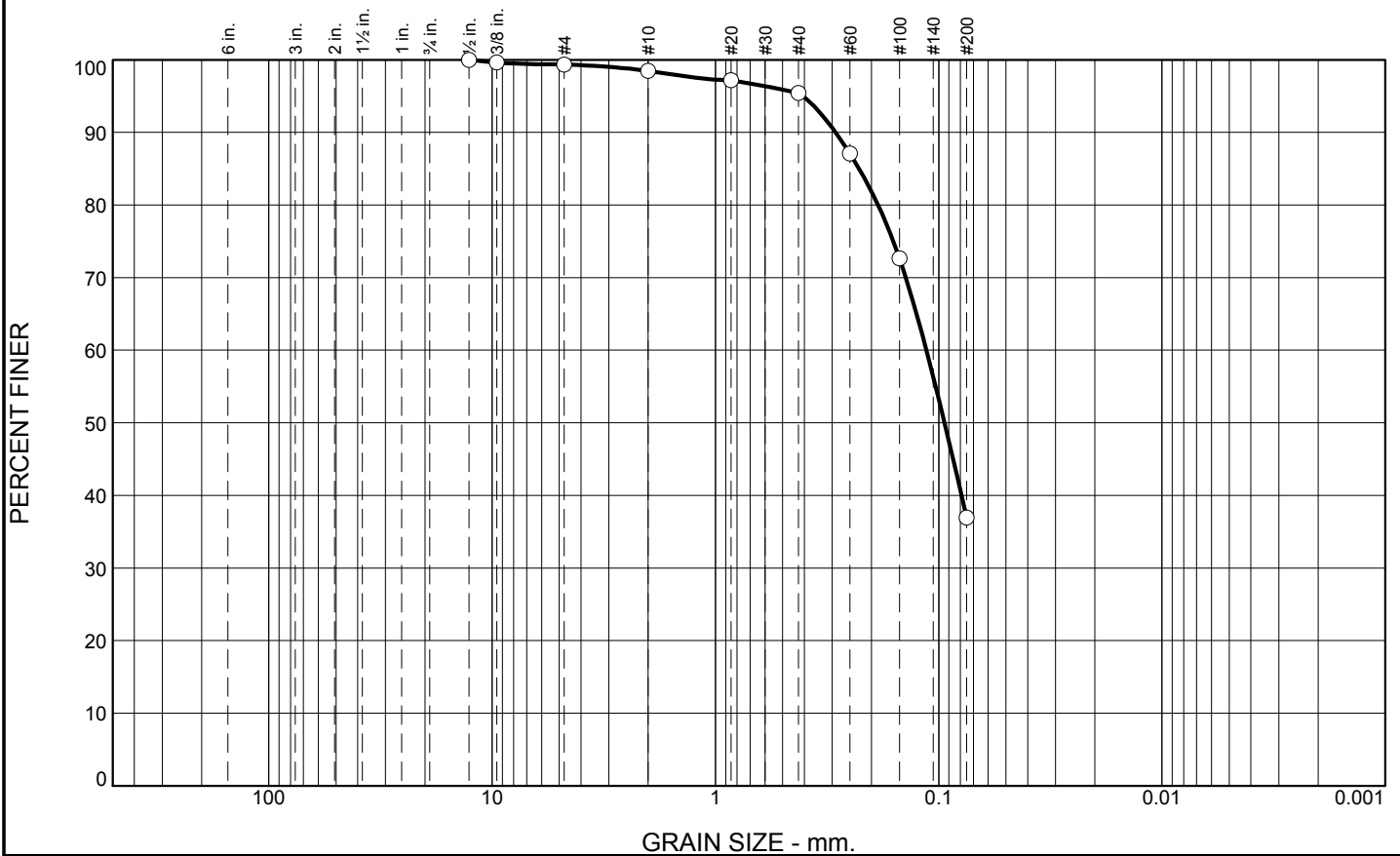
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.7	0.8	3.1	58.5	36.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.500	100.0		
.375	99.6		
#4	99.3		
#10	98.5		
#20	97.2		
#40	95.4		
#60	87.1		
#100	72.6		
#200	36.9		

* (no specification provided)

Material Description

SILTY SAND, (SM), medium to fine grained, with trace shell and clay nodules

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.2895

D₈₅= 0.2273

D₆₀= 0.1136

D₅₀= 0.0943

D₃₀=

D₁₅=

D₁₀=

C_u=

C_c=

Classification

USCS= SM

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-SP-23-10C
Sample Number: TE Lab ID: 4488.47

Depth: 9.5 - 14.9 (ft.)

Date: 5/27/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Figure

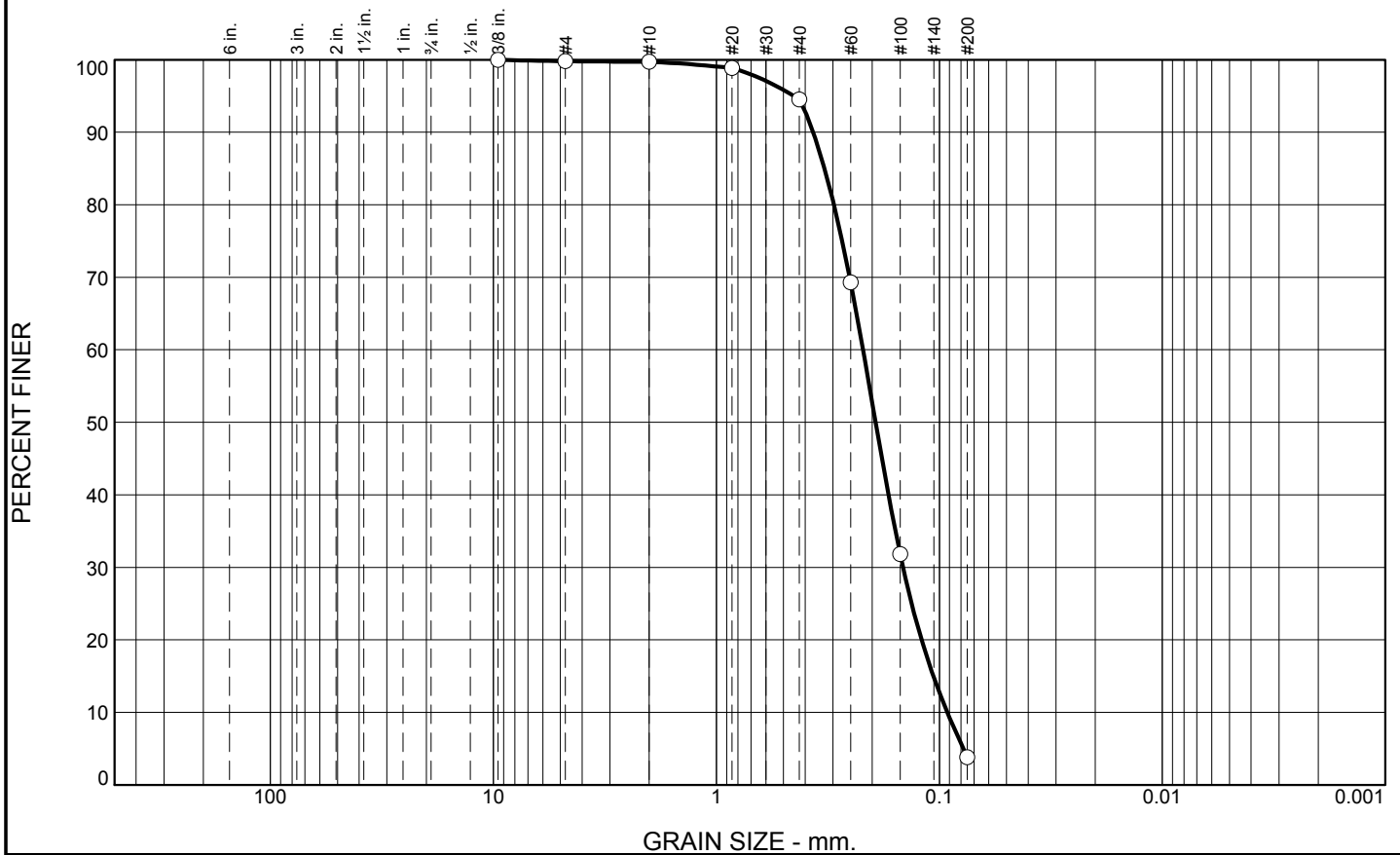
Tested By: L.Stokes

Checked By: R.Byrd

Boring Designation BI-SP-24-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island Pass				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SP-24-10		LOCATION COORDINATES E = 925,430 N = 262,132		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		14. WATER DEPTH 18 Ft.	
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 05-18-10		STARTED 05-18-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -16.6 Ft.		COMPLETED 05-18-10	
8. TOTAL DEPTH OF BORING 14.6 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Ed Herman, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-16.6	0.0						
			SAND, poorly-graded, mostly medium-grained sand-sized quartz, some shell fragments, gray (SP)	A	Classification: SP Color: 2.5Y 7/2-light gray D50: 0.1931 mm % Fines: 3.8		
				B	Classification: SP Color: 2.5Y 7/2-light gray D50: 0.1992 mm % Fines: 4		
-27.7	11.1		SAND, clayey, mostly fine-grained sand-sized quartz, with clay zones, dark gray (SC)	C	Classification: SM Color: 2.5Y 5/2-grayish brown D50: 0.0763 mm % Fines: 48.8		
-31.2	14.6						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.1	5.2	90.7	3.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.8		
#10	99.7		
#20	98.9		
#40	94.5		
#60	69.3		
#100	31.8		
#200	3.8		

* (no specification provided)

Material Description		
SAND, (SP). fine grained		
<div> <div> Atterberg Limits LL= PI= </div> <div> Coefficients D₉₀= 0.3680 D₅₀= 0.1931 D₁₀= 0.0921 </div> <div> D₈₅= 0.3272 D₃₀= 0.1456 C_u= 2.39 </div> <div> D₆₀= 0.2199 D₁₅= 0.1064 C_c= 1.05 </div> </div>		
<div> Classification USCS= SP AASHTO= </div>		
<div> Remarks CADD CODE = CH10D965 </div>		

Location: USACE Sample # BI-SP-24-10A
Sample Number: TE Lab ID: 4488.51

Depth: 0.0 - 5.0 (ft.)

Date: 5/27/10

Thompson Engineering
Mobile, Alabama

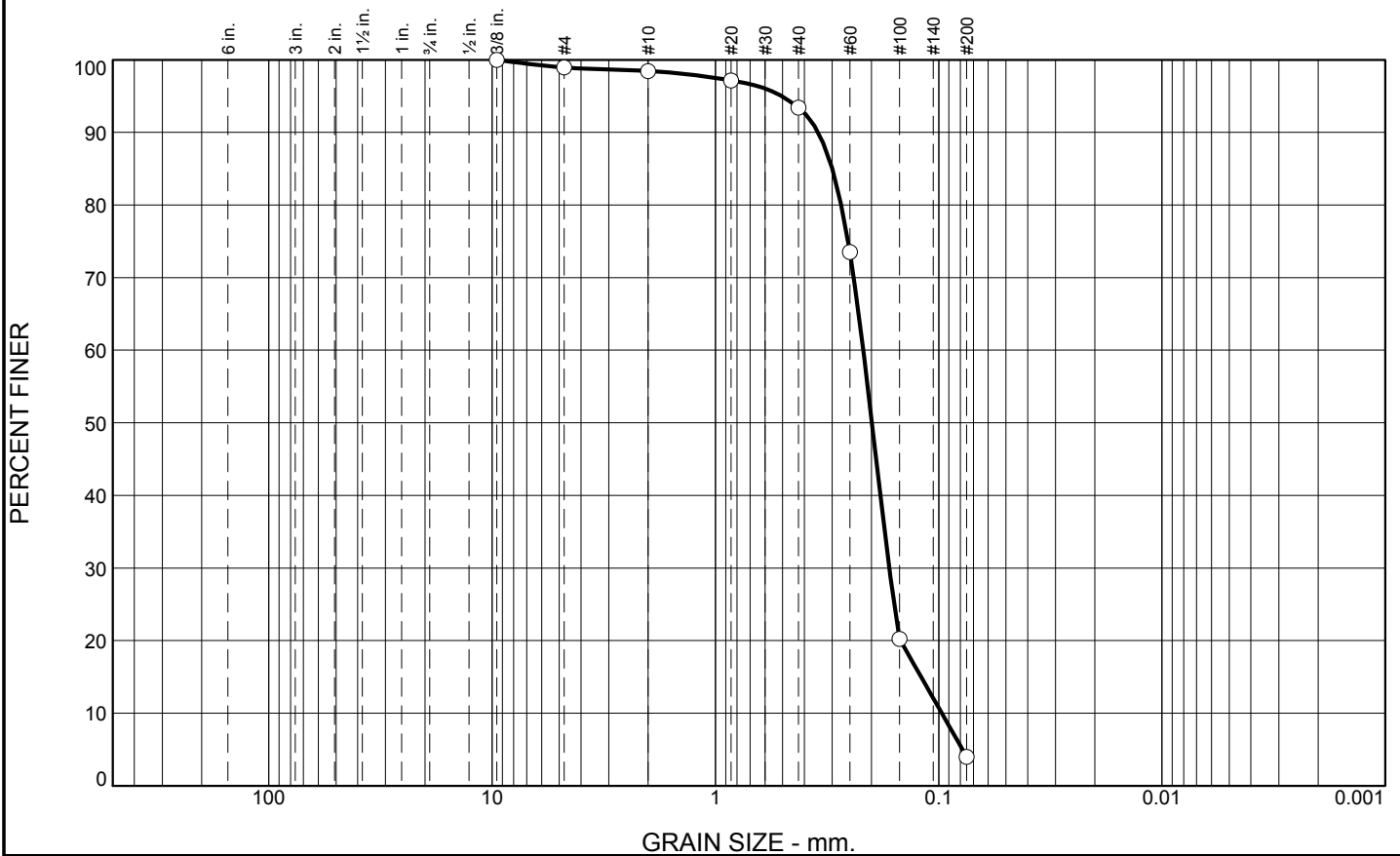
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.1	0.5	5.0	89.4	4.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	98.9		
#10	98.4		
#20	97.1		
#40	93.4		
#60	73.5		
#100	20.2		
#200	4.0		

* (no specification provided)

<u>Material Description</u>		
SAND, (SP), fine grained, with trace shell		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.3466	D ₈₅ = 0.2998	D ₆₀ = 0.2177
D ₅₀ = 0.1992	D ₃₀ = 0.1665	D ₁₅ = 0.1200
D ₁₀ = 0.0969	C _u = 2.25	C _c = 1.31
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-SP-24-10B
Sample Number: TE Lab ID: 4488.52

Depth: 5.0 - 11.1 (ft.)

Date: 5/27/10

Thompson Engineering
Mobile, Alabama

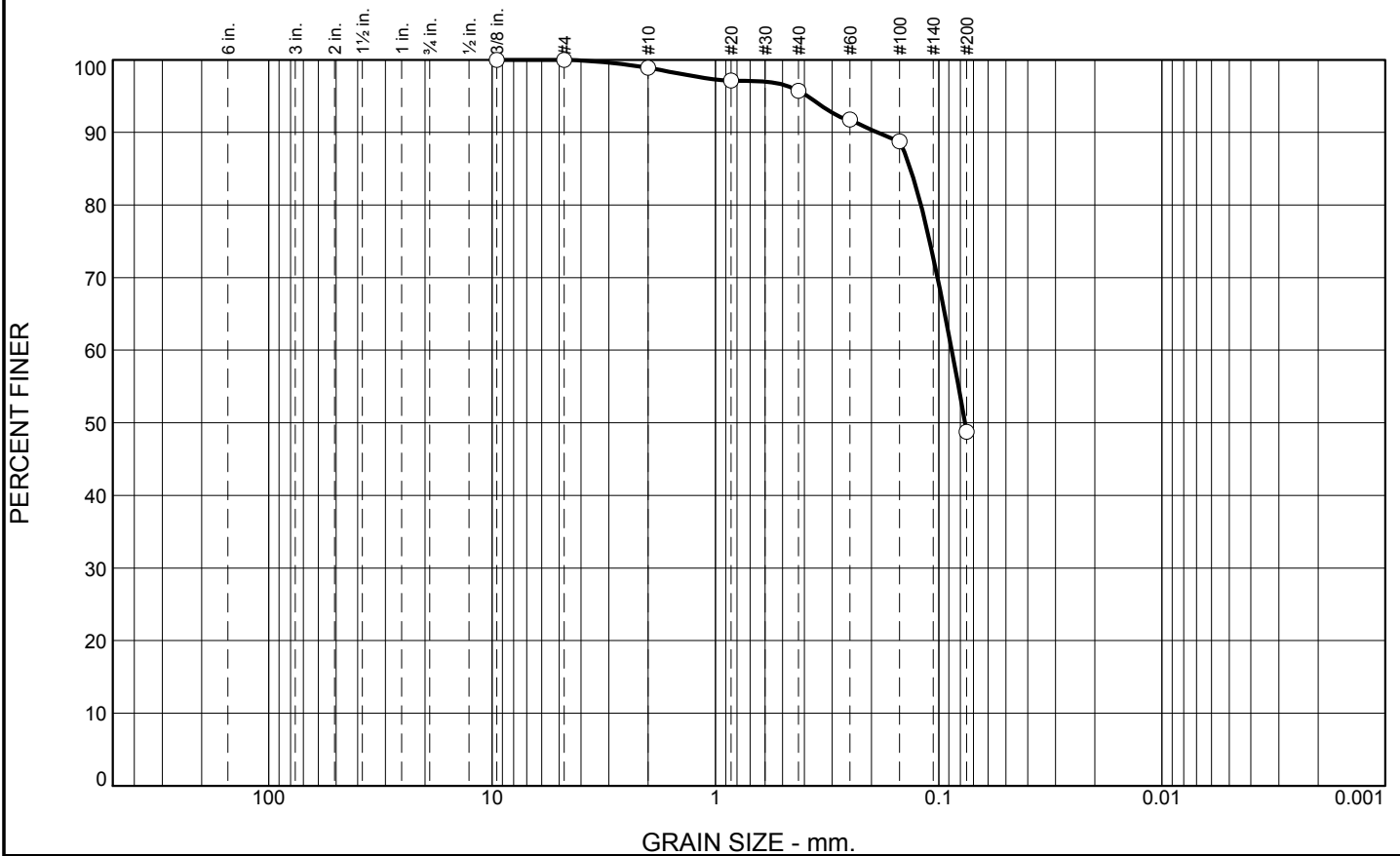
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	1.1	3.2	46.9	48.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	98.9		
#20	97.1		
#40	95.7		
#60	91.8		
#100	88.8		
#200	48.8		

* (no specification provided)

Material Description
SILTY SAND, (SM), fine grained, with clay nodules

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.1883 D₈₅= 0.1339 D₆₀= 0.0875
 D₅₀= 0.0763 D₃₀= D₁₅=
 D₁₀= C_u= C_c=

Classification
 USCS= SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-SP-24-10C
Sample Number: TE Lab ID: 4488.53

Depth: 11.1 - 14.6 (ft.)

Date: 5/27/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Boring Designation BI-SP-25-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island Pass				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SP-25-10		LOCATION COORDINATES E = 932,131 N = 244,411		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		UNDISTURBED (UD) 0	
6. THICKNESS OF OVERBURDEN N/A				14. WATER DEPTH		25.5 Ft.	
7. DEPTH DRILLED INTO ROCK N/A				15. DATE BORING		STARTED 06-15-10	
8. TOTAL DEPTH OF BORING 13.9 Ft.				16. ELEVATION TOP OF BORING		COMPLETED 06-15-10	
				17. TOTAL RECOVERY FOR BORING		100%	
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-24.4	0.0				
-25.7	1.3		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, trace shell fragments, lt. gray (SP)		
-27.2	2.8		CLAY, lean, dark gray (CL)		
-27.8	3.4		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments, gray (SM)		
			CLAY, lean, dark gray (CL)	NS	
-38.3	13.9				
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.		

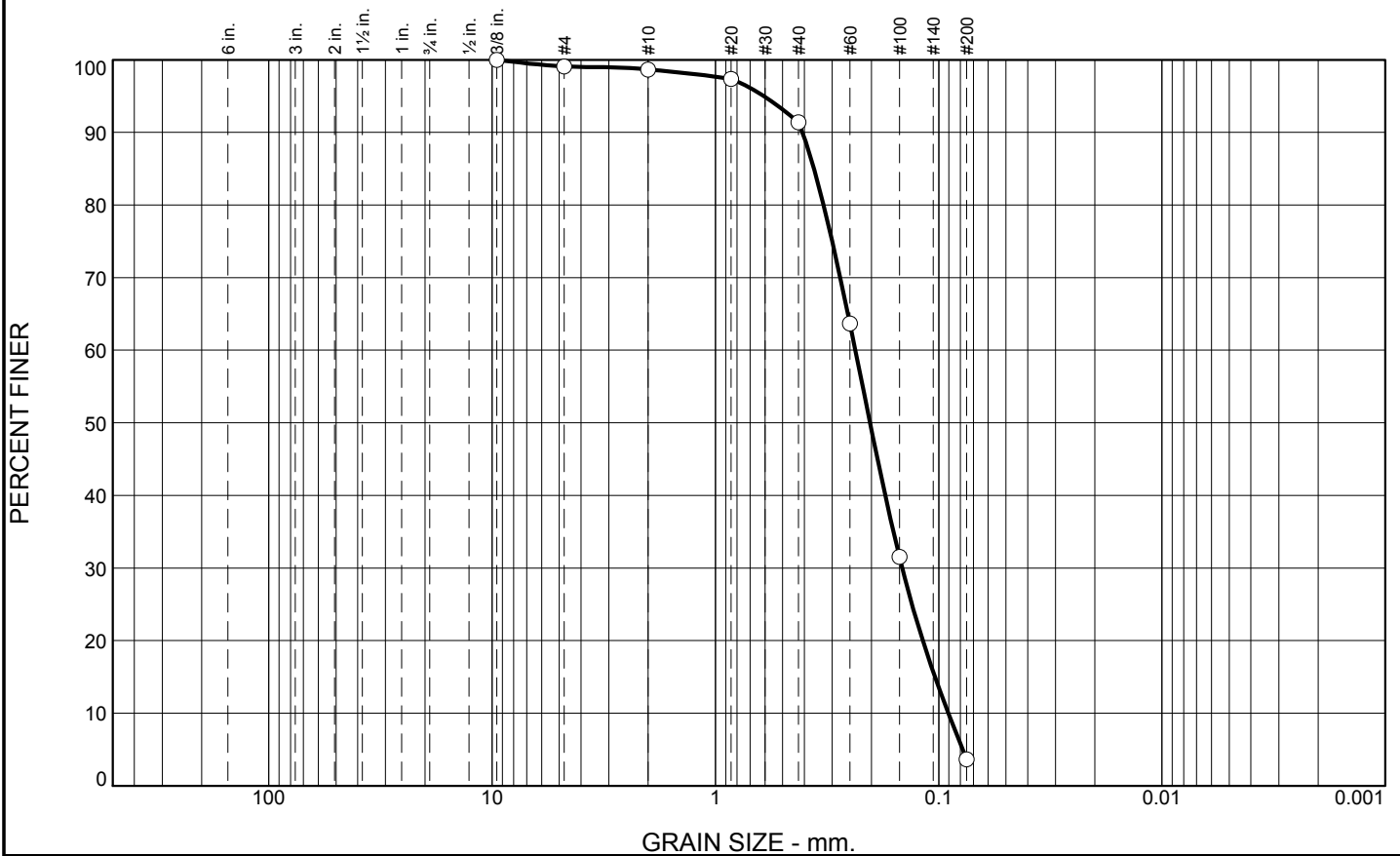
Boring Designation BI-SP-26-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island Pass				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SP-26-10		LOCATION COORDINATES E = 939,073 N = 236,611		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		UNDISTURBED (UD) 0	
6. THICKNESS OF OVERBURDEN N/A				14. WATER DEPTH		26 Ft.	
7. DEPTH DRILLED INTO ROCK N/A				15. DATE BORING		STARTED 06-15-10	
8. TOTAL DEPTH OF BORING 12.9 Ft.				16. ELEVATION TOP OF BORING		COMPLETED 06-15-10	
				17. TOTAL RECOVERY FOR BORING		100%	
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-24.9	0.0		CLAY, lean, dark gray (CL)	NS			
-37.8	12.9		NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Boring Designation BI-SP-27-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island Pass				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SP-27-10		LOCATION COORDINATES E = 928,899 N = 259,298		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 17 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 05-18-10		STARTED 05-18-10 COMPLETED 05-18-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -15.5 Ft.			
8. TOTAL DEPTH OF BORING 13.7 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Ed Herman, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-15.5	0.0						
			SAND, poorly-graded, mostly medium-grained sand-sized quartz, some shell fragments, occasional clay balls, gray (SP)	A	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.203 mm % Fines: 3.6		
-21.0	5.5						
			CLAY, fat, dark gray (CH)	B	Classification: CL Color: 2.5Y 5/2-grayish brown D50: mm % Fines: 70.8		
-29.2	13.7						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.9	0.5	7.2	87.8	3.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.1		
#10	98.6		
#20	97.4		
#40	91.4		
#60	63.7		
#100	31.5		
#200	3.6		

* (no specification provided)

<u>Material Description</u>		
SAND, (SP), fine grained, with trace shell		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.4082	D ₈₅ = 0.3618	D ₆₀ = 0.2363
D ₅₀ = 0.2030	D ₃₀ = 0.1458	D ₁₅ = 0.1040
D ₁₀ = 0.0905	C _u = 2.61	C _c = 0.99
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-SP-27-10A
Sample Number: TE Lab ID: 4488.43

Depth: 0.0 - 5.5 (ft.)

Date: 5/27/10

Thompson Engineering
Mobile, Alabama

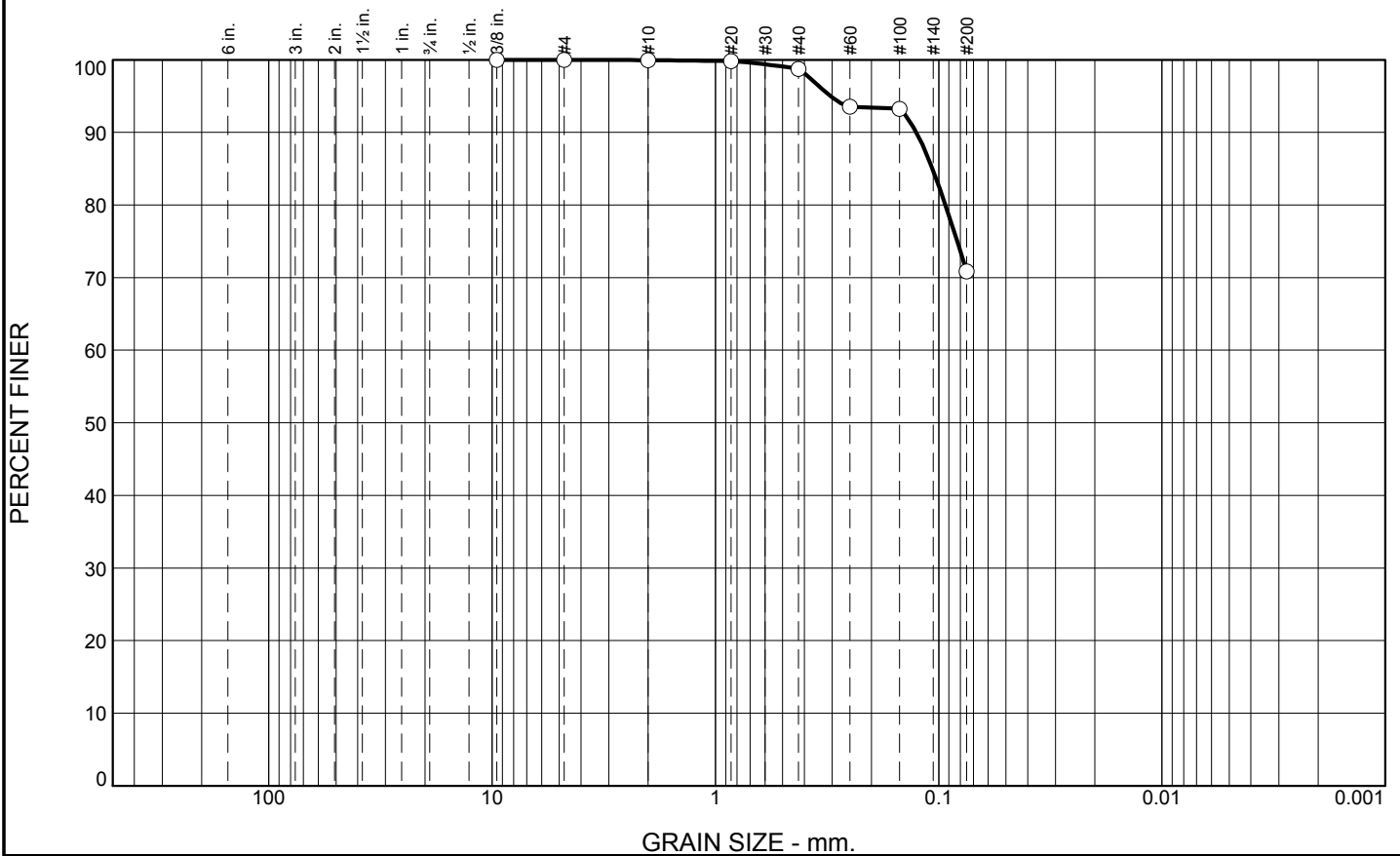
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.3	27.9	70.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.8		
#40	98.7		
#60	93.5		
#100	93.3		
#200	70.8		

* (no specification provided)

Material Description

CLAY, (CL)

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.1259

D₈₅= 0.1067

D₆₀=

D₅₀=

D₃₀=

D₁₅=

D₁₀=

C_u=

C_c=

Classification

USCS= CL

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-SP-27-10B
Sample Number: TE Lab ID: 4488.44

Depth: 5.5 - 13.7 (ft.)

Date: 5/27/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Figure

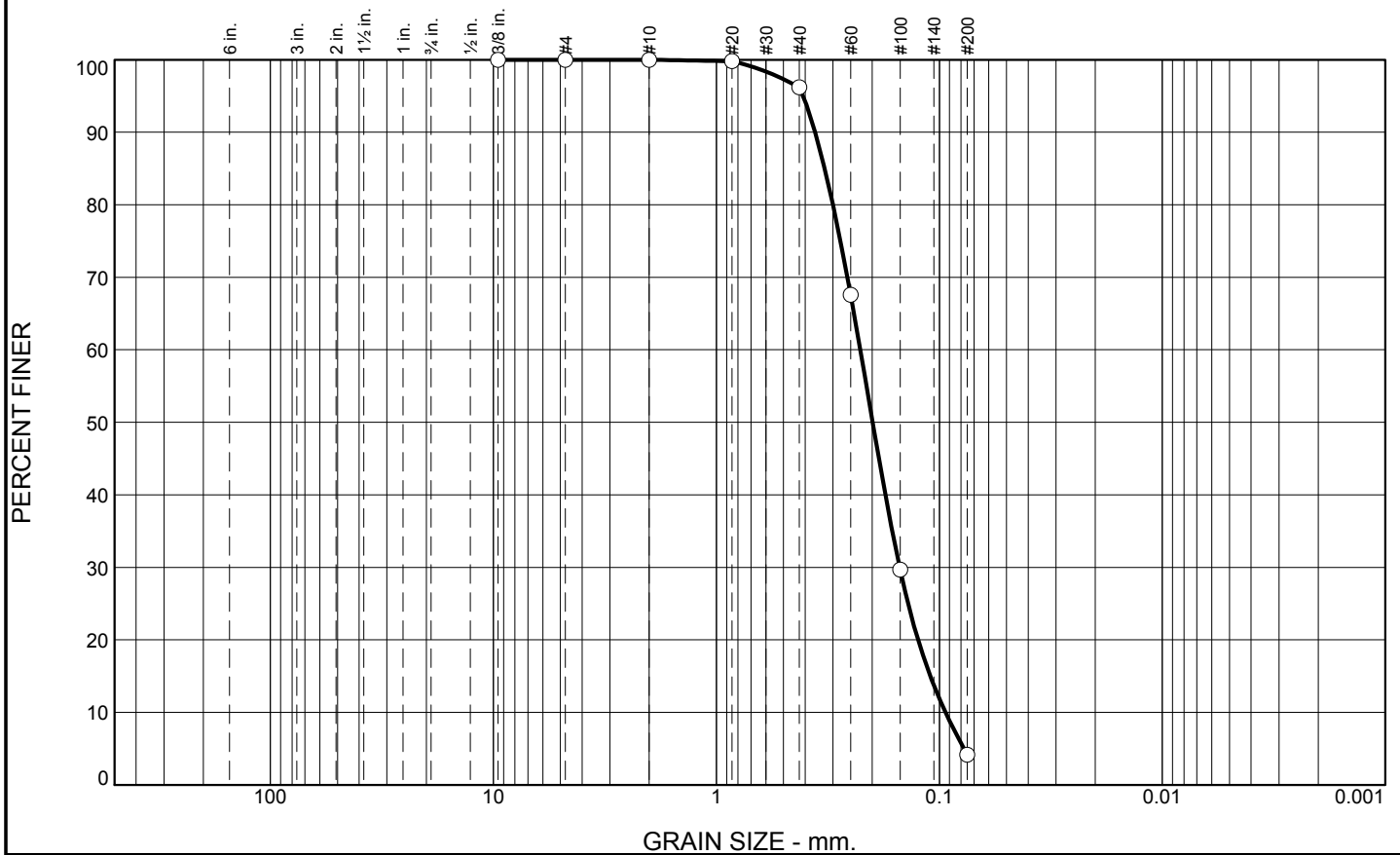
Tested By: L.Stokes

Checked By: R.Byrd

Boring Designation BI-SP-28-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island Pass				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SP-28-10		LOCATION COORDINATES E = 930,677 N = 254,607		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 19 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 05-18-10		STARTED 05-18-10 COMPLETED 05-18-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -17.6 Ft.			
8. TOTAL DEPTH OF BORING 16.5 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Ed Herman, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-17.6	0.0						
-21.9	4.3		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, some shell fragments, gray (SP)	A	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.1991 mm % Fines: 4.2		
-26.6	9.0		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, some shell fragments, gray (SP)	B	Classification: SP Color: 2.5Y 7/2-light gray D50: 0.2619 mm % Fines: 3.8		
-34.1	16.5		CLAY, fat, occasional sand, dark gray (CH)	C	Classification: CL Color: 2.5Y 5/2-grayish brown D50: mm % Fines: 77.5		
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	3.8	92.0	4.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.8		
#40	96.2		
#60	67.6		
#100	29.7		
#200	4.2		

* (no specification provided)

<u>Material Description</u>		
SAND, (SP), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.3608	D ₈₅ = 0.3269	D ₆₀ = 0.2262
D ₅₀ = 0.1991	D ₃₀ = 0.1507	D ₁₅ = 0.1099
D ₁₀ = 0.0939	C _u = 2.41	C _c = 1.07
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-SP-28-10A
Sample Number: TE Lab ID: 4488.40

Depth: 0.0 - 4.3 (ft.)

Date: 5/27/10

Thompson Engineering
Mobile, Alabama

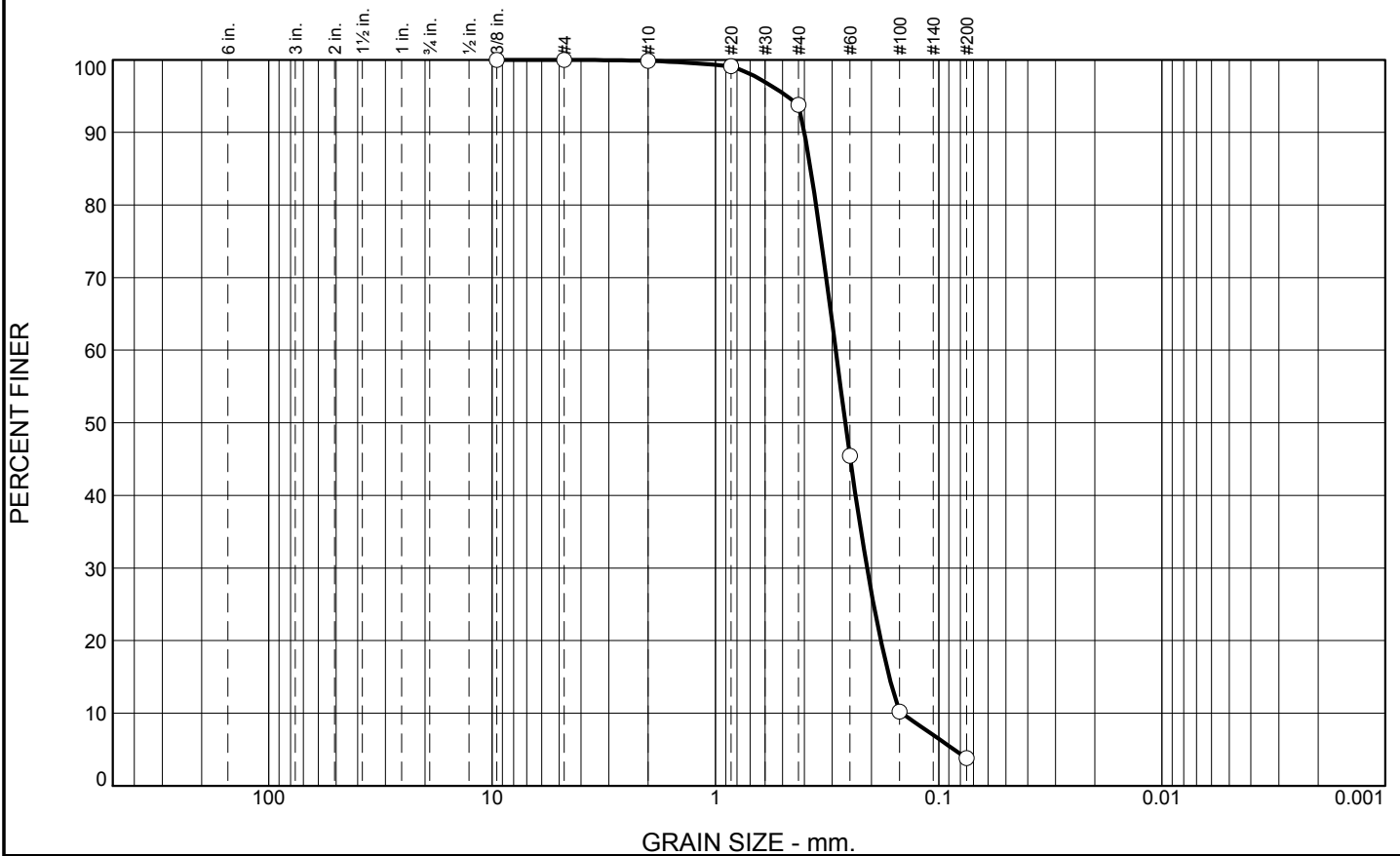
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	6.1	90.0	3.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.1		
#40	93.8		
#60	45.5		
#100	10.2		
#200	3.8		

* (no specification provided)

Material Description		
SAND, (SP), fine grained, with clay nodules		
<div> <div> Atterberg Limits PL= LL= PI= </div> <div> Coefficients D₉₀= 0.4007 D₈₅= 0.3753 D₆₀= 0.2891 D₅₀= 0.2619 D₃₀= 0.2094 D₁₅= 0.1665 D₁₀= 0.1466 C_u= 1.97 C_c= 1.03 </div> <div> Classification USCS= SP AASHTO= </div> <div> Remarks CADD CODE = CH10D965 </div> </div>		

Location: USACE Sample # BI-SP-28-10B
Sample Number: TE Lab ID: 4488.41

Depth: 4.3 - 9.0 (ft.)

Date: 5/27/10

Thompson Engineering
Mobile, Alabama

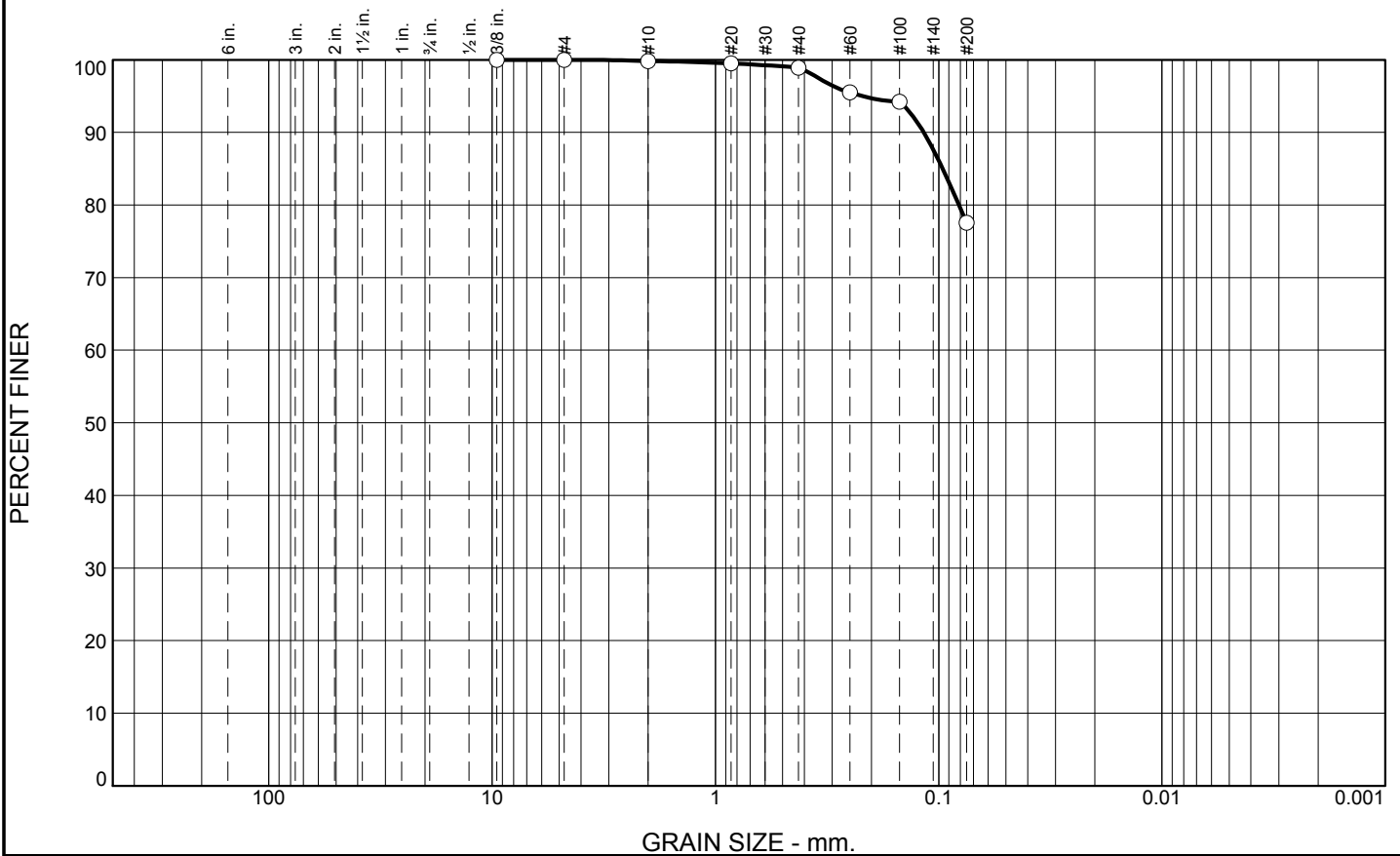
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	0.9	21.4	77.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.8		
#20	99.5		
#40	98.9		
#60	95.5		
#100	94.2		
#200	77.5		

* (no specification provided)

Material Description

CLAY, (CL)

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.1167

D₈₅= 0.0961

D₆₀=

D₅₀=

D₃₀=

D₁₅=

D₁₀=

C_u=

C_c=

Classification

USCS= CL

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-SP-28-10C
Sample Number: TE Lab ID: 4488.42

Depth: 9.0 - 16.5 (ft.)

Date: 5/27/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Figure

Tested By: L.Stokes

Checked By: R.Byrd

Boring Designation BI-SP-29-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island Pass				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SP-29-10		LOCATION COORDINATES E = 924,978 N = 258,216		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		14. WATER DEPTH 20 Ft.	
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING		STARTED 06-17-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -19.3 Ft.		COMPLETED 06-17-10	
8. TOTAL DEPTH OF BORING 19.7 Ft.				17. TOTAL RECOVERY FOR BORING 100%		18. SIGNATURE AND TITLE OF INSPECTOR Brad Johnson, Geologist	
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-19.3	0.0		CLAY, lean, dark gray (CL)				
			At El. -29.4 Ft., trace silt, dark gray	NS			
			At El. -34.6 Ft., trace fine-grained sand-sized quartz, trace silt, gray				
-37.7	18.4						
-39.0	19.7		SAND, poorly-graded, mostly fine-grained sand-sized quartz (SP)				
NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.							

Boring Designation BI-SP-30-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island Pass				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SP-30-10		LOCATION COORDINATES E = 921,838 N = 254,447		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		14. WATER DEPTH 22 Ft.	
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING		STARTED 06-17-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -21.4 Ft.		COMPLETED 06-17-10	
8. TOTAL DEPTH OF BORING 12.8 Ft.				17. TOTAL RECOVERY FOR BORING 100%		18. SIGNATURE AND TITLE OF INSPECTOR Brad Johnson, Geologist	
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-21.4	0.0		CLAY, lean, some fine-grained sand-sized quartz, some silt, dark gray (CL)	NS			
-32.6	11.2		SAND, silty, some fine-grained sand-sized quartz, some silt, gray (SM)				
-34.2	12.8		NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

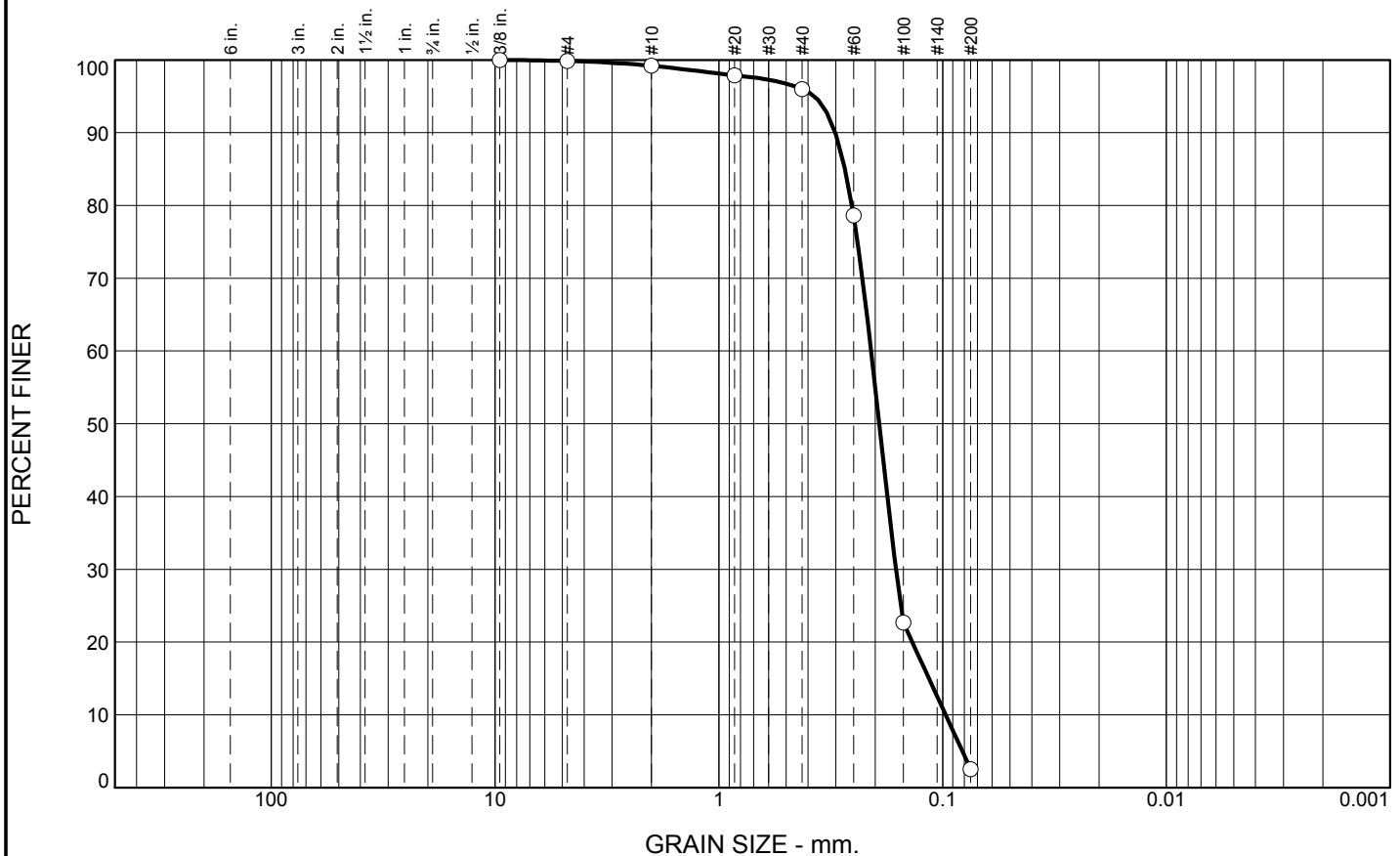
APPENDIX H

SHIP ISLAND BORING LOGS AND LAB RESULTS

Boring Designation BI-SI-10-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SI-10-10		LOCATION COORDINATES E = 956,553 N = 255,574		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 23 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-01-10		STARTED 06-01-10 COMPLETED 06-01-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -21.7 Ft.			
8. TOTAL DEPTH OF BORING 17.9 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-21.7	0.0						
-23.7	2.0		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little silt, trace shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 7/2-light gray D50: 0.192 mm % Fines: 2.5		
-26.1	4.4		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments, gray (SM)	B	Classification: SM Color: 5Y 6/2-light olive gray D50: 0.1477 mm % Fines: 21		
-32.7	11.0		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little silt, trace shell fragments, lt. gray (SP)	C	Classification: SP-SM Color: 2.5Y 7/2-light gray D50: 0.1847 mm % Fines: 5.2		
-39.6	17.9		CLAY, lean, dark gray (CL)	NS			
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.7	3.2	93.5	2.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.2		
#20	97.9		
#40	96.0		
#60	78.6		
#100	22.7		
#200	2.5		

* (no specification provided)

Material Description		
SAND, (SP), fine grained		
<div> <div> Atterberg Limits PL= LL= PI= </div> <div> Coefficients D₉₀= 0.3021 D₈₅= 0.2731 D₆₀= 0.2088 D₅₀= 0.1920 D₃₀= 0.1616 D₁₅= 0.1152 D₁₀= 0.0969 C_u= 2.15 C_c= 1.29 </div> <div> Classification USCS= SP AASHTO= </div> <div> Remarks CADD CODE = CH10D965 </div> </div>		

Location: USACE Sample # BI-SI-10-10A
Sample Number: TE Lab ID: 4519.19

Depth: 0.0 - 2.0 (ft.)

Date: 6/12/10

Thompson Engineering
Mobile, Alabama

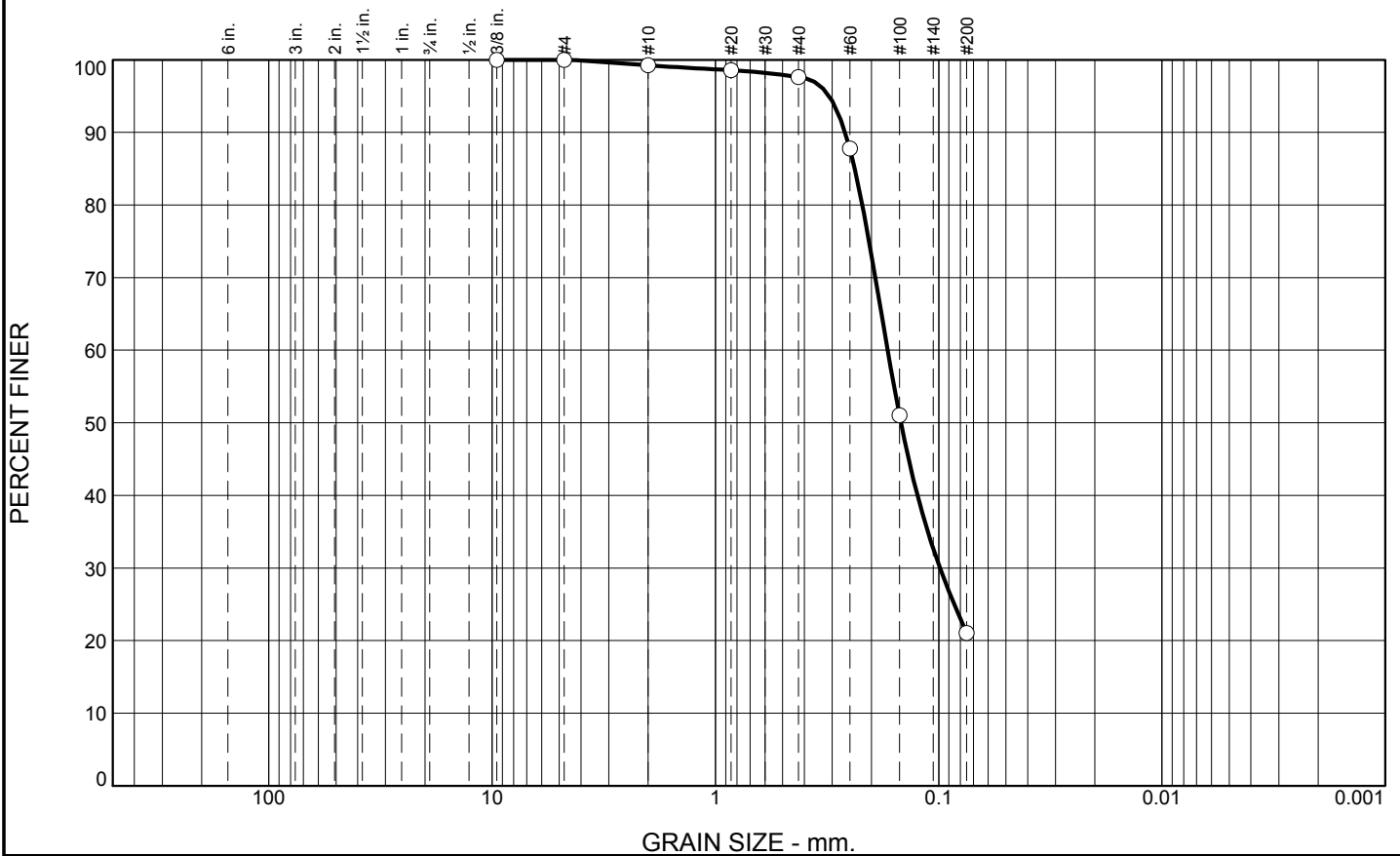
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.8	1.6	76.6	21.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.2		
#20	98.6		
#40	97.6		
#60	87.8		
#100	51.0		
#200	21.0		

* (no specification provided)

Material Description
SILTY SAND, (SM), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.2623 D₈₅= 0.2377 D₆₀= 0.1694
 D₅₀= 0.1477 D₃₀= 0.0987 D₁₅=
 D₁₀= C_u= C_c=

Classification
 USCS= SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-SI-10-10B
Sample Number: TE Lab ID: 4519.20

Depth: 2.0 - 4.4 (ft.)

Date: 6/12/10

Thompson Engineering

Mobile, Alabama

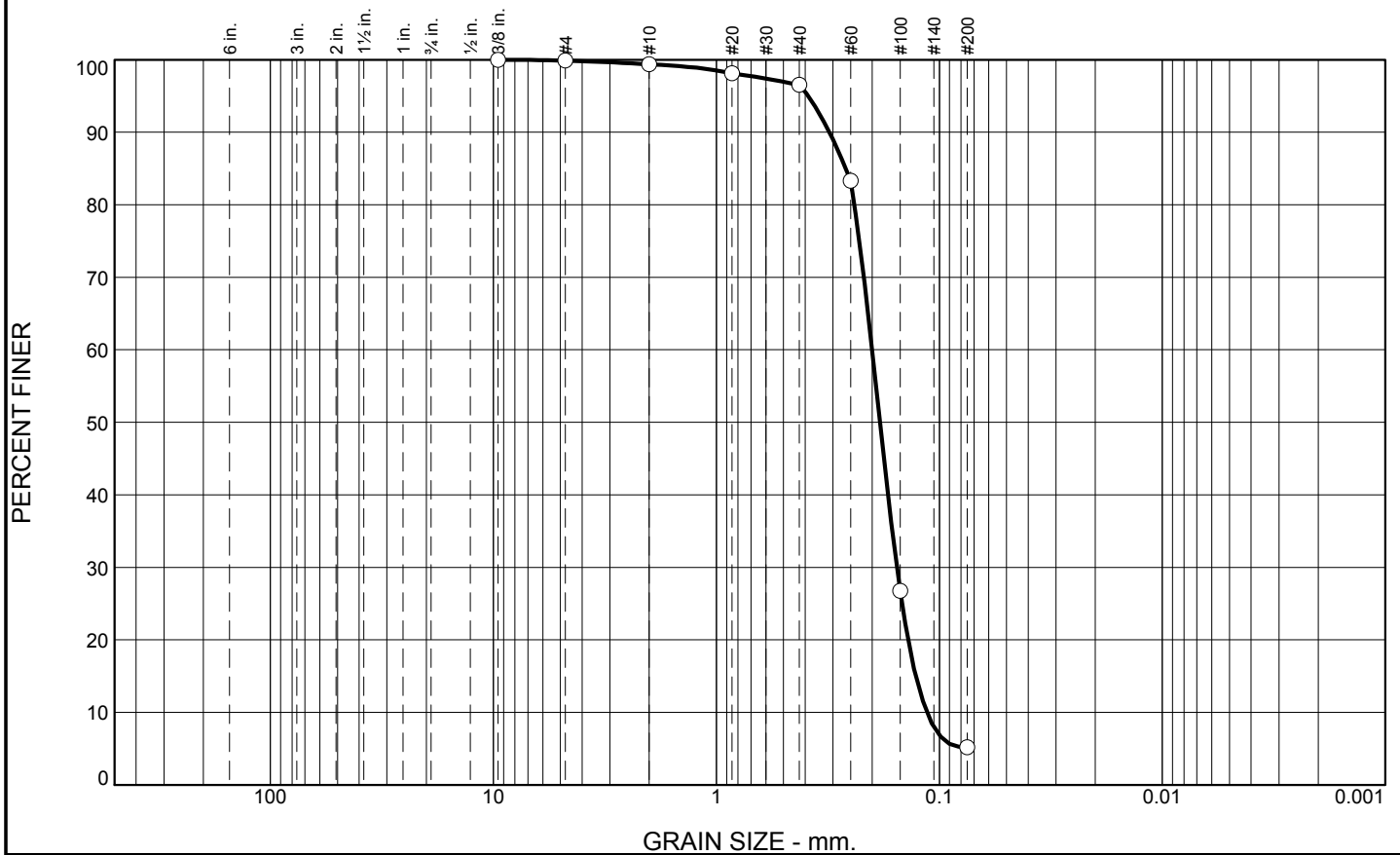
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.5	2.9	91.3	5.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.4		
#20	98.1		
#40	96.5		
#60	83.3		
#100	26.8		
#200	5.2		

* (no specification provided)

Material Description

SAND, (SP-SM), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.3110

D₈₅= 0.2630

D₆₀= 0.2003

D₅₀= 0.1847

D₃₀= 0.1551

D₁₅= 0.1275

D₁₀= 0.1137

C_u= 1.76

C_c= 1.06

Classification

USCS= SP-SM

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-SI-10-10C
Sample Number: TE Lab ID: 4519.21

Depth: 4.4 - 11.0 (ft.)

Date: 6/12/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Figure

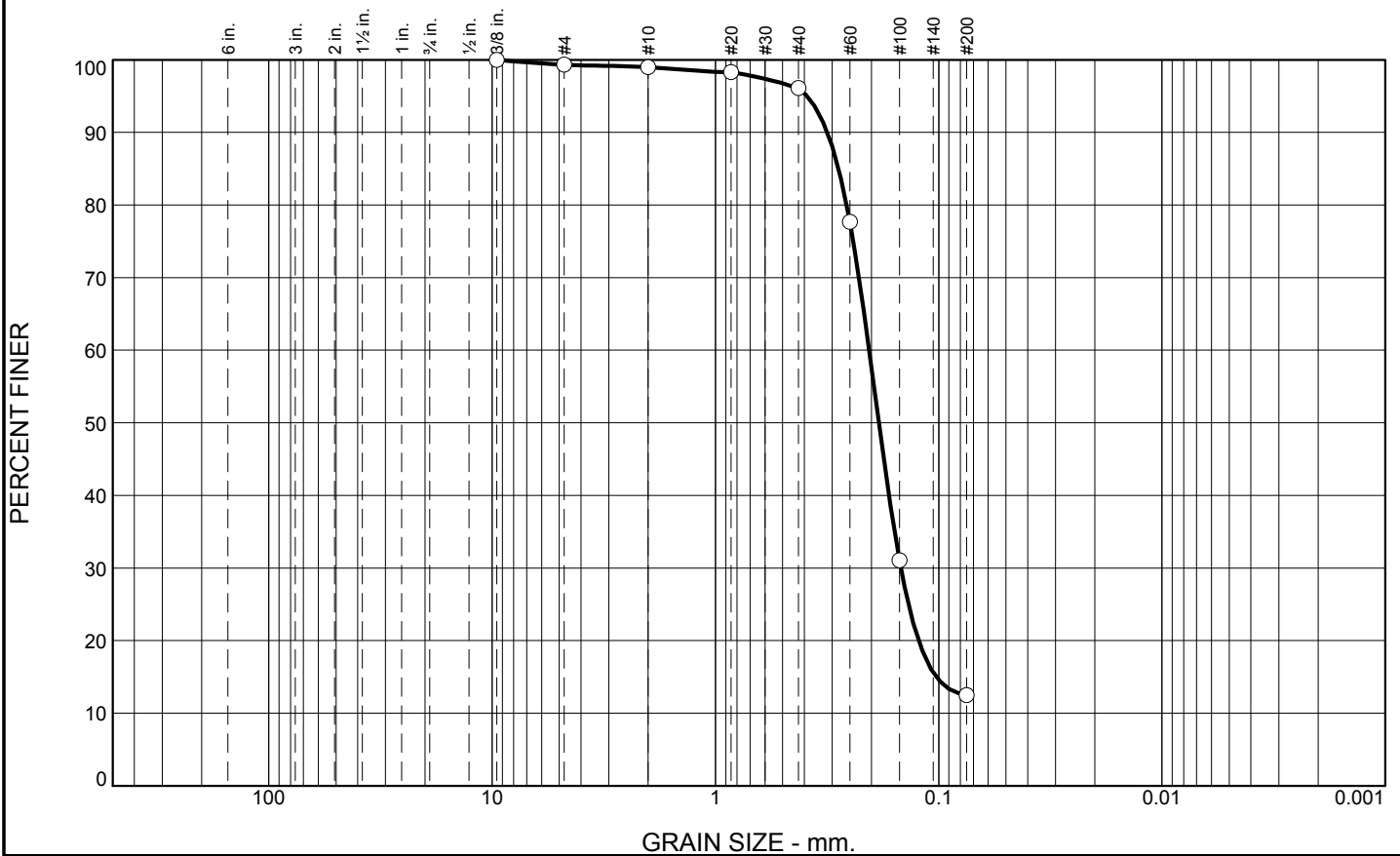
Tested By: R.Martin

Checked By: R.Byrd

Boring Designation BI-SI-11-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SI-11-10		LOCATION COORDINATES E = 965,992 N = 260,169		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 29 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-01-10		STARTED 06-01-10 COMPLETED 06-01-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -28.0 Ft.			
8. TOTAL DEPTH OF BORING 16.7 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-28.0	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little silt, trace shell fragments, lt. gray (SP)	A	Classification: SM Color: 5Y 6/2-light olive gray D50: 0.1853 mm % Fines: 12.5		
				B	Classification: SP-SM Color: 2.5Y 6/2-light brownish gray D50: 0.1726 mm % Fines: 6.4		
-39.5	11.5		CLAY, lean, dark gray (CL)				
-40.5	12.5						
-41.0	13.0		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little silt, trace shell fragments, lt. gray (SP)				
			CLAY, lean, dark gray (CL)	NS			
-44.7	16.7						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.7	0.3	2.9	83.6	12.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.3		
#10	99.0		
#20	98.3		
#40	96.1		
#60	77.7		
#100	31.1		
#200	12.5		

* (no specification provided)

Material Description
SILTY SAND, (SM), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.3153 D₈₅= 0.2809 D₆₀= 0.2049
 D₅₀= 0.1853 D₃₀= 0.1478 D₁₅= 0.1026
 D₁₀= C_u= C_c=

Classification
 USCS= SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-SI-11-10A
Sample Number: TE Lab ID: 4519.13

Depth: 0.0 - 5.0 (ft.)

Date: 6/12/10

Thompson Engineering

Mobile, Alabama

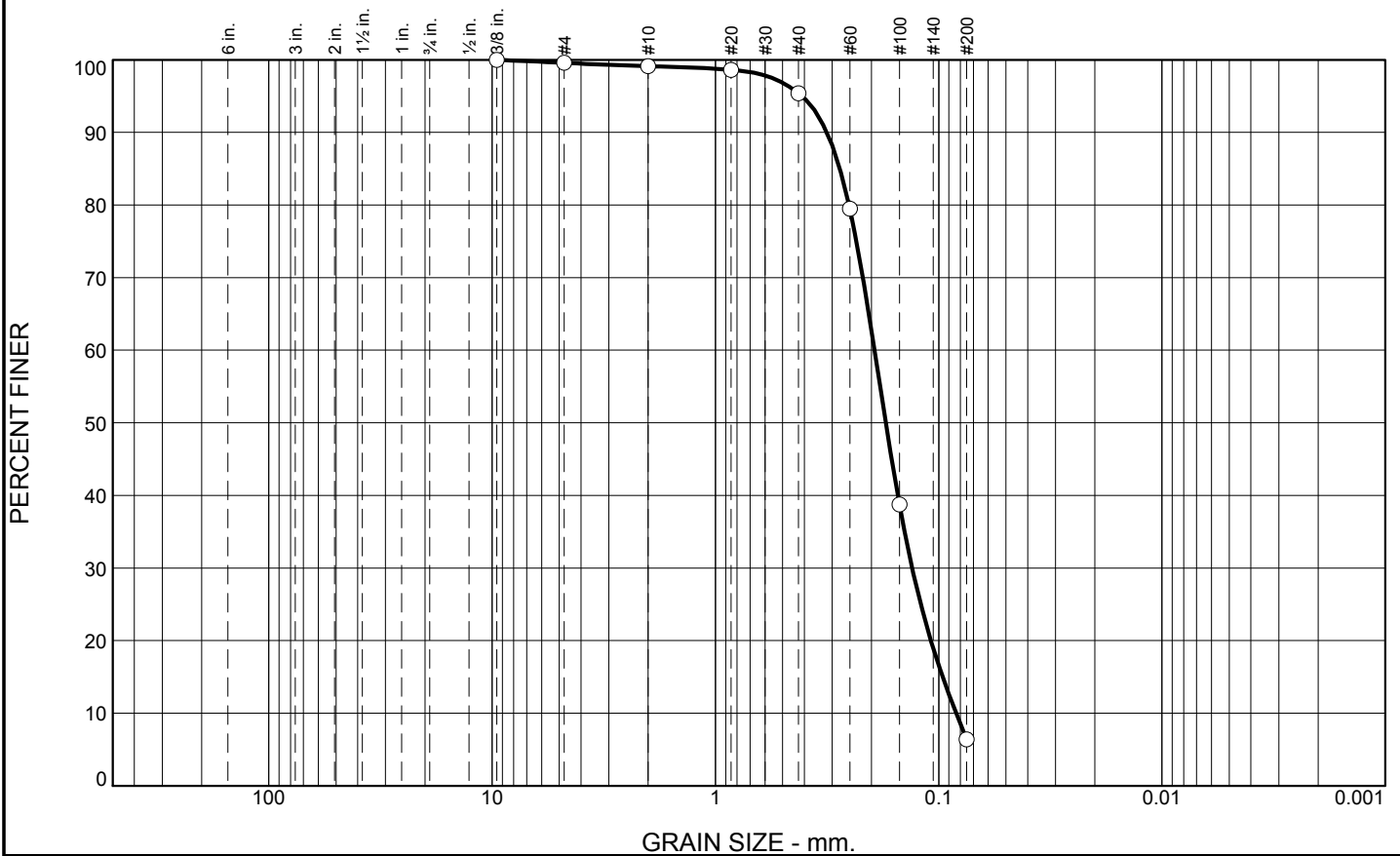
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.4	0.5	3.7	89.0	6.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.6		
#10	99.1		
#20	98.6		
#40	95.4		
#60	79.5		
#100	38.7		
#200	6.4		

* (no specification provided)

Material Description
SAND, (SP-SM), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.3167 D₈₅= 0.2771 D₆₀= 0.1939
 D₅₀= 0.1726 D₃₀= 0.1315 D₁₅= 0.0960
 D₁₀= 0.0836 C_u= 2.32 C_c= 1.07

Classification
 USCS= SP-SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-SI-11-10B
Sample Number: TE Lab ID: 4519.14

Depth: 5.0 - 11.5 (ft.)

Date: 6/12/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

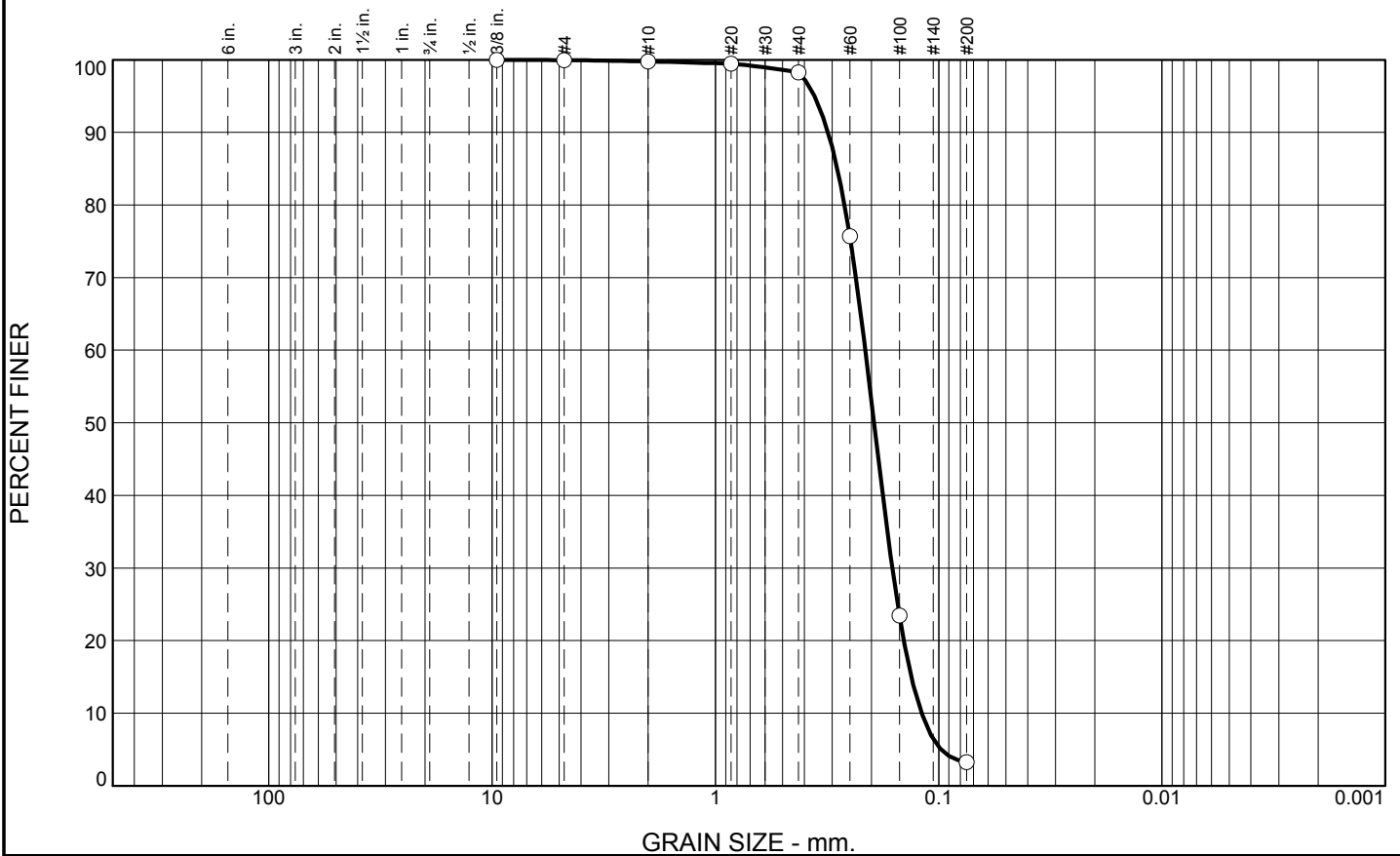
Tested By: R.Martin

Checked By: R.Byrd

Boring Designation BI-SI-12-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SI-12-10		LOCATION COORDINATES E = 962,387 N = 254,563		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 29 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-01-10		STARTED 06-01-10 COMPLETED 06-01-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -27.8 Ft.			
8. TOTAL DEPTH OF BORING 19.7 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-27.8	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, trace shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.1948 mm % Fines: 3.2		
-32.5	4.7		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, gray (SM)	B	Classification: SP-SM Color: 2.5Y 6/2-light brownish gray D50: 0.1609 mm % Fines: 10.3		
-36.1	8.3		CLAY, lean, dark gray (CL)	NS			
-41.8	14.0						
-42.8	15.0		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, gray (SM)				
			CLAY, lean, dark gray (CL)				
-47.5	19.7						
NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.							

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.1	1.5	95.1	3.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.8		
#20	99.5		
#40	98.3		
#60	75.7		
#100	23.4		
#200	3.2		

* (no specification provided)

Material Description

SAND, (SP), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.3127

D₈₅= 0.2843

D₆₀= 0.2132

D₅₀= 0.1948

D₃₀= 0.1614

D₁₅= 0.1326

D₁₀= 0.1192

C_u= 1.79

C_c= 1.03

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-SI-12-10A
Sample Number: TE Lab ID: 4519.01

Depth: 0.0 - 4.7 (ft.)

Date: 6/12/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

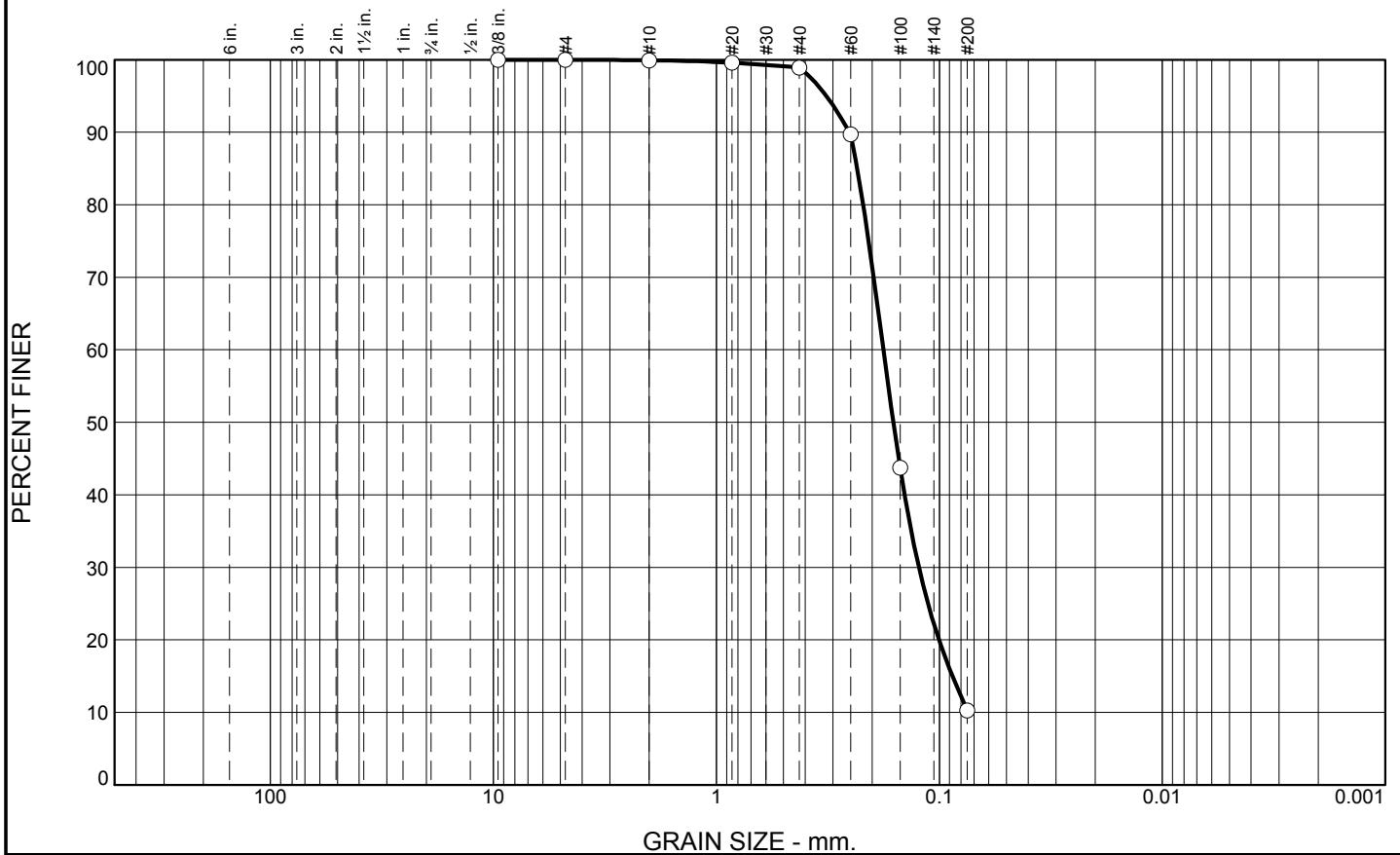
Project No: 10-2123-0009

Figure

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	1.0	88.6	10.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.6		
#40	98.9		
#60	89.7		
#100	43.7		
#200	10.3		

* (no specification provided)

Material Description
SAND, (SP-SM), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.2531 D₈₅= 0.2334 D₆₀= 0.1783
 D₅₀= 0.1609 D₃₀= 0.1236 D₁₅= 0.0874
 D₁₀= C_u= C_c=

Classification
 USCS= SP-SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-SI-12-10B
Sample Number: TE Lab ID: 4519.02

Depth: 4.7 - 8.5 (ft.)

Date: 6/12/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

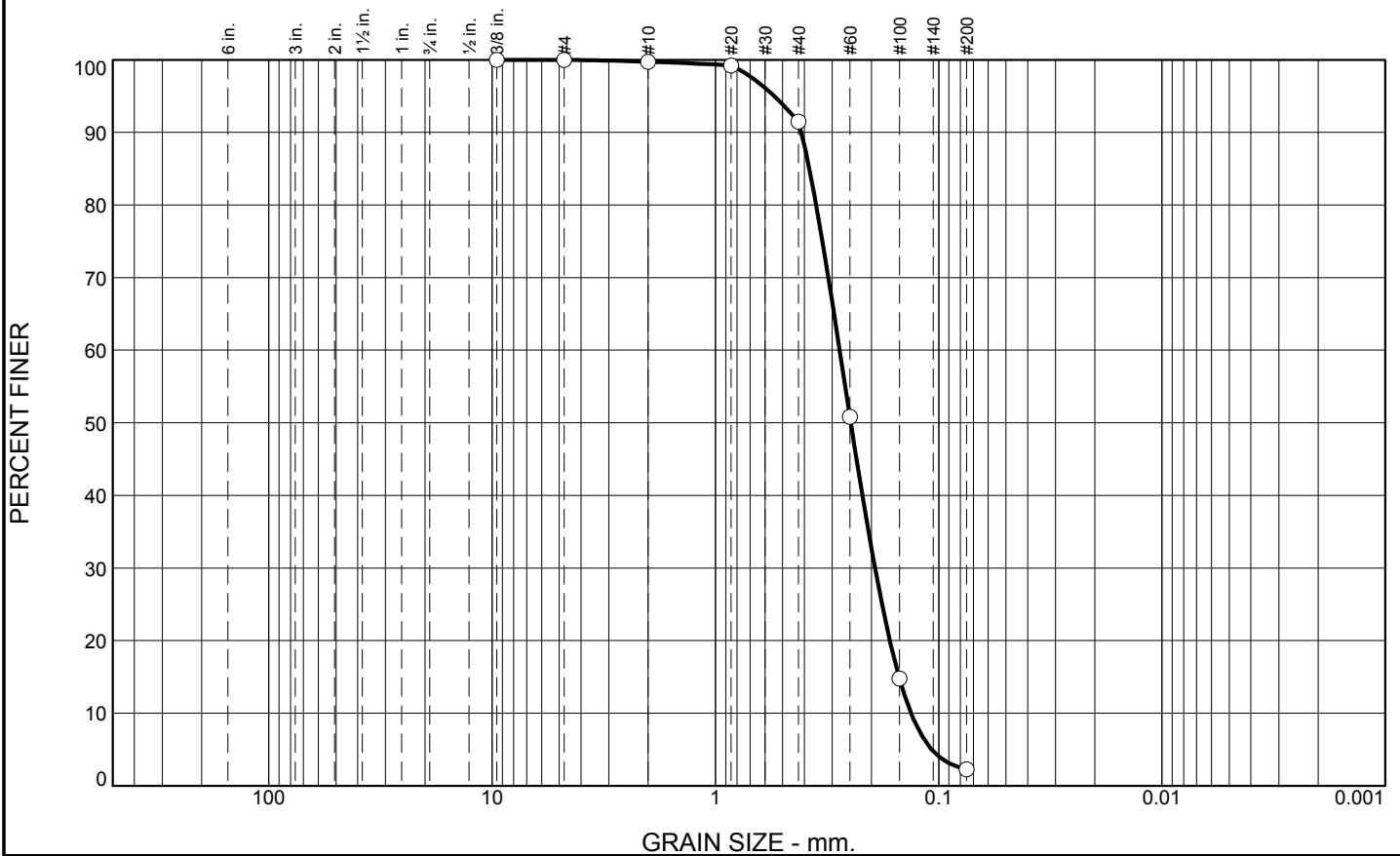
Tested By: R.Martin

Checked By: R.Byrd

Boring Designation BI-SI-13-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SI-13-10		LOCATION COORDINATES E = 970,966 N = 258,821		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 31 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-01-10		STARTED 06-01-10 COMPLETED 06-01-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -30.1 Ft.			
8. TOTAL DEPTH OF BORING 18.9 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-30.1	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little silt, trace shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.2476 mm % Fines: 2.3		
				B	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.2046 mm % Fines: 2.3		
				C	Classification: SP-SM Color: 5Y 7/2-light gray D50: 0.165 mm % Fines: 5.9		
-43.3	13.2						
			CLAY, lean, dark gray (CL)	NS			
-49.0	18.9						
			NOTES:				
			1. Soils are field visually classified in accordance with the Unified Soils Classification System.				
			2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.3	8.2	89.2	2.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.7		
#20	99.2		
#40	91.5		
#60	50.8		
#100	14.8		
#200	2.3		

* (no specification provided)

Material Description		
SAND, (SP), fine grained		
<div> <div> Atterberg Limits </div> <div> PL= </div> <div> LL= </div> <div> PI= </div> </div>		
<div> <div> Coefficients </div> <div> D₉₀= 0.4131 </div> <div> D₅₀= 0.2476 </div> <div> D₁₀= 0.1330 </div> <div> D₈₅= 0.3799 </div> <div> D₃₀= 0.1929 </div> <div> C_u= 2.09 </div> <div> D₆₀= 0.2777 </div> <div> D₁₅= 0.1507 </div> <div> C_c= 1.01 </div> </div>		
<div> <div> Classification </div> <div> USCS= SP </div> <div> AASHTO= </div> </div>		
<div> <div> Remarks </div> <div> CADD CODE = CH10D965 </div> </div>		

Location: USACE Sample # BI-SI-13-10A
Sample Number: TE Lab ID: 4519.10

Depth: 0.0 - 5.0 (ft.)

Date: 6/12/10

Thompson Engineering
Mobile, Alabama

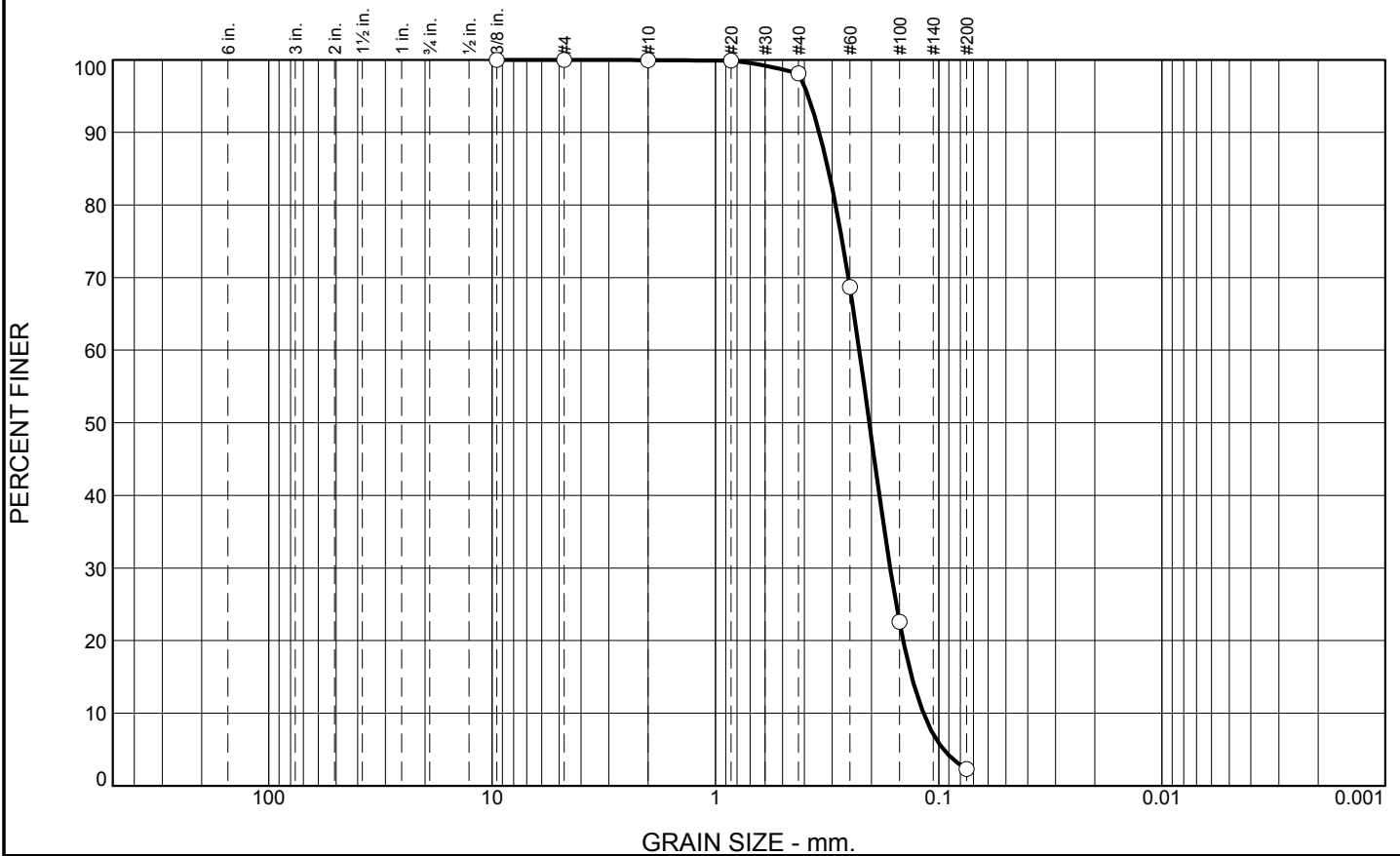
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	1.8	95.8	2.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.9		
#40	98.1		
#60	68.7		
#100	22.6		
#200	2.3		

* (no specification provided)

Material Description		
SAND, (SP), fine grained		
<div> <div> Atterberg Limits PL= LL= PI= </div> <div> Coefficients D₉₀= 0.3426 D₈₅= 0.3127 D₆₀= 0.2270 D₅₀= 0.2046 D₃₀= 0.1650 D₁₅= 0.1320 D₁₀= 0.1170 C_u= 1.94 C_c= 1.02 </div> <div> Classification USCS= SP AASHTO= </div> <div> Remarks CADD CODE = CH10D965 </div> </div>		

Location: USACE Sample # BI-SI-13-10B
Sample Number: TE Lab ID: 4519.11

Depth: 5.0 - 10.0 (ft.)

Date: 6/12/10

Thompson Engineering
Mobile, Alabama

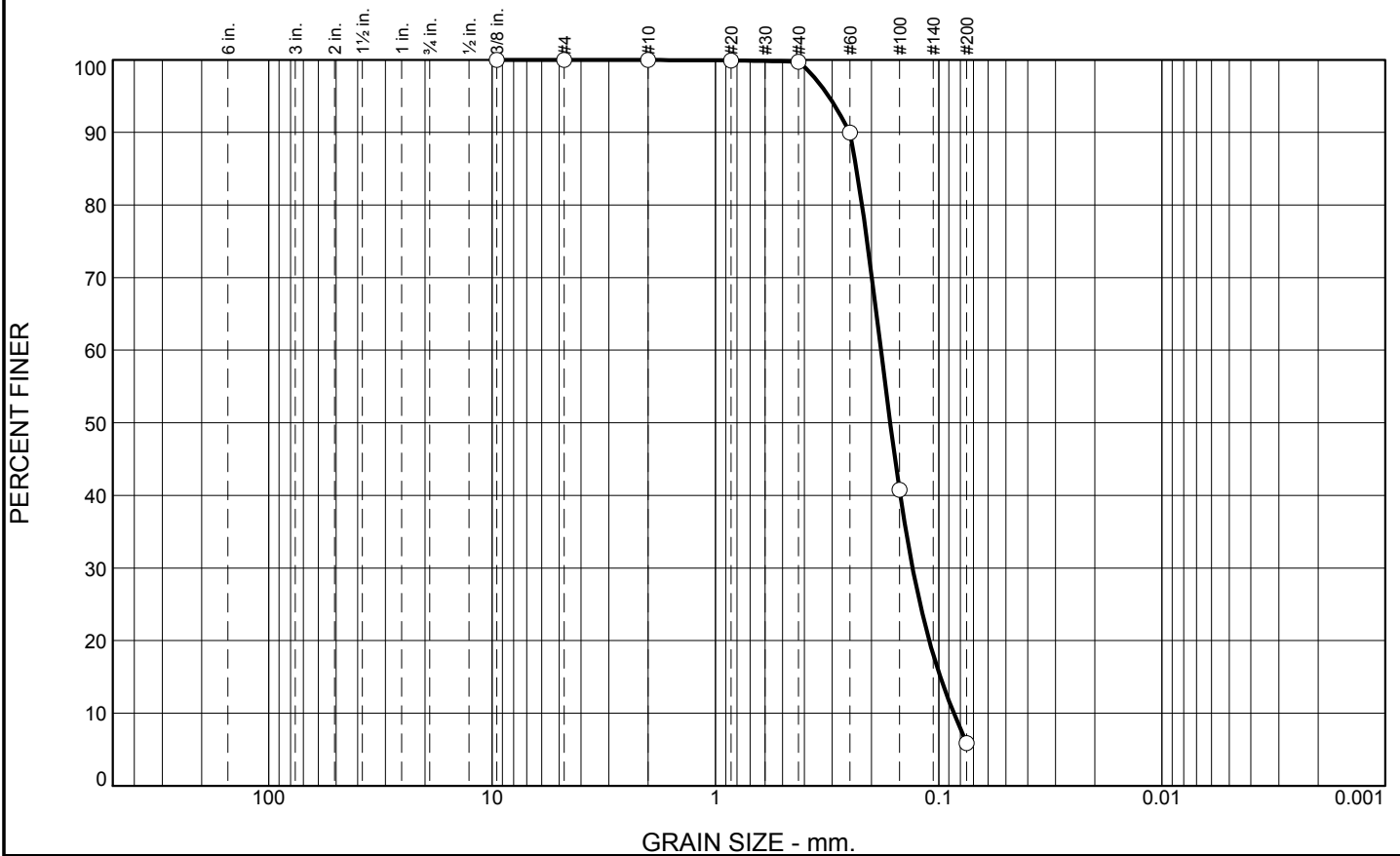
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.3	93.8	5.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	99.7		
#60	90.0		
#100	40.8		
#200	5.9		

* (no specification provided)

Material Description

SAND, (SP-SM), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.2503

D₈₅= 0.2336

D₆₀= 0.1814

D₅₀= 0.1650

D₃₀= 0.1309

D₁₅= 0.0984

D₁₀= 0.0856

C_u= 2.12

C_c= 1.10

Classification

USCS= SP-SM

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-SI-13-10C
Sample Number: TE Lab ID: 4519.12

Depth: 10.0 - 13.2 (ft.)

Date: 6/12/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Figure

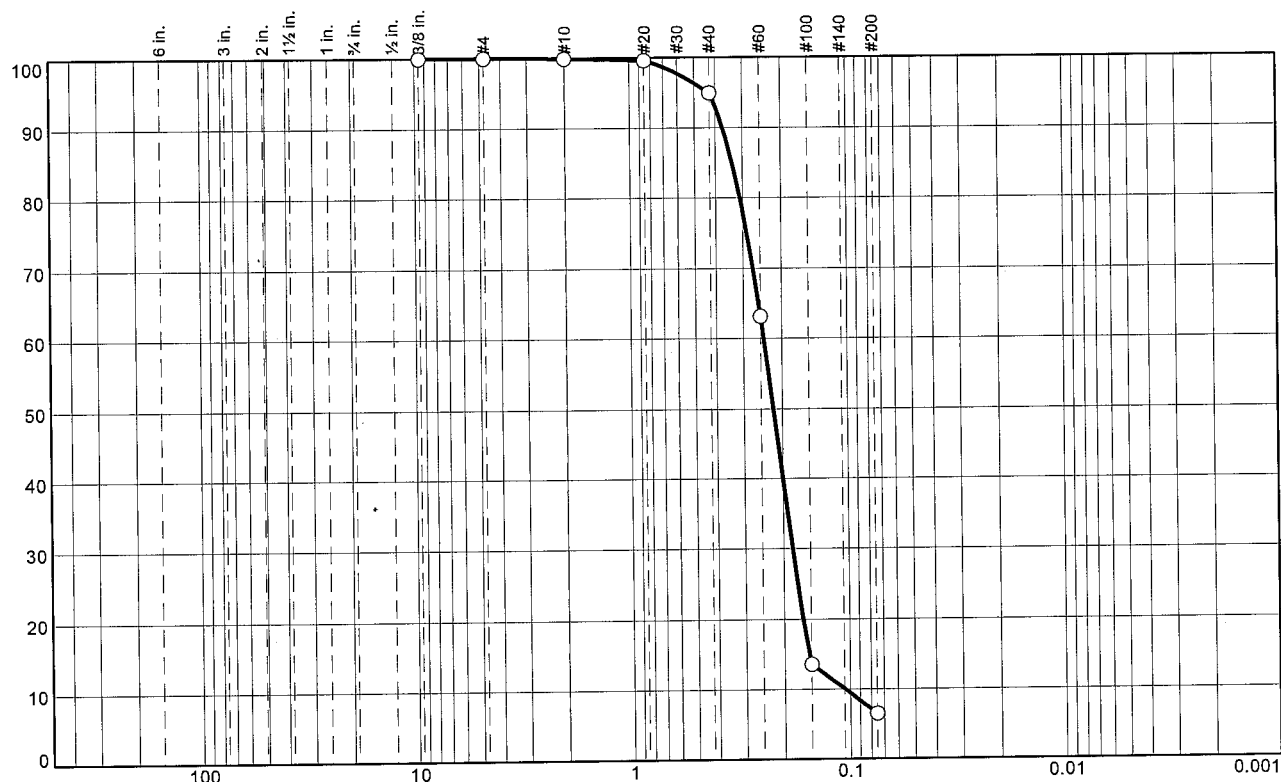
Tested By: R.Martin

Checked By: R.Byrd

Boring Designation BI-SI-14-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SI-14-10		LOCATION COORDINATES E = 970,540 N = 254,224		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 4		DISTURBED 4 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 30 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-08-10		STARTED 06-08-10 COMPLETED 06-08-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -29.0 Ft.			
8. TOTAL DEPTH OF BORING 19.5 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-29.0	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, trace shell fragments, lt. gray (SP)	A	Classification: SP-SM Color: 5Y 7/1-light gray D50: 0.2196 mm % Fines: 6.5		
				B	Classification: SP-SM Color: 2.5Y 7/1-light gray D50: 0.1838 mm % Fines: 6.3		
-37.0	8.0		SAND, silty, some silt, trace shell fragments, gray (SM)	C	Classification: SM Color: 2.5Y 6/2-light brownish gray D50: 0.1542 mm % Fines: 13.9		
				D	Classification: SM Color: 2.5Y 5/2-grayish brown D50: 0.1646 mm % Fines: 19.8		
-45.5	16.5		CLAY, lean, dark gray (CL)	NS			
-48.5	19.5						
			NOTES:				
			1. Soils are field visually classified in accordance with the Unified Soils Classification System.				
			2. NS = Sample not submitted for laboratory analysis from this interval.				

PERCENT FINER



GRAIN SIZE - mm.

GRAIN SIZE - mm.							
% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	4.9	88.5	6.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.6		
#40	95.0		
#60	63.1		
#100	13.6		
#200	6.5		

* (no specification provided)

SAND, (SP-SM), fine grained

$$PL =$$
$$LL =$$
$$P| =$$
$$D_{90} = 0.3709$$
$$D_{g5} = 0.3355$$
$$D_{60} = 0.2420$$

D50= 0.2196

$$D_{30} = 0.1816$$
$$D_{15} = 0.1531$$
$$D_{10} = 0.1056$$
$$C_y^{\infty} = 2.29$$
$$C_C = 1.29$$

USCS= SP-SM

AASHTO=

Remarks

CADD CODE =CH10D965

Depth: 0.0 - 4.0 (ft.)

Date: 6/19/10

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

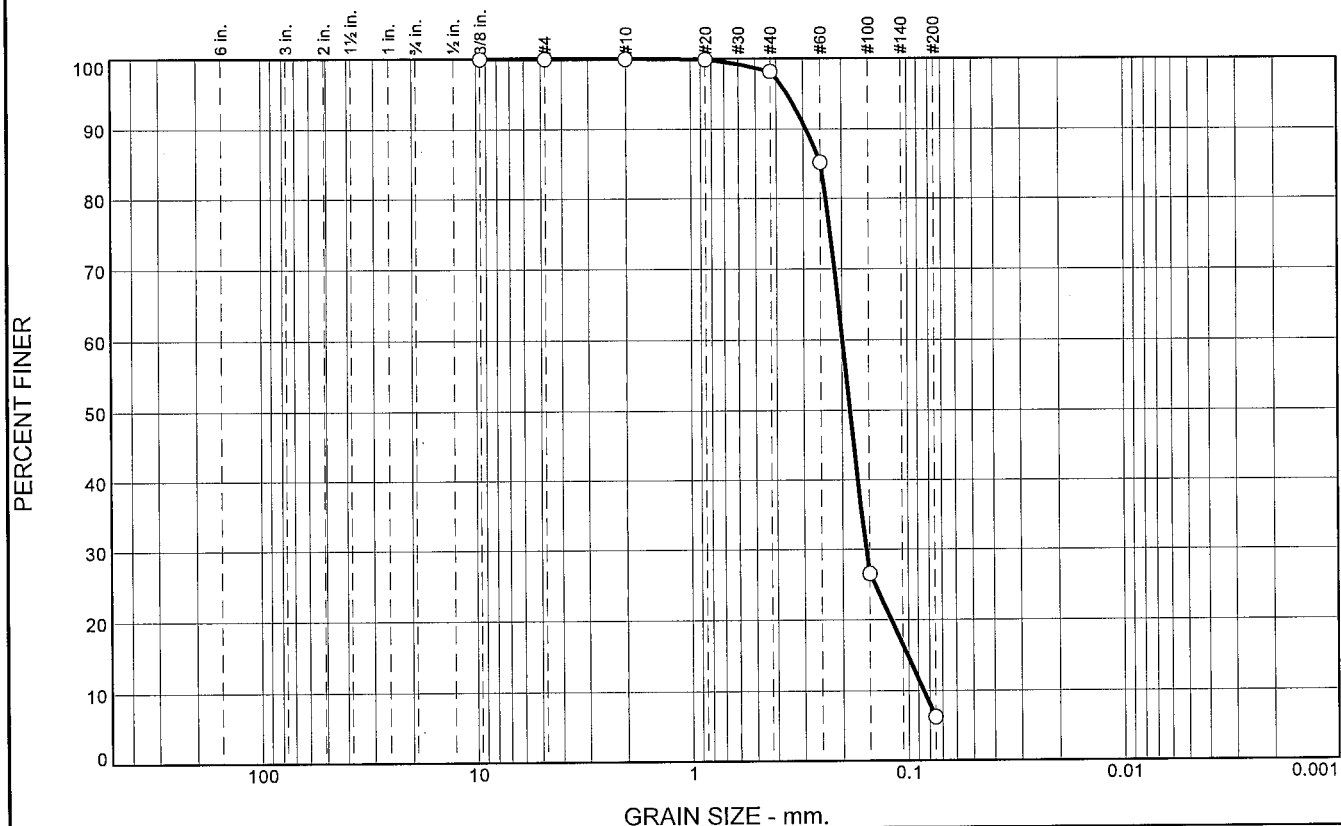
Figure

Mobile, Alabama

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.8	91.9	6.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	98.2		
#60	85.1		
#100	26.6		
#200	6.3		

* (no specification provided)

Material Description

SAND, (SP-SM), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.2918

D₈₅= 0.2496

D₆₀= 0.1988

D₅₀= 0.1838

D₃₀= 0.1553

D₁₅= 0.1011

D₁₀= 0.0852

C_u= 2.33

C_c= 1.42

Classification

USCS= SP-SM

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-SI-14-10B
Sample Number: TE Lab ID: 4538.05

Depth: 4.0 - 8.0 (ft.)

Date: 6/19/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

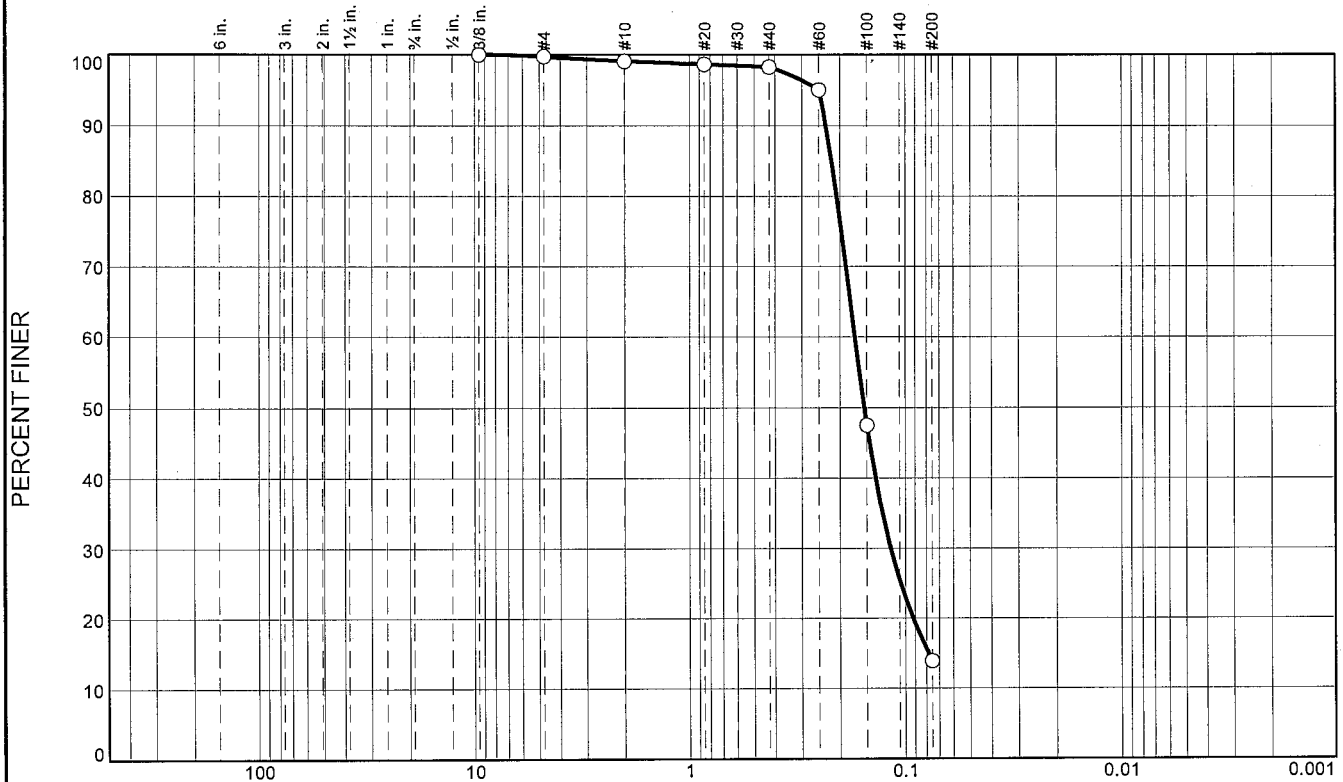
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.3	0.6	0.8	84.4	13.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.7		
#10	99.1		
#20	98.7		
#40	98.3		
#60	95.0		
#100	47.5		
#200	13.9		

* (no specification provided)

Material Description

SILTY SAND, (SM), fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.2317 D₈₅= 0.2182 D₆₀= 0.1704
D₅₀= 0.1542 D₃₀= 0.1168 D₁₅= 0.0781
D₁₀= C_u= C_c=

Classification

USCS= SM AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-SI-14-10C
Sample Number: TE Lab ID: 4538.72

Depth: 8.0 - 12.0 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

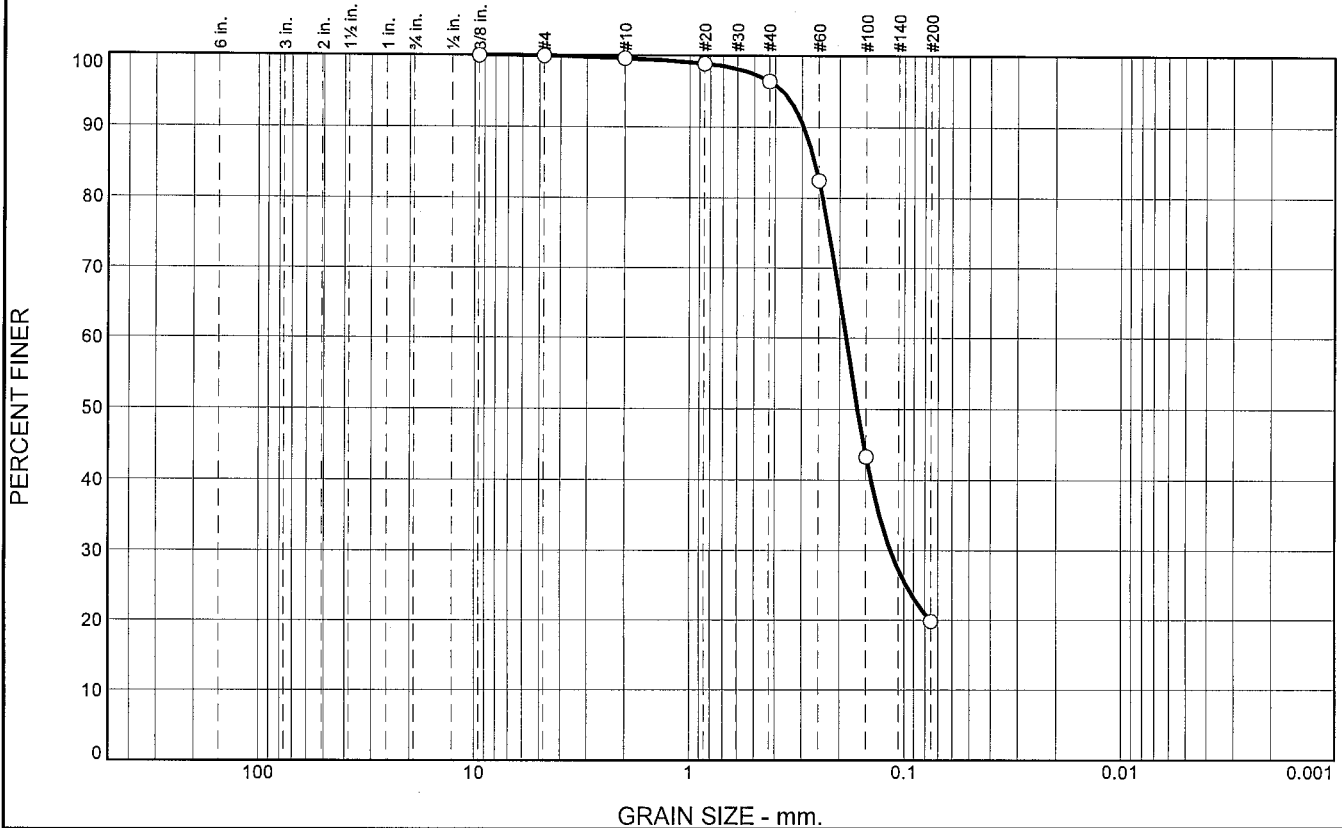
Project No: 10-2123-0009

Figure

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.3	3.2	76.6	19.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.6		
#20	98.9		
#40	96.4		
#60	82.5		
#100	43.2		
#200	19.8		

* (no specification provided)

Material Description
SILTY SAND, (SM), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.2946 D₈₅= 0.2617 D₆₀= 0.1860
 D₅₀= 0.1646 D₃₀= 0.1156 D₁₅=
 D₁₀= C_u= C_c=

Classification
 USCS= SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-SI-14-10D
 Sample Number: TE Lab ID: 4538.73

Depth: 12.0 - 16.5 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: R.Martin

Checked By: R.Byrd

Boring Designation BI-SI-15-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SI-15-10		LOCATION COORDINATES E = 947,708 N = 251,640		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 0 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 28 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING		STARTED 06-01-10 COMPLETED 06-01-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -26.6 Ft.			
8. TOTAL DEPTH OF BORING 16.5 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-26.6	0.0		CLAY, lean, dark gray (CL)				
				NS			
-43.1	16.5		NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Boring Designation BI-SI-16-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SI-16-10		LOCATION COORDINATES E = 941,470 N = 250,905		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 0		DISTURBED 0 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		BEARING		13. TOTAL NUMBER CORE BOXES	
6. THICKNESS OF OVERBURDEN N/A				14. WATER DEPTH 25 Ft.			
7. DEPTH DRILLED INTO ROCK N/A				15. DATE BORING 06-01-10		STARTED 06-01-10 COMPLETED 06-01-10	
8. TOTAL DEPTH OF BORING 15.3 Ft.				16. ELEVATION TOP OF BORING -23.5 Ft.			
				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-23.5	0.0		CLAY, lean, dark gray (CL)				
				NS			
-38.8	15.3		NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Boring Designation BI-SI-17-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SI-17-10		LOCATION COORDINATES E = 957,925 N = 251,514		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		BEARING		13. TOTAL NUMBER CORE BOXES	
6. THICKNESS OF OVERBURDEN N/A				14. WATER DEPTH 28 Ft.			
7. DEPTH DRILLED INTO ROCK N/A				15. DATE BORING 06-01-10		STARTED COMPLETED 06-01-10	
8. TOTAL DEPTH OF BORING 19.7 Ft.				16. ELEVATION TOP OF BORING -27.2 Ft.			
				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-27.2	0.0		CLAY, lean, dark gray (CL)				
				NS			
-46.9	19.7						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Boring Designation BI-SI-19-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SI-19-10		LOCATION COORDINATES E = 964,482 N = 249,241		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 30 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-08-10		STARTED COMPLETED 06-08-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -29.4 Ft.			
8. TOTAL DEPTH OF BORING 19.5 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-29.4	0.0		CLAY, lean, dark gray (CL)				
				NS			
-48.9	19.5		NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

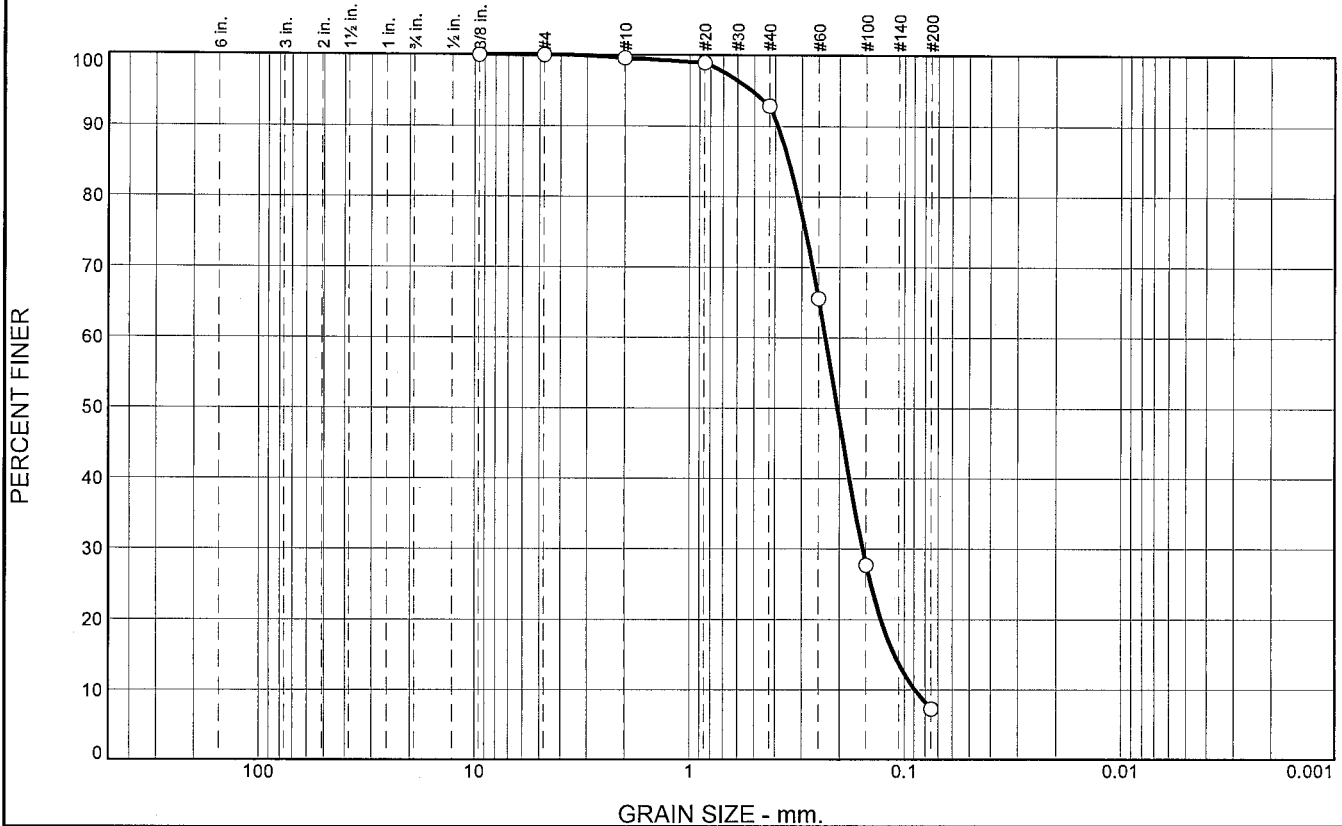
Boring Designation BI-SI-20-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SI-20-10		LOCATION COORDINATES E = 957,512 N = 245,826		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		BEARING		13. TOTAL NUMBER CORE BOXES	
6. THICKNESS OF OVERBURDEN N/A				14. WATER DEPTH 29 Ft.			
7. DEPTH DRILLED INTO ROCK N/A				15. DATE BORING 06-08-10		STARTED COMPLETED 06-08-10	
8. TOTAL DEPTH OF BORING 19.1 Ft.				16. ELEVATION TOP OF BORING -28.6 Ft.			
				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-28.6	0.0		CLAY, lean, dark gray (CL)				
				NS			
-47.7	19.1						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Boring Designation BI-SI-21-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SI-21-10		LOCATION COORDINATES E = 953,703 N = 225,369		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 21 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-09-10		STARTED 06-09-10 COMPLETED 06-09-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -19.2 Ft.			
8. TOTAL DEPTH OF BORING 14.3 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-19.2	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, trace shell fragments, lt. gray (SP)	A	Classification: SP-SM Color: 2.5Y 6/2-light brownish gray D50: 0.2043 mm % Fines: 7.3		
				B	Classification: SP-SM Color: 2.5Y 7/1-light gray D50: 0.2756 mm % Fines: 6.5		
-27.5	8.3						
			SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments, gray (SM)	C	Classification: SM Color: 2.5Y 5/2-grayish brown D50: 0.1631 mm % Fines: 29.6		
-30.4	11.2						
			CLAY, lean, dark gray (CL)	NS			
-33.5	14.3						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.5	6.6	85.6	7.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.5		
#20	98.9		
#40	92.9		
#60	65.6		
#100	27.7		
#200	7.3		

* (no specification provided)

<u>Material Description</u>		
SAND, (SP-SM), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.3894	D ₈₅ = 0.3457	D ₆₀ = 0.2321
D ₅₀ = 0.2043	D ₃₀ = 0.1557	D ₁₅ = 0.1113
D ₁₀ = 0.0892	C _u = 2.60	C _c = 1.17
<u>Classification</u>		
USCS= SP-SM	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-SI-21-10A
Sample Number: TE Lab ID: 4538.06

Depth: 0.0 - 4.0 (ft.)

Date: 6/19/10

Thompson Engineering
Mobile, Alabama

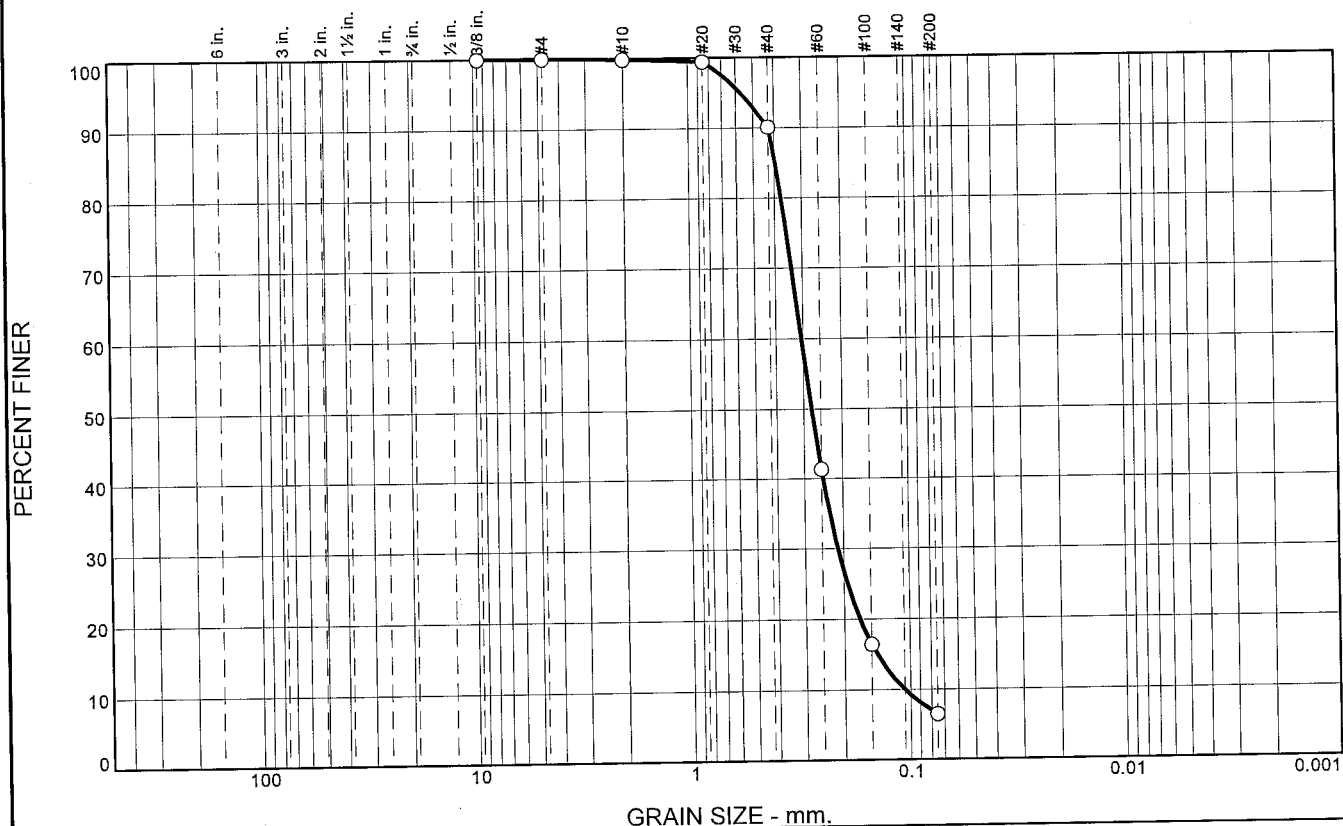
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	9.8	83.5	6.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.8		
#20	99.4		
#40	90.0		
#60	41.3		
#100	16.4		
#200	6.5		

* (no specification provided)

Material Description

SAND, (SP-SM), fine grained, with clay nodules

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.4247
D₅₀= 0.2756
D₁₀= 0.1061

D₈₅= 0.3965
D₃₀= 0.2125
C_u= 2.87

D₆₀= 0.3048
D₁₅= 0.1414
C_c= 1.40

Classification

USCS= SP-SM

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-SI-21-10B
Sample Number: TE Lab ID: 4538.07

Depth: 4.0 - 8.3 (ft.)

Date: 6/19/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

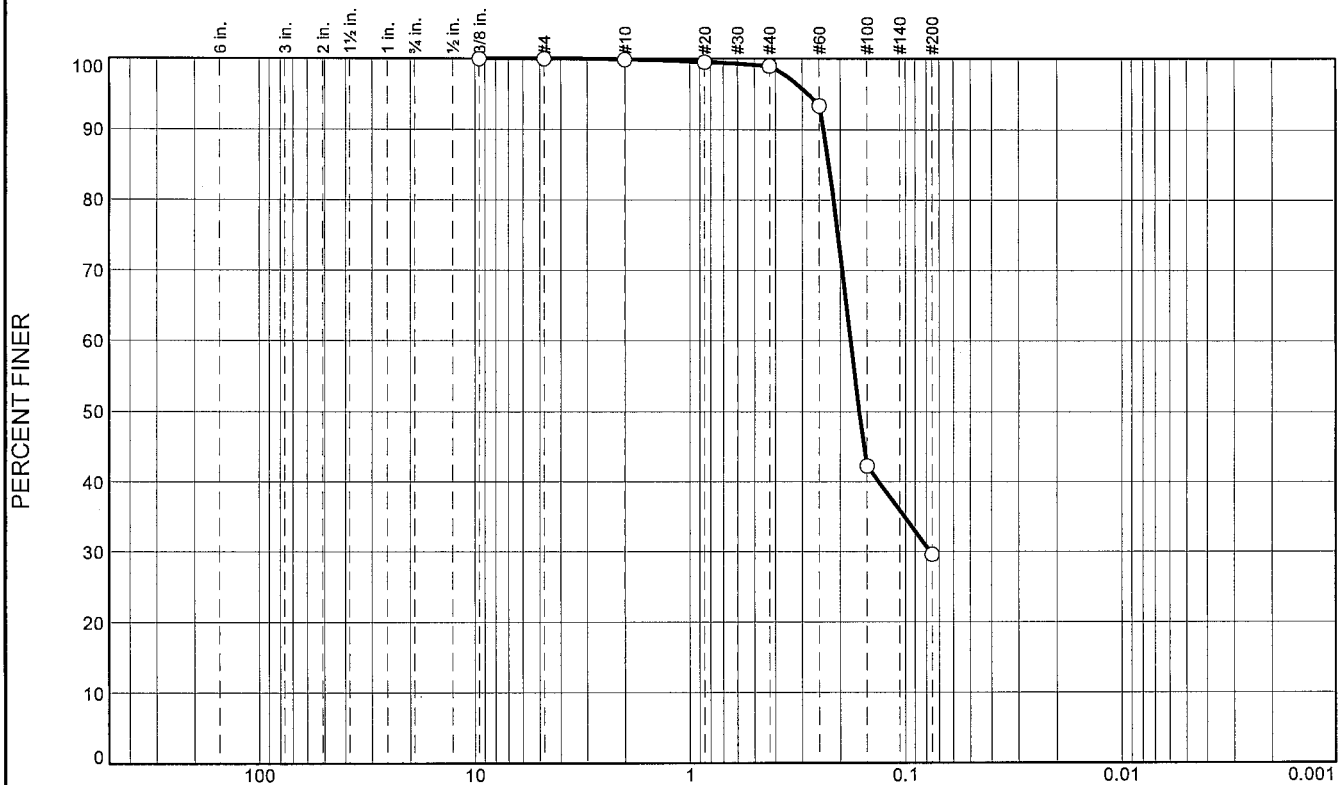
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	0.9	69.4	29.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.5		
#40	99.0		
#60	93.4		
#100	42.3		
#200	29.6		

* (no specification provided)

Material Description

SILTY SAND, (SM), fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.2387 D₈₅= 0.2254 D₆₀= 0.1791
D₅₀= 0.1631 D₃₀= 0.0768 D₁₅=
D₁₀= C_u= C_c=

Classification

USCS= SM AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-SI-21-10C
Sample Number: TE Lab ID: 4538.74

Depth: 8.3 - 11.2 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Figure

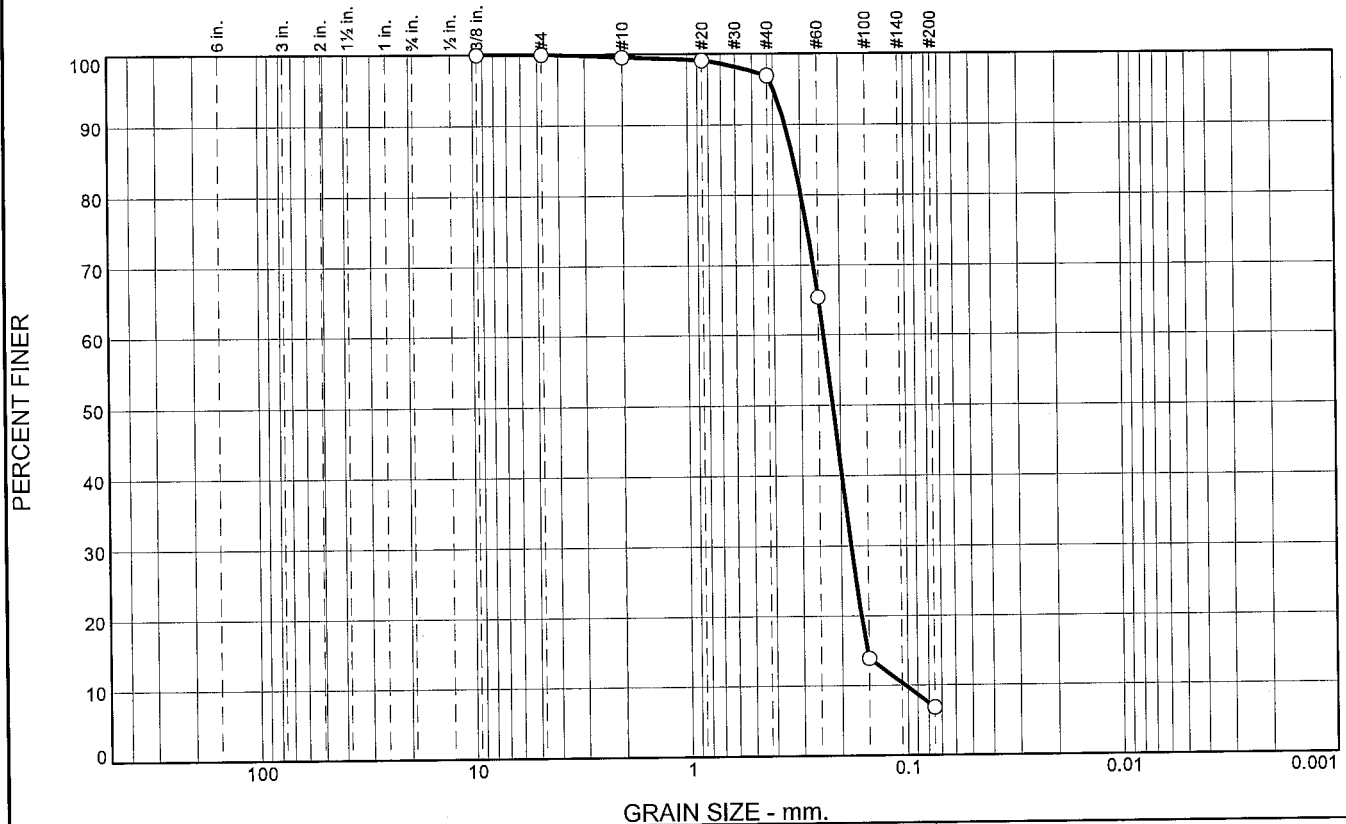
Tested By: R.Martin

Checked By: R.Byrd

Boring Designation BI-SI-22-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SI-22-10		LOCATION COORDINATES E = 955,046 N = 255,109		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 21 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-09-10		STARTED 06-09-10 COMPLETED 06-09-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -19.2 Ft.			
8. TOTAL DEPTH OF BORING 13.9 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-19.2	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, trace shell fragments, lt. gray (SP)	A	Classification: SP-SM Color: 2.5Y 7/1-light gray D50: 0.216 mm % Fines: 6.8		
				B	Classification: SP-SM Color: 2.5Y 6/2-light brownish gray D50: 0.1913 mm % Fines: 9.4		
-27.2	8.0		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments, gray (SM)	C	Classification: SM Color: 2.5Y 5/2-grayish brown D50: 0.1741 mm % Fines: 23.7		
-28.8	9.6						
			CLAY, lean, dark gray (CL)	NS			
-33.1	13.9						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.4	2.7	90.1	6.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.6		
#20	99.1		
#40	96.9		
#60	65.4		
#100	13.8		
#200	6.8		

* (no specification provided)

Material Description

SAND, (SP-SM), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.3526

D₈₅= 0.3216

D₆₀= 0.2370

D₅₀= 0.2160

D₃₀= 0.1799

D₁₅= 0.1525

D₁₀= 0.1028

C_u= 2.31

C_c= 1.33

Classification

USCS= SP-SM

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-SI-22-10A
Sample Number: TE Lab ID: 4538.21

Depth: 0.0 - 4.0 (ft.)

Date: 6/19/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

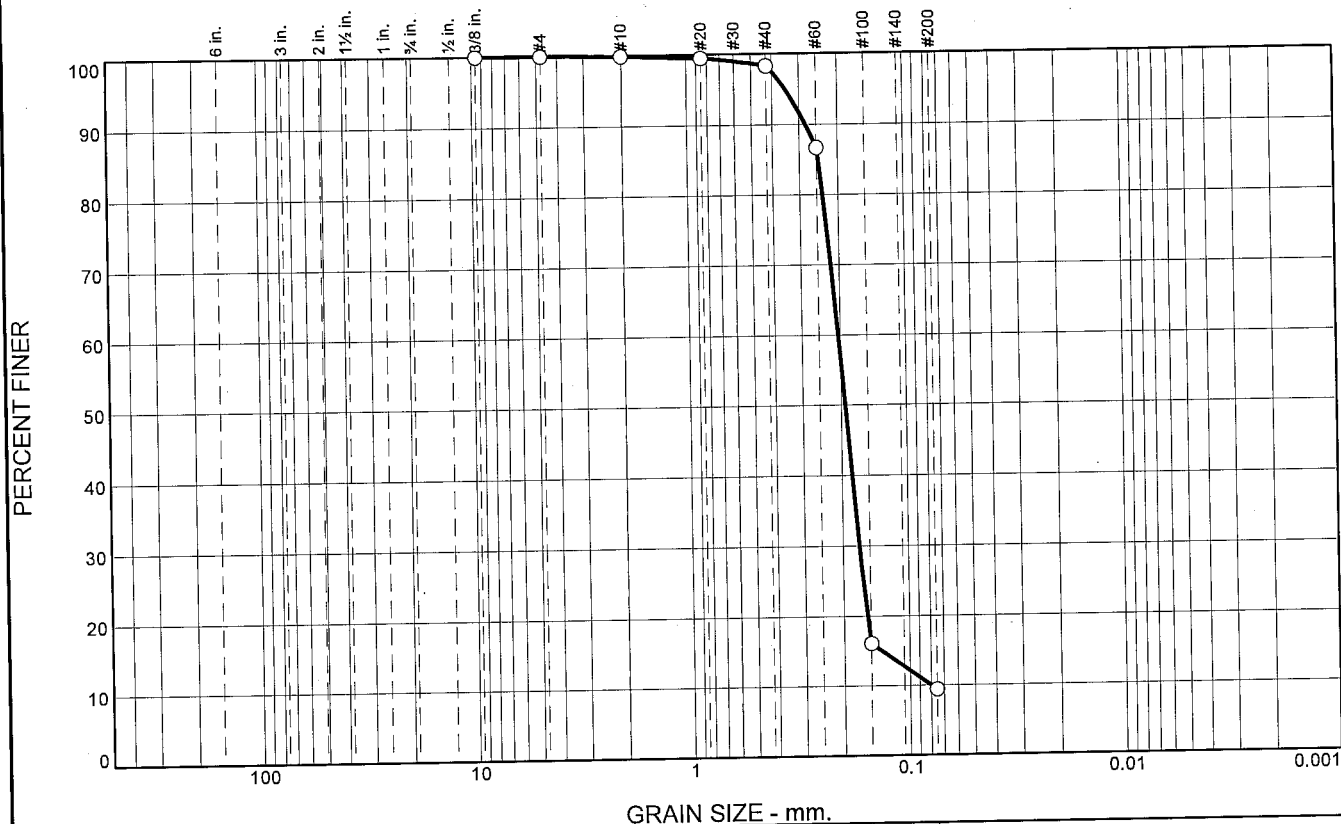
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	1.5	88.9	9.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.8		
#20	99.5		
#40	98.3		
#60	86.6		
#100	16.1		
#200	9.4		

* (no specification provided)

Material Description

SAND, (SP-SM), fine grained, with clay pockets

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.2810

D₈₅= 0.2460

D₆₀= 0.2040

D₅₀= 0.1913

D₃₀= 0.1677

D₁₅= 0.1343

D₁₀= 0.0800

C_u= 2.55

C_c= 1.72

Classification

USCS= SP-SM

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-SI-22-10B
Sample Number: TE Lab ID: 4538.22

Depth: 4.0 - 8.0 (ft.)

Date: 6/19/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

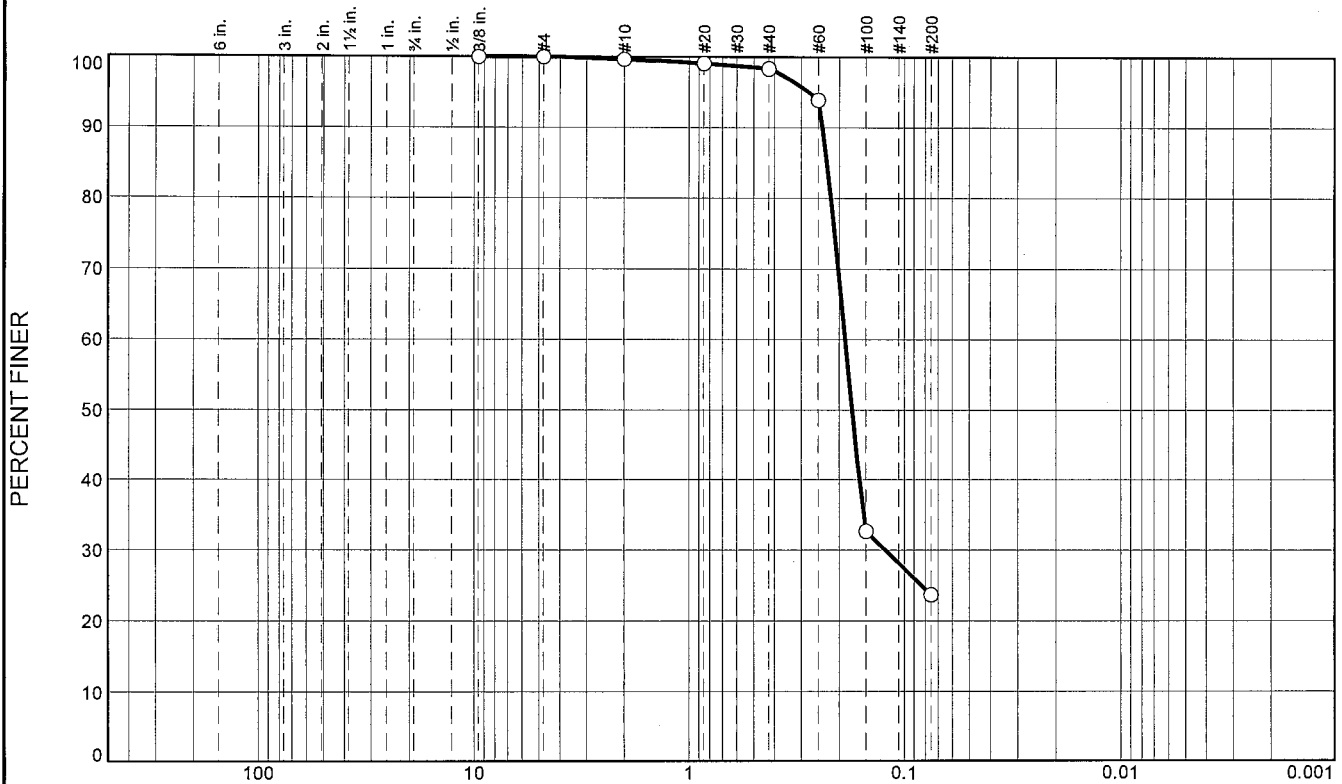
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.4	1.2	74.7	23.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.6		
#20	98.4		
#40	93.9		
#60	32.6		
#100	23.7		
#200			

* (no specification provided)

Material Description

SILTY SAND, (SM), fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.2390 D₈₅= 0.2277 D₆₀= 0.1875
D₅₀= 0.1741 D₃₀= 0.1223 D₁₅=
D₁₀= C_u= C_c=

Classification

USCS= SM AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-SI-22-10C
Sample Number: TE Lab ID: 4538.75

Depth: 8.0 - 9.6 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Figure

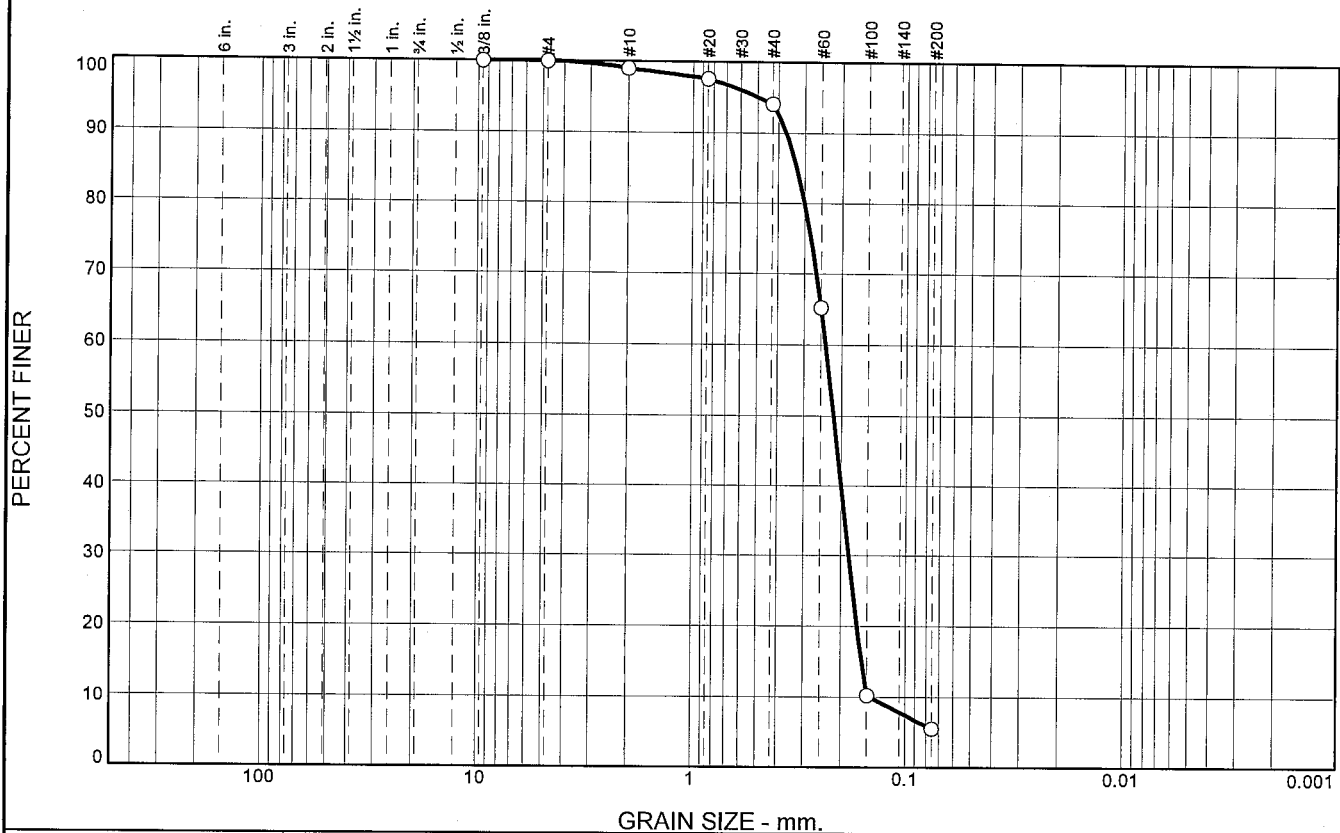
Tested By: R.Martin

Checked By: R.Byrd

Boring Designation BI-SI-23-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SI-23-10		LOCATION COORDINATES E = 958,556 N = 256,529		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 21 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-09-10		STARTED 06-09-10 COMPLETED 06-09-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -19.2 Ft.			
8. TOTAL DEPTH OF BORING 14.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-19.2	0.0						
-21.6	2.4		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, trace shell fragments, lt. gray (SP)	A	Classification: SP-SM Color: 2.5Y 5/2-grayish brown D50: 0.2174 mm % Fines: 5.5		
-25.0	5.8		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments, gray (SM)	B	Classification: SM Color: 2.5Y 6/2-light brownish gray D50: 0.1837 mm % Fines: 15.1		
-33.2	14.0		CLAY, lean, dark gray (CL)	NS			
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	1.0	4.9	88.6	5.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.0		
#20	97.6		
#40	94.1		
#60	65.2		
#100	10.2		
#200	5.5		

* (no specification provided)

Material Description

SAND, (SP-SM), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.3685

D₈₅= 0.3281

D₆₀= 0.2376

D₅₀= 0.2174

D₃₀= 0.1836

D₁₅= 0.1589

D₁₀= 0.1456

C_u= 1.63

C_c= 0.97

Classification

USCS= SP-SM

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-SI-23-10A
Sample Number: TE Lab ID: 4538.23

Depth: 0.0 - 2.4 (ft.)

Date: 6/19/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

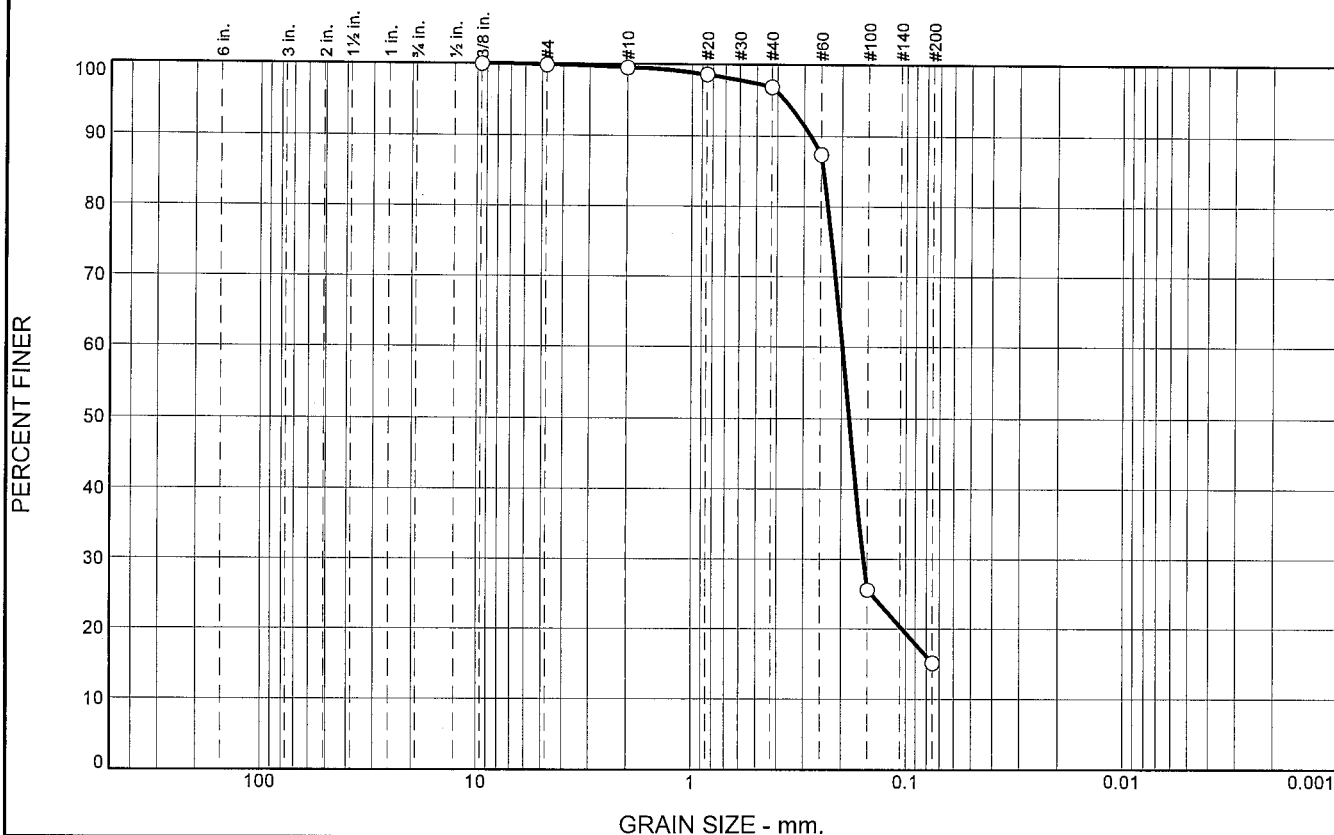
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.4	2.6	81.8	15.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.5		
#20	98.6		
#40	96.9		
#60	87.4		
#100	25.6		
#200	15.1		

* (no specification provided)

Material Description

SILTY SAND, (SM), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.2798

D₈₅= 0.2433

D₆₀= 0.1976

D₅₀= 0.1837

D₃₀= 0.1566

D₁₅=

D₁₀=

C_u=

C_c=

Classification

USCS= SM

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-SI-23-10B
Sample Number: TE Lab ID: 4538.76

Depth: 2.4 - 5.6 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Figure

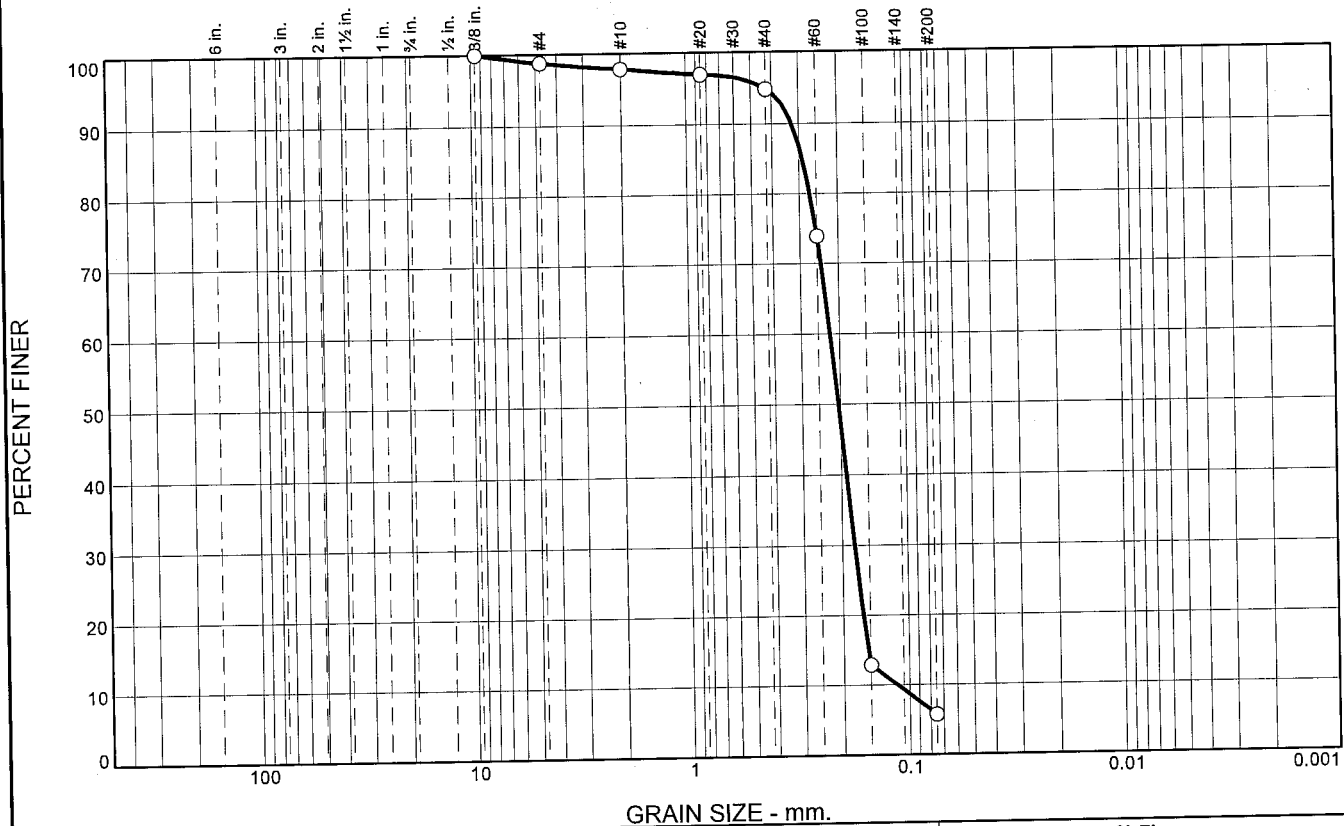
Tested By: R.Martin

Checked By: R.Byrd

Boring Designation BI-SI-24-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SI-24-10		LOCATION COORDINATES E = 960,812 N = 257,313		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 23 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-09-10		STARTED 06-09-10 COMPLETED 06-09-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -21.2 Ft.			
8. TOTAL DEPTH OF BORING 7.7 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-21.2	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, trace shell fragments, lt. gray (SP)	A	Classification: SP-SM Color: 2.5Y 6/2-light brownish gray D50: 0.2043 mm % Fines: 5.7		
				B	Classification: SP-SM Color: 2.5Y 7/1-light gray D50: 0.2187 mm % Fines: 7.5		
-28.9	7.7						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.2	1.0	3.0	89.1	5.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	98.8		
#10	97.8		
#20	96.9		
#40	94.8		
#60	73.9		
#100	12.9		
#200	5.7		

* (no specification provided)

Material Description

SAND, (SP-SM), fine grained, with trace shell

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.3241 D₈₅= 0.2897 D₆₀= 0.2207
D₅₀= 0.2043 D₃₀= 0.1754 D₁₅= 0.1535
D₁₀= 0.1136 C_u= 1.94 C_c= 1.23

Classification

USCS= SP-SM AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-SI-24-10A
Sample Number: TE Lab ID: 4538.24

Depth: 0.0 - 4.0 (ft.)

Date: 6/19/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

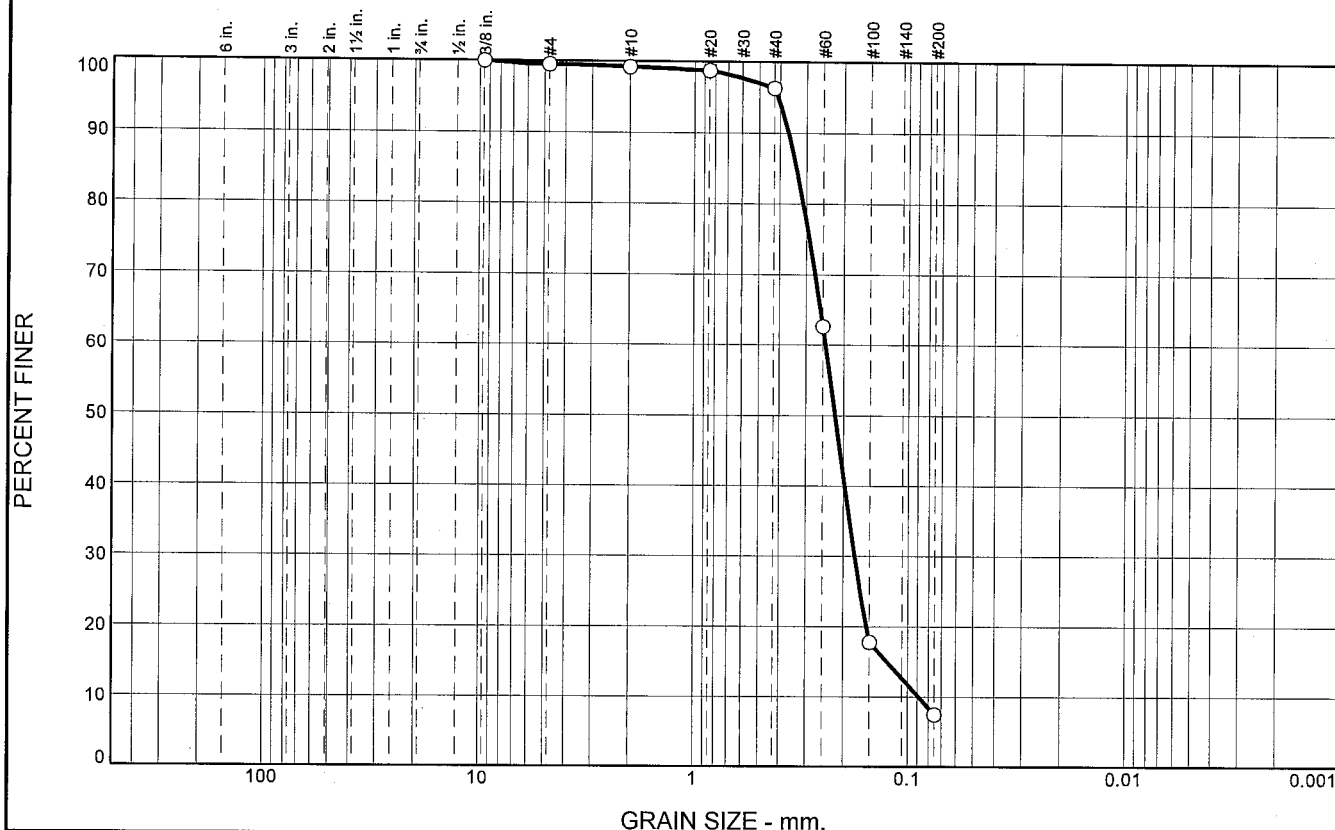
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.5	0.3	2.9	88.8	7.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.5		
#10	99.2		
#20	98.7		
#40	96.3		
#60	62.6		
#100	17.8		
#200	7.5		

* (no specification provided)

Material Description

SAND, (SP-SM), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.3654

D₈₅= 0.3345

D₆₀= 0.2429

D₅₀= 0.2187

D₃₀= 0.1766

D₁₅= 0.1245

D₁₀= 0.0889

C_u= 2.73

C_c= 1.44

Classification

USCS= SP-SM

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-SI-24-10B
Sample Number: TE Lab ID: 4538.25

Depth: 4.0 - 7.7 (ft.)

Date: 6/19/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Figure

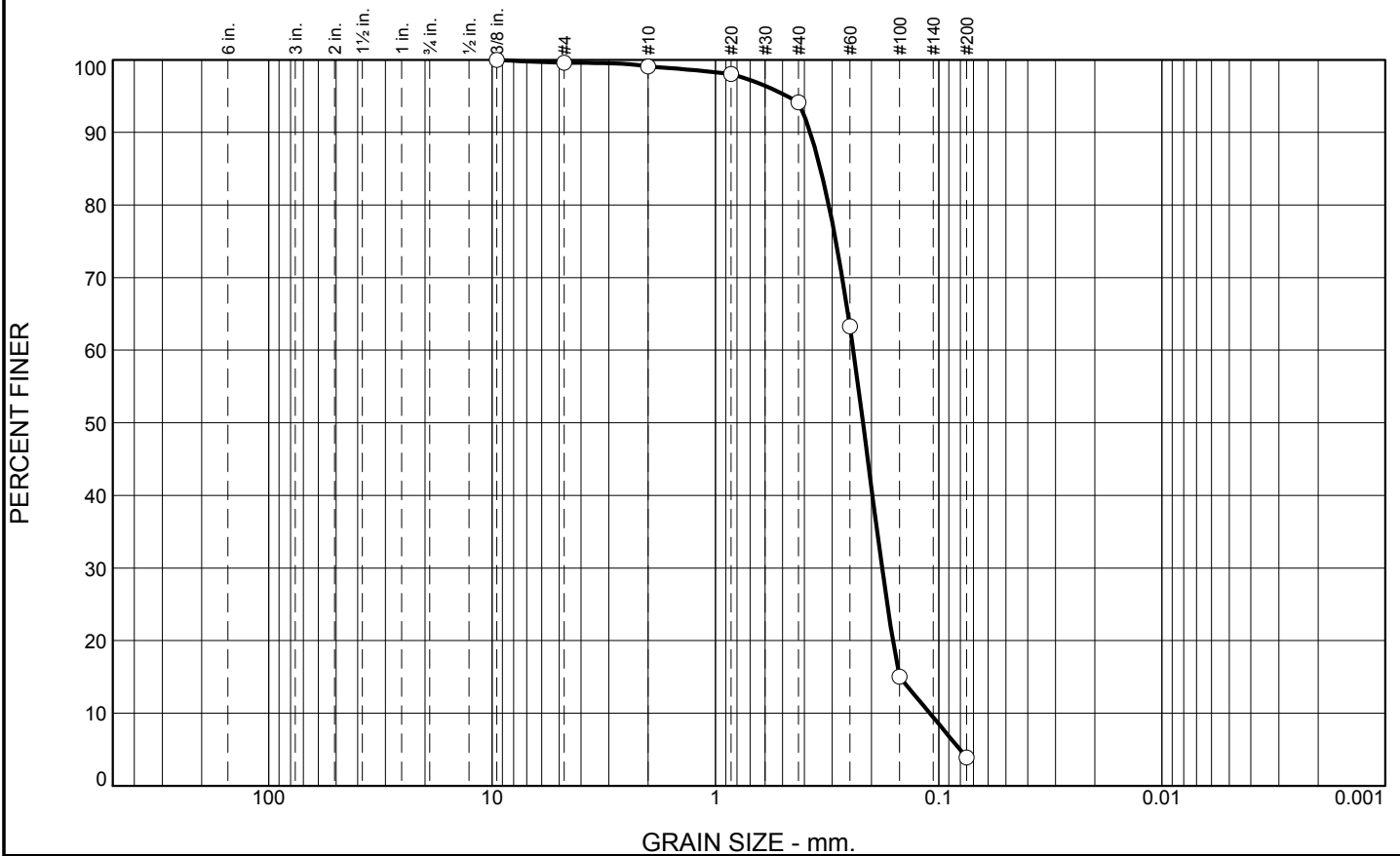
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-SI-25-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SI-25-10		LOCATION COORDINATES E = 963,062 N = 258,180		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 22 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-09-10		STARTED 06-09-10 COMPLETED 06-09-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -20.2 Ft.			
8. TOTAL DEPTH OF BORING 10.4 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-20.2	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, trace shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 6/2-light brownish gray D50: 0.2183 mm % Fines: 3.9		
				B	Classification: SP Color: 2.5Y 6/2-light brownish gray D50: 0.1942 mm % Fines: 4.5		
-27.2	7.0						
-28.5	8.3		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments, gray (SM)	C	Classification: SM Color: 2.5Y 6/2-light brownish gray D50: 0.1592 mm % Fines: 14.1		
				NS			
-30.6	10.4		CLAY, lean, dark gray (CL)				
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.4	0.5	4.9	90.3	3.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.6		
#10	99.1		
#20	98.0		
#40	94.2		
#60	63.3		
#100	15.0		
#200	3.9		

* (no specification provided)

<u>Material Description</u>		
SAND, (SP), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.3766	D ₈₅ = 0.3386	D ₆₀ = 0.2414
D ₅₀ = 0.2183	D ₃₀ = 0.1793	D ₁₅ = 0.1499
D ₁₀ = 0.1097	C _u = 2.20	C _c = 1.21
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-SI-25-10A
Sample Number: TE Lab ID: 4538.77

Depth: 0.0 -3.5 (ft.)

Date: 6/26/10

Thompson Engineering
Mobile, Alabama

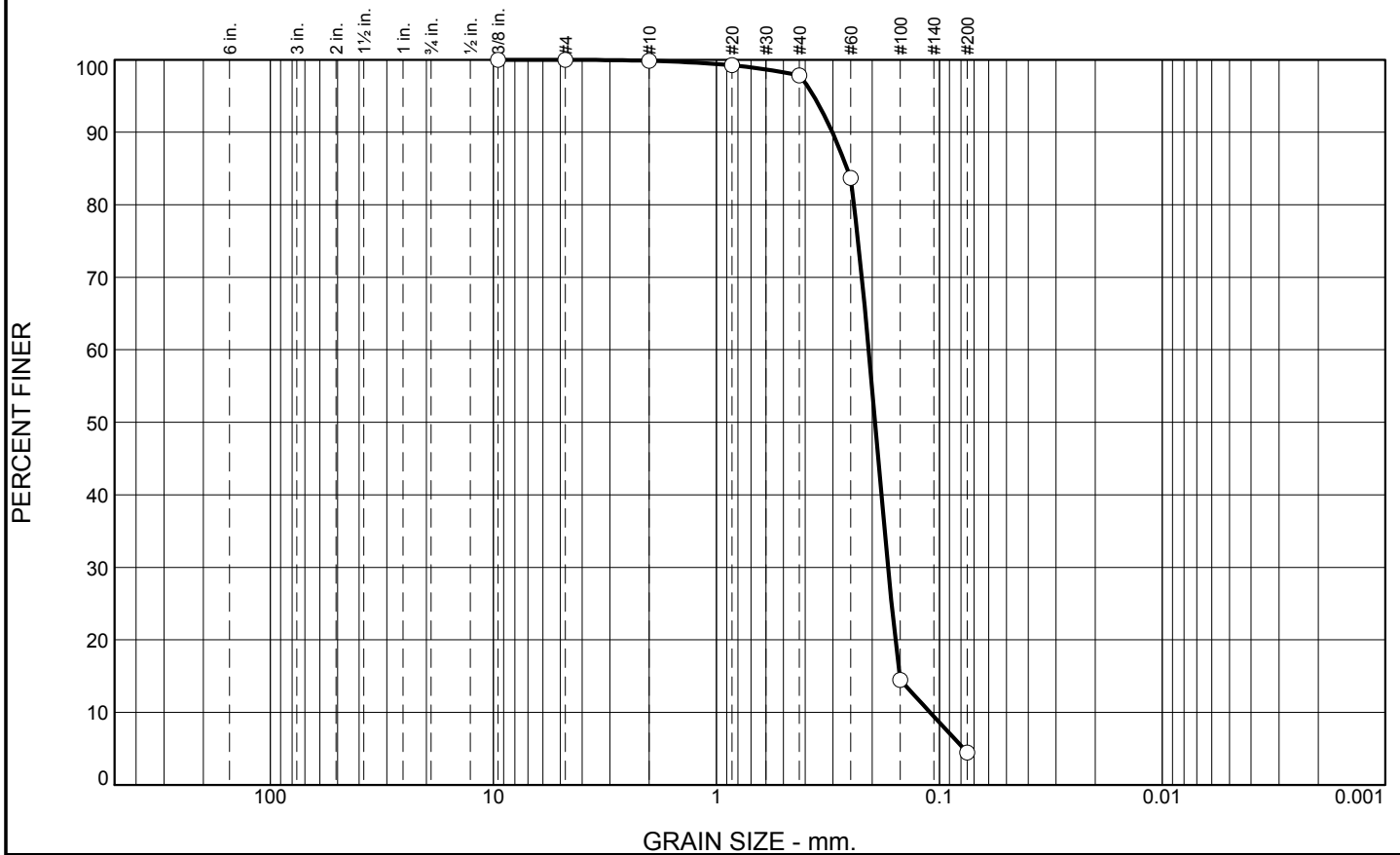
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	2.1	93.3	4.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.3		
#40	97.8		
#60	83.7		
#100	14.5		
#200	4.5		

* (no specification provided)

Material Description
SAND, (SP), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.3017 D₈₅= 0.2591 D₆₀= 0.2076
 D₅₀= 0.1942 D₃₀= 0.1699 D₁₅= 0.1507
 D₁₀= 0.1100 C_u= 1.89 C_c= 1.26

Classification
 USCS= SP AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-SI-25-10B
Sample Number: TE Lab ID: 4538.78

Depth: 3.5 - 7.0 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

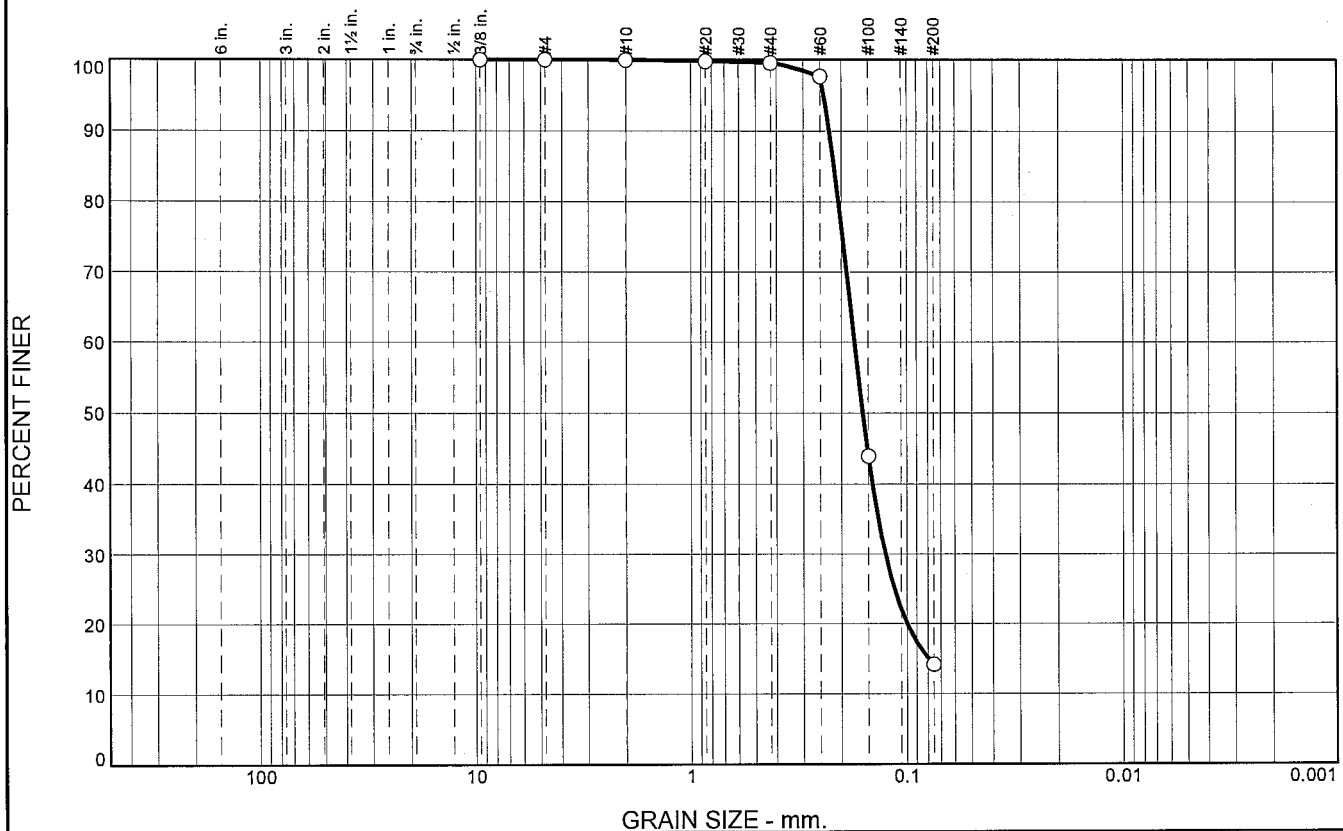
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	0.3	85.5	14.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.8		
#40	99.6		
#60	97.7		
#100	43.9		
#200	14.1		

* (no specification provided)

Material Description

SILTY SAND, (SM), fine grained, with clay pockets

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.2266 D₈₅= 0.2154 D₆₀= 0.1737
D₅₀= 0.1592 D₃₀= 0.1255 D₁₅= 0.0793
C_u= C_c=

Classification

USCS= SM AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-SI-25-10C
Sample Number: TE Lab ID: 4538.26

Depth: 7.0 - 8.3 (ft.)

Date: 6/19/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Figure

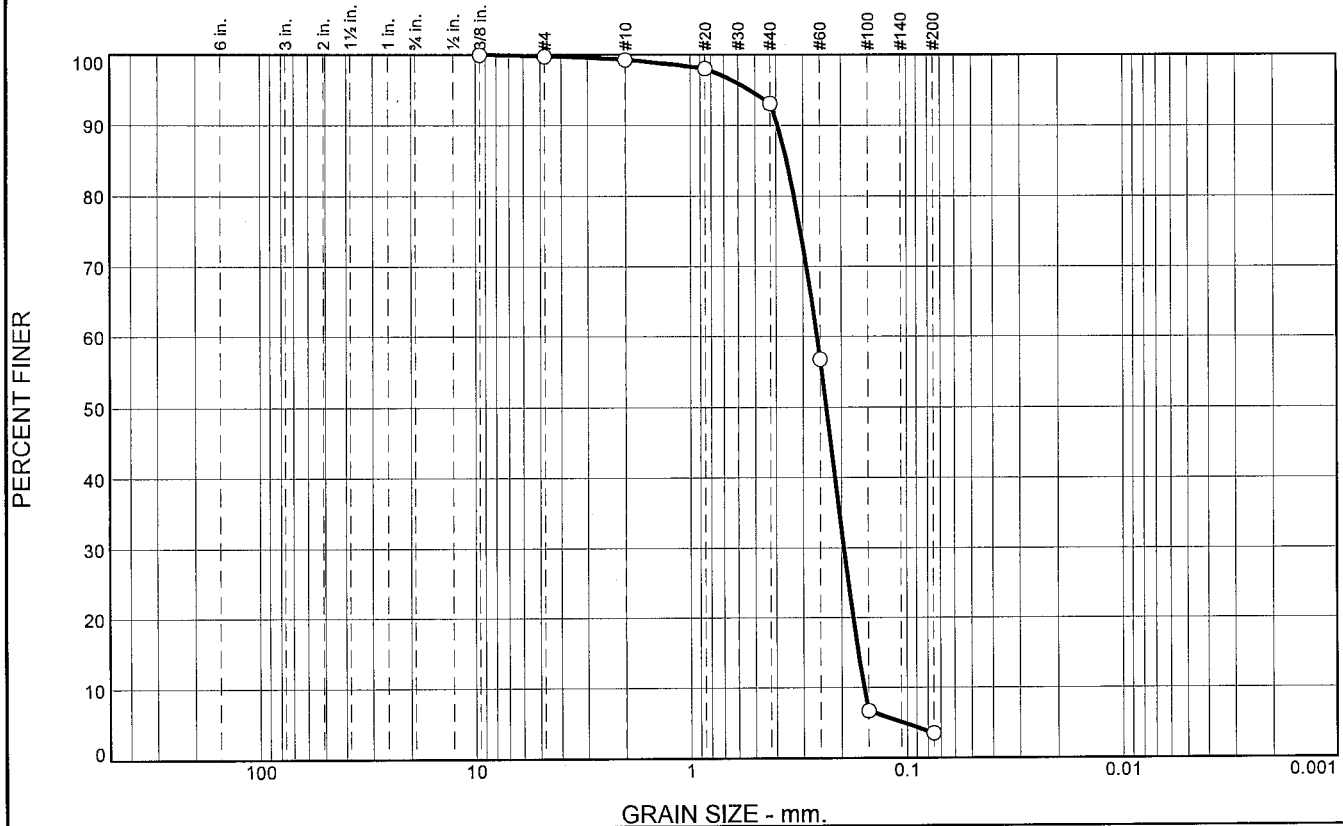
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-SI-26-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SI-26-10		LOCATION COORDINATES E = 965,049 N = 258,903		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 26 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-09-10		STARTED 06-09-10 COMPLETED 06-09-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -24.3 Ft.			
8. TOTAL DEPTH OF BORING 16.2 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-24.3	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little silt, trace shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.2343 mm % Fines: 3.5		
				B	Classification: SP-SM Color: 2.5Y 7/1-light gray D50: 0.1792 mm % Fines: 7.4		
-36.3	12.0						
			SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments (SM)	C	Classification: SM Color: 2.5Y 5/2-grayish brown D50: 0.1856 mm % Fines: 21.5		
-40.5	16.2						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.5	6.2	89.6	3.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.8		
#10	99.3		
#20	98.0		
#40	93.1		
#60	56.7		
#100	6.7		
#200	3.5		

* (no specification provided)

Material Description
SAND, (SP), fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.3933 D₈₅= 0.3570 D₆₀= 0.2585
D₅₀= 0.2343 D₃₀= 0.1948 D₁₅= 0.1672
D₁₀= 0.1573 C_u= 1.64 C_c= 0.93

Classification
USCS= SP AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-SI-26-10A
Sample Number: TE Lab ID: 4538.79

Depth: 0.0 - 6.0 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

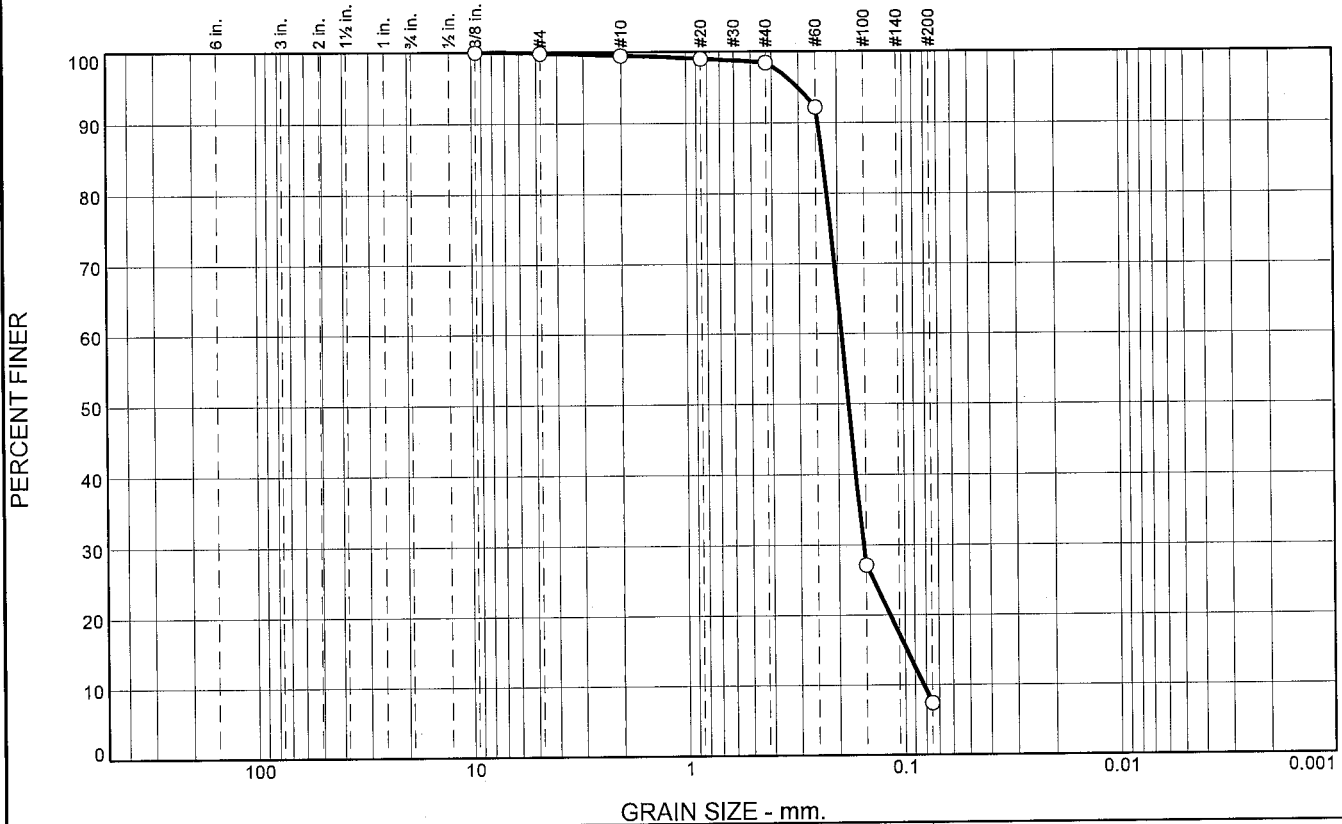
Project No: 10-2123-0009

Figure

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.3	1.1	91.0	7.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.8		
#10	99.5		
#20	99.0		
#40	98.4		
#60	92.2		
#100	27.1		
#200	7.4		

* (no specification provided)

Material Description

SAND, (SP-SM), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.2439

D₈₅= 0.2322

D₆₀= 0.1921

D₅₀= 0.1792

D₃₀= 0.1540

D₁₅= 0.0980

C_u= 0.0822

C_c= 2.34

C_c= 1.50

Classification

USCS= SP-SM

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-SI-26-10B
Sample Number: TE Lab ID: 4538.80

Depth: 6.0 - 12.0 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

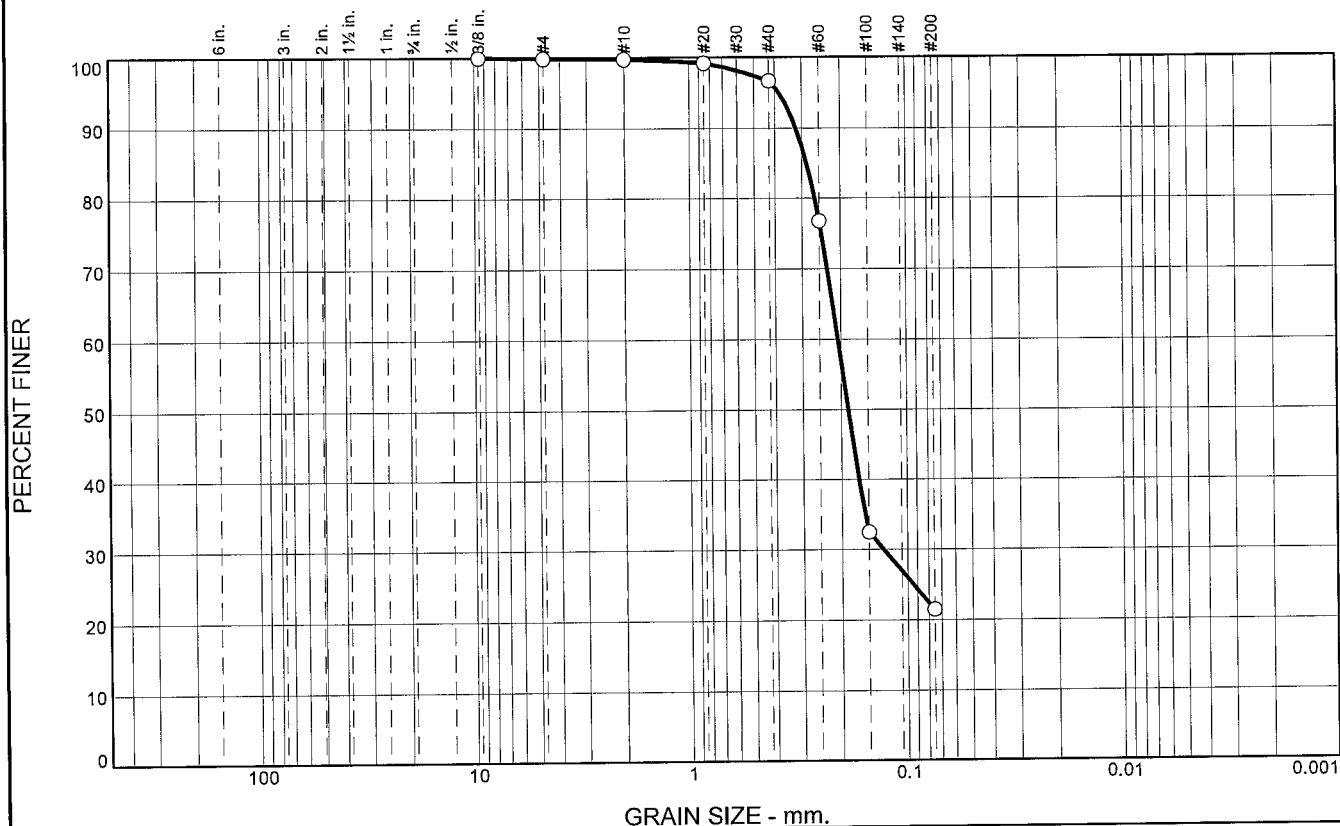
Project No: 10-2123-0009

Figure

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.1	3.1	75.2	21.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.8		
#20	99.2		
#40	96.7		
#60	76.7		
#100	32.4		
#200	21.5		

* (no specification provided)

Material Description
SILTY SAND, (SM), fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.3194 D₈₅= 0.2853 D₆₀= 0.2062
D₅₀= 0.1856 D₃₀= 0.1286 D₁₅=
D₁₀= C_u= C_c=

Classification
USCS= SM AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-SI-26-10C
Sample Number: TE Lab ID: 4538.81

Depth: 12.0 - 16.2 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Figure

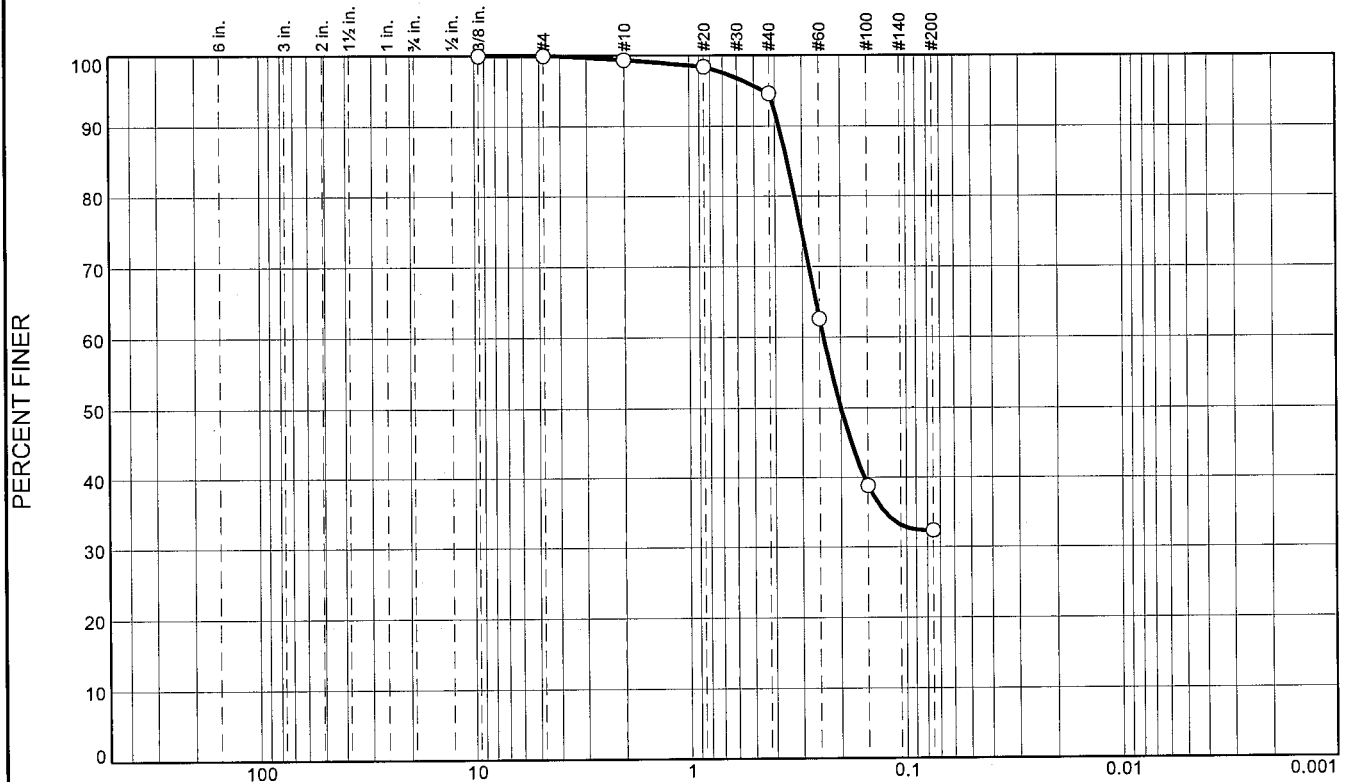
Tested By: R.Martin

Checked By: R.Byrd

Boring Designation BI-SI-27-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SI-27-10		LOCATION COORDINATES E = 980,122 N = 260,447		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 26 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-09-10		STARTED 06-09-10 COMPLETED 06-09-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -24.7 Ft.			
8. TOTAL DEPTH OF BORING 14.7 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-24.7	0.0						
-25.9	1.2		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments, gray (SM)	A	Classification: SM Color: 2.5Y 5/2-grayish brown D50: 0.2002 mm % Fines: 32.3		
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little silt, trace shell fragments, lt. gray (SP)	B	Classification: SP-SM Color: 2.5Y 6/2-light brownish gray D50: 0.2039 mm % Fines: 11.3		
-31.3	6.6						
-33.0	8.3		CLAY, lean, dark gray (CL)	NS			
-36.4	11.7		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little silt, trace shell fragments, lt. gray (SP)	C	Classification: SP-SM Color: 2.5Y 6/2-light brownish gray D50: 0.2659 mm % Fines: 10		
-39.4	14.7		CLAY, lean, dark gray (CL)	NS			
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.6	4.8	62.3	32.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.4		
#20	98.4		
#40	94.6		
#60	62.6		
#100	38.8		
#200	32.3		

* (no specification provided)

Material Description

SILTY SAND, (SM), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.3837

D₈₅= 0.3512

D₆₀= 0.2399

D₅₀= 0.2002

D₃₀=

D₁₅=

D₁₀=

C_u=

C_c=

Classification

USCS= SM

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-SI-27-10A
Sample Number: TE Lab ID: 4538.08

Depth: 0.0 - 1.2 (ft.)

Date: 6/19/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

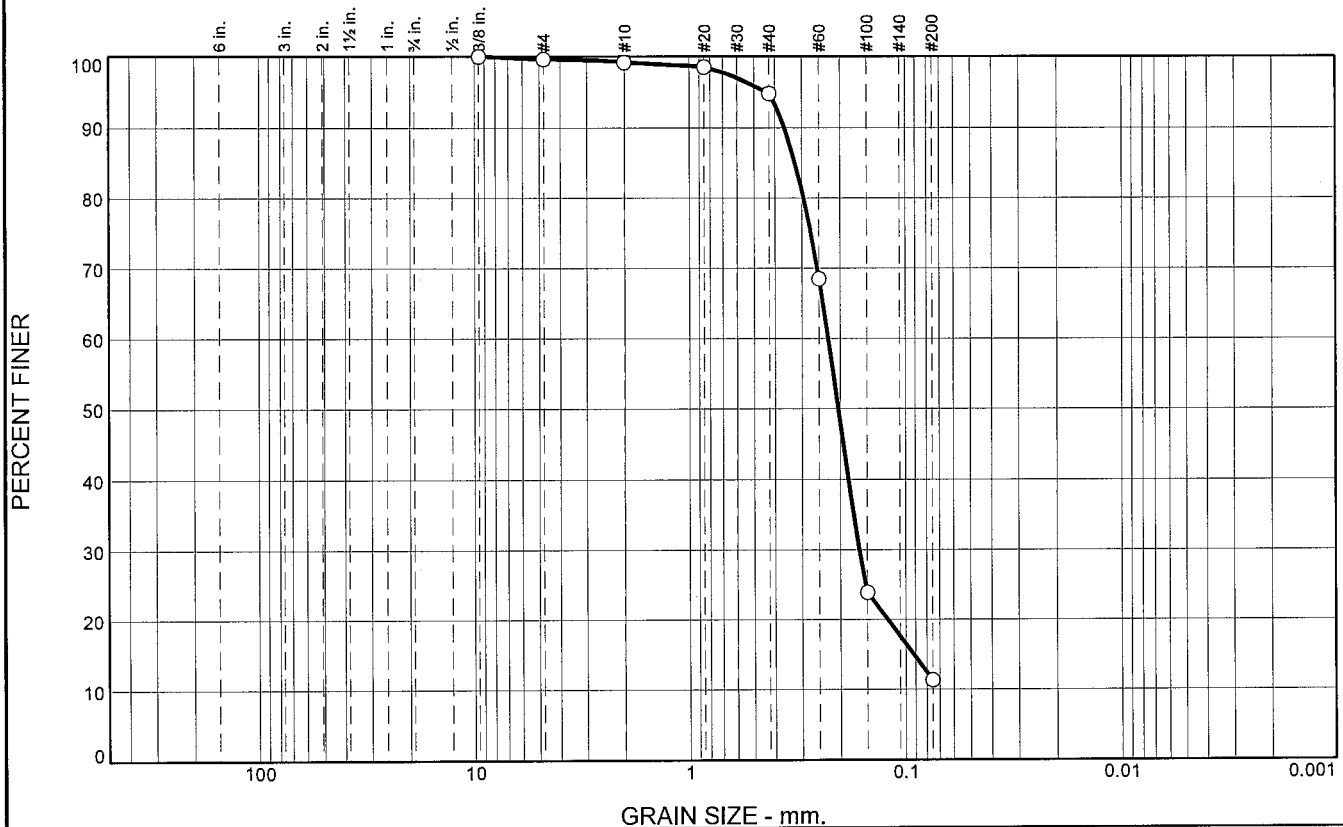
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.4	0.4	4.4	83.5	11.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.6		
#10	99.2		
#20	98.5		
#40	94.8		
#60	68.4		
#100	23.9		
#200	11.3		

* (no specification provided)

Material Description

SAND, (SP-SM), fine grained, with clay pockets

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.3621 D₈₅= 0.3228 D₆₀= 0.2268
D₅₀= 0.2039 D₃₀= 0.1632 D₁₅= 0.0919
D₁₀= C_u= C_c=

Classification

USCS= SP-SM AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-SI-27-10B
Sample Number: TE Lab ID: 4538.09

Depth: 1.2 - 6.6 (ft.)

Date: 6/19/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

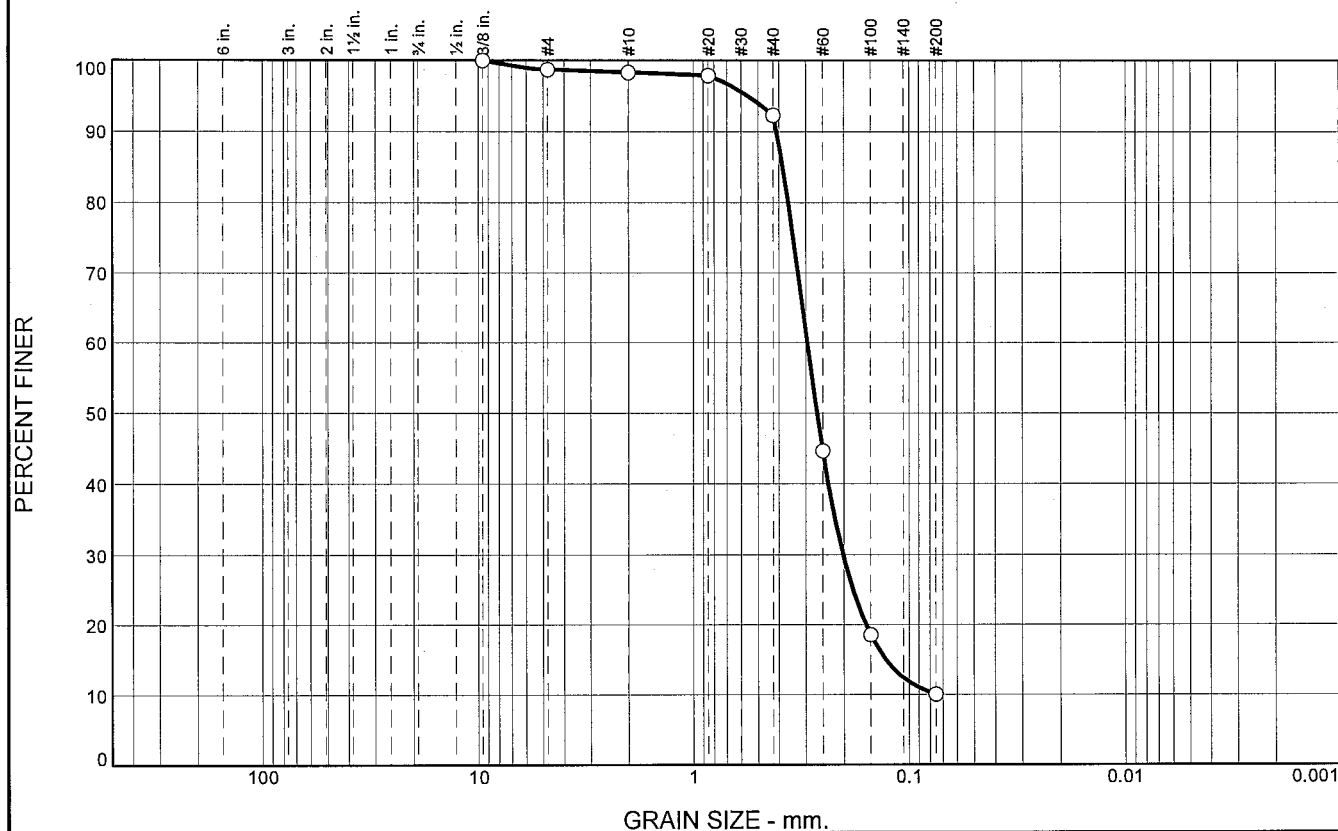
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.3	0.4	6.0	82.3	10.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	98.7		
#10	98.3		
#20	97.9		
#40	92.3		
#60	44.6		
#100	18.5		
#200	10.0		

* (no specification provided)

Material Description

SAND, (SP-SM), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.4101

D₈₅= 0.3838

D₆₀= 0.2950

D₅₀= 0.2659

D₃₀= 0.2017

D₁₅= 0.1279

D₁₀=

C_u=

C_c=

Classification

USCS= SP-SM

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-SI-27-10C
Sample Number: TE Lab ID: 4538.10

Depth: 8.3 - 11.7 (ft.)

Date: 6/19/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Figure

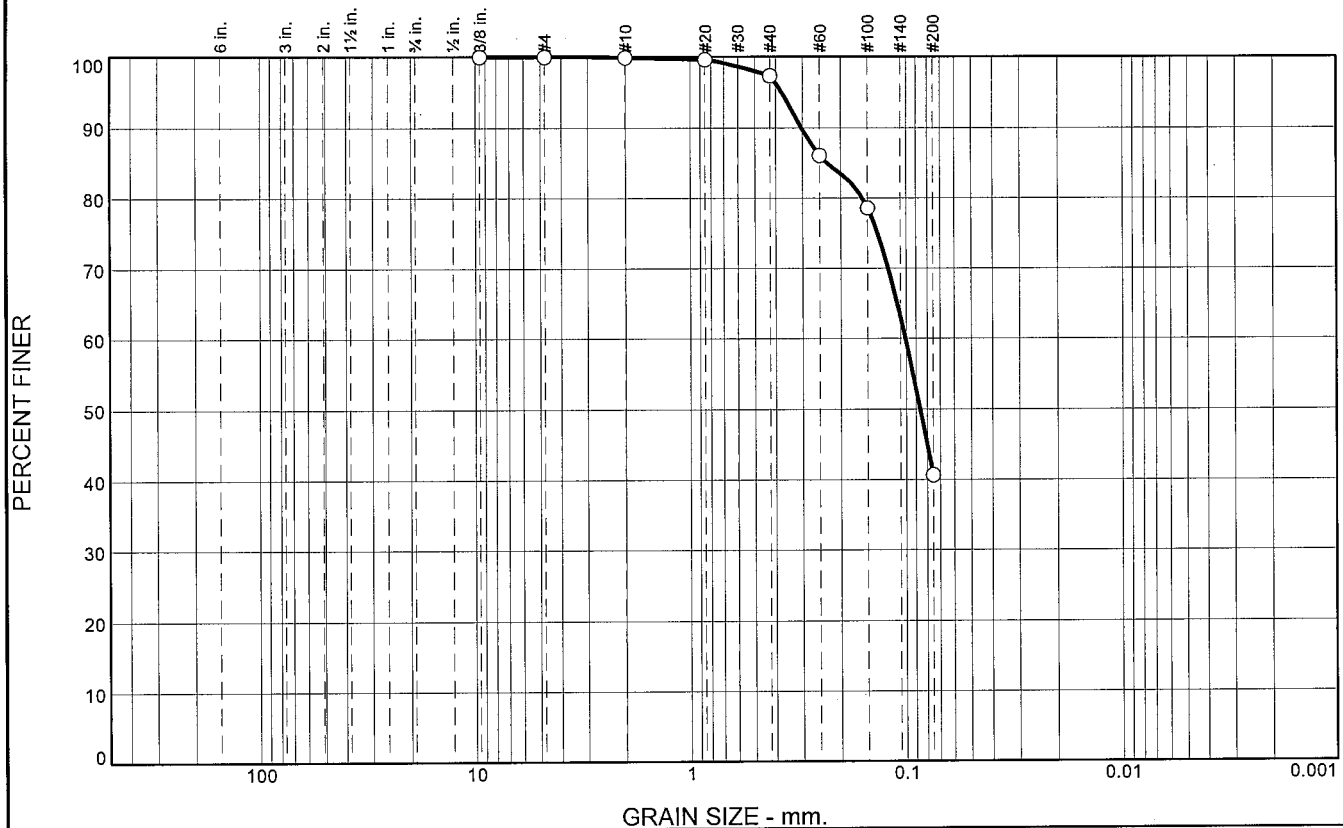
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-SI-28-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SI-28-10		LOCATION COORDINATES E = 969,583 N = 261,585		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 4		DISTURBED 0 UNDISTURBED (UD)	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 25 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-09-10		STARTED 06-09-10 COMPLETED 06-09-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -23.9 Ft.			
8. TOTAL DEPTH OF BORING 17.9 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-23.9	0.0						
			SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments, gray (SM)	A	Classification: SM Color: 2.5Y 4/2-dark grayish brown D50: 0.0862 mm % Fines: 40.6		
				B	Classification: SP-SM Color: 2.5Y 6/2-light brownish gray D50: 0.2735 mm % Fines: 10.8		
-29.0	5.1		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, trace shell fragments, lt. gray (SP)	C	Classification: SM Color: 2.5Y 7/1-light gray D50: 0.2149 mm % Fines: 12.2		
				D	Classification: SP-SM Color: 5Y 7/1-light gray D50: 0.243 mm % Fines: 8.6		
-37.9	14.0		CLAY, lean, dark gray (CL)	NS			
-41.8	17.9						
			NOTES:				
			1. Soils are field visually classified in accordance with the Unified Soils Classification System.				
			2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	2.6	56.7	40.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.6		
#40	97.3		
#60	86.1		
#100	78.5		
#200	40.6		

* (no specification provided)

Material Description

SILTY SAND, (SM), fine grained, with clay pockets

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.3039 D₈₅= 0.2314 D₆₀= 0.1009
D₅₀= 0.0862 D₃₀= D₁₅=
D₁₀= C_u= C_c=

Classification

USCS= SM AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-SI-28-10A
Sample Number: TE Lab ID: 4538.11

Depth: 0.0 - 1.3 (ft.)

Date: 6/19/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

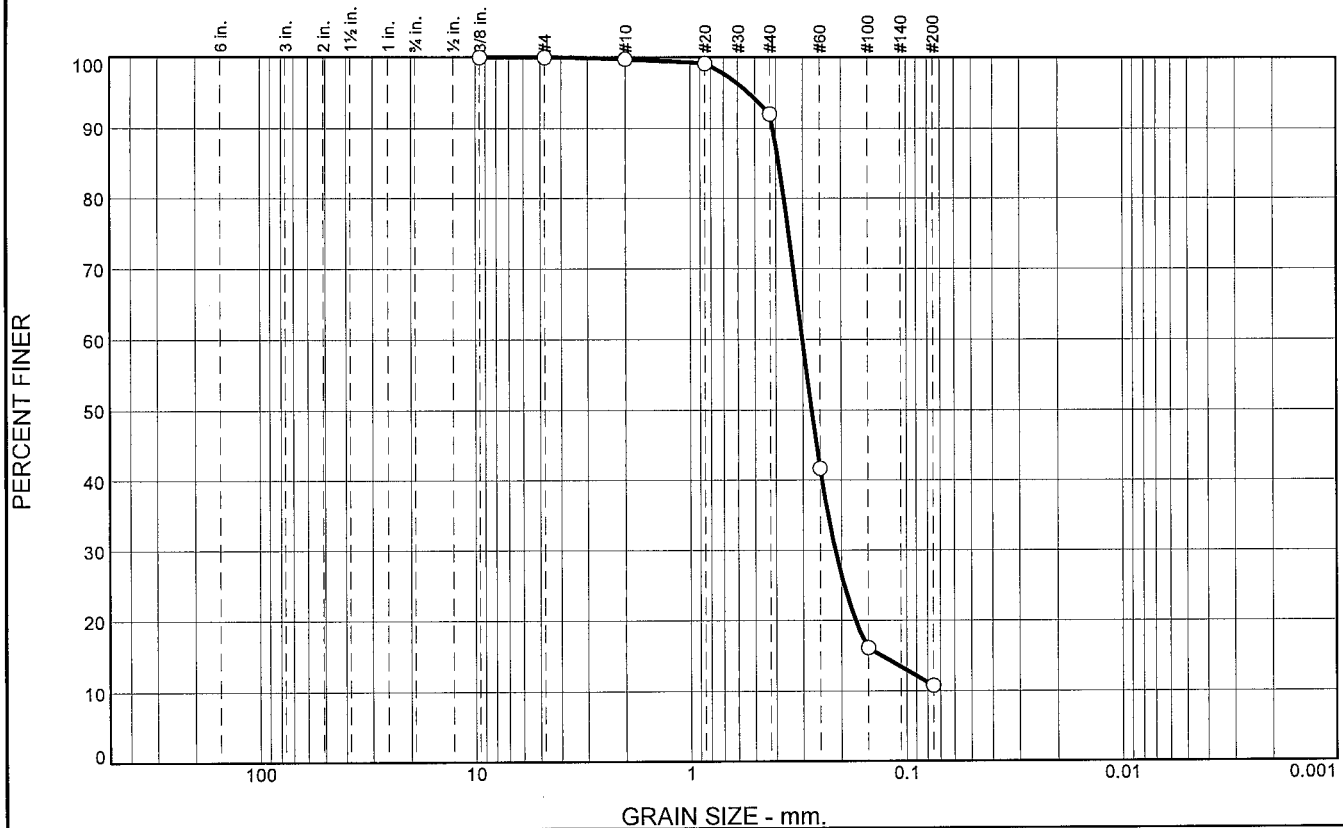
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.3	7.6	81.3	10.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.7		
#20	99.1		
#40	92.1		
#60	41.6		
#100	16.1		
#200	10.8		

* (no specification provided)

Material Description

SAND, (SP-SM), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.4125

D₈₅= 0.3873

D₆₀= 0.3015

D₅₀= 0.2735

D₃₀= 0.2132

D₁₅= 0.1301

D₁₀=

C_u=

C_c=

Classification

USCS= SP-SM

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-SI-28-10B
Sample Number: TE Lab ID: 4538.12

Depth: 1.3 - 5.1 (ft.)

Date: 6/19/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

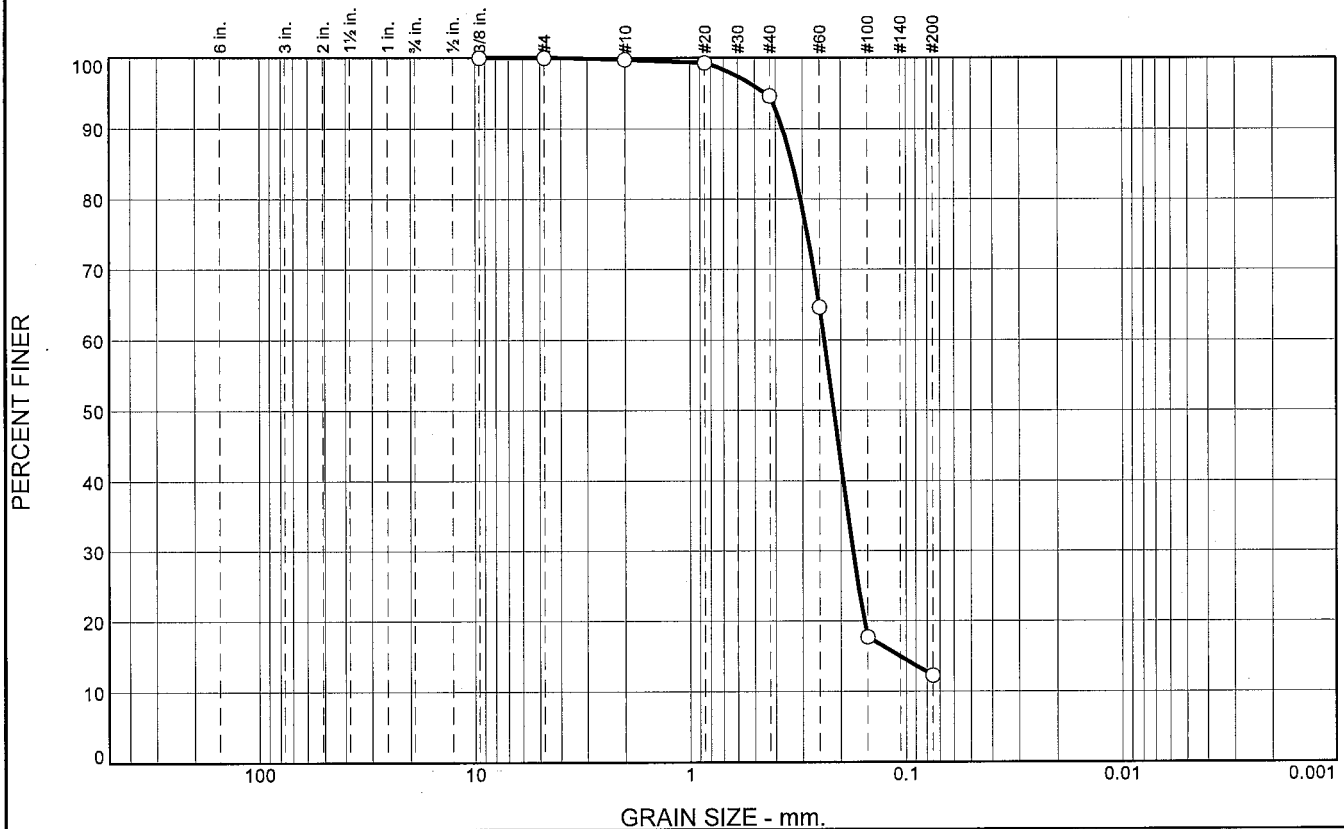
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.3	5.1	82.4	12.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.7		
#20	99.3		
#40	94.6		
#60	64.6		
#100	17.7		
#200	12.2		

* (no specification provided)

Material Description

SILTY SAND, (SM), fine grained, with clay pockets

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.3716 D₈₅= 0.3340 D₆₀= 0.2378
D₅₀= 0.2149 D₃₀= 0.1754 D₁₅= 0.1066
D₁₀= C_u= C_c=

Classification

USCS= SM AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-SI-28-10C
Sample Number: TE Lab ID: 4538.13

Depth: 5.1 - 10.0 (ft.)

Date: 6/19/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

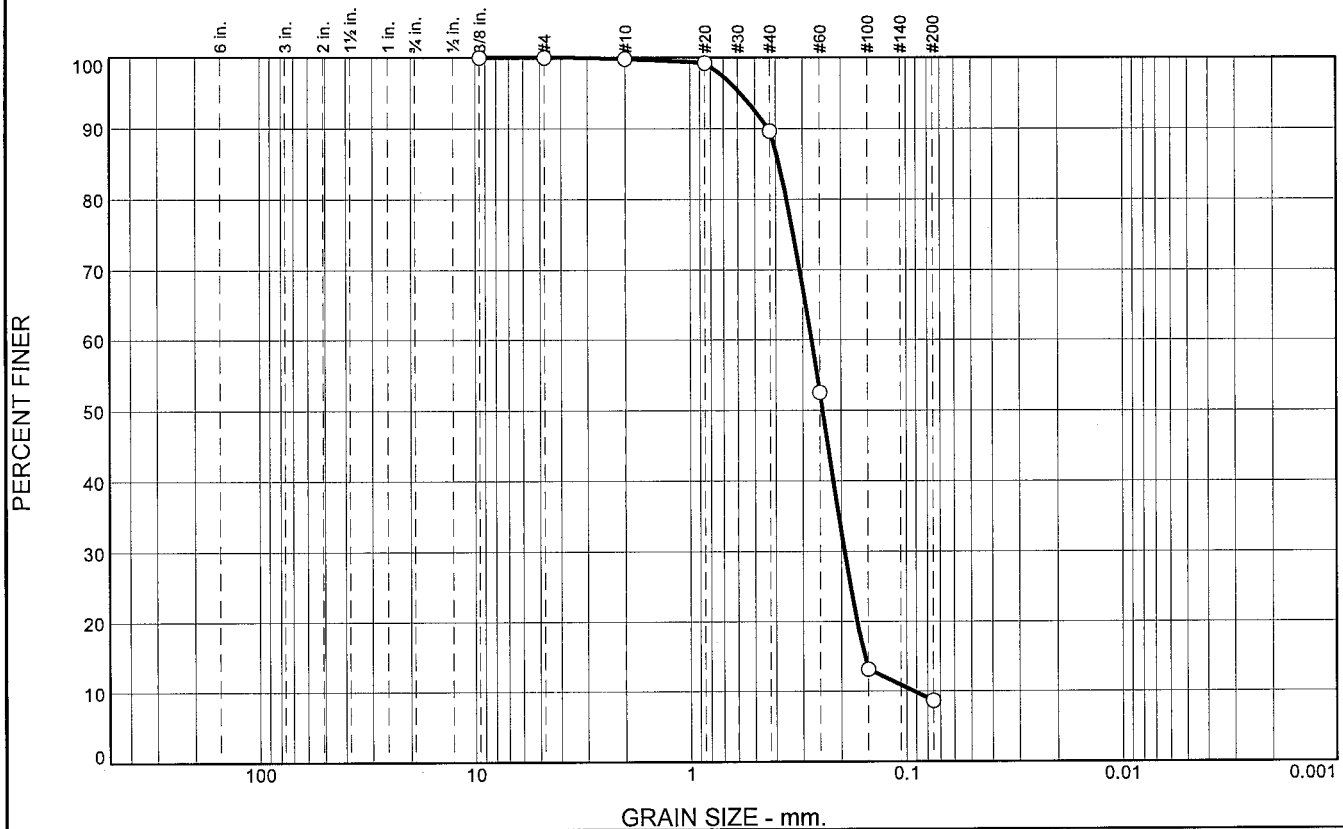
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	10.2	81.0	8.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.8		
#20	99.2		
#40	89.6		
#60	52.5		
#100	13.1		
#200	8.6		

* (no specification provided)

Material Description

SAND, (SP-SM), medium to fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.4330 D₈₅= 0.3872 D₆₀= 0.2729
D₅₀= 0.2430 D₃₀= 0.1929 D₁₅= 0.1555
C_u= 2.95 C_c= 1.47

Classification

USCS= SP-SM AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-SI-28-10D
Sample Number: TE Lab ID: 4538.14

Depth: 10.0 - 14.0 (ft.)

Date: 6/19/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Figure

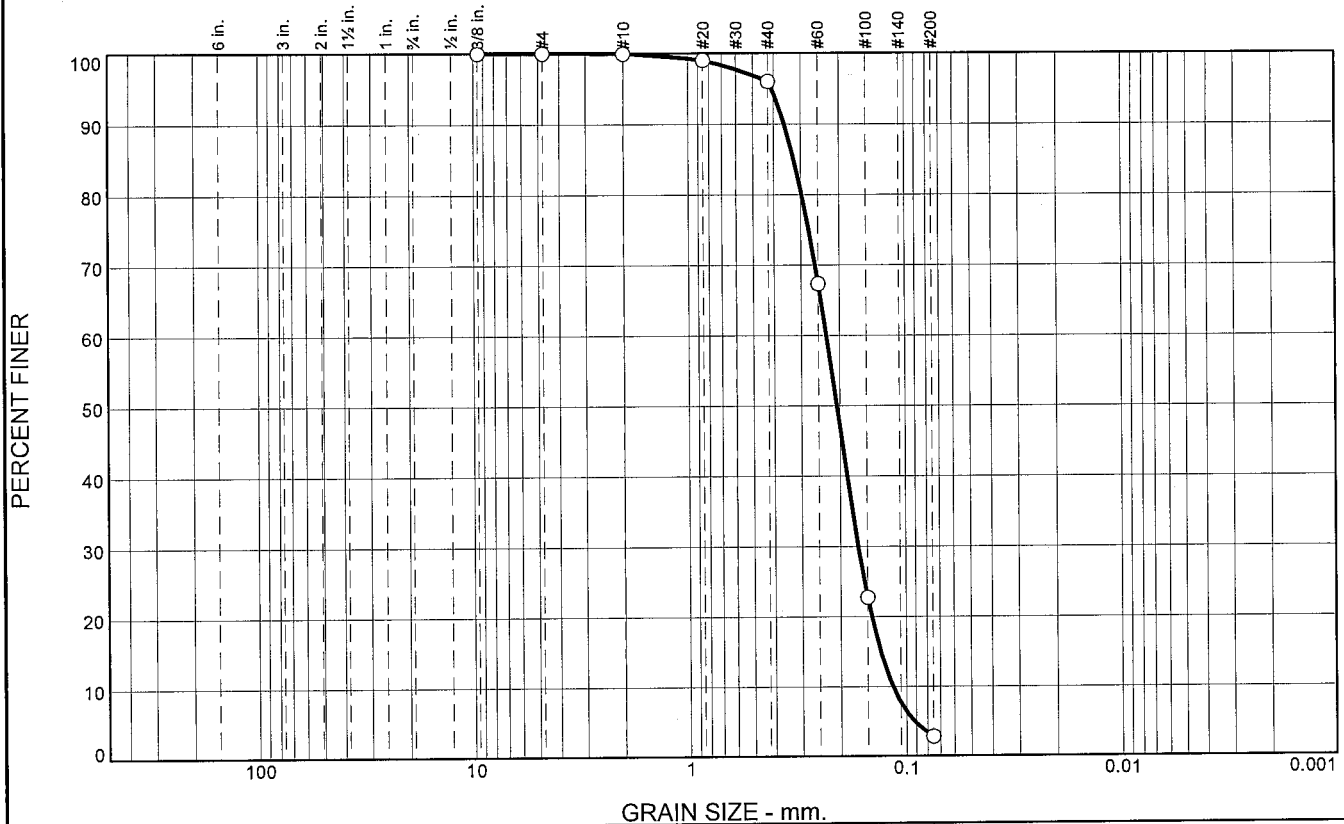
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-SI-29-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SI-29-10		LOCATION COORDINATES E = 958,546 N = 254,238		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 23 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-12-10		STARTED 06-12-10 COMPLETED 06-12-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -20.8 Ft.			
8. TOTAL DEPTH OF BORING 14.2 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-20.8	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, trace shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 6/2-light brownish gray D50: 0.2063 mm % Fines: 2.8		
-24.8	4.0						
			SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments, gray (SM)	B	Classification: SM Color: 2.5Y 5/2-grayish brown D50: 0.1523 mm % Fines: 20		
-29.3	8.5						
			CLAY, lean, dark gray (CL)	NS			
-35.0	14.2						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	3.9	93.2	2.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.0		
#40	96.0		
#60	67.3		
#100	22.7		
#200	2.8		

* (no specification provided)

Material Description

SAND, (SP), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.3580

D₈₅= 0.3234

D₆₀= 0.2298

D₅₀= 0.2063

D₃₀= 0.1652

D₁₅= 0.1310

D₁₀= 0.1153

C_u= 1.99

C_c= 1.03

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-SI-29-10A
Sample Number: TE Lab ID: 4538.46

Depth: 0.0 - 4.0 (ft.)

Date: 6/19/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

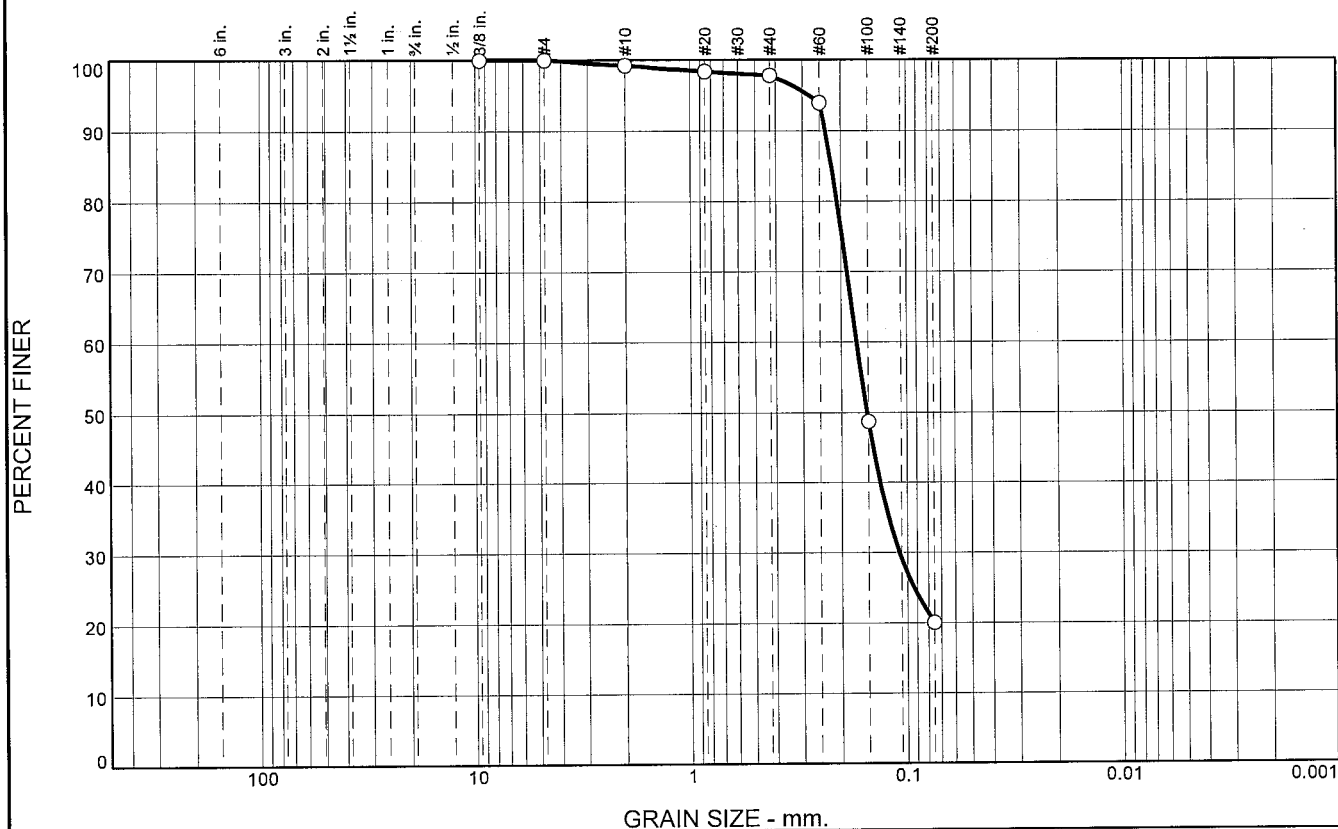
Project No: 10-2123-0009

Figure

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.8	1.4	77.8	20.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.2		
#20	98.4		
#40	97.8		
#60	94.0		
#100	48.7		
#200	20.0		

* (no specification provided)

Material Description

SILTY SAND, (SM), medium to fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.2347 D₈₅= 0.2200 D₆₀= 0.1697
D₅₀= 0.1523 D₃₀= 0.1090 D₁₅=
D₁₀= C_u= C_c=

Classification

USCS= SM AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-SI-29-10B
Sample Number: TE Lab ID: 4538.47

Depth: 4.0 - 8.5 (ft.)

Date: 6/19/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Figure

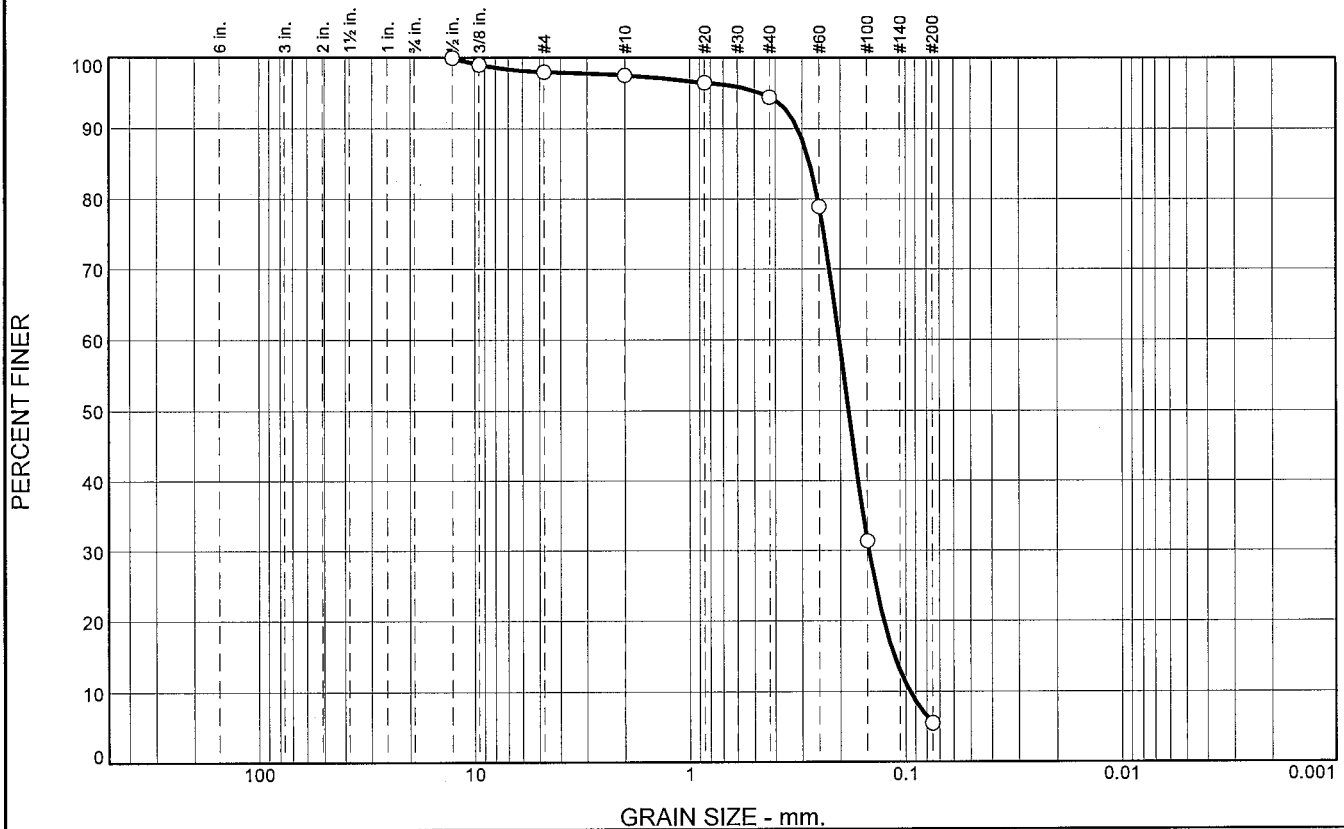
Tested By: R.Martin

Checked By: R.Byrd

Boring Designation BI-SI-30-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SI-30-10		LOCATION COORDINATES E = 961,188 N = 255,673		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 25 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-12-10		COMPLETED 06-12-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -22.8 Ft.			
8. TOTAL DEPTH OF BORING 19.8 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-22.8	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, trace shell fragments, lt. gray (SP)	A	Classification: SP-SM Color: 2.5Y 6/2-light brownish gray D50: 0.183 mm % Fines: 5.6		
				B	Classification: SP-SM Color: 2.5Y 7/1-light gray D50: 0.2146 mm % Fines: 5.9		
-32.8	10.0						
-34.1	11.3		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments, gray (SM)	C	Classification: SM Color: 2.5Y 7/1-light gray D50: 0.1547 mm % Fines: 15.6		
			CLAY, lean, dark gray (CL)	NS			
-42.6	19.8						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	2.0	0.5	3.1	88.8	5.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.500	100.0		
.375	99.0		
#4	98.0		
#10	97.5		
#20	96.5		
#40	94.4		
#60	78.9		
#100	31.4		
#200	5.6		

* (no specification provided)

Material Description
SAND, (SP-SM), fine grained, with trace shell

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.3151 D₈₅= 0.2769 D₆₀= 0.2019
 D₅₀= 0.1830 D₃₀= 0.1474 D₁₅= 0.1128
 D₁₀= 0.0956 C_u= 2.11 C_c= 1.13

Classification
 USCS= SP-SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-SI-30-10A
 Sample Number: TE Lab ID: 4538.49

Depth: 0.0 - 5.0 (ft.)

Date: 6/19/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project

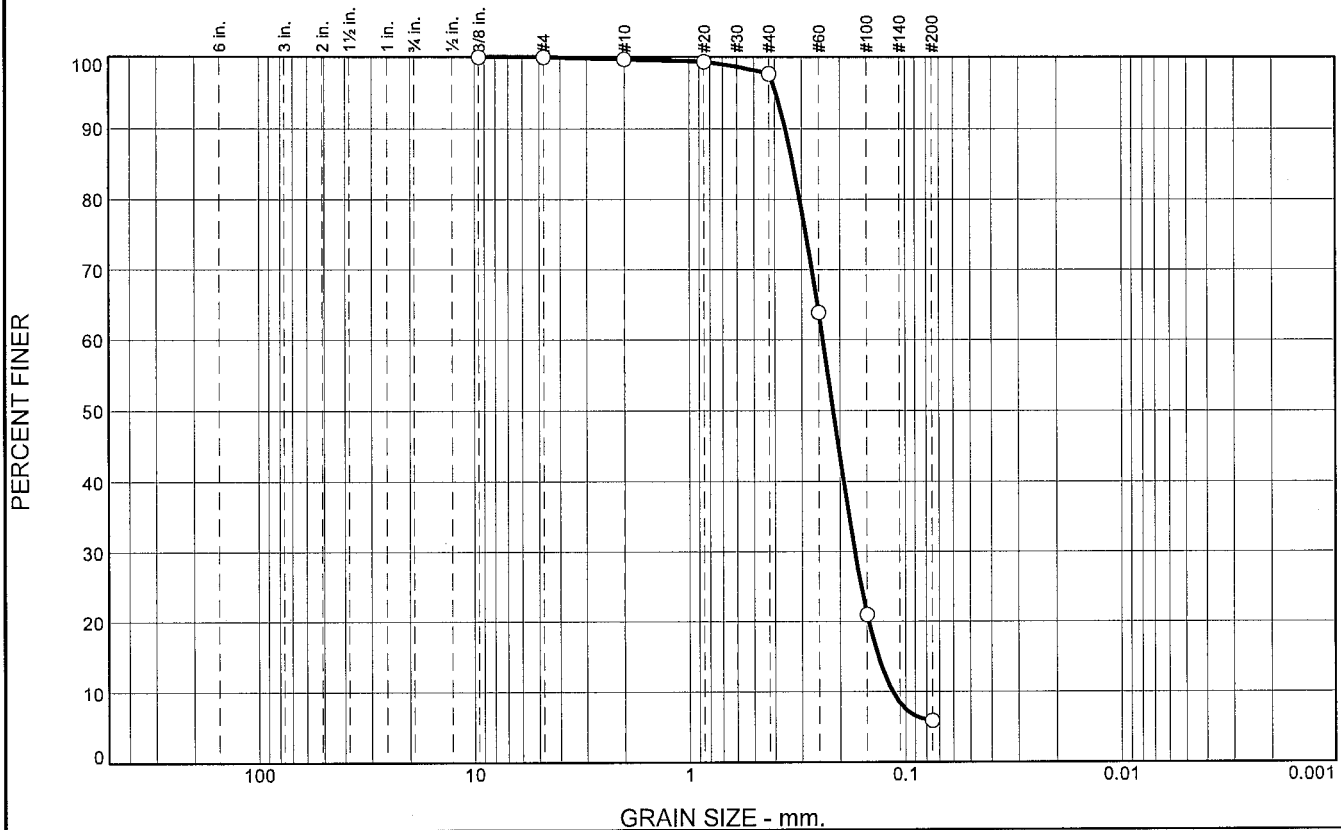
Project No: 10-2123-0009

Figure

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.3	2.1	91.7	5.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.7		
#20	99.3		
#40	97.6		
#60	63.8		
#100	20.9		
#200	5.9		

* (no specification provided)

Material Description

SAND, (SP-SM), fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.3576 D₈₅= 0.3290 D₆₀= 0.2395
D₅₀= 0.2146 D₃₀= 0.1706 D₁₅= 0.1336
D₁₀= 0.1149 C_u= 2.08 C_c= 1.06

Classification

USCS= SP-SM AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-SI-30-10B
Sample Number: TE Lab ID: 4538.50

Depth: 5.0 - 10.0 (ft.)

Date: 6/19/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

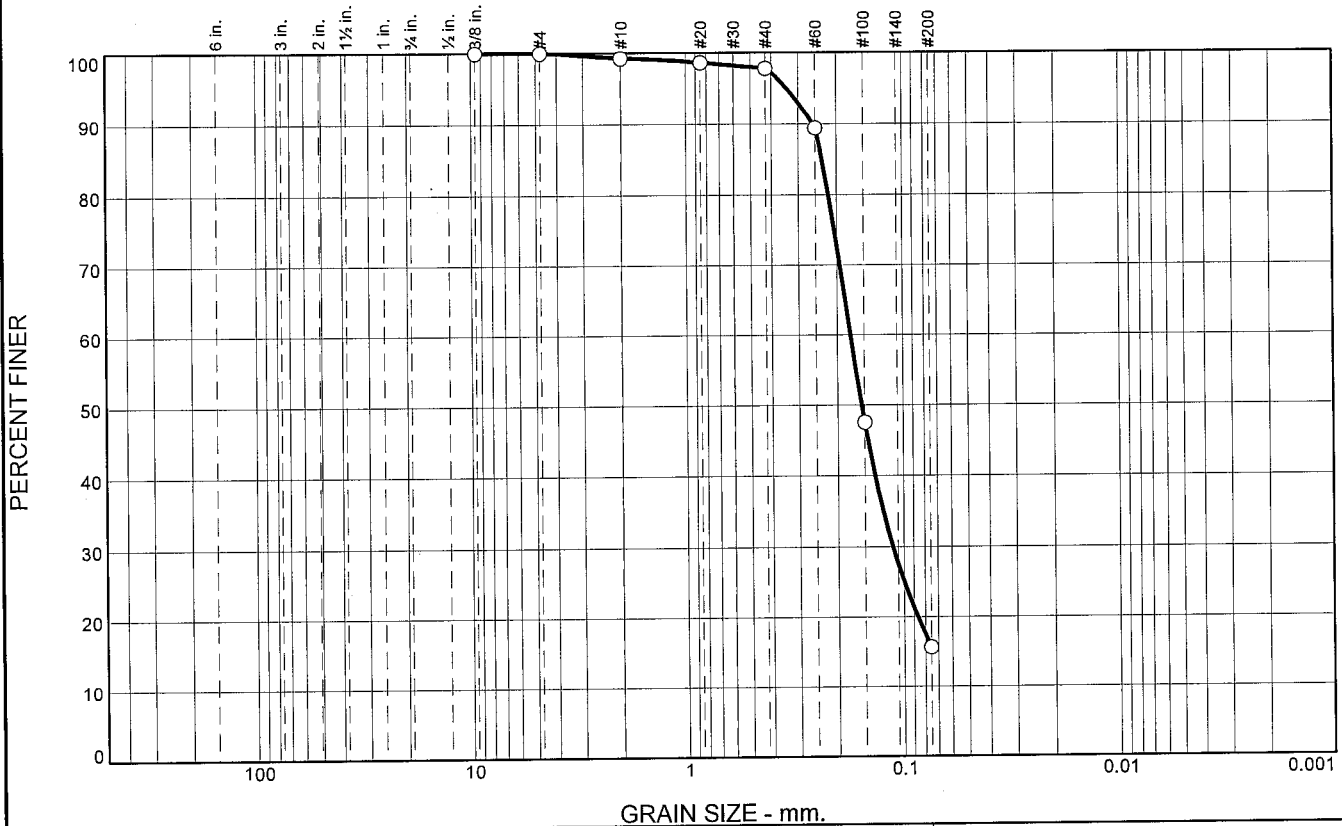
Project No: 10-2123-0009

Figure

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.7	1.5	82.2	15.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.3		
#20	98.6		
#40	97.8		
#60	89.4		
#100	47.5		
#200	15.6		

* (no specification provided)

Material Description

SILTY SAND, (SM), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.2574

D₈₅= 0.2331

D₆₀= 0.1736

D₅₀= 0.1547

D₃₀= 0.1124

D₁₅=

D₁₀=

C_u=

C_c=

Classification

USCS= SM

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-SI-30-10C
Sample Number: TE Lab ID: 4538.51

Depth: 10.0 - 13.0 (ft.)

Date: 6/19/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Figure

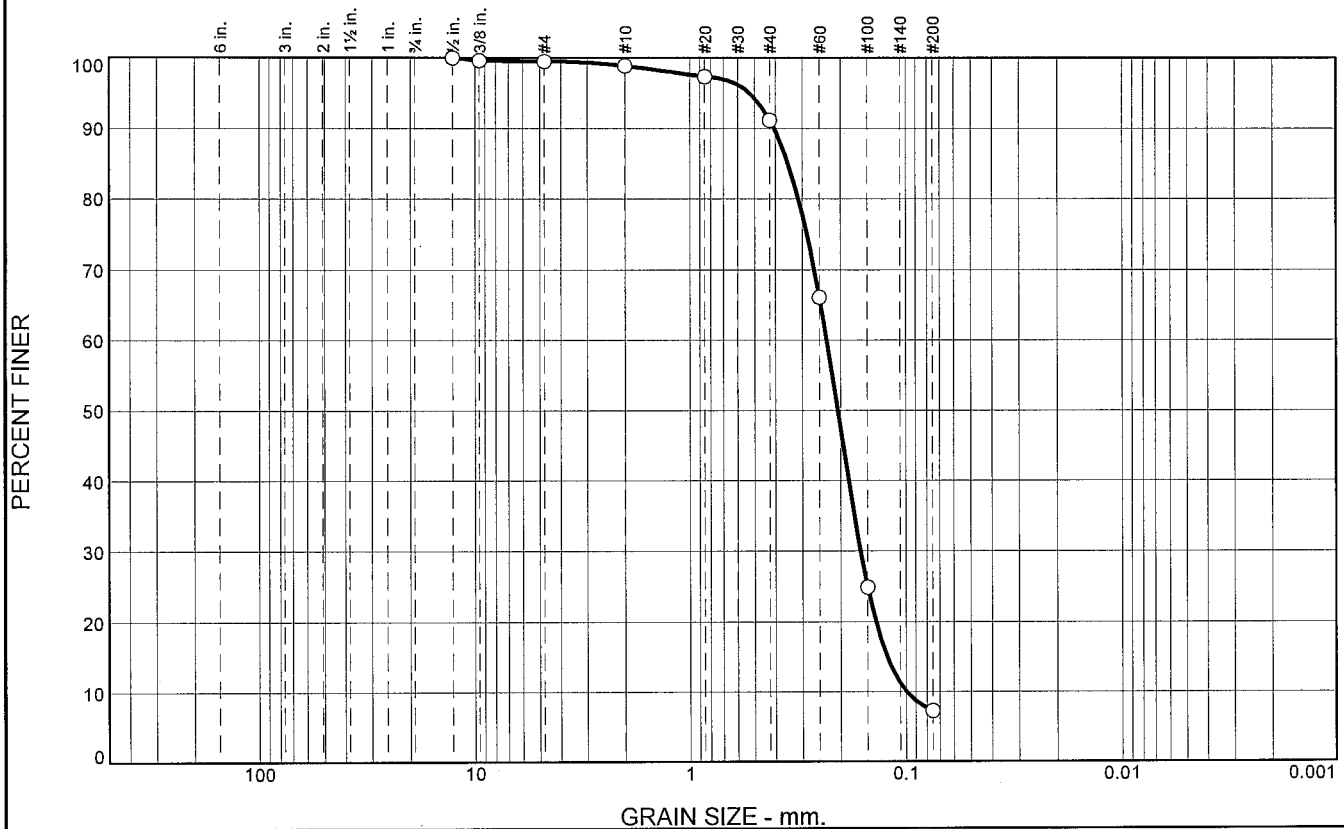
Tested By: R.Martin

Checked By: R.Byrd

Boring Designation BI-SI-31-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SI-31-10		LOCATION COORDINATES E = 963,513 N = 256,766		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 0 UNDISTURBED (UD)	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 26 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-12-10		STARTED 06-12-10 COMPLETED 06-12-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -23.7 Ft.			
8. TOTAL DEPTH OF BORING 17.1 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-23.7	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, trace shell fragments, lt. gray (SP)	A	Classification: SP-SM Color: 2.5Y 7/1-light gray D50: 0.2057 mm % Fines: 7.3		
				B	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.1912 mm % Fines: 4.1		
-34.2	10.5						
			SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments, gray (SM)	C	Classification: SM Color: 2.5Y 6/2-light brownish gray D50: 0.1271 mm % Fines: 13.5		
-37.2	13.5						
			CLAY, lean, dark gray (CL)	NS			
-40.8	17.1						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.6	0.6	7.6	83.9	7.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.500	100.0		
.375	99.6		
#4	99.4		
#10	98.8		
#20	97.3		
#40	91.2		
#60	66.1		
#100	24.9		
#200	7.3		

* (no specification provided)

Material Description
SAND, (SP-SM), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.4064 D₈₅= 0.3502 D₆₀= 0.2313
 D₅₀= 0.2057 D₃₀= 0.1617 D₁₅= 0.1221
 D₁₀= 0.0995 C_u= 2.32 C_c= 1.14

Classification
 USCS= SP-SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-SI-31-10A
 Sample Number: TE Lab ID: 4538.52

Depth: 0.0 - 5.0 (ft.)

Date: 6/19/10

Thompson Engineering

Mobile, Alabama

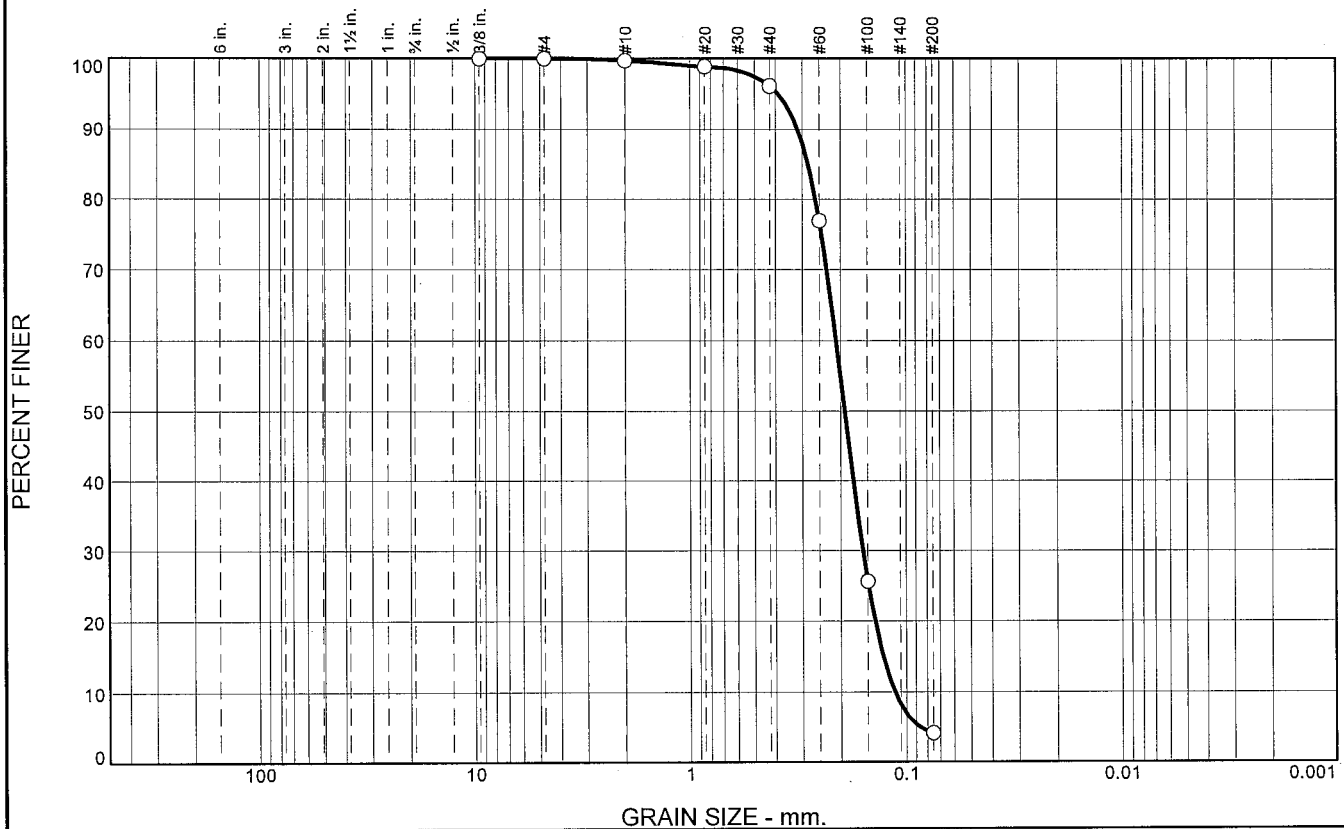
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.3	3.5	92.1	4.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.7		
#20	98.8		
#40	96.2		
#60	76.9		
#100	25.6		
#200	4.1		

* (no specification provided)

Material Description

SAND, (SP), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.3154

D₈₅= 0.2823

D₆₀= 0.2096

D₅₀= 0.1912

D₃₀= 0.1577

D₁₅= 0.1277

C_u= 1.85

C_c= 1.05

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-SI-31-10B
Sample Number: TE Lab ID: 4538.53

Depth: 5.0 - 10.5 (ft.)

Date: 6/19/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

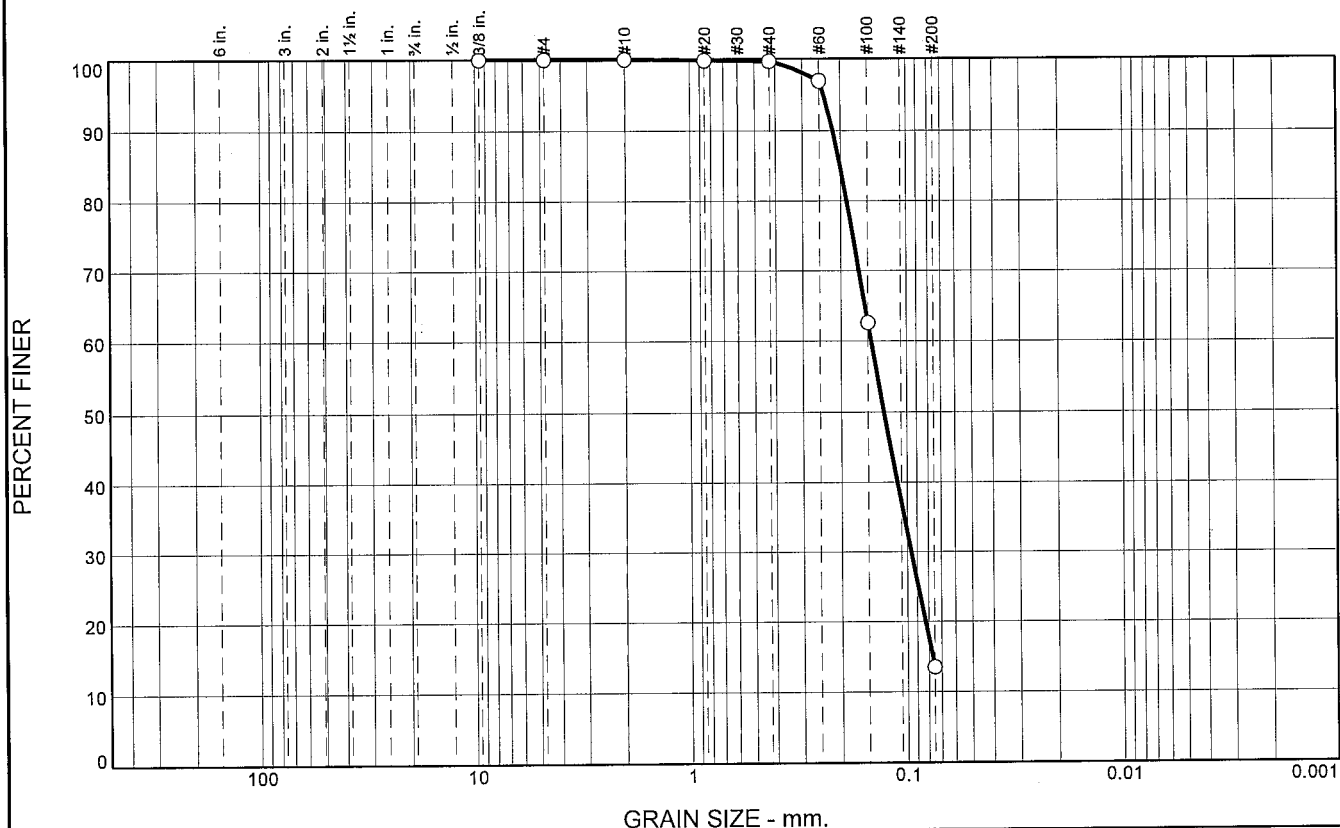
Project No: 10-2123-0009

Figure

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.3	86.2	13.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.8		
#40	99.7		
#60	97.0		
#100	62.6		
#200	13.5		

* (no specification provided)

Material Description
SILTY SAND, (SM), fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.2170 D₈₅= 0.2008 D₆₀= 0.1451
D₅₀= 0.1271 D₃₀= 0.0958 D₁₅= 0.0767
D₁₀= C_u= C_c=

Classification
USCS= SM AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-SI-31-10C
Sample Number: TE Lab ID: 4538.54

Depth: 10.5 - 13.5 (ft.)

Date: 6/19/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Figure

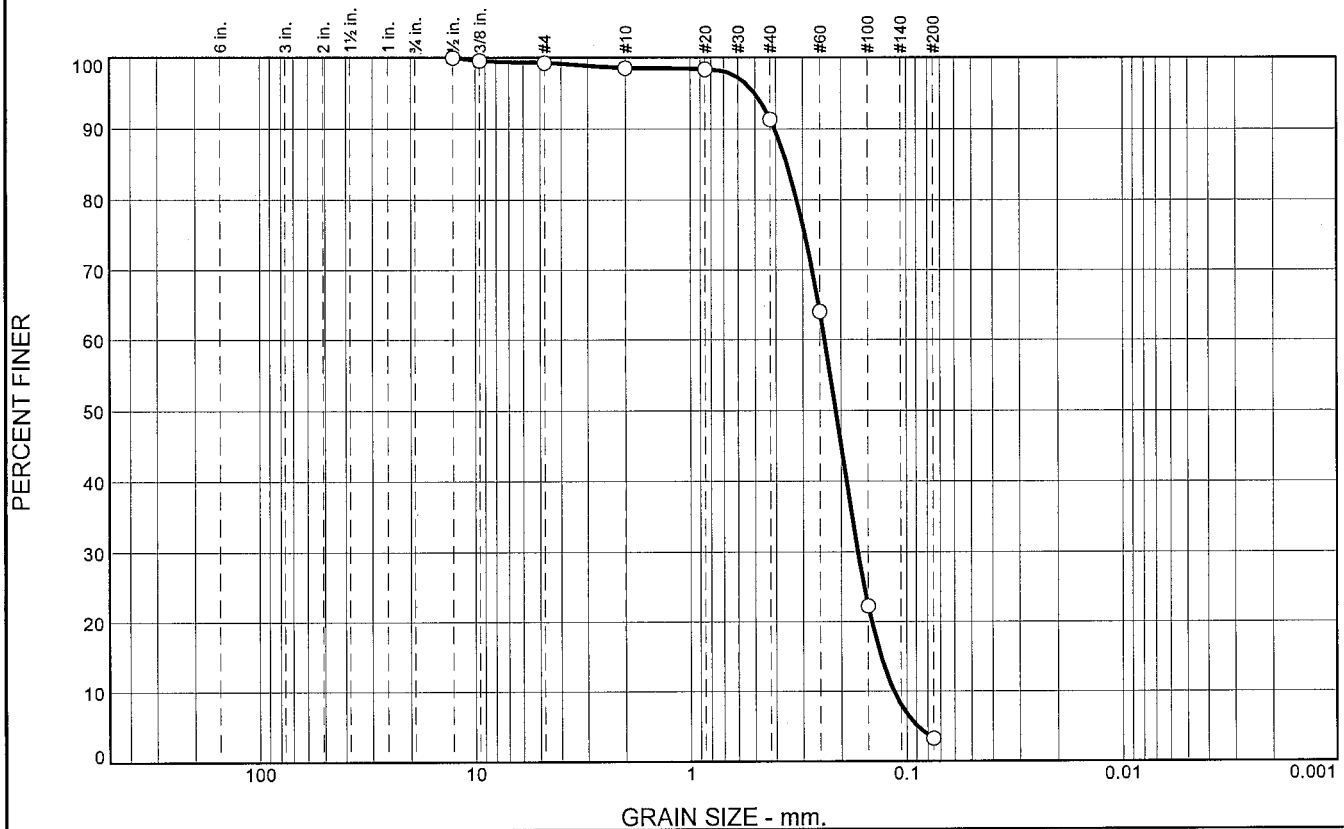
Tested By: R.Martin

Checked By: R.Byrd

Boring Designation BI-SI-32-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SI-32-10		LOCATION COORDINATES E = 965,567 N = 257,529		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 4		DISTURBED 0 UNDISTURBED (UD)	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 28 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-12-10		STARTED 06-12-10 COMPLETED 06-12-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -25.7 Ft.			
8. TOTAL DEPTH OF BORING 18.9 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-25.7	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, trace wood debris, trace shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 7/2-light gray D50: 0.2115 mm % Fines: 3.3		
				B	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.1631 mm % Fines: 4.6		
				C	Classification: SP-SM Color: 5Y 7/1-light gray D50: 0.1496 mm % Fines: 7.1		
-41.0	15.3						
			SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments, gray (SM)	D	Classification: SM Color: 2.5Y 6/2-light brownish gray D50: 0.1601 mm % Fines: 12.9		
-44.6	18.9						
			NOTES:				
			1. Soils are field visually classified in accordance with the Unified Soils Classification System.				
			2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.8	0.7	7.2	88.0	3.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.500	100.0		
.375	99.5		
#4	99.2		
#10	98.5		
#20	98.4		
#40	91.3		
#60	64.0		
#100	22.2		
#200	3.3		

* (no specification provided)

Material Description

SAND, (SP), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.4071

D₈₅= 0.3560

D₆₀= 0.2378

D₅₀= 0.2115

D₃₀= 0.1672

D₁₅= 0.1312

D₁₀= 0.1145

C_u= 2.08

C_c= 1.03

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-SI-32-10A
Sample Number: TE Lab ID: 4538.55

Depth: 0.0 - 5.0 (ft.)

Date: 6/19/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

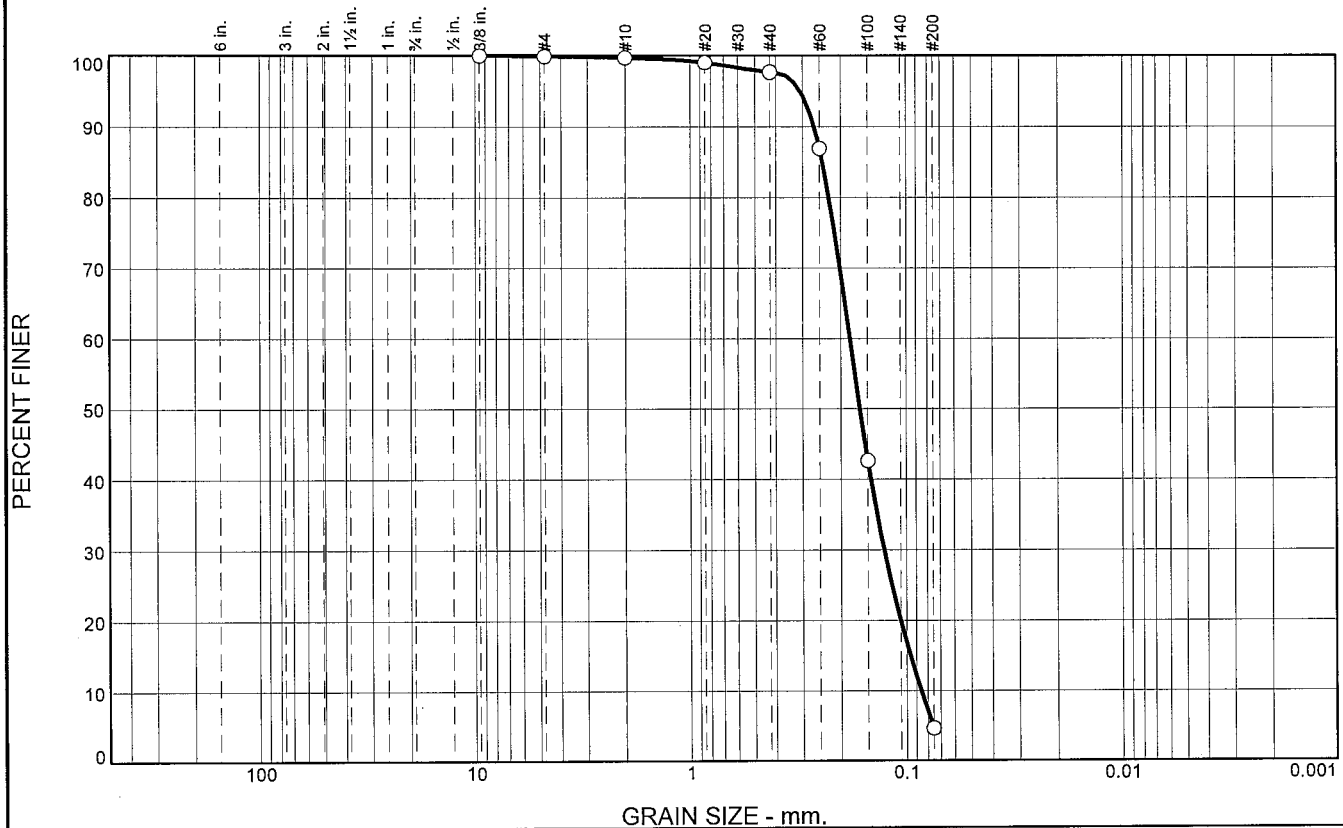
Project No: 10-2123-0009

Figure

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.2	2.0	93.1	4.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.7		
#20	99.0		
#40	97.7		
#60	86.9		
#100	42.6		
#200	4.6		

* (no specification provided)

Material Description
SAND, (SP), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.2652 D₈₅= 0.2427 D₆₀= 0.1812
 D₅₀= 0.1631 D₃₀= 0.1265 D₁₅= 0.0960
 D₁₀= 0.0856 C_u= 2.12 C_c= 1.03

Classification
 USCS= SP AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-SI-32-10B
 Sample Number: TE Lab ID: 4538.56

Depth: 5.0 - 10.0 (ft.)

Date: 6/19/10

Thompson Engineering

Mobile, Alabama

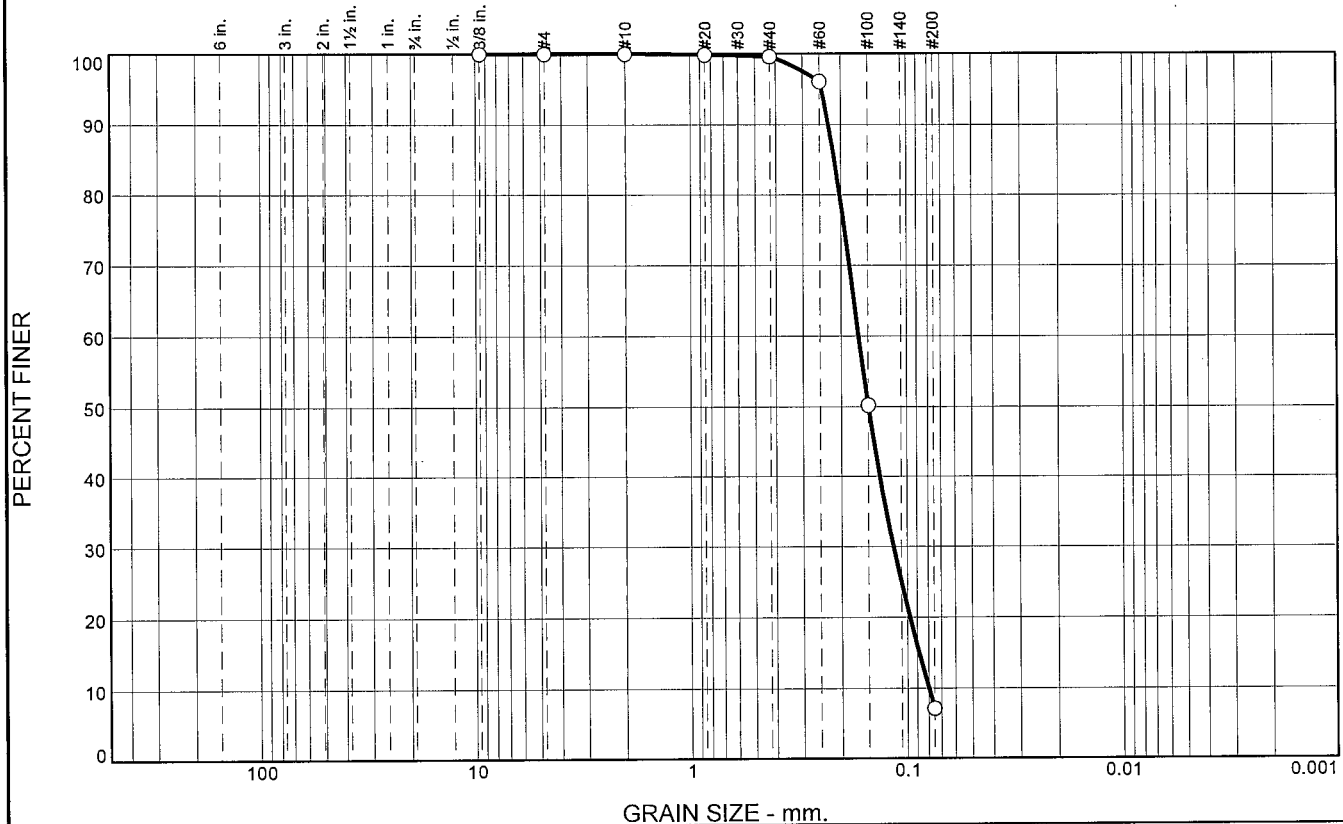
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.4	92.5	7.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	99.6		
#60	96.1		
#100	50.2		
#200	7.1		

* (no specification provided)

Material Description

SAND, (SP-SM), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.2275

D₈₅= 0.2139

D₆₀= 0.1659

D₅₀= 0.1496

D₃₀= 0.1154

D₁₅= 0.0883

D₁₀= 0.0797

C_u= 2.08

C_c= 1.01

Classification

USCS= SP-SM

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-SI-32-10C
Sample Number: TE Lab ID: 4538.57

Depth: 10.0 - 15.3 (ft.)

Date: 6/19/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

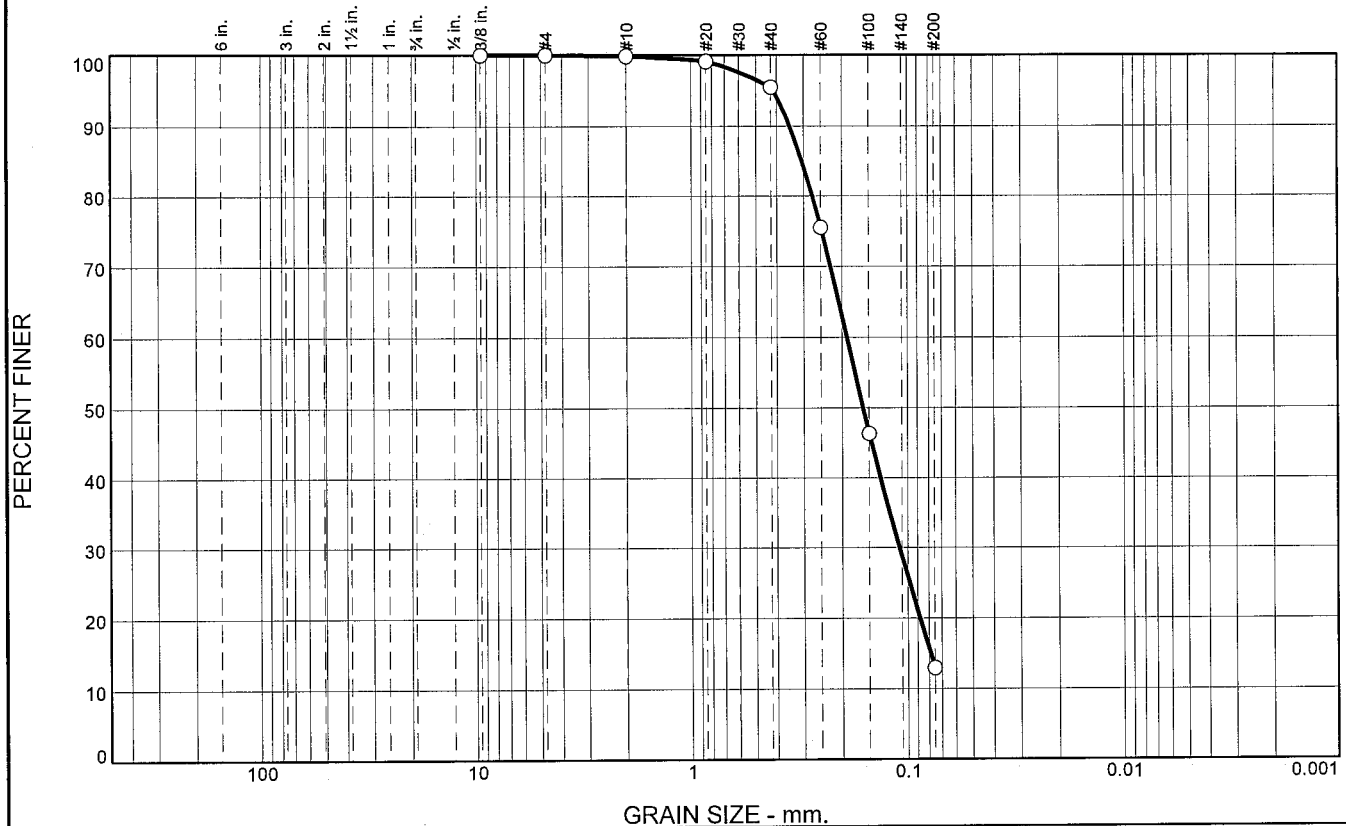
Project No: 10-2123-0009

Figure

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	4.3	82.6	12.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.8		
#20	95.5		
#40	75.5		
#60	46.3		
#100	12.9		
#200	12.9		

* (no specification provided)

Material Description
SILTY SAND, (SM), fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.3485 D₈₅= 0.3058 D₆₀= 0.1900
D₅₀= 0.1601 D₃₀= 0.1090 D₁₅= 0.0786
D₁₀= C_u= C_c=

Classification
USCS= SM AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-SI-32-10D
Sample Number: TE Lab ID: 4538.58

Depth: 15.3 - 18.9 (ft.)

Date: 6/19/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Figure

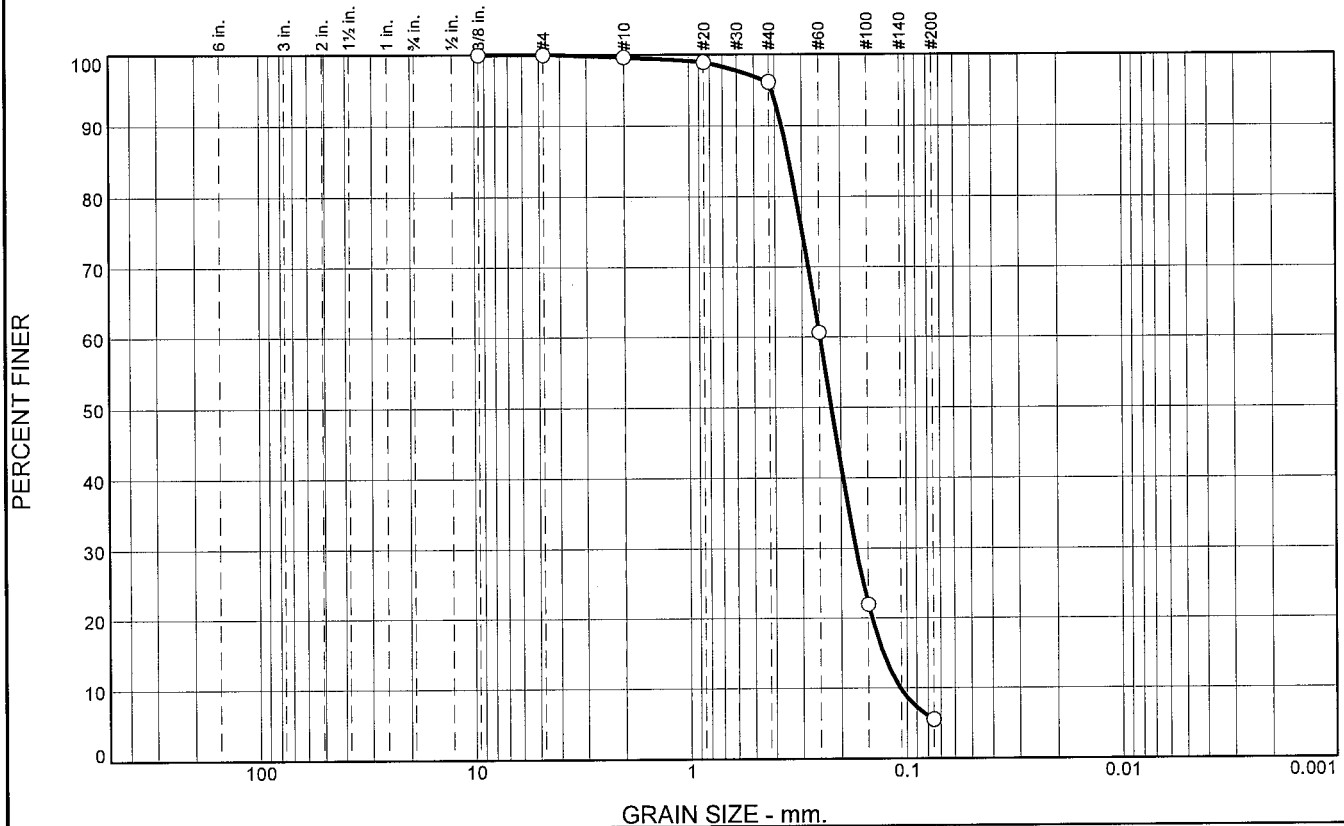
Tested By: R.Martin

Checked By: R.Byrd

Boring Designation BI-SI-33-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SI-33-10		LOCATION COORDINATES E = 967,418 N = 257,960		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 26 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-09-10		STARTED 06-09-10 COMPLETED 06-09-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -25.5 Ft.			
8. TOTAL DEPTH OF BORING 13.3 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-25.5	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, trace shell fragments, lt. gray (SP)	A	Classification: SP-SM Color: 5Y 7/1-light gray D50: 0.2204 mm % Fines: 5.5		
				B	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.1598 mm % Fines: 4.8		
-34.9	9.4						
			SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments, gray (SM)	C	Classification: SM Color: 2.5Y 4/2-dark grayish brown D50: 0.1591 mm % Fines: 12.6		
-38.8	13.3						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.4	3.4	90.7	5.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.6		
#20	98.9		
#40	96.2		
#60	60.6		
#100	21.9		
#200	5.5		

* (no specification provided)

Material Description

SAND, (SP-SM), fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.3725 D₈₅= 0.3431 D₆₀= 0.2481
D₅₀= 0.2204 D₃₀= 0.1707 D₁₅= 0.1285
D₁₀= 0.1075 C_u= 2.31 C_c= 1.09

Classification

USCS= SP-SM AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-SI-33-10A
Sample Number: TE Lab ID: 4538.27

Depth: 0.0 - 4.7 (ft.)

Date: 6/19/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

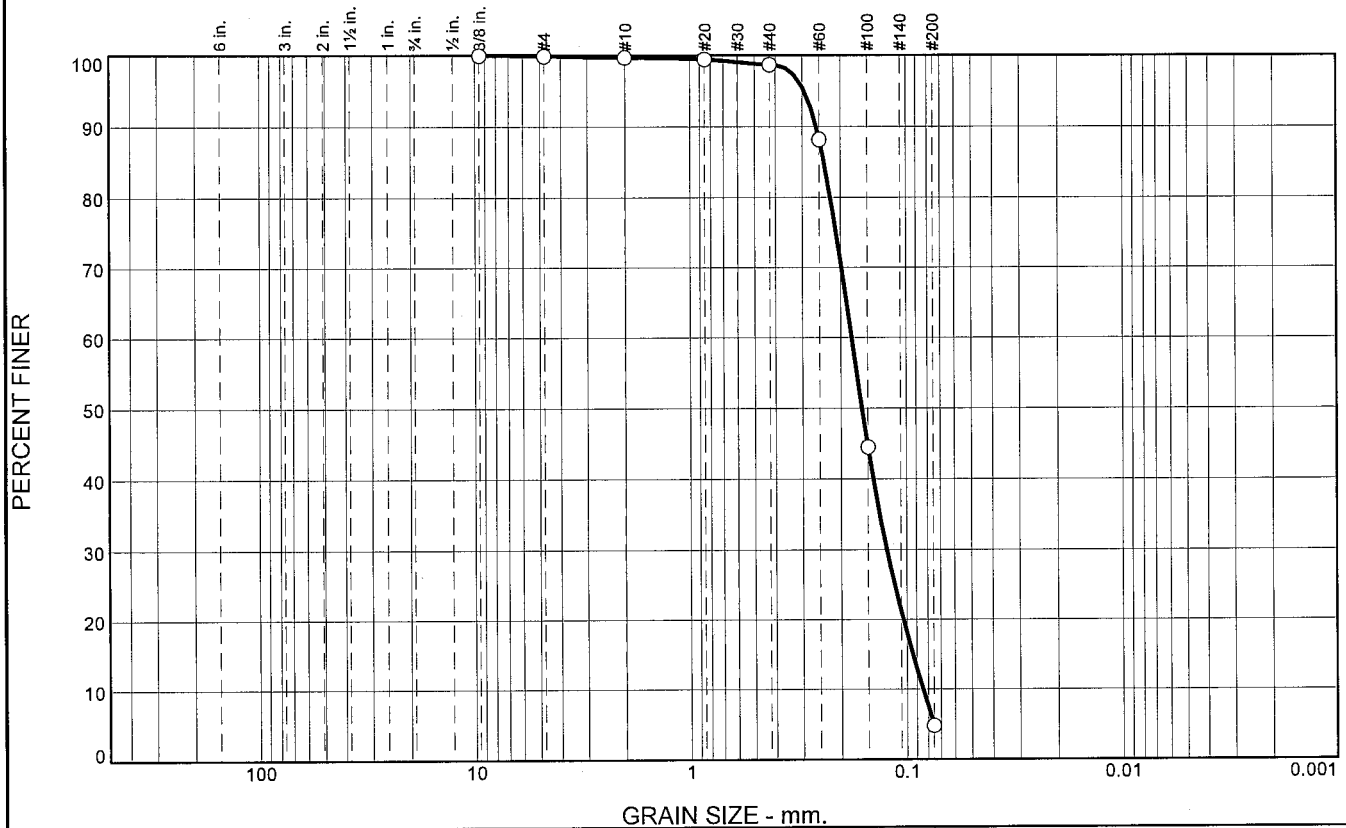
Project No: 10-2123-0009

Figure

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.2	1.0	93.9	4.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.7		
#20	99.4		
#40	98.7		
#60	88.2		
#100	44.5		
#200	4.8		

* (no specification provided)

Material Description
SAND, (SP), fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.2586 D₈₅= 0.2379 D₆₀= 0.1779
D₅₀= 0.1598 D₃₀= 0.1233 D₁₅= 0.0940
D₁₀= 0.0844 C_u= 2.11 C_c= 1.01

Classification
USCS= SP AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-SI-33-10B
Sample Number: TE Lab ID: 4538.28

Depth: 4.7 - 9.4 (ft.)

Date: 6/19/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

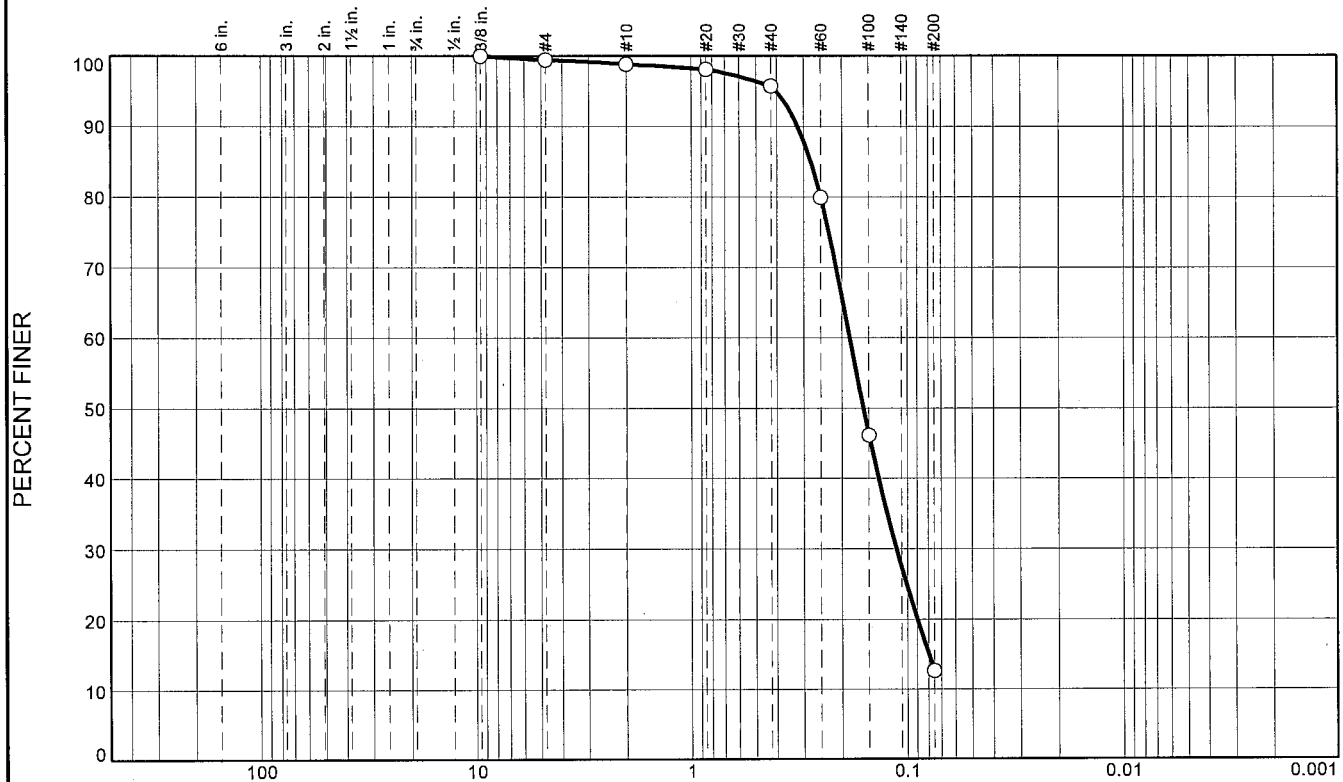
Project No: 10-2123-0009

Figure

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



GRAIN SIZE - mm.

% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.6	0.6	3.1	83.1	12.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.4		
#10	98.8		
#20	98.1		
#40	95.7		
#60	79.9		
#100	46.1		
#200	12.6		

* (no specification provided)

Material Description

SILTY SAND, (SM), fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.3201 D₈₅= 0.2782 D₆₀= 0.1837
D₅₀= 0.1591 D₃₀= 0.1122 D₁₅= 0.0796
C_u= C_c=

Classification

USCS= SM AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-SI-33-10C
Sample Number: TE Lab ID: 4538.29

Depth: 9.4 - 13.3 (ft.)

Date: 6/19/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Figure

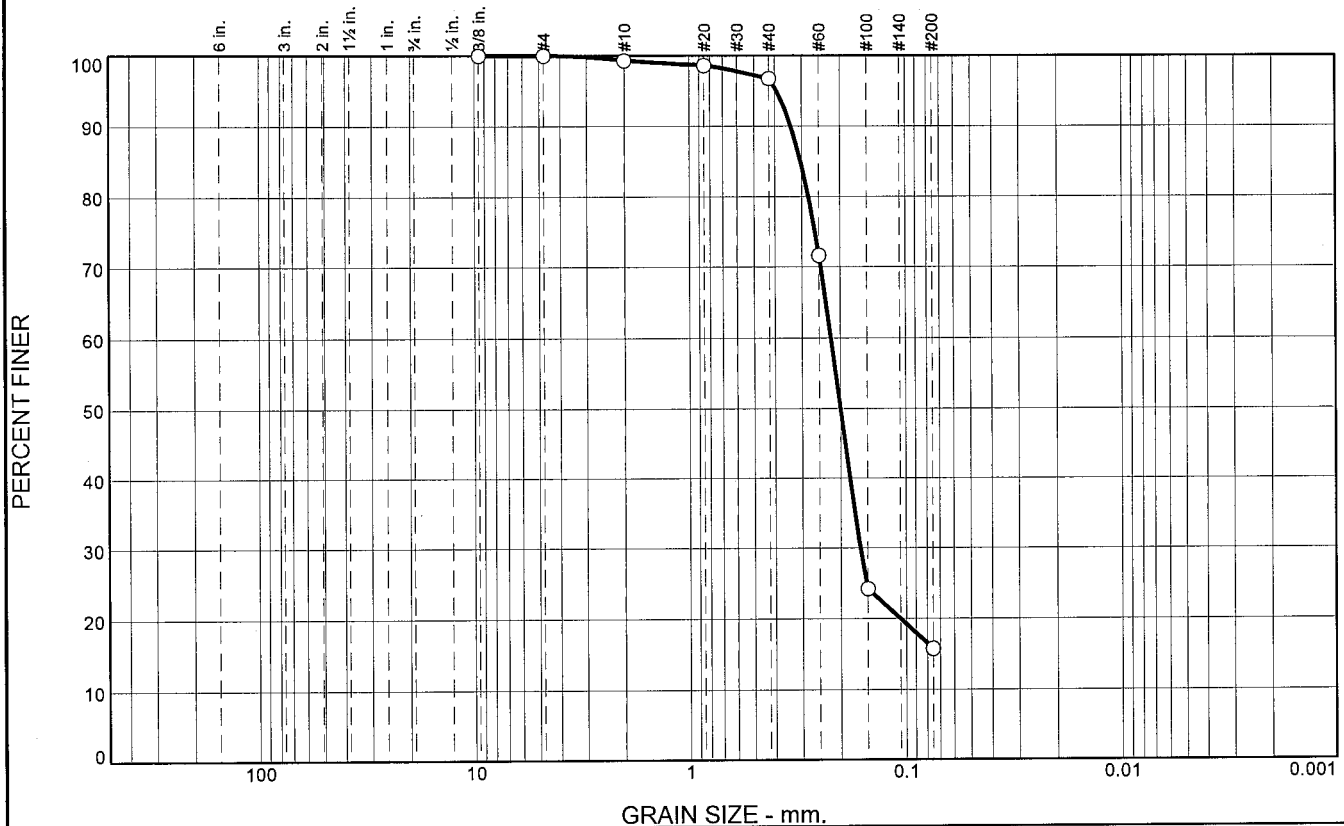
Tested By: R.Martin

Checked By: R.Byrd

Boring Designation BI-SI-34-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SI-34-10		LOCATION COORDINATES E = 990,988 N = 258,568		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 27 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-09-10		STARTED 06-09-10 COMPLETED 06-09-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -26.3 Ft.			
8. TOTAL DEPTH OF BORING 14.2 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-26.3	0.0						
			SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments, gray (SM)	A	Classification: SM Color: 2.5Y 6/2-light brownish gray D50: 0.1999 mm % Fines: 15.8		
-29.9	3.6						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, trace shell fragments, lt. gray (SP)	B	Classification: SP-SM Color: 2.5Y 7/1-light gray D50: 0.1952 mm % Fines: 9.2		
				C	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.1871 mm % Fines: 4.8		
-39.3	13.0						
-40.5	14.2		CLAY, lean, dark gray (CL)	NS			
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.7	2.5	81.0	15.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.3		
#20	98.6		
#40	96.8		
#60	71.6		
#100	24.2		
#200	15.8		

* (no specification provided)

Material Description

SILTY SAND, (SM), fine grained, with clay pockets

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.3374 D₈₅= 0.3038 D₆₀= 0.2206
D₅₀= 0.1999 D₃₀= 0.1621 D₁₅=
D₁₀= C_u= C_c=

Classification

USCS= SM AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-SI-34-10A
Sample Number: TE Lab ID: 4538.18

Depth: 0.0 - 3.6 (ft.)

Date: 6/19/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

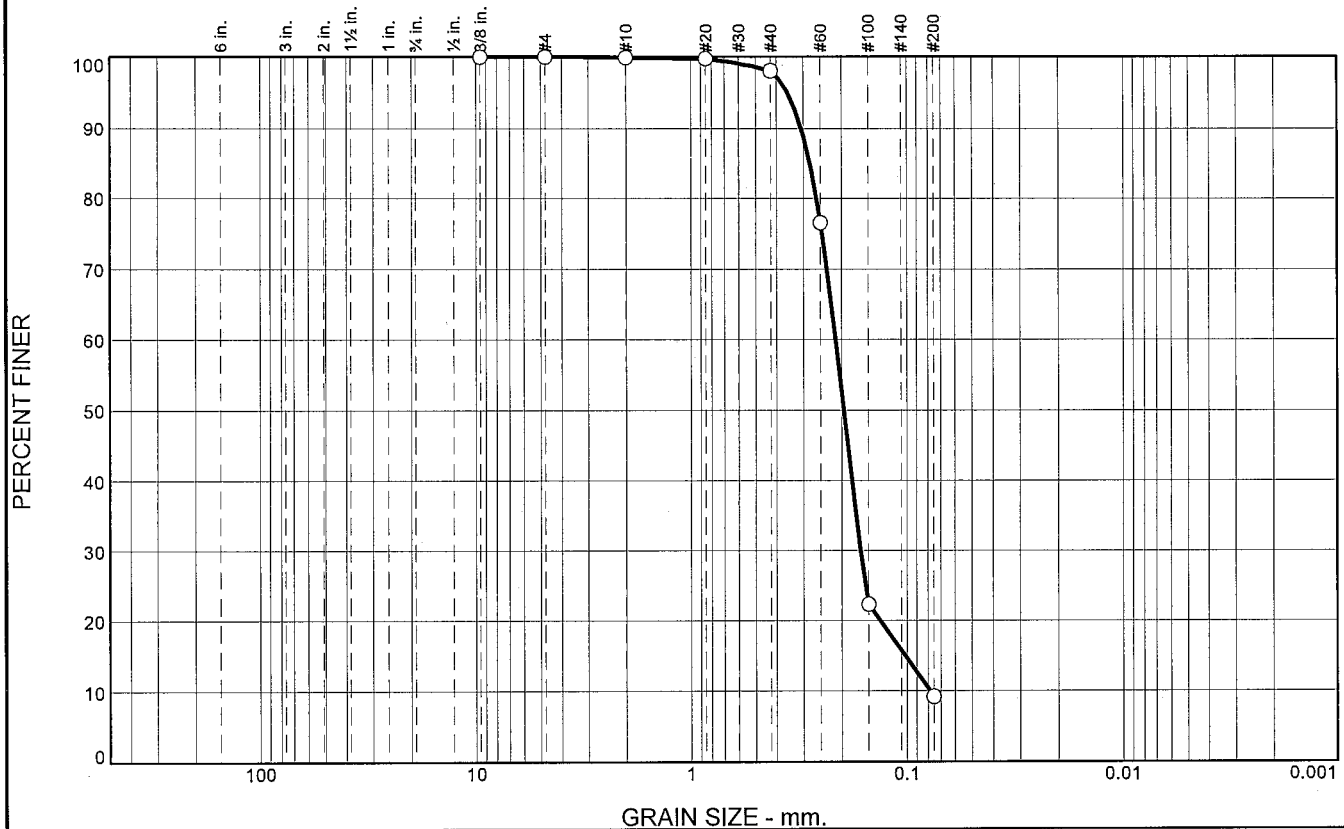
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	1.8	88.9	9.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	98.1		
#40	76.6		
#60	22.3		
#100	9.2		
#200			

* (no specification provided)

Material Description

SAND, (SP-SM), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.3074

D₈₅= 0.2799

D₆₀= 0.2128

D₅₀= 0.1952

D₃₀= 0.1632

D₁₅= 0.1019

D₁₀= 0.0782

C_u= 2.72

C_c= 1.60

Classification

USCS= SP-SM

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-SI-34-10B
Sample Number: TE Lab ID: 4538.19

Depth: 3.6 - 8.0 (ft.)

Date: 6/19/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03

Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report

Grain Size (mm)	Percent Finer (%)
60.0	100.0
30.0	100.0
15.0	100.0
7.5	100.0
4.75	100.0
2.5	100.0
1.18	100.0
0.85	100.0
0.6	100.0
0.425	100.0
0.3	100.0
0.25	100.0
0.2	100.0
0.15	100.0
0.106	100.0
0.075	22.2
0.053	8.0
0.0425	4.8

% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.5	1.2	93.5	4.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.5		
#20	99.3		
#40	98.3		
#60	85.8		
#100	22.2		
#200	4.8		

Material Description

SAND, (SP), fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D ₉₀ = 0.2869	D ₈₅ = 0.2479	D ₆₀ = 0.2011
D ₅₀ = 0.1871	D ₃₀ = 0.1609	D ₁₅ = 0.1126
D ₁₀ = 0.0922	C _u = 2.18	C _c = 1.40

Classification

USCS= SP AASHTO=

Remarks

CADD CODE = CH10D965

* (no specification provided)

Location: USACE Sample # BI-SI-34-10C

Sample Number: TE Lab ID: 4538.20

Depth: 8.0 - 13.0 (ft.)

Date: 6/19/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

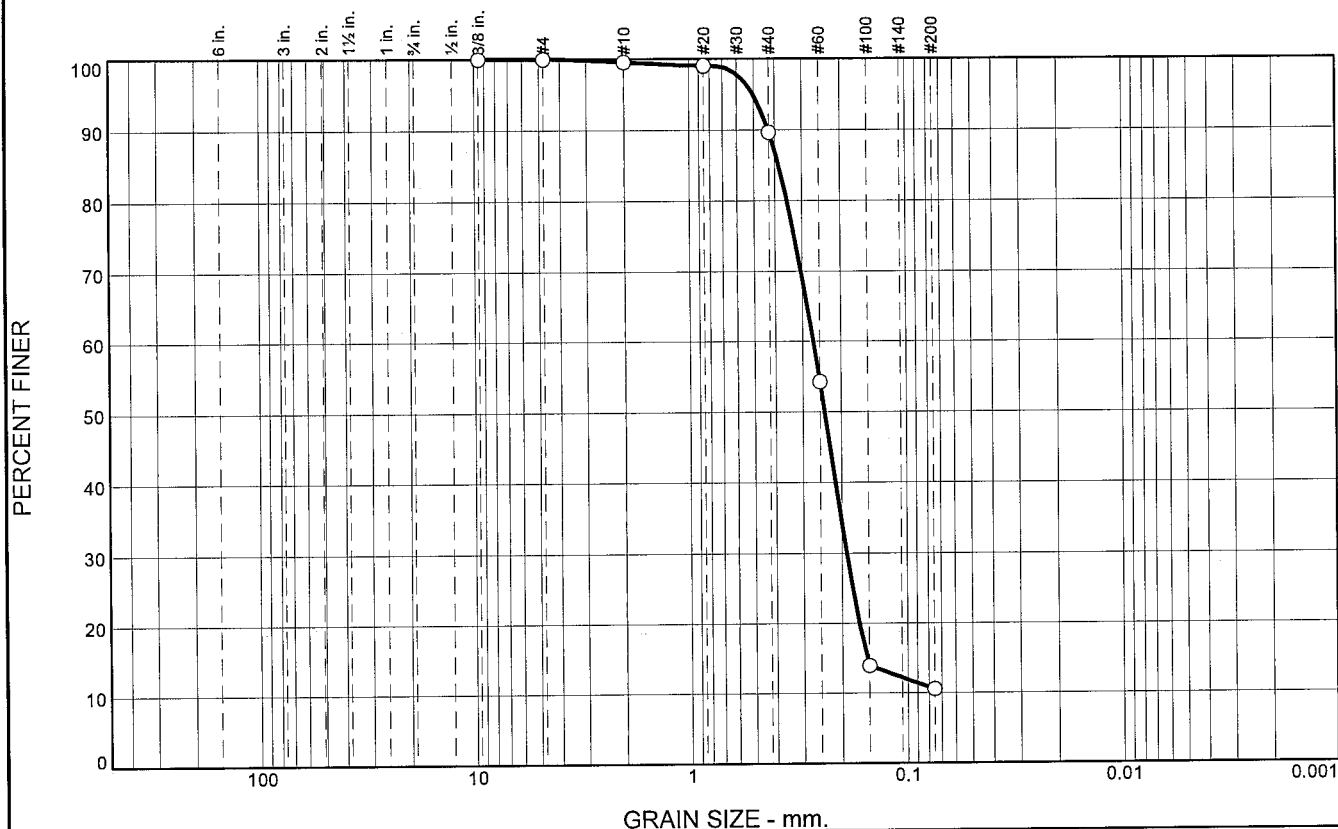
Figure

Checked By: R.Byrd

Boring Designation BI-SI-35-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SI-35-10		LOCATION COORDINATES E = 970,918 N = 259,679		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 27 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-09-10		STARTED 06-09-10 COMPLETED 06-09-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -26.1 Ft.			
8. TOTAL DEPTH OF BORING 16.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-26.1	0.0						
-26.7	0.6			NS			
			SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments, gray (SM)				
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, trace shell fragments (SP)	A	Classification: SP-SM Color: 5Y 7/1-light gray D50: 0.2383 mm % Fines: 10.5		
				B	Classification: SP-SM Color: 2.5Y 7/1-light gray D50: 0.2374 mm % Fines: 8.1		
				C	Classification: SP-SM Color: 2.5Y 7/1-light gray D50: 0.2054 mm % Fines: 9.5		
-39.5	13.4						
			CLAY, lean, dark gray (CL)	NS			
-42.1	16.0						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.4	9.9	79.2	10.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.6		
#20	99.1		
#40	89.7		
#60	54.2		
#100	13.9		
#200	10.5		

* (no specification provided)

Material Description

SAND, (SP-SM), fine grained, with clay nodules

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.4283

D₈₅= 0.3845

D₆₀= 0.2677

D₅₀= 0.2383

D₃₀= 0.1897

D₁₅= 0.1531

D₁₀=

C_u=

C_c=

Classification

USCS= SP-SM

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-SI-35-10A
Sample Number: TE Lab ID: 4538.15

Depth: 0.6 - 5.0 (ft.)

Date: 6/19/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

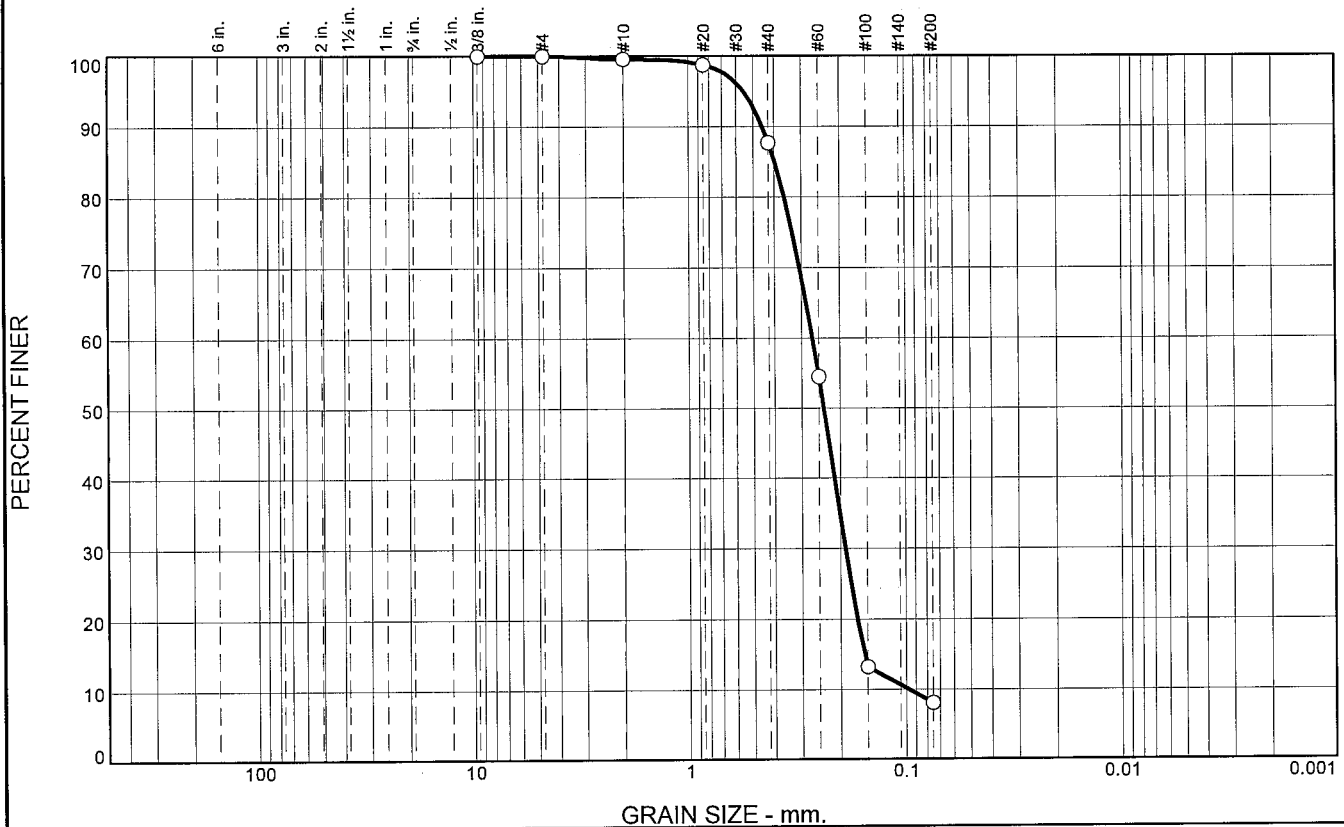
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.5	11.8	79.6	8.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.5		
#20	98.7		
#40	87.7		
#60	54.5		
#100	13.2		
#200	8.1		

* (no specification provided)

Material Description

SAND, (SP-SM), medium to fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.4535

D₈₅= 0.3988

D₆₀= 0.2675

D₅₀= 0.2374

D₃₀= 0.1895

D₁₅= 0.1547

D₁₀= 0.0971

C_u= 2.75

C_c= 1.38

Classification

USCS= SP-SM

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-SI-35-10B
Sample Number: TE Lab ID: 4538.16

Depth: 5.0 - 10.0 (ft.)

Date: 6/19/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

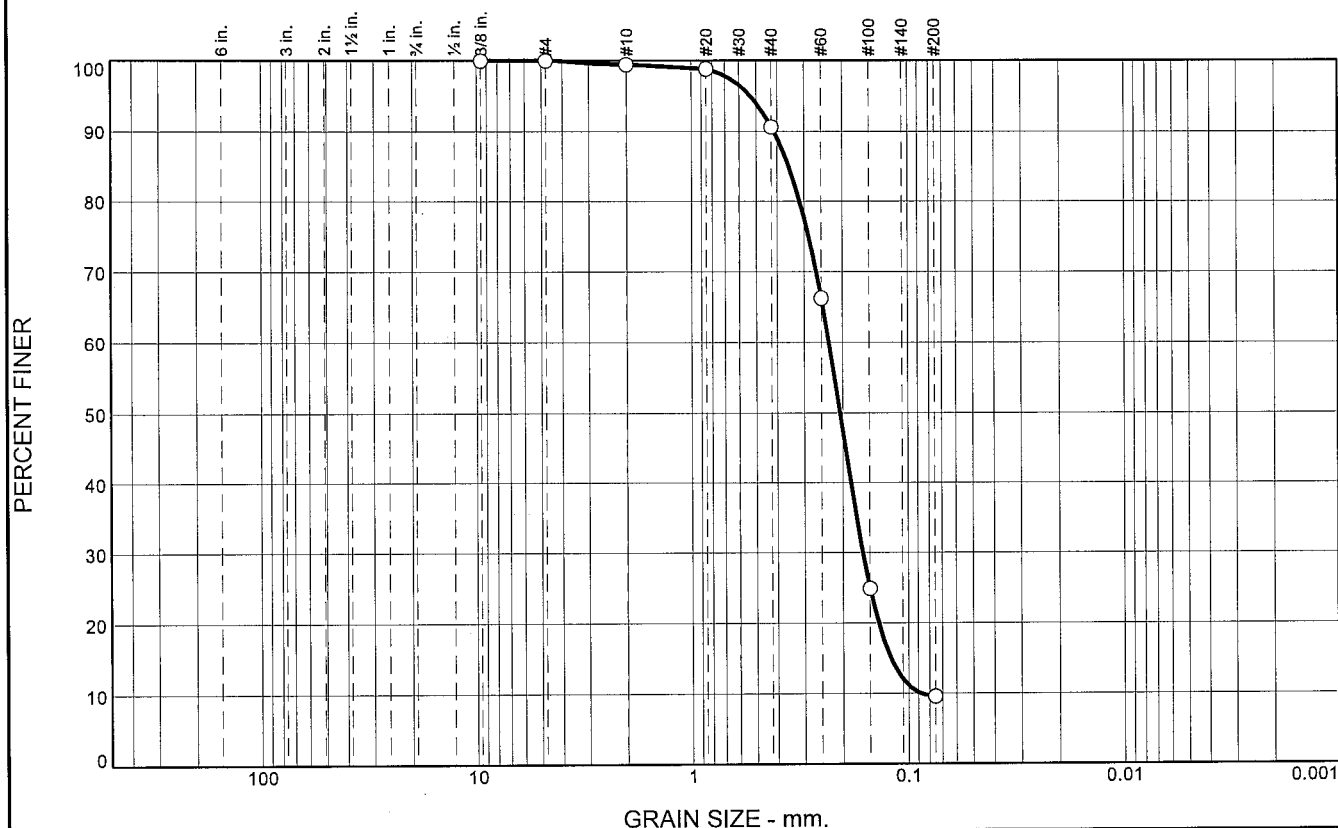
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.6	8.8	81.1	9.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.4		
#20	98.8		
#40	90.6		
#60	66.2		
#100	24.9		
#200	9.5		

* (no specification provided)

Material Description

SAND, (SP-SM), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.4148

D₈₅= 0.3540

D₆₀= 0.2308

D₅₀= 0.2054

D₃₀= 0.1617

D₁₅= 0.1208

D₁₀= 0.0878

C_u= 2.63

C_c= 1.29

Classification

USCS= SP-SM

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-SI-35-10C
Sample Number: TE Lab ID: 4538.17

Depth: 10.0 - 13.4 (ft.)

Date: 6/19/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Figure

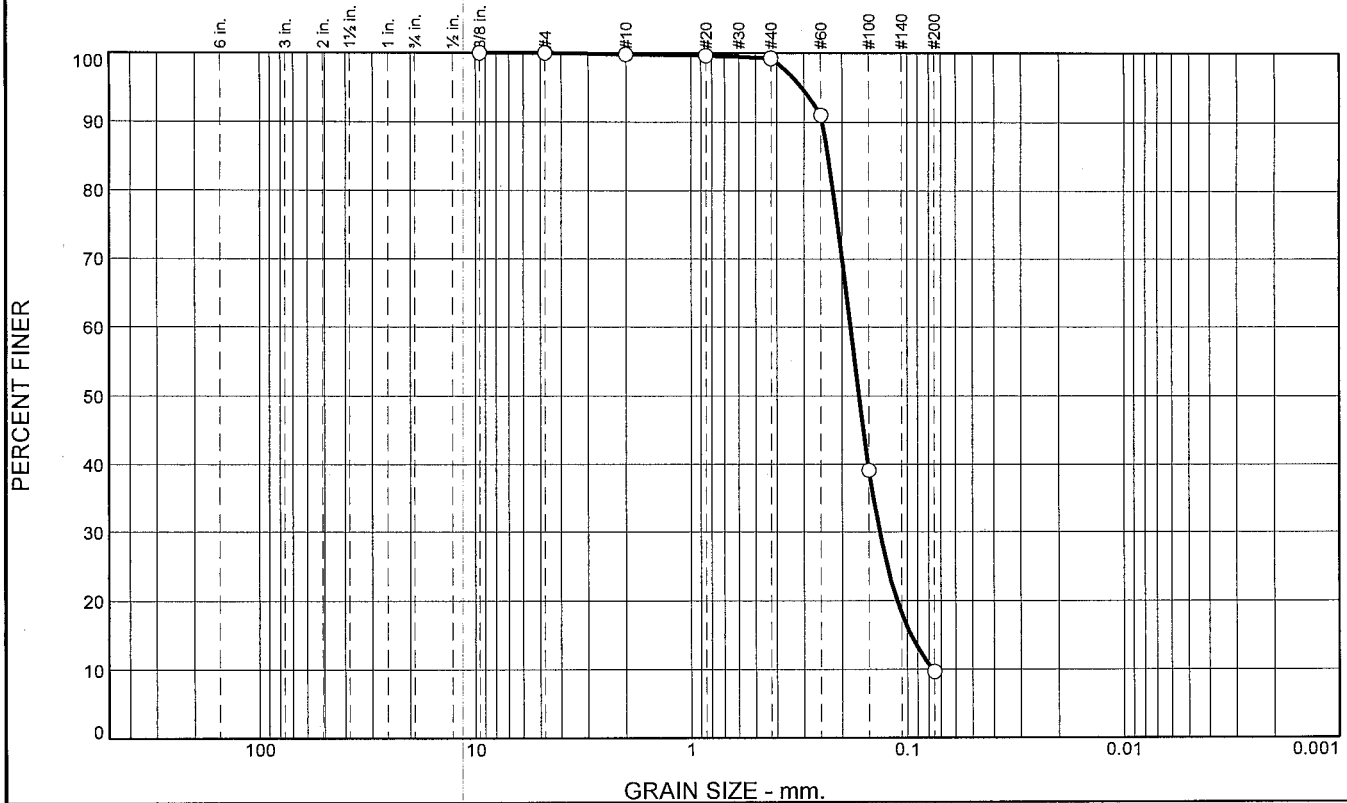
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-SI-36-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SI-36-10		LOCATION COORDINATES E = 957,515 N = 252,879		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 1 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH		26 Ft.	
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING		STARTED 06-12-10 COMPLETED 06-12-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING		-23.9 Ft.	
8. TOTAL DEPTH OF BORING 16.8 Ft.				17. TOTAL RECOVERY FOR BORING		100%	
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-23.9	0.0						
			SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments, gray (SM)	A	Classification: SP-SM Color: 2.5Y 6/2-light brownish gray D50: 0.1671 mm % Fines: 9.7		
-27.4	3.5						
			CLAY, lean, dark gray (CL)	NS			
-40.7	16.8						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	0.5	89.6	9.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.8		
#20	99.6		
#40	99.3		
#60	91.0		
#100	39.1		
#200	9.7		

* (no specification provided)

Material Description
SAND, (SP-SM), fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.2465 D₈₅= 0.2316 D₆₀= 0.1827
D₅₀= 0.1671 D₃₀= 0.1340 D₁₅= 0.0966
D₁₀= 0.0765 C_u= 2.39 C_c= 1.28

Classification
USCS= SP-SM AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-SI-36-10A
Sample Number: TE Lab ID: 4538.48

Depth: 0.0 - 3.5 (ft.)

