Project Mississippi Barrier Island Restoration Project

AVS
AMERICAN VIBRACORE SERVICES

Core Identifier BI-PBS-74-12

Coordinate System
Latitude / Longitude

Latitude 30 08.872

Longitude 088 19.758

Date 11/21/2012

Start Time 10:01:03

End Time 10:02:03

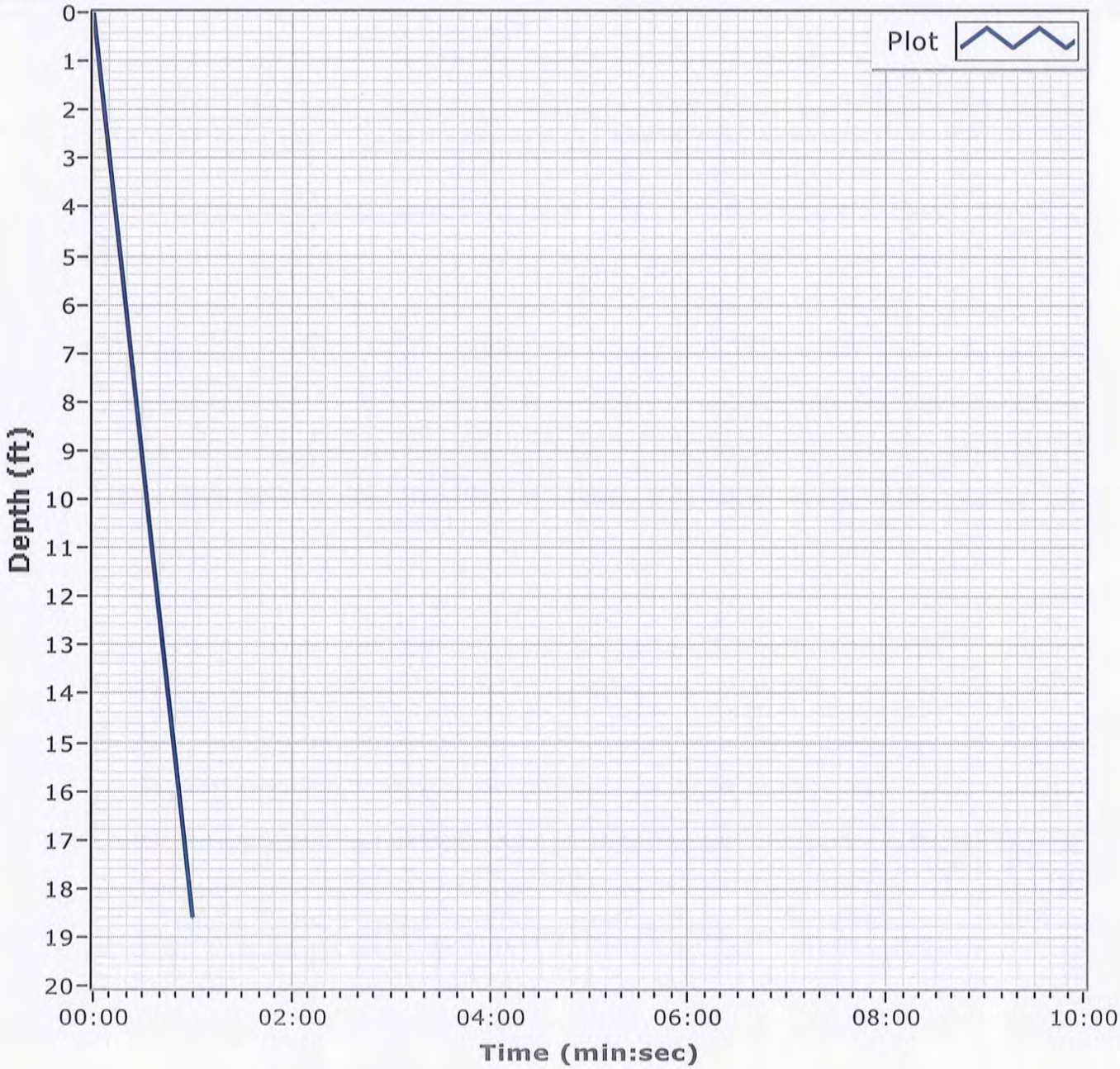
Total Time 00:01:00

Water Depth 55.9'

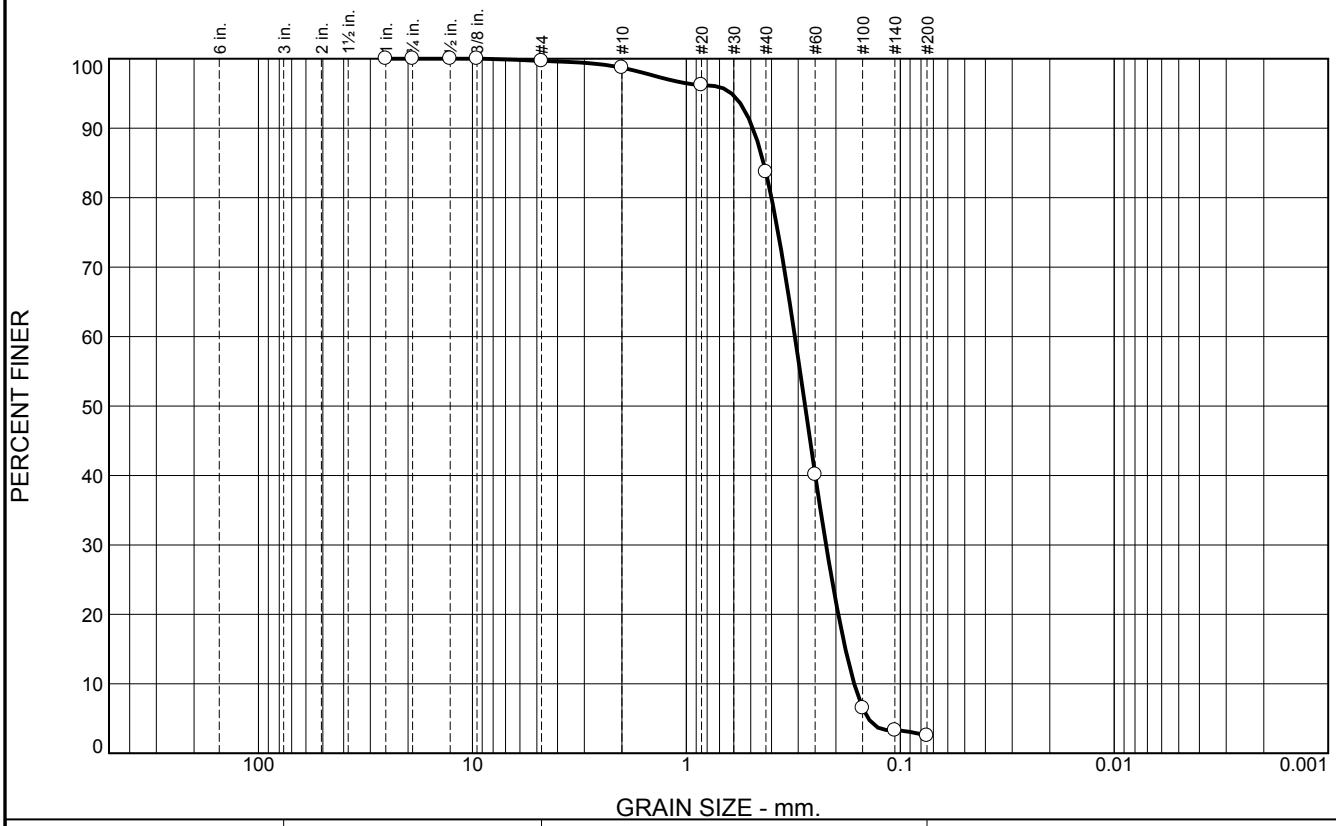
Penetration 18.6'

Recovery 17.6'

Comments



Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.3	1.0	15.0	81.2	2.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
.75	100.0		
.5	100.0		
.375	100.0		
#4	99.7		
#10	98.7		
#20	96.2		
#40	83.7		
#60	40.1		
#100	6.5		
#140	3.3		
#200	2.5		

* (no specification provided)

Material Description

Fine to medium grained, SAND

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.4889 D_{85}= 0.4354 D_{60}= 0.3111
D_{50}= 0.2787 D_{30}= 0.2223 D_{15}= 0.1805
D_{10}= 0.1643 C_u= 1.89 C_c= 0.97

Classification

USCS= SP AASHTO=

Remarks

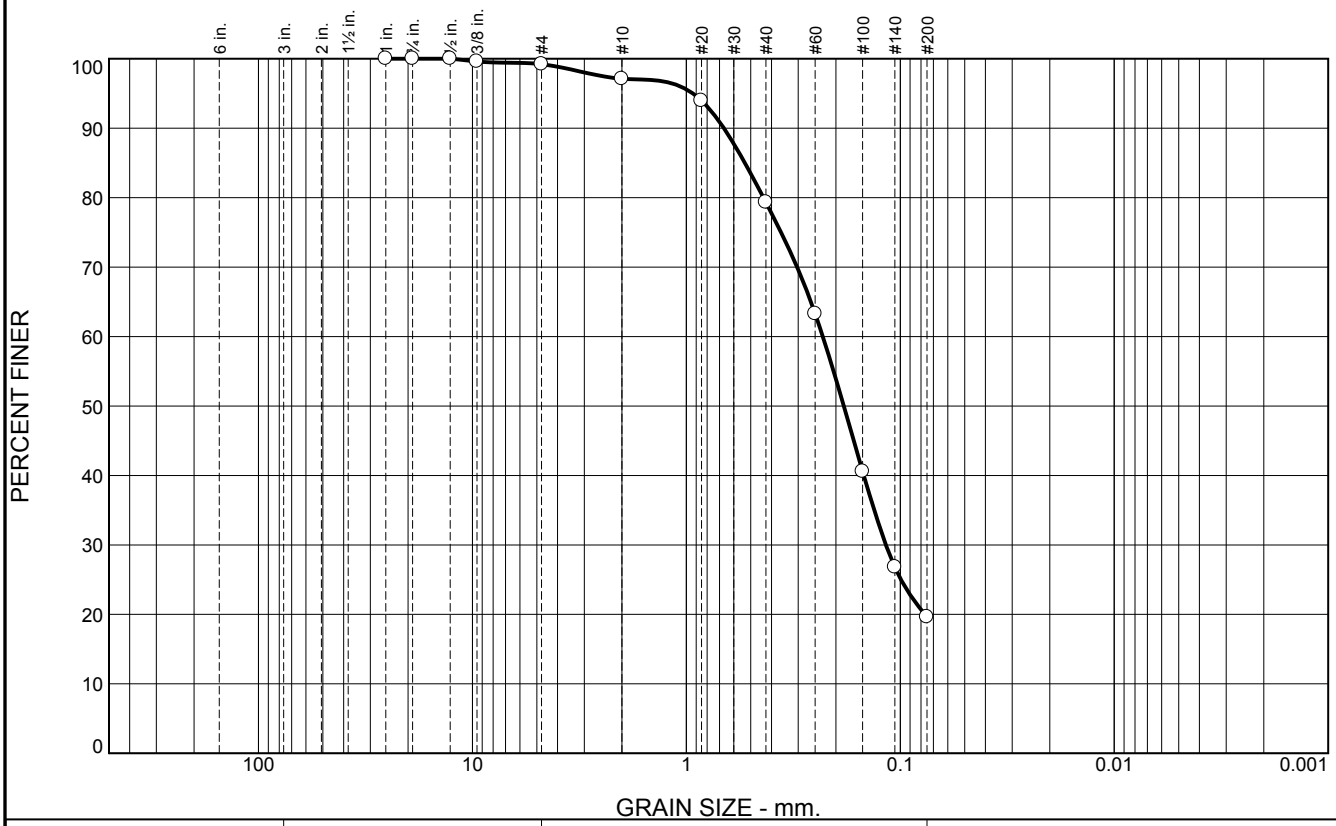
Location: BI-PBS-74-12 A
Sample Number: 6469 (3) **Depth:** 0.0' **Date:** 11/28/12

Thompson Engineering

Mobile, Alabama

Client: CDM/Thompson Engineering JV
Project: MsCIP Barrier Island Restoration GT
Project No: 1221110095 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.8	2.1	17.8	59.7	19.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
.75	100.0		
.5	100.0		
.375	99.6		
#4	99.2		
#10	97.1		
#20	94.0		
#40	79.3		
#60	63.3		
#100	40.6		
#140	26.8		
#200	19.6		

* (no specification provided)

Material Description

Fine to medium grained, SILTY SAND

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.6679 D_{85}= 0.5328 D_{60}= 0.2302
D_{50}= 0.1838 D_{30}= 0.1167 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO=

Remarks

Location: BI-PBS-74-12 B
Sample Number: 6469 (4) **Depth:** 2.2' **Date:** 11/28/12

Thompson Engineering

Mobile, Alabama

Client: CDM/Thompson Engineering JV
Project: MsCIP Barrier Island Restoration GT
Project No: 1221110095 **Figure**

Boring Designation BI-PBS-075-12

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 2 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS East	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-075-12 — LOCATION COORDINATES: E = 1,145,942 N = 233,567	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.:	12. TOTAL SAMPLES — DISTURBED: — UNDISTURBED (UD): 0
4. NAME OF DRILLER: American Vibracore Systems, Inc.	13. TOTAL NUMBER CORE BOXES:
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL: — BEARING:	14. WATER DEPTH: 56.7 Ft.
	15. DATE BORING — STARTED: 11-20-12 — COMPLETED: 11-20-12
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -56.4 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 19.1 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: John Bass, Geotechnical Engineer

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-56.4	0.0				
-59.4	3.0		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace fines, gray (SP)	A	Classification: SP Color: 5Y 6/2-light olive gray D50: 0.2318 mm % Fines: 3.6
-65.9	9.5		SAND, silty, mostly fine-grained sand-sized quartz, some silt, trace shell fragments, gray (SM)	NS	
-74.8	18.4		SAND, clayey, mostly fine-grained sand-sized quartz, some clay, clayey sand bordering on sandy clay, wood fragments at 14.0', gray to dark gray (SC)		
-75.5	19.1		CLAY, fat, mostly clay, little fine-grained sand-sized sand, medium plasticity, lt. gray to 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.

3. Seafloor elevation calculated using sampling

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14127° Long = -88.32180°

DRILLING LOG (Cont. Sheet)	INSTALLATION Mobile District		SHEET 2 OF 2 SHEETS
PROJECT MsCIP Barrier Island Restoration	COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83	VERTICAL NAVD88
LOCATION COORDINATES X = 1,145,942 Y = 233,567	ELEVATION TOP OF BORING -56.4 Ft.		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
			vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.		

30
35
40
45
50
55
60

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14127° Long = -88.32180°

Project Mississippi Barrier Island Restoration Project

AVS
AMERICAN VIBRACORE SERVICES

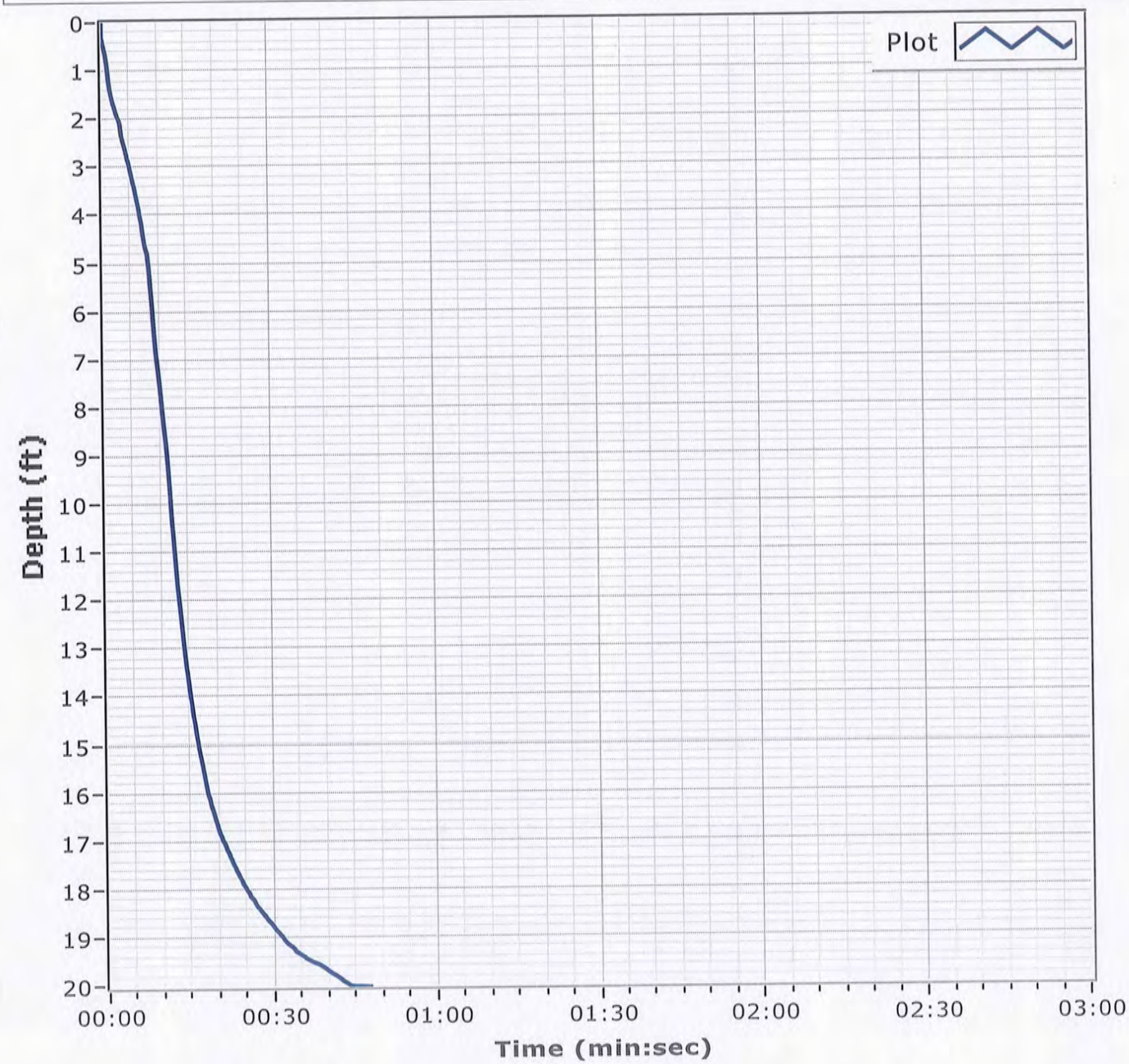
Core Identifier BI-PBS-75-12
Coordinate System
Latitude / Longitude

Latitude 30 08.476
Longitude 088 19.308

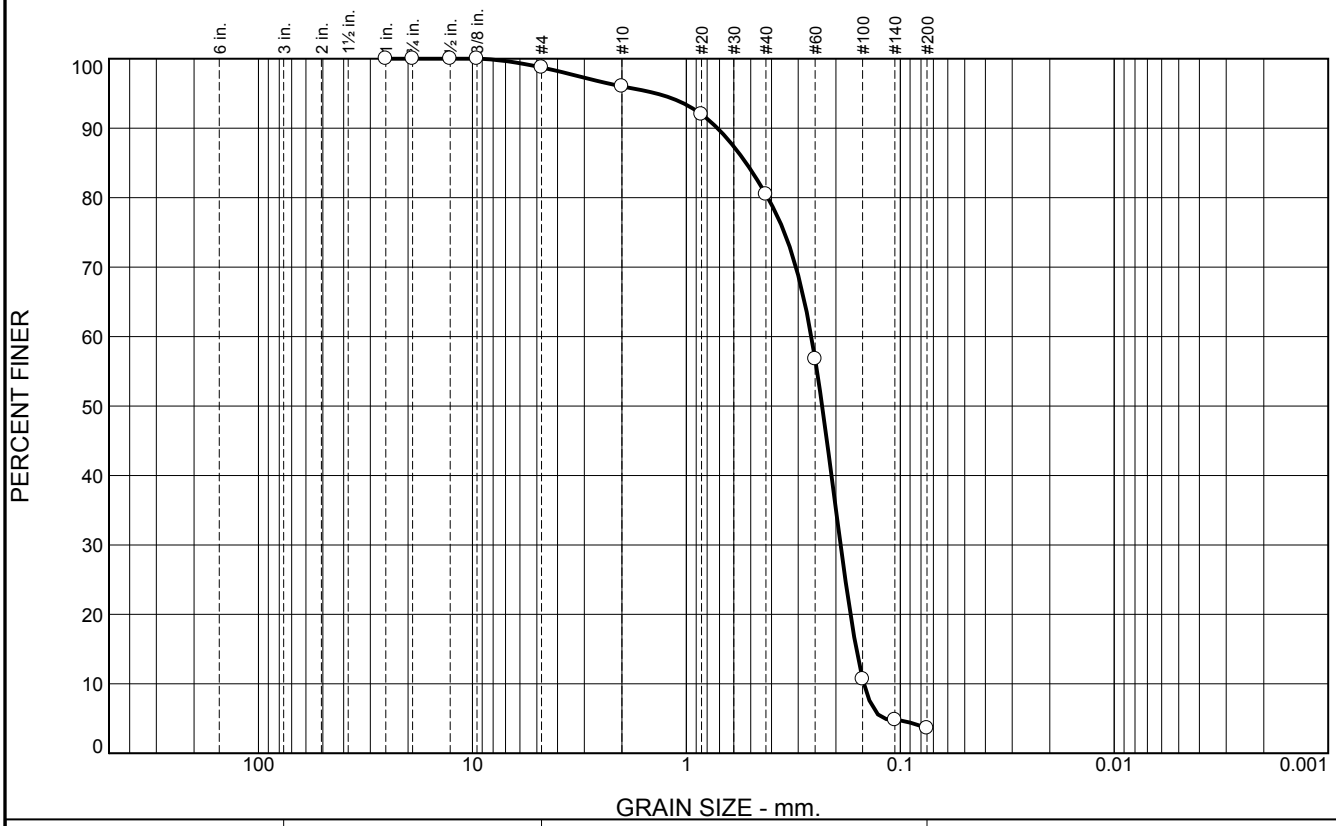
Date 11/20/2012
Start Time 09:05:19
End Time 09:06:07
Total Time 00:00:48

Water Depth 56.7'
Penetration 20.0'
Recovery 19.1'

Comments



Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.3	2.7	15.5	76.9	3.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
.75	100.0		
.5	100.0		
.375	100.0		
#4	98.7		
#10	96.0		
#20	92.0		
#40	80.5		
#60	56.8		
#100	10.7		
#140	4.8		
#200	3.6		

* (no specification provided)

Material Description

Fine to medium grained, SAND, with trace SHELL

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.7158 D_{85}= 0.5262 D_{60}= 0.2605
D_{50}= 0.2318 D_{30}= 0.1902 D_{15}= 0.1607
D_{10}= 0.1480 C_u= 1.76 C_c= 0.94

Classification

USCS= SP AASHTO=

Remarks

Location: BI-PBS-75-12 A
Sample Number: 6462 **Depth:** 0.0' **Date:** 11/23/12

Thompson Engineering

Mobile, Alabama

Client: CDM/Thompson Engineering JV
Project: MsCIP Barrier Island Restoration GT
Project No: 1221110095 **Figure**

Boring Designation BI-PBS-076-12

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 2 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS East	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-076-12 — LOCATION COORDINATES: E = 1,143,464 N = 234,949	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.:	12. TOTAL SAMPLES — DISTURBED: — UNDISTURBED (UD): 0
4. NAME OF DRILLER: American Vibracore Systems, Inc.	13. TOTAL NUMBER CORE BOXES:
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL: — BEARING:	14. WATER DEPTH: 52.8 Ft.
	15. DATE BORING — STARTED: 11-21-12 — COMPLETED: 11-21-12
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -52.4 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 19.4 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: John Bass, Geotechnical Engineer

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-52.4	0.0				
-56.3	3.9		SAND, poorly-graded, mostly fine to medium-grained quartz, trace fines, trace shell fragments, lt. gray (SP)	A	Classification: SP Color: 5Y 7/2-light gray D50: 0.3173 mm % Fines: 1.8
-61.4	9.0		SAND, poorly-graded, mostly fine-grained sand-sized quartz, little silt, trace shell fragments, trace wood debris, fines content increases with depth, gray (SP)	B	Classification: SM Color: 5Y 5/2-olive gray D50: 0.2024 mm % Fines: 14.4
				NS	
				C	Classification: SM Color: 2.5Y 5/2-grayish brown D50: 0.2085 mm % Fines: 16.9
-62.9	10.5		SAND, silty, mostly fine-grained sand-sized quartz, some silt, trace shell fragments, trace wood debris, gray (SM)	NS	
-63.4	11.0		CLAY, silty, some clay, some silt, little fine-grained sand-sized quartz, gray (CL-ML)		
-65.8	13.4		SAND, silty, mostly fine-grained sand-sized quartz, some silt, trace wood debris, gray (SM)		
-68.4	16.0		SAND, clayey, mostly fine-grained sand-sized quartz, some clay, trace wood debris, soft, gray mottled with lt. gray and orange (SC)		
-71.8	19.4		CLAY, lean, mostly clay, some fine-grained sand-sized quartz, trace wood debris, stiff, gray mottled with lt. gray and orange (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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14510° Long = -88.32962°

DRILLING LOG (Cont. Sheet)	INSTALLATION Mobile District		SHEET 2 OF 2 SHEETS
PROJECT MsCIP Barrier Island Restoration	COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83	VERTICAL NAVD88
LOCATION COORDINATES X = 1,143,464 Y = 234,949	ELEVATION TOP OF BORING -52.4 Ft.		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
			applying NOAA tidal gauge data conversion factor.		

30
35
40
45
50
55
60

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14510° Long = -88.32962°

Project Mississippi Barrier Island Restoration Project

AVS
AMERICAN VIBRACORE SERVICES

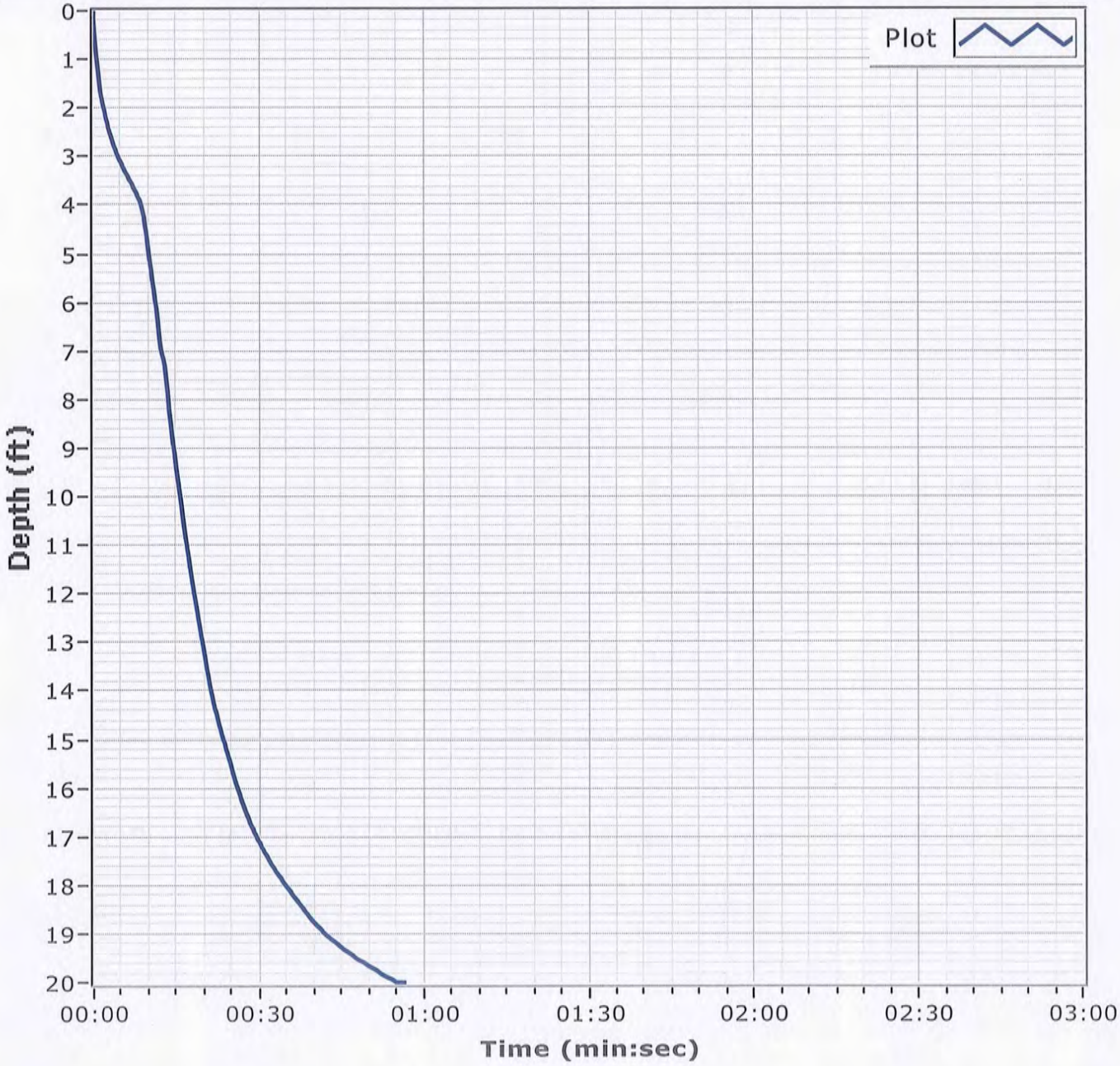
Core Identifier BI-PBS-76-12
Coordinate System
Latitude / Longitude

Latitude 30 08.706
Longitude 088 19.777

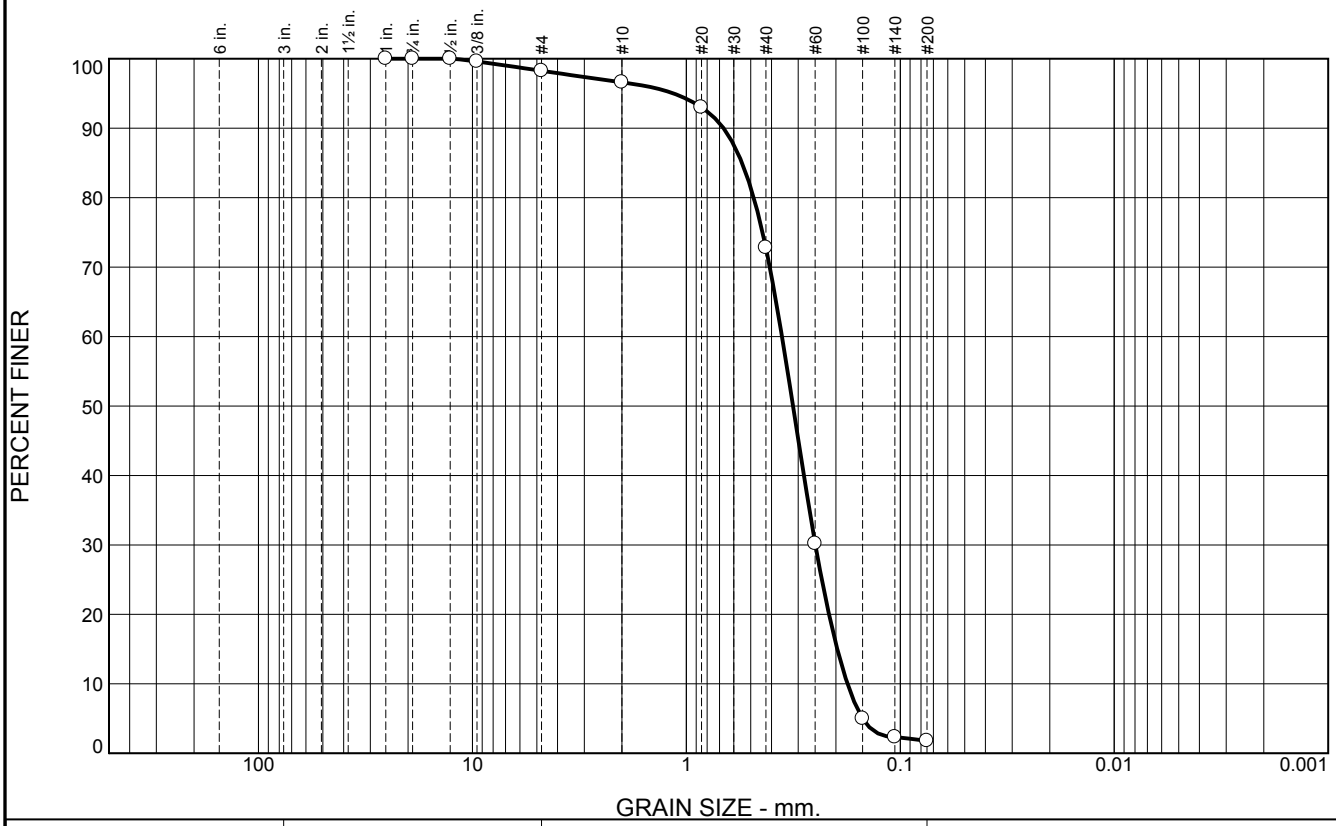
Date 11/21/2012
Start Time 10:42:53
End Time 10:43:50
Total Time 00:00:56

Water Depth 52.8'
Penetration 20.0'
Recovery 19.4'

Comments



Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.7	1.7	23.8	71.0	1.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
.75	100.0		
.5	100.0		
.375	99.6		
#4	98.3		
#10	96.6		
#20	93.0		
#40	72.8		
#60	30.2		
#100	5.0		
#140	2.3		
#200	1.8		

* (no specification provided)

Material Description

Fine to medium grained, SAND, with trace SHELL

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.6705 D_{85}= 0.5491 D_{60}= 0.3573
D_{50}= 0.3173 D_{30}= 0.2493 D_{15}= 0.1971
D_{10}= 0.1767 C_u= 2.02 C_c= 0.98

Classification

USCS= SP AASHTO=

Remarks

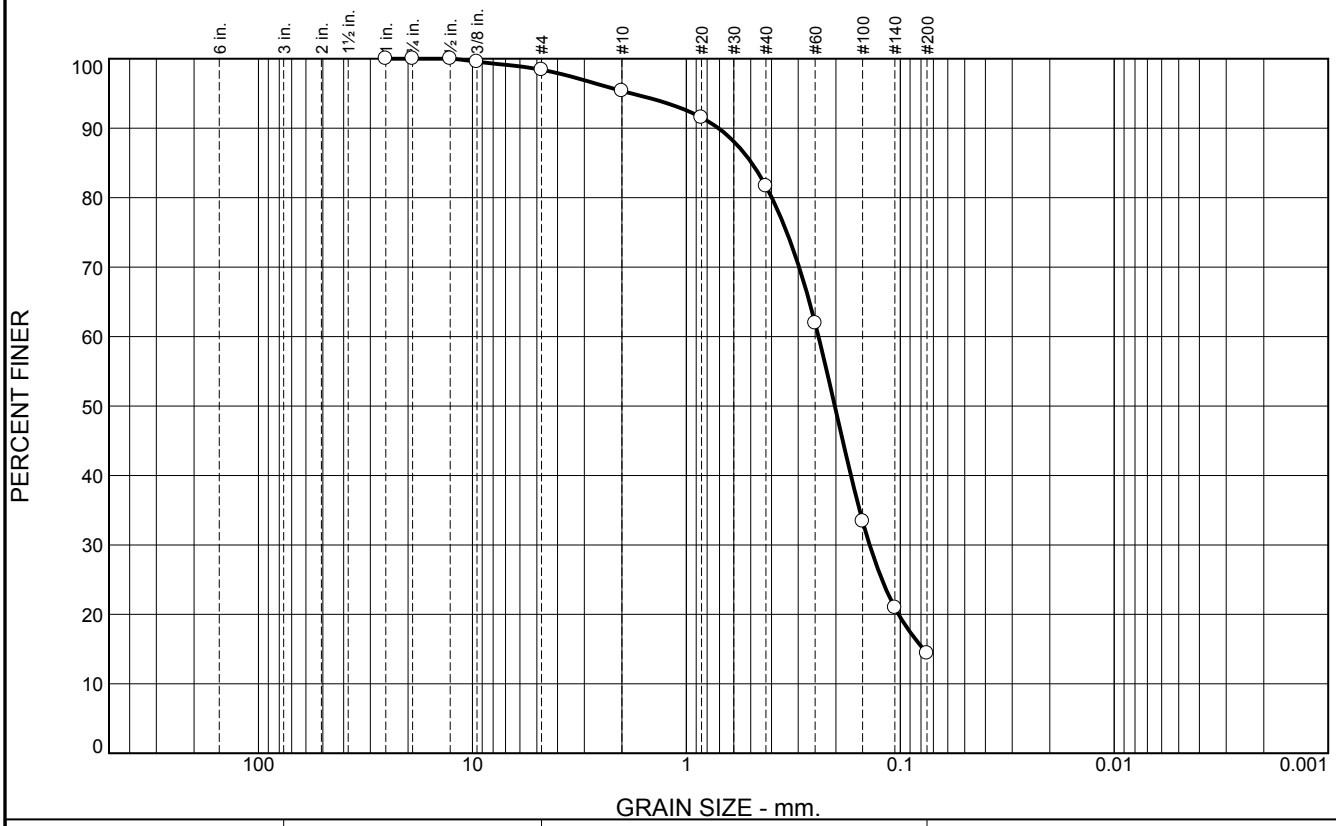
Location: BI-PBS-76-12 A
Sample Number: 6469 (5) **Depth:** 0.0' **Date:** 11/28/12

Thompson Engineering

Mobile, Alabama

Client: CDM/Thompson Engineering JV
Project: MsCIP Barrier Island Restoration GT
Project No: 1221110095 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.6	3.0	13.7	67.3	14.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
.75	100.0		
.5	100.0		
.375	99.6		
#4	98.4		
#10	95.4		
#20	91.5		
#40	81.7		
#60	61.9		
#100	33.4		
#140	21.0		
#200	14.4		

* (no specification provided)

Material Description

Fine to medium grained, SILTY SAND, with trace SHELL

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.7086 D_{85}= 0.4954 D_{60}= 0.2411
D_{50}= 0.2024 D_{30}= 0.1391 D_{15}= 0.0779
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO=

Remarks

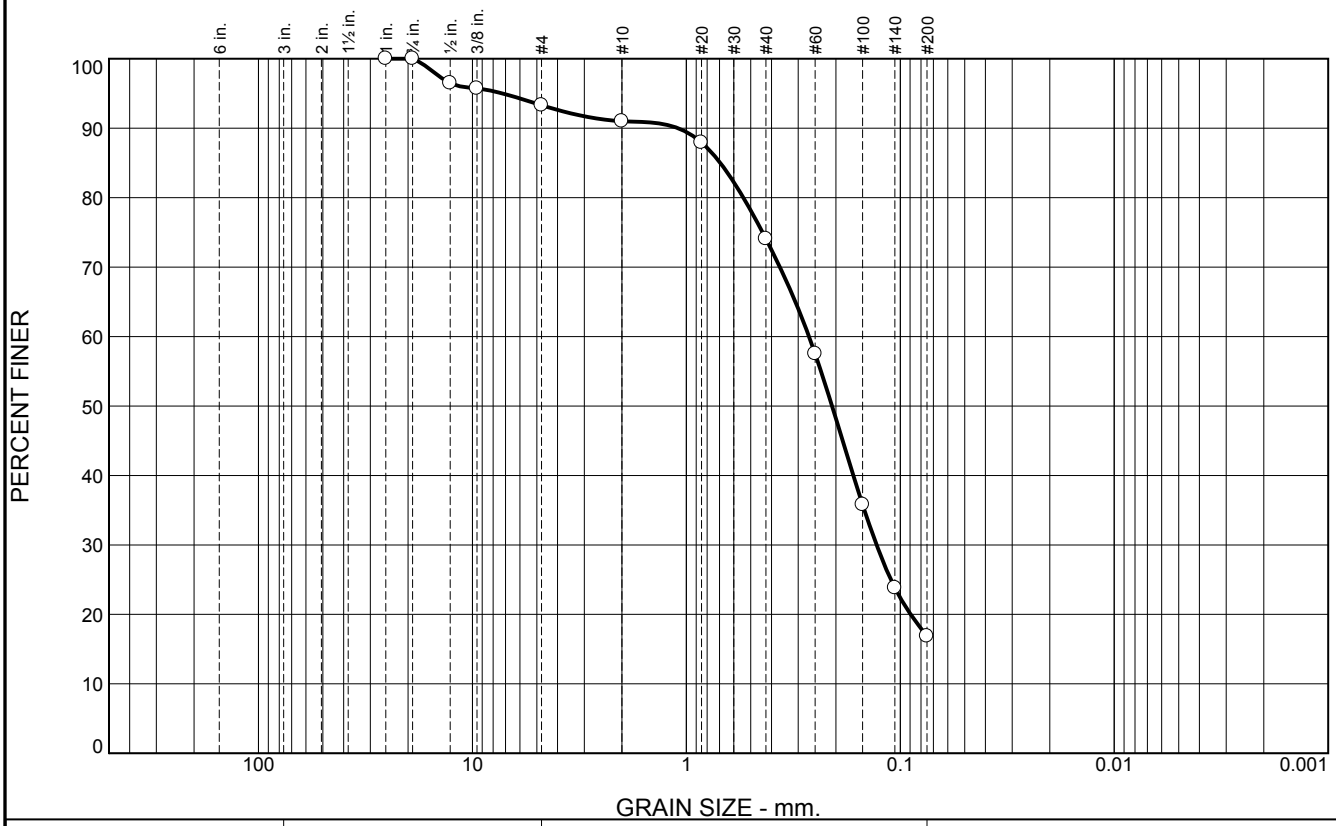
Location: BI-PBS-76-12 B
Sample Number: 6469 (6) **Depth:** 3.9' **Date:** 11/28/12

Thompson Engineering

Mobile, Alabama

Client: CDM/Thompson Engineering JV
Project: MsCIP Barrier Island Restoration GT
Project No: 1221110095 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	6.7	2.3	16.9	57.2	16.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
.75	100.0		
.5	96.5		
.375	95.7		
#4	93.3		
#10	91.0		
#20	87.9		
#40	74.1		
#60	57.5		
#100	35.8		
#140	23.8		
#200	16.9		

* (no specification provided)

Material Description

Fine to medium grained, SILTY SAND, with trace SHELL

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 1.0954 D_{85}= 0.6947 D_{60}= 0.2672
D_{50}= 0.2085 D_{30}= 0.1291 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO=

Remarks

Location: BI-PBS-76-12 C
Sample Number: 6469 (7) **Depth:** 8.0' **Date:** 11/28/12

Thompson Engineering

Mobile, Alabama

Client: CDM/Thompson Engineering JV
Project: MsCIP Barrier Island Restoration GT
Project No: 1221110095 **Figure**

Boring Designation BI-PBS-077-12

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 2 SHEETS
	South Atlantic	Mobile District	

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS East
2. BORING DESIGNATION	BI-PBS-077-12
LOCATION COORDINATES	E = 1,147,901 N = 238,471
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	American Vibracore Systems, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	20.0 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED: ; UNDISTURBED (UD): 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	55.8 Ft.
15. DATE BORING	STARTED 12-18-12; COMPLETED 12-18-12
16. ELEVATION TOP OF BORING	-55.8 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Mike FitzHarris, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-55.8	0.0				
-57.7	1.9		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, trace clay, trace shell fragments, gray (SP)	A	Classification: SP Color: 5Y 6/2-light olive gray D50: 0.2464 mm % Fines: 4.6
-58.5	2.7		SAND, clayey, mostly fine-grained sand-sized quartz, some clay, little silt, trace shell fragments, gray (SC)		
-61.7	5.9		CLAY, lean, mostly clay, some sand, low to medium plasticity, gray (CL)		
-75.8	20.0		SAND, silty, mostly fine-grained sand-sized quartz, some silt, little clay lenses, gray (SM) At El. -67.5 Ft., mostly fine-grained sand-sized quartz, some silt, trace wood debris, gray to grayish brown	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.

3. Seafloor elevation calculated using sampling

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15473° Long = -88.31553°

DRILLING LOG (Cont. Sheet)	INSTALLATION Mobile District		SHEET 2 OF 2 SHEETS
PROJECT MsCIP Barrier Island Restoration	COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83	VERTICAL NAVD88
LOCATION COORDINATES X = 1,147,901 Y = 238,471	ELEVATION TOP OF BORING -55.8 Ft.		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
			vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.		

30
35
40
45
50
55
60

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15473° Long = -88.31553°

Project Mississippi Barrier Island Restoration Project

AVS
AMERICAN VIBRACORE SERVICES

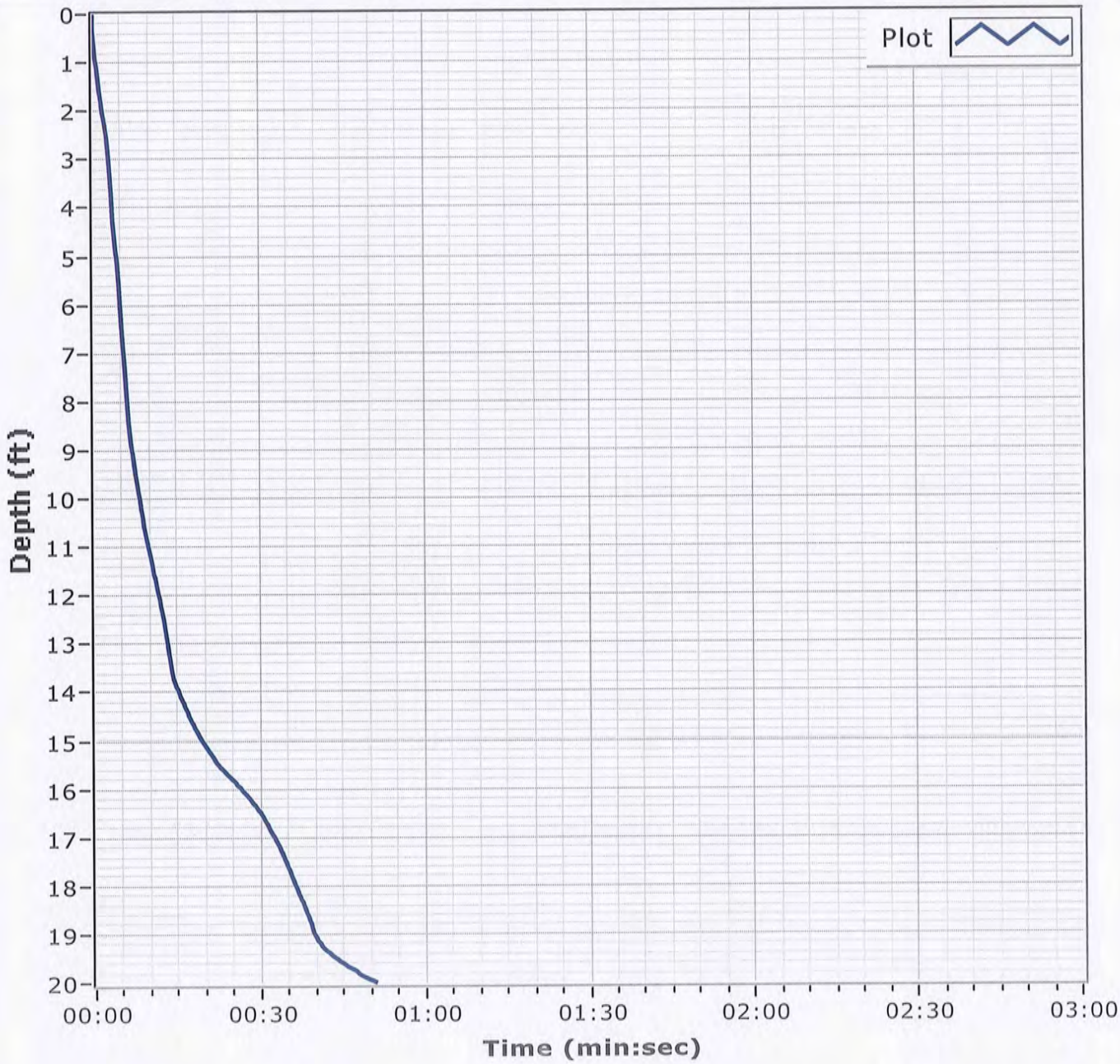
Core Identifier BI-PBS-77-12
Coordinate System
Latitude / Longitude

Latitude 30 9.284
Longitude 88 18.932

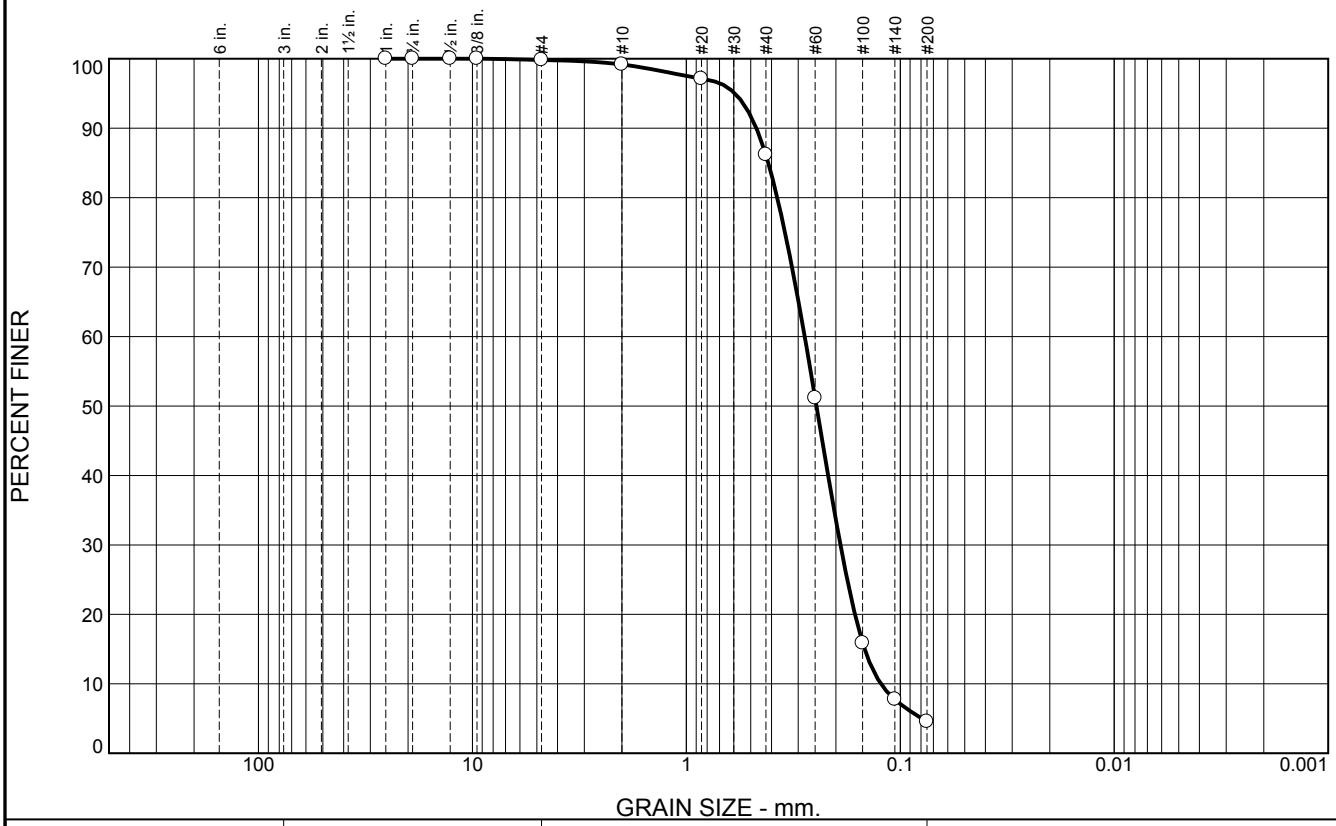
Date 12/18/2012
Start Time 11:14:11
End Time 11:15:02
Total Time 00:00:51

Water Depth 55.8'
Penetration 20.0'
Recovery 20.0'

Comments



Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.6	13.0	81.6	4.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
.75	100.0		
.5	100.0		
.375	100.0		
#4	99.8		
#10	99.2		
#20	97.1		
#40	86.2		
#60	51.1		
#100	15.9		
#140	7.8		
#200	4.6		

* (no specification provided)

Material Description

Fine to medium grained, SAND

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.4708 D_{85}= 0.4140 D_{60}= 0.2799
D_{50}= 0.2464 D_{30}= 0.1905 D_{15}= 0.1469
D_{10}= 0.1234 C_u= 2.27 C_c= 1.05

Classification

USCS= SP AASHTO=

Remarks

Location: BI-PBS-77-12 A
Sample Number: 6494 (44) **Depth:** 0.0' **Date:** 12/26/12

Thompson Engineering

Mobile, Alabama

Client: CDM/Thompson Engineering JV
Project: MsCIP Barrier Island Restoration GT
Project No: 1221110095 **Figure**

Boring Designation BI-PBS-078-12

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS East	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-078-12 — LOCATION COORDINATES: E = 1,146,430 N = 238,934	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: — UNDISTURBED (UD): 0
4. NAME OF DRILLER: American Vibracore Systems, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL: — BEARING:	14. WATER DEPTH: 53.9 Ft.
	15. DATE BORING — STARTED: 12-18-12 — COMPLETED: 12-18-12
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -53.9 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 18.2 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Mike FitzHarris, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-53.9	0.0				
-57.1	3.2		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, clayey bands at 2, 2.5, and 2.8 ft., lt. gray (SP)	A	Classification: SP-SM Color: 5Y 6/2-light olive gray D50: 0.2821 mm % Fines: 6.3
-59.3	5.4		SAND, clayey, mostly fine-grained sand-sized quartz, some clay, grades to sandy clay, gray (SC)	NS	
-72.1	18.2		CLAY, fat, mostly clay, trace silt, trace shell fragments, trace shell fragments, medium to high plasticity, 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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15602° Long = -88.32018°

Project Mississippi Barrier Island Restoration Project

AVS
AMERICAN VIBRACORE SERVICES

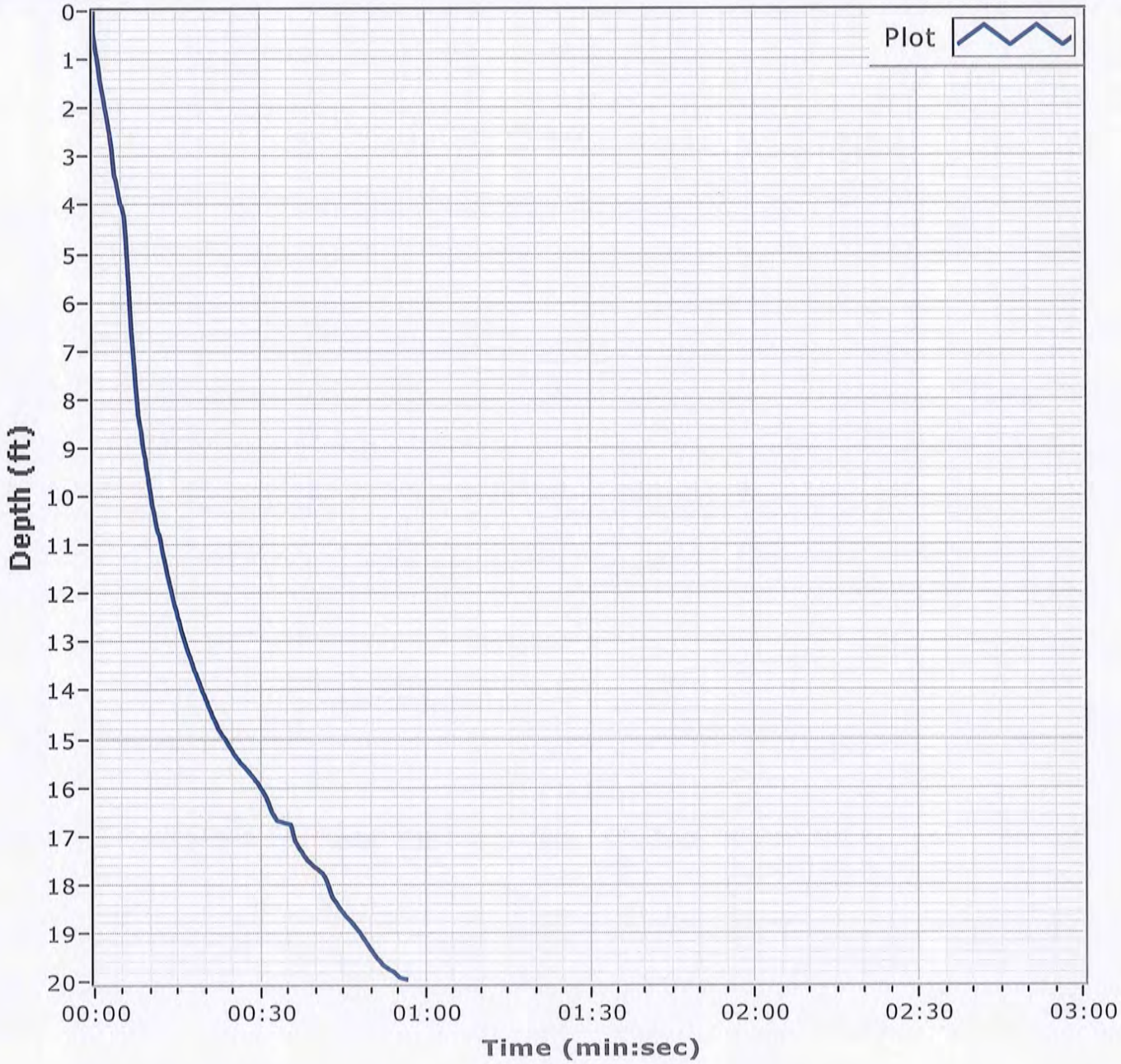
Core Identifier BI-PBS-78-12
Coordinate System
Latitude / Longitude

Latitude 30 9.361
Longitude 88 19.211

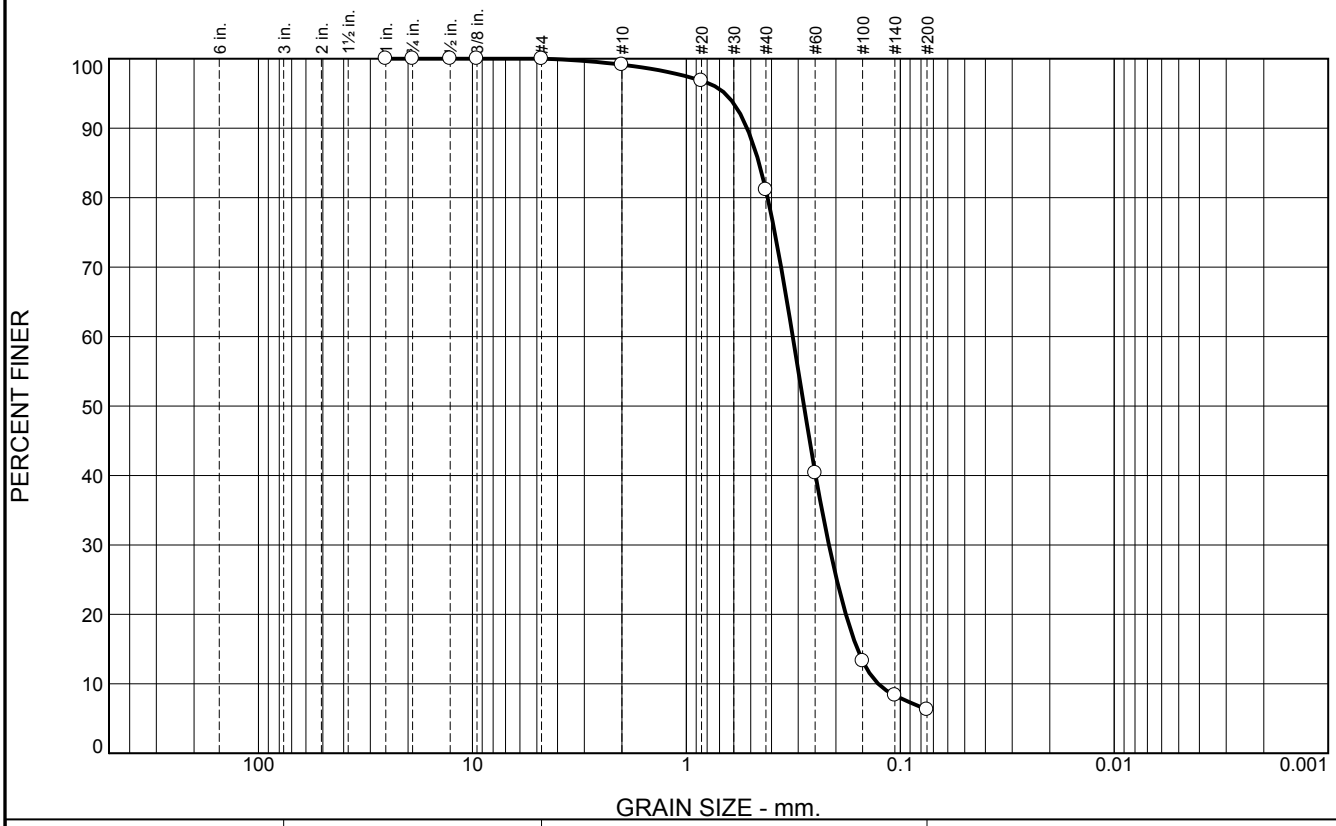
Date 12/18/2012
Start Time 10:48:19
End Time 10:49:15
Total Time 00:00:56

Water Depth 53.9'
Penetration 20.0'
Recovery 18.0'

Comments



Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.9	18.0	74.8	6.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
.75	100.0		
.5	100.0		
.375	100.0		
#4	100.0		
#10	99.1		
#20	96.8		
#40	81.1		
#60	40.4		
#100	13.3		
#140	8.4		
#200	6.3		

* (no specification provided)

Material Description

Fine to medium grained, SLIGHTLY SILTY SAND

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.5201 D_{85}= 0.4577 D_{60}= 0.3182
D_{50}= 0.2821 D_{30}= 0.2155 D_{15}= 0.1587
D_{10}= 0.1268 C_u= 2.51 C_c= 1.15

Classification

USCS= SP-SM AASHTO=

Remarks

Location: BI-PBS-78-12 A
Sample Number: 6494 (45) **Depth:** 0.0' **Date:** 12/26/12

Thompson Engineering

Mobile, Alabama

Client: CDM/Thompson Engineering JV
Project: MsCIP Barrier Island Restoration GT
Project No: 1221110095 **Figure**

Boring Designation BI-PBS-079-12

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
	South Atlantic	Mobile District	

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS East
2. BORING DESIGNATION	BI-PBS-079-12
LOCATION COORDINATES	E = 1,145,037 N = 239,338
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	American Vibracore Systems, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	16.4 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED: ; UNDISTURBED (UD): 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	52.3 Ft.
15. DATE BORING	STARTED 12-18-12; COMPLETED 12-18-12
16. ELEVATION TOP OF BORING	-52.3 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Mike FitzHarris, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-52.3	0.0				
-54.2	1.9		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace shell fragments, trace clay lenses, lt. gray (SP)	A	Classification: SP Color: 5Y 6/2-light olive gray D50: 0.2701 mm % Fines: 1.9
-55.4	3.1		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, some silt, trace shell fragments, trace clay lenses, gray (SP-SM)	B	Classification: SP-SM Color: 5Y 5/2-olive gray D50: 0.2114 mm % Fines: 11.5
-56.9	4.6		SAND, clayey, mostly fine-grained sand-sized quartz, trace shell fragments, gray (SC)		
-68.7	16.4		CLAY, fat, mostly clay, trace shell fragments, trace wood debris, medium to high plasticity, trace sandy lenses, gray to greenish 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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15715° Long = -88.32458°

Project Mississippi Barrier Island Restoration Project

AVS
AMERICAN VIBRACORE SERVICES

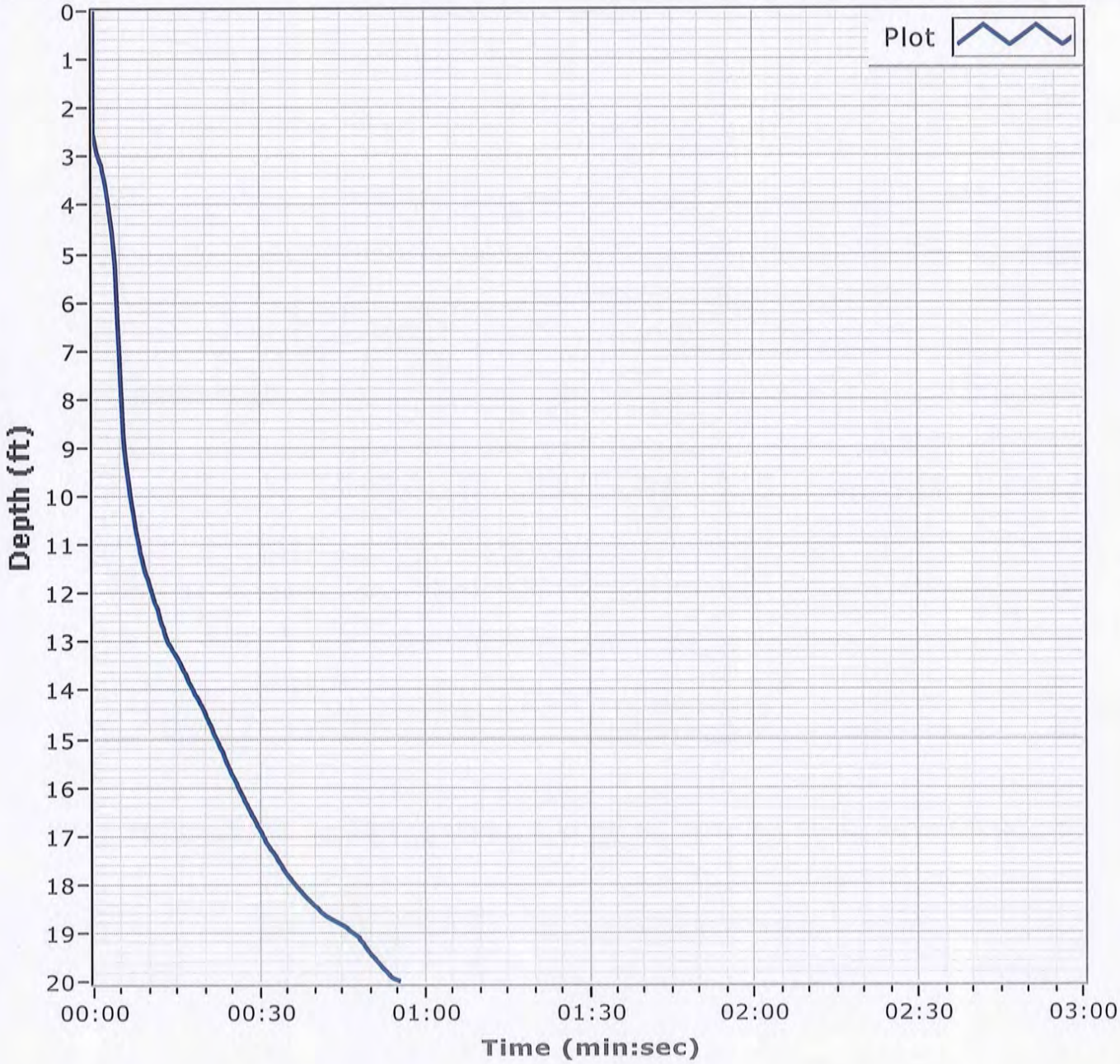
Core Identifier BI-PBS-79-12
Coordinate System
Latitude / Longitude

Latitude 30 9.429
Longitude 88 19.475

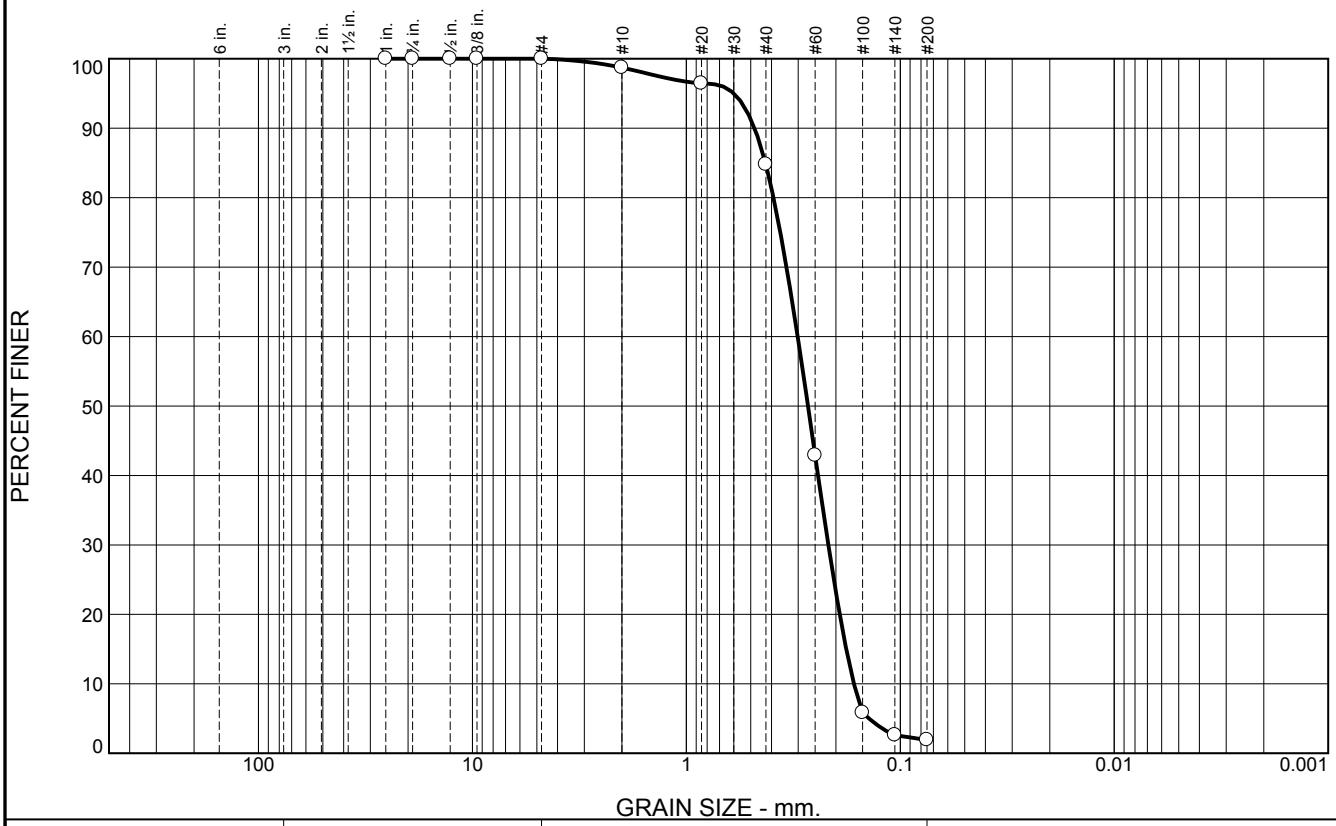
Date 12/18/2012
Start Time 09:53:10
End Time 09:54:06
Total Time 00:00:55

Water Depth 52.3'
Penetration 20.0'
Recovery 16.5'

Comments



Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	1.3	13.9	82.9	1.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
.75	100.0		
.5	100.0		
.375	100.0		
#4	100.0		
#10	98.7		
#20	96.5		
#40	84.8		
#60	42.9		
#100	5.9		
#140	2.6		
#200	1.9		

* (no specification provided)

Material Description

Fine to medium grained, SAND

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.4802 D_{85}= 0.4270 D_{60}= 0.3020
D_{50}= 0.2701 D_{30}= 0.2168 D_{15}= 0.1791
D_{10}= 0.1649 C_u= 1.83 C_c= 0.94

Classification

USCS= SP AASHTO=

Remarks

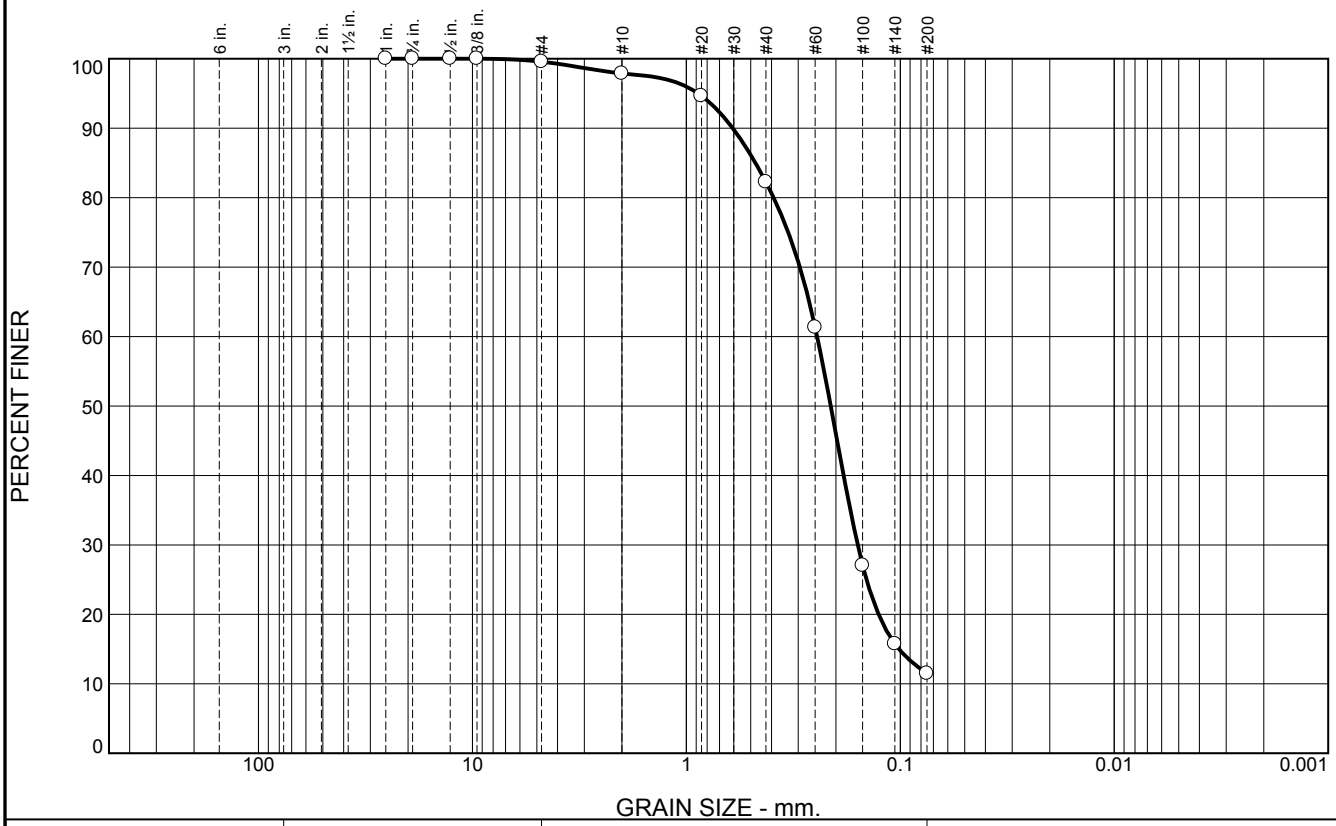
Location: BI-PBS-79-12 A
Sample Number: 6494 (46) **Depth:** 0.0' **Date:** 12/26/12

Thompson Engineering

Mobile, Alabama

Client: CDM/Thompson Engineering JV
Project: MsCIP Barrier Island Restoration GT
Project No: 1221110095 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.4	1.7	15.7	70.7	11.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
.75	100.0		
.5	100.0		
.375	100.0		
#4	99.6		
#10	97.9		
#20	94.7		
#40	82.2		
#60	61.3		
#100	27.0		
#140	15.8		
#200	11.5		

* (no specification provided)

Material Description

Fine to medium grained, SLIGHTLY SILTY SAND

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.6072 D_{85}= 0.4757 D_{60}= 0.2447
D_{50}= 0.2114 D_{30}= 0.1582 D_{15}= 0.1014
D_{10}= C_u= C_c=

Classification

USCS= SP-SM AASHTO=

Remarks

Location: BI-PBS-79-12 B
Sample Number: 6494 (47) **Depth:** 1.9' **Date:** 12/26/12

Thompson Engineering

Mobile, Alabama

Client: CDM/Thompson Engineering JV
Project: MsCIP Barrier Island Restoration GT
Project No: 1221110095 **Figure**

Boring Designation BI-PBS-080-12

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 2 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS East	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-080-12 — LOCATION COORDINATES: E = 1,143,708 N = 239,852	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: — UNDISTURBED (UD): 0
4. NAME OF DRILLER: American Vibracore Systems, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL: — BEARING:	14. WATER DEPTH: 52.3 Ft.
	15. DATE BORING — STARTED: 12-18-12 — COMPLETED: 12-18-12
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -52.2 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 19.4 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Mike FitzHarris, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-52.2	0.0				
-54.2	2.0		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, trace shell fragments, gray (SP)	A	Classification: SP Color: 5Y 6/2-light olive gray D50: 0.2596 mm % Fines: 1.9
-56.6	4.4		SAND, clayey, mostly fine-grained sand-sized quartz, some clay, trace shell fragments, trace clay lenses, gray (SC)	B	Classification: SP-SM Color: 5Y 5/2-olive gray D50: 0.2305 mm % Fines: 11.6
-71.6	19.4		CLAY, fat, mostly clay, trace wood debris, medium to high plasticity, stiff, trace sandy lenses, 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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15858° Long = -88.32878°

DRILLING LOG (Cont. Sheet)	INSTALLATION Mobile District		SHEET 2 OF 2 SHEETS
PROJECT MsCIP Barrier Island Restoration	COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83	VERTICAL NAVD88
LOCATION COORDINATES X = 1,143,708 Y = 239,852	ELEVATION TOP OF BORING -52.2 Ft.		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
			applying NOAA tidal gauge data conversion factor.		

30
35
40
45
50
55
60

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15858° Long = -88.32878°

Project Mississippi Barrier Island Restoration Project

AVS
AMERICAN VIBRACORE SERVICES

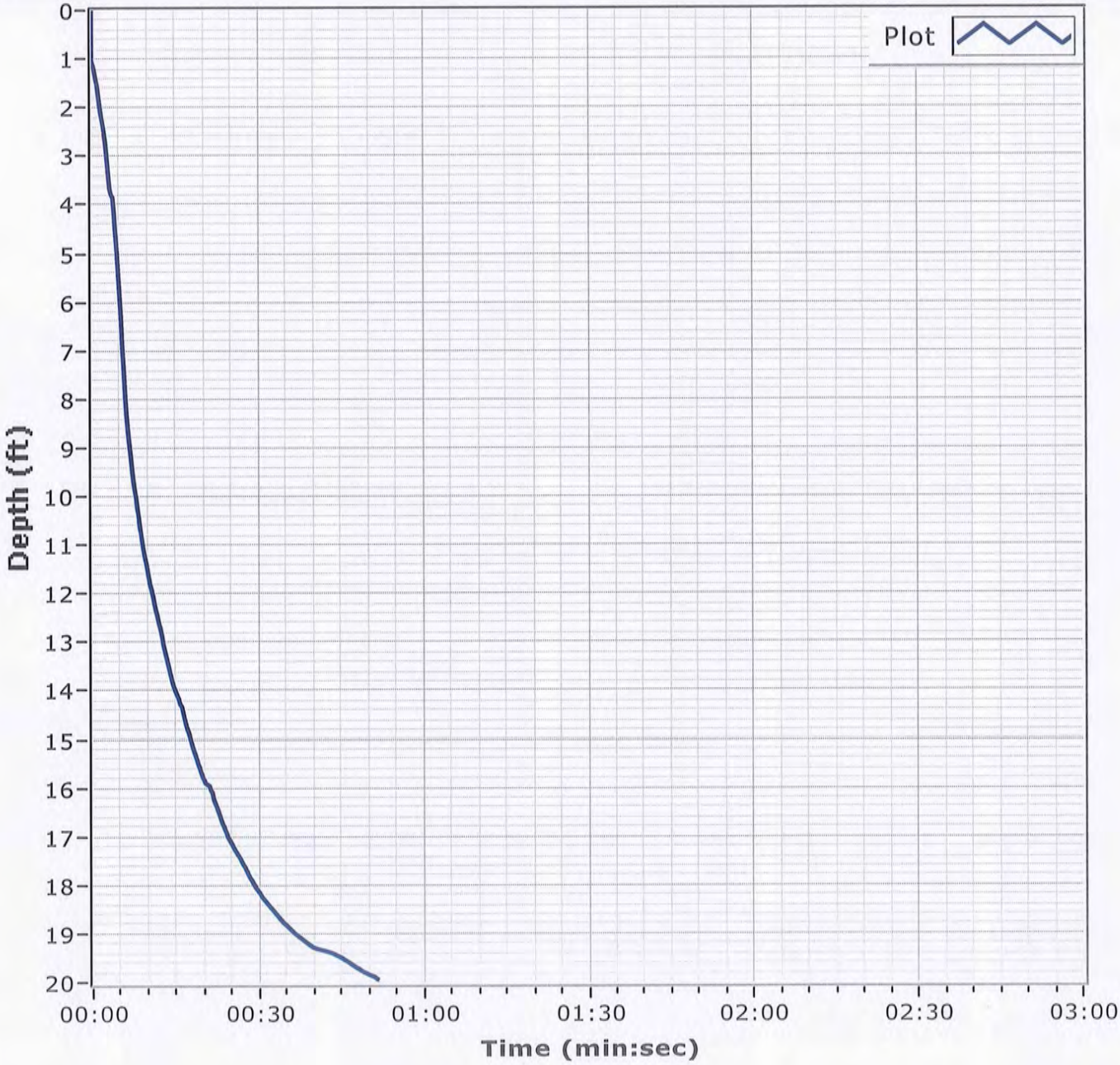
Core Identifier BI-PBS-80-12
Coordinate System
Latitude / Longitude

Latitude 30 9.515
Longitude 88 19.727

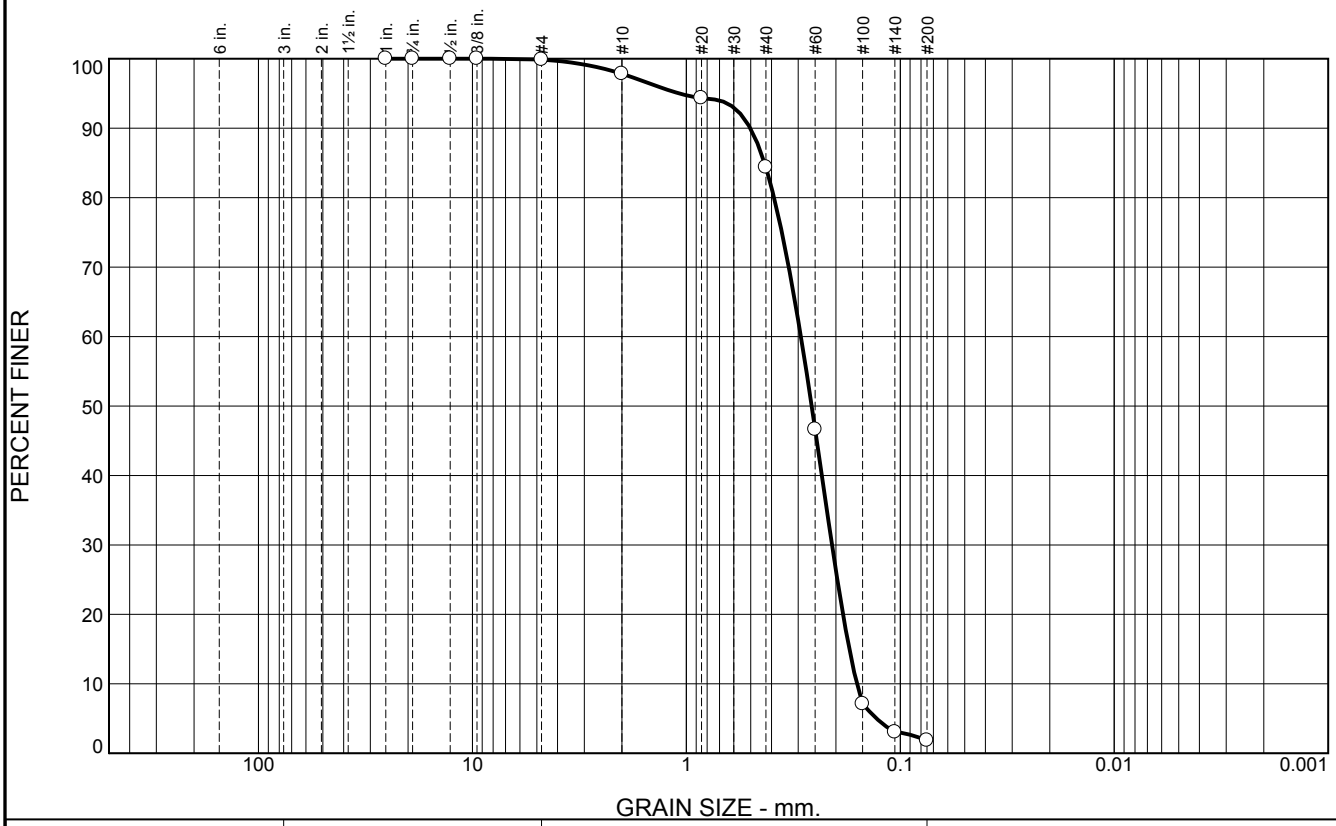
Date 12/18/2012
Start Time 09:23:20
End Time 09:24:12
Total Time 00:00:51

Water Depth 52.3'
Penetration 20.0'
Recovery 19.5'

Comments



Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	2.1	13.4	82.5	1.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
.75	100.0		
.5	100.0		
.375	100.0		
#4	99.9		
#10	97.8		
#20	94.3		
#40	84.4		
#60	46.6		
#100	7.1		
#140	3.0		
#200	1.9		

* (no specification provided)

Material Description

Fine to medium grained, SAND

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.5026 D_{85}= 0.4313 D_{60}= 0.2917
D_{50}= 0.2596 D_{30}= 0.2086 D_{15}= 0.1732
D_{10}= 0.1596 C_u= 1.83 C_c= 0.93

Classification

USCS= SP AASHTO=

Remarks

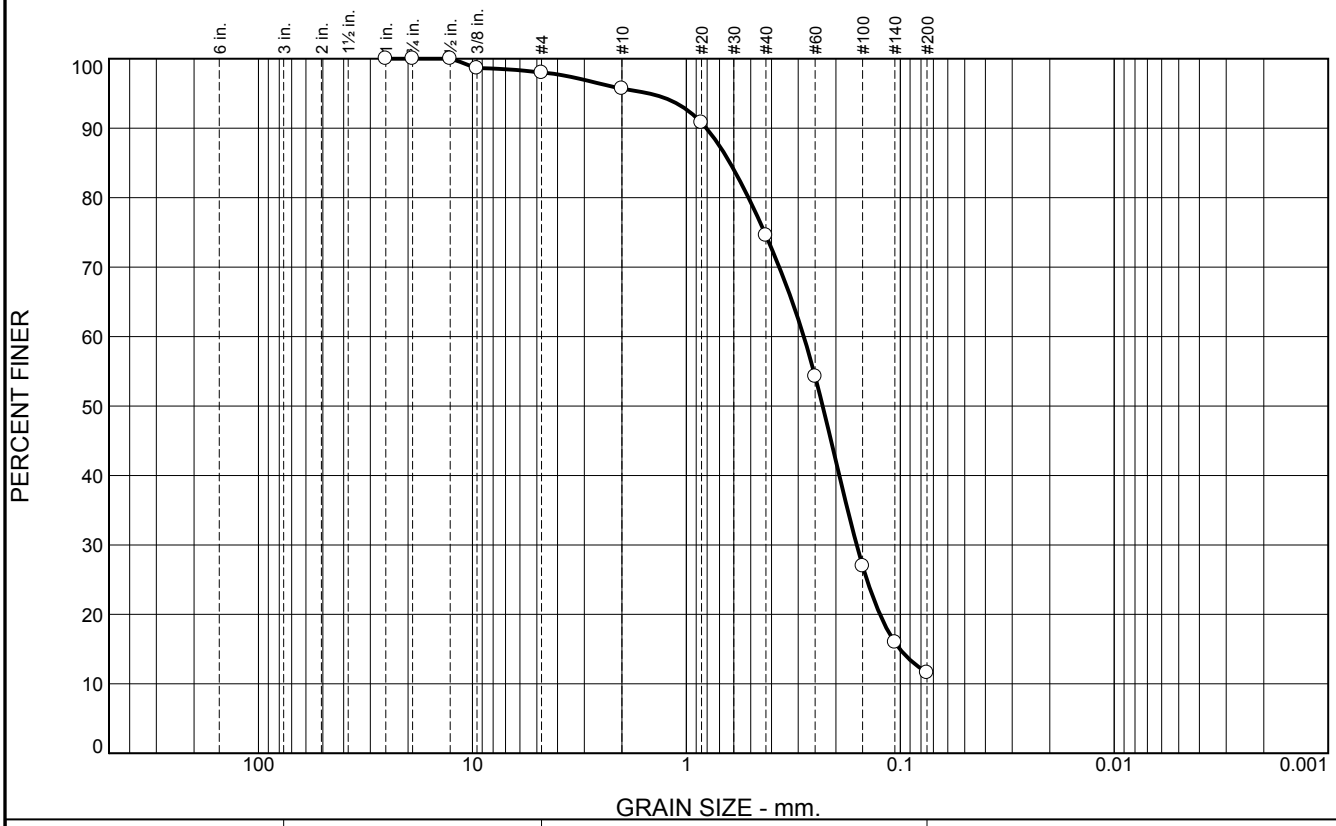
Location: BI-PBS-80-12 A
Sample Number: 6494 (48) **Depth:** 0.0' **Date:** 12/26/12

Thompson Engineering

Mobile, Alabama

Client: CDM/Thompson Engineering JV
Project: MsCIP Barrier Island Restoration GT
Project No: 1221110095 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	2.0	2.3	21.1	63.0	11.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
.75	100.0		
.5	100.0		
.375	98.6		
#4	98.0		
#10	95.7		
#20	90.8		
#40	74.6		
#60	54.3		
#100	27.0		
#140	16.0		
#200	11.6		

* (no specification provided)

Material Description

Fine to medium grained, SLIGHTLY SILTY SAND, with trace SHELL

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.8069 D_{85}= 0.6250 D_{60}= 0.2827
D_{50}= 0.2305 D_{30}= 0.1600 D_{15}= 0.1005
D_{10}= C_u= C_c=

Classification

USCS= SP-SM AASHTO=

Remarks

Location: BI-PBS-80-12 B
Sample Number: 6494 (49) **Depth:** 2.0' **Date:** 12/26/12

Thompson Engineering

Mobile, Alabama

Client: CDM/Thompson Engineering JV
Project: MsCIP Barrier Island Restoration GT
Project No: 1221110095 **Figure**

Boring Designation BI-PBS-081-12

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS East	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-081-12 — LOCATION COORDINATES: E = 1,145,995 N = 240,743	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: — UNDISTURBED (UD): 0
4. NAME OF DRILLER: American Vibracore Systems, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL: — BEARING:	14. WATER DEPTH: 52 Ft.
	15. DATE BORING — STARTED: 12-18-12 — COMPLETED: 12-18-12
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -52.0 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 16.9 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Mike FitzHarris, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-52.0	0.0				
-53.9	1.9		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, trace shell fragments, trace clay lenses, lt. gray (SP)	A	Classification: SP Color: 5Y 6/2-light olive gray D50: 0.2244 mm % Fines: 2.4
-55.6	3.6		SAND, silty, mostly fine-grained sand-sized quartz, some silt, trace clay, trace shell fragments, gray (SM)	B	Classification: SP-SM Color: 5Y 5/2-olive gray D50: 0.1757 mm % Fines: 9.1
-56.2	4.2		SAND, clayey, mostly fine-grained sand-sized quartz, some clay, trace shell fragments, gray (SC)		
-68.9	16.9		CLAY, fat, mostly clay, trace wood debris, medium to high plasticity, stiff, sandy lenses at 4.7 ft., 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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.16100° Long = -88.32153°

Project Mississippi Barrier Island Restoration Project

AVS
AMERICAN VIBRACORE SERVICES

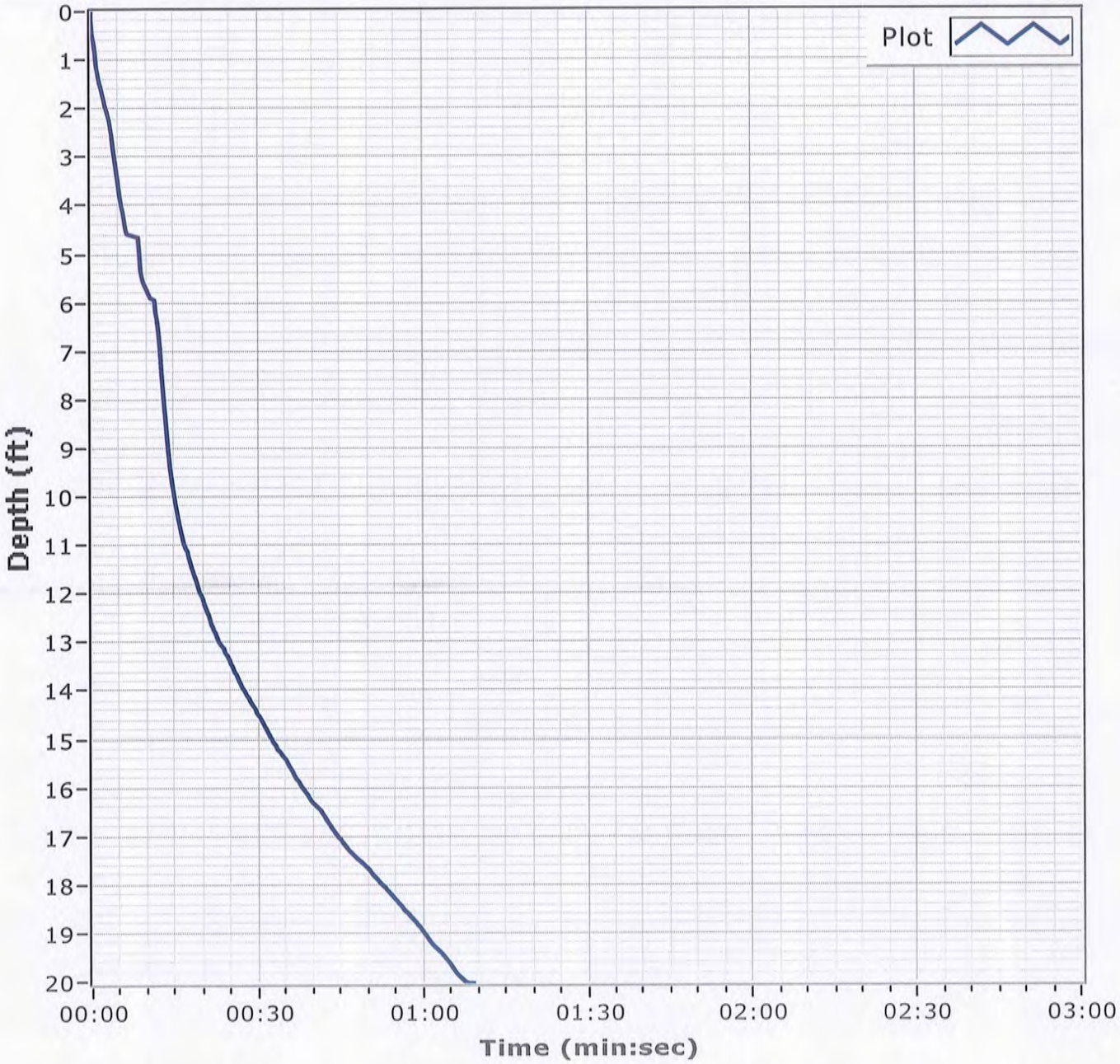
Core Identifier BI-PBS-81-12
Coordinate System
Latitude / Longitude

Latitude 30 9.660
Longitude 88 19.292

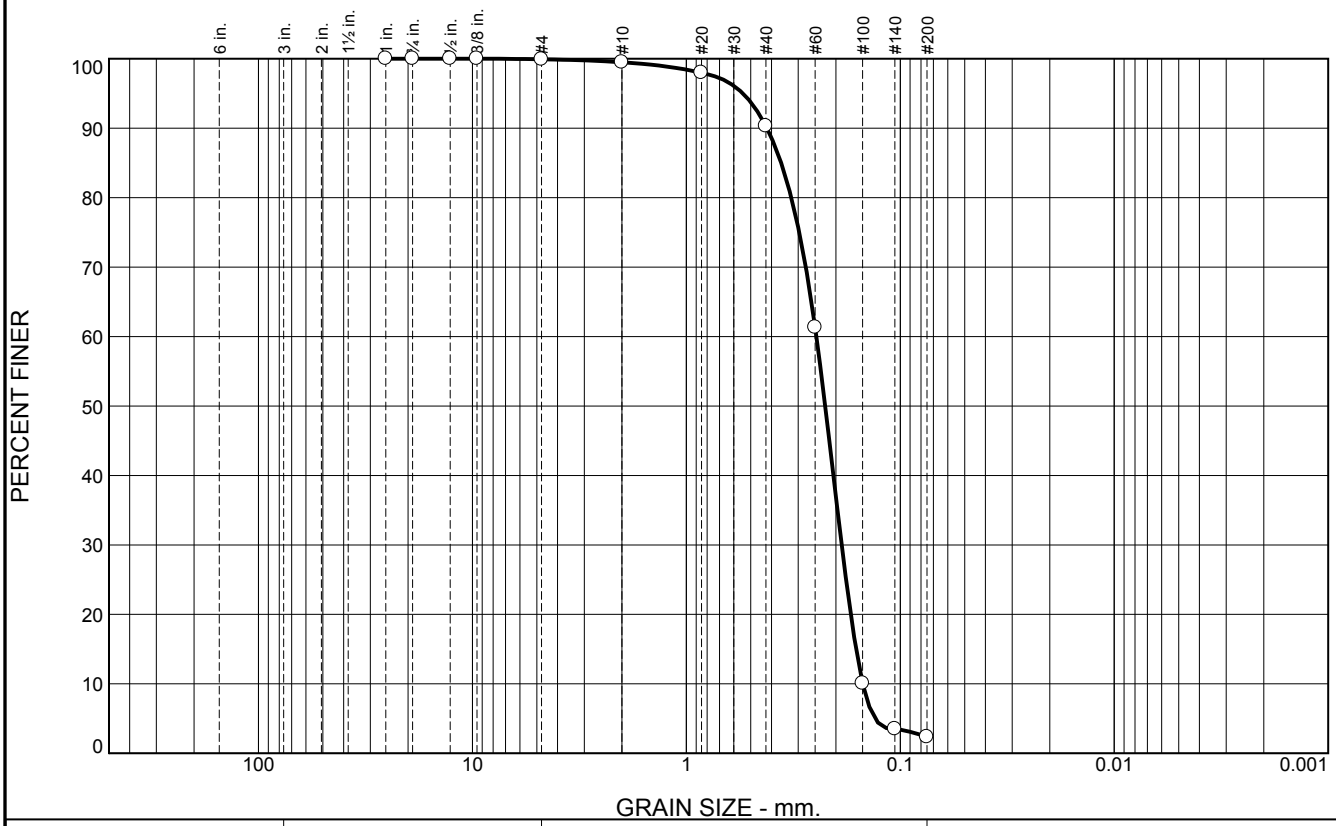
Date 12/18/2012
Start Time 10:18:31
End Time 10:19:41
Total Time 00:01:09

Water Depth 52.0'
Penetration 20.0'
Recovery 16.9'

Comments



Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.4	9.2	87.9	2.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
.75	100.0		
.5	100.0		
.375	100.0		
#4	99.9		
#10	99.5		
#20	98.0		
#40	90.3		
#60	61.3		
#100	10.1		
#140	3.5		
#200	2.4		

* (no specification provided)

Material Description

Fine grained, SAND

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.4201 D_{85}= 0.3604 D_{60}= 0.2466
D_{50}= 0.2244 D_{30}= 0.1880 D_{15}= 0.1610
D_{10}= 0.1499 C_u= 1.65 C_c= 0.96

Classification

USCS= SP AASHTO=

Remarks

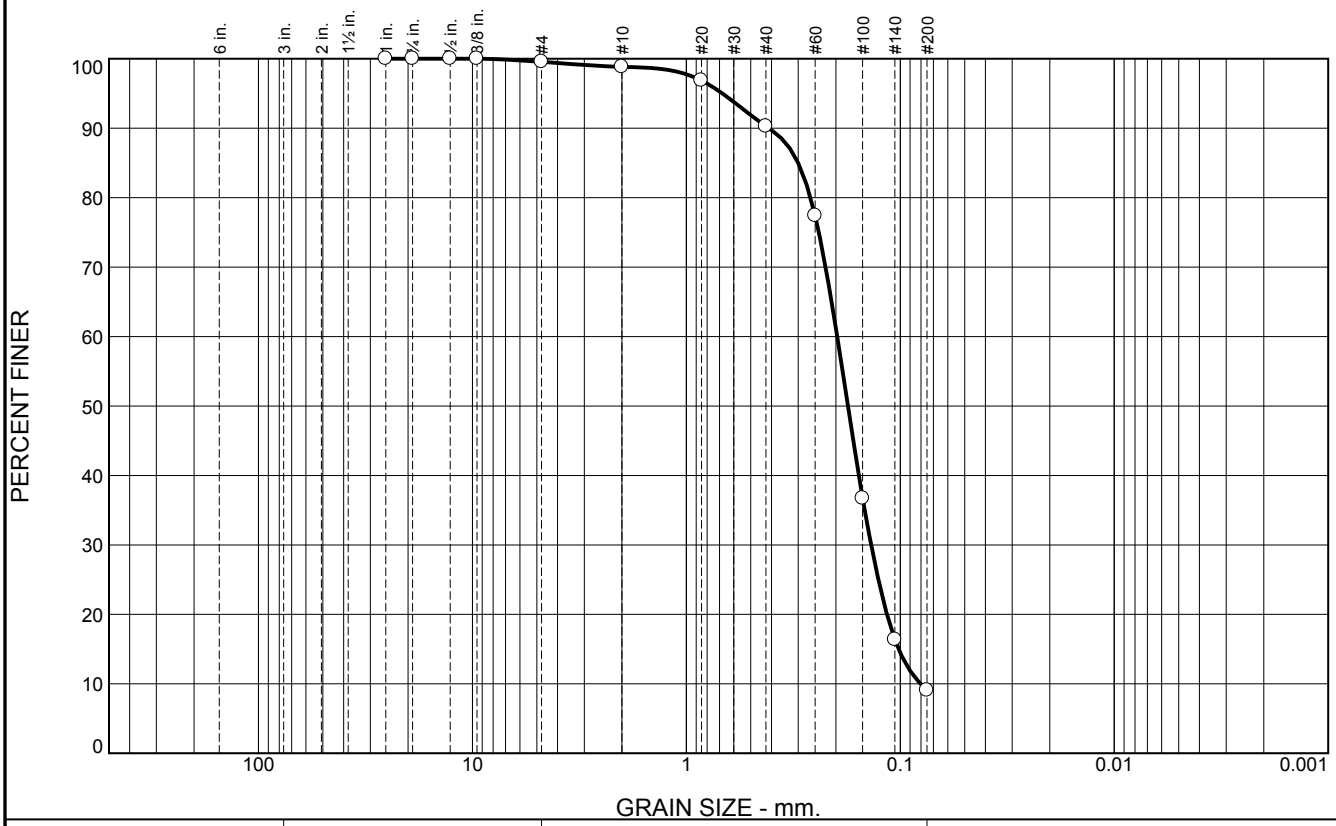
Location: BI-PBS-81-12 A
Sample Number: 6494 (50) **Depth:** 0.0' **Date:** 12/26/12

Thompson Engineering

Mobile, Alabama

Client: CDM/Thompson Engineering JV
Project: MsCIP Barrier Island Restoration GT
Project No: 1221110095 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.5	0.7	8.5	81.2	9.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
.75	100.0		
.5	100.0		
.375	100.0		
#4	99.5		
#10	98.8		
#20	96.9		
#40	90.3		
#60	77.4		
#100	36.7		
#140	16.4		
#200	9.1		

* (no specification provided)

Material Description

Fine grained, SLIGHTLY SILTY SAND

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.4129 D_{85}= 0.3005 D_{60}= 0.1972
D_{50}= 0.1757 D_{30}= 0.1369 D_{15}= 0.1019
D_{10}= 0.0804 C_u= 2.45 C_c= 1.18

Classification

USCS= SP-SM AASHTO=

Remarks

Location: BI-PBS-81-12 B
Sample Number: 6494 (51) **Depth:** 1.9' **Date:** 12/26/12

Thompson Engineering

Mobile, Alabama

Client: CDM/Thompson Engineering JV
Project: MsCIP Barrier Island Restoration GT
Project No: 1221110095 **Figure**

Boring Designation BI-PBS-082-12

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 2 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS East	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-082-12 — LOCATION COORDINATES: E = 1,146,918 N = 232,935	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: — UNDISTURBED (UD): 0
4. NAME OF DRILLER: American Vibracore Systems, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL: — BEARING:	14. WATER DEPTH: 59.6 Ft.
	15. DATE BORING — STARTED: 12-18-12 — COMPLETED: 12-18-12
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -59.6 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 19.0 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Mike FitzHarris, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-59.6	0.0				
-63.4	3.8		SAND, clayey, mostly fine-grained sand-sized quartz, some clay, little shell fragments, trace silt, gray (SC)		
-68.0	8.4		SAND, silty, mostly fine-grained sand-sized quartz, some silt, little clay, trace shell fragments, gray (SM)		
-78.6	19.0		CLAY, lean, mostly clay, little fine-grained sand-sized quartz, trace silt, trace shell fragments, gray (CL) At El. -72.1 Ft., mostly clay, trace silt, stiff, low to medium plasticity, brownish gray	NS	
			At El. -78.4 Ft., mostly clay, some silt, very stiff, 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.

3. Seafloor elevation calculated using sampling

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.13952° Long = -88.31872°

DRILLING LOG (Cont. Sheet)	INSTALLATION Mobile District		SHEET 2 OF 2 SHEETS
PROJECT MsCIP Barrier Island Restoration	COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83	VERTICAL NAVD88
LOCATION COORDINATES X = 1,146,918 Y = 232,935	ELEVATION TOP OF BORING -59.6 Ft.		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
			vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.		

30
35
40
45
50
55
60

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.13952° Long = -88.31872°

Project Mississippi Barrier Island Restoration Project

AVS
AMERICAN VIBRACORE SERVICES

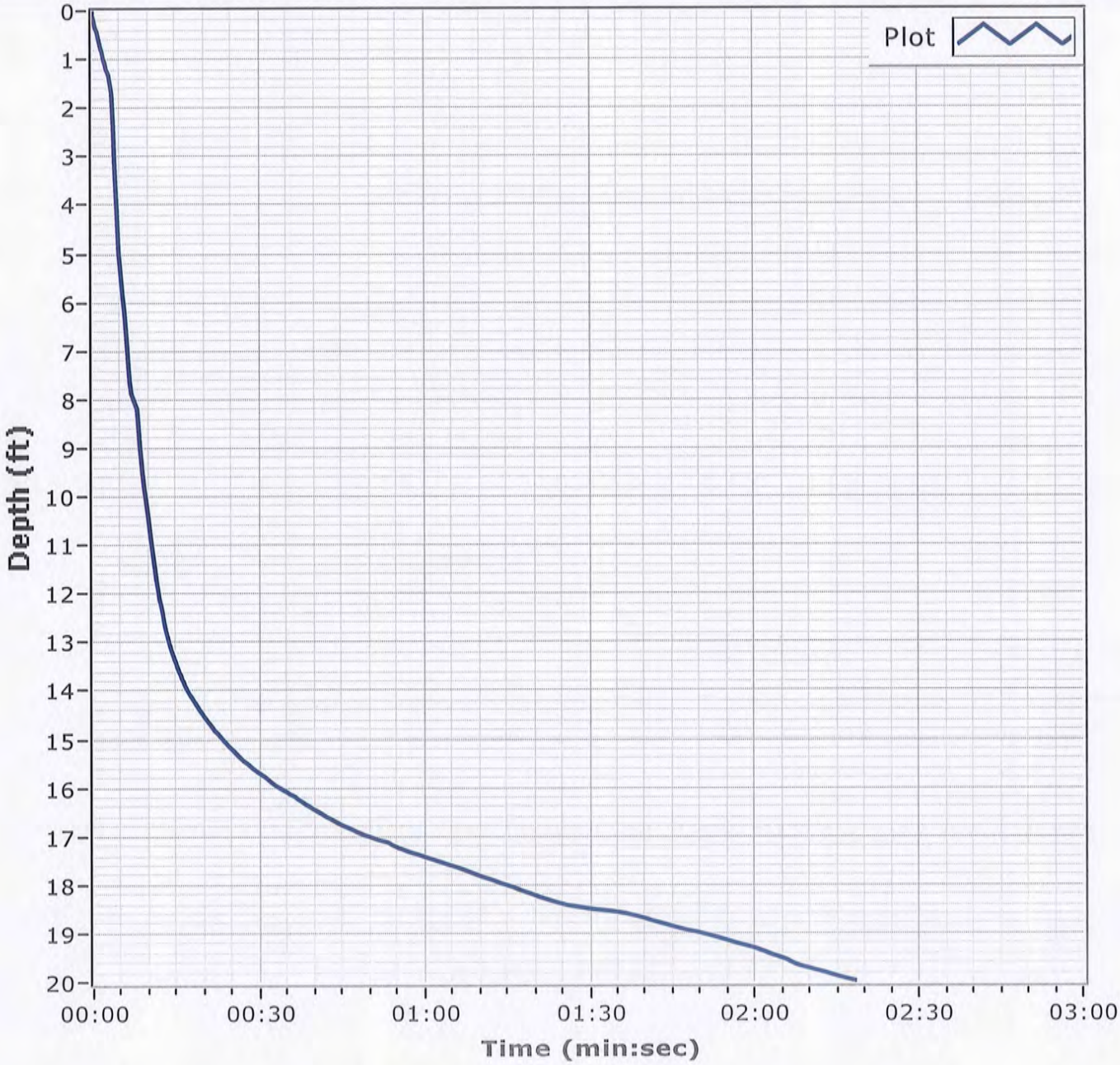
Core Identifier BI-PBS-82-12
Coordinate System
Latitude / Longitude

Latitude 30 8.371
Longitude 88 19.123

Date 12/18/2012
Start Time 11:44:47
End Time 11:47:05
Total Time 00:02:18

Water Depth 59.6'
Penetration 20.0'
Recovery 19.0'

Comments



Boring Designation BI-PBS-083-12

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
	South Atlantic	Mobile District	

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS East
2. BORING DESIGNATION	BI-PBS-083-12
LOCATION COORDINATES	E = 1,142,384 N = 232,518
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	American Vibracore Systems, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	19.6 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED: ; UNDISTURBED (UD): 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	52.4 Ft.
15. DATE BORING	STARTED 12-18-12; COMPLETED 12-18-12
16. ELEVATION TOP OF BORING	-52.1 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Mike FitzHarris, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-52.1	0.0				
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little shell fragments, trace clay, trace silt, gray (SP)	A	Classification: SP Color: 5Y 6/2-light olive gray D50: 0.3509 mm % Fines: 1
				B	Classification: SP-SM Color: 5Y 5/2-olive gray D50: 0.2416 mm % Fines: 5.2
-59.8	7.7				
			CLAY, lean, mostly clay, some silt, trace fine-grained sand-sized quartz, trace shell fragments, gray, orangy brown (CL)	NS	
-63.4	11.3				
			SAND, clayey, mostly fine-grained sand-sized quartz, some clay, little silt, trace shell fragments, gray (SC)		
-67.1	15.0				
			CLAY, lean, mostly clay, some silt, some fine-grained sand-sized quartz, trace shell fragments, trace wood debris, gray (CL)		
-71.7	19.6				
			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. 3. Seafloor elevation determined from USACE hydrographic survey completed April 2014.		

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.13843° Long = -88.33307°

Project Mississippi Barrier Island Restoration Project

AVS
AMERICAN VIBRACORE SERVICES

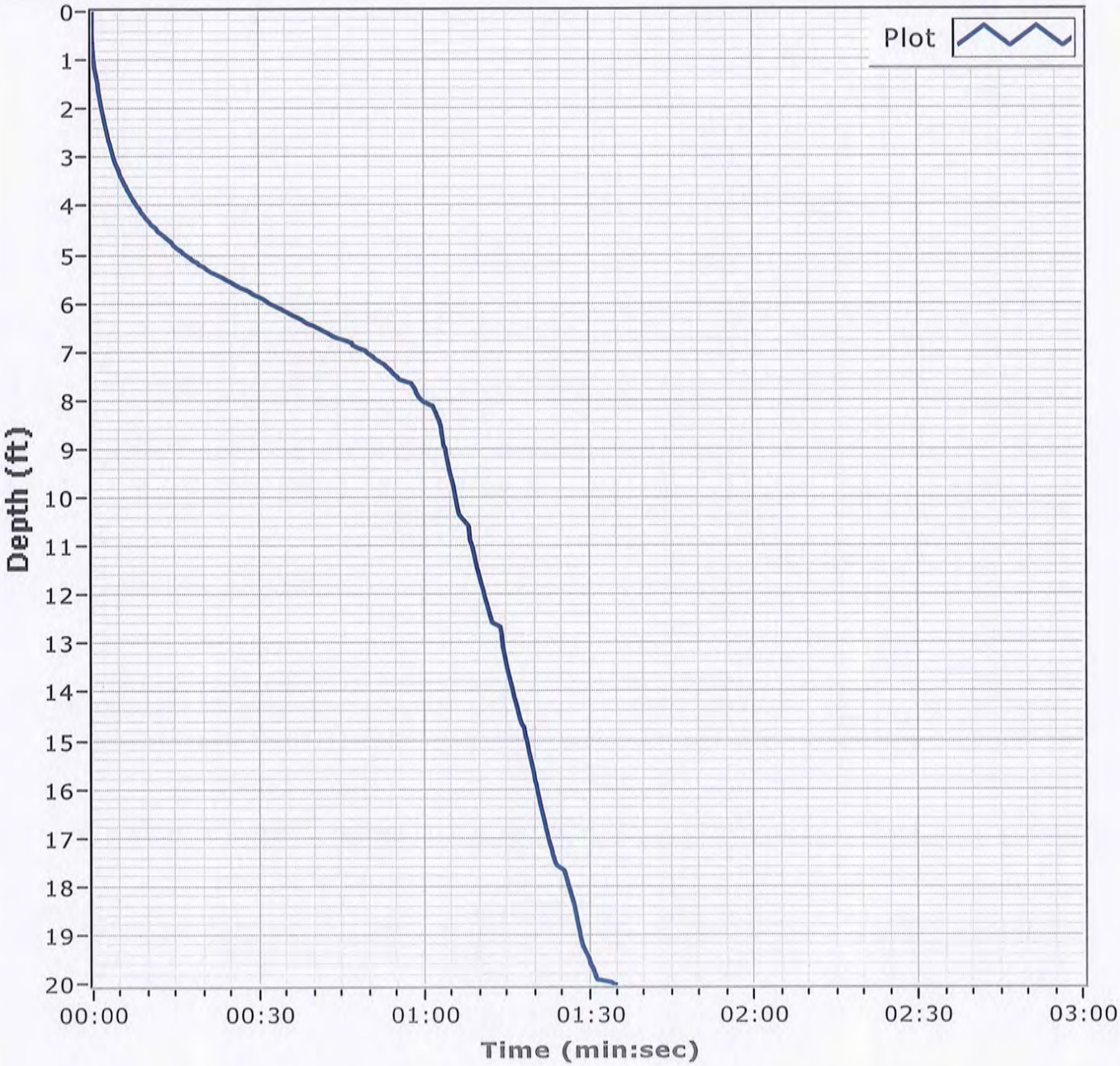
Core Identifier BI-PBS-83-12
Coordinate System
Latitude / Longitude

Latitude 30 8.306
Longitude 88 19.984

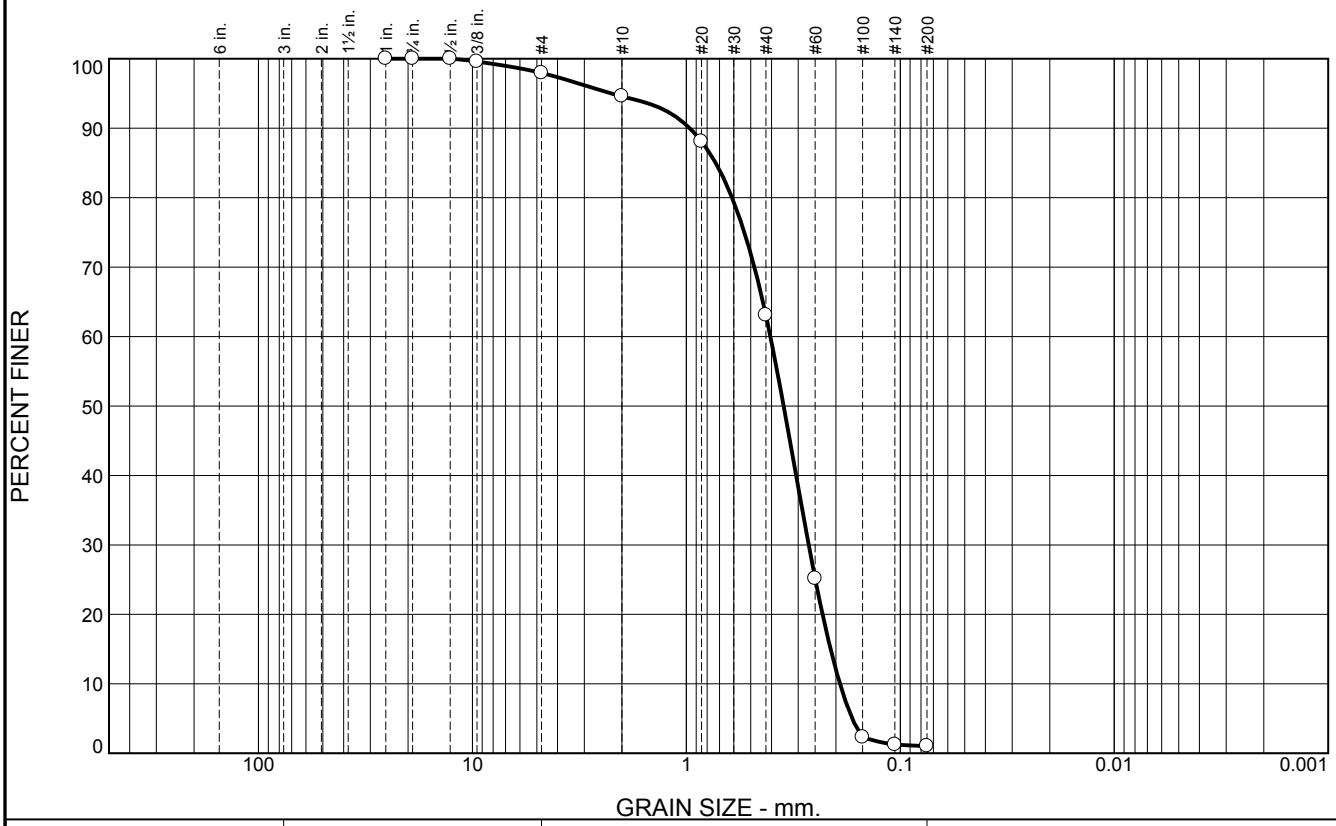
Date 12/18/2012
Start Time 12:21:37
End Time 12:23:12
Total Time 00:01:35

Water Depth 52.4'
Penetration 20.0'
Recovery 19.6'

Comments



Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	2.1	3.3	31.5	62.1	1.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
.75	100.0		
.5	100.0		
.375	99.6		
#4	97.9		
#10	94.6		
#20	88.1		
#40	63.1		
#60	25.1		
#100	2.3		
#140	1.2		
#200	1.0		

* (no specification provided)

Material Description

Fine to medium grained, SAND, with trace SHELL

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.9650 D_{85}= 0.7300 D_{60}= 0.4048
D_{50}= 0.3509 D_{30}= 0.2681 D_{15}= 0.2118
D_{10}= 0.1916 C_u= 2.11 C_c= 0.93

Classification

USCS= SP AASHTO=

Remarks

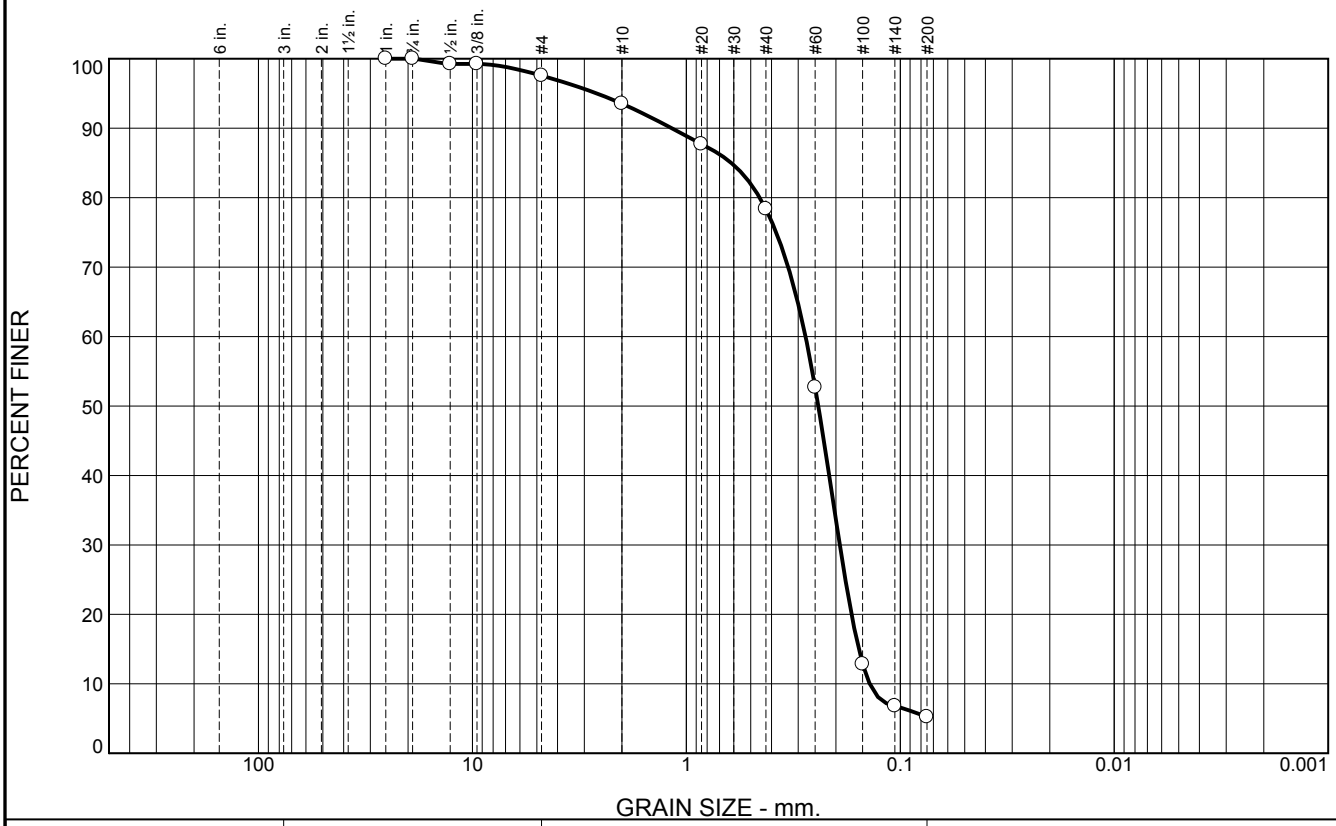
Location: BI-PBS-83-12 A
Sample Number: 6494 (52) **Depth:** 0.0' **Date:** 12/26/12

Thompson Engineering

Mobile, Alabama

Client: CDM/Thompson Engineering JV
Project: MsCIP Barrier Island Restoration GT
Project No: 1221110095 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	2.4	4.1	15.2	73.1	5.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
.75	100.0		
.5	99.2		
.375	99.2		
#4	97.6		
#10	93.5		
#20	87.7		
#40	78.3		
#60	52.7		
#100	12.8		
#140	6.8		
#200	5.2		

* (no specification provided)

Material Description

Fine to medium grained, SLIGHTLY SILTY SAND, with trace SHELL

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 1.1728 D_{85}= 0.6166 D_{60}= 0.2774
D_{50}= 0.2416 D_{30}= 0.1918 D_{15}= 0.1564
D_{10}= 0.1390 C_u= 2.00 C_c= 0.95

Classification

USCS= SP-SM AASHTO=

Remarks

Location: BI-PBS-83-12 B
Sample Number: 6494 (53) **Depth:** 5.0' **Date:** 12/26/12

Thompson Engineering

Mobile, Alabama

Client: CDM/Thompson Engineering JV
Project: MsCIP Barrier Island Restoration GT
Project No: 1221110095 **Figure**

Boring Designation BI-PBS-084-12

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS East	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-084-12 — LOCATION COORDINATES: E = 1,140,305 N = 228,596	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: — UNDISTURBED (UD): 0
4. NAME OF DRILLER: American Vibracore Systems, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL: — BEARING:	14. WATER DEPTH: 63.7 Ft.
	15. DATE BORING — STARTED: 12-18-12 — COMPLETED: 12-18-12
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -63.6 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 15.5 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Mike FitzHarris, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-63.6	0.0				
-67.7	4.1		SAND, silty, mostly fine-grained sand-sized quartz, some silt, little clay, trace shell fragments, trace clay lenses, dark gray (SM)	A	Classification: SM Color: 5Y 5/2-olive gray D50: 0.195 mm % Fines: 16.7
-69.8	6.2		SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace fines, gray (SP)	B	Classification: SP Color: 2.5Y 6/1-gray D50: 0.2799 mm % Fines: 4.6
-76.8	13.2		CLAY, fat, mostly clay, trace shell fragments, medium to high plasticity, gray (CH)	NS	
-77.4	13.8		SAND, clayey, mostly fine-grained sand-sized quartz, some clay, trace shell fragments, gray (SC)		
-79.1	15.5		SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace fines, 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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.12767° Long = -88.33970°

Project Mississippi Barrier Island Restoration Project

AVS
AMERICAN VIBRACORE SERVICES

Core Identifier BI-PBS-84-12

Coordinate System
Latitude / Longitude

Latitude 30 2.660

Longitude 88 20.382

Date 12/18/2012

Start Time 13:23:33

End Time 13:27:12

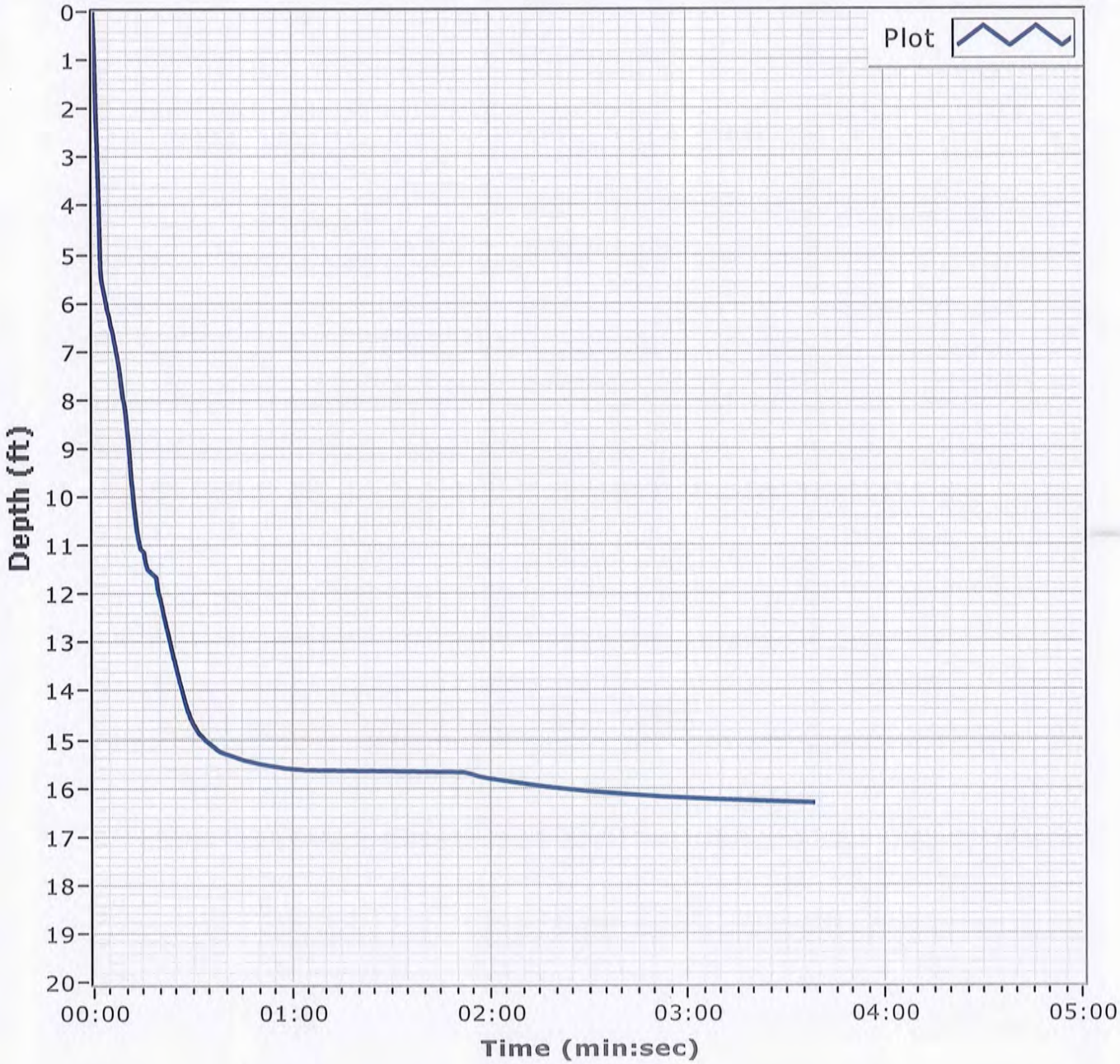
Total Time 00:03:38

Water Depth 63.7'

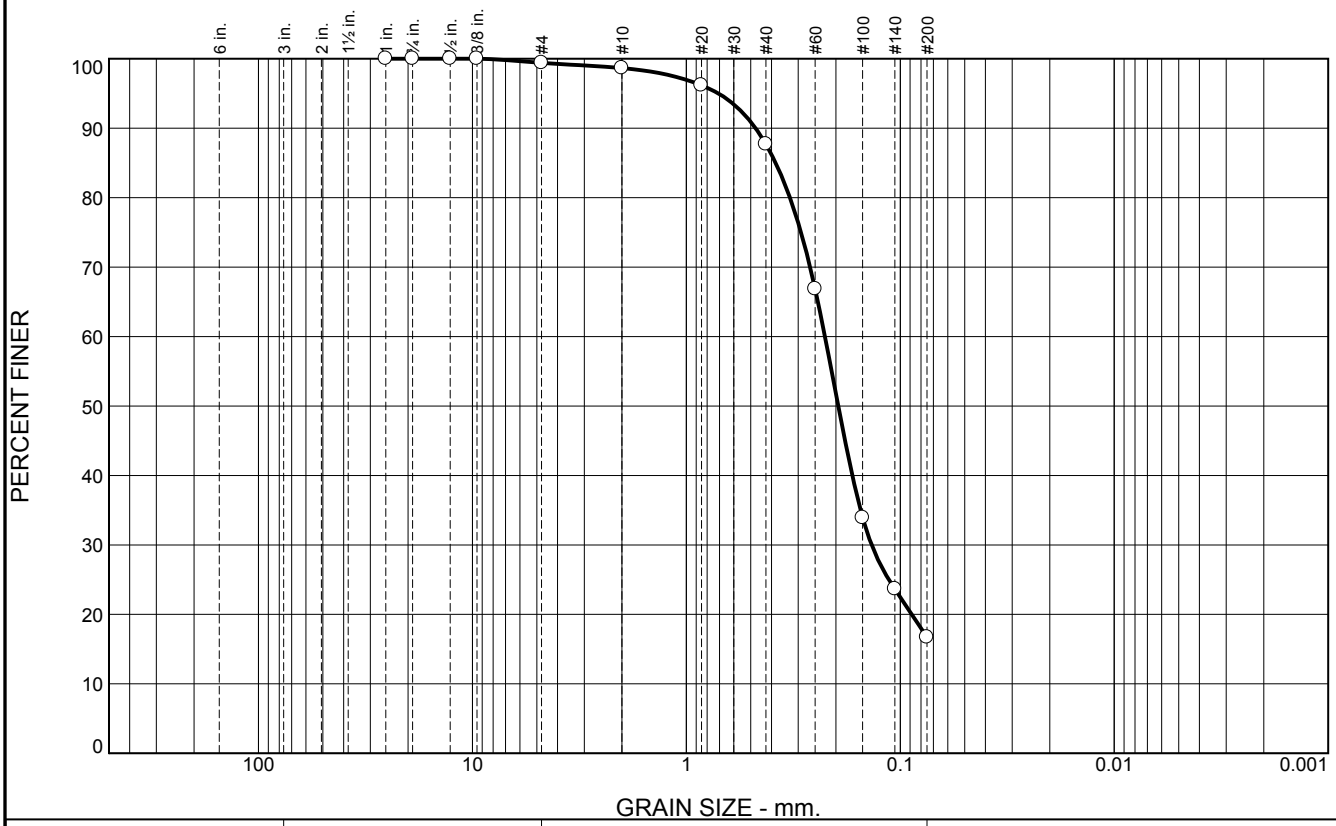
Penetration 16.3'

Recovery 15.5'

Comments



Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.6	0.8	10.9	71.0	16.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
.75	100.0		
.5	100.0		
.375	100.0		
#4	99.4		
#10	98.6		
#20	96.2		
#40	87.7		
#60	66.8		
#100	33.9		
#140	23.7		
#200	16.7		

* (no specification provided)

Material Description

Fine to medium grained, SILTY SAND

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.4751 D_{85}= 0.3824 D_{60}= 0.2249
D_{50}= 0.1950 D_{30}= 0.1362 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO=

Remarks

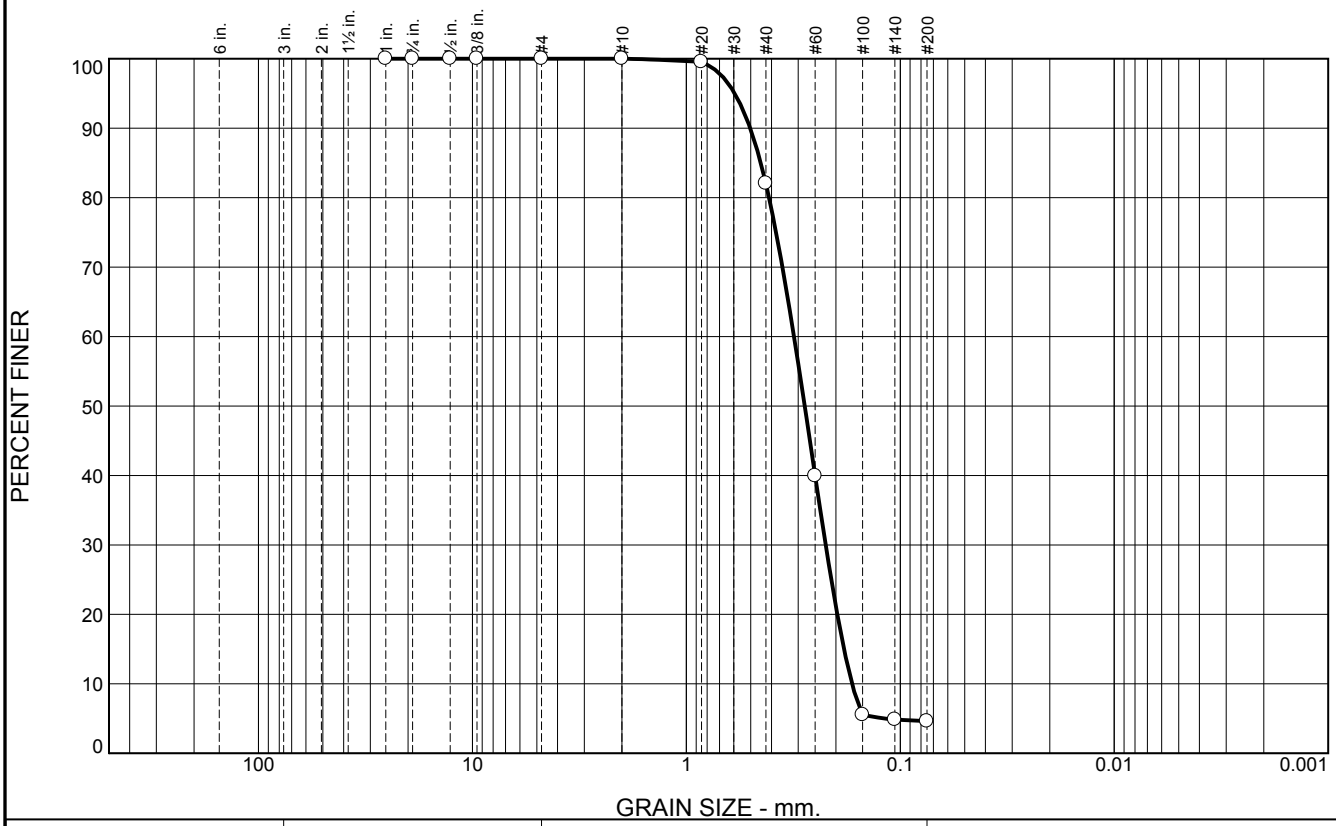
Location: BI-PBS-84-12 A
Sample Number: 6494 (54) **Depth:** 0.0' **Date:** 12/26/12

Thompson Engineering

Mobile, Alabama

Client: CDM/Thompson Engineering JV
Project: MsCIP Barrier Island Restoration GT
Project No: 1221110095 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	18.0	77.4	4.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
.75	100.0		
.5	100.0		
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.5		
#40	82.0		
#60	39.9		
#100	5.5		
#140	4.9		
#200	4.6		

* (no specification provided)

Material Description

Fine to medium grained, SAND

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.5029 D_{85}= 0.4489 D_{60}= 0.3141
D_{50}= 0.2799 D_{30}= 0.2232 D_{15}= 0.1834
D_{10}= 0.1682 C_u= 1.87 C_c= 0.94

Classification

USCS= SP AASHTO=

Remarks

Location: BI-PBS-84-12 B
Sample Number: 6494 (55) **Depth:** 4.1' **Date:** 12/26/12

Thompson Engineering

Mobile, Alabama

Client: CDM/Thompson Engineering JV
Project: MsCIP Barrier Island Restoration GT
Project No: 1221110095 **Figure**

Boring Designation BI-PBS-085-12

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
	South Atlantic	Mobile District	

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS East
2. BORING DESIGNATION	BI-PBS-085-12
LOCATION COORDINATES	E = 1,137,667 N = 233,280
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	American Vibracore Systems, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	18.6 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED: ; UNDISTURBED (UD): 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	56.7 Ft.
15. DATE BORING	STARTED 12-18-12; COMPLETED 12-18-12
16. ELEVATION TOP OF BORING	-56.0 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Mike FitzHarris, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-56.0	0.0				
-57.6	1.6		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little shell fragments, trace fines, gray (SP)	A	Classification: SP Color: 5Y 6/2-light olive gray D50: 0.2999 mm % Fines: 1.2
-63.9	7.9		CLAY, lean, mostly clay, some silt, few shell fragments, some fine-grained sand-sized quartz pockets, gray, lt. gray and orange mottle (CL)	NS	
-64.6	8.6		SAND, clayey, mostly fine-grained sand-sized quartz, some clay, little shell fragments, gray (SC)		
-72.0	16.0		CLAY, lean, mostly clay, some silt, little shell fragments, trace wood debris, gray (CL)		
-74.6	18.6		SAND, clayey, mostly fine-grained sand-sized quartz, some clay, little silt, little shell fragments, dark 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.

3. Seafloor elevation determined from USACE hydrographic survey completed April 2014.

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14058° Long = -88.34798°

Project Mississippi Barrier Island Restoration Project

AVS
AMERICAN VIBRACORE SERVICES

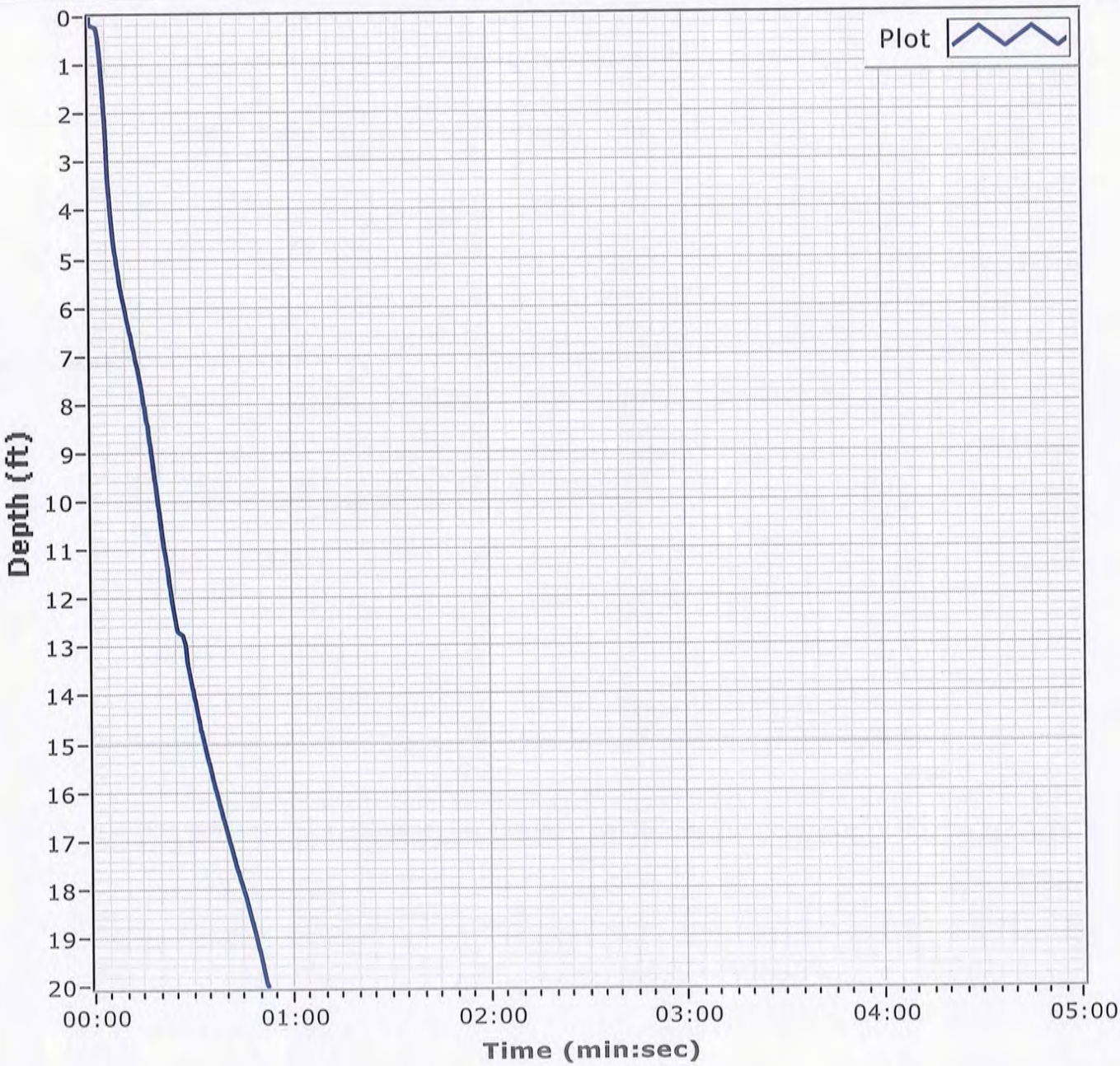
Core Identifier BI-PBS-85-12
Coordinate System
Latitude / Longitude

Latitude 30 8.435
Longitude 88 20.879

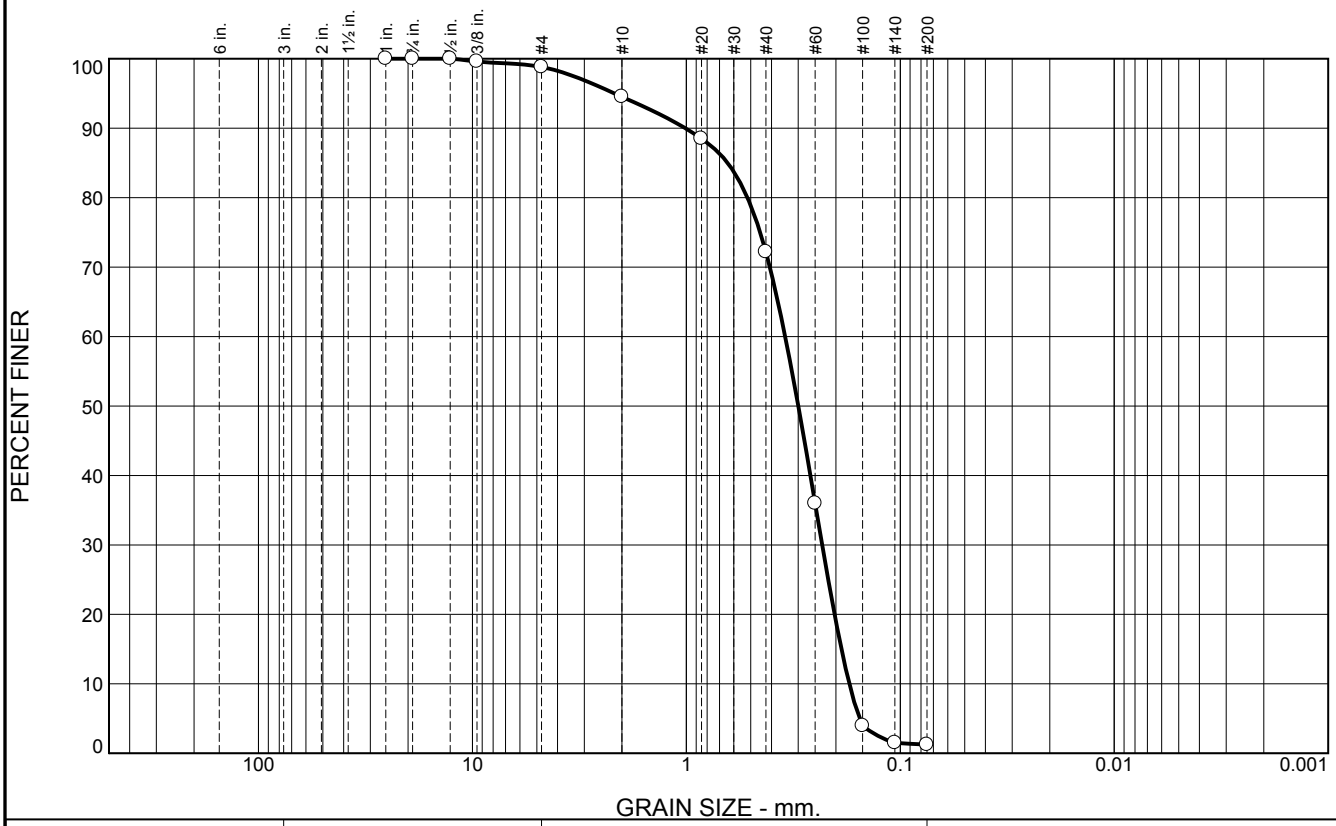
Date 12/18/2012
Start Time 15:25:05
End Time 15:25:58
Total Time 00:00:52

Water Depth 56.7'
Penetration 20.0'
Recovery 17.5'

Comments



Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.2	4.3	22.3	71.0	1.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
.75	100.0		
.5	100.0		
.375	99.6		
#4	98.8		
#10	94.5		
#20	88.5		
#40	72.2		
#60	36.0		
#100	3.9		
#140	1.5		
#200	1.2		

* (no specification provided)

Material Description

Fine to medium grained, SAND, with trace SHELL

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 1.0127 D_{85}= 0.6412 D_{60}= 0.3452
D_{50}= 0.2999 D_{30}= 0.2317 D_{15}= 0.1885
D_{10}= 0.1732 C_u= 1.99 C_c= 0.90

Classification

USCS= SP AASHTO=

Remarks

Location: BI-PBS-85-12 A
Sample Number: 6494 (56) **Depth:** 0.0' **Date:** 12/26/12

Thompson Engineering

Mobile, Alabama

Client: CDM/Thompson Engineering JV
Project: MsCIP Barrier Island Restoration GT
Project No: 1221110095 **Figure**

Boring Designation BI-PBS-086-12

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS East	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-086-12 — LOCATION COORDINATES: E = 1,138,944 N = 231,129	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: — UNDISTURBED (UD): 0
4. NAME OF DRILLER: American Vibracore Systems, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL: — BEARING:	14. WATER DEPTH: 54.7 Ft.
	15. DATE BORING — STARTED: 12-18-12 — COMPLETED: 12-18-12
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -54.7 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 17.8 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Mike FitzHarris, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-54.7	0.0				
-58.3	3.6		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace fines, trace shell fragments, gray (SP)	A	Classification: SP Color: 5Y 6/2-light olive gray D50: 0.204 mm % Fines: 3.1
-60.6	5.9		SAND, silty, mostly fine-grained sand-sized quartz, some silt, little shell fragments, trace clay, gray (SM)	B	Classification: SM Color: 5Y 5/2-olive gray D50: 0.1926 mm % Fines: 13.2
-62.5	7.8		CLAY, lean, mostly clay, some silt, few fine-grained sand-sized quartz, trace shell fragments, gray with some orange mottle (CL)	NS	
-63.7	9.0		CLAY, fat, mostly clay, few silt, trace fine-grained sand-sized quartz, low to medium plasticity, gray, orange mottle (CH)		
-64.5	9.8				
-66.0	11.3		SAND, silty, mostly fine-grained sand-sized quartz, some silt, gray (SM)		
			CLAY, lean, mostly clay, some silt, little fine-grained sand-sized quartz, stiff, gray (CL)		
-72.5	17.8		CLAY, fat, mostly clay, trace wood debris, trace shell fragments, stiff, medium to high plasticity, trace fine-grained sandy pockets, 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.

3. Seafloor elevation determined from USACE hydrographic survey completed April 2014.

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.13465° Long = -88.34397°

Project Mississippi Barrier Island Restoration Project

AVS
AMERICAN VIBRACORE SERVICES

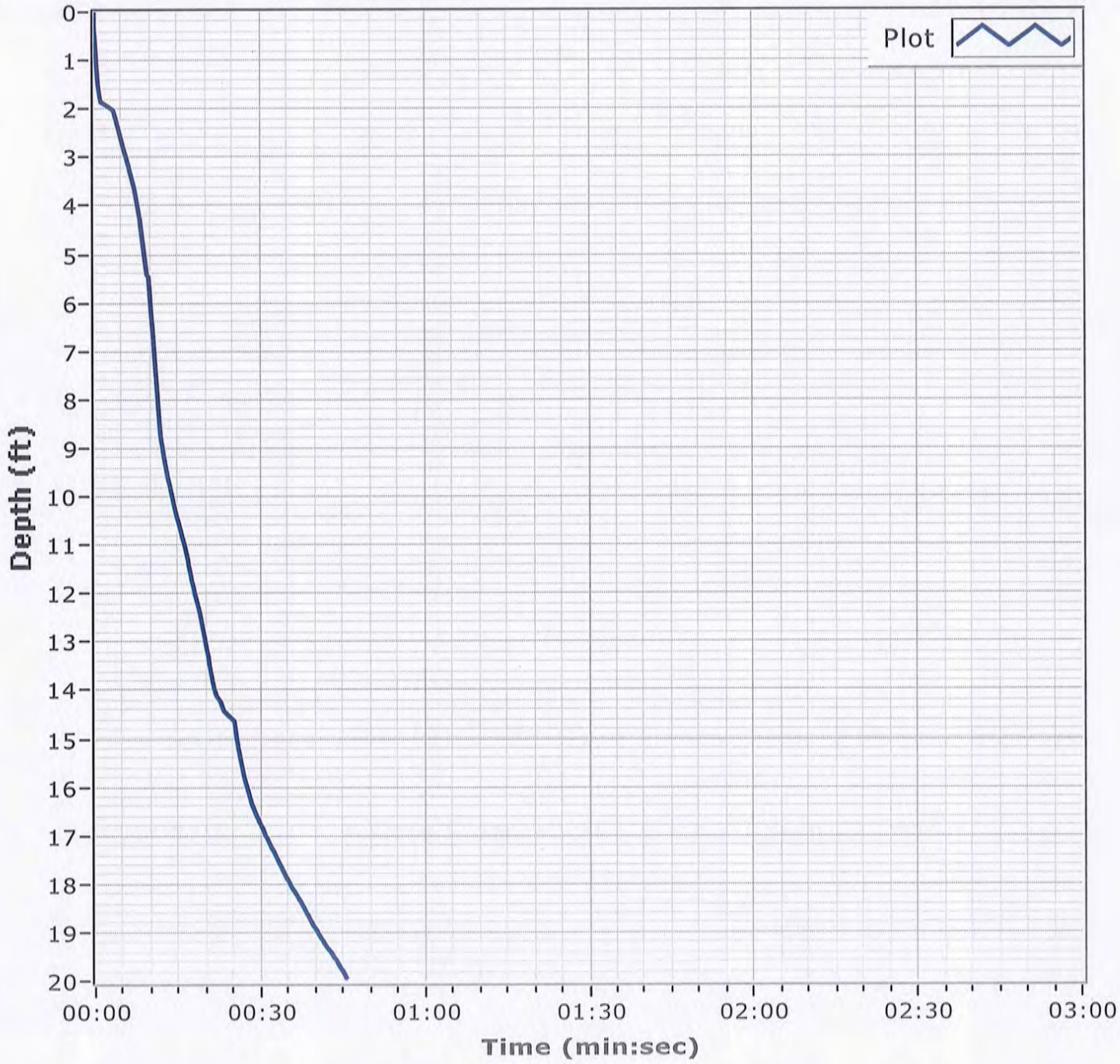
Core Identifier BI-PBS-86-12
Coordinate System
Latitude / Longitude

Latitude 30 8.079
Longitude 88 20.638

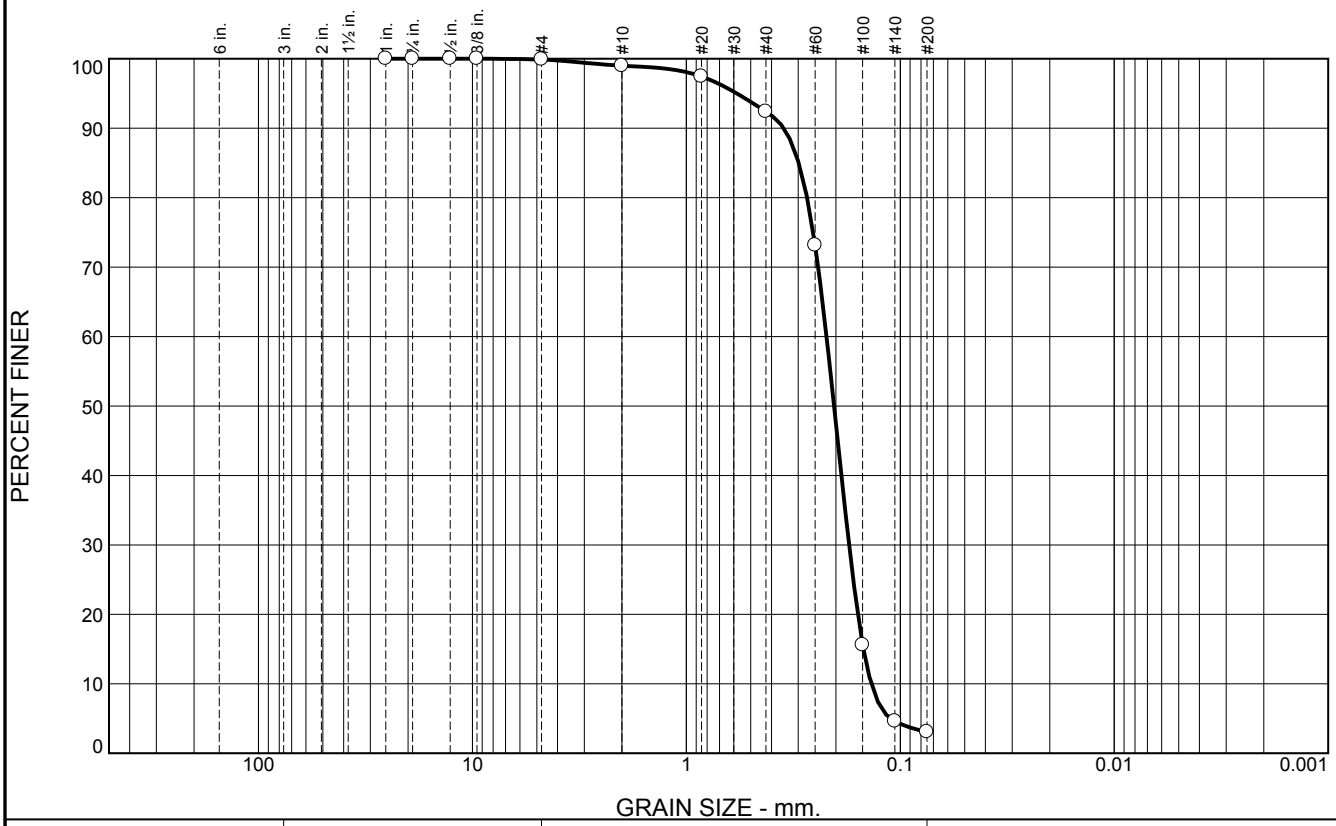
Date 12/18/2012
Start Time 14:23:55
End Time 14:24:41
Total Time 00:00:45

Water Depth 54.7'
Penetration 20.0'
Recovery 17.5'

Comments



Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.9	6.6	89.3	3.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
3/4"	100.0		
1/2"	100.0		
.375	100.0		
#4	99.9		
#10	99.0		
#20	97.4		
#40	92.4		
#60	73.1		
#100	15.6		
#140	4.6		
#200	3.1		

* (no specification provided)

Material Description

Fine grained, SAND

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.3506 D_{85}= 0.2987 D_{60}= 0.2211
D_{50}= 0.2040 D_{30}= 0.1736 D_{15}= 0.1488
D_{10}= 0.1366 C_u= 1.62 C_c= 1.00

Classification

USCS= SP AASHTO=

Remarks

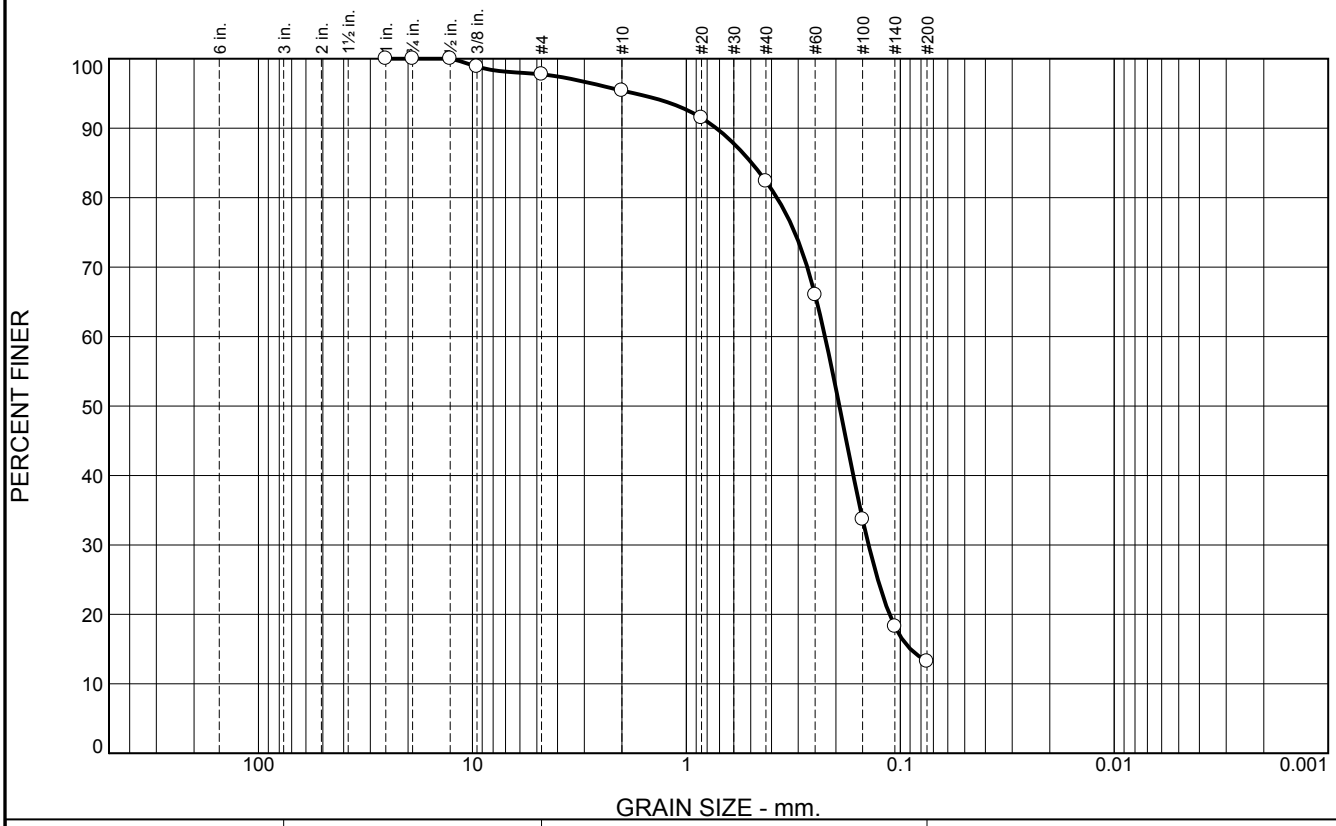
Location: BI-PBS-86-12 A
Sample Number: 6494 (57) **Depth:** 0.0' **Date:** 12/26/12

Thompson Engineering

Mobile, Alabama

Client: CDM/Thompson Engineering JV
Project: MsCIP Barrier Island Restoration GT
Project No: 1221110095 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	2.3	2.3	13.0	69.2	13.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
.75	100.0		
.5	100.0		
.375	98.9		
#4	97.7		
#10	95.4		
#20	91.5		
#40	82.4		
#60	66.0		
#100	33.7		
#140	18.3		
#200	13.2		

* (no specification provided)

Material Description

Fine to medium grained, SILTY SAND, with trace SHELL

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.7251 D_{85}= 0.4956 D_{60}= 0.2248
D_{50}= 0.1926 D_{30}= 0.1407 D_{15}= 0.0897
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO=

Remarks

Location: BI-PBS-86-12 B
Sample Number: 6494 (58) **Depth:** 3.6' **Date:** 12/26/12

Thompson Engineering

Mobile, Alabama

Client: CDM/Thompson Engineering JV
Project: MsCIP Barrier Island Restoration GT
Project No: 1221110095 **Figure**

Boring Designation BI-PBS-087-12

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS East	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-087-12 — LOCATION COORDINATES: E = 1,140,125 N = 231,570	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: — UNDISTURBED (UD): 0
4. NAME OF DRILLER: American Vibracore Systems, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL: — BEARING:	14. WATER DEPTH: 53.1 Ft.
	15. DATE BORING — STARTED: 12-18-12 — COMPLETED: 12-18-12
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -53.2 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 18.8 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Mike FitzHarris, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-53.2	0.0				
-58.2	5.0		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace fines, trace shell fragments, gray (SP)	A	Classification: SP Color: 5Y 6/2-light olive gray D50: 0.258 mm % Fines: 1.5
-59.6	6.4		SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace fines, trace shell fragments, gray (SP)	B	Classification: SP Color: 5Y 6/2-light olive gray D50: 0.2058 mm % Fines: 4.5
-66.0	12.8		CLAY, lean, mostly clay, some silt, some fine-grained sand-sized quartz, low to medium plasticity, stiff, gray, orangy brown mottle (CL)	NS	
-68.2	15.0		SAND, clayey, mostly fine-grained sand-sized quartz, some clay, some silt, borderline silty clay with fine-grained sand, gray (SC)		
-72.0	18.8		CLAY, lean, mostly clay, some silt, some fine-grained sand-sized quartz, trace shell fragments, 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.

3. Seafloor elevation determined from USACE hydrographic survey completed April 2014.

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.13585° Long = -88.34023°

Project Mississippi Barrier Island Restoration Project

AVS
AMERICAN VIBRACORE SERVICES

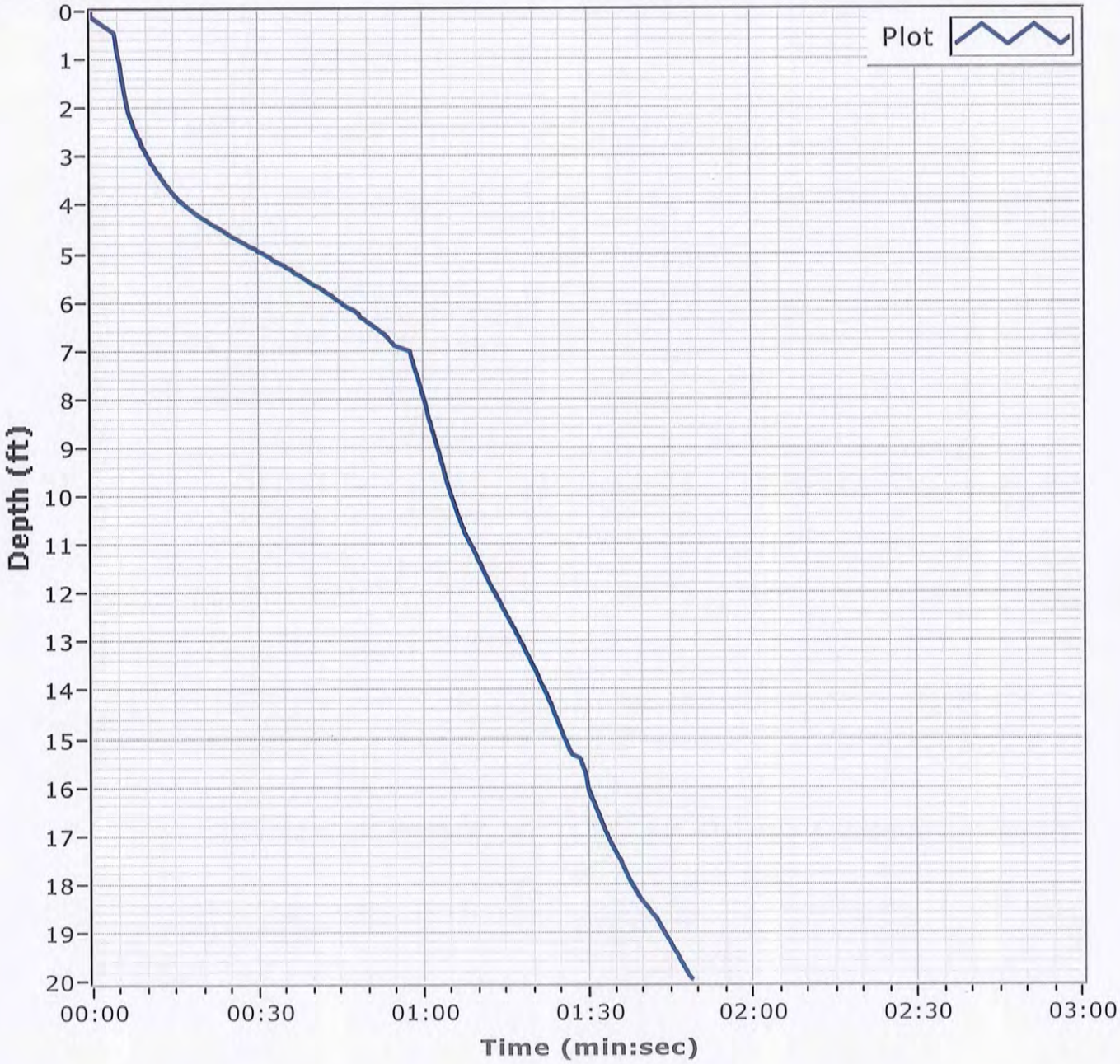
Core Identifier BI-PBS-87-12
Coordinate System
Latitude / Longitude

Latitude 30 8.151
Longitude 88 20.414

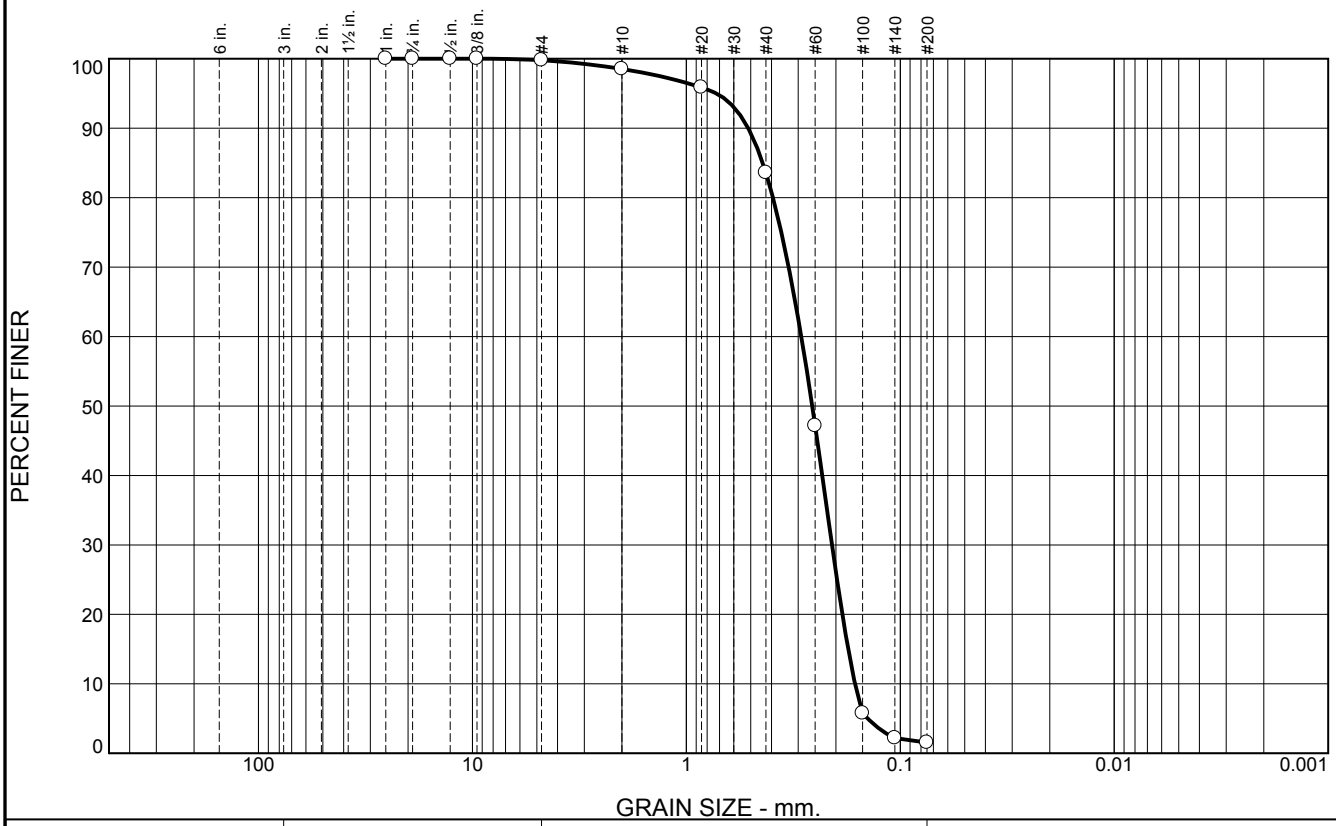
Date 12/18/2012
Start Time 14:54:33
End Time 14:56:22
Total Time 00:01:49

Water Depth 53.1'
Penetration 20.0'
Recovery 17.5'

Comments



Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	1.3	14.9	82.1	1.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
.75	100.0		
.5	100.0		
.375	100.0		
#4	99.8		
#10	98.5		
#20	95.9		
#40	83.6		
#60	47.2		
#100	5.8		
#140	2.2		
#200	1.5		

* (no specification provided)

Material Description

Fine to medium grained, SAND

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.5142 D_{85}= 0.4397 D_{60}= 0.2904
D_{50}= 0.2580 D_{30}= 0.2086 D_{15}= 0.1753
D_{10}= 0.1630 C_u= 1.78 C_c= 0.92

Classification

USCS= SP AASHTO=

Remarks

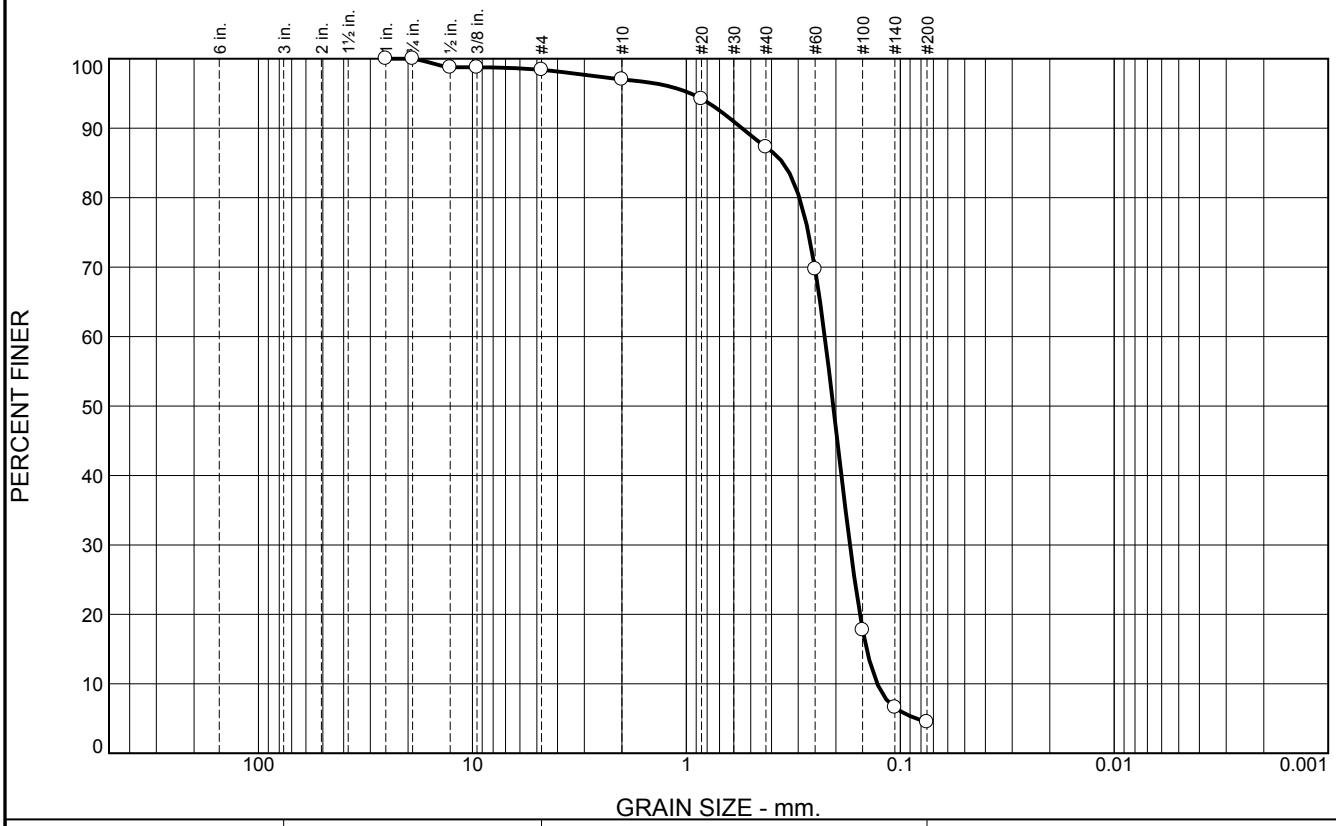
Location: BI-PBS-87-12 A
Sample Number: 6494 (59) **Depth:** 0.0' **Date:** 12/26/12

Thompson Engineering

Mobile, Alabama

Client: CDM/Thompson Engineering JV
Project: MsCIP Barrier Island Restoration GT
Project No: 1221110095 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.6	1.4	9.7	82.8	4.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
.75	100.0		
.5	98.8		
.375	98.8		
#4	98.4		
#10	97.0		
#20	94.2		
#40	87.3		
#60	69.7		
#100	17.8		
#140	6.6		
#200	4.5		

* (no specification provided)

Material Description

Fine grained, SAND, with trace SHELL

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.5497 D_{85}= 0.3532 D_{60}= 0.2254
D_{50}= 0.2058 D_{30}= 0.1721 D_{15}= 0.1437
D_{10}= 0.1281 C_u= 1.76 C_c= 1.02

Classification

USCS= SP AASHTO=

Remarks

Location: BI-PBS-87-12 B
Sample Number: 6494 (60) **Depth:** 5.0' **Date:** 12/26/12

Thompson Engineering

Mobile, Alabama

Client: CDM/Thompson Engineering JV
Project: MsCIP Barrier Island Restoration GT
Project No: 1221110095 **Figure**

Boring Designation BI-PBS-088-12

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS East	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-088-12 — LOCATION COORDINATES: E = 1,139,419 N = 230,301	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: — UNDISTURBED (UD): 0
4. NAME OF DRILLER: American Vibracore Systems, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL: — BEARING:	14. WATER DEPTH: 56.3 Ft.
	15. DATE BORING — STARTED: 12-18-12 — COMPLETED: 12-18-12
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -56.3 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 17.5 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Mike FitzHarris, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-56.3	0.0				
-61.3	5.0		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace fines, trace shell fragments, gray (SP)	A	Classification: SP Color: 5Y 6/2-light olive gray D50: 0.2311 mm % Fines: 2.6
-62.4	6.1		SAND, silty, mostly fine-grained sand-sized quartz, some silt, trace shell fragments, some clayey nodules, gray (SM)	B	Classification: SM Color: 5Y 5/2-olive gray D50: 0.2 mm % Fines: 14.4
-64.5	8.2		CLAY, lean, mostly clay, trace silt, trace fine-grained sand-sized quartz, low to medium plasticity, gray and orange mottle (CL)	NS	
-67.3	11.0		SAND, silty, mostly fine-grained sand-sized quartz, some silt, few clay lenses, grayish brown (SM)	NS	
-73.8	17.5		CLAY, fat, mostly clay, trace wood debris, zones of trace fine-grained sand, medium to high plasticity, greenish 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.

3. Seafloor elevation determined from USACE hydrographic survey completed April 2014.

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.13237° Long = -88.34248°

Project Mississippi Barrier Island Restoration Project

AVS
AMERICAN VIBRACORE SERVICES

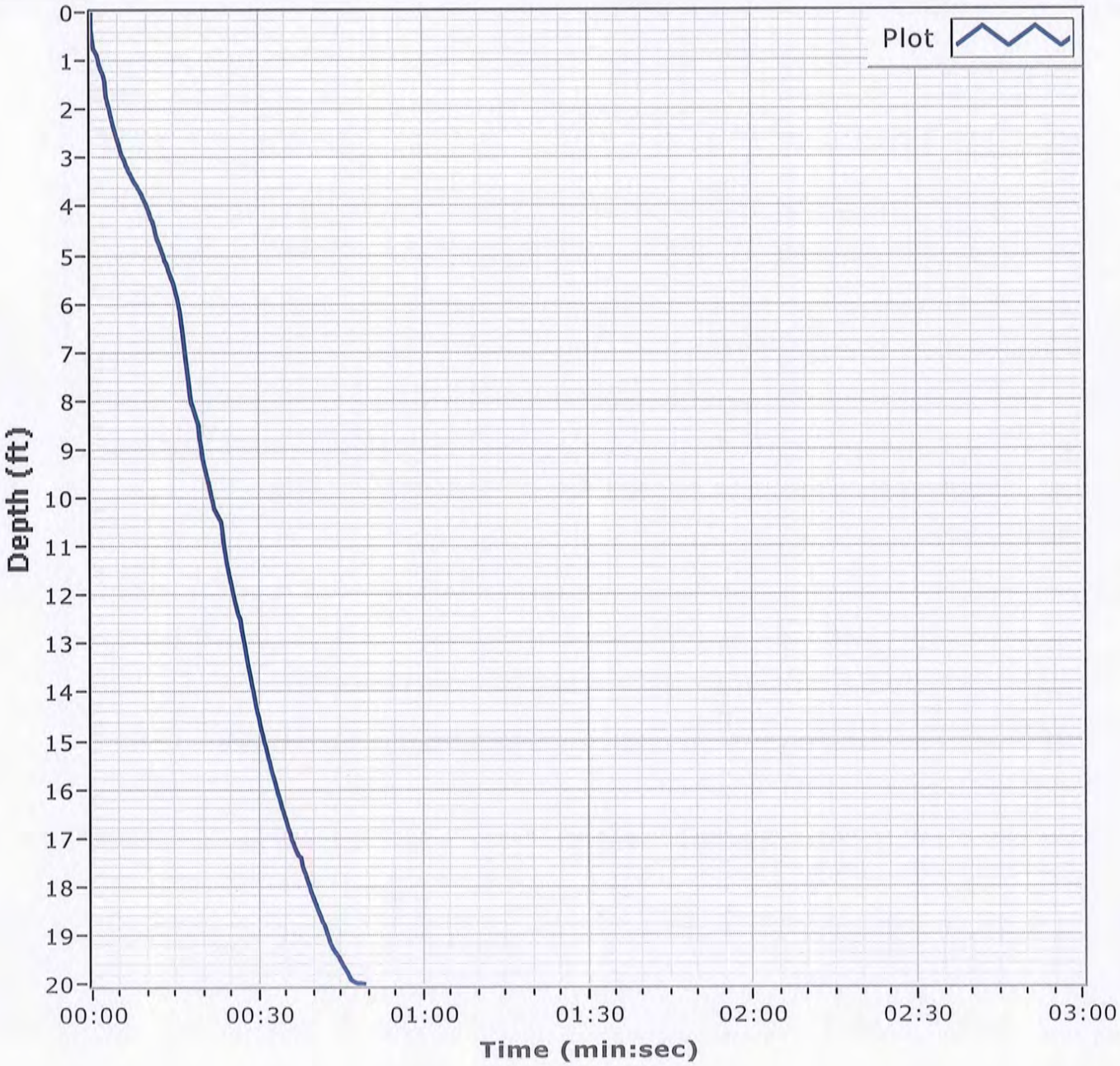
Core Identifier BI-PBS-88-12
Coordinate System
Latitude / Longitude

Latitude 30 7.942
Longitude 88 20.549

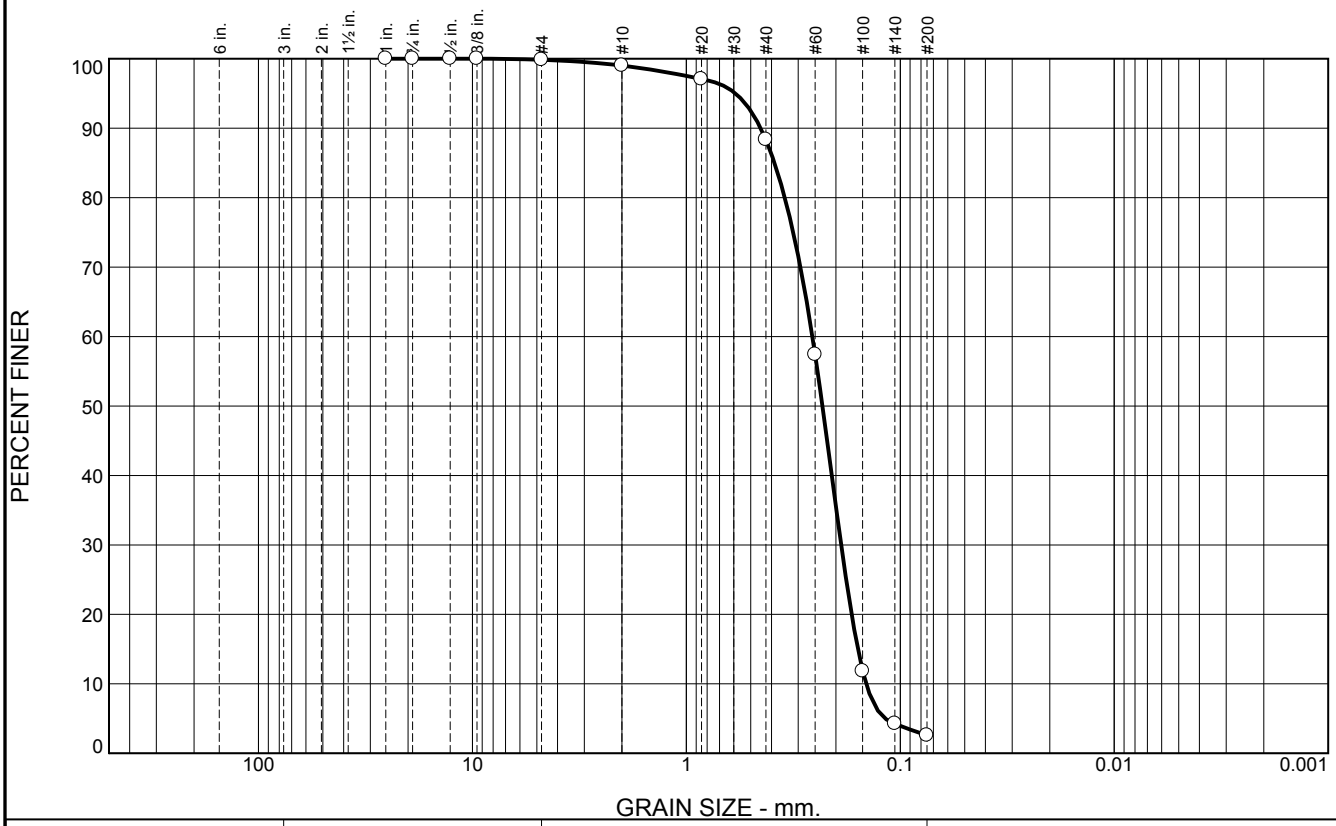
Date 12/18/2012
Start Time 13:54:14
End Time 13:55:04
Total Time 00:00:49

Water Depth 56.3'
Penetration 20.0'
Recovery 17.5'

Comments



Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.8	10.7	85.7	2.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
.75	100.0		
.5	100.0		
.375	100.0		
#4	99.8		
#10	99.0		
#20	97.1		
#40	88.3		
#60	57.4		
#100	11.8		
#140	4.3		
#200	2.6		

* (no specification provided)

Material Description

Fine to medium grained, SAND

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.4498 D_{85}= 0.3872 D_{60}= 0.2575
D_{50}= 0.2311 D_{30}= 0.1890 D_{15}= 0.1580
D_{10}= 0.1444 C_u= 1.78 C_c= 0.96

Classification

USCS= SP AASHTO=

Remarks

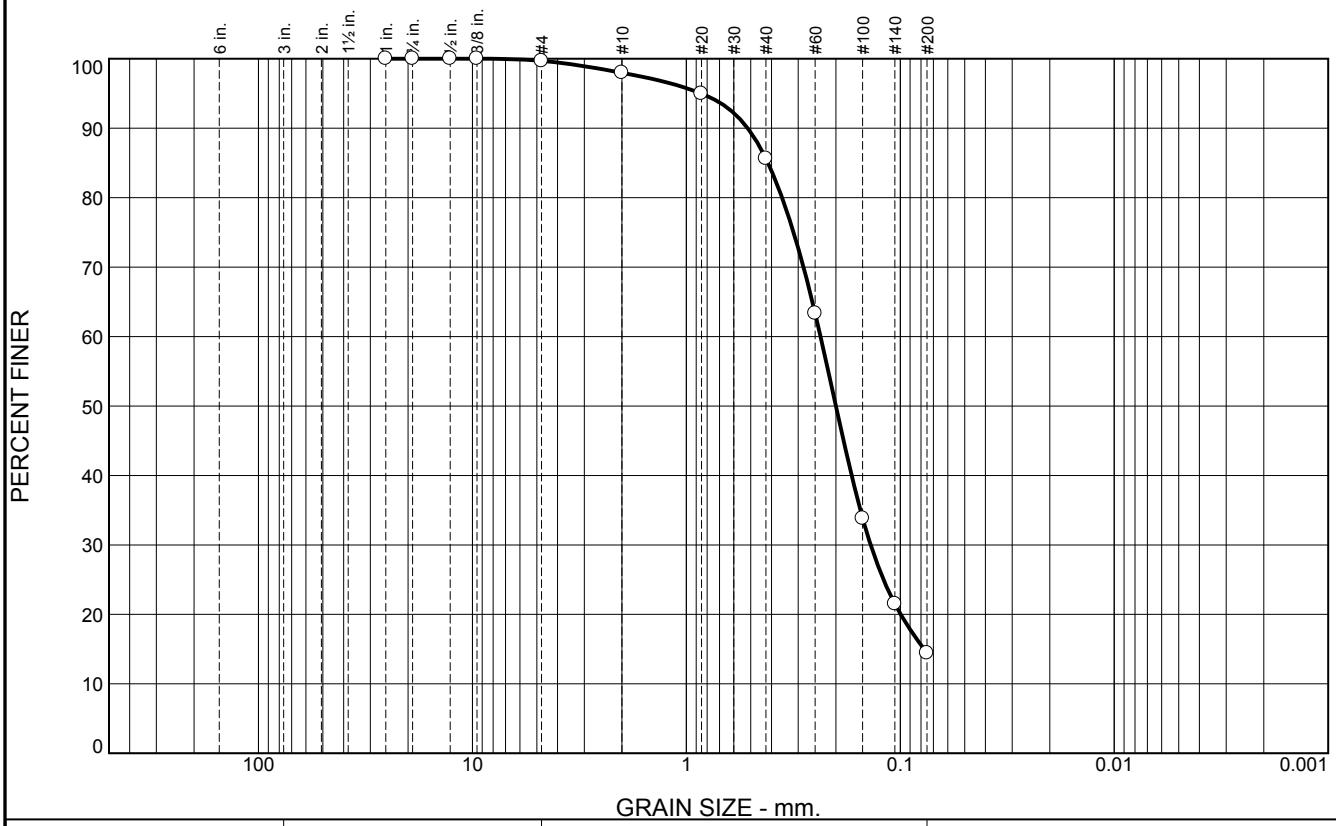
Location: BI-PBS-88-12 A
Sample Number: 6494 (61) **Depth:** 0.0' **Date:** 12/26/12

Thompson Engineering

Mobile, Alabama

Client: CDM/Thompson Engineering JV
Project: MsCIP Barrier Island Restoration GT
Project No: 1221110095 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.3	1.7	12.4	71.2	14.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
.75	100.0		
.5	100.0		
.375	100.0		
#4	99.7		
#10	98.0		
#20	95.0		
#40	85.6		
#60	63.3		
#100	33.8		
#140	21.5		
#200	14.4		

* (no specification provided)

Material Description

Fine to medium grained, SILTY SAND

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.5171 D_{85}= 0.4155 D_{60}= 0.2359
D_{50}= 0.2000 D_{30}= 0.1376 D_{15}= 0.0774
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO=

Remarks

Location: BI-PBS-88-12 B
Sample Number: 6494 (62) **Depth:** 5.1' **Date:** 12/26/12

Thompson Engineering

Mobile, Alabama

Client: CDM/Thompson Engineering JV
Project: MsCIP Barrier Island Restoration GT
Project No: 1221110095 **Figure**

Boring Designation BI-PBS-094-12

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
	South Atlantic	Mobile District	

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS West
2. BORING DESIGNATION	BI-PBS-094-12
LOCATION COORDINATES	E = 1,099,813 N = 234,812
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	American Vibracore Systems, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	19.5 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED: ; UNDISTURBED (UD): 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	40 Ft.
15. DATE BORING	STARTED 01-05-13; COMPLETED 01-05-13
16. ELEVATION TOP OF BORING	-40.3 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Mike FitzHarris, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-40.3	0.0				
-44.8	4.5		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little shell fragments, trace fines, lt. gray (SP)	A	Classification: SP-SM Color: 5Y 6/2-light olive gray D50: 0.2448 mm % Fines: 5.4
-47.3	7.0		SAND, poorly-graded with silt, mostly fine to medium-grained sand-sized quartz, few silt, trace shell fragments, gray (SP-SM)	B	Classification: SP Color: 5Y 7/2-light gray D50: 0.3252 mm % Fines: 1.1
-50.3	10.0		SAND, silty, mostly fine-grained sand-sized quartz, some silt, trace shell fragments, gray (SM)	C	Classification: SP-SM Color: 5Y 5/2-olive gray D50: 0.2122 mm % Fines: 7.7
-55.5	15.2		SILT, inorganic-L, mostly silt, some fine-grained sand-sized quartz, trace shell fragments, trace clay, gray (ML)	NS	
-59.8	19.5		CLAY, lean, mostly clay, some silt, some fine-grained sand-sized quartz, trace shell fragments, soft, gray (CL) At El. -56.9 Ft., mostly clay, trace silt, trace shell fragments, stiff, low to medium plasticity, red, orange, greenish gray, gray mottle		

NOTES:

1. Soils are field visually classified in accordance with the Unified Soils Classification System.

2. NS = Sample not submitted for laboratory analysis from this interval.

3. Seafloor elevation determined from 10/16/2014 USACE survey.

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14518° Long = -88.46772°

Project Mississippi Barrier Island Restoration Project

AVS
AMERICAN VIBRACORE SERVICES

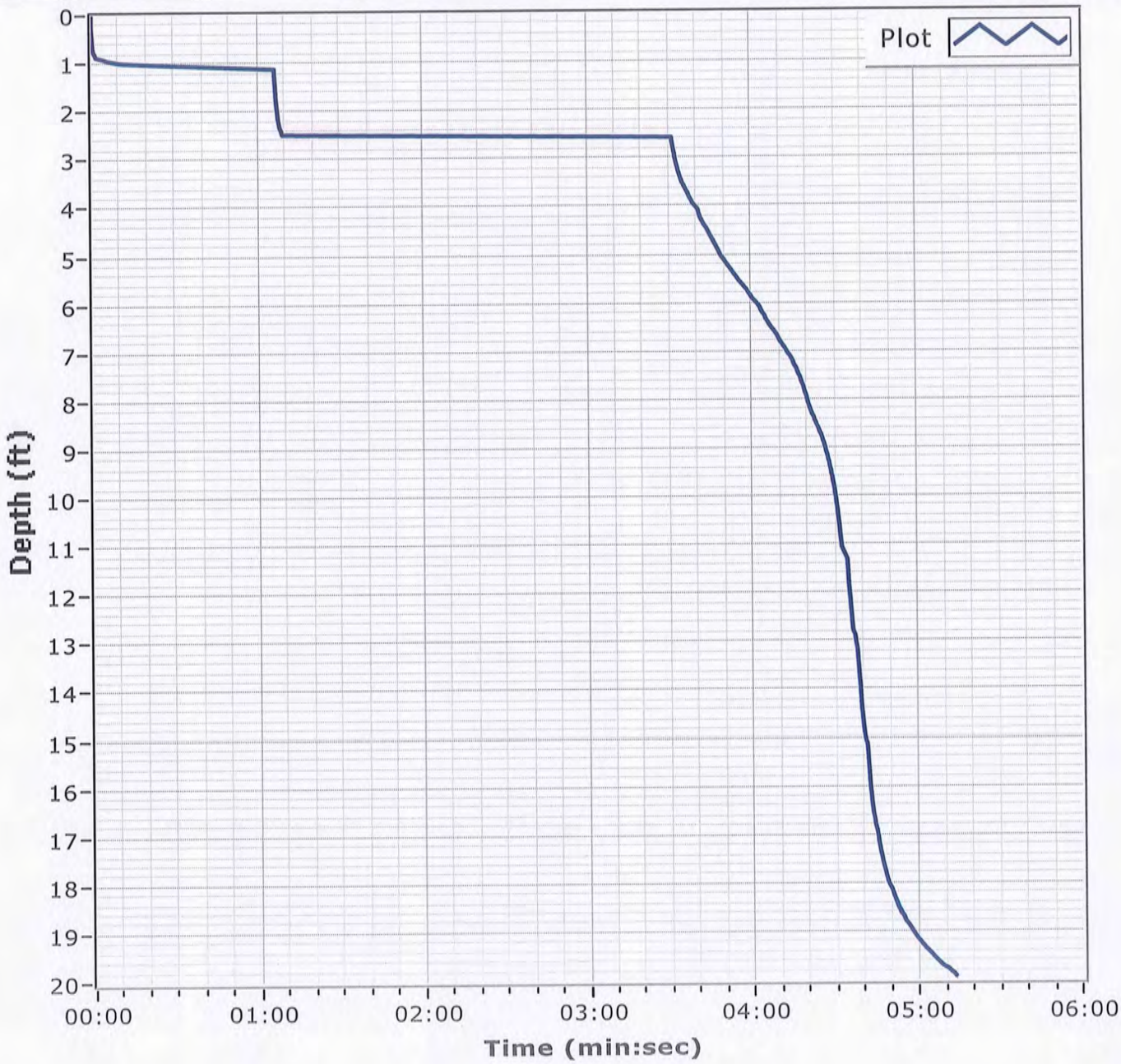
Core Identifier BI-PBS-94-12
Coordinate System
Latitude / Longitude

Latitude 30 11.088 N
Longitude 088 28.063 W

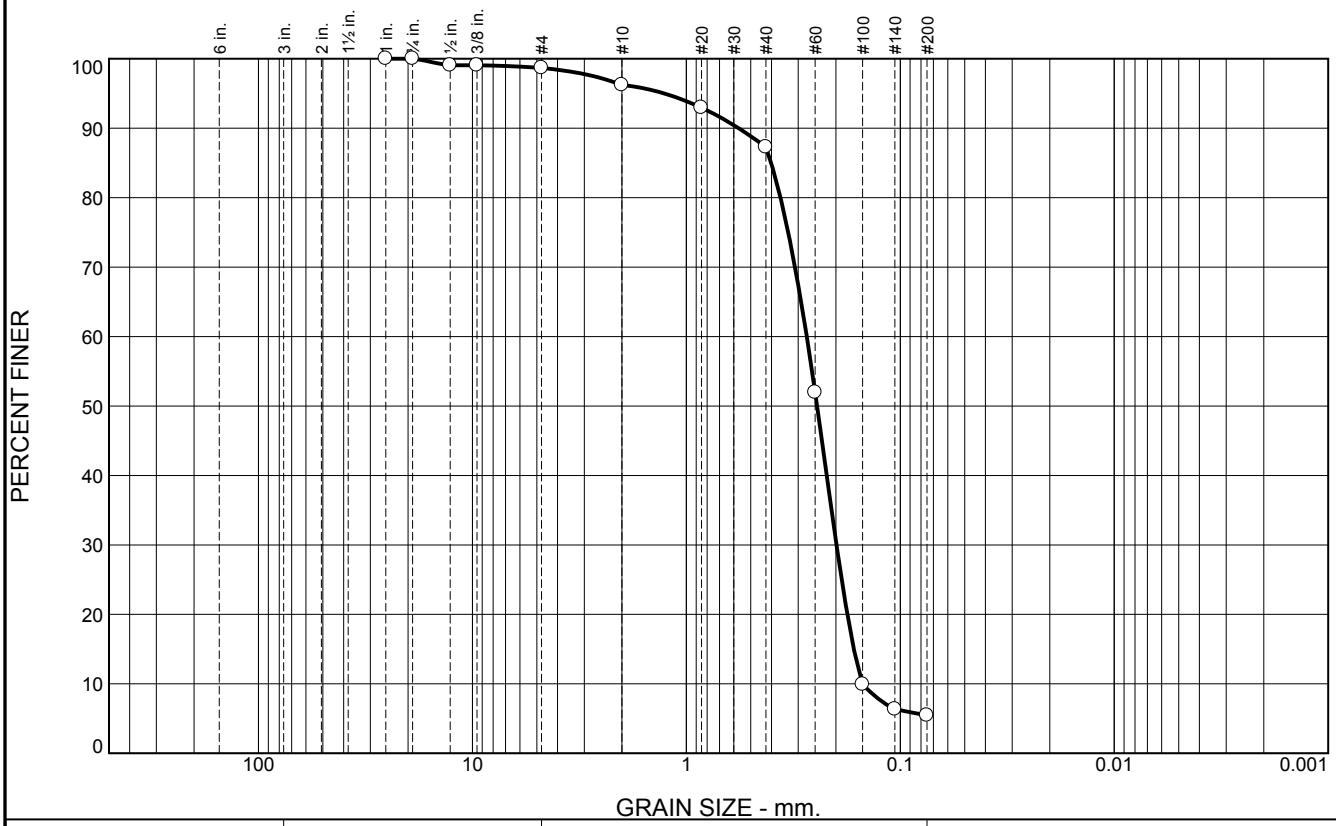
Date 01/05/2013
Start Time 14:05:29
End Time 14:10:43
Total Time 00:05:13

Water Depth 40.0'
Penetration 20.0'
Recovery 19.5'

Comments
NOTE: VIBRATOR QUIT THEN RESTARTED



Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.3	2.5	8.9	81.9	5.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
.75	100.0		
.5	99.0		
.375	99.0		
#4	98.7		
#10	96.2		
#20	92.9		
#40	87.3		
#60	52.0		
#100	9.9		
#140	6.4		
#200	5.4		

* (no specification provided)

Material Description

Fine grained, SLIGHTLY SILTY SAND, with trace SHELL

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.5705 D_{85}= 0.4015 D_{60}= 0.2737
D_{50}= 0.2448 D_{30}= 0.1987 D_{15}= 0.1650
D_{10}= 0.1503 C_u= 1.82 C_c= 0.96

Classification

USCS= SP-SM AASHTO=

Remarks

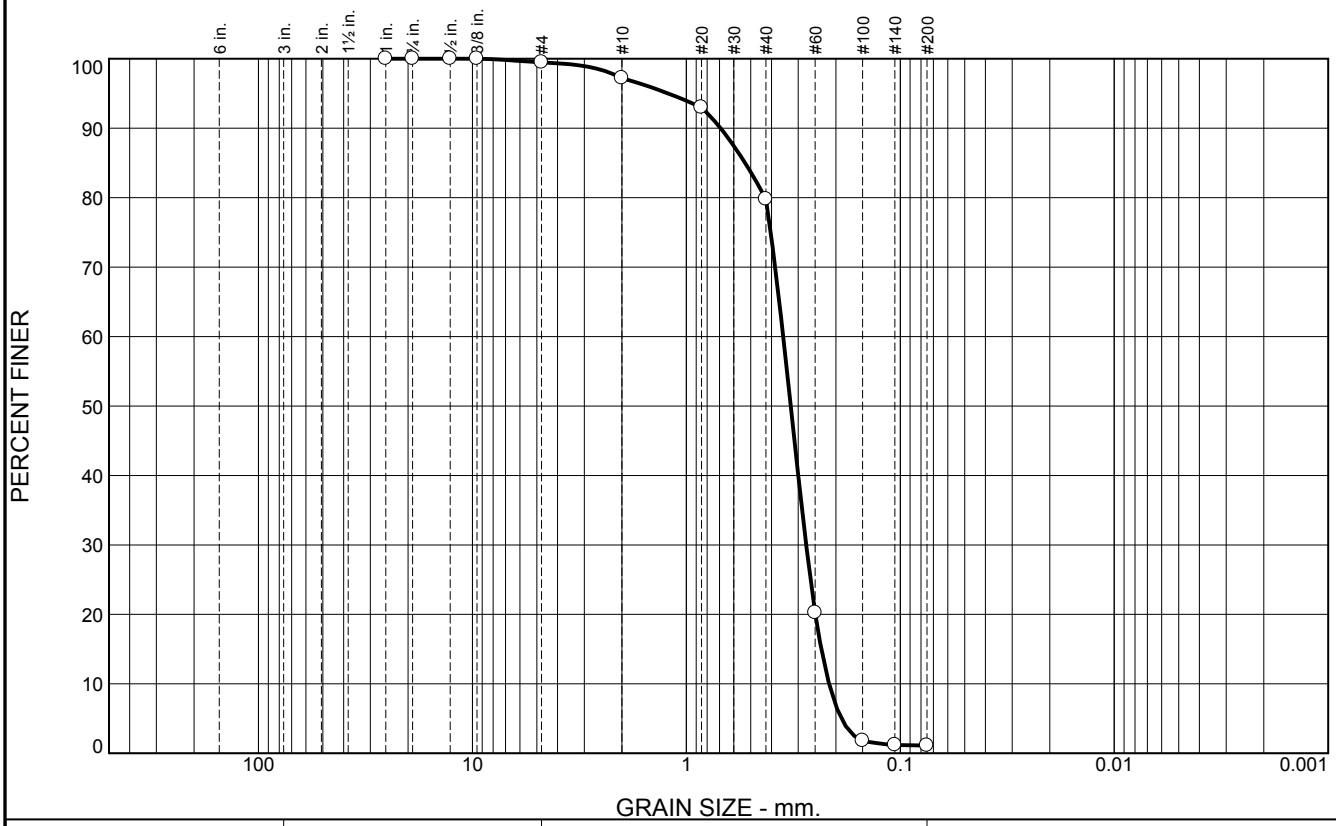
Location: BI-PBS-94-12 A
Sample Number: 6503 (15) **Depth:** 0.0' **Date:** 1/08/13

Thompson Engineering

Mobile, Alabama

Client: CDM/Thompson Engineering JV
Project: MsCIP Barrier Island Restoration GT
Project No: 1221110095 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.5	2.3	17.4	78.7	1.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
.75	100.0		
.5	100.0		
.375	100.0		
#4	99.5		
#10	97.2		
#20	93.0		
#40	79.8		
#60	20.2		
#100	1.8		
#140	1.2		
#200	1.1		

* (no specification provided)

Material Description

Fine grained, SAND

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.6926 D_{85}= 0.5316 D_{60}= 0.3526
D_{50}= 0.3252 D_{30}= 0.2755 D_{15}= 0.2339
D_{10}= 0.2152 C_u= 1.64 C_c= 1.00

Classification

USCS= SP AASHTO=

Remarks

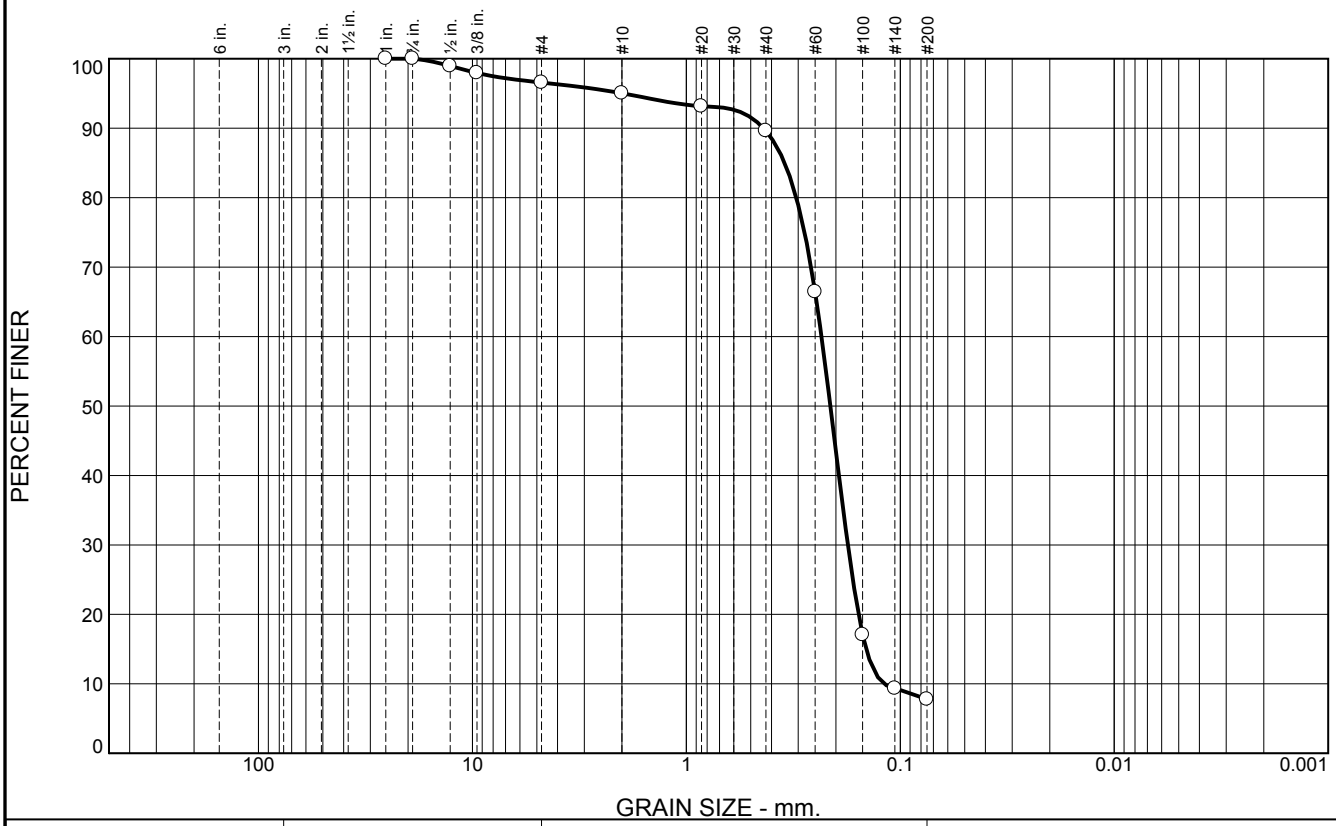
Location: BI-PBS-94-12 B
Sample Number: 6503 (16) **Depth:** 4.5' **Date:** 1/08/13

Thompson Engineering

Mobile, Alabama

Client: CDM/Thompson Engineering JV
Project: MsCIP Barrier Island Restoration GT
Project No: 1221110095 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	3.4	1.6	5.4	81.9	7.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
.75	100.0		
.5	98.9		
.375	97.9		
#4	96.6		
#10	95.0		
#20	93.2		
#40	89.6		
#60	66.4		
#100	17.0		
#140	9.3		
#200	7.7		

* (no specification provided)

Material Description

Fine grained, SLIGHTLY SILTY SAND, with trace SHELL

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.4367 D_{85}= 0.3473 D_{60}= 0.2335
D_{50}= 0.2122 D_{30}= 0.1759 D_{15}= 0.1444
D_{10}= 0.1190 C_u= 1.96 C_c= 1.11

Classification

USCS= SP-SM AASHTO=

Remarks

Location: BI-PBS-94-12 C
Sample Number: 6503 (17) **Depth:** 7.0' **Date:** 1/08/13

Thompson Engineering

Mobile, Alabama

Client: CDM/Thompson Engineering JV
Project: MsCIP Barrier Island Restoration GT
Project No: 1221110095 **Figure**

Boring Designation BI-PBS-095-12

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-095-12 — LOCATION COORDINATES: E = 1,102,745 N = 240,967	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: — UNDISTURBED (UD): 0
4. NAME OF DRILLER: American Vibracore Systems, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL: — BEARING:	14. WATER DEPTH: 43.8 Ft.
	15. DATE BORING — STARTED: 01-05-13 — COMPLETED: 01-05-13
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -42.7 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 17.9 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Mike FitzHarris, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-42.7	0.0				
-44.9	2.2		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little shell fragments, trace fines, lt. gray (SP)	A	Classification: SP Color: 5Y 6/2-light olive gray D50: 0.32 mm % Fines: 1.2
-46.9	4.2		SAND, silty, mostly fine-grained sand-sized quartz, some silt, trace shell fragments, gray (SM)	B	Classification: SP-SM Color: 5Y 5/2-olive gray D50: 0.1954 mm % Fines: 10.5
-51.7	9.0		SILT, inorganic-L, mostly silt, some sand, trace clay, trace shell fragments, gray (ML)	NS	
-54.4	11.7		CLAY, fat, mostly clay, trace shell fragments, trace pockets of fine-grained sand, high plasticity, gray (CH)		
-60.6	17.9		CLAY, lean, mostly clay, trace shell fragments, soft becoming very stiff at depth, also becomes siltier with depth to 15.9 ft., becomes a CH at 17 ft., lt. gray, orangy brown,and gray mottle (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.