Date: 6/19/10

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 **Report No.**

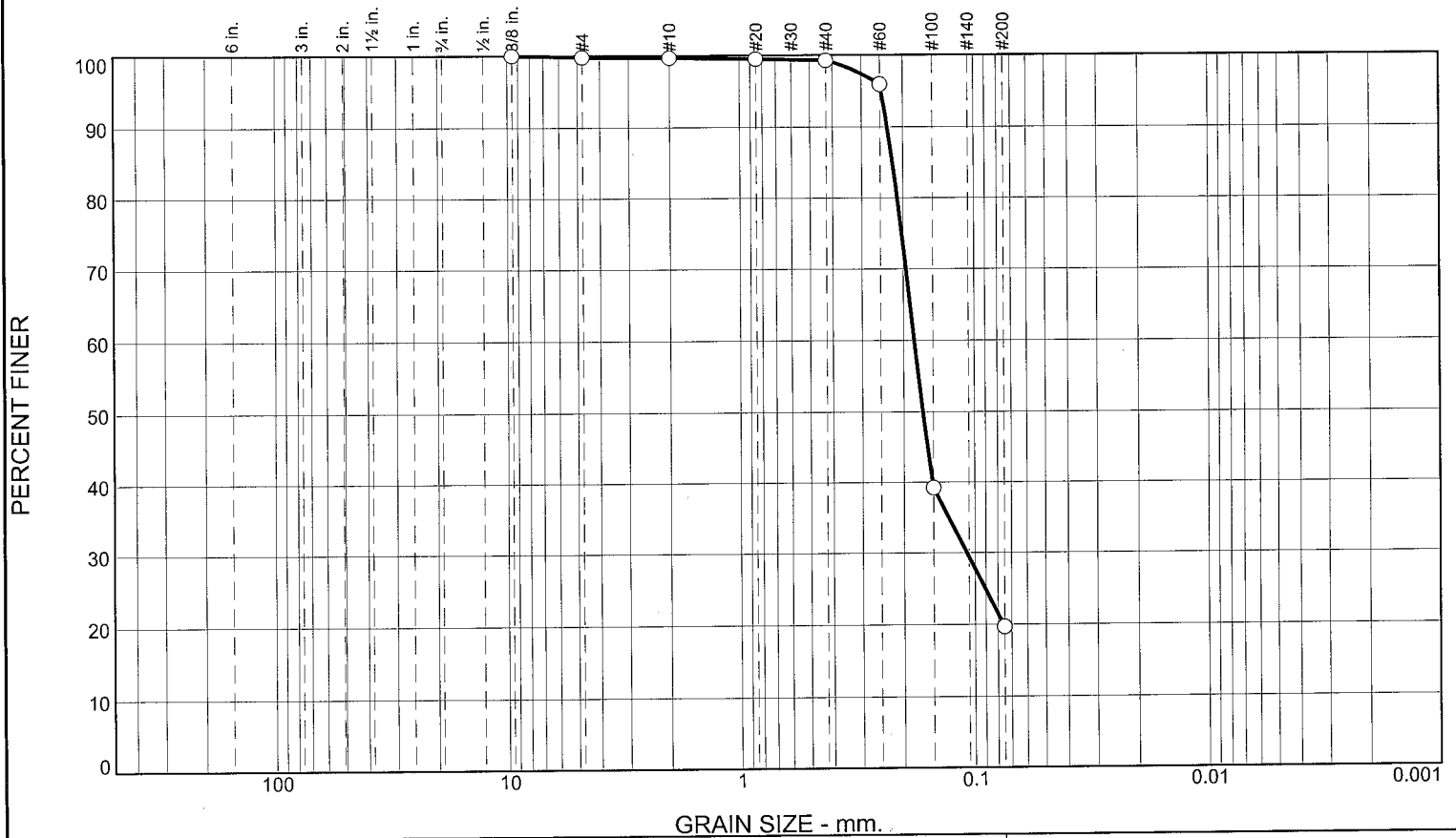
Tested By: R.Martin

Checked By: R.Byrd

Boring Designation BI-SI-37-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SI-37-10		LOCATION COORDINATES E = 959,401 N = 253,597		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 1 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 26 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING		STARTED 06-14-10 COMPLETED 06-14-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -24.0 Ft.			
8. TOTAL DEPTH OF BORING 17.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-24.0	0.0						
			SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments, gray (SM)	A	Classification: SM Color: 2.5Y 5/1-gray D50: 0.1658 mm % Fines: 19.7		
-29.7	5.7						
			CLAY, lean, dark gray (CL)	NS			
-41.0	17.0						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.1	0.5	79.5	19.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.8		
#10	99.7		
#20	99.5		
#40	99.2		
#60	95.9		
#100	39.2		
#200	19.7		

* (no specification provided)

Location: USACE Sample # BI-SI-37-10A
Sample Number: TE Lab ID: 4549.01

Depth: 0.0 - 5.7 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Figure

Material Description

SILTY SAND, (SM), fine grained, with clay nodules

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.2326

D₈₅= 0.2213

D₆₀= 0.1800

D₅₀= 0.1658

D₃₀= 0.1082

D₁₅=

D₁₀=

C_u=

C_c=

Classification

USCS= SM

AASHTO=

Remarks

CADD CODE = CH10D965

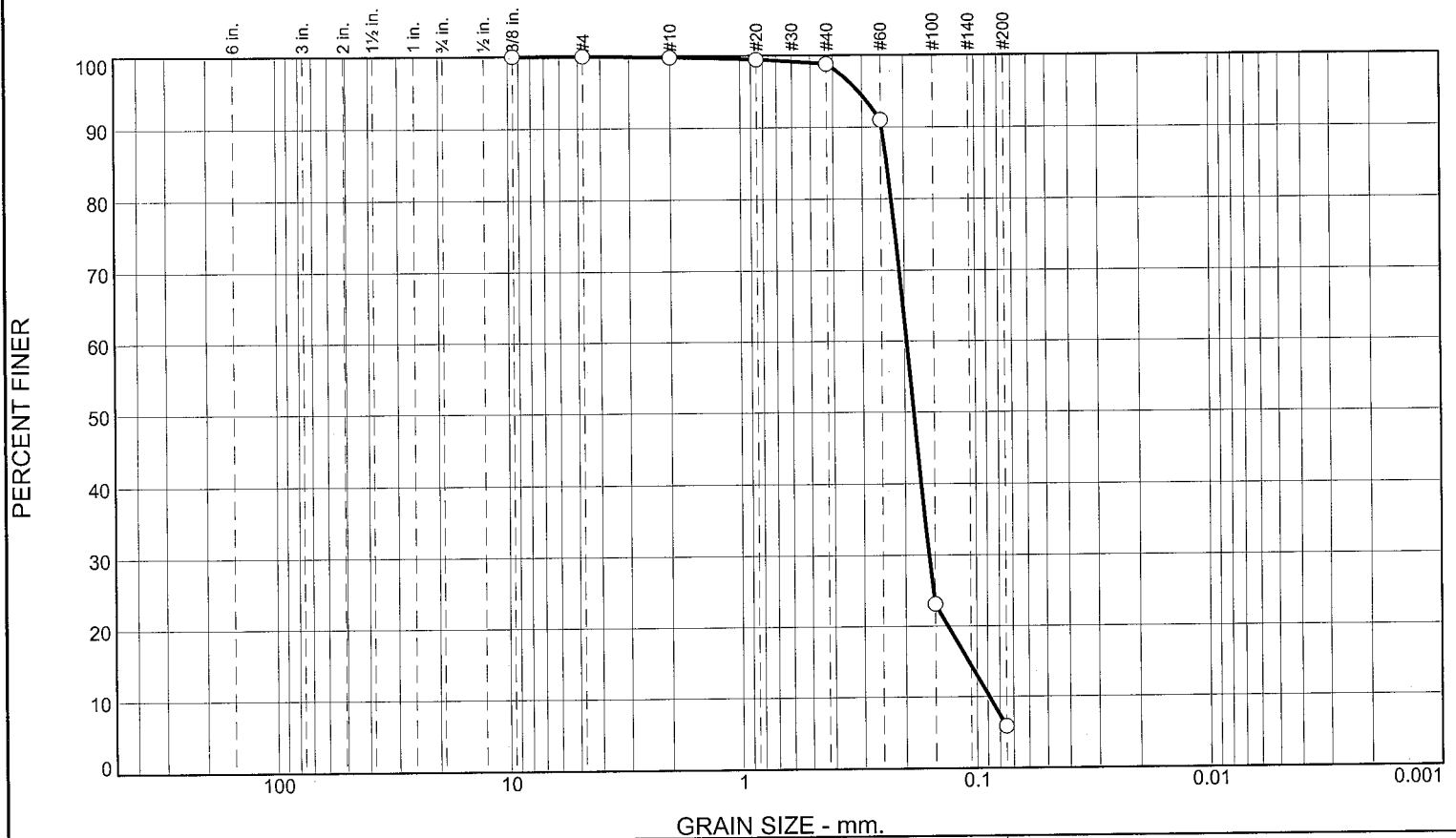
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-SI-38-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SI-38-10		LOCATION COORDINATES E = 964,637 N = 255,460		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 4		DISTURBED 4 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 27 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-14-10		STARTED 06-14-10 COMPLETED 06-14-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -24.8 Ft.			
8. TOTAL DEPTH OF BORING 15.5 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-24.8	0.0						
-26.8	2.0		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments, gray (SM)	A	Classification: SP-SM Color: 2.5Y 6/2-light brownish gray D50: 0.1831 mm % Fines: 5.8		
-29.3	4.5		CLAY, lean, dark gray (CL)	NS			
-37.6	12.8		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, trace shell fragments, lt. gray (SP)	B	Classification: SP-SM Color: 2.5Y 7/1-light gray D50: 0.1926 mm % Fines: 5.3		
-40.3	15.5		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments, gray (SM)	C	Classification: SP-SM Color: 2.5Y 6/2-light brownish gray D50: 0.1673 mm % Fines: 9.1		
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.	D	Classification: SM Color: 2.5Y 4/2-dark grayish brown D50: 0.1499 mm % Fines: 25.5		

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	1.0	93.0	5.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.8		
#20	99.4		
#40	98.8		
#60	91.0		
#100	23.1		
#200	5.8		

* (no specification provided)

Material Description
SAND, (SP-SM), medium to fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
 D₉₀= 0.2472 D₈₅= 0.2355 D₆₀= 0.1957
 D₅₀= 0.1831 D₃₀= 0.1590 D₁₅= 0.1083
 D₁₀= 0.0886 C_u= 2.21 C_c= 1.46

Classification
USCS= SP-SM AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-SI-38-10A
Sample Number: TE Lab ID: 4549.02

Depth: 0.0 - 2.0 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

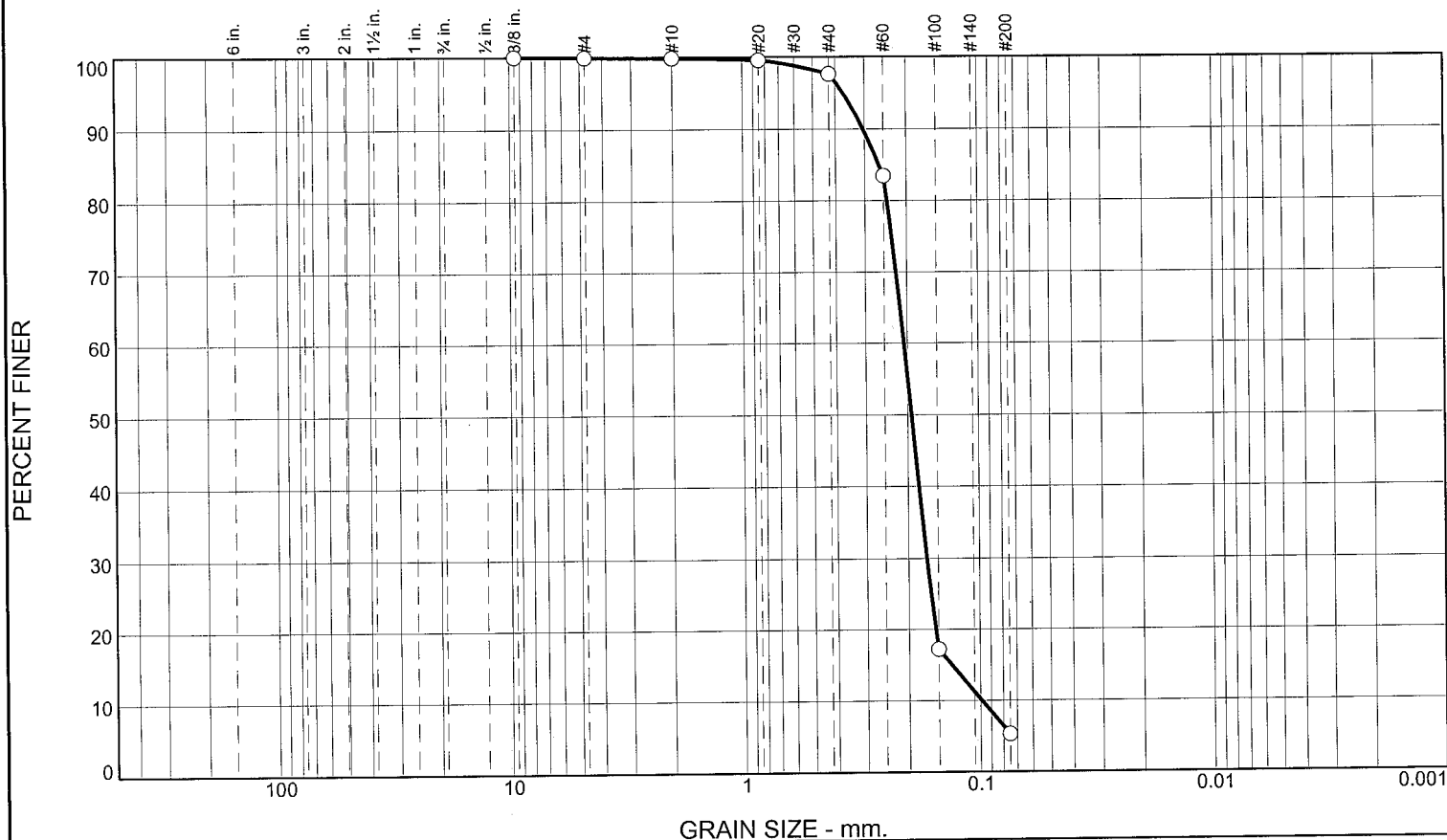
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.1	2.2	92.3	5.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.8		
#20	99.6		
#40	97.6		
#60	83.4		
#100	17.2		
#200	5.3		

* (no specification provided)

Material Description
SAND, (SP-SM), fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.3046 D₈₅= 0.2610 D₆₀= 0.2064
D₅₀= 0.1926 D₃₀= 0.1672 D₁₅= 0.1320
D₁₀= 0.0987 C_u= 2.09 C_c= 1.37

Classification
USCS= SP-SM AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-SI-38-10B
Sample Number: TE Lab ID: 4549.03

Depth: 4.5 - 9.5 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

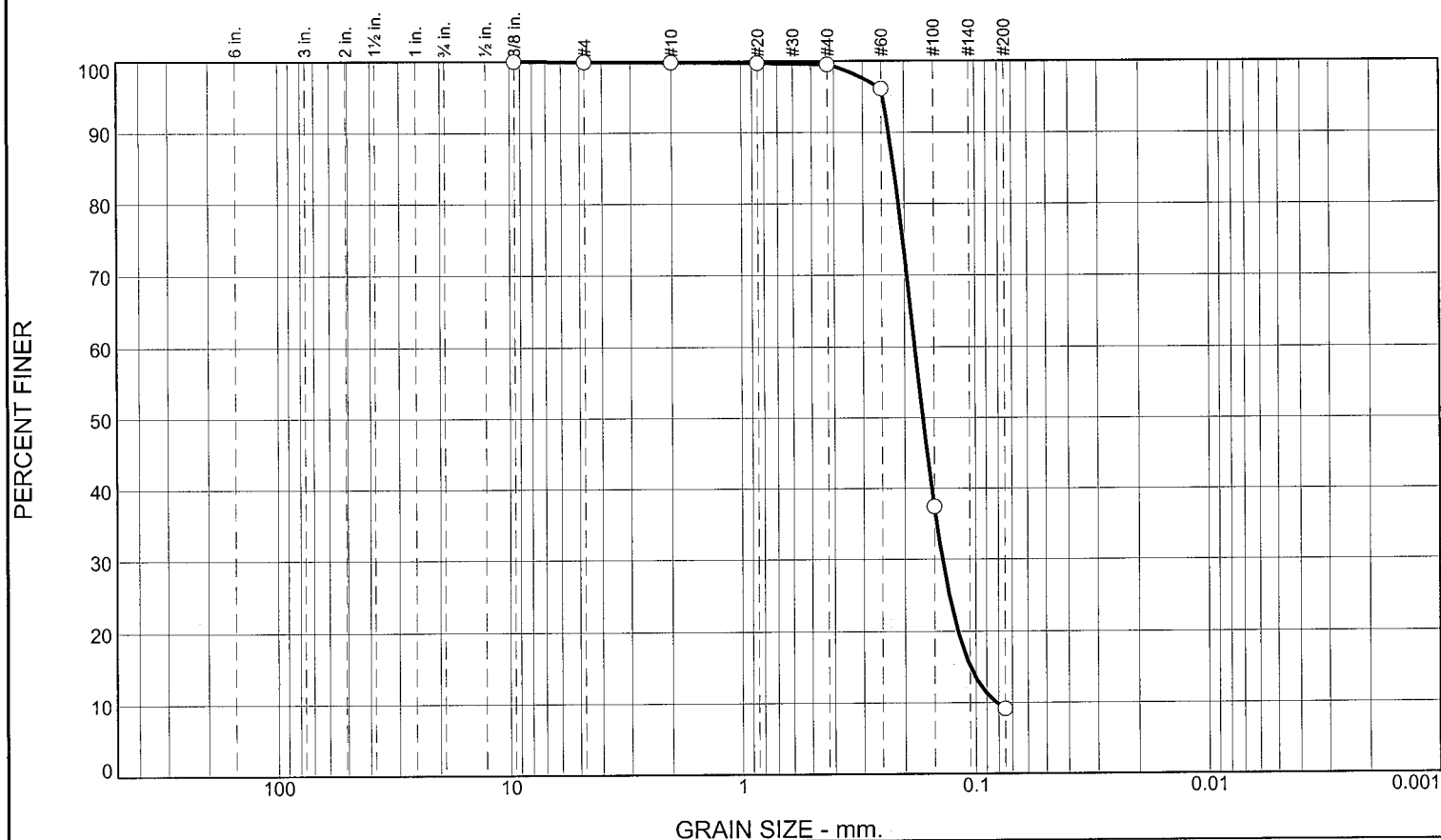
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.1	0.3	90.4	9.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.8		
#20	99.7		
#40	99.5		
#60	96.1		
#100	37.5		
#200	9.1		

* (no specification provided)

Material Description		
SAND, (SP-SM), fine grained		
Atterberg Limits		
PL=	LL=	PI=
Coefficients		
D ₉₀ = 0.2322	D ₈₅ = 0.2212	D ₆₀ = 0.1809
D ₅₀ = 0.1673	D ₃₀ = 0.1384	D ₁₅ = 0.1054
D ₁₀ = 0.0816	C _u = 2.22	C _c = 1.30
Classification		
USCS= SP-SM	AASHTO=	
Remarks		
CADD CODE = CH10D965		

Location: USACE Sample # BI-SI-38-10C
Sample Number: TE Lab ID: 4549.04

Depth: 9.5 - 12.8 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

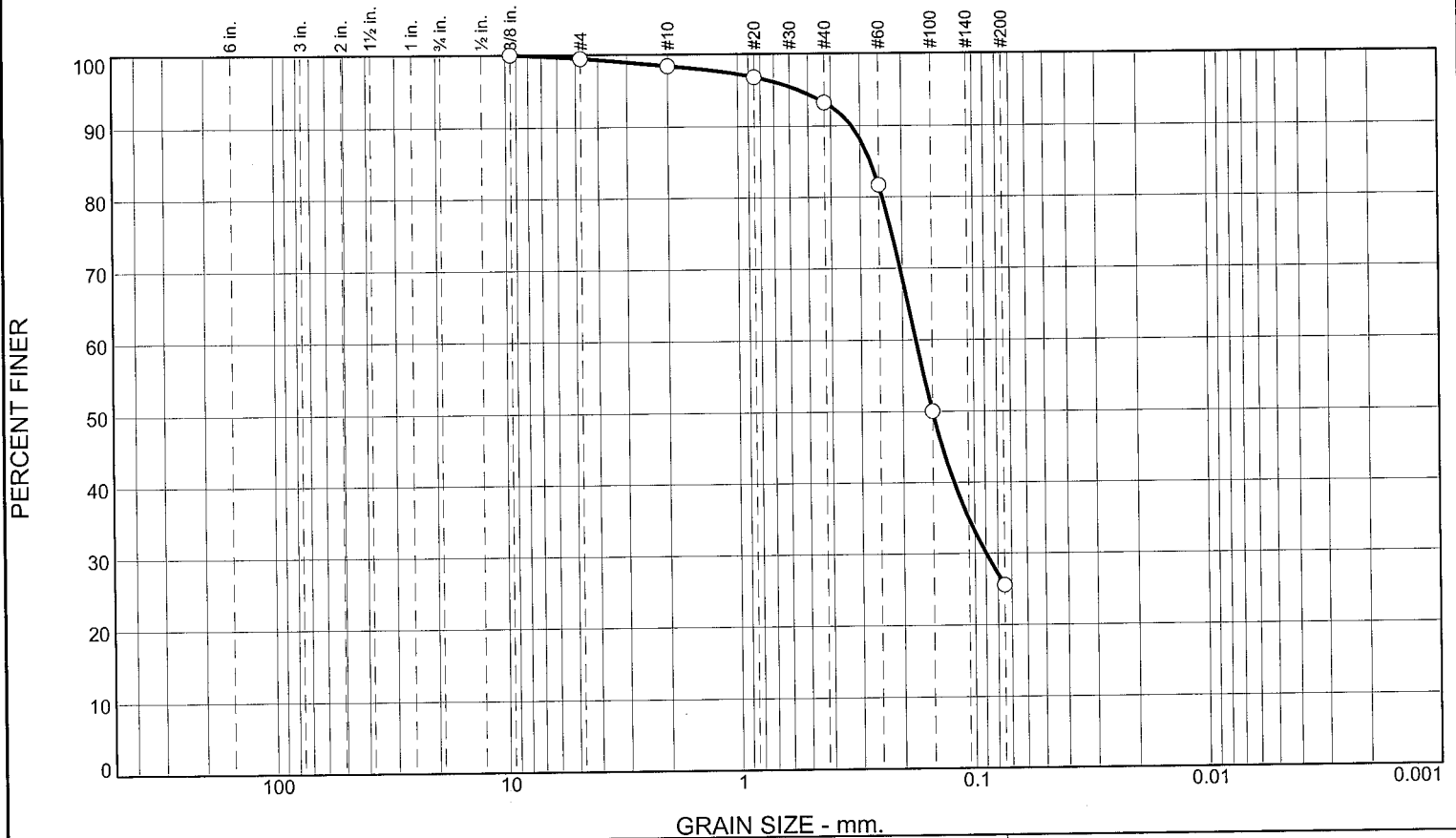
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.5	1.1	5.1	67.8	25.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.5		
#10	98.4		
#20	96.8		
#40	93.3		
#60	81.7		
#100	50.0		
#200	25.5		

* (no specification provided)

Material Description
SILTY SAND, (SM), medium to fine grained, with clay nodules

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.3252 D₈₅= 0.2707 D₆₀= 0.1757
 D₅₀= 0.1499 D₃₀= 0.0896 D₁₅=
 D₁₀= C_u= C_c=

Classification
 USCS= SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-SI-38-10D
 Sample Number: TE Lab ID: 4549.05

Depth: 12.8 - 15.9 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Figure

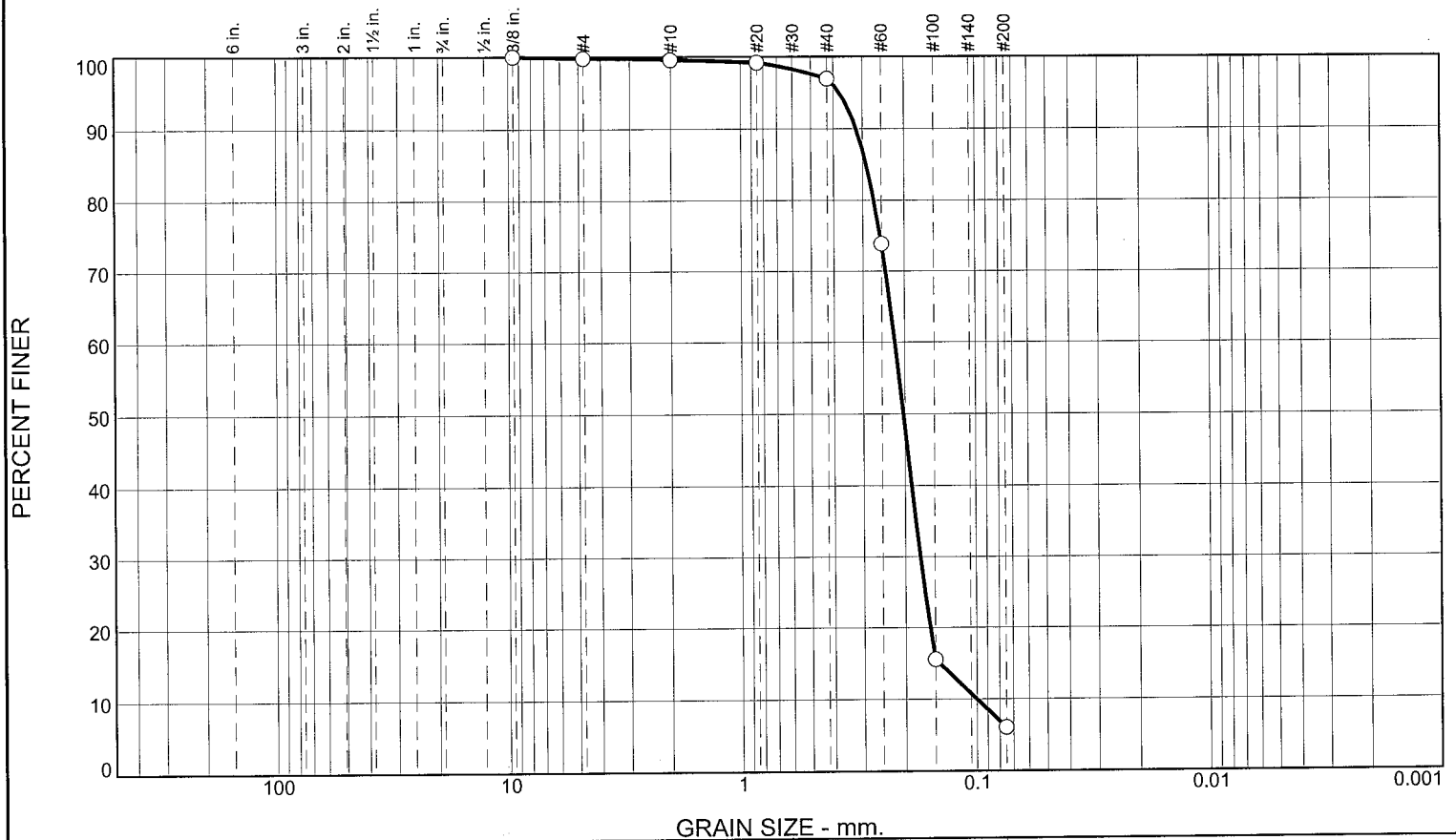
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-SI-39-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SI-39-10		LOCATION COORDINATES E = 966,533 N = 256,277		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 0 UNDISTURBED (UD)	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 28 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-14-10		STARTED 06-14-10 COMPLETED 06-14-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -25.8 Ft.			
8. TOTAL DEPTH OF BORING 15.6 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-25.8	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, trace shell fragments, lt. gray (SP)	A	Classification: SP-SM Color: 2.5Y 7/1-light gray D50: 0.203 mm % Fines: 6		
				B	Classification: SP-SM Color: 2.5Y 6/2-light brownish gray D50: 0.1798 mm % Fines: 8.9		
-37.8	12.0						
			SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments, gray (SM)	C	Classification: SP-SM Color: 2.5Y 6/2-light brownish gray D50: 0.1994 mm % Fines: 11.4		
-41.4	15.6						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.2	2.6	91.0	6.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.8		
#10	99.6		
#20	99.2		
#40	97.0		
#60	73.8		
#100	15.5		
#200	6.0		

* (no specification provided)

Material Description

SAND, (SP-SM), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.3190

D₈₅= 0.2891

D₆₀= 0.2201

D₅₀= 0.2030

D₃₀= 0.1727

D₁₅= 0.1444

D₁₀= 0.1003

C_u= 2.19

C_c= 1.35

Classification

USCS= SP-SM

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-SI-39-10A
Sample Number: TE Lab ID: 4549.06

Depth: 0.0 - 6.0 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

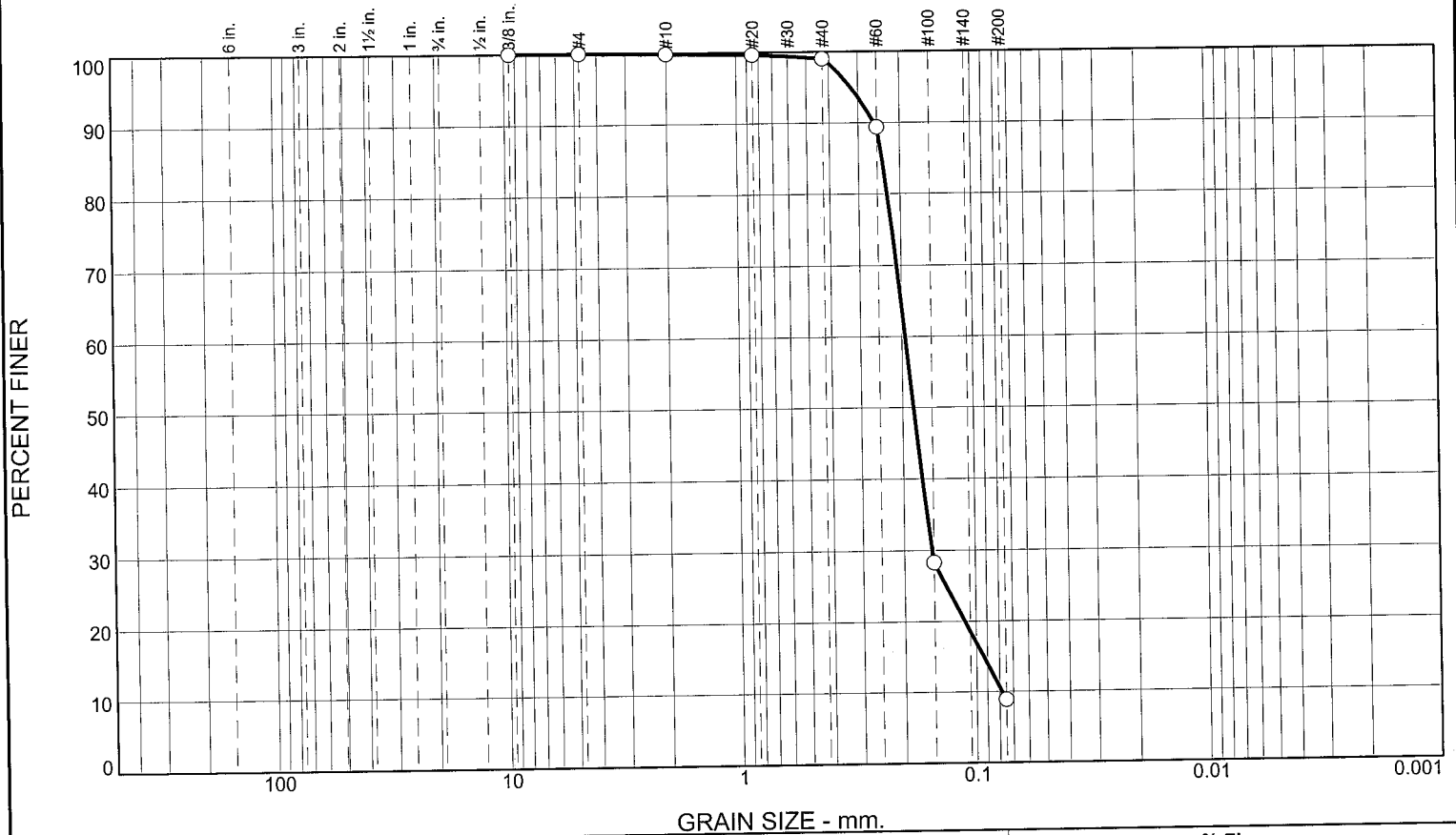
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	0.8	90.1	8.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.8		
#20	99.6		
#40	99.0		
#60	89.4		
#100	28.3		
#200	8.9		

* (no specification provided)

Material Description
SAND, (SP-SM), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.2563 D₈₅= 0.2382 D₆₀= 0.1937
 D₅₀= 0.1798 D₃₀= 0.1525 D₁₅= 0.0934
 D₁₀= 0.0781 C_u= 2.48 C_c= 1.54

Classification
 USCS= SP-SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-SI-39-10B
 Sample Number: TE Lab ID: 4549.07

Depth: 6.0 - 12.0 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

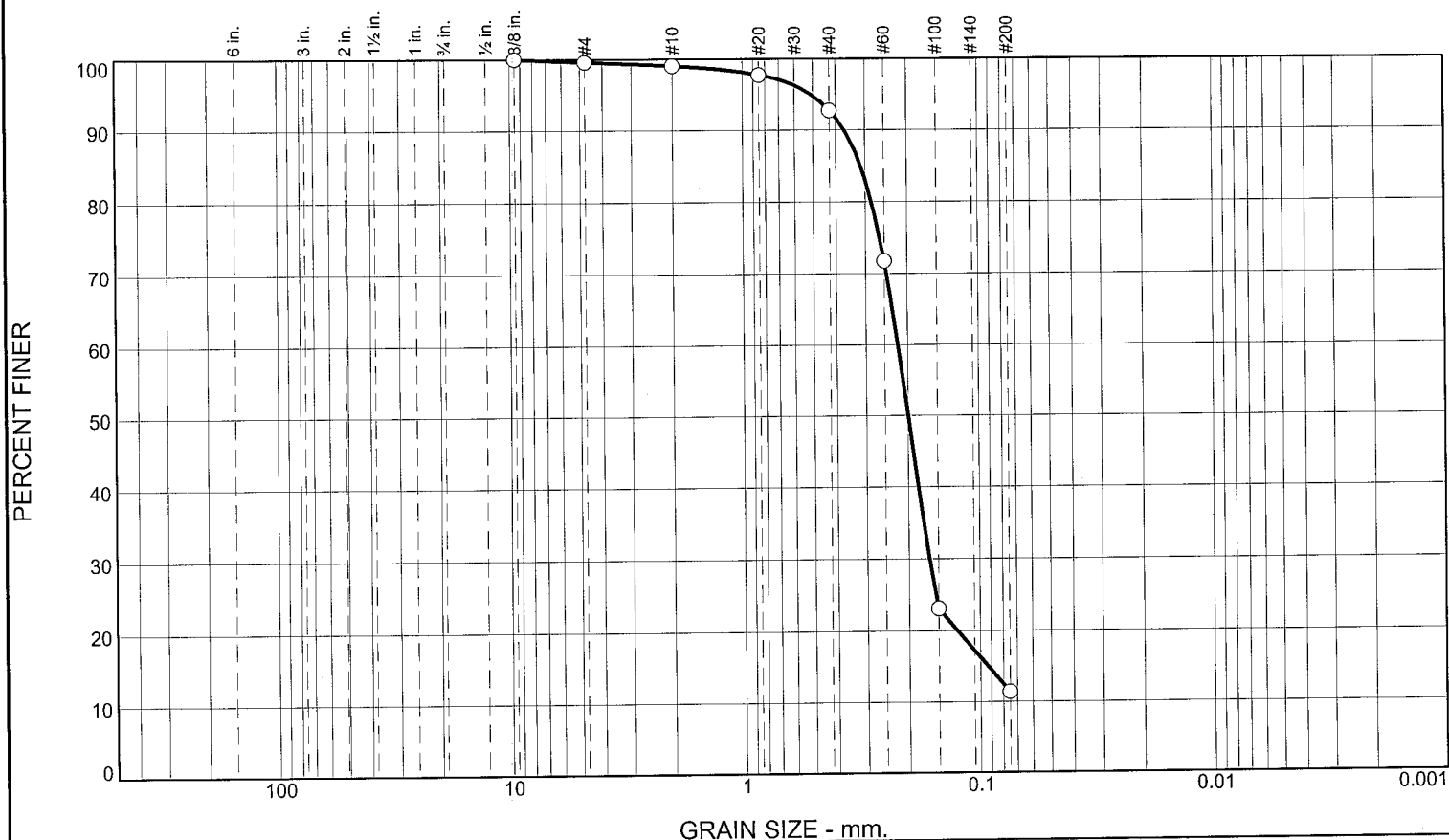
Client: US Army Corps of Engineers
 Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
 Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.4	0.6	6.3	81.3	11.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.6		
#10	99.0		
#20	97.7		
#40	92.7		
#60	71.7		
#100	23.1		
#200	11.4		

* (no specification provided)

Material Description
SAND, (SP-SM), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.3677 D₈₅= 0.3133 D₆₀= 0.2197
 D₅₀= 0.1994 D₃₀= 0.1633 D₁₅= 0.0928
 D₁₀= C_u= C_c=

Classification
 USCS= SP-SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-SI-39-10C
 Sample Number: TE Lab ID: 4549.08

Depth: 12.0 - 15.6 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

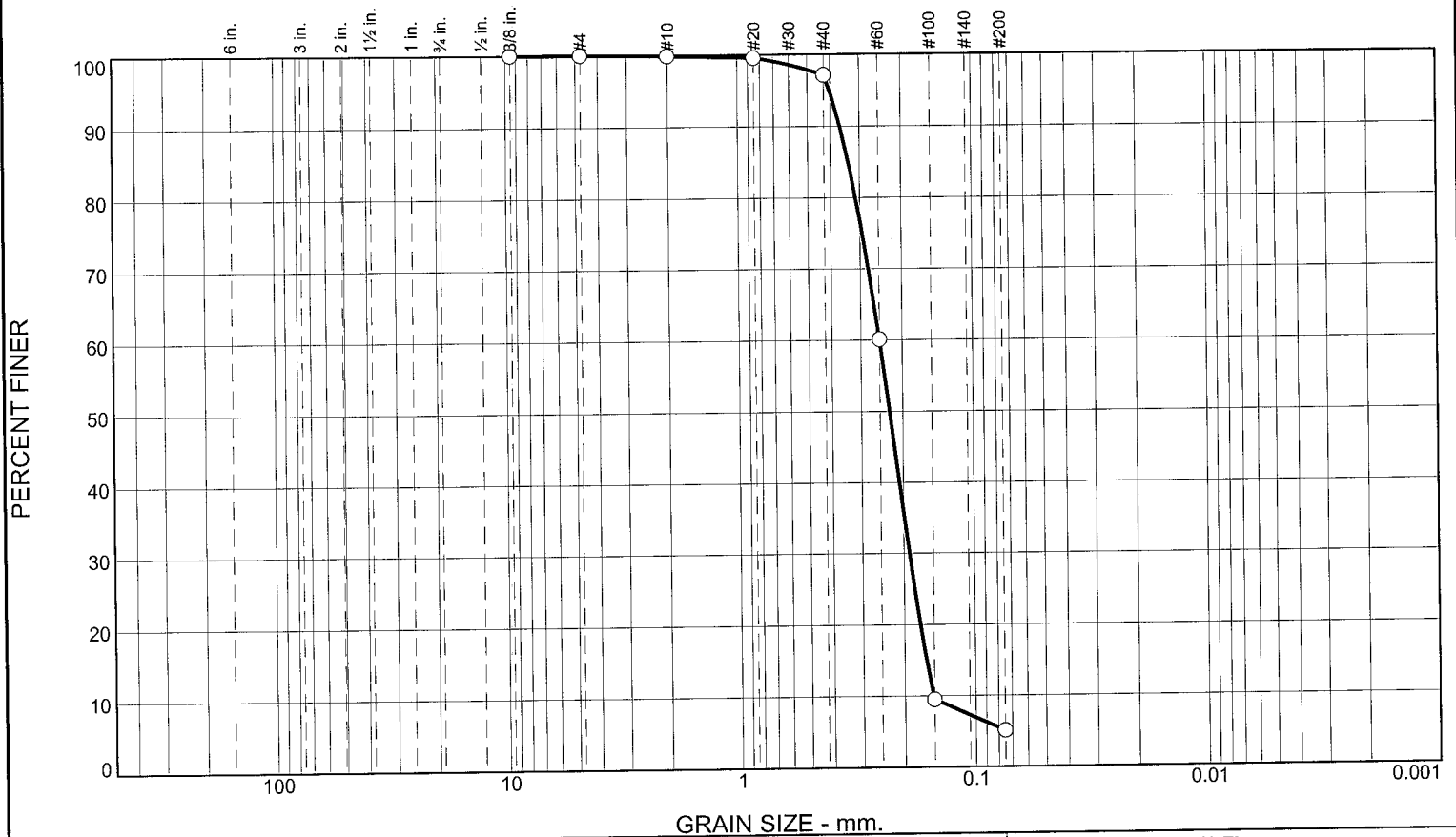
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-SI-40-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SI-40-10		LOCATION COORDINATES E = 968,978 N = 257,392		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 30 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-14-10		STARTED 06-14-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -27.8 Ft.			
8. TOTAL DEPTH OF BORING 17.1 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-27.8	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, trace shell fragments, lt. gray (SP)	A	Classification: SP-SM Color: 2.5Y 7/2-light gray D50: 0.2273 mm % Fines: 5.1		
				B	Classification: SP-SM Color: 2.5Y 7/2-light gray D50: 0.1872 mm % Fines: 6.8		
-41.0	13.2						
			SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments, gray (SM)	C	Classification: SP-SM Color: 2.5Y 5/2- D50: 0.2159 mm % Fines: 10.5		
-44.9	17.1						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	2.8	92.0	5.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.5		
#40	97.1		
#60	60.1		
#100	9.5		
#200	5.1		

* (no specification provided)

Material Description
SAND, (SP-SM), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.3633 D₈₅= 0.3350 D₆₀= 0.2498
 D₅₀= 0.2273 D₃₀= 0.1893 D₁₅= 0.1616
 D₁₀= 0.1512 C_u= 1.65 C_c= 0.95

Classification
 USCS= SP-SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-SI-40-10A
 Sample Number: TE Lab ID: 4549.09

Depth: 0.0 - 6.5 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

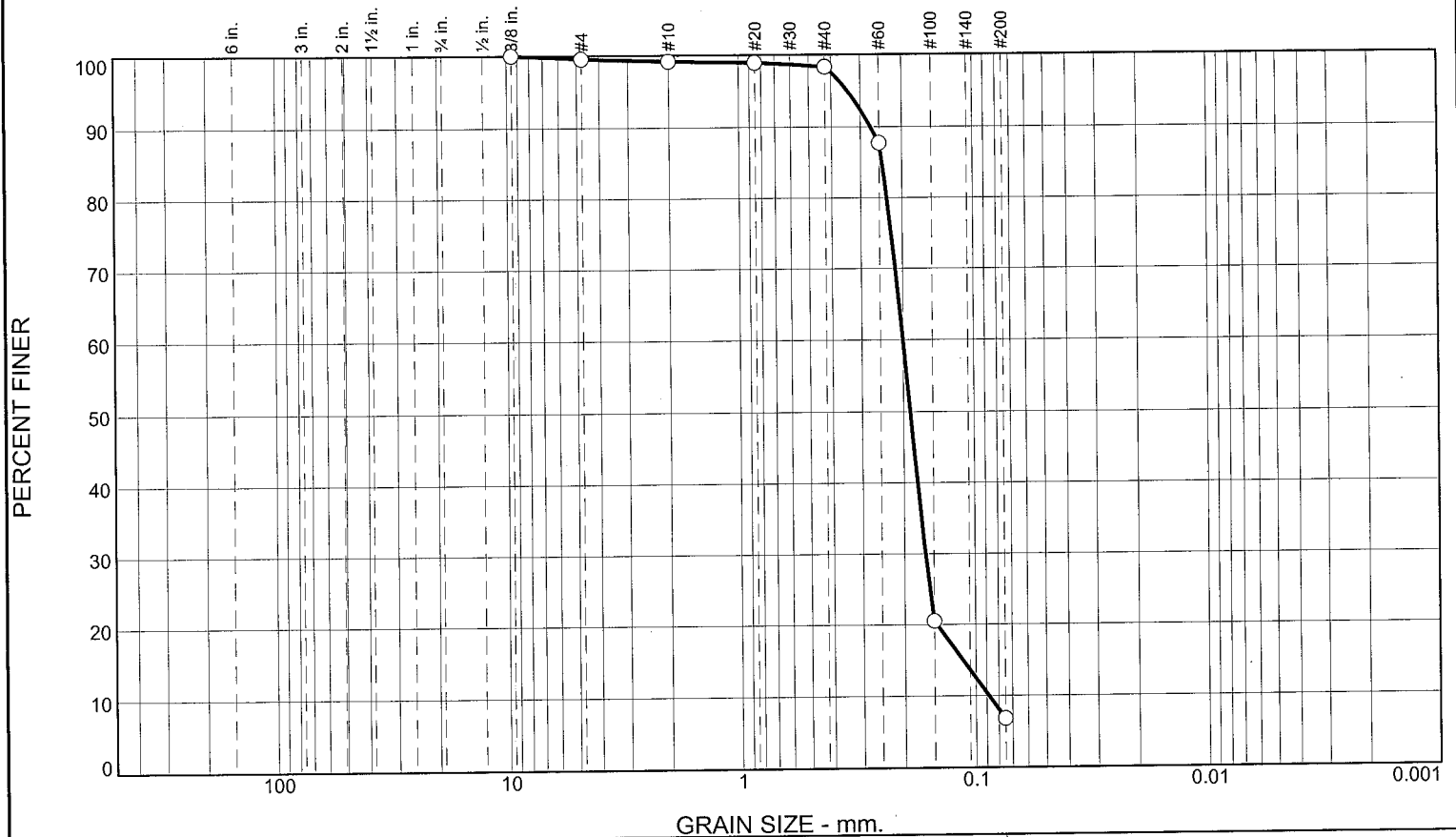
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.5	0.3	0.9	91.5	6.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.5		
#10	99.2		
#20	98.9		
#40	98.3		
#60	87.8		
#100	20.5		
#200	6.8		

* (no specification provided)

Material Description
SAND, (SP-SM), fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.2718 D₈₅= 0.2430 D₆₀= 0.2003
D₅₀= 0.1872 D₃₀= 0.1626 D₁₅= 0.1136
D₁₀= 0.0881 C_u= 2.27 C_c= 1.50

Classification
USCS= SP-SM AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-SI-40-10B
Sample Number: TE Lab ID: 4549.10

Depth: 6.5 - 13.2 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

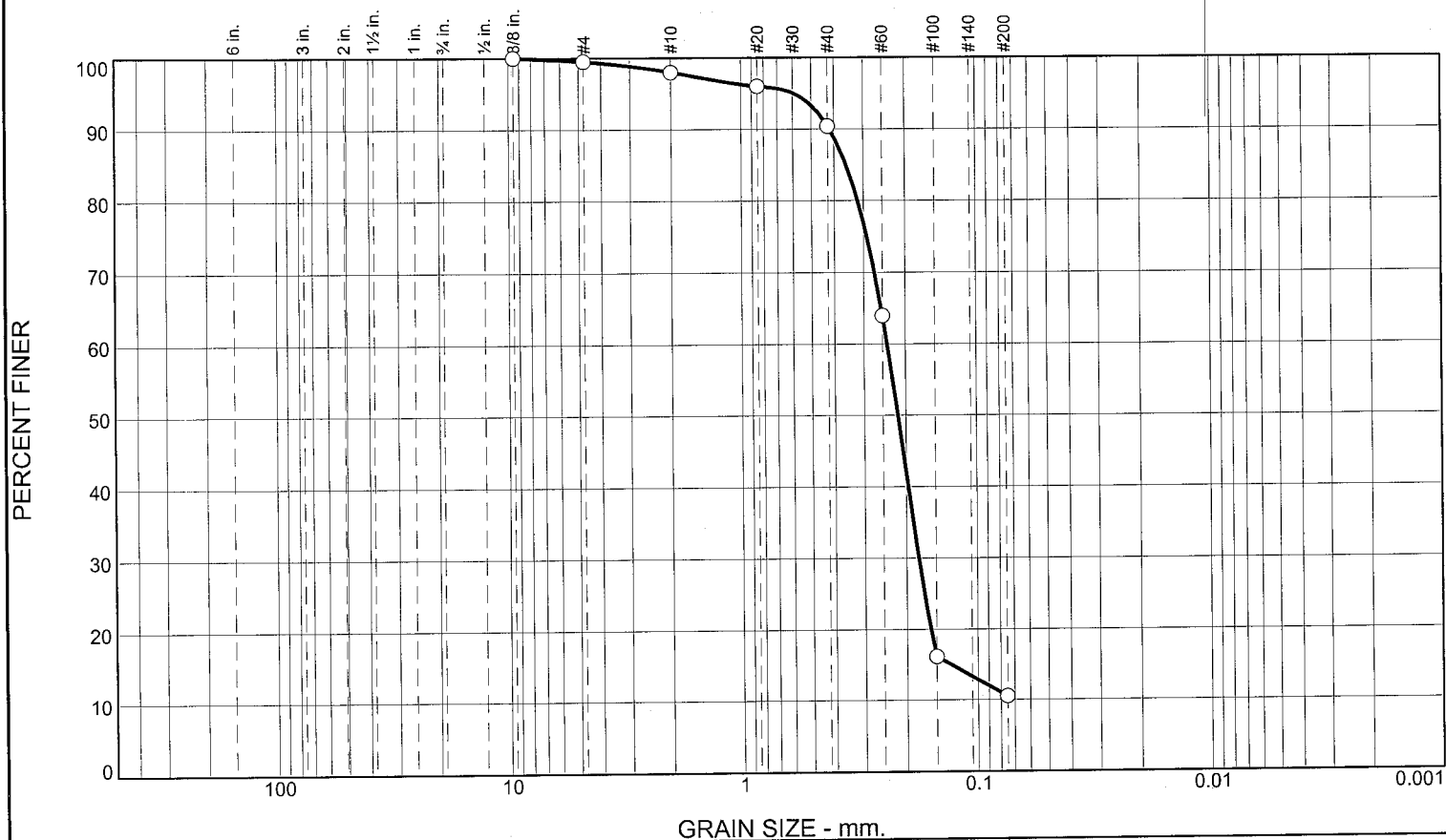
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.5	1.5	7.6	79.9	10.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.5		
#10	98.0		
#20	96.0		
#40	90.4		
#60	64.0		
#100	16.2		
#200	10.5		

* (no specification provided)

Material Description
SAND, (SP-SM), medium to fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.4179 D₈₅= 0.3550 D₆₀= 0.2391
 D₅₀= 0.2159 D₃₀= 0.1773 D₁₅= 0.1301
 D₁₀= C_u= C_c=

Classification
 USCS= SP-SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-SI-40-10C
 Sample Number: TE Lab ID: 4549.11

Depth: 13.2 - 17.1 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

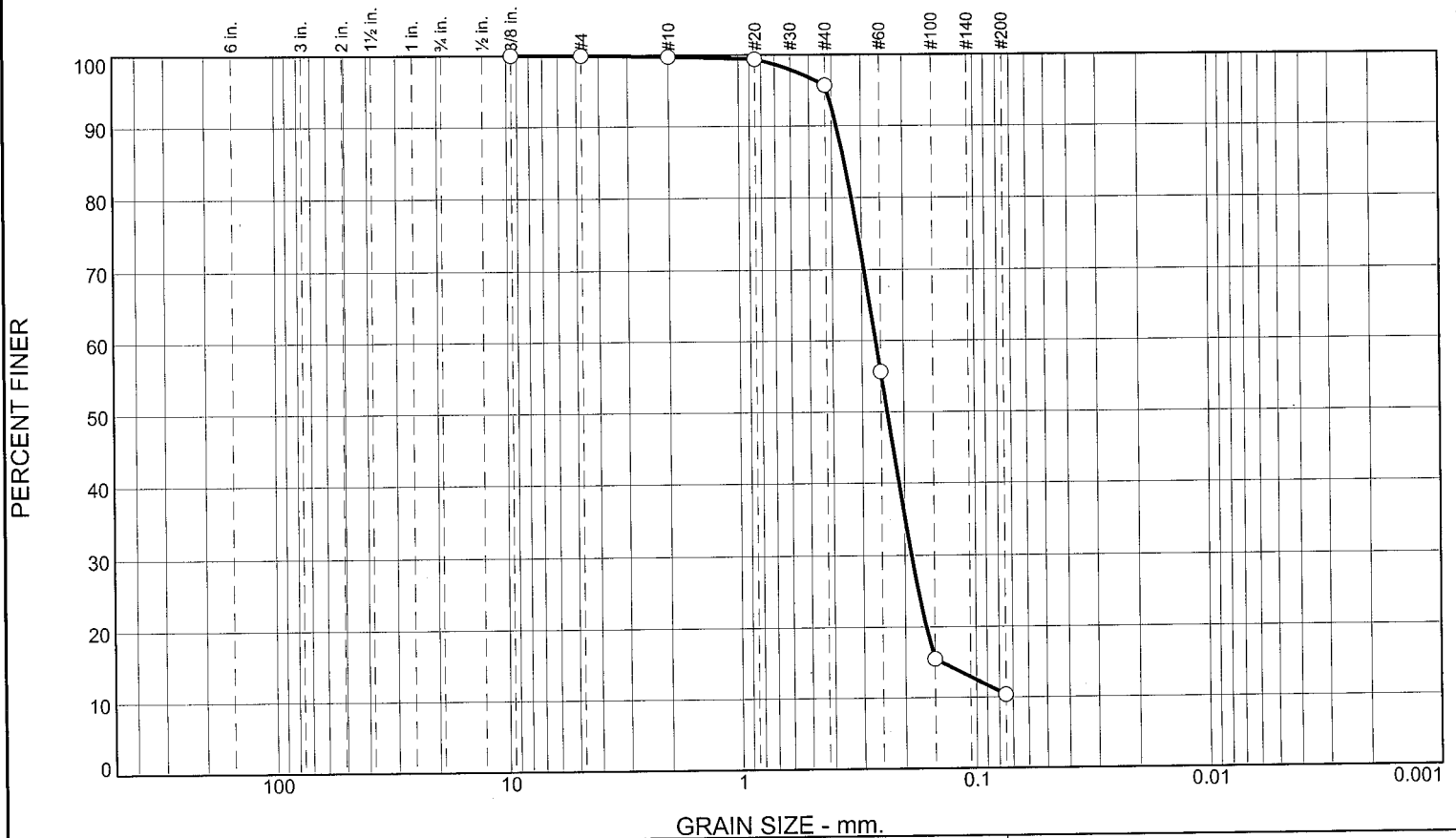
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-SI-41-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SI-41-10		LOCATION COORDINATES E = 972,059 N = 258,893		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 30 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-14-10		STARTED 06-14-10 COMPLETED 06-14-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -27.9 Ft.			
8. TOTAL DEPTH OF BORING 16.7 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-27.9	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, trace shell fragments, lt. gray (SP)	A	Classification: SP-SM Color: 2.5Y 7/1-light gray D50: 0.2353 mm % Fines: 10.4		
				B	Classification: SP-SM Color: 2.5Y 7/1-light gray D50: 0.2164 mm % Fines: 6		
-39.3	11.4		CLAY, lean, dark gray (CL)	NS			
-44.6	16.7						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	4.1	85.3	10.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.8		
#20	99.4		
#40	95.7		
#60	55.6		
#100	15.4		
#200	10.4		

* (no specification provided)

Material Description
SAND, (SP-SM), fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.3810 D₈₅= 0.3532 D₆₀= 0.2621
D₅₀= 0.2353 D₃₀= 0.1873 D₁₅= 0.1413
D₁₀= C_u= C_c=

Classification
USCS= SP-SM AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-SI-41-10A
Sample Number: TE Lab ID: 4549.12

Depth: 0.0 - 5.0 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

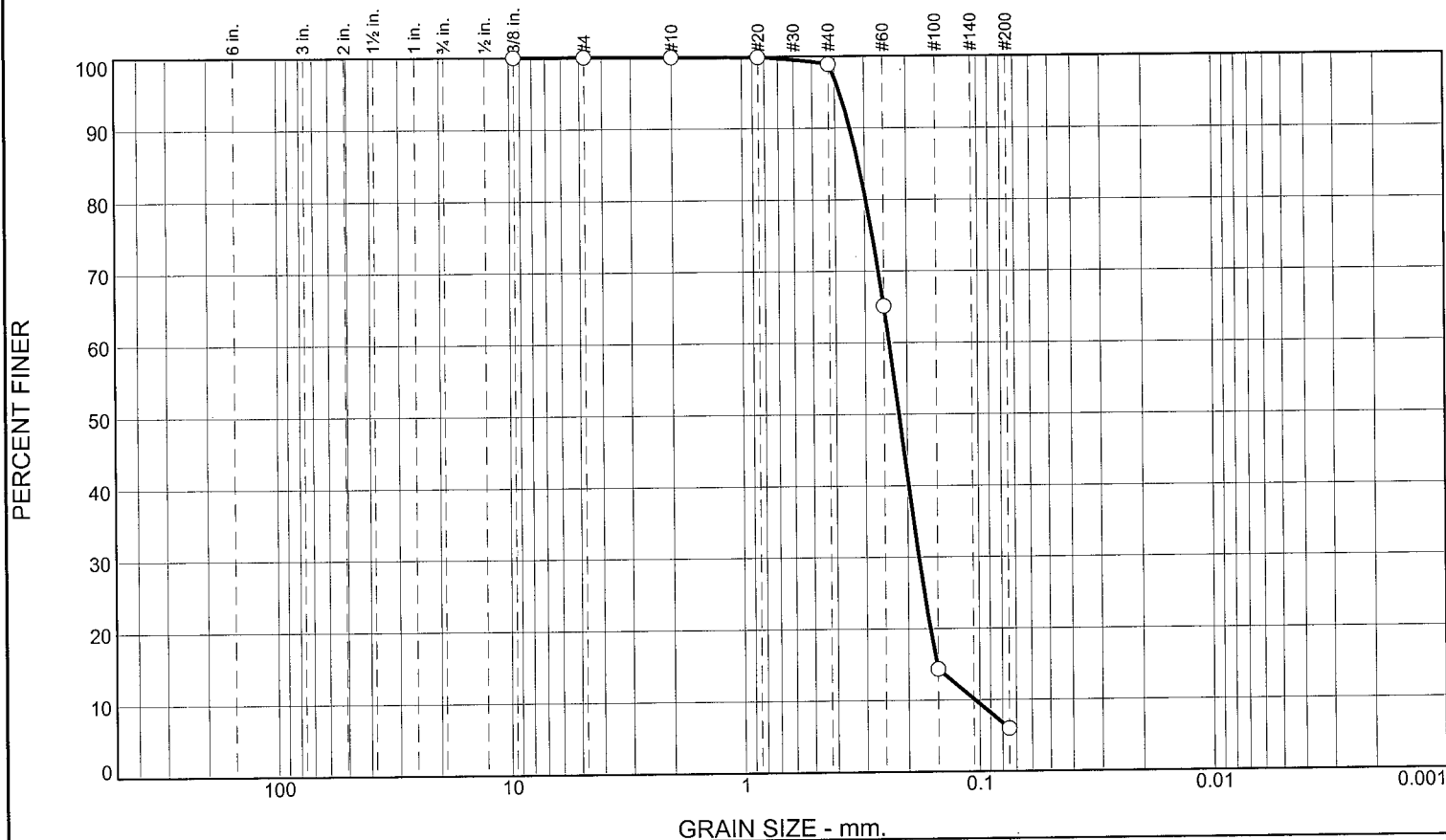
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	1.0	92.9	6.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.9		
#40	98.9		
#60	65.1		
#100	14.4		
#200	6.0		

* (no specification provided)

Material Description
SAND, (SP-SM), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.3449 D₈₅= 0.3180 D₆₀= 0.2376
 D₅₀= 0.2164 D₃₀= 0.1796 D₁₅= 0.1514
 D₁₀= 0.1047 C_u= 2.27 C_c= 1.30

Classification
 USCS= SP-SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-SI-41-10B
 Sample Number: TE Lab ID: 4549.13

Depth: 5.0 - 11.4 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
 Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
 Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-SI-42-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SI-42-10		LOCATION COORDINATES E = 960,603 N = 251,607		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 0 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		BEARING		13. TOTAL NUMBER CORE BOXES	
6. THICKNESS OF OVERBURDEN N/A				14. WATER DEPTH 27 Ft.			
7. DEPTH DRILLED INTO ROCK N/A				15. DATE BORING 06-08-10		STARTED 06-08-10 COMPLETED 06-08-10	
8. TOTAL DEPTH OF BORING 20.0 Ft.				16. ELEVATION TOP OF BORING -26.8 Ft.			
				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-26.8	0.0		CLAY, lean, dark gray (CL)				
-41.0	14.2		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments, gray (SM)	NS			
-46.8	20.0		NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

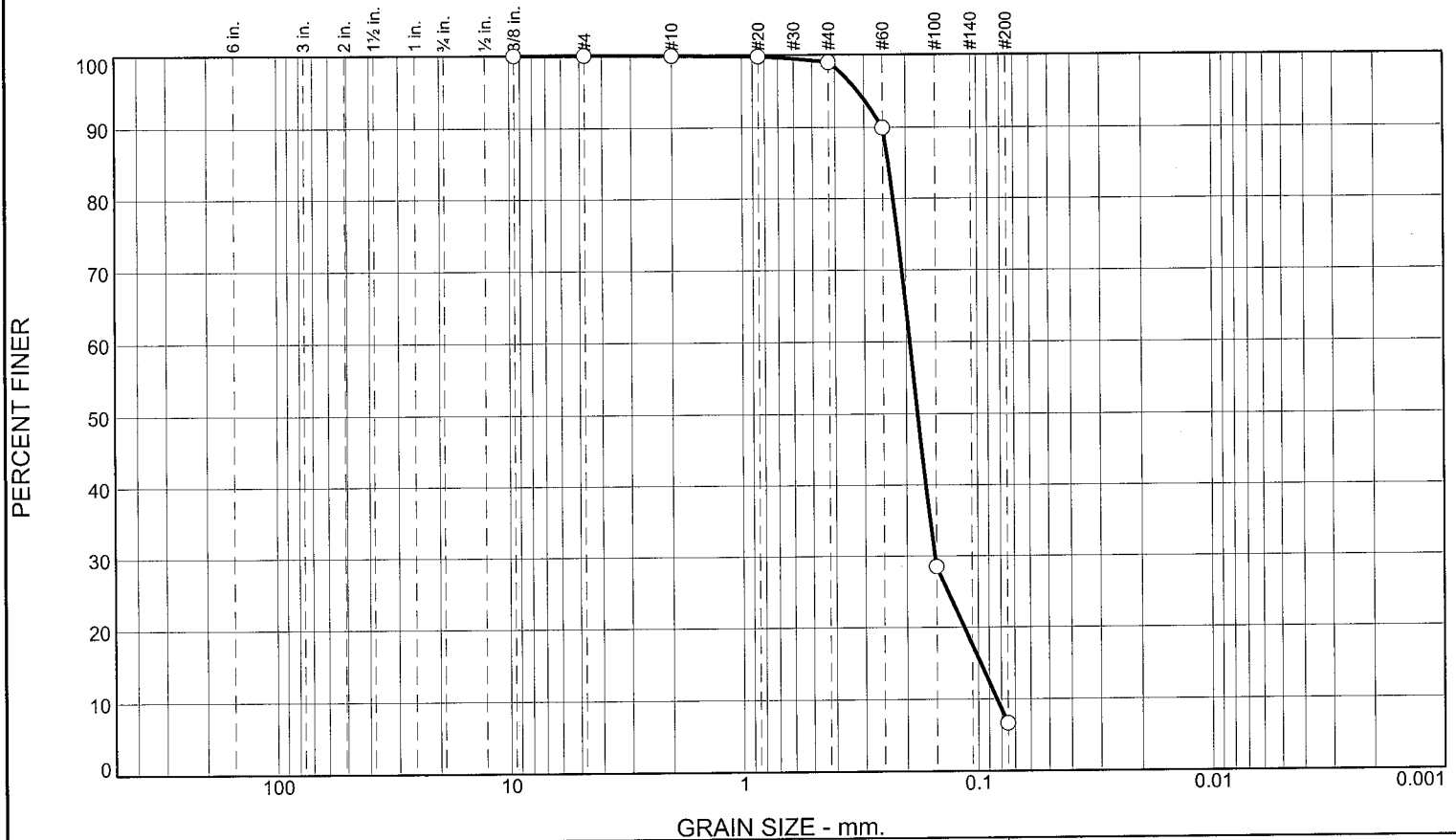
Boring Designation BI-SI-43-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SI-43-10		LOCATION COORDINATES E = 963,078 N = 252,282		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 0		DISTURBED 0 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 28.5 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-14-10		STARTED 06-14-10 COMPLETED 06-14-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -27.2 Ft.			
8. TOTAL DEPTH OF BORING 18.2 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-27.2	0.0		CLAY, lean, dark gray (CL)	NS			
-42.4	15.2						
-45.4	18.2		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments, gray (SM)				
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Boring Designation BI-SI-44-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SI-44-10		LOCATION COORDINATES E = 965,344 N = 253,248		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 29 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-14-10		STARTED 06-14-10 COMPLETED 06-14-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -27.6 Ft.			
8. TOTAL DEPTH OF BORING 15.4 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-27.6	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, trace shell fragments, lt. gray (SP)	A	Classification: SP-SM Color: 2.5Y 6/2-light brownish gray D50: 0.1791 mm % Fines: 6.7		
				B	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.2159 mm % Fines: 3.9		
-36.1	8.5						
			CLAY, lean, dark gray (CL)	NS			
-39.6	12.0						
			SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments, gray (SM)	C	Classification: SM Color: 2.5Y 5/2-grayish brown D50: 0.2105 mm % Fines: 12		
-43.0	15.4						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	0.9	92.3	6.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.8		
#40	99.0		
#60	89.9		
#100	28.5		
#200	6.7		

* (no specification provided)

Material Description
SAND, (SP-SM), fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
 D₉₀= 0.2509 D₈₅= 0.2368 D₆₀= 0.1929
 D₅₀= 0.1791 D₃₀= 0.1522 D₁₅= 0.0977
 D₁₀= 0.0834 C_u= 2.31 C_c= 1.44

Classification
USCS= SP-SM AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-SI-44-10A
Sample Number: TE Lab ID: 4549.22

Depth: 0.0 - 4.0 (ft.)

Date: 6/26/10

Thompson Engineering
Mobile, Alabama

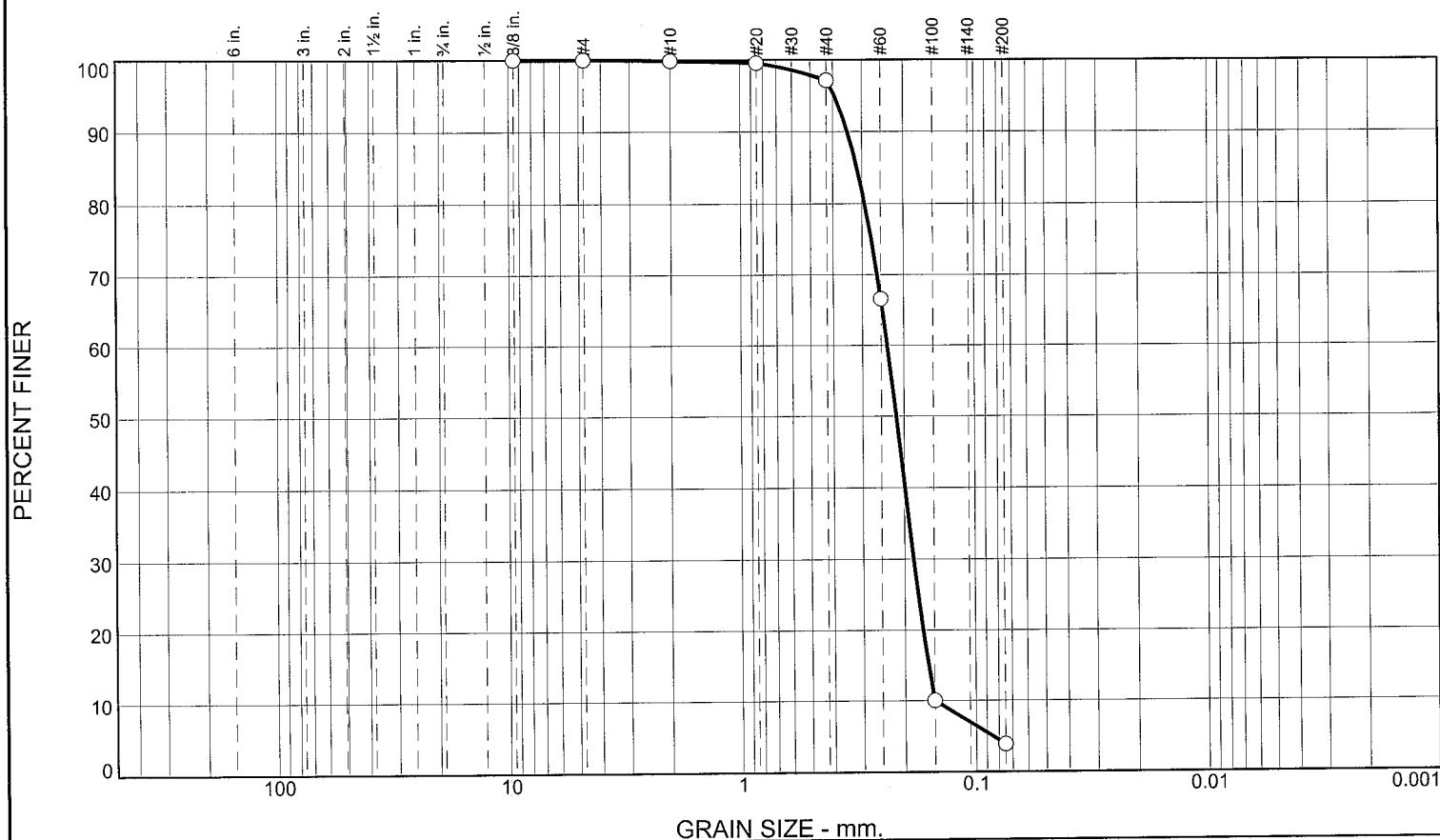
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	2.8	93.2	3.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.6		
#40	97.1		
#60	66.6		
#100	10.0		
#200	3.9		

* (no specification provided)

Material Description
SAND, (SP), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.3454 D₈₅= 0.3146 D₆₀= 0.2351
 D₅₀= 0.2159 D₃₀= 0.1830 D₁₅= 0.1590
 D₁₀= 0.1497 C_u= 1.57 C_c= 0.95

Classification
 USCS= SP AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-SI-44-10B
 Sample Number: TE Lab ID: 4549.23

Depth: 4.0 - 8.5 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

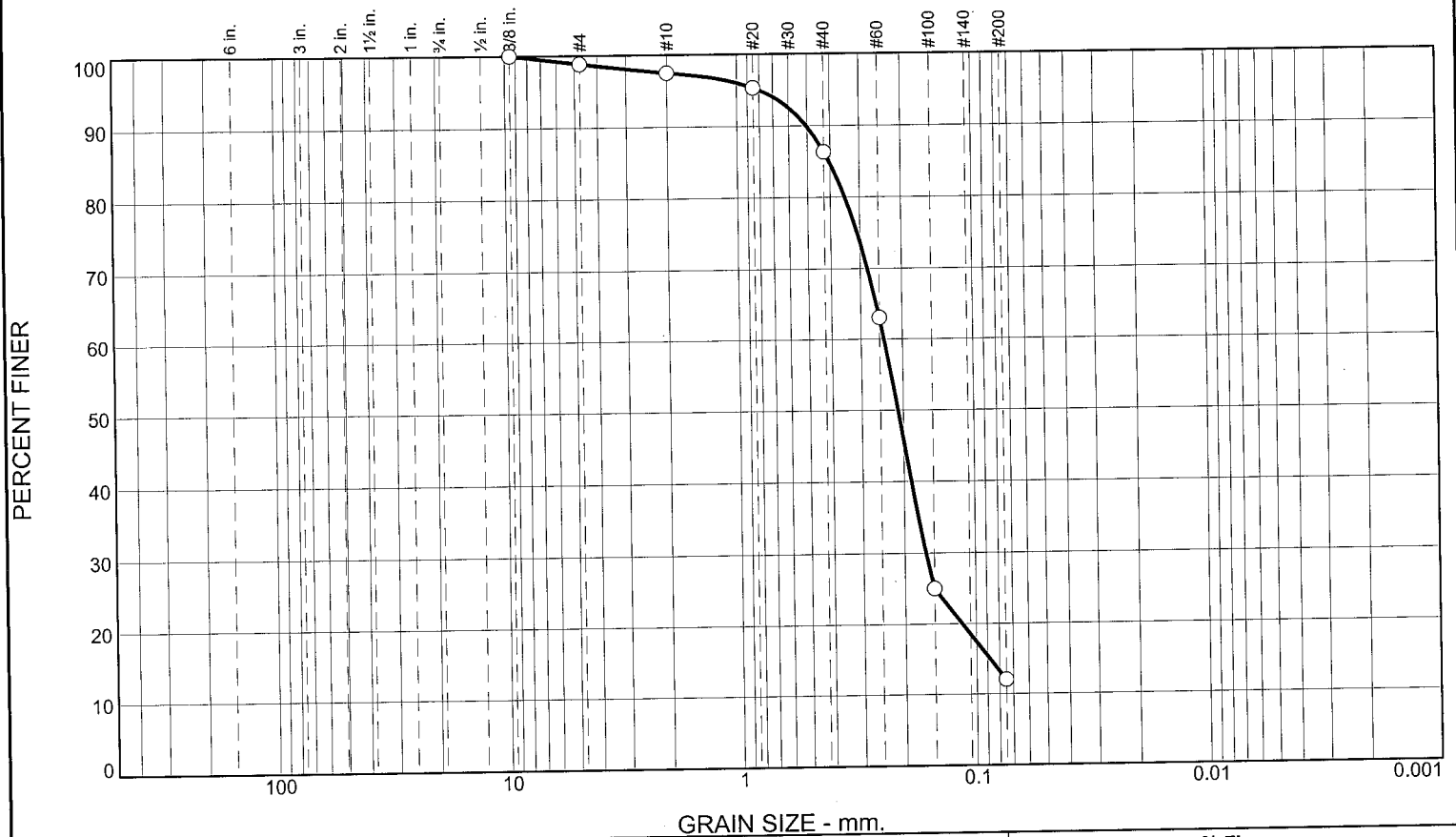
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.2	1.3	11.2	74.3	12.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	98.8		
#10	97.5		
#20	95.3		
#40	86.3		
#60	63.0		
#100	25.0		
#200	12.0		

* (no specification provided)

Material Description

SILTY SAND, (SM), medium to fine grained, with trace gravel

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.5048

D₈₅= 0.4039

D₆₀= 0.2395

D₅₀= 0.2105

D₃₀= 0.1625

D₁₅= 0.0879

D₁₀=

C_u=

C_c=

Classification

USCS= SM

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-SI-44-10C
Sample Number: TE Lab ID: 4549.24

Depth: 12.0 - 15.4 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Figure

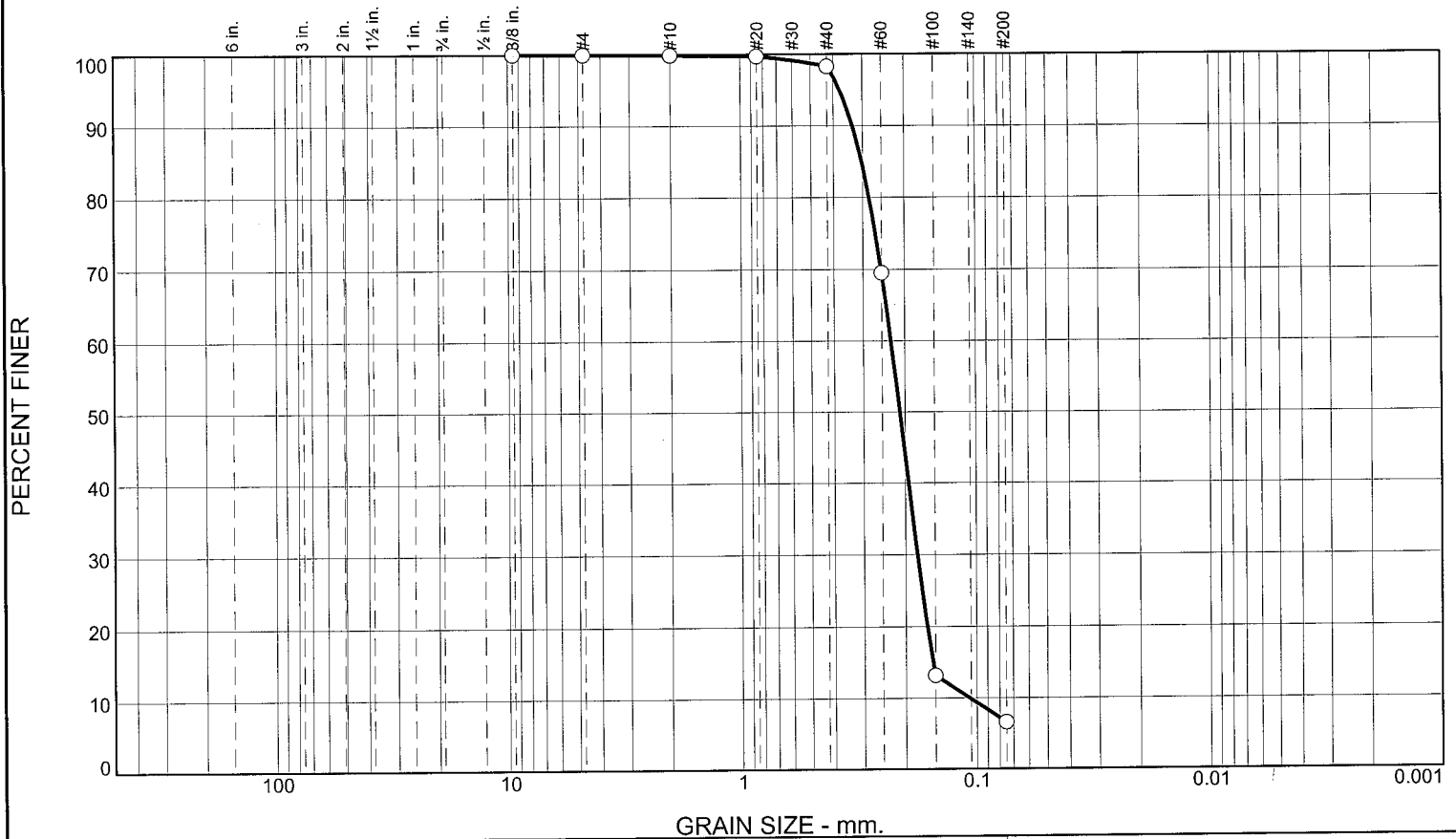
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-SI-45-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SI-45-10		LOCATION COORDINATES E = 967,524 N = 254,174		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 0 UNDISTURBED (UD)	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 30 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-14-10		STARTED 06-14-10 COMPLETED 06-14-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -28.4 Ft.			
8. TOTAL DEPTH OF BORING 15.9 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-28.4	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, trace shell fragments, lt. gray (SP)	A	Classification: SP-SM Color: 2.5Y 7/1-light gray D50: 0.2102 mm % Fines: 6.6		
				B	Classification: SP-SM Color: 2.5Y 5/2-grayish brown D50: 0.1895 mm % Fines: 7.5		
-37.8	9.4						
			CLAY, lean, dark gray (CL)	NS			
-39.9	11.5						
			SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments, gray (SM)	C	Classification: SM Color: 2.5Y 5/2-grayish brown D50: 0.1884 mm % Fines: 15.7		
-44.3	15.9						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	1.6	91.7	6.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.7		
#40	98.3		
#60	69.5		
#100	13.2		
#200	6.6		

* (no specification provided)

Material Description
SAND, (SP-SM), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.3314 D₈₅= 0.3030 D₆₀= 0.2288
 D₅₀= 0.2102 D₃₀= 0.1779 D₁₅= 0.1533
 D₁₀= 0.1072 C_u= 2.13 C_c= 1.29

Classification
 USCS= SP-SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-SI-45-10A
 Sample Number: TE Lab ID: 4549.19

Depth: 0.0 - 5.0 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

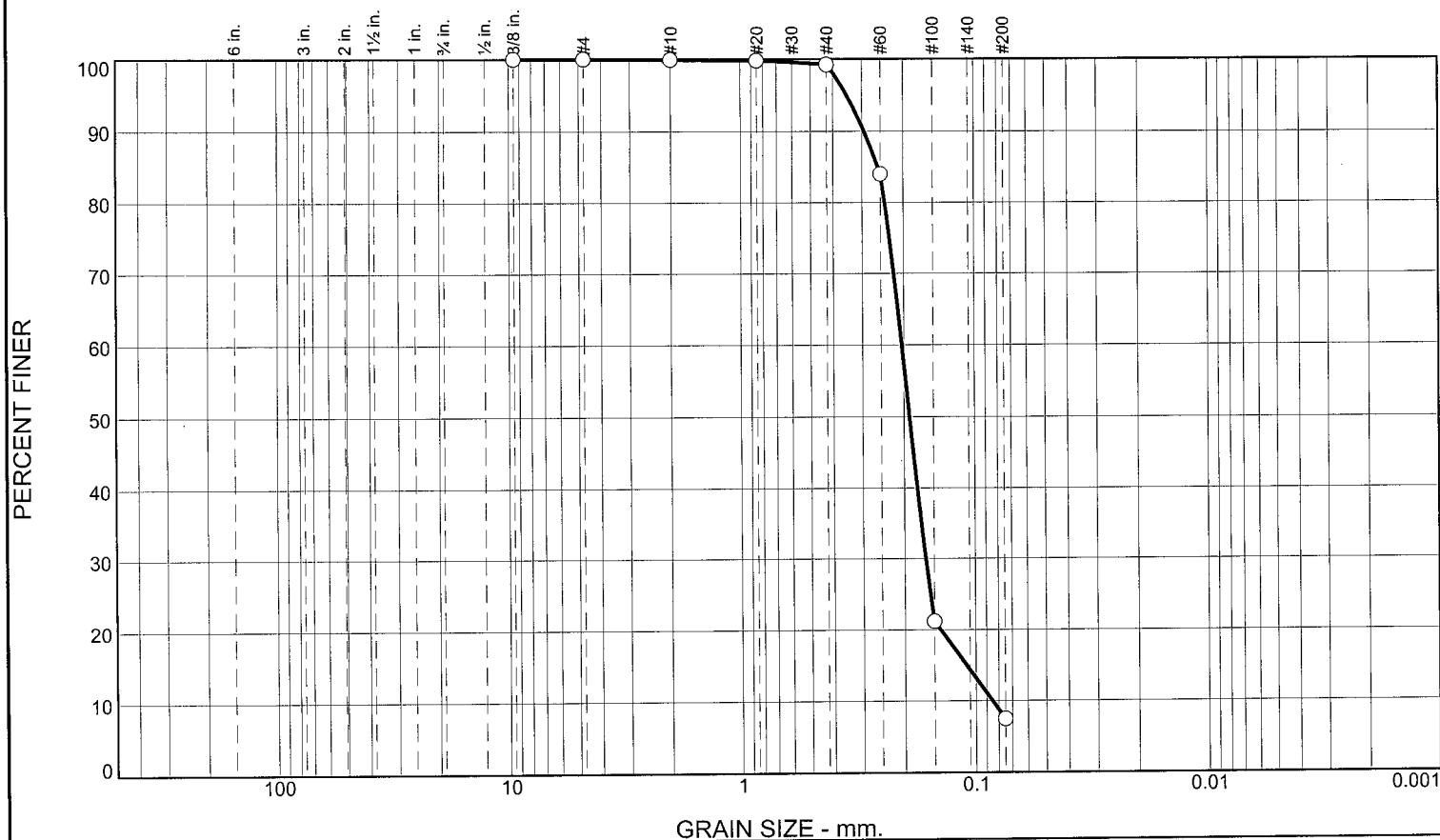
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	0.7	91.7	7.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.8		
#40	99.2		
#60	84.0		
#100	21.2		
#200	7.5		

* (no specification provided)

Material Description
SAND, (SP-SM), medium to fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.2937 D₈₅= 0.2561 D₆₀= 0.2038
D₅₀= 0.1895 D₃₀= 0.1627 D₁₅= 0.1096
D₁₀= 0.0851 C_u= 2.40 C_c= 1.53

Classification
USCS= SP-SM AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-SI-45-10B
Sample Number: TE Lab ID: 4549.20

Depth: 5.0 - 9.4 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

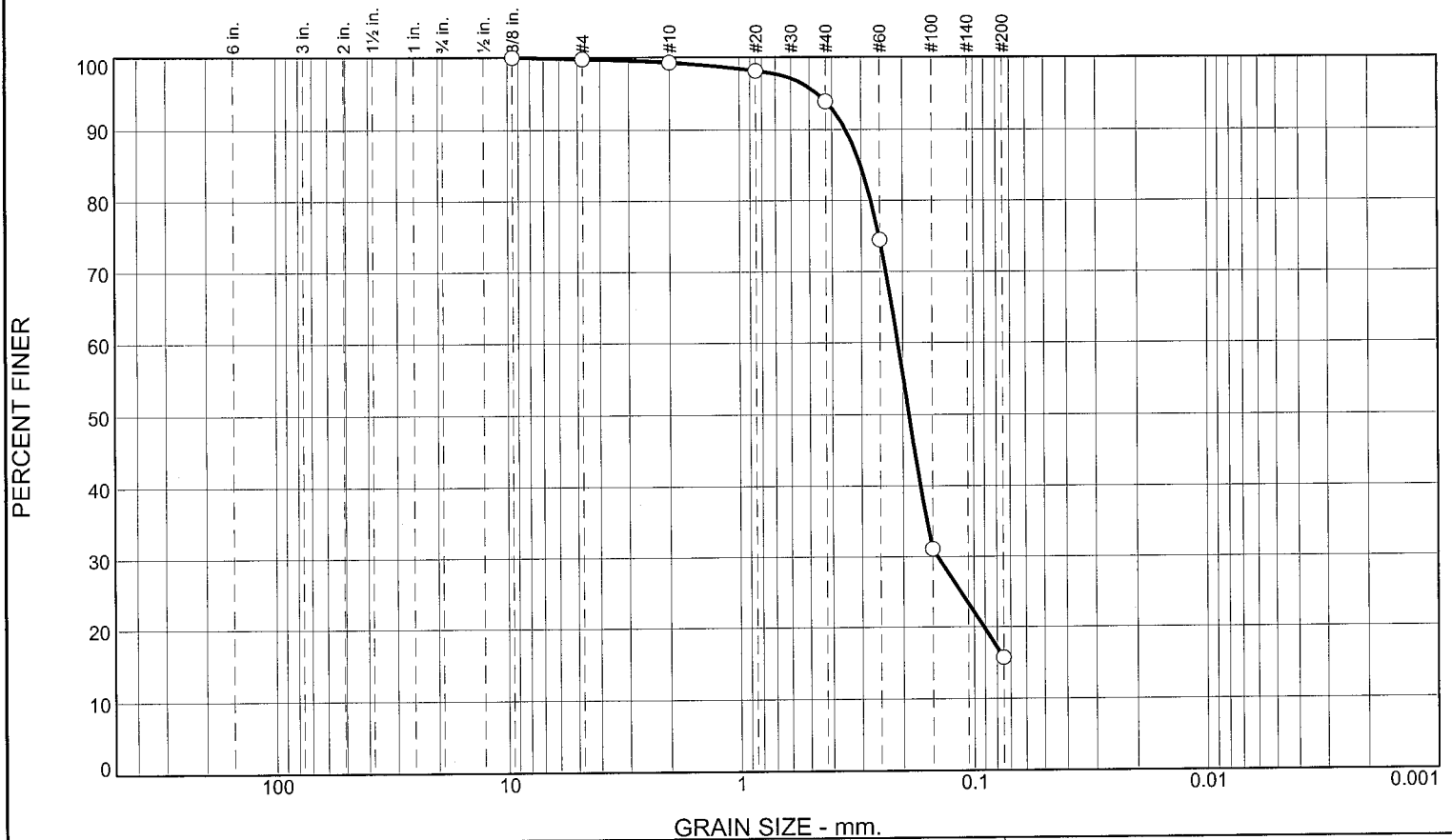
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.5	5.5	78.1	15.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.8		
#10	99.3		
#20	98.1		
#40	93.8		
#60	74.5		
#100	31.1		
#200	15.7		

* (no specification provided)

Material Description
SILTY SAND, (SM), medium to fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.3494 D₈₅= 0.3016 D₆₀= 0.2099
 D₅₀= 0.1884 D₃₀= 0.1427 D₁₅=
 D₁₀= C_u= C_c=

Classification
 USCS= SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-SI-45-10C
 Sample Number: TE Lab ID: 4549.21

Depth: 11.5 - 15.9 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
 Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
 Project No: 10-2123-0009

Figure

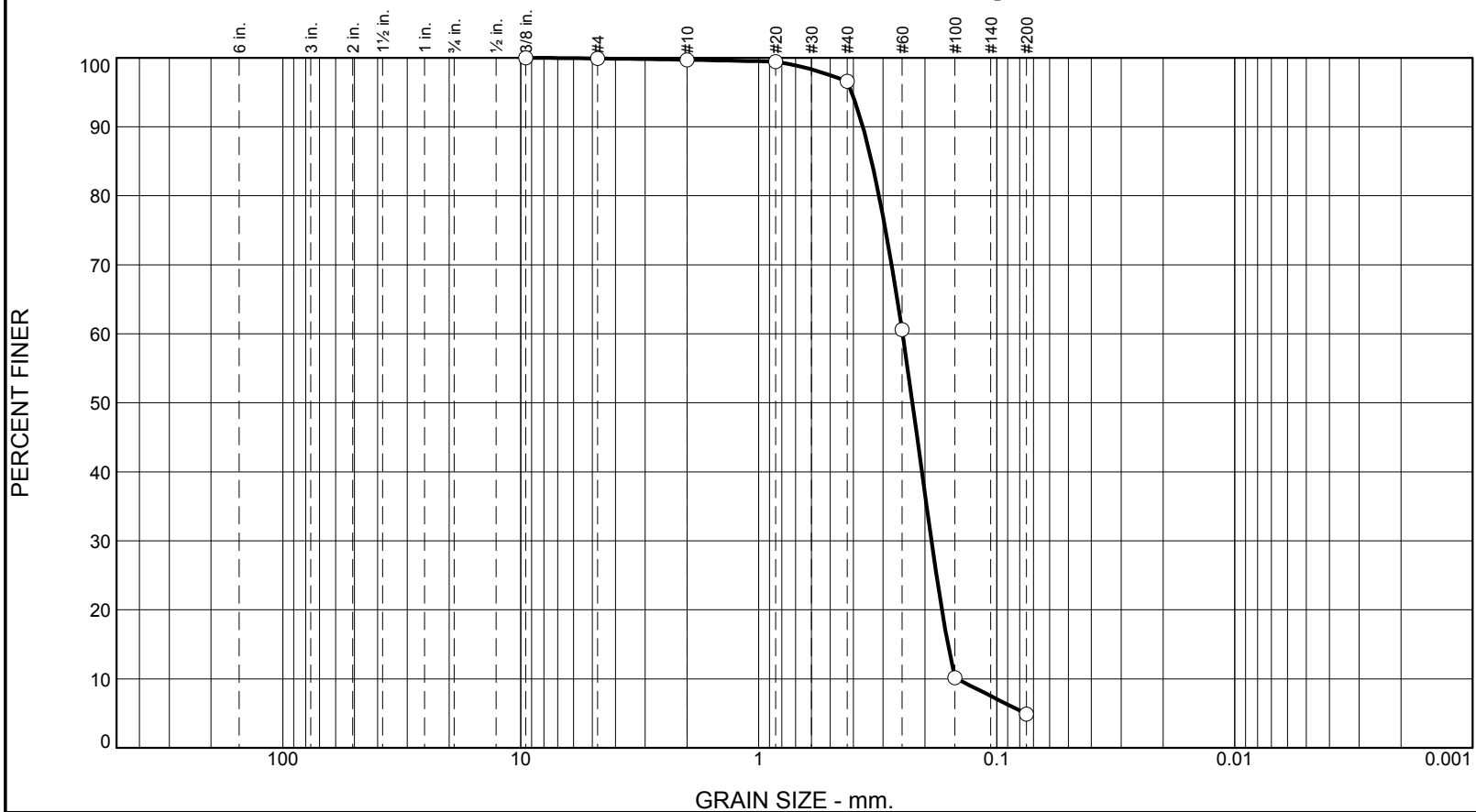
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-SI-46-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SI-46-10		LOCATION COORDINATES E = 969,755 N = 255,414		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 31 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-14-10		COMPLETED 06-14-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -29.1 Ft.			
8. TOTAL DEPTH OF BORING 15.4 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-29.1	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, trace shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.226 mm % Fines: 4.9		
				B	Classification: SP-SM Color: 2.5Y 7/1-light gray D50: 0.1903 mm % Fines: 8.1		
-40.5	11.4						
			SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments, gray (SM)	C	Classification: SM Color: 2.5Y 5/2-grayish brown D50: 0.1904 mm % Fines: 16		
-44.5	15.4						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.2	3.1	91.7	4.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.7		
#20	99.4		
#40	96.6		
#60	60.6		
#100	10.2		
#200	4.9		

* (no specification provided)

Material Description
 SAND, (SP), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.3651 D₈₅= 0.3355 D₆₀= 0.2485
 D₅₀= 0.2260 D₃₀= 0.1879 D₁₅= 0.1602
 D₁₀= 0.1470 C_u= 1.69 C_c= 0.97

Classification
 USCS= SP AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-SI-46-10A
 Sample Number: TE Lab ID: 4549.16

Depth: 0.0 - 5.0 (FT.)

Date: 6/26/10

Thompson Engineering

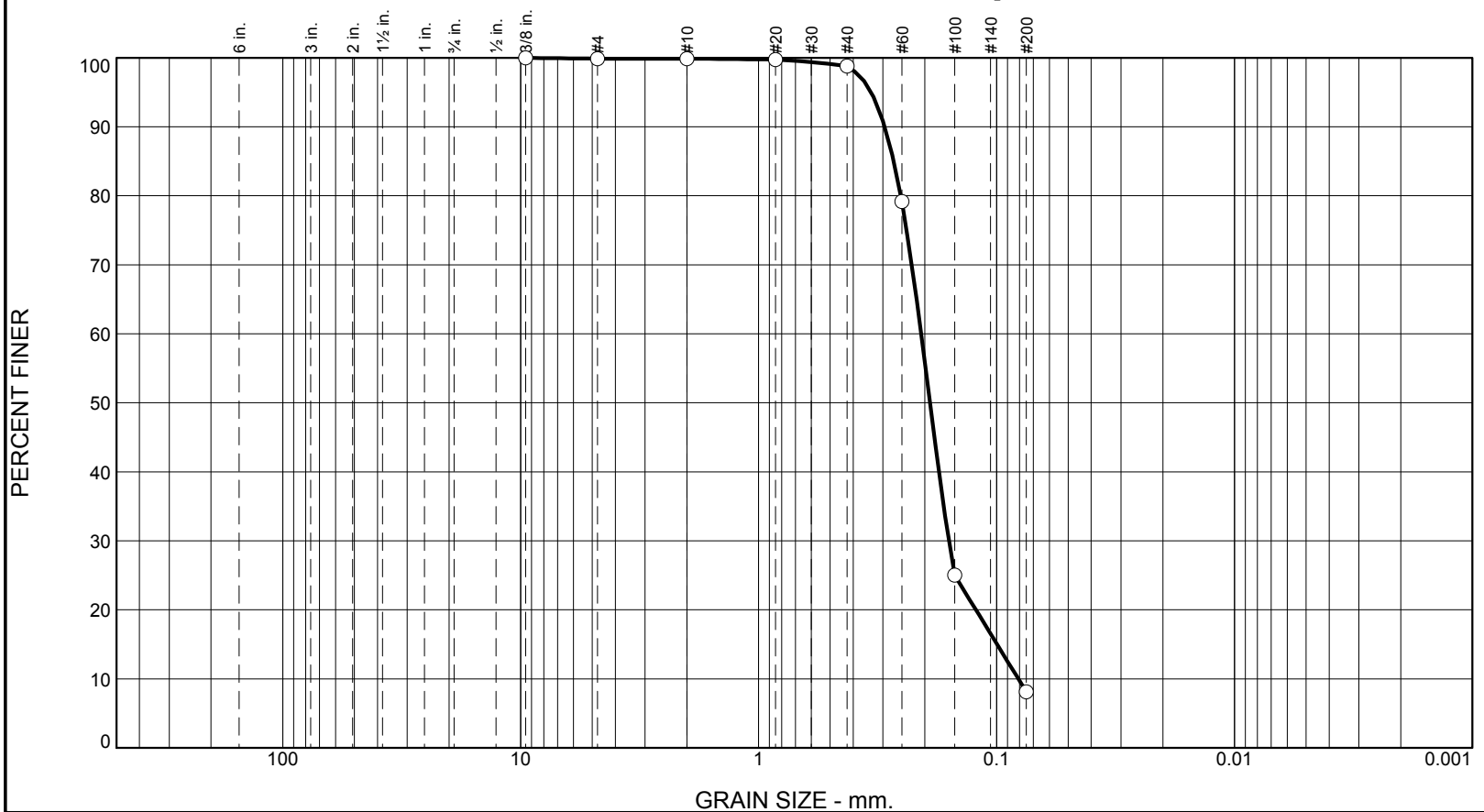
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: G.Fancher Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.0	1.1	90.7	8.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.9		
#20	99.7		
#40	98.8		
#60	79.2		
#100	25.0		
#200	8.1		

Material Description
SAND, (SP-SM), medium to fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.2947 D₈₅= 0.2701 D₆₀= 0.2074
D₅₀= 0.1903 D₃₀= 0.1585 D₁₅= 0.0995
D₁₀= 0.0810 C_u= 2.56 C_c= 1.50

Classification
USCS= SP-SM AASHTO=

Remarks
CADD CODE = CH10D965

* (no specification provided)

Location: USACE Sample # BI-SI-46-10B
Sample Number: TE Lab ID: 4549.17

Depth: 5.0 - 11.4 (ft.)

Date: 6/26/10

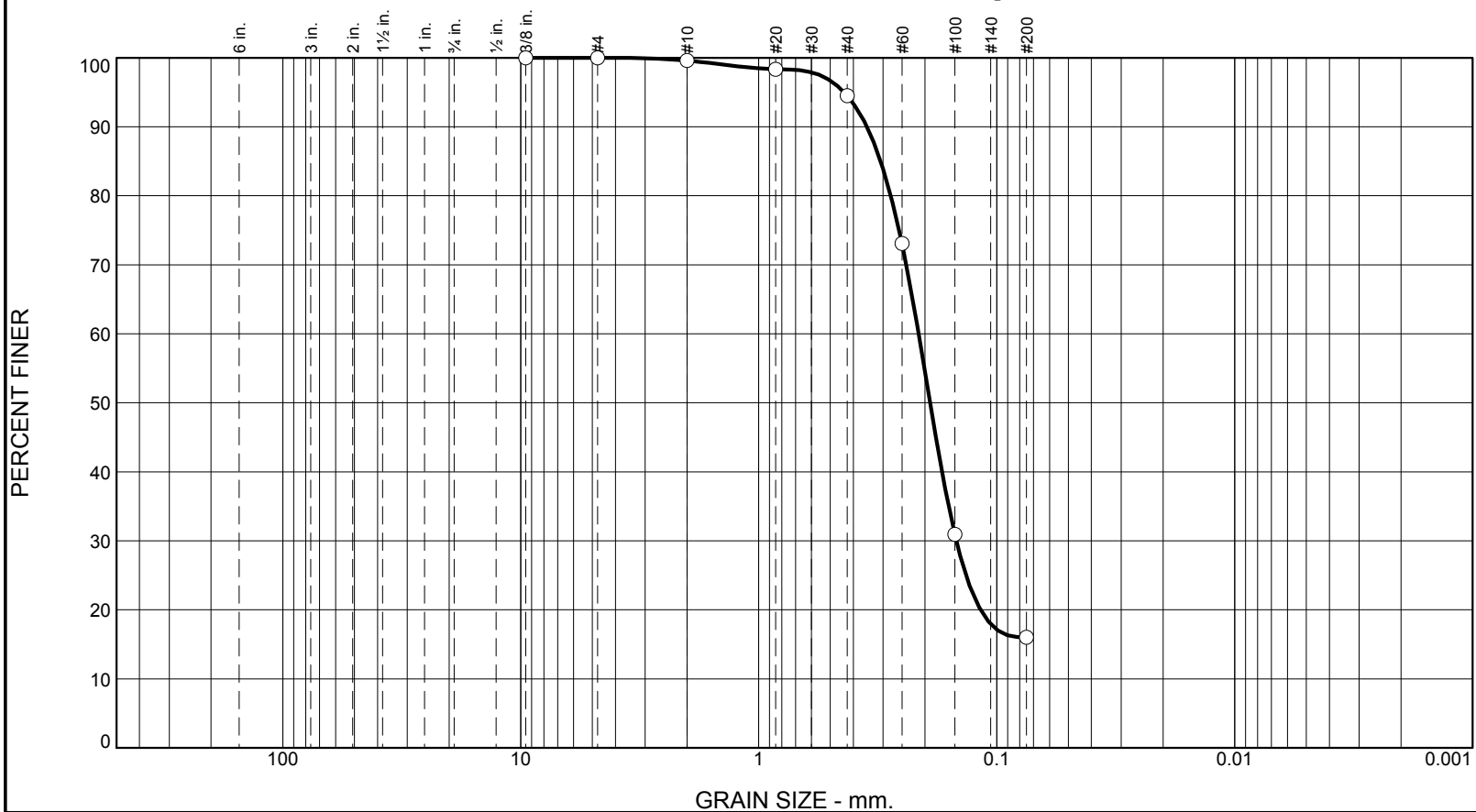
Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: G.Fancher **Checked By:** R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.4	5.1	78.5	16.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.6		
#20	98.4		
#40	94.5		
#60	73.1		
#100	30.9		
#200	16.0		

* (no specification provided)

Material Description		
SILTY SAND, (SM), medium to fine grained		
Atterberg Limits		
PL=	LL=	PI=
Coefficients		
D ₉₀ = 0.3509	D ₈₅ = 0.3072	D ₆₀ = 0.2129
D ₅₀ = 0.1904	D ₃₀ = 0.1478	D ₁₅ =
D ₁₀ =	C _u =	C _c =
Classification		
USCS= SM	AASHTO=	
Remarks		
CADD CODE = CH10D965		

Location: USACE Sample # BI-SI-46-10C
Sample Number: TE Lab ID: 4549.18

Depth: 11.4 - 15.4 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

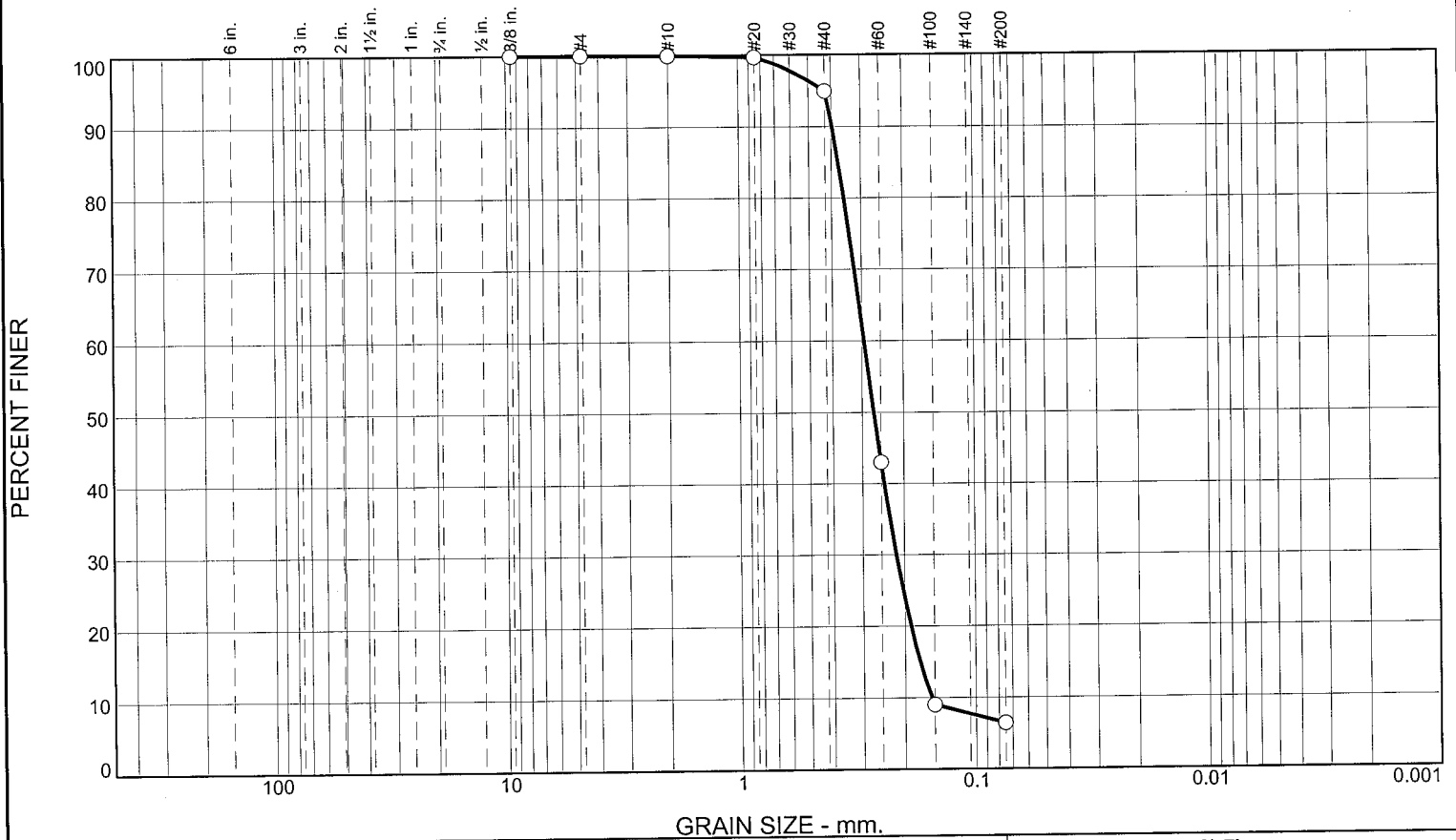
Figure

Tested By: G.Fancher Checked By: R.Byrd

Boring Designation BI-SI-47-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SI-47-10		LOCATION COORDINATES E = 971,919 N = 256,598		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 31 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-14-10		STARTED 06-14-10 COMPLETED 06-14-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -29.0 Ft.			
8. TOTAL DEPTH OF BORING 15.6 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-29.0	0.0						
-29.7	0.7		CLAY, lean, dark gray (CL)	NS			
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, trace shell fragments, lt. gray (SP)	A	Classification: SP-SM Color: 2.5Y 7/1-light gray D50: 0.2676 mm % Fines: 6.4		
				B	Classification: SP-SM Color: 2.5Y 7/1-light gray D50: 0.1967 mm % Fines: 6.8		
-38.7	9.7		CLAY, lean, dark gray (CL)	NS			
-44.6	15.6						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	5.0	88.5	6.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.7		
#40	94.9		
#60	43.0		
#100	9.0		
#200	6.4		

* (no specification provided)

Material Description

SAND, (SP-SM), fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.3963 D₈₅= 0.3736 D₆₀= 0.2935
D₅₀= 0.2676 D₃₀= 0.2163 D₁₅= 0.1725
D₁₀= 0.1542 C_u= 1.90 C_c= 1.03

Classification

USCS= SP-SM AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-SI-47-10A
Sample Number: TE Lab ID: 4549.14

Depth: 0.7 - 5.0 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

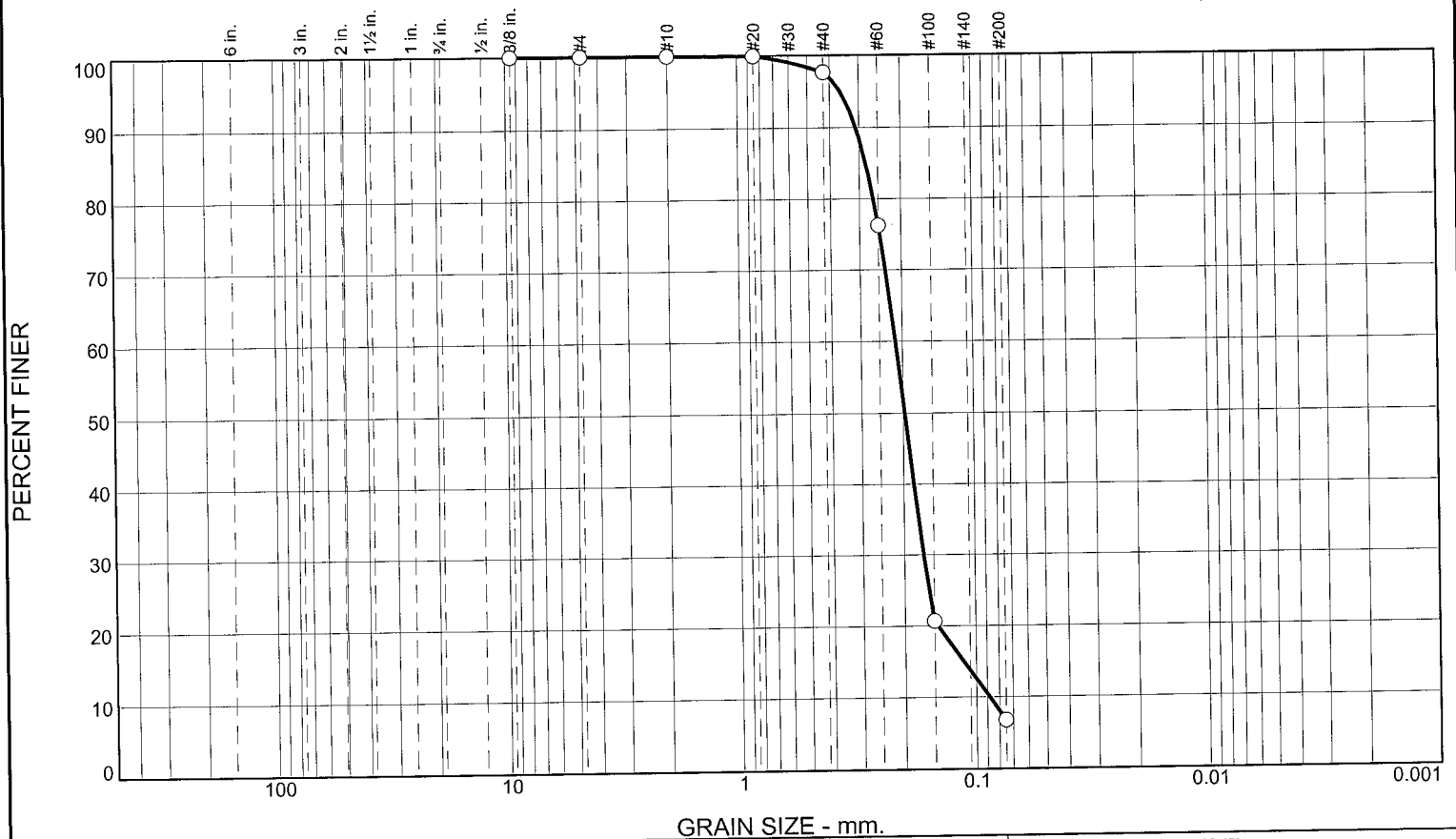
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	2.4	90.8	6.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	97.6		
#60	76.3		
#100	20.7		
#200	6.8		

* (no specification provided)

Material Description

SAND, (SP-SM), fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.3093 D₈₅= 0.2811 D₆₀= 0.2140
D₅₀= 0.1967 D₃₀= 0.1654 D₁₅= 0.1129
D₁₀= 0.0880 C_u= 2.43 C_c= 1.45

Classification

USCS= SP-SM AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-SI-47-10B
Sample Number: TE Lab ID: 4549.15

Depth: 5.0 - 9.7 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-SI-48-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SI-48-10		LOCATION COORDINATES E = 963,873 N = 250,405		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		BEARING		13. TOTAL NUMBER CORE BOXES	
6. THICKNESS OF OVERBURDEN N/A				14. WATER DEPTH 31 Ft.			
7. DEPTH DRILLED INTO ROCK N/A				15. DATE BORING 06-14-10		STARTED COMPLETED 06-14-10	
8. TOTAL DEPTH OF BORING 19.5 Ft.				16. ELEVATION TOP OF BORING -29.1 Ft.			
				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-29.1	0.0		CLAY, lean, dark gray (CL)				
-46.5	17.4			NS			
-48.6	19.5		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments, gray (SM)				
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Boring Designation BI-SI-49-10

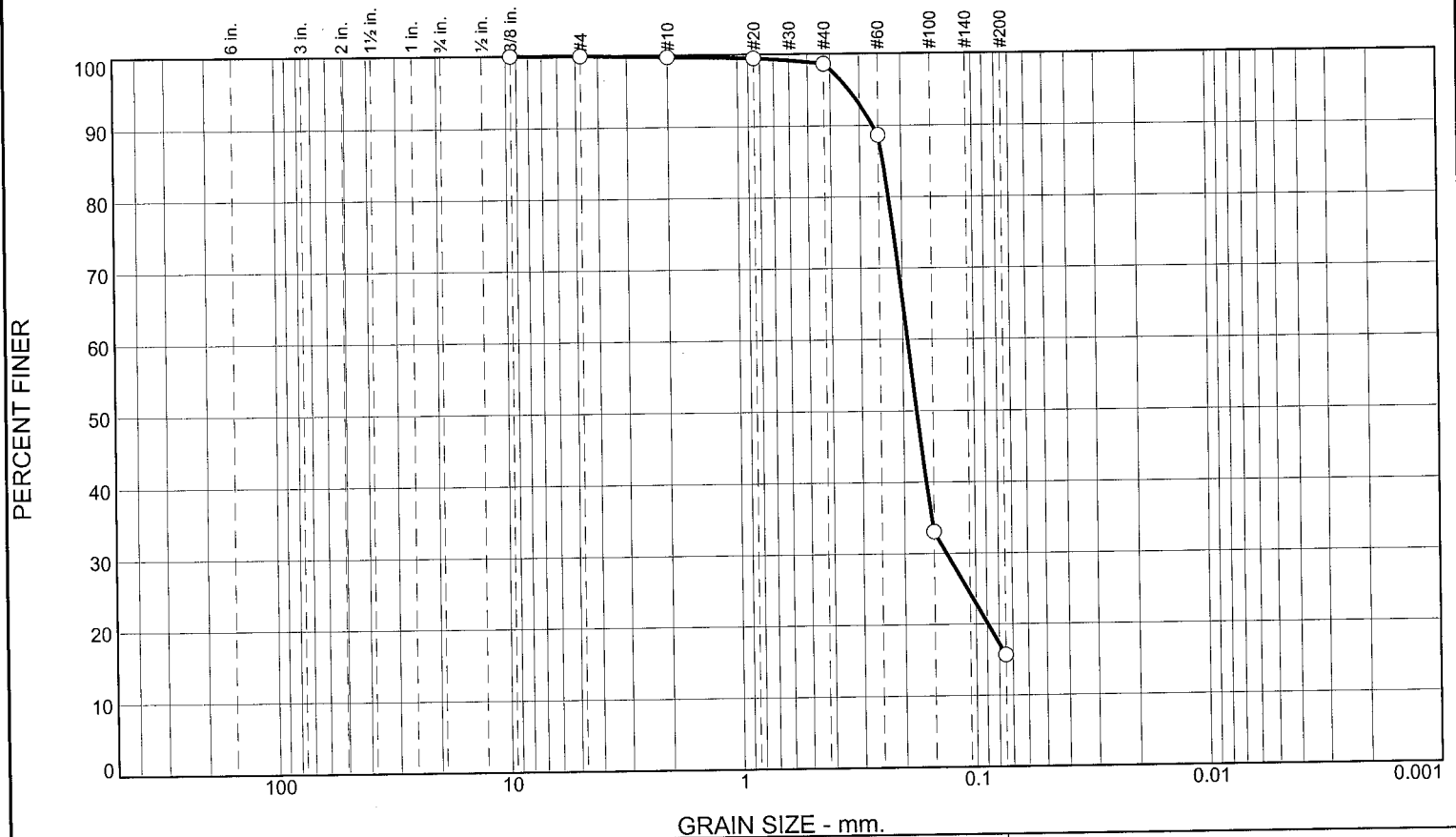
DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SI-49-10		LOCATION COORDINATES E = 966,407 N = 250,276		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 0 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		BEARING		13. TOTAL NUMBER CORE BOXES	
6. THICKNESS OF OVERBURDEN N/A				14. WATER DEPTH 32 Ft.			
7. DEPTH DRILLED INTO ROCK N/A				15. DATE BORING		STARTED 06-15-10 COMPLETED 06-15-10	
8. TOTAL DEPTH OF BORING 19.5 Ft.				16. ELEVATION TOP OF BORING -29.9 Ft.			
				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-29.9	0.0		CLAY, lean, dark gray (CL)				
-47.2	17.3			NS			
-49.4	19.5		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments, gray (SM)				
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Boring Designation BI-SI-50-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SI-50-10		LOCATION COORDINATES E = 968,360 N = 251,443		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 1 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		BEARING		13. TOTAL NUMBER CORE BOXES	
6. THICKNESS OF OVERBURDEN N/A		7. DEPTH DRILLED INTO ROCK N/A		8. TOTAL DEPTH OF BORING 16.9 Ft.		14. WATER DEPTH 32 Ft.	
						15. DATE BORING STARTED 06-15-10 COMPLETED 06-15-10	
						16. ELEVATION TOP OF BORING -29.8 Ft.	
						17. TOTAL RECOVERY FOR BORING 100%	
						18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist	

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-29.8	0.0				
			CLAY, lean, dark gray (CL)	NS	
-33.5	3.7				
			SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments, gray (SM)	A	Classification: SM Color: 2.5Y 6/2-light brownish gray D50: 0.1757 mm % Fines: 15.7
-39.6	9.8				
			CLAY, lean, dark gray (CL)	NS	
-43.8	14.0				
			SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments, gray (SM)		
-46.7	16.9		At El. -45.8 Ft., mostly medium-grained sand-sized quartz, some silt, trace shell fragments, brown		
NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.					

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.3	1.1	82.9	15.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.7		
#20	99.5		
#40	98.6		
#60	88.7		
#100	33.1		
#200	15.7		

* (no specification provided)

Material Description
SILTY SAND, (SM), medium to fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.2635 D₈₅= 0.2392 D₆₀= 0.1908
 D₅₀= 0.1757 D₃₀= 0.1327 D₁₅=
 D₁₀= C_u= C_c=

Classification
 USCS= SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-SI-50-10A
 Sample Number: TE Lab ID: 4549.25

Depth: 3.7 - 9.8 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

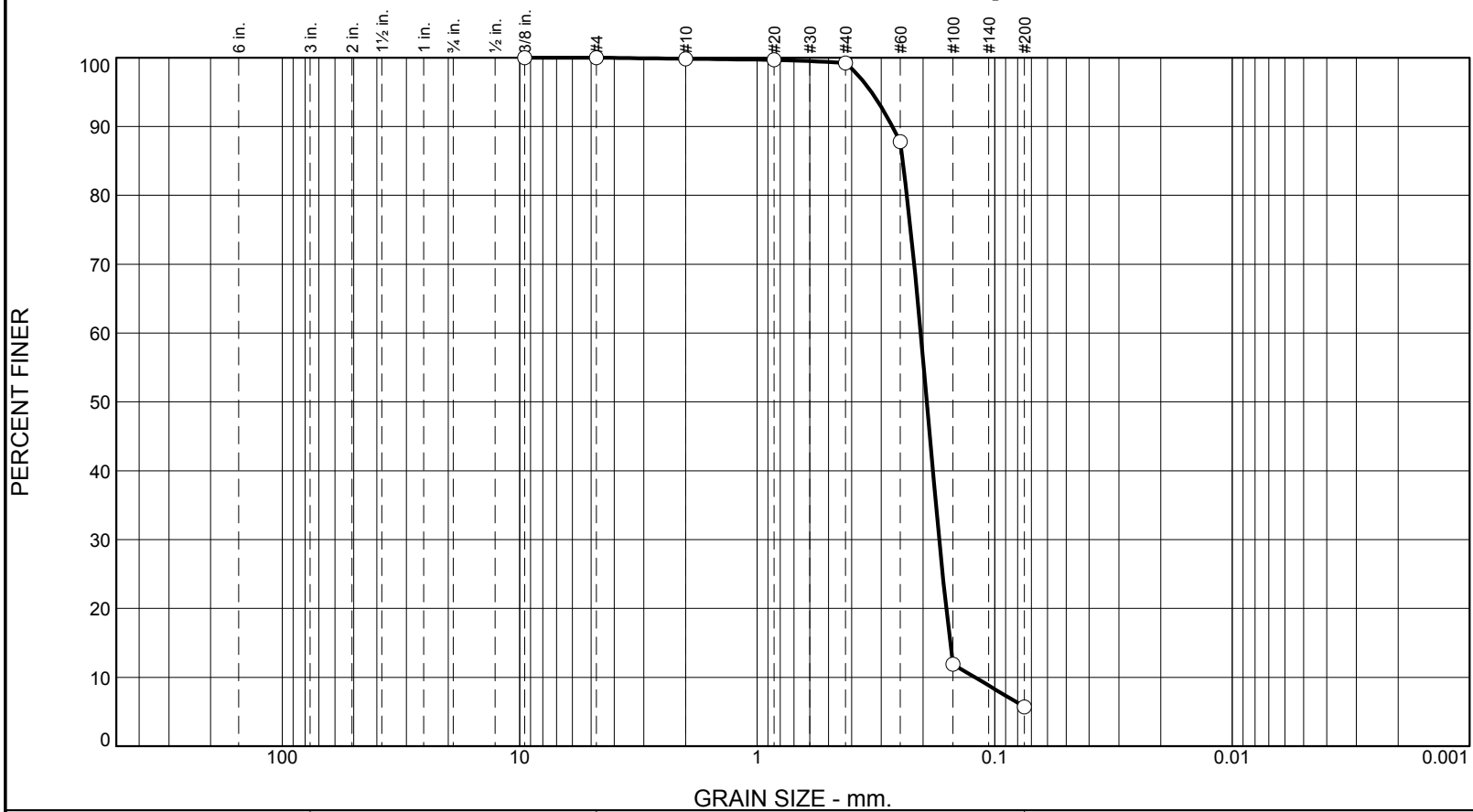
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-SI-51-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SI-51-10		LOCATION COORDINATES E = 972,973 N = 254,780		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 33 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-15-10		STARTED 06-15-10 COMPLETED 06-15-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -30.8 Ft.			
8. TOTAL DEPTH OF BORING 18.2 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-30.8	0.0						
-32.6	1.8		CLAY, lean, dark gray (CL)	NS			
			SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments, lt. gray (SM)	A	Classification: SP-SM Color: 2.5Y 6/2-light brownish gray D50: 0.1931 mm % Fines: 5.7		
				B	Classification: SM Color: 2.5Y 6/2-light brownish gray D50: 0.174 mm % Fines: 15.5		
-41.2	10.4		CLAY, lean, dark gray (CL)	NS			
-47.0	16.2						
-49.0	18.2		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments, brown (SM)				
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	0.6	93.5	5.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.8		
#20	99.7		
#40	99.2		
#60	87.8		
#100	11.9		
#200	5.7		

Material Description
SAND, (SP-SM), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.2694 D₈₅= 0.2437 D₆₀= 0.2050
 D₅₀= 0.1931 D₃₀= 0.1710 D₁₅= 0.1539
 D₁₀= 0.1212 C_u= 1.69 C_c= 1.18

Classification
 USCS= SP-SM AASHTO=

Remarks
 CADD CODE = CH10D965

* (no specification provided)

Location: USACE Sample # BI-SI-51-10A
Sample Number: TE Lab ID: 4549.26

Depth: 1.8 - 5.0 (ft.)

Date: 6/26/10

Thompson Engineering

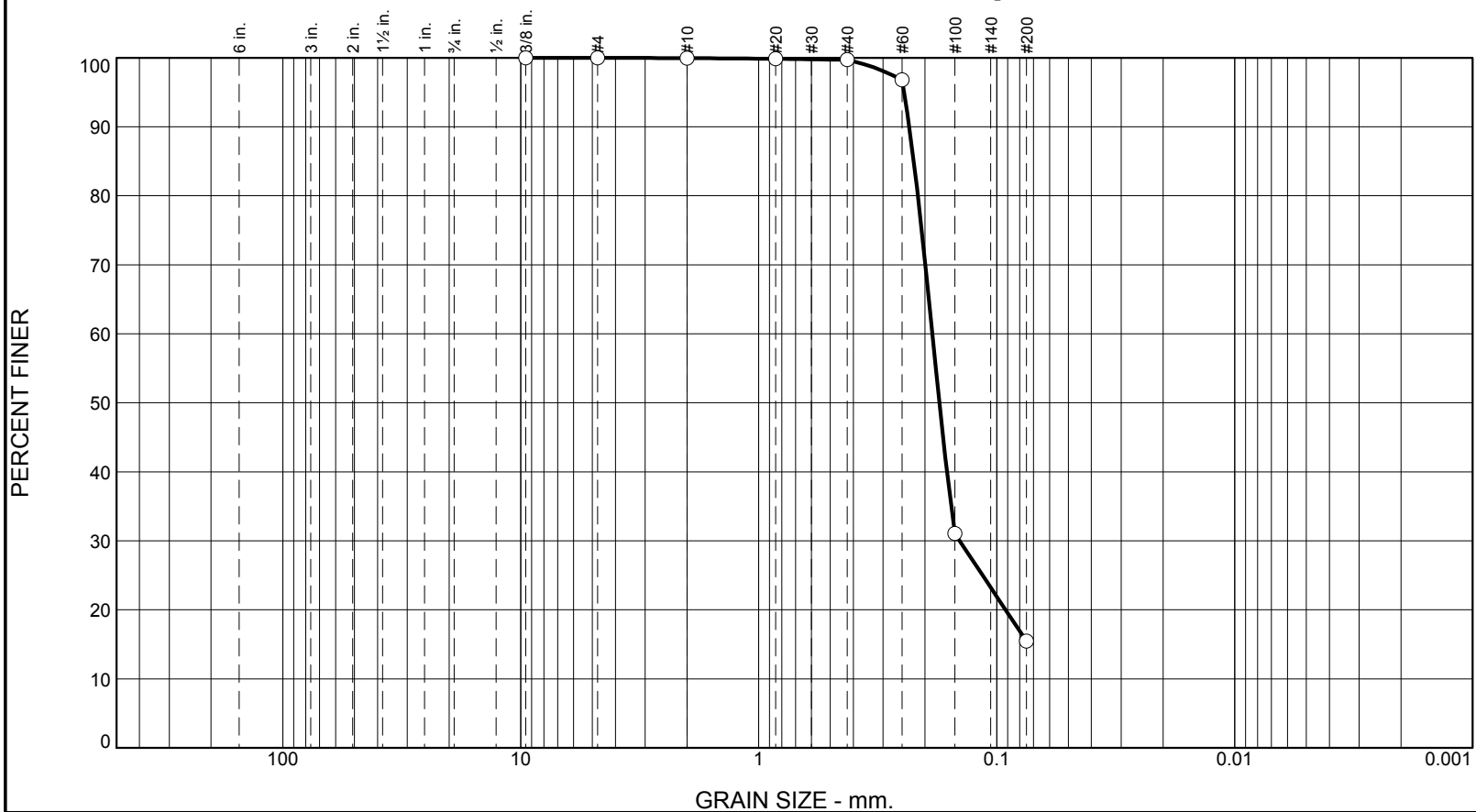
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: G.Fancher **Checked By:** R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	0.2	84.2	15.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.9		
#40	99.7		
#60	96.8		
#100	31.1		
#200	15.5		

* (no specification provided)

<u>Material Description</u>		
SILTY SAND, (SM), fine grained, with clay pockets		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.2328	D ₈₅ = 0.2230	D ₆₀ = 0.1864
D ₅₀ = 0.1740	D ₃₀ = 0.1431	D ₁₅ =
D ₁₀ =	C _u =	C _c =
<u>Classification</u>		
USCS= SM	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-SI-51-10B
Sample Number: TE Lab ID: 4549.27

Depth: 5.0 - 10.4 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

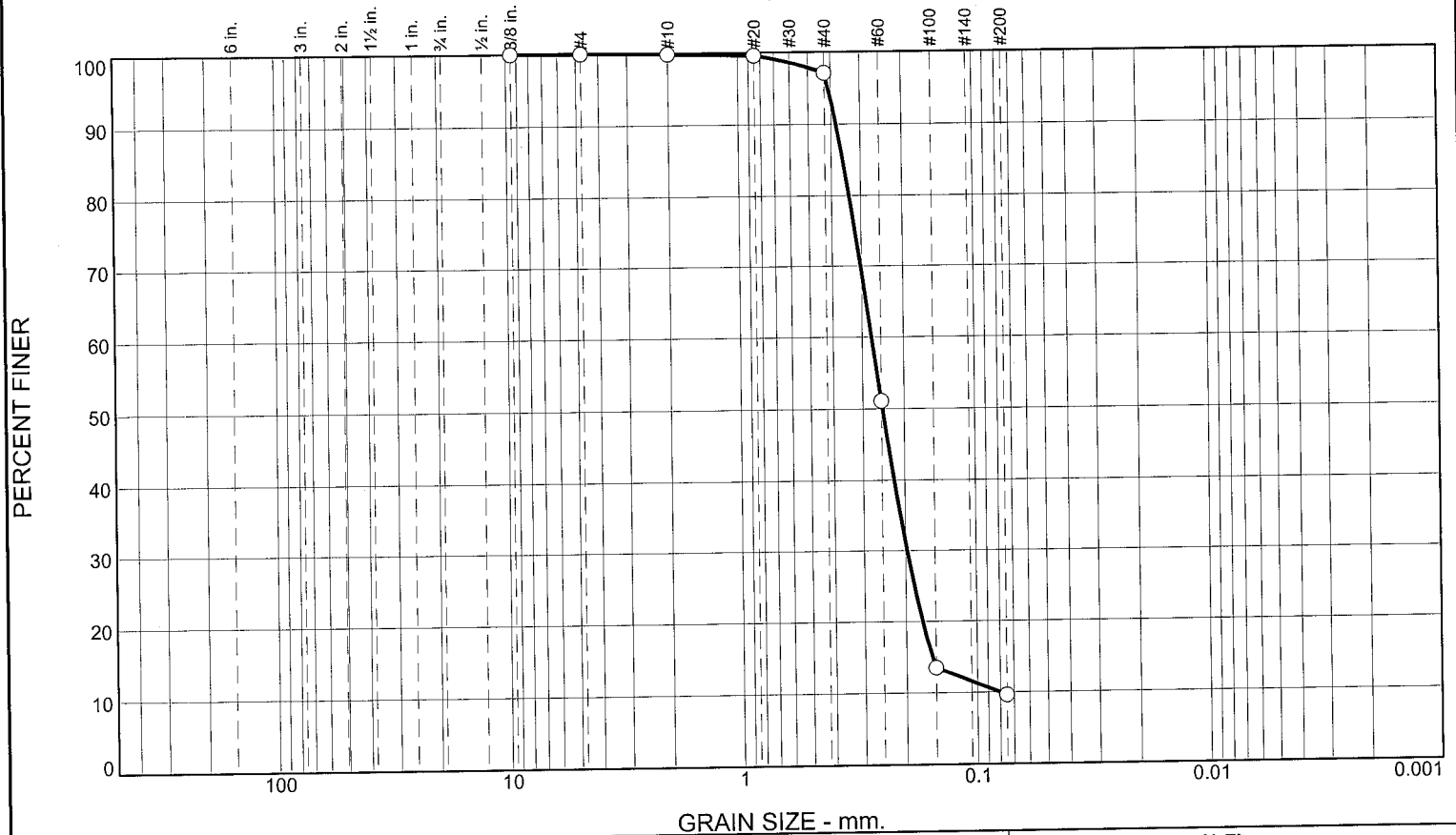
Figure

Tested By: G.Fancher Checked By: R.Byrd

Boring Designation BI-SI-62-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SI-62-10		LOCATION COORDINATES E = 972,401 N = 263,243		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 24 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-16-10		STARTED 06-16-10 COMPLETED 06-16-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -22.3 Ft.			
8. TOTAL DEPTH OF BORING 12.6 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Brad Johnson, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-22.3	0.0						
-24.3	2.0		SAND, silty, mostly fine-grained sand-sized quartz, some silt, lt. gray (SM)	A	Classification: SP-SM Color: 2.5Y 6/2-light brownish gray D50: 0.2472 mm % Fines: 9.6		
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, lt. gray (SP)	B	Classification: SP-SM Color: 2.5Y 7/1-light gray D50: 0.2734 mm % Fines: 5.2		
				C	Classification: SP Color: 2.5Y 8/1-white D50: 0.2996 mm % Fines: 3.7		
-34.9	12.6						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	2.7	87.5	9.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.8		
#20	99.6		
#40	97.1		
#60	51.1		
#100	13.5		
#200	9.6		

* (no specification provided)

Location: USACE Sample # BI-SI-62-10A
Sample Number: TE Lab ID: 4549.36

Depth: 0.0 - 2.0 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Figure

Material Description

SAND, (SP-SM), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.3797

D₈₅= 0.3563

D₆₀= 0.2736

D₅₀= 0.2472

D₃₀= 0.1968

D₁₅= 0.1552

D₁₀= 0.0804

C_u= 3.41

C_c= 1.76

Classification

USCS= SP-SM

AASHTO=

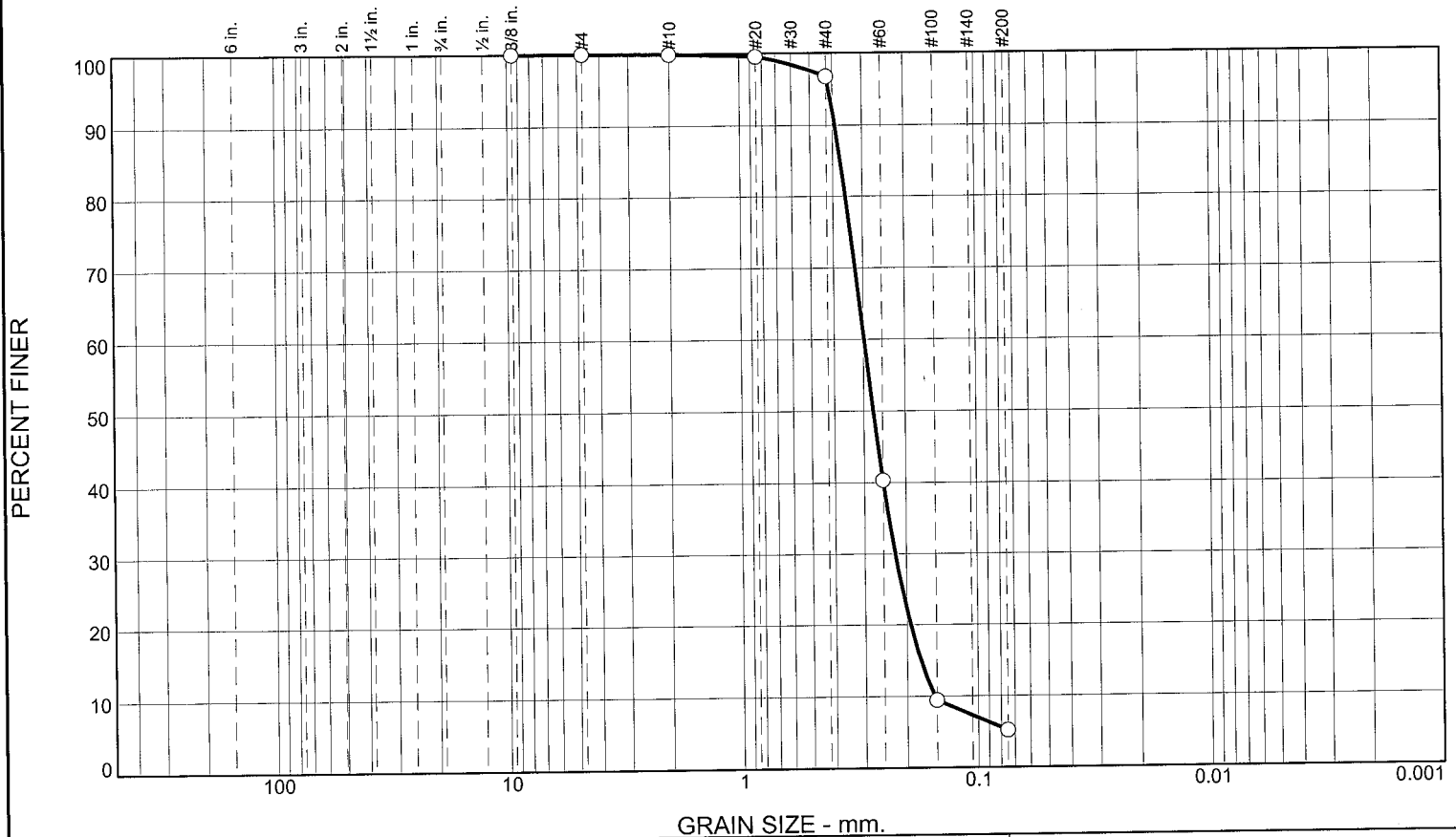
Remarks

CADD CODE = CH10D965

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	3.1	91.6	5.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.5		
#40	96.8		
#60	40.4		
#100	9.4		
#200	5.2		

* (no specification provided)

Material Description
SAND, (SP-SM), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.3905 D₈₅= 0.3708 D₆₀= 0.2978
 D₅₀= 0.2734 D₃₀= 0.2228 D₁₅= 0.1748
 D₁₀= 0.1529 C_u= 1.95 C_c= 1.09

Classification
 USCS= SP-SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-SI-62-10B
 Sample Number: TE Lab ID: 4549.37

Depth: 2.0 - 7.0 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project

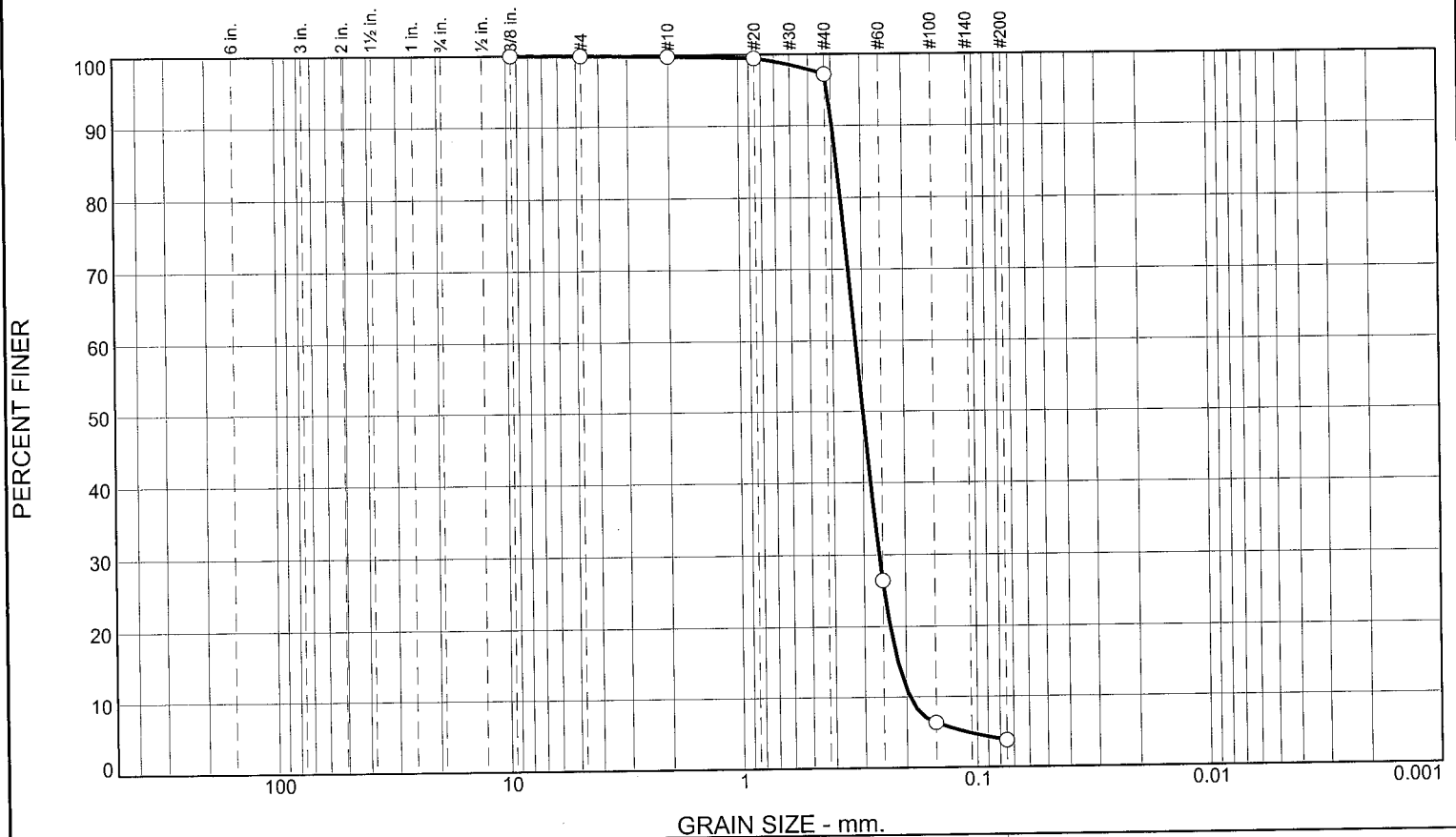
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.1	2.6	93.5	3.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.8		
#20	99.5		
#40	97.2		
#60	26.4		
#100	6.3		
#200	3.7		

* (no specification provided)

Material Description
SAND, (SP), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.3967 D₈₅= 0.3809 D₆₀= 0.3202
 D₅₀= 0.2996 D₃₀= 0.2583 D₁₅= 0.2167
 D₁₀= 0.1933 C_u= 1.66 C_c= 1.08

Classification
 USCS= SP AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-SI-62-10C
 Sample Number: TE Lab ID: 4549.38

Depth: 7.0 - 12.6 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
 Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
 Project No: 10-2123-0009

Figure

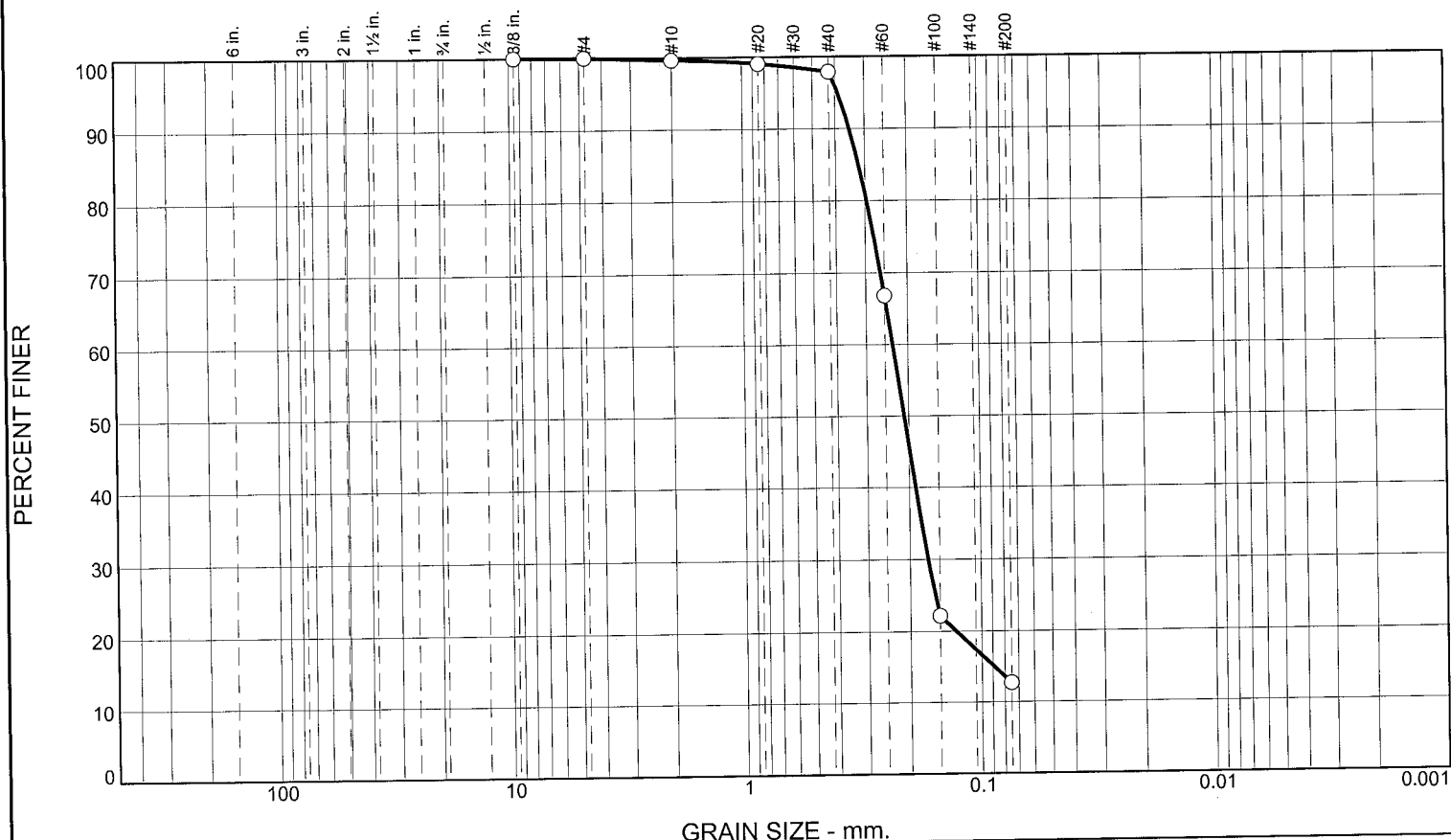
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-SI-65-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SI-65-10		LOCATION COORDINATES E = 953,572 N = 252,758		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 1		DISTURBED 1 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 21 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-17-10		STARTED 06-17-10 COMPLETED 06-17-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -20.0 Ft.			
8. TOTAL DEPTH OF BORING 10.9 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Brad Johnson, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-20.0	0.0						
			SAND, silty, mostly fine-grained sand-sized quartz, some silt, trace shell fragments, gray (SM)	A	Classification: SM Color: 2.5Y 5/2-grayish brown D50: 0.2089 mm % Fines: 12.7		
-26.1	6.1						
			CLAY, lean, some silt, dark gray (CL)	NS			
-30.9	10.9						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.4	1.7	85.2	12.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.6		
#20	99.1		
#40	97.9		
#60	66.8		
#100	22.1		
#200	12.7		

* (no specification provided)

Material Description
SILTY SAND, (SM), medium to fine grained, with clay nodules

Atterberg Limits
 PL= LL= PI=
Coefficients
 D₉₀= 0.3481 D₈₅= 0.3187 D₆₀= 0.2319
 D₅₀= 0.2089 D₃₀= 0.1675 D₁₅= 0.0889
 D₁₀= C_u= C_c=

Classification
 USCS= SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-SI-65-10A
 Sample Number: TE Lab ID: 4549.39

Depth: 0.0 - 6.1 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Figure

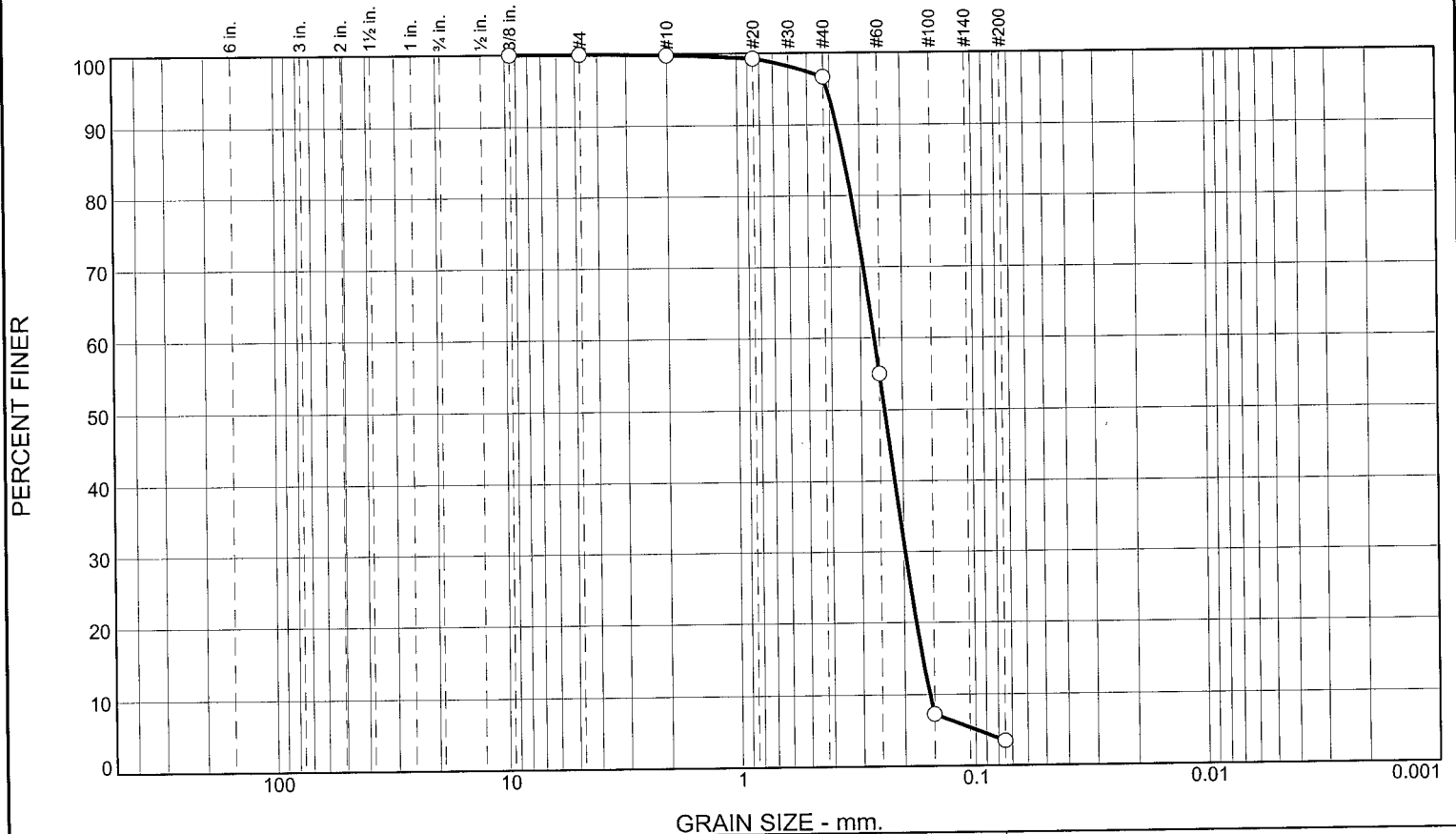
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-SI-66-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SI-66-10		LOCATION COORDINATES E = 954,998 N = 253,601		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 21 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-17-10		STARTED 06-17-10 COMPLETED 06-17-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -20.0 Ft.			
8. TOTAL DEPTH OF BORING 17.7 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Brad Johnson, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-20.0	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 7/2-light gray D50: 0.2383 mm % Fines: 3.5		
				B	Classification: SP Color: 2.5Y 7/2-light gray D50: 0.2635 mm % Fines: 4.4		
-28.6	8.6						
			SAND, clayey, some silt, some sand (SC)				
-33.2	13.2			NS			
			CLAY, lean (CL)				
-37.7	17.7						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	3.1	93.2	3.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.8		
#20	99.3		
#40	96.7		
#60	55.0		
#100	7.3		
#200	3.5		

* (no specification provided)

Material Description
SAND, (SP), fine grained

PL= **Atterberg Limits** LL= PI=

Coefficients
D₉₀= 0.3741 D₈₅= 0.3477 D₆₀= 0.2624
D₅₀= 0.2383 D₃₀= 0.1970 D₁₅= 0.1674
D₁₀= 0.1566 C_u= 1.68 C_c= 0.95

Classification
USCS= SP AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-SI-66-10A
Sample Number: TE Lab ID: 4549.40

Depth: 0.0 - 5.0 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

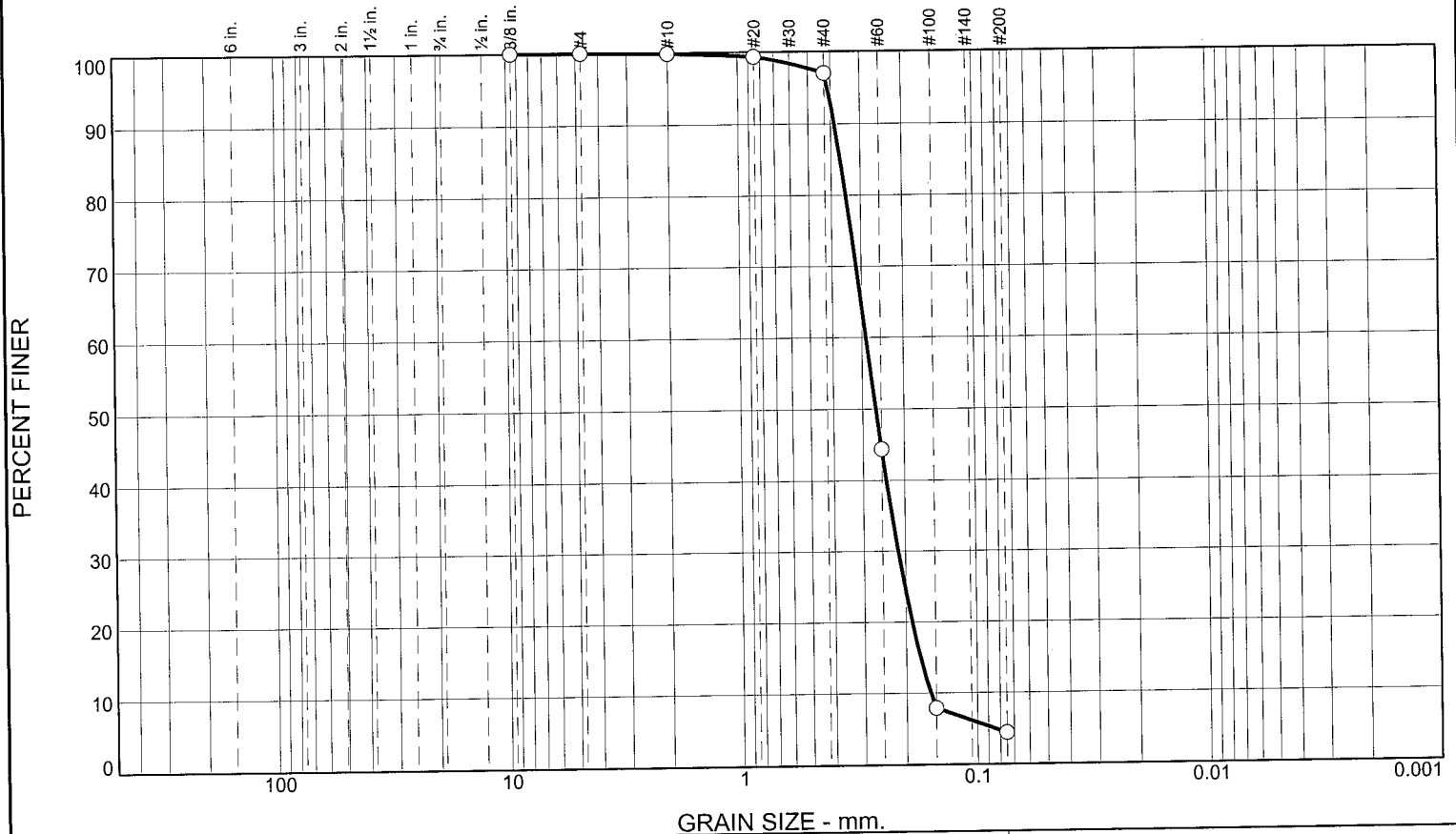
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	2.9	92.6	4.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.3		
#40	97.0		
#60	44.4		
#100	7.9		
#200	4.4		

* (no specification provided)

Location: USACE Sample # BI-SI-66-10B
Sample Number: TE Lab ID: 4549.41

Depth: 5.0 - 8.6 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Figure

Material Description

SAND, (SP), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.3859

D₈₅= 0.3648

D₆₀= 0.2884

D₅₀= 0.2635

D₃₀= 0.2145

D₁₅= 0.1740

D₁₀= 0.1579

C_u= 1.83

C_c= 1.01

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

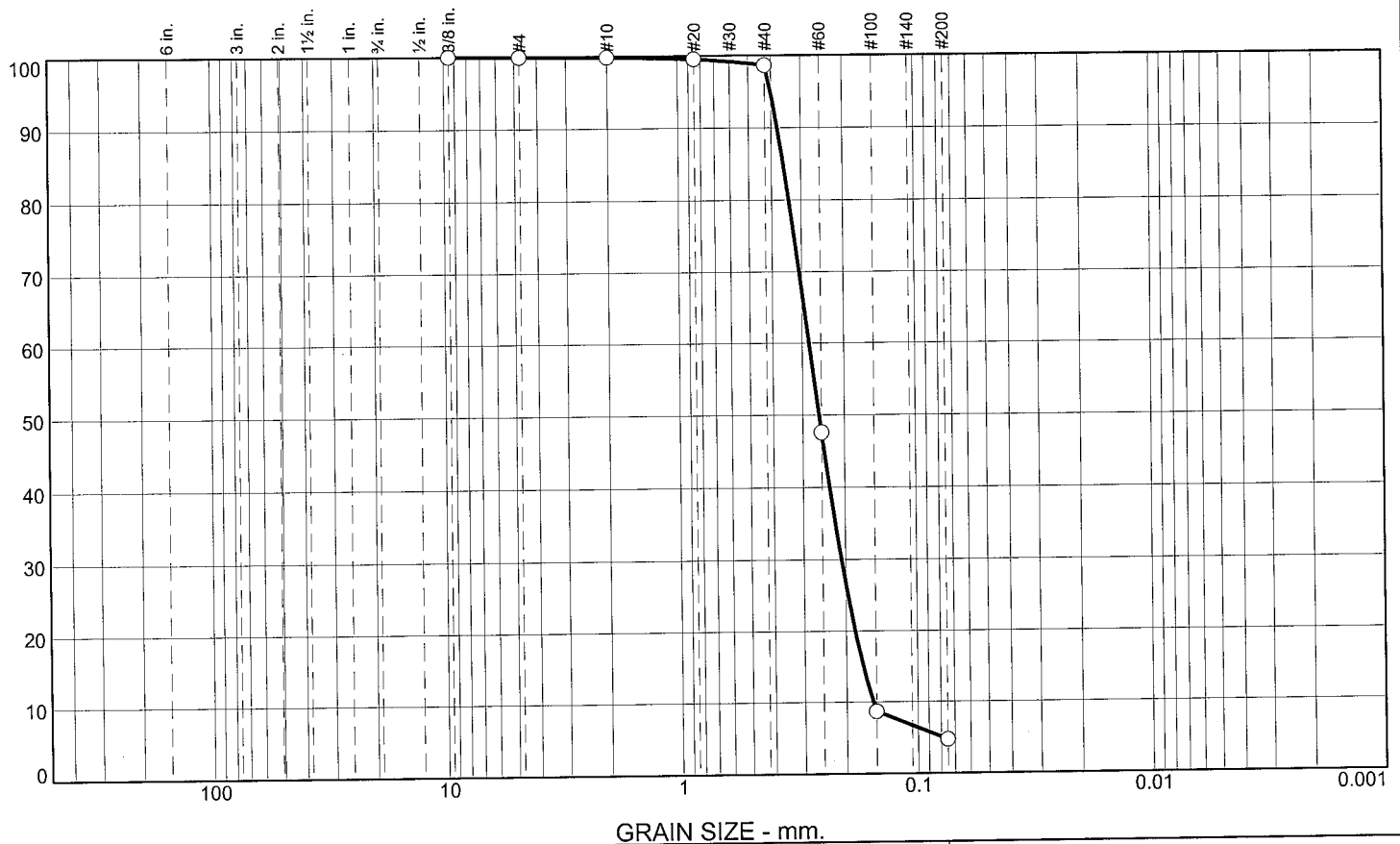
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-SI-67-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SI-67-10		LOCATION COORDINATES E = 959,298 N = 254,812		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 1		DISTURBED 1 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 21 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-17-10		STARTED 06-17-10 COMPLETED 06-17-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -19.7 Ft.			
8. TOTAL DEPTH OF BORING 14.1 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Brad Johnson, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-19.7	0.0						
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, gray (SP)	A	Classification: SP Color: 2.5Y 7/2-light gray D50: 0.2558 mm % Fines: 4.7		
-23.4	3.7						
-24.3	4.6		CLAY, lean, some sand, dark gray (CL)				
			SILT, inorganic-L, some sand, dark gray (ML)				
-25.9	6.2						
			CLAY, lean, dark gray (CL)	NS			
-33.8	14.1						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

PERCENT FINER



GRAIN SIZE - mm.							
% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.1	1.2	93.9	4.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.8		
#20	99.5		
#40	98.6		
#60	47.6		
#100	8.7		
#200	4.7		

* (no specification provided)

Material Description

SAND, (SP), fine grained

Atterberg Limits

$$P_L =$$
$$LL =$$
$$PI =$$

Coefficients

$$D_{90} = 0.3764$$
$$D_{8.5} = 0.3558$$
$$D_{60} = 0.2804$$
$$D_{50} = 0.2558$$
$$D_{30}^{0.5} = 0.2080$$
$$D_{15} = 0.1697$$
$$D_{10}^{50} = 0.1545$$
$$C_u^{\infty} = 1.81$$
$$C_C = 1.00$$

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-SI-67-10A
Sample Number: TE Lab ID: 4549.42

Depth: 0.0 - 3.7 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Figure

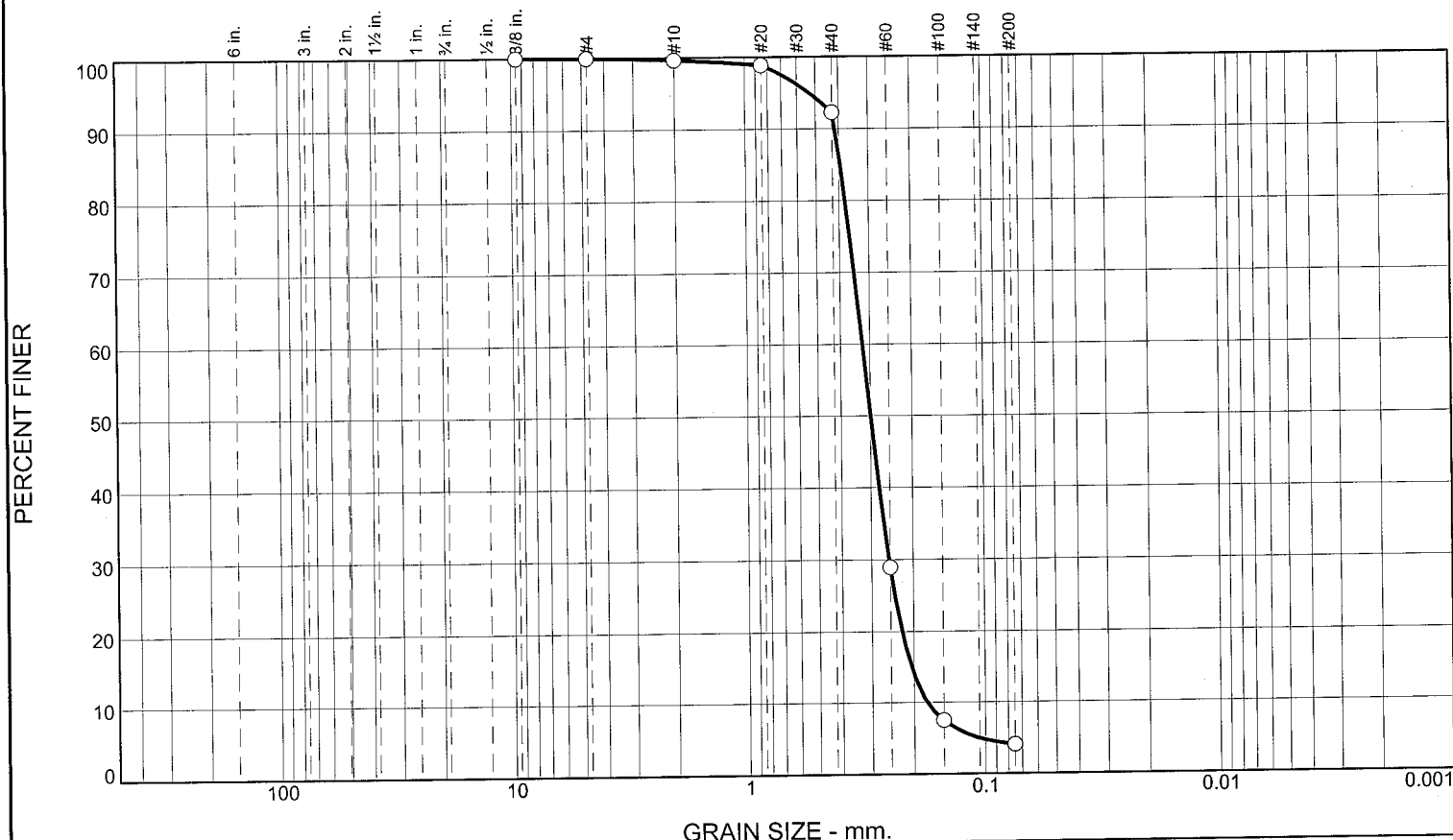
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-SI-68-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SI-68-10		LOCATION COORDINATES E = 970,015 N = 258,785		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 0 UNDISTURBED (UD)	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 29 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-16-10		STARTED 06-16-10 COMPLETED 06-16-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -27.2 Ft.			
8. TOTAL DEPTH OF BORING 15.5 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Brad Johnson, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-27.2	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 7/2-light gray D50: 0.2992 mm % Fines: 4.1		
				B	Classification: SP Color: 2.5Y 7/2-light gray D50: 0.2942 mm % Fines: 3.3		
				C	Classification: SP Color: 2.5Y 7/2-light gray D50: 0.2232 mm % Fines: 3.9		
-39.4	12.2						
			SAND, clayey, dark gray (SC)	NS			
-42.7	15.5						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.4	7.4	88.1	4.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.6		
#20	98.9		
#40	92.2		
#60	28.9		
#100	7.5		
#200	4.1		

* (no specification provided)

Material Description
SAND, (SP), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.4144 D₈₅= 0.3941 D₆₀= 0.3225
 D₅₀= 0.2992 D₃₀= 0.2527 D₁₅= 0.2045
 D₁₀= 0.1760 C_u= 1.83 C_c= 1.13

Classification
 USCS= SP AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-SI-68-10A
 Sample Number: TE Lab ID: 4549.43

Depth: 0.0 - 4.0 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project

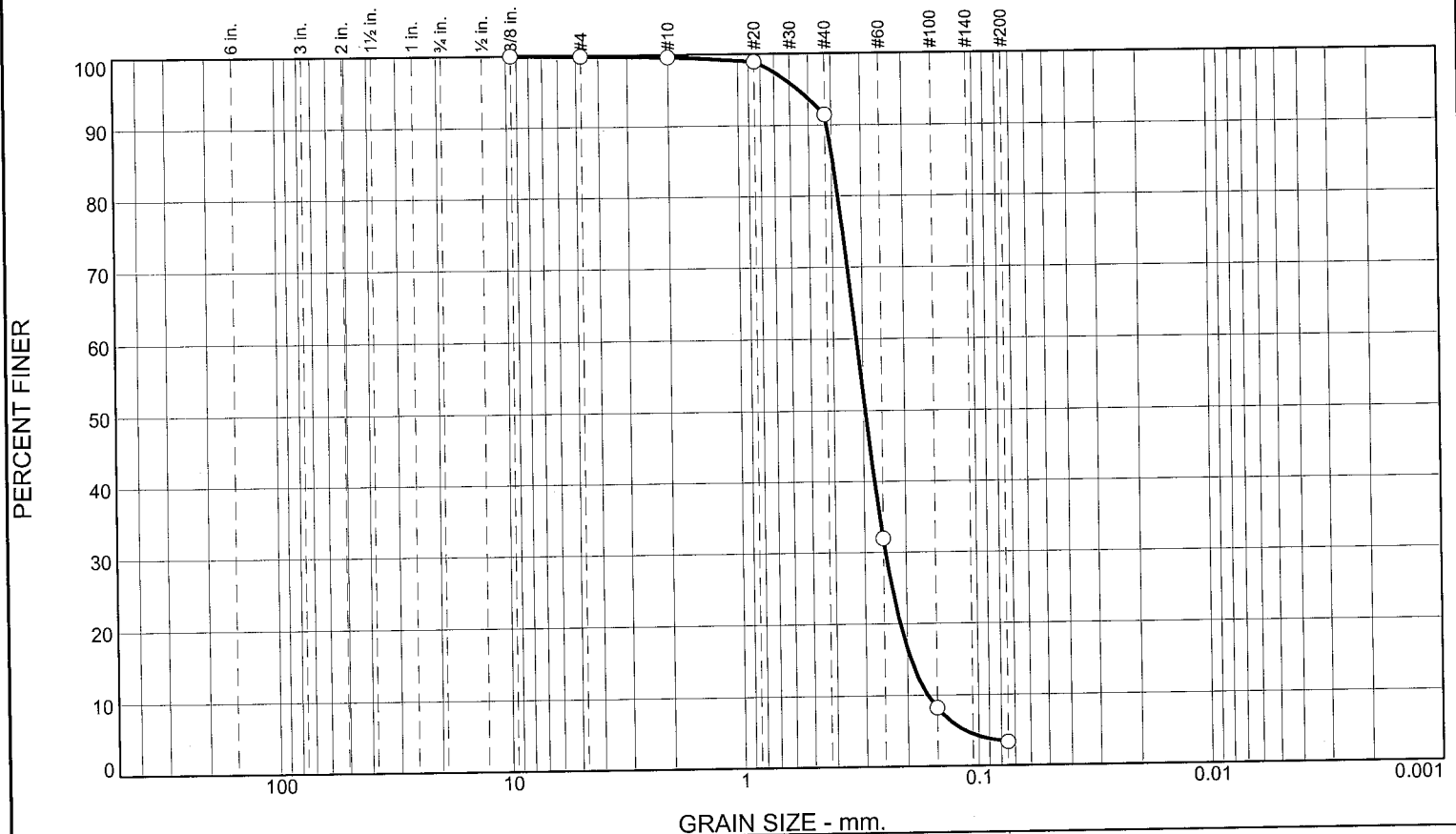
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.3	8.2	88.1	3.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.6		
#20	98.9		
#40	91.4		
#60	31.9		
#100	8.2		
#200	3.3		

* (no specification provided)

Material Description		
SAND, (SP), fine grained		
Atterberg Limits		
PL=	LL=	PI=
Coefficients		
D ₉₀ = 0.4175	D ₈₅ = 0.3953	D ₆₀ = 0.3189
D ₅₀ = 0.2942	D ₃₀ = 0.2448	D ₁₅ = 0.1931
D ₁₀ = 0.1644	C _u = 1.94	C _c = 1.14
Classification		
USCS= SP	AASHTO=	
Remarks		
CADD CODE = CH10D965		

Location: USACE Sample # BI-SI-68-10B
Sample Number: TE Lab ID: 4549.44

Depth: 4.0 - 8.0 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

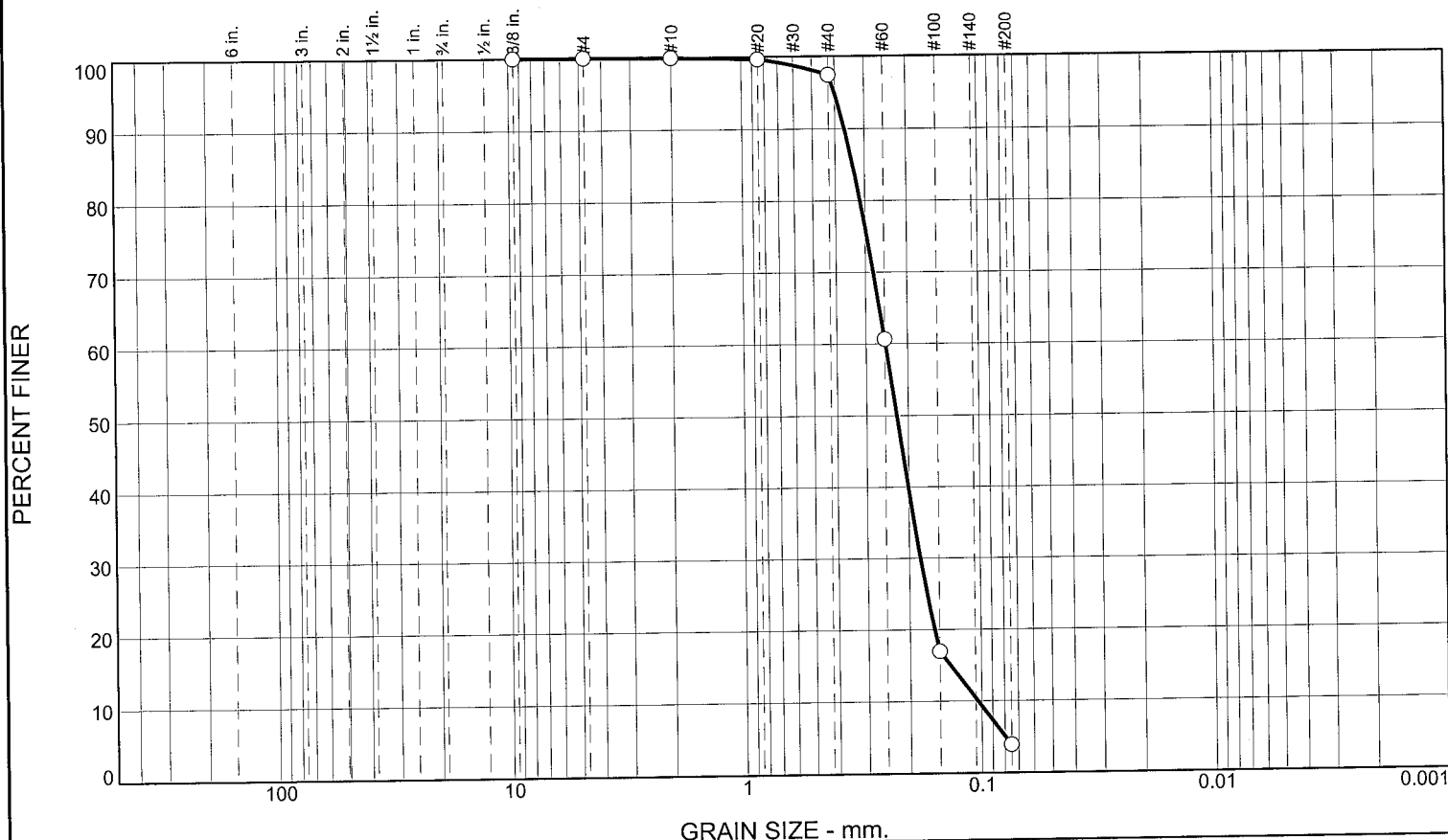
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	2.5	93.5	3.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.6		
#40	97.4		
#60	60.6		
#100	17.0		
#200	3.9		

* (no specification provided)

Material Description
SAND, (SP), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.3642 D₈₅= 0.3367 D₆₀= 0.2483
 D₅₀= 0.2232 D₃₀= 0.1793 D₁₅= 0.1353
 D₁₀= 0.1037 C_u= 2.39 C_c= 1.25

Classification
 USCS= SP AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-SI-68-10C
 Sample Number: TE Lab ID: 4549.45

Depth: 8.0 - 12.2 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
 Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
 Project No: 10-2123-0009

Figure

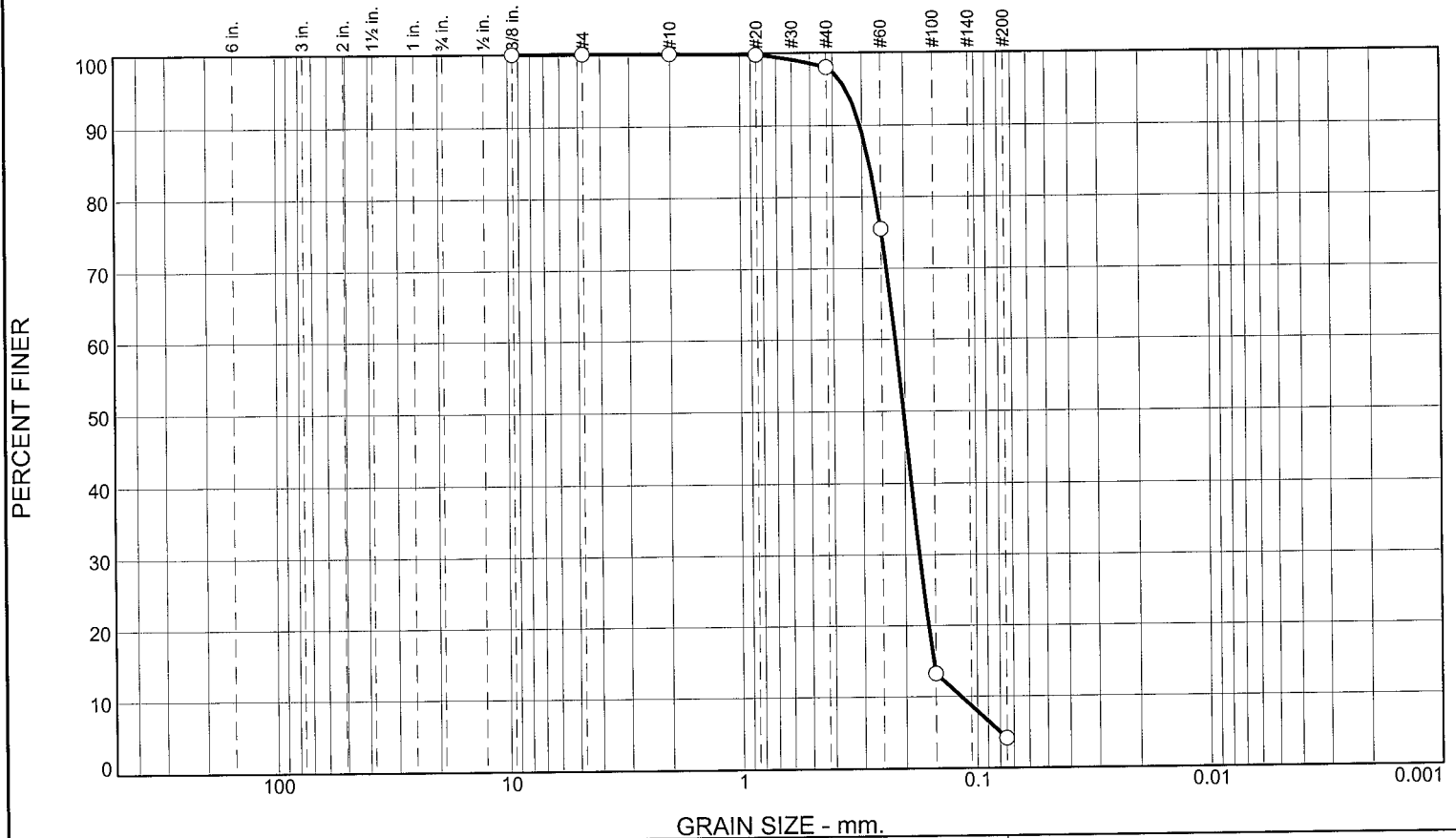
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-SI-69-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SI-69-10		LOCATION COORDINATES E = 971,567 N = 261,330		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 26 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-16-10		STARTED 06-16-10 COMPLETED 06-16-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -24.3 Ft.			
8. TOTAL DEPTH OF BORING 18.2 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Brad Johnson, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-24.3	0.0						
-25.7	1.4		SAND, clayey, dark gray (SC)	NS			
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, lt. gray (SP)	A	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.2027 mm % Fines: 4.1		
				B	Classification: SM Color: 2.5Y 7/1-light gray D50: 0.1891 mm % Fines: 21.4		
				C	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.1907 mm % Fines: 4.7		
-37.6	13.3		SAND, clayey, dark gray (SC)	NS			
-42.5	18.2						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	1.9	93.9	4.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.8		
#40	98.0		
#60	75.5		
#100	13.2		
#200	4.1		

* (no specification provided)

Material Description
SAND, (SP), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.3060 D₈₅= 0.2804 D₆₀= 0.2186
 D₅₀= 0.2027 D₃₀= 0.1744 D₁₅= 0.1529
 D₁₀= 0.1174 C_u= 1.86 C_c= 1.19

Classification
 USCS= SP AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-SI-69-10A
 Sample Number: TE Lab ID: 4549.46

Depth: 1.4 - 5.4 (ft.)

Date: 6/26/10

Thompson Engineering
Mobile, Alabama

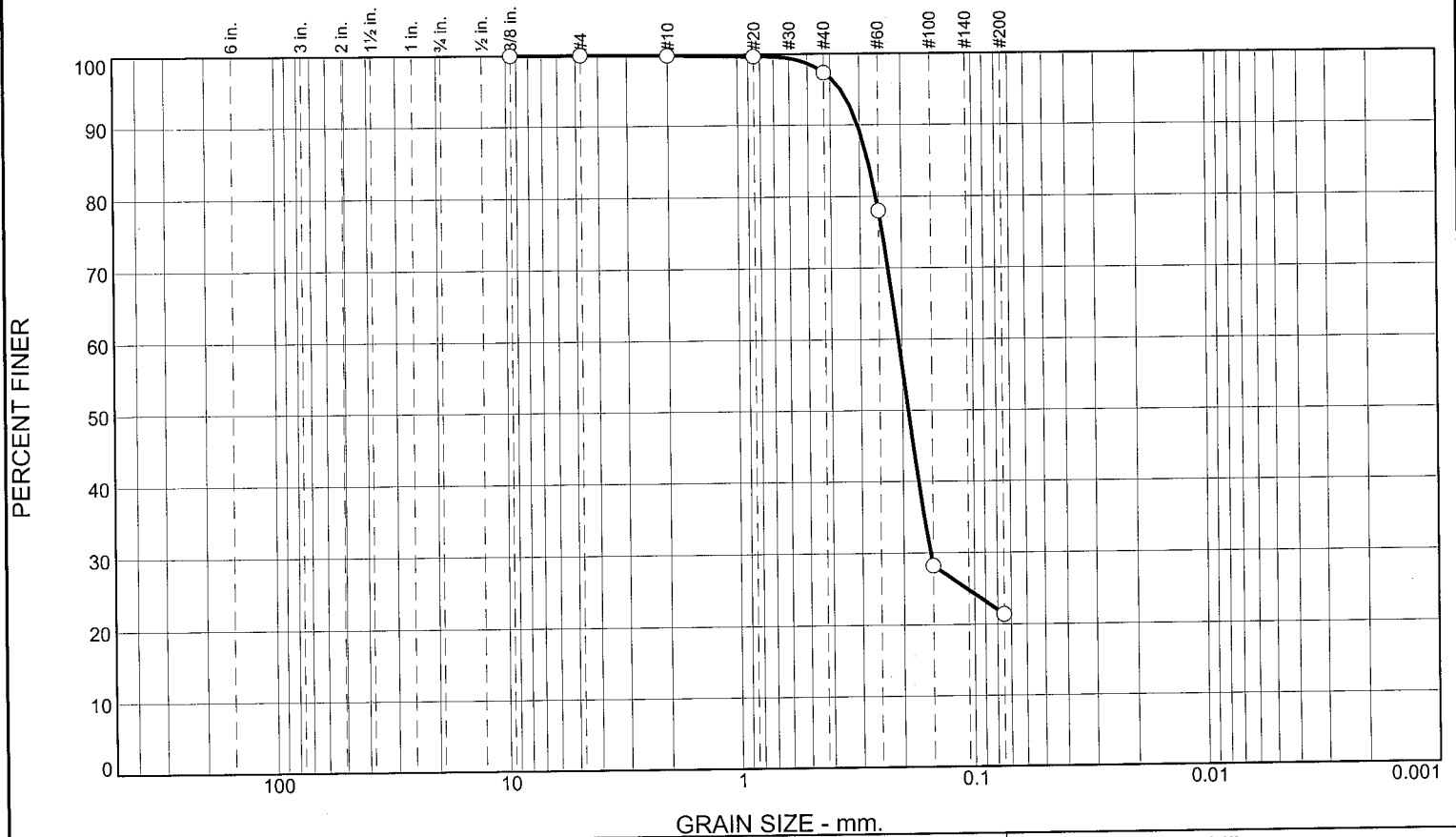
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	2.5	76.0	21.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.7		
#40	97.4		
#60	78.0		
#100	28.2		
#200	21.4		

* (no specification provided)

Material Description
SILTY SAND, (SM), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.3055 D₈₅= 0.2764 D₆₀= 0.2074
 D₅₀= 0.1891 D₃₀= 0.1537 D₁₅=
 D₁₀= C_u= C_c=

Classification
 USCS= SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-SI-69-10B
 Sample Number: TE Lab ID: 4549.47

Depth: 5.4 - 9.4 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

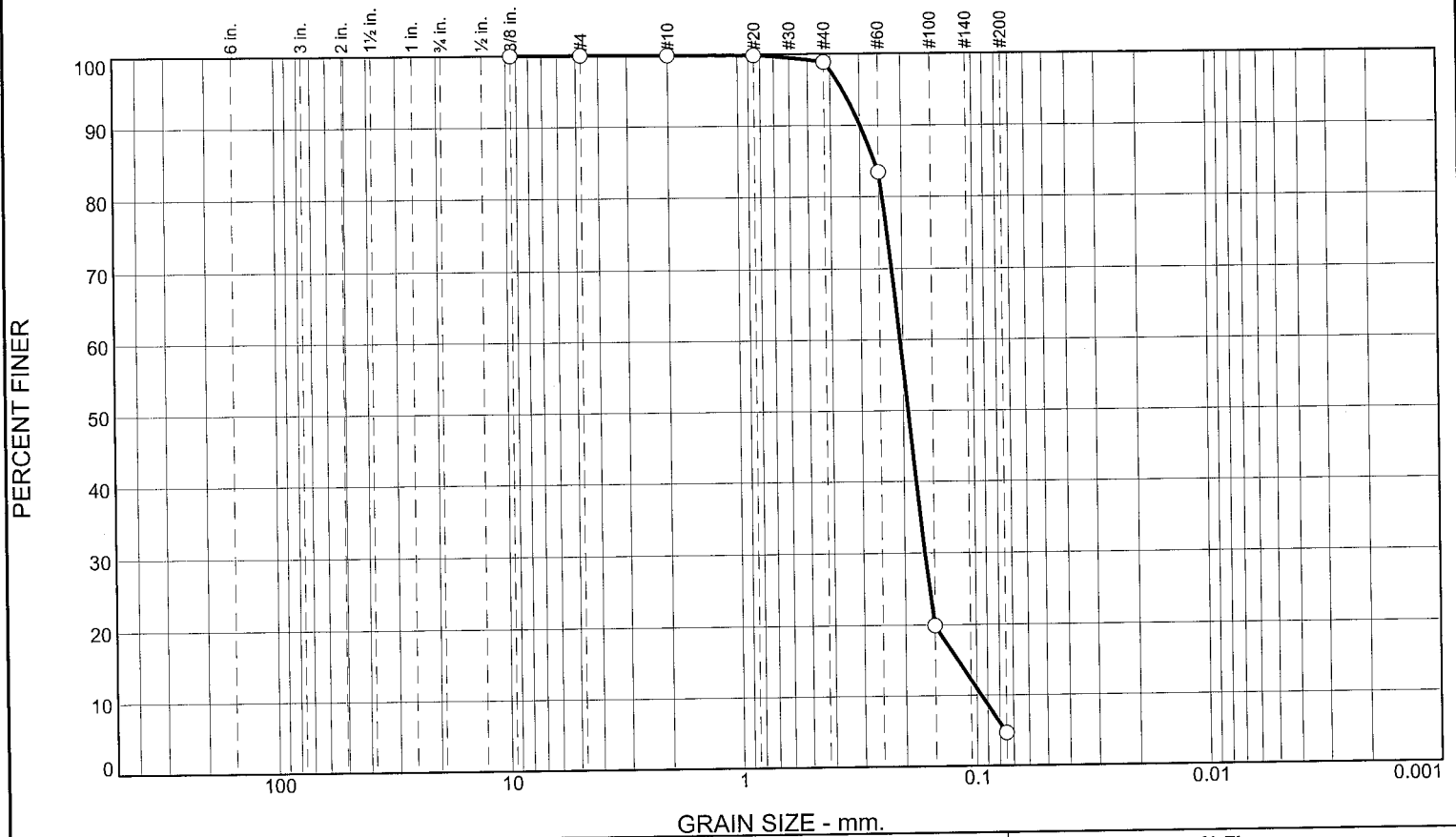
Client: US Army Corps of Engineers
 Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
 Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	1.0	94.2	4.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.9		
#40	98.9		
#60	83.4		
#100	19.9		
#200	4.7		

* (no specification provided)

Material Description
SAND, (SP), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.2985 D₈₅= 0.2599 D₆₀= 0.2051
 D₅₀= 0.1907 D₃₀= 0.1642 D₁₅= 0.1201
 D₁₀= 0.0956 C_u= 2.14 C_c= 1.38

Classification
 USCS= SP AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-SI-69-10C
 Sample Number: TE Lab ID: 4549.48

Depth: 9.4 13.3 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
 Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
 Project No: 10-2123-0009

Figure

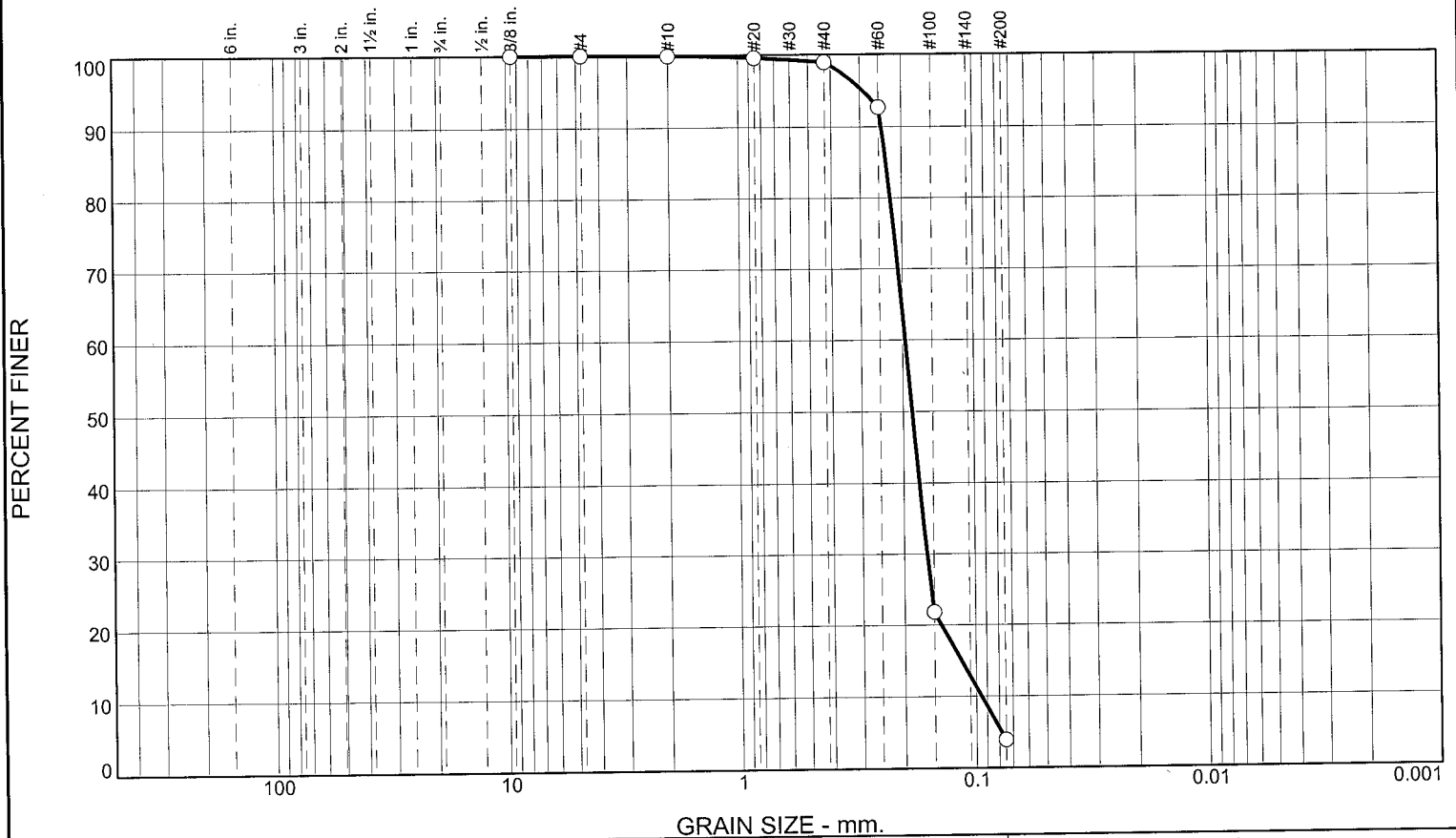
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-SI-70-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SI-70-10		LOCATION COORDINATES E = 960,735 N = 254,491		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 1 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		BEARING		13. TOTAL NUMBER CORE BOXES	
6. THICKNESS OF OVERBURDEN N/A				14. WATER DEPTH 21 Ft.			
7. DEPTH DRILLED INTO ROCK N/A				15. DATE BORING 06-17-10		STARTED 06-17-10 COMPLETED 06-17-10	
8. TOTAL DEPTH OF BORING 15.4 Ft.				16. ELEVATION TOP OF BORING -19.7 Ft.			
				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Brad Johnson, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-19.7	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.1831 mm % Fines: 3.9		
-24.2	4.5						
			CLAY, lean, some sand, dark gray (CL)	NS			
-35.1	15.4						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	1.0	95.0	3.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.6		
#40	98.9		
#60	92.7		
#100	21.8		
#200	3.9		

* (no specification provided)

Material Description
SAND, (SP), fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.2431 D₈₅= 0.2325 D₆₀= 0.1951
D₅₀= 0.1831 D₃₀= 0.1601 D₁₅= 0.1152
D₁₀= 0.0950 C_u= 2.05 C_c= 1.38

Classification
USCS= SP AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-SI-70-10A
Sample Number: TE Lab ID: 4549.49

Depth: 0.0 - 4.5 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

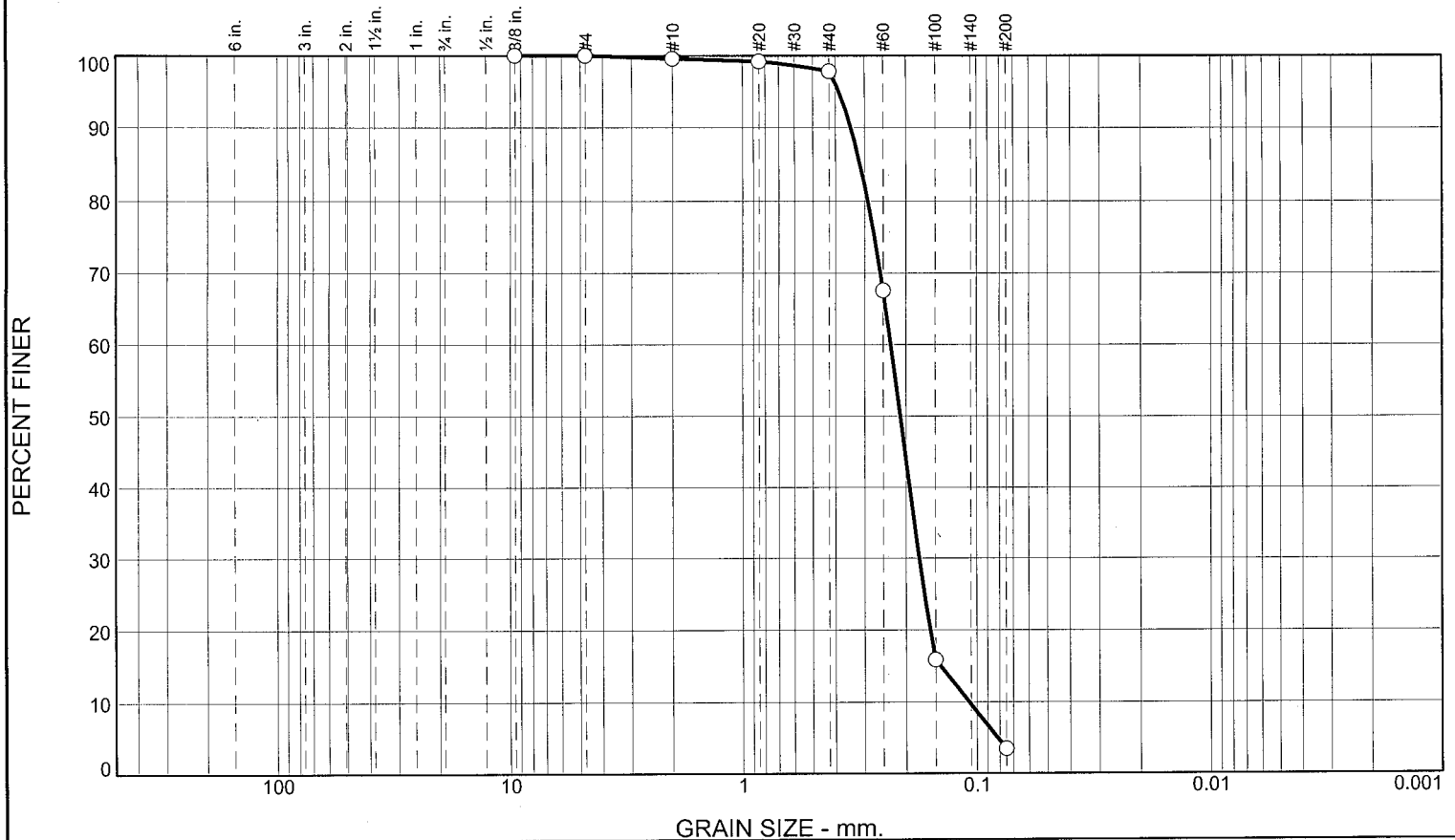
Boring Designation BI-SI-71-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SI-71-10		LOCATION COORDINATES E = 960,905 N = 252,923		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 0		DISTURBED 0 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 27 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-17-10		STARTED 06-17-10 COMPLETED 06-17-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -25.6 Ft.			
8. TOTAL DEPTH OF BORING 17.5 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Brad Johnson, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-25.6	0.0		SAND, silty, mostly fine-grained sand-sized quartz, some clay, dark gray (SM)				
-31.0	5.4		CLAY, lean, sand layers (CL)	NS			
-43.1	17.5		NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Boring Designation BI-SI-72-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SI-72-10		LOCATION COORDINATES E = 963,262 N = 253,537		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 0 UNDISTURBED (UD)	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 26 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-17-10		STARTED 06-17-10 COMPLETED 06-17-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -24.5 Ft.			
8. TOTAL DEPTH OF BORING 17.5 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Brad Johnson, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-24.5	0.0						
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace shell fragments, lt. gray (SP)	A	Classification: SM Color: 2.5Y 6/2-light brownish gray D50: 0.2112 mm % Fines: 3.5		
-31.2	6.7						
			CLAY, lean, some sand, dark gray (CL)	NS			
-34.9	10.4						
			SAND, silty, mostly fine-grained sand-sized quartz, some silt, some clay, dark gray (SM)	B	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.1573 mm % Fines: 15.3		
-42.0	17.5						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.4	1.8	94.3	3.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.6		
#20	99.2		
#40	97.8		
#60	67.6		
#100	15.9		
#200	3.5		

Material Description
SAND, (SP), fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.3426 D₈₅= 0.3129 D₆₀= 0.2317
D₅₀= 0.2112 D₃₀= 0.1756 D₁₅= 0.1428
D₁₀= 0.1080 C_u= 2.15 C_c= 1.23

Classification
USCS= SP AASHTO=

Remarks
CADD CODE = CH10D965

* (no specification provided)

Location: USACE Sample # BI-SI-72-10B
Sample Number: TE Lab ID: 4549.51

Depth: 0.0 - 6.7 (ft.)

Date: 6/26/10

Mislabeled; should be BI-SI-72-10A

Thompson Engineering

Mobile, Alabama

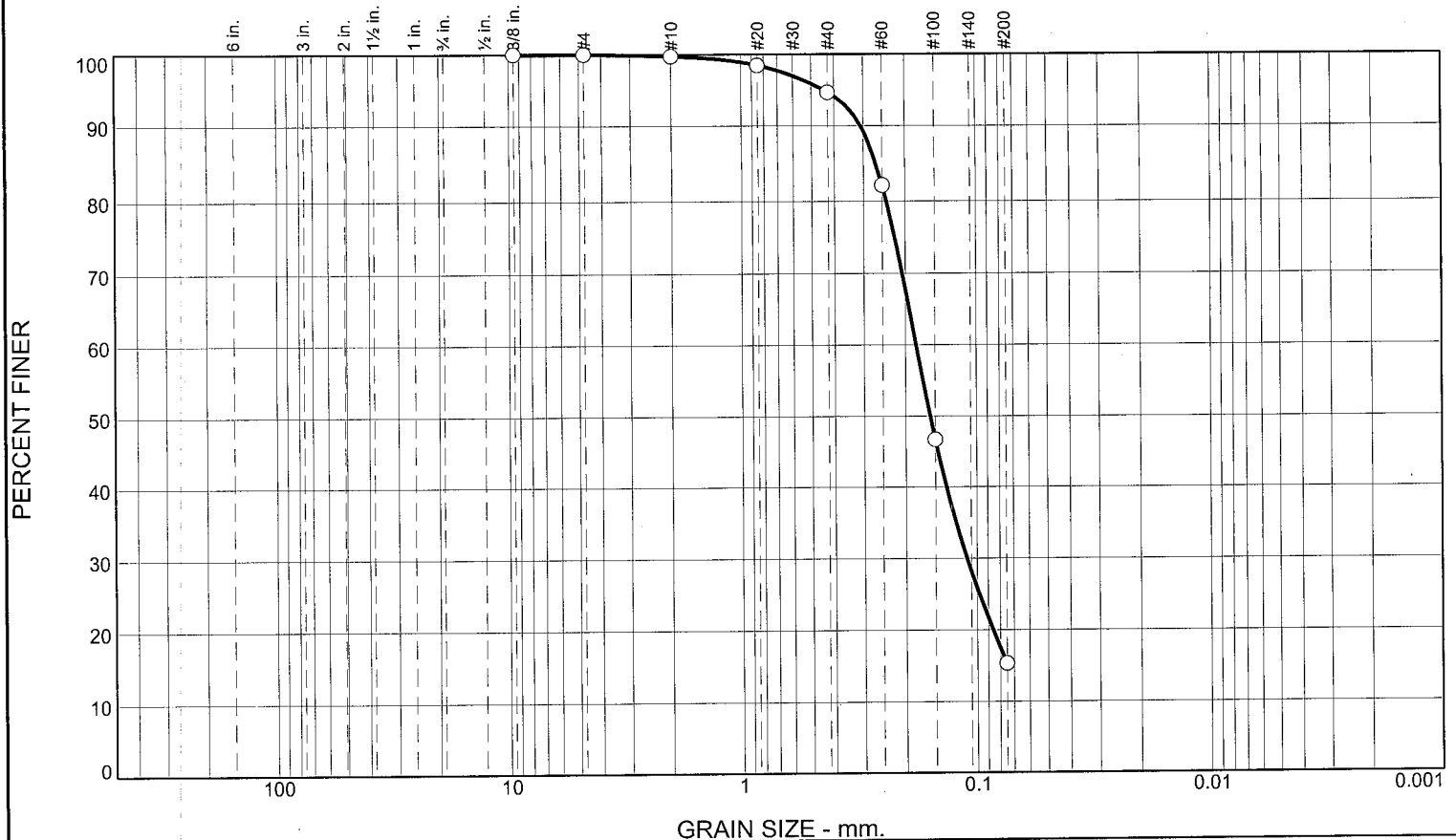
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.3	5.0	79.4	15.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.7		
#20	98.5		
#40	94.7		
#60	82.2		
#100	46.7		
#200	15.3		

* (no specification provided)

Location: USACE Sample # BI-SI-72-10A
Sample Number: TE Lab ID: 4549.50

Depth: 10.4 - 12.5 (ft.)

Date: 6/26/10

Mislabeled; should be BI-SI-72-10B

Material Description

SILTY SAND, (SM), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.3076

D₈₅= 0.2651

D₆₀= 0.1801

D₅₀= 0.1573

D₃₀= 0.1104

D₁₅=

D₁₀=

C_u=

C_c=

Classification

USCS= SM

AASHTO=

Remarks

CADD CODE = CH10D965

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Figure

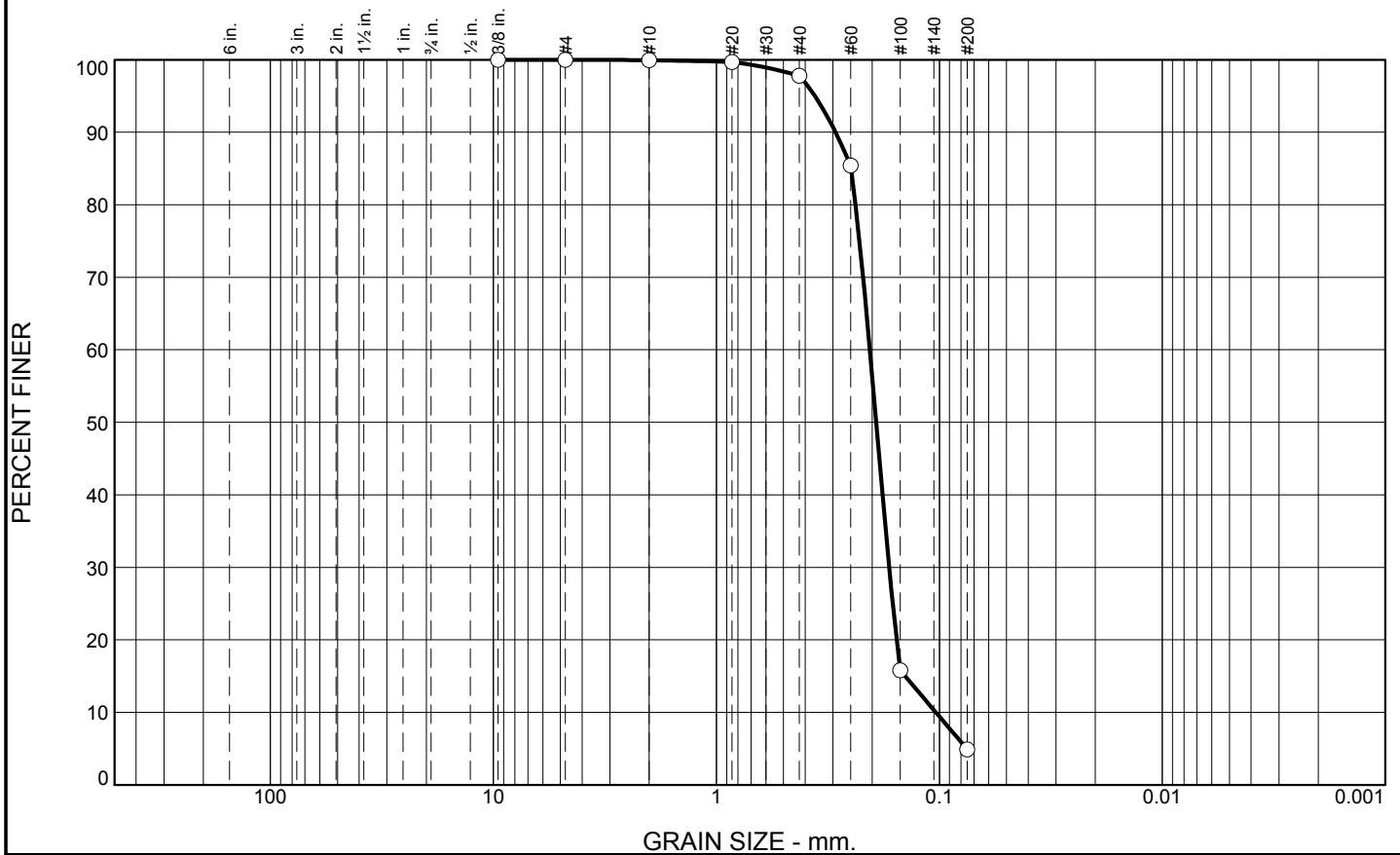
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-SI-73-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SI-73-10		LOCATION COORDINATES E = 970,779 N = 257,363		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 27 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-21-10		STARTED 06-21-10 COMPLETED 06-21-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -26.1 Ft.			
8. TOTAL DEPTH OF BORING 17.4 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-26.1	0.0						
-26.4	0.3		CLAY, lean, dark gray (CL)	NS			
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, trace shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 7/2-light gray D50: 0.192 mm % Fines: 4.9		
				B	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.1835 mm % Fines: 4.4		
-37.4	11.3		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, gray (SM)	C	Classification: SM Color: 2.5Y 4/3-olive brown D50: 0.1636 mm % Fines: 19.1		
-41.0	14.9		CLAY, lean, trace wood debris, dark gray (CL)	NS			
-43.5	17.4						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	2.1	92.9	4.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.7		
#40	97.8		
#60	85.4		
#100	15.8		
#200	4.9		

* (no specification provided)

Material Description
SAND, (SP), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.2918 D₈₅= 0.2489 D₆₀= 0.2050
 D₅₀= 0.1920 D₃₀= 0.1680 D₁₅= 0.1424
 D₁₀= 0.1037 C_u= 1.98 C_c= 1.33

Classification
 USCS= SP AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-SI-73-10A
Sample Number: TE Lab ID: 4557.01

Depth: 0.3 - 5.3 (ft.)

Date: 7/3/10

Thompson Engineering

Mobile, Alabama

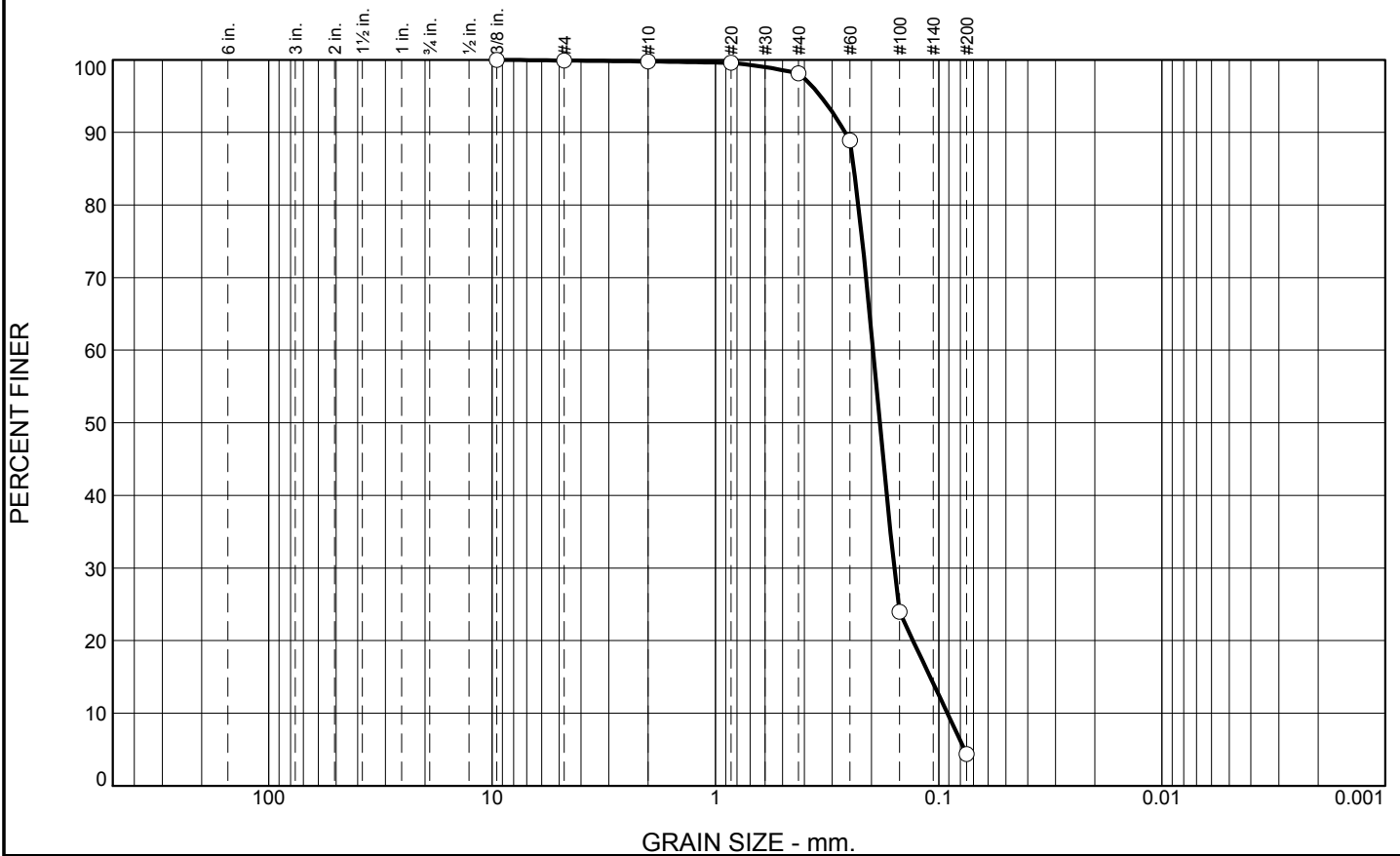
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.1	1.7	93.7	4.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.8		
#20	99.6		
#40	98.1		
#60	88.9		
#100	24.0		
#200	4.4		

* (no specification provided)

Material Description		
SAND, (SP), fine grained		
<div> <div> Atterberg Limits </div> <div> PL= </div> <div> LL= </div> <div> PI= </div> </div>		
<div> <div> Coefficients </div> <div> D₉₀= 0.2623 </div> <div> D₅₀= 0.1835 </div> <div> D₁₀= 0.0915 </div> <div> D₈₅= 0.2398 </div> <div> D₃₀= 0.1582 </div> <div> C_u= 2.15 </div> <div> D₆₀= 0.1968 </div> <div> D₁₅= 0.1092 </div> <div> C_c= 1.39 </div> </div>		
<div> <div> Classification </div> <div> USCS= SP </div> <div> AASHTO= </div> </div>		
<div> <div> Remarks </div> <div> CADD CODE = CH10D965 </div> </div>		

Location: USACE Sample # BI-SI-73-10B
Sample Number: TE Lab ID: 4557.02

Depth: 5.3 - 11.3 (ft.)

Date: 7/3/10

Thompson Engineering
Mobile, Alabama

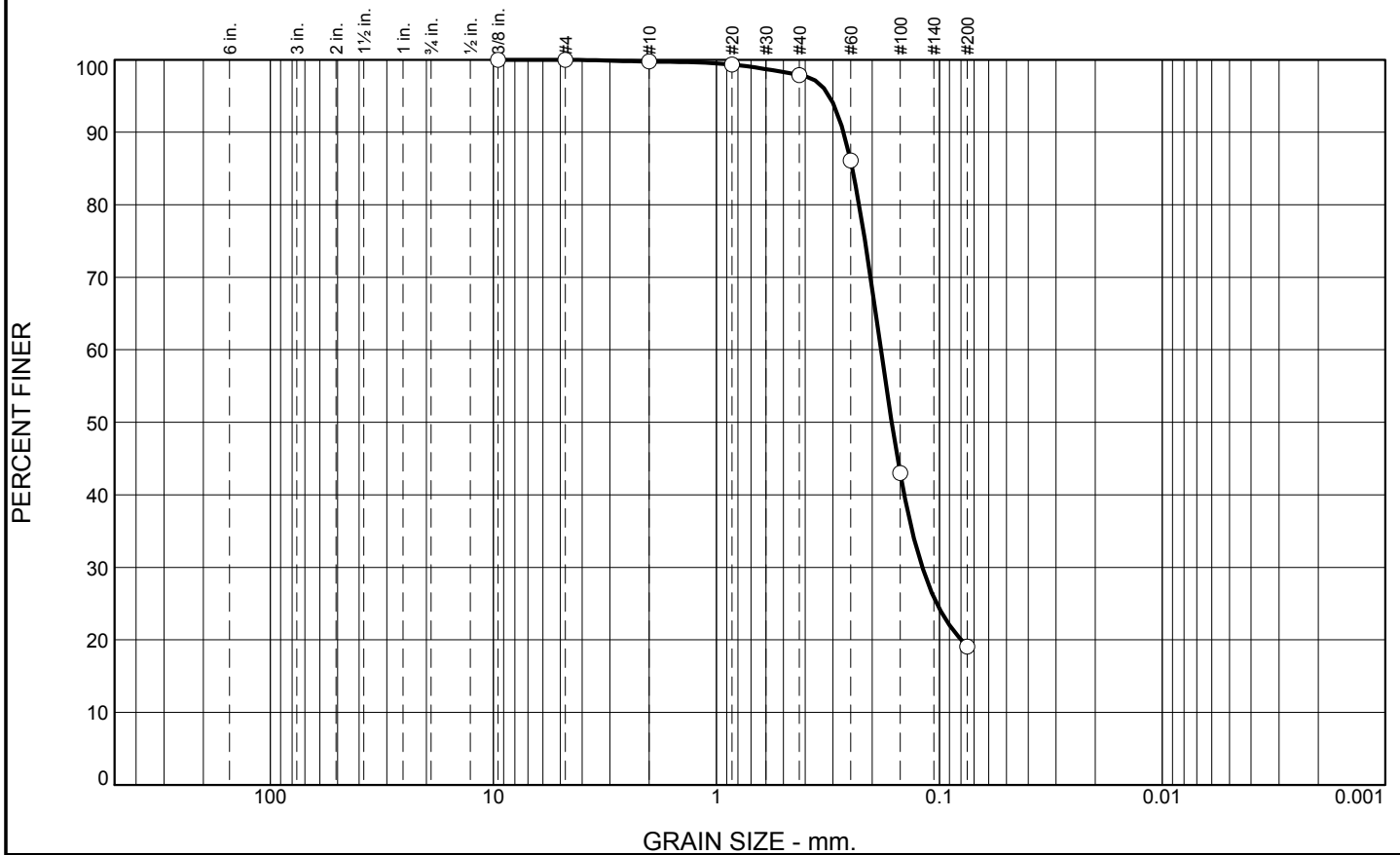
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	1.9	78.8	19.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.8		
#20	99.3		
#40	97.9		
#60	86.1		
#100	43.0		
#200	19.1		

* (no specification provided)

Material Description
SILTY SAND, (SM), fine grained, with clay pockets

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.2687 D₈₅= 0.2456 D₆₀= 0.1828
 D₅₀= 0.1636 D₃₀= 0.1192 D₁₅=
 D₁₀= C_u= C_c=

Classification
 USCS= SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-SI-73-10C
Sample Number: TE Lab ID: 4557.03

Depth: 11.3 - 14.9 (ft.)

Date: 7/3/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

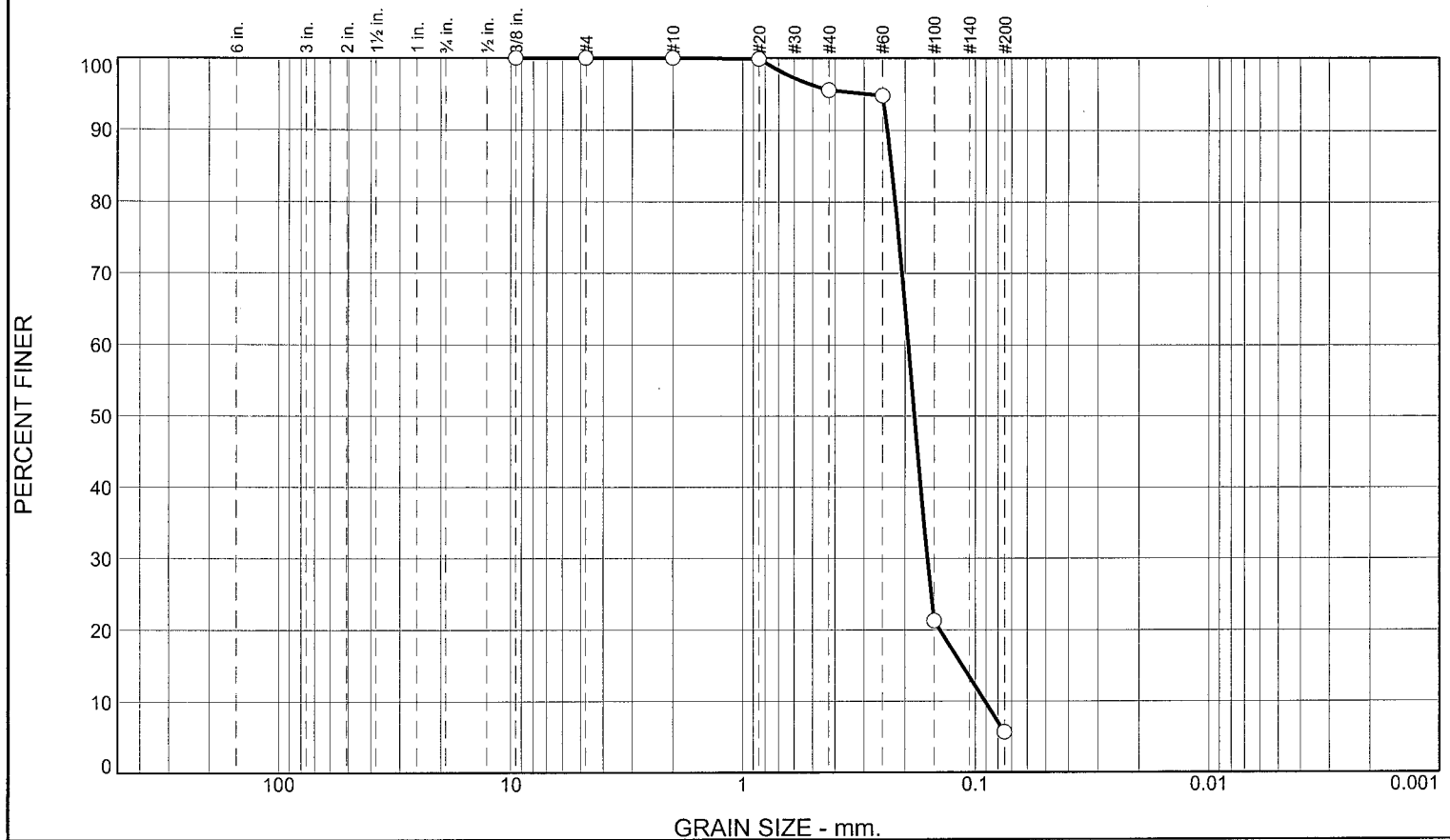
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-SI-74-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SI-74-10		LOCATION COORDINATES E = 973,379 N = 259,795		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.		12. TOTAL SAMPLES		DISTURBED 2		UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES		14. WATER DEPTH 30 Ft.	
6. THICKNESS OF OVERBURDEN N/A		15. DATE BORING		STARTED 06-16-10		COMPLETED 06-16-10	
7. DEPTH DRILLED INTO ROCK N/A		16. ELEVATION TOP OF BORING -28.3 Ft.		17. TOTAL RECOVERY FOR BORING 100%		18. SIGNATURE AND TITLE OF INSPECTOR Brad Johnson, Geologist	
8. TOTAL DEPTH OF BORING 17.0 Ft.							
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-28.3	0.0						
-29.6	1.3		CLAY, lean, trace sand, gray (CL)	NS			
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, lt. gray (SP)	A	Classification: SP-SM Color: 2.5Y 7/1-light gray D50: 0.1821 mm % Fines: 5.7		
				B	Classification: SP-SM Color: 2.5Y 7/1-light gray D50: 0.1775 mm % Fines: 6.1		
-40.3	12.0		CLAY, lean, trace sand, trace silt, dark gray (CL)	NS			
-45.3	17.0						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	4.4	89.9	5.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	95.6		
#60	94.8		
#100	21.3		
#200	5.7		

* (no specification provided)

<u>Material Description</u>		
SAND, (SP-SM), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.2381	D ₈₅ = 0.2284	D ₆₀ = 0.1934
D ₅₀ = 0.1821	D ₃₀ = 0.1603	D ₁₅ = 0.1135
D ₁₀ = 0.0909	C _u = 2.13	C _c = 1.46
<u>Classification</u>		
USCS= SP-SM	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-SI-74-10A
Sample Number: TE Lab ID: 4549.52

Depth: 1.3 - 6.3 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

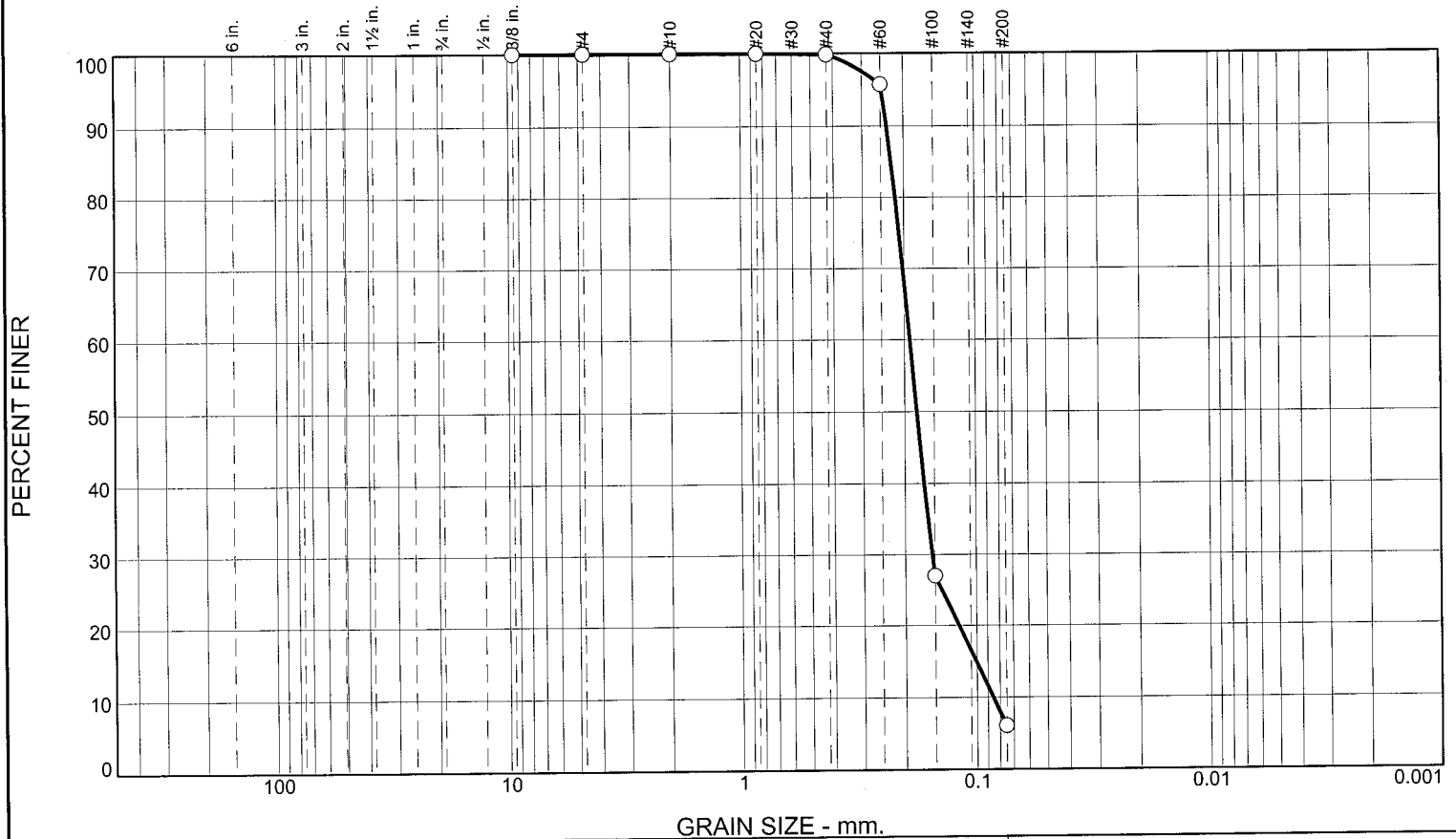
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.2	93.7	6.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	100.0		
#40	99.8		
#60	95.8		
#100	27.0		
#200	6.1		

* (no specification provided)

Location: USACE Sample # BI-SI-74-10B
Sample Number: TE Lab ID: 4549.53

Depth: 6.3 - 12.0 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Figure

Material Description

SAND, (SP-SM), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.2356

D₈₅= 0.2258

D₆₀= 0.1895

D₅₀= 0.1775

D₃₀= 0.1538

D₁₅= 0.1007

D₁₀= 0.0853

C_u= 2.22

C_c= 1.46

Classification

USCS= SP-SM

AASHTO=

Remarks

CADD CODE = CH10D965

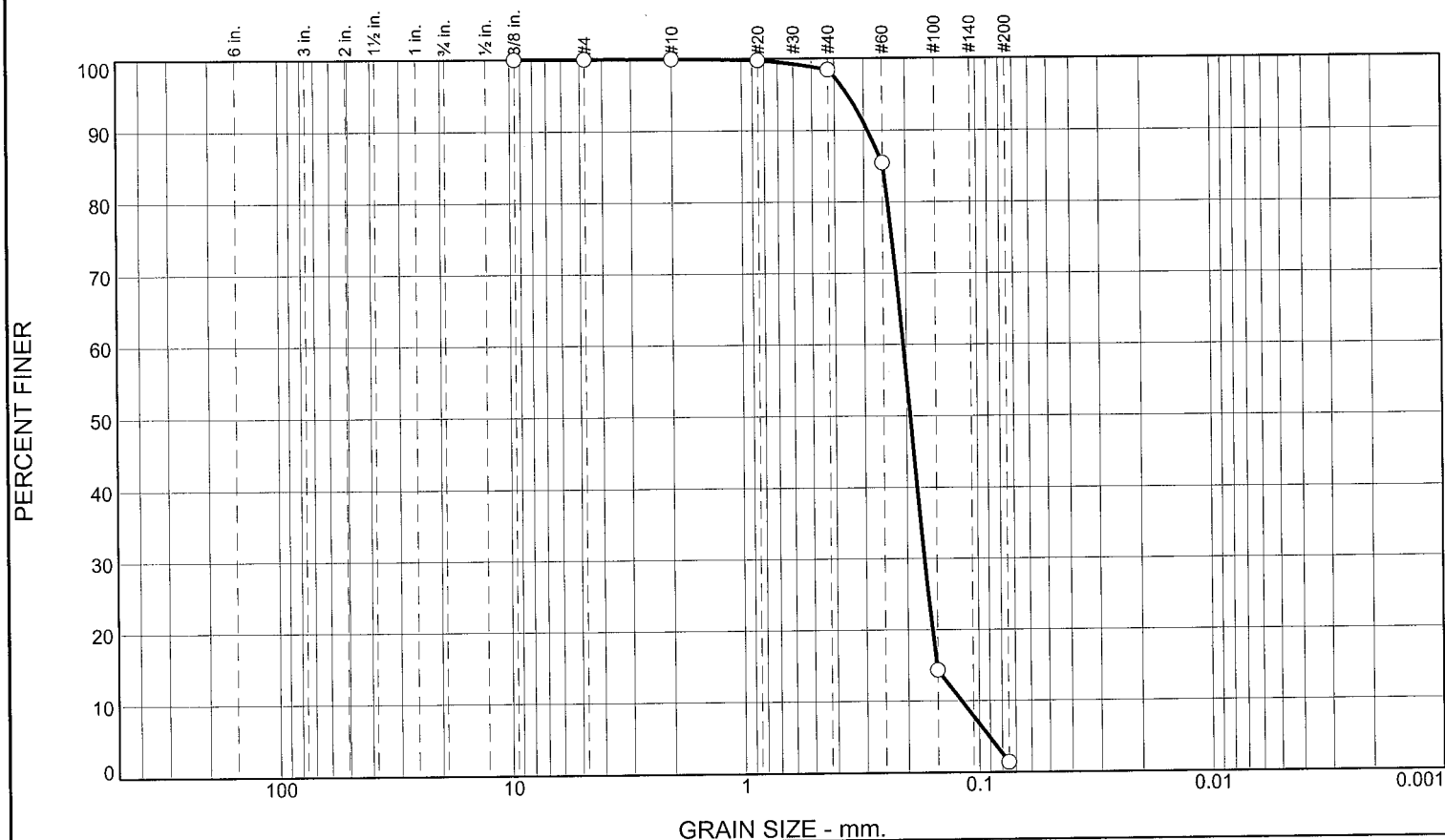
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-SI-75-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SI-75-10		LOCATION COORDINATES E = 966,632 N = 252,375		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 0 UNDISTURBED (UD)	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		14. WATER DEPTH 30 Ft.	
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-17-10		STARTED 06-17-10 COMPLETED 06-17-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -28.5 Ft.		17. TOTAL RECOVERY FOR BORING 100%	
8. TOTAL DEPTH OF BORING 18.7 Ft.				18. SIGNATURE AND TITLE OF INSPECTOR Brad Johnson, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-28.5	0.0						
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.1929 mm % Fines: 1.4		
				B	Classification: SP Color: 2.5Y 5/2-grayish brown D50: 0.1698 mm % Fines: 4.9		
-39.5	11.0						
-41.2	12.7		SILT, inorganic-L, gray (ML)				
			CLAY, lean, dark gray (CL)	NS			
-44.4	15.9						
			SAND, silty (SM)	C	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.1746 mm % Fines: 12.5		
-47.2	18.7						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.6	97.0	1.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.8		
#40	98.4		
#60	85.5		
#100	14.3		
#200	1.4		

* (no specification provided)

Material Description

SAND, (SP), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.2886

D₈₅= 0.2488

D₆₀= 0.2057

D₅₀= 0.1929

D₃₀= 0.1693

D₁₅= 0.1509

D₁₀= 0.1191

C_u= 1.73

C_c= 1.17

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-SI-75-10A
Sample Number: TE Lab ID: 4549.54

Depth: 0.0 - 5.5 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

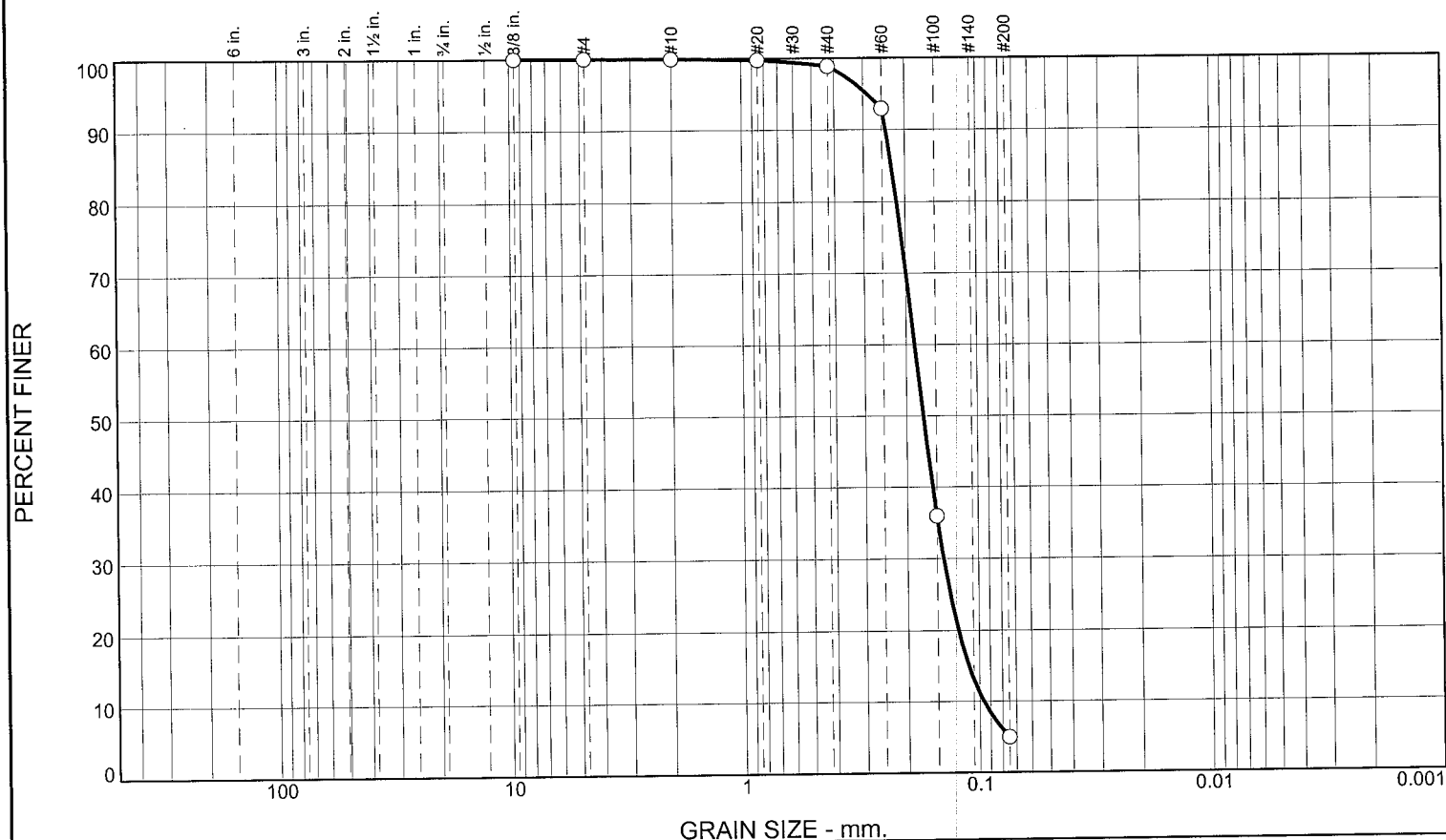
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	1.0	94.0	4.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.7		
#40	98.9		
#60	92.9		
#100	36.0		
#200	4.9		

* (no specification provided)

Location: USACE Sample # BI-SI-75-10C
Sample Number: TE Lab ID: 4549.56

Depth: 5.5 - 11.0 (ft.)

Mislabeled; should be BI-SI-75-10B

Date: 6/26/10

Material Description

SAND, (SP), fine grained

PL=

Atterberg Limits

LL=

PI=

Coefficients

D₉₀= 0.2407

D₈₅= 0.2279

D₆₀= 0.1840

D₅₀= 0.1698

D₃₀= 0.1407

D₁₅= 0.1109

D₁₀= 0.0962

C_u= 1.91

C_c= 1.12

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

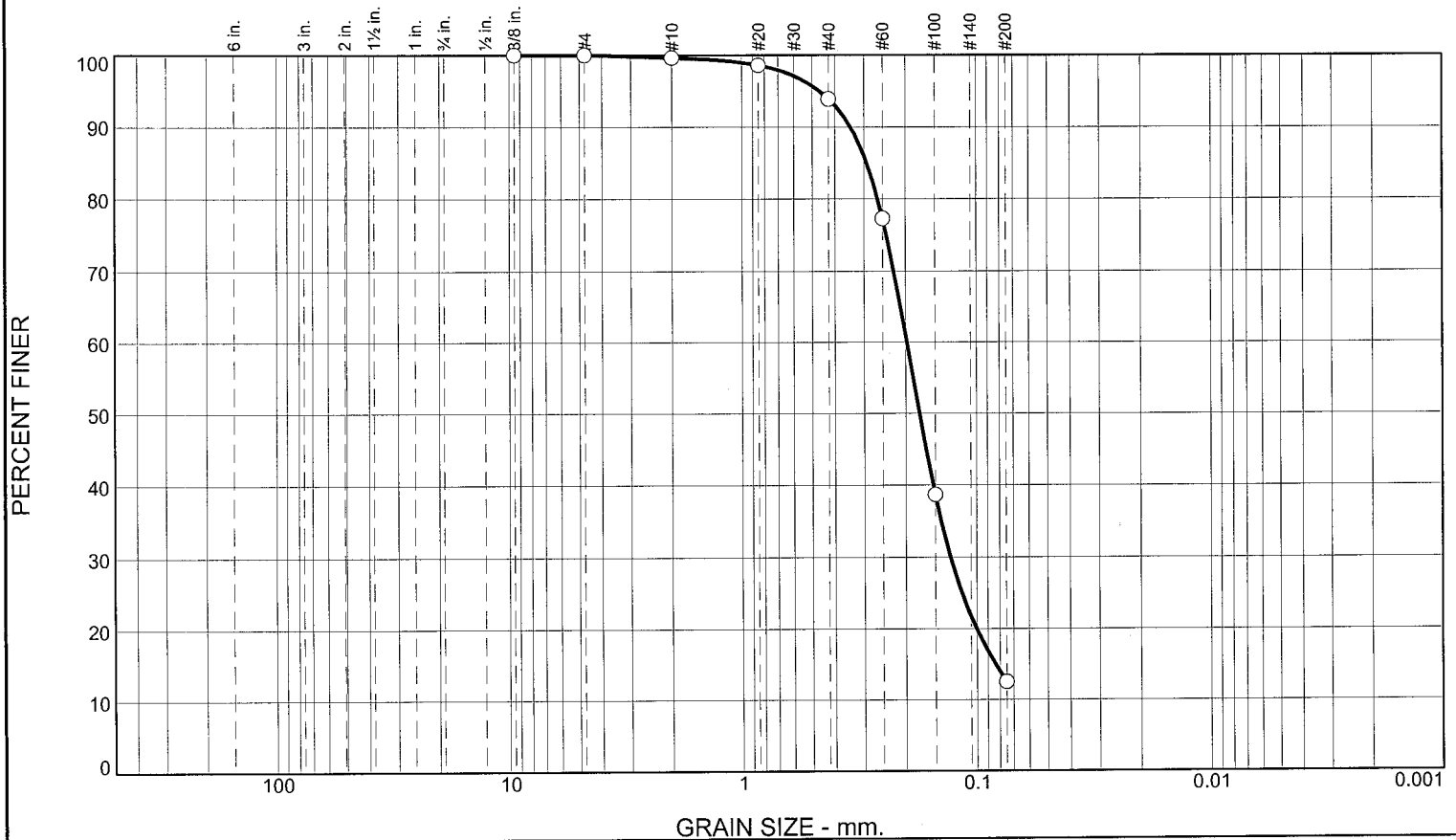
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.4	5.8	81.3	12.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.6		
#20	98.6		
#40	93.8		
#60	77.3		
#100	38.7		
#200	12.5		

Material Description
SILTY SAND, (SM), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.3424 D₈₅= 0.2920 D₆₀= 0.1974
 D₅₀= 0.1746 D₃₀= 0.1293 D₁₅= 0.0834
 D₁₀= C_u= C_c=

Classification
 USCS= SM AASHTO=

Remarks
 CADD CODE = CH10D965

* (no specification provided)

Location: USACE Sample # BI-SI-75-10B
 Sample Number: TE Lab ID: 4549.55

Depth: 15.9 - 18.7 (ft.)

Date: 6/26/10

Mislabeled; should be BI-SI-75-10C

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

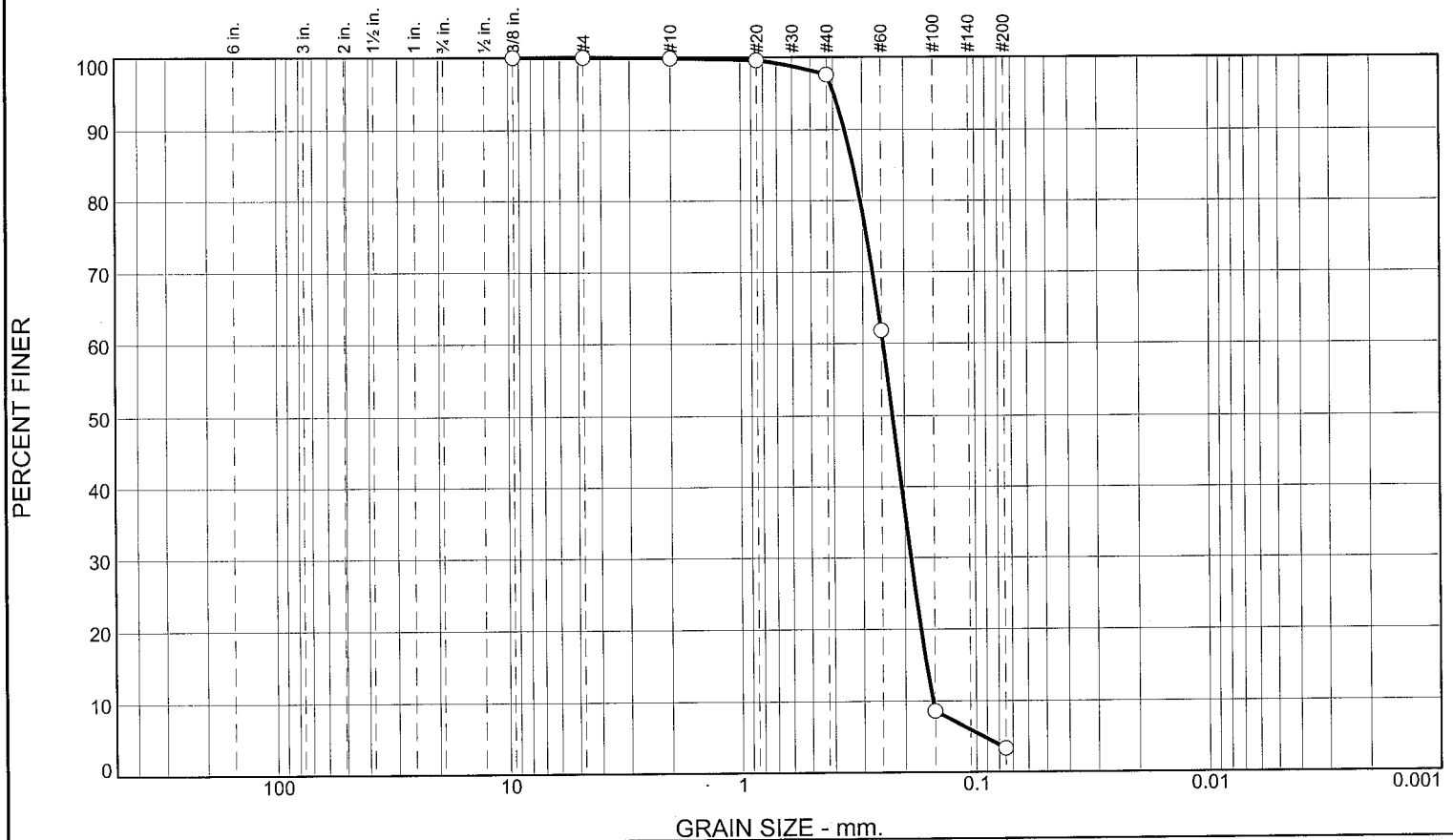
Checked By: R.Byrd

Boring Designation BI-SI-76-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SI-76-10		LOCATION COORDINATES E = 969,273 N = 253,079		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 31 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-16-10		STARTED 06-16-10 COMPLETED 06-16-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -29.7 Ft.			
8. TOTAL DEPTH OF BORING 16.2 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Brad Johnson, Geologist			

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-29.7	0.0				
-30.4	0.7		SAND, clayey, mostly fine-grained sand-sized quartz, some clay, some silt, lt. gray (SC)	A	Classification: SP Color: 2/5Y 7/1- D50: 0.2245 mm % Fines: 3.3
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, lt. gray (SP)	B	Classification: SM Color: 2.5Y 7/1-light gray D50: 0.1591 mm % Fines: 24.1
-40.9	11.2		CLAY, lean, some sand, some silt, dark gray (CL)	NS	
-44.0	14.3				
-45.9	16.2		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace shell fragments, dark gray (SP)		
NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.					

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	2.3	94.3	3.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.6		
#40	97.6		
#60	61.8		
#100	8.6		
#200	3.3		

Material Description

SAND, (SP), fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.3565 D₈₅= 0.3284 D₆₀= 0.2457
D₅₀= 0.2245 D₃₀= 0.1885 D₁₅= 0.1625
D₁₀= 0.1529 C_u= 1.61 C_c= 0.95

Classification

USCS= SP AASHTO=

Remarks

CADD CODE = CH10D965

* (no specification provided)

Location: USACE Sample # BI-SI-76-10A
Sample Number: TE Lab ID: 4549.57

Depth: 0.7 - 6.0 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

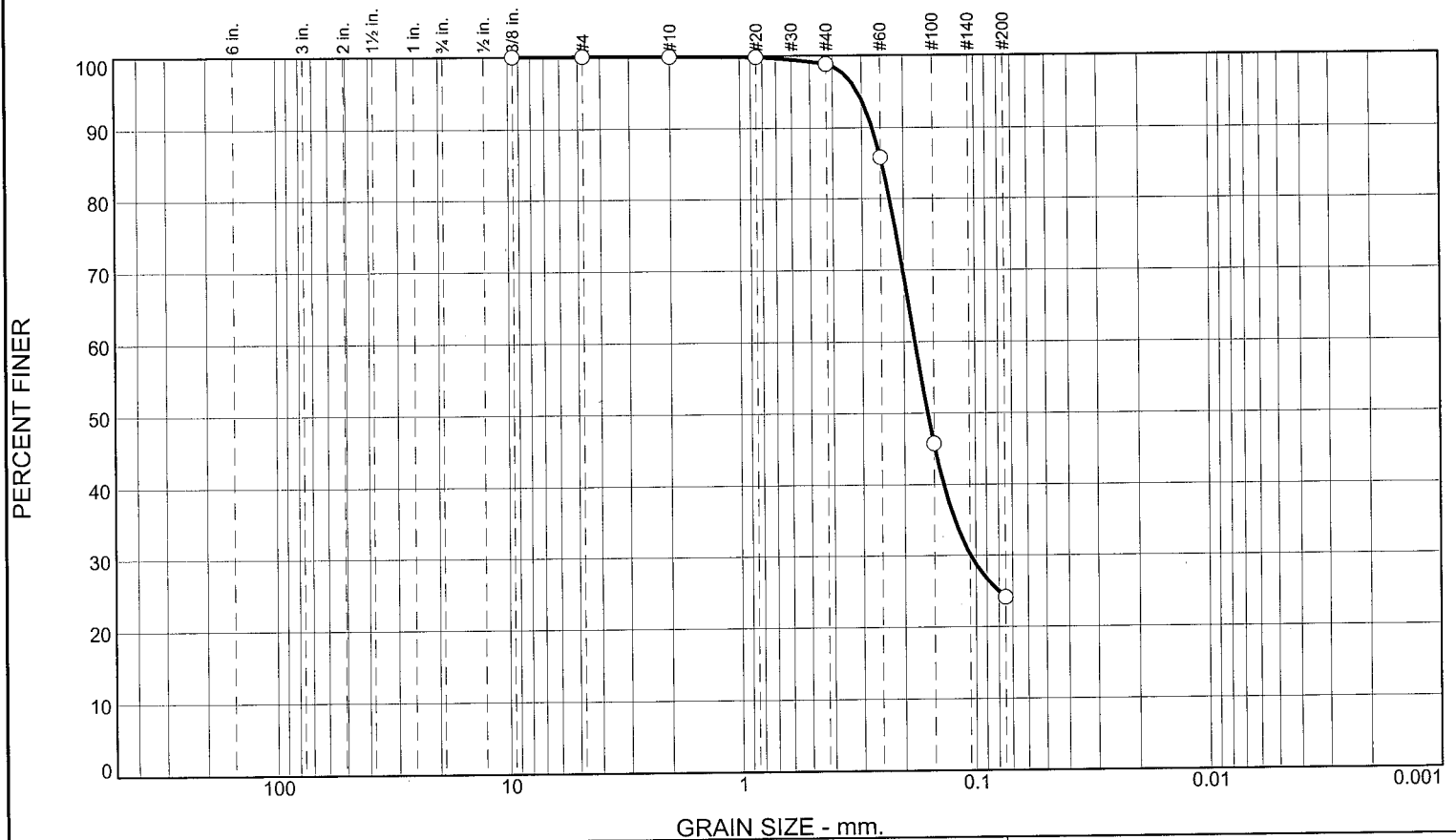
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	1.1	74.7	24.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.8		
#40	98.8		
#60	85.9		
#100	45.8		
#200	24.1		

* (no specification provided)

Material Description
SILTY SAND, (SM), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.2706 D₈₅= 0.2465 D₆₀= 0.1799
 D₅₀= 0.1591 D₃₀= 0.1053 D₁₅=
 D₁₀= C_u= C_c=

Classification
 USCS= SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-SI-76-10B
 Sample Number: TE Lab ID: 4549.58

Depth: 6.0 - 11.2 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
 Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
 Project No: 10-2123-0009

Figure

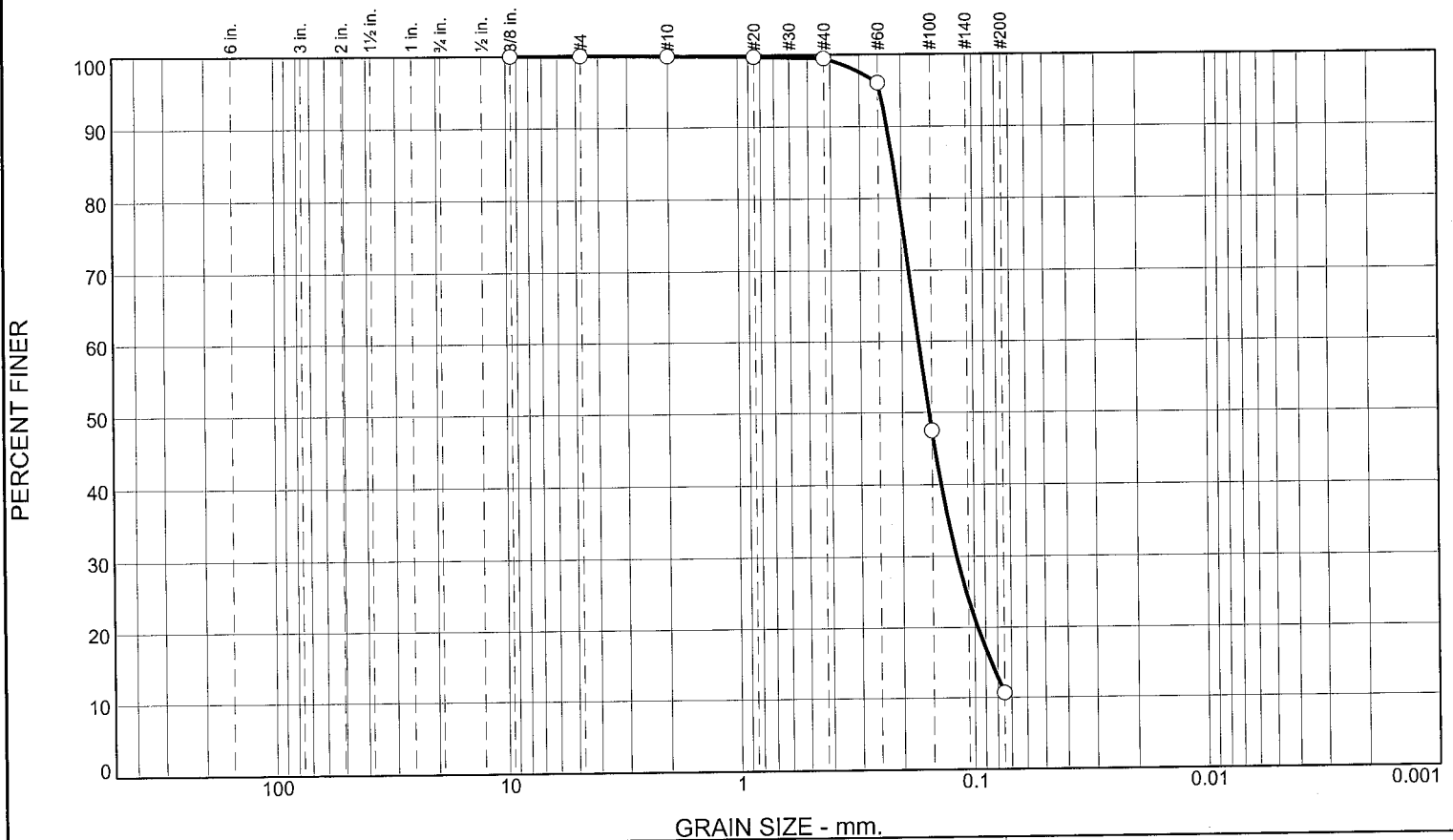
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-SI-77-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SI-77-10		LOCATION COORDINATES E = 972,126 N = 253,489		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 32.5 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-16-10		STARTED 06-16-10 COMPLETED 06-16-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -31.0 Ft.			
8. TOTAL DEPTH OF BORING 16.1 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Brad Johnson, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-31.0	0.0						
-33.3	2.3		CLAY, lean, trace sand, trace silt, dark gray (CL)	NS			
-39.6	8.6		SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace silt, lt. gray (SP)	A	Classification: SP-SM Color: 2.5Y 6/2-light brownish gray D50: 0.154 mm % Fines: 10.7		
-43.2	12.2		CLAY, lean, some sand, dark gray (CL)	NS			
-47.1	16.1		SAND, poorly-graded, mostly medium-grained sand-sized quartz, trace shell fragments (SP)	B	Classification: SP-SM Color: 2.5Y 6/2-light brownish gray D50: 0.2548 mm % Fines: 6.9		
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	0.4	88.8	10.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.7		
#40	99.5		
#60	96.0		
#100	47.5		
#200	10.7		

* (no specification provided)

Material Description		
SAND, (SP-SM), fine grained		
Atterberg Limits		
PL=	LL=	PI=
Coefficients		
D ₉₀ = 0.2291	D ₈₅ = 0.2161	D ₆₀ = 0.1698
D ₅₀ = 0.1540	D ₃₀ = 0.1187	D ₁₅ = 0.0851
D ₁₀ =	C _u =	C _c =
Classification		
USCS= SP-SM	AASHTO=	
Remarks		
CADD CODE = CH10D965		

Location: USACE Sample # BI-SI-77-10A
Sample Number: TE Lab ID: 4549.59

Depth: 2.3 - 8.6 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

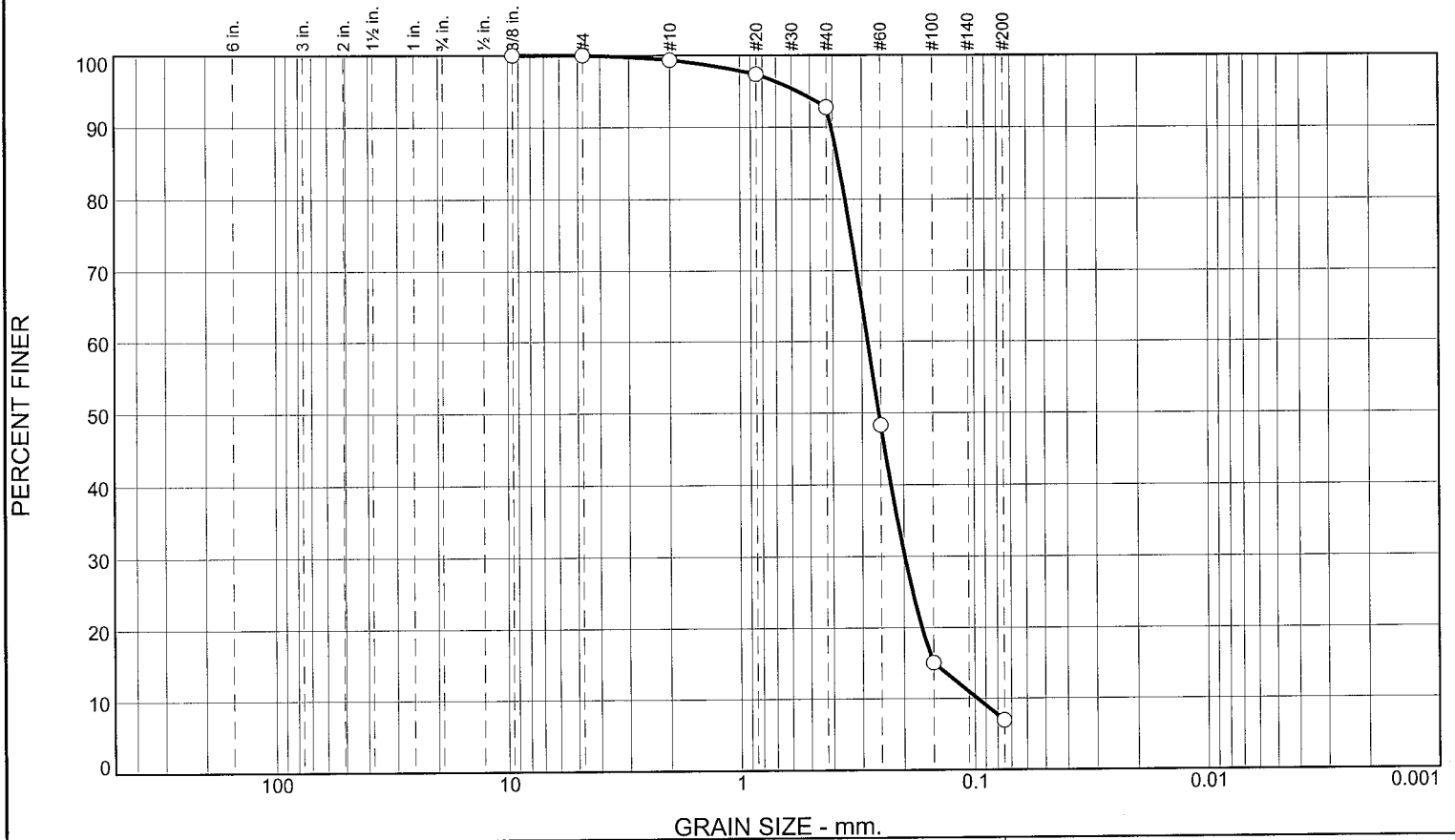
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.7	6.6	85.8	6.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.3		
#20	97.4		
#40	92.7		
#60	48.3		
#100	15.0		
#200	6.9		

* (no specification provided)

Material Description
SAND, (SP-SM), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.4052 D₈₅= 0.3766 D₆₀= 0.2838
 D₅₀= 0.2548 D₃₀= 0.1982 D₁₅= 0.1496
 D₁₀= 0.0975 C_u= 2.91 C_c= 1.42

Classification
 USCS= SP-SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-SI-77-10B
 Sample Number: TE Lab ID: 4549.60

Depth: 12.2 - 16.1 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
 Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
 Project No: 10-2123-0009

Figure

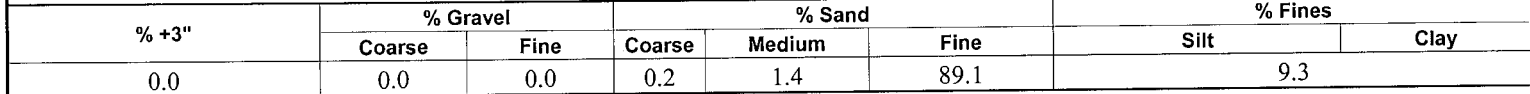
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-SI-79-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SI-79-10		LOCATION COORDINATES E = 974,064 N = 257,714		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 31 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-16-10		STARTED 06-16-10 COMPLETED 06-16-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -29.5 Ft.			
8. TOTAL DEPTH OF BORING 11.3 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Brad Johnson, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-29.5	0.0						
-30.8	1.3		CLAY, lean, dark gray (CL)	NS			
-33.9	4.4		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little silt, lt. gray (SP)	A	Classification: SP-SM Color: 2.5Y 6/2-light brownish gray D50: 0.1757 mm % Fines: 9.3		
-38.4	8.9		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments, gray (SM)	B	Classification: SM Color: 2.5Y 5/2-grayish brown D50: 0.1408 mm % Fines: 26.6		
-40.8	11.3		CLAY, lean, dark gray (CL)	NS			
NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.							

PERCENT FINER



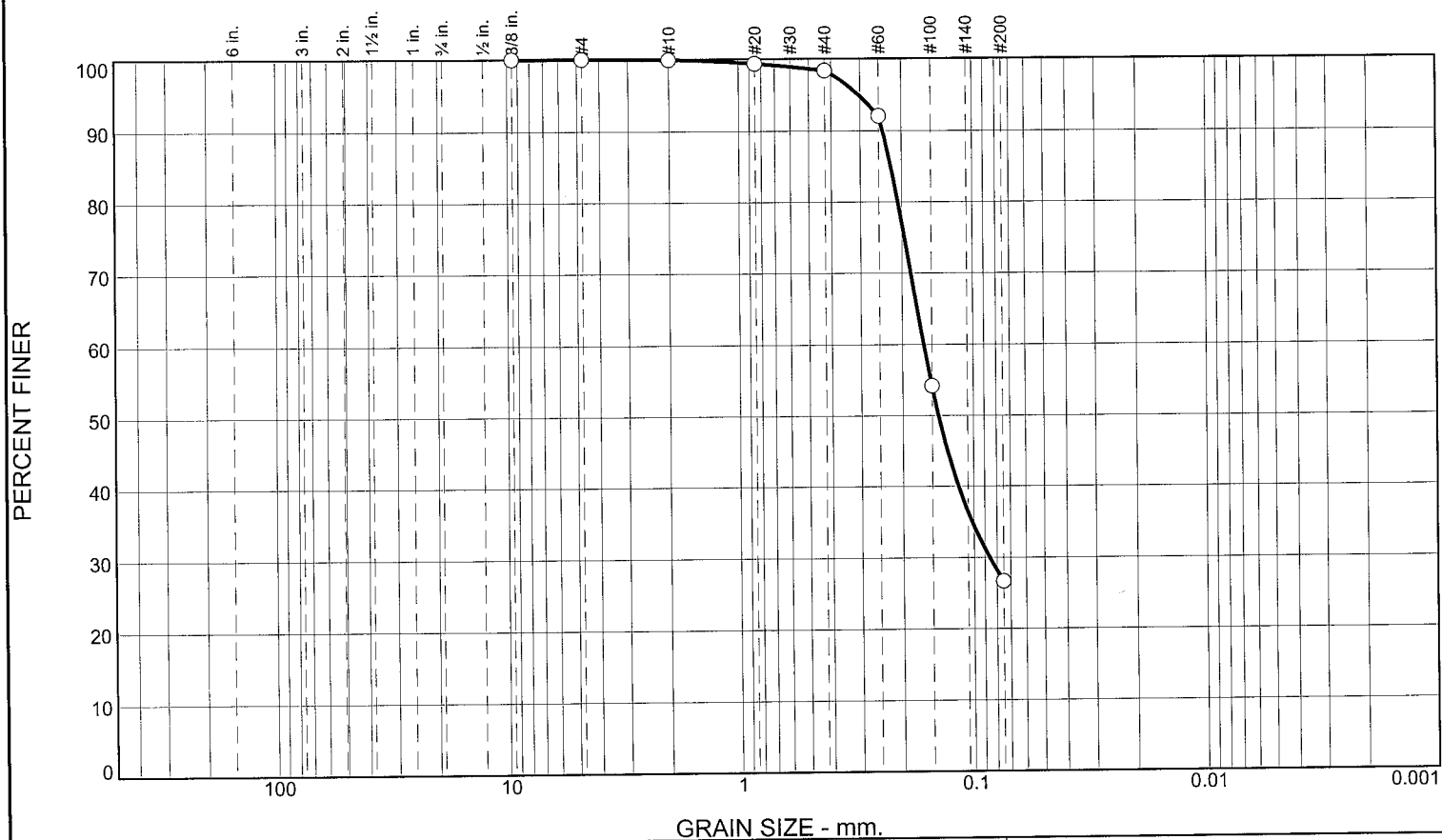
<u>Material Description</u>		
SAND, (SP-SM), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.2642	D ₈₅ = 0.2392	D ₆₀ = 0.1907
D ₅₀ = 0.1757	D ₃₀ = 0.1456	D ₁₅ = 0.1125
D ₁₀ = 0.0863	C _u = 2.21	C _c = 1.29
<u>Classification</u>		
USCS= SP-SM	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Date: 6/26/10

Figure

H-172

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	1.5	71.8	26.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.3		
#40	98.4		
#60	92.1		
#100	54.2		
#200	26.6		

* (no specification provided)

Material Description
SILTY SAND, (SM), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.2404 D₈₅= 0.2221 D₆₀= 0.1622
 D₅₀= 0.1408 D₃₀= 0.0858 D₁₅=
 D₁₀= C_u= C_c=

Classification
 USCS= SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-SI-79-10B
 Sample Number: TE Lab ID: 4549.62

Depth: 4.4 - 8.9 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

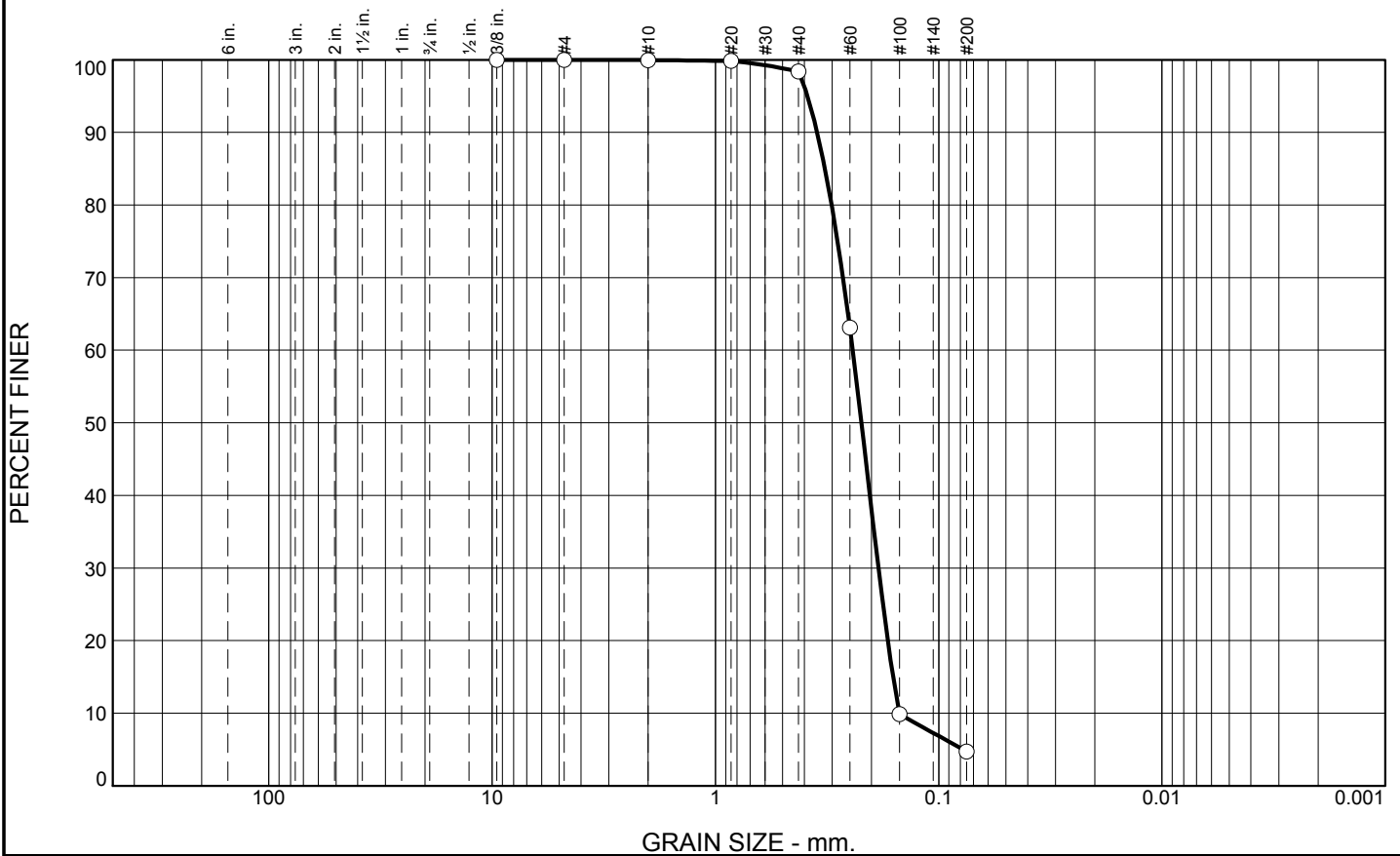
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-SI-80-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SI-80-10		LOCATION COORDINATES E = 972,006 N = 263,156		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 0 UNDISTURBED (UD)	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 24 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-22-10		STARTED 06-22-10 COMPLETED 06-22-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -23.2 Ft.			
8. TOTAL DEPTH OF BORING 20.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-23.2	0.0						
			CLAY, lean, dark gray (CL)	NS			
-26.0	2.8						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, lt. gray (SP)	A	Classification: SP Color: 2.5Y 7/2-light gray D50: 0.2219 mm % Fines: 4.7		
				B	Classification: SP-SM Color: 2.5Y 7/2-light gray D50: 0.1965 mm % Fines: 5.4		
				C	Classification: SP-SM Color: 2.5Y 7/1-light gray D50: 0.1902 mm % Fines: 5.5		
-38.4	15.2						
			CLAY, lean, dark gray (CL)	NS			
-43.2	20.0						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.6	93.7	4.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.8		
#40	98.4		
#60	63.1		
#100	9.9		
#200	4.7		

* (no specification provided)

Material Description		
SAND, (SP), fine grained		
<div> <div> Atterberg Limits PL= LL= PI= </div> <div> Coefficients D₉₀= 0.3502 D₈₅= 0.3231 D₆₀= 0.2427 D₅₀= 0.2219 D₃₀= 0.1862 D₁₅= 0.1602 D₁₀= 0.1503 C_u= 1.62 C_c= 0.95 </div> <div> Classification USCS= SP AASHTO= </div> <div> Remarks CADD CODE = CH10D965 </div> </div>		

Location: USACE Sample # BI-SI-80-10A
Sample Number: TE Lab ID: 4557.14

Depth: 2.8 - 7.8 (ft.)

Date: 7/3/10

Thompson Engineering

Mobile, Alabama

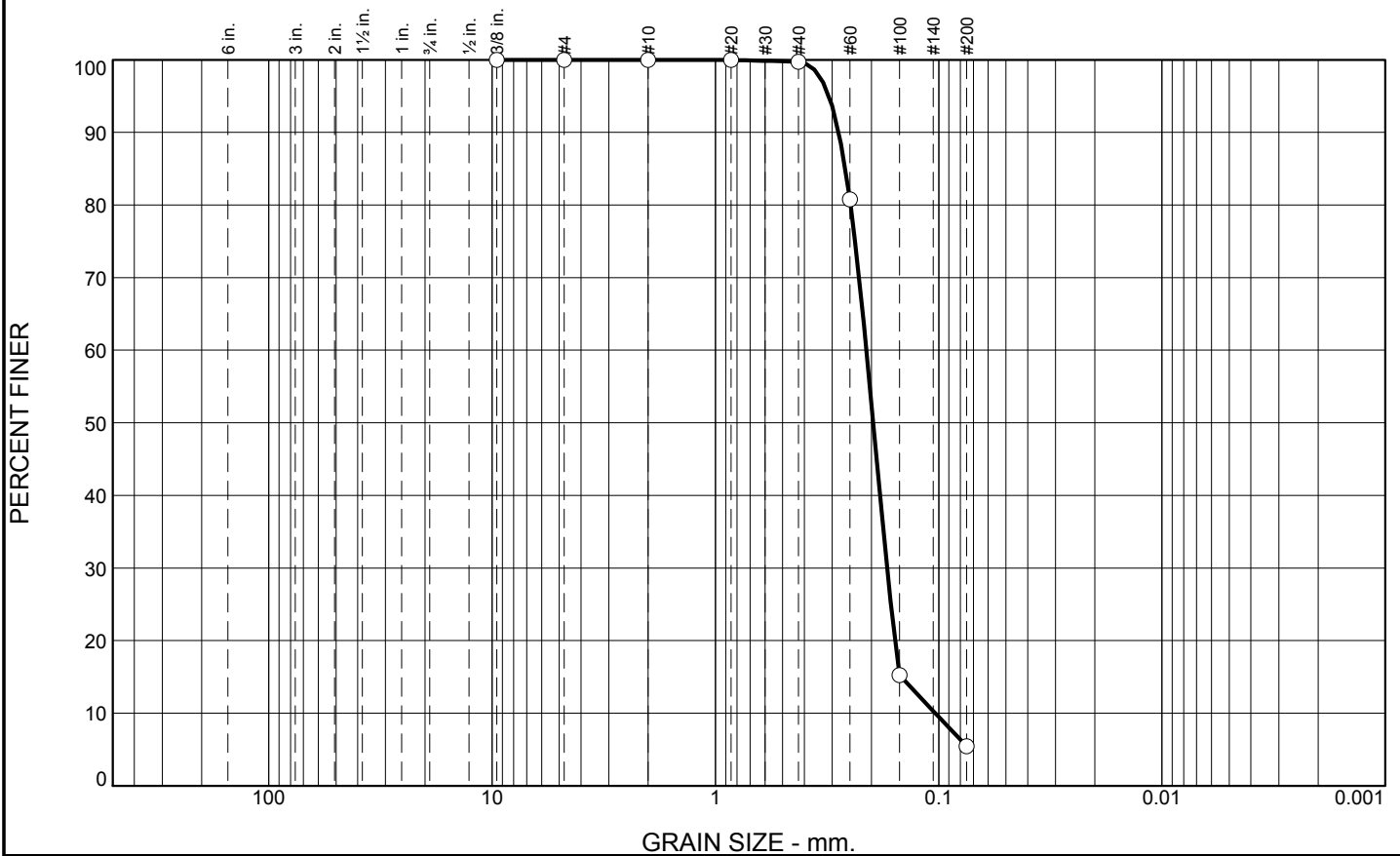
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.3	94.3	5.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	100.0		
#40	99.7		
#60	80.8		
#100	15.2		
#200	5.4		

* (no specification provided)

<u>Material Description</u>		
SAND, (SP-SM), fine grained		
PL=	<u>Atterberg Limits</u> LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.2805	D ₈₅ = 0.2618	D ₆₀ = 0.2109
D ₅₀ = 0.1965	D ₃₀ = 0.1703	D ₁₅ = 0.1474
D ₁₀ = 0.1036	C _u = 2.04	C _c = 1.33
<u>Classification</u>		
USCS= SP-SM	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-SI-80-10B
Sample Number: TE Lab ID: 4557.15

Depth: 7.8 - 12.8 (ft.)

Date: 7/3/10

Thompson Engineering
Mobile, Alabama

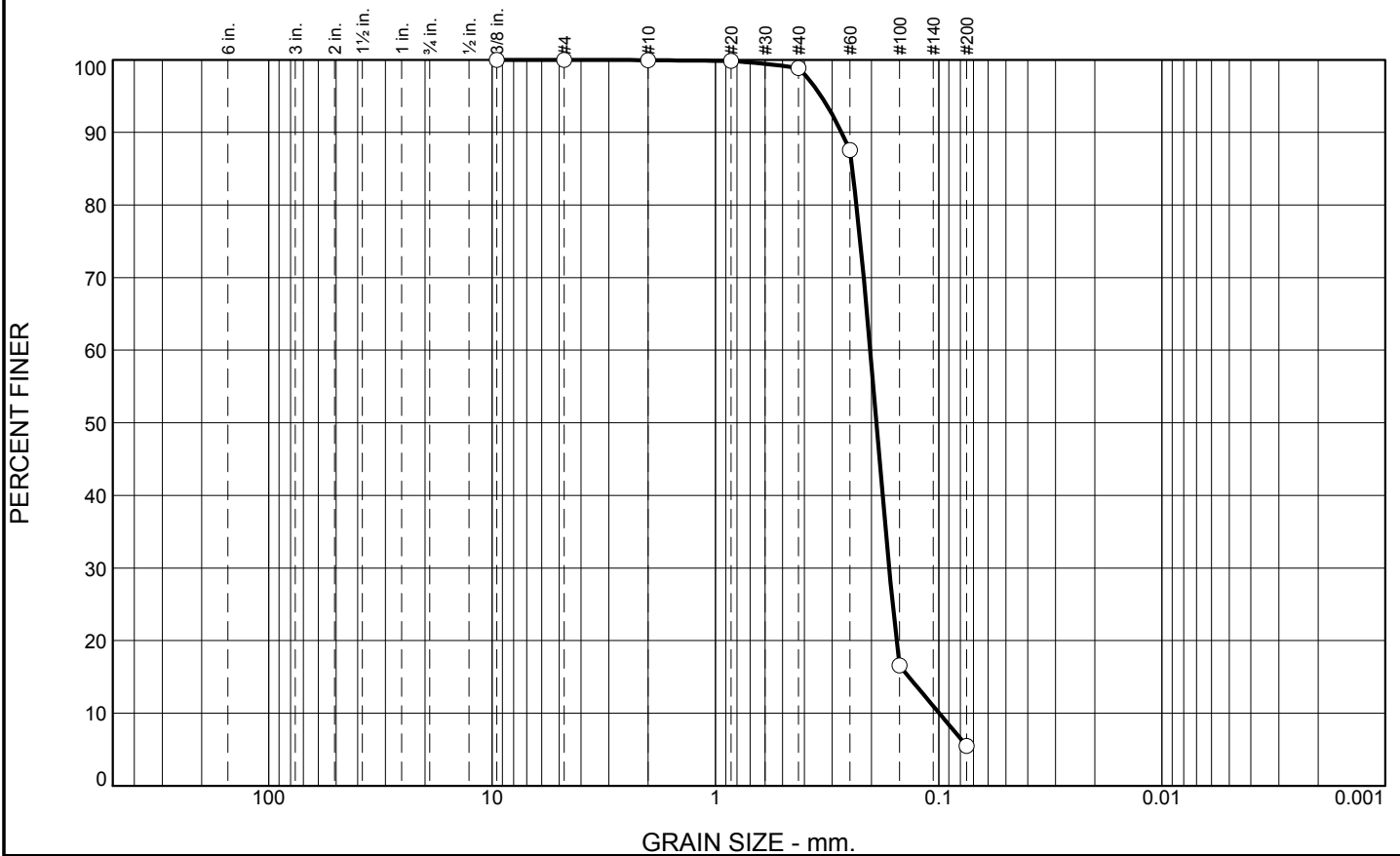
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	1.0	93.4	5.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.8		
#40	98.9		
#60	87.6		
#100	16.6		
#200	5.5		

* (no specification provided)

Material Description

SAND, (SP-SM), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.2723

D₈₅= 0.2438

D₆₀= 0.2027

D₅₀= 0.1902

D₃₀= 0.1667

D₁₅= 0.1360

D₁₀= 0.0995

C_u= 2.04

C_c= 1.38

Classification

USCS= SP-SM

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-SI-80-10C
Sample Number: TE Lab ID: 4557.16

Depth: 12.8 - 15.2 (ft.)

Date: 7/3/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Figure

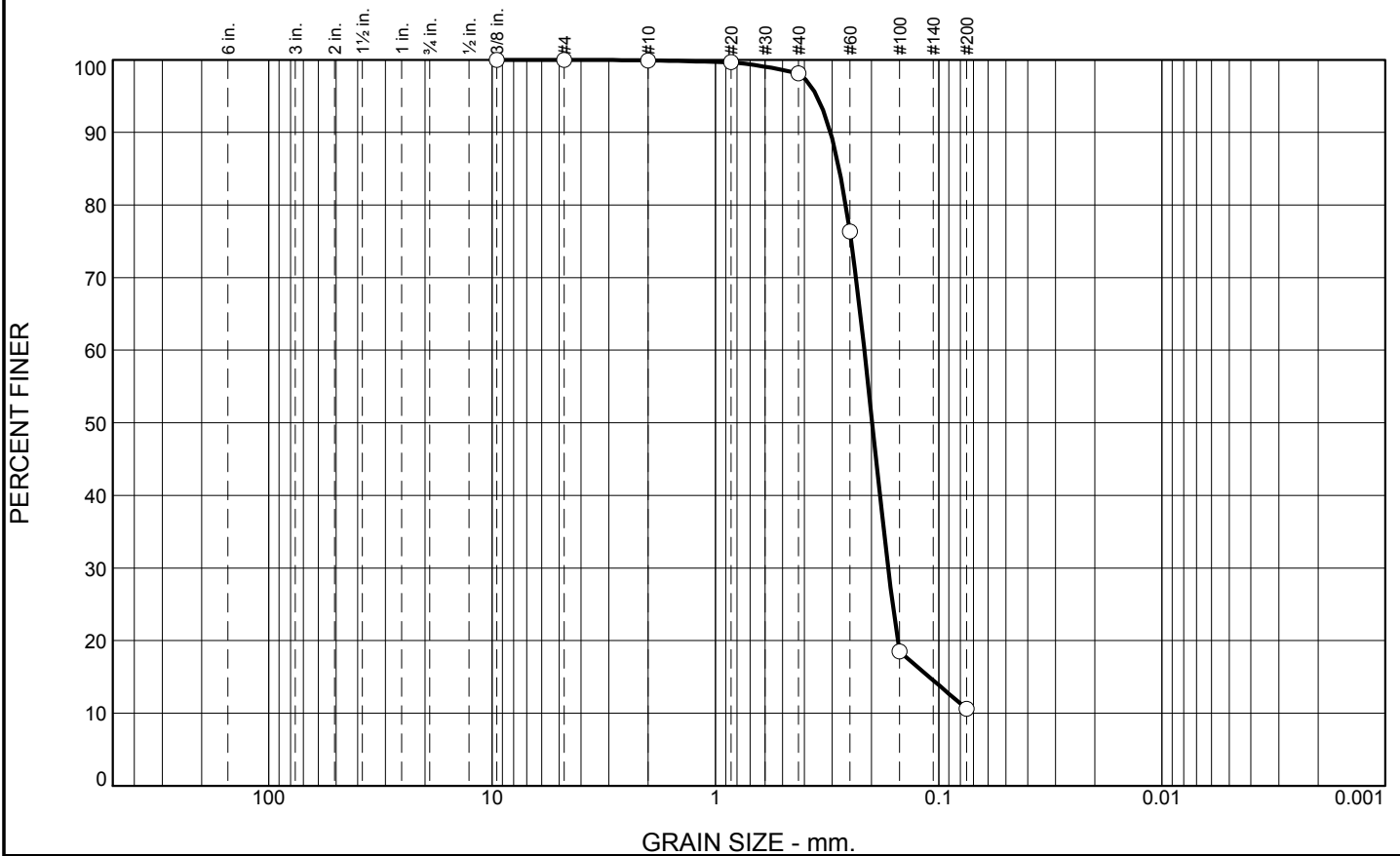
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-SI-81-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SI-81-10		LOCATION COORDINATES E = 972,830 N = 262,213		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 26 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-22-10		STARTED 06-22-10 COMPLETED 06-22-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -25.2 Ft.			
8. TOTAL DEPTH OF BORING 18.1 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-25.2	0.0						
			CLAY, lean, dark gray (CL)	NS			
-27.5	2.3						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, lt. gray (SP)	A	Classification: SP-SM Color: 2.5Y 7/2-light gray D50: 0.1986 mm % Fines: 10.6		
				B	Classification: SP-SM Color: 2.5Y 7/1-light gray D50: 0.1859 mm % Fines: 9.7		
-38.5	13.3						
			CLAY, lean, dark gray (CL)	NS			
-43.3	18.1						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	1.8	87.5	10.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.7		
#40	98.1		
#60	76.3		
#100	18.5		
#200	10.6		

* (no specification provided)

Material Description		
SAND, (SP-SM), fine grained		
<div> <div> Atterberg Limits </div> <div> PL= </div> <div> LL= </div> <div> PI= </div> </div>		
<div> <div> Coefficients </div> <div> D₉₀= 0.3051 </div> <div> D₅₀= 0.1986 </div> <div> D₁₀= </div> <div> D₈₅= 0.2791 </div> <div> D₃₀= 0.1685 </div> <div> C_u= </div> <div> D₆₀= 0.2153 </div> <div> D₁₅= 0.1104 </div> <div> C_c= </div> </div>		
<div> <div> Classification </div> <div> USCS= SP-SM </div> <div> AASHTO= </div> </div>		
<div> <div> Remarks </div> <div> CADD CODE = CH10D965 </div> </div>		

Location: USACE Sample # BI-SI-81-10A
Sample Number: TE Lab ID: 4557.12

Depth: 2.3 - 7.3 (ft.)

Date: 7/3/10

Thompson Engineering
Mobile, Alabama

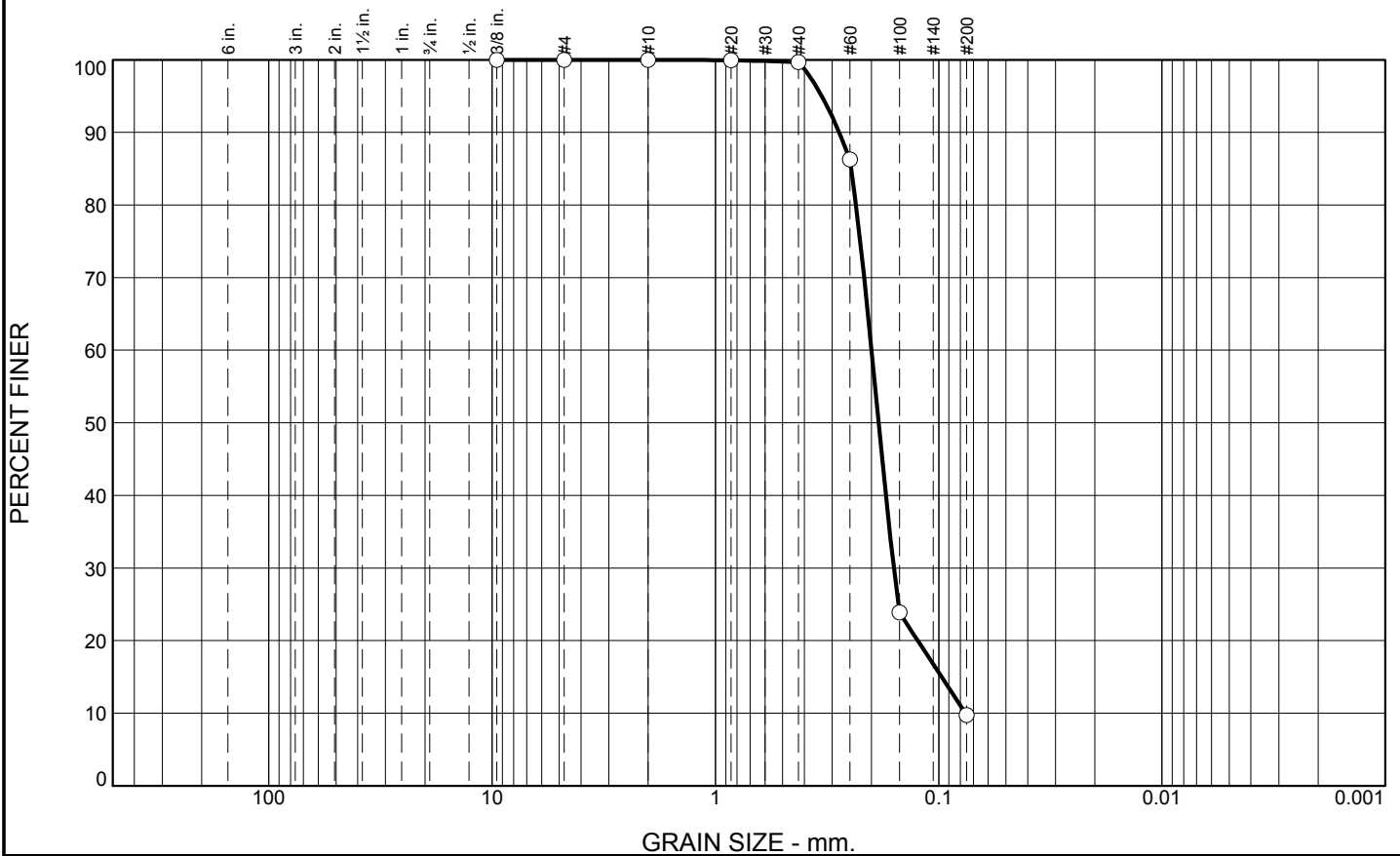
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.3	90.0	9.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	99.7		
#60	86.3		
#100	23.9		
#200	9.7		

* (no specification provided)

Material Description

SAND, (SP-SM), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.2790

D₈₅= 0.2465

D₆₀= 0.1999

D₅₀= 0.1859

D₃₀= 0.1590

D₁₅= 0.0971

D₁₀= 0.0760

C_u= 2.63

C_c= 1.66

Classification

USCS= SP-SM

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-SI-81-10B
Sample Number: TE Lab ID: 4557.13

Depth: 7.3 - 13.3 (ft.)

Date: 7/3/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Figure

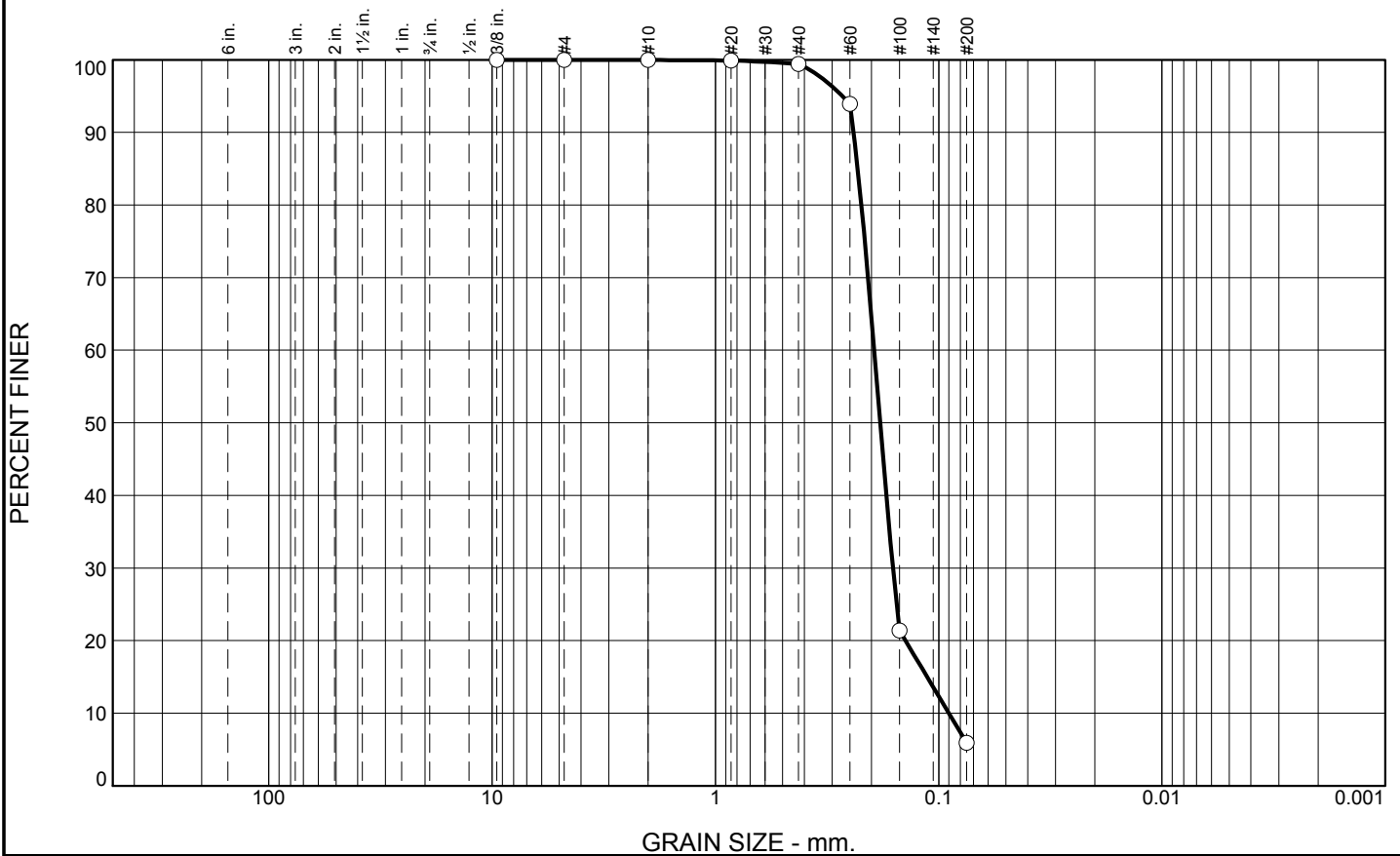
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-SI-82-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SI-82-10		LOCATION COORDINATES E = 973,983 N = 261,173		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 27 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-22-10		STARTED 06-22-10 COMPLETED 06-22-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -26.0 Ft.			
8. TOTAL DEPTH OF BORING 19.1 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-26.0	0.0						
-28.0	2.0		CLAY, lean, dark gray (CL)	NS			
-34.4	8.4		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little silt, lt. gray (SP)	A	Classification: SP-SM Color: 2.5Y 6/2-light brownish gray D50: 0.1829 mm % Fines: 5.9		
-39.3	13.3		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, lt. gray (SM)	B	Classification: SM Color: 2.5Y 6/2-light brownish gray D50: 0.162 mm % Fines: 22.7		
-45.1	19.1		CLAY, lean, dark gray (CL)	NS			
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.6	93.5	5.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	99.4		
#60	93.9		
#100	21.4		
#200	5.9		

* (no specification provided)

<u>Material Description</u>		
SAND, (SP-SM), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.2404	D ₈₅ = 0.2304	D ₆₀ = 0.1946
D ₅₀ = 0.1829	D ₃₀ = 0.1604	D ₁₅ = 0.1127
D ₁₀ = 0.0901	C _u = 2.16	C _c = 1.47
<u>Classification</u>		
USCS= SP-SM	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-SI-82-10A
Sample Number: TE Lab ID: 4557.10

Depth: 2.0 - 8.4 (ft.)

Date: 7/3/10

Thompson Engineering
Mobile, Alabama

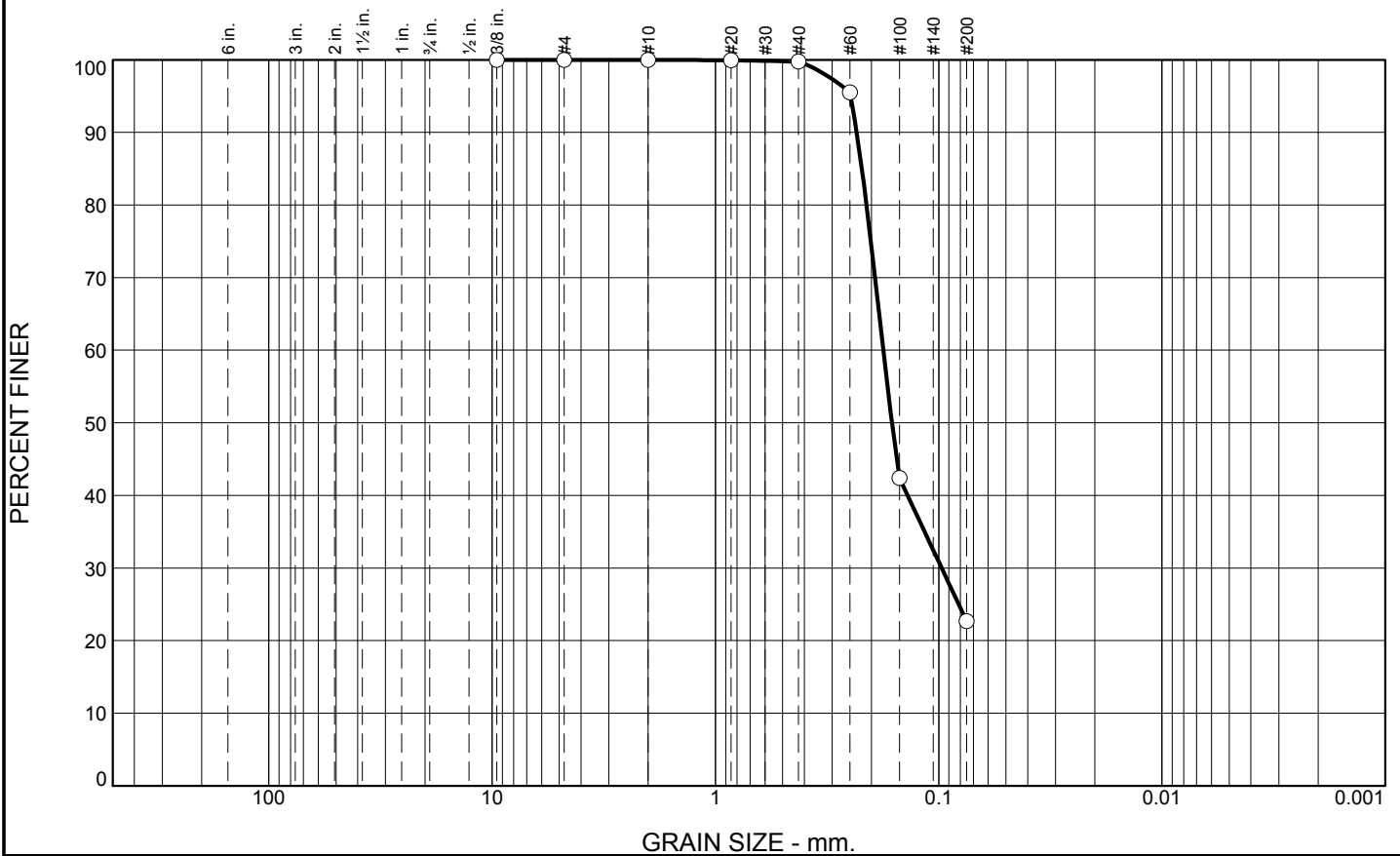
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.2	77.1	22.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	99.8		
#60	95.5		
#100	42.4		
#200	22.7		

* (no specification provided)

Material Description

SILTY SAND, (SM), fine grained, with clay pockets

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.2328

D₅₀= 0.1620

D₁₀=

D₈₅= 0.2208

D₃₀= 0.0970

C_u=

D₆₀= 0.1771

D₁₅=

C_c=

Classification

USCS= SM

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-SI-82-10B
Sample Number: TE Lab ID: 4557.11

Depth: 8.4 - 13.3 (ft.)