3. Seafloor elevation determined from 10/28/2014 USACE survey.

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.16208° Long = -88.45838°

Project Mississippi Barrier Island Restoration Project

AVS
AMERICAN VIBRACORE SERVICES

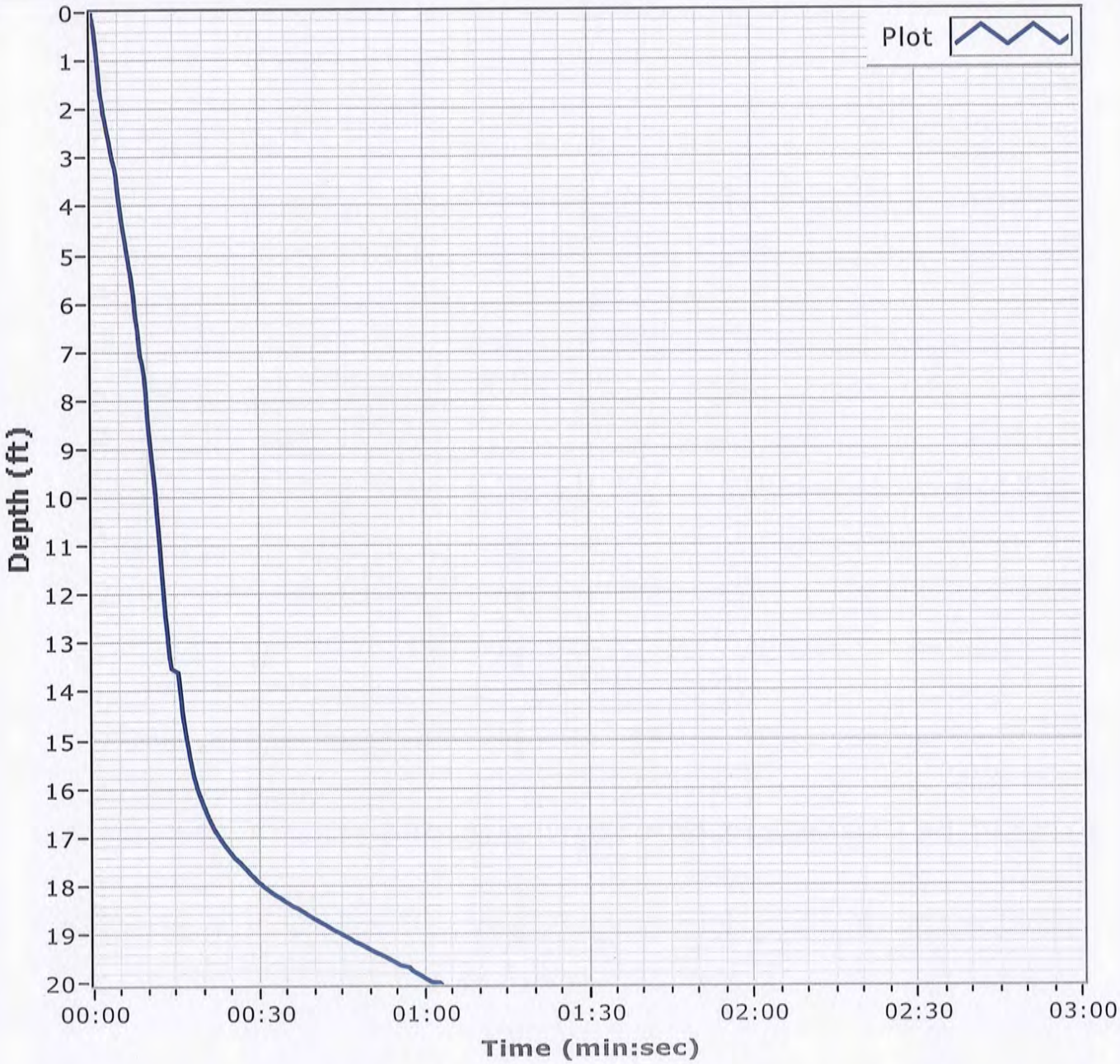
Core Identifier BI-PBS-95-12
Coordinate System
Latitude / Longitude

Latitude 30 09.725 N
Longitude 088 27.503 W

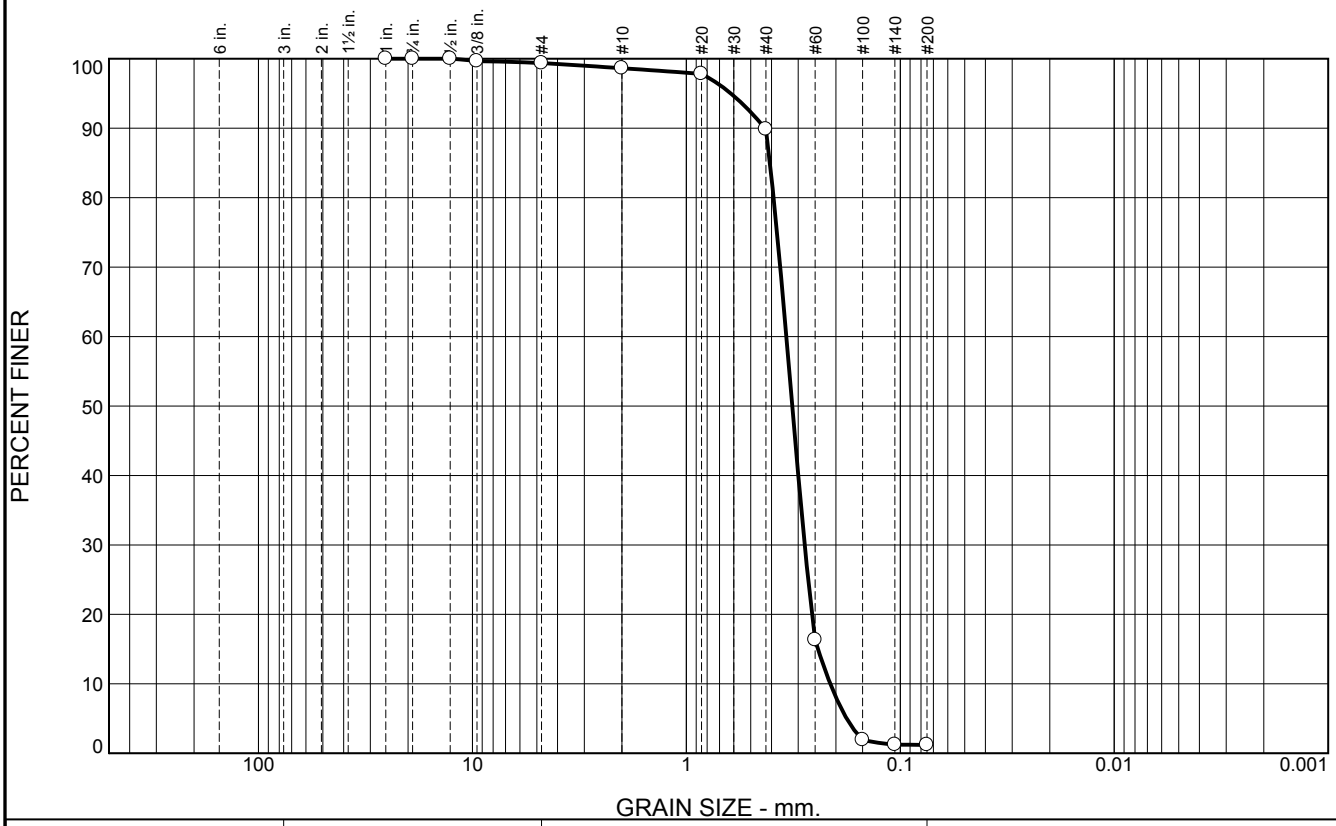
Date 01/05/2013
Start Time 14:55:29
End Time 14:56:33
Total Time 00:01:04

Water Depth 43.8'
Penetration 20.2'
Recovery 17.8'

Comments



Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.6	0.8	8.8	88.6	1.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
.75	100.0		
.5	100.0		
.375	99.6		
#4	99.4		
#10	98.6		
#20	97.8		
#40	89.8		
#60	16.3		
#100	1.9		
#140	1.3		
#200	1.2		

* (no specification provided)

Material Description

Fine grained, SAND

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.4292 D_{85}= 0.4067 D_{60}= 0.3409
D_{50}= 0.3200 D_{30}= 0.2801 D_{15}= 0.2424
D_{10}= 0.2124 C_u= 1.61 C_c= 1.08

Classification

USCS= SP AASHTO=

Remarks

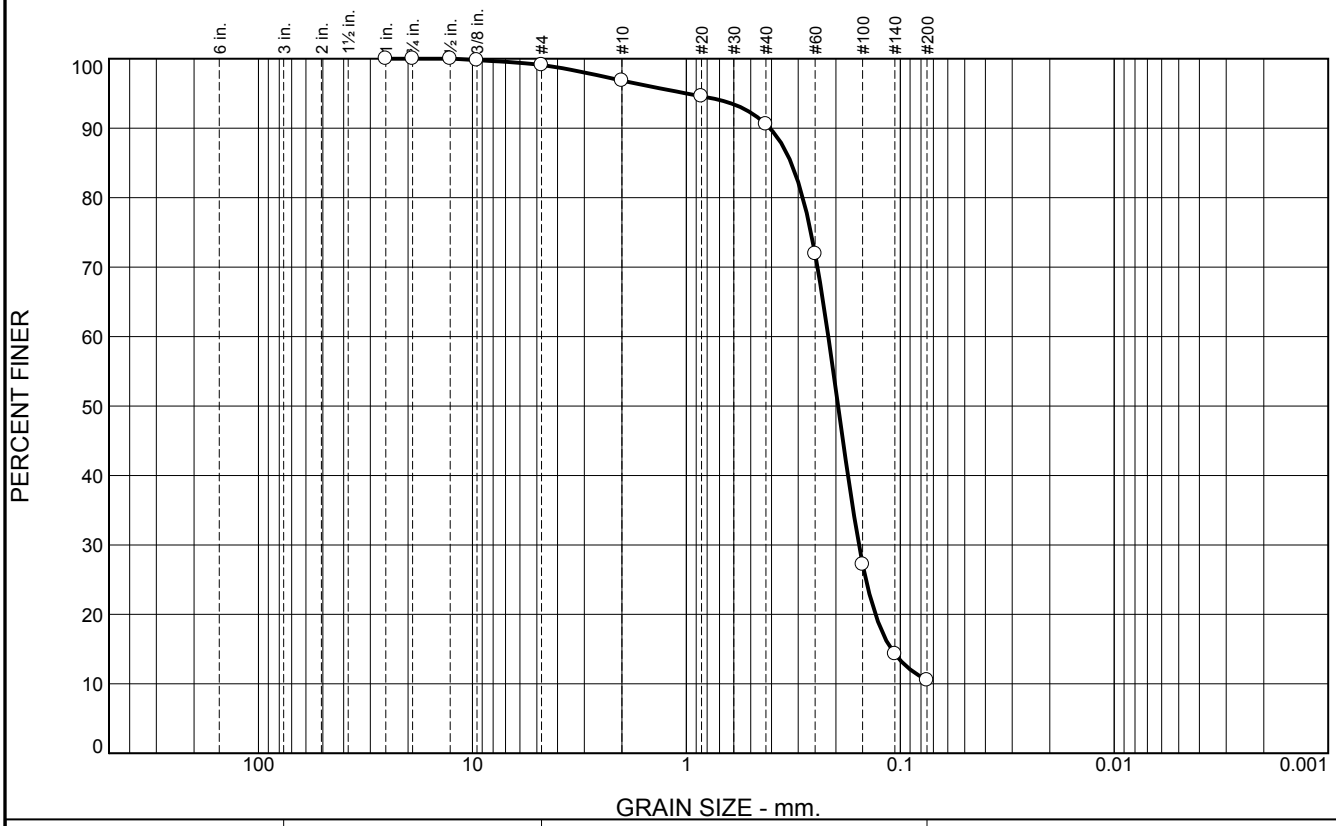
Location: BI-PBS-95-12 A
Sample Number: 6503 (18) **Depth:** 0.0' **Date:** 1/08/13

Thompson Engineering

Mobile, Alabama

Client: CDM/Thompson Engineering JV
Project: MsCIP Barrier Island Restoration GT
Project No: 1221110095 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.9	2.3	6.2	80.1	10.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
.75	100.0		
.5	100.0		
.375	99.8		
#4	99.1		
#10	96.8		
#20	94.6		
#40	90.6		
#60	71.9		
#100	27.2		
#140	14.3		
#200	10.5		

* (no specification provided)

Material Description

Fine grained, SLIGHTLY SILTY SAND

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.4074 D_{85}= 0.3235 D_{60}= 0.2170
D_{50}= 0.1954 D_{30}= 0.1561 D_{15}= 0.1100
D_{10}= C_u= C_c=

Classification

USCS= SP-SM AASHTO=

Remarks

Location: BI-PBS-95-12 B
Sample Number: 6503 (19) **Depth:** 2.2' **Date:** 1/08/13

Thompson Engineering

Mobile, Alabama

Client: CDM/Thompson Engineering JV
Project: MsCIP Barrier Island Restoration GT
Project No: 1221110095 **Figure**

Boring Designation BI-PBS-099-12

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 2 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-099-12 — LOCATION COORDINATES: E = 1,114,168 N = 233,329	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: — UNDISTURBED (UD): 0
4. NAME OF DRILLER: American Vibracore Systems, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL: — BEARING:	14. WATER DEPTH: 43.4 Ft.
	15. DATE BORING — STARTED: 01-12-13 — COMPLETED: 01-12-13
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -44.9 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 18.3 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Mike FitzHarris, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-44.9	0.0				
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace fines, trace shell fragments, lt. gray (SP)	A	Classification: SP Color: 5Y 6/2-light olive gray D50: 0.3009 mm % Fines: 2.1
				B	Classification: SP Color: 5Y 6/2-light olive gray D50: 0.3217 mm % Fines: 2
-51.2	6.3				
			SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, some shell fragments, lt. gray (SP-SM)	C	Classification: SM Color: 5Y 5/2-olive gray D50: 0.2553 mm % Fines: 12.5
-53.6	8.7				
			SAND, silty, mostly fine-grained sand-sized quartz, some silt, trace clay, trace wood debris, brown (SM)	NS	
-60.3	15.4				
			SILT, inorganic-L, mostly silt, some fine-grained sand-sized quartz, brown (ML)		
-61.8	16.9				
			SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few silt, becomes less silty with depth, gray (SP-SM)		
-63.2	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.

3. Top 1 ft. of sample may be compromised because contractor's vibracore unit stopped after approximately 1 ft of penetration when the

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14097° Long = -88.42232°

DRILLING LOG (Cont. Sheet)	INSTALLATION Mobile District		SHEET 2 OF 2 SHEETS
PROJECT MsCIP Barrier Island Restoration	COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83	VERTICAL NAVD88
LOCATION COORDINATES X = 1,114,168 Y = 233,329	ELEVATION TOP OF BORING -44.9 Ft.		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
			pneumatic hoses running the vibracore's vibrator got pinched off. Contractor then raised the vibracore barrel to unkink the hoses and restarted the vibrator. He let the machine run for about 3 minutes to get excess material out of the barrel, but there appeared to be a bit leftover, making recovery deeper than the penetration. 4. Seafloor elevation determined from 12/17/2014 USACE survey.		

30
35
40
45
50
55
60

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14097° Long = -88.42232°

Project Mississippi Barrier Island Restoration Project

AVS
AMERICAN VIBRACORE SERVICES

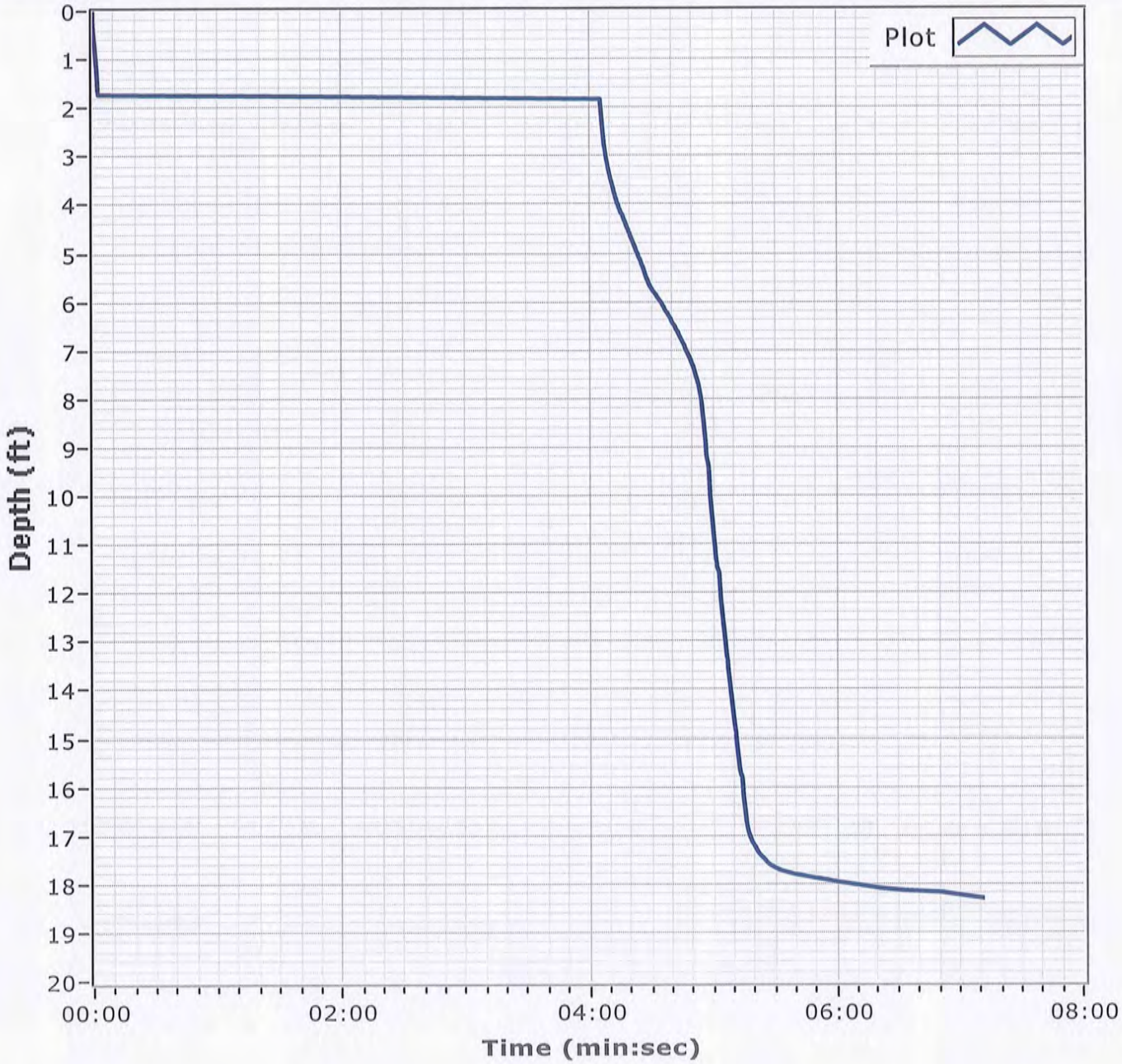
Core Identifier BI-PBS-99-12
Coordinate System
Latitude / Longitude

Latitude 30 08.458 N
Longitude 088 25.339 W

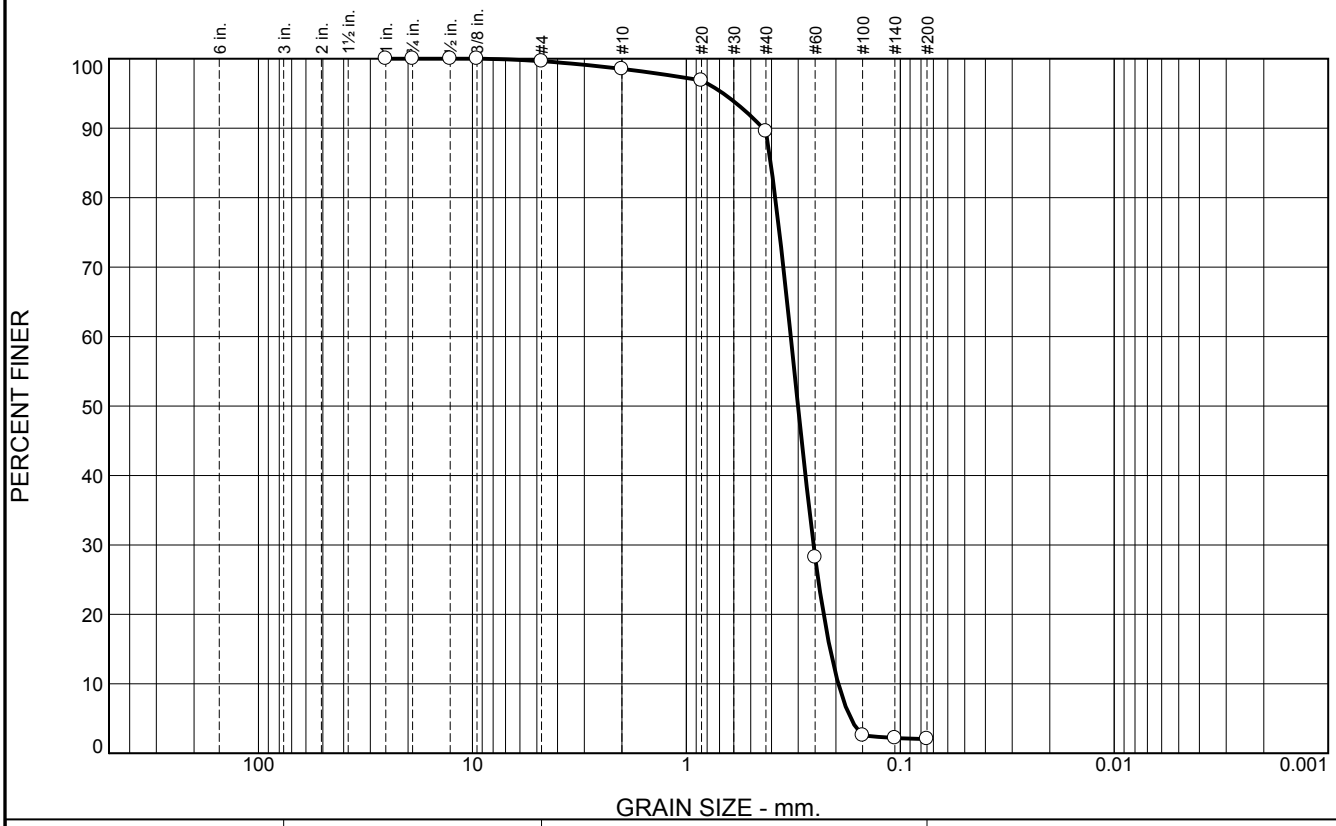
Date 01/12/2013
Start Time 09:14:49
End Time 09:22:00
Total Time 00:07:11

Water Depth 43.4'
Penetration 18.3'
Recovery 18.3'

Comments
NOTE: VIBRATOR STOPPED AND THEN RESTARTED



Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.4	1.1	8.9	87.5	2.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
.75	100.0		
.5	100.0		
.375	100.0		
#4	99.6		
#10	98.5		
#20	96.9		
#40	89.6		
#60	28.2		
#100	2.6		
#140	2.2		
#200	2.1		

* (no specification provided)

Material Description

Fine grained, SAND

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.4386 D_{85}= 0.4034 D_{60}= 0.3251
D_{50}= 0.3009 D_{30}= 0.2544 D_{15}= 0.2130
D_{10}= 0.1949 C_u= 1.67 C_c= 1.02

Classification

USCS= SP AASHTO=

Remarks

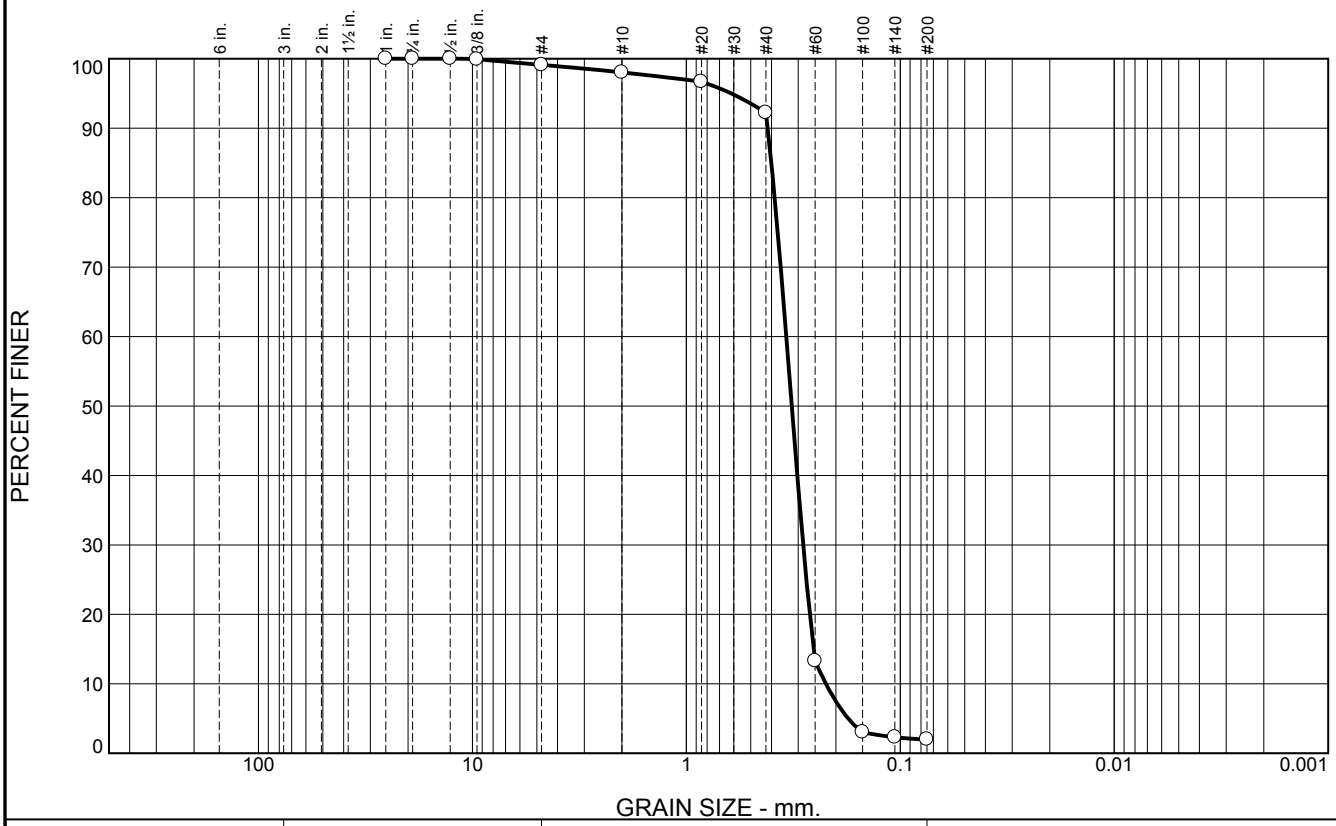
Location: BI-PBS-99-12 A
Sample Number: 6507 (1) **Depth:** 0.0' **Date:** 1/14/13

Thompson Engineering

Mobile, Alabama

Client: CDM/Thompson Engineering JV
Project: MsCIP Barrier Island Restoration GT
Project No: 1221110095 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.9	1.1	5.8	90.2	2.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
.75	100.0		
.5	100.0		
.375	99.9		
#4	99.1		
#10	98.0		
#20	96.7		
#40	92.2		
#60	13.3		
#100	3.0		
#140	2.3		
#200	2.0		

* (no specification provided)

Material Description

Fine grained, SAND

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.4167 D_{85}= 0.4004 D_{60}= 0.3411
D_{50}= 0.3217 D_{30}= 0.2847 D_{15}= 0.2541
D_{10}= 0.2227 C_u= 1.53 C_c= 1.07

Classification

USCS= SP AASHTO=

Remarks

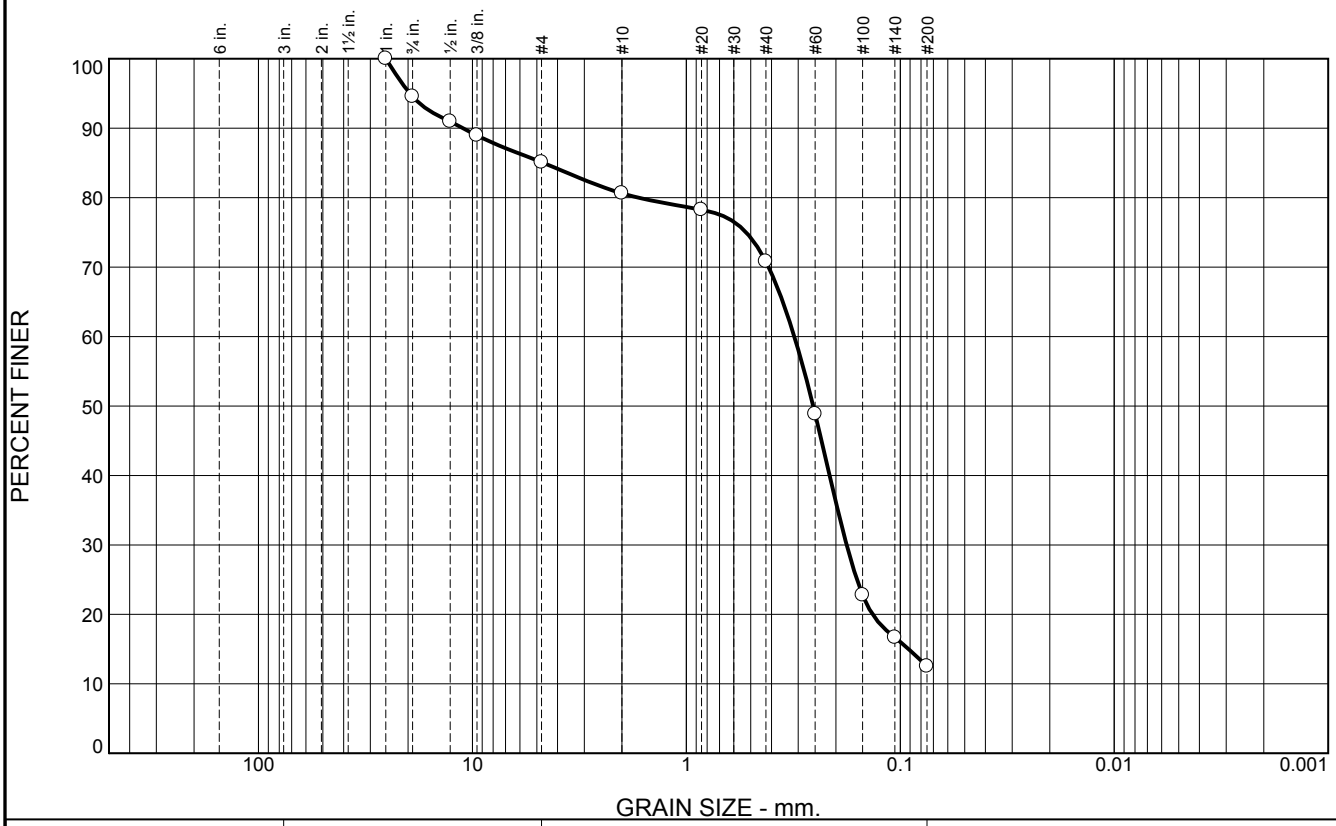
Location: BI-PBS-99-12 B
Sample Number: 6507 (2) **Depth:** 3.7' **Date:** 1/14/13

Thompson Engineering

Mobile, Alabama

Client: CDM/Thompson Engineering JV
Project: MsCIP Barrier Island Restoration GT
Project No: 1221110095 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	5.5	9.4	4.5	9.8	58.3	12.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
.75	94.5		
.5	90.9		
.375	88.9		
#4	85.1		
#10	80.6		
#20	78.2		
#40	70.8		
#60	48.9		
#100	22.8		
#140	16.7		
#200	12.5		

* (no specification provided)

Material Description

Fine grained, SILTY SAND, with some SHELL

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 11.0776 D_{85}= 4.6678 D_{60}= 0.3130
D_{50}= 0.2553 D_{30}= 0.1782 D_{15}= 0.0916
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO=

Remarks

Location: BI-PBS-99-12 C
Sample Number: 6507 (3) **Depth:** 6.3' **Date:** 1/14/13

Thompson Engineering

Mobile, Alabama

Client: CDM/Thompson Engineering JV
Project: MsCIP Barrier Island Restoration GT
Project No: 1221110095 **Figure**

Boring Designation BI-PBS-101-12

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-101-12 — LOCATION COORDINATES: E = 1,121,347 N = 230,046	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: — UNDISTURBED (UD): 0
4. NAME OF DRILLER: American Vibracore Systems, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL: — BEARING:	14. WATER DEPTH: 47.3 Ft.
	15. DATE BORING — STARTED: 01-12-13 — COMPLETED: 01-12-13
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -48.0 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 15.0 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Mike FitzHarris, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-48.0	0.0				
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace fines, shelly zone at 1.2 ft., 0.5-in. clay lens at 4.6 ft., lt. gray (SP)	A	Classification: SP Color: 5Y 6/2-light olive gray D50: 0.31 mm % Fines: 1.8
				B	Classification: SP Color: 5Y 6/2-light olive gray D50: 0.3007 mm % Fines: 1.9
-54.8	6.8				
-55.0	7.0		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few silt, trace shell fragments, gray (SP-SM)		
			CLAY, lean, mostly clay, some fine-grained sand-sized quartz, medium to high plasticity, clayey sand veins throughout, soft but becoming gradually stiffer with depth, orangy brown, greenish gray, gray mottle (CL)	NS	
-62.3	14.3				
-63.0	15.0		SAND, clayey, mostly fine-grained sand-sized quartz, some clay, dark 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.

3. Seafloor elevation determined from 12/17/2014 USACE survey.

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.13187° Long = -88.39965°

Project Mississippi Barrier Island Restoration Project

AVS
AMERICAN VIBRACORE SERVICES

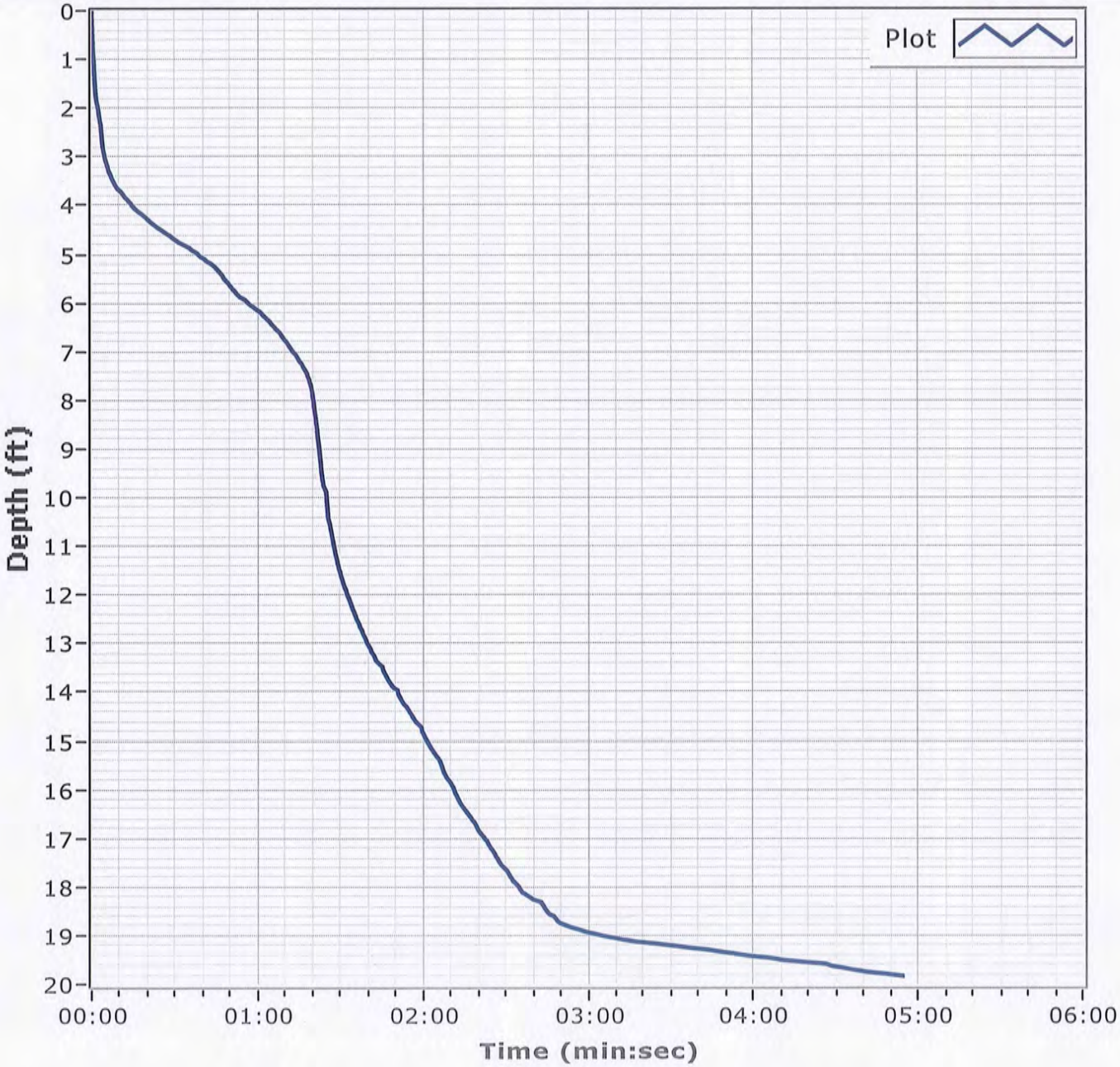
Core Identifier BI-PBS-101-12
Coordinate System
Latitude / Longitude

Date 01/12/2013
Start Time 10:07:18
End Time 10:12:13
Total Time 00:04:55

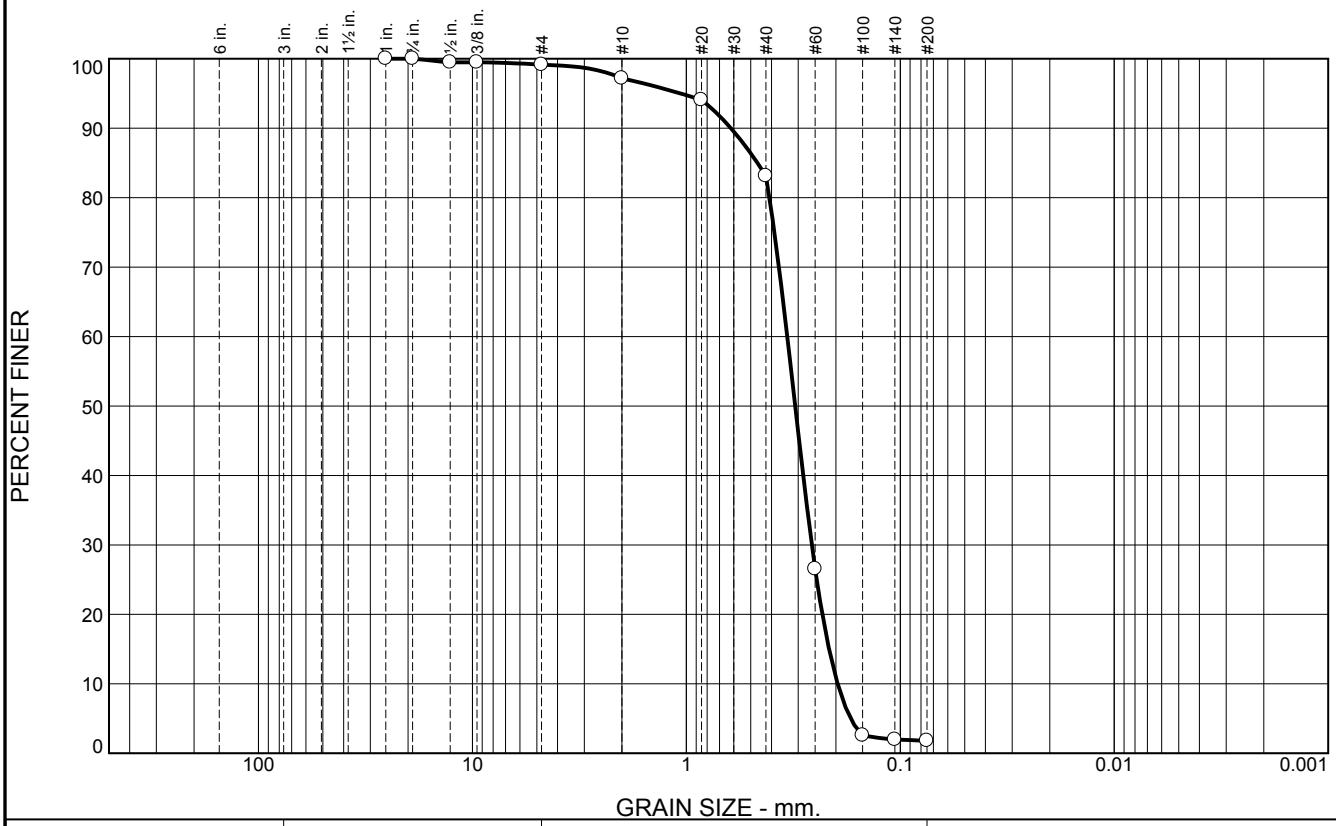
Water Depth 47.3'
Penetration 19.8'
Recovery 15'

Latitude 30 07.912 N
Longitude 088 23.979 W

Comments



Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.9	1.9	14.1	81.3	1.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
.75	100.0		
.5	99.5		
.375	99.5		
#4	99.1		
#10	97.2		
#20	94.1		
#40	83.1		
#60	26.5		
#100	2.6		
#140	2.0		
#200	1.8		

* (no specification provided)

Material Description

Fine to medium grained, SAND

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.6194 D_{85}= 0.4658 D_{60}= 0.3375
D_{50}= 0.3100 D_{30}= 0.2592 D_{15}= 0.2153
D_{10}= 0.1963 C_u= 1.72 C_c= 1.01

Classification

USCS= SP AASHTO=

Remarks

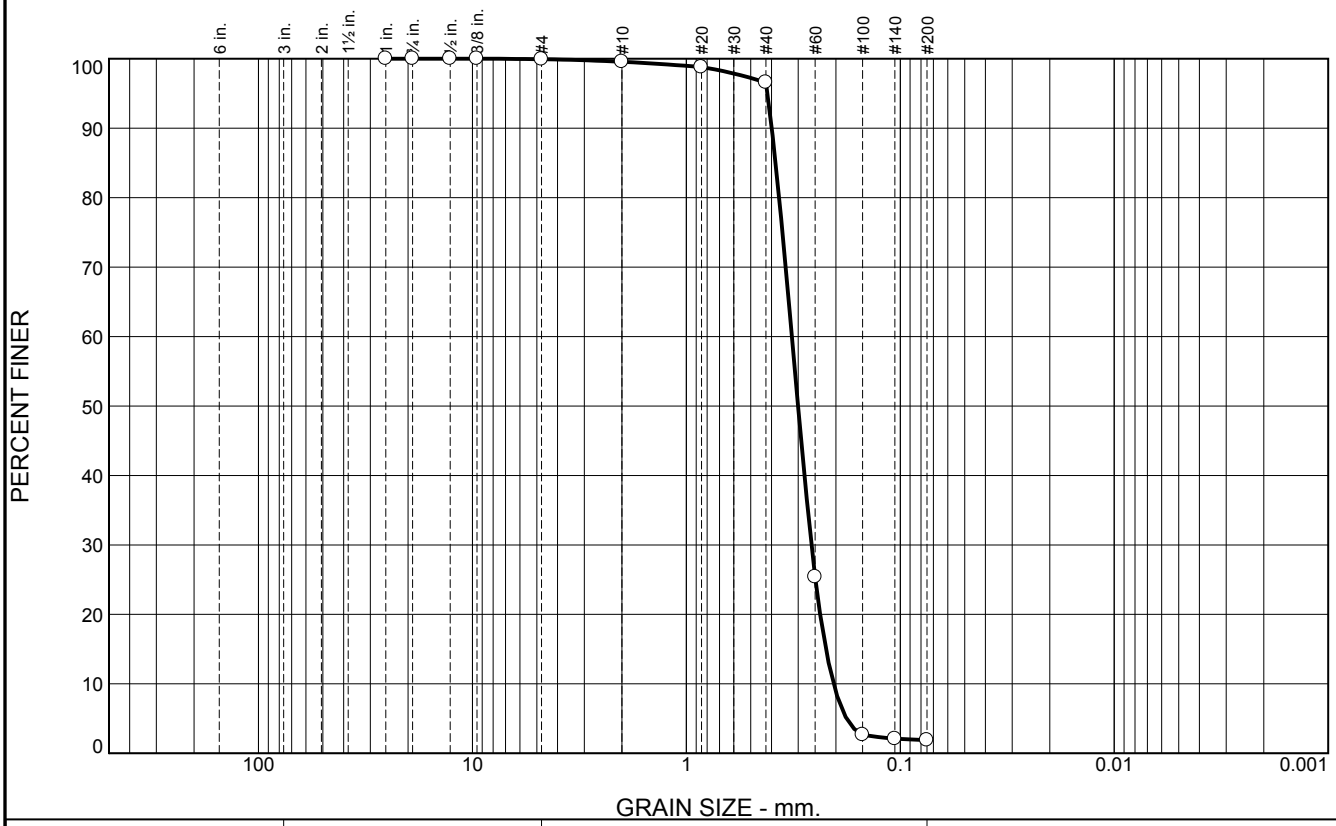
Location: BI-PBS-101-12 A
Sample Number: 6507 (4) **Depth:** 0.0' **Date:** 1/14/13

Thompson Engineering

Mobile, Alabama

Client: CDM/Thompson Engineering JV
Project: MsCIP Barrier Island Restoration GT
Project No: 1221110095 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.3	3.0	94.7	1.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
.75	100.0		
.5	100.0		
.375	100.0		
#4	99.9		
#10	99.6		
#20	98.8		
#40	96.6		
#60	25.4		
#100	2.7		
#140	2.1		
#200	1.9		

* (no specification provided)

Material Description

Fine grained, SAND

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.3987 D_{85}= 0.3826 D_{60}= 0.3213
D_{50}= 0.3007 D_{30}= 0.2602 D_{15}= 0.2227
D_{10}= 0.2051 C_u= 1.57 C_c= 1.03

Classification

USCS= SP AASHTO=

Remarks

Location: BI-PBS-101-12 B
Sample Number: 6507 (5) **Depth:** 5.0' **Date:** 1/14/13

Thompson Engineering

Mobile, Alabama

Client: CDM/Thompson Engineering JV
Project: MsCIP Barrier Island Restoration GT
Project No: 1221110095 **Figure**

Boring Designation BI-PBS-104-12

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS East	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-104-12 — LOCATION COORDINATES: E = 1,139,968 N = 229,824	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: — UNDISTURBED (UD): 0
4. NAME OF DRILLER: American Vibracore Systems, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL: — BEARING:	14. WATER DEPTH: 60.1 Ft.
	15. DATE BORING — STARTED: 01-04-13 — COMPLETED: 01-04-13
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -58.3 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 18.2 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Mike FitzHarris, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-58.3	0.0				
-59.3	1.0		SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace fines, trace shell fragments, gray (SP)	A	Classification: SP Color: 5Y 6/2-light olive gray D50: 0.2759 mm % Fines: 1.9
-62.4	4.1		SAND, silty, mostly fine-grained sand-sized quartz, some silt, few clay, trace shell fragments, gray (SM)	B	Classification: SM Color: 5Y 5/2-olive gray D50: 0.2074 mm % Fines: 12.9
-65.0	6.7		SAND, clayey, mostly fine-grained sand-sized quartz, some clay, few silt, trace shell fragments, trace wood debris, gray (SC)	C	Classification: SM Color: 5Y 5/2-olive gray D50: 0.2412 mm % Fines: 21.9
-71.5	13.2		CLAY, lean, mostly clay, trace wood debris, some fine-grained sandy zones, gray (CL)	NS	
-74.8	16.5		SAND, silty, mostly fine-grained sand-sized quartz, some silt, trace clay, gray (SM)		
-76.5	18.2		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few silt, trace shell fragments, trace wood debris, gray (SP-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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.13105° Long = -88.34075°

Project Mississippi Barrier Island Restoration Project

AVS
AMERICAN VIBRACORE SERVICES

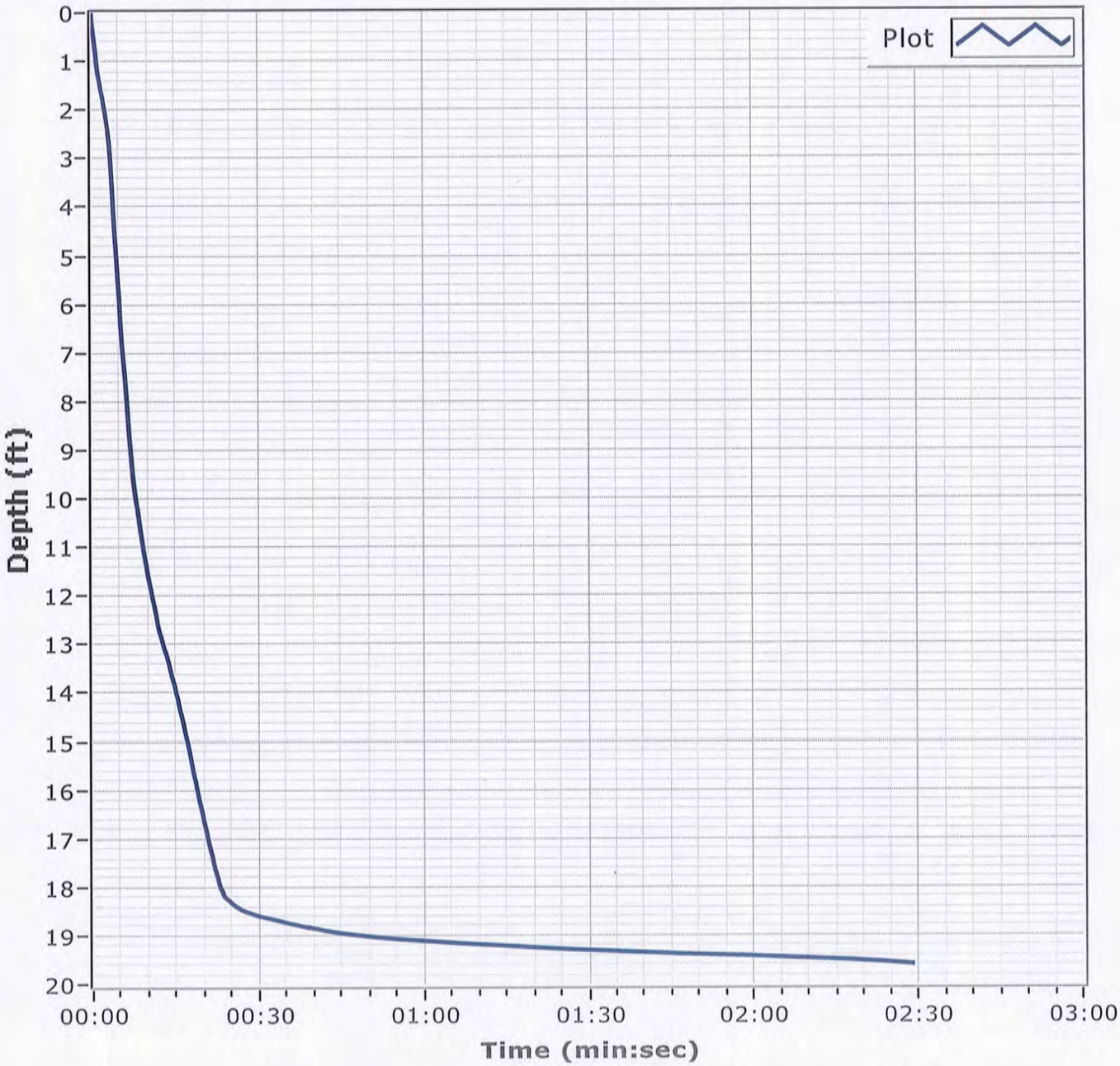
Core Identifier BI-PBS-104-12
Coordinate System
Latitude / Longitude

Date 01/04/2013
Start Time 13:53:43
End Time 13:56:12
Total Time 00:02:29

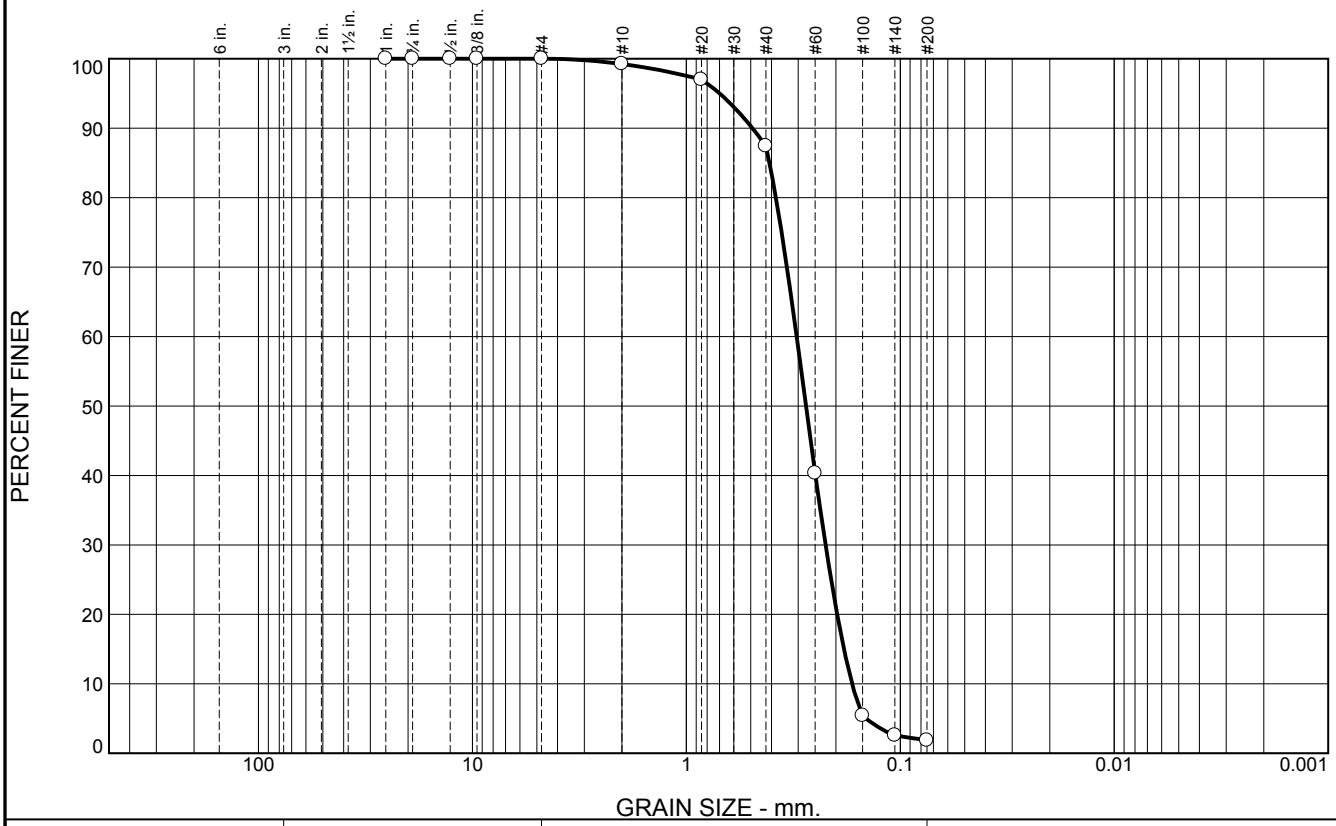
Water Depth 60.1'
Penetration 19.6'
Recovery 18.2'

Latitude 30 07.863 N
Longitude 088 20.445 W

Comments



Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.8	11.8	85.5	1.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
.75	100.0		
.5	100.0		
.375	100.0		
#4	100.0		
#10	99.2		
#20	97.0		
#40	87.4		
#60	40.3		
#100	5.4		
#140	2.6		
#200	1.9		

* (no specification provided)

Material Description

Fine to medium grained, SAND

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.4914 D_{85}= 0.4087 D_{60}= 0.3052
D_{50}= 0.2759 D_{30}= 0.2234 D_{15}= 0.1835
D_{10}= 0.1682 C_u= 1.81 C_c= 0.97

Classification

USCS= SP AASHTO=

Remarks

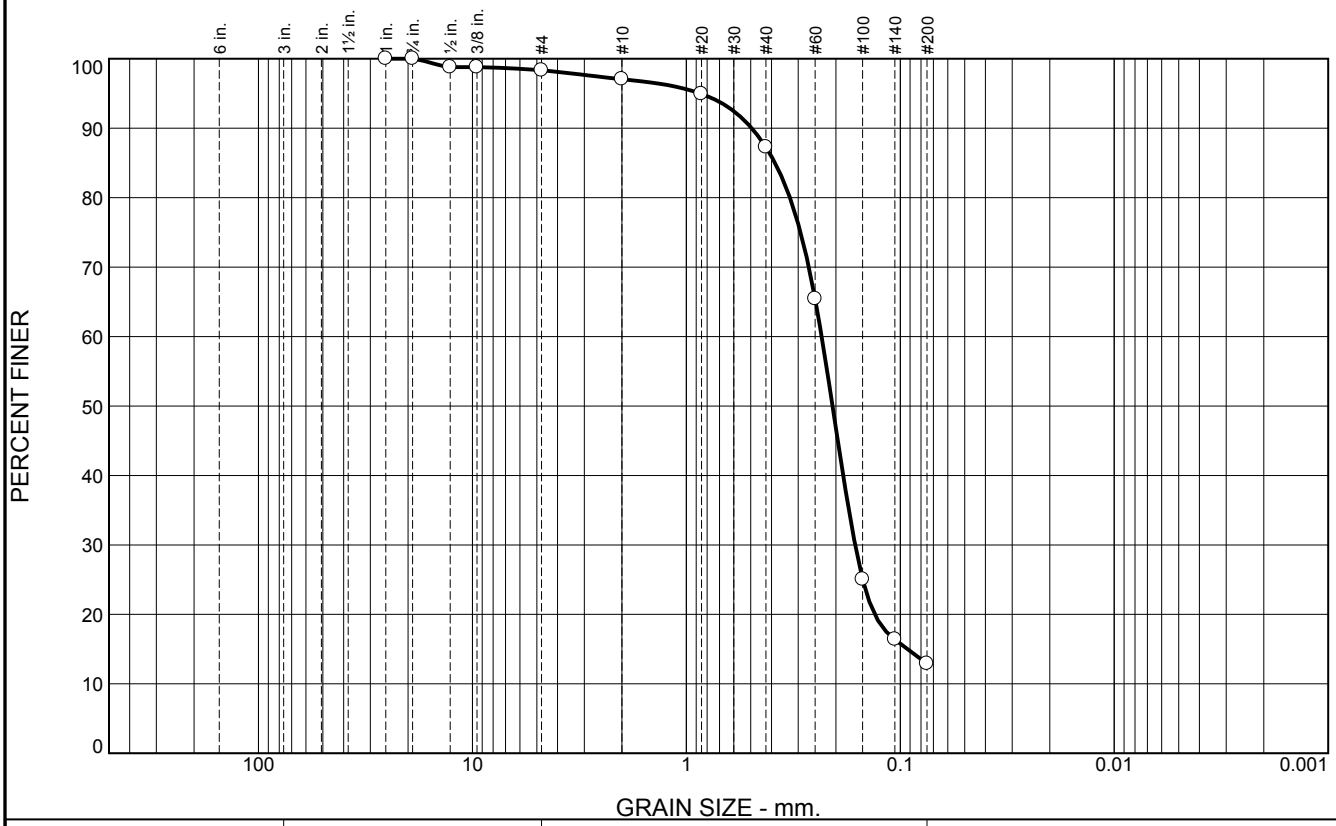
Location: BI-PBS-104-12 A
Sample Number: 6503 (20) **Depth:** 0.0' **Date:** 1/08/13

Thompson Engineering

Mobile, Alabama

Client: CDM/Thompson Engineering JV
Project: MsCIP Barrier Island Restoration GT
Project No: 1221110095 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.7	1.3	9.7	74.4	12.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
.75	100.0		
.5	98.8		
.375	98.8		
#4	98.3		
#10	97.0		
#20	94.9		
#40	87.3		
#60	65.4		
#100	25.0		
#140	16.4		
#200	12.9		

* (no specification provided)

Material Description

Fine grained, SILTY SAND, with trace SHELL

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.4950 D_{85}= 0.3851 D_{60}= 0.2331
D_{50}= 0.2074 D_{30}= 0.1627 D_{15}= 0.0926
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO=

Remarks

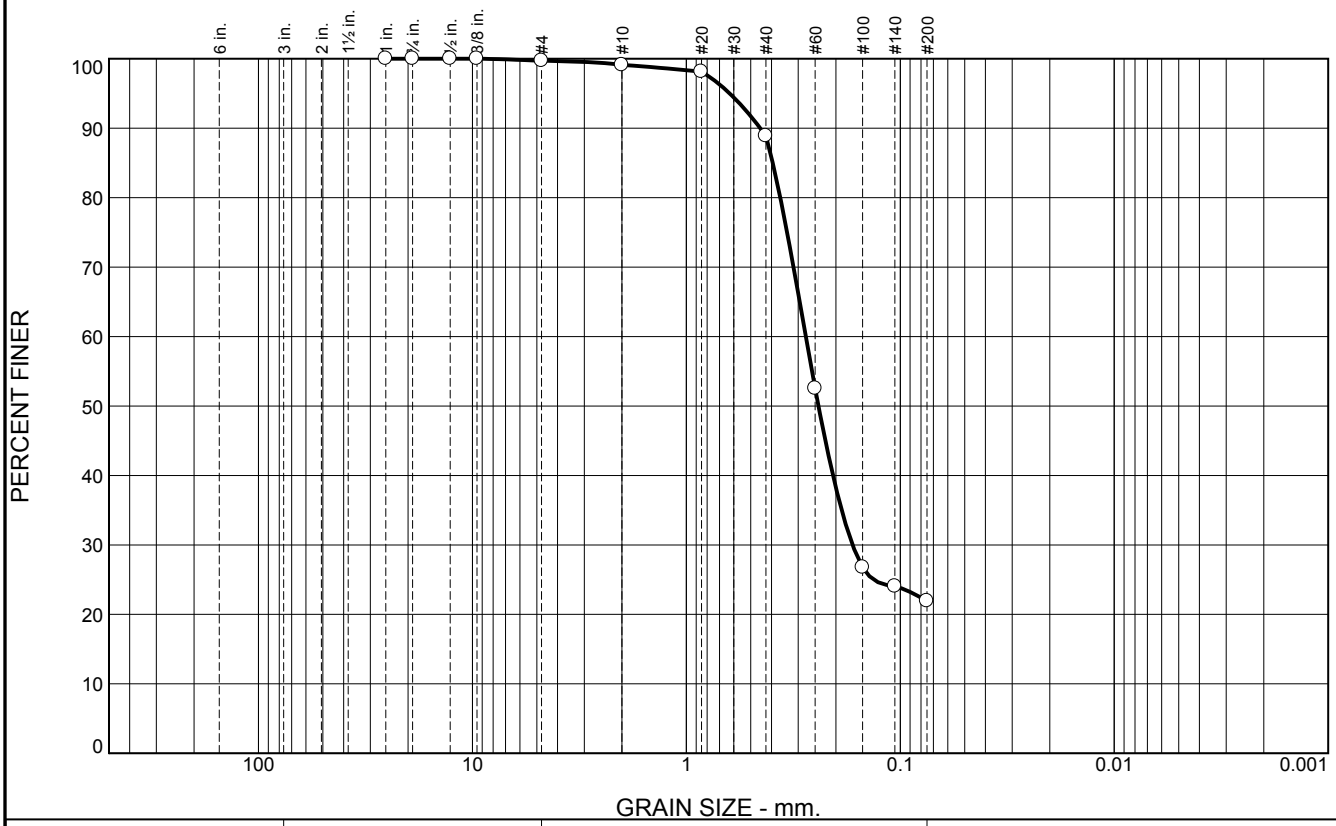
Location: BI-PBS-104-12 B
Sample Number: 6503 (21) **Depth:** 1.0' **Date:** 1/08/13

Thompson Engineering

Mobile, Alabama

Client: CDM/Thompson Engineering JV
Project: MsCIP Barrier Island Restoration GT
Project No: 1221110095 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.3	0.6	10.2	67.0	21.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
.75	100.0		
.5	100.0		
.375	100.0		
#4	99.7		
#10	99.1		
#20	98.1		
#40	88.9		
#60	52.5		
#100	26.8		
#140	24.0		
#200	21.9		

* (no specification provided)

Material Description

Fine to medium grained, SILTY SAND

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.4520 D_{85}= 0.3946 D_{60}= 0.2766
D_{50}= 0.2412 D_{30}= 0.1673 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO=

Remarks

Location: BI-PBS-104-12 C
Sample Number: 6503 (22) **Depth:** 4.1' **Date:** 1/08/13

Thompson Engineering

Mobile, Alabama

Client: CDM/Thompson Engineering JV
Project: MsCIP Barrier Island Restoration GT
Project No: 1221110095 **Figure**

Boring Designation BI-PBS-105-12

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
	South Atlantic	Mobile District	

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS East
2. BORING DESIGNATION	BI-PBS-105-12
LOCATION COORDINATES	E = 1,141,273 N = 231,419
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	American Vibracore Systems, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	18.5 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED: ; UNDISTURBED (UD): 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	59.8 Ft.
15. DATE BORING	STARTED 01-04-13; COMPLETED 01-04-13
16. ELEVATION TOP OF BORING	-59.3 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Mike FitzHarris, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-59.3	0.0				
-60.8	1.5		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace fines, trace shells, gray (SP)	A	Classification: SP Color: 5Y 6/2-light olive gray D50: 0.2602 mm % Fines: 2.1
-65.7	6.4		CLAY, lean, mostly clay, some fine-grained sand-sized quartz, some silt, few shell fragments, greenish gray, orangy brown, gray mottle (CL) At El. -62.8 Ft., mostly clay, trace fine-grained sand-sized quartz, trace shell fragments, greenish gray, orangy brown, gray mottle At El. -64.4 Ft., mostly clay, some fine-grained sand-sized quartz, trace shell fragments, some clay bands, gray		
-68.5	9.2		SAND, clayey, mostly fine-grained sand-sized quartz, some clay, few shell fragments, gray (SC)		
-75.0	15.7		CLAY, lean, mostly clay, trace shell fragments, trace wood debris, some fine-grained sand between 13.7 and 15.7 ft., gray (CL)	NS	
-77.8	18.5		CLAY, fat, mostly clay, very stiff, medium to high plasticity, lt. gray, orangy brown mottle (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.

3. Seafloor elevation determined from USACE hydrographic survey completed April 2014.

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.13542° Long = -88.33660°

Project Mississippi Barrier Island Restoration Project

AVS
AMERICAN VIBRACORE SERVICES

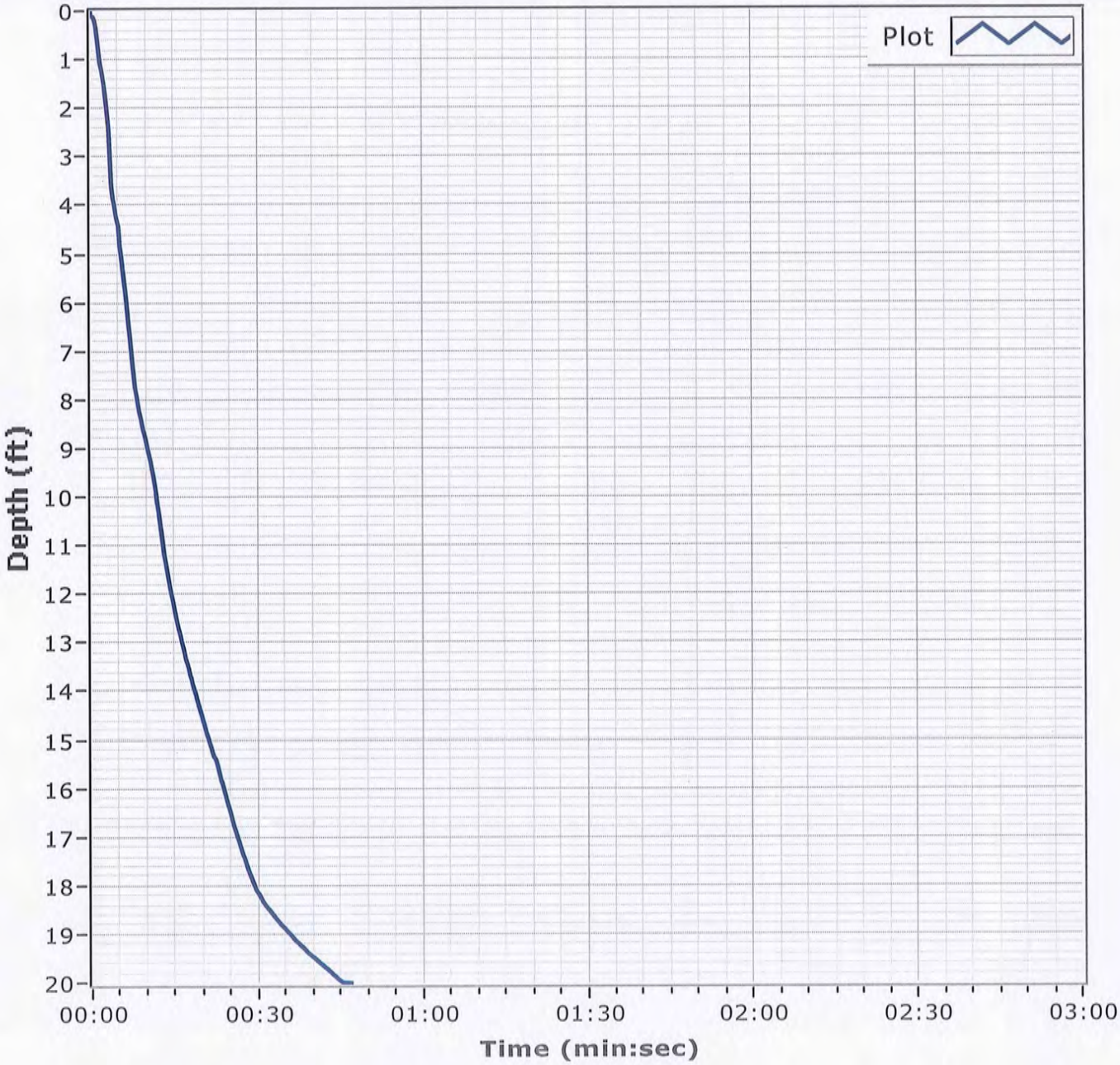
Core Identifier BI-PBS-105-12
Coordinate System
Latitude / Longitude

Latitude 30 008.125 N
Longitude 088 20.196 W

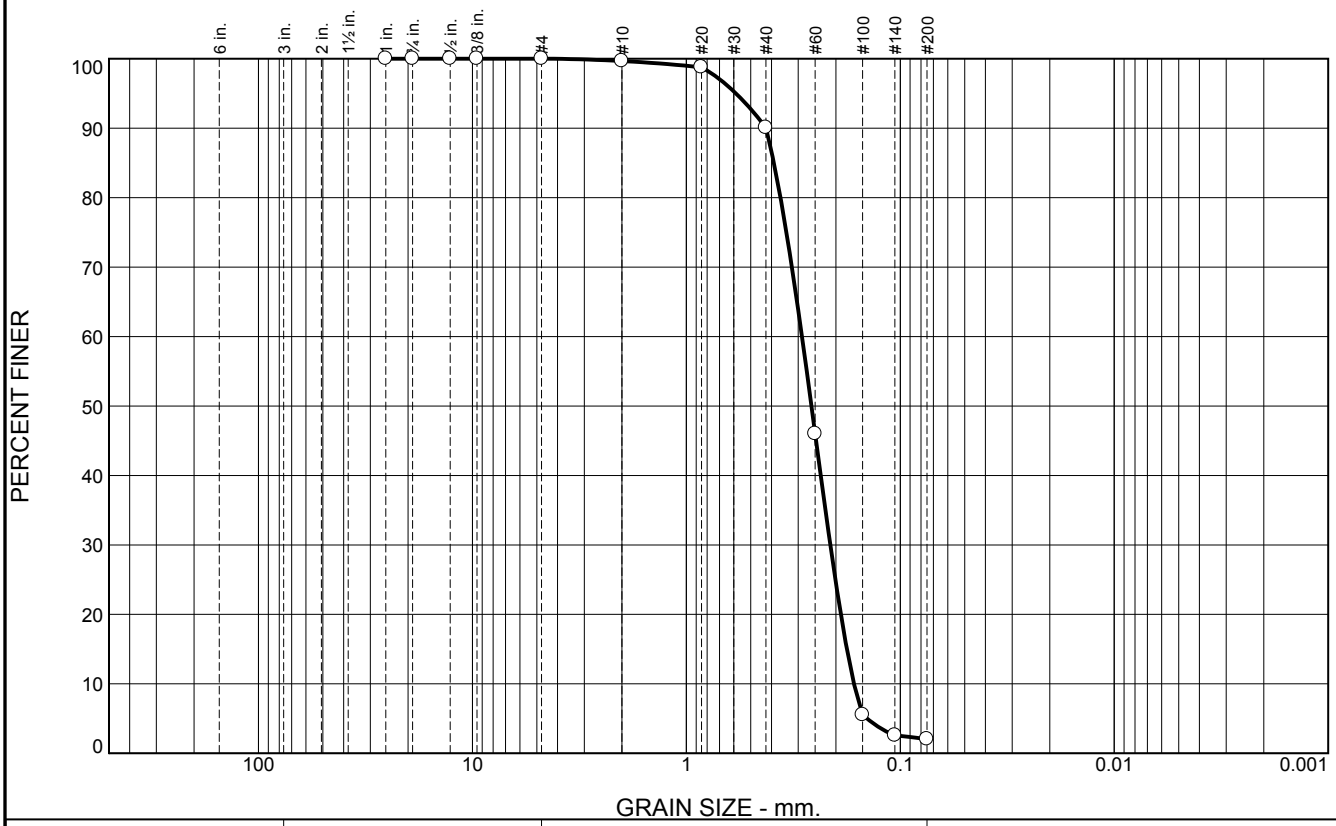
Date 01/04/2013
Start Time 15:40:32
End Time 15:41:19
Total Time 00:00:47

Water Depth 59.8'
Penetration 20.0'
Recovery 18.5'

Comments



Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.3	9.6	88.0	2.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
.75	100.0		
.5	100.0		
.375	100.0		
#4	100.0		
#10	99.7		
#20	98.8		
#40	90.1		
#60	46.0		
#100	5.5		
#140	2.6		
#200	2.1		

* (no specification provided)

Material Description

Fine grained, SAND

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.4244 D_{85}= 0.3897 D_{60}= 0.2882
D_{50}= 0.2602 D_{30}= 0.2124 D_{15}= 0.1778
D_{10}= 0.1648 C_u= 1.75 C_c= 0.95

Classification

USCS= SP AASHTO=

Remarks

Location: BI-PBS-105-12 A
Sample Number: 6503 (23) **Depth:** 0.0' **Date:** 1/08/13

Thompson Engineering

Mobile, Alabama

Client: CDM/Thompson Engineering JV
Project: MsCIP Barrier Island Restoration GT
Project No: 1221110095 **Figure**

Boring Designation BI-PBS-106A-12

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 2 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS East	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-106A-12 — LOCATION COORDINATES: E = 1,140,300 N = 231,982	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: — UNDISTURBED (UD): 0
4. NAME OF DRILLER: American Vibracore Systems, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL: — BEARING:	14. WATER DEPTH: 58.4 Ft.
	15. DATE BORING — STARTED: 01-12-13 — COMPLETED: 01-12-13
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -58.9 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 20.2 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Mike FitzHarris, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-58.9	0.0				
-60.0	1.1		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, some shell fragments, trace fines, gray (SP)	A	Classification: SP Color: 5Y 6/3-pale olive D50: 0.5035 mm % Fines: 2.5
-65.6	6.7		CLAY, lean, mostly clay, trace shell fragments, pockets of clayey sand, low to medium plasticity, stiff, orangy brown, greenish gray, and gray mottle (CL)		
-68.1	9.2		SAND, clayey, mostly fine-grained sand-sized quartz, some clay, little shell fragments, gray (SC)		
-79.1	20.2		CLAY, fat, mostly clay, trace shell fragments, trace wood debris, medium to high plasticity, stiff, trace fine-grained sandy zones throughout, gray (CH) At El. -76.5 Ft., mostly clay, trace wood debris, medium to high plasticity, very stiff, some silty pockets within zone, lt. 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.

3. Seafloor elevation determined from USACE

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.13698° Long = -88.33967°

DRILLING LOG (Cont. Sheet)	INSTALLATION Mobile District		SHEET 2 OF 2 SHEETS
PROJECT MsCIP Barrier Island Restoration	COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83	VERTICAL NAVD88
LOCATION COORDINATES X = 1,140,300 Y = 231,982	ELEVATION TOP OF BORING -58.9 Ft.		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
			hydrographic survey completed April 2014.		

30
35
40
45
50
55
60

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.13698° Long = -88.33967°

Project Mississippi Barrier Island Restoration Project

AVS
AMERICAN VIBRACORE SERVICES

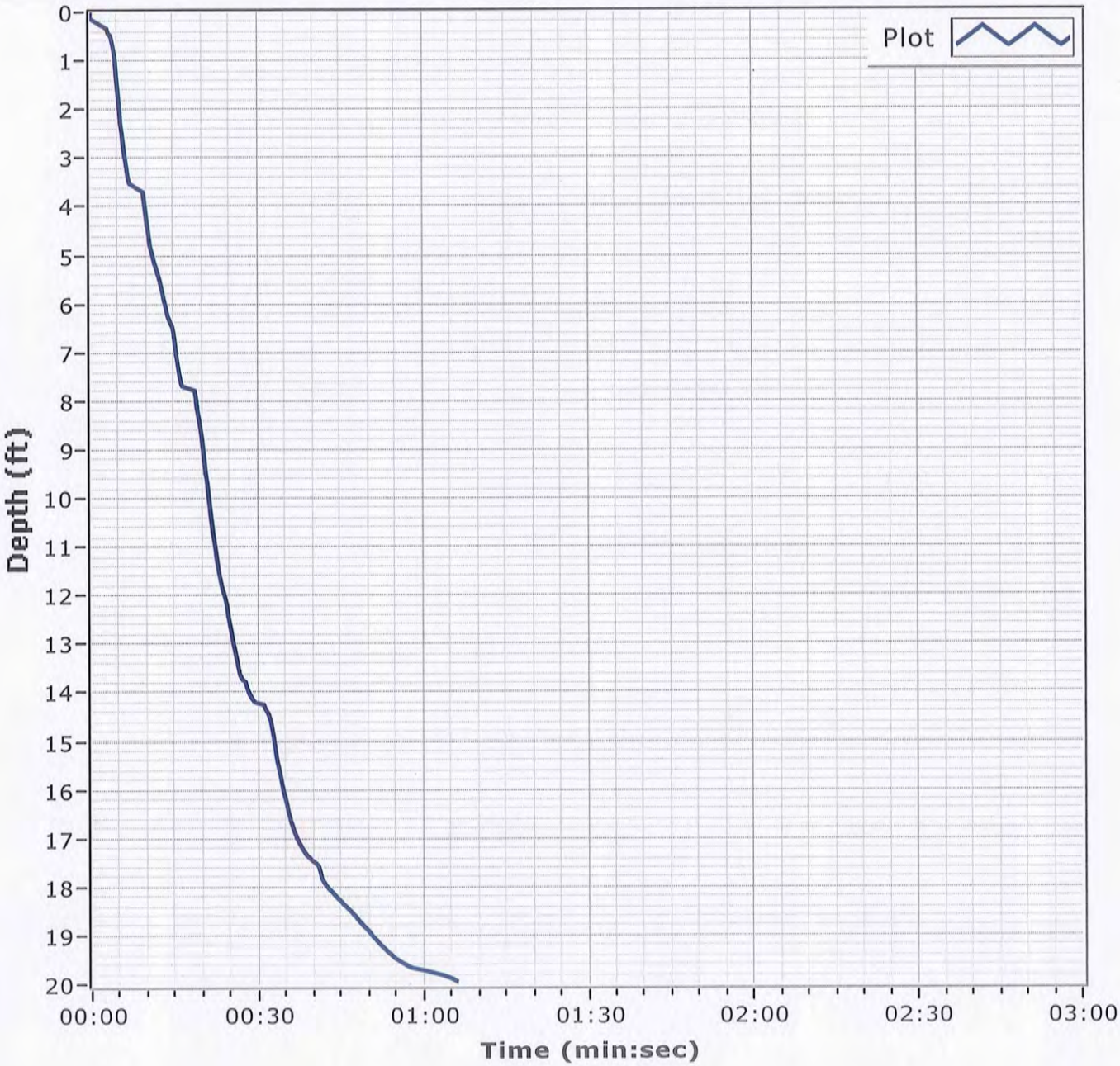
Core Identifier BI-PBS-106A-12
Coordinate System
Latitude / Longitude

Date 01/12/2013
Start Time 14:55:56
End Time 14:57:02
Total Time 00:01:06

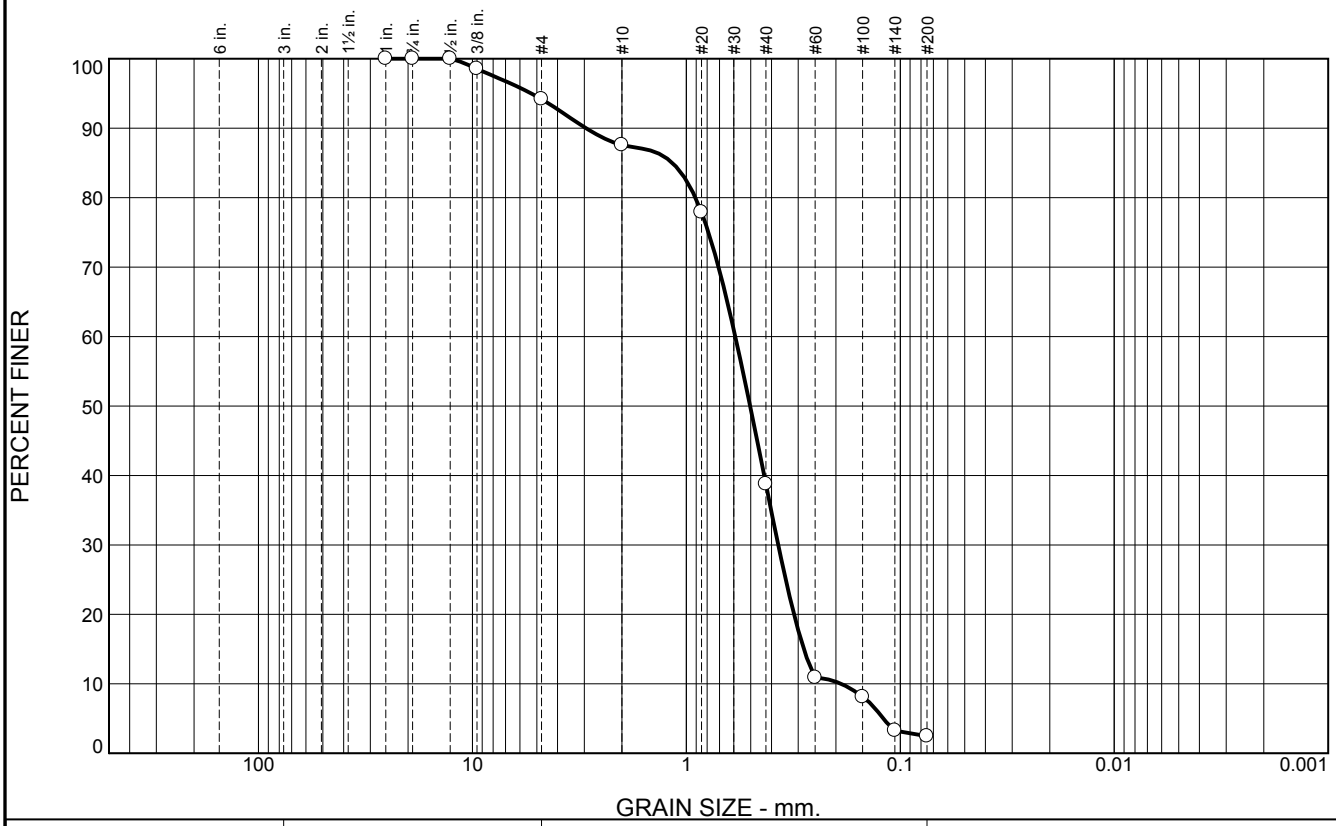
Water Depth 58.4'
Penetration 20.0'
Recovery 20.0'

Latitude 30 08.219
Longitude 088 20.380

Comments



Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	5.8	6.6	48.8	36.3	2.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
.75	100.0		
.5	100.0		
.375	98.5		
#4	94.2		
#10	87.6		
#20	77.9		
#40	38.8		
#60	10.9		
#100	8.1		
#140	3.3		
#200	2.5		

* (no specification provided)

Material Description

Fine to medium grained, SAND, with trace SHELL

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 2.9447 D_{85}= 1.1613 D_{60}= 0.5904
D_{50}= 0.5035 D_{30}= 0.3720 D_{15}= 0.2827
D_{10}= 0.1888 C_u= 3.13 C_c= 1.24

Classification

USCS= SP AASHTO=

Remarks

Location: BI-PBS-106A-12 A
Sample Number: 6507 (6) **Depth:** 0.0' **Date:** 1/14/13

Thompson Engineering

Mobile, Alabama

Client: CDM/Thompson Engineering JV
Project: MsCIP Barrier Island Restoration GT
Project No: 1221110095 **Figure**

Boring Designation BI-PBS-107-12

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS East	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-107-12 — LOCATION COORDINATES: E = 1,133,445 N = 224,614	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: — UNDISTURBED (UD): 0
4. NAME OF DRILLER: American Vibracore Systems, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL: — BEARING:	14. WATER DEPTH: 62.5 Ft.
	15. DATE BORING — STARTED: 01-04-13 — COMPLETED: 01-04-13
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -64.9 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 17.3 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Mike FitzHarris, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-64.9	0.0				
-67.5	2.6		CLAY, lean, mostly clay, low to medium plasticity, fine-grained sand pockets, stiff, brownish orange, greenish gray, and gray mottle (CL)	NS	
-68.1	3.2		SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace fines, trace shell fragments, gray (SP)		
-70.2	5.3		CLAY, lean, mostly clay, some silt, some fine-grained sand-sized quartz, trace wood debris, brown (CL)		
-70.9	6.0		SAND, clayey, mostly fine-grained sand-sized quartz, some clay, trace shell fragments, gray (SC)	A	Classification: SM Color: 5Y 5/2-olive gray D50: 0.2166 mm % Fines: 15.1
-73.0	8.1				
-73.6	8.7		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, trace clay, gray (SM)	NS	
-76.0	11.1		CLAY, lean, mostly clay, some fine-grained sand-sized quartz, some shell fragments, trace wood debris, gray (CL)	B	Classification: SM Color: 5Y 5/1-gray D50: 0.294 mm % Fines: 13.3
			SAND, silty, mostly fine-grained sand-sized quartz, some silt, little shell fragments, trace clay stringers, gray (SM)	C	Classification: SP-SM Color: 5Y 6/2-light olive gray D50: 0.2036 mm % Fines: 6.7
-82.2	17.3		SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace fines, trace shell fragments, dense, 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.