Date: 7/3/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Figure

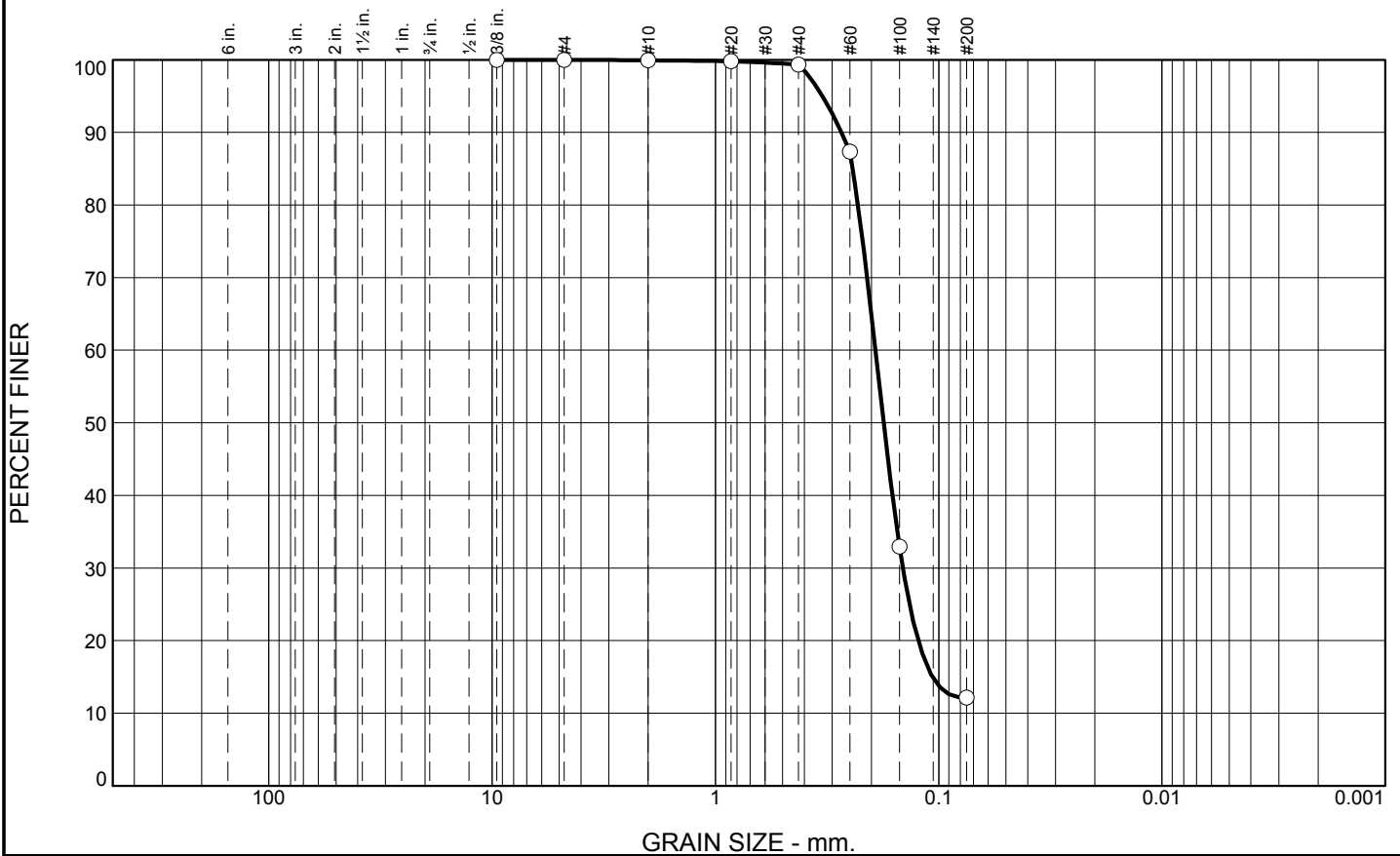
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-SI-83-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SI-83-10		LOCATION COORDINATES E = 974,886 N = 259,558		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 1 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 29 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-22-10		STARTED 06-22-10 COMPLETED 06-22-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -28.0 Ft.			
8. TOTAL DEPTH OF BORING 18.7 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-28.0	0.0						
-29.5	1.5		CLAY, lean, dark gray (CL)	NS			
-33.0	5.0		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, gray (SM)	A	Classification: SM Color: 2.5Y 6/2-light brownish gray D50: 0.1764 mm % Fines: 12.1		
-46.7	18.7		CLAY, lean, dark gray (CL)	NS			
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	0.6	87.2	12.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.8		
#40	99.3		
#60	87.3		
#100	33.0		
#200	12.1		

* (no specification provided)

Material Description
SILTY SAND, (SM), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.2728 D₈₅= 0.2428 D₆₀= 0.1920
 D₅₀= 0.1764 D₃₀= 0.1448 D₁₅= 0.1066
 D₁₀= C_u= C_c=

Classification
 USCS= SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-SI-83-10A
Sample Number: TE Lab ID: 4557.09

Depth: 1.5 - 5.0 (ft.)

Date: 7/3/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

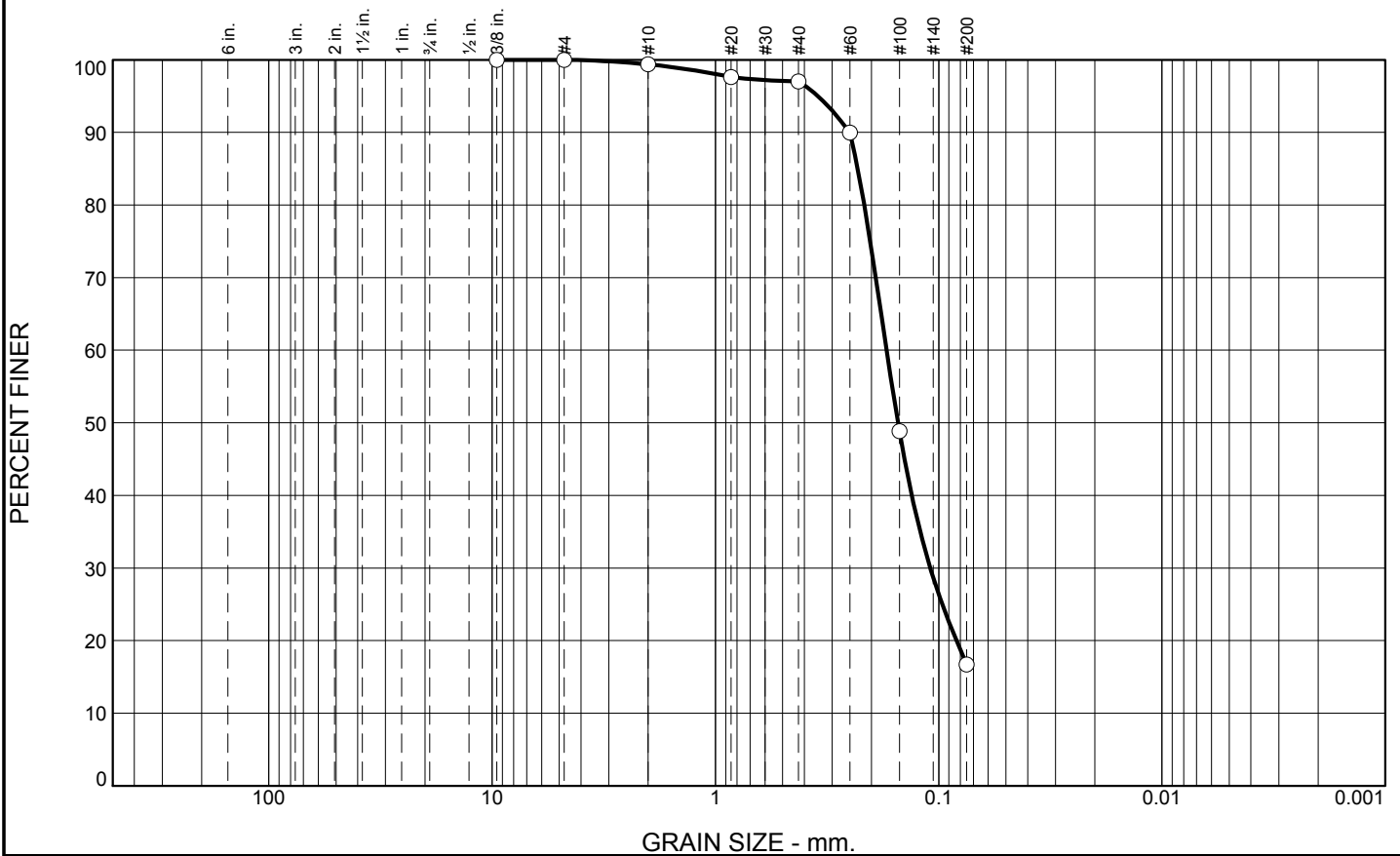
Boring Designation BI-SI-84-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SI-84-10		LOCATION COORDINATES E = 975,903 N = 258,081		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 0 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		BEARING		13. TOTAL NUMBER CORE BOXES	
6. THICKNESS OF OVERBURDEN N/A				14. WATER DEPTH 30 Ft.			
7. DEPTH DRILLED INTO ROCK N/A				15. DATE BORING 06-21-10		STARTED 06-21-10 COMPLETED 06-21-10	
8. TOTAL DEPTH OF BORING 19.3 Ft.				16. ELEVATION TOP OF BORING -29.5 Ft.			
				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-29.5	0.0		CLAY, lean, dark gray (CL)				
-46.5	17.0						
-48.8	19.3		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments, gray (SM)				
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Boring Designation BI-SI-85-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SI-85-10		LOCATION COORDINATES E = 973,248 N = 263,584		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 24 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-22-10		STARTED 06-22-10 COMPLETED 06-22-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -23.4 Ft.			
8. TOTAL DEPTH OF BORING 16.1 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-23.4	0.0						
-24.9	1.5		SAND, silty, mostly medium-grained sand-sized quartz, some silt, trace shell fragments, gray (SM)	A	Classification: SM Color: 2.5Y 5/1-gray D50: 0.1522 mm % Fines: 16.7		
-28.8	5.4		CLAY, lean, dark gray (CL)	NS			
-34.3	10.9		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, gray (SM)	B	Classification: SM Color: 2.5Y 5/2-grayish brown D50: 0.1807 mm % Fines: 12.9		
-39.5	16.1		CLAY, lean, dark gray (CL)	NS			
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.6	2.4	80.3	16.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.4		
#20	97.6		
#40	97.0		
#60	90.0		
#100	48.9		
#200	16.7		

* (no specification provided)

Material Description
SILTY SAND, (SM), fine grained, with clay nodules

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.2506 D₈₅= 0.2305 D₆₀= 0.1712
 D₅₀= 0.1522 D₃₀= 0.1091 D₁₅=
 D₁₀= C_u= C_c=

Classification
 USCS= SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-SI-85-10A
Sample Number: TE Lab ID: 4557.17

Depth: 0.0 - 1.5 (ft.)

Date: 7/3/10

Thompson Engineering

Mobile, Alabama

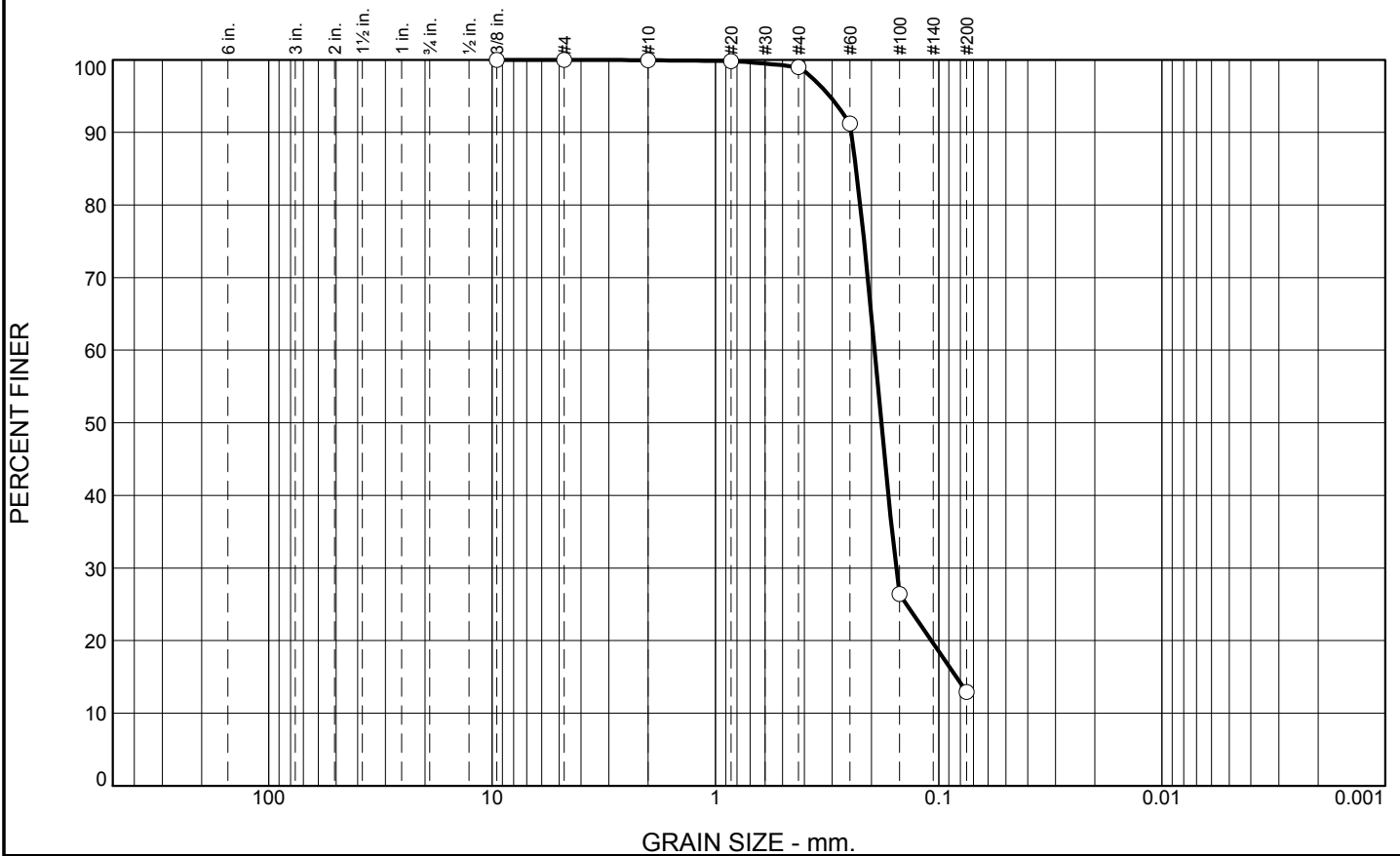
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	0.9	86.1	12.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.8		
#40	99.0		
#60	91.2		
#100	26.4		
#200	12.9		

* (no specification provided)

<u>Material Description</u>		
SILTY SAND, (SM), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.2465	D ₈₅ = 0.2345	D ₆₀ = 0.1937
D ₅₀ = 0.1807	D ₃₀ = 0.1551	D ₁₅ = 0.0835
D ₁₀ =	C _u =	C _c =
<u>Classification</u>		
USCS= SM	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-SI-85-10B
Sample Number: TE Lab ID: 4557.18

Depth: 5.4 - 10.9 (ft.)

Date: 7/3/10

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

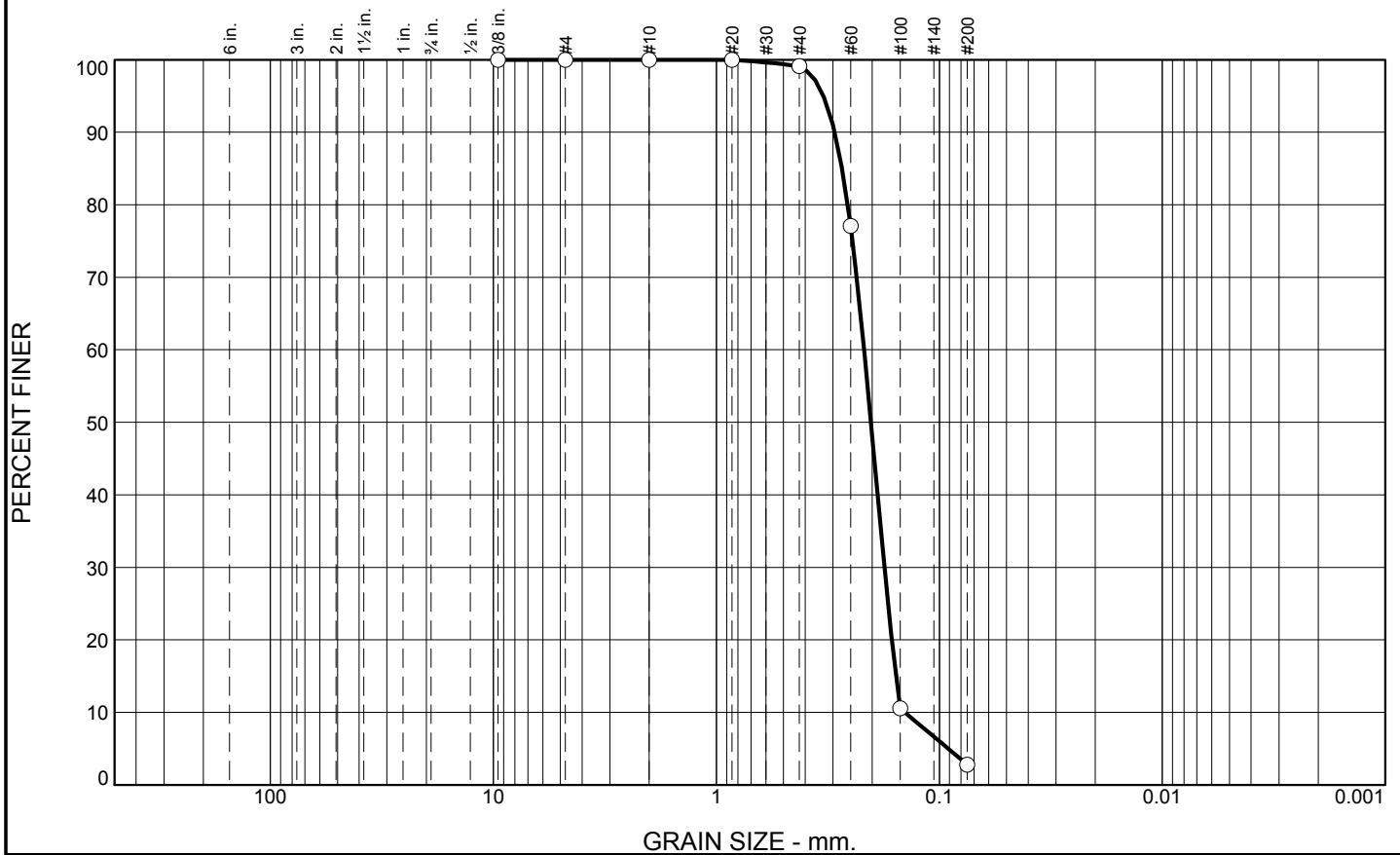
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-SI-89-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SI-89-10		LOCATION COORDINATES E = 972,320 N = 257,500		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 4		DISTURBED 0 UNDISTURBED (UD)	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 27 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-21-10		STARTED 06-21-10 COMPLETED 06-21-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -26.2 Ft.			
8. TOTAL DEPTH OF BORING 19.3 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-26.2	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, trace wood debris, trace silt, lt. gray (SP)	A	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.2027 mm % Fines: 2.8		
				B	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.1924 mm % Fines: 3.7		
				C	Classification: SP Color: 2.5Y 6/2-light brownish gray D50: 0.1844 mm % Fines: 4.7		
-39.7	13.5						
			SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments, gray (SM)	D	Classification: SM Color: 2.5Y 4/3-olive brown D50: 0.1732 mm % Fines: 20.3		
-44.5	18.3						
-45.5	19.3		CLAY, lean, dark gray (CL)	NS			
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.9	96.3	2.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	100.0		
#40	99.1		
#60	77.1		
#100	10.6		
#200	2.8		

* (no specification provided)

Material Description		
SAND, (SP), fine grained		
<div> <div> Atterberg Limits PL= LL= PI= </div> <div> Coefficients D₉₀= 0.2947 D₈₅= 0.2731 D₆₀= 0.2176 D₅₀= 0.2027 D₃₀= 0.1764 D₁₅= 0.1566 D₁₀= 0.1427 C_u= 1.52 C_c= 1.00 </div> <div> Classification USCS= SP AASHTO= </div> <div> Remarks CADD CODE = CH10D965 </div> </div>		

Location: USACE Sample # BI-SI-89-10A
Sample Number: TE Lab ID: 4557.04

Depth: 0.0 - 5.0 (ft.)

Date: 7/3/10

Thompson Engineering
Mobile, Alabama

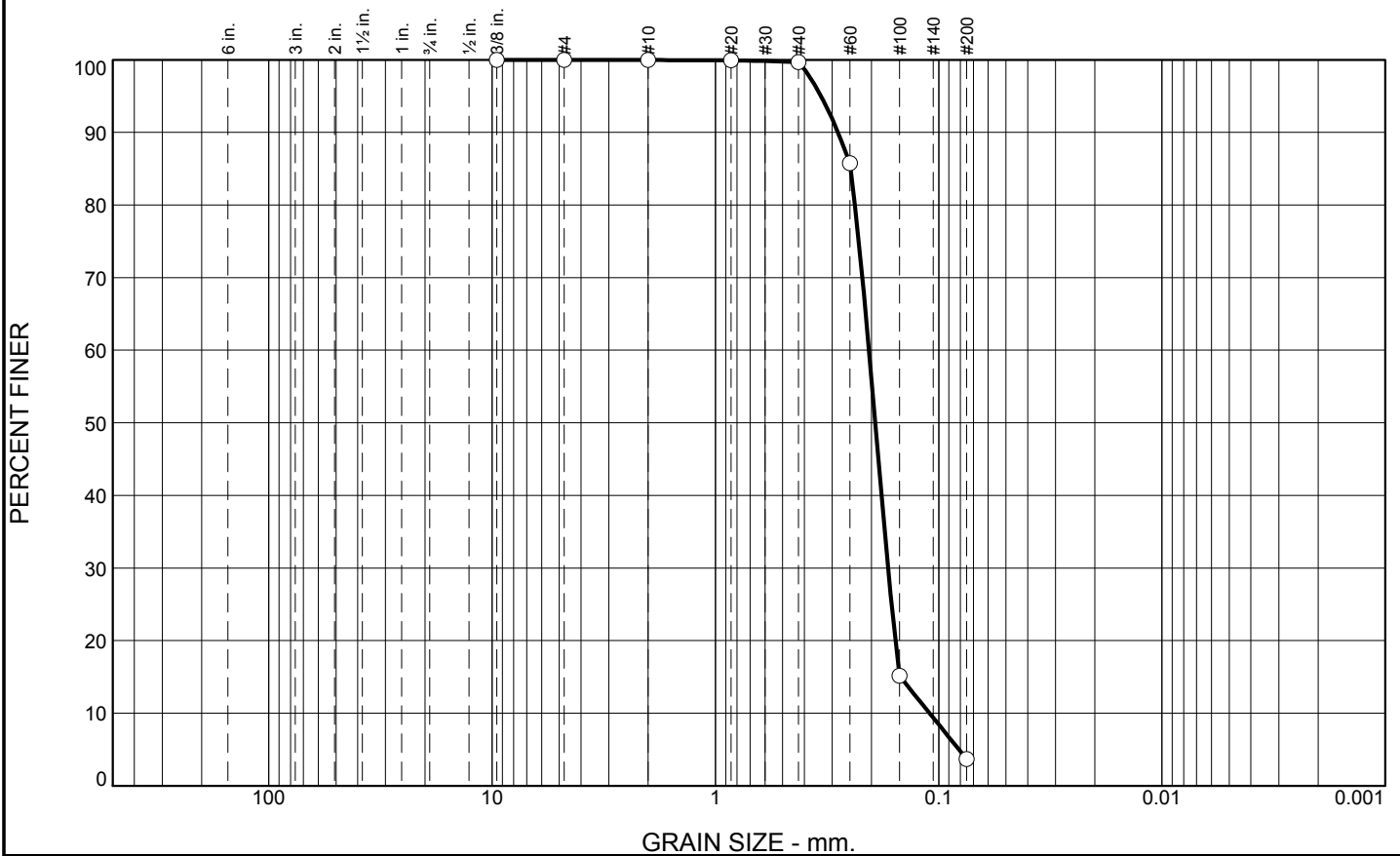
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.3	96.0	3.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	99.7		
#60	85.7		
#100	15.2		
#200	3.7		

* (no specification provided)

Material Description		
SAND, (SP), fine grained		
<div> <div> Atterberg Limits PL= LL= PI= </div> <div> Coefficients D₉₀= 0.2824 D₈₅= 0.2482 D₆₀= 0.2053 D₅₀= 0.1924 D₃₀= 0.1686 D₁₅= 0.1486 D₁₀= 0.1099 C_u= 1.87 C_c= 1.26 </div> <div> Classification USCS= SP AASHTO= </div> <div> Remarks CADD CODE = CH10D965 </div> </div>		

Location: USACE Sample # BI-SI-89-10B
Sample Number: TE Lab ID: 4557.05

Depth: 5.0 - 10.0 (ft.)

Date: 7/3/10

Thompson Engineering

Mobile, Alabama

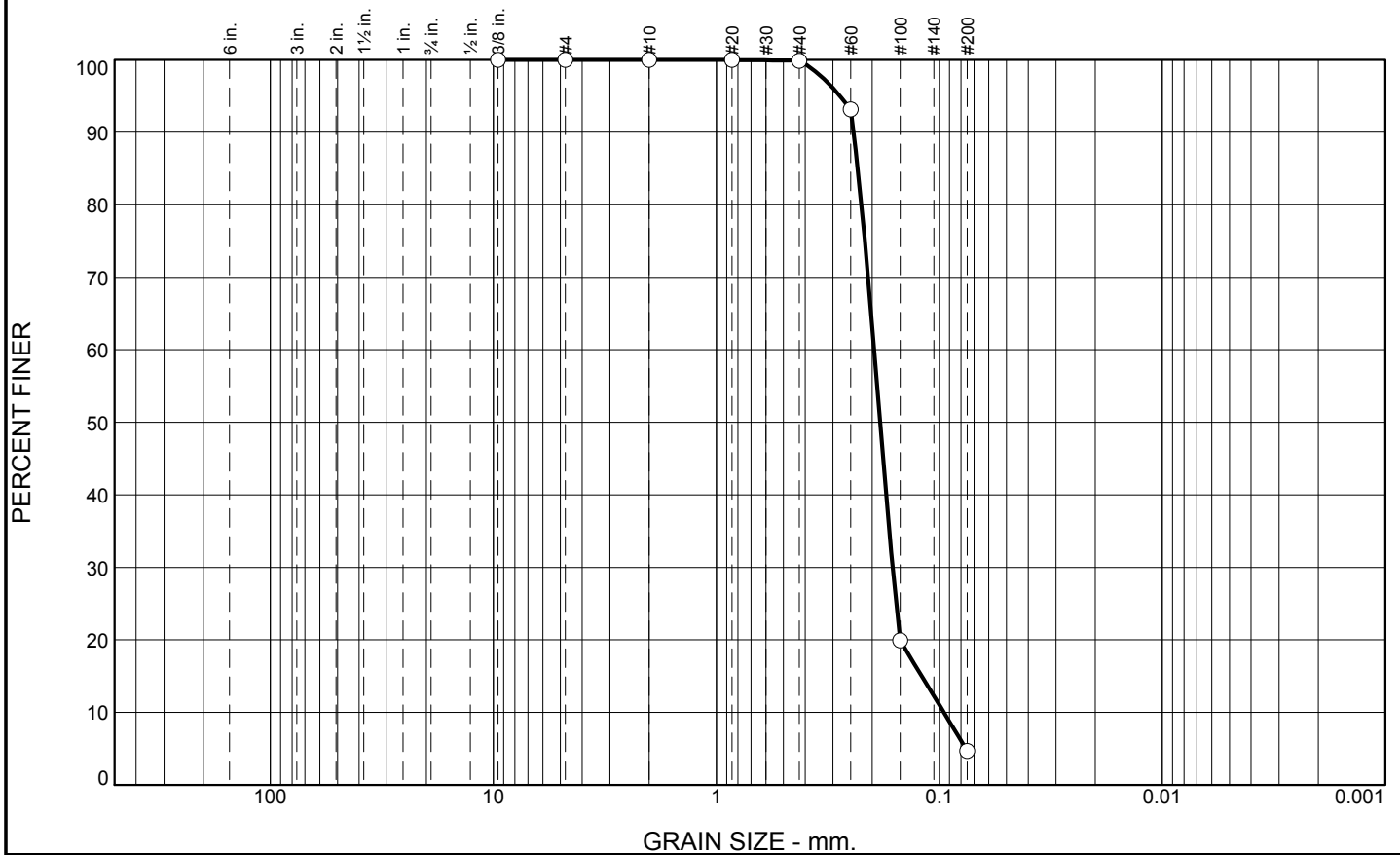
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.1	95.2	4.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	100.0		
#40	99.9		
#60	93.1		
#100	19.9		
#200	4.7		

* (no specification provided)

Material Description		
SAND, (SP), fine grained		
<div> <div> Atterberg Limits </div> <div> PL= </div> <div> LL= </div> <div> PI= </div> </div>		
<div> <div> Coefficients </div> <div> D₉₀= 0.2423 </div> <div> D₅₀= 0.1844 </div> <div> D₁₀= 0.0955 </div> <div> D₈₅= 0.2322 </div> <div> D₃₀= 0.1621 </div> <div> C_u= 2.05 </div> <div> D₆₀= 0.1961 </div> <div> D₁₅= 0.1199 </div> <div> C_c= 1.40 </div> </div>		
<div> <div> Classification </div> <div> USCS= SP </div> <div> AASHTO= </div> </div>		
<div> <div> Remarks </div> <div> CADD CODE = CH10D965 </div> </div>		

Location: USACE Sample # BI-SI-89-10C
Sample Number: TE Lab ID: 4557.06

Depth: 10.0 - 13.5 (ft.)

Date: 7/3/10

Thompson Engineering
Mobile, Alabama

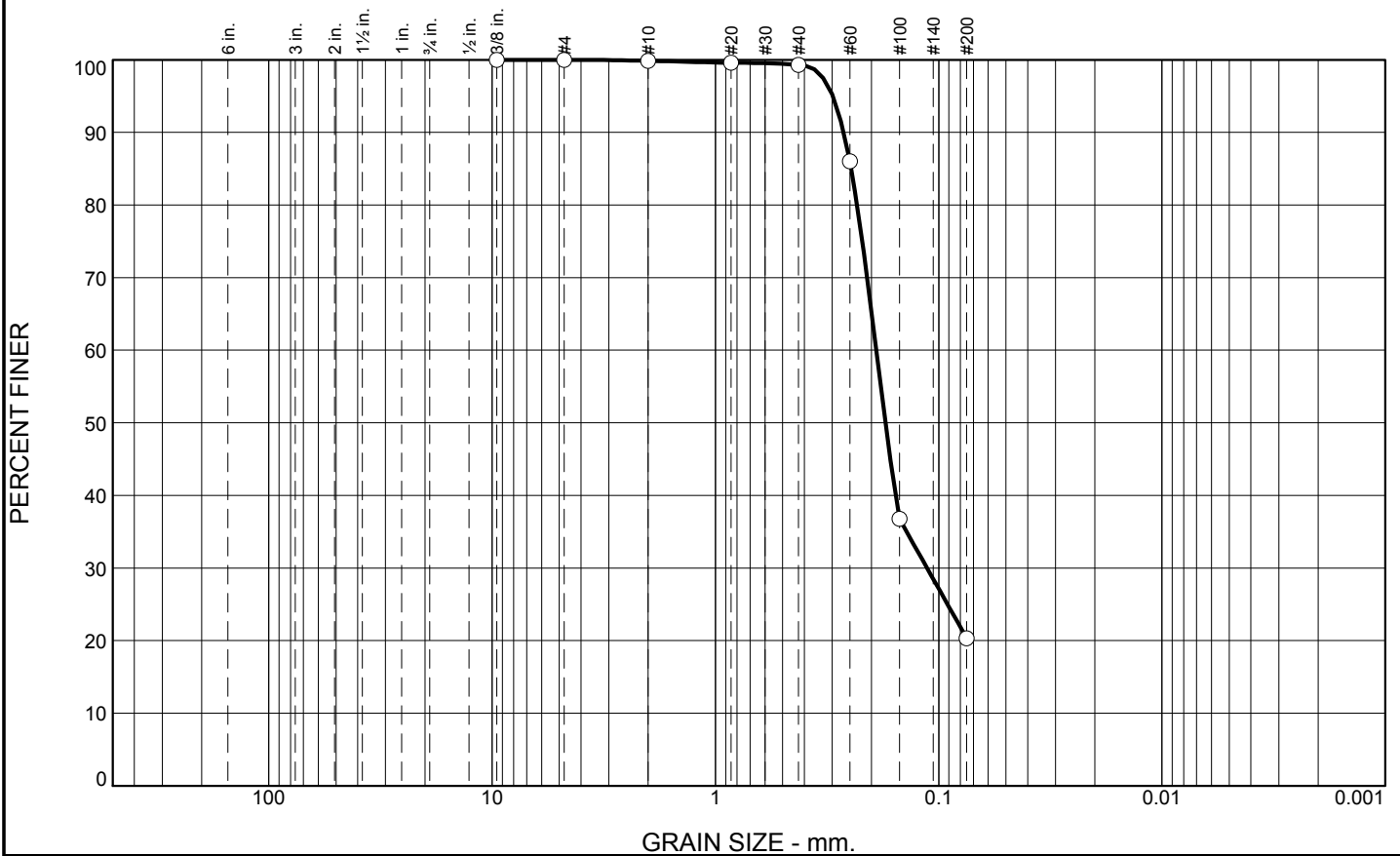
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	0.6	79.0	20.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.6		
#40	99.3		
#60	86.0		
#100	36.8		
#200	20.3		

* (no specification provided)

Material Description		
SILTY SAND, (SM), fine grained, with clay pockets		
<div> <div> Atterberg Limits PL= LL= PI= </div> <div> Coefficients D₉₀= 0.2661 D₈₅= 0.2466 D₆₀= 0.1904 D₅₀= 0.1732 D₃₀= 0.1128 D₁₅= D₁₀= C_u= C_c= </div> <div> Classification USCS= SM AASHTO= </div> <div> Remarks CADD CODE = CH10D965 </div> </div>		

Location: USACE Sample # BI-SI-89-10D
Sample Number: TE Lab ID: 4557.07

Depth: 13.5 - 18.3 (ft.)

Date: 7/3/10

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

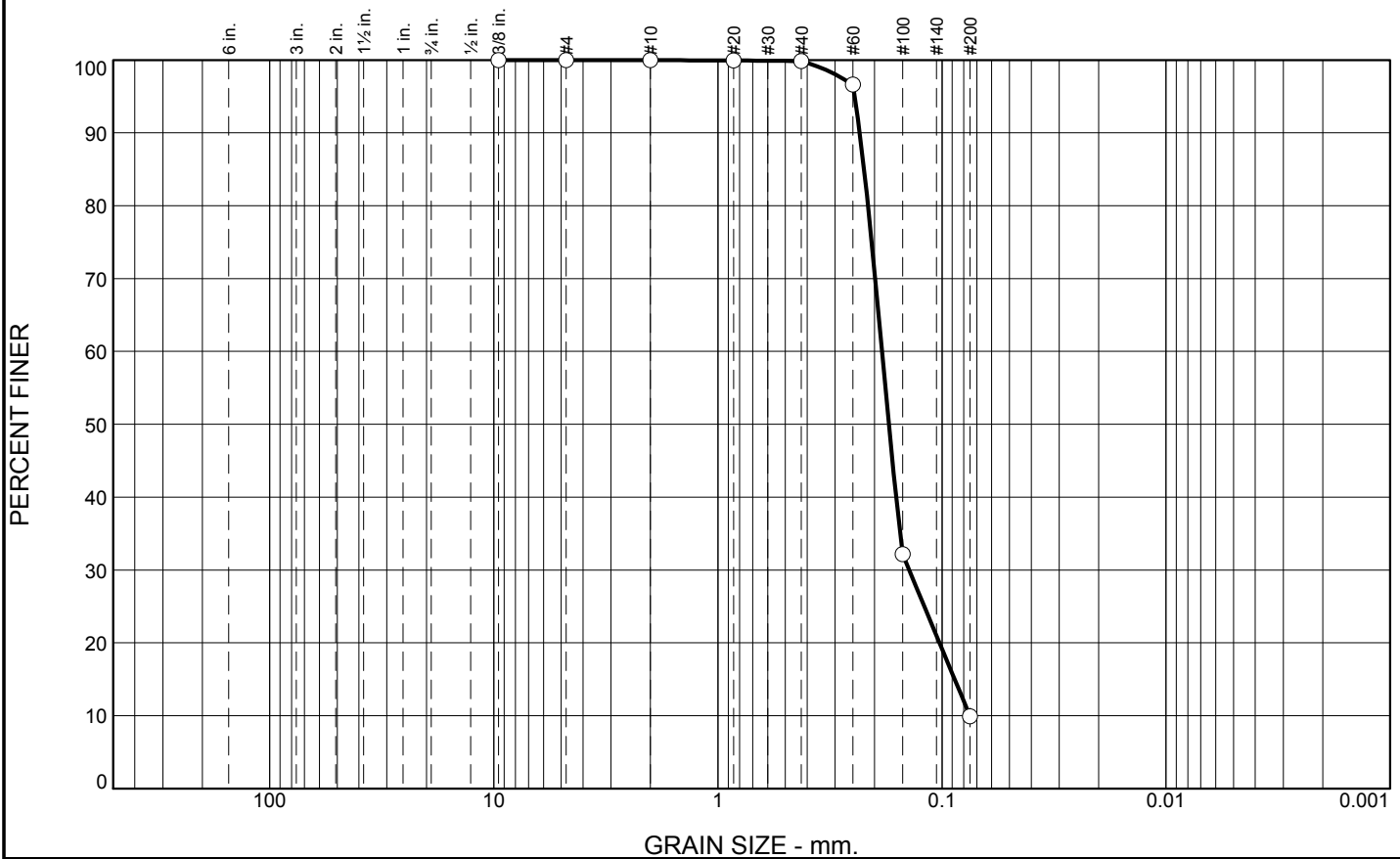
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-SI-90-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SI-90-10		LOCATION COORDINATES E = 973,659 N = 256,121		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 1 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 30 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING		STARTED 06-21-10 COMPLETED 06-21-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -29.3 Ft.			
8. TOTAL DEPTH OF BORING 12.7 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-29.3	0.0						
-30.9	1.6		CLAY, lean, dark gray (CL)	NS			
-34.2	4.9		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, gray (SM)	A	Classification: SP-SM Color: 2.5Y 6/2-light brownish gray D50: 0.1727 mm % Fines: 9.9		
-35.3	6.0		CLAY, lean, dark gray (CL)				
-37.3	8.0		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, lt. gray (SP)				
-42.0	12.7		CLAY, lean, dark gray (CL)	NS			
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.2	89.9	9.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	99.8		
#60	96.6		
#100	32.2		
#200	9.9		

* (no specification provided)

Material Description

SAND, (SP-SM), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.2327

D₈₅= 0.2226

D₆₀= 0.1853

D₅₀= 0.1727

D₃₀= 0.1402

D₁₅= 0.0878

D₁₀= 0.0752

C_u= 2.46

C_c= 1.41

Classification

USCS= SP-SM

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-SI-90-10A
Sample Number: TE Lab ID: 4557.08

Depth: 1.6 - 4.9 (ft.)

Date: 7/3/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Figure

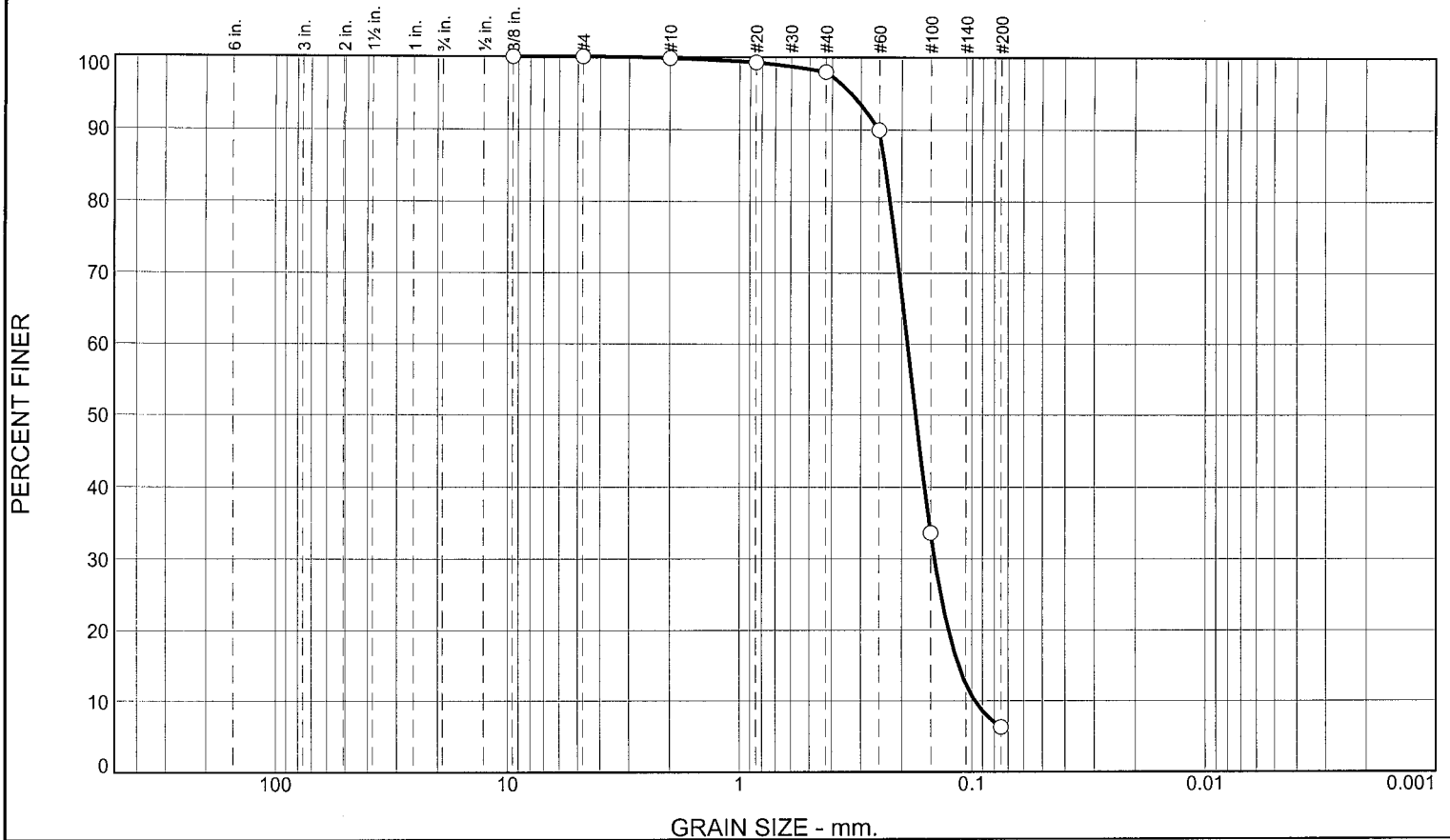
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-SI-91-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Ship Island				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-SI-91-10		LOCATION COORDINATES E = 970,695 N = 252,173		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 32 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-17-10		STARTED 06-17-10 COMPLETED 06-17-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -30.5 Ft.			
8. TOTAL DEPTH OF BORING 15.7 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Brad Johnson, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-30.5	0.0						
			CLAY, lean, dark gray (CL)	NS			
-33.4	2.9						
			SAND, clayey, mostly fine to medium-grained sand-sized quartz, some clay, gray (SC)	A	Classification: SP-SM Color: 2.5Y 6/2-light brownish gray D50: 0.1738 mm % Fines: 6.2		
-38.6	8.1		B	Classification: SP-SM Color: 2.5Y 6/2-light brownish gray D50: 0.1533 mm % Fines: 7.3			
			CLAY, lean, some silt, some sand, gray (CL)	NS			
-42.2	11.7						
			SAND, silty, some silt, some clay, gray (SM)	C	Classification: SM Color: 2.5Y 5/2-grayish brown D50: 0.1179 mm % Fines: 12.2		
-46.2	15.7						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	1.9	91.7	6.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.8		
#20	99.3		
#40	97.9		
#60	89.9		
#100	33.6		
#200	6.2		

* (no specification provided)

Material Description
SAND, (SP-SM), fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
 D₉₀= 0.2510 D₈₅= 0.2355 D₆₀= 0.1885
 D₅₀= 0.1738 D₃₀= 0.1443 D₁₅= 0.1138
 D₁₀= 0.0970 C_u= 1.94 C_c= 1.14

Classification
USCS= SP-SM AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-SI-91-10A
Sample Number: TE Lab ID: 4549.63

Depth: 2.9 - 5.9 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

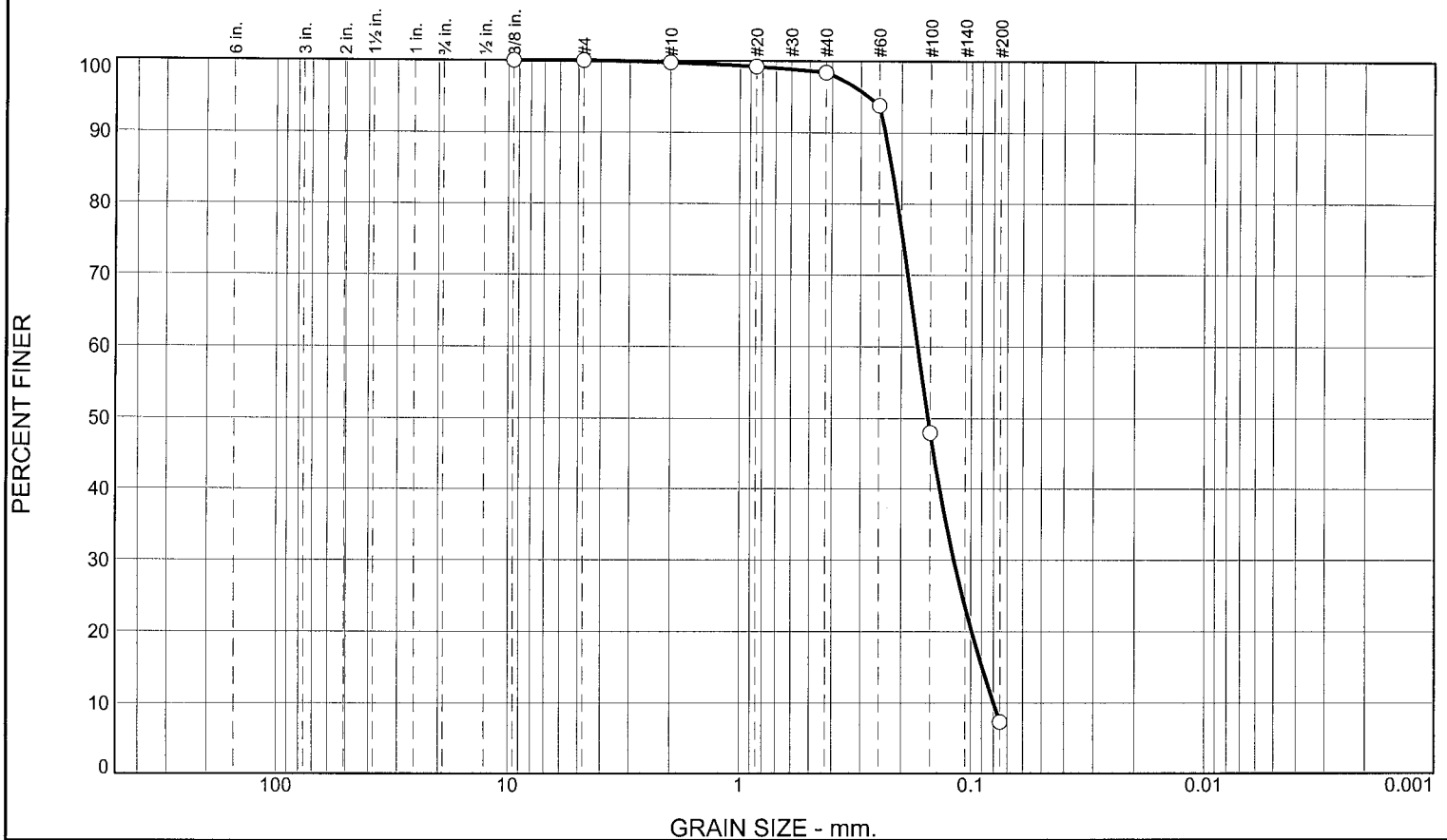
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.3	1.3	91.1	7.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.7		
#20	99.2		
#40	98.4		
#60	93.8		
#100	48.0		
#200	7.3		

* (no specification provided)

Material Description
SAND, (SP-SM), fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
 D₉₀= 0.2350 D₈₅= 0.2202 D₆₀= 0.1699
 D₅₀= 0.1533 D₃₀= 0.1184 D₁₅= 0.0893
 D₁₀= 0.0798 C_u= 2.13 C_c= 1.03

Classification
USCS= SP-SM AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-SI-91-10B
Sample Number: TE Lab ID: 4549.64

Date: 6/26/10

Thompson Engineering
Mobile, Alabama

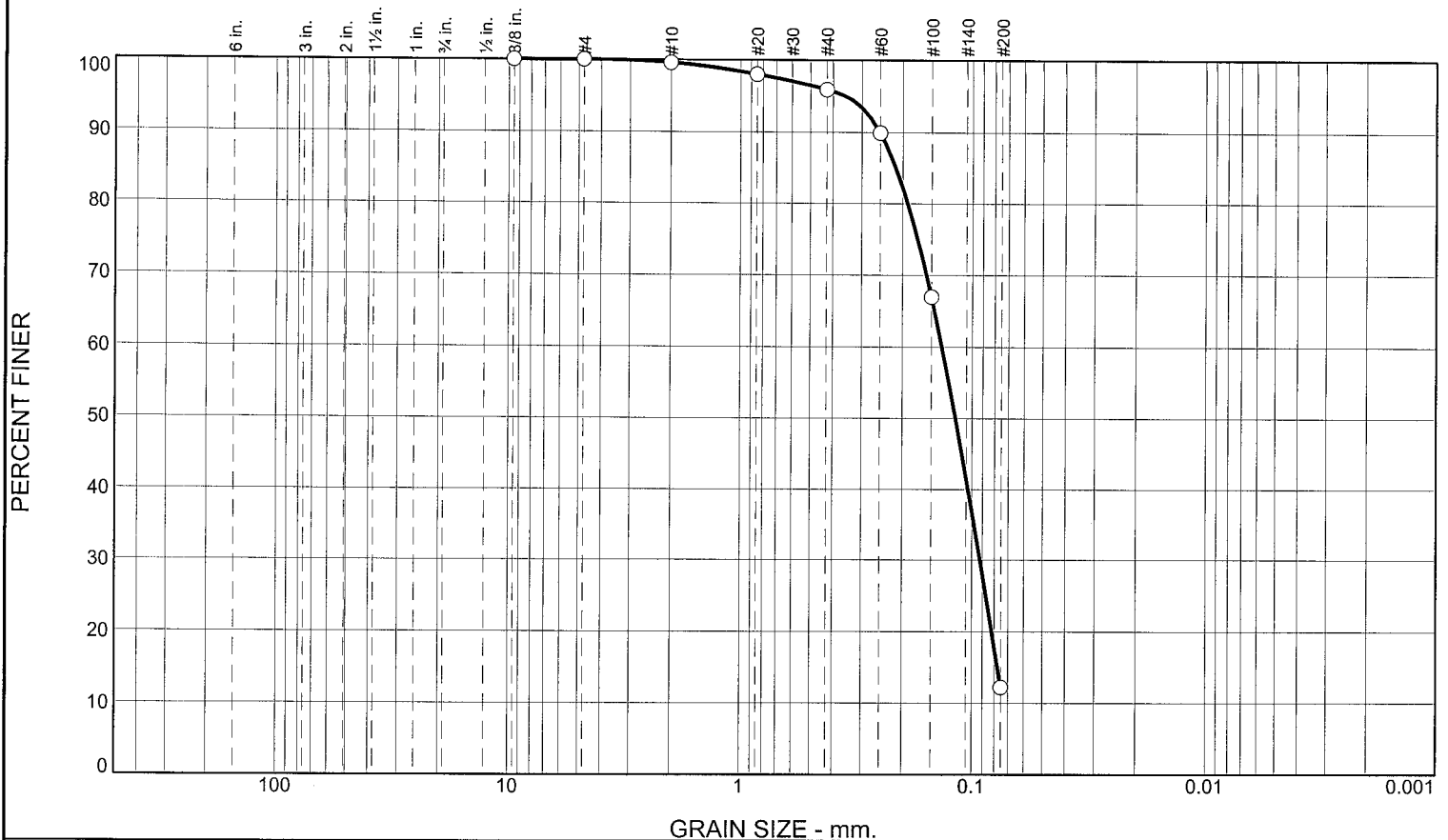
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.4	3.7	83.7	12.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.6		
#20	98.0		
#40	95.9		
#60	89.9		
#100	67.0		
#200	12.2		

* (no specification provided)

<u>Material Description</u>		
SILTY SAND, (SM), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.2508	D ₈₅ = 0.2141	D ₆₀ = 0.1351
D ₅₀ = 0.1179	D ₃₀ = 0.0922	D ₁₅ = 0.0774
D ₁₀ =	C _u =	C _c =
<u>Classification</u>		
USCS= SM	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-SI-91-10C
Sample Number: TE Lab ID: 4549.65

Depth: 11.7 - 15.7 (ft.)

Date: 6/26/10

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

APPENDIX I

DOG KEYS PASS BORING LOGS AND LAB RESULTS

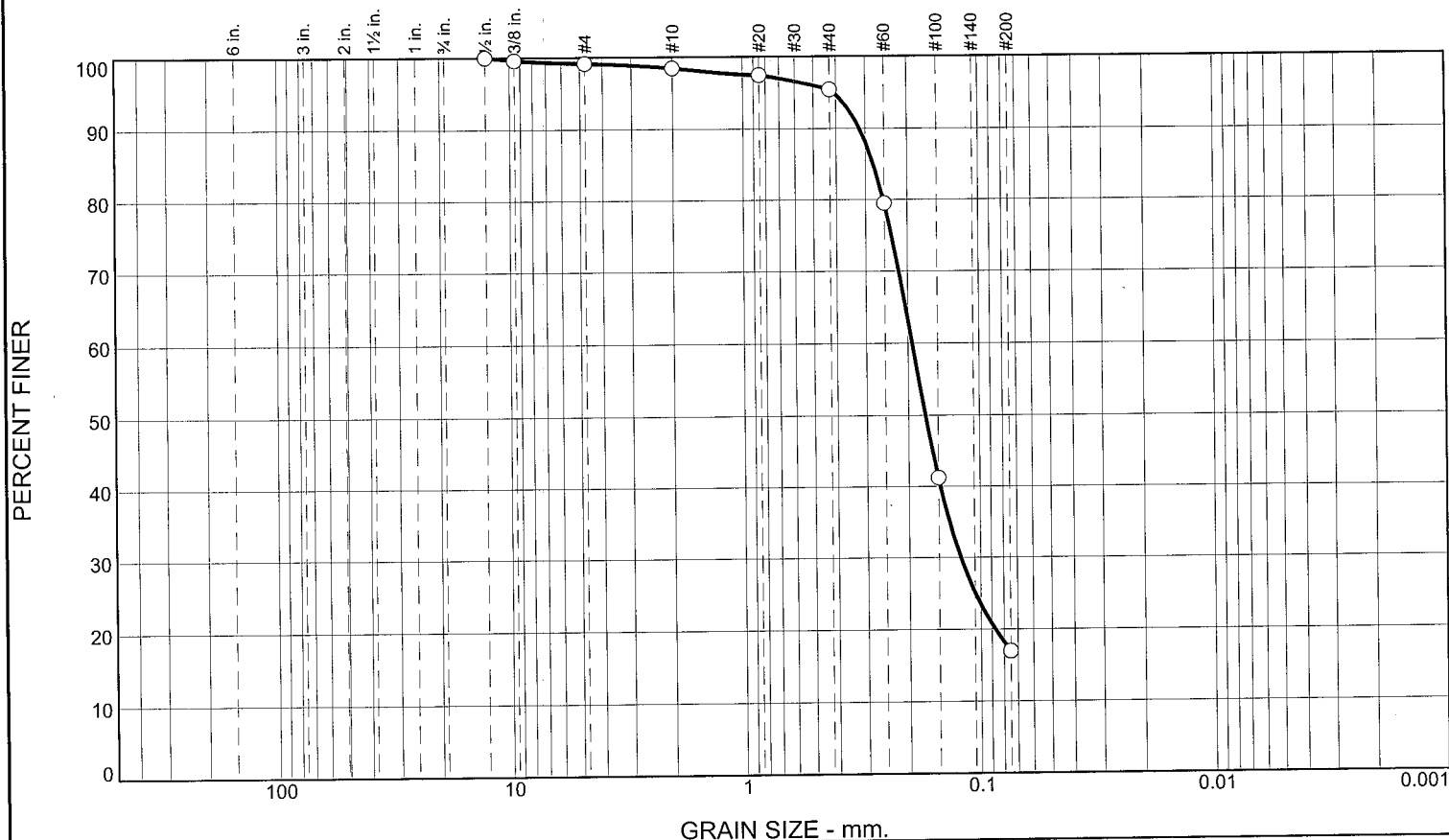
Boring Designation BI-DK-01-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Dog Keys Pass				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-DK-01-10		LOCATION COORDINATES E = 1,006,610 N = 250,192		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES		UNDISTURBED (UD) 0	
6. THICKNESS OF OVERBURDEN N/A				14. WATER DEPTH 43 Ft.			
7. DEPTH DRILLED INTO ROCK N/A				15. DATE BORING		STARTED 06-15-10	
8. TOTAL DEPTH OF BORING 19.1 Ft.				16. ELEVATION TOP OF BORING -41.3 Ft.		COMPLETED 06-15-10	
				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-41.3	0.0		CLAY, lean, dark gray (CL)	NS			
-47.6	6.3						
-49.7	8.4		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments, gray (SM)				
-55.3	14.0		CLAY, lean, brown (CL)				
-60.4	19.1		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little silt, brown (SP)				
NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.							

Boring Designation BI-DK-02-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Dog Keys Pass				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-DK-02-10		LOCATION COORDINATES E = 1,003,335 N = 247,400		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 40 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-15-10		STARTED 06-15-10 COMPLETED 06-15-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -38.1 Ft.			
8. TOTAL DEPTH OF BORING 17.1 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-38.1	0.0						
			CLAY, lean, dark gray (CL)	NS			
-43.7	5.6						
			SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments, gray (SM)	A	Classification: SM Color: 2.5Y 5/2-grayish brown D50: 0.1694 mm % Fines: 16.9		
-48.6	10.5						
			SILT, inorganic-L, brown (ML)	NS			
-50.1	12.0						
			SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments, gray (SM)	B	Classification: SM Color: 2.5Y 5/2-grayish brown D50: 0.2772 mm % Fines: 17.3		
-52.1	14.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little silt, trace shell fragments, brown (SP)	C	Classification: SM Color: 2.5Y 6/2-light brownish gray D50: 0.1817 mm % Fines: 14.9		
-55.2	17.1						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.9	0.6	3.1	78.5	16.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.500	100.0		
.375	99.6		
#4	99.1		
#10	98.5		
#20	97.4		
#40	95.4		
#60	79.5		
#100	41.2		
#200	16.9		

Material Description
SILTY SAND, (SM), fine grained, with trace gravel and clay pockets

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.3176 D₈₅= 0.2777 D₆₀= 0.1920
 D₅₀= 0.1694 D₃₀= 0.1213 D₁₅=
 D₁₀= C_u= C_c=

Classification
 USCS= SM AASHTO=

Remarks
 CADD CODE = CH10D965

* (no specification provided)

Location: USACE Sample # BI-DK-2-10A
 Sample Number: TE Lab ID: 4549.33

Depth: 5.6 - 10.5 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project

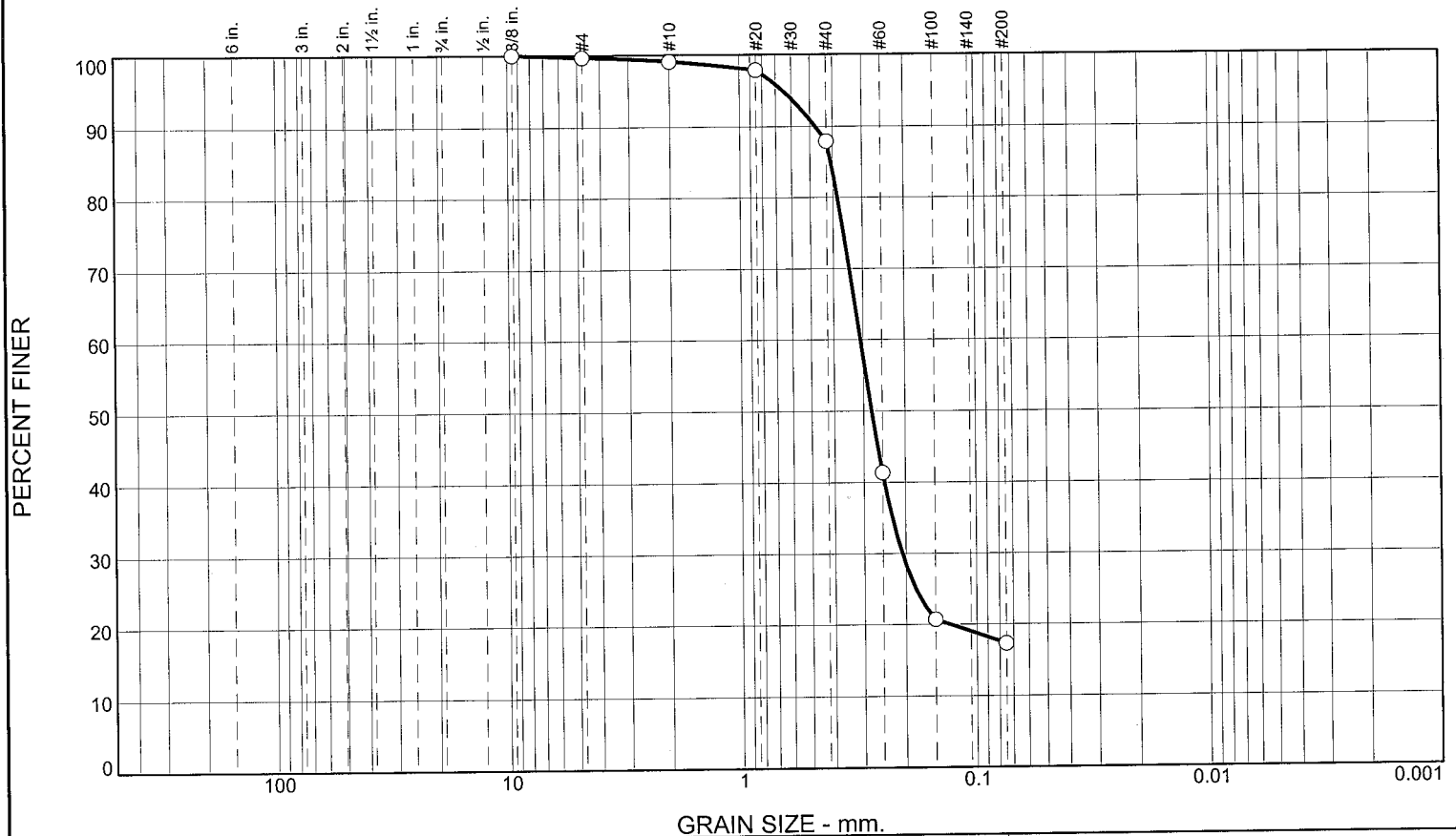
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.4	0.5	11.2	70.6	17.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.6		
#10	99.1		
#20	97.8		
#40	87.9		
#60	41.4		
#100	20.7		
#200	17.3		

* (no specification provided)

Material Description
SILTY SAND, (SM), fine grained, with clay pockets and trace organics

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.4741 D₈₅= 0.4073 D₆₀= 0.3082
D₅₀= 0.2772 D₃₀= 0.2069 D₁₅=
D₁₀= C_u= C_c=

Classification
USCS= SM AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-DK-2-10B
Sample Number: TE Lab ID: 4549.34

Depth: 12.0 - 14.0 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

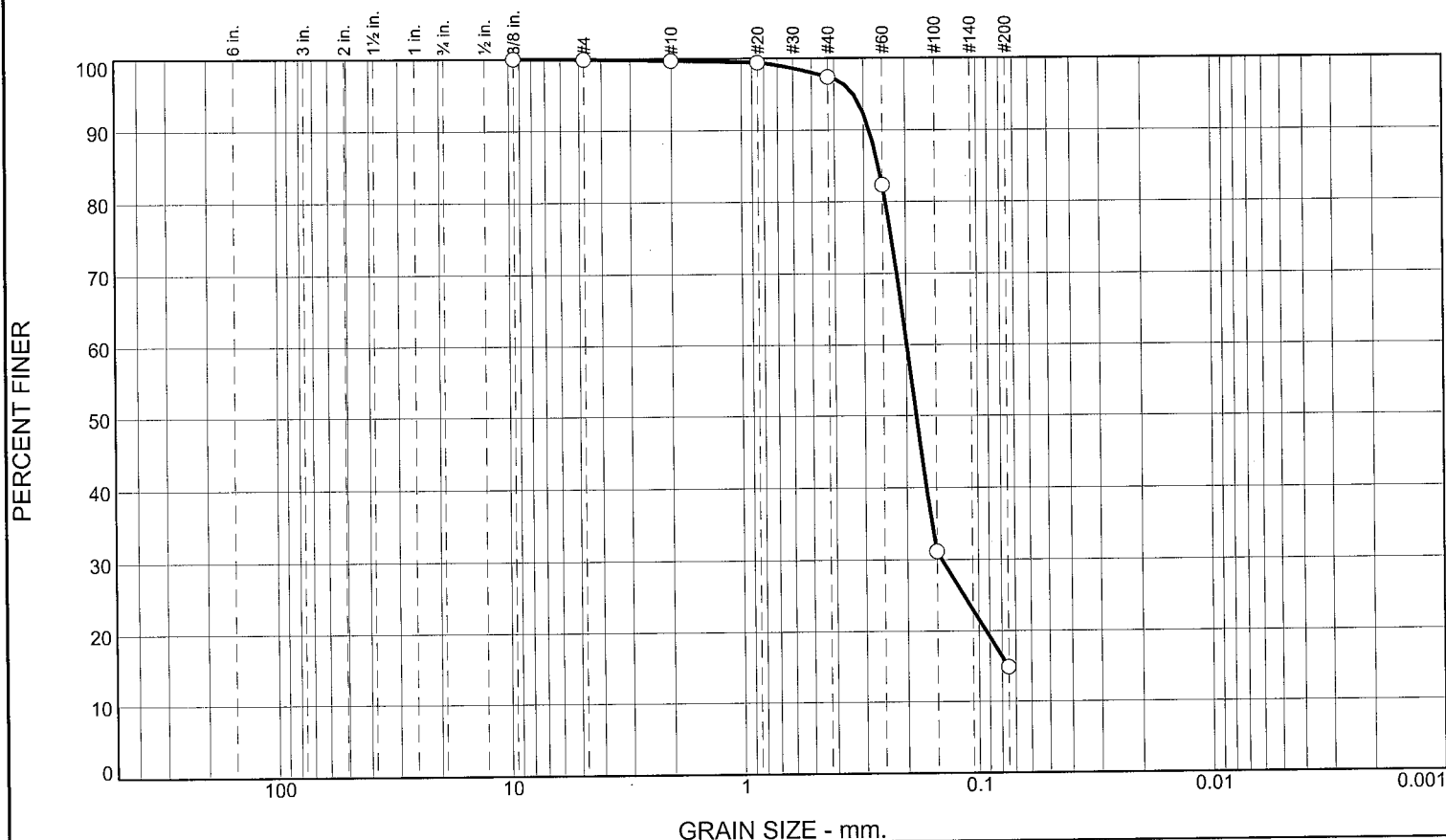
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.2	2.4	82.4	14.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.7		
#20	99.4		
#40	97.3		
#60	82.4		
#100	31.1		
#200	14.9		

Material Description
SILTY SAND, (SM), fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.2839 D₈₅= 0.2595 D₆₀= 0.1988
D₅₀= 0.1817 D₃₀= 0.1429 D₁₅= 0.0754
D₁₀= C_u= C_c=

Classification
USCS= SM AASHTO=

Remarks
CADD CODE = CH10D965

* (no specification provided)

Location: USACE Sample # BI-DK-2-10C
Sample Number: TE Lab ID: 4549.35

Depth: 14.0 - 17.2 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

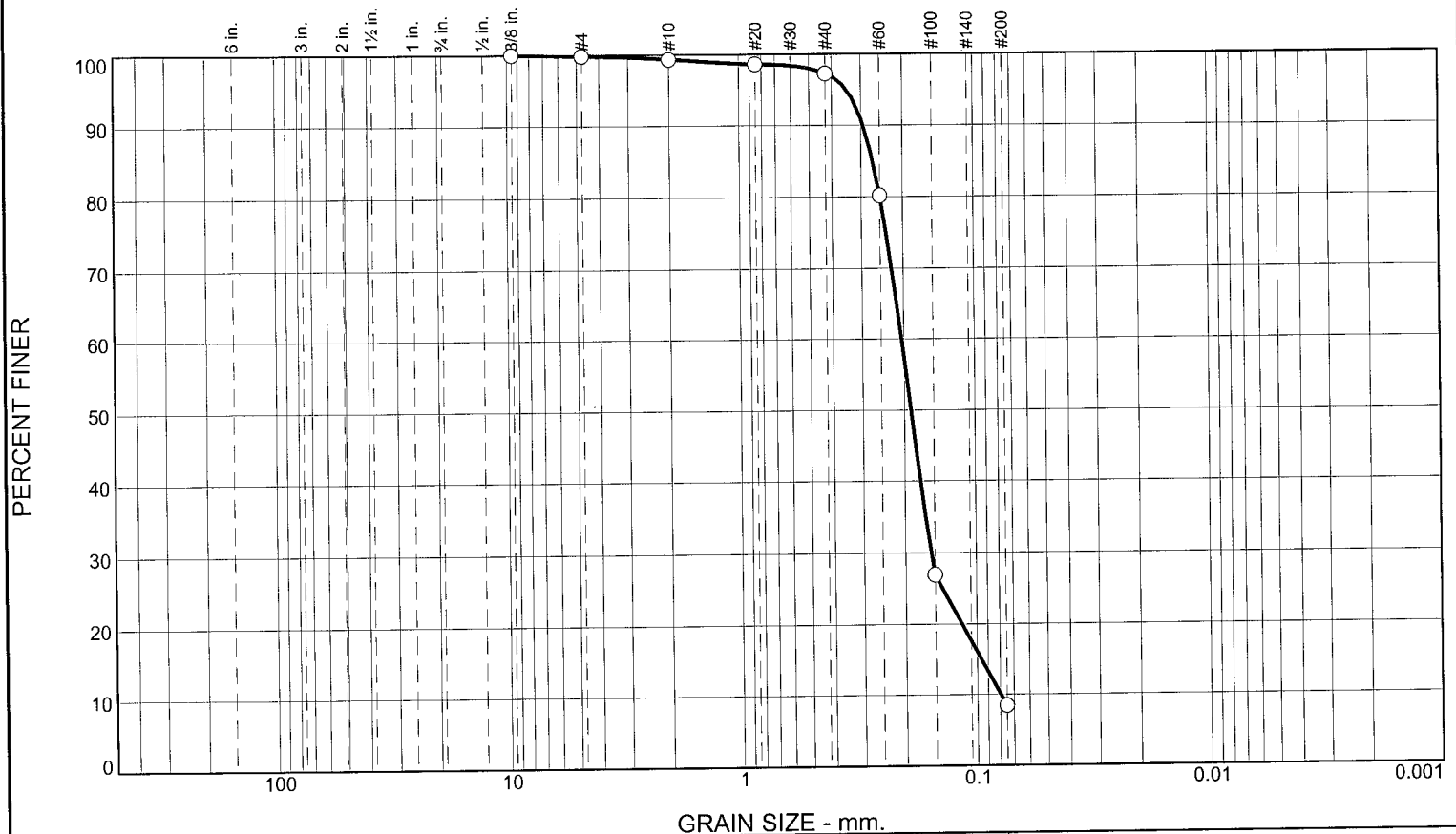
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-DK-03-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Dog Keys Pass				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-DK-03-10		LOCATION COORDINATES E = 999,847 N = 247,108		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 0 UNDISTURBED (UD)	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 43 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-15-10		STARTED 06-15-10 COMPLETED 06-15-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -41.0 Ft.			
8. TOTAL DEPTH OF BORING 18.2 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-41.0	0.0		CLAY, lean, dark gray (CL)	NS			
-48.6	7.6		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments (SM)	A	Classification: SP-SM Color: 2.5Y 5/2-grayish brown D50: 0.1874 mm % Fines: 8.4		
-54.0	13.0		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, trace shell fragments (SP)	B	Classification: SP-SM Color: 2.5Y 6/2-light brownish gray D50: 0.1995 mm % Fines: 5.7		
-59.2	18.2		NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.5	2.0	88.9	8.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.8		
#10	99.3		
#20	98.6		
#40	97.3		
#60	80.2		
#100	26.9		
#200	8.4		

* (no specification provided)

Material Description
SAND, (SP-SM), fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.2935 D₈₅= 0.2674 D₆₀= 0.2045
D₅₀= 0.1874 D₃₀= 0.1553 D₁₅= 0.0959
D₁₀= 0.0795 C_u= 2.57 C_c= 1.48

Classification
USCS= SP-SM AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-DK-3-10A
Sample Number: TE Lab ID: 4549.31

Depth: 7.6 - 13.0 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

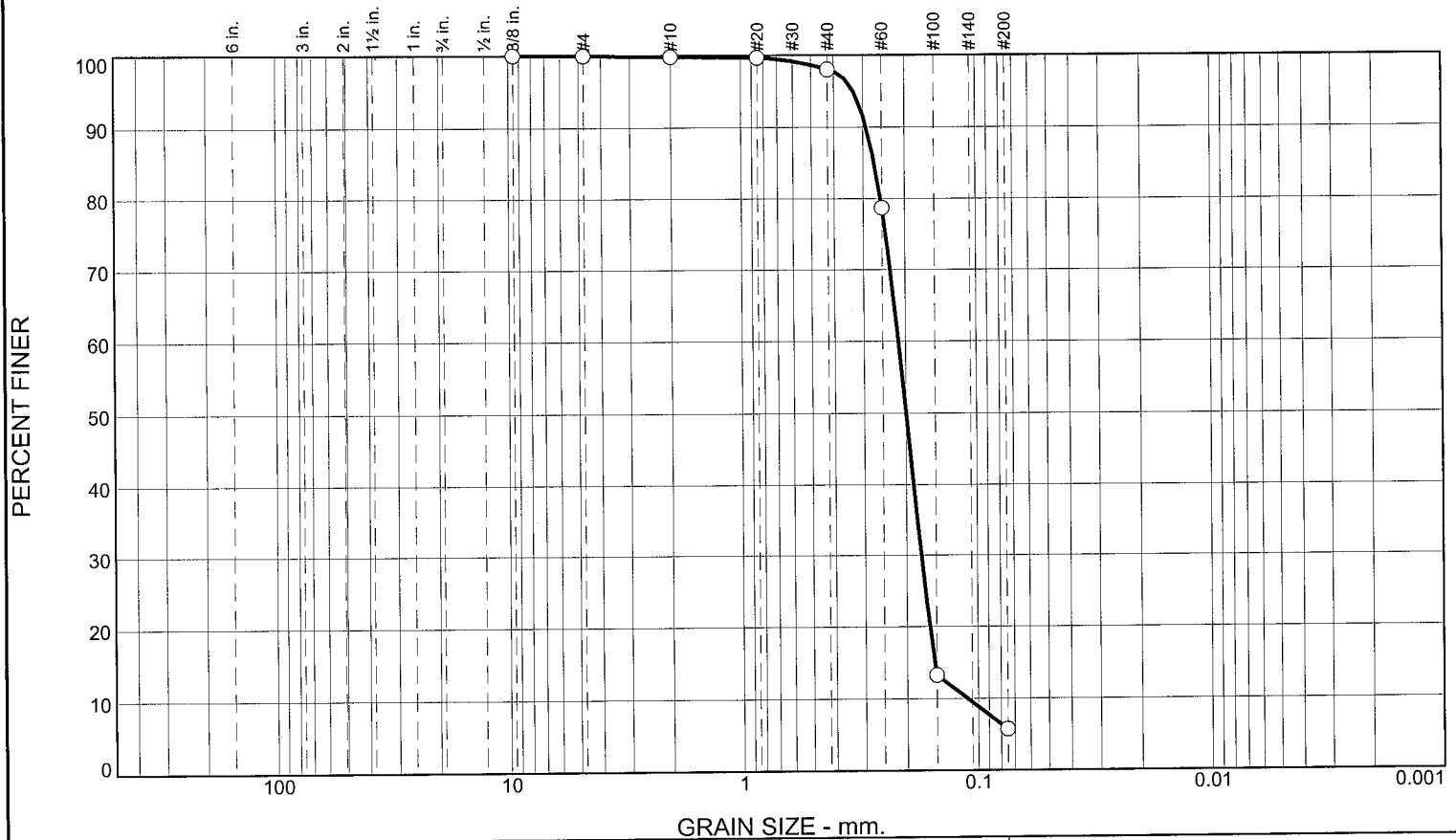
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	1.8	92.3	5.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.8		
#20	99.7		
#40	98.0		
#60	78.7		
#100	13.3		
#200	5.7		

* (no specification provided)

Material Description
SAND, (SP-SM), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.2905 D₈₅= 0.2688 D₆₀= 0.2142
 D₅₀= 0.1995 D₃₀= 0.1731 D₁₅= 0.1527
 D₁₀= 0.1111 C_u= 1.93 C_c= 1.26

Classification
 USCS= SP-SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-DK-3-10B
 Sample Number: TE Lab ID: 4549.32

Depth: 13.0 - 18.2 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Figure

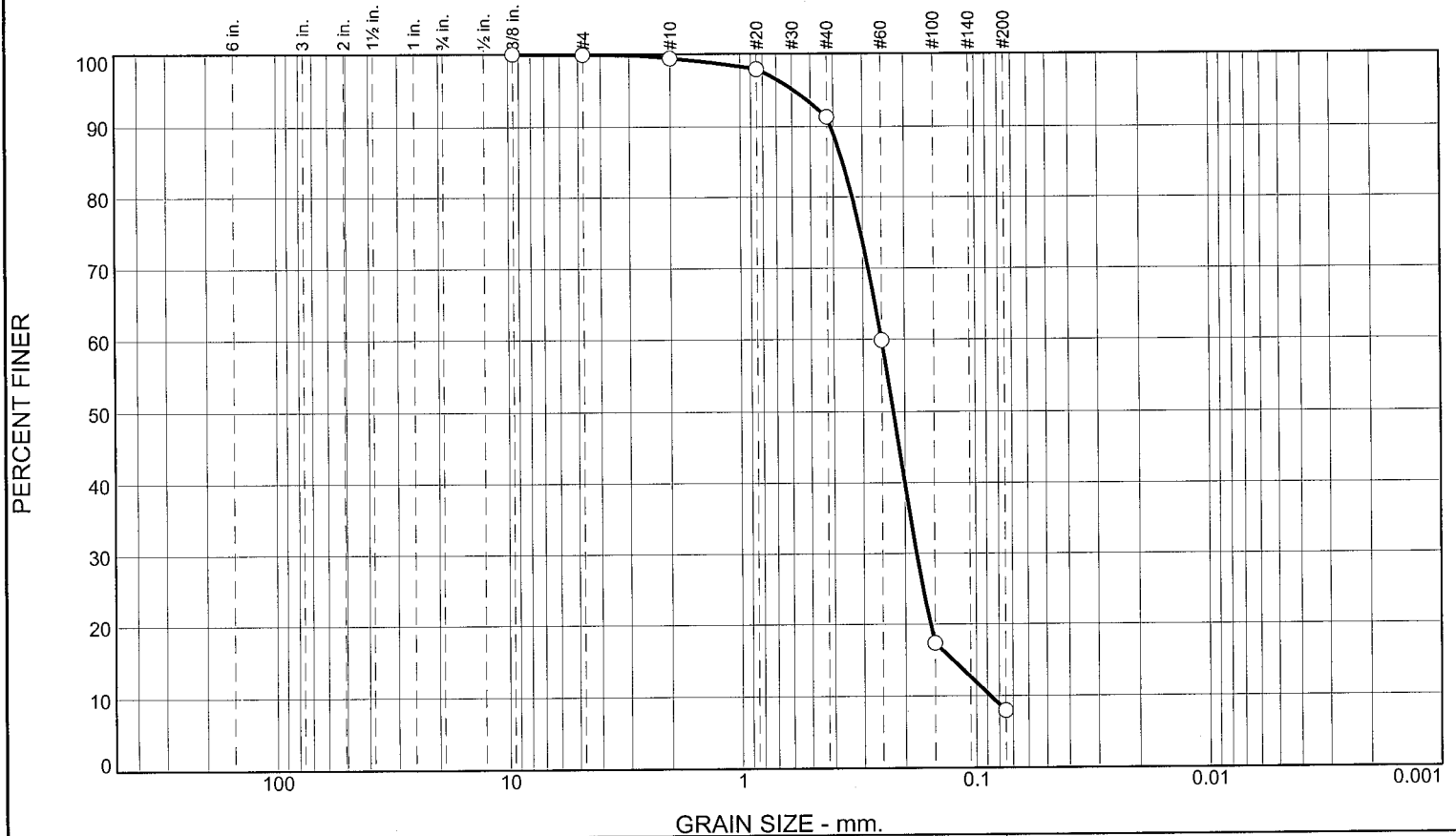
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-DK-04-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Dog Keys Pass				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-DK-04-10		LOCATION COORDINATES E = 980,375 N = 252,192		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 0 UNDISTURBED (UD)	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 37.5 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-15-10		STARTED 06-15-10 COMPLETED 06-15-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -35.4 Ft.			
8. TOTAL DEPTH OF BORING 19.7 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-35.4	0.0		CLAY, lean, dark gray (CL)	NS			
-45.4	10.0		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments, gray (SM)	A	Classification: SP-SM Color: 2.5Y 5/2-grayish brown D50: 0.2235 mm % Fines: 7.9		
				B	Classification: SP-SM Color: 2.5Y 5/2-grayish brown D50: 0.2245 mm % Fines: 8		
-52.6	17.2		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little silt, trace shell fragments, brown (SP)	C	Classification: SP-SM Color: 2.5Y 5/2-grayish brown D50: 0.2778 mm % Fines: 10.6		
-55.1	19.7		NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.5	8.1	83.4	7.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.4		
#20	97.9		
#40	91.3		
#60	59.9		
#100	17.4		
#200	7.9		

Material Description
SAND, (SP-SM), medium to fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.4090 D₈₅= 0.3639 D₆₀= 0.2503
D₅₀= 0.2235 D₃₀= 0.1787 D₁₅= 0.1262
D₁₀= 0.0874 C_u= 2.87 C_c= 1.46

Classification
USCS= SP-SM AASHTO=

Remarks
CADD CODE = CH10D965

* (no specification provided)

Location: USACE Sample # BI-DK-4-10A
Sample Number: TE Lab ID: 4549.28

Depth: 10.0 - 13.5 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

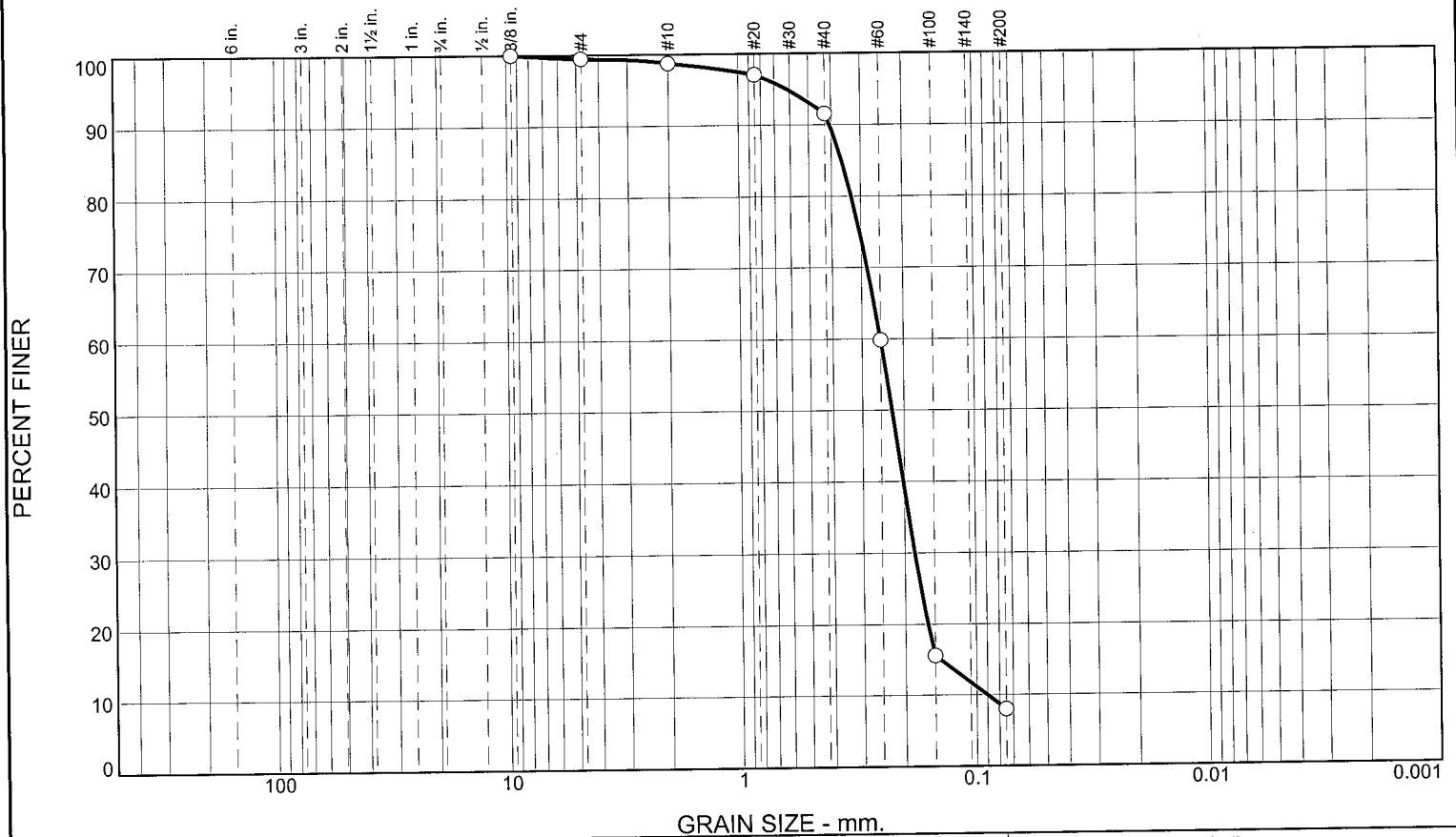
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.5	0.8	7.1	83.6	8.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.5		
#10	98.7		
#20	97.1		
#40	91.6		
#60	59.9		
#100	15.6		
#200	8.0		

* (no specification provided)

Material Description
SAND, (SP-SM), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.4059 D₈₅= 0.3611 D₆₀= 0.2504
 D₅₀= 0.2245 D₃₀= 0.1814 D₁₅= 0.1422
 D₁₀= 0.0902 C_u= 2.78 C_c= 1.46

Classification
 USCS= SP-SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-DK-4-10B
 Sample Number: TE Lab ID: 4549.29

Depth: 13.5 - 17.7 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

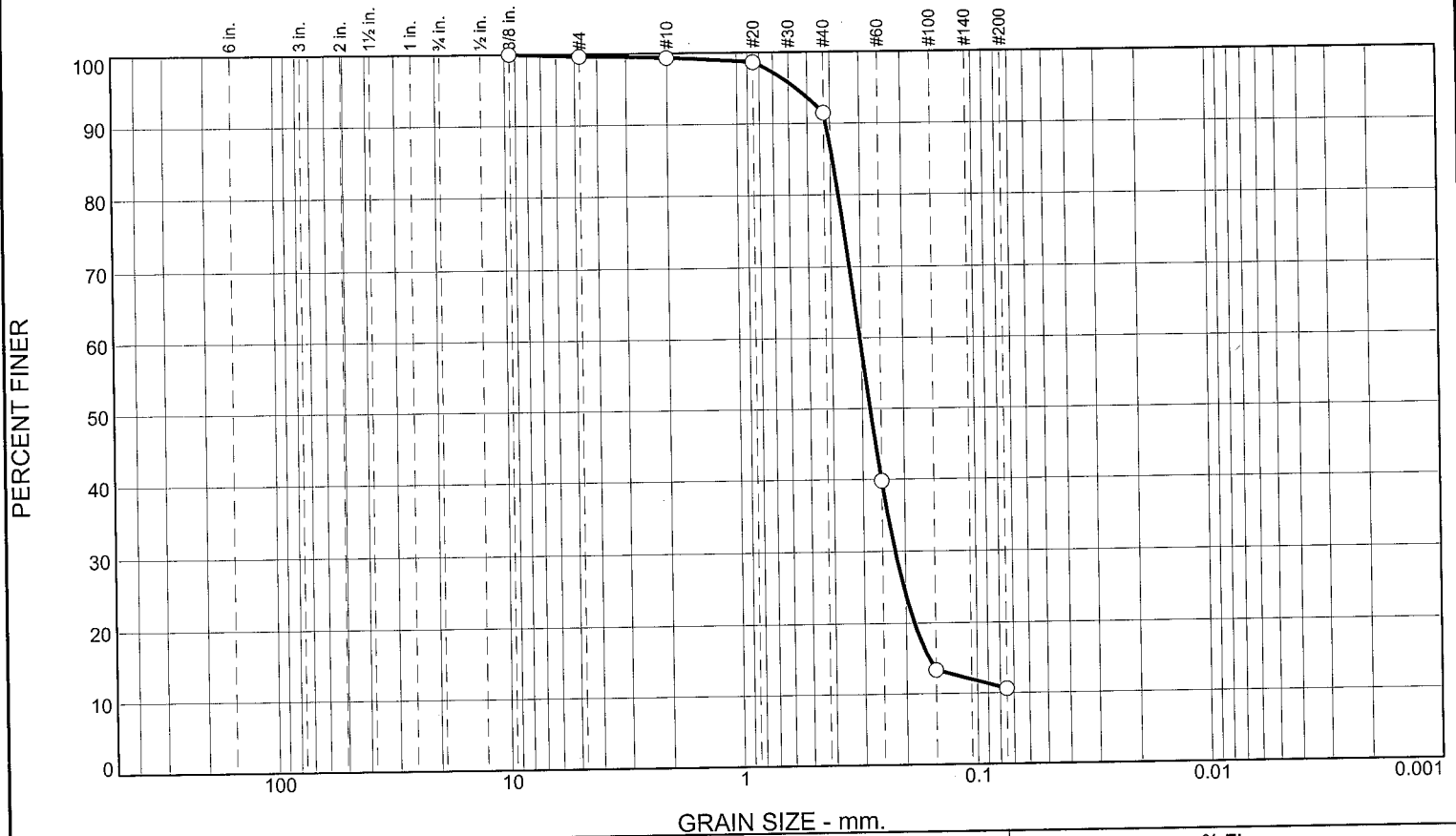
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.4	0.3	7.9	80.8	10.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.6		
#10	99.3		
#20	98.6		
#40	91.4		
#60	39.8		
#100	13.3		
#200	10.6		

* (no specification provided)

Material Description
SAND, (SP-SM), medium to fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.4163 D₈₅= 0.3907 D₆₀= 0.3051
D₅₀= 0.2778 D₃₀= 0.2207 D₁₅= 0.1602
D₁₀= C_u= C_c=

Classification
USCS= SP-SM AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-DK-4-10C
Sample Number: TE Lab ID: 4549.30

Depth: 17.2 - 19.7 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

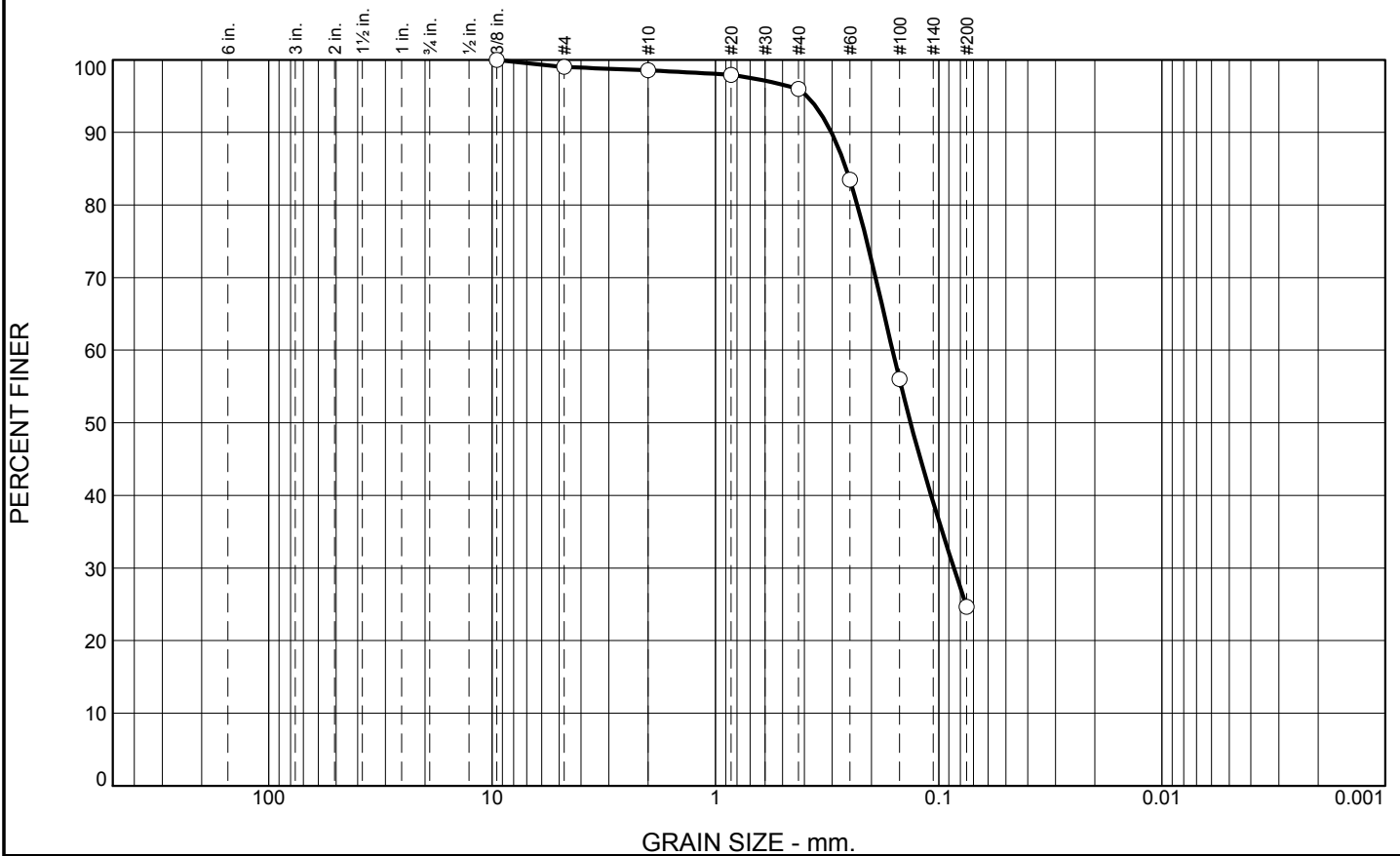
Boring Designation BI-DK-05-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Dog Keys Pass				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-DK-05-10		LOCATION COORDINATES E = 985,016 N = 249,497		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		UNDISTURBED (UD) 0	
6. THICKNESS OF OVERBURDEN N/A				14. WATER DEPTH 40 Ft.		15. DATE BORING 06-15-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -37.9 Ft.		COMPLETED 06-15-10	
8. TOTAL DEPTH OF BORING 19.5 Ft.				17. TOTAL RECOVERY FOR BORING 100%		18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist	
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-37.9	0.0		CLAY, lean, dark gray (CL)	NS			
-46.3	8.4		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments, gray (SM)				
-49.2	11.3		CLAY, lean, dark gray (CL)				
-55.0	17.1		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments, brown (SM)				
-57.4	19.5		NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Boring Designation BI-DK-06-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Dog Keys Pass				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-DK-06-10		LOCATION COORDINATES E = 986,043 N = 247,483		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 0 UNDISTURBED (UD)	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 42 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-02-10		STARTED 06-02-10 COMPLETED 06-02-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -40.2 Ft.			
8. TOTAL DEPTH OF BORING 20.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-40.2	0.0		CLAY, lean, dark gray (CL)				
-54.7	14.5			NS			
-56.7	16.5		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments, gray (SM)	A	Classification: SM Color: 2.5Y 4/2-dark grayish brown D50: 0.1337 mm % Fines: 24.6		
-60.2	20.0		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little silt, trace shell fragments, brown (SP)	B	Classification: SM Color: 2.5Y 4/2-dark grayish brown D50: 0.1703 mm % Fines: 12.9		
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.9	0.6	2.5	71.4	24.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.1		
#10	98.5		
#20	97.9		
#40	96.0		
#60	83.5		
#100	56.0		
#200	24.6		

* (no specification provided)

Material Description
SILTY SAND, (SM), fine grained, with clay pockets

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.3022 D₈₅= 0.2595 D₆₀= 0.1611
 D₅₀= 0.1337 D₃₀= 0.0855 D₁₅=
 D₁₀= C_u= C_c=

Classification
 USCS= SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-DK-6-10A
Sample Number: TE Lab ID: 4519.08

Depth: 14.5 - 16.5 (ft.)

Date: 6/12/10

Thompson Engineering

Mobile, Alabama

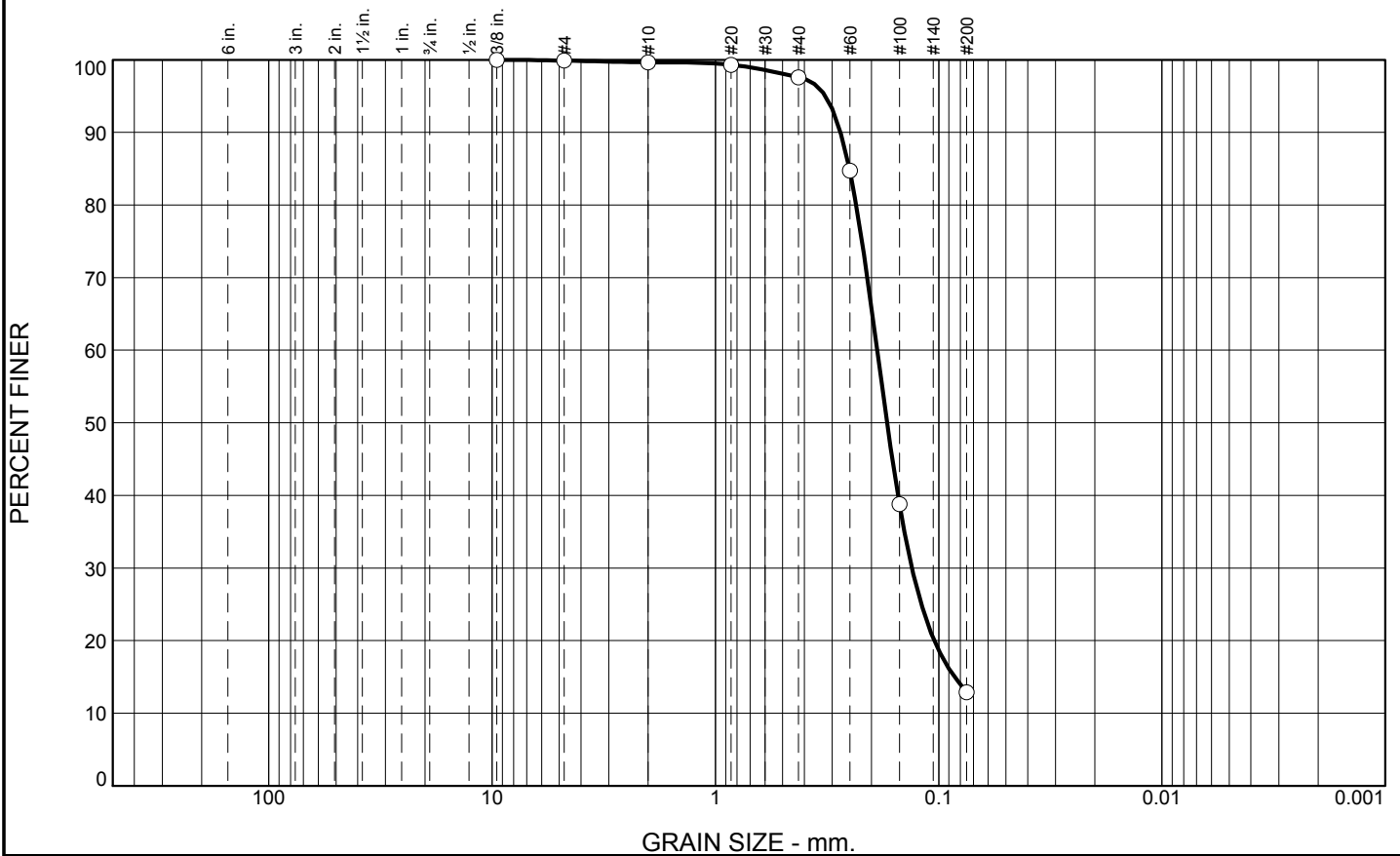
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.3	2.0	84.7	12.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.6		
#20	99.3		
#40	97.6		
#60	84.7		
#100	38.8		
#200	12.9		

* (no specification provided)

<u>Material Description</u>		
SILTY SAND, (SM), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.2752	D ₈₅ = 0.2511	D ₆₀ = 0.1886
D ₅₀ = 0.1703	D ₃₀ = 0.1319	D ₁₅ = 0.0849
D ₁₀ =	C _u =	C _c =
<u>Classification</u>		
USCS= SM	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-DK-6-10B
Sample Number: TE Lab ID: 4519.09

Depth: 16.5 - 20.0 (ft.)

Date: 6/12/10

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

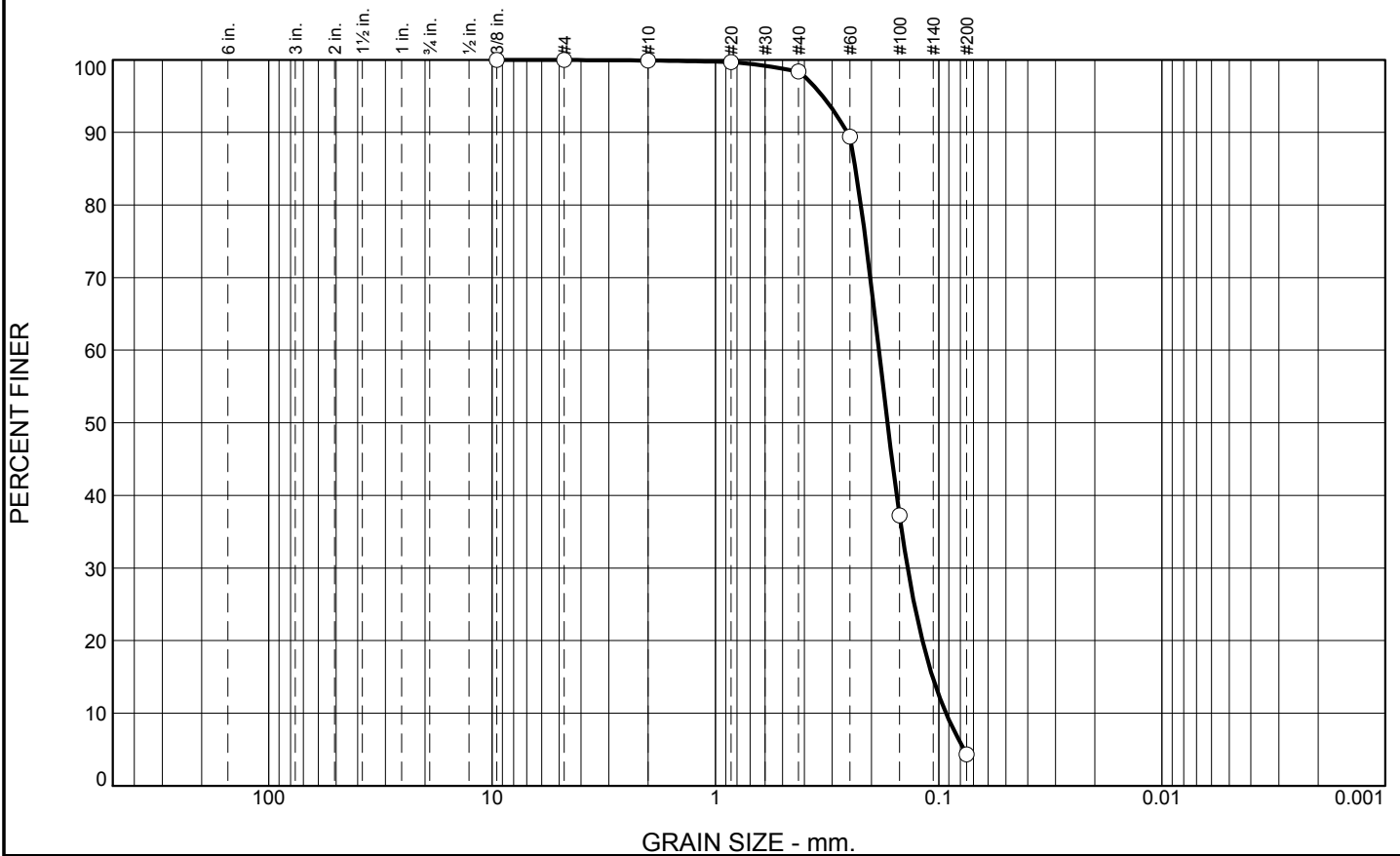
Tested By: R.Martin

Checked By: R.Byrd

Boring Designation BI-DK-07-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Dog Keys Pass				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-DK-07-10		LOCATION COORDINATES E = 985,518 N = 263,284		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 1		DISTURBED 1 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 26 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-02-10		STARTED 06-02-10 COMPLETED 06-02-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -25.1 Ft.			
8. TOTAL DEPTH OF BORING 15.9 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-25.1	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little silt, trace shell fragments, lt. gray (SP)	A	Classification: SP Color: 5Y 7/1-light gray D50: 0.1696 mm % Fines: 4.3		
-29.4	4.3						
			CLAY, lean, dark gray (CL)	NS			
-41.0	15.9						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	1.5	94.1	4.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.7		
#40	98.4		
#60	89.4		
#100	37.3		
#200	4.3		

* (no specification provided)

Material Description		
SAND, (SP), fine grained		
<div> <div> Atterberg Limits PL= LL= PI= </div> <div> Coefficients D₉₀= 0.2565 D₈₅= 0.2359 D₆₀= 0.1853 D₅₀= 0.1696 D₃₀= 0.1378 D₁₅= 0.1066 D₁₀= 0.0928 C_u= 2.00 C_c= 1.10 </div> <div> Classification USCS= SP AASHTO= </div> <div> Remarks CADD CODE = CH10D965 </div> </div>		

Location: USACE Sample # BI-DK-7-10A
Sample Number: TE Lab ID: 4519.07

Depth: 0.0 - 4.3 (ft.)

Date: 6/12/10

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

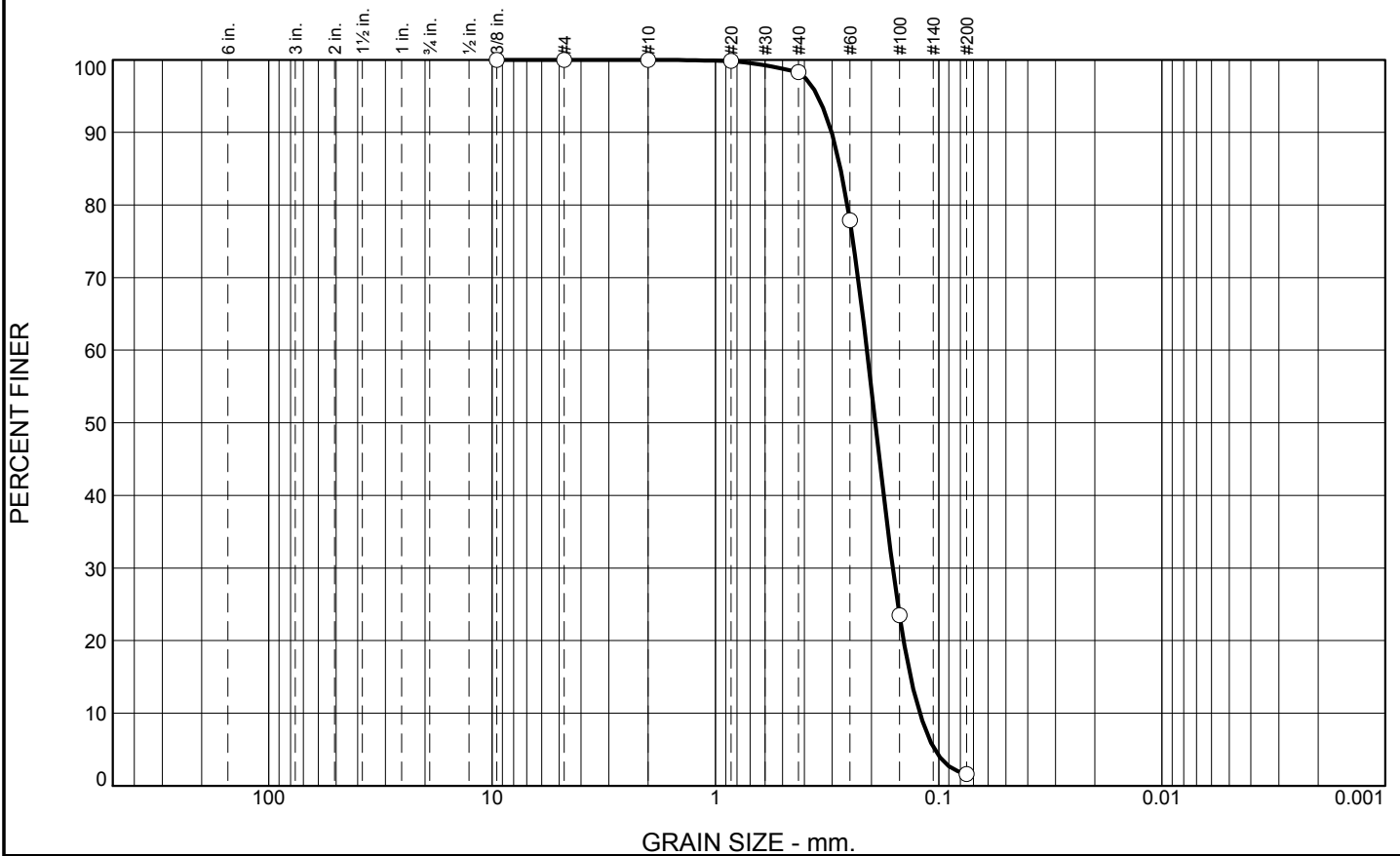
Tested By: R.Martin

Checked By: R.Byrd

Boring Designation BI-DK-08-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Dog Keys Pass				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-DK-08-10		LOCATION COORDINATES E = 997,087 N = 261,959		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 17 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-02-10		STARTED 06-02-10 COMPLETED 06-02-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -15.9 Ft.			
8. TOTAL DEPTH OF BORING 12.4 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-15.9	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little silt, trace shell fragments, lt. gray (SP)	A	Classification: SP Color: 5Y 7/1-light gray D50: 0.1923 mm % Fines: 1.6		
				B	Classification: SP-SM Color: 5Y 7/1-light gray D50: 0.1542 mm % Fines: 7		
-26.4	10.5						
-28.3	12.4		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments, gray (SM)	C	Classification: SP-SM Color: 2.5Y 6/2-light brownish gray D50: 0.1154 mm % Fines: 9.9		
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.7	96.7	1.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	98.3		
#60	77.9		
#100	23.5		
#200	1.6		

* (no specification provided)

Material Description		
SAND, (SP), fine grained		
<div> <div> Atterberg Limits LL= PI= </div> <div> Coefficients D₉₀= 0.3017 D₅₀= 0.1923 D₁₀= 0.1215 </div> <div> D₈₅= 0.2752 D₃₀= 0.1607 C_u= 1.73 </div> <div> D₆₀= 0.2097 D₁₅= 0.1336 C_c= 1.01 </div> </div>		
Classification USCS= SP AASHTO=		
Remarks CADD CODE = CH10D965		

Location: USACE Sample # BI-DK-8-10A
Sample Number: TE Lab ID: 4519.04

Depth: 0.0 - 5.0 (ft.)

Date: 6/12/10

Thompson Engineering

Mobile, Alabama

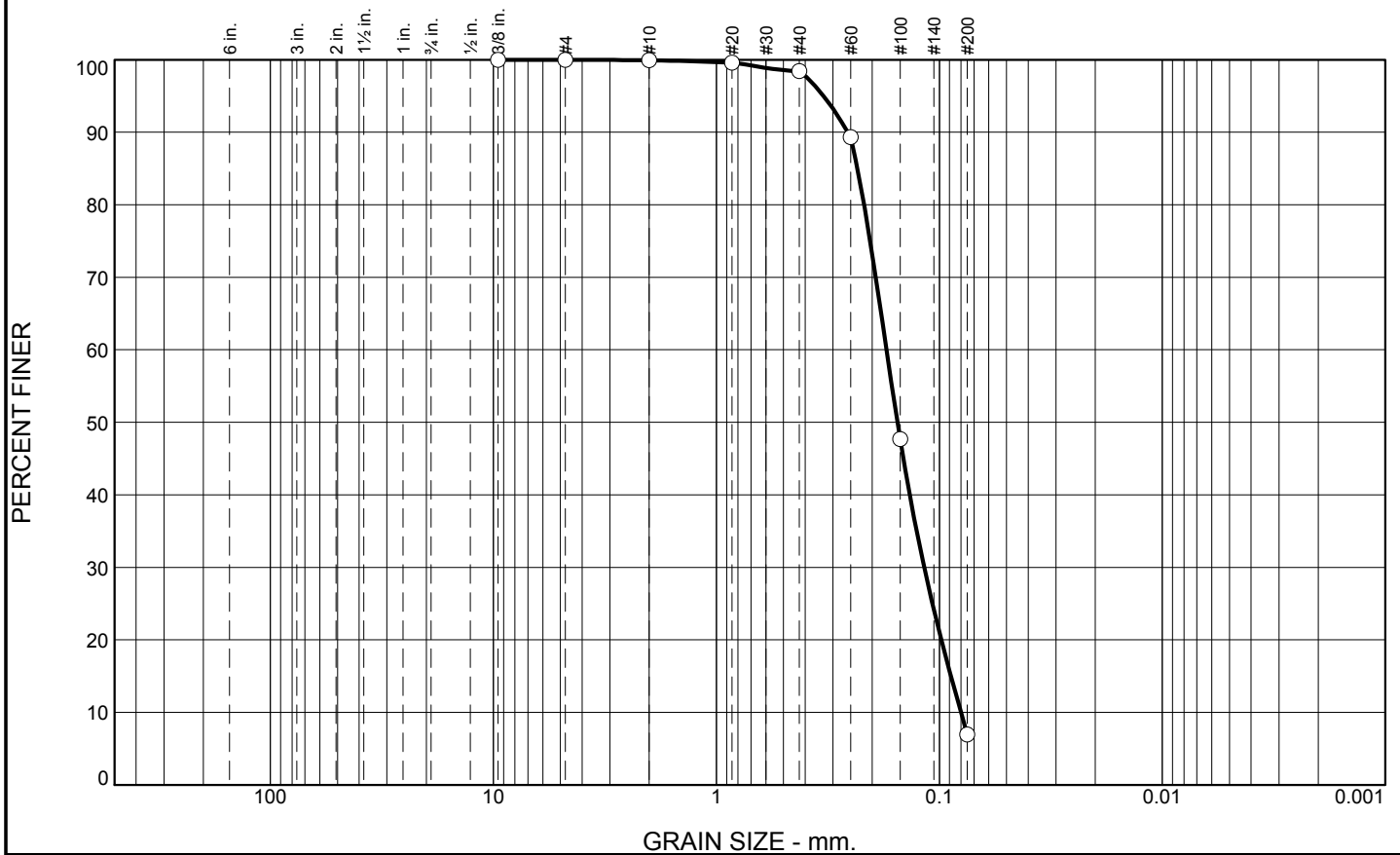
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	1.5	91.4	7.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.6		
#40	98.4		
#60	89.3		
#100	47.7		
#200	7.0		

* (no specification provided)

<u>Material Description</u>		
SAND, (SP-SM), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.2575	D ₈₅ = 0.2329	D ₆₀ = 0.1727
D ₅₀ = 0.1542	D ₃₀ = 0.1170	D ₁₅ = 0.0888
D ₁₀ = 0.0800	C _u = 2.16	C _c = 0.99
<u>Classification</u>		
USCS= SP-SM	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-DK-8-10B
Sample Number: TE Lab ID: 4519.05

Depth: 5.0 - 10.5 (ft.)

Date: 6/12/10

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

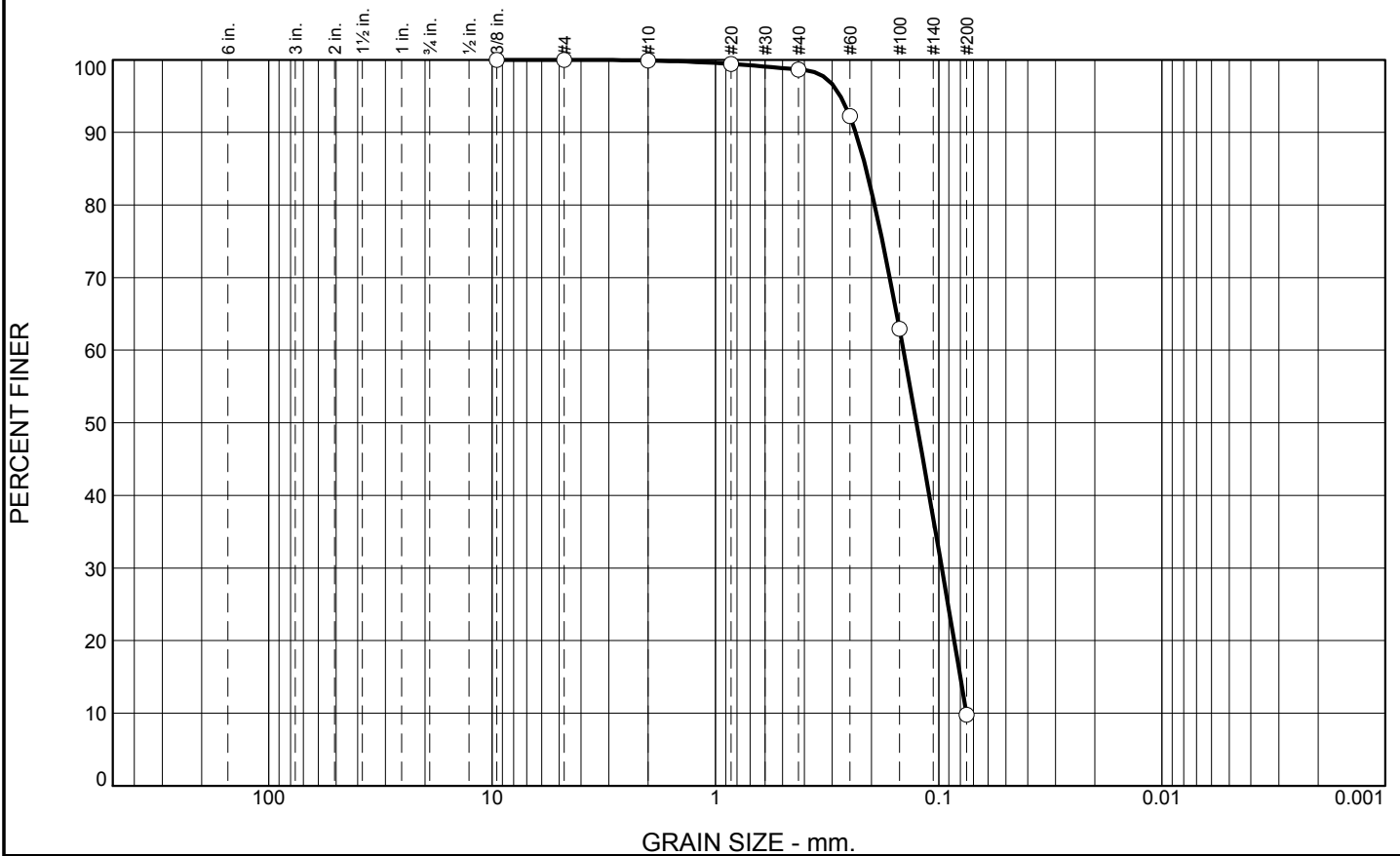
Tested By: R.Martin

Checked By: R.Byrd

Boring Designation BI-DK-09-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Dog Keys Pass				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-DK-09-10		LOCATION COORDINATES E = 997,087 N = 261,959		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 1 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 31 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-02-10		STARTED 06-02-10 COMPLETED 06-02-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -29.8 Ft.			
8. TOTAL DEPTH OF BORING 17.9 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-29.8	0.0						
			SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments, gray (SM)	A	Classification: SP-SM Color: 2.5Y 6/2-light brownish gray D50: 0.1257 mm % Fines: 9.8		
-32.6	2.8						
			CLAY, lean, dark gray (CL)	NS			
-47.7	17.9						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	1.2	88.9	9.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.4		
#40	98.7		
#60	92.2		
#100	63.0		
#200	9.8		

* (no specification provided)

Material Description

SAND, (SP-SM), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.2356

D₈₅= 0.2118

D₆₀= 0.1440

D₅₀= 0.1257

D₃₀= 0.0969

D₁₅= 0.0801

D₁₀= 0.0752

C_u= 1.92

C_c= 0.87

Classification

USCS= SP-SM

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-DK-9-10BA
Sample Number: TE Lab ID: 4519.03

Depth: 0.0 - 2.8 (ft.)

Date: 6/12/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project


Project No: 10-2123-0009

Figure

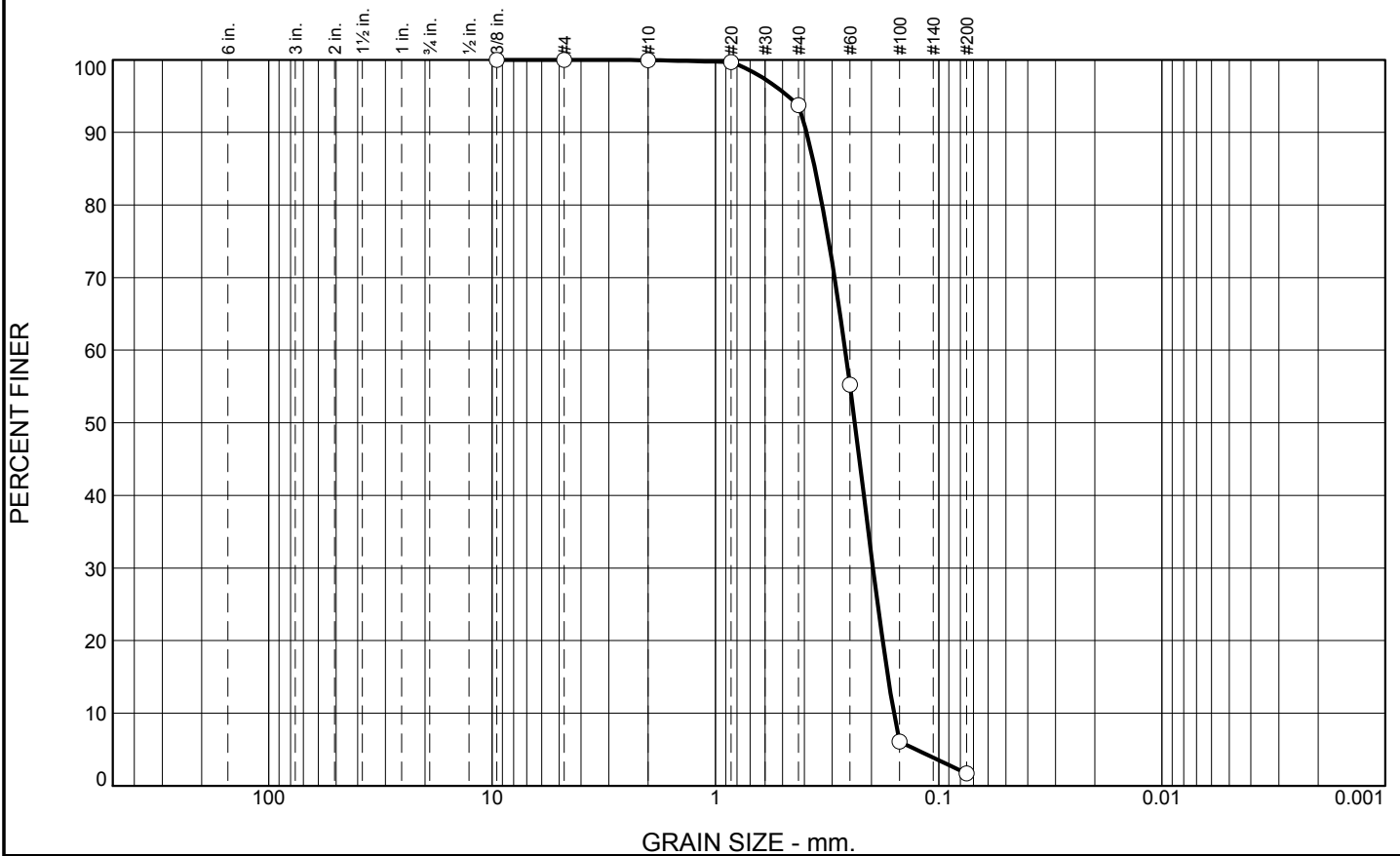
Tested By: R.Martin

Checked By: R.Byrd

Boring Designation BI-DK-10-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Dog Keys Pass				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-DK-10-10		LOCATION COORDINATES E = 1,000,389 N = 263,462		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 0 UNDISTURBED (UD)	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 13 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-08-10		STARTED 06-08-10 COMPLETED 06-08-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -11.1 Ft.			
8. TOTAL DEPTH OF BORING 13.9 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-11.1	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, trace organic matter, trace shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.2376 mm % Fines: 1.7		
				B	Classification: SP Color: 5Y 7/1-light gray D50: 0.1972 mm % Fines: 3.9		
				C	Classification: SP-SM Color: 5Y 7/1-light gray D50: 0.1844 mm % Fines: 5.9		
-25.0	13.9						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	6.2	92.0	1.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.7		
#40	93.7		
#60	55.3		
#100	6.1		
#200	1.7		

<u>Material Description</u>		
SAND, (SP), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.3912	D ₈₅ = 0.3581	D ₆₀ = 0.2623
D ₅₀ = 0.2376	D ₃₀ = 0.1970	D ₁₅ = 0.1688
D ₁₀ = 0.1587	C _u = 1.65	C _c = 0.93
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

* (no specification provided)

Location: USACE Sample # BI-DK-11-10A
Sample Number: TE Lab ID: 4538.66

Depth: 0.0 - 5.0 (ft.)

Date: 6/26/10

This sample is actually BI-DK-10-10A

Thompson Engineering
Mobile, Alabama

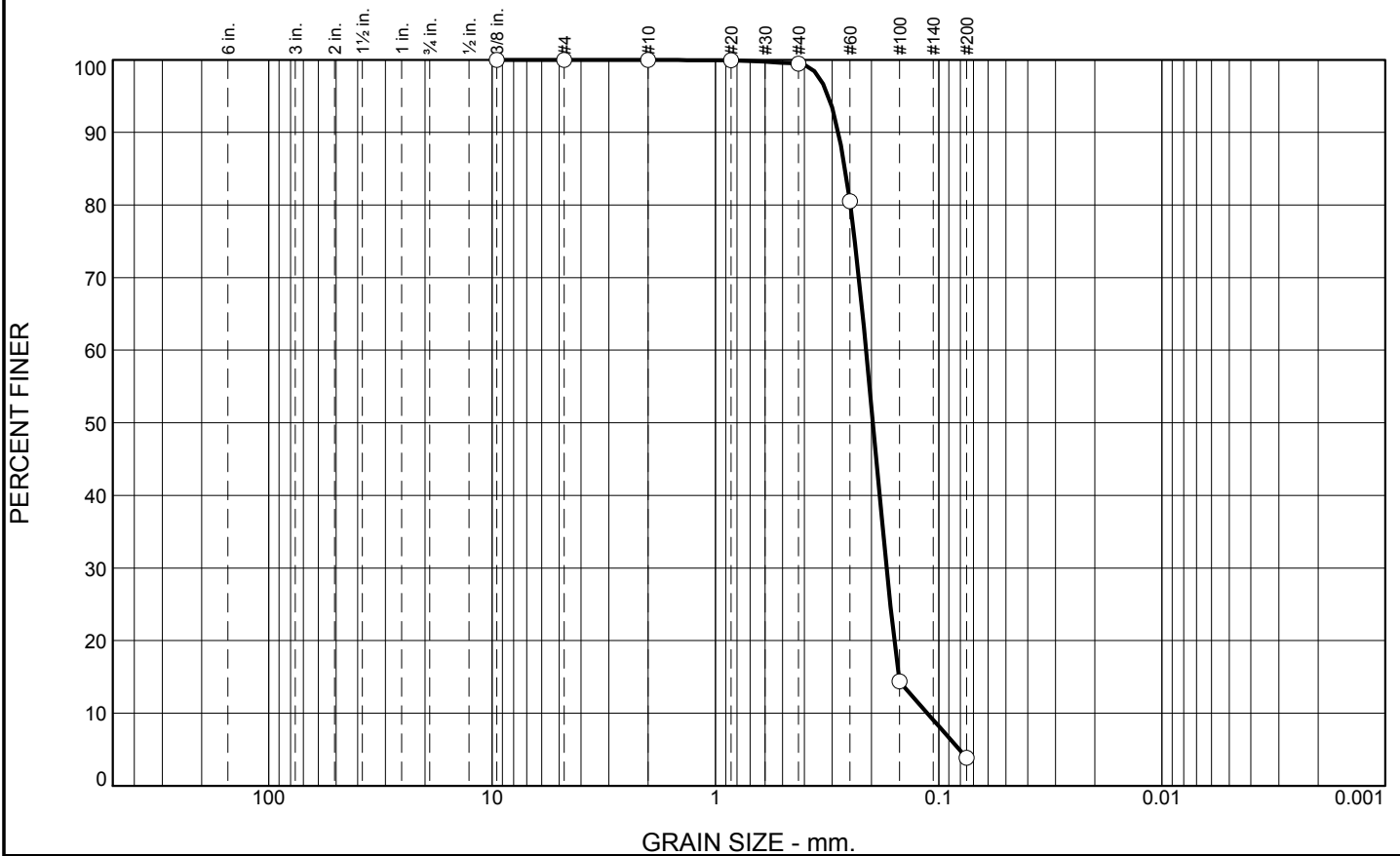
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.6	95.5	3.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	99.4		
#60	80.5		
#100	14.4		
#200	3.9		

* (no specification provided)

<u>Material Description</u>		
SAND, (SP), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.2814	D ₈₅ = 0.2626	D ₆₀ = 0.2115
D ₅₀ = 0.1972	D ₃₀ = 0.1712	D ₁₅ = 0.1510
D ₁₀ = 0.1125	C _u = 1.88	C _c = 1.23
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

This sample is actually BI-DK-10-10B

Location: USACE Sample # BI-DK-11-10B
Sample Number: TE Lab ID: 4538.67

Depth: 5.0 - 10.0 (ft.)

Date: 6/26/10

Thompson Engineering
Mobile, Alabama

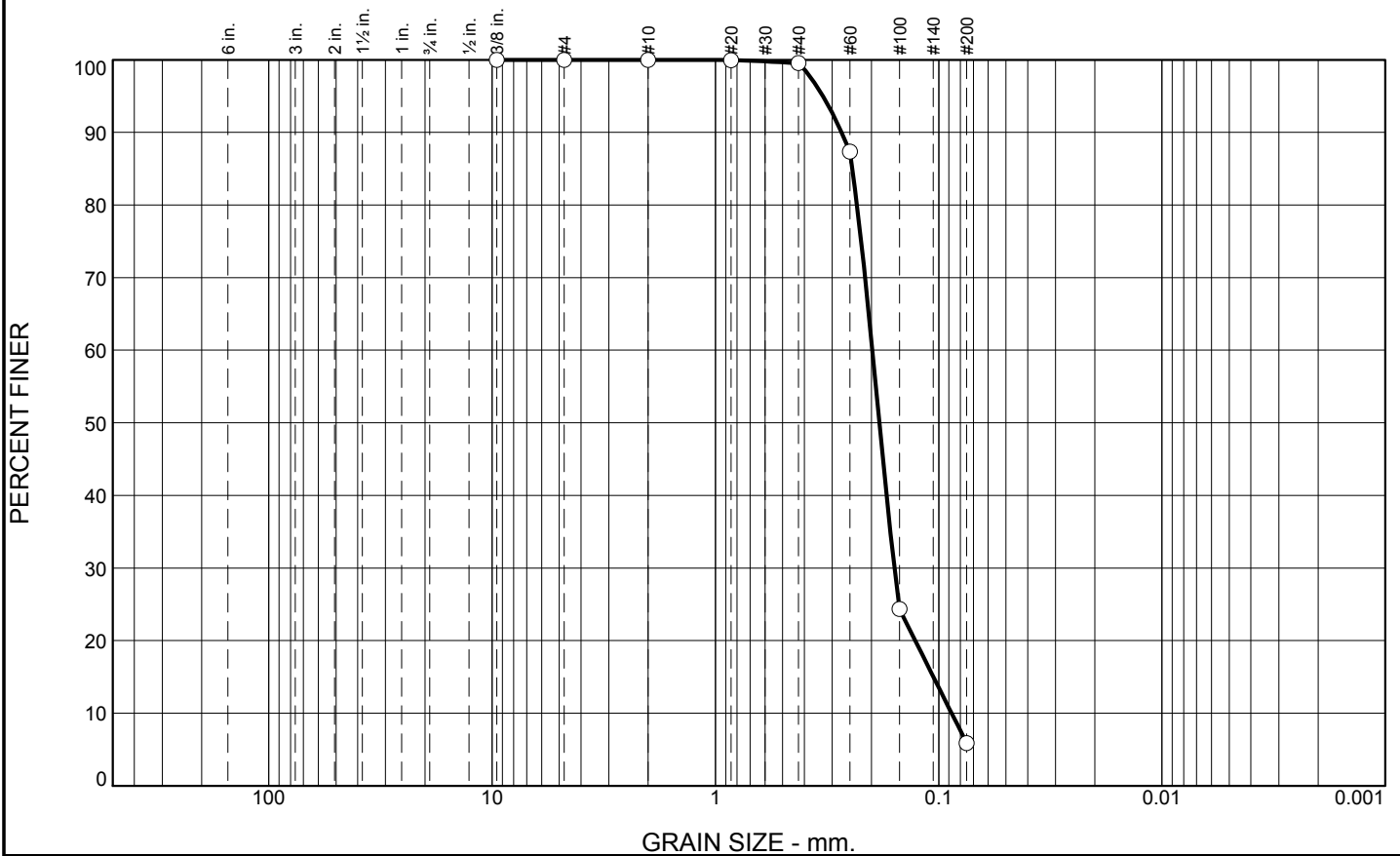
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.5	93.6	5.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	100.0		
#40	99.5		
#60	87.3		
#100	24.4		
#200	5.9		

* (no specification provided)

Material Description		
SAND, (SP-SM), fine grained		
<div> <div> Atterberg Limits PL= LL= PI= </div> <div> Coefficients D₉₀= 0.2723 D₈₅= 0.2437 D₆₀= 0.1983 D₅₀= 0.1844 D₃₀= 0.1580 D₁₅= 0.1056 D₁₀= 0.0876 C_u= 2.26 C_c= 1.44 </div> <div> Classification USCS= SP-SM AASHTO= </div> <div> Remarks CADD CODE = CH10D965 </div> </div>		

This sample is actually BI-DK-10-10C

Location: USACE Sample # **BI-DK-11-10C**
 Sample Number: TE Lab ID: 4538.68

Depth: 10.0 - 13.9 (ft.)

Date: 6/26/10

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

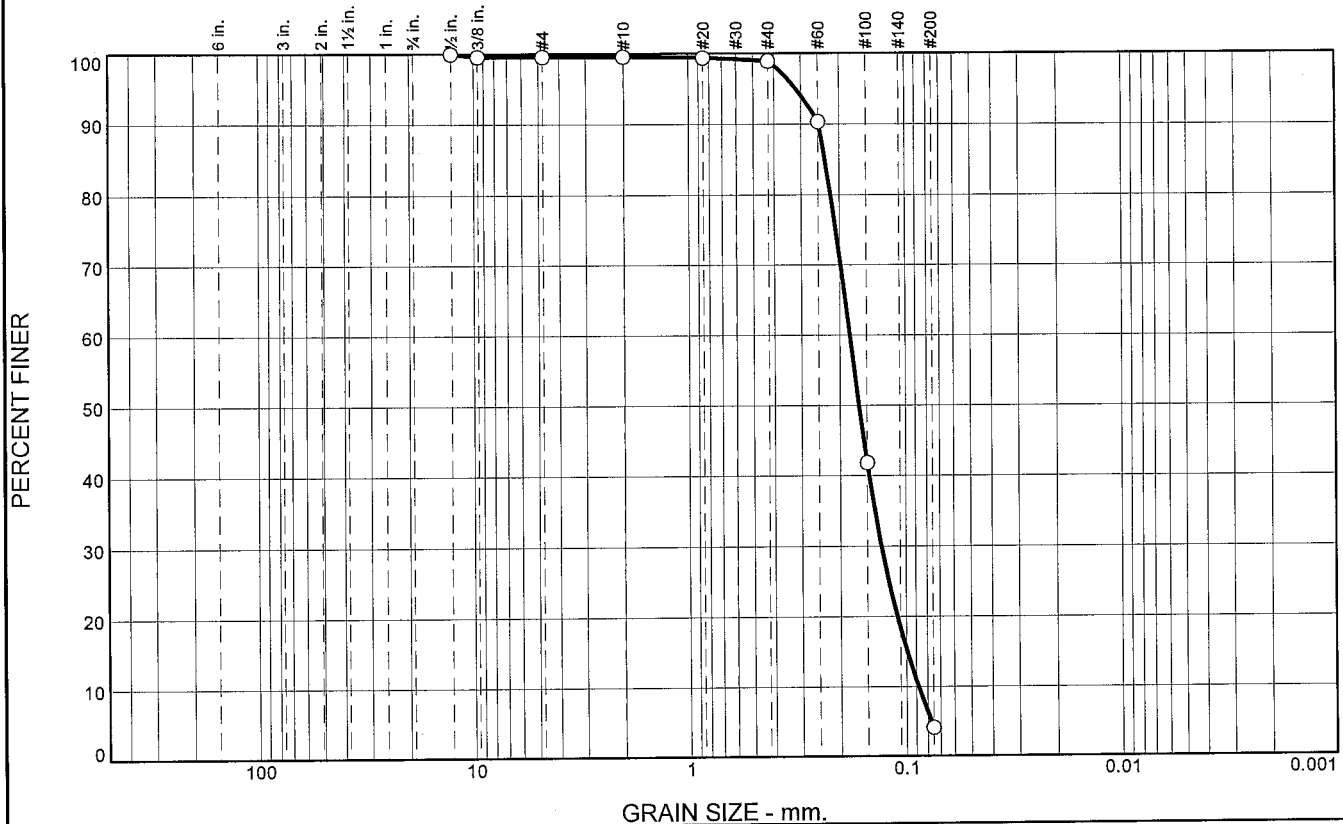
Tested By: R.Martin

Checked By: R.Byrd

Boring Designation BI-DK-11-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Dog Keys Pass				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-DK-11-10		LOCATION COORDINATES E = 1,000,308 N = 262,186		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		14. WATER DEPTH 12.5 Ft.	
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-08-10		STARTED 06-08-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -10.9 Ft.		COMPLETED 06-08-10	
8. TOTAL DEPTH OF BORING 8.6 Ft.				17. TOTAL RECOVERY FOR BORING 100%		18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist	
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-10.9	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, trace organic matter, trace shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.1633 mm % Fines: 4.1		
				B	Classification: SP Color: 5Y 7/1-light gray D50: 0.1863 mm % Fines: 3.3		
-19.5	8.6		NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.5	0.0	0.6	94.8	4.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.500	100.0		
.375	99.5		
#4	99.5		
#10	99.5		
#20	99.4		
#40	98.9		
#60	90.3		
#100	41.8		
#200	4.1		

* (no specification provided)

Material Description
SAND, (SP), fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.2487 D₈₅= 0.2321 D₆₀= 0.1797
D₅₀= 0.1633 D₃₀= 0.1295 D₁₅= 0.0991
D₁₀= 0.0879 C_u= 2.04 C_c= 1.06

Classification
USCS= SP AASHTO=

Remarks
CADD CODE = VH10D965

Location: USACE Sample # BI-DK-10-10A
Sample Number: TE Lab ID: 4538.69

Depth: 0.0 - 4.3 (ft.)

Date: 6/26/10

This sample is actually BI-DK-11-10A

Thompson Engineering
Mobile, Alabama

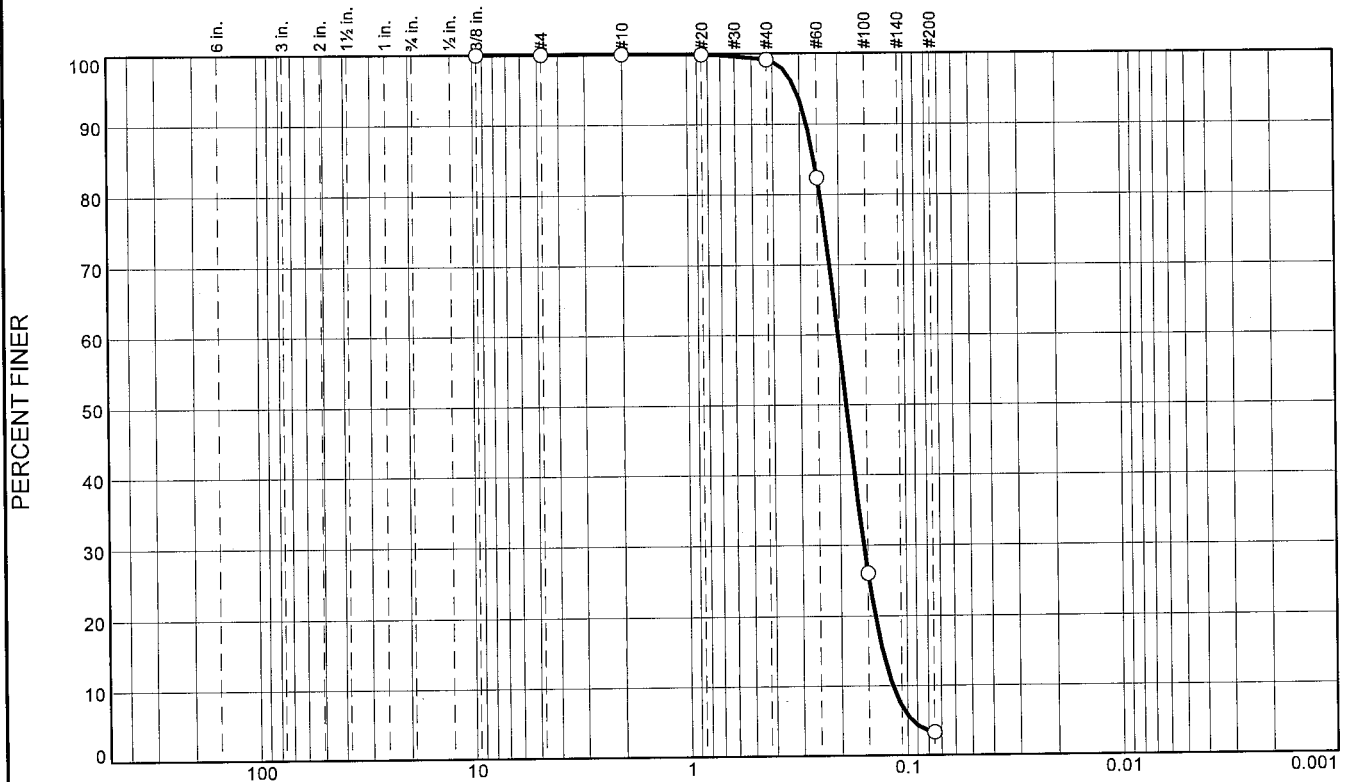
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.9	95.8	3.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	99.1		
#60	82.4		
#100	26.0		
#200	3.3		

* (no specification provided)

Material Description

SAND, (SP), fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.2795 D₈₅= 0.2585 D₆₀= 0.2023
D₅₀= 0.1863 D₃₀= 0.1563 D₁₅= 0.1292
D₁₀= 0.1164 C_u= 1.74 C_c= 1.04

Classification

USCS= SP AASHTO=

Remarks

CADD CODE = CH10D965

This sample is actually BI-DK-11-10B

Location: USACE Sample # BI-DK-10-10B
Sample Number: TE Lab ID: 4538.03

Depth: 4.3 - 8.6 (ft.)

Date: 6/19/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

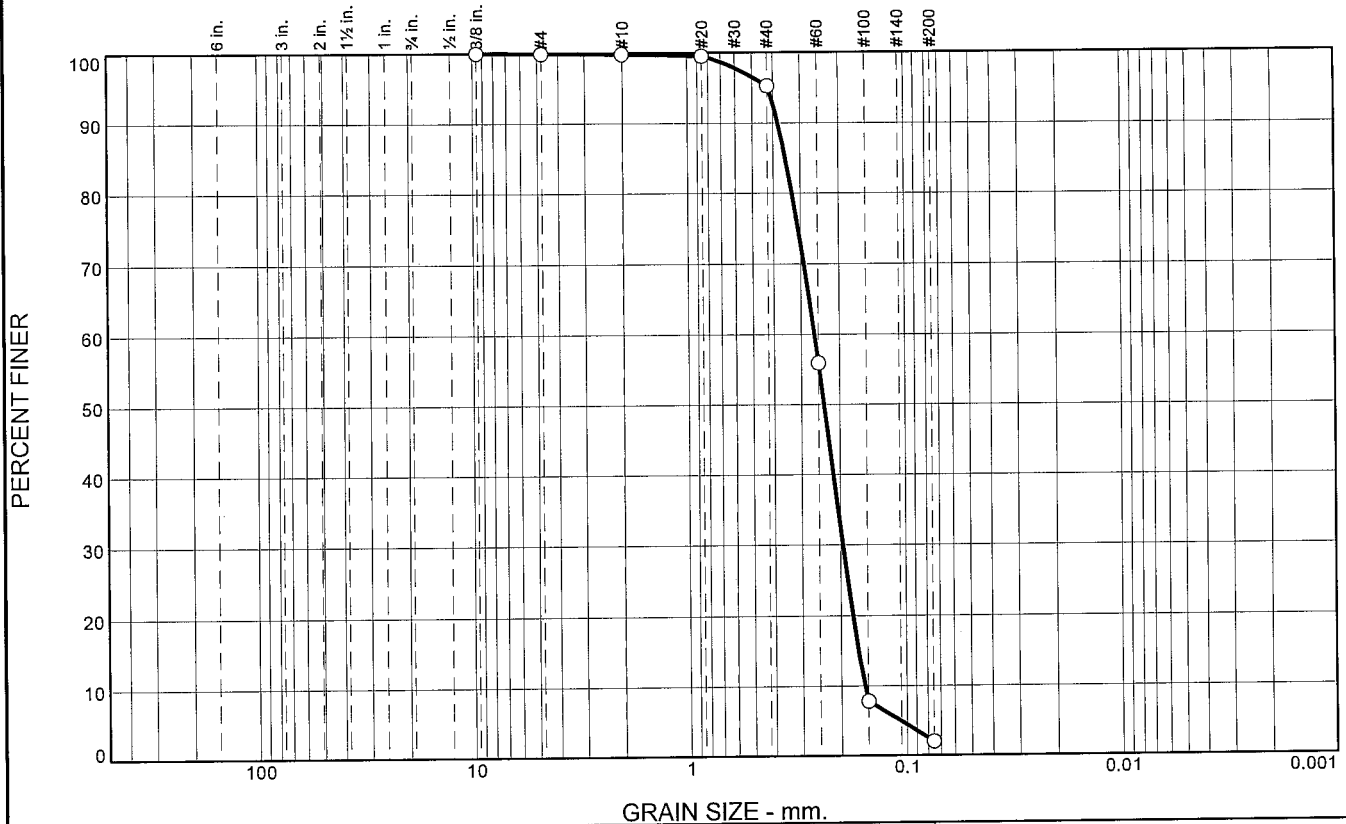
Boring Designation BI-DK-12-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Dog Keys Pass				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-DK-12-10		LOCATION COORDINATES E = 1,013,395 N = 262,823		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 0 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 30 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING		STARTED 06-07-10 COMPLETED 06-07-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -29.0 Ft.			
8. TOTAL DEPTH OF BORING 18.7 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-29.0	0.0		CLAY, lean, dark gray (CL)	NS			
-43.2	14.2						
-45.2	16.2		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments, gray (SM)				
-47.7	18.7		CLAY, lean, dark gray (CL)				
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Boring Designation BI-DK-13-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Dog Keys Pass				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-DK-13-10		LOCATION COORDINATES E = 995,405 N = 284,859		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		BEARING		13. TOTAL NUMBER CORE BOXES	
6. THICKNESS OF OVERBURDEN N/A				14. WATER DEPTH 13 Ft.			
7. DEPTH DRILLED INTO ROCK N/A				15. DATE BORING 06-07-10		STARTED 06-07-10 COMPLETED 06-07-10	
8. TOTAL DEPTH OF BORING 12.5 Ft.				16. ELEVATION TOP OF BORING -12.5 Ft.			
				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-12.5	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, trace shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.2361 mm % Fines: 2		
				B	Classification: SM Color: 5Y 7/1-light gray D50: 0.2167 mm % Fines: 13.4		
-23.1	10.6						
			CLAY, lean, dark gray (CL)	NS			
-25.0	12.5						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.1	4.6	93.2	2.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.8		
#20	99.5		
#40	95.2		
#60	55.9		
#100	7.8		
#200	2.0		

* (no specification provided)

Material Description

SAND, (SP), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.3810

D₈₅= 0.3513

D₆₀= 0.2605

D₅₀= 0.2361

D₃₀= 0.1950

D₁₅= 0.1658

D₁₀= 0.1551

C_u= 1.68

C_c= 0.94

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-DK-13-10A
Sample Number: TE Lab ID: 4538.63

Depth: 0.0 - 5.0 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

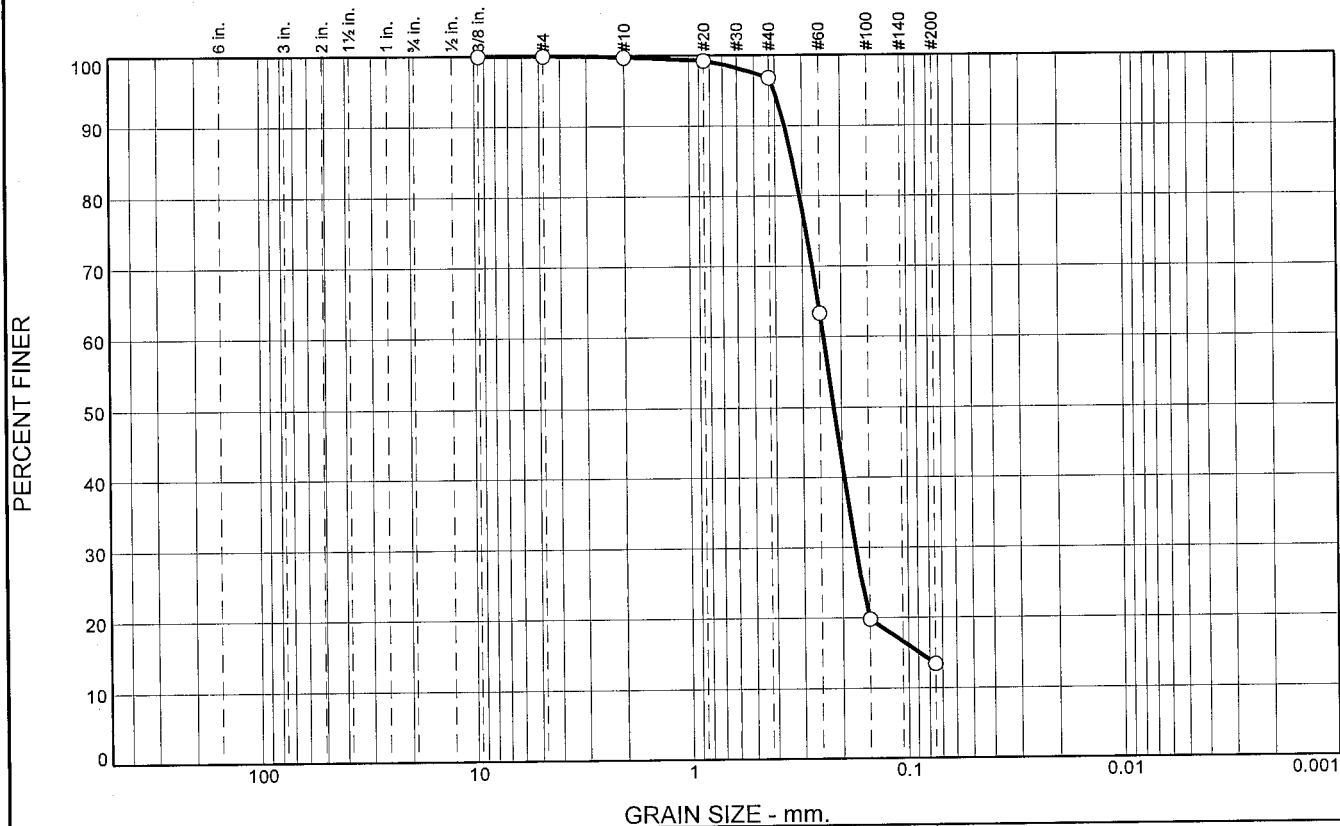
Project No: 10-2123-0009

Figure

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	2.9	83.5	13.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.8		
#20	99.3		
#40	96.9		
#60	63.3		
#100	19.8		
#200	13.4		

* (no specification provided)

Material Description
SILTY SAND, (SM), medium to fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.3617 D₈₅= 0.3317 D₆₀= 0.2410
D₅₀= 0.2167 D₃₀= 0.1736 D₁₅= 0.0893
D₁₀= C_u= C_c=

Classification
USCS= SM AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-DK-13-10B
Sample Number: TE Lab ID: 4538.02

Depth: 5.0 - 10.6 (ft.)

Date: 6/19/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Figure

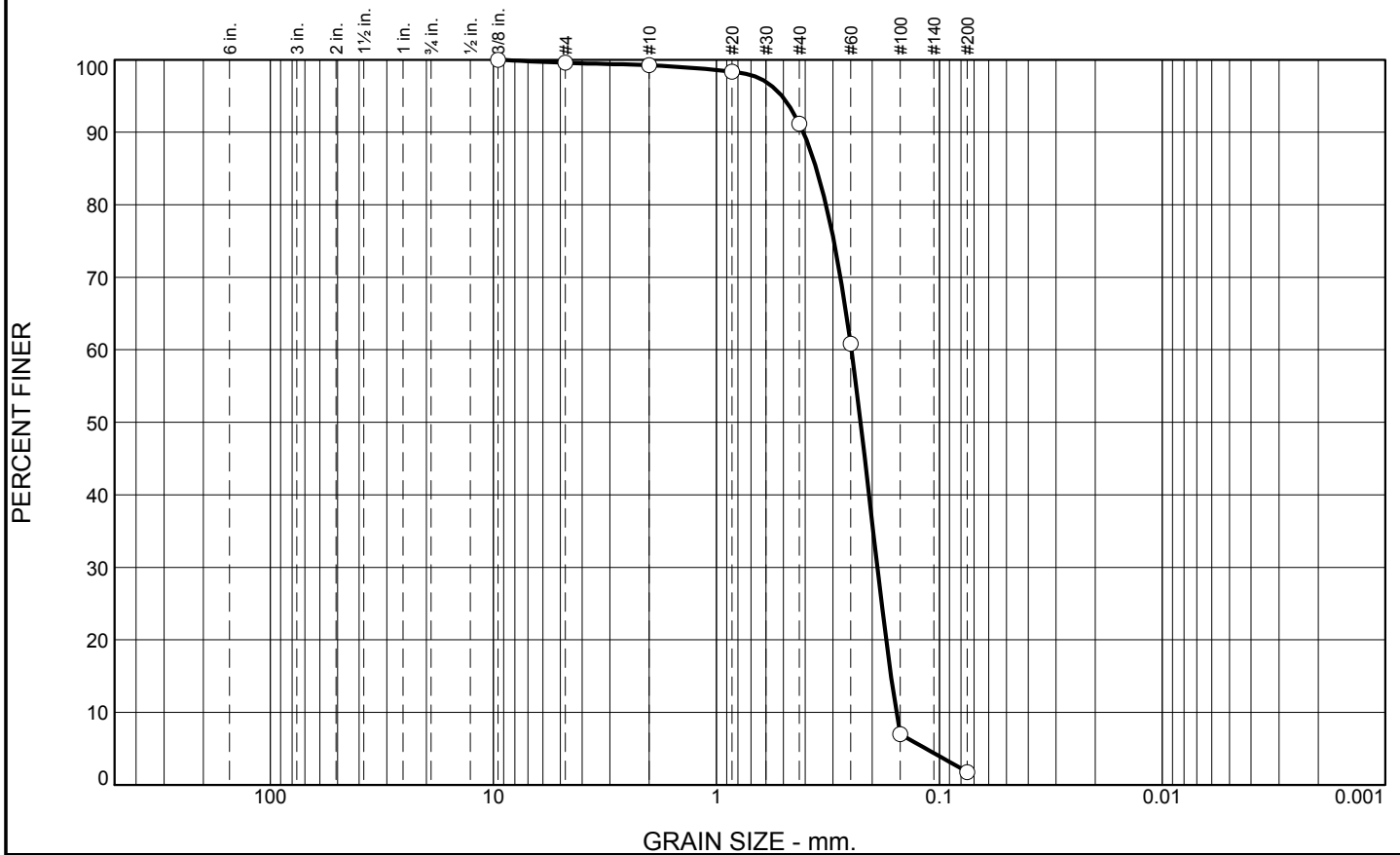
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-DK-14-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Dog Keys Pass				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-DK-14-10		LOCATION COORDINATES E = 999,545 N = 264,596		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 15.5 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-07-10		STARTED 06-07-10 COMPLETED 06-07-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -14.9 Ft.			
8. TOTAL DEPTH OF BORING 17.1 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-14.9	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, trace shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.2256 mm % Fines: 1.8		
				B	Classification: SP Color: 5Y 7/1-light gray D50: 0.2119 mm % Fines: 3.1		
-22.9	8.0		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, gray (SM)	C	Classification: SM Color: 2.5Y 6/2-light brownish gray D50: 0.156 mm % Fines: 15.4		
-26.3	11.4						
			CLAY, lean, dark gray (CL)	NS			
-32.0	17.1						
		NOTES:					
		1. Soils are field visually classified in accordance with the Unified Soils Classification System.					
		2. NS = Sample not submitted for laboratory analysis from this interval.					

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.4	0.4	8.0	89.4	1.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.6		
#10	99.2		
#20	98.3		
#40	91.2		
#60	60.8		
#100	7.0		
#200	1.8		

* (no specification provided)

<u>Material Description</u>		
SAND, (SP), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.4080	D ₈₅ = 0.3563	D ₆₀ = 0.2479
D ₅₀ = 0.2256	D ₃₀ = 0.1897	D ₁₅ = 0.1648
D ₁₀ = 0.1559	C _u = 1.59	C _c = 0.93
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-DK-14-10A
Sample Number: TE Lab ID: 4538.60

Depth: 0.0 - 4.0 (ft.)

Date: 6/26/10

Thompson Engineering
Mobile, Alabama

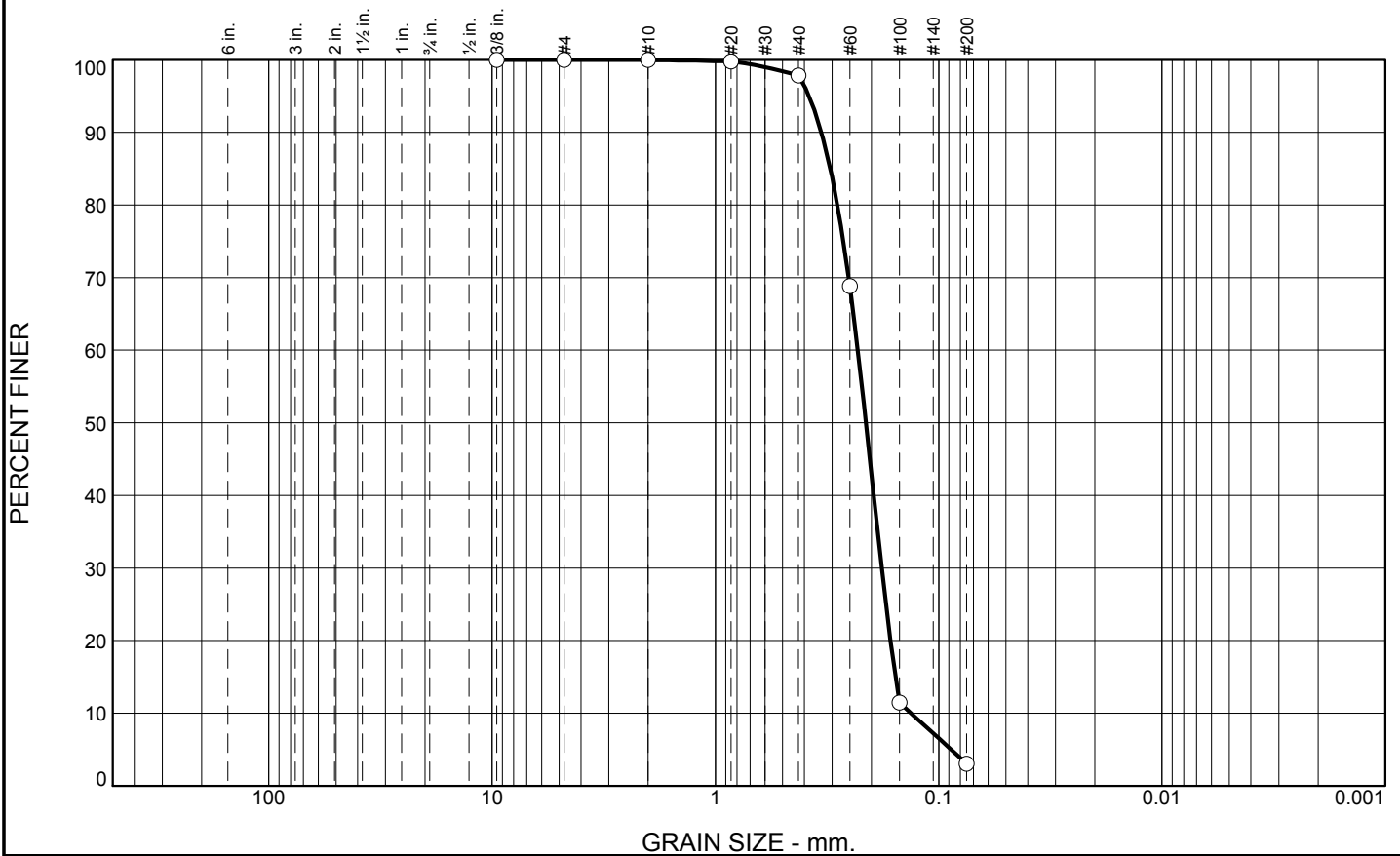
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	2.2	94.7	3.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.8		
#40	97.8		
#60	68.8		
#100	11.5		
#200	3.1		

* (no specification provided)

Material Description		
SAND, (SP), fine grained		
<div> <div> Atterberg Limits LL= PI= </div> <div> Coefficients D₉₀= 0.3351 D₅₀= 0.2119 D₁₀= 0.1330 </div> <div> D₈₅= 0.3057 D₃₀= 0.1800 C_u= 1.73 </div> <div> D₆₀= 0.2304 D₁₅= 0.1563 C_c= 1.06 </div> </div>		
Classification USCS= SP AASHTO=		
Remarks CADD CODE = CH10D965		

Location: USACE Sample # BI-DK-14-10B
 Sample Number: TE Lab ID: 4538.61

Depth: 4.0 - 8.0 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

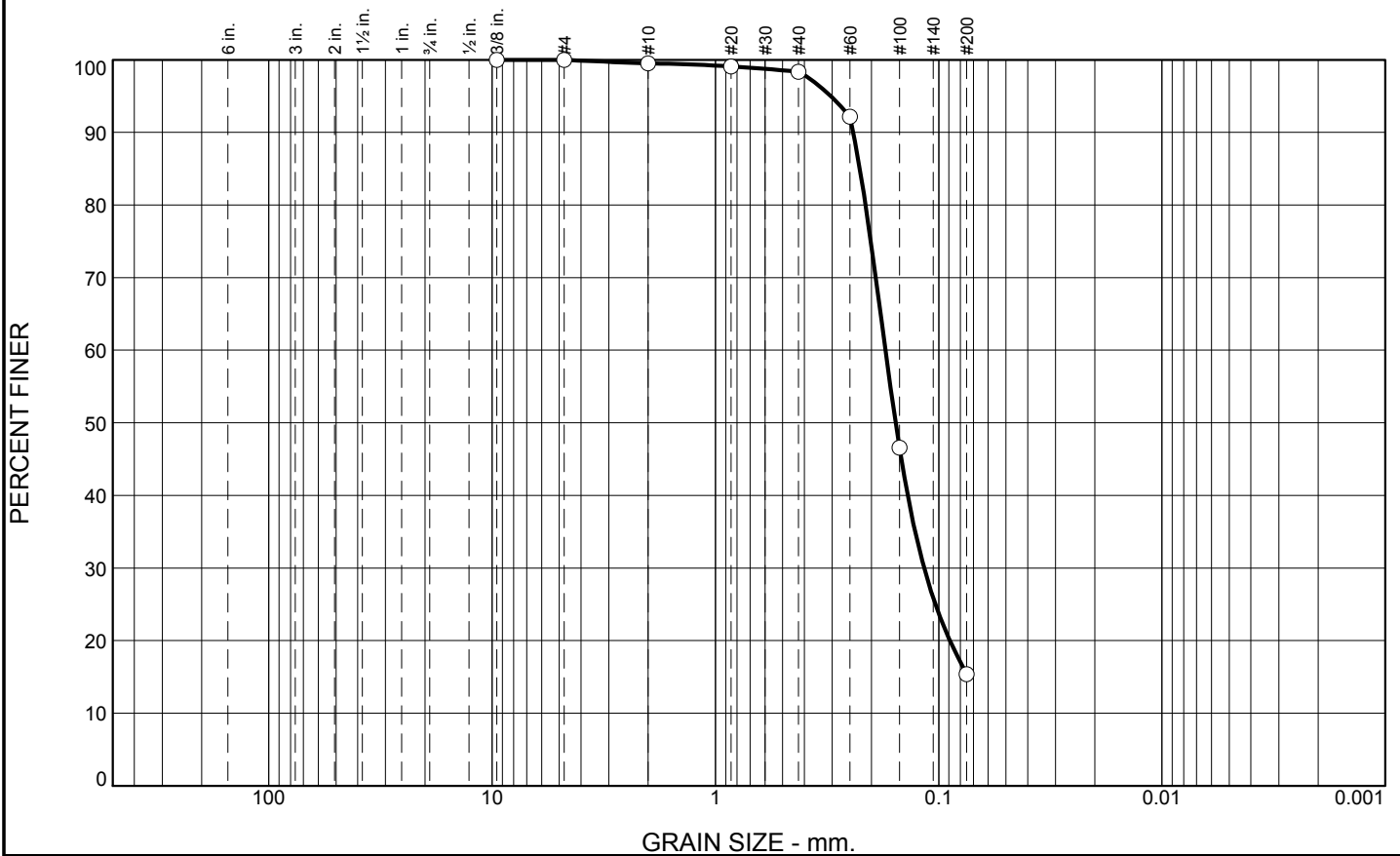
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.5	1.2	82.9	15.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.5		
#20	99.1		
#40	98.3		
#60	92.1		
#100	46.6		
#200	15.4		

* (no specification provided)

Material Description

SILTY SAND, (SM), fine grained, with clay nodules

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.2414

D₈₅= 0.2256

D₆₀= 0.1733

D₅₀= 0.1560

D₃₀= 0.1162

D₁₅=

D₁₀=

C_u=

C_c=

Classification

USCS= SM

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-DK-14-10C
Sample Number: TE Lab ID: 4538.62

Depth: 8.0 - 11.4 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Figure

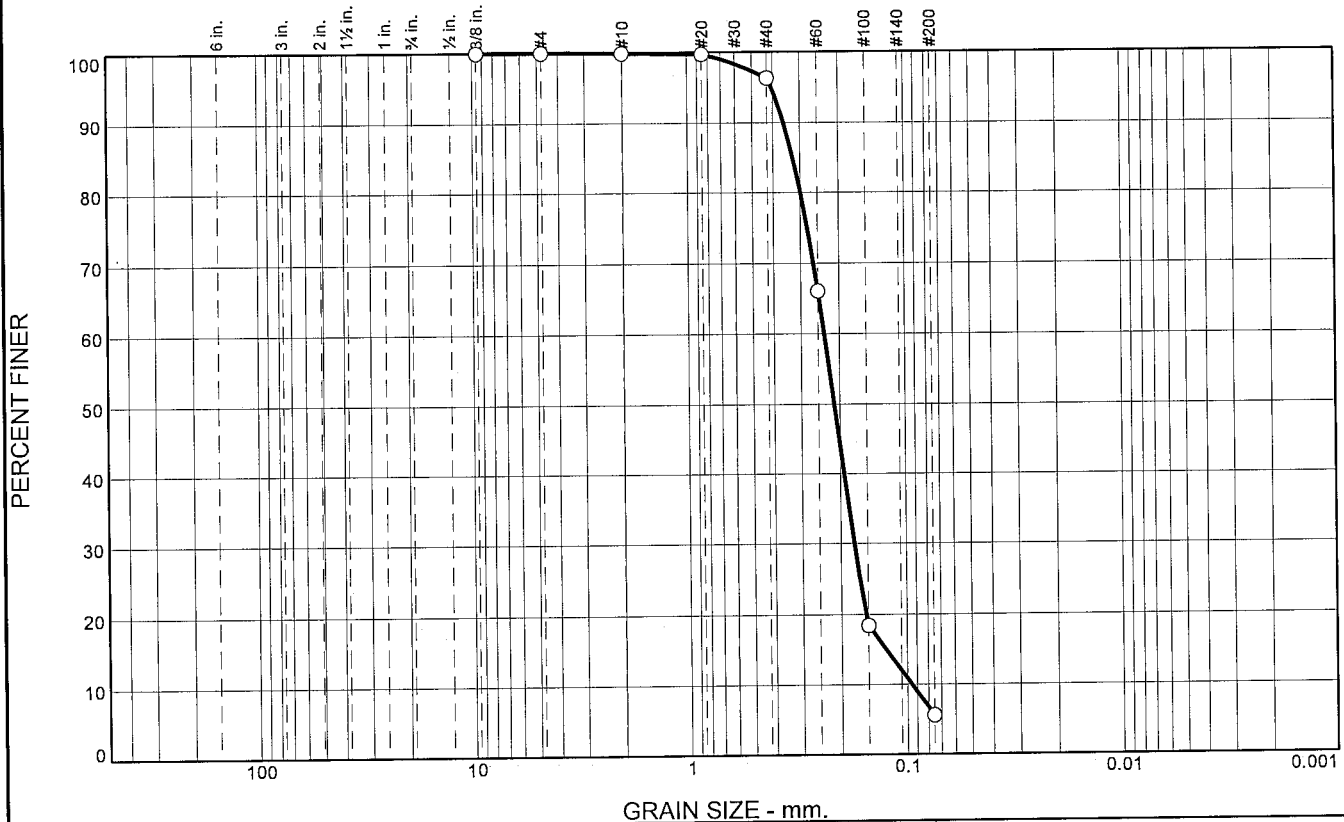
Tested By: R.Martin

Checked By: R.Byrd

Boring Designation BI-DK-15-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Dog Keys Pass				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-DK-15-10		LOCATION COORDINATES E = 1,002,457 N = 264,609		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		UNDISTURBED (UD) 0	
6. THICKNESS OF OVERBURDEN N/A				14. WATER DEPTH 15 Ft.		15. DATE BORING 06-07-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -14.3 Ft.		COMPLETED 06-07-10	
8. TOTAL DEPTH OF BORING 14.1 Ft.				17. TOTAL RECOVERY FOR BORING 100%		18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist	
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-14.3	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, trace organic matter, lt. gray (SP)	A	Classification: SP-SM Color: 5Y 7/1-light gray D50: 0.2119 mm % Fines: 5.6		
				B	Classification: SP-SM Color: 5Y 7/1-light gray D50: 0.1869 mm % Fines: 5.9		
-22.5	8.2						
			CLAY, lean, dark gray (CL)	NS			
-28.4	14.1						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	3.6	90.7	5.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.7		
#40	96.3		
#60	66.0		
#100	18.4		
#200	5.6		

* (no specification provided)

Material Description
SAND, (SP-SM), fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.3573 D₈₅= 0.3243 D₆₀= 0.2343
D₅₀= 0.2119 D₃₀= 0.1731 D₁₅= 0.1246
D₁₀= 0.0951 C_u= 2.46 C_c= 1.34

Classification
USCS= SP-SM AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-DK-15-10A
Sample Number: TE Lab ID: 4538.01

Depth: 0.0 - 4.0 (ft.)

Date: 6/19/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

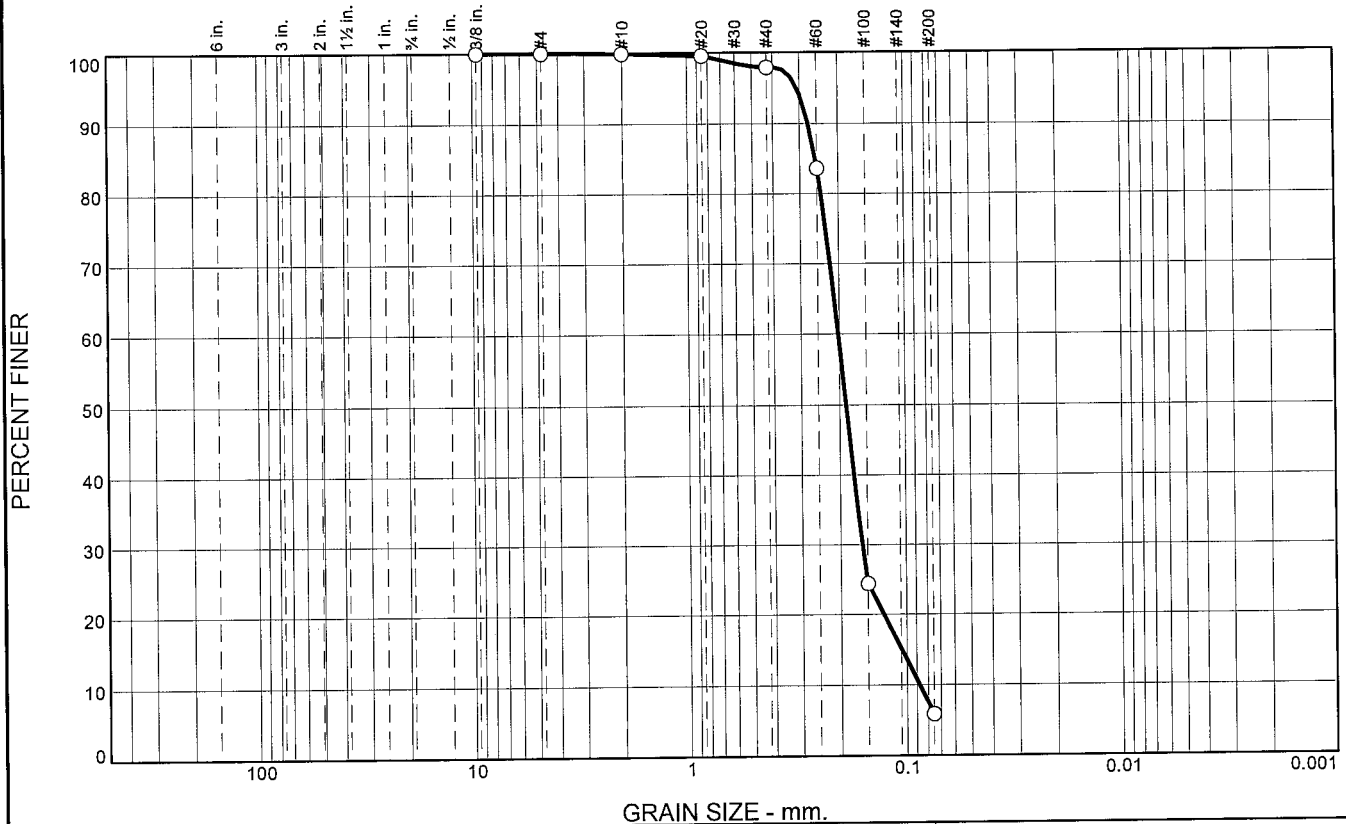
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	2.0	92.0	5.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.6		
#40	97.9		
#60	83.6		
#100	24.4		
#200	5.9		

* (no specification provided)

Material Description
SAND, (SP-SM), fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.2741 D₈₅= 0.2545 D₆₀= 0.2020
D₅₀= 0.1869 D₃₀= 0.1585 D₁₅= 0.1055
D₁₀= 0.0875 C_u= 2.31 C_c= 1.42

Classification
USCS= SP-SM AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-DK-15-10B
Sample Number: TE Lab ID: 4538.59

Depth: 4.0 - 8.2 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Figure

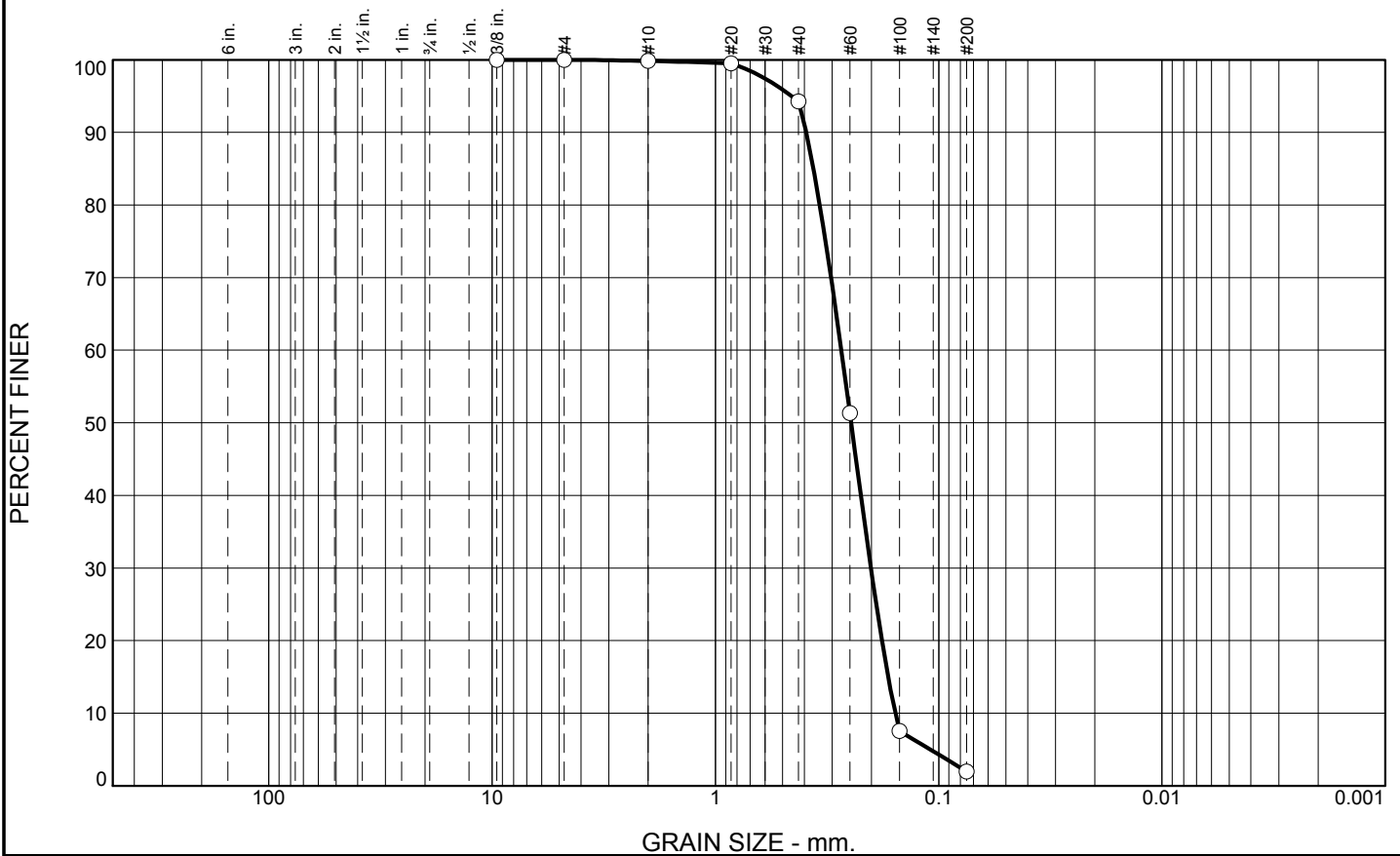
Tested By: R.Martin

Checked By: R.Byrd

Boring Designation BI-DK-16-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Dog Keys Pass				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-DK-16-10		LOCATION COORDINATES E = 982,529 N = 265,564		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 0 UNDISTURBED (UD)	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 13 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-08-10		STARTED 06-08-10 COMPLETED 06-08-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -11.6 Ft.			
8. TOTAL DEPTH OF BORING 14.3 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-11.6	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, trace shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.2467 mm % Fines: 2		
-16.8	5.2						
			SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments, gray (SM)	B	Classification: SP-SM Color: 2.5Y 6/2-light brownish gray D50: 0.1741 mm % Fines: 10.5		
-20.6	9.0						
-21.2	9.6		CLAY, lean, dark gray (CL)				
-22.8	11.2		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments, gray (SM)				
-23.5	11.9		CLAY, lean, dark gray (CL)	NS			
			SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments (SM)				
-25.9	14.3						
NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.							

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	5.5	92.3	2.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.8		
#20	99.5		
#40	94.3		
#60	51.3		
#100	7.6		
#200	2.0		

* (no specification provided)

<u>Material Description</u>		
SAND, (SP), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.3925	D ₈₅ = 0.3640	D ₆₀ = 0.2729
D ₅₀ = 0.2467	D ₃₀ = 0.2012	D ₁₅ = 0.1685
D ₁₀ = 0.1565	C _u = 1.74	C _c = 0.95
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-DK-16-10A
Sample Number: TE Lab ID: 4538.70

Depth: 0.0 - 5.2 (ft.)

Date: 6/26/10

Thompson Engineering
Mobile, Alabama

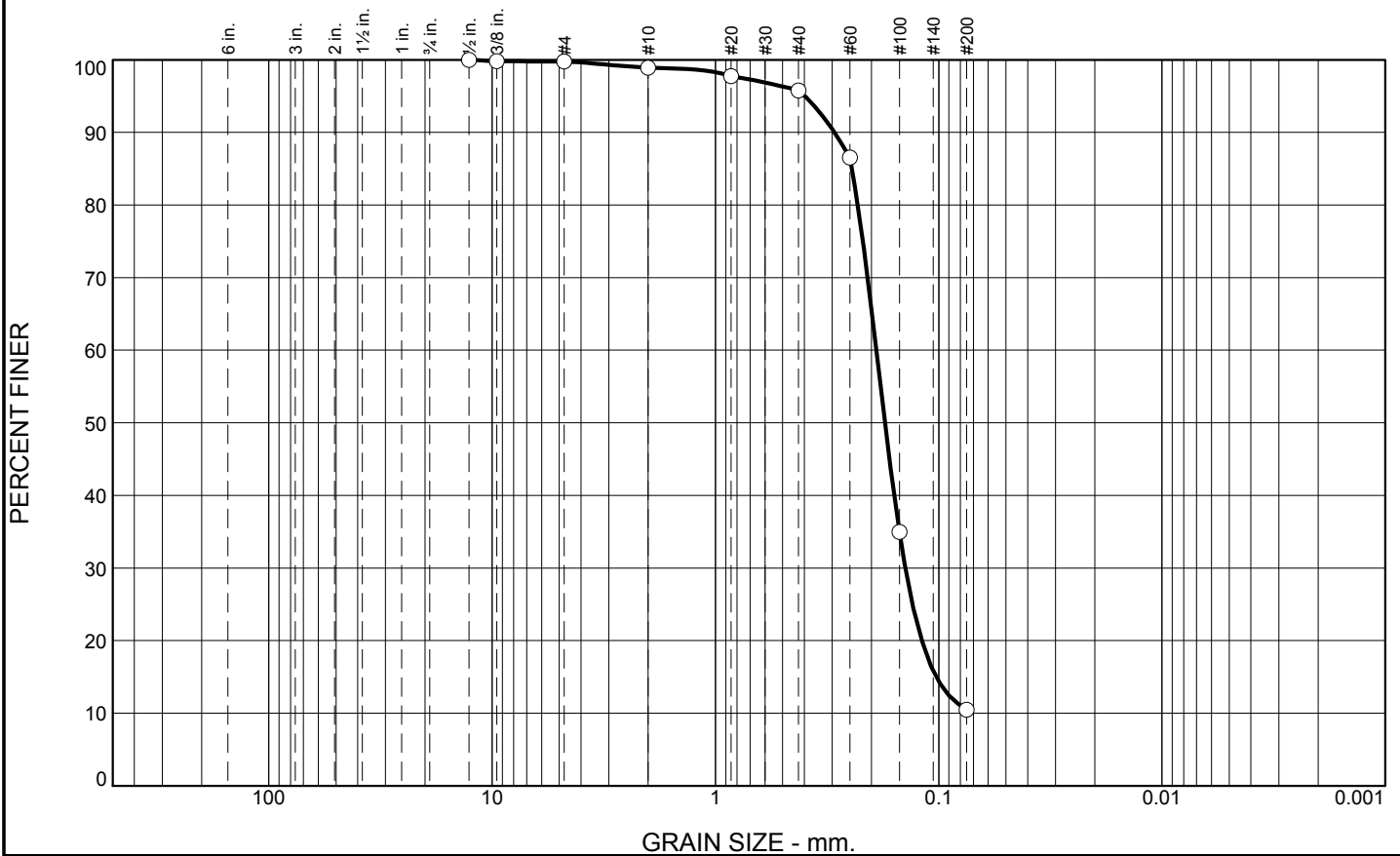
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.9	3.1	85.3	10.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.500	100.0		
.375	99.8		
#4	99.8		
#10	98.9		
#20	97.7		
#40	95.8		
#60	86.5		
#100	35.0		
#200	10.5		

* (no specification provided)

Material Description
SAND, (SP-SM), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.2931 D₈₅= 0.2448 D₆₀= 0.1903
 D₅₀= 0.1741 D₃₀= 0.1411 D₁₅= 0.1027
 D₁₀= C_u= C_c=

Classification
 USCS= SP-SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-DK-16-10B
Sample Number: TE Lab ID: 4538.71

Depth: 5.2 - 9.0 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

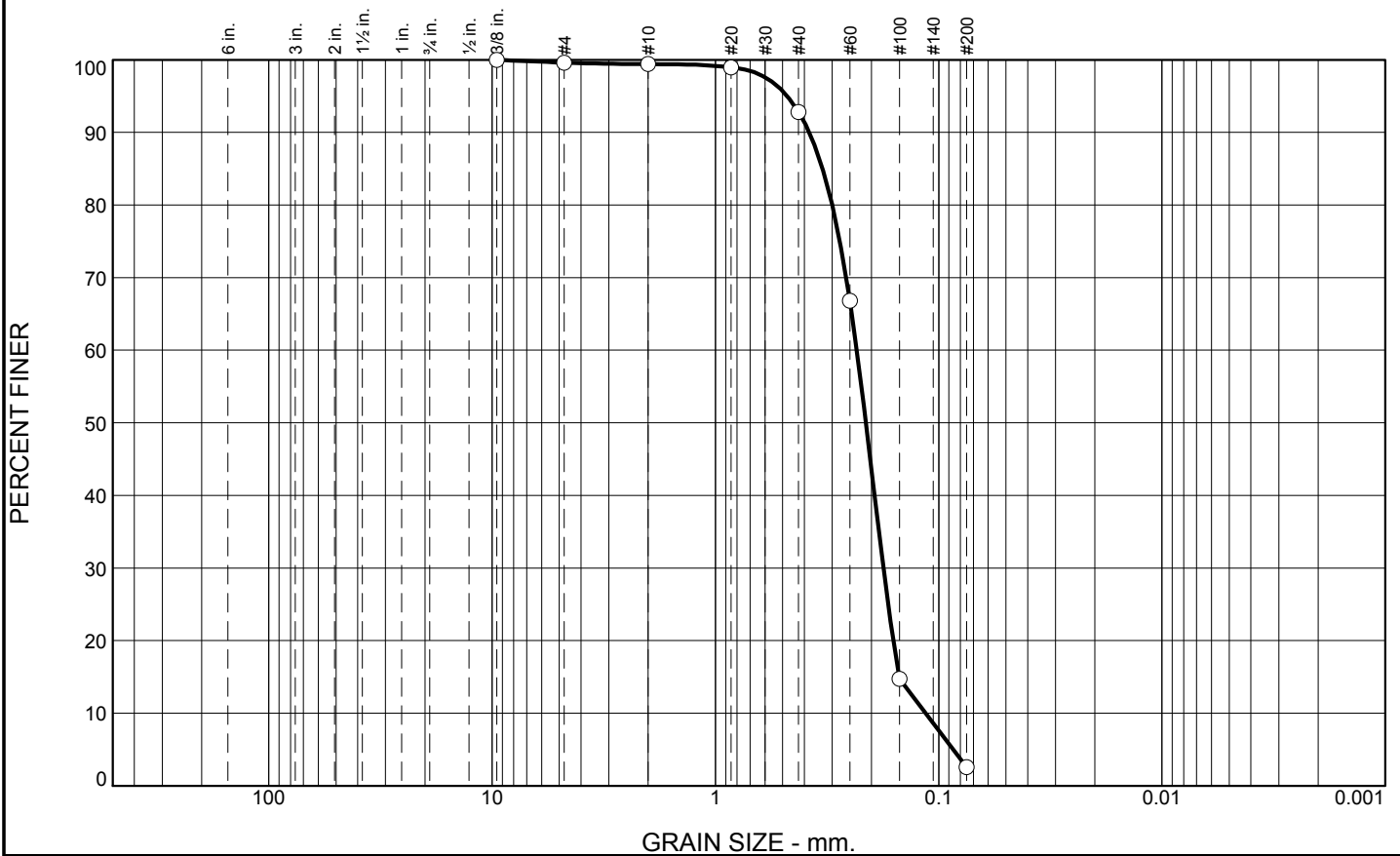
Tested By: R.Martin

Checked By: R.Byrd

Boring Designation BI-DK-17-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Dog Keys Pass				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-DK-17-10		LOCATION COORDINATES E = 984,604 N = 265,295		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 1		DISTURBED 1 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 14 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-07-10		STARTED 06-07-10 COMPLETED 06-07-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -13.7 Ft.			
8. TOTAL DEPTH OF BORING 16.4 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-13.7	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little silt, trace shell fragments, lt. gray (SP)	A	Classification: SP Color: 5Y 7/1-light gray D50: 0.212 mm % Fines: 2.6		
-18.7	5.0						
-19.9	6.2		CLAY, lean, dark gray (CL)				
-21.1	7.4		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments, gray (SM)				
			CLAY, lean, dark gray (CL)				
-23.7	10.0						
-25.2	11.5		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments, gray (SM)	NS			
			CLAY, lean, dark gray (CL)				
-28.2	14.5						
-30.1	16.4		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments, gray (SM)				
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.4	0.2	6.6	90.2	2.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.6		
#10	99.4		
#20	98.9		
#40	92.8		
#60	66.8		
#100	14.7		
#200	2.6		

* (no specification provided)

Material Description		
SAND, (SP), fine grained		
<div> <div> Atterberg Limits PL= LL= PI= </div> <div> Coefficients D₉₀= 0.3802 D₈₅= 0.3312 D₆₀= 0.2328 D₅₀= 0.2120 D₃₀= 0.1768 D₁₅= 0.1505 D₁₀= 0.1145 C_u= 2.03 C_c= 1.17 </div> <div> Classification USCS= SP AASHTO= </div> <div> Remarks CADD CODE = CH10D965 </div> </div>		

Location: USACE Sample # BI-DK-17-10A
Sample Number: TE Lab ID: 4538.65

Depth: 0.0 - 5.0 (ft.)

Date: 6/26/10

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

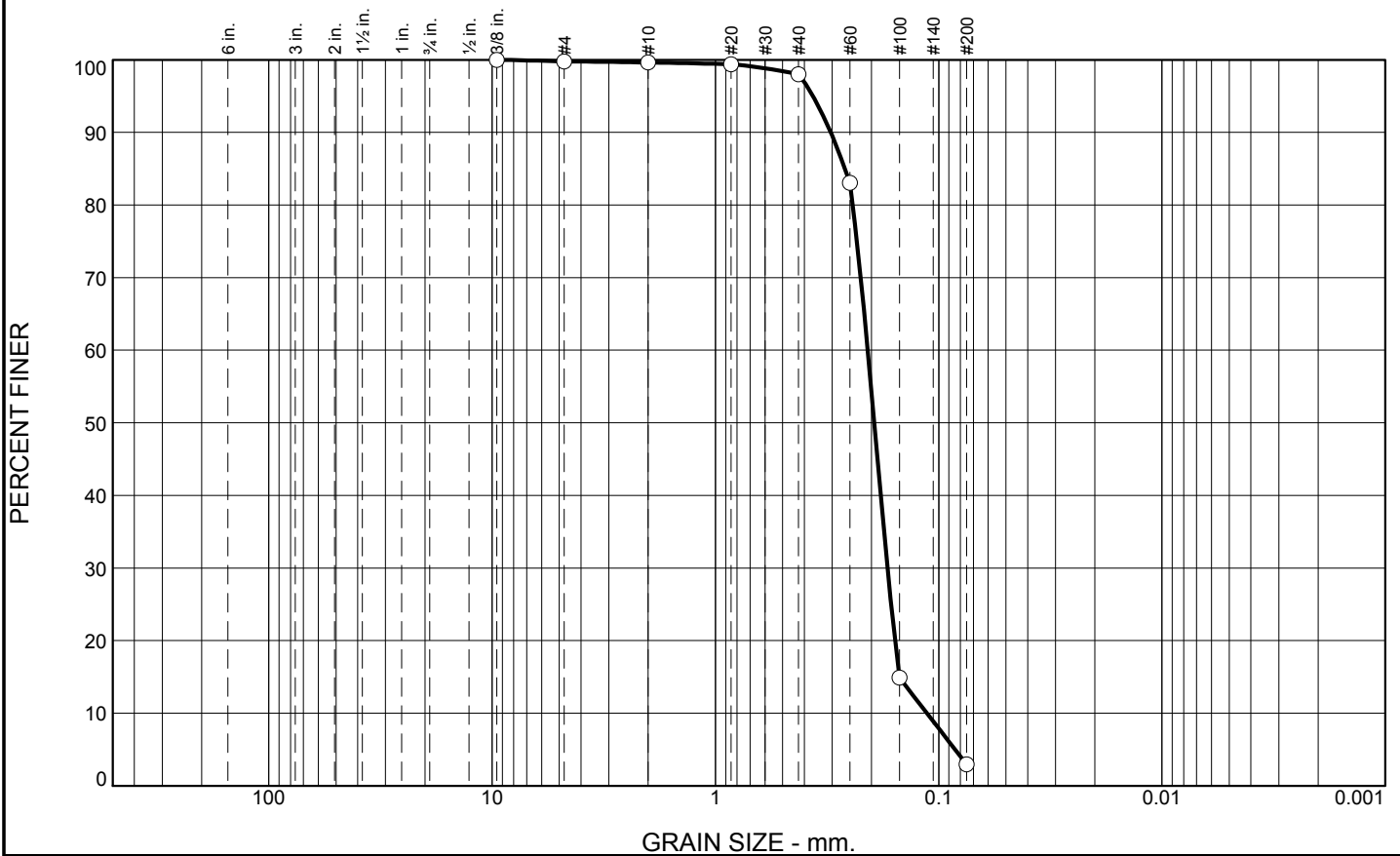
Tested By: R.Martin

Checked By: R.Byrd

Boring Designation BI-DK-18-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Dog Keys Pass				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-DK-18-10		LOCATION COORDINATES E = 987,030 N = 265,299		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 15.5 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-07-10		STARTED COMPLETED 06-07-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -15.1 Ft.			
8. TOTAL DEPTH OF BORING 11.7 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-15.1	0.0						
-18.6	3.5		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little silt, trace shell fragments, lt. gray (SP)	A	Classification: SP Color: 5Y 7/1-light gray D50: 0.1944 mm % Fines: 2.9		
-22.1	7.0		CLAY, lean, dark gray (CL)	NS			
-23.5	8.4		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, gray (SM)				
-26.8	11.7		CLAY, lean, dark gray (CL)				
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.2	1.6	95.1	2.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.8		
#10	99.6		
#20	99.4		
#40	98.0		
#60	83.0		
#100	14.9		
#200	2.9		

* (no specification provided)

Material Description		
SAND, (SP), fine grained		
<div> <div> Atterberg Limits PL= LL= PI= </div> <div> Coefficients D₉₀= 0.3043 D₈₅= 0.2630 D₆₀= 0.2080 D₅₀= 0.1944 D₃₀= 0.1696 D₁₅= 0.1501 D₁₀= 0.1129 C_u= 1.84 C_c= 1.22 </div> <div> Classification USCS= SP AASHTO= </div> <div> Remarks CADD CODE = CH10D965 </div> </div>		

Location: USACE Sample # BI-DK-18-10A
 Sample Number: TE Lab ID: 4538.64

Depth: 0.0 - 3.5 (ft.)

Date: 6/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

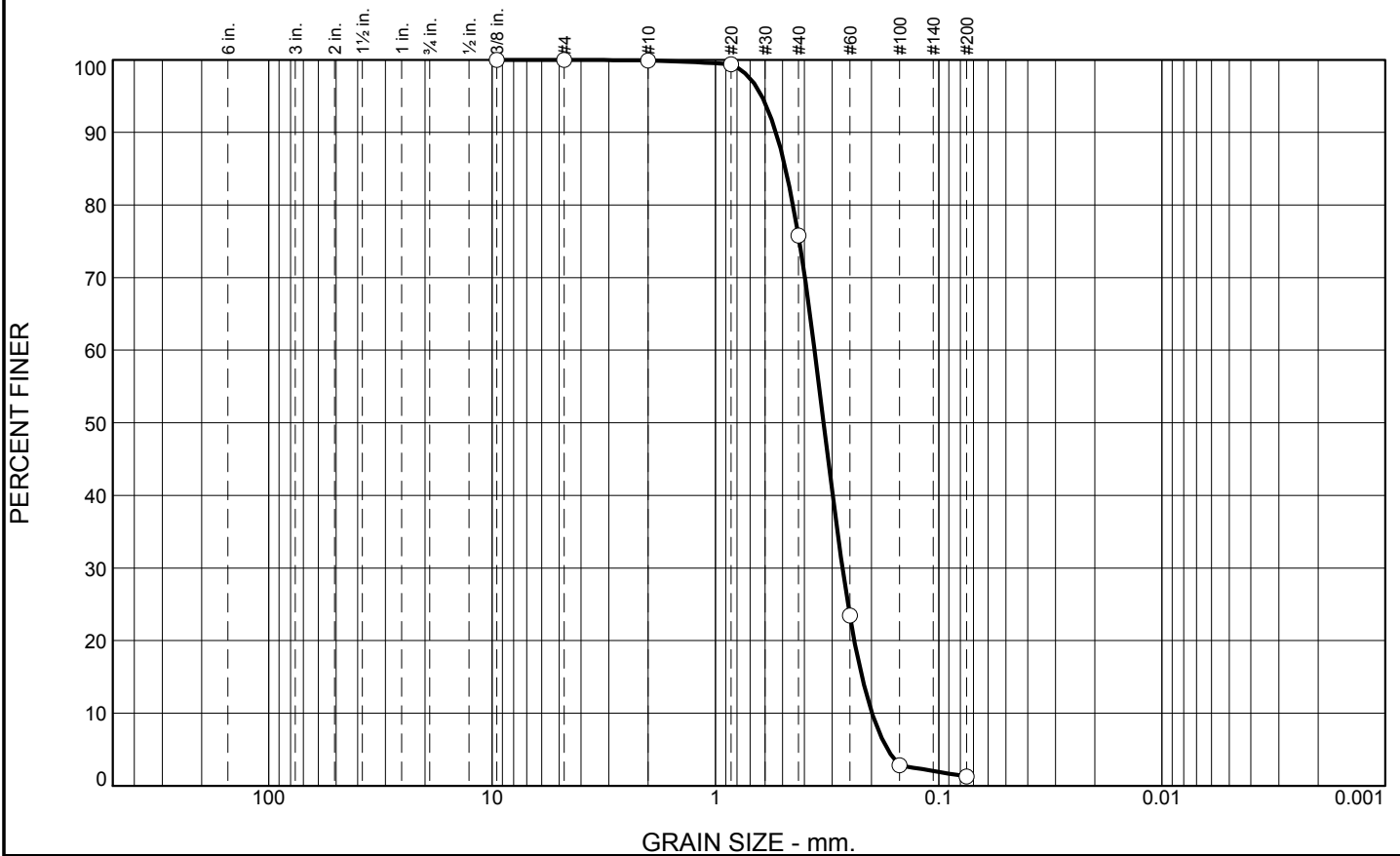
Tested By: R.Martin

Checked By: R.Byrd

Boring Designation BI-DK-19-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Dog Keys Pass				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-DK-19-10		LOCATION COORDINATES E = 995,476 N = 262,857		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 0 UNDISTURBED (UD)	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 17 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-24-10		STARTED 06-24-10 COMPLETED 06-24-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -14.9 Ft.			
8. TOTAL DEPTH OF BORING 14.1 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-14.9	0.0						
			SAND, poorly-graded, mostly medium-grained sand-sized quartz, trace silt, lt. gray (SP)	A	Classification: SP Color: 7.5YR 8.5/1-white D50: 0.3276 mm % Fines: 1.3		
				B	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.2991 mm % Fines: 2.7		
-27.3	12.4						
-29.0	14.1		SAND, silty, mostly medium-grained sand-sized quartz, some silt, gray (SM)	C	Classification: SM Color: 2.5Y 6/2-light brownish gray D50: 0.1497 mm % Fines: 18.8		
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	24.1	74.5	1.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.4		
#40	75.8		
#60	23.4		
#100	2.8		
#200	1.3		

* (no specification provided)

<u>Material Description</u>		
SAND, (SP), medium to fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.5353	D ₈₅ = 0.4850	D ₆₀ = 0.3599
D ₅₀ = 0.3276	D ₃₀ = 0.2696	D ₁₅ = 0.2207
D ₁₀ = 0.1990	C _u = 1.81	C _c = 1.02
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-DK-19-10A
Sample Number: TE Lab ID: 4557.19

Depth: 0.0 - 6.0 (ft.)

Date: 7/3/10

Thompson Engineering
Mobile, Alabama

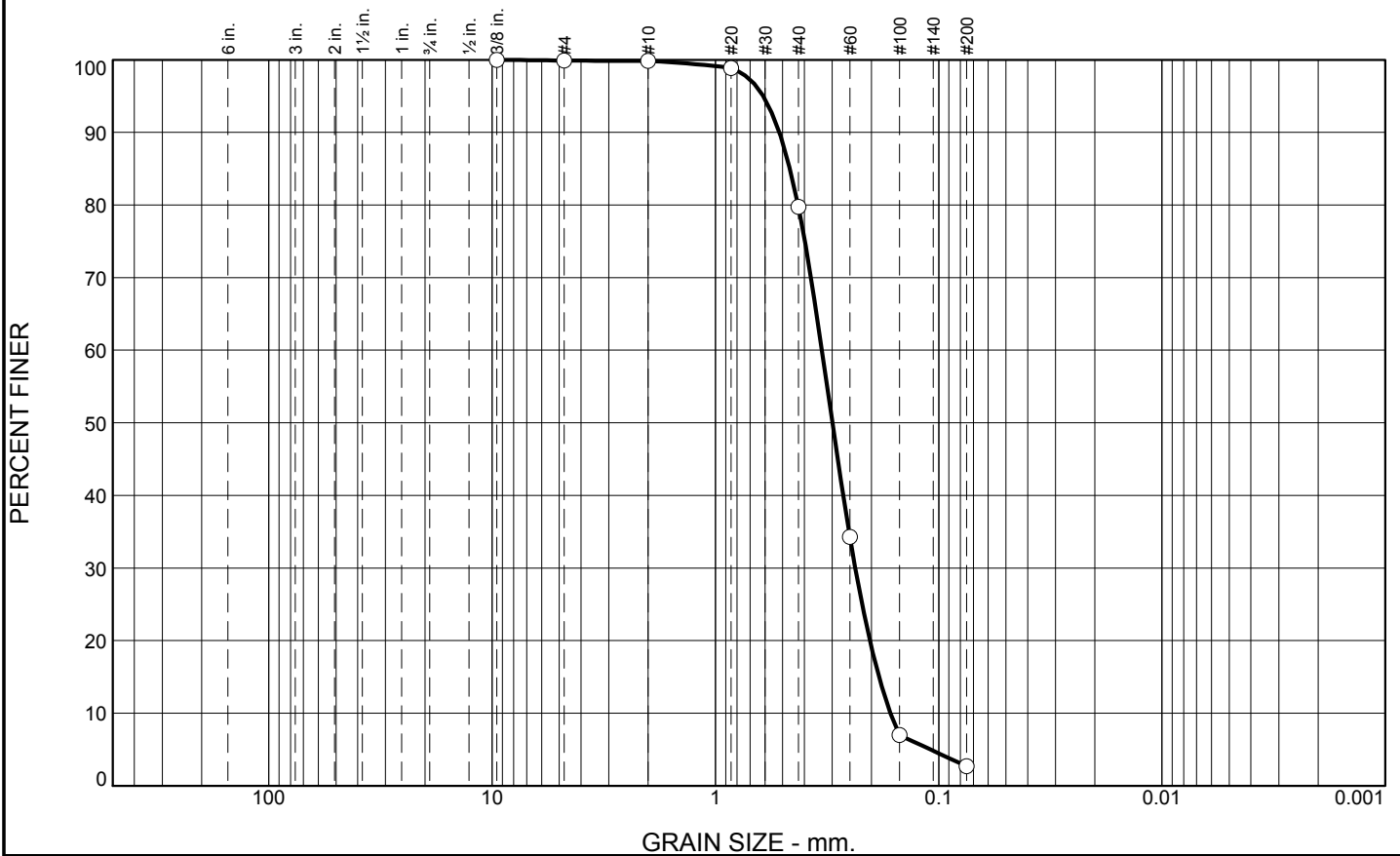
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.1	20.1	77.0	2.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.8		
#20	98.9		
#40	79.7		
#60	34.3		
#100	7.0		
#200	2.7		

* (no specification provided)

Material Description		
SAND, (SP), medium to fine grained		
<div> <div> Atterberg Limits PL= LL= PI= </div> <div> Coefficients D₉₀= 0.5171 D₈₅= 0.4639 D₆₀= 0.3335 D₅₀= 0.2991 D₃₀= 0.2365 D₁₅= 0.1851 D₁₀= 0.1646 C_u= 2.03 C_c= 1.02 </div> <div> Classification USCS= SP AASHTO= </div> <div> Remarks CADD CODE = CH10D965 </div> </div>		

Location: USACE Sample # BI-DK-19-10B
Sample Number: TE Lab ID: 4557.20

Depth: 6.0 - 12.4 (ft.)

Date: 7/3/10

Thompson Engineering

Mobile, Alabama

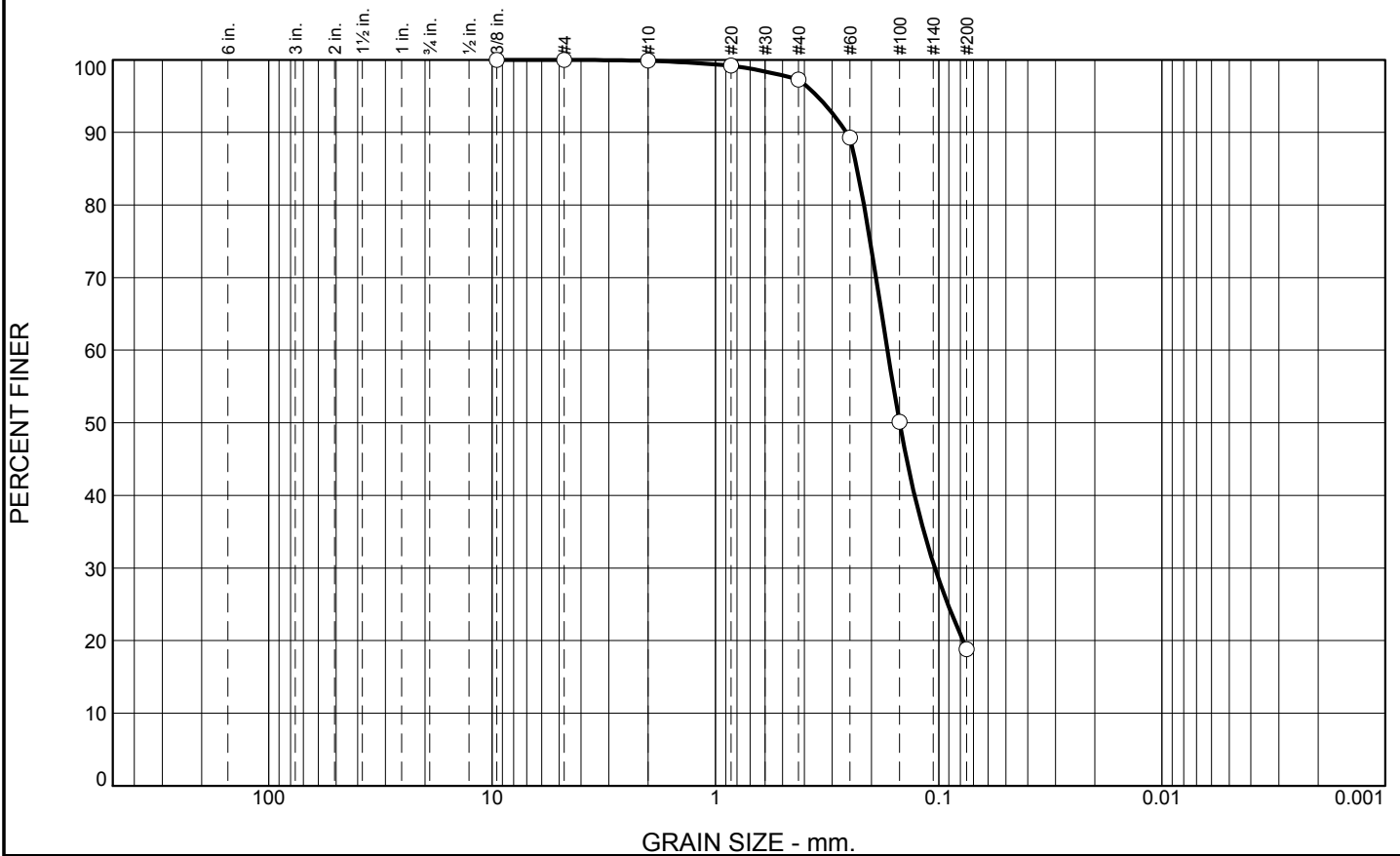
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	2.6	78.5	18.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.2		
#40	97.3		
#60	89.3		
#100	50.1		
#200	18.8		

* (no specification provided)

Material Description		
SILTY SAND, (SM), fine grained		
<div> <div> Atterberg Limits </div> <div> PL= </div> <div> LL= </div> <div> PI= </div> </div>		
<div> <div> Coefficients </div> <div> D₉₀= 0.2589 </div> <div> D₅₀= 0.1497 </div> <div> D₁₀= </div> <div> D₈₅= 0.2322 </div> <div> D₃₀= 0.1041 </div> <div> C_u= </div> <div> D₆₀= 0.1698 </div> <div> D₁₅= </div> <div> C_c= </div> </div>		
<div> <div> Classification </div> <div> USCS= SM </div> <div> AASHTO= </div> </div>		
<div> <div> Remarks </div> <div> CADD CODE = CH10D965 </div> </div>		

Location: USACE Sample # BI-DK-19-10C
Sample Number: TE Lab ID: 4557.21

Depth: 12.4 - 14.1 (ft.)

Date: 7/3/10

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-DK-20-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Dog Keys Pass				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-DK-20-10		LOCATION COORDINATES E = 993,085 N = 263,129		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		UNDISTURBED (UD) 0	
6. THICKNESS OF OVERBURDEN N/A				14. WATER DEPTH		28 Ft.	
7. DEPTH DRILLED INTO ROCK N/A				15. DATE BORING		STARTED 06-24-10	
8. TOTAL DEPTH OF BORING 18.4 Ft.				16. ELEVATION TOP OF BORING		COMPLETED 06-24-10	
				17. TOTAL RECOVERY FOR BORING		100%	
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-25.8	0.0		CLAY, lean, dark gray (CL)				
				NS			
-44.2	18.4						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Boring Designation BI-DK-21-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Dog Keys Pass				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-DK-21-10		LOCATION COORDINATES E = 993,091 N = 264,402		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 0		DISTURBED 0 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 26 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-24-10		STARTED 06-01-24 COMPLETED	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -23.9 Ft.			
8. TOTAL DEPTH OF BORING 15.9 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-23.9	0.0		CLAY, lean, dark gray (CL)				
				NS			
-39.8	15.9						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Boring Designation BI-DK-22-10

DRILLING LOG		DIVISION South Atlantic	INSTALLATION Mobile District	SHEET 1 OF 1 SHEETS
1. PROJECT Barrier Island Restoration Dog Keys Pass		9. SIZE AND TYPE OF BIT N/A		
2. BORING DESIGNATION BI-DK-22-10		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		11. HORIZONTAL NAD83
3. DRILLING AGENCY Corps of Engineers - CESAM		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		12. VERTICAL NAVD88
4. NAME OF DRILLER Construction Solutions International, Inc.		13. TOTAL NUMBER CORE BOXES		
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		14. WATER DEPTH 30 Ft.		
6. THICKNESS OF OVERBURDEN N/A		15. DATE BORING 06-24-10		
7. DEPTH DRILLED INTO ROCK N/A		16. ELEVATION TOP OF BORING -27.9 Ft.		
8. TOTAL DEPTH OF BORING 19.0 Ft.		17. TOTAL RECOVERY FOR BORING 100%		
		18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-27.9	0.0		CLAY, lean, dark gray (CL)		
-46.9	19.0			NS	
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.		

Boring Designation BI-DK-23-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Dog Keys Pass				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-DK-23-10		LOCATION COORDINATES E = 980,859 N = 265,096		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 0		DISTURBED 0 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 25 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-24-10		STARTED 06-24-10 COMPLETED 06-24-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -23.0 Ft.			
8. TOTAL DEPTH OF BORING 16.5 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-23.0	0.0						
-24.3	1.3		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, lt. gray (SP)				
			CLAY, lean, dark gray (CL)				
				NS			
-39.5	16.5						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Boring Designation BI-DK-25-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Dog Keys Pass				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-DK-25-10		LOCATION COORDINATES E = 981,611 N = 264,005		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 0 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		BEARING		13. TOTAL NUMBER CORE BOXES	
6. THICKNESS OF OVERBURDEN N/A				14. WATER DEPTH 27 Ft.			
7. DEPTH DRILLED INTO ROCK N/A				15. DATE BORING 06-24-10		STARTED 06-24-10 COMPLETED 06-24-10	
8. TOTAL DEPTH OF BORING 18.5 Ft.				16. ELEVATION TOP OF BORING -24.9 Ft.			
				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-24.9	0.0		CLAY, lean, dark gray (CL)				
-40.9	16.0			NS			
-43.4	18.5		SILT, organic-L, brown (OL)				
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

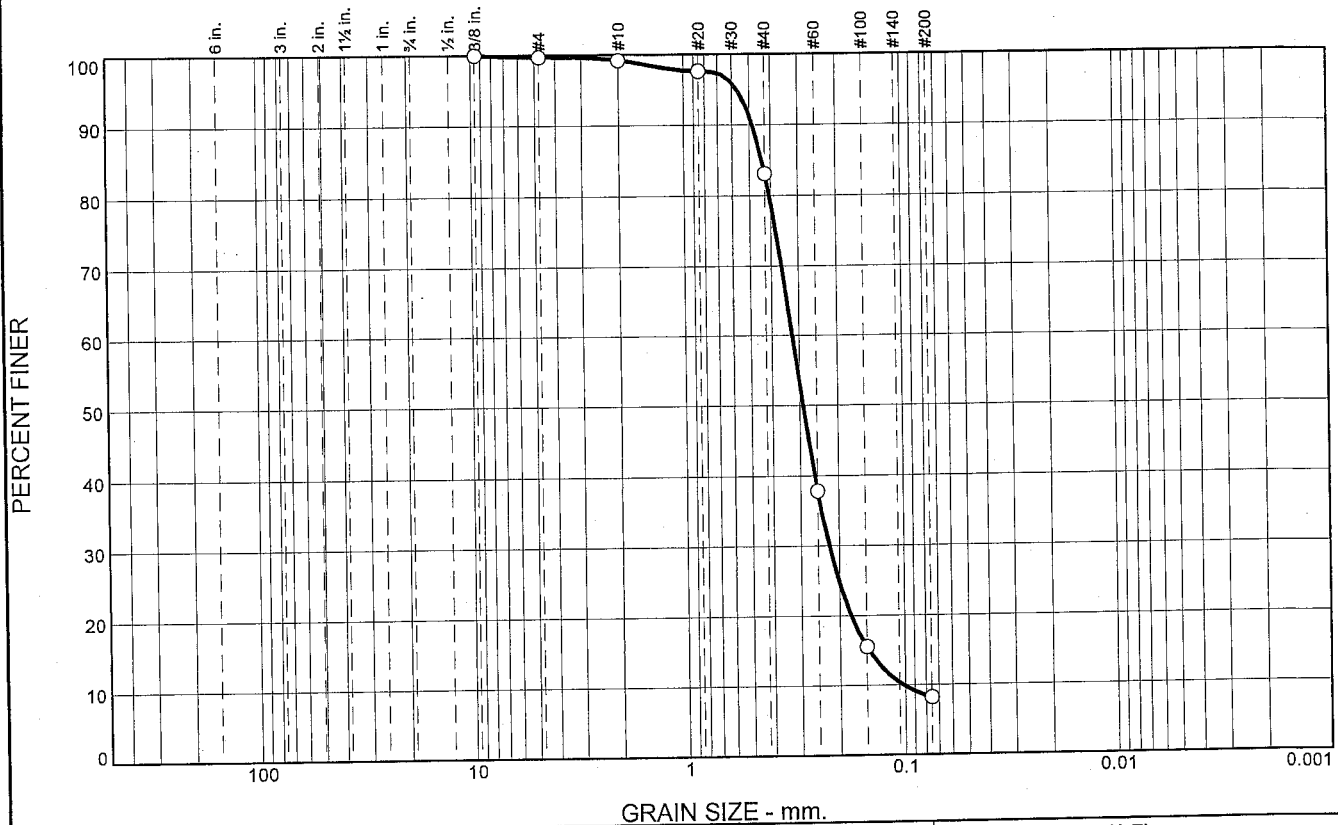
APPENDIX J

HORN ISLAND PASS BORING LOGS AND LAB RESULTS

Boring Designation BI-HP-01-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Horn Island Pass				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-HP-01-10		LOCATION COORDINATES E = 1,073,633 N = 249,659		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 31 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 07-13-10		STARTED 07-13-10 COMPLETED 07-13-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -30.5 Ft.			
8. TOTAL DEPTH OF BORING 19.2 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR John Baehr, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-30.5	0.0						
			SAND, poorly-graded, trace shell fragments, lt. gray (SP)	A	Classification: SP-SM Color: 2.5Y 7/1-light gray D50: 0.289 mm % Fines: 8.2		
				B	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.3016 mm % Fines: 2.4		
-40.4	9.9						
			SAND, clayey, mostly fine-grained sand-sized quartz, gray (SC)	NS			
-49.7	19.2						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.3	0.5	16.1	74.9	8.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.7		
#10	99.2		
#20	97.6		
#40	83.1		
#60	37.8		
#100	15.5		
#200	8.2		

* (no specification provided)

Material Description
SAND, (SP-SM), medium to fine grained, with clay nodules

Atterberg Limits
PL= LL= PI=

Coefficients
 $D_{90} = 0.4835$ $D_{85} = 0.4379$ $D_{60} = 0.3220$
 $D_{50} = 0.2890$ $D_{30} = 0.2220$ $D_{15} = 0.1465$
 $D_{10} = 0.1017$ $C_u = 3.17$ $C_c = 1.51$

Classification
USCS= SP-SM AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-HP-1-10A
Sample Number: TE Lab ID: 4593.29

Depth: 0.0 - 5.0 (ft.)

Date: 7/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

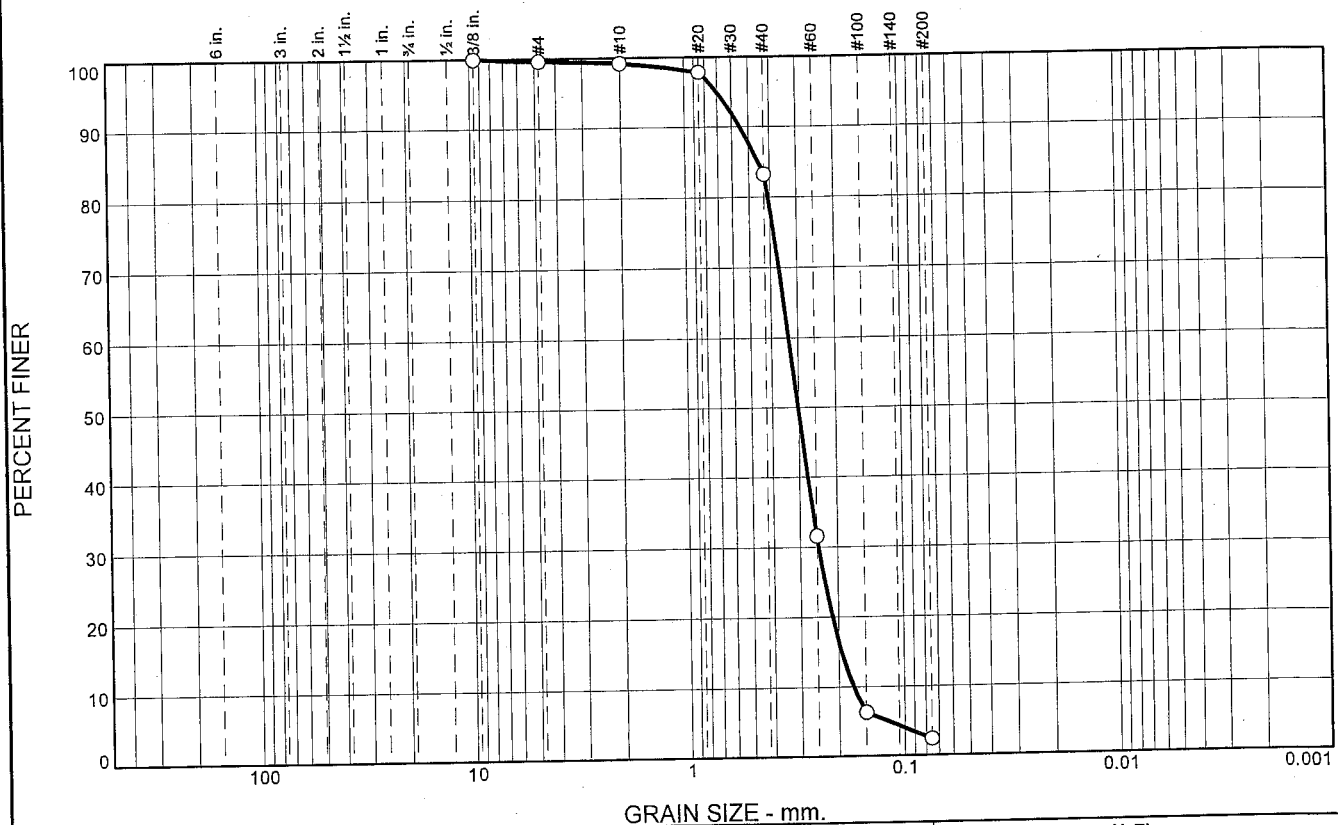
Project No: 10-2123-0009

Report No.

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.3	0.5	16.0	80.8	2.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.7		
#10	99.2		
#20	97.9		
#40	83.2		
#60	31.6		
#100	6.3		
#200	2.4		

* (no specification provided)

Material Description
SAND, (SP), medium to fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.5486 D₈₅= 0.4523 D₆₀= 0.3313
D₅₀= 0.3016 D₃₀= 0.2454 D₁₅= 0.1942
D₁₀= 0.1715 C_u= 1.93 C_c= 1.06

Classification
USCS= SP AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-HP-1-10B
Sample Number: TE Lab ID: 4593.30

Depth: 5.0 - 9.9 (ft.)

Date: 7/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 Report No.

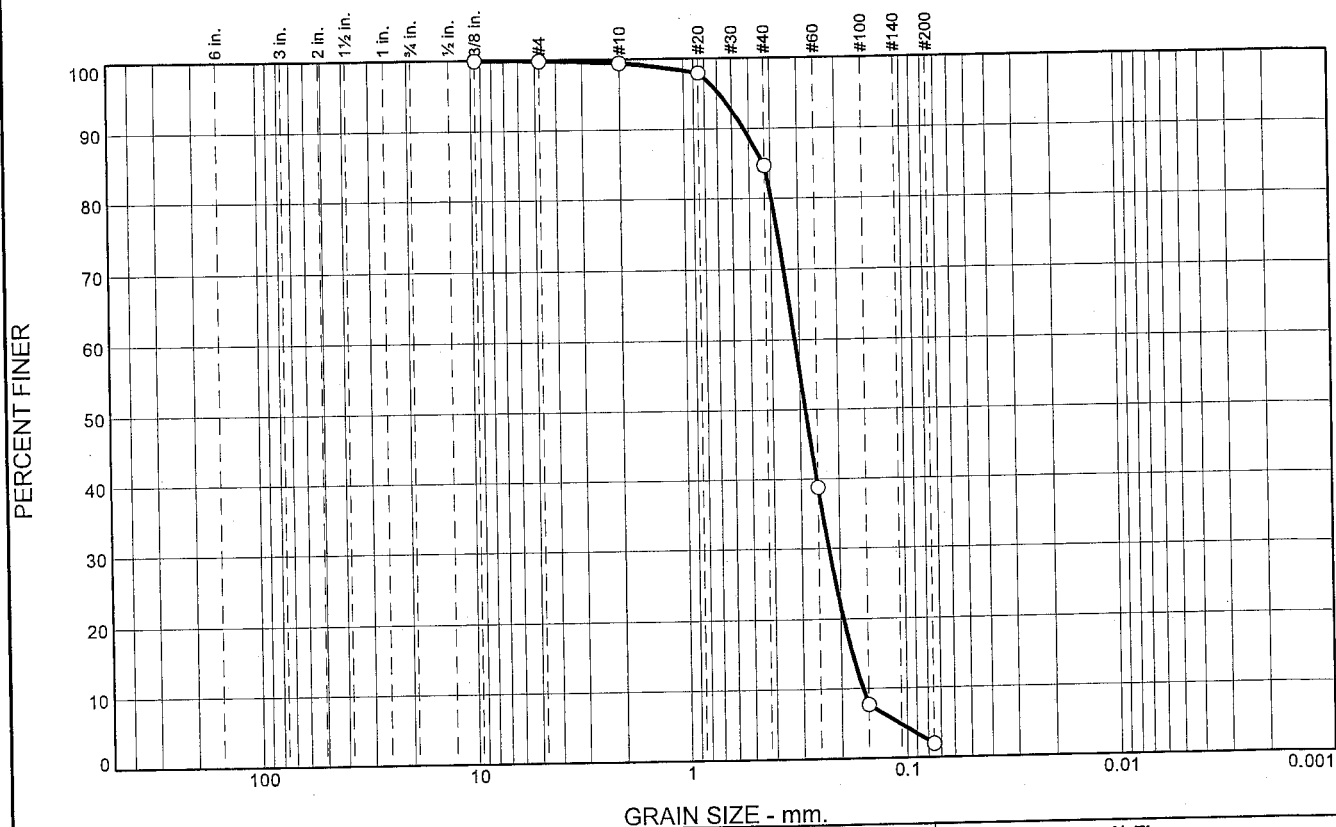
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-HP-02-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Horn Island Pass				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-HP-02-10		LOCATION COORDINATES E = 1,073,085 N = 248,683		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 34 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 07-13-10		STARTED 07-13-10 COMPLETED 07-13-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -33.2 Ft.			
8. TOTAL DEPTH OF BORING 17.6 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR John Baehr, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-33.2	0.0						
-36.5	3.3		SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 6/2-light brownish gray D50: 0.2829 mm % Fines: 2		
-39.1	5.9		SAND, silty, mostly fine-grained sand-sized quartz, trace shell fragments, gray (SM)	B	Classification: SM Color: 2.5Y 5/1-gray D50: 0.229 mm % Fines: 15.2		
-40.2	7.0		CLAY, lean, some sand, gray (CL)				
-50.8	17.6		SAND, clayey, mostly fine-grained sand-sized quartz, trace shell fragments, gray (SC)	NS			
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.4	14.8	82.7	2.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.5		
#20	98.0		
#40	84.7		
#60	38.8		
#100	7.7		
#200	2.0		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.5277

D₈₅= 0.4299

D₆₀= 0.3144

D₅₀= 0.2829

D₃₀= 0.2245

D₁₅= 0.1778

D₁₀= 0.1597

C_u= 1.97

C_c= 1.00

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-HP-2-10A
Sample Number: TE Lab ID: 4593.25

Depth: 0.0 - 3.3 (ft.)

Date: 7/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

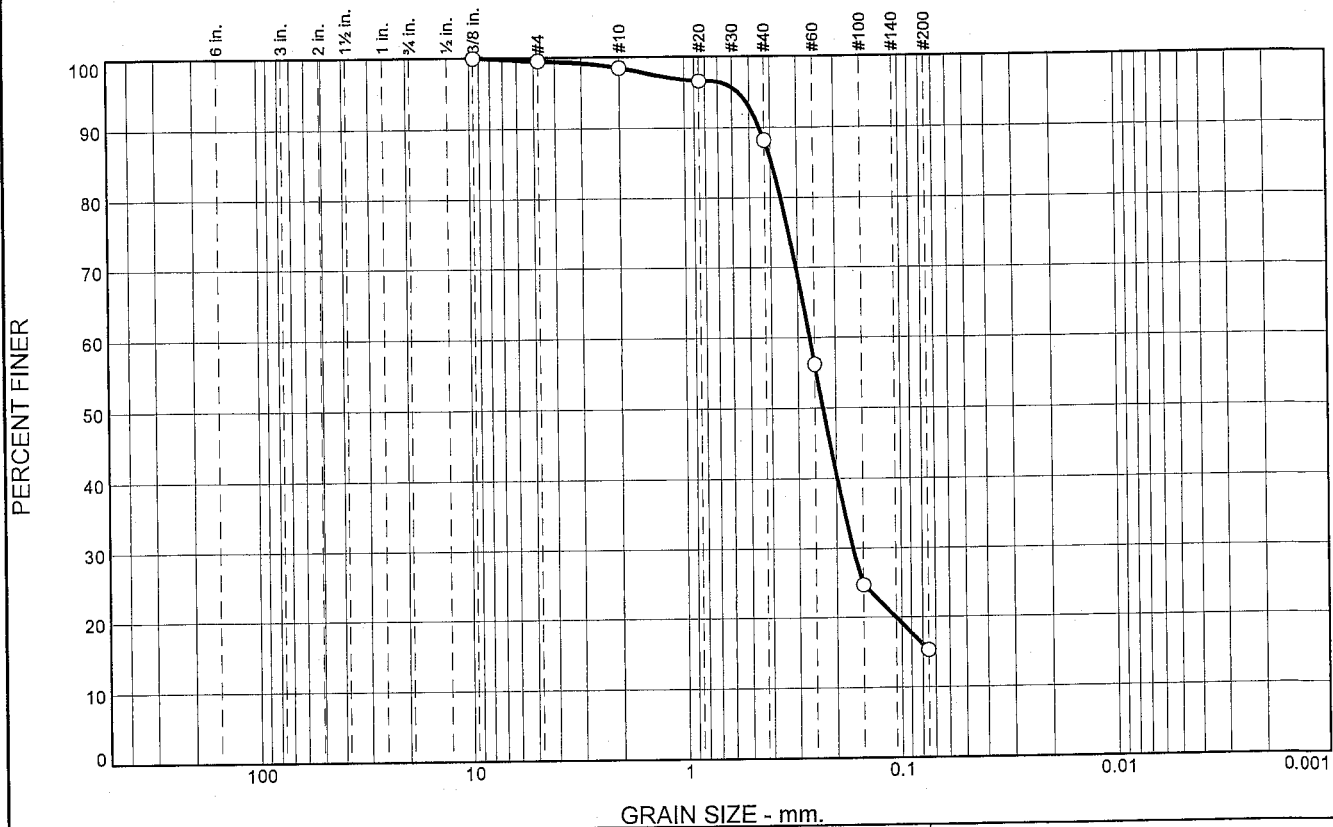
Project No: 10-2123-0009

Report No.

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.5	1.0	10.3	73.0	15.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.5		
#10	98.5		
#20	96.6		
#40	88.2		
#60	56.2		
#100	24.7		
#200	15.2		

Material Description
SILTY SAND, (SM), medium to fine grained, with clay nodules

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.4475 D₈₅= 0.3949 D₆₀= 0.2636
 D₅₀= 0.2290 D₃₀= 0.1676 D₁₅=
 D₁₀= C_u= C_c=

Classification
 USCS= SM AASHTO=

Remarks
 CADD CODE = CH10D965

* (no specification provided)

Location: USACE Sample # BI-HP-2-10B
 Sample Number: TE Lab ID: 4593.26

Depth: 3.3 - 5.9 (ft.)

Date: 7/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
 Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
 Project No: 10-2123-0009 Report No.

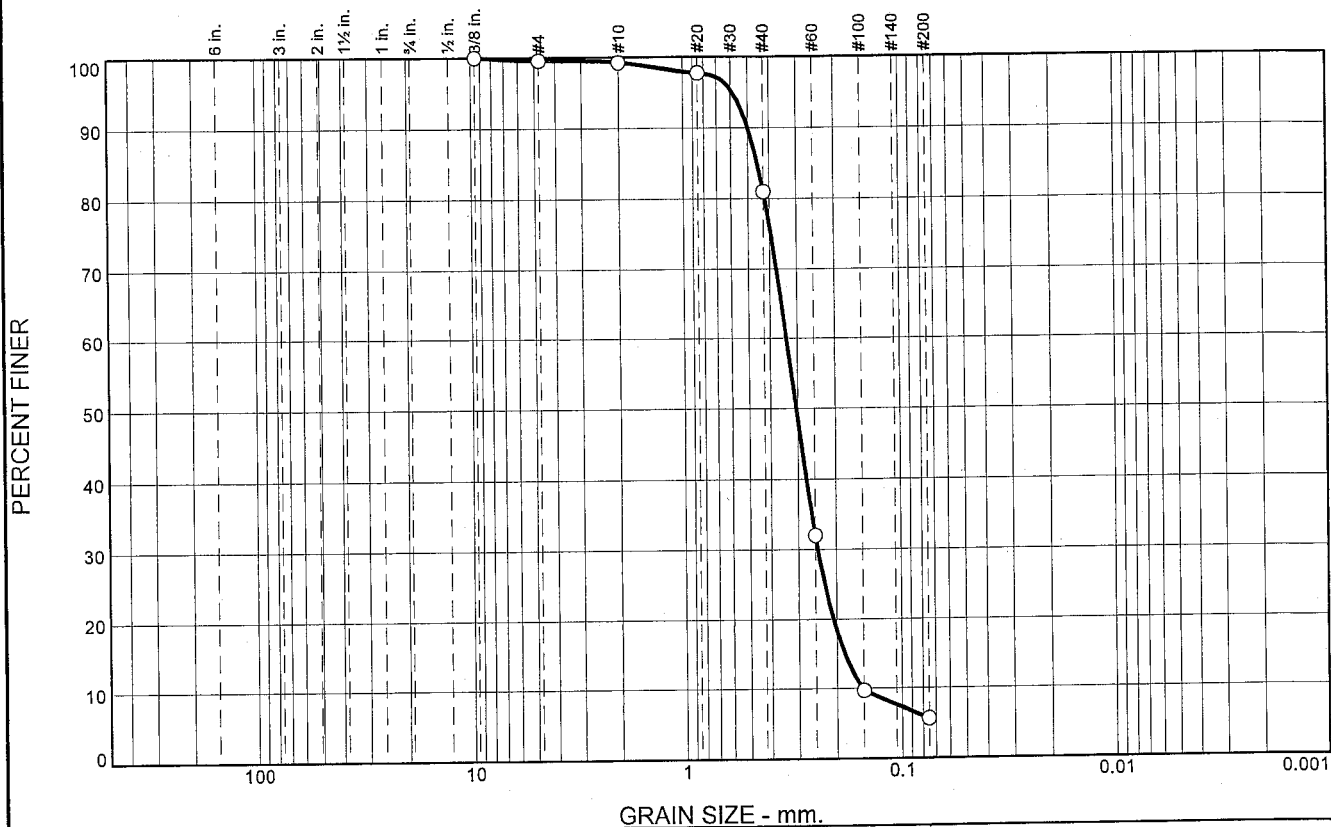
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-HP-03-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Horn Island Pass				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-HP-03-10		LOCATION COORDINATES E = 1,074,424 N = 248,919		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 0 UNDISTURBED (UD)	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 34 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 07-13-10		STARTED 07-13-10 COMPLETED	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -33.1 Ft.			
8. TOTAL DEPTH OF BORING 18.1 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR John Baehr, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-33.1	0.0						
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, occ. clay balls (1' - 2"), lt. gray (SP)	A	Classification: SP-SM Color: 2.5Y 7/2 - light gray D50: 0.3041 mm % Fines: 5.6		
				B	Classification: SP Color: 2.5Y 7/2 - light gray D50: 0.2557 mm % Fines: 3.4		
-38.9	5.8						
			SAND, clayey, mostly fine-grained sand-sized quartz, trace shell fragments, gray (SC)	NS			
-51.2	18.1						
			NOTES:				
			1. Soils are field visually classified in accordance with the Unified Soils Classification System.				
			2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.4	0.4	18.2	75.4	5.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.6		
#10	99.2		
#20	97.7		
#40	81.0		
#60	32.0		
#100	9.7		
#200	5.6		

Material Description

SAND, (SP-SM), medium to fine grained, with clay nodules

Atterberg Limits

$$P_L = \frac{LL}{P_I} =$$

Coefficients

D ₉₀ = 0.4986	D ₈₅ = 0.4518	D ₆₀ = 0.3358
D ₅₀ = 0.3041	D ₃₀ = 0.2436	D ₁₅ = 0.1839
D ₁₀ = 0.1527	C _u = 2.20	C _c = 1.16

Classification

USCS= SP-SM AASHTO=

Remarks

CADD CODE = CH10D965

* (no specification provided)

Location: USACE Sample # BI-HP-3-10A
Sample Number: TE Lab ID: 4593.23

Depth: 0.0 - 2.9 (ft.)

Date: 7/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

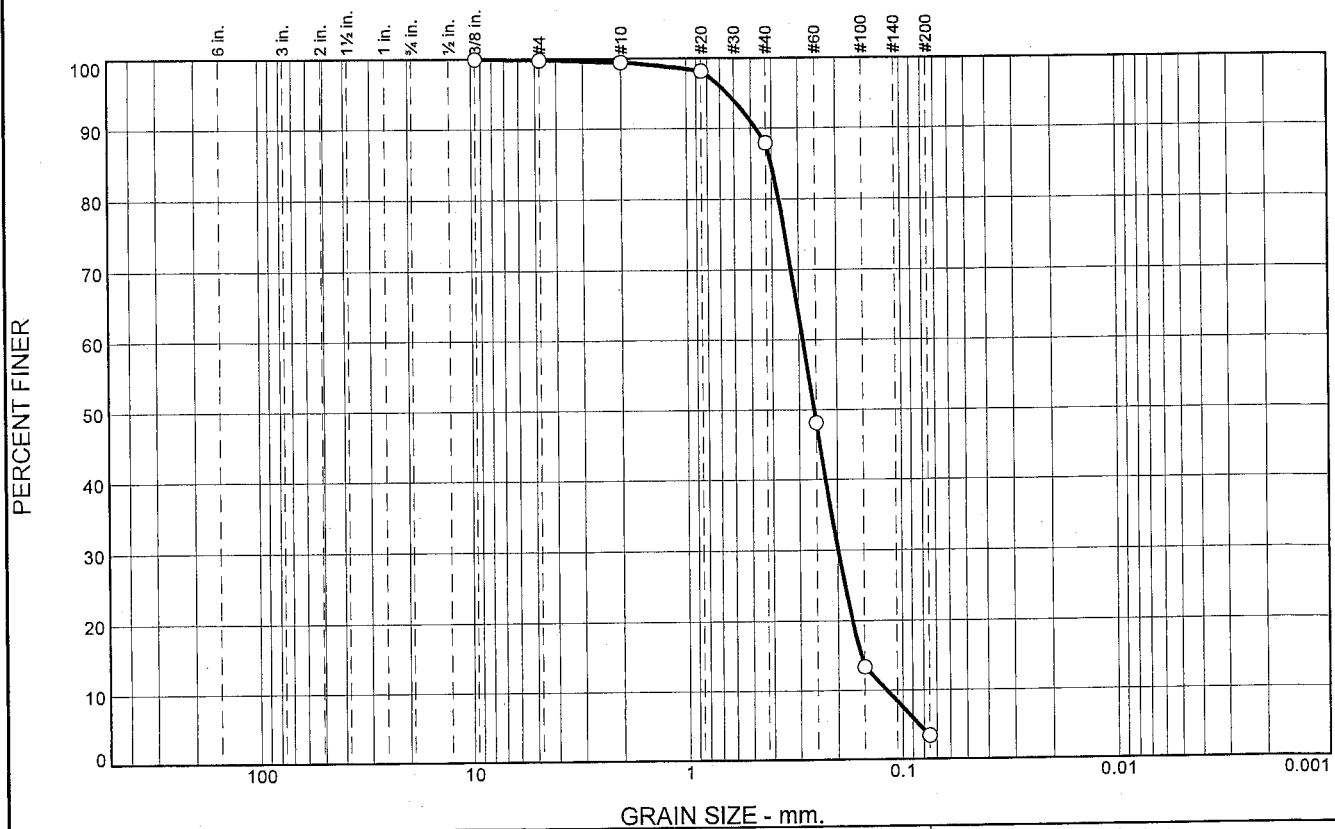
Project No: 10-2123-0009

Report No.

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.3	11.6	84.5	3.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.8		
#10	99.5		
#20	98.2		
#40	87.9		
#60	48.1		
#100	13.4		
#200	3.4		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained

PL= Atterberg Limits LL= PI=

Coefficients
D₉₀= 0.4726 D₈₅= 0.4028 D₆₀= 0.2877
D₅₀= 0.2557 D₃₀= 0.1986 D₁₅= 0.1554
D₁₀= 0.1187 C_u= 2.42 C_c= 1.16

Classification
USCS= SP AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-HP-3-10B
Sample Number: TE Lab ID: 4593.24

Depth: 2.9 - 5.8 (ft.)

Date: 7/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Report No.

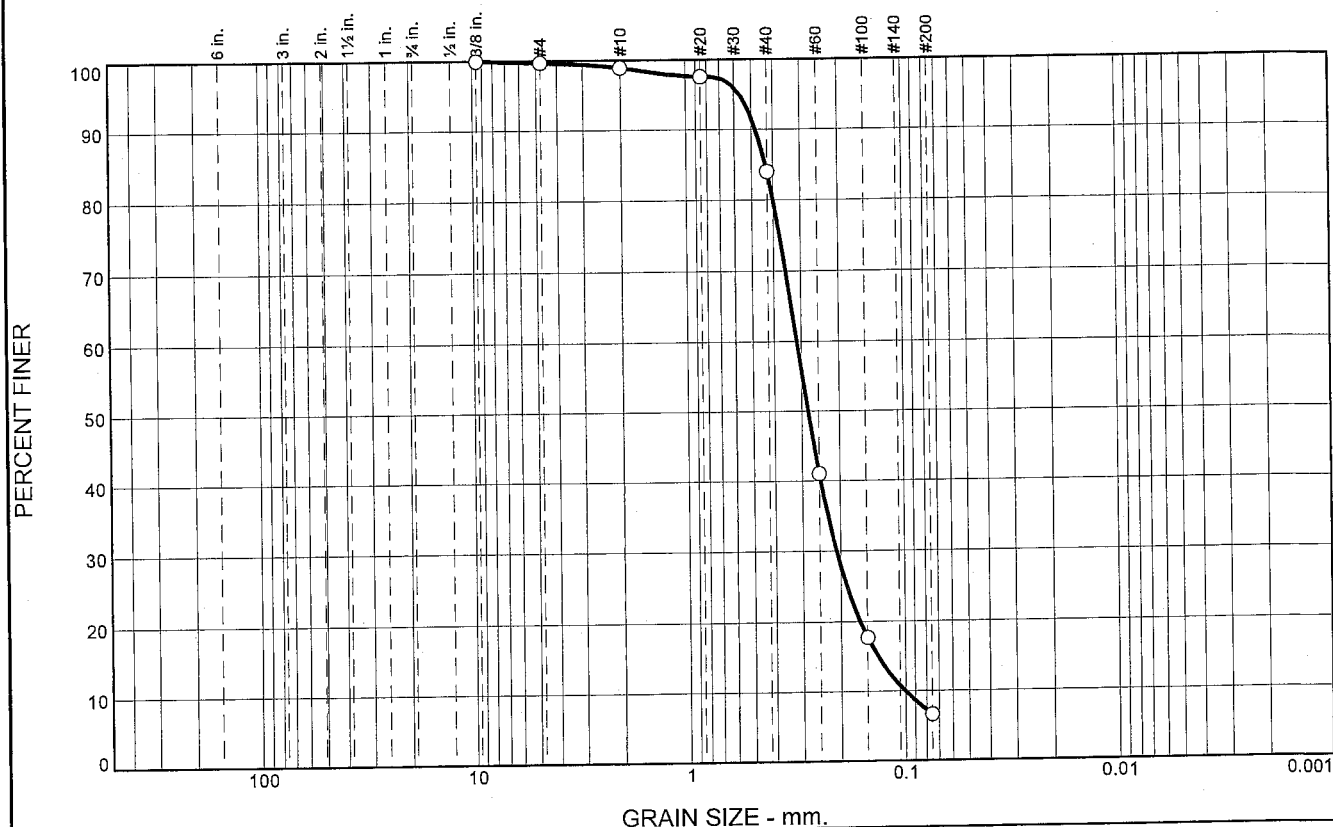
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-HP-04-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Horn Island Pass				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-HP-04-10		LOCATION COORDINATES E = 1,074,261 N = 249,799		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 30 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 07-13-10		STARTED 07-13-10 COMPLETED 07-13-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -29.1 Ft.			
8. TOTAL DEPTH OF BORING 19.3 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR John Baehr, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-29.1	0.0						
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace shell fragments, lt. gray (SP)	A	Classification: SP-SM Color: 2.5Y 7/1-light gray D50: 0.28 mm % Fines: 6.6		
				B	Classification: SM Color: 2.5Y 7/2-light gray D50: 0.2732 mm % Fines: 12.5		
-37.6	8.5						
			SAND, silty, mostly fine-grained sand-sized quartz, trace clay balls, gray (SM)	C	Classification: SM Color: 2.5Y 4/2-dark grayish brown D50: 0.1803 mm % Fines: 29.3		
-40.3	11.2						
			SAND, clayey, mostly fine-grained sand-sized quartz, some clay, trace shell fragments (SC)	NS			
-48.4	19.3						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.3	0.8	14.9	77.4	6.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.7		
#10	98.9		
#20	97.6		
#40	84.0		
#60	41.0		
#100	17.7		
#200	6.6		

* (no specification provided)

Material Description

SAND, (SP-SM), medium to fine grained, with clay nodules

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.4785

D₈₅= 0.4324

D₆₀= 0.3140

D₅₀= 0.2800

D₃₀= 0.2090

D₁₅= 0.1342

D₁₀= 0.1003

C_u= 3.13

C_c= 1.39

Classification

USCS= SP-SM

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-HP-4-10A
Sample Number: TE Lab ID: 4593.31

Depth: 0.0 - 4.2 (ft.)

Date: 7/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

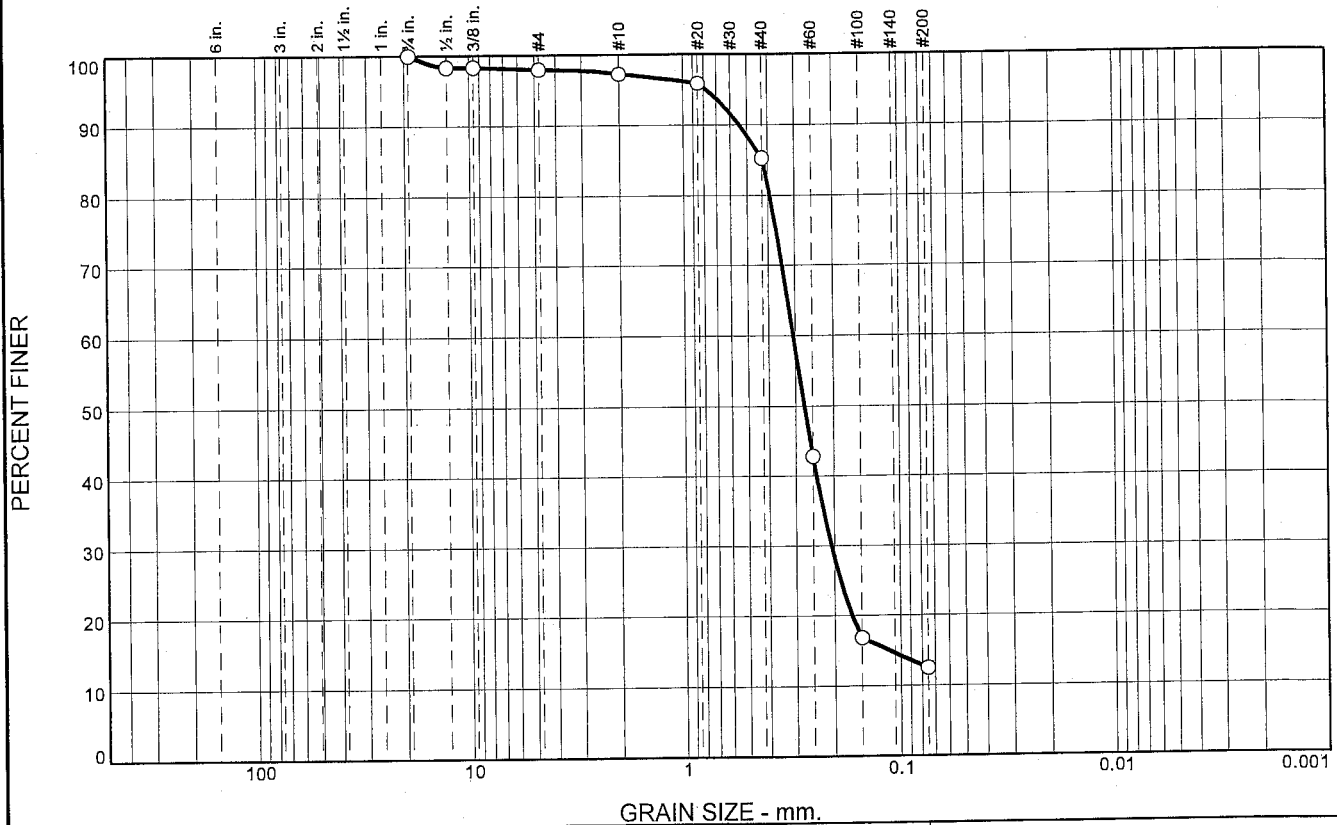
Project No: 10-2123-0009

Report No.

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	2.0	0.7	12.1	72.7	12.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.750	100.0		
.500	98.4		
.375	98.4		
#4	98.0		
#10	97.3		
#20	95.9		
#40	85.2		
#60	42.8		
#100	16.8		
#200	12.5		

Material Description

SILTY SAND, (SM), medium to fine grained, with clay nodules and trace shell

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.5436 D₈₅= 0.4232 D₆₀= 0.3065
D₅₀= 0.2732 D₃₀= 0.2065 D₁₅= 0.1125
D₁₀= C_u= C_c=

Classification

USCS= SM AASHTO=

Remarks

CADD CODE = CH10D965

* (no specification provided)

Location: USACE Sample # BI-HP-4-10B
Sample Number: TE Lab ID: 4593.32

Depth: 4.2 -8.5 (ft.)

Date: 7/26/10

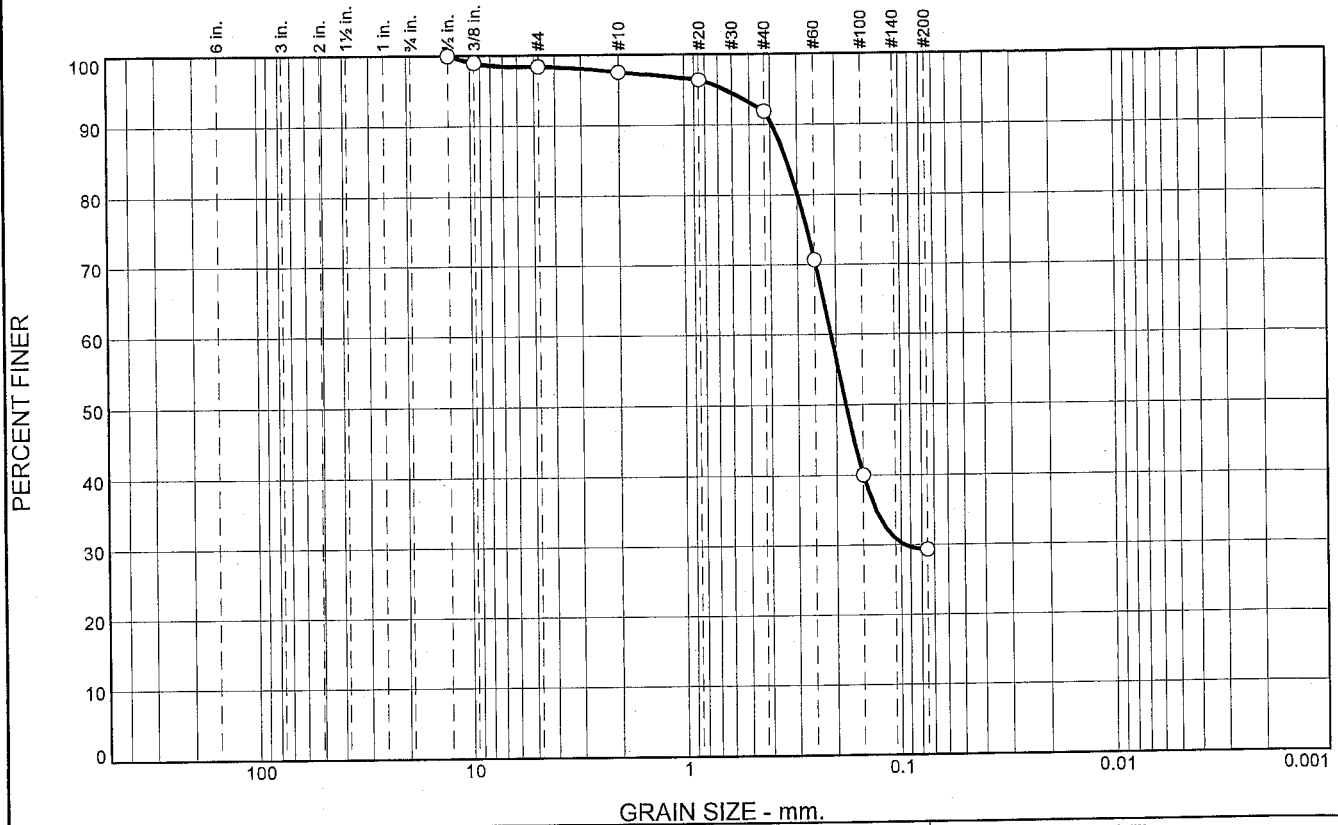
Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 Report No.

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.6	0.8	5.7	62.6	29.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.500	100.0		
.375	99.0		
#4	98.4		
#10	97.6		
#20	96.4		
#40	91.9		
#60	70.7		
#100	40.1		
#200	29.3		

* (no specification provided)

Material Description

SILTY SAND, (SM), fine grained, with trace shell

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.3932 D₈₅= 0.3367 D₆₀= 0.2109
D₅₀= 0.1803 D₃₀= 0.0960 D₁₅=
D₁₀= C_u= C_c=

Classification

USCS= SM AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-HP-4-10C
Sample Number: TE Lab ID: 4593.33

Depth: 8.5 - 11.2 (ft.)

Date: 7/26/10

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Report No.

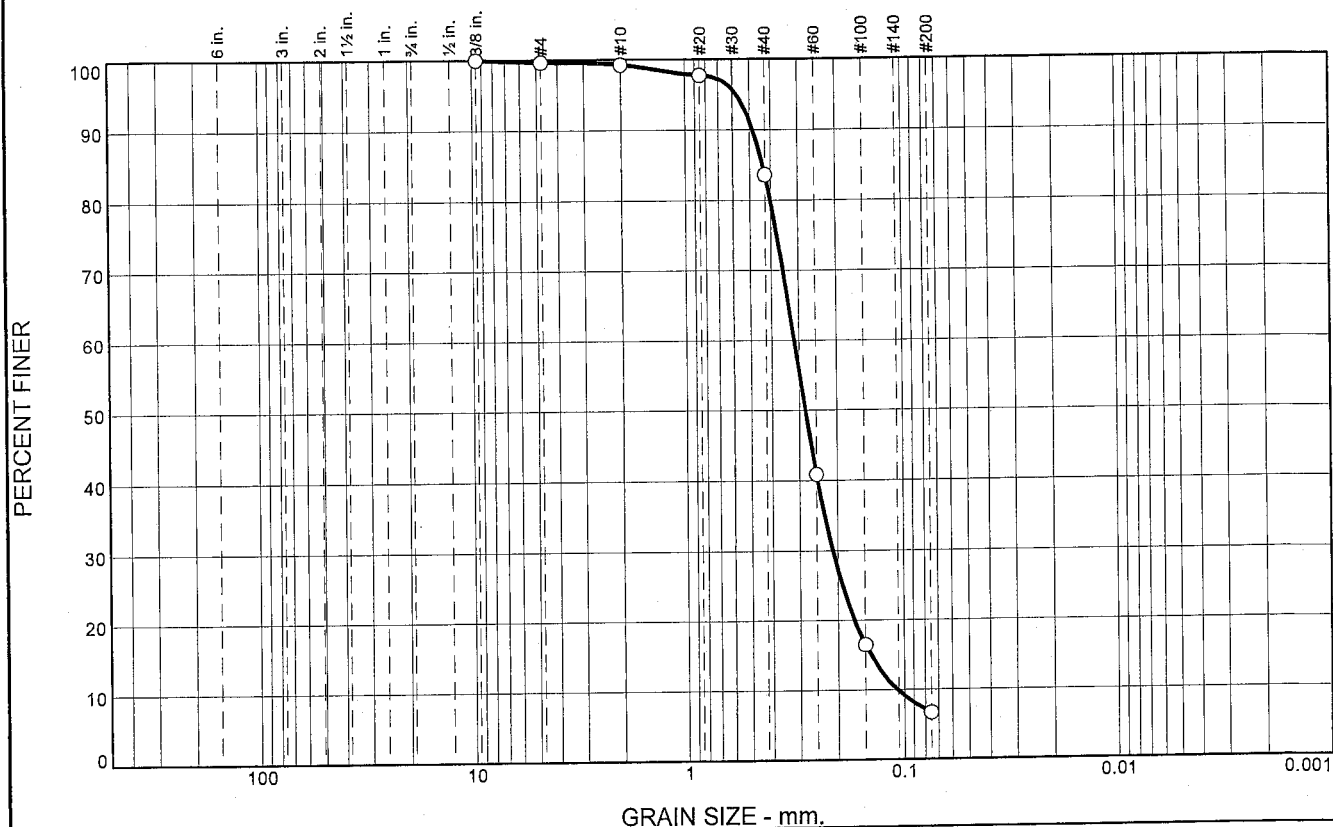
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-HP-05-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Horn Island Pass				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-HP-05-10		LOCATION COORDINATES E = 1,074,509 N = 250,523		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		BEARING		13. TOTAL NUMBER CORE BOXES	
6. THICKNESS OF OVERBURDEN N/A		7. DEPTH DRILLED INTO ROCK N/A		8. TOTAL DEPTH OF BORING 17.8 Ft.		14. WATER DEPTH 34 Ft.	
						15. DATE BORING STARTED 07-14-10 COMPLETED 07-14-10	
						16. ELEVATION TOP OF BORING -33.7 Ft.	
						17. TOTAL RECOVERY FOR BORING 100%	
						18. SIGNATURE AND TITLE OF INSPECTOR John Baehr, Geologist	
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-33.7	0.0						
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace clay, lt. gray (SP)	A	Classification: SP-SM Color: 2.5Y 7/1-light gray D50: 0.2803 mm % Fines: 6.7		
-38.5	4.8						
			SAND, clayey, mostly fine-grained sand-sized quartz, some clay, gray (SC)	B			
-51.5	17.8						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.3	0.4	15.7	76.9	6.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.7		
#10	99.3		
#20	97.7		
#40	83.6		
#60	40.9		
#100	16.5		
#200	6.7		

Material Description

SAND, (SP-SM), medium to fine grained, with clay nodules

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.4832

D₈₅= 0.4354

D₆₀= 0.3146

D₅₀= 0.2803

D₃₀= 0.2110

D₁₅= 0.1417

D₁₀= 0.1073

C_u= 2.93

C_c= 1.32

Classification

USCS= SP-SM

AASHTO=

Remarks

CADD CODE = CH10D965

* (no specification provided)

Location: USACE Sample # BI-HP-5-10A
Sample Number: TE Lab ID: 4593.34

Depth: 0.0 - 4.8 (ft.)

Date: 7/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Report No.

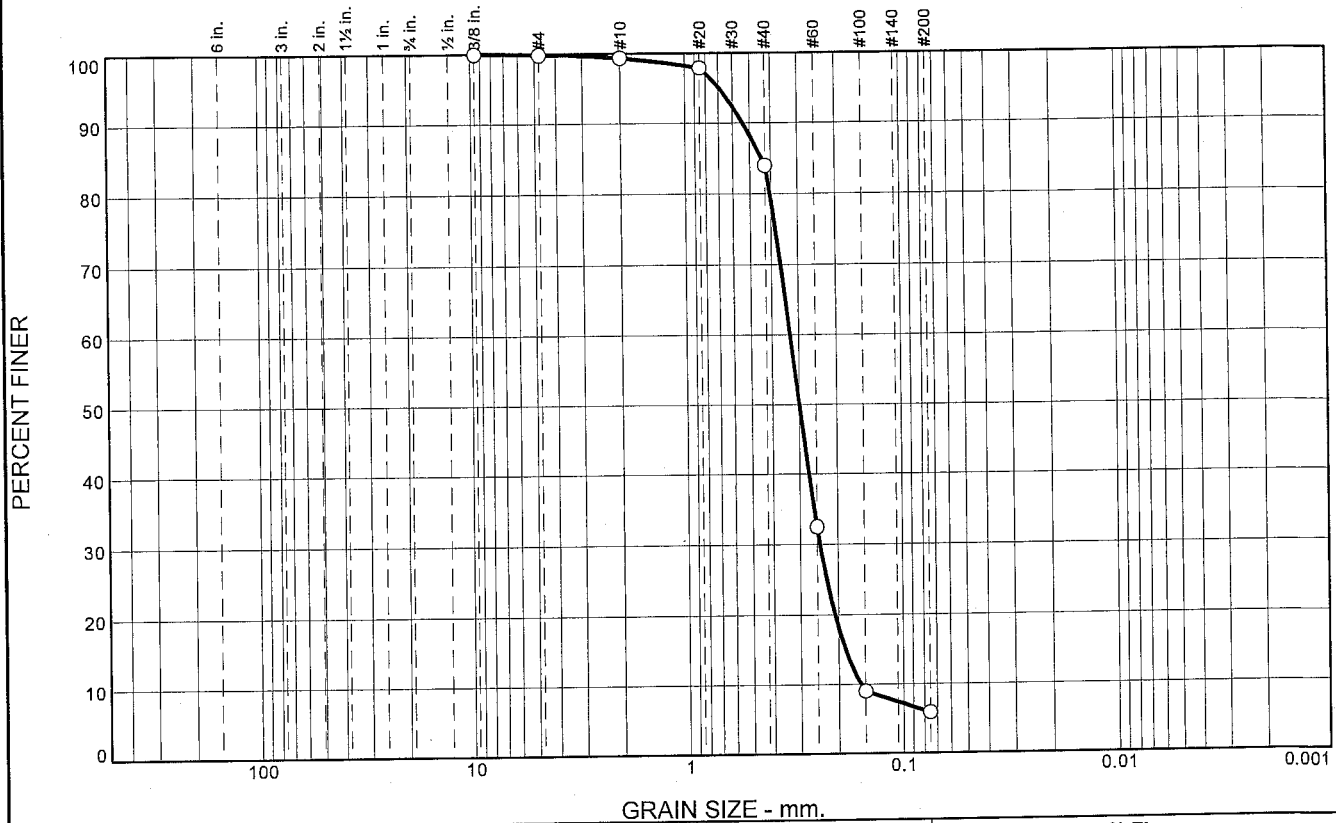
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-HP-06-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Horn Island Pass				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-HP-06-10		LOCATION COORDINATES E = 1,073,220 N = 250,622		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 1 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		BEARING		13. TOTAL NUMBER CORE BOXES	
6. THICKNESS OF OVERBURDEN N/A				14. WATER DEPTH 34 Ft.			
7. DEPTH DRILLED INTO ROCK N/A				15. DATE BORING 07-14-10		STARTED 07-14-10 COMPLETED 07-14-10	
8. TOTAL DEPTH OF BORING 17.5 Ft.				16. ELEVATION TOP OF BORING -33.6 Ft.			
				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR John Baehr, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-33.6	0.0						
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, lt. gray (SP)	A	Classification: SP-SM Color: 2.5Y 6/1-gray D50: 0.2996 mm % Fines: 5.9		
-37.6	4.0						
			SAND, clayey, mostly fine-grained sand-sized quartz, occasional clay balls, gray (SC)	NS			
-51.1	17.5						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.5	15.4	78.1	5.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.4		
#20	97.9		
#40	84.0		
#60	32.5		
#100	9.0		
#200	5.9		

* (no specification provided)

Material Description

SAND, (SP-SM), medium to fine grained, with clay nodules

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.5378 D₈₅= 0.4409 D₆₀= 0.3291
D₅₀= 0.2996 D₃₀= 0.2425 D₁₅= 0.1864
D₁₀= 0.1577 C_u= 2.09 C_c= 1.13

Classification

USCS= SP-SM AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-HP-6-10A
Sample Number: TE Lab ID: 4593.35

Depth: 0.0 - 4.3 (ft.)

Date: 7/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Report No.

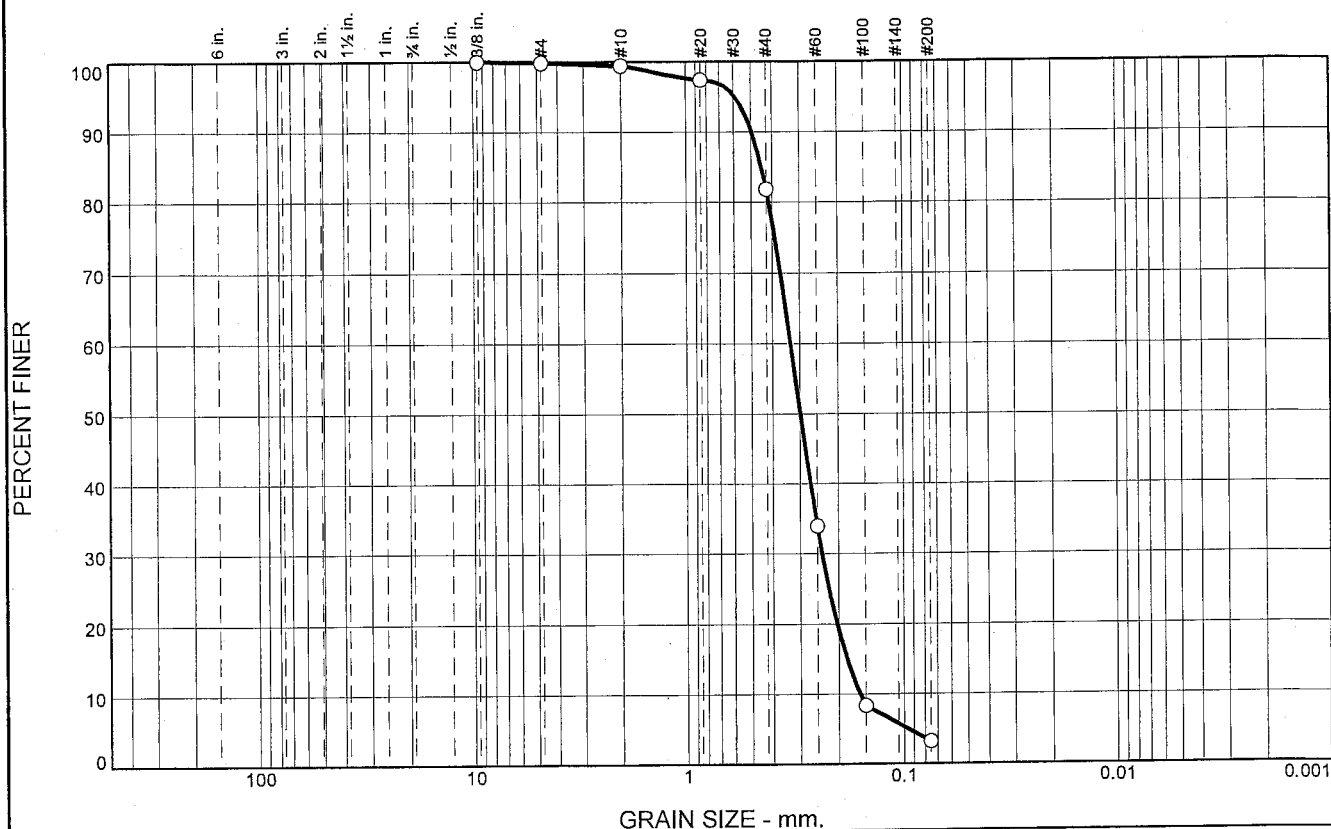
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-HP-07-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Horn Island Pass				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-HP-07-10		LOCATION COORDINATES E = 1,073,684 N = 249,161		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 32 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 07-13-10		STARTED 07-13-10 COMPLETED 07-13-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -31.3 Ft.			
8. TOTAL DEPTH OF BORING 16.7 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR John Baehr, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-31.3	0.0						
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace shell fragments, occ. clay balls (SP)	A	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.2982 mm % Fines: 3.2		
				B	Classification: SP-SM Color: 2.5Y 7/1-light gray D50: 0.2463 mm % Fines: 6.2		
-37.5	6.2						
			SAND, clayey, mostly fine-grained sand-sized quartz, some clay, gray (SC)	NS			
-48.0	16.7						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.5	17.6	78.6	3.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.4		
#20	97.4		
#40	81.8		
#60	33.9		
#100	8.3		
#200	3.2		

(no specification provided)

Material Description

SAND, (SP), medium to fine grained, with clay nodules

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.4948 D₈₅= 0.4472 D₆₀= 0.3301
D₅₀= 0.2982 D₃₀= 0.2378 D₁₅= 0.1834
D₁₀= 0.1595 C_u= 2.07 C_c= 1.07

Classification

USCS= SP AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-HP-7-10A
Sample Number: TE Lab ID: 4593.27

Depth: 0.0 - 3.1 (ft.)

Date: 7/26/10

Thompson Engineering

Mobile, Alabama

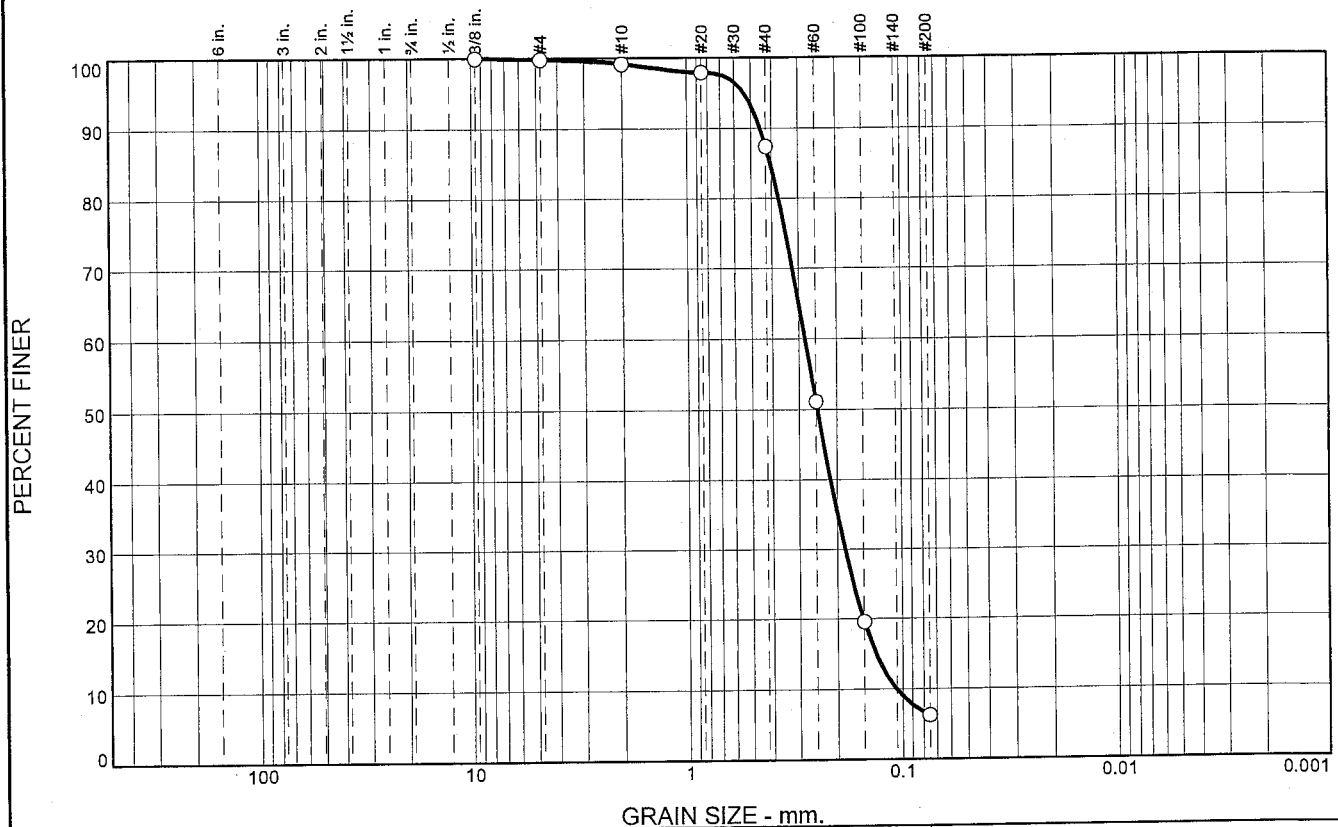
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Report No.

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.6	11.8	81.2	6.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.8		
#10	99.2		
#20	98.0		
#40	87.4		
#60	51.1		
#100	19.5		
#200	6.2		

* (no specification provided)

Material Description

SAND, (SP-SM), medium to fine grained, with clay nodules

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.4518 D₈₅= 0.4050 D₆₀= 0.2808
D₅₀= 0.2463 D₃₀= 0.1838 D₁₅= 0.1324
C_u= 2.63 C_c= 1.13

Classification

USCS= SP-SM AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-HP-7-10B
Sample Number: TE Lab ID: 4593.28

Depth: 3.1 - 6.2 (ft.)

Date: 7/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Report No.

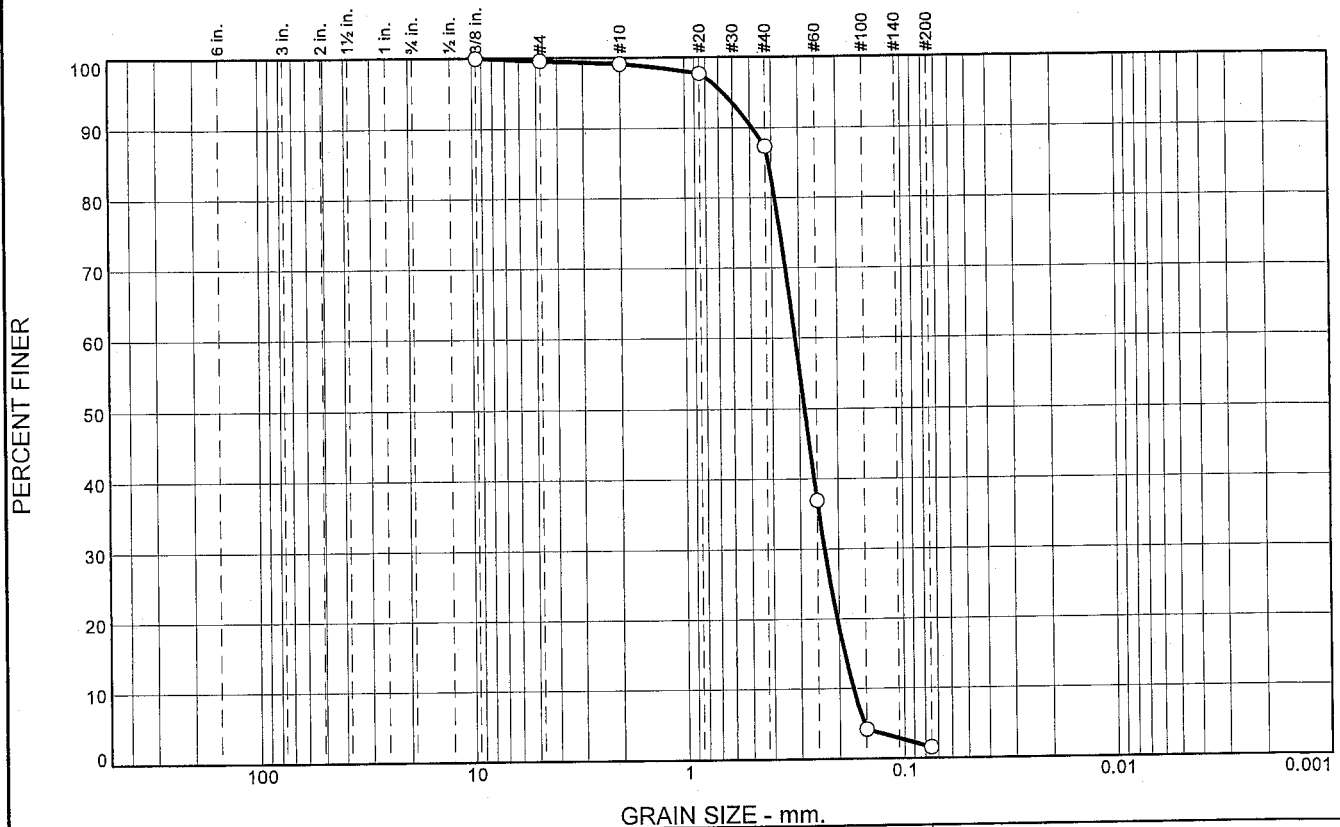
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-HP-08-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Horn Island Pass				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-HP-08-10		LOCATION COORDINATES E = 1,073,140 N = 251,924		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 1	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		UNDISTURBED (UD) 0	
6. THICKNESS OF OVERBURDEN N/A				14. WATER DEPTH		33 Ft.	
7. DEPTH DRILLED INTO ROCK N/A				15. DATE BORING		STARTED 07-14-10	
8. TOTAL DEPTH OF BORING 17.4 Ft.				16. ELEVATION TOP OF BORING		COMPLETED 07-14-10	
				17. TOTAL RECOVERY FOR BORING		100%	
				18. SIGNATURE AND TITLE OF INSPECTOR		John Baehr, Geologist	
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-32.2	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.2849 mm % Fines: 1.6		
-37.3	5.1						
			SAND, clayey, mostly fine-grained sand-sized quartz, some clay, gray (SC)	NS			
-49.6	17.4						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.4	0.5	11.8	85.7	1.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.6		
#10	99.1		
#20	97.8		
#40	87.3		
#60	36.9		
#100	4.2		
#200	1.6		

Material Description

SAND, (SP), medium to fine grained, with clay nodules

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.4863 D₈₅= 0.4109 D₆₀= 0.3134
D₅₀= 0.2849 D₃₀= 0.2316 D₁₅= 0.1888
D₁₀= 0.1725 C_u= 1.82 C_c= 0.99

Classification

USCS= SP AASHTO=

Remarks

CADD CODE = CH10D965

* (no specification provided)

Location: USACE Sample # BI-HP-8-10A
Sample Number: TE Lab ID: 4593.45

Depth: 0.0 - 5.1 (ft.)

Date: 7/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Report No.

Tested By: G.Fancher

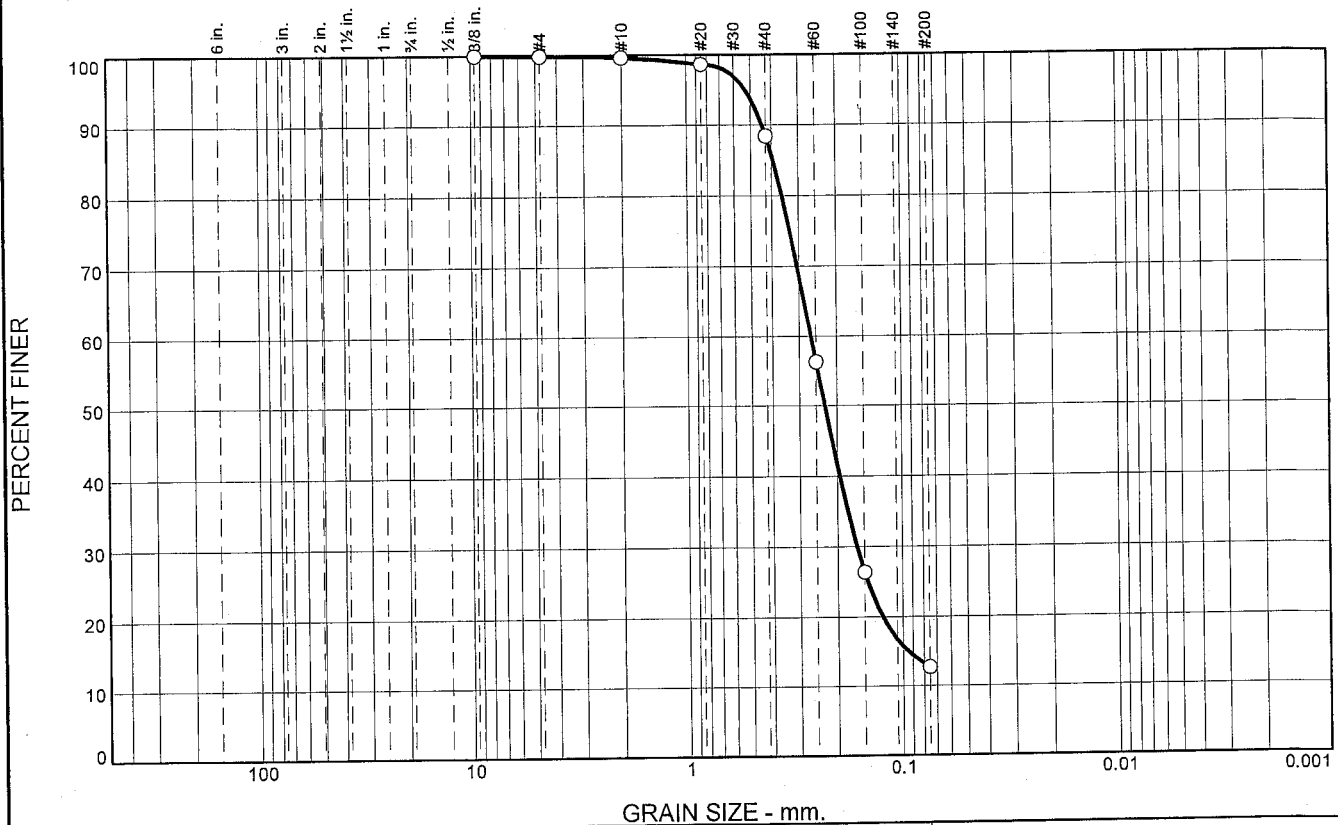
Checked By: R.Byrd

Boring Designation BI-HP-09-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Horn Island Pass				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-HP-09-10		LOCATION COORDINATES E = 1,074,811 N = 252,037		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 1	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		UNDISTURBED (UD) 0	
6. THICKNESS OF OVERBURDEN N/A				14. WATER DEPTH		36 Ft.	
7. DEPTH DRILLED INTO ROCK N/A				15. DATE BORING		STARTED 07-14-10	
8. TOTAL DEPTH OF BORING 18.7 Ft.				16. ELEVATION TOP OF BORING		COMPLETED 07-14-10	
				17. TOTAL RECOVERY FOR BORING		100%	
				18. SIGNATURE AND TITLE OF INSPECTOR John Baehr, Geologist			

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-35.1	0.0				
-35.6	0.5				
-36.5	1.4		SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace shell fragments, lt. gray (SP)	A	Classification: SM Color: 2.5Y 7/1-light gray D50: 0.2278 mm % Fines: 12.7
			SAND, silty, mostly fine-grained sand-sized quartz, some silt, lt. gray (SM)		
			SAND, clayey, mostly fine-grained sand-sized quartz, some clay, gray (SC)		
				NS	
-53.8	18.7				
NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.					

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.2	11.3	75.7	12.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.7		
#20	98.7		
#40	88.4		
#60	56.3		
#100	26.3		
#200	12.7		

* (no specification provided)

Material Description
SILTY SAND, (SM), medium to fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.4423 D₈₅= 0.3940 D₆₀= 0.2637
 D₅₀= 0.2278 D₃₀= 0.1627 D₁₅= 0.0944
 D₁₀= C_u= C_c=

Classification
 USCS= SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-HP-9-10A
 Sample Number: TE Lab ID: 4593.44

Depth: 0.0 - 1.4 (ft.)

Date: 7/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
 Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
 Project No: 10-2123-0009

Report No.

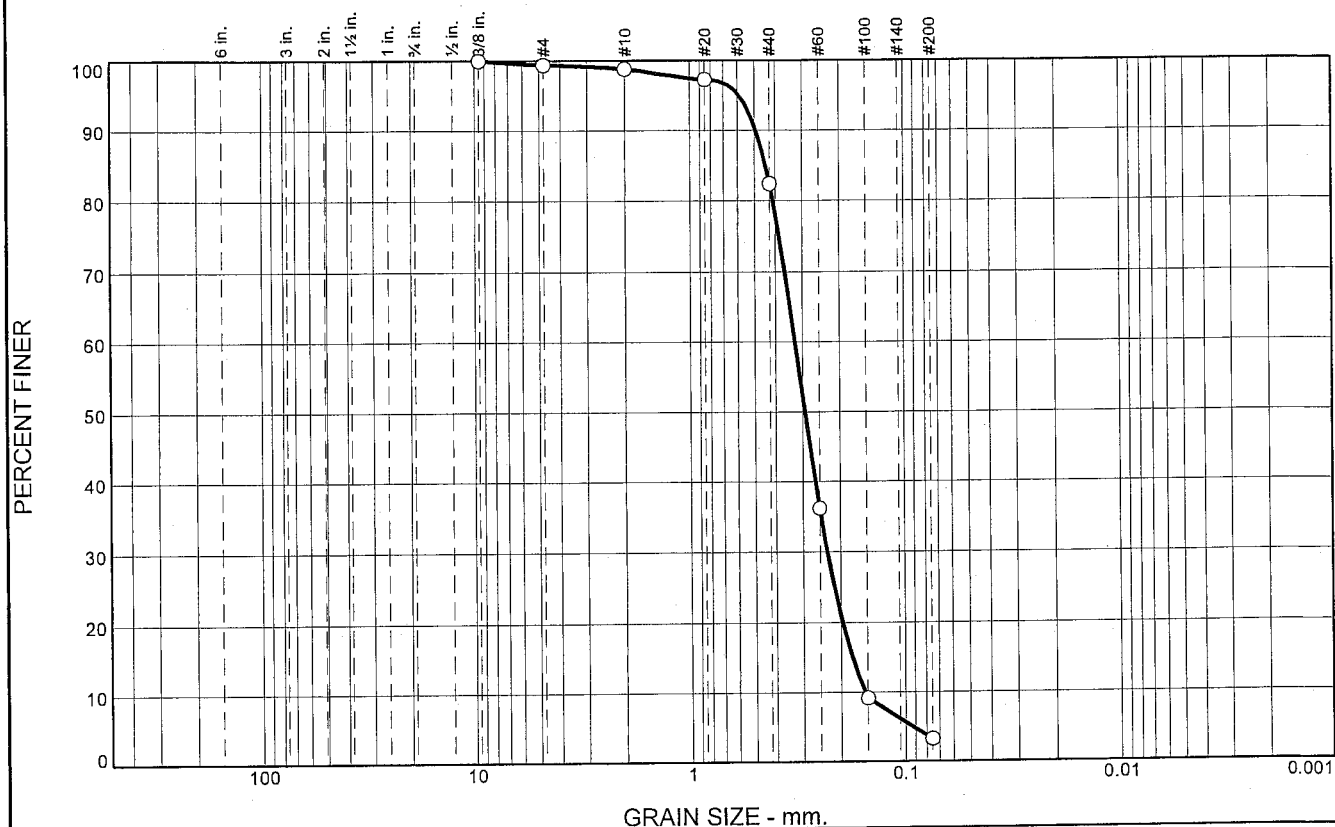
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-HP-10-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Horn Island Pass				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-HP-10-10		LOCATION COORDINATES E = 1,076,520 N = 252,092		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 31 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 07-14-10		STARTED 07-14-10 COMPLETED 07-14-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -30.1 Ft.			
8. TOTAL DEPTH OF BORING 18.8 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR John Baehr, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-30.1	0.0						
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace shell fragments (SP)	A	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.2922 mm % Fines: 3.2		
				B	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.2576 mm % Fines: 3.5		
-35.7	5.6						
			SAND, clayey, mostly fine-grained sand-sized quartz, some clay, gray (SC)	NS			
-48.9	18.8						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.6	0.6	16.5	79.1	3.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.4		
#10	98.8		
#20	97.3		
#40	82.3		
#60	36.1		
#100	9.2		
#200	3.2		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained

PL= Atterberg Limits LL= PI=

Coefficients
D₉₀= 0.4926 D₈₅= 0.4440 D₆₀= 0.3247
D₅₀= 0.2922 D₃₀= 0.2307 D₁₅= 0.1771
D₁₀= 0.1544 C_u= 2.10 C_c= 1.06

Classification
USCS= SP AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-HP-10-10A
Sample Number: TE Lab ID: 4593.42

Depth: 0.0 - 2.8 (ft.)

Date: 7/26/10

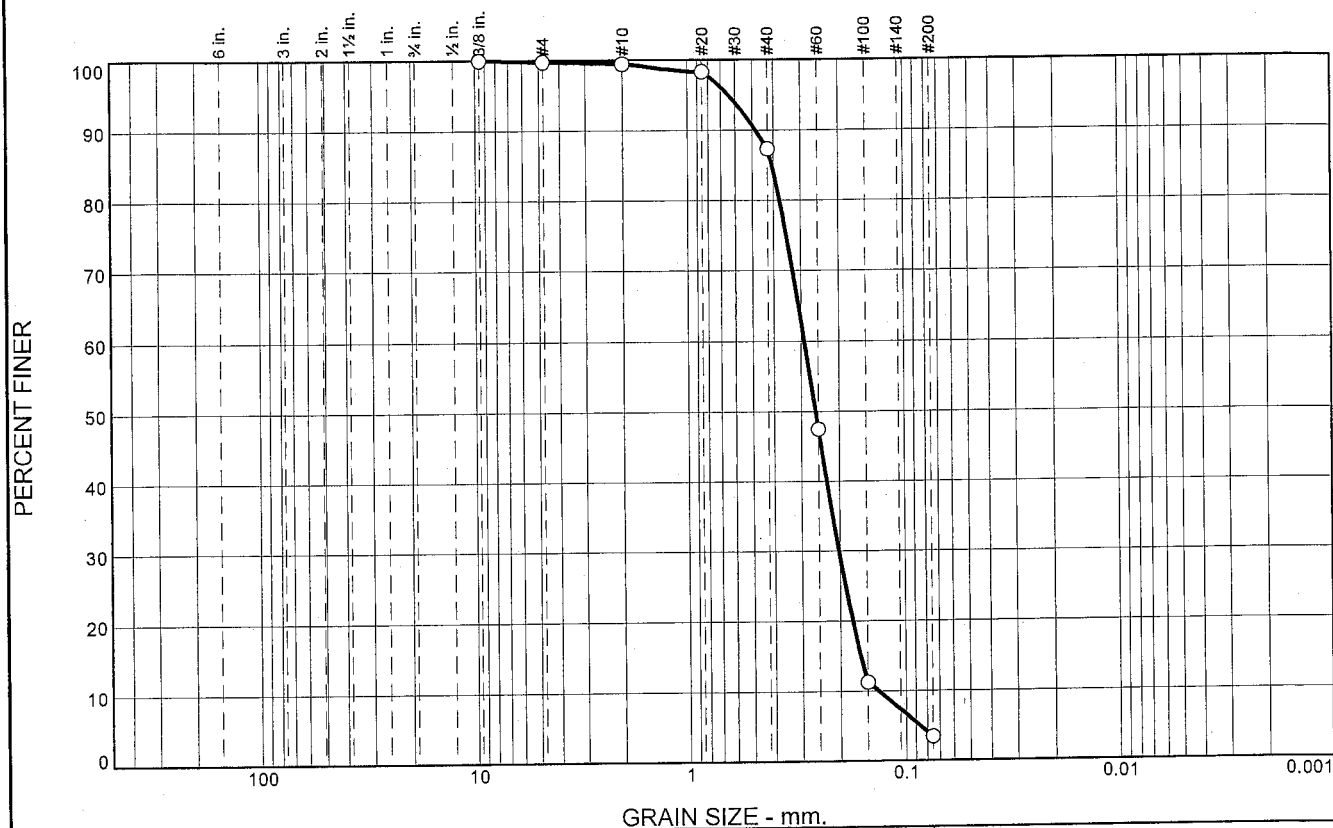
Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 Report No.

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.3	12.2	83.8	3.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.8		
#10	99.5		
#20	98.3		
#40	87.3		
#60	47.4		
#100	11.3		
#200	3.5		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained, with clay nodules

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.4825 D₈₅= 0.4069 D₆₀= 0.2895
D₅₀= 0.2576 D₃₀= 0.2023 D₁₅= 0.1617
D₁₀= 0.1340 C_u= 2.16 C_c= 1.05

Classification

USCS= SP AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-HP-10-10B
Sample Number: TE Lab ID: 4593.43

Depth: 2.8 - 5.6 (ft.)

Date: 7/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Report No.

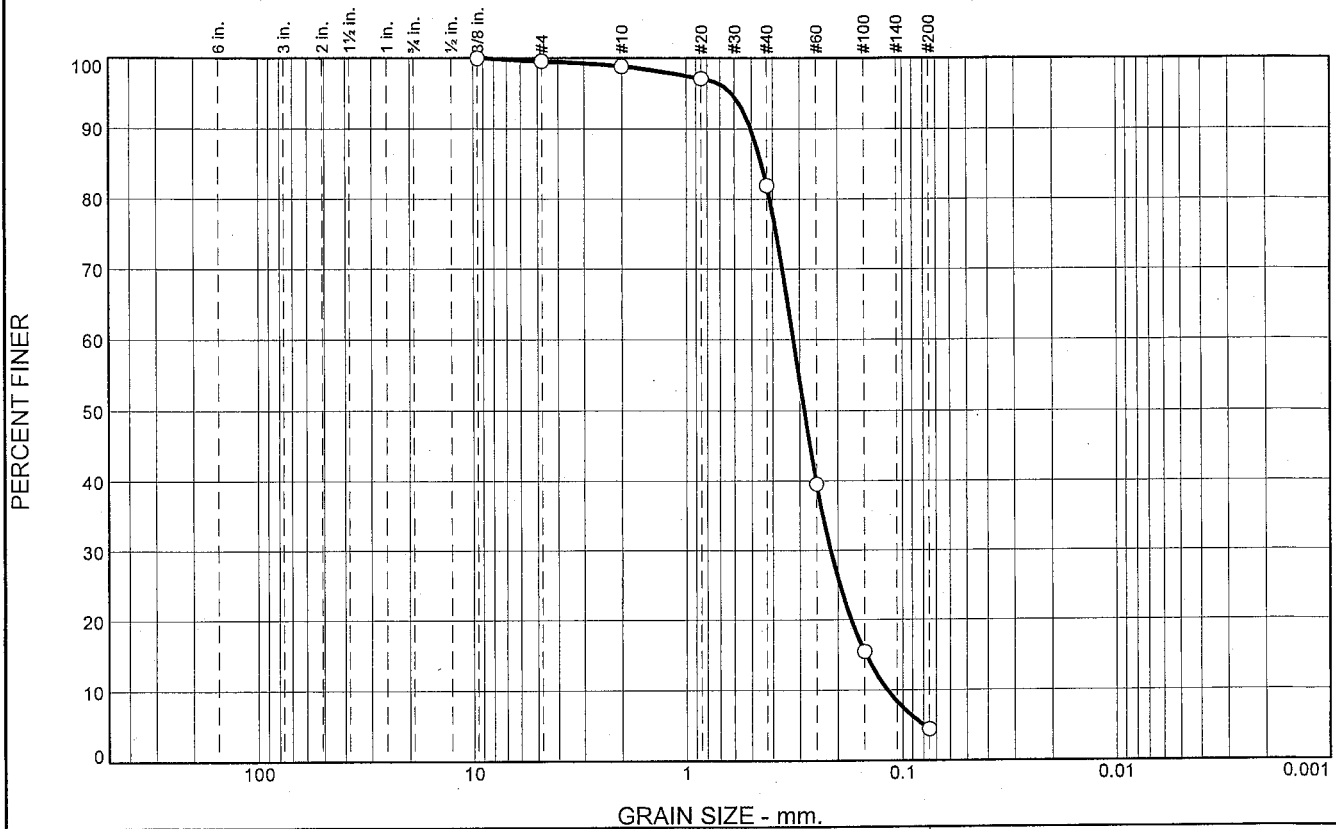
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-HP-11-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Horn Island Pass				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-HP-11-10		LOCATION COORDINATES E = 1,071,722 N = 249,203		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 36 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 07-14-10		STARTED 07-14-10 COMPLETED 07-14-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -35.6 Ft.			
8. TOTAL DEPTH OF BORING 18.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR John Baehr, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-35.6	0.0						
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.2854 mm % Fines: 4.5		
-40.7	5.1						
-41.8	6.2		SAND, silty, mostly fine-grained sand-sized quartz, some silt, trace shell fragments, lt. gray (SM)	B	Classification: SM Color: 2.5Y 5/1-gray D50: 0.2161 mm % Fines: 16.8		
			SAND, clayey, mostly fine-grained sand-sized quartz, some clay, trace shell fragments, gray (SC)	NS			
-53.6	18.0						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.5	0.6	17.0	77.4	4.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.5		
#10	98.9		
#20	97.1		
#40	81.9		
#60	39.5		
#100	15.4		
#200	4.5		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained, with clay nodules

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.5033 D₈₅= 0.4490 D₆₀= 0.3205
D₅₀= 0.2854 D₃₀= 0.2156 D₁₅= 0.1478
D₁₀= 0.1176 C_u= 2.73 C_c= 1.23

Classification

USCS= SP AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-HP-11-10A
Sample Number: TE Lab ID: 4593.36

Depth: 0.0 - 5.1 (ft.)

Date: 7/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

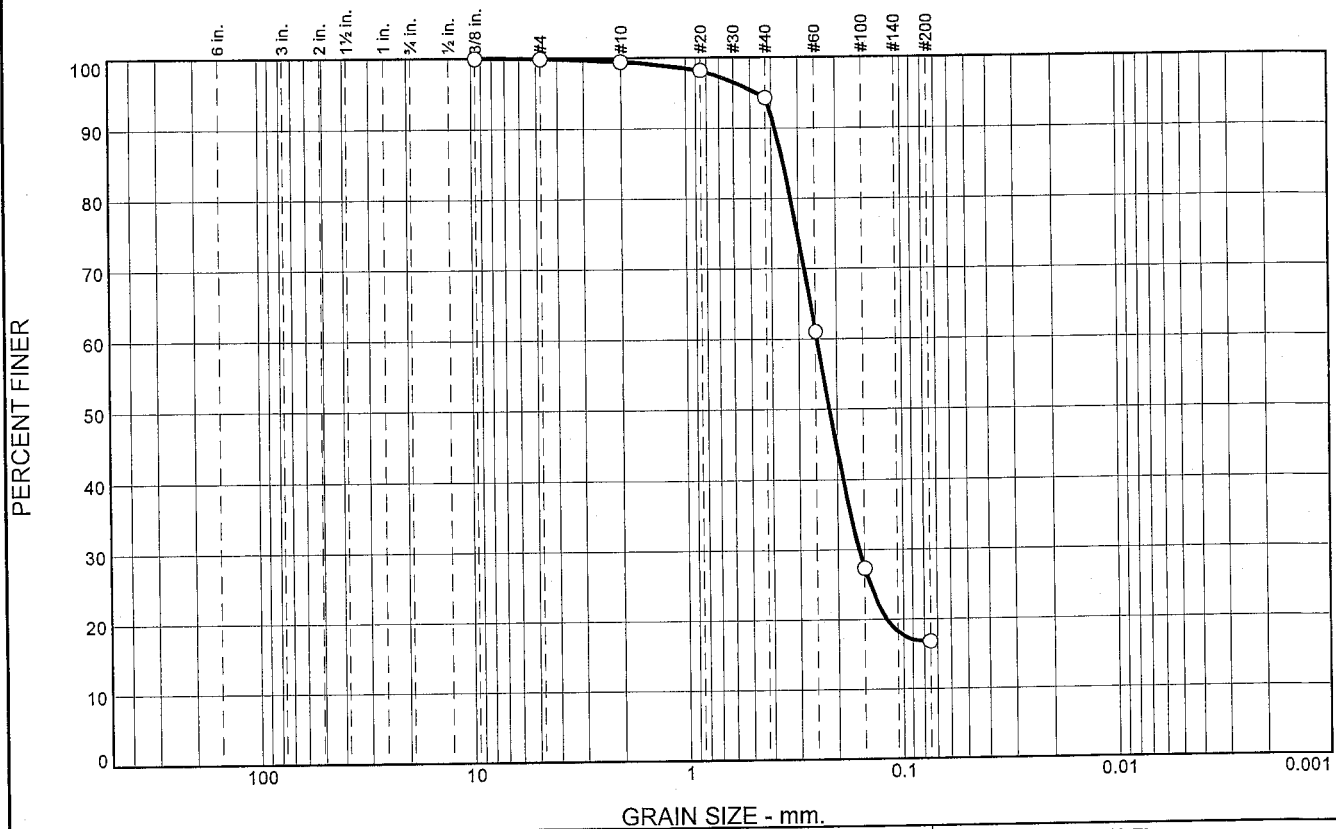
Project No: 10-2123-0009

Report No.

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.4	5.2	77.5	16.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.5		
#20	98.2		
#40	94.3		
#60	61.0		
#100	27.3		
#200	16.8		

* (no specification provided)

Material Description
SILTY SAND, (SM), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.3850 D₈₅= 0.3514 D₆₀= 0.2467
 D₅₀= 0.2161 D₃₀= 0.1586 D₁₅=
 D₁₀= C_u= C_c=

Classification
 USCS= SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-HP-11-10B
 Sample Number: TE Lab ID: 4593.37

Depth: 5.1 - 6.2 (ft.)

Date: 7/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
 Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
 Project No: 10-2123-0009

Report No.