3. Seafloor elevation determined from 2013 USGS geophysical survey.

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.11680° Long = -88.36145°

Project Mississippi Barrier Island Restoration Project

AVS
AMERICAN VIBRACORE SERVICES

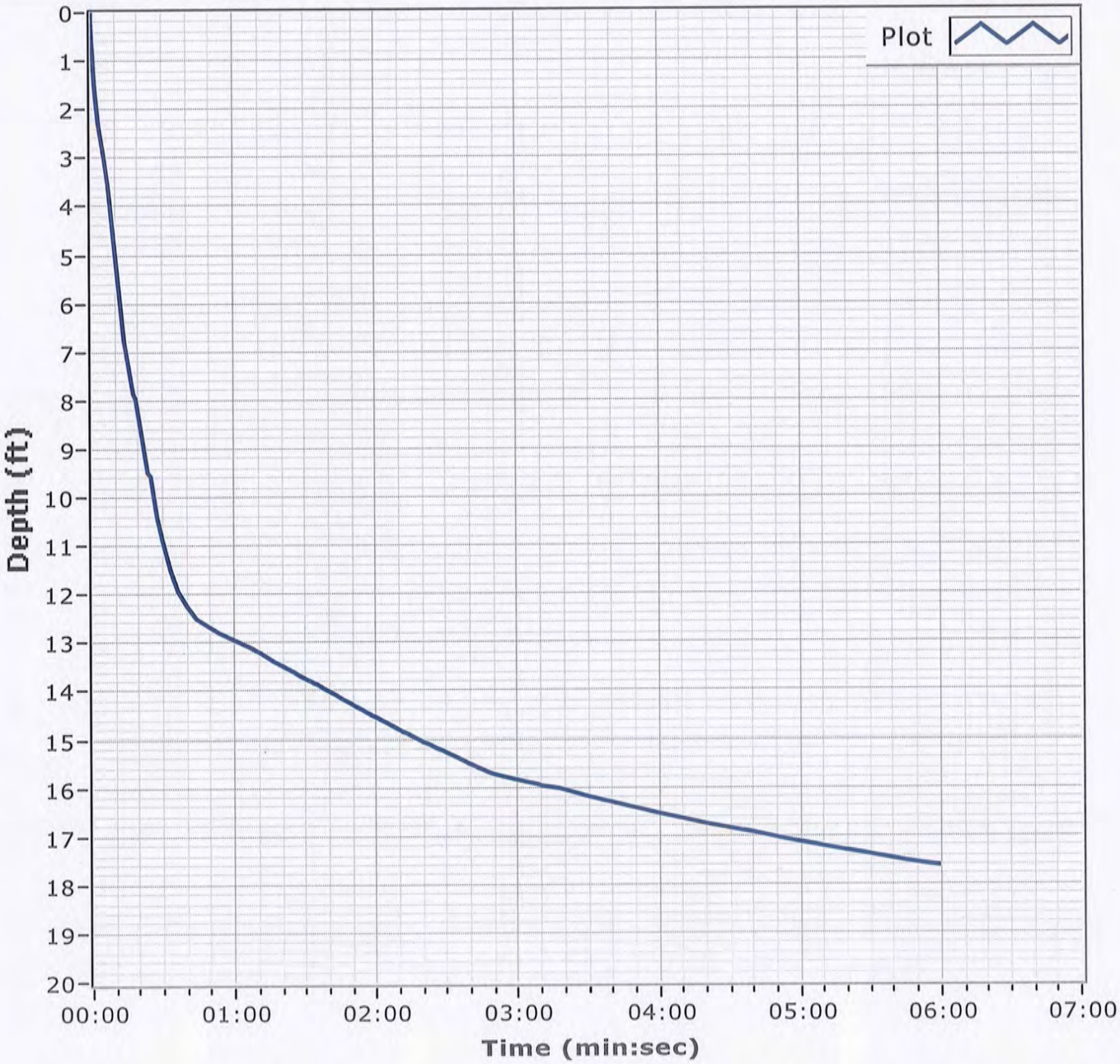
Core Identifier BI-PBS-107-12
Coordinate System
Latitude / Longitude

Latitude 30 07.008 N
Longitude 088 21.687 W

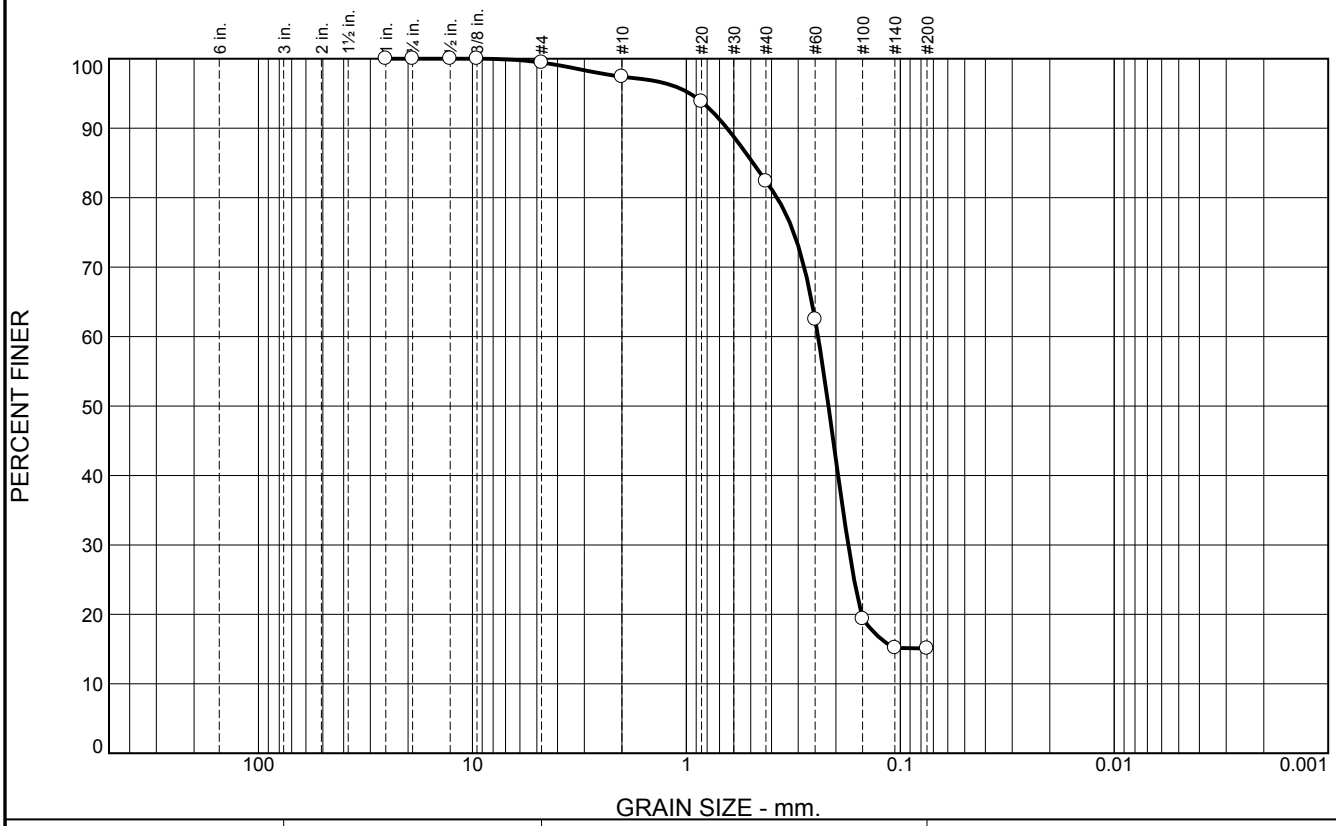
Date 01/04/2013
Start Time 13:03:43
End Time 13:09:43
Total Time 00:05:59

Water Depth 62.5'
Penetration 17.6'
Recovery 17.3'

Comments



Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.6	2.0	15.0	67.3	15.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
.75	100.0		
.5	100.0		
.375	100.0		
#4	99.4		
#10	97.4		
#20	93.8		
#40	82.4		
#60	62.5		
#100	19.4		
#140	15.2		
#200	15.1		

* (no specification provided)

Material Description

Fine to medium grained, SILTY SAND

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.6459 D_{85}= 0.4884 D_{60}= 0.2422
D_{50}= 0.2166 D_{30}= 0.1752 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO=

Remarks

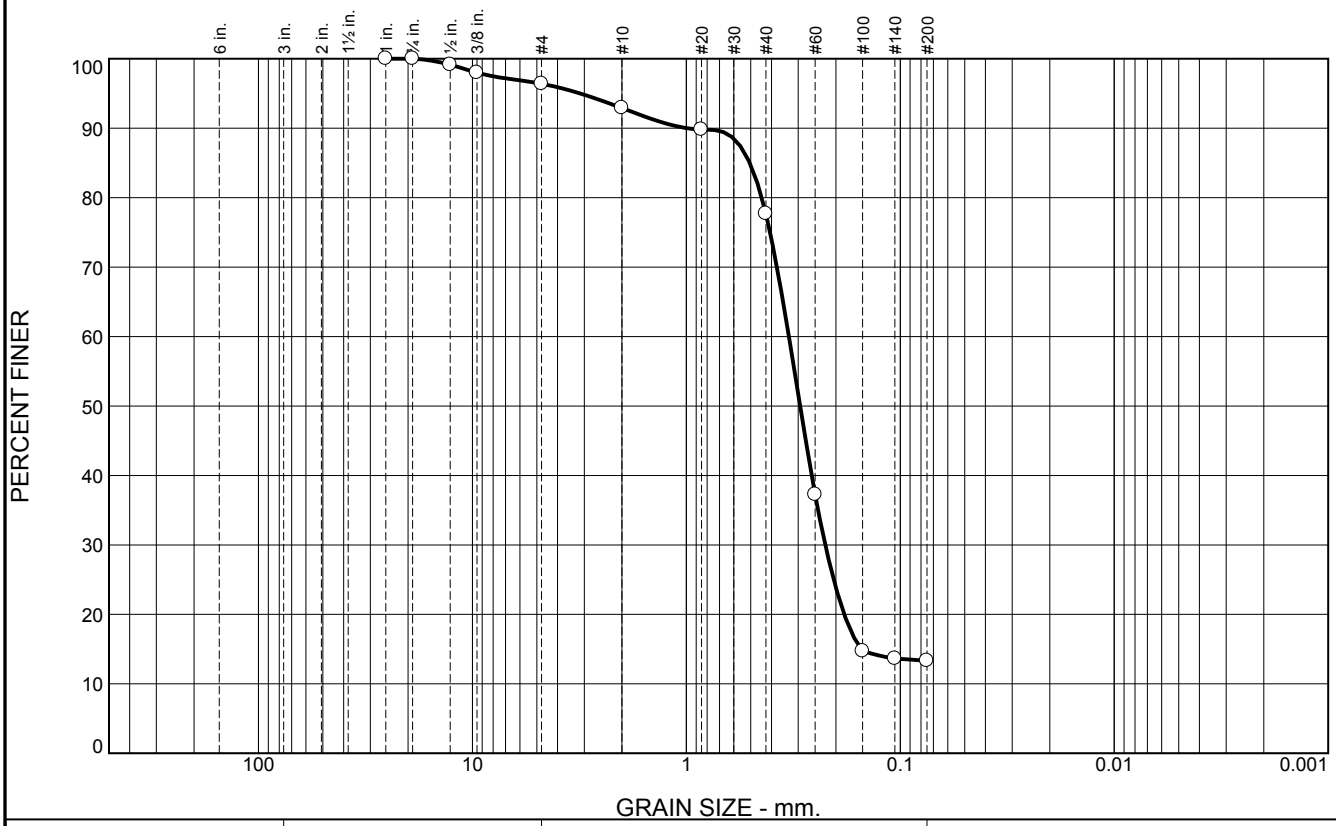
Location: BI-PBS-107-12 A
Sample Number: 6503 (24) **Depth:** 6.0' **Date:** 1/08/13

Thompson Engineering

Mobile, Alabama

Client: CDM/Thompson Engineering JV
Project: MsCIP Barrier Island Restoration GT
Project No: 1221110095 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	3.6	3.5	15.2	64.4	13.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
.75	100.0		
.5	99.1		
.375	98.0		
#4	96.4		
#10	92.9		
#20	89.8		
#40	77.7		
#60	37.2		
#100	14.7		
#140	13.6		
#200	13.3		

* (no specification provided)

Material Description

Fine to medium grained, SILTY SAND, with trace SHELL

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.9996 D_{85}= 0.5057 D_{60}= 0.3317
D_{50}= 0.2940 D_{30}= 0.2242 D_{15}= 0.1526
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO=

Remarks

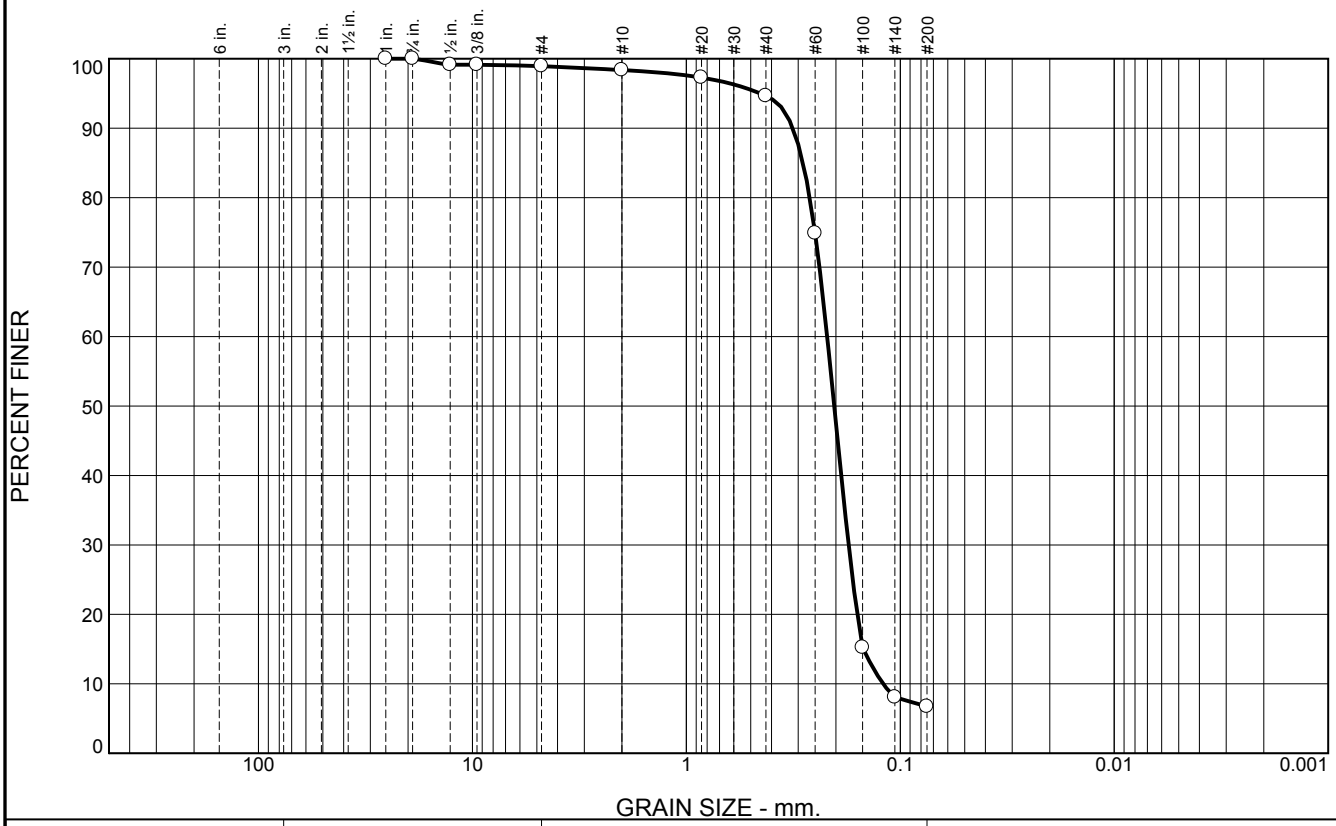
Location: BI-PBS-107-12 B
Sample Number: 6503 (25) **Depth:** 8.7' **Date:** 1/08/13

Thompson Engineering

Mobile, Alabama

Client: CDM/Thompson Engineering JV
Project: MsCIP Barrier Island Restoration GT
Project No: 1221110095 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.1	0.5	3.8	87.9	6.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
.75	100.0		
.5	99.1		
.375	99.1		
#4	98.9		
#10	98.4		
#20	97.3		
#40	94.6		
#60	74.9		
#100	15.2		
#140	8.1		
#200	6.7		

* (no specification provided)

Material Description

Fine grained, SLIGHTLY SILTY SAND, with trace SHELL

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.3180 D_{85}= 0.2852 D_{60}= 0.2197
D_{50}= 0.2036 D_{30}= 0.1745 D_{15}= 0.1488
D_{10}= 0.1202 C_u= 1.83 C_c= 1.15

Classification

USCS= SP-SM AASHTO=

Remarks

Location: BI-PBS-107-12 C
Sample Number: 6503 (26) **Depth:** 11.1' **Date:** 1/08/13

Thompson Engineering

Mobile, Alabama

Client: CDM/Thompson Engineering JV
Project: MsCIP Barrier Island Restoration GT
Project No: 1221110095 **Figure**

Boring Designation BI-PBS-108-12

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS East	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-108-12 — LOCATION COORDINATES: E = 1,141,062 N = 230,567	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: — UNDISTURBED (UD): 0
4. NAME OF DRILLER: American Vibracore Systems, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL: — BEARING:	14. WATER DEPTH: 59.1 Ft.
	15. DATE BORING — STARTED: 01-04-13 — COMPLETED: 01-04-13
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -58.9 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 17.5 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Mike FitzHarris, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-58.9	0.0				
-61.6	2.7		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace fines, trace shell fragments, gray (SP)	A	Classification: SP Color: 5Y 6/2-light olive gray D50: 0.2444 mm % Fines: 4.4
-63.0	4.1		SAND, clayey, mostly fine-grained sand-sized quartz, some clay, few shell fragments, gray (SC)	B	Classification: SM Color: 5Y 5/2-olive gray D50: 0.2294 mm % Fines: 27.7
-75.4	16.5		CLAY, lean, mostly clay, little silt, few shell fragments, some sandy zones, dark gray (CL)	NS	
-76.4	17.5		CLAY, fat, mostly clay, medium to high plasticity, very stiff, gets siltier near 16-16.5 ft., lt. 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.

3. Seafloor elevation determined from USACE hydrographic survey completed April 2014.

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.13308° Long = -88.33728°

Project Mississippi Barrier Island Restoration Project

AVS
AMERICAN VIBRACORE SERVICES

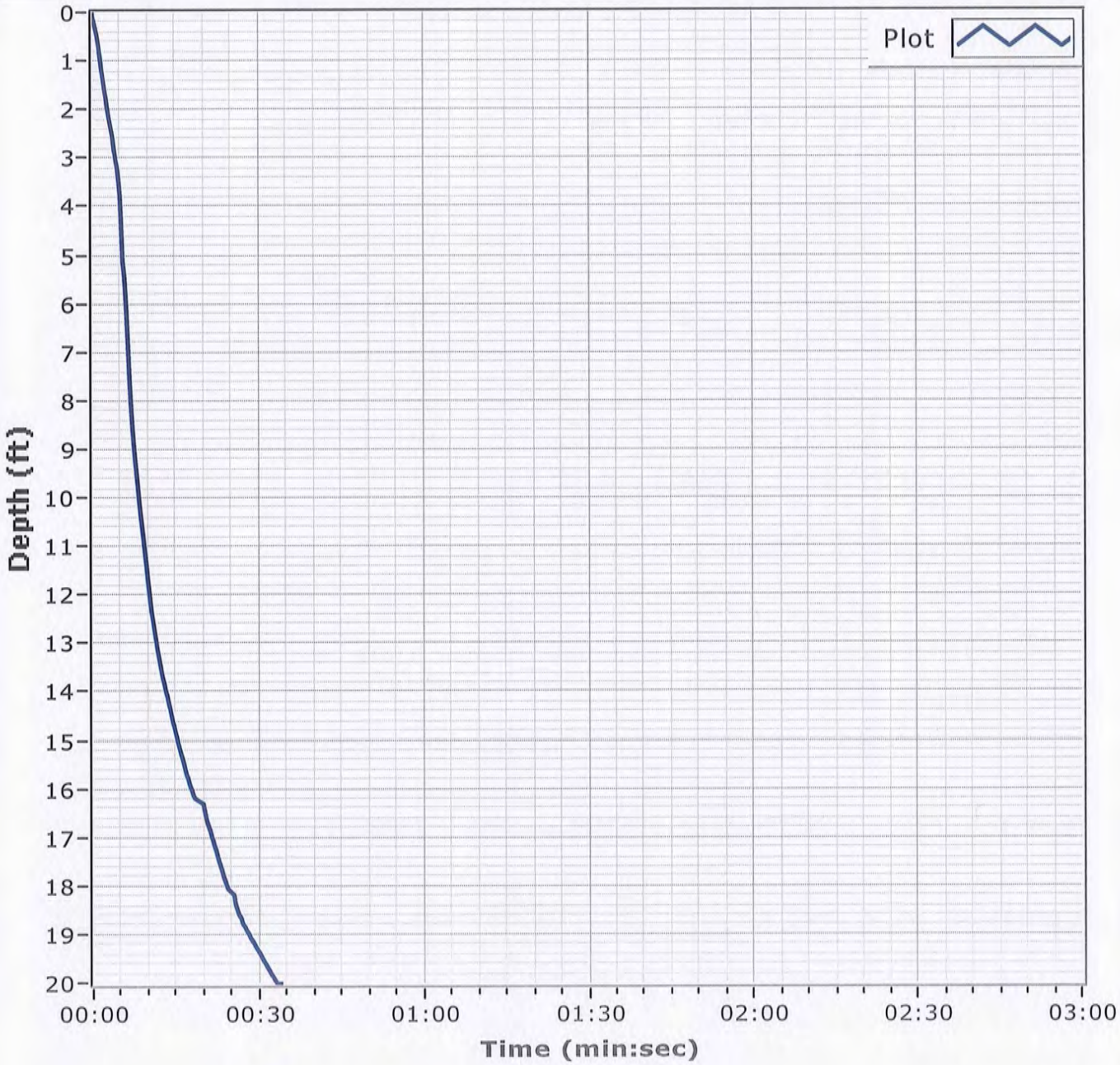
Core Identifier BI-PBS-108-12
Coordinate System
Latitude / Longitude

Latitude 30 07.799 N
Longitude 088 20.237 W

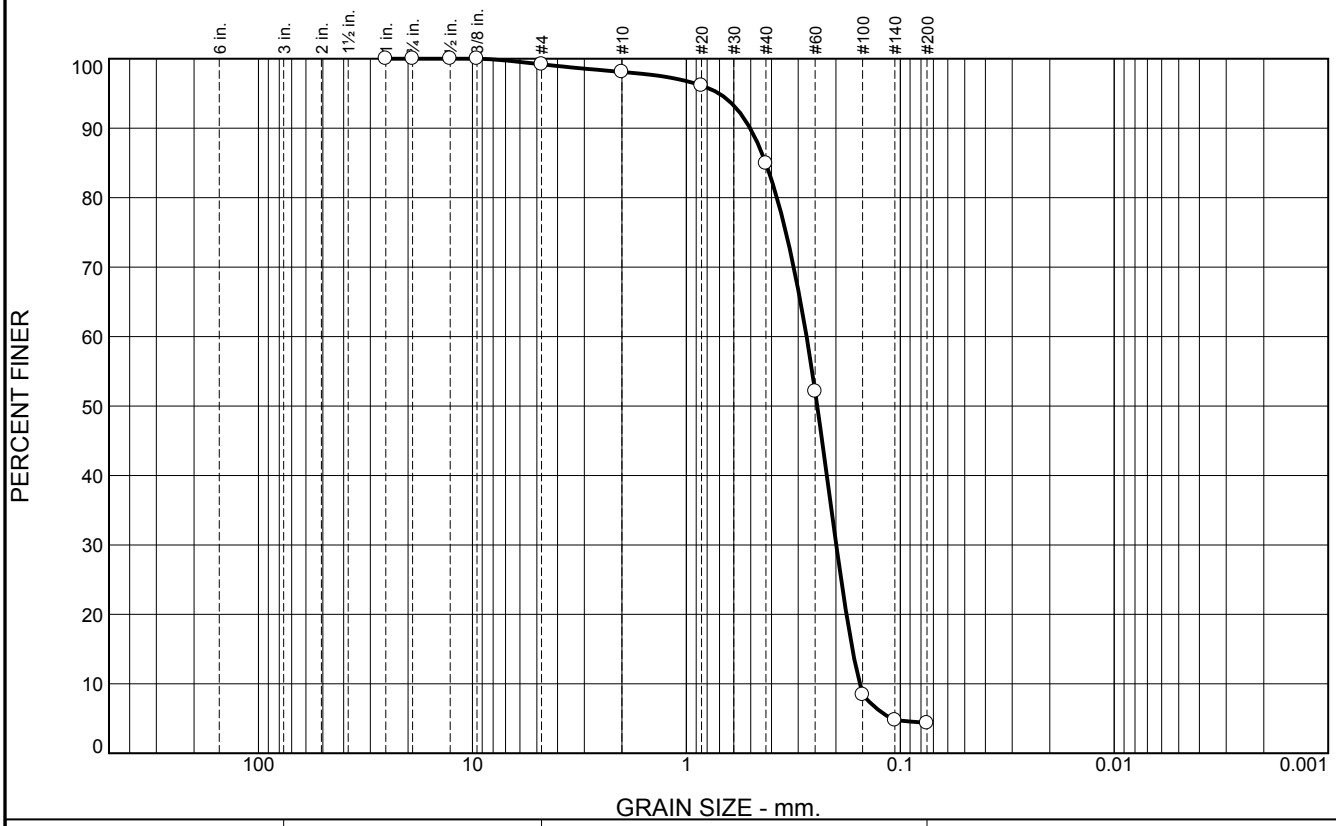
Date 01/04/2013
Start Time 15:11:20
End Time 15:11:55
Total Time 00:00:34

Water Depth 59.1'
Penetration 20.0'
Recovery 17.5'

Comments



Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.8	1.1	13.2	80.5	4.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
.75	100.0		
.5	100.0		
.375	100.0		
#4	99.2		
#10	98.1		
#20	96.1		
#40	84.9		
#60	52.1		
#100	8.4		
#140	4.8		
#200	4.4		

* (no specification provided)

Material Description

Fine to medium grained, SAND

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.5037 D_{85}= 0.4257 D_{60}= 0.2743
D_{50}= 0.2444 D_{30}= 0.1993 D_{15}= 0.1676
D_{10}= 0.1549 C_u= 1.77 C_c= 0.93

Classification

USCS= SP AASHTO=

Remarks

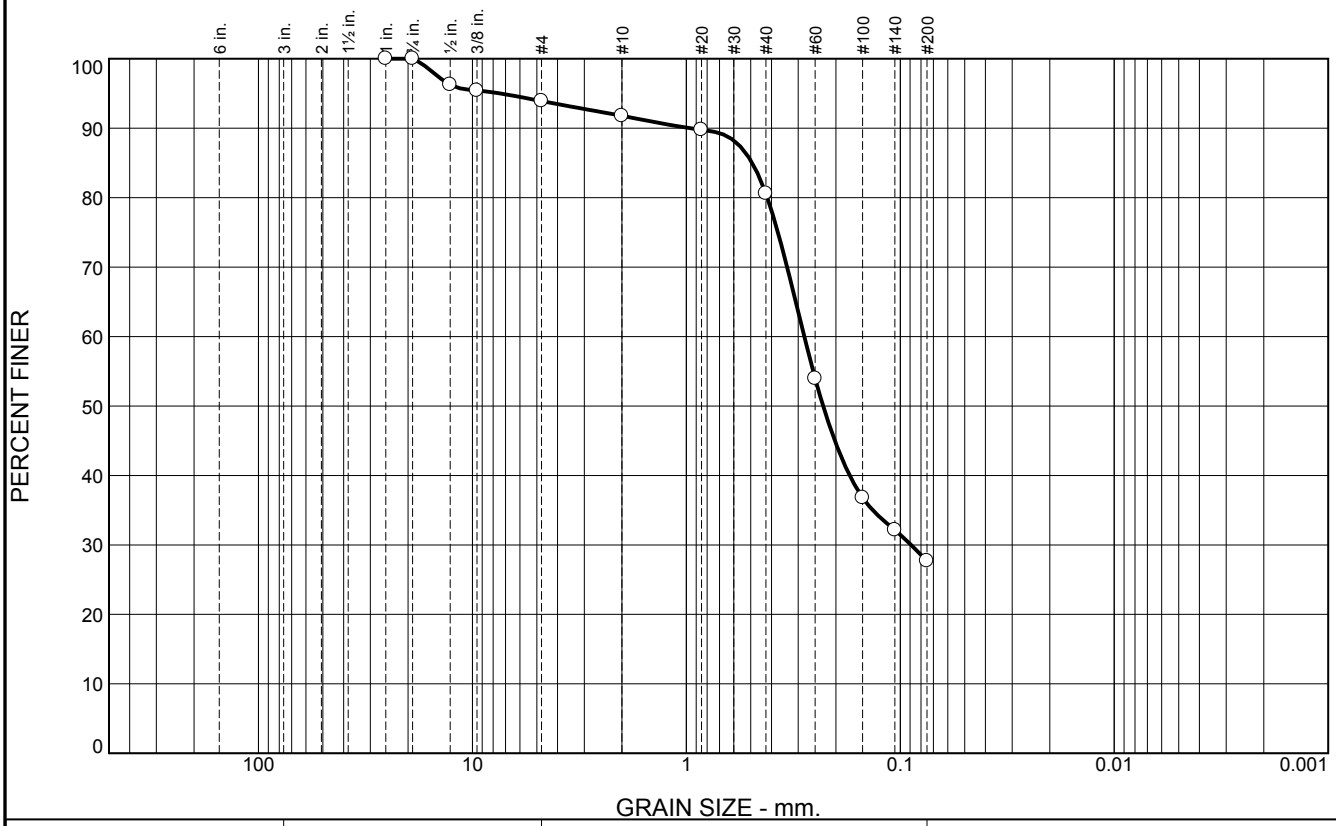
Location: BI-PBS-108-12 A
Sample Number: 6503 (27) **Depth:** 0.0' **Date:** 1/08/13

Thompson Engineering

Mobile, Alabama

Client: CDM/Thompson Engineering JV
Project: MsCIP Barrier Island Restoration GT
Project No: 1221110095 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	6.1	2.1	11.2	52.9	27.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
.75	100.0		
.5	96.3		
.375	95.4		
#4	93.9		
#10	91.8		
#20	89.8		
#40	80.6		
#60	54.0		
#100	36.8		
#140	32.2		
#200	27.7		

* (no specification provided)

Material Description

Fine to medium, SILTY SAND, with trace SHELL

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.9627 D_{85}= 0.4924 D_{60}= 0.2811
D_{50}= 0.2294 D_{30}= 0.0891 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO=

Remarks

Location: BI-PBS-108-12 B
Sample Number: 6503 (28) **Depth:** 2.7' **Date:** 1/08/13

Thompson Engineering

Mobile, Alabama

Client: CDM/Thompson Engineering JV
Project: MsCIP Barrier Island Restoration GT
Project No: 1221110095 **Figure**

Boring Designation BI-PBS-109-12

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS East	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-109-12 — LOCATION COORDINATES: E = 1,142,277 N = 229,445	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: — UNDISTURBED (UD): 0
4. NAME OF DRILLER: American Vibracore Systems, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL: — BEARING:	14. WATER DEPTH: 60.4 Ft.
	15. DATE BORING — STARTED: 01-04-13 — COMPLETED: 01-04-13
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -60.3 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 16.6 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Mike FitzHarris, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-60.3	0.0				
-62.6	2.3		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace fines, trace shell fragments, gray (SP)	A	Classification: SP Color: 5Y 5/2-olive gray D50: 0.2367 mm % Fines: 3.5
-66.2	5.9		SAND, silty, mostly fine-grained sand-sized quartz, some silt, few shell fragments, gray (SM)	B	Classification: SM Color: 5Y 5/2-olive gray D50: 0.2436 mm % Fines: 22.2
-74.7	14.4		CLAY, lean, mostly clay, some sand, little silt, trace shell fragments, gray (CL)	NS	
-75.3	15.0		SAND, poorly-graded with clay, mostly fine-grained sand-sized quartz, little silt, few clay, trace shell fragments, gray (SP-SC)		
-76.9	16.6		SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace fines, 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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.12998° Long = -88.33345°

Project Mississippi Barrier Island Restoration Project

AVS
AMERICAN VIBRACORE SERVICES

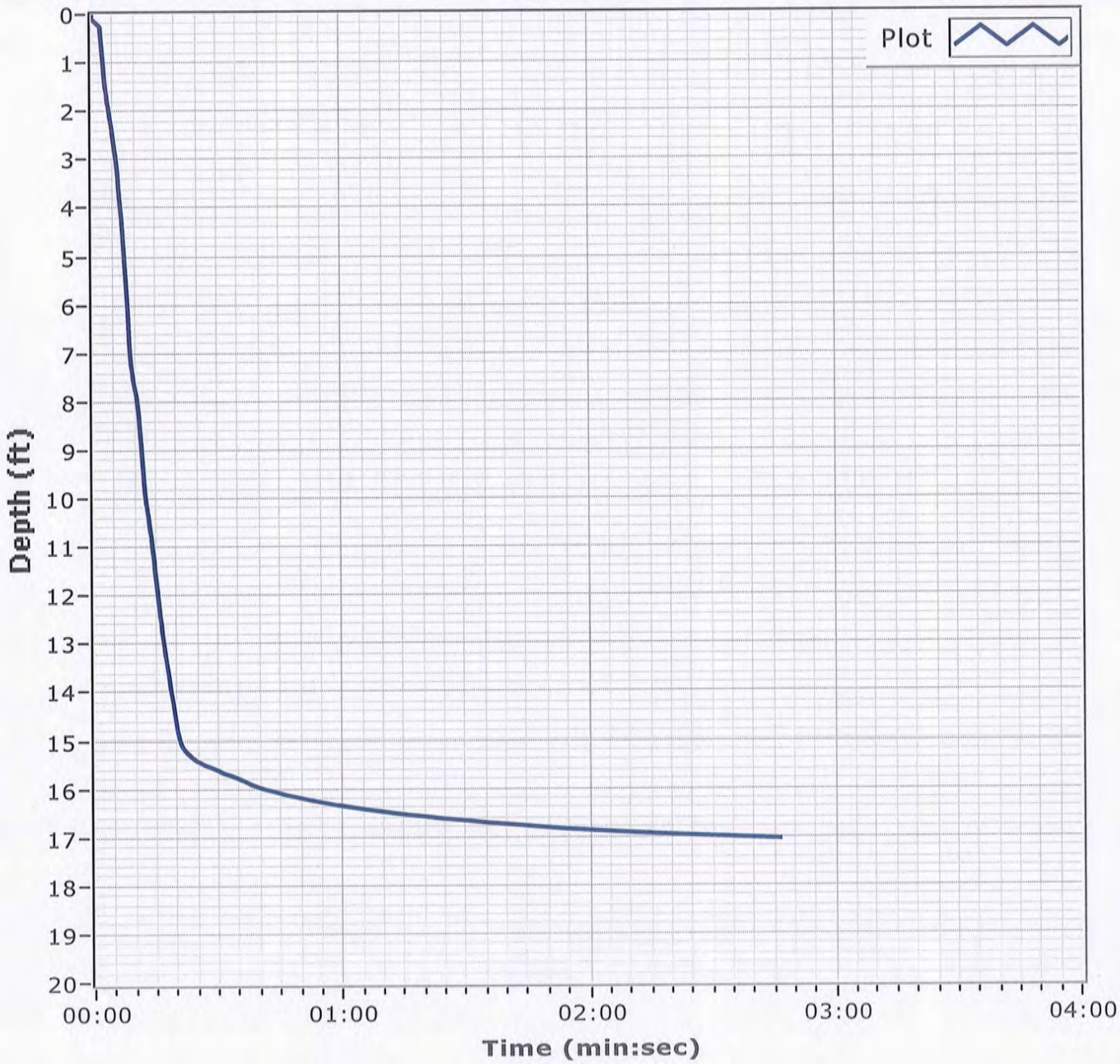
Core Identifier BI-PBS-109-12
Coordinate System
Latitude / Longitude

Latitude 30 07.799 N
Longitude 088 20.007 W

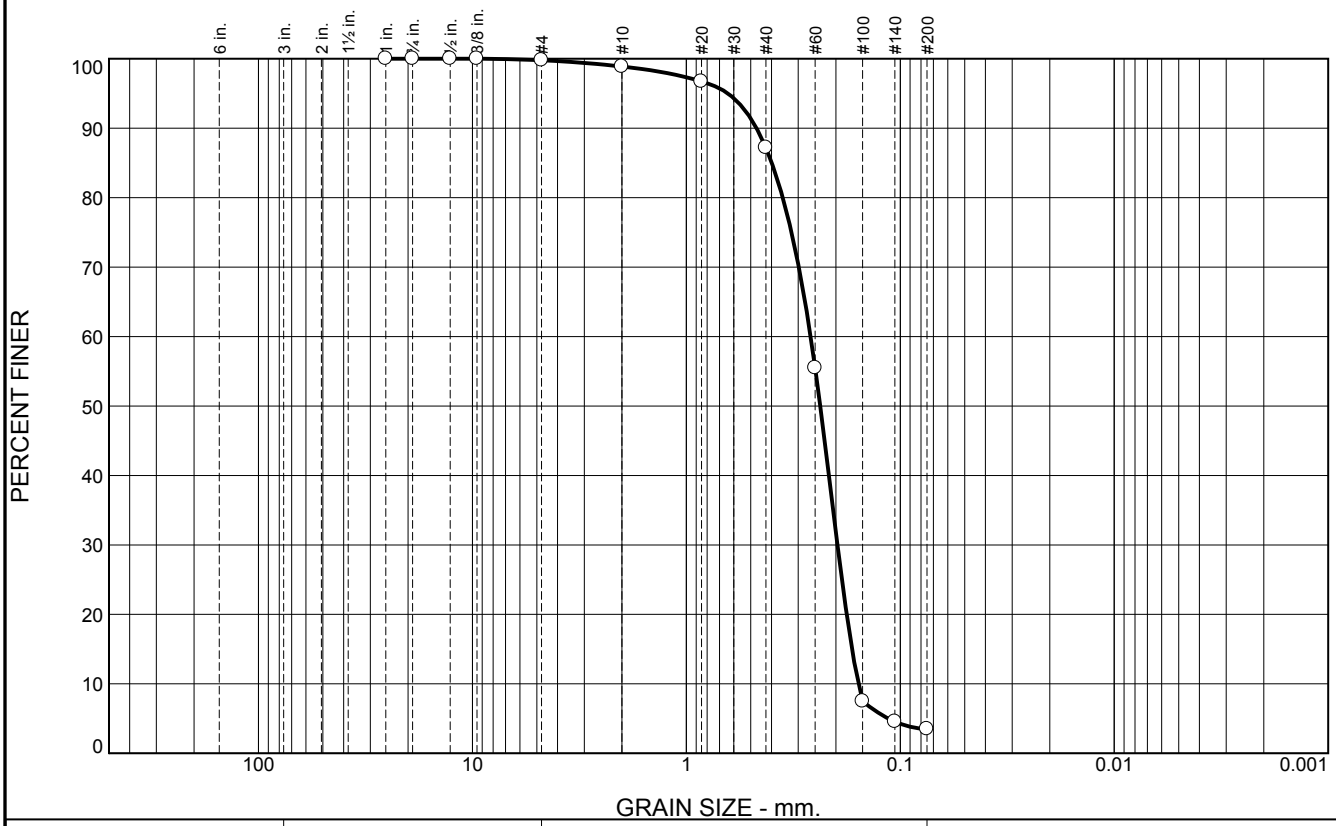
Date 01/04/2013
Start Time 14:35:20
End Time 14:38:07
Total Time 00:02:46

Water Depth 60.4'
Penetration 17.1'
Recovery 16.6'

Comments



Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.9	11.7	83.7	3.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
.75	100.0		
.5	100.0		
.375	100.0		
#4	99.8		
#10	98.9		
#20	96.7		
#40	87.2		
#60	55.5		
#100	7.5		
#140	4.6		
#200	3.5		

* (no specification provided)

Material Description

Fine to medium grained, SAND

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.4702 D_{85}= 0.3987 D_{60}= 0.2625
D_{50}= 0.2367 D_{30}= 0.1967 D_{15}= 0.1683
D_{10}= 0.1570 C_u= 1.67 C_c= 0.94

Classification

USCS= SP AASHTO=

Remarks

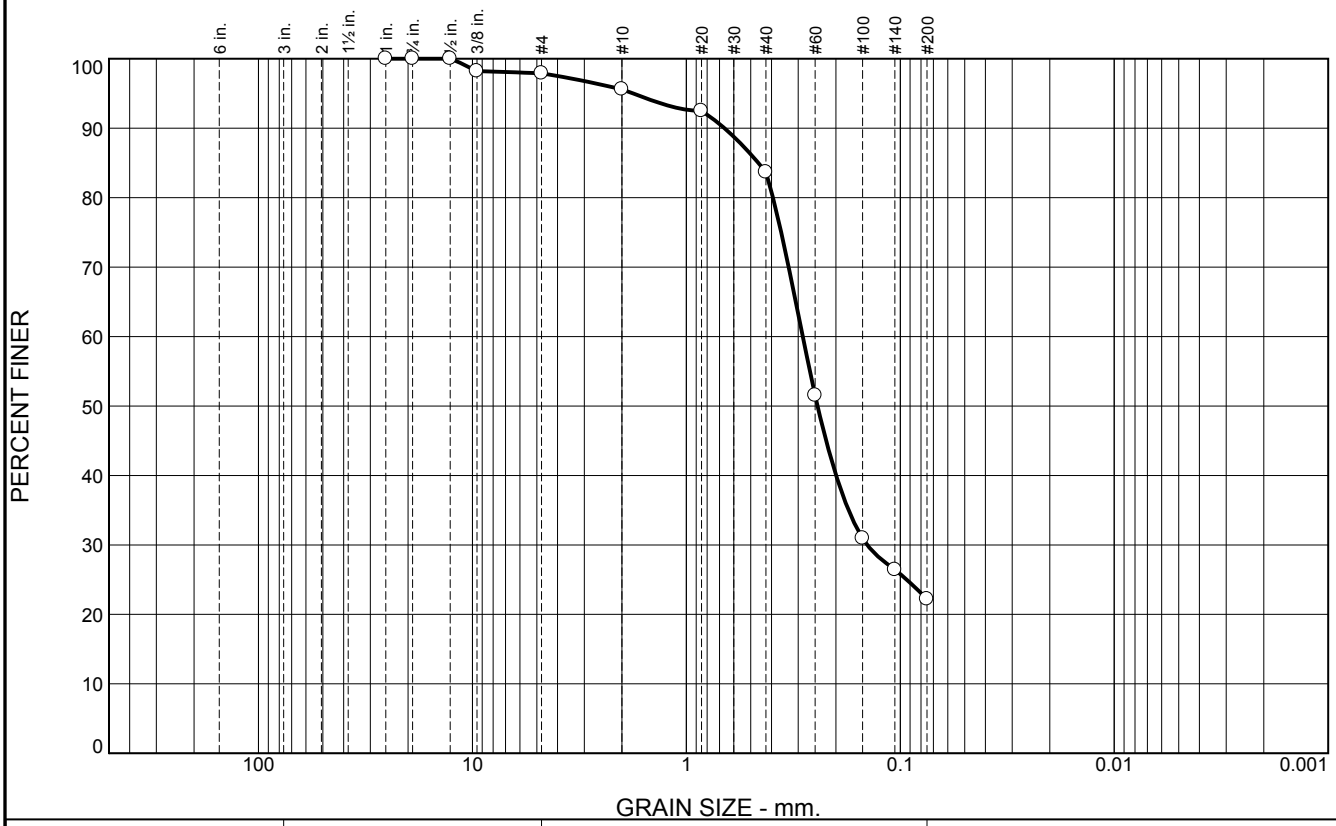
Location: BI-PBS-109-12 A
Sample Number: 6503 (29) **Depth:** 0.0' **Date:** 1/08/12

Thompson Engineering

Mobile, Alabama

Client: CDM/Thompson Engineering JV
Project: MsCIP Barrier Island Restoration GT
Project No: 1221110095 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	2.1	2.3	11.9	61.5	22.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
.75	100.0		
.5	100.0		
.375	98.2		
#4	97.9		
#10	95.6		
#20	92.5		
#40	83.7		
#60	51.5		
#100	30.9		
#140	26.4		
#200	22.2		

* (no specification provided)

Material Description

Fine to medium grained, SILTY SAND, with trace SHELL

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.6646 D_{85}= 0.4611 D_{60}= 0.2859
D_{50}= 0.2436 D_{30}= 0.1428 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO=

Remarks

Location: BI-PBS-109-12 B
Sample Number: 6503 (30) **Depth:** 2.3' **Date:** 1/08/13

Thompson Engineering

Mobile, Alabama

Client: CDM/Thompson Engineering JV
Project: MsCIP Barrier Island Restoration GT
Project No: 1221110095 **Figure**

Boring Designation BI-PBS-110-12

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS East	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-110-12 — LOCATION COORDINATES: E = 1,135,086 N = 239,132	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: — UNDISTURBED (UD): 0
4. NAME OF DRILLER: American Vibracore Systems, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL: — BEARING:	14. WATER DEPTH: 51.4 Ft.
	15. DATE BORING — STARTED: 01-12-13 — COMPLETED: 01-12-13
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -52.5 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 18.3 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Mike FitzHarris, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-52.5	0.0				
-54.8	2.3		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace fines, trace shell fragments, gray (SP)	A	Classification: SP Color: 5Y 6/2-light olive gray D50: 0.2964 mm % Fines: 2.6
			SAND, silty, mostly fine-grained sand-sized quartz, some silt, altenating bands of clay, dark gray (SM)	NS	
			At El. -58.1 Ft., mostly fine-grained sand-sized quartz, some silt, trace clay, dark gray	B	Classification: SM Color: 5Y 5/2-olive gray D50: 0.2127 mm % Fines: 14.5
-65.0	12.5				
-70.8	18.3		SAND, poorly-graded with clay, mostly fine-grained sand-sized quartz, few clay, few silt, some clay intervals with poorly-graded, fine-grained sand with silt between 14.3-15.3 ft., gray (SP-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.

3. Seafloor elevation determined from USACE hydrographic survey completed April 2014.

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.1567° Long = -88.35607°

Project Mississippi Barrier Island Restoration Project

AVS
AMERICAN VIBRACORE SERVICES

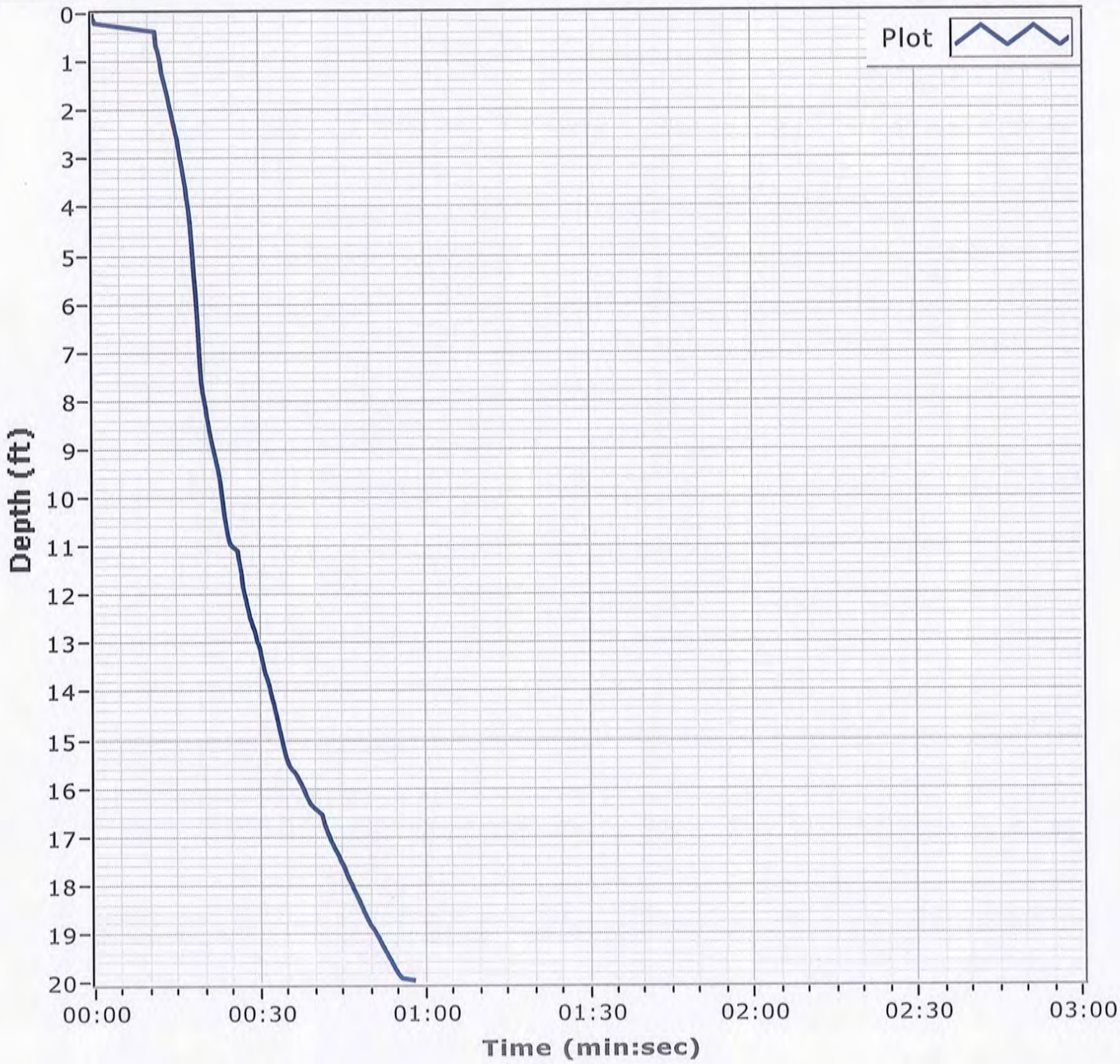
Core Identifier BI-PBS-110-12
Coordinate System
Latitude / Longitude

Latitude 30 09.402
Longitude 088 21.364

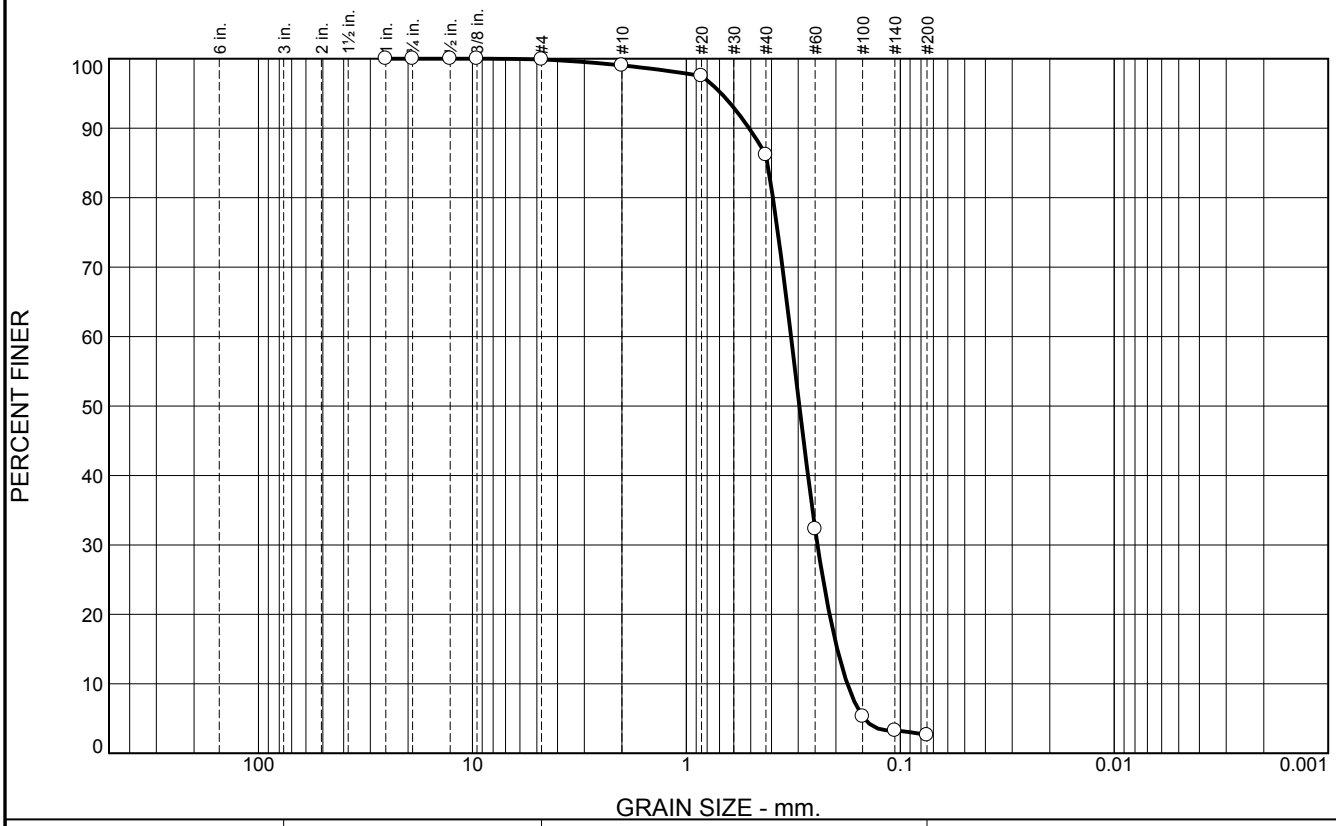
Date 01/12/2013
Start Time 11:44:29
End Time 11:45:27
Total Time 00:00:58

Water Depth 51.4'
Penetration 20.0'
Recovery 18.3'

Comments



Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.9	12.8	83.6	2.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
.75	100.0		
.5	100.0		
.375	100.0		
#4	99.9		
#10	99.0		
#20	97.5		
#40	86.2		
#60	32.3		
#100	5.3		
#140	3.3		
#200	2.6		

* (no specification provided)

Material Description

Fine to medium grained, SAND

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.5094 D_{85}= 0.4184 D_{60}= 0.3242
D_{50}= 0.2964 D_{30}= 0.2437 D_{15}= 0.1971
D_{10}= 0.1770 C_u= 1.83 C_c= 1.04

Classification

USCS= SP AASHTO=

Remarks

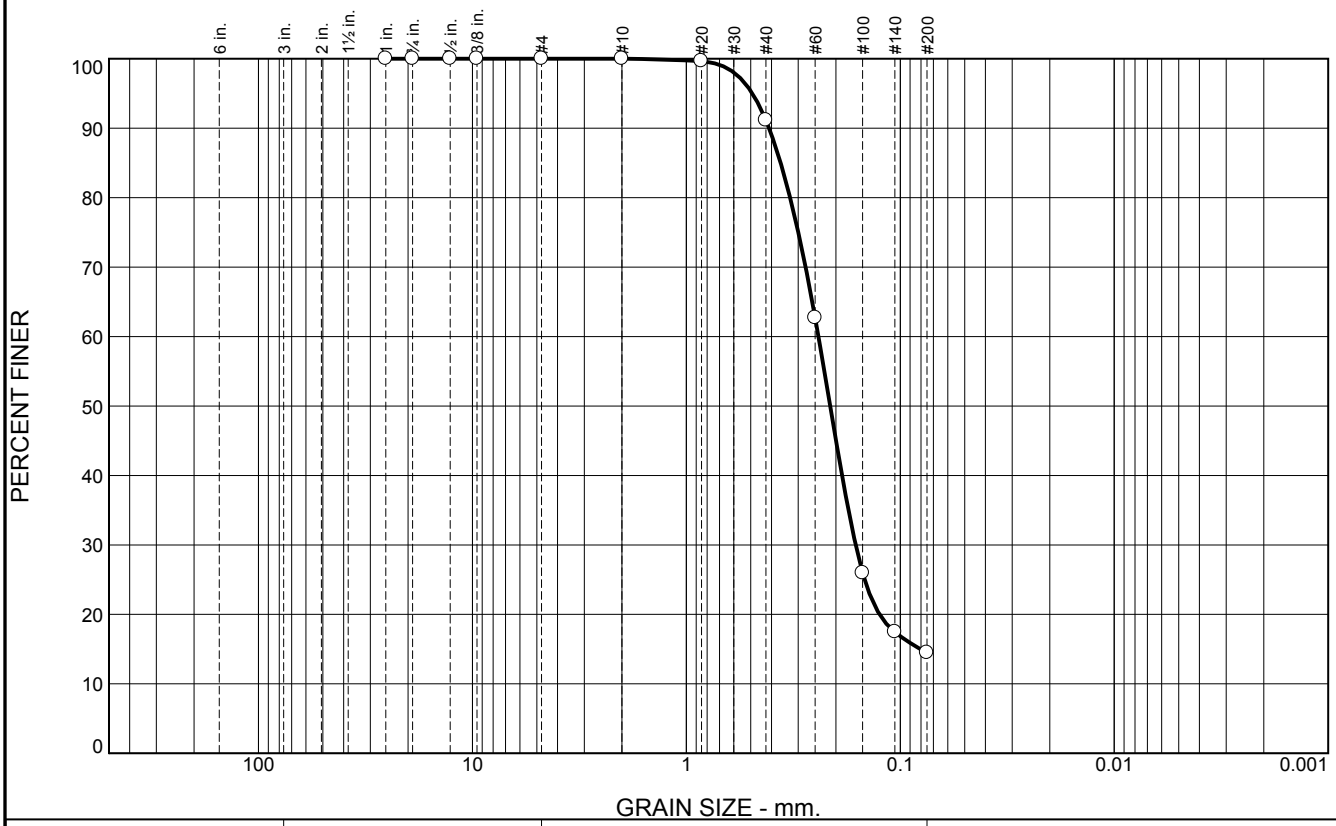
Location: BI-PBS-110-12 A
Sample Number: 6507 (7) **Depth:** 0.0' **Date:** 1/14/13

Thompson Engineering

Mobile, Alabama

Client: CDM/Thompson Engineering JV
Project: MsCIP Barrier Island Restoration GT
Project No: 1221110095 **Figure**

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	76.7	14.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
.75	100.0		
.5	100.0		
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.7		
#40	91.2		
#60	62.7		
#100	26.0		
#140	17.5		
#200	14.5		

* (no specification provided)

Material Description

Fine grained, SILTY SAND

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.4106 D_{85}= 0.3624 D_{60}= 0.2412
D_{50}= 0.2127 D_{30}= 0.1618 D_{15}= 0.0805
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO=

Remarks

Location: BI-PBS-110-12 B
Sample Number: 6507 (8) **Depth:** 5.6' **Date:** 1/14/13

Thompson Engineering

Mobile, Alabama

Client: CDM/Thompson Engineering JV
Project: MsCIP Barrier Island Restoration GT

Project No: 1221110095 **Figure**

Boring Designation BI-PBS-111-12

DRILLING LOG	DIVISION South Atlantic	INSTALLATION Mobile District	SHEET 1 OF 2 SHEETS

1. PROJECT MsCIP Barrier Island Restoration Petit Bois Pass-OCS East	9. SIZE AND TYPE OF BIT N/A 10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-111-12 — LOCATION COORDINATES: E = 1,137,855 N = 237,489	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: — UNDISTURBED (UD): 0
4. NAME OF DRILLER: American Vibracore Systems, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL: — BEARING:	14. WATER DEPTH 52 Ft. 15. DATE BORING — STARTED: 01-12-13 — COMPLETED: 01-12-13
6. THICKNESS OF OVERBURDEN N/A	16. ELEVATION TOP OF BORING -51.6 Ft.
7. DEPTH DRILLED INTO ROCK N/A	17. TOTAL RECOVERY FOR BORING 100%
8. TOTAL DEPTH OF BORING 19.9 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Mike FitzHarris, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-51.6	0.0				
-55.6	4.0		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace fines, trace shell fragments, gray (SP)	A	Classification: SP Color: 5Y 6/2-light olive gray D50: 0.3011 mm % Fines: 3.7
-58.0	6.4		SAND, clayey, mostly fine-grained sand-sized quartz, some clay, trace shell fragments, trace wood debris, clay bands, gray (SC)	NS	
-64.4	12.8		SAND, silty, mostly fine-grained sand-sized quartz, some silt, trace wood debris, few clay lenses, gray (SM)	B	Classification: SM Color: 5Y 5/2-olive gray D50: 0.1971 mm % Fines: 15.7
-65.4	13.8		CLAY, silty, mostly clay, some silt, few fine-grained sand-sized quartz, low plasticity, gray (CL-ML)	NS	
-70.3	18.7		SAND, silty, mostly fine-grained sand-sized quartz, some silt, trace clay, gray (SM)		
-71.5	19.9		SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace fines, 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.

3. Seafloor elevation determined from 2013

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15215° Long = -88.34733°

DRILLING LOG (Cont. Sheet)	INSTALLATION Mobile District		SHEET 2 OF 2 SHEETS
PROJECT MsCIP Barrier Island Restoration	COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83	VERTICAL NAVD88
LOCATION COORDINATES X = 1,137,855 Y = 237,489	ELEVATION TOP OF BORING -51.6 Ft.		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
			USGS geophysical survey.		

30
35
40
45
50
55
60

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15215° Long = -88.34733°

Project Mississippi Barrier Island Restoration Project

AVS
AMERICAN VIBRACORE SERVICES

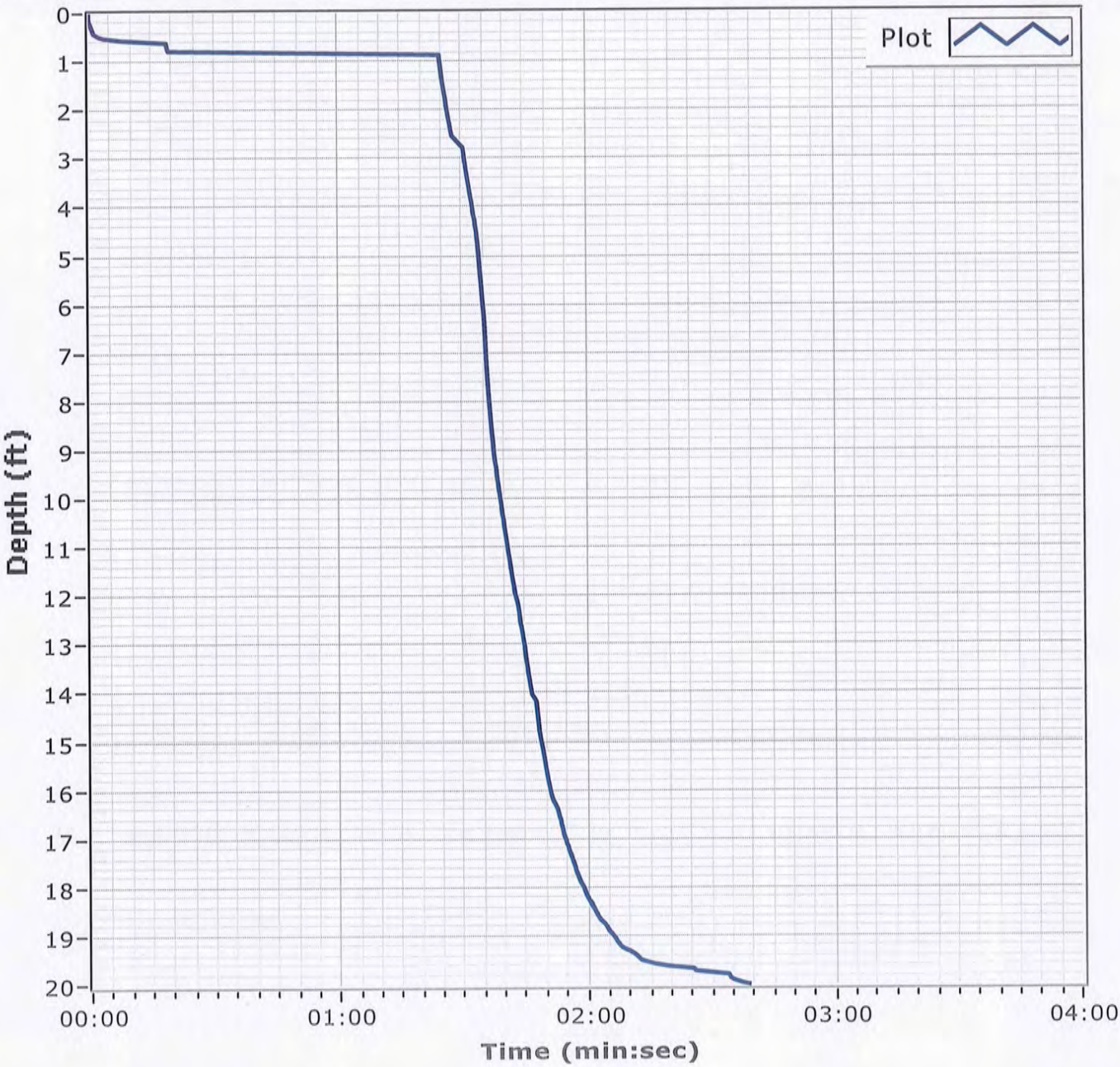
Core Identifier BI-PBS-111-12
Coordinate System
Latitude / Longitude

Latitude 30 09.129
Longitude 088 20.840

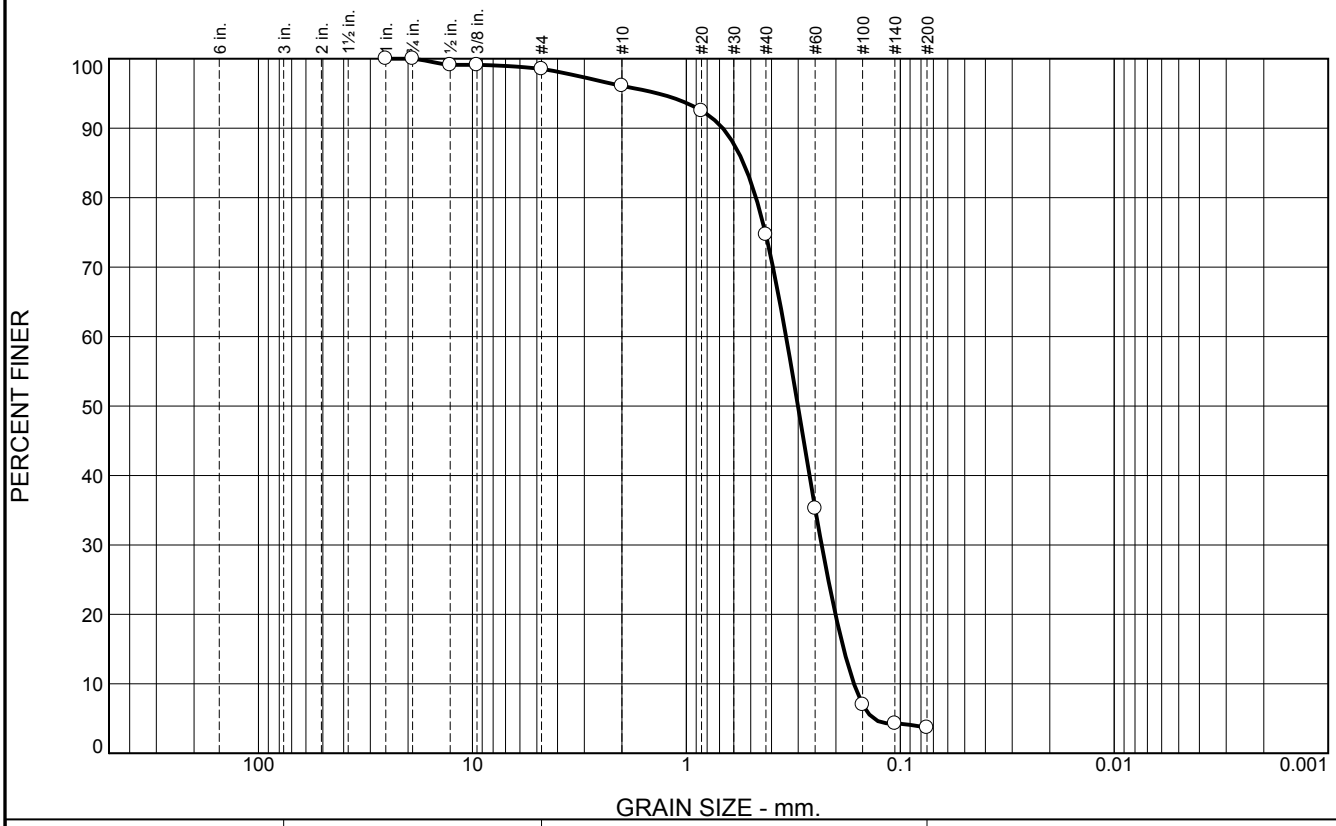
Date 01/12/2013
Start Time 12:17:09
End Time 12:19:48
Total Time 00:02:39

Water Depth 52.0'
Penetration 20.0'
Recovery 19.9'

Comments
at 0.8' vibrator stopped then restarted



Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.5	2.4	21.4	71.0	3.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
.75	100.0		
.5	99.1		
.375	99.1		
#4	98.5		
#10	96.1		
#20	92.5		
#40	74.7		
#60	35.2		
#100	7.0		
#140	4.3		
#200	3.7		

* (no specification provided)

Material Description

Fine to medium grained, SAND, with trace SHELL

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.6764 D_{85}= 0.5410 D_{60}= 0.3420
D_{50}= 0.3011 D_{30}= 0.2331 D_{15}= 0.1840
D_{10}= 0.1648 C_u= 2.08 C_c= 0.96

Classification

USCS= SP AASHTO=

Remarks

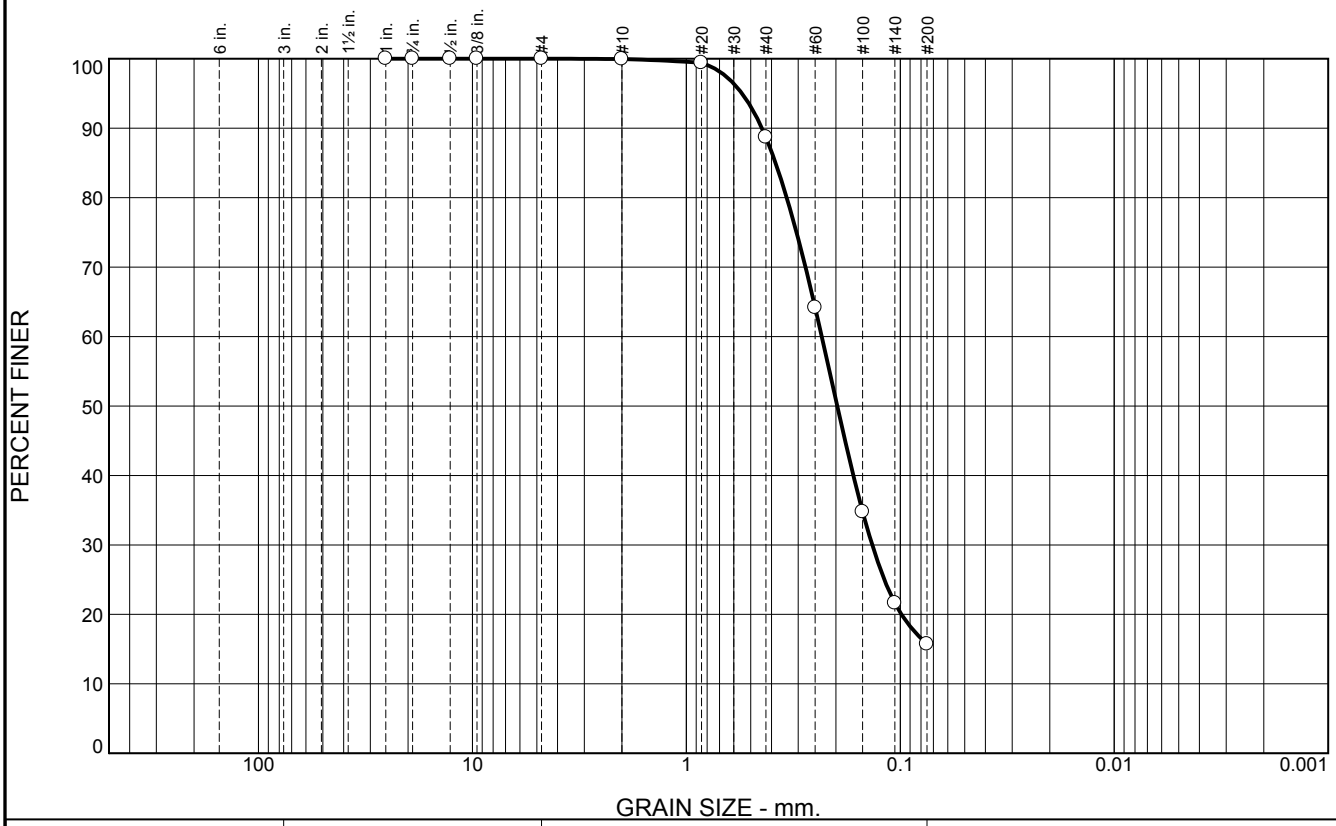
Location: BI-PBS-111-12 A
Sample Number: 6507 (9) **Depth:** 0.0' **Date:** 1/14/13

Thompson Engineering

Mobile, Alabama

Client: CDM/Thompson Engineering JV
Project: MsCIP Barrier Island Restoration GT
Project No: 1221110095 **Figure**

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	73.0	15.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
.75	100.0		
.5	100.0		
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.4		
#40	88.7		
#60	64.2		
#100	34.7		
#140	21.6		
#200	15.7		

* (no specification provided)

Material Description

Fine to medium grained, SILTY SAND

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.4435 D_{85}= 0.3828 D_{60}= 0.2328
D_{50}= 0.1971 D_{30}= 0.1353 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO=

Remarks

Location: BI-PBS-111-12 B
Sample Number: 6507 (10) **Depth:** 6.4' **Date:** 1/14/13

Thompson Engineering

Mobile, Alabama

Client: CDM/Thompson Engineering JV
Project: MsCIP Barrier Island Restoration GT
Project No: 1221110095 **Figure**

Boring Designation BI-PBS-112-12

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 2 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS East	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-112-12 — LOCATION COORDINATES: E = 1,133,311 N = 237,913	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: — UNDISTURBED (UD): 0
4. NAME OF DRILLER: American Vibracore Systems, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL: — BEARING:	14. WATER DEPTH: 49 Ft.
	15. DATE BORING — STARTED: 01-12-13 — COMPLETED: 01-12-13
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -48.4 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 20.2 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Mike FitzHarris, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-48.4	0.0				
-53.4	5.0		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace fines, trace shell fragments, lt. gray (SP)	A	Classification: SP Color: 5Y 6/2-light olive gray D50: 0.3298 mm % Fines: 2.3
-55.0	6.6		SAND, poorly-graded with silt, mostly fine to medium-grained sand-sized quartz, few silt, trace clay, gray (SP-SM)	B	Classification: SP-SM Color: 5Y 5/2-olive gray D50: 0.3135 mm % Fines: 7.6
-57.4	9.0		SAND, silty, mostly fine-grained sand-sized quartz, some silt, few clay bands, gray (SM)	NS	
-62.4	14.0		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few silt, trace shell fragments, gray (SP-SM)	C	Classification: SM Color: 5Y 5/1-gray D50: 0.2161 mm % Fines: 12.7
-66.2	17.8		SAND, silty, mostly fine-grained sand-sized quartz, some silt, few shell fragments, few clay nodules, gray (SM)	D	Classification: SP-SM Color: 5Y 5/2-olive gray D50: 0.2329 mm % Fines: 11.2
-68.6	20.2		SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace fines, lt. gray (SP)	E E	Classification: SP Color: 5Y 6/2-light olive gray D50: 0.242 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.

3. Seafloor elevation determined from USACE

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15337° Long = -88.3617°

DRILLING LOG (Cont. Sheet)	INSTALLATION Mobile District		SHEET 2 OF 2 SHEETS
PROJECT MsCIP Barrier Island Restoration	COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83	VERTICAL NAVD88
LOCATION COORDINATES X = 1,133,311 Y = 237,913	ELEVATION TOP OF BORING -48.4 Ft.		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
			hydrographic survey completed April 2014.		

30
35
40
45
50
55
60

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15337° Long = -88.3617°

Project Mississippi Barrier Island Restoration Project

AVS
AMERICAN VIBRACORE SERVICES

Core Identifier BI-PBS-112-12

Coordinate System
Latitude / Longitude

Latitude 30 09.202

Longitude 088 21.702

Date 01/12/2013

Start Time 10:58:31

End Time 11:05:21

Total Time 00:06:50

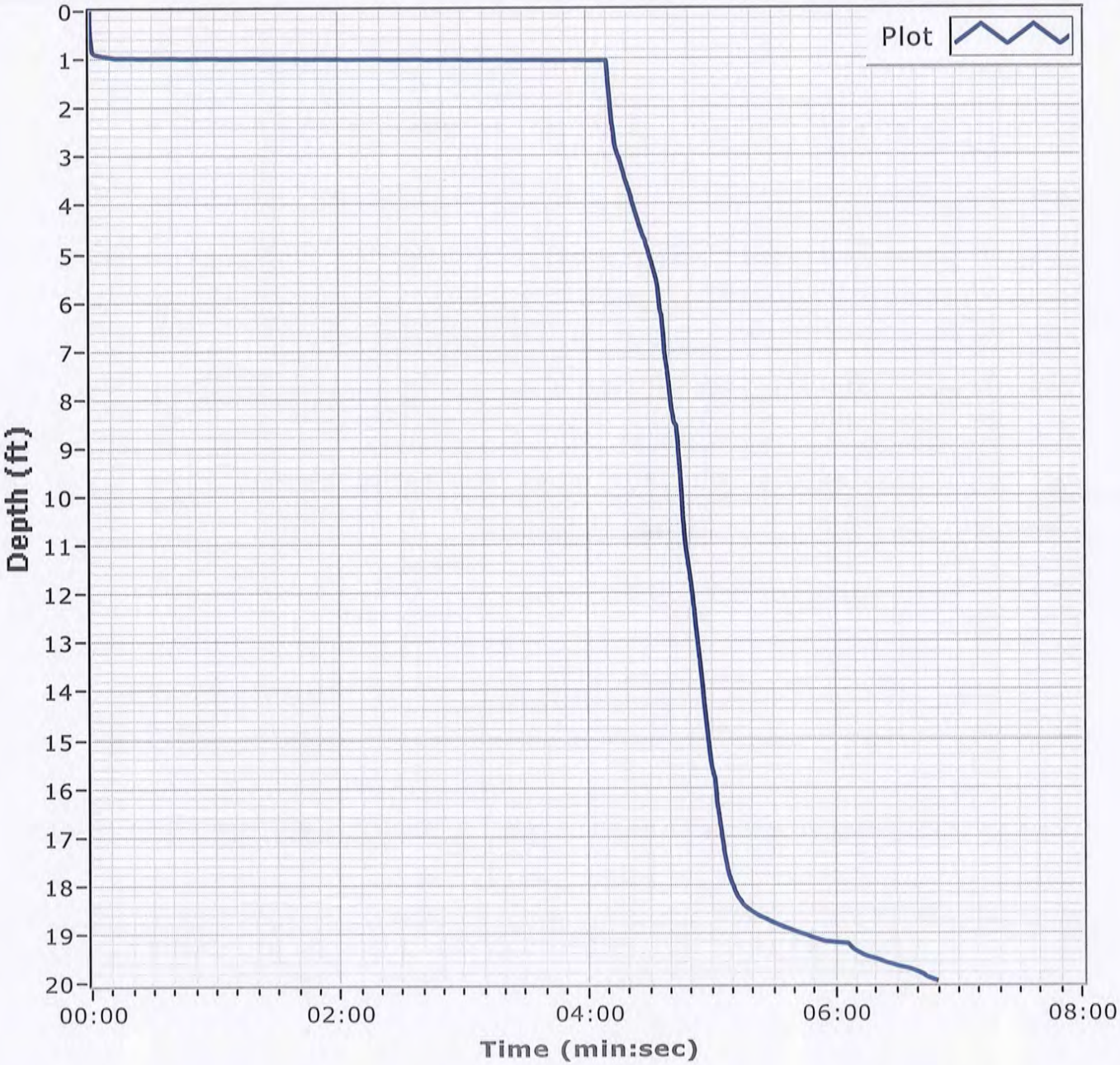
Water Depth 49.0'

Penetration 20.0'

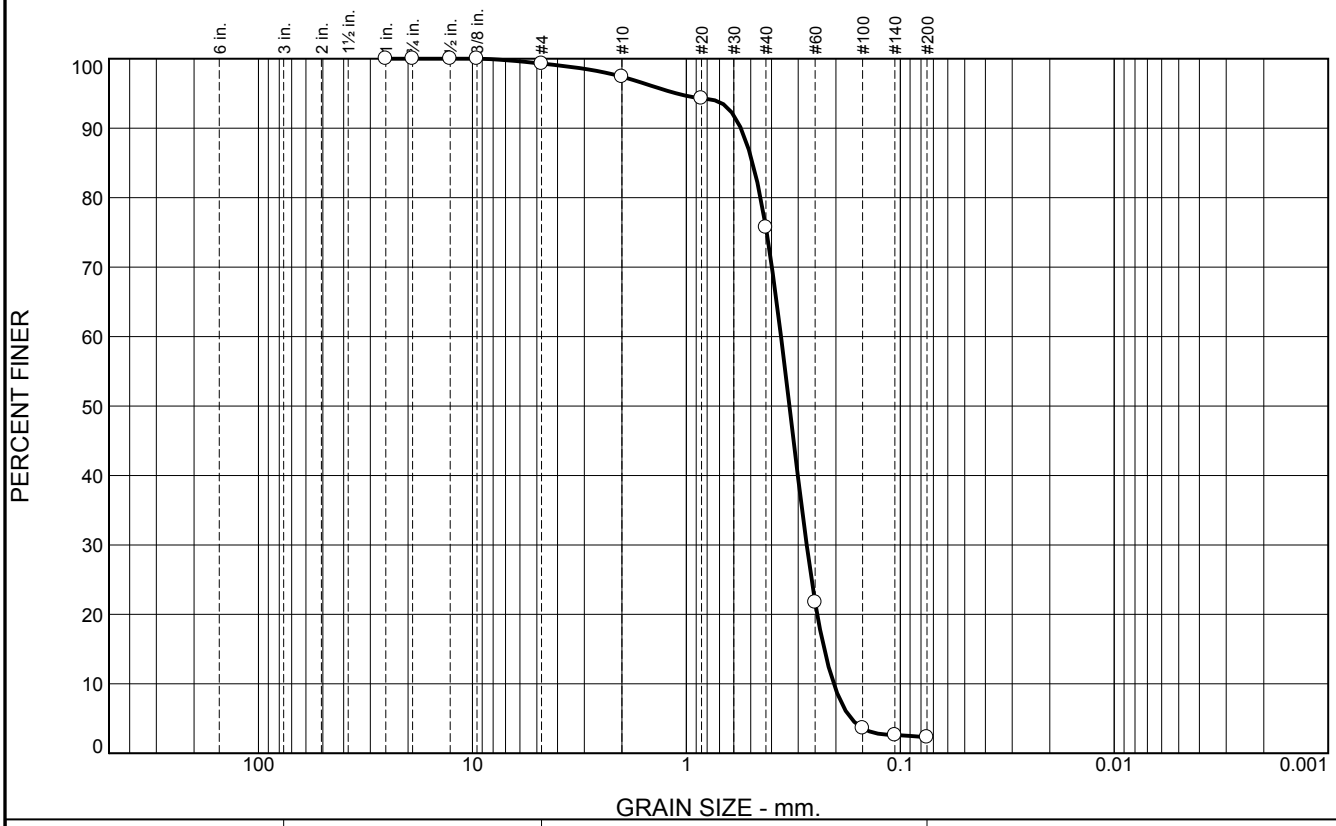
Recovery 20.0'

Comments

at 1.0' vibrator stopped then restarted



Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.7	1.9	21.7	73.4	2.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
.75	100.0		
.5	100.0		
.375	100.0		
#4	99.3		
#10	97.4		
#20	94.3		
#40	75.7		
#60	21.7		
#100	3.6		
#140	2.6		
#200	2.3		

* (no specification provided)

Material Description

Fine to medium grained, SAND

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.5563 D_{85}= 0.4901 D_{60}= 0.3610
D_{50}= 0.3298 D_{30}= 0.2740 D_{15}= 0.2268
D_{10}= 0.2047 C_u= 1.76 C_c= 1.02

Classification

USCS= SP AASHTO=

Remarks

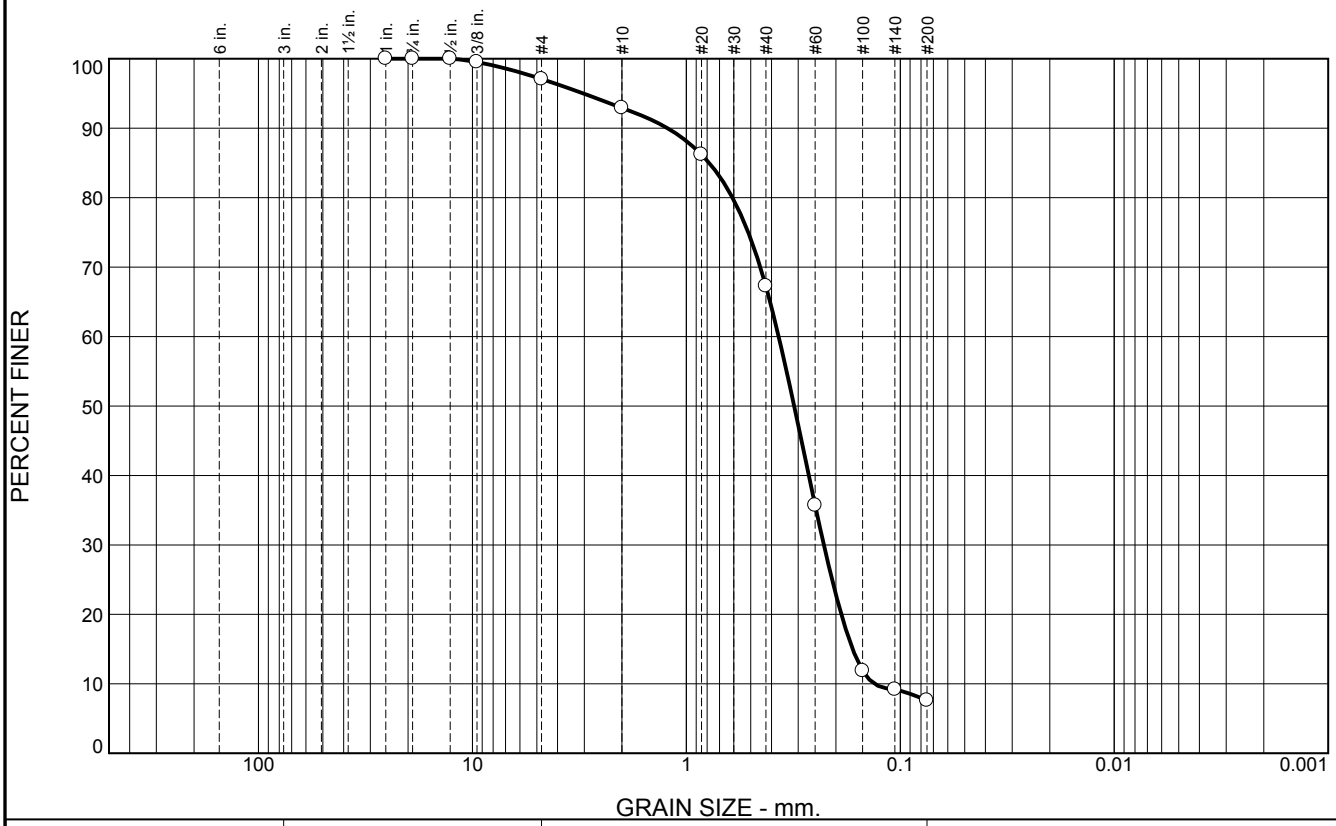
Location: BI-PBS-112-12 A
Sample Number: 6507 (11) **Depth:** 0.0' **Date:** 1/14/13

Thompson Engineering

Mobile, Alabama

Client: CDM/Thompson Engineering JV
Project: MsCIP Barrier Island Restoration GT
Project No: 1221110095 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	2.9	4.2	25.6	59.7	7.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
.75	100.0		
.5	100.0		
.375	99.5		
#4	97.1		
#10	92.9		
#20	86.2		
#40	67.3		
#60	35.7		
#100	11.9		
#140	9.2		
#200	7.6		

* (no specification provided)

Material Description

Fine to medium grained, SLIGHTLY SILTY SAND, with trace SHELL

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 1.2257 D_{85}= 0.7835 D_{60}= 0.3702
D_{50}= 0.3135 D_{30}= 0.2276 D_{15}= 0.1672
D_{10}= 0.1321 C_u= 2.80 C_c= 1.06

Classification

USCS= SP-SM AASHTO=

Remarks

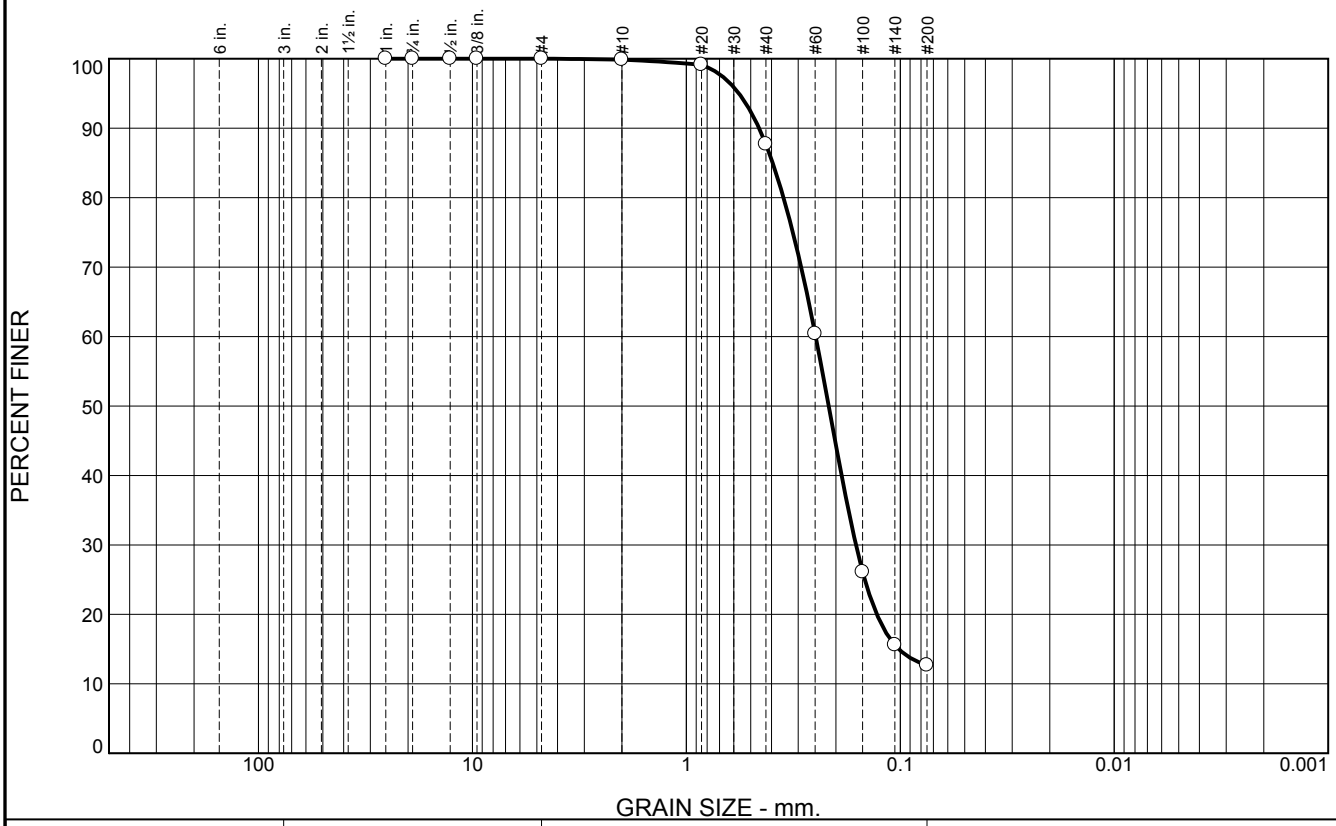
Location: BI-PBS-112 B
Sample Number: 6507 (12) **Depth:** 5.0' **Date:** 1/14/13

Thompson Engineering

Mobile, Alabama

Client: CDM/Thompson Engineering JV
Project: MsCIP Barrier Island Restoration GT
Project No: 1221110095 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	12.2	75.0	12.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
.75	100.0		
.5	100.0		
.375	100.0		
#4	100.0		
#10	99.9		
#20	99.1		
#40	87.7		
#60	60.4		
#100	26.1		
#140	15.6		
#200	12.7		

* (no specification provided)

Material Description

Fine to medium grained, SILTY SAND

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.4573 D_{85}= 0.3948 D_{60}= 0.2485
D_{50}= 0.2161 D_{30}= 0.1613 D_{15}= 0.1016
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO=

Remarks

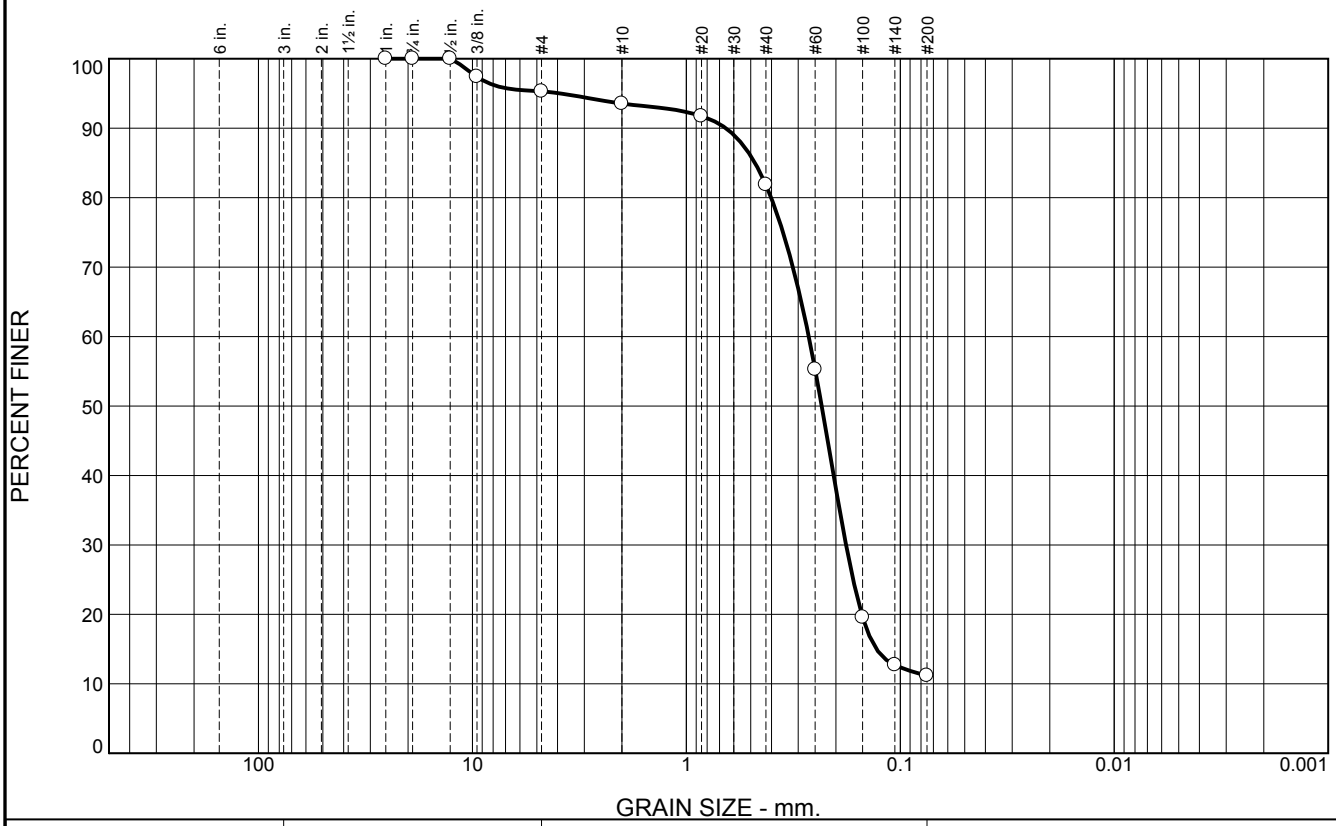
Location: BI-PBS-112-12 C
Sample Number: 6507 (13) **Depth:** 9.0' **Date:** 1/14/13

Thompson Engineering

Mobile, Alabama

Client: CDM/Thompson Engineering JV
Project: MsCIP Barrier Island Restoration GT
Project No: 1221110095 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	4.7	1.8	11.7	70.6	11.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
.75	100.0		
.5	100.0		
.375	97.4		
#4	95.3		
#10	93.5		
#20	91.7		
#40	81.8		
#60	55.3		
#100	19.6		
#140	12.7		
#200	11.2		

* (no specification provided)

Material Description

Fine to medium grained, SLIGHTLY SILTY SAND, with trace SHELL

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.6544 D_{85}= 0.4779 D_{60}= 0.2679
D_{50}= 0.2329 D_{30}= 0.1794 D_{15}= 0.1293
D_{10}= C_u= C_c=

Classification

USCS= SP-SM AASHTO=

Remarks

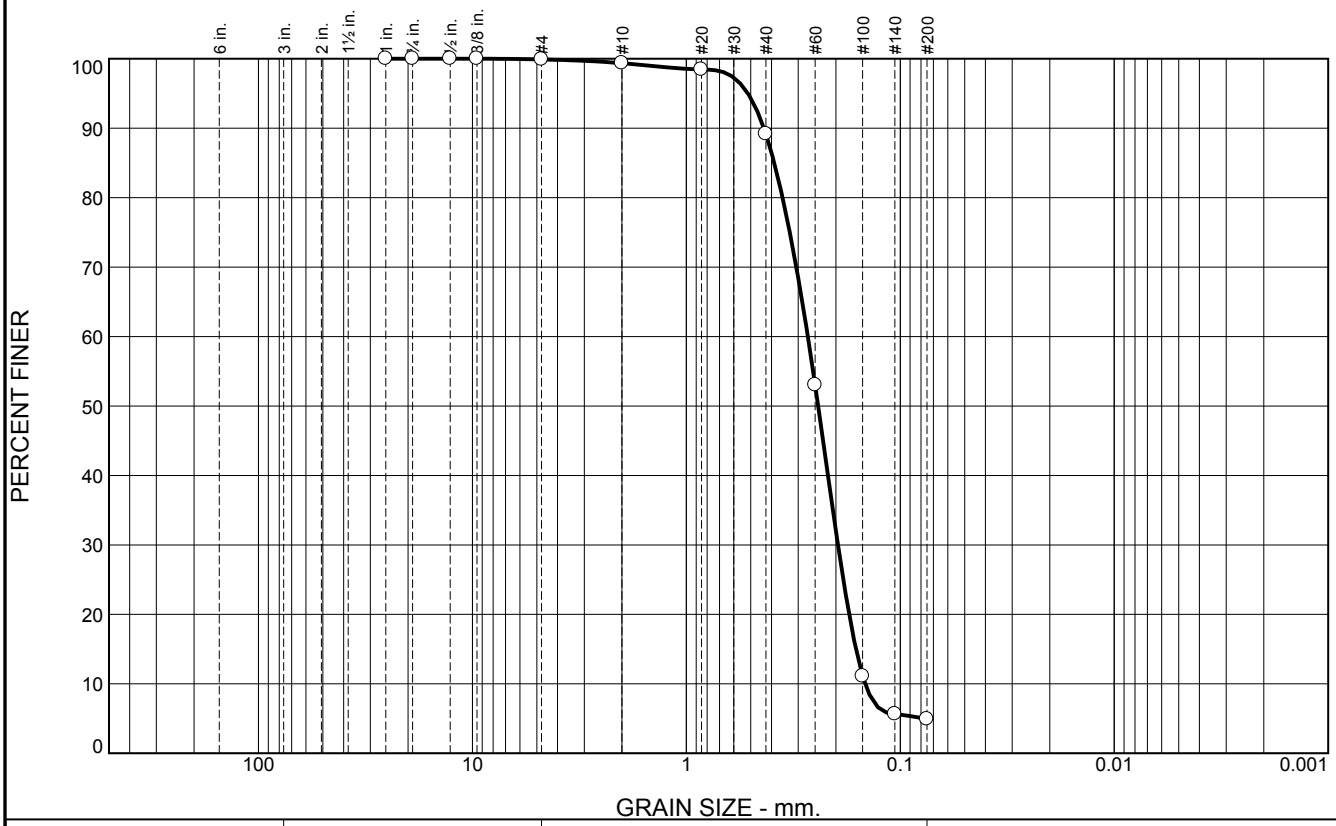
Location: BI-PBS-112-12 D
Sample Number: 6507 (14) **Depth:** 14.0' **Date:** 1/14/13

Thompson Engineering

Mobile, Alabama

Client: CDM/Thompson Engineering JV
Project: MsCIP Barrier Island Restoration GT
Project No: 1221110095 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.5	10.2	84.3	4.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
.75	100.0		
.5	100.0		
.375	100.0		
#4	99.9		
#10	99.4		
#20	98.5		
#40	89.2		
#60	53.0		
#100	11.1		
#140	5.7		
#200	4.9		

* (no specification provided)

Material Description

Fine to medium grained, SAND

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.4341 D_{85}= 0.3881 D_{60}= 0.2705
D_{50}= 0.2420 D_{30}= 0.1956 D_{15}= 0.1613
D_{10}= 0.1460 C_u= 1.85 C_c= 0.97

Classification

USCS= SP AASHTO=

Remarks

Location: BI-PBS-112-12 E
Sample Number: 6507 (15) **Depth:** 17.8' **Date:** 1/14/13

Thompson Engineering

Mobile, Alabama

Client: CDM/Thompson Engineering JV
Project: MsCIP Barrier Island Restoration GT
Project No: 1221110095 **Figure**

Boring Designation BI-PBS-113-12

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 2 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS East	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-113-12 — LOCATION COORDINATES: E = 1,135,613 N = 235,577	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: — UNDISTURBED (UD): 0
4. NAME OF DRILLER: American Vibracore Systems, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL: — BEARING:	14. WATER DEPTH: 51 Ft.
	15. DATE BORING — STARTED: 01-12-13 — COMPLETED: 01-12-13
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -50.8 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 20.2 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Mike FitzHarris, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-50.8	0.0				
-56.0	5.2		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace fines, shelly at 2.0 ft., gray (SP)	A	Classification: SP Color: 5Y 6/2-light olive gray D50: 0.2966 mm % Fines: 2.6
-59.7	8.9		SAND, clayey, mostly fine-grained sand-sized quartz, some clay, few silt, trace shell fragments, gray (SC)	B	Classification: SM Color: 5Y 5/1-gray D50: 0.2354 mm % Fines: 16
-60.3	9.5		CLAY, lean, mostly clay, some fine-grained sand-sized quartz, low to medium plasticity, gray (CL)	NS	
-68.5	17.7		SAND, clayey, mostly fine-grained sand-sized quartz, some clay, few silt, few shell fragments, gray (SC)		
-71.0	20.2		SAND, silty, mostly fine-grained sand-sized quartz, some silt, few shell fragments, trace clay, 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.

3. Seafloor elevation determined from USACE

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14692° Long = -88.35445°

DRILLING LOG (Cont. Sheet)	INSTALLATION Mobile District		SHEET 2 OF 2 SHEETS
PROJECT MsCIP Barrier Island Restoration	COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83	VERTICAL NAVD88
LOCATION COORDINATES X = 1,135,613 Y = 235,577	ELEVATION TOP OF BORING -50.8 Ft.		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
			hydrographic survey completed April 2014.		