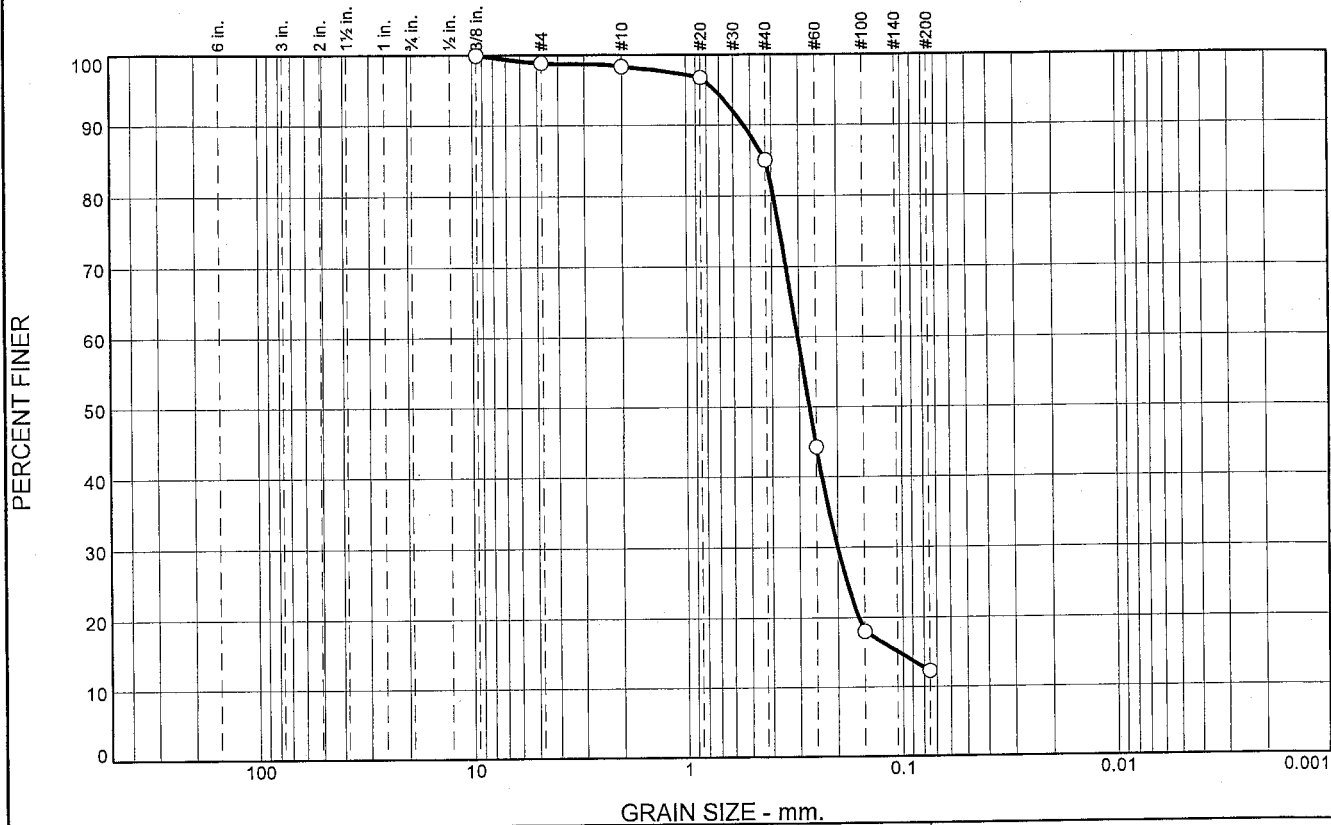
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-HP-12-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Horn Island Pass				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-HP-12-10		LOCATION COORDINATES E = 1,071,714 N = 247,385		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		BEARING		13. TOTAL NUMBER CORE BOXES	
6. THICKNESS OF OVERBURDEN N/A		7. DEPTH DRILLED INTO ROCK N/A		8. TOTAL DEPTH OF BORING 17.8 Ft.		14. WATER DEPTH 36 Ft.	
						15. DATE BORING STARTED 07-14-10 COMPLETED 07-14-10	
						16. ELEVATION TOP OF BORING -35.2 Ft.	
						17. TOTAL RECOVERY FOR BORING 100%	
						18. SIGNATURE AND TITLE OF INSPECTOR John Baehr, Geologist	
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-35.2	0.0						
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, occ. silty zones, lt. gray (SP)	A	Classification: SM Color: 2.5Y 7/1-light gray D50: 0.2691 mm % Fines: 12.3		
				B	Classification: SP-SM Color: 2.5Y 7/1-light gray D50: 0.2371 mm % Fines: 6.4		
-41.2	6.0						
			SAND, clayey, mostly fine-grained sand-sized quartz, some clay, gray (SC)	NS			
-53.0	17.8						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.1	0.5	13.4	72.7	12.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	98.9		
#10	98.4		
#20	96.8		
#40	85.0		
#60	44.3		
#100	18.0		
#200	12.3		

* (no specification provided)

Material Description
SILTY SAND, (SM), fine grained, with clay nodules and trace shell

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.5356 D₈₅= 0.4248 D₆₀= 0.3035
D₅₀= 0.2691 D₃₀= 0.2006 D₁₅= 0.1044
D₁₀= C_u= C_c=

Classification
USCS= SM AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-HP-12-10A
Sample Number: TE Lab ID: 4593.39

Depth: 0.0 - 3.0 (ft.)

Date: 7/26/10

Thompson Engineering
Mobile, Alabama

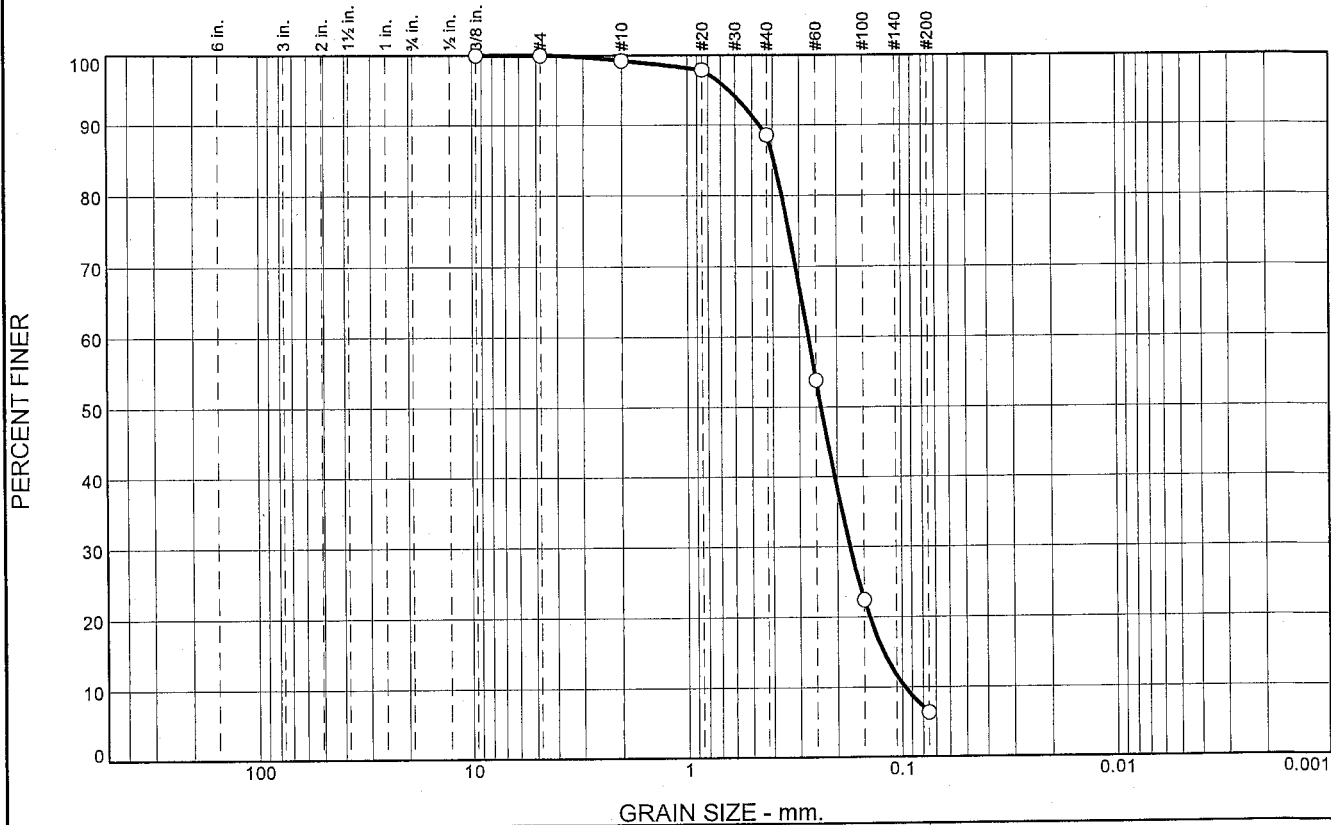
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Report No.

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.8	10.6	82.2	6.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.2		
#20	97.9		
#40	88.6		
#60	53.8		
#100	22.4		
#200	6.4		

Material Description

SAND, (SP-SM), medium to fine grained, with clay nodules

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.4598 D₈₅= 0.3948 D₆₀= 0.2717
D₅₀= 0.2371 D₃₀= 0.1744 D₁₅= 0.1219
D₁₀= 0.0971 C_u= 2.80 C_c= 1.15

Classification

USCS= SP-SM AASHTO=

Remarks

CADD CODE = CH10D965

* (no specification provided)

Location: USACE Sample # BI-HP-12-10B
Sample Number: TE Lab ID: 4593.40

Depth: 3.0 - 6.0 (ft.)

Date: 7/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Report No.

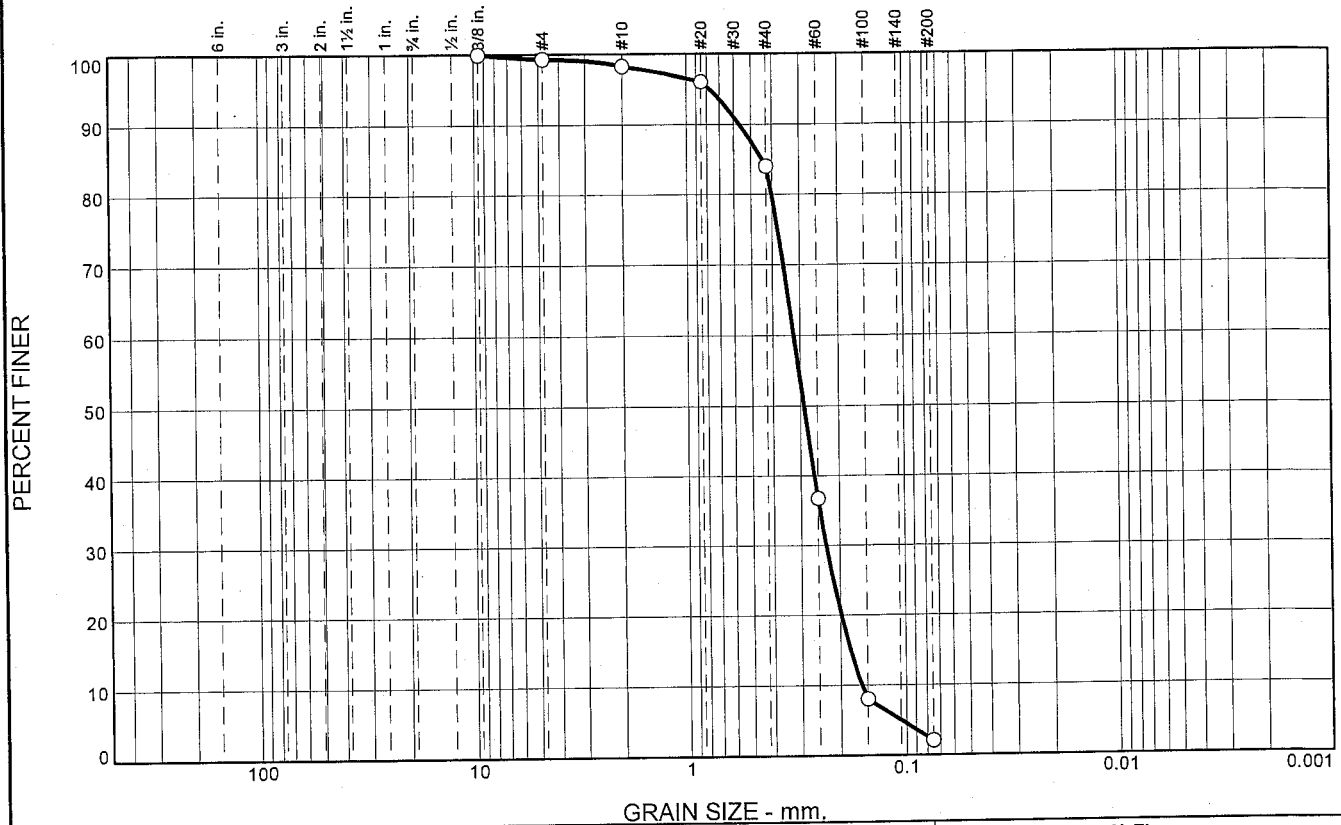
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-HP-13-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Horn Island Pass				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-HP-13-10		LOCATION COORDINATES E = 1,070,283 N = 247,411		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		12. TOTAL SAMPLES 1		DISTURBED 1		VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		13. TOTAL NUMBER CORE BOXES		14. WATER DEPTH 38 Ft.	
4. NAME OF DRILLER Construction Solutions International, Inc.		5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		15. DATE BORING 07-14-10		16. ELEVATION TOP OF BORING -37.1 Ft.	
6. THICKNESS OF OVERBURDEN N/A		7. DEPTH DRILLED INTO ROCK N/A		17. TOTAL RECOVERY FOR BORING 100%		18. SIGNATURE AND TITLE OF INSPECTOR John Baehr, Geologist	
8. TOTAL DEPTH OF BORING 17.3 Ft.							
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-37.1	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 7/2-light gray D50: 0.2888 mm % Fines: 2.1		
-40.3	3.2						
			SAND, clayey, mostly fine-grained sand-sized quartz, some clay, gray (SC)	NS			
-54.4	17.3						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.7	1.0	14.3	81.9	2.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.3		
#10	98.3		
#20	96.0		
#40	84.0		
#60	36.7		
#100	8.0		
#200	2.1		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.5635

D₈₅= 0.4434

D₆₀= 0.3200

D₅₀= 0.2888

D₃₀= 0.2300

D₁₅= 0.1799

D₁₀= 0.1594

C_u= 2.01

C_c= 1.04

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-HP-13-10A
Sample Number: TE Lab ID: 4593.41

Depth: 0.0 - 3.2 (ft.)

Date: 7/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Report No.

Tested By: G.Fancher

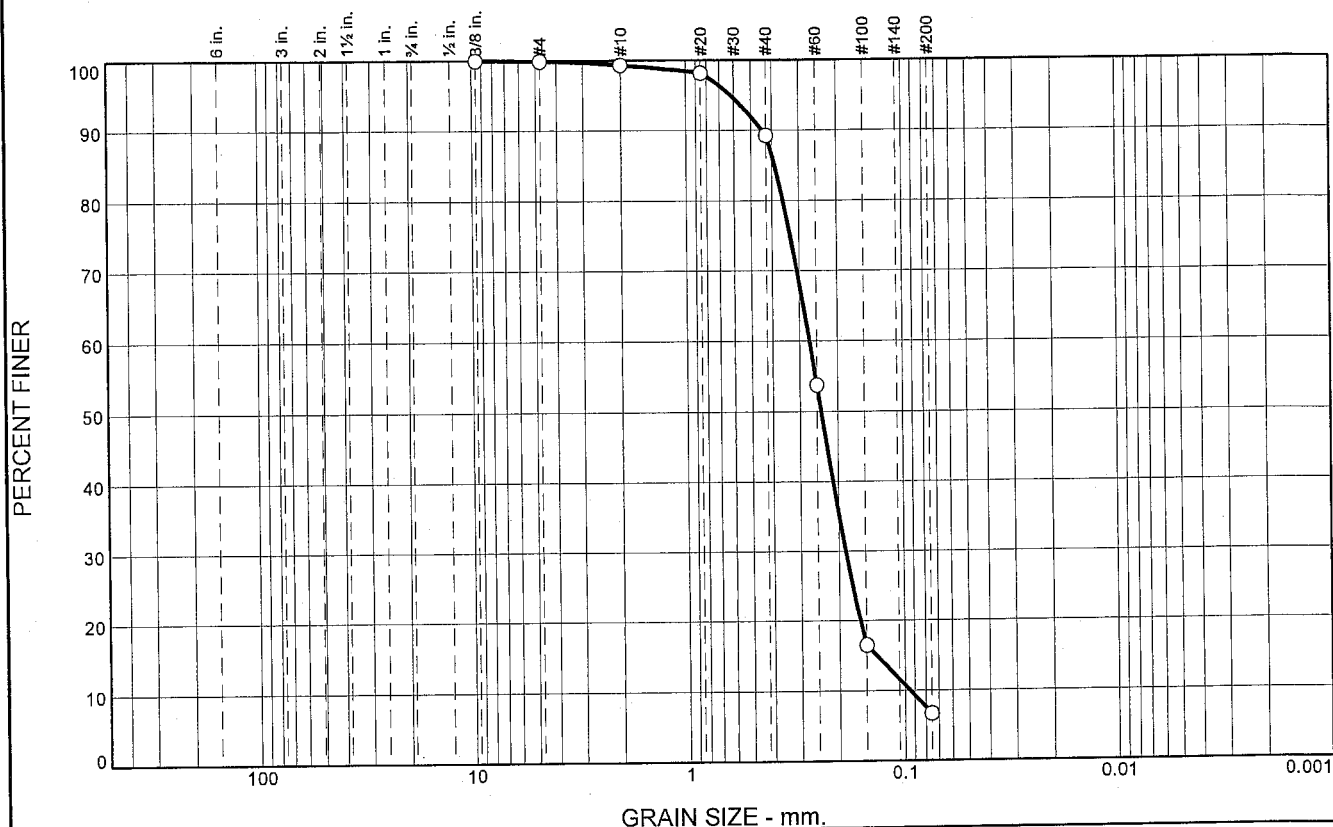
Checked By: R.Byrd

Boring Designation BI-HP-14-10

DRILLING LOG		DIVISION South Atlantic	INSTALLATION Mobile District	SHEET 1 OF 1 SHEETS
1. PROJECT Barrier Island Restoration Horn Island Pass		9. SIZE AND TYPE OF BIT N/A		
2. BORING DESIGNATION BI-HP-14-10		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		
3. DRILLING AGENCY Corps of Engineers - CESAM		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		
4. NAME OF DRILLER Construction Solutions International, Inc.		12. TOTAL SAMPLES 1		
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		13. TOTAL NUMBER CORE BOXES		
6. THICKNESS OF OVERBURDEN N/A		14. WATER DEPTH 37 Ft.		
7. DEPTH DRILLED INTO ROCK N/A		15. DATE BORING 07-14-10		
8. TOTAL DEPTH OF BORING 15.9 Ft.		16. ELEVATION TOP OF BORING -36.4 Ft.		
		17. TOTAL RECOVERY FOR BORING 100%		
		18. SIGNATURE AND TITLE OF INSPECTOR John Baehr, Geologist		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-36.4	0.0				
-38.9	2.5		SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace shell fragments, lt. gray (SP)	A	Classification: SP-SM Color: 5Y 6/2-light olive gray D50: 0.2388 mm % Fines: 6.7
-52.3	15.9		SAND, clayey, mostly fine-grained sand-sized quartz, some clay, gray (SC)	NS	
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.		

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.6	10.0	82.6	6.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.3		
#20	98.2		
#40	89.3		
#60	53.8		
#100	16.5		
#200	6.7		

Material Description

SAND, (SP-SM), medium to fine grained, with clay nodules

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.4431 D₈₅= 0.3886 D₆₀= 0.2699
D₅₀= 0.2388 D₃₀= 0.1860 D₁₅= 0.1349
D₁₀= 0.0946 C_u= 2.85 C_c= 1.35

Classification

USCS= SP-SM AASHTO=

Remarks

CADD CODE = CH10D965

* (no specification provided)

Location: USACE Sample # BI-HP-14-10A
Sample Number: TE Lab ID: 4593.38

Depth: 0.0 - 2.5 (ft.)

Date: 7/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Report No.

Tested By: G.Fancher

Checked By: R.Byrd

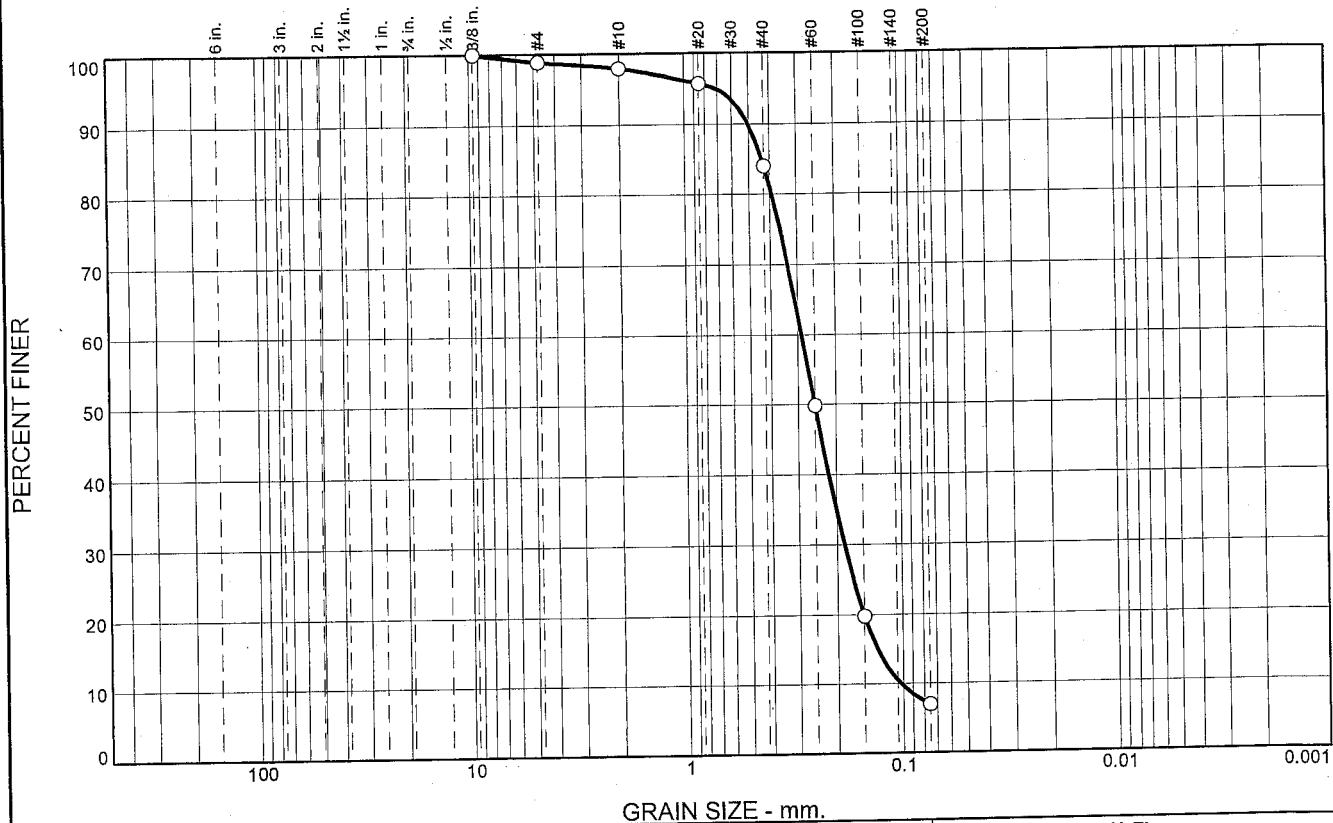
Boring Designation BI-HP-15-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Horn Island Pass				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-HP-15-10		LOCATION COORDINATES E = 1,077,412 N = 250,836		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 0 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 36 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING		STARTED 07-14-10 COMPLETED 07-14-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -35.3 Ft.			
8. TOTAL DEPTH OF BORING 18.5 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR John Baehr, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-35.3	0.0		SAND, clayey, mostly fine-grained sand-sized quartz, some clay, gray (SC)				
				NS			
-53.8	18.5		NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Boring Designation BI-HP-16-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Horn Island Pass				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-HP-16-10		LOCATION COORDINATES E = 1,075,650 N = 248,944		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		12. TOTAL SAMPLES 2		DISTURBED 2		UNDISTURBED (UD) 0	
3. DRILLING AGENCY Corps of Engineers - CESAM				13. TOTAL NUMBER CORE BOXES			
4. NAME OF DRILLER Construction Solutions International, Inc.				14. WATER DEPTH 37 Ft.			
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		BEARING		15. DATE BORING 07-14-10	
6. THICKNESS OF OVERBURDEN N/A				16. ELEVATION TOP OF BORING -36.4 Ft.			
7. DEPTH DRILLED INTO ROCK N/A				17. TOTAL RECOVERY FOR BORING 100%			
8. TOTAL DEPTH OF BORING 17.7 Ft.				18. SIGNATURE AND TITLE OF INSPECTOR John Baehr, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-36.4	0.0						
-37.9	1.5		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, lt. gray (SP)	A	Classification: SP-SM Color: 2.5Y 7/2-light gray D50: 0.2508 mm % Fines: 7		
-39.4	3.0		SAND, silty, mostly fine-grained sand-sized quartz, occ. clayey zones, lt. gray (SM)	B	Classification: SM Color: 2.5Y 7/2-light gray D50: 0.1831 mm % Fines: 26.7		
			SAND, clayey, mostly fine-grained sand-sized quartz, some clay, gray (SC)	NS			
-54.1	17.7						
NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.							

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.1	1.0	13.9	77.0	7.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	98.9		
#10	97.9		
#20	95.7		
#40	84.0		
#60	49.8		
#100	19.7		
#200	7.0		

* (no specification provided)

Material Description

SAND, (SP-SM), medium to fine grained, with clay nodules and trace shell

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.5037

D₈₅= 0.4352

D₆₀= 0.2883

D₅₀= 0.2508

D₃₀= 0.1846

D₁₅= 0.1306

D₁₀= 0.1026

C_u= 2.81

C_c= 1.15

Classification

USCS= SP-SM

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-HP-16-10A
Sample Number: TE Lab ID: 4593.46

Depth: 0.0 - 1.5 (ft.)

Date: 7/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

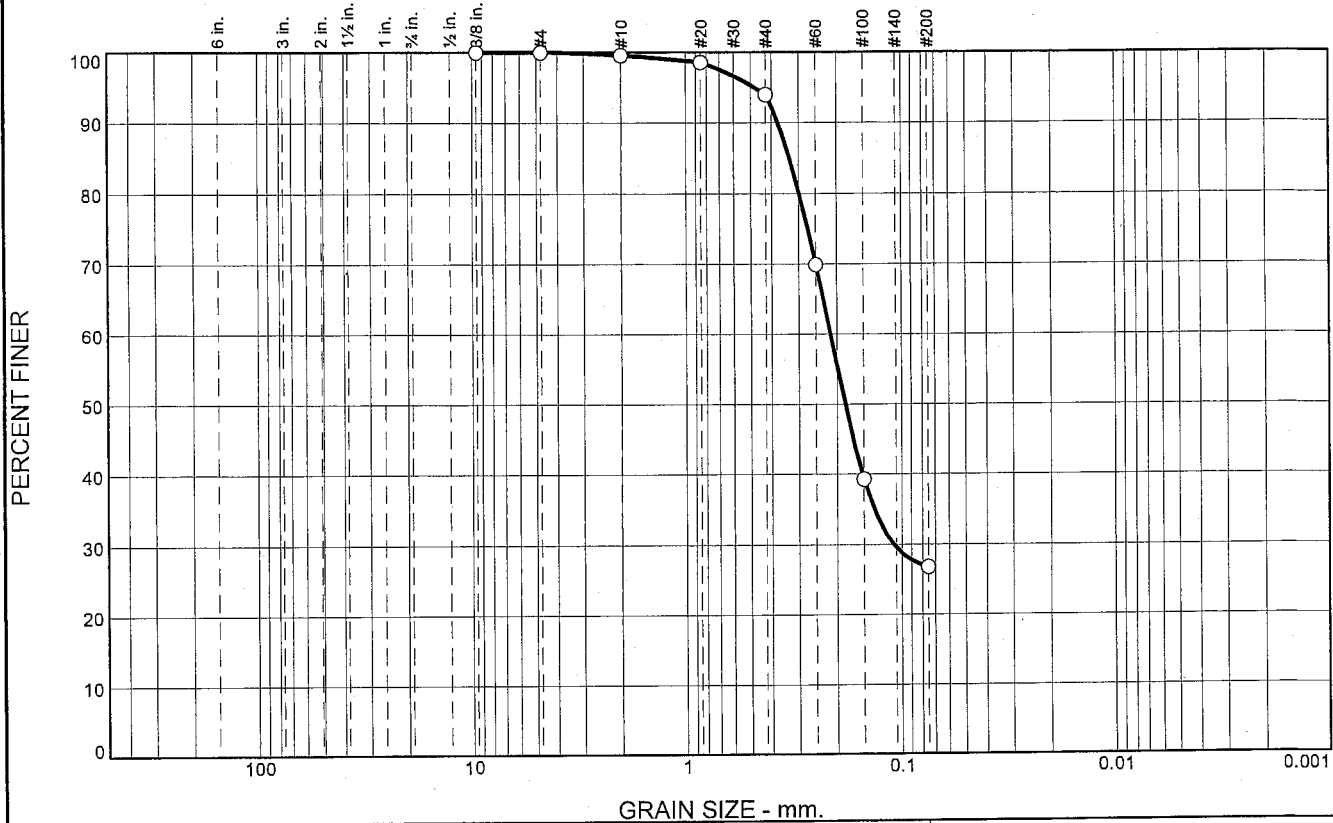
Project No: 10-2123-0009

Report No.

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.4	5.6	67.3	26.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.6		
#20	98.6		
#40	94.0		
#60	69.9		
#100	39.3		
#200	26.7		

* (no specification provided)

Material Description
SILTY SAND, (SM), fine grained, with clay nodules

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.3741 D₈₅= 0.3310 D₆₀= 0.2143
 D₅₀= 0.1831 D₃₀= 0.1089 D₁₅=
 D₁₀= C_u= C_c=

Classification
 USCS= SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-HP-16-10B
 Sample Number: TE Lab ID: 4593.47

Depth: 1.5 - 3.0 (ft.)

Date: 7/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
 Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
 Project No: 10-2123-0009 Report No.

Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-HP-17-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Horn Island Pass				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-HP-17-10		LOCATION COORDINATES E = 1,074,355 N = 247,461		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 0		DISTURBED 0 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 39 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 07-15-10		STARTED 07-15-10 COMPLETED 07-15-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -38.2 Ft.			
8. TOTAL DEPTH OF BORING 17.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR John Baehr, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-38.2	0.0						
			SAND, clayey, mostly fine-grained sand-sized quartz, trace shell fragments, gray (SC)				
				NS			
-55.2	17.0						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Boring Designation BI-HP-18-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Horn Island Pass				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-HP-18-10		LOCATION COORDINATES E = 1,075,845 N = 253,105		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 0 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 34 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING		STARTED 07-15-10 COMPLETED 07-15-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -33.9 Ft.			
8. TOTAL DEPTH OF BORING 16.5 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR John Baehr, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-33.9	0.0						
			SAND, clayey, mostly fine-grained sand-sized quartz, trace, gray (SC)				
				NS			
-49.0	15.1						
-50.4	16.5		CLAY, lean, yellow brown (CL)				
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

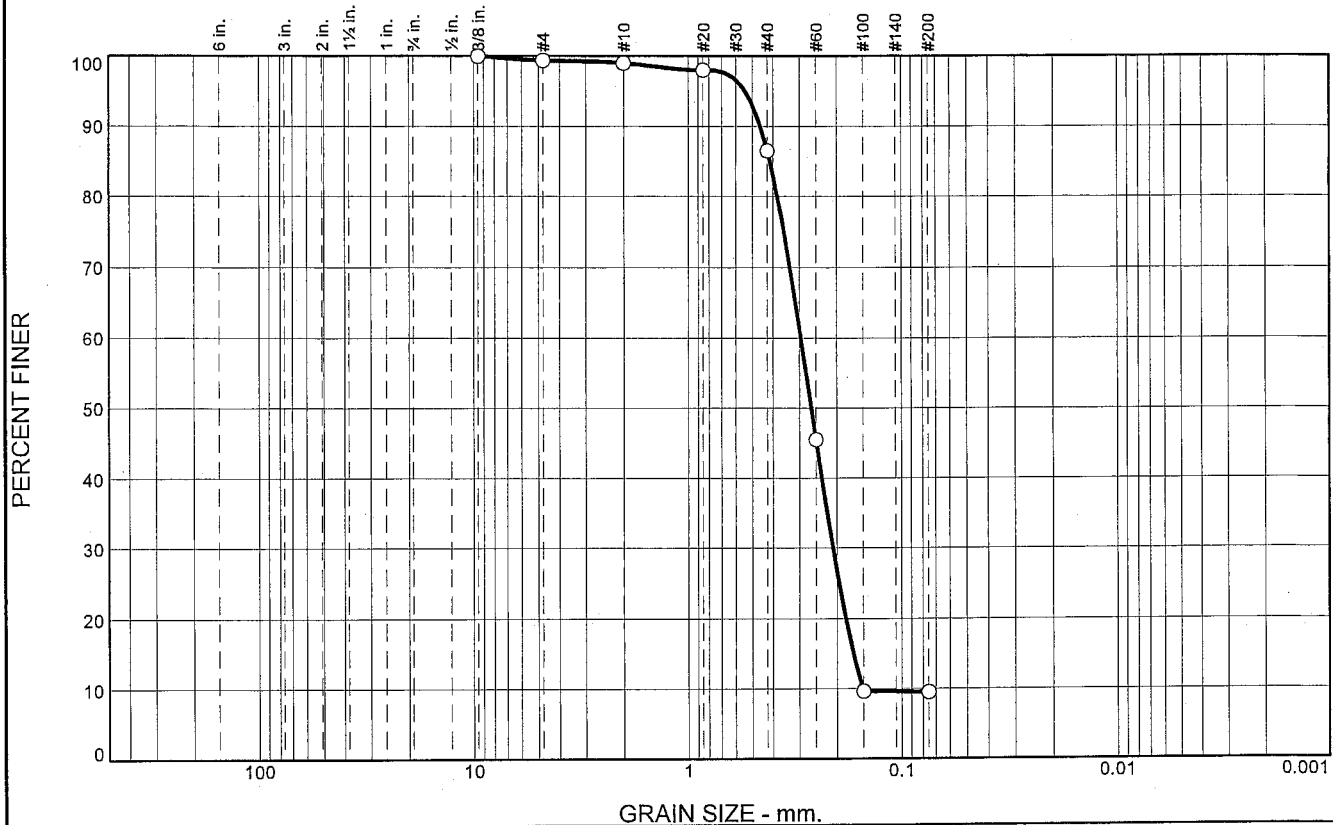
Boring Designation BI-HP-19-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Horn Island Pass				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-HP-19-10		LOCATION COORDINATES E = 1,073,567 N = 253,241		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 0		DISTURBED 0 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 35 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 07-15-10		STARTED 07-15-10 COMPLETED 07-15-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -34.9 Ft.			
8. TOTAL DEPTH OF BORING 18.1 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR John Baehr, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-34.9	0.0		SAND, clayey, mostly fine-grained sand-sized quartz, gray (SC)				
				NS			
-53.0	18.1						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Boring Designation BI-HP-20-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Horn Island Pass				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-HP-20-10		LOCATION COORDINATES E = 1,074,049 N = 251,370		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 1 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 36 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING		STARTED 07-15-10 COMPLETED 07-15-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -35.8 Ft.			
8. TOTAL DEPTH OF BORING 17.6 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR John Baehr, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-35.8	0.0						
-37.4	1.6		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace shell fragments, trace of clay balls, lt. gray (SP)	A	Classification: SP-SM Color: 2.5Y 7/1-light gray D50: 0.2632 mm % Fines: 9.5		
			SAND, clayey, mostly fine-grained sand-sized quartz, trace shell fragments, gray (SC)	NS			
-53.4	17.6						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.6	0.4	12.5	77.0	9.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.4		
#10	99.0		
#20	98.0		
#40	86.5		
#60	45.5		
#100	9.6		
#200	9.5		

* (no specification provided)

Material Description
SAND, (SP-SM), medium to fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.4590 D₈₅= 0.4135 D₆₀= 0.2950
D₅₀= 0.2632 D₃₀= 0.2082 D₁₅= 0.1676
D₁₀= 0.1514 C_u= 1.95 C_c= 0.97

Classification
USCS= SP-SM AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-HP-20-10A
Sample Number: TE Lab ID: 4593.48

Depth: 0.0 - 1.6 (ft.)

Date: 7/26/10

Thompson Engineering



Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 Report No.

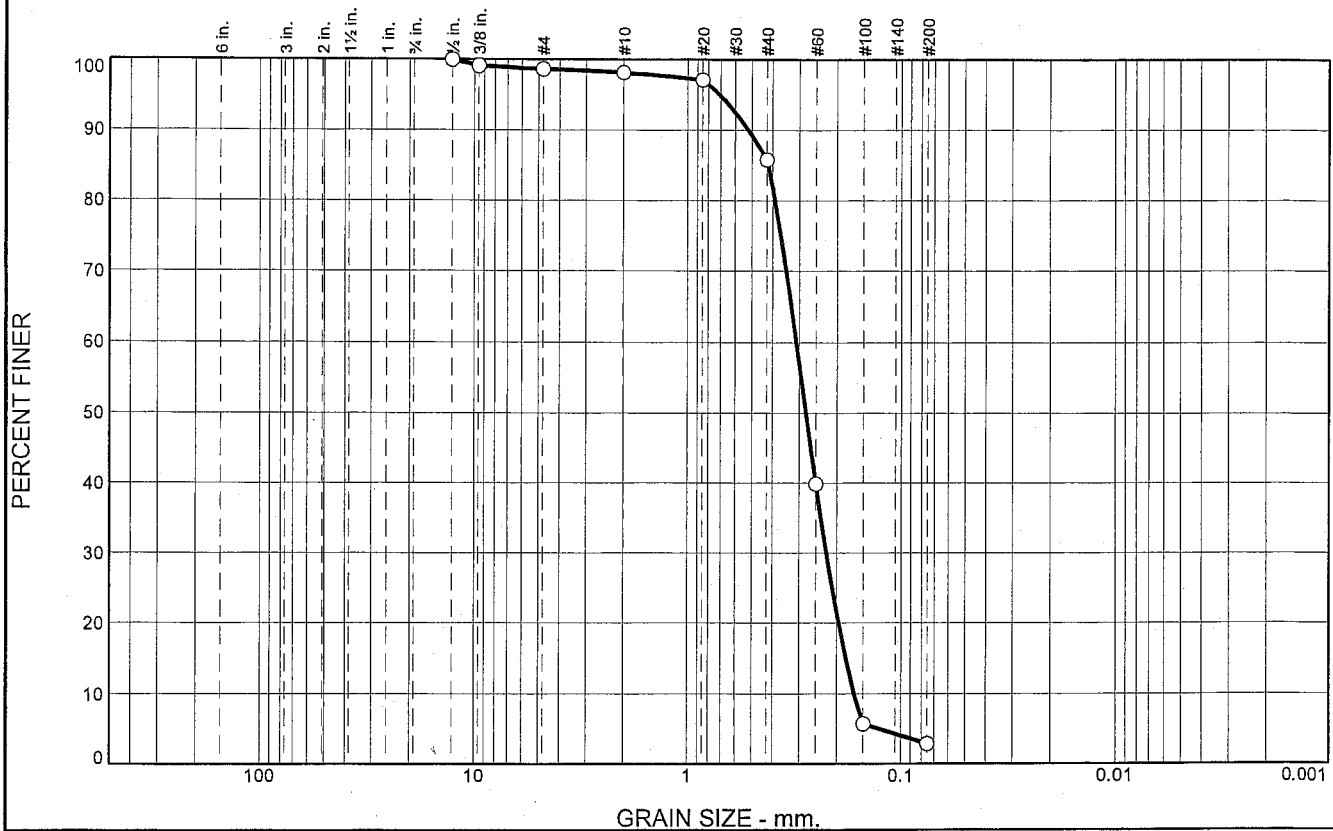
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-HP-21-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Horn Island Pass				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-HP-21-10		LOCATION COORDINATES E = 1,072,441 N = 250,020		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 35 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 07-15-10		STARTED 07-15-10 COMPLETED 07-15-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -34.6 Ft.			
8. TOTAL DEPTH OF BORING 18.4 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR John Baehr, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-34.6	0.0						
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace shell fragments, occ. clay balls, lt. gray (SP)	A	Classification: SP Color: 2.5Y 8/1-white D50: 0.2786 mm % Fines: 2.9		
				B	Classification: SP-SM Color: 2.5Y 7/2-light gray D50: 0.2702 mm % Fines: 7.9		
-40.5	5.9		SAND, clayey, mostly fine-grained sand-sized quartz, gray (SC)	NS			
-53.0	18.4						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.4	0.4	12.5	82.8	2.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.500	100.0		
.375	99.1		
#4	98.6		
#10	98.2		
#20	97.1		
#40	85.7		
#60	39.8		
#100	5.7		
#200	2.9		

Material Description
SAND, (SP), medium to fine grained, with trace shell

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.5192 D₈₅= 0.4198 D₆₀= 0.3093
 D₅₀= 0.2786 D₃₀= 0.2232 D₁₅= 0.1811
 D₁₀= 0.1655 C_u= 1.87 C_c= 0.97

Classification
 USCS= SP AASHTO=

Remarks
 CADD CODE = CH10D965

* (no specification provided)

Location: USACE Sample # BI-HP-21-10A
 Sample Number: TE Lab ID: 4593.49

Depth: 0.0 - 3.0 (ft.)

Date: 7/26/10

Thompson Engineering

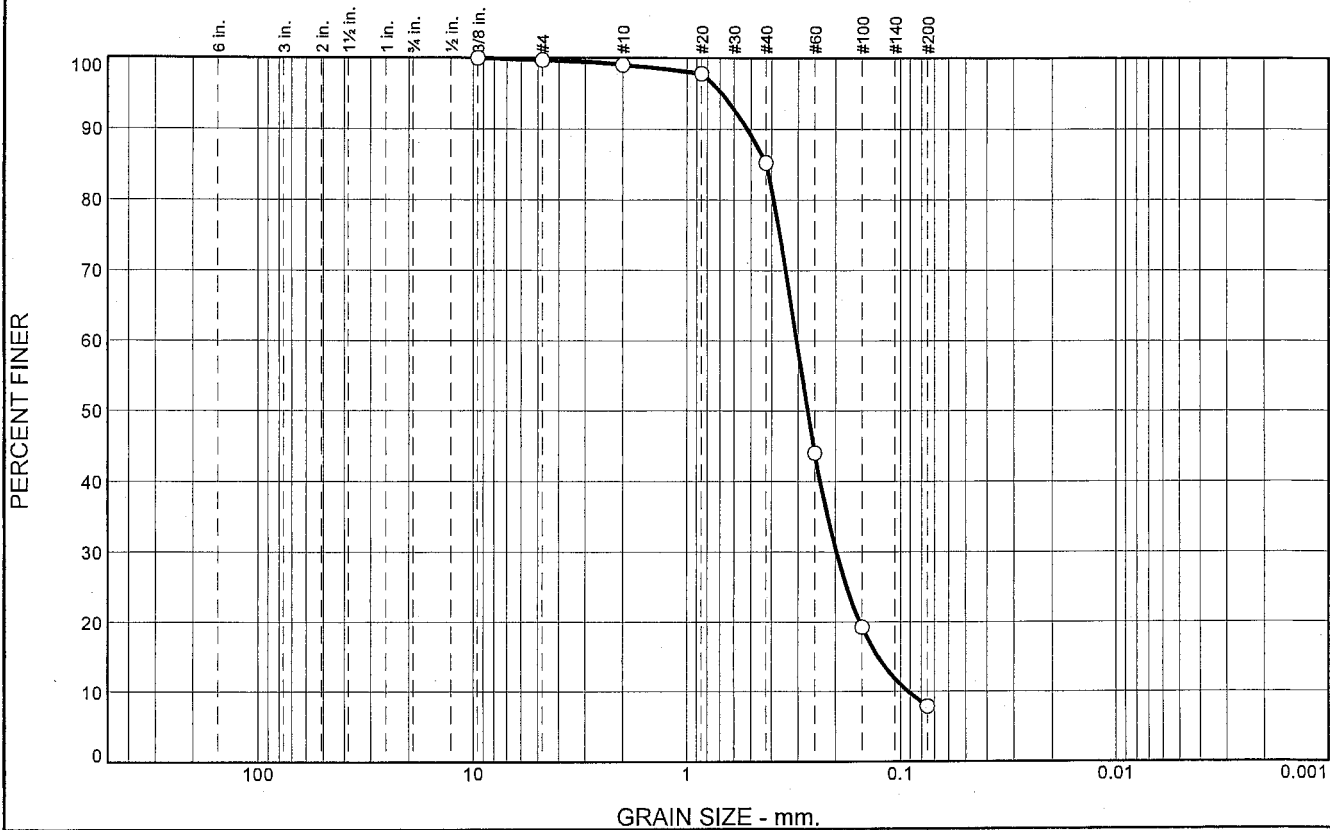
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 **Report No.**

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.3	0.7	13.8	77.3	7.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.7		
#10	99.0		
#20	97.8		
#40	85.2		
#60	44.0		
#100	19.2		
#200	7.9		

* (no specification provided)

Material Description

SAND, (SP-SM), medium to fine grained, with clay nodules

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.5205 D₈₅= 0.4233 D₆₀= 0.3048
D₅₀= 0.2702 D₃₀= 0.1982 D₁₅= 0.1267
D₁₀= 0.0920 C_u= 3.31 C_c= 1.40

Classification

USCS= SP-SM AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-HP-21-10B
Sample Number: TE Lab ID: 4593.50

Depth: 3.0 - 5.9 (ft.)

Date: 7/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 Report No.

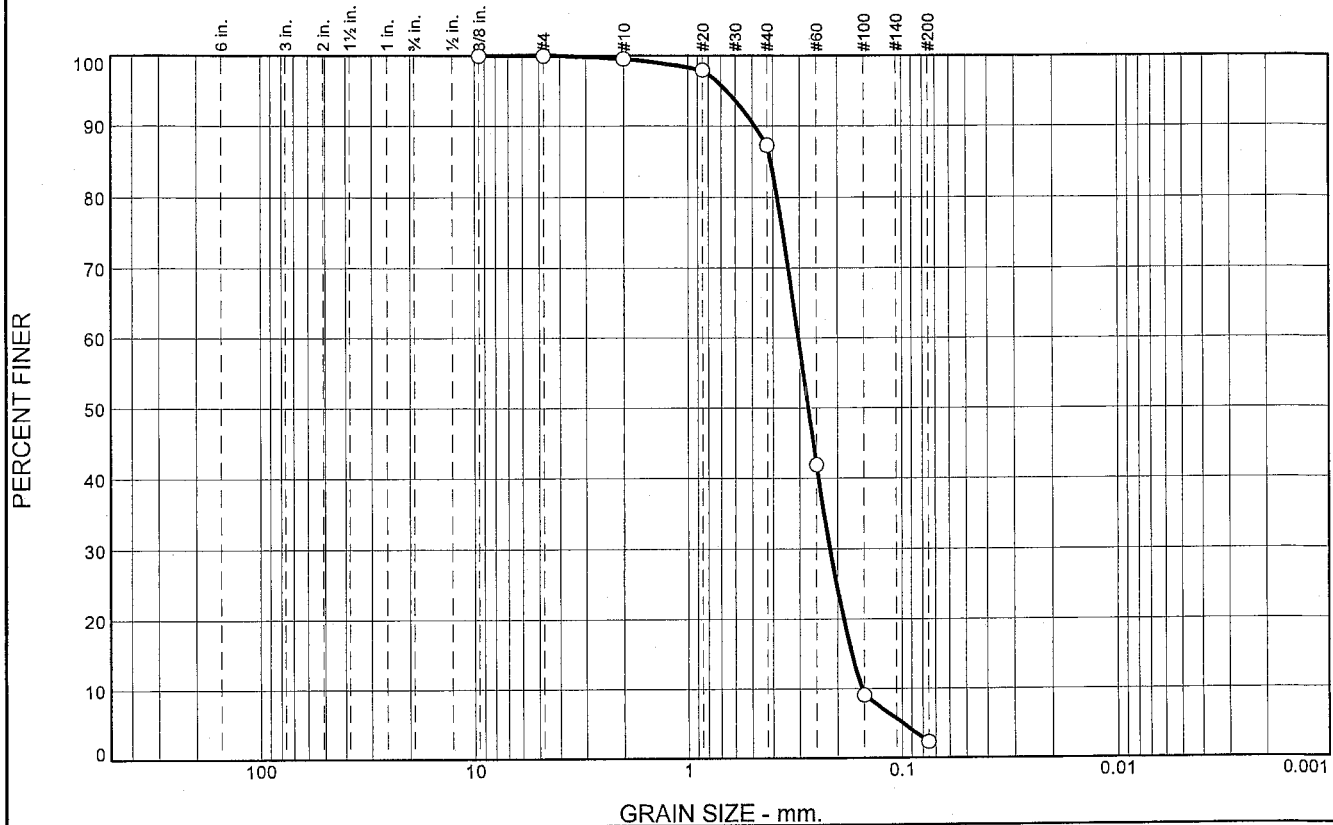
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-HP-22-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Horn Island Pass				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-HP-22-10		LOCATION COORDINATES E = 1,072,851 N = 248,861		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 34 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 07-15-10		STARTED 07-15-10 COMPLETED 07-15-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -33.6 Ft.			
8. TOTAL DEPTH OF BORING 19.1 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR John Baehr, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-33.6	0.0						
-36.6	3.0		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace shell fragments, occ. clay balls, lt. gray (SP)	A	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.2733 mm % Fines: 2.3		
-40.0	6.4			B	Classification: SP-SM Color: 2.5Y 7/1-light gray D50: 0.2499 mm % Fines: 9.2		
-52.7	19.1		SAND, clayey, mostly fine-grained sand-sized quartz, gray (SC)	NS			
			NOTES:				
			1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.4	12.3	85.0	2.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.6		
#20	98.0		
#40	87.3		
#60	41.9		
#100	9.0		
#200	2.3		

* (no specification provided)

Material Description
SAND, (SP), medium to fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.4853 D₈₅= 0.4094 D₆₀= 0.3038
D₅₀= 0.2733 D₃₀= 0.2164 D₁₅= 0.1714
D₁₀= 0.1538 C_u= 1.98 C_c= 1.00

Classification
USCS= SP AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-HP-22-10A
Sample Number: TE Lab ID: 4593.51

Depth: 0.0 - 3.0 (ft.)

Date: 7/26/10

Thompson Engineering

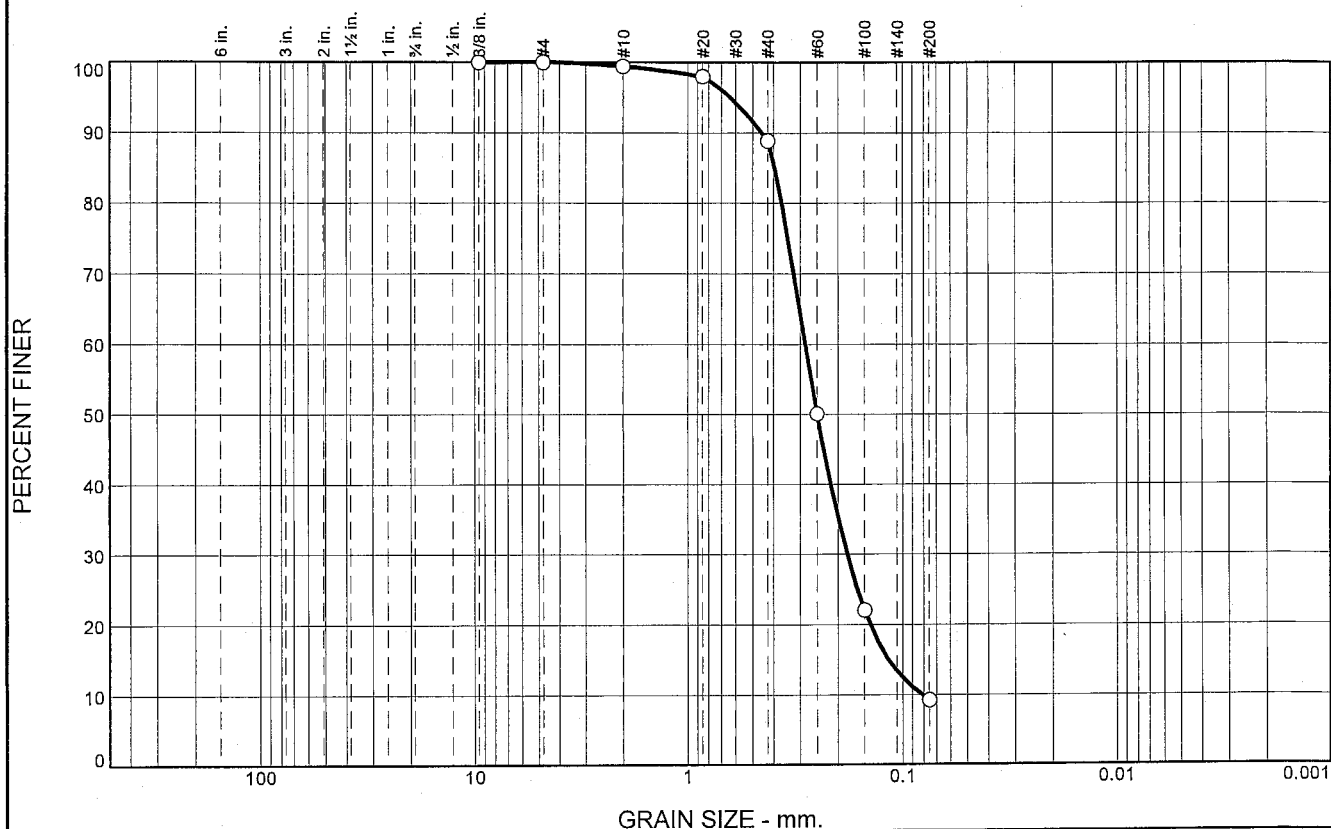
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 Report No.

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.6	10.6	79.6	9.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.4		
#20	98.0		
#40	88.8		
#60	50.0		
#100	22.0		
#200	9.2		

* (no specification provided)

Material Description
SAND, (SP-SM), medium to fine grained, with clay nodules

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.4533 D₈₅= 0.3966 D₆₀= 0.2841
D₅₀= 0.2499 D₃₀= 0.1809 D₁₅= 0.1158
D₁₀= 0.0810 C_u= 3.51 C_c= 1.42

Classification
USCS= SP-SM AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-HP-22-10B
Sample Number: TE Lab ID: 4593.52

Depth: 3.0 - 6.4 (ft.)

Date: 7/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 Report No.

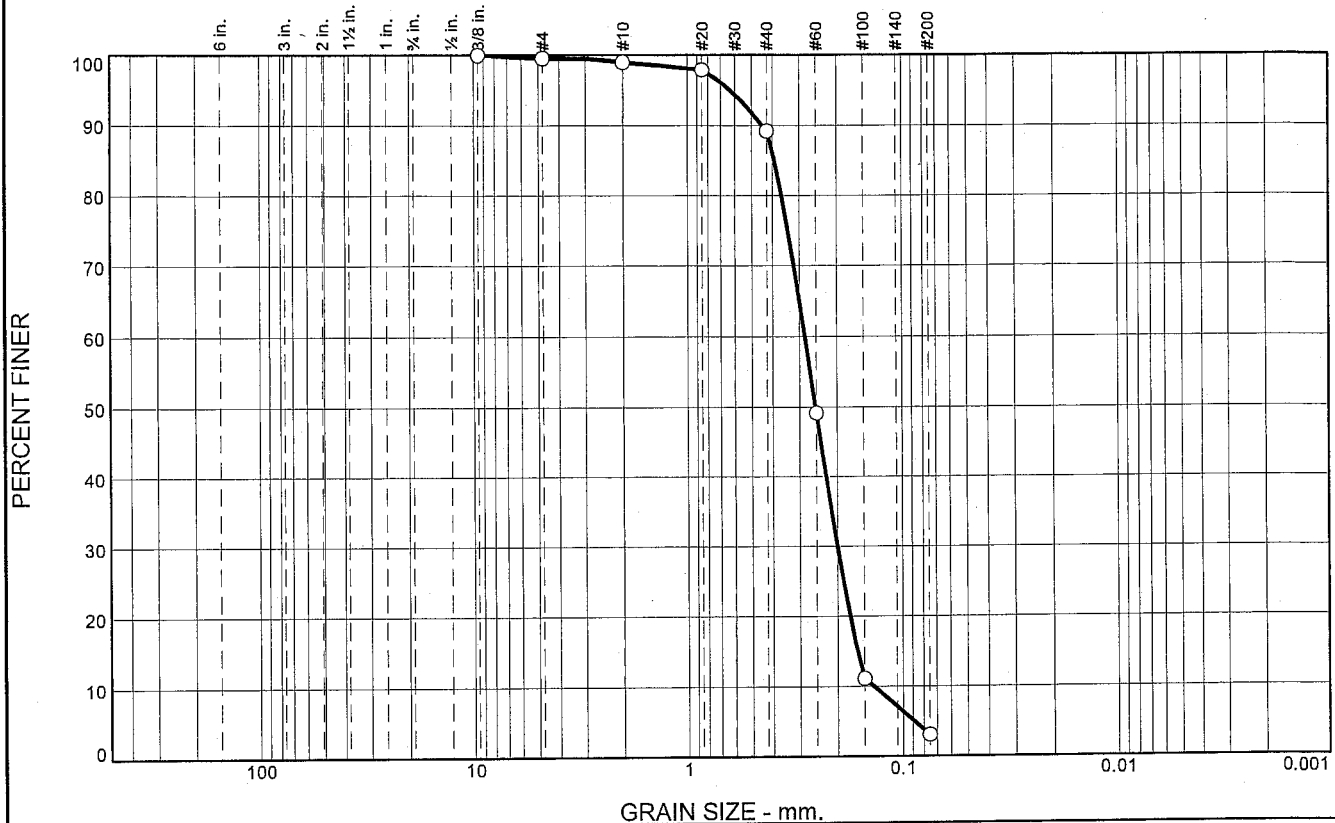
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-HP-23-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Horn Island Pass				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-HP-23-10		LOCATION COORDINATES E = 1,072,094 N = 248,186		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 37 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 07-15-10		STARTED 07-15-10 COMPLETED 07-15-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -36.2 Ft.			
8. TOTAL DEPTH OF BORING 16.1 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR John Baehr, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-36.2	0.0						
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace shell fragments, occ. clay balls, lt. gray (SP)	A	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.2524 mm % Fines: 3.1		
-39.6	3.4			B	Classification: SM Color: 2.5Y 6/2-light brownish gray D50: 0.2126 mm % Fines: 12		
-40.4	4.2		SAND, silty, mostly fine-grained sand-sized quartz, trace shell fragments, occ. clay balls, gray (SM)				
			SAND, clayey, mostly fine-grained sand-sized quartz, trace shell fragments (SC)	NS			
-52.3	16.1						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.5	0.5	9.8	86.1	3.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.5		
#10	99.0		
#20	97.9		
#40	89.2		
#60	49.2		
#100	11.1		
#200	3.1		

* (no specification provided)

Material Description
SAND, (SP), fine grained, with clay nodules

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.4450 D₈₅= 0.3929 D₆₀= 0.2827
D₅₀= 0.2524 D₃₀= 0.1999 D₁₅= 0.1614
D₁₀= 0.1363 C_u= 2.07 C_c= 1.04

Classification
USCS= SP AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-HP-23-10A
Sample Number: TE Lab ID: 4593.53

Depth: 0.0 - 3.4 (ft.)

Date: 7/26/10

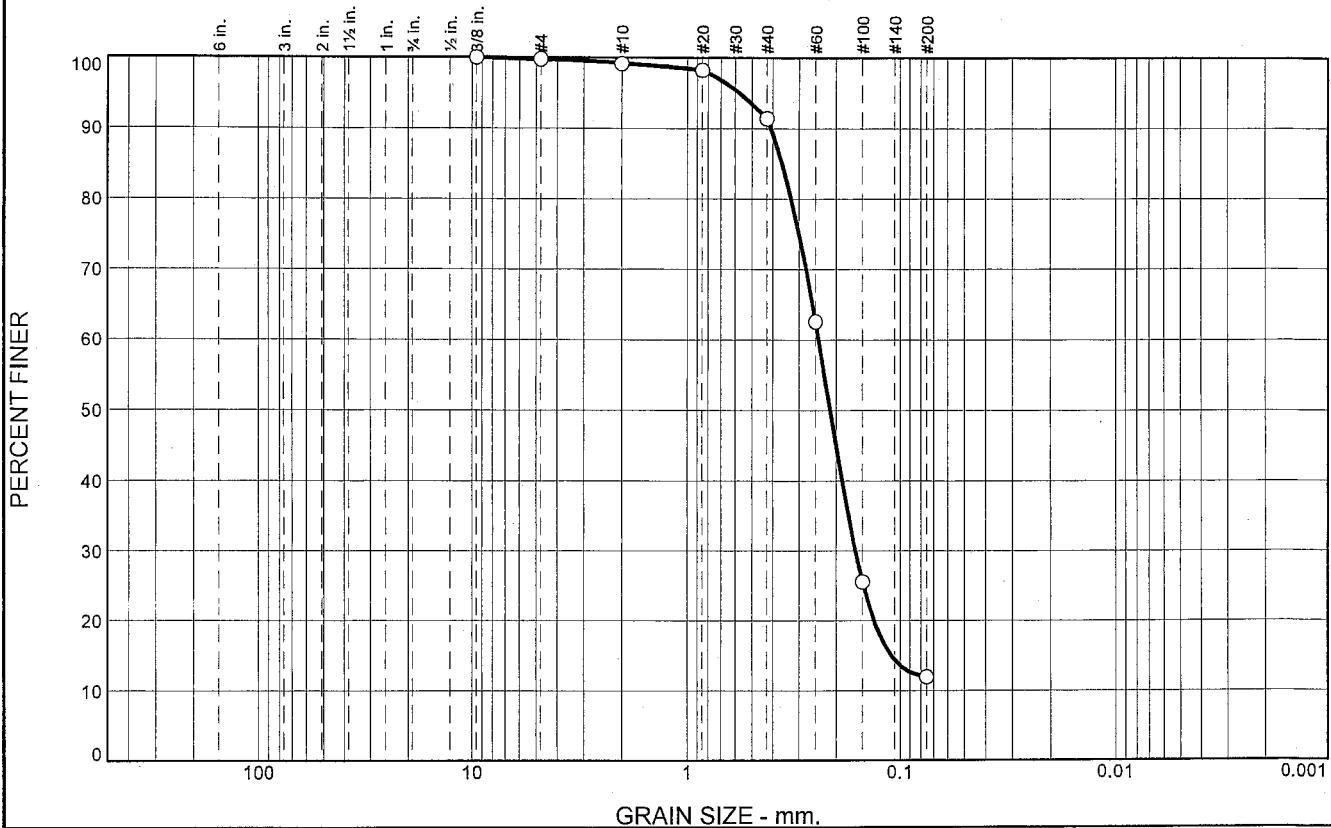
Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 Report No.

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.6	7.8	79.4	12.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.8		
#10	99.2		
#20	98.2		
#40	91.4		
#60	62.6		
#100	25.5		
#200	12.0		

* (no specification provided)

Material Description
SILTY SAND, (SM), fine grained, with clay nodules

Atterberg Limits
 PL= LL= PI=
Coefficients
 D₉₀= 0.4080 D₈₅= 0.3612 D₆₀= 0.2416
 D₅₀= 0.2126 D₃₀= 0.1620 D₁₅= 0.1102
 D₁₀= C_u= C_c=

Classification
USCS= SM AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-HP-23-10B
Sample Number: TE Lab ID: 4593.54

Depth: 3.4 - 4.2 (ft.)

Date: 7/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 **Report No.**

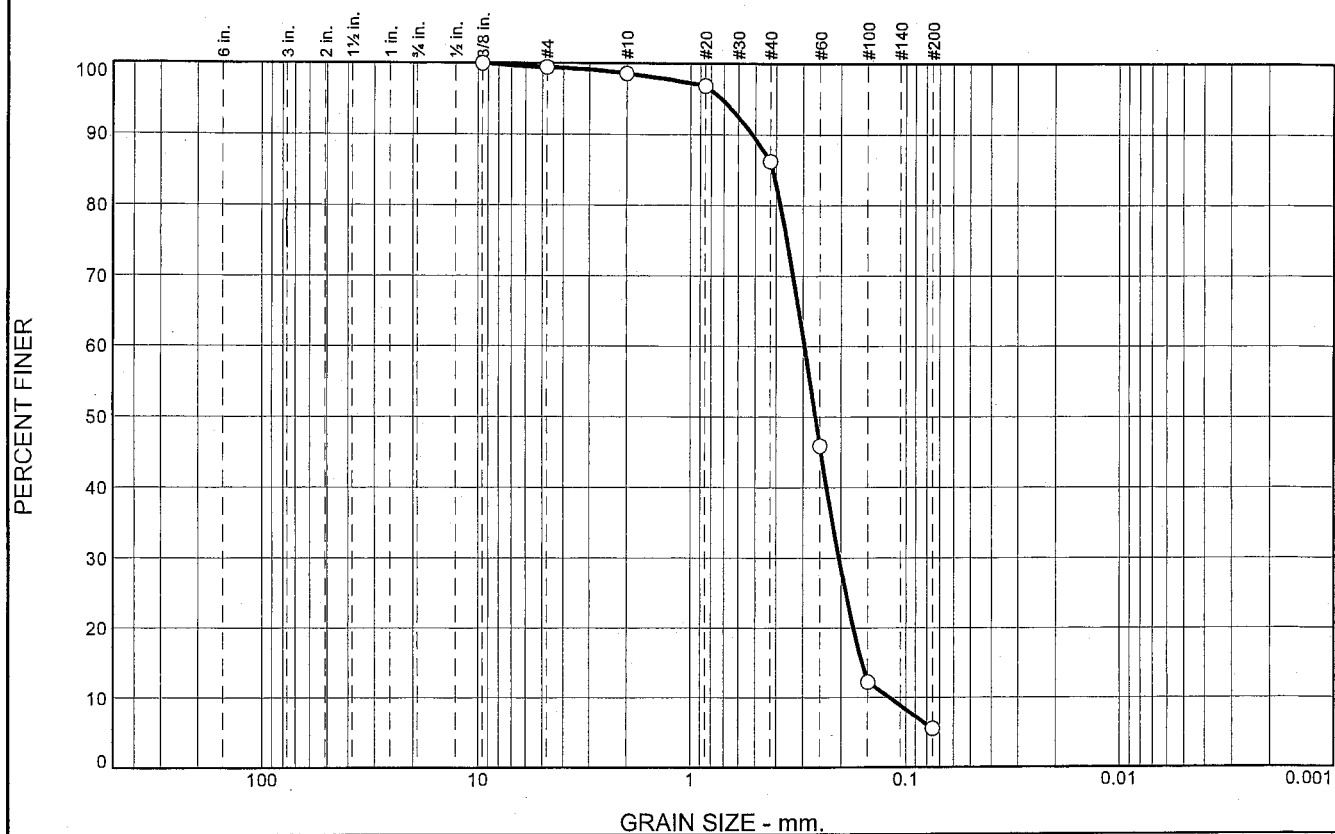
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-HP-24-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Horn Island Pass				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-HP-24-10		LOCATION COORDINATES E = 1,075,190 N = 249,681		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 33 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 07-15-10		STARTED 07-15-10 COMPLETED 07-15-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -32.2 Ft.			
8. TOTAL DEPTH OF BORING 18.6 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR John Baehr, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-32.2	0.0						
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace shell fragments, occ. clay balls, lt. gray (SP)	A	Classification: SP-SM Color: 2.5Y 6/2-light brownish gray D50: 0.2625 mm % Fines: 5.5		
				B	Classification: SP-SM Color: 2.5Y 7/1-light gray D50: 0.2557 mm % Fines: 7.1		
-38.9	6.7						
			SAND, clayey, mostly fine-grained sand-sized quartz, gray (SC)	NS			
-50.8	18.6						
			NOTES:				
			1. Soils are field visually classified in accordance with the Unified Soils Classification System.				
			2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.6	0.9	12.3	80.7	5.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.4		
#10	98.5		
#20	96.9		
#40	86.2		
#60	45.9		
#100	12.2		
#200	5.5		

* (no specification provided)

Material Description
SAND, (SP-SM), medium to fine grained, with clay nodules

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.5157 D₈₅= 0.4157 D₆₀= 0.2953
D₅₀= 0.2625 D₃₀= 0.2042 D₁₅= 0.1597
D₁₀= 0.1192 C_u= 2.48 C_c= 1.18

Classification
USCS= SP-SM AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-HP-24-10A
Sample Number: TE Lab ID: 4593.55

Depth: 0.0 - 3.4 (ft.)

Date: 7/26/10

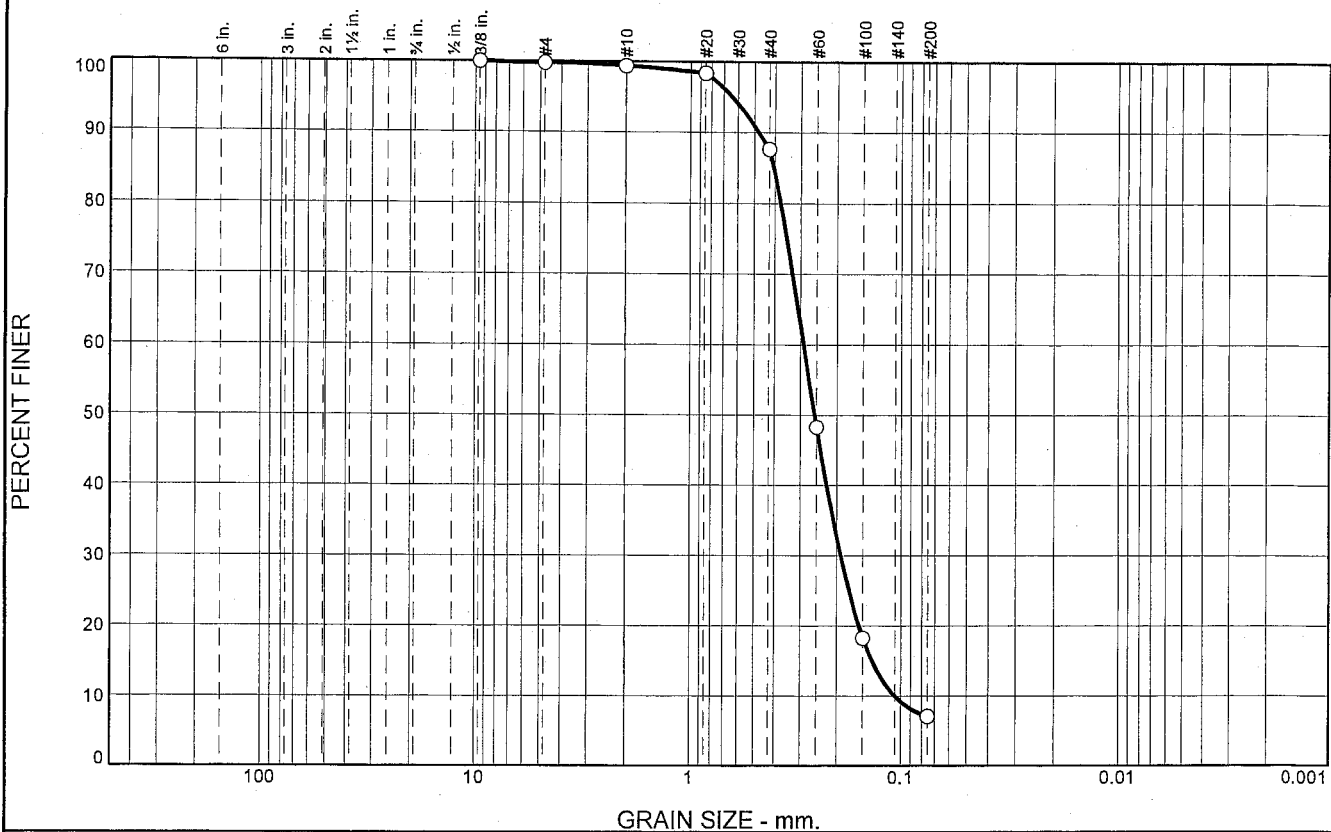
Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 Report No.

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.4	11.8	80.5	7.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.8		
#10	99.4		
#20	98.4		
#40	87.6		
#60	48.2		
#100	18.3		
#200	7.1		

* (no specification provided)

Material Description
SAND, (SP-SM), medium to fine grained, with clay nodules

Atterberg Limits
 PL= LL= PI=
Coefficients
 D₉₀= 0.4764 D₈₅= 0.4053 D₆₀= 0.2894
 D₅₀= 0.2557 D₃₀= 0.1913 D₁₅= 0.1359
 D₁₀= 0.1069 C_u= 2.71 C_c= 1.18

Classification
USCS= SP-SM AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-HP-24-10B
Sample Number: TE Lab ID: 4593.56

Depth: 3.4 - 6.7 (ft.)

Date: 7/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 **Report No.**

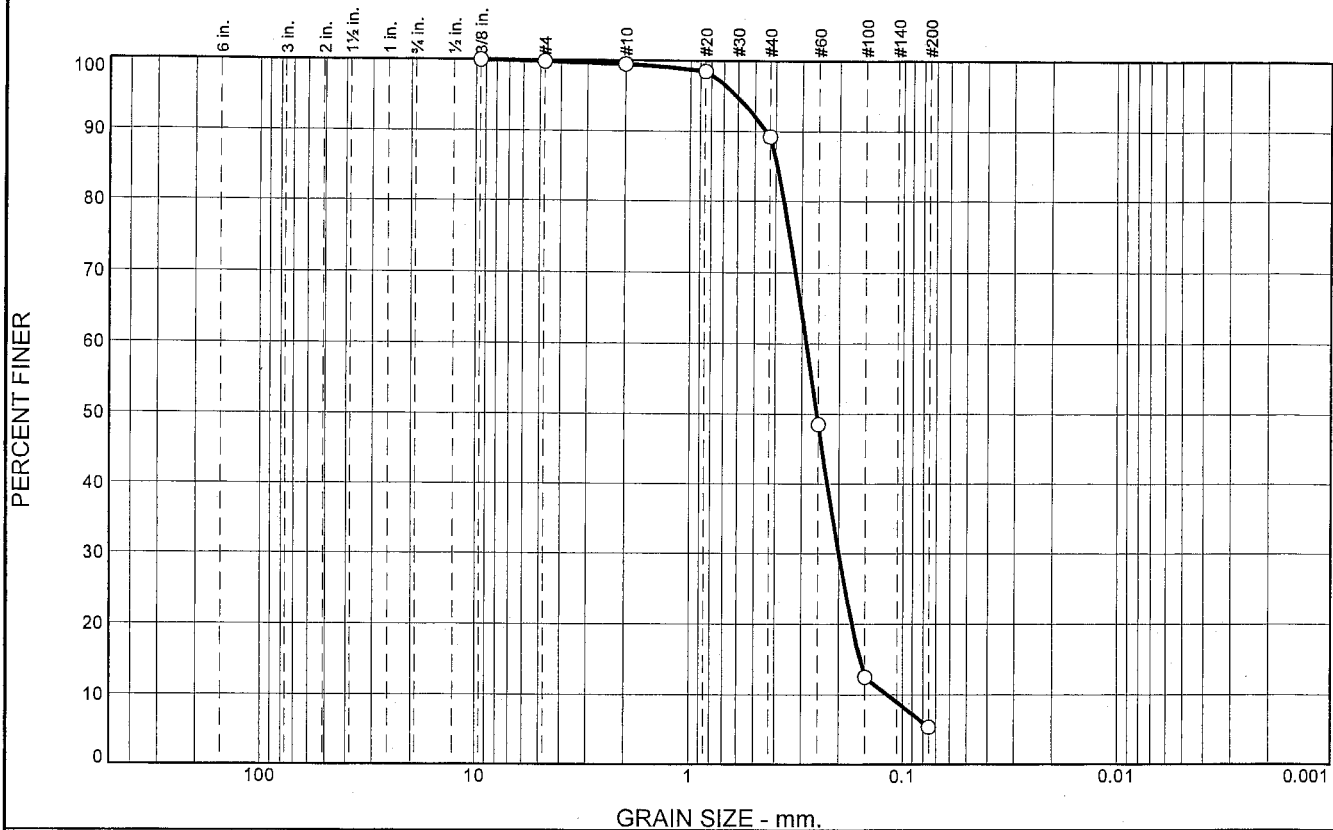
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-HP-25-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Horn Island Pass				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-HP-25-10		LOCATION COORDINATES E = 1,075,884 N = 250,272		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		12. TOTAL SAMPLES 1		DISTURBED 1		VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		13. TOTAL NUMBER CORE BOXES		14. WATER DEPTH 35 Ft.	
4. NAME OF DRILLER Construction Solutions International, Inc.		5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		15. DATE BORING 07-15-10		16. ELEVATION TOP OF BORING -34.3 Ft.	
6. THICKNESS OF OVERBURDEN N/A		7. DEPTH DRILLED INTO ROCK N/A		17. TOTAL RECOVERY FOR BORING 100%		18. SIGNATURE AND TITLE OF INSPECTOR John Baehr, Geologist	
8. TOTAL DEPTH OF BORING 17.4 Ft.							
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-34.3	0.0						
-36.8	2.5		SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace shell fragments, occ. clay balls, lt. gray (SP)	A	Classification: SP-SM Color: 2.5Y 7/1-light gray D50: 0.2544 mm % Fines: 5.4		
-51.7	17.4		SAND, clayey, mostly fine-grained sand-sized quartz, gray (SC)	NS			
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.3	10.3	83.8	5.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.8		
#10	99.5		
#20	98.5		
#40	89.2		
#60	48.5		
#100	12.5		
#200	5.4		

* (no specification provided)

Material Description
SAND, (SP-SM), medium to fine grained, with clay nodules

Atterberg Limits
 PL= LL= PI=
Coefficients
 D₉₀= 0.4432 D₈₅= 0.3940 D₆₀= 0.2851
 D₅₀= 0.2544 D₃₀= 0.1997 D₁₅= 0.1582
 D₁₀= 0.1178 C_u= 2.42 C_c= 1.19

Classification
USCS= SP-SM AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-HP-25-10A
Sample Number: TE Lab ID: 4593.57

Depth: 0.0 - 2.5 (ft.)

Date: 7/26/10

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Report No.

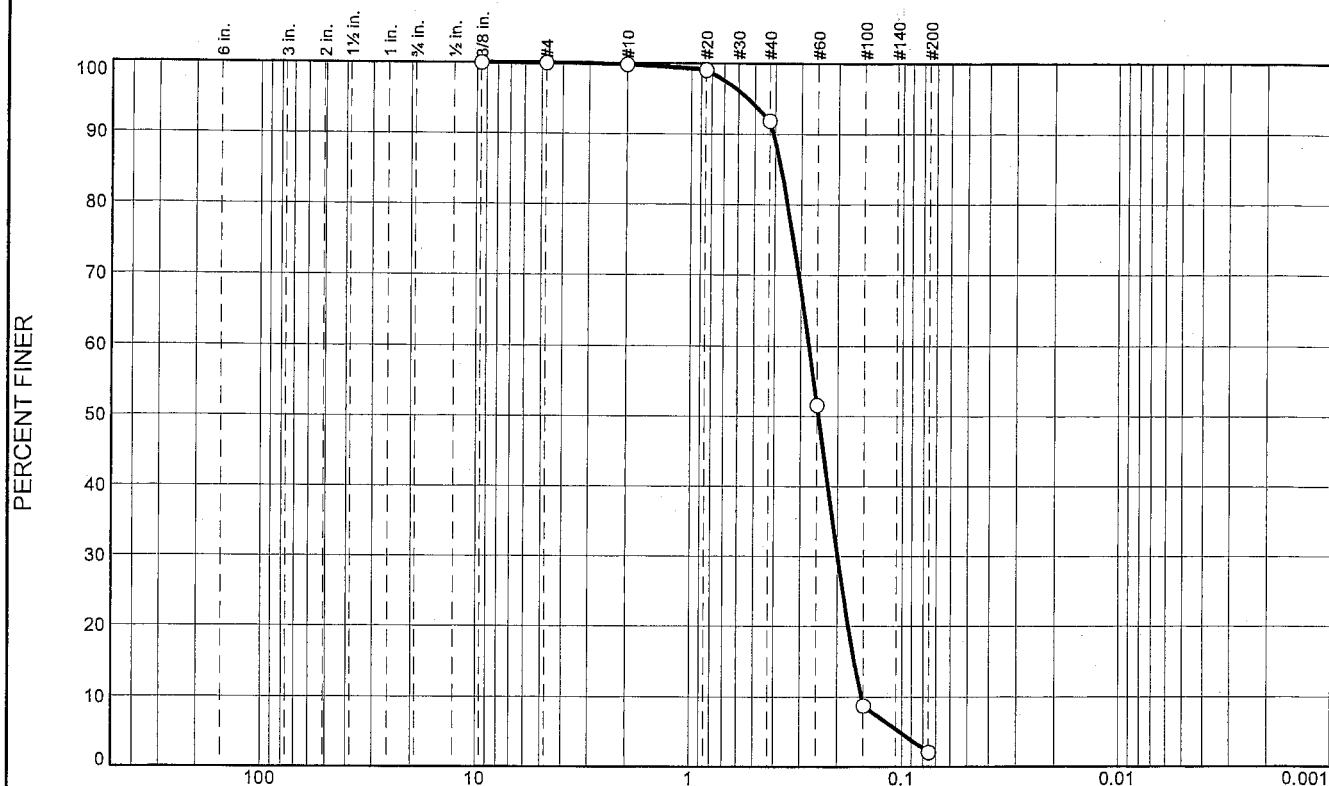
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-HP-26-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Horn Island Pass				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-HP-26-10		LOCATION COORDINATES E = 1,075,957 N = 251,218		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 1 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		BEARING		13. TOTAL NUMBER CORE BOXES	
6. THICKNESS OF OVERBURDEN N/A				14. WATER DEPTH 34 Ft.			
7. DEPTH DRILLED INTO ROCK N/A				15. DATE BORING		STARTED 07-15-10 COMPLETED 07-15-10	
8. TOTAL DEPTH OF BORING 17.9 Ft.				16. ELEVATION TOP OF BORING -33.4 Ft.			
				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR John Baehr, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-33.4	0.0						
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.2459 mm % Fines: 2.1		
-37.4	4.0						
			SAND, clayey, mostly fine-grained sand-sized quartz, trace shell fragments, gray (SC)	NS			
-51.3	17.9						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



GRAIN SIZE - mm.

% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	7.9	89.8	2.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.8		
#20	91.9		
#40	51.6		
#60	8.7		
#100	2.1		
#200			

* (no specification provided)

Material Description

SAND, (SP), fine grained, with clay nodules

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.4088 D₈₅= 0.3747 D₆₀= 0.2735
D₅₀= 0.2459 D₃₀= 0.1991 D₁₅= 0.1658
D₁₀= 0.1535 C_u= 1.78 C_c= 0.94

Classification

USCS= SP AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-HP-26-10A
Sample Number: TE Lab ID: 4593.58

Depth: 0.0 - 4.0 (ft.)

Date: 7/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Report No.

Tested By: G.Fancher

Checked By: R.Byrd

APPENDIX K

DA-10 BORING LOGS AND LAB RESULTS

Boring Designation BI-DA10-01-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Disposal Area 10				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-DA10-01-11		LOCATION COORDINATES E = 1,086,863 N = 265,697		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 1	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		UNDISTURBED (UD) 0	
6. THICKNESS OF OVERBURDEN N/A				14. WATER DEPTH		9.5 Ft.	
7. DEPTH DRILLED INTO ROCK N/A				15. DATE BORING		STARTED 06-20-11	
8. TOTAL DEPTH OF BORING 14.5 Ft.				16. ELEVATION TOP OF BORING		COMPLETED 06-20-11	
				17. TOTAL RECOVERY FOR BORING		100%	
				18. SIGNATURE AND TITLE OF INSPECTOR Rhonda Capes, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-7.8	0.0						
-9.3	1.5		SAND, poorly-graded, mostly medium-grained sand-sized quartz, gray (SP)	A	Classification: SP Color: 2.5Y 6/2-light brownish gray D50: 0.3492 mm % Fines: 1.3		
			CLAY, lean, trace fine-grained sand, gray (CL)	NS			
-22.3	14.5						
NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.							

PERCENT FINER



<u>Material Description</u>		
SAND (SP), medium to fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.5766	D ₈₅ = 0.5172	D ₆₀ = 0.3815
D ₅₀ = 0.3492	D ₃₀ = 0.2927	D ₁₅ = 0.2483
D ₁₀ = 0.2288	C _u = 1.67	C _c = 0.98
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		

Boring Designation BI-DA10-02-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Disposal Area 10				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-DA10-02-11		LOCATION COORDINATES E = 1,087,035 N = 263,966		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 0		DISTURBED 0 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 21.5 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-20-11		STARTED 06-20-11 COMPLETED 06-20-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -19.8 Ft.			
8. TOTAL DEPTH OF BORING 13.5 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Rhonda Capes, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-19.8	0.0						
-20.2	0.4						
-22.2	2.4		SAND, poorly-graded, mostly medium-grained sand-sized quartz, trace shell fragments, gray (SP)				
-24.3	4.5		CLAY, lean, some sand, gray (CL)				
-25.1	5.3		SAND, poorly-graded, mostly fine-grained sand-sized quartz, dark gray (SP)				
-26.5	6.7		CLAY, lean, dark gray (CL)				
-33.3	13.5		SAND, poorly-graded, mostly fine-grained quartz, gray (SP)	NS			
			CLAY, lean, dark gray (CL)				
NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.							

Boring Designation BI-DA10-03-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Disposal Area 10				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-DA10-03-11		LOCATION COORDINATES E = 1,082,279 N = 266,429		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		UNDISTURBED (UD) 0	
6. THICKNESS OF OVERBURDEN N/A				14. WATER DEPTH		21.5 Ft.	
7. DEPTH DRILLED INTO ROCK N/A				15. DATE BORING		STARTED 06-20-11	
8. TOTAL DEPTH OF BORING 13.5 Ft.				16. ELEVATION TOP OF BORING		COMPLETED 06-20-11	
				17. TOTAL RECOVERY FOR BORING		100%	
				18. SIGNATURE AND TITLE OF INSPECTOR Rhonda Capes, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-19.5	0.0		CLAY, lean, dark gray (CL)	NS			
-24.0	4.5						
-24.5	5.0		SAND, clayey, dark gray (SC)				
-26.7	7.2		SAND, poorly-graded, mostly medium-grained sand-sized quartz, lt. gray (SP)				
			CLAY, lean, dark gray (CL)				
-33.0	13.5						
NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.							

Boring Designation BI-DA10-04-11

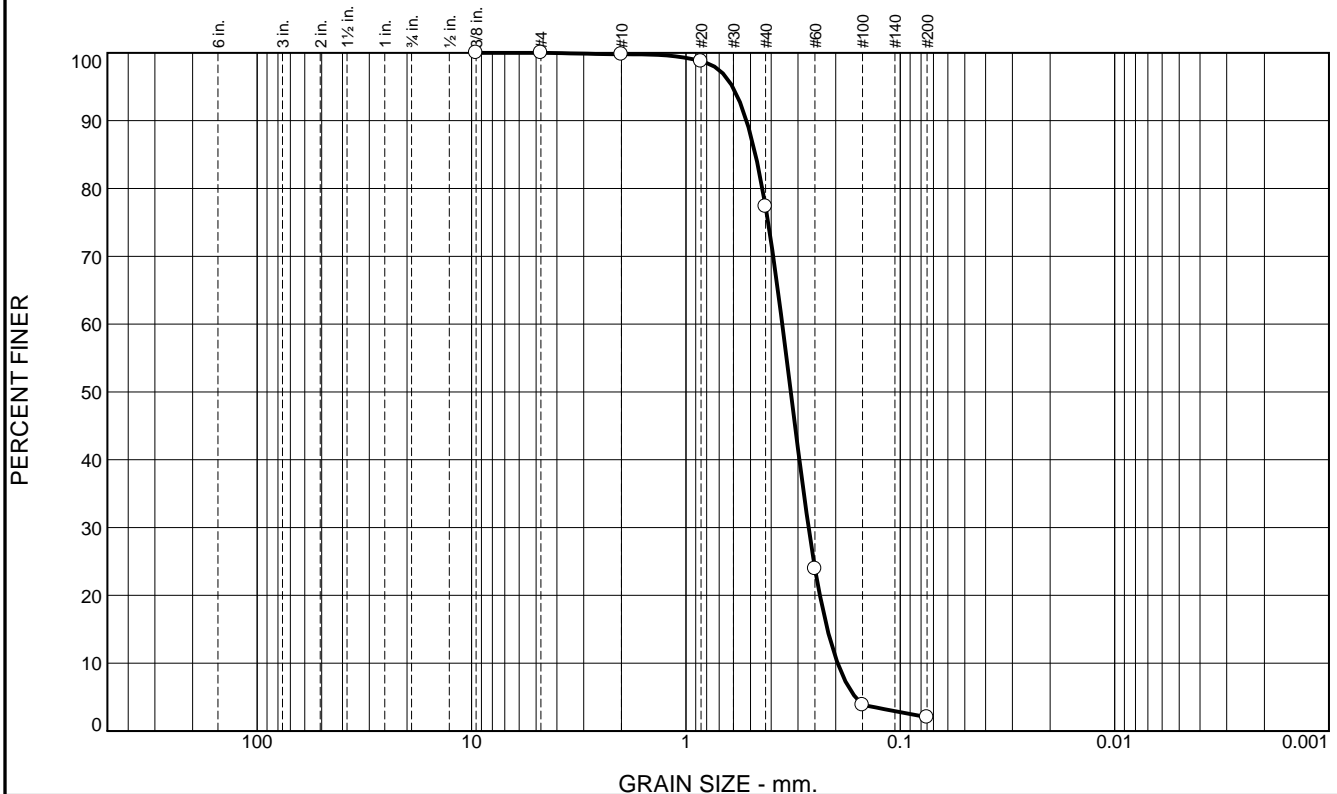
DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Disposal Area 10				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-DA10-04-11		LOCATION COORDINATES E = 1,083,234 N = 265,999		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 0		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 19.5 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-20-11		STARTED 06-20-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -17.5 Ft.		COMPLETED 06-20-11	
8. TOTAL DEPTH OF BORING 11.8 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Rhonda Capes, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-17.5	0.0		CLAY, lean, trace shell fragments, dark gray (CL)				
			At El. -21.0 Ft., dark gray	NS			
-29.3	11.8						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Boring Designation BI-DA10-05-11

DRILLING LOG		DIVISION South Atlantic	INSTALLATION Mobile District	SHEET 1 OF 1 SHEETS
1. PROJECT Barrier Island Restoration Disposal Area 10		9. SIZE AND TYPE OF BIT N/A		
2. BORING DESIGNATION BI-DA10-05-11		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		
3. DRILLING AGENCY Corps of Engineers - CESAM		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		
4. NAME OF DRILLER Construction Solutions International, Inc.		12. TOTAL SAMPLES 1		
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		13. TOTAL NUMBER CORE BOXES 12.5 Ft.		
6. THICKNESS OF OVERBURDEN N/A		14. WATER DEPTH 12.5 Ft.		
7. DEPTH DRILLED INTO ROCK N/A		15. DATE BORING 06-20-11		
8. TOTAL DEPTH OF BORING 15.4 Ft.		16. ELEVATION TOP OF BORING -10.6 Ft.		
		17. TOTAL RECOVERY FOR BORING 100%		
		18. SIGNATURE AND TITLE OF INSPECTOR Rhonda Capes, Geologist		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-10.6	0.0				
-12.9	2.3		SAND, poorly-graded, mostly medium-grained sand-sized quartz, trace shell fragments, occasional clay, lt. gray (SP)	A	Classification: SP Color: 2.5Y 6/2-light brownish gray D50: 0.3243 mm % Fines: 2
-18.0	7.4		SAND, clayey, gray and brown (SC)	NS	
-20.8	10.2		SAND, poorly-graded, mostly medium-grained sand-sized quartz, lt. gray (SP)		
-26.0	15.4		CLAY, fat, dark gray (CH)		
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.		

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	22.5	75.3	2.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.8		
#20	98.8		
#40	77.3		
#60	23.9		
#100	3.8		
#200	2.0		

* (no specification provided)

Material Description		
SAND (SP), medium to fine grained		
PL=	Atterberg Limits LL=	PI=
D ₉₀ = 0.5214	Coefficients D ₈₅ = 0.4735	D ₆₀ = 0.3553
D ₅₀ = 0.3243	D ₃₀ = 0.2679	D ₁₅ = 0.2188
D ₁₀ = 0.1960	C _u = 1.81	C _c = 1.03
USCS= SP	Classification AASHTO=	
Remarks		

Location: USACE Sample # BI-DA10-5A-11
Sample Number: TE Lab ID: 5054.15

Depth: 0.0 - 2.3 (ft)

Date: 7/15/11

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Boring Designation BI-DA10-06-11

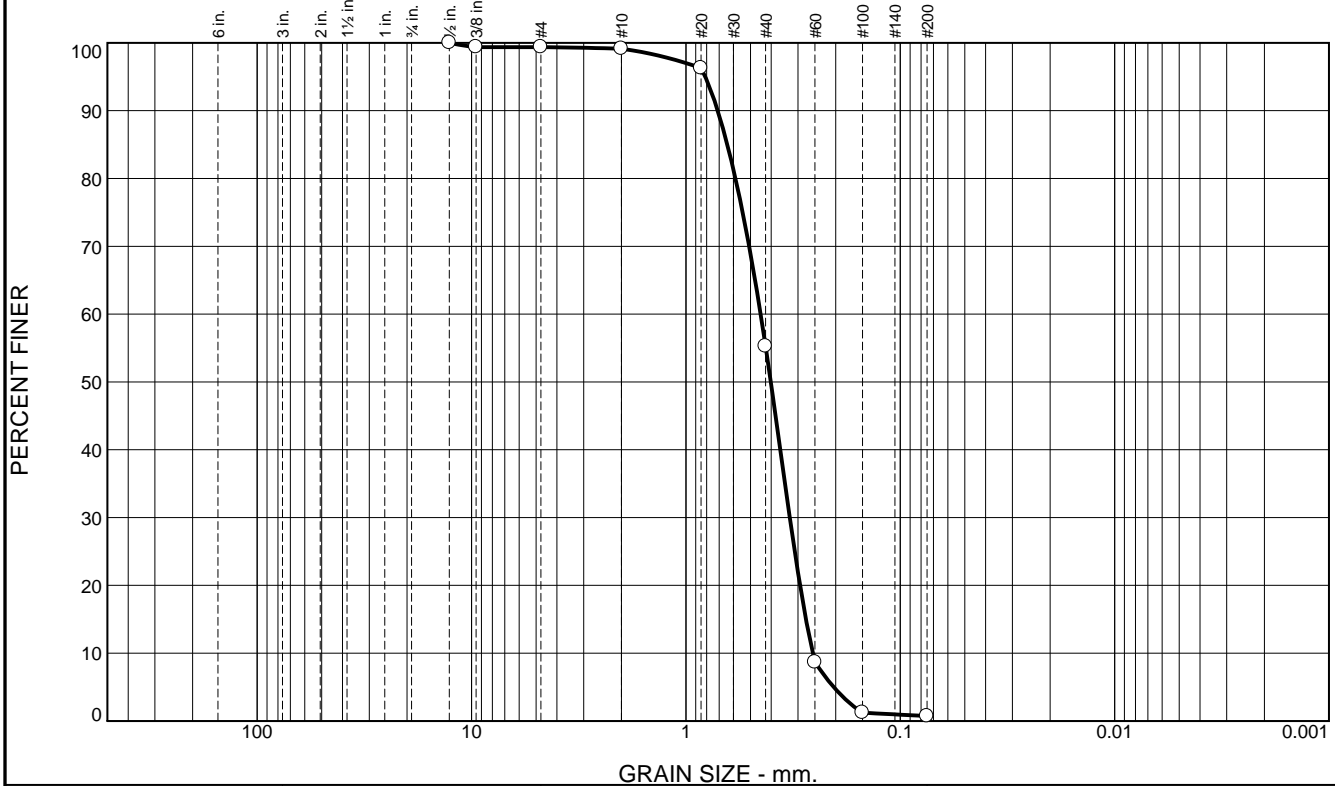
DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Disposal Area 10				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-DA10-06-11		LOCATION COORDINATES E = 1,085,833 N = 265,748		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 0		DISTURBED 0 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 16.5 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-20-11		STARTED 06-20-11 COMPLETED 06-20-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -14.6 Ft.			
8. TOTAL DEPTH OF BORING 10.8 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Rhonda Capes, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-14.6	0.0						
-15.6	1.0		SAND, poorly-graded, mostly medium-grained sand-sized quartz, gray (SP)				
			SAND, silty, mostly fine-grained sand-sized quartz, some silt, occasional clay, gray (SM)				
-19.6	5.0						
			CLAY, fat, dark gray (CH)	NS			
-25.4	10.8						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Boring Designation BI-DA10-07-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Disposal Area 10				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-DA10-07-11		LOCATION COORDINATES E = 1,078,709 N = 264,485		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 1		DISTURBED 1 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 17.5 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-20-11		STARTED 06-20-11 COMPLETED 06-20-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -15.5 Ft.			
8. TOTAL DEPTH OF BORING 14.8 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Rhonda Capes, Geologist			

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-15.5	0.0				
-16.5	1.0		SAND, poorly-graded, mostly medium-grained sand-sized quartz, trace shell fragments, tan (SP) SAND, poorly-graded, mostly medium-grained sand-sized quartz, trace shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 7/2-light gray D50: 0.4019 mm % Fines: 0.7
-23.1	7.6				
-30.2	14.8		CLAY, lean, dark gray (CL)	NS	
			SAND, poorly-graded, mostly medium-grained sand-sized quartz, brown (SP) NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.		

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.6	0.3	43.8	54.6	0.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.5	100.0		
.375	99.4		
#4	99.4		
#10	99.1		
#20	96.3		
#40	55.3		
#60	8.7		
#100	1.2		
#200	0.7		

Material Description
SAND (SP), medium to fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.7105 D₈₅= 0.6405 D₆₀= 0.4480
 D₅₀= 0.4019 D₃₀= 0.3279 D₁₅= 0.2758
 D₁₀= 0.2560 C_u= 1.75 C_c= 0.94

Classification
 USCS= SP AASHTO=

Remarks

* (no specification provided)

Location: USACE Sample # BI-DA10-7A-11
 Sample Number: TE Lab ID: 5054.16

Depth: 0.0 - 5.0 (ft)

Date: 7/15/11

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
 Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Boring Designation BI-DA10-08-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Disposal Area 10				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-DA10-08-11		LOCATION COORDINATES E = 1,080,158 N = 264,573		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 0		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 25.5 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-20-11		STARTED 06-20-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -23.6 Ft.		COMPLETED 06-20-11	
8. TOTAL DEPTH OF BORING 14.8 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Rhonda Capes, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-23.6	0.0						
			CLAY, lean, trace sand, dark gray (CL)				
-28.9	5.3						
			SAND, silty, mostly medium-grained sand-sized quartz, occasional clay, dark gray (SM)	NS			
-32.1	8.5						
			SAND, poorly-graded, mostly medium-grained sand-sized quartz, tan and white (SP)				
-38.4	14.8						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

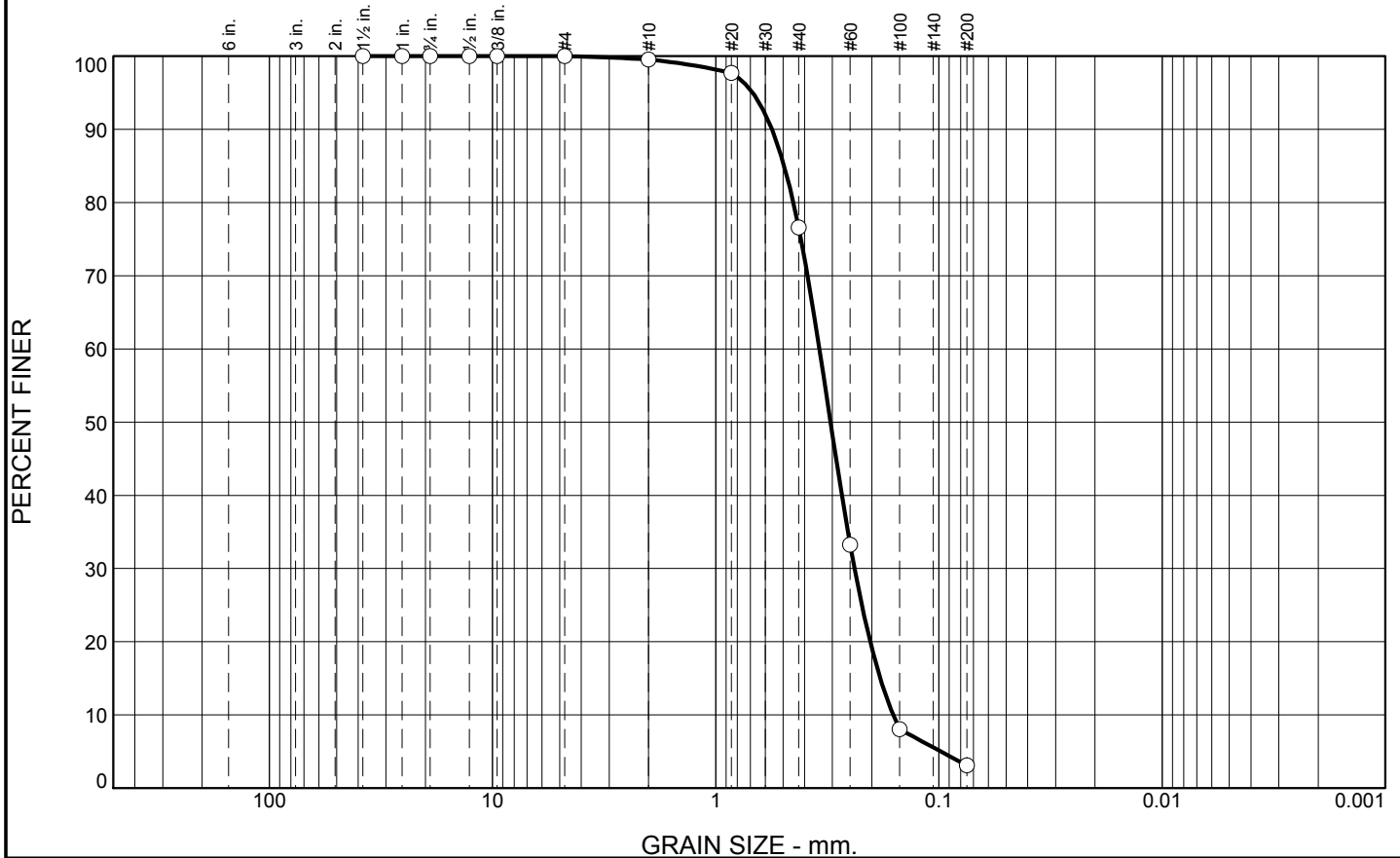
Boring Designation BI-DA10-09-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Disposal Area 10				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-DA10-09-11		LOCATION COORDINATES E = 1,081,523 N = 264,613		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 0		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 20 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-18-11		STARTED 06-18-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -18.0 Ft.			
8. TOTAL DEPTH OF BORING 16.9 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Rhonda Capes, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-18.0	0.0		CLAY, lean, dark gray (CL)				
-24.2	6.2		SAND, poorly-graded, mostly medium-grained sand-sized quartz, gray (SP)				
			At El. -26.5 Ft., lt. gray				
			At El. -27.6 Ft., brown	NS			
-34.9	16.9						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Boring Designation BI-DA10-10-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Disposal Area 10				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-DA10-10-11		LOCATION COORDINATES E = 1,083,136 N = 264,748		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 0 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 17.5 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-18-11		STARTED 06-18-11 COMPLETED 06-18-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -15.3 Ft.			
8. TOTAL DEPTH OF BORING 13.5 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Rhonda Capes, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-15.3	0.0						
-17.0	1.7		CLAY, lean, gray (CL)	NS			
			SAND, poorly-graded, mostly medium-grained sand-sized quartz, gray (SP)	A	Classification: SP Color: 10YR 6/2-light brownish gray D50: 0.306 mm % Fines: 3.1		
			At El. -21.0 Ft., brown	B	Classification: SP Color: 10YR 4/2-dark grayish brown D50: 0.2718 mm % Fines: 3		
-22.9	7.6						
-23.3	8.0		SAND, clayey, mostly medium-grained sand-sized quartz, dark brown (SC)	NS			
			SAND, poorly-graded, mostly medium-grained sand-sized quartz, gray (SP)	C	Classification: SP Color: 10YR 4/2-dark grayish brown D50: 0.2889 mm % Fines: 2.8		
-28.8	13.5						
NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.							

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.4	23.0	73.5	3.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.50	100.0		
1	100.0		
.75	100.0		
.5	100.0		
.375	100.0		
#4	100.0		
#10	99.6		
#20	97.7		
#40	76.6		
#60	33.3		
#100	8.0		
#200	3.1		

* (no specification provided)

<u>Material Description</u>		
SAND (SP), medium to fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.5597	D ₈₅ = 0.4937	D ₆₀ = 0.3433
D ₅₀ = 0.3060	D ₃₀ = 0.2390	D ₁₅ = 0.1833
D ₁₀ = 0.1606	C _u = 2.14	C _c = 1.04
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		

Location: USACE Sample # B1-DA10-10A-11
Sample Number: TE Lab ID: 5055.01

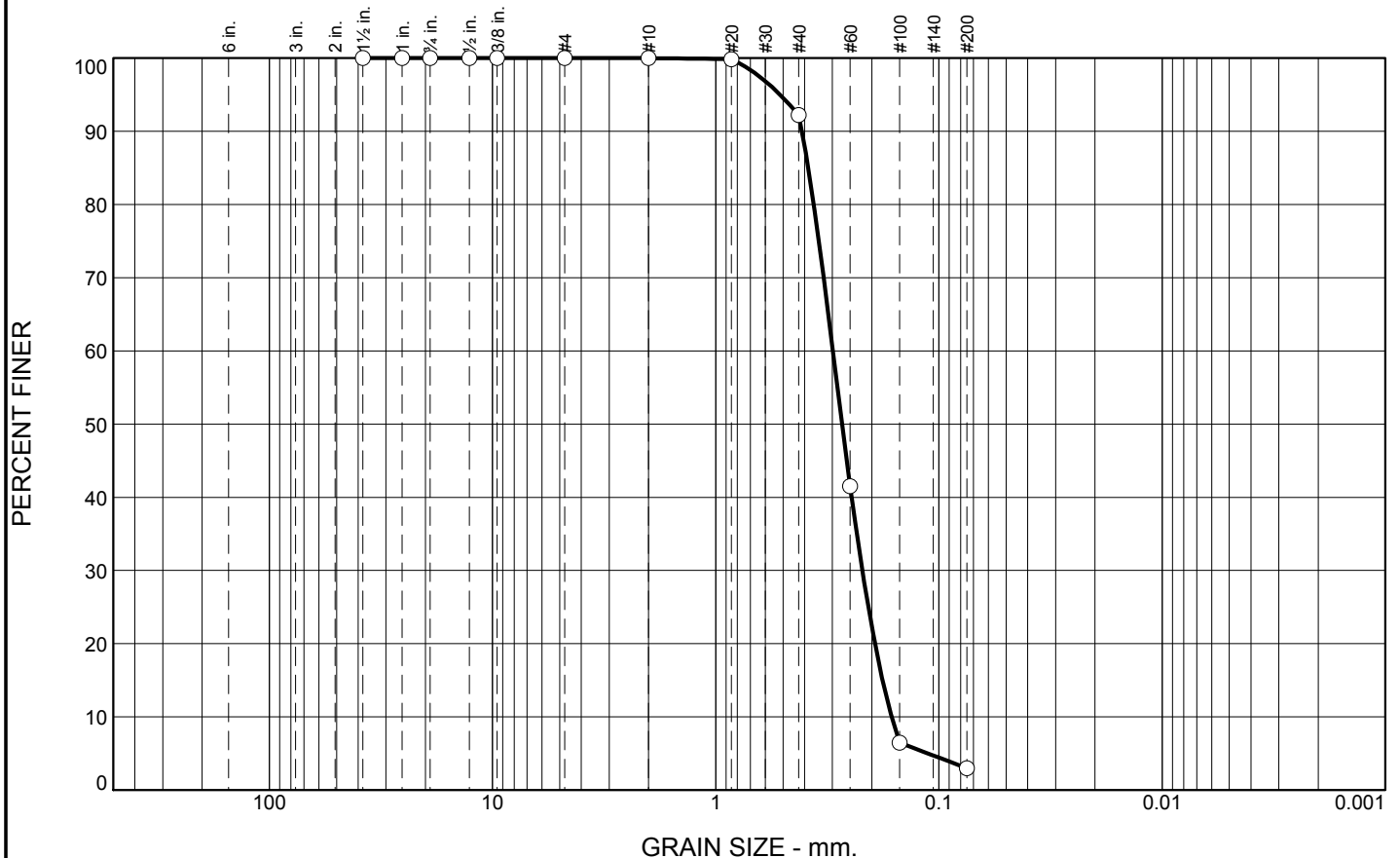
Depth: 1.7 - 5.7 (ft)

Date: 8/8/11

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 009
 Mississippi Barrier Island Restoration Project
Project No: 11-2116-0057
Report No.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	7.8	89.2	3.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.50	100.0		
1	100.0		
.75	100.0		
.5	100.0		
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.8		
#40	92.2		
#60	41.5		
#100	6.5		
#200	3.0		

* (no specification provided)

Material Description

SAND (SP), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.4111

D₈₅= 0.3852

D₆₀= 0.2986

D₅₀= 0.2718

D₃₀= 0.2204

D₁₅= 0.1791

D₁₀= 0.1631

C_u= 1.83

C_c= 1.00

Classification

USCS= SP

AASHTO=

Remarks

Location: USACE Sample # B1-DA10-10B-11
Sample Number: TE Lab ID: 5055.02

Depth: 5.7 - 7.6 (ft)

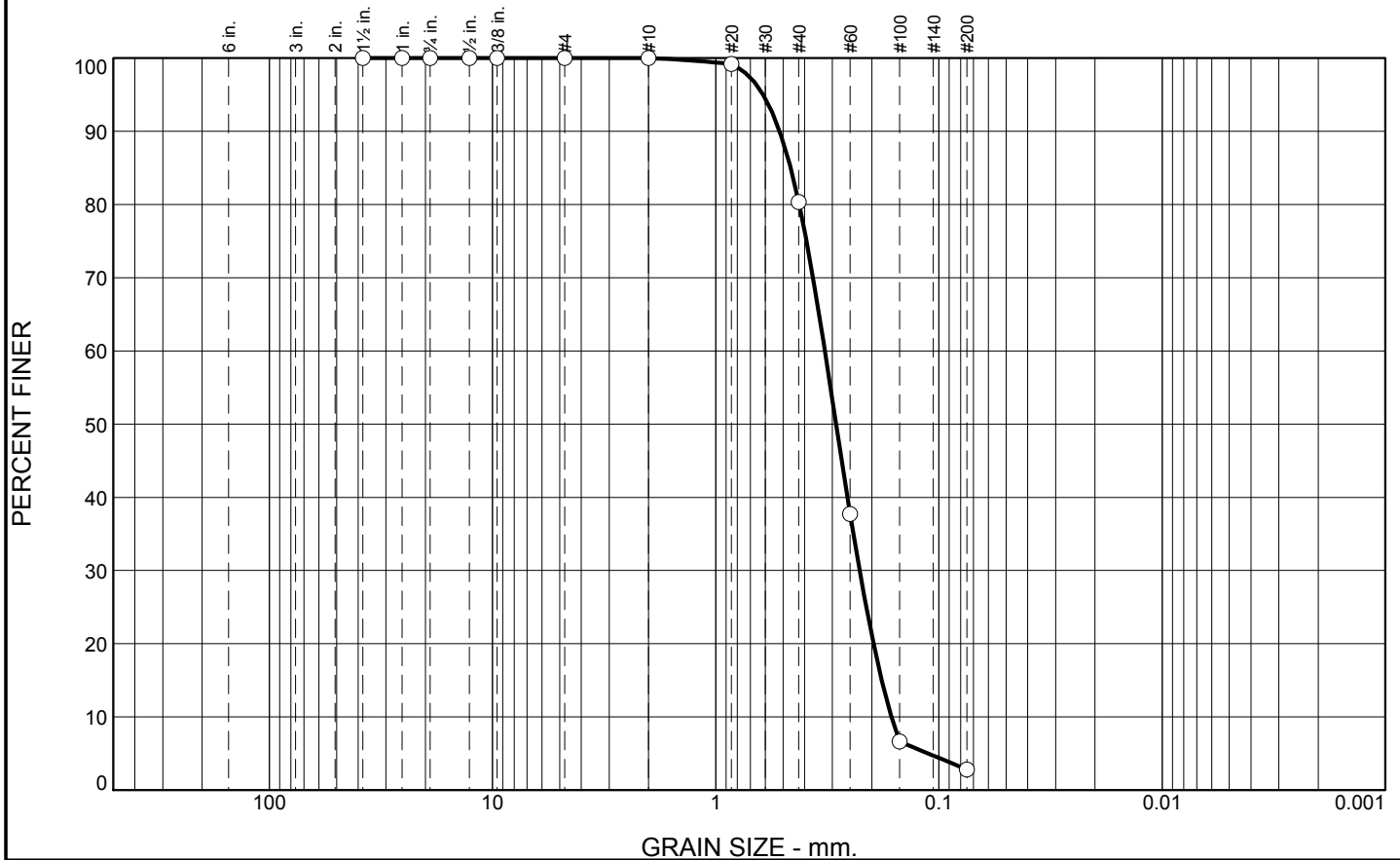
Date: 8/8/11

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project
Project No: 11-2116-0057

Report No.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	19.6	77.6	2.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.50	100.0		
1	100.0		
.75	100.0		
.5	100.0		
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.2		
#40	80.4		
#60	37.7		
#100	6.6		
#200	2.8		

* (no specification provided)

Material Description
 SAND (SP), medium to fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.5175 D₈₅= 0.4618 D₆₀= 0.3245
 D₅₀= 0.2889 D₃₀= 0.2267 D₁₅= 0.1805
 D₁₀= 0.1634 C_u= 1.99 C_c= 0.97

Classification
 USCS= SP AASHTO=

Remarks

Location: USACE Sample # B1-DA10-10C-11
 Sample Number: TE Lab ID: 5055.03

Depth: 8.0 - 13.5 (ft)

Date: 8/8/11

Thompson Engineering

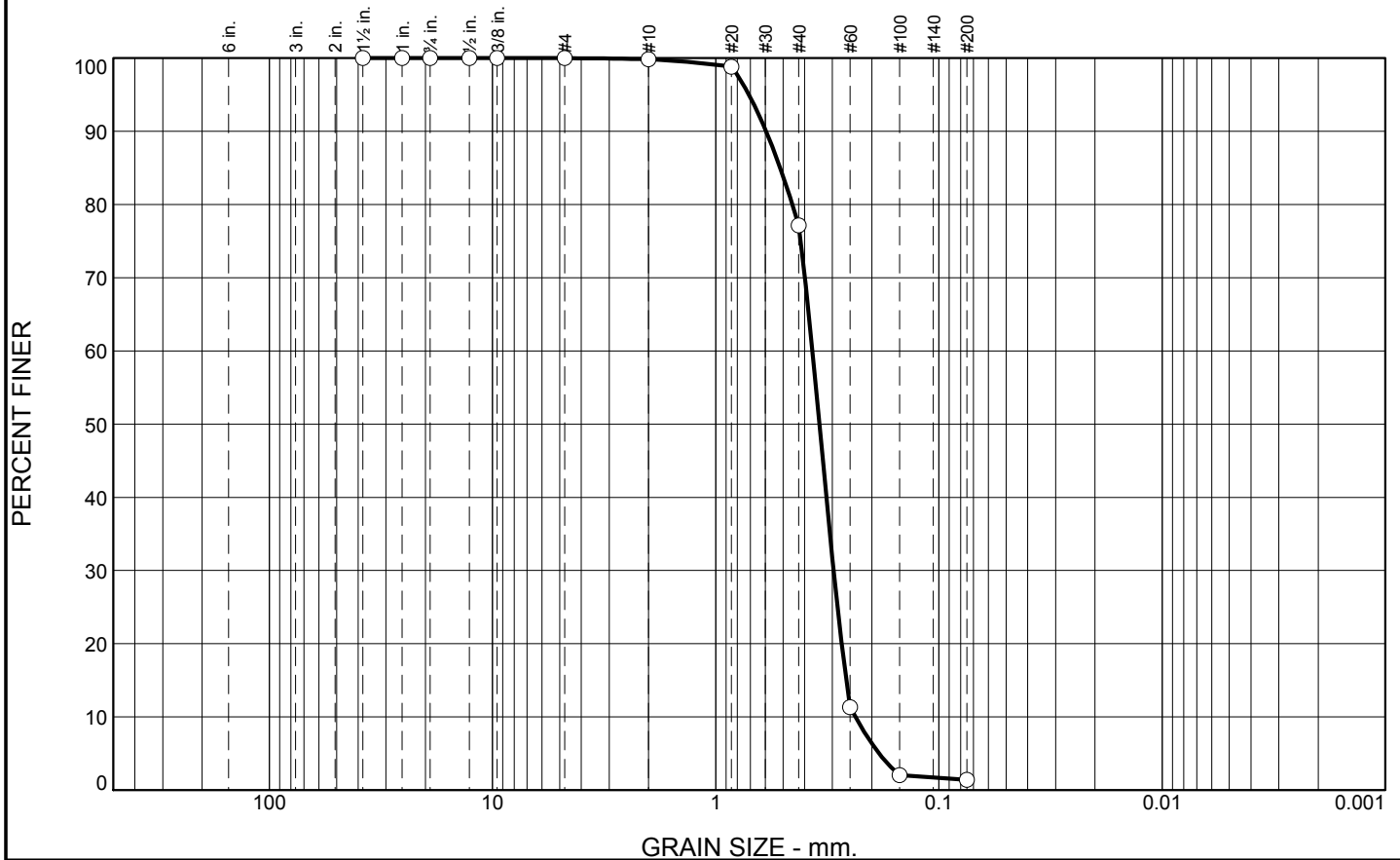
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 009
 Mississippi Barrier Island Restoration Project
Project No: 11-2116-0057 **Report No.**

Boring Designation BI-DA10-11-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Disposal Area 10				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-DA10-11-11		LOCATION COORDINATES E = 1,084,662 N = 264,527		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 3 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-18-11		STARTED 06-18-11 COMPLETED 06-18-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -0.7 Ft.			
8. TOTAL DEPTH OF BORING 14.1 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Rhonda Capes, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-0.7	0.0						
			SAND, poorly-graded, mostly medium-grained sand-sized quartz, lt. gray (SP)	A	Classification: SP Color: 2.5Y 7/2-light gray D50: 0.343 mm % Fines: 1.4		
				B	Classification: SP Color: 2.5Y 7/2-light gray D50: 0.338 mm % Fines: 2.4		
-10.4	9.7		CLAY, lean, gray (CL)	NS			
-13.9	13.2						
-14.8	14.1		SAND, poorly-graded, mostly medium-grained sand-sized quartz, lt. gray (SP)				
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	22.8	75.7	1.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.50	100.0		
1	100.0		
.75	100.0		
.5	100.0		
.375	100.0		
#4	100.0		
#10	99.9		
#20	98.8		
#40	77.1		
#60	11.3		
#100	2.0		
#200	1.4		

* (no specification provided)

Material Description

SAND (SP), medium to fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.5949

D₈₅= 0.5146

D₆₀= 0.3688

D₅₀= 0.3430

D₃₀= 0.2965

D₁₅= 0.2604

D₁₀= 0.2368

C_u= 1.56

C_c= 1.01

Classification

USCS= SP

AASHTO=

Remarks

Location: USACE Sample # B1-DA10-11A-11

Sample Number: TE Lab ID: 5055.04

Depth: 0.0 - 5.0 (ft)

Date: 8/8/11

Thompson Engineering

Mobile, Alabama

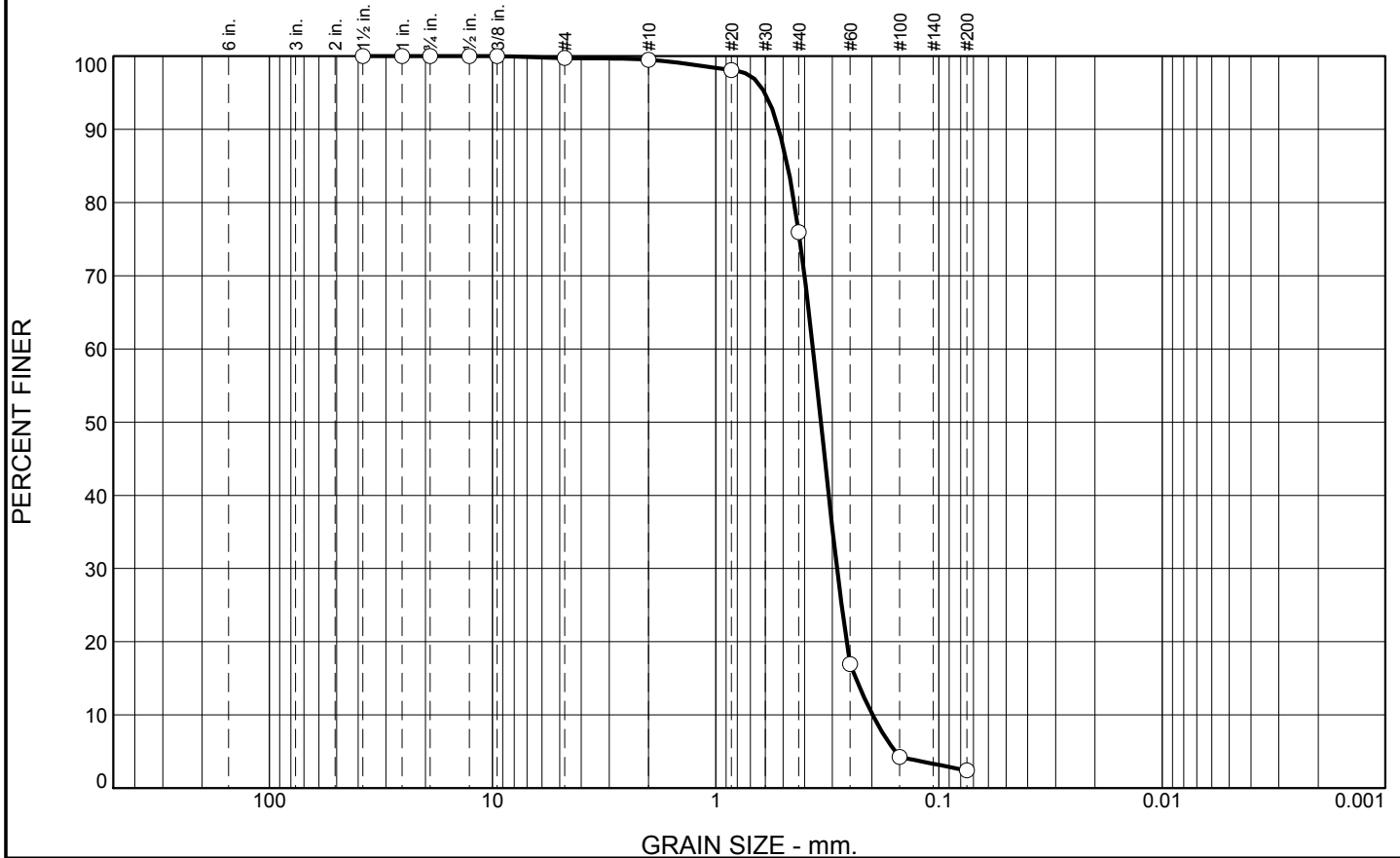
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Report No.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.3	0.2	23.5	73.6	2.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.50	100.0		
1	100.0		
.75	100.0		
.5	100.0		
.375	100.0		
#4	99.7		
#10	99.5		
#20	98.1		
#40	76.0		
#60	17.0		
#100	4.2		
#200	2.4		

* (no specification provided)

Material Description
 SAND (SP), medium to fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.5219 D₈₅= 0.4769 D₆₀= 0.3667
 D₅₀= 0.3380 D₃₀= 0.2862 D₁₅= 0.2357
 D₁₀= 0.1983 C_u= 1.85 C_c= 1.13

Classification
 USCS= SP AASHTO=

Remarks

Location: USACE Sample # B1-DA10-11B-11
 Sample Number: TE Lab ID: 5055.05

Depth: 5.0 - 9.7 (ft)

Date: 8/8/11

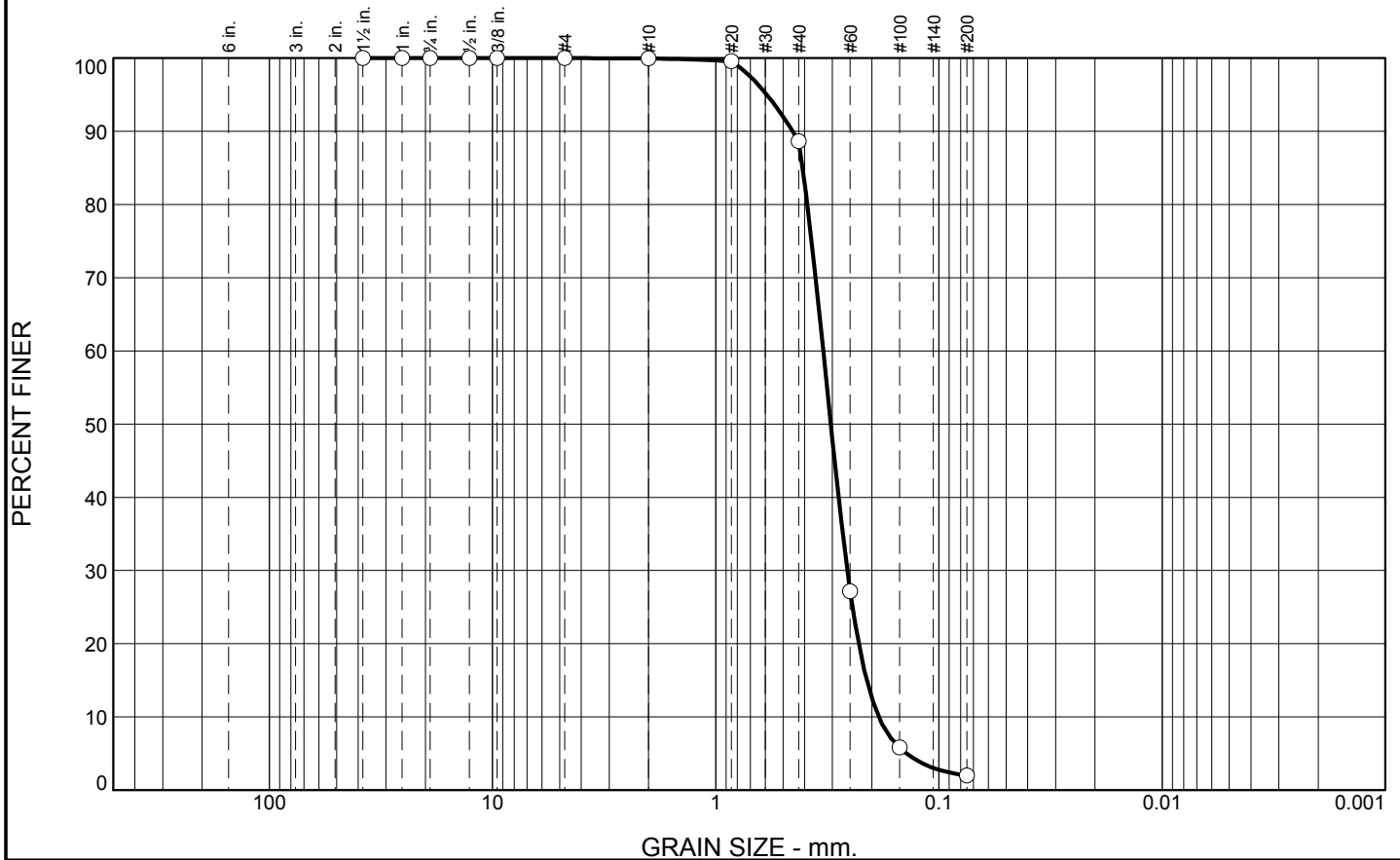
Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 009
 Mississippi Barrier Island Restoration Project
Project No: 11-2116-0057 **Report No.**

Boring Designation BI-DA10-12-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Disposal Area 10				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-DA10-12-11		LOCATION COORDINATES E = 1,085,756 N = 263,890		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 4		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		14. WATER DEPTH 6.5 Ft.	
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-18-11		STARTED 06-18-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -4.2 Ft.		COMPLETED 06-18-11	
8. TOTAL DEPTH OF BORING 17.4 Ft.				17. TOTAL RECOVERY FOR BORING 100%		18. SIGNATURE AND TITLE OF INSPECTOR Rhonda Capes, Geologist	
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-4.2	0.0						
			SAND, poorly-graded, mostly medium-grained sand-sized quartz, lt. gray (SP)	A	Classification: SP Color: 2.5Y 7/2-light gray D50: 0.3053 mm % Fines: 2		
				B	Classification: SP Color: 2.5Y 7/2-light gray D50: 0.2972 mm % Fines: 4.1		
				C	Classification: SP Color: 2.5Y 7/2-light gray D50: 0.3417 mm % Fines: 3.7		
				D	Classification: SP-SM Color: 2.5Y 7/2-light gray D50: 0.3292 mm % Fines: 5.2		
-21.6	17.4						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	11.4	86.6	2.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.50	100.0		
1	100.0		
.75	100.0		
.5	100.0		
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.6		
#40	88.6		
#60	27.2		
#100	5.8		
#200	2.0		

* (no specification provided)

<u>Material Description</u>		
SAND (SP), medium to fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.4522	D ₈₅ = 0.4083	D ₆₀ = 0.3298
D ₅₀ = 0.3053	D ₃₀ = 0.2574	D ₁₅ = 0.2108
D ₁₀ = 0.1862	C _u = 1.77	C _c = 1.08
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		

Location: USACE Sample # B1-DA10-12A-11
Sample Number: TE Lab ID: 5055.06

Depth: 0.0 - 4.0 (ft)

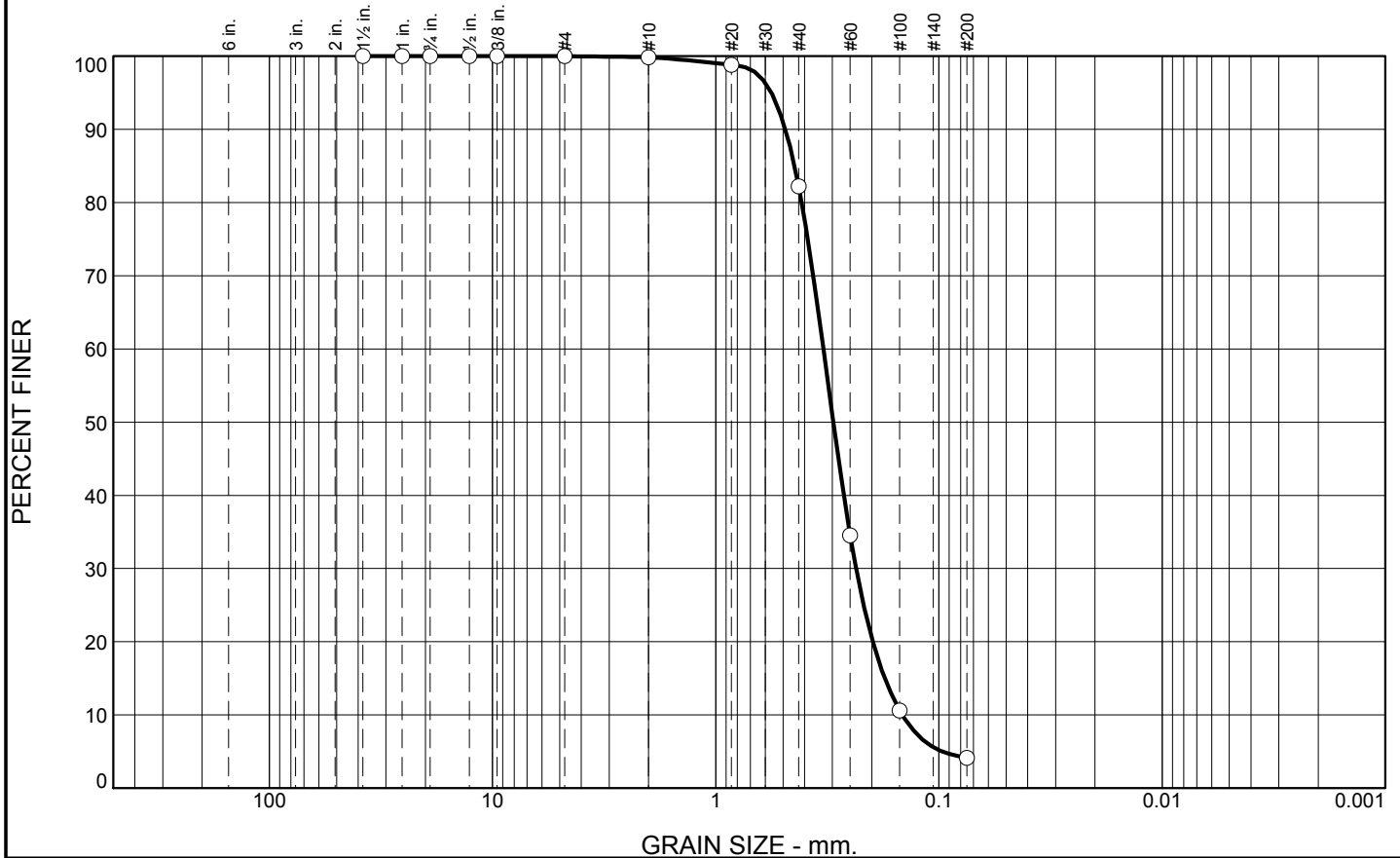
Date: 8/8/11

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project
Project No: 11-2116-0057

Report No.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	17.6	78.1	4.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.50	100.0		
1	100.0		
.75	100.0		
.5	100.0		
.375	100.0		
#4	100.0		
#10	99.8		
#20	98.8		
#40	82.2		
#60	34.5		
#100	10.6		
#200	4.1		

* (no specification provided)

Material Description
 SAND (SP), medium to fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.4877 D₈₅= 0.4437 D₆₀= 0.3293
 D₅₀= 0.2972 D₃₀= 0.2352 D₁₅= 0.1750
 D₁₀= 0.1459 C_u= 2.26 C_c= 1.15

Classification
 USCS= SP AASHTO=

Remarks

Location: USACE Sample # B1-DA10-12B-11
 Sample Number: TE Lab ID: 5055.07

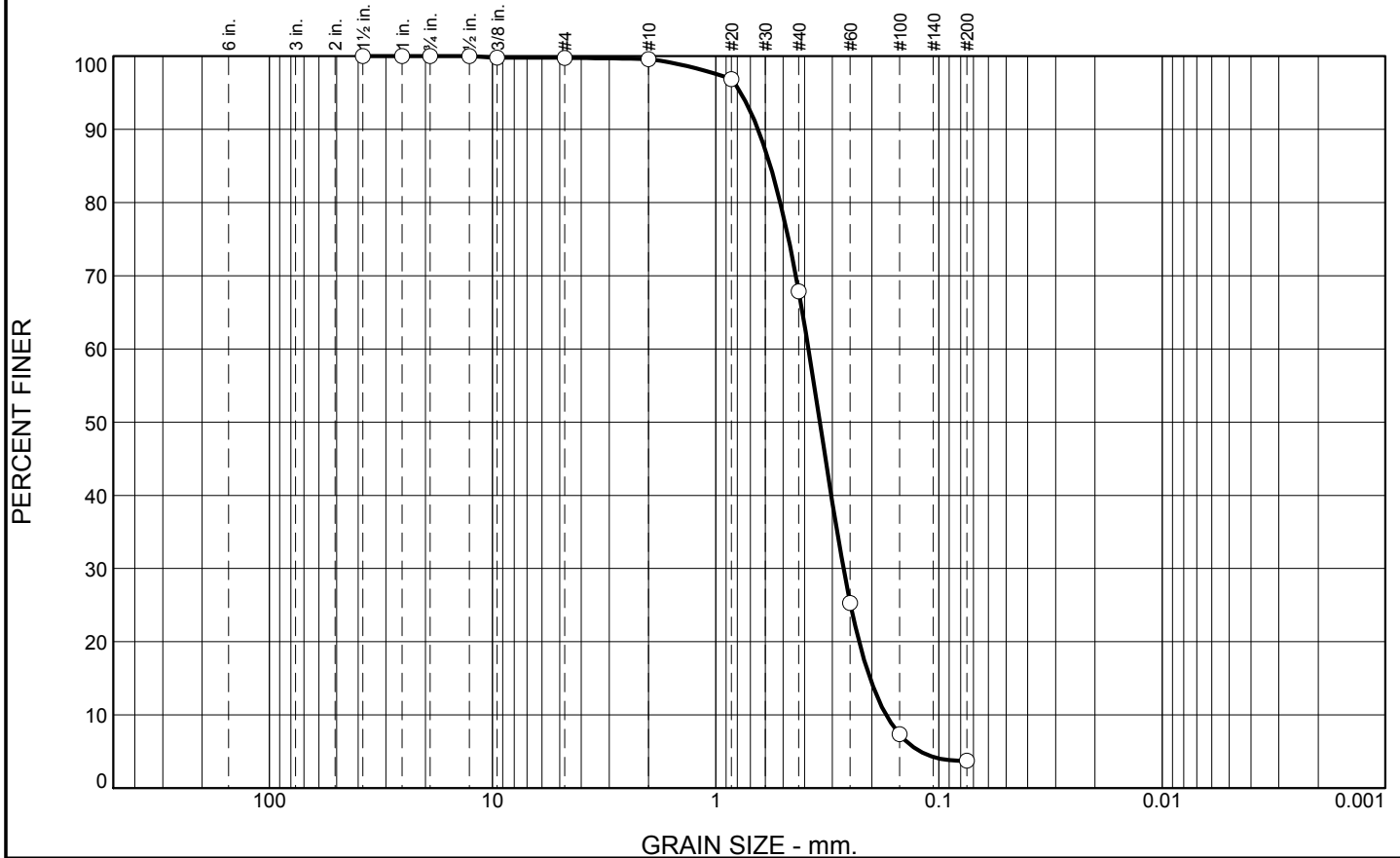
Depth: 4.0 - 8.0 (ft)

Date: 8/8/11

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 009
 Mississippi Barrier Island Restoration Project
Project No: 11-2116-0057 **Report No.**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.2	31.7	64.2	3.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.50	100.0		
1	100.0		
.75	100.0		
.5	100.0		
.375	99.8		
#4	99.8		
#10	99.6		
#20	96.9		
#40	67.9		
#60	25.3		
#100	7.4		
#200	3.7		

* (no specification provided)

<u>Material Description</u>		
SAND (SP), medium to fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.6467	D ₈₅ = 0.5696	D ₆₀ = 0.3844
D ₅₀ = 0.3417	D ₃₀ = 0.2677	D ₁₅ = 0.2037
D ₁₀ = 0.1725	C _u = 2.23	C _c = 1.08
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		

Location: USACE Sample # B1-DA10-12C-11
Sample Number: TE Lab ID: 5055.08

Depth: 8.0 - 12.0 (ft)

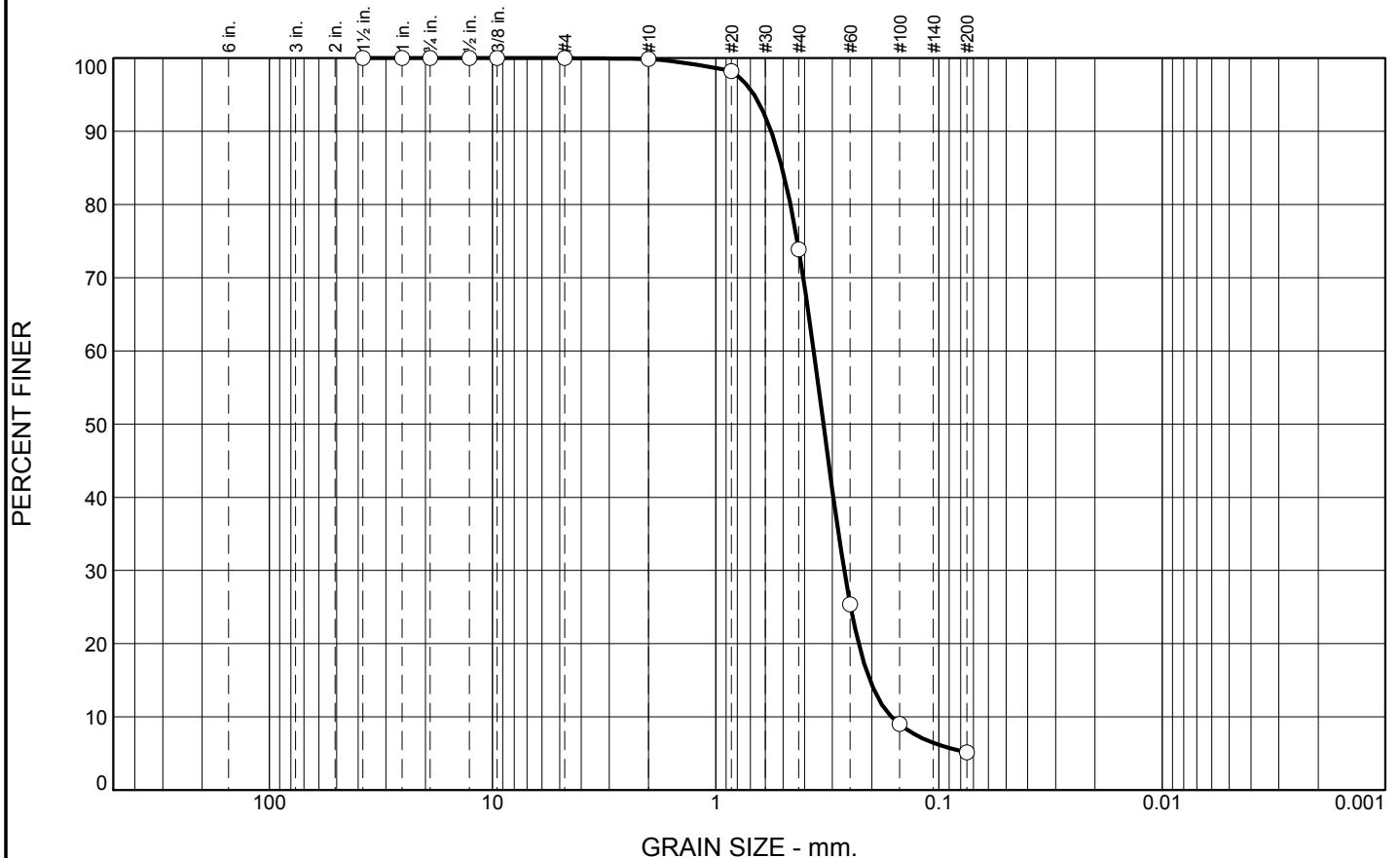
Date: 8/8/11

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project
Project No: 11-2116-0057

Report No.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	26.0	68.7	5.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.50	100.0		
1	100.0		
.75	100.0		
.5	100.0		
.375	100.0		
#4	100.0		
#10	99.9		
#20	98.2		
#40	73.9		
#60	25.4		
#100	9.0		
#200	5.2		

* (no specification provided)

Material Description

Slightly silty SAND (SP-SM), medium to fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.5647 D₈₅= 0.5046 D₆₀= 0.3640
D₅₀= 0.3292 D₃₀= 0.2658 D₁₅= 0.2039
D₁₀= 0.1632 C_u= 2.23 C_c= 1.19

Classification

USCS= SP-SM AASHTO=

Remarks

Location: USACE Sample # B1-DA10-12D-11
Sample Number: TE Lab ID: 5055.09

Depth: 12.0 - 17.4 (ft)

Date: 8/8/11

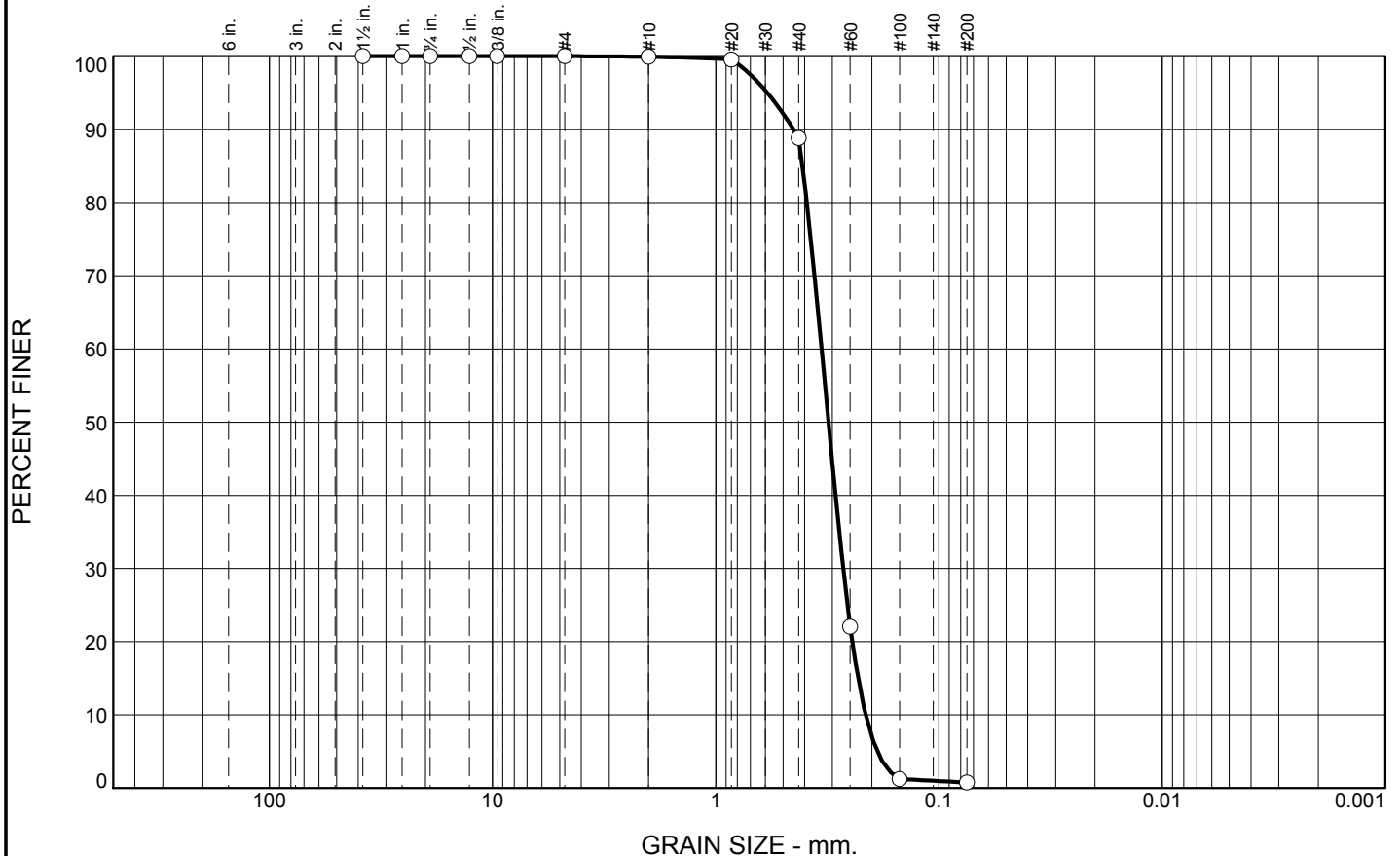
Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project
Project No: 11-2116-0057
Report No.

Boring Designation BI-DA10-13-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Disposal Area 10				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-DA10-13-11		LOCATION COORDINATES E = 1,086,264 N = 262,996		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 5		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		14. WATER DEPTH 6 Ft.	
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-18-11		STARTED 06-18-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -3.6 Ft.		COMPLETED 06-18-11	
8. TOTAL DEPTH OF BORING 15.8 Ft.				17. TOTAL RECOVERY FOR BORING 100%		18. SIGNATURE AND TITLE OF INSPECTOR Rhonda Capes, Geologist	
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-3.6	0.0						
			SAND, poorly-graded, mostly medium-grained sand-sized quartz, tan and gray mottled (SP)	A	Classification: SP Color: 2.5Y 6/3-light yellowish brown D50: 0.3125 mm % Fines: 0.8		
			At El. -7.1 Ft., dark gray	B	Classification: SP Color: 2.5Y 6/2-light brownish gray D50: 0.3058 mm % Fines: 1.3		
				C	Classification: SP Color: 2.5Y 6/2-light brownish gray D50: 0.3237 mm % Fines: 3.2		
			At El. -13.0 Ft., lt. gray	D	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.3204 mm % Fines: 4.5		
				E	Classification: SP-SM Color: 2.5Y 7/1-light gray D50: 0.3302 mm % Fines: 8.1		
-19.4	15.8						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	11.1	88.0	0.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.50	100.0		
1	100.0		
.75	100.0		
.5	100.0		
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.6		
#40	88.8		
#60	22.1		
#100	1.2		
#200	0.8		

* (no specification provided)

Material Description
 SAND (SP), medium to fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.4491 D₈₅= 0.4089 D₆₀= 0.3355
 D₅₀= 0.3125 D₃₀= 0.2687 D₁₅= 0.2304
 D₁₀= 0.2131 C_u= 1.57 C_c= 1.01

Classification
 USCS= SP AASHTO=

Remarks

Location: USACE Sample # B1-DA10-13A-11
 Sample Number: TE Lab ID: 5055.10

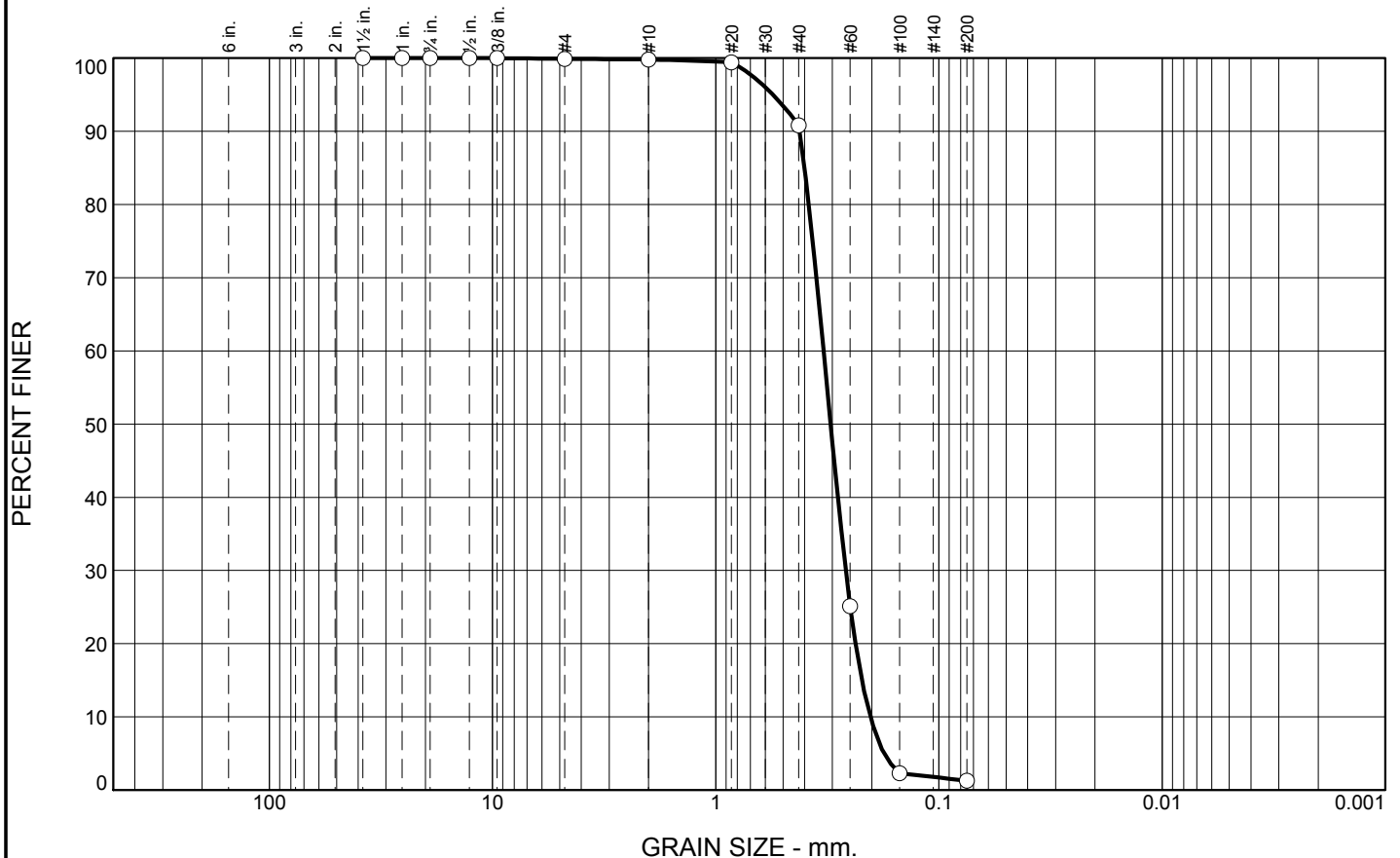
Depth: 0.0 - 3.5 (ft)

Date: 8/8/11

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 009
 Mississippi Barrier Island Restoration Project
Project No: 11-2116-0057 **Report No.**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.1	9.0	89.5	1.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.50	100.0		
1	100.0		
.75	100.0		
.5	100.0		
.375	100.0		
#4	99.9		
#10	99.8		
#20	99.4		
#40	90.8		
#60	25.1		
#100	2.3		
#200	1.3		

* (no specification provided)

<u>Material Description</u>		
SAND (SP), fine grained		
PL=	<u>Atterberg Limits</u> LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.4212	D ₈₅ = 0.4005	D ₆₀ = 0.3287
D ₅₀ = 0.3058	D ₃₀ = 0.2616	D ₁₅ = 0.2214
D ₁₀ = 0.2029	C _u = 1.62	C _c = 1.03
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		

Location: USACE Sample # B1-DA10-13B-11
Sample Number: TE Lab ID: 5055.11

Depth: 3.5 - 6.0 (ft)

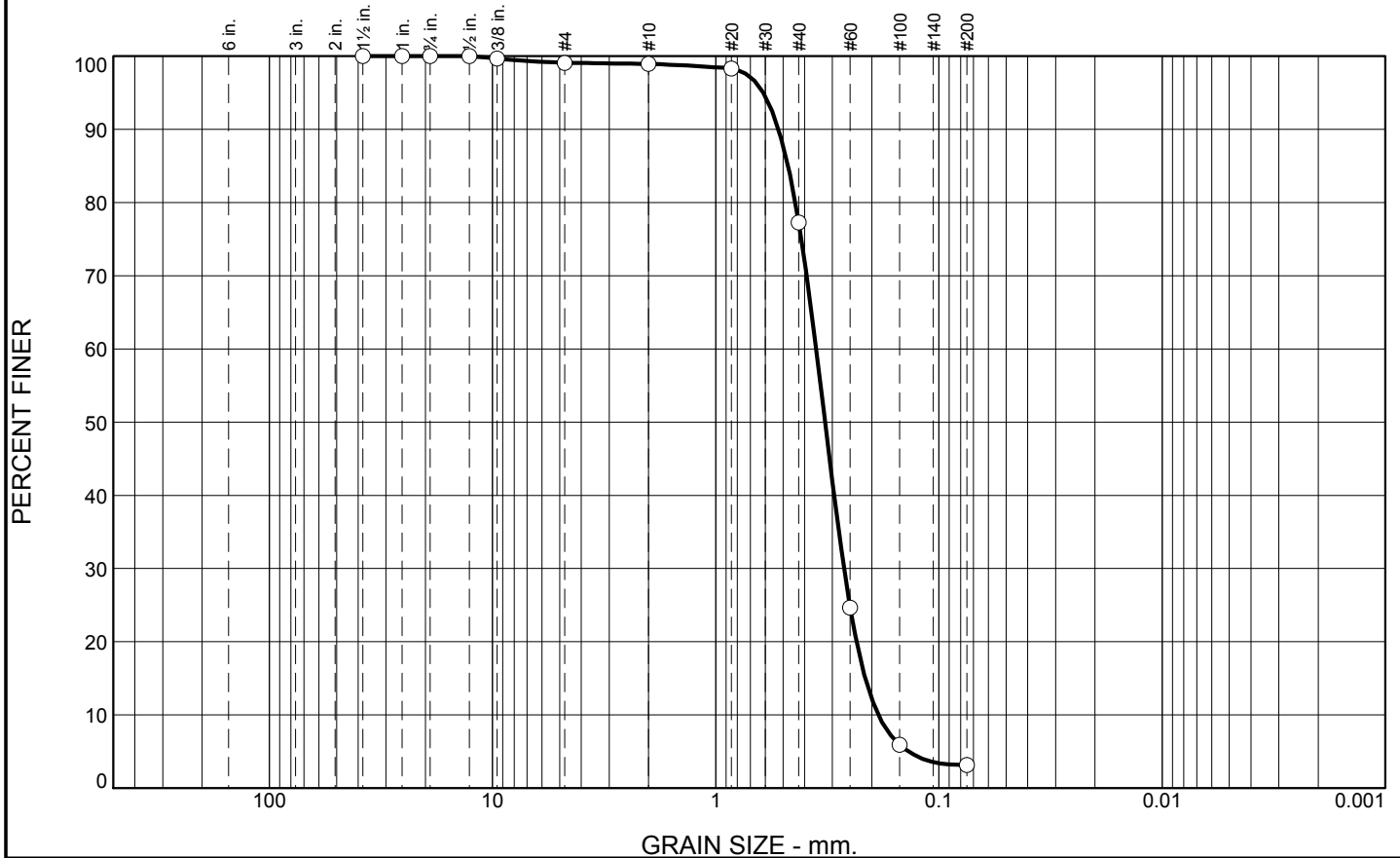
Date: 8/8/11

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project
Project No: 11-2116-0057

Report No.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.9	0.1	21.7	74.1	3.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.50	100.0		
1	100.0		
.75	100.0		
.5	100.0		
.375	99.7		
#4	99.1		
#10	99.0		
#20	98.3		
#40	77.3		
#60	24.7		
#100	5.9		
#200	3.2		

* (no specification provided)

Material Description
 SAND (SP), medium to fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.5237 D₈₅= 0.4745 D₆₀= 0.3550
 D₅₀= 0.3237 D₃₀= 0.2663 D₁₅= 0.2139
 D₁₀= 0.1870 C_u= 1.90 C_c= 1.07

Classification
 USCS= SP AASHTO=

Remarks

Location: USACE Sample # B1-DA10-13C-11
 Sample Number: TE Lab ID: 5055.12

Depth: 6.0 - 9.4 (ft)

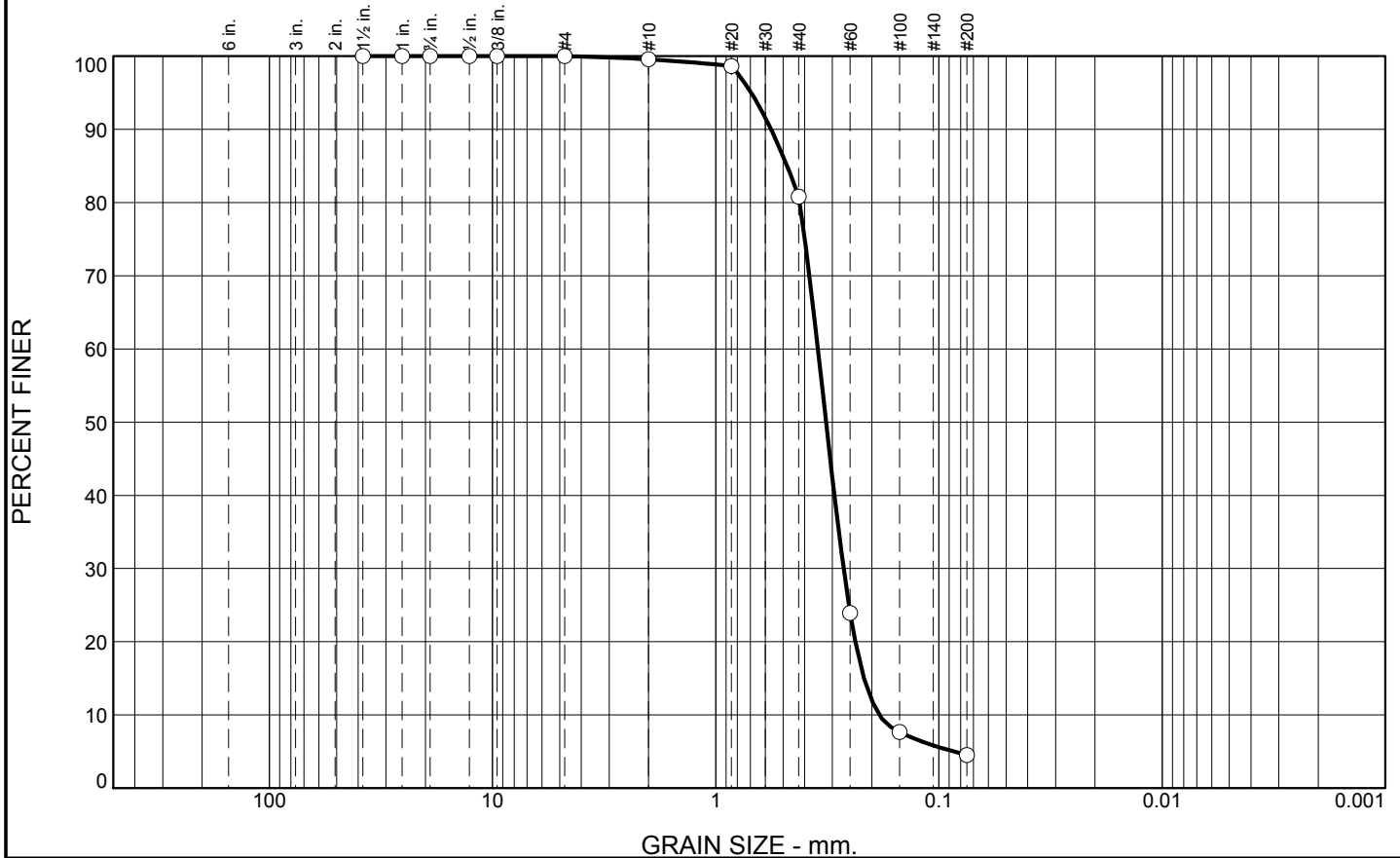
Date: 8/8/11

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 009
 Mississippi Barrier Island Restoration Project
Project No: 11-2116-0057 **Report No.**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.4	18.8	76.3	4.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.50	100.0		
1	100.0		
.75	100.0		
.5	100.0		
.375	100.0		
#4	100.0		
#10	99.6		
#20	98.6		
#40	80.8		
#60	23.9		
#100	7.7		
#200	4.5		

* (no specification provided)

<u>Material Description</u>		
SAND (SP), medium to fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.5654	D ₈₅ = 0.4795	D ₆₀ = 0.3486
D ₅₀ = 0.3204	D ₃₀ = 0.2676	D ₁₅ = 0.2166
D ₁₀ = 0.1850	C _u = 1.88	C _c = 1.11
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		

Location: USACE Sample # B1-DA10-13D-11
Sample Number: TE Lab ID: 5055.13

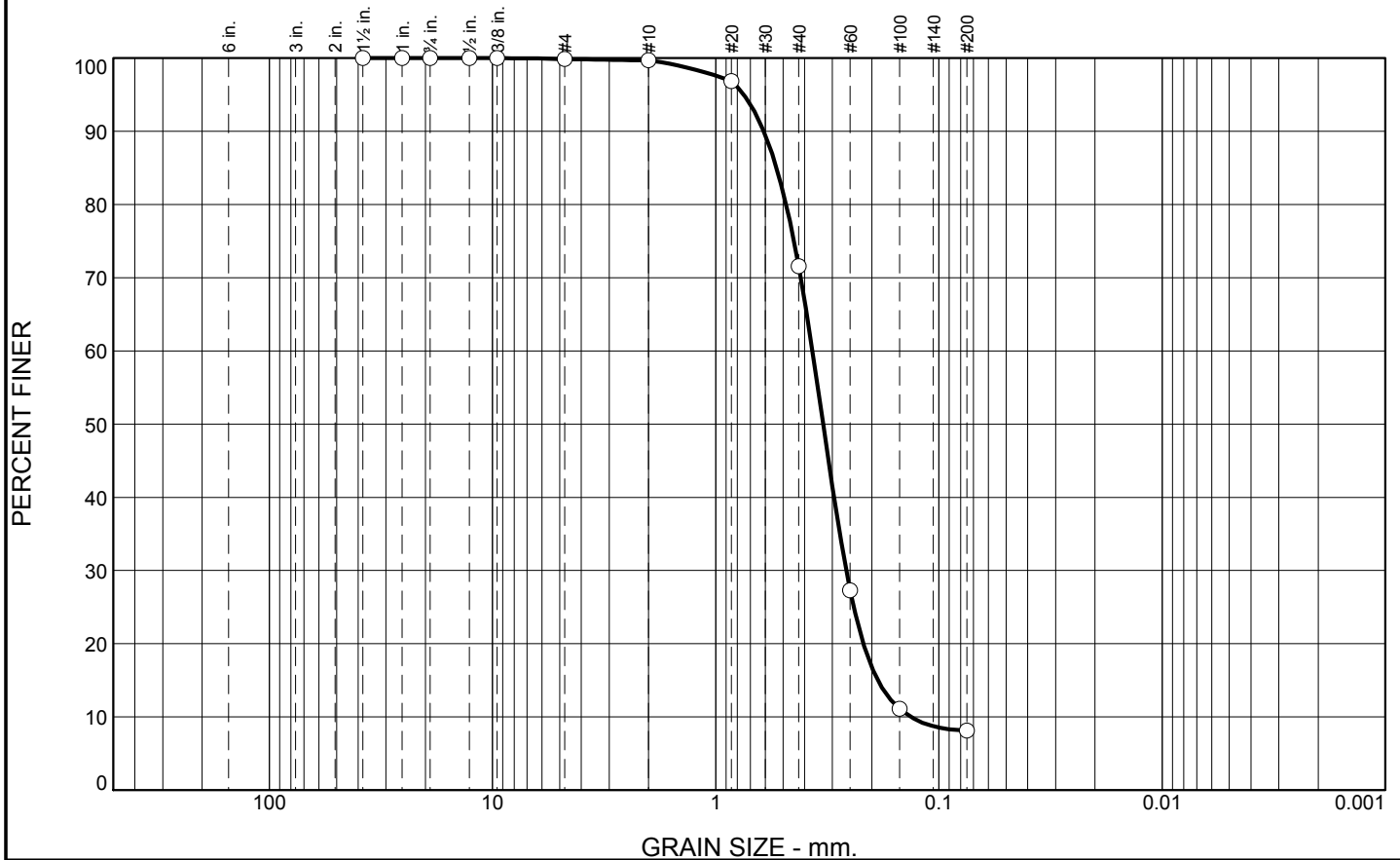
Depth: 9.4 - 13.0 (ft)

Date: 8/8/11

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 009
 Mississippi Barrier Island Restoration Project
Project No: 11-2116-0057
Report No.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.2	28.1	63.5	8.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.50	100.0		
1	100.0		
.75	100.0		
.5	100.0		
.375	100.0		
#4	99.9		
#10	99.7		
#20	96.9		
#40	71.6		
#60	27.3		
#100	11.1		
#200	8.1		

* (no specification provided)

Material Description

Slightly silty SAND (SP-SM), medium to fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.6093 D₈₅= 0.5345 D₆₀= 0.3690
 D₅₀= 0.3302 D₃₀= 0.2602 D₁₅= 0.1880
 D₁₀= 0.1333 C_u= 2.77 C_c= 1.38

Classification

USCS= SP-SM AASHTO=

Remarks

Location: USACE Sample # B1-DA10-13E-11
Sample Number: TE Lab ID: 5055.14

Depth: 13.0 - 15.8 (ft)

Date: 8/8/11

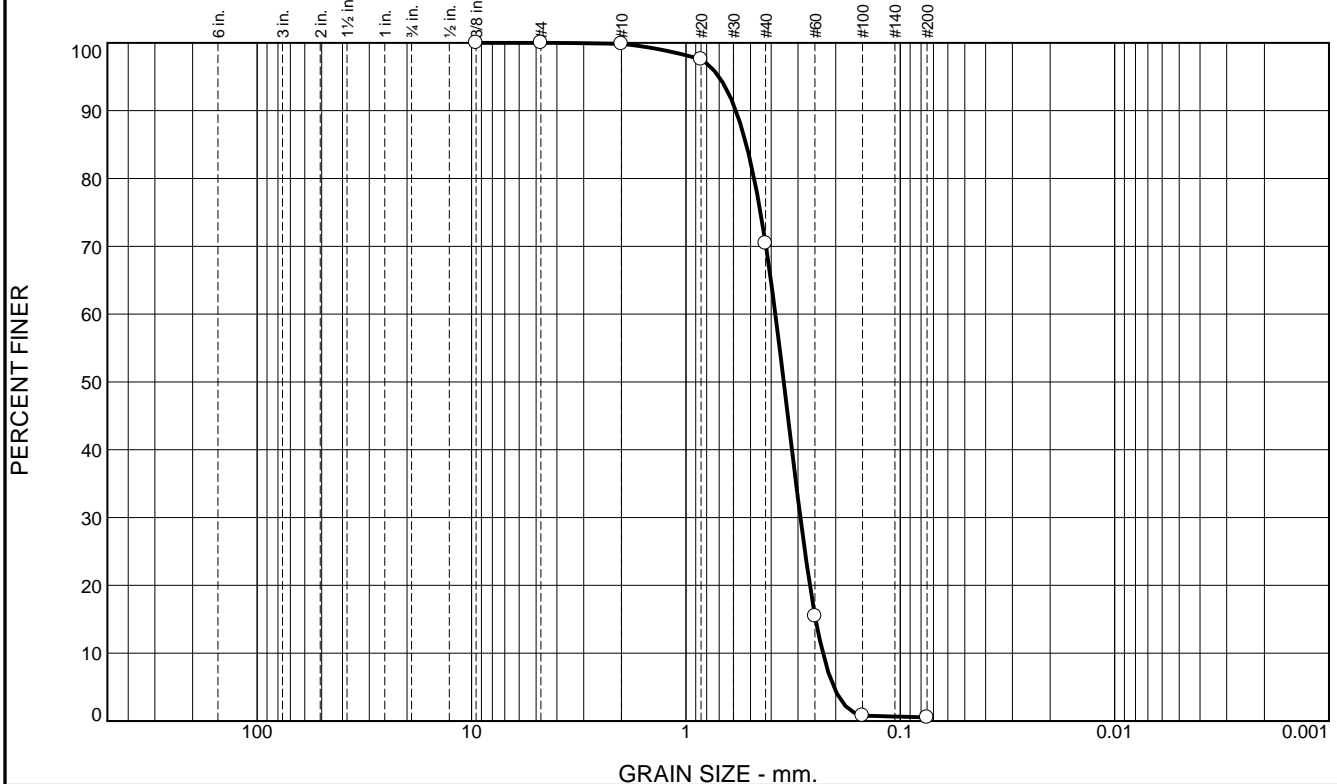
Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project
Project No: 11-2116-0057 Report No.

Boring Designation BI-DA10-14-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Disposal Area 10				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-DA10-14-11		LOCATION COORDINATES E = 1,080,268 N = 262,714		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		14. WATER DEPTH 13.2 Ft.	
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-21-11		STARTED 06-21-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -11.4 Ft.		COMPLETED 06-21-11	
8. TOTAL DEPTH OF BORING 12.1 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Rhonda Capes, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-11.4	0.0						
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, tan (SP) At El. -12.2 Ft., gray	A	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.3497 mm % Fines: 0.5		
-16.0	4.6						
-16.9	5.5		CLAY, lean, trace fine-grained sand, gray (CL)	NS			
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, lt. gray (SP)	B	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.301 mm % Fines: 4		
-23.5	12.1						
NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.							

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	29.4	70.0	0.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	97.6		
#40	70.5		
#60	15.5		
#100	0.8		
#200	0.5		

* (no specification provided)

Material Description		
SAND (SP), medium to fine grained		
<div> <div> Atterberg Limits PL= LL= PI= </div> <div> Coefficients D₉₀= 0.5841 D₈₅= 0.5224 D₆₀= 0.3826 D₅₀= 0.3497 D₃₀= 0.2926 D₁₅= 0.2484 D₁₀= 0.2297 C_u= 1.67 C_c= 0.97 </div> <div> Classification USCS= SP AASHTO= </div> <div> Remarks </div> </div>		

Location: USACE Sample # BI-DA10-14A-11

Sample Number: TE Lab ID: 5054.22

Depth: 0.0 - 4.6 (ft)

Date: 7/15/11

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

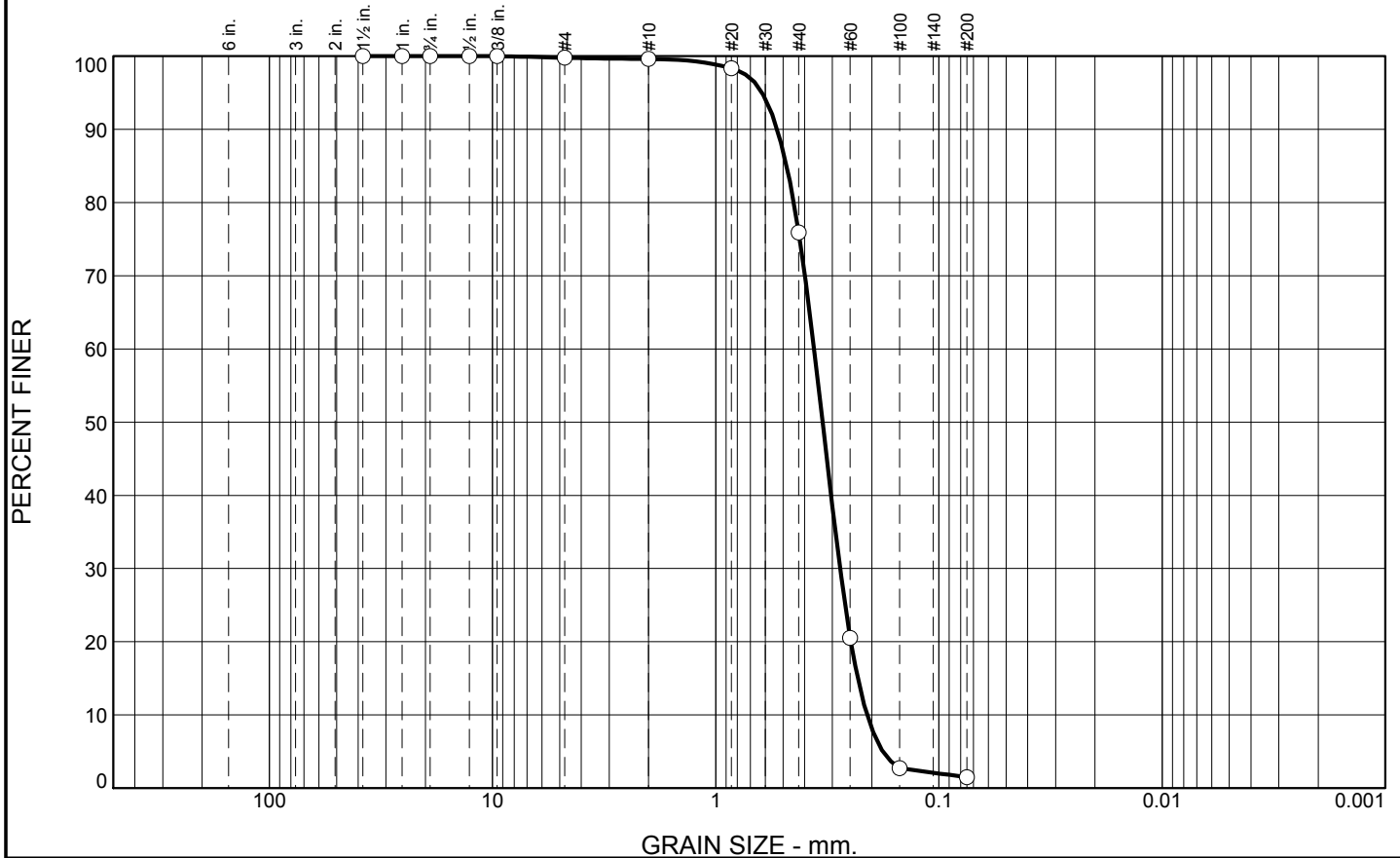
PERCENT FINER

K-34

Boring Designation BI-DA10-18-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Disposal Area 10				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-DA10-18-11		LOCATION COORDINATES E = 1,085,865 N = 261,322		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		14. WATER DEPTH 18 Ft.	
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-18-11		STARTED 06-18-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -15.6 Ft.		COMPLETED 06-18-11	
8. TOTAL DEPTH OF BORING 14.5 Ft.				17. TOTAL RECOVERY FOR BORING 100%		18. SIGNATURE AND TITLE OF INSPECTOR Rhonda Capes, Geologist	
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-15.6	0.0						
			SAND, poorly-graded, mostly medium-grained sand-sized quartz, tan and gray mottled (SP)	A	Classification: SP Color: 2.5Y 7/2-light gray D50: 0.3321 mm % Fines: 1.5		
			At El. -19.4 Ft., lt. gray	B	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.3527 mm % Fines: 2.7		
				C	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.3366 mm % Fines: 3.6		
-30.1	14.5						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.2	23.7	74.4	1.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.50	100.0		
1	100.0		
.75	100.0		
.5	100.0		
.375	100.0		
#4	99.8		
#10	99.6		
#20	98.3		
#40	75.9		
#60	20.5		
#100	2.7		
#200	1.5		

* (no specification provided)

Material Description
 SAND (SP), medium to fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.5307 D₈₅= 0.4815 D₆₀= 0.3627
 D₅₀= 0.3321 D₃₀= 0.2772 D₁₅= 0.2312
 D₁₀= 0.2100 C_u= 1.73 C_c= 1.01

Classification
 USCS= SP AASHTO=

Remarks

Location: USACE Sample # B1-DA10-18A-11
 Sample Number: TE Lab ID: 5055.15

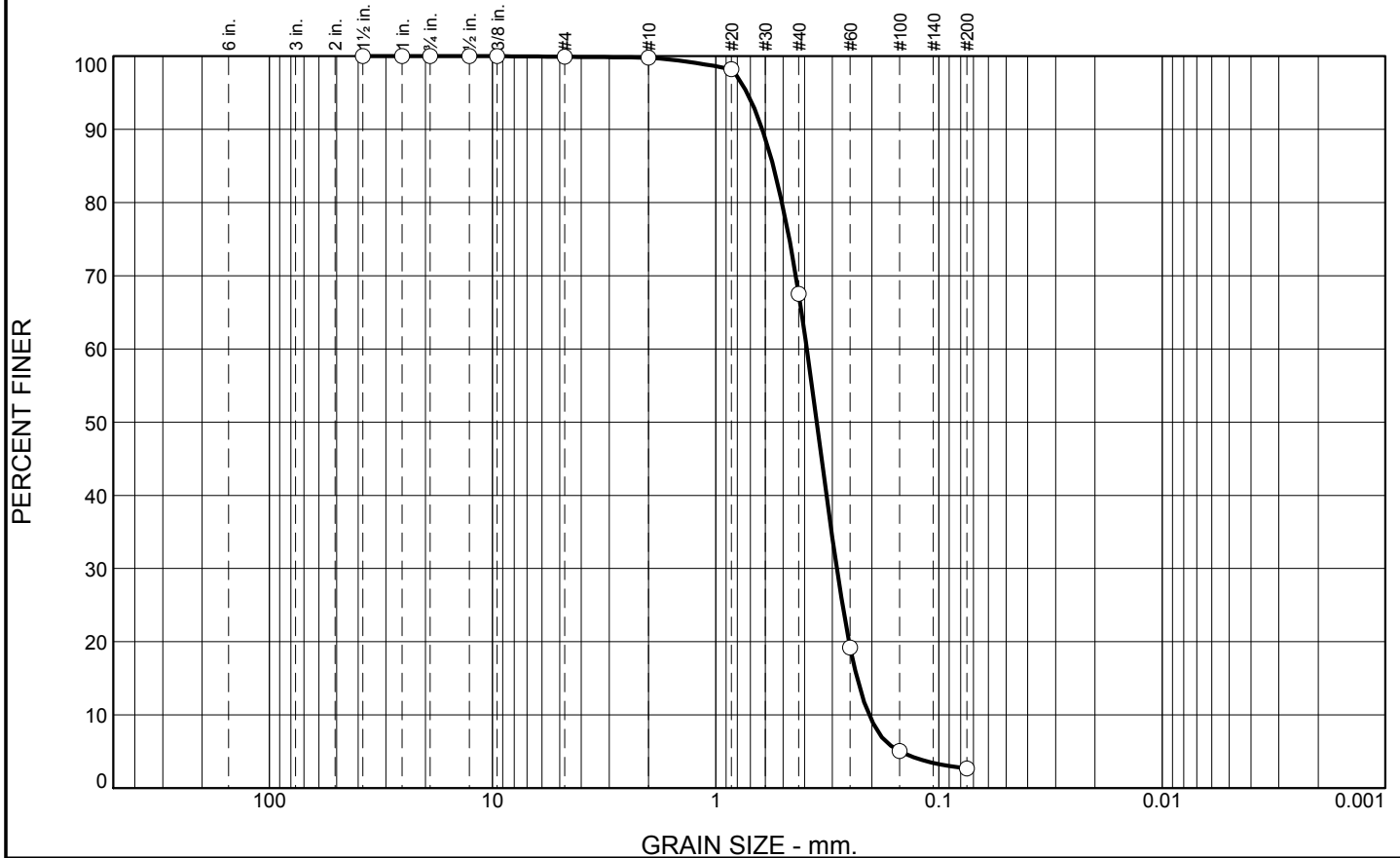
Depth: 0.0 - 5.0 (ft)

Date: 8/8/11

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 009
 Mississippi Barrier Island Restoration Project
Project No: 11-2116-0057 **Report No.**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.1	32.3	64.8	2.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.50	100.0		
1	100.0		
.75	100.0		
.5	100.0		
.375	100.0		
#4	99.9		
#10	99.8		
#20	98.2		
#40	67.5		
#60	19.2		
#100	5.1		
#200	2.7		

* (no specification provided)

<u>Material Description</u>		
SAND (SP), medium to fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.6186	D ₈₅ = 0.5528	D ₆₀ = 0.3908
D ₅₀ = 0.3527	D ₃₀ = 0.2869	D ₁₅ = 0.2326
D ₁₀ = 0.2057	C _u = 1.90	C _c = 1.02
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		

Location: USACE Sample # B1-DA10-18B-11
Sample Number: TE Lab ID: 5055.16

Depth: 5.0 - 10.0 (ft)

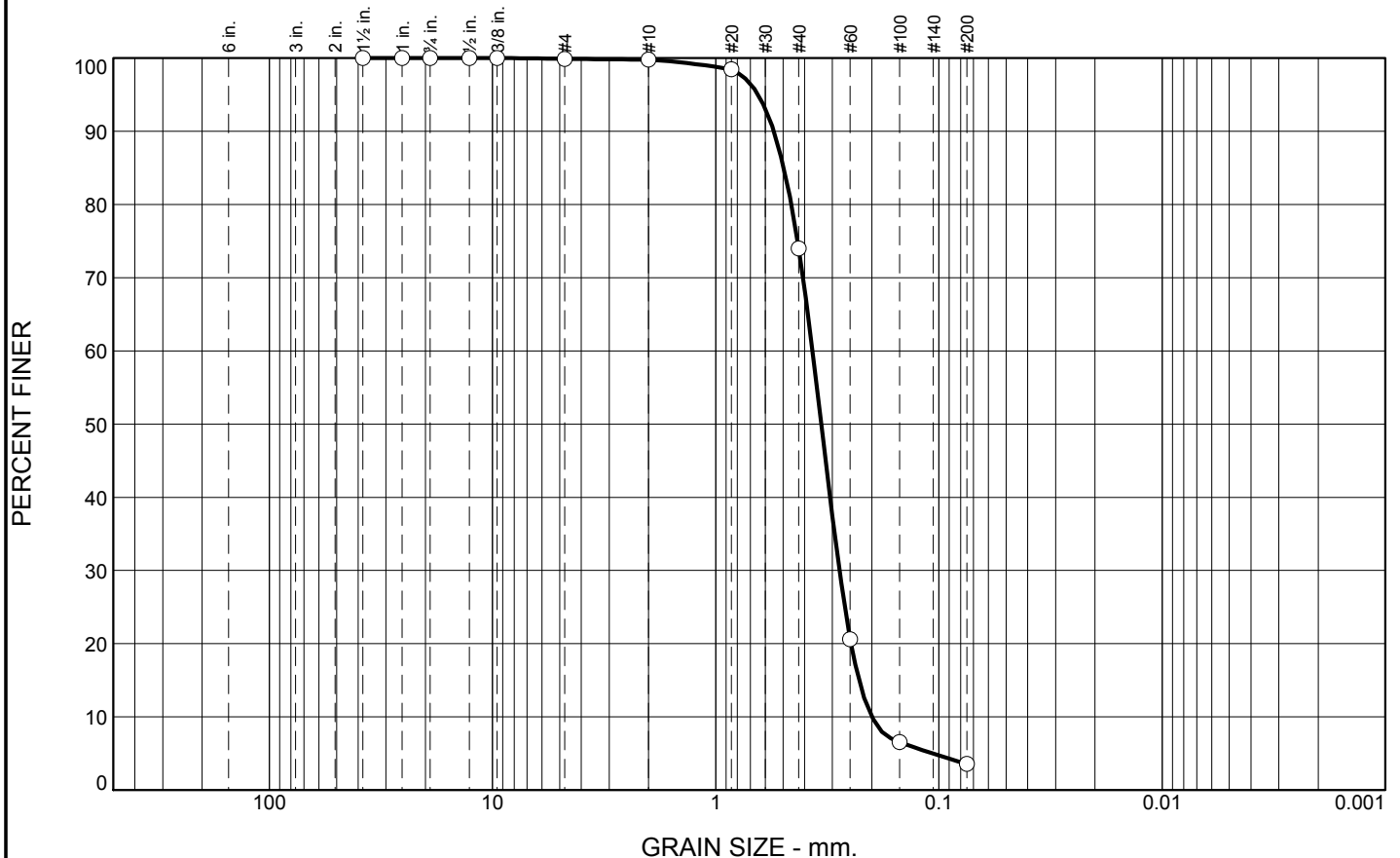
Date: 8/8/11

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project
Project No: 11-2116-0057

Report No.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.1	25.8	70.4	3.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.50	100.0		
1	100.0		
.75	100.0		
.5	100.0		
.375	100.0		
#4	99.9		
#10	99.8		
#20	98.5		
#40	74.0		
#60	20.6		
#100	6.5		
#200	3.6		

* (no specification provided)

Material Description
 SAND (SP), medium to fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.5494 D₈₅= 0.4959 D₆₀= 0.3686
 D₅₀= 0.3366 D₃₀= 0.2790 D₁₅= 0.2281
 D₁₀= 0.1998 C_u= 1.84 C_c= 1.06

Classification
 USCS= SP AASHTO=

Remarks

Location: USACE Sample # B1-DA10-18C-11
 Sample Number: TE Lab ID: 5055.17

Depth: 10.0 - 14.5 (ft)

Date: 8/8/11

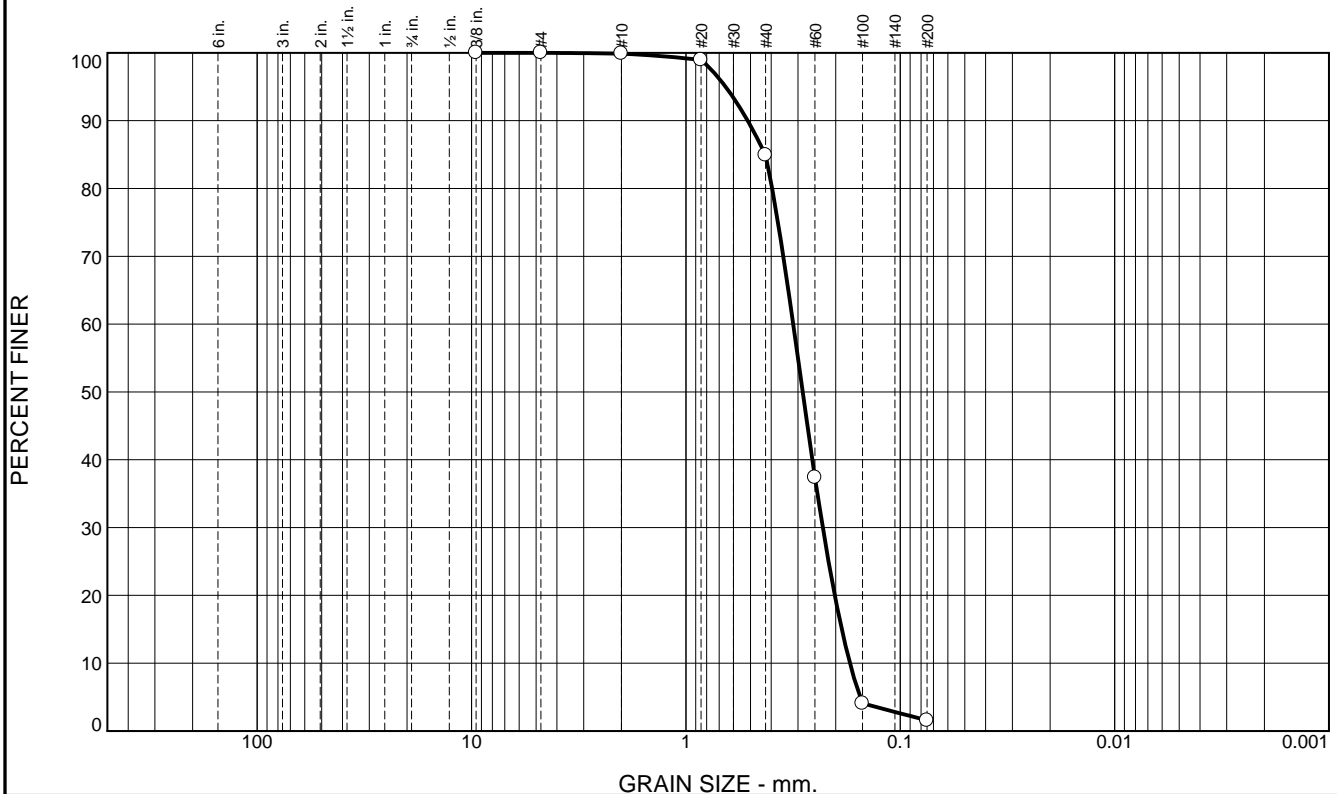
Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 009
 Mississippi Barrier Island Restoration Project
Project No: 11-2116-0057 **Report No.**

Boring Designation BI-DA10-19-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Disposal Area 10				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-DA10-19-11		LOCATION COORDINATES E = 1,080,255 N = 261,427		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 5		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES		14. WATER DEPTH 13 Ft.	
6. THICKNESS OF OVERBURDEN N/A		BEARING		15. DATE BORING 06-16-11		STARTED 06-16-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -11.1 Ft.		COMPLETED 06-16-11	
8. TOTAL DEPTH OF BORING 19.2 Ft.				17. TOTAL RECOVERY FOR BORING 100%		18. SIGNATURE AND TITLE OF INSPECTOR Rhonda Capes, Geologist	
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-11.1	0.0						
			SAND, poorly-graded, mostly medium-grained sand-sized quartz, tan (SP) At El. -11.9 Ft., gray	A	Classification: SP Color: 2.5Y 7/2-light gray D50: 0.2854 mm % Fines: 1.6		
			At El. -16.0 Ft., lt. gray	B	Classification: SP Color: 2.5Y 7/2-light gray D50: 0.276 mm % Fines: 3.5		
				C	Classification: SP Color: 2.5Y 7/2-light gray D50: 0.3211 mm % Fines: 1.5		
				D	Classification: SP Color: 2.5Y 7/2-light gray D50: 0.3323 mm % Fines: 1.6		
				E	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.335 mm % Fines: 1.9		
-30.3	19.2						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	15.0	83.3	1.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.0		
#40	84.9		
#60	37.4		
#100	4.1		
#200	1.6		

* (no specification provided)

Material Description
SAND (SP), medium to fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.5149 D₈₅= 0.4261 D₆₀= 0.3160
 D₅₀= 0.2854 D₃₀= 0.2298 D₁₅= 0.1874
 D₁₀= 0.1718 C_u= 1.84 C_c= 0.97

Classification
 USCS= SP AASHTO=

Remarks

Location: USACE Sample # BI-DA10-19A-11
 Sample Number: TE Lab ID: 5054.01

Depth: 0.0 - 4.0 (ft)

Date: 7/15/11

Thompson Engineering

Mobile, Alabama

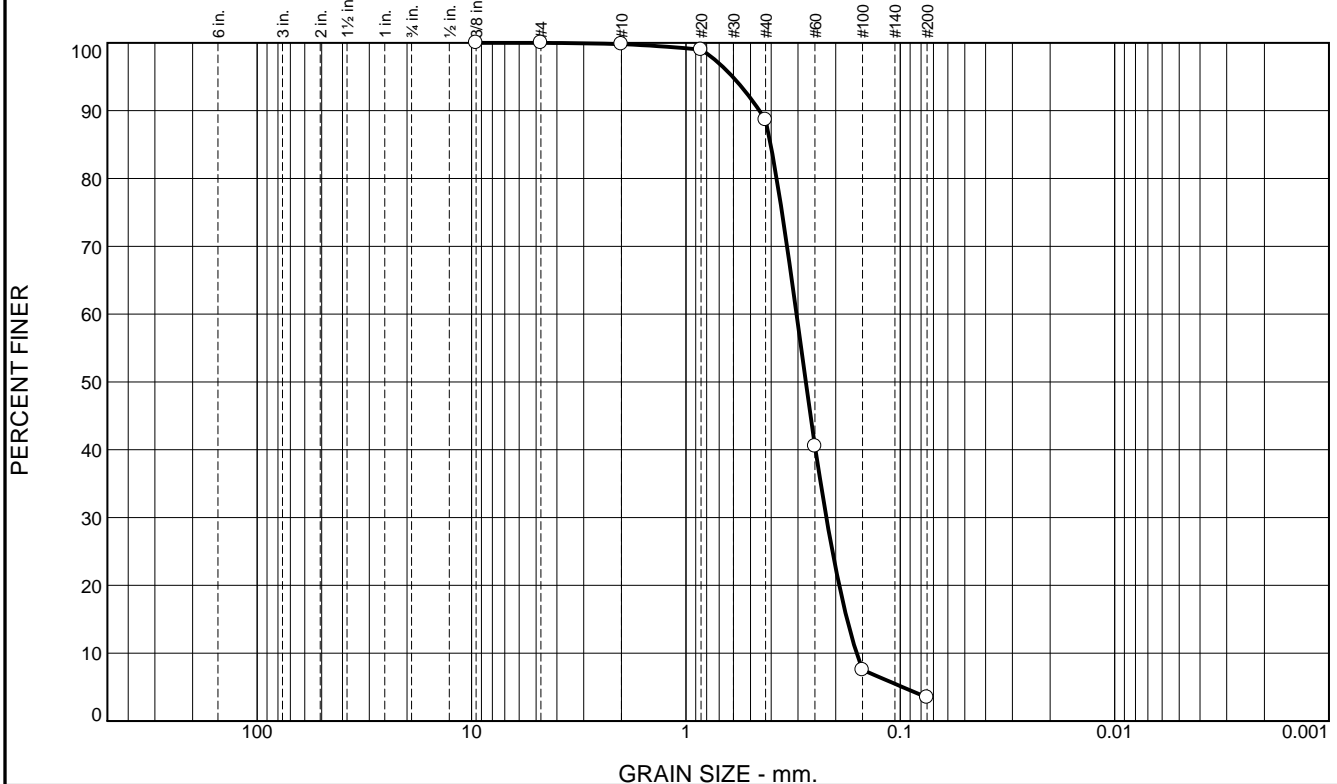
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
 Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	11.1	85.2	3.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.8		
#20	99.0		
#40	88.7		
#60	40.5		
#100	7.5		
#200	3.5		

* (no specification provided)

Material Description		
SAND (SP), medium to fine grained		
<div> <div> Atterberg Limits PL= LL= PI= </div> <div> Coefficients D₉₀= 0.4536 D₈₅= 0.4025 D₆₀= 0.3050 D₅₀= 0.2760 D₃₀= 0.2212 D₁₅= 0.1771 D₁₀= 0.1599 C_u= 1.91 C_c= 1.00 </div> <div> Classification USCS= SP AASHTO= </div> <div> Remarks </div> </div>		

Location: USACE Sample # BI-DA10-19B-11
Sample Number: TE Lab ID: 5054.02

Depth: 4.0 - 8.0 (ft)

Date: 7/15/11

Thompson Engineering

Mobile, Alabama

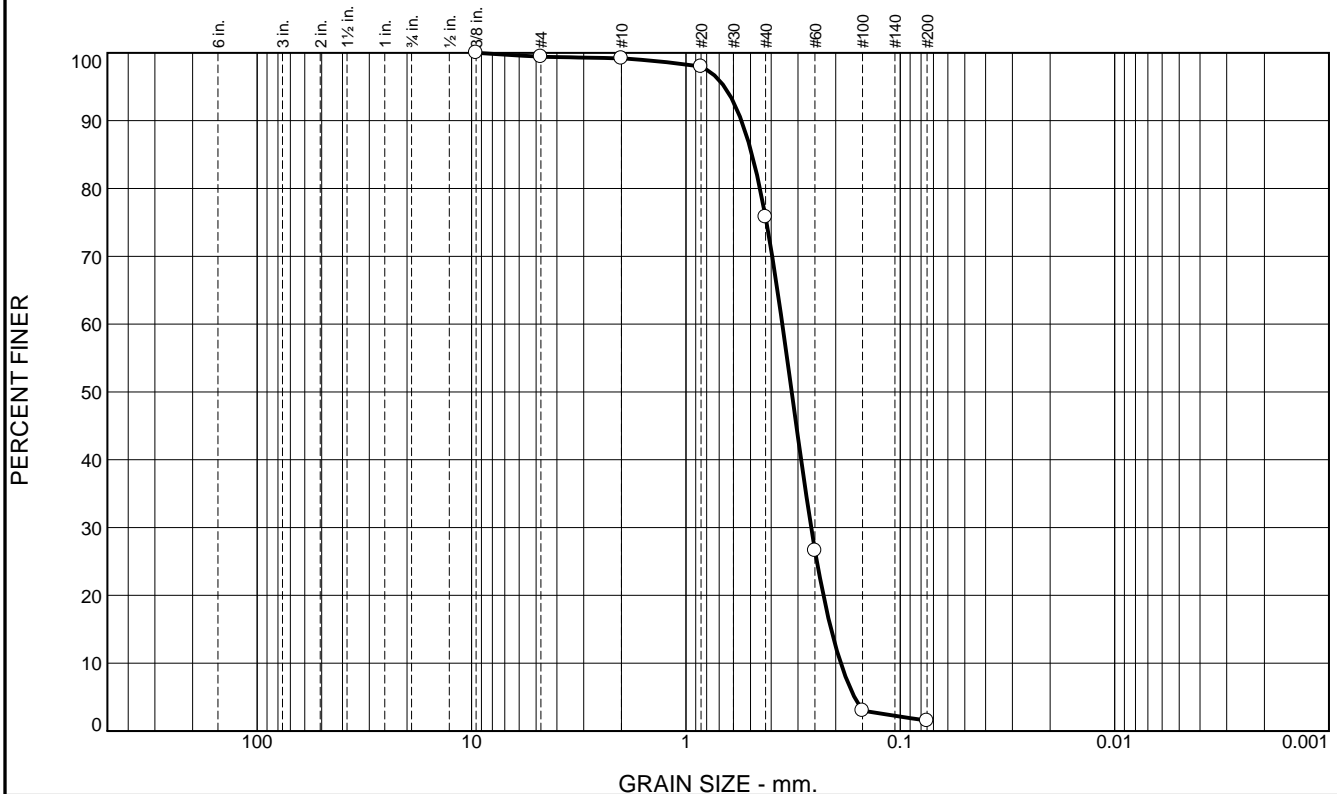
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.6	0.2	23.4	74.3	1.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.4		
#10	99.2		
#20	98.0		
#40	75.8		
#60	26.6		
#100	3.0		
#200	1.5		

* (no specification provided)

Material Description		
SAND (SP), medium to fine grained		
<div> <div> Atterberg Limits PL= LL= PI= </div> <div> Coefficients D₉₀= 0.5503 D₈₅= 0.4916 D₆₀= 0.3552 D₅₀= 0.3211 D₃₀= 0.2604 D₁₅= 0.2102 D₁₀= 0.1895 C_u= 1.87 C_c= 1.01 </div> <div> Classification USCS= SP AASHTO= </div> <div> Remarks </div> </div>		

Location: USACE Sample # BI-DA10-19C-11
Sample Number: TE Lab ID: 5054.03

Depth: 8.0 - 12.0 (ft)

Date: 7/15/11

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

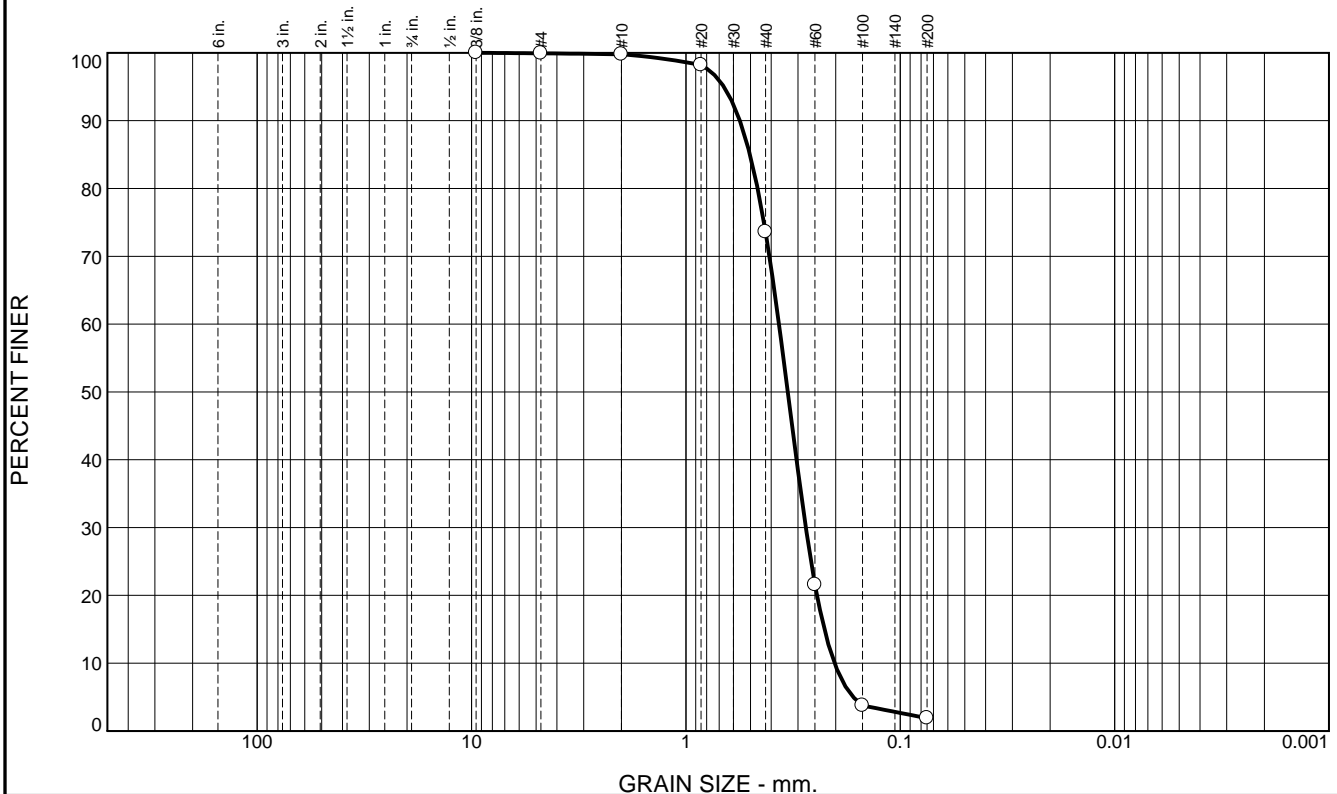
Figure

PERCENT FINER



<u>Material Description</u>		
SAND (SP), medium to fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.5812	D ₈₅ = 0.5152	D ₆₀ = 0.3676
D ₅₀ = 0.3323	D ₃₀ = 0.2702	D ₁₅ = 0.2185
D ₁₀ = 0.1958	C _u = 1.88	C _c = 1.01
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.1	26.2	71.7	1.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.8		
#20	98.2		
#40	73.6		
#60	21.6		
#100	3.8		
#200	1.9		

* (no specification provided)

Material Description		
SAND (SP), medium to fine grained		
PL=	Atterberg Limits LL=	PI=
D ₉₀ = 0.5601	Coefficients D ₈₅ = 0.5026	D ₆₀ = 0.3681
D ₅₀ = 0.3350	D ₃₀ = 0.2760	D ₁₅ = 0.2261
D ₁₀ = 0.2026	C _u = 1.82	C _c = 1.02
USCS= SP	Classification AASHTO=	
Remarks		

Location: USACE Sample # BI-DA10-19E-11
Sample Number: TE Lab ID: 5054.05

Depth: 16.0 - 19.2 (ft)

Date: 7/15/11

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

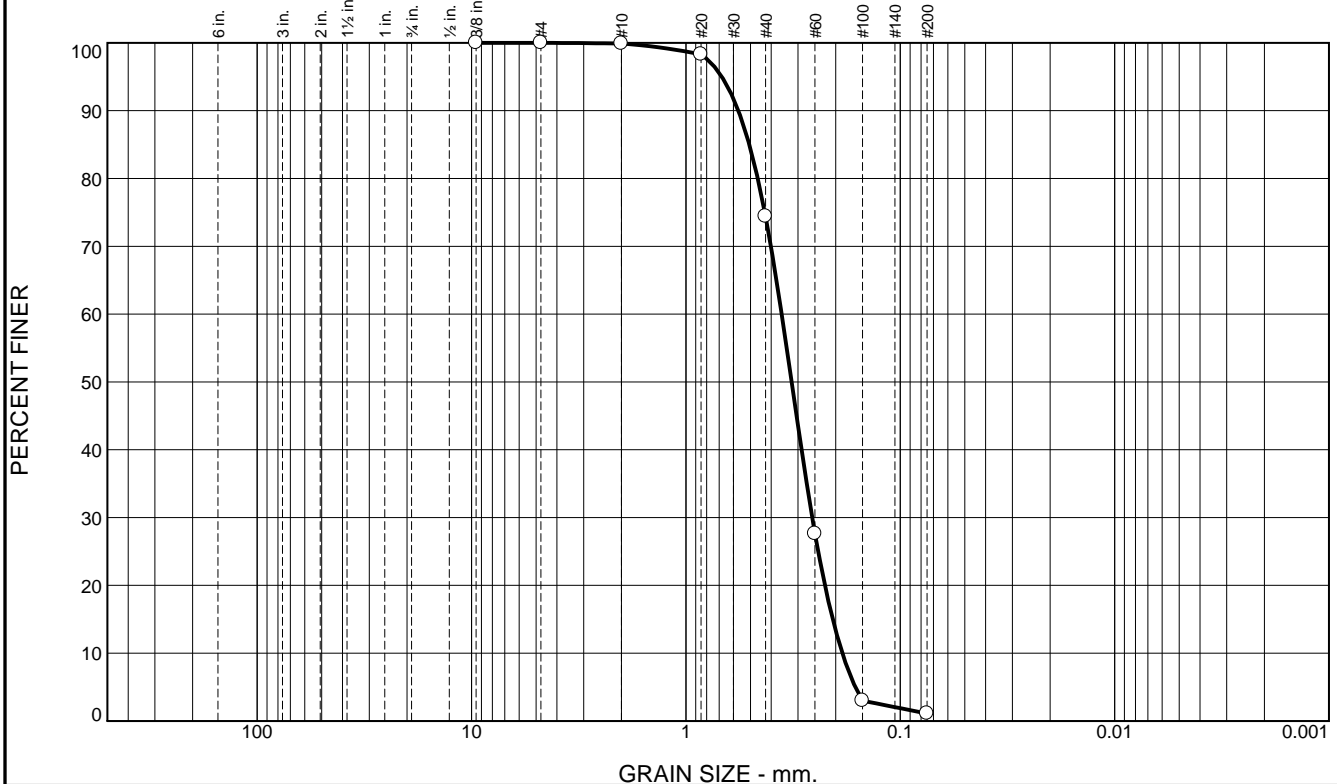
Project No: 11-2116-0057

Figure

Boring Designation BI-DA10-20-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Disposal Area 10				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-DA10-20-11		LOCATION COORDINATES E = 1,081,812 N = 261,482		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 4		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		14. WATER DEPTH 11 Ft.	
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-16-11		STARTED 06-16-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -9.0 Ft.		COMPLETED 06-16-11	
8. TOTAL DEPTH OF BORING 16.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%		18. SIGNATURE AND TITLE OF INSPECTOR Rhonda Capes, Geologist	
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-9.0	0.0						
			SAND, poorly-graded, mostly medium-grained sand-sized quartz, gray (SP)	A	Classification: SP Color: 2.5Y 6/2-light brownish gray D50: 0.3214 mm % Fines: 1.1		
				B	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.3564 mm % Fines: 1.9		
				C	Classification: SP Color: 2.5Y 7/2-light gray D50: 0.3176 mm % Fines: 2.7		
			At El. -21.0 Ft., trace shell fragments At El. -22.0 Ft., discontinue shell fragments	D	Classification: SP Color: 2.5Y 6/2-light brownish gray D50: 0.2525 mm % Fines: 4.5		
-25.0	16.0						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	25.5	73.3	1.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	98.3		
#40	74.4		
#60	27.6		
#100	3.0		
#200	1.1		

* (no specification provided)

Material Description		
SAND (SP), medium to fine grained		
<div> <div> Atterberg Limits PL= LL= PI= </div> <div> Coefficients D₉₀= 0.5691 D₈₅= 0.5060 D₆₀= 0.3577 D₅₀= 0.3214 D₃₀= 0.2576 D₁₅= 0.2065 D₁₀= 0.1863 C_u= 1.92 C_c= 1.00 </div> <div> Classification USCS= SP AASHTO= </div> <div> Remarks </div> </div>		

Location: USACE Sample # BI-DA10-20A-11
Sample Number: TE Lab ID: 5054.06

Depth: 0.0 - 4.0 (ft)

Date: 7/15/11

Thompson Engineering

Mobile, Alabama

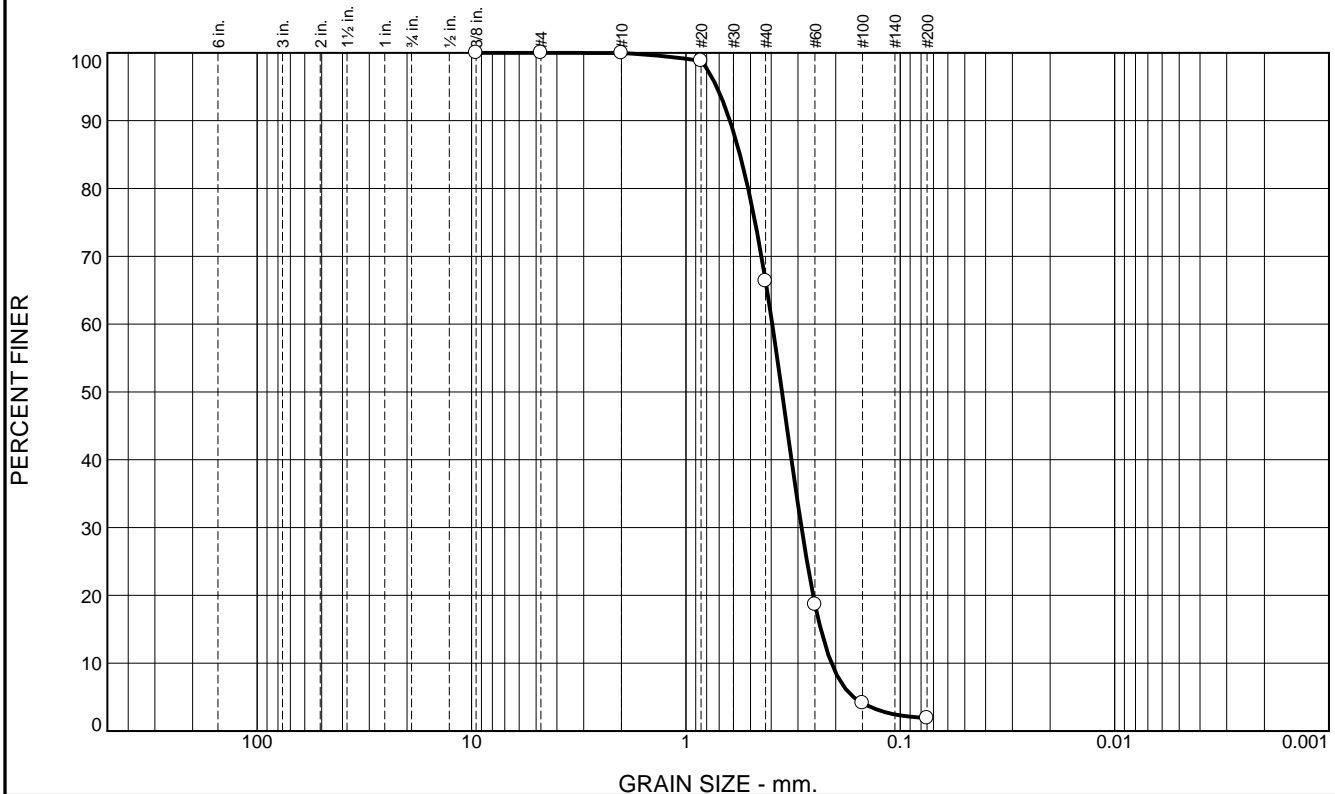
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	33.6	64.5	1.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	98.8		
#40	66.4		
#60	18.7		
#100	4.1		
#200	1.9		

* (no specification provided)

<u>Material Description</u>		
SAND (SP), medium to fine grained		
PL=	<u>Atterberg Limits</u>	PI=
	LL=	
<u>Coefficients</u>		
D ₉₀ = 0.6230	D ₈₅ = 0.5596	D ₆₀ = 0.3956
D ₅₀ = 0.3564	D ₃₀ = 0.2891	D ₁₅ = 0.2349
D ₁₀ = 0.2093	C _u = 1.89	C _c = 1.01
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		

Location: USACE Sample # BI-DA10-20B-11
Sample Number: TE Lab ID: 5054.07

Depth: 4.0 - 8.0 (ft)

Date: 7/15/11

Thompson Engineering

Mobile, Alabama

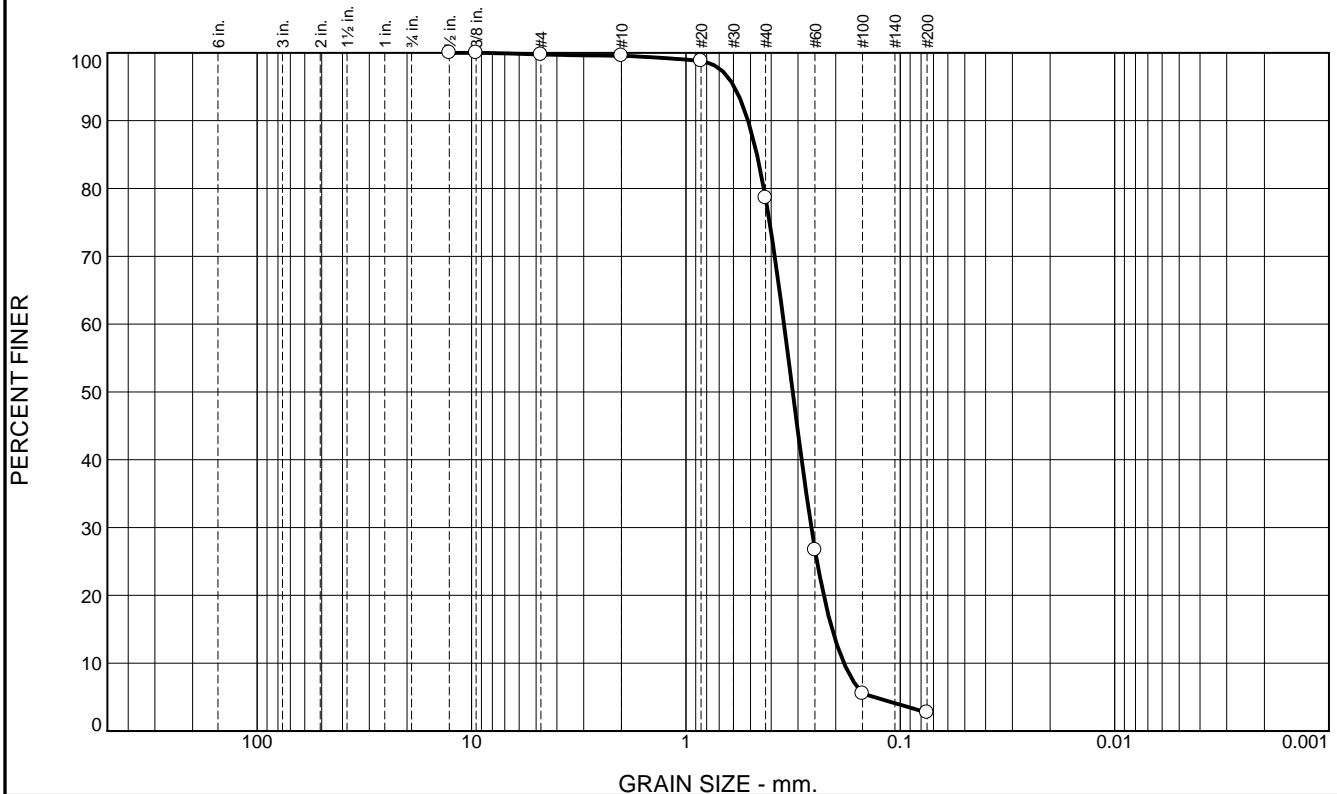
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.2	21.0	75.9	2.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.5	100.0		
.375	100.0		
#4	99.8		
#10	99.6		
#20	98.8		
#40	78.6		
#60	26.7		
#100	5.5		
#200	2.7		

* (no specification provided)

Material Description
SAND (SP), medium to fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.5127 D₈₅= 0.4659 D₆₀= 0.3489
 D₅₀= 0.3176 D₃₀= 0.2600 D₁₅= 0.2079
 D₁₀= 0.1830 C_u= 1.91 C_c= 1.06

Classification
 USCS= SP AASHTO=

Remarks

Location: USACE Sample # BI-DA10-20C-11
 Sample Number: TE Lab ID: 5054.08

Depth: 8.0 - 12.0 (ft)

Date: 7/15/11

Thompson Engineering

Mobile, Alabama

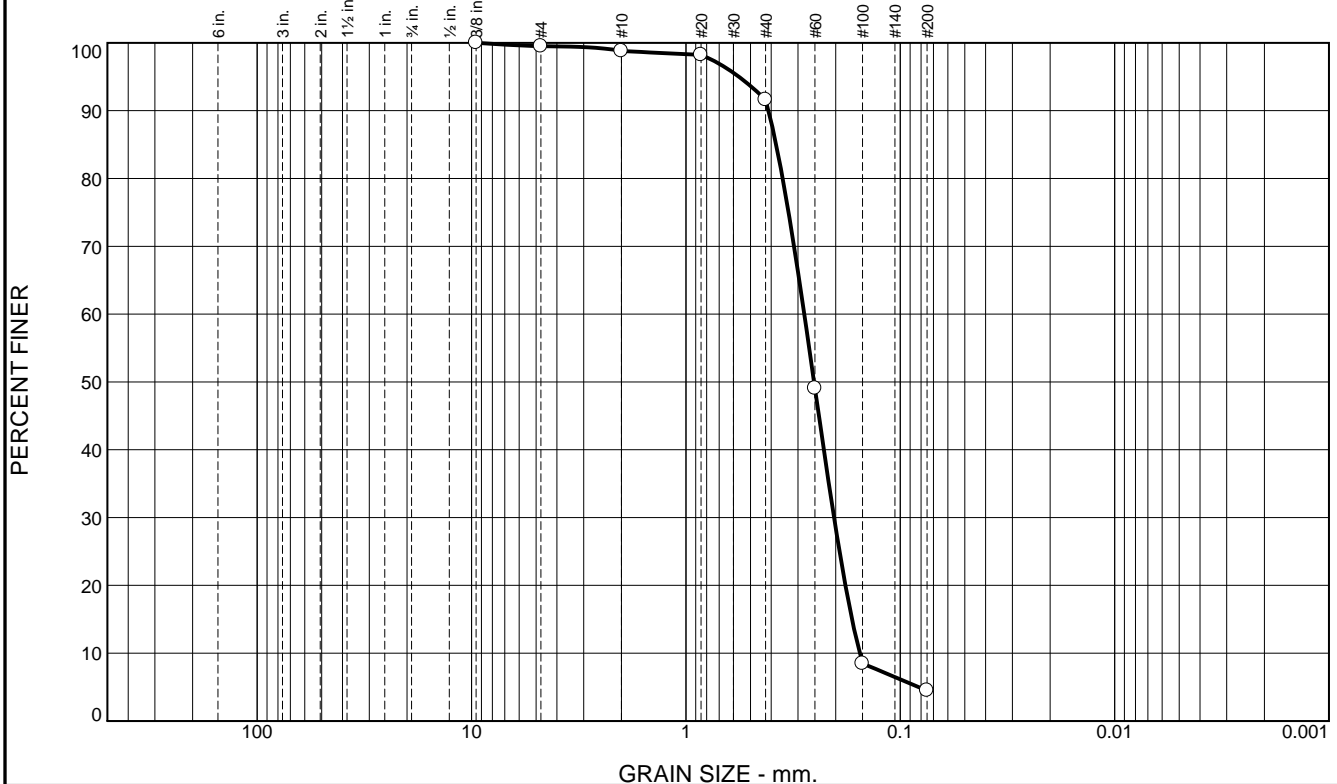
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
 Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.5	0.7	7.2	87.1	4.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.5		
#10	98.8		
#20	98.2		
#40	91.6		
#60	49.0		
#100	8.5		
#200	4.5		

* (no specification provided)

Material Description		
SAND (SP), fine grained		
PL=	Atterberg Limits LL=	PI=
D ₉₀ = 0.4119	Coefficients D ₈₅ = 0.3793	D ₆₀ = 0.2806
D ₅₀ = 0.2525	D ₃₀ = 0.2036	D ₁₅ = 0.1680
D ₁₀ = 0.1546	C _u = 1.82	C _c = 0.96
USCS= SP	Classification AASHTO=	
Remarks		

Location: USACE Sample # BI-DA10-20D-11
Sample Number: TE Lab ID: 5054.09

Depth: 12.0 -16.0 (ft)

Date: 7/15/11

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

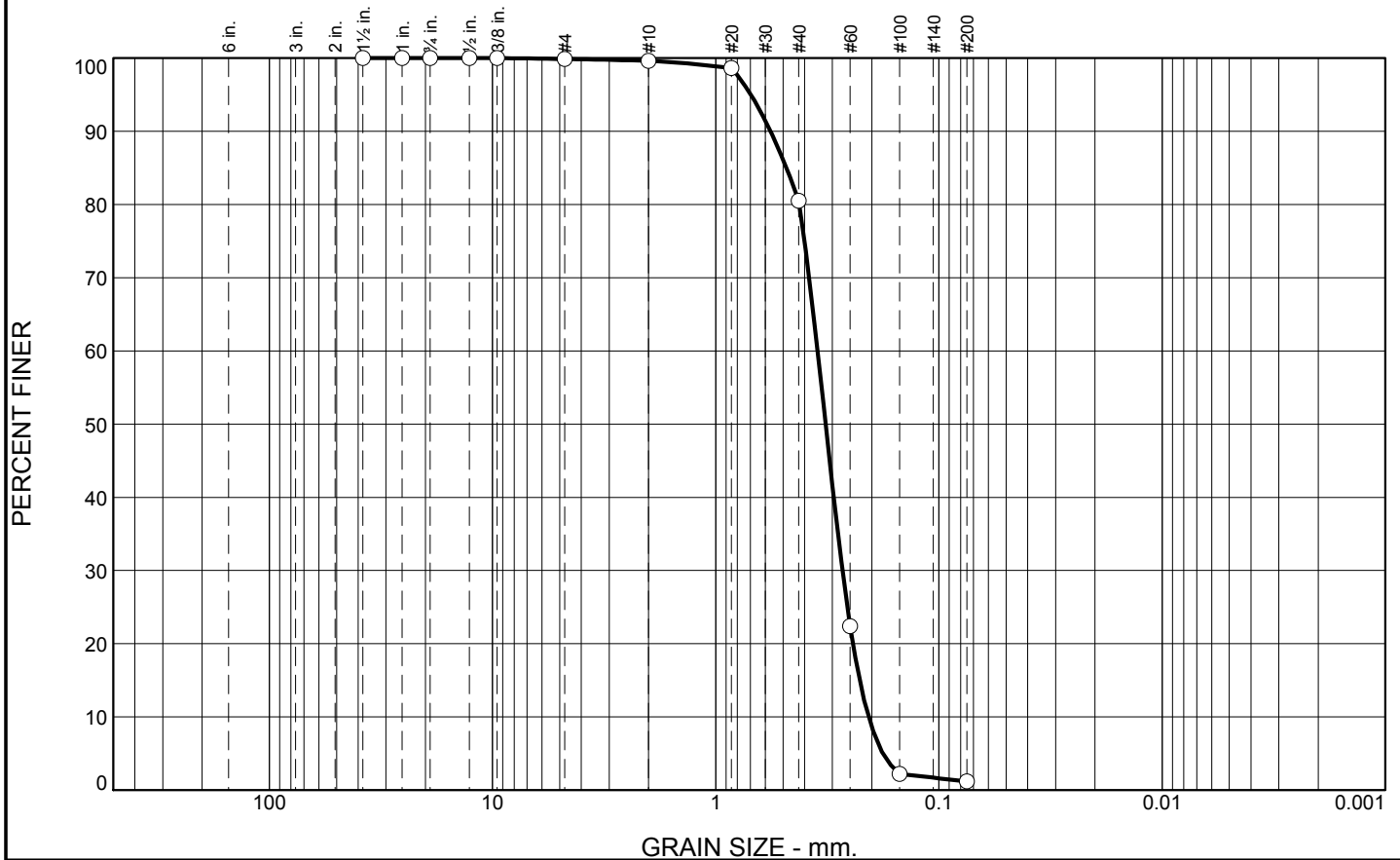
Project No: 11-2116-0057

Figure

Boring Designation BI-DA10-21-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Disposal Area 10				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-DA10-21-11		LOCATION COORDINATES E = 1,083,389 N = 261,228		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 4		UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		14. WATER DEPTH 9 Ft.	
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-18-11		STARTED 06-18-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -6.9 Ft.		COMPLETED 06-18-11	
8. TOTAL DEPTH OF BORING 17.4 Ft.				17. TOTAL RECOVERY FOR BORING 100%		18. SIGNATURE AND TITLE OF INSPECTOR Rhonda Capes, Geologist	
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-6.9	0.0		SAND, poorly-graded, mostly medium-grained sand-sized quartz, lt. gray (SP)	A	Classification: SP Color: 2.5Y 7/2-light gray D50: 0.3218 mm % Fines: 1.2		
				B	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.3334 mm % Fines: 2.4		
				C	Classification: SP Color: 5Y 7/1-light gray D50: 0.3256 mm % Fines: 3.1		
				D	Classification: SP Color: 5Y 7/1-light gray D50: 0.2759 mm % Fines: 4.2		
-24.3	17.4		NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.3	19.1	79.3	1.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.50	100.0		
1	100.0		
.75	100.0		
.5	100.0		
.375	100.0		
#4	99.9		
#10	99.6		
#20	98.6		
#40	80.5		
#60	22.4		
#100	2.2		
#200	1.2		

* (no specification provided)

Material Description
 SAND (SP), medium to fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.5682 D₈₅= 0.4825 D₆₀= 0.3497
 D₅₀= 0.3218 D₃₀= 0.2706 D₁₅= 0.2266
 D₁₀= 0.2066 C_u= 1.69 C_c= 1.01

Classification
 USCS= SP AASHTO=

Remarks

Location: USACE Sample # B1-DA10-21A-11
 Sample Number: TE Lab ID: 5055.18

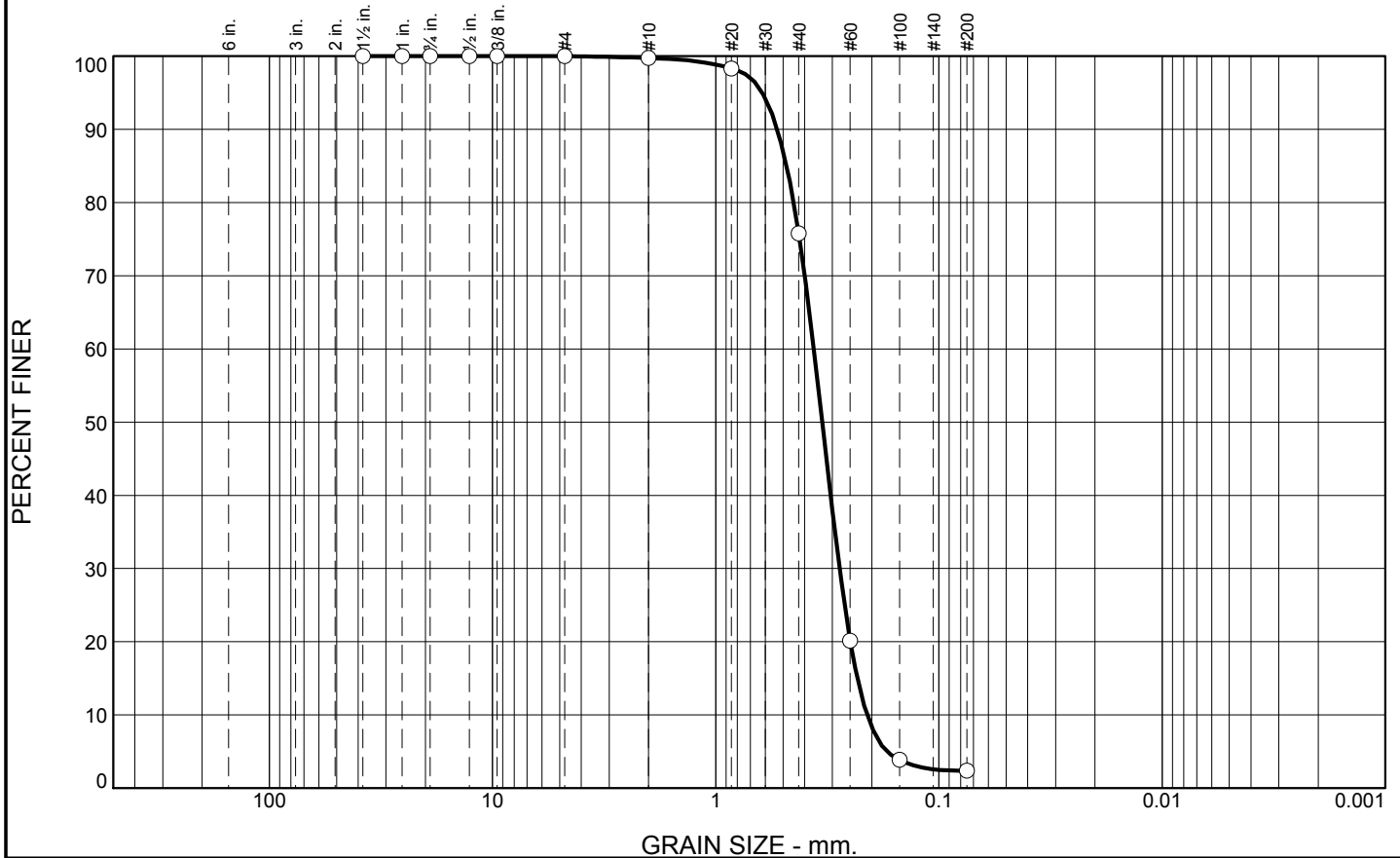
Depth: 0.0 - 4.0 (ft)

Date: 8/8/11

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 009
 Mississippi Barrier Island Restoration Project
Project No: 11-2116-0057 **Report No.**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.3	23.9	73.4	2.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.50	100.0		
1	100.0		
.75	100.0		
.5	100.0		
.375	100.0		
#4	100.0		
#10	99.7		
#20	98.3		
#40	75.8		
#60	20.1		
#100	3.9		
#200	2.4		

* (no specification provided)

Material Description
 SAND (SP), medium to fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.5305 D₈₅= 0.4817 D₆₀= 0.3638
 D₅₀= 0.3334 D₃₀= 0.2786 D₁₅= 0.2322
 D₁₀= 0.2098 C_u= 1.73 C_c= 1.02

Classification
 USCS= SP AASHTO=

Remarks

Location: USACE Sample # B1-DA10-21B-11
 Sample Number: TE Lab ID: 5055.19

Depth: 4.0 - 8.0 (ft)

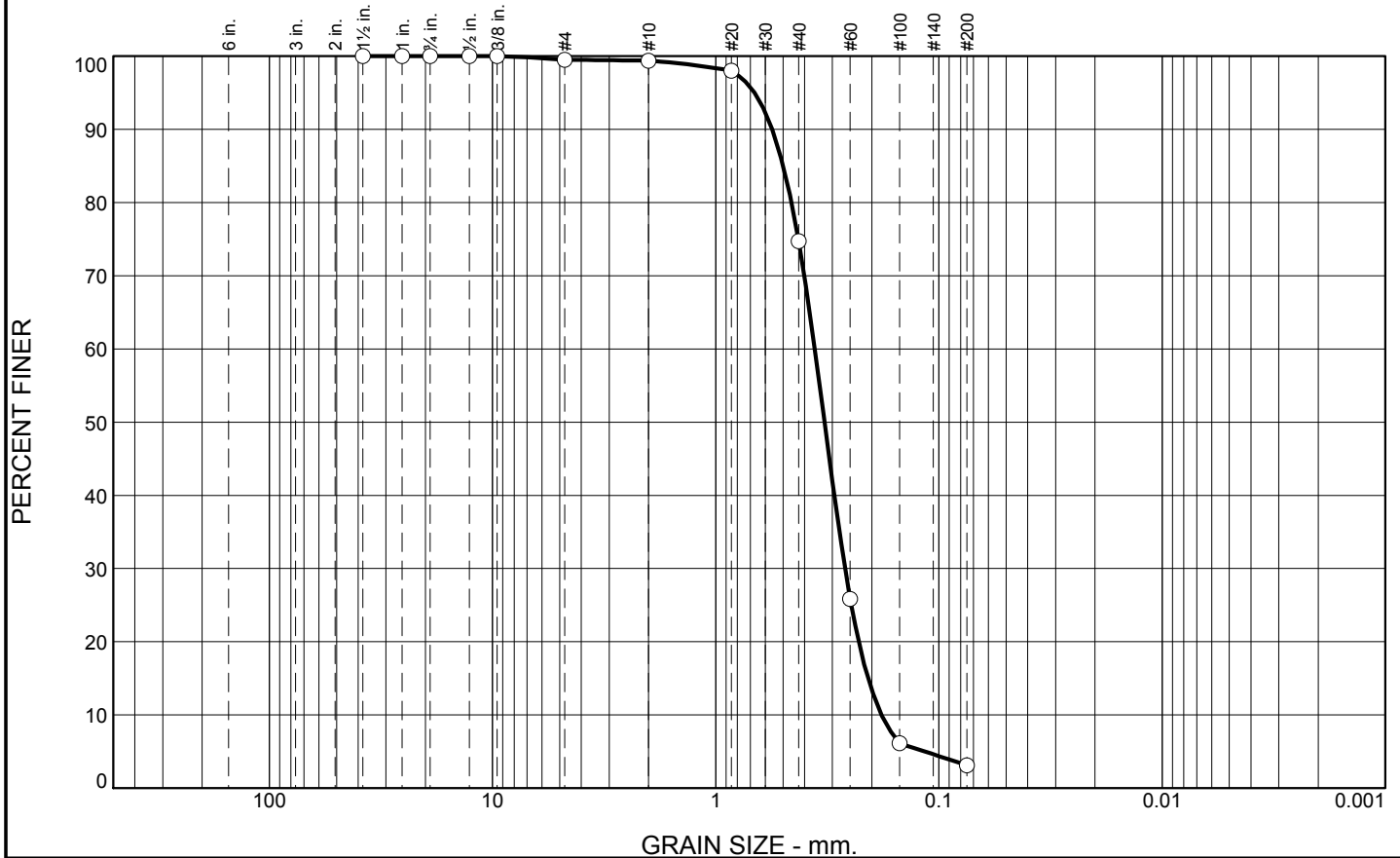
Date: 8/8/11

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 009
 Mississippi Barrier Island Restoration Project
Project No: 11-2116-0057 **Report No.**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.5	0.1	24.7	71.6	3.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.50	100.0		
1	100.0		
.75	100.0		
.5	100.0		
.375	100.0		
#4	99.5		
#10	99.4		
#20	98.0		
#40	74.7		
#60	25.9		
#100	6.1		
#200	3.1		

* (no specification provided)

Material Description
 SAND (SP), medium to fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.5592 D₈₅= 0.4992 D₆₀= 0.3601
 D₅₀= 0.3256 D₃₀= 0.2634 D₁₅= 0.2078
 D₁₀= 0.1808 C_u= 1.99 C_c= 1.07

Classification
 USCS= SP AASHTO=

Remarks

Location: USACE Sample # B1-DA10-21C-11
 Sample Number: TE Lab ID: 5055.20

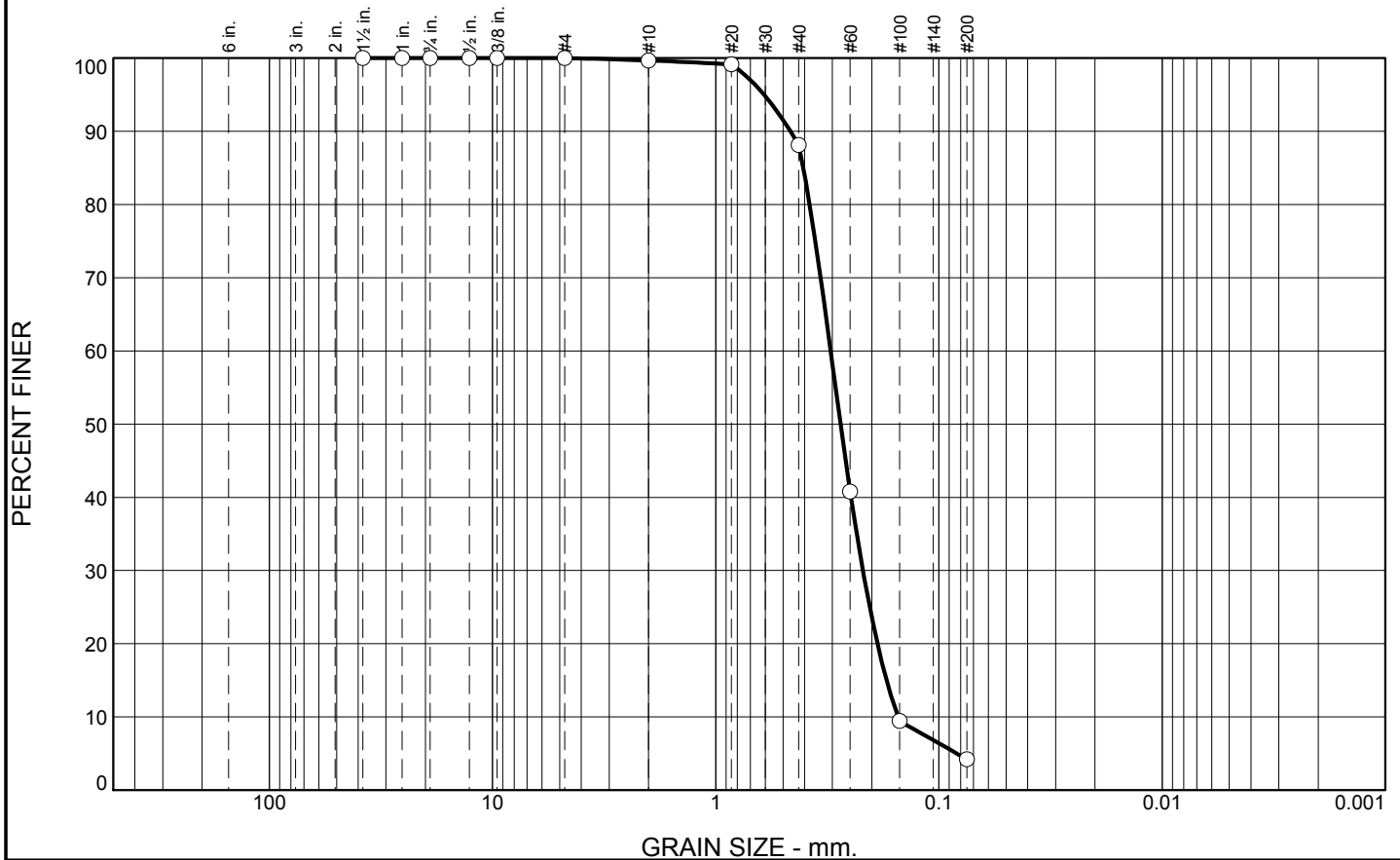
Depth: 8.0 - 12.0 (ft)

Date: 8/8/11

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 009
 Mississippi Barrier Island Restoration Project
Project No: 11-2116-0057 **Report No.**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.3	11.5	84.0	4.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.50	100.0		
1	100.0		
.75	100.0		
.5	100.0		
.375	100.0		
#4	100.0		
#10	99.7		
#20	99.2		
#40	88.2		
#60	40.8		
#100	9.4		
#200	4.2		

* (no specification provided)

<u>Material Description</u>		
SAND (SP), medium to fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.4624	D ₈₅ = 0.4053	D ₆₀ = 0.3056
D ₅₀ = 0.2759	D ₃₀ = 0.2191	D ₁₅ = 0.1719
D ₁₀ = 0.1525	C _u = 2.00	C _c = 1.03
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		

Location: USACE Sample # B1-DA10-21D-11
Sample Number: TE Lab ID: 5055.21

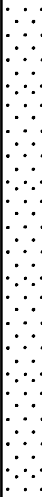
Depth: 12.0 - 17.4 (ft)

Date: 8/8/11

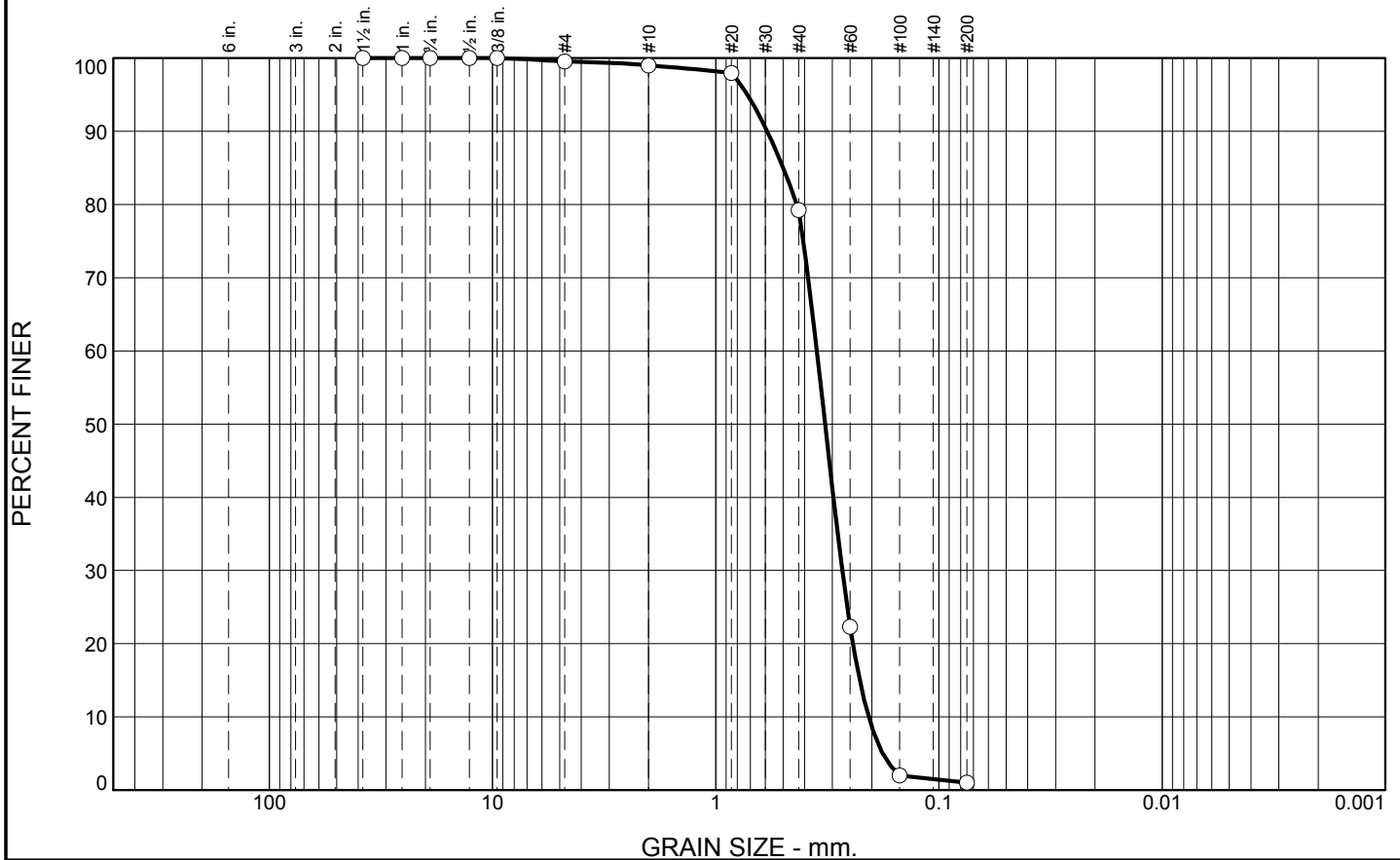
Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project
Project No: 11-2116-0057
Report No.

Boring Designation BI-DA10-22-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Disposal Area 10				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-DA10-22-11		LOCATION COORDINATES E = 1,084,677 N = 261,537		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 12.5 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-18-11		COMPLETED 06-18-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -10.3 Ft.			
8. TOTAL DEPTH OF BORING 11.5 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Rhonda Capes, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-10.3	0.0						
		 SAND, poorly-graded, mostly medium-grained sand-sized quartz, trace shell fragments, lt. gray (SP) At El. -17.3 Ft., white		A	Classification: SP Color: 2.5Y 7/2-light gray D50: 0.3236 mm % Fines: 1		
				B	Classification: SP Color: 2.5Y 7/2-light gray D50: 0.3044 mm % Fines: 2.3		
				C	Classification: SP Color: 5Y 8/1-white D50: 0.4041 mm % Fines: 4.6		
-21.8	11.5						
			NOTES:				
			1. Soils are field visually classified in accordance with the Unified Soils Classification System.				
			2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.4	0.6	19.7	78.3	1.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.50	100.0		
1	100.0		
.75	100.0		
.5	100.0		
.375	100.0		
#4	99.6		
#10	99.0		
#20	98.0		
#40	79.3		
#60	22.3		
#100	2.0		
#200	1.0		

* (no specification provided)

<u>Material Description</u>		
SAND (SP), medium to fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.5878	D ₈₅ = 0.4989	D ₆₀ = 0.3524
D ₅₀ = 0.3236	D ₃₀ = 0.2711	D ₁₅ = 0.2265
D ₁₀ = 0.2065	C _u = 1.71	C _c = 1.01
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		

Location: USACE Sample # B1-DA10-22A-11
Sample Number: TE Lab ID: 5055.22

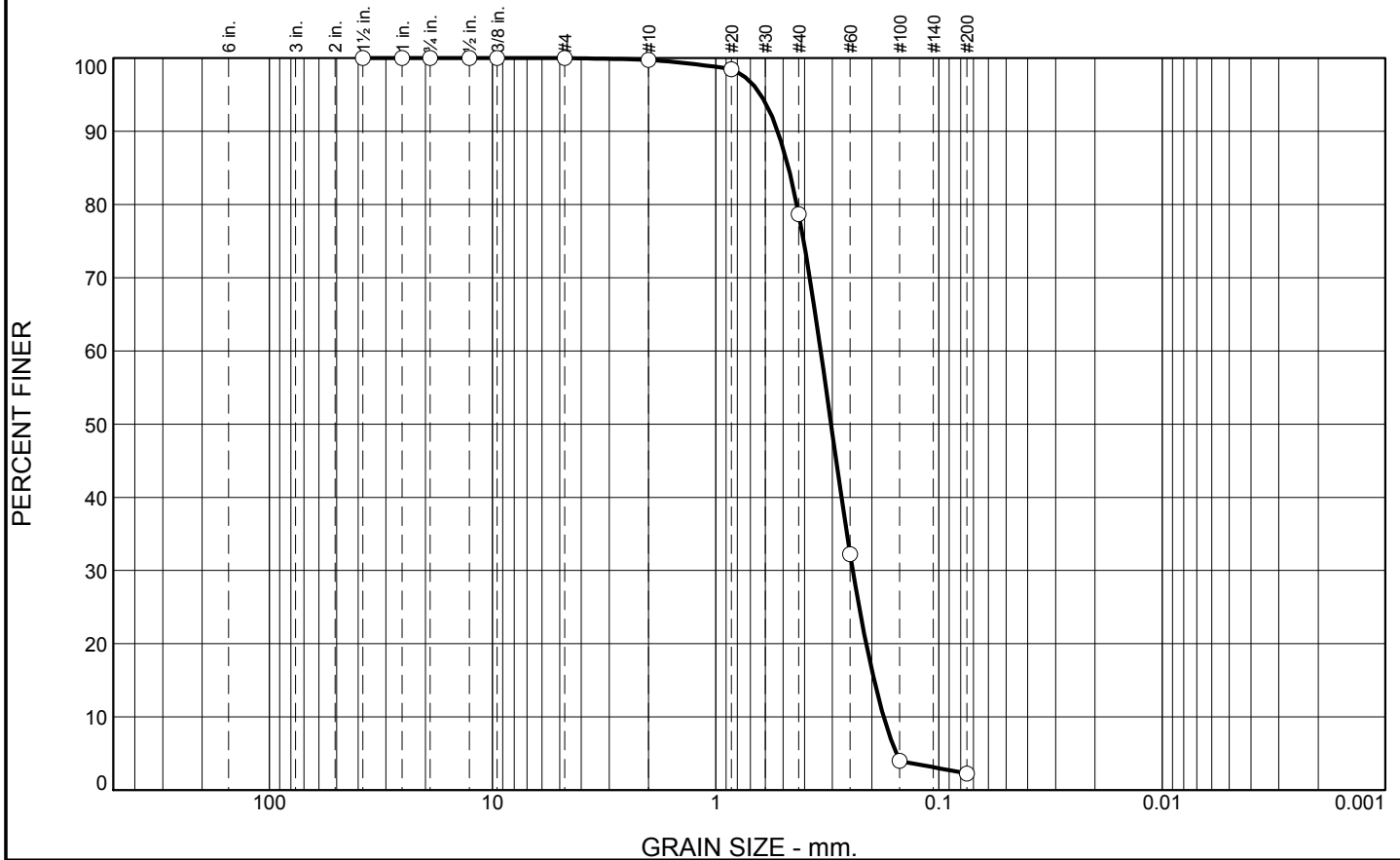
Depth: 0.0 - 4.0 (ft)

Date: 8/8/11

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project
Project No: 11-2116-0057
Report No.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	21.1	76.4	2.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.50	100.0		
1	100.0		
.75	100.0		
.5	100.0		
.375	100.0		
#4	100.0		
#10	99.8		
#20	98.5		
#40	78.7		
#60	32.2		
#100	4.0		
#200	2.3		

* (no specification provided)

<u>Material Description</u>		
SAND (SP), medium to fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.5279	D ₈₅ = 0.4721	D ₆₀ = 0.3387
D ₅₀ = 0.3044	D ₃₀ = 0.2433	D ₁₅ = 0.1952
D ₁₀ = 0.1769	C _u = 1.92	C _c = 0.99
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		

Location: USACE Sample # B1-DA10-22B-11
Sample Number: TE Lab ID: 5055.23

Depth: 4.0 - 8.0 (ft)

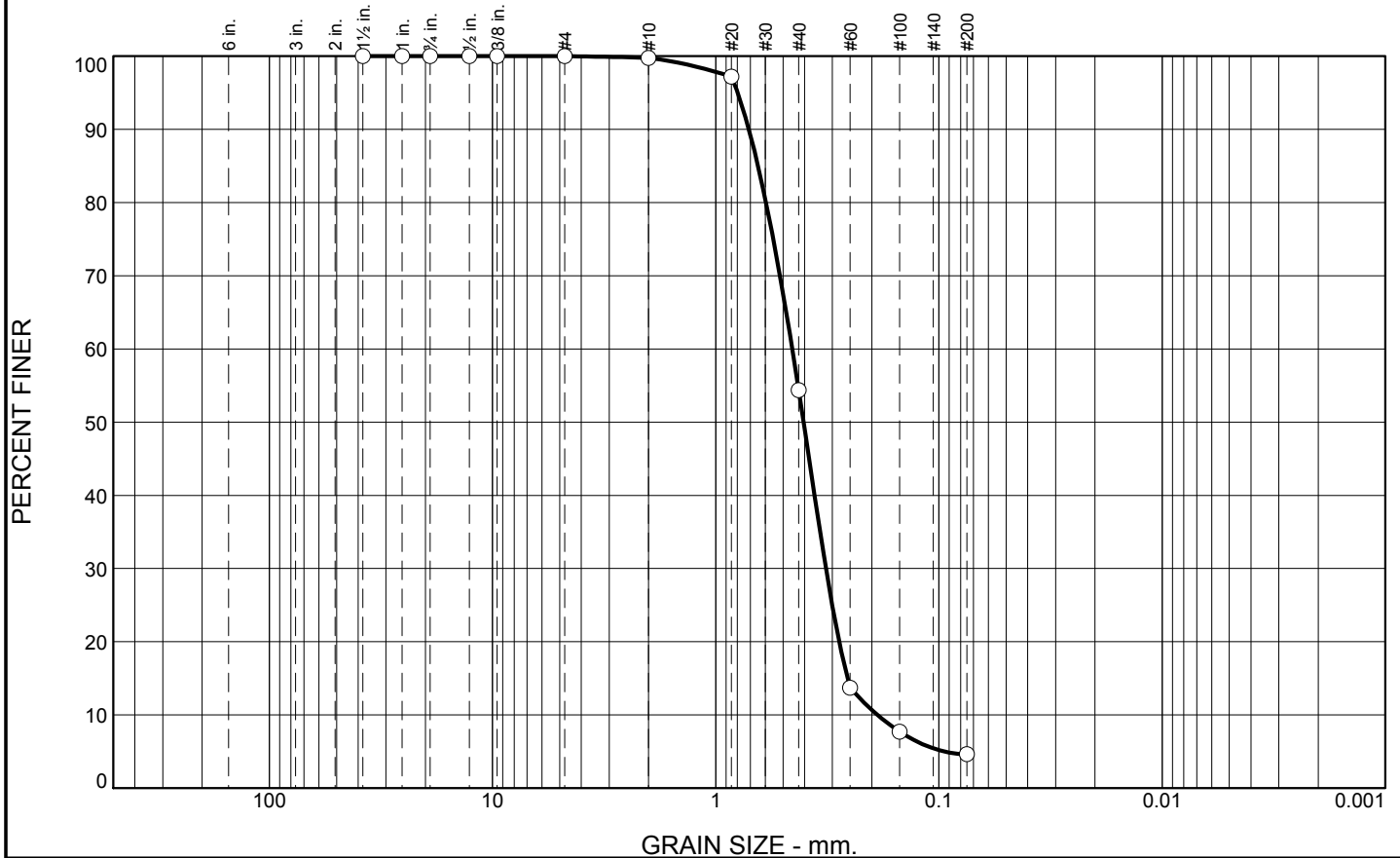
Date: 8/8/11

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project
Project No: 11-2116-0057

Report No.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	45.4	49.8	4.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.50	100.0		
1	100.0		
.75	100.0		
.5	100.0		
.375	100.0		
#4	100.0		
#10	99.8		
#20	97.2		
#40	54.4		
#60	13.7		
#100	7.7		
#200	4.6		

* (no specification provided)

<u>Material Description</u>		
SAND (SP), medium to fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.7104	D ₈₅ = 0.6466	D ₆₀ = 0.4543
D ₅₀ = 0.4041	D ₃₀ = 0.3208	D ₁₅ = 0.2569
D ₁₀ = 0.1886	C _u = 2.41	C _c = 1.20
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		

Location: USACE Sample # B1-DA10-22C-11
Sample Number: TE Lab ID: 5055.24

Depth: 8.0 - 11.5 (ft)

Date: 8/8/11

Thompson Engineering
Mobile, Alabama

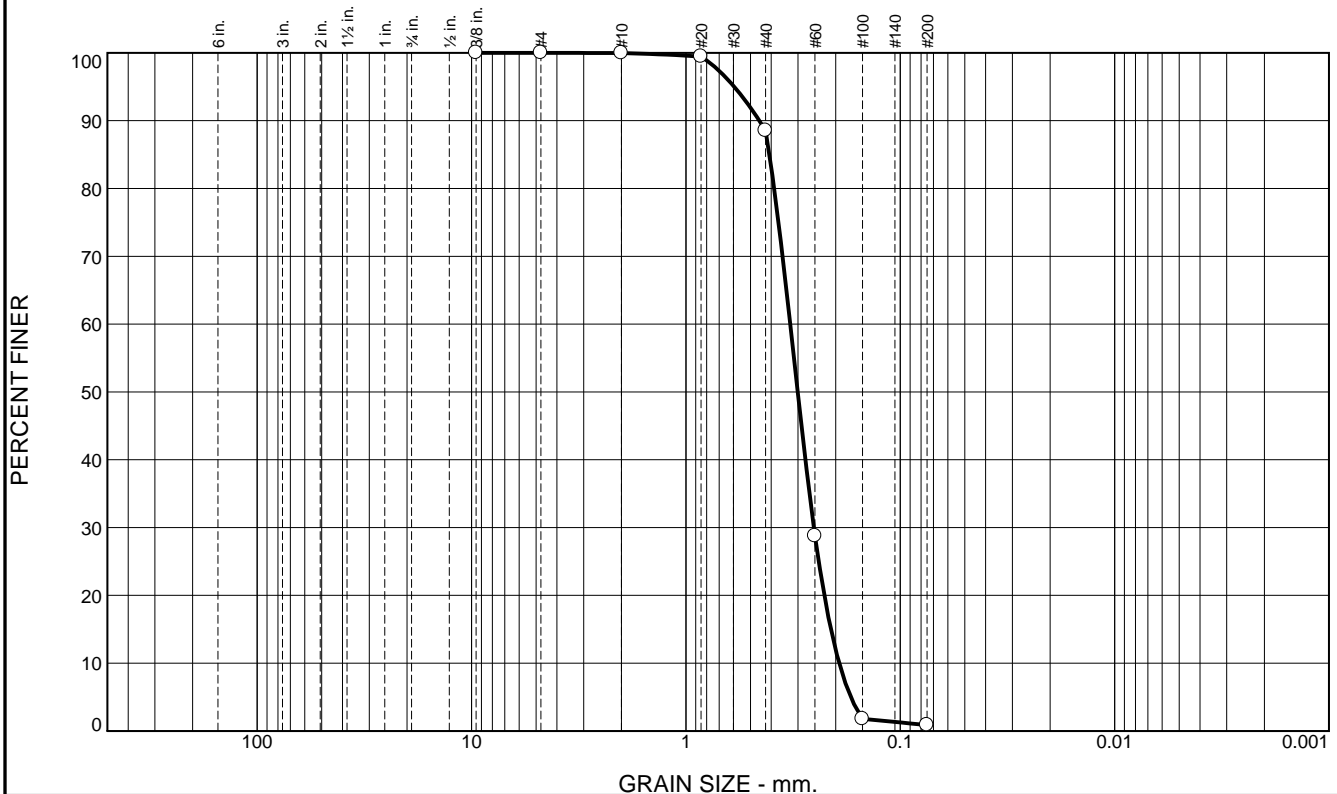
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project
Project No: 11-2116-0057

Report No.

Boring Designation BI-DA10-23-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Disposal Area 10				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-DA10-23-11		LOCATION COORDINATES E = 1,080,826 N = 260,647		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 4		UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		14. WATER DEPTH 11.5 Ft.	
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-16-11		STARTED 06-16-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -9.6 Ft.		COMPLETED 06-16-11	
8. TOTAL DEPTH OF BORING 15.7 Ft.				17. TOTAL RECOVERY FOR BORING 100%		18. SIGNATURE AND TITLE OF INSPECTOR Rhonda Capes, Geologist	
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-9.6	0.0						
			SAND, poorly-graded, mostly medium-grained sand-sized quartz, dark gray (SP)	A	Classification: SP Color: 2.5Y 7/2-light gray D50: 0.3011 mm % Fines: 0.9		
			At El. -13.6 Ft., lt. gray	B	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.3061 mm % Fines: 1.2		
			At El. -18.1 Ft., trace shell fragments, lt. gray	C	Classification: SP-SM Color: 5Y 7/1-light gray D50: 0.2796 mm % Fines: 6.5		
			At El. -20.1 Ft., discontinue shell fragments, lt. gray	D	Classification: SP-SM Color: 5Y 7/1-light gray D50: 0.2473 mm % Fines: 5.7		
-25.3	15.7						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	11.5	87.6	0.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.5		
#40	88.5		
#60	28.8		
#100	1.8		
#200	0.9		

* (no specification provided)

Material Description		
SAND (SP), medium to fine grained		
<div> <div> Atterberg Limits PL= LL= PI= </div> <div> Coefficients D₉₀= 0.4544 D₈₅= 0.4079 D₆₀= 0.3263 D₅₀= 0.3011 D₃₀= 0.2531 D₁₅= 0.2107 D₁₀= 0.1927 C_u= 1.69 C_c= 1.02 </div> <div> Classification USCS= SP AASHTO= </div> <div> Remarks </div> </div>		

Location: USACE Sample # BI-DA10-23A-11
Sample Number: TE Lab ID: 5054.10

Depth: 0.0 -4.0 (ft)

Date: 7/15/11

Thompson Engineering

Mobile, Alabama

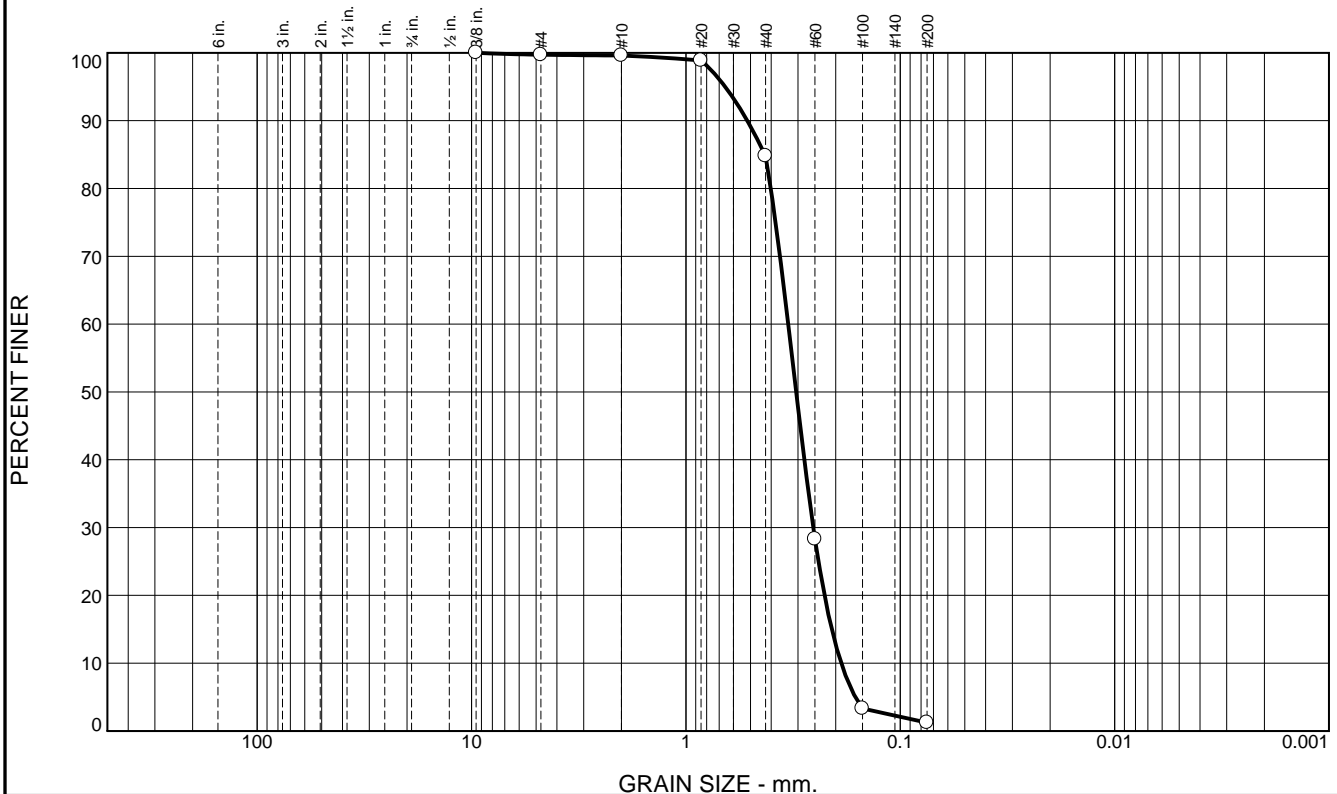
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.3	0.1	14.8	83.6	1.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.7		
#10	99.6		
#20	98.9		
#40	84.8		
#60	28.3		
#100	3.3		
#200	1.2		

* (no specification provided)

Material Description		
SAND (SP), medium to fine grained		
<div> <div> Atterberg Limits PL= LL= PI= </div> <div> Coefficients D₉₀= 0.5172 D₈₅= 0.4281 D₆₀= 0.3334 D₅₀= 0.3061 D₃₀= 0.2546 D₁₅= 0.2087 D₁₀= 0.1886 C_u= 1.77 C_c= 1.03 </div> <div> Classification USCS= SP AASHTO= </div> <div> Remarks </div> </div>		

Location: USACE Sample # BI-DA10-23B-11
Sample Number: TE Lab ID: 5054.11

Depth: 4.0 -8.0 (ft)

Date: 7/15/11

Thompson Engineering

Mobile, Alabama

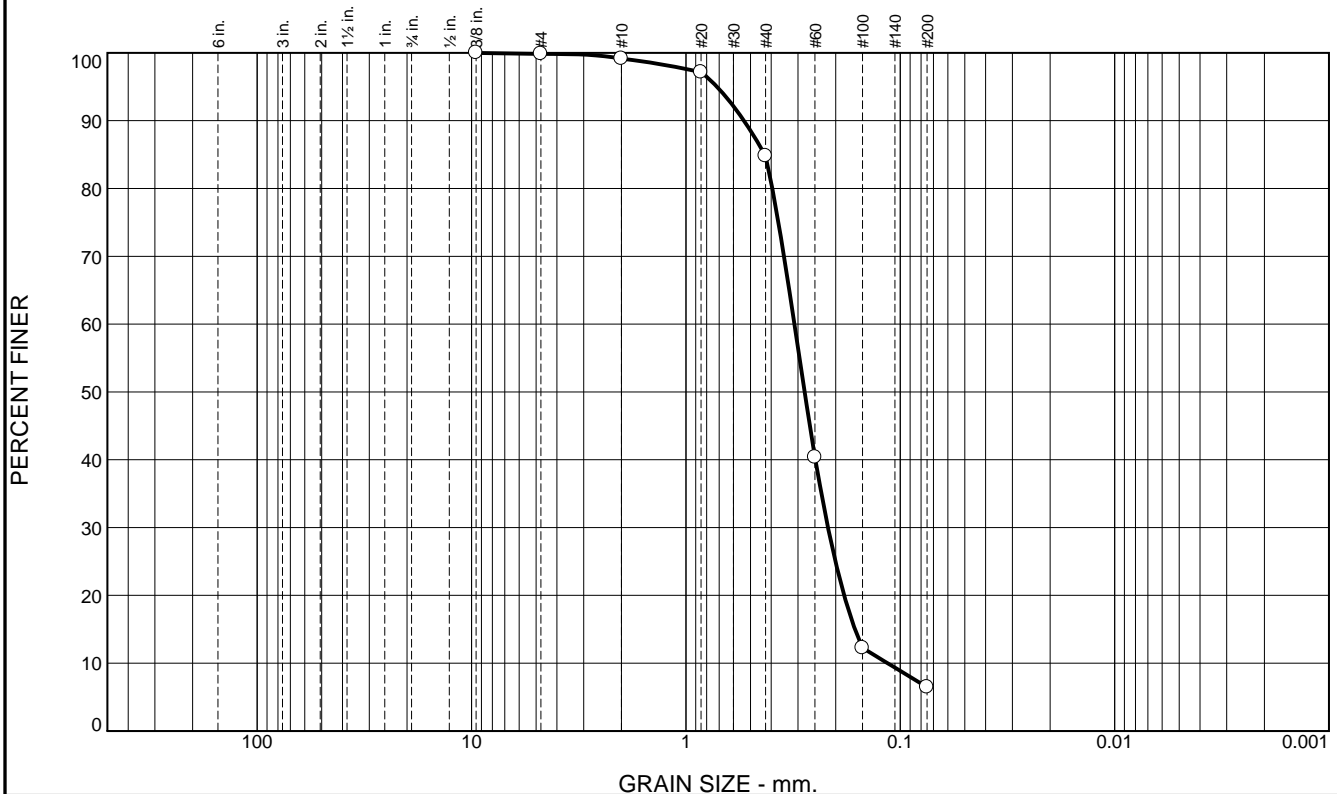
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.7	14.3	78.3	6.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.8		
#10	99.1		
#20	97.2		
#40	84.8		
#60	40.4		
#100	12.2		
#200	6.5		

* (no specification provided)

Material Description

Slightly silty SAND (SP-SM), medium to fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.5361

D₈₅= 0.4287

D₆₀= 0.3119

D₅₀= 0.2796

D₃₀= 0.2173

D₁₅= 0.1627

D₁₀= 0.1146

C_u= 2.72

C_c= 1.32

Classification

USCS= SP-SM

AASHTO=

Remarks

Location: USACE Sample # BI-DA10-23C-11

Sample Number: TE Lab ID: 5054.12

Depth: 8.0 - 12.0 (ft)

Date: 7/15/11

Thompson Engineering

Mobile, Alabama

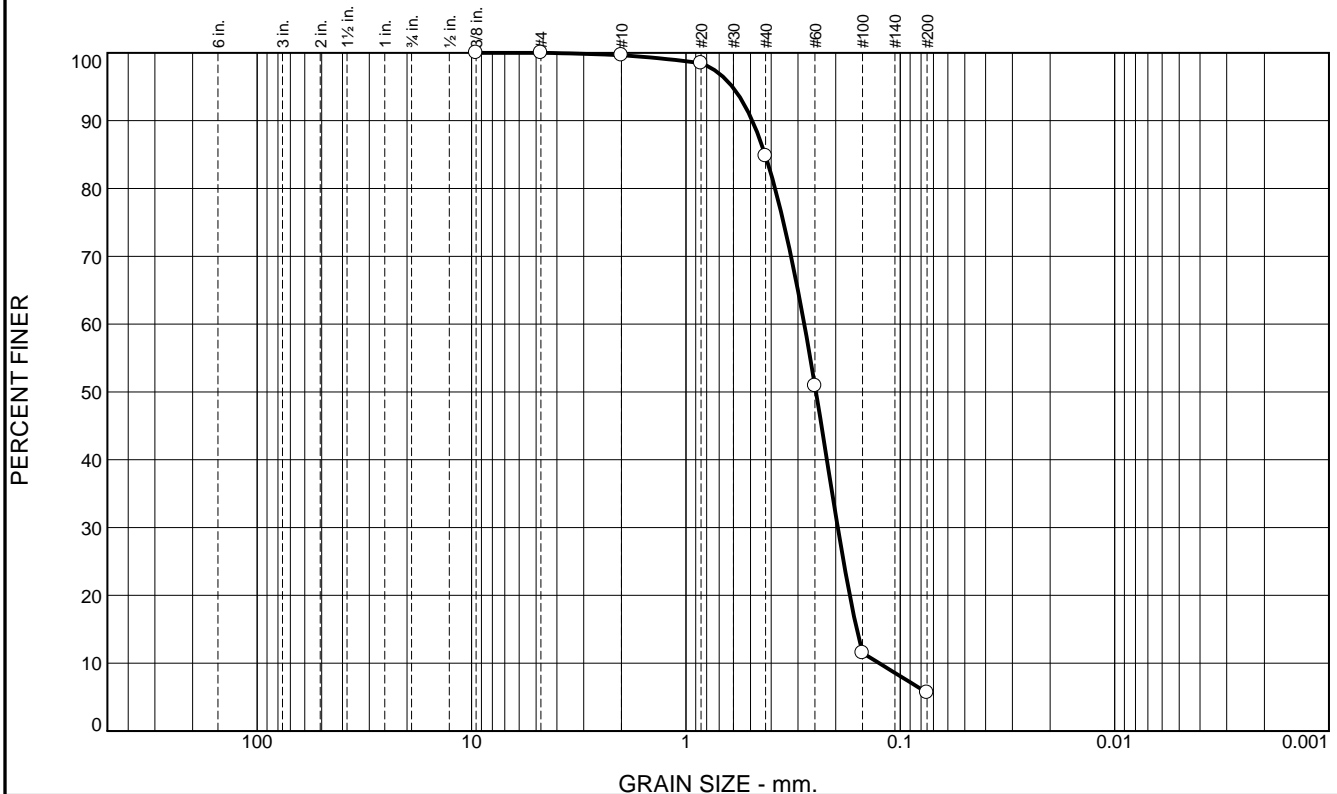
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.3	14.9	79.1	5.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.7		
#20	98.5		
#40	84.8		
#60	50.9		
#100	11.5		
#200	5.7		

* (no specification provided)

Material Description

Slightly silty SAND (SP-SM), medium to fine grained

PL=

Atterberg Limits

LL=

PI=

Coefficients

D₉₀= 0.4901

D₈₅= 0.4270

D₆₀= 0.2805

D₅₀= 0.2473

D₃₀= 0.1956

D₁₅= 0.1596

D₁₀= 0.1254

C_u= 2.24

C_c= 1.09

Classification

USCS= SP-SM

AASHTO=

Remarks

Location: USACE Sample # BI-DA10-23D-11

Sample Number: TE Lab ID: 5054.13

Depth: 12.0 - 15.7 (ft)

Date: 7/15/11

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

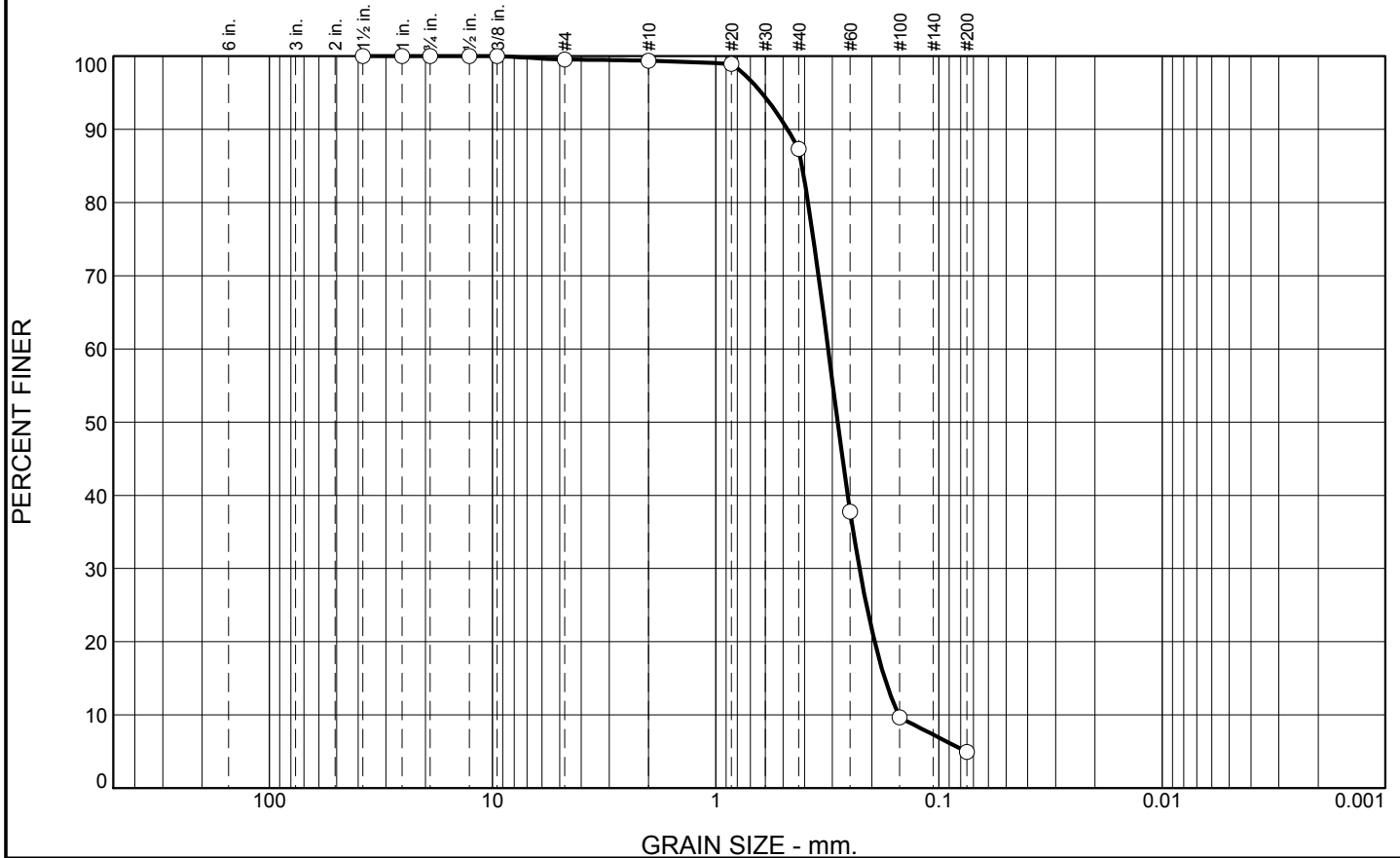
Project No: 11-2116-0057

Figure

Boring Designation BI-DA10-24-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Disposal Area 10				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-DA10-24-11		LOCATION COORDINATES E = 1,082,055 N = 260,268		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 9 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-18-11		STARTED 06-18-11 COMPLETED 06-18-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -6.7 Ft.			
8. TOTAL DEPTH OF BORING 11.4 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Rhonda Capes, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-6.7	0.0						
			SAND, poorly-graded, mostly medium-grained sand-sized quartz, tan (SP) At El. -8.7 Ft., trace shell fragments, lt. gray	A	Classification: SP-SM Color: 2.5Y 7/1-light gray D50: 0.2844 mm % Fines: 5		
				B	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.2657 mm % Fines: 3.6		
				C	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.2437 mm % Fines: 4.9		
-18.1	11.4		NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.5	0.1	12.1	82.3	5.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.50	100.0		
1	100.0		
.75	100.0		
.5	100.0		
.375	100.0		
#4	99.5		
#10	99.4		
#20	99.0		
#40	87.3		
#60	37.8		
#100	9.7		
#200	5.0		

* (no specification provided)

Material Description

Slightly silty SAND (SP-SM), medium to fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.4775 D₈₅= 0.4110 D₆₀= 0.3136
D₅₀= 0.2844 D₃₀= 0.2271 D₁₅= 0.1750
D₁₀= 0.1519 C_u= 2.07 C_c= 1.08

Classification

USCS= SP-SM AASHTO=

Remarks

Location: USACE Sample # B1-DA10-24A-11
Sample Number: TE Lab ID: 5055.25

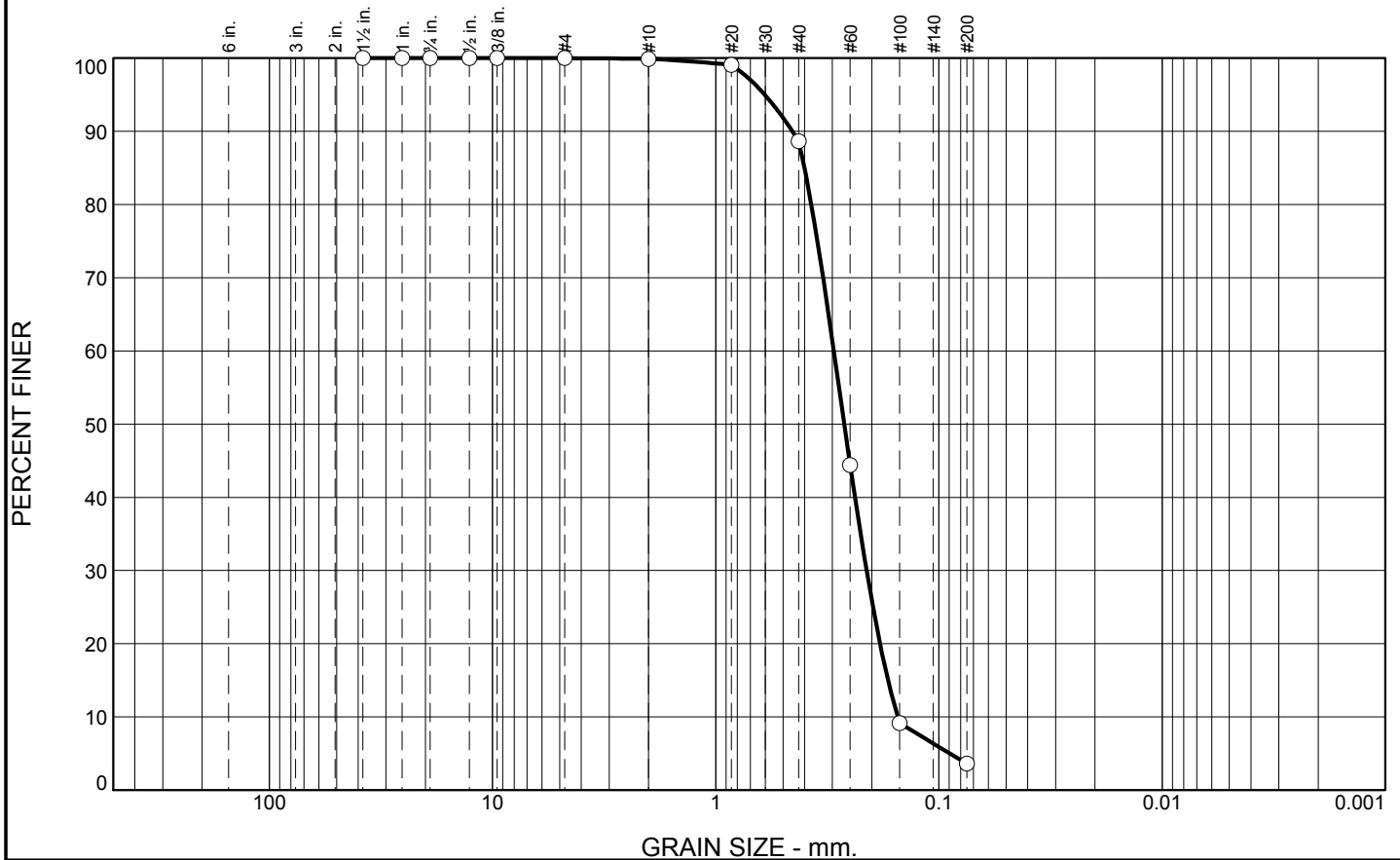
Depth: 0.0 - 4.0 (ft)

Date: 8/8/11

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project
Project No: 11-2116-0057
Report No.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	11.3	85.0	3.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.50	100.0		
1	100.0		
.75	100.0		
.5	100.0		
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.1		
#40	88.6		
#60	44.4		
#100	9.2		
#200	3.6		

* (no specification provided)

Material Description

SAND (SP), medium to fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.4537

D₈₅= 0.4003

D₆₀= 0.2959

D₅₀= 0.2657

D₃₀= 0.2109

D₁₅= 0.1692

D₁₀= 0.1531

C_u= 1.93

C_c= 0.98

Classification

USCS= SP

AASHTO=

Remarks

Location: USACE Sample # B1-DA10-24B-11
Sample Number: TE Lab ID: 5055.26

Depth: 4.0 - 8.0 (ft)

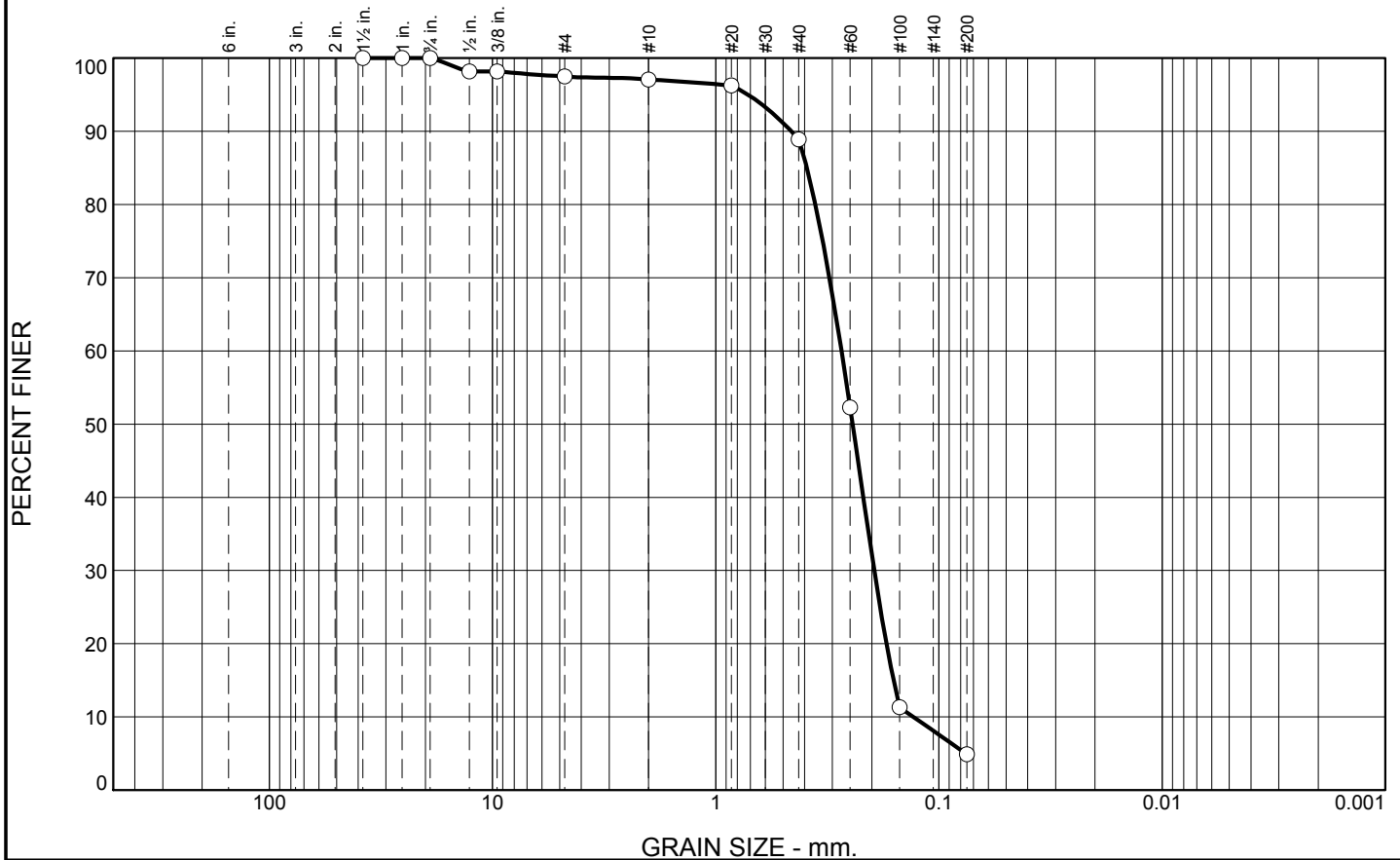
Date: 8/8/11

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project
Project No: 11-2116-0057

Report No.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	2.5	0.4	8.2	84.0	4.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.50	100.0		
1	100.0		
.75	100.0		
.5	98.2		
.375	98.2		
#4	97.5		
#10	97.1		
#20	96.3		
#40	88.9		
#60	52.3		
#100	11.3		
#200	4.9		

* (no specification provided)

<u>Material Description</u>		
SAND (SP), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.4584	D ₈₅ = 0.3907	D ₆₀ = 0.2733
D ₅₀ = 0.2437	D ₃₀ = 0.1949	D ₁₅ = 0.1599
D ₁₀ = 0.1302	C _u = 2.10	C _c = 1.07
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		

Location: USACE Sample # B1-DA10-24C-11
Sample Number: TE Lab ID: 5055.27

Depth: 8.0 - 11.4 (ft)

Date: 8/8/11

Thompson Engineering
Mobile, Alabama

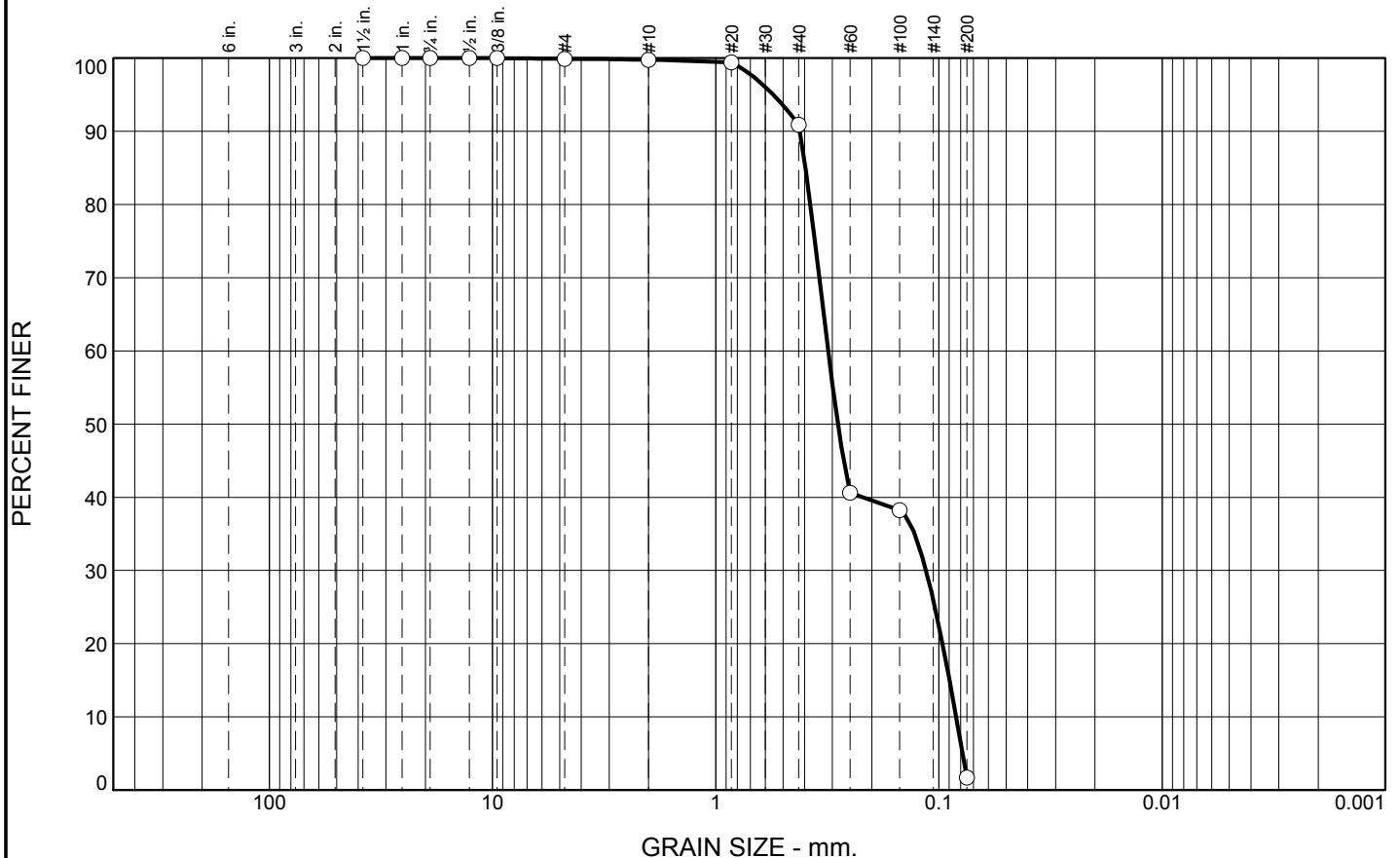
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project
Project No: 11-2116-0057

Report No.

Boring Designation BI-DA10-25-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Disposal Area 10				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-DA10-25-11		LOCATION COORDINATES E = 1,083,617 N = 259,756		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		14. WATER DEPTH 21 Ft.	
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-18-11		STARTED 06-18-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -18.4 Ft.		COMPLETED 06-18-11	
8. TOTAL DEPTH OF BORING 14.5 Ft.				17. TOTAL RECOVERY FOR BORING 100%		18. SIGNATURE AND TITLE OF INSPECTOR Rhonda Capes, Geologist	
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-18.4	0.0						
			SAND, poorly-graded, mostly medium-grained sand-sized quartz, tan (SP) At El. -20.9 Ft., lt. gray	A	Classification: SP Color: 2.5Y 7/2-light gray D50: 0.2837 mm % Fines: 1.7		
				B	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.2558 mm % Fines: 3.2		
				C	Classification: SP Color: 2.5Y 7/2-light gray D50: 0.3322 mm % Fines: 1.2		
-32.9	14.5						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.1	8.9	89.2	1.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.50	100.0		
1	100.0		
.75	100.0		
.5	100.0		
.375	100.0		
#4	99.9		
#10	99.8		
#20	99.4		
#40	90.9		
#60	40.6		
#100	38.2		
#200	1.7		

* (no specification provided)

Material Description

SAND (SP), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.4201

D₈₅= 0.3966

D₆₀= 0.3135

D₅₀= 0.2837

D₃₀= 0.1141

D₁₅= 0.0897

D₁₀= 0.0837

C_u= 3.74

C_c= 0.50

Classification

USCS= SP

AASHTO=

Remarks

Location: USACE Sample # B1-DA10-25A-11

Sample Number: TE Lab ID: 5055.28

Depth: 0.0 - 5.0 (ft)

Date: 8/8/11

Thompson Engineering

Mobile, Alabama

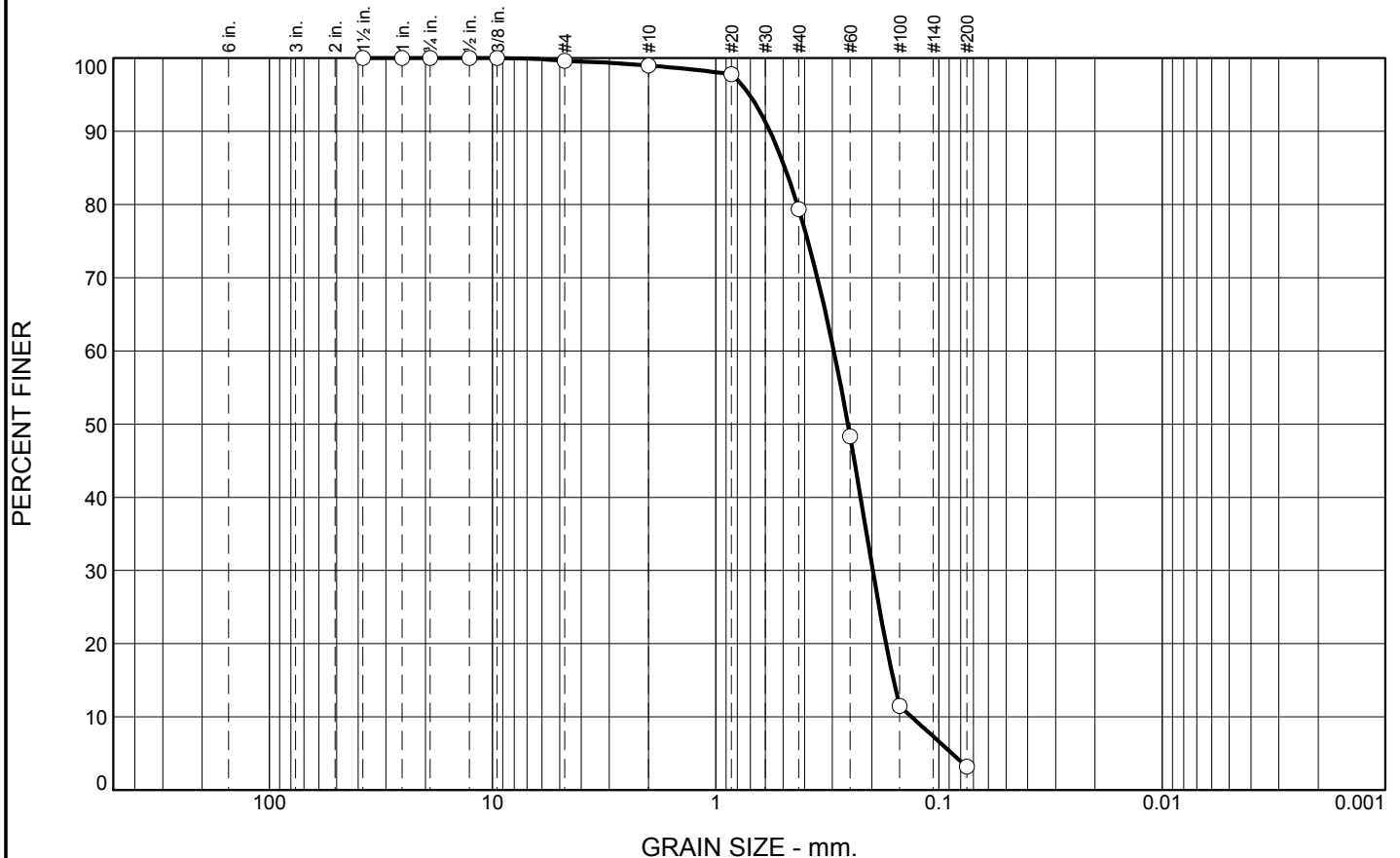
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Report No.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.4	0.6	19.6	76.2	3.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.50	100.0		
1	100.0		
.75	100.0		
.5	100.0		
.375	100.0		
#4	99.6		
#10	99.0		
#20	97.8		
#40	79.4		
#60	48.3		
#100	11.5		
#200	3.2		

* (no specification provided)

<u>Material Description</u>		
SAND (SP), medium to fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.5718	D ₈₅ = 0.4898	D ₆₀ = 0.2959
D ₅₀ = 0.2558	D ₃₀ = 0.1979	D ₁₅ = 0.1600
D ₁₀ = 0.1326	C _u = 2.23	C _c = 1.00
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		

Location: USACE Sample # B1-DA10-25B-11
Sample Number: TE Lab ID: 5055.29

Depth: 5.0 - 10.0 (ft)

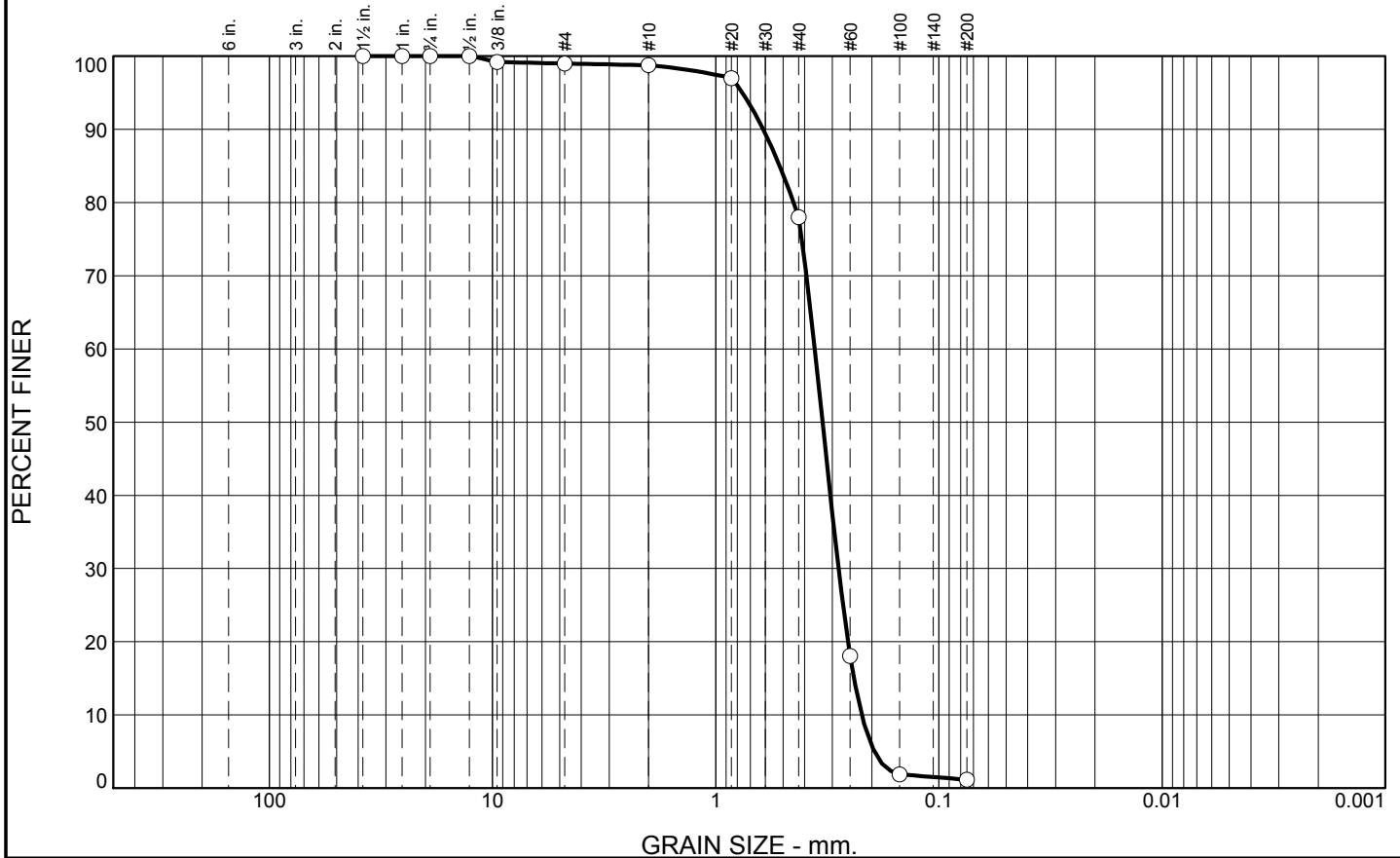
Date: 8/8/11

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project
Project No: 11-2116-0057

Report No.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.0	0.2	20.8	76.8	1.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.50	100.0		
1	100.0		
.75	100.0		
.5	100.0		
.375	99.2		
#4	99.0		
#10	98.8		
#20	97.0		
#40	78.0		
#60	18.0		
#100	1.9		
#200	1.2		

* (no specification provided)

<u>Material Description</u>		
SAND (SP), medium to fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.6130	D ₈₅ = 0.5176	D ₆₀ = 0.3600
D ₅₀ = 0.3322	D ₃₀ = 0.2818	D ₁₅ = 0.2405
D ₁₀ = 0.2219	C _u = 1.62	C _c = 0.99
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		

Location: USACE Sample # B1-DA10-25C-11
Sample Number: TE Lab ID: 5055.30

Depth: 10.0 - 14.5 (ft)

Date: 8/8/11

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project
Project No: 11-2116-0057
Report No.

Boring Designation BI-DA10-26-11

DRILLING LOG		DIVISION South Atlantic	INSTALLATION Mobile District	SHEET 1 OF 1 SHEETS
1. PROJECT Barrier Island Restoration Disposal Area 10		9. SIZE AND TYPE OF BIT N/A		
2. BORING DESIGNATION BI-DA10-26-11		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		
3. DRILLING AGENCY Corps of Engineers - CESAM		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		
4. NAME OF DRILLER Construction Solutions International, Inc.		12. TOTAL SAMPLES 0		
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		13. TOTAL NUMBER CORE BOXES 0		
6. THICKNESS OF OVERBURDEN N/A		14. WATER DEPTH 32.5 Ft.		
7. DEPTH DRILLED INTO ROCK N/A		15. DATE BORING 06-21-11		
8. TOTAL DEPTH OF BORING 16.7 Ft.		16. ELEVATION TOP OF BORING -30.8 Ft.		
		17. TOTAL RECOVERY FOR BORING 100%		
		18. SIGNATURE AND TITLE OF INSPECTOR Rhonda Capes, Geologist		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-30.8	0.0				
-31.7	0.9		SAND, poorly-graded, mostly medium-grained sand-sized quartz, lt. gray (SP)		
			SAND, clayey, mostly medium-grained sand-sized quartz, some clay, gray (SC)		
-39.3	8.5				
-39.8	9.0		SAND, silty, mostly quartz, dark gray (SM)		
			SAND, poorly-graded, mostly medium-grained sand-sized quartz, dark brown (SP)		
-44.3	13.5				
			CLAY, lean, dark gray (CL)		
-47.5	16.7				
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.		