30
35
40
45
50
55
60

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14692° Long = -88.35445°

Project Mississippi Barrier Island Restoration Project

AVS
AMERICAN VIBRACORE SERVICES

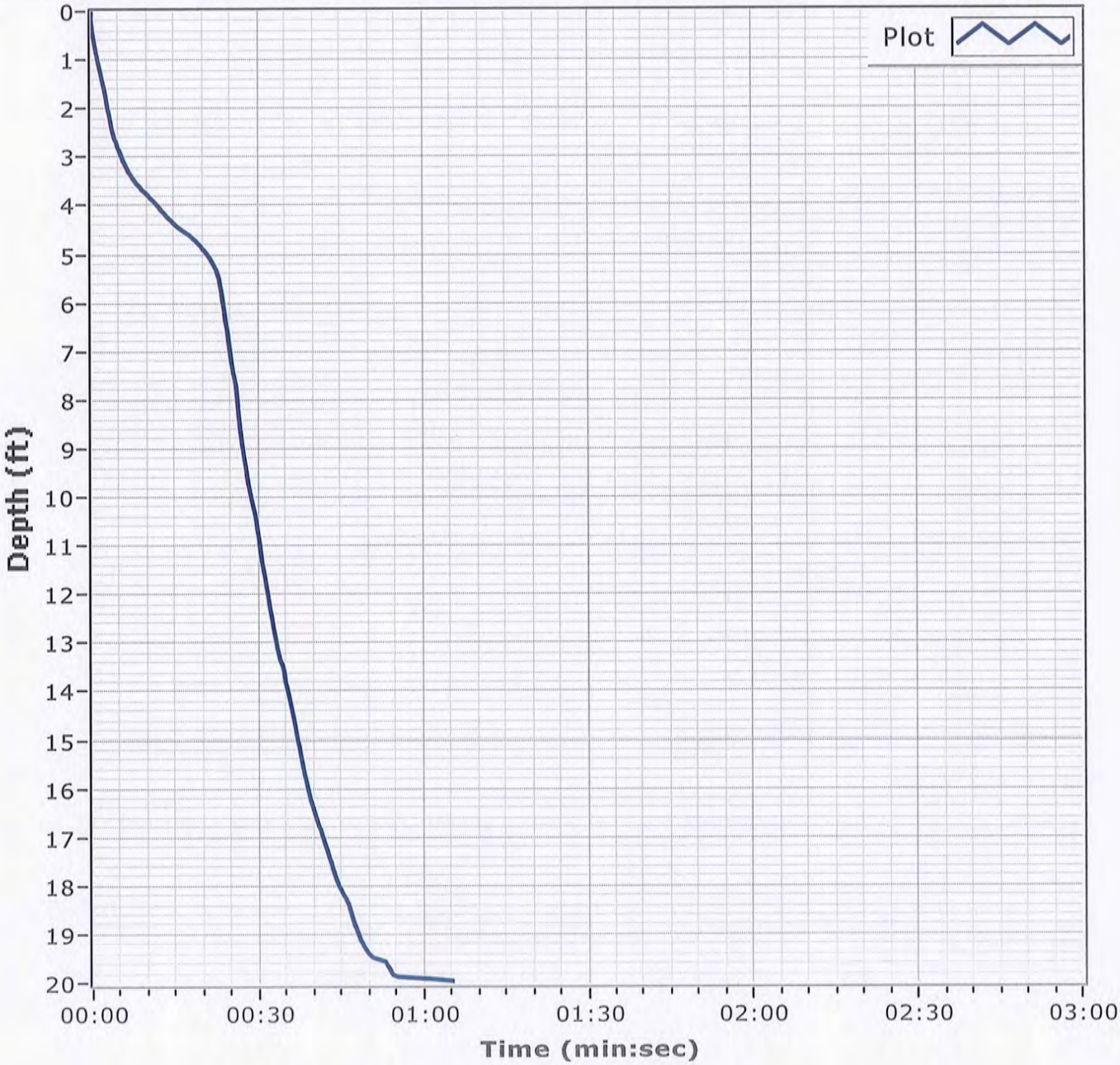
Core Identifier BI-PBS-113-12
Coordinate System
Latitude / Longitude

Latitude 30 08.815
Longitude 088 21.267

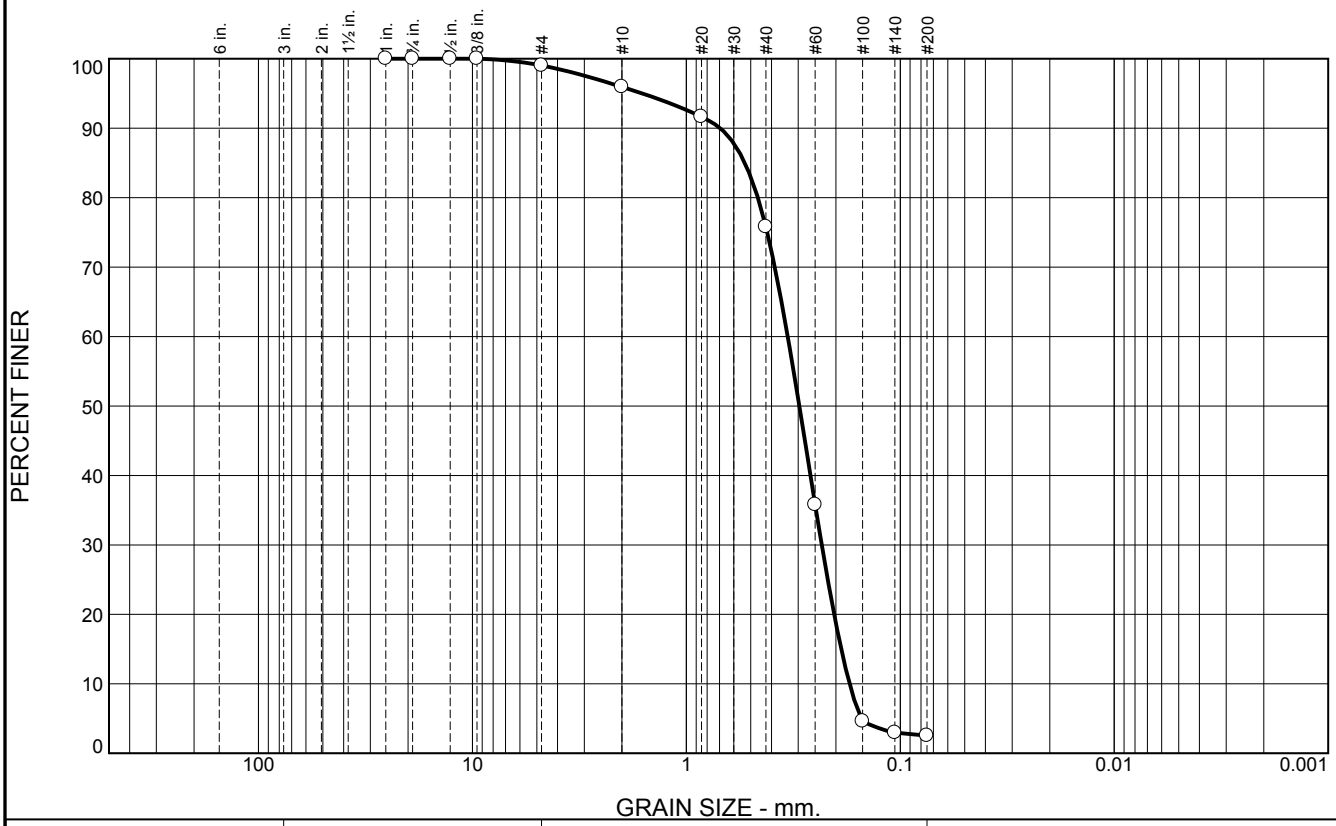
Date 01/12/2013
Start Time 13:23:16
End Time 13:24:22
Total Time 00:01:05

Water Depth 51.0'
Penetration 20.0'
Recovery 20.0'

Comments



Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.0	3.1	20.1	73.2	2.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
.75	100.0		
.5	100.0		
.375	100.0		
#4	99.0		
#10	95.9		
#20	91.6		
#40	75.8		
#60	35.8		
#100	4.6		
#140	3.0		
#200	2.6		

* (no specification provided)

Material Description

Fine to medium grained, SAND, with trace SHELL

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.6951 D_{85}= 0.5330 D_{60}= 0.3359
D_{50}= 0.2966 D_{30}= 0.2328 D_{15}= 0.1889
D_{10}= 0.1728 C_u= 1.94 C_c= 0.93

Classification

USCS= SP AASHTO=

Remarks

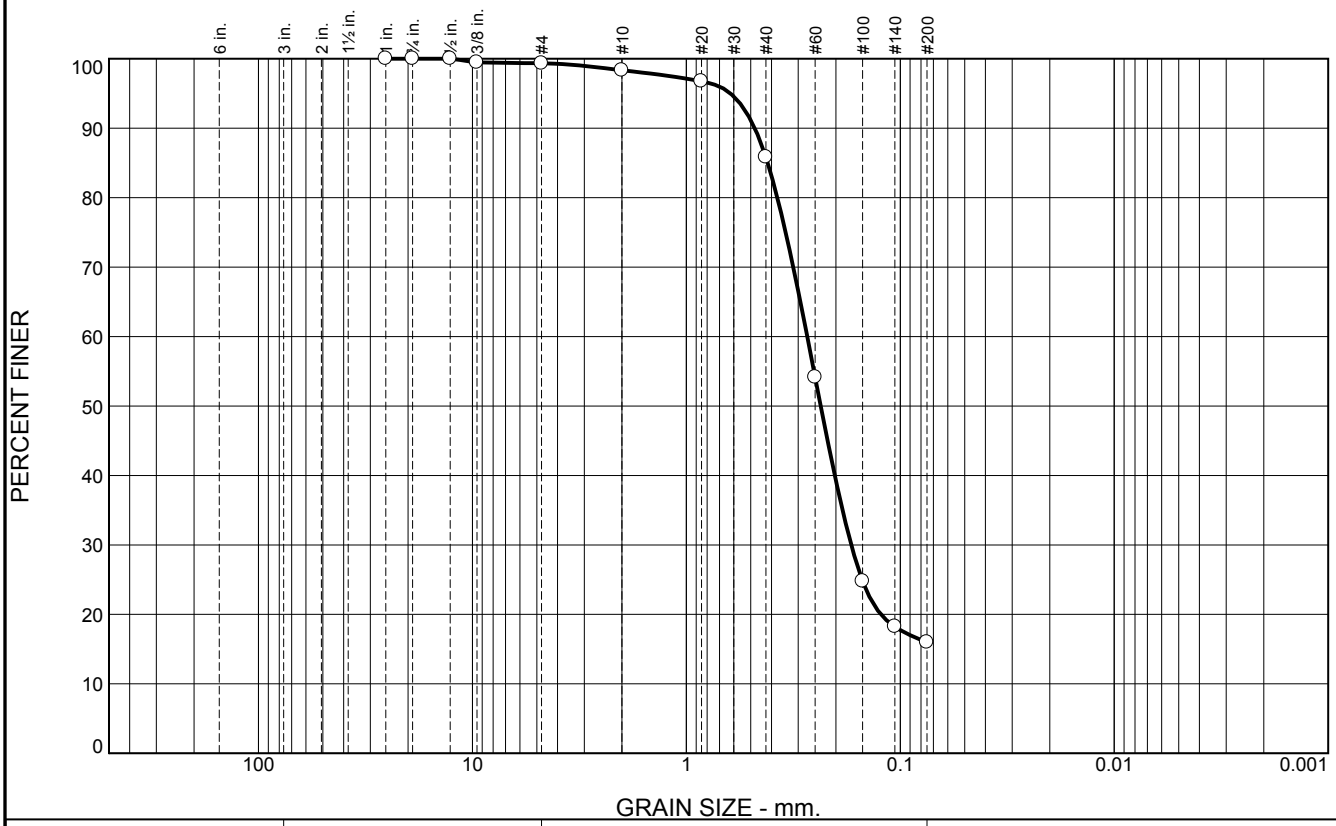
Location: BI-PBS-113-12 A
Sample Number: 6507 (16) **Depth:** 0.0' **Date:** 1/14/13

Thompson Engineering

Mobile, Alabama

Client: CDM/Thompson Engineering JV
Project: MsCIP Barrier Island Restoration GT
Project No: 1221110095 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.7	1.0	12.5	69.8	16.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
.75	100.0		
.5	100.0		
.375	99.5		
#4	99.3		
#10	98.3		
#20	96.7		
#40	85.8		
#60	54.1		
#100	24.8		
#140	18.2		
#200	16.0		

* (no specification provided)

Material Description

Fine to medium grained, SILTY SAND

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.4791 D_{85}= 0.4167 D_{60}= 0.2723
D_{50}= 0.2354 D_{30}= 0.1696 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO=

Remarks

Location: BI-PBS-113-12 B
Sample Number: 6507 (17) **Depth:** 5.0' **Date:** 1/14/13

Thompson Engineering

Mobile, Alabama

Client: CDM/Thompson Engineering JV
Project: MsCIP Barrier Island Restoration GT
Project No: 1221110095 **Figure**

Boring Designation BI-PBS-114-12

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS East	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-114-12 — LOCATION COORDINATES: E = 1,142,473 N = 231,598	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: — UNDISTURBED (UD): 0
4. NAME OF DRILLER: American Vibracore Systems, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL: — BEARING:	14. WATER DEPTH: 57.3 Ft.
	15. DATE BORING — STARTED: 01-12-13 — COMPLETED: 01-12-13
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -57.9 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 18.4 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Mike FitzHarris, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-57.9	0.0				
-60.9	3.0		SAND, poorly-graded, mostly medium-grained sand-sized quartz, some shell fragments, gray (SP)	A	Classification: SP Color: 5Y 6/2-light olive gray D50: 0.6627 mm % Fines: 3.5
-65.1	7.2		CLAY, lean, mostly clay, some fine-grained sand-sized quartz, trace shell fragments, brownish orange, greenish gray, and gray mottle (CL) At El. -61.5 Ft., mostly clay, some fine-grained sand-sized quartz, trace shell fragments, trace wood debris, gray	NS	
-66.7	8.8		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few silt, alternating layers of clay within this zone, gray (SP-SM)		
-67.6	9.7		SAND, clayey, mostly fine-grained sand-sized quartz, some clay, trace shell fragments, gray (SC)		
-72.3	14.4		CLAY, fat, mostly clay, trace fine-grained sand-sized quartz, trace wood debris, medium to high plasticity, stiff, gray (CH)		
-76.3	18.4		CLAY, lean, mostly clay, some fine-grained sand-sized quartz, trace shell fragments, 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.

3. Seafloor elevation determined from USACE hydrographic survey completed April 2014.

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.1359° Long = -88.3328°

Project Mississippi Barrier Island Restoration Project

AVS
AMERICAN VIBRACORE SERVICES

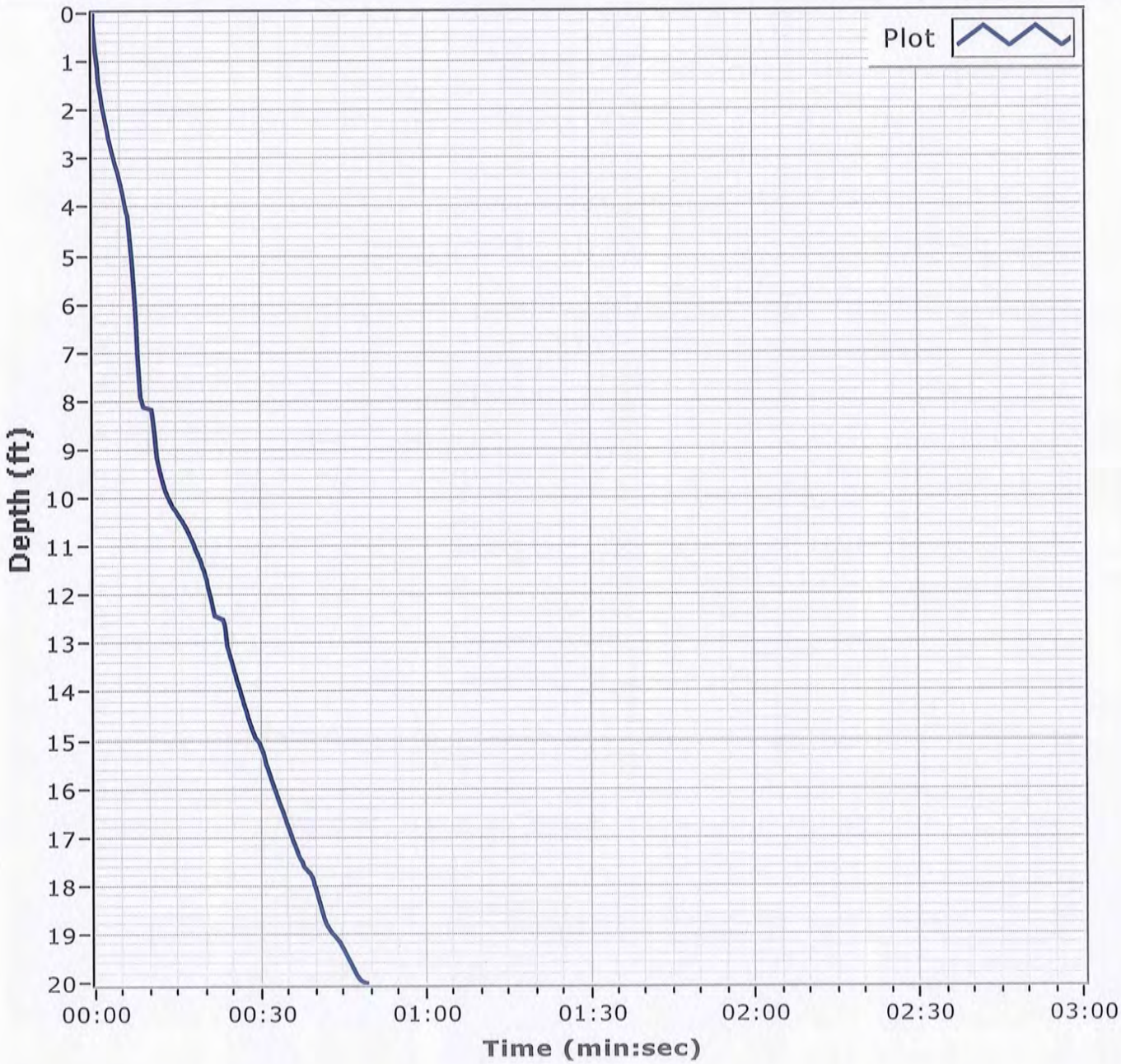
Core Identifier BI-PBS-114-12
Coordinate System
Latitude / Longitude

Latitude 30 08.154
Longitude 088 19.968

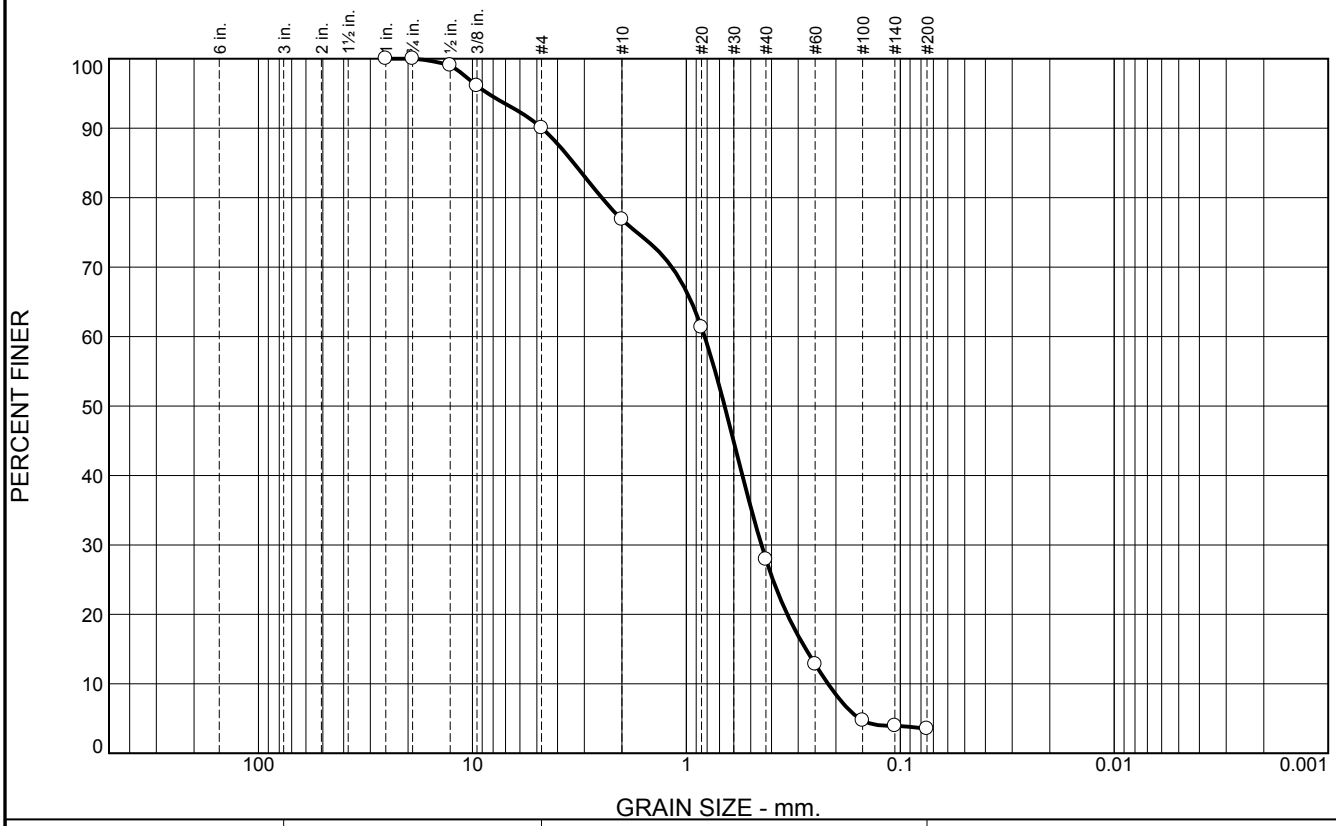
Date 01/12/2013
Start Time 15:36:18
End Time 15:37:08
Total Time 00:00:49

Water Depth 57.3'
Penetration 20.0'
Recovery 18.4'

Comments



Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	10.0	13.2	48.9	24.4	3.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
.75	100.0		
.5	99.1		
.375	96.1		
#4	90.0		
#10	76.8		
#20	61.3		
#40	27.9		
#60	12.8		
#100	4.7		
#140	3.9		
#200	3.5		

* (no specification provided)

Material Description

Fine, medium and coarse grained, SAND, with some SHELL

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 4.7311 D_{85}= 3.3642 D_{60}= 0.8215
D_{50}= 0.6627 D_{30}= 0.4460 D_{15}= 0.2764
D_{10}= 0.2175 C_u= 3.78 C_c= 1.11

Classification

USCS= SP AASHTO=

Remarks

Location: BI-PBS-114-12 A
Sample Number: 6507 (18) **Depth:** 0.0' **Date:** 1/14/13

Thompson Engineering

Mobile, Alabama

Client: CDM/Thompson Engineering JV
Project: MsCIP Barrier Island Restoration GT
Project No: 1221110095 **Figure**

Boring Designation BI-PBS-115-12

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 2 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS East	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-115-12 — LOCATION COORDINATES: E = 1,137,201 N = 235,165	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.:	12. TOTAL SAMPLES — DISTURBED: — UNDISTURBED (UD): 0
4. NAME OF DRILLER: American Vibracore Systems, Inc.	13. TOTAL NUMBER CORE BOXES:
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL: — BEARING:	14. WATER DEPTH: 54 Ft.
	15. DATE BORING — STARTED: 01-12-13 — COMPLETED: 01-12-13
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -55.7 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: Mike FitzHarris, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-55.7	0.0				
-57.4	1.7		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace fines, trace shell fragments, gray (SP)	A	Classification: SP Color: 5Y 6/3-pale olive D50: 0.3711 mm % Fines: 2.1
-61.2	5.5		CLAY, lean, mostly clay, some fine-grained sand-sized quartz, trace shell fragments, low to medium plasticity, stiff, orangy brown, gray, and greenish gray mottle (CL)		
-75.7	20.0		SAND, clayey, mostly fine-grained sand-sized quartz, some clay, trace shell fragments, trace wood debris, clayey sand and silty sand zones with bands of clay throughout, 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.

3. Seafloor elevation determined from USACE

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14577° Long = -88.34943°

Boring Designation BI-PBS-115-12

DRILLING LOG (Cont. Sheet)	INSTALLATION Mobile District		SHEET 2 OF 2 SHEETS
PROJECT MsCIP Barrier Island Restoration	COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83	VERTICAL NAVD88
LOCATION COORDINATES X = 1,137,201 Y = 235,165	ELEVATION TOP OF BORING -55.7 Ft.		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
			hydrographic survey completed April 2014.		

30
35
40
45
50
55
60

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14577° Long = -88.34943°

Project Mississippi Barrier Island Restoration Project

AVS
AMERICAN VIBRACORE SERVICES

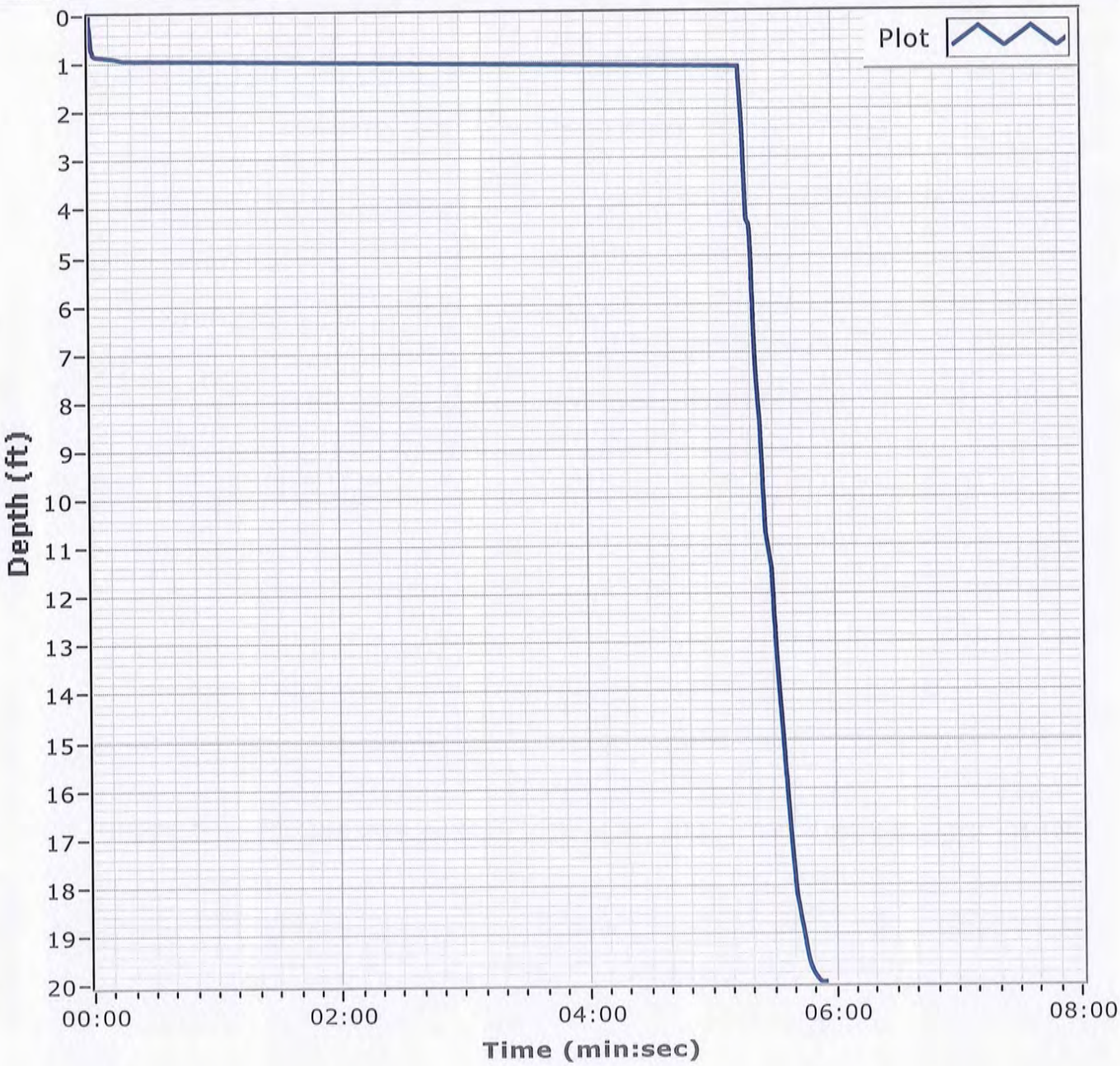
Core Identifier BI-PBS-115-12
Coordinate System
Latitude / Longitude

Latitude 30 08.746
Longitude 088 20.966

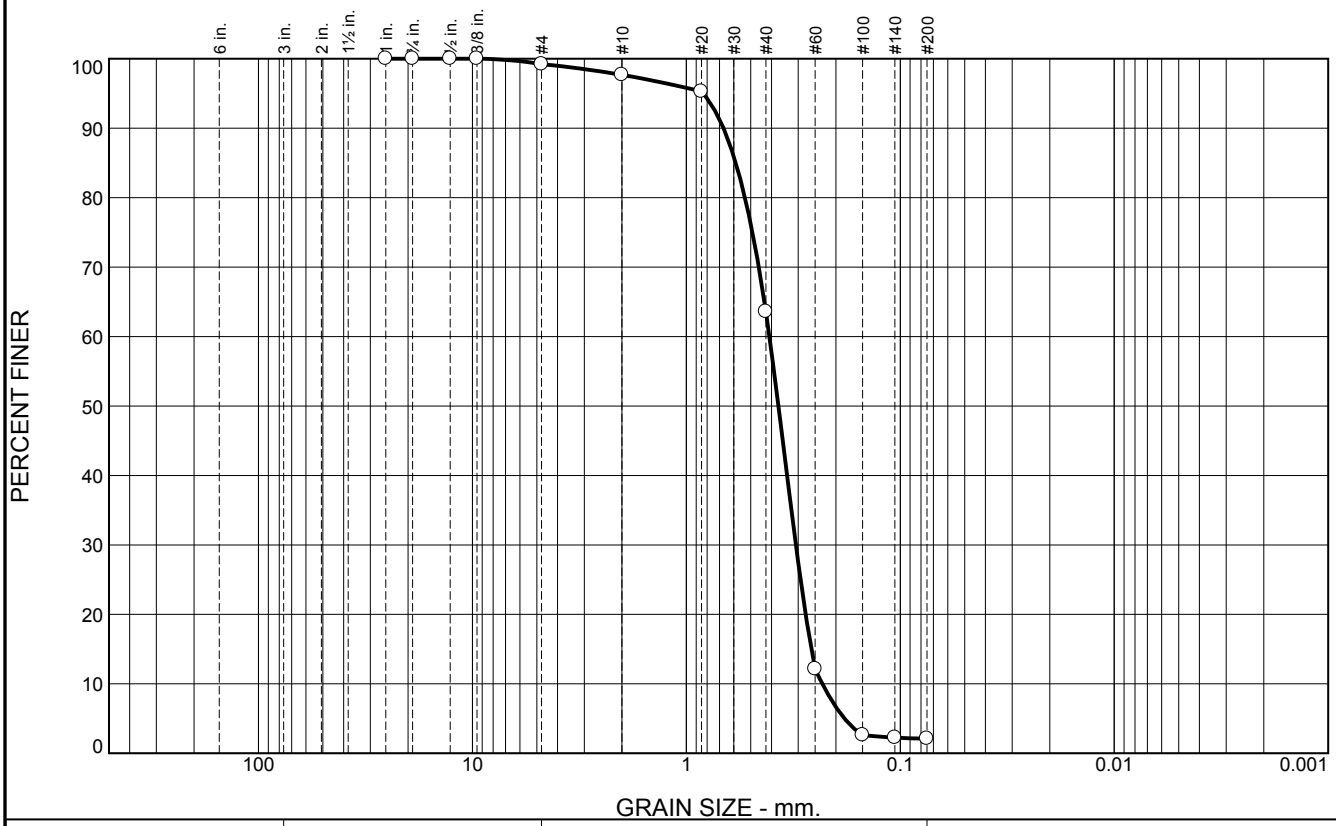
Date 01/12/2013
Start Time 13:56:04
End Time 14:01:59
Total Time 00:05:55

Water Depth 54.0'
Penetration 20.0'
Recovery 20.0'

Comments
@ 1.0' air hose got twisted up. Untangled air hose and continued coring.



Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.8	1.5	34.1	61.5	2.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
.75	100.0		
.5	100.0		
.375	100.0		
#4	99.2		
#10	97.7		
#20	95.3		
#40	63.6		
#60	12.1		
#100	2.6		
#140	2.3		
#200	2.1		

* (no specification provided)

Material Description

Fine to medium grained, SAND

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.6704 D_{85}= 0.5872 D_{60}= 0.4092
D_{50}= 0.3711 D_{30}= 0.3077 D_{15}= 0.2606
D_{10}= 0.2314 C_u= 1.77 C_c= 1.00

Classification

USCS= SP AASHTO=

Remarks

Location: BI-PBS-115-12 A
Sample Number: 6507 (19) **Depth:** 0.0' **Date:** 1/14/13

Thompson Engineering

Mobile, Alabama

Client: CDM/Thompson Engineering JV
Project: MsCIP Barrier Island Restoration GT
Project No: 1221110095 **Figure**

Boring Designation BI-PBS-120-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS East	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-120-13 — LOCATION COORDINATES: E = 1,135,247 N = 233,851	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 3 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 49 Ft.
	15. DATE BORING — STARTED: 12-01-13 — COMPLETED: 12-01-13
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -48.1 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 18.4 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-48.1	0.0				
-54.1	6.0		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, some shell, lt. gray (SP)	A	Classification: SP Color: GLEY1 10Y 7/1- D50: 0.342 mm % Fines: 1.7
				B	Classification: SP Color: GLEY1 10Y 6/1- D50: 0.31 mm % Fines: 1.9
-56.2	8.1		SAND, silty, mostly fine-grained sand-sized quartz, few shell, medium gray (SM)	C	Classification: SP-SM Color: GLEY1 10Y 5/1- D50: 0.194 mm % Fines: 11.1
-63.4	15.3		CLAY, lean, sandy, medium gray (CL)	NS	
-64.1	16.0		SAND, clayey, medium gray (SC)		
-66.5	18.4		CLAY, lean, sandy, medium 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.

3. Seafloor elevation determined from USACE hydrographic survey completed April 2014.

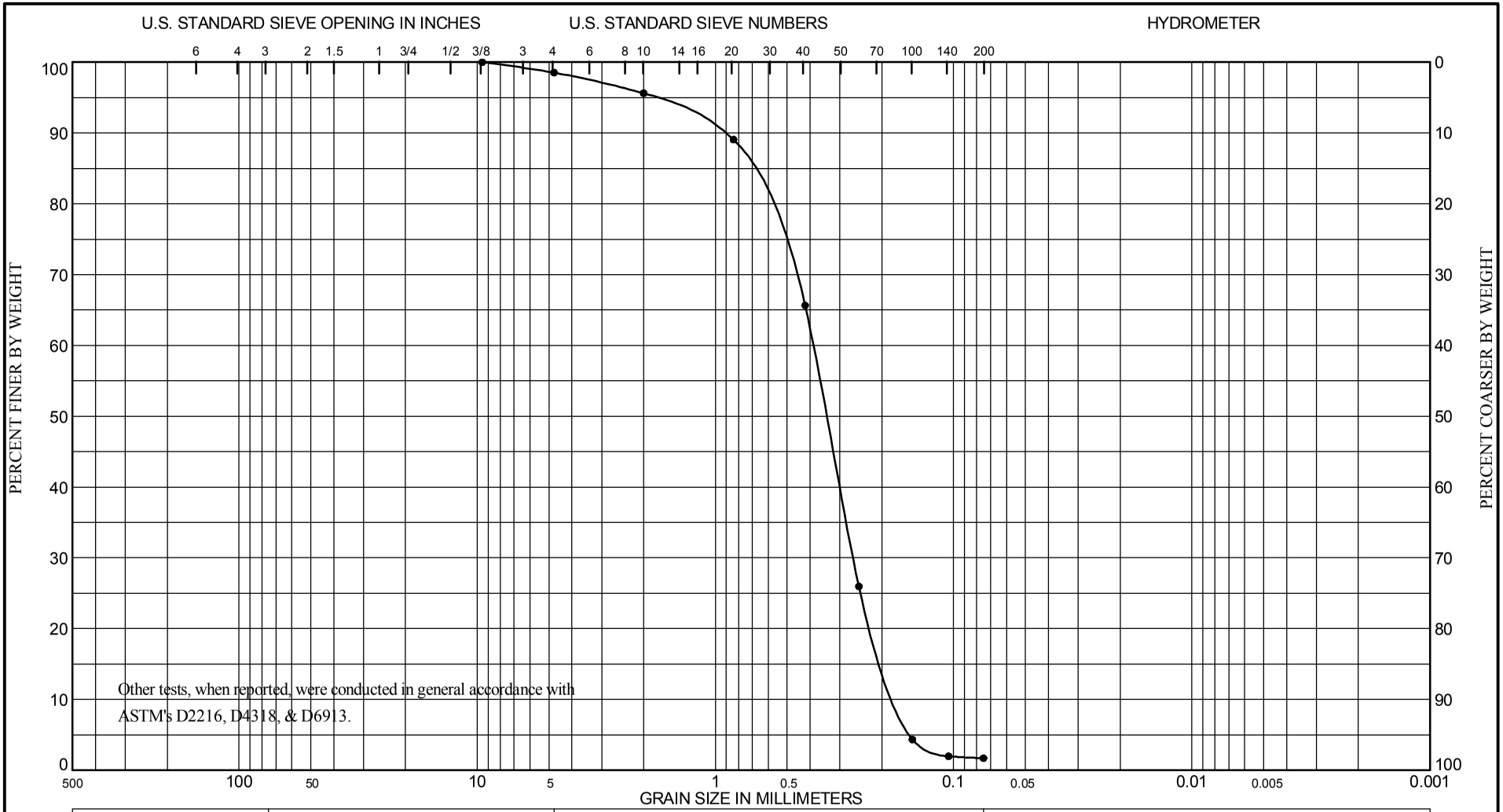
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14218° Long = -88.35563°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

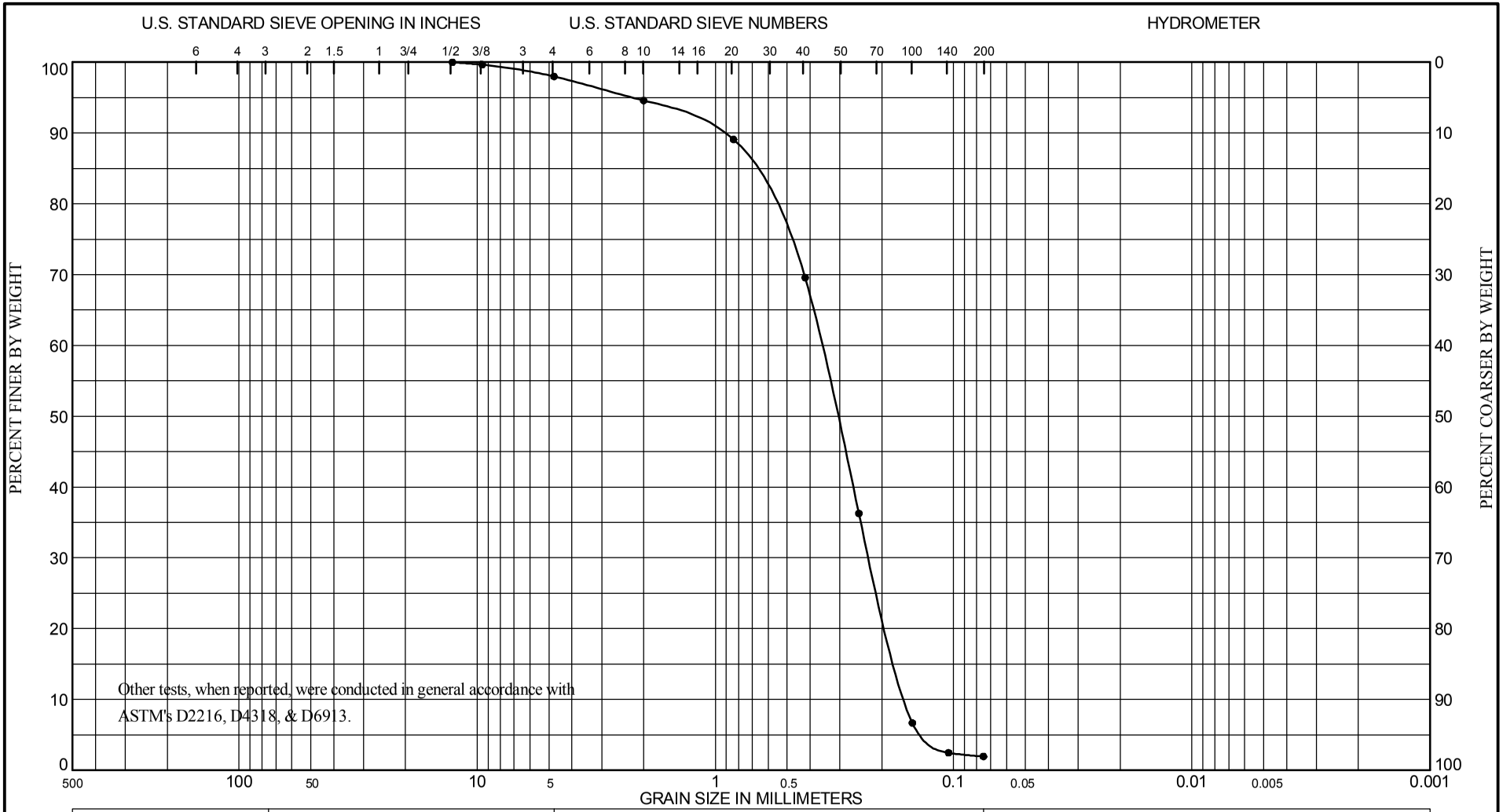
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 3.0	Olive Gray, Poorly Graded Sand (SP), with a trace of gravel size				
		shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3902
Hole No. BI-PBS-120-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

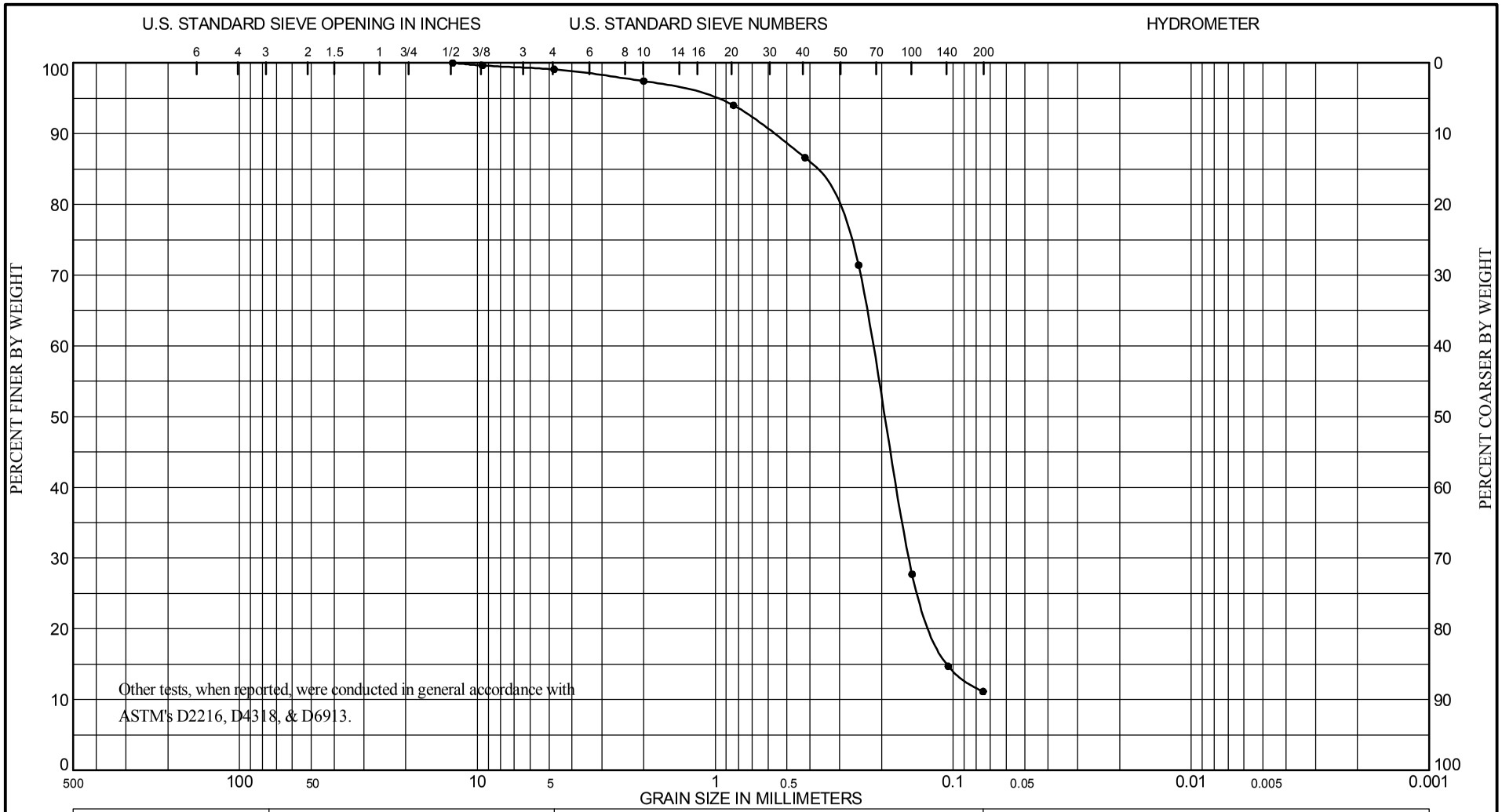
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	3.0 to 6.0	Olive Gray, Poorly Graded Sand (SP), with a trace of gravel size				
		shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3903
Hole No. BI-PBS-120-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	6.0 to 8.1	Dark Greenish Gray, Poorly Graded Silty Sand (SP-SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3904
Hole No. BI-PBS-120-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-121-13

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
	South Atlantic	Mobile District	

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS East
2. BORING DESIGNATION	BI-PBS-121-13
LOCATION COORDINATES	E = 1,130,200 N = 235,842
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	18.2 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED 2 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	52 Ft.
15. DATE BORING	STARTED 12-01-13 / COMPLETED 12-01-13
16. ELEVATION TOP OF BORING	-51.1 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-51.1	0.0				
-53.1	2.0		SAND, poorly-graded, mostly fine-grained sand-sized quartz, little shell, lt. gray (SP)	A	Classification: SP Color: GLEY1 10Y 6/1- D50: 0.219 mm % Fines: 3.6
-54.5	3.4		SAND, silty, mostly fine-grained sand-sized quartz, little shell, medium gray (SM)	B	Classification: SP-SM Color: GLEY1 10Y 6/1- D50: 0.198 mm % Fines: 10.5
-69.3	18.2		CLAY, lean, few sand pockets, CL-CH, brownish 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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

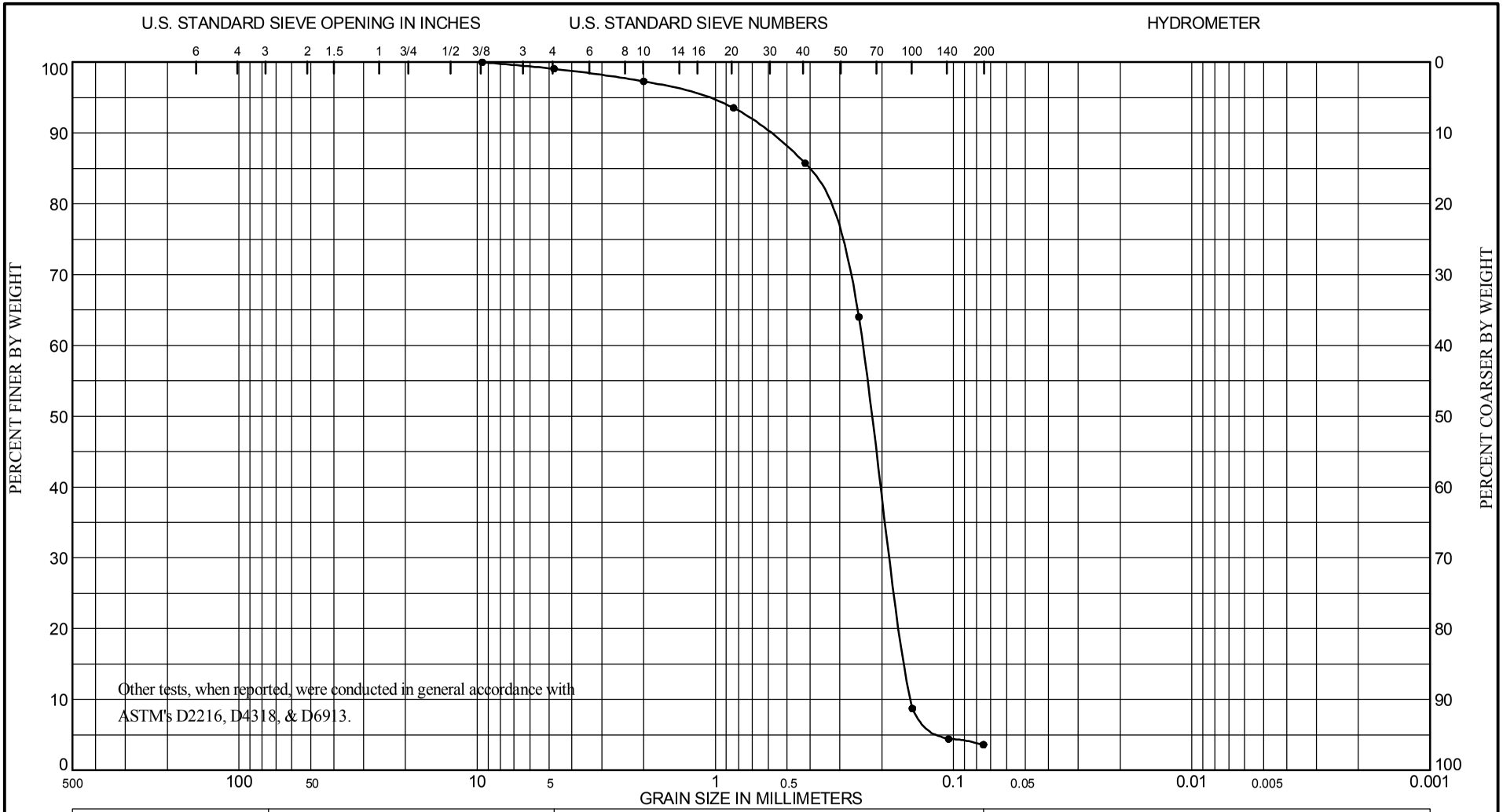
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14771° Long = -88.37157°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

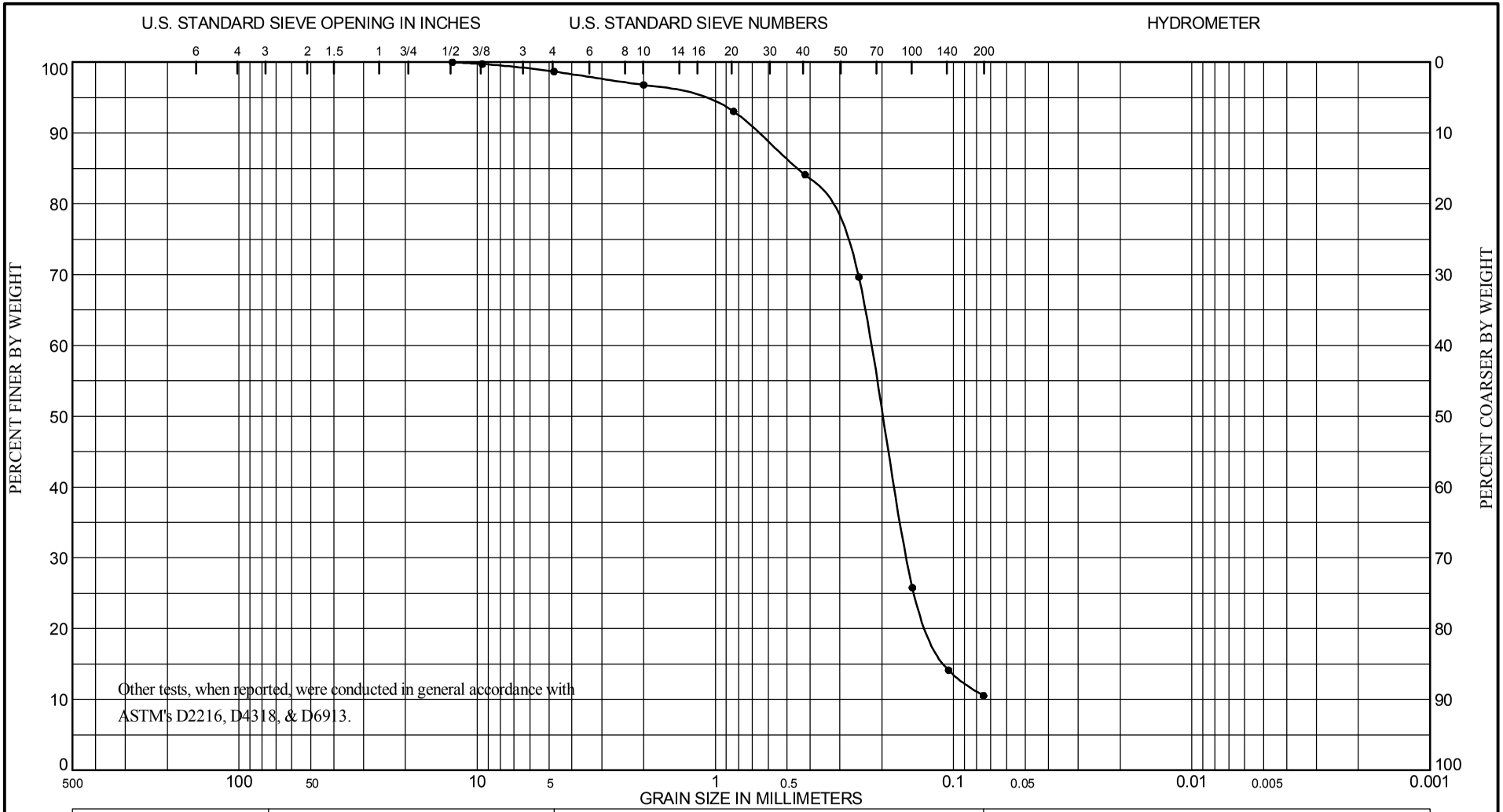
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 2.0	Greenish Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3911
Hole No. BI-PBS-121-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	2.0 to 3.4	Dark Greenish Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3912
Hole No. BI-PBS-121-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-122-13

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
	South Atlantic	Mobile District	

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS East
2. BORING DESIGNATION	BI-PBS-122-13
LOCATION COORDINATES	E = 1,135,969 N = 232,825
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	17.4 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED 2 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	48 Ft.
15. DATE BORING	STARTED 12-01-13 / COMPLETED 12-01-13
16. ELEVATION TOP OF BORING	-48.0 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-48.0	0.0				
-53.0	5.0		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace coarse-grained quartz sand, lt. gray (SP)	A	Classification: SP Color: GLEY1 10Y 6/1- D50: 0.246 mm % Fines: 2.5
-56.4	8.4		SAND, silty, mostly fine-grained sand-sized quartz, little shell, medium gray (SM)	B	Classification: SP-SM Color: GLEY1 10Y 5/1- D50: 0.185 mm % Fines: 11.9
-65.4	17.4		CLAY, fat, little pockets of silty sand, 1-inch thick, upper 4 feet of strata, light greenish 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.

3. Seafloor elevation determined from USACE hydrographic survey completed April 2014.

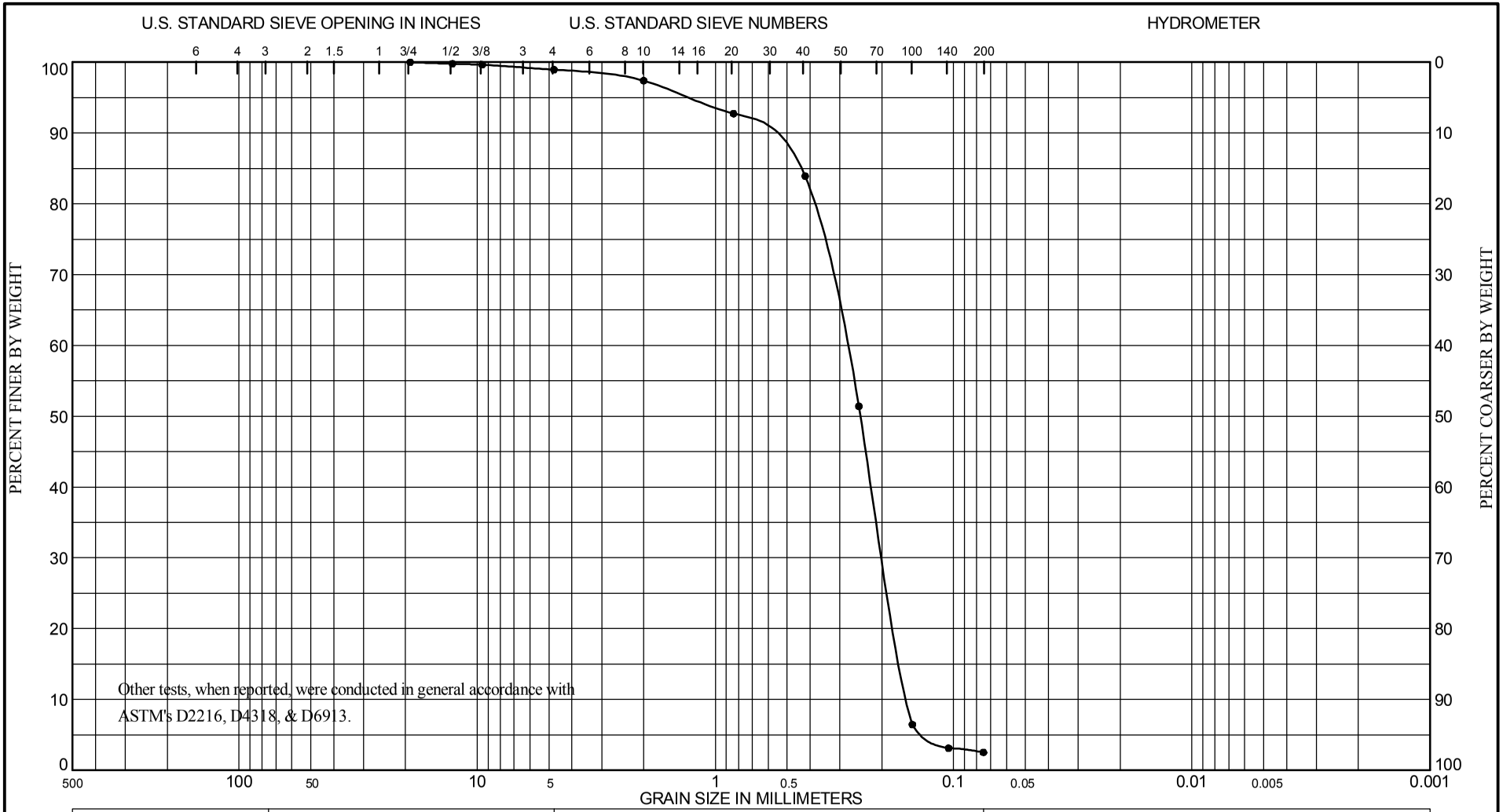
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.13935° Long = -88.35336°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

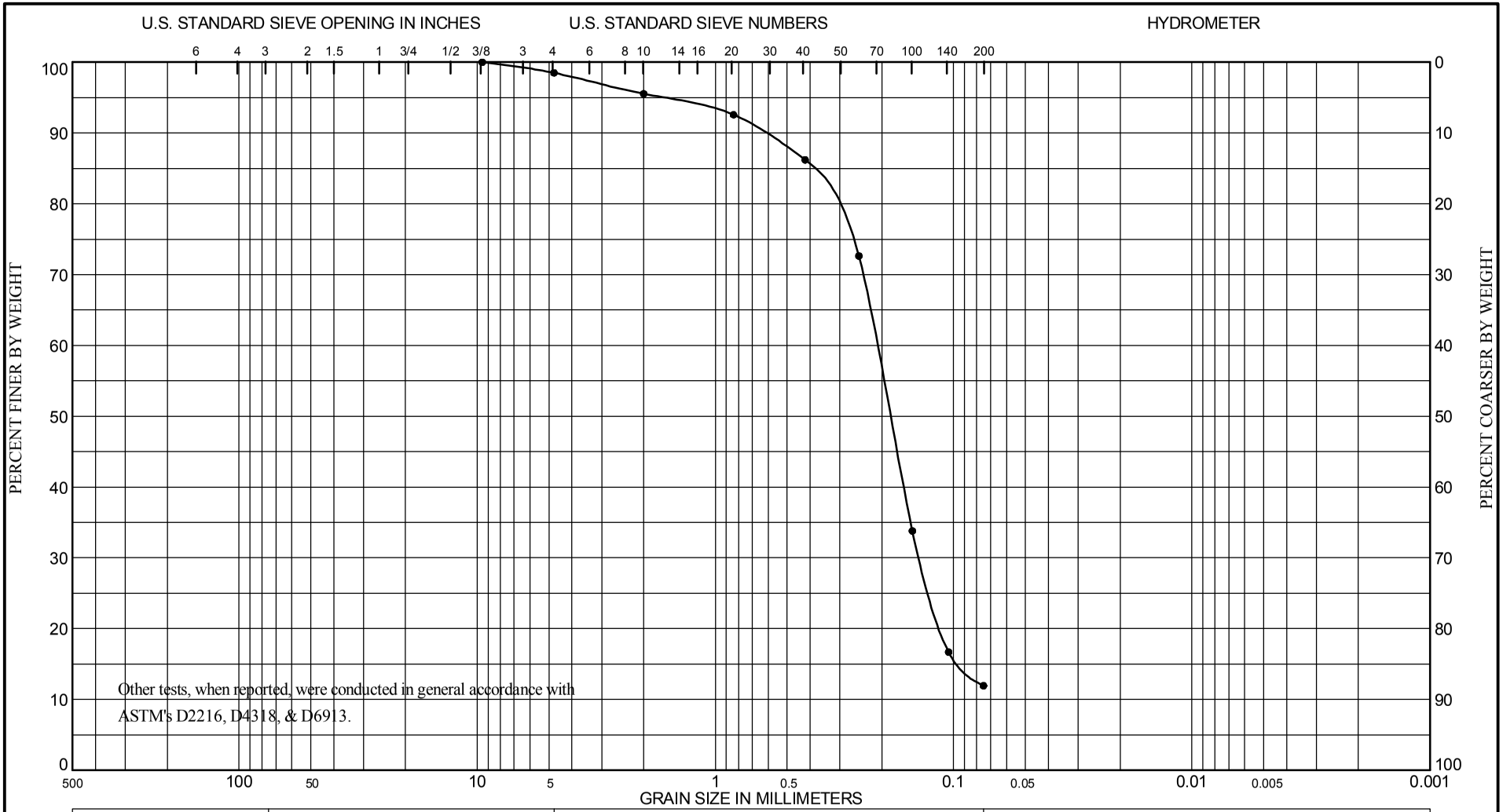
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 5.0	Olive Gray, Poorly Graded Sand (SP), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3900
Hole No. BI-PBS-122-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	5.0 to 8.4	Very Dark Greenish Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3901
Hole No. BI-PBS-122-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-123-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 2 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS East	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-123-13 — LOCATION COORDINATES: E = 1,131,230 N = 235,261	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 2 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 50 Ft.
	15. DATE BORING — STARTED: 12-01-13 — COMPLETED: 12-01-13
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -49.5 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: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-49.5	0.0				
			SAND, silty, mostly fine-grained sand-sized quartz, little shell, medium gray (SM)	A	Classification: SP-SM Color: GLEY1 10Y 6/1- D50: 0.206 mm % Fines: 6.1
				B	Classification: SM Color: 2.5Y 5/1-gray D50: 0.193 mm % Fines: 14.6
-55.2	5.7				
			CLAY, lean, sandy from depth of 5.7 to 14 feet, non-sandy from 14 to depth of 20 feet, medium gray (CL)	NS	
-69.5	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. 3. Seafloor elevation determined from USACE		

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14610° Long = -88.36832°

DRILLING LOG (Cont. Sheet)	INSTALLATION Mobile District		SHEET 2 OF 2 SHEETS
PROJECT MsCIP Barrier Island Restoration	COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83	VERTICAL NAVD88
LOCATION COORDINATES X = 1,131,230 Y = 235,261	ELEVATION TOP OF BORING -49.5 Ft.		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
			hydrographic survey completed April 2014.		

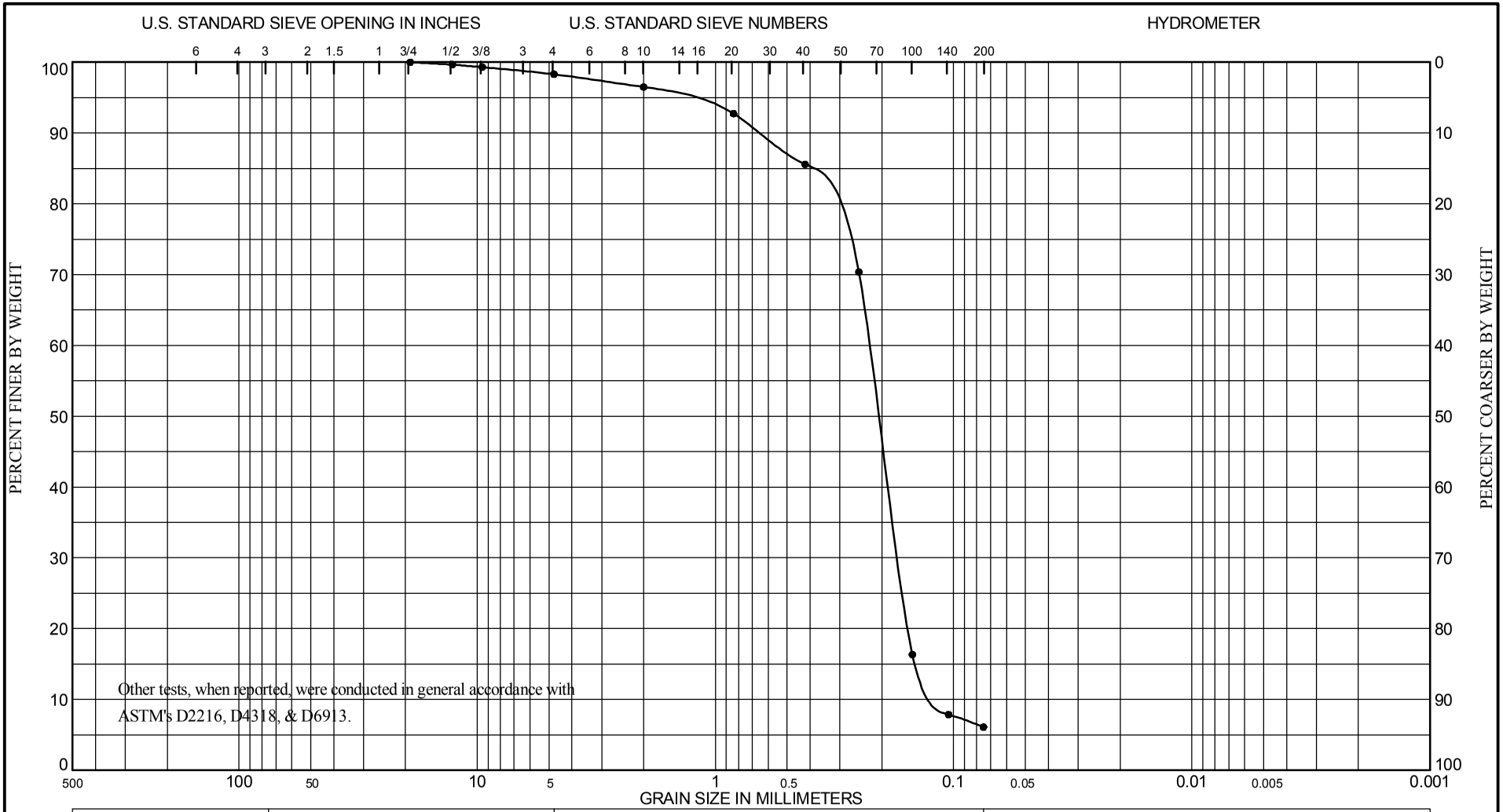
30
35
40
45
50
55
60

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14610° Long = -88.36832°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 2.3	Dark Greenish Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3908
Hole No. BI-PBS-123-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192

COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	2.3 to 5.7	Dark Greenish Gray, Silty Sand (SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3909
Hole No. BI-PBS-123-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-124-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS East	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-124-13 — LOCATION COORDINATES: E = 1,133,046 N = 234,126	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 3 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 46 Ft.
	15. DATE BORING — STARTED: 12-01-13 — COMPLETED: 12-01-13
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -45.5 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 18.7 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-45.5	0.0				
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, some shell, lt. gray (SP)	A	Classification: SP Color: GLEY1 10Y 7/1- D50: 0.306 mm % Fines: 1.8
				B	Classification: SP Color: GLEY1 10Y 7/1- D50: 0.362 mm % Fines: 1.5
-53.3	7.8				
			SAND, silty, mostly fine-grained sand-sized quartz, little shell, medium gray (SM)	C	Classification: SP-SM Color: GLEY1 10Y 5/1- D50: 0.193 mm % Fines: 9.2
-56.0	10.5				
			CLAY, lean, sandy CL-CH, orangish gray down to 13.9 ft. over lt. greenish gray (CL)	NS	
-64.2	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. 3. Seafloor elevation determined from USACE hydrographic survey completed April 2014.		

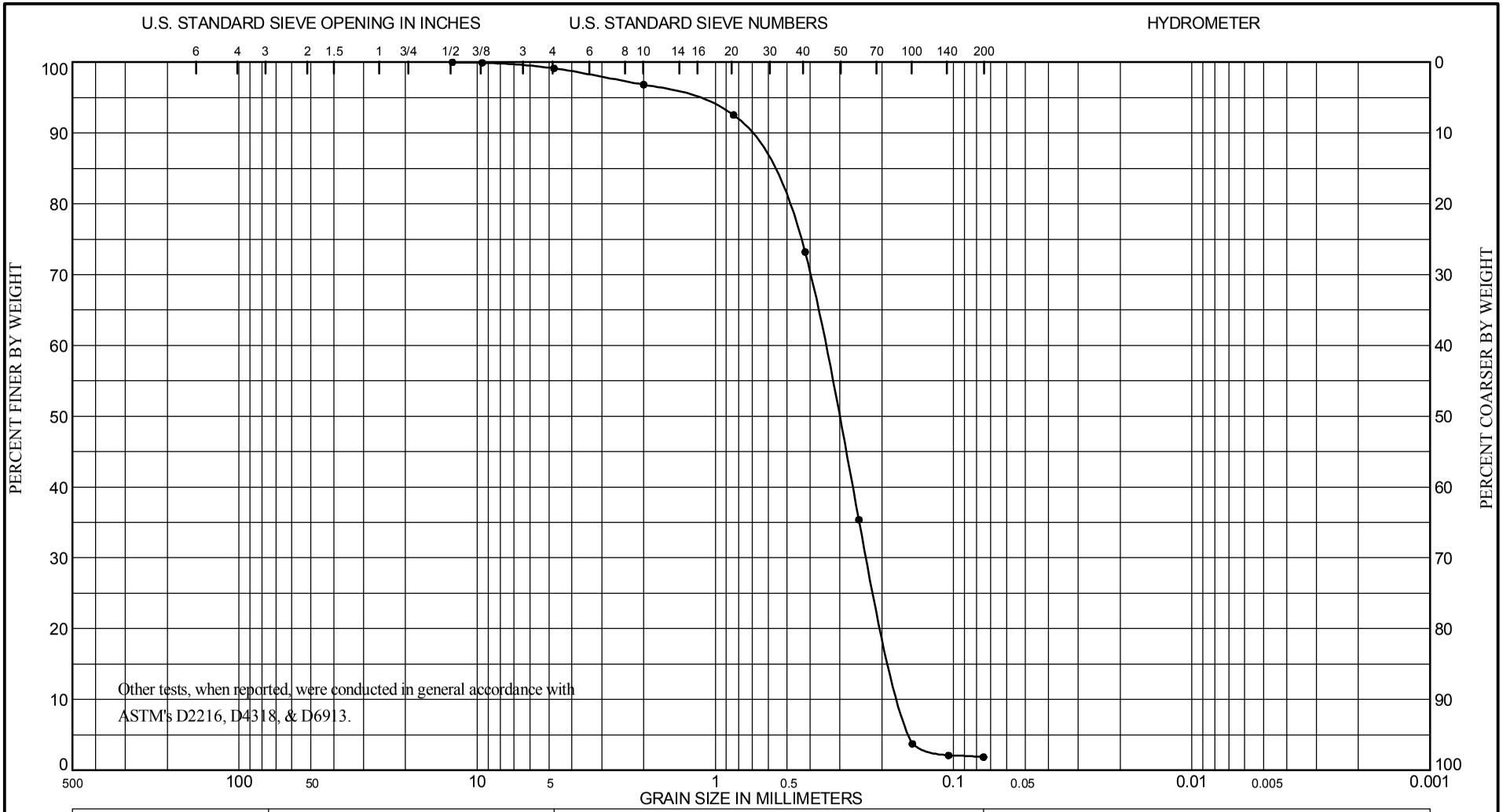
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14296° Long = -88.36259°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

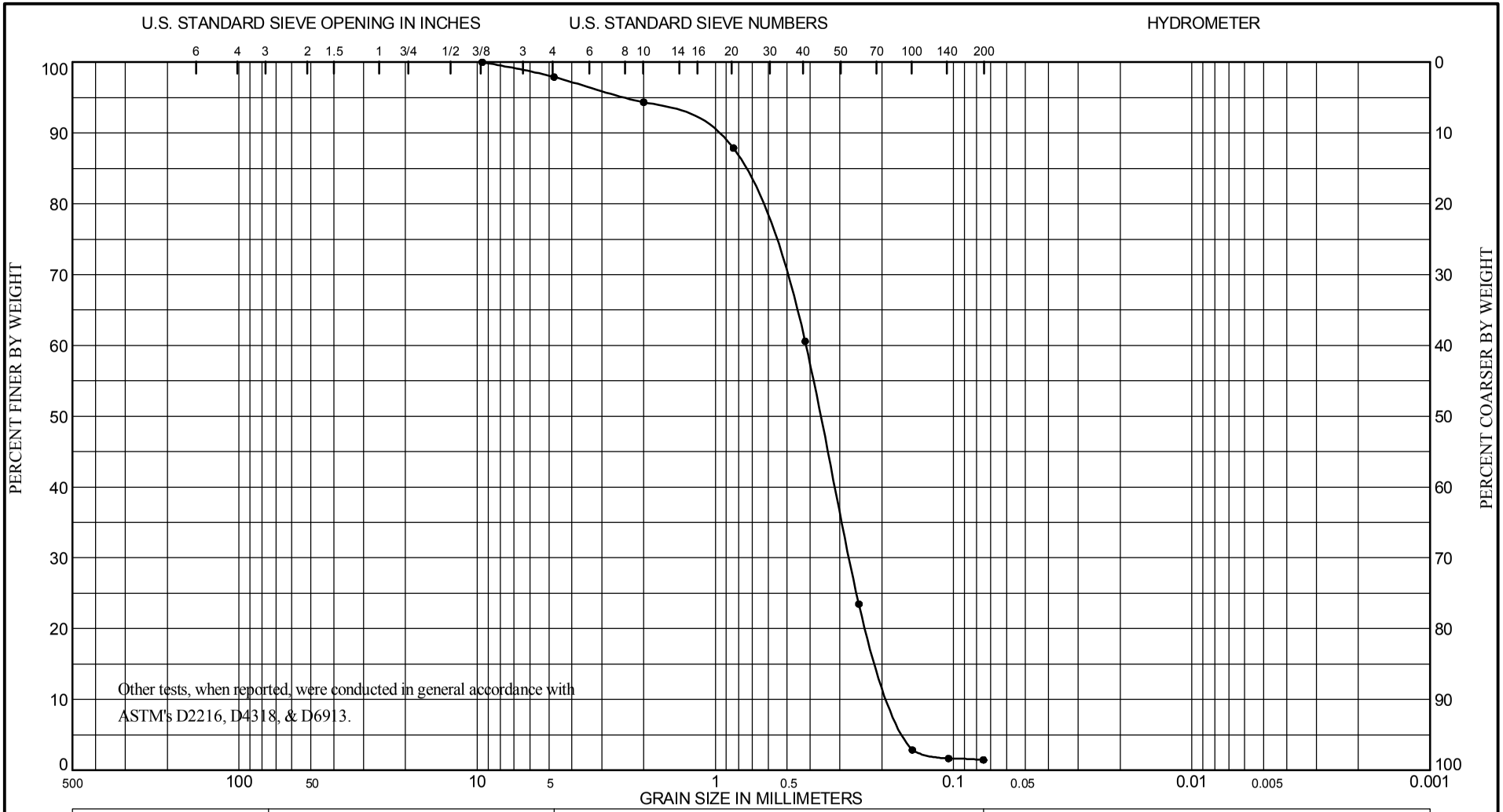
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 4.0	Olive Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3905
Hole No. BI-PBS-124-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

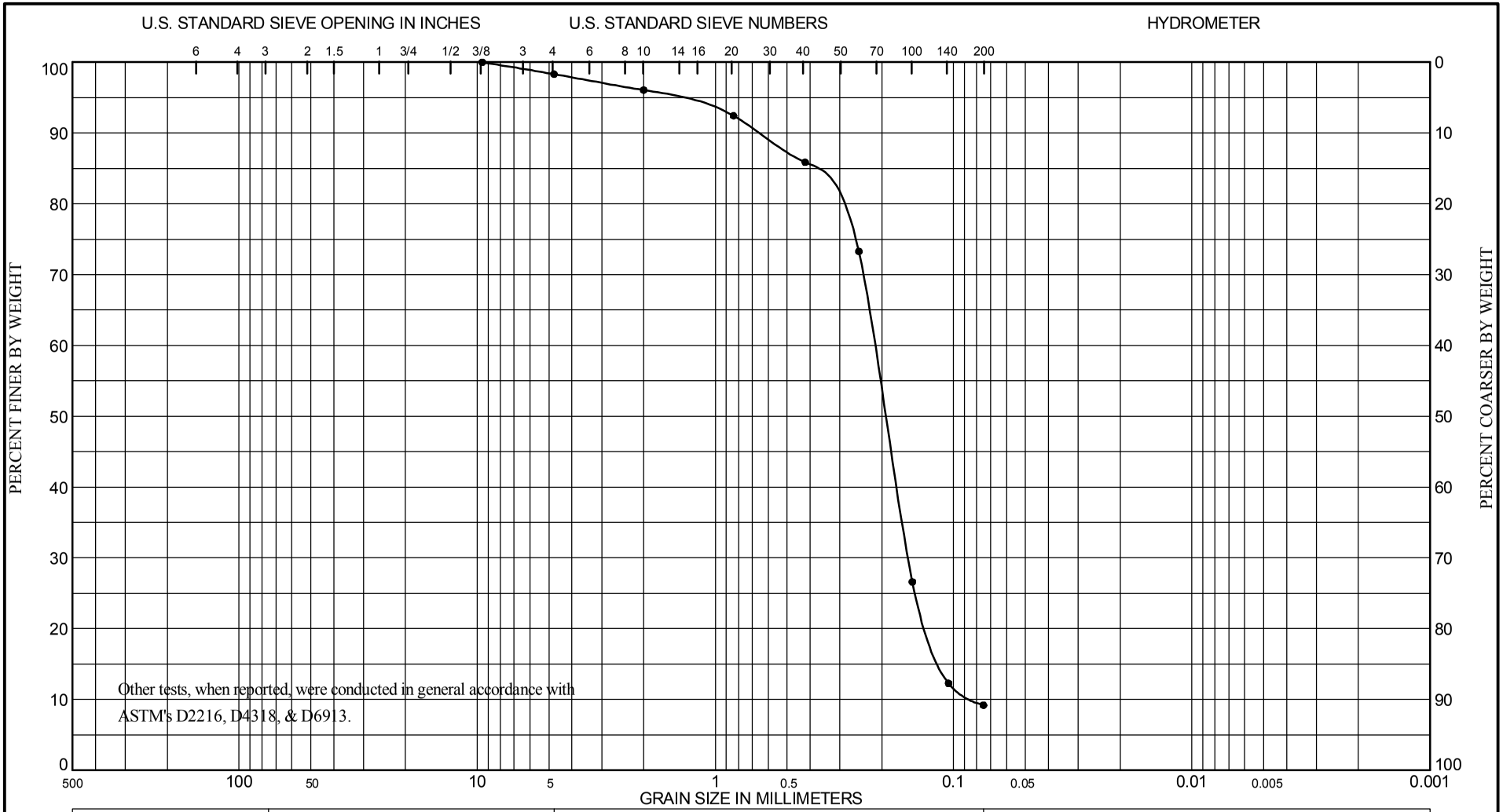
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	4.0 to 7.8	Olive Gray, Poorly Graded Sand (SP), with a trace of gravel size				
		shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3906
Hole No. BI-PBS-124-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	7.8 to 10.5	Dark Greenish Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3907
Hole No. BI-PBS-124-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-127-13

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
	South Atlantic	Mobile District	

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS East
2. BORING DESIGNATION	BI-PBS-127-13
LOCATION COORDINATES	E = 1,136,897 N = 237,452
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	16.6 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED 6 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	55 Ft.
15. DATE BORING	STARTED 11-30-13 / COMPLETED 11-30-13
16. ELEVATION TOP OF BORING	-54.9 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-54.9	0.0				
-55.9	1.0		SAND, poorly-graded, mostly fine-grained sand-sized quartz, lt. brown (SP)	A	Classification: SP Color: 2.5Y 6/1-gray D50: 0.204 mm % Fines: 3.8
-59.1	4.2		SAND, silty, clayey, mostly fine-grained sand-sized quartz, few wood fragments at depth of 3.6 ft., brownish gray (SC-SM)	B	Classification: SM Color: GLEY1 10Y 5/1- D50: 0.162 mm % Fines: 23.4
-65.6	10.7		SAND, silty, mostly fine-grained sand-sized quartz, few wood fragments at depth of 6.4 ft., brownish gray (SM)	C	Classification: SM Color: 2.5Y 6/1-gray D50: 0.233 mm % Fines: 14.6
-67.6	12.7		SAND, poorly-graded, mostly fine-grained sand-sized quartz, lt. brown (SP)	D	Classification: SP-SM Color: 2.5Y 7/1-light gray D50: 0.167 mm % Fines: 8.7
-70.8	15.9		SAND, silty, clayey, mostly fine-grained sand-sized quartz, brownish gray (SC-SM)	E	Classification: SM Color: 2.5Y 6/1-gray D50: 0.149 mm % Fines: 23.8
-71.5	16.6		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, lt. brown (SP)	F NS	Classification: SP-SM Color: 2.5Y 6/1-gray D50: 0.389 mm % Fines: 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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

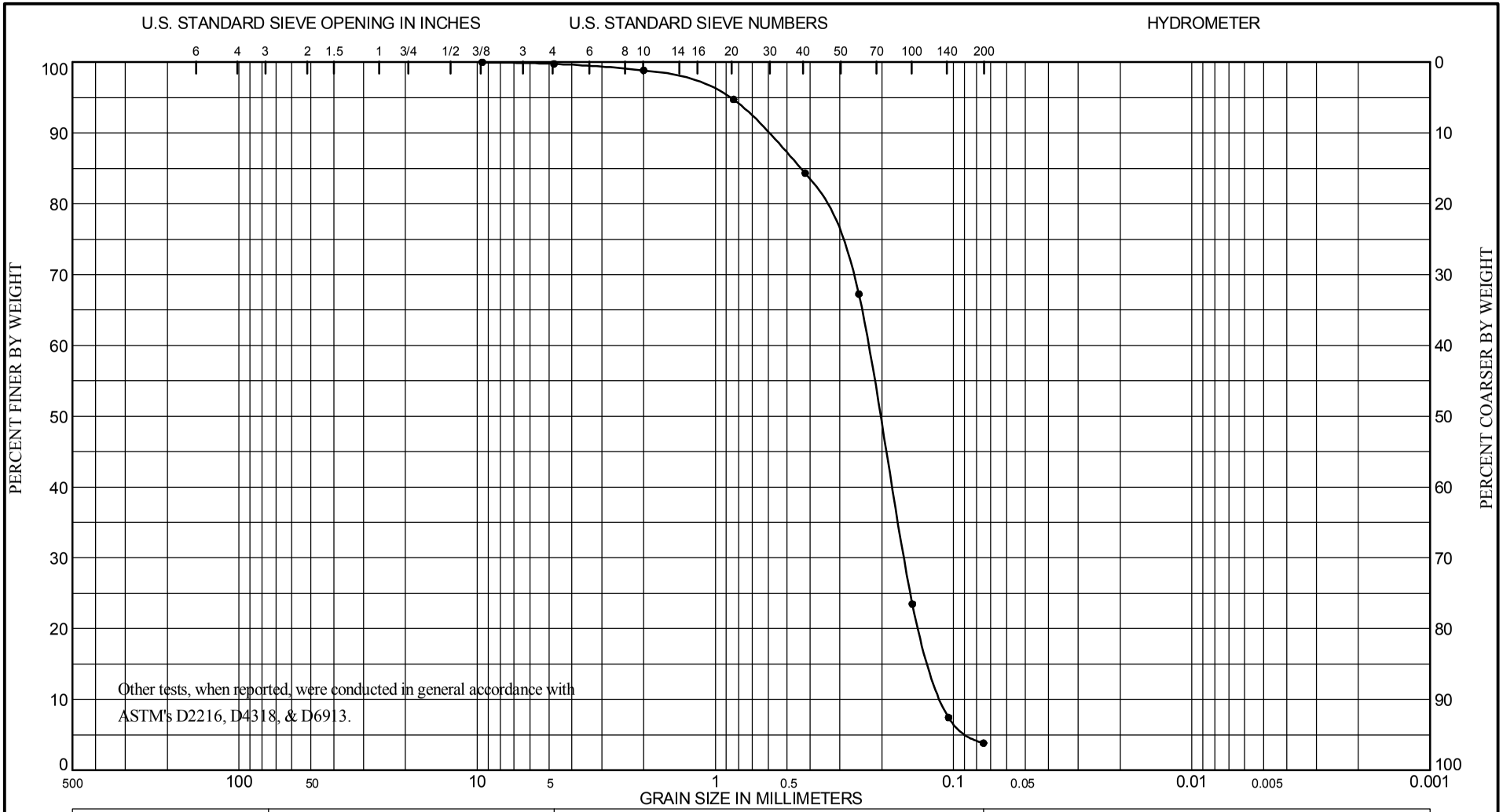
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15206° Long = -88.35036°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

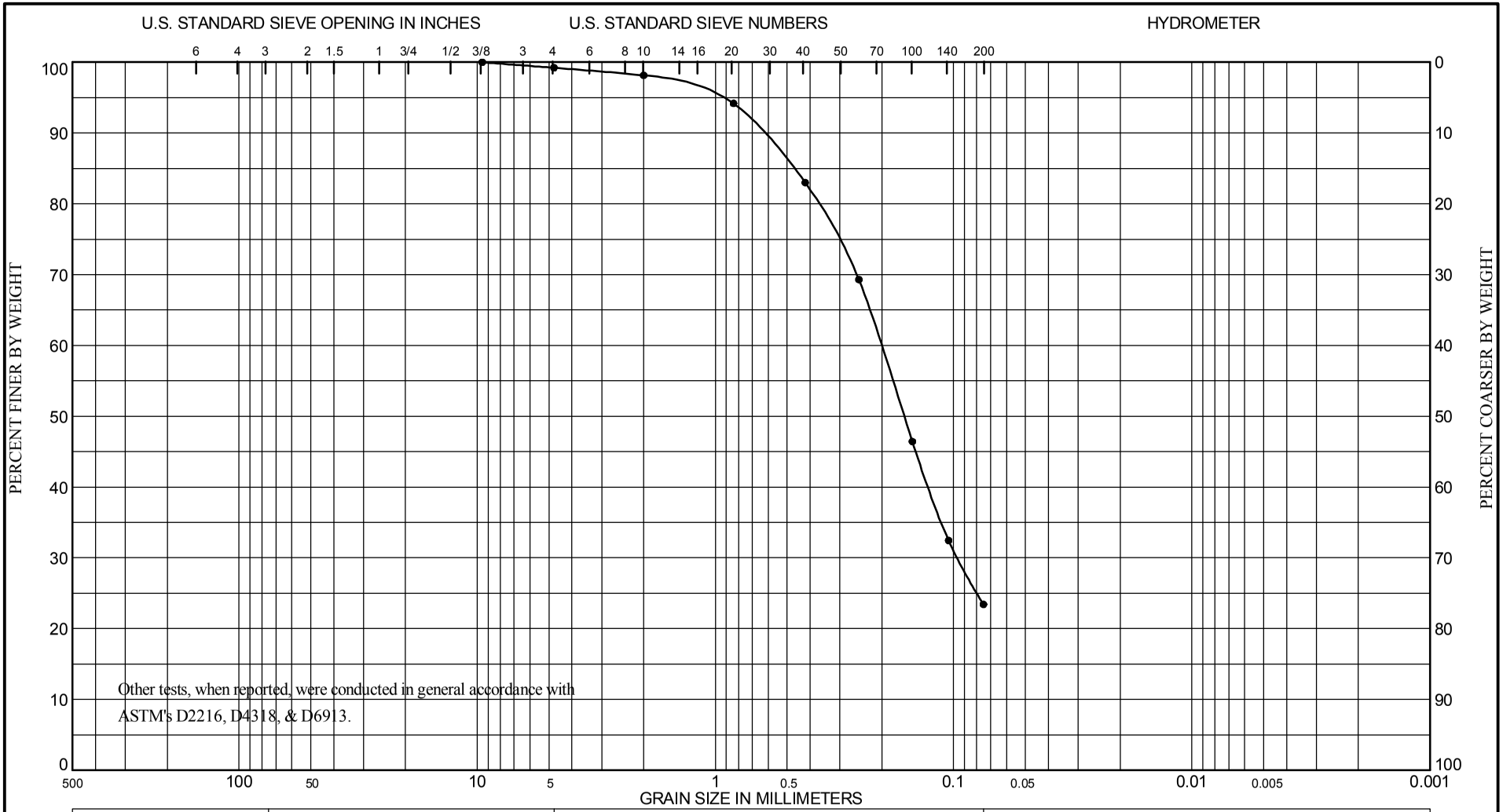
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 1.0	Olive Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3889
Hole No. BI-PBS-127-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

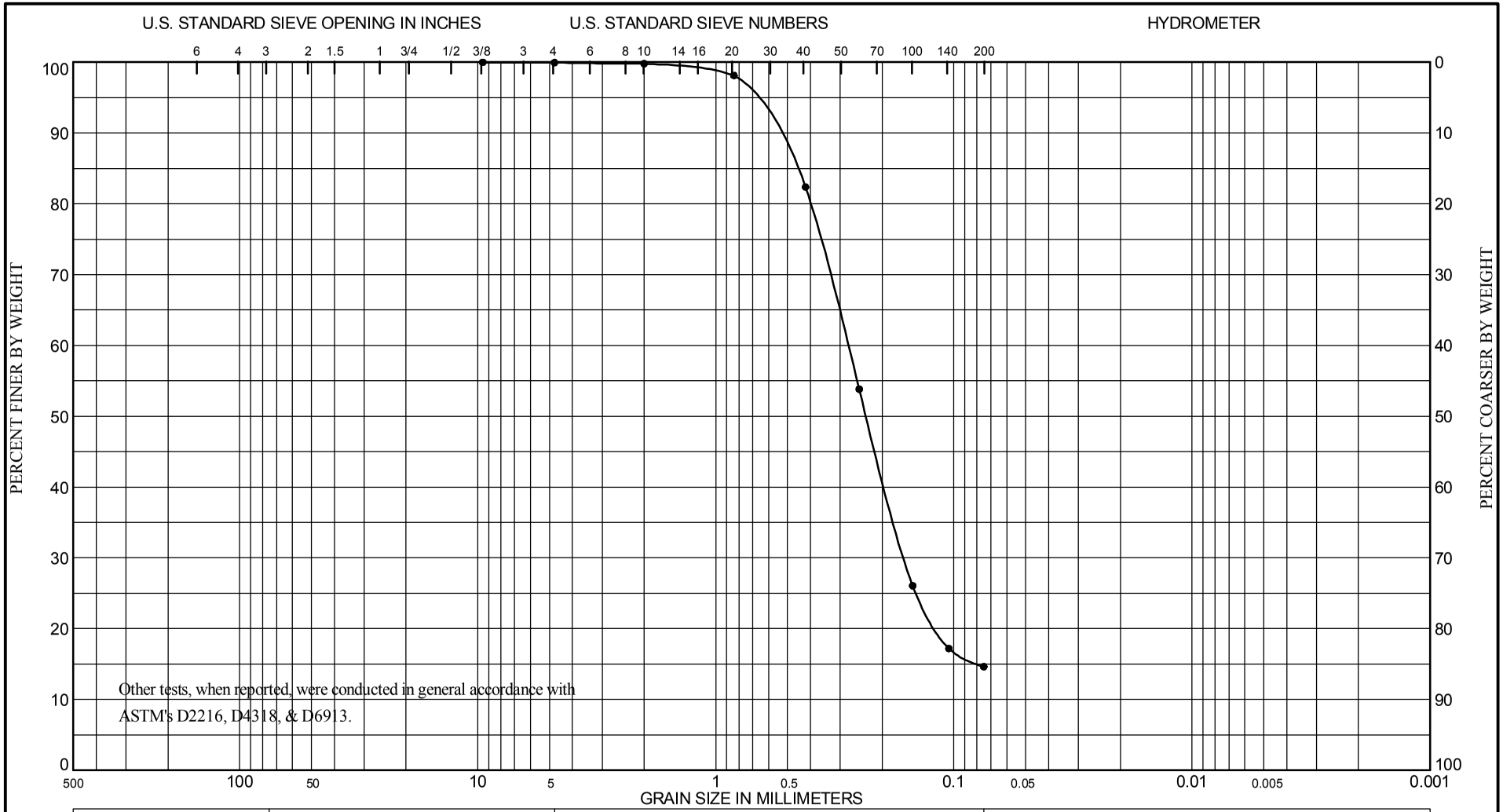
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	1.0 to 4.2	Dark Greenish Gray, Silty Sand (SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3890
Hole No. BI-PBS-127-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

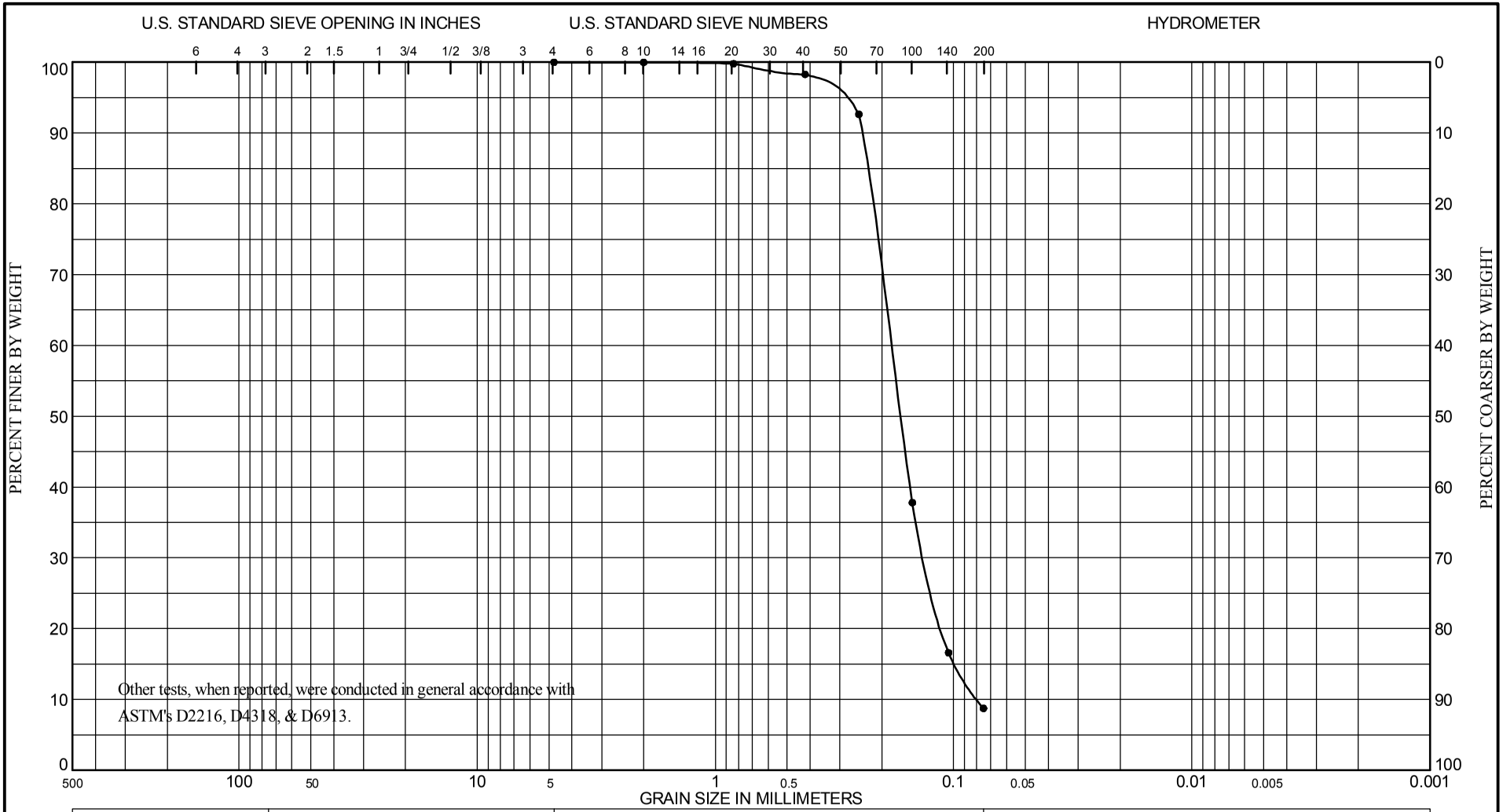
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	4.2 to 10.7	Greenish Gray, Silty Sand (SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3891
Hole No. BI-PBS-127-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

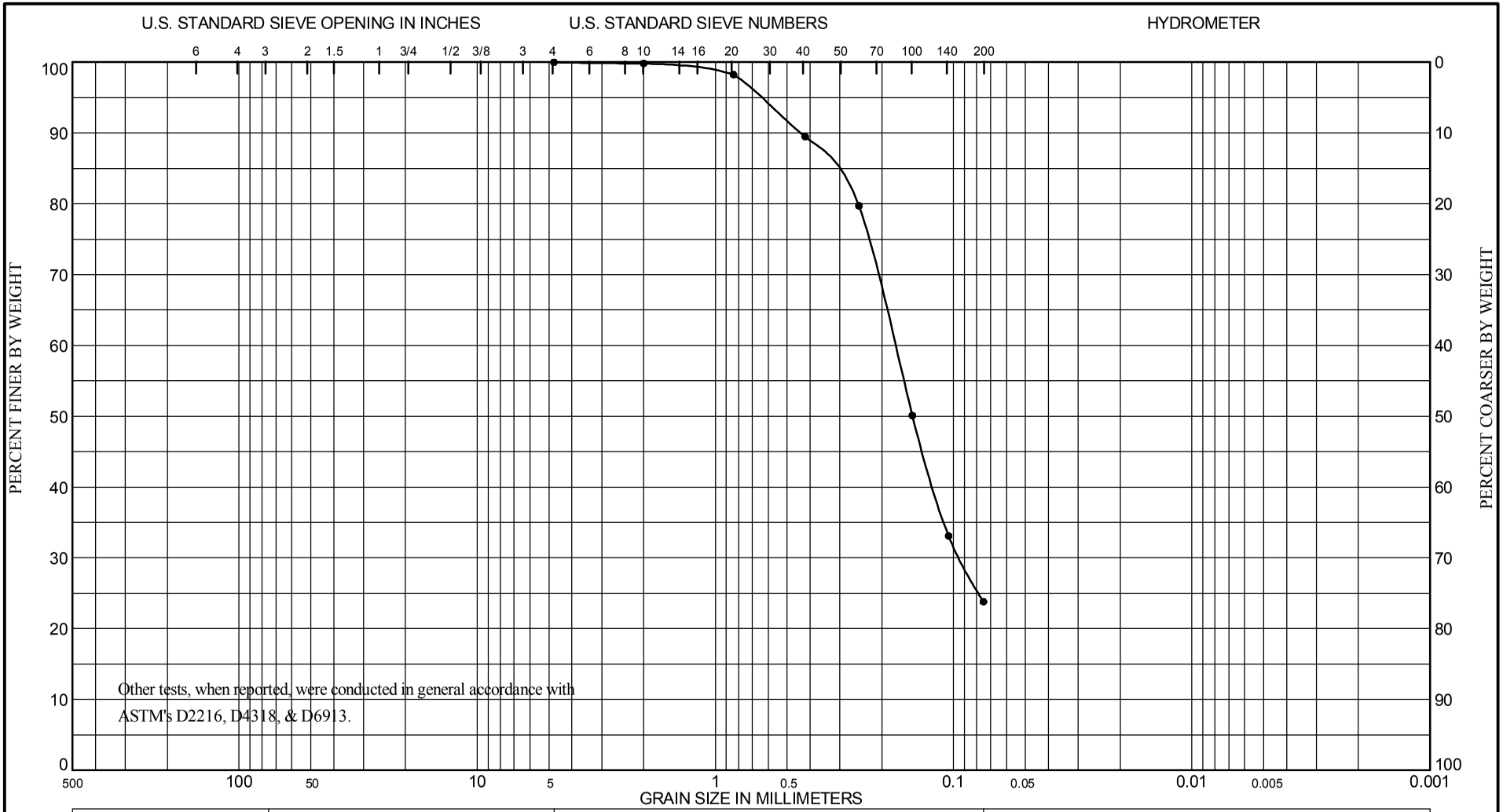
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
D	10.7 to 12.7	Gray, Poorly Graded Silty Sand (SP-SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3892
Hole No. BI-PBS-127-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

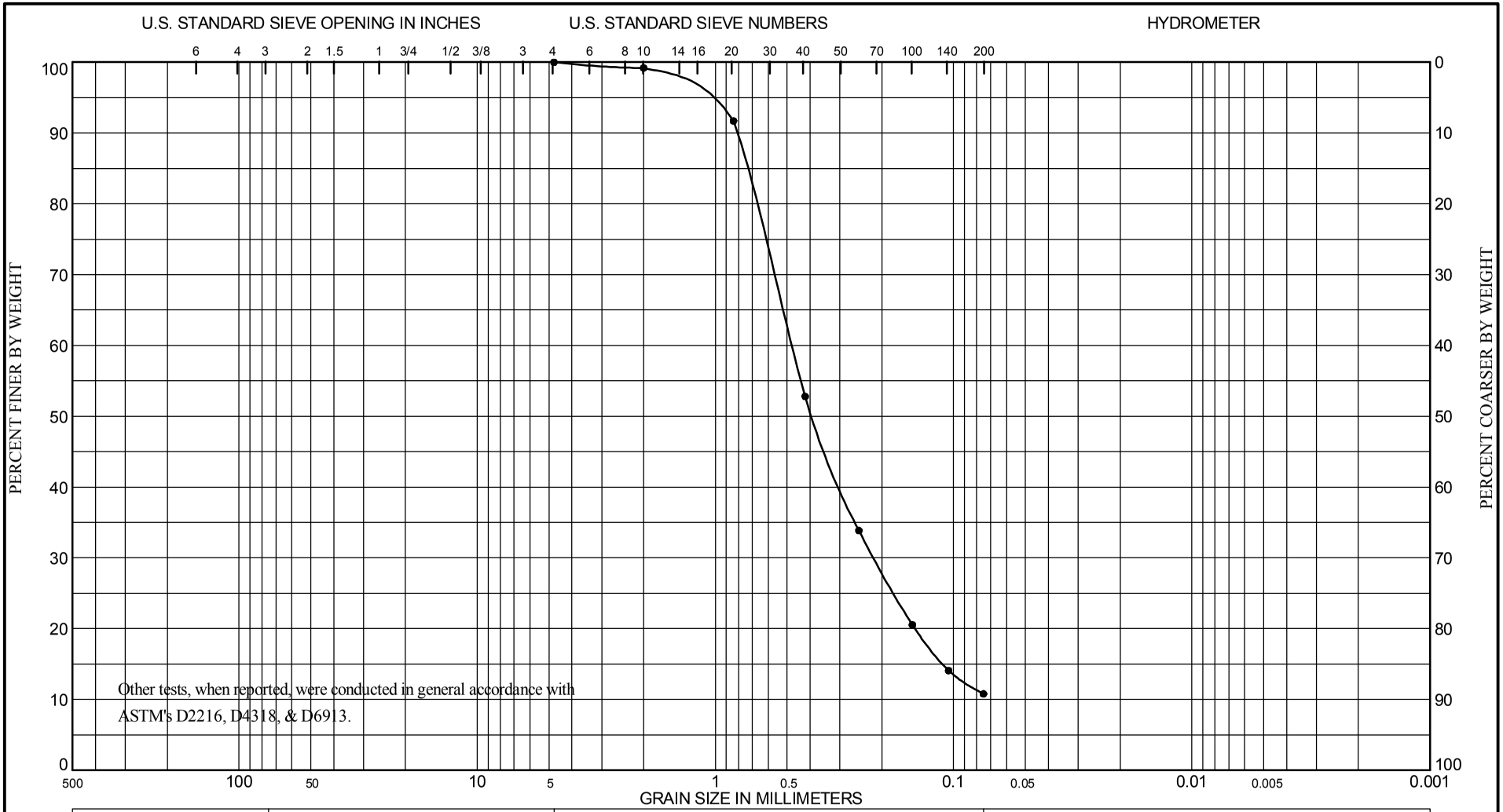
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
E	12.7 to 15.9	Greenish Gray, Silty Sand (SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3893
Hole No. BI-PBS-127-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
F	15.9 to 16.6	Gray, Poorly Graded Silty Sand (SP-SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3894
Hole No. BI-PBS-127-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-128-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 2 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS East	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-128-13 — LOCATION COORDINATES: E = 1,137,627 N = 236,738	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 3 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 57 Ft.
	15. DATE BORING — STARTED: 11-30-13 — COMPLETED: 11-30-13
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -56.7 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 19.2 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-56.7	0.0				
			SAND, silty, mostly fine-grained sand-sized quartz, little shell, medium brown and medium gray (SM)	A	Classification: SM Color: 2.5Y 5/1-gray D50: 0.187 mm % Fines: 16.1
				B	Classification: SP-SM Color: 2.5Y 5/1-gray D50: 0.243 mm % Fines: 11.8
-65.5	8.8				
-66.7	10.0		SAND, poorly-graded, mostly fine-grained sand-sized quartz, lt. brown (SP)	C	Classification: SP-SM Color: 2.5Y 6/1-gray D50: 0.21 mm % Fines: 11
			CLAY, lean, few wood at depth of 10.7 ft., medium to lt. brown (CL)	NS	
-70.7	14.0				
			SILT, inorganic-L, lt. brown (ML)		
-74.5	17.8				
-75.9	19.2		CLAY, fat, lt. brown (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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15009° Long = -88.34806°

DRILLING LOG (Cont. Sheet)	INSTALLATION Mobile District		SHEET 2 OF 2 SHEETS
PROJECT MsCIP Barrier Island Restoration	COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83	VERTICAL NAVD88
LOCATION COORDINATES X = 1,137,627 Y = 236,738	ELEVATION TOP OF BORING -56.7 Ft.		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
			factor.		

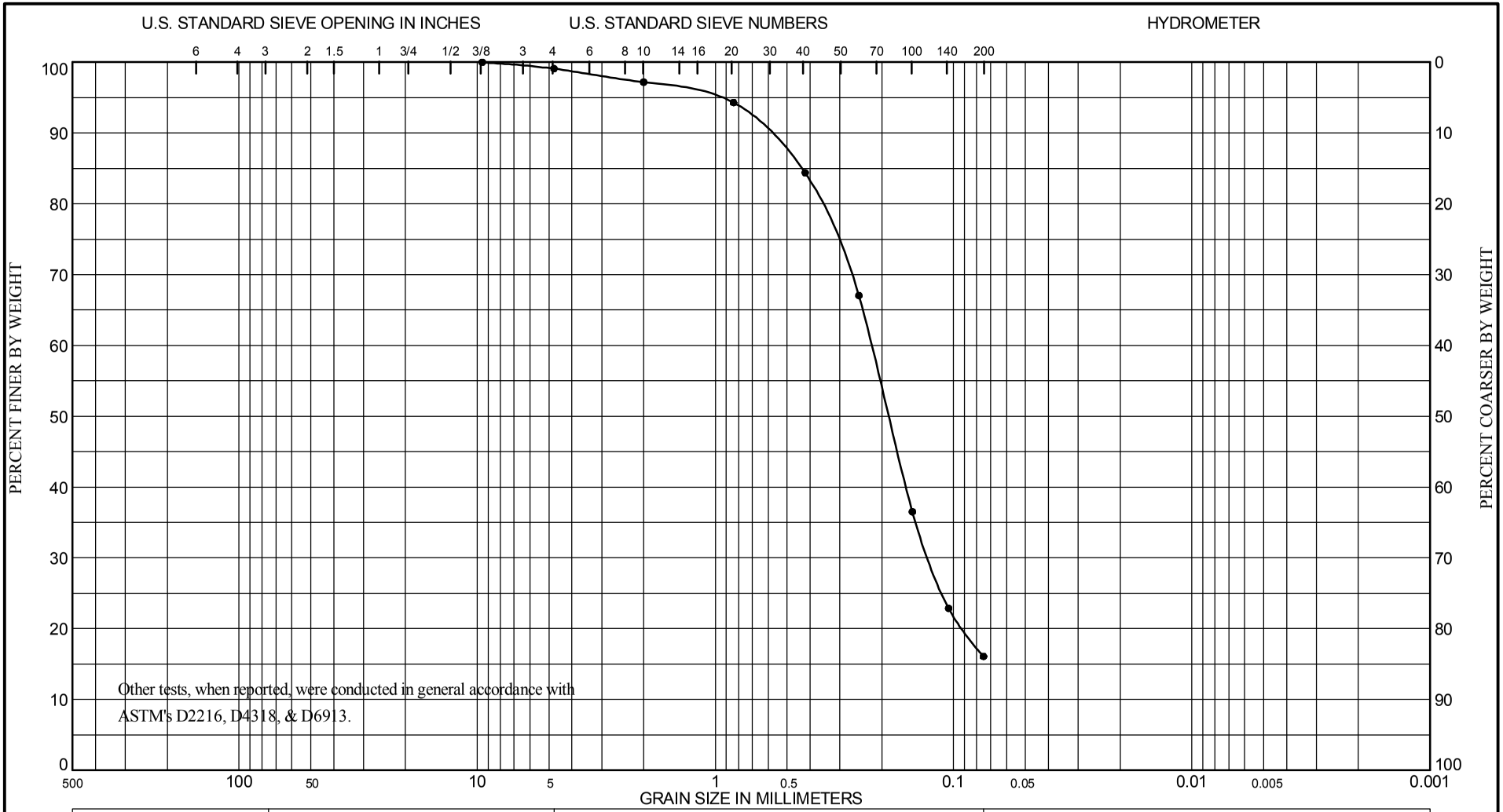
30
35
40
45
50
55
60

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15009° Long = -88.34806°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 4.5	Dark Greenish Gray, Silty Sand (SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3895
Hole No. BI-PBS-128-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192

COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

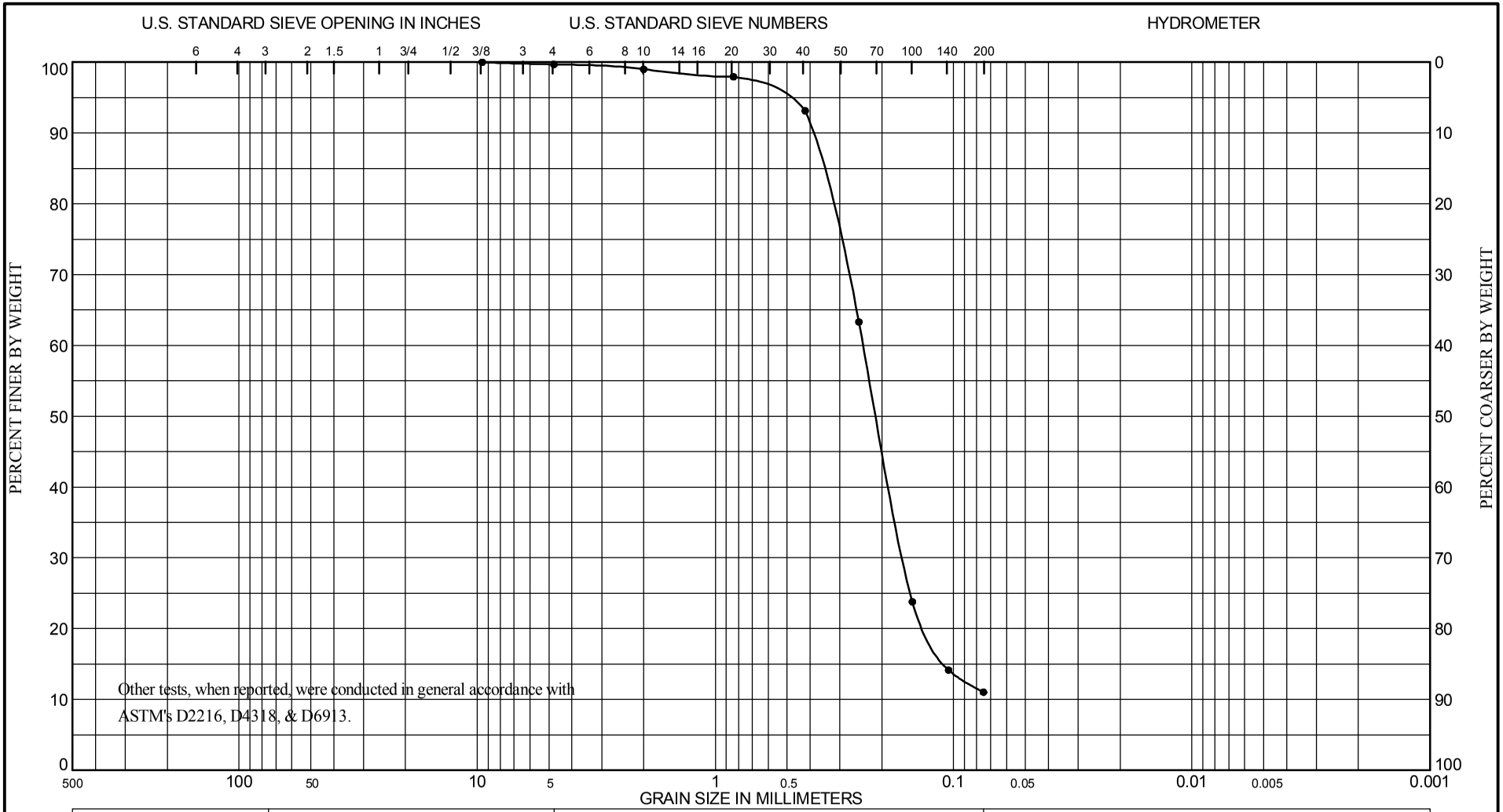
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	4.5 to 8.8	Dark Greenish Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3896
Hole No. BI-PBS-128-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	8.8 to 10.0	Greenish Gray, Poorly Graded Silty Sand (SP-SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3897
Hole No. BI-PBS-128-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-131-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 2 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS East	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-131-13 — LOCATION COORDINATES: E = 1,136,650 N = 238,444	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 6 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 55 Ft.
	15. DATE BORING — STARTED: 11-30-13 — COMPLETED: 11-30-13
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -55.3 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: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-55.3	0.0				
-58.3	3.0		SAND, silty, mostly fine-grained sand-sized quartz, medium brown (SM)	A	Classification: SM Color: 2.5Y 5/1-gray D50: 0.198 mm % Fines: 15.6
-63.3	8.0		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, medium brown (SP-SM)	B	Classification: SM Color: 2.5Y 5/1-gray D50: 0.138 mm % Fines: 19.1
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, medium brown to 12 ft., lt. brown to 14 ft. (SP)	C	Classification: SM Color: 2.5Y 6/1-gray D50: 0.208 mm % Fines: 14
				D	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.34 mm % Fines: 3
			At El. -69.3 Ft., mostly medium-grained sand-sized quartz, lt. brown	E	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.405 mm % Fines: 1.4
-75.3	20.0			F	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.488 mm % Fines: 1.5

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.

3. Seafloor elevation calculated using sampling

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15479° Long = -88.35113°

DRILLING LOG (Cont. Sheet)	INSTALLATION Mobile District		SHEET 2 OF 2 SHEETS
PROJECT MsCIP Barrier Island Restoration	COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83	VERTICAL NAVD88
LOCATION COORDINATES X = 1,136,650 Y = 238,444	ELEVATION TOP OF BORING -55.3 Ft.		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
			vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.		

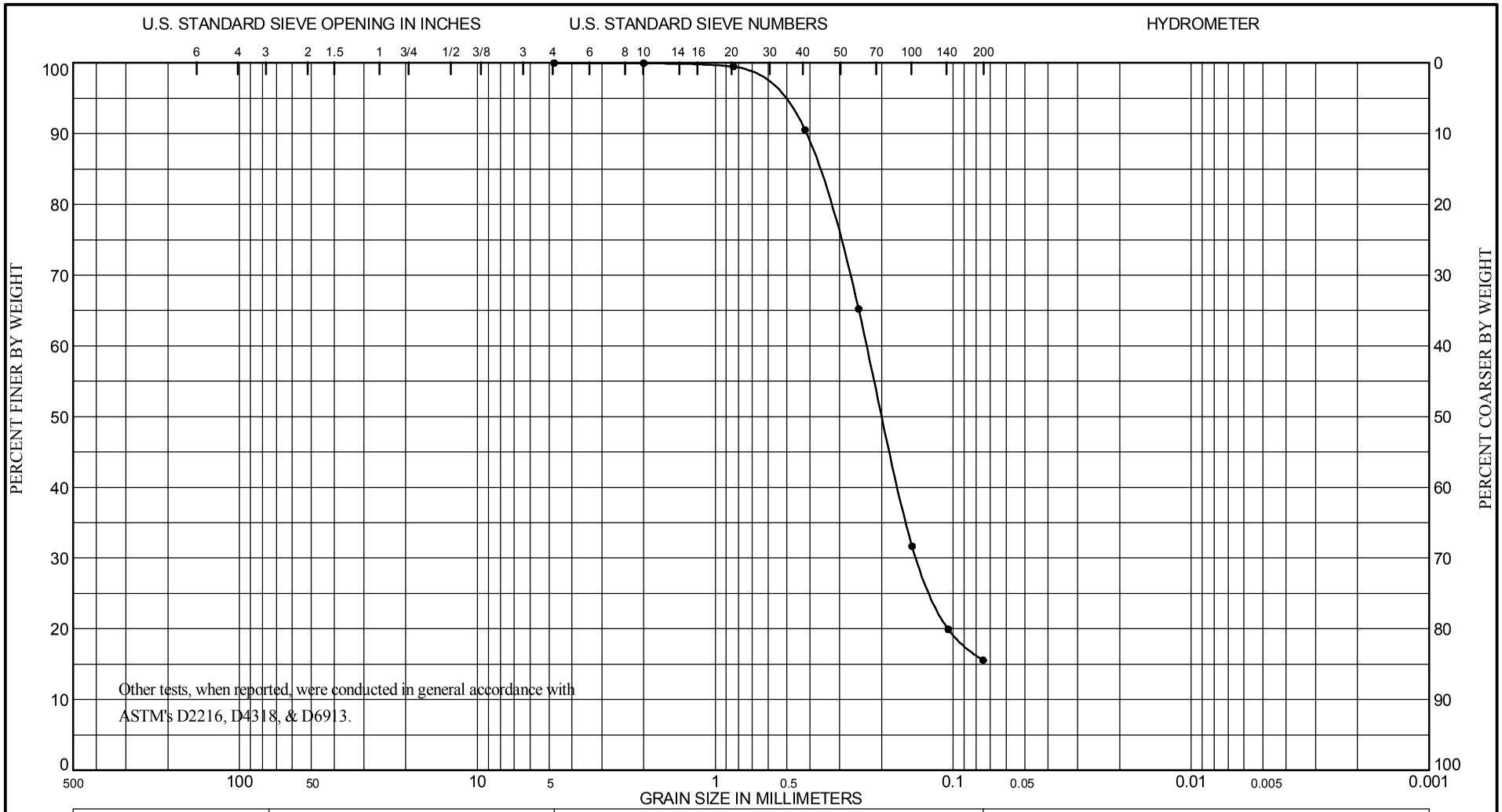
30
35
40
45
50
55
60

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15479° Long = -88.35113°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 3.0	Dark Greenish Gray, Silty Sand (SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3878
Hole No. BI-PBS-131-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

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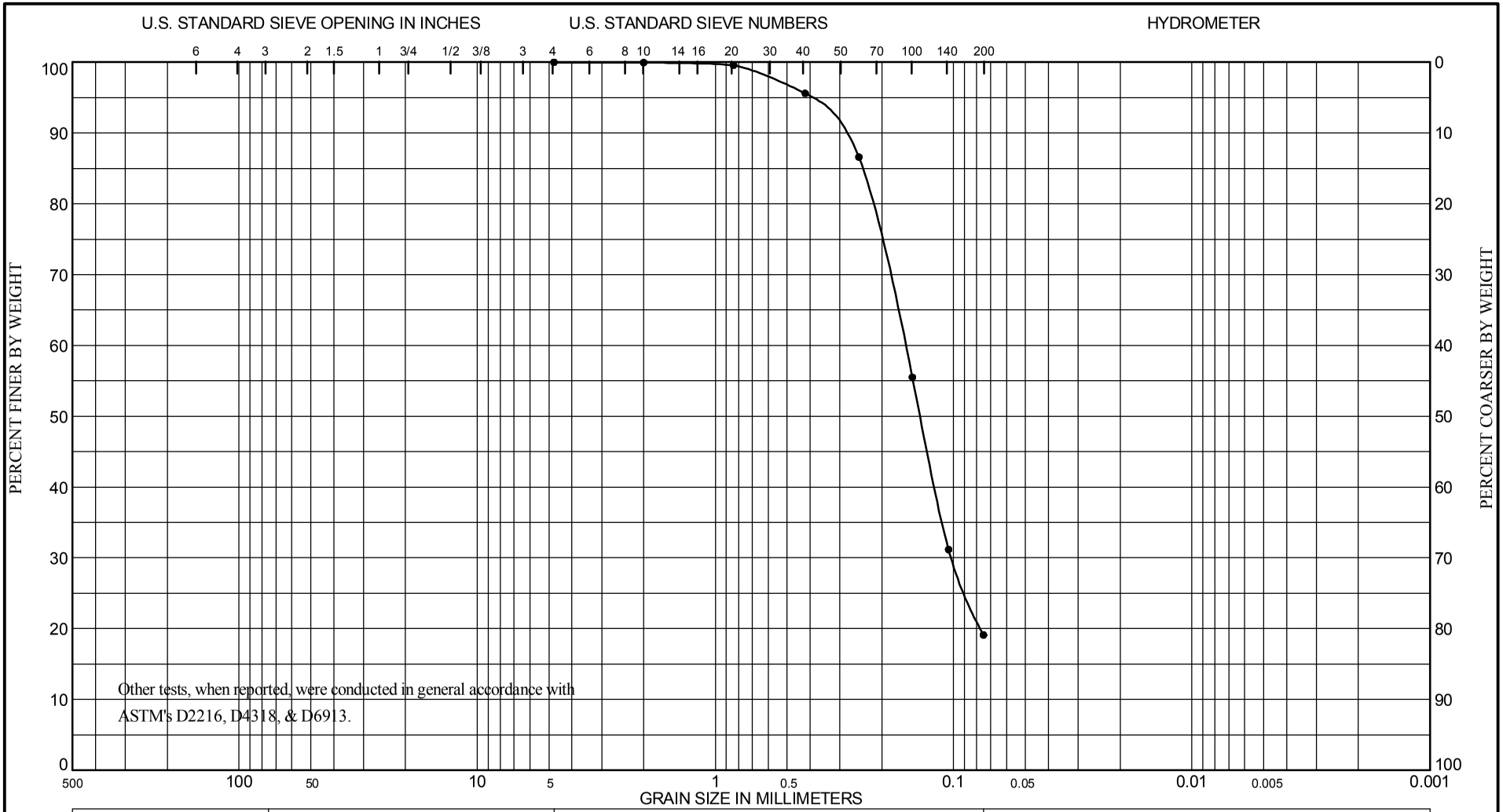


COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

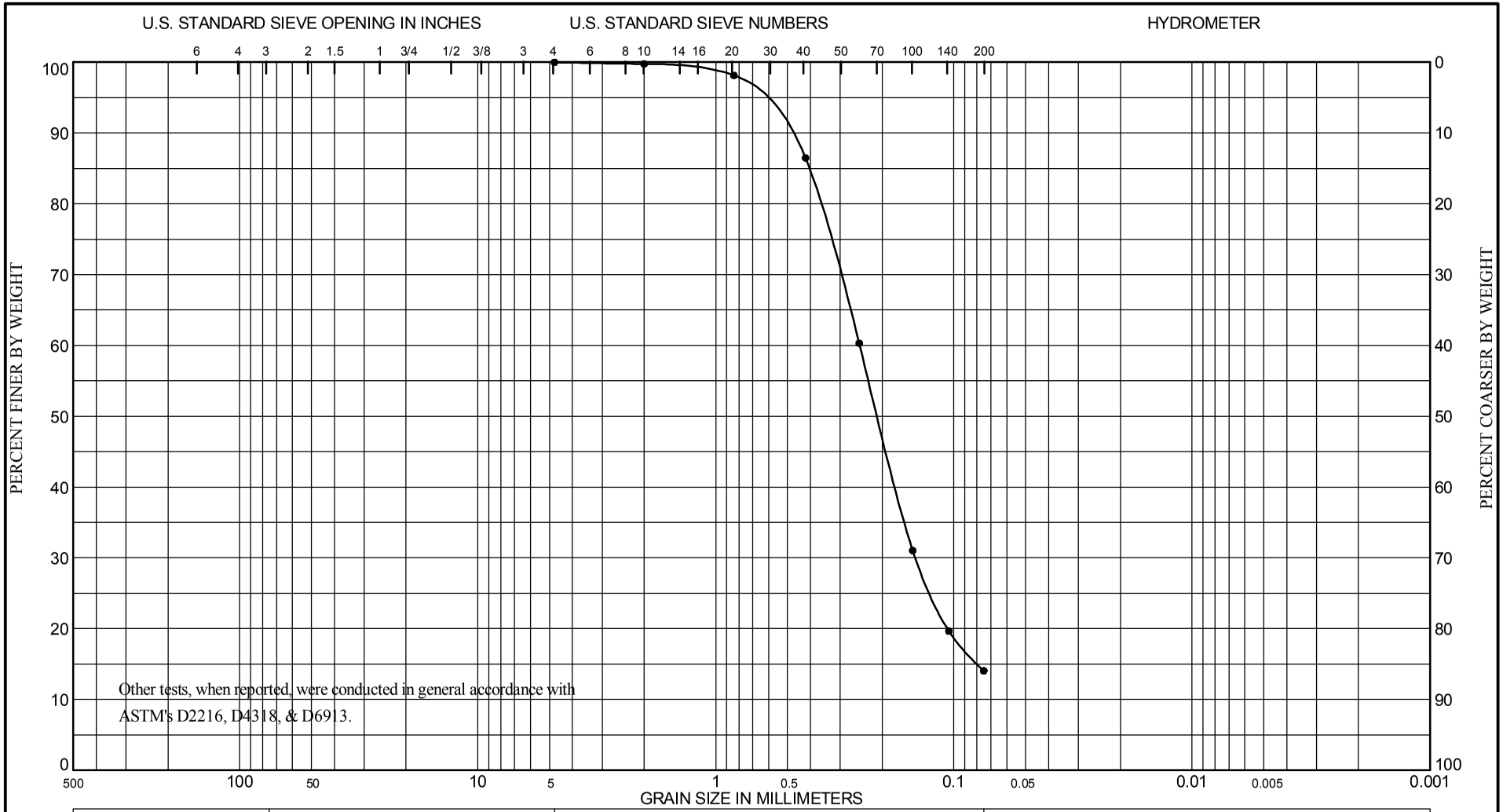
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	3.0 to 8.0	Dark Greenish Gray, Silty Sand (SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3879
Hole No. BI-PBS-131-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	8.0 to 11.0	Very Dark Gray, Silty Sand (SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3880
Hole No. BI-PBS-131-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

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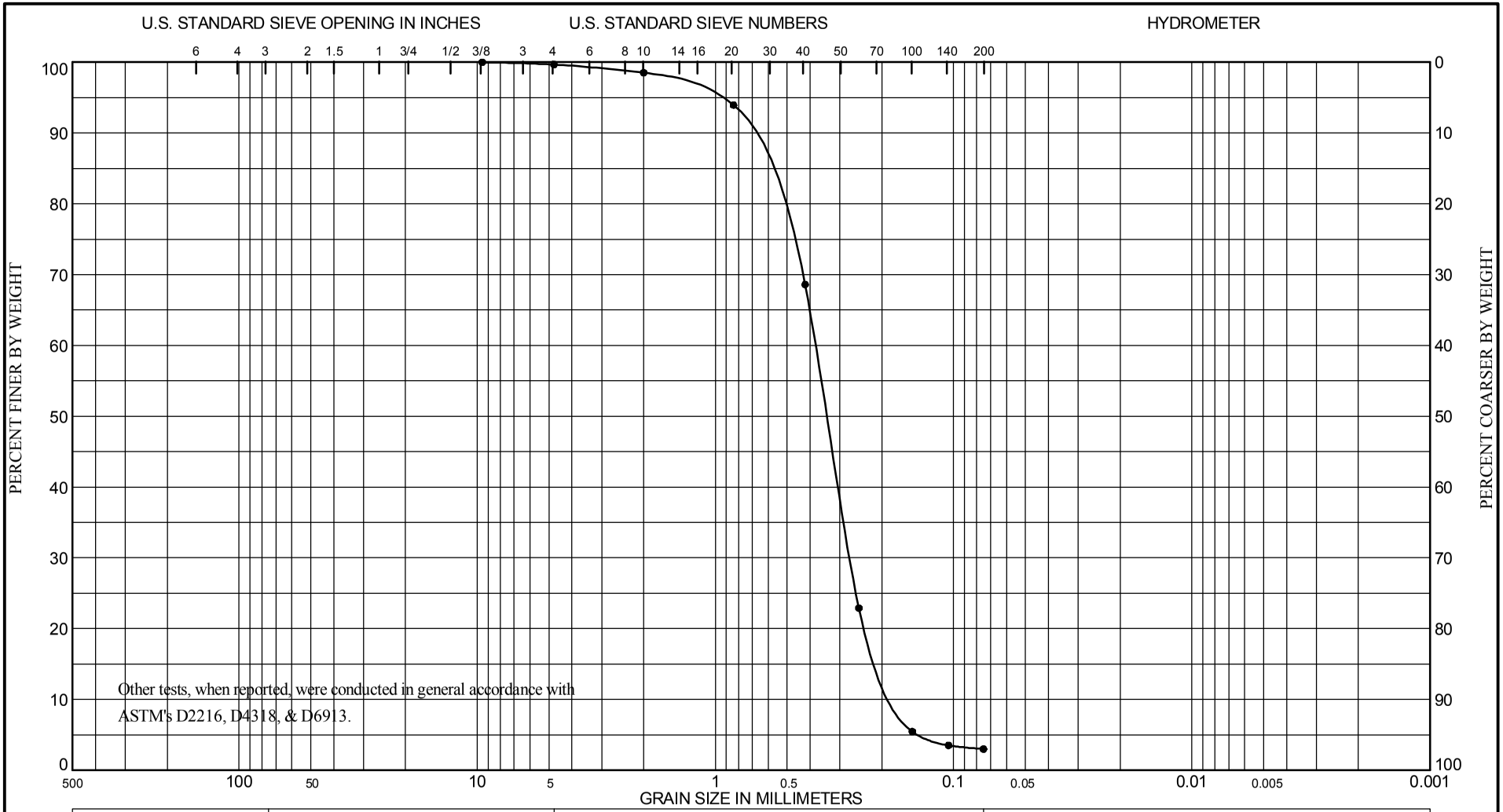
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

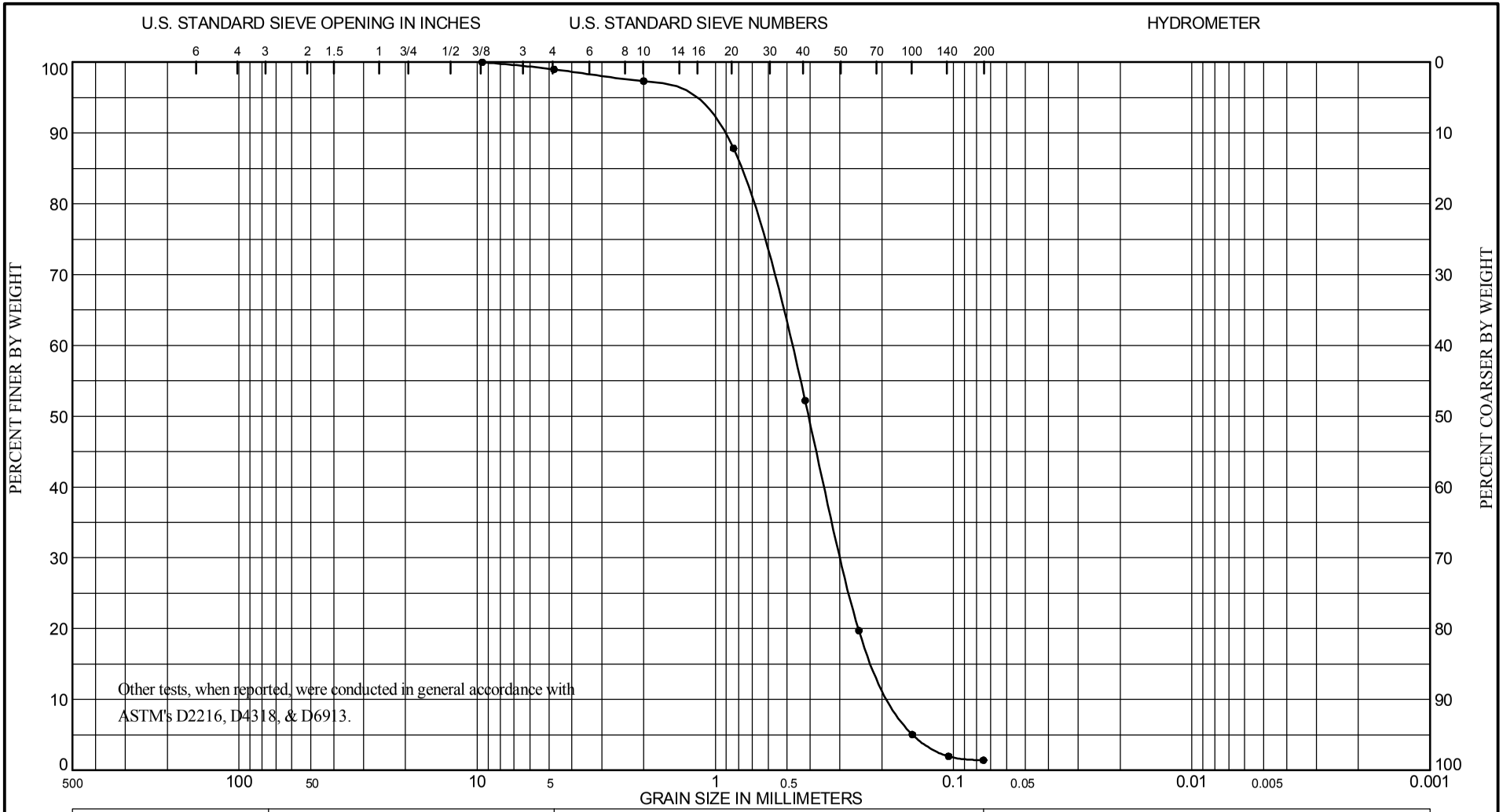
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
D	11.0 to 14.0	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3881
Hole No. BI-PBS-131-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

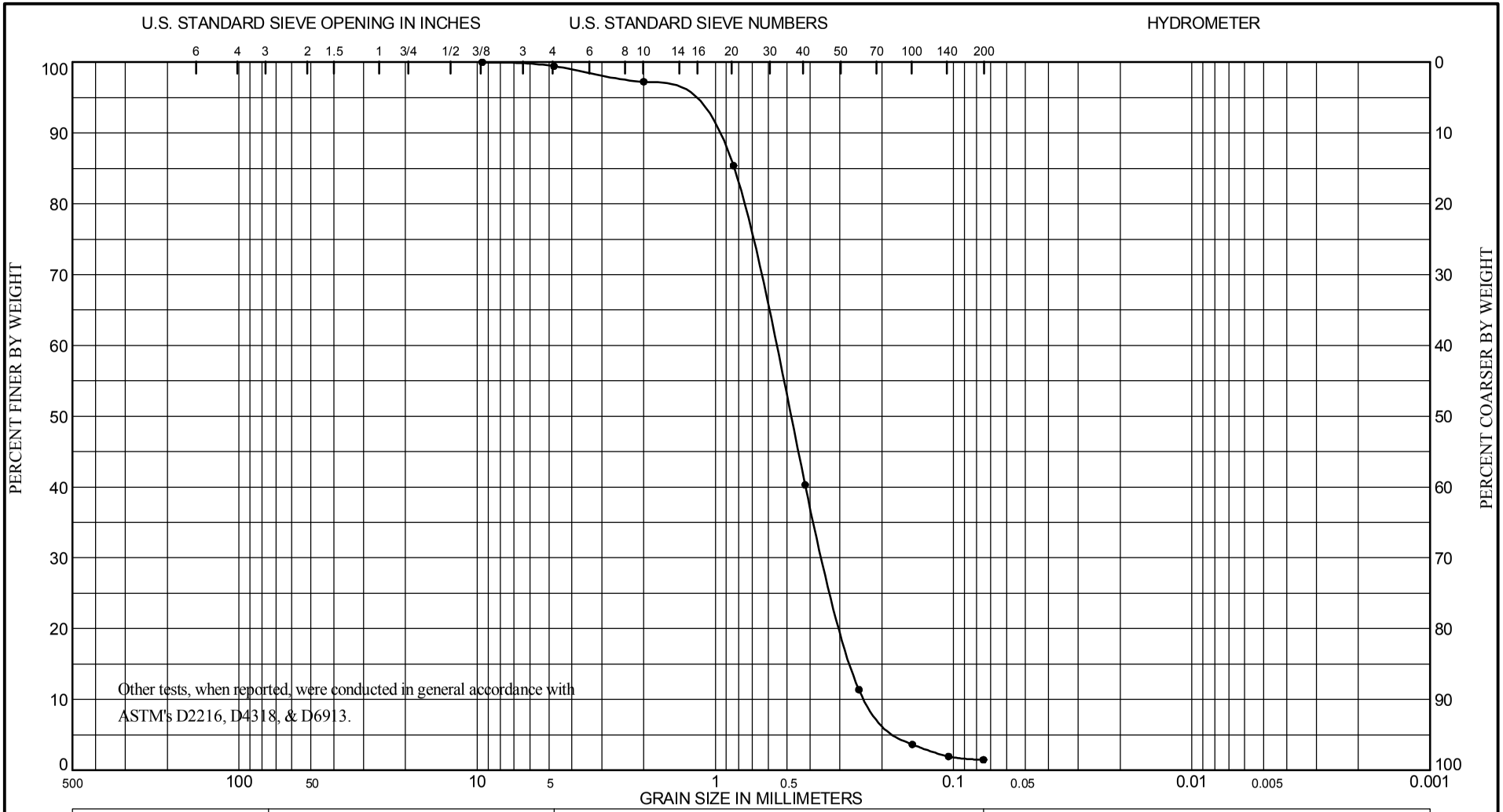
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
E	14.0 to 17.0	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3882
Hole No. BI-PBS-131-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
F	17.0 to 20.0	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3883
Hole No. BI-PBS-131-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-132-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS East	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-132-13 — LOCATION COORDINATES: E = 1,136,226 N = 237,794	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 5 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 55 Ft.
	15. DATE BORING — STARTED: 11-30-13 — COMPLETED: 11-30-13
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -55.1 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 16.1 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-55.1	0.0				
-56.1	1.0		SAND, poorly-graded, mostly fine-grained sand-sized quartz, medium gray (SP)	A	Classification: SP-SM Color: GLEY1 10Y 6/1- D50: 0.223 mm % Fines: 6.5
			SAND, silty, mostly fine-grained sand-sized quartz, few wood fragments at 1.2 to 1.8 ft., medium gray to 4 ft., grayish brown to 5.5 ft., lt. brown to 9 ft. (SM)	B	Classification: SP-SM Color: 2.5Y 5/1-gray D50: 0.213 mm % Fines: 11
				C	Classification: SM Color: 2.5Y 6/1-gray D50: 0.255 mm % Fines: 15.1
-64.1	9.0				
-65.3	10.2		SAND, poorly-graded, mostly fine-grained sand-sized quartz, lt. gray (SP)	D	Classification: SP-SM Color: 2.5Y 5/1-gray D50: 0.153 mm % Fines: 11.2
-67.1	12.0		SAND, silty, mostly fine-grained sand-sized quartz, little shell fragments, lt. gray (SM)	E	Classification: SM Color: 2.5Y 5/1-gray D50: 0.124 mm % Fines: 27.4
-71.2	16.1		SAND, clayey, little shell fragments to 14 ft., lt. 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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

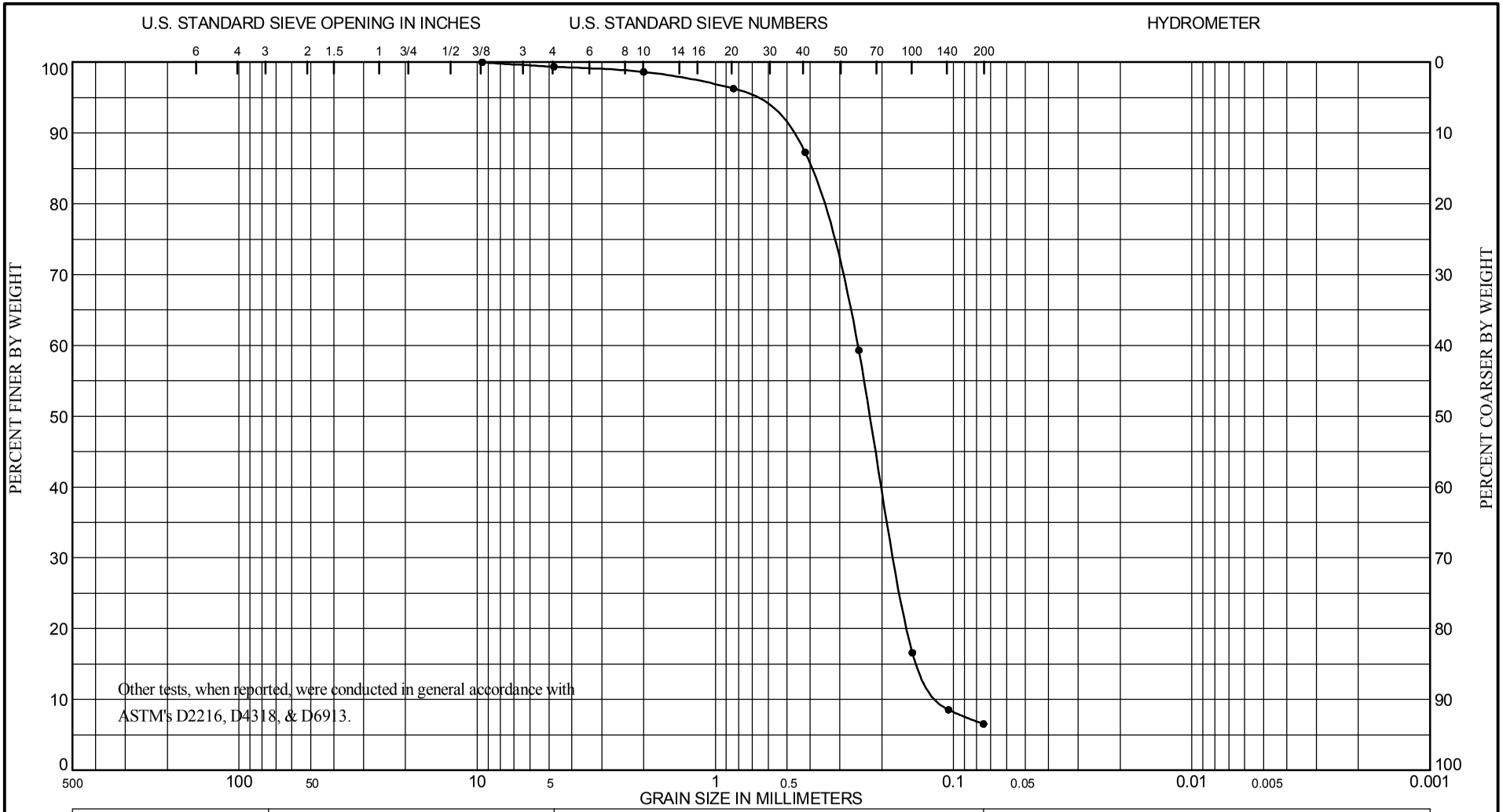
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15301° Long = -88.35248°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

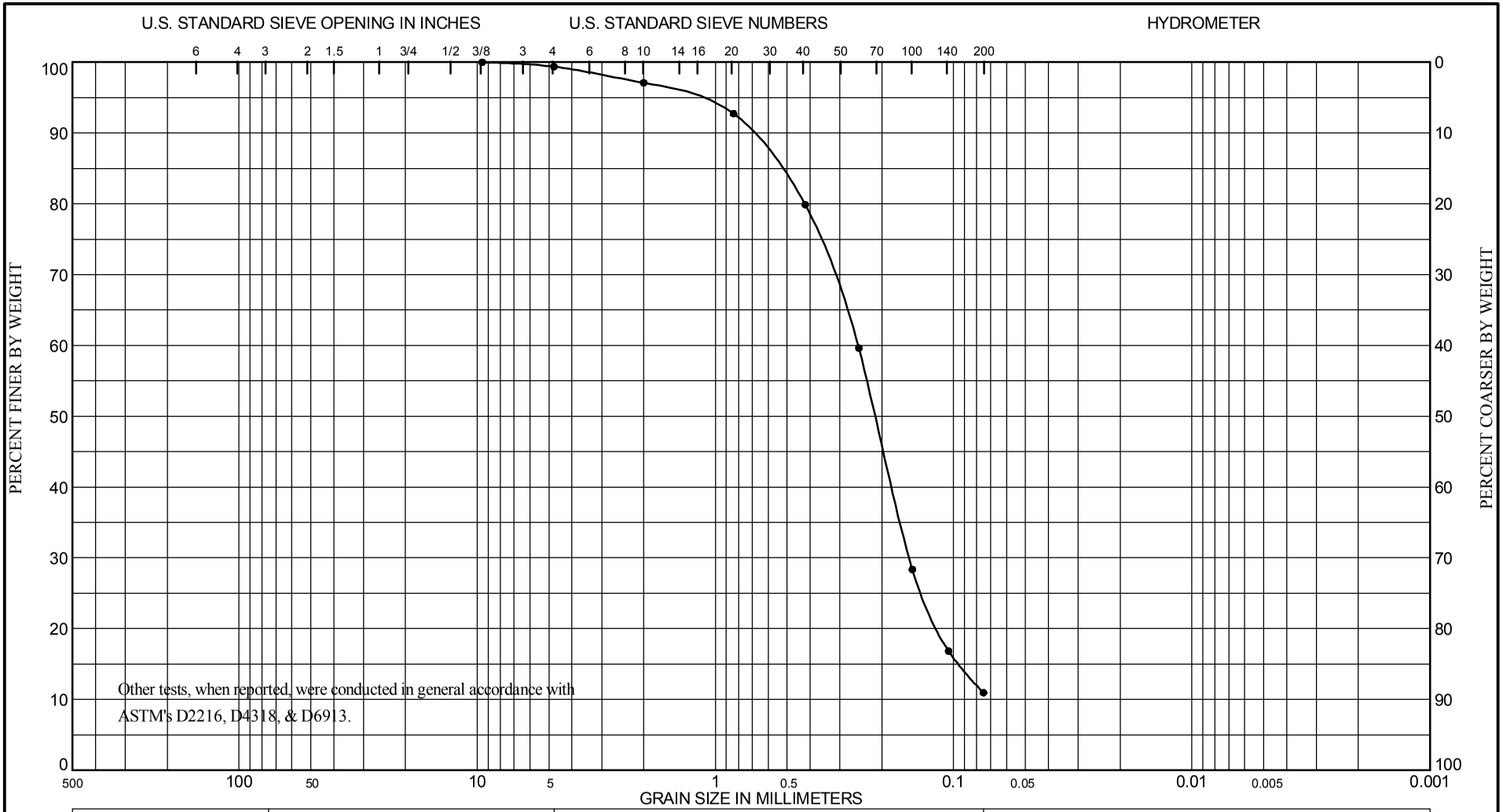
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 1.0	Dark Greenish Gray, Poorly Graded Silty Sand (SP-SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3884
Hole No. BI-PBS-132-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

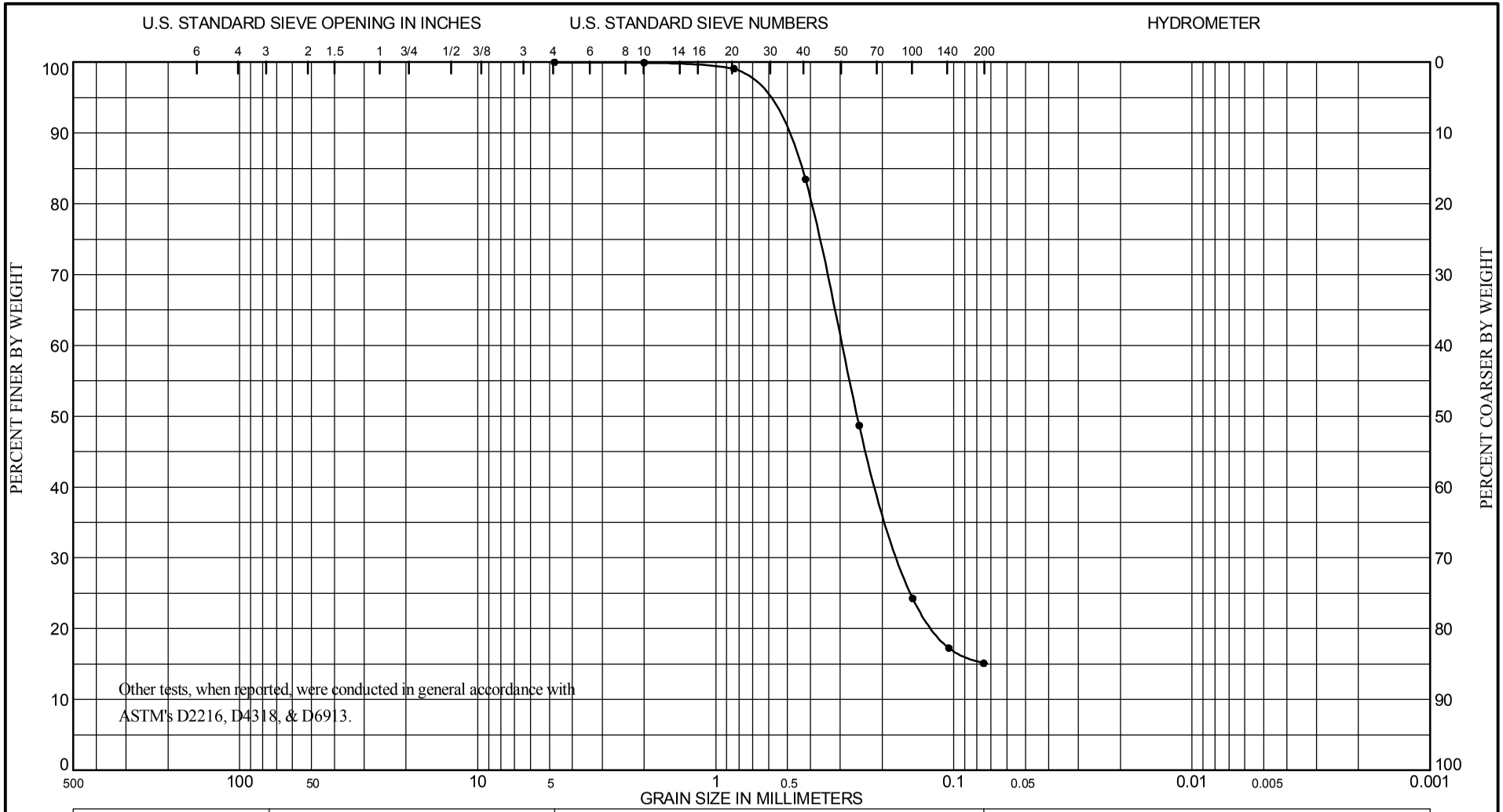
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	1.0 to 5.0	Dark Greenish Gray, Poorly Graded Silty Sand (SP-SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3885
Hole No. BI-PBS-132-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

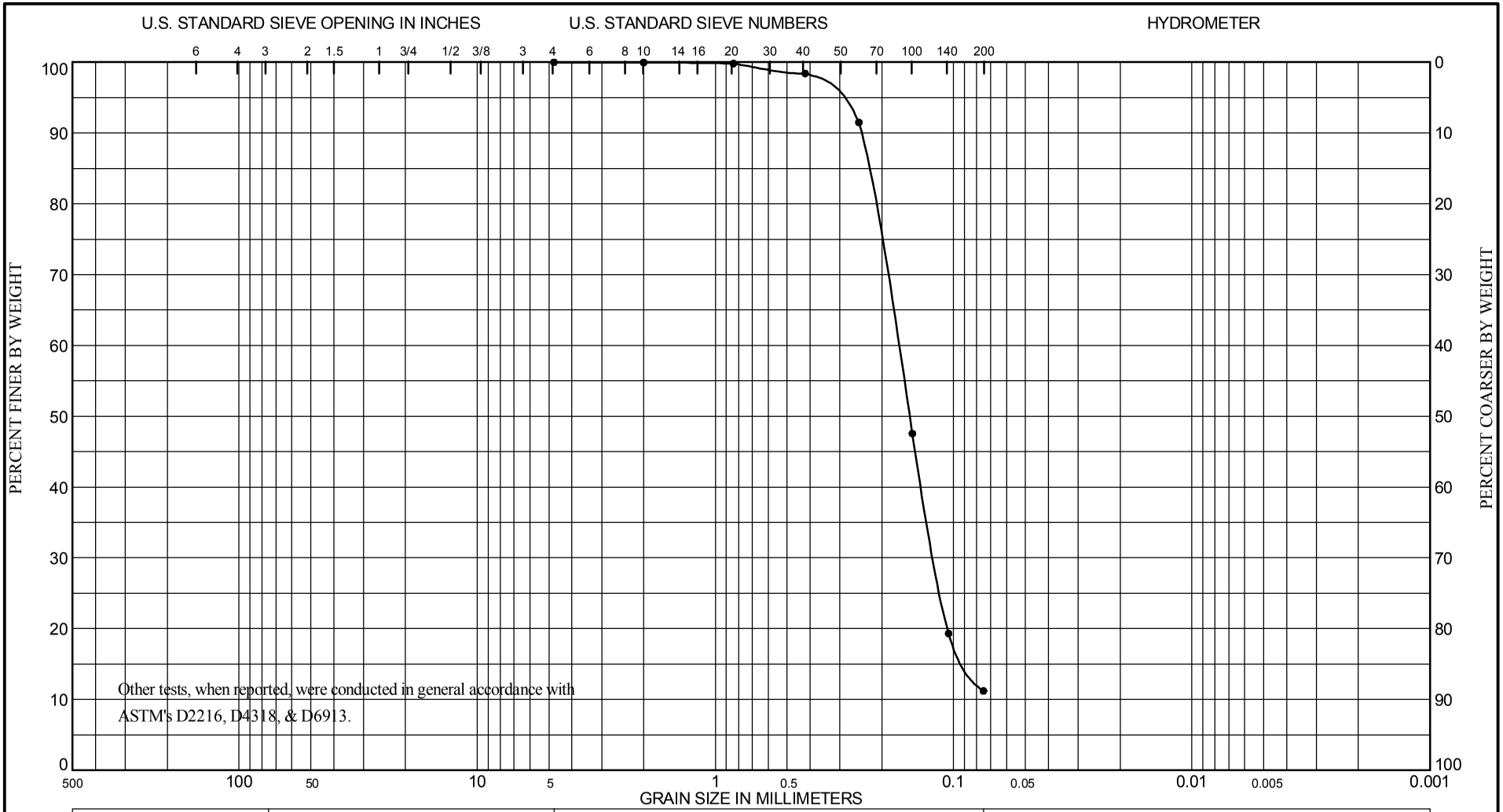
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	5.0 to 9.0	Dark Greenish Gray, Silty Sand (SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3886
Hole No. BI-PBS-132-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

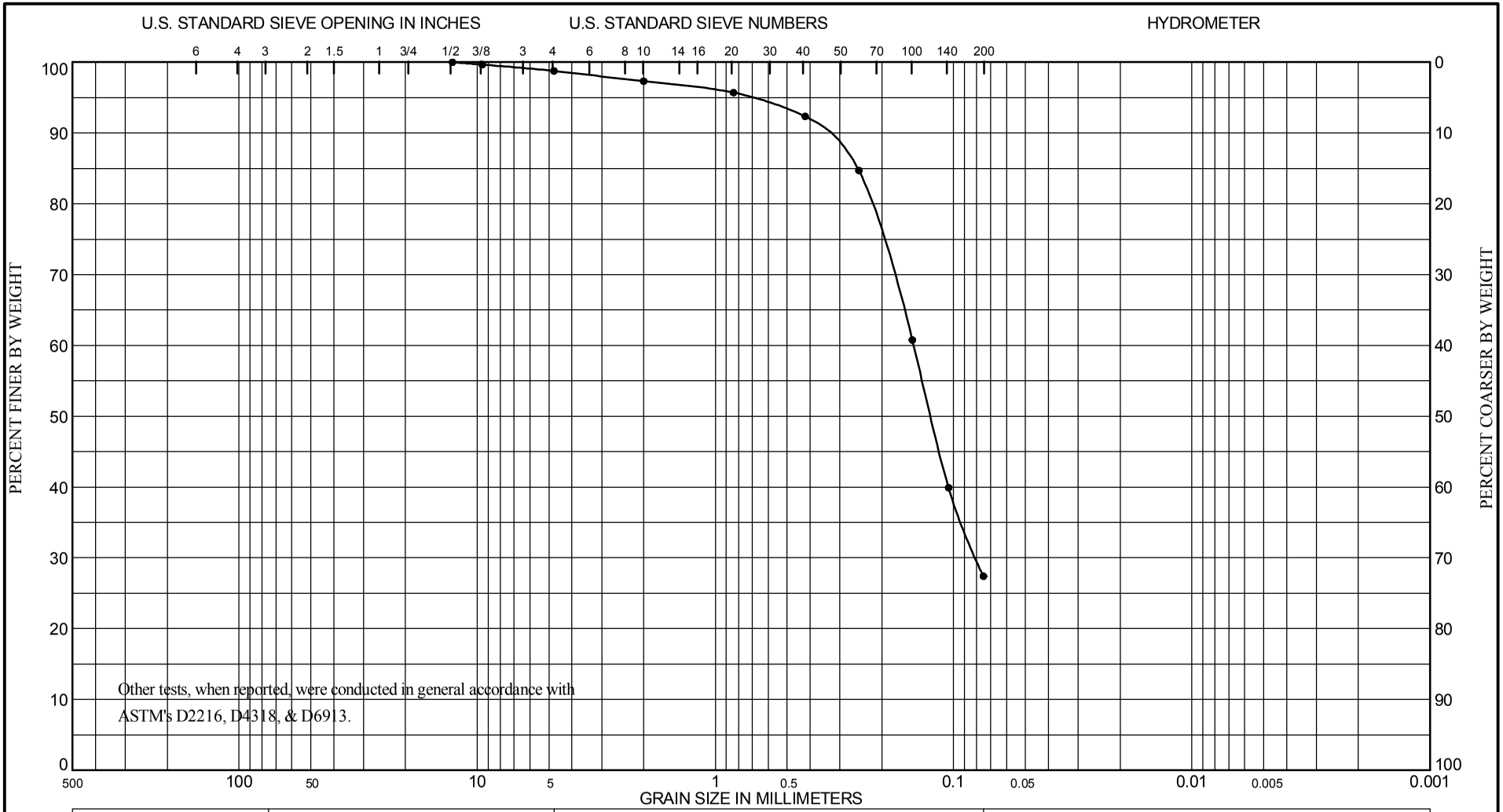
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
D	9.0 to 10.2	Greenish Gray, Poorly Graded Silty Sand (SP-SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3887
Hole No. BI-PBS-132-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
E	10.2 to 12.0	Dark Greenish Gray, Silty Sand (SM), with a trace of gravel size				
		shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3888
Hole No. BI-PBS-132-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-134-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS East	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-134-13 — LOCATION COORDINATES: E = 1,136,832 N = 236,397	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ 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: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 57 Ft.
	15. DATE BORING — STARTED: 11-30-13 — COMPLETED: 11-30-13
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -56.6 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 18.7 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-56.6	0.0				
-58.6	2.0		CLAY, lean, interbedded with lenses of silty sand with few shell fragments, medium gray (CL)		
-64.2	7.6		SAND, silty, mostly fine-grained sand-sized quartz, few shell, medium gray (SM) At El. -61.2 Ft., mostly fine-grained sand-sized quartz, little shell, medium gray		
-69.7	13.1		SAND, poorly-graded, mostly fine-grained sand-sized quartz, lt. brown (SP)	NS	
-70.7	14.1		SAND, clayey, brownish gray (SC)		
-75.3	18.7		CLAY, fat, lt. brown (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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14916° Long = -88.35058°

Boring Designation BI-PBS-135-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 2 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS East	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-135-13 — LOCATION COORDINATES: E = 1,129,985 N = 234,430	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 1 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 56 Ft.
	15. DATE BORING — STARTED: 12-01-13 — COMPLETED: 12-01-13
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -55.3 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 19.9 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-55.3	0.0				
-56.8	1.5		SAND, silty, mostly fine-grained sand-sized quartz, little shell, medium gray (SM)	A	Classification: SM Color: GLEY1 10Y 5/1- D50: 0.176 mm % Fines: 14.4
-58.0	2.7		SAND, clayey, little shell, medium gray (SC)		
-73.6	18.3		CLAY, lean, silty CL-CH, brownish gray (CL)	NS	
-75.2	19.9		SAND, silty, mostly fine-grained sand-sized quartz, 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.

3. Seafloor elevation calculated using sampling

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14383° Long = -88.37227°

DRILLING LOG (Cont. Sheet)	INSTALLATION Mobile District		SHEET 2 OF 2 SHEETS
PROJECT MsCIP Barrier Island Restoration	COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83	VERTICAL NAVD88
LOCATION COORDINATES X = 1,129,985 Y = 234,430	ELEVATION TOP OF BORING -55.3 Ft.		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
			vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.		

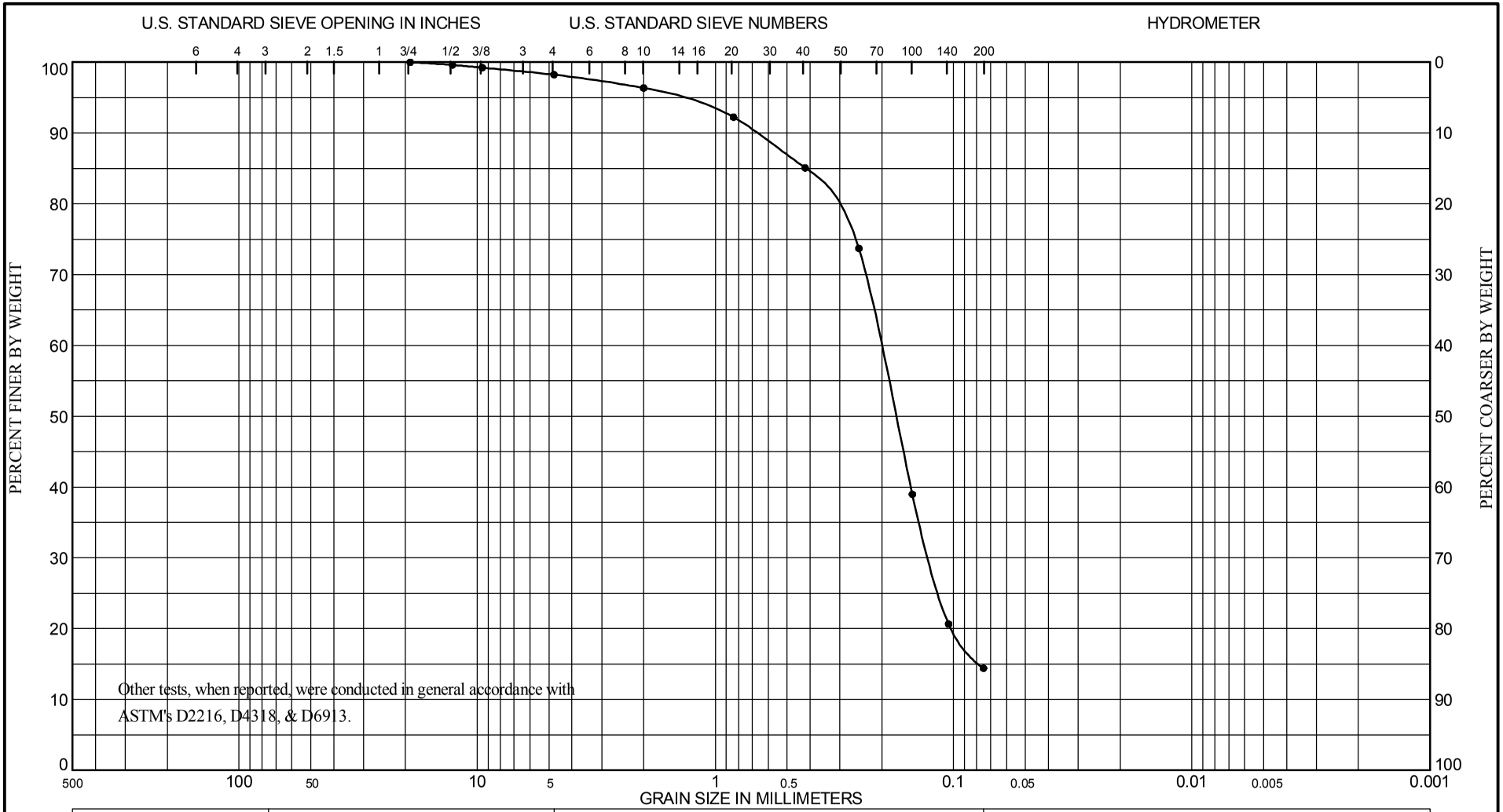
30
35
40
45
50
55
60

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14383° Long = -88.37227°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 1.5	Dark Greenish Gray, Silty Sand (SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3910
Hole No. BI-PBS-135-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-136-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 2 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-136-13 — LOCATION COORDINATES: E = 1,100,438 N = 241,975	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 2 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 45.4 Ft.
	15. DATE BORING — STARTED: 12-30-13 — COMPLETED: 12-30-13
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -45.0 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: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-45.0	0.0				
-45.7	0.7		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 5/1-gray D50: 0.269 mm % Fines: 3.5
-52.9	7.9		SAND, silty, mostly fine-grained sand-sized quartz, little shell fragments, medium gray (SM)	B	Classification: SM Color: 2.5Y 5/1-gray D50: 0.165 mm % Fines: 15.1
-55.5	10.5		SAND, clayey, mostly fine-grained sand-sized quartz, little shell fragments, medium gray (SC)	NS	
-62.5	17.5		CLAY, lean, few shell fragments, sandy, medium gray and pale orange (CL)	NS	
-65.0	20.0		CLAY, fat, sandy, lt. and medium gray and pale green (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.

3. Seafloor elevation calculated using sampling

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.16487° Long = -88.46567°

DRILLING LOG (Cont. Sheet)	INSTALLATION Mobile District		SHEET 2 OF 2 SHEETS
PROJECT MsCIP Barrier Island Restoration	COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83	VERTICAL NAVD88
LOCATION COORDINATES X = 1,100,438 Y = 241,975	ELEVATION TOP OF BORING -45.0 Ft.		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
			vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.		

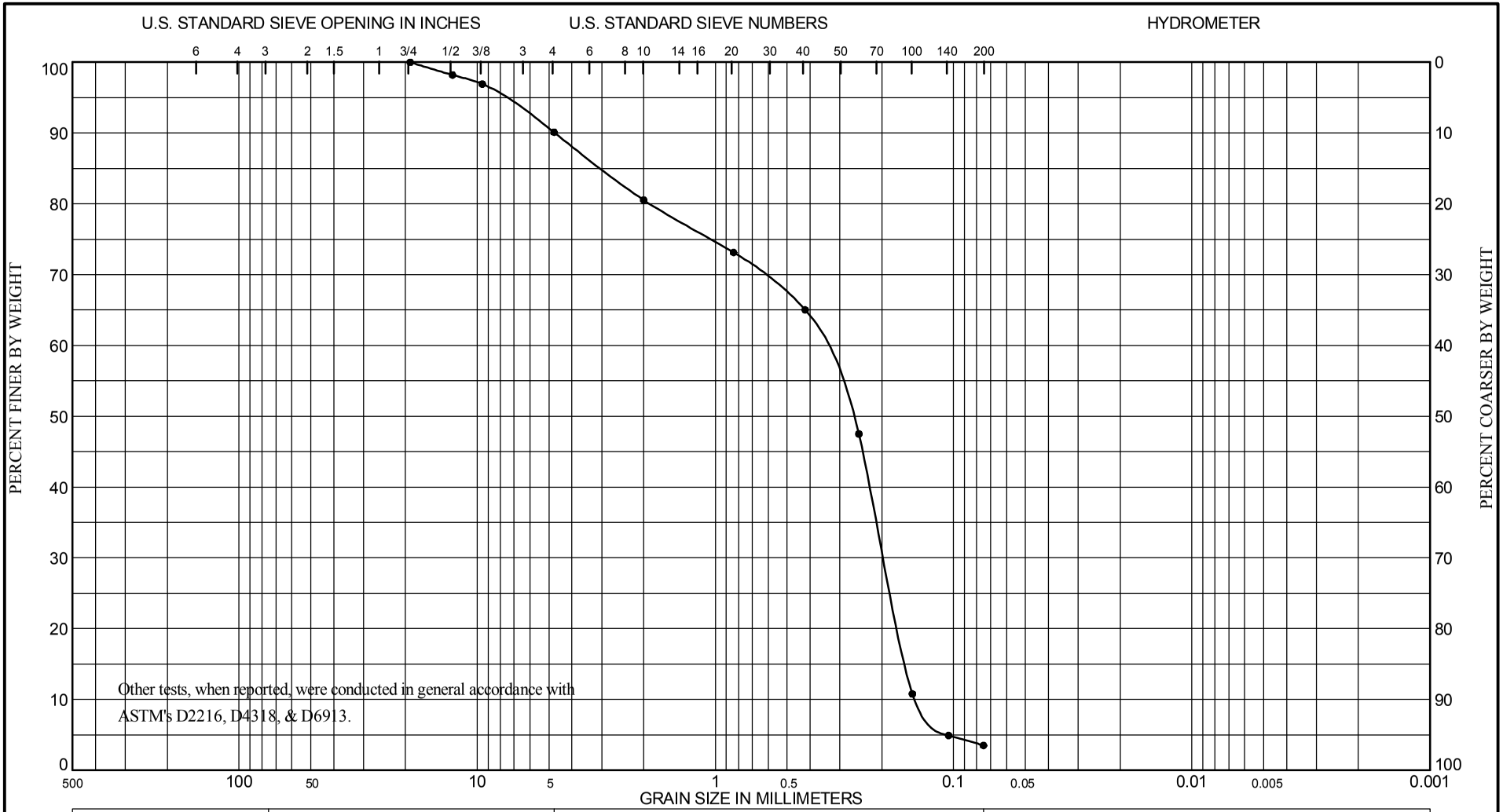
30
35
40
45
50
55
60

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.16487° Long = -88.46567°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

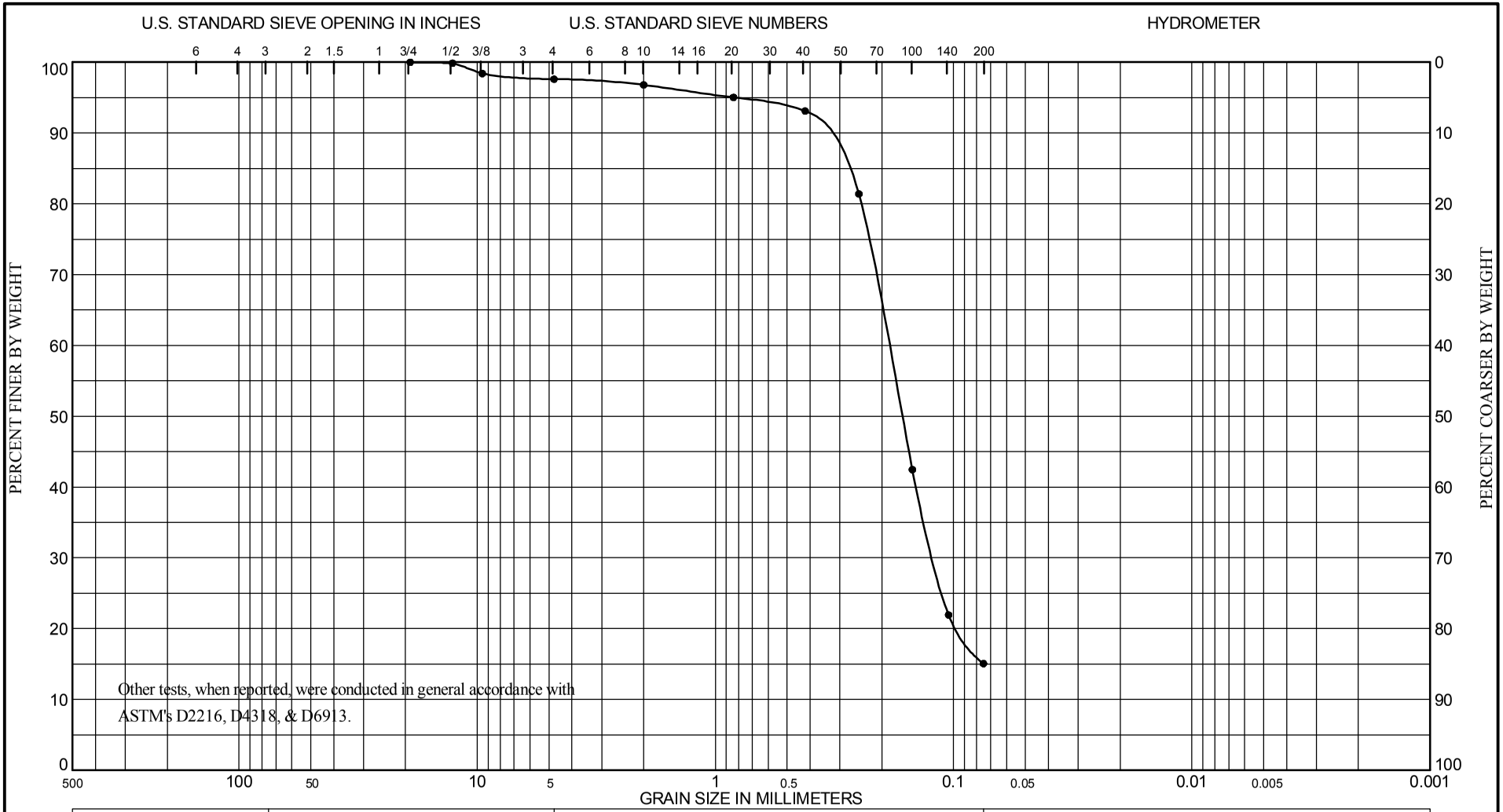
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 0.7	Greenish Black, Poorly Graded Sand (SP), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4145
Hole No. BI-PBS-136-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	0.7 to 7.9	Greenish Black, Silty Sand (SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4146
Hole No. BI-PBS-136-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-137-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-137-13 — LOCATION COORDINATES: E = 1,101,465 N = 237,941	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 3 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 48 Ft.
	15. DATE BORING — STARTED: 12-30-13 — COMPLETED: 12-30-13
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -47.1 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 11.4 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-47.1	0.0				
-47.7	0.6		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 5/1-gray D50: 0.259 mm % Fines: 3.3
-48.6	1.5			B	Classification: SP-SM Color: 2.5Y 5/1-gray D50: 0.185 mm % Fines: 10
-49.5	2.4			C	Classification: SM Color: GLEY1 10Y 6/1- D50: 0.16 mm % Fines: 13.8
-50.2	3.1		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few shell fragments, lt. to medium gray (SP-SM)		
			SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, lt. to medium gray (SM)		
			SAND, clayey, mostly fine-grained sand-sized quartz, few shell fragments, medium gray (SC)	NS	
-55.1	8.0		CLAY, lean, sandy and trace shell fragments from 3.1 to 5.0 ft., medium to dark gray and pale brown (CL)		
			CLAY, fat, sandy, lt. and medium gray, pale orange, and pale green (CH)		
-58.5	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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15377° Long = -88.46246°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192

COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

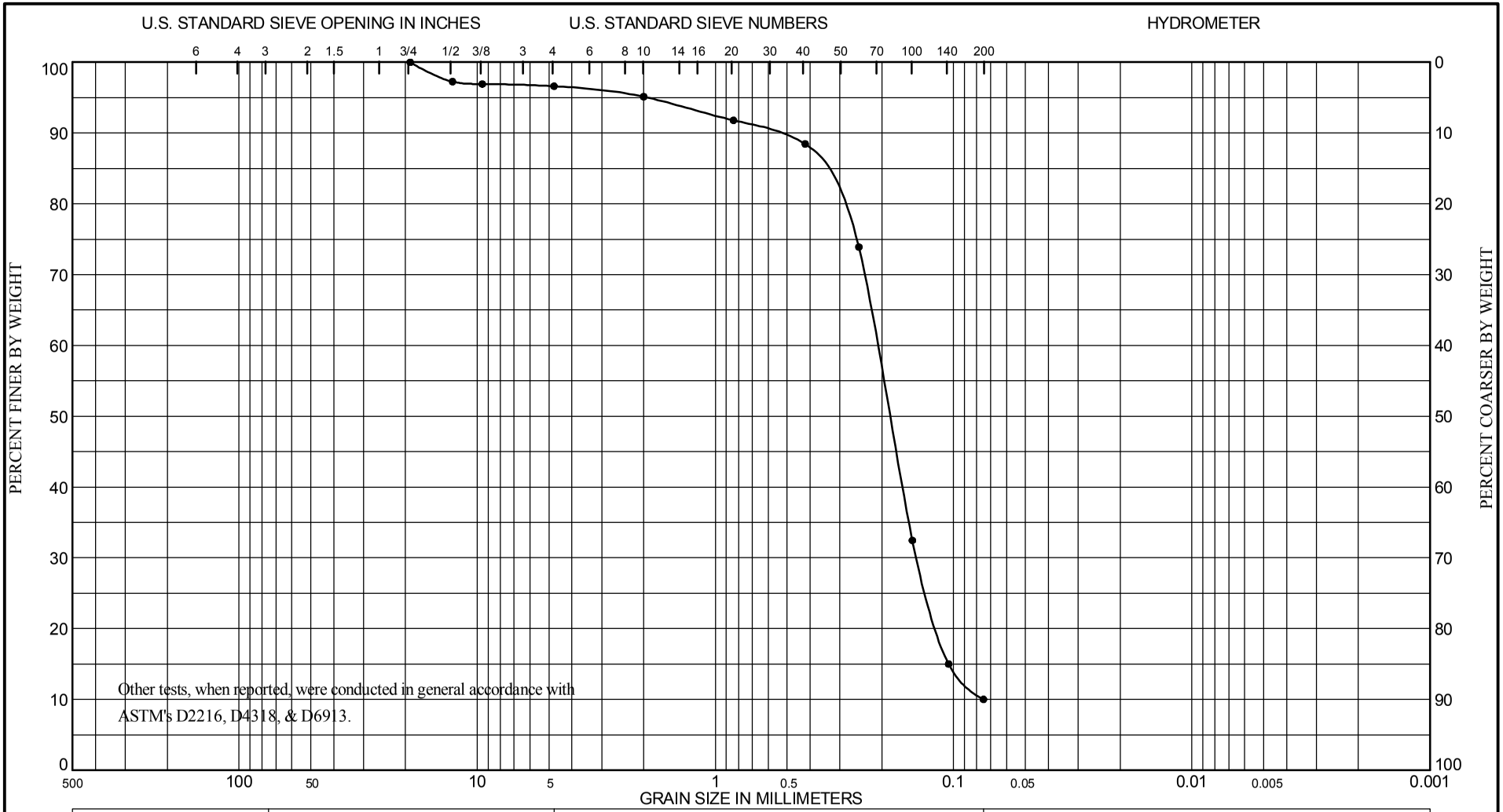
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 0.6	Very Dark Greenish Gray, Poorly Graded Sand (SP), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4148
Hole No. BI-PBS-137-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

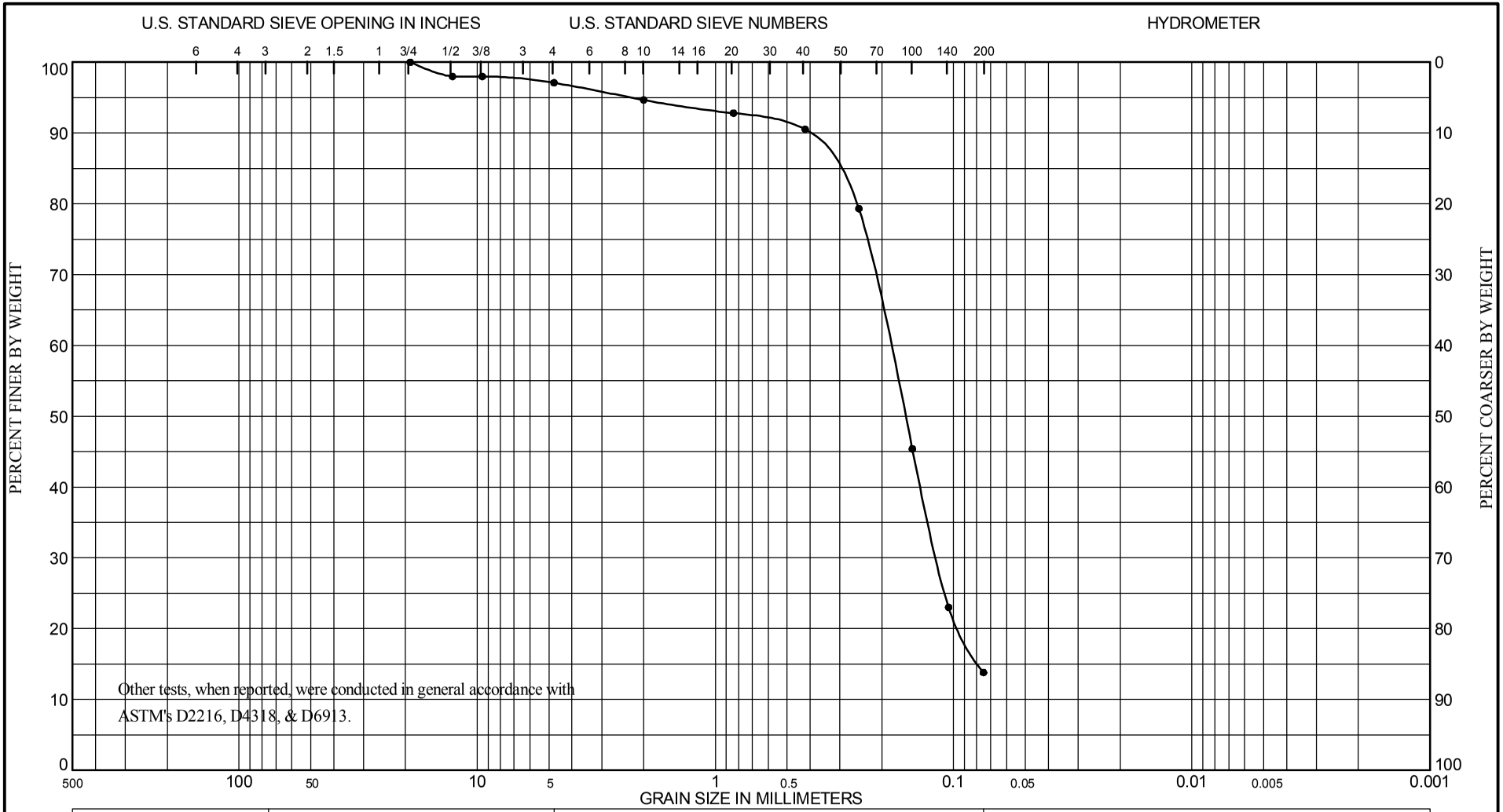
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	0.6 to 1.5	Very Dark Greenish Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4149
Hole No. BI-PBS-137-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	1.5 to 2.4	Very Dark Greenish Gray, Silty Sand (SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4150
Hole No. BI-PBS-137-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-138-13

DRILLING LOG	DIVISION South Atlantic	INSTALLATION Mobile District	SHEET 1 OF 2 SHEETS

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS West
2. BORING DESIGNATION	BI-PBS-138-13
LOCATION COORDINATES	E = 1,115,293 N = 228,227
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	19.9 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED 0 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	58.2 Ft.
15. DATE BORING	STARTED 12-09-13 / COMPLETED 12-09-13
16. ELEVATION TOP OF BORING	-58.1 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-58.1	0.0				
			CLAY, lean, sandy and non-sandy, trace wood fragments at 5 ft. and below, pale green and lt. gray to 5 ft., medium gray below (CL)	NS	
			At El. -73.0 Ft., little shell		
-76.1	18.0				
-78.0	19.9		SAND, poorly-graded with silt, mostly fine to medium-grained sand-sized quartz, some shell, lt. gray (SP-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.

3. Seafloor elevation calculated using sampling

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.12693° Long = -88.41882°

DRILLING LOG (Cont. Sheet)	INSTALLATION Mobile District		SHEET 2 OF 2 SHEETS
PROJECT MsCIP Barrier Island Restoration	COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83	VERTICAL NAVD88
LOCATION COORDINATES X = 1,115,293 Y = 228,227	ELEVATION TOP OF BORING -58.1 Ft.		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
			vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.		

30
35
40
45
50
55
60

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.12693° Long = -88.41882°

Boring Designation BI-PBS-144-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS East	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-144-13 — LOCATION COORDINATES: E = 1,133,323 N = 235,207	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 1 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 50 Ft.
	15. DATE BORING — STARTED: 11-30-13 — COMPLETED: 11-30-13
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -49.2 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 18.7 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-49.2	0.0				
-53.4	4.2		SAND, poorly-graded, mostly fine to coarse-grained sand-sized quartz, trace shell, medium gray (SP)	A	Classification: SP Color: GLEY1 10Y 7/1- D50: 0.334 mm % Fines: 1.4
-58.0	8.8		SAND, clayey, medium gray (SC)		
-60.9	11.7		CLAY, lean, sandy, medium gray (CL)		
-63.9	14.7		SAND, clayey, medium gray (SC)		
-67.9	18.7		CLAY, fat, trace wood fragments, medium 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.

3. Seafloor elevation determined from USACE hydrographic survey completed April 2014.

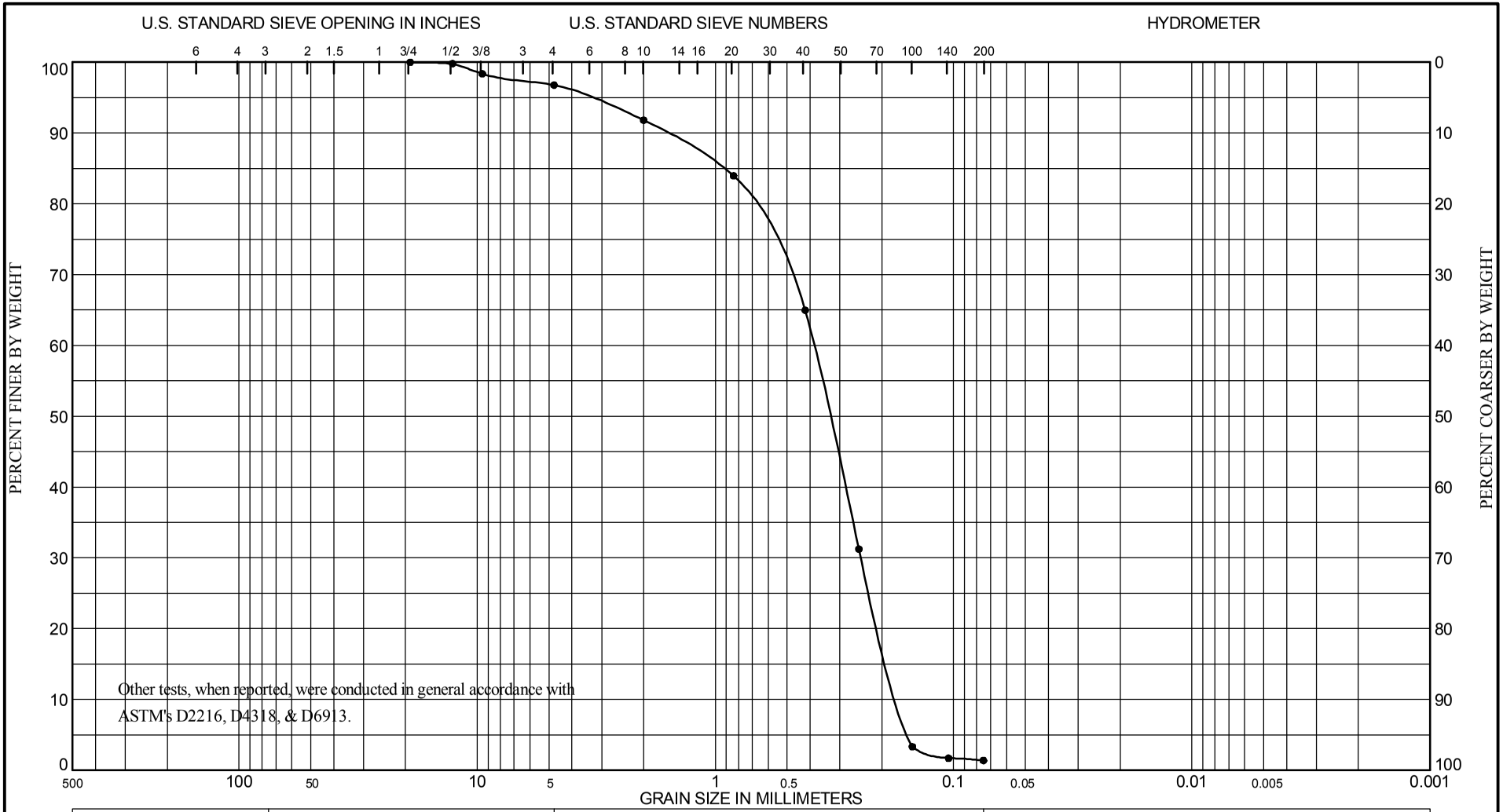
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14593° Long = -88.36170°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 4.2	Olive Gray, Poorly Graded Sand (SP), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3899
Hole No. BI-PBS-144-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-153-13

DRILLING LOG	DIVISION South Atlantic	INSTALLATION Mobile District	SHEET 1 OF 2 SHEETS

1. PROJECT MsCIP Barrier Island Restoration Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT N/A
	10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.) | HORIZONTAL NAD83 | VERTICAL NAVD88
2. BORING DESIGNATION BI-PBS-153-13 | LOCATION COORDINATES E = 1,116,112 N = 229,041	11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY Corps of Engineers - CESAM | CONTRACTOR FILE NO.	12. TOTAL SAMPLES | DISTURBED 1 | UNDISTURBED (UD) 0
4. NAME OF DRILLER Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED | DEG. FROM VERTICAL | BEARING	14. WATER DEPTH 56.3 Ft.
	15. DATE BORING | STARTED 12-08-13 | COMPLETED 12-08-13
6. THICKNESS OF OVERBURDEN N/A	16. ELEVATION TOP OF BORING -55.9 Ft.
7. DEPTH DRILLED INTO ROCK N/A	17. TOTAL RECOVERY FOR BORING 100%
8. TOTAL DEPTH OF BORING 19.2 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-55.9	0.0				
-56.7	0.8		SAND, silty, mostly fine-grained sand-sized quartz, few shell, lt. gray (SM)	A	Classification: SP-SM Color: GLEY1 10Y 6/1- D50: 0.208 mm % Fines: 7
-58.8	2.9		CLAY, fat, lt. gray and orange (CH)		
-59.1	3.2		SAND, clayey, mostly fine-grained sand-sized quartz, lt. gray (SC)		
-63.9	8.0		CLAY, lean, slightly sandy, trace wood at depth of 6.7 ft., lt. gray (CL)		
-70.4	14.5		SAND, silty, mostly fine-grained sand-sized quartz, 0.15 ft. of clay at depth of 9.25 ft., lt. gray (SM)	NS	
-75.1	19.2		CLAY, lean, trace sand-filled burrows (horizontal), 1/2-inch diameter, lt. 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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.12916° Long = -88.41622°

DRILLING LOG (Cont. Sheet)	INSTALLATION Mobile District		SHEET 2 OF 2 SHEETS
PROJECT MsCIP Barrier Island Restoration	COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83	VERTICAL NAVD88
LOCATION COORDINATES X = 1,116,112 Y = 229,041	ELEVATION TOP OF BORING -55.9 Ft.		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
			factor.		