Boring Designation BI-DA10-27-11

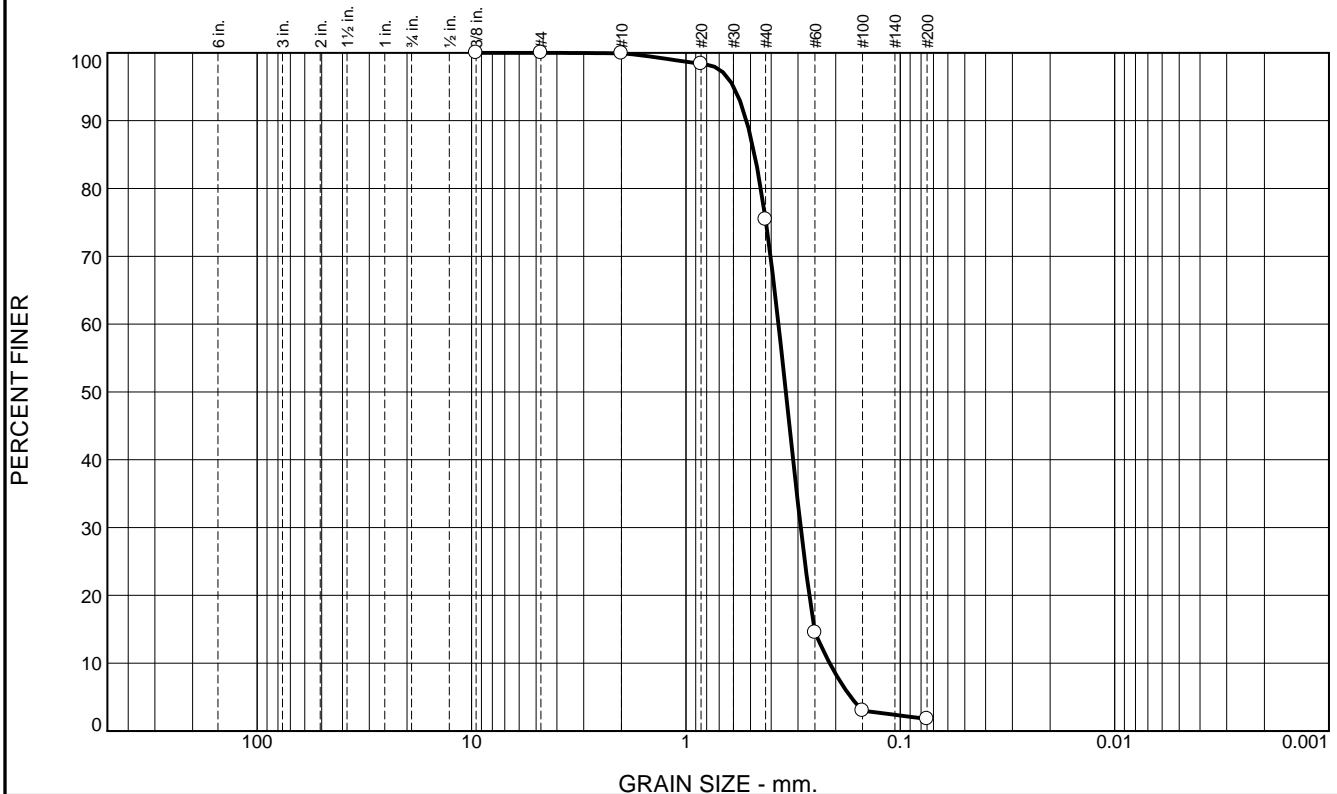
DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Disposal Area 10				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-DA10-27-11		LOCATION COORDINATES E = 1,084,005 N = 264,659		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		14. WATER DEPTH 9.5 Ft.	
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-20-11		STARTED 06-20-11 COMPLETED 06-20-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -7.8 Ft.		17. TOTAL RECOVERY FOR BORING 100%	
8. TOTAL DEPTH OF BORING 13.1 Ft.				18. SIGNATURE AND TITLE OF INSPECTOR Rhonda Capes, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-7.8	0.0						
			SAND, poorly-graded, mostly medium-grained sand-sized quartz, gray (SP)	A	Classification: SP Color: 2.5Y 7/2-light gray D50: 0.3266 mm % Fines: 1		
				B	Classification: SP Color: 2.5Y 7/2-light gray D50: 0.3419 mm % Fines: 1.8		
-15.3	7.5						
			SAND, clayey, gray (SC)	NS			
-18.8	11.0						
			SAND, poorly-graded, mostly medium-grained sand-sized quartz, gray (SP)				
-20.9	13.1						
NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.							

PERCENT FINER



<u>Material Description</u>		
SAND (SP), medium to fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.5457	D ₈₅ = 0.4615	D ₆₀ = 0.3517
D ₅₀ = 0.3266	D ₃₀ = 0.2801	D ₁₅ = 0.2414
D ₁₀ = 0.2241	C _u = 1.57	C _c = 1.00
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	24.4	73.7	1.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	98.4		
#40	75.5		
#60	14.5		
#100	3.0		
#200	1.8		

* (no specification provided)

Material Description

SAND (SP), medium to fine grained

PL=

Atterberg Limits

LL=

PI=

Coefficients

D₉₀= 0.5217

D₈₅= 0.4781

D₆₀= 0.3701

D₅₀= 0.3419

D₃₀= 0.2916

D₁₅= 0.2515

D₁₀= 0.2134

C_u= 1.73

C_c= 1.08

Classification

USCS= SP

AASHTO=

Remarks

Location: USACE Sample # BI-DA10-27B-11

Sample Number: TE Lab ID: 5054.18

Depth: 4.0 - 7.5 (ft)

Date: 7/15/11

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

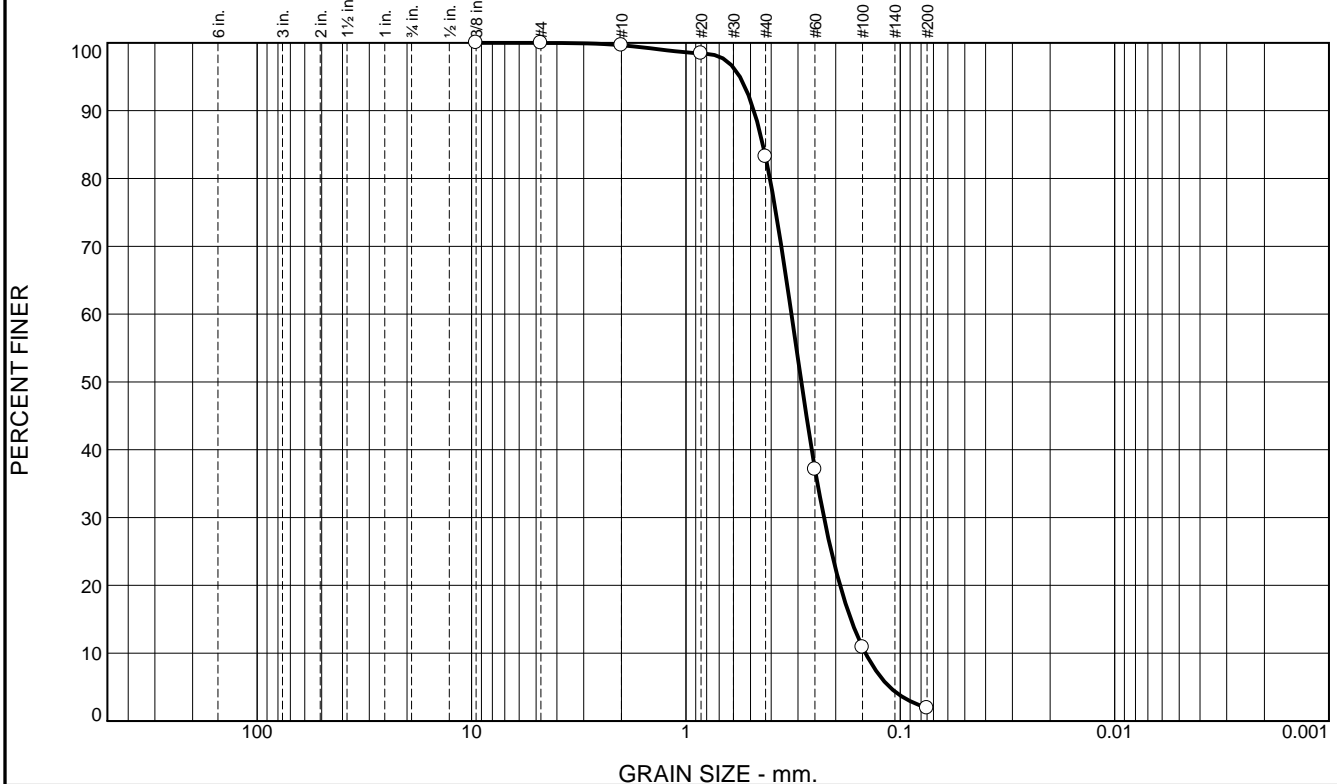
Boring Designation BI-DA10-28-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Disposal Area 10				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-DA10-28-11		LOCATION COORDINATES E = 1,084,594 N = 265,188		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		14. WATER DEPTH 6.5 Ft.	
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-20-11		STARTED 06-20-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -4.7 Ft.		COMPLETED 06-20-11	
8. TOTAL DEPTH OF BORING 11.6 Ft.				17. TOTAL RECOVERY FOR BORING 100%		18. SIGNATURE AND TITLE OF INSPECTOR Rhonda Capes, Geologist	
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-4.7	0.0						
			SAND, poorly-graded, mostly medium-grained sand-sized quartz, lt. gray (SP)	A	Classification: SP Color: 2.5Y 7/2-light gray D50: 0.309 mm % Fines: 0.7		
				B	Classification: SP Color: 2.5Y 7/2-light gray D50: 0.2896 mm % Fines: 1.9		
-14.0	9.3						
			CLAY, lean, dark gray (CL)	NS			
-16.3	11.6						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

PERCENT FINER

K-77

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.4	16.4	81.3	1.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.6		
#20	98.4		
#40	83.2		
#60	37.1		
#100	10.9		
#200	1.9		

* (no specification provided)

Material Description		
SAND (SP), medium to fine grained		
<div> <div> Atterberg Limits PL= LL= PI= </div> <div> Coefficients D₉₀= 0.4816 D₈₅= 0.4372 D₆₀= 0.3220 D₅₀= 0.2896 D₃₀= 0.2270 D₁₅= 0.1700 D₁₀= 0.1453 C_u= 2.22 C_c= 1.10 </div> <div> Classification USCS= SP AASHTO= </div> <div> Remarks </div> </div>		

Location: USACE Sample # BI-DA10-28B-11
Sample Number: TE Lab ID: 5054.20

Depth: 5.0 - 9.3 (ft)

Date: 7/15/11

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

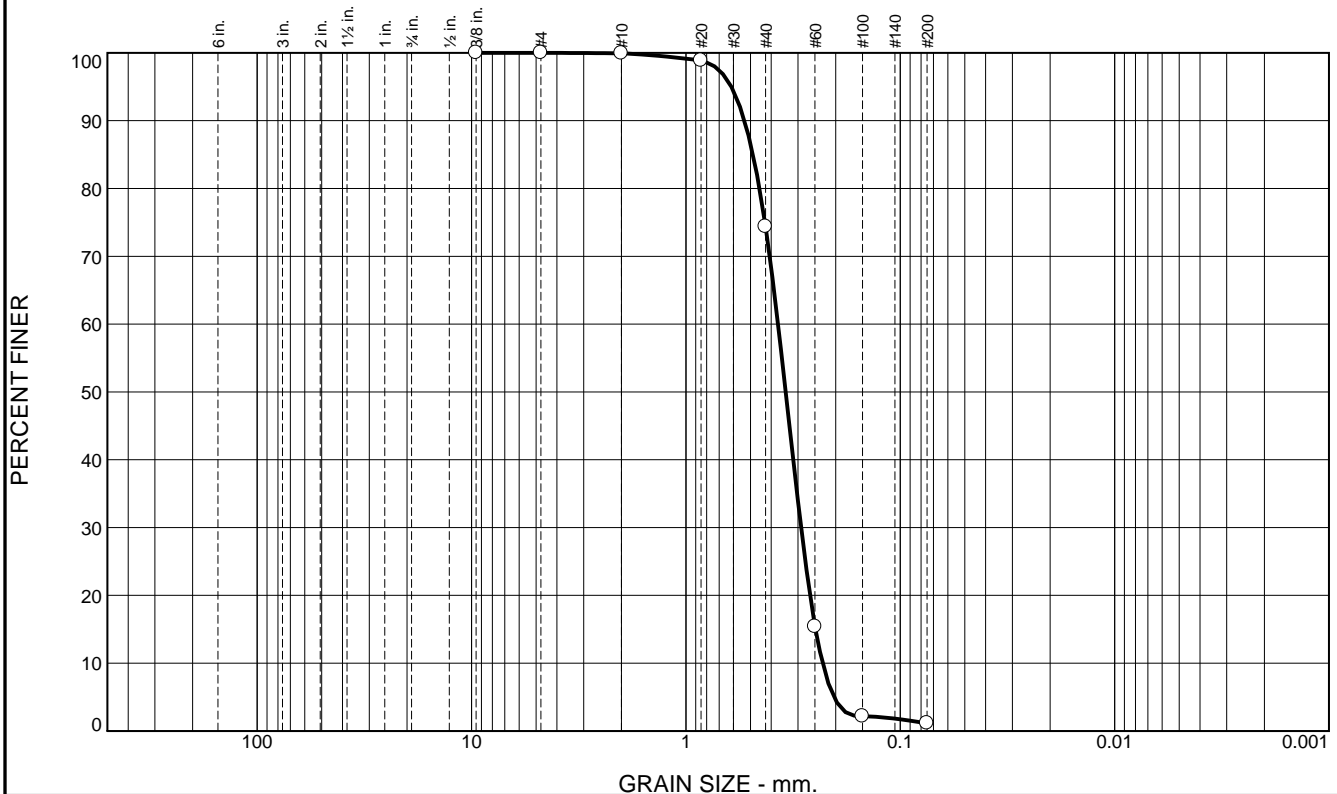
Figure

Boring Designation BI-DA10-29-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Disposal Area 10				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-DA10-29-11		LOCATION COORDINATES E = 1,084,593 N = 265,545		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 1	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		UNDISTURBED (UD) 0	
6. THICKNESS OF OVERBURDEN N/A				14. WATER DEPTH		10.1 Ft.	
7. DEPTH DRILLED INTO ROCK N/A				15. DATE BORING		STARTED 06-20-11	
8. TOTAL DEPTH OF BORING 13.5 Ft.				16. ELEVATION TOP OF BORING		COMPLETED 06-20-11	
				17. TOTAL RECOVERY FOR BORING		100%	
				18. SIGNATURE AND TITLE OF INSPECTOR Rhonda Capes, Geologist			

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-8.2	0.0				
			SAND, poorly-graded, mostly medium-grained sand-sized quartz, tan (SP)	A	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.3426 mm % Fines: 1.1
			At El. -12.6 Ft., trace silt, lt. gray		
-14.9	6.7				
			SAND, silty, mostly fine-grained sand-sized quartz, occasional clay, dark gray (SM)		
-16.8	8.6				
			CLAY, lean, dark gray (CL)	NS	
-21.7	13.5				
NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.					

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	25.5	73.3	1.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	98.9		
#40	74.4		
#60	15.4		
#100	2.2		
#200	1.1		

* (no specification provided)

Material Description		
SAND (SP), medium to fine grained		
<div> <div>PL=</div> <div> Atterberg Limits LL= </div> <div>PI=</div> </div>		
<div> <div> D₉₀= 0.5329 D₅₀= 0.3426 D₁₀= 0.2305 </div> <div> Coefficients D₈₅= 0.4865 D₃₀= 0.2903 C_u= 1.61 </div> <div> D₆₀= 0.3719 D₁₅= 0.2487 C_c= 0.98 </div> </div>		
<div> USCS= SP </div> <div> Classification AASHTO= </div>		
<div> Remarks </div>		

Location: USACE Sample # BI-DA10-29A-11
Sample Number: TE Lab ID: 5054.21

Depth: 0.0 - 4.4 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

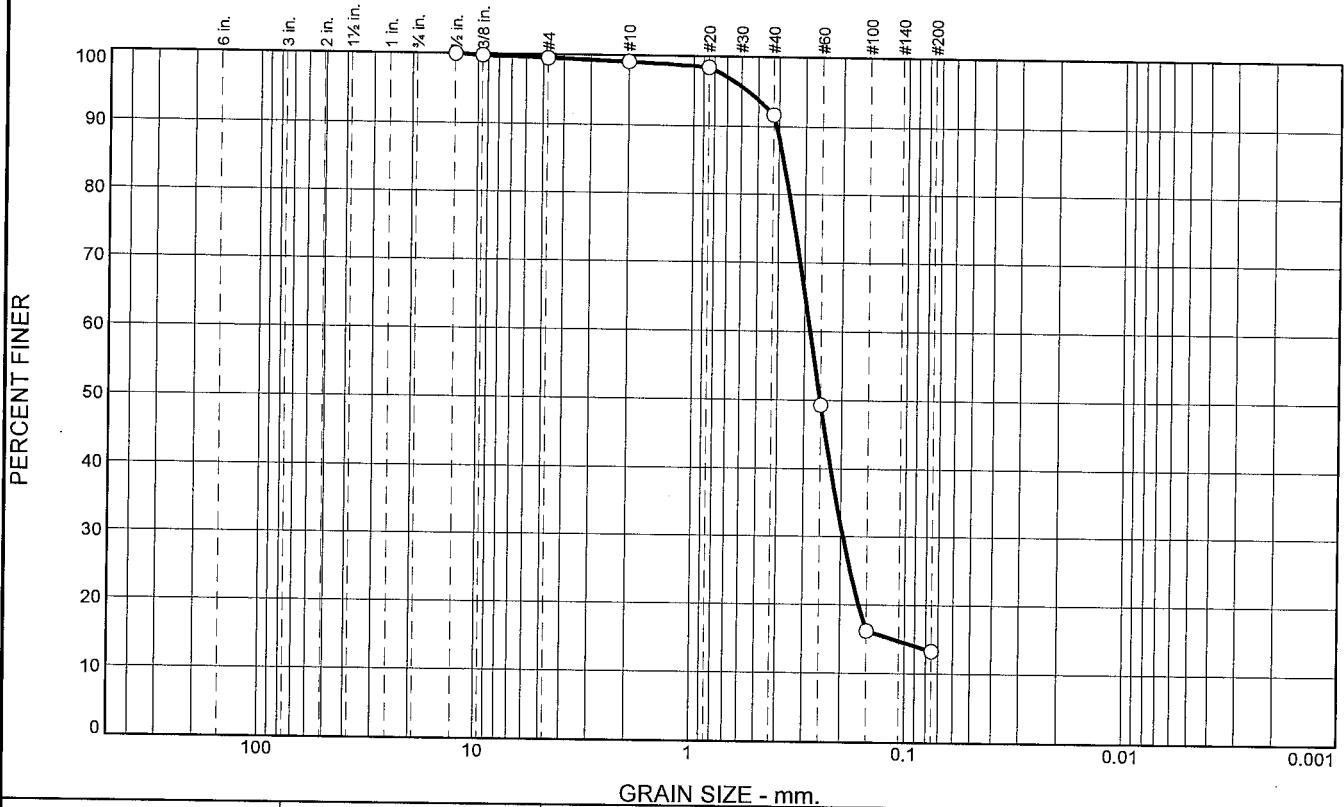
APPENDIX L

PETIT BOIS PASS BORING LOGS AND LAB RESULTS

Boring Designation BI-PB-001-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-001-10		LOCATION COORDINATES E = 1,125,532 N = 246,989		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		14. WATER DEPTH 44 Ft.	
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-25-10		STARTED 06-25-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -42.2 Ft.		COMPLETED 06-25-10	
8. TOTAL DEPTH OF BORING 15.7 Ft.				17. TOTAL RECOVERY FOR BORING 100%		18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist	
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-42.2	0.0		CLAY, lean, dark gray (CL)	NS			
-48.2	6.0		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, gray (SM)	A	Classification: SM Color: 2.5Y 6/2-light brownish gray D50: 0.2522 mm % Fines: 13.3		
-52.5	10.3		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, trace wood debris, lt. gray (SP)	B	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.2622 mm % Fines: 2.9		
-57.9	15.7		NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.5	0.4	7.4	78.4	13.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.500	100.0		
.375	99.8		
#4	99.5		
#10	99.1		
#20	98.4		
#40	91.7		
#60	49.3		
#100	16.2		
#200	13.3		

* (no specification provided)

Material Description

SILTY SAND, (SM), fine grained, with some clay pockets

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.4121

D₈₅= 0.3808

D₆₀= 0.2821

D₅₀= 0.2522

D₃₀= 0.1951

D₁₅= 0.1133

D₁₀=

C_u=

C_c=

Classification

USCS= SM

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-1-10A
Sample Number: TE Lab ID: 4569.01

Depth: 6.0 - 10.3 (ft.)

Date: 7/8/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

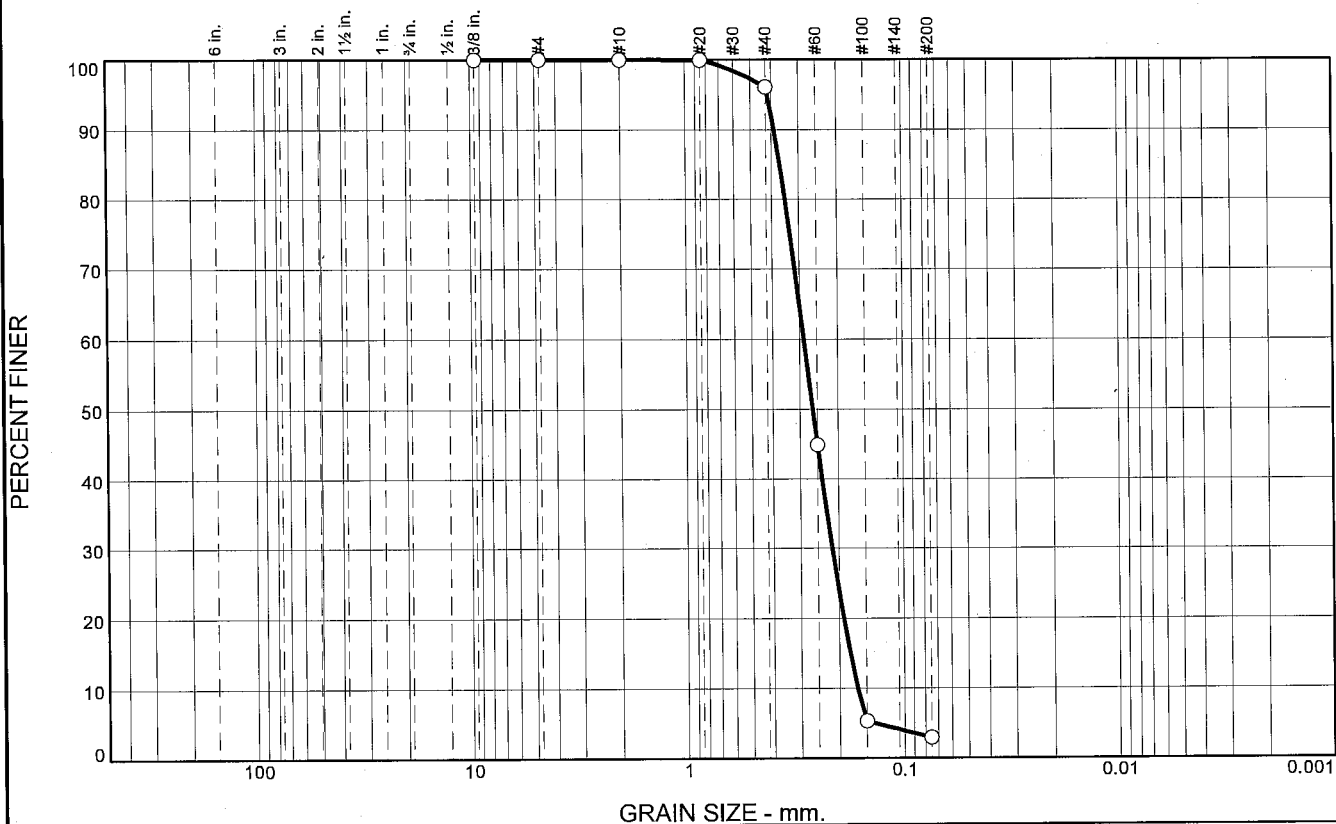
Project No: 10-2123-0009

Report No.

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	3.9	93.2	2.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	96.1		
#60	44.9		
#100	5.3		
#200	2.9		

* (no specification provided)

Material Description

SAND, (SP), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.3891

D₈₅= 0.3666

D₆₀= 0.2873

D₅₀= 0.2622

D₃₀= 0.2149

D₁₅= 0.1784

D₁₀= 0.1648

C_u= 1.74

C_c= 0.98

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-1-10B
Sample Number: TE Lab ID: 4569.02

Depth: 10.3 - 15.7 (ft.)

Date: 7/8/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Figure

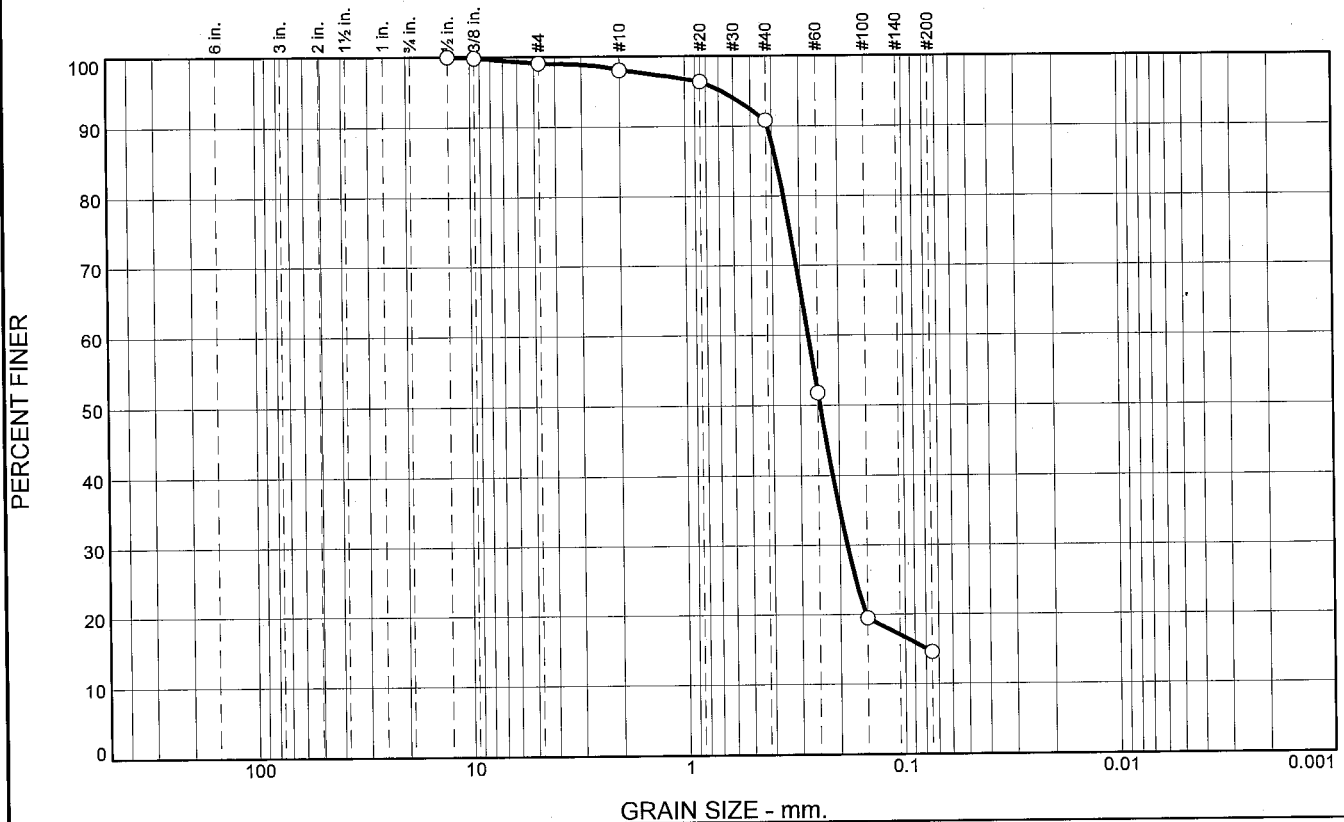
Tested By: R.Martin

Checked By: R.Byrd

Boring Designation BI-PB-002-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-002-10		LOCATION COORDINATES E = 1,126,683 N = 247,597		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 1	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		UNDISTURBED (UD) 0	
6. THICKNESS OF OVERBURDEN N/A				14. WATER DEPTH		43 Ft.	
7. DEPTH DRILLED INTO ROCK N/A				15. DATE BORING		STARTED 06-25-10	
8. TOTAL DEPTH OF BORING 15.5 Ft.				16. ELEVATION TOP OF BORING -41.4 Ft.		COMPLETED 06-25-10	
				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-41.4	0.0		CLAY, lean, dark gray (CL)	NS			
-49.0	7.6		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, gray (SM)	A	Classification: SM Color: 2.5Y 6S/2- D50: 0.2445 mm % Fines: 14.6		
-54.7	13.3		CLAY, lean, dark gray (CL)	NS			
-56.9	15.5		NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.9	1.0	7.3	76.2	14.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.500	100.0		
.375	99.8		
#4	99.1		
#10	98.1		
#20	96.4		
#40	90.8		
#60	51.8		
#100	19.5		
#200	14.6		

* (no specification provided)

Material Description
SILTY SAND, (SM), fine grained, with little clay pockets

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.4176 D₈₅= 0.3819 D₆₀= 0.2759
 D₅₀= 0.2445 D₃₀= 0.1852 D₁₅= 0.0797
 D₁₀= C_u= C_c=

Classification
 USCS= SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-PB-2-10A
 Sample Number: TE Lab ID: 4569.04

Depth: 7.6 - 13.3 (ft.)

Date: 7/8/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
 Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
 Project No: 10-2123-0009

Figure

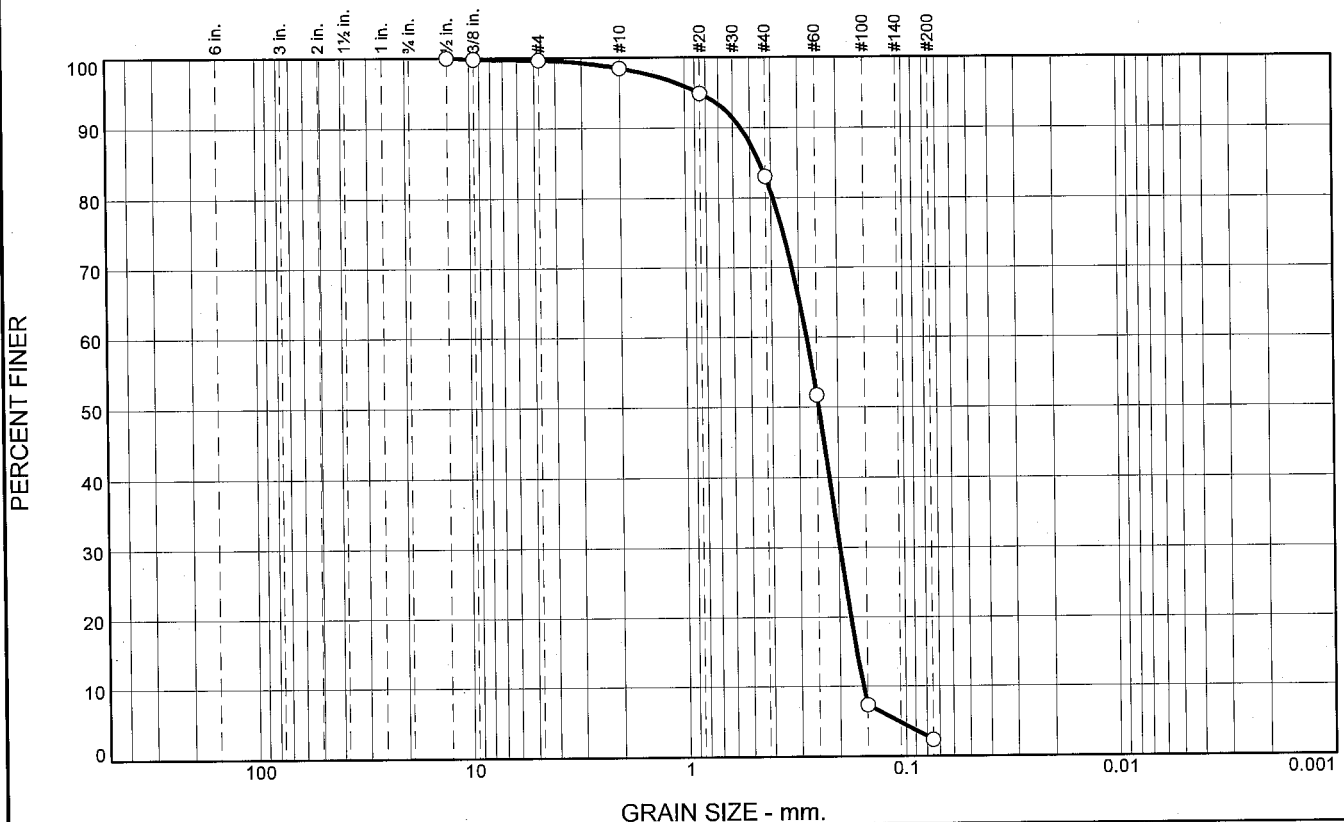
Tested By: R.Martin

Checked By: R.Byrd

Boring Designation BI-PB-003-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-003-10		LOCATION COORDINATES E = 1,130,066 N = 248,669		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 33 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-25-10		STARTED COMPLETED 06-25-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -31.5 Ft.			
8. TOTAL DEPTH OF BORING 18.4 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-31.5	0.0						
-35.0	3.5		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, trace shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.2451 mm % Fines: 2.3		
-38.2	6.7		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments, gray (SM)	B	Classification: SC Color: 2.5Y 5/2-grayish brown D50: 0.2086 mm % Fines: 16.8		
-45.2	13.7		CLAY, lean, dark gray (CL)	NS			
-49.9	18.4		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, lt. gray (SP)				
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.4	1.1	15.4	80.8	2.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.500	100.0		
.375	99.8		
#4	99.6		
#10	98.5		
#20	94.9		
#40	83.1		
#60	51.7		
#100	7.3		
#200	2.3		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.5509 D₈₅= 0.4502 D₆₀= 0.2770
D₅₀= 0.2451 D₃₀= 0.1982 D₁₅= 0.1674
D₁₀= 0.1565 C_u= 1.77 C_c= 0.91

Classification

USCS= SP AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-3-10A
Sample Number: TE Lab ID: 4569.05

Depth: 0.0 - 3.5 (ft.)

Date: 7/8/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

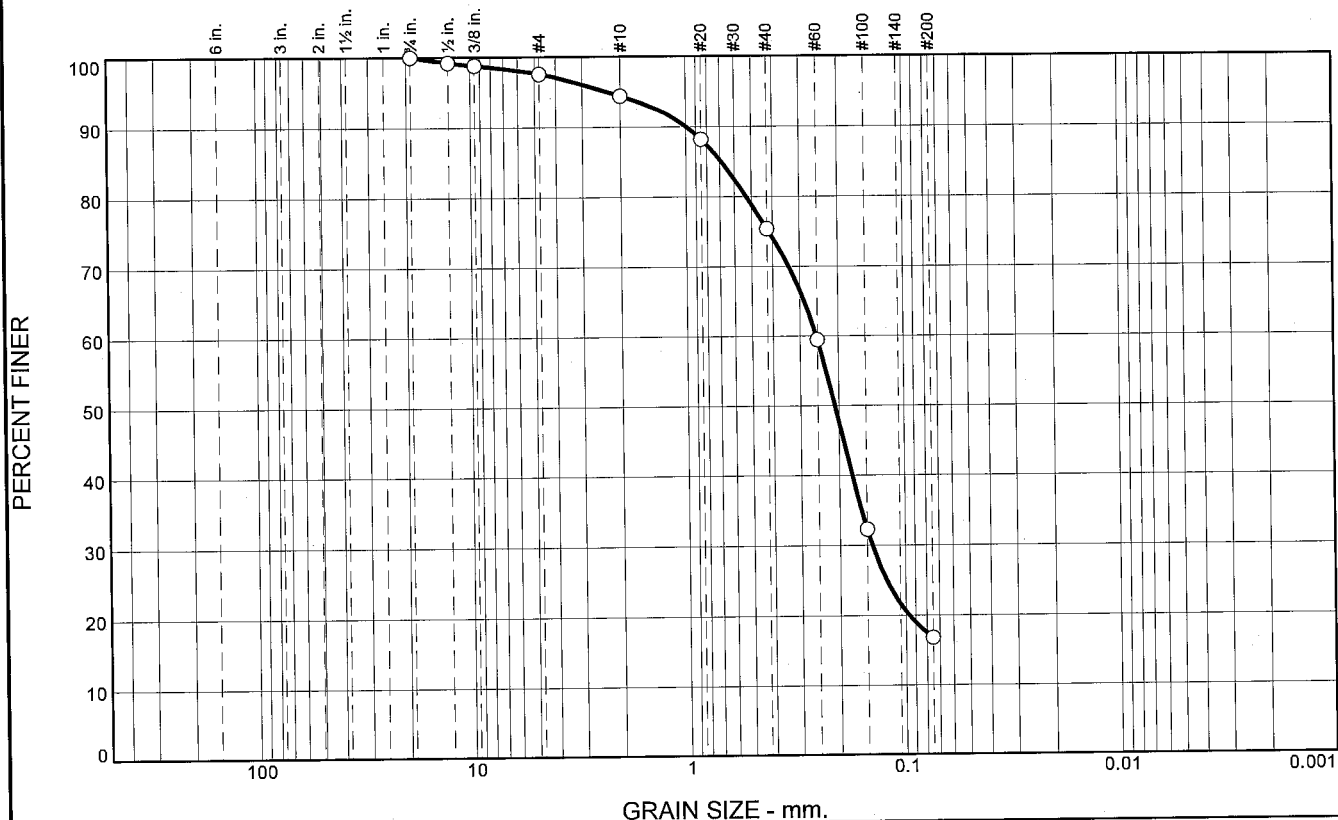
Project No: 10-2123-0009

Figure

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	2.4	3.2	19.0	58.6	16.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.750	100.0		
.500	99.2		
.375	98.8		
#4	97.6		
#10	94.4		
#20	88.2		
#40	75.4		
#60	59.5		
#100	32.3		
#200	16.8		

* (no specification provided)

Material Description

CLAYEY SAND, (SC), medium to fine grained, with little clay pockets and trace shell

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.9957 D₈₅= 0.6906 D₆₀= 0.2530
D₅₀= 0.2086 D₃₀= 0.1420 D₁₅=
D₁₀= C_u= C_c=

Classification

USCS= SC AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-3-10B
Sample Number: TE Lab ID: 4569.06

Depth: 3.0 - 6.7 (ft.)

Date: 7/8/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Figure

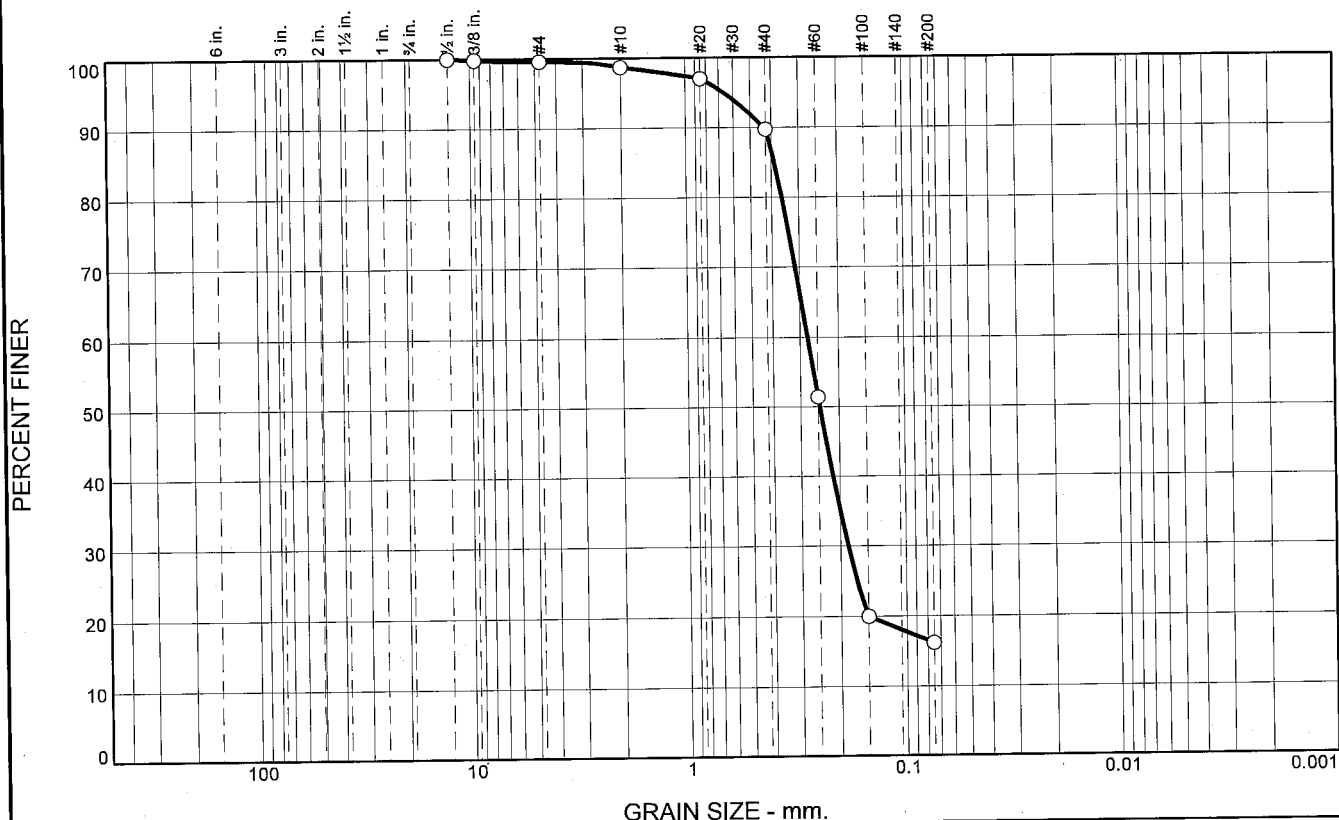
Tested By: R.Martin

Checked By: R.Byrd

Boring Designation BI-PB-004-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-004-10		LOCATION COORDINATES E = 1,128,138 N = 247,301		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
6. THICKNESS OF OVERBURDEN N/A		BEARING		14. WATER DEPTH 43 Ft.			
7. DEPTH DRILLED INTO ROCK N/A				15. DATE BORING 06-25-10		COMPLETED 06-25-10	
8. TOTAL DEPTH OF BORING 20.0 Ft.				16. ELEVATION TOP OF BORING -41.4 Ft.			
				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-41.4	0.0		CLAY, lean, dark gray (CL)	NS			
-49.4	8.0		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, gray (SM)	A	Classification: SM Color: 2.5Y 5/2-grayish brown D50: 0.2455 mm % Fines: 16.2		
-53.4	12.0		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little silt, lt. gray (SP)	B	Classification: SM Color: 2.5Y 6/2-light brownish gray D50: 0.1947 mm % Fines: 12.1		
-59.1	17.7		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, gray (SM)	C	Classification: SM Color: 2.5Y 5/2-grayish brown D50: 0.1898 mm % Fines: 19.1		
-61.4	20.0		NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.4	0.9	9.0	73.5	16.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.500	100.0		
.375	99.8		
#4	99.6		
#10	98.7		
#20	97.0		
#40	89.7		
#60	51.4		
#100	20.0		
#200	16.2		

* (no specification provided)

<u>Material Description</u>		
SILTY SAND, (SM), fine grained, with some clay pockets		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.4333	D ₈₅ = 0.3889	D ₆₀ = 0.2779
D ₅₀ = 0.2455	D ₃₀ = 0.1847	D ₁₅ =
D ₁₀ =	C _u =	C _c =
<u>Classification</u>		
USCS= SM	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-PB-4-10A
Sample Number: TE Lab ID: 4569.07

Depth: 8.0 - 12.0 (ft.)

Date: 7/8/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Figure

Tested By: R.Martin

Checked By: R.Byrd

PERCENT FINER



SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.7		
#40	98.8		
#60	76.4		
#100	23.6		
#200	12.1		

Material Description

Atterberg Limits

$$LL =$$
$$P| \equiv$$

Coefficients

$$D_{85} = 0.2806$$
$$D_{60} = 0.2127$$
$$D_{30} = 0.1615$$
$$D_{15} = 0.0893$$
 C_{41} C_{11}

Classification

AASHTO=

Remarks

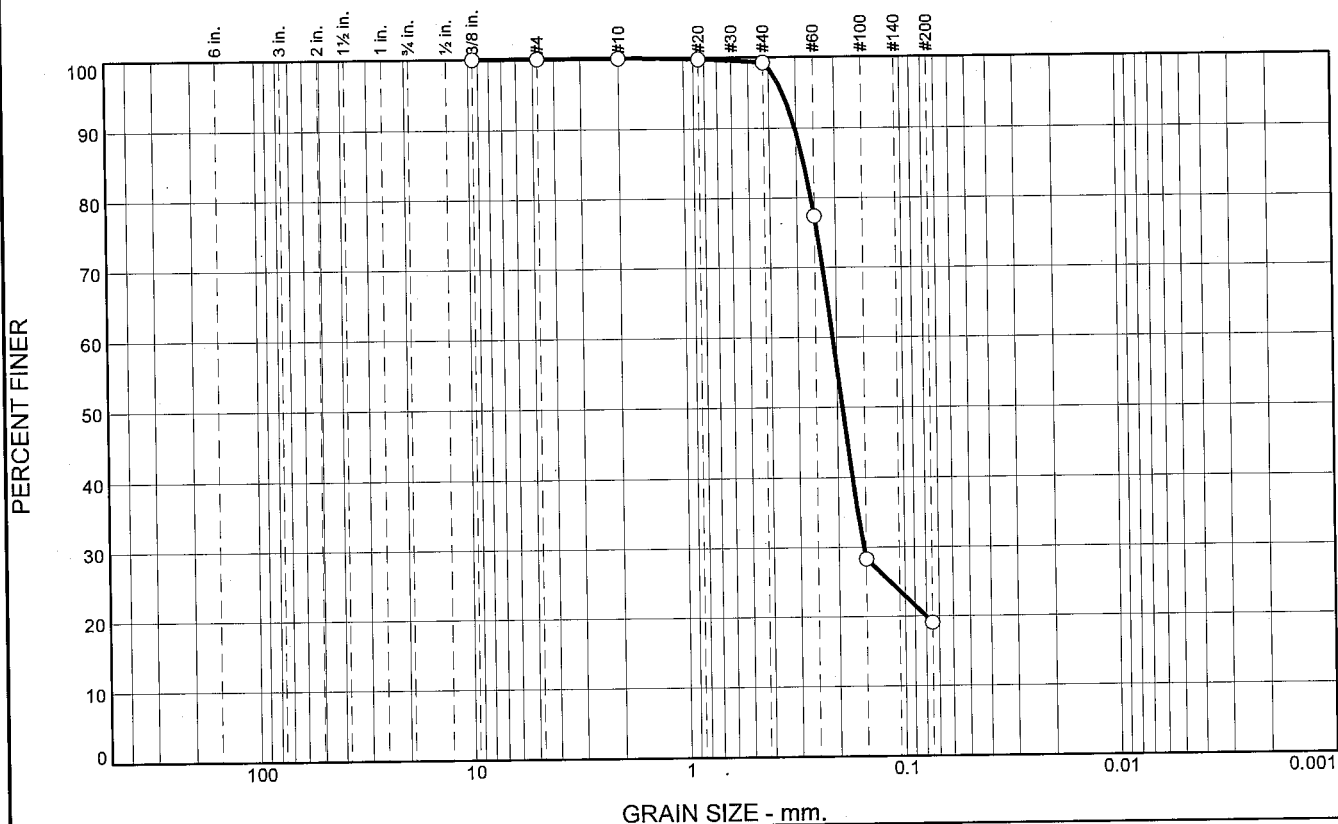
CADD CODE = CH10D965

Date: 7/8/10

Figure

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.7	80.2	19.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.8		
#40	99.3		
#60	77.4		
#100	28.3		
#200	19.1		

* (no specification provided)

Material Description

SILTY SAND, (SM), fine grained, with clay pockets

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.3041

D₈₅= 0.2777

D₆₀= 0.2086

D₅₀= 0.1898

D₃₀= 0.1535

D₁₅=

D₁₀=

C_u=

C_c=

Classification

USCS= SM

AASHTO=

Remarks

CADD CODWE = CH10D965

Location: USACE Sample # BI-PB-4-10C
Sample Number: TE Lab ID: 4569.09

Depth: 17.7 - 20.0 (ft.)

Date: 7/8/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Figure

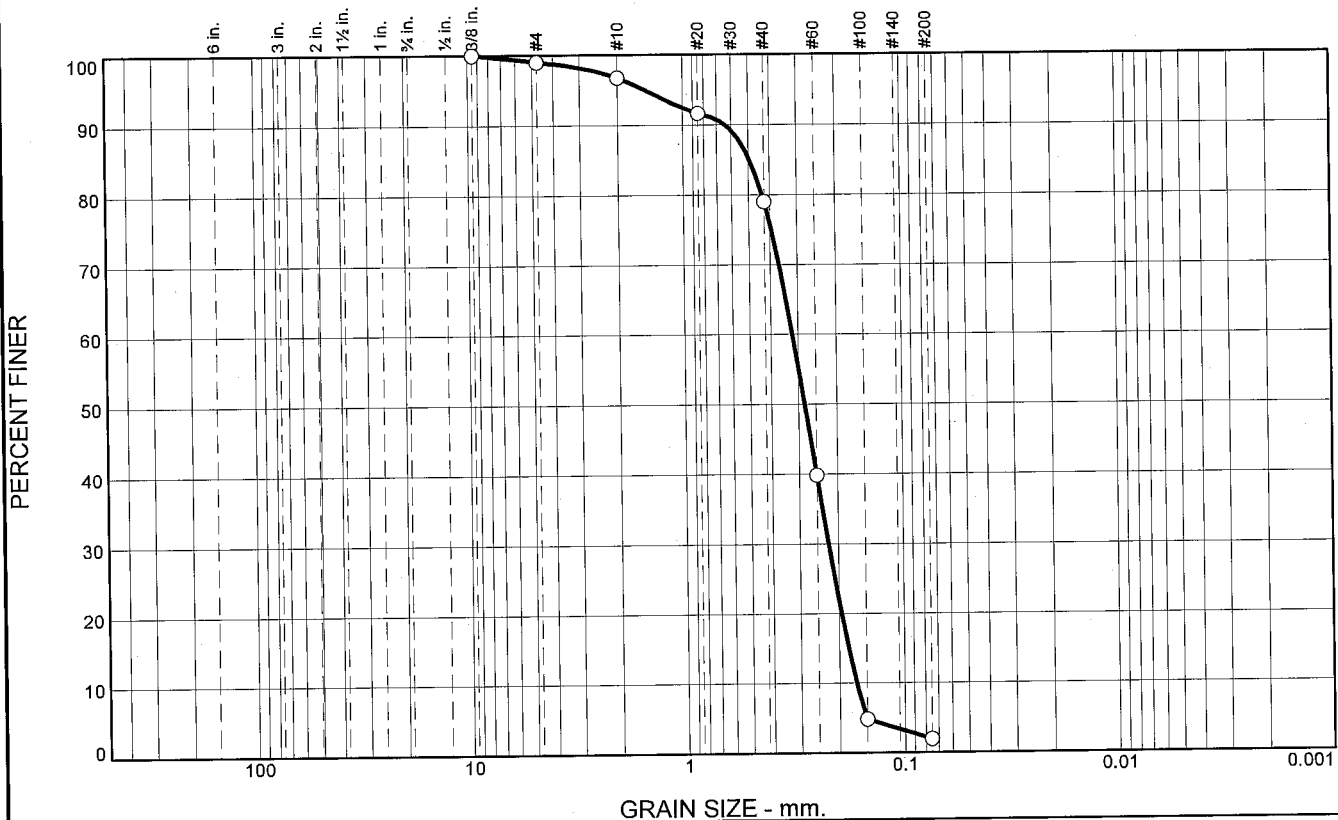
Tested By: R.Martin

Checked By: R.Byrd

Boring Designation BI-PB-005-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-005-10		LOCATION COORDINATES E = 1,130,535 N = 248,423		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 1 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 31 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING		STARTED 06-26-10 COMPLETED 06-26-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -29.4 Ft.			
8. TOTAL DEPTH OF BORING 19.5 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-29.4	0.0						
			SAND, poorly-graded, mostly medium-grained sand-sized quartz, trace silt, trace shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 7/2-light gray D50: 0.2821 mm % Fines: 1.9		
-36.0	6.6						
			CLAY, lean, dark gray (CL)	NS			
-44.2	14.8						
			SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments, gray (SM)				
-46.7	17.3						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, trace shell fragments, lt. gray (SP)				
-48.9	19.5						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.0	2.3	17.7	77.1	1.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.0		
#10	96.7		
#20	91.7		
#40	79.0		
#60	39.8		
#100	4.8		
#200	1.9		

* (no specification provided)

Material Description
SAND, (SP), medium to fine grained, with trace shell

PL= **Atterberg Limits** LL= PI=

Coefficients
D₉₀= 0.6383 D₈₅= 0.4938 D₆₀= 0.3190
D₅₀= 0.2821 D₃₀= 0.2220 D₁₅= 0.1813
D₁₀= 0.1670 C_u= 1.91 C_c= 0.93

USCS= SP **Classification** AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-PB-5-10A
Sample Number: TE Lab ID: 4569.10

Depth: 0.0 - 6.6 (ft.)

Date: 7/8/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Figure

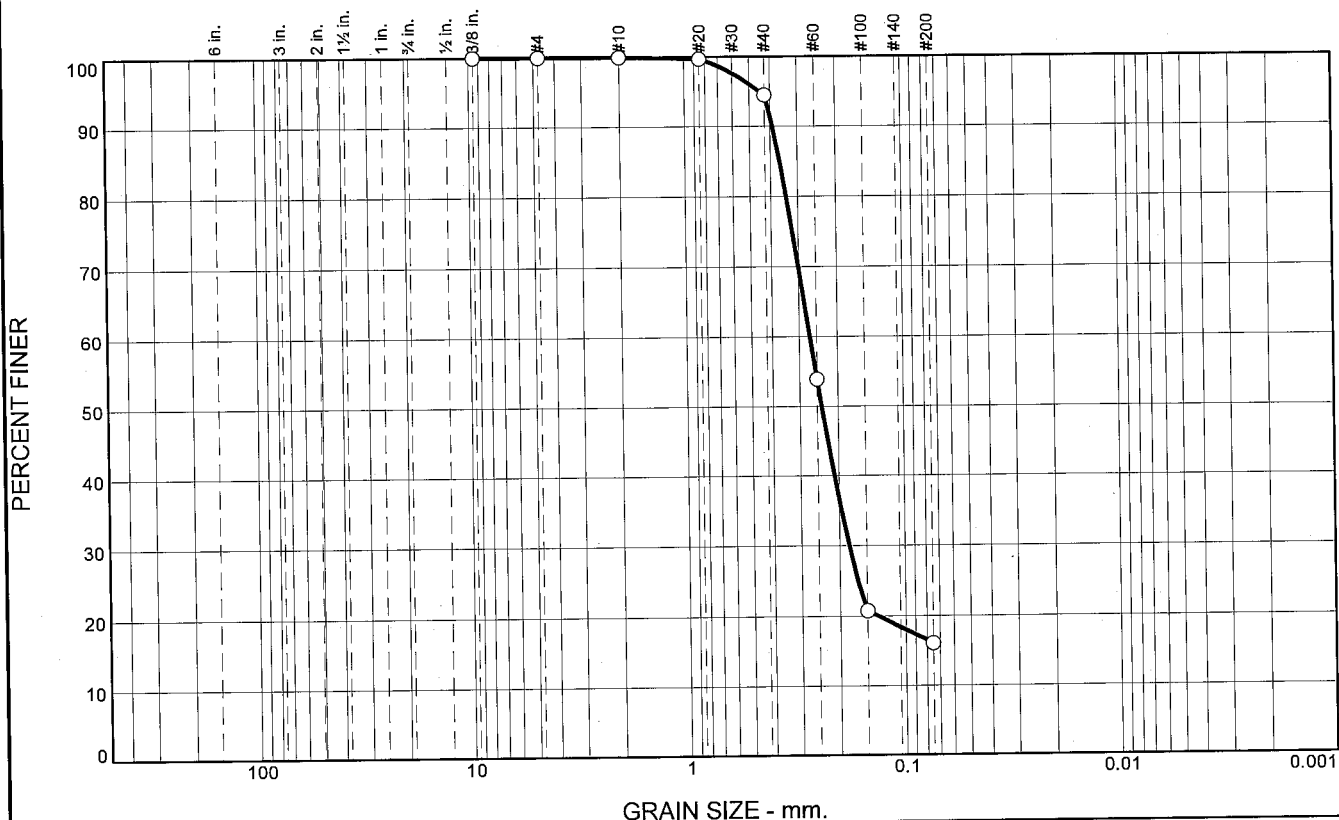
Tested By: R.Martin

Checked By: R.Byrd

Boring Designation BI-PB-006-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-006-10		LOCATION COORDINATES E = 1,130,004 N = 246,054		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 45 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-26-10		STARTED 06-26-10 COMPLETED 06-26-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -43.4 Ft.			
8. TOTAL DEPTH OF BORING 18.6 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-43.4	0.0						
			CLAY, lean, dark gray (CL)	NS			
-47.6	4.2						
			SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, gray (SM)	A	Classification: SM Color: 2.5Y 5/2-grayish brown D50: 0.2386 mm % Fines: 16.1		
-51.6	8.2						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, lt. gray (SP)	B	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.2785 mm % Fines: 3.4		
				C	Classification: SP-SM Color: - D50: 0.2879 mm % Fines: 5		
-62.0	18.6						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	5.5	78.4	16.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.7		
#40	94.5		
#60	53.9		
#100	20.8		
#200	16.1		

* (no specification provided)

<u>Material Description</u>		
SILTY SAND, (SM), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.3915	D ₈₅ = 0.3632	D ₆₀ = 0.2684
D ₅₀ = 0.2386	D ₃₀ = 0.1808	D ₁₅ =
D ₁₀ =	C _u =	C _c =
<u>Classification</u>		
USCS= SM	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-PB-6-10A
Sample Number: TE Lab ID: 4569.11

Depth: 4.2 - 8.2 (ft.)

Date: 7/8/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

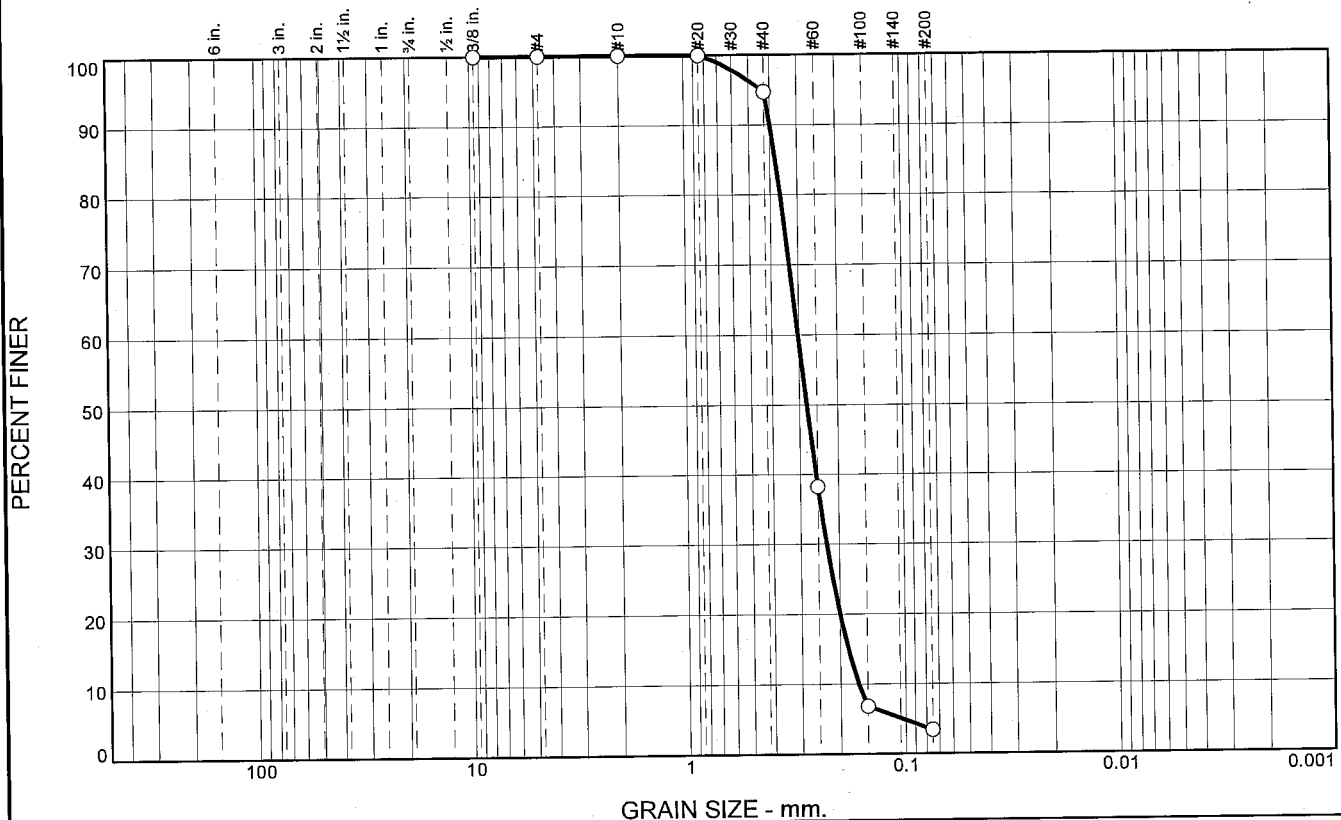
Project No: 10-2123-0009

Figure

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	5.3	91.3	3.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	94.7		
#60	38.2		
#100	6.8		
#200	3.4		

* (no specification provided)

Material Description

SAND, (SP), fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.4001 D₈₅= 0.3789 D₆₀= 0.3032
D₅₀= 0.2785 D₃₀= 0.2288 D₁₅= 0.1839
D₁₀= 0.1648 C_u= 1.84 C_c= 1.05

Classification

USCS= SP AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-6-10B
Sample Number: TE Lab ID: 4569.12

Depth: 8.2 - 13.2 (ft.)

Date: 7/8/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

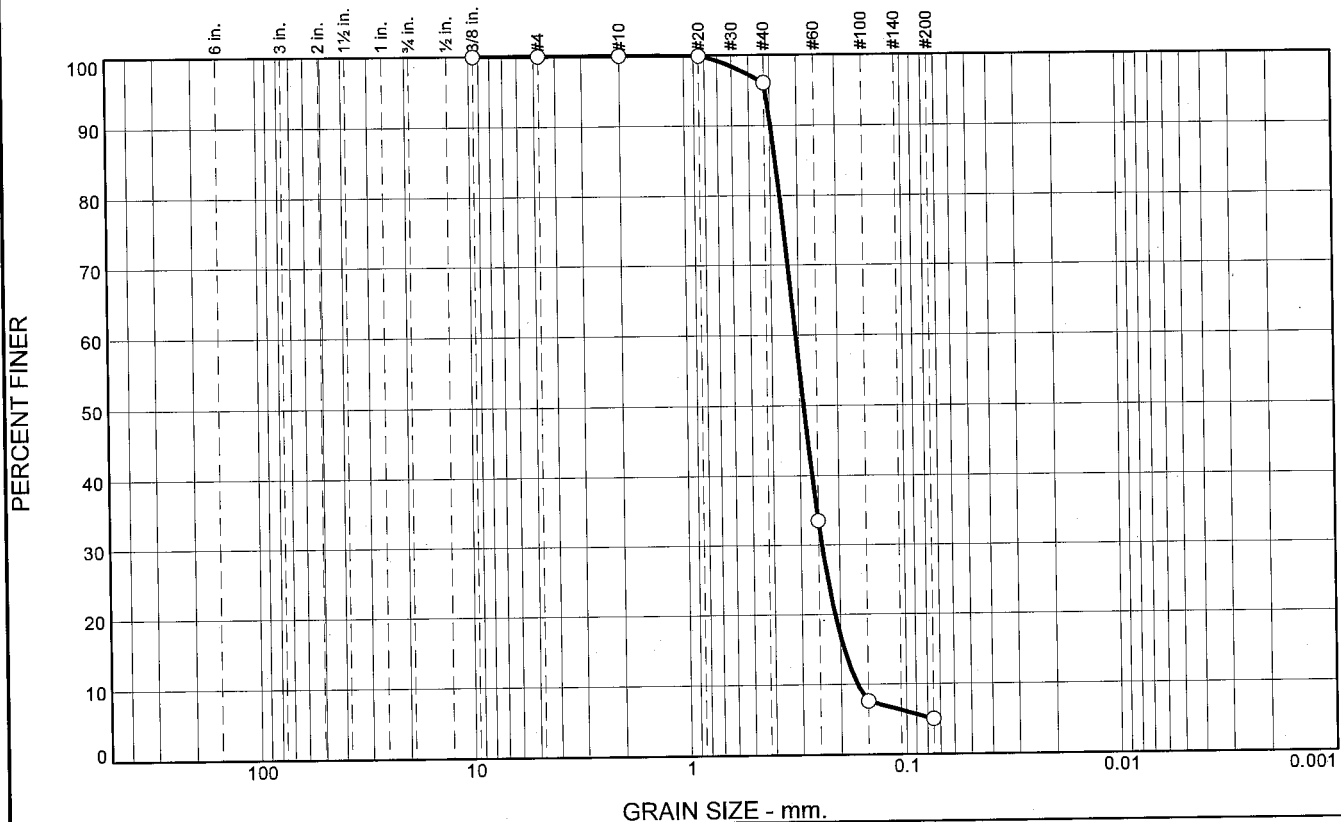
Project No: 10-2123-0009

Figure

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	3.9	91.1	5.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	96.1		
#60	33.5		
#100	7.6		
#200	5.0		

* (no specification provided)

Material Description

SAND, (SP-SM), fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.3973 D₈₅= 0.3791 D₆₀= 0.3108
D₅₀= 0.2879 D₃₀= 0.2411 D₁₅= 0.1929
D₁₀= 0.1676 C_u= 1.85 C_c= 1.12

Classification

USCS= SP-SM AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-6-10C
Sample Number: TE Lab ID: 4569.13

Depth: 13.2 - 18.6 (ft.)

Date: 7/8/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Figure

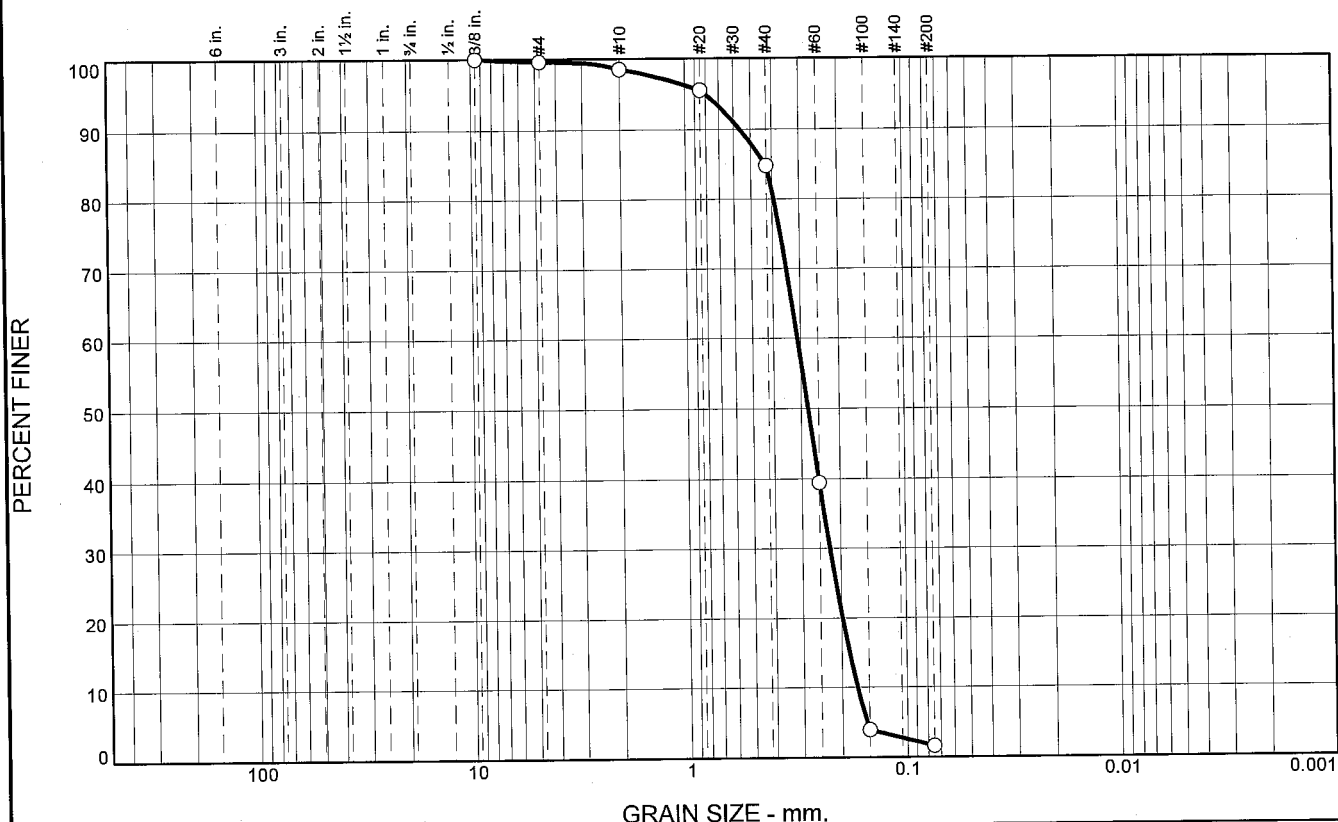
Tested By: R.Martin

Checked By: R.Byrd

Boring Designation BI-PB-007-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-007-10		LOCATION COORDINATES E = 1,133,313 N = 247,416		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 36 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-26-10		STARTED 06-26-10 COMPLETED 06-26-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -34.6 Ft.			
8. TOTAL DEPTH OF BORING 19.3 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-34.6	0.0						
			SAND, poorly-graded, mostly medium-grained sand-sized quartz, trace silt, trace shell fragments (SP)	A	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.2794 mm % Fines: 1.6		
				B	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.3157 mm % Fines: 1.5		
-42.1	7.5		CLAY, lean, dark gray (CL)				
				NS			
-51.3	16.7						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little silt, lt. gray (SP)				
-53.9	19.3						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.4	1.1	13.7	83.2	1.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.6		
#10	98.5		
#20	95.5		
#40	84.8		
#60	39.5		
#100	4.0		
#200	1.6		

* (no specification provided)

Material Description
SAND, (SP), medium to fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.5608 D₈₅= 0.4287 D₆₀= 0.3104
D₅₀= 0.2794 D₃₀= 0.2247 D₁₅= 0.1846
D₁₀= 0.1702 C_u= 1.82 C_c= 0.96

Classification
USCS= SP AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-PB-7-10A
Sample Number: TE Lab ID: 4569.14

Depth: 0.0 - 3.5 (ft.)

Date: 7/8/10

Thompson Engineering
Mobile, Alabama

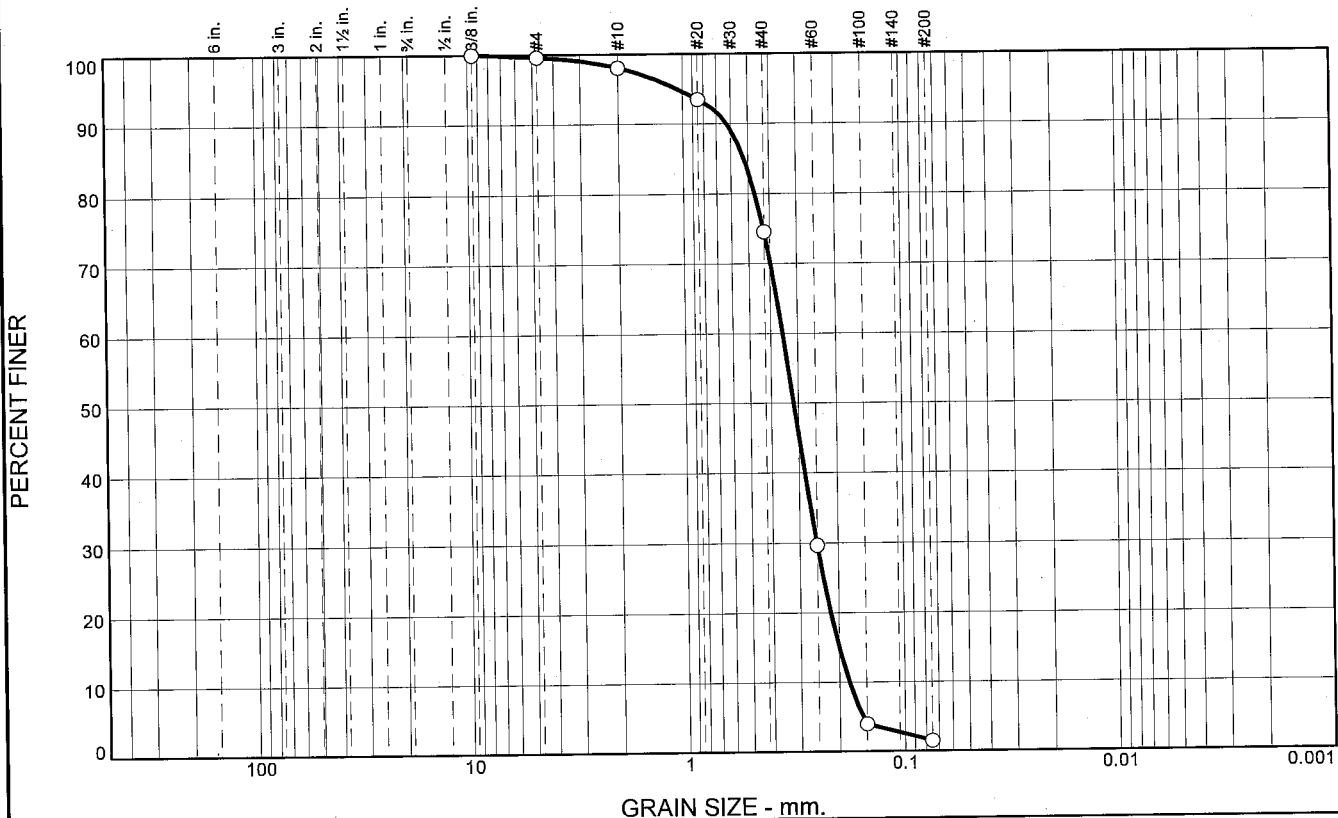
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.4	1.5	23.6	73.0	1.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.6		
#10	98.1		
#20	93.5		
#40	74.5		
#60	29.7		
#100	3.9		
#200	1.5		

* (no specification provided)

Material Description
SAND, (SP), medium to fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.6273 D₈₅= 0.5227 D₆₀= 0.3528
D₅₀= 0.3157 D₃₀= 0.2511 D₁₅= 0.1998
D₁₀= 0.1799 C_u= 1.96 C_c= 0.99

Classification
USCS= SP AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-PB-7-10B
Sample Number: TE Lab ID: 4569.15

Depth: 3.5 - 7.5 (ft.)

Date: 7/8/10

Thompson Engineering
Mobile, Alabama


Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

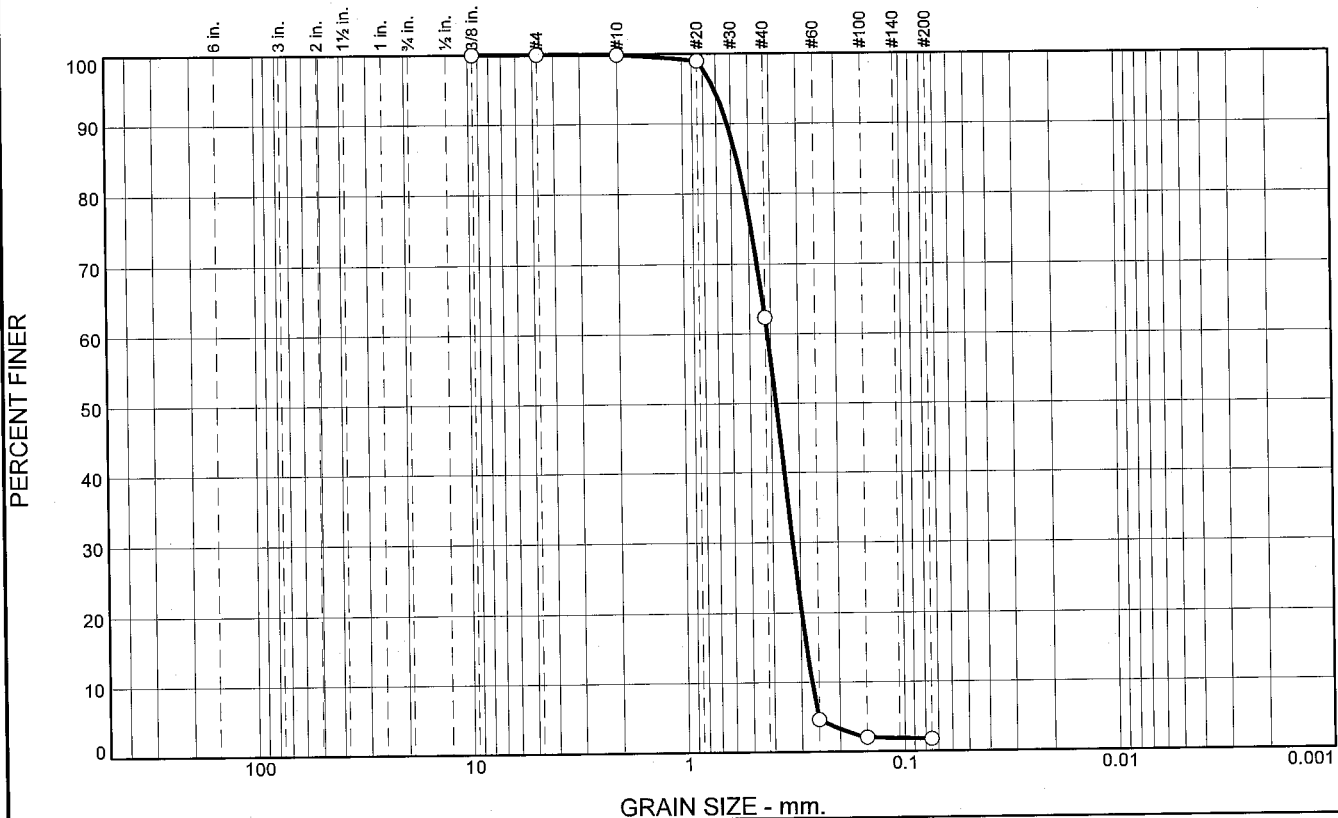
Tested By: R.Martin

Checked By: R.Byrd

Boring Designation BI-PB-008-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-008-10		LOCATION COORDINATES E = 1,140,592 N = 254,350		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 0 UNDISTURBED (UD)	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 33 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-26-10		STARTED 06-26-10 COMPLETED 06-26-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -31.5 Ft.			
8. TOTAL DEPTH OF BORING 16.9 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-31.5	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, lt. gray (SP)	A	Classification: SP Color: 2.5Y 8/1-white D50: 0.3816 mm % Fines: 1.7		
				B	Classification: SP Color: 2.5Y 8/1-white D50: 0.397 mm % Fines: 1.7		
				C	Classification: SP Color: 2.5Y 6/2-light brownish gray D50: 0.3718 mm % Fines: 4.3		
-48.4	16.9						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	37.6	60.6	1.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	98.9		
#40	62.3		
#60	4.6		
#100	2.1		
#200	1.7		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.6221 D₈₅= 0.5637 D₆₀= 0.4159
D₅₀= 0.3816 D₃₀= 0.3245 D₁₅= 0.2837
D₁₀= 0.2688 C_u= 1.55 C_c= 0.94

Classification

USCS= SP AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-8-10A
Sample Number: TE Lab ID: 4569.16

Depth: 0.0 - 6.0 (ft.)

Date: 7/8/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

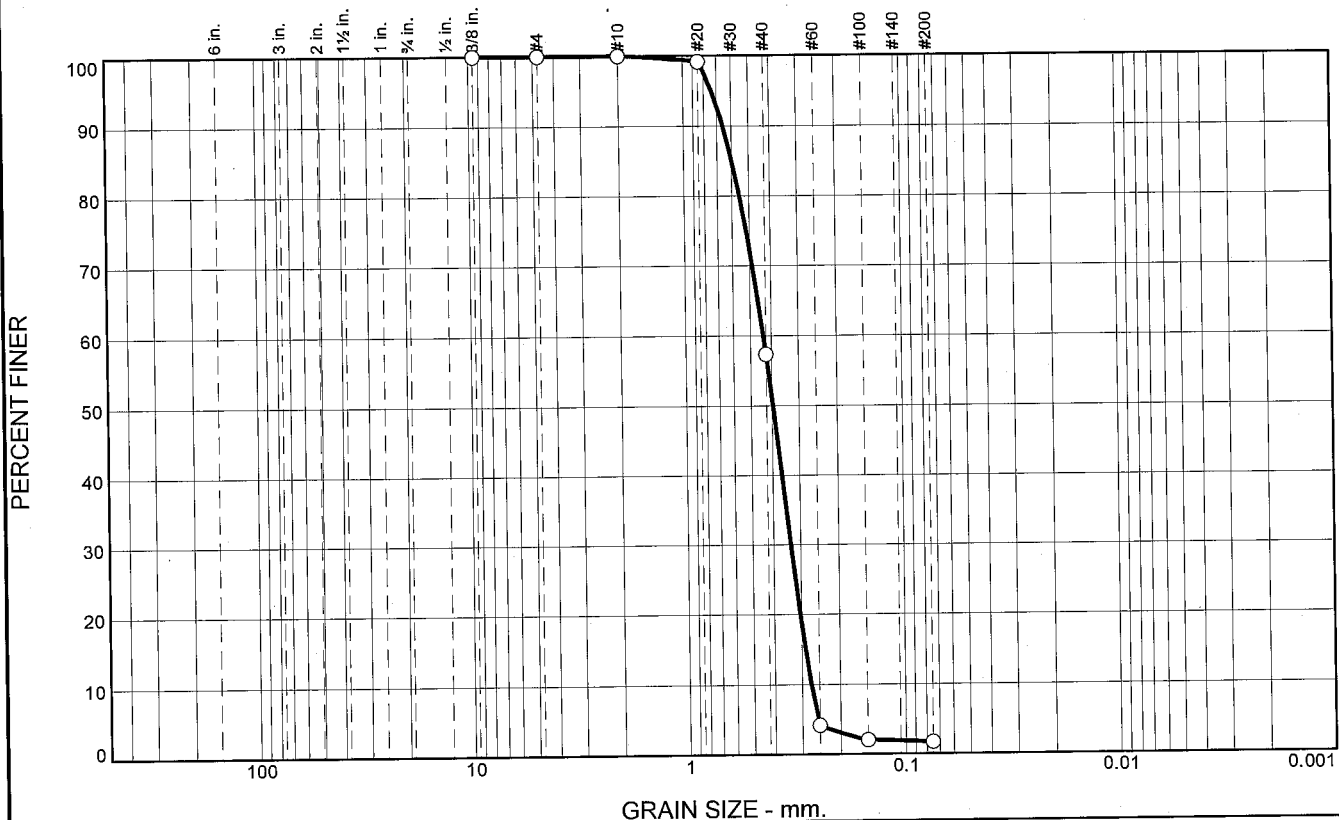
Project No: 10-2123-0009

Figure

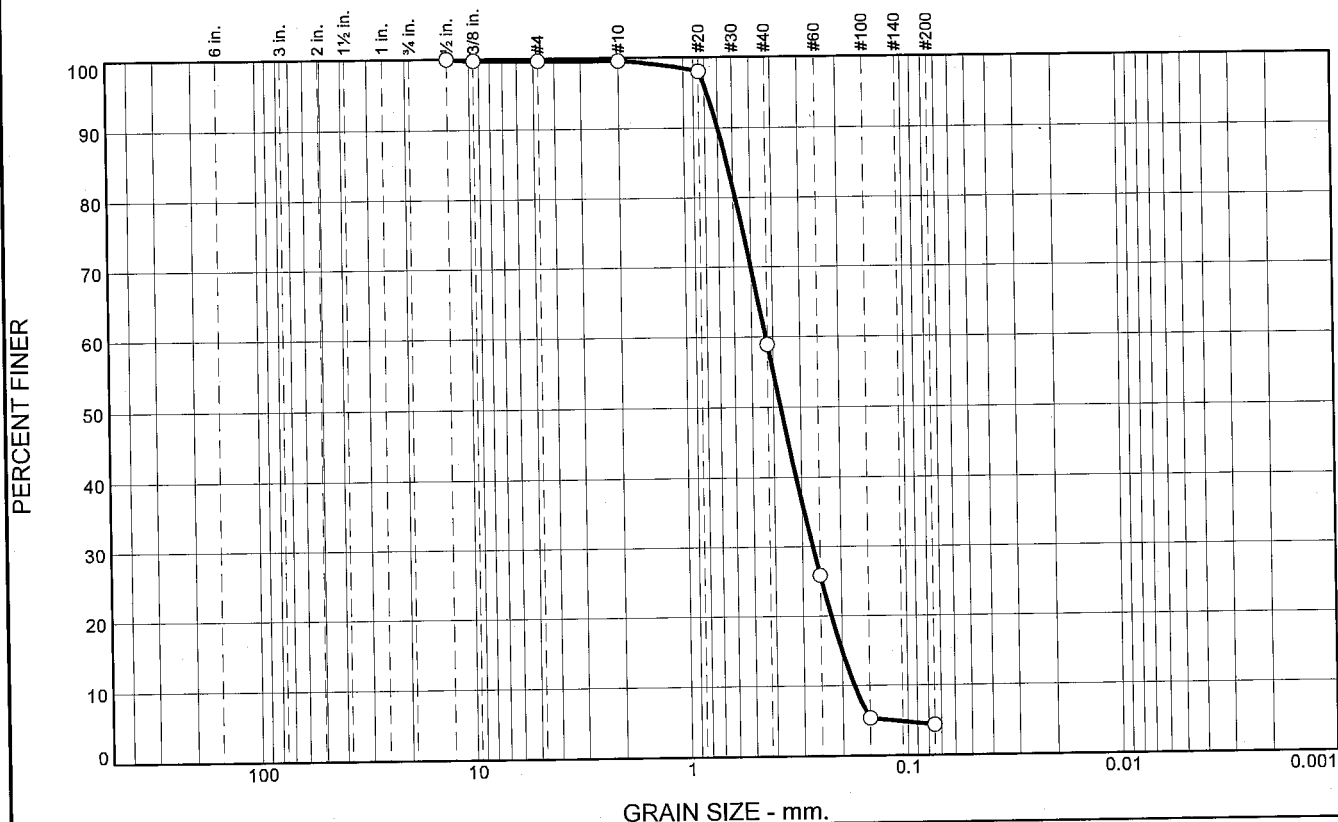
Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.4	0.0	40.7	54.6	4.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.500	100.0		
.375	99.7		
#4	99.6		
#10	99.6		
#20	98.0		
#40	58.9		
#60	25.9		
#100	5.3		
#200	4.3		

* (no specification provided)

Material Description
SAND, (SP), medium to fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.6990 D₈₅= 0.6366 D₆₀= 0.4319
D₅₀= 0.3718 D₃₀= 0.2692 D₁₅= 0.2006
D₁₀= 0.1767 C_u= 2.44 C_c= 0.95

Classification
USCS= SP AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-PB-8-10C
Sample Number: TE Lab ID: 4569.18

Depth: 12.0 - 16.9 (ft.)

Date: 7/8/10

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

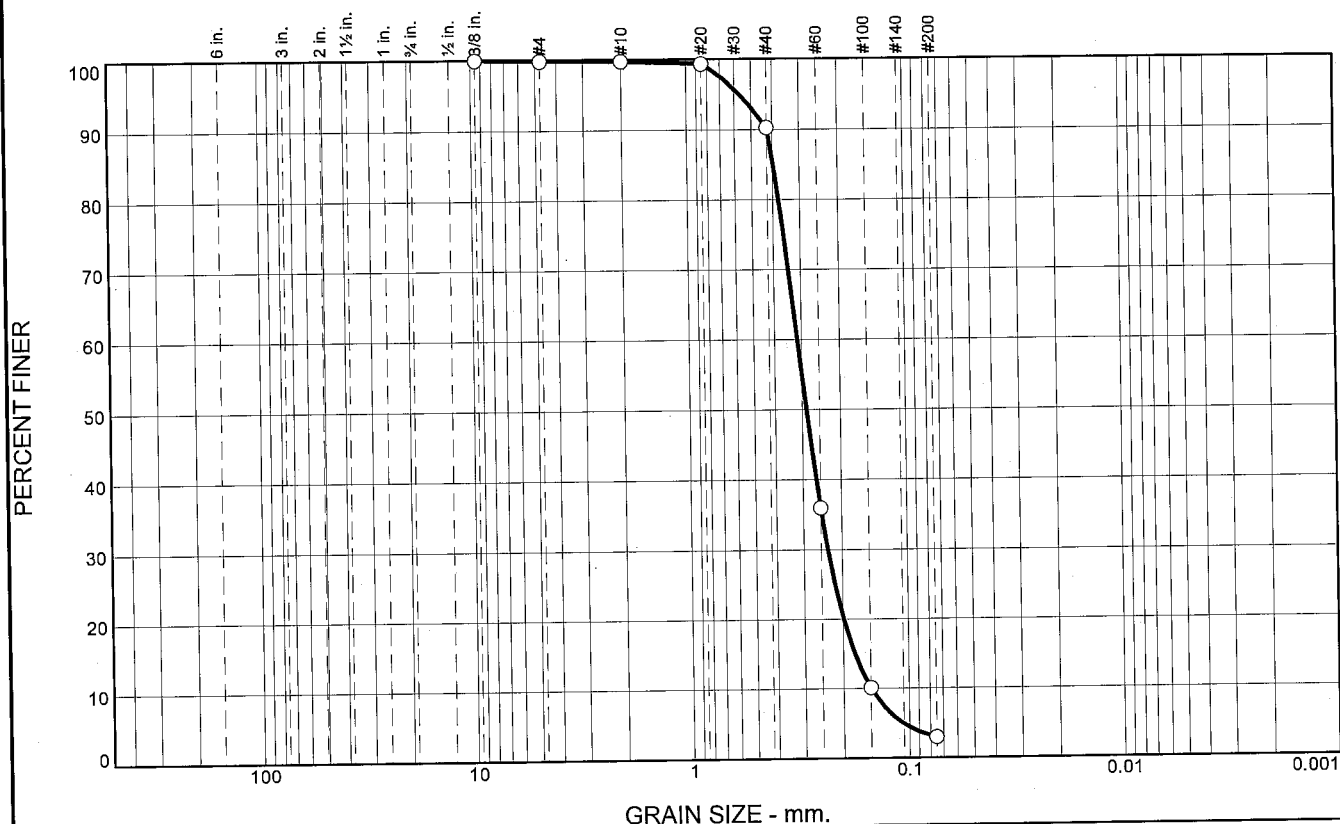
Tested By: R.Martin

Checked By: R.Byrd

Boring Designation BI-PB-009-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-009-10		LOCATION COORDINATES E = 1,144,039 N = 255,649		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		14. WATER DEPTH 23 Ft.	
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-26-10		STARTED 06-26-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -21.5 Ft.		COMPLETED 06-26-10	
8. TOTAL DEPTH OF BORING 15.2 Ft.				17. TOTAL RECOVERY FOR BORING 100%		18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist	
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-21.5	0.0						
			SAND, poorly-graded, mostly medium-grained sand-sized quartz, trace silt, lt. gray (SP)	A	Classification: SP Color: 2.5Y 7/2-light gray D50: 0.2871 mm % Fines: 3		
-28.2	6.7						
-29.1	7.6		CLAY, lean, dark gray (CL)	NS			
			SAND, poorly-graded, mostly medium-grained sand-sized quartz, trace silt, trace shell fragments, lt. gray (SP)	B	Classification: SP Color: 2.5Y 7/2-light gray D50: 0.3432 mm % Fines: 2.5		
				C	Classification: SP Color: 2.5Y 7/2-light gray D50: 0.3513 mm % Fines: 2.4		
-36.7	15.2						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.1	9.4	87.3	3.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.8		
#10	99.7		
#20	99.3		
#40	90.3		
#60	35.9		
#100	10.2		
#200	3.0		

* (no specification provided)

Material Description

SAND, (SP), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.4235

D₈₅= 0.3980

D₆₀= 0.3138

D₅₀= 0.2871

D₃₀= 0.2328

D₁₅= 0.1769

D₁₀= 0.1490

C_u= 2.11

C_c= 1.16

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10965

Location: USACE Sample # BI-PB-9-10A
Sample Number: TE Lab ID: 4569.19

Depth: 0.0 - 6.7 (ft.)

Date: 7/8/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

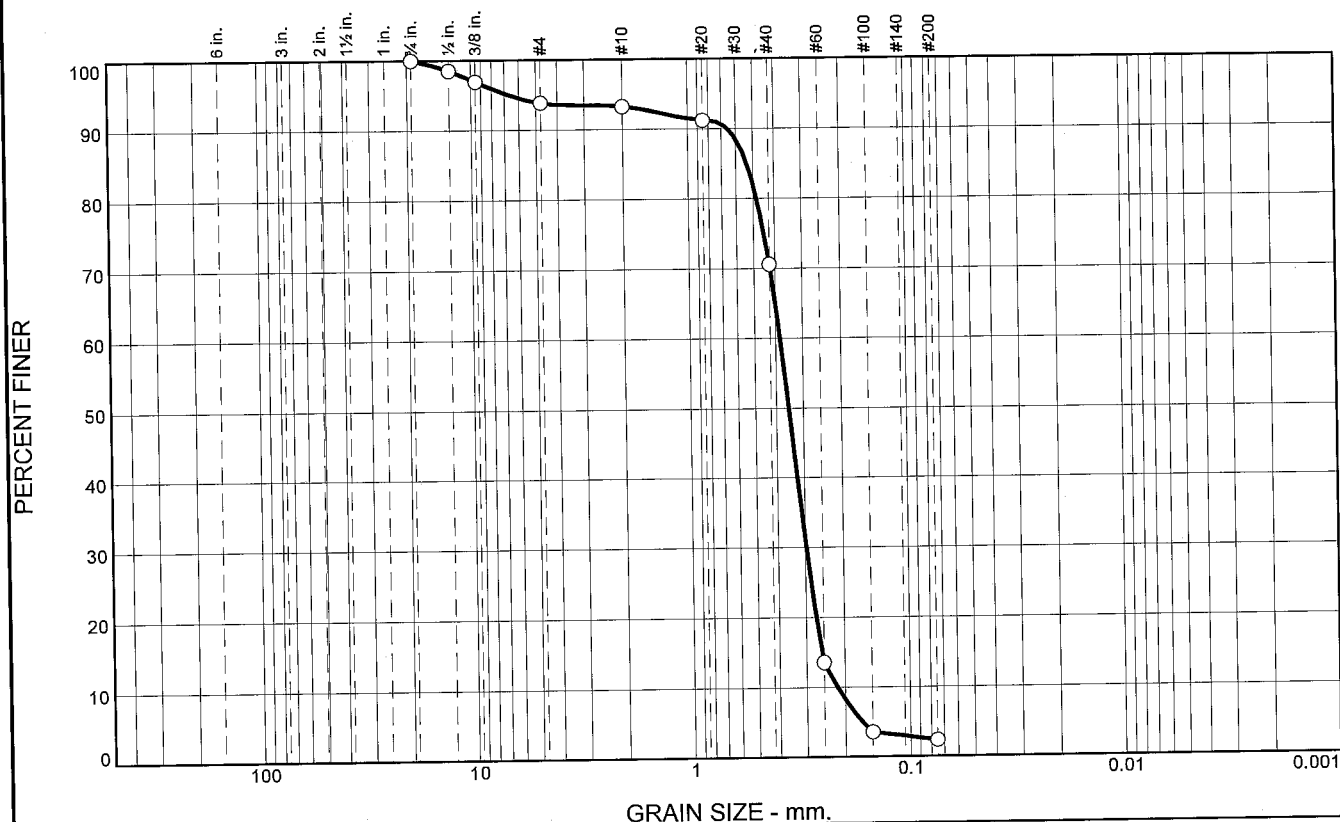
Project No: 10-2123-0009

Figure

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	6.1	0.6	22.7	68.2	2.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.750	100.0		
.500	98.5		
.375	97.0		
#4	93.9		
#10	93.3		
#20	91.2		
#40	70.6		
#60	13.6		
#100	3.6		
#200	2.4		

* (no specification provided)

Material Description
SAND, (SP), fine grained, with trace shell

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.6529 D₈₅= 0.5341 D₆₀= 0.3828
D₅₀= 0.3513 D₃₀= 0.2968 D₁₅= 0.2547
D₁₀= 0.2167 C_u= 1.77 C_c= 1.06

Classification
USCS= SP AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-PB-9-10C
Sample Number: TE Lab ID: 4569.21

Depth: 12.6 - 15.2 (ft.)

Date: 7/8/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Figure

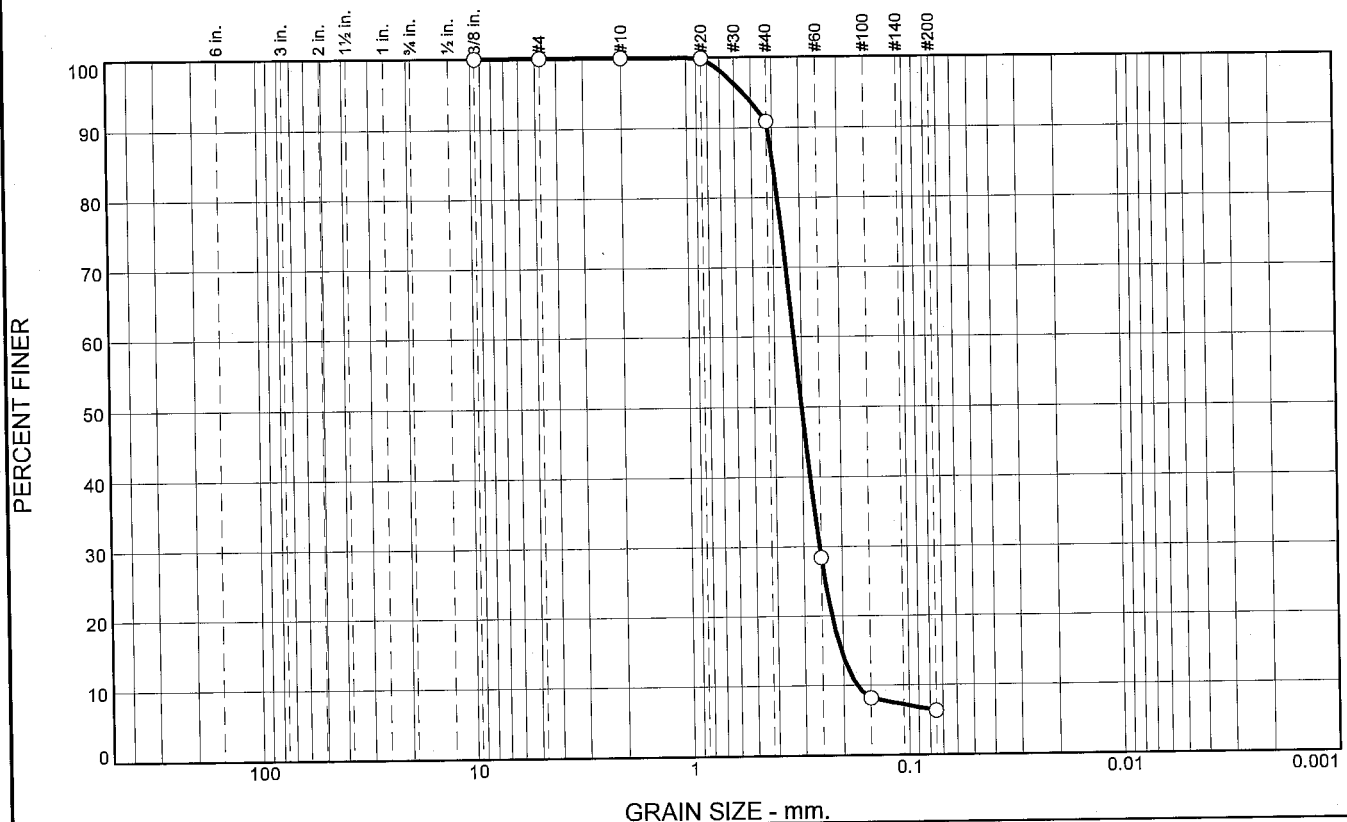
Tested By: R.Martin

Checked By: R.Byrd

Boring Designation BI-PB-010-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-010-10		LOCATION COORDINATES E = 1,131,666 N = 253,687		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 27 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-26-10		STARTED 06-26-10 COMPLETED 06-26-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -25.4 Ft.			
8. TOTAL DEPTH OF BORING 14.6 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-25.4	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, trace shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 6/2-light brownish gray D50: 0.2788 mm % Fines: 4.9		
				B	Classification: SP-SM Color: 2.5Y 6/2-light brownish gray D50: 0.3014 mm % Fines: 6.3		
-32.4	7.0						
			CLAY, lean, dark gray (CL)				
-35.3	9.9						
			SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt (SM)	NS			
-37.0	11.6						
			CLAY, lean, dark gray (CL)				
-40.0	14.6						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	9.1	84.6	6.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	90.9		
#60	28.4		
#100	8.1		
#200	6.3		

* (no specification provided)

Material Description

SAND, (SP-SM), fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.4207 D₈₅= 0.3993 D₆₀= 0.3253
D₅₀= 0.3014 D₃₀= 0.2541 D₁₅= 0.2045
D₁₀= 0.1731 C_u= 1.88 C_c= 1.15

Classification

USCS= SP-SM AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-10-10B
Sample Number: TE Lab ID: 4569.23

Depth: 3.5 - 7.0 (ft.)

Date: 7/8/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Figure

Tested By: R.Martin

Checked By: R.Byrd

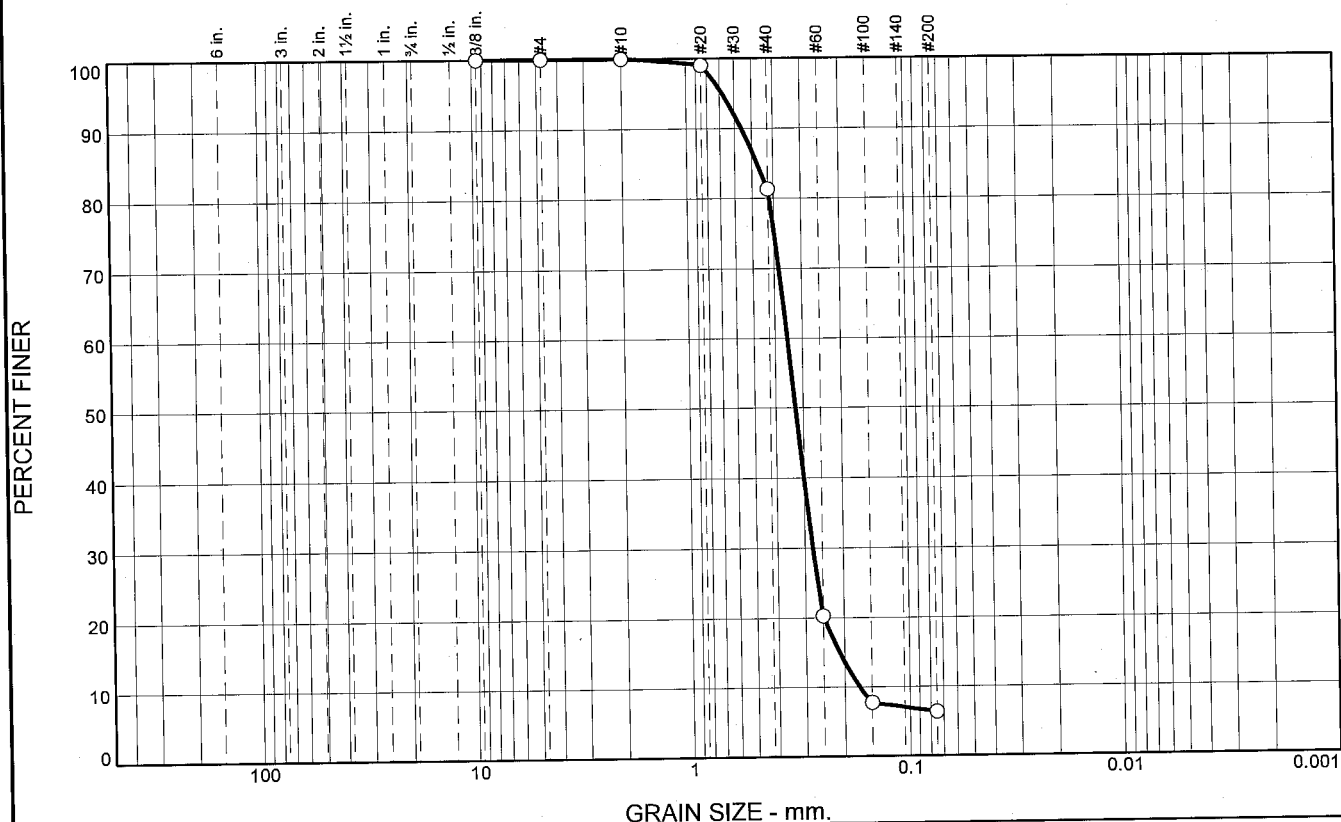
Boring Designation BI-PB-011-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-011-10		LOCATION COORDINATES E = 1,140,842 N = 251,922		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 0		DISTURBED 0 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 37 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-26-10		STARTED 06-26-10 COMPLETED 06-26-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -35.5 Ft.			
8. TOTAL DEPTH OF BORING 18.3 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-35.5	0.0						
-36.1	0.6						
			SAND, poorly-graded, mostly medium-grained sand-sized quartz, trace silt, lt. gray (SP) CLAY, lean, dark gray (CL)				
				NS			
-45.5	10.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, trace shell fragments, lt. gray (SP)				
-53.8	18.3						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Boring Designation BI-PB-012-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-012-10		LOCATION COORDINATES E = 1,147,712 N = 254,556		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 35 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-25-10		STARTED 06-25-10 COMPLETED 06-25-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -34.1 Ft.			
8. TOTAL DEPTH OF BORING 18.4 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-34.1	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, lt. gray (SP)	A	Classification: SP-SM Color: 2.5Y 7/2-light gray D50: 0.3257 mm % Fines: 6.3		
				B	Classification: SP Color: 2.5Y 8/1-white D50: 0.3292 mm % Fines: 4.3		
				C	Classification: SP Color: 2.5Y 8/1-white D50: 0.3286 mm % Fines: 2		
-52.5	18.4						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	18.7	75.0	6.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.0		
#40	81.3		
#60	20.3		
#100	7.7		
#200	6.3		

* (no specification provided)

Material Description
SAND, (SP-SM), medium to fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
 D₉₀= 0.5565 D₈₅= 0.4724 D₆₀= 0.3520
 D₅₀= 0.3257 D₃₀= 0.2764 D₁₅= 0.2106
 D₁₀= 0.1709 C_u= 2.06 C_c= 1.27

Classification
USCS= SP-SM AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-PB-12-10A
Sample Number: TE Lab ID: 4569.24

Depth: 0.0 - 6.0 (ft.)

Date: 7/8/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

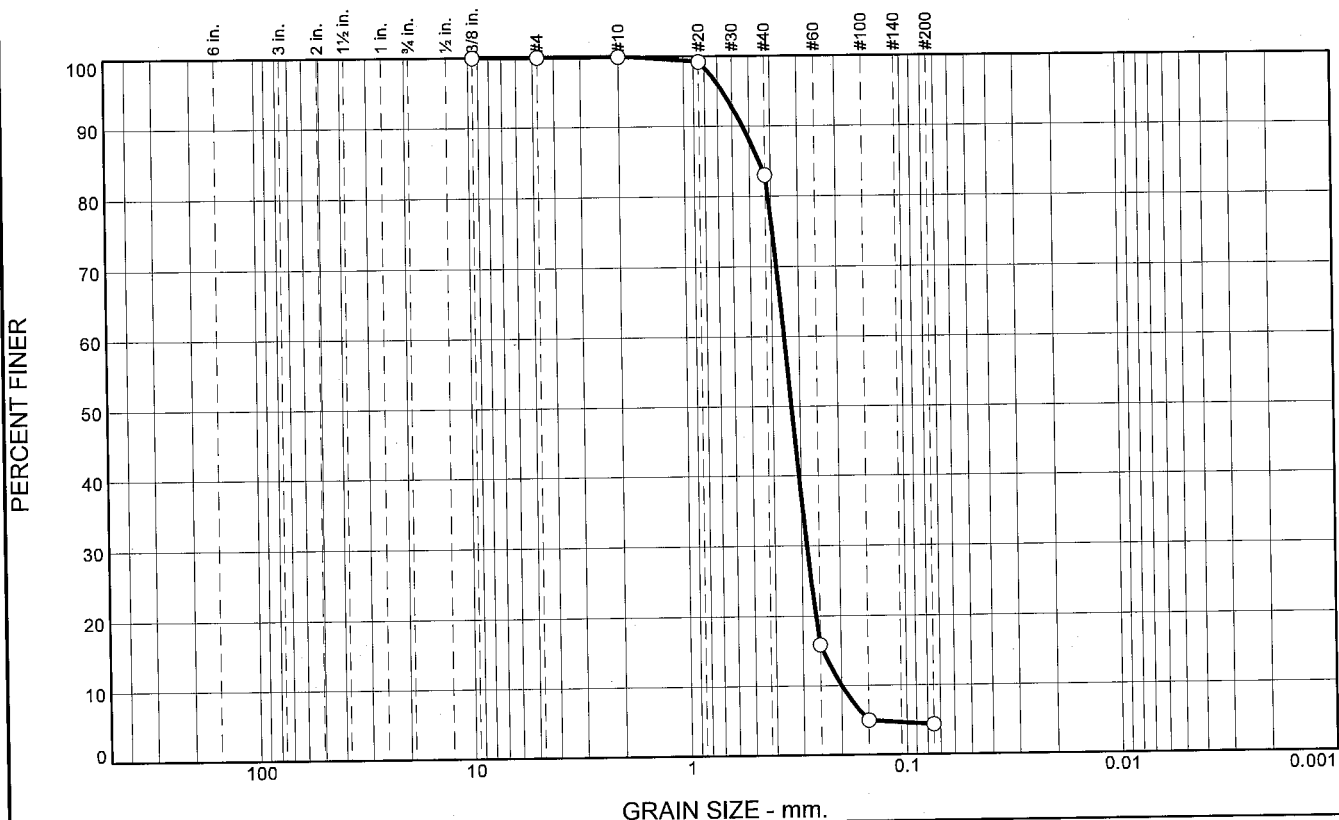
Project No: 10-2123-0009

Figure

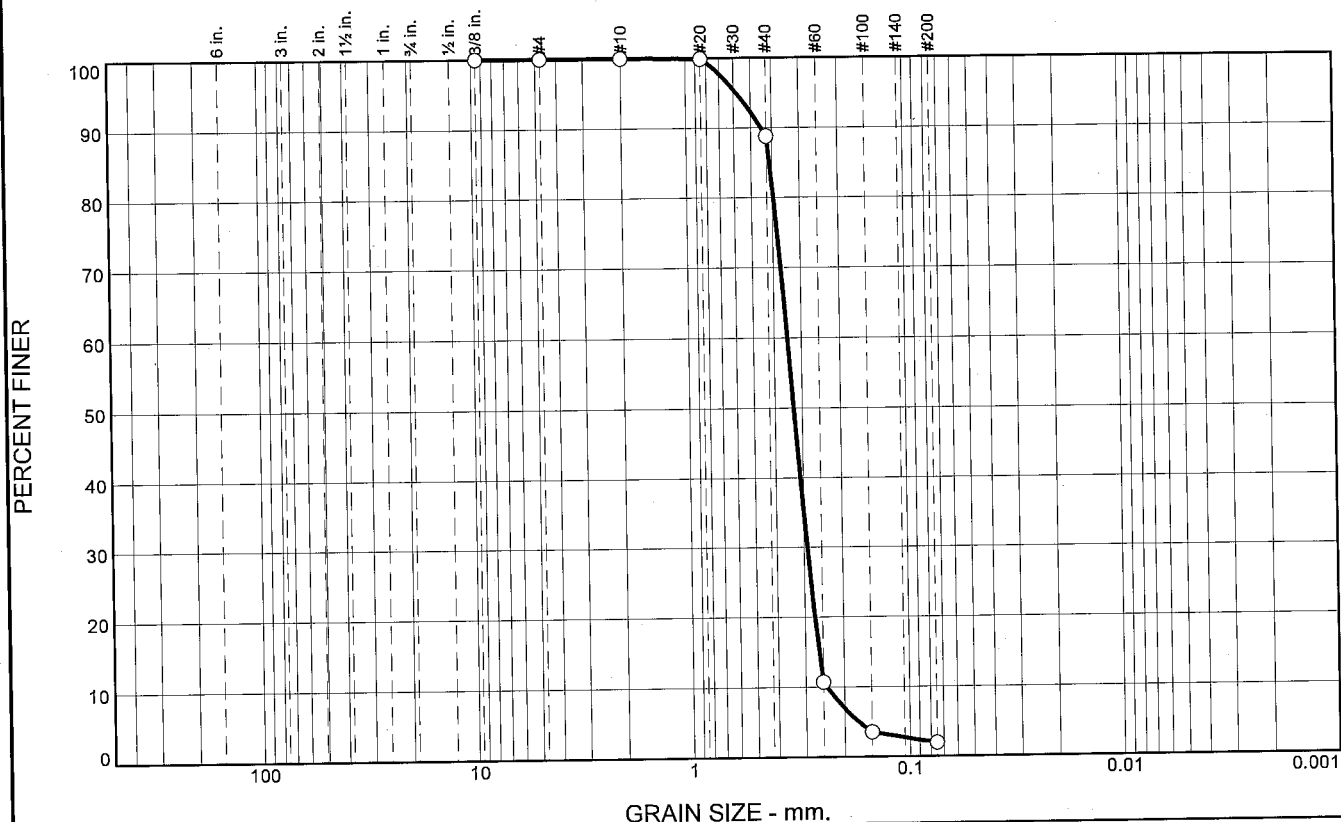
Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



Particle Size Distribution Report



% +3"	% Gravel		% Sand		% Fines	
	Coarse	Fine	Coarse	Fine	Silt	Clay
0.0	0.0	0.0	0.0	11.2	86.8	2.0

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	88.8		
#60	10.7		
#100	3.5		
#200	2.0		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.4483

D₈₅= 0.4117

D₆₀= 0.3487

D₅₀= 0.3286

D₃₀= 0.2907

D₁₅= 0.2603

D₁₀= 0.2403

C_u= 1.45

C_c= 1.01

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-12-10C
Sample Number: TE Lab ID: 4569.26

Depth: 12.0 - 18.3 (ft.)

Date: 7/8/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Figure


Tested By: R.Martin

Checked By: R.Byrd

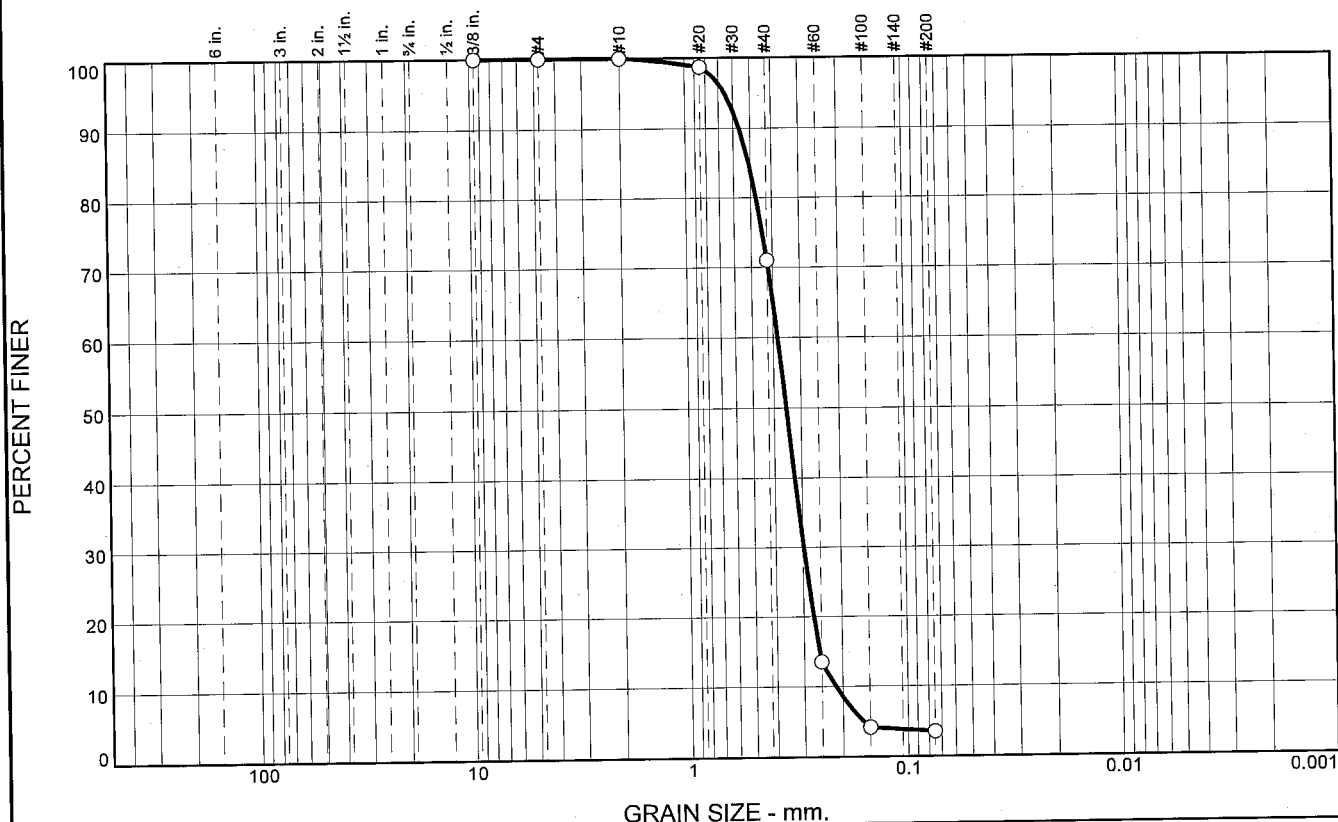
Boring Designation BI-PB-013-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-013-10		LOCATION COORDINATES E = 1,140,818 N = 250,234		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES		UNDISTURBED (UD) 0	
6. THICKNESS OF OVERBURDEN N/A		BEARING		14. WATER DEPTH 40 Ft.		15. DATE BORING STARTED 06-26-10 COMPLETED 06-26-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -38.4 Ft.		17. TOTAL RECOVERY FOR BORING 100%	
8. TOTAL DEPTH OF BORING 18.2 Ft.				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-38.4	0.0		CLAY, lean, dark gray (CL)	NS			
-48.8	10.4		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, lt. gray (SP)				
-56.6	18.2						
NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.							

Boring Designation BI-PB-014-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-014-10		LOCATION COORDINATES E = 1,149,377 N = 253,637		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 38 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-26-10		STARTED 06-26-10 COMPLETED 06-26-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -36.6 Ft.			
8. TOTAL DEPTH OF BORING 17.4 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-36.6	0.0						
			SAND, poorly-graded, mostly medium-grained sand-sized quartz, trace silt, trace shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 7/2-light gray D50: 0.3521 mm % Fines: 3.5		
				B	Classification: SP Color: 2.5Y 8/1-white D50: 0.371 mm % Fines: 2.7		
				C	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.3535 mm % Fines: 4.6		
-54.0	17.4						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	29.0	67.5	3.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	98.7		
#40	71.0		
#60	13.5		
#100	4.2		
#200	3.5		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.5625

D₈₅= 0.5098

D₆₀= 0.3831

D₅₀= 0.3521

D₃₀= 0.2977

D₁₅= 0.2550

D₁₀= 0.2150

C_u= 1.78

C_c= 1.08

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-14-10A
Sample Number: TE Lab ID: 4569.27

Depth: 0.0 - 6.0 (ft.)

Date: 7/8/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

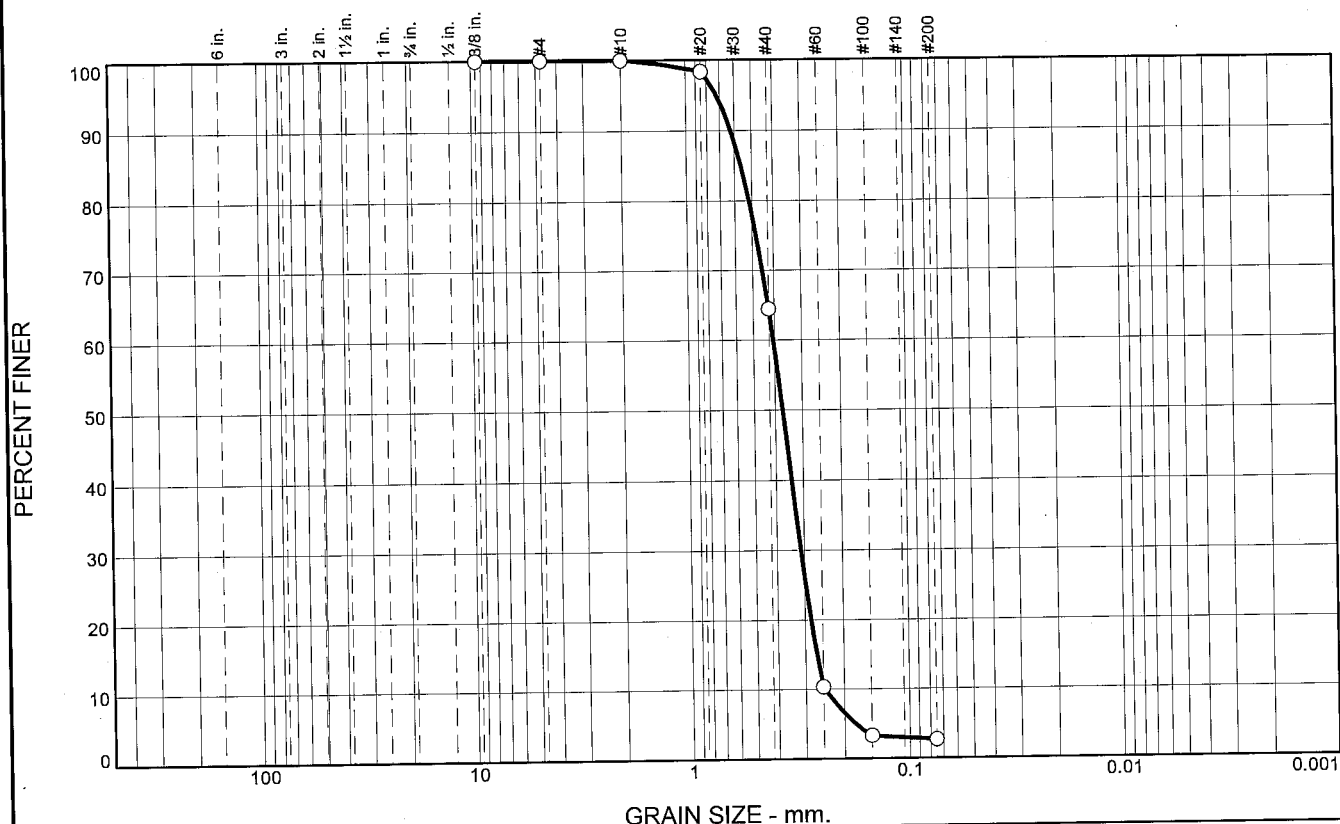
Project No: 10-2123-0009

Figure

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	35.5	61.8	2.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	98.3		
#40	64.5		
#60	10.3		
#100	3.3		
#200	2.7		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.6226

D₈₅= 0.5601

D₆₀= 0.4064

D₅₀= 0.3710

D₃₀= 0.3110

D₁₅= 0.2665

D₁₀= 0.2455

C_u= 1.66

C_c= 0.97

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-14-10B
Sample Number: TE Lab ID: 4569.28

Depth: 6.0 - 12.0 (ft.)

Date: 7/8/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

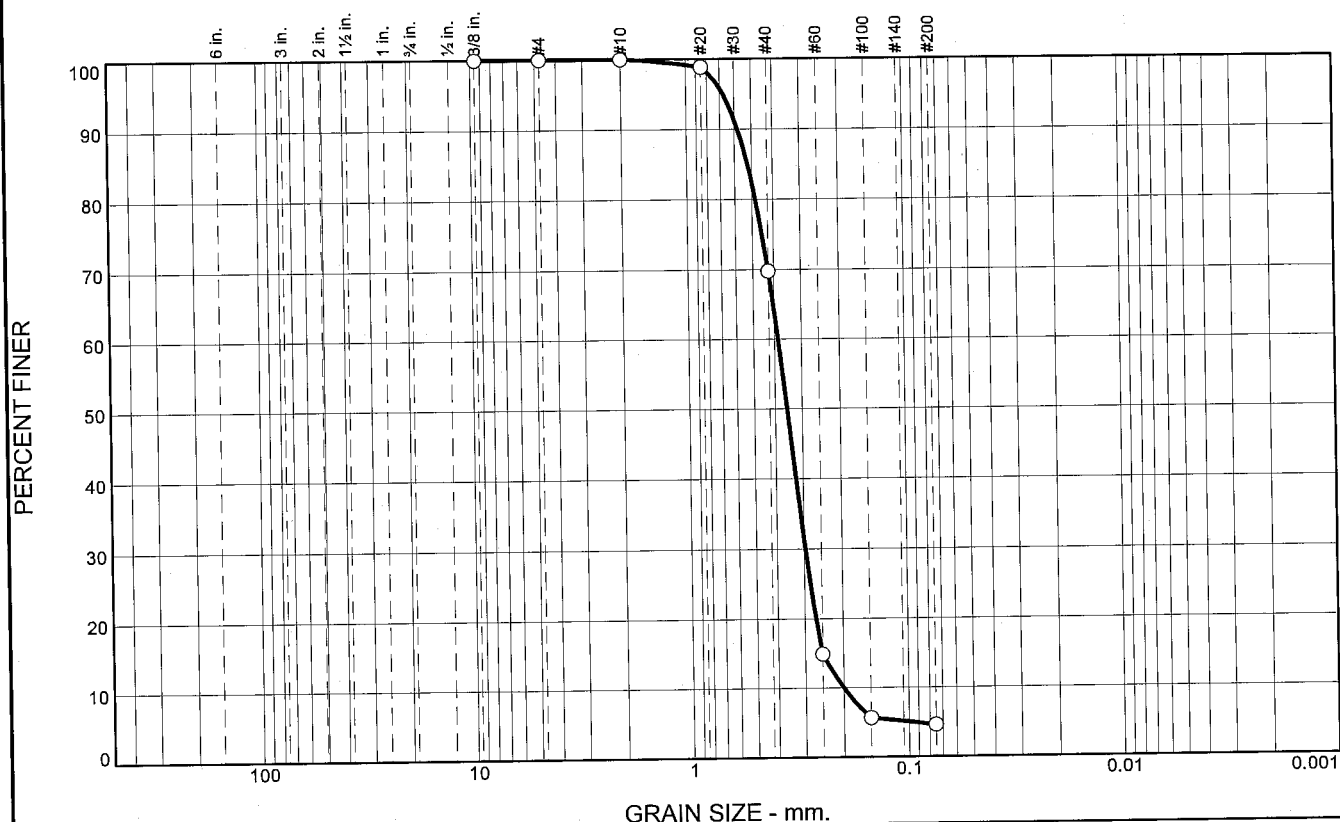
Project No: 10-2123-0009

Figure

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	30.2	65.2	4.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	98.8		
#40	69.8		
#60	14.9		
#100	5.7		
#200	4.6		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.5779 D₈₅= 0.5217 D₆₀= 0.3862
D₅₀= 0.3535 D₃₀= 0.2963 D₁₅= 0.2505
D₁₀= 0.2002 C_u= 1.93 C_c= 1.14

Classification

USCS= SP AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-14-10C
Sample Number: TE Lab ID: 4569.29

Depth: 12.0 - 17.4 (ft.)

Date: 7/8/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Figure

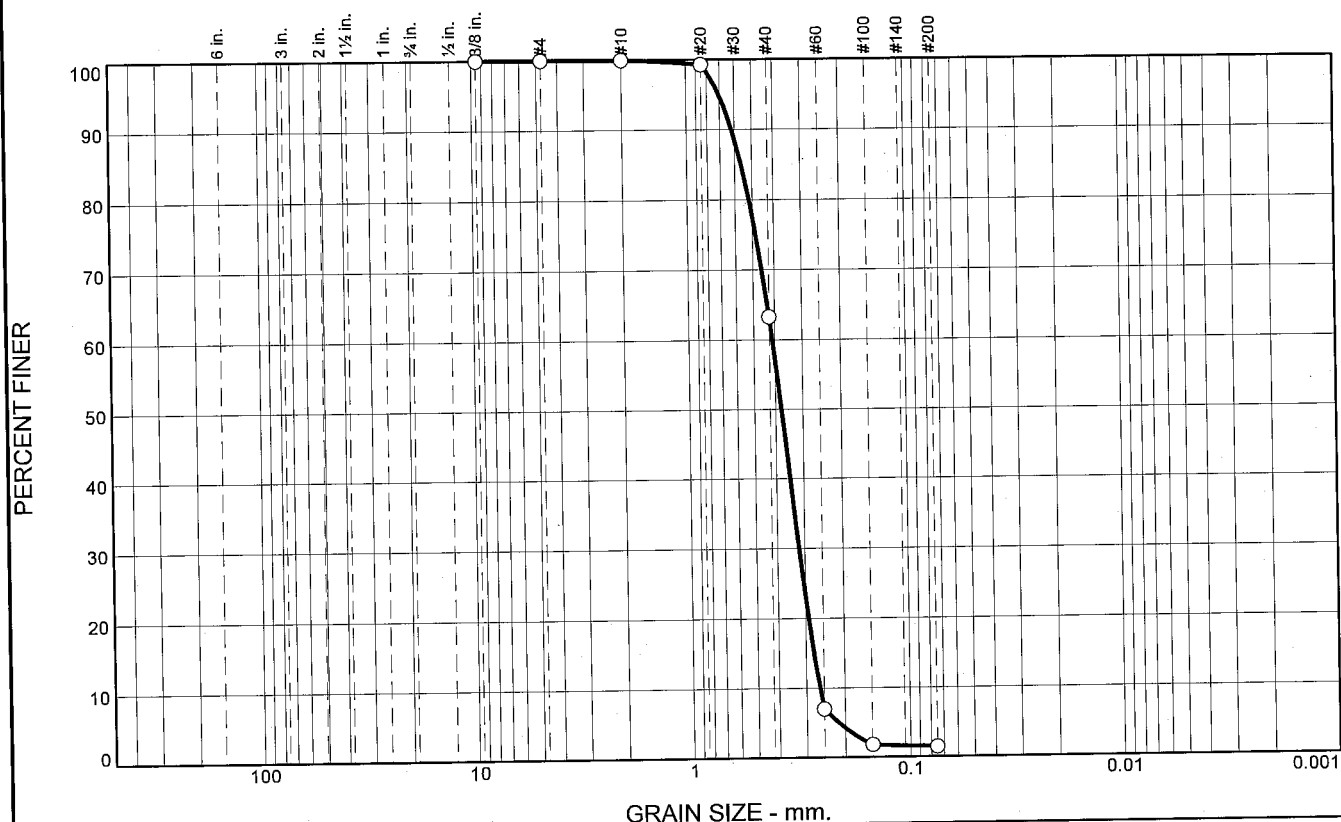
Tested By: R.Martin

Checked By: R.Byrd

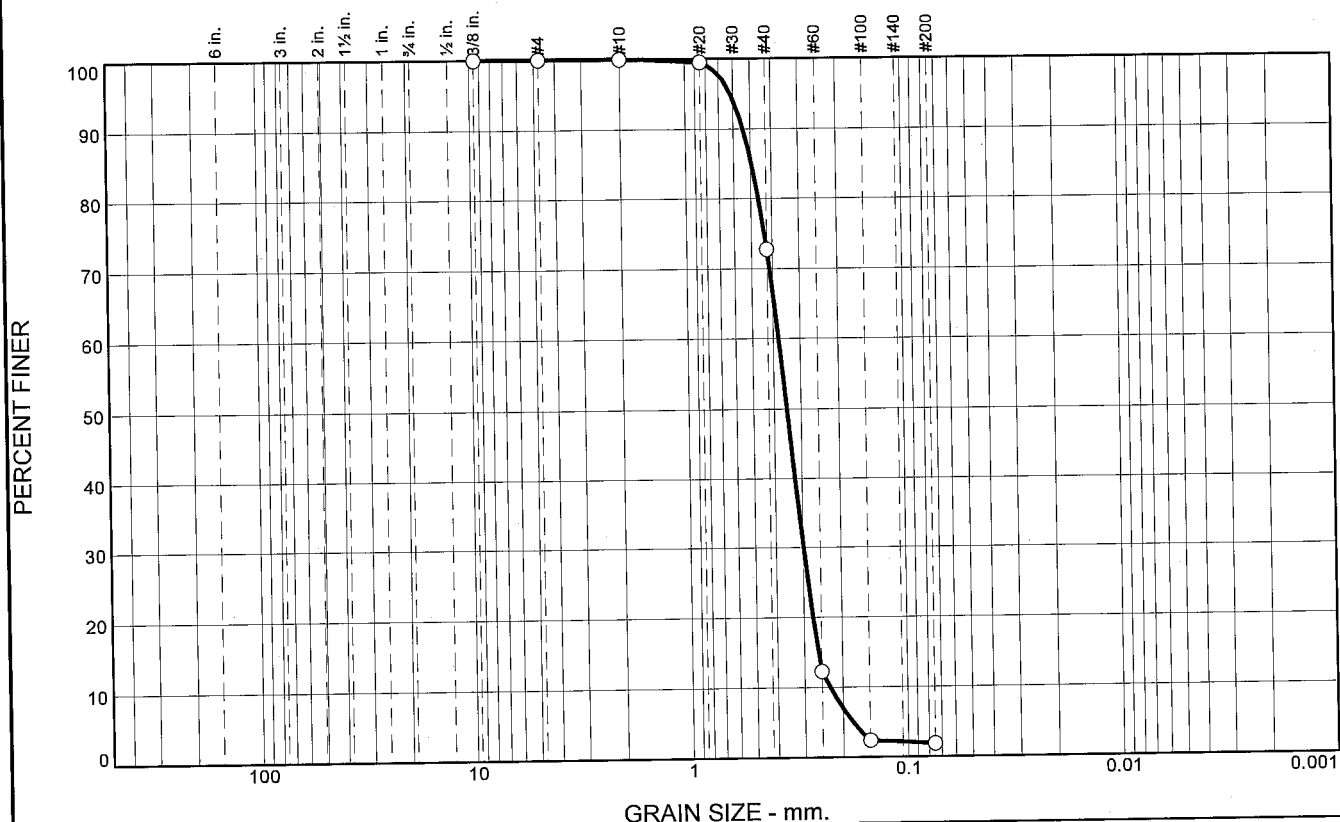
Boring Designation BI-PB-015-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-015-10		LOCATION COORDINATES E = 1,152,285 N = 252,108		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		14. WATER DEPTH 42 Ft.	
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-26-10		STARTED 06-26-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -40.7 Ft.		COMPLETED 06-26-10	
8. TOTAL DEPTH OF BORING 19.1 Ft.				17. TOTAL RECOVERY FOR BORING 100%		18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist	
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-40.7	0.0		CLAY, lean, dark gray (CL)	NS			
-45.4	4.7		SAND, poorly-graded, mostly medium-grained sand-sized quartz, trace silt, lt. gray (SP)	A	Classification: SP Color: 2.5Y 8/1-white D50: 0.3772 mm % Fines: 1.5		
-52.8	12.1		SAND, poorly-graded, mostly medium-grained sand-sized quartz, trace silt, lt. gray (SP)	B	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.35 mm % Fines: 1.9		
-55.5	14.8		CLAY, lean, dark gray (CL)	NS			
-59.8	19.1		SAND, silty, mostly medium-grained sand-sized quartz, some silt, gray (SM)	NS			
NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.							

Particle Size Distribution Report



Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	27.3	70.8	1.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.5		
#40	72.7		
#60	12.3		
#100	2.4		
#200	1.9		

* (no specification provided)

Material Description

SAND, (SP), fine grained, with trace clay pockets

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.5398 D₈₅= 0.4941 D₆₀= 0.3791
D₅₀= 0.3500 D₃₀= 0.2984 D₁₅= 0.2585
D₁₀= 0.2288 C_u= 1.66 C_c= 1.03

Classification

USCS= SP AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-15-10B
Sample Number: TE Lab ID: 4569.31

Depth: 9.0 - 12.1 (ft.)

Date: 7/8/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Figure

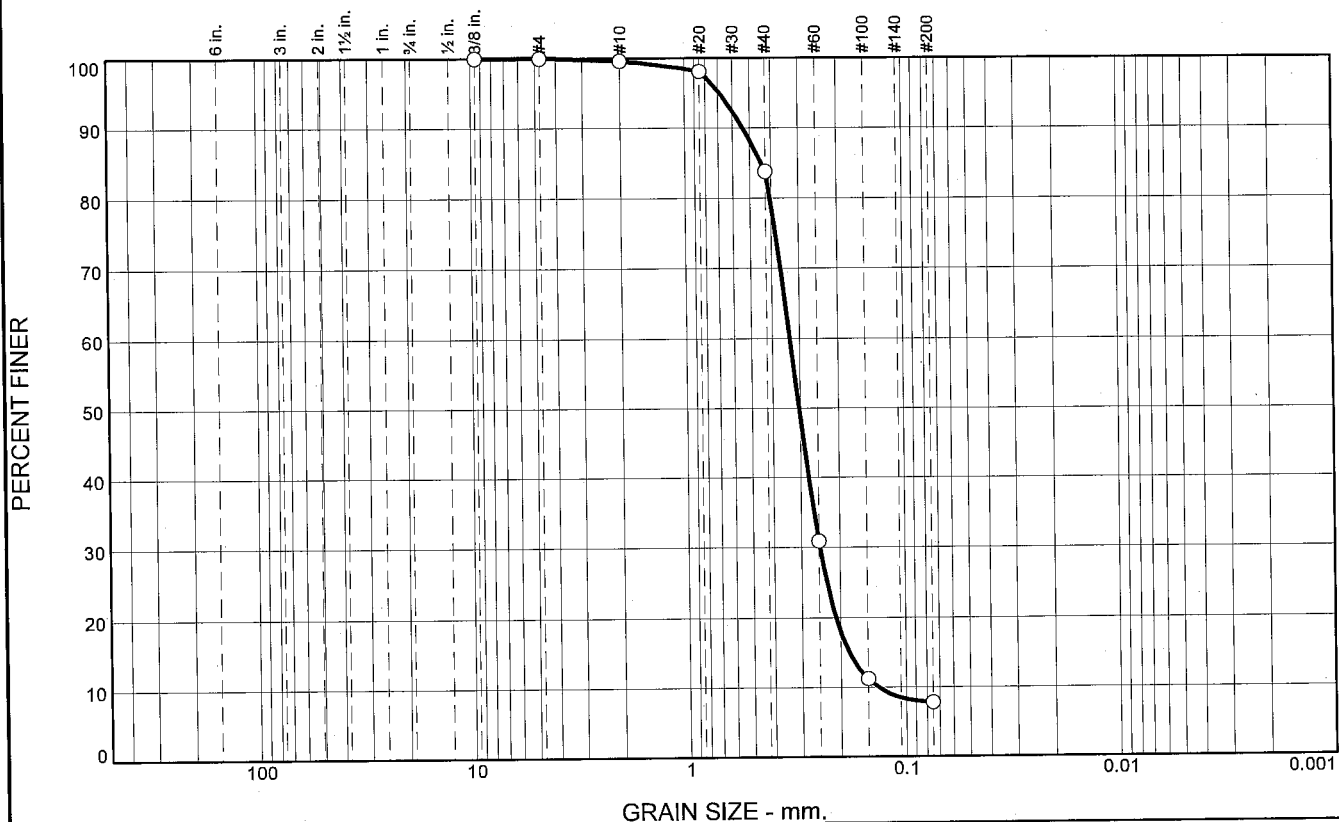
Tested By: R.Martin

Checked By: R.Byrd

Boring Designation BI-PB-016-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-016-10		LOCATION COORDINATES E = 1,150,827 N = 255,753		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 4		DISTURBED 0 UNDISTURBED (UD)	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 34 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-26-10		STARTED 06-26-10 COMPLETED 06-26-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -32.6 Ft.			
8. TOTAL DEPTH OF BORING 20.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-32.6	0.0						
-35.1	2.5		SAND, silty, mostly medium-grained sand-sized quartz, some silt, brown (SM)	A	Classification: SP-SM Color: 2.5Y 6/2-light brownish gray D50: 0.304 mm % Fines: 7.8		
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace clay, white (SP)	B	Classification: SP-SM Color: 2.5Y 7/2-light gray D50: 0.3312 mm % Fines: 6.8		
				C	Classification: SP-SM Color: 2.5Y 7/2-light gray D50: 0.3364 mm % Fines: 5.1		
-47.6	15.0						
			SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, brown (SM)	D	Classification: SP-SM Color: 2.5Y 6/2-light brownish gray D50: 0.3067 mm % Fines: 7.4		
-52.6	20.0						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.4	15.8	76.0	7.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.6		
#20	98.1		
#40	83.8		
#60	30.9		
#100	11.3		
#200	7.8		

* (no specification provided)

Material Description
SAND, (SP-SM), medium to fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.5387 D₈₅= 0.4434 D₆₀= 0.3329
 D₅₀= 0.3040 D₃₀= 0.2472 D₁₅= 0.1830
 D₁₀= 0.1339 C_u= 2.49 C_c= 1.37

Classification
 USCS= SP-SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-PB-16-10A
 Sample Number: TE Lab ID: 4569.32

Depth: 0.0 - 2.5 (ft.)

Date: 7/8/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project

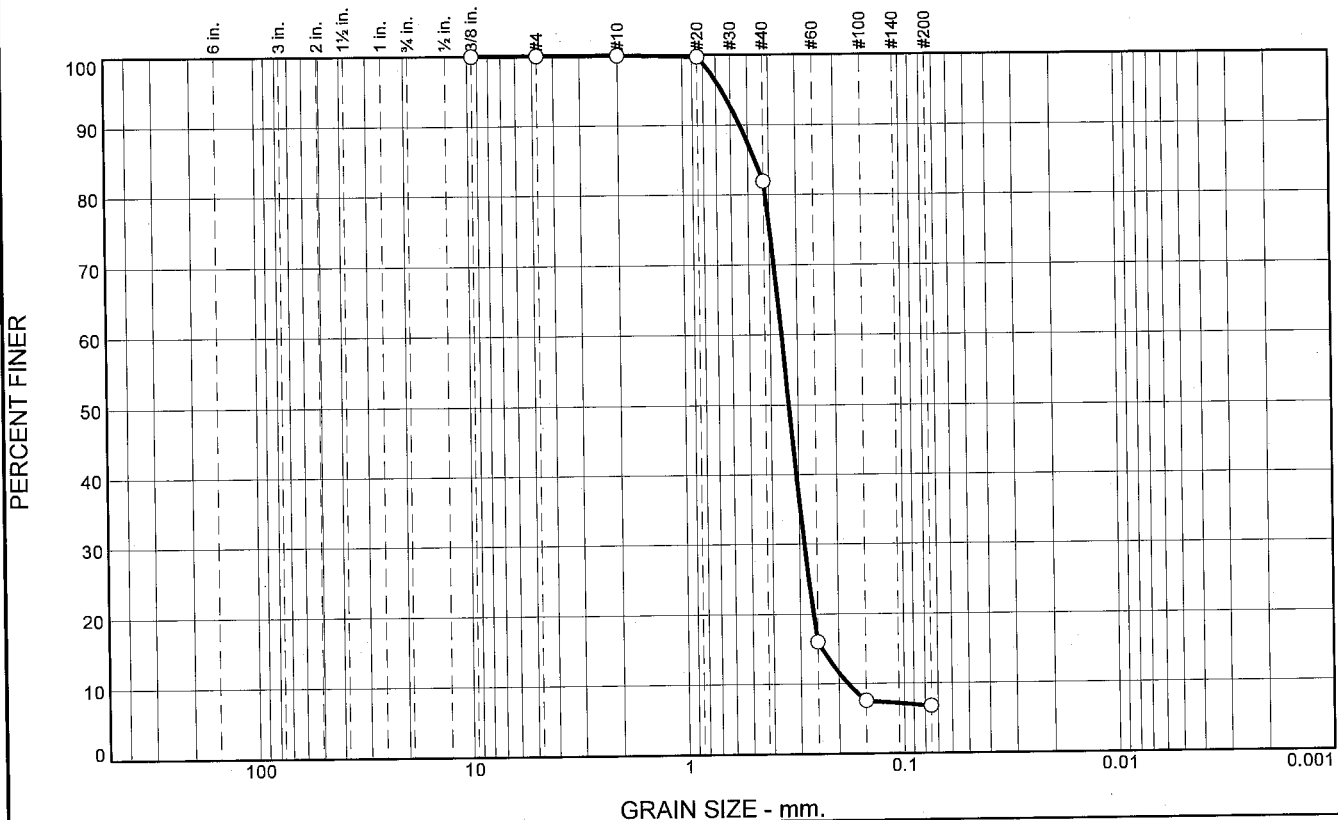
Project No: 10-2123-0009

Figure

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	18.1	75.1	6.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.7		
#40	81.9		
#60	16.0		
#100	7.6		
#200	6.8		

* (no specification provided)

<u>Material Description</u>		
SAND, (SP-SM), medium to fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.5426	D ₈₅ = 0.4633	D ₆₀ = 0.3557
D ₅₀ = 0.3312	D ₃₀ = 0.2856	D ₁₅ = 0.2387
D ₁₀ = 0.1819	C _u = 1.96	C _c = 1.26
<u>Classification</u>		
USCS= SP-SM	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-PB-16-10B
Sample Number: TE Lab ID: 4569.33

Depth: 2.5 - 8.5 (ft.)

Date: 7/8/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

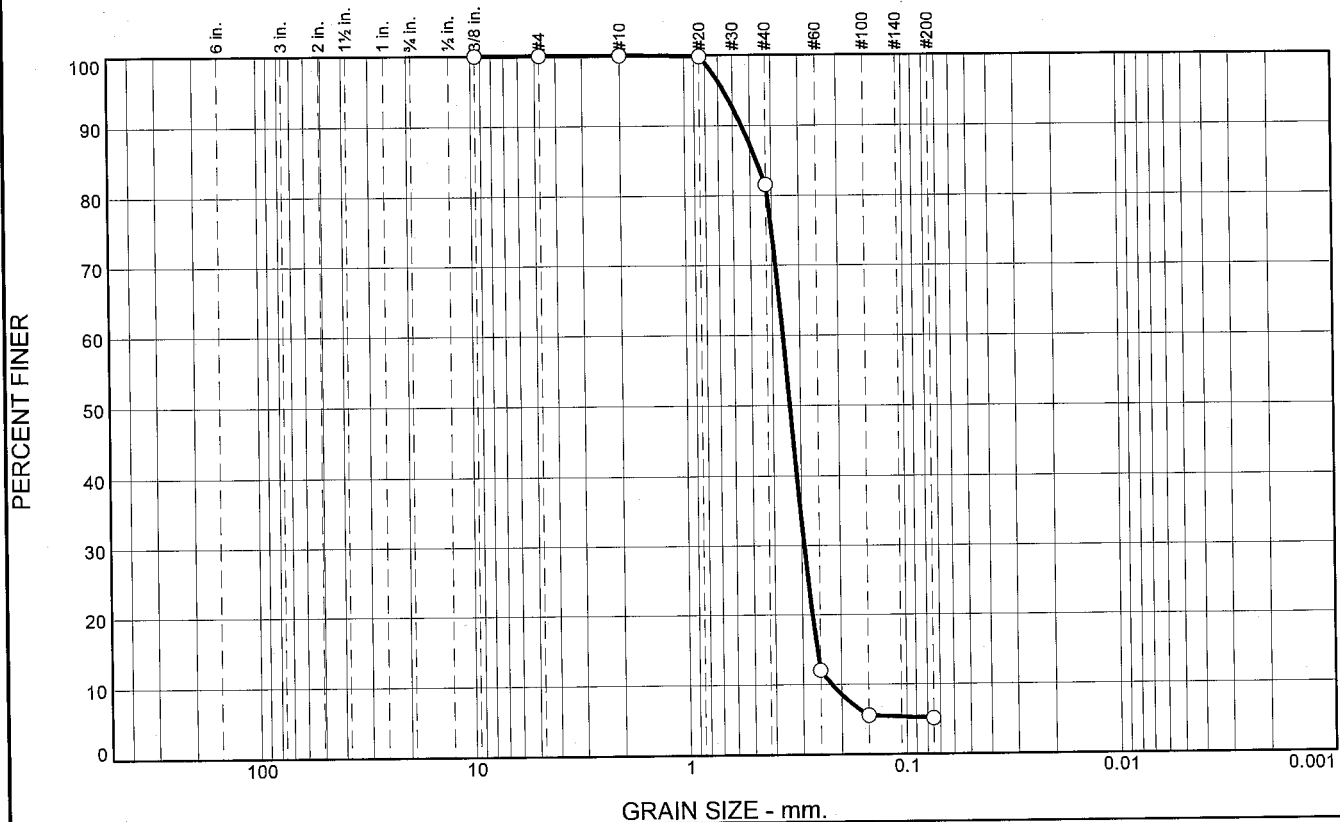
Project No: 10-2123-0009

Figure

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	18.4	76.5	5.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.8		
#40	81.6		
#60	12.0		
#100	5.6		
#200	5.1		

* (no specification provided)

<u>Material Description</u>		
SAND, (SP-SM), medium to fine grained, with trace clay nodules		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.5450	D ₈₅ = 0.4666	D ₆₀ = 0.3598
D ₅₀ = 0.3364	D ₃₀ = 0.2931	D ₁₅ = 0.2583
D ₁₀ = 0.2212	C _u = 1.63	C _c = 1.08
<u>Classification</u>		
USCS= SP-SM	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-PB-16-10C
Sample Number: TE Lab ID: 4569.34

Depth: 8.5 - 15.0 (ft.)

Date: 7/8/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

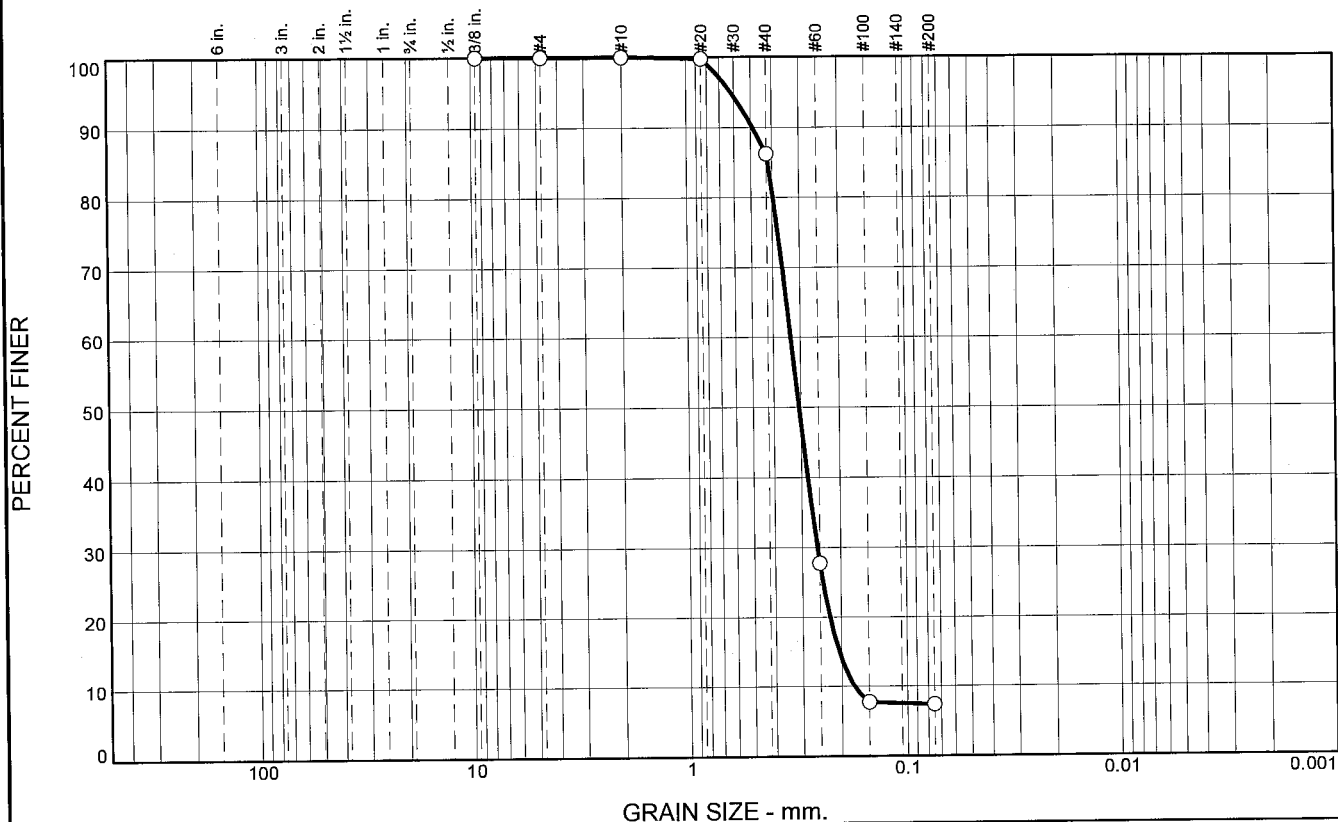
Project No: 10-2123-0009

Figure

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	13.7	78.9	7.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.7		
#40	86.3		
#60	27.8		
#100	7.7		
#200	7.4		

* (no specification provided)

<u>Material Description</u>		
SAND, (SP-SM), medium to fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.4898	D ₈₅ = 0.4186	D ₆₀ = 0.3329
D ₅₀ = 0.3067	D ₃₀ = 0.2561	D ₁₅ = 0.2052
D ₁₀ = 0.1753	C _u = 1.90	C _c = 1.12
<u>Classification</u>		
USCS= SP-SM	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-PB-16-10D
Sample Number: TE Lab ID: 4569.03

Depth: 15.0 - 20.0 (ft.)

Date: 7/8/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Figure

Tested By: R.Martin

Checked By: R.Byrd

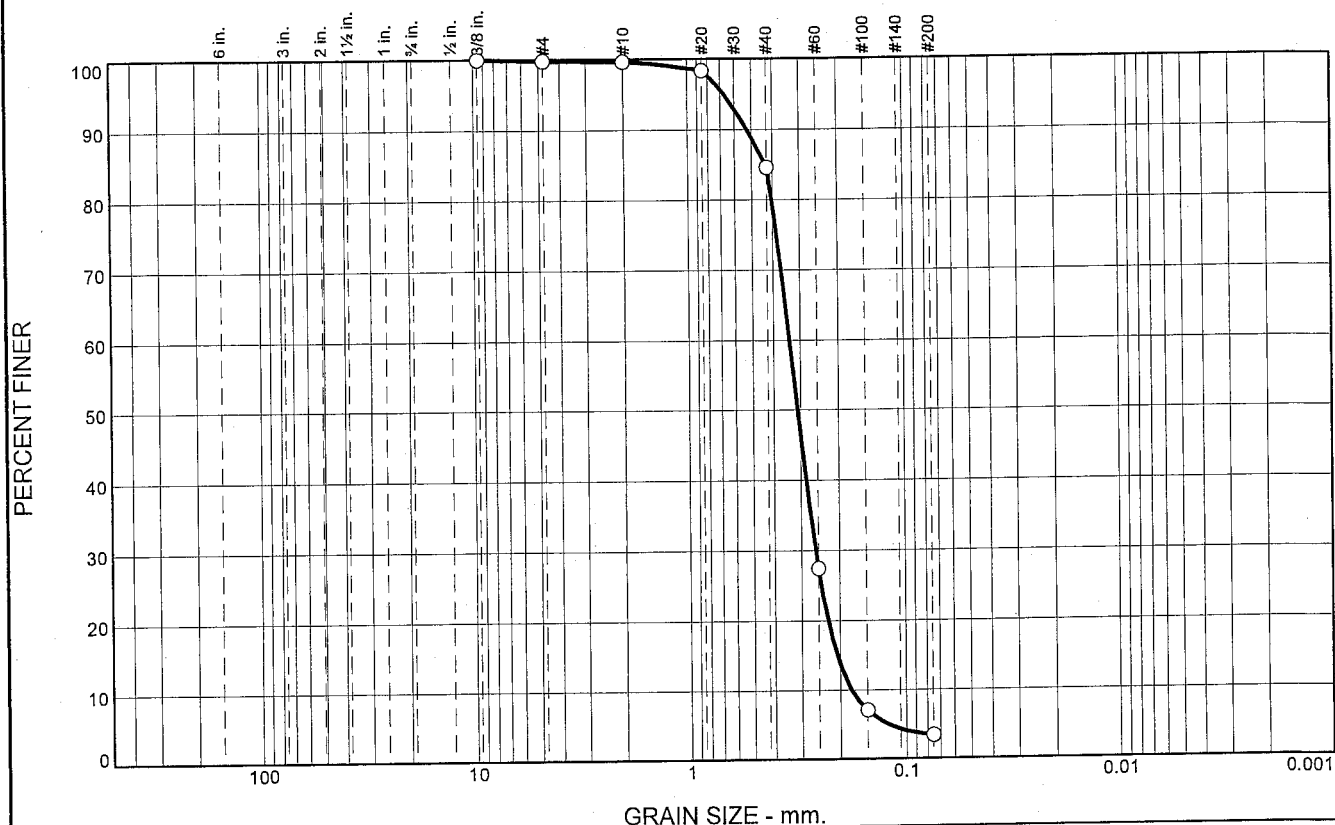
Boring Designation BI-PB-017-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-017-10		LOCATION COORDINATES E = 1,150,383 N = 258,337		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		UNDISTURBED (UD) 0	
6. THICKNESS OF OVERBURDEN N/A				14. WATER DEPTH		28 Ft.	
7. DEPTH DRILLED INTO ROCK N/A				15. DATE BORING		STARTED 06-26-10	
8. TOTAL DEPTH OF BORING 20.0 Ft.				16. ELEVATION TOP OF BORING		COMPLETED 06-26-10	
				17. TOTAL RECOVERY FOR BORING		100%	
				18. SIGNATURE AND TITLE OF INSPECTOR Marty Gates, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-26.6	0.0		CLAY, lean, dark gray (CL)				
-45.6	19.0			NS			
-46.6	20.0		SAND, silty, mostly medium-grained sand-sized quartz, some silt, gray (SM)				
NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.							

Boring Designation BI-PB-018-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-018-10		LOCATION COORDINATES E = 1,138,415 N = 255,697		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 27 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 07-09-10		STARTED 07-09-10 COMPLETED 07-09-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -26.8 Ft.			
8. TOTAL DEPTH OF BORING 15.8 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Valerie Morrow, Geotechnical Engineer			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-26.8	0.0						
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, lt. brown (SP)	A	Classification: SP Color: 10YR 6/2-light brownish gray D50: 0.309 mm % Fines: 3.4		
				B	Classification: SP Color: 10YR 6/2-light brownish gray D50: 0.3036 mm % Fines: 4.1		
-33.4	6.6						
			CLAY, fat, trace fine-grained sand-sized quartz, dk. blue gray (CH) At El. -33.8 Ft., dk. blue gray	NS			
-42.6	15.8						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.1	15.1	81.2	3.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.8		
#10	99.7		
#20	98.4		
#40	84.6		
#60	27.4		
#100	7.1		
#200	3.4		

Material Description
SAND, (SP), medium to fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
 D₉₀= 0.5255 D₈₅= 0.4318 D₆₀= 0.3360
 D₅₀= 0.3090 D₃₀= 0.2572 D₁₅= 0.2060
 D₁₀= 0.1777 C_u= 1.89 C_c= 1.11

Classification
USCS= SP AASHTO=

Remarks
CADD CODE = CH10D965

* (no specification provided)

Location: USACE Sample # BI-PB-18-10A
Sample Number: TE Lab ID: 4578.08

Depth: 0.0 - 3.3 (ft.)

Date: 7/16/10

Thompson Engineering

Mobile, Alabama

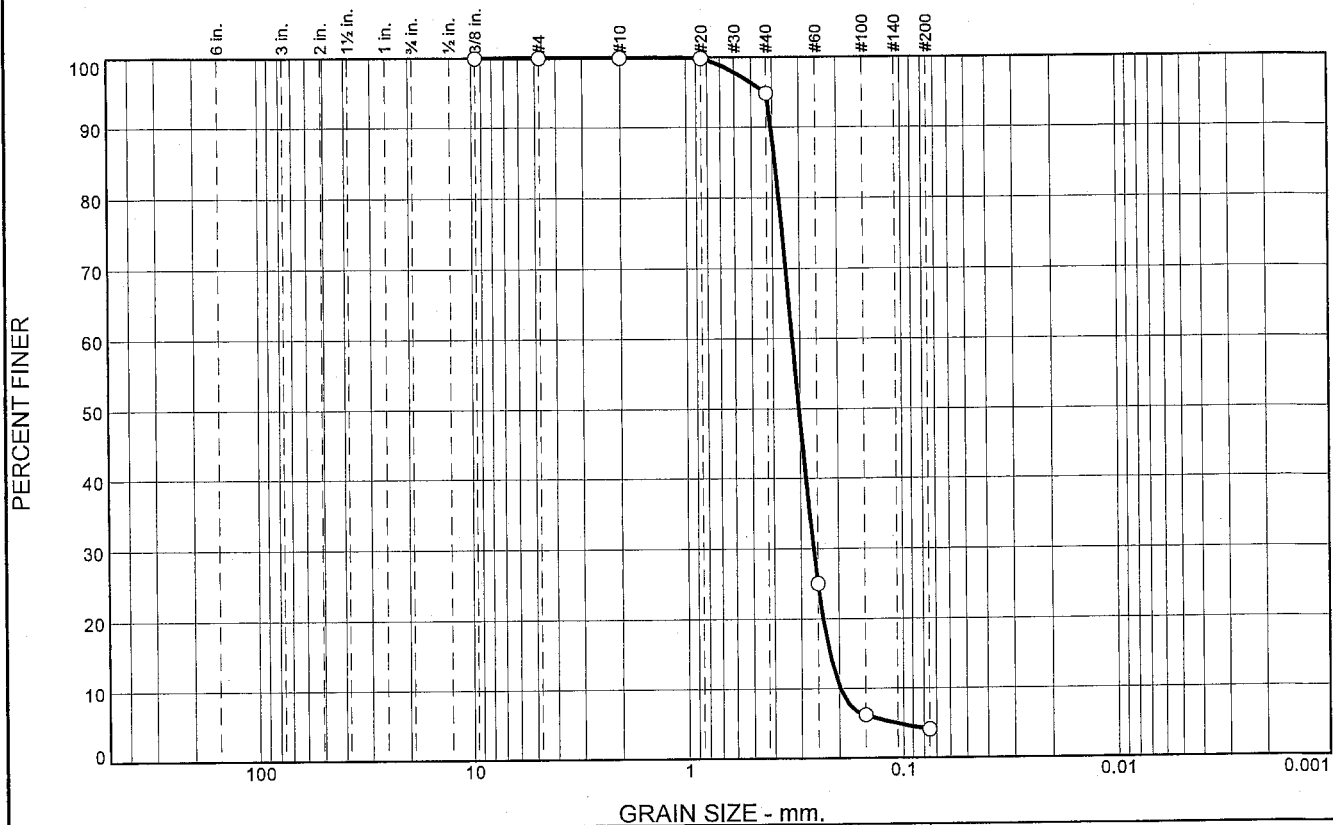
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	5.1	90.8	4.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	94.9		
#60	25.0		
#100	6.2		
#200	4.1		

* (no specification provided)

Material Description
SAND, (SP), fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.4051 D₈₅= 0.3882 D₆₀= 0.3248
D₅₀= 0.3036 D₃₀= 0.2617 D₁₅= 0.2205
D₁₀= 0.1977 C_u= 1.64 C_c= 1.07

Classification
USCS= SP AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-PB-18-10B
Sample Number: TE Lab ID: 4578.09

Depth: 3.3 - 6.6 (ft.)

Date: 7/16/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

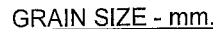
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-PB-019-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-019-10		LOCATION COORDINATES E = 1,140,721 N = 255,806		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 30 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 07-10-10		STARTED 07-10-10 COMPLETED 07-10-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -28.3 Ft.			
8. TOTAL DEPTH OF BORING 18.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Valerie Morrow, Geotechnical Engineer			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-28.3	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, lt. gray (SP)	A	Classification: SP Color: 2.5Y 7/2-light gray D50: 0.3382 mm % Fines: 1.9		
				B	Classification: SP Color: 2.5Y 8/1-white D50: 0.3338 mm % Fines: 2		
-36.9	8.6						
-39.2	10.9		SAND, clayey, mostly fine to medium-grained sand-sized quartz, some clay, gray (SC)				
			CLAY, fat, trace silt, dark gray (CH)	NS			
-46.3	18.0						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

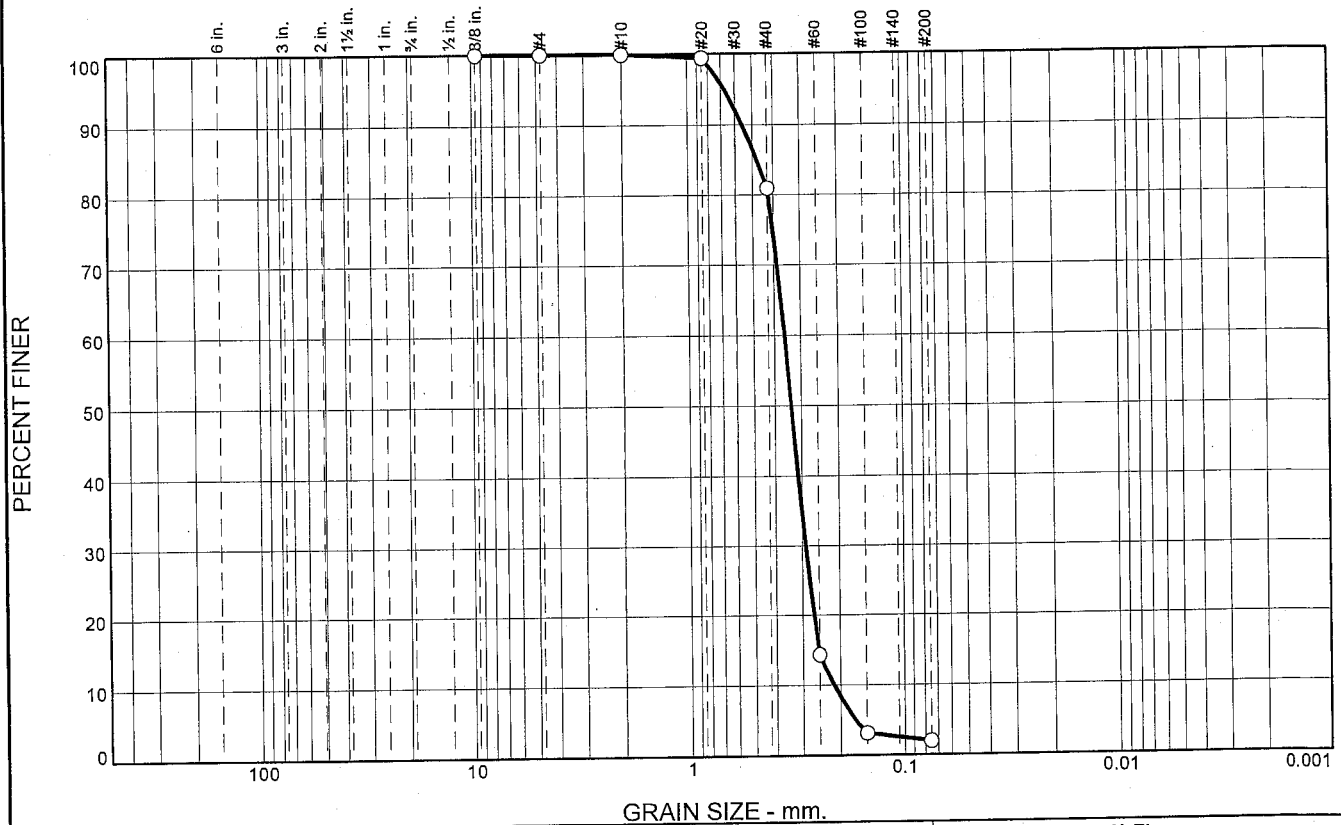
PERCENT FINER



<u>Material Description</u>	
SAND, (SP), medium to fine grained	
<u>Atterberg Limits</u>	
PL=	LL= PI=
<u>Coefficients</u>	
D ₉₀ = 0.5095	D ₈₅ = 0.4692
D ₅₀ = 0.3382	D ₃₀ = 0.2883
D ₁₀ = 0.2052	C _u = 1.78
	C _c = 1.11
<u>Classification</u>	
USCS= SP	AASHTO=
<u>Remarks</u>	
CADD CODE = CH10D965	

L-57

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	19.0	79.0	2.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.4		
#40	81.0		
#60	14.3		
#100	3.1		
#200	2.0		

Material Description

SAND, (SP), medium to fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.5555 D₈₅= 0.4749 D₆₀= 0.3584
D₅₀= 0.3338 D₃₀= 0.2886 D₁₅= 0.2520
D₁₀= 0.2143 C_u= 1.67 C_c= 1.08

Classification

USCS= SP AASHTO=

Remarks

CADD CODE = CH10D965

* (no specification provided)

Location: USACE Sample # BI-PB-19-10B
Sample Number: TE Lab ID: 4578.11

Depth: 4.3 - 8.6 (ft.)

Date: 7/16/10

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

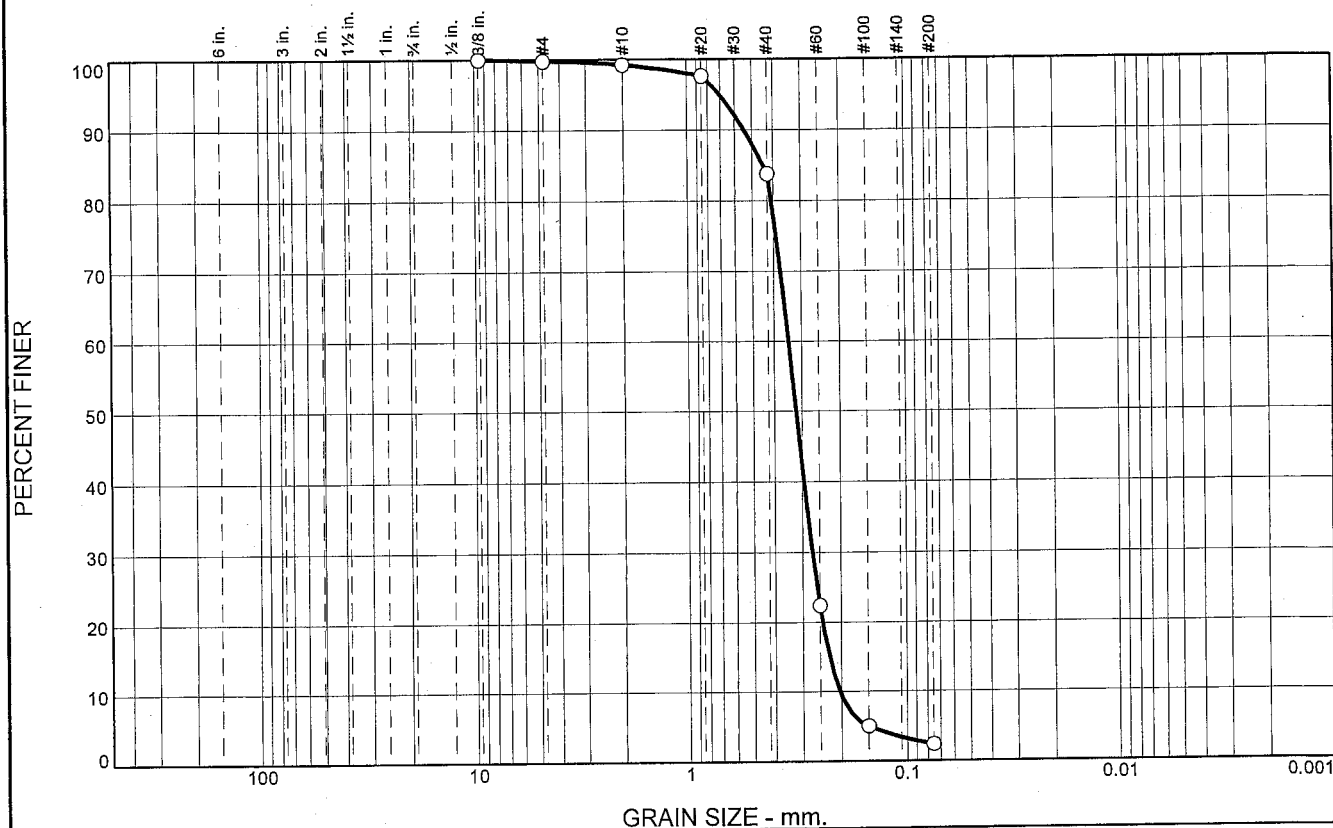
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-PB-020-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-020-10		LOCATION COORDINATES E = 1,142,114 N = 255,783		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 4		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 27 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 07-10-10		STARTED 07-10-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -25.3 Ft.			
8. TOTAL DEPTH OF BORING 17.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Valerie Morrow, Geotechnical Engineer			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-25.3	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, lt. gray (SP)	A	Classification: SP Color: 2.5Y 7/2-light gray D50: 0.3183 mm % Fines: 2.3		
				B	Classification: SP Color: 2.5Y 7/2-light gray D50: 0.3265 mm % Fines: 1.9		
				C	Classification: SP Color: 2.5Y 7/2-light gray D50: 0.3176 mm % Fines: 2		
				D	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.3032 mm % Fines: 3.4		
-42.3	17.0						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.6	15.4	81.5	2.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.8		
#10	99.2		
#20	97.7		
#40	83.8		
#60	22.4		
#100	5.0		
#200	2.3		

Material Description
SAND, (SP), medium to fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.5434 D₈₅= 0.4442 D₆₀= 0.3439
D₅₀= 0.3183 D₃₀= 0.2700 D₁₅= 0.2260
D₁₀= 0.2033 C_u= 1.69 C_c= 1.04

Classification
USCS= SP AASHTO=

Remarks
CADD CODE = CH10D965

* (no specification provided)

Location: USACE Sample # BI-PB-20-10A
Sample Number: TE Lab ID: 4578.12

Depth: 0.0 - 4.4 (ft.)

Date: 7/16/10

Thompson Engineering
Mobile, Alabama

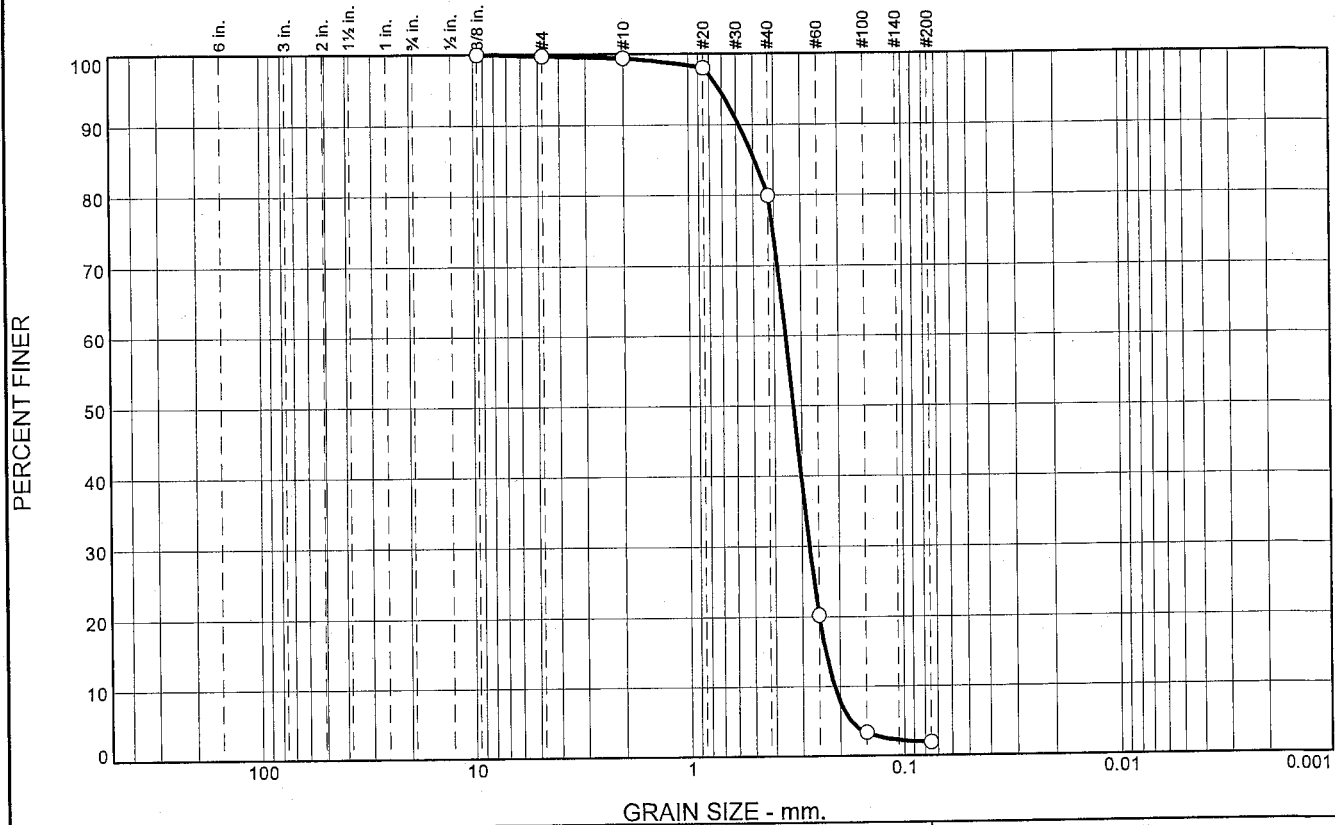
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.4	19.5	78.0	1.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.8		
#10	99.4		
#20	98.1		
#40	79.9		
#60	20.2		
#100	3.4		
#200	1.9		

* (no specification provided)

Material Description
SAND, (SP), medium to fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.5814 D₈₅= 0.4919 D₆₀= 0.3539
D₅₀= 0.3265 D₃₀= 0.2763 D₁₅= 0.2331
D₁₀= 0.2126 C_u= 1.66 C_c= 1.01

Classification
USCS= SP AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-PB-20-10B
Sample Number: TE Lab ID: 4578.13

Depth: 4.0 - 8.0 (ft.)

Date: 7/16/10

Thompson Engineering

Mobile, Alabama

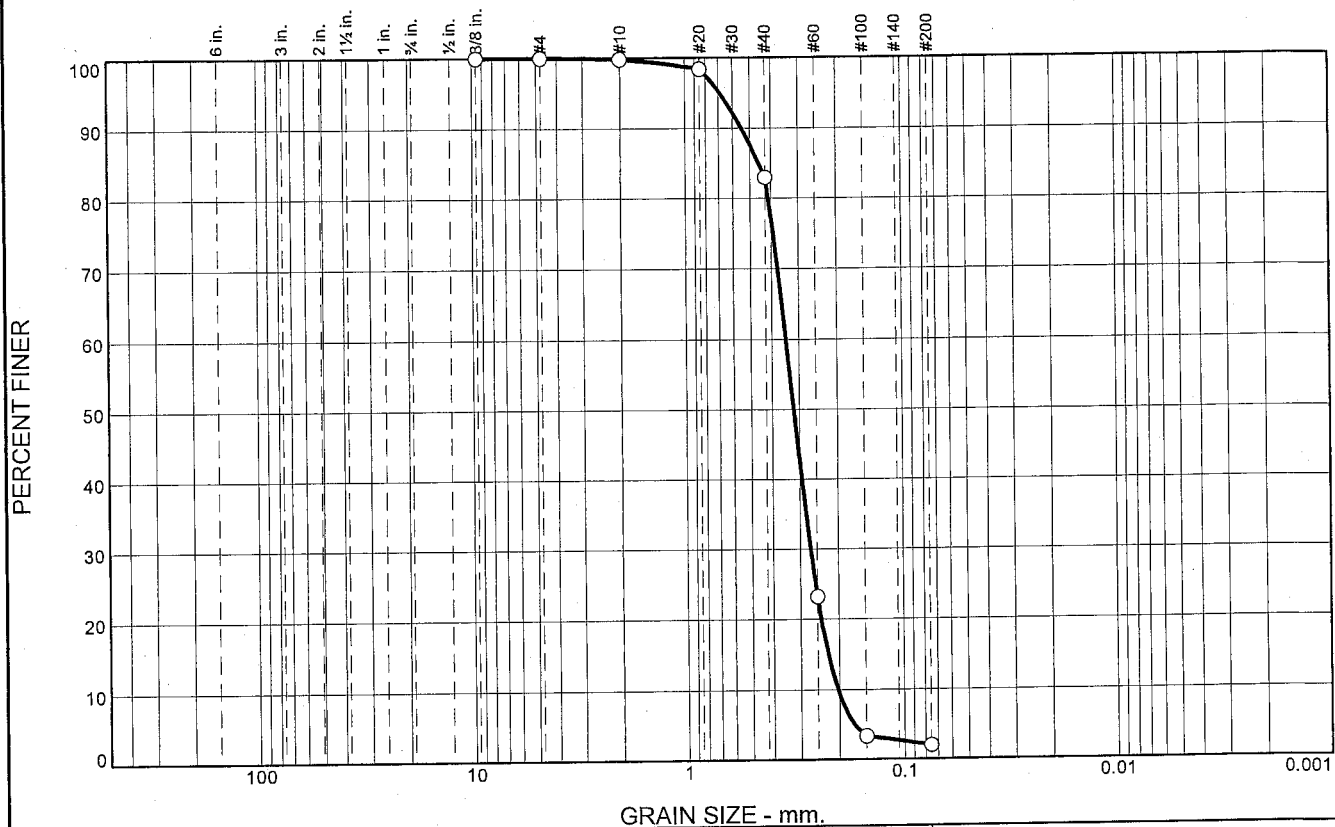
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	16.9	80.9	2.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.8		
#20	98.4		
#40	82.9		
#60	23.2		
#100	3.4		
#200	2.0		

* (no specification provided)

Material Description
SAND, (SP), medium to fine grained, with clay nodules

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.5461 D₈₅= 0.4546 D₆₀= 0.3441
D₅₀= 0.3176 D₃₀= 0.2681 D₁₅= 0.2242
D₁₀= 0.2033 C_u= 1.69 C_c= 1.03

Classification
USCS= SP AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-PB-20-10C
Sample Number: TE Lab ID: 4578.14

Depth: 8.0 - 12.0 (ft.)

Date: 7/16/10

Thompson Engineering
Mobile, Alabama

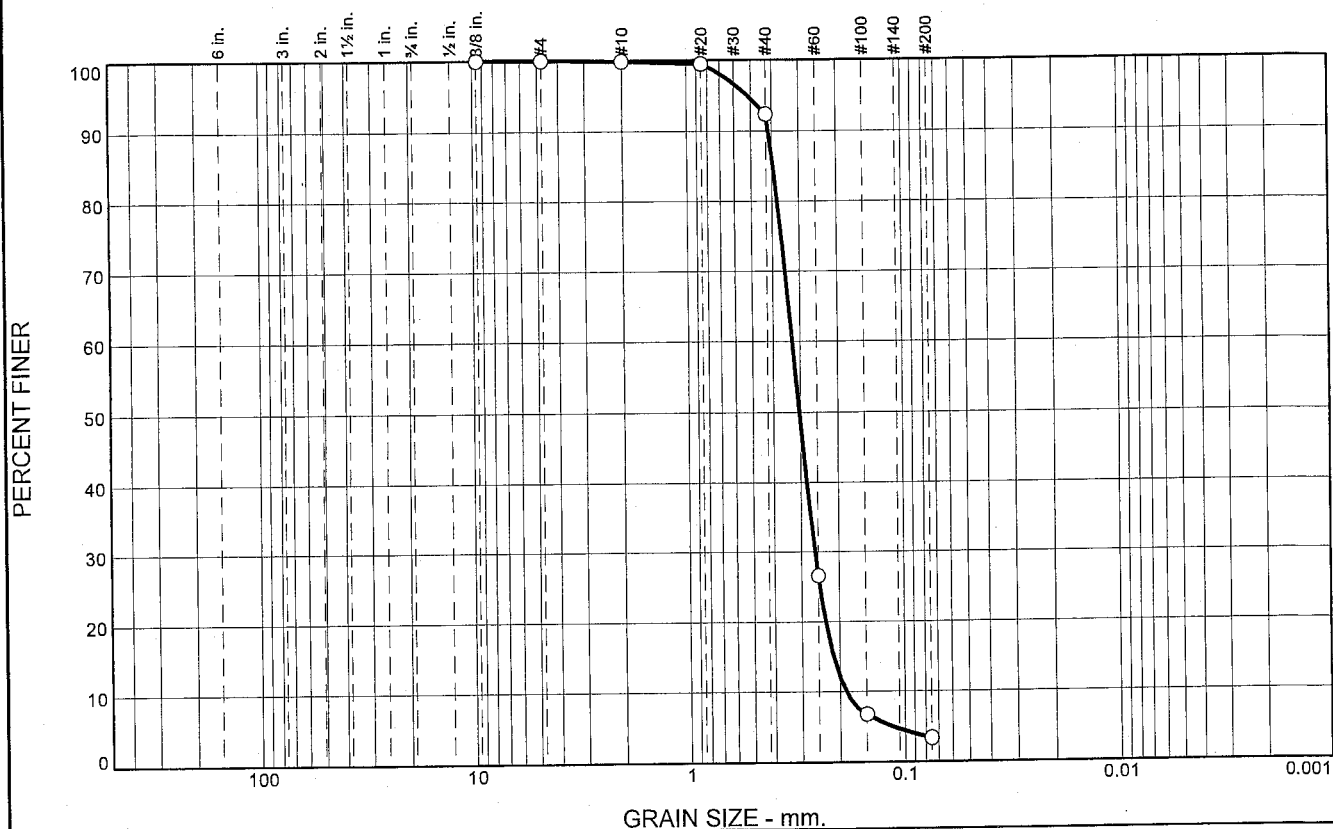
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	7.4	89.0	3.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.8		
#20	99.5		
#40	92.4		
#60	26.5		
#100	6.8		
#200	3.4		

Material Description
SAND, (SP), fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
 D₉₀= 0.4142 D₈₅= 0.3949 D₆₀= 0.3258
 D₅₀= 0.3032 D₃₀= 0.2586 D₁₅= 0.2136
 D₁₀= 0.1875 C_u= 1.74 C_c= 1.09

Classification
USCS= SP AASHTO=

Remarks
CADD CODE = CH10D965

* (no specification provided)

Location: USACE Sample # BI-PB-20-10D
Sample Number: TE Lab ID: 4578.15

Depth: 12.0 - 17.0 (ft.)

Date: 7/16/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

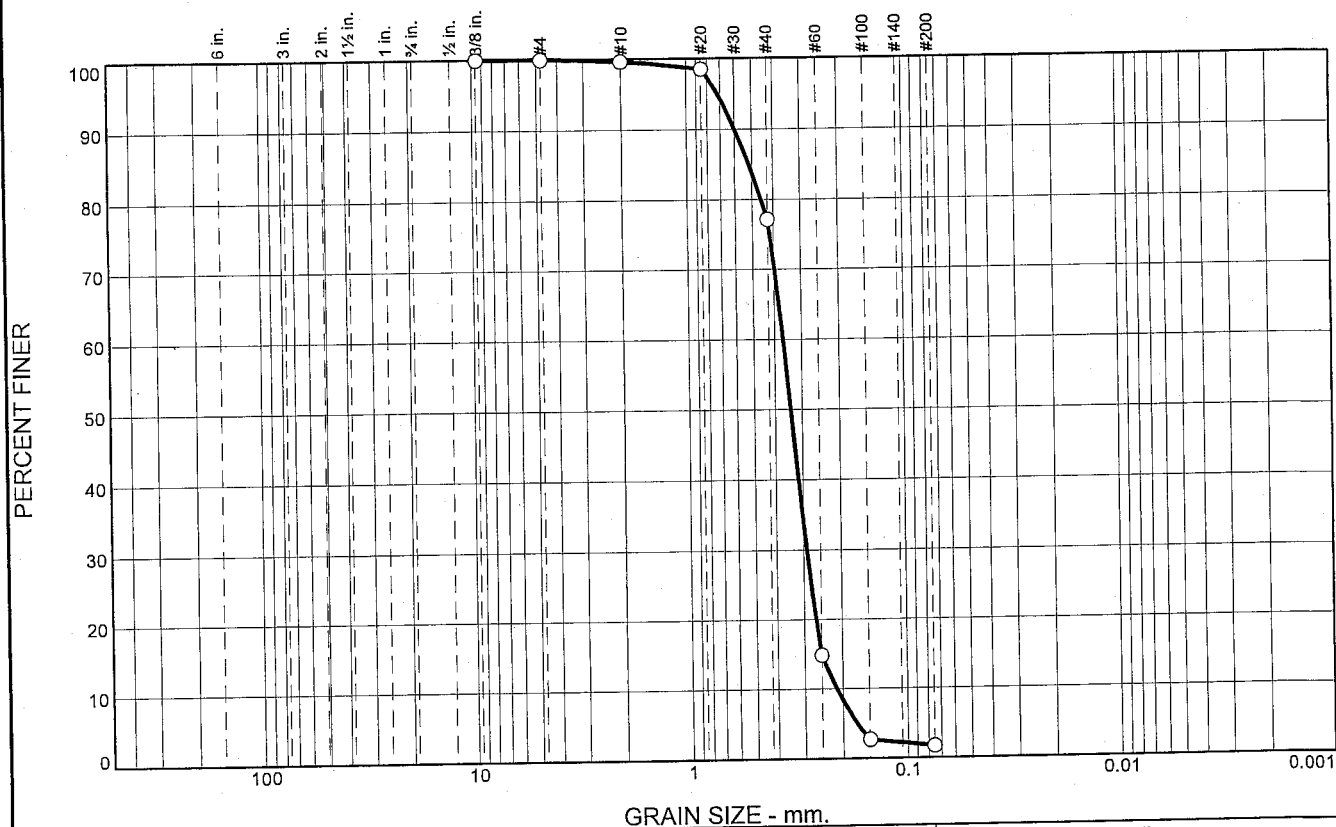
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-PB-021-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-021-10		LOCATION COORDINATES E = 1,146,385 N = 255,809		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 5		DISTURBED 5 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 33 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 07-10-10		STARTED 07-10-10 COMPLETED 07-10-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -31.3 Ft.			
8. TOTAL DEPTH OF BORING 18.5 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Valerie Morrow, Geotechnical Engineer			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-31.3	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, lt. gray (SP)	A	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.3387 mm % Fines: 1.7		
				B	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.3309 mm % Fines: 1.9		
				C	Classification: SP Color: 2.5Y 7/2-light gray D50: 0.3319 mm % Fines: 2.9		
-42.7	11.4		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, lt. gray (SM)	D	Classification: SP-SM Color: 2.5Y 7/2-light gray D50: 0.3225 mm % Fines: 6.3		
				E	Classification: SP-SM Color: 2.5Y 7/2-light gray D50: 0.3838 mm % Fines: 8.9		
-49.8	18.5						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.4	22.5	75.4	1.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.6		
#20	98.5		
#40	77.1		
#60	14.8		
#100	2.7		
#200	1.7		

* (no specification provided)

Material Description
SAND, (SP), medium to fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.5989 D₈₅= 0.5165 D₆₀= 0.3658
 D₅₀= 0.3387 D₃₀= 0.2898 D₁₅= 0.2506
 D₁₀= 0.2133 C_u= 1.72 C_c= 1.08

Classification
 USCS= SP AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-PB-21-10A
 Sample Number: TE Lab ID: 4578.16

Depth: 0.0 - 4.0 (ft.)

Date: 7/16/10

Thompson Engineering
Mobile, Alabama

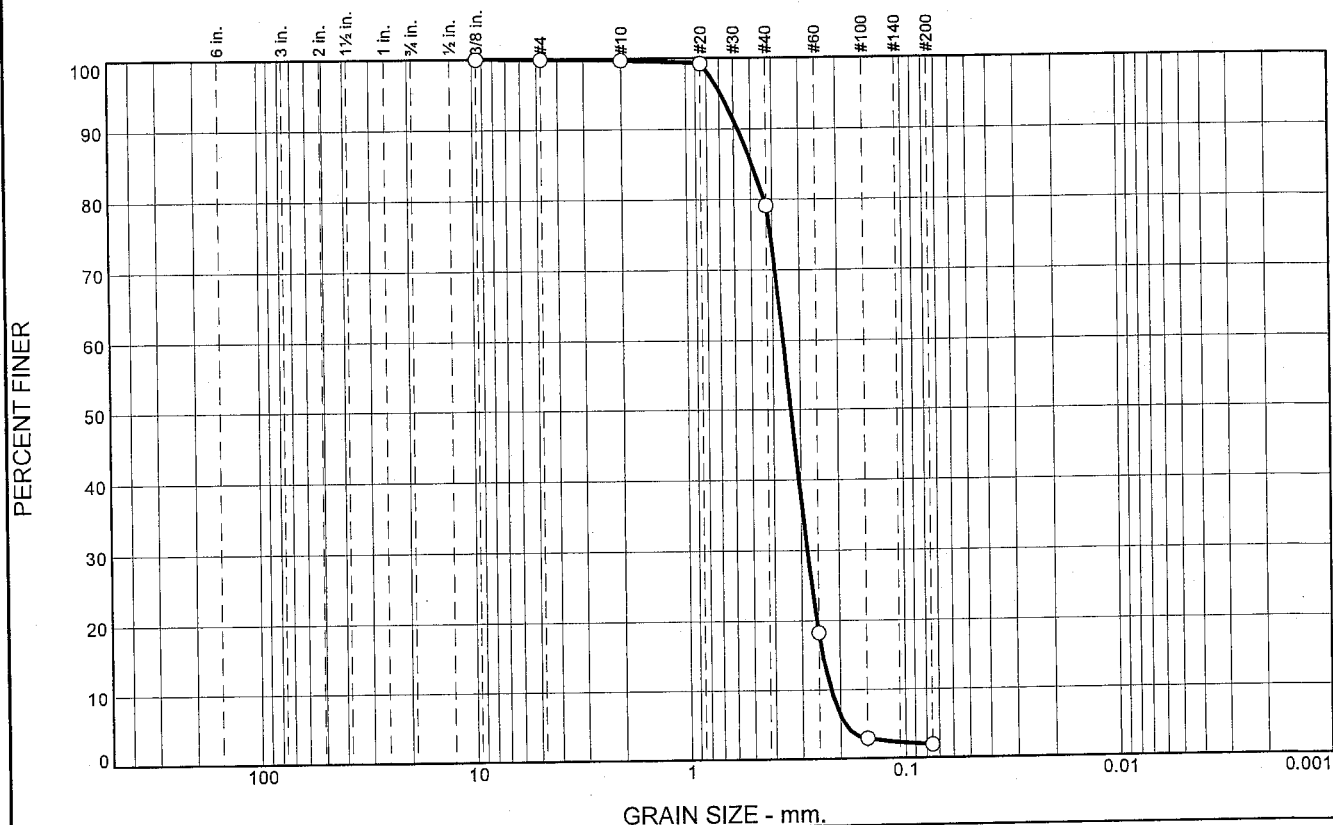
Client: US Army Corps of Engineers
 Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
 Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.2	20.6	77.2	1.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.7		
#20	99.3		
#40	79.1		
#60	18.2		
#100	2.9		
#200	1.9		

* (no specification provided)

Material Description
SAND, (SP), medium to fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.5737 D₈₅= 0.4943 D₆₀= 0.3581
D₅₀= 0.3309 D₃₀= 0.2813 D₁₅= 0.2398
D₁₀= 0.2206 C_u= 1.62 C_c= 1.00

Classification
USCS= SP AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-PB-21-10B
Sample Number: TE Lab ID: 4578.17

Depth: 4.0 - 8.0 (ft.)

Date: 7/16/10

Thompson Engineering
Mobile, Alabama

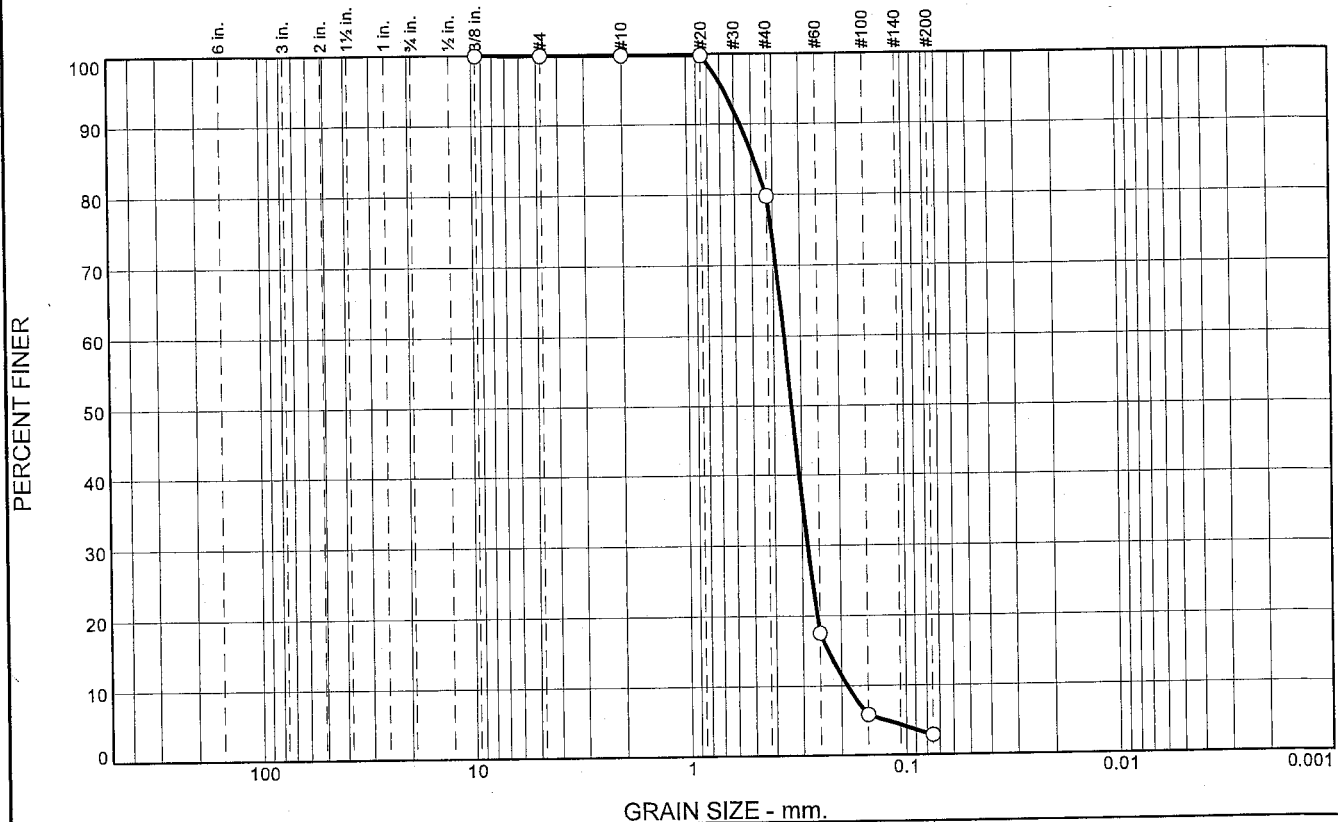
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.0	20.2	76.8	2.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.9		
#20	99.8		
#40	79.7		
#60	17.5		
#100	5.8		
#200	2.9		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.5624

D₈₅= 0.4858

D₆₀= 0.3582

D₅₀= 0.3319

D₃₀= 0.2833

D₁₅= 0.2293

D₁₀= 0.1879

C_u= 1.91

C_c= 1.19

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-21-10C
Sample Number: TE Lab ID: 4578.18

Depth: 8.0 - 11.4 (ft.)

Date: 7/16/10

Thompson Engineering
Mobile, Alabama

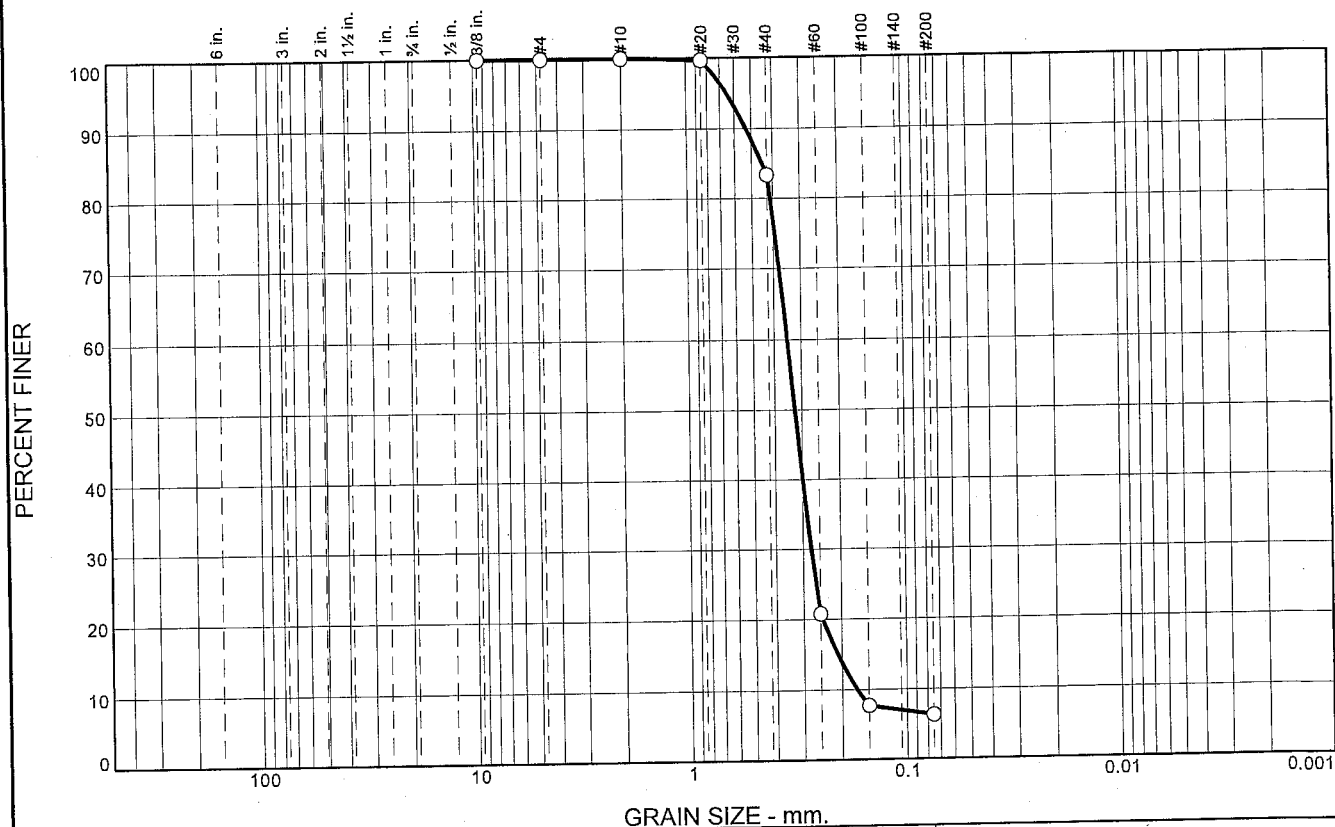
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	16.7	77.0	6.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.7		
#40	83.3		
#60	20.8		
#100	7.7		
#200	6.3		

* (no specification provided)

Material Description
SAND, (SP-SM), medium to fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
 D₉₀= 0.5284 D₈₅= 0.4473 D₆₀= 0.3478
 D₅₀= 0.3225 D₃₀= 0.2746 D₁₅= 0.2088
 D₁₀= 0.1704 C_u= 2.04 C_c= 1.27

Classification
USCS= SP-SM AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-PB-21-10D
Sample Number: TE Lab ID: 4578.19

Depth: 11.4 - 14.5 (ft.)

Date: 7/16/10

Thompson Engineering
Mobile, Alabama

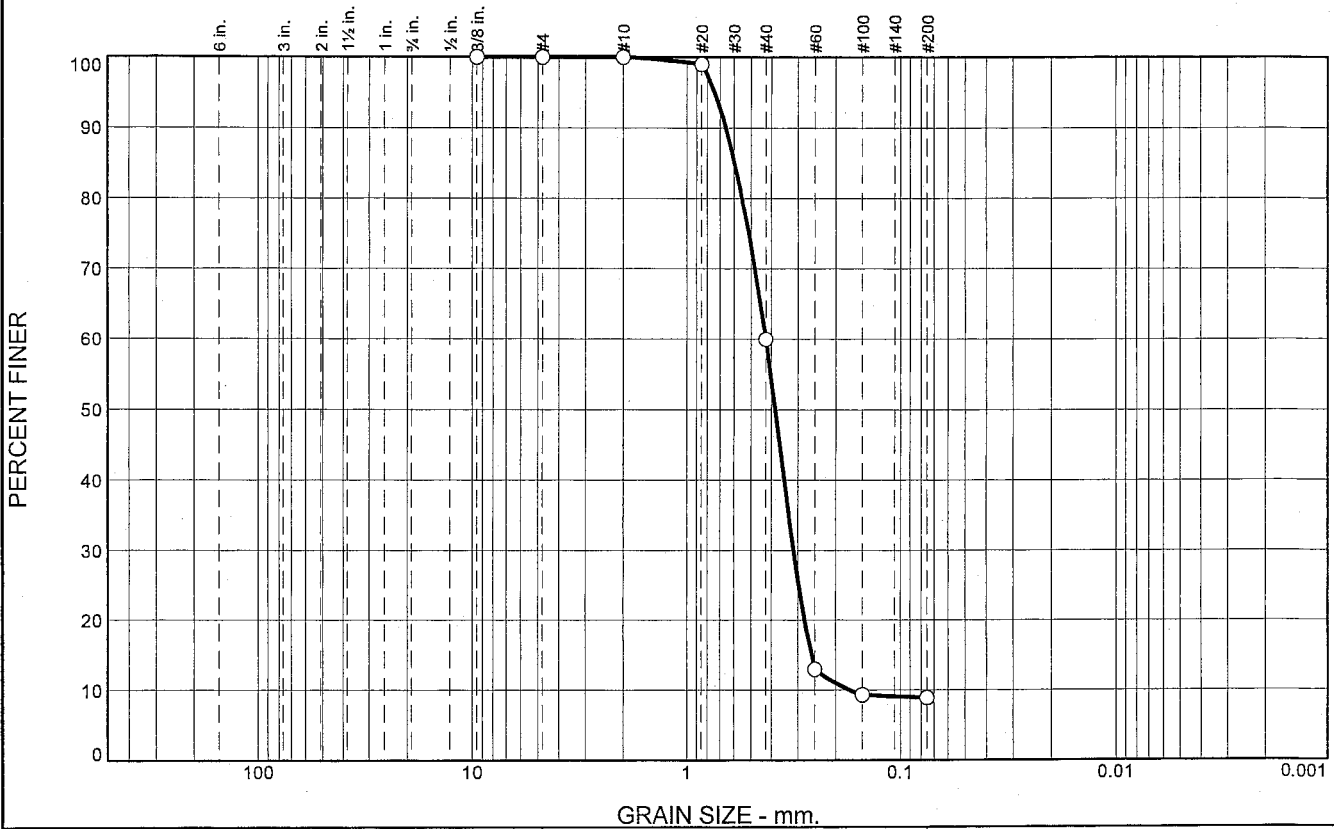
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	40.1	51.0	8.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.0		
#40	59.9		
#60	12.9		
#100	9.3		
#200	8.9		

* (no specification provided)

Material Description
SAND, (SP-SM), medium to fine grained

PL= **Atterberg Limits** LL= PI=

Coefficients
D₉₀= 0.6561 D₈₅= 0.5957 D₆₀= 0.4254
D₅₀= 0.3838 D₃₀= 0.3139 D₁₅= 0.2596
D₁₀= 0.1722 C_u= 2.47 C_c= 1.35

Classification
USCS= SP-SM AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-PB-21-10E
Sample Number: TE Lab ID: 4578.20

Depth: 14.5 - 18.5 (ft.)

Date: 7/16/10

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

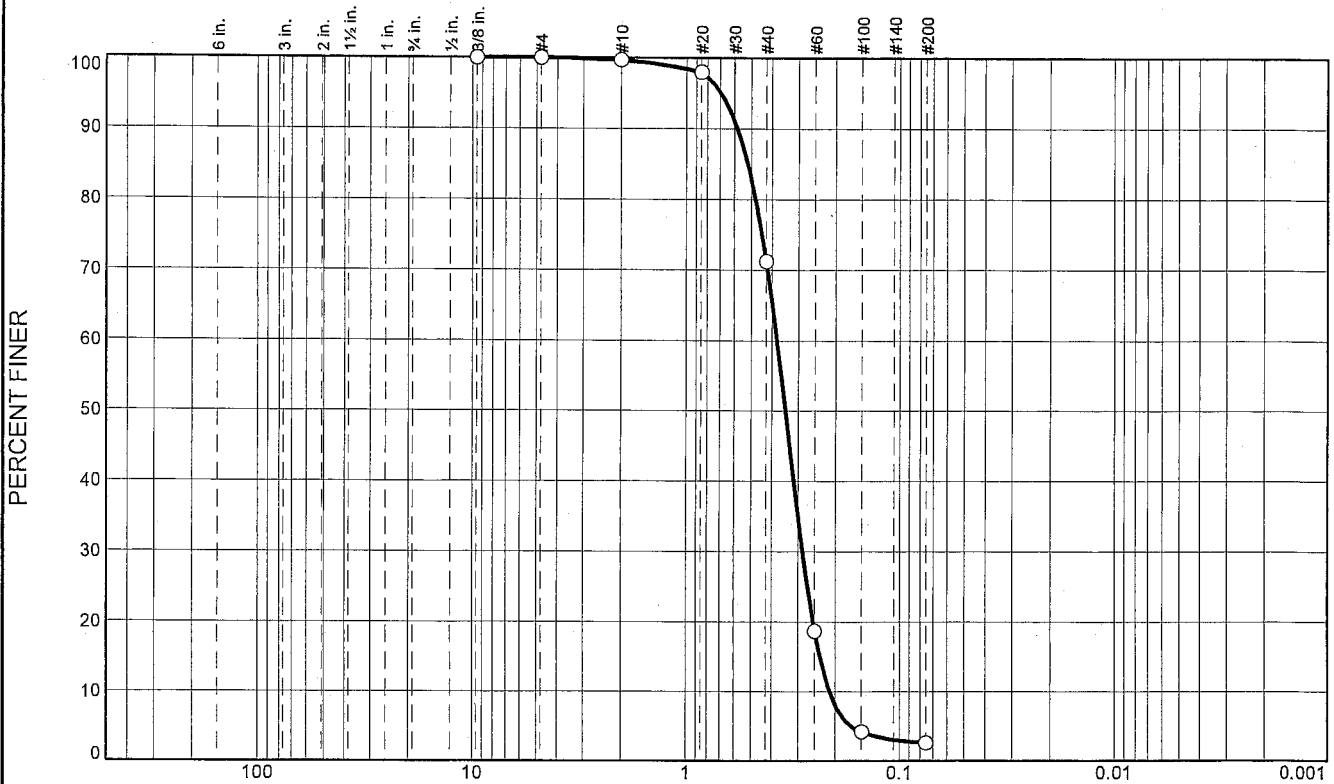
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-PB-022-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-022-10		LOCATION COORDINATES E = 1,146,771 N = 255,731		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 5	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		UNDISTURBED (UD) 0	
6. THICKNESS OF OVERBURDEN N/A				14. WATER DEPTH		33 Ft.	
7. DEPTH DRILLED INTO ROCK N/A				15. DATE BORING		STARTED 07-10-10	
8. TOTAL DEPTH OF BORING 18.6 Ft.				16. ELEVATION TOP OF BORING		COMPLETED 07-10-10	
				17. TOTAL RECOVERY FOR BORING		100%	
				18. SIGNATURE AND TITLE OF INSPECTOR		Valerie Morrow, Geotechnical Engineer	
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-31.4	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, lt. gray (SP)	A	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.3445 mm % Fines: 2.6		
				B	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.3622 mm % Fines: 2.3		
-42.0	10.6		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, lt. gray (SM)	C	Classification: SP-SM Color: 2.5Y 7/2-light gray D50: 0.3345 mm % Fines: 6.5		
				D	Classification: SP-SM Color: 2.5Y 7/2-light gray D50: 0.3895 mm % Fines: 10.1		
-48.4	17.0						
-50.0	18.6		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, lt. gray (SP)	E	Classification: SP-SM Color: 2.5Y 8/1-white D50: 0.3815 mm % Fines: 5.8		
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.3	28.5	68.6	2.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.7		
#20	98.0		
#40	71.2		
#60	18.7		
#100	4.2		
#200	2.6		

Material Description
SAND, (SP), medium to fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.5800 D₈₅= 0.5192 D₆₀= 0.3783
 D₅₀= 0.3445 D₃₀= 0.2851 D₁₅= 0.2362
 D₁₀= 0.2126 C_u= 1.78 C_c= 1.01

Classification
 USCS= SP AASHTO=

Remarks
 CADD CODE = CH10D965

* (no specification provided)

Location: USACE Sample # BI-PB-22-10A
 Sample Number: TE Lab ID: 4578.21

Depth: 0.0 - 5.3 (ft.)

Date: 7/16/10

Thompson Engineering

Mobile, Alabama

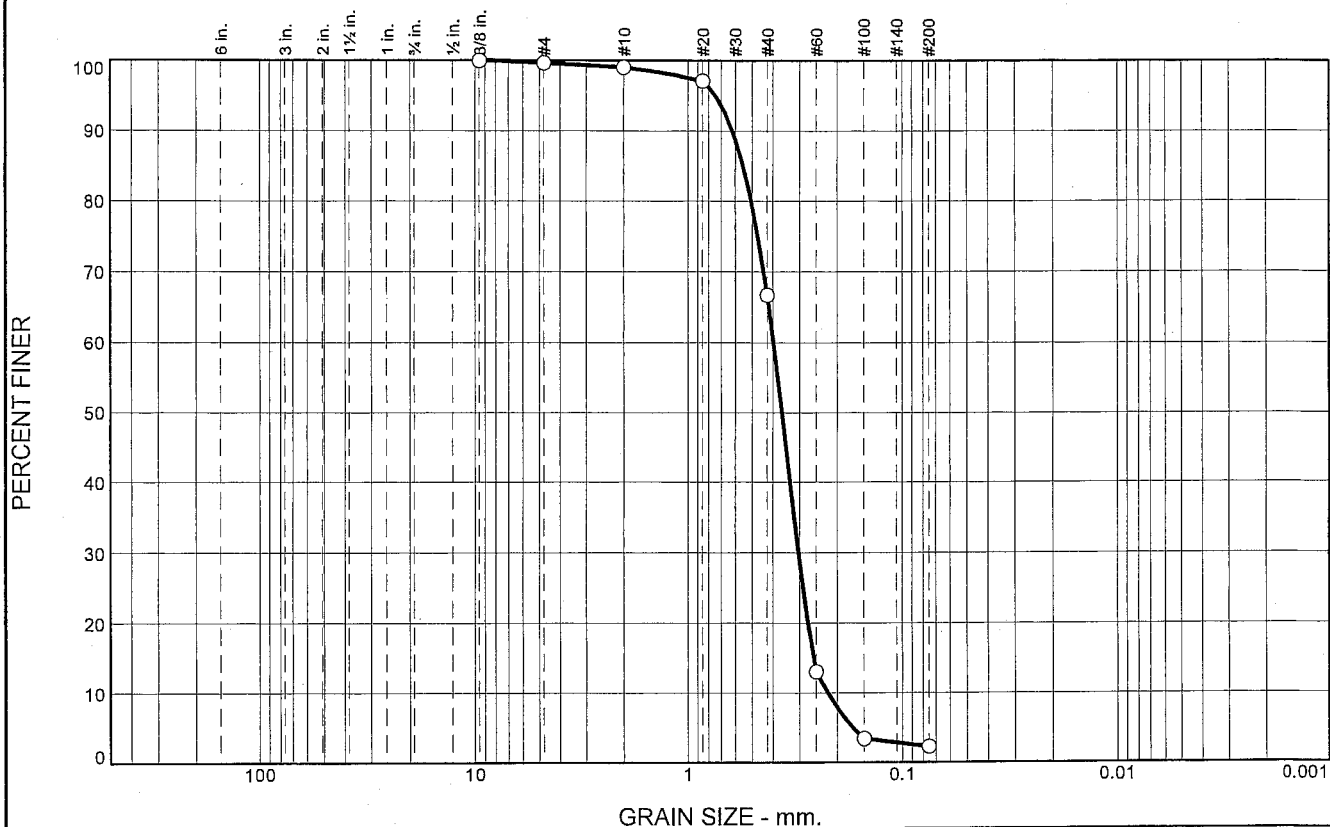
Client: US Army Corps of Engineers
 Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
 Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.4	0.6	32.3	64.4	2.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.6		
#10	99.0		
#20	97.1		
#40	66.7		
#60	13.0		
#100	3.4		
#200	2.3		

* (no specification provided)

Material Description
SAND, (SP), medium to fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.6195 D₈₅= 0.5513 D₆₀= 0.3971
 D₅₀= 0.3622 D₃₀= 0.3026 D₁₅= 0.2571
 D₁₀= 0.2206 C_u= 1.80 C_c= 1.04

Classification
 USCS= SP AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-PB-22-10B
 Sample Number: TE Lab ID: 4578.22

Depth: 5.3 - 10.6 (ft.)

Date: 7/16/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project

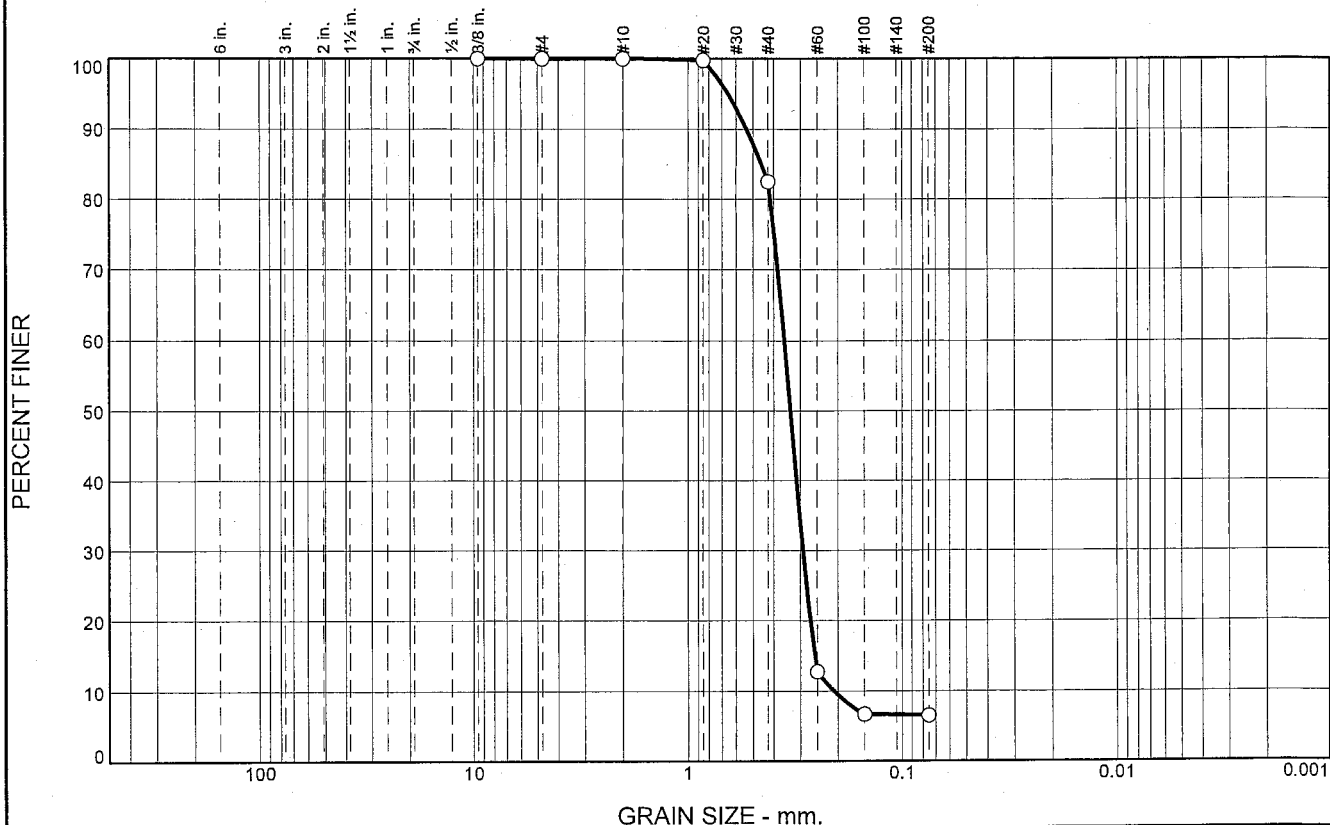
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	17.5	76.0	6.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.8		
#40	82.5		
#60	12.8		
#100	6.7		
#200	6.5		

Material Description
SAND, (SP-SM), medium to fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.5364 D₈₅= 0.4567 D₆₀= 0.3576
 D₅₀= 0.3345 D₃₀= 0.2914 D₁₅= 0.2563
 D₁₀= 0.2082 C_u= 1.72 C_c= 1.14

Classification
 USCS= SP-SM AASHTO=

Remarks
 CADD CODE = CH10D965

* (no specification provided)

Location: USACE Sample # BI-PB-22-10C
 Sample Number: TE Lab ID: 4578.23

Depth: 10.6 - 13.6 (ft.)

Date: 7/16/10

Thompson Engineering

Mobile, Alabama

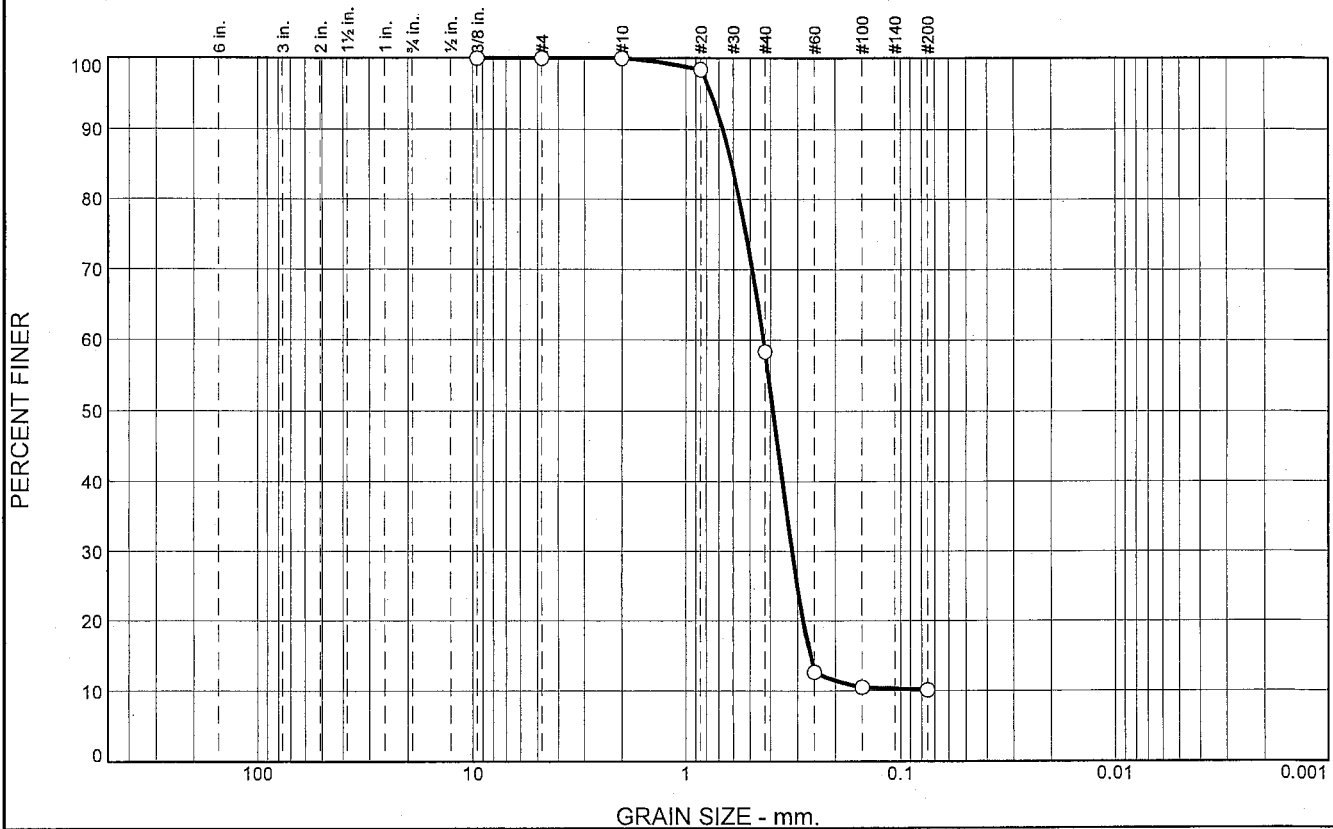
Client: US Army Corps of Engineers
 Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
 Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	41.6	48.3	10.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	98.4		
#40	58.4		
#60	12.6		
#100	10.5		
#200	10.1		

* (no specification provided)

Material Description
SAND, (SP-SM), medium to fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.6720 D₈₅= 0.6096 D₆₀= 0.4327
 D₅₀= 0.3895 D₃₀= 0.3174 D₁₅= 0.2615
 D₁₀= C_u= C_c=

Classification
 USCS= SP-SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-PB-22-10D
 Sample Number: TE Lab ID: 4578.24

Depth: 13.6 - 17.0 (ft.)

Date: 7/16/10

Thompson Engineering

Mobile, Alabama

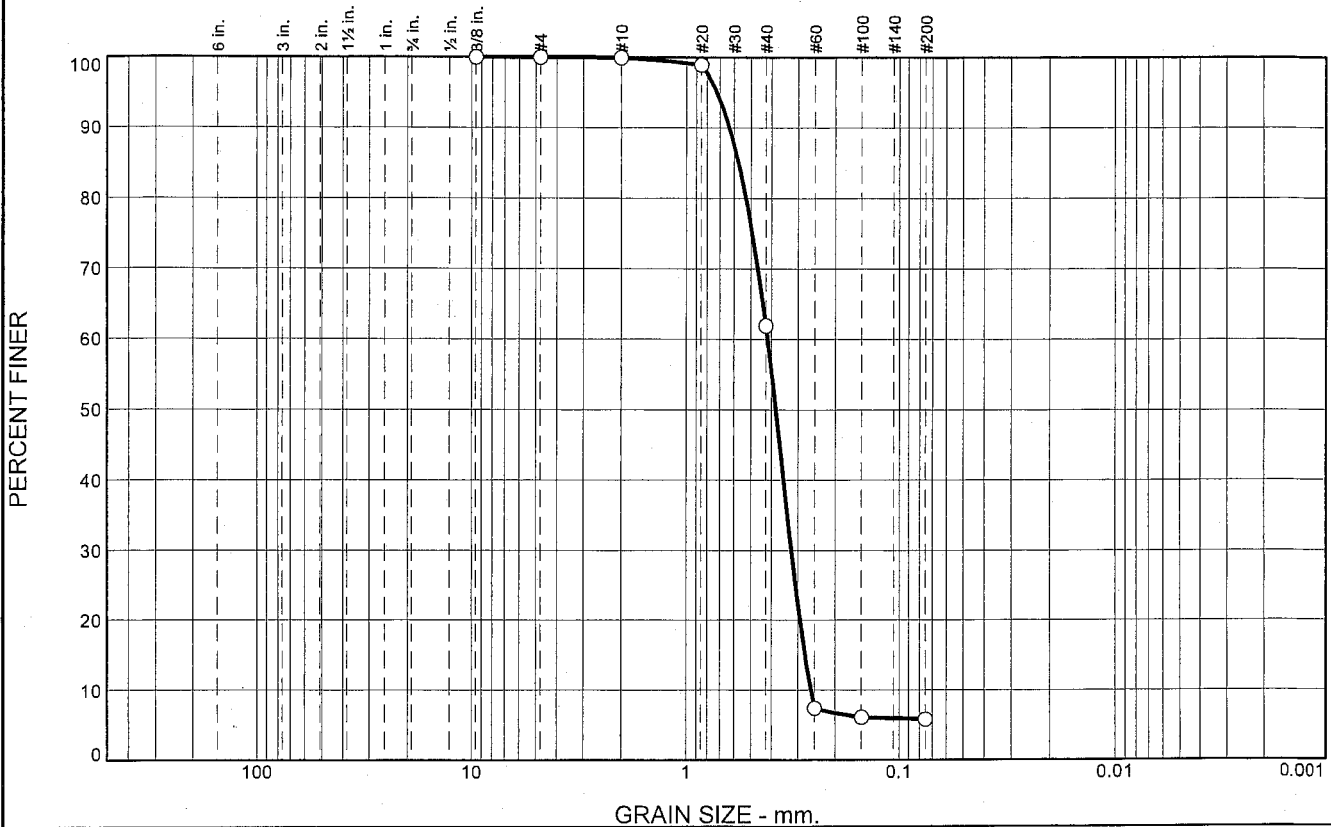
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	38.0	56.1	5.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	98.9		
#40	61.9		
#60	7.4		
#100	6.1		
#200	5.8		

Material Description
SAND, (SP-SM), medium to fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.6308 D₈₅= 0.5713 D₆₀= 0.4175
D₅₀= 0.3815 D₃₀= 0.3215 D₁₅= 0.2775
D₁₀= 0.2605 C_u= 1.60 C_c= 0.95

Classification
USCS= SP-SM AASHTO=

Remarks
CADD CODE = CH10D965

* (no specification provided)

Location: USACE Sample # BI-PB-22-10E
Sample Number: TE Lab ID: 4578.25

Depth: 17.0 - 18.6 (ft.)

Date: 7/16/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

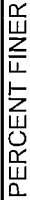
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-PB-023-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-023-10		LOCATION COORDINATES E = 1,148,176 N = 255,821		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 32 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 07-10-10		STARTED 07-10-10 COMPLETED 07-10-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -30.6 Ft.			
8. TOTAL DEPTH OF BORING 17.8 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Valerie Morrow, Geotechnical Engineer			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-30.6	0.0		SAND, poorly-graded with silt, lt. gray (SP-SM)	A	Classification: SP-SM Color: 2.5Y 7/1-light gray D50: 0.3479 mm % Fines: 6.1		
				B	Classification: SP-SM Color: 2.5Y 7/1-light gray D50: 0.3649 mm % Fines: 5.9		
-37.0	6.4		CLAY, lean, gray (CL)	NS			
-46.2	15.6		SAND, clayey, mostly fine to medium-grained sand-sized quartz, some clay, gray (SC)				
-48.4	17.8						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

PERCENT FINER



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	29.6	64.2	6.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	98.7		
#40	70.3		
#60	18.7		
#100	8.3		
#200	6.1		

SAND, (SP-SM), medium to fine grained

SAND, (SP-SM), medium to fine grained

PL= Ratio of g curve PI=

PL= Ratio of g curve PI=

D ₉₀ = 0.5826	D ₈₅ = 0.5238	D ₆₀ = 0.3822
D ₅₀ = 0.3479	D ₃₀ = 0.2872	D ₁₅ = 0.2165
D ₁₀ = 0.1684	C _u = 2.27	C _c = 1.28

D ₉₀ = 0.5826	D ₈₅ = 0.5238	D ₆₀ = 0.3822
D ₅₀ = 0.3479	D ₃₀ = 0.2872	D ₁₅ = 0.2165
D ₁₀ = 0.1684	C _u = 2.27	C _c = 1.28

USCS= SP-SM AASHTO=USCS= SP-SM AASHTO=

CADD CODE = CH10D965

CADD CODE = CH10D965

(no specification provided)

Location: USACE Sample # BI-PB-23-10A
Sample Number: TE Lab ID: 4578.26

Depth: 0.0 - 3.2 (ft.)

Date: 7/16/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

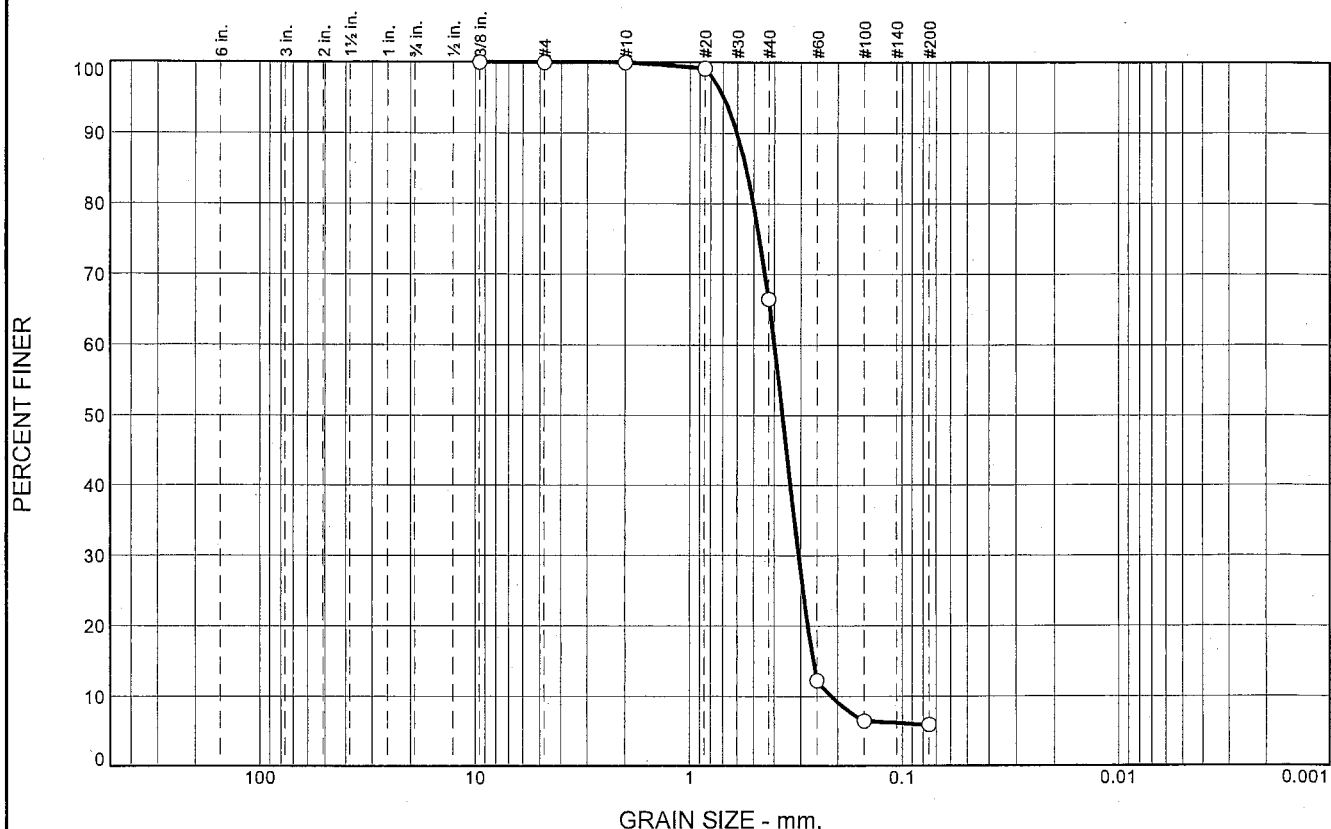
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	33.6	60.5	5.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.1		
#40	66.4		
#60	12.2		
#100	6.5		
#200	5.9		

* (no specification provided)

Material Description
SAND, (SP-SM), medium to fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
 D₉₀= 0.6017 D₈₅= 0.5438 D₆₀= 0.3992
 D₅₀= 0.3649 D₃₀= 0.3059 D₁₅= 0.2603
 D₁₀= 0.2138 C_u= 1.87 C_c= 1.10

Classification
USCS= SP-SM AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-PB-23-10B
Sample Number: TE Lab ID: 4578.27

Depth: 3.2 - 6.4 (ft.)

Date: 7/16/10

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

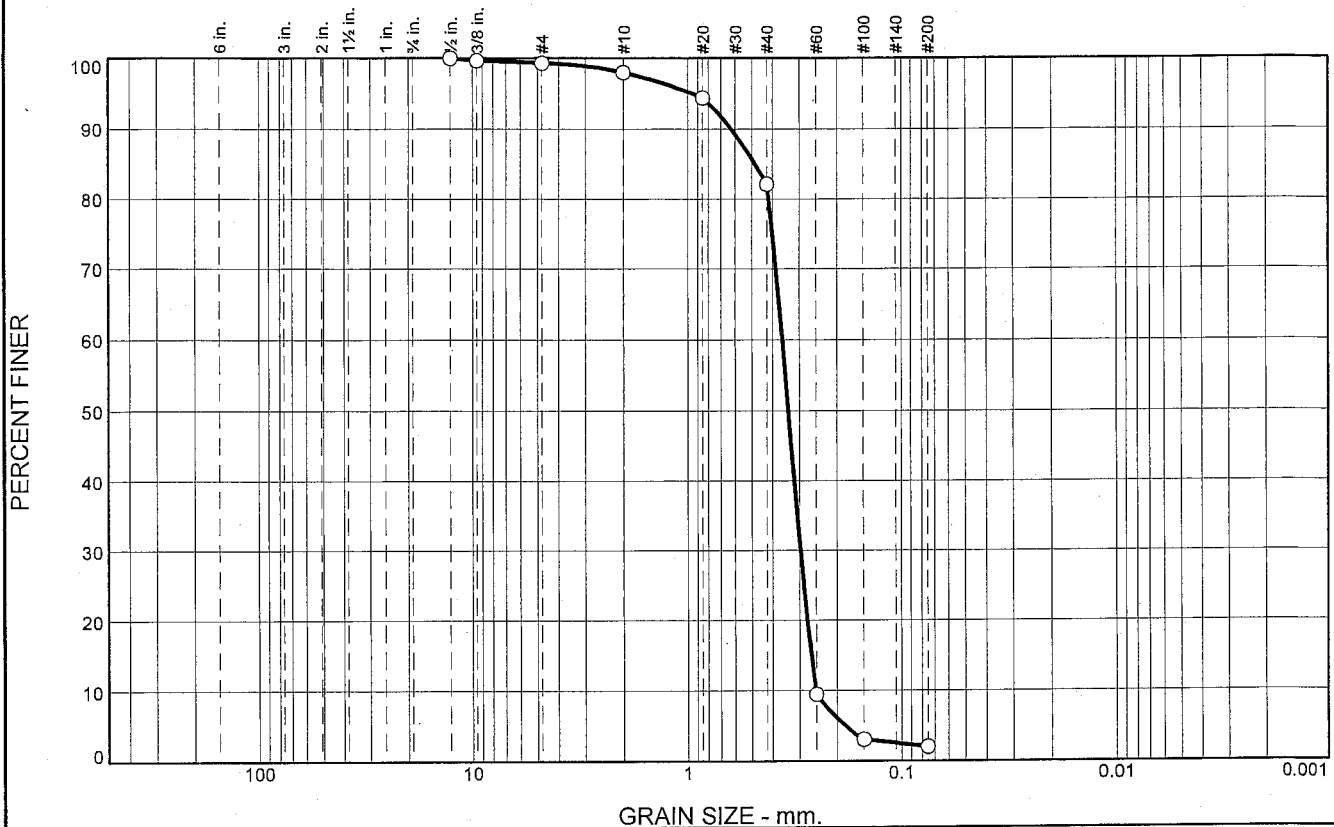
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-PB-024-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-024-10		LOCATION COORDINATES E = 1,149,746 N = 255,839		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 4		UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES		14. WATER DEPTH 31 Ft.	
6. THICKNESS OF OVERBURDEN N/A		7. DEPTH DRILLED INTO ROCK N/A		15. DATE BORING 07-10-10		STARTED 07-10-10	
8. TOTAL DEPTH OF BORING 18.2 Ft.				16. ELEVATION TOP OF BORING -29.8 Ft.		17. TOTAL RECOVERY FOR BORING 100%	
				18. SIGNATURE AND TITLE OF INSPECTOR Valerie Morrow, Geotechnical Engineer			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-29.8	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace shell fragments, gray (SP)	A	Classification: SP Color: 2.5Y 7/2-light gray D50: 0.3373 mm % Fines: 2		
-33.4	3.6						
			SAND, poorly-graded with silt, lt. gray (SP-SM)	B	Classification: SP-SM Color: 2.5Y 7/2-light gray D50: 0.3315 mm % Fines: 6.4		
				C	Classification: SP-SM Color: 2.5Y 7/2-light gray D50: 0.3435 mm % Fines: 5.3		
				D	Classification: SP Color: 2.5Y 7/2-light gray D50: 0.3472 mm % Fines: 4.8		
-48.0	18.2						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.7	1.3	15.9	80.1	2.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.500	100.0		
.375	99.6		
#4	99.3		
#10	98.0		
#20	94.4		
#40	82.1		
#60	9.4		
#100	3.0		
#200	2.0		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained

PL= Atterberg Limits LL= PI=

Coefficients
D₉₀= 0.6258 D₈₅= 0.4830 D₆₀= 0.3598
D₅₀= 0.3373 D₃₀= 0.2962 D₁₅= 0.2642
D₁₀= 0.2516 C_u= 1.43 C_c= 0.97

Classification
USCS= SP AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-PB-24-10A
Sample Number: TE Lab ID: 4578.28

Depth: 0.0 - 3.6 (ft.)

Date: 7/16/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

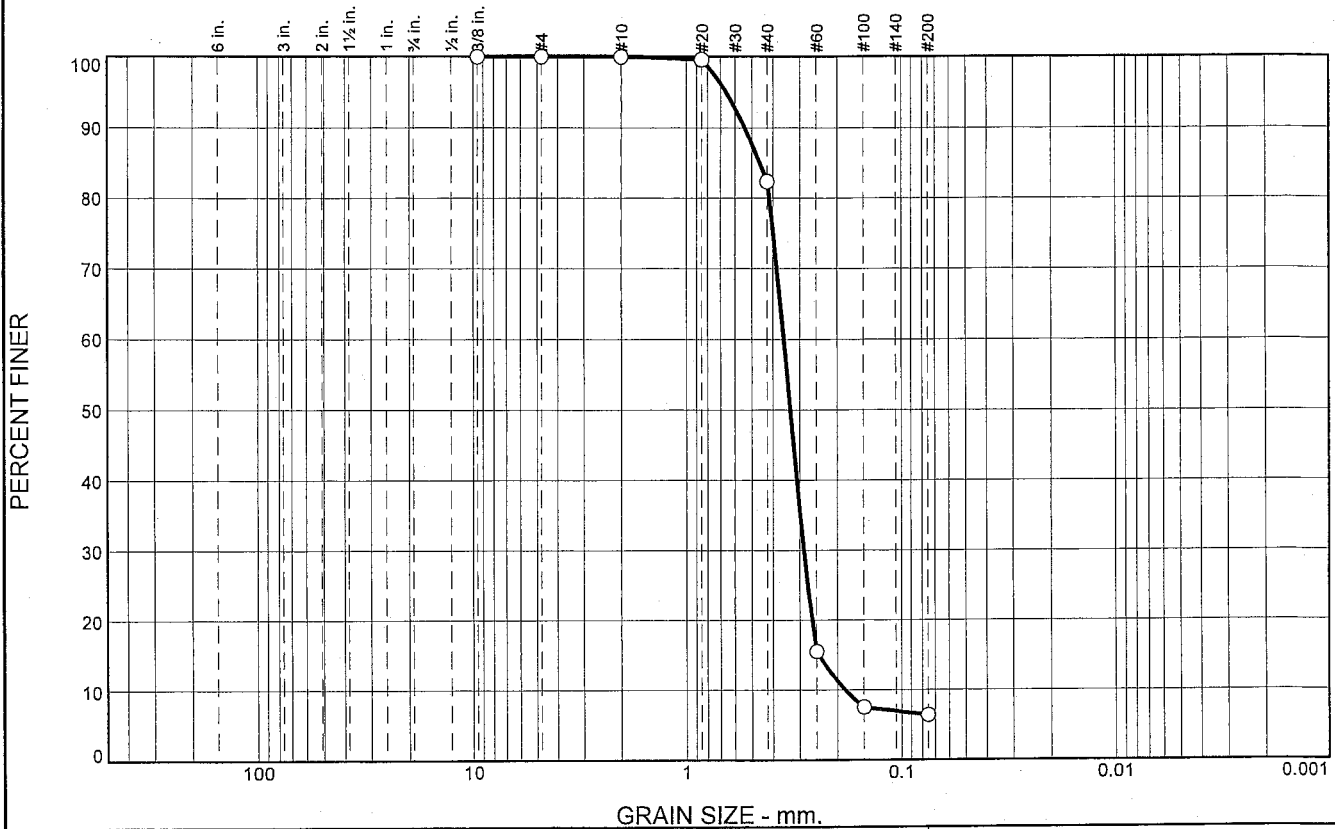
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	17.7	75.9	6.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.6		
#40	82.3		
#60	15.4		
#100	7.5		
#200	6.4		

* (no specification provided)

Material Description

SAND, (SP-SM), medium to fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.5403 D₈₅= 0.4595 D₆₀= 0.3555
D₅₀= 0.3315 D₃₀= 0.2866 D₁₅= 0.2448
D₁₀= 0.1846 C_u= 1.93 C_c= 1.25

Classification

USCS= SP-SM AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-24-10B
Sample Number: TE Lab ID: 4578.29

Depth: 3.6 - 8.6 (ft.)

Date: 7/16/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

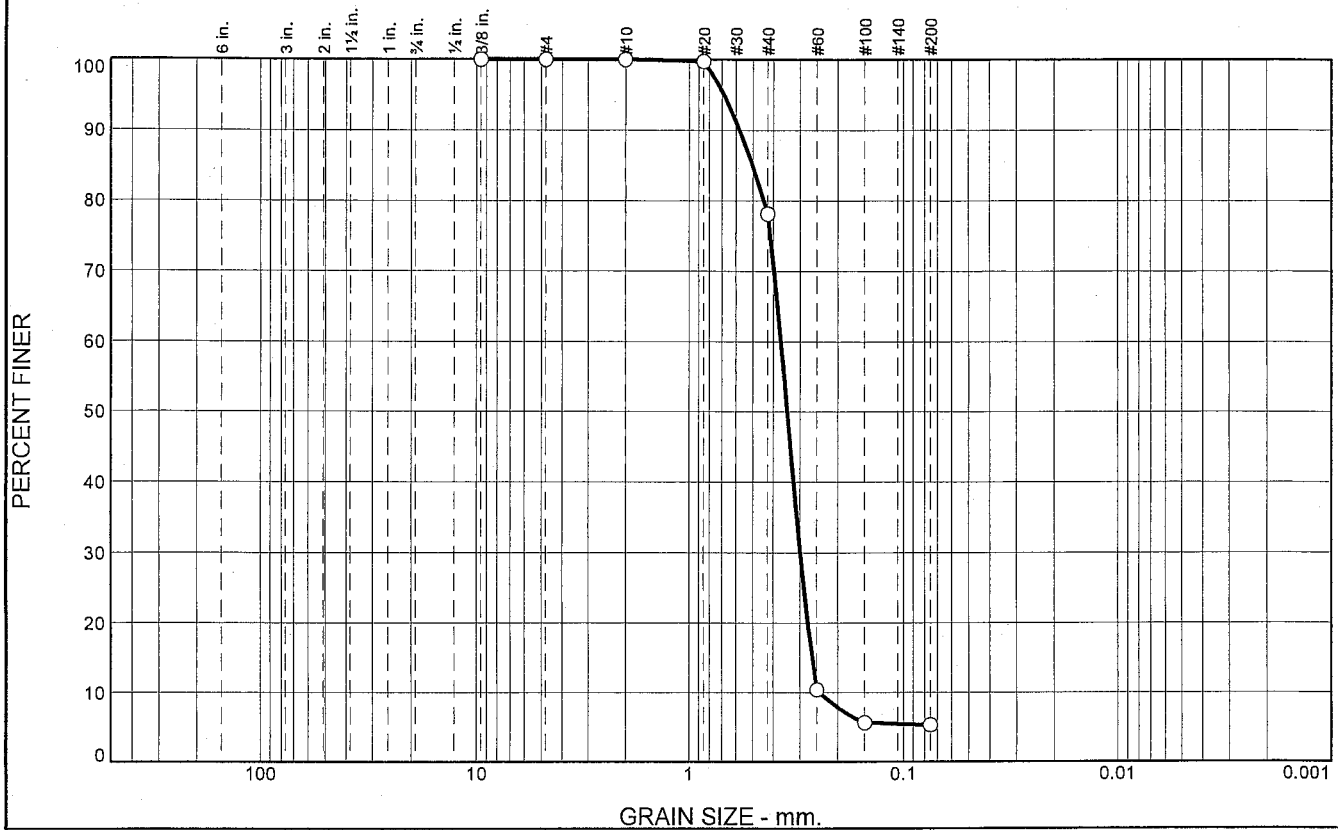
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	21.9	72.8	5.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.7		
#40	78.1		
#60	10.4		
#100	5.6		
#200	5.3		

Material Description
SAND, (SP-SM), medium to fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
 D₉₀= 0.5771 D₈₅= 0.5014 D₆₀= 0.3683
 D₅₀= 0.3435 D₃₀= 0.2985 D₁₅= 0.2632
 D₁₀= 0.2425 C_u= 1.52 C_c= 1.00

Classification
USCS= SP-SM AASHTO=

Remarks
CADD CODE = CH10D965

* (no specification provided)

Location: USACE Sample # BI-PB-24-10C
Sample Number: TE Lab ID: 4578.30

Depth: 8.6 - 13.6 (ft.)

Date: 7/16/10

Thompson Engineering

Mobile, Alabama

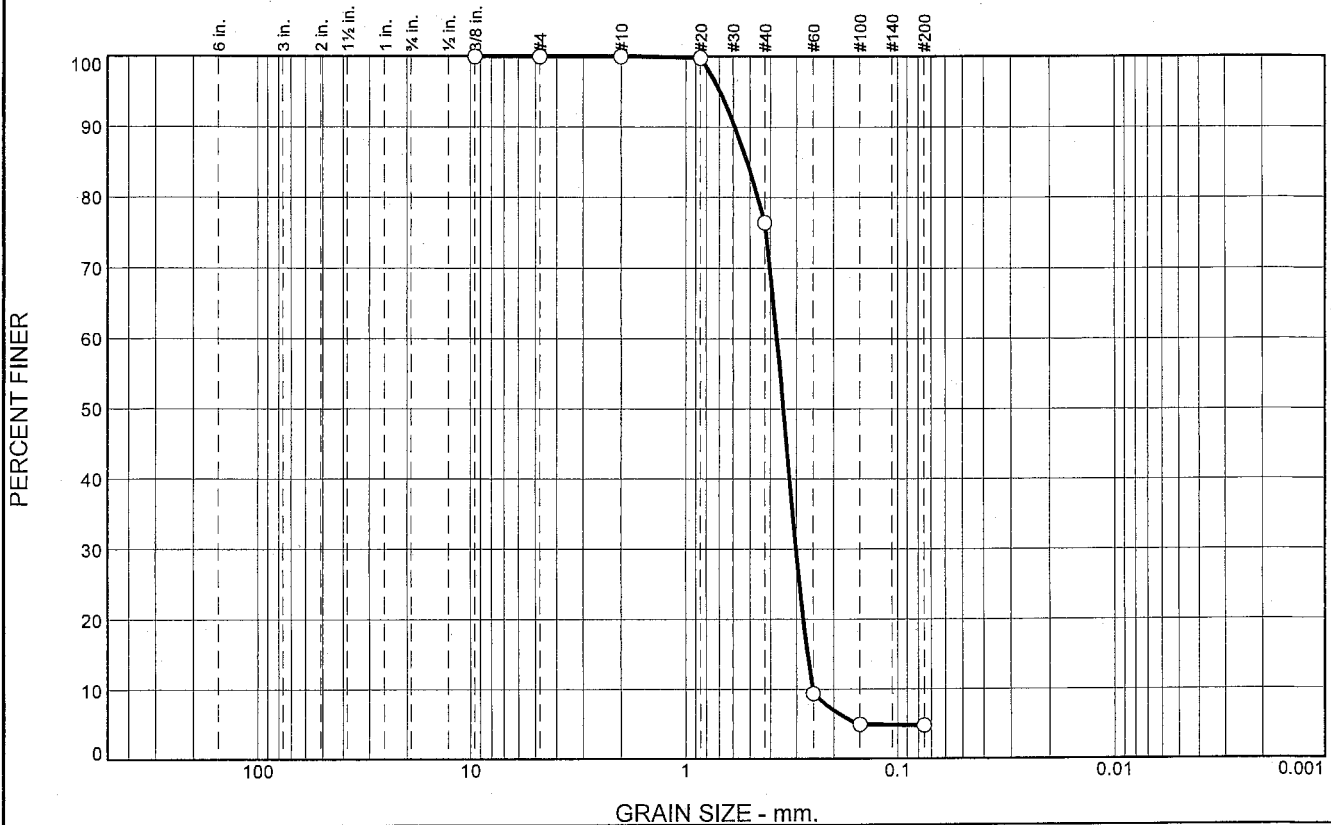
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	23.6	71.6	4.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.8		
#40	76.4		
#60	9.4		
#100	4.9		
#200	4.8		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained

PL= Atterberg Limits LL= PI=

Coefficients
D₉₀= 0.5885 D₈₅= 0.5151 D₆₀= 0.3726
D₅₀= 0.3472 D₃₀= 0.3015 D₁₅= 0.2661
D₁₀= 0.2520 C_u= 1.48 C_c= 0.97

USCS= SP Classification AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-PB-24-10D
Sample Number: TE Lab ID: 4578.31

Depth: 13.6 - 18.2 (ft.)

Date: 7/16/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Figure

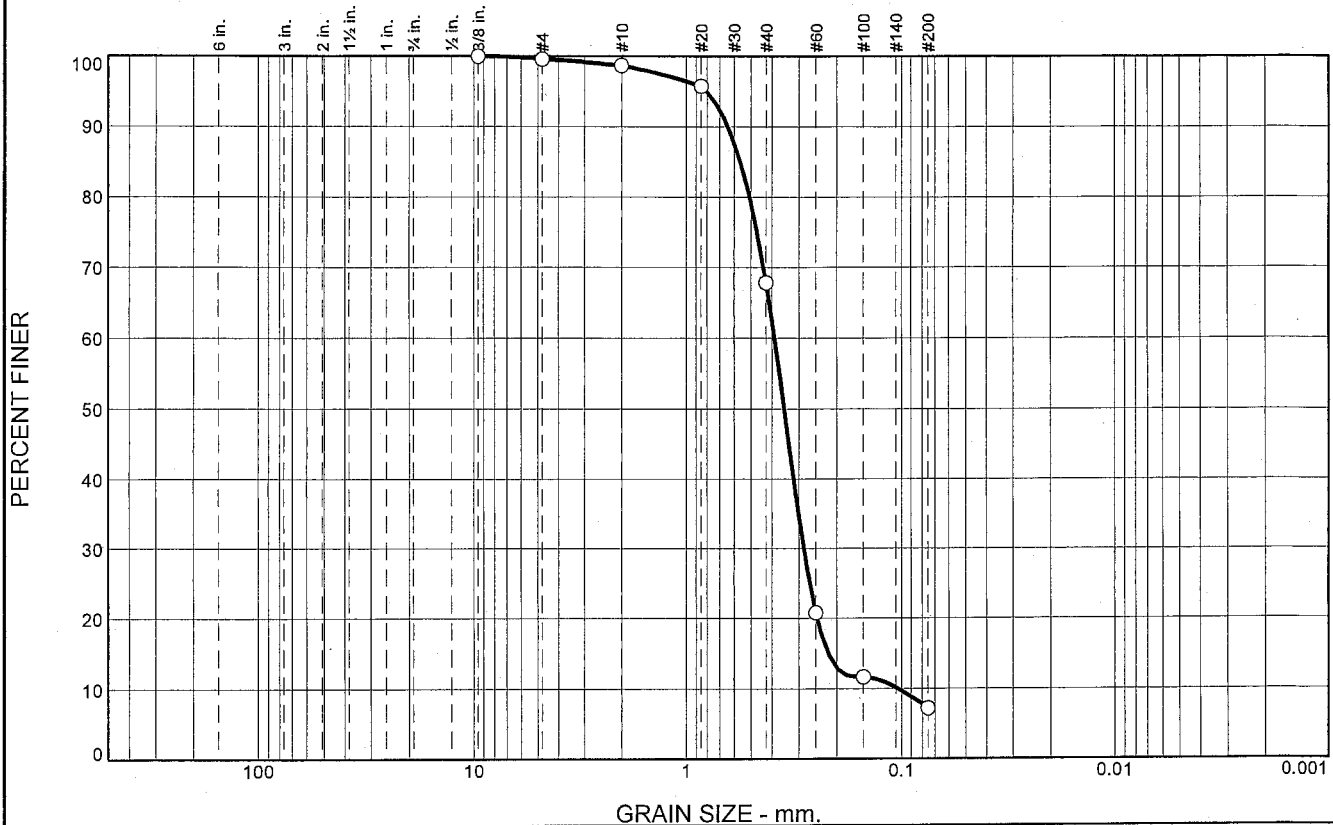
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-PB-025-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-025-10		LOCATION COORDINATES E = 1,152,791 N = 255,947		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 5		UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		14. WATER DEPTH 35 Ft.	
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 07-10-10		STARTED 07-10-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -33.6 Ft.		COMPLETED 07-10-10	
8. TOTAL DEPTH OF BORING 15.8 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Valerie Morrow, Geotechnical Engineer			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-33.6	0.0						
-33.9	0.3		SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace shell fragments, tan (SP)	A	Classification: SP-SM Color: 2.5Y 7/2-light gray D50: 0.3509 mm % Fines: 7.2		
			SAND, silty, mostly fine-grained sand-sized quartz, some silt, gray (SM)	B	Classification: SM Color: 2.5Y 5/2-grayish brown D50: 0.32 mm % Fines: 13.6		
				C	Classification: SP-SM Color: 2.5Y 6/2-light brownish gray D50: 0.33 mm % Fines: 6.1		
				D	Classification: SM Color: 2.5Y 5/2-grayish brown D50: 0.3195 mm % Fines: 12.3		
				E	Classification: SP-SM Color: 2.5Y 5/2-grayish brown D50: 0.3191 mm % Fines: 11		
-49.4	15.8						
NOTES:							
1. Soils are field visually classified in accordance with the Unified Soils Classification System.							
2. NS = Sample not submitted for laboratory analysis from this interval.							

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.4	0.9	30.9	60.6	7.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.6		
#10	98.7		
#20	95.8		
#40	67.8		
#60	20.8		
#100	11.7		
#200	7.2		

* (no specification provided)

Material Description
SAND, (SP-SM), medium to fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.6420 D₈₅= 0.5609 D₆₀= 0.3890
D₅₀= 0.3509 D₃₀= 0.2840 D₁₅= 0.2189
D₁₀= 0.1035 C_u= 3.76 C_c= 2.00

Classification
USCS= SP-SM AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-PB-25-10A
Sample Number: TE Lab ID: 4578.32

Depth: 0.0 - 0.3 (ft.)

Date: 7/16/10

Thompson Engineering

Mobile, Alabama

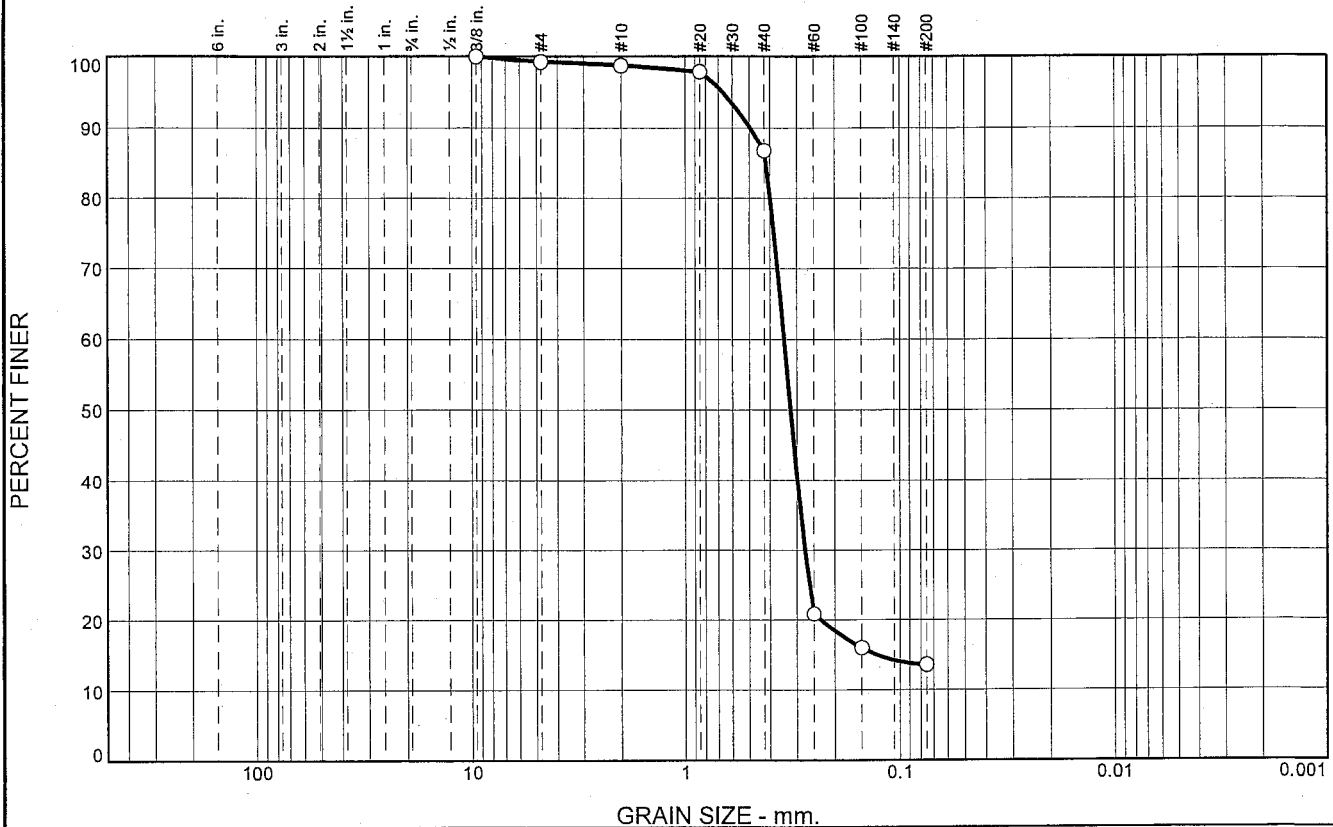
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.7	0.6	11.9	73.2	13.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.3		
#10	98.7		
#20	97.9		
#40	86.8		
#60	20.9		
#100	16.0		
#200	13.6		

* (no specification provided)

Material Description
SILTY SAND, (SM), medium to fine grained

PL= **Atterberg Limits** LL= PI=

Coefficients
D₉₀= 0.4945 D₈₅= 0.4175 D₆₀= 0.3432
D₅₀= 0.3200 D₃₀= 0.2746 D₁₅= 0.1279
D₁₀= C_u= C_c=

Classification
USCS= SM AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-PB-25-10B
Sample Number: TE Lab ID: 4578.33

Depth: 0.3 - 4.3 (ft.)

Date: 7/16/10

Thompson Engineering
Mobile, Alabama

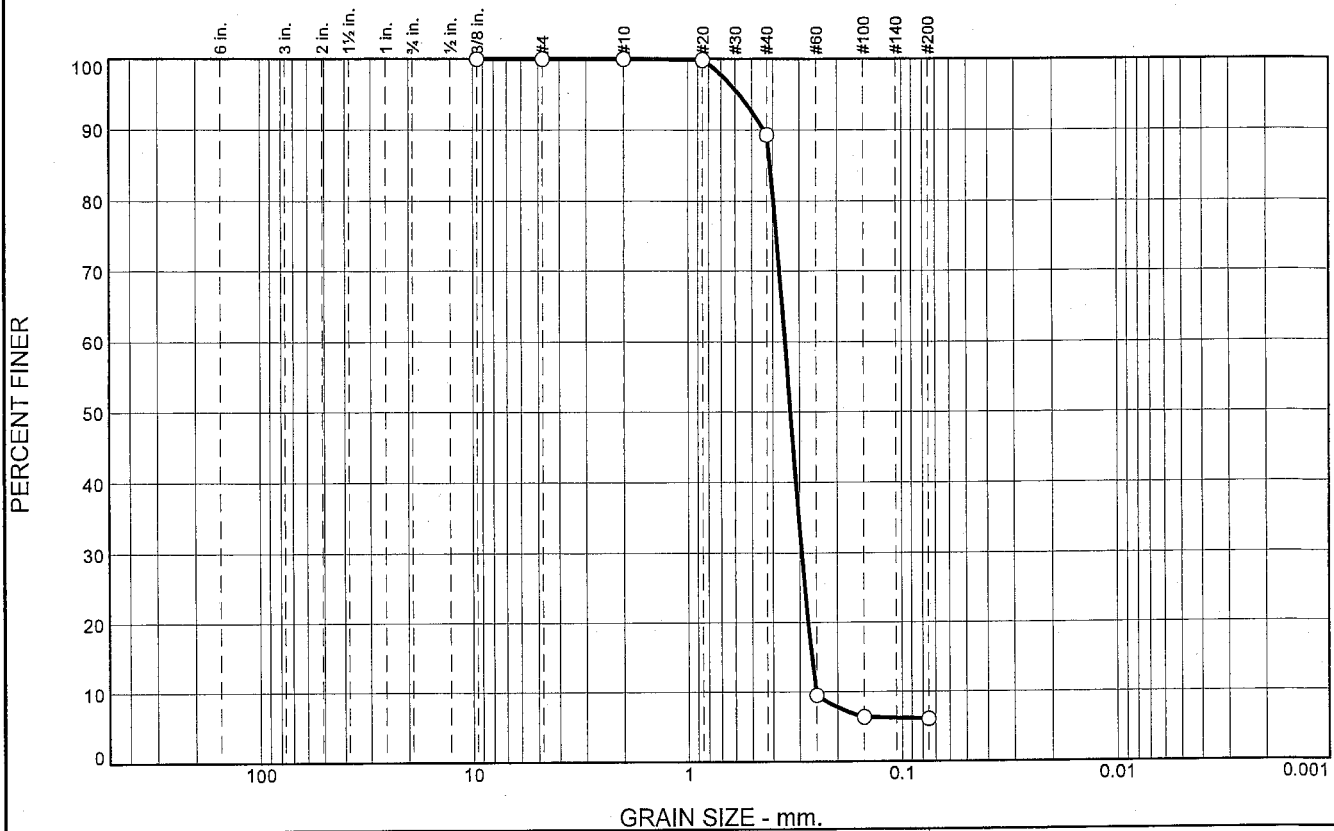
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	10.7	83.2	6.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	89.3		
#60	9.5		
#100	6.3		
#200	6.1		

* (no specification provided)

Material Description
SAND, (SP-SM), medium to fine grained

PL= **Atterberg Limits** LL= PI=

Coefficients
D₉₀= 0.4395 D₈₅= 0.4106 D₆₀= 0.3496
D₅₀= 0.3300 D₃₀= 0.2929 D₁₅= 0.2632
D₁₀= 0.2513 C_u= 1.39 C_c= 0.98

Classification
USCS= SP-SM AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-PB-25-10C
Sample Number: TE Lab ID: 4578.34

Depth: 4.3 - 8.3 (ft.)

Date: 7/16/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

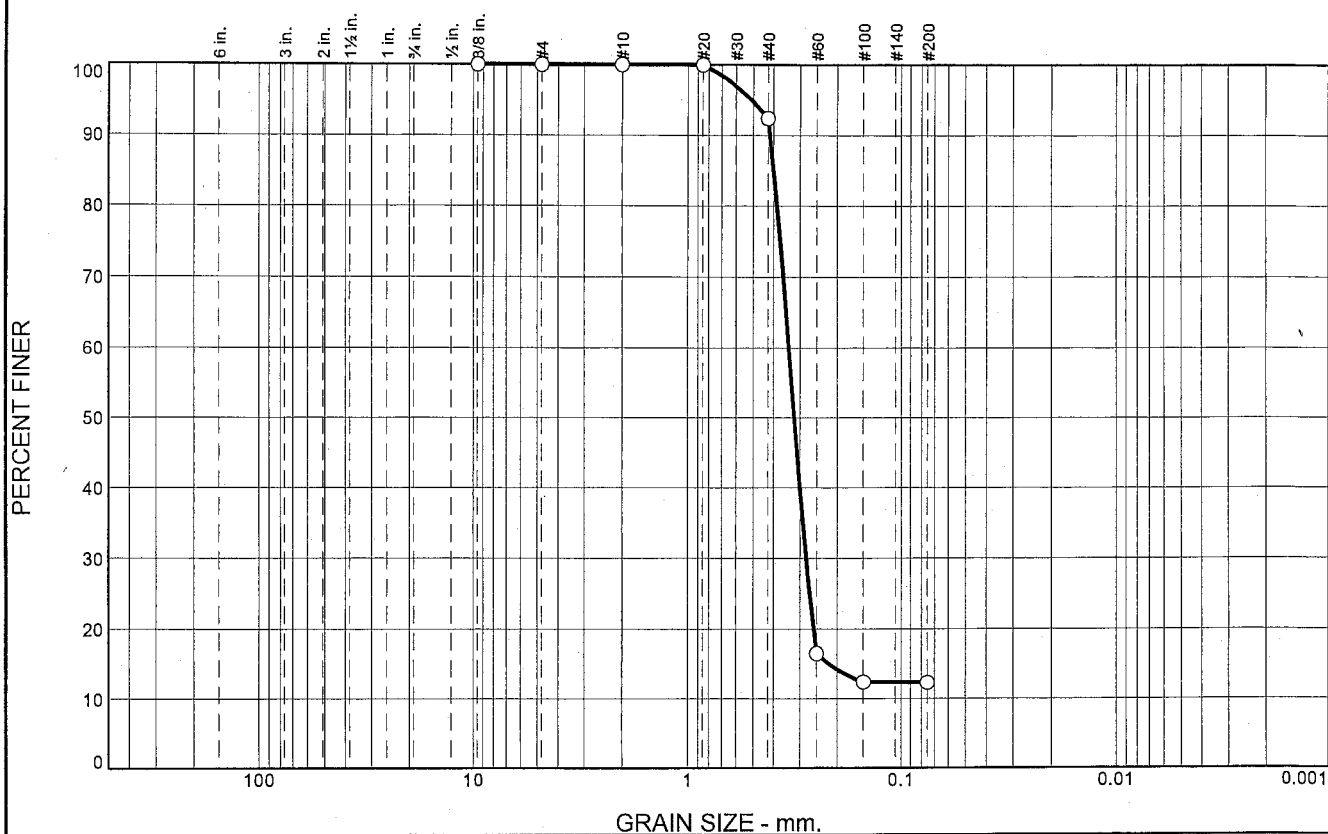
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	7.6	80.1	12.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	100.0		
#40	92.4		
#60	16.5		
#100	12.3		
#200	12.3		

* (no specification provided)

Material Description		
SILTY SAND, (SM), fine grained		
Atterberg Limits		
PL=	LL=	PI=
Coefficients		
D ₉₀ = 0.4161	D ₈₅ = 0.3998	D ₆₀ = 0.3395
D ₅₀ = 0.3195	D ₃₀ = 0.2806	D ₁₅ = 0.2171
D ₁₀ =	C _u =	C _c =
Classification		
USCS= SM	AASHTO=	
Remarks		
CADD CODE = CH10D965		

Location: USACE Sample # BI-PB-25-10D
Sample Number: TE Lab ID: 4578.35

Depth: 8.3 - 12.3 (ft.)

Date: 7/16/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

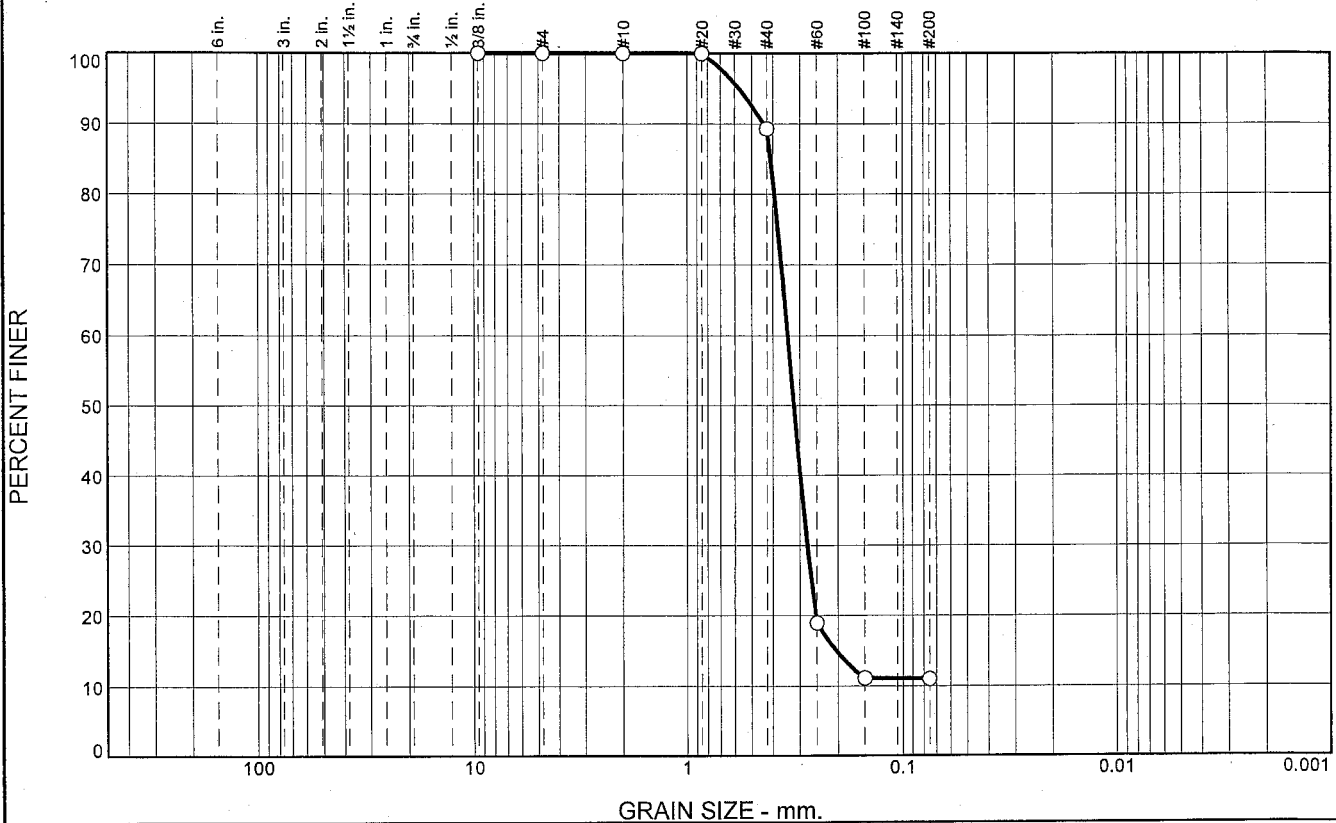
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	10.7	78.3	11.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	100.0		
#40	89.3		
#60	18.9		
#100	11.1		
#200	11.0		

Material Description
SAND, (SP-SM), medium to fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.4395 D₈₅= 0.4087 D₆₀= 0.3409
 D₅₀= 0.3191 D₃₀= 0.2769 D₁₅= 0.2034
 D₁₀= C_u= C_c=

Classification
 USCS= SP-SM AASHTO=

Remarks
 CADD CODE = CH10D965

* (no specification provided)

Location: USACE Sample # BI-PB-25-10E
 Sample Number: TE Lab ID: 4578.36

Depth: 12.3 - 15.8 (ft.)

Date: 7/16/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 **Figure**

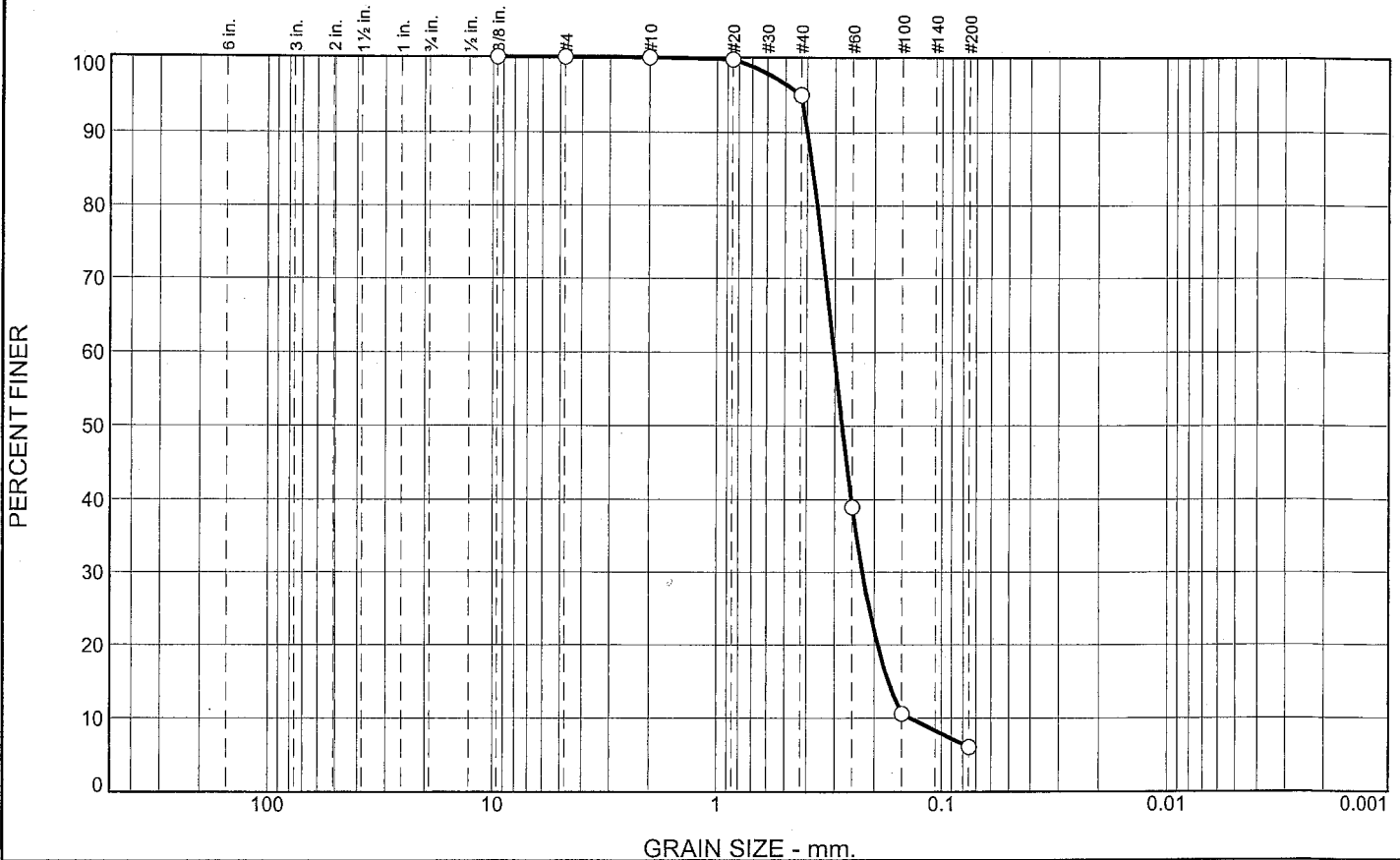
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-PB-026-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-026-10		LOCATION COORDINATES E = 1,137,521 N = 254,424		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 30 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 07-19-10		COMPLETED 07-19-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -29.8 Ft.			
8. TOTAL DEPTH OF BORING 20.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-29.8	0.0						
-31.4	1.6		SAND, silty, mostly fine-grained sand-sized quartz, some silt, brown (SM)	A	Classification: SP-SM Color: 2.5Y 3/2-very dark grayish brown D50: 0.2776 mm % Fines: 6		
-31.8	2.0		SAND, silty, mostly medium-grained sand-sized quartz, some silt, dk. brown (SM)				
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, brown (SP)	B	Classification: SP-SM Color: 2.5Y 4/2-dark grayish brown D50: 0.2524 mm % Fines: 6.5		
				C	Classification: SP Color: 2.5Y 5/2-grayish brown D50: 0.2625 mm % Fines: 3.9		
-41.8	12.0						
			CLAY, fat, gray (CH)	NS			
-49.8	20.0						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	5.0	89.0	6.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.7		
#40	95.0		
#60	38.9		
#100	10.6		
#200	6.0		

* (no specification provided)

<u>Material Description</u>		
SAND, (SP-SM), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.3988	D ₈₅ = 0.3780	D ₆₀ = 0.3026
D ₅₀ = 0.2776	D ₃₀ = 0.2255	D ₁₅ = 0.1728
D ₁₀ = 0.1371	C _u = 2.21	C _c = 1.23
<u>Classification</u>		
USCS= SP-SM	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-PB-26-10A
Sample Number: TE Lab ID: 4609.01

Depth: 0.0 - 2.0 (ft.)

Date: 8/4/10

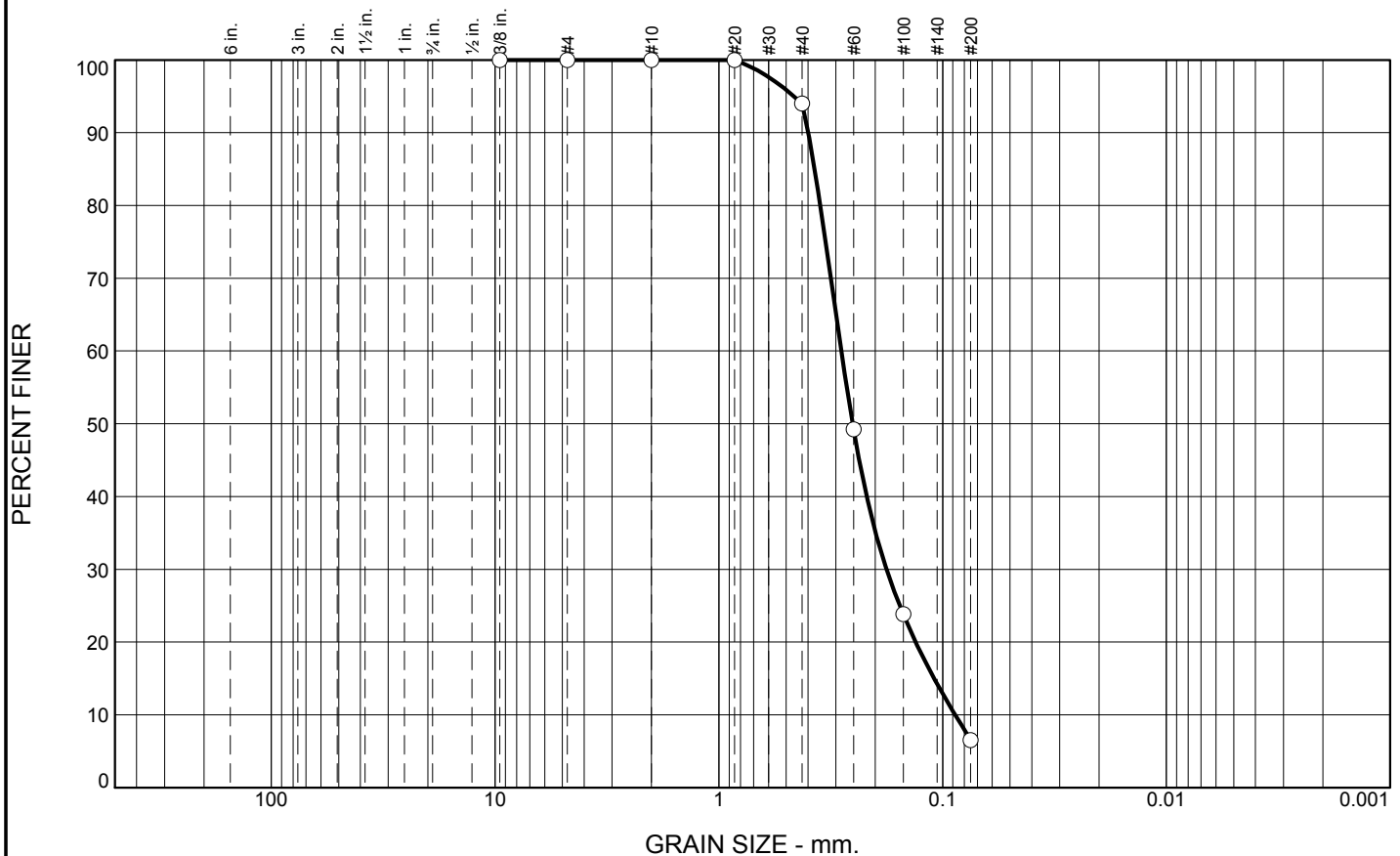
Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009
Report No.

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	6.0	87.5	6.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	100.0		
#40	94.0		
#60	49.2		
#100	23.9		
#200	6.5		

* (no specification provided)

<u>Material Description</u>		
SAND, (SP-SM), fine grained		
PL=	<u>Atterberg Limits</u> LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.3992	D ₈₅ = 0.3737	D ₆₀ = 0.2835
D ₅₀ = 0.2524	D ₃₀ = 0.1783	D ₁₅ = 0.1091
D ₁₀ = 0.0879	C _u = 3.22	C _c = 1.28
<u>Classification</u>		
USCS= SP-SM	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-PB-26-10B
Sample Number: TE Lab ID: 4609.02

Depth: 2.0 - 7.0 (ft.)

Date: 8/4/10

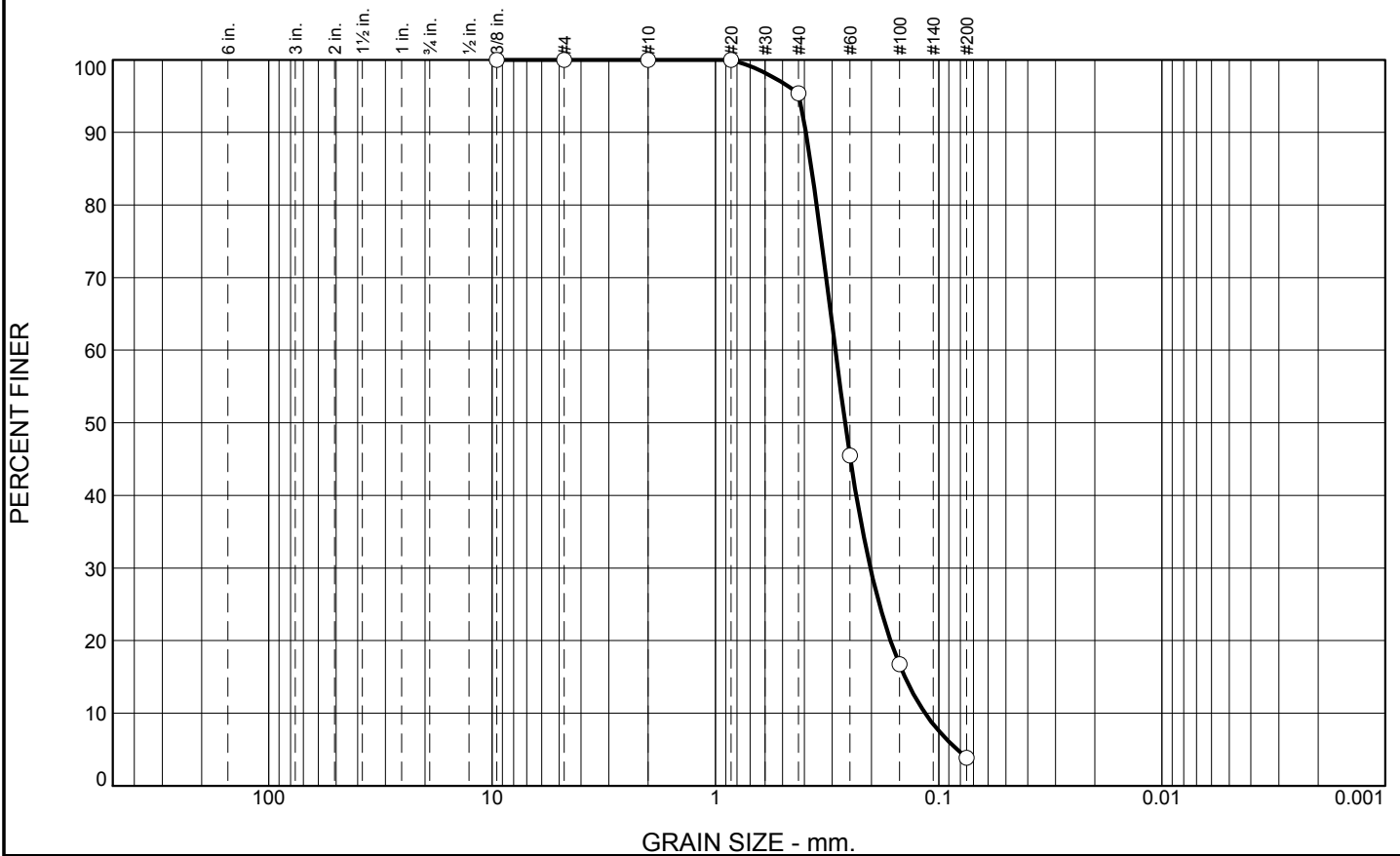
Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009
Report No. Revised 8/20

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	4.6	91.5	3.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	100.0		
#40	95.4		
#60	45.5		
#100	16.7		
#200	3.9		

* (no specification provided)

Material Description

SAND, (SP), fine grained, with trace clay nodules

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.3939 D₈₅= 0.3714 D₆₀= 0.2900
 D₅₀= 0.2625 D₃₀= 0.2024 D₁₅= 0.1417
 D₁₀= 0.1151 C_u= 2.52 C_c= 1.23

Classification

USCS= SP AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-26-10C
Sample Number: TE Lab ID: 4609.03

Depth: 7.0 - 12.0 (ft.)

Date: 8/4/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Report No. Revised 8/20

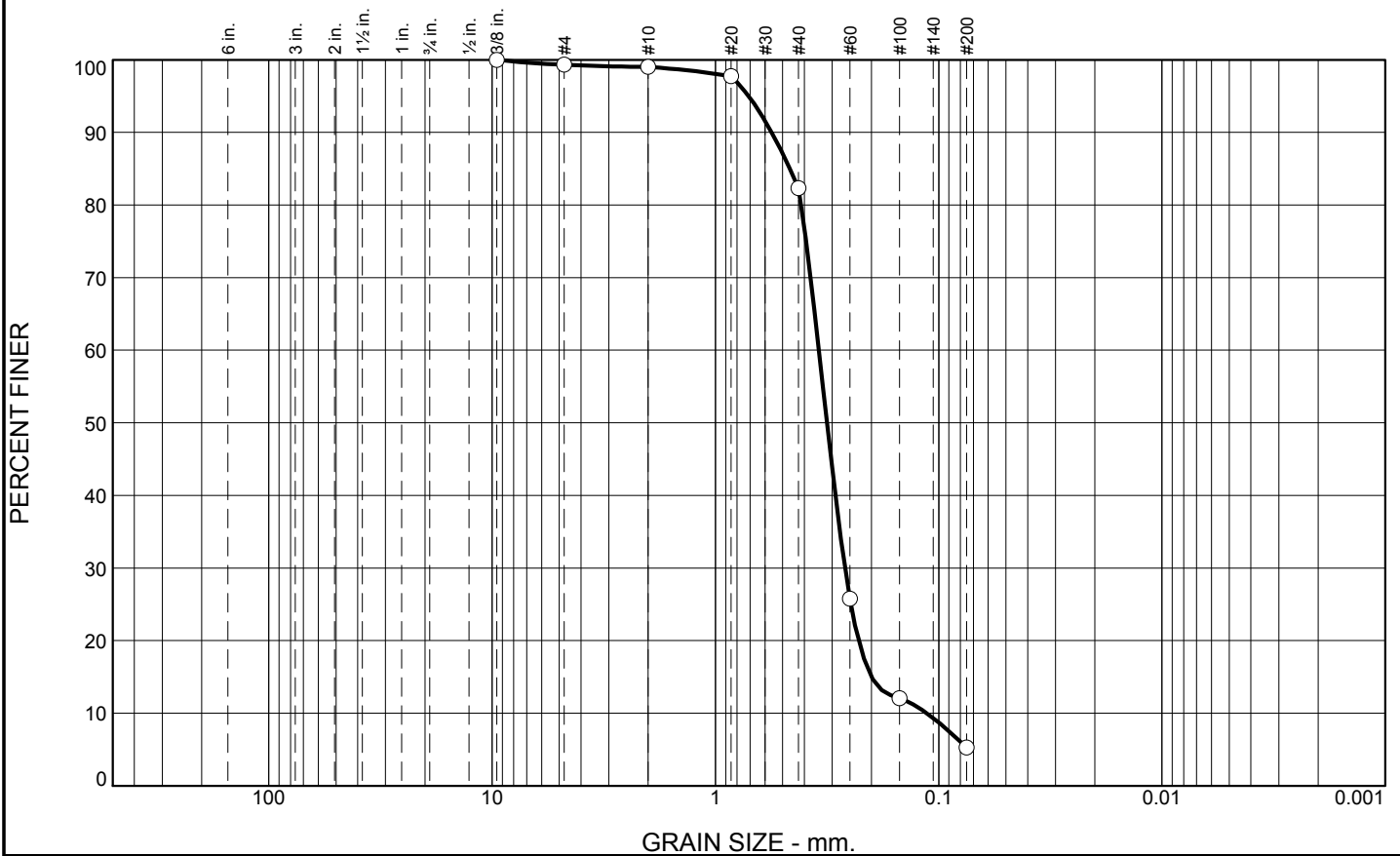
Tested By: R.Martin

Checked By: R.Byrd

Boring Designation BI-PB-027-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-027-10		LOCATION COORDINATES E = 1,138,715 N = 254,477		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		12. TOTAL SAMPLES 2		DISTURBED 2		VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		13. TOTAL NUMBER CORE BOXES		14. WATER DEPTH 30 Ft.	
4. NAME OF DRILLER Construction Solutions International, Inc.		5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		15. DATE BORING 07-19-10		16. ELEVATION TOP OF BORING -29.9 Ft.	
6. THICKNESS OF OVERBURDEN N/A		7. DEPTH DRILLED INTO ROCK N/A		17. TOTAL RECOVERY FOR BORING 100%		18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist	
8. TOTAL DEPTH OF BORING 18.0 Ft.							
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-29.9	0.0		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace shell fragments, brownish tan (SP)	A	Classification: SP-SM Color: 2.5Y 6/2-light brownish gray D50: 0.3163 mm % Fines: 5.3		
				B	Classification: SP Color: 2.5Y 7/2-light gray D50: 0.3179 mm % Fines: 2.9		
-39.9	10.0		CLAY, fat, dark gray (CH)	NS			
-47.9	18.0		NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.7	0.3	16.7	77.0	5.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.3		
#10	99.0		
#20	97.7		
#40	82.3		
#60	25.8		
#100	12.1		
#200	5.3		

* (no specification provided)

<u>Material Description</u>		
SAND, (SP-SM), medium to fine grained, with trace clay nodules		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.5599	D ₈₅ = 0.4641	D ₆₀ = 0.3439
D ₅₀ = 0.3163	D ₃₀ = 0.2628	D ₁₅ = 0.1999
D ₁₀ = 0.1132	C _u = 3.04	C _c = 1.77
<u>Classification</u>		
USCS= SP-SM	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-PB-27-10A
Sample Number: TE Lab ID: 4609.04

Depth: 0.0 - 5.0 (ft.)

Date: 8/4/10

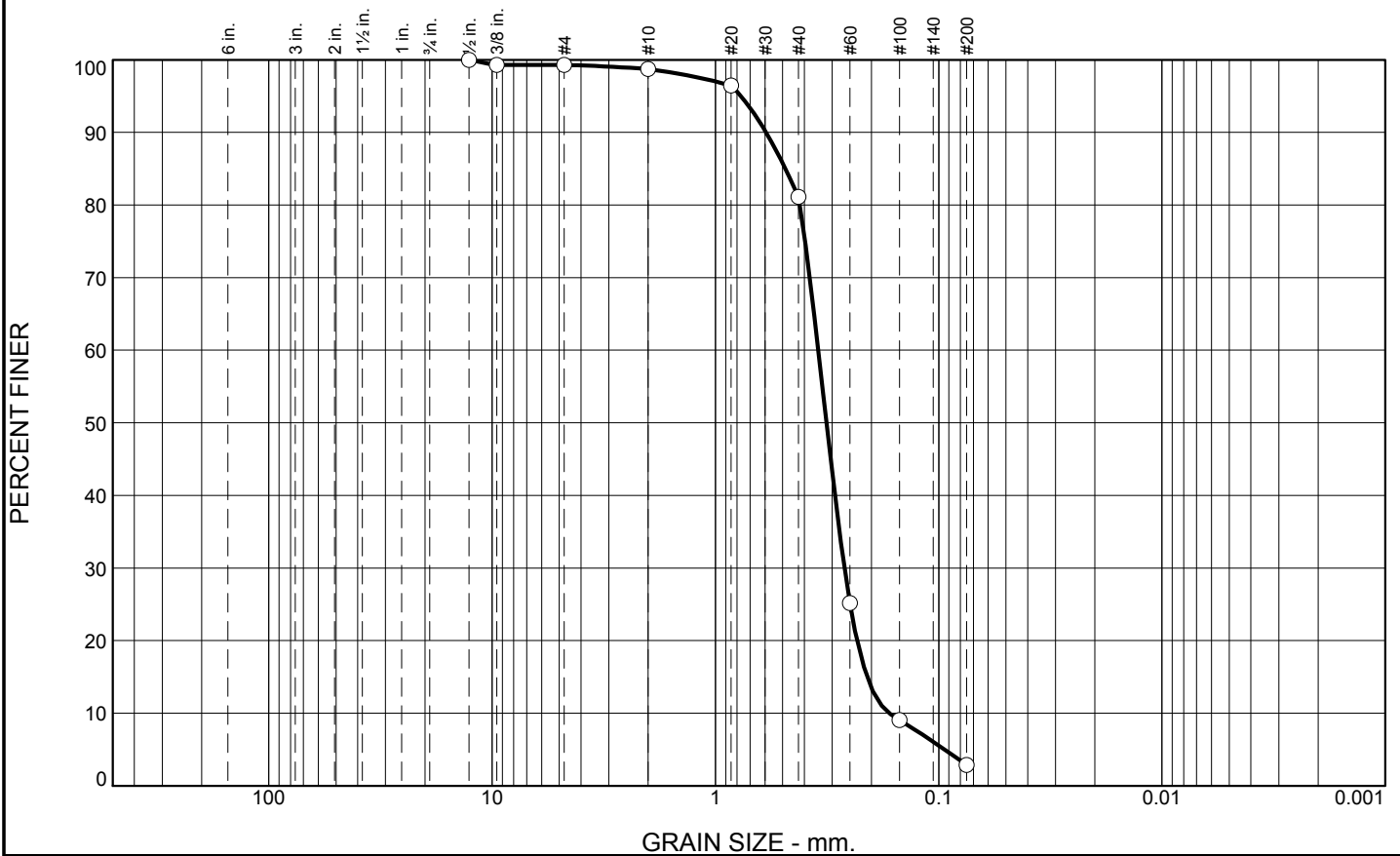
Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009
Report No. Revised 8/20

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.7	0.6	17.6	78.2	2.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.500	100.0		
.375	99.3		
#4	99.3		
#10	98.7		
#20	96.5		
#40	81.1		
#60	25.2		
#100	9.1		
#200	2.9		

* (no specification provided)

Material Description
 SAND, (SP), medium to fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.5932 D₈₅= 0.4857 D₆₀= 0.3462
 D₅₀= 0.3179 D₃₀= 0.2643 D₁₅= 0.2093
 D₁₀= 0.1666 C_u= 2.08 C_c= 1.21

Classification
 USCS= SP AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-PB-27-10B
 Sample Number: TE Lab ID: 4609.05

Depth: 5.0 - 10.0 (FT.)

Date: 8/4/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 **Report No.** Revised 8/20

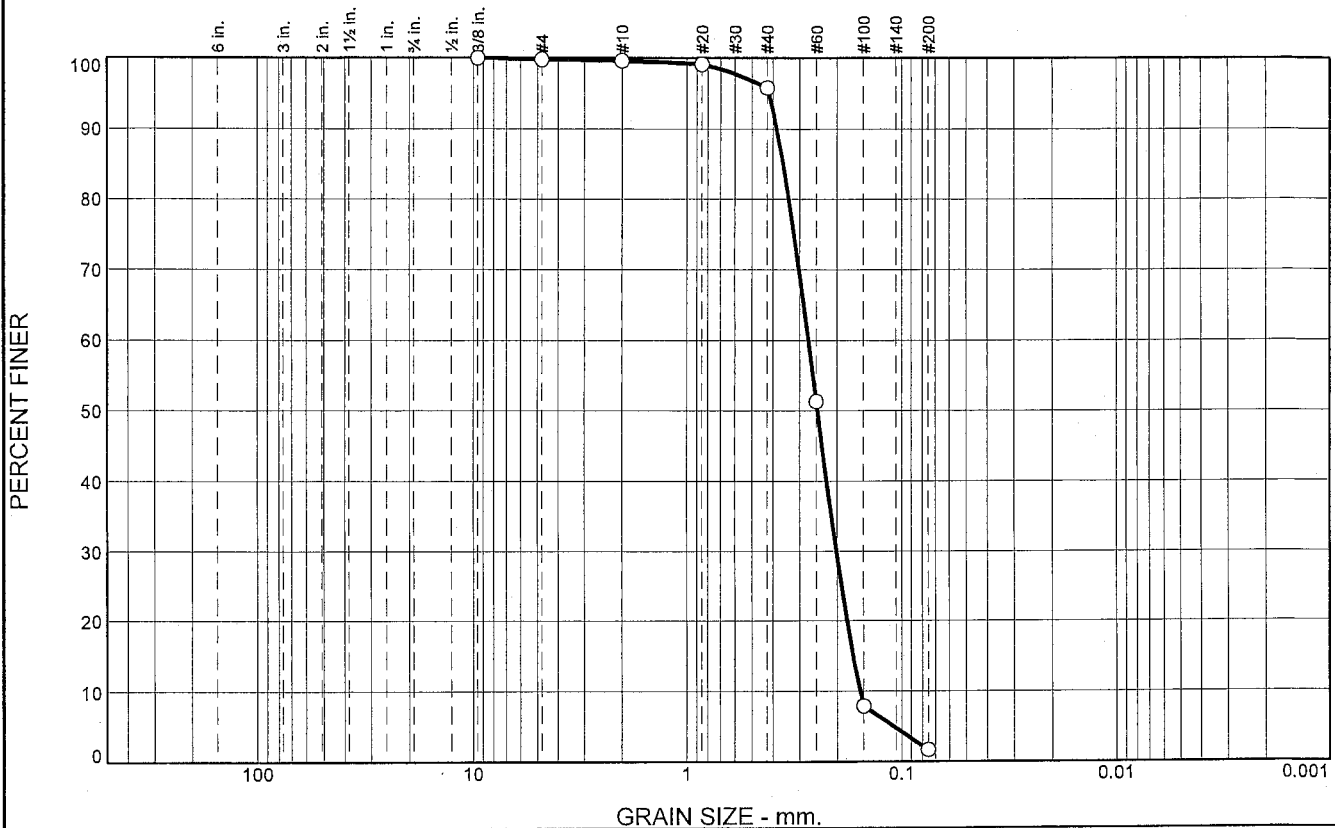
Tested By: R.Martin

Checked By: R.Byrd

Boring Designation BI-PB-028-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-028-10		LOCATION COORDINATES E = 1,142,088 N = 254,513		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 4		DISTURBED 0 UNDISTURBED (UD)	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 32 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 07-16-10		STARTED 07-16-10 COMPLETED 07-16-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -31.6 Ft.			
8. TOTAL DEPTH OF BORING 18.6 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR John Baehr, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-31.6	0.0						
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.2468 mm % Fines: 1.7		
				B	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.2646 mm % Fines: 1.9		
				C	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.2917 mm % Fines: 2.5		
				D	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.3289 mm % Fines: 1.8		
-50.2	18.6						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.2	3.8	94.1	1.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.8		
#10	99.6		
#20	99.1		
#40	95.8		
#60	51.3		
#100	7.9		
#200	1.7		

* (no specification provided)

Material Description

SAND, (SP), fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.3841 D₈₅= 0.3583 D₆₀= 0.2724
D₅₀= 0.2468 D₃₀= 0.2013 D₁₅= 0.1681
D₁₀= 0.1557 C_u= 1.75 C_c= 0.96

Classification

USCS= SP AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-28-10A
Sample Number: TE Lab ID: 4593.60

Depth: 0.0 - 5.0 (ft.)