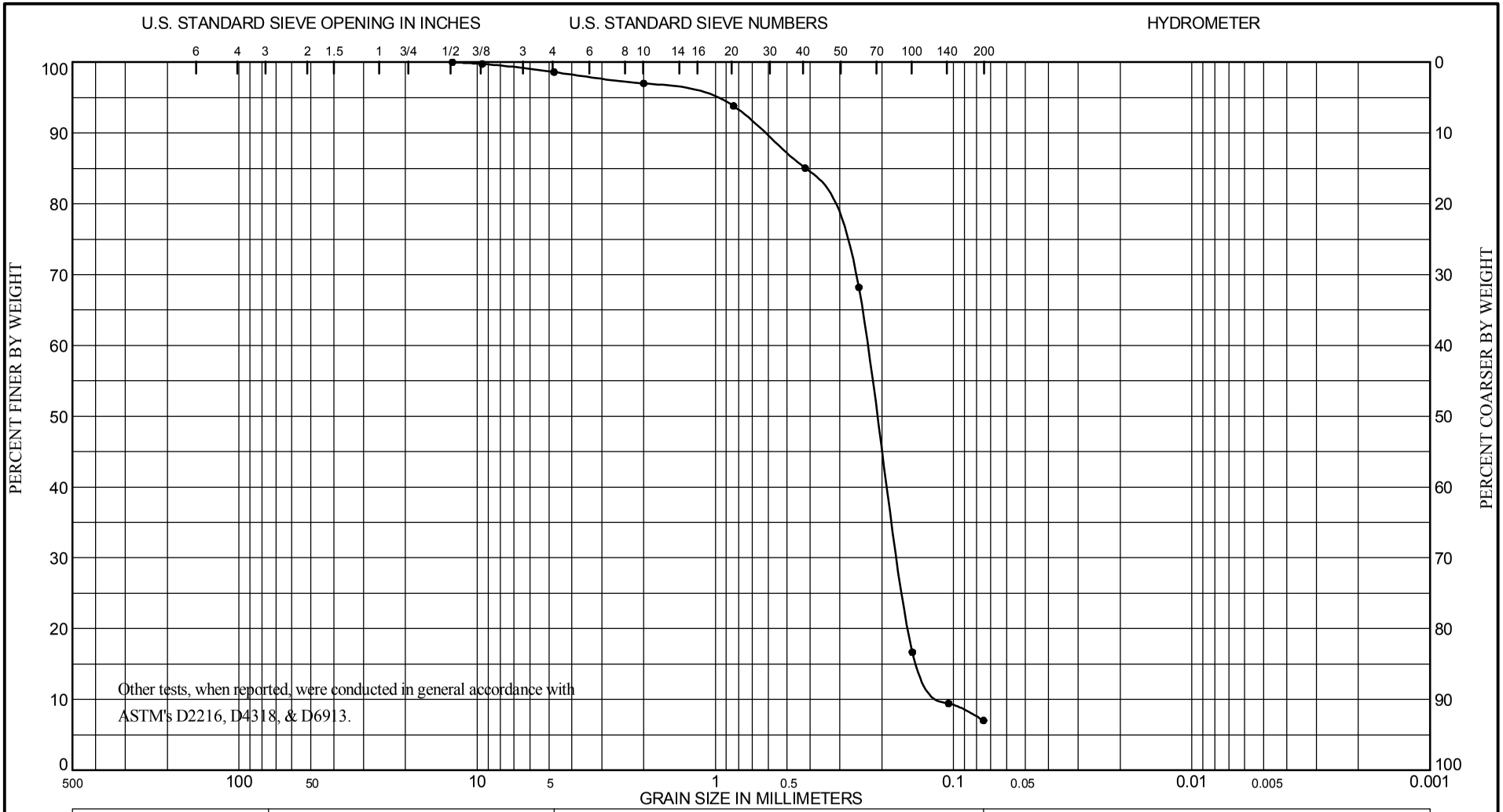
30
35
40
45
50
55
60

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.12916° Long = -88.41622°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 0.8	Greenish Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3987
Hole No. BI-PBS-153-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-154-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-154-13 — LOCATION COORDINATES: E = 1,100,295 N = 240,163	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 3 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 48.1 Ft.
	15. DATE BORING — STARTED: 12-29-13 — COMPLETED: 12-29-13
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -46.8 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 15.2 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-46.8	0.0				
-47.3	0.5		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace shell fragments, lt. gray (SP)	A	Classification: SP Color: GLEY1 10Y 6/1- D50: 0.266 mm % Fines: 1.5
-48.5	1.7		SAND, poorly-graded with silt, mostly fine to medium-grained sand-sized quartz, some clay lenses from 0.5 to 0.9 ft., few shell fragments, lt. to medium gray (SP-SM)	B	Classification: SP-SM Color: GLEY1 10Y 6/1- D50: 0.254 mm % Fines: 5.7
-52.8	6.0		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, medium gray (SM)	C	Classification: SM Color: GLEY1 10Y 5/1- D50: 0.154 mm % Fines: 18.1
-53.5	6.7		SAND, clayey, mostly fine-grained sand-sized quartz, few shell fragments, medium gray (SC)		
-62.0	15.2		CLAY, lean, medium to 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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

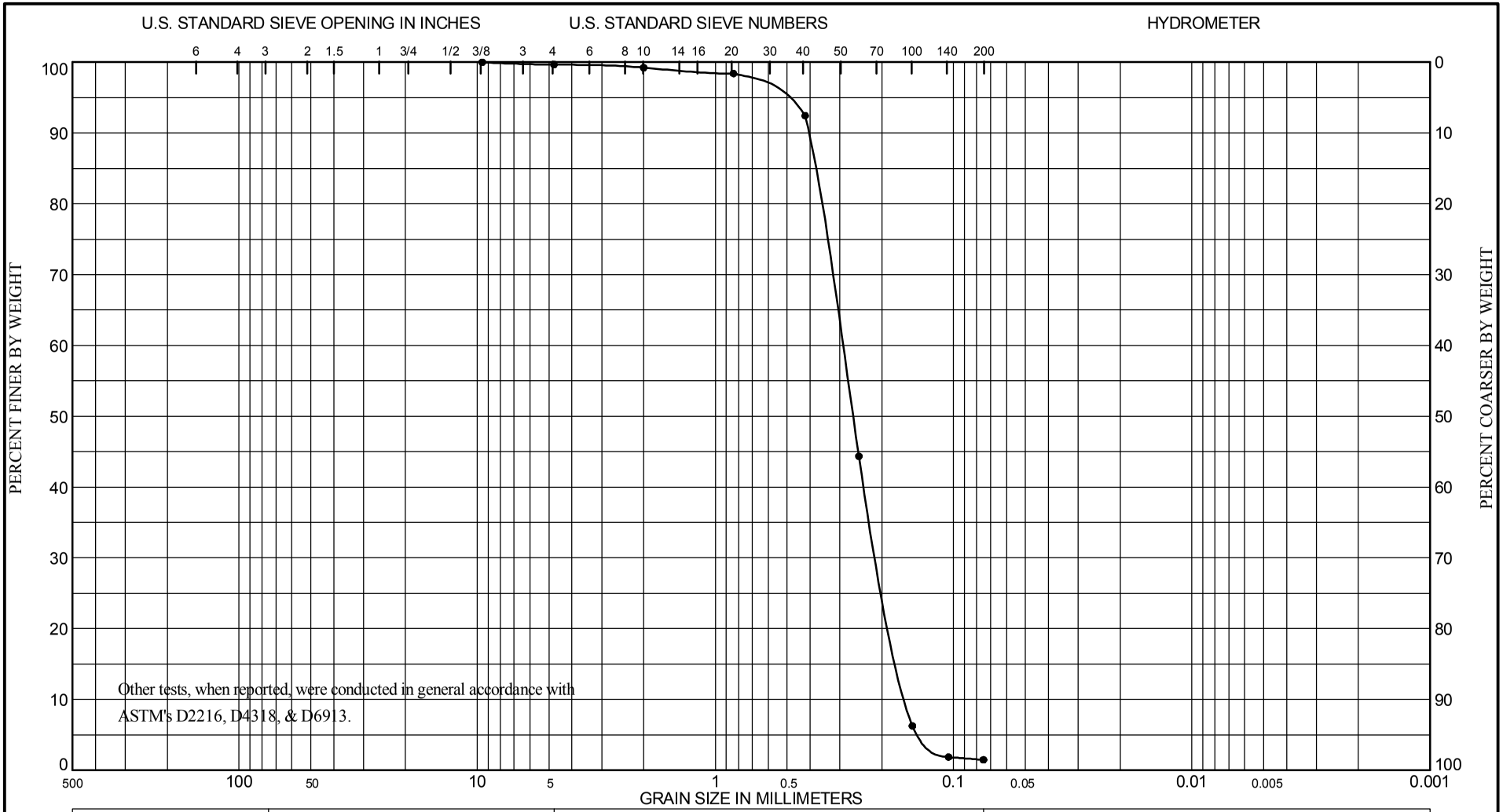
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15989° Long = -88.46614°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

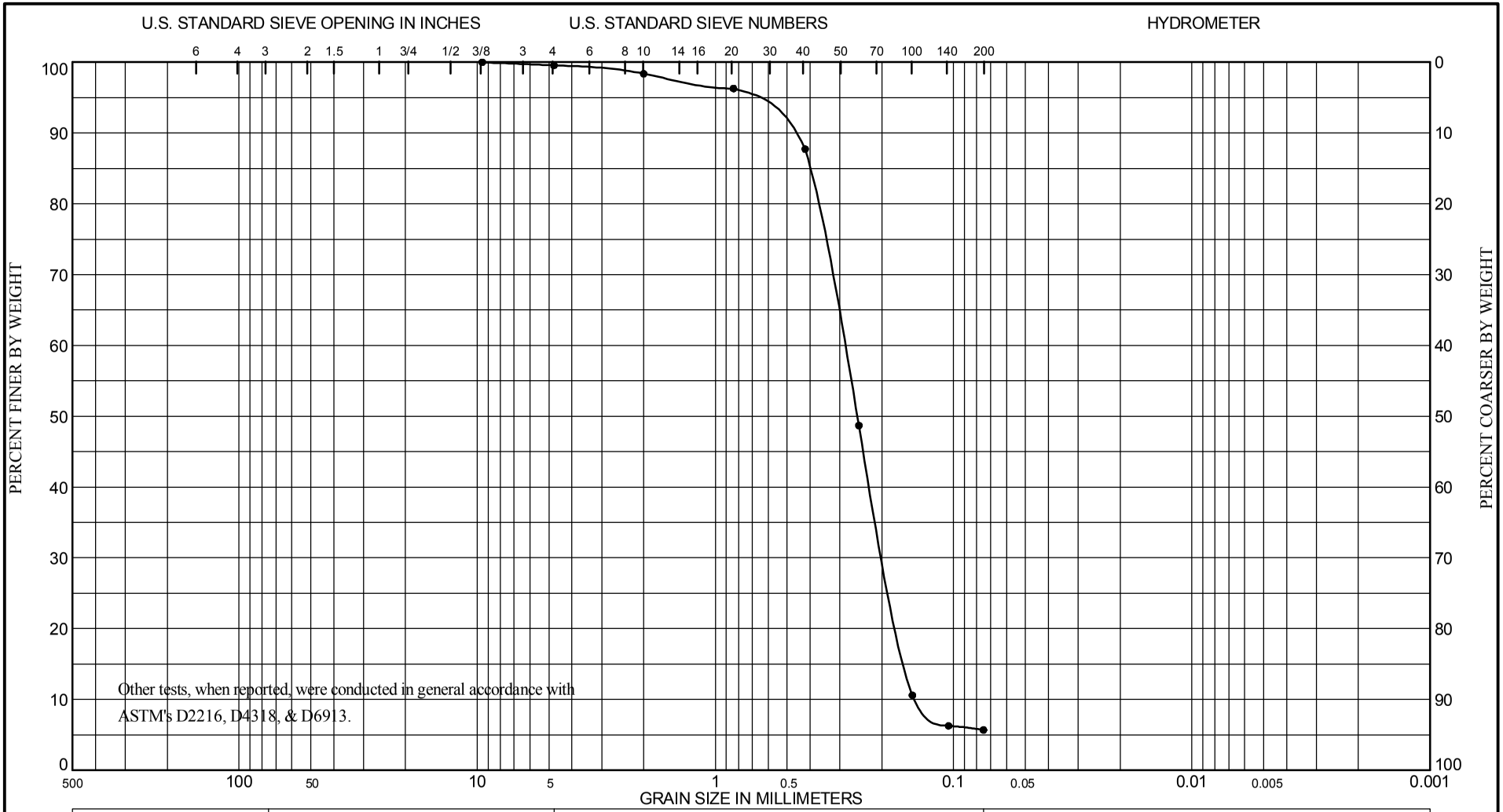
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 0.5	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4067
Hole No. BI-PBS-154-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

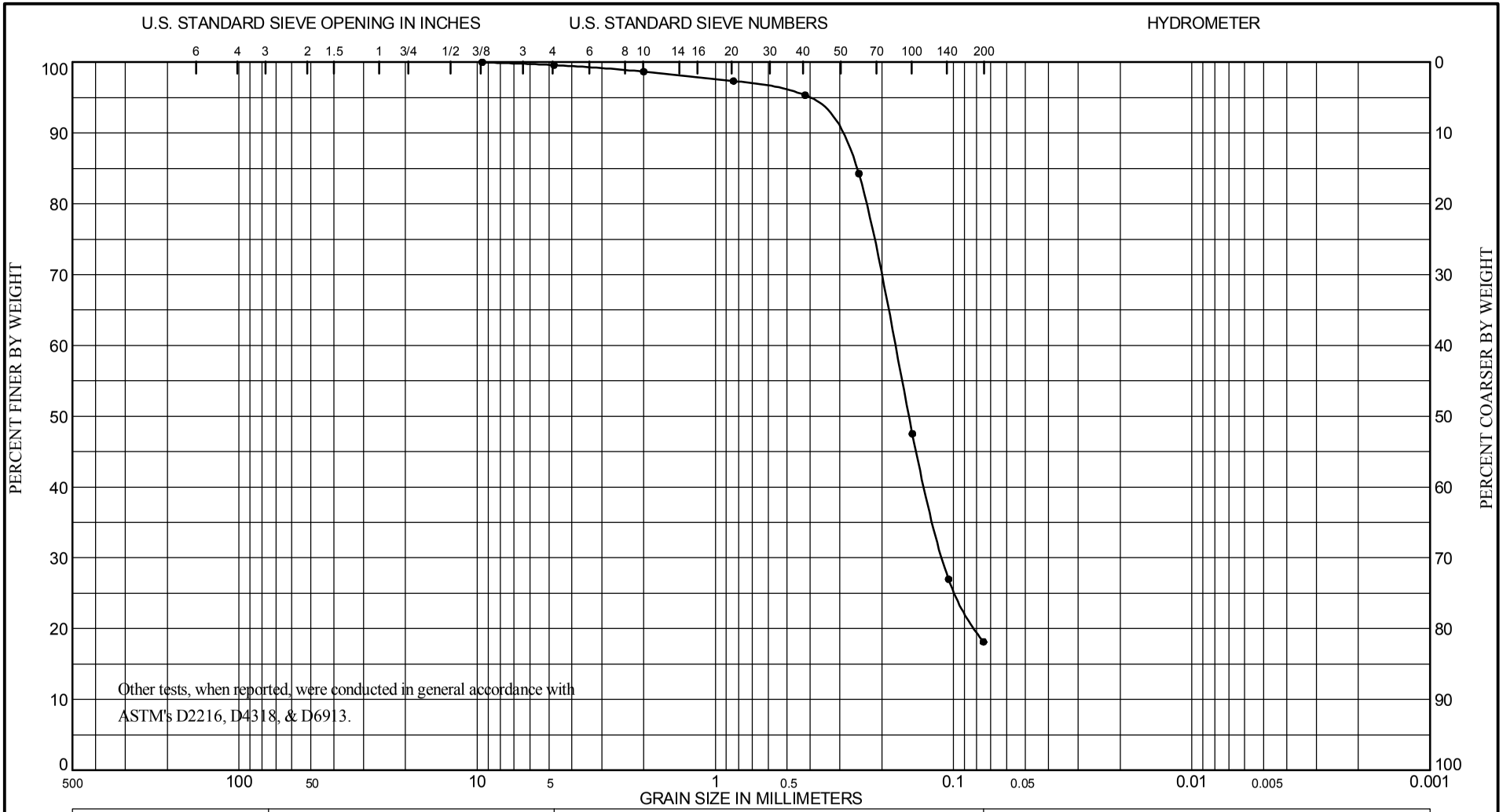
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	0.5 to 1.7	Gray, Poorly Graded Silty Sand (SP-SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4068
Hole No. BI-PBS-154-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	1.7 to 6.0	Greenish Gray, Silty Sand (SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4069
Hole No. BI-PBS-154-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-155-13

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
	South Atlantic	Mobile District	

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS West
2. BORING DESIGNATION	BI-PBS-155-13
LOCATION COORDINATES	E = 1,101,840 N = 242,292
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	12.1 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED 1 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	47.1 Ft.
15. DATE BORING	STARTED 12-30-13 / COMPLETED 12-30-13
16. ELEVATION TOP OF BORING	-46.5 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-46.5	0.0				
-48.2	1.7		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, lt. gray (SM)	A	Classification: SP-SM Color: 2.5Y 5/1-gray D50: 0.193 mm % Fines: 8.8
-50.4	3.9		SAND, clayey, mostly fine-grained sand-sized quartz, little shell fragments, medium gray (SC)	NS	
-56.7	10.2		CLAY, lean, few shell fragments and sandy from 3.9 to 5.0 ft., medium gray and pale brown (CL)	NS	
-58.6	12.1		CLAY, fat, sandy, lt. and medium gray and pale orange (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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

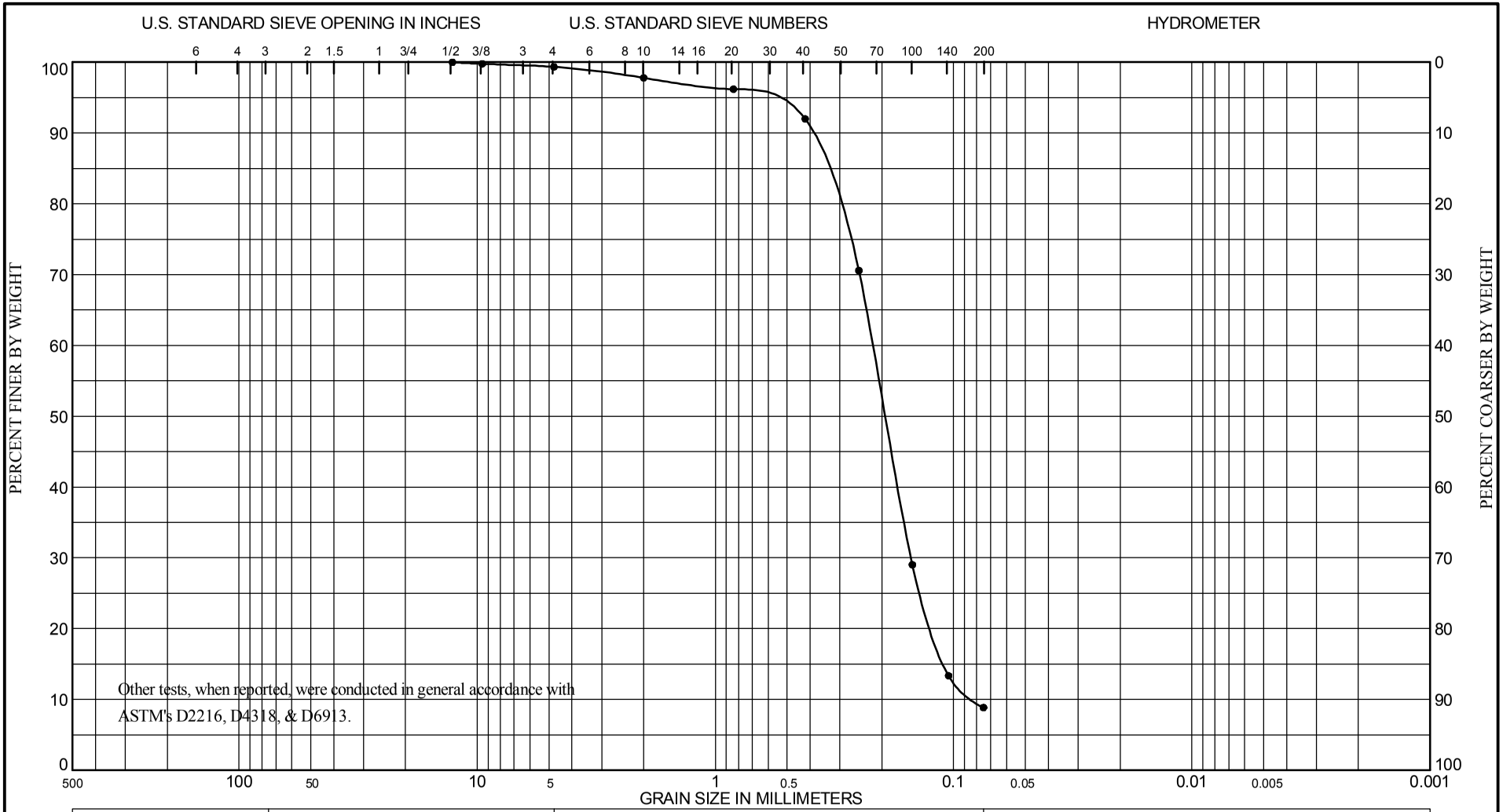
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.16573° Long = -88.46123°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 1.7	Dark Greenish Gray, Poorly Graded Silty Sand (SP-SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4147
Hole No. BI-PBS-155-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-160-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 2 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-160-13 — LOCATION COORDINATES: E = 1,119,247 N = 227,696	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 3 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 53 Ft.
	15. DATE BORING — STARTED: 12-03-13 — COMPLETED: 12-03-13
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -52.3 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 18.5 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-52.3	0.0				
-57.9	5.6		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, few shell, lt. gray (SP)	A	Classification: SP Color: GLEY1 10Y 6/1- D50: 0.328 mm % Fines: 1.6
-58.5	6.2		SAND, poorly-graded, mostly fine-grained sand-sized quartz, lt. to medium gray (SP)	B	Classification: SP Color: GLEY1 10Y 6/1- D50: 0.256 mm % Fines: 4
-61.2	8.9		SAND, silty, mostly fine-grained sand-sized quartz, lt. to medium gray (SM)	C	Classification: SP-SM Color: GLEY1 10Y 5/1- D50: 0.198 mm % Fines: 10.4
-61.5	9.2		SAND, clayey, medium gray (SC)		
-66.4	14.1		CLAY, lean, interbedded with silty sand up to 1-inch thick, medium gray, dark brown from 13 to 14 ft. depth (CL)	NS	
-69.7	17.4		CLAY, fat, sandy, lt. gray and orange (CH)		
-70.8	18.5		SAND, silty, mostly fine-grained sand-sized quartz, lt. gray and orange (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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.12543° Long = -88.40632°

DRILLING LOG (Cont. Sheet)	INSTALLATION Mobile District		SHEET 2 OF 2 SHEETS
PROJECT MsCIP Barrier Island Restoration	COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83	VERTICAL NAVD88
LOCATION COORDINATES X = 1,119,247 Y = 227,696	ELEVATION TOP OF BORING -52.3 Ft.		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
			factor.		

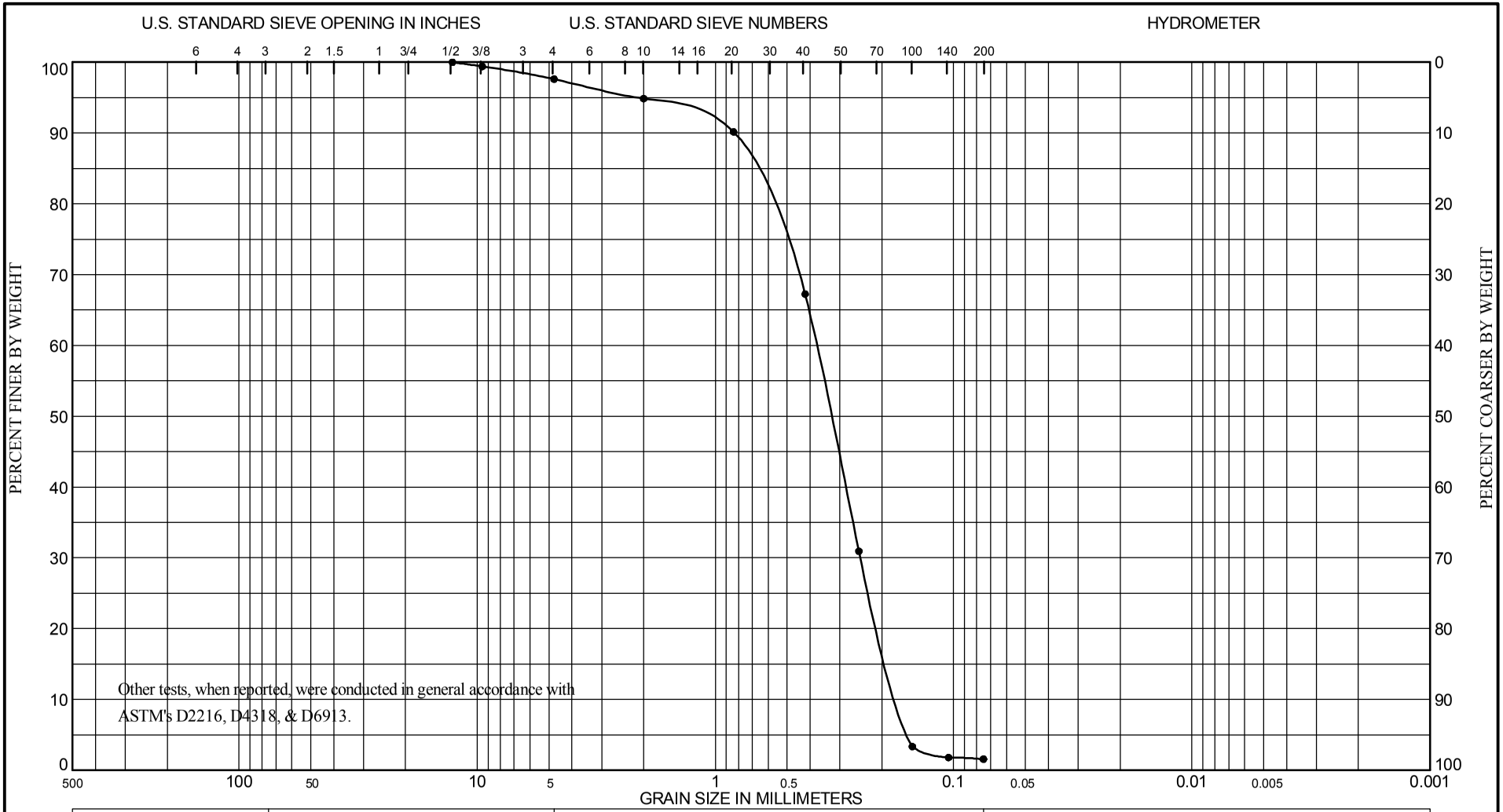
30
35
40
45
50
55
60

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.12543° Long = -88.40632°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

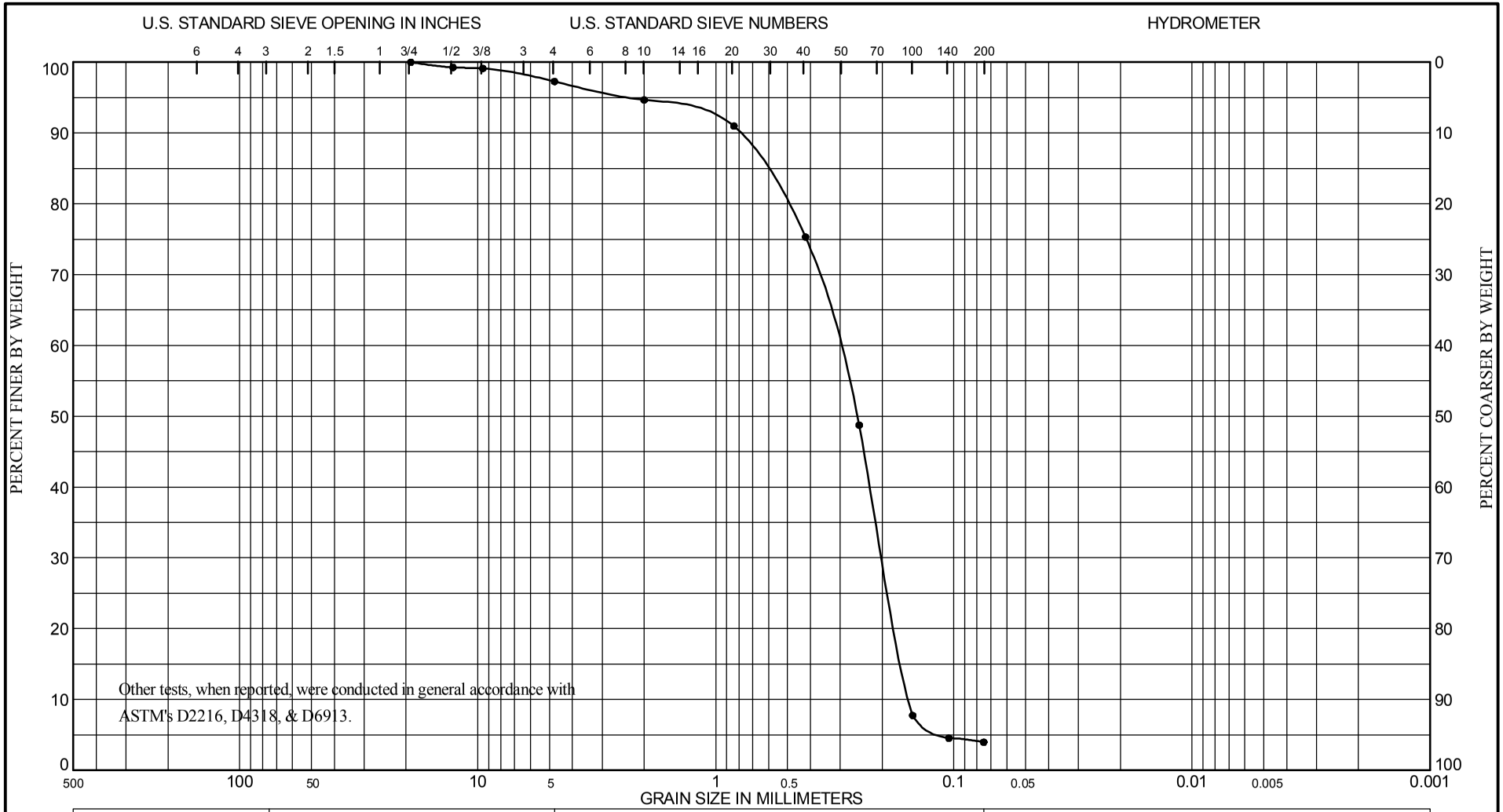
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 5.6	Olive Gray, Poorly Graded Sand (SP), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3932
Hole No. BI-PBS-160-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

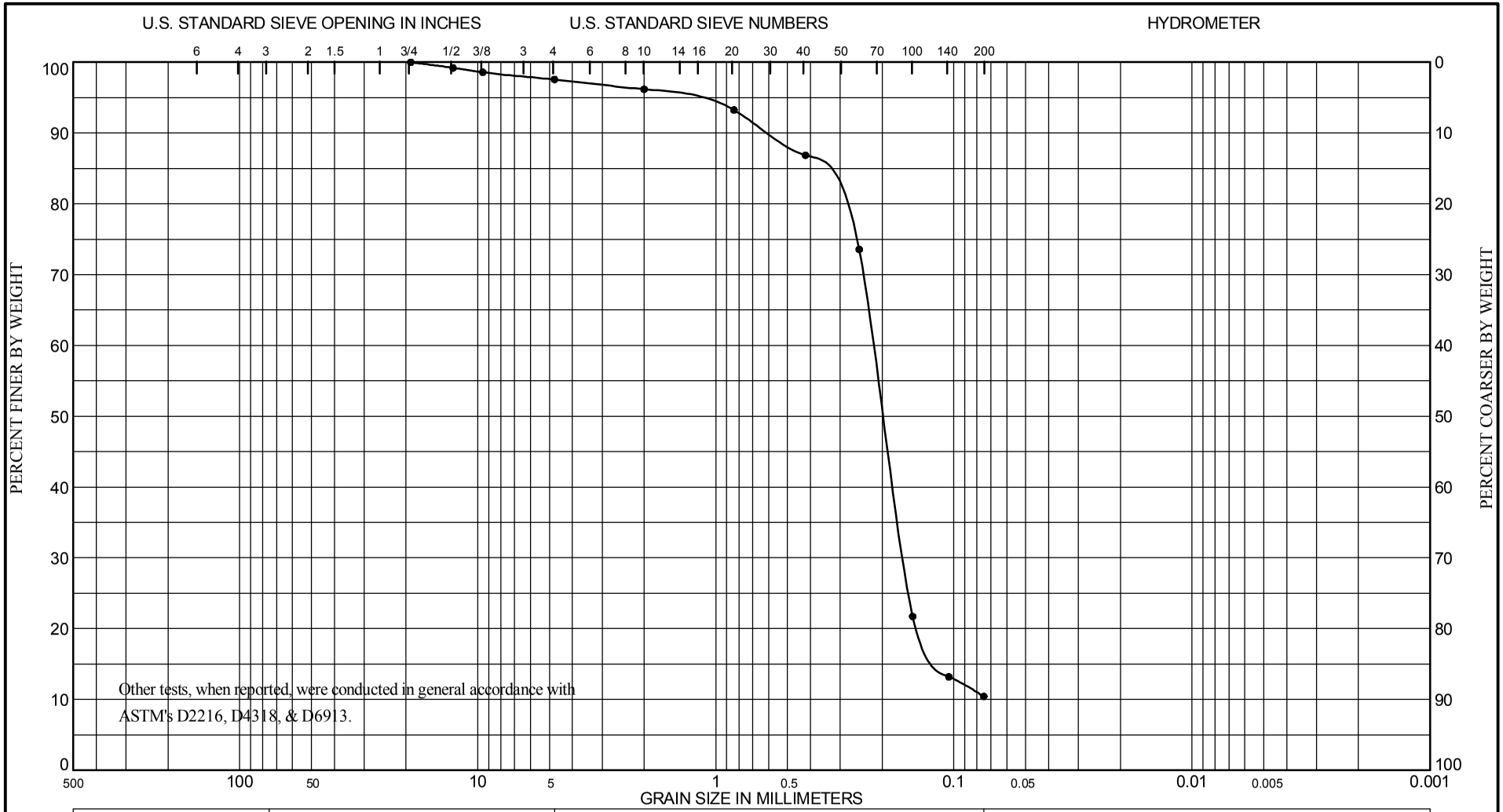
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	5.6 to 6.2	Olive Gray, Poorly Graded Sand (SP), with a trace of gravel size				
		shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3933
Hole No. BI-PBS-160-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	6.2 to 8.9	Dark Greenish Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3934
Hole No. BI-PBS-160-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-161-13

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
	South Atlantic	Mobile District	

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS West
2. BORING DESIGNATION	BI-PBS-161-13
LOCATION COORDINATES	E = 1,116,476 N = 228,115
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	18.3 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED 1 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	57 Ft.
15. DATE BORING	STARTED 12-09-13 / COMPLETED 12-09-13
16. ELEVATION TOP OF BORING	-57.0 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-57.0	0.0				
-58.5	1.5		SAND, silty, clayey, mostly fine-grained sand-sized quartz, little shell, slight plasticity, medium gray (SC-SM)	A	Classification: SP-SM Color: GLEY1 10Y 5/1- D50: 0.213 mm % Fines: 11.5
-61.4	4.4		CLAY, lean, sandy, sand pockets throughout., pale green and light gray (CL) At El. -61.0 Ft., lt. gray to medium gray CLAY, lean, mostly fine-grained sand-sized quartz (CL) At El. -65.3 Ft., mostly fine-grained sand-sized quartz, little shell At El. -67.5 Ft., mostly fine-grained sand-sized quartz	NS	
-75.3	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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

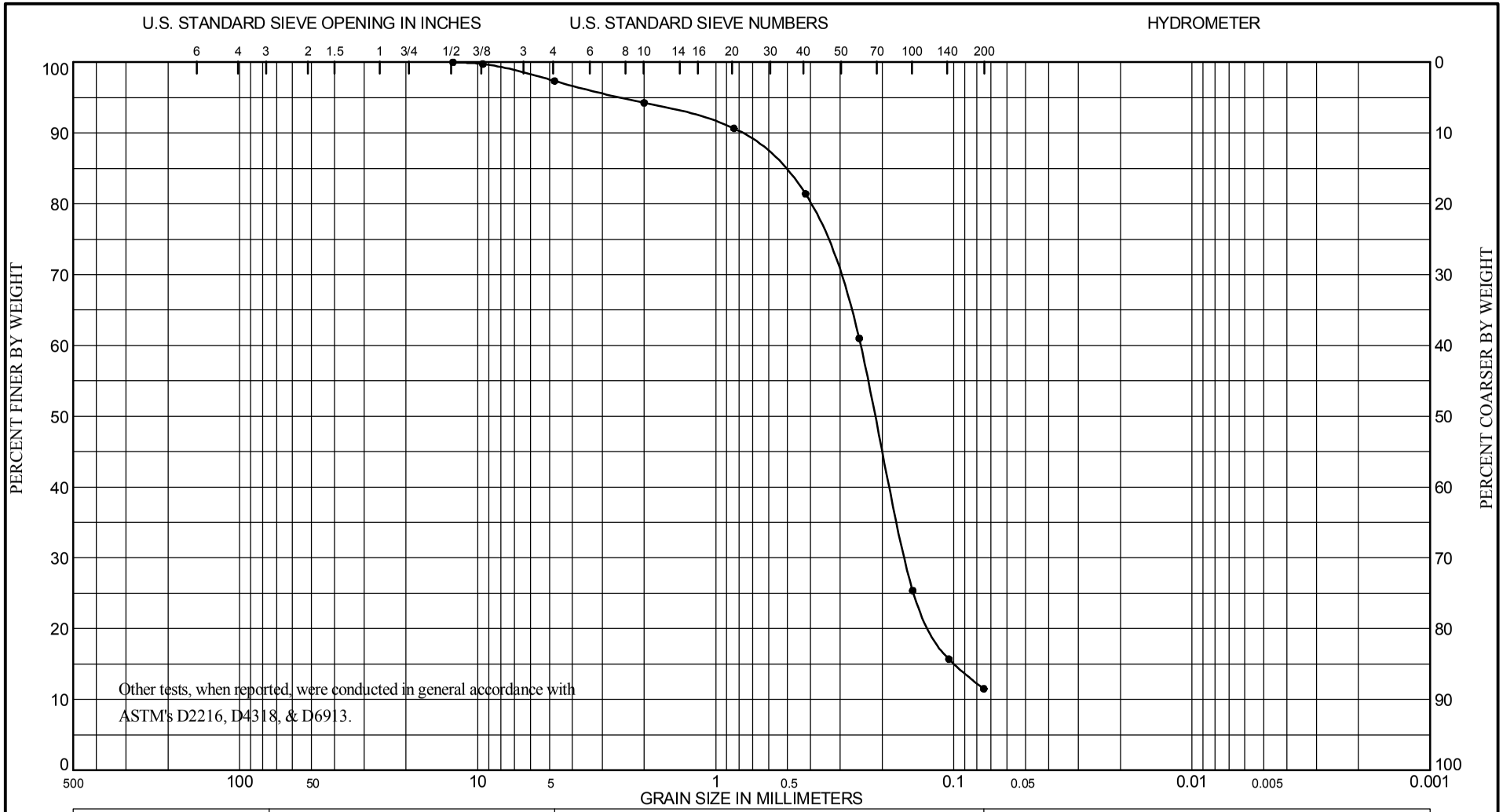
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.12661° Long = -88.41508°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 1.5	Dark Greenish Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3990
Hole No. BI-PBS-161-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-162-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 2 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-162-13 — LOCATION COORDINATES: E = 1,119,764 N = 226,509	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 2 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 57 Ft.
	15. DATE BORING — STARTED: 12-03-13 — COMPLETED: 12-03-13
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -56.1 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 19.3 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-56.1	0.0				
-59.2	3.1		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, few shell, lt. gray (SP)	A	Classification: SP Color: GLEY1 10Y 6/1- D50: 0.214 mm % Fines: 4.2
-61.6	5.5		SAND, silty, mostly fine-grained sand-sized quartz, little shell, light to medium gray (SM)	B	Classification: SP-SM Color: 2.5Y 6/1-gray D50: 0.202 mm % Fines: 11.1
-71.4	15.3		CLAY, lean, with silty sand interbeds and burrows, sandy below 11.5 ft., light to medium gray to 8.3 ft., pale brown to 11.5 ft., lt. gray to 15.3 ft. (CL)	NS	
-73.6	17.5		SAND, silty, mostly fine-grained sand-sized quartz, lt. gray (SM)		
-75.4	19.3		SAND, poorly-graded, mostly fine-grained sand-sized quartz, lt. gray and pale 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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.12216° Long = -88.40470°

DRILLING LOG (Cont. Sheet)	INSTALLATION Mobile District		SHEET 2 OF 2 SHEETS
PROJECT MsCIP Barrier Island Restoration	COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83	VERTICAL NAVD88
LOCATION COORDINATES X = 1,119,764 Y = 226,509	ELEVATION TOP OF BORING -56.1 Ft.		

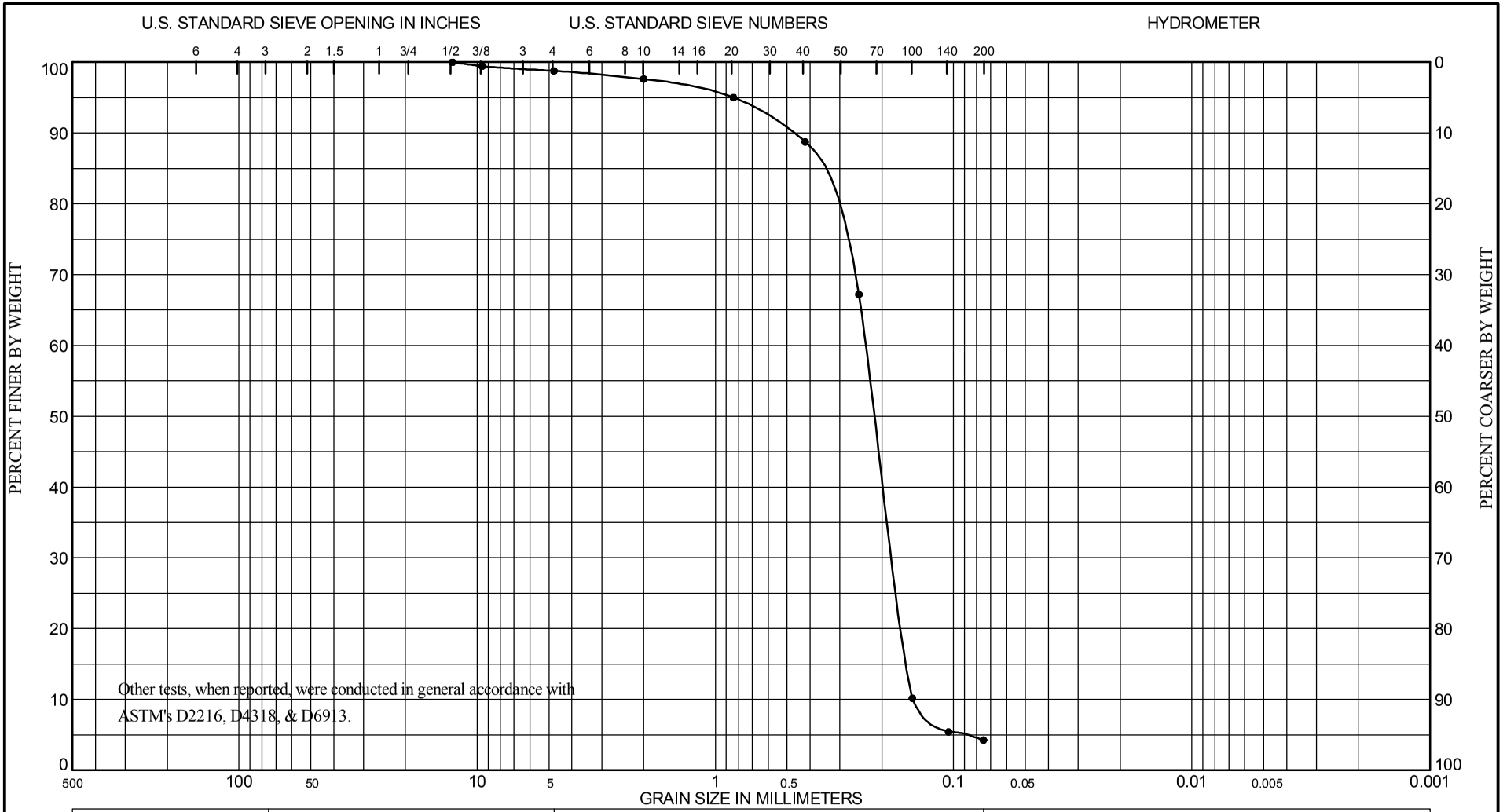
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
			factor.		

30
35
40
45
50
55
60

Lat = 30.12216° Long = -88.40470°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

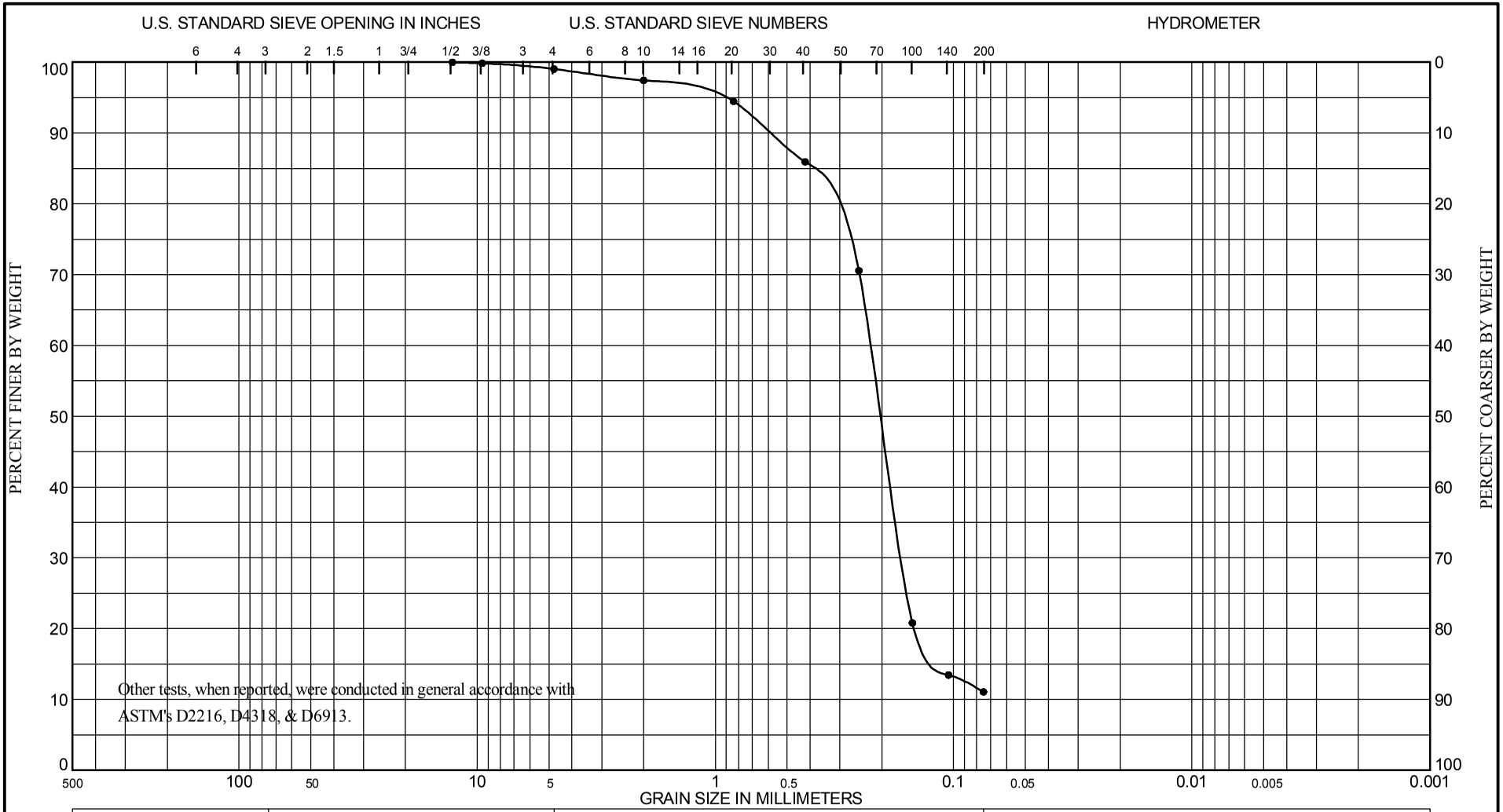
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 3.1	Dark Greenish Gray, Poorly Graded Sand (SP), with a trace of gravel				
		size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3935
Hole No. BI-PBS-162-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	3.1 to 5.5	Greenish Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3936
Hole No. BI-PBS-162-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-163-13

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
	South Atlantic	Mobile District	

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS West
2. BORING DESIGNATION	BI-PBS-163-13
LOCATION COORDINATES	E = 1,123,099 N = 224,827
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	16.7 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED 2 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	54.6 Ft.
15. DATE BORING	STARTED 12-17-13 / COMPLETED 12-17-13
16. ELEVATION TOP OF BORING	-54.6 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-54.6	0.0				
-55.6	1.0		SAND, poorly-graded with silt, mostly fine to medium-grained sand-sized quartz, trace shell fragments, lt. gray (SP-SM)	A	Classification: SP Color: 2.5Y 6/1-gray D50: 0.218 mm % Fines: 2.8
-57.1	2.5		SAND, silty, mostly fine-grained sand-sized quartz, little shell fragments, medium gray (SM)	B	Classification: SP-SM Color: 2.5Y 5/1-gray D50: 0.197 mm % Fines: 9.6
-59.6	5.0		SAND, clayey, mostly fine-grained sand-sized quartz, little shell fragments, medium gray (SC)	NS	
-60.8	6.2		CLAY, lean, medium gray (CL)		
-65.0	10.4		CLAY, fat, sandy, lt. gray and pale orange (CH)		
-71.3	16.7		CLAY, lean, sandy, trace wood at 12.8 ft., lt. to medium 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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

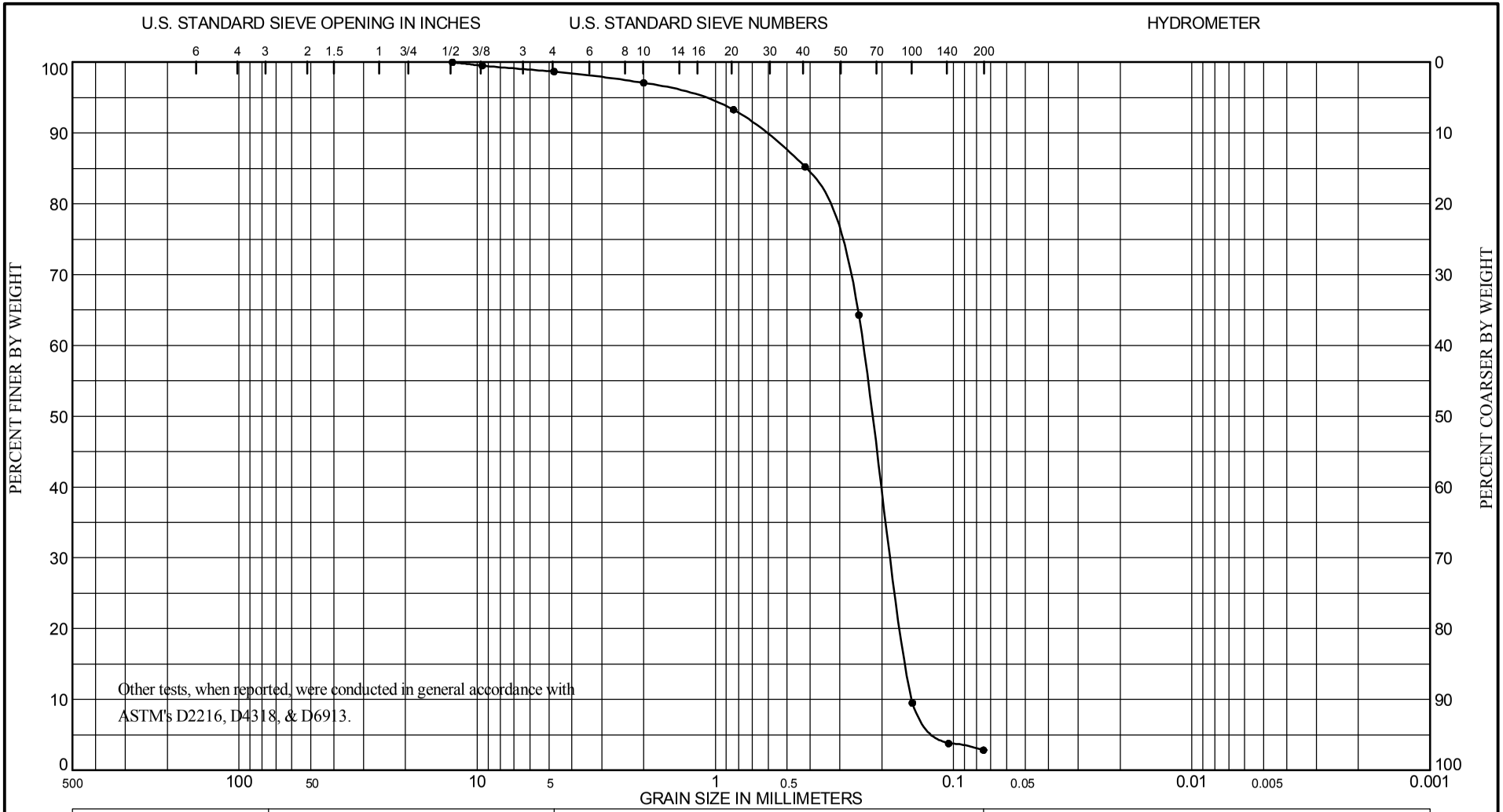
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.11750° Long = -88.39417°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

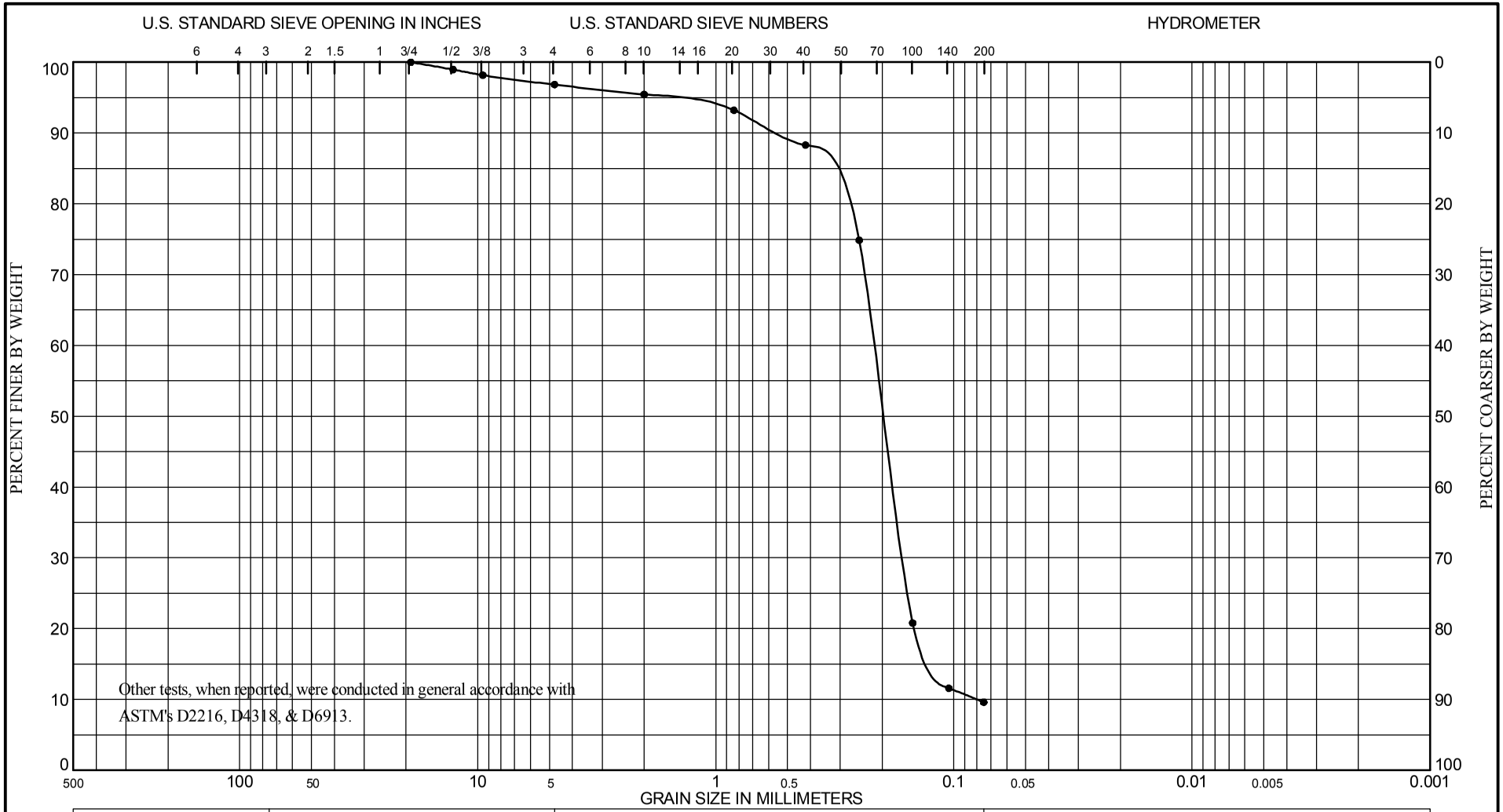
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 1.0	Greenish Gray, Poorly Graded Sand (SP), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4038
Hole No. BI-PBS-163-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	1.0 to 2.5	Greenish Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4039
Hole No. BI-PBS-163-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-164-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 2 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-164-13 — LOCATION COORDINATES: E = 1,123,566 N = 223,385	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 2 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 54.3 Ft.
	15. DATE BORING — STARTED: 12-17-13 — COMPLETED: 12-17-13
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -54.6 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 19.2 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-54.6	0.0				
-58.4	3.8		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace shell fragments, lt. gray (SP)	A	Classification: SP Color: GLEY1 10Y 6/1- D50: 0.208 mm % Fines: 2.8
-59.0	4.4		SAND, silty, mostly fine-grained sand-sized quartz, medium gray (SM)	B	Classification: SP-SM Color: 2.5Y 6/1-gray D50: 0.206 mm % Fines: 8.7
-65.8	11.2		CLAY, lean, sandy, medium gray (CL)	NS	
-73.8	19.2		CLAY, fat, sandy and silty, lt. and medium gray and pale orange (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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.11353° Long = -88.39271°

DRILLING LOG (Cont. Sheet)	INSTALLATION Mobile District		SHEET 2 OF 2 SHEETS
PROJECT MsCIP Barrier Island Restoration	COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83	VERTICAL NAVD88
LOCATION COORDINATES X = 1,123,566 Y = 223,385	ELEVATION TOP OF BORING -54.6 Ft.		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
			factor.		

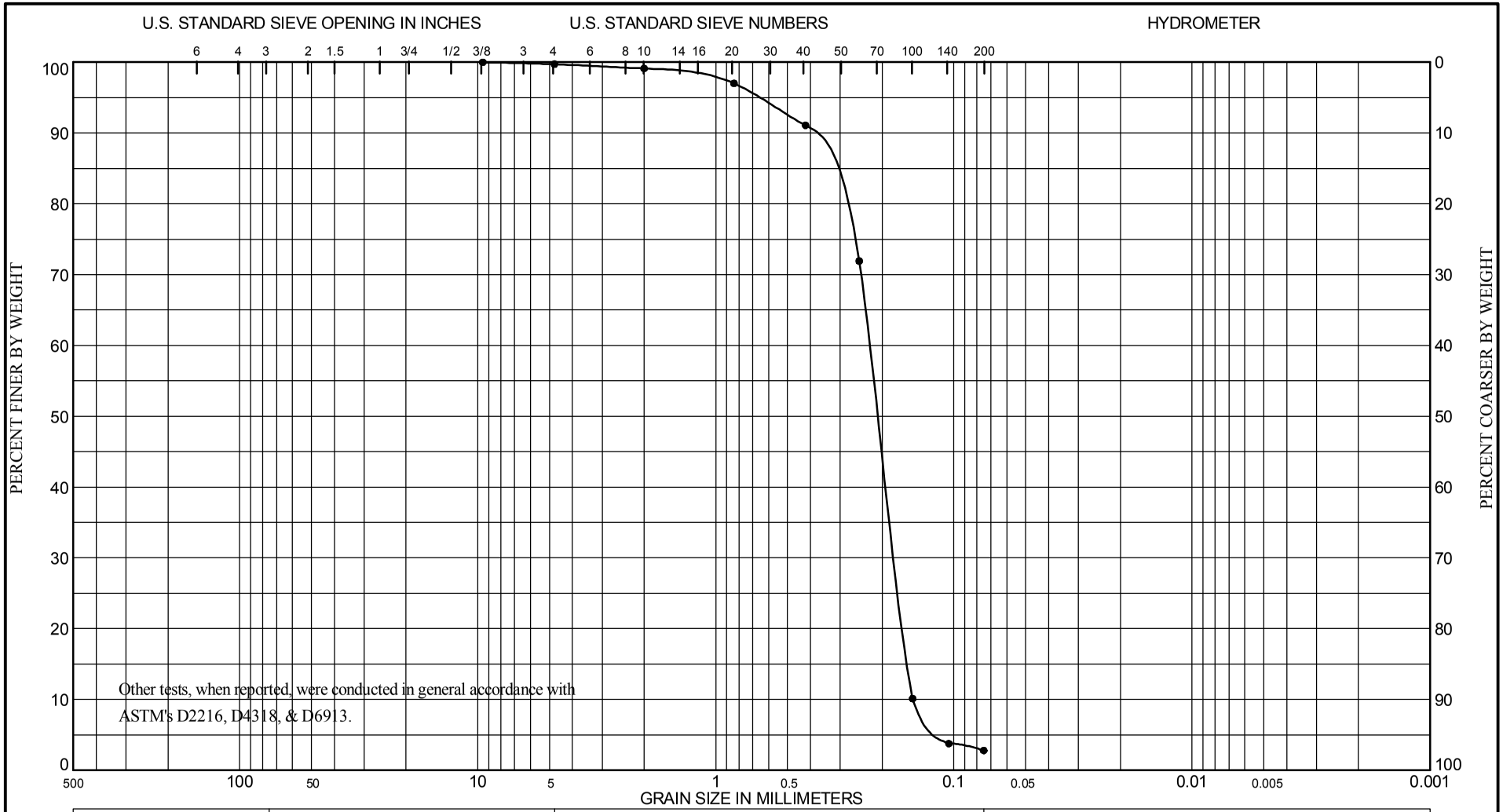
30
35
40
45
50
55
60

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.11353° Long = -88.39271°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

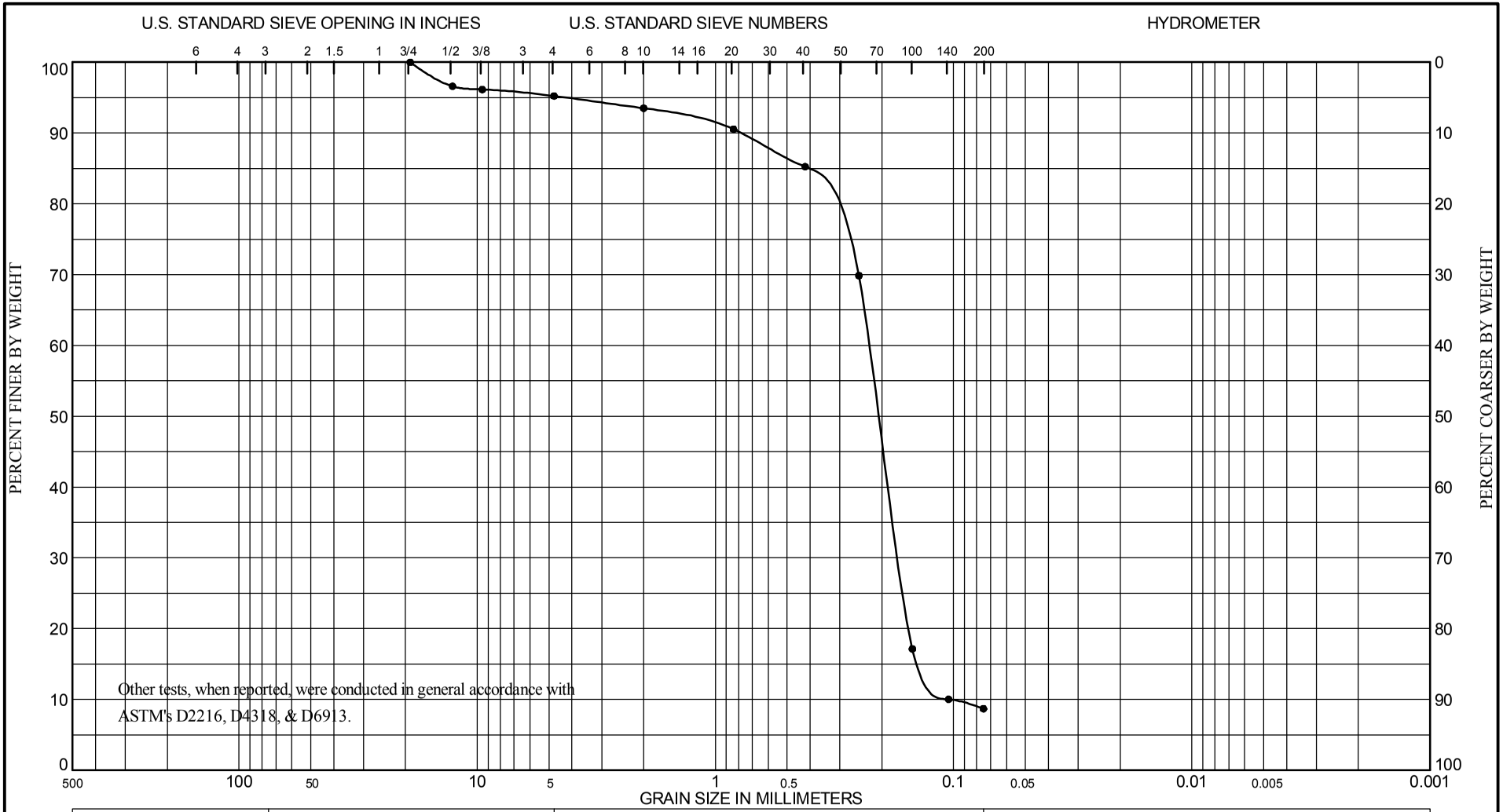
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 3.8	Greenish Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4036
Hole No. BI-PBS-164-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	3.8 to 4.4	Greenish Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4037
Hole No. BI-PBS-164-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-165-13

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
	South Atlantic	Mobile District	

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS West
2. BORING DESIGNATION	BI-PBS-165-13
LOCATION COORDINATES	E = 1,122,044 N = 224,495
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	15.0 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED 2 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	55.6 Ft.
15. DATE BORING	STARTED 12-17-13 / COMPLETED 12-17-13
16. ELEVATION TOP OF BORING	-56.2 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-56.2	0.0				
-58.7	2.5		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace shell fragments, lt. gray (SP)	A	Classification: SP Color: GLEY1 10Y 7/1- D50: 0.208 mm % Fines: 4
-59.0	2.8		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, medium gray (SM)	B	Classification: SP-SM Color: 2.5Y 5/1-gray D50: 0.256 mm % Fines: 11.3
-61.6	5.4		SAND, clayey, mostly fine-grained sand-sized quartz, pale orange and medium gray (SC)		
-71.2	15.0		CLAY, lean, trace shell fragments, partially sandy, medium 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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

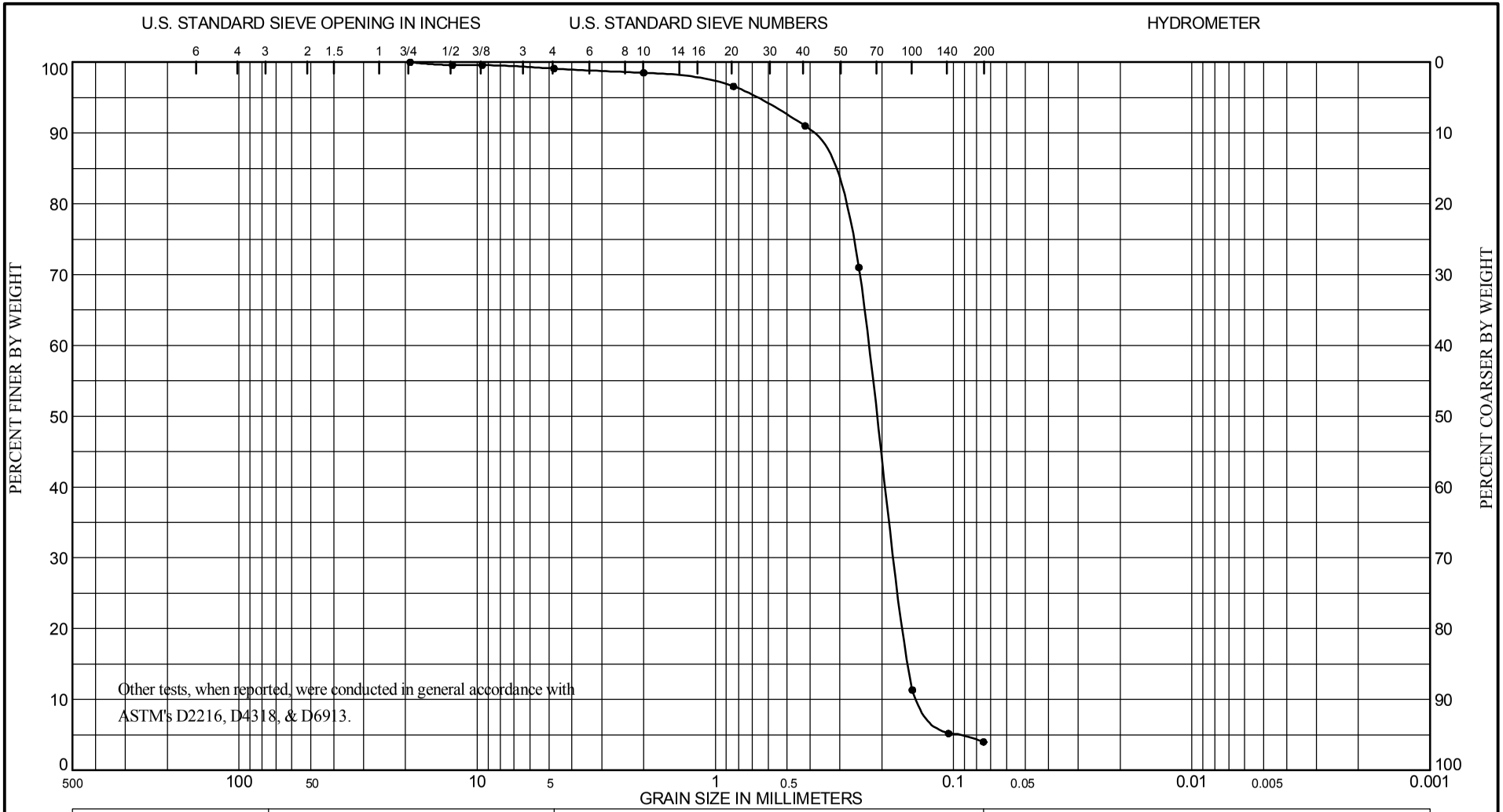
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.11660° Long = -88.39751°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

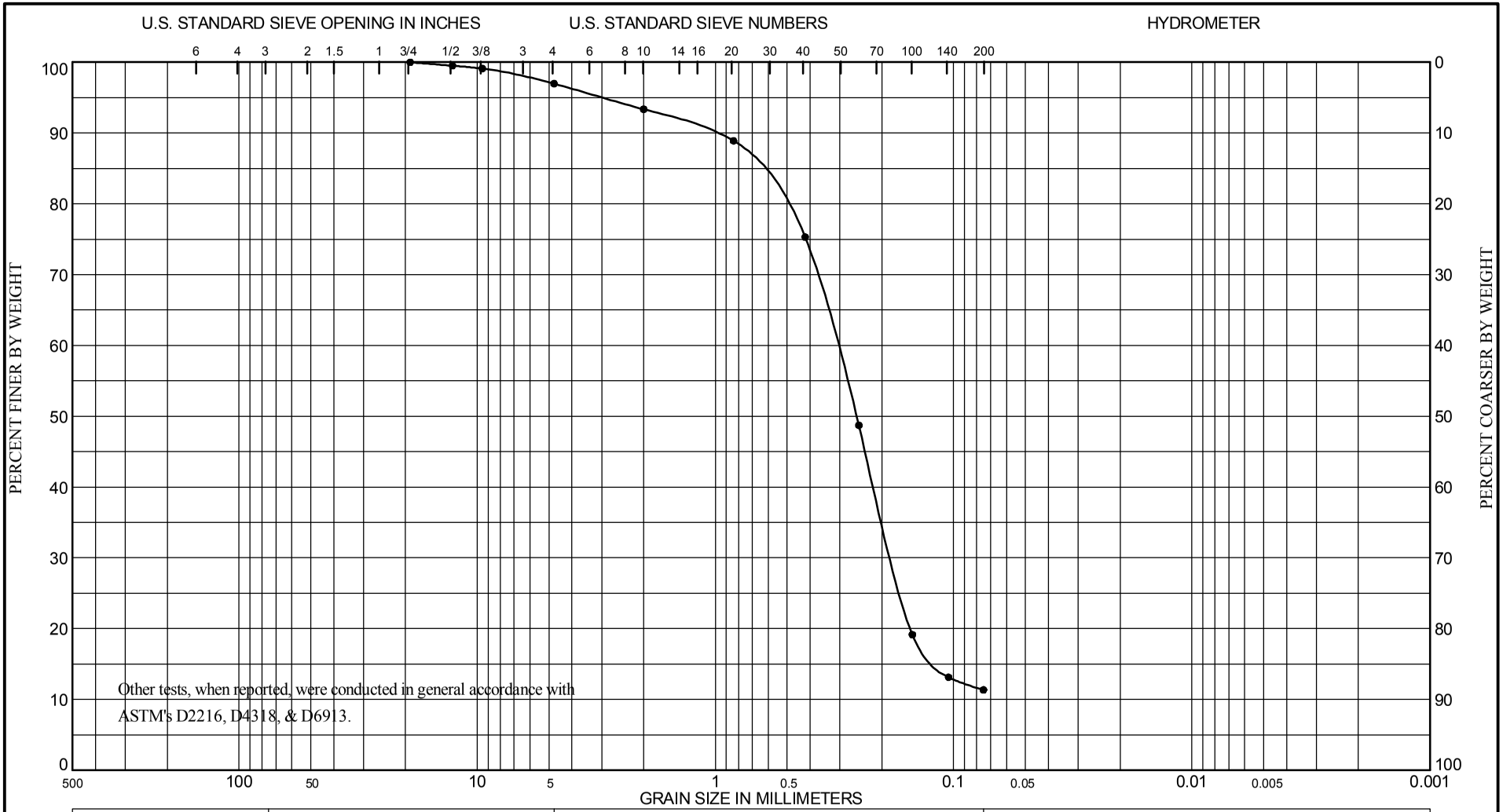
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 2.5	Greenish Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4034
Hole No. BI-PBS-165-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	2.5 to 2.8	Greenish Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4035
Hole No. BI-PBS-165-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-166-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-166-13 — LOCATION COORDINATES: E = 1,120,816 N = 226,535	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 1 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 52.5 Ft.
	15. DATE BORING — STARTED: 12-17-13 — COMPLETED: 12-17-13
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -53.7 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 12.9 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-53.7	0.0				
-57.3	3.6		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, few shell fragments, lt. gray to lt. brown (SP)	A	Classification: SP Color: 10Y 7/1-light greenish gray D50: 0.238 mm % Fines: 2.7
-58.0	4.3		SAND, silty, mostly fine-grained sand-sized quartz, medium gray (SM)		
-65.5	11.8		CLAY, lean, medium gray (CL)	NS	
-66.6	12.9		SAND, silty, mostly fine-grained sand-sized quartz, brownish 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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

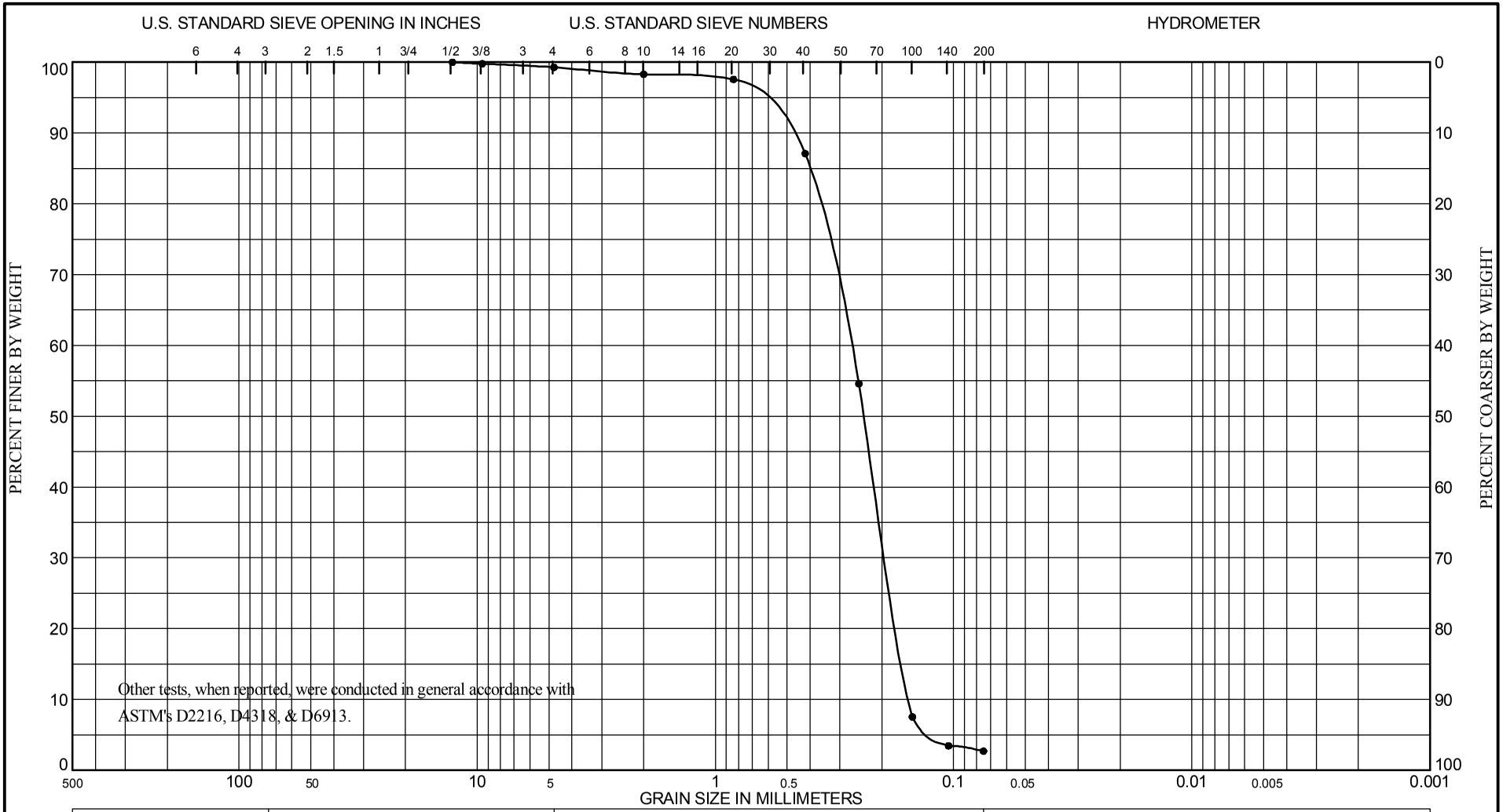
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.12222° Long = -88.40137°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 4.3	Light Greenish Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4032
Hole No. BI-PBS-166-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-169-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-169-13 — LOCATION COORDINATES: E = 1,101,693 N = 240,851	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 2 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 45.1 Ft.
	15. DATE BORING — STARTED: 12-29-13 — COMPLETED: 12-29-13
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -44.7 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: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-44.7	0.0				
-47.4	2.7		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, few shell fragments, lt. gray (SP)	A	Classification: SP Color: GLEY1 10Y 7/1- D50: 0.263 mm % Fines: 1.2
-52.2	7.5		SAND, silty, mostly fine-grained sand-sized quartz, little shell fragments, medium gray (SM)	B	Classification: SP-SM Color: 2.5Y 6/1-gray D50: 0.224 mm % Fines: 9.7
-54.9	10.2		SAND, clayey, mostly fine-grained sand-sized quartz, few shell fragments, medium gray (SC)	NS	
-60.8	16.1		CLAY, lean, medium gray, pale brown at 15 ft. (CL)		
-62.4	17.7		SILT, inorganic-L, few oyster shell fragments, less than 5% wood fragments, pale 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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

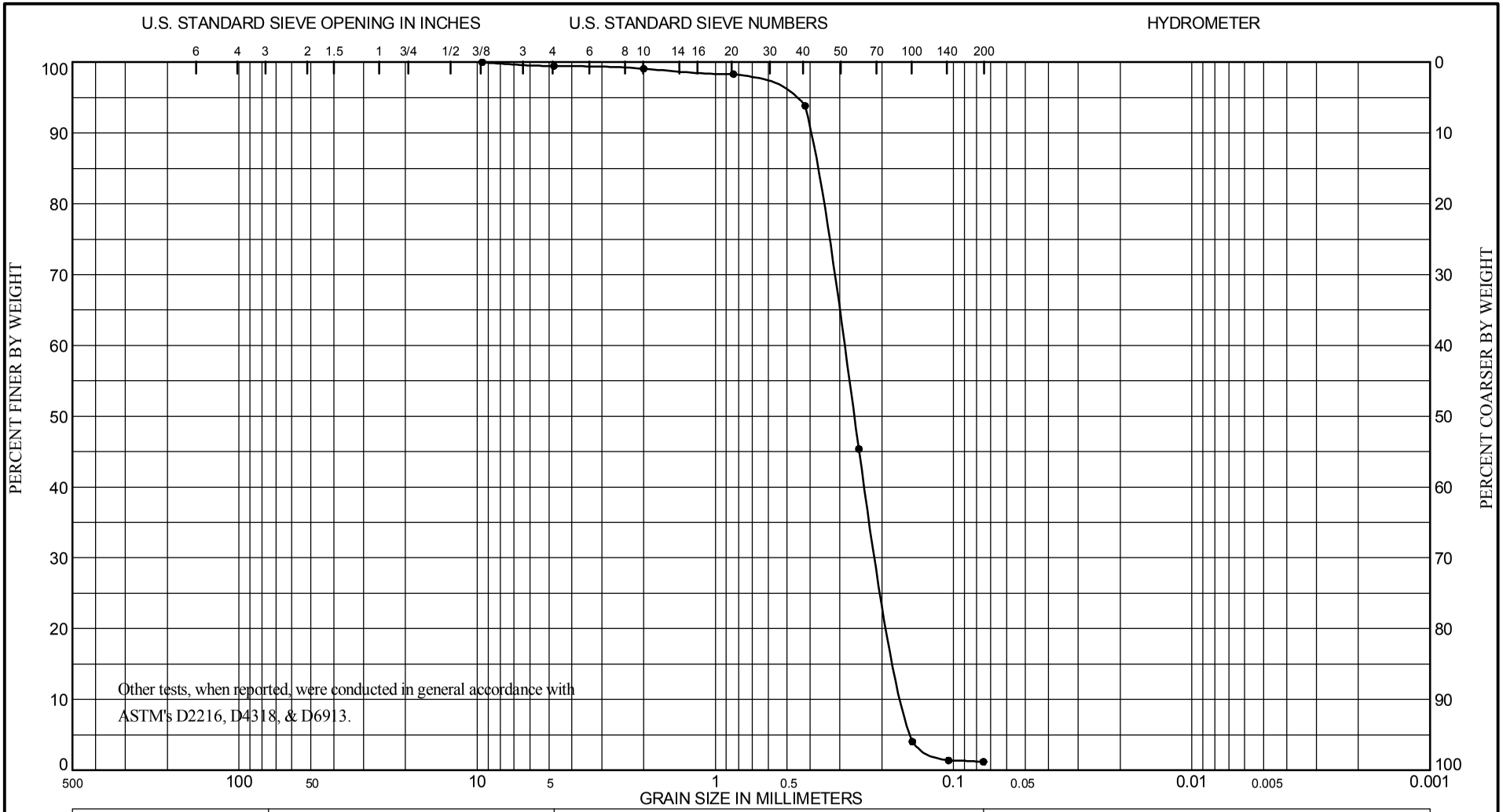
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.16177° Long = -88.46171°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

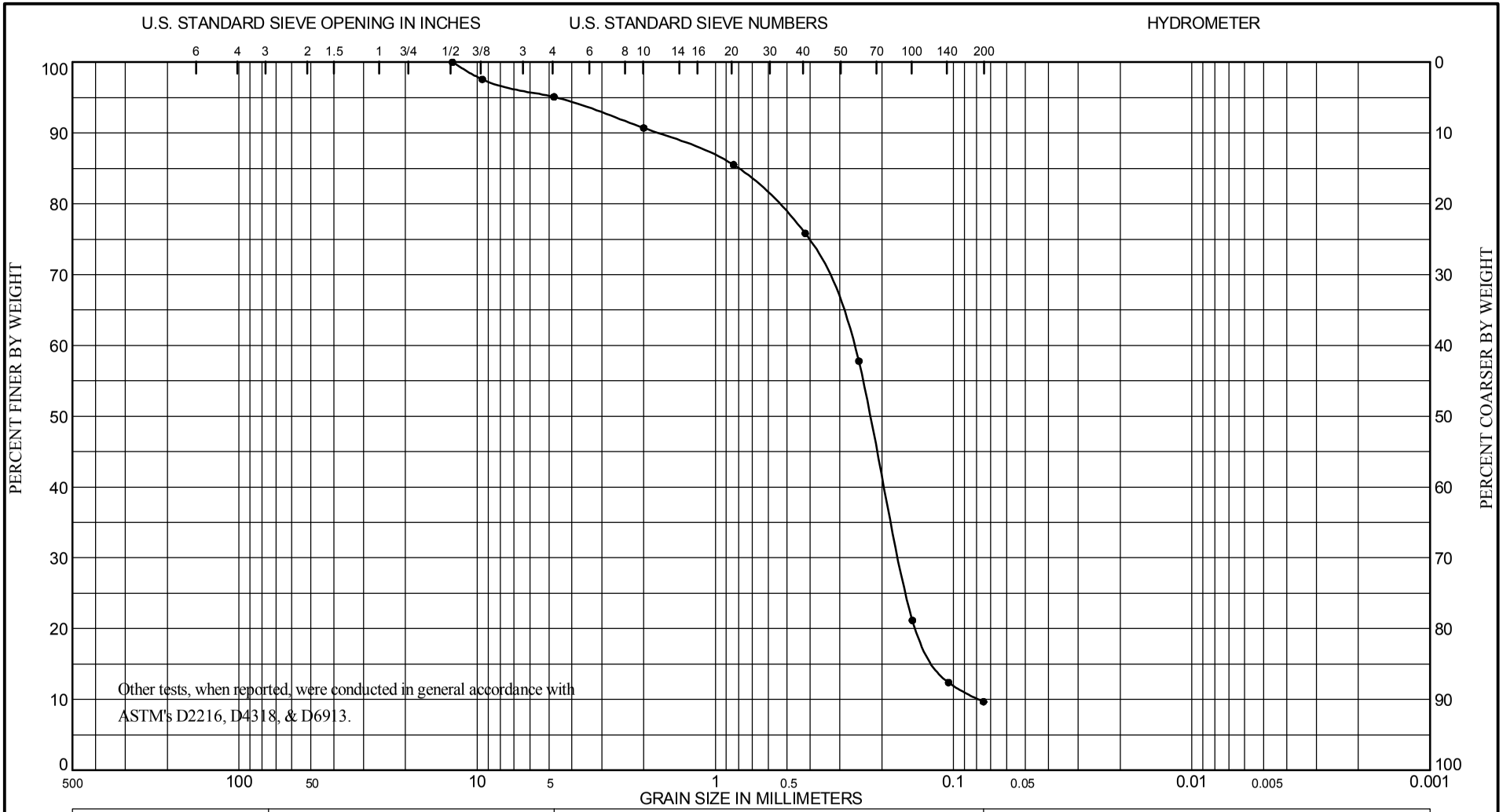
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 2.7	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4064
Hole No. BI-PBS-169-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	2.7 to 7.5	Greenish Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4065
Hole No. BI-PBS-169-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-170-13

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
	South Atlantic	Mobile District	

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS West
2. BORING DESIGNATION	BI-PBS-170-13
LOCATION COORDINATES	E = 1,101,653 N = 239,509
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	16.5 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED 1 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	50 Ft.
15. DATE BORING	STARTED 12-29-13 / COMPLETED 12-29-13
16. ELEVATION TOP OF BORING	-49.2 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-49.2	0.0				
-52.4	3.2		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, medium gray (SM)	A	Classification: SM Color: GLEY1 10Y 5/1- D50: 0.171 mm % Fines: 16.4
-57.5	8.3		CLAY, lean, sandy, medium gray (CL)	NS	
-65.7	16.5		CLAY, fat, sandy, lt. gray and pale orange (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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

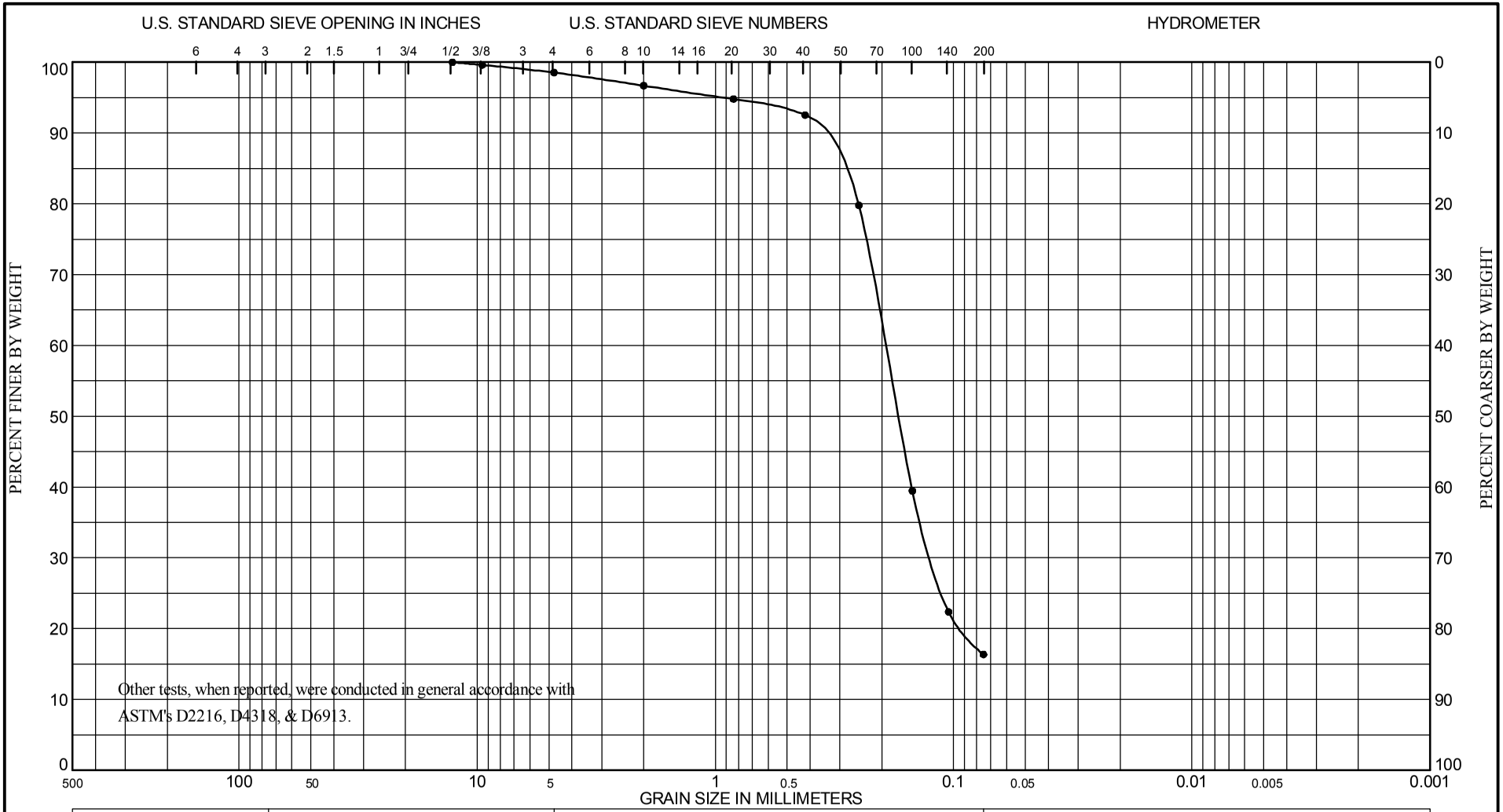
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15808° Long = -88.46185°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 3.2	Greenish Gray, Silty Sand (SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4066
Hole No. BI-PBS-170-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-171-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-171-13 — LOCATION COORDINATES: E = 1,103,271 N = 239,394	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 2 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 46.8 Ft.
	15. DATE BORING — STARTED: 12-27-13 — COMPLETED: 12-27-13
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -45.2 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 9.8 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-45.2	0.0				
-46.0	0.8		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little shell fragments, lt. gray (SP)	A	Classification: SP Color: GLEY1 10Y 6/1- D50: 0.245 mm % Fines: 3.2
-46.7	1.5			B	Classification: SP-SM Color: GLEY1 10Y 5/1- D50: 0.204 mm % Fines: 9.8
-48.8	3.6		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, medium gray (SM)	NS	
-51.5	6.3		SILT, inorganic-L, few shell fragments, medium gray (ML)		
-54.5	9.3		CLAY, lean, few shell fragments, sandy, medium gray (CL)		
-55.0	9.8		CLAY, fat, sandy, lt. and medium gray and pale orange (CH)		
			SAND, silty, mostly fine to medium-grained sand-sized quartz, medium 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.

3. Seafloor elevation determined from 10/28/2014 USACE survey.

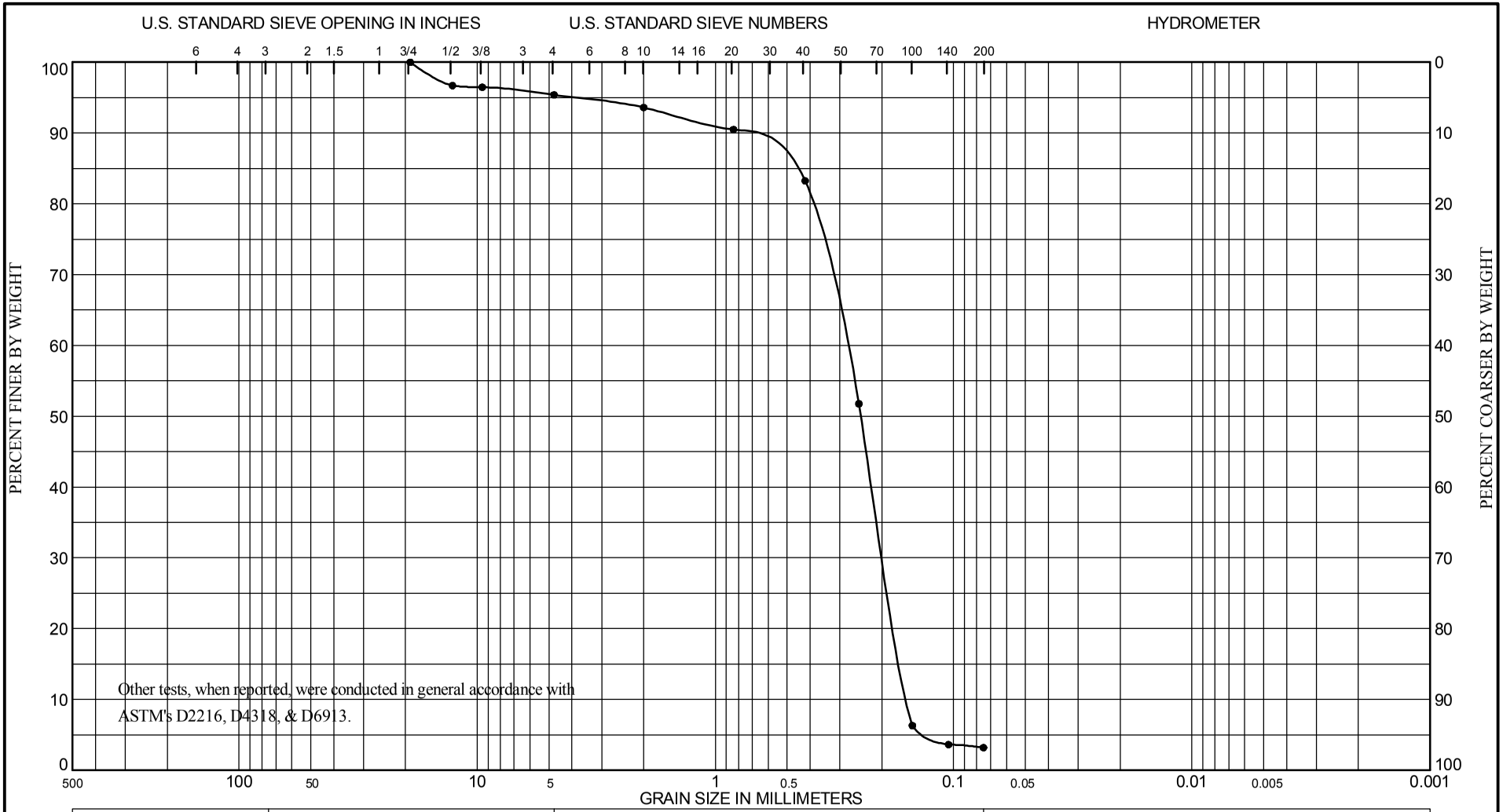
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15775° Long = -88.45673°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

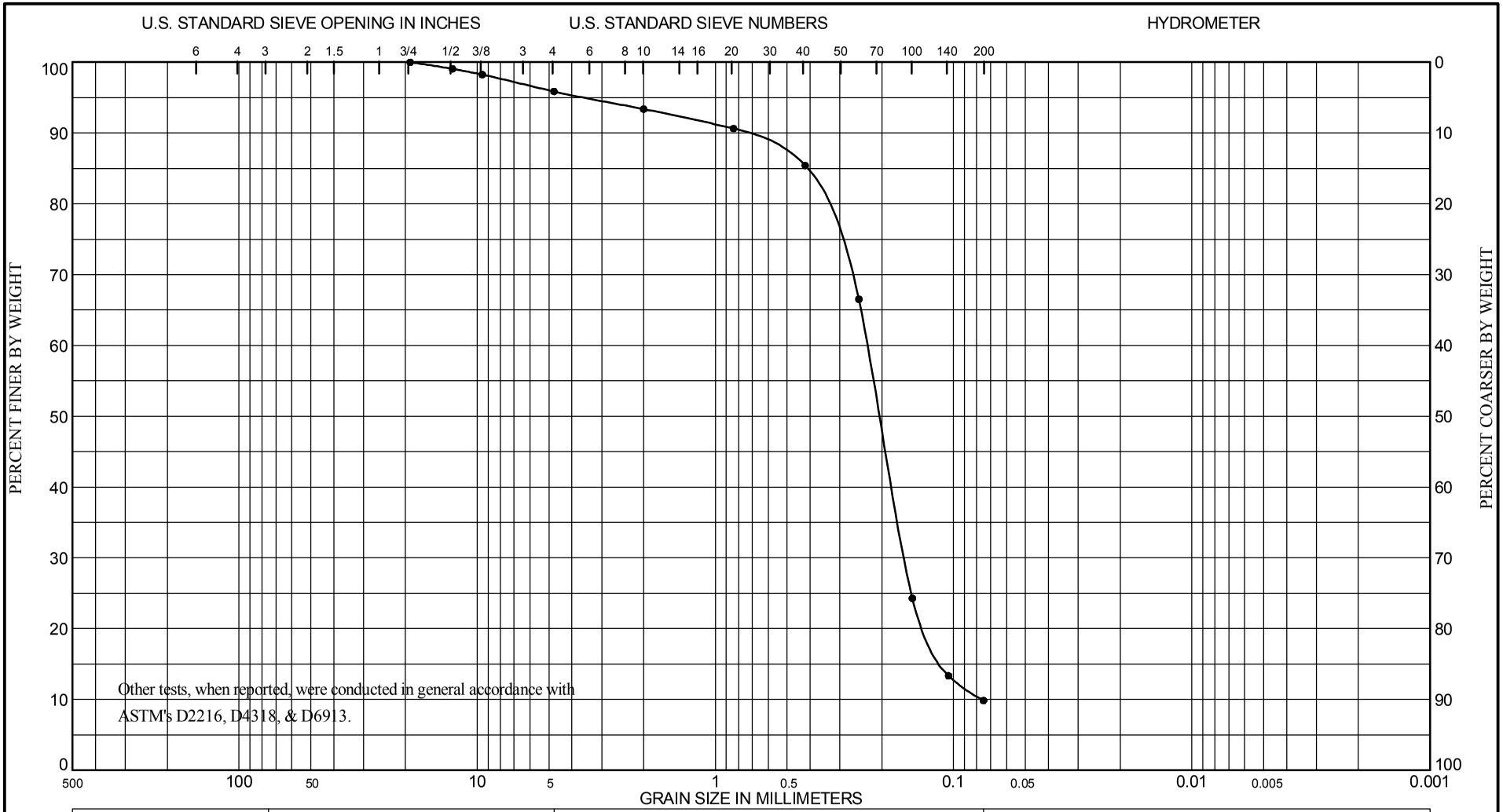
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 0.8	Greenish Gray, Poorly Graded Sand (SP), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4054
Hole No. BI-PBS-171-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	0.8 to 1.5	Greenish Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4055
Hole No. BI-PBS-171-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-172-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-172-13 — LOCATION COORDINATES: E = 1,093,754 N = 241,710	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 3 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 45.1 Ft.
	15. DATE BORING — STARTED: 12-30-13 — COMPLETED: 12-30-13
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -44.9 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 16.8 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-44.9	0.0				
-45.7	0.8		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: 0.22 mm % Fines: 1.2
			SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, slightly plastic at 3.0 ft., medium gray (SM)	B	Classification: SP-SM Color: 2.5Y 5/1-gray D50: 0.176 mm % Fines: 10.9
				C	Classification: SM Color: 2.5Y 5/1-gray D50: 0.146 mm % Fines: 16.8
-55.4	10.5				
-57.0	12.1		SAND, clayey, mostly fine-grained sand-sized quartz, little shell fragments, medium gray (SC)		
			CLAY, fat, trace shell fragments, medium gray and pale brown (CH)	NS	
-61.7	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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

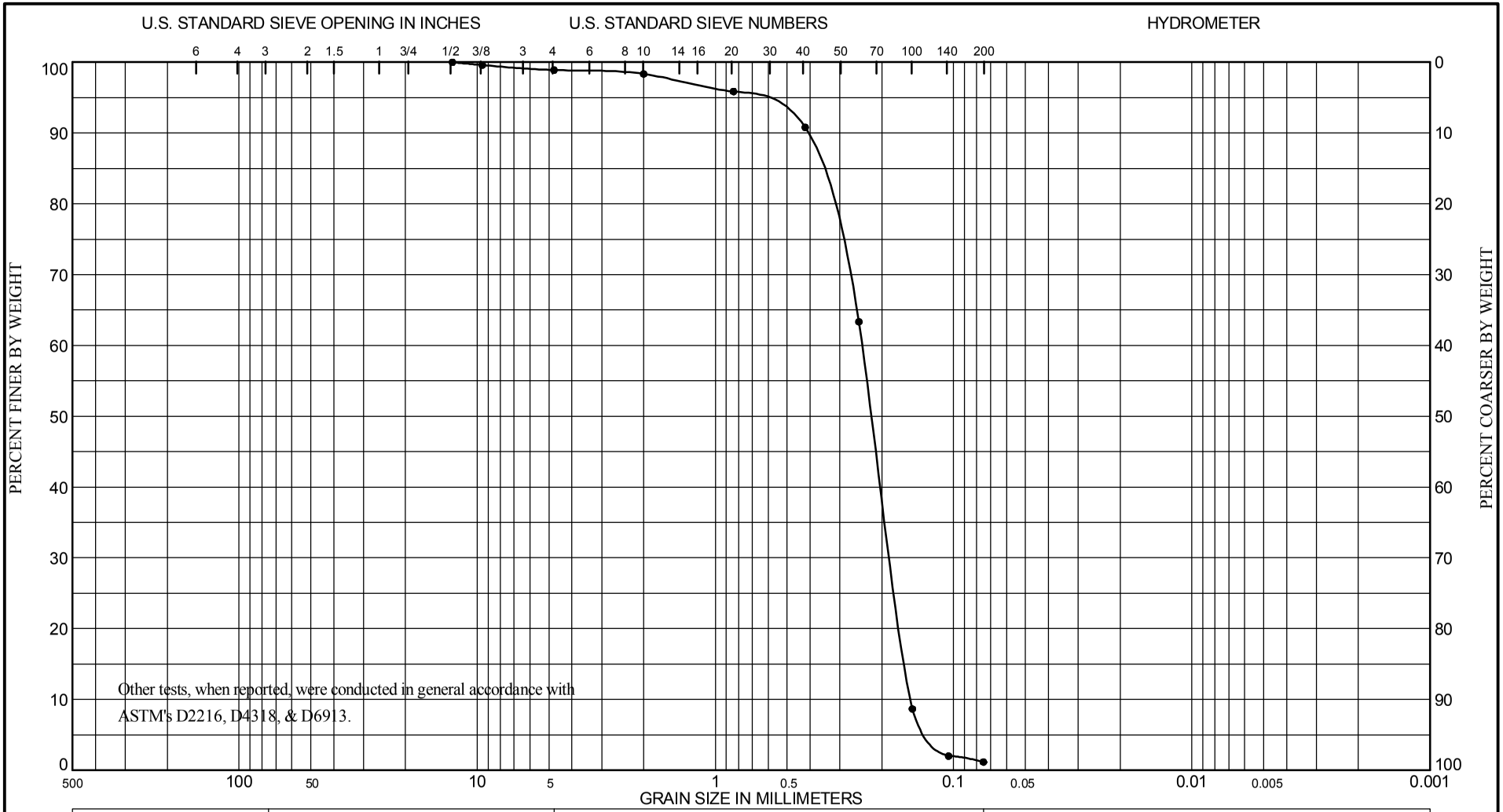
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.16420° Long = -88.48682°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

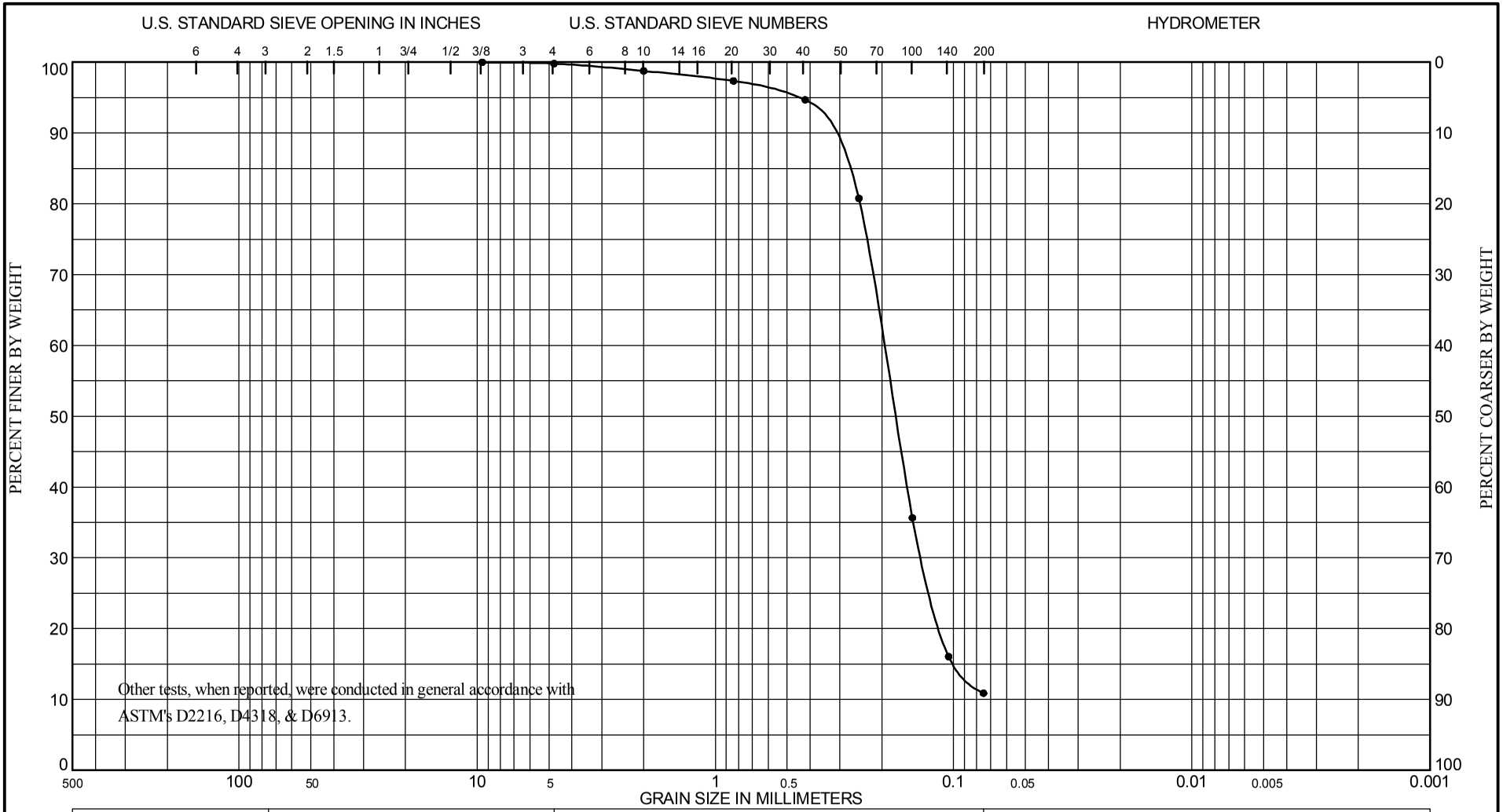
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 0.8	Very Dark Greenish Gray, Poorly Graded Sand (SP), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4142
Hole No. BI-PBS-172-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

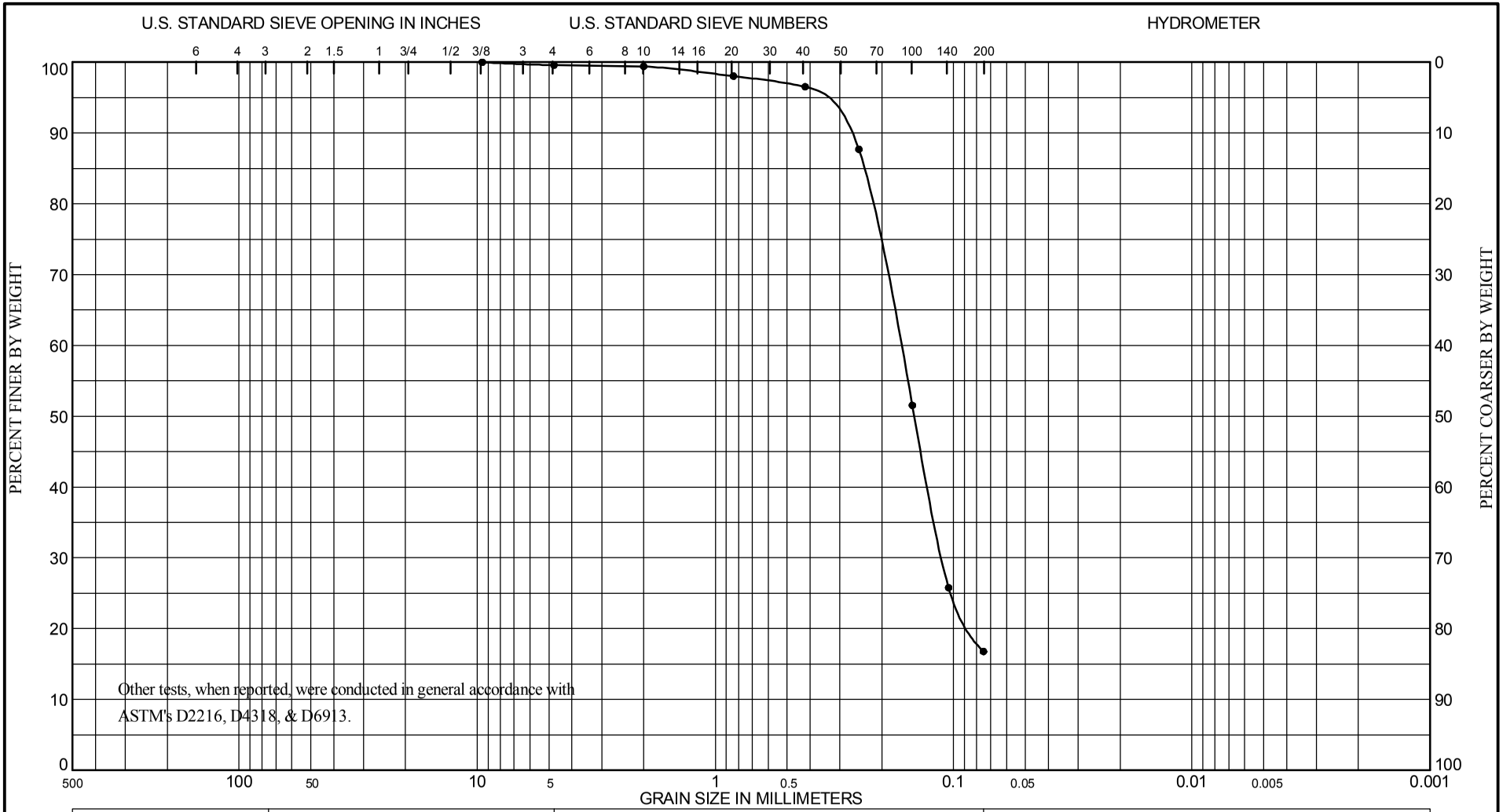
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	0.8 to 5.8	Greenish Black, Poorly Graded Silty Sand (SP-SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4143
Hole No. BI-PBS-172-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	5.8 to 10.5	Greenish Black, Silty Sand (SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4144
Hole No. BI-PBS-172-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-173-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-173-13 — LOCATION COORDINATES: E = 1,103,469 N = 240,675	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 2 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 45 Ft.
	15. DATE BORING — STARTED: 12-29-13 — COMPLETED: 12-29-13
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -42.7 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 15.3 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-42.7	0.0				
-45.0	2.3		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, few shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 6/1-gray D50: 0.305 mm % Fines: 1.3
-46.9	4.2		SAND, silty, mostly fine-grained sand-sized quartz, little shell fragments, medium gray (SM)	B	Classification: SP-SM Color: GLEY1 10Y 7/1- D50: 0.201 mm % Fines: 10.8
-50.3	7.6		SAND, clayey, mostly fine-grained sand-sized quartz, little shell fragments, medium gray (SC)	NS	
-51.9	9.2		CLAY, lean, sandy, medium to dark gray (CL)		
-58.0	15.3		CLAY, fat, sandy, pale orange, lt. gray, pale green, and pale brown (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.