Date: 7/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

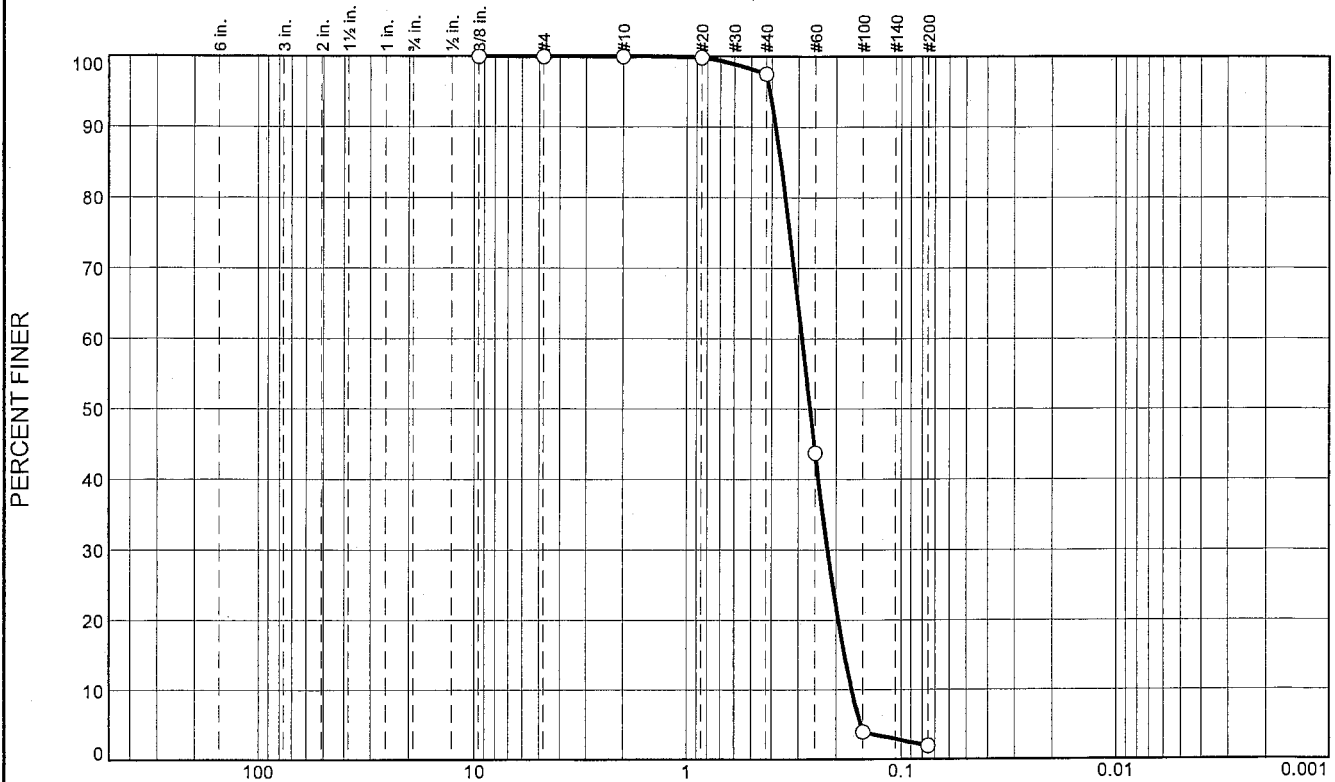
Project No: 10-2123-0009

Report No.

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



GRAIN SIZE - mm.

% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	2.5	95.6	1.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	97.5		
#60	43.7		
#100	3.9		
#200	1.9		

* (no specification provided)

Material Description

SAND, (SP), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.3837

D₈₅= 0.3632

D₆₀= 0.2887

D₅₀= 0.2646

D₃₀= 0.2186

D₁₅= 0.1825

D₁₀= 0.1692

C_u= 1.71

C_c= 0.98

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-28-10B
Sample Number: TE Lab ID: 4593.61

Depth: 5.0 - 10.0 (ft.)

Date: 7/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

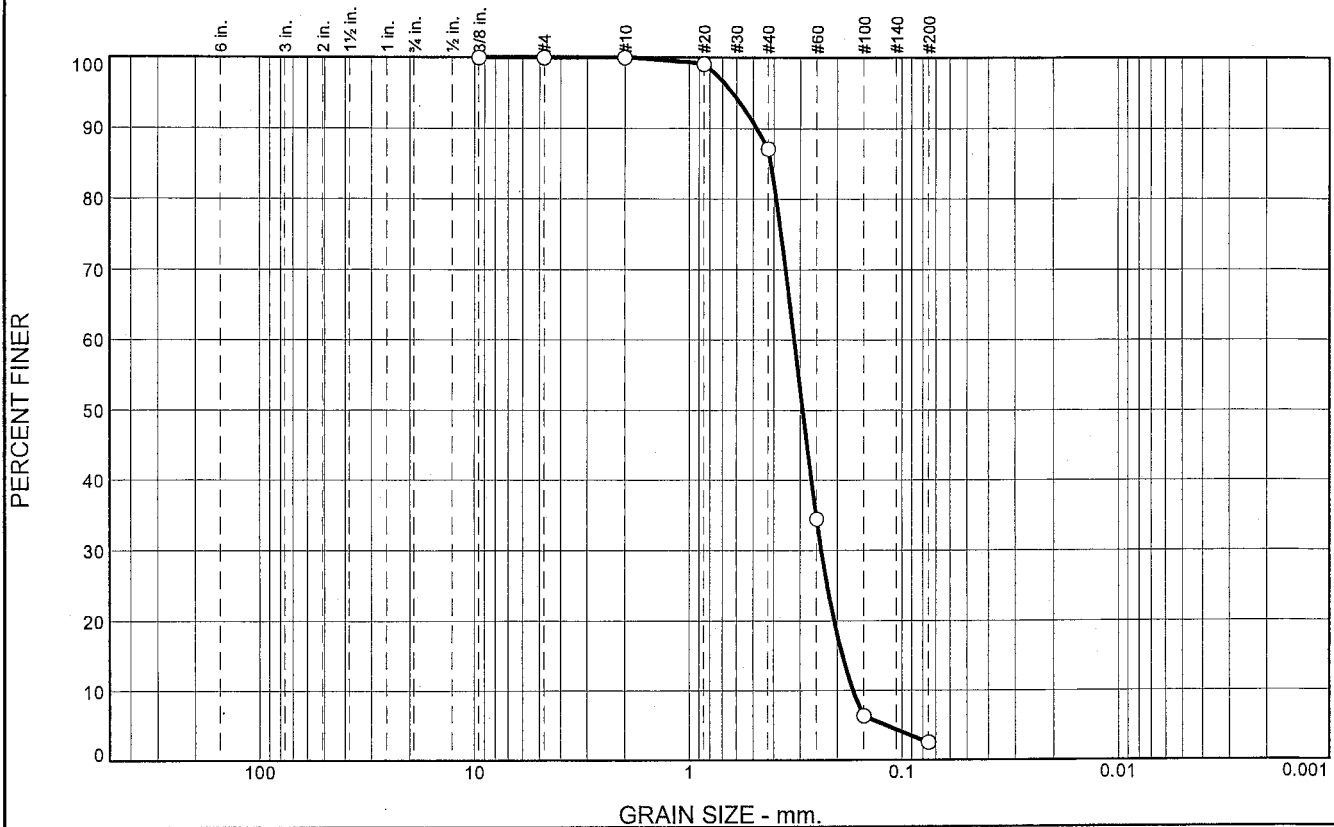
Project No: 10-2123-0009

Report No.

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	12.9	84.6	2.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.1		
#40	87.1		
#60	34.4		
#100	6.4		
#200	2.5		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.4813 D₈₅= 0.4131 D₆₀= 0.3197
D₅₀= 0.2917 D₃₀= 0.2376 D₁₅= 0.1891
D₁₀= 0.1684 C_u= 1.90 C_c= 1.05

Classification

USCS= SP AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-28-10C
Sample Number: TE Lab ID: 4593.62

Depth: 10.0 - 15.0 (ft.)

Date: 7/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

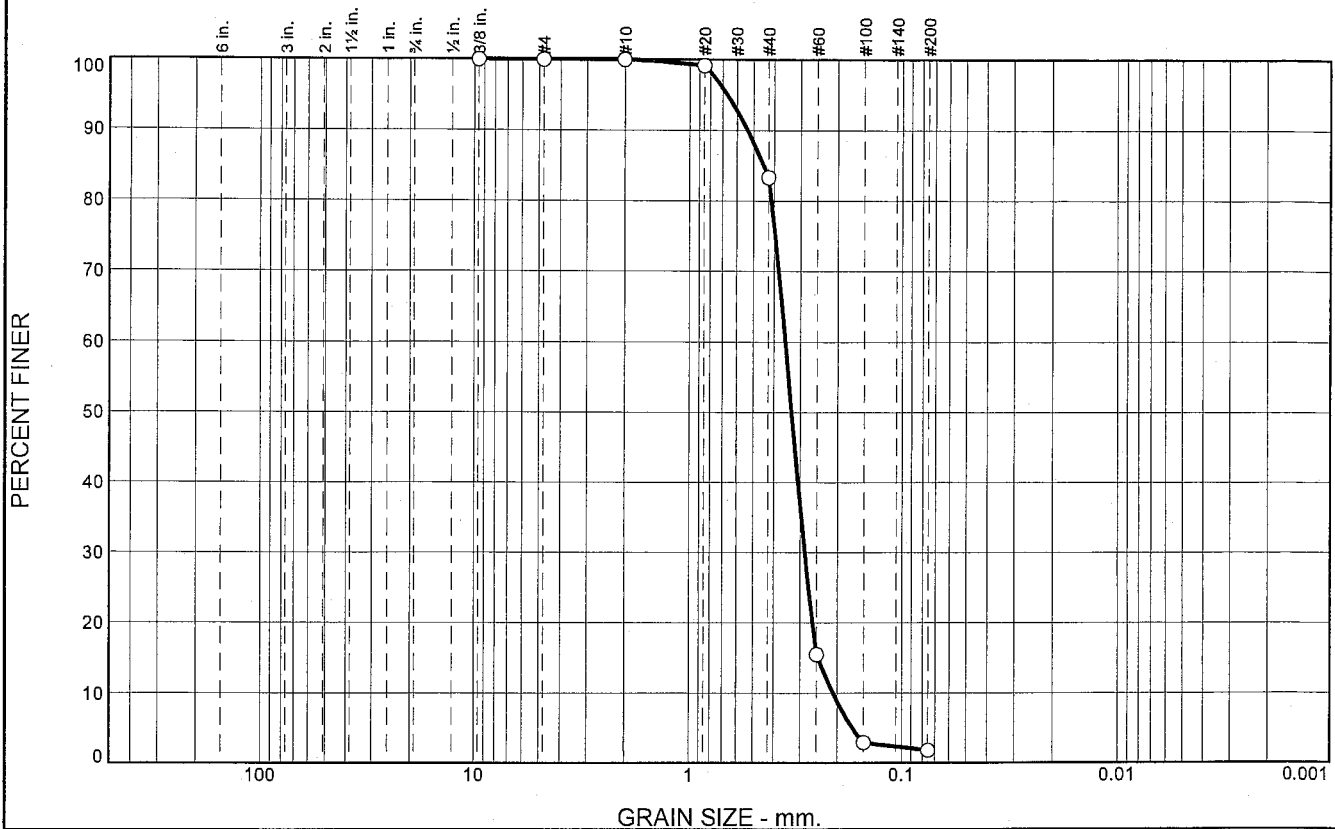
Project No: 10-2123-0009

Report No.

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	16.7	81.5	1.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.1		
#40	83.3		
#60	15.5		
#100	2.9		
#200	1.8		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.5337

D₈₅= 0.4483

D₆₀= 0.3527

D₅₀= 0.3289

D₃₀= 0.2849

D₁₅= 0.2466

D₁₀= 0.2095

C_u= 1.68

C_c= 1.10

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-28-10D
Sample Number: TE Lab ID: 4593.63

Depth: 15.0 - 19.2 (ft.)

Date: 7/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Report No.

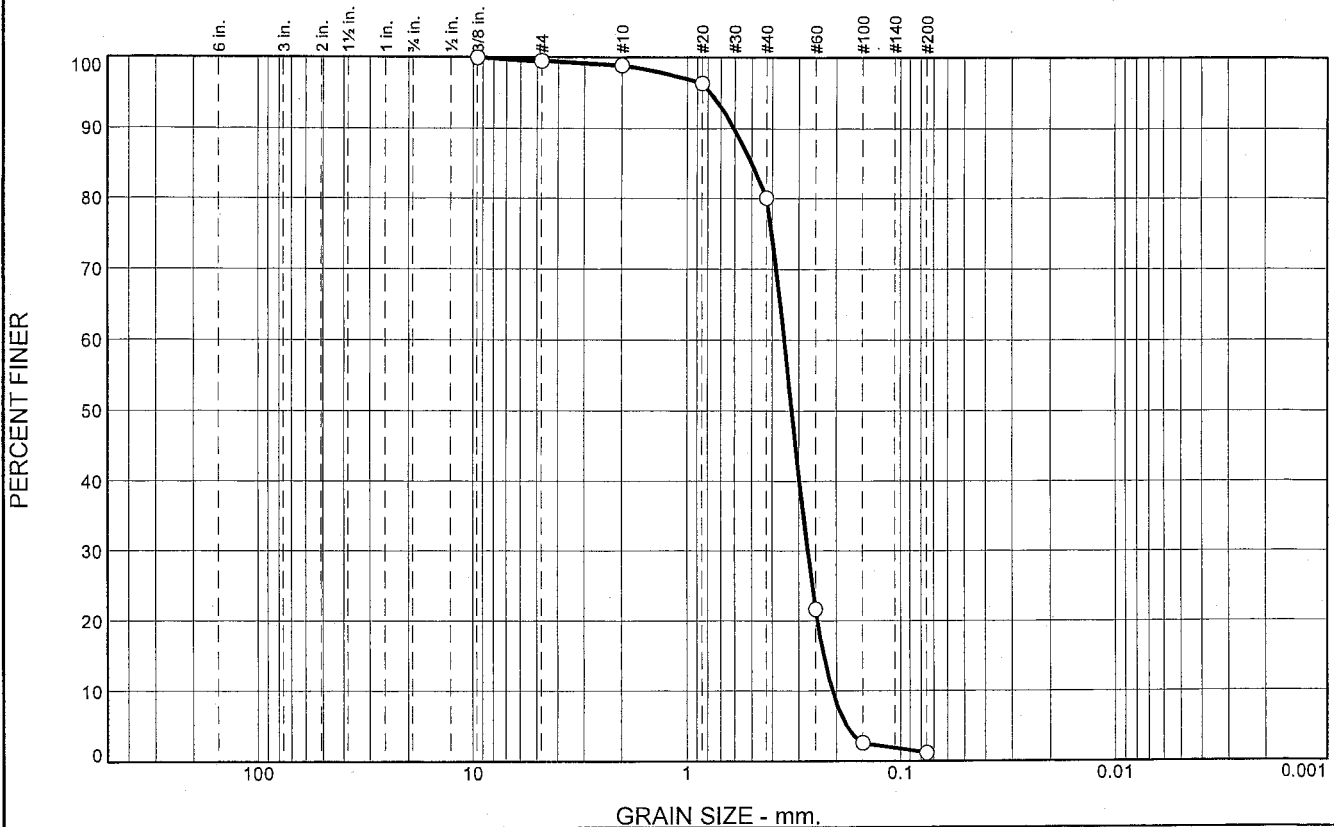
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-PB-029-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-029-10		LOCATION COORDINATES E = 1,143,583 N = 254,505		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 1 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 30 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING		STARTED 07-16-10 COMPLETED 07-16-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -29.6 Ft.			
8. TOTAL DEPTH OF BORING 11.5 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR John Baehr, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-29.6	0.0						
-31.0	1.4		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 7/2-light gray D50: 0.3235 mm % Fines: 1.2		
-32.6	3.0		SAND, poorly-graded with silt, mostly fine to medium-grained sand-sized quartz, trace shell fragments, interbedded SP and SM layers, lt. gray (SP-SM)				
			CLAY, lean, gray (CL)	NS			
-41.1	11.5						
NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.							

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.5	0.6	18.9	78.8	1.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.5		
#10	98.9		
#20	96.4		
#40	80.0		
#60	21.7		
#100	2.6		
#200	1.2		

Material Description

SAND, (SP), medium to fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.6056 D₈₅= 0.4996 D₆₀= 0.3513
D₅₀= 0.3235 D₃₀= 0.2725 D₁₅= 0.2287
D₁₀= 0.2085 C_u= 1.68 C_c= 1.01

Classification

USCS= SP AASHTO=

Remarks

CADD CODE = CH10D965

* (no specification provided)

Location: USACE Sample # BI-PB-29-10A
Sample Number: TE Lab ID: 4593.59

Depth: 0.0 - 1.4 (ft.)

Date: 7/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Report No.

Tested By: G.Fancher

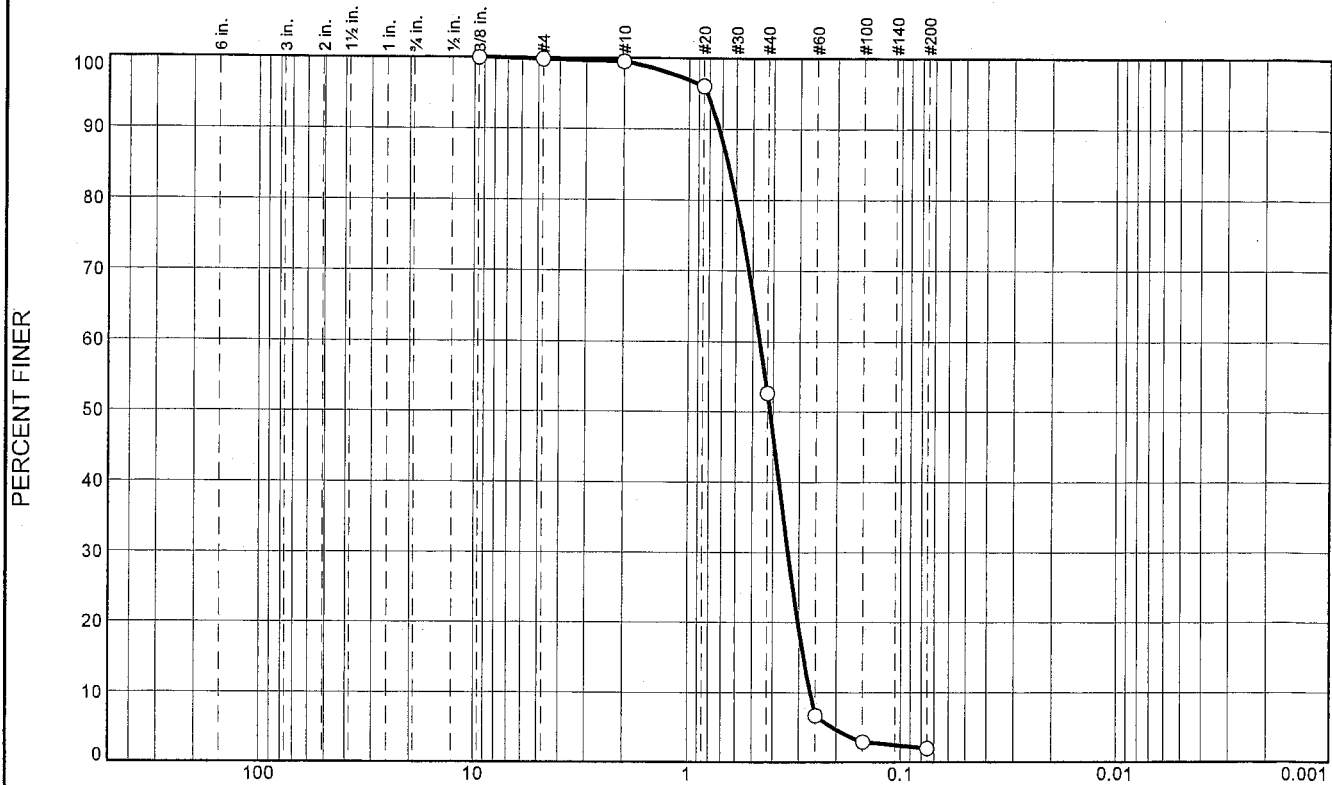
Checked By: R.Byrd

Boring Designation BI-PB-030-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-030-10		LOCATION COORDINATES E = 1,145,242 N = 254,411		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 3	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		UNDISTURBED (UD) 0	
6. THICKNESS OF OVERBURDEN N/A				14. WATER DEPTH		33 Ft.	
7. DEPTH DRILLED INTO ROCK N/A				15. DATE BORING		STARTED 07-16-10	
8. TOTAL DEPTH OF BORING 18.8 Ft.				16. ELEVATION TOP OF BORING		COMPLETED 07-16-10	
				17. TOTAL RECOVERY FOR BORING		100%	
				18. SIGNATURE AND TITLE OF INSPECTOR		John Baehr, Geologist	

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-32.7	0.0				
			SAND, poorly-graded, mostly medium-grained sand-sized quartz, lt. gray (SP)	A	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.4137 mm % Fines: 2
				B	Classification: SP Color: N 9/1- D50: 0.3812 mm % Fines: 1.8
				C	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.39 mm % Fines: 2
-47.6	14.9		CLAY, lean, occ. sand pockets, gray (CL)	NS	
-51.5	18.8				
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.		

Particle Size Distribution Report



GRAIN SIZE - mm.

% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.3	46.9	50.6	2.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.8		
#10	99.5		
#20	96.1		
#40	52.6		
#60	6.7		
#100	2.9		
#200	2.0		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained, with clay nodules

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.7231 D₈₅= 0.6548 D₆₀= 0.4613
D₅₀= 0.4137 D₃₀= 0.3379 D₁₅= 0.2851
D₁₀= 0.2654 C_u= 1.74 C_c= 0.93

Classification

USCS= SP AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-30-10A
Sample Number: TE Lab ID: 4593.20

Depth: 0.0 - 5.0 (ft.)

Date: 7/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

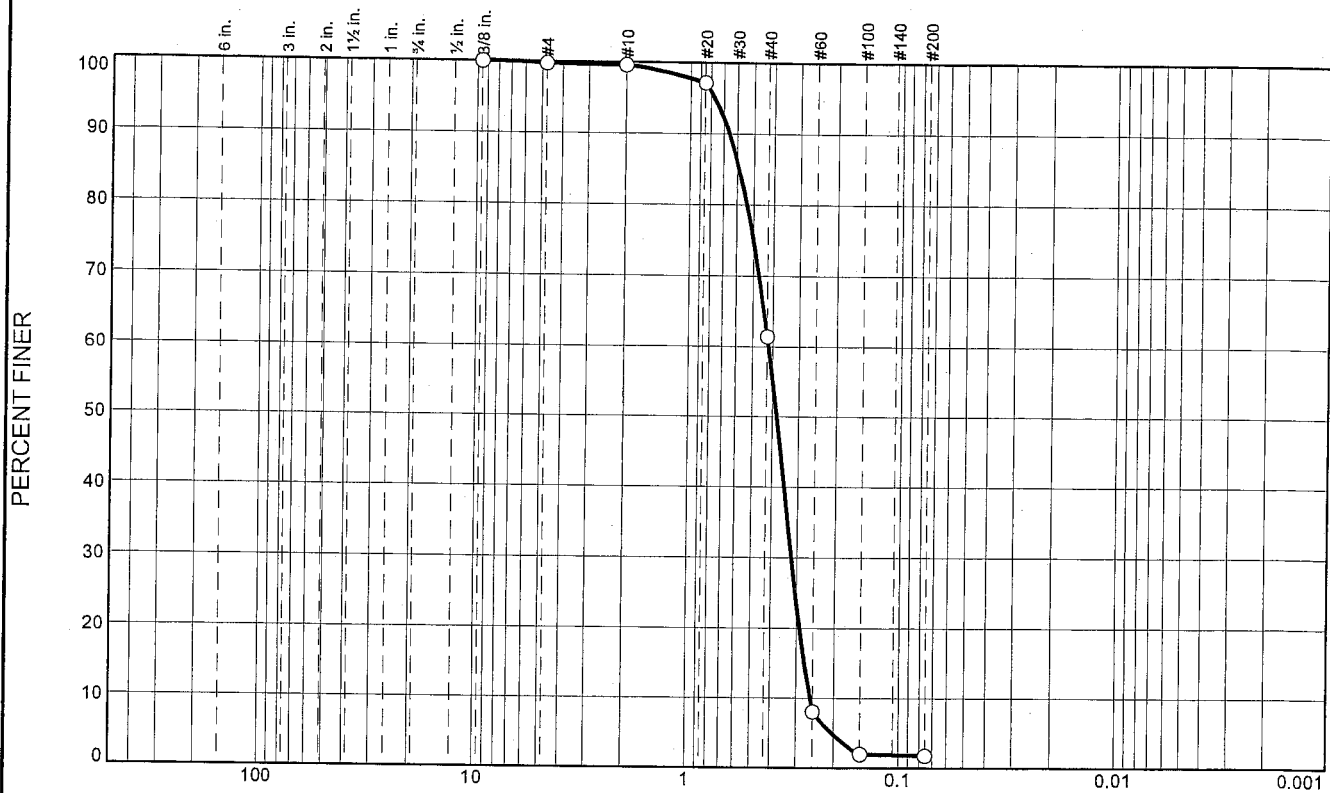
Project No: 10-2123-0009

Report No.

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.3	0.1	38.2	59.6	1.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.7		
#10	99.6		
#20	97.2		
#40	61.4		
#60	8.0		
#100	2.0		
#200	1.8		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.6557 D₈₅= 0.5866 D₆₀= 0.4189
D₅₀= 0.3812 D₃₀= 0.3192 D₁₅= 0.2746
D₁₀= 0.2576 C_u= 1.63 C_c= 0.94

Classification

USCS= SP AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-30-10B
Sample Number: TE Lab ID: 4593.21

Depth: 5.0 - 10.0 (ft.)

Date: 7/26/10

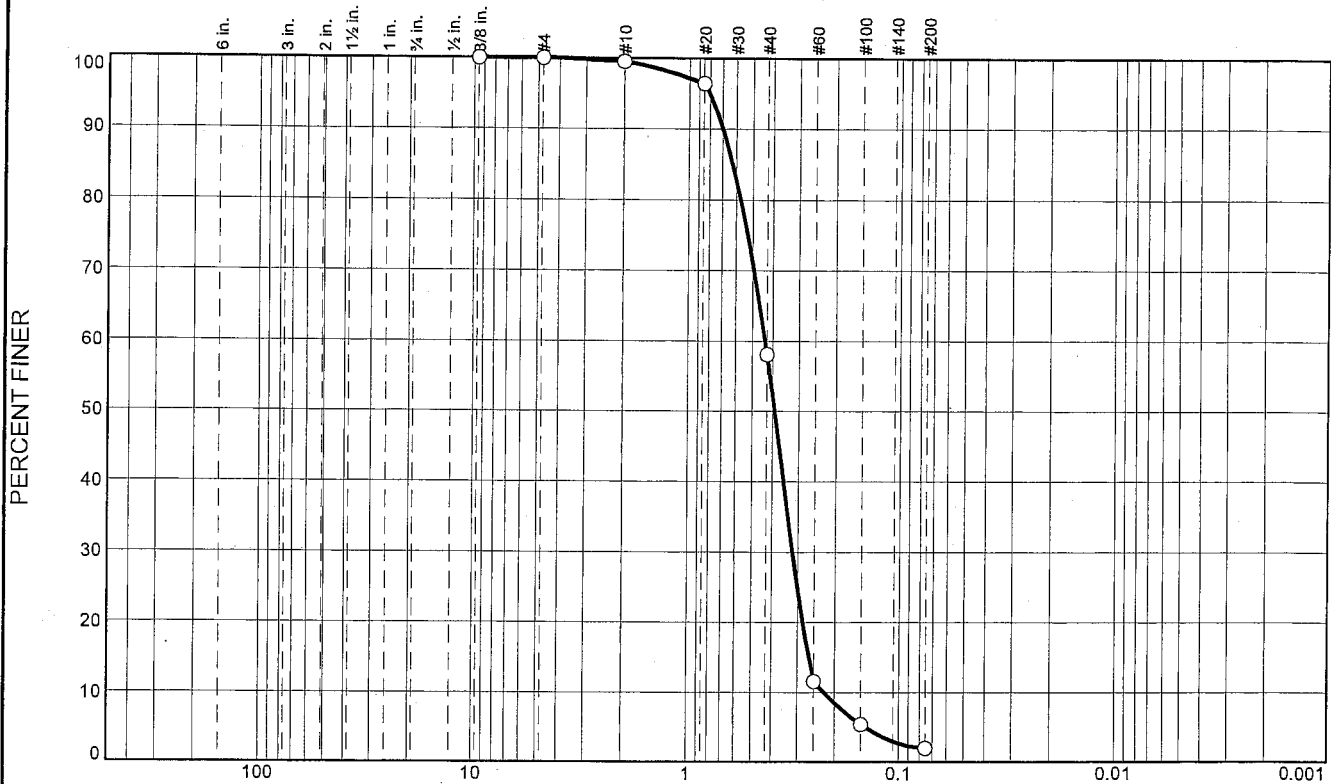
Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 Report No.

Tested By: G.Fancher Checked By: R.Byrd

Particle Size Distribution Report



GRAIN SIZE - mm.

% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.5	41.4	56.1	2.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.5		
#20	96.4		
#40	58.1		
#60	11.6		
#100	5.4		
#200	2.0		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.6967 D₈₅= 0.6244 D₆₀= 0.4342
D₅₀= 0.3900 D₃₀= 0.3180 D₁₅= 0.2647
C_u= 1.94 C_c= 1.04

Classification

USCS= SP AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-30-10C
Sample Number: TE Lab ID: 4593.22

Depth: 10.0 - 14.9 (ft.)

Date: 7/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Report No.

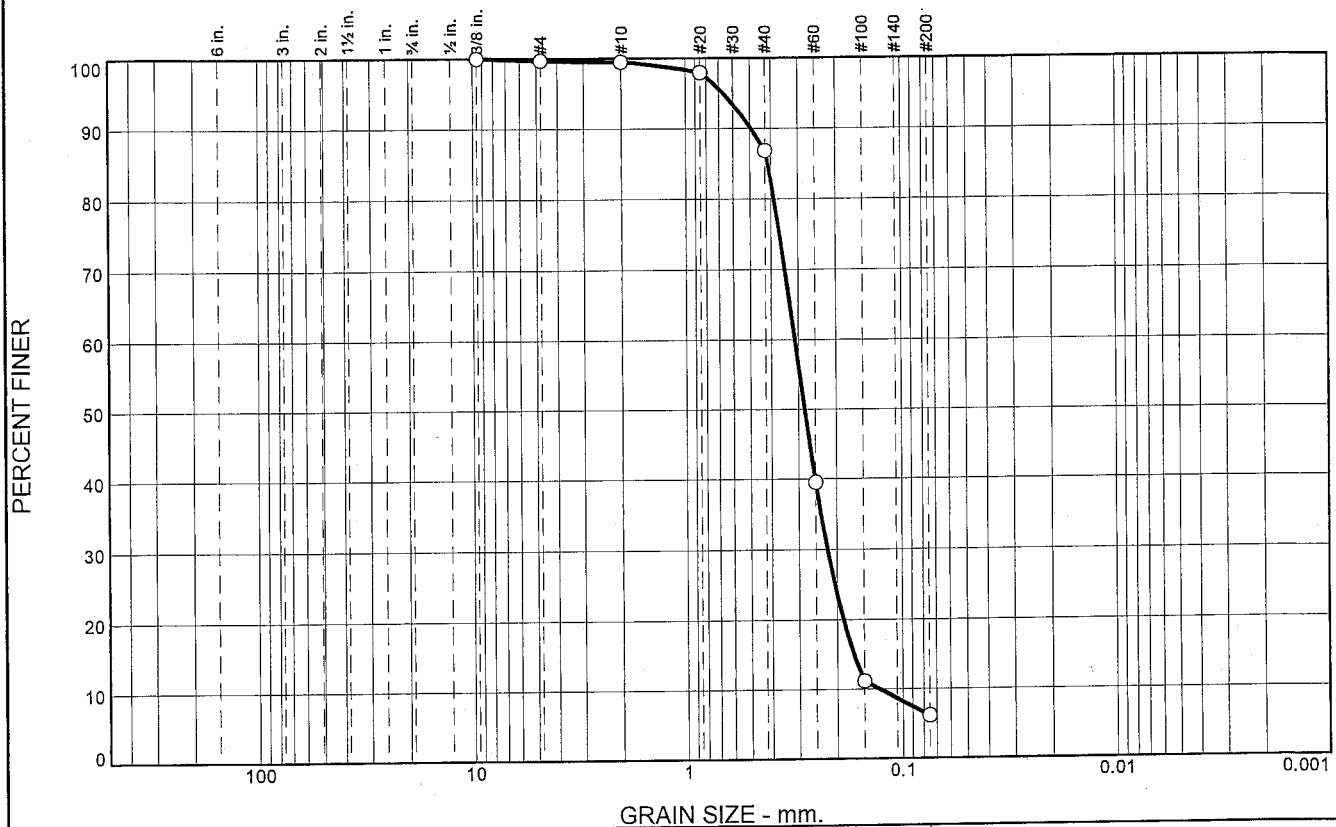
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-PB-031-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-031-10		LOCATION COORDINATES E = 1,146,749 N = 254,381		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 4		DISTURBED 4 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 29 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 07-12-10		STARTED 07-12-10 COMPLETED 07-12-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -28.0 Ft.			
8. TOTAL DEPTH OF BORING 18.4 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR John Baehr, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-28.0	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace shell fragments, tan (SP)	A	Classification: SP-SM Color: 2.5Y 7/2-light gray D50: 0.2805 mm % Fines: 6.2		
-32.0	4.0		SAND, poorly-graded, mostly fine-grained sand-sized quartz, some shell fragments, gray (SP)	B	Classification: SP-SM Color: 2.5Y 7/1-light gray D50: 0.3229 mm % Fines: 6.2		
-35.0	7.0		SAND, poorly-graded, mostly medium-grained sand-sized quartz, lt. gray (SP)	C	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.3751 mm % Fines: 3		
-36.7	8.7						
			SAND, silty, mostly fine-grained sand-sized quartz, some silt, trace shell fragments, gray (SM)	D	Classification: SP-SM Color: 2.5Y 5/2-grayish brown D50: 0.3258 mm % Fines: 8.9		
-40.9	12.9						
			CLAY, lean, occ. sand pockets, gray (CL)	NS			
-46.4	18.4						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.3	0.2	12.7	80.6	6.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.7		
#10	99.5		
#20	98.0		
#40	86.8		
#60	39.5		
#100	11.2		
#200	6.2		

Material Description
SAND, (SP-SM), medium to fine grained, with clay nodules

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.4942 D₈₅= 0.4133 D₆₀= 0.3108
D₅₀= 0.2805 D₃₀= 0.2212 D₁₅= 0.1678
D₁₀= 0.1273 C_u= 2.44 C_c= 1.24

Classification
USCS= SP-SM AASHTO=

Remarks
CADD CODE = CH10D965

* (no specification provided)

Location: USACE Sample # BI-PB-31-10A
Sample Number: TE Lab ID: 4593.16

Depth: 0.0 - 4.0 (ft.)

Date: 7/26/10

Thompson Engineering

Mobile, Alabama

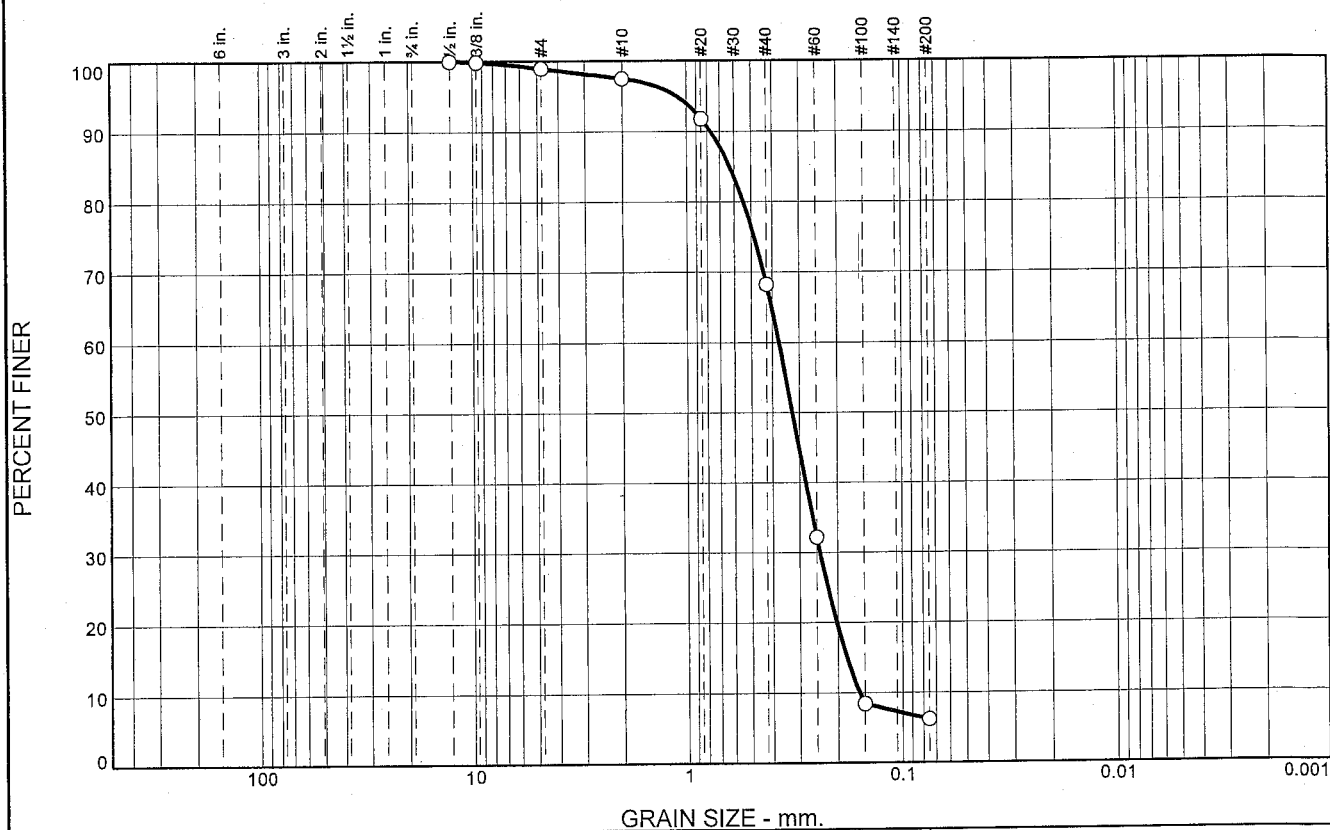
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Report No.

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.1	1.4	29.3	62.0	6.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.500	100.0		
.375	99.9		
#4	98.9		
#10	97.5		
#20	91.8		
#40	68.2		
#60	32.2		
#100	8.4		
#200	6.2		

*(no specification provided)

Material Description
SAND, (SP-SM), medium to fine grained, with trace shell

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.7698 D₈₅= 0.6283 D₆₀= 0.3728
 D₅₀= 0.3229 D₃₀= 0.2416 D₁₅= 0.1820
 D₁₀= 0.1586 C_u= 2.35 C_c= 0.99

Classification
 USCS= SP-SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-PB-31-10B
 Sample Number: TE Lab ID: 4593.17

Depth: 4.0 - 7.0 (ft.)

Date: 7/26/10

Thompson Engineering

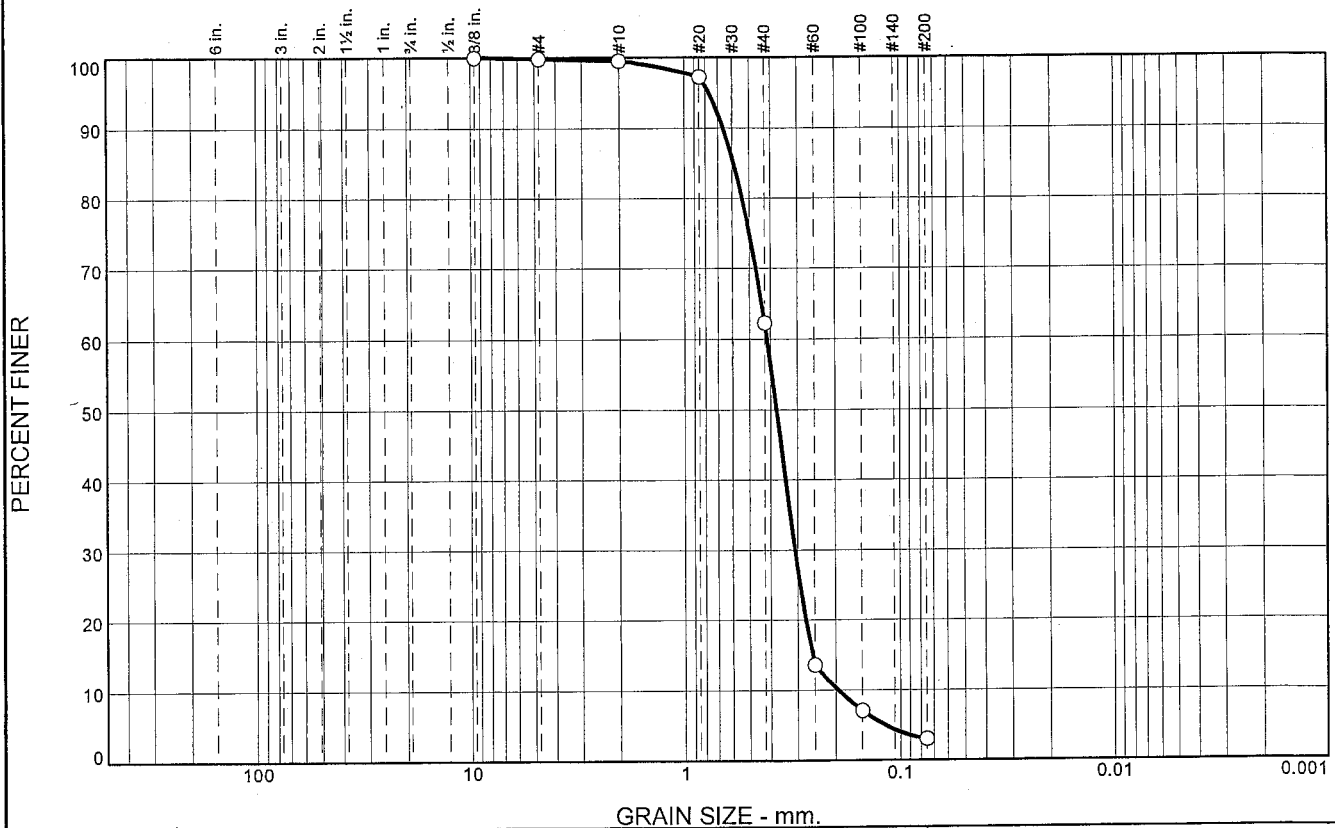
Mobile, Alabama

Client: US Army Corps of Engineers
 Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
 Project No: 10-2123-0009 Report No.

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.3	37.3	59.2	3.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.8		
#10	99.5		
#20	97.3		
#40	62.2		
#60	13.5		
#100	7.1		
#200	3.0		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.6592 D₈₅= 0.5895 D₆₀= 0.4150
D₅₀= 0.3751 D₃₀= 0.3082 D₁₅= 0.2564
D₁₀= 0.1948 C_u= 2.13 C_c= 1.17

Classification

USCS= SP AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-31-10C
Sample Number: TE Lab ID: 4593.18

Depth: 7.0 - 8.7 (ft.)

Date: 7/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

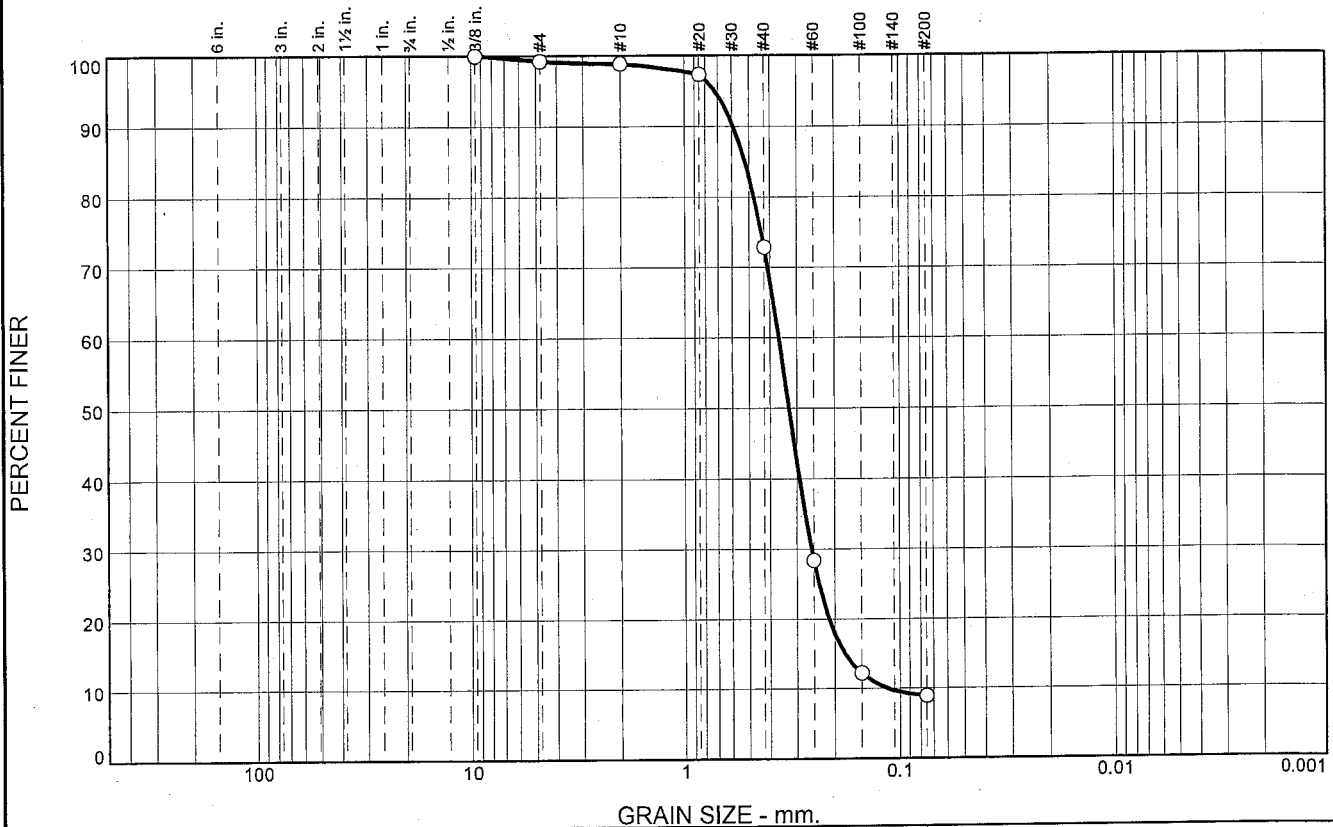
Project No: 10-2123-0009

Report No.

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.8	0.3	26.0	64.0	8.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.2		
#10	98.9		
#20	97.4		
#40	72.9		
#60	28.4		
#100	12.2		
#200	8.9		

* (no specification provided)

Material Description

SAND, (SP-SM), medium to fine grained, with clay nodules

Atterberg Limits

PL= LL= PI=

Coefficients

$D_{90} = 0.5903$ $D_{85} = 0.5209$ $D_{60} = 0.3637$
 $D_{50} = 0.3258$ $D_{30} = 0.2562$ $D_{15} = 0.1797$
 $D_{10} = 0.1139$ $C_u = 3.19$ $C_c = 1.58$

Classification

USCS= SP-SM AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-31-10D
Sample Number: TE Lab ID: 4593.19

Depth: 8.7 - 12.9 (ft.)

Date: 7/26/10

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 Report No.

Tested By: G.Fancher

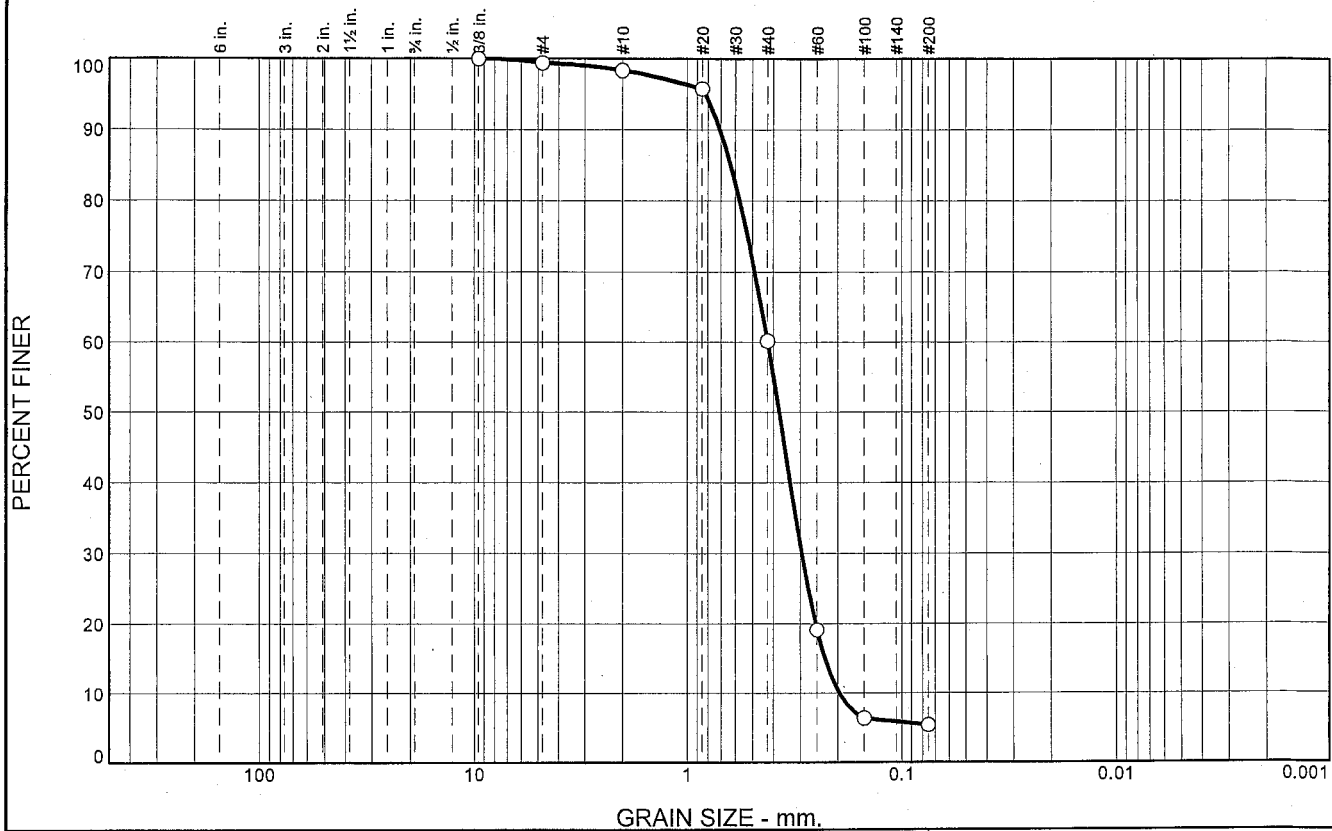
Checked By: R.Byrd

Boring Designation BI-PB-032-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-032-10		LOCATION COORDINATES E = 1,149,700 N = 254,347		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 5		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		14. WATER DEPTH 34 Ft.	
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 07-12-10		STARTED 07-12-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -32.9 Ft.		COMPLETED 07-12-10	
8. TOTAL DEPTH OF BORING 19.8 Ft.				17. TOTAL RECOVERY FOR BORING 100%		18. SIGNATURE AND TITLE OF INSPECTOR John Baehr, Geologist	

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-32.9	0.0				
-33.4	0.5			NS	Classification: SP-SM Color: 10YR 6/2-light brownish gray
-34.0	1.1		SAND, clayey, trace shell fragments, dark gray (SC)	A	D50: 0.3755 mm % Fines: 5.4
			SAND, poorly-graded, mostly medium-grained sand-sized quartz, gray (SP)		
			SAND, poorly-graded with silt, lt. gray (SP-SM)	B	Classification: SP-SM Color: 2.5Y 7/2-light gray D50: 0.3764 mm % Fines: 6.8
				C	Classification: SP Color: 10YR 8/2-very pale brown D50: 0.4244 mm % Fines: 4.6
				D	Classification: SP Color: 2.5Y 7/2-light gray D50: 0.4576 mm % Fines: 3
-48.7	15.8				
			SAND, poorly-graded, mostly medium-grained sand-sized quartz, lt. gray (SP)	E	Classification: SP Color: 2.5Y 8/1-white D50: 0.4827 mm % Fines: 4
-52.7	19.8				
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.		

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.6	1.0	38.2	54.8	5.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.4		
#10	98.4		
#20	95.8		
#40	60.2		
#60	19.1		
#100	6.4		
#200	5.4		

* (no specification provided)

Material Description
SAND, (SP-SM), medium to fine grained, with clay nodules

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.7064 D₈₅= 0.6293 D₆₀= 0.4241
 D₅₀= 0.3755 D₃₀= 0.2946 D₁₅= 0.2298
 D₁₀= 0.1967 C_u= 2.16 C_c= 1.04

Classification
 USCS= SP-SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-PB-32-10A
 Sample Number: TE Lab ID: 4593.11

Depth: 0.5 - 1.1 (ft.)

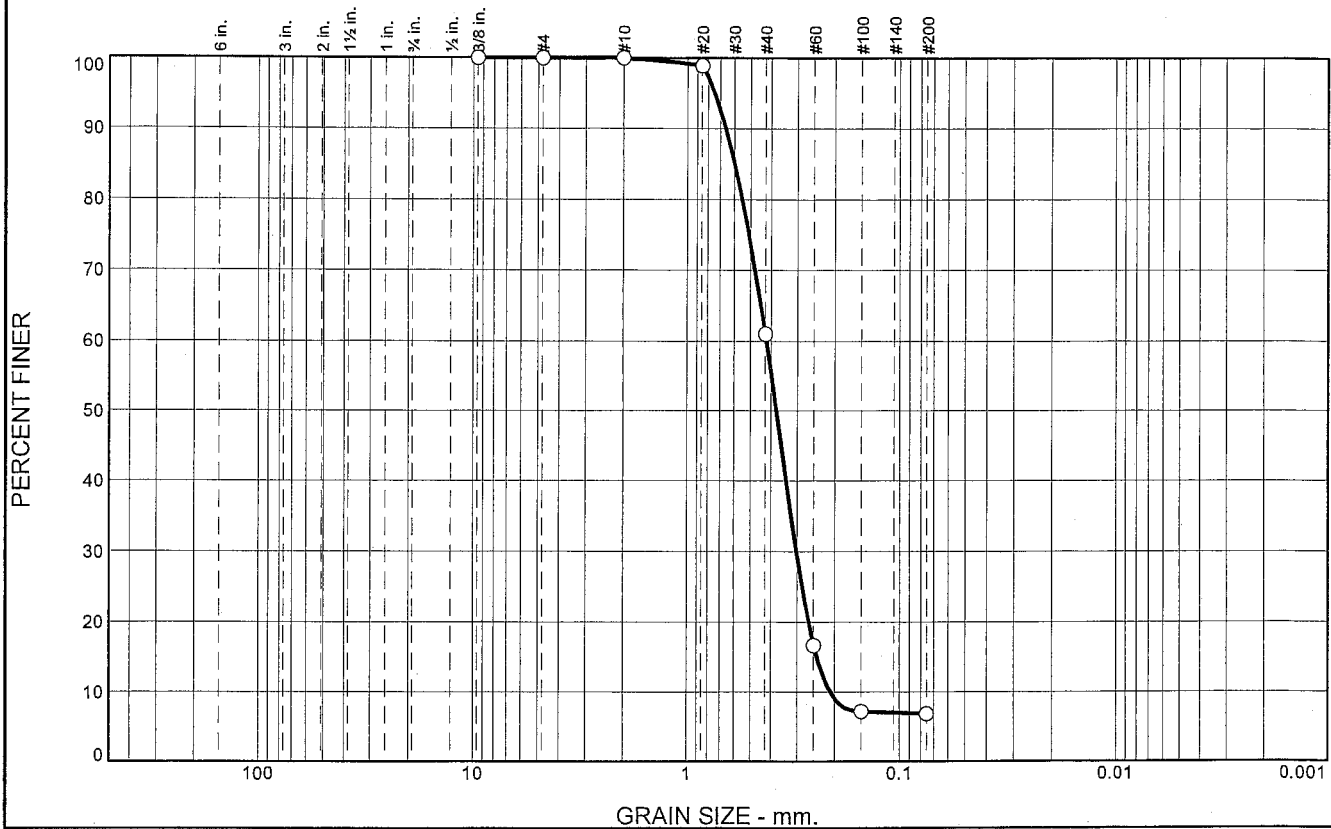
Date: 7/26/10

Thompson Engineering Mobile, Alabama	Client: US Army Corps of Engineers Project: Contract No. W91278-10-D-0026 - Task 03 Mississippi Barrier Island Restoration Project
	Project No: 10-2123-0009 Report No.

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	39.0	54.2	6.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	98.9		
#40	61.0		
#60	16.7		
#100	7.2		
#200	6.8		

* (no specification provided)

Material Description
SAND, (SP-SM), medium to fine grained, with clay nodules

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.6589 D₈₅= 0.5973 D₆₀= 0.4203
 D₅₀= 0.3764 D₃₀= 0.3019 D₁₅= 0.2420
 D₁₀= 0.2099 C_u= 2.00 C_c= 1.03

Classification
 USCS= SP-SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-PB-32-10B
 Sample Number: TE Lab ID: 4593.12

Depth: 1.1 -6.1 (ft.)

Date: 7/26/10

Thompson Engineering

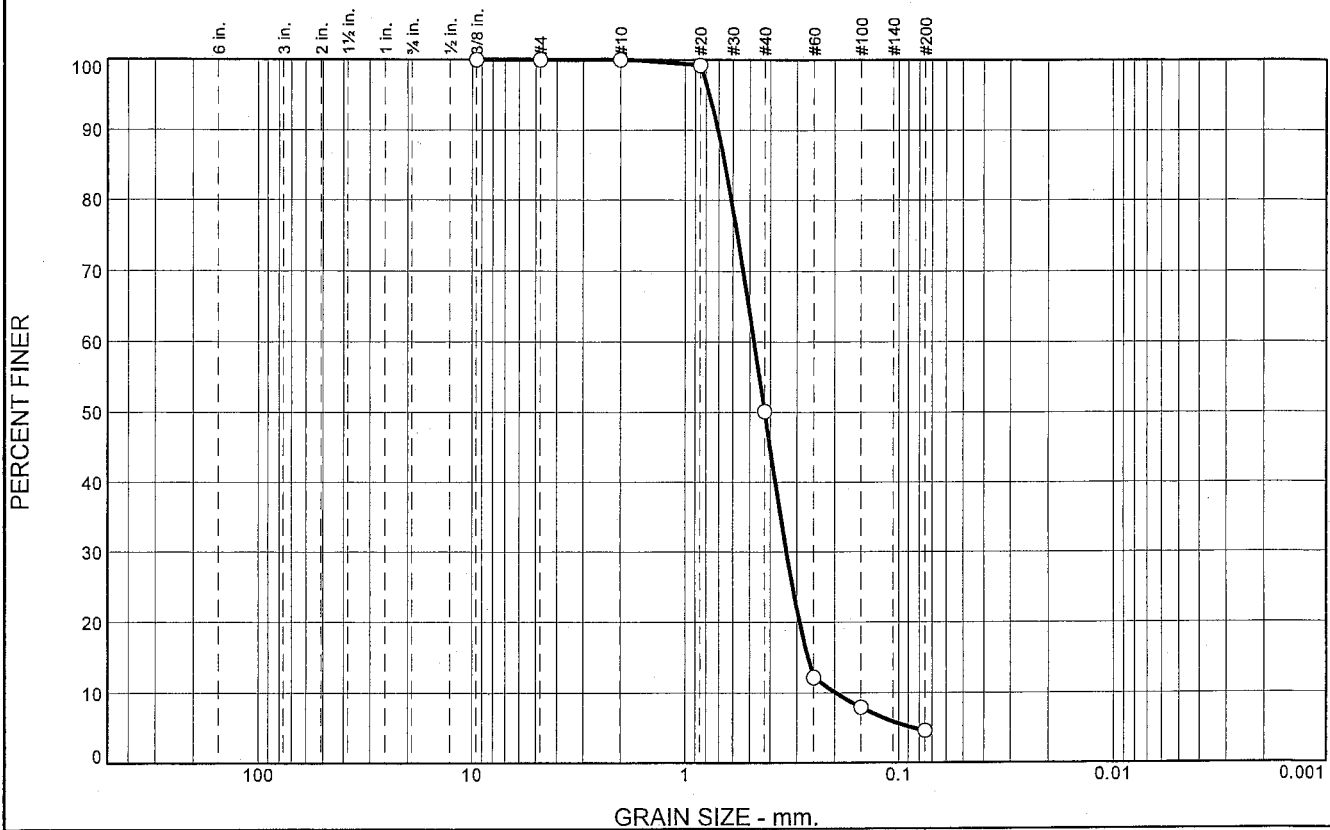
Mobile, Alabama

Client: US Army Corps of Engineers
 Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
 Project No: 10-2123-0009 Report No.

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	49.9	45.5	4.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.2		
#40	50.1		
#60	12.2		
#100	7.9		
#200	4.6		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.7052 D₈₅= 0.6526 D₆₀= 0.4758
D₅₀= 0.4244 D₃₀= 0.3353 D₁₅= 0.2667
D₁₀= 0.1967 C_u= 2.42 C_c= 1.20

Classification

USCS= SP AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-32-10C
Sample Number: TE Lab ID: 4593.13

Depth: 6.1 - 11.1 (ft.)

Date: 7/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

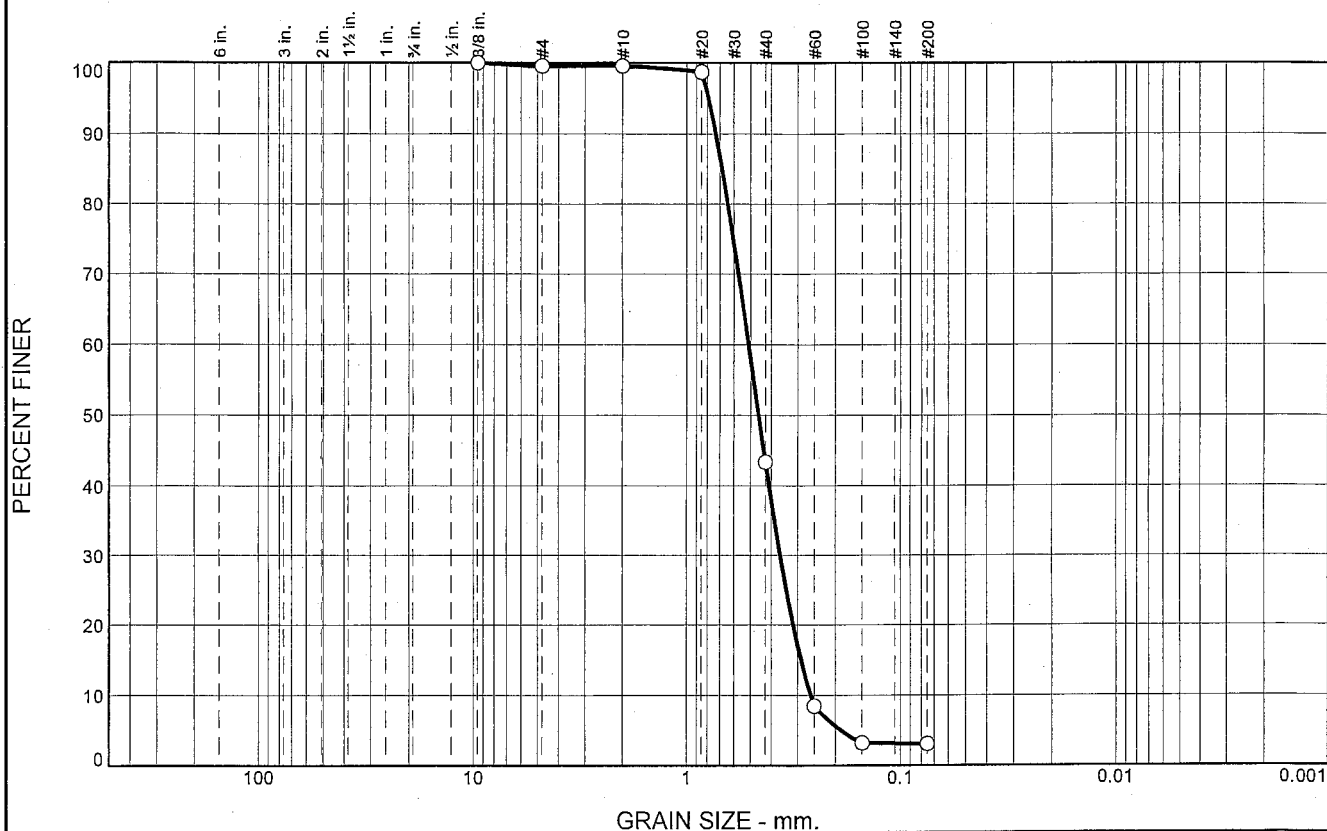
Project No: 10-2123-0009

Report No.

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.5	0.0	56.1	40.4	3.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.5		
#10	99.5		
#20	98.7		
#40	43.4		
#60	8.5		
#100	3.2		
#200	3.0		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.7296

D₈₅= 0.6809

D₆₀= 0.5101

D₅₀= 0.4576

D₃₀= 0.3619

D₁₅= 0.2891

D₁₀= 0.2604

C_u= 1.96

C_c= 0.99

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-32-10D
Sample Number: TE Lab ID: 4593.14

Depth: 11.1 - 15.8 (ft.)

Date: 7/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

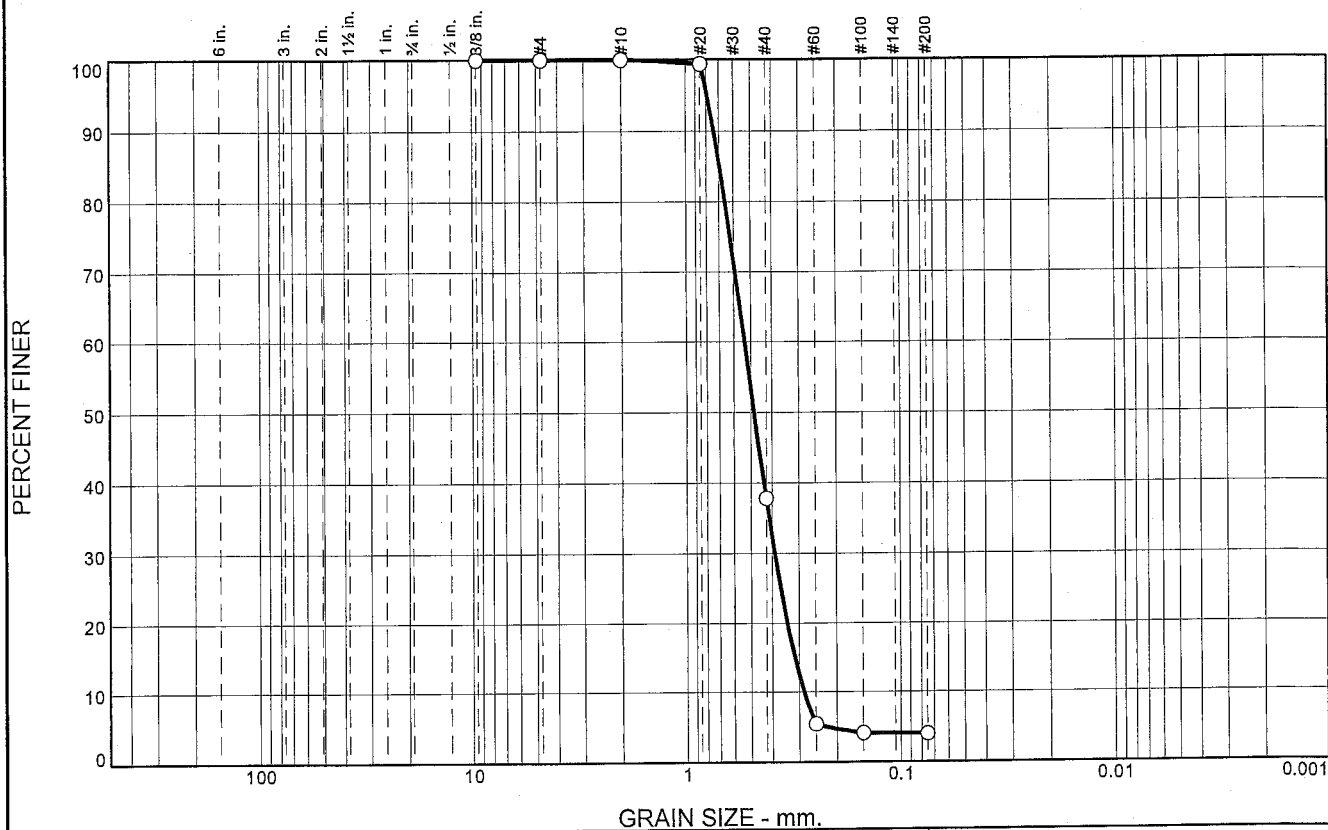
Project No: 10-2123-0009

Report No.

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	62.2	33.8	4.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.4		
#40	37.8		
#60	5.4		
#100	4.1		
#200	4.0		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.7362

D₈₅= 0.6923

D₆₀= 0.5331

D₅₀= 0.4827

D₃₀= 0.3884

D₁₅= 0.3138

D₁₀= 0.2846

C_u= 1.87

C_c= 0.99

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-32-10E
Sample Number: TE Lab ID: 4593.15

Depth: 15.8 - 19.8 (ft.)

Date: 7/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Report No.

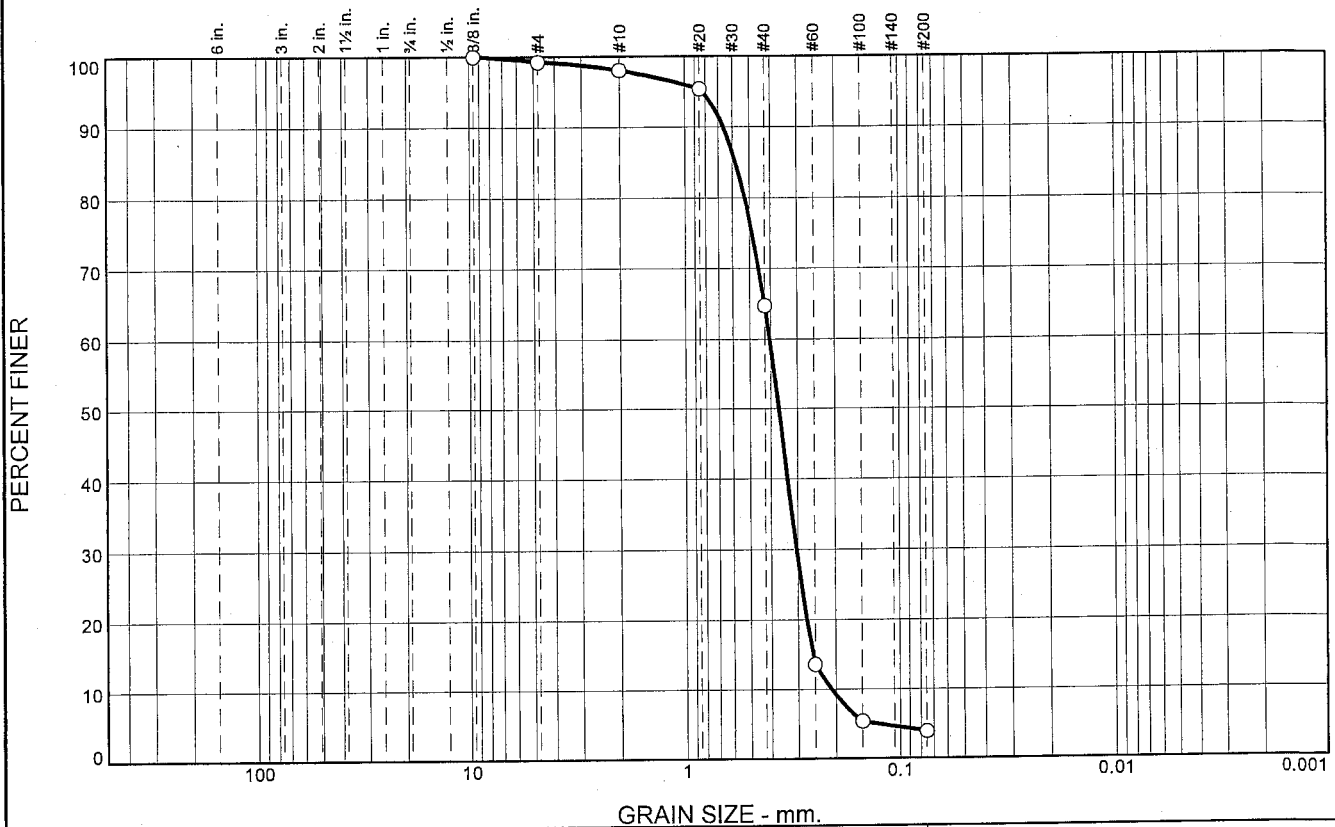
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-PB-033-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-033-10		LOCATION COORDINATES E = 1,151,187 N = 254,380		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 5		DISTURBED 5 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 37 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 07-12-10		STARTED 07-12-10 COMPLETED 07-12-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -35.8 Ft.			
8. TOTAL DEPTH OF BORING 19.1 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR John Baehr, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-35.8	0.0						
-37.8	2.0		SAND, poorly-graded, mostly medium-grained sand-sized quartz, lt. gray (SP)	A	Classification: SP Color: 2.5Y 6/1-gray D50: 0.3669 mm % Fines: 3.9		
			SAND, silty, mostly fine-grained sand-sized quartz, some silt, gray (SM)	B	Classification: SP-SM Color: 2.5Y 5/1-gray D50: 0.3303 mm % Fines: 7		
				C	Classification: SP-SM Color: 2.5Y 5/1-gray D50: 0.3287 mm % Fines: 6.4		
-46.8	11.0						
-49.1	13.3		SAND, poorly-graded, mostly fine-grained sand-sized quartz, lt. gray (SP)	D	Classification: SP Color: 2.5Y 6/1-gray D50: 0.3221 mm % Fines: 3.8		
			SAND, silty, mostly fine-grained sand-sized quartz, some silt, gray (SM)	E	Classification: SP-SM Color: 2.5Y 5/1-gray D50: 0.3212 mm % Fines: 8		
-54.9	19.1						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.7	1.3	33.3	60.8	3.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.3		
#10	98.0		
#20	95.4		
#40	64.7		
#60	13.6		
#100	5.3		
#200	3.9		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.6612 D₈₅= 0.5788 D₆₀= 0.4044
D₅₀= 0.3669 D₃₀= 0.3039 D₁₅= 0.2555
D₁₀= 0.2090 C_u= 1.94 C_c= 1.09

Classification

USCS= SP AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-33-10A
Sample Number: TE Lab ID: 4593.06

Depth: 0.0 - 2.0 (ft.)

Date: 7/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

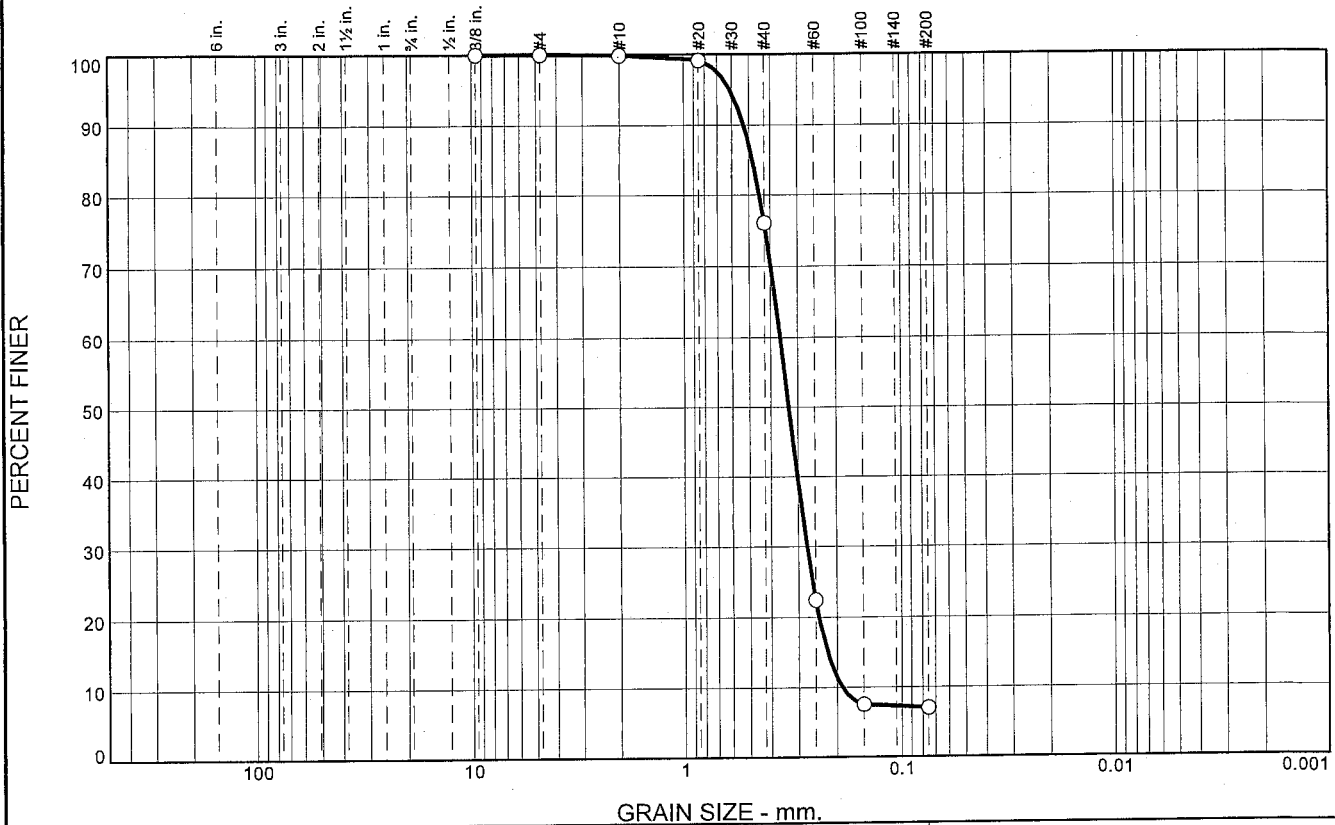
Project No: 10-2123-0009

Report No.

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	23.8	69.1	7.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.2		
#40	76.1		
#60	22.4		
#100	7.6		
#200	7.0		

* (no specification provided)

Material Description

SAND, (SP-SM), medium to fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.5282 D₈₅= 0.4804 D₆₀= 0.3614
D₅₀= 0.3303 D₃₀= 0.2733 D₁₅= 0.2207
D₁₀= 0.1893 C_u= 1.91 C_c= 1.09

Classification

USCS= SP-SM AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-33-10B
Sample Number: TE Lab ID: 4593.07

Depth: 2.0 - 7.0 (ft.)

Date: 7/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

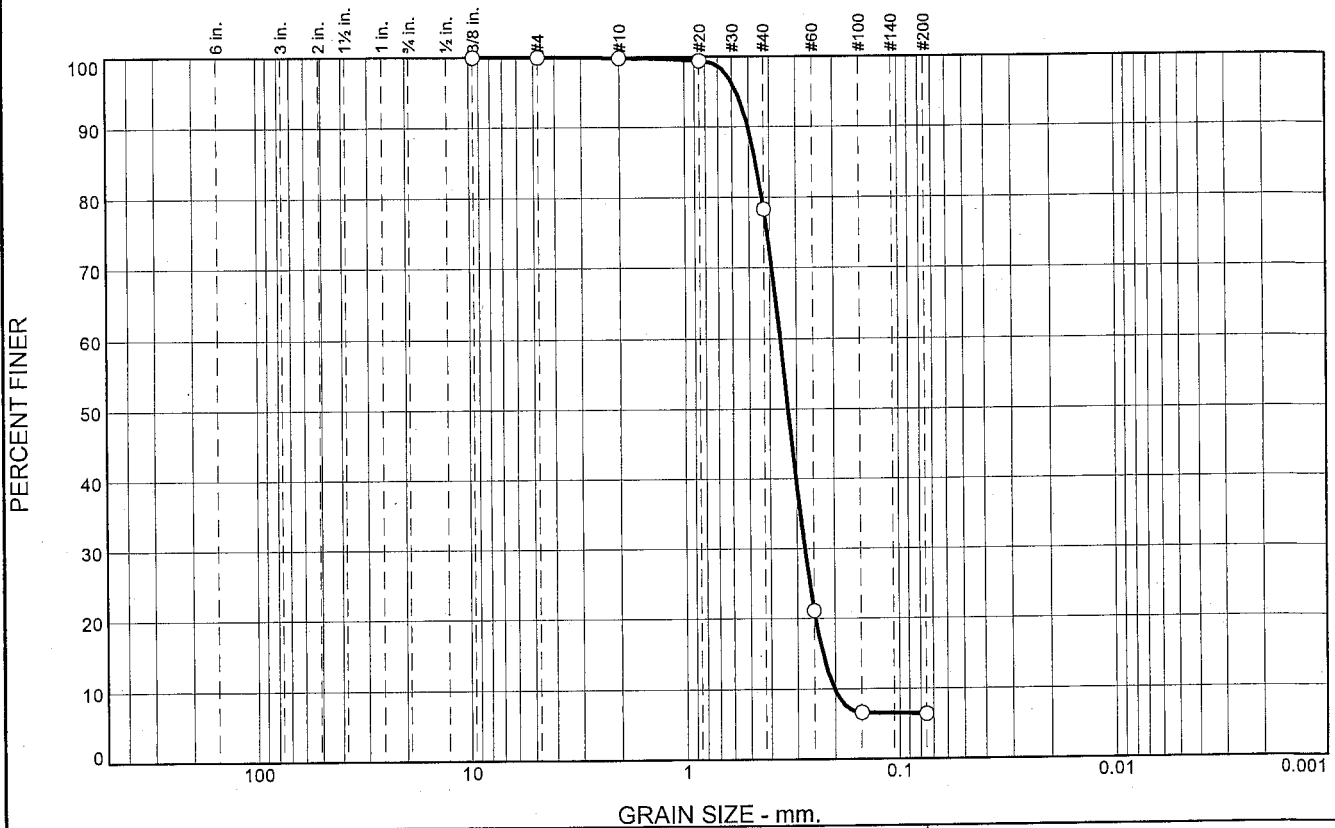
Project No: 10-2123-0009

Report No.

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	21.5	71.9	6.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.8		
#20	99.4		
#40	78.3		
#60	21.1		
#100	6.7		
#200	6.4		

Material Description

SAND, (SP-SM), medium to fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.5033 D₈₅= 0.4629 D₆₀= 0.3575
D₅₀= 0.3287 D₃₀= 0.2756 D₁₅= 0.2279
D₁₀= 0.2014 C_u= 1.77 C_c= 1.06

Classification

USCS= SP-SM AASHTO=

Remarks

CADD CODE = CH10D965

* (no specification provided)

Location: USACE Sample # BI-PB-33-10C
Sample Number: TE Lab ID: 4593.08

Depth: 7.0 -11.0 (ft.)

Date: 7/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

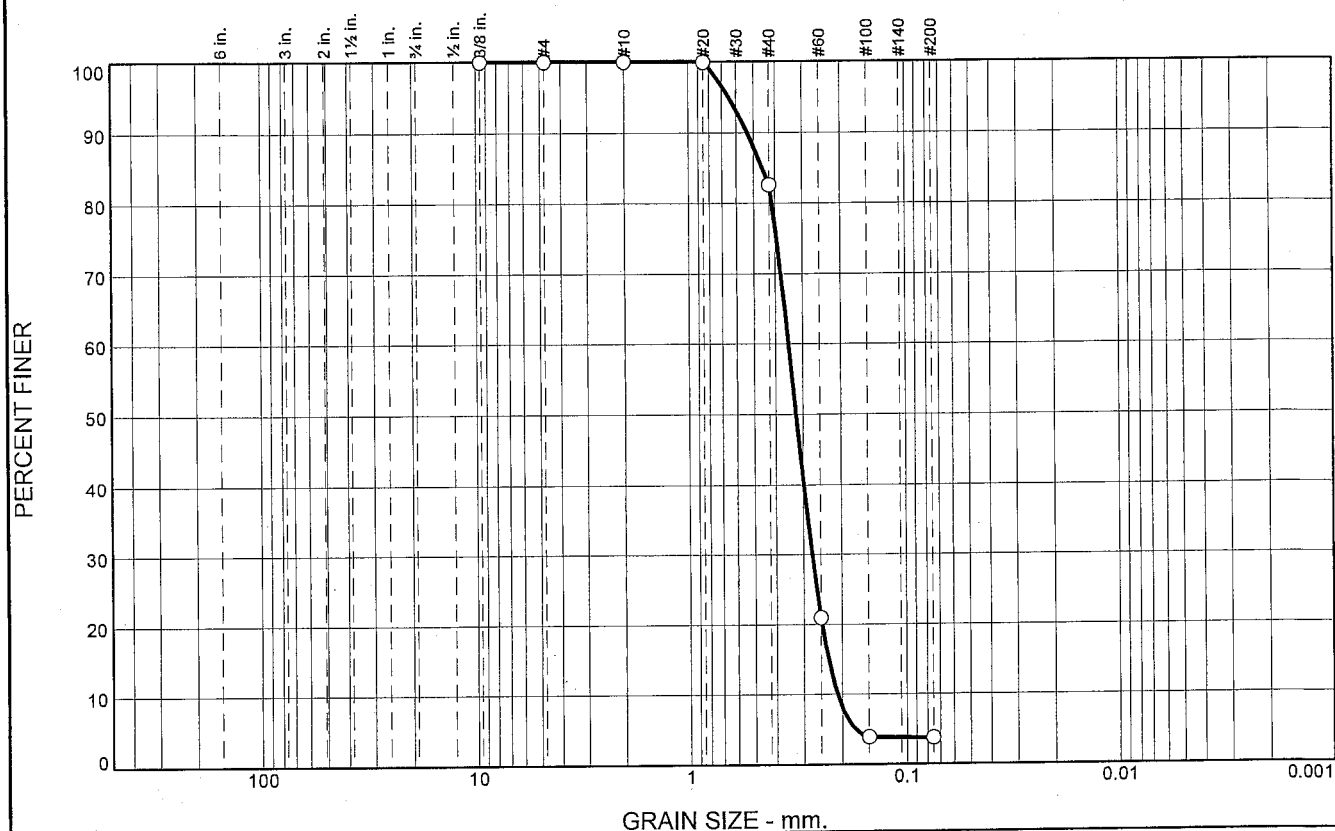
Project No: 10-2123-0009

Report No.

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	17.4	78.8	3.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	100.0		
#40	82.6		
#60	21.0		
#100	3.9		
#200	3.8		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained

PL= Atterberg Limits LL= PI=

Coefficients
D₉₀= 0.5336 D₈₅= 0.4552 D₆₀= 0.3481
D₅₀= 0.3221 D₃₀= 0.2736 D₁₅= 0.2311
D₁₀= 0.2105 C_u= 1.65 C_c= 1.02

Classification
USCS= SP AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-PB-33-10D
Sample Number: TE Lab ID: 4593.09

Depth: 11.0 - 13.3 (ft.)

Date: 7/23/10

Thompson Engineering

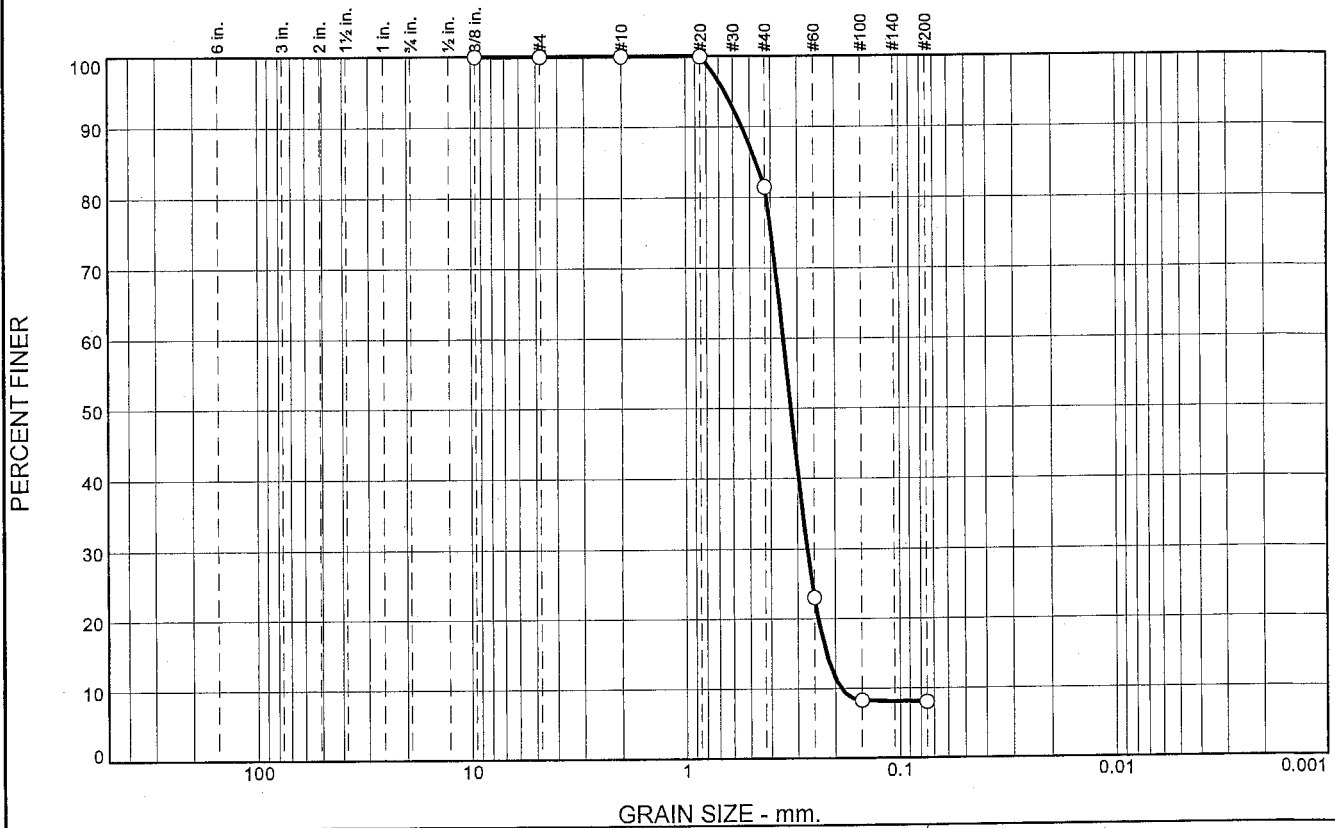
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 Report No.

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	18.5	73.5	8.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	100.0		
#40	81.5		
#60	23.1		
#100	8.3		
#200	8.0		

Material Description
SAND, (SP-SM), medium to fine grained, with clay nodules

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.5444 D₈₅= 0.4670 D₆₀= 0.3485
D₅₀= 0.3212 D₃₀= 0.2697 D₁₅= 0.2201
D₁₀= 0.1877 C_u= 1.86 C_c= 1.11

Classification
USCS= SP-SM AASHTO=

Remarks
CADD CODE = CH10D965

* (no specification provided)

Location: USACE Sample # BI-PB-33-10E
Sample Number: TE Lab ID: 4593.10

Depth: 13.3 - 19.1 (ft.)

Date: 7/26/10

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 Report No.

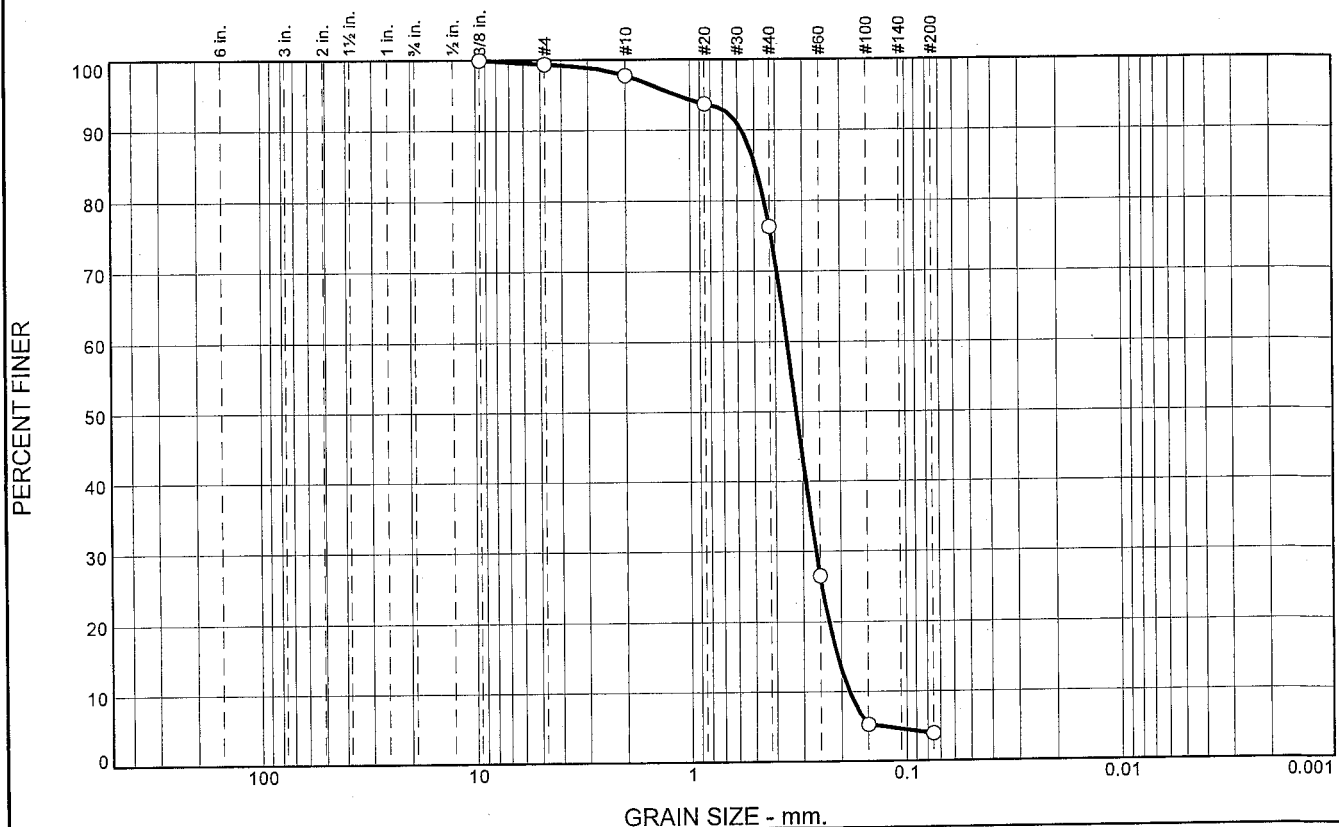
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-PB-034-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-034-10		LOCATION COORDINATES E = 1,152,694 N = 254,368		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 5 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH		37 Ft.	
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING		STARTED 07-12-10 COMPLETED 07-12-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING		-35.4 Ft.	
8. TOTAL DEPTH OF BORING 19.1 Ft.				17. TOTAL RECOVERY FOR BORING		100%	
				18. SIGNATURE AND TITLE OF INSPECTOR John Baehr, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-35.4	0.0						
-37.3	1.9		SAND, poorly-graded, mostly medium-grained sand-sized quartz, trace shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.3204 mm % Fines: 3.9		
-39.0	3.6		CLAY, lean, some sand, gray (CL)	NS			
-40.7	5.3		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, some silt, tan (SP-SM)	B	Classification: SP-SM Color: 2.5Y 5/1-gray D50: 0.2817 mm % Fines: 8		
			SAND, silty, mostly fine-grained sand-sized quartz, some silt, gray (SM)	C	Classification: SP-SM Color: 2.5Y 5/1-gray D50: 0.3174 mm % Fines: 7.5		
				D	Classification: SP-SM Color: 2.5Y 5/1-gray D50: 0.3137 mm % Fines: 8		
				E	Classification: SP-SM Color: 2.5Y 4/1-dark gray D50: 0.3051 mm % Fines: 7.5		
-54.5	19.1						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.6	1.6	21.5	72.4	3.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.4		
#10	97.8		
#20	93.7		
#40	76.3		
#60	26.5		
#100	5.3		
#200	3.9		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.5722 D₈₅= 0.4937 D₆₀= 0.3535
D₅₀= 0.3204 D₃₀= 0.2607 D₁₅= 0.2082
D₁₀= 0.1839 C_u= 1.92 C_c= 1.05

Classification

USCS= SP AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-34-10A
Sample Number: TE Lab ID: 4593.01

Depth: 0.0 - 1.9 (ft.)

Date: 7/26/10

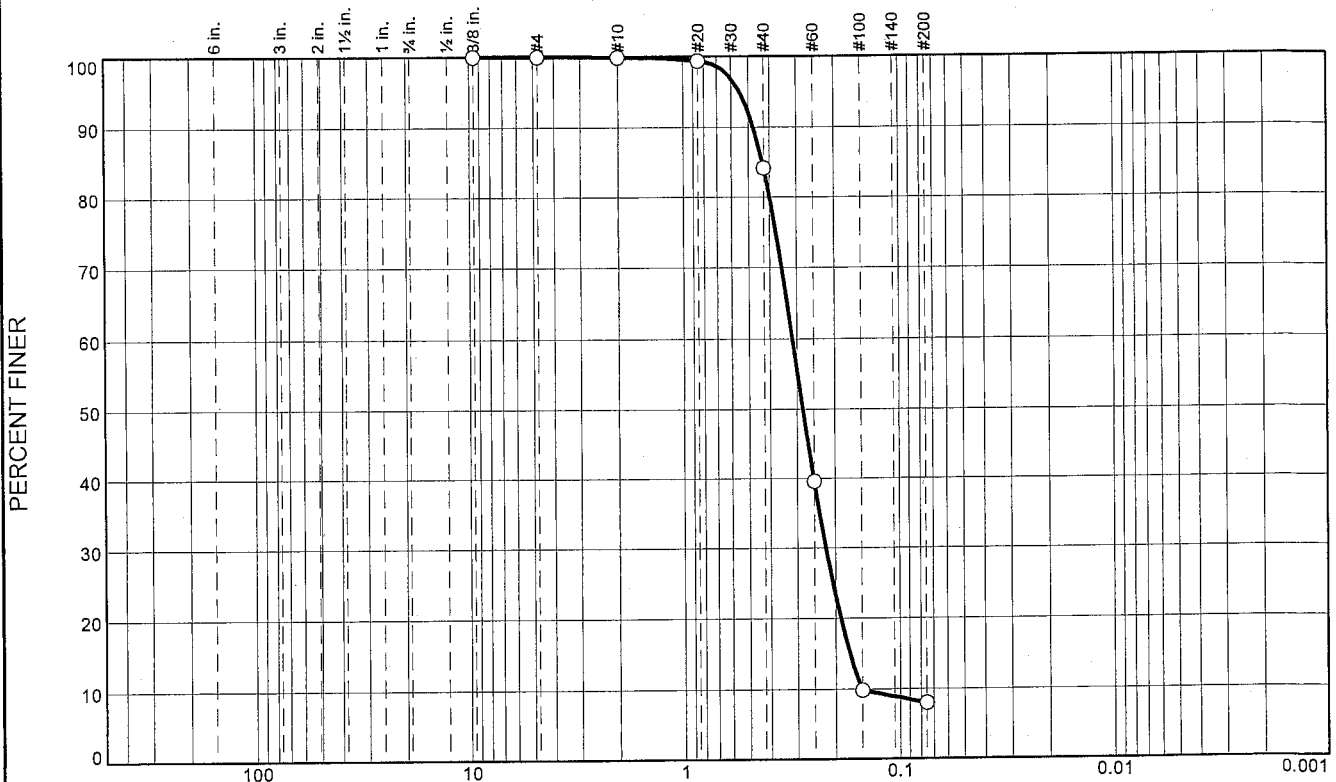
Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 Report No.

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	15.8	76.1	8.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.4		
#40	84.1		
#60	39.6		
#100	9.8		
#200	8.0		

* (no specification provided)

Material Description
SAND, (SP-SM), medium to fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.4750 D₈₅= 0.4311 D₆₀= 0.3143
D₅₀= 0.2817 D₃₀= 0.2211 D₁₅= 0.1717
D₁₀= 0.1508 C_u= 2.08 C_c= 1.03

Classification
USCS= SP-SM AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-PB-34-10B
Sample Number: TE Lab ID: 4593.02

Depth: 3.6 - 5.3 (ft.)

Date: 7/26/10

Thompson Engineering

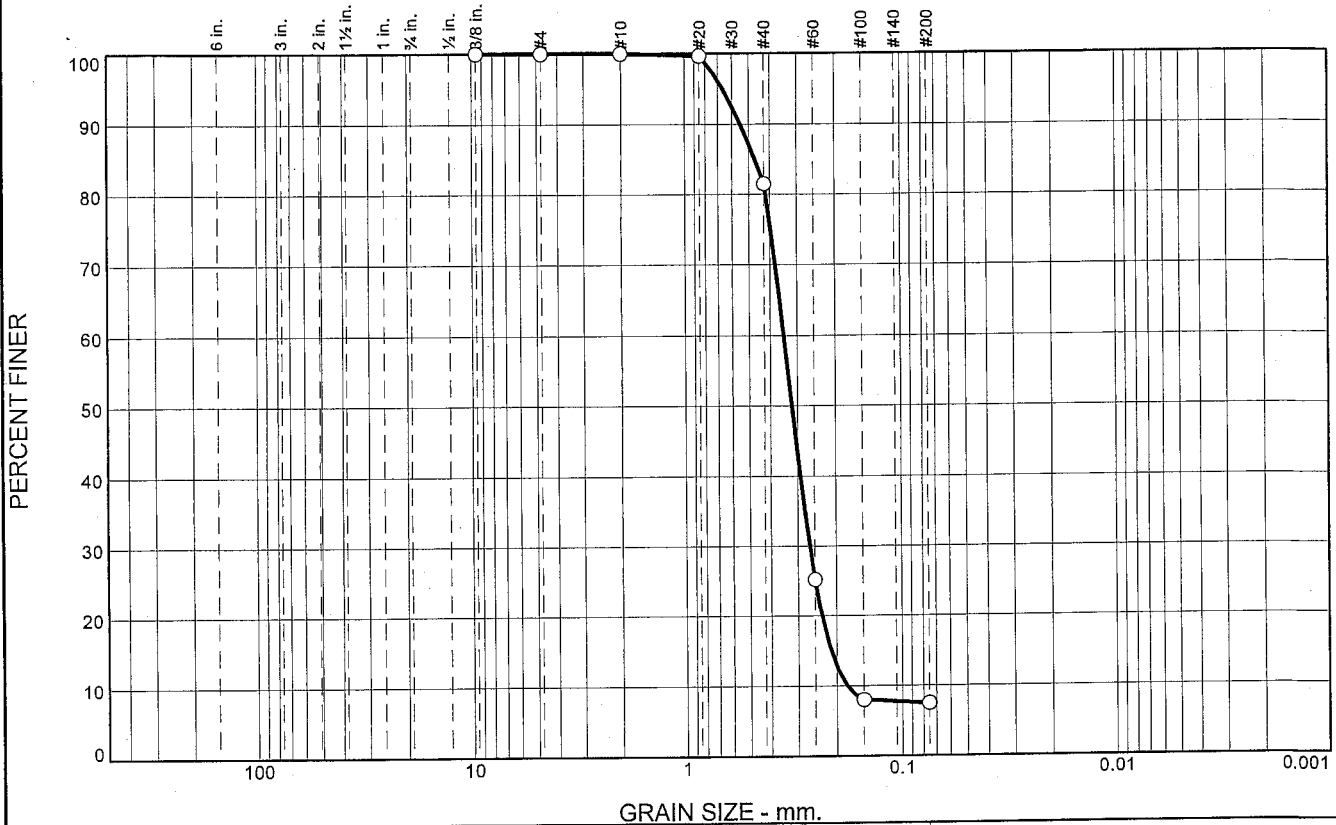
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 Report No.

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	18.5	74.0	7.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.6		
#40	81.5		
#60	25.2		
#100	8.0		
#200	7.5		

* (no specification provided)

Material Description

SAND, (SP-SM), medium to fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.5483 D₈₅= 0.4687 D₆₀= 0.3456
D₅₀= 0.3174 D₃₀= 0.2640 D₁₅= 0.2117
D₁₀= 0.1791 C_u= 1.93 C_c= 1.13

Classification

USCS= SP-SM AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-34-10C
Sample Number: TE Lab ID: 4593.03

Depth: 5.3 - 10.3 (ft.)

Date: 7/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

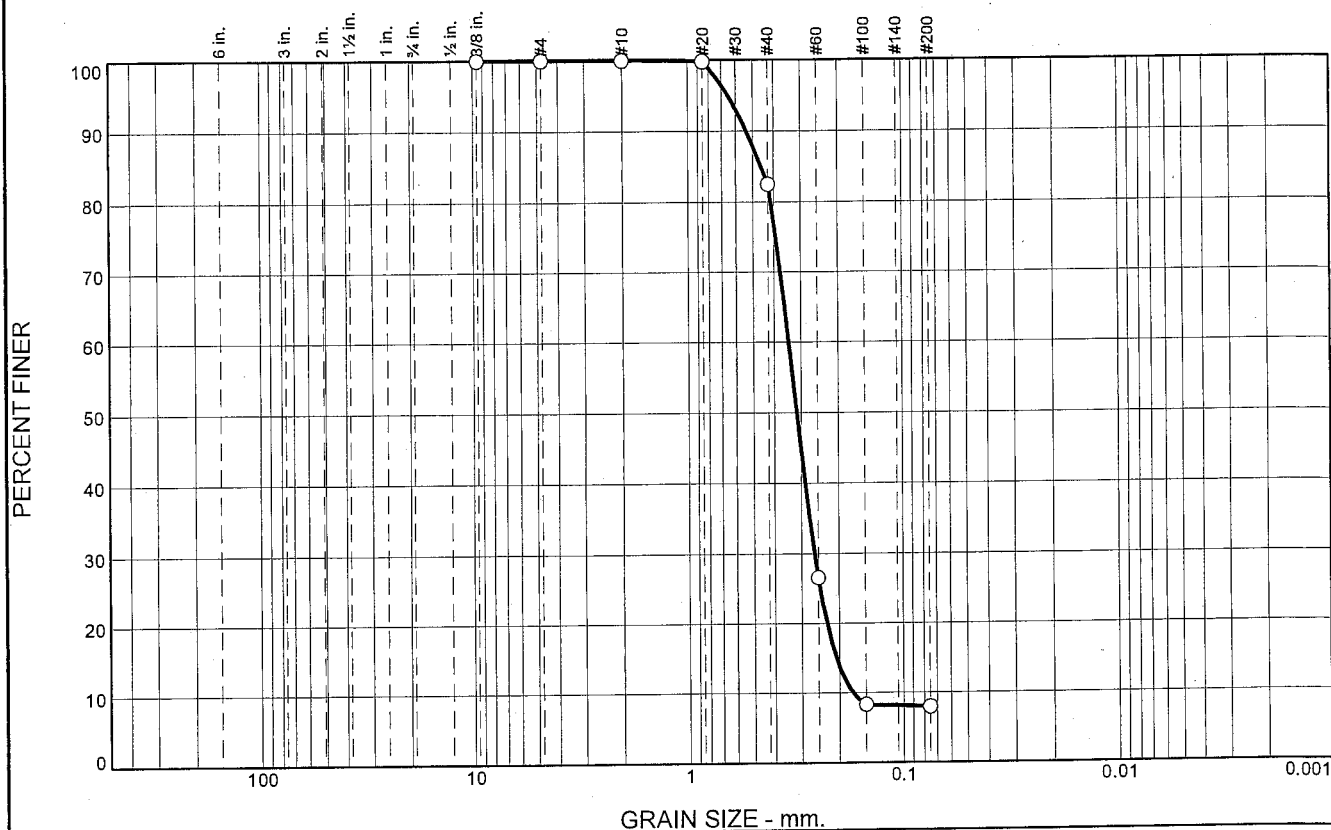
Project No: 10-2123-0009

Report No.

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	17.5	74.5	8.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.8		
#40	82.5		
#60	26.5		
#100	8.3		
#200	8.0		

Material Description

SAND, (SP-SM), medium to fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.5358 D₈₅= 0.4565 D₆₀= 0.3418
D₅₀= 0.3137 D₃₀= 0.2601 D₁₅= 0.2067
D₁₀= 0.1732 C_u= 1.97 C_c= 1.14

Classification

USCS= SP-SM AASHTO=

Remarks

CADD CODE = CH10D965

* (no specification provided)

Location: USACE Sample # BI-PB-34-10D
Sample Number: TE Lab ID: 4593.04

Depth: 10.3 - 15.3 (ft.)

Date: 7/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

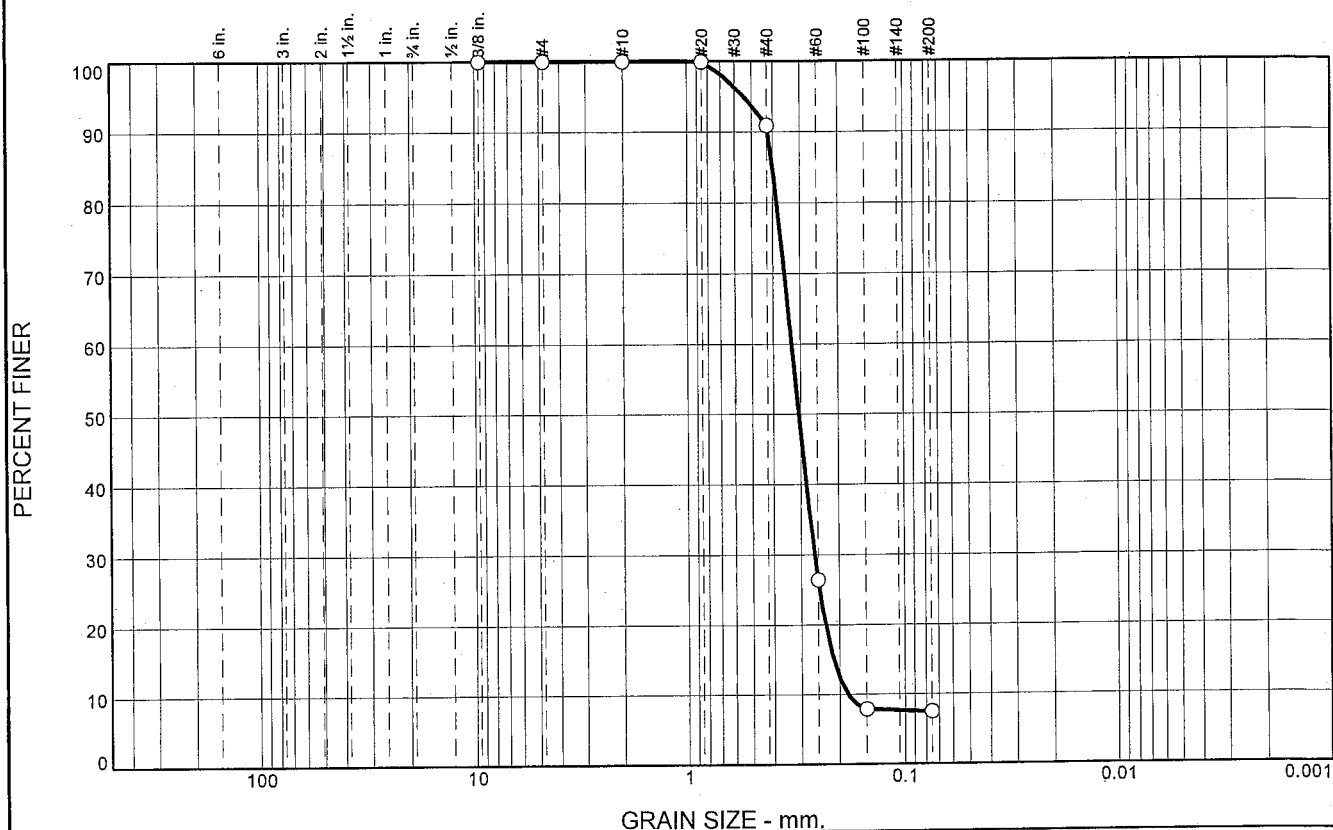
Project No: 10-2123-0009

Report No.

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	9.1	83.4	7.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	90.9		
#60	26.4		
#100	7.9		
#200	7.5		

Material Description
SAND, (SP-SM), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.4210 D₈₅= 0.4003 D₆₀= 0.3283
 D₅₀= 0.3051 D₃₀= 0.2593 D₁₅= 0.2125
 D₁₀= 0.1829 C_u= 1.80 C_c= 1.12

Classification
 USCS= SP-SM AASHTO=

Remarks
 CADD CODE = CH10D965

* (no specification provided)

Location: USACE Sample # BI-PB-34-10E
 Sample Number: TE Lab ID: 4593.05

Depth: 15.3 - 19.1 (ft.)

Date: 7/26/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
 Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
 Project No: 10-2123-0009 Report No.

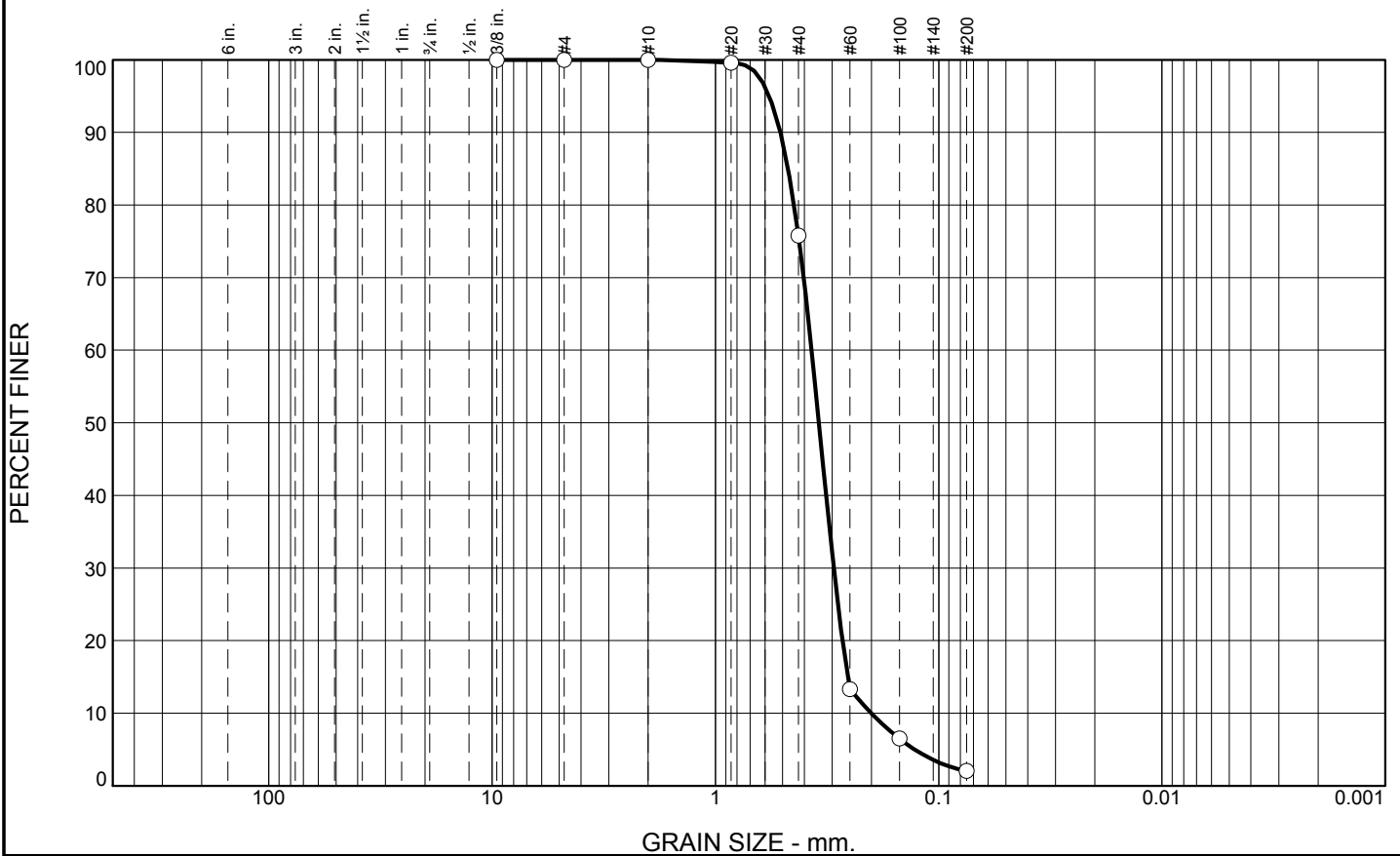
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-PB-035-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-035-10		LOCATION COORDINATES E = 1,138,721 N = 252,855		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 30 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 07-19-10		STARTED 07-19-10 COMPLETED 07-19-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -30.0 Ft.			
8. TOTAL DEPTH OF BORING 18.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-30.0	0.0						
-31.0	1.0		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments, dark brown (SM) SAND, silty, mostly medium-grained sand-sized quartz, some silt, dark brown (SM)	A	Classification: SP Color: 10Y 5/3- D50: 0.3441 mm % Fines: 2		
-35.0	5.0						
-40.0	10.0						
			CLAY, fat, dark gray (CH)	NS			
-48.0	18.0						
NOTES:							
1. Soils are field visually classified in accordance with the Unified Soils Classification System.							
2. NS = Sample not submitted for laboratory analysis from this interval.							

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	24.2	73.8	2.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.6		
#40	75.8		
#60	13.3		
#100	6.5		
#200	2.0		

* (no specification provided)

Material Description
SAND, (SP), medium to fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.5114 D₈₅= 0.4727 D₆₀= 0.3712
 D₅₀= 0.3441 D₃₀= 0.2950 D₁₅= 0.2554
 D₁₀= 0.2003 C_u= 1.85 C_c= 1.17

Classification
 USCS= SP AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-PB-35-10A
Sample Number: TE Lab ID: 4609.06

Depth: 0.0 - 5.0 (ft.)

Date: 8/4/10

Thompson Engineering

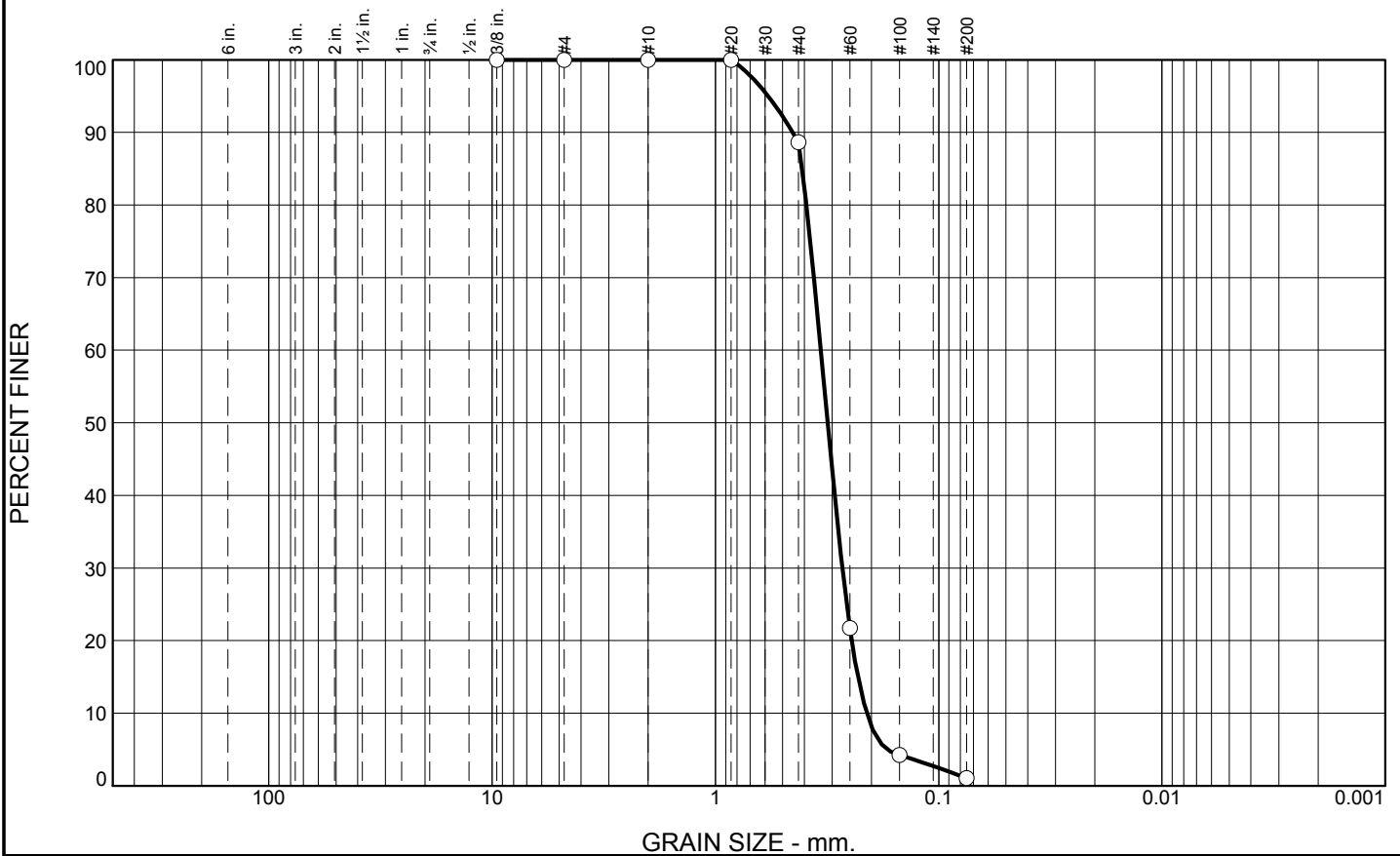
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 **Report No.** Revised 8/20

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	11.4	87.5	1.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	100.0		
#40	88.6		
#60	21.7		
#100	4.3		
#200	1.1		

* (no specification provided)

<u>Material Description</u>		
SAND, (SM), medium to fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.4506	D ₈₅ = 0.4098	D ₆₀ = 0.3370
D ₅₀ = 0.3141	D ₃₀ = 0.2700	D ₁₅ = 0.2300
D ₁₀ = 0.2100	C _u = 1.60	C _c = 1.03
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-PB-35-10B
Sample Number: TE Lab ID: 4609.07

Depth: 5.0 - 10.0 (ft.)

Date: 8/4/10

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009
Report No. Revised 8/20

Tested By: R.Martin

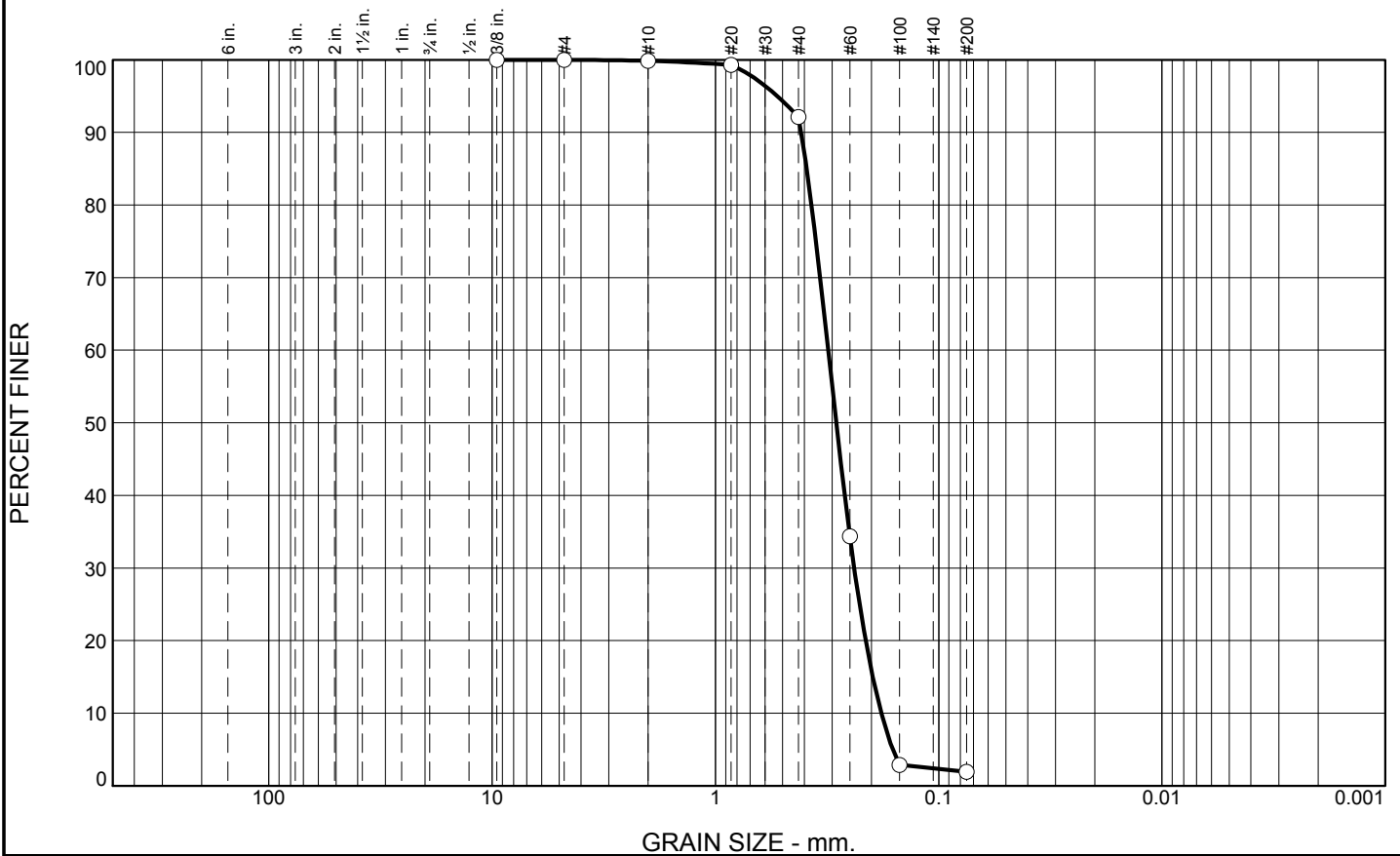
Checked By: R.Byrd

Boring Designation BI-PB-036-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-036-10		LOCATION COORDINATES E = 1,138,996 N = 252,914		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 33 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 07-19-10		STARTED 07-19-10 COMPLETED 07-19-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -33.0 Ft.			
8. TOTAL DEPTH OF BORING 19.5 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist			

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-33.0	0.0				
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace shell fragments, tannish brown (SP)	A	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.2874 mm % Fines: 1.9
				B	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.3231 mm % Fines: 2
				C	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.3464 mm % Fines: 4.1
-47.5	14.5				
			CLAY, fat, dark gray (CH)	NS	
-52.5	19.5				
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.		

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	7.8	90.2	1.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.3		
#40	92.1		
#60	34.4		
#100	2.9		
#200	1.9		

* (no specification provided)

Material Description
 SAND, (SP), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.4135 D₈₅= 0.3906 D₆₀= 0.3122
 D₅₀= 0.2874 D₃₀= 0.2392 D₁₅= 0.1974
 D₁₀= 0.1807 C_u= 1.73 C_c= 1.01

Classification
 USCS= SP AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-PB-36-10A
Sample Number: TE Lab ID: 4609.08

Depth: 0.0 - 5.0 (ft.)

Date: 8/4/10

Thompson Engineering

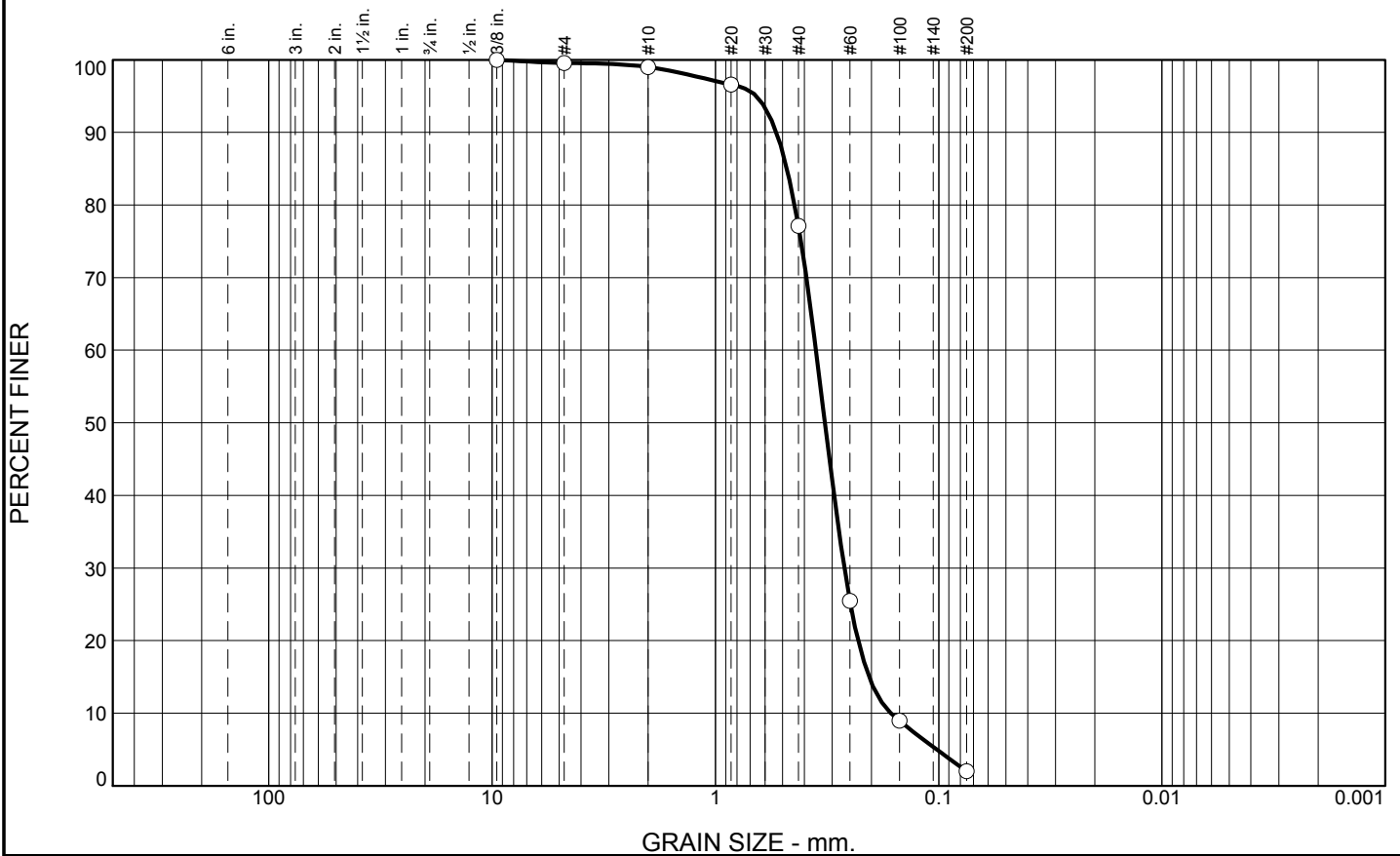
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 **Report No.** Revised 8/20

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.4	0.6	21.9	75.1	2.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.6		
#10	99.0		
#20	96.6		
#40	77.1		
#60	25.5		
#100	9.0		
#200	2.0		

* (no specification provided)

Material Description
SAND, (SP), medium to fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.5329 D₈₅= 0.4780 D₆₀= 0.3548
 D₅₀= 0.3231 D₃₀= 0.2645 D₁₅= 0.2052
 D₁₀= 0.1636 C_u= 2.17 C_c= 1.20

Classification
 USCS= SP AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-PB-36-10B
Sample Number: TE Lab ID: 4609.09

Depth: 5.0 - 10.0 (ft.)

Date: 8/4/10

Thompson Engineering

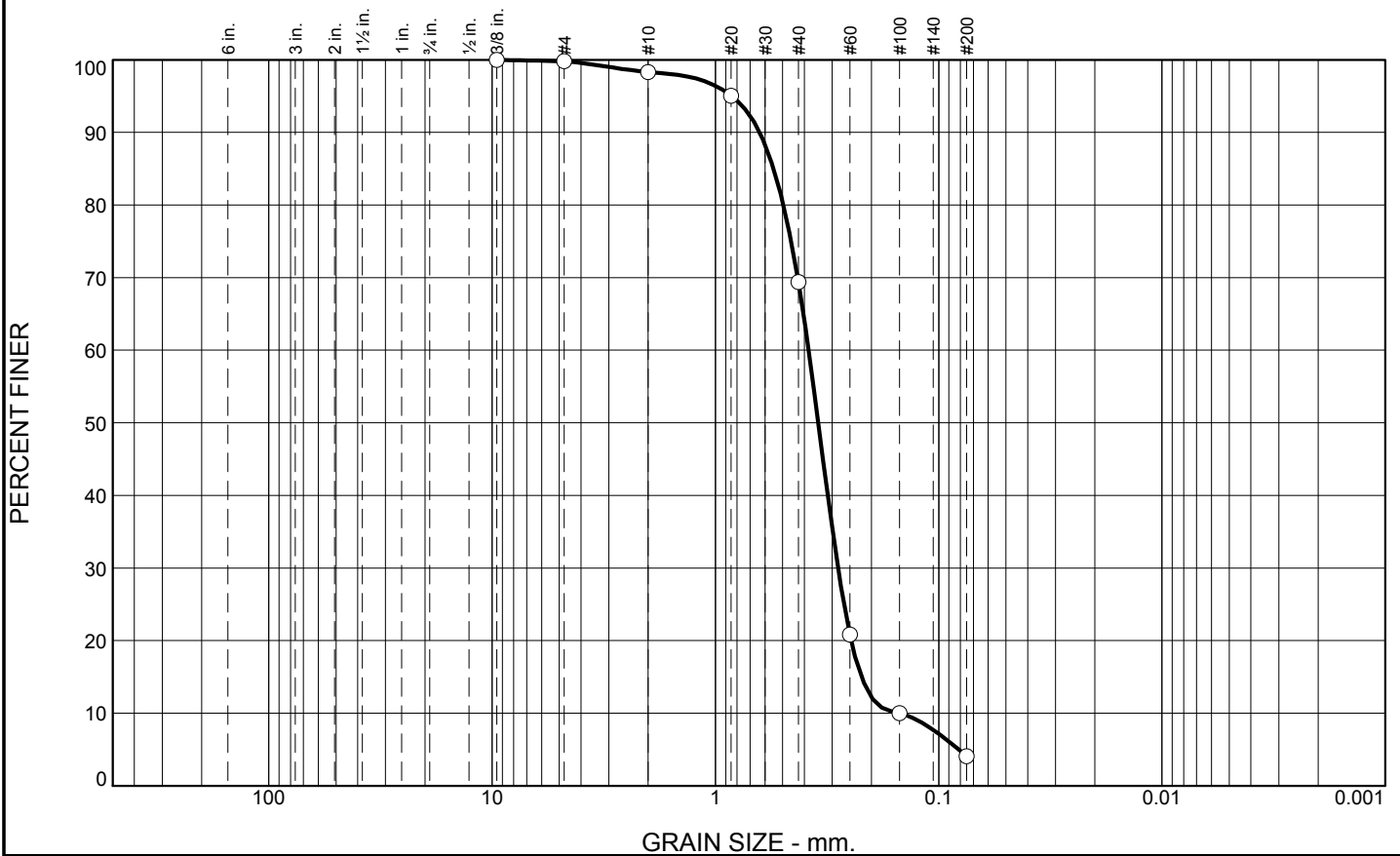
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 **Report No.** Revised 8/20

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	1.5	28.9	65.3	4.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.8		
#10	98.3		
#20	95.0		
#40	69.4		
#60	20.8		
#100	10.0		
#200	4.1		

* (no specification provided)

Material Description
SAND, (SP), medium to fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.6337 D₈₅= 0.5486 D₆₀= 0.3828
 D₅₀= 0.3464 D₃₀= 0.2821 D₁₅= 0.2219
 D₁₀= 0.1493 C_u= 2.56 C_c= 1.39

Classification
 USCS= SP AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-PB-36-10C
Sample Number: TE Lab ID: 4609.10

Depth: 10.0 - 14.5 (ft.)

Date: 8/4/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 **Report No.** Revised 8/20

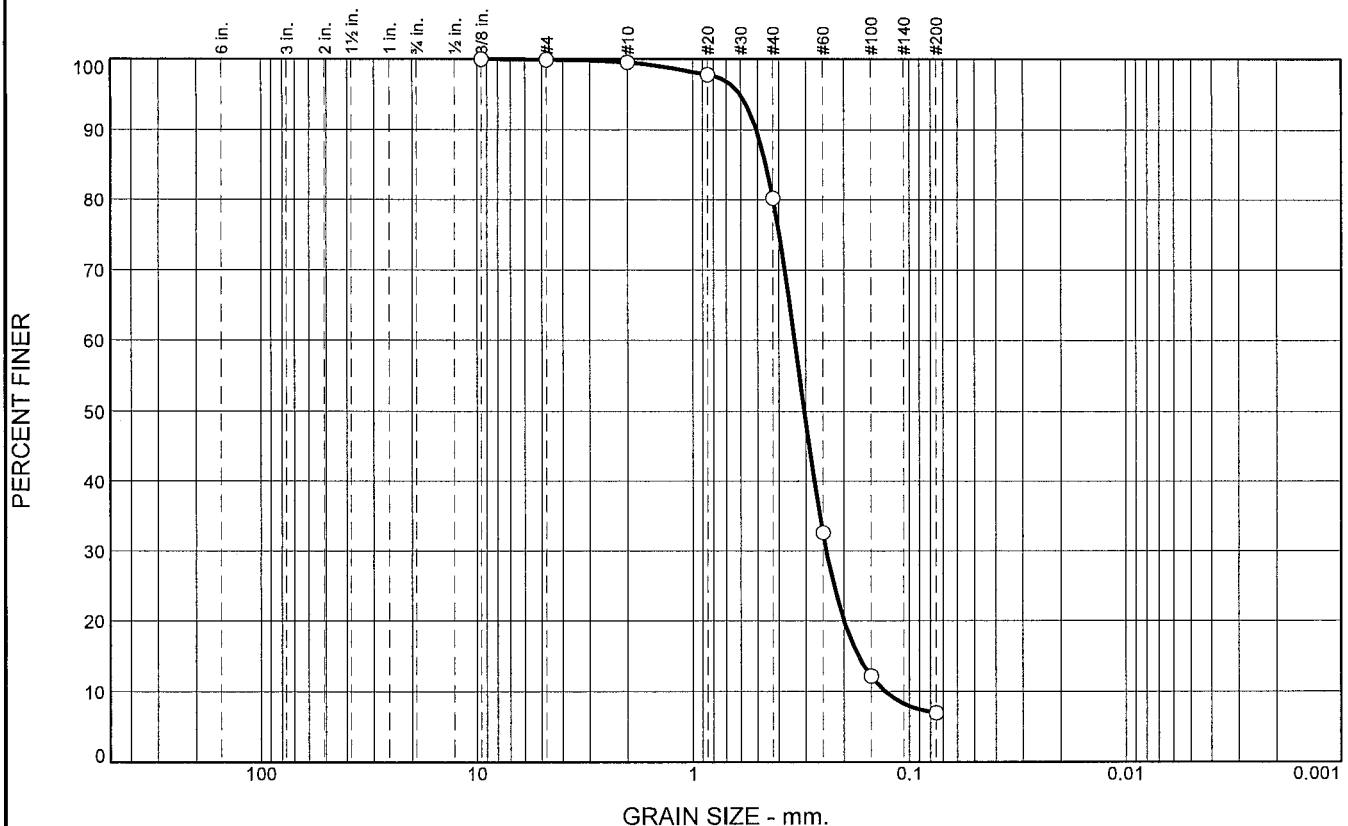
Tested By: R.Martin

Checked By: R.Byrd

Boring Designation BI-PB-037-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-037-10		LOCATION COORDINATES E = 1,140,725 N = 252,845		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 34 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 07-27-10		STARTED 07-27-10 COMPLETED 07-27-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -33.2 Ft.			
8. TOTAL DEPTH OF BORING 16.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-33.2	0.0		SAND, poorly-graded, dark gray (SP)	A	Classification: SP-SM Color: 2.5Y 6/2-light brownish gray D50: 0.3045 mm % Fines: 7		
			At El. -37.2 Ft., trace shell fragments, lt. gray	B	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.3385 mm % Fines: 2		
				C	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.3025 mm % Fines: 3.9		
-47.2	14.0		SAND, clayey, dark gray (SC)	NS			
-49.2	16.0						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.4	19.3	73.2	7.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.5		
#20	97.8		
#40	80.2		
#60	32.6		
#100	12.1		
#200	7.0		

* (no specification provided)

Material Description

SAND, (SP-SM), medium to fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.5082 D₈₅= 0.4582 D₆₀= 0.3373
 D₅₀= 0.3045 D₃₀= 0.2411 D₁₅= 0.1719
 D₁₀= 0.1291 C_u= 2.61 C_c= 1.34

Classification

USCS= SP-SM AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-37-10A
Sample Number: TE Lab ID: 4612.01

Depth: 0.0 - 5.0 (ft.)

Date: 8/7/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

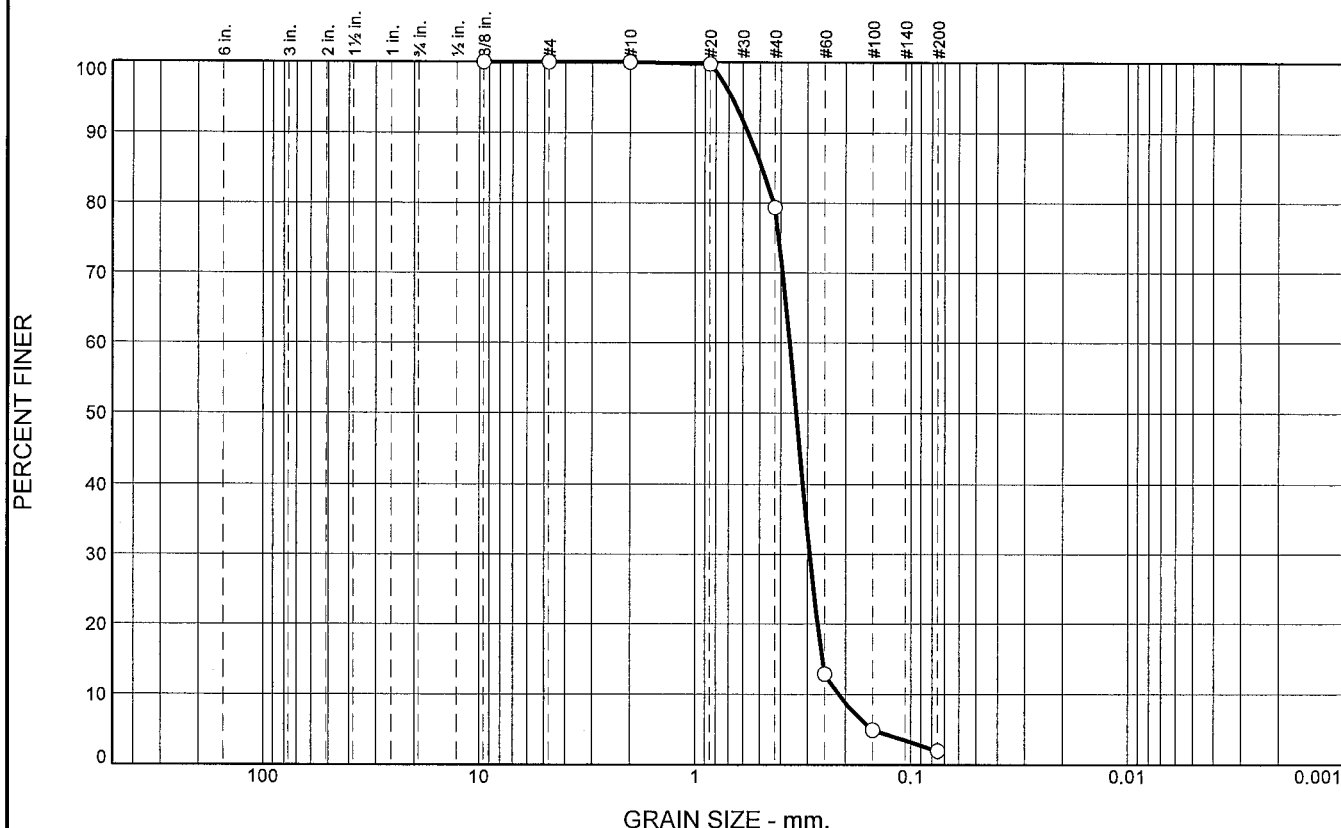
Project No: 10-2123-0009

Report No.

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	20.6	77.4	2.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.7		
#40	79.4		
#60	12.9		
#100	4.9		
#200	2.0		

* (no specification provided)

Material Description
SAND, (SP), medium to fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.5668 D₈₅= 0.4900 D₆₀= 0.3634
D₅₀= 0.3385 D₃₀= 0.2929 D₁₅= 0.2563
D₁₀= 0.2148 C_u= 1.69 C_c= 1.10

Classification
USCS= SP AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-PB-37-10B
Sample Number: TE Lab ID: 4612.02

Depth: 5.0 - 10.0 (ft.)

Date: 8/7/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

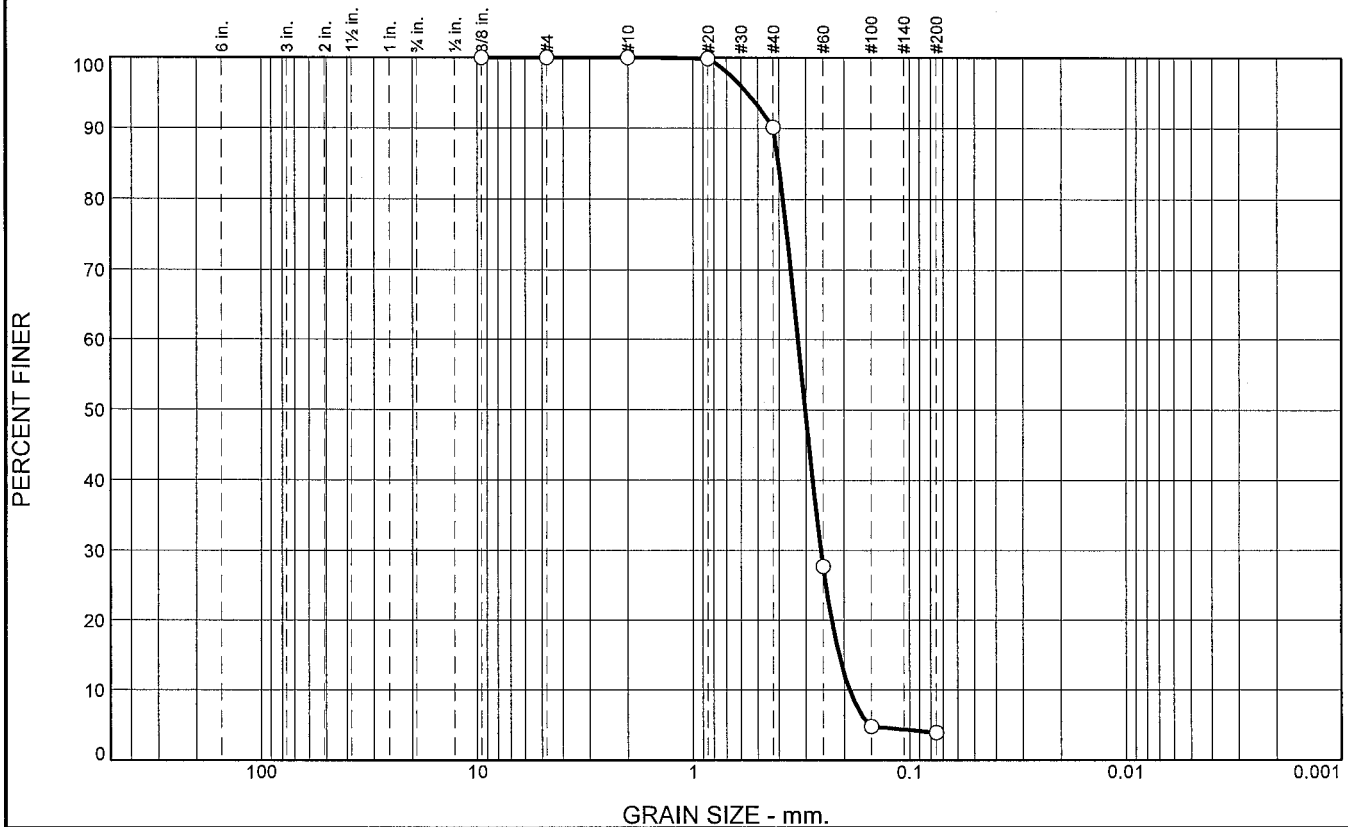
Project No: 10-2123-0009

Report No.

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	9.9	86.2	3.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.8		
#40	90.1		
#60	27.7		
#100	4.8		
#200	3.9		

* (no specification provided)

Material Description

SAND, (SP), fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.4243 D₈₅= 0.4021 D₆₀= 0.3265
D₅₀= 0.3025 D₃₀= 0.2558 D₁₅= 0.2112
D₁₀= 0.1893 C_u= 1.72 C_c= 1.06

Classification

USCS= SP AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-37-10C
Sample Number: TE Lab ID: 4612.03

Depth: 10.0 - 15.0 (ft.)

Date: 8/7/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Report No.

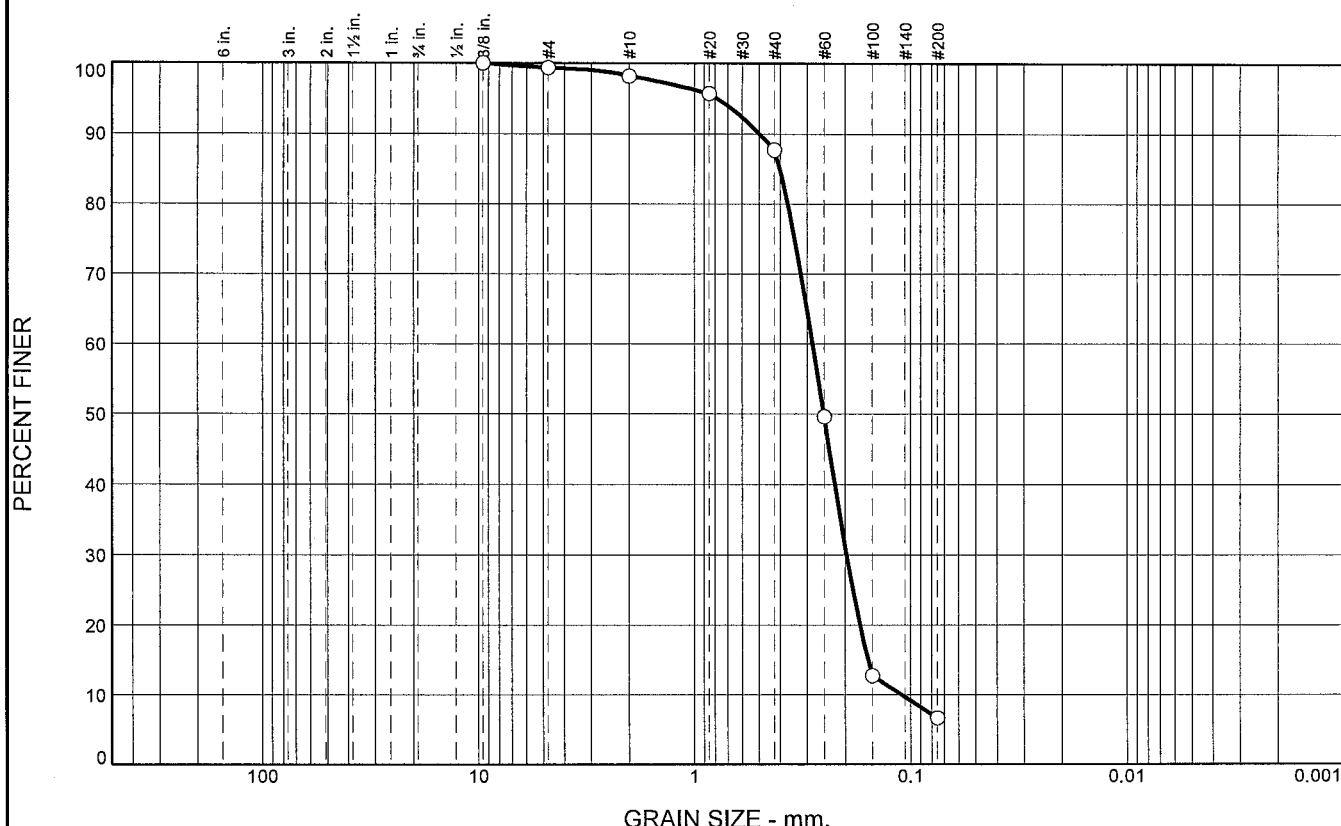
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-PB-038-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-038-10		LOCATION COORDINATES E = 1,142,128 N = 252,721		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 4		DISTURBED 0 UNDISTURBED (UD)	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 35 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 07-28-10		STARTED 07-28-10 COMPLETED 07-28-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -34.4 Ft.			
8. TOTAL DEPTH OF BORING 18.5 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-34.4	0.0						
-35.9	1.5		CLAY, lean, dark gray (CL)	NS			
			SAND, poorly-graded, trace shell fragments, lt. gray (SP)	A	Classification: SP-SM Color: 2.5Y 5/2-grayish brown D50: 0.2511 mm % Fines: 6.7		
				B	Classification: SP Color: 2.5Y7/2- D50: 0.2721 mm % Fines: 2.6		
				C	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.3004 mm % Fines: 3		
				D	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.3073 mm % Fines: 3.3		
-52.9	18.5						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.7	1.2	10.4	81.0	6.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.3		
#10	98.1		
#20	95.7		
#40	87.7		
#60	49.6		
#100	12.7		
#200	6.7		

* (no specification provided)

Material Description
SAND, (SP-SM), medium to fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.4979 D₈₅= 0.4020 D₆₀= 0.2826
D₅₀= 0.2511 D₃₀= 0.1972 D₁₅= 0.1571
D₁₀= 0.1096 C_u= 2.58 C_c= 1.26

Classification
USCS= SP-SM AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-PB-38-10A
Sample Number: TE Lab ID: 4612.04

Depth: 1.5 - 5.0 (ft.)

Date: 8/7/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

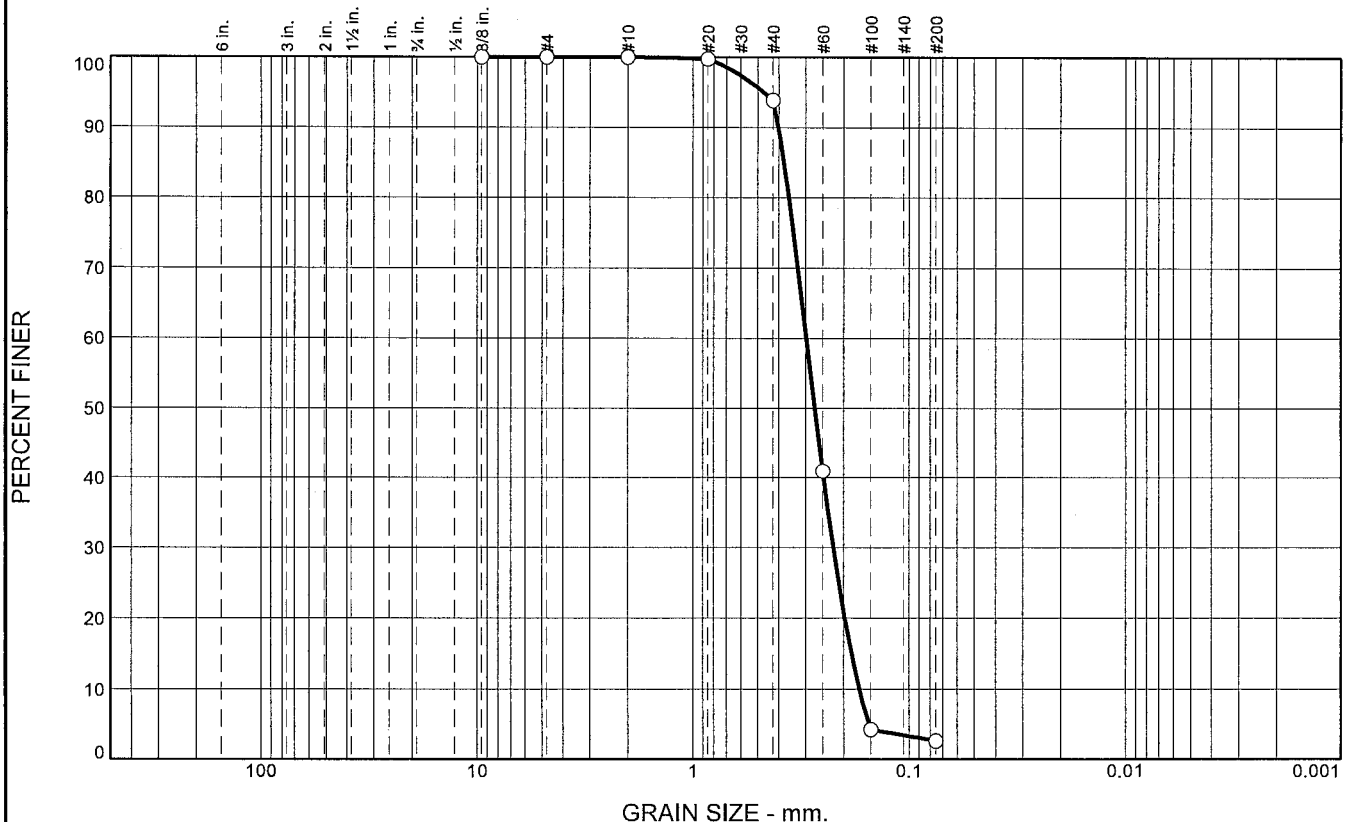
Project No: 10-2123-0009

Report No.

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	6.1	91.3	2.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.7		
#40	93.9		
#60	40.9		
#100	4.3		
#200	2.6		

* (no specification provided)

Material Description

SAND, (SP), fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.4021 D₈₅= 0.3786 D₆₀= 0.2976
D₅₀= 0.2721 D₃₀= 0.2234 D₁₅= 0.1845
D₁₀= 0.1699 C_u= 1.75 C_c= 0.99

Classification

USCS= SP AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-38-10B
Sample Number: TE Lab ID: 4612.05

Depth: 5.0 - 10.0 (ft.)

Date: 8/7/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

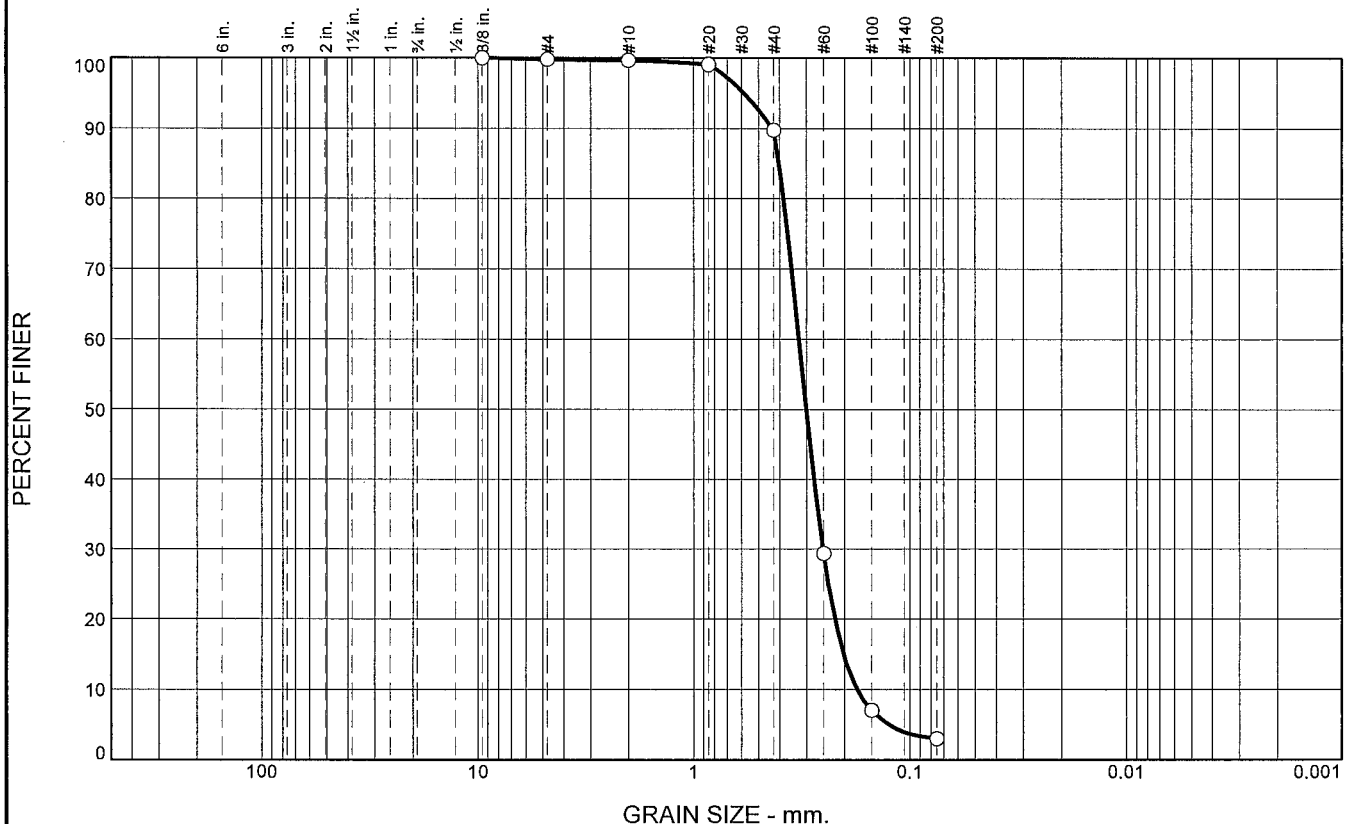
Project No: 10-2123-0009

Report No.

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.2	9.8	86.8	3.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.8		
#10	99.6		
#20	99.0		
#40	89.8		
#60	29.3		
#100	7.0		
#200	3.0		

* (no specification provided)

Material Description

SAND, (SP), fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.4306 D₈₅= 0.4030 D₆₀= 0.3251
D₅₀= 0.3004 D₃₀= 0.2518 D₁₅= 0.2025
D₁₀= 0.1755 C_u= 1.85 C_c= 1.11

Classification

USCS= SP AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-38-10C
Sample Number: TE Lab ID: 4612.06

Depth: 10.0 - 15.0 (ft.)

Date: 8/7/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

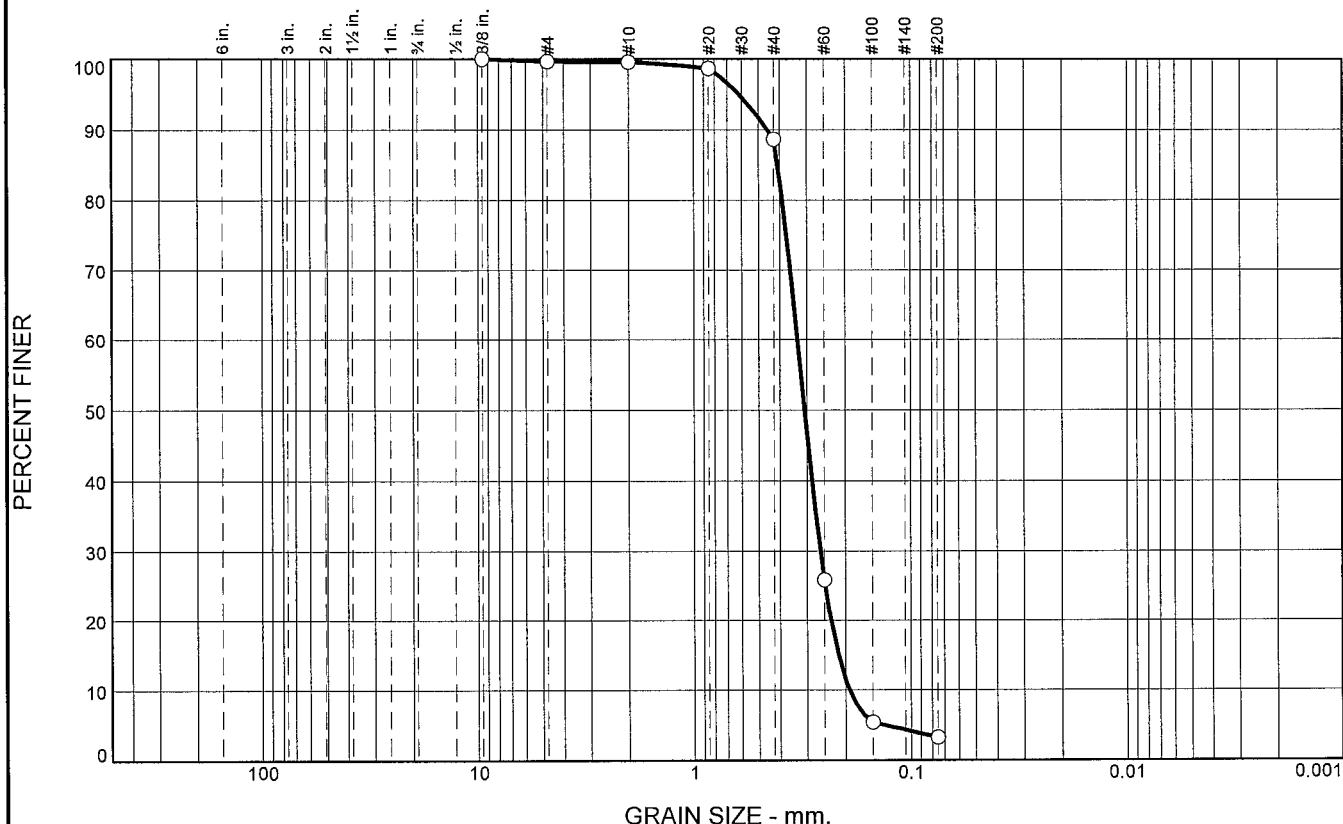
Project No: 10-2123-0009

Report No.

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.4	0.1	10.9	85.3	3.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.6		
#10	99.5		
#20	98.6		
#40	88.6		
#60	25.9		
#100	5.4		
#200	3.3		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.4555

D₈₅= 0.4086

D₆₀= 0.3314

D₅₀= 0.3073

D₃₀= 0.2605

D₁₅= 0.2157

D₁₀= 0.1923

C_u= 1.72

C_c= 1.06

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-38-10D
Sample Number: TE Lab ID: 4612.07

Depth: 15.0 - 18.5 (ft.)

Date: 8/7/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Report No.

Tested By: G.Fancher

Checked By: R.Byrd

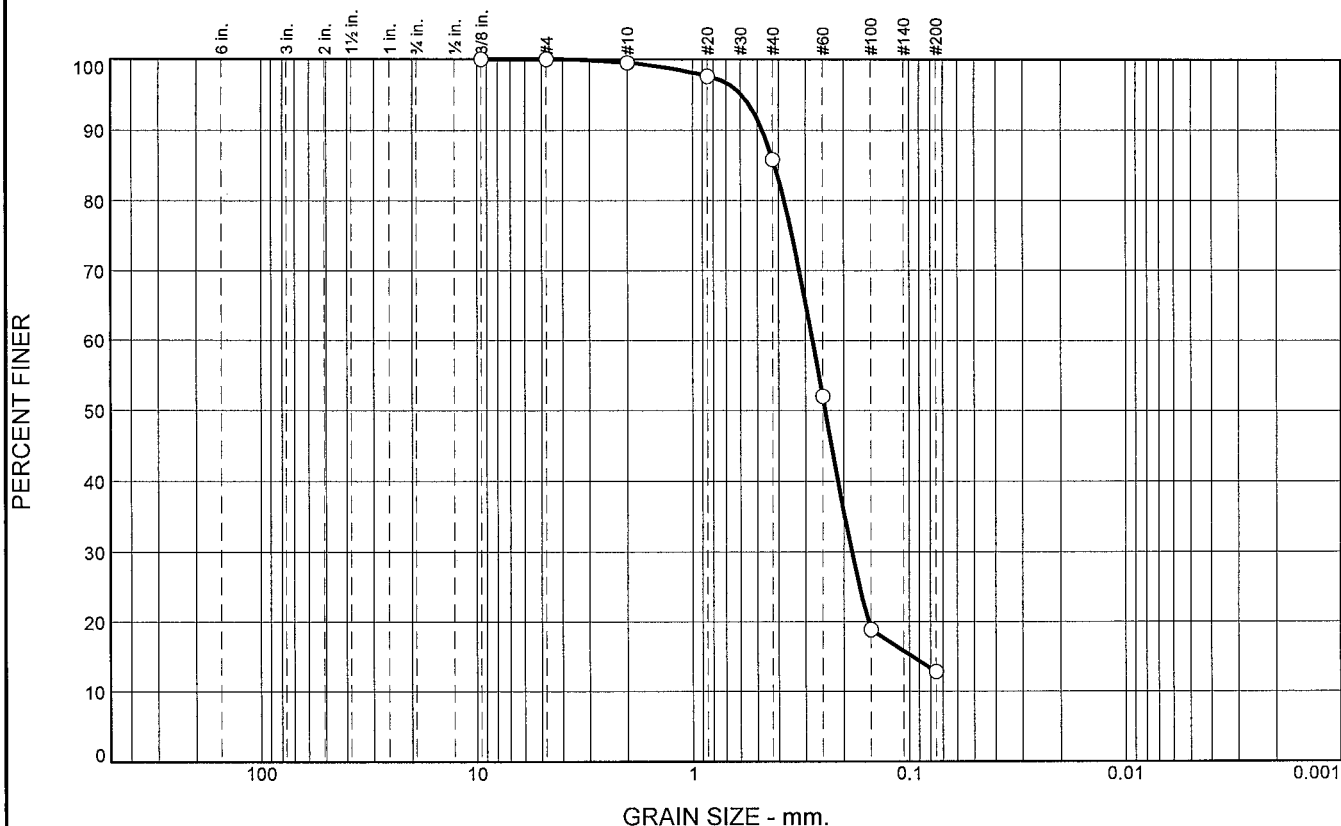
Boring Designation BI-PB-039-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-039-10		LOCATION COORDINATES E = 1,143,682 N = 252,847		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		14. WATER DEPTH 35 Ft.	
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING		STARTED 07-28-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -34.3 Ft.		COMPLETED 07-28-10	
8. TOTAL DEPTH OF BORING 13.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-34.3	0.0		CLAY, fat, gray (CH)	NS			
-47.3	13.0						
NOTES:							
1. Soils are field visually classified in accordance with the Unified Soils Classification System.							
2. NS = Sample not submitted for laboratory analysis from this interval.							

Boring Designation BI-PB-040-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-040-10		LOCATION COORDINATES E = 1,145,255 N = 252,825		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 1		DISTURBED 1 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 33 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 07-28-10		STARTED 07-28-10 COMPLETED 07-28-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -32.2 Ft.			
8. TOTAL DEPTH OF BORING 14.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-32.2	0.0						
-34.2	2.0		SAND, poorly-graded, trace shell fragments, dark gray (SP)	A	Classification: SM Color: 2.5Y 5/3-light olive brown D50: 0.2432 mm % Fines: 12.8		
-46.2	14.0		CLAY, fat, gray (CH)	NS			
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.5	13.6	73.1	12.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.5		
#20	97.6		
#40	85.9		
#60	52.1		
#100	18.9		
#200	12.8		

* (no specification provided)

Material Description
SILTY SAND, (SM), medium to fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.4750 D₈₅= 0.4168 D₆₀= 0.2781
 D₅₀= 0.2432 D₃₀= 0.1842 D₁₅= 0.0961
 D₁₀= C_u= C_c=

Classification
 USCS= SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-PB-40-10A
 Sample Number: TE Lab ID: 4612.08

Depth: 0.0 - 2.0 (ft.)

Date: 8/7/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Report No.

Tested By: G.Fancher

Checked By: R.Byrd

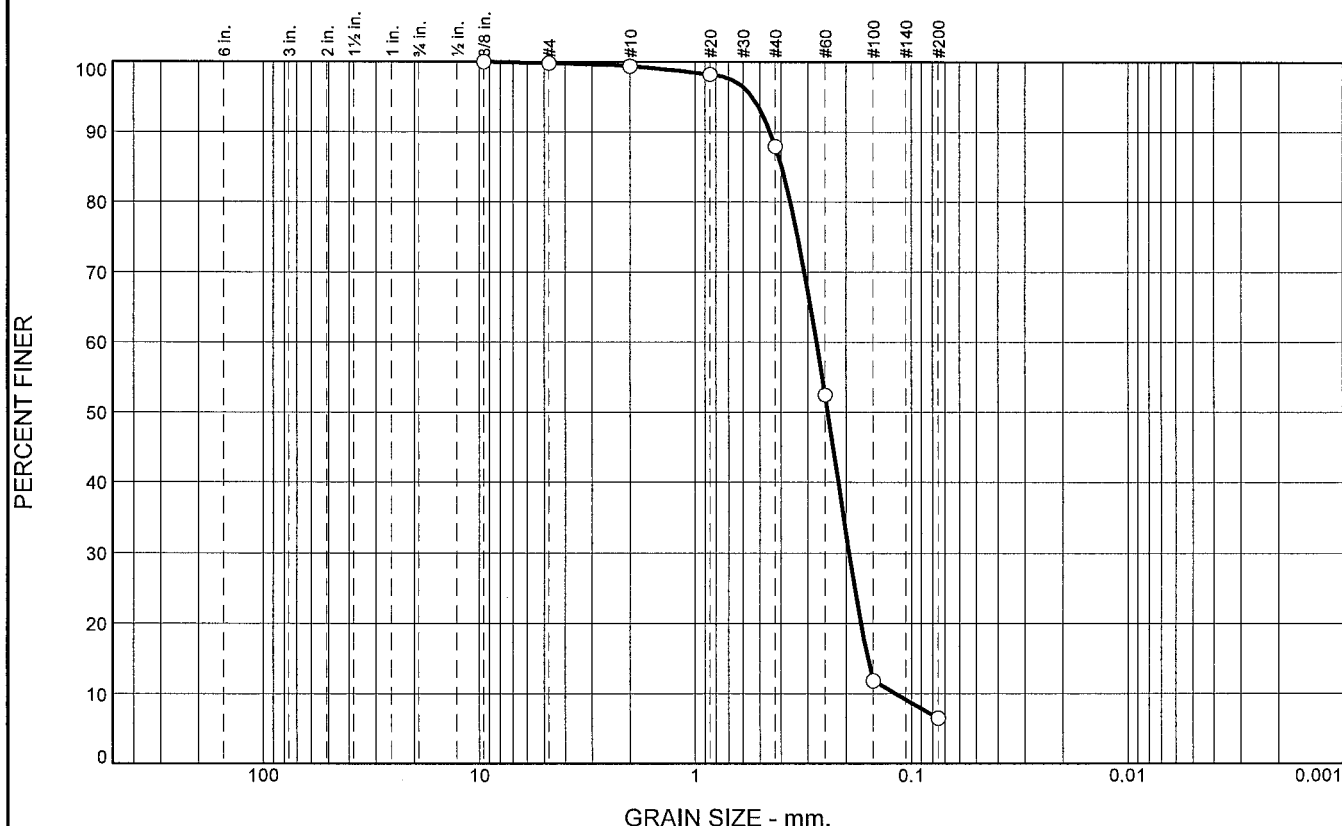
Boring Designation BI-PB-041-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-041-10		LOCATION COORDINATES E = 1,146,730 N = 252,846		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES		UNDISTURBED (UD) 0	
6. THICKNESS OF OVERBURDEN N/A		BEARING		14. WATER DEPTH 38 Ft.		15. DATE BORING 07-28-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -37.1 Ft.		COMPLETED 07-28-10	
8. TOTAL DEPTH OF BORING 20.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%		18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist	
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-37.1	0.0		CLAY, fat, gray (CH)				
				NS			
-57.1	20.0						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Boring Designation BI-PB-042-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-042-10		LOCATION COORDINATES E = 1,148,137 N = 252,784		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 33 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 07-28-10		STARTED 07-28-10 COMPLETED 07-28-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -32.2 Ft.			
8. TOTAL DEPTH OF BORING 15.5 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-32.2	0.0						
			SAND, poorly-graded, mostly medium-grained sand-sized quartz, dark gray (SP)	A	Classification: SP-SM Color: 2.5Y 5/2-grayish brown D50: 0.2428 mm % Fines: 6.5		
				B	Classification: SP-SM Color: 2.5Y 6/2-light brownish gray D50: 0.2663 mm % Fines: 5.2		
-41.2	9.0		SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace shell fragments, lt. gray (SP)				
				C	Classification: SP Color: 5Y 8/1-white D50: 0.257 mm % Fines: 3.7		
-47.7	15.5						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.5	11.4	81.4	6.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.8		
#10	99.3		
#20	98.2		
#40	87.9		
#60	52.5		
#100	11.9		
#200	6.5		

* (no specification provided)

Material Description

SAND, (SP-SM), medium to fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.4495

D₈₅= 0.3988

D₆₀= 0.2733

D₅₀= 0.2428

D₃₀= 0.1937

D₁₅= 0.1585

C_u= 0.1178

C_c= 2.32

C_c= 1.17

Classification

USCS= SP-SM

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-42-10A
Sample Number: TE Lab ID: 4612.09

Depth: 0.0 - 5.0 (ft.)

Date: 8/7/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

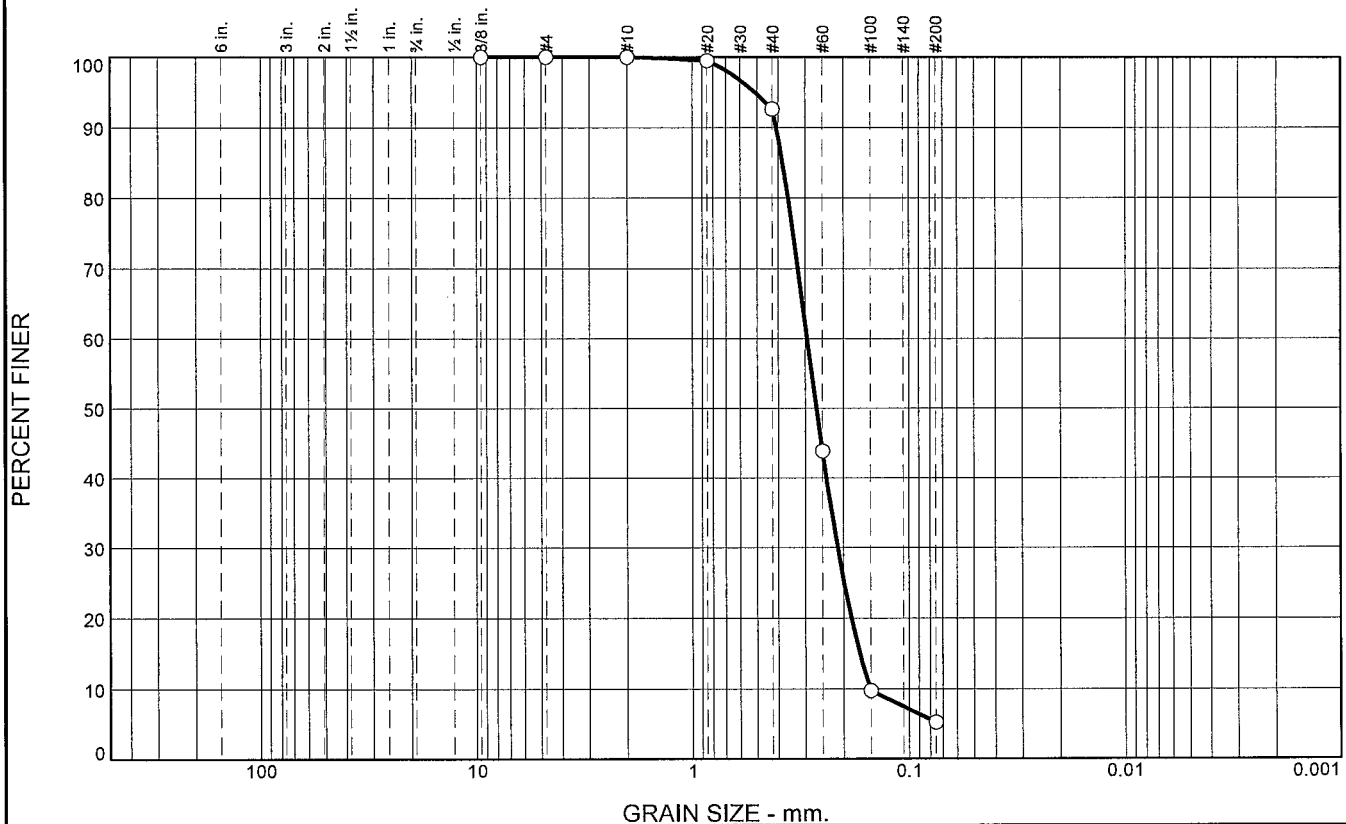
Project No: 10-2123-0009

Report No.

Tested By: J.Maddox

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	7.4	87.4	5.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.5		
#40	92.6		
#60	43.9		
#100	9.8		
#200	5.2		

* (no specification provided)

Material Description
SAND, (SP-SM), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.4078 D₈₅= 0.3815 D₆₀= 0.2937
 D₅₀= 0.2663 D₃₀= 0.2130 D₁₅= 0.1690
 D₁₀= 0.1509 C_u= 1.95 C_c= 1.02

Classification
 USCS= SP-SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-PB-42-10B
 Sample Number: TE Lab ID: 4612.10

Depth: 5.0 - 10.0 (ft.)

Date: 8/7/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project

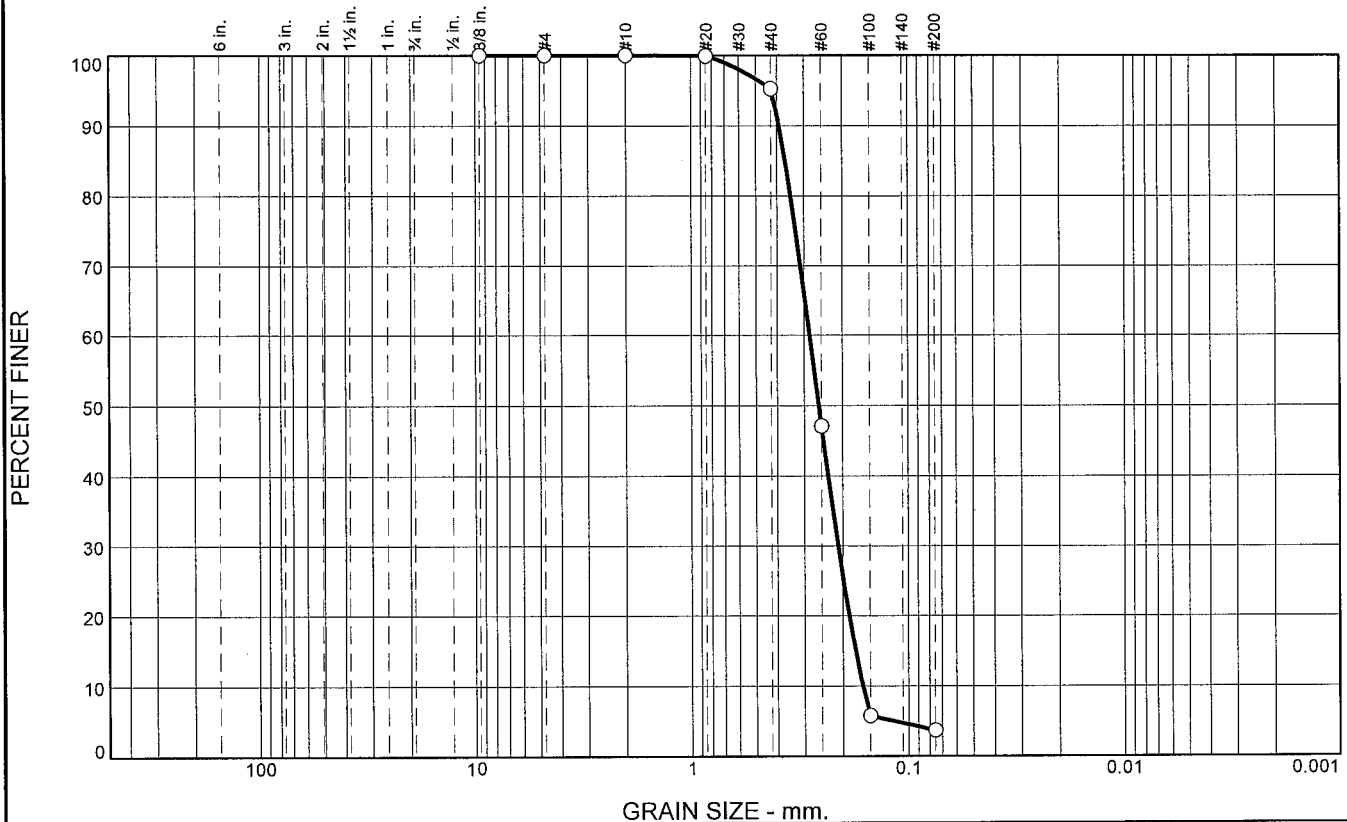
Project No: 10-2123-0009

Report No.

Tested By: J.Maddox

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	4.7	91.6	3.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	95.3		
#60	47.1		
#100	5.8		
#200	3.7		

* (no specification provided)

Material Description
SAND, (SP), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.3909 D₈₅= 0.3663 D₆₀= 0.2827
 D₅₀= 0.2570 D₃₀= 0.2101 D₁₅= 0.1752
 D₁₀= 0.1623 C_u= 1.74 C_c= 0.96

Classification
 USCS= SP AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-PB-42-10C
 Sample Number: TE Lab ID: 4612.11

Depth: 10.0 - 15.0 (ft.)

Date: 8/7/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Report No.

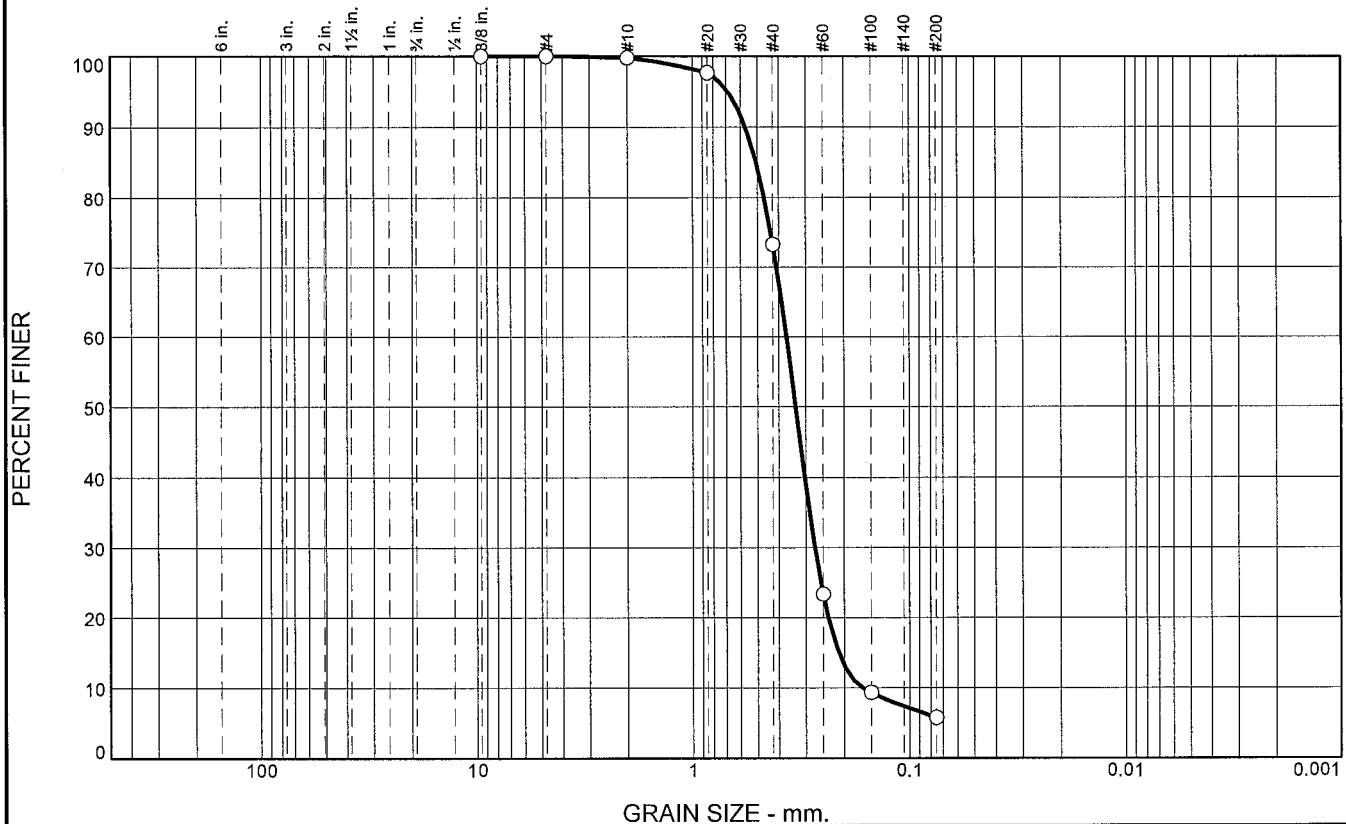
Tested By: J.Maddox

Checked By: R.Byrd

Boring Designation BI-PB-043-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-043-10		LOCATION COORDINATES E = 1,149,697 N = 252,849		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 38 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 07-28-10		STARTED COMPLETED 07-28-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -37.3 Ft.			
8. TOTAL DEPTH OF BORING 20.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-37.3	0.0						
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace shell fragments, lt. gray (SP)	A	Classification: SP-SM Color: 2.5Y 7/2-light gray D50: 0.334 mm % Fines: 5.8		
				B	Classification: SM Color: 2.5Y 7/2-light gray D50: 0.306 mm % Fines: 12.4		
-47.3	10.0						
			CLAY, lean, trace shell fragments, dark gray (CL)	NS			
-52.3	15.0						
			SAND, clayey, trace shell fragments, dark gray (SC)	C	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.2151 mm % Fines: 3.7		
-57.3	20.0						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	26.5	67.5	5.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.8		
#20	97.6		
#40	73.3		
#60	23.4		
#100	9.4		
#200	5.8		

* (no specification provided)

Material Description
SAND, (SP-SM), medium to fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.5693 D₈₅= 0.5078 D₆₀= 0.3682
 D₅₀= 0.3340 D₃₀= 0.2722 D₁₅= 0.2121
 D₁₀= 0.1642 C_u= 2.24 C_c= 1.23

Classification
 USCS= SP-SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-PB-43-10A
 Sample Number: TE Lab ID: 4612.12

Depth: 0.0 - 5.0 (ft.)

Date: 8/7/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project

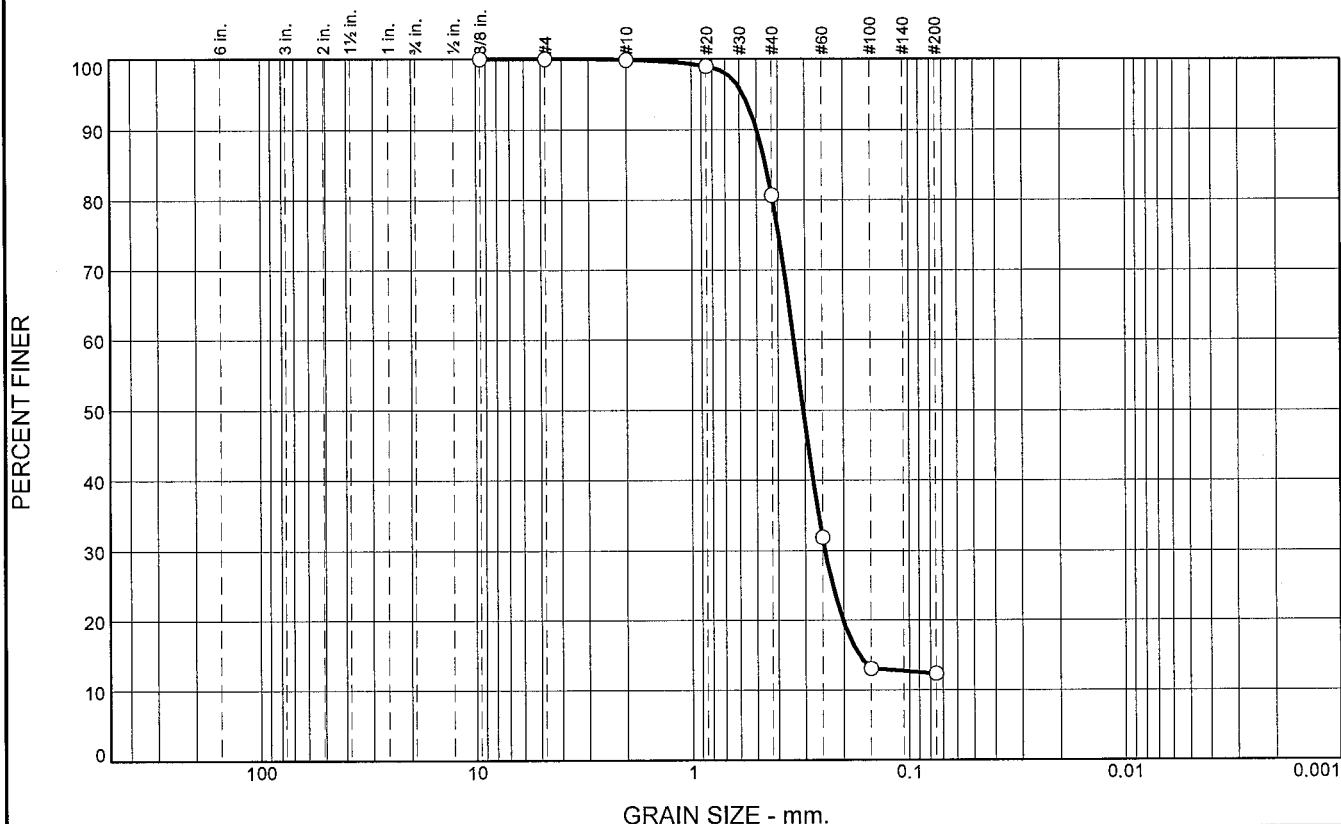
Project No: 10-2123-0009

Report No.

Tested By: J.Maddox

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	19.3	68.2	12.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	98.9		
#40	80.6		
#60	31.9		
#100	13.1		
#200	12.4		

* (no specification provided)

Material Description
SILTY SAND, (SM), medium to fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.4985 D₈₅= 0.4534 D₆₀= 0.3381
 D₅₀= 0.3060 D₃₀= 0.2435 D₁₅= 0.1698
 D₁₀= C_u= C_c=

Classification
 USCS= SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-PB-43-10B
 Sample Number: TE Lab ID: 4612.13

Depth: 5.0 - 10.0 (ft.)

Date: 8/7/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project

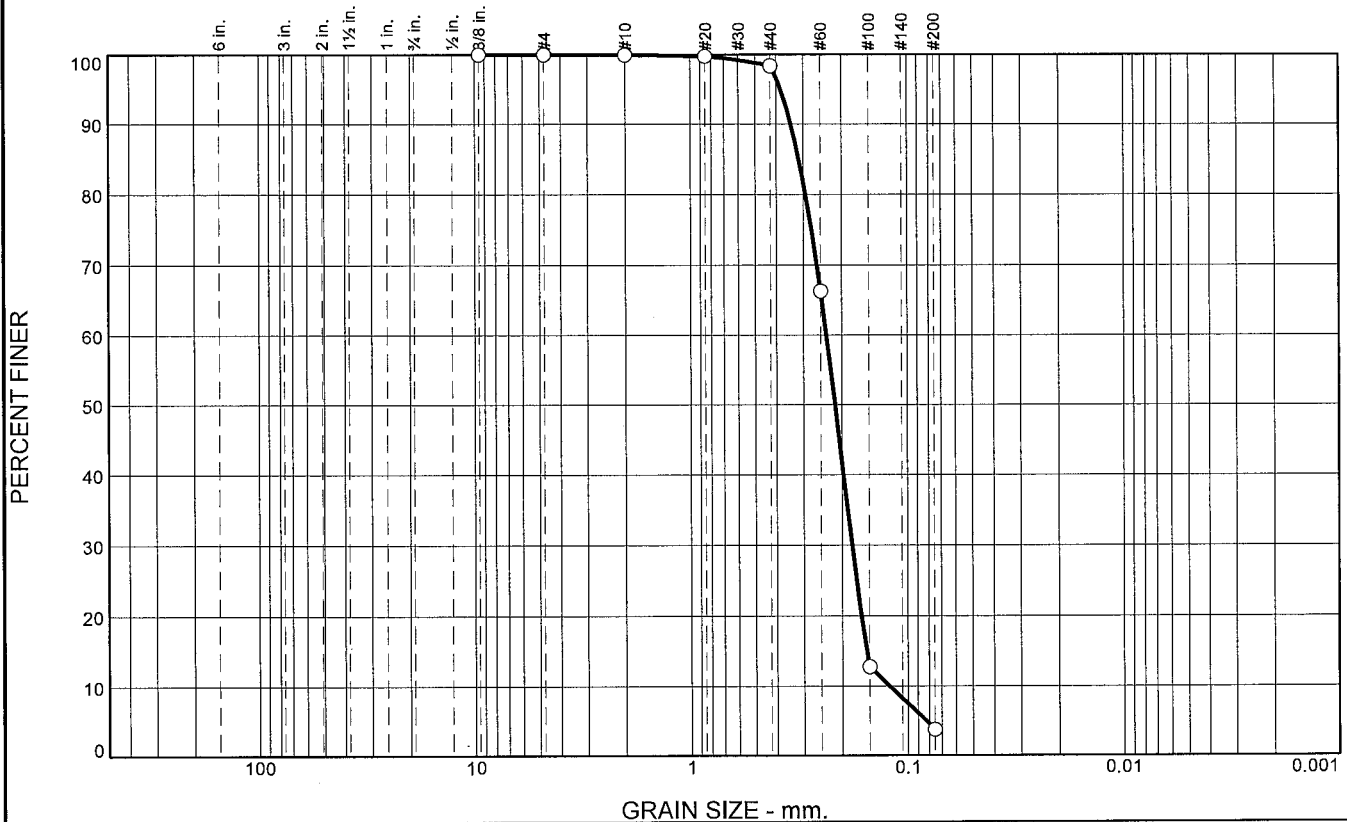
Project No: 10-2123-0009

Report No.

Tested By: J.Maddox

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	1.6	94.6	3.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.7		
#40	98.3		
#60	66.3		
#100	12.8		
#200	3.7		

* (no specification provided)

Material Description

SAND, (SP), fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.3426 D₈₅= 0.3145 D₆₀= 0.2353
D₅₀= 0.2151 D₃₀= 0.1804 D₁₅= 0.1544
D₁₀= 0.1212 C_u= 1.94 C_c= 1.14

Classification

USCS= SP AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-43-10C
Sample Number: TE Lab ID: 4612.14

Depth: 15.0 - 20.0 (ft.)?

Date: 8/7/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Report No.

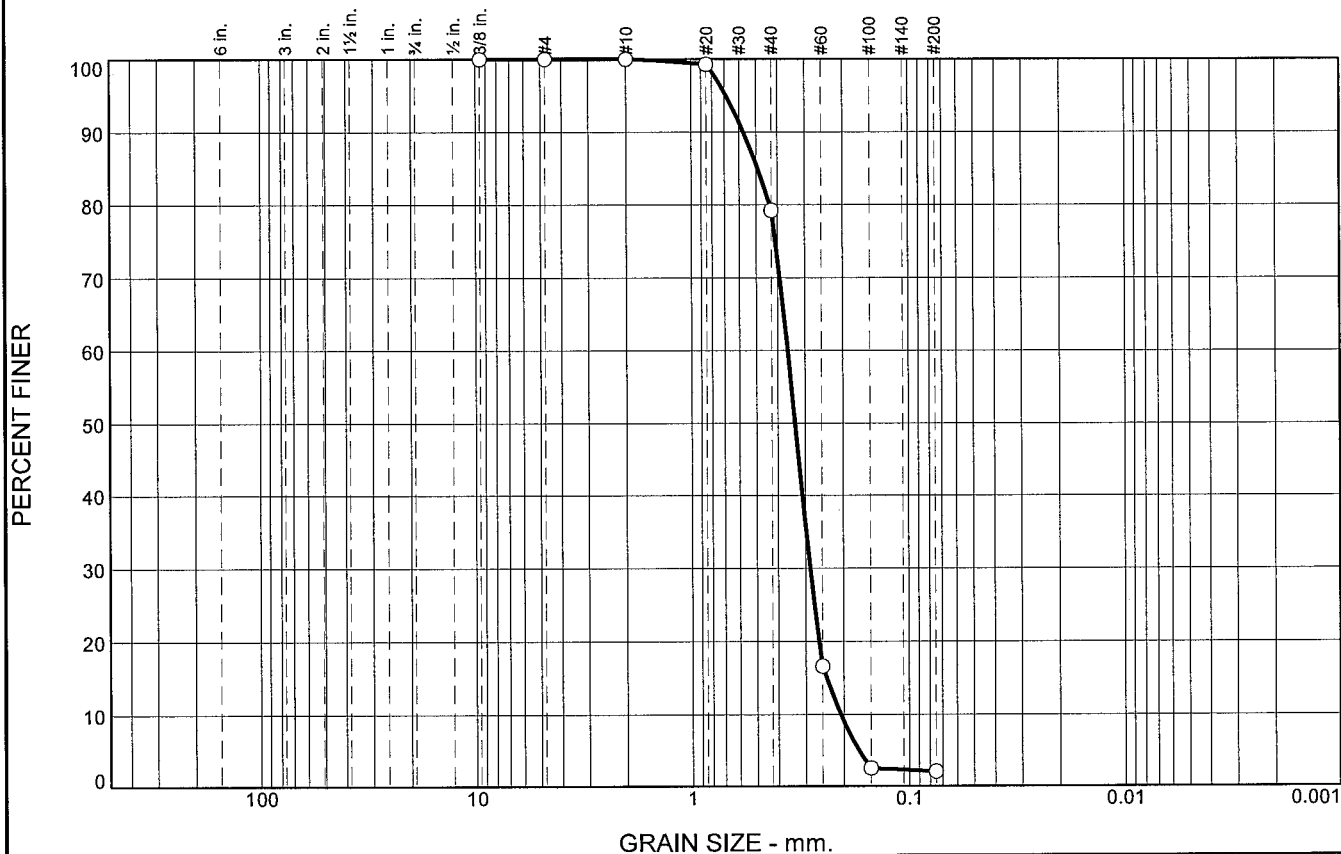
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-PB-044-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-044-10		LOCATION COORDINATES E = 1,151,166 N = 252,917		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 38 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 07-28-10		COMPLETED 07-28-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -37.4 Ft.			
8. TOTAL DEPTH OF BORING 20.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-37.4	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 6/1-gray D50: 0.3331 mm % Fines: 2		
				B	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.3428 mm % Fines: 2.1		
				C	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.3322 mm % Fines: 2.3		
				D	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.3566 mm % Fines: 3.6		
-57.4	20.0						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	20.8	77.2	2.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.3		
#40	79.2		
#60	16.6		
#100	2.5		
#200	2.0		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.5732 D₈₅= 0.4935 D₆₀= 0.3595
D₅₀= 0.3331 D₃₀= 0.2847 D₁₅= 0.2398
D₁₀= 0.2068 C_u= 1.74 C_c= 1.09

Classification

USCS= SP AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-44-10A
Sample Number: TE Lab ID: 4612.15

Depth: 0.0 - 5.0 (ft.)

Date: 8/7/10

Thompson Engineering

Mobile, Alabama

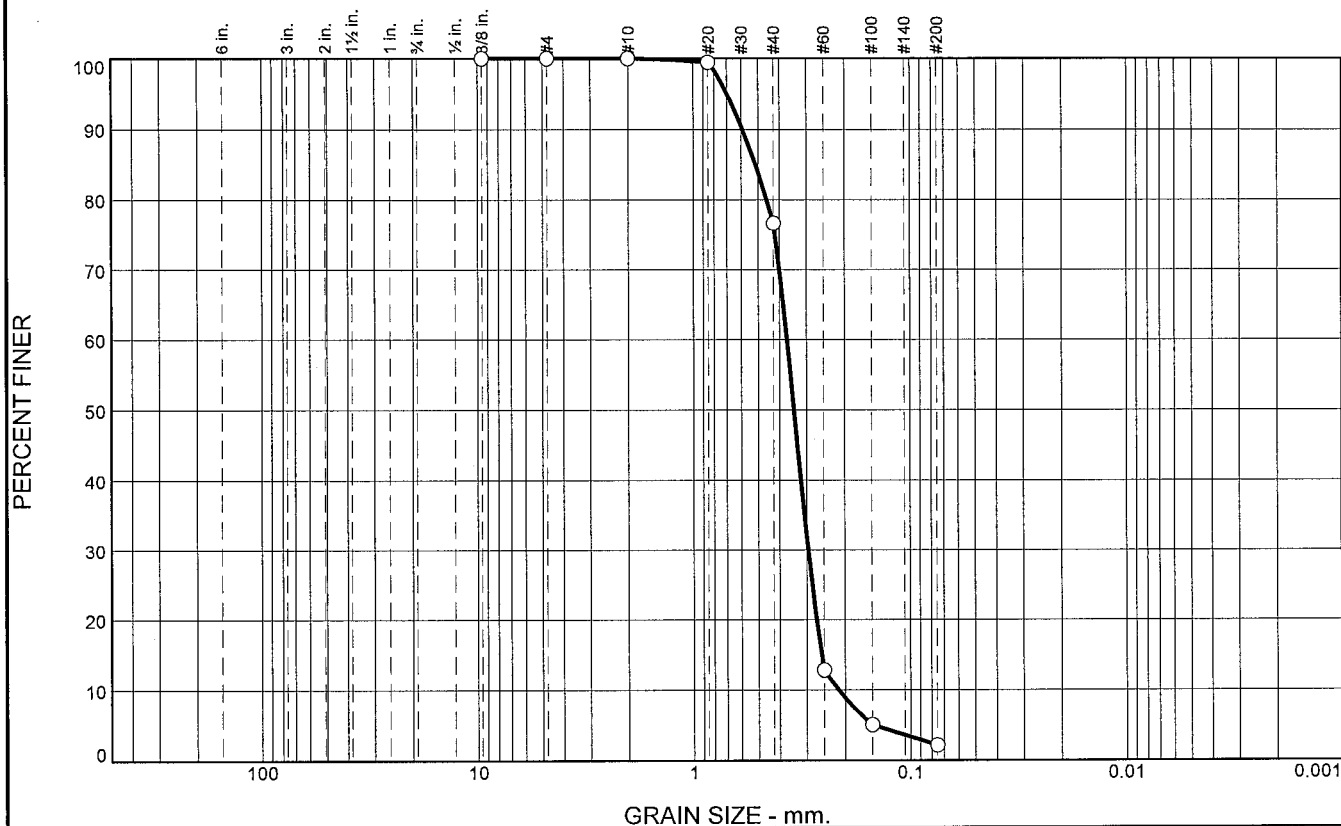
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Report No.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	23.4	74.5	2.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.4		
#40	76.6		
#60	12.9		
#100	5.1		
#200	2.1		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.5914 D₈₅= 0.5155 D₆₀= 0.3694
 D₅₀= 0.3428 D₃₀= 0.2949 D₁₅= 0.2566
 D₁₀= 0.2143 C_u= 1.72 C_c= 1.10

Classification

USCS= SP AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-44-10B
Sample Number: TE Lab ID: 4612.16

Depth: 5.0 - 10.0 (ft.)

Date: 8/7/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

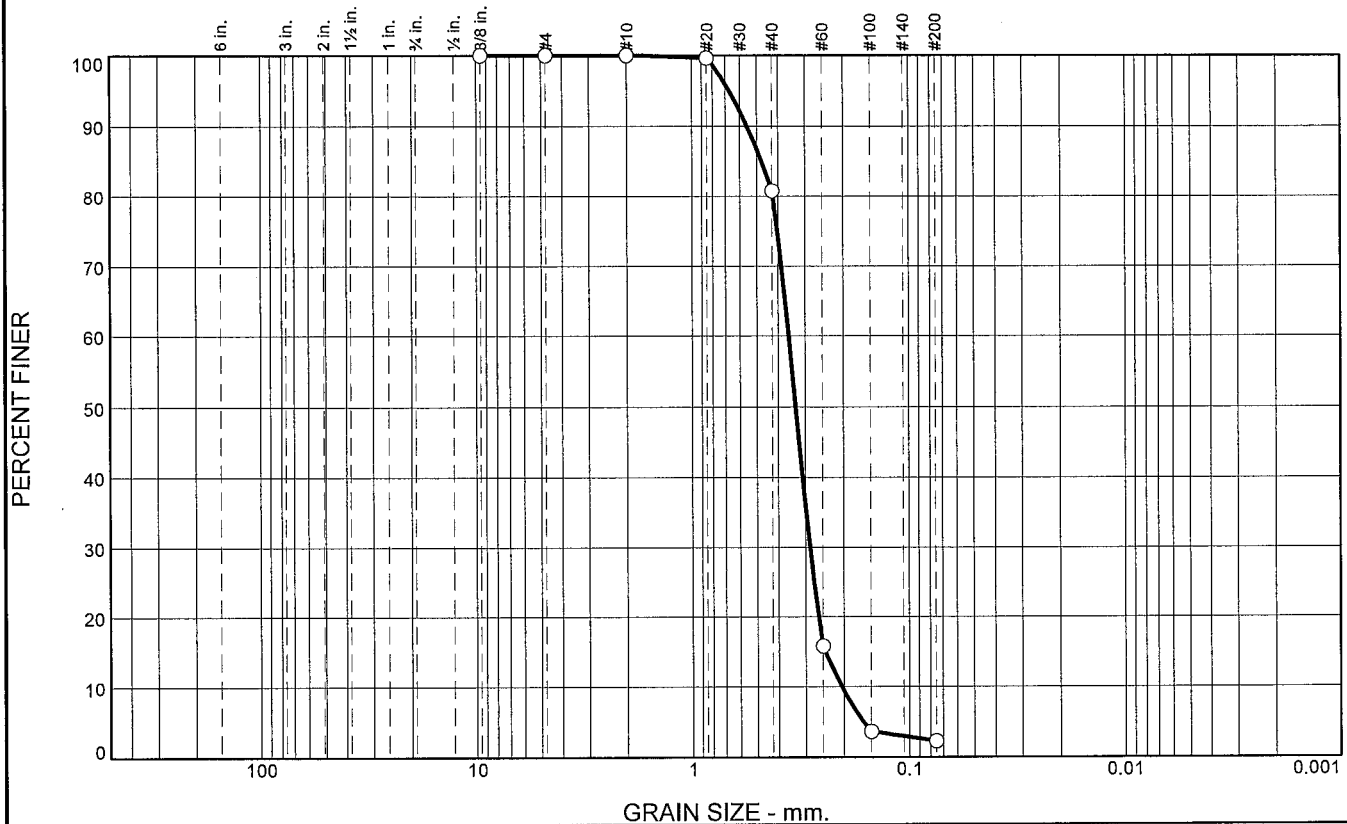
Project No: 10-2123-0009

Report No.

Tested By: J.Maddox

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	19.2	78.5	2.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.6		
#40	80.8		
#60	15.8		
#100	3.7		
#200	2.3		

* (no specification provided)

Material Description
SAND, (SP), medium to fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.5555 D₈₅= 0.4763 D₆₀= 0.3574
 D₅₀= 0.3322 D₃₀= 0.2858 D₁₅= 0.2439
 D₁₀= 0.2053 C_u= 1.74 C_c= 1.11

Classification
 USCS= SP AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-PB-44-10C
 Sample Number: TE Lab ID: 4612.17

Depth: 10.0 - 15.0 (ft.)

Date: 8/7/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project

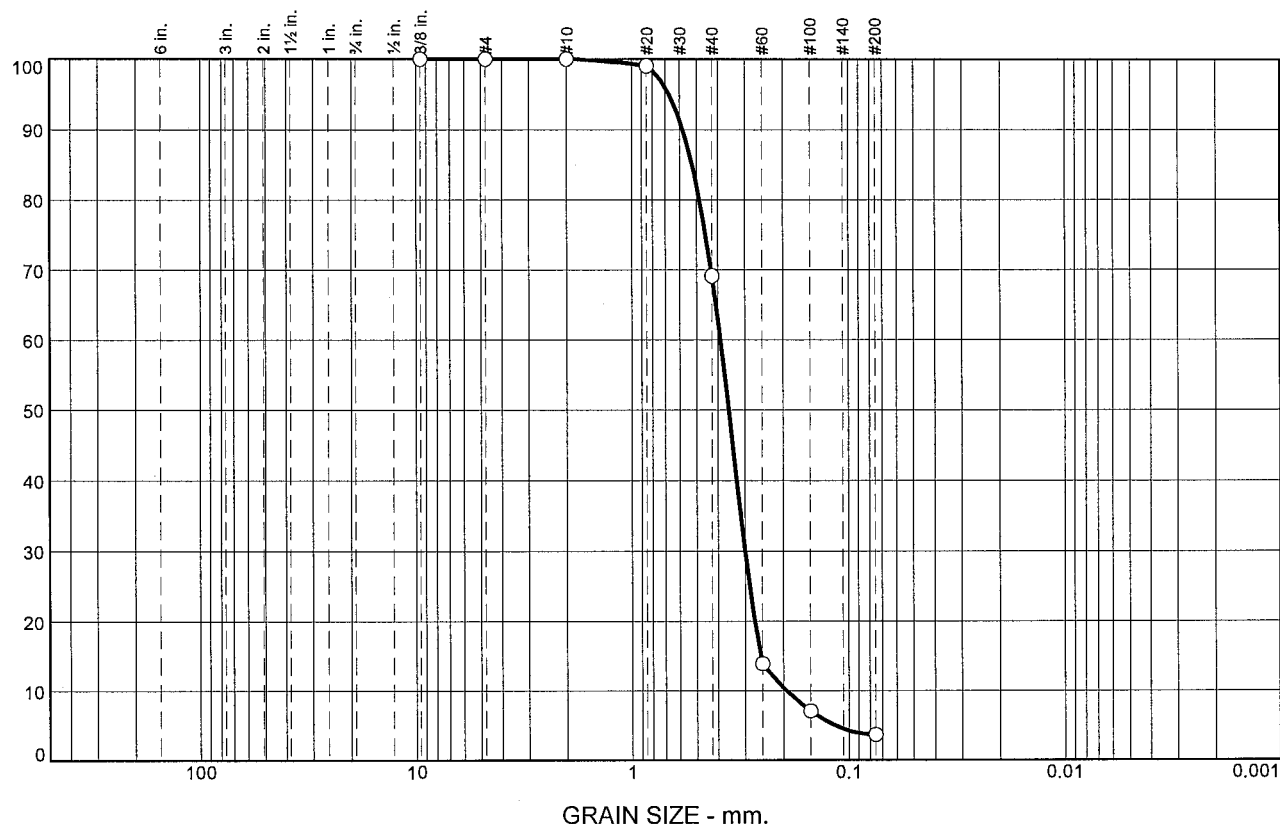
Project No: 10-2123-0009

Report No.

Tested By: J.Maddox

Checked By: R.Byrd

PERCENT FINER



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	30.9	65.5	3.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.0		
#40	69.1		
#60	13.9		
#100	7.1		
#200	3.6		

Material Description

SAND, (SP), medium to fine grained

Atterberg Limits

$$PL =$$
$$LL =$$
$$P| =$$

Coefficients

$$D_{90} = 0.5796$$
$$D_{85} = 0.5243$$
$$D_{60} = 0.3892$$
$$D_{50} = 0.3566$$
$$D_{30} = 0.2996$$
$$D_{15} = 0.2541$$
$$D_{10}^{50} = 0.1934$$
$$C_u^{\infty} = 2.01$$
$$C_C \approx 1.19$$

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

* (no specification provided)

Location: USACE Sample # BI-PB-44-10D
Sample Number: TE Lab ID: 4612.18

Depth: 15.0 - 20.0 (ft.)

Date: 8/7/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Report No.

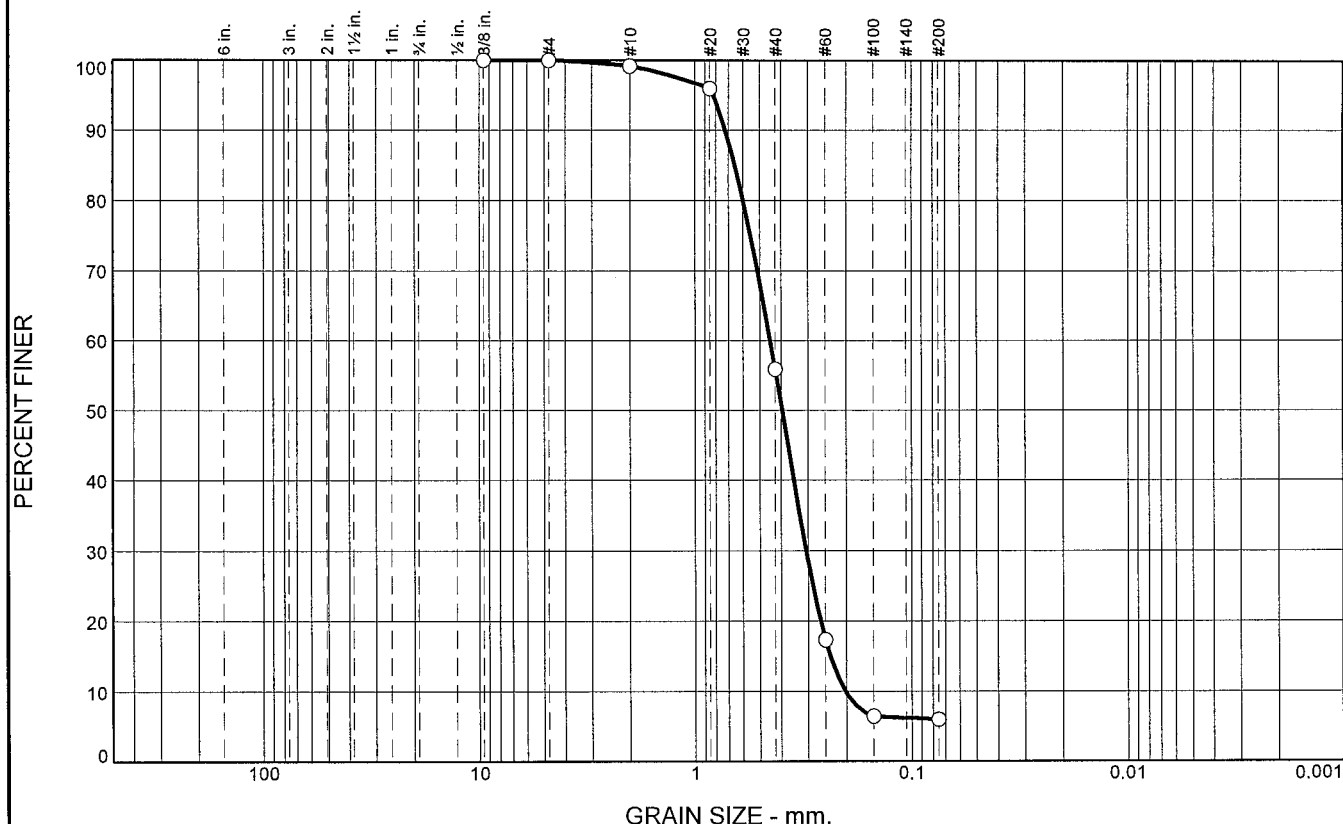
Tested By: J.Maddox

Checked By: R.Byrd

Boring Designation BI-PB-045-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-045-10		LOCATION COORDINATES E = 1,152,623 N = 252,702		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 1	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES		UNDISTURBED (UD) 0	
6. THICKNESS OF OVERBURDEN N/A				14. WATER DEPTH 37 Ft.			
7. DEPTH DRILLED INTO ROCK N/A				15. DATE BORING 07-29-10		COMPLETED 07-29-10	
8. TOTAL DEPTH OF BORING 20.0 Ft.				16. ELEVATION TOP OF BORING -36.4 Ft.			
				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-36.4	0.0						
-38.4	2.0		SAND, poorly-graded, mostly medium-grained sand-sized quartz, trace shell fragments, dark gray (SP)	A	Classification: SP-SM Color: 5Y 5/2-olive gray D50: 0.3949 mm % Fines: 6		
			SAND, poorly-graded, mostly medium-grained sand-sized quartz, dark gray (SP)				
-44.4	8.0						
			CLAY, lean, dark gray (CL)	NS			
			At El. -48.4 Ft., trace medium-grained sand-sized quartz, lt. gray				
-51.4	15.0						
			SAND, poorly-graded, mostly medium-grained sand-sized quartz, lt. gray (SP)				
-56.4	20.0						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.8	43.3	49.9	6.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.2		
#20	96.0		
#40	55.9		
#60	17.3		
#100	6.5		
#200	6.0		

* (no specification provided)

Material Description
SAND, (SP-SM), medium to fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.7241 D₈₅= 0.6540 D₆₀= 0.4480
D₅₀= 0.3949 D₃₀= 0.3064 D₁₅= 0.2374
D₁₀= 0.2025 C_u= 2.21 C_c= 1.04

Classification
USCS= SP-SM AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-PB-45-10A
Sample Number: TE Lab ID: 4612.19

Depth: 0.0 - 5.0 (ft.)

Date: 8/7/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Report No.

Tested By: J.Maddox

Checked By: R.Byrd

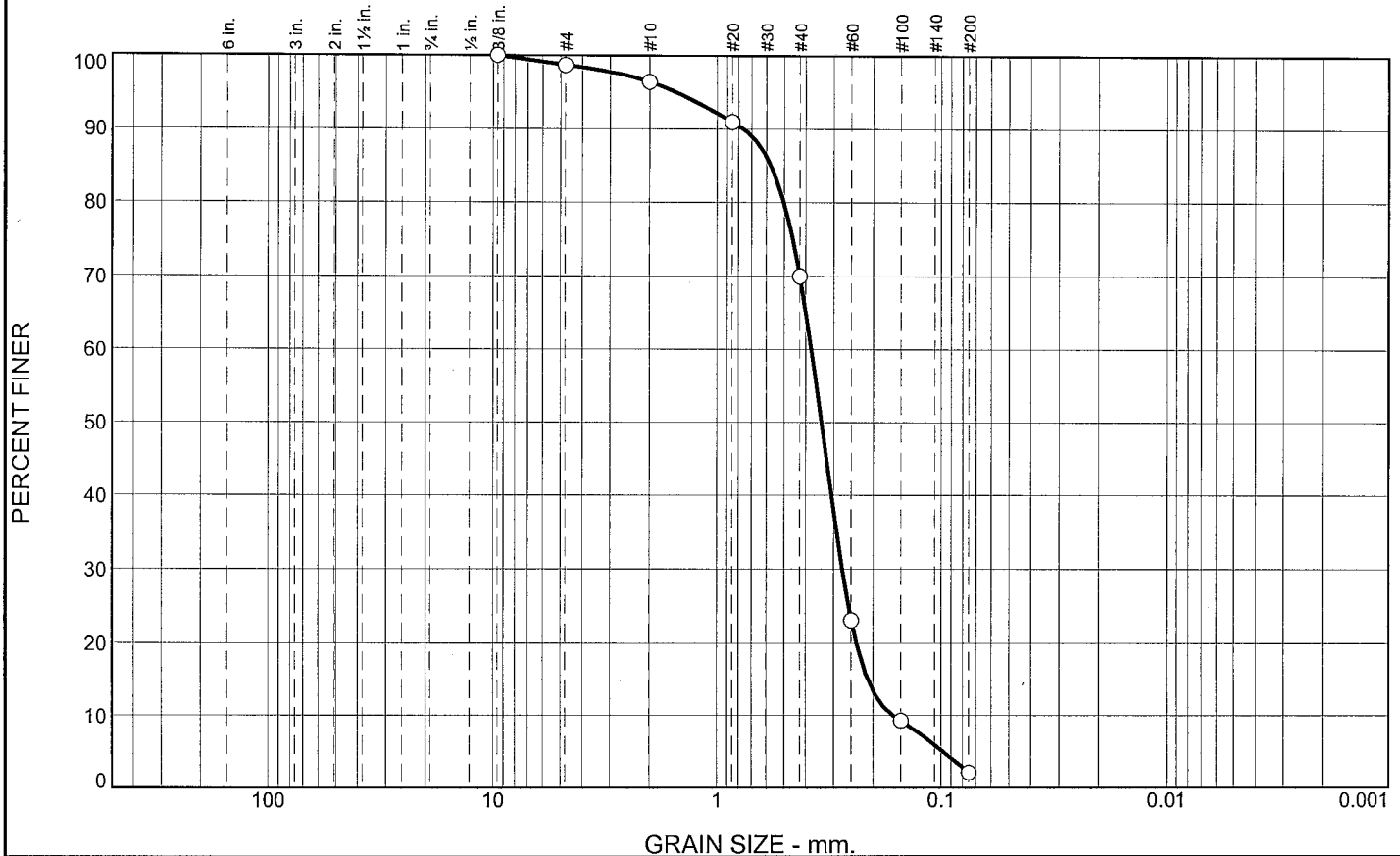
Boring Designation BI-PB-046-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-046-10		LOCATION COORDINATES E = 1,137,591 N = 251,286		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 37 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING		STARTED 08-06-10 COMPLETED 08-06-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -35.8 Ft.			
8. TOTAL DEPTH OF BORING 20.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-35.8	0.0						
			CLAY, fat, dark gray (CH)				
-41.8	6.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, dark gray (SP)				
-44.8	9.0						
			CLAY, fat, dark gray (CH)	NS			
-55.8	20.0						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Boring Designation BI-PB-047-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-047-10		LOCATION COORDINATES E = 1,139,034 N = 251,372		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 36 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 08-06-10		STARTED 08-06-10 COMPLETED 08-06-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -35.0 Ft.			
8. TOTAL DEPTH OF BORING 18.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-35.0	0.0						
-37.0	2.0		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, gray (SP)	A	Classification: SP Color: 2.5Y 6/2-light brownish gray D50: 0.3398 mm % Fines: 2.1		
-41.0	6.0		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, gray (SP)	B	Classification: SM Color: 2.5Y 4/2-dark grayish brown D50: 0.1913 mm % Fines: 23.4		
-53.0	18.0		CLAY, fat, dark gray (CH)	NS			
			NOTES:				
			1. Soils are field visually classified in accordance with the Unified Soils Classification System.				
			2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.3	2.3	26.4	67.9	2.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	98.7		
#10	96.4		
#20	90.9		
#40	70.0		
#60	23.1		
#100	9.3		
#200	2.1		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained, with trace shell

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.7598 D₈₅= 0.5732 D₆₀= 0.3773
 D₅₀= 0.3398 D₃₀= 0.2743 D₁₅= 0.2115
 D₁₀= 0.1624 C_u= 2.32 C_c= 1.23

Classification

USCS= SP AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-47-10A
Sample Number: TE Lab ID: 4622.31

Depth: 0.0 - 2.0 (ft.)

Date: 8/15/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

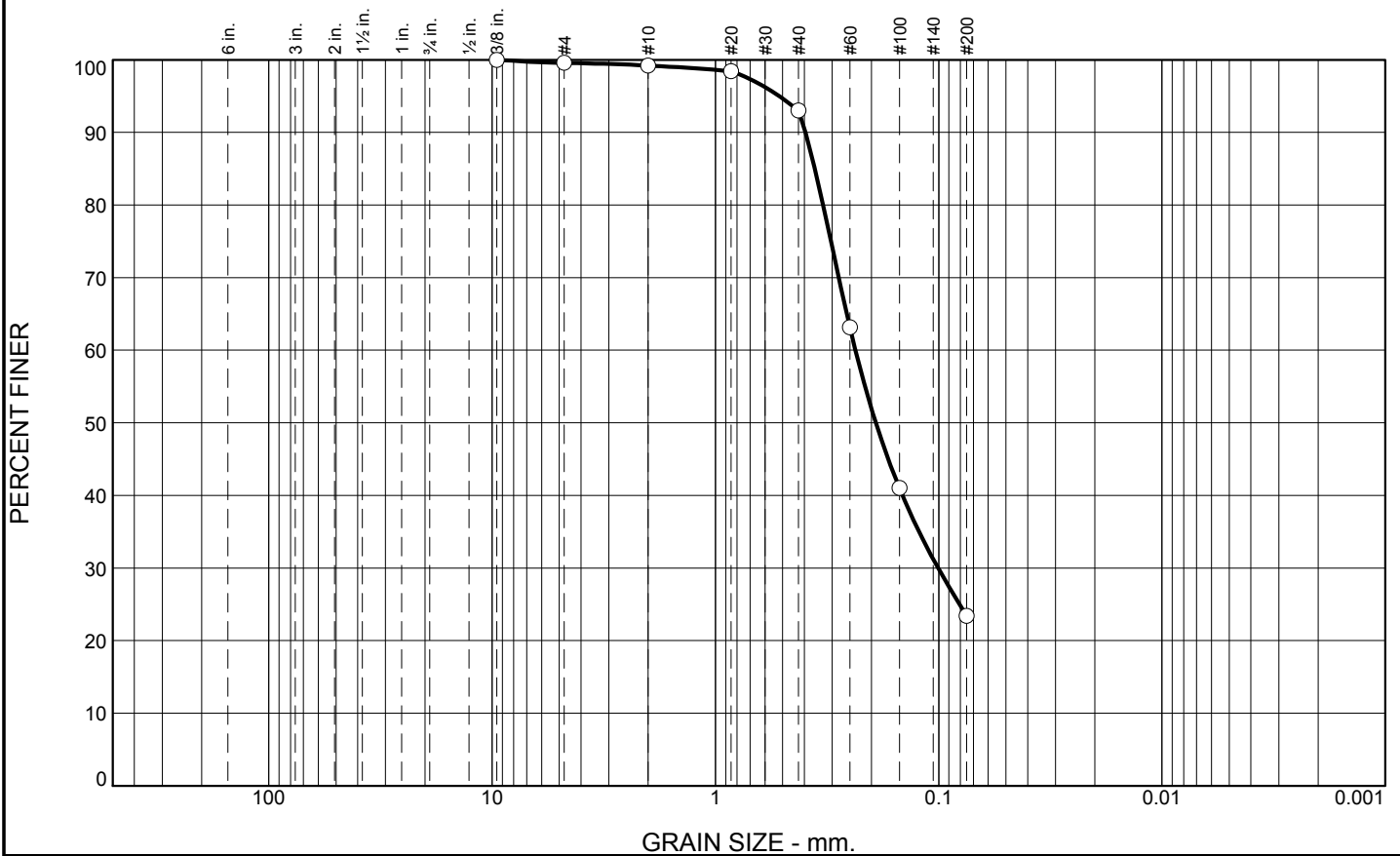
Project No: 10-2123-0009

Report No.

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.4	0.4	6.2	69.6	23.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.6		
#10	99.2		
#20	98.4		
#40	93.0		
#60	63.2		
#100	41.0		
#200	23.4		

* (no specification provided)

Material Description

SILTY SAND, (SM), fine grained, with clay pockets

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.3956

D₈₅= 0.3589

D₆₀= 0.2361

D₅₀= 0.1913

D₃₀= 0.1006

D₁₅=

D₁₀=

C_u=

C_c=

Classification

USCS= SM

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-47-10B
Sample Number: TE Lab ID: 4622.32

Depth: 2.0 - 6.0 (ft.)

Date: 8/15/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Report No.

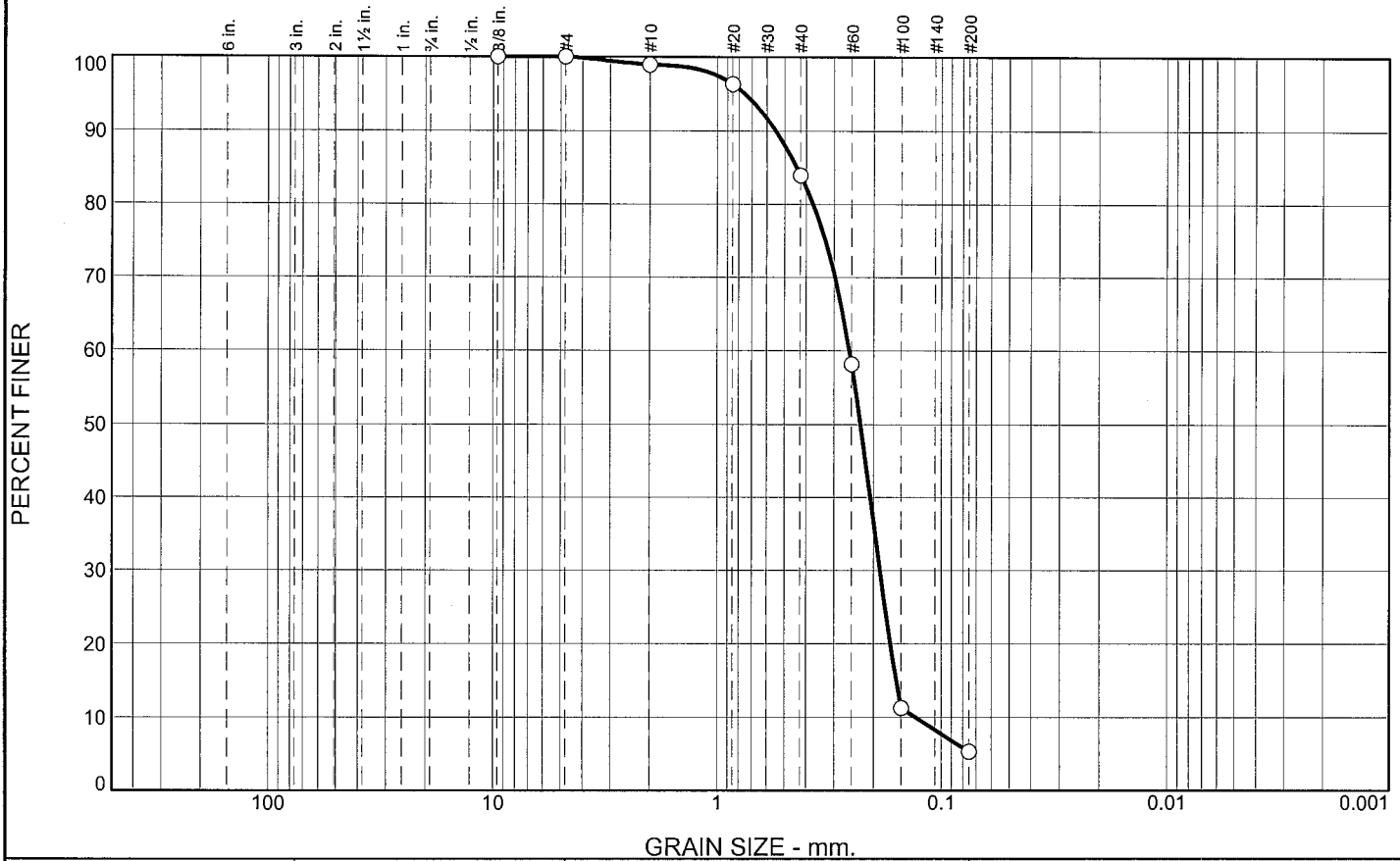
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-PB-051-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-051-10		LOCATION COORDINATES E = 1,146,592 N = 251,351		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 1	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		UNDISTURBED (UD) 0	
6. THICKNESS OF OVERBURDEN N/A				14. WATER DEPTH		36 Ft.	
7. DEPTH DRILLED INTO ROCK N/A				15. DATE BORING		STARTED 08-06-10	
8. TOTAL DEPTH OF BORING 14.7 Ft.				16. ELEVATION TOP OF BORING		COMPLETED 08-06-10	
				17. TOTAL RECOVERY FOR BORING		100%	
				18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-35.4	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace shell fragments, lt. tan/grey (SP)	A	Classification: SP-SM Color: 2.5Y 6/2-light brownish gray D50: 0.2282 mm % Fines: 5.3		
-39.4	4.0		CLAY, fat, dark gray (CH)	NS			
-50.1	14.7						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	1.1	15.0	78.6	5.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	98.9		
#20	96.3		
#40	83.9		
#60	58.2		
#100	11.3		
#200	5.3		

* (no specification provided)

Material Description

SAND, (SP-SM), medium to fine grained, with clay pockets

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.5482

D₈₅= 0.4420

D₆₀= 0.2558

D₅₀= 0.2282

D₃₀= 0.1868

D₁₅= 0.1580

D₁₀= 0.1292

C_u= 1.98

C_c= 1.06

Classification

USCS= SP-SM

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-51-10A
Sample Number: TE Lab ID: 4622.34

Depth: 0.0 - 4.0 (ft.)

Date: 8/15/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project



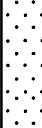
Project No: 10-2123-0009

Report No.

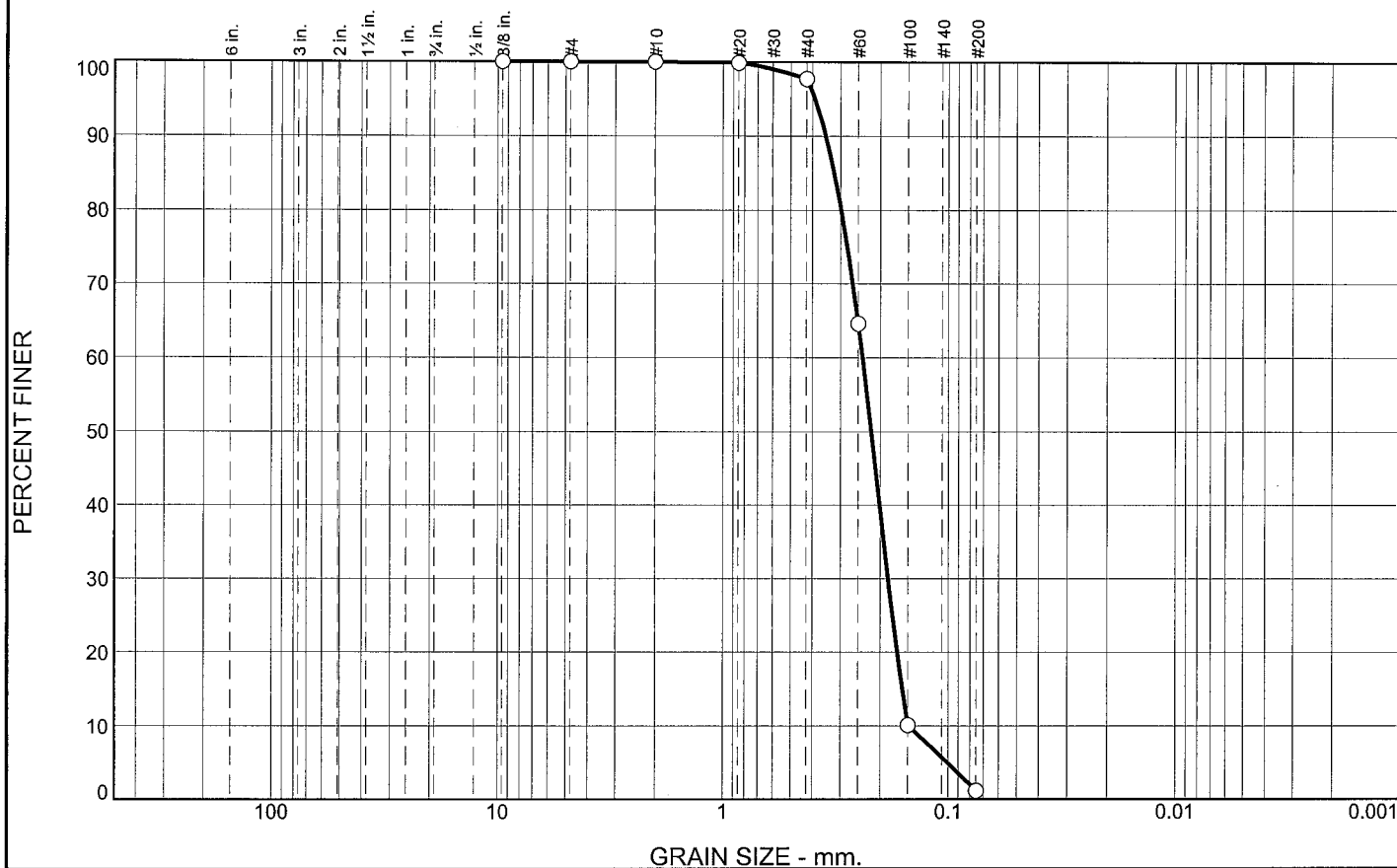
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-PB-052-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-052-10		LOCATION COORDINATES E = 1,148,029 N = 251,332		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 0 UNDISTURBED (UD)	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 40 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 08-06-10		STARTED 08-06-10 COMPLETED 08-06-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -40.1 Ft.			
8. TOTAL DEPTH OF BORING 20.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-40.1	0.0						
			CLAY, fat, dark gray (CH)	NS			
-45.1	5.0						
			SAND, well-graded, mostly fine-grained sand-sized quartz, lt gray/tan (SW)	A	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.2189 mm % Fines: 1.2		
				B	Classification: SP-SM Color: 2.5Y 8/1-white D50: 0.1937 mm % Fines: 6.1		
-57.1	17.0						
			SAND, poorly-graded, dark gray (SP)	NS			
-60.1	20.0						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	2.3	96.5	1.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	97.7		
#60	64.6		
#100	10.1		
#200	1.2		

* (no specification provided)

Material Description
 SAND, (SP), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.3492 D₈₅= 0.3203 D₆₀= 0.2393
 D₅₀= 0.2189 D₃₀= 0.1843 D₁₅= 0.1592
 D₁₀= 0.1486 C_u= 1.61 C_c= 0.96

Classification
 USCS= SP AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-PB-52-10A
 Sample Number: TE Lab ID: 4622.35

Depth: 5.0 - 10.0 (ft.)

Date: 8/15/10

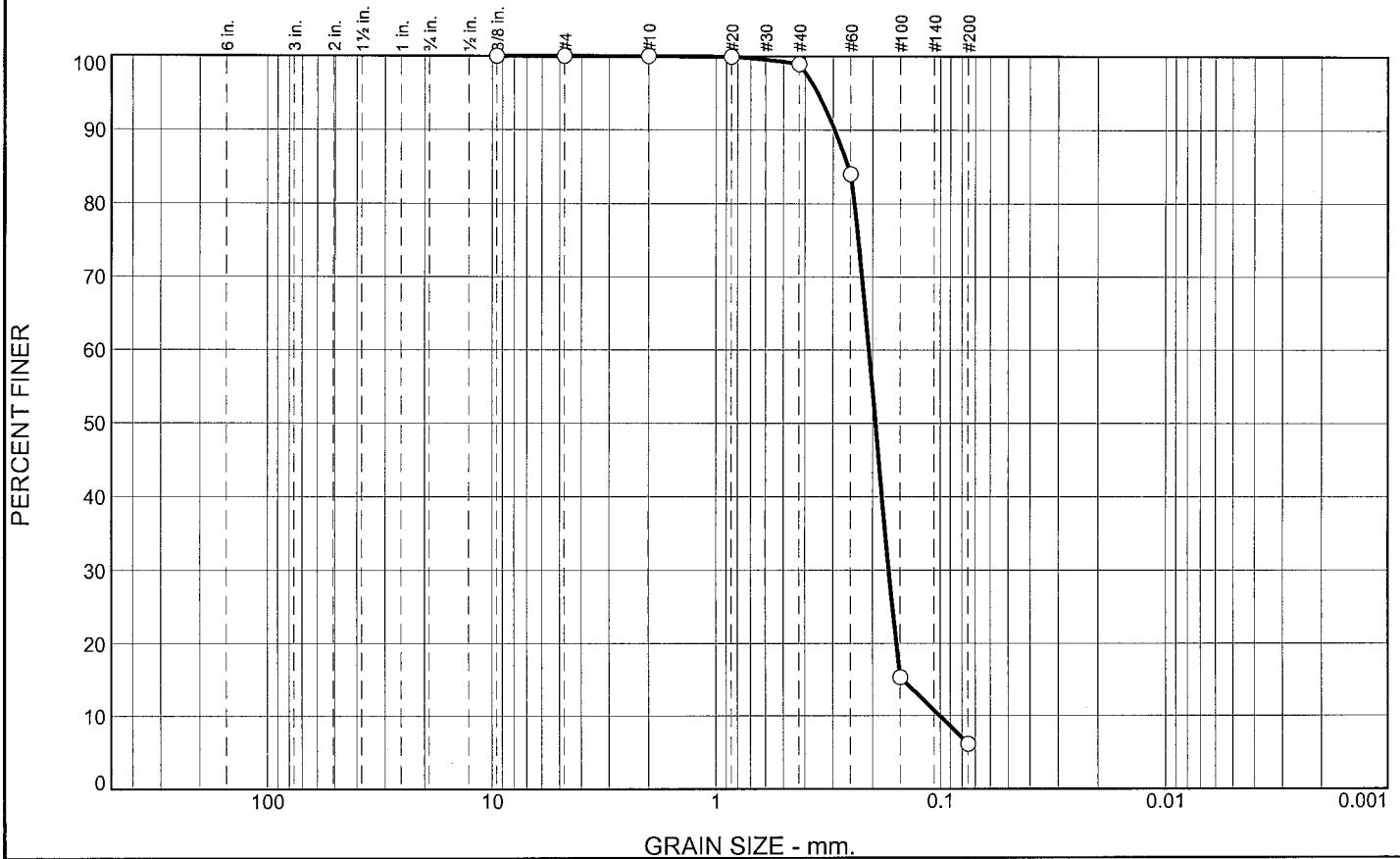
Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 **Report No.**

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.1	92.8	6.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	98.9		
#60	84.0		
#100	15.3		
#200	6.1		

* (no specification provided)

Material Description

SAND, (SP-SM), fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.2952 D₈₅= 0.2564 D₆₀= 0.2070
D₅₀= 0.1937 D₃₀= 0.1691 D₁₅= 0.1467
D₁₀= 0.1004 C_u= 2.06 C_c= 1.38

Classification

USCS= SP-SM AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-52-10B
Sample Number: TE Lab ID: 4622.36

Depth: 10.0 - 15.0 (ft.)

Date: 8/15/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Report No.

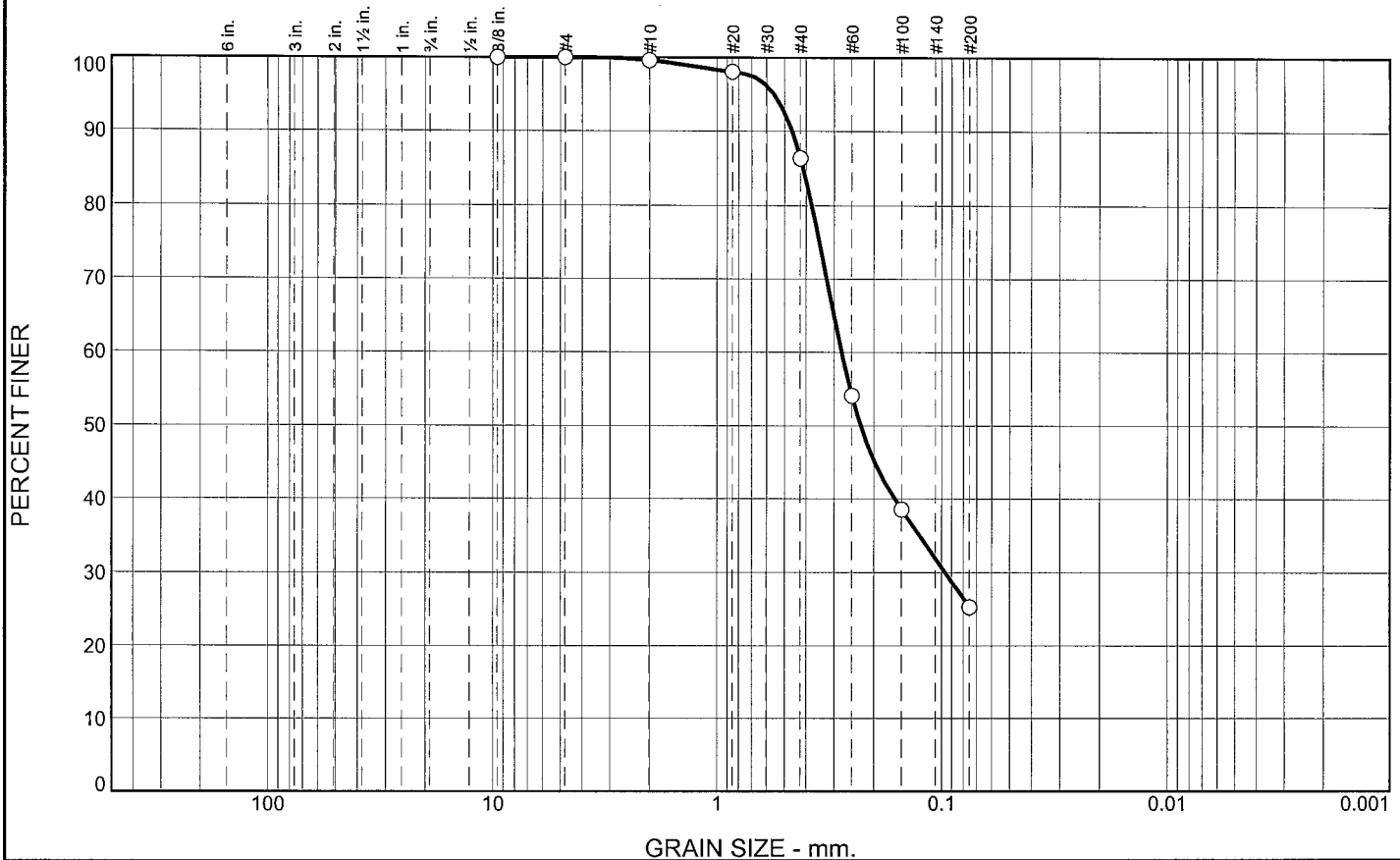
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-PB-053-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-053-10		LOCATION COORDINATES E = 1,149,681 N = 251,438		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 4		DISTURBED 0 UNDISTURBED (UD)	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 39 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 08-07-10		STARTED 08-07-10 COMPLETED 08-07-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -37.1 Ft.			
8. TOTAL DEPTH OF BORING 18.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-37.1	0.0						
-40.1	3.0		SAND, poorly-graded, dark gray (SP)	A	Classification: SM Color: 2.5Y 5/2-grayish brown D50: 0.2292 mm % Fines: 25.3		
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, lt. gray (SP)	B	Classification: SP Color: 2.5Y 8/1-white D50: 0.2843 mm % Fines: 3.1		
				C	Classification: SP Color: 2.5Y 8/1-white D50: 0.25 mm % Fines: 4.1		
				D	Classification: SP-SM Color: 2.5Y 8/1-white D50: 0.2058 mm % Fines: 6.3		
-55.1	18.0						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.4	13.2	61.1	25.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.6		
#20	98.1		
#40	86.4		
#60	54.0		
#100	38.6		
#200	25.3		

* (no specification provided)

Material Description

SILTY SAND, (SM), medium to fine grained, with clay pockets

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.4627

D₈₅= 0.4132

D₆₀= 0.2777

D₅₀= 0.2292

D₃₀= 0.0962

D₁₅=

D₁₀=

C_u=

C_c=

Classification

USCS= SM

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-53-10A
Sample Number: TE Lab ID: 4622.37

Depth: 0.0 - 5.0 (ft.)

Date: 8/15/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

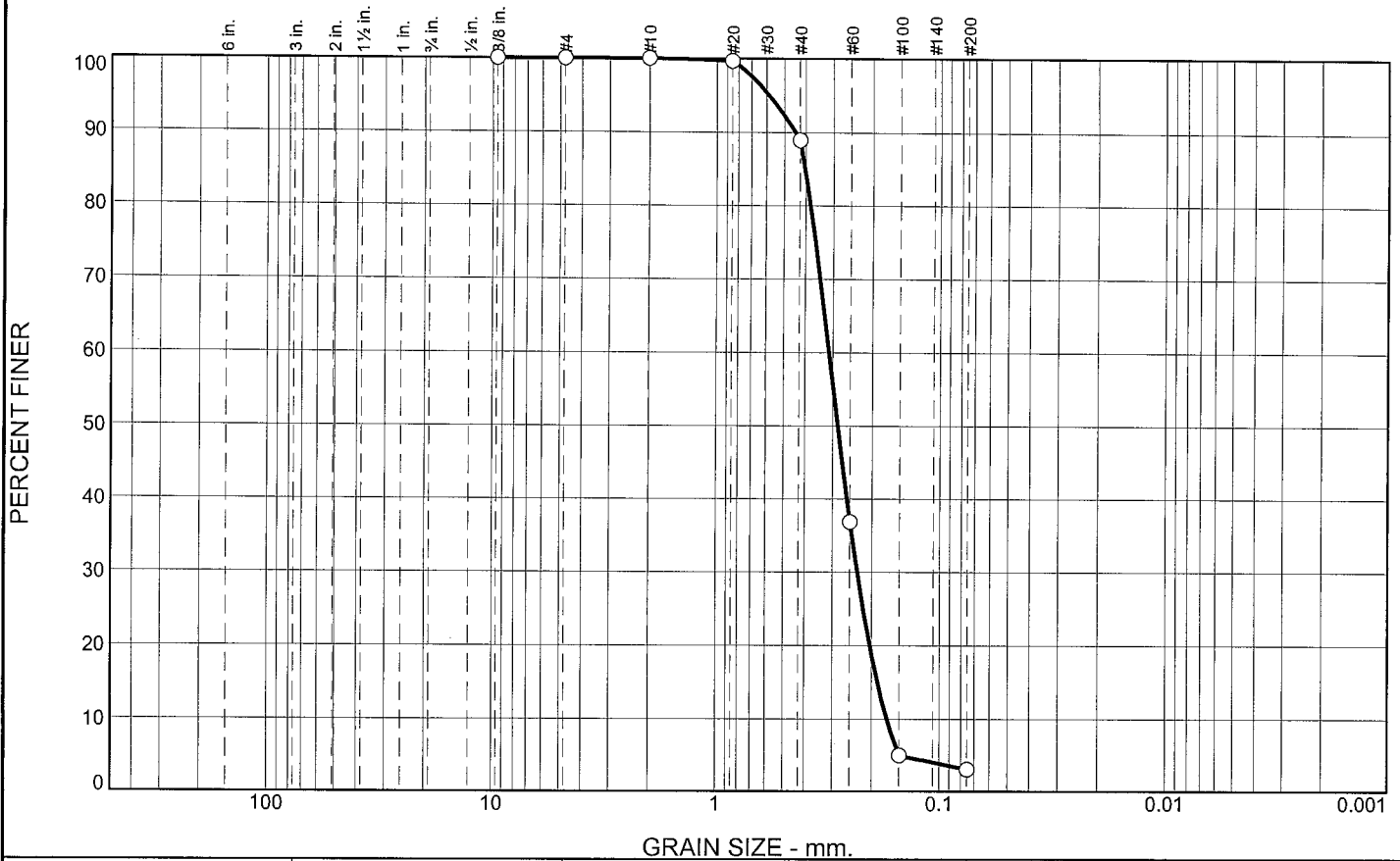
Project No: 10-2123-0009

Report No.

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	11.1	85.8	3.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.7		
#40	88.9		
#60	36.8		
#100	5.0		
#200	3.1		

* (no specification provided)

Material Description		
SAND, (SP), medium to fine grained		
Atterberg Limits		
PL=	LL=	PI=
Coefficients		
D ₉₀ = 0.4462	D ₈₅ = 0.4029	D ₆₀ = 0.3119
D ₅₀ = 0.2843	D ₃₀ = 0.2318	D ₁₅ = 0.1881
D ₁₀ = 0.1710	C _u = 1.82	C _c = 1.01
Classification		
USCS= SP	AASHTO=	
Remarks		
CADD CODE = CH10D965		

Location: USACE Sample # BI-PB-53-10B
Sample Number: TE Lab ID: 4622.38

Depth: 5.0 - 10.0 (ft.)

Date: 8/15/10

Thompson Engineering
Mobile, Alabama

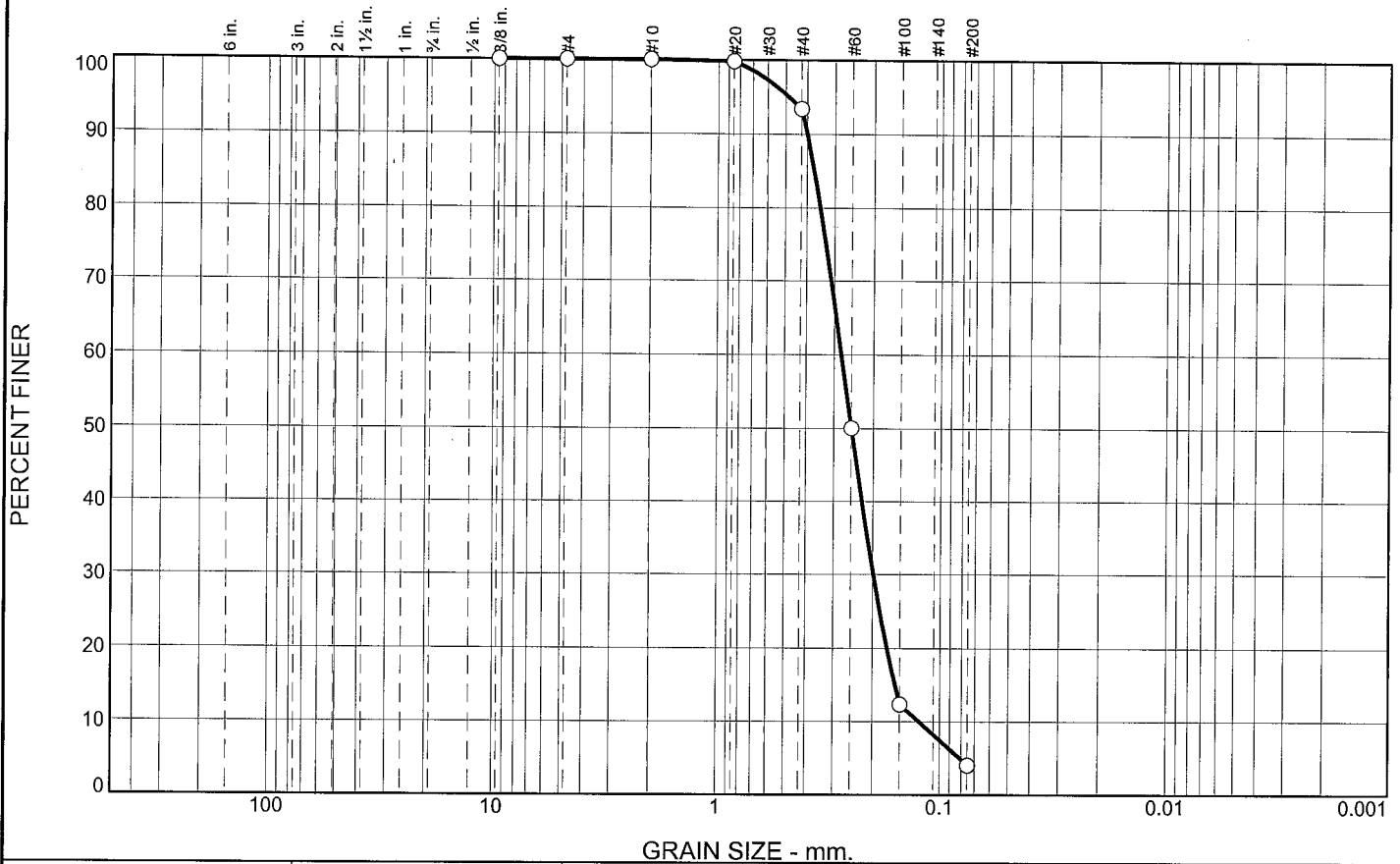
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Report No.

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	6.6	89.3	4.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.8		
#40	93.4		
#60	50.0		
#100	12.3		
#200	4.1		

* (no specification provided)

Material Description
SAND, (SP), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.3998 D₈₅= 0.3713 D₆₀= 0.2781
 D₅₀= 0.2500 D₃₀= 0.1983 D₁₅= 0.1583
 D₁₀= 0.1234 C_u= 2.25 C_c= 1.15

Classification
 USCS= SP AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-PB-53-10C
 Sample Number: TE Lab ID: 4622.39

Depth: 10.0 - 15.0 (ft.)

Date: 8/15/10

Thompson Engineering

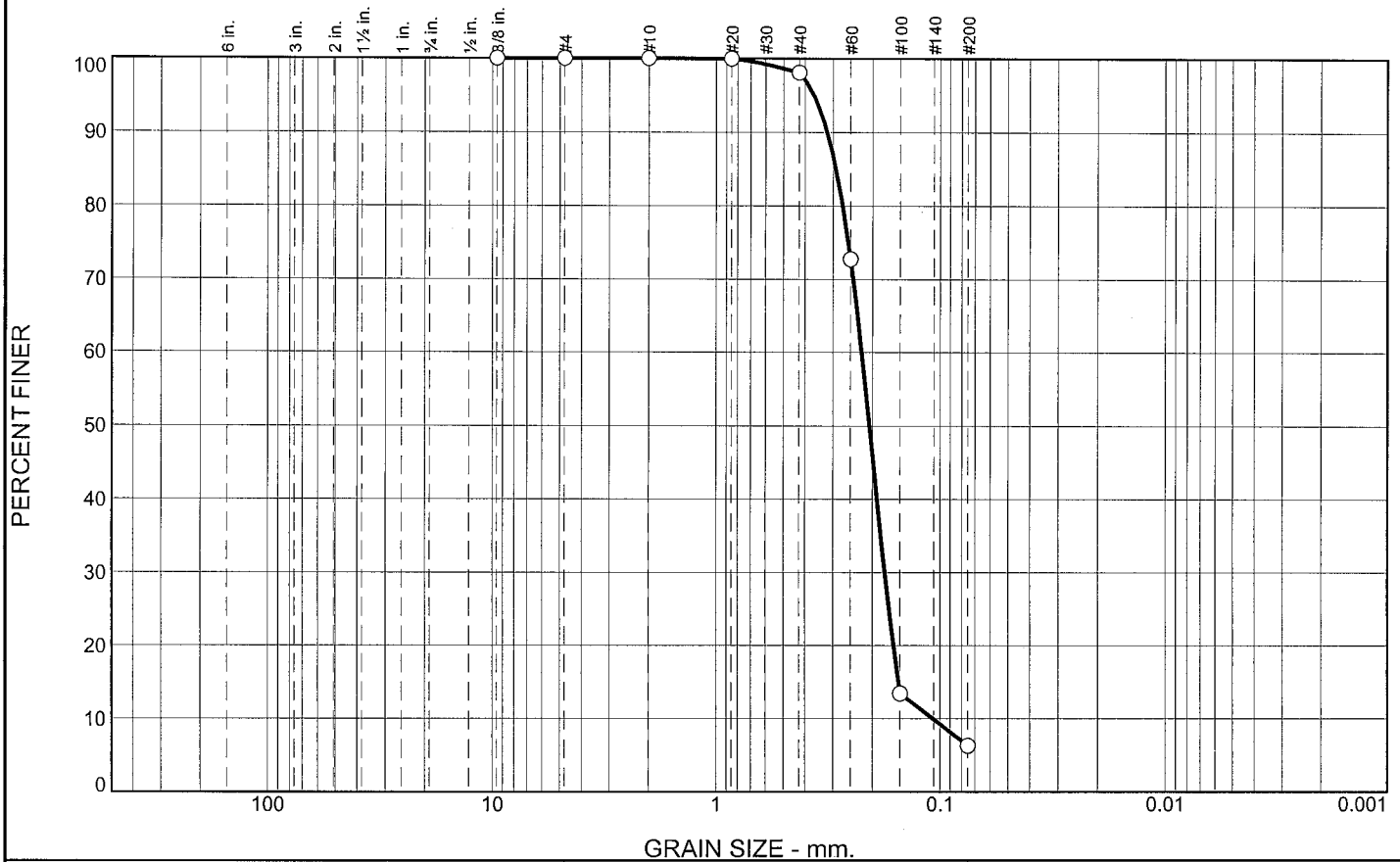
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 **Report No.**

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.9	91.8	6.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	100.0		
#40	98.1		
#60	72.8		
#100	13.4		
#200	6.3		

* (no specification provided)

Material Description
SAND, (SP-SM), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.3188 D₈₅= 0.2910 D₆₀= 0.2229
 D₅₀= 0.2058 D₃₀= 0.1758 D₁₅= 0.1528
 D₁₀= 0.1077 C_u= 2.07 C_c= 1.29

Classification
 USCS= SP-SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-PB-53-10D
 Sample Number: TE Lab ID: 4622.40

Depth: 15.0 - 18.0 (ft.)

Date: 8/15/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 **Report No.**

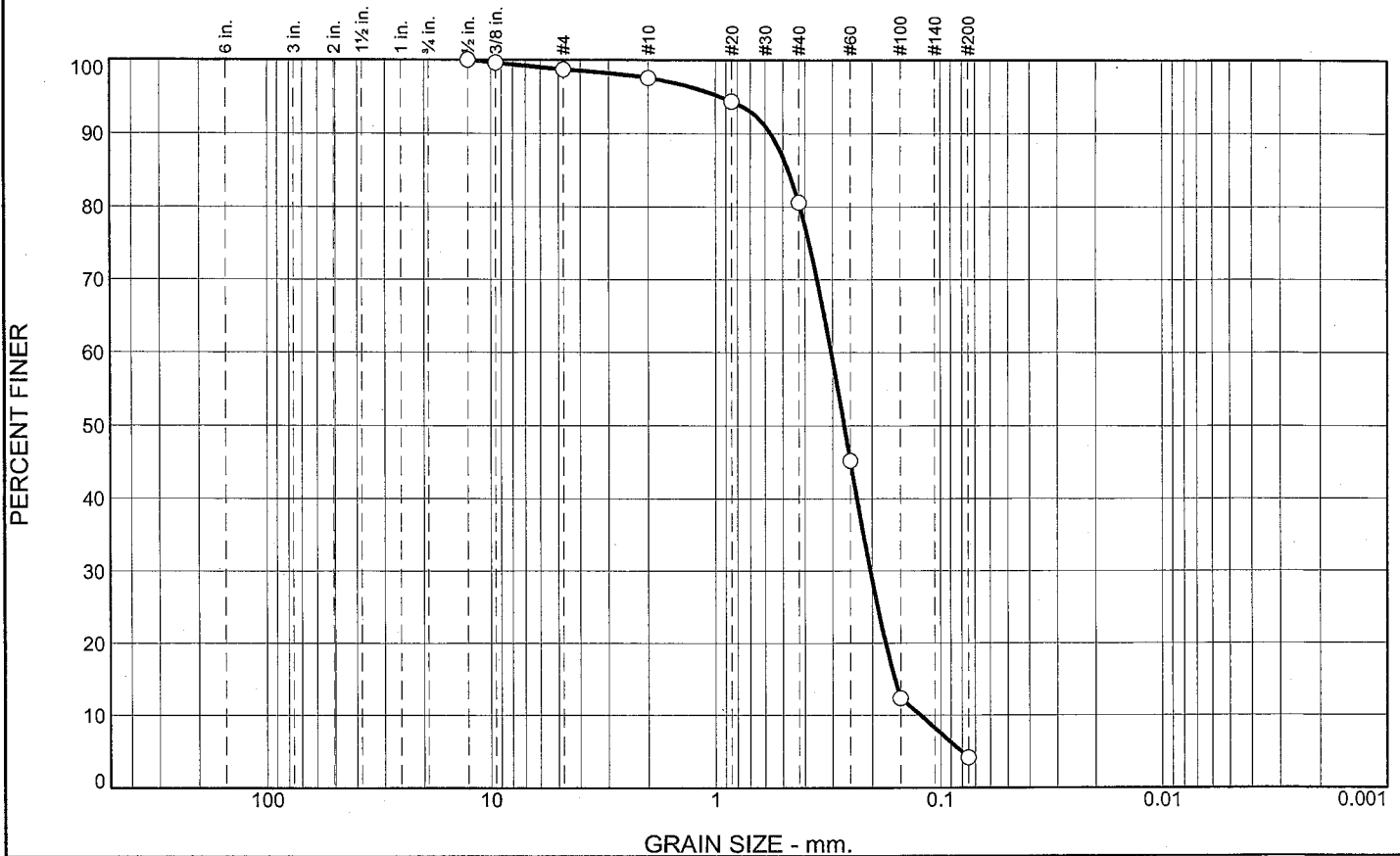
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-PB-054-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-054-10		LOCATION COORDINATES E = 1,151,094 N = 251,371		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 1 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 40 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING		STARTED 08-09-10 COMPLETED 08-09-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -38.6 Ft.			
8. TOTAL DEPTH OF BORING 17.5 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-38.6	0.0						
-40.1	1.5		SAND, poorly-graded, mostly medium to coarse-grained sand-sized quartz, trace shell fragments, dark gray (SP)	A	Classification: SP Color: 2.5Y 6/2-light brownish gray D50: 0.2663 mm % Fines: 4.2		
			CLAY, fat, trace fine-grained sand-sized quartz, dark gray (CH)	NS			
-56.1	17.5						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.3	1.2	16.9	76.4	4.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.500	100.0		
.375	99.6		
#4	98.7		
#10	97.5		
#20	94.4		
#40	80.6		
#60	45.2		
#100	12.4		
#200	4.2		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained, with trace shell and clay pockets

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.5663

D₈₅= 0.4726

D₆₀= 0.3044

D₅₀= 0.2663

D₃₀= 0.2035

D₁₅= 0.1589

D₁₀= 0.1227

C_u= 2.48

C_c= 1.11

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-54-10A
Sample Number: TE Lab ID: 4636.01

Depth: 0.0 - 1.5 (ft.)

Date: 8/18/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Report #:


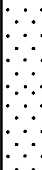

Tested By: R.Martin

Checked By: R. Byrd

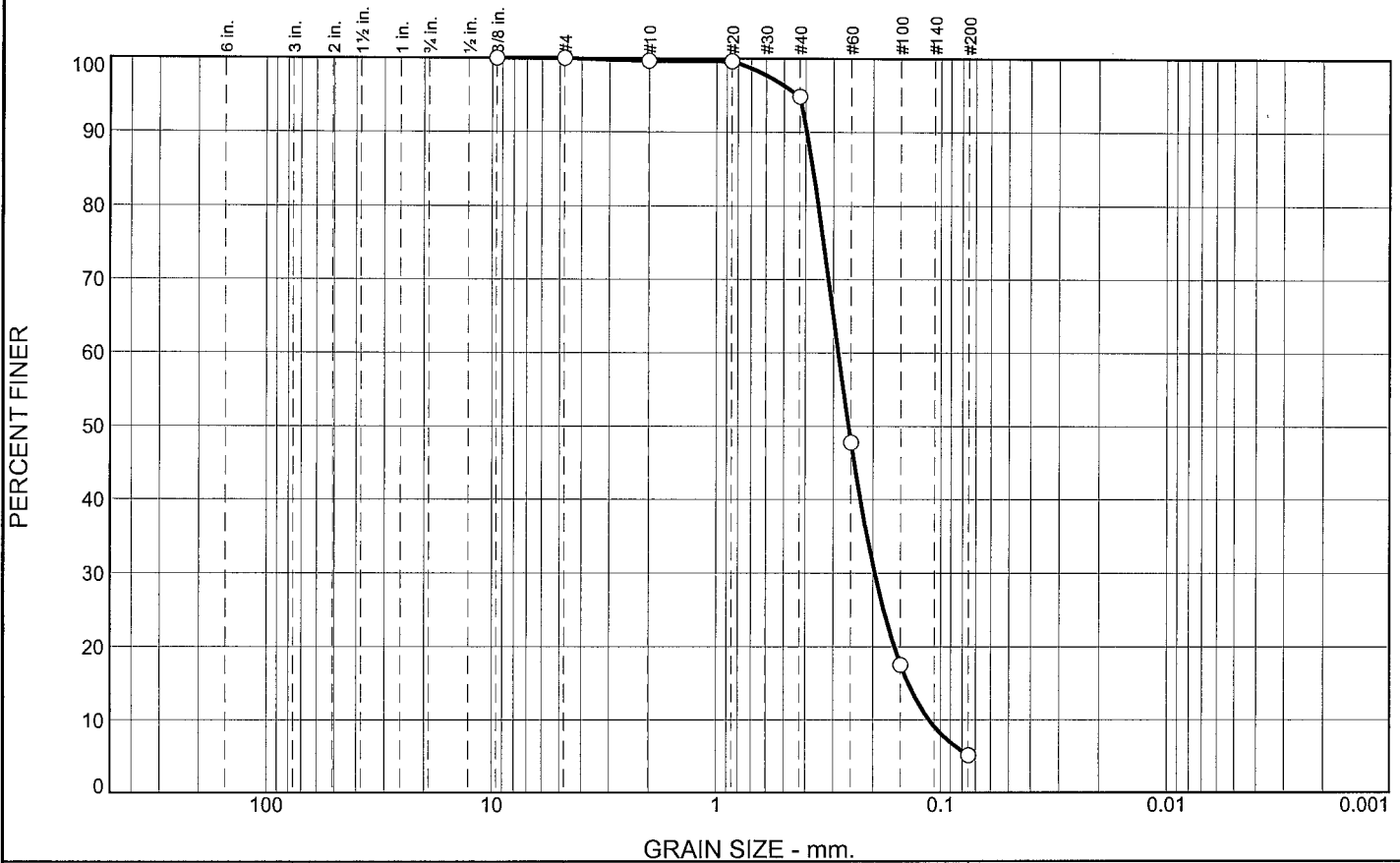
Boring Designation BI-PB-057-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-057-10		LOCATION COORDINATES E = 1,130,175 N = 249,800		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES		UNDISTURBED (UD) 0	
6. THICKNESS OF OVERBURDEN N/A		BEARING		14. WATER DEPTH 38 Ft.		15. DATE BORING 08-06-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -36.7 Ft.		COMPLETED 08-06-10	
8. TOTAL DEPTH OF BORING 15.3 Ft.				17. TOTAL RECOVERY FOR BORING 100%		18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist	
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-36.7	0.0						
			CLAY, fat, dark gray (CH)	NS			
-43.7	7.0		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, gray (SP)				
-47.7	11.0		CLAY, fat, dark gray (CH)				
-52.0	15.3						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Boring Designation BI-PB-058-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-058-10		LOCATION COORDINATES E = 1,131,745 N = 249,854		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 1 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		BEARING		13. TOTAL NUMBER CORE BOXES	
6. THICKNESS OF OVERBURDEN N/A				14. WATER DEPTH 36 Ft.			
7. DEPTH DRILLED INTO ROCK N/A				15. DATE BORING		STARTED 08-04-10 COMPLETED 08-04-10	
8. TOTAL DEPTH OF BORING 20.0 Ft.				16. ELEVATION TOP OF BORING -36.8 Ft.			
				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-36.8	0.0						
			CLAY, fat, trace fine-grained sand-sized quartz, trace shell fragments, dark gray (CH)	NS			
-46.8	10.0						
			SAND, poorly-graded, lt. gray (SP)	A	Classification: SP-SM Color: 2.5Y 6/2-light brownish gray D50: 0.2564 mm % Fines: 5.2		
-50.8	14.0						
			CLAY, fat, dark gray (CH)	NS			
-56.8	20.0						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.3	4.9	89.6	5.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.7		
#20	99.6		
#40	94.8		
#60	47.7		
#100	17.5		
#200	5.2		

Material Description
SAND, (SP-SM), fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
 D₉₀= 0.3948 D₈₅= 0.3706 D₆₀= 0.2849
 D₅₀= 0.2564 D₃₀= 0.1960 D₁₅= 0.1390
 D₁₀= 0.1124 C_u= 2.53 C_c= 1.20

Classification
USCS= SP-SM AASHTO=

Remarks
CADD CODE = CH10D965

* (no specification provided)

Location: USACE Sample # BI-PB-58-10A
Sample Number: TE Lab ID: 4622.21

Depth: 10.0 - 14.0 (ft.)

Date: 8/15/10

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 **Report No.**

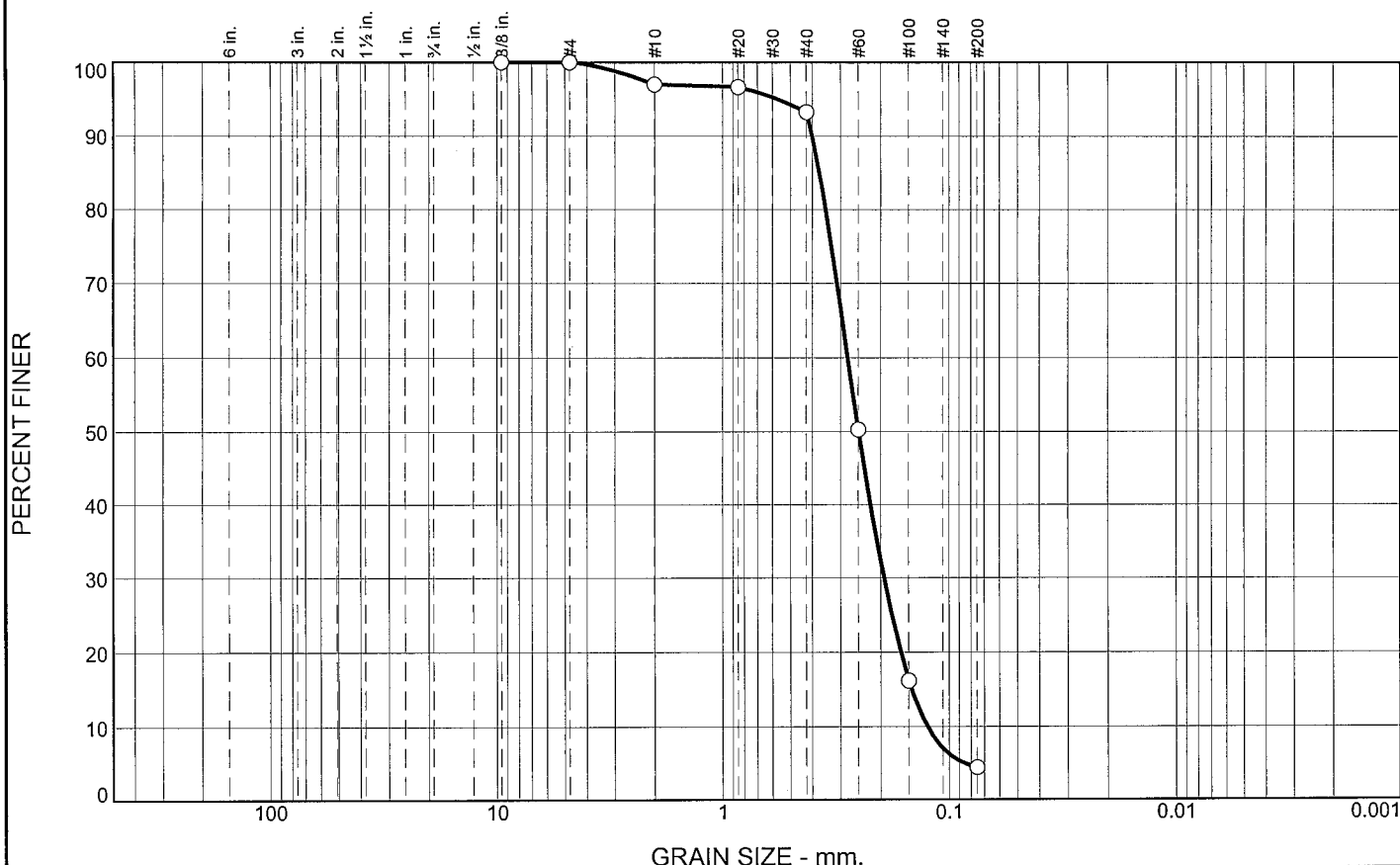
Tested By: R.Martin

Checked By: R.Byrd

Boring Designation BI-PB-059-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-059-10		LOCATION COORDINATES E = 1,133,379 N = 249,835		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 1 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		BEARING		13. TOTAL NUMBER CORE BOXES	
6. THICKNESS OF OVERBURDEN N/A		7. DEPTH DRILLED INTO ROCK N/A		8. TOTAL DEPTH OF BORING 19.0 Ft.		14. WATER DEPTH 35 Ft.	
						15. DATE BORING STARTED 08-04-10 COMPLETED 08-04-10	
						16. ELEVATION TOP OF BORING -35.8 Ft.	
						17. TOTAL RECOVERY FOR BORING 100%	
						18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist	
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-35.8	0.0		CLAY, fat, trace fine-grained sand-sized quartz, dark gray (CH)				
			At El. -39.8 Ft.	NS			
-45.8	10.0		SAND, poorly-graded, lt. gray (SP)	A	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.2494 mm % Fines: 4.4		
-48.8	13.0		CLAY, fat, trace fine-grained sand-sized quartz, dark gray (CH)				
				NS			
-54.8	19.0						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	3.0	3.7	88.9	4.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	97.0		
#20	96.6		
#40	93.3		
#60	50.2		
#100	16.2		
#200	4.4		

* (no specification provided)

Material Description
SAND, (SP), fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.4007 D₈₅= 0.3720 D₆₀= 0.2785
D₅₀= 0.2494 D₃₀= 0.1928 D₁₅= 0.1457
D₁₀= 0.1242 C_u= 2.24 C_c= 1.07

Classification
USCS= SP AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-PB-59-10A
Sample Number: TE Lab ID: 4622.20

Depth: 10.0 - 13.0 (ft.)

Date: 8/15/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Report No.

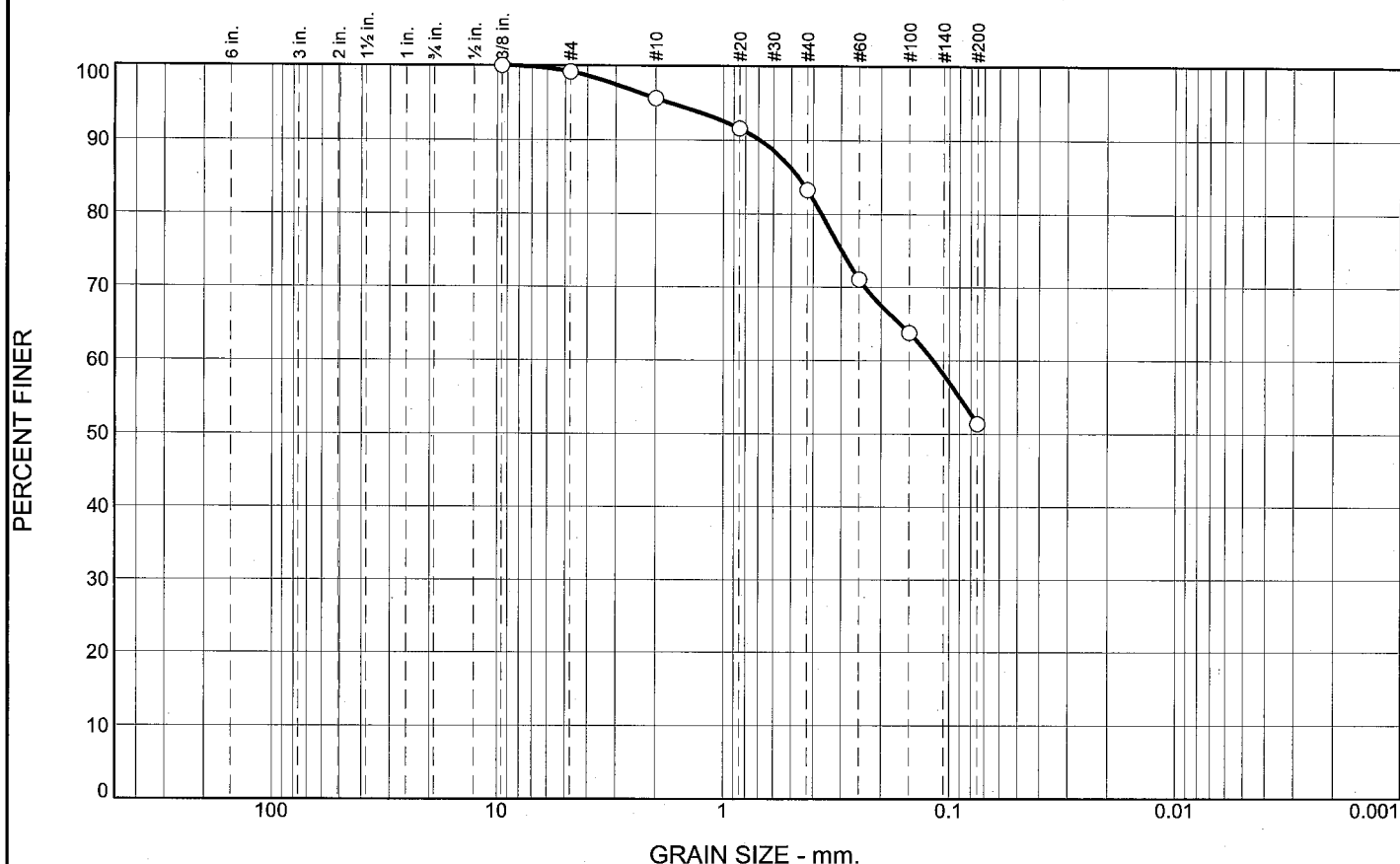
Tested By: R.Martin

Checked By: R.Byrd

Boring Designation BI-PB-060-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-060-10		LOCATION COORDINATES E = 1,134,921 N = 249,820		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		12. TOTAL SAMPLES 0		DISTURBED 0		VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		13. TOTAL NUMBER CORE BOXES		14. WATER DEPTH 37 Ft.	
4. NAME OF DRILLER Construction Solutions International, Inc.		5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		15. DATE BORING 08-04-10		COMPLETED 08-04-10	
6. THICKNESS OF OVERBURDEN N/A		7. DEPTH DRILLED INTO ROCK N/A		16. ELEVATION TOP OF BORING -37.7 Ft.		17. TOTAL RECOVERY FOR BORING 100%	
8. TOTAL DEPTH OF BORING 18.0 Ft.				18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-37.7	0.0						
-39.7	2.0		SAND, poorly-graded, trace shell fragments, dark gray (SP)	A	Classification: CL Color: 2.5Y 4/2-dark grayish brown D50: mm % Fines: 51.4		
			CLAY, fat, dark gray (CH)	NS			
-55.7	18.0						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.8	3.6	12.3	31.9	51.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.2		
#10	95.6		
#20	91.6		
#40	83.3		
#60	71.1		
#100	63.8		
#200	51.4		

* (no specification provided)

Material Description

SANDY CLAY, (CL)

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.6874 D₈₅= 0.4654 D₆₀= 0.1178
D₅₀= D₃₀= D₁₅=
D₁₀= C_u= C_c=

Classification

USCS= CL AASHTO=

Remarks

CADD CODE = CH10D965
Note: Plasticity based off of visual examination.

Location: USACE Sample # BI-PB-60-10A
Sample Number: TE Lab ID: 4622.19

Depth: 0.0 - 2.0 (ft.)

Date: 8/15/10

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 **Report No.**

Tested By: R.Martin

Checked By: R.Byrd

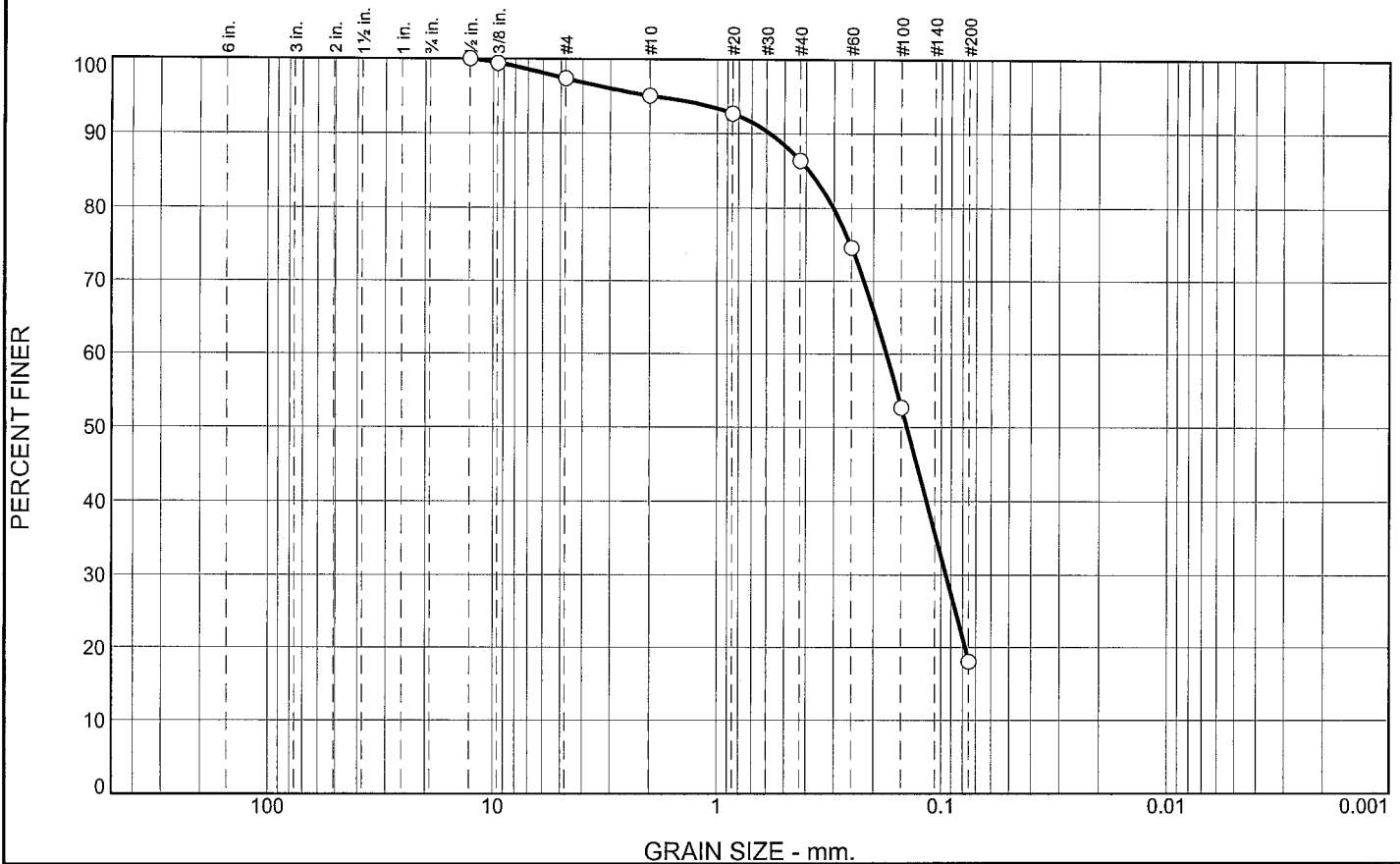
Boring Designation BI-PB-061-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-061-10		LOCATION COORDINATES E = 1,136,298 N = 249,858		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 0 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 36 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING		STARTED 08-04-10 COMPLETED 08-04-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -36.6 Ft.			
8. TOTAL DEPTH OF BORING 18.5 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-36.6	0.0						
			CLAY, fat, trace shell fragments, dark gray (CH)				
				NS			
-55.1	18.5						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Boring Designation BI-PB-062-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-062-10		LOCATION COORDINATES E = 1,137,556 N = 249,860		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 1		DISTURBED 1 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 38 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 08-06-10		STARTED 08-06-10 COMPLETED 08-06-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -38.0 Ft.			
8. TOTAL DEPTH OF BORING 20.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-38.0	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, gray (SP)	A	Classification: SM Color: 2.5Y 5/2-grayish brown D50: 0.1421 mm % Fines: 18		
				NS			
-58.0	20.0						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	2.6	2.3	8.7	68.4	18.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.500	100.0		
.375	99.4		
#4	97.4		
#10	95.1		
#20	92.7		
#40	86.4		
#60	74.6		
#100	52.6		
#200	18.0		

* (no specification provided)

Material Description
SILTY SAND, (SM), fine grained, with trace shell

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.5797 D₈₅= 0.3881 D₆₀= 0.1750
 D₅₀= 0.1421 D₃₀= 0.0950 D₁₅=
 D₁₀= C_u= C_c=

Classification
 USCS= SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-PB-62-10A
 Sample Number: TE Lab ID: 4622.33

Depth: 0.0 - 1.5 (ft.)

Date: 8/15/10

Thompson Engineering


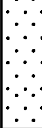

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 **Report No.**

Tested By: G.Fancher

Checked By: R.Byrd

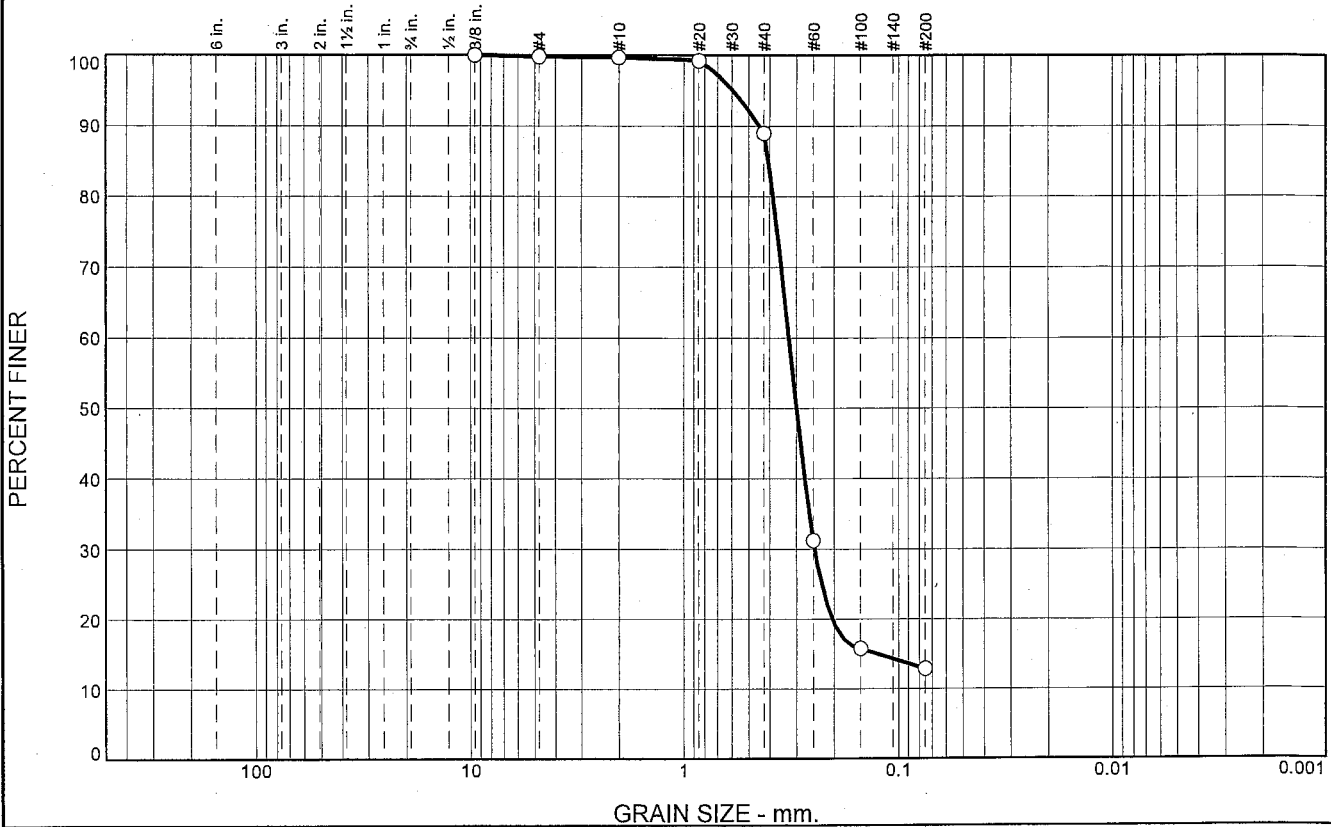
Boring Designation BI-PB-063-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-063-10		LOCATION COORDINATES E = 1,139,088 N = 249,859		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 0		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 39 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 08-06-10		STARTED 08-06-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -38.8 Ft.			
8. TOTAL DEPTH OF BORING 16.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-38.8	0.0						
			CLAY, fat, trace fine-grained sand-sized quartz, dark gray (CH)	NS			
-44.8	6.0						
			SAND, poorly-graded, trace silt, dark gray (SP)				
-47.8	9.0						
			CLAY, fat, dark gray (CH)				
-54.8	16.0						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Boring Designation BI-PB-064-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-064-10		LOCATION COORDINATES E = 1,124,089 N = 248,369		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 0 UNDISTURBED (UD)	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 39 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 07-09-10		STARTED 07-09-10 COMPLETED 07-09-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -38.6 Ft.			
8. TOTAL DEPTH OF BORING 18.5 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Valerie Morrow, Geotechnical Engineer			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-38.6	0.0		CLAY, lean, dark gray (CL)	NS			
-49.6	11.0		SAND, silty, mostly fine-grained sand-sized quartz, gray (SM)	A	Classification: SM Color: 2.5Y 5/2-grayish brown D50: 0.2997 mm % Fines: 12.9		
-51.4	12.8		SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace silt, lt. gray (SP)	B	Classification: SP-SM Color: 2.5Y 7/2-light gray D50: 0.2991 mm % Fines: 9.3		
-57.1	18.5			C	Classification: SP Color: 2.5Y 7/2-light gray D50: 0.3164 mm % Fines: 3		
NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.							

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.1	10.7	76.1	12.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.8		
#10	99.7		
#20	99.2		
#40	89.0		
#60	31.2		
#100	15.7		
#200	12.9		

* (no specification provided)

Material Description
SILTY SAND, (SM), medium to fine grained

PL= **Atterberg Limits** LL= PI=

Coefficients
D₉₀= 0.4460 D₈₅= 0.4061 D₆₀= 0.3254
D₅₀= 0.2997 D₃₀= 0.2462 D₁₅= 0.1256
D₁₀= C_u= C_c=

Classification
USCS= SM AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-PB-64-10A
Sample Number: TE Lab ID: 4578.05

Depth: 11.0 - 12.8 (ft.)

Date: 7/16/10

Thompson Engineering
Mobile, Alabama

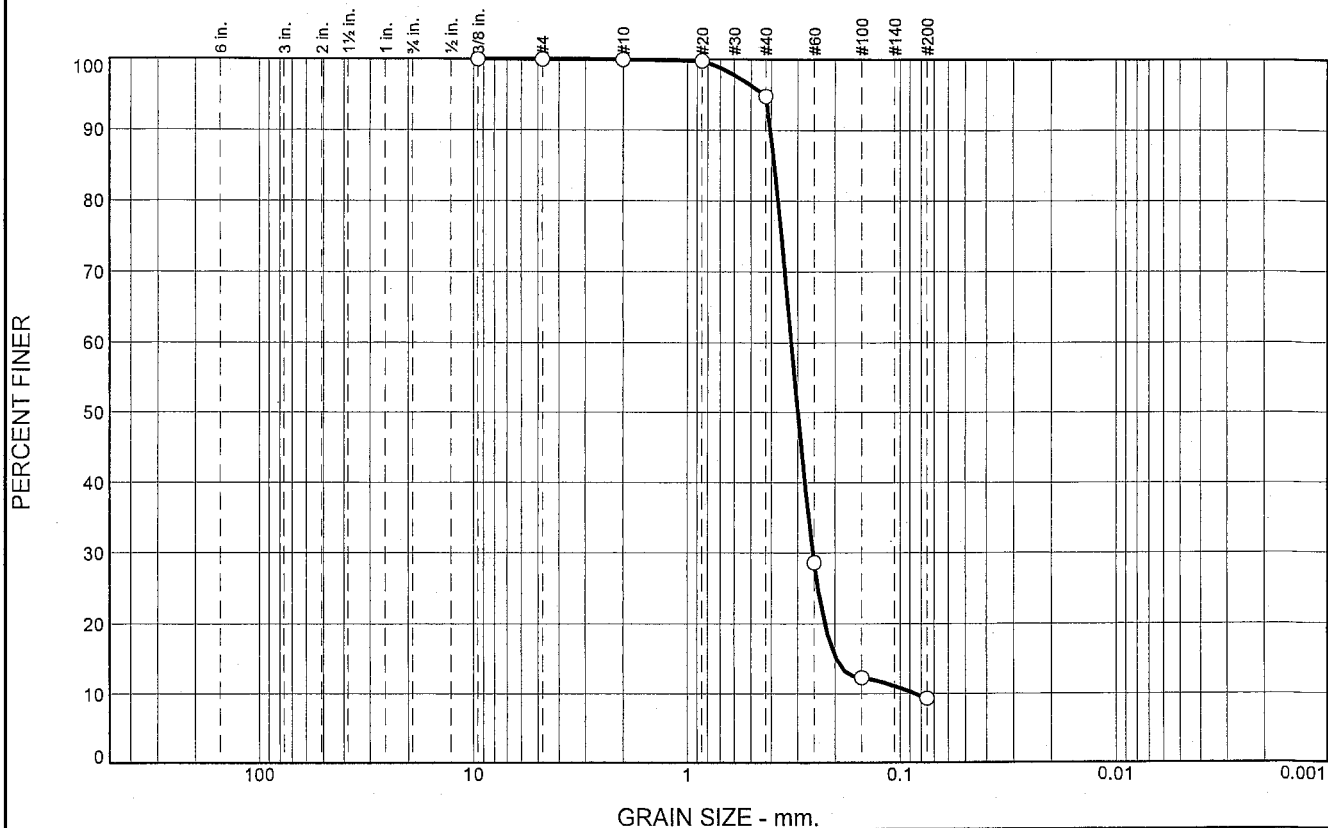
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	5.1	85.5	9.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.8		
#40	94.8		
#60	28.6		
#100	12.3		
#200	9.3		

Material Description

SAND, (SP-SM), fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.4046 D₈₅= 0.3870 D₆₀= 0.3212
D₅₀= 0.2991 D₃₀= 0.2537 D₁₅= 0.1970
D₁₀= 0.0853 C_u= 3.77 C_c= 2.35

Classification

USCS= SP-SM AASHTO=

Remarks

CADD CODE = CH10D965

* (no specification provided)

Location: USACE Sample # BI-PB-64-10B
Sample Number: TE Lab ID: 4578.06

Depth: 12.8 - 15.8 (ft.)

Date: 7/16/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

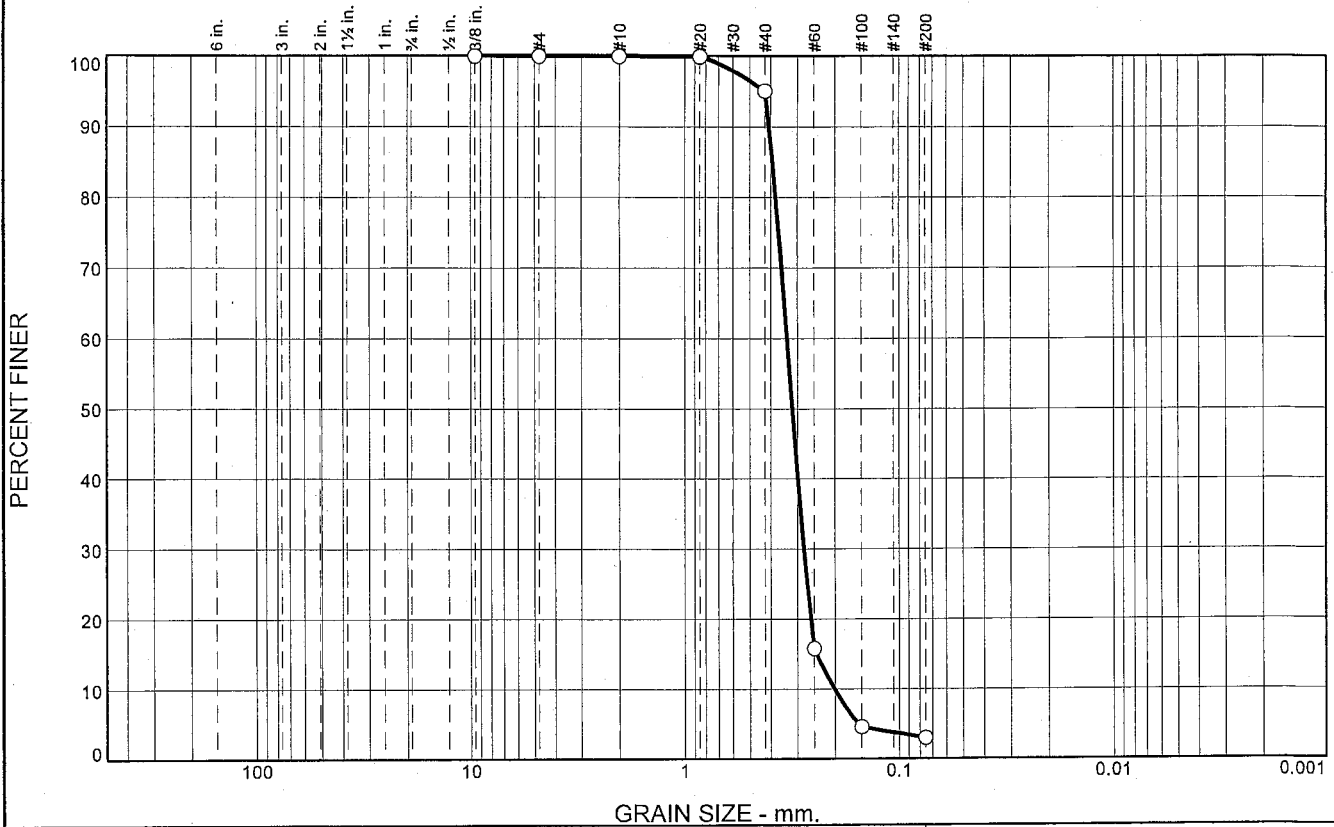
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	4.9	92.1	3.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	95.1		
#60	15.7		
#100	4.6		
#200	3.0		

* (no specification provided)

Material Description

SAND, (SP), fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.4069 D₈₅= 0.3921 D₆₀= 0.3354
D₅₀= 0.3164 D₃₀= 0.2796 D₁₅= 0.2438
D₁₀= 0.2015 C_u= 1.66 C_c= 1.16

Classification

USCS= SP AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-64-10C
Sample Number: TE Lab ID: 4578.07

Depth: 15.8 - 18.8 (ft.)

Date: 7/16/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project




Project No: 10-2123-0009

Figure

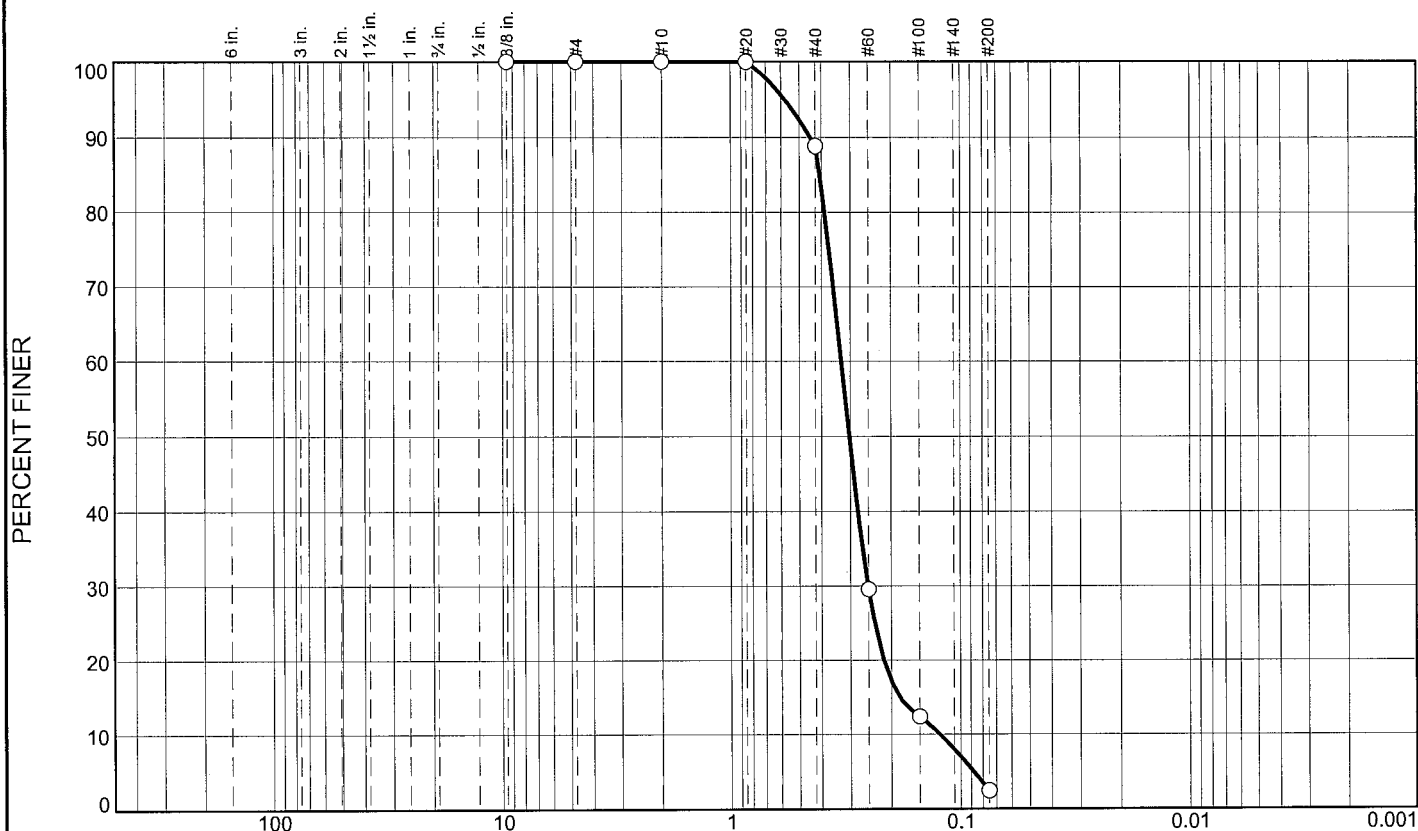
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-PB-067-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-067-10		LOCATION COORDINATES E = 1,128,573 N = 248,430		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 37 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 08-05-10		STARTED 08-05-10 COMPLETED 08-05-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -35.8 Ft.			
8. TOTAL DEPTH OF BORING 19.5 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-35.8	0.0						
			CLAY, fat, dark gray (CH)	NS			
-40.8	5.0						
			SAND, poorly-graded, lt. gray (SP)	A	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.3025 mm % Fines: 2.4		
				B	Classification: SP Color: 2.5Y 6/2-light brownish gray D50: 0.2647 mm % Fines: 4.5		
-51.8	16.0						
			CLAY, fat, dark gray (CH)	NS			
-55.3	19.5						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



GRAIN SIZE - mm.

% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	11.2	86.4	2.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	100.0		
#40	88.8		
#60	29.6		
#100	12.4		
#200	2.4		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.4479

D₈₅= 0.4074

D₆₀= 0.3278

D₅₀= 0.3025

D₃₀= 0.2512

D₁₅= 0.1837

D₁₀= 0.1229

C_u= 2.67

C_c= 1.57

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-67-10A
Sample Number: TE Lab ID: 4622.22

Depth: 5.0 - 10.0 (ft.)

Date: 8/15/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

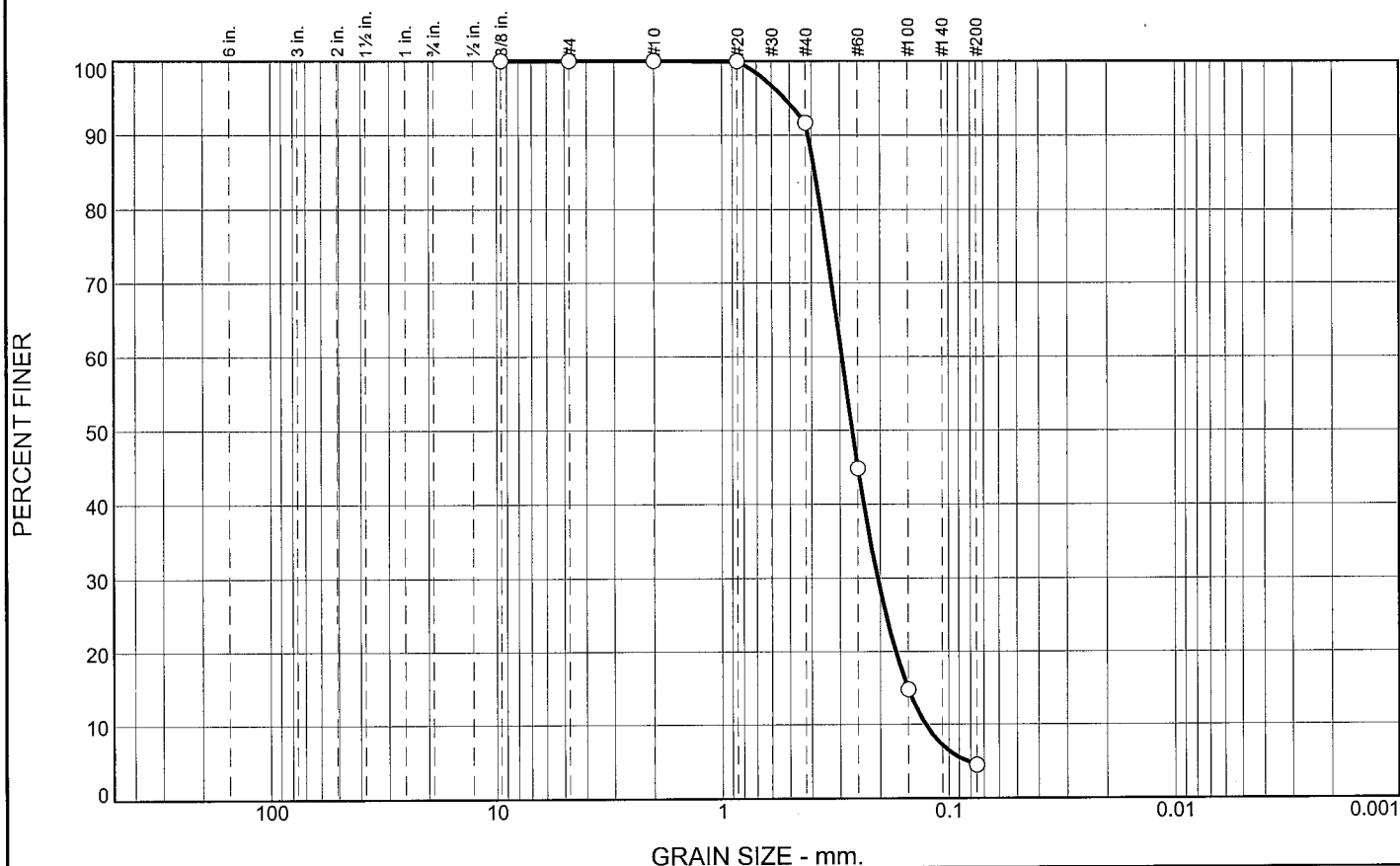
Project No: 10-2123-0009

Report No.

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	8.3	87.2	4.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	91.7		
#60	44.9		
#100	14.8		
#200	4.5		

* (no specification provided)

Material Description

SAND, (SP), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.4138

D₈₅= 0.3860

D₆₀= 0.2939

D₅₀= 0.2647

D₃₀= 0.2051

D₁₅= 0.1509

D₁₀= 0.1261

C_u= 2.33

C_c= 1.13

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-67-10B
Sample Number: TE Lab ID: 4622.23

Depth: 10.0 - 15.0 (ft.)

Date: 8/15/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project



Project No: 10-2123-0009

Report No.

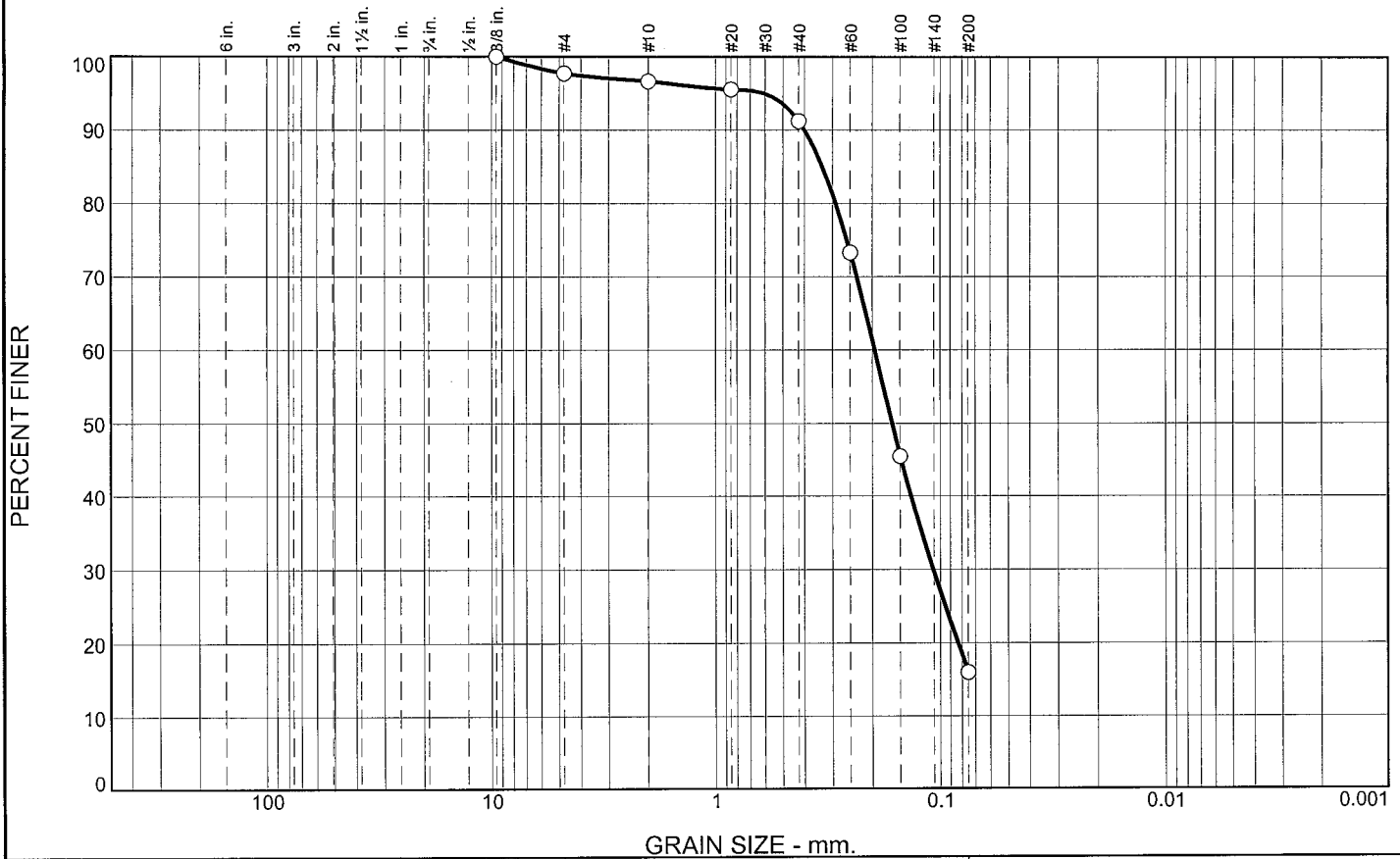
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-PB-068-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-068-10		LOCATION COORDINATES E = 1,131,651 N = 248,301		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 0 UNDISTURBED (UD)	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 36 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 08-05-10		STARTED 08-05-10 COMPLETED 08-05-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -34.9 Ft.			
8. TOTAL DEPTH OF BORING 20.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-34.9	0.0						
			CLAY, fat, trace fine-grained sand-sized quartz, trace shell fragments, dark gray (CH)	NS			
-41.9	7.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz (SP) At El. -43.9 Ft., mostly fine to medium-grained sand-sized quartz, lt. gray	A	Classification: SM Color: 2.5Y 5/2-grayish brown D50: 0.1633 mm % Fines: 16		
				B	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.255 mm % Fines: 2.5		
				C	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.2504 mm % Fines: 4.4		
-54.9	20.0						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	2.3	1.1	5.4	75.2	16.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	97.7		
#10	96.6		
#20	95.5		
#40	91.2		
#60	73.3		
#100	45.5		
#200	16.0		

* (no specification provided)

Material Description

SILTY SAND, (SM), fine grained, with trace shell

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.4006 D₈₅= 0.3337 D₆₀= 0.1950
D₅₀= 0.1633 D₃₀= 0.1074 D₁₅=
D₁₀= C_u= C_c=

Classification

USCS= SM AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-68-10A
Sample Number: TE Lab ID: 4622.24

Depth: 7.0 - 10.0 (ft.)

Date: 8/15/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

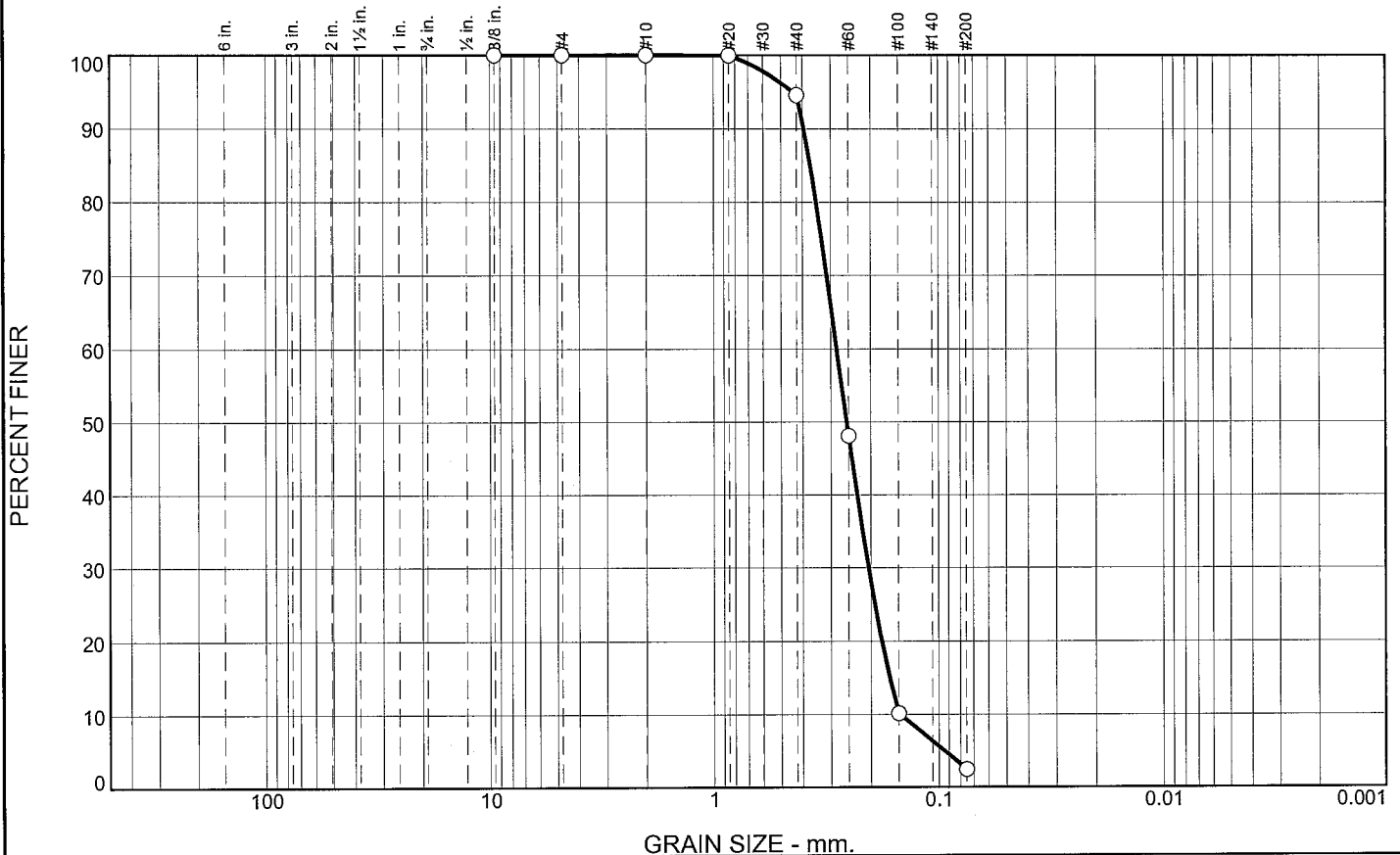
Project No: 10-2123-0009

Report No.

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	5.4	92.1	2.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	94.6		
#60	48.1		
#100	10.2		
#200	2.5		

* (no specification provided)

Material Description

SAND, (SP), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.3946

D₈₅= 0.3690

D₆₀= 0.2821

D₅₀= 0.2550

D₃₀= 0.2043

D₁₅= 0.1648

D₁₀= 0.1475

C_u= 1.91

C_c= 1.00

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-68-10B
Sample Number: TE Lab ID: 4622.25

Depth: 10.0 - 15.0 (ft.)

Date: 8/15/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

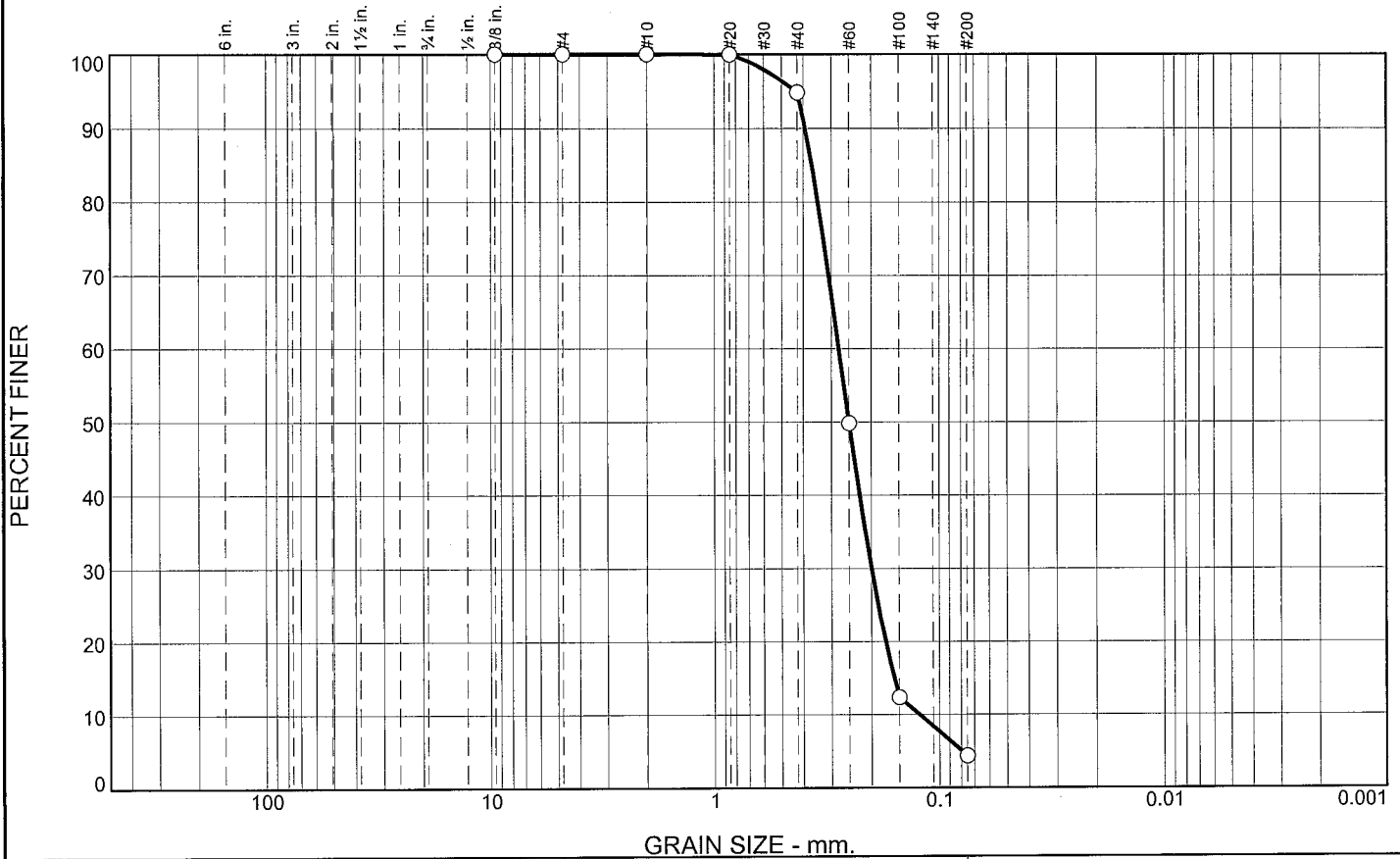
Project No: 10-2123-0009

Report No.

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	5.1	90.5	4.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	100.0		
#40	94.9		
#60	49.8		
#100	12.3		
#200	4.4		

* (no specification provided)

Material Description

SAND, (SP), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.3920

D₈₅= 0.3661

D₆₀= 0.2779

D₅₀= 0.2504

D₃₀= 0.1990

D₁₅= 0.1585

D₁₀= 0.1224

C_u= 2.27

C_c= 1.16

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-68-10C
Sample Number: TE Lab ID: 4622.26

Depth: 15.0 - 20.0 (ft.)

Date: 8/15/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project




Project No: 10-2123-0009

Report No.

Tested By: G.Fancher

Checked By: R.Byrd

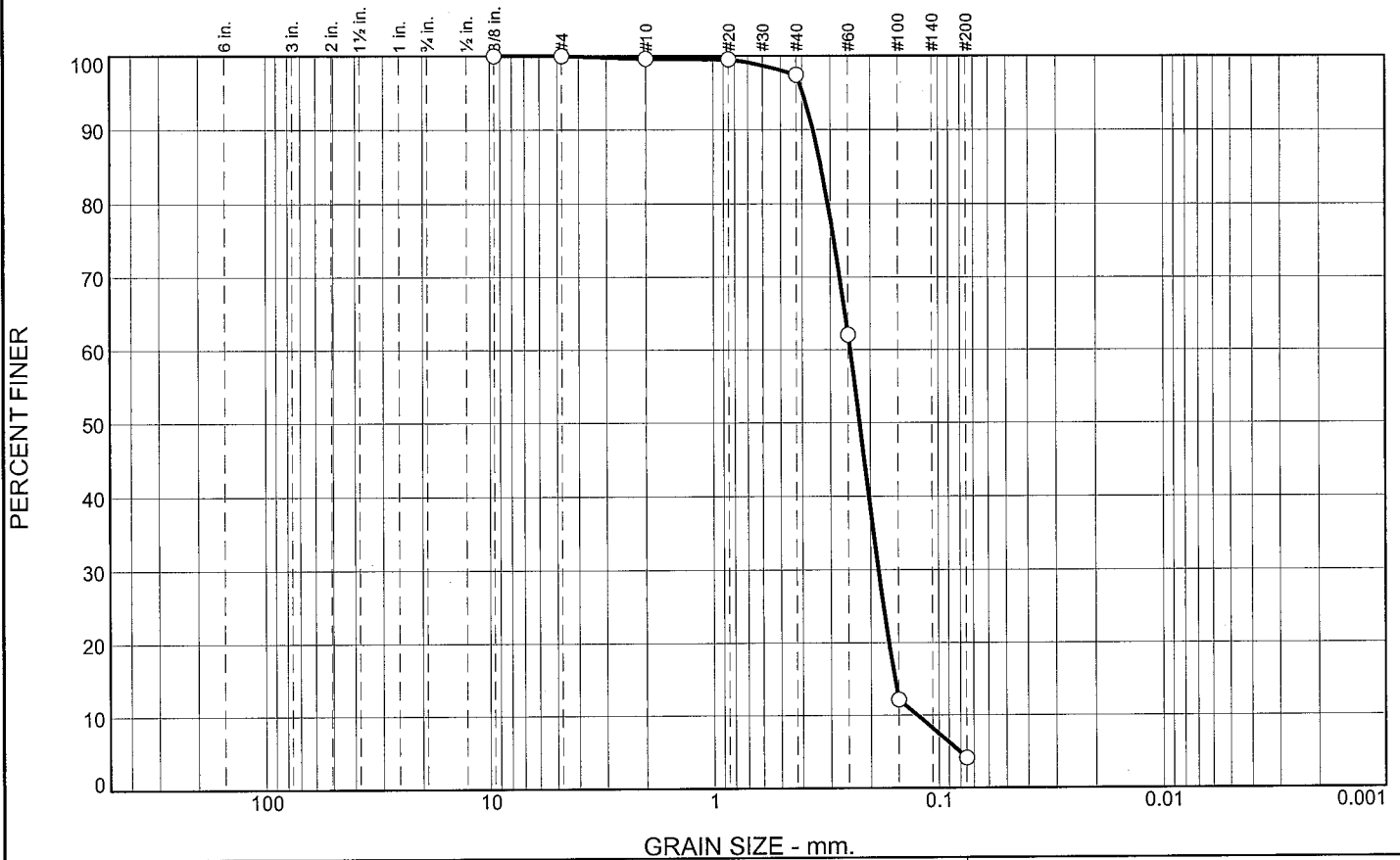
Boring Designation BI-PB-069-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-069-10		LOCATION COORDINATES E = 1,133,344 N = 248,464		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 0		UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 40 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 08-07-10		COMPLETED 08-07-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -39.8 Ft.			
8. TOTAL DEPTH OF BORING 20.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-39.8	0.0						
			CLAY, fat, trace shell fragments, dark gray (CH)				
-46.8	7.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, gray (SP)	NS			
-54.8	15.0						
			CLAY, fat, dark gray (CH)				
-59.8	20.0						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Boring Designation BI-PB-070-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-070-10		LOCATION COORDINATES E = 1,134,943 N = 248,332		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 1		DISTURBED 1 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		BEARING		13. TOTAL NUMBER CORE BOXES	
6. THICKNESS OF OVERBURDEN N/A		7. DEPTH DRILLED INTO ROCK N/A		8. TOTAL DEPTH OF BORING 20.0 Ft.		14. WATER DEPTH 40 Ft.	
						15. DATE BORING STARTED 08-05-10 COMPLETED 08-05-10	
						16. ELEVATION TOP OF BORING -40.2 Ft.	
						17. TOTAL RECOVERY FOR BORING 100%	
						18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist	
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-40.2	0.0		CLAY, fat, trace fine-grained sand-sized quartz (CH)	NS			
-47.2	7.0		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, lt. gray (SP)	A	Classification: SP Color: 2.5Y 6/2-light brownish gray D50: 0.2226 mm % Fines: 4.1		
-50.2	10.0		CLAY, fat, dark gray (CH)	NS			
-60.2	20.0		NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.4	2.2	93.3	4.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.6		
#20	99.5		
#40	97.4		
#60	62.1		
#100	12.2		
#200	4.1		

* (no specification provided)

Material Description

SAND, (SP), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.3586

D₈₅= 0.3301

D₆₀= 0.2449

D₅₀= 0.2226

D₃₀= 0.1844

D₁₅= 0.1561

D₁₀= 0.1243

C_u= 1.97

C_c= 1.12

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-70-10A
Sample Number: TE Lab ID: 4622.30

Depth: 7.0 - 10.0 (ft.)

Date: 8/15/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Report No.

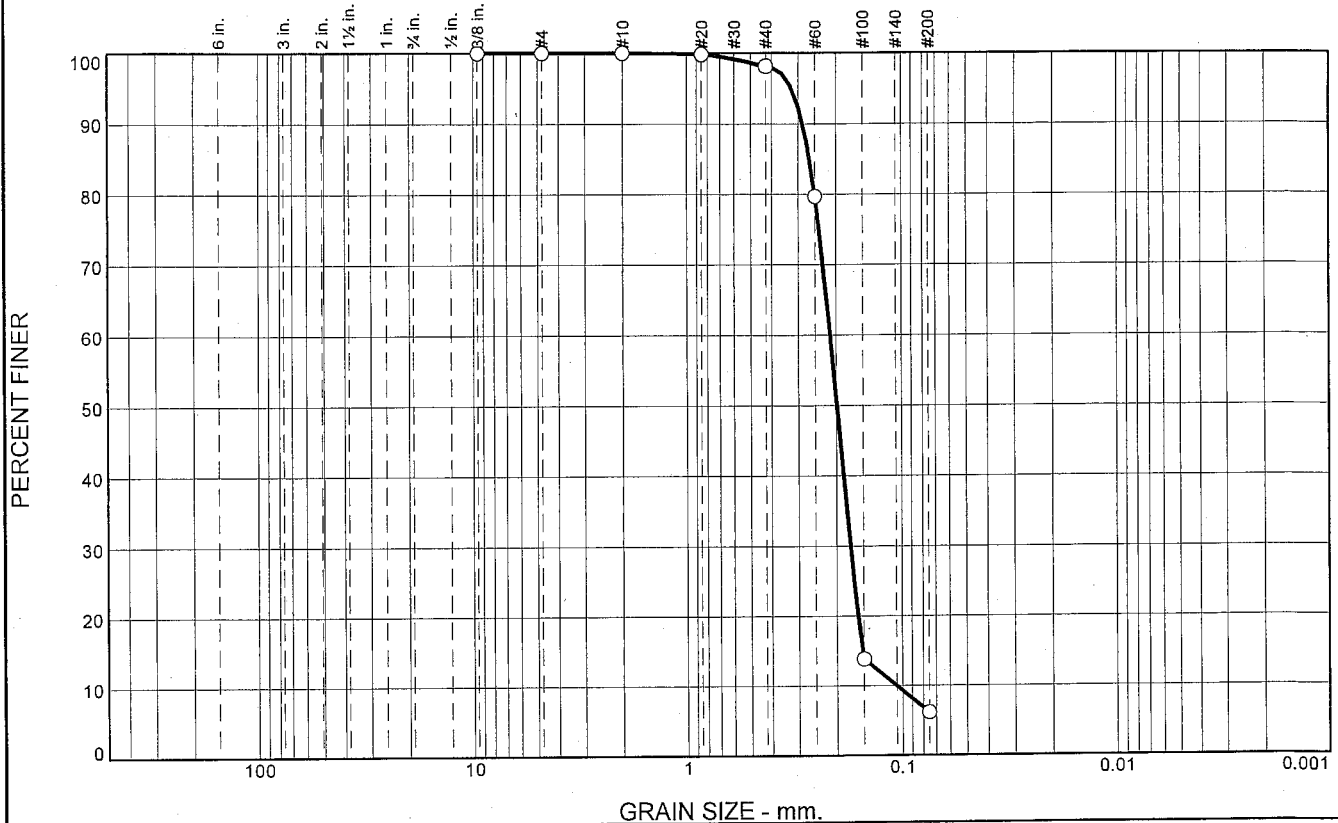
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-PB-073-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-073-10		LOCATION COORDINATES E = 1,122,713 N = 247,209		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 1 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		BEARING		13. TOTAL NUMBER CORE BOXES	
6. THICKNESS OF OVERBURDEN N/A		7. DEPTH DRILLED INTO ROCK N/A		8. TOTAL DEPTH OF BORING 18.3 Ft.		14. WATER DEPTH 43 Ft.	
						15. DATE BORING STARTED 07-09-10 COMPLETED 07-09-10	
						16. ELEVATION TOP OF BORING -41.2 Ft.	
						17. TOTAL RECOVERY FOR BORING 100%	
						18. SIGNATURE AND TITLE OF INSPECTOR Valerie Morrow, Geotechnical Engineer	
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-41.2	0.0		CLAY, lean, trace fine-grained sand-sized quartz, trace shell fragments, trace wood debris, dark gray (CL) At El. -42.3 Ft., trace shell fragments, dark gray	NS			
-52.2	11.0		SAND, clayey, mostly fine-grained sand-sized quartz, dark gray (SC)				
-55.0	13.8		SAND, poorly-graded, mostly fine-grained sand-sized quartz, gray (SP)				
-59.5	18.3			A	Classification: SP-SM Color: 2.5Y 7/1-light gray D50: 0.1983 mm % Fines: 6.1		
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.9	92.0	6.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.8		
#40	98.1		
#60	79.6		
#100	13.8		
#200	6.1		

* (no specification provided)

Material Description

SAND, (SP-SM), fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.2863 D₈₅= 0.2657 D₆₀= 0.2128
D₅₀= 0.1983 D₃₀= 0.1721 D₁₅= 0.1518
D₁₀= 0.1063 C_u= 2.00 C_c= 1.31

Classification

USCS= SP-SM AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-73-10A
Sample Number: TE Lab ID: 4578.01

Depth: 13.8 - 18.3 (ft.)

Date: 7/16/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Figure

Tested By: G.Fancher


Checked By: R.Martin

Boring Designation BI-PB-076-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-076-10		LOCATION COORDINATES E = 1,130,215 N = 247,087		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 0		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 40 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 08-05-10		STARTED 08-05-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -40.2 Ft.			
8. TOTAL DEPTH OF BORING 18.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-40.2	0.0		CLAY, fat, trace fine-grained sand-sized quartz, dark gray (CH)				
				NS			
-58.2	18.0						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Boring Designation BI-PB-077-10

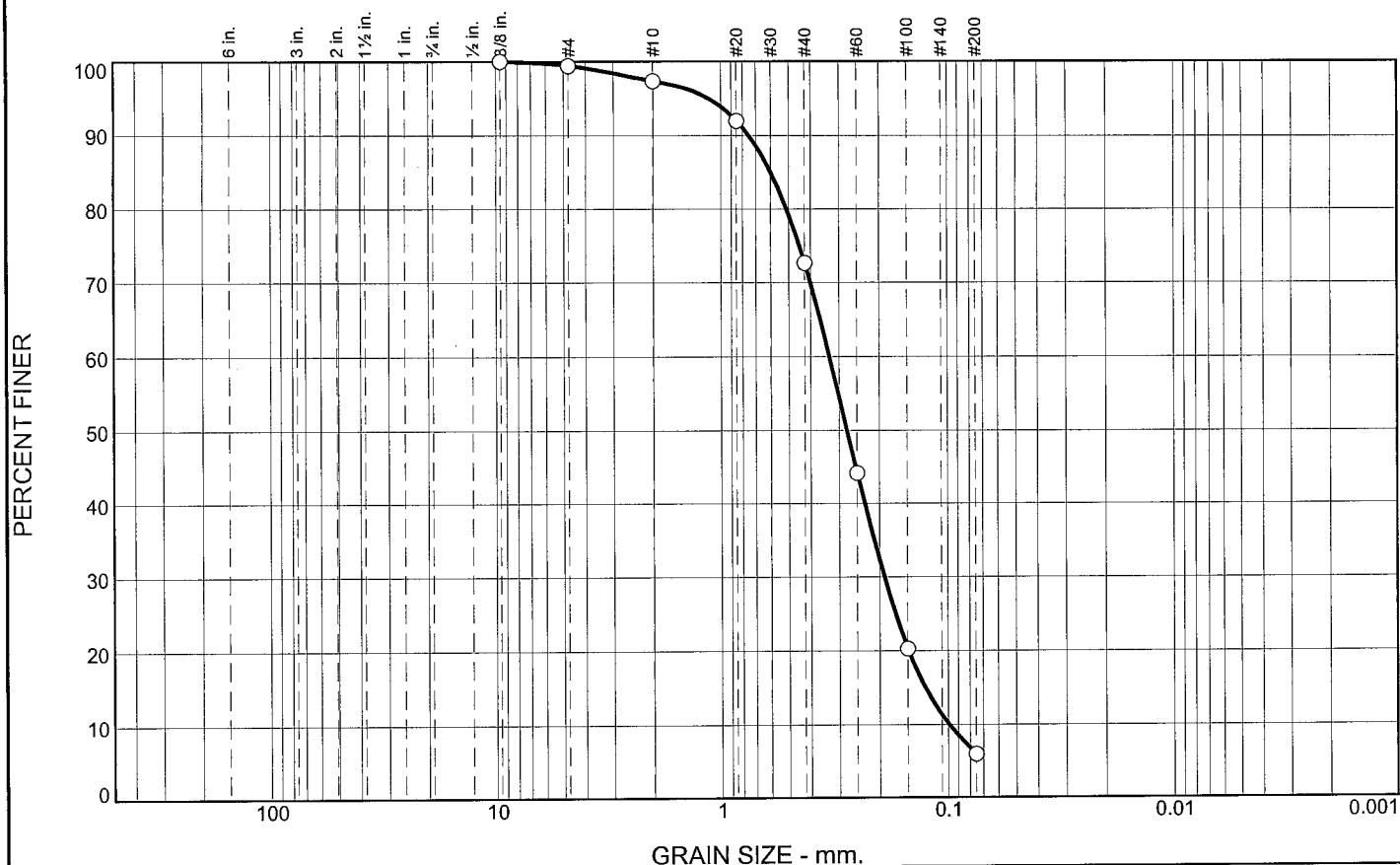
DRILLING LOG		DIVISION South Atlantic	INSTALLATION Mobile District	SHEET 1 OF 1 SHEETS
1. PROJECT Barrier Island Restoration Petit Bois		9. SIZE AND TYPE OF BIT N/A		
2. BORING DESIGNATION BI-PB-077-10		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		
LOCATION COORDINATES E = 1,131,643 N = 247,104		HORIZONTAL NAD83		
3. DRILLING AGENCY Corps of Engineers - CESAM		11. MANUFACTURER'S DESIGNATION OF DRILL <input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER		
CONTRACTOR FILE NO.		12. TOTAL SAMPLES DISTURBED 0 UNDISTURBED (UD) 0		
4. NAME OF DRILLER Construction Solutions International, Inc.		13. TOTAL NUMBER CORE BOXES		
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		14. WATER DEPTH 41 Ft.		
DEG. FROM VERTICAL		15. DATE BORING STARTED 08-05-10 COMPLETED 08-05-10		
BEARING		16. ELEVATION TOP OF BORING -41.3 Ft.		
6. THICKNESS OF OVERBURDEN N/A		17. TOTAL RECOVERY FOR BORING 100%		
7. DEPTH DRILLED INTO ROCK N/A		18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist		
8. TOTAL DEPTH OF BORING 18.0 Ft.				

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-41.3	0.0				
			CLAY, fat, trace shell fragments, dark gray (CH)	NS	
-59.3	18.0				
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.		

Boring Designation BI-PB-078-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-078-10		LOCATION COORDINATES E = 1,134,784 N = 247,090		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 38 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 08-05-10		STARTED 08-05-10 COMPLETED 08-05-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -38.1 Ft.			
8. TOTAL DEPTH OF BORING 18.5 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-38.1	0.0						
-40.1	2.0		SAND, poorly-graded, mostly medium-grained sand-sized quartz, trace shell fragments, dark gray (SP)	A	Classification: SP-SM Color: 2.5Y 6/2-light brownish gray D50: 0.2775 mm % Fines: 6		
-45.1	7.0		CLAY, fat, trace fine-grained sand-sized quartz, dark gray (CH)	NS			
-51.6	13.5		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, lt. gray (SP)	B	Classification: SP-SM Color: 2.5Y 6/2-light brownish gray D50: 0.2008 mm % Fines: 6.9		
				C	Classification: SM Color: 2.5Y 5/2-grayish brown D50: 0.1569 mm % Fines: 18.3		
-56.6	18.5		CLAY, fat, dark gray (CH)	NS			
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.6	2.0	24.8	66.6	6.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.4		
#10	97.4		
#20	92.0		
#40	72.6		
#60	44.1		
#100	20.2		
#200	6.0		

* (no specification provided)

Material Description
SAND, (SP-SM), medium to fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.7524 D₈₅= 0.6018 D₆₀= 0.3314
 D₅₀= 0.2775 D₃₀= 0.1902 D₁₅= 0.1258
 D₁₀= 0.0987 C_u= 3.36 C_c= 1.11

Classification
 USCS= SP-SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-PB-78-10A
 Sample Number: TE Lab ID: 4622.27

Depth: 0.0 - 2.0 (ft.)

Date: 8/15/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project

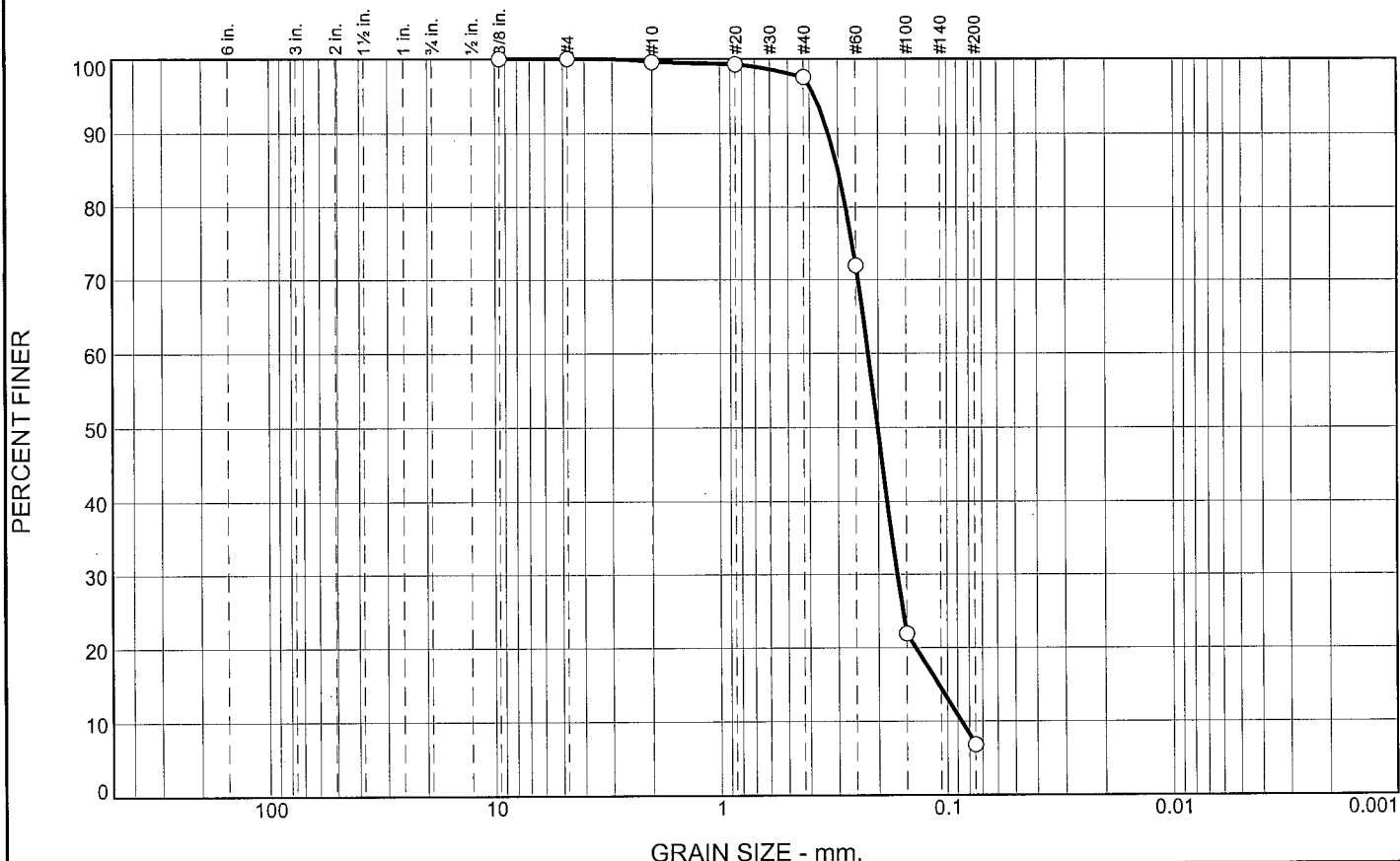
Project No: 10-2123-0009

Report No.

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.4	2.0	90.7	6.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.6		
#20	99.3		
#40	97.6		
#60	71.9		
#100	21.9		
#200	6.9		

* (no specification provided)

Material Description
SAND, (SP-SM), fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.3313 D₈₅= 0.3001 D₆₀= 0.2207
D₅₀= 0.2008 D₃₀= 0.1651 D₁₅= 0.1091
D₁₀= 0.0867 C_u= 2.55 C_c= 1.43

Classification
USCS= SP-SM AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-PB-78-10B
Sample Number: TE Lab ID: 4622.28

Depth: 7.0 - 10.0 (ft.)

Date: 8/15/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

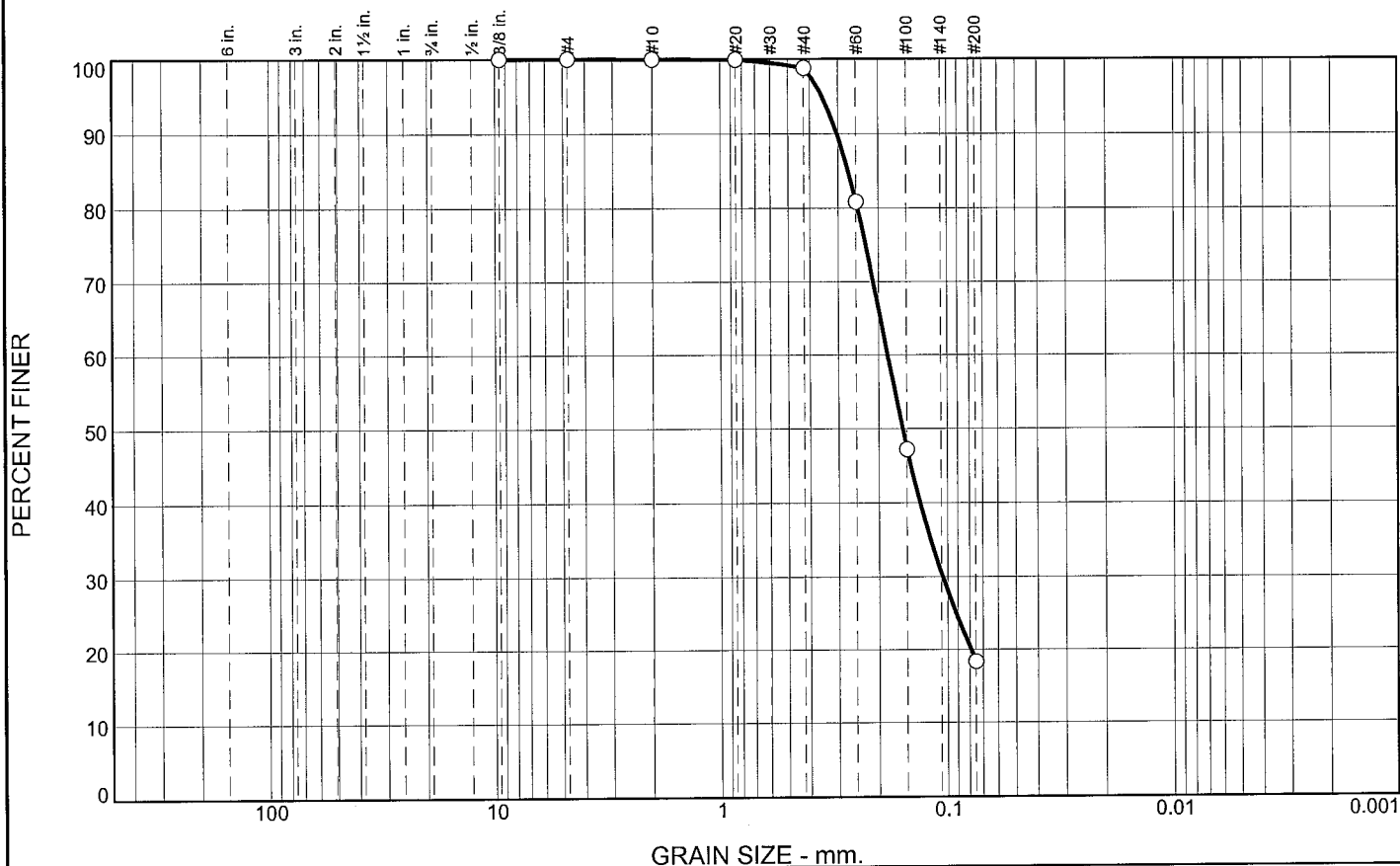
Project No: 10-2123-0009

Report No.

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.2	80.5	18.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	98.8		
#60	80.8		
#100	47.2		
#200	18.3		

* (no specification provided)

Material Description

SILTY SAND, (SM), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.3035

D₈₅= 0.2707

D₆₀= 0.1821

D₅₀= 0.1569

D₃₀= 0.1052

D₁₅=

D₁₀=

C_u=

C_c=

Classification

USCS= SM

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-78-10C
Sample Number: TE Lab ID: 4622.29

Depth: 10.0 - 13.5 (ft.)

Date: 8/15/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Report No.

Tested By: G.Fancher

Checked By: R.Byrd

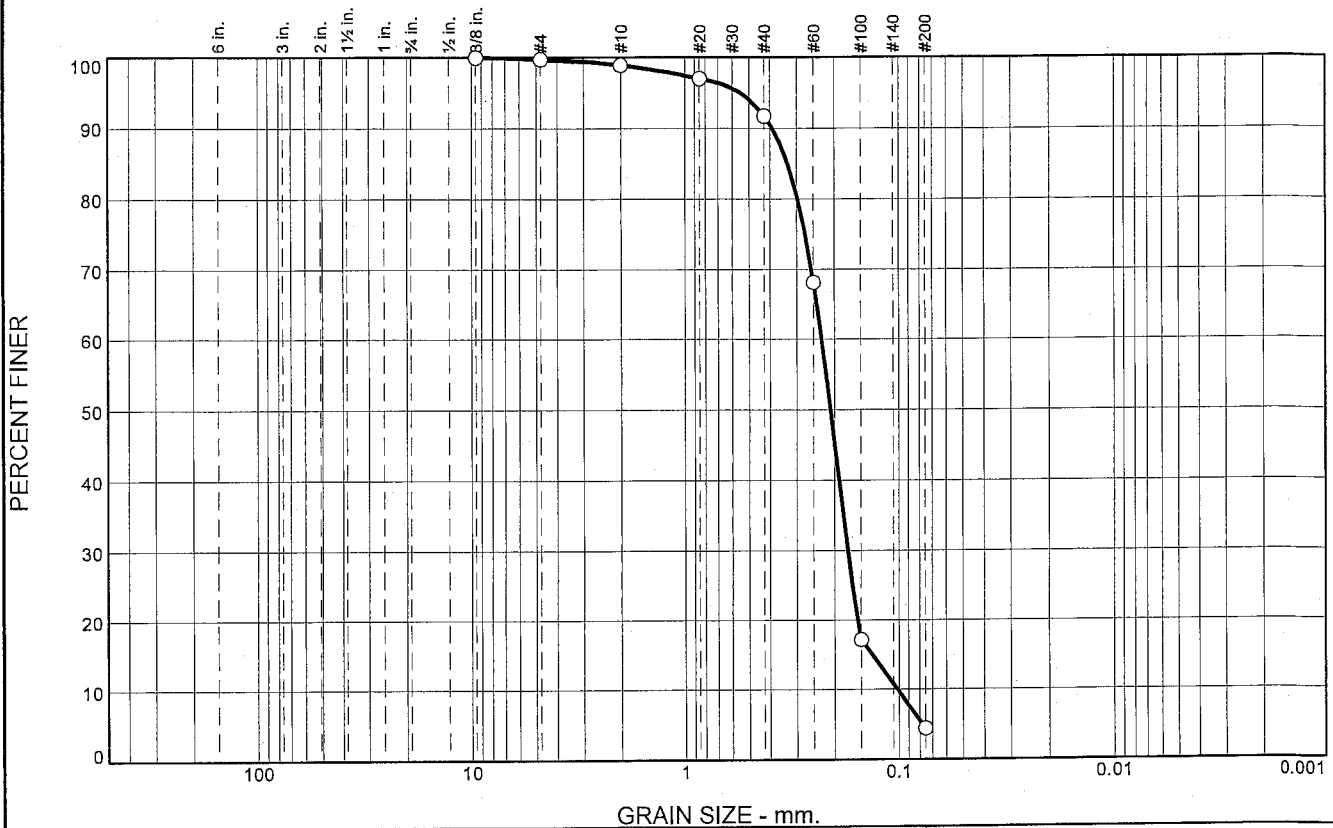
Boring Designation BI-PB-079-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-079-10		LOCATION COORDINATES E = 1,136,298 N = 247,040		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 0		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 43 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 08-05-10		STARTED 08-05-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -42.8 Ft.			
8. TOTAL DEPTH OF BORING 17.5 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-42.8	0.0		CLAY, fat, dark gray (CH)				
				NS			
-60.3	17.5						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Boring Designation BI-PB-080-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-080-10		LOCATION COORDINATES E = 1,122,678 N = 245,508		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 43.5 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 07-09-10		STARTED 07-09-10 COMPLETED 07-09-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -42.2 Ft.			
8. TOTAL DEPTH OF BORING 19.4 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Valerie Morrow, Geotechnical Engineer			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-42.2	0.0		CLAY, lean, trace shell fragments, trace wood debris, dark gray (CL)	NS			
-49.9	7.7		SAND, clayey, mostly fine-grained sand-sized quartz, trace shell fragments, gray (SC)				
-51.6	9.4		SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace shell fragments, gray (SP)	A	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.2084 mm % Fines: 4.4		
-61.6	19.4			B	Classification: SP-SM Color: 2.5Y 7/1-light gray D50: 0.1684 mm % Fines: 9.1		
NOTES:							
1. Soils are field visually classified in accordance with the Unified Soils Classification System.							
2. NS = Sample not submitted for laboratory analysis from this interval.							

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.3	0.8	7.2	87.3	4.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.7		
#10	98.9		
#20	97.1		
#40	91.7		
#60	68.1		
#100	17.1		
#200	4.4		

* (no specification provided)

Material Description
SAND, (SP), fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.3906 D₈₅= 0.3311 D₆₀= 0.2292
D₅₀= 0.2084 D₃₀= 0.1730 D₁₅= 0.1335
D₁₀= 0.1016 C_u= 2.25 C_c= 1.29

Classification
USCS= SP AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-PB-80-10A
Sample Number: TE Lab ID: 4578.02

Depth: 9.4 - 14.4 (ft.)

Date: 7/16/10

Thompson Engineering
Mobile, Alabama

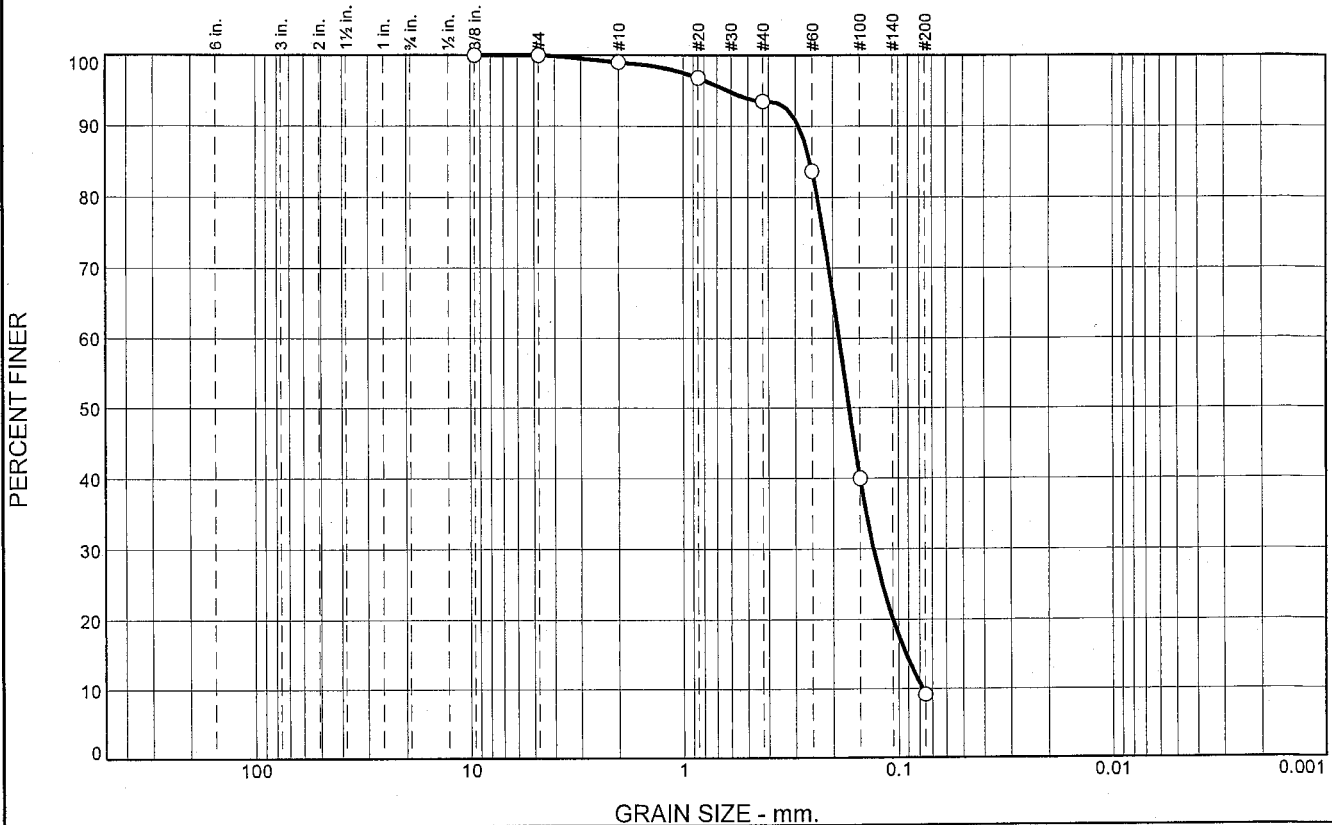
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	1.0	5.6	84.3	9.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.0		
#20	96.8		
#40	93.4		
#60	83.7		
#100	39.9		
#200	9.1		

Material Description
SAND, (SP-SM), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.2897 D₈₅= 0.2559 D₆₀= 0.1872
 D₅₀= 0.1684 D₃₀= 0.1301 D₁₅= 0.0922
 D₁₀= 0.0774 C_u= 2.42 C_c= 1.17

Classification
 USCS= SP-SM AASHTO=

Remarks
 CADD CODE = CH10D965

* (no specification provided)

Location: USACE Sample # BI-PB-80-10B
 Sample Number: TE Lab ID: 4578.03

Depth: 14.4 - 19.4 (ft.)

Date: 7/16/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
 Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
 Project No: 10-2123-0009

Figure

Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-PB-085-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-085-10		LOCATION COORDINATES E = 1,131,589 N = 245,569		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 0		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 46 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 08-10-10		STARTED 08-10-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -45.6 Ft.			
8. TOTAL DEPTH OF BORING 20.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-45.6	0.0		CLAY, fat, dark gray (CH)				
-52.6	7.0		At El. -50.6 Ft., trace fine-grained sand-sized quartz, dark gray				
-59.6	14.0		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, gray (SP)	NS			
-65.6	20.0		CLAY, fat, dark gray (CH)				
NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.							

Boring Designation BI-PB-086-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-086-10		LOCATION COORDINATES E = 1,134,819 N = 245,546		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 0		DISTURBED 0 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 46 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 08-10-10		STARTED 08-10-10 COMPLETED 08-10-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -44.4 Ft.			
8. TOTAL DEPTH OF BORING 17.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-44.4	0.0		CLAY, fat, trace fine-grained sand-sized quartz, dark gray (CH)				
				NS			
-61.4	17.0		NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Boring Designation BI-PB-087-10

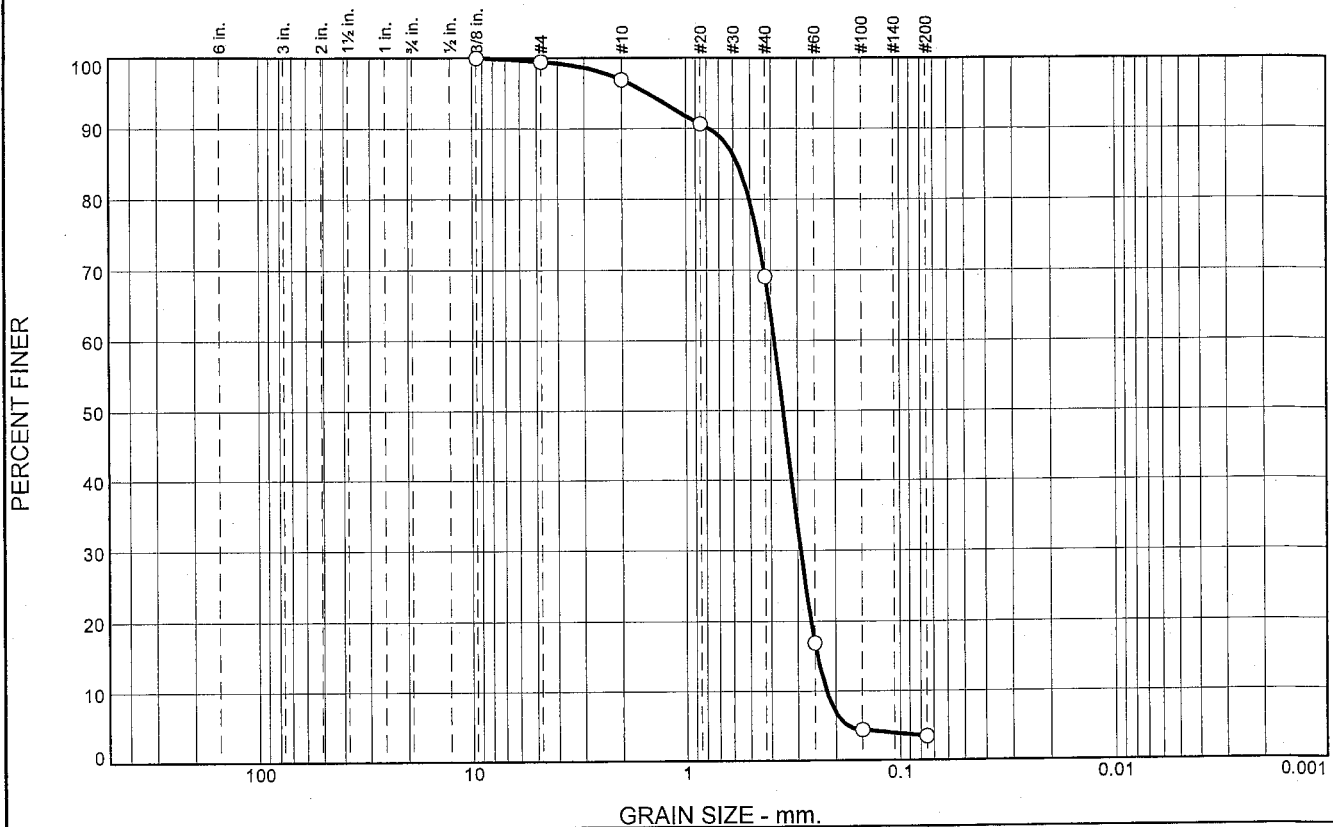
DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-087-10		LOCATION COORDINATES E = 1,134,819 N = 245,506		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		UNDISTURBED (UD) 0	
6. THICKNESS OF OVERBURDEN N/A				14. WATER DEPTH		46 Ft.	
7. DEPTH DRILLED INTO ROCK N/A				15. DATE BORING		STARTED 08-10-10	
8. TOTAL DEPTH OF BORING 20.0 Ft.				16. ELEVATION TOP OF BORING -44.7 Ft.		COMPLETED 08-10-10	
				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist			

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-44.7	0.0				
-46.7	2.0		SILT, inorganic-H, trace fine-grained sand-sized quartz, dark gray (MH)		
-51.7	7.0		CLAY, fat, dark gray (CH)		
-54.7	10.0		SAND, poorly-graded, gray (SP)		
-64.7	20.0		CLAY, fat, dark gray (CH)	NS	
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.		

Boring Designation BI-PB-089-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-089-10		LOCATION COORDINATES E = 1,122,763 N = 244,127		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 1 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 43 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING		STARTED 07-09-10 COMPLETED 07-09-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -42.3 Ft.			
8. TOTAL DEPTH OF BORING 16.6 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Valerie Morrow, Geotechnical Engineer			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-42.3	0.0						
-43.7	1.4		SAND, poorly-graded, mostly medium to coarse-grained sand-sized quartz, trace shell fragments, gray (SP)	A	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.35 mm % Fines: 3.4		
			SAND, clayey, mostly fine-grained sand-sized quartz, some clay, trace shell fragments, dark gray (SC)	NS			
-55.1	12.8						
			CLAY, lean, some clay, dark greenish gray (CL)				
-58.9	16.6						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.5	2.5	27.9	65.7	3.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.5		
#10	97.0		
#20	90.6		
#40	69.1		
#60	16.9		
#100	4.4		
#200	3.4		

<u>Material Description</u>		
SAND, (SP), medium to fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.7737	D ₈₅ = 0.5704	D ₆₀ = 0.3850
D ₅₀ = 0.3500	D ₃₀ = 0.2905	D ₁₅ = 0.2431
D ₁₀ = 0.2206	C _u = 1.75	C _c = 0.99
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

* (no specification provided)

Location: USACE Sample # BI-PB-89-10A
Sample Number: TE Lab ID: 4578.04

Depth: 0.0 - 1.4 (ft.)

Date: 7/16/10

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Figure

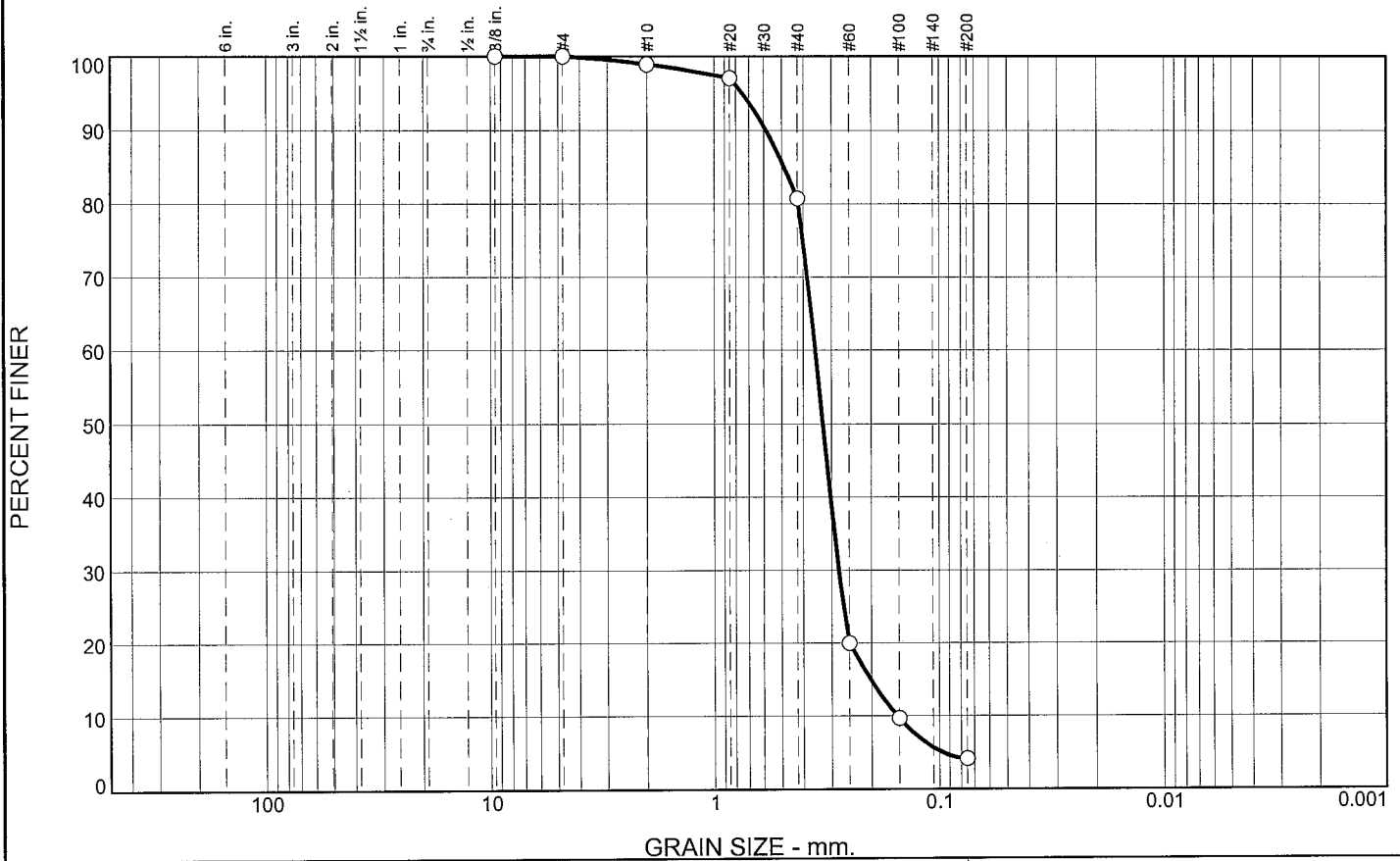
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-PB-098-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-098-10		LOCATION COORDINATES E = 1,130,183 N = 252,593		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 4		UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES		14. WATER DEPTH 25 Ft.	
6. THICKNESS OF OVERBURDEN N/A		7. DEPTH DRILLED INTO ROCK N/A		15. DATE BORING 08-03-10		COMPLETED 08-03-10	
8. TOTAL DEPTH OF BORING 17.5 Ft.				16. ELEVATION TOP OF BORING -25.0 Ft.		17. TOTAL RECOVERY FOR BORING 100%	
				18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-25.0	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace shell fragments, gray (SP)	A	Classification: SP Color: 2.5Y 6/2-light brownish gray D50: 0.3274 mm % Fines: 4.2		
-30.0	5.0		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, brown/tan (SP)	B	Classification: SP-SM Color: 2.5Y 5/2-grayish brown D50: 0.2679 mm % Fines: 7.4		
-39.0	14.0		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, lt. gray/tan (SP)	C	Classification: SP Color: 2.5Y 6/2-light brownish gray D50: 0.3191 mm % Fines: 4.5		
-42.5	17.5			D	Classification: SP Color: 2.5Y 6/2-light brownish gray D50: 0.2906 mm % Fines: 4.9		
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	1.1	18.2	76.5	4.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	98.9		
#20	97.1		
#40	80.7		
#60	20.0		
#100	9.7		
#200	4.2		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained, with trace clay pockets

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.5875

D₈₅= 0.4875

D₆₀= 0.3538

D₅₀= 0.3274

D₃₀= 0.2780

D₁₅= 0.2019

D₁₀= 0.1534

C_u= 2.31

C_c= 1.42

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-98-10A
Sample Number: TE Lab ID: 4622.01

Depth: 0.0 - 5.0 (ft.)

Date: 8/15/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

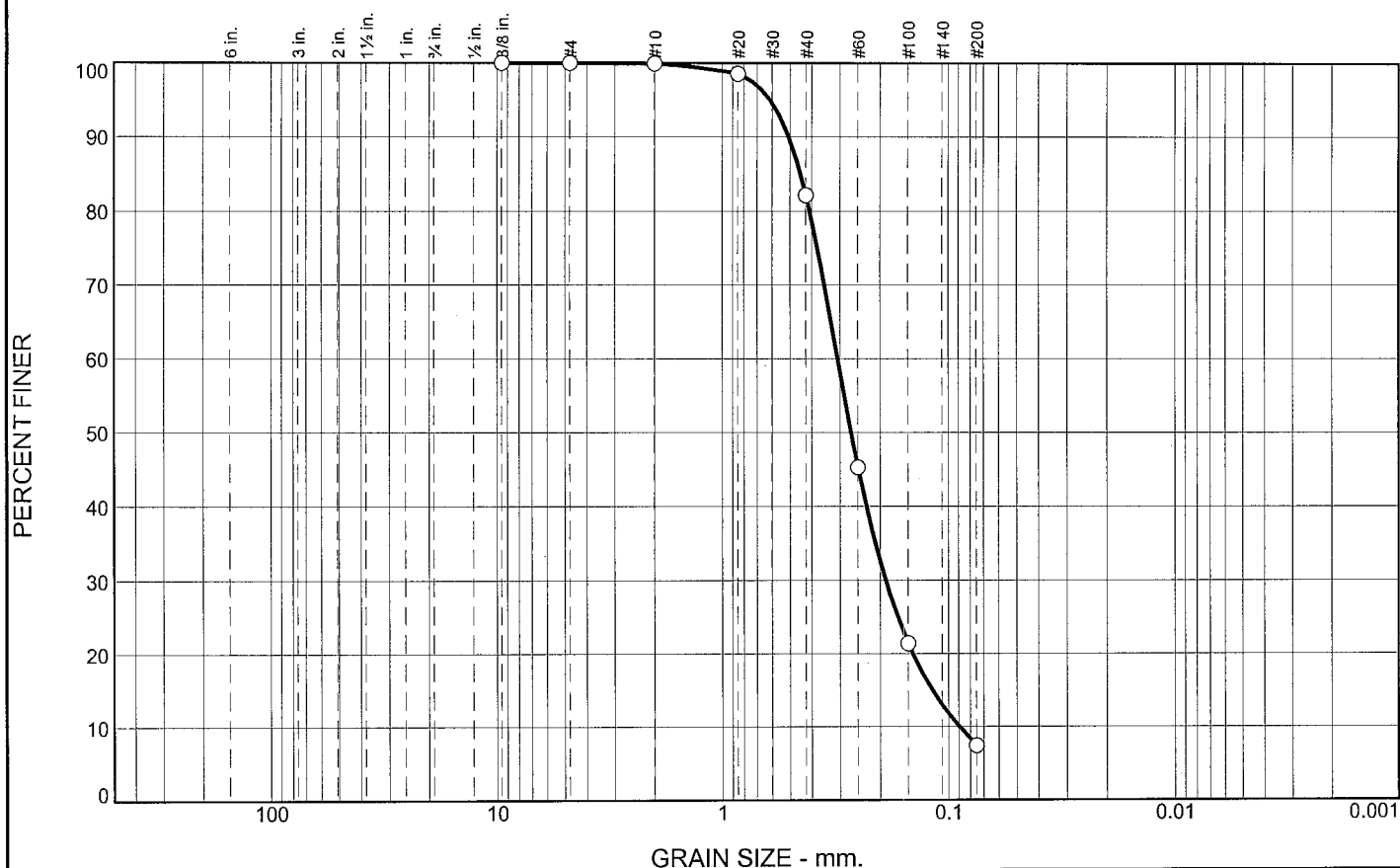
Project No: 10-2123-0009

Report No.

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	17.8	74.7	7.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	98.5		
#40	82.1		
#60	45.3		
#100	21.4		
#200	7.4		

* (no specification provided)

Material Description

SAND, (SP-SM), medium to fine grained, with trace clay pockets

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.5076

D₈₅= 0.4494

D₆₀= 0.3072

D₅₀= 0.2679

D₃₀= 0.1888

D₁₅= 0.1174

D₁₀= 0.0892

C_u= 3.44

C_c= 1.30

Classification

USCS= SP-SM

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-98-10B
Sample Number: TE Lab ID: 4622.02

Depth: 5.0 - 10.0 (ft.)

Date: 8/15/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

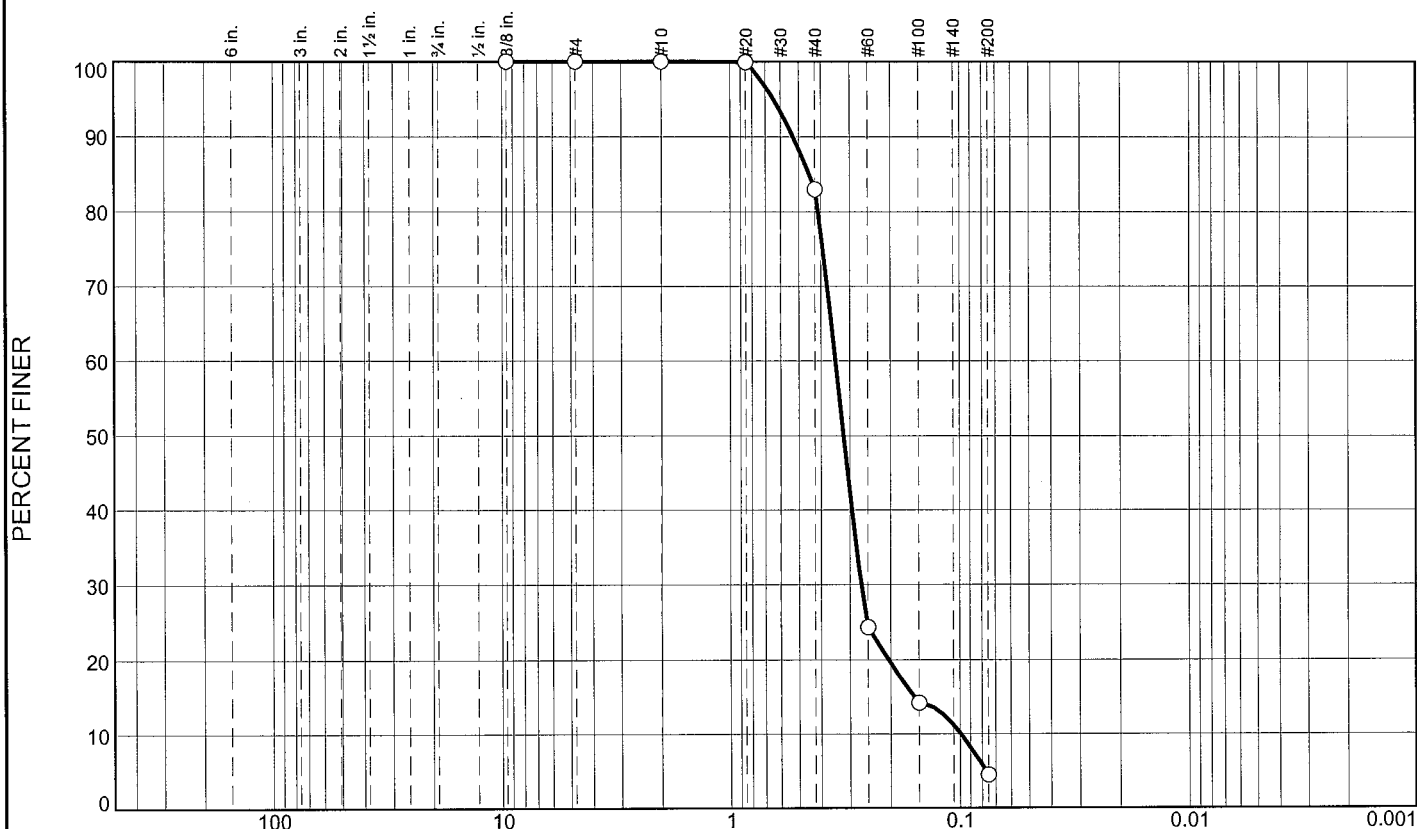
Project No: 10-2123-0009

Report No.

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



GRAIN SIZE - mm.

% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	17.0	78.5	4.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	83.0		
#60	24.3		
#100	14.2		
#200	4.5		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.5296

D₈₅= 0.4506

D₆₀= 0.3458

D₅₀= 0.3191

D₃₀= 0.2672

D₁₅= 0.1572

D₁₀= 0.0991

C_u= 3.49

C_c= 2.08

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-98-10C
Sample Number: TE Lab ID: 4622.03

Depth: 10.0 - 15.0 (ft.)

Date: 8/15/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

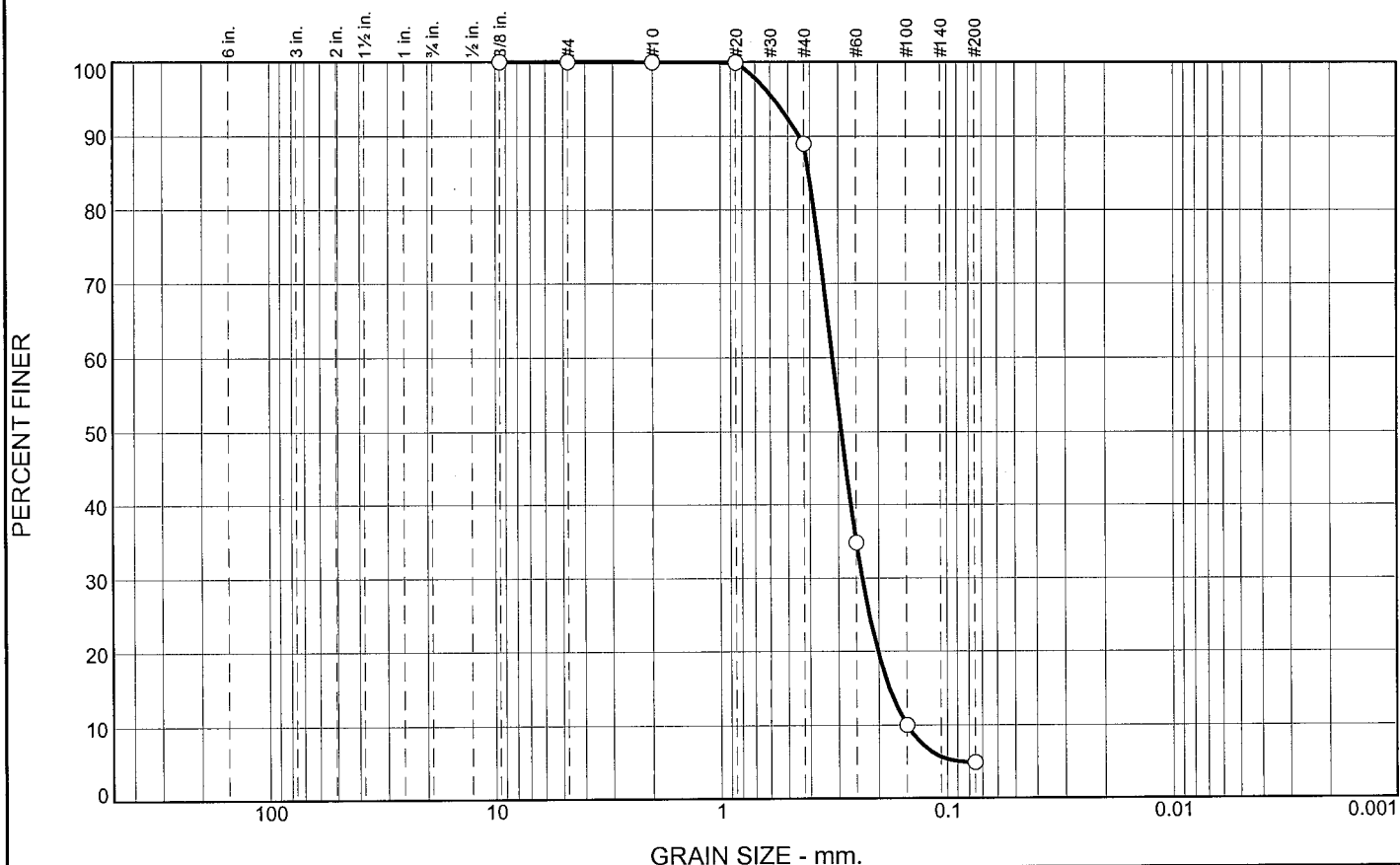
Project No: 10-2123-0009

Report No.

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	11.1	84.0	4.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	88.9		
#60	34.8		
#100	10.0		
#200	4.9		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.4455

D₈₅= 0.4045

D₆₀= 0.3177

D₅₀= 0.2906

D₃₀= 0.2359

D₁₅= 0.1796

D₁₀= 0.1499

C_u= 2.12

C_c= 1.17

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-98-10D
Sample Number: TE Lab ID: 4622.04

Depth: 15.0 - 17.5 (ft.)

Date: 8/15/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Report No.

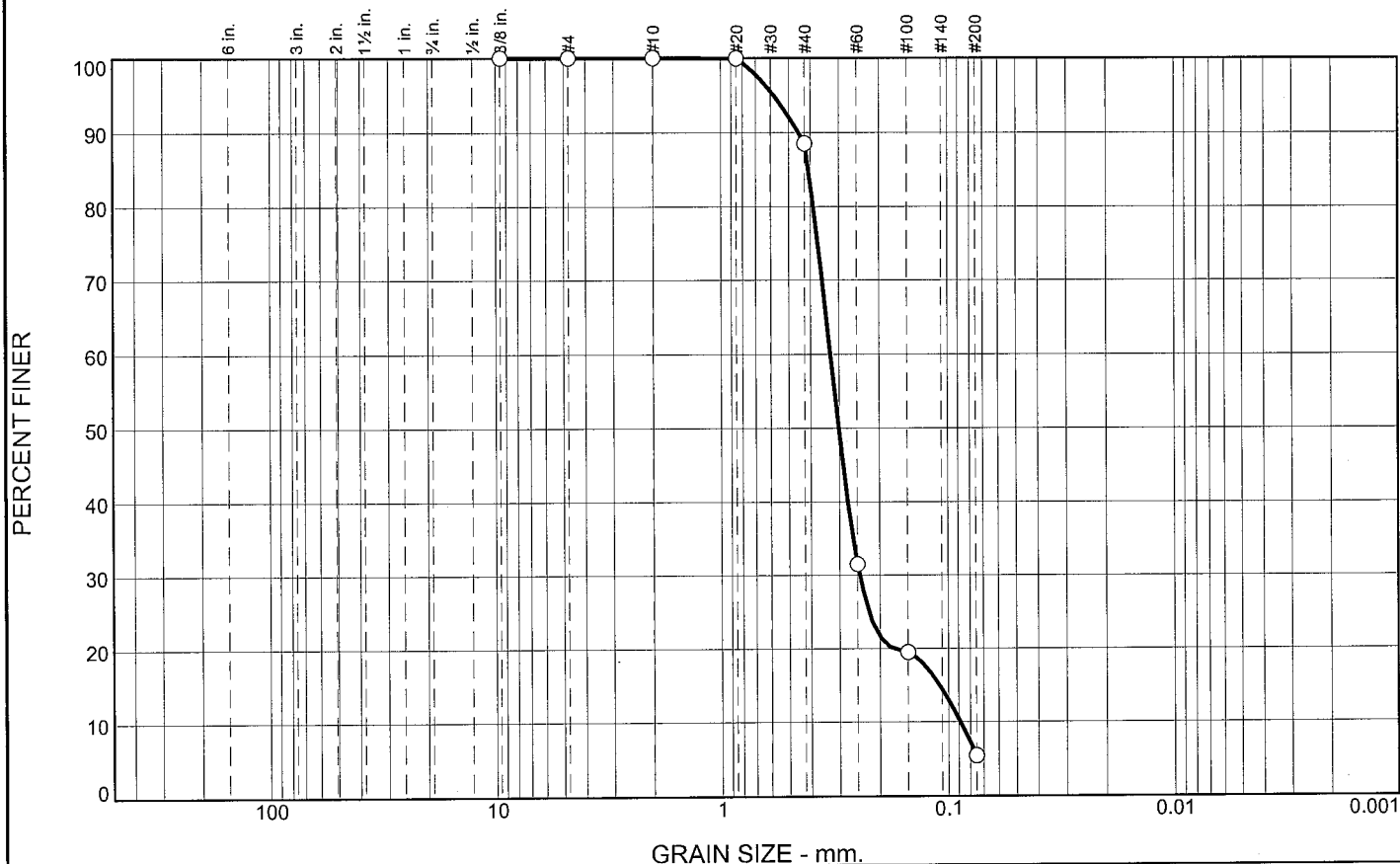
Tested By: R.Martin

Checked By: R.Byrd

Boring Designation BI-PB-099-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-099-10		LOCATION COORDINATES E = 1,133,367 N = 252,679		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 0 UNDISTURBED (UD)	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 30 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 08-03-10		STARTED 08-03-10 COMPLETED 08-03-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -30.1 Ft.			
8. TOTAL DEPTH OF BORING 20.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-30.1	0.0						
-31.1	1.0		CLAY, fat, dark gray (CH)	NS			
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, lt. gray (SP)	A	Classification: SP-SM Color: 2.5Y 5/2-grayish brown D50: 0.301 mm % Fines: 5.5		
				B	Classification: SP-SM Color: 2.5Y 6/2-light brownish gray D50: 0.2822 mm % Fines: 5.4		
-40.1	10.0		CLAY, fat, dark gray (CH)				
				NS			
-50.1	20.0						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	11.5	83.0	5.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	100.0		
#40	88.5		
#60	31.5		
#100	19.5		
#200	5.5		

* (no specification provided)

Material Description

SAND, (SP-SM), medium to fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.4529

D₈₅= 0.4084

D₆₀= 0.3272

D₅₀= 0.3010

D₃₀= 0.2447

D₁₅= 0.1093

D₁₀= 0.0887

C_u= 3.69

C_c= 2.06

Classification

USCS= SP-SM

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-99-10A
Sample Number: TE Lab ID: 4622.08

Depth: 1.0 - 5.0 (ft.)

Date: 8/15/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

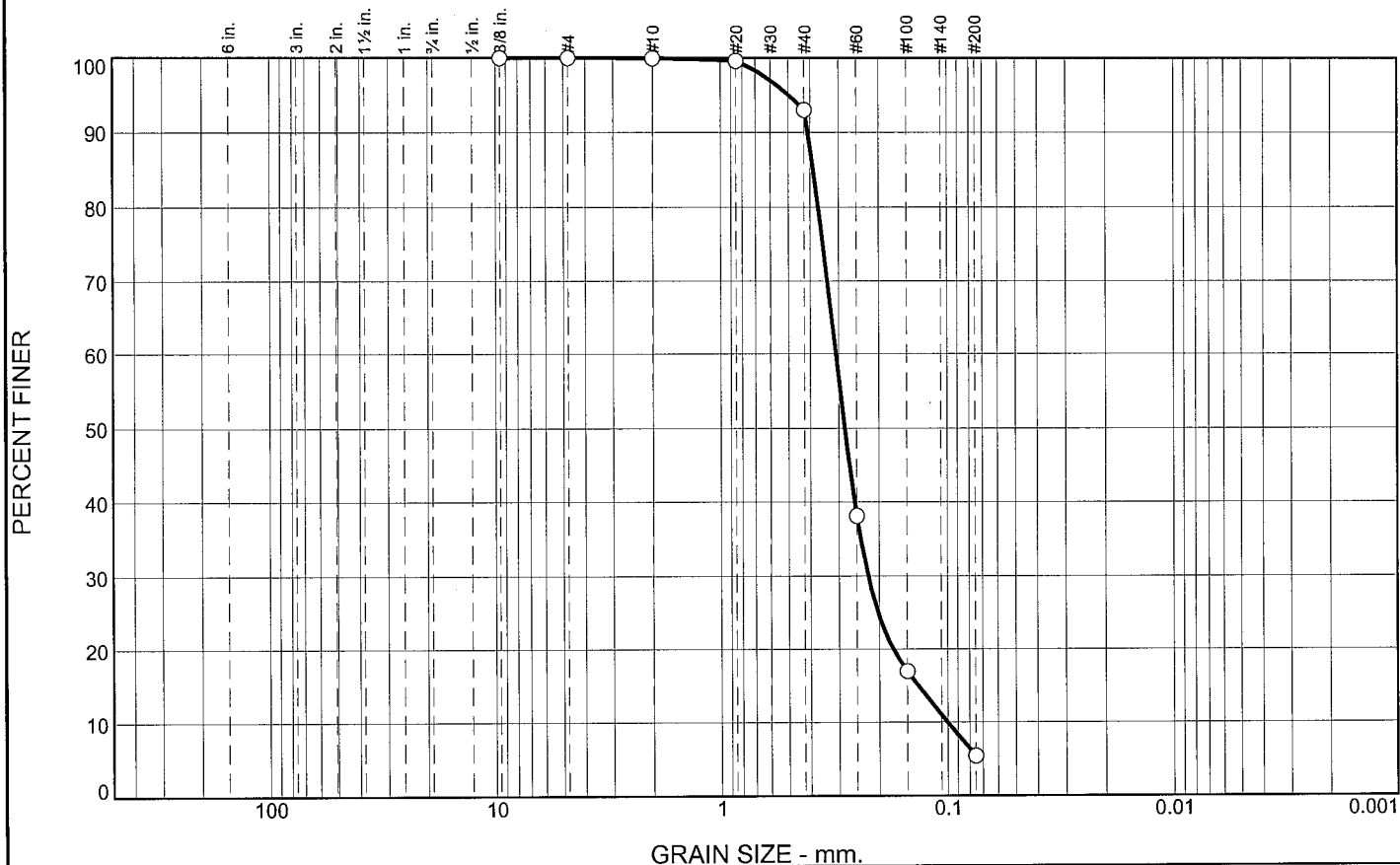
Project No: 10-2123-0009

Report No.

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	6.9	87.6	5.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.6		
#40	93.0		
#60	38.1		
#100	17.0		
#200	5.4		

* (no specification provided)

Material Description

SAND, (SP-SM), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.4090

D₈₅= 0.3869

D₆₀= 0.3085

D₅₀= 0.2822

D₃₀= 0.2233

D₁₅= 0.1346

D₁₀= 0.1001

C_u= 3.08

C_c= 1.62

Classification

USCS= SP-SM

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-99-10B
Sample Number: TE Lab ID: 4622.09

Depth: 5.0 - 10.0 (ft.)

Date: 8/15/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Report No.

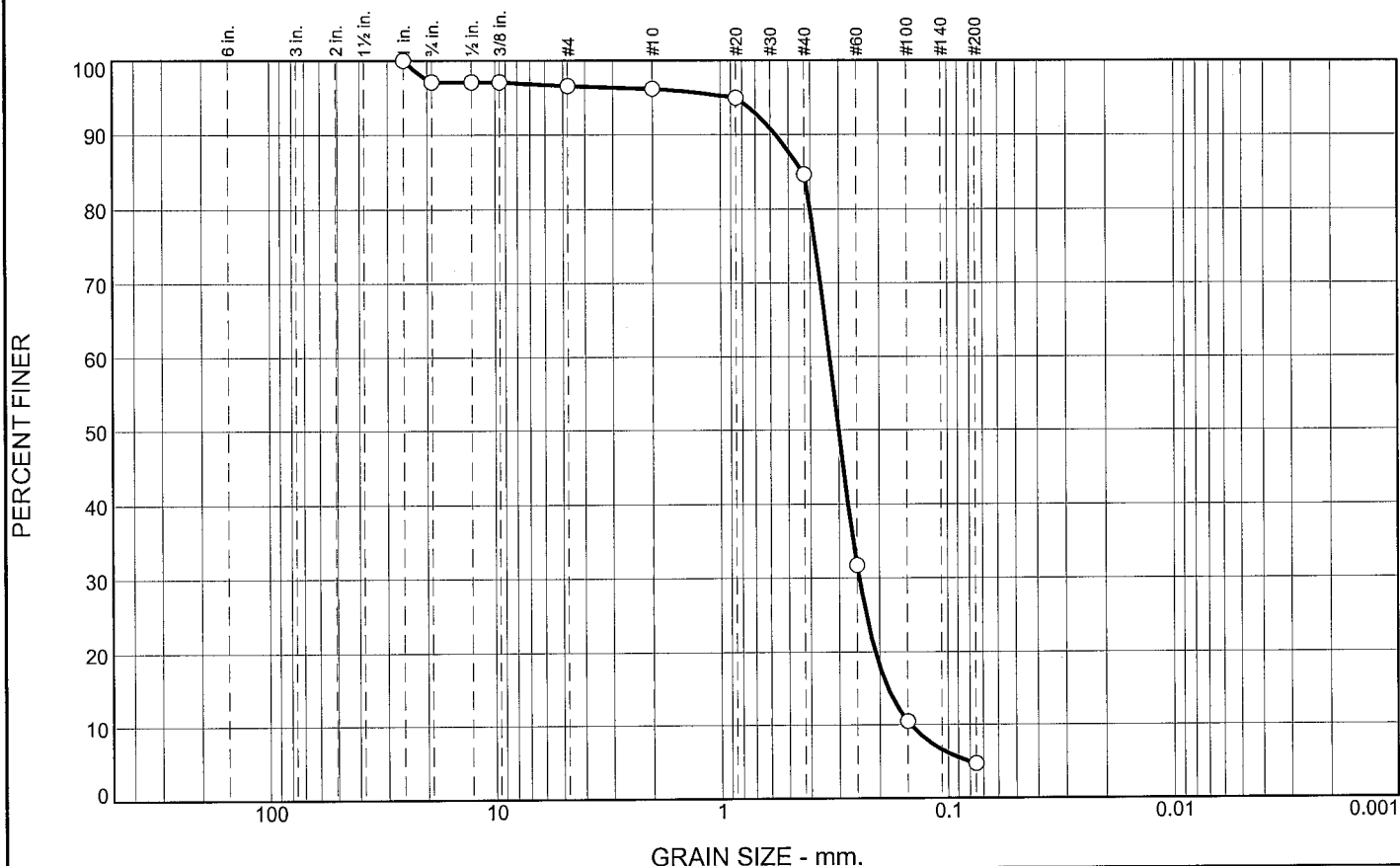
Tested By: R.Martin

Checked By: R.Byrd

Boring Designation BI-PB-100-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-100-10		LOCATION COORDINATES E = 1,131,777 N = 254,357		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		14. WATER DEPTH 25 Ft.	
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 08-03-10		COMPLETED 08-03-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -25.1 Ft.		17. TOTAL RECOVERY FOR BORING 100%	
8. TOTAL DEPTH OF BORING 13.0 Ft.				18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-25.1	0.0						
-26.6	1.5		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace shell fragments, gray (SP) SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, dark brown (SP)	A	Classification: SP Color: 2.5Y 4/2-dark grayish brown D50: 0.3007 mm % Fines: 4.7		
-30.1	5.0						
-34.1	9.0						
-37.1	12.0		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, gray (SP)	B	Classification: SP-SM Color: 2.5Y 5/2-grayish brown D50: 0.2993 mm % Fines: 6.5		
-38.1	13.0						
			CLAY, fat, gray (CH)	NS			
NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.							

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	2.9	0.5	0.4	11.5	80.0	4.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1"	100.0		
.750	97.1		
.50	97.1		
.375	97.1		
#4	96.6		
#10	96.2		
#20	94.9		
#40	84.7		
#60	31.7		
#100	10.5		
#200	4.7		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained, with trace shell

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.5691 D₈₅= 0.4314 D₆₀= 0.3292
D₅₀= 0.3007 D₃₀= 0.2448 D₁₅= 0.1836
D₁₀= 0.1455 C_u= 2.26 C_c= 1.25

Classification

USCS= SP AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-100-10A
Sample Number: TE Lab ID: 4622.05

Depth: 0.0 - 5.0 (ft.)

Date: 8/15/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

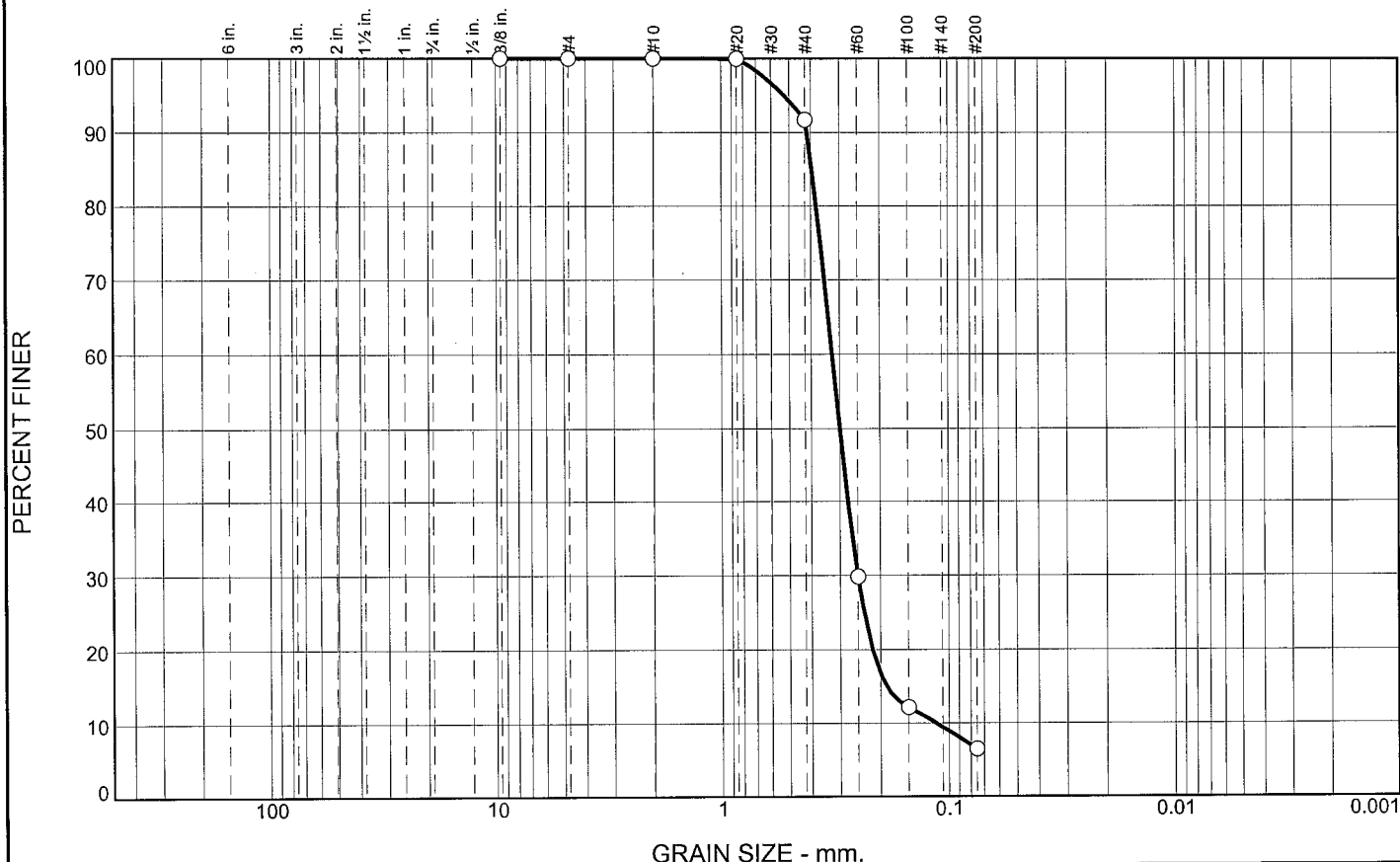
Project No: 10-2123-0009

Report No.

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	8.3	85.2	6.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	100.0		
#40	91.7		
#60	29.8		
#100	12.2		
#200	6.5		

* (no specification provided)

Material Description

SAND, (SP-SM), fine grained, with trace clay pockets

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.4167

D₈₅= 0.3961

D₆₀= 0.3232

D₅₀= 0.2993

D₃₀= 0.2505

D₁₅= 0.1880

D₁₀= 0.1136

C_u= 2.85

C_c= 1.71

Classification

USCS= SP-SM

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-100-10B
Sample Number: TE Lab ID: 4622.06

Depth: 5.0 - 10.0 (ft.)

Date: 8/15/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

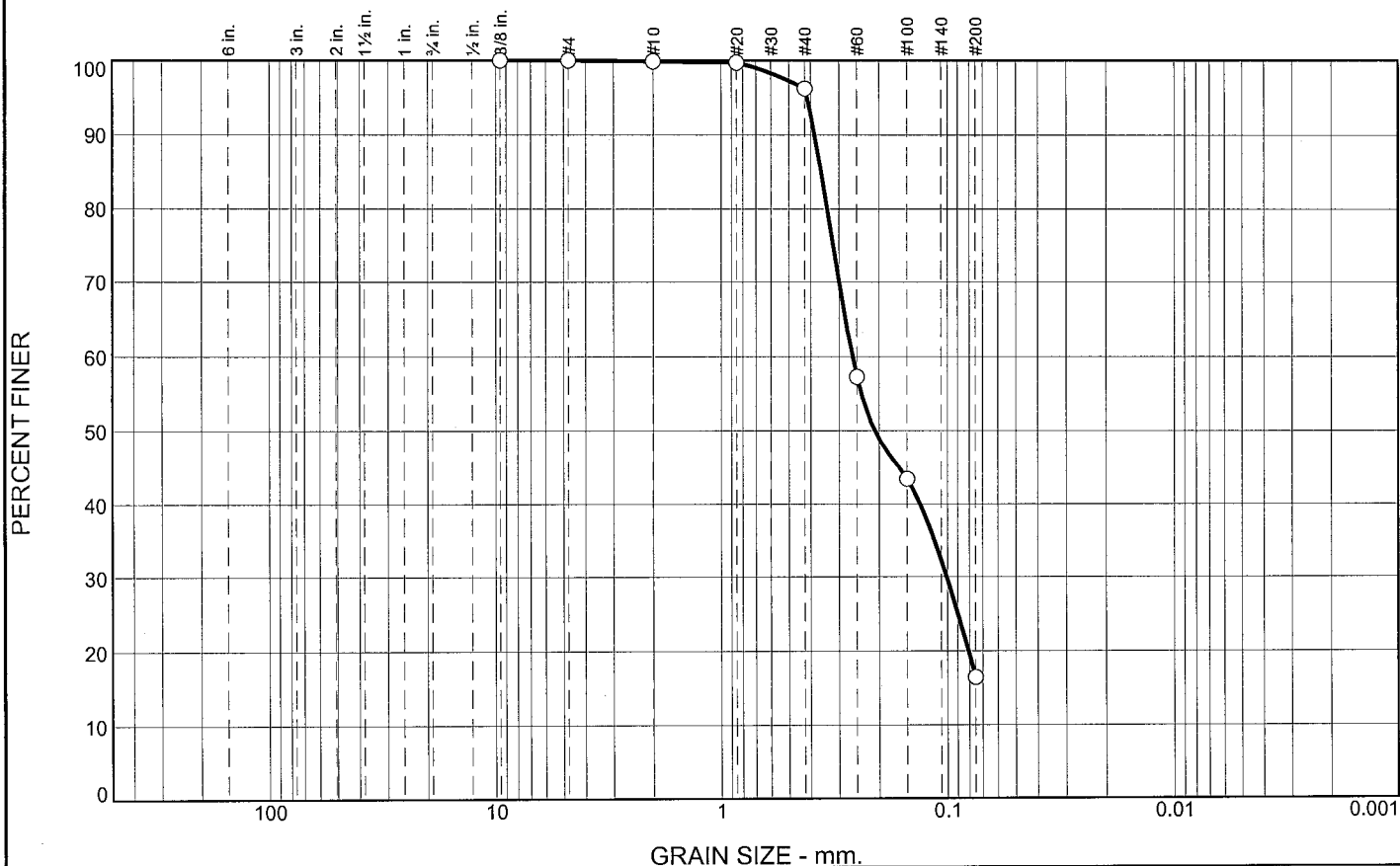
Project No: 10-2123-0009

Report No.

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	3.7	79.8	16.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.7		
#40	96.2		
#60	57.3		
#100	43.4		
#200	16.4		

* (no specification provided)

Material Description

CLAYEY SAND, (SC), fine grained, with trace clay pockets

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.3843

D₈₅= 0.3595

D₆₀= 0.2615

D₅₀= 0.2091

D₃₀= 0.1009

D₁₅=

D₁₀=

C_u=

C_c=

Classification

USCS= SC

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-100-10C
Sample Number: TE Lab ID: 4622.07

Depth: 10.0 - 15.0 (ft.)

Date: 8/15/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Report No.

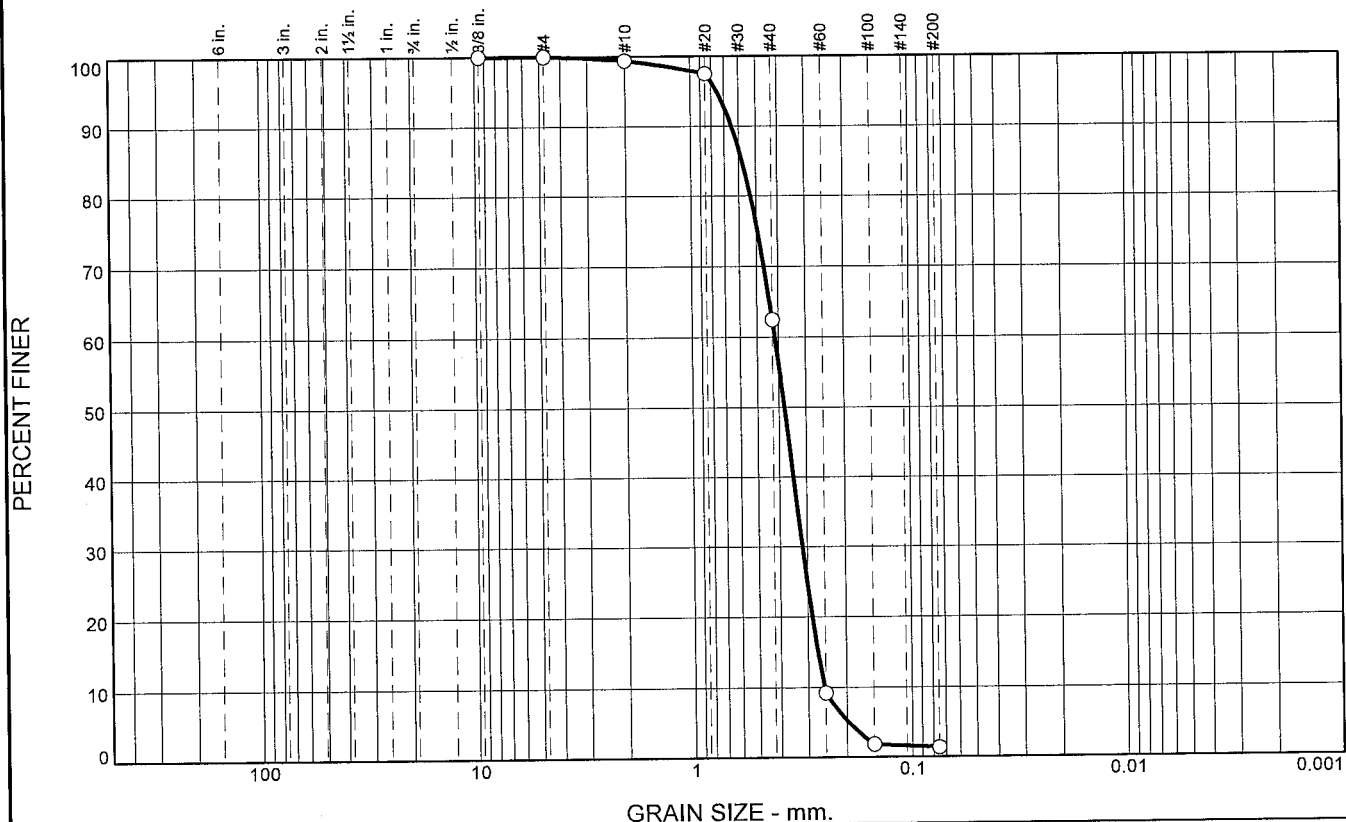
Tested By: R.Martin

Checked By: R.Byrd

Boring Designation BI-PB-101-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-101-10		LOCATION COORDINATES E = 1,133,423 N = 254,374		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		14. WATER DEPTH 27 Ft.	
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 07-31-10		COMPLETED 07-31-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -26.9 Ft.		17. TOTAL RECOVERY FOR BORING 100%	
8. TOTAL DEPTH OF BORING 16.0 Ft.				18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-26.9	0.0		SAND, poorly-graded, mostly medium-grained sand-sized quartz, dark brown (SP)	A	Classification: SP Color: 2.5Y 3/3-dark olive brown D50: 0.3773 mm % Fines: 1.4		
			At El. -33.9 Ft., lt. tan	B	Classification: SP-SM Color: 2.5Y 2.5/1-black D50: 0.2789 mm % Fines: 5.5		
-36.9	10.0		CLAY, fat, dark gray (CH)	C	Classification: SP-SM Color: 2.5Y 5/1-gray D50: 0.2862 mm % Fines: 5.4		
				NS			
-42.9	16.0		NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.6	36.9	61.1	1.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.4		
#20	97.5		
#40	62.5		
#60	9.2		
#100	1.8		
#200	1.4		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained

PL= Atterberg Limits LL= PI=

Coefficients
D₉₀= 0.6465 D₈₅= 0.5791 D₆₀= 0.4146
D₅₀= 0.3773 D₃₀= 0.3154 D₁₅= 0.2704
D₁₀= 0.2530 C_u= 1.64 C_c= 0.95

Classification
USCS= SP AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-PB-101-10A
Sample Number: TE Lab ID: 4612.65

Depth: 0.0 - 5.0 (ft.)

Date: 8/7/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

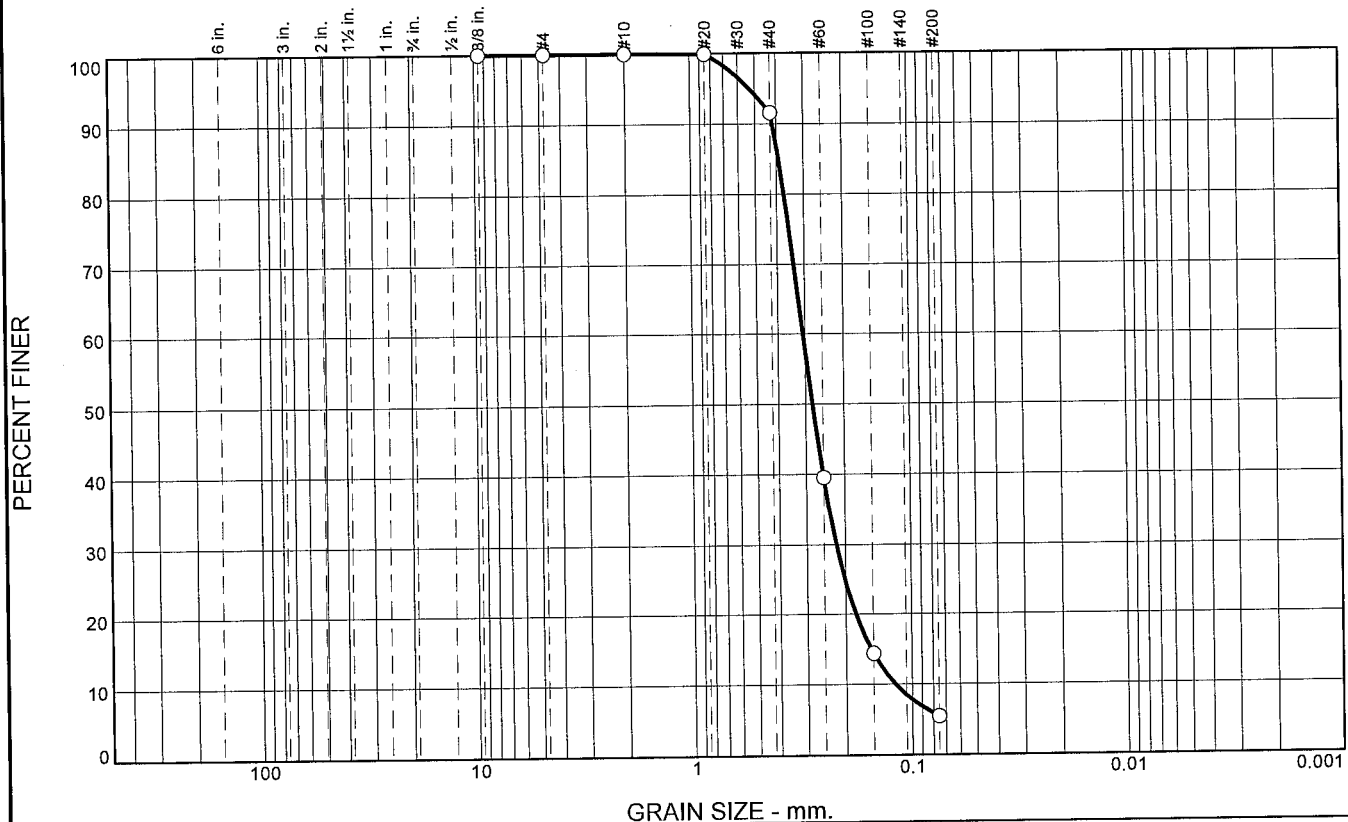
Project No: 10-2123-0009

Report No.

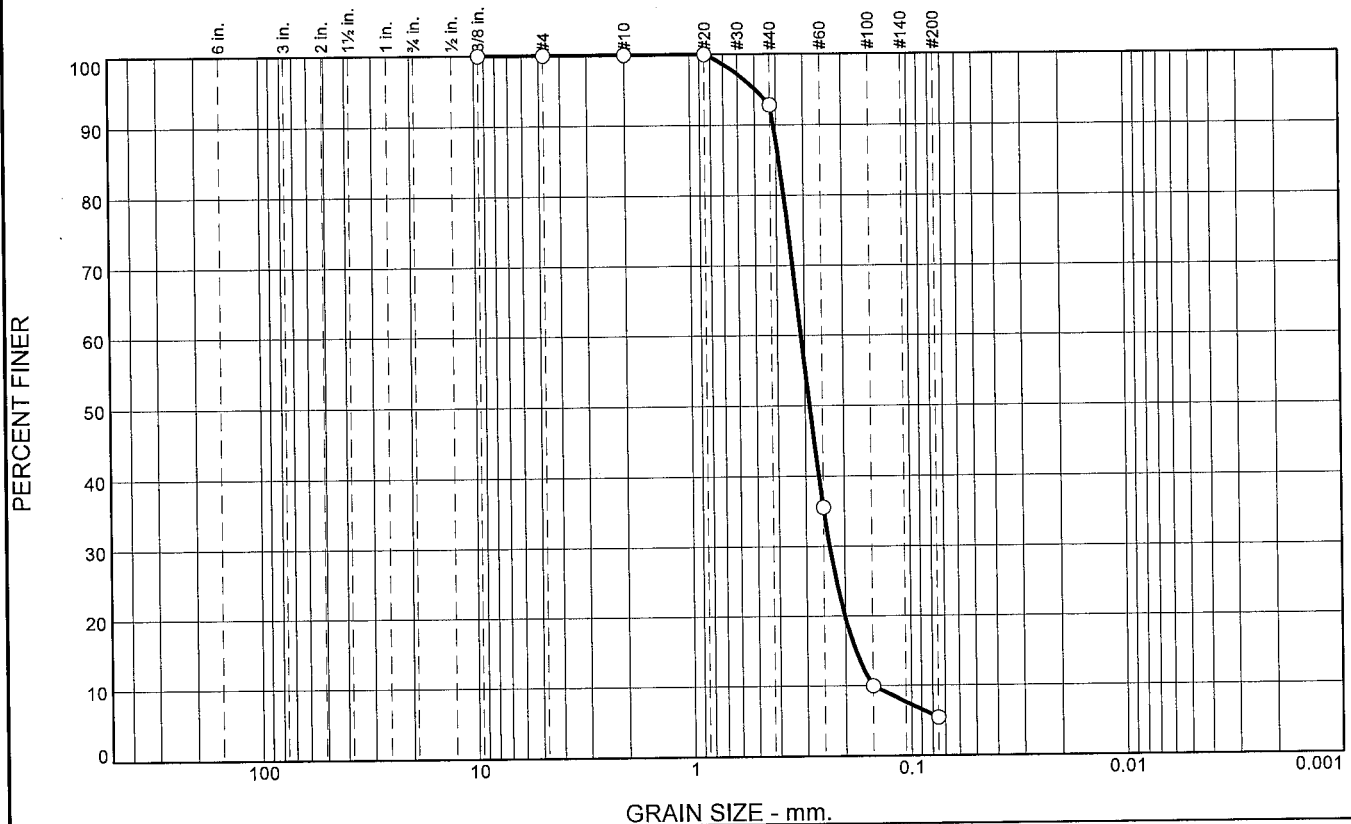
Tested By: J.Maddox

Checked By: R.Byrd

Particle Size Distribution Report



Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	7.2	87.4	5.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	100.0		
#40	92.8		
#60	35.6		
#100	10.0		
#200	5.4		

* (no specification provided)

Material Description
SAND, (SP-SM), fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.4103 D₈₅= 0.3884 D₆₀= 0.3114
D₅₀= 0.2862 D₃₀= 0.2345 D₁₅= 0.1800
D₁₀= 0.1504 C_u= 2.07 C_c= 1.17

Classification
USCS= SP-SM AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-PB-101-10C
Sample Number: TE Lab ID: 4612.67

Depth: 10.0 - 11.0 (ft.)

Date: 8/7/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Report No.

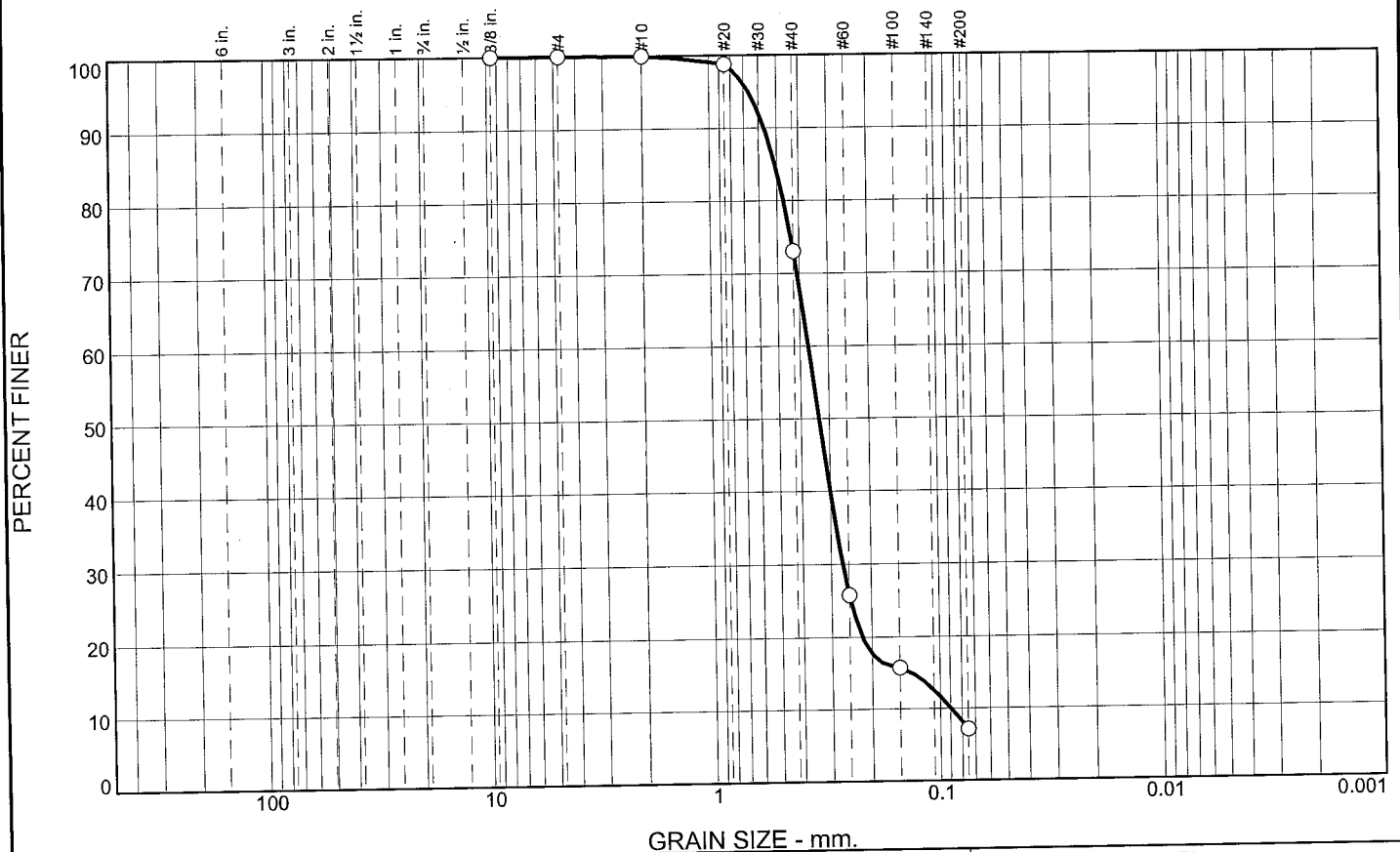
Tested By: J.Maddox

Checked By: R.Byrd

Boring Designation BI-PB-102-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-102-10		LOCATION COORDINATES E = 1,134,927 N = 252,813		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 31 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 08-03-10		COMPLETED 08-03-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -31.2 Ft.			
8. TOTAL DEPTH OF BORING 20.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-31.2	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, lt. gray (SP)	A	Classification: SP-SM Color: 2.5Y 5/2-grayish brown D50: 0.3327 mm % Fines: 7.1		
				B	Classification: SP Color: 2.5Y 6/2-light brownish gray D50: 0.3295 mm % Fines: 3.1		
				C	Classification: SP-SM Color: 2.5Y 6/2-light brownish gray D50: 0.2562 mm % Fines: 7.3		
-42.2	11.0		CLAY, fat, dark gray (CH)	NS			
-51.2	20.0						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	26.9	65.9	7.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	98.7		
#40	73.0		
#60	25.7		
#100	15.7		
#200	7.1		

* (no specification provided)

Material Description
SAND, (SP-SM), medium to fine grained

Atterberg Limits
 PL= LL= PI=
Coefficients
 D₉₀= 0.5679 D₈₅= 0.5092 D₆₀= 0.3681
 D₅₀= 0.3327 D₃₀= 0.2664 D₁₅= 0.1341
 D₁₀= 0.0895 C_u= 4.11 C_c= 2.15

Classification
 USCS= SP-SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-PB-102-10A
 Sample Number: TE Lab ID: 4622.10

Depth: 0.0 - 4.0 (ft.)

Date: 8/15/10

Thompson Engineering

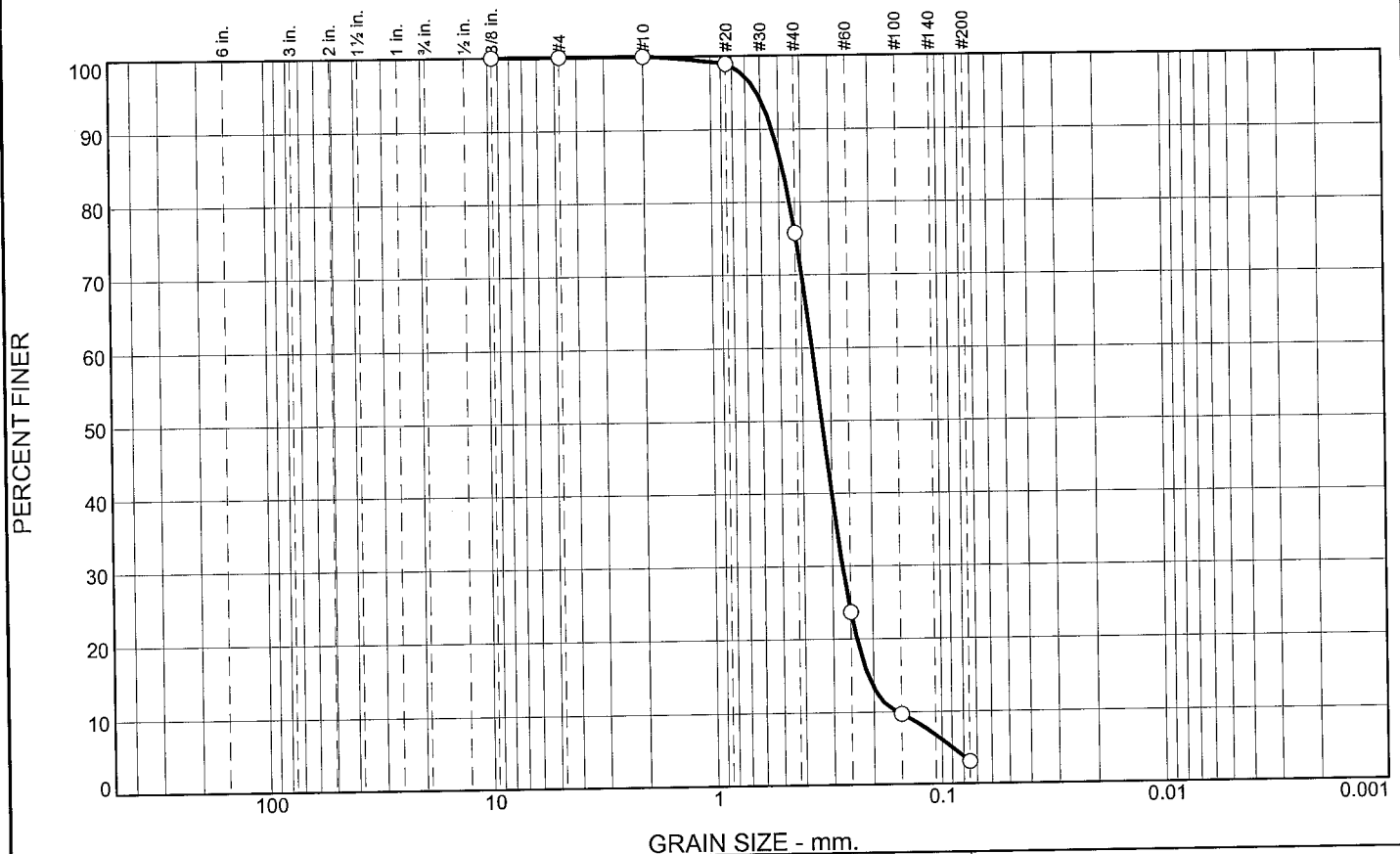
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 **Report No.**

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	24.2	72.7	3.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	98.9		
#40	75.8		
#60	23.6		
#100	9.7		
#200	3.1		

* (no specification provided)

Material Description
SAND, (SP), medium to fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.5342 D₈₅= 0.4841 D₆₀= 0.3614
 D₅₀= 0.3295 D₃₀= 0.2707 D₁₅= 0.2112
 D₁₀= 0.1559 C_u= 2.32 C_c= 1.30

Classification
 USCS= SP AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-PB-102-10B
 Sample Number: TE Lab ID: 4622.11

Depth: 4.0 - 8.0 (ft.)

Date: 8/15/10

Thompson Engineering

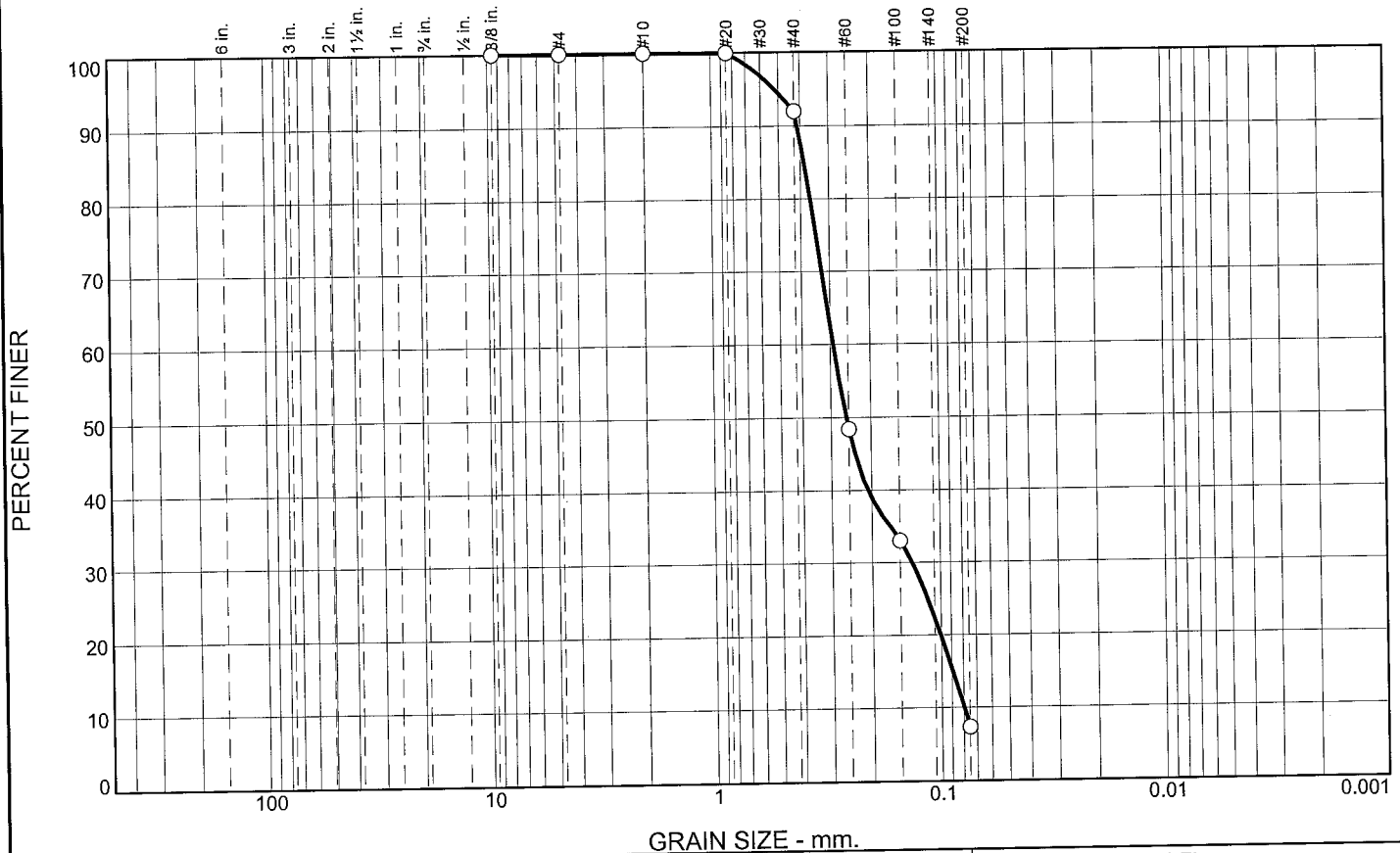
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 **Report No.**

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	8.0	84.7	7.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	92.0		
#60	48.4		
#100	33.0		
#200	7.3		

* (no specification provided)

Material Description
SAND, (SP-SM), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.4123 D₈₅= 0.3854 D₆₀= 0.2909
 D₅₀= 0.2562 D₃₀= 0.1333 D₁₅= 0.0892
 D₁₀= 0.0796 C_u= 3.65 C_c= 0.77

Classification
 USCS= SP-SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-PB-102-10C
 Sample Number: TE Lab ID: 4622.12

Depth: 8.0 - 11.0 (ft.)

Date: 8/15/10

Thompson Engineering


Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009 **Report No.**

Tested By: R.Martin

Checked By: R.Byrd

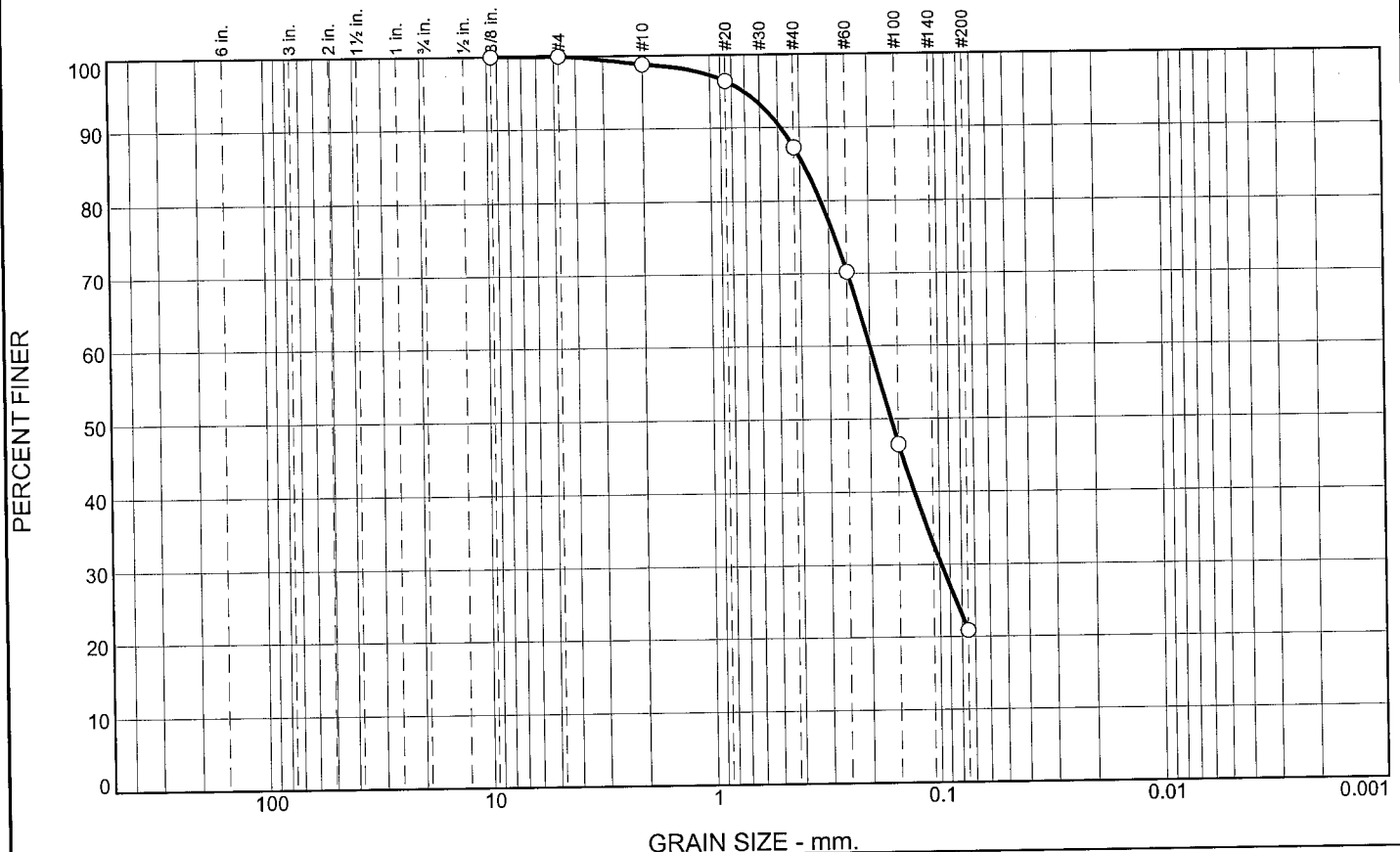
Boring Designation BI-PB-103-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-103-10		LOCATION COORDINATES E = 1,128,625 N = 250,343		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 0 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 33 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING		STARTED 08-04-10 COMPLETED 08-04-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -32.4 Ft.			
8. TOTAL DEPTH OF BORING 19.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-32.4	0.0						
			CLAY, fat, trace of shell fragments in upper 1 ft., dark gray (CH)	NS			
-51.4	19.0						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Boring Designation BI-PB-104-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-104-10		LOCATION COORDINATES E = 1,130,296 N = 251,226		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 33 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 08-04-10		STARTED 08-04-10 COMPLETED 08-04-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -32.6 Ft.			
8. TOTAL DEPTH OF BORING 20.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-32.6	0.0						
-34.6	2.0		CLAY, fat, trace fine-grained sand-sized quartz, trace shell fragments, dark gray (CH)	NS			
			SAND, poorly-graded, mostly medium-grained sand-sized quartz, dark brown (SP)	A	Classification: SM Color: 2.5Y 4/2-dark grayish brown D50: 0.1621 mm % Fines: 20.8		
			At El. -36.6 Ft., mostly quartz, trace silt, lt. gray	B	Classification: SM Color: 2.5Y 3/2-very dark grayish brown D50: 0.1077 mm % Fines: 37.5		
-40.6	8.0						
			CLAY, fat, trace fine-grained sand-sized quartz, gray (CH)	NS			
-48.6	16.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, gray (SP)				
-51.6	19.0						
-52.6	20.0		CLAY, fat, gray (CH)				
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	1.2	11.5	66.5	20.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	98.8		
#20	96.4		
#40	87.3		
#60	70.2		
#100	46.5		
#200	20.8		

* (no specification provided)

Material Description

CLAYEY SAND, (SC), medium to fine grained, with clay pockets

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.4856 D₈₅= 0.3867 D₆₀= 0.1999
D₅₀= 0.1621 D₃₀= 0.0983 D₁₅=
D₁₀= C_u= C_c=

Classification

USCS= SC AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-104-10A
Sample Number: TE Lab ID: 4622.13

Depth: 2.0 - 5.0 (ft.)

Date: 8/15/10

Thompson Engineering
Mobile, Alabama

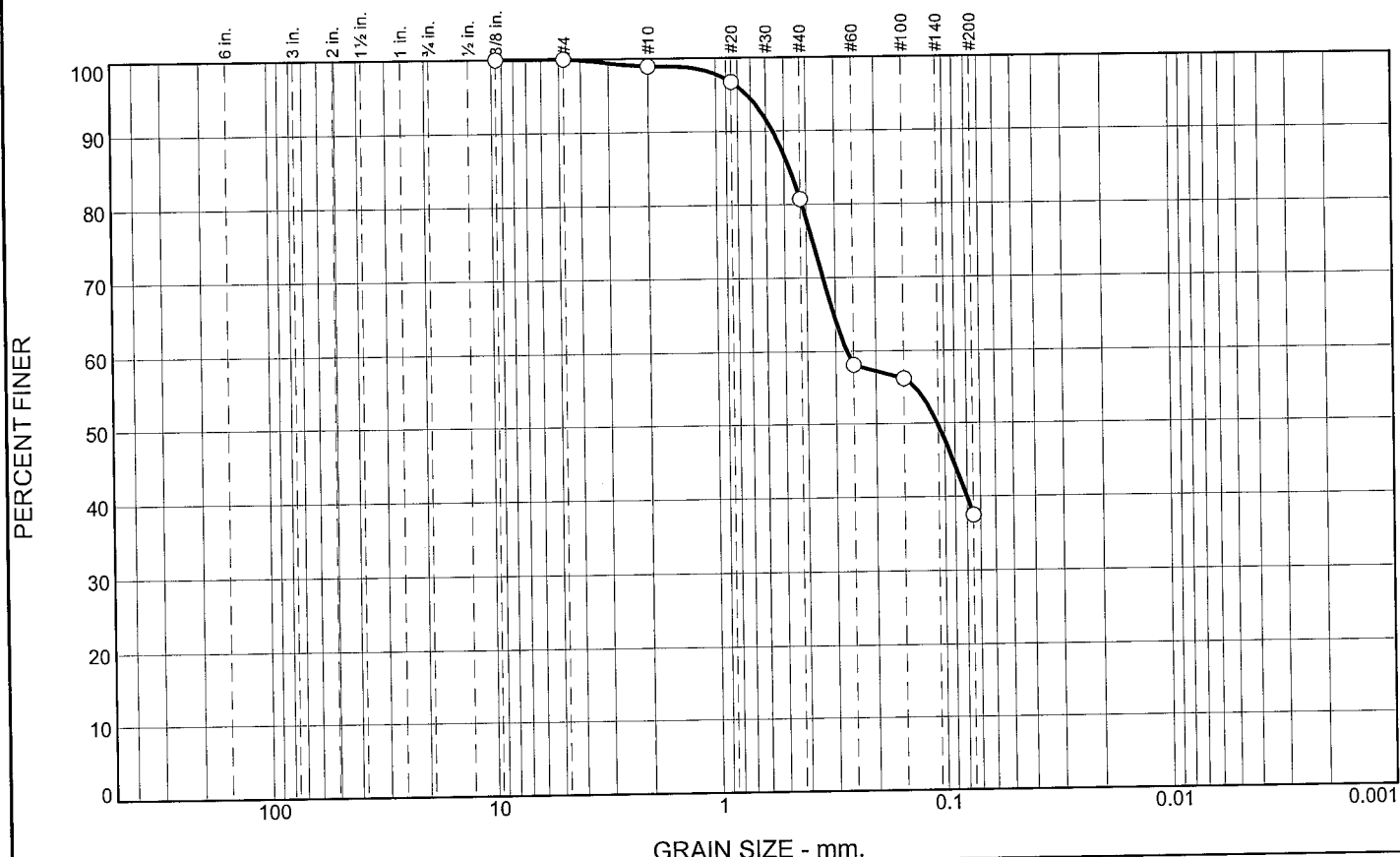
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Report No.

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	1.1	18.2	43.2	37.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	98.9		
#20	96.7		
#40	80.7		
#60	58.1		
#100	56.2		
#200	37.5		

* (no specification provided)

Material Description
CLAYEY SAND, (SC), medium to fine grained, with trace clay pockets

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.5605 D₈₅= 0.4746 D₆₀= 0.2682
 D₅₀= 0.1077 D₃₀= D₁₅=
 D₁₀= C_u= C_c=

Classification
 USCS= SC AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-PB-104-10B
 Sample Number: TE Lab ID: 4622.14

Depth: 5.0 - 8.0 (ft.)

Date: 8/15/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Report No.

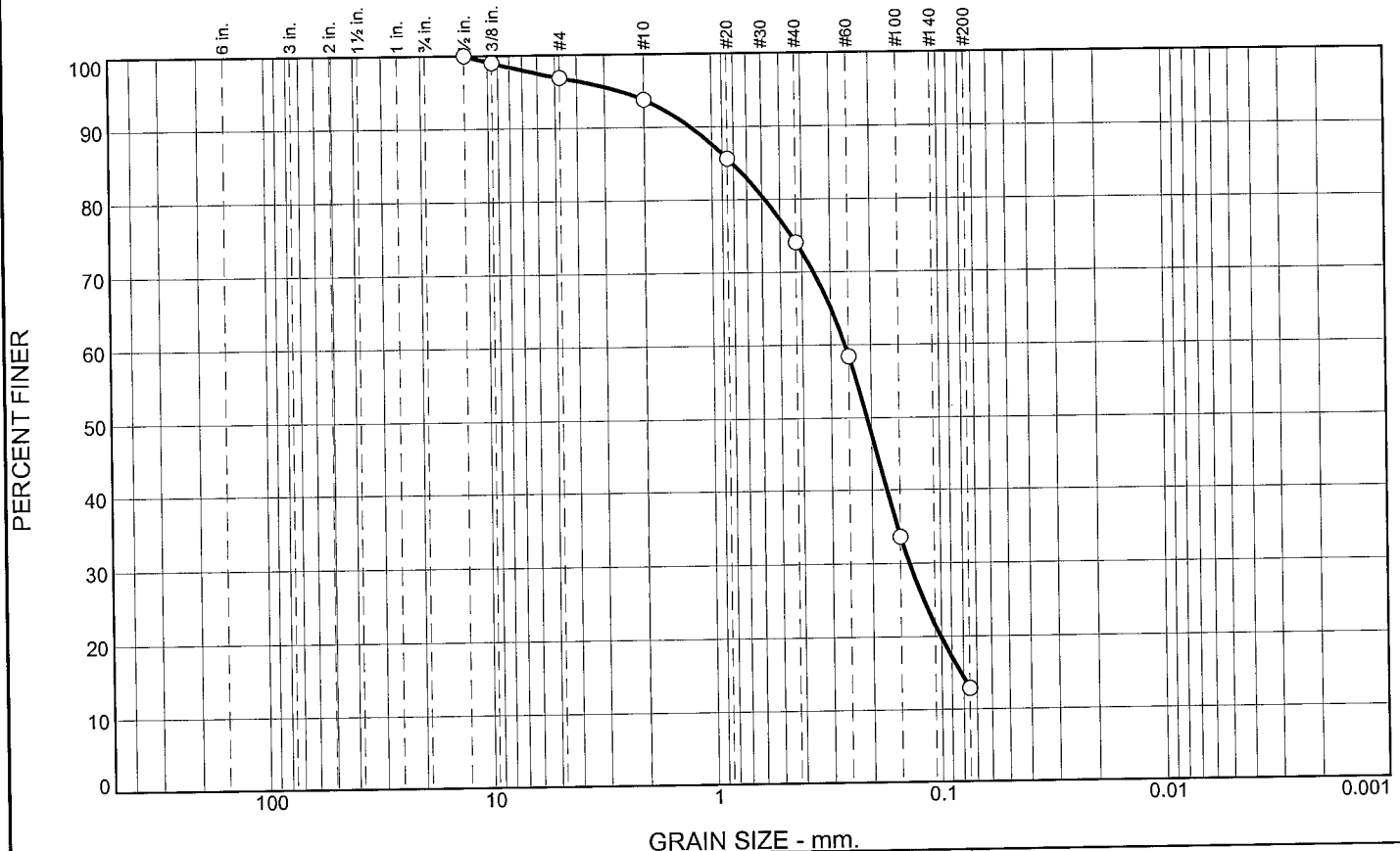
Tested By: R.Martin

Checked By: R.Byrd

Boring Designation BI-PB-105-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-105-10		LOCATION COORDINATES E = 1,131,730 N = 251,312		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 31 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 08-04-10		COMPLETED 08-04-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -31.5 Ft.			
8. TOTAL DEPTH OF BORING 18.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-31.5	0.0		SAND, poorly-graded, dark gray (SP)	A	Classification: SM Color: 2.5Y 6/1-gray D50: 0.2091 mm % Fines: 12.8		
				B	Classification: SM Color: 2.5Y 5/2-grayish brown D50: 0.1917 mm % Fines: 23		
-39.5	8.0		CLAY, fat, dark gray (CH)	NS			
-49.5	18.0		NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	3.1	3.1	19.8	61.2	12.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.500	100.0		
.375	99.0		
#4	96.9		
#10	93.8		
#20	85.6		
#40	74.0		
#60	58.4		
#100	33.6		
#200	12.8		

* (no specification provided)

Material Description
SILTY SAND, (SM), medium to fine grained, trace shell and CLAY pockets

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 1.2465 D₈₅= 0.8129 D₆₀= 0.2599
 D₅₀= 0.2091 D₃₀= 0.1374 D₁₅= 0.0823
 D₁₀= C_u= C_c=

Classification
 USCS= SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-PB-105-10A
 Sample Number: TE Lab ID: 4622.15

Depth: 0.0 - 4.0 (ft.)

Date: 8/15/10

Thompson Engineering
Mobile, Alabama

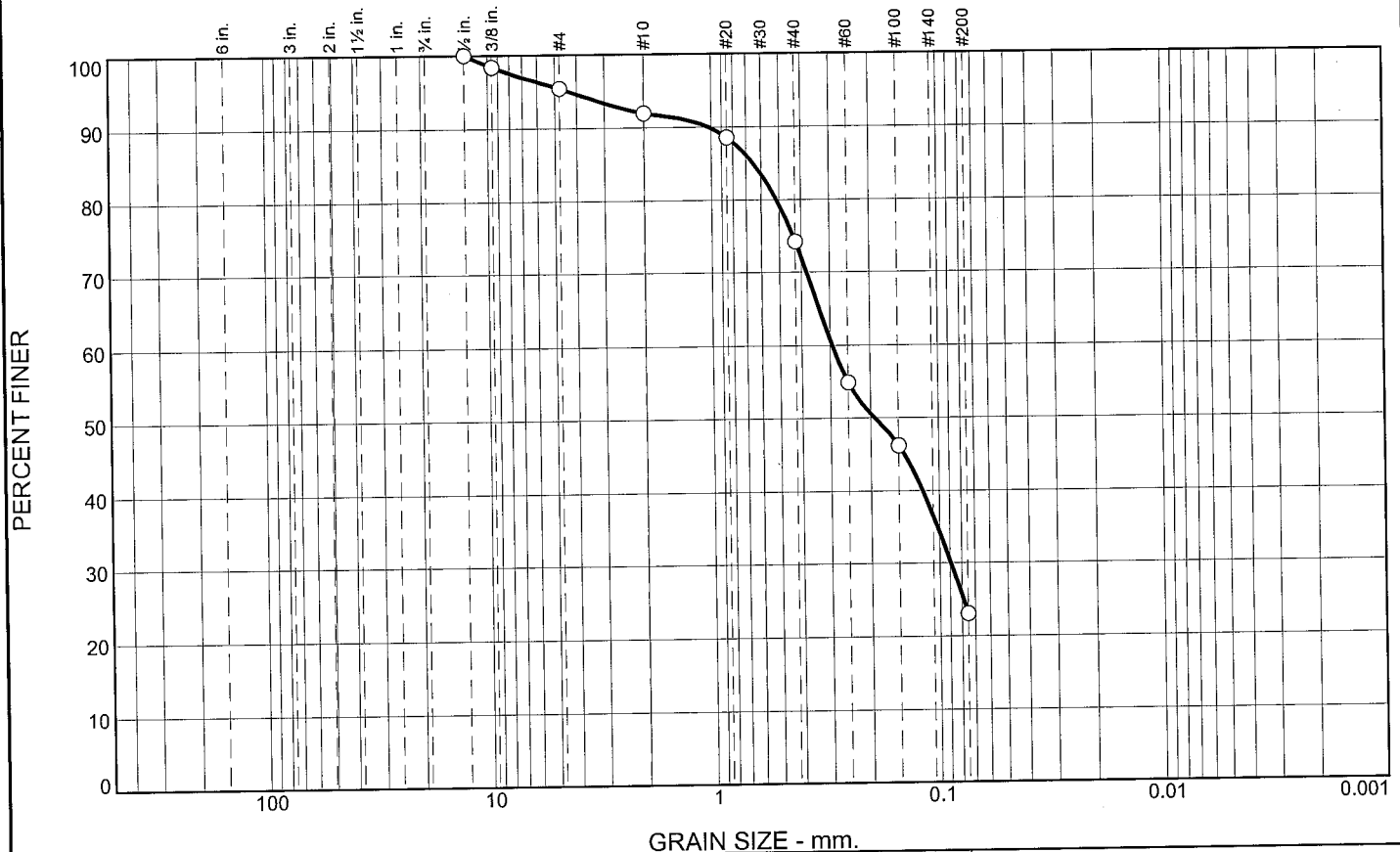
Client: US Army Corps of Engineers
 Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
 Project No: 10-2123-0009

Report No.

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	4.6	3.5	17.7	51.2	23.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.500	100.0		
.375	98.4		
#4	95.4		
#10	91.9		
#20	88.6		
#40	74.2		
#60	54.9		
#100	46.2		
#200	23.0		

* (no specification provided)

Material Description
CLAYEY SAND, (SC), medium to fine grained, with trace shell

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 1.0238 D₈₅= 0.6492 D₆₀= 0.2938
 D₅₀= 0.1917 D₃₀= 0.0894 D₁₅=
 D₁₀= C_u= C_c=

Classification
 USCS= SC AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-PB-105-10B
 Sample Number: TE Lab ID: 4622.16

Depth: 4.0 - 8.0 (ft.)

Date: 8/15/10


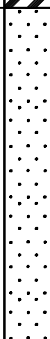
Thompson Engineering

Mobile, Alabama

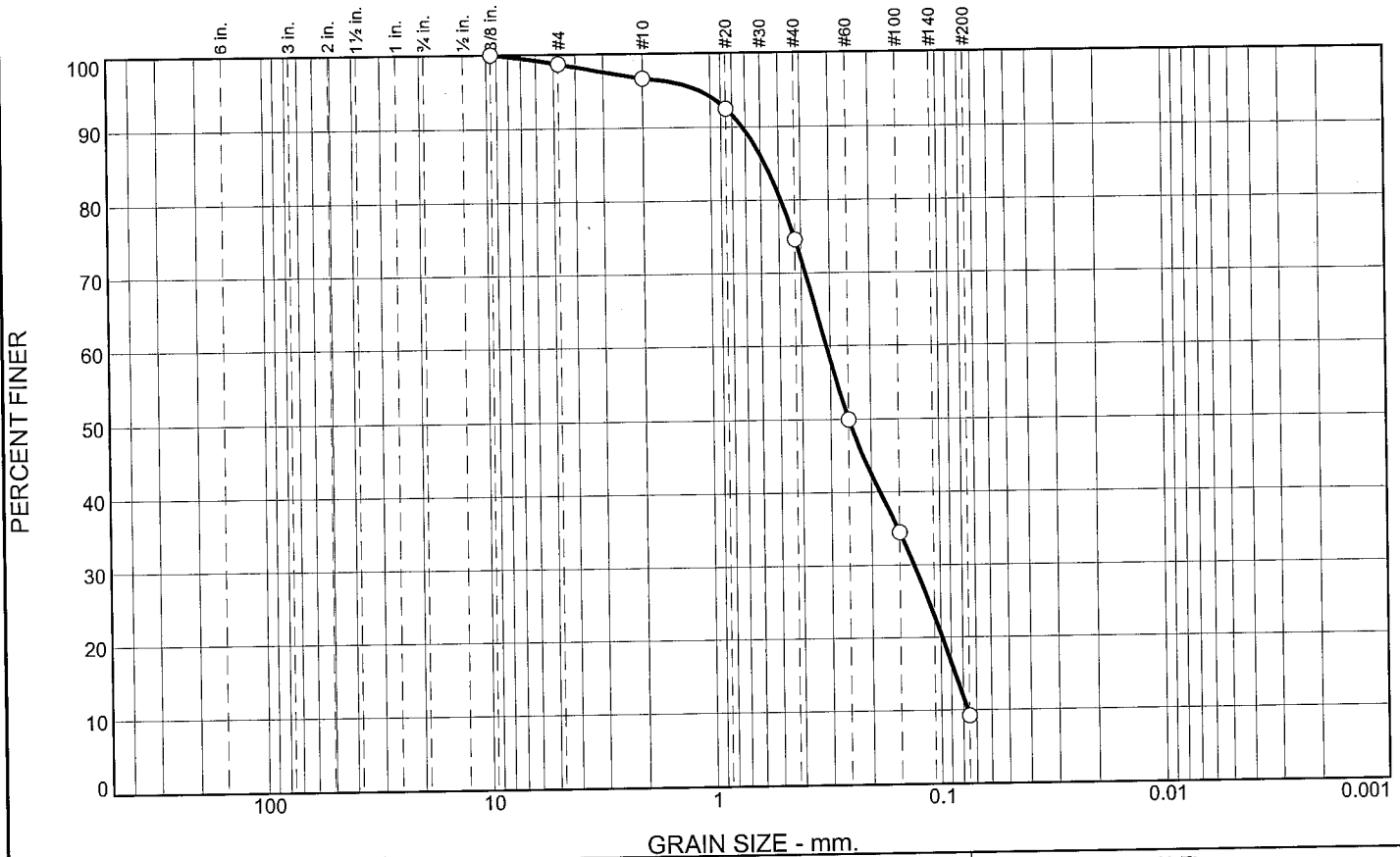
Client: US Army Corps of Engineers
 Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
 Project No: 10-2123-0009 Report No.

Tested By: R.Martin Checked By: R.Byrd

Boring Designation BI-PB-106-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-106-10		LOCATION COORDINATES E = 1,133,338 N = 251,293		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 33 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 08-04-10		STARTED 08-04-10 COMPLETED 08-04-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -33.5 Ft.			
8. TOTAL DEPTH OF BORING 9.5 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-33.5	0.0						
-35.5	2.0		CLAY, fat, dark gray (CH)	A	Classification: SP-SM Color: 2.5Y 4/2-dark grayish brown D50: 0.2503 mm % Fines: 9.2		
			SAND, poorly-graded, mostly medium-grained sand-sized quartz, dark brown (SP) At El. -37.5 Ft., trace silt, gray				
-43.0	9.5			B	Classification: SM Color: 5Y 5/2-olive gray D50: 0.2584 mm % Fines: 19.3		
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.3	2.0	22.1	65.4	9.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	98.7		
#10	96.7		
#20	92.5		
#40	74.6		
#60	49.9		
#100	34.5		
#200	9.2		

* (no specification provided)

Material Description
SAND, (SP-SM), medium to fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.7219 D₈₅= 0.5758 D₆₀= 0.3124
 D₅₀= 0.2503 D₃₀= 0.1302 D₁₅= 0.0867
 D₁₀= 0.0765 C_u= 4.09 C_c= 0.71

Classification
 USCS= SP-SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-PB-106-10A
 Sample Number: TE Lab ID: 4622.17

Depth: 2.0 - 5.0 (ft.)

Date: 8/15/10

Thompson Engineering
Mobile, Alabama

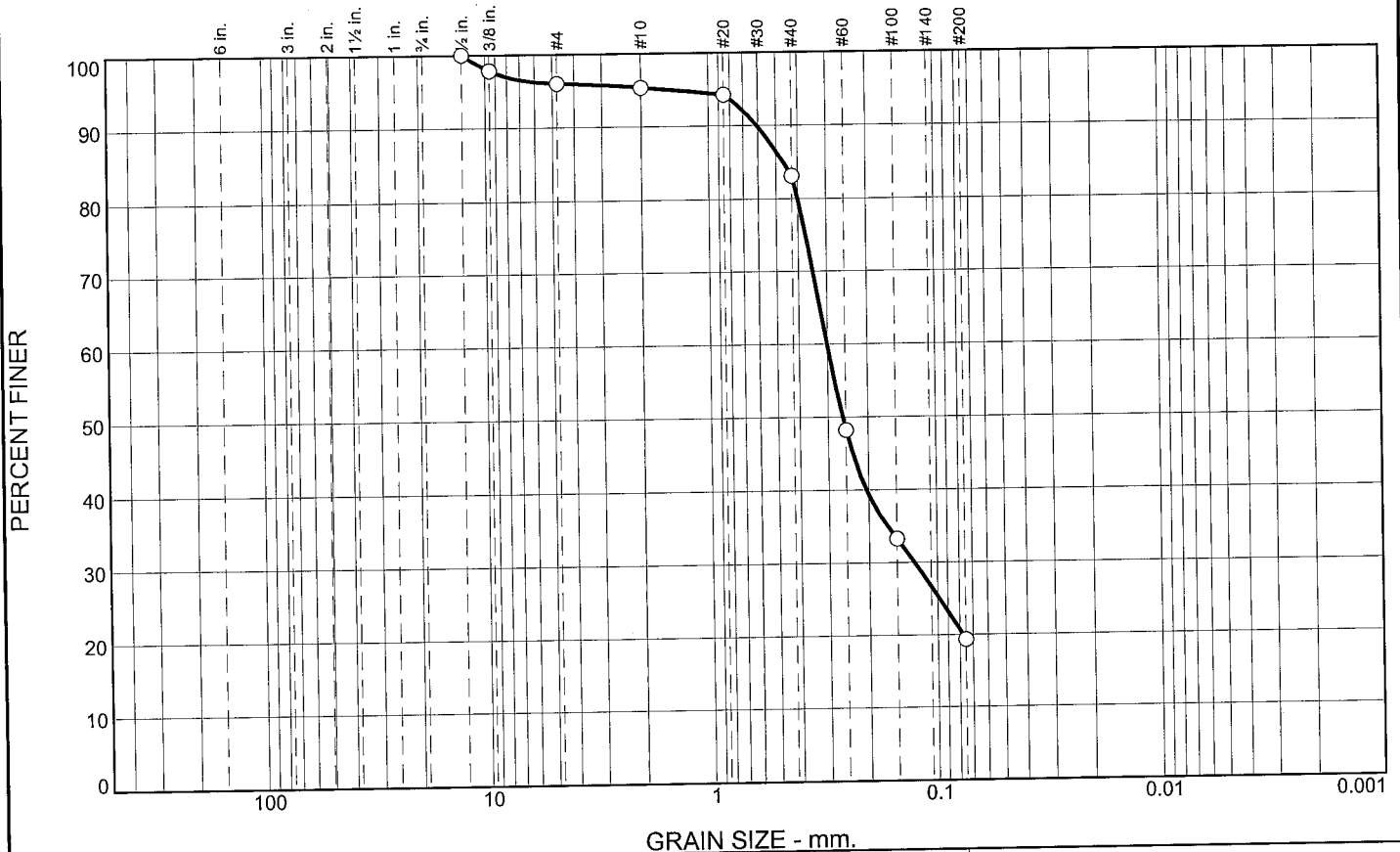
Client: US Army Corps of Engineers
 Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
 Project No: 10-2123-0009

Report No.

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	4.0	0.7	12.2	63.8	19.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.500	100.0		
.375	97.8		
#4	96.0		
#10	95.3		
#20	94.2		
#40	83.1		
#60	48.2		
#100	33.3		
#200	19.3		

* (no specification provided)

Material Description

SILTY SAND, (SM), medium to fine grained, with trace shell and clay pockets

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.6086 D₈₅= 0.4631 D₆₀= 0.3008
D₅₀= 0.2584 D₃₀= 0.1260 D₁₅=
D₁₀= C_u= C_c=

Classification

USCS= SM AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-106-10B
Sample Number: TE Lab ID: 4622.18

Depth: 5.0 - 9.5 (ft.)

Date: 8/15/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Report No.

Tested By: R.Martin

Checked By: R.Byrd

Boring Designation BI-PB-107-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-107-10		LOCATION COORDINATES E = 1,134,885 N = 251,631		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		UNDISTURBED (UD) 0	
6. THICKNESS OF OVERBURDEN N/A				14. WATER DEPTH		32 Ft.	
7. DEPTH DRILLED INTO ROCK N/A				15. DATE BORING		STARTED 08-03-10	
8. TOTAL DEPTH OF BORING 13.5 Ft.				16. ELEVATION TOP OF BORING		COMPLETED 08-03-10	
				17. TOTAL RECOVERY FOR BORING		100%	
				18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-32.3	0.0		CLAY, fat, trace fine-grained sand-sized quartz, dark gray (CH)				
				NS			
-45.8	13.5		NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Boring Designation BI-PB-108-10

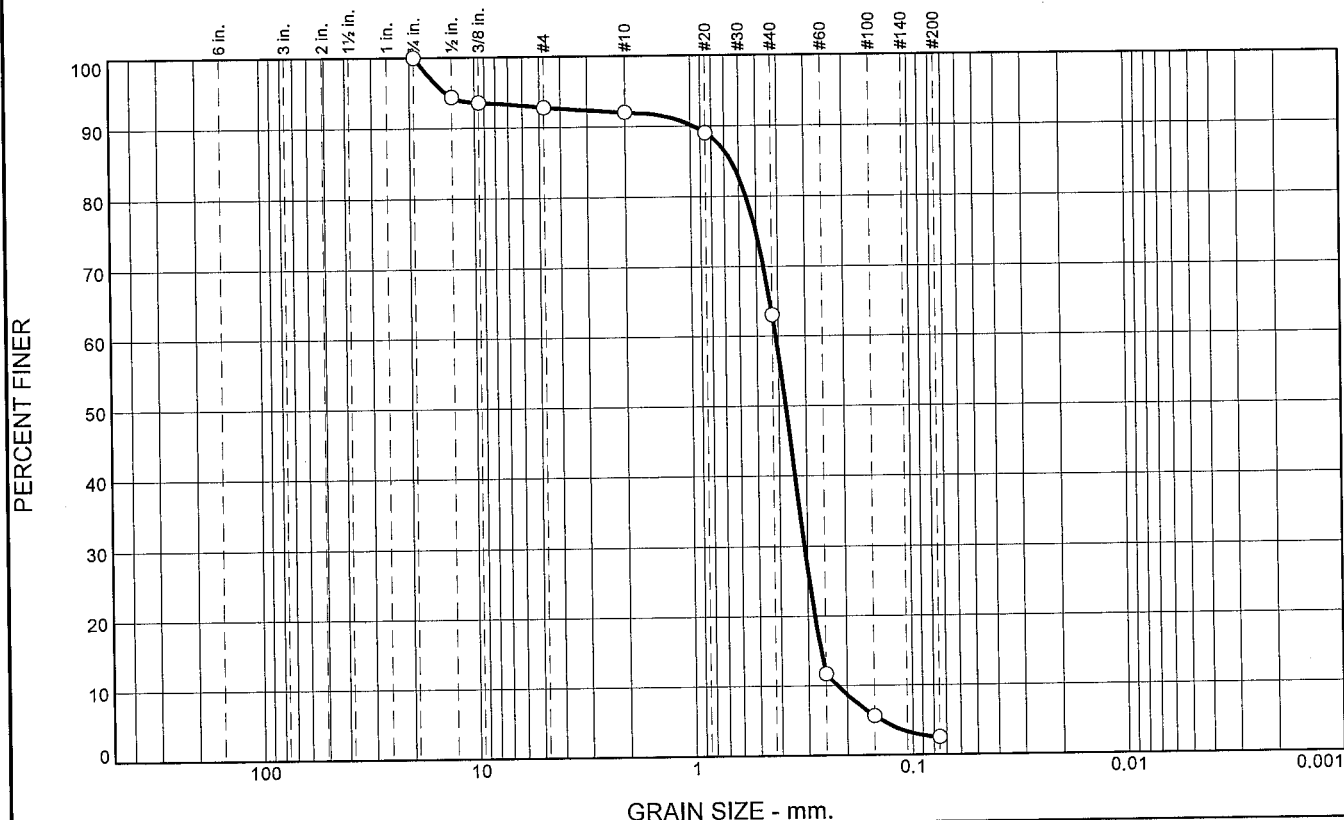
DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-108-10		LOCATION COORDINATES E = 1,143,666 N = 254,989		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 0		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 31 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 07-29-10		STARTED 07-29-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -30.6 Ft.			
8. TOTAL DEPTH OF BORING 16.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-30.6	0.0		CLAY, fat, black/gray (CH) At El. -31.6 Ft., dark gray	NS			
-42.6	12.0						
-46.6	16.0		SAND, poorly-graded, dark gray (SP)				
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Boring Designation BI-PB-109-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-109-10		LOCATION COORDINATES E = 1,144,575 N = 254,430		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		14. WATER DEPTH 32 Ft.	
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 07-29-10		COMPLETED 07-29-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -31.9 Ft.		17. TOTAL RECOVERY FOR BORING 100%	
8. TOTAL DEPTH OF BORING 16.5 Ft.				18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist			

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-31.9	0.0				
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace shell, lt. gray (SP)	A	Classification: SP Color: 5Y 7/2-light gray D50: 0.3721 mm % Fines: 2.5
-38.9	7.0		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, lt. gray (SP)	B	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.334 mm % Fines: 2.4
			At El. -44.9 Ft., trace silt, dark gray	C	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.3316 mm % Fines: 2.8
-48.4	16.5			NS	
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.		

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	7.2	0.8	28.9	60.6	2.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.750	100.0		
.500	94.4		
.375	93.6		
#4	92.8		
#10	92.0		
#20	89.0		
#40	63.1		
#60	11.7		
#100	5.6		
#200	2.5		

* (no specification provided)

Material Description
SAND, (SP), medium to fine grained, with trace shell

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.9643 D₈₅= 0.6495 D₆₀= 0.4109
 D₅₀= 0.3721 D₃₀= 0.3092 D₁₅= 0.2624
 D₁₀= 0.2217 C_u= 1.85 C_c= 1.05

Classification
 USCS= SP AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-PB-109-10A
 Sample Number: TE Lab ID: 4612.20

Depth: 0.0 - 5.0 (ft.)

Date: 8/7/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project

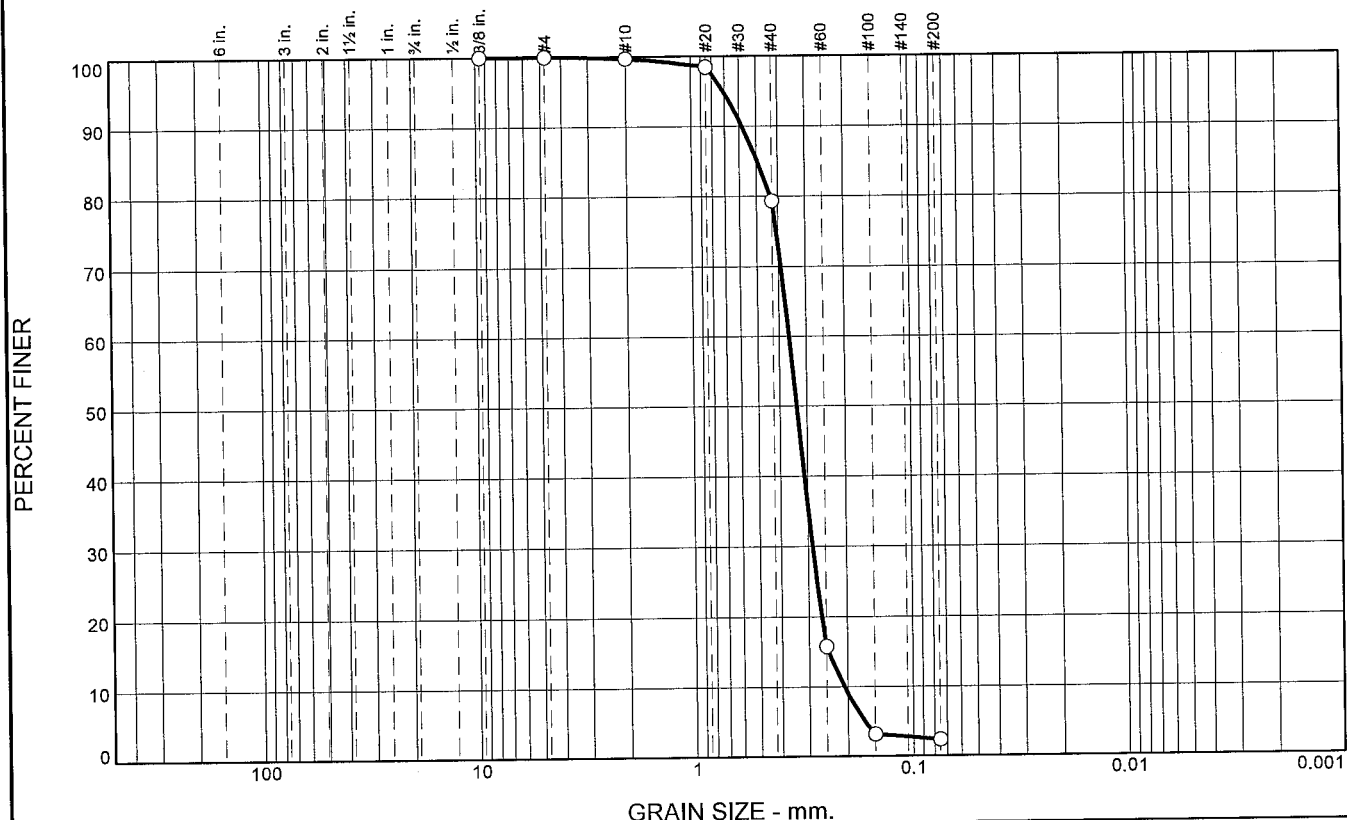
Project No: 10-2123-0009

Report No.

Tested By: J.Maddox

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.3	20.4	76.9	2.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.7		
#20	98.4		
#40	79.3		
#60	15.8		
#100	3.2		
#200	2.4		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.5823 D₈₅= 0.4964 D₆₀= 0.3601
D₅₀= 0.3340 D₃₀= 0.2864 D₁₅= 0.2442
D₁₀= 0.2074 C_u= 1.74 C_c= 1.10

Classification

USCS= SP AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-109-10B
Sample Number: TE Lab ID: 4612.21

Depth: 5.0 - 10.0 (ft.)

Date: 8/7/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Report No.

Tested By: J.Maddox

Checked By: R.Byrd

PERCENT FINER



SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.500	100.0		
.375	99.0		
#4	99.0		
#10	98.9		
#20	98.1		
#40	79.9		
#60	17.5		
#100	6.4		
#200	2.8		

CADD CODE = CH10D965


L-259

Boring Designation BI-PB-110-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-110-10		LOCATION COORDINATES E = 1,143,696 N = 253,855		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		UNDISTURBED (UD) 0	
6. THICKNESS OF OVERBURDEN N/A				14. WATER DEPTH		31 Ft.	
7. DEPTH DRILLED INTO ROCK N/A				15. DATE BORING		STARTED 07-30-10	
8. TOTAL DEPTH OF BORING 12.0 Ft.				16. ELEVATION TOP OF BORING		COMPLETED 07-30-10	
				17. TOTAL RECOVERY FOR BORING		100%	
				18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-31.1	0.0		CLAY, fat, trace shell fragments, dark gray (CH)				
				NS			
-43.1	12.0		NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Boring Designation BI-PB-111-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
				10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
2. BORING DESIGNATION BI-PB-111-10		LOCATION COORDINATES E = 1,142,901 N = 254,408		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		12. TOTAL SAMPLES		DISTURBED 0	UNDISTURBED (UD) 0
4. NAME OF DRILLER Construction Solutions International, Inc.				13. TOTAL NUMBER CORE BOXES			
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		BEARING		14. WATER DEPTH 31 Ft.	
				15. DATE BORING		STARTED 07-29-10	COMPLETED 07-29-10
6. THICKNESS OF OVERBURDEN		N/A		16. ELEVATION TOP OF BORING		-30.6 Ft.	
7. DEPTH DRILLED INTO ROCK		N/A		17. TOTAL RECOVERY FOR BORING		100%	
8. TOTAL DEPTH OF BORING		20.0 Ft.		18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist			

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-30.6	0.0				
			CLAY, fat, trace shell fragments, trace fine-grained sand-sized quartz, lt. gray (CH) At El. -40.6 Ft., gray	NS	
-50.6	20.0				
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.		

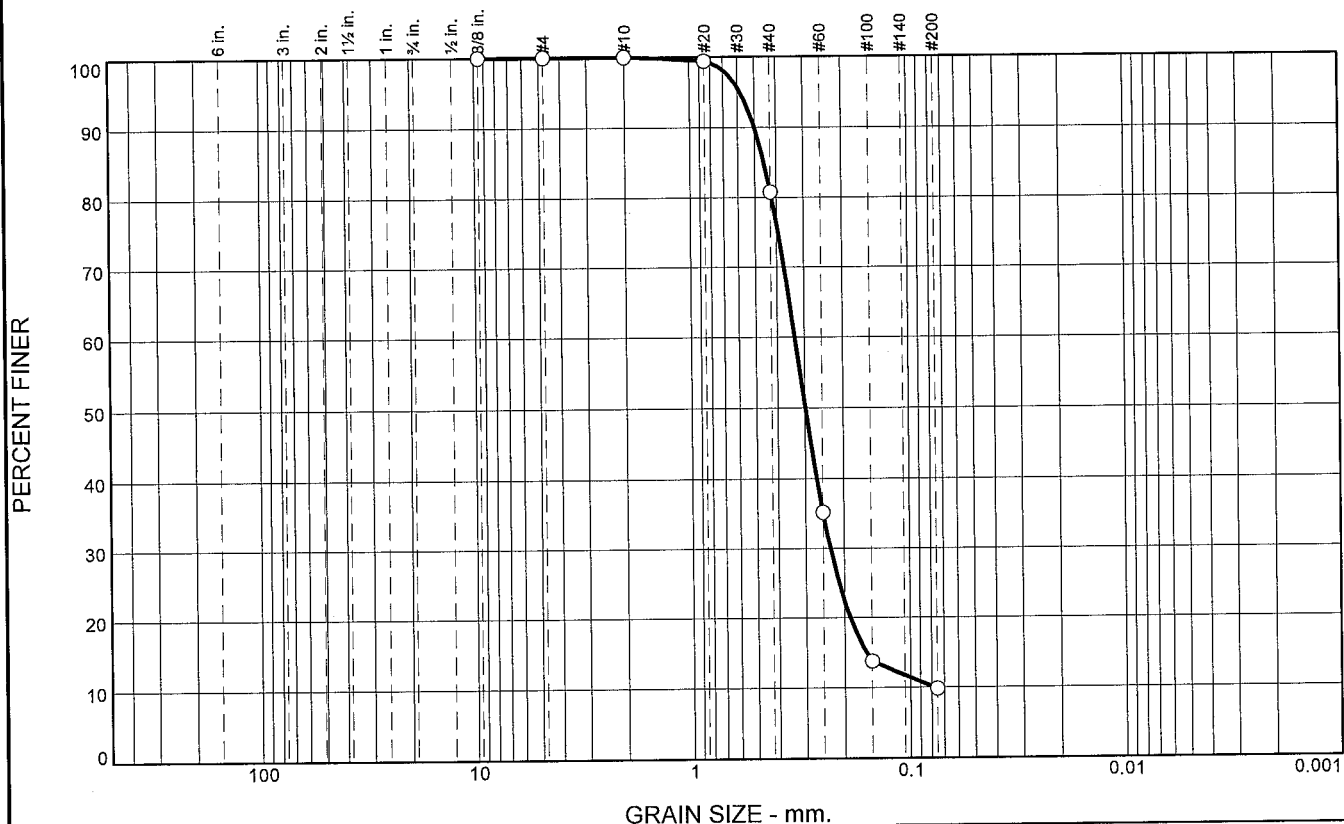
SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.19861° Long = -88.33113°

Boring Designation BI-PB-112-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-112-10		LOCATION COORDINATES E = 1,147,813 N = 255,790		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		14. WATER DEPTH 31 Ft.	
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 07-30-10		STARTED 07-30-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -30.9 Ft.		COMPLETED 07-30-10	
8. TOTAL DEPTH OF BORING 11.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%		18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist	
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-30.9	0.0						
-31.9	1.0		CLAY, fat, black/brown (CH)	NS			
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, lt. gray (SP)	A	Classification: SP-SM Color: 2.5Y 7/1-light gray D50: 0.2982 mm % Fines: 9.8		
				B	Classification: SP-SM Color: 2.5Y 7/2-light gray D50: 0.3341 mm % Fines: 6.2		
				C	Classification: SP-SM Color: 2.5Y 7/2-light gray D50: 0.3282 mm % Fines: 6.6		
-41.9	11.0						
NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.							

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	19.2	71.0	9.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.4		
#40	80.8		
#60	35.2		
#100	13.8		
#200	9.8		

* (no specification provided)

Material Description
SAND, (SP-SM), medium to fine grained

PL= **Atterberg Limits** LL= PI=

Coefficients
D₉₀= 0.5023 D₈₅= 0.4545 D₆₀= 0.3320
D₅₀= 0.2982 D₃₀= 0.2317 D₁₅= 0.1592
D₁₀= 0.0775 C_u= 4.28 C_c= 2.09

Classification
USCS= SP-SM AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-PB-112-10A
Sample Number: TE Lab ID: 4612.57

Depth: 1.0 - 5.0 (ft.)

Date: 8/7/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

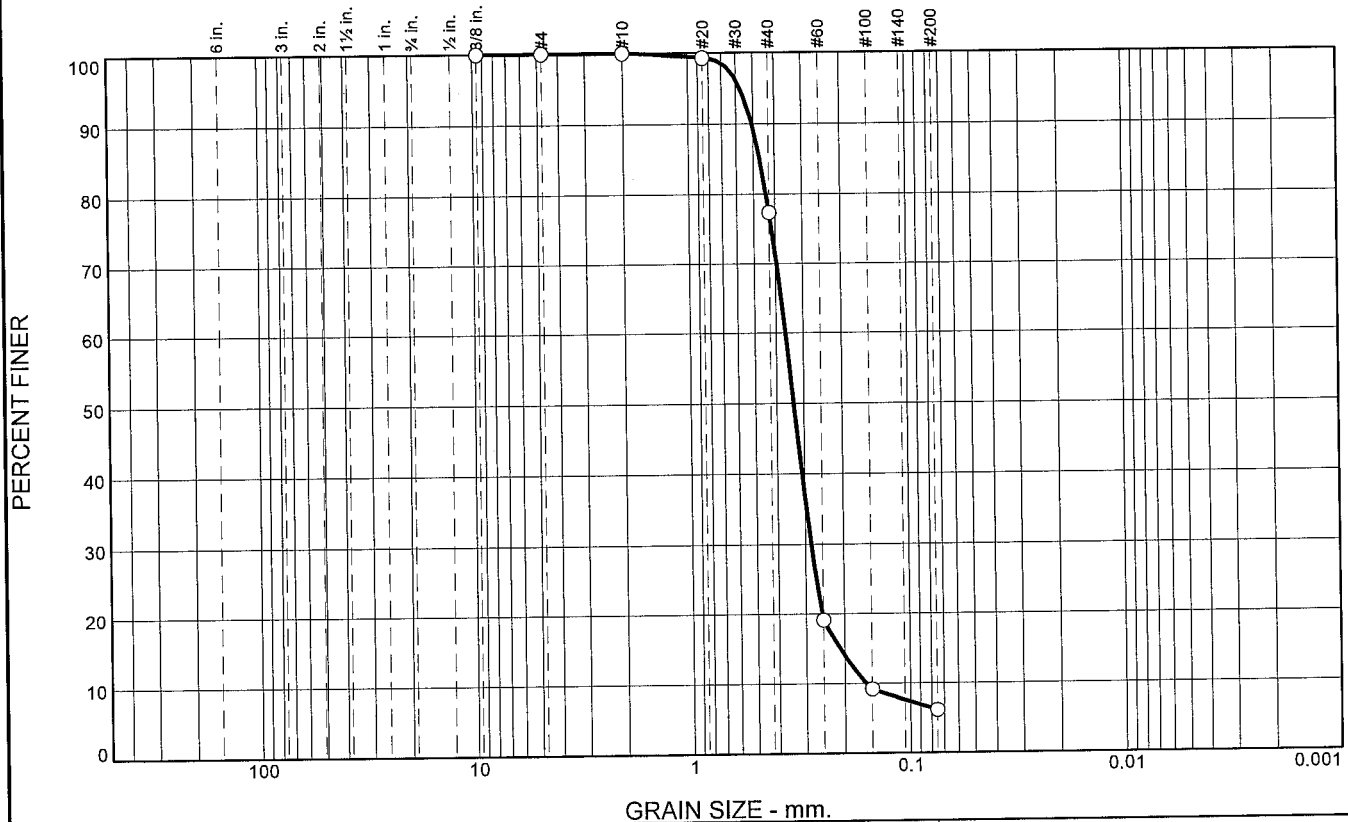
Project No: 10-2123-0009

Report No.

Tested By: J.Maddox

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	22.6	71.2	6.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.3		
#40	77.4		
#60	19.1		
#100	9.2		
#200	6.2		

* (no specification provided)

Material Description
SAND, (SP-SM), medium to fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
 D₉₀= 0.5076 D₈₅= 0.4672 D₆₀= 0.3624
 D₅₀= 0.3341 D₃₀= 0.2817 D₁₅= 0.2102
 D₁₀= 0.1593 C_u= 2.27 C_c= 1.37

Classification
USCS= SP-SM AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-PB-112-10B
Sample Number: TE Lab ID: 4612.58

Depth: 5.0 - 9.0 (ft.)

Date: 8/7/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

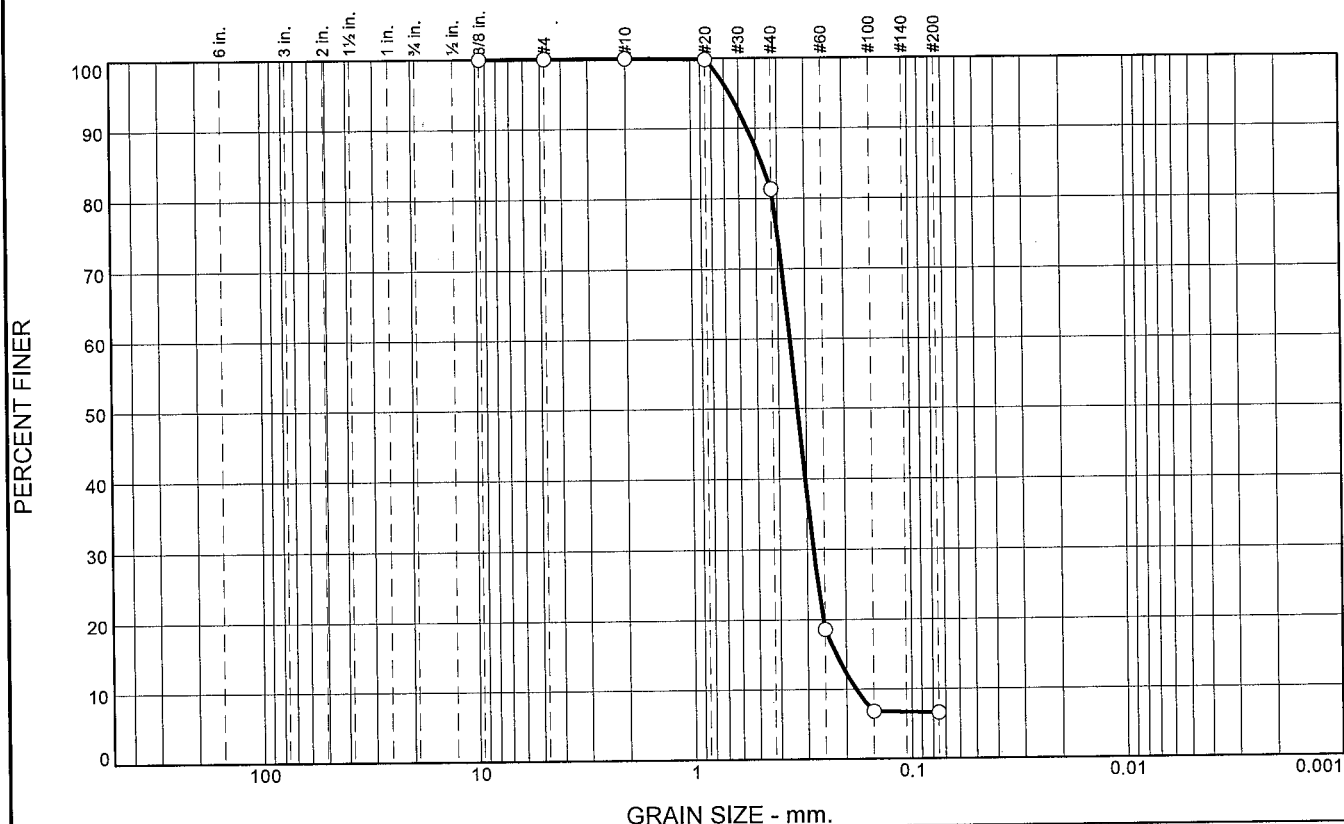
Project No: 10-2123-0009

Report No.

Tested By: J.Maddox

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	18.7	74.7	6.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.8		
#40	81.3		
#60	18.6		
#100	6.8		
#200	6.6		

* (no specification provided)

Material Description

SAND, (SP-SM), medium to fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.5476

D₈₅= 0.4694

D₆₀= 0.3539

D₅₀= 0.3282

D₃₀= 0.2802

D₁₅= 0.2223

D₁₀= 0.1814

C_u= 1.95

C_c= 1.22

Classification

USCS= SP-SM

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-112-10C
Sample Number: TE Lab ID: 4612.59

Depth: 9.0 - 11.0 (ft.)

Date: 8/7/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Report No.

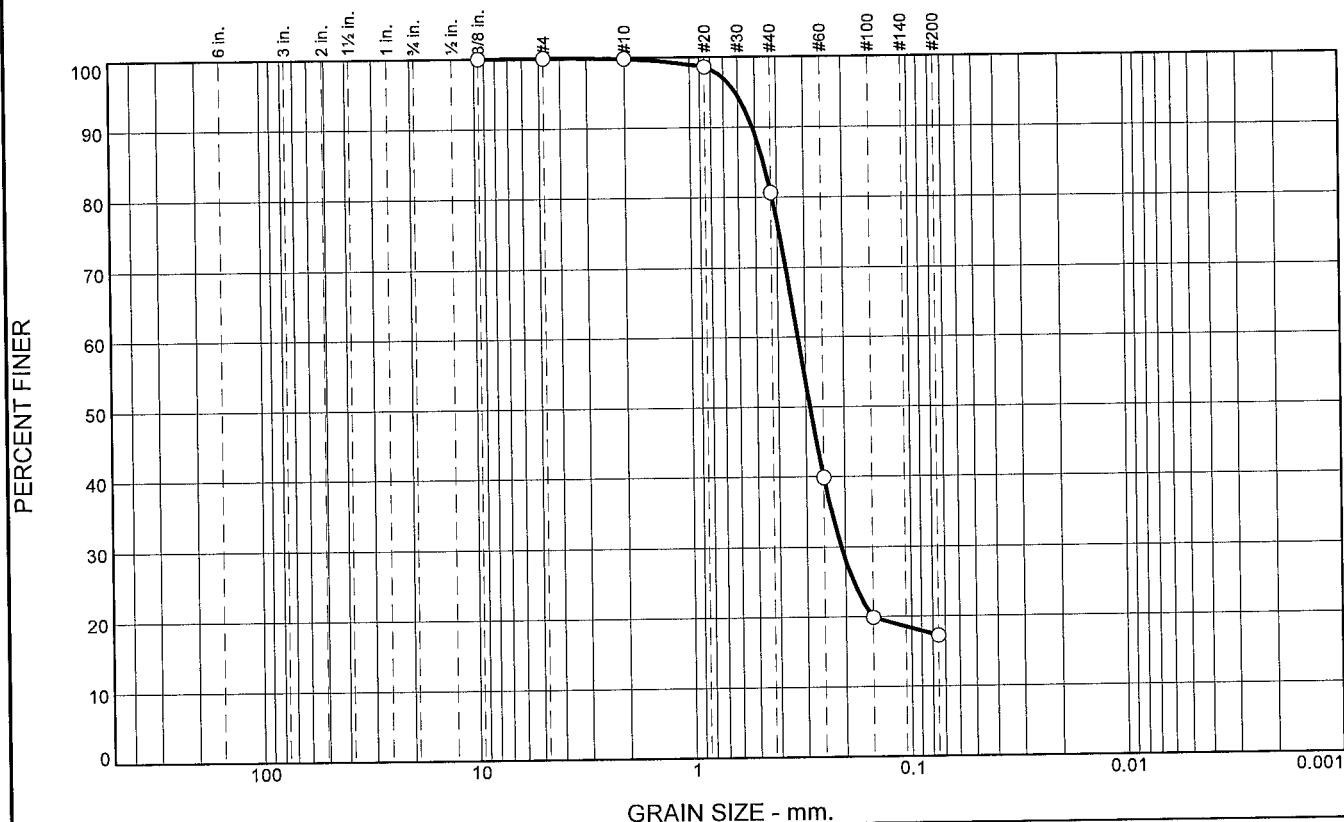
Tested By: J.Maddox

Checked By: R.Byrd

Boring Designation BI-PB-113-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-113-10		LOCATION COORDINATES E = 1,148,125 N = 255,333		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 4		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		14. WATER DEPTH 32 Ft.	
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 07-30-10		STARTED 07-30-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -32.1 Ft.		COMPLETED 07-30-10	
8. TOTAL DEPTH OF BORING 17.5 Ft.				17. TOTAL RECOVERY FOR BORING 100%		18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist	
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-32.1	0.0						
-33.1	1.0		SAND, poorly-graded, dark gray (SP) SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, lt. gray (SP)	A	Classification: SM Color: 2.5Y 3/1-very dark gray D50: 0.2867 mm % Fines: 17.2		
				B	Classification: SM Color: 5Y 5/2-olive gray D50: 0.2881 mm % Fines: 19.4		
				C	Classification: SM Color: 2.5Y 6/1-gray D50: 0.2677 mm % Fines: 20.8		
				D	Classification: SP-SM Color: 2.5Y 6/1-gray D50: 0.3099 mm % Fines: 9.9		
-49.6	17.5						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	19.2	63.4	17.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.8		
#20	98.6		
#40	80.6		
#60	39.9		
#100	19.9		
#200	17.2		

* (no specification provided)

Material Description
SILTY SAND, (SM), medium to fine grained, with clay pockets

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.5144 D₈₅= 0.4591 D₆₀= 0.3238
 D₅₀= 0.2867 D₃₀= 0.2095 D₁₅=
 D₁₀= C_u= C_c=

Classification
 USCS= SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-PB-113-10A
 Sample Number: TE Lab ID: 4612.49

Depth: 0.0 - 5.0 (ft.)

Date: 8/7/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project

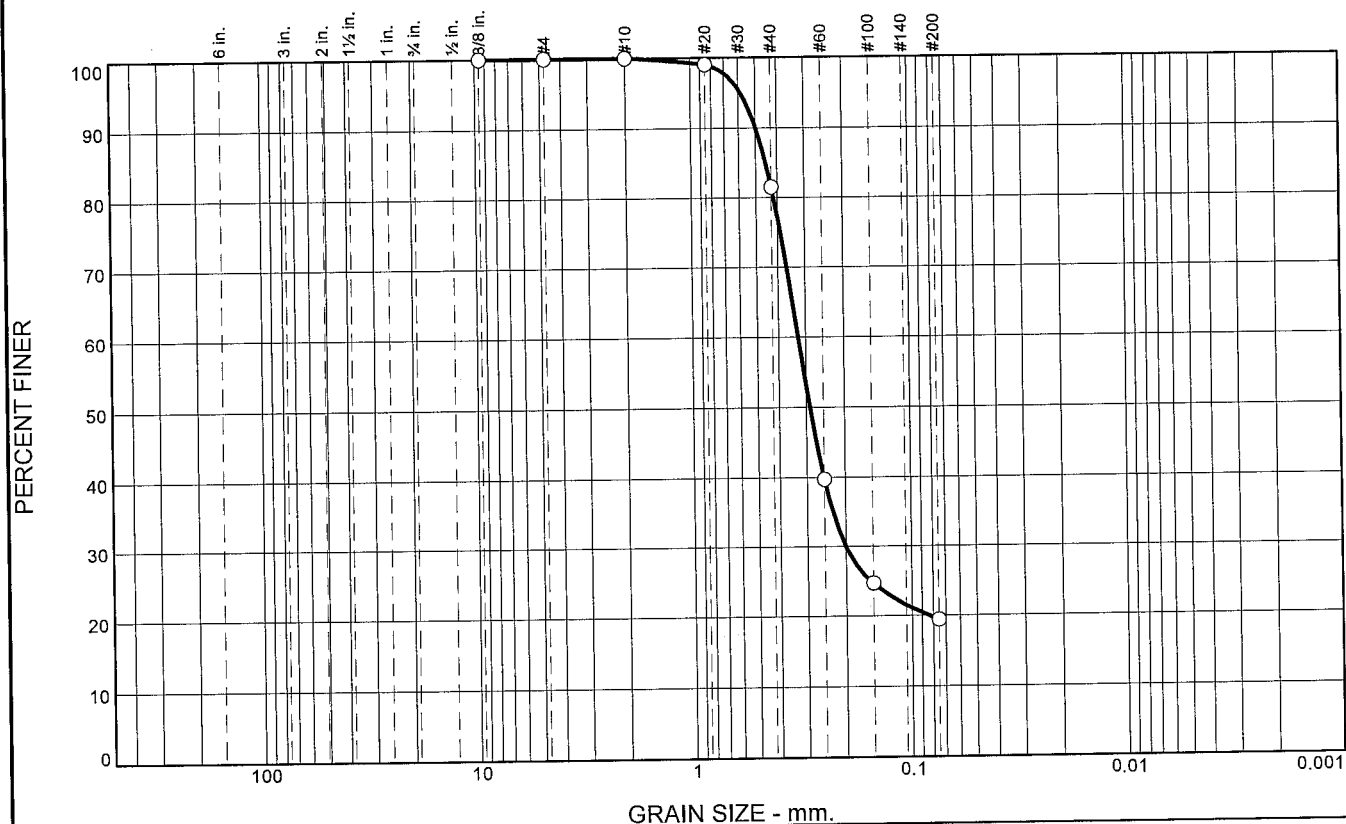
Project No: 10-2123-0009

Report No.

Tested By: J.Maddox

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	18.5	62.1	19.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.0		
#40	81.5		
#60	39.8		
#100	24.6		
#200	19.4		

* (no specification provided)

Material Description
SILTY SAND, (SM), medium to fine grained, with clay pockets

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.4998 D₈₅= 0.4504 D₆₀= 0.3244
 D₅₀= 0.2881 D₃₀= 0.2008 D₁₅=
 D₁₀= C_u= C_c=

Classification
 USCS= SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-PB-113-10B
 Sample Number: TE Lab ID: 4612.50

Depth: 5.0 - 10.0 (ft.)

Date: 8/7/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project

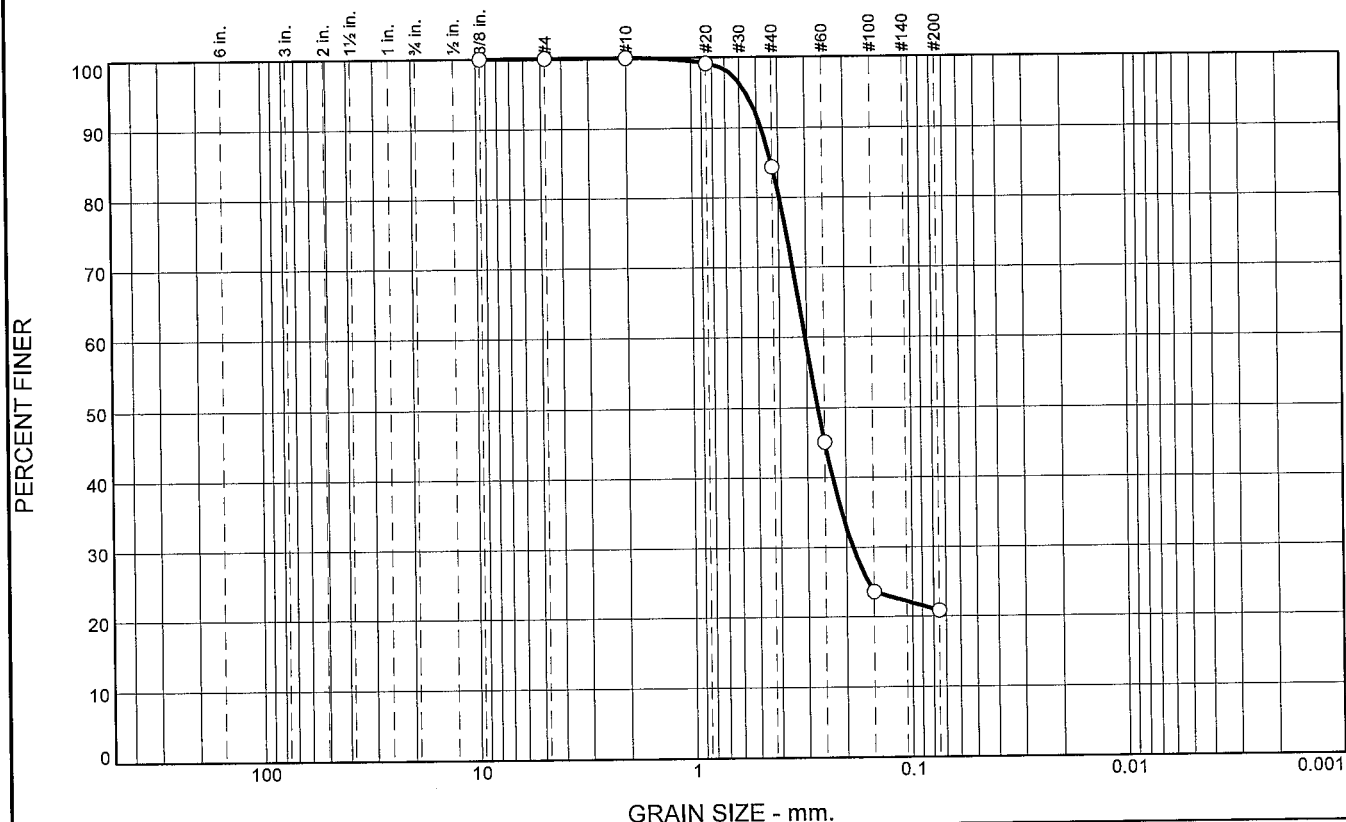
Project No: 10-2123-0009

Report No.

Tested By: J.Maddox

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	15.7	63.5	20.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.1		
#40	84.3		
#60	45.1		
#100	23.6		
#200	20.8		

* (no specification provided)

Material Description
SILTY SAND, (SM), medium to fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.4773 D₈₅= 0.4300 D₆₀= 0.3045
 D₅₀= 0.2677 D₃₀= 0.1872 D₁₅=
 D₁₀= C_u= C_c=

Classification
 USCS= SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-PB-113-10C
 Sample Number: TE Lab ID: 4612.51

Depth: 10.0 - 15.0 (ft.)

Date: 8/7/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project

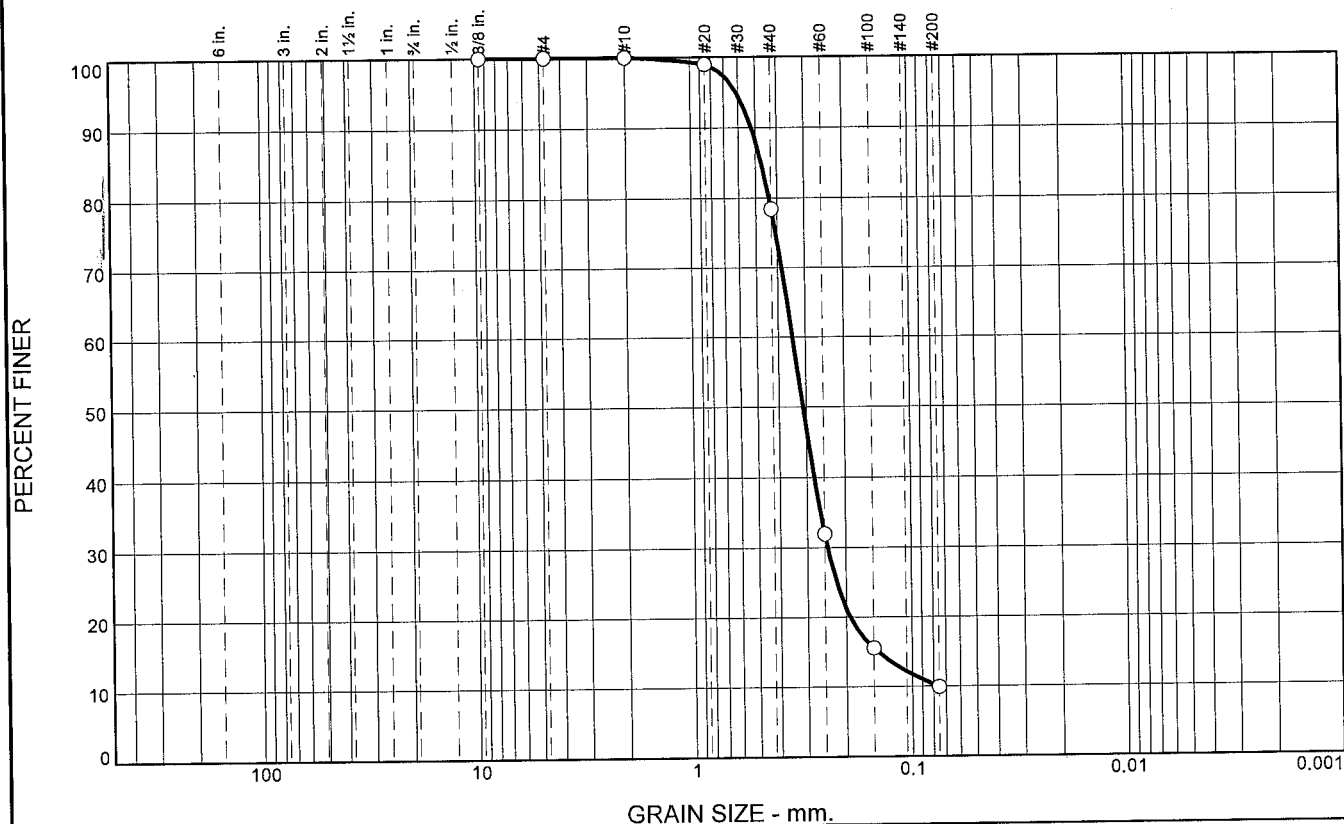
Project No: 10-2123-0009

Report No.

Tested By: J.Maddox

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	21.6	68.5	9.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.0		
#40	78.4		
#60	32.0		
#100	15.5		
#200	9.9		

* (no specification provided)

Material Description
SAND, (SP-SM), medium to fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
 D₉₀= 0.5222 D₈₅= 0.4709 D₆₀= 0.3440
 D₅₀= 0.3099 D₃₀= 0.2426 D₁₅= 0.1432
 D₁₀= 0.0761 C_u= 4.52 C_c= 2.25

Classification
USCS= SP-SM AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-PB-113-10D
Sample Number: TE Lab ID: 4612.52

Depth: 15.0 - 17.5 (ft.)

Date: 8/7/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Report No.

Tested By: J.Maddox

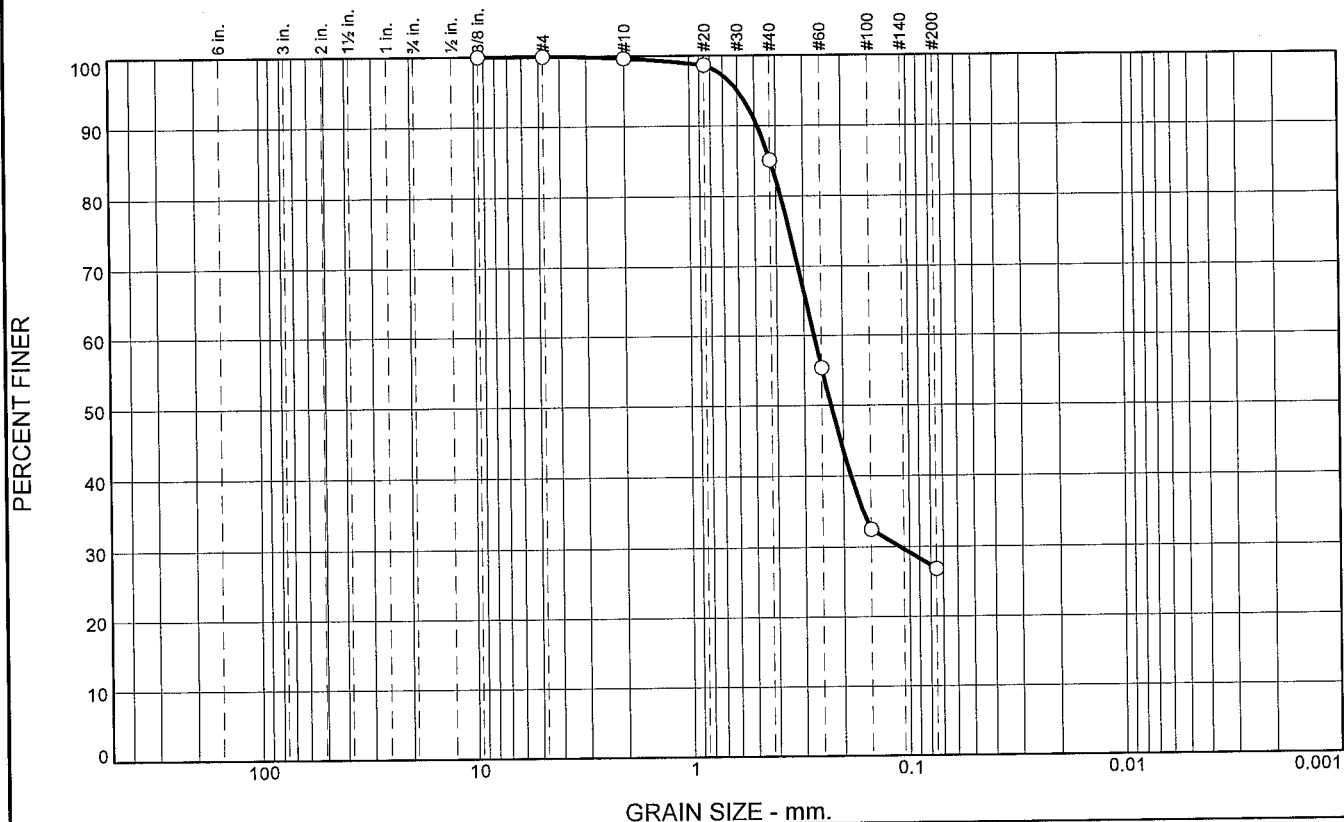
Checked By: R.Byrd

Boring Designation BI-PB-114-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-114-10		LOCATION COORDINATES E = 1,148,606 N = 255,746		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 4	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		UNDISTURBED (UD) 0	
6. THICKNESS OF OVERBURDEN N/A				14. WATER DEPTH		30 Ft.	
7. DEPTH DRILLED INTO ROCK N/A				15. DATE BORING		STARTED 07-30-10	
8. TOTAL DEPTH OF BORING 19.0 Ft.				16. ELEVATION TOP OF BORING -30.0 Ft.		COMPLETED 07-30-10	
				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist			

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-30.0	0.0				
-32.0	2.0		SAND, poorly-graded, trace silt, dark gray (SP)	A	Classification: SM Color: 5Y 5/2-olive gray D50: 0.2271 mm % Fines: 26.9
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, lt. gray (SP)	B	Classification: SP-SM Color: 2.5Y 7/2-light gray D50: 0.3357 mm % Fines: 6.7
-40.0	10.0		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, dark gray (SP)	C	Classification: SP-SM Color: 2.5Y 5/1-gray D50: 0.33 mm % Fines: 6.6
-49.0	19.0			D	Classification: SM Color: 2.5Y 6/1-gray D50: 0.3039 mm % Fines: 13.8
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.		

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.4	14.5	58.2	26.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.6		
#20	98.7		
#40	85.1		
#60	55.4		
#100	32.5		
#200	26.9		

* (no specification provided)

Material Description
SILTY SAND, (SM), medium to fine grained, with clay pockets

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.4855 D₈₅= 0.4242 D₆₀= 0.2703
D₅₀= 0.2271 D₃₀= 0.1105 D₁₅=
D₁₀= C_u= C_c=

Classification
USCS= SM AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-PB-114-10A
Sample Number: TE Lab ID: 4612.53

Depth: 0.0 - 5.0 (ft.)

Date: 8/7/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

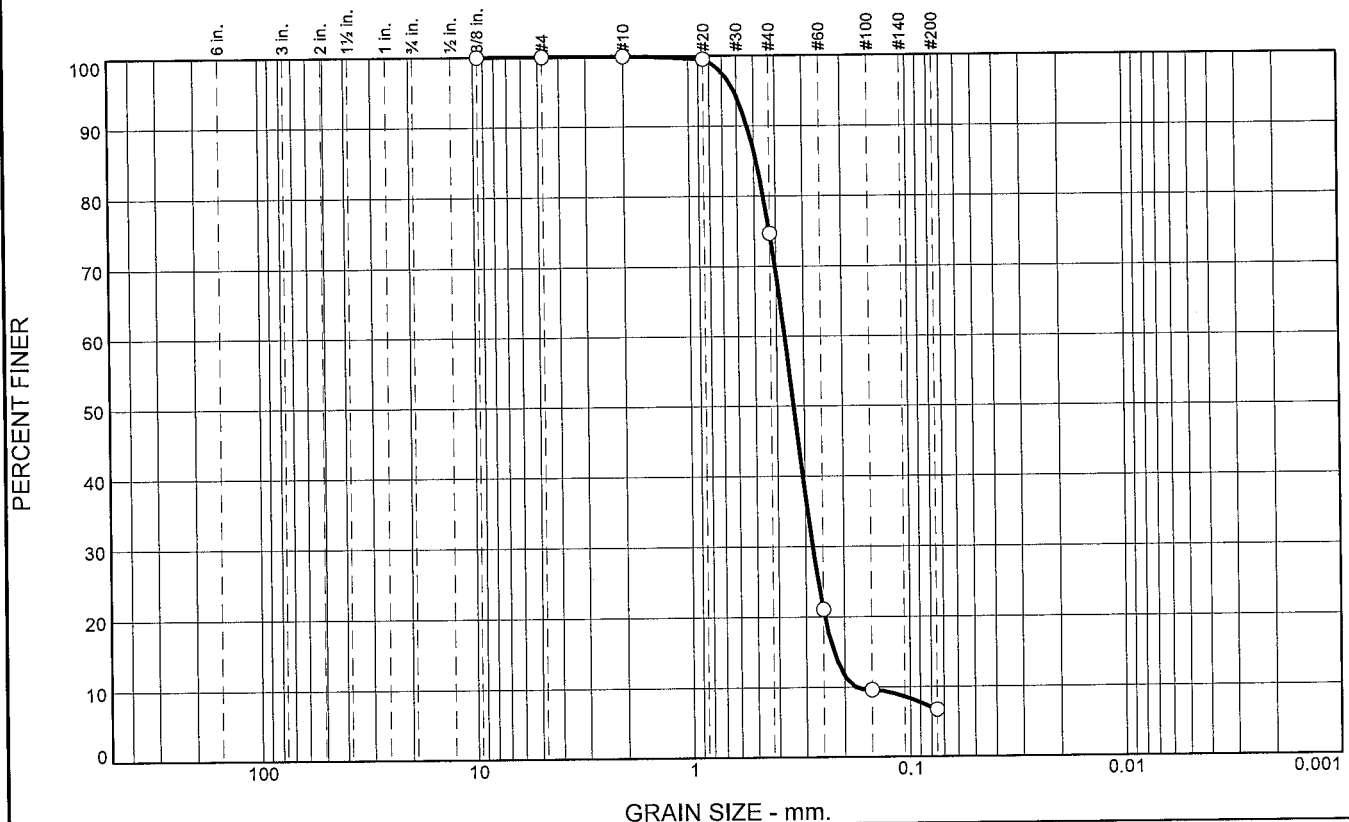
Project No: 10-2123-0009

Report No.

Tested By: J.Maddox

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	25.3	68.0	6.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.5		
#40	74.7		
#60	21.1		
#100	9.6		
#200	6.7		

* (no specification provided)

Material Description

SAND, (SP-SM), medium to fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.5371

D₈₅= 0.4886

D₆₀= 0.3672

D₅₀= 0.3357

D₃₀= 0.2782

D₁₅= 0.2238

D₁₀= 0.1771

C_u= 2.07

C_c= 1.19

Classification

USCS= SP-SM

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-114-10B
Sample Number: TE Lab ID: 4612.54

Depth: 5.0 - 10.0 (ft.)

Date: 8/7/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

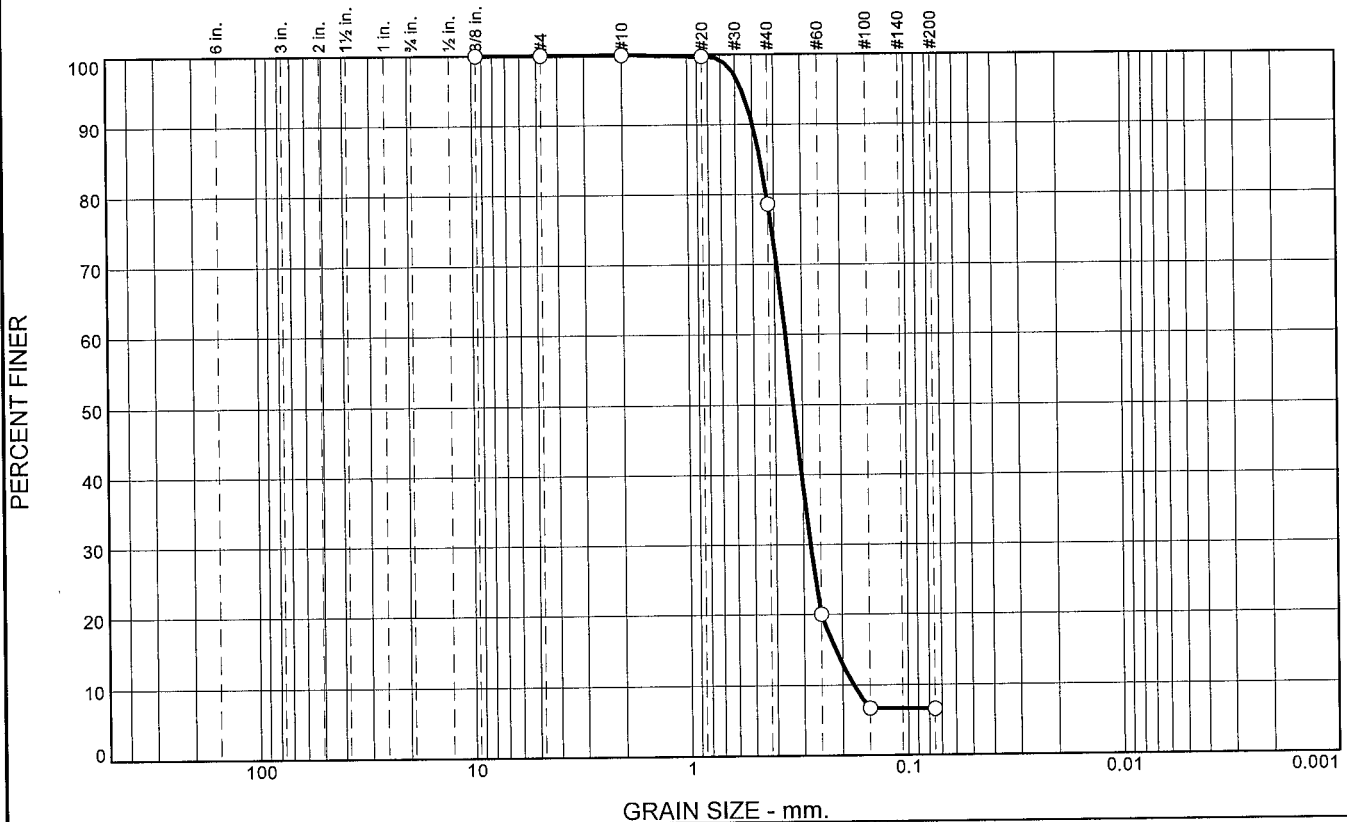
Project No: 10-2123-0009

Report No.

Tested By: J.Maddox

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	21.4	72.0	6.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.7		
#40	78.6		
#60	20.0		
#100	6.7		
#200	6.6		

* (no specification provided)

Material Description
SAND, (SP-SM), medium to fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.4982 D₈₅= 0.4600 D₆₀= 0.3581
D₅₀= 0.3300 D₃₀= 0.2782 D₁₅= 0.2154
D₁₀= 0.1784 C_u= 2.01 C_c= 1.21

Classification
USCS= SP-SM AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-PB-114-10C
Sample Number: TE Lab ID: 4612.55

Depth: 10.0 - 15.0 (ft.)

Date: 8/7/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

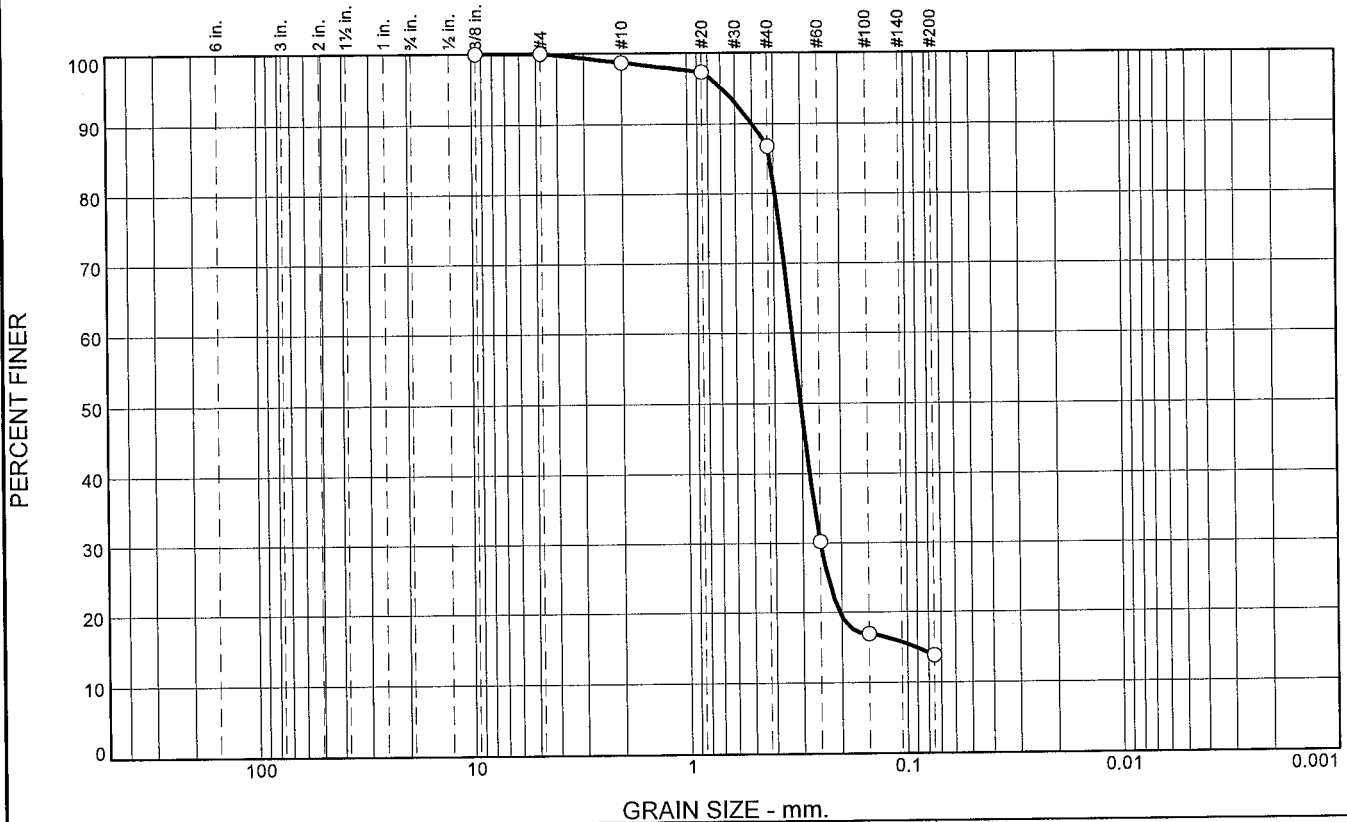
Project No: 10-2123-0009

Report No.

Tested By: J.Maddox

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	1.3	11.9	73.0	13.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	98.7		
#20	97.3		
#40	86.8		
#60	30.2		
#100	16.9		
#200	13.8		

* (no specification provided)

Material Description
SILTY SAND, (SM), medium to fine grained, with clay pockets

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.5005 D₈₅= 0.4161 D₆₀= 0.3304
D₅₀= 0.3039 D₃₀= 0.2493 D₁₅= 0.0920
D₁₀= C_u= C_c=

Classification
USCS= SM AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-PB-114-10D
Sample Number: TE Lab ID: 4612.56

Depth: 15.0 - 19.0 (ft.)

Date: 8/7/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Report No.

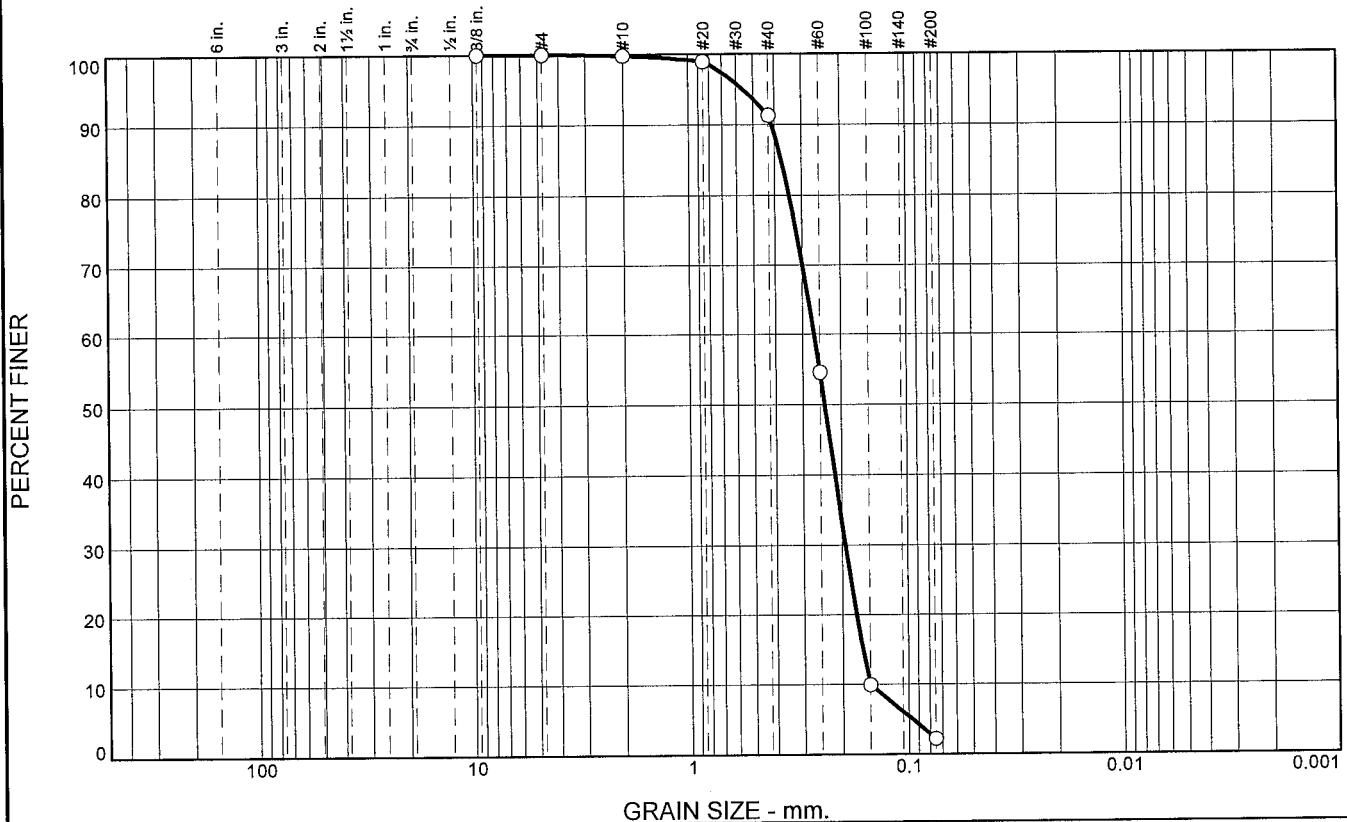
Tested By: J.Maddox

Checked By: R.Byrd

Boring Designation BI-PB-115-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-115-10		LOCATION COORDINATES E = 1,140,715 N = 257,104		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 18 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 07-29-10		STARTED 07-29-10 COMPLETED 07-29-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -17.6 Ft.			
8. TOTAL DEPTH OF BORING 15.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-17.6	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace shell fragments, gray (SP)	A	Classification: SP Color: 2.5Y 6/2-light brownish gray D50: 0.2381 mm % Fines: 2.2		
-21.6	4.0			B	Classification: SP Color: 2.5Y 6/2-light brownish gray D50: 0.2206 mm % Fines: 4.8		
				C	Classification: SP-SM Color: 5Y 6/2-light olive gray D50: 0.2853 mm % Fines: 5.5		
-29.1	11.5		CLAY, fat, dark gray (CH)	NS			
-32.6	15.0						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	8.5	89.1	2.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.8		
#20	98.9		
#40	91.3		
#60	54.6		
#100	9.9		
#200	2.2		

* (no specification provided)

Material Description
SAND, (SP), fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.4121 D₈₅= 0.3729 D₆₀= 0.2653
D₅₀= 0.2381 D₃₀= 0.1935 D₁₅= 0.1620
D₁₀= 0.1502 C_u= 1.77 C_c= 0.94

Classification
USCS= SP AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-PB-115-10A
Sample Number: TE Lab ID: 4612.29

Depth: 0.0 - 4.0 (ft.)

Date: 8/7/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

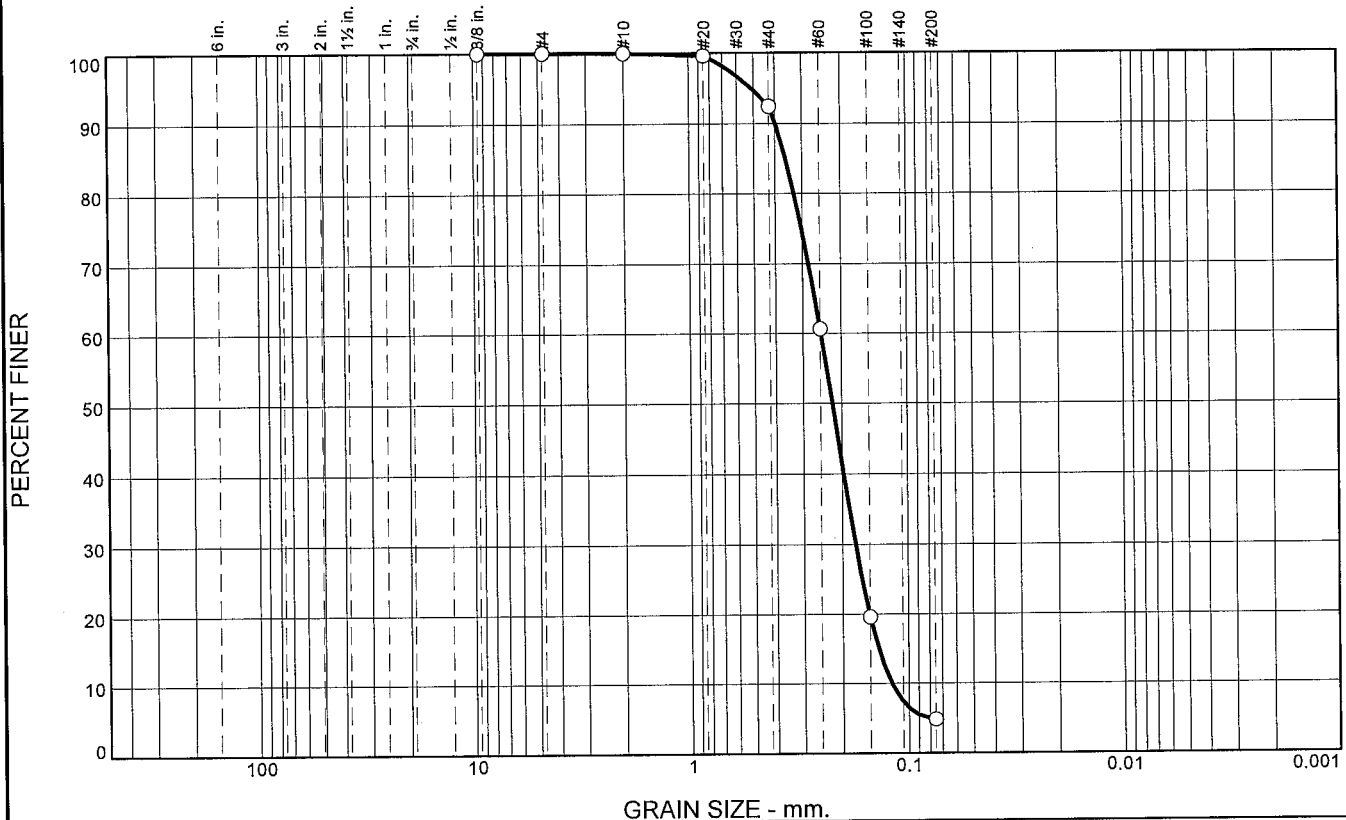
Project No: 10-2123-0009

Report No.

Tested By: J.Maddox

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	7.5	87.6	4.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.5		
#40	92.4		
#60	60.7		
#100	19.6		
#200	4.8		

* (no specification provided)

Material Description
SAND, (SP), fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.3989 D₈₅= 0.3583 D₆₀= 0.2480
D₅₀= 0.2206 D₃₀= 0.1743 D₁₅= 0.1372
D₁₀= 0.1196 C_u= 2.07 C_c= 1.02

Classification
USCS= SP AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-PB-115-10B
Sample Number: TE Lab ID: 4612.30

Depth: 4.0 - 8.0 (ft.)

Date: 8/7/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

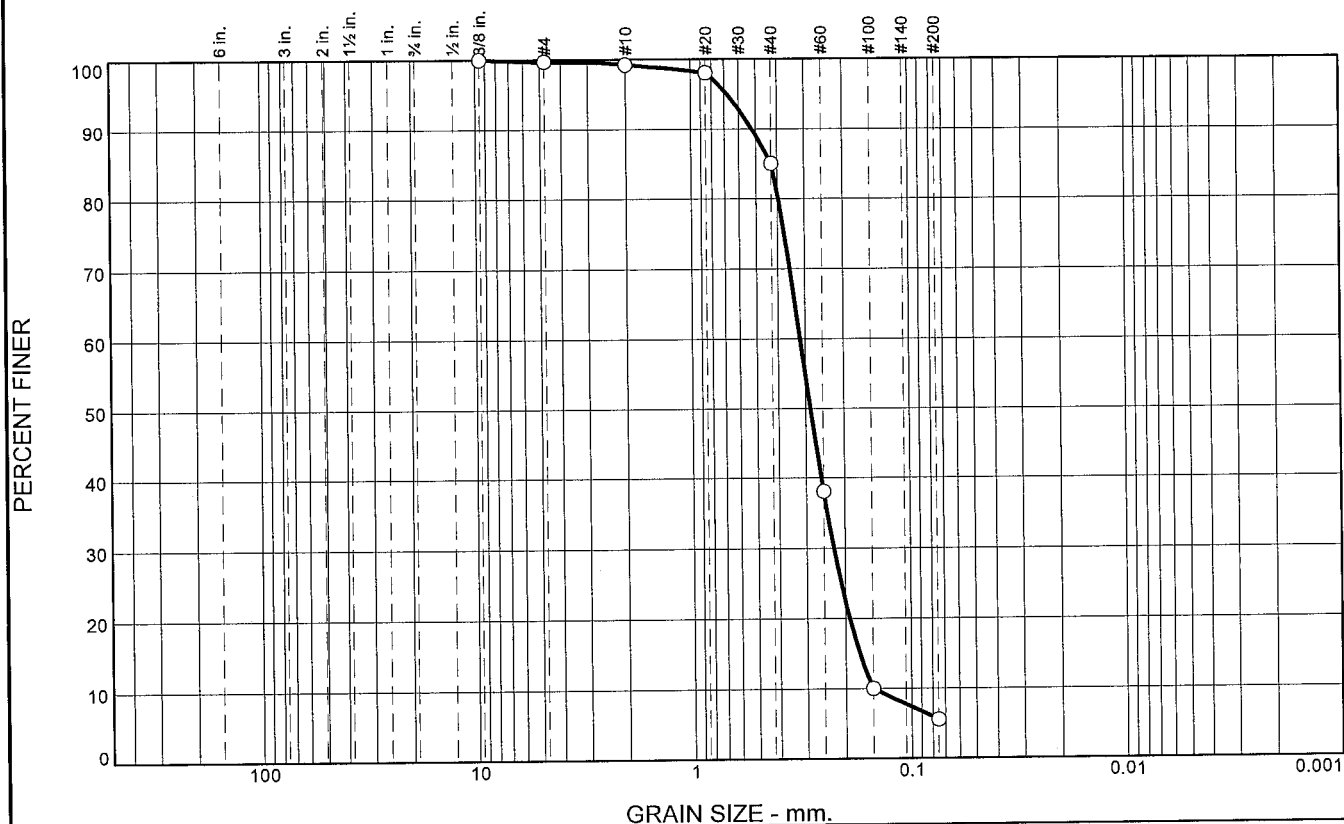
Project No: 10-2123-0009

Report No.

Tested By: J.Maddox

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.3	0.5	14.2	79.5	5.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.7		
#10	99.2		
#20	98.0		
#40	85.0		
#60	38.1		
#100	10.0		
#200	5.5		

* (no specification provided)

Material Description
SAND, (SP-SM), medium to fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.5226 D₈₅= 0.4255 D₆₀= 0.3164
D₅₀= 0.2853 D₃₀= 0.2254 D₁₅= 0.1728
D₁₀= 0.1490 C_u= 2.12 C_c= 1.08

Classification
USCS= SP-SM AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-PB-115-10C
Sample Number: TE Lab ID: 4612.31

Depth: 8.0 - 11.5 (ft.)

Date: 8/7/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Report No.

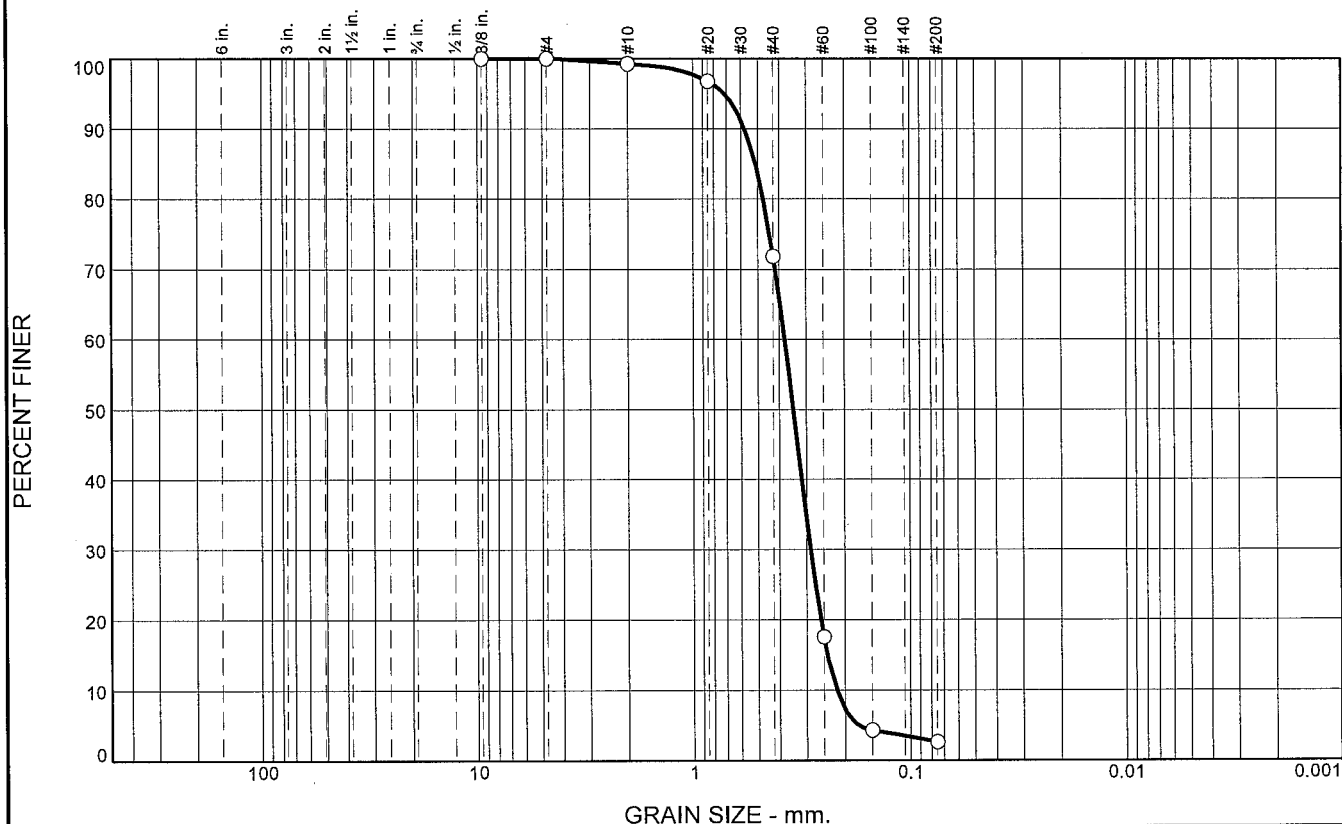
Tested By: J.Maddox

Checked By: R.Byrd

Boring Designation BI-PB-116-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-116-10		LOCATION COORDINATES E = 1,142,153 N = 257,056		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 16 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 07-29-10		COMPLETED 07-29-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -15.6 Ft.			
8. TOTAL DEPTH OF BORING 15.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-15.6	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace shell fragments, gray (SP)	A	Classification: SP Color: 2.5Y 6/2-light brownish gray D50: 0.3445 mm % Fines: 2.7		
				B	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.2828 mm % Fines: 4.6		
-22.6	7.0						
			CLAY, fat, dark gray (CH)	NS			
-30.6	15.0						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.8	27.4	69.1	2.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.2		
#20	96.8		
#40	71.8		
#60	17.6		
#100	4.3		
#200	2.7		

* (no specification provided)

Material Description
SAND, (SP), medium to fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.5772 D₈₅= 0.5141 D₆₀= 0.3770
 D₅₀= 0.3445 D₃₀= 0.2874 D₁₅= 0.2406
 D₁₀= 0.2181 C_u= 1.73 C_c= 1.00

Classification
 USCS= SP AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-PB-116-10A
 Sample Number: TE Lab ID: 4612.27

Depth: 0.0 - 5.0 (ft.)

Date: 8/7/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project

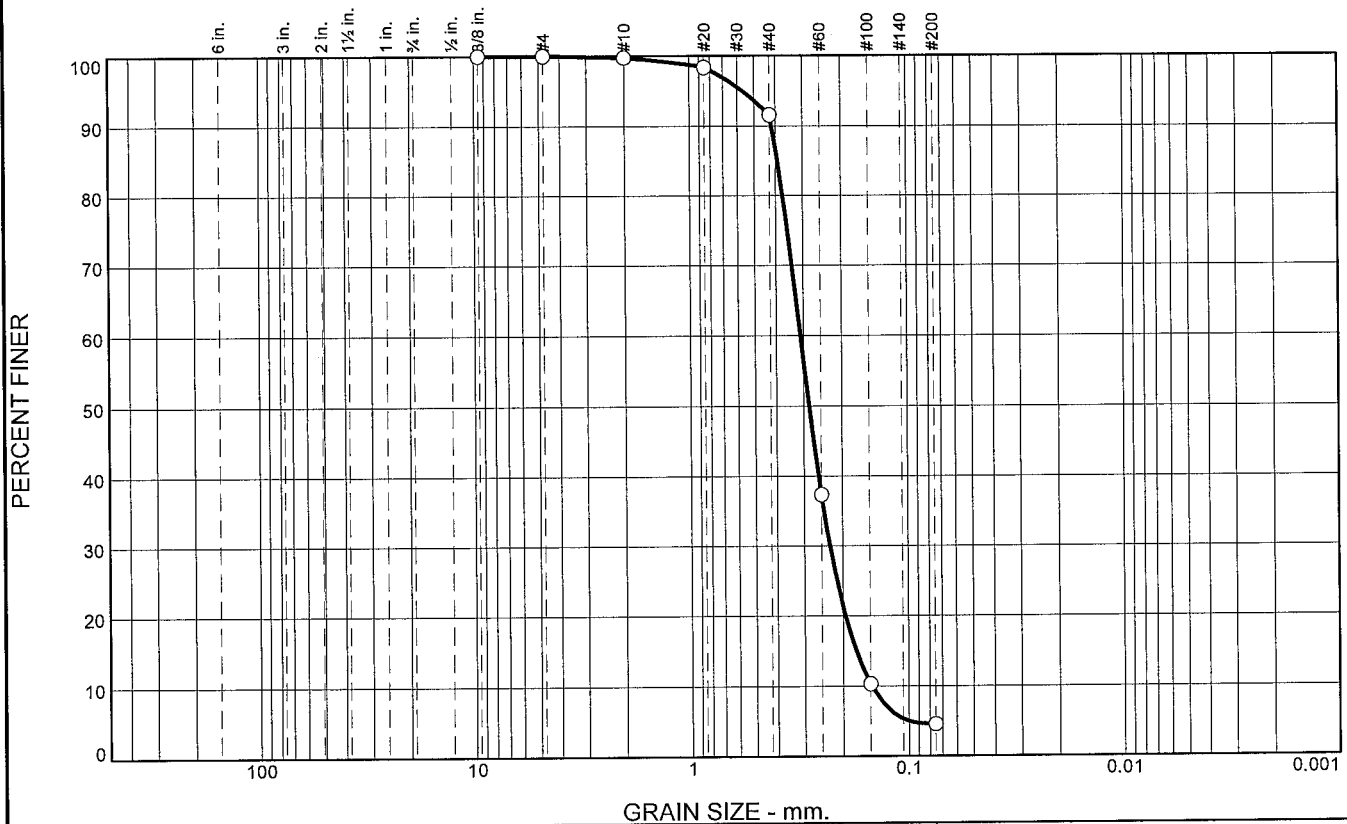
Project No: 10-2123-0009

Report No.

Tested By: J.Maddox

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.3	8.1	87.0	4.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.7		
#20	98.4		
#40	91.6		
#60	37.4		
#100	10.4		
#200	4.6		

* (no specification provided)

Material Description

SAND, (SP), fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.4159 D₈₅= 0.3915 D₆₀= 0.3092
D₅₀= 0.2828 D₃₀= 0.2289 D₁₅= 0.1746
D₁₀= 0.1478 C_u= 2.09 C_c= 1.15

Classification

USCS= SP AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-116-10B
Sample Number: TE Lab ID: 4612.28

Depth: 5.0 - 7.0 (ft.)

Date: 8/7/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Report No.

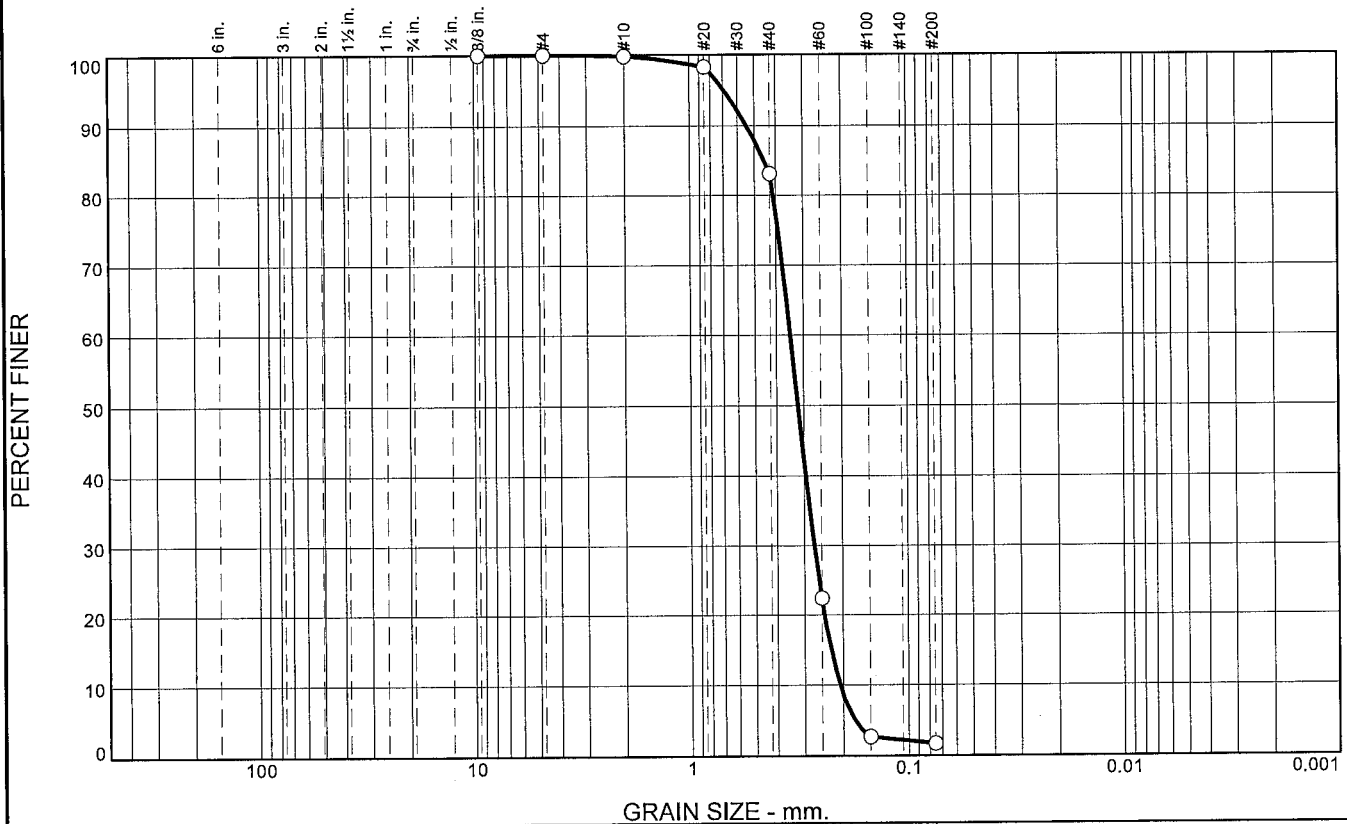
Tested By: J.Maddox

Checked By: R.Byrd

Boring Designation BI-PB-117-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-117-10		LOCATION COORDINATES E = 1,143,659 N = 257,160		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 4		UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES		14. WATER DEPTH 16 Ft.	
6. THICKNESS OF OVERBURDEN N/A		7. DEPTH DRILLED INTO ROCK N/A		15. DATE BORING 07-29-10		STARTED 07-29-10	
8. TOTAL DEPTH OF BORING 20.0 Ft.				16. ELEVATION TOP OF BORING -15.6 Ft.		17. TOTAL RECOVERY FOR BORING 100%	
				18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-15.6	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.3185 mm % Fines: 1.7		
				B	Classification: SP Color: 5Y 7/1-light gray D50: 0.3146 mm % Fines: 1.8		
			At El. -26.6 Ft., trace silt, trace shell fragments, dark gray	C	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.2606 mm % Fines: 4.5		
				D	Classification: SP-SM Color: 2.5Y 5/2-grayish brown D50: 0.2042 mm % Fines: 9.8		
-35.6	20.0						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	16.7	81.4	1.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.8		
#20	98.3		
#40	83.1		
#60	22.4		
#100	2.7		
#200	1.7		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.5457 D₈₅= 0.4527 D₆₀= 0.3446
D₅₀= 0.3185 D₃₀= 0.2697 D₁₅= 0.2271
D₁₀= 0.2072 C_u= 1.66 C_c= 1.02

Classification

USCS= SP AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-117-10A
Sample Number: TE Lab ID: 4612.23

Depth: 0.0 - 5.0 (ft.)

Date: 8/7/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

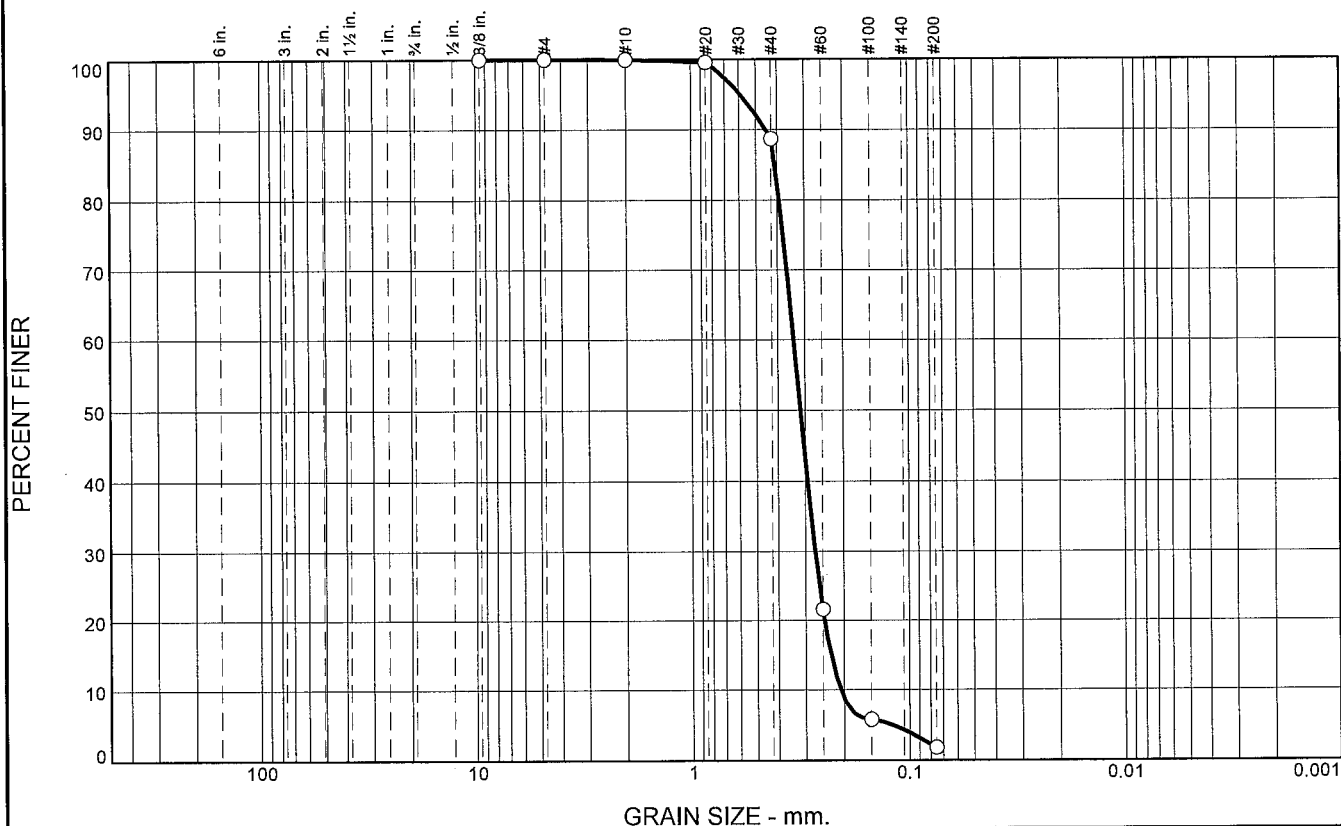
Project No: 10-2123-0009

Report No.

Tested By: J.Maddox

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	11.2	86.9	1.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.5		
#40	88.7		
#60	21.6		
#100	5.8		
#200	1.8		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.4516

D₈₅= 0.4098

D₆₀= 0.3375

D₅₀= 0.3146

D₃₀= 0.2706

D₁₅= 0.2298

D₁₀= 0.2079

C_u= 1.62

C_c= 1.04

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-117-10B
Sample Number: TE Lab ID: 4612.24

Depth: 5.0 - 10.0 (ft.)

Date: 8/7/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

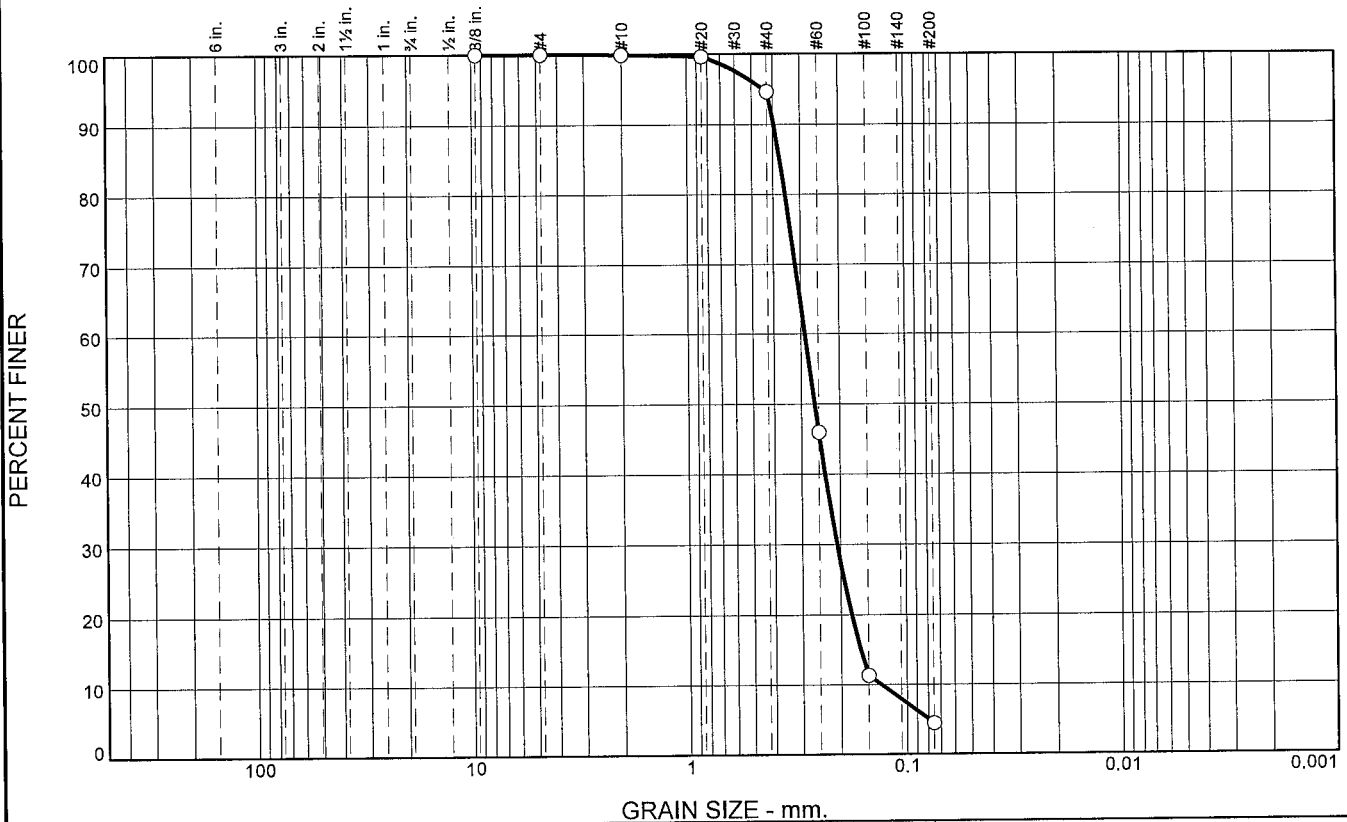
Project No: 10-2123-0009

Report No.

Tested By: J.Maddox

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	5.3	90.1	4.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.6		
#40	94.6		
#60	45.9		
#100	11.4		
#200	4.5		

* (no specification provided)

Material Description

SAND, (SP-SM), fine grained

PL= Atterberg Limits LL= PI=

Coefficients
D₉₀= 0.3962 D₈₅= 0.3719 D₆₀= 0.2876
D₅₀= 0.2606 D₃₀= 0.2075 D₁₅= 0.1632
D₁₀= 0.1310 C_u= 2.20 C_c= 1.14

USCS= SP Classification AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-PB-117-10C
Sample Number: TE Lab ID: 4612.25

Depth: 10.0 - 15.0 (ft.)

Date: 8/7/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

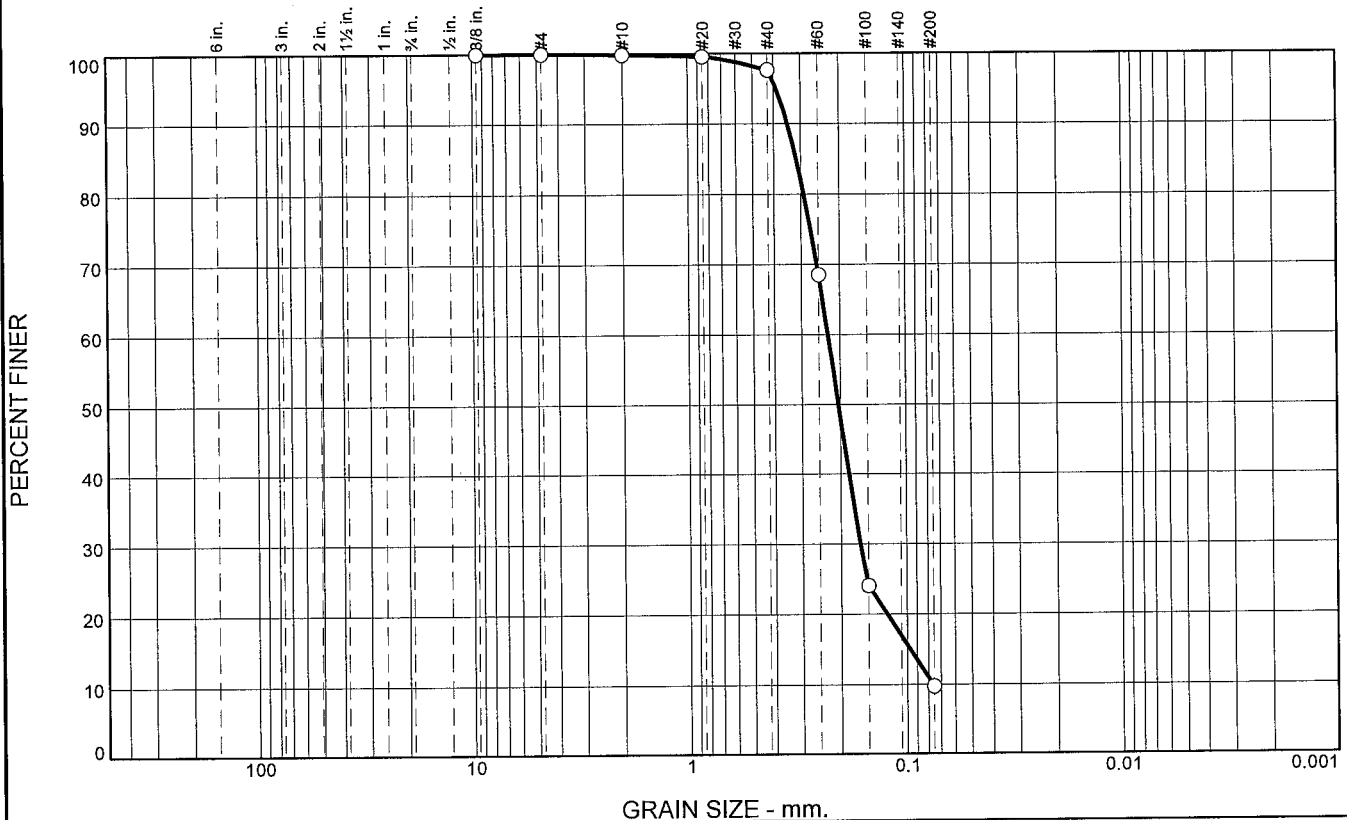
Project No: 10-2123-0009

Report No.

Tested By: J.Maddox

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	2.1	87.9	9.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.8		
#20	99.6		
#40	97.7		
#60	68.5		
#100	24.0		
#200	9.8		

* (no specification provided)

Material Description

SAND, (SP-SM), fine grained

PL= Atterberg Limits LL= PI=

Coefficients
D₉₀= 0.3457 D₈₅= 0.3149 D₆₀= 0.2272
D₅₀= 0.2042 D₃₀= 0.1631 D₁₅= 0.0967
D₁₀= 0.0759 C_u= 2.99 C_c= 1.54

Classification
USCS= SP-SM AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-PB-117-10D
Sample Number: TE Lab ID: 4612.26

Depth: 15.0 - 20.0 (ft.)

Date: 8/7/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Report No.

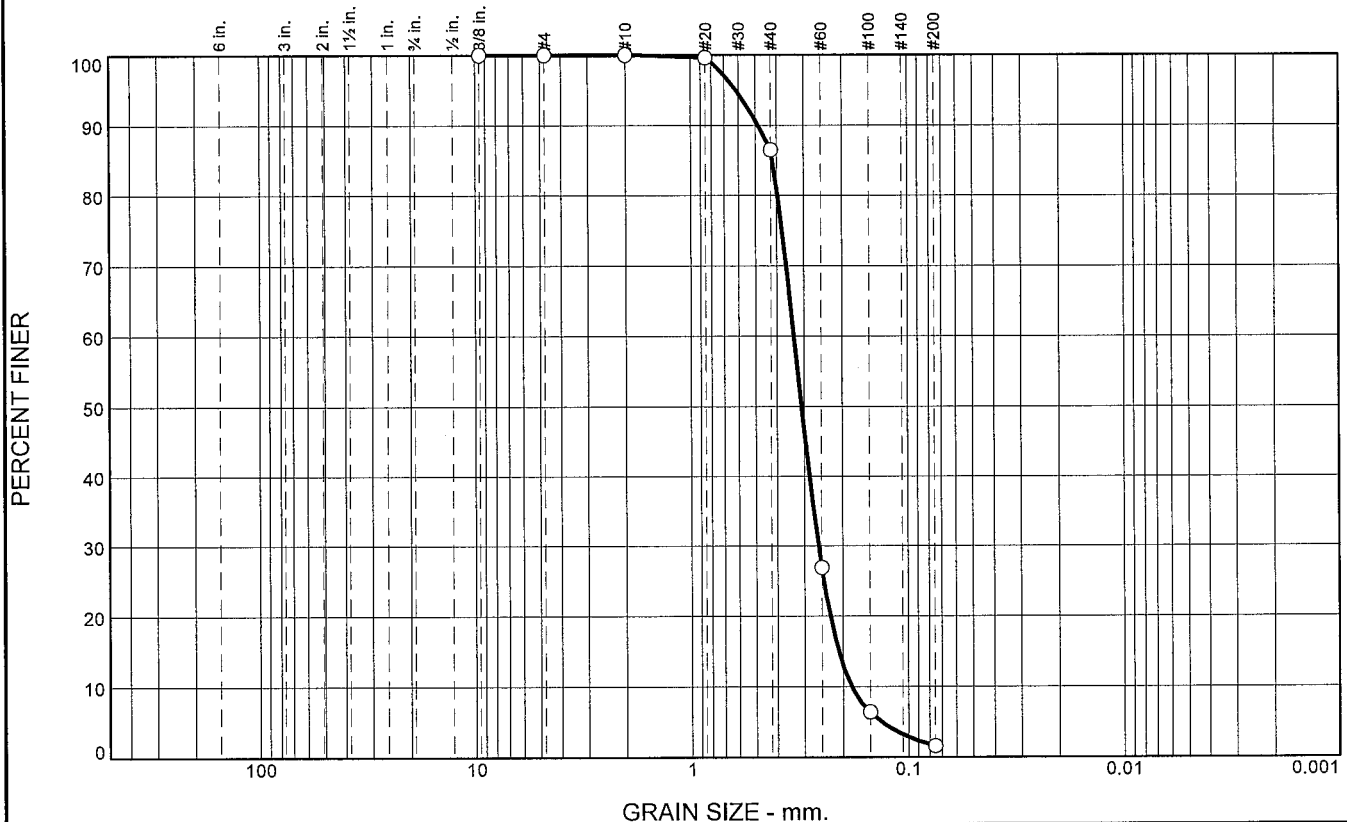
Tested By: J.Maddox

Checked By: R.Byrd

Boring Designation BI-PB-118-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-118-10		LOCATION COORDINATES E = 1,145,059 N = 257,119		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 4		UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES		14. WATER DEPTH 16 Ft.	
6. THICKNESS OF OVERBURDEN N/A		7. DEPTH DRILLED INTO ROCK N/A		15. DATE BORING 07-30-10		COMPLETED 07-30-10	
8. TOTAL DEPTH OF BORING 20.0 Ft.				16. ELEVATION TOP OF BORING -15.9 Ft.		17. TOTAL RECOVERY FOR BORING 100%	
				18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-15.9	0.0						
			SAND, well-graded, mostly medium-grained sand-sized quartz, trace shell fragments, lt. gray (SW)	A	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.308 mm % Fines: 1.6		
	B			Classification: SP-SM Color: 2.5Y 7/1-light gray D50: 0.3077 mm % Fines: 6.1			
	C			Classification: SP Color: 5Y 7/1-light gray D50: 0.3556 mm % Fines: 1.8			
	D			Classification: SP Color: 5Y 7/1-light gray D50: 0.2905 mm % Fines: 2.5			
-35.9	20.0						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	13.5	84.9	1.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.6		
#40	86.5		
#60	26.9		
#100	6.4		
#200	1.6		

* (no specification provided)

<u>Material Description</u>		
SAND, (SP), medium to fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.4874	D ₈₅ = 0.4177	D ₆₀ = 0.3337
D ₅₀ = 0.3080	D ₃₀ = 0.2584	D ₁₅ = 0.2096
D ₁₀ = 0.1830	C _u = 1.82	C _c = 1.09
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		
CADD CODE = CH10D965		

Location: USACE Sample # BI-PB-118-10A
Sample Number: TE Lab ID: 4612.60

Depth: 0.0 - 5.0 (ft.)

Date: 8/7/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

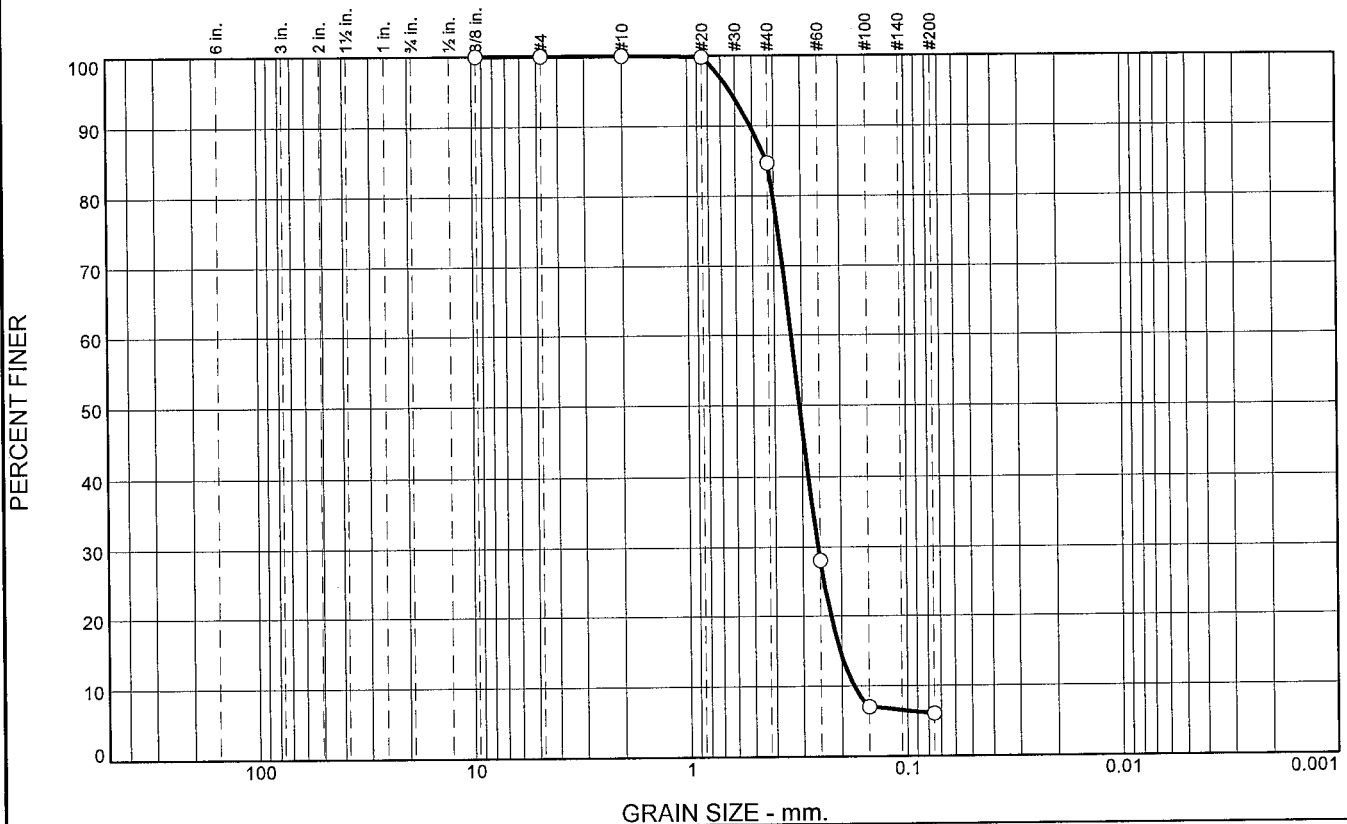
Project No: 10-2123-0009

Report No.

Tested By: J.Maddox

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	15.3	78.6	6.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.8		
#40	84.7		
#60	28.1		
#100	7.1		
#200	6.1		

* (no specification provided)

Material Description

SAND, (SP-SM), medium to fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.5110 D₈₅= 0.4293 D₆₀= 0.3350
D₅₀= 0.3077 D₃₀= 0.2554 D₁₅= 0.2042
D₁₀= 0.1767 C_u= 1.90 C_c= 1.10

Classification

USCS= SP-SM AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-118-10B
Sample Number: TE Lab ID: 4612.61

Depth: 5.0 - 10.0 (ft.)

Date: 8/7/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

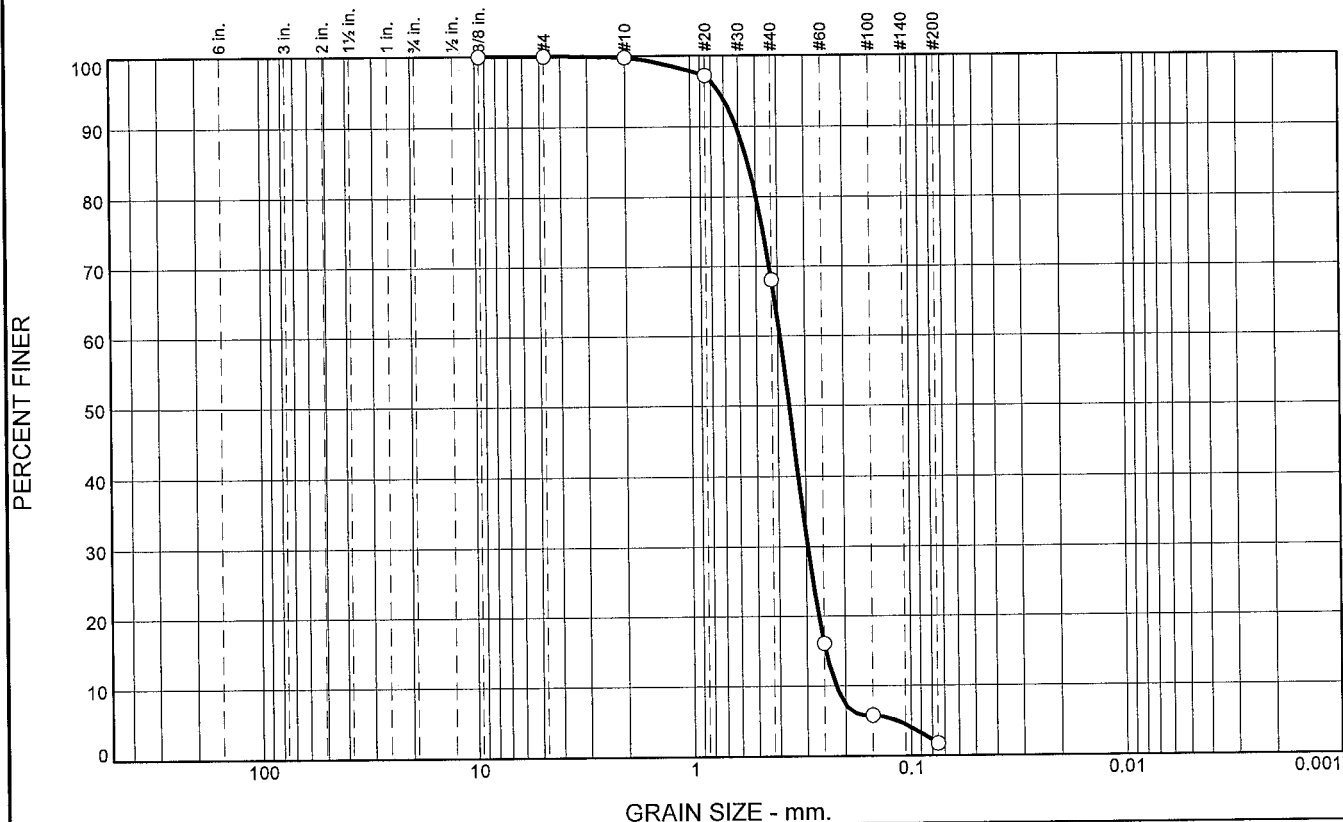
Project No: 10-2123-0009

Report No.

Tested By: J.Maddox

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	31.7	66.3	1.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.8		
#20	97.2		
#40	68.1		
#60	16.1		
#100	5.8		
#200	1.8		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.6129 D₈₅= 0.5445 D₆₀= 0.3908
D₅₀= 0.3556 D₃₀= 0.2947 D₁₅= 0.2456
D₁₀= 0.2212 C_u= 1.77 C_c= 1.01

Classification

USCS= SP AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-118-10C
Sample Number: TE Lab ID: 4612.62

Depth: 10.0- 15.0 (ft.)

Date: 8/7/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

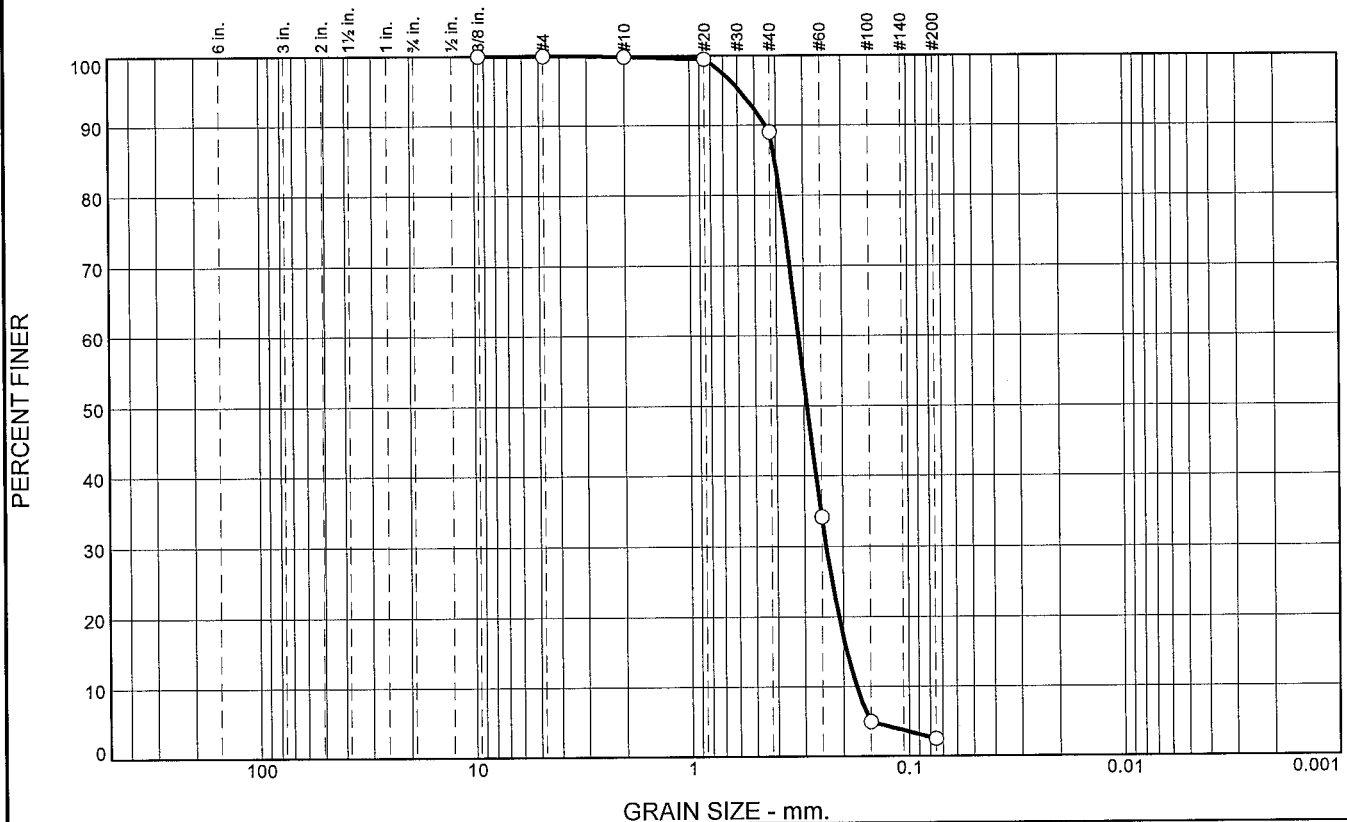
Project No: 10-2123-0009

Report No.

Tested By: J.Maddox

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	10.9	86.5	2.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.5		
#40	89.0		
#60	34.1		
#100	5.0		
#200	2.5		

* (no specification provided)

Material Description
SAND, (SP), medium to fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.4452 D₈₅= 0.4038 D₆₀= 0.3171
 D₅₀= 0.2905 D₃₀= 0.2389 D₁₅= 0.1933
 D₁₀= 0.1743 C_u= 1.82 C_c= 1.03

Classification
 USCS= SP AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-PB-118-10D
 Sample Number: TE Lab ID: 4612.63

Depth: 15.0 - 20.0 (ft.)

Date: 8/7/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Report No.

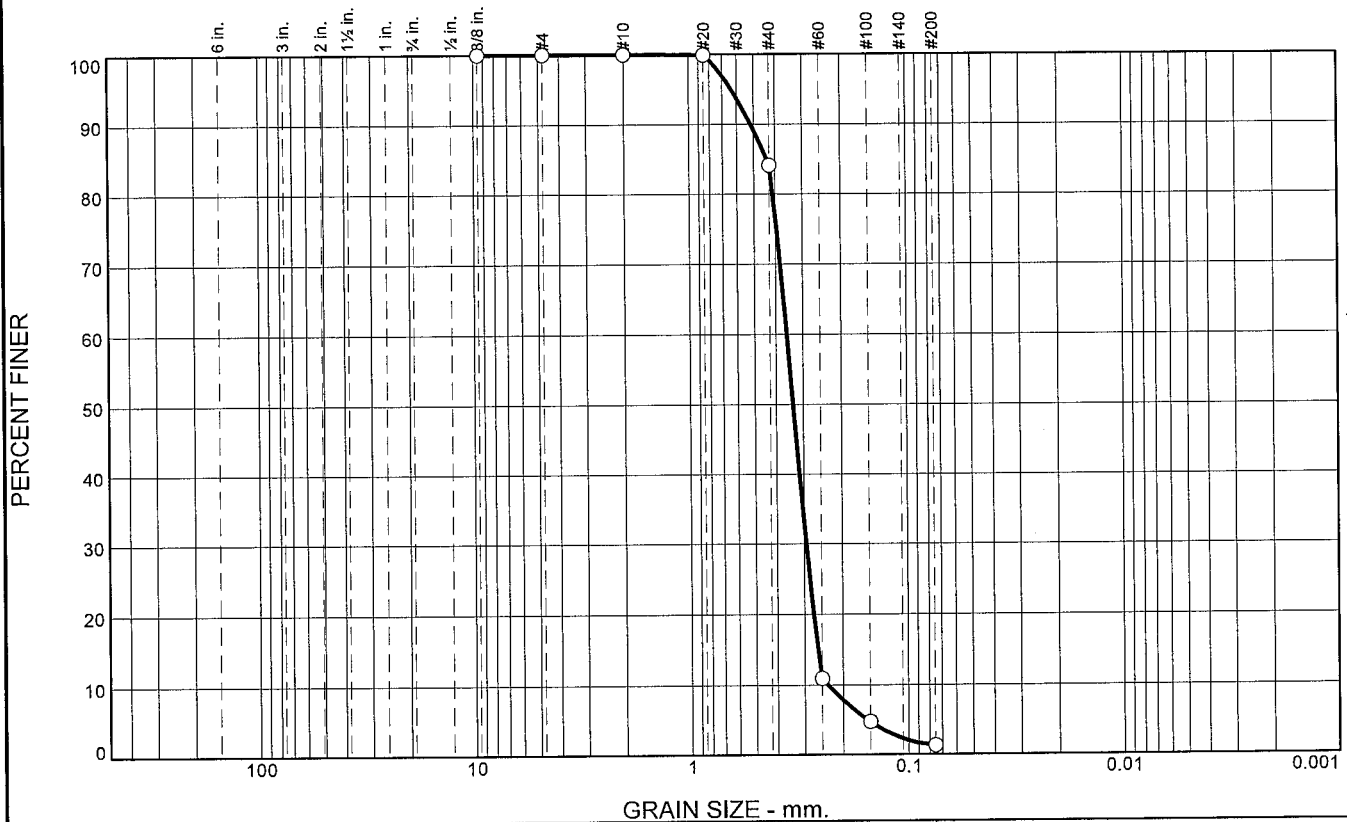
Tested By: J.Maddox

Checked By: R.Byrd

Boring Designation BI-PB-119-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-119-10		LOCATION COORDINATES E = 1,146,626 N = 257,188		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 4		DISTURBED 0 UNDISTURBED (UD)	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 16 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 07-30-10		STARTED 07-30-10 COMPLETED 07-30-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -15.8 Ft.			
8. TOTAL DEPTH OF BORING 20.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-15.8	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.3342 mm % Fines: 1.3		
				B	Classification: SP Color: 5Y 7/1-light gray D50: 0.3066 mm % Fines: 1.9		
				C	Classification: SP Color: 5Y 7/1-light gray D50: 0.2323 mm % Fines: 2.3		
				D	Classification: SP Color: 2.5Y 6/2-light brownish gray D50: 0.3417 mm % Fines: 4.6		
-35.8	20.0						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	15.9	82.8	1.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	84.1		
#60	11.0		
#100	4.7		
#200	1.3		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.5172 D₈₅= 0.4370 D₆₀= 0.3562
D₅₀= 0.3342 D₃₀= 0.2933 D₁₅= 0.2606
D₁₀= 0.2346 C_u= 1.52 C_c= 1.03

Classification

USCS= SP AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-119-10A
Sample Number: TE Lab ID: 4612.32

Depth: 0.0 - 5.0 (ft.)

Date: 8/7/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

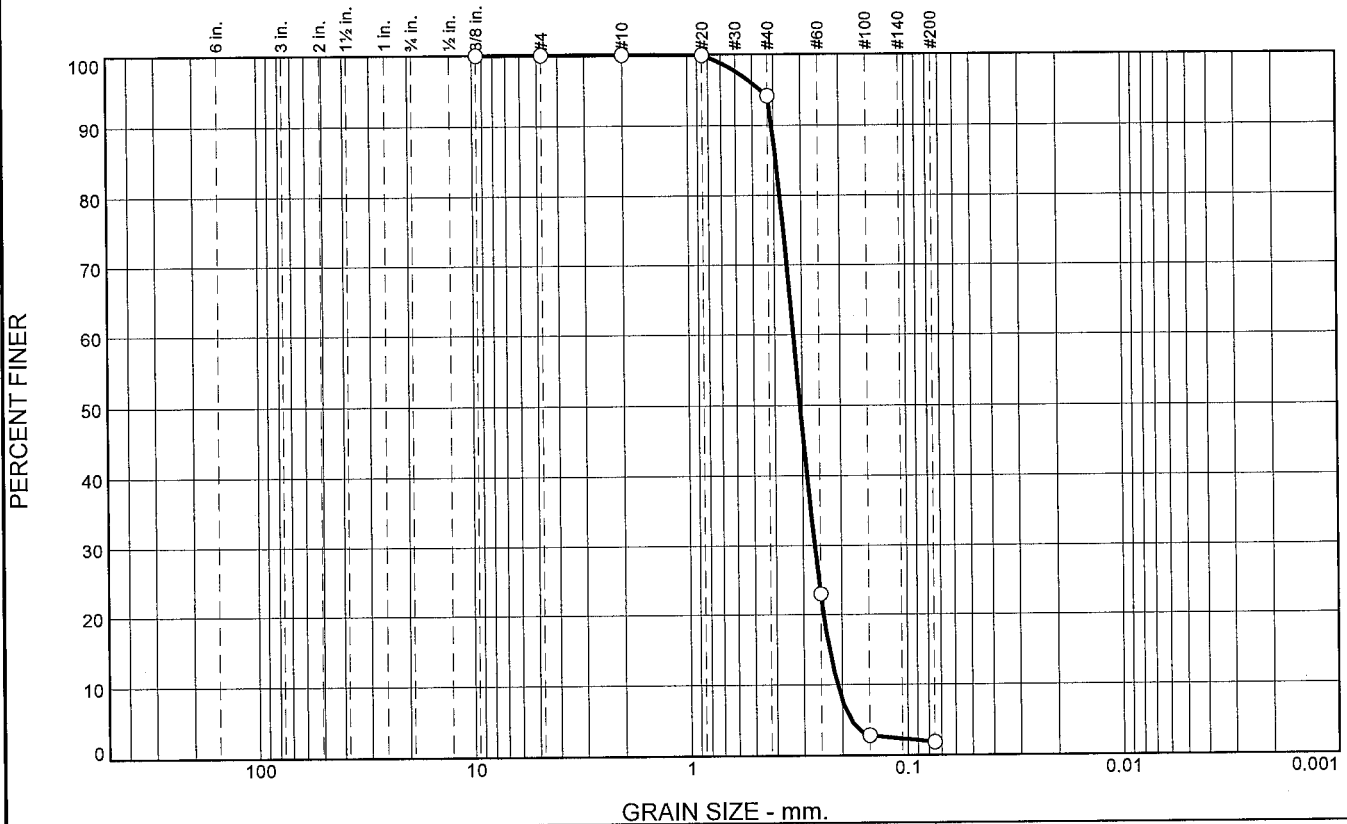
Project No: 10-2123-0009

Report No.

Tested By: J.Maddox

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	5.8	92.3	1.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	94.2		
#60	23.0		
#100	2.9		
#200	1.9		

* (no specification provided)

Material Description

SAND, (SP), fine grained

PL= Atterberg Limits LL= PI=

Coefficients
D₉₀= 0.4080 D₈₅= 0.3909 D₆₀= 0.3276
D₅₀= 0.3066 D₃₀= 0.2658 D₁₅= 0.2285
D₁₀= 0.2107 C_u= 1.55 C_c= 1.02

Classification
USCS= SP AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-PB-119-10B
Sample Number: TE Lab ID: 4612.33

Depth: 5.0 - 10.0 (ft.)

Date: 8/7/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

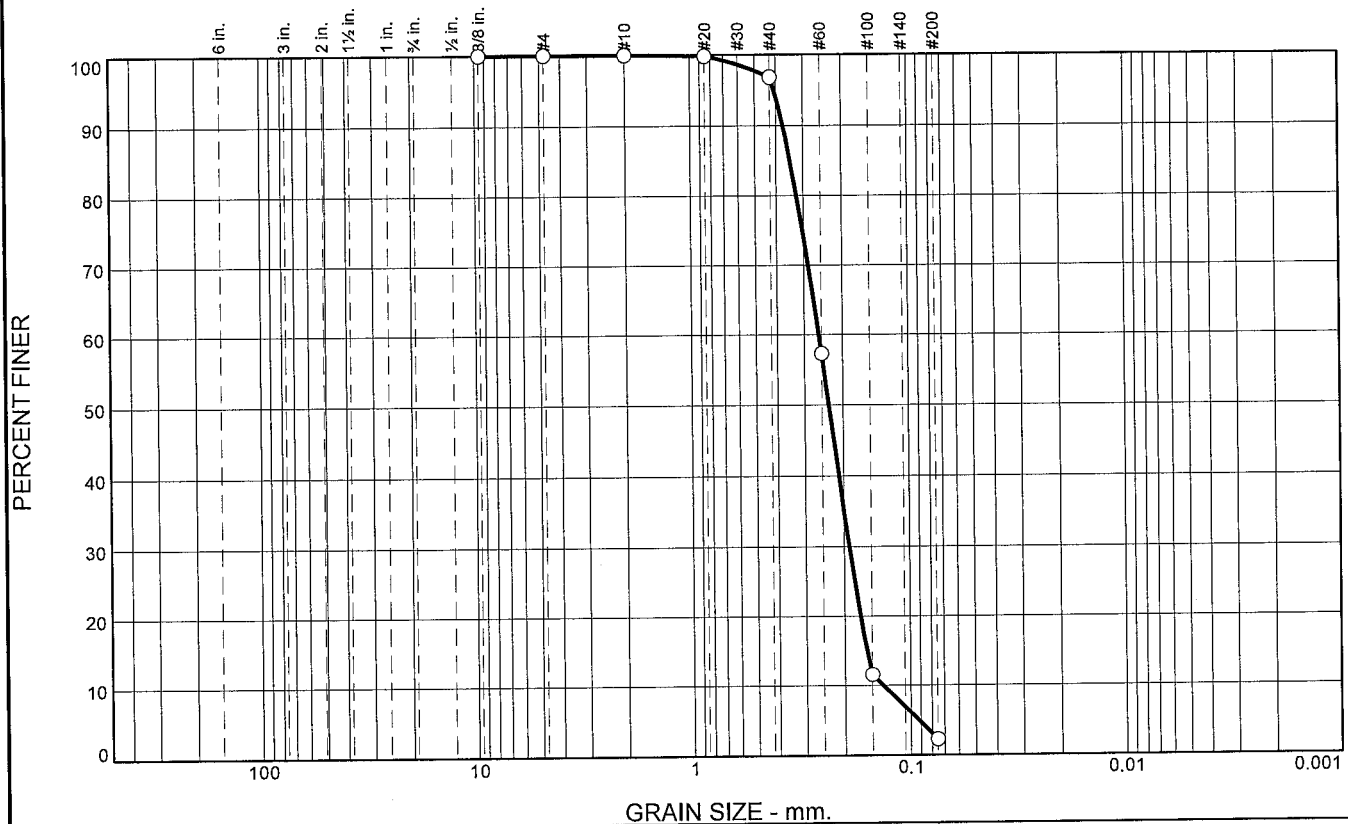
Project No: 10-2123-0009

Report No.

Tested By: J.Maddox

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	3.2	94.5	2.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.8		
#40	96.8		
#60	57.3		
#100	11.6		
#200	2.3		

* (no specification provided)

Material Description		
SAND, (SP), fine grained		
Atterberg Limits		
PL=	LL=	PI=
Coefficients		
D ₉₀ = 0.3716	D ₈₅ = 0.3444	D ₆₀ = 0.2570
D ₅₀ = 0.2323	D ₃₀ = 0.1896	D ₁₅ = 0.1582
D ₁₀ = 0.1335	C _u = 1.93	C _c = 1.05
Classification		
USCS= SP	AASHTO=	
Remarks		
CADD CODE = CH10D965		

Location: USACE Sample # BI-PB-119-10C
Sample Number: TE Lab ID: 4612.34

Depth: 10 - 15.0 (ft.)

Date: 8/7/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

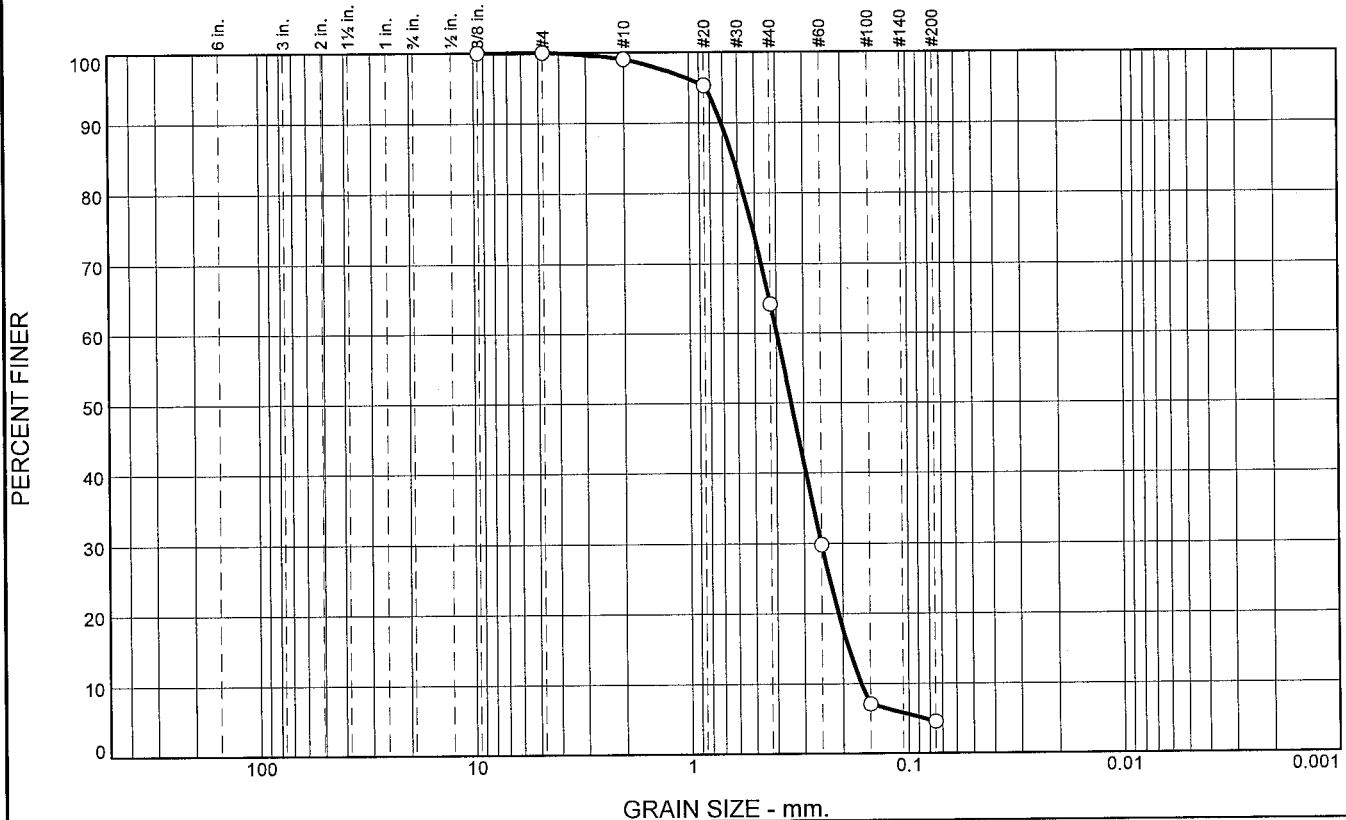
Project No: 10-2123-0009

Report No.

Tested By: J.Maddox

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	1.0	34.8	59.6	4.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.0		
#20	95.3		
#40	64.2		
#60	29.8		
#100	7.1		
#200	4.6		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.7115
D₅₀= 0.3417
D₁₀= 0.1656

D₈₅= 0.6274
D₃₀= 0.2507
C_u= 2.40

D₆₀= 0.3978
D₁₅= 0.1884
C_c= 0.95

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-119-10D
Sample Number: TE Lab ID: 4612.35

Depth: 15.0 - 20.0 (ft.)

Date: 8/7/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Report No.

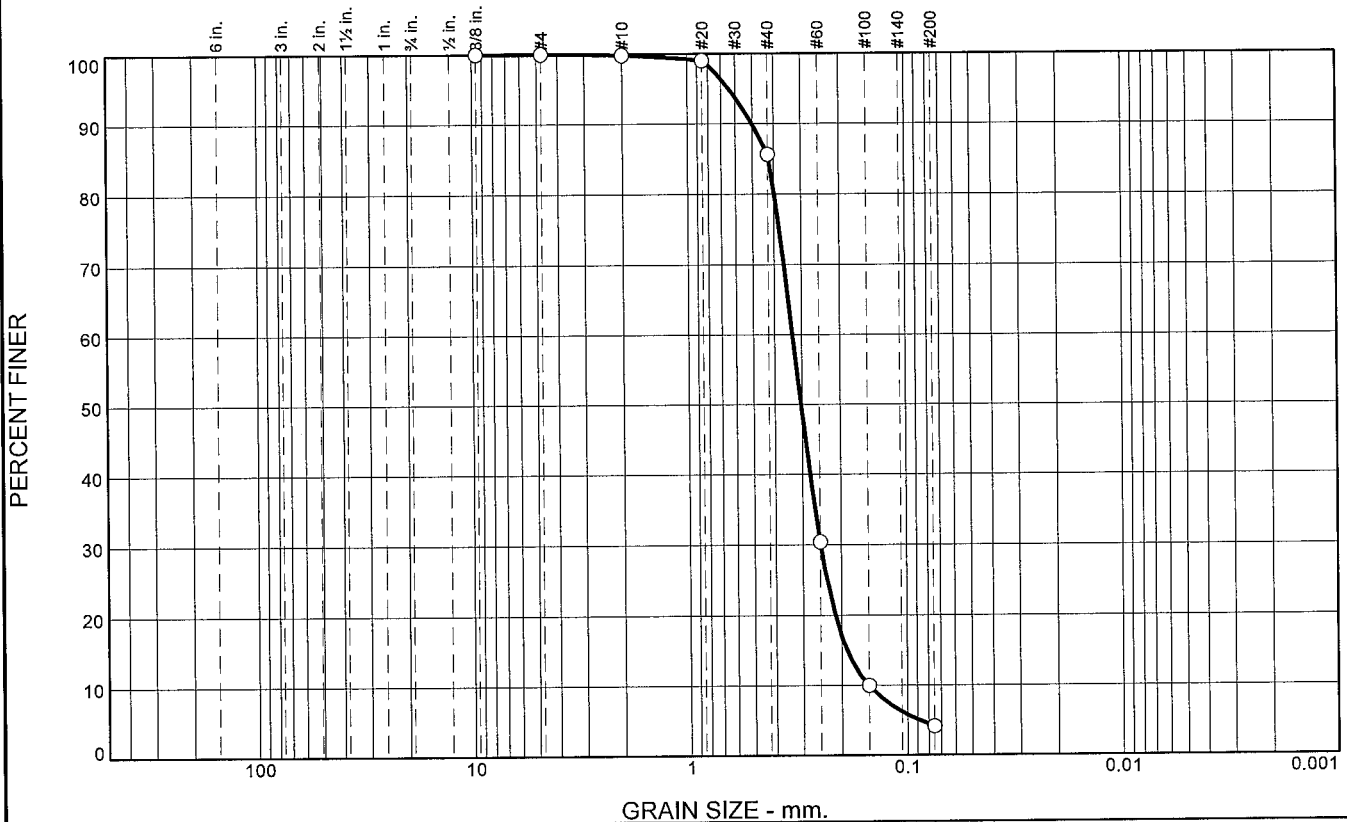
Tested By: J.Maddox

Checked By: R.Byrd

Boring Designation BI-PB-120-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-120-10		LOCATION COORDINATES E = 1,147,975 N = 257,133		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 0 UNDISTURBED (UD)	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 23 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 07-30-10		STARTED 07-30-10 COMPLETED 07-30-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -22.7 Ft.			
8. TOTAL DEPTH OF BORING 15.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-22.7	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 6/2-light brownish gray D50: 0.303 mm % Fines: 4.1		
				B	Classification: SP Color: 2.5Y 6/2-light brownish gray D50: 0.299 mm % Fines: 3.5		
				C	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.2684 mm % Fines: 3.1		
-37.7	15.0						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	14.2	81.5	4.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.8		
#20	99.0		
#40	85.6		
#60	30.4		
#100	10.0		
#200	4.1		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.5049

D₈₅= 0.4218

D₆₀= 0.3305

D₅₀= 0.3030

D₃₀= 0.2488

D₁₅= 0.1894

D₁₀= 0.1501

C_u= 2.20

C_c= 1.25

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-120-10A
Sample Number: TE Lab ID: 4612.36

Depth: 0.0 - 5.0 (ft.)

Date: 8/7/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

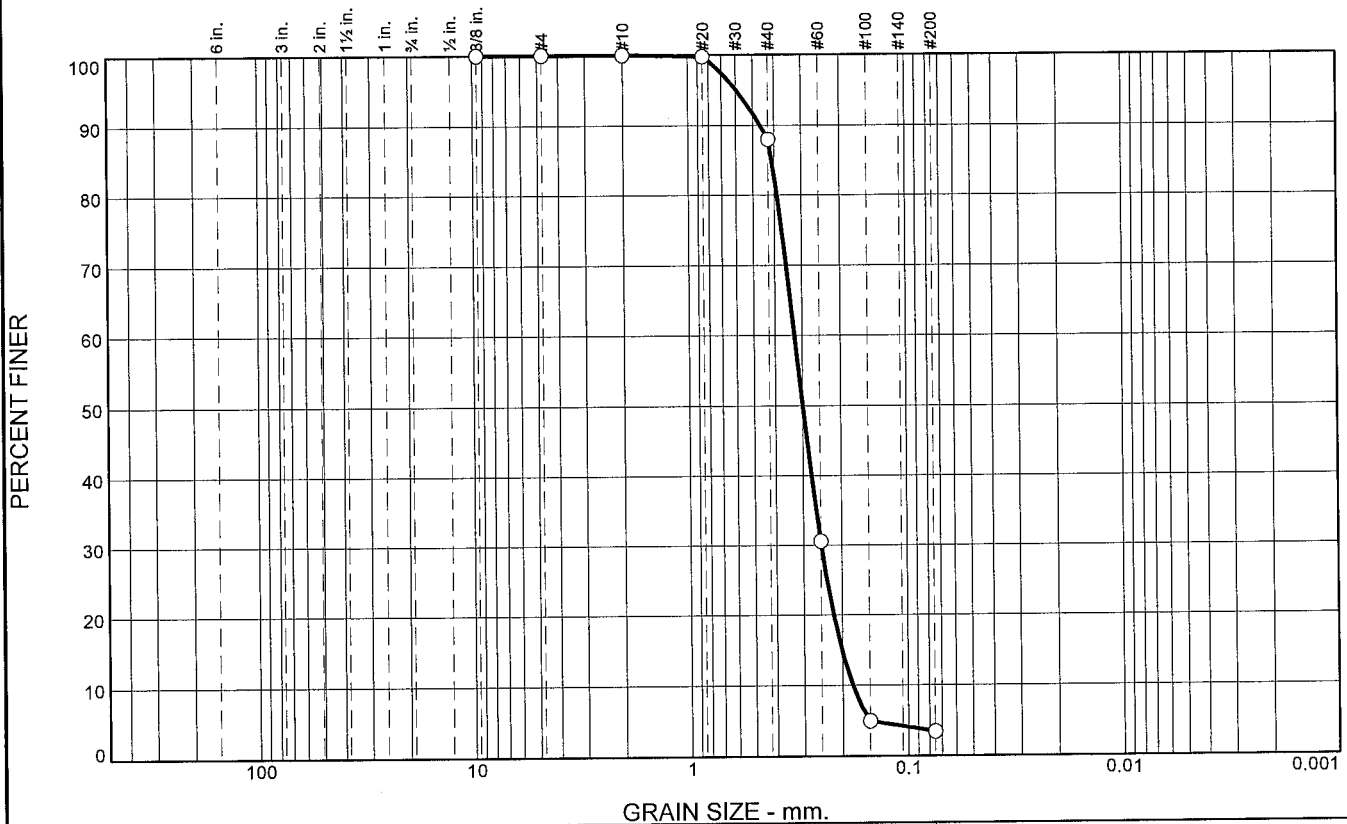
Project No: 10-2123-0009

Report No.

Tested By: J.Maddox

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	12.0	84.5	3.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.7		
#40	88.0		
#60	30.5		
#100	5.0		
#200	3.5		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.4633 D₈₅= 0.4100 D₆₀= 0.3251
D₅₀= 0.2990 D₃₀= 0.2486 D₁₅= 0.2017
D₁₀= 0.1803 C_u= 1.80 C_c= 1.05

Classification

USCS= SP AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-120-10B
Sample Number: TE Lab ID: 4612.37

Depth: 5.0 - 10.0 (ft.)

Date: 8/7/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

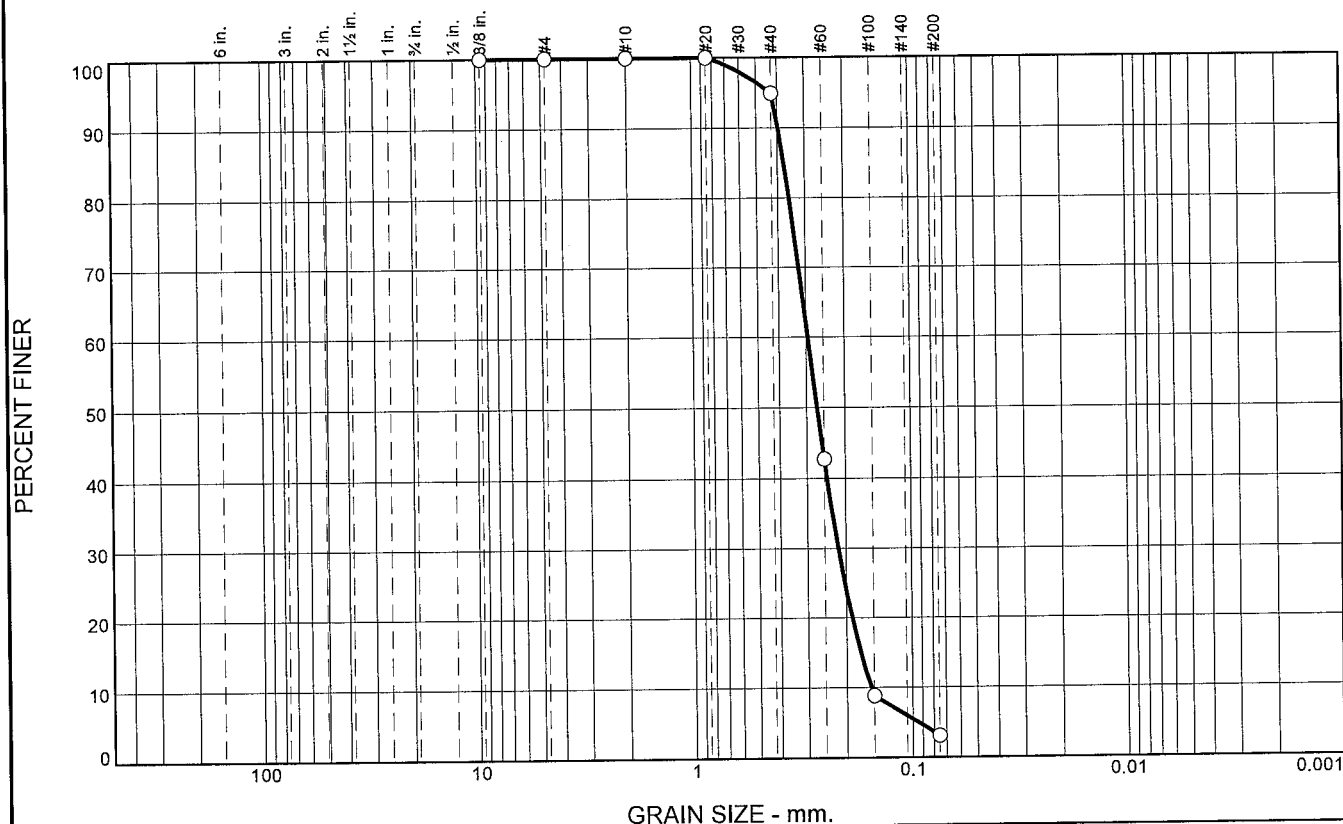
Project No: 10-2123-0009

Report No.

Tested By: J.Maddox

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	5.1	91.8	3.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	100.0		
#40	94.9		
#60	42.7		
#100	8.8		
#200	3.1		

* (no specification provided)

Material Description

SAND, (SP), fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.3968 D₈₅= 0.3742 D₆₀= 0.2943
D₅₀= 0.2684 D₃₀= 0.2169 D₁₅= 0.1728
D₁₀= 0.1548 C_u= 1.90 C_c= 1.03

Classification

USCS= SP AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-120-10C
Sample Number: TE Lab ID: 4612.38

Depth: 10.0 15.0 (ft.)

Date: 8/7/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Report No.

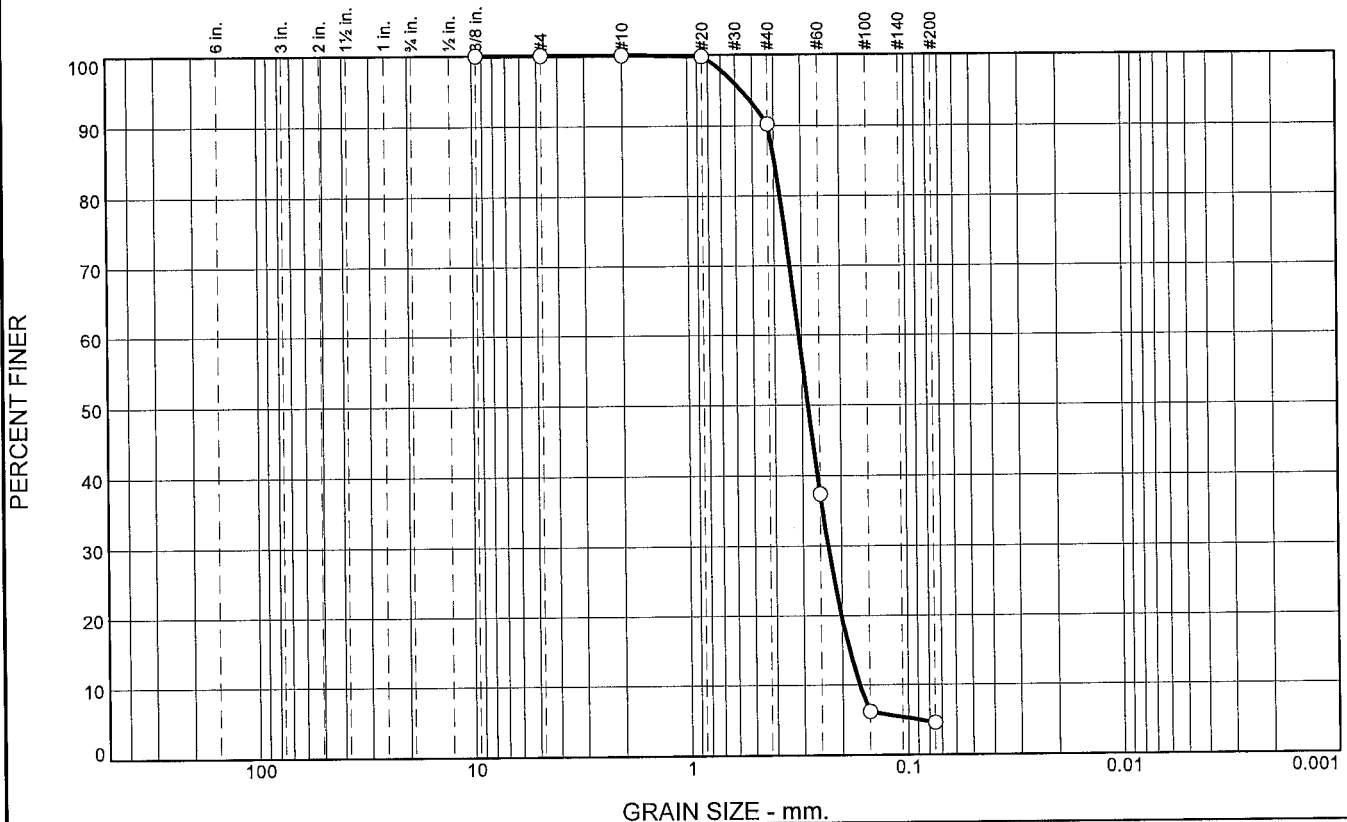
Tested By: J.Maddox

Checked By: R.Byrd

Boring Designation BI-PB-121-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-121-10		LOCATION COORDINATES E = 1,149,586 N = 257,136		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 4		DISTURBED 0 UNDISTURBED (UD)	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 29 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 07-31-10		STARTED 07-31-10 COMPLETED 07-31-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -28.9 Ft.			
8. TOTAL DEPTH OF BORING 20.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-28.9	0.0						
			SAND, well-graded, mostly fine-grained sand-sized quartz, lt. gray (SW)	A	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.2825 mm % Fines: 4.6		
				B	Classification: SP-SM Color: 2.5Y 7/1-light gray D50: 0.2726 mm % Fines: 10.4		
				C	Classification: SP-SM Color: 2.5Y 7/2-light gray D50: 0.3128 mm % Fines: 6.2		
-43.9	15.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, lt. gray (SP)	D	Classification: SP-SM Color: 2.5Y 7/2-light gray D50: 0.3051 mm % Fines: 6.1		
-48.9	20.0						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	9.8	85.6	4.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.8		
#40	90.2		
#60	37.4		
#100	6.2		
#200	4.6		

* (no specification provided)

Material Description

SAND, (SP), fine grained

PL= Atterberg Limits LL= PI=

Coefficients
D₉₀= 0.4235 D₈₅= 0.3967 D₆₀= 0.3095
D₅₀= 0.2825 D₃₀= 0.2303 D₁₅= 0.1854
D₁₀= 0.1672 C_u= 1.85 C_c= 1.02

USCS= SP Classification AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-PB-121-10A
Sample Number: TE Lab ID: 4612.39

Depth: 0.0 - 5.0 (ft.)

Date: 8/7/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

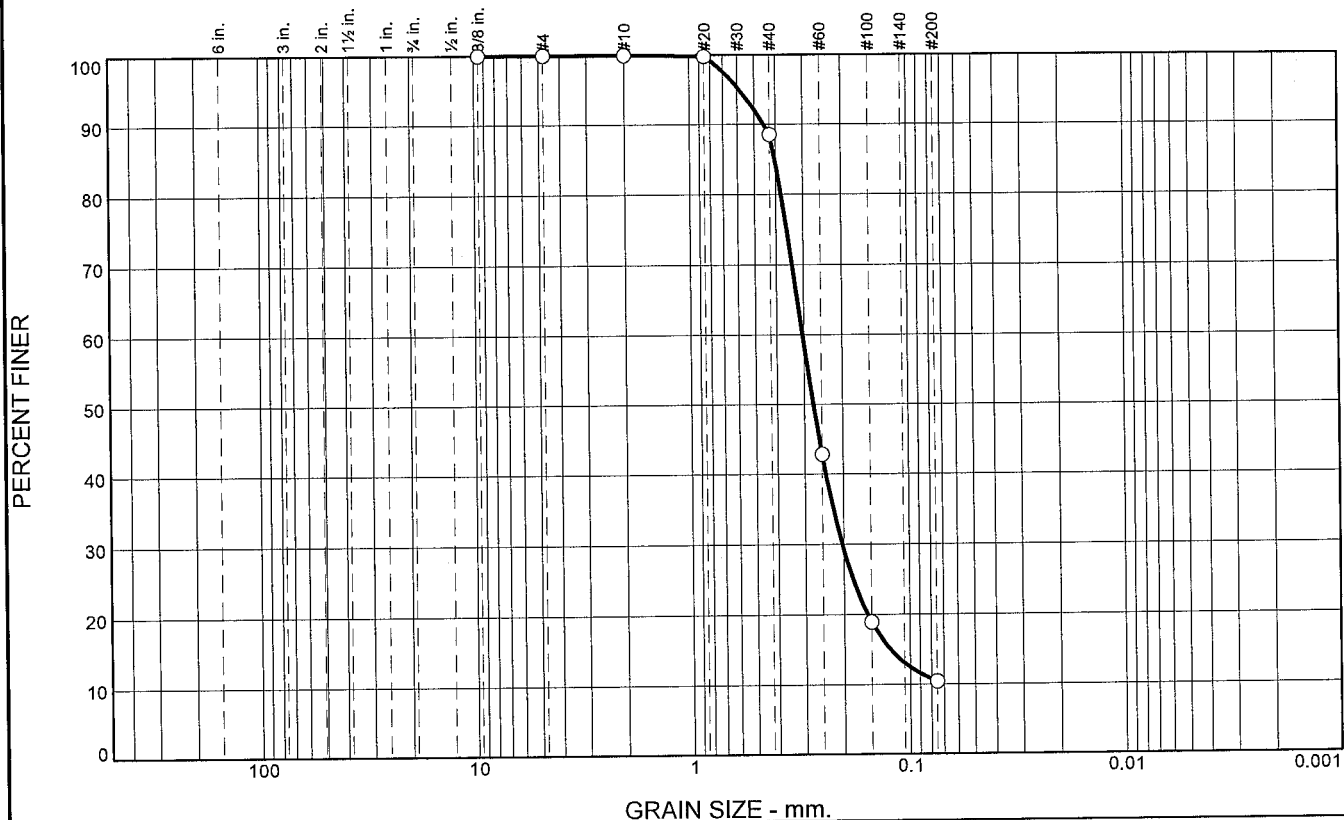
Project No: 10-2123-0009

Report No.

Tested By: J.Maddox

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	11.5	78.1	10.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.8		
#40	88.5		
#60	42.8		
#100	18.9		
#200	10.4		

* (no specification provided)

Material Description
SAND, (SP-SM), medium to fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.4537 D₈₅= 0.4035 D₆₀= 0.3039
D₅₀= 0.2726 D₃₀= 0.2041 D₁₅= 0.1228
D₁₀= C_u= C_c=

Classification
USCS= SP-SM AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-PB-121-10B
Sample Number: TE Lab ID: 4612.40

Depth: 5.0 - 10.0 (ft.)

Date: 8/7/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

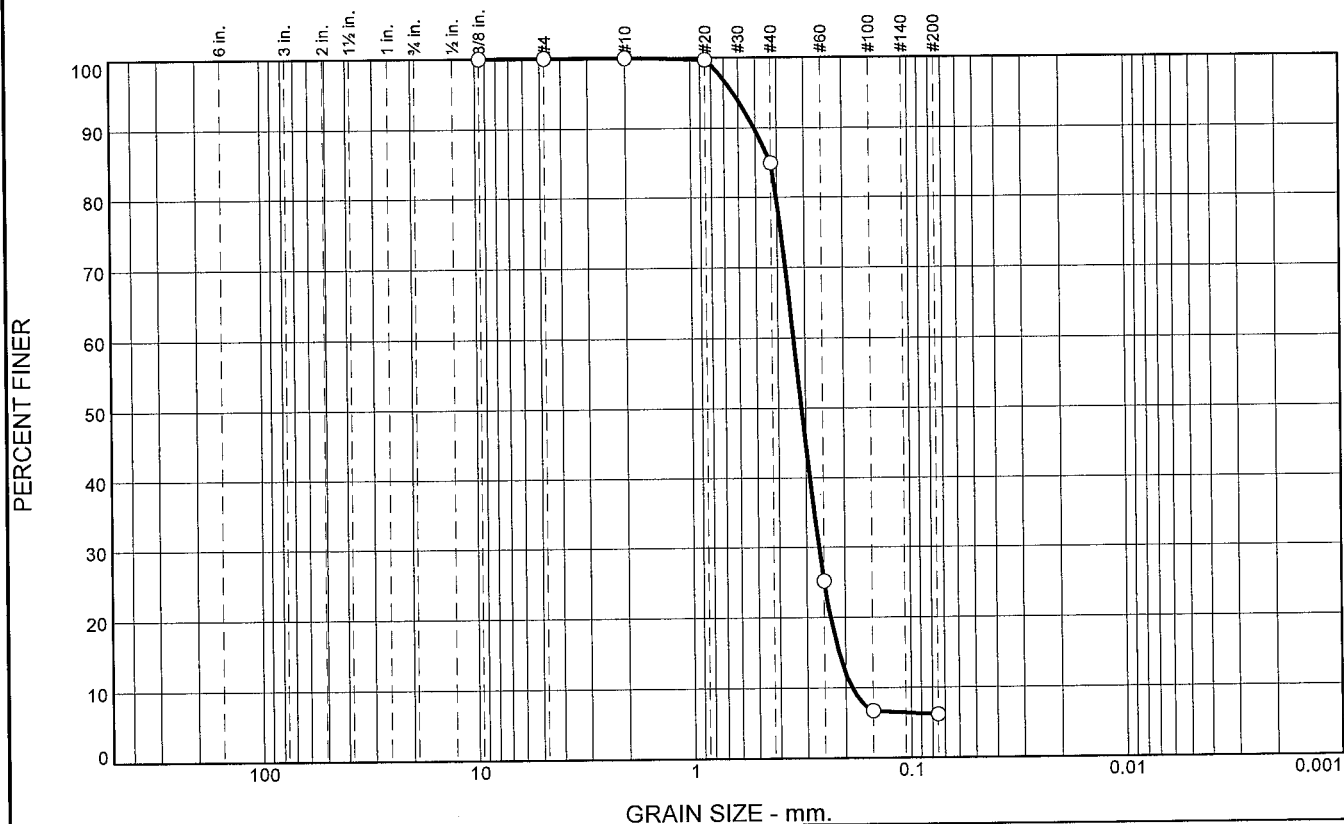
Project No: 10-2123-0009

Report No.

Tested By: J.Maddox

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	15.1	78.7	6.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.7		
#40	84.9		
#60	25.2		
#100	6.7		
#200	6.2		

* (no specification provided)

Material Description
SAND, (SP-SM), medium to fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.5090 D₈₅= 0.4264 D₆₀= 0.3388
D₅₀= 0.3128 D₃₀= 0.2630 D₁₅= 0.2150
D₁₀= 0.1880 C_u= 1.80 C_c= 1.09

Classification
USCS= SP-SM AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-PB-121-10C
Sample Number: TE Lab ID: 4612.41

Depth: 10.0 - 15.0 (ft.)

Date: 8/7/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

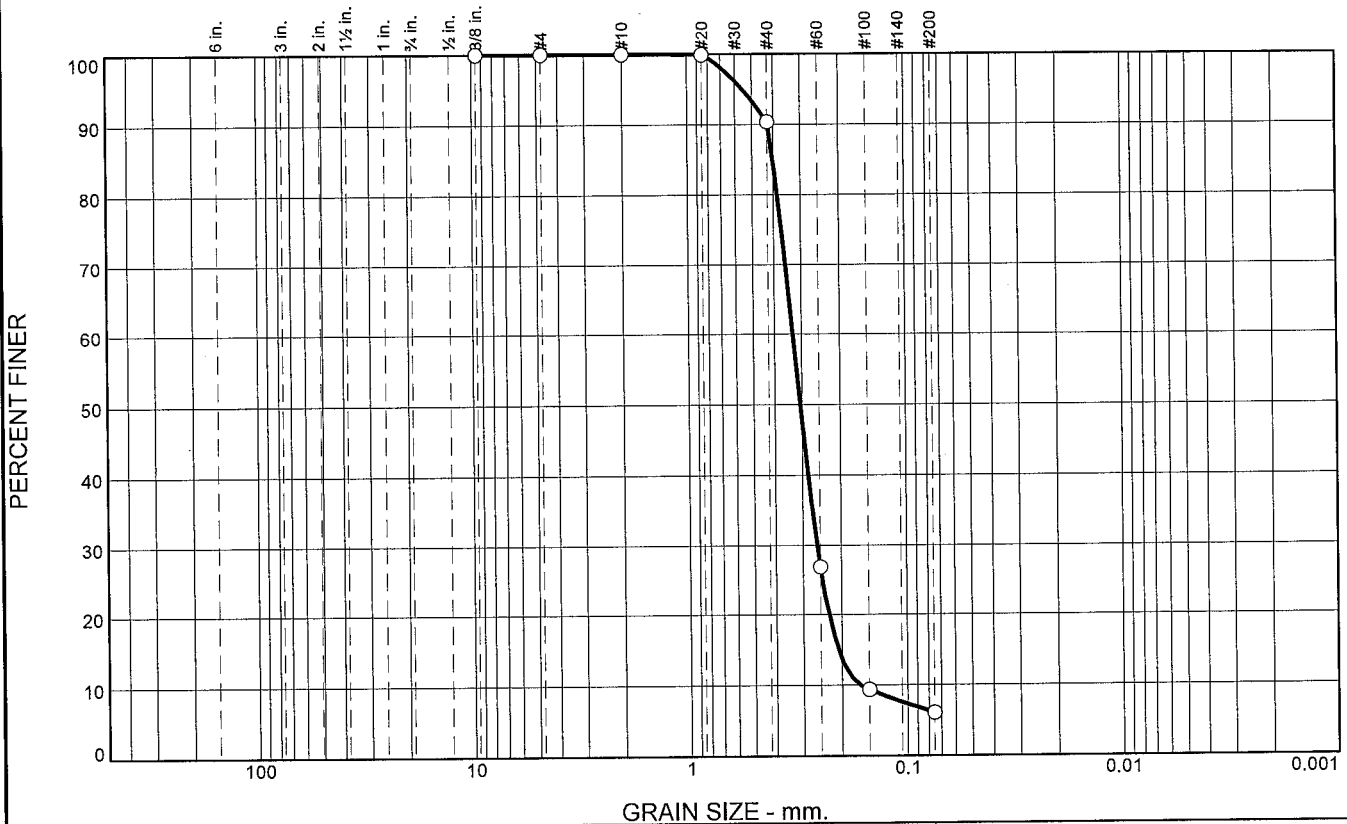
Project No: 10-2123-0009

Report No.

Tested By: J.Maddox

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	9.6	84.3	6.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	90.4		
#60	26.9		
#100	9.4		
#200	6.1		

* (no specification provided)

Material Description
SAND, (SP-SM), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.4232 D₈₅= 0.4020 D₆₀= 0.3287
 D₅₀= 0.3051 D₃₀= 0.2582 D₁₅= 0.2078
 D₁₀= 0.1654 C_u= 1.99 C_c= 1.23

Classification
 USCS= SP-SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-PB-121-10D
 Sample Number: TE Lab ID: 4612.42

Depth: 15.0 - 20.0 (ft.)

Date: 8/7/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Report No.

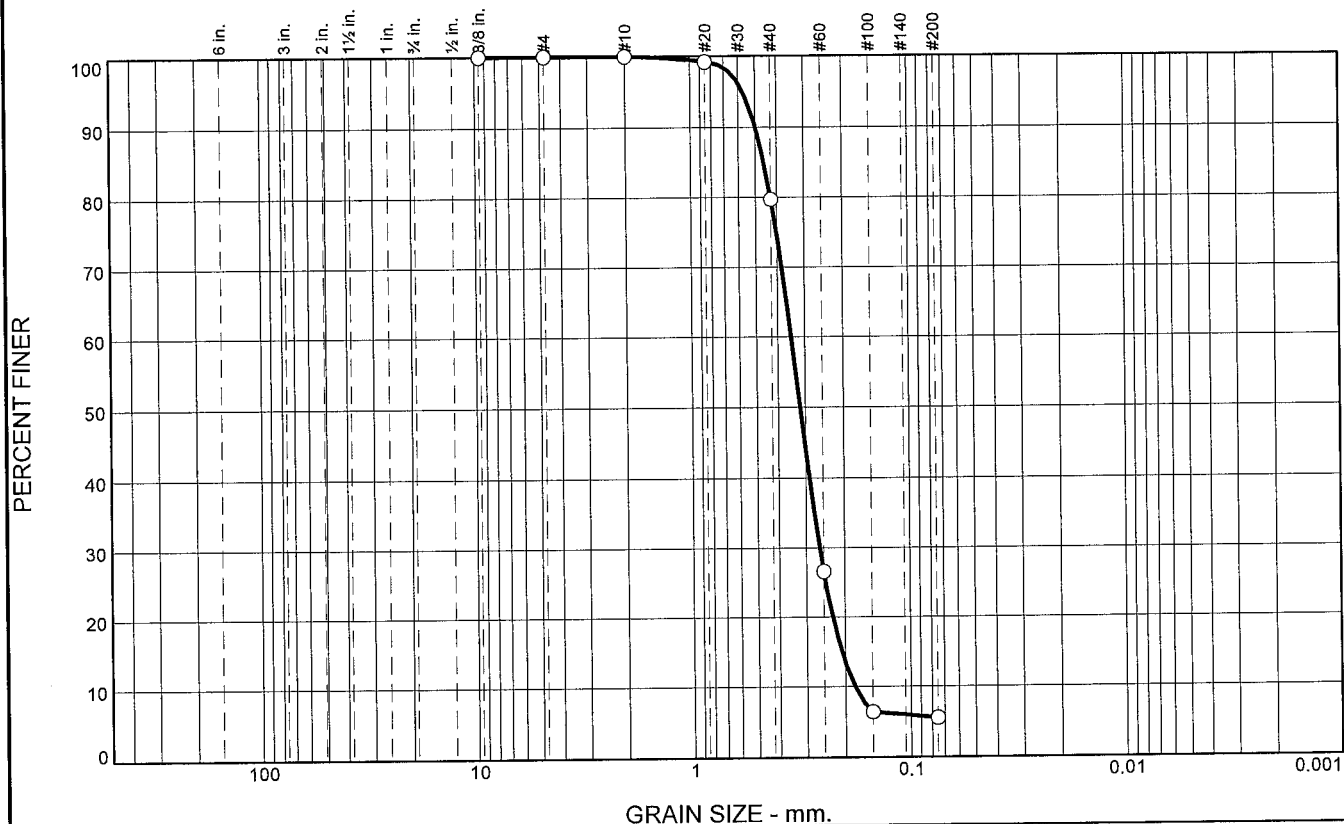
Tested By: J.Maddox

Checked By: R.Byrd

Boring Designation BI-PB-122-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-122-10		LOCATION COORDINATES E = 1,151,118 N = 257,165		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 4		UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		14. WATER DEPTH 30 Ft.	
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 07-31-10		STARTED 07-31-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -29.9 Ft.		COMPLETED 07-31-10	
8. TOTAL DEPTH OF BORING 18.5 Ft.				17. TOTAL RECOVERY FOR BORING 100%		18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist	
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-29.9	0.0						
-30.9	1.0		CLAY, fat, dark gray (CH)				
			SAND, well-graded, mostly fine-grained sand-sized quartz, lt. gray (SW)	A	Classification: SP-SM Color: 2.5Y 6/2-light brownish gray D50: 0.3165 mm % Fines: 5.5		
				B	Classification: SM Color: 2.5Y 7/1-light gray D50: 0.259 mm % Fines: 12.8		
				C	Classification: SP-SM Color: 2.5Y 7/2-light gray D50: 0.3229 mm % Fines: 6.5		
-45.9	16.0			D	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.3342 mm % Fines: 4.3		
-48.4	18.5		CLAY, fat, dark gray (CH)				
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	20.3	74.2	5.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.2		
#40	79.7		
#60	26.6		
#100	6.4		
#200	5.5		

* (no specification provided)

Material Description
SAND, (SP-SM), medium to fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.5002 D₈₅= 0.4574 D₆₀= 0.3468
D₅₀= 0.3165 D₃₀= 0.2602 D₁₅= 0.2078
D₁₀= 0.1811 C_u= 1.91 C_c= 1.08

Classification
USCS= SP-SM AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-PB-122-10A
Sample Number: TE Lab ID: 4612.43

Depth: 1.0 - 5.0 (ft.)

Date: 8/7/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

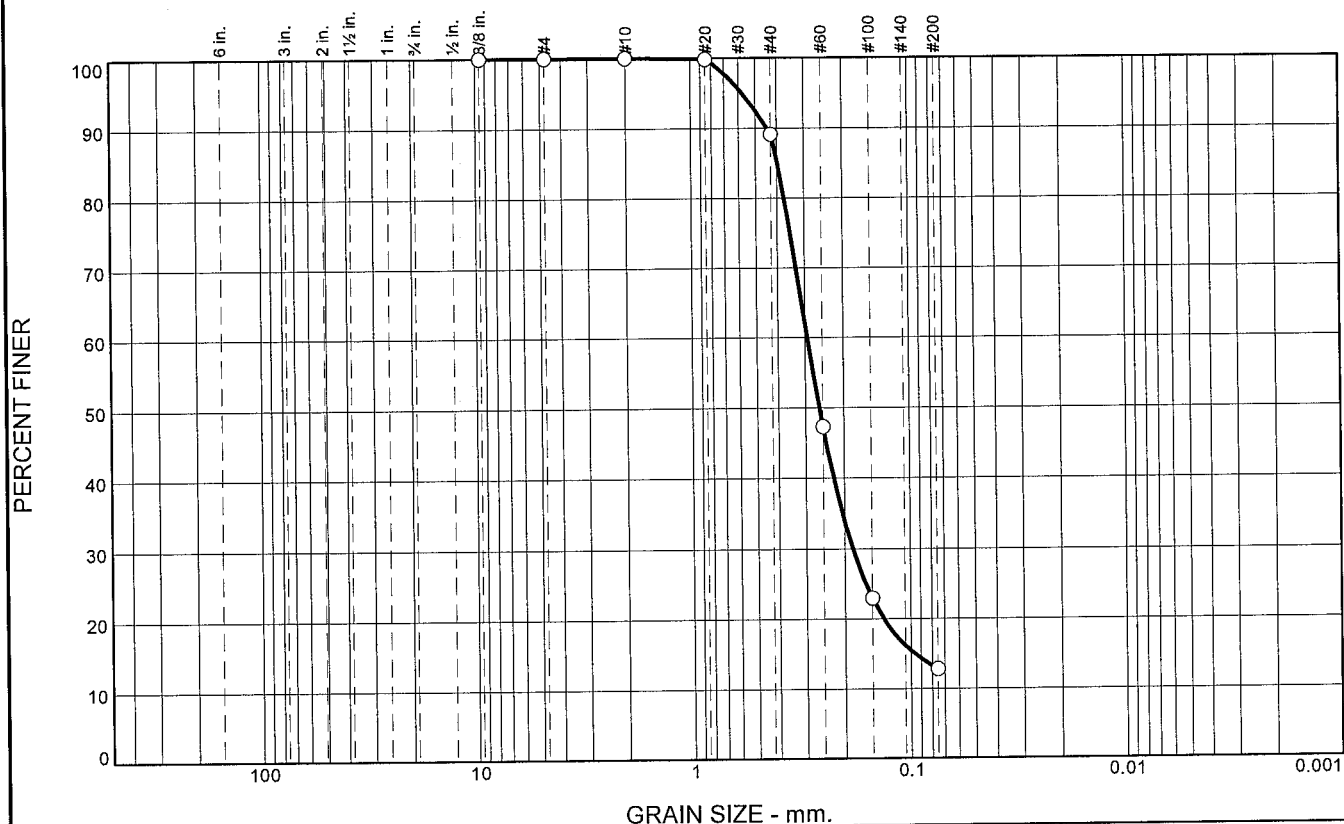
Project No: 10-2123-0009

Report No.

Tested By: J.Maddox

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	10.9	76.3	12.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.8		
#40	89.1		
#60	47.3		
#100	23.0		
#200	12.8		

* (no specification provided)

Material Description

SILTY SAND, (SM), medium to fine grained, with clay pockets

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.4429 D₈₅= 0.3980 D₆₀= 0.2925
D₅₀= 0.2590 D₃₀= 0.1841 D₁₅= 0.0956
D₁₀= C_u= C_c=

Classification

USCS= SM AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-122-10B
Sample Number: TE Lab ID: 4612.44

Depth: 5.0 - 10.0 (ft.)

Date: 8/7/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

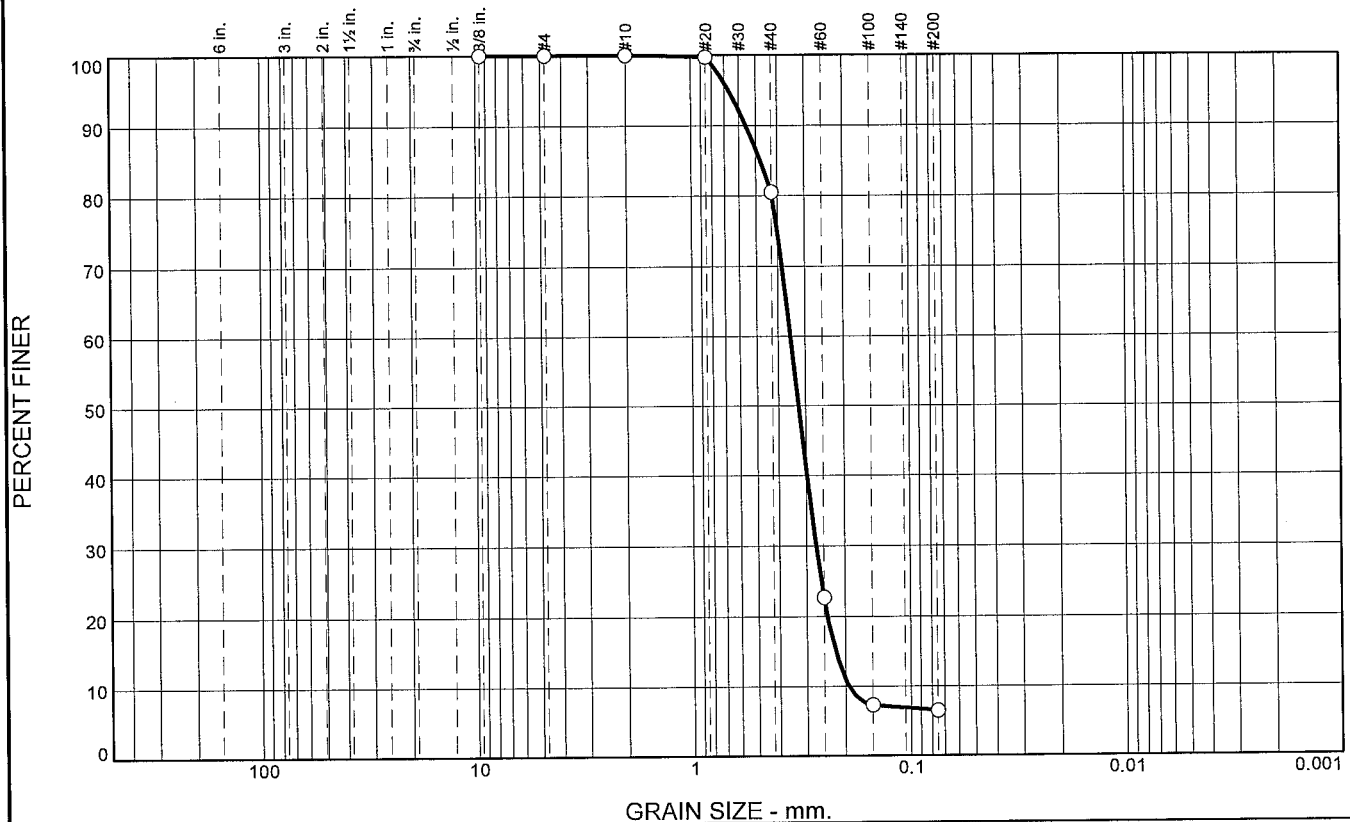
Project No: 10-2123-0009

Report No.

Tested By: J.Maddox

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	19.5	74.0	6.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.7		
#40	80.5		
#60	22.7		
#100	7.3		
#200	6.5		

* (no specification provided)

Material Description

SAND, (SP-SM), medium to fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.5568 D₈₅= 0.4785 D₆₀= 0.3508
D₅₀= 0.3229 D₃₀= 0.2707 D₁₅= 0.2219
D₁₀= 0.1931 C_u= 1.82 C_c= 1.08

Classification

USCS= SP-SM AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-122-10C
Sample Number: TE Lab ID: 4612.45

Depth: 10.0 - 15.0 (ft.)

Date: 8/7/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

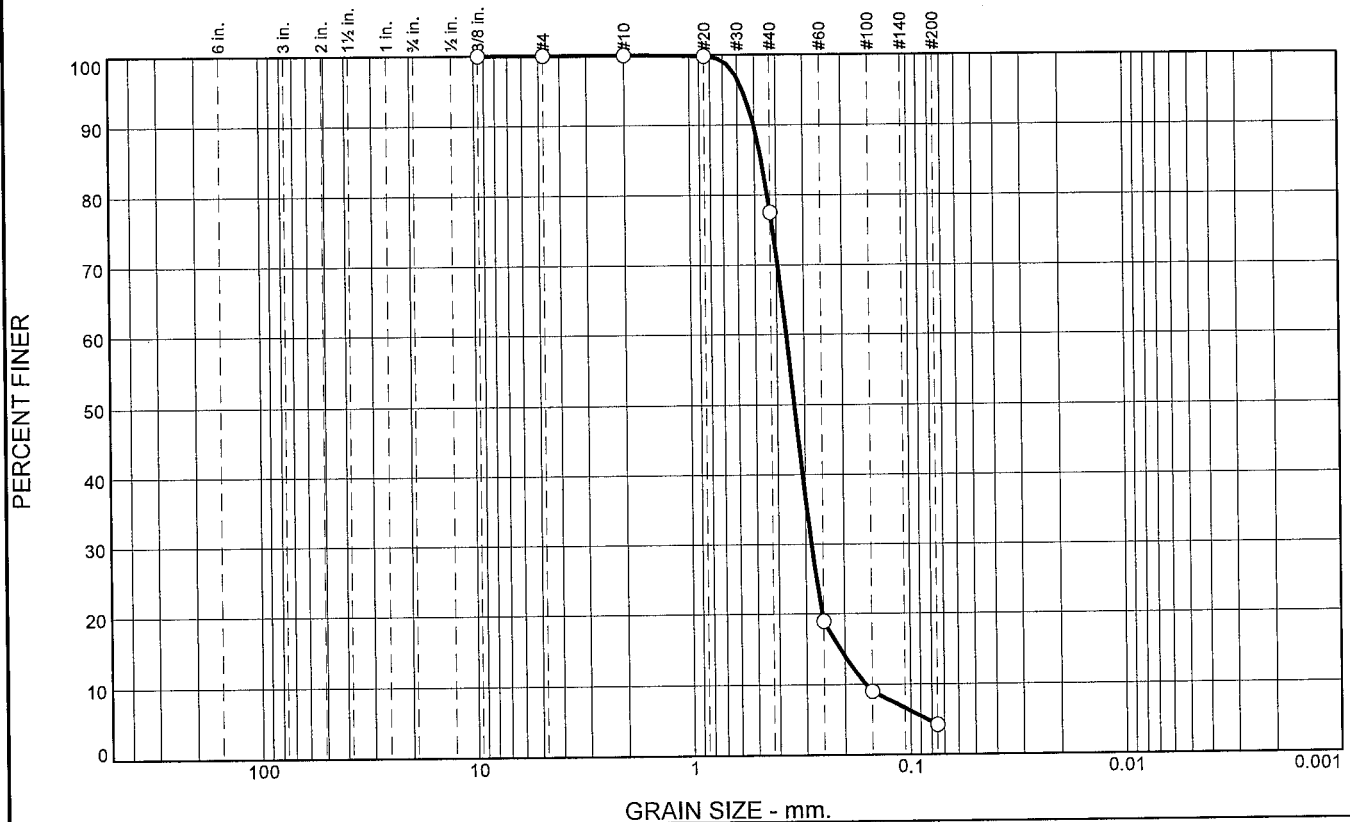
Project No: 10-2123-0009

Report No.

Tested By: J.Maddox

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	22.5	73.2	4.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.8		
#40	77.5		
#60	18.9		
#100	9.0		
#200	4.3		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained

PL= Atterberg Limits LL= PI=

Coefficients
D₉₀= 0.5046 D₈₅= 0.4656 D₆₀= 0.3624
D₅₀= 0.3342 D₃₀= 0.2822 D₁₅= 0.2106
D₁₀= 0.1603 C_u= 2.26 C_c= 1.37

Classification
USCS= SP AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-PB-122-10D
Sample Number: TE Lab ID: 4612.46

Depth: 15.0 - 16.5 (ft.)

Date: 8/7/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Report No.

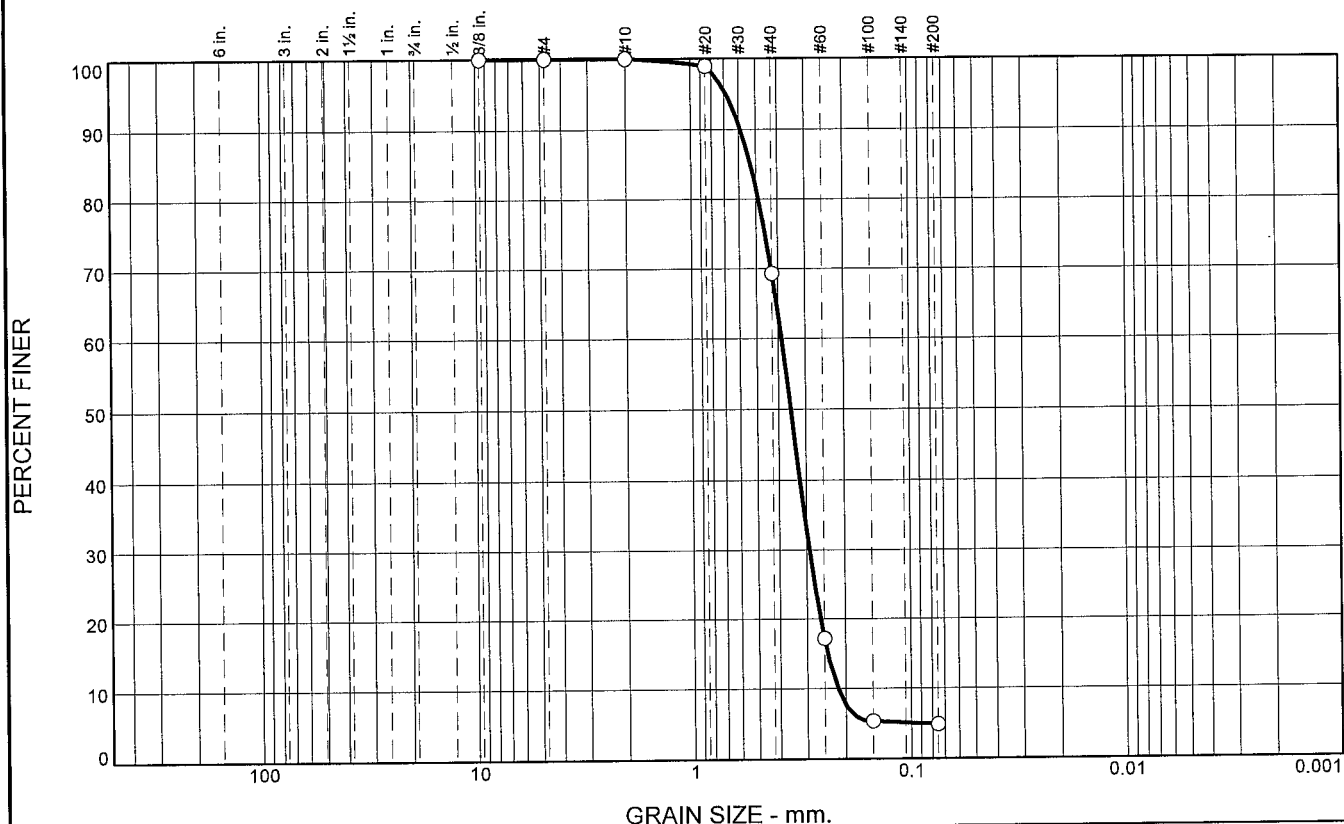
Tested By: J.Maddox

Checked By: R.Byrd

Boring Designation BI-PB-123-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-123-10		LOCATION COORDINATES E = 1,152,555 N = 257,201		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		14. WATER DEPTH 31 Ft.	
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 07-31-10		STARTED 07-31-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -30.5 Ft.		COMPLETED 07-31-10	
8. TOTAL DEPTH OF BORING 16.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%		18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist	
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-30.5	0.0						
			SAND, well-graded, mostly fine to medium-grained sand-sized quartz, lt. gray (SW)	A	Classification: SP Color: 2.5Y 7/2-light gray D50: 0.3514 mm % Fines: 4.9		
				B	Classification: SP Color: 2.5Y 8/1-white D50: 0.3001 mm % Fines: 3.2		
				C	Classification: SP Color: 2.5Y 8/1-white D50: 0.295 mm % Fines: 4.5		
-45.5	15.0						
-46.5	16.0		SAND, poorly-graded, some silt, dark gray (SP)	NS			
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	30.7	64.4	4.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	98.9		
#40	69.3		
#60	17.2		
#100	5.3		
#200	4.9		

* (no specification provided)

Material Description
SAND, (SP), medium to fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.5888 D₈₅= 0.5299 D₆₀= 0.3860
 D₅₀= 0.3514 D₃₀= 0.2909 D₁₅= 0.2416
 D₁₀= 0.2173 C_u= 1.78 C_c= 1.01

Classification
 USCS= SP AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-PB-123-10A
 Sample Number: TE Lab ID: 4612.47

Depth: 0.0 - 5.0 (ft.)

Date: 8/7/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project

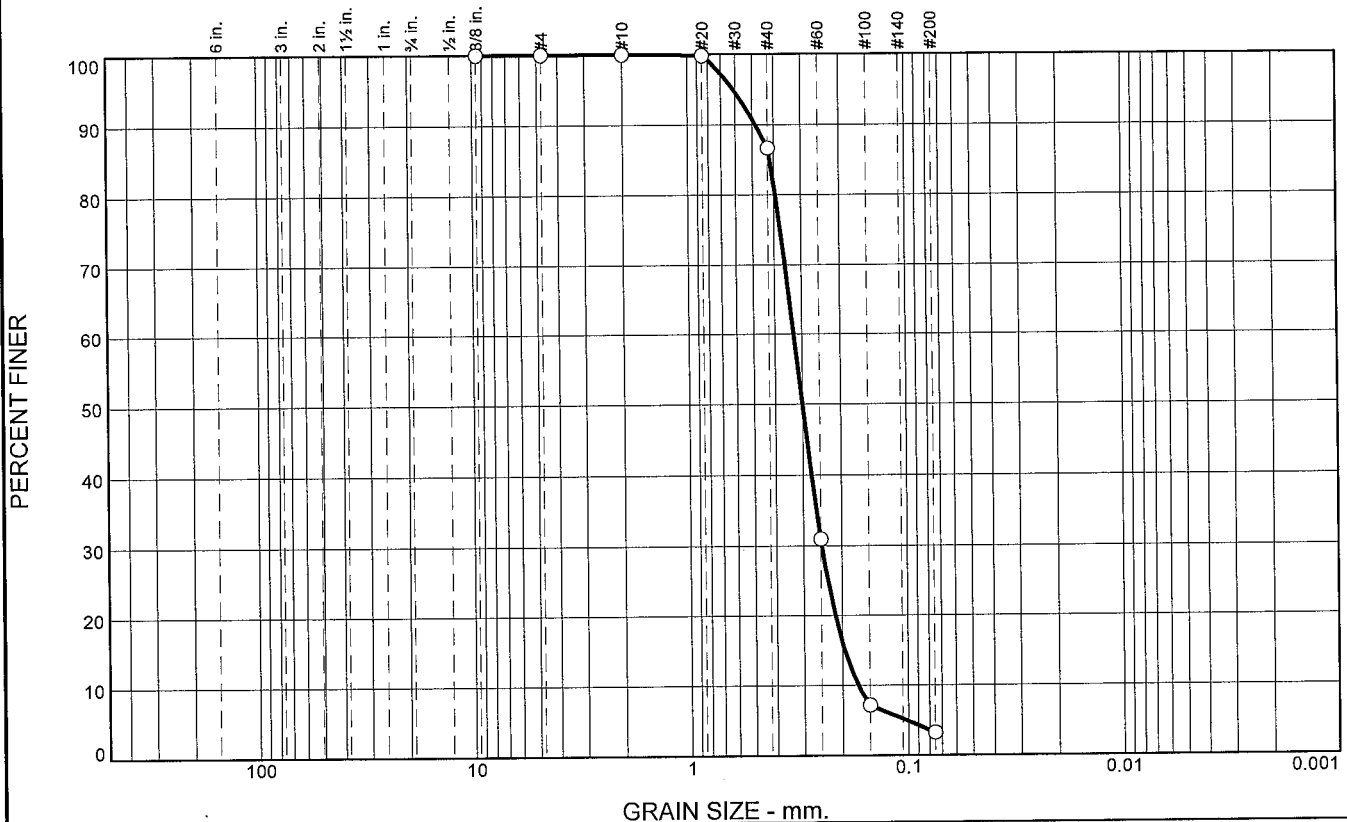
Project No: 10-2123-0009

Report No.

Tested By: J.Maddox

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	13.4	83.4	3.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.8		
#40	86.6		
#60	31.0		
#100	7.1		
#200	3.2		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.4845 D₈₅= 0.4165 D₆₀= 0.3272
D₅₀= 0.3001 D₃₀= 0.2473 D₁₅= 0.1957
D₁₀= 0.1701 C_u= 1.92 C_c= 1.10

Classification

USCS= SP AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-123-10B
Sample Number: TE Lab ID: 4612.48

Depth: 5.0 - 10.0 (ft.)

Date: 8/7/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

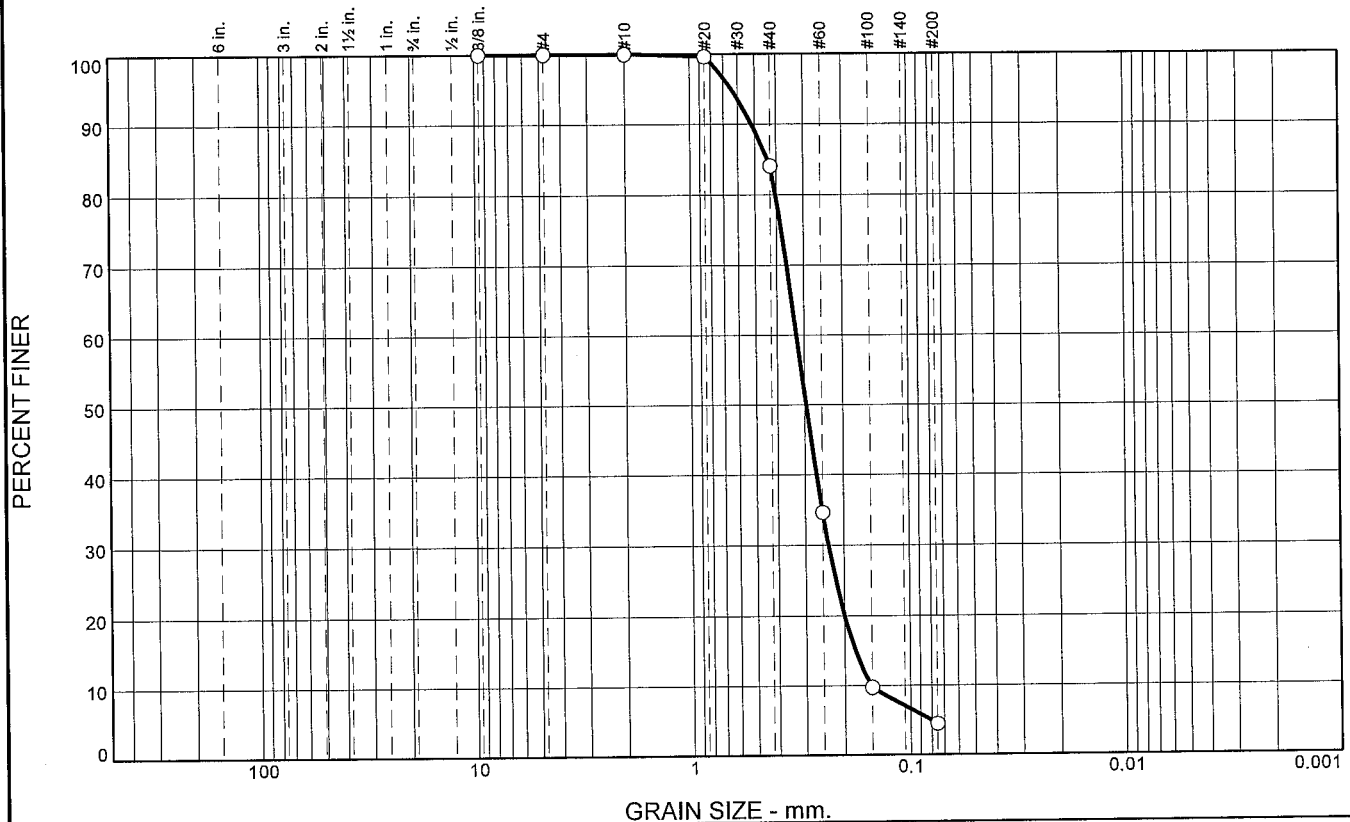
Project No: 10-2123-0009

Report No.

Tested By: J.Maddox

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	15.9	79.6	4.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.6		
#40	84.1		
#60	34.6		
#100	9.7		
#200	4.5		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.5202 D₈₅= 0.4377 D₆₀= 0.3255
D₅₀= 0.2950 D₃₀= 0.2356 D₁₅= 0.1788
D₁₀= 0.1517 C_u= 2.15 C_c= 1.12

Classification

USCS= SP AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-123-10C
Sample Number: TE Lab ID: 4612.64

Depth: 10.0 - 15.0 (ft.)

Date: 8/7/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

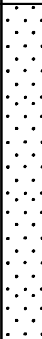

Project No: 10-2123-0009

Report No.

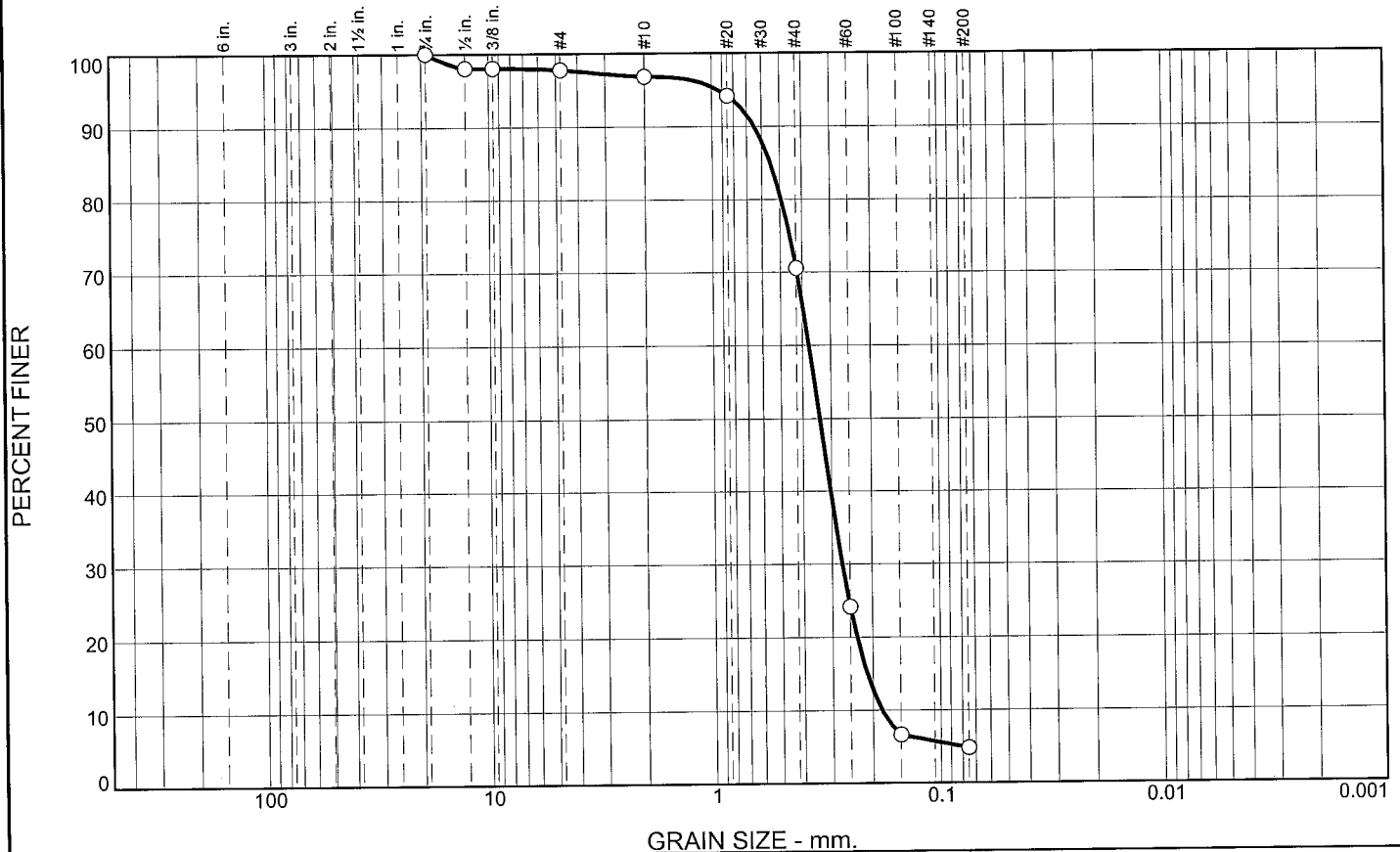
Tested By: J.Maddox

Checked By: R.Byrd

Boring Designation BI-PB-124-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-124-10		LOCATION COORDINATES E = 1,154,090 N = 257,121		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 32 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 08-07-10		STARTED 08-07-10 COMPLETED 08-07-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -30.6 Ft.			
8. TOTAL DEPTH OF BORING 13.6 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-30.6	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, lt. gray (SP)	A	Classification: SP Color: 2.5Y 7/2-light gray D50: 0.3364 mm % Fines: 4.8		
				B	Classification: SP Color: 2.5Y 7/2-light gray D50: 0.3274 mm % Fines: 3.8		
-38.6	8.0		CLAY, fat, dark gray (CH)	NS			
-44.2	13.6						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	2.2	1.0	26.2	65.8	4.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.750	100.0		
.500	98.0		
.375	98.0		
#4	97.8		
#10	96.8		
#20	94.2		
#40	70.6		
#60	24.2		
#100	6.7		
#200	4.8		

* (no specification provided)

Material Description
SAND, (SP), medium to fine grained, with trace shell

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.6476 D₈₅= 0.5507 D₆₀= 0.3745
 D₅₀= 0.3364 D₃₀= 0.2700 D₁₅= 0.2116
 D₁₀= 0.1818 C_u= 2.06 C_c= 1.07

Classification
 USCS= SP AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-PB-124-10A
 Sample Number: TE Lab ID: 4622.46

Depth: 0.0 - 4.0 (ft.)

Date: 8/15/10

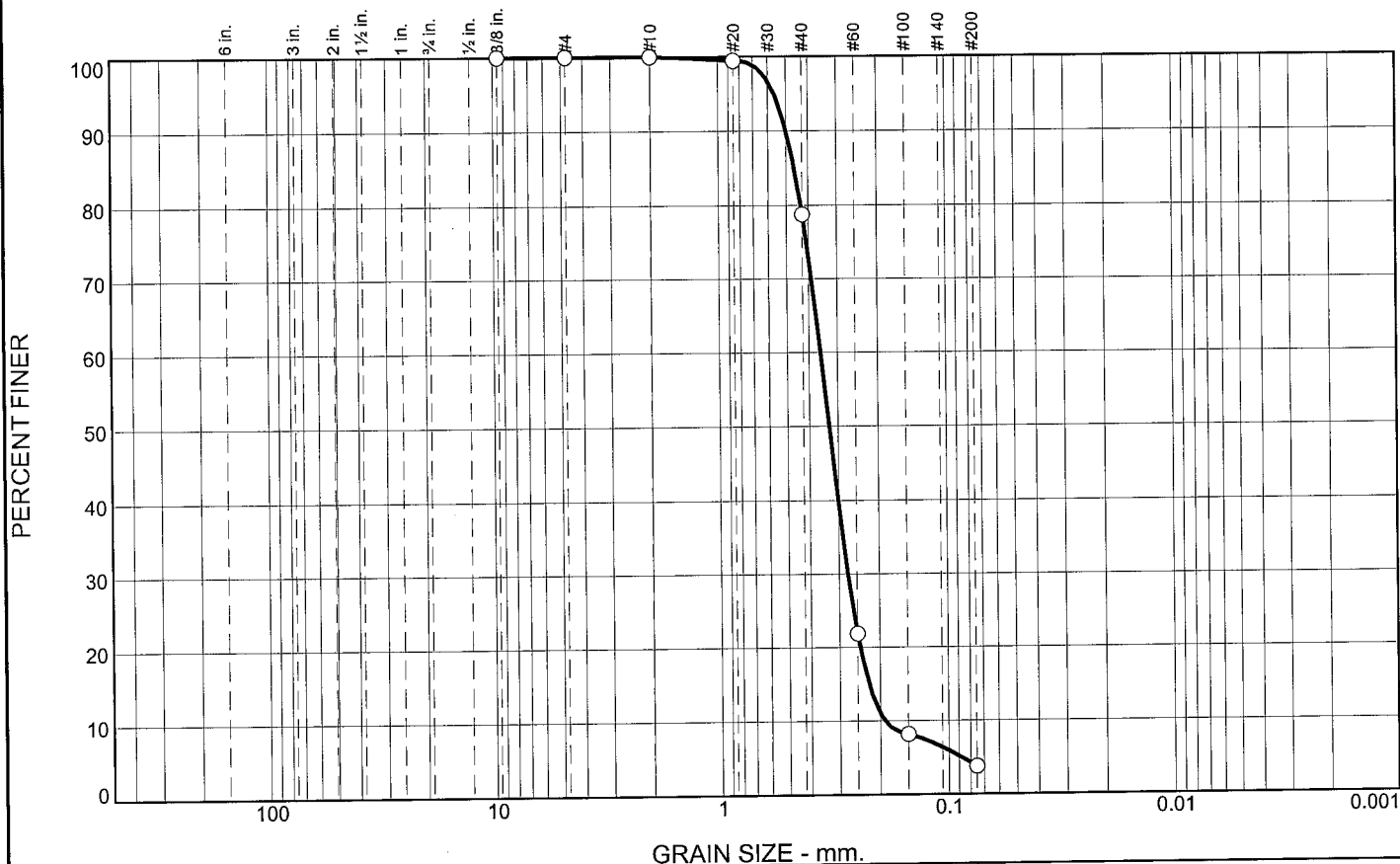
Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
 Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
 Project No: 10-2123-0009 Report No.

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	21.3	74.9	3.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.4		
#40	78.7		
#60	21.8		
#100	8.2		
#200	3.8		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.4996

D₈₅= 0.4602

D₆₀= 0.3560

D₅₀= 0.3274

D₃₀= 0.2740

D₁₅= 0.2236

D₁₀= 0.1903

C_u= 1.87

C_c= 1.11

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-124-10B
Sample Number: TE Lab ID: 4622.47

Depth: 4.0 - 8.0 (ft.)

Date: 8/15/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Report No.

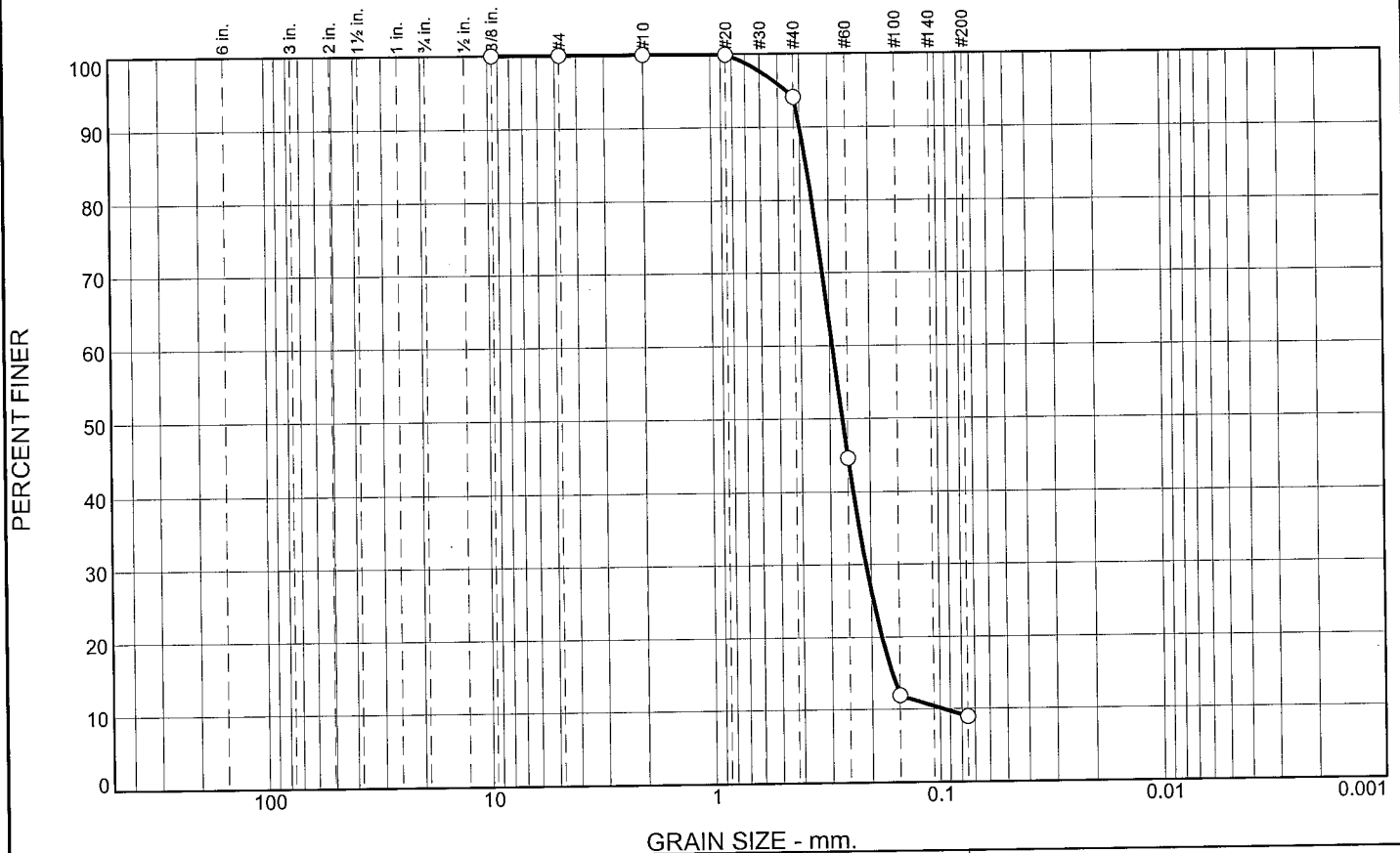
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-PB-125-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-125-10		LOCATION COORDINATES E = 1,153,996 N = 255,749		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		14. WATER DEPTH 37 Ft.	
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 08-07-10		STARTED 08-07-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -35.2 Ft.		COMPLETED 08-07-10	
8. TOTAL DEPTH OF BORING 10.5 Ft.				17. TOTAL RECOVERY FOR BORING 100%		18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist	
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-35.2	0.0		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, gray (SP)				
				A	Classification: SP-SM Color: 2.5Y 5/2-grayish brown D50: 0.2642 mm % Fines: 8.9		
				B	Classification: SP-SM Color: 2.5Y 5/1-gray D50: 0.3004 mm % Fines: 9.4		
-45.7	10.5			NS			
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	5.9	85.2	8.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	94.1		
#60	44.6		
#100	11.9		
#200	8.9		

* (no specification provided)

Material Description
SAND, (SP-SM), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.3999 D₈₅= 0.3756 D₆₀= 0.2913
 D₅₀= 0.2642 D₃₀= 0.2102 D₁₅= 0.1627
 D₁₀= 0.0964 C_u= 3.02 C_c= 1.57

Classification
 USCS= SP-SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-PB-125-10A
 Sample Number: TE Lab ID: 4622.44

Depth: 0.0 - 5.0 (ft.)

Date: 8/15/10

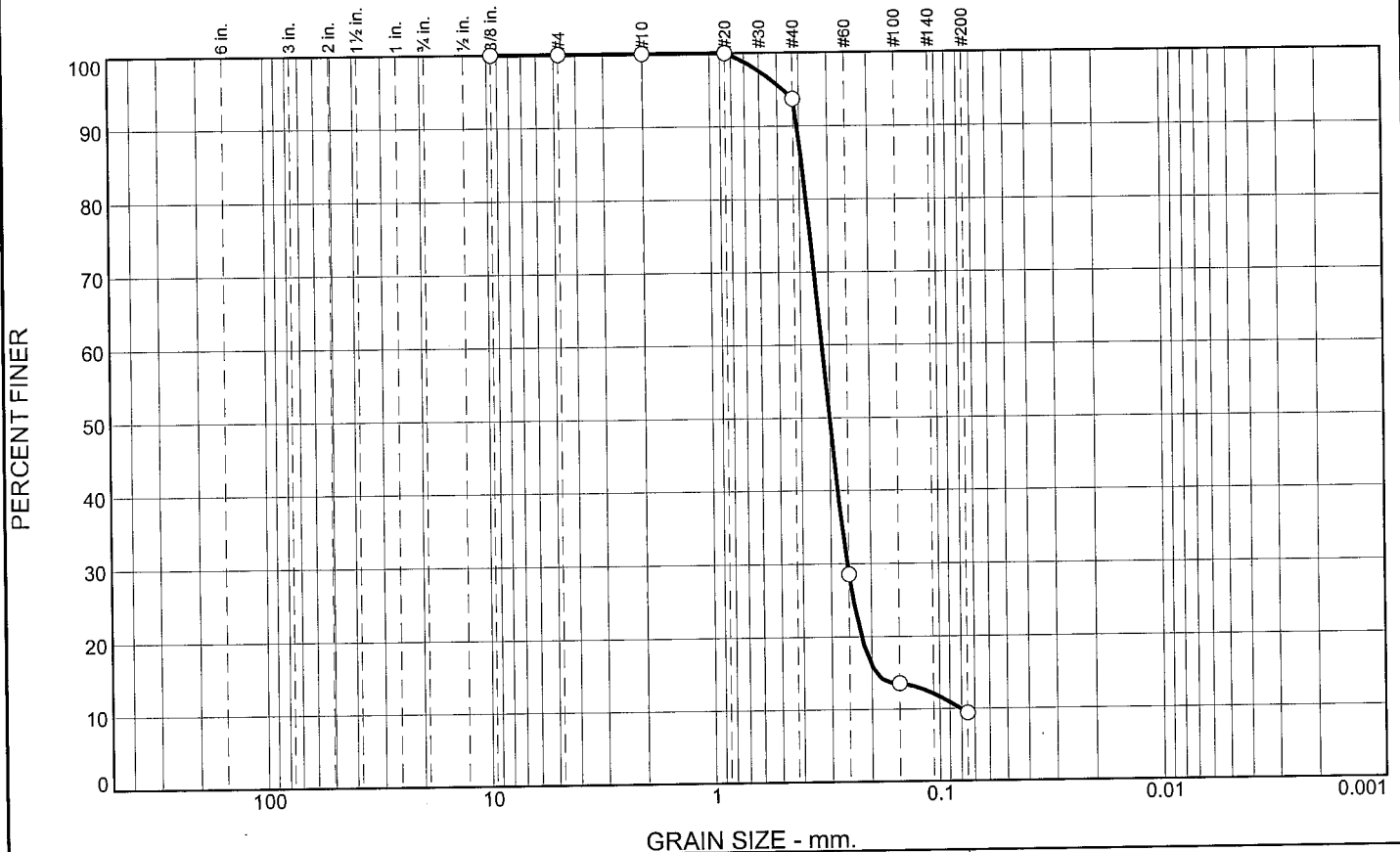
Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
 Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
 Project No: 10-2123-0009 Report No.

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	6.3	84.3	9.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	100.0		
#40	93.7		
#60	28.5		
#100	13.5		
#200	9.4		

* (no specification provided)

Material Description
SAND, (SP-SM), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.4088 D₈₅= 0.3905 D₆₀= 0.3230
 D₅₀= 0.3004 D₃₀= 0.2539 D₁₅= 0.1906
 D₁₀= 0.0804 C_u= 4.02 C_c= 2.48

Classification
 USCS= SP-SM AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-PB-125-10B
 Sample Number: TE Lab ID: 4622.45

Depth: 5.0 - 10.0 (ft.)

Date: 8/15/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Report No.

Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-PB-126-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-126-10		LOCATION COORDINATES E = 1,154,059 N = 254,378		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		14. WATER DEPTH 36 Ft.	
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 08-07-10		STARTED 08-07-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -34.1 Ft.		COMPLETED 08-07-10	
8. TOTAL DEPTH OF BORING 14.7 Ft.				17. TOTAL RECOVERY FOR BORING 100%		18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist	
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-34.1	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace shell fragments, trace silt, lt. gray (SP)	A	Classification: SP-SM Color: 2.5Y 5/2-grayish brown D50: 0.3272 mm % Fines: 9.1		
				B	Classification: SP-SM Color: 2.5Y 5/1-gray D50: 0.3205 mm % Fines: 6.2		
				C	Classification: SP-SM Color: 2.5Y 5/1-gray D50: 0.3173 mm % Fines: 11		
-48.8	14.7		NOTES:				
			1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

PERCENT FINER

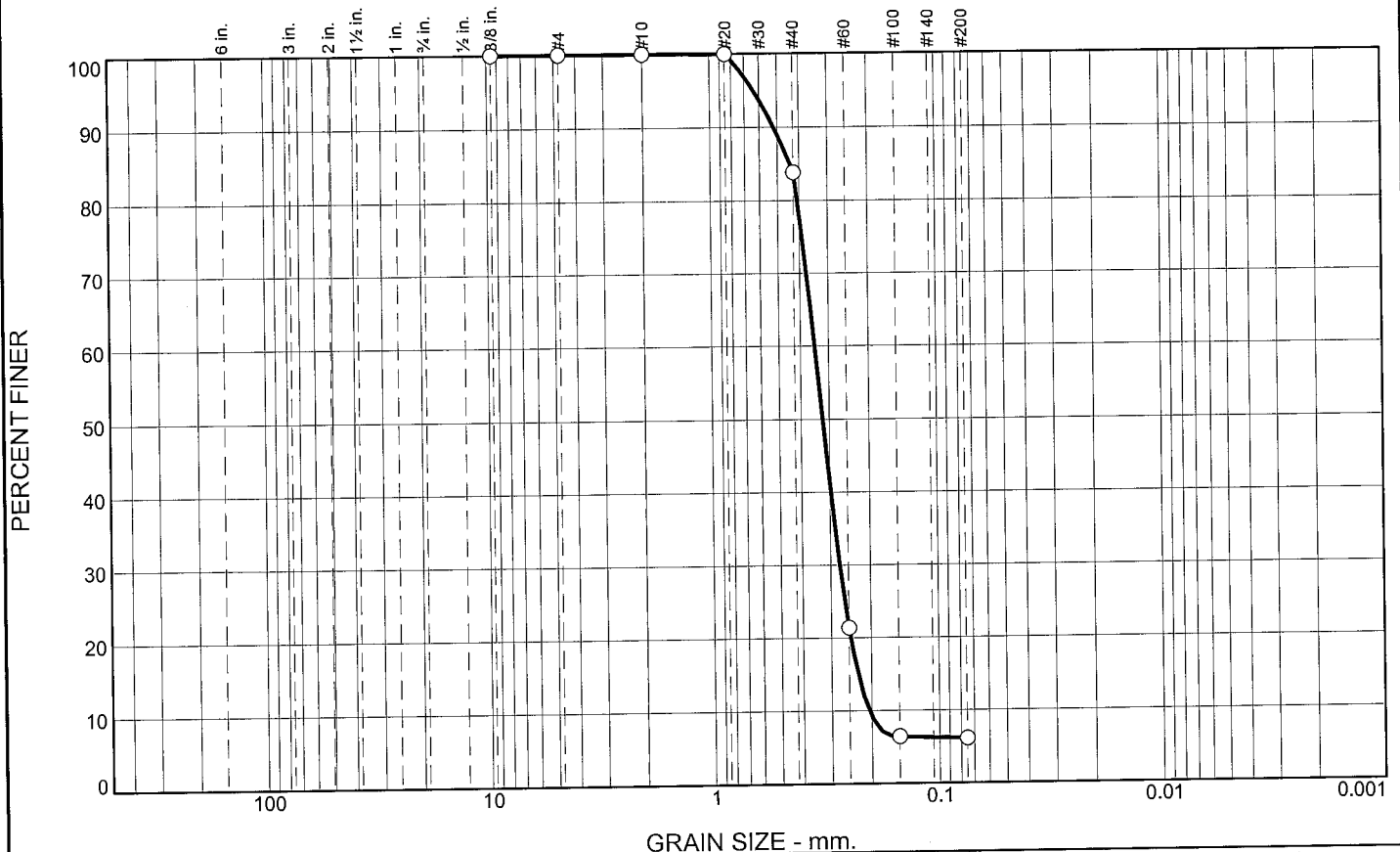


SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.3		
#20	97.2		
#40	74.3		
#60	26.9		
#100	14.9		
#200	9.1		

CADD CODE = CH10D965

L-323

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	16.1	77.7	6.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	83.9		
#60	21.4		
#100	6.4		
#200	6.2		

* (no specification provided)

Material Description
SAND, (SP-SM), medium to fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
 D₉₀= 0.5195 D₈₅= 0.4399 D₆₀= 0.3458
 D₅₀= 0.3205 D₃₀= 0.2727 D₁₅= 0.2289
 D₁₀= 0.2051 C_u= 1.69 C_c= 1.05

Classification
USCS= SP-SM AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-PB-126-10B
Sample Number: TE Lab ID: 4622.42

Depth: 5.0 - 10.0 (ft.)

Date: 8/15/10

Thompson Engineering
Mobile, Alabama

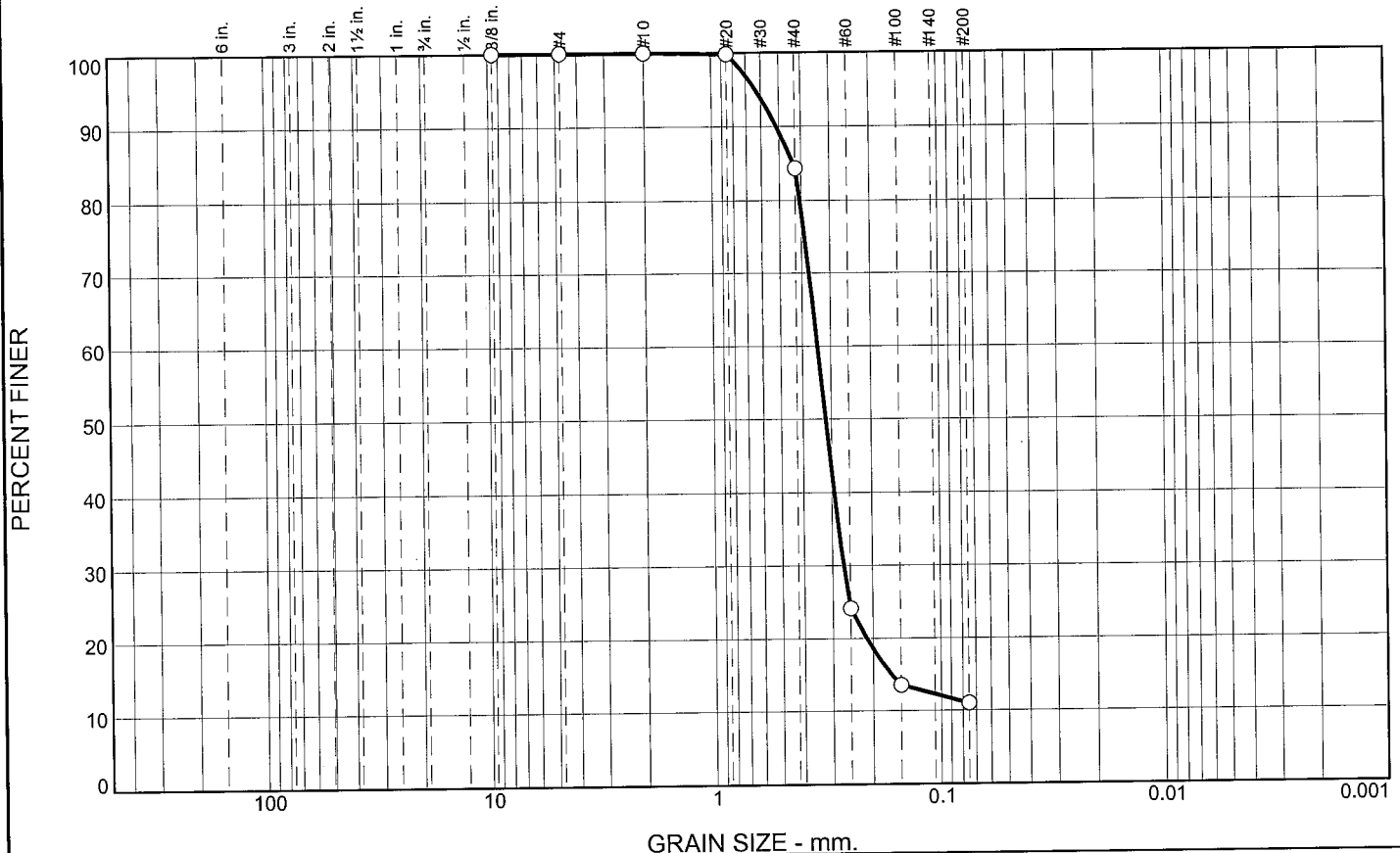
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Report No.

Tested By: G.Fancher

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	15.6	73.4	11.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.8		
#40	84.4		
#60	24.1		
#100	13.5		
#200	11.0		

* (no specification provided)

Material Description
SAND, (SP-SM), medium to fine grained

Atterberg Limits
PL= LL= PI=

Coefficients
D₉₀= 0.5148 D₈₅= 0.4335 D₆₀= 0.3431
D₅₀= 0.3173 D₃₀= 0.2671 D₁₅= 0.1659
D₁₀= C_u= C_c=

Classification
USCS= SP-SM AASHTO=

Remarks
CADD CODE = CH10D965

Location: USACE Sample # BI-PB-126-10C
Sample Number: TE Lab ID: 4622.43

Depth: 10.0 - 14.7 (ft.)

Date: 8/15/10

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Report No.

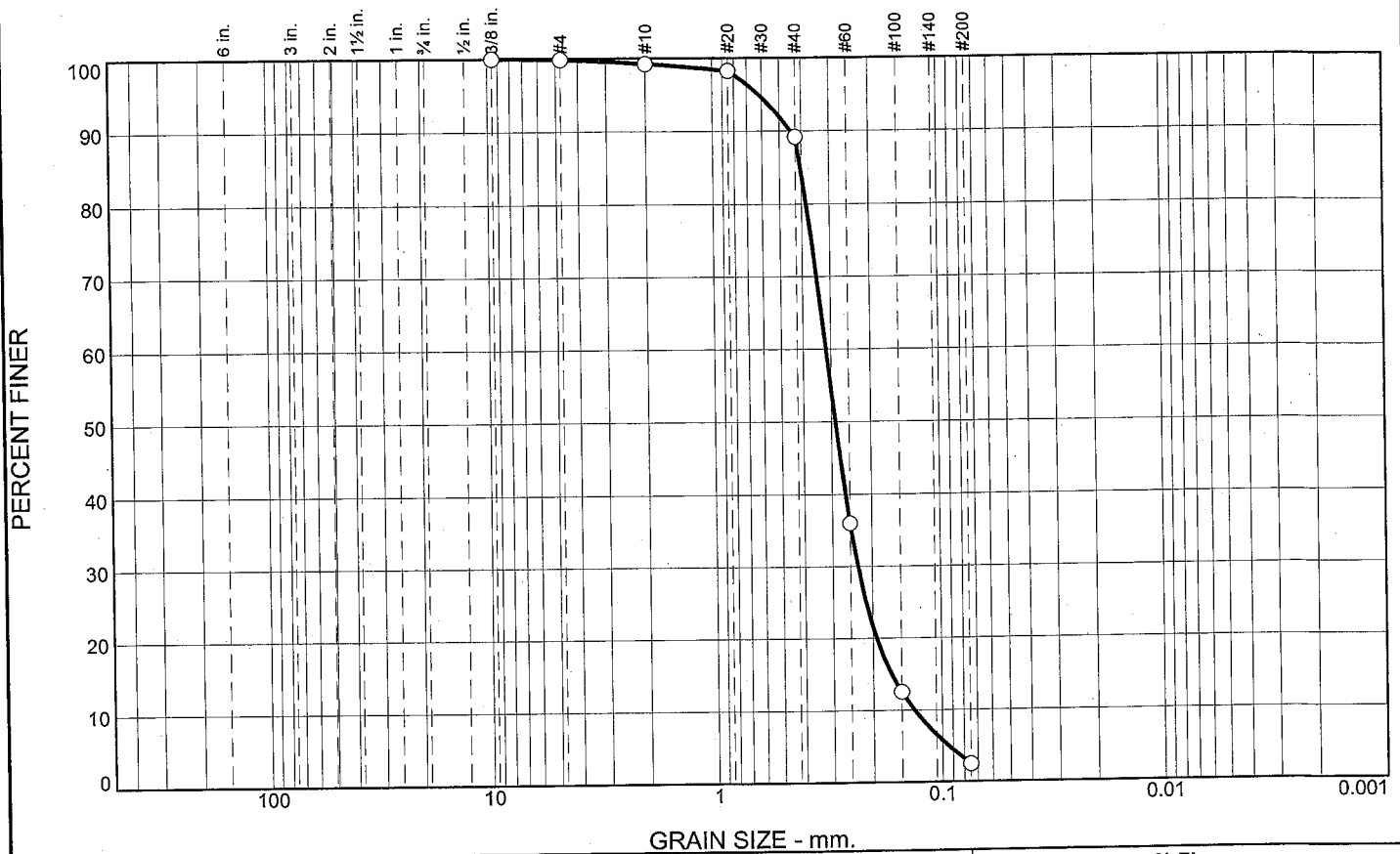
Tested By: G.Fancher

Checked By: R.Byrd

Boring Designation BI-PB-127-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-127-10		LOCATION COORDINATES E = 1,134,883 N = 254,377		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		BEARING		13. TOTAL NUMBER CORE BOXES	
6. THICKNESS OF OVERBURDEN N/A				14. WATER DEPTH 29 Ft.			
7. DEPTH DRILLED INTO ROCK N/A				15. DATE BORING 08-09-10		STARTED 08-09-10 COMPLETED 08-09-10	
8. TOTAL DEPTH OF BORING 15.5 Ft.				16. ELEVATION TOP OF BORING -28.1 Ft.			
				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-28.1	0.0						
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace shell fragments, dark brown (SP)	A	Classification: SP Color: 10YR 4/2-dark grayish brown D50: 0.2883 mm % Fines: 2.4		
-33.1	5.0		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, lt. gray (SP)	B	Classification: SP Color: 2.5Y 5/2-grayish brown D50: 0.2755 mm % Fines: 4.5		
-38.1	10.0						
			CLAY, fat, dark gray (CH)	NS			
-43.6	15.5						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.6	10.0	86.8	2.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.8		
#10	99.2		
#20	98.2		
#40	89.2		
#60	36.0		
#100	12.5		
#200	2.4		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.4451

D₈₅= 0.4029

D₆₀= 0.3157

D₅₀= 0.2883

D₃₀= 0.2314

D₁₅= 0.1661

D₁₀= 0.1322

C_u= 2.39

C_c= 1.28

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-127-10A
Sample Number: TE Lab ID: 4636.05

Depth: 0.0 - 5.0 (ft.)

Date: 8/17/10

Thompson Engineering
Mobile, Alabama

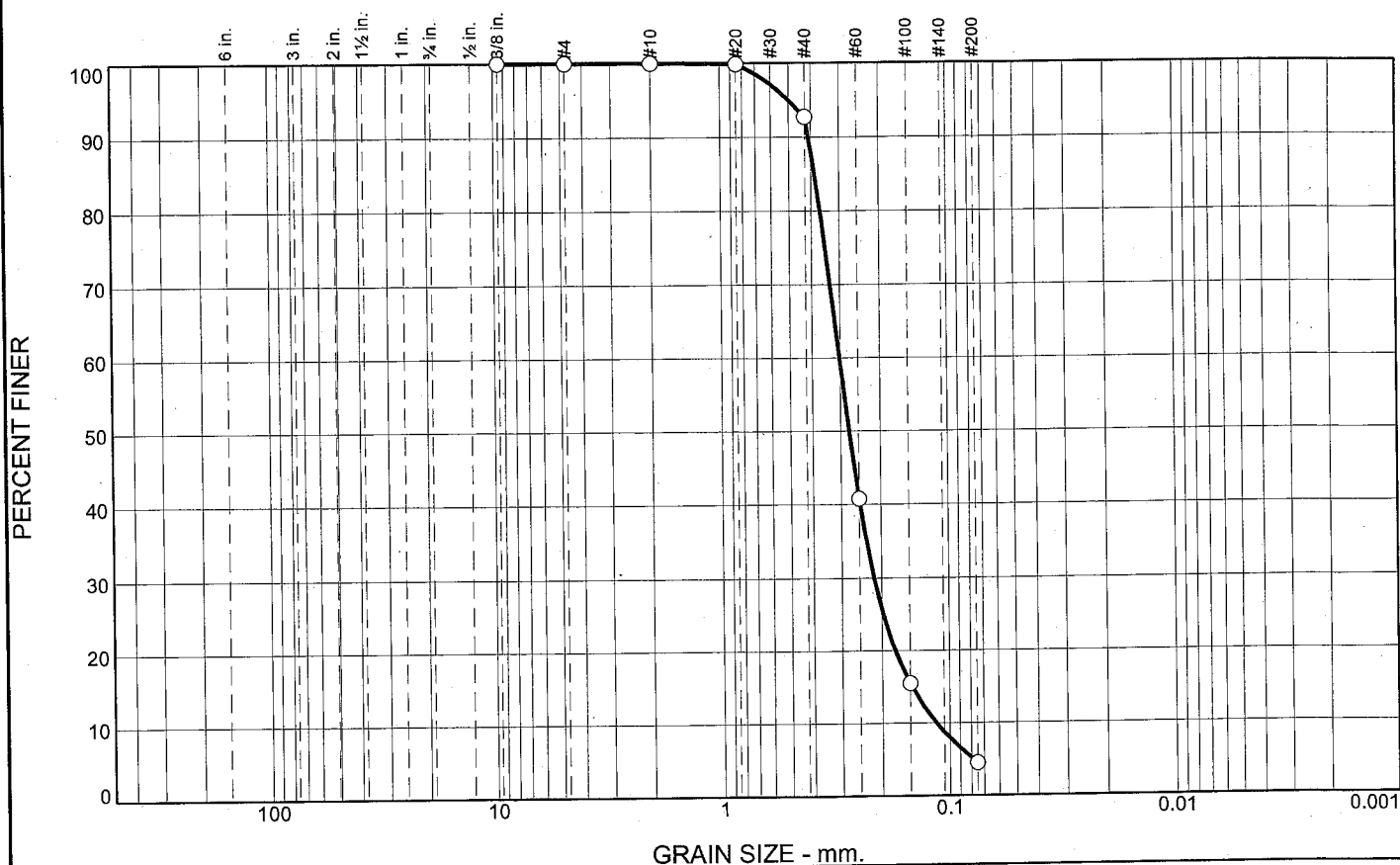
Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009

Report #:

Tested By: R.Martin

Checked By: R.Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	7.2	88.3	4.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	92.8		
#60	40.8		
#100	15.5		
#200	4.5		

* (no specification provided)

Material Description
SAND, (SP), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.4091 D₈₅= 0.3854 D₆₀= 0.3027
 D₅₀= 0.2755 D₃₀= 0.2158 D₁₅= 0.1470
 D₁₀= 0.1149 C_u= 2.64 C_c= 1.34

Classification
 USCS= SP AASHTO=

Remarks
 CADD CODE = CH10D965

Location: USACE Sample # BI-PB-127-10B
 Sample Number: TE Lab ID: 4636.06

Depth: 5.0 - 10.0 (ft.)

Date: 8/17/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
 Project: Contract No. W91278-10-D-0026 - Task 03
 Mississippi Barrier Island Restoration Project
 Project No: 10-2123-0009

Report #:

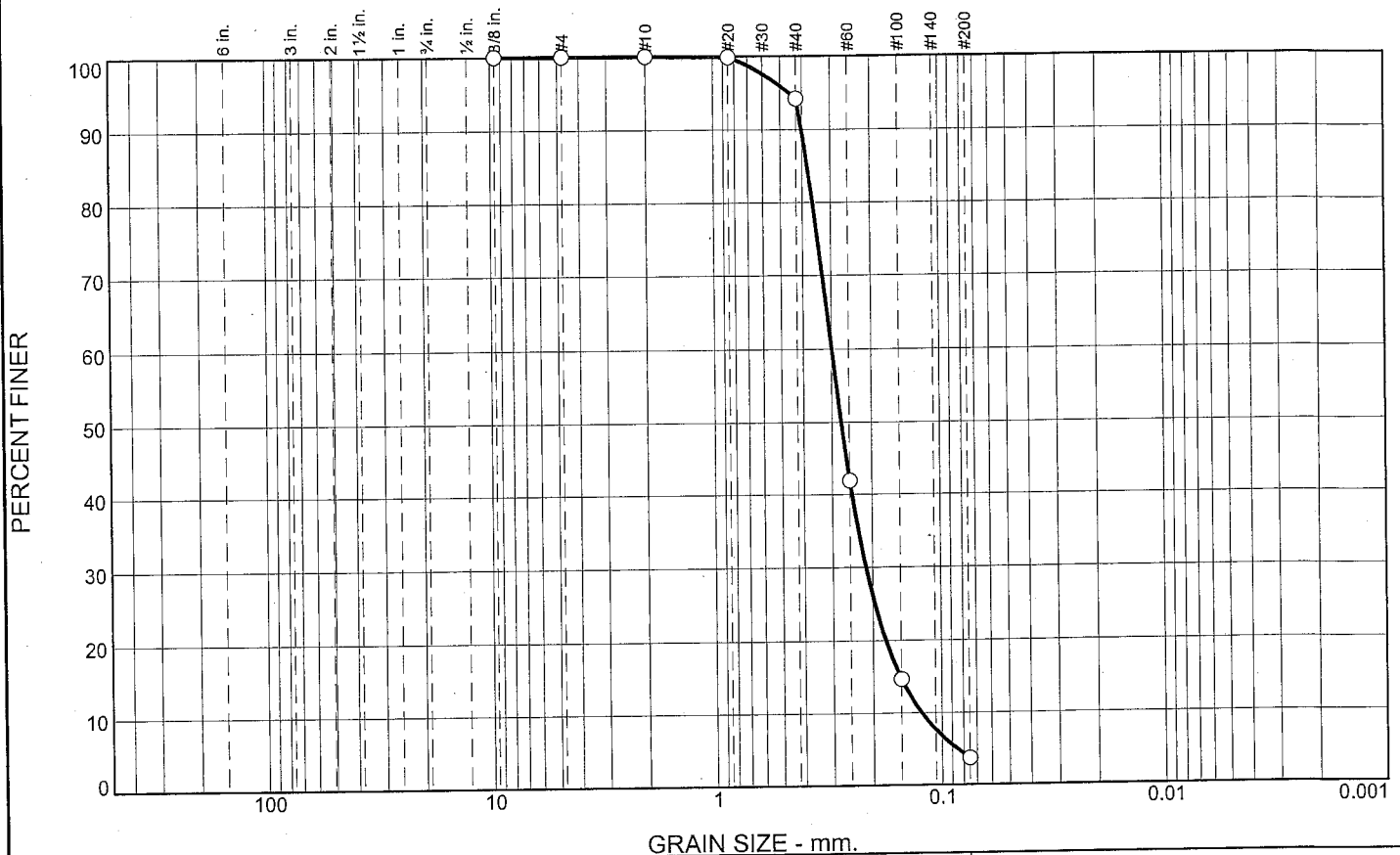
Tested By: R.Martin

Checked By: R. Byrd

Boring Designation BI-PB-128-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-128-10		LOCATION COORDINATES E = 1,136,273 N = 254,404		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 1	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		UNDISTURBED (UD) 0	
6. THICKNESS OF OVERBURDEN N/A				14. WATER DEPTH		30 Ft.	
7. DEPTH DRILLED INTO ROCK N/A				15. DATE BORING		STARTED 08-09-10	
8. TOTAL DEPTH OF BORING 14.0 Ft.				16. ELEVATION TOP OF BORING		COMPLETED 08-09-10	
				17. TOTAL RECOVERY FOR BORING		100%	
				18. SIGNATURE AND TITLE OF INSPECTOR		Chris Gillentine, Geologist	
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-28.9	0.0						
-29.9	1.0		SAND, silty (SM)	NS			
			SAND, poorly-graded (SP)	A	Classification: SP Color: 2.5Y 5/2-grayish brown D50: 0.2718 mm % Fines: 3.8		
-35.4	6.5						
			CLAY, fat, dark gray (CH)	NS			
-42.9	14.0						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



GRAIN SIZE - mm.

% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	5.8	90.4	3.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	94.2		
#60	41.9		
#100	14.7		
#200	3.8		

* (no specification provided)

Material Description

SAND, (SP), fine grained, with trace clay pockets

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.4014

D₈₅= 0.3789

D₆₀= 0.2986

D₅₀= 0.2718

D₃₀= 0.2138

D₁₅= 0.1515

D₁₀= 0.1224

C_u= 2.44

C_c= 1.25

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-128-10A
Sample Number: TE Lab ID: 4636.04

Depth: 1.0 - 6.0 (ft.)

Date: 8/17/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

Project No: 10-2123-0009

Report No.

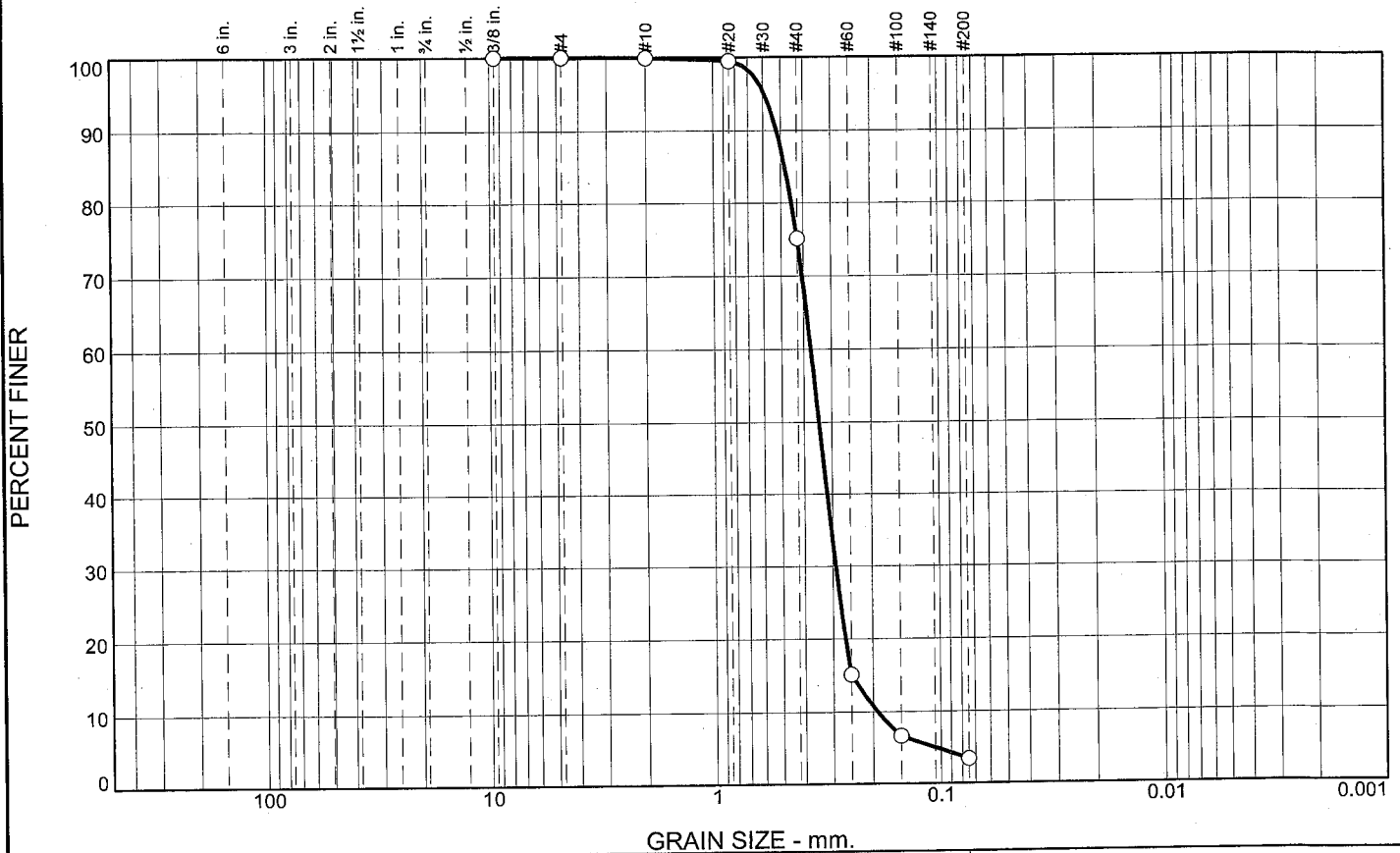
Tested By: R.Martin

Checked By: R.Byrd

Boring Designation BI-PB-129-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-129-10		LOCATION COORDINATES E = 1,136,280 N = 252,797		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 2 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 33 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 08-09-10		STARTED 08-09-10 COMPLETED 08-09-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -31.7 Ft.			
8. TOTAL DEPTH OF BORING 17.8 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-31.7	0.0						
-32.7	1.0		SILT, inorganic-H, trace fine-grained sand-sized quartz, dark gray (MH)	NS			
			SAND, poorly-graded, lt. tan/gray (SP)	A	Classification: SP Color: 2.5Y 6/2-light brownish gray D50: 0.343 mm % Fines: 3.4		
				B	Classification: SP Color: 2.5Y 6/2-light brownish gray D50: 0.2957 mm % Fines: 4.7		
-39.7	8.0		CLAY, fat, dark gray (CH)	NS			
-49.5	17.8						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	24.8	71.7	3.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.5		
#40	75.1		
#60	15.1		
#100	6.6		
#200	3.4		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.5212

D₈₅= 0.4791

D₆₀= 0.3713

D₅₀= 0.3430

D₃₀= 0.2918

D₁₅= 0.2487

D₁₀= 0.1910

C_u= 1.94

C_c= 1.20

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-129-10A
Sample Number: TE Lab ID: 4636.02

Depth: 1.0 - 4.0 (ft.)

Date: 8/17/10

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project

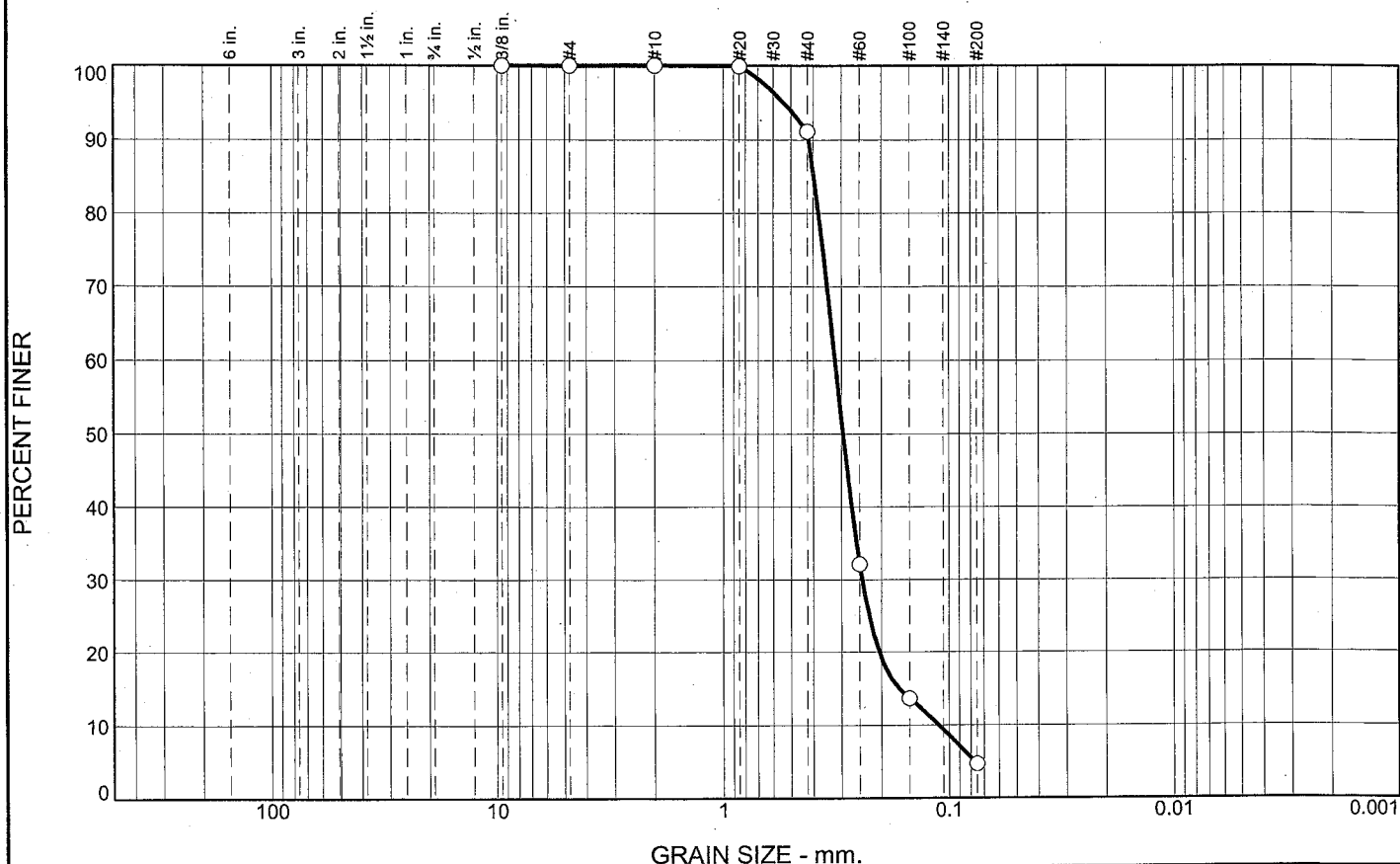
Project No: 10-2123-0009

Report #:

Tested By: R.Martin

Checked By: L. Byrd

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	8.8	86.5	4.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	91.2		
#60	32.2		
#100	13.7		
#200	4.7		

* (no specification provided)

Material Description

SAND, (SP), fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.4190

D₈₅= 0.3970

D₆₀= 0.3206

D₅₀= 0.2957

D₃₀= 0.2435

D₁₅= 0.1664

D₁₀= 0.1111

C_u= 2.89

C_c= 1.66

Classification

USCS= SP

AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-129-10B
Sample Number: TE Lab ID: 4636.03

Depth: 4.0 - 8.0 (ft.)

Date: 8/17/10

Thompson Engineering
Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 03
Mississippi Barrier Island Restoration Project
Project No: 10-2123-0009
Report #:

Tested By: G.Fancher

Checked By: R.B. Byrd

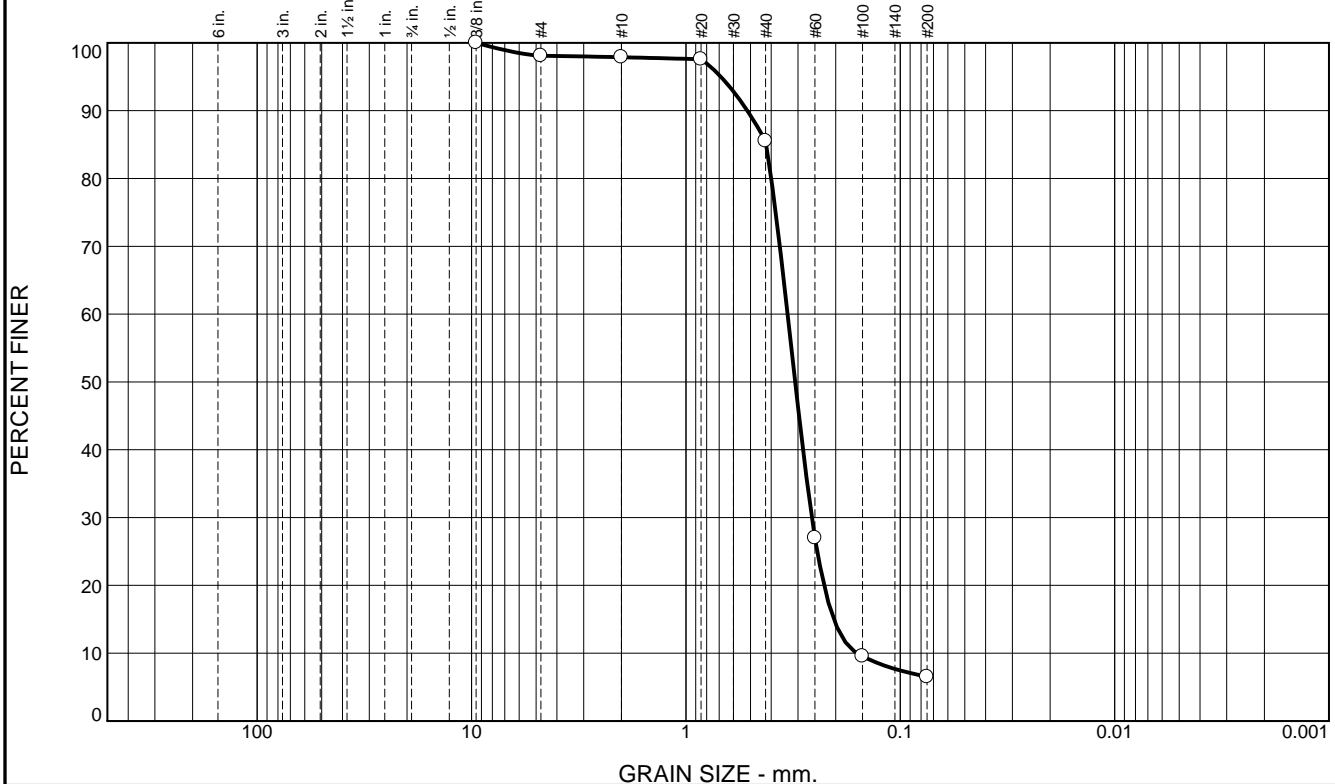
Boring Designation BI-PB-130-10

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petit Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-130-10		LOCATION COORDINATES E = 1,136,277 N = 251,346		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 0		UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 36 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 08-09-10		COMPLETED 08-09-10	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -34.7 Ft.			
8. TOTAL DEPTH OF BORING 16.9 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Chris Gillentine, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-34.7	0.0		CLAY, fat, dark gray (CH)				
				NS			
-51.6	16.9		NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Boring Designation BI-PB-131-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petis Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-131-11		LOCATION COORDINATES E = 1,131,148 N = 253,747		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 0 UNDISTURBED (UD)	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 28.5 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-30-11		STARTED 06-30-11 COMPLETED 06-30-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -26.4 Ft.			
8. TOTAL DEPTH OF BORING 14.3 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Michele Johnson, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-26.4	0.0						
			SAND, poorly-graded, trace shell fragments, lt. gray (SP)	A	Classification: SP-SM Color: 5Y 7/1-light gray D50: 0.3095 mm % Fines: 6.5		
-29.7	3.3						
			SAND, poorly-graded with silt, trace shell fragments, gray (SP-SM)	B	Classification: SP-SM Color: 2.5Y 6/2-light brownish gray D50: 0.2957 mm % Fines: 7.2		
				NS			
-40.7	14.3						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.9	0.2	12.4	79.0	6.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	98.1		
#10	97.9		
#20	97.6		
#40	85.5		
#60	27.0		
#100	9.5		
#200	6.5		

* (no specification provided)

<u>Material Description</u>		
Slightly silty SAND (SP-SM), medium to fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.5168	D ₈₅ = 0.4223	D ₆₀ = 0.3356
D ₅₀ = 0.3095	D ₃₀ = 0.2586	D ₁₅ = 0.2042
D ₁₀ = 0.1590	C _u = 2.11	C _c = 1.25
<u>Classification</u>		
USCS= SP-SM	AASHTO=	
<u>Remarks</u>		

Location: USACE Sample # BI-PB-131A-11
Sample Number: TE Lab ID: 5054.106

Depth: 0.0 - 3.3 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

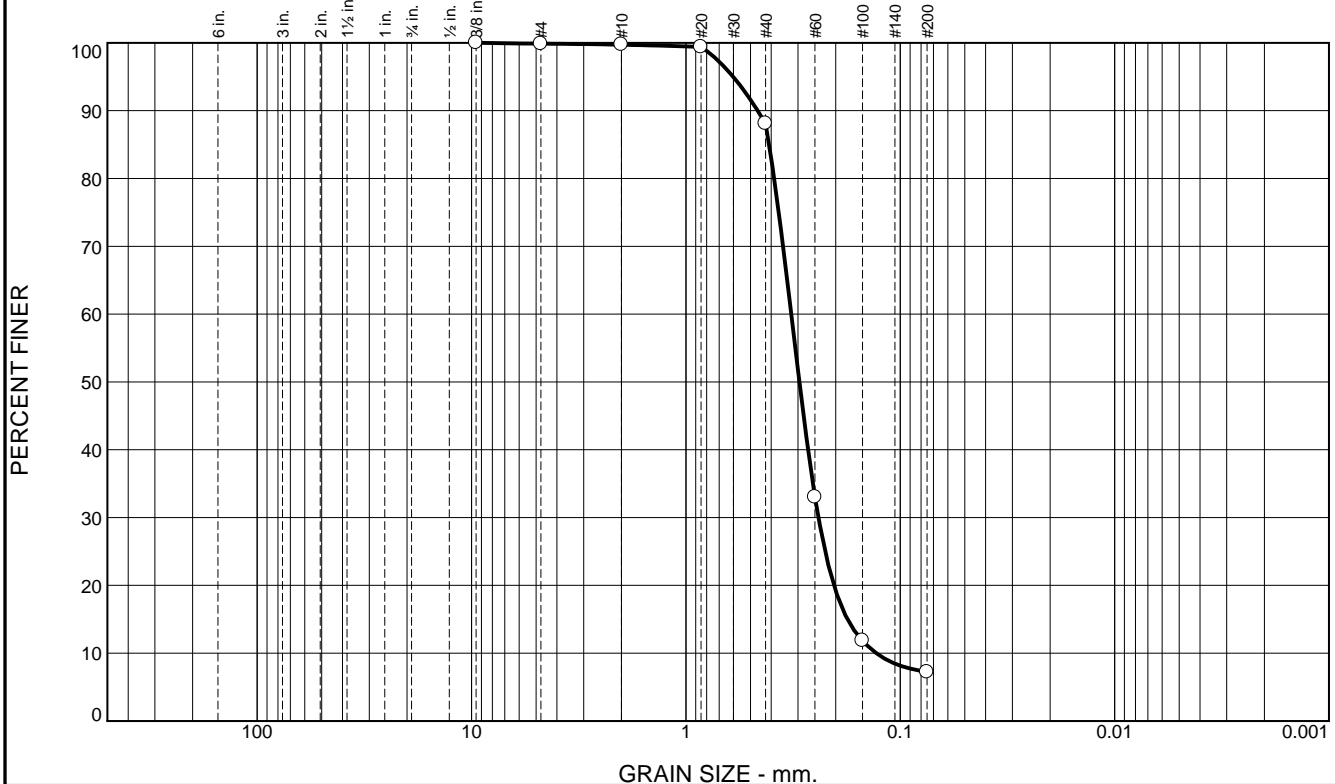
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.2	11.6	80.9	7.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.7		
#20	99.4		
#40	88.1		
#60	33.0		
#100	11.8		
#200	7.2		

* (no specification provided)

Material Description
Slightly silty SAND (SP-SM), medium to fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.4625 D₈₅= 0.4092 D₆₀= 0.3227
 D₅₀= 0.2957 D₃₀= 0.2409 D₁₅= 0.1764
 D₁₀= 0.1294 C_u= 2.49 C_c= 1.39

Classification
 USCS= SP-SM AASHTO=

Remarks

Location: USACE Sample # BI-PB-131B-11
 Sample Number: TE Lab ID: 5054.107

Depth: 3.3 - 8.3 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers
Project: Contract No. W91278-10-D-0026 - Task 009
 Mississippi Barrier Island Restoration Project

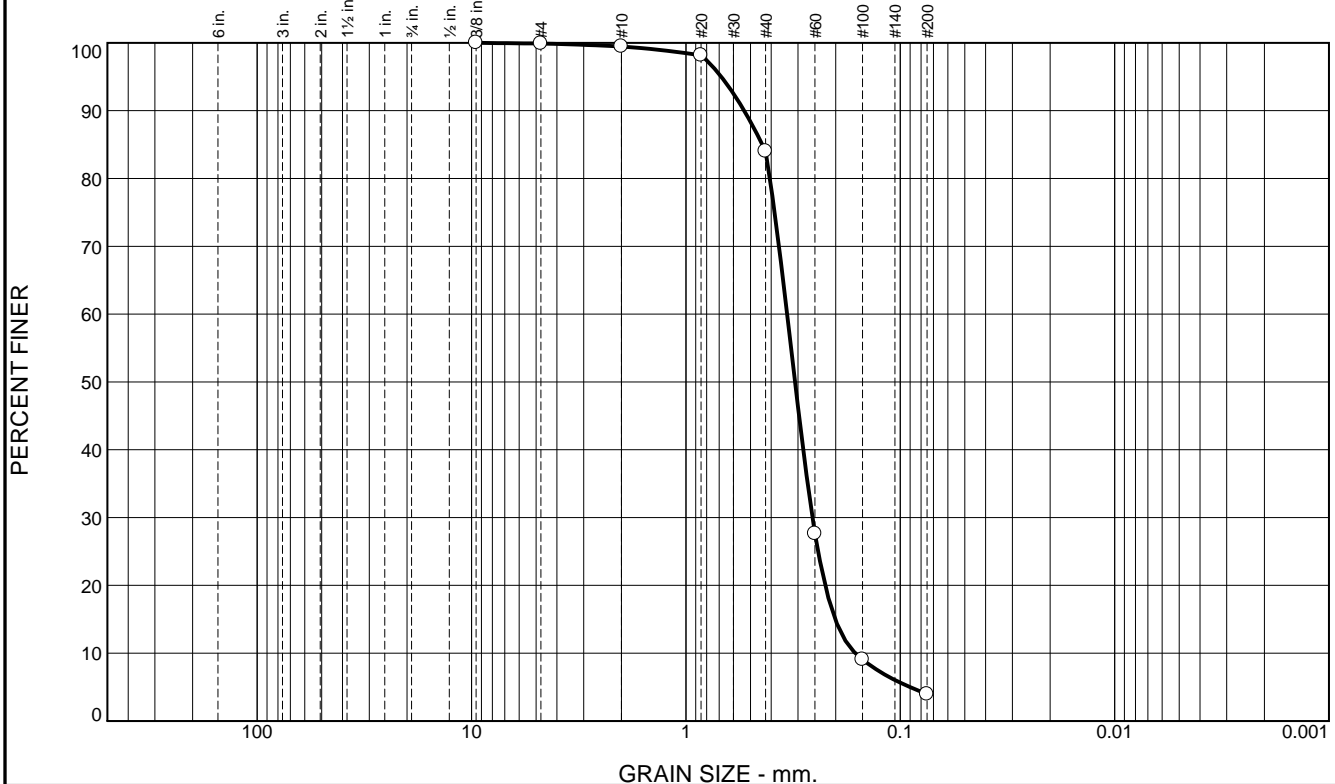
Project No: 11-2116-0057

Figure

Boring Designation BI-PB-132-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petis Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-132-11		LOCATION COORDINATES E = 1,131,712 N = 252,560		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		14. WATER DEPTH 33 Ft.	
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-30-11		STARTED 06-30-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -30.9 Ft.		COMPLETED 06-30-11	
8. TOTAL DEPTH OF BORING 18.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%		18. SIGNATURE AND TITLE OF INSPECTOR Michele Johnson, Geologist	
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-30.9	0.0						
			SAND, poorly-graded, mostly medium-grained sand-sized quartz, gray (SP)	A	Classification: SP Color: 2.5Y 6/2-light brownish gray D50: 0.3099 mm % Fines: 4		
			At El. -35.9 Ft., trace shell fragments, lt. gray	B	Classification: SP-SM Color: 2.5Y 6/2-light brownish gray D50: 0.3122 mm % Fines: 5		
				C	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.3152 mm % Fines: 2.5		
				NS			
-48.9	18.0						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.4	15.5	80.0	4.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.5		
#20	98.2		
#40	84.0		
#60	27.6		
#100	9.1		
#200	4.0		

* (no specification provided)

Material Description

Slightly silty SAND (SP-SM), medium to fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.5347 D₈₅= 0.4401 D₆₀= 0.3373
D₅₀= 0.3099 D₃₀= 0.2569 D₁₅= 0.2011
D₁₀= 0.1622 C_u= 2.08 C_c= 1.21

Classification

USCS= SP-SM AASHTO=

Remarks

Location: USACE Sample # BI-PB-132A-11
Sample Number: TE Lab ID: 5054.103

Depth: 0.0 - 5.0 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

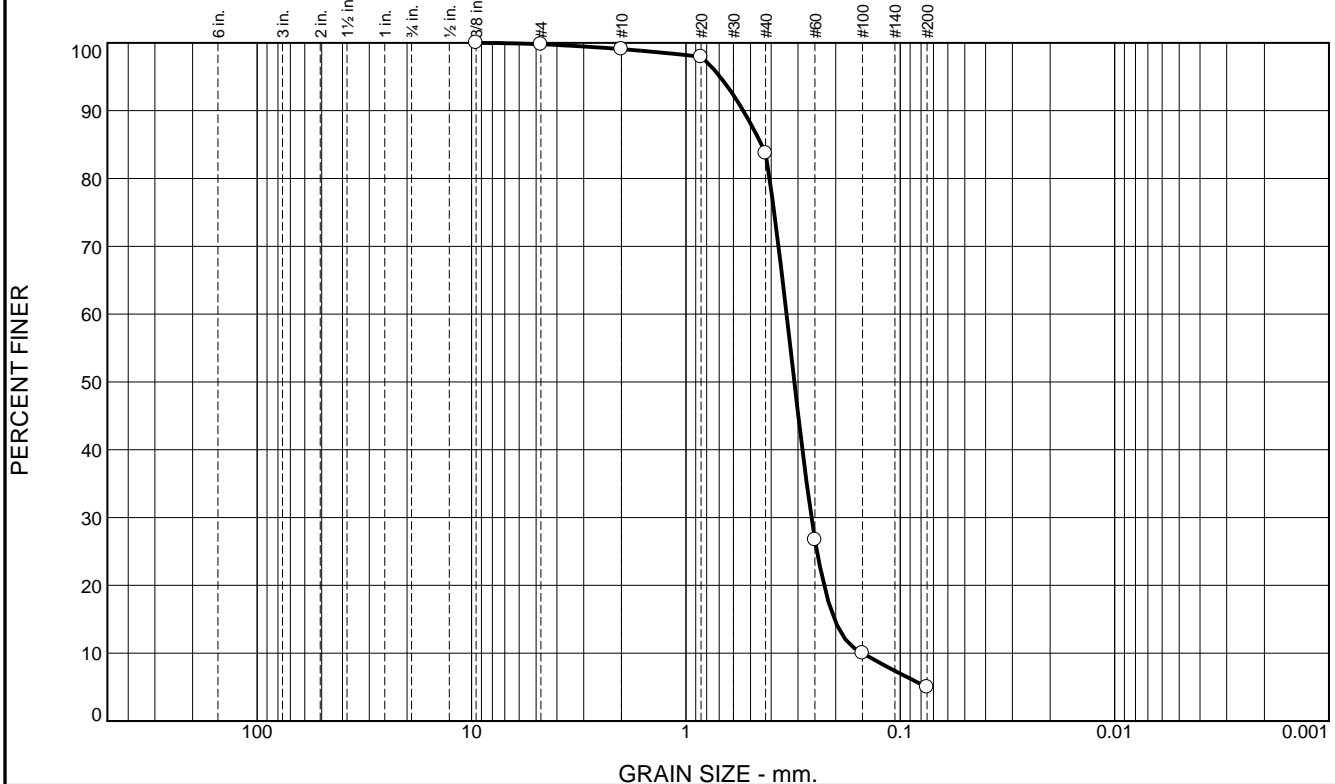
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.7	15.3	78.8	5.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.8		
#10	99.1		
#20	97.9		
#40	83.8		
#60	26.7		
#100	10.0		
#200	5.0		

* (no specification provided)

<u>Material Description</u>		
Slightly silty SAND (SP-SM), medium to fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.5400	D ₈₅ = 0.4440	D ₆₀ = 0.3394
D ₅₀ = 0.3122	D ₃₀ = 0.2597	D ₁₅ = 0.2027
D ₁₀ = 0.1502	C _u = 2.26	C _c = 1.32
<u>Classification</u>		
USCS= SP-SM	AASHTO=	
<u>Remarks</u>		

Location: USACE Sample # BI-PB-132B-11
Sample Number: TE Lab ID: 5054.104

Depth: 5.0 - 10.0 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

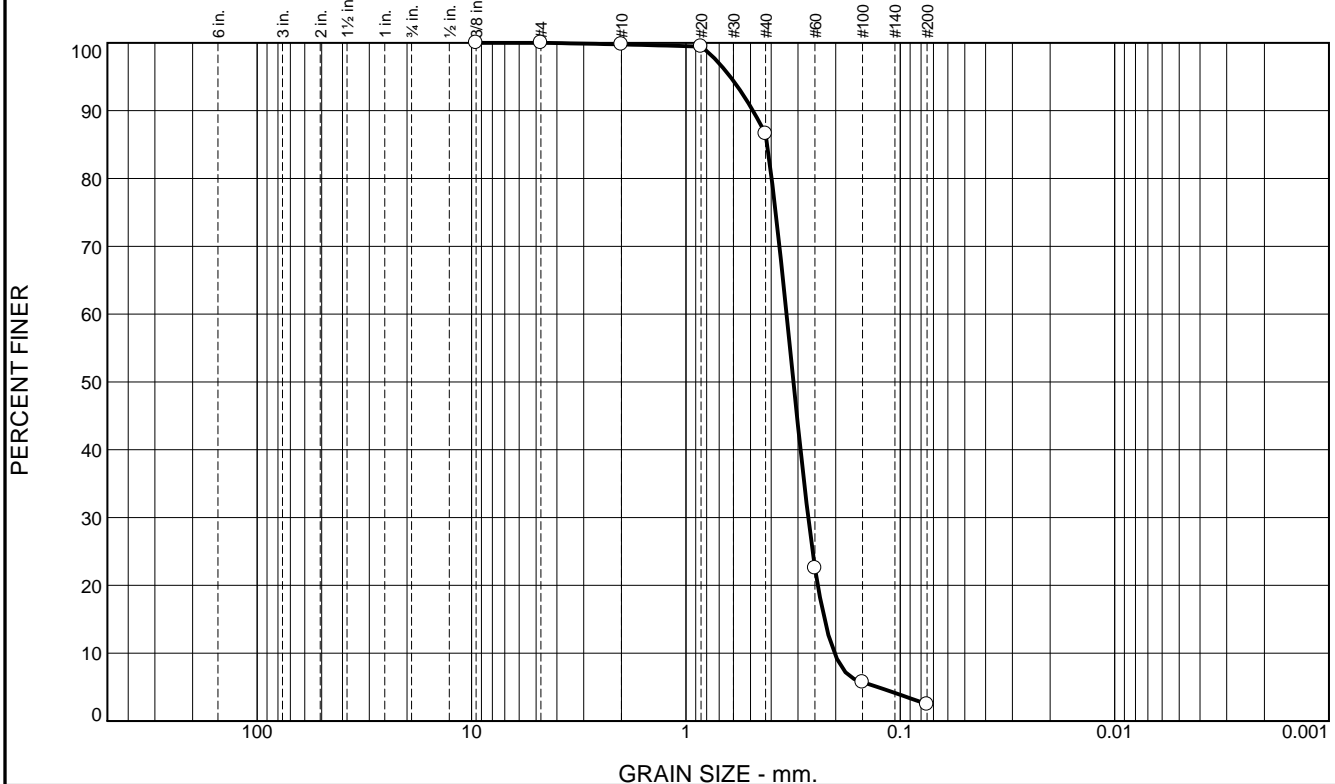
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	13.2	84.1	2.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.8		
#20	99.5		
#40	86.6		
#60	22.6		
#100	5.7		
#200	2.5		

* (no specification provided)

Material Description		
SAND (SP), medium to fine grained		
<div> <div> Atterberg Limits PL= LL= PI= </div> <div> Coefficients D₉₀= 0.4868 D₈₅= 0.4179 D₆₀= 0.3394 D₅₀= 0.3152 D₃₀= 0.2690 D₁₅= 0.2258 D₁₀= 0.2027 C_u= 1.67 C_c= 1.05 </div> <div> Classification USCS= SP AASHTO= </div> <div> Remarks </div> </div>		

Location: USACE Sample # BI-PB-132C-11
Sample Number: TE Lab ID: 5054.105

Depth: 10.0 - 14.8 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

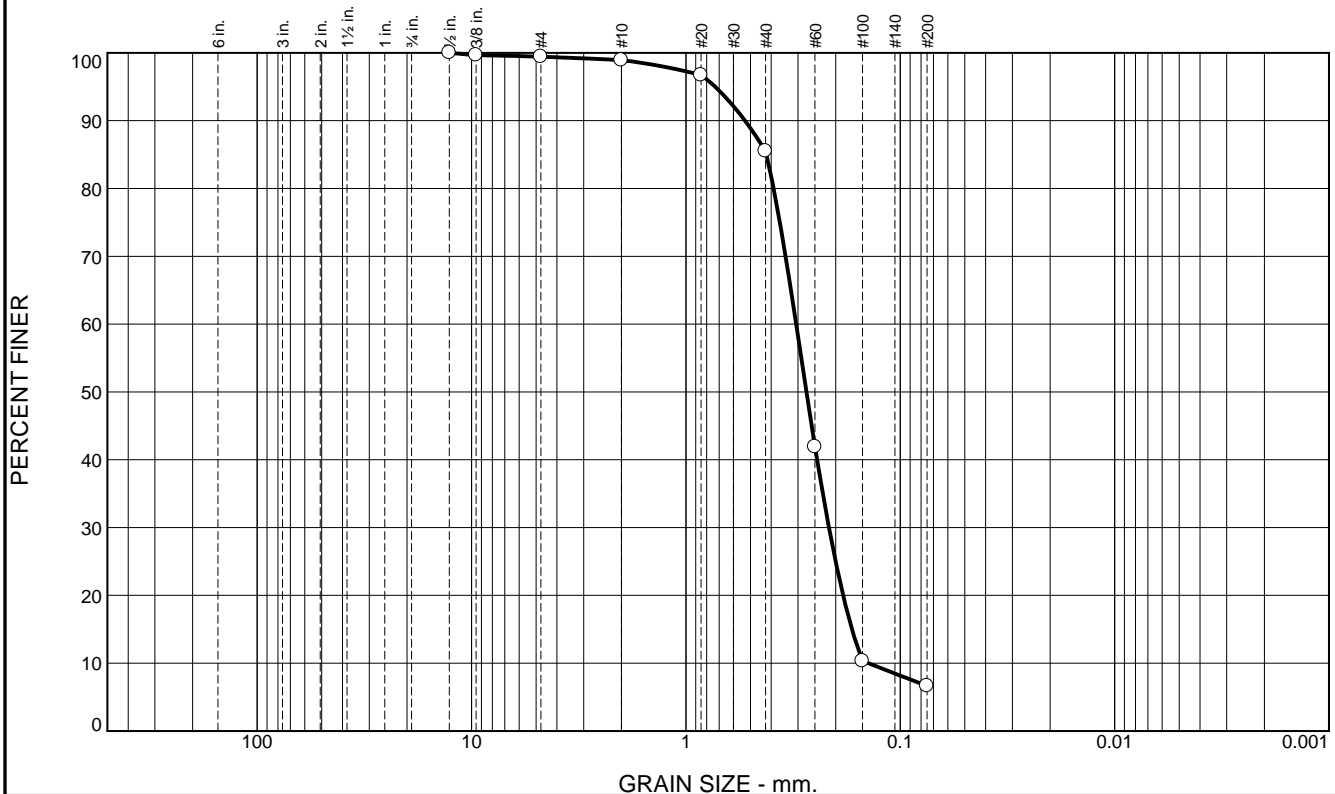
Figure

Boring Designation BI-PB-133-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petis Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-133-11		LOCATION COORDINATES E = 1,132,513 N = 253,727		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		14. WATER DEPTH 29.5 Ft.	
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-30-11		COMPLETED 06-30-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -27.5 Ft.		17. TOTAL RECOVERY FOR BORING 100%	
8. TOTAL DEPTH OF BORING 18.4 Ft.				18. SIGNATURE AND TITLE OF INSPECTOR Michele Johnson, Geologist			

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-27.5	0.0				
-31.5	4.0		SAND, poorly-graded, mostly medium-grained sand-sized quartz, trace shell fragments, From 2.3 to 5 tan to brown, gray (SP)	A	Classification: SP-SM Color: 2.5Y 7/1-light gray D50: 0.2741 mm % Fines: 6.6
-35.5	8.0		SAND, poorly-graded, mostly medium-grained sand-sized quartz, lt. gray (SP)	B	Classification: SP Color: 2.5Y 6/2-light brownish gray D50: 0.2848 mm % Fines: 3.6
-45.9	18.4		SAND, poorly-graded, mostly medium-grained sand-sized quartz, some sand, lt. gray (SP)	C	Classification: SP Color: 2.5Y 6/2-light brownish gray D50: 0.2854 mm % Fines: 2.8
				NS	
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.		

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.6	0.5	13.4	78.9	6.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.5	100.0		
.375	99.7		
#4	99.4		
#10	98.9		
#20	96.7		
#40	85.5		
#60	41.9		
#100	10.3		
#200	6.6		

* (no specification provided)

Material Description

Slightly silty SAND (SP-SM), medium to fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.5301 D₈₅= 0.4213 D₆₀= 0.3061
D₅₀= 0.2741 D₃₀= 0.2151 D₁₅= 0.1681
D₁₀= 0.1411 C_u= 2.17 C_c= 1.07

Classification

USCS= SP-SM AASHTO=

Remarks

Location: USACE Sample # BI-PB-133A-11
Sample Number: TE Lab ID: 5054.108

Depth: 0.0 - 4.0 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

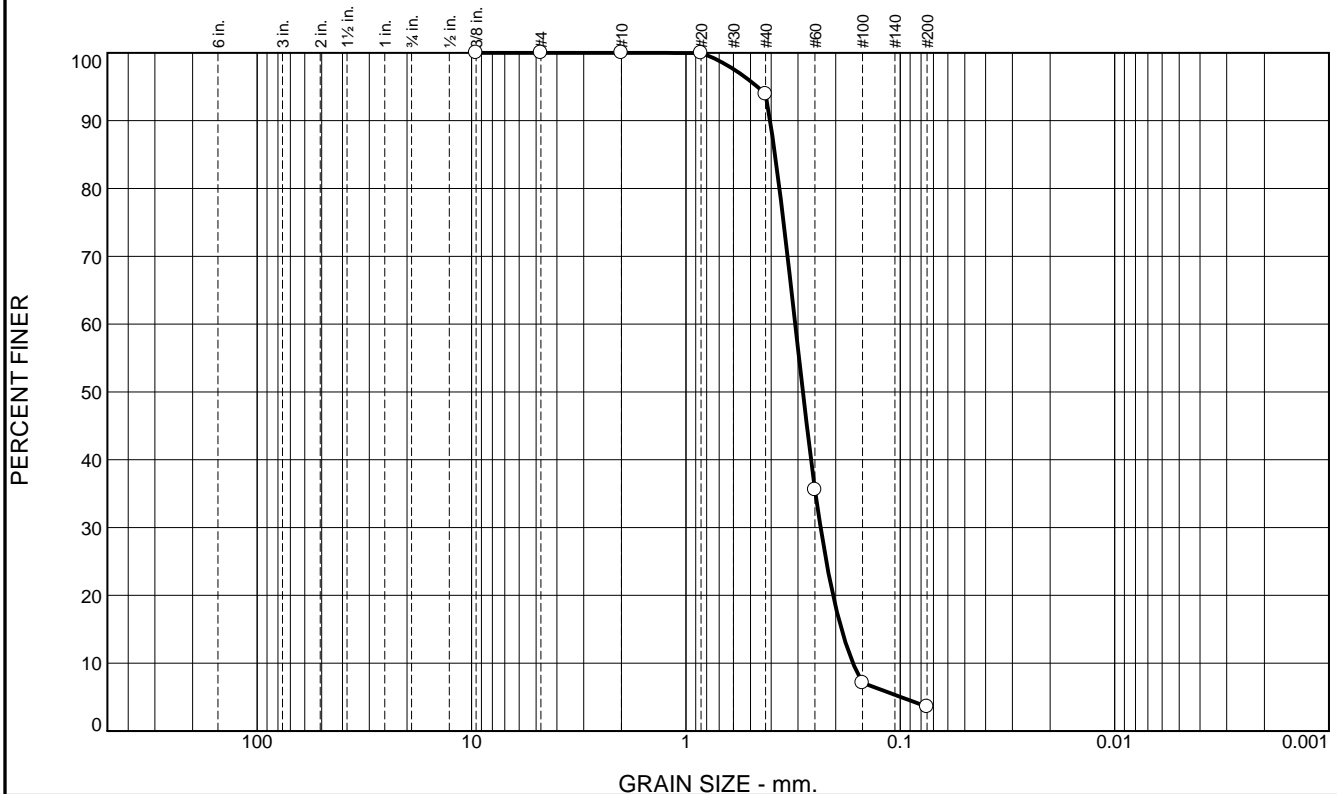
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	6.1	90.3	3.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	100.0		
#40	93.9		
#60	35.6		
#100	7.1		
#200	3.6		

* (no specification provided)

<u>Material Description</u>		
SAND (SP), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.4049	D ₈₅ = 0.3840	D ₆₀ = 0.3093
D ₅₀ = 0.2848	D ₃₀ = 0.2354	D ₁₅ = 0.1880
D ₁₀ = 0.1662	C _u = 1.86	C _c = 1.08
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		

Location: USACE Sample # BI-PB-133B-11
Sample Number: TE Lab ID: 5054.109

Depth: 4.0 - 8.0 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

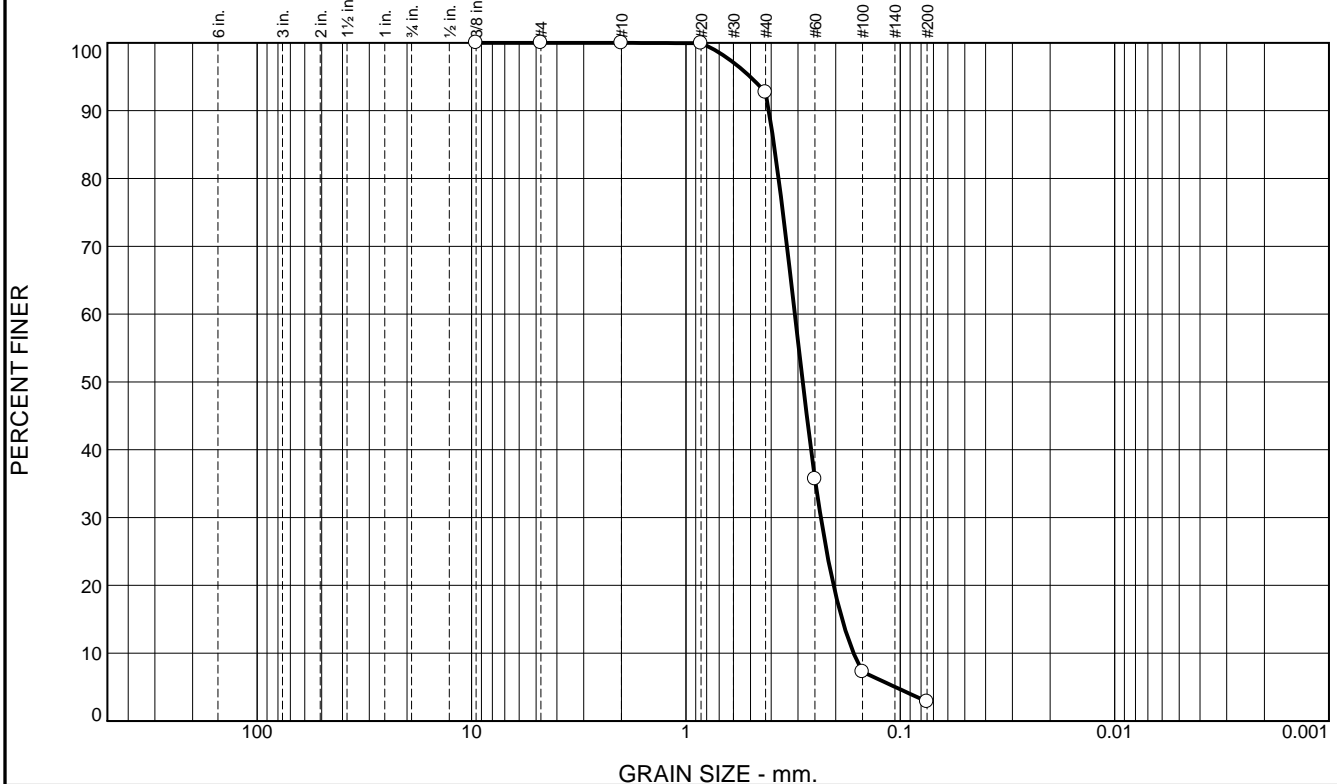
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	7.3	89.9	2.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	92.7		
#60	35.7		
#100	7.2		
#200	2.8		

* (no specification provided)

Material Description		
SAND (SP), fine grained		
<div> <div> Atterberg Limits PL= LL= PI= </div> <div> Coefficients D₉₀= 0.4106 D₈₅= 0.3883 D₆₀= 0.3105 D₅₀= 0.2854 D₃₀= 0.2349 D₁₅= 0.1868 D₁₀= 0.1650 C_u= 1.88 C_c= 1.08 </div> <div> Classification USCS= SP AASHTO= </div> <div> Remarks </div> </div>		

Location: USACE Sample # BI-PB-133C-11
Sample Number: TE Lab ID: 5054.110

Depth: 8.0 - 13.0 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

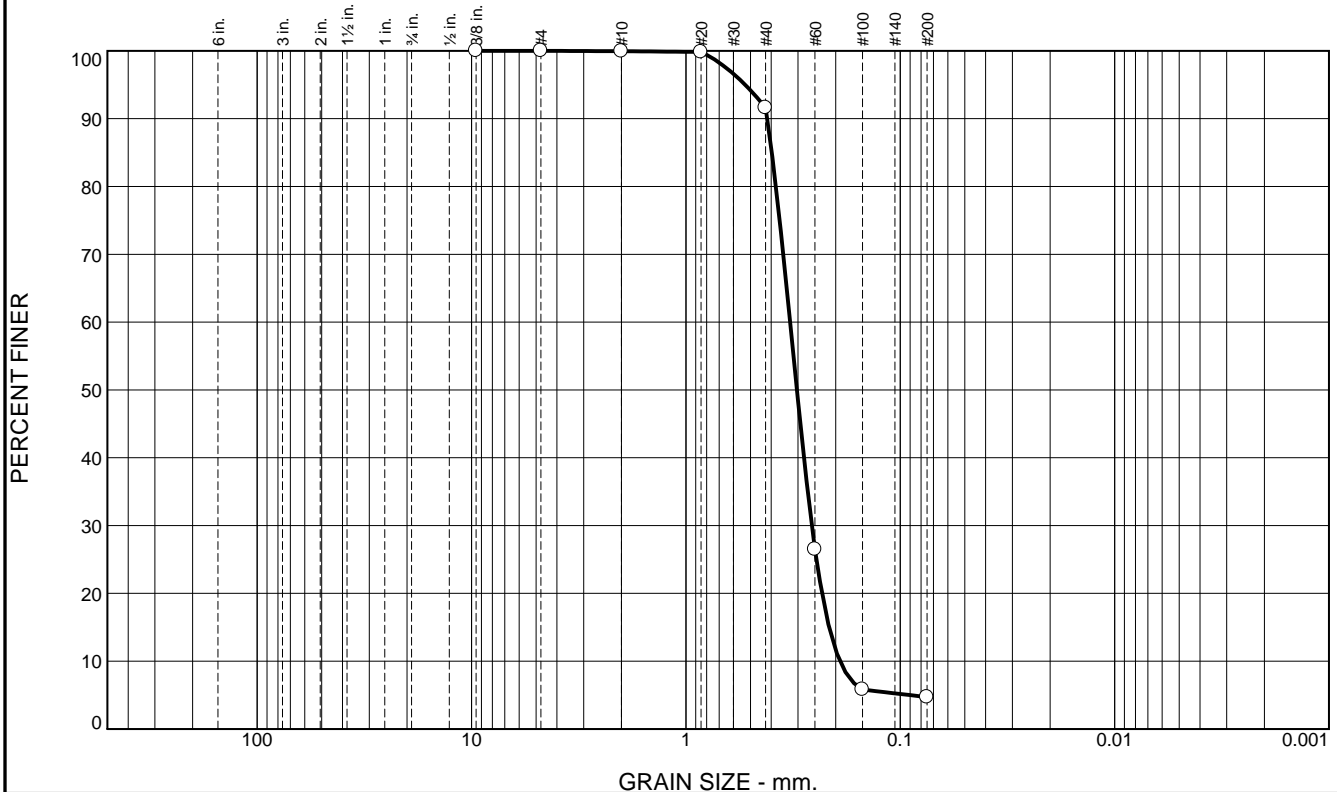
Project No: 11-2116-0057

Figure

Boring Designation BI-PB-134-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petis Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-134-11		LOCATION COORDINATES E = 1,135,605 N = 253,852		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		14. WATER DEPTH 32.5 Ft.	
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-30-11		COMPLETED 06-30-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -30.6 Ft.		17. TOTAL RECOVERY FOR BORING 100%	
8. TOTAL DEPTH OF BORING 16.4 Ft.				18. SIGNATURE AND TITLE OF INSPECTOR Michele Johnson, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-30.6	0.0						
			SAND, poorly-graded with silt, mostly fine to medium-grained sand-sized quartz, dark gray/brown (SP-SM)	A	Classification: SP Color: 2.5Y 4/2-dark grayish brown D50: 0.3037 mm % Fines: 4.7		
-35.6	5.0		SAND, poorly-graded with silt, mostly fine to medium-grained sand-sized quartz, lt. gray/brown (SP-SM)	B	Classification: SP-SM Color: 2.5Y 5/2-grayish brown D50: 0.2666 mm % Fines: 5.9		
				NS			
-47.0	16.4						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	8.3	86.9	4.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.8		
#40	91.6		
#60	26.5		
#100	5.8		
#200	4.7		

* (no specification provided)

Material Description		
SAND (SP), fine grained		
PL=	Atterberg Limits LL=	PI=
D ₉₀ = 0.4175	Coefficients D ₈₅ = 0.3975	D ₆₀ = 0.3266
D ₅₀ = 0.3037	D ₃₀ = 0.2587	D ₁₅ = 0.2147
D ₁₀ = 0.1911	C _u = 1.71	C _c = 1.07
USCS= SP	Classification AASHTO=	
Remarks		

Location: USACE Sample # BI-PB-134A-11
Sample Number: TE Lab ID: 5054.111

Depth: 0.0 - 5.0 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

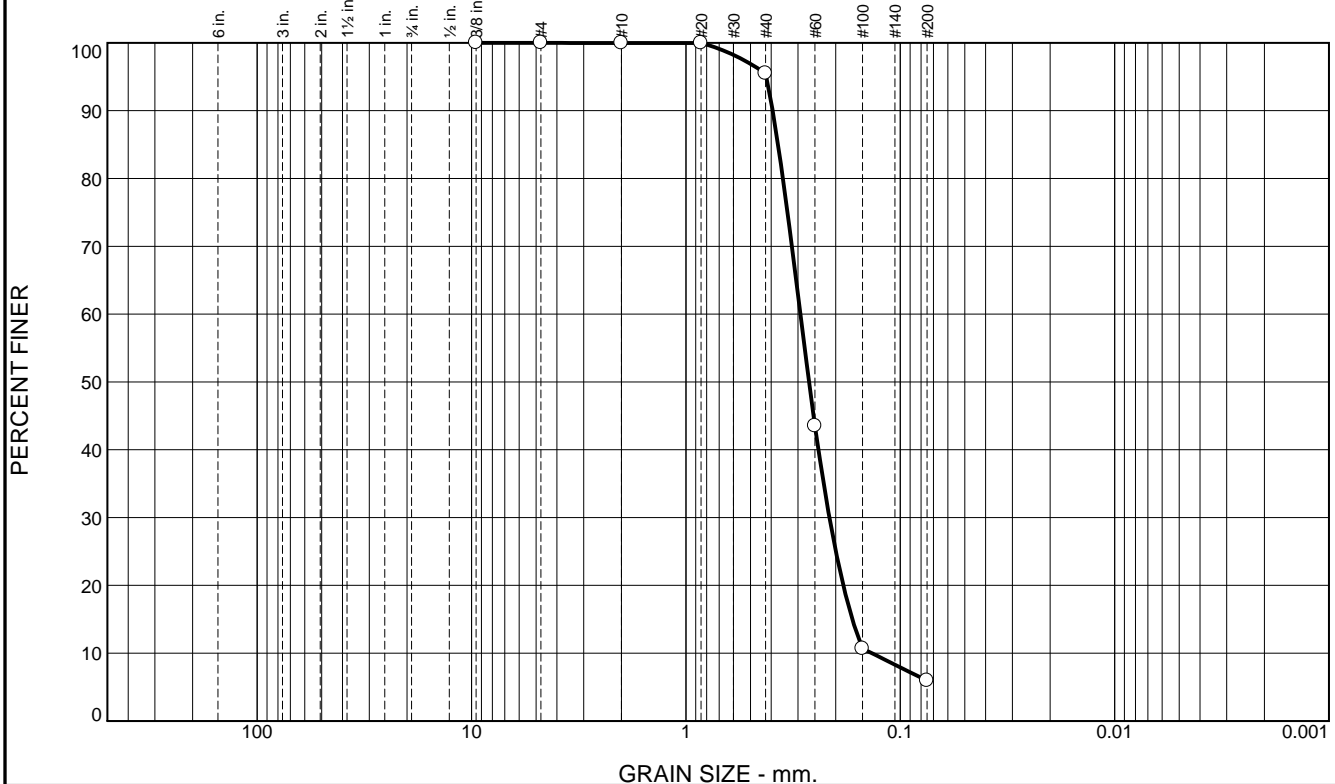
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	4.5	89.6	5.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	100.0		
#40	95.5		
#60	43.5		
#100	10.7		
#200	5.9		

* (no specification provided)

<u>Material Description</u>		
Slightly silty SAND (SP-SM), fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.3938	D ₈₅ = 0.3717	D ₆₀ = 0.2925
D ₅₀ = 0.2666	D ₃₀ = 0.2140	D ₁₅ = 0.1674
D ₁₀ = 0.1358	C _u = 2.15	C _c = 1.15
<u>Classification</u>		
USCS= SP-SM	AASHTO=	
<u>Remarks</u>		

Location: USACE Sample # BI-PB-134B-11
Sample Number: TE Lab ID: 5054.112

Depth: 5.0 - 8.0 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

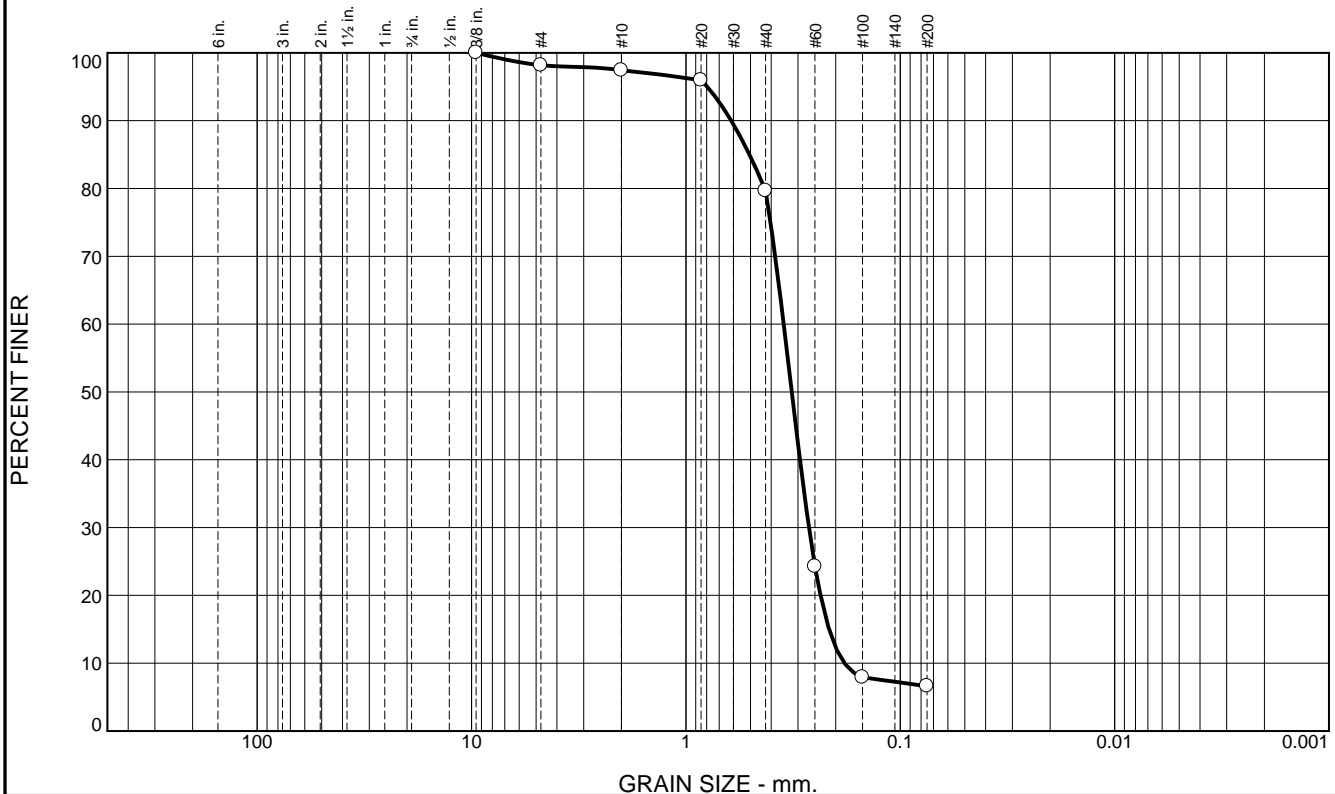
Project No: 11-2116-0057

Figure

Boring Designation BI-PB-135-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petis Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-135-11		LOCATION COORDINATES E = 1,137,172 N = 253,892		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		14. WATER DEPTH 32.5 Ft.	
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-30-11		STARTED 06-30-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -30.6 Ft.		COMPLETED 06-30-11	
8. TOTAL DEPTH OF BORING 12.2 Ft.				17. TOTAL RECOVERY FOR BORING 100%		18. SIGNATURE AND TITLE OF INSPECTOR Michele Johnson, Geologist	
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-30.6	0.0						
			SAND, poorly-graded with silt, mostly fine to medium-grained sand-sized quartz, dk brown/dk gray (SP-SM)	A	Classification: SP-SM Color: 2.5Y 5/2-grayish brown D50: 0.3209 mm % Fines: 6.6		
-34.6	4.0			B	Classification: SP-SM Color: 2.5Y 5/2-grayish brown D50: 0.2445 mm % Fines: 8.4		
-36.2	5.6		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, dk gray (SP)				
			CLAY, lean, trace fine-grained sand, dk gray (CL)	NS			
-42.8	12.2						
NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.							

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.8	0.8	17.7	73.1	6.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	98.2		
#10	97.4		
#20	95.9		
#40	79.7		
#60	24.3		
#100	7.9		
#200	6.6		

* (no specification provided)

Material Description

Slightly silty SAND (SP-SM), medium to fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.6143 D₈₅= 0.5054 D₆₀= 0.3499
D₅₀= 0.3209 D₃₀= 0.2669 D₁₅= 0.2148
D₁₀= 0.1822 C_u= 1.92 C_c= 1.12

Classification

USCS= SP-SM AASHTO=

Remarks

Location: USACE Sample # BI-PB-135A-11
Sample Number: TE Lab ID: 5054.113

Depth: 0.0 - 2.0 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

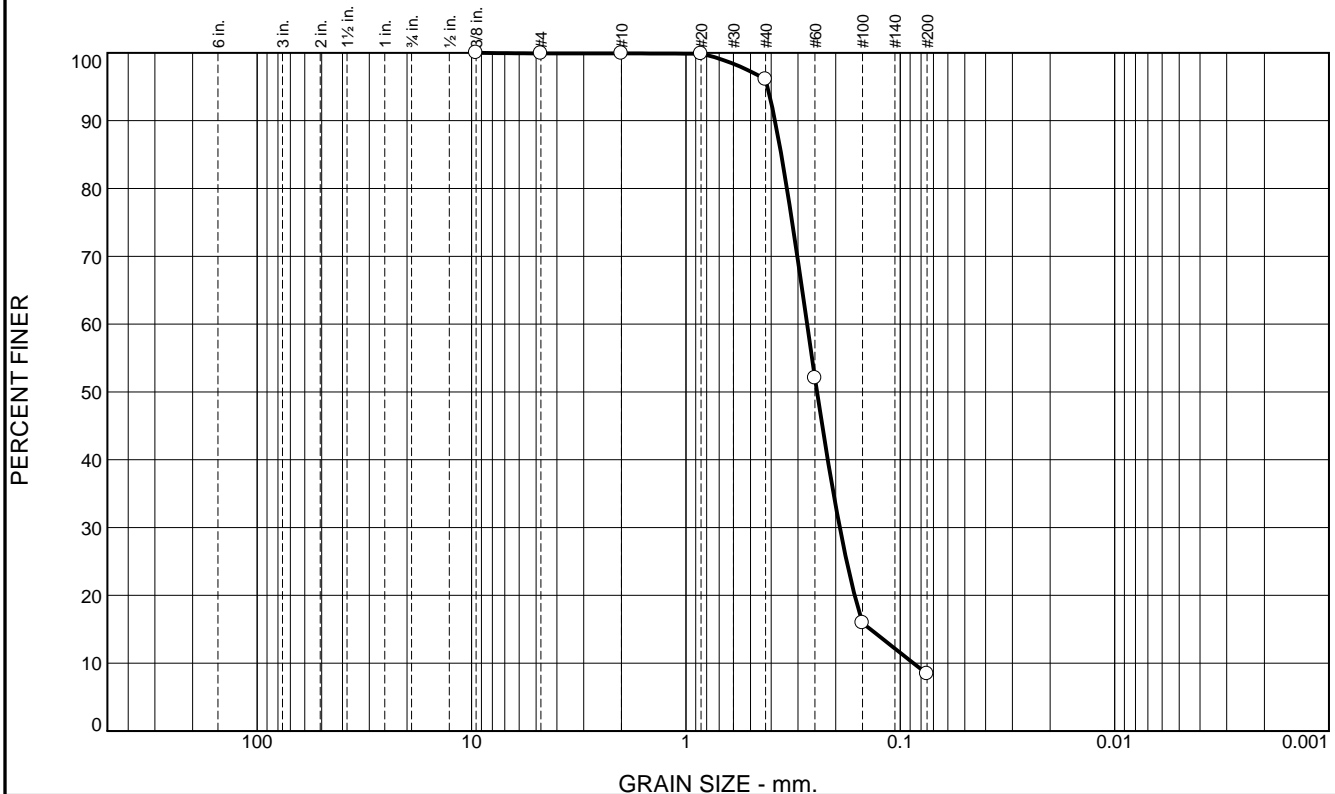
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.0	3.8	87.7	8.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.9		
#20	99.9		
#40	96.1		
#60	52.0		
#100	15.9		
#200	8.4		

* (no specification provided)

Material Description
Slightly silty SAND (SP-SM), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.3841 D₈₅= 0.3591 D₆₀= 0.2721
 D₅₀= 0.2445 D₃₀= 0.1914 D₁₅= 0.1377
 D₁₀= 0.0868 C_u= 3.14 C_c= 1.55

Classification
 USCS= SP-SM AASHTO=

Remarks

Location: USACE Sample # BI-PB-135B-11
Sample Number: TE Lab ID: 5054.114

Depth: 2.0 - 5.6 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
 Mississippi Barrier Island Restoration Project

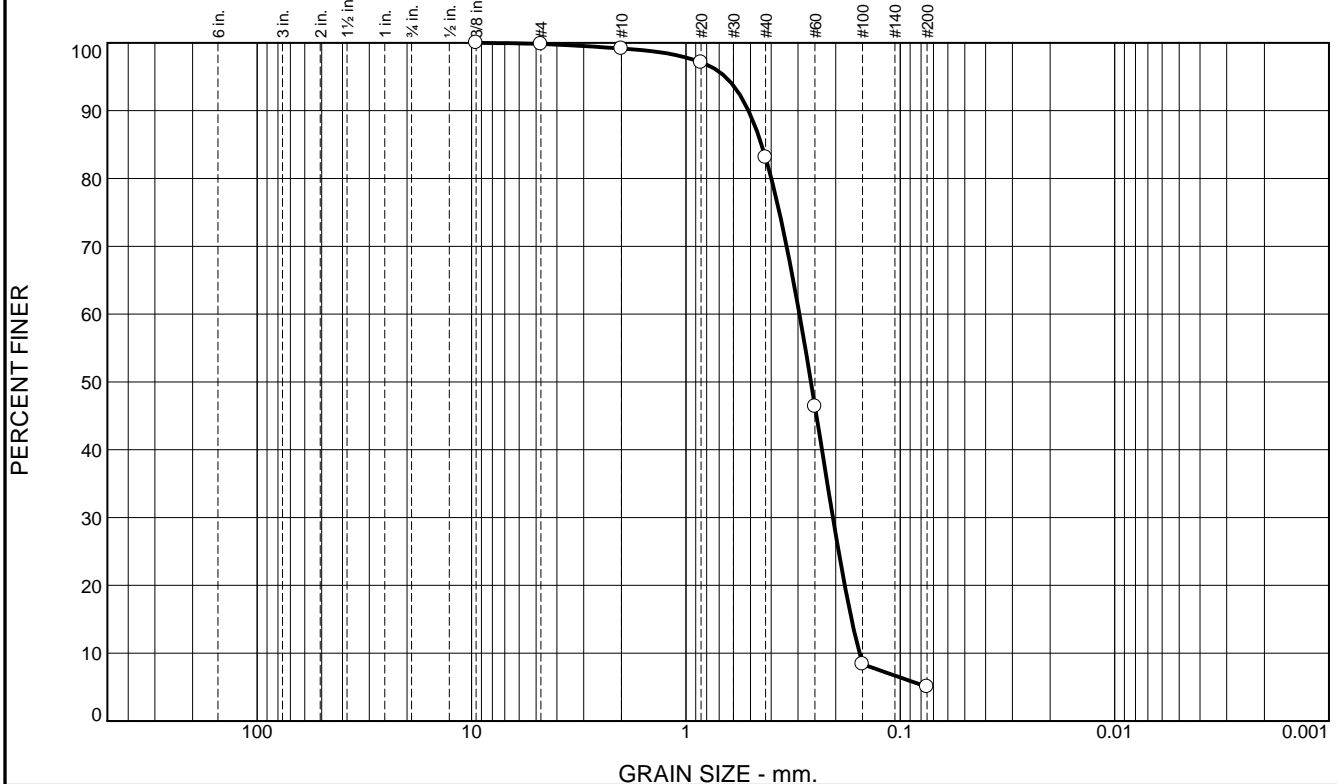
Project No: 11-2116-0057

Figure

Boring Designation BI-PB-136-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petis Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-136-11		LOCATION COORDINATES E = 1,146,828 N = 253,716		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 2		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 32 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-30-11		COMPLETED 06-30-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -30.4 Ft.			
8. TOTAL DEPTH OF BORING 14.9 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Michele Johnson, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-30.4	0.0						
-33.4	3.0		SAND, poorly-graded with silt, trace shell fragments, gray (SP-SM)	A	Classification: SP-SM Color: 5Y 6/2-light olive gray D50: 0.261 mm % Fines: 5		
			SAND, poorly-graded, mostly medium-grained sand-sized quartz, trace shell fragments, dark gray (SP)	B	Classification: SP-SM Color: 5Y 6/2-light olive gray D50: 0.3035 mm % Fines: 7.2		
				NS			
-45.3	14.9						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.6	16.1	78.1	5.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.8		
#10	99.2		
#20	97.1		
#40	83.1		
#60	46.4		
#100	8.4		
#200	5.0		

* (no specification provided)

Material Description

Slightly silty SAND (SP-SM), medium to fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.5105 D₈₅= 0.4433 D₆₀= 0.2957
D₅₀= 0.2610 D₃₀= 0.2061 D₁₅= 0.1688
D₁₀= 0.1550 C_u= 1.91 C_c= 0.93

Classification

USCS= SP-SM AASHTO=

Remarks

Location: USACE Sample # BI-PB-136A-11
Sample Number: TE Lab ID: 5054.124

Depth: 0.0 - 3.0 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

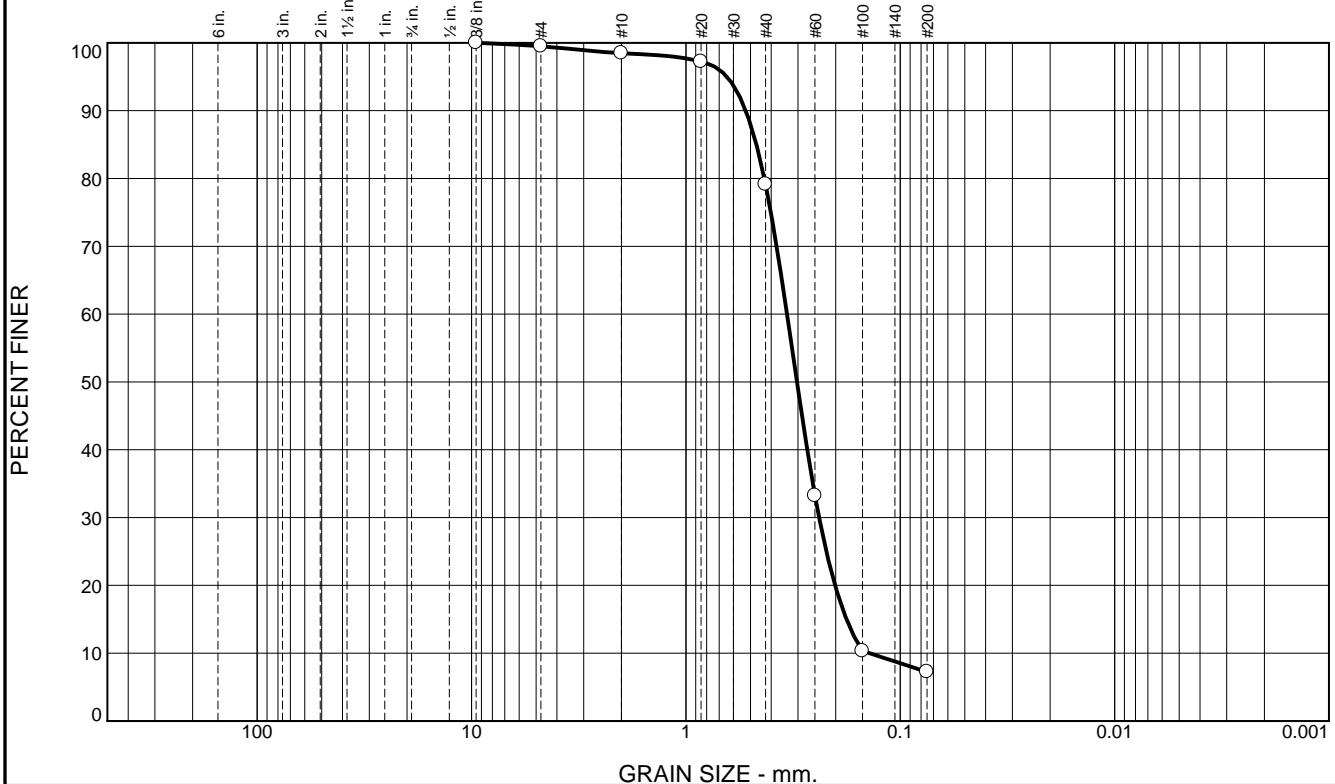
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.5	1.0	19.4	71.9	7.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.5		
#10	98.5		
#20	97.2		
#40	79.1		
#60	33.2		
#100	10.3		
#200	7.2		

* (no specification provided)

<u>Material Description</u>		
Slightly silty SAND (SP-SM), medium to fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.5256	D ₈₅ = 0.4687	D ₆₀ = 0.3377
D ₅₀ = 0.3035	D ₃₀ = 0.2392	D ₁₅ = 0.1782
D ₁₀ = 0.1393	C _u = 2.42	C _c = 1.22
<u>Classification</u>		
USCS= SP-SM	AASHTO=	
<u>Remarks</u>		

Location: USACE Sample # BI-PB-136B-11
Sample Number: TE Lab ID: 5054.125

Depth: 3.0 - 6.5 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Boring Designation BI-PB-137-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petis Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-137-11		LOCATION COORDINATES E = 1,147,898 N = 253,783		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 4		DISTURBED 4 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 32 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 06-30-11		STARTED 06-30-11 COMPLETED 06-30-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -30.4 Ft.			
8. TOTAL DEPTH OF BORING 16.9 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Michele Johnson, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-30.4	0.0						
			SAND, poorly-graded, mostly medium-grained sand-sized quartz, trace shell fragments, trace organic matter, lt. gray (SP)	A	Classification: SP Color: 5Y 7/1-light gray D50: 0.2881 mm % Fines: 2.9		
-34.4	4.0		SAND, poorly-graded with silt, some fine to medium-grained sand-sized, lt. gray (SP-SM)	B	Classification: SP-SM Color: 2.5Y 6/2-light brownish gray D50: 0.2613 mm % Fines: 6.6		
			At El. -38.4 Ft., some fine to medium-grained sand-sized, lt. gray	C	Classification: SP Color: 2.5Y 7/2-light gray D50: 0.3004 mm % Fines: 4.9		
-42.4	12.0		SAND, poorly-graded, trace medium-grained sand-sized, gray (SP)	D	Classification: SP Color: 2.5Y 8/1-white D50: 0.2937 mm % Fines: 4.4		
-47.3	16.9						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	1.0	19.2	76.7	2.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.8		
#10	98.8		
#20	95.4		
#40	79.6		
#60	37.9		
#100	5.1		
#200	2.9		

* (no specification provided)

Material Description		
SAND (SP), medium to fine grained		
PL=	Atterberg Limits LL=	PI=
D ₉₀ = 0.5508	Coefficients D ₈₅ = 0.4746	D ₆₀ = 0.3240
D ₅₀ = 0.2881	D ₃₀ = 0.2269	D ₁₅ = 0.1834
D ₁₀ = 0.1677	C _u = 1.93	C _c = 0.95
USCS= SP	Classification AASHTO=	
Remarks		

Location: USACE Sample # BI-PB-137A-11
Sample Number: TE Lab ID: 5054.120

Depth: 0.0 - 4.0 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

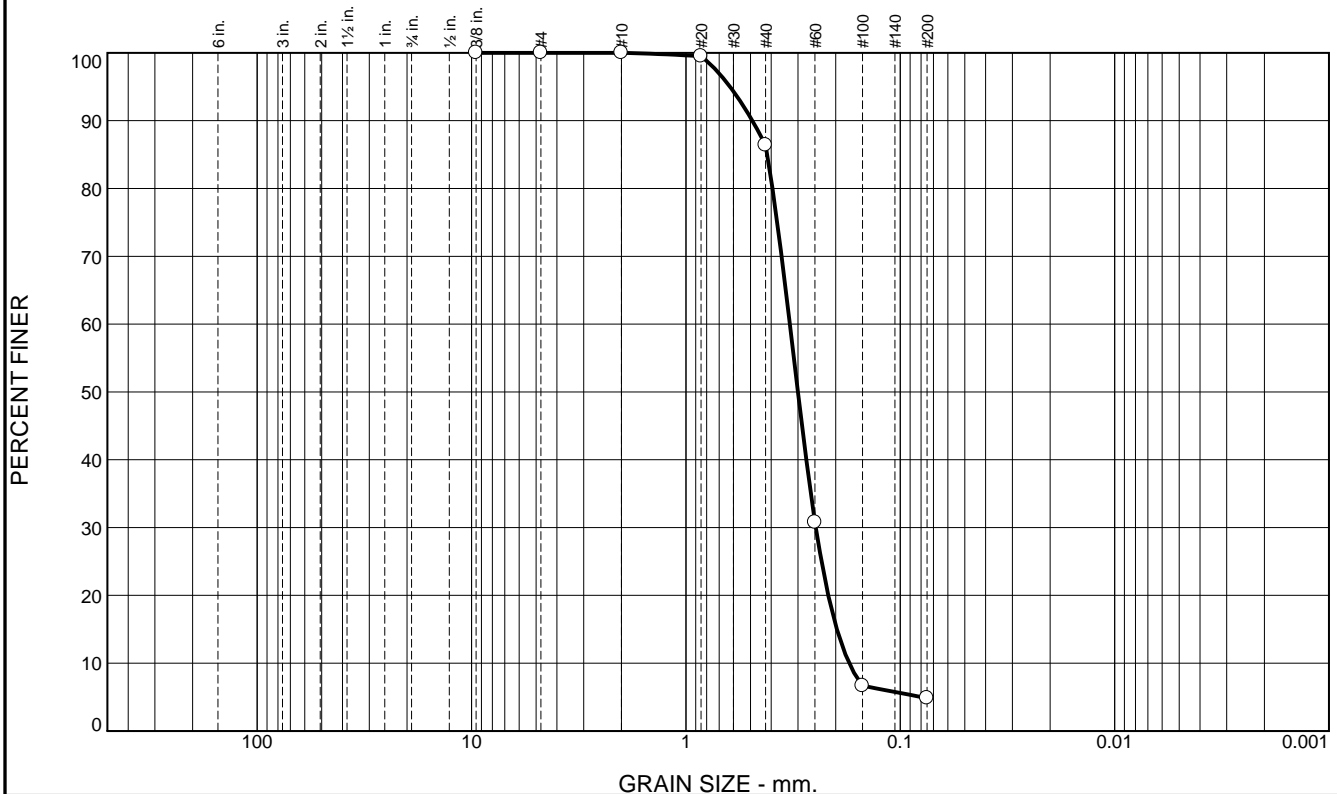
Figure

PERCENT FINER



<u>Material Description</u>		
Slightly silty SAND (SP-SM), medium to fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.4583	D ₈₅ = 0.4134	D ₆₀ = 0.2942
D ₅₀ = 0.2613	D ₃₀ = 0.2020	D ₁₅ = 0.1558
D ₁₀ = 0.1060	C _u = 2.77	C _c = 1.31
<u>Classification</u>		
USCS= SP-SM	AASHTO=	
<u>Remarks</u>		

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	13.6	81.5	4.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.5		
#40	86.4		
#60	30.8		
#100	6.7		
#200	4.9		

* (no specification provided)

Material Description

SAND (SP), medium to fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.4898

D₈₅= 0.4176

D₆₀= 0.3276

D₅₀= 0.3004

D₃₀= 0.2478

D₁₅= 0.1975

D₁₀= 0.1731

C_u= 1.89

C_c= 1.08

Classification

USCS= SP

AASHTO=

Remarks

Location: USACE Sample # BI-PB-137C-11
Sample Number: TE Lab ID: 5054.122

Depth: 8.0 - 12.0 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

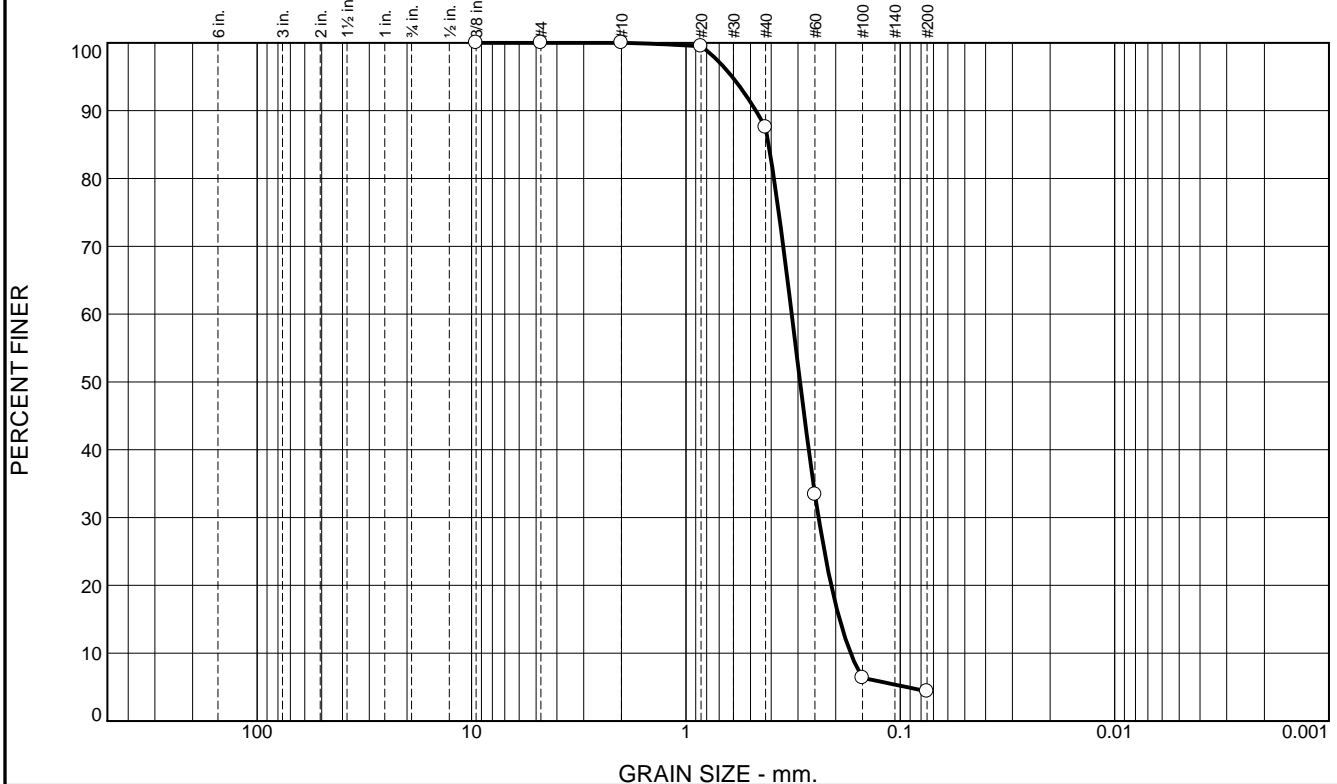
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	12.5	83.1	4.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.5		
#40	87.5		
#60	33.4		
#100	6.4		
#200	4.4		

* (no specification provided)

<u>Material Description</u>		
SAND (SP), medium to fine grained		
PL=	<u>Atterberg Limits</u>	PI=
	LL=	
<u>Coefficients</u>		
D ₉₀ = 0.4718	D ₈₅ = 0.4113	D ₆₀ = 0.3211
D ₅₀ = 0.2937	D ₃₀ = 0.2406	D ₁₅ = 0.1919
D ₁₀ = 0.1704	C _u = 1.88	C _c = 1.06
<u>Classification</u>		
USCS= SP	AASHTO=	
<u>Remarks</u>		

Location: USACE Sample # BI-PB-137D-11
Sample Number: TE Lab ID: 5054.123

Depth: 12.0 - 16.9 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

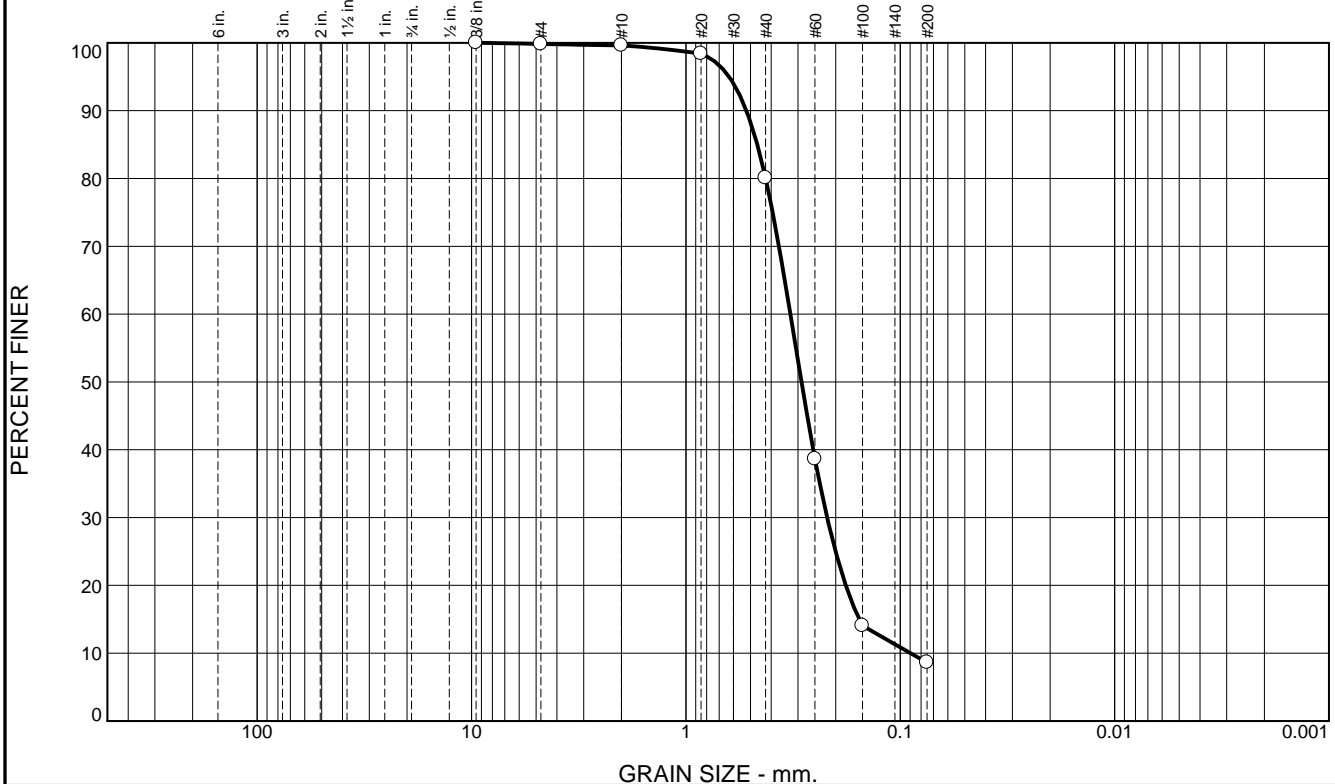
Project No: 11-2116-0057

Figure

Boring Designation BI-PB-138-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petis Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-138-11		LOCATION COORDINATES E = 1,149,013 N = 253,235		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 5	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		UNDISTURBED (UD) 0	
6. THICKNESS OF OVERBURDEN N/A				14. WATER DEPTH		37.5 Ft.	
7. DEPTH DRILLED INTO ROCK N/A				15. DATE BORING		STARTED 06-30-11	
8. TOTAL DEPTH OF BORING 18.5 Ft.				16. ELEVATION TOP OF BORING		COMPLETED 06-30-11	
				17. TOTAL RECOVERY FOR BORING		100%	
				18. SIGNATURE AND TITLE OF INSPECTOR		Michele Johnson, Geologist	
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-36.1	0.0		SAND, poorly-graded, mostly medium-grained sand-sized quartz, lt. gray (SP)	A	Classification: SP-SM Color: 5Y 6/1-gray D50: 0.289 mm % Fines: 8.6		
			At El. -41.1 Ft., trace shell fragments, lt. gray	B	Classification: SP Color: 5Y 6/1-gray D50: 0.3247 mm % Fines: 3.2		
-46.1	10.0		SAND, poorly-graded with silt, trace fine to medium-grained sand-sized, gray (SP-SM)	C	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.3269 mm % Fines: 2.9		
-51.1	15.0		SAND, poorly-graded, mostly medium-grained sand-sized quartz, dark gray (SP)	D	Classification: SP-SM Color: 2.5Y 7/1-light gray D50: 0.3135 mm % Fines: 5.7		
-54.6	18.5		At El. -52.6 Ft., mostly medium-grained sand-sized quartz, dark gray	E	Classification: SP-SM Color: 2.5Y 7/1-light gray D50: 0.266 mm % Fines: 11.4		
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.2	19.5	71.5	8.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.8		
#10	99.6		
#20	98.4		
#40	80.1		
#60	38.6		
#100	14.0		
#200	8.6		

* (no specification provided)

Material Description

Slightly silty SAND (SP-SM), medium to fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.5222 D₈₅= 0.4643 D₆₀= 0.3257
D₅₀= 0.2890 D₃₀= 0.2193 D₁₅= 0.1553
D₁₀= 0.0896 C_u= 3.64 C_c= 1.65

Classification

USCS= SP-SM AASHTO=

Remarks

Location: USACE Sample # BI-PB-138A-11
Sample Number: TE Lab ID: 5054.126

Depth: 0.0 - 5.0 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

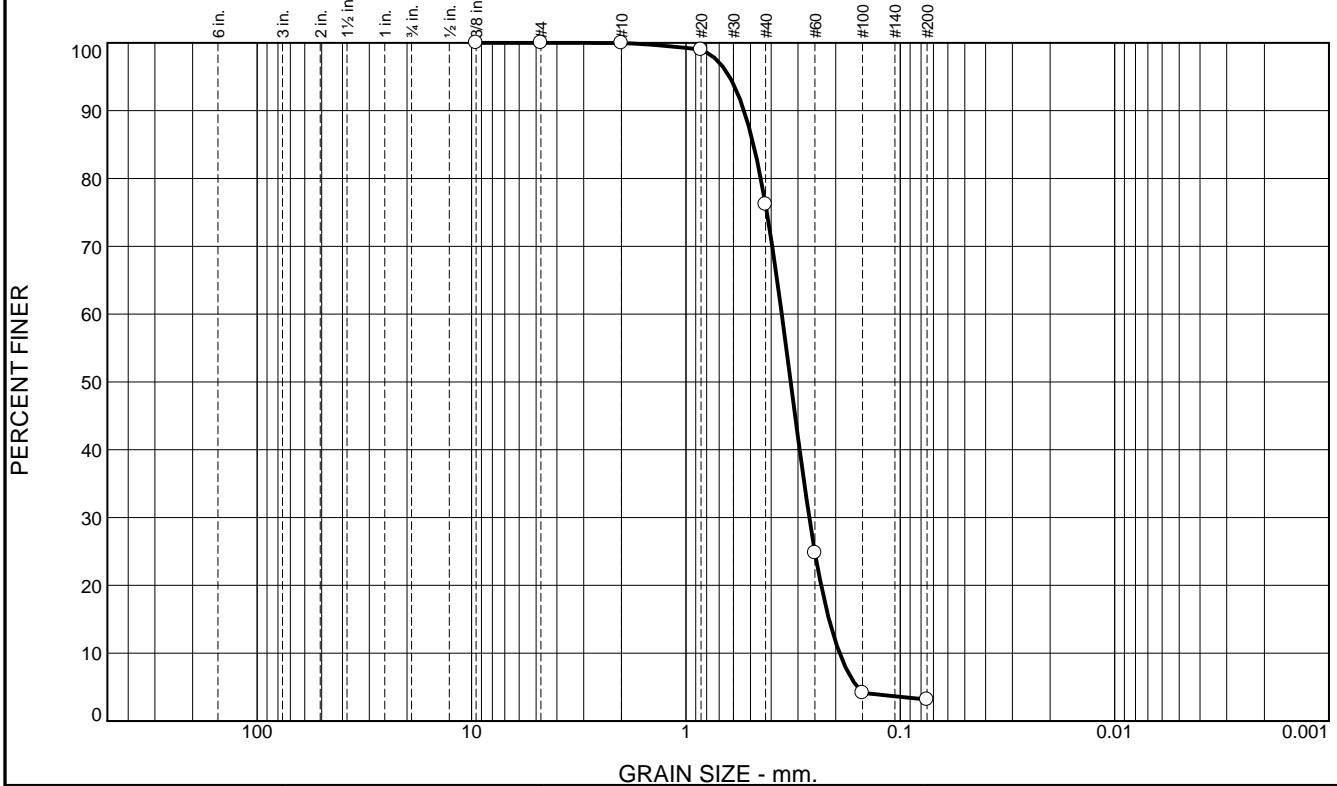
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	23.8	73.0	3.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.0		
#40	76.2		
#60	24.8		
#100	4.1		
#200	3.2		

* (no specification provided)

Material Description

SAND (SP), medium to fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.5356

D₈₅= 0.4838

D₆₀= 0.3573

D₅₀= 0.3247

D₃₀= 0.2659

D₁₅= 0.2150

D₁₀= 0.1919

C_u= 1.86

C_c= 1.03

Classification

USCS= SP

AASHTO=

Remarks

Location: USACE Sample # BI-PB-138B-11
Sample Number: TE Lab ID: 5054.127

Depth: 5.0 - 10.0 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

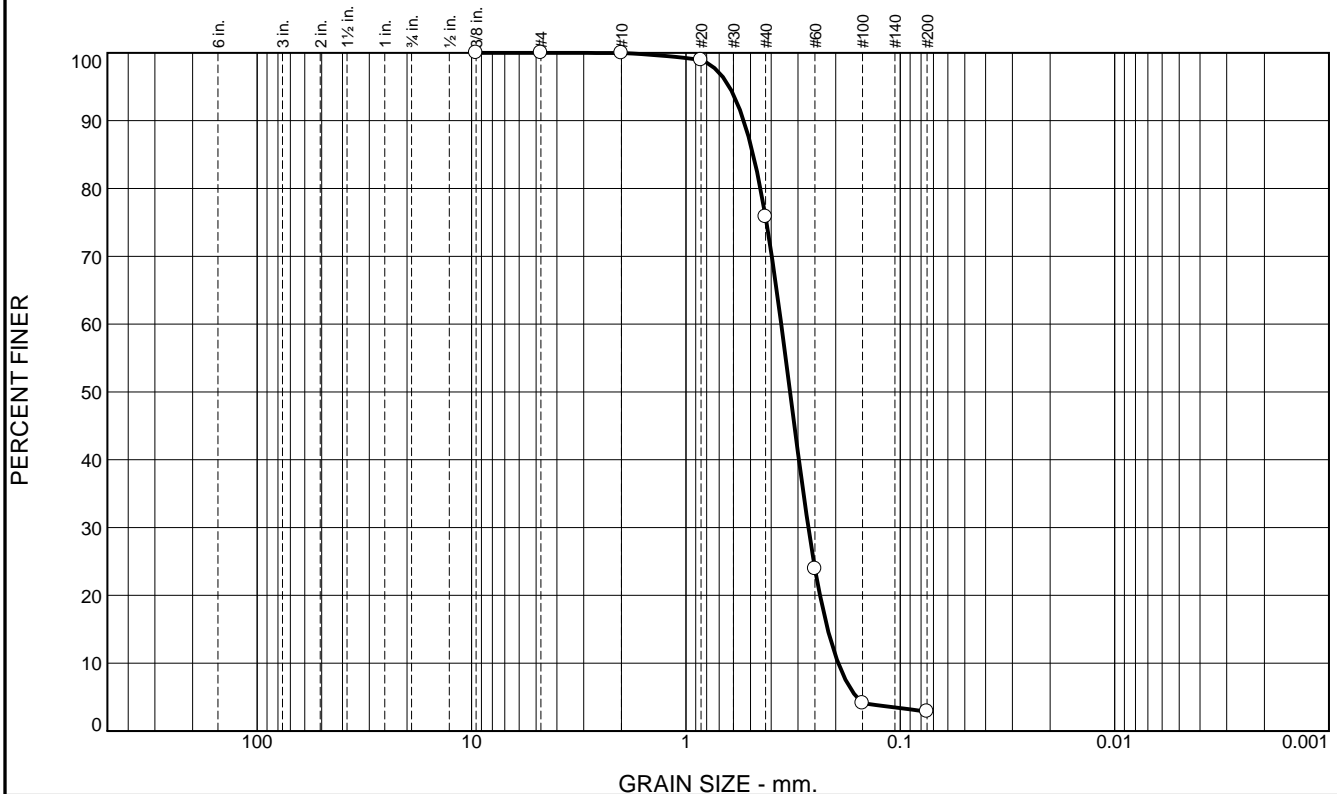
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	24.2	72.9	2.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.0		
#40	75.8		
#60	23.9		
#100	4.1		
#200	2.9		

* (no specification provided)

Material Description

SAND (SP), medium to fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.5372 D₈₅= 0.4855 D₆₀= 0.3593
D₅₀= 0.3269 D₃₀= 0.2685 D₁₅= 0.2180
D₁₀= 0.1947 C_u= 1.85 C_c= 1.03

Classification

USCS= SP AASHTO=

Remarks

Location: USACE Sample # BI-PB-138C-11
Sample Number: TE Lab ID: 5054.128

Depth: 10.0 - 15.0 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

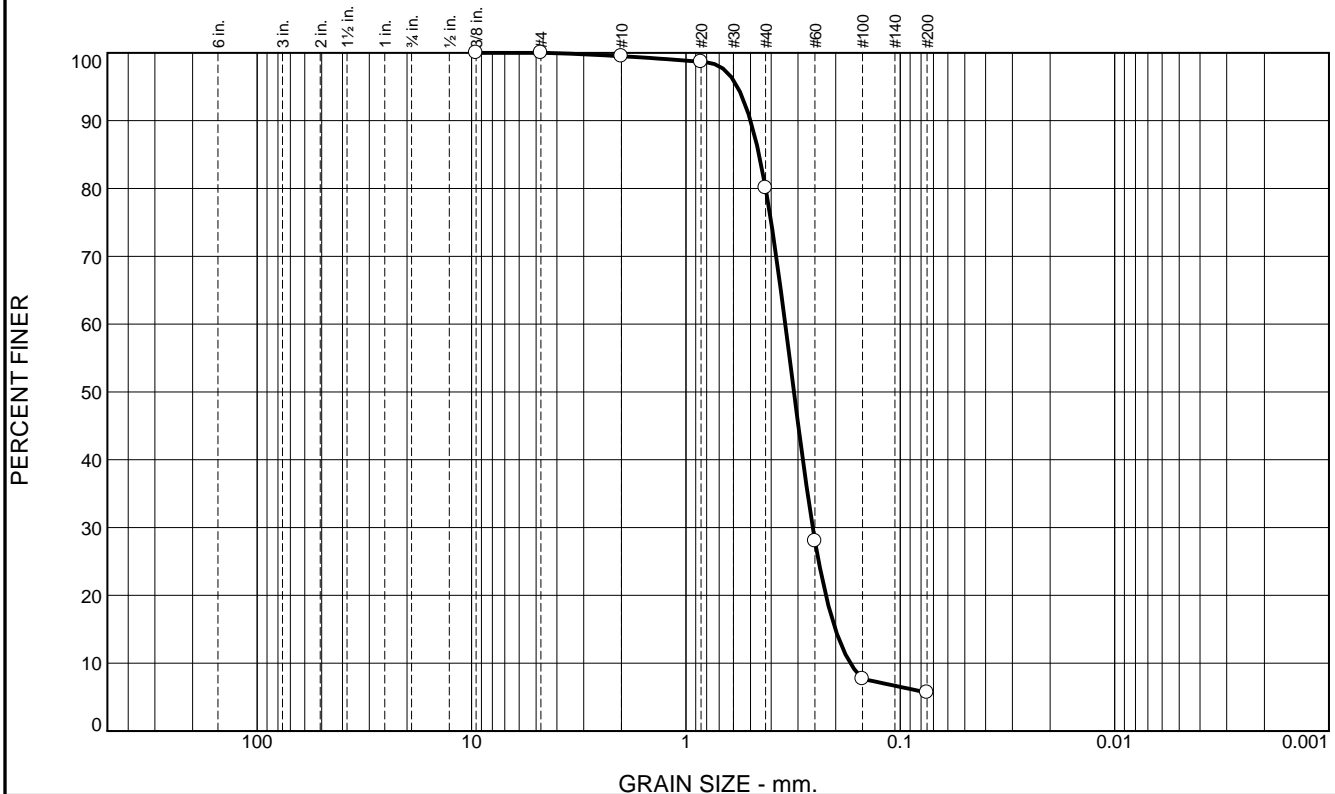
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.5	19.4	74.4	5.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.5		
#20	98.7		
#40	80.1		
#60	28.0		
#100	7.7		
#200	5.7		

* (no specification provided)

<u>Material Description</u>		
Slightly silty SAND (SP-SM), medium to fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.4992	D ₈₅ = 0.4556	D ₆₀ = 0.3441
D ₅₀ = 0.3135	D ₃₀ = 0.2561	D ₁₅ = 0.2008
D ₁₀ = 0.1710	C _u = 2.01	C _c = 1.11
<u>Classification</u>		
USCS= SP-SM	AASHTO=	
<u>Remarks</u>		

Location: USACE Sample # BI-PB-138D-11
Sample Number: TE Lab ID: 5054.129

Depth: 15.0 - 16.5 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

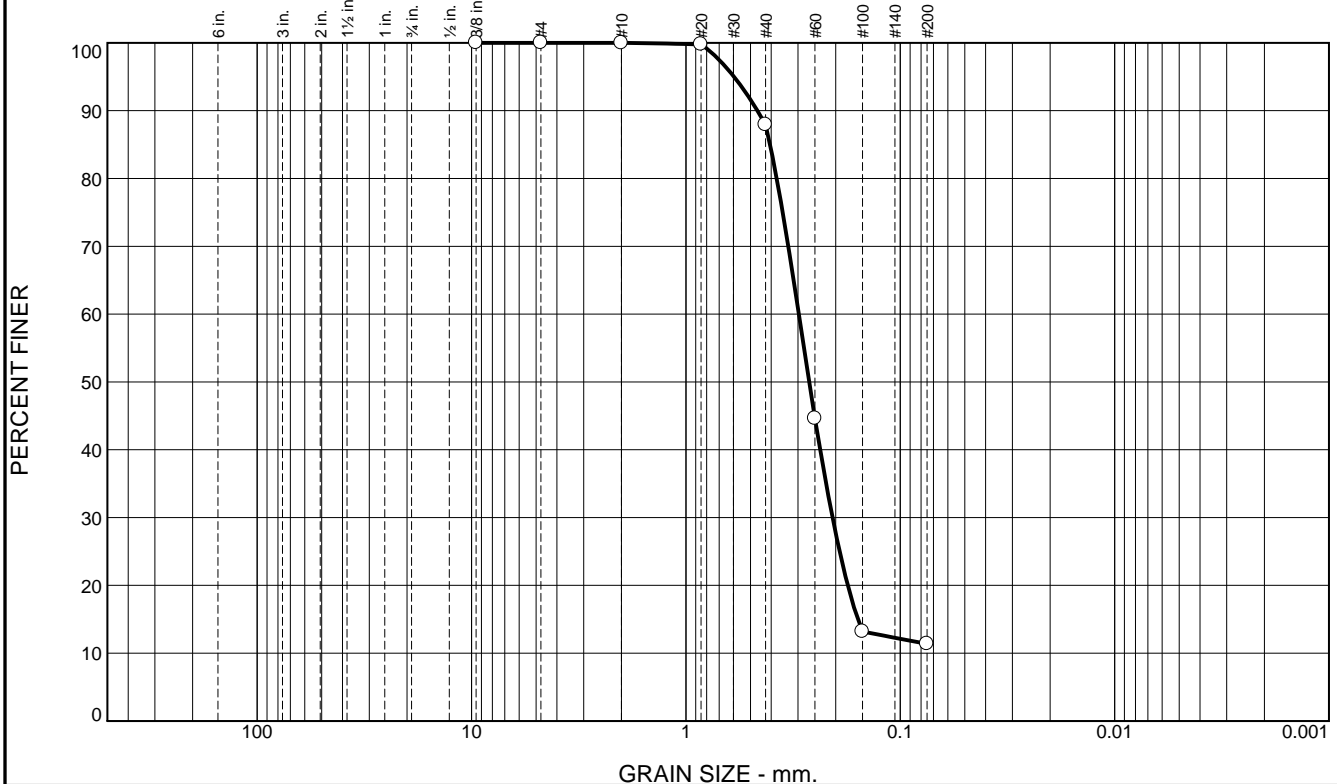
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	12.1	76.5	11.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.8		
#40	87.9		
#60	44.6		
#100	13.2		
#200	11.4		

* (no specification provided)

Material Description

Slightly silty SAND (SP-SM), medium to fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.4640 D₈₅= 0.4051 D₆₀= 0.2975
D₅₀= 0.2660 D₃₀= 0.2070 D₁₅= 0.1577
D₁₀= C_u= C_c=

Classification

USCS= SP-SM AASHTO=

Remarks

Location: USACE Sample # BI-PB-138E-11
Sample Number: TE Lab ID: 5054.130

Depth: 16.5 - 18.5 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

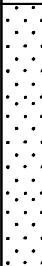
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

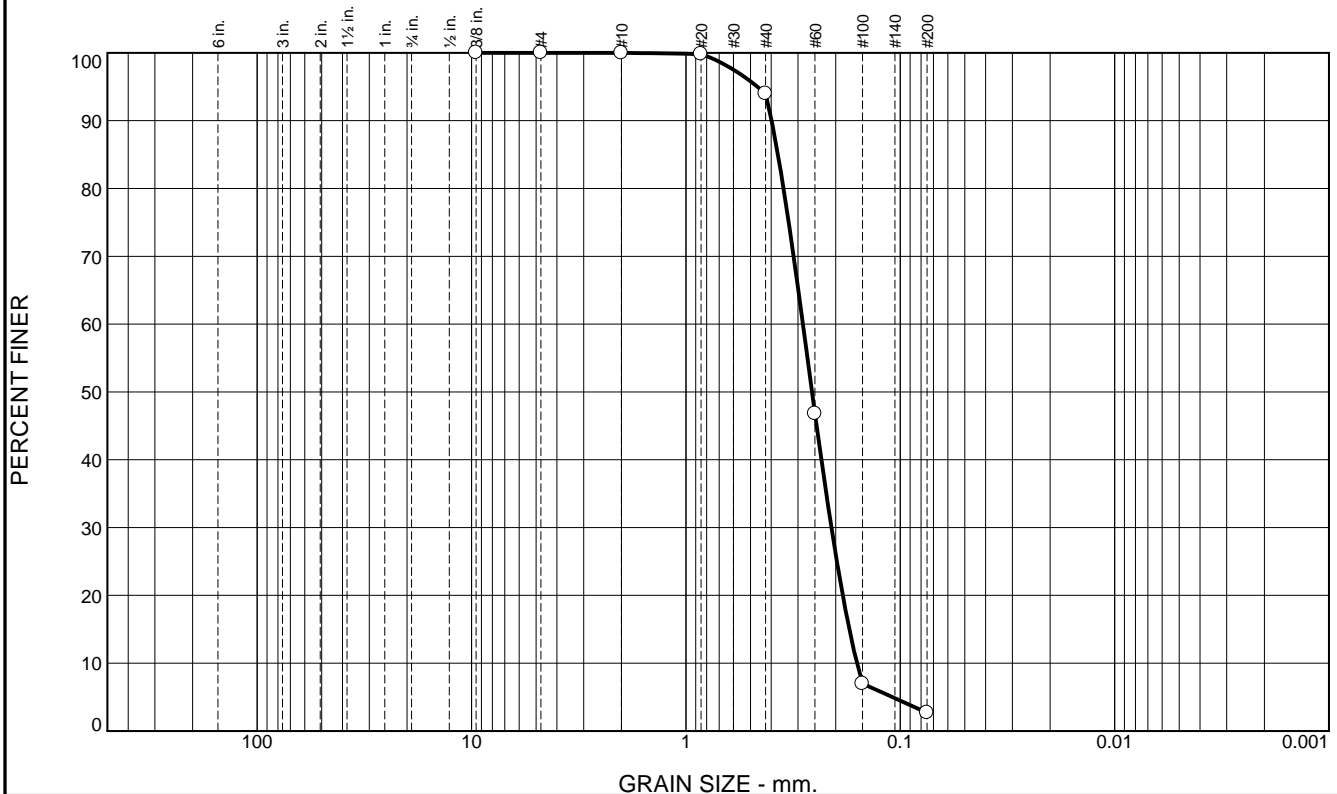
Project No: 11-2116-0057

Figure

Boring Designation BI-PB-139-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petis Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-139-11		LOCATION COORDINATES E = 1,148,957 N = 251,729		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 39 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 07-01-11		STARTED 07-01-11 COMPLETED 07-01-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -38.3 Ft.			
8. TOTAL DEPTH OF BORING 6.0 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Michele Johnson, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-38.3	0.0						
			SAND, poorly-graded, mostly medium-grained sand-sized, lt. gray (SP)	A	Classification: SP Color: 2.5Y 8/1-white D50: 0.2581 mm % Fines: 2.7		
			At El. -40.3 Ft., mostly medium-grained sand-sized, lt. gray	B	Classification: SP Color: 2.5Y 8/1-white D50: 0.265 mm % Fines: 1.6		
			At El. -42.3 Ft., mostly medium-grained sand-sized, lt. gray	C	Classification: SP Color: 2.5Y 8/1-white D50: 0.2646 mm % Fines: 2.9		
-44.3	6.0						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	6.0	91.3	2.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.8		
#40	94.0		
#60	46.8		
#100	7.0		
#200	2.7		

* (no specification provided)

Material Description		
SAND (SP), medium to fine grained		
PL=	Atterberg Limits LL=	PI=
D ₉₀ = 0.3983	Coefficients D ₈₅ = 0.3721	D ₆₀ = 0.2847
D ₅₀ = 0.2581	D ₃₀ = 0.2094	D ₁₅ = 0.1729
D ₁₀ = 0.1593	C _u = 1.79	C _c = 0.97
USCS= SP	Classification AASHTO=	
Remarks		

Location: USACE Sample # BI-PB-139A-11
Sample Number: TE Lab ID: 5054.148

Depth: 0.0 - 2.0 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

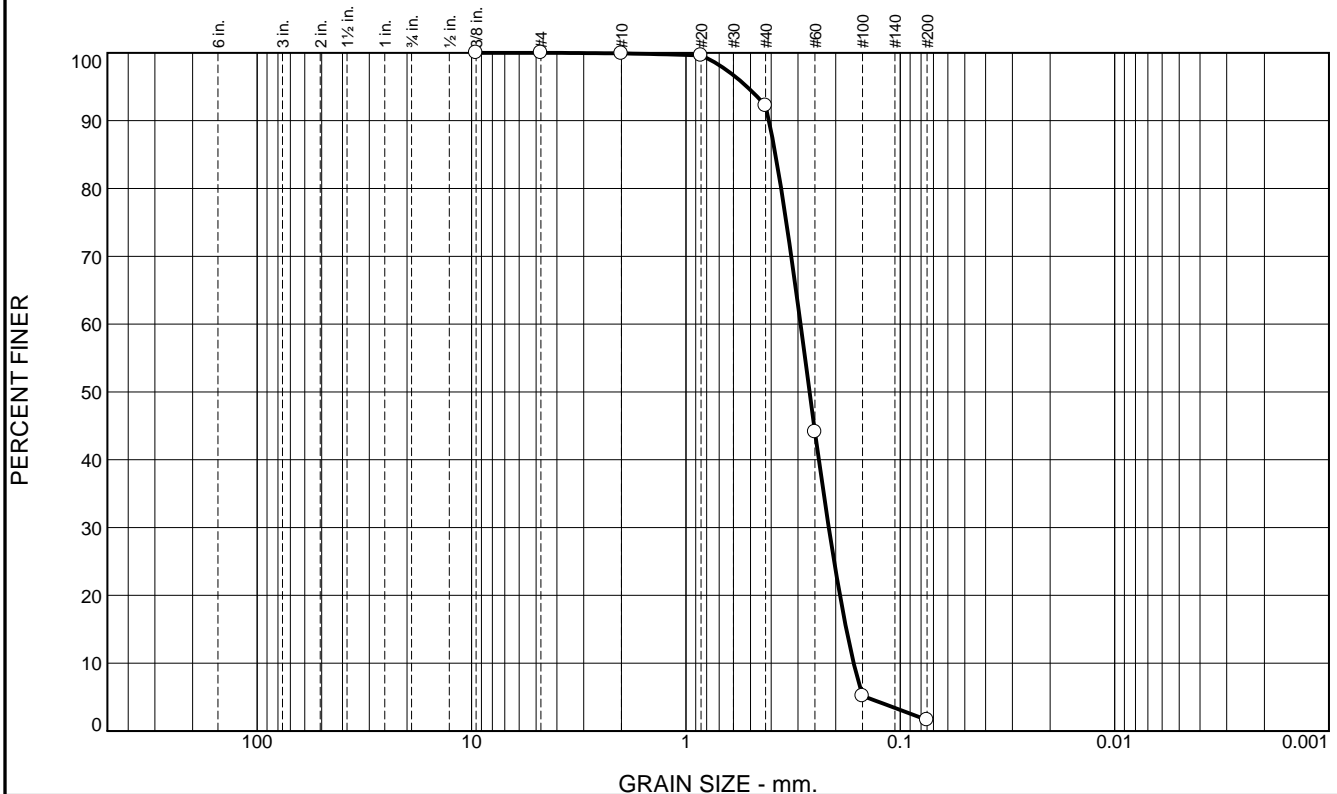
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	7.7	90.6	1.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.6		
#40	92.2		
#60	44.1		
#100	5.2		
#200	1.6		

* (no specification provided)

Material Description		
SAND (SP), fine grained		
PL=	Atterberg Limits LL=	PI=
D ₉₀ = 0.4099	Coefficients D ₈₅ = 0.3821	D ₆₀ = 0.2921
D ₅₀ = 0.2650	D ₃₀ = 0.2155	D ₁₅ = 0.1785
D ₁₀ = 0.1649	C _u = 1.77	C _c = 0.96
USCS= SP	Classification AASHTO=	
Remarks		

Location: USACE Sample # BI-PB-139B-11
Sample Number: TE Lab ID: 5054.149

Depth: 2.0 - 4.0 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

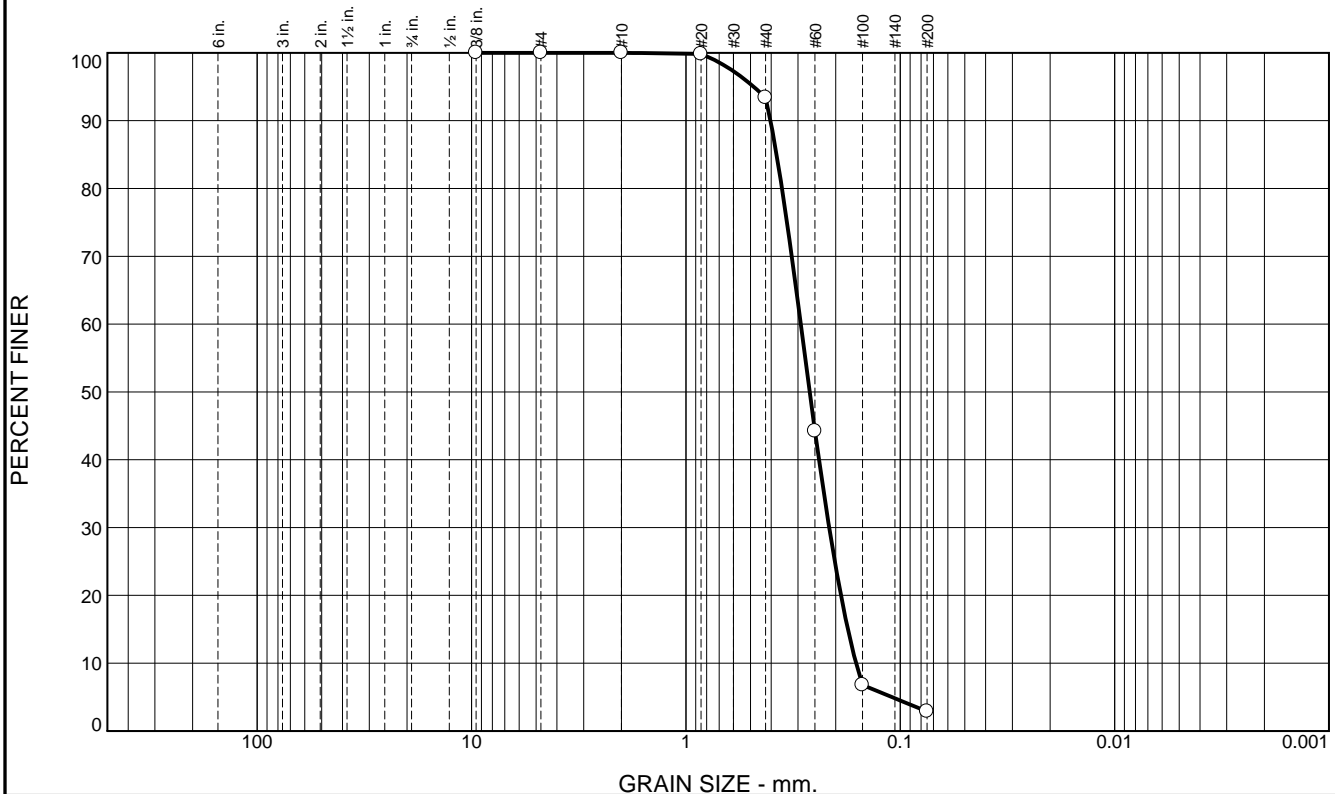
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	6.6	90.5	2.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.8		
#40	93.4		
#60	44.2		
#100	6.8		
#200	2.9		

* (no specification provided)

Material Description		
SAND (SP), fine grained		
PL=	Atterberg Limits LL=	PI=
D ₉₀ = 0.4032	Coefficients D ₈₅ = 0.3775	D ₆₀ = 0.2913
D ₅₀ = 0.2646	D ₃₀ = 0.2145	D ₁₅ = 0.1756
D ₁₀ = 0.1609	C _u = 1.81	C _c = 0.98
USCS= SP	Classification AASHTO=	
Remarks		

Location: USACE Sample # BI-PB-139C-11
Sample Number: TE Lab ID: 5054.150

Depth: 4.0 - 6.0 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

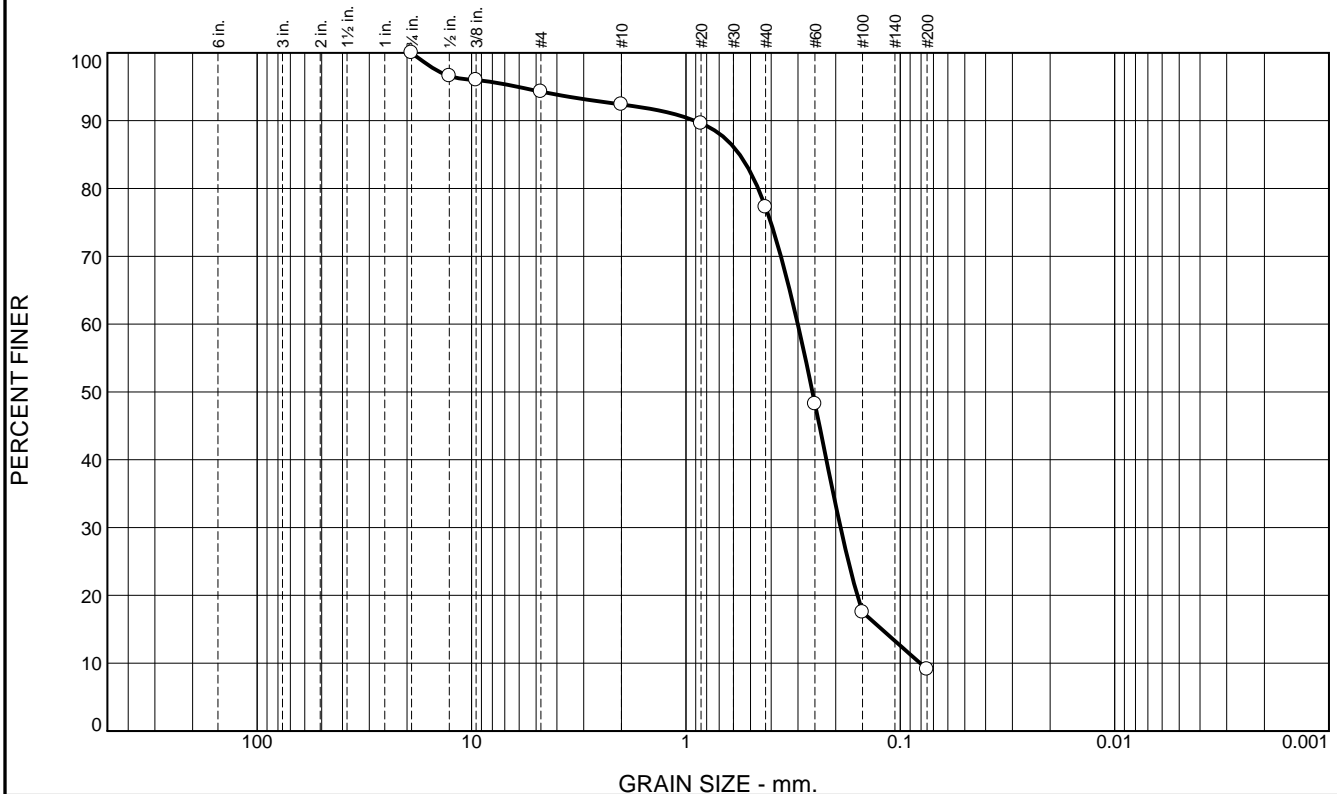
Project No: 11-2116-0057

Figure

Boring Designation BI-PB-140-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petis Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-140-11		LOCATION COORDINATES E = 1,149,808 N = 252,155		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		14. WATER DEPTH 38 Ft.	
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 07-01-11		STARTED 07-01-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -36.3 Ft.		COMPLETED 07-01-11	
8. TOTAL DEPTH OF BORING 19.4 Ft.				17. TOTAL RECOVERY FOR BORING 100%		18. SIGNATURE AND TITLE OF INSPECTOR Michele Johnson, Geologist	
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-36.3	0.0						
-38.5	2.2		SAND, poorly-graded, mostly quartz, dark gray (SP)	A	Classification: SP-SM Color: 2.5Y 6/2-light brownish gray D50: 0.2568 mm % Fines: 9.1		
			SAND, silty, mostly fine-grained sand-sized quartz, lt. gray (SM)	B	Classification: SP Color: 2.5Y 7/2-light gray D50: 0.3158 mm % Fines: 3.9		
			At El. -42.1 Ft., mostly fine-grained sand-sized quartz, lt. gray	C	Classification: SP Color: 2.5Y 7/2-light gray D50: 0.2991 mm % Fines: 3.9		
				NS			
-55.7	19.4						
NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.							

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	5.7	1.9	15.1	68.2	9.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.75	100.0		
.5	96.6		
.375	96.0		
#4	94.3		
#10	92.4		
#20	89.6		
#40	77.3		
#60	48.2		
#100	17.5		
#200	9.1		

* (no specification provided)

Material Description

Slightly silty SAND (SP-SM), medium to fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.9113 D₈₅= 0.5612 D₆₀= 0.3009
D₅₀= 0.2568 D₃₀= 0.1898 D₁₅= 0.1219
D₁₀= 0.0808 C_u= 3.72 C_c= 1.48

Classification

USCS= SP-SM AASHTO=

Remarks

Location: USACE Sample # BI-PB-140A-11
Sample Number: TE Lab ID: 5054.131

Depth: 0.0- 1.5 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

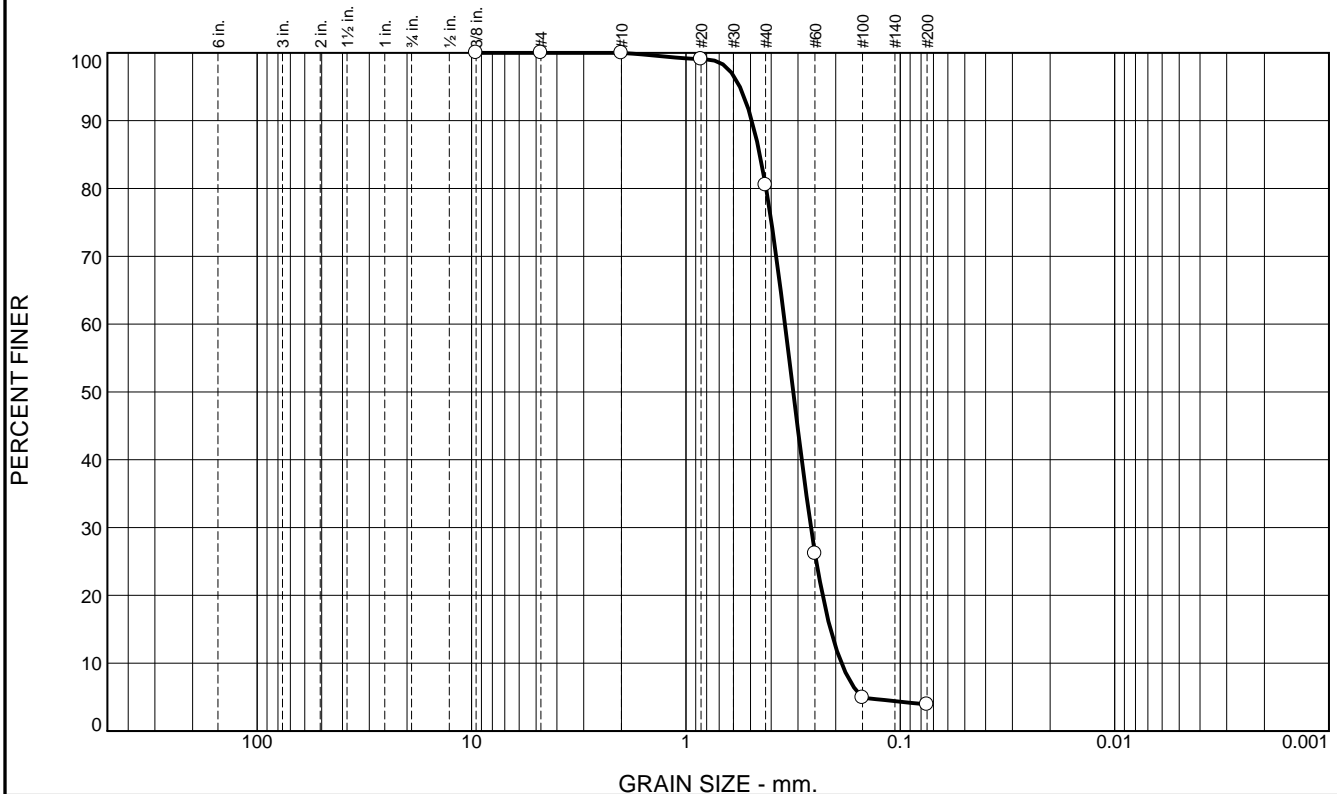
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	19.5	76.6	3.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.1		
#40	80.5		
#60	26.2		
#100	4.9		
#200	3.9		

* (no specification provided)

Material Description		
SAND (SP), medium to fine grained		
<div> <div> Atterberg Limits PL= LL= PI= </div> <div> Coefficients D₉₀= 0.4924 D₈₅= 0.4518 D₆₀= 0.3453 D₅₀= 0.3158 D₃₀= 0.2611 D₁₅= 0.2116 D₁₀= 0.1881 C_u= 1.84 C_c= 1.05 </div> <div> Classification USCS= SP AASHTO= </div> <div> Remarks </div> </div>		

Location: USACE Sample # BI-PB-140B-11
Sample Number: TE Lab ID: 5054.132

Depth: 2.2 - 5.8 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	12.7	83.4	3.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.4		
#40	87.3		
#60	30.7		
#100	4.5		
#200	3.9		

* (no specification provided)

Material Description		
SAND (SP), medium to fine grained		
<div> <div> Atterberg Limits PL= LL= PI= </div> <div> Coefficients D₉₀= 0.4763 D₈₅= 0.4131 D₆₀= 0.3256 D₅₀= 0.2991 D₃₀= 0.2481 D₁₅= 0.2018 D₁₀= 0.1814 C_u= 1.79 C_c= 1.04 </div> <div> Classification USCS= SP AASHTO= </div> <div> Remarks </div> </div>		

Location: USACE Sample # BI-PB-140C-11
Sample Number: TE Lab ID: 5054.133

Depth: 5.8 - 10.5 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Boring Designation BI-PB-141-11

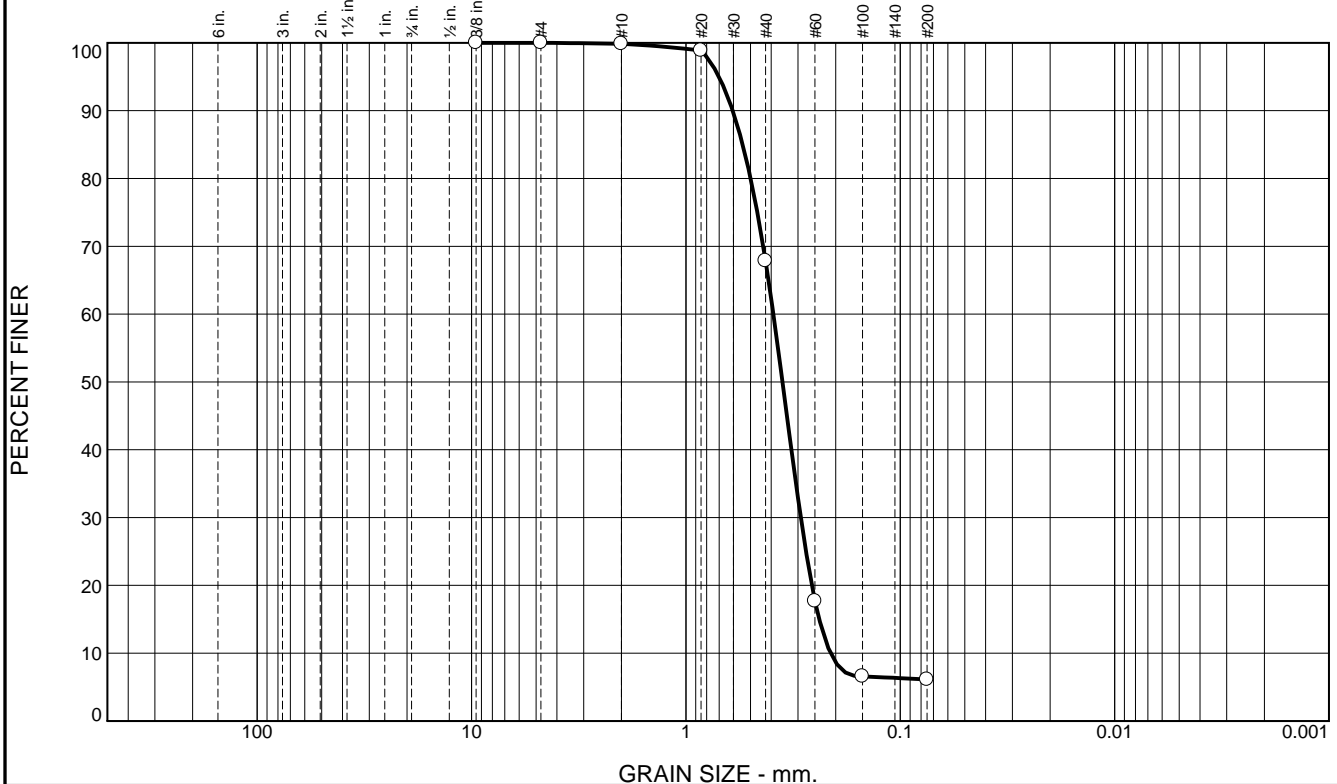
DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petis Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-141-11		LOCATION COORDINATES E = 1,150,656 N = 251,751		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		14. WATER DEPTH 40.5 Ft.	
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING		STARTED 07-01-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -36.9 Ft.		COMPLETED 07-01-11	
8. TOTAL DEPTH OF BORING 18.1 Ft.				17. TOTAL RECOVERY FOR BORING 100%		18. SIGNATURE AND TITLE OF INSPECTOR Michele Johnson, Geologist	
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-36.9	0.0		CLAY, lean, trace fine-grained sand, Some CL interbedded, dark gray (CL)	NS			
-42.9	6.0		SAND, poorly-graded, some medium-grained sand-sized, dark gray (SP)				
-51.9	15.0		CLAY, lean, trace fine-grained sand, dark gray (CL)				
-55.0	18.1						
NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.							

Boring Designation BI-PB-142-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petis Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-142-11		LOCATION COORDINATES E = 1,154,108 N = 252,717		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 4		DISTURBED 0 UNDISTURBED (UD)	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 41 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 07-01-11		STARTED 07-01-11 COMPLETED 07-01-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -39.3 Ft.			
8. TOTAL DEPTH OF BORING 15.1 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Michele Johnson, Geologist			

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-39.3	0.0		SAND, poorly-graded with silt, mostly fine to medium-grained sand-sized quartz, gray (SP-SM)	A	Classification: SP-SM Color: 5Y 6/2-light olive gray D50: 0.3546 mm % Fines: 6.1
-43.3	4.0				
-48.3	9.0		SAND, poorly-graded with silt, mostly fine to medium-grained sand-sized quartz, gray (SP-SM)	B	Classification: SP Color: 5Y 5/2-olive gray D50: 0.3862 mm % Fines: 4.6
-54.4	15.1		SAND, poorly-graded, mostly medium-grained sand-sized quartz, gray (SP) At El. -51.3 Ft., mostly medium-grained sand-sized quartz, gray	C D	Classification: SP-SM Color: 5Y 5/2-olive gray D50: 0.3635 mm % Fines: 7.5 Classification: SP Color: 5Y 6/1-gray D50: 0.3628 mm % Fines: 4
NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.					

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	32.1	61.7	6.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	98.9		
#40	67.8		
#60	17.7		
#100	6.6		
#200	6.1		

* (no specification provided)

Material Description

Slightly silty SAND (SP-SM), medium to fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.6045

D₈₅= 0.5434

D₆₀= 0.3910

D₅₀= 0.3546

D₃₀= 0.2913

D₁₅= 0.2389

D₁₀= 0.2113

C_u= 1.85

C_c= 1.03

Classification

USCS= SP-SM

AASHTO=

Remarks

Location: USACE Sample # BI-PB-142A-11
Sample Number: TE Lab ID: 5054.137

Depth: 1.2 - 4.0 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

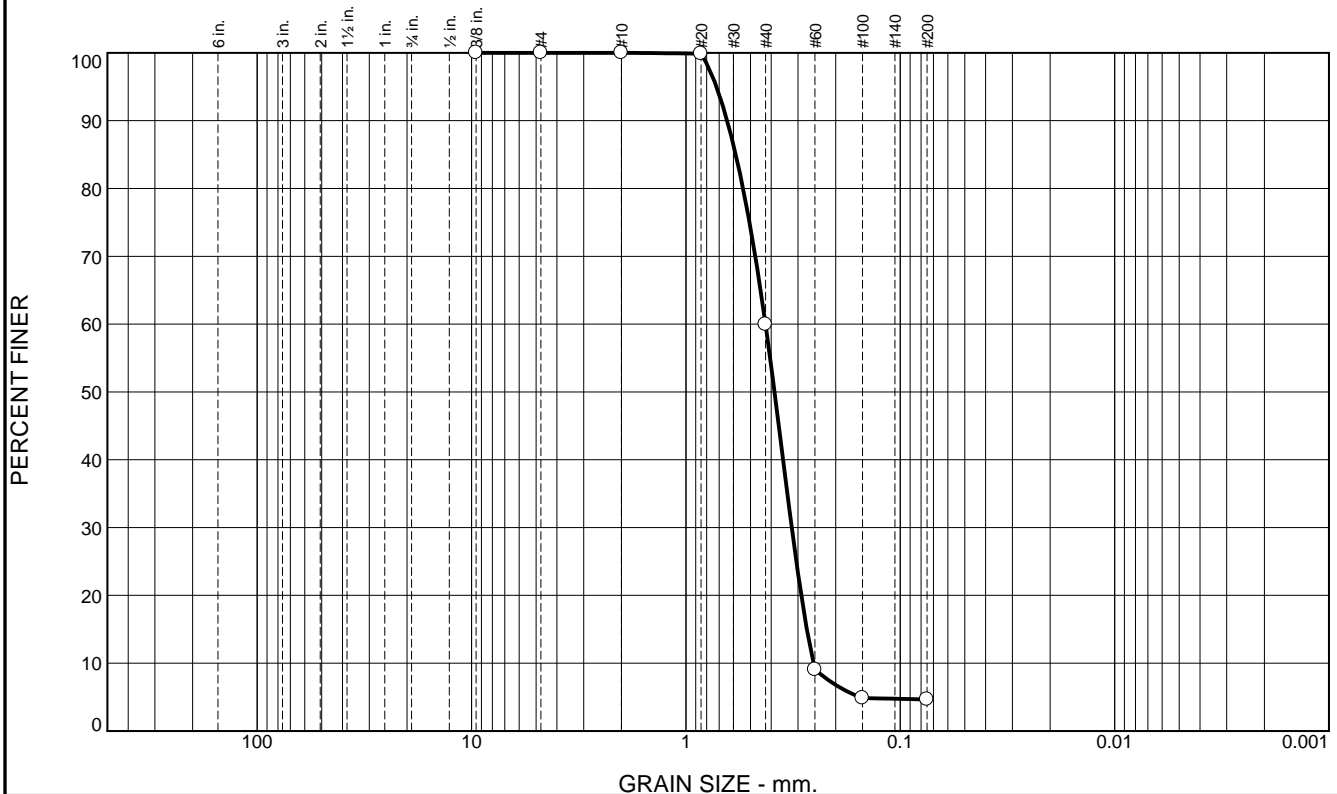
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

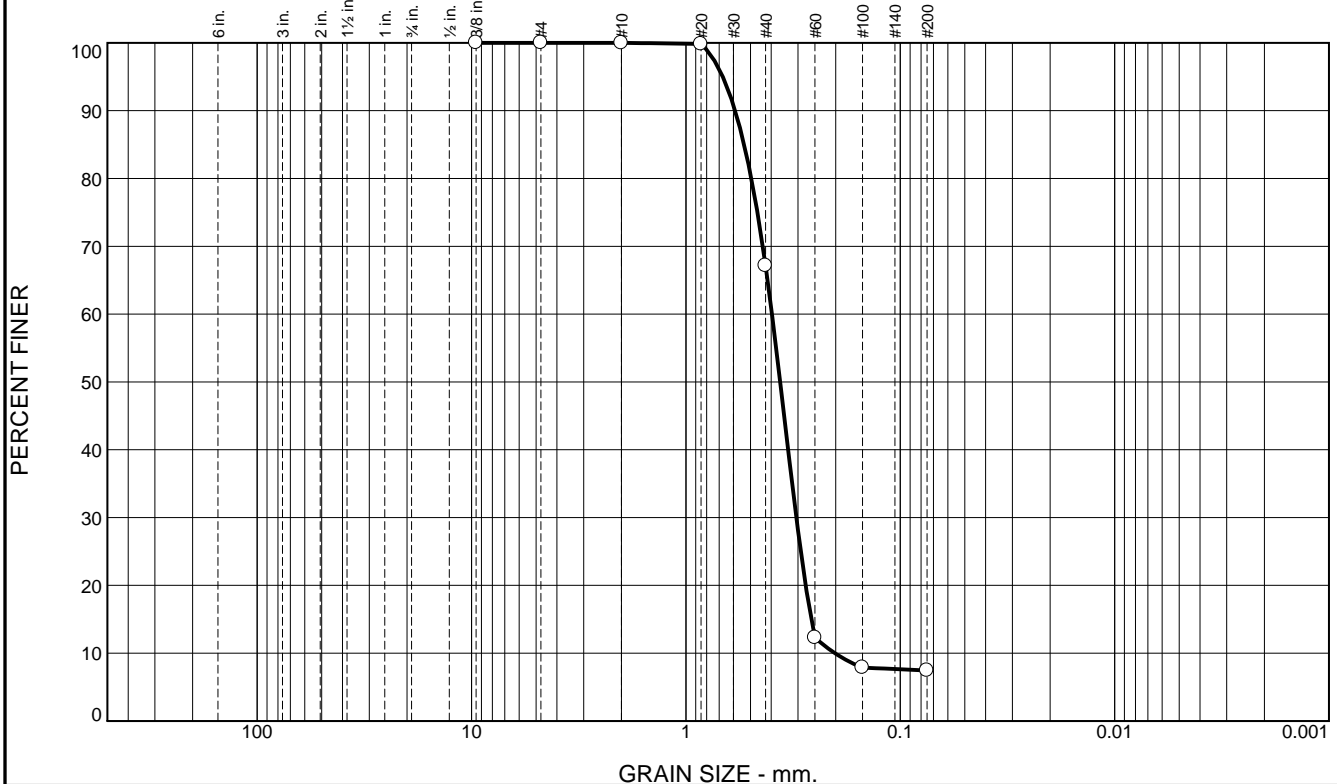
Project No: 11-2116-0057

Figure

Particle Size Distribution Report



Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	32.9	59.6	7.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.8		
#40	67.1		
#60	12.3		
#100	7.9		
#200	7.5		

* (no specification provided)

Material Description

Slightly silty SAND (SP-SM), medium to fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.5889

D₈₅= 0.5349

D₆₀= 0.3969

D₅₀= 0.3635

D₃₀= 0.3055

D₁₅= 0.2602

D₁₀= 0.2017

C_u= 1.97

C_c= 1.17

Classification

USCS= SP-SM

AASHTO=

Remarks

Location: USACE Sample # BI-PB-142C-11
Sample Number: TE Lab ID: 5054.139

Depth: 9.0 - 12.0 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

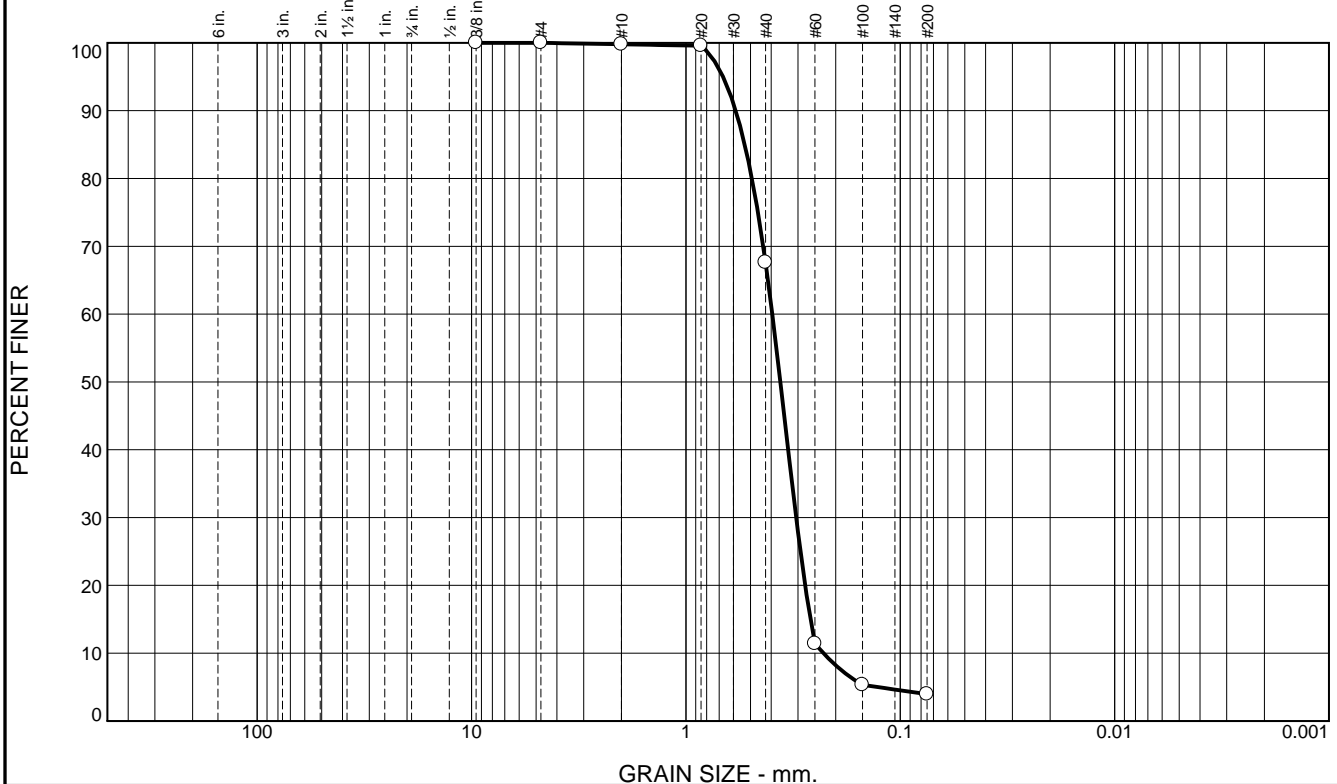
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	32.2	63.6	4.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.8		
#20	99.6		
#40	67.6		
#60	11.4		
#100	5.3		
#200	4.0		

* (no specification provided)

Material Description
SAND (SP), medium to fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.5851 D₈₅= 0.5312 D₆₀= 0.3955
 D₅₀= 0.3628 D₃₀= 0.3061 D₁₅= 0.2627
 D₁₀= 0.2283 C_u= 1.73 C_c= 1.04

Classification
 USCS= SP AASHTO=

Remarks

Location: USACE Sample # BI-PB-142D-11
 Sample Number: TE Lab ID: 5054.140

Depth: 12.0 - 15.1 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
 Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Boring Designation BI-PB-143-11

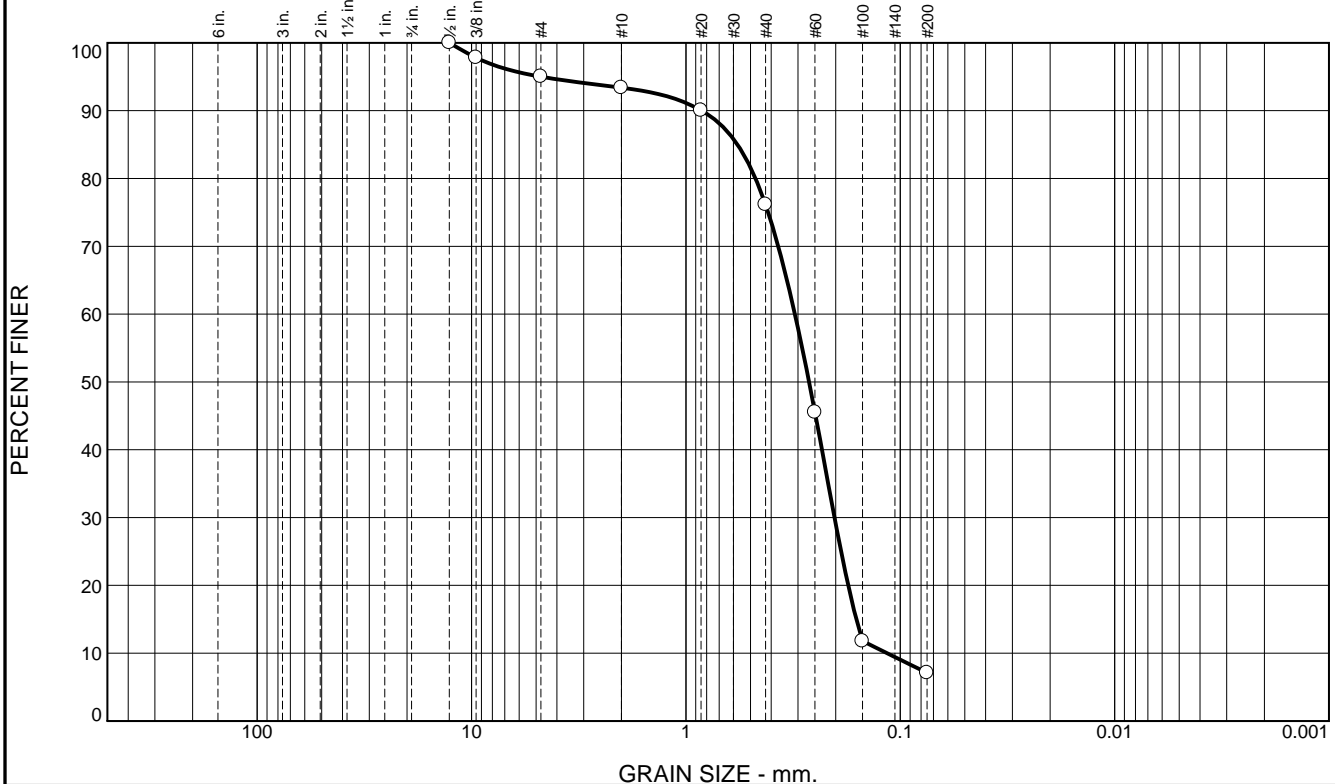
DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petis Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-143-11		LOCATION COORDINATES E = 1,155,503 N = 254,302		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		14. WATER DEPTH 41.5 Ft.	
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING		STARTED 07-01-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -39.7 Ft.		COMPLETED 07-01-11	
8. TOTAL DEPTH OF BORING 19.5 Ft.				17. TOTAL RECOVERY FOR BORING 100%		18. SIGNATURE AND TITLE OF INSPECTOR Michele Johnson, Geologist	
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-39.7	0.0		CLAY, fat, some sand, dark gray (CH)	NS			
-47.1	7.4		SAND, poorly-graded, mostly medium-grained sand-sized quartz, gray (SP)				
-52.1	12.4		CLAY, fat, dark gray (CH)				
-59.2	19.5		NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Boring Designation BI-PB-144-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petis Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-144-11		LOCATION COORDINATES E = 1,155,524 N = 255,866		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 4		DISTURBED 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				13. TOTAL NUMBER CORE BOXES		14. WATER DEPTH 35 Ft.	
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 07-01-11		STARTED 07-01-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -33.1 Ft.		COMPLETED 07-01-11	
8. TOTAL DEPTH OF BORING 16.2 Ft.				17. TOTAL RECOVERY FOR BORING 100%		18. SIGNATURE AND TITLE OF INSPECTOR Michele Johnson, Geologist	

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-33.1	0.0				
			SAND, poorly-graded, mostly coarse-grained sand-sized quartz, gray (SP)	A	Classification: SP-SM Color: 2.5Y 7/1-light gray D50: 0.2664 mm % Fines: 7.1
-37.1	4.0		SAND, poorly-graded with silt, trace shell fragments, dark gray (SP-SM)	B	Classification: SP-SM Color: 2.5Y 6/2-light brownish gray D50: 0.2519 mm % Fines: 5.9
			At El. -41.1 Ft., trace clay, dark gray	C	Classification: SM Color: 2.5Y 5/1-gray D50: 0.2399 mm % Fines: 18.8
			At El. -45.1 Ft., mostly medium-grained sand-sized quartz, dark gray	D	Classification: SM Color: 2.5Y 5/2-grayish brown D50: 0.3375 mm % Fines: 17.9
-49.3	16.2				
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.		

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	5.0	1.6	17.3	69.0	7.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.5	100.0		
.375	97.8		
#4	95.0		
#10	93.4		
#20	90.0		
#40	76.1		
#60	45.5		
#100	11.8		
#200	7.1		

* (no specification provided)

Material Description

Slightly silty SAND (SP-SM), medium to fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.8462 D₈₅= 0.5744 D₆₀= 0.3103
D₅₀= 0.2664 D₃₀= 0.2026 D₁₅= 0.1604
D₁₀= 0.1152 C_u= 2.69 C_c= 1.15

Classification

USCS= SP-SM AASHTO=

Remarks

There are two samples marked BI-PB-144A-11, 0 - 4 ft and no sample marked BI-PB-145A-11. Both samples were tested and marked BI-PB-144A-1-11 and BI-PB-144A-2-11.

Location: USACE Sample # BI-PB-144A-1-11

Sample Number: TE Lab ID: 5054.141

Depth: 0.0 - 4.0 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

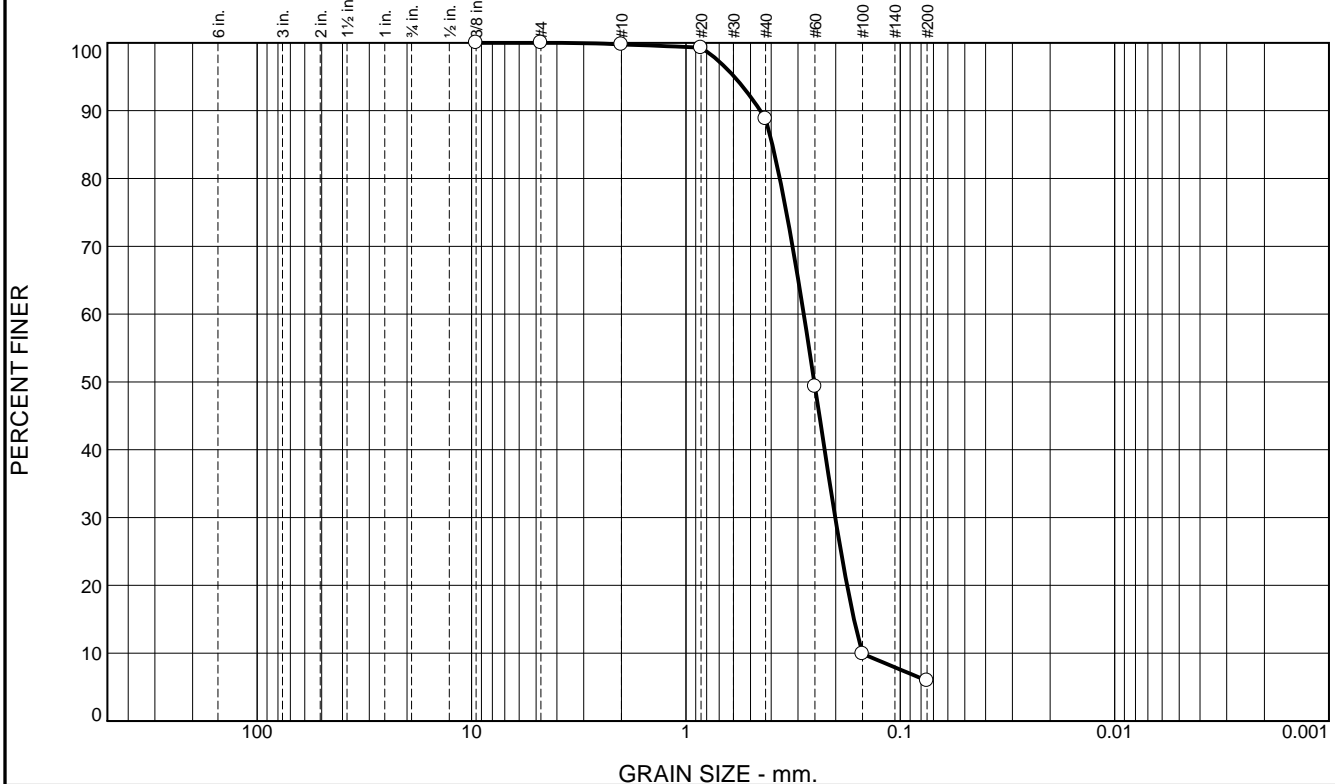
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	11.0	82.9	5.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.8		
#20	99.3		
#40	88.8		
#60	49.3		
#100	9.9		
#200	5.9		

* (no specification provided)

Material Description
Slightly silty SAND (SP-SM), medium to fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.4496 D₈₅= 0.3953 D₆₀= 0.2821
 D₅₀= 0.2519 D₃₀= 0.2010 D₁₅= 0.1645
 D₁₀= 0.1503 C_u= 1.88 C_c= 0.95

Classification
 USCS= SP-SM AASHTO=

Remarks

Location: USACE Sample # BI-PB-144B-11
 Sample Number: TE Lab ID: 5054.142

Depth: 4.0 - 8.0 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

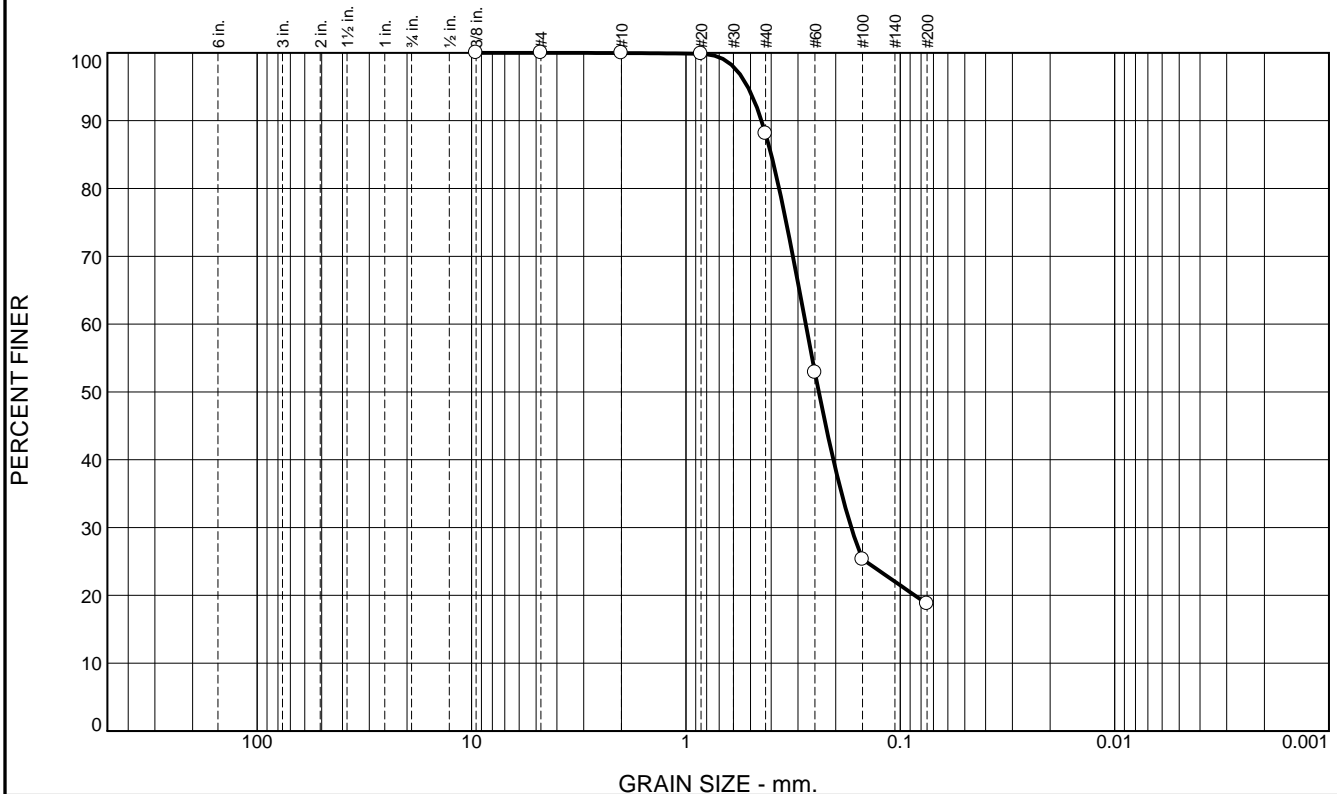
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
 Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	11.9	69.3	18.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	88.1		
#60	52.8		
#100	25.3		
#200	18.8		

<u>Material Description</u>		
Silty SAND (SM), medium to fine grained		
<u>Atterberg Limits</u>		
PL=	LL=	PI=
<u>Coefficients</u>		
D ₉₀ = 0.4434	D ₈₅ = 0.4000	D ₆₀ = 0.2762
D ₅₀ = 0.2399	D ₃₀ = 0.1693	D ₁₅ =
D ₁₀ =	C _u =	C _c =
<u>Classification</u>		
USCS= SM	AASHTO=	
<u>Remarks</u>		

* (no specification provided)

Location: USACE Sample # BI-PB-144C-11
Sample Number: TE Lab ID: 5054.143

Depth: 8.0 - 12.0 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

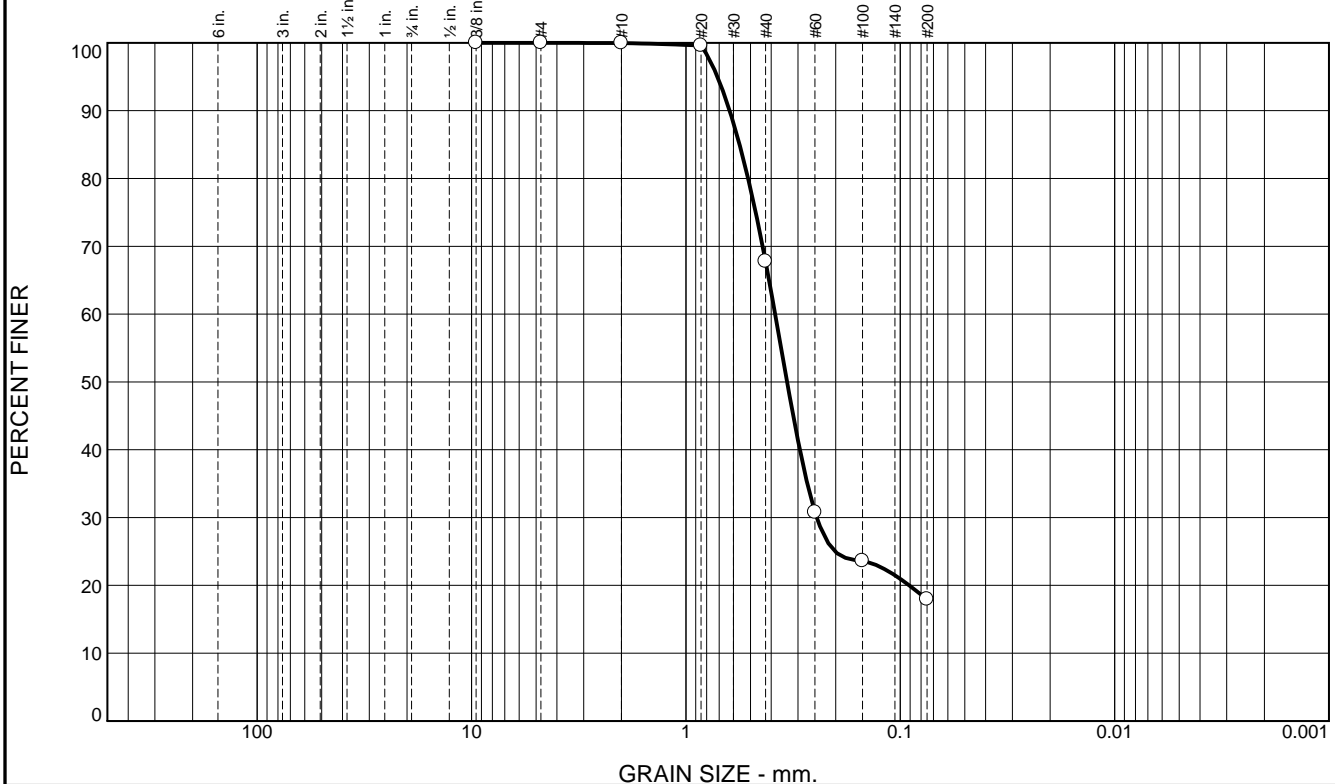
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	32.2	49.9	17.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.6		
#40	67.8		
#60	30.8		
#100	23.6		
#200	17.9		

* (no specification provided)

Material Description
Silty SAND (SM), medium to fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.6247 D₈₅= 0.5617 D₆₀= 0.3836
 D₅₀= 0.3375 D₃₀= 0.2455 D₁₅=
 D₁₀= C_u= C_c=

Classification
 USCS= SM AASHTO=

Remarks

Location: USACE Sample # BI-PB-144D-11
 Sample Number: TE Lab ID: 5054.144

Depth: 12.0 - 16.2 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
 Mississippi Barrier Island Restoration Project

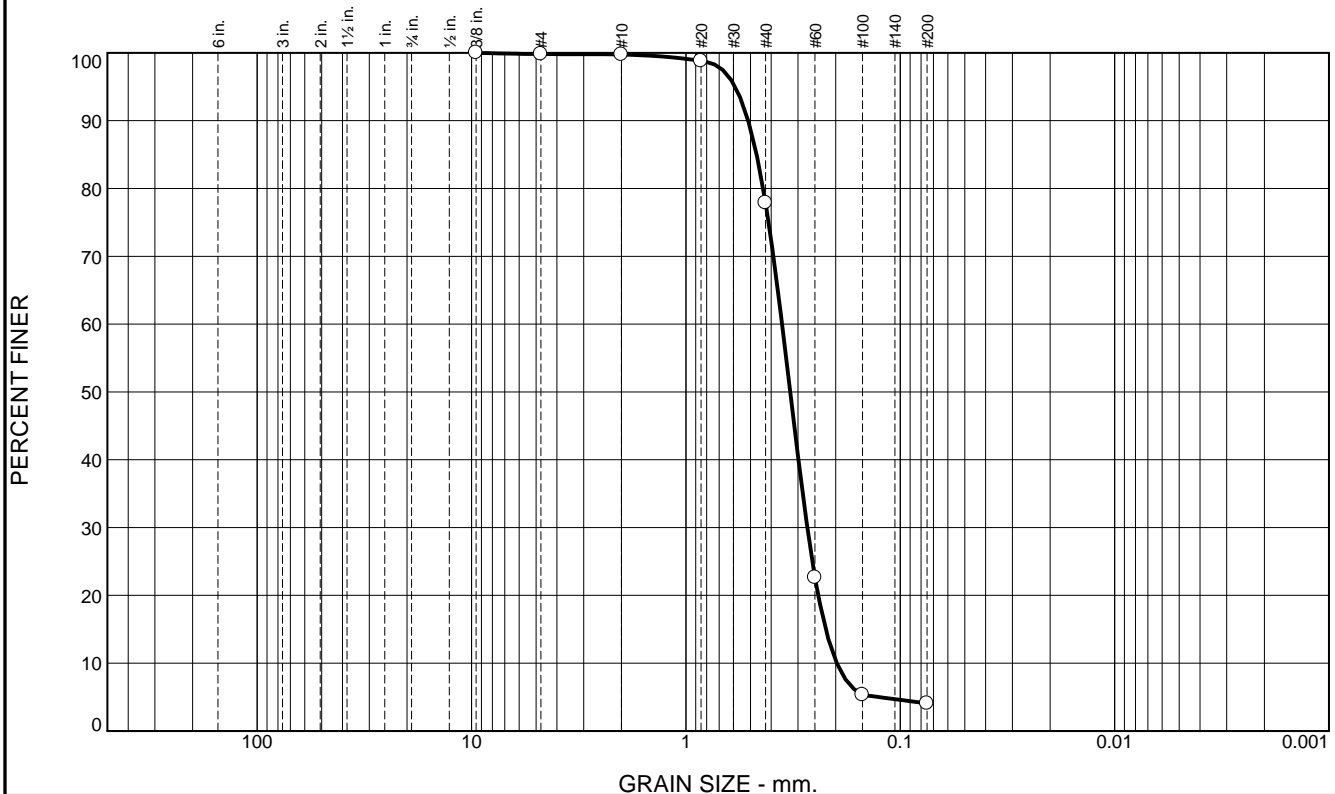
Project No: 11-2116-0057

Figure

Boring Designation BI-PB-145-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petis Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-145-11		LOCATION COORDINATES E = 1,155,559 N = 257,212		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 36.6 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 07-01-11		STARTED 07-01-11 COMPLETED 07-01-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -34.5 Ft.			
8. TOTAL DEPTH OF BORING 16.4 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Michele Johnson, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-34.5	0.0						
			SAND, poorly-graded, mostly medium-grained sand-sized quartz, gray (SP)	A	Classification: SP Color: - D50: 0.3263 mm % Fines: 4.1		
-38.5	4.0		SAND, poorly-graded, mostly medium-grained sand-sized quartz, gray (SP)	B	Classification: SP Color: 5Y 7/1-light gray D50: 0.3541 mm % Fines: 2.9		
-41.8	7.3		SAND, clayey, trace shell fragments, clayey, gray (SC)	C	Classification: SM Color: 2.5Y 5/1-gray D50: 0.189 mm % Fines: 21.2		
				NS			
-50.9	16.4						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.0	21.9	73.8	4.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.8		
#10	99.8		
#20	98.8		
#40	77.9		
#60	22.6		
#100	5.3		
#200	4.1		

* (no specification provided)

Material Description

SAND (SP), medium to fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.5122

D₈₅= 0.4678

D₆₀= 0.3562

D₅₀= 0.3263

D₃₀= 0.2716

D₁₅= 0.2227

D₁₀= 0.1977

C_u= 1.80

C_c= 1.05

Classification

USCS= SP

AASHTO=

Remarks

There are two samples marked BI-PB-144A-11, 0 - 4 ft and no sample marked BI-PB-145A-11. Both samples were tested and marked BI-PB-144A-1-11 and BI-PB-144A-2-11.

Location: USACE Sample # BI-PB-144A-2-11
Sample Number: TE Lab ID: 5054.145

Depth: 0.0 - 4.0 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	30.6	66.5	2.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	98.8		
#40	69.4		
#60	14.7		
#100	4.2		
#200	2.9		

* (no specification provided)

Material Description

SAND (SP), medium to fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.5818

D₈₅= 0.5249

D₆₀= 0.3872

D₅₀= 0.3541

D₃₀= 0.2965

D₁₅= 0.2511

D₁₀= 0.2083

C_u= 1.86

C_c= 1.09

Classification

USCS= SP

AASHTO=

Remarks

Location: USACE Sample # BI-PB-145B-11
Sample Number: TE Lab ID: 5054.146

Depth: 4.0 - 7.3 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

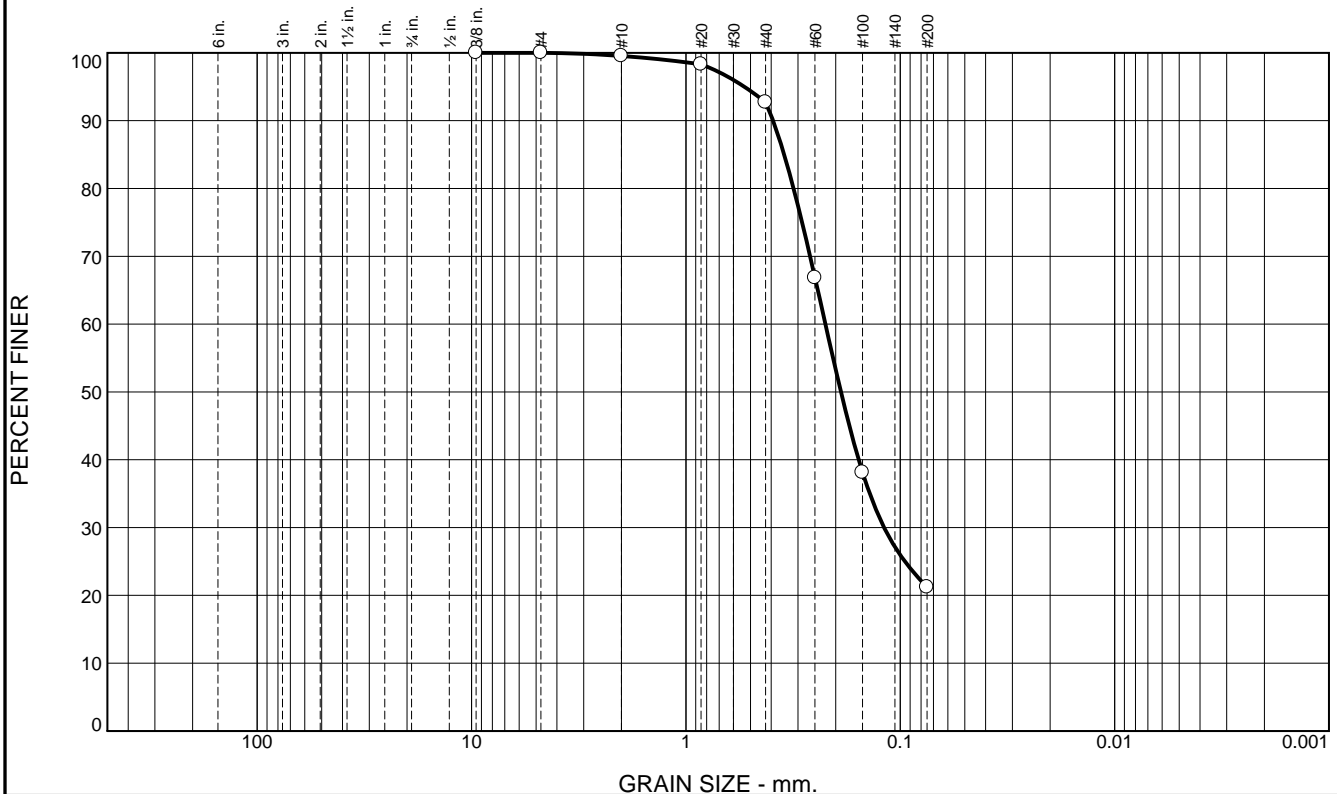
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.5	6.8	71.5	21.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.5		
#20	98.3		
#40	92.7		
#60	66.8		
#100	38.1		
#200	21.2		

* (no specification provided)

Material Description
Silty SAND (SM), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.3921 D₈₅= 0.3481 D₆₀= 0.2235
 D₅₀= 0.1890 D₃₀= 0.1189 D₁₅=
 D₁₀= C_u= C_c=

Classification
 USCS= SM AASHTO=

Remarks

Location: USACE Sample # BI-PB-145C-11
 Sample Number: TE Lab ID: 5054.147

Depth: 7.3 - 11.4 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
 Mississippi Barrier Island Restoration Project

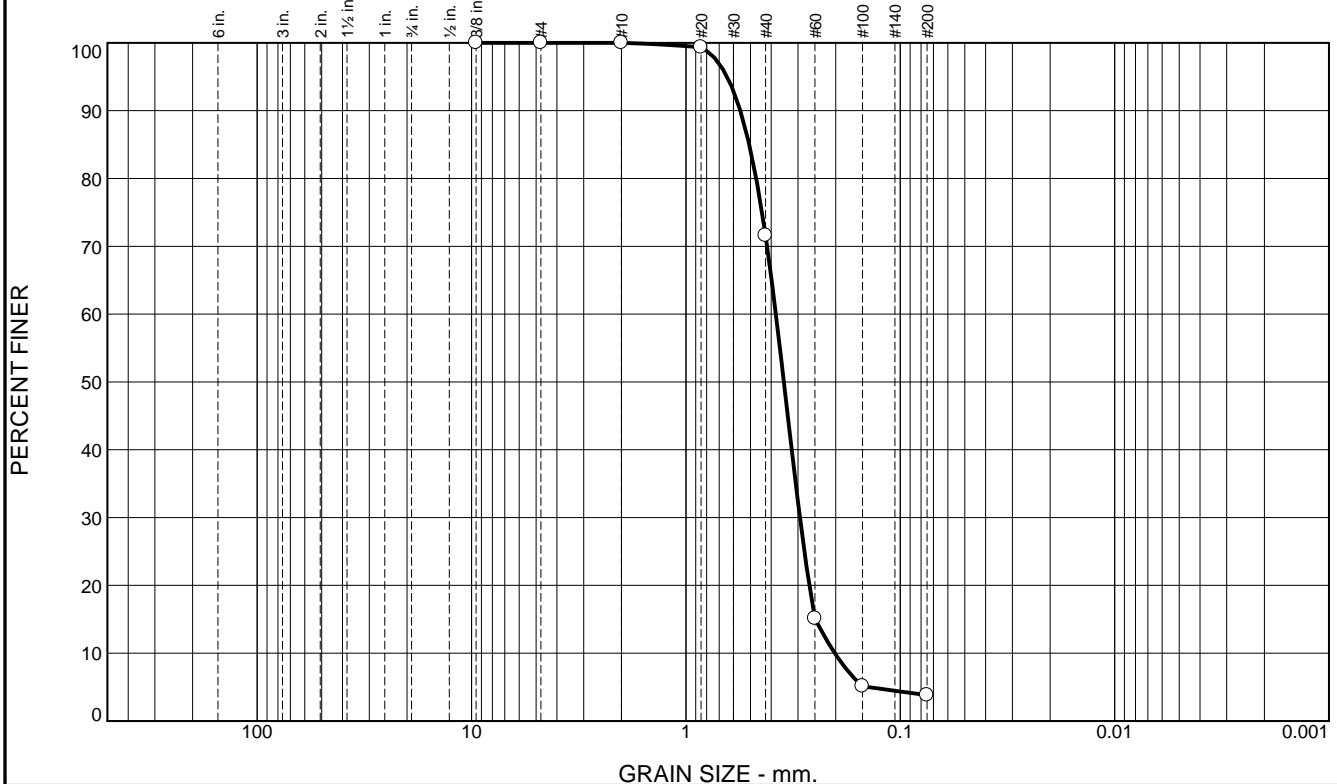
Project No: 11-2116-0057

Figure

Boring Designation BI-PB-146-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petis Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-146-11		LOCATION COORDINATES E = 1,147,329 N = 255,271		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 5		DISTURBED 5 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 35 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 07-01-11		STARTED 06-30-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -33.3 Ft.			
8. TOTAL DEPTH OF BORING 18.9 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Michele Johnson, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-33.3	0.0						
			SAND, poorly-graded, mostly medium-grained sand-sized quartz, lt. gray (SP)	A	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.3493 mm % Fines: 3.8		
				B	Classification: SP-SM Color: 2.5Y 7/1-light gray D50: 0.3494 mm % Fines: 5.3		
				C	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.3502 mm % Fines: 3.5		
				D	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.3514 mm % Fines: 2.5		
				E	Classification: SP Color: 2.5Y 8/1-white D50: 0.3606 mm % Fines: 2.1		
-52.2	18.9						
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	28.4	67.8	3.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.3		
#40	71.6		
#60	15.1		
#100	5.1		
#200	3.8		

* (no specification provided)

Material Description		
SAND (SP), medium to fine grained		
<div> <div>PL=</div> <div>Atterberg Limits</div> <div>LL=</div> <div>Pi=</div> </div>		
<div> <div> D₉₀= 0.5572 D₅₀= 0.3493 D₁₀= 0.2020 </div> <div> Coefficients D₈₅= 0.5063 D₃₀= 0.2941 C_u= 1.88 </div> <div> D₆₀= 0.3806 D₁₅= 0.2491 C_c= 1.12 </div> </div>		
<div> USCS= SP </div> <div> Classification AASHTO= </div>		
Remarks		

Location: USACE Sample # BI-PB-146A-11
Sample Number: TE Lab ID: 5054.115

Depth: 0.0 - 4.0 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	28.8	65.9	5.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.0		
#40	71.2		
#60	15.8		
#100	6.0		
#200	5.3		

* (no specification provided)

Material Description

Slightly silty SAND (SP-SM), medium to fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.5648

D₈₅= 0.5113

D₆₀= 0.3814

D₅₀= 0.3494

D₃₀= 0.2930

D₁₅= 0.2428

D₁₀= 0.1947

C_u= 1.96

C_c= 1.16

Classification

USCS= SP-SM

AASHTO=

Remarks

Location: USACE Sample # BI-PB-146B-11
Sample Number: TE Lab ID: 5054.116

Depth: 4.0 - 8.0 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

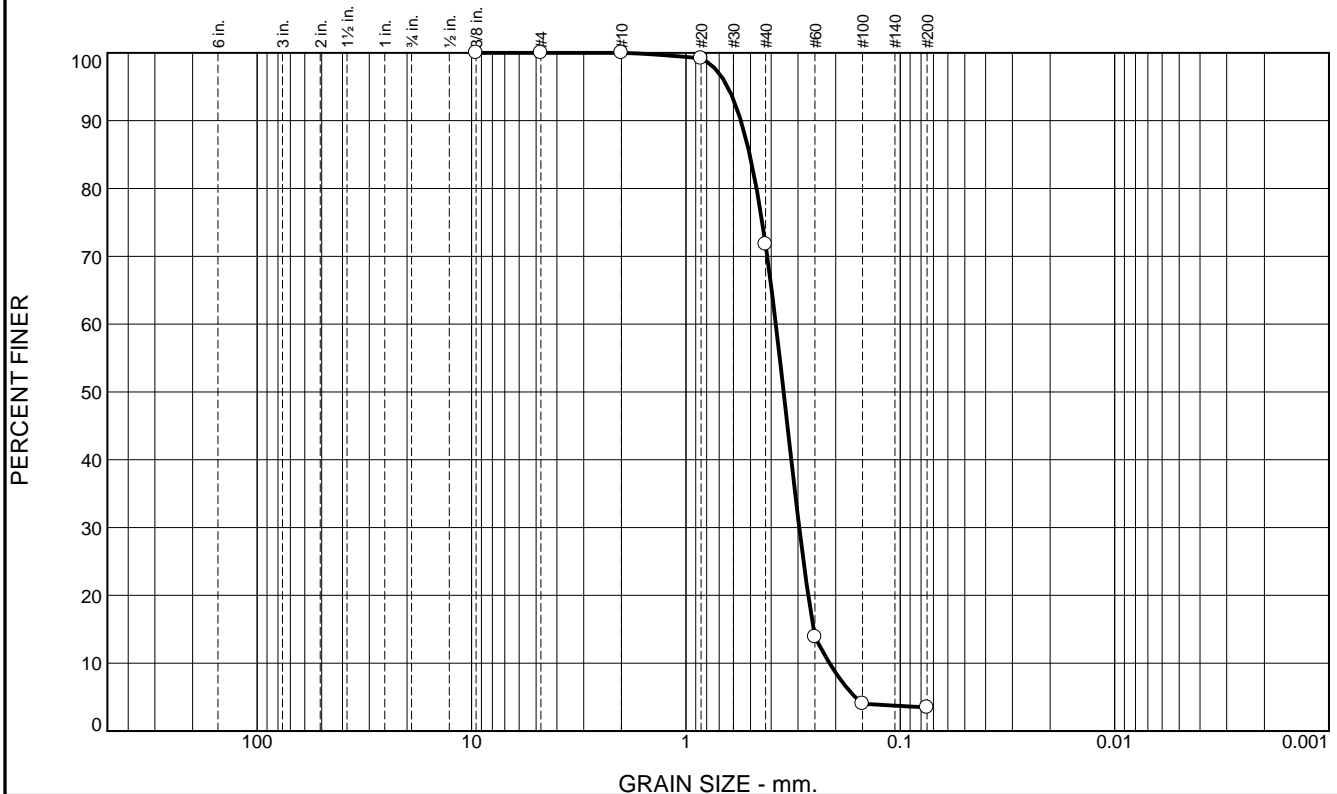
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	28.2	68.3	3.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.2		
#40	71.8		
#60	13.9		
#100	4.0		
#200	3.5		

* (no specification provided)

Material Description

SAND (SP), medium to fine grained

PL=

Atterberg Limits

LL=

PI=

Coefficients

D₉₀= 0.5537

D₈₅= 0.5037

D₆₀= 0.3808

D₅₀= 0.3502

D₃₀= 0.2963

D₁₅= 0.2538

D₁₀= 0.2138

C_u= 1.78

C_c= 1.08

Classification

USCS= SP

AASHTO=

Remarks

Location: USACE Sample # BI-PB-146C-11
Sample Number: TE Lab ID: 5054.117

Depth: 8.0 - 12.0 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

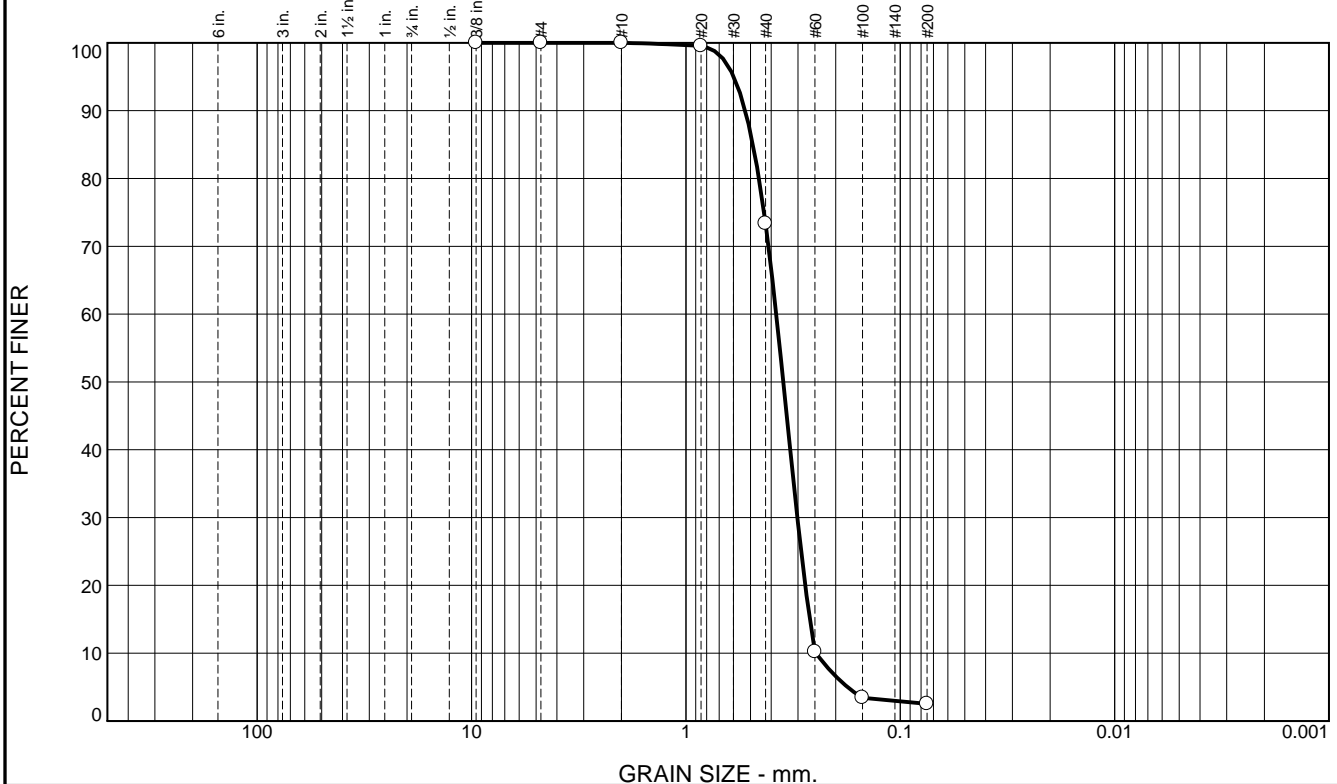
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	26.6	70.9	2.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.5		
#40	73.4		
#60	10.2		
#100	3.4		
#200	2.5		

* (no specification provided)

Material Description

SAND (SP), medium to fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 0.5287 D₈₅= 0.4866 D₆₀= 0.3792
D₅₀= 0.3514 D₃₀= 0.3023 D₁₅= 0.2645
D₁₀= 0.2475 C_u= 1.53 C_c= 0.97

Classification

USCS= SP AASHTO=

Remarks

Location: USACE Sample # BI-PB-146D-11
Sample Number: TE Lab ID: 5054.118

Depth: 12.0 - 16.0 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

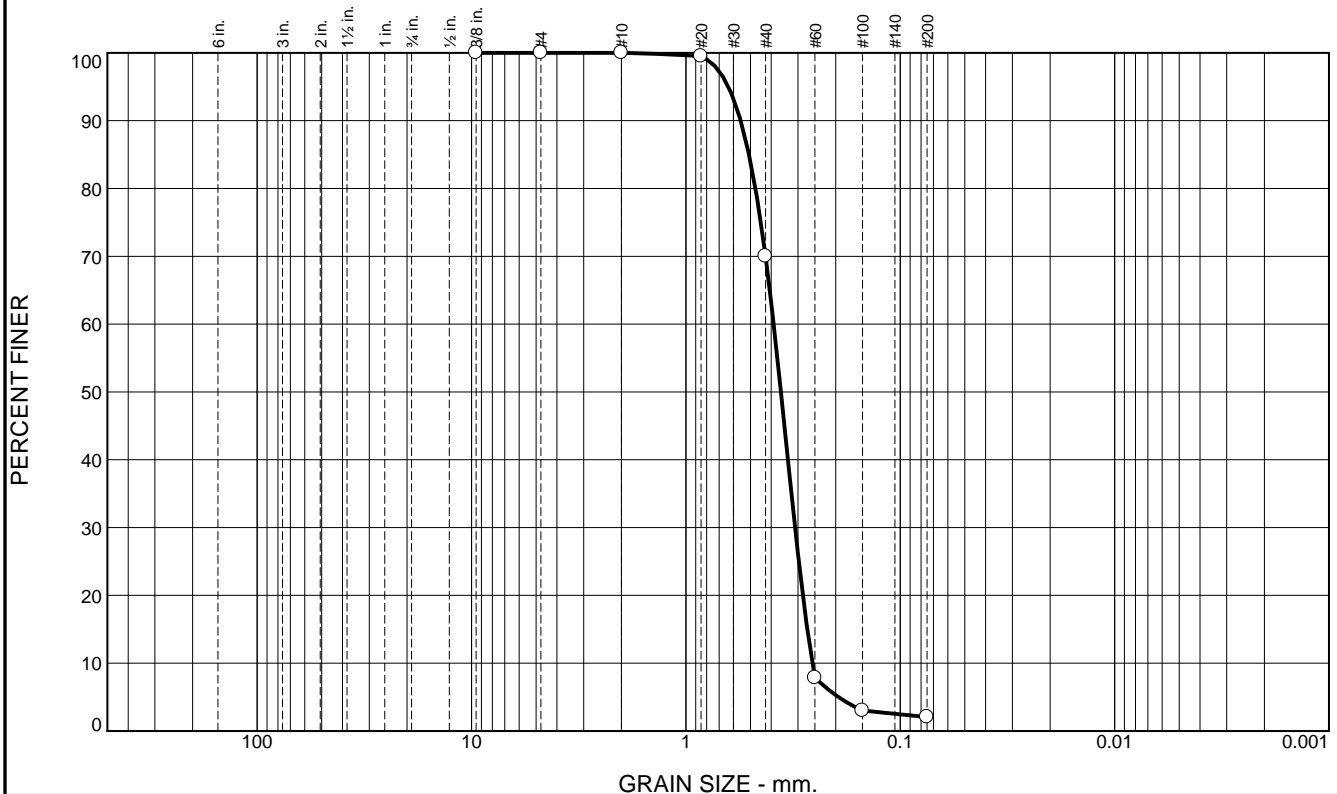
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	30.0	67.9	2.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.5		
#40	70.0		
#60	7.8		
#100	3.0		
#200	2.1		

Material Description		
SAND (SP), medium to fine grained		
PL=	Atterberg Limits LL=	PI=
D ₉₀ = 0.5550	Coefficients D ₈₅ = 0.5078	D ₆₀ = 0.3897
D ₅₀ = 0.3606	D ₃₀ = 0.3098	D ₁₅ = 0.2718
D ₁₀ = 0.2572	C _u = 1.52	C _c = 0.96
USCS= SP	Classification AASHTO=	
Remarks		

* (no specification provided)

Location: USACE Sample # BI-PB-146E-11
Sample Number: TE Lab ID: 5054.119

Depth: 16.0 - 18.9 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Boring Designation BI-PB-147-11

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Mobile District		SHEET 1 OF 1 SHEETS	
1. PROJECT Barrier Island Restoration Petis Bois				9. SIZE AND TYPE OF BIT N/A			
2. BORING DESIGNATION BI-PB-147-11		LOCATION COORDINATES E = 1,147,311 N = 253,645		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)		HORIZONTAL NAD83 VERTICAL NAVD88	
3. DRILLING AGENCY Corps of Engineers - CESAM		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Construction Solutions International, Inc.				12. TOTAL SAMPLES 3		DISTURBED 3 UNDISTURBED (UD) 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		13. TOTAL NUMBER CORE BOXES			
		BEARING		14. WATER DEPTH 33 Ft.			
6. THICKNESS OF OVERBURDEN N/A				15. DATE BORING 07-01-11		STARTED 07-01-11 COMPLETED 07-01-11	
7. DEPTH DRILLED INTO ROCK N/A				16. ELEVATION TOP OF BORING -31.3 Ft.			
8. TOTAL DEPTH OF BORING 15.4 Ft.				17. TOTAL RECOVERY FOR BORING 100%			
				18. SIGNATURE AND TITLE OF INSPECTOR Michele Johnson, Geologist			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS		
-31.3	0.0						
-33.3	2.0		SAND, poorly-graded, mostly medium-grained sand-sized quartz, gray (SP)	A	Classification: SP Color: 2.5Y 6/2-light brownish gray D50: 0.2887 mm % Fines: 2		
-37.3	6.0		SAND, poorly-graded with silt, trace fine to medium-grained sand-sized shell fragments, gray (SP-SM)	B	Classification: SP-SM Color: 2.5Y 6/2-light brownish gray D50: 0.2033 mm % Fines: 6.2		
-46.7	15.4		SAND, silty, trace fine-grained sand-sized shell fragments, gray (SM)	C	Classification: SP Color: 2.5Y 5/2-grayish brown D50: 0.3213 mm % Fines: 4.4		
				NS			
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval.				

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.6	14.3	83.1	2.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.4		
#20	97.8		
#40	85.1		
#60	35.9		
#100	3.5		
#200	2.0		

* (no specification provided)

Material Description		
SAND (SP), medium to fine grained		
<div> <div> Atterberg Limits </div> <div> PL= </div> <div> LL= </div> <div> PI= </div> </div>		
<div> <div> Coefficients </div> <div> D₉₀= 0.5248 </div> <div> D₅₀= 0.2887 </div> <div> D₁₀= 0.1751 </div> </div>		
<div> <div> Classification </div> <div> USCS= SP </div> <div> AASHTO= </div> </div>		
<div> <div> Remarks </div> </div>		

Location: USACE Sample # BI-PB-147A-11
Sample Number: TE Lab ID: 5054.134

Depth: 0.0 - 2.0 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

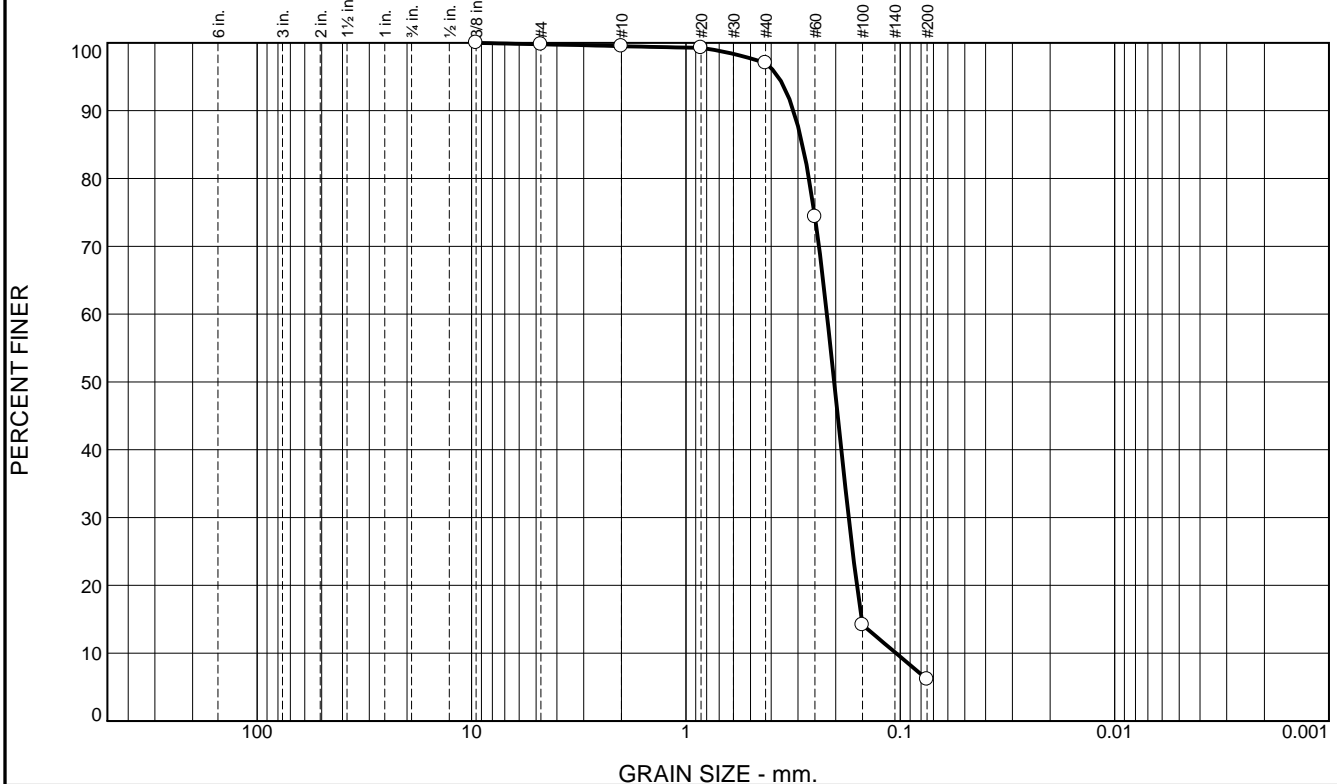
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.3	2.5	90.8	6.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.8		
#10	99.5		
#20	99.3		
#40	97.0		
#60	74.4		
#100	14.2		
#200	6.2		

* (no specification provided)

Material Description
Slightly silty SAND (SP-SM), fine grained

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 0.3150 D₈₅= 0.2862 D₆₀= 0.2199
 D₅₀= 0.2033 D₃₀= 0.1740 D₁₅= 0.1514
 D₁₀= 0.1046 C_u= 2.10 C_c= 1.32

Classification
 USCS= SP-SM AASHTO=

Remarks

Location: USACE Sample # BI-PB-147B-11
 Sample Number: TE Lab ID: 5054.135

Depth: 2.0 - 6.0 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

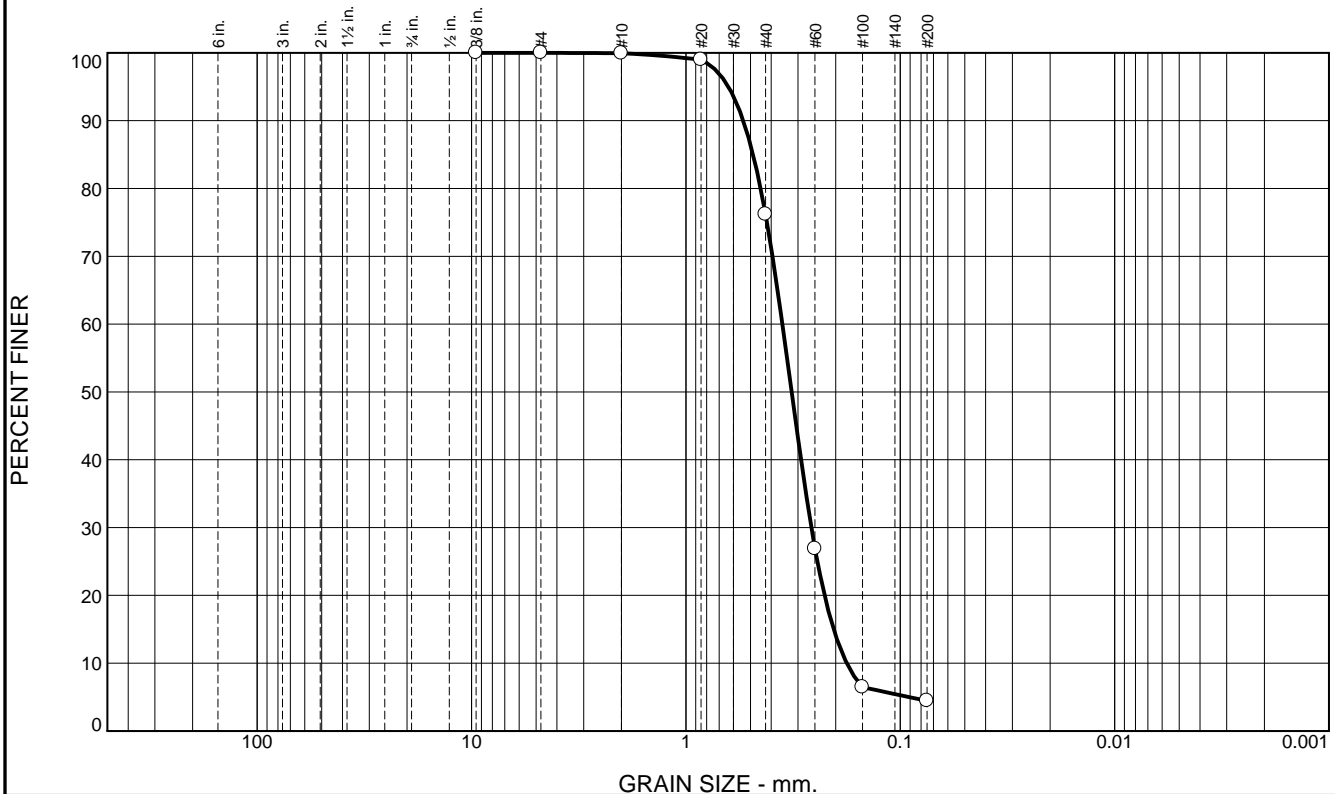
Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
 Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	23.7	71.8	4.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.0		
#40	76.2		
#60	26.9		
#100	6.5		
#200	4.4		

* (no specification provided)

Material Description

SAND (SP), medium to fine grained

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₉₀= 0.5397

D₈₅= 0.4859

D₆₀= 0.3550

D₅₀= 0.3213

D₃₀= 0.2600

D₁₅= 0.2046

D₁₀= 0.1777

C_u= 2.00

C_c= 1.07

Classification

USCS= SP

AASHTO=

Remarks

Location: USACE Sample # BI-PB-147C-11
Sample Number: TE Lab ID: 5054.136

Depth: 6.0 - 8.2 (ft)

Date: 7/18/11

Thompson Engineering

Mobile, Alabama

Client: US Army Corps of Engineers

Project: Contract No. W91278-10-D-0026 - Task 009
Mississippi Barrier Island Restoration Project

Project No: 11-2116-0057

Figure