3. Seafloor elevation determined from 10/28/2014 USACE survey.

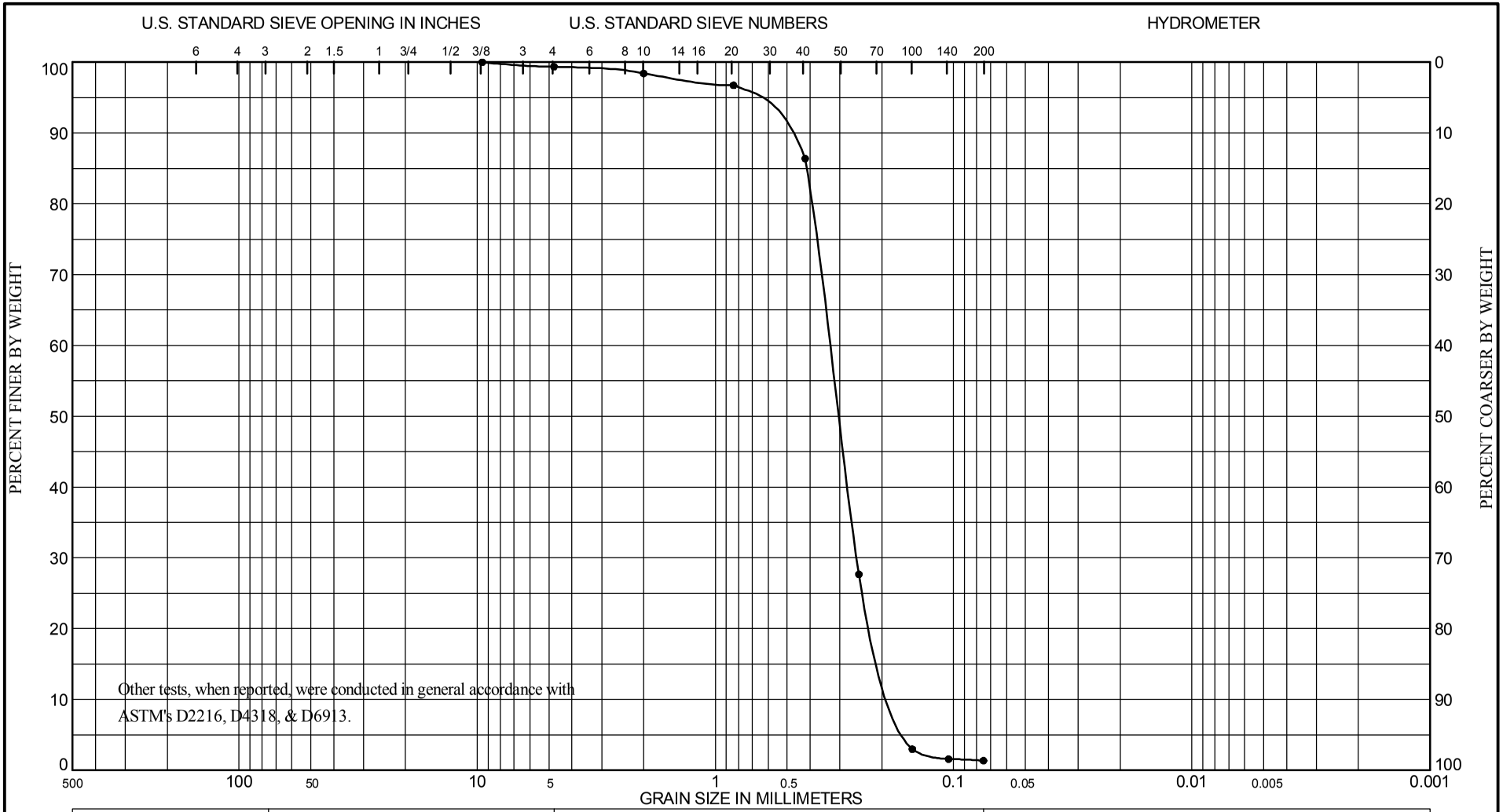
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.16127° Long = -88.45609°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

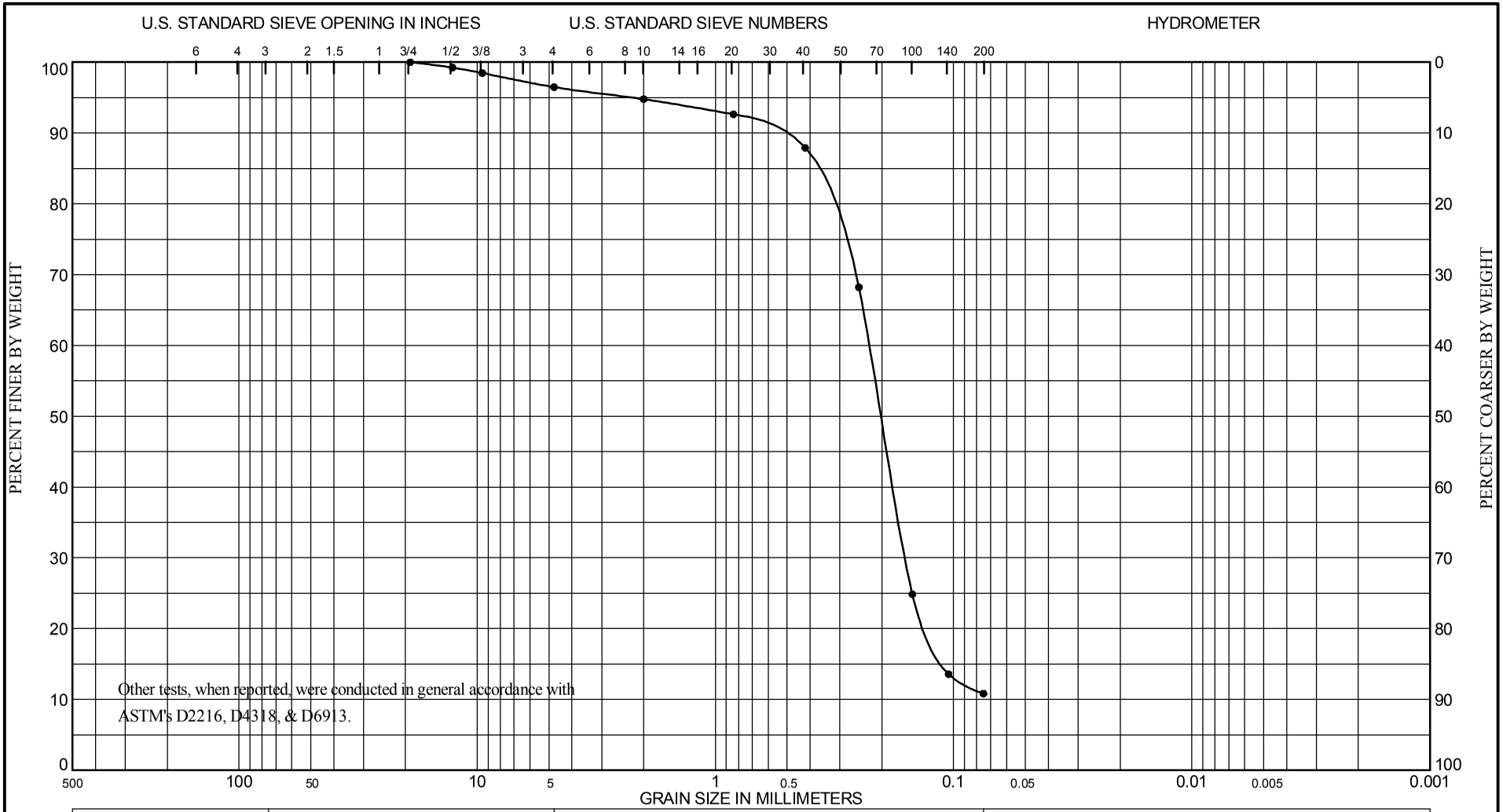
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 2.3	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4062
Hole No. BI-PBS-173-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	2.3 to 4.2	Light Greenish Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4063
Hole No. BI-PBS-173-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-174-13

DRILLING LOG	DIVISION South Atlantic	INSTALLATION Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT MsCIP Barrier Island Restoration Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT N/A
	10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.) | HORIZONTAL NAD83 | VERTICAL NAVD88
2. BORING DESIGNATION BI-PBS-174-13 | LOCATION COORDINATES E = 1,103,967 N = 238,364	11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY Corps of Engineers - CESAM | CONTRACTOR FILE NO.	12. TOTAL SAMPLES | DISTURBED 1 | UNDISTURBED (UD) 0
4. NAME OF DRILLER Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED | DEG. FROM VERTICAL | BEARING	14. WATER DEPTH 49 Ft.
	15. DATE BORING | STARTED 12-27-13 | COMPLETED 12-27-13
6. THICKNESS OF OVERBURDEN N/A	16. ELEVATION TOP OF BORING -50.4 Ft.
7. DEPTH DRILLED INTO ROCK N/A	17. TOTAL RECOVERY FOR BORING 100%
8. TOTAL DEPTH OF BORING 14.7 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-50.4	0.0				
-50.9	0.5				
-51.4	1.0		CLAY, lean, sandy, medium gray (CL)		
-52.2	1.8		SAND, silty, mostly fine-grained sand-sized quartz, little shell fragments, medium gray (SM)	A	Classification: SM Color: 2.5Y 6/1-gray D50: 0.219 mm % Fines: 15.3
-53.8	3.4		SAND, clayey, mostly fine-grained sand-sized quartz, little shell fragments, medium gray (SC)		
-55.0	4.6		CLAY, lean, sandy, medium gray (CL)		
			SAND, clayey, mostly fine-grained sand-sized quartz, medium gray (SC)		
			CLAY, fat, lt. and medium gray and pale orange (CH)	NS	
-62.8	12.4				
-65.1	14.7		SAND, clayey, mostly fine-grained sand-sized quartz, trace wood fragments at 14.0, little oyster shell fragments from 14.1 ft. down, medium and lt. 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.

3. Seafloor elevation determined from 2013 USGS geophysical survey.

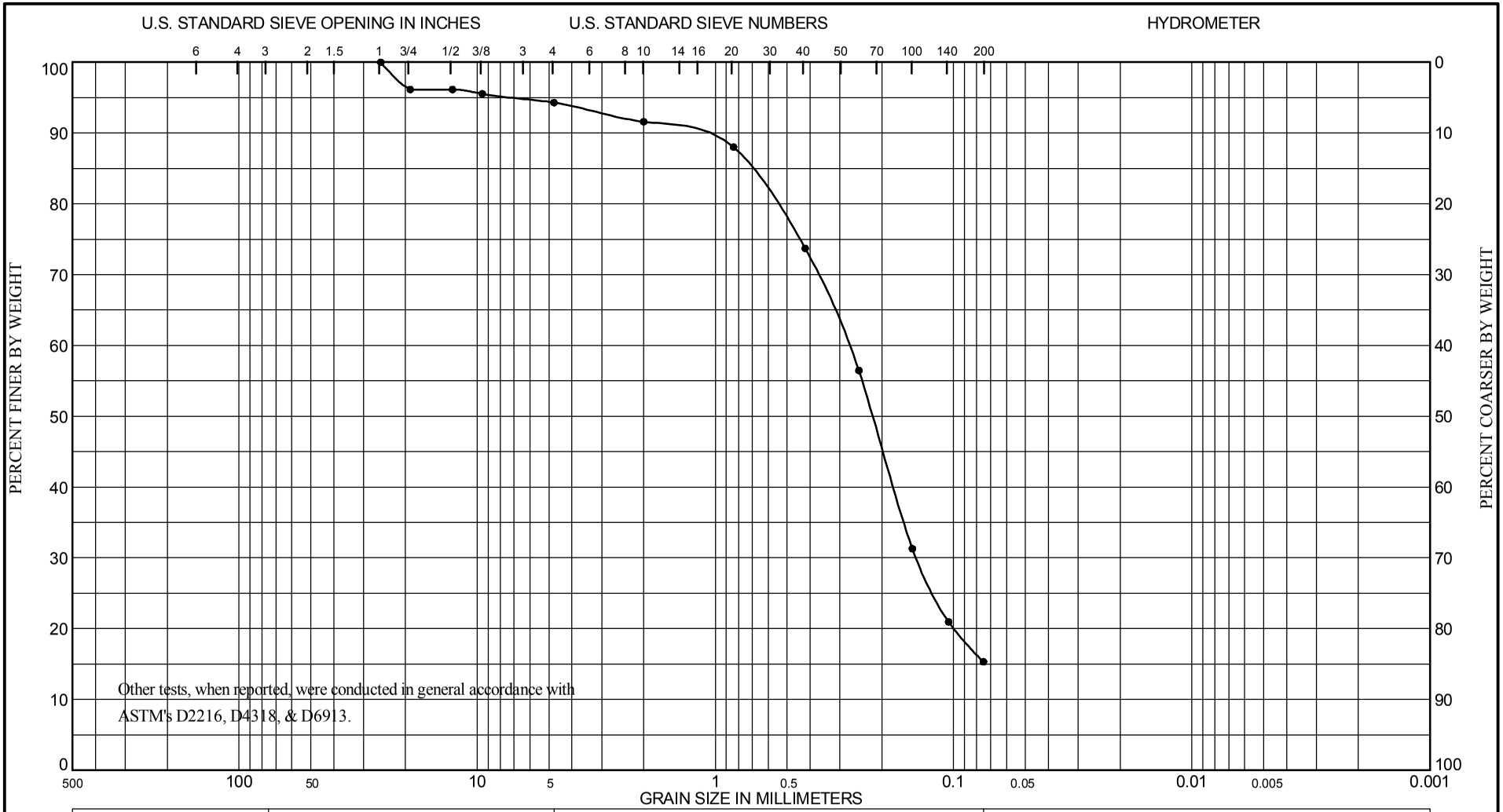
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15491° Long = -88.45454°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.5 to 1.8	Dark Greenish Gray, Silty Sand (SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4053
Hole No. BI-PBS-174-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-175-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-175-13 — LOCATION COORDINATES: E = 1,104,880 N = 239,520	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 3 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 44.8 Ft.
	15. DATE BORING — STARTED: 12-27-13 — COMPLETED: 12-27-13
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -42.9 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 16.6 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-42.9	0.0				
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, few shell fragments, lt. gray (SP)	A	Classification: SP Color: GLEY1 10Y 7/1- D50: 0.315 mm % Fines: 0.8
			At El. -46.4 Ft., little shell fragments	B	Classification: SP Color: GLEY1 10Y 7/1- D50: 0.334 mm % Fines: 0.8
-48.3	5.4				
			SAND, silty, mostly fine-grained sand-sized quartz, little shell fragments, medium gray (SM)	C	Classification: SM Color: GLEY1 10Y 5/1- D50: 0.176 mm % Fines: 15.4
-51.9	9.0				
			CLAY, lean, trace shell fragments, sandy, medium gray (CL)	NS	
-57.6	14.7				
			CLAY, fat, sandy, lt. to medium gray (CH)		
-59.5	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. 3. Seafloor elevation determined from 10/28/2014 USACE survey.		

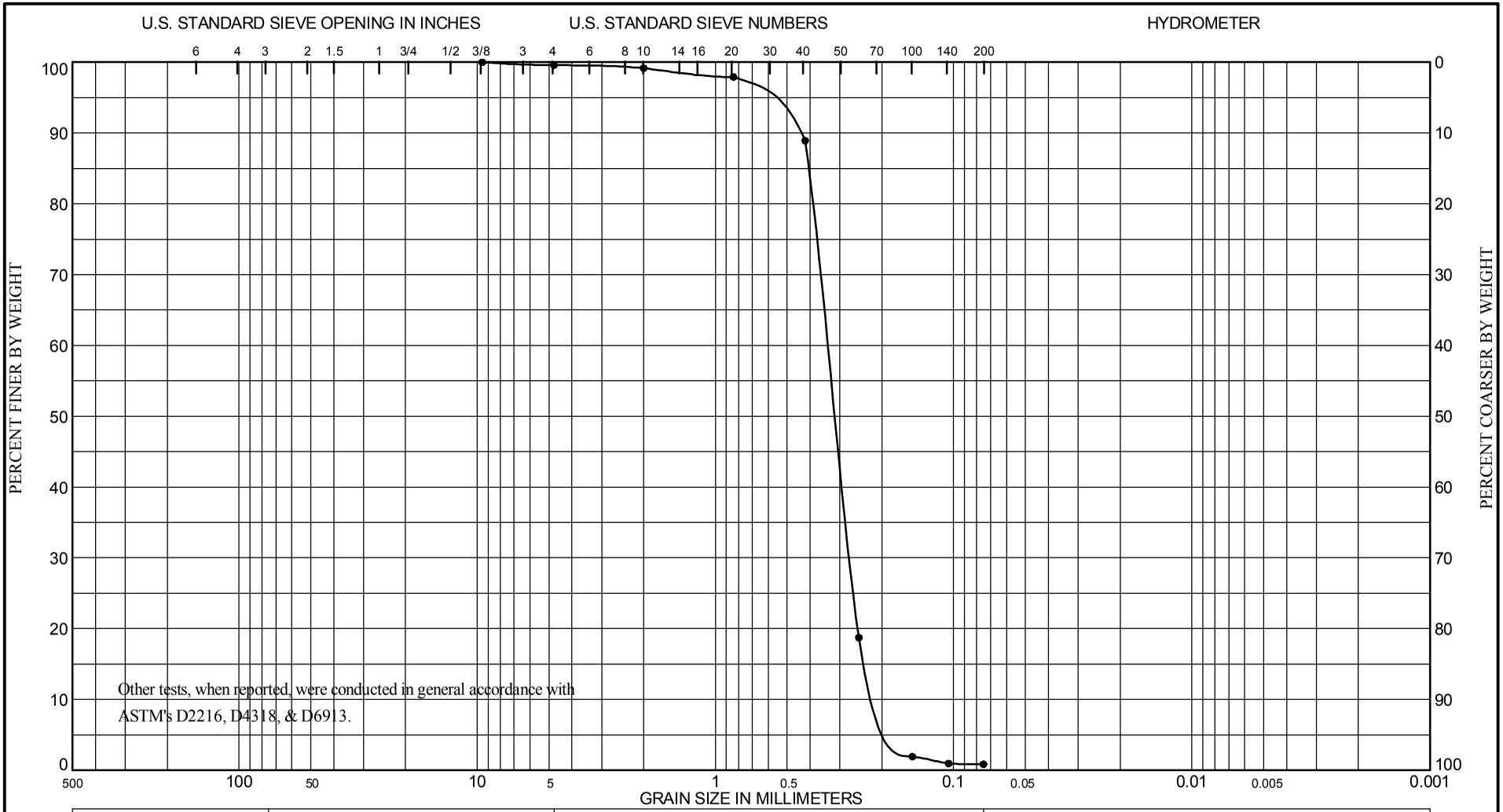
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15808° Long = -88.45164°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

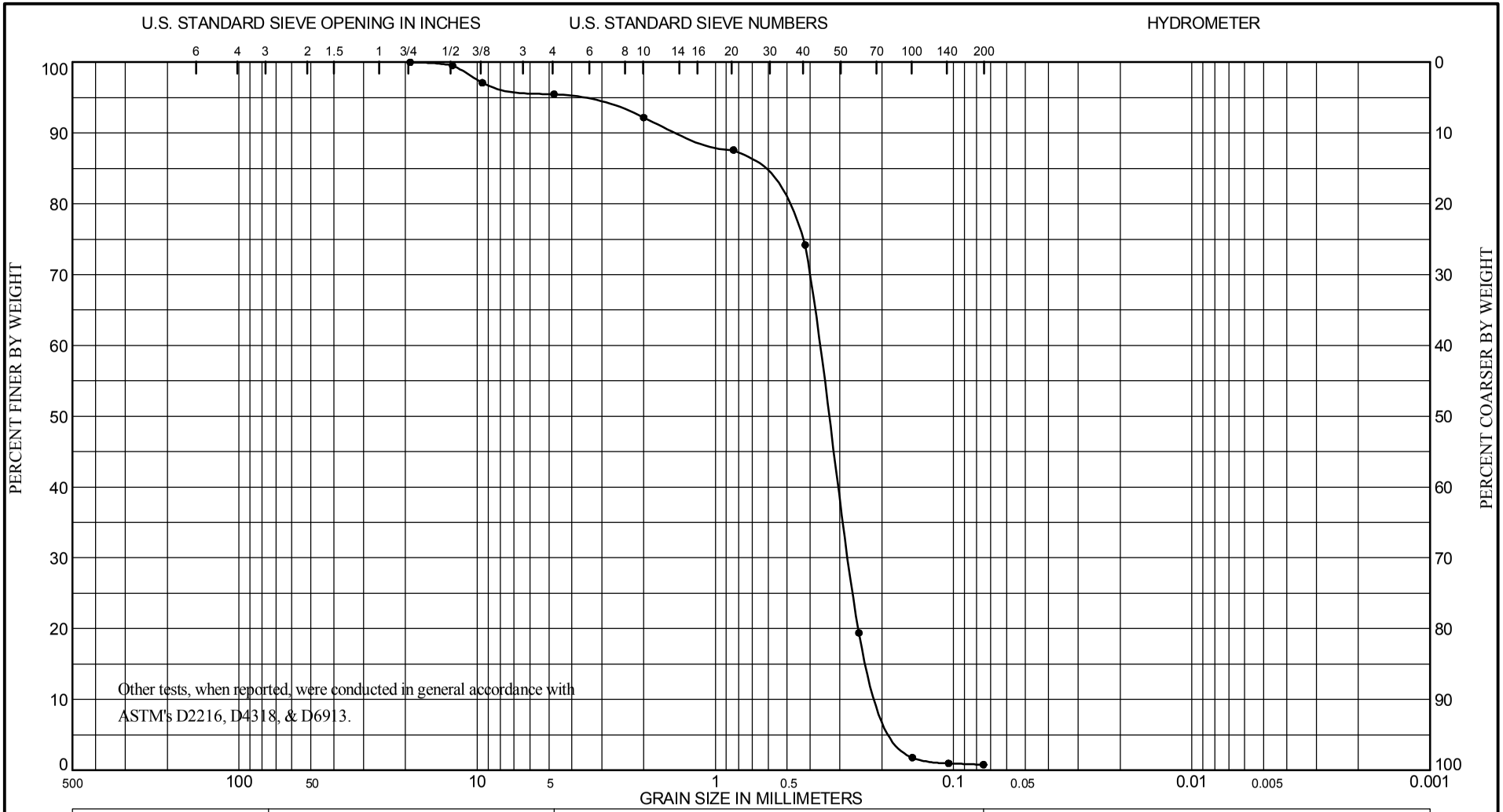
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 2.7	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4056
Hole No. BI-PBS-175-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

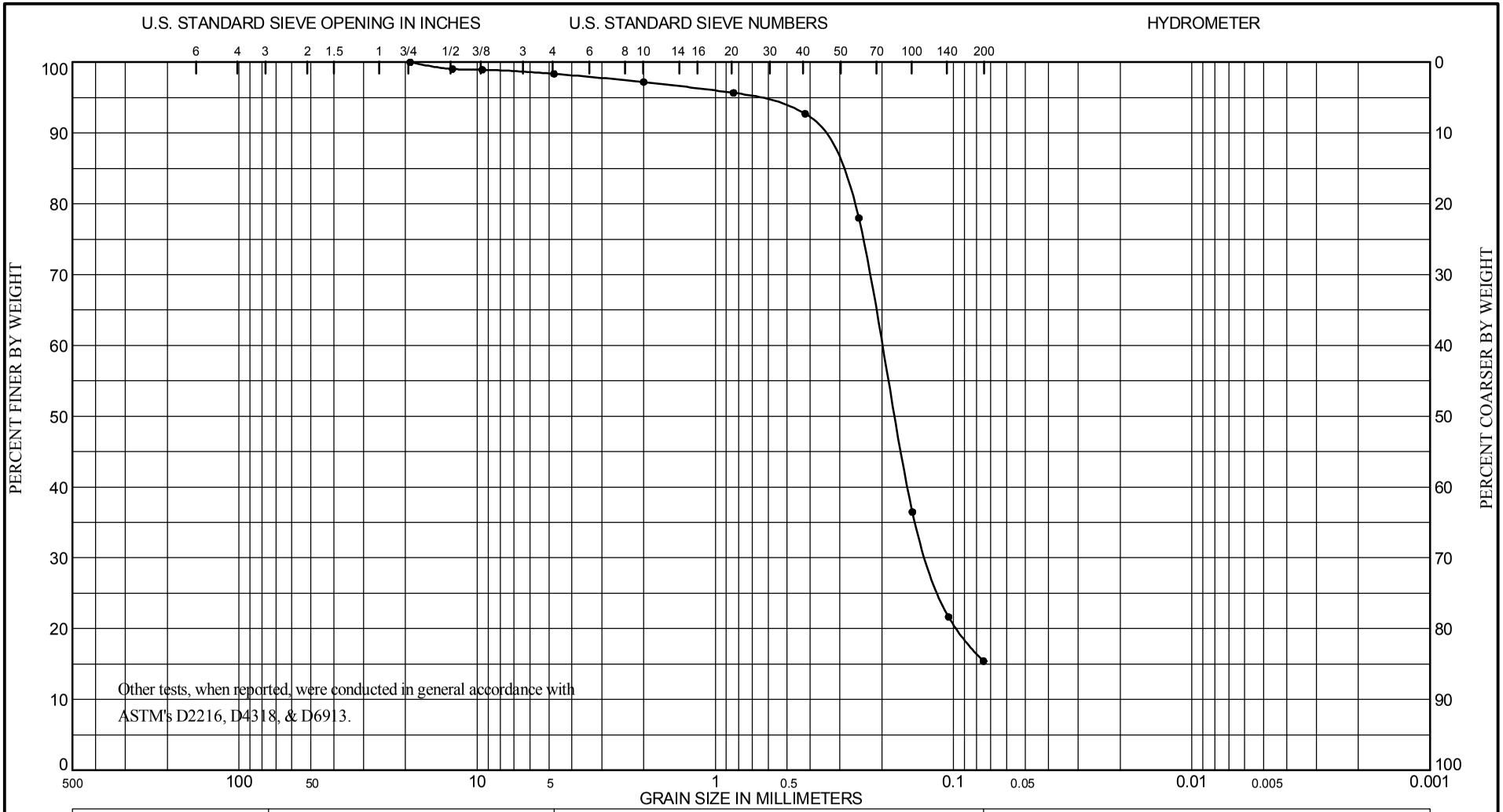
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	2.7 to 5.4	Gray, Poorly Graded Sand (SP), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4057
Hole No. BI-PBS-175-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	5.4 to 9.0	Gray, Silty Sand (SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4058
Hole No. BI-PBS-175-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-176-13

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
	South Atlantic	Mobile District	

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS West
2. BORING DESIGNATION	BI-PBS-176-13
LOCATION COORDINATES	E = 1,105,840 N = 240,439
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	19.8 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED 1 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	50.1 Ft.
15. DATE BORING	STARTED 12-29-13 / COMPLETED 12-29-13
16. ELEVATION TOP OF BORING	-48.6 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-48.6	0.0				
-51.8	3.2		SAND, silty, mostly fine-grained sand-sized quartz, little shell fragments, medium gray (SM)	A	Classification: SM Color: GLEY1 10Y 5/1- D50: 0.14 mm % Fines: 22.4
-53.3	4.7		SAND, clayey, mostly fine-grained sand-sized quartz, little shell fragments, medium gray (SC)		
-59.1	10.5		CLAY, lean, few shell fragments, medium gray (CL)		
-68.4	19.8		CLAY, fat, sandy, lt. gray, pale green, pale orange, and pale brown (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.

3. Seafloor elevation determined from 10/28/2014 USACE survey.

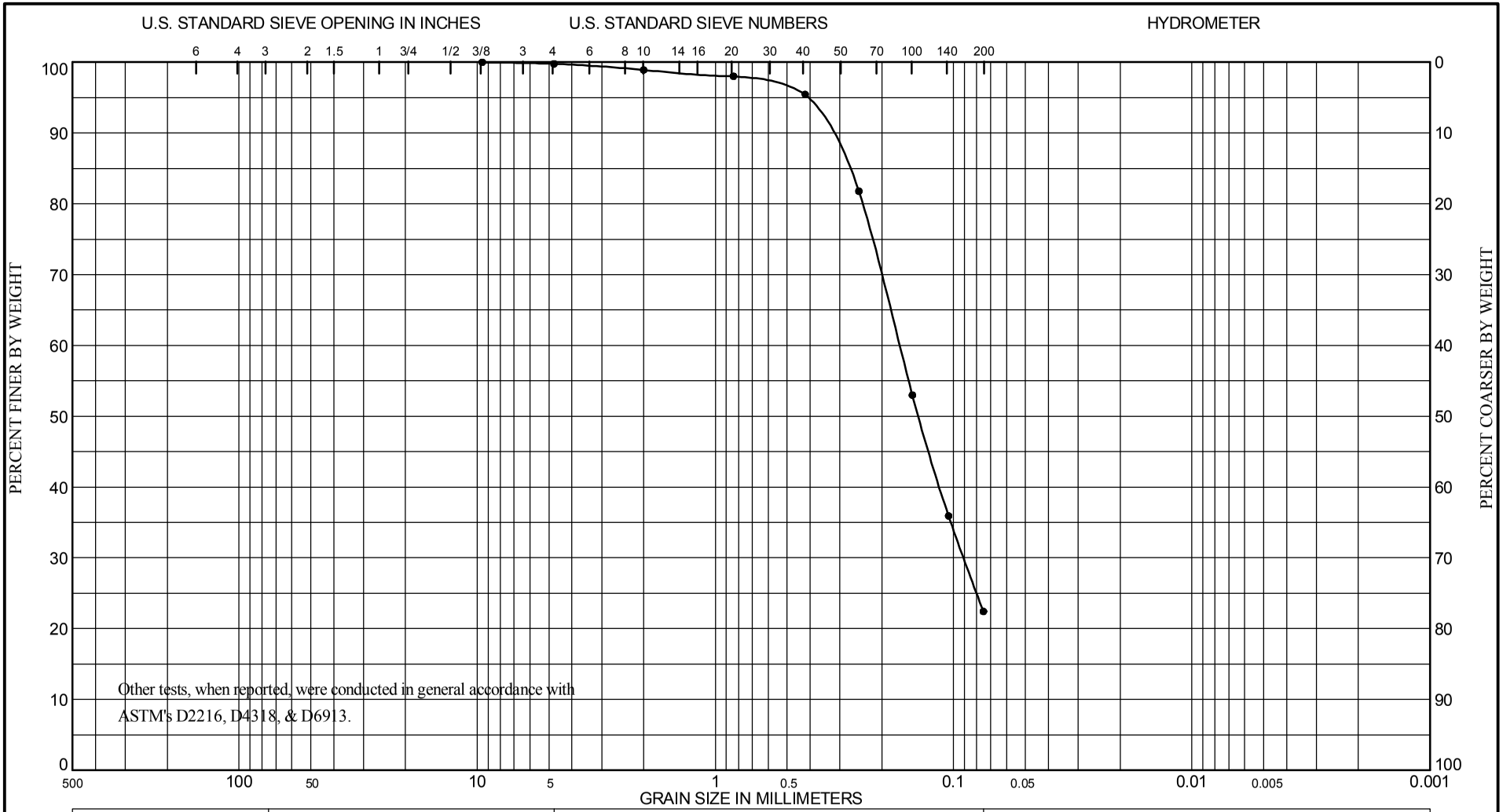
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.16060° Long = -88.44859°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 3.2	Dark Greenish Gray, Silty Sand (SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4061
Hole No. BI-PBS-176-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-177-13

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
	South Atlantic	Mobile District	

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS West
2. BORING DESIGNATION	BI-PBS-177-13
LOCATION COORDINATES	E = 1,107,601 N = 239,362
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	11.5 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED 1 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	50.4 Ft.
15. DATE BORING	STARTED 12-16-13 / COMPLETED 12-16-13
16. ELEVATION TOP OF BORING	-49.2 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-49.2	0.0				
-49.5	0.3		SAND, silty, mostly fine-grained sand-sized quartz, lt. to medium gray (SM)	A	Classification: SM Color: GLEY1 10Y 5/1- D50: 0.211 mm % Fines: 17.1
			CLAY, lean, lt. to medium gray and pale orange (CL)		
			At El. -54.0 Ft., trace woody fines	NS	
-60.2	11.0				
-60.7	11.5		SAND, silty, mostly fine-grained sand-sized quartz, little shell fragments, medium 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.

3. Seafloor elevation determined from 10/28/2014 USACE survey.

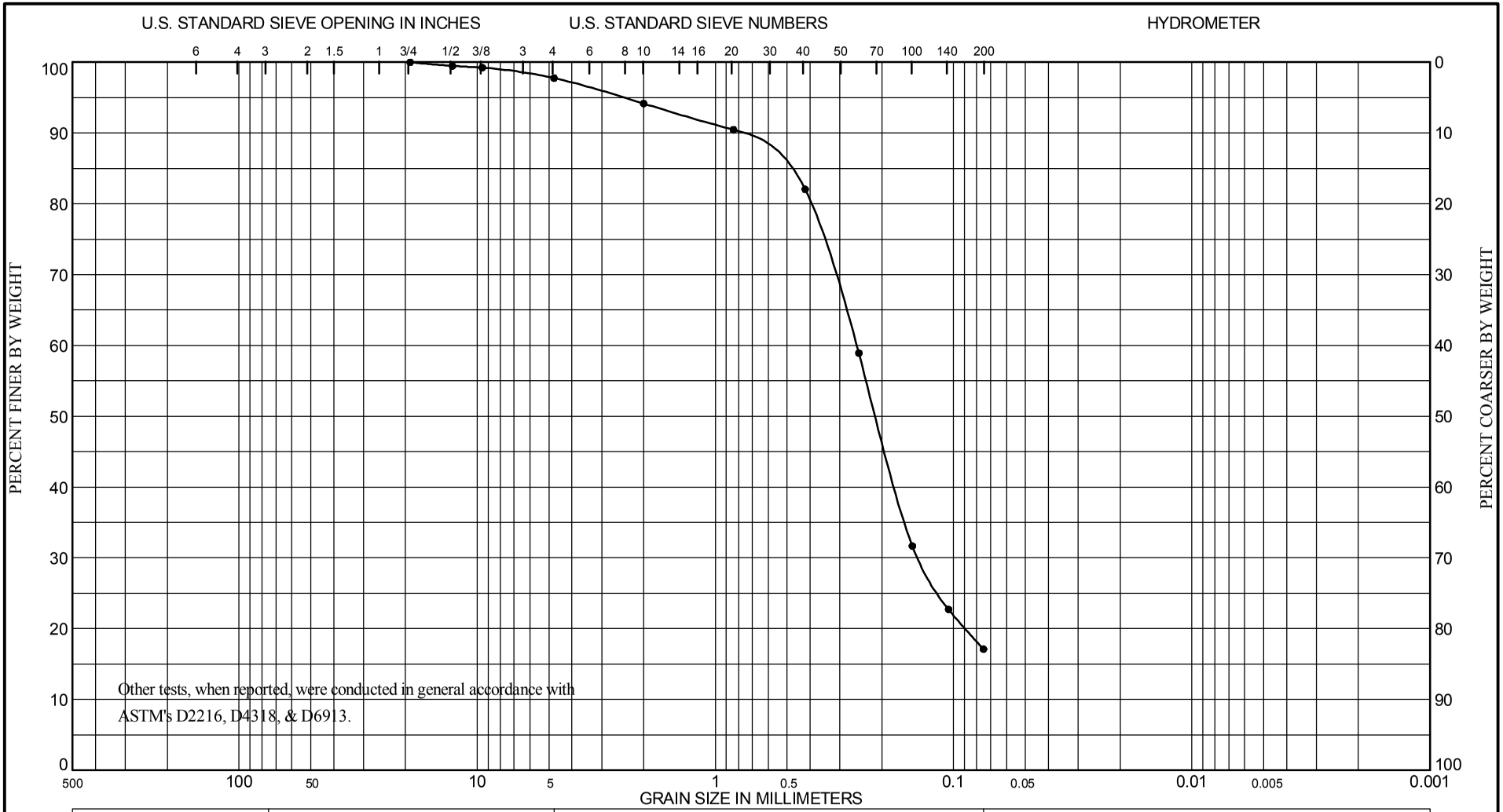
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15762° Long = -88.44303°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 0.3	Greenish Gray & Light Greenish Gray, Silty Sand (SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4019
Hole No. BI-PBS-177-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-178-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-178-13 — LOCATION COORDINATES: E = 1,107,742 N = 237,886	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 2 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 44.8 Ft.
	15. DATE BORING — STARTED: 12-16-13 — COMPLETED: 12-16-13
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -43.4 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 19.3 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-43.4	0.0				
-48.4	5.0		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, few shell fragments, lt. gray (SP)	A	Classification: SP Color: GLEY1 10Y 6/1- D50: 0.306 mm % Fines: 1.8
-49.9	6.5		SAND, silty, mostly fine-grained sand-sized quartz, trace shell fragments, lt. gray (SM)	B	Classification: SM Color: 2.5Y 6/1-gray D50: 0.164 mm % Fines: 18.1
-58.4	15.0		CLAY, lean, sandy, medium gray (CL) At El. -50.9 Ft., medium gray At El. -52.4 Ft., sandy and silty, medium gray At El. -55.9 Ft., trace woody fines	NS	
-62.7	19.3		CLAY, fat, lt. gray and pale orange (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.

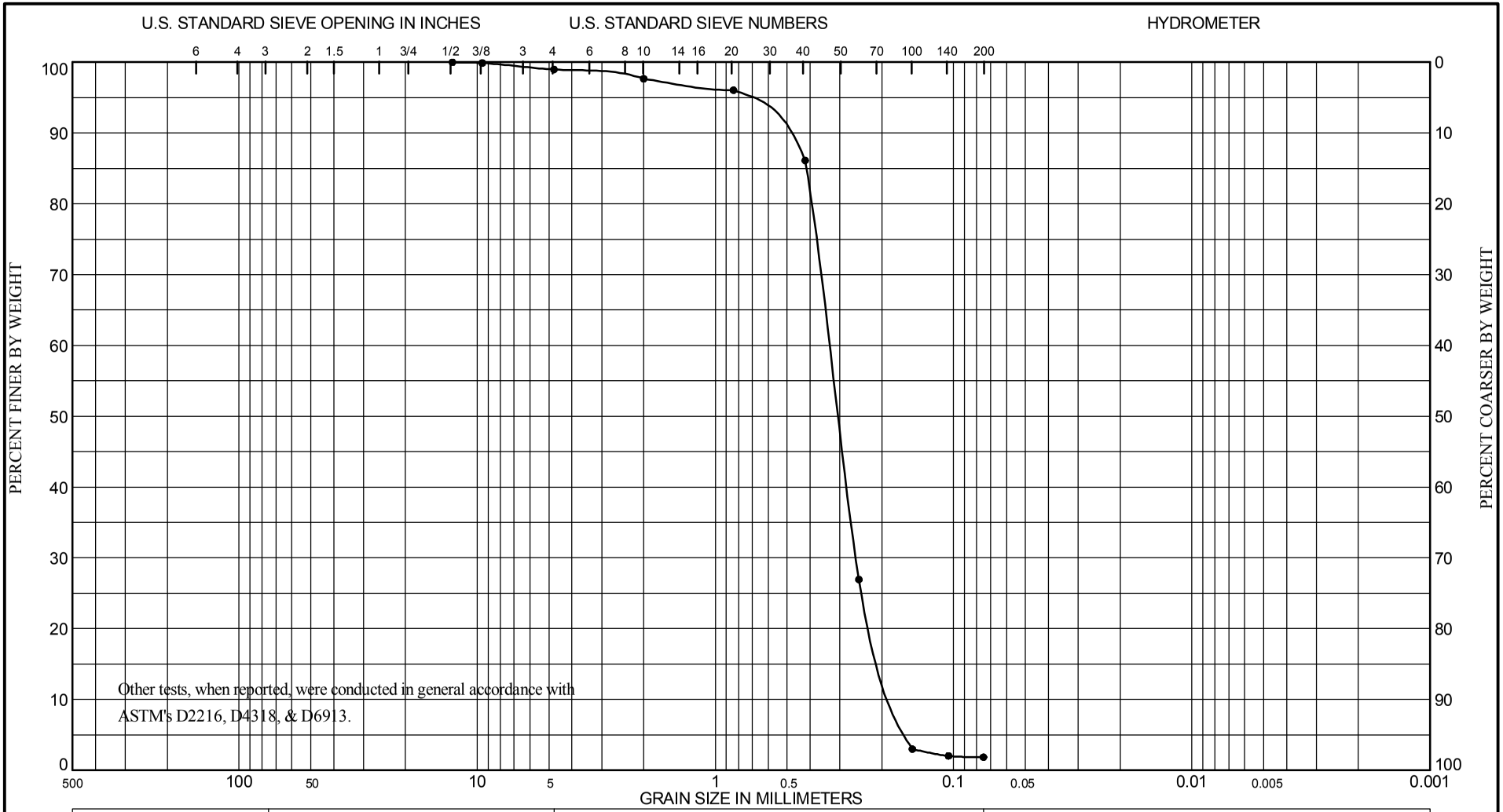
3. Seafloor elevation determined from 2014 USACE survey.

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15356° Long = -88.44260°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

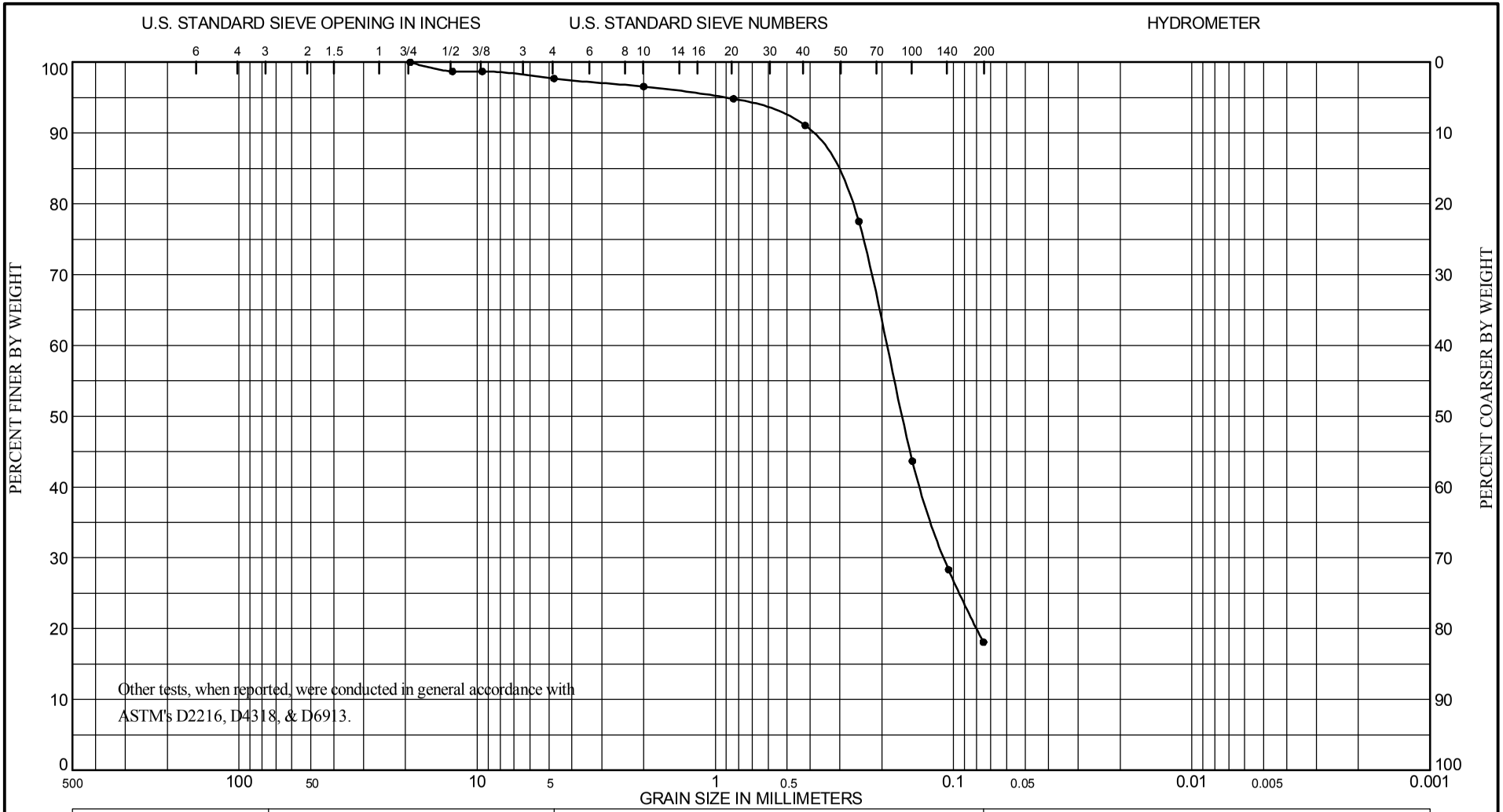
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 5.0	Gray, Poorly Graded Sand (SP), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4020
Hole No. BI-PBS-178-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	5.0 to 6.5	Greenish Gray, Silty Sand (SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4021
Hole No. BI-PBS-178-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-179-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-179-13 — LOCATION COORDINATES: E = 1,108,748 N = 236,671	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 1 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 47.4 Ft.
	15. DATE BORING — STARTED: 12-16-13 — COMPLETED: 12-16-13
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -46.3 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 13.6 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-46.3	0.0				
-50.1	3.8		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: 0.306 mm % Fines: 1.5
-50.5	4.2		SAND, silty, mostly fine-grained sand-sized quartz, medium gray (SM)	NS	
-55.5	9.2		CLAY, lean, sandy down to 5 ft., lt. to medium gray (CL) At El. -54.9 Ft., oyster shell		
-56.7	10.4		SAND, clayey, mostly fine-grained sand-sized quartz, medium gray and pale orange (SC)		
-59.6	13.3		CLAY, lean, sandy, lt. to medium gray (CL)		
-59.9	13.6		SAND, silty, mostly fine-grained sand-sized quartz, medium 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.

3. Seafloor elevation determined from 2014 USACE survey.

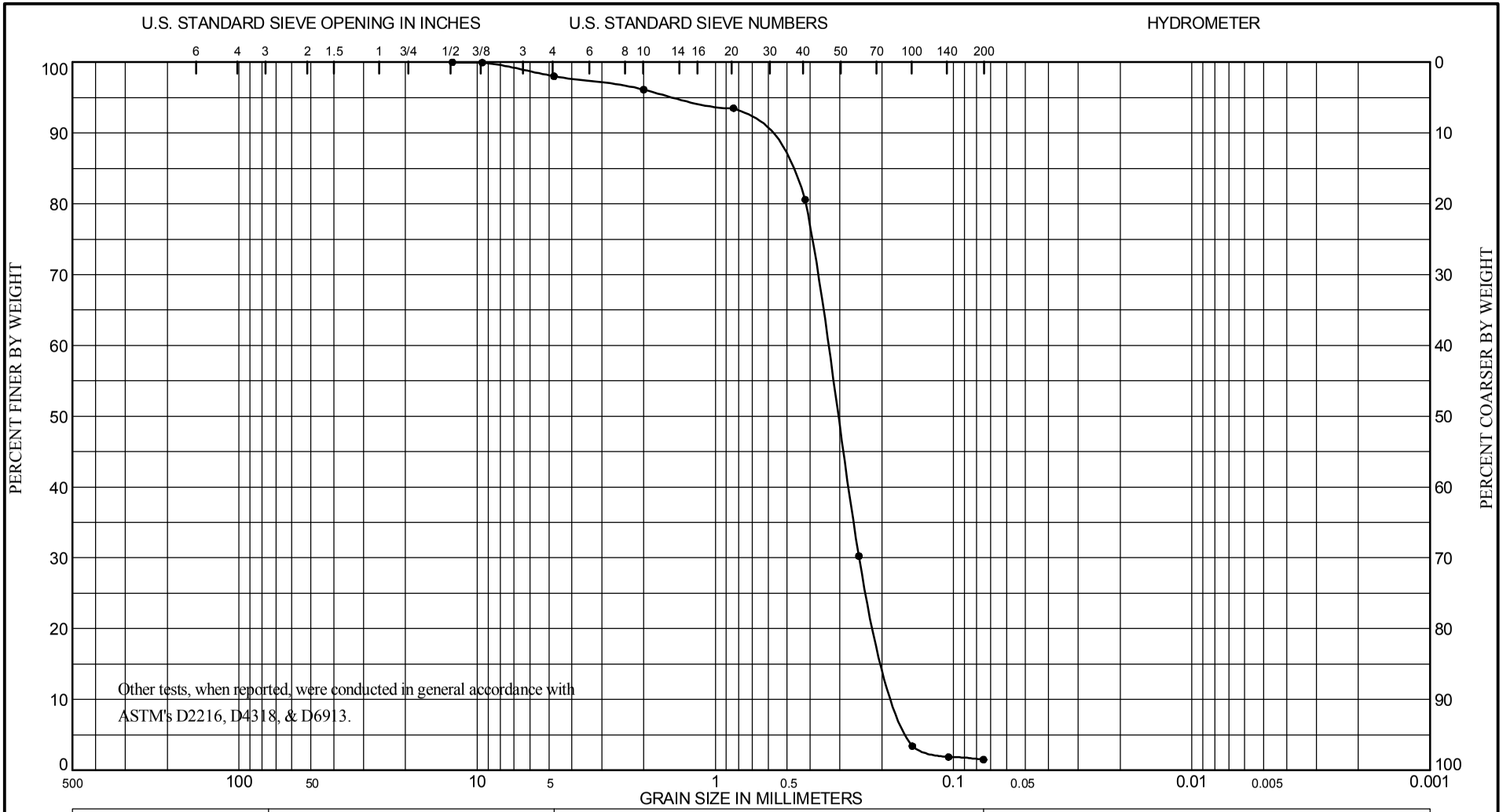
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15021° Long = -88.43943°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 4.2	Gray, Poorly Graded Sand (SP), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4022
Hole No. BI-PBS-179-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-180-13

DRILLING LOG	DIVISION South Atlantic	INSTALLATION Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.); HORIZONTAL: NAD83; VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-180-13; LOCATION COORDINATES: E = 1,107,904 N = 235,762	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore; ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM; CONTRACTOR FILE NO.	12. TOTAL SAMPLES: DISTURBED 1; UNDISTURBED (UD) 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED; DEG. FROM VERTICAL; BEARING	14. WATER DEPTH: 48.4 Ft.
	15. DATE BORING: STARTED 12-19-13; COMPLETED 12-19-13
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -48.9 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 14.8 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-48.9	0.0				
-49.3	0.4		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace shell fragments, lt. gray (SP)	A	Classification: SM Color: 2.5Y 5/1-gray D50: 0.19 mm % Fines: 14.1
-50.5	1.6		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, lt. to medium gray (SM)		
			CLAY, lean, sandy, trace wood at 12 and 14 ft., lt. and medium gray and pale orange (CL)	NS	
-63.7	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.

3. Seafloor elevation determined from 2013 USGS geophysical survey.

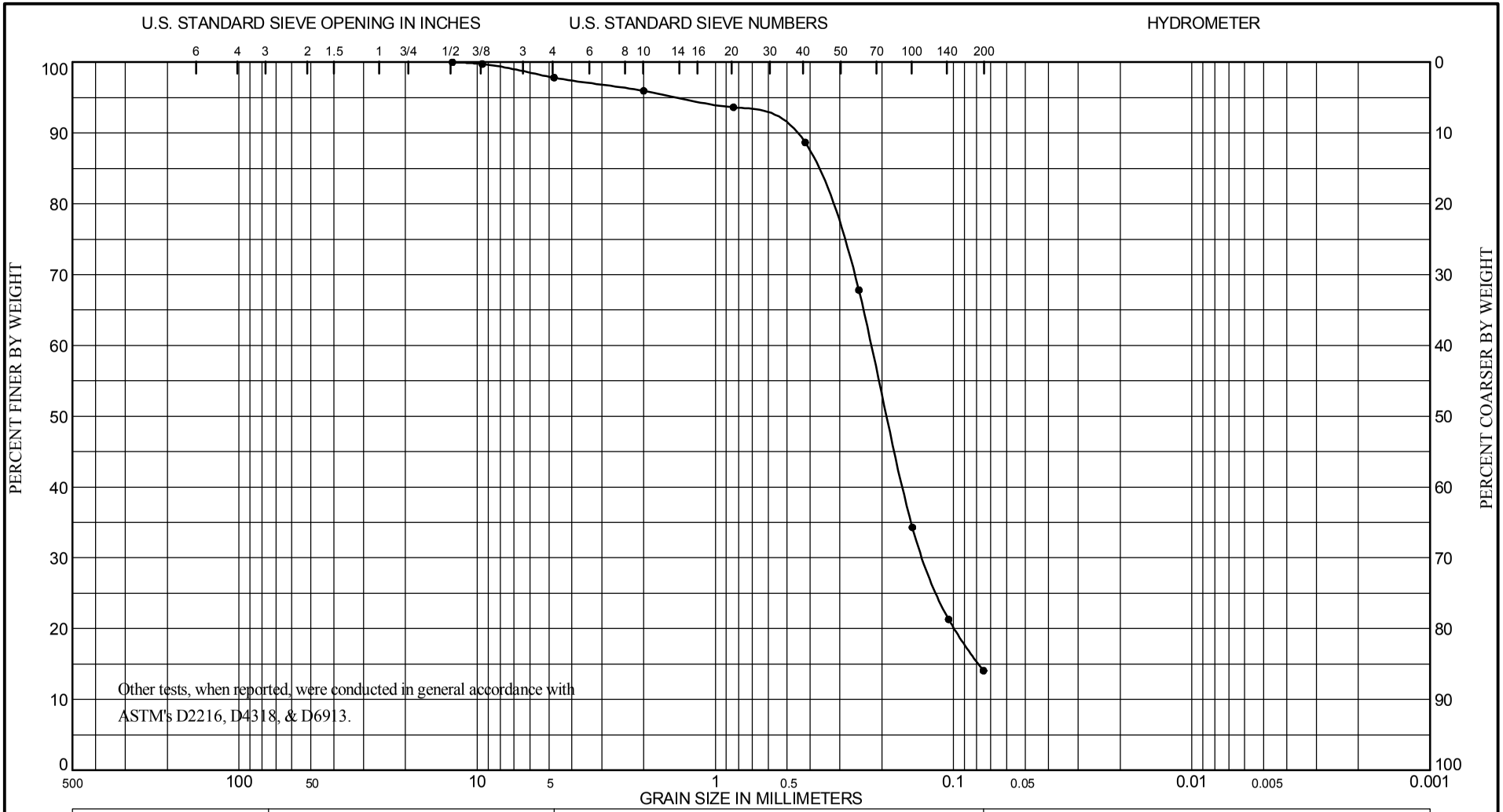
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14772° Long = -88.44211°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 1.6	Greenish Gray, Silty Sand (SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4049
Hole No. BI-PBS-180-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-181-13

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
	South Atlantic	Mobile District	

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS West
2. BORING DESIGNATION	BI-PBS-181-13
LOCATION COORDINATES	E = 1,109,544 N = 237,925
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	18.8 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED 1 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	49.4 Ft.
15. DATE BORING	STARTED 12-16-13 / COMPLETED 12-16-13
16. ELEVATION TOP OF BORING	-50.8 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-50.8	0.0				
-52.3	1.5		SAND, silty, mostly fine-grained sand-sized quartz, little shell fragments, medium gray (SM)	A	Classification: SP-SM Color: 2.5Y 5/1-gray D50: 0.259 mm % Fines: 11.3
-53.3	2.5		SAND, clayey, mostly fine-grained sand-sized quartz, trace shell fragments, medium gray (SC)	NS	
-56.6	5.8		CLAY, lean, trace wood and oyster shell, sandy, medium gray (CL)		
-57.6	6.8		SILT, inorganic-L, sandy, pale brown, medium gray (ML)		
-59.1	8.3		SAND, silty, mostly fine-grained sand-sized quartz, medium brown (SM)		
-59.8	9.0				
-60.8	10.0		SILT, inorganic-L, sandy, organic fines, pale brown, medium gray (ML)		
			SAND, silty, mostly fine-grained sand-sized quartz, medium dark gray (SM)		
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, medium gray (SP) At El. -61.3 Ft., fine grained woody material		
-69.6	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.

3. Seafloor elevation determined from 2013 USGS geophysical survey.

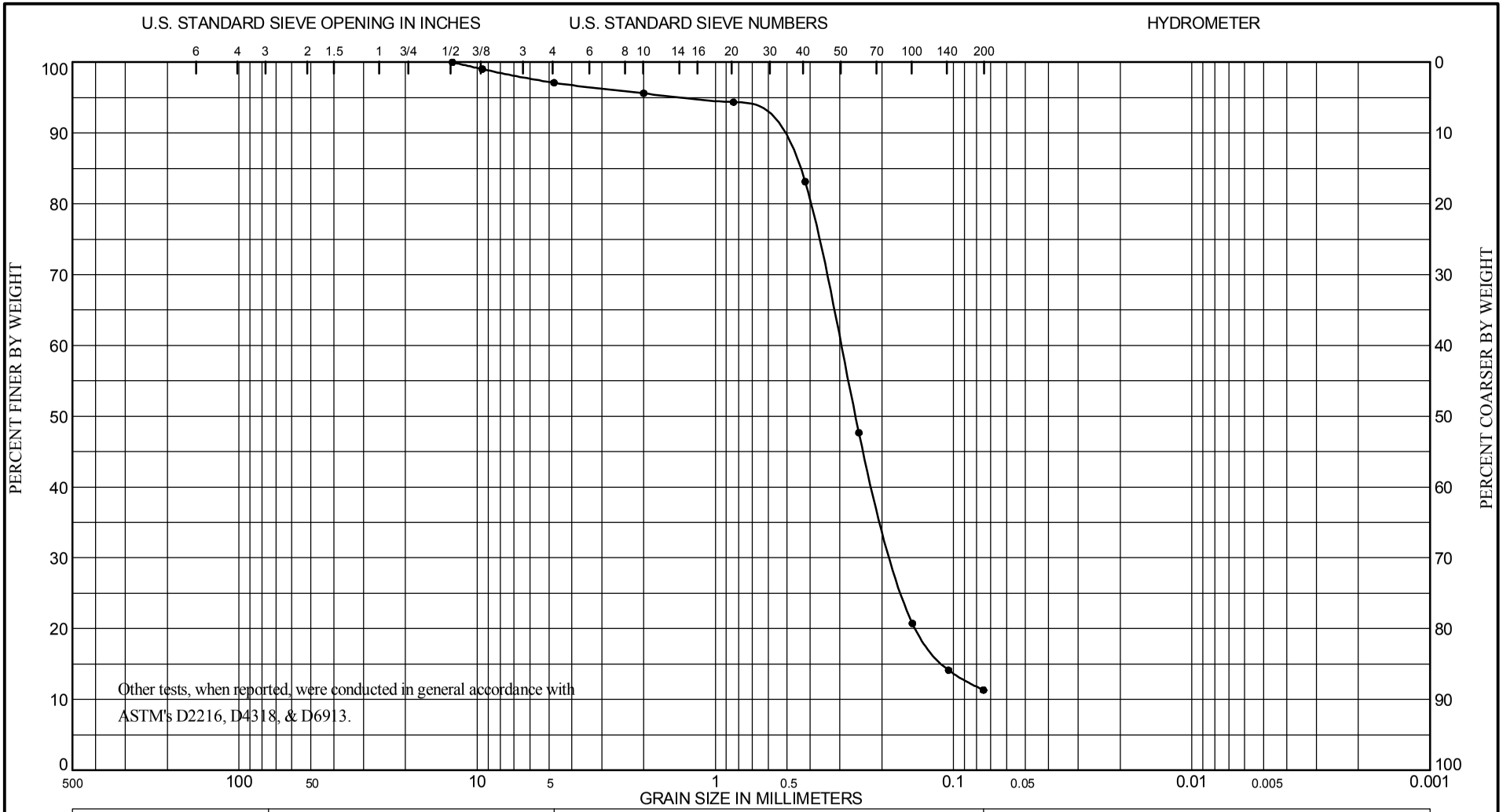
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15365° Long = -88.43690°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 1.5	Greenish Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4018
Hole No. BI-PBS-181-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-182-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-182-13 — LOCATION COORDINATES: E = 1,109,865 N = 235,536	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 2 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 49 Ft.
	15. DATE BORING — STARTED: 12-18-13 — COMPLETED: 12-18-13
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -48.4 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 18.7 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-48.4	0.0				
-51.3	2.9		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace shell fragments, lt. gray (SP)	A	Classification: SP Color: GLEY1 10Y 6/1- D50: 0.268 mm % Fines: 3.3
-52.9	4.5		CLAY, lean, sandy, medium gray (CL)	NS	
-53.4	5.0		SAND, poorly-graded with silt, mostly fine to medium-grained sand-sized quartz, little shell fragments, brownish gray (SP-SM)	B	Classification: SP Color: 2.5Y 6/1-gray D50: 0.305 mm % Fines: 4.8
-66.0	17.6		CLAY, lean, sandy, medium gray (CL)	NS	
-67.1	18.7		SAND, poorly-graded, mostly fine-grained sand-sized quartz, brownish 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.

3. Seafloor elevation determined from 2013 USGS geophysical survey.

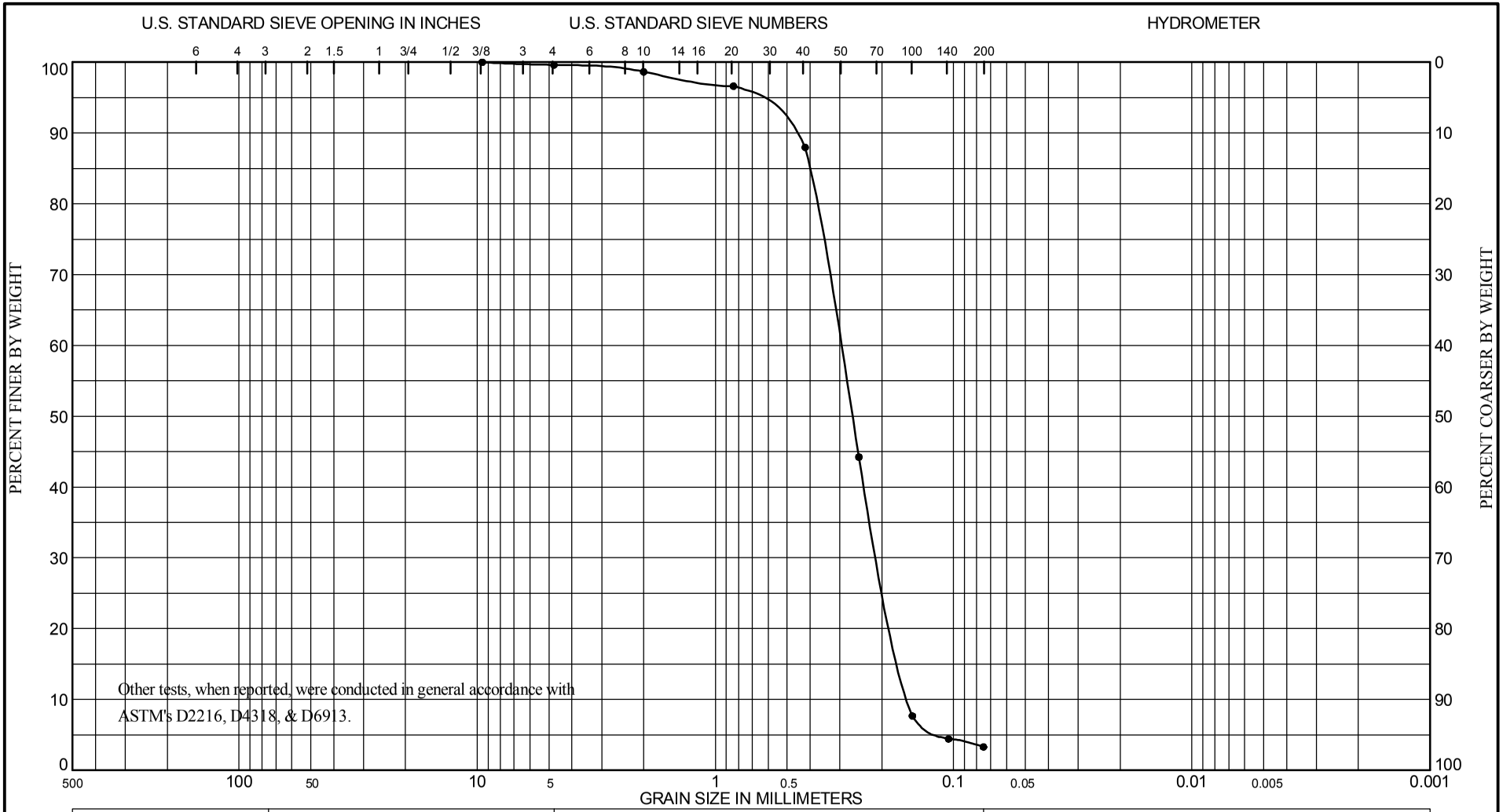
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14708° Long = -88.43591°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

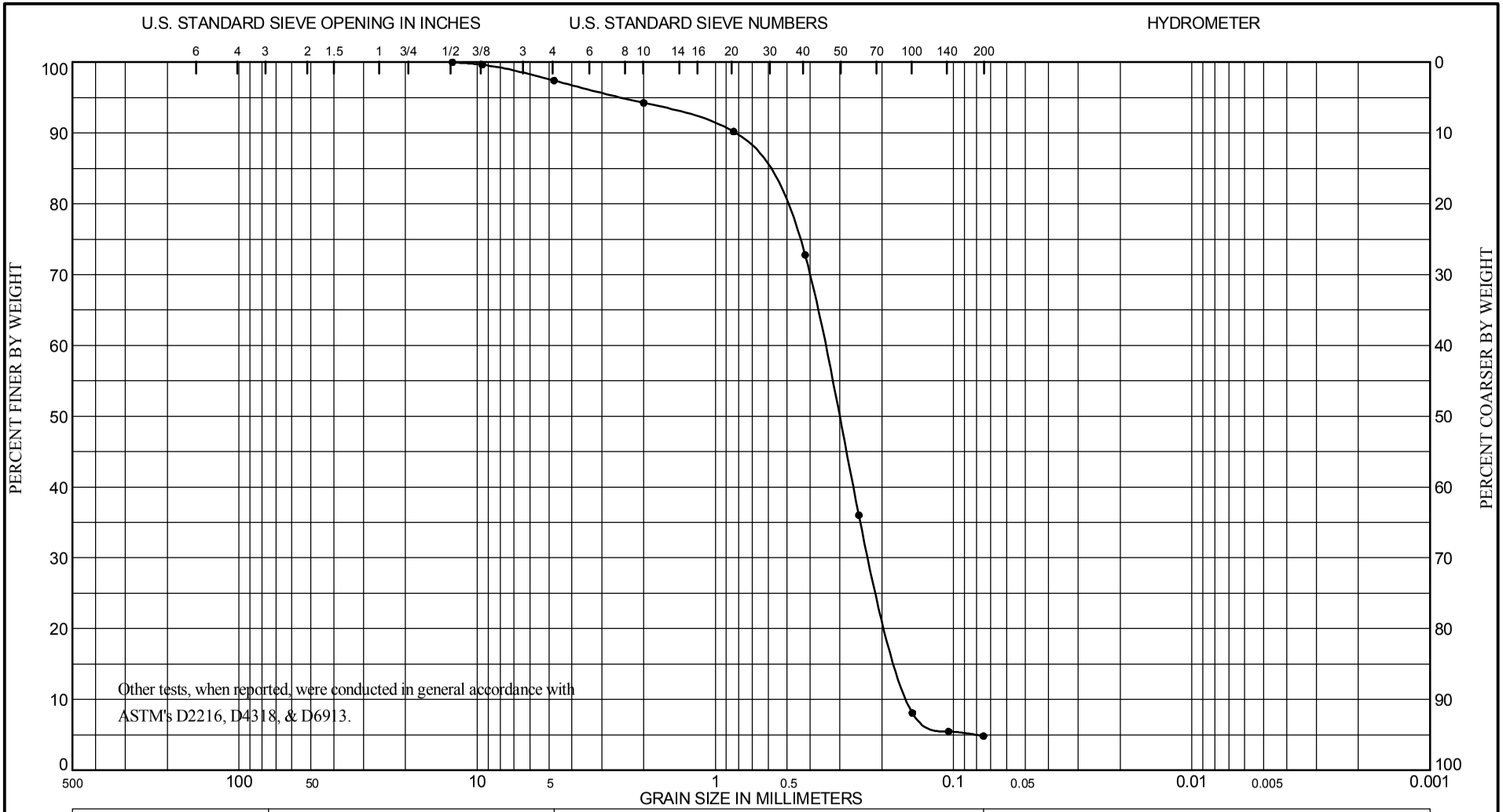
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 2.9	Greenish Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4047
Hole No. BI-PBS-182-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	4.5 to 5.0	Greenish Gray, Poorly Graded Sand (SP), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4048
Hole No. BI-PBS-182-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-184-13

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
	South Atlantic	Mobile District	

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS West
2. BORING DESIGNATION	BI-PBS-184-13
LOCATION COORDINATES	E = 1,101,352 N = 228,921
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	12.9 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED 2 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	52 Ft.
15. DATE BORING	STARTED 01-20-14 / COMPLETED 01-20-14
16. ELEVATION TOP OF BORING	-52.6 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-52.6	0.0				
-54.1	1.5		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few shell fragments, medium gray (SP-SM)	A	Classification: SP-SM Color: GLEY1 10Y 5/1- D50: 0.193 mm % Fines: 7.7
-55.6	3.0		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, medium gray (SM)	B	Classification: SM Color: 2.5Y 6/1-gray D50: 0.141 mm % Fines: 15.4
-62.3	9.7		CLAY, lean, sandy, medium to dark gray; brownish orange from 9 to 9.7 ft. (CL) At El. -57.5 Ft., 0.1 ft. shell lag zone At El. -59.3 Ft., 0.1 ft. shell lag zone At El. -60.4 Ft., 0.1 ft. shell lag zone At El. -62.0 Ft., 0.1 ft. shell lag zone	NS	
-65.4	12.8		CLAY, fat, orangish brown, lt. gray, pale green (CH)		
-65.5	12.9		CLAY, lean, very sandy, lt. 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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

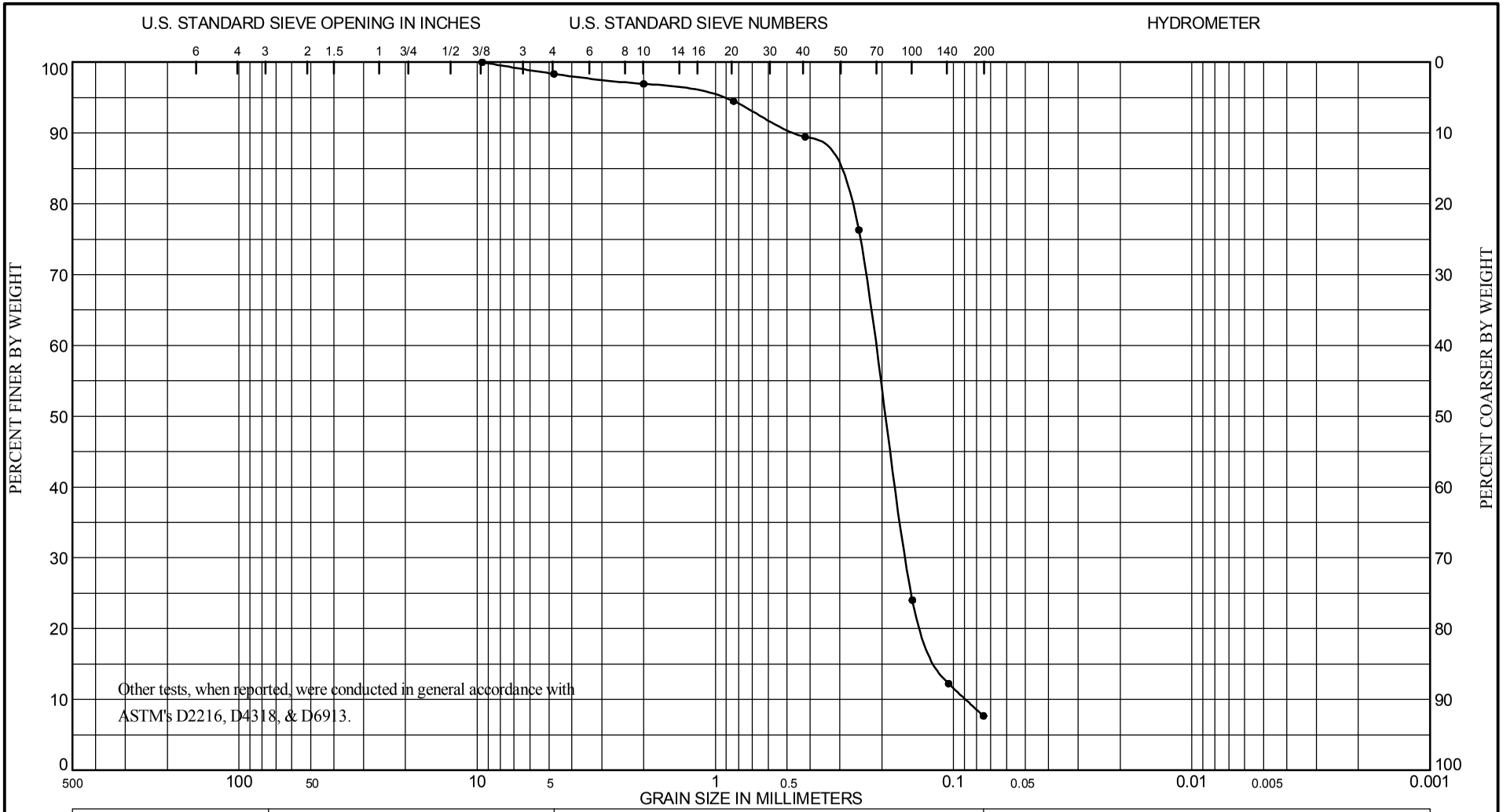
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.12897° Long = -88.46291°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

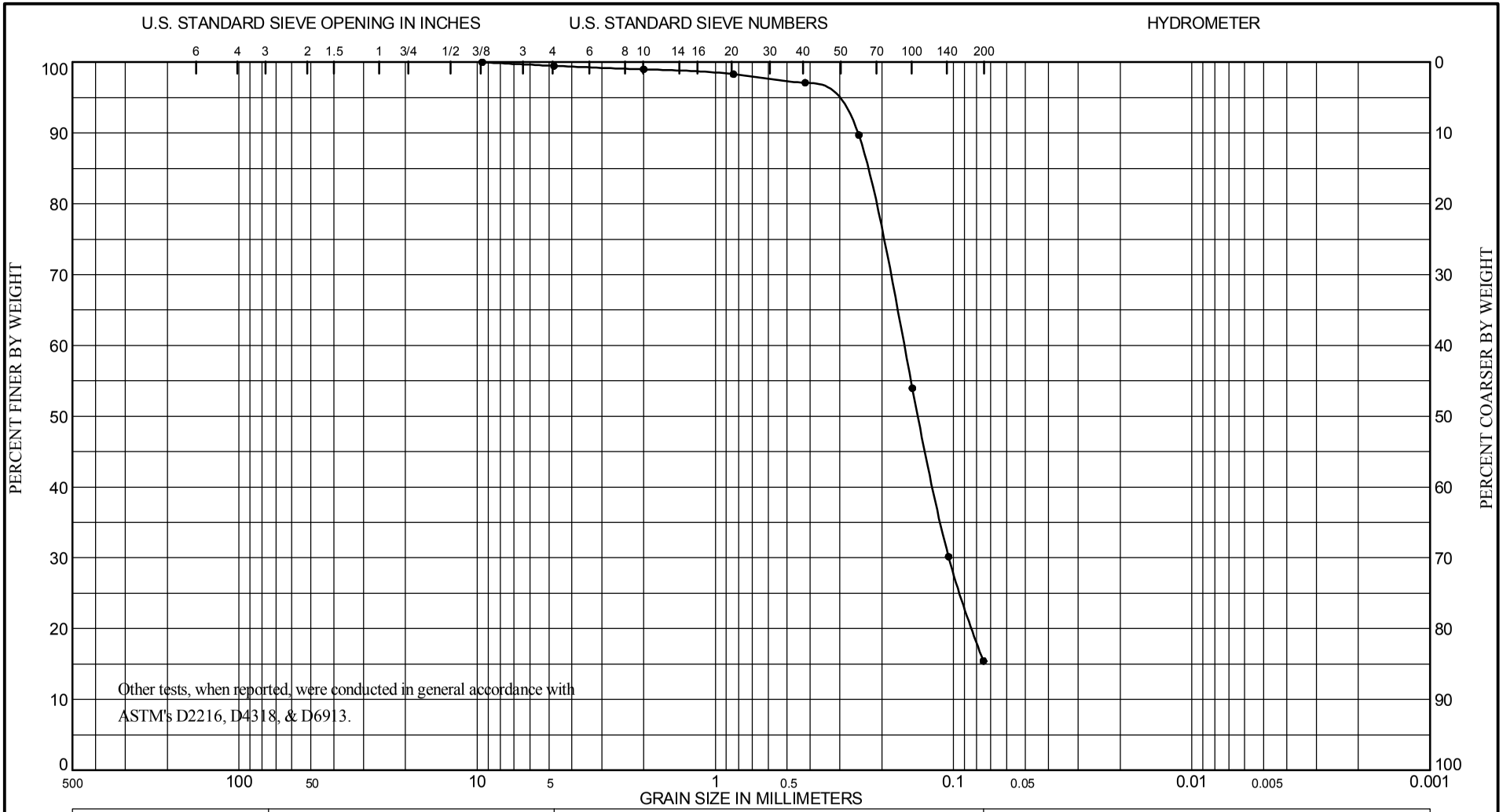
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 1.5	Very Dark Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4216
Hole No. BI-PBS-184-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	1.5 to 3.0	Very Dark Gray, Silty Sand (SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4217
Hole No. BI-PBS-184-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-185-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 2 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-185-13 — LOCATION COORDINATES: E = 1,110,875 N = 236,914	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 5 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 50 Ft.
	15. DATE BORING — STARTED: 12-16-13 — COMPLETED: 12-16-13
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -51.1 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: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-51.1	0.0				
-56.0	4.9		SAND, silty, mostly fine-grained sand-sized quartz, trace wood, trace thin clay lenses, medium to light gray (SM)	A	Classification: SM Color: 2.5Y 5/1-gray D50: 0.225 mm % Fines: 20.5
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, lt. gray (SP)	B	Classification: SP Color: 2.5Y 6/1-gray D50: 0.371 mm % Fines: 3.2
				C	Classification: SP Color: 2.5Y 6/1-gray D50: 0.347 mm % Fines: 2.7
-69.4	18.3		At El. -66.1 Ft., few shell fragments to 16 ft.	D	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.373 mm % Fines: 3.2
-71.1	20.0		SAND, poorly-graded with silt, mostly fine to medium-grained sand-sized quartz, trace shell fragments, medium to light gray (SP-SM)	E	Classification: SP-SM Color: 2.5Y 5/1-gray D50: 0.318 mm % Fines: 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.

3. Seafloor elevation determined from 2013

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15086° Long = -88.43270°

Boring Designation BI-PBS-185-13

DRILLING LOG (Cont. Sheet)	INSTALLATION Mobile District		SHEET 2 OF 2 SHEETS
PROJECT MsCIP Barrier Island Restoration	COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83	VERTICAL NAVD88
LOCATION COORDINATES X = 1,110,875 Y = 236,914	ELEVATION TOP OF BORING -51.1 Ft.		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
			USGS geophysical survey.		

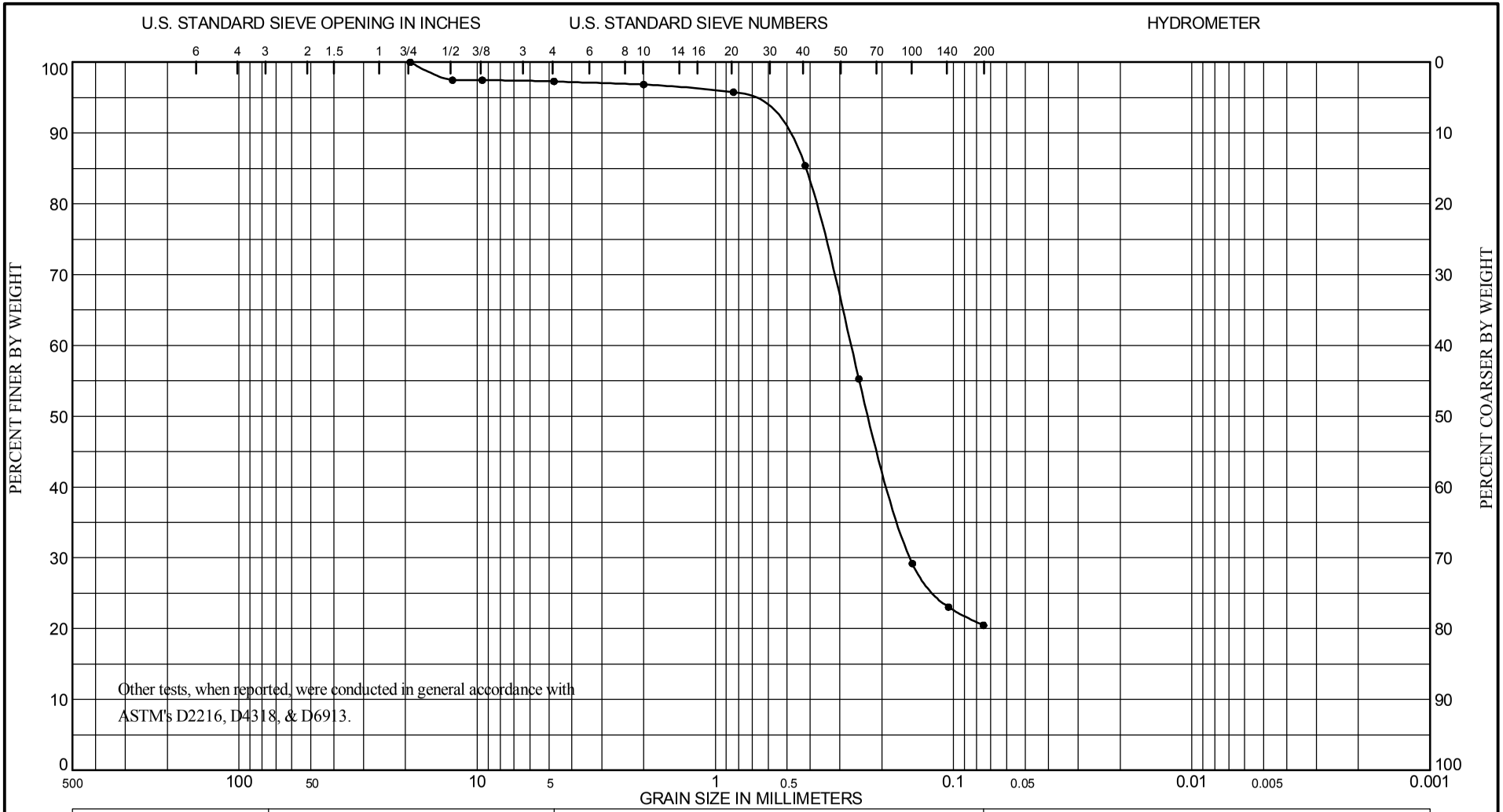
30
35
40
45
50
55
60

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15086° Long = -88.43270°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

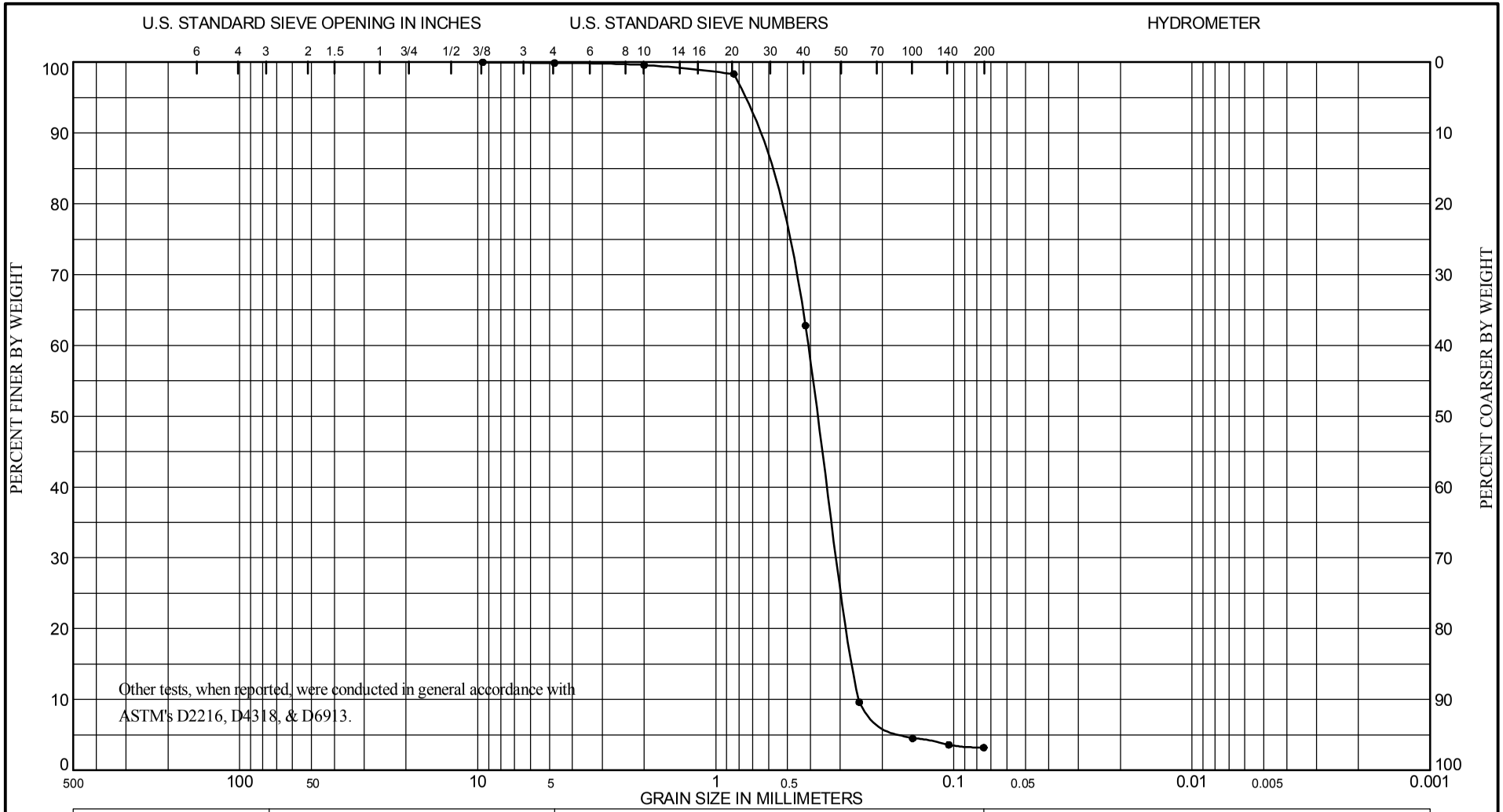
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 4.9	Greenish Gray, Silty Sand (SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4013
Hole No. BI-PBS-185-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

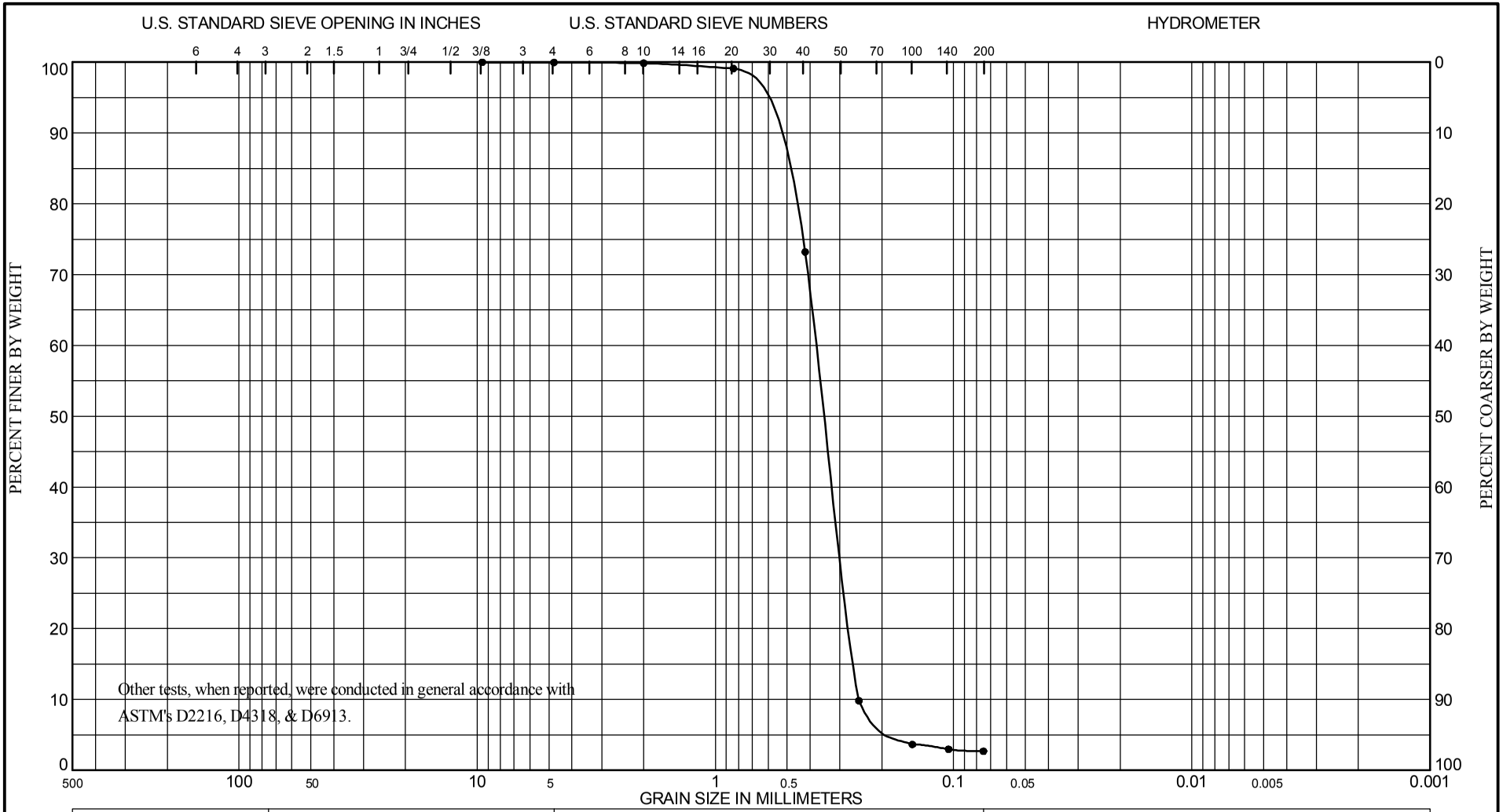
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	4.9 to 9.9	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4014
Hole No. BI-PBS-185-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

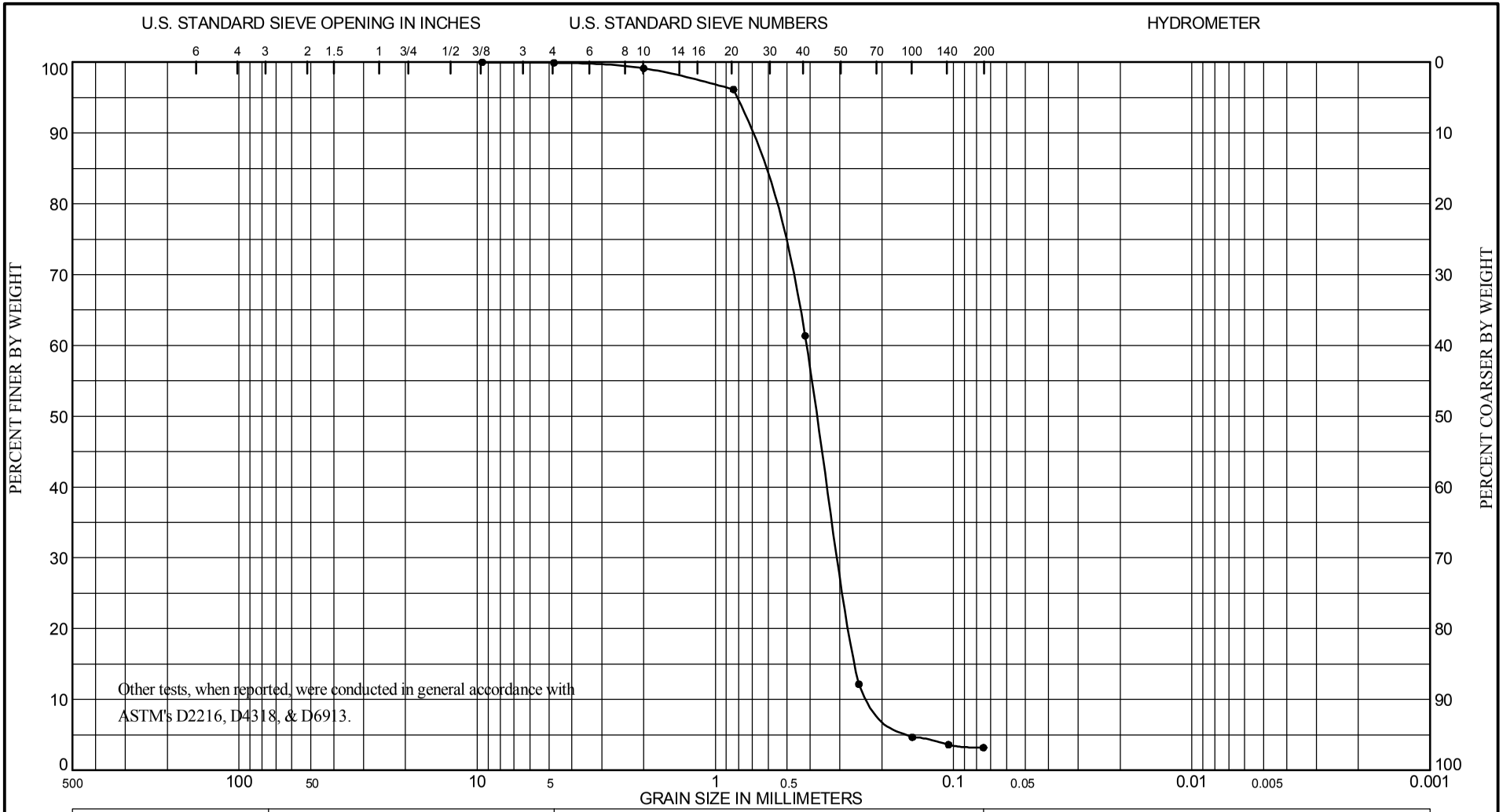
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	9.9 to 14.9	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4015
Hole No. BI-PBS-185-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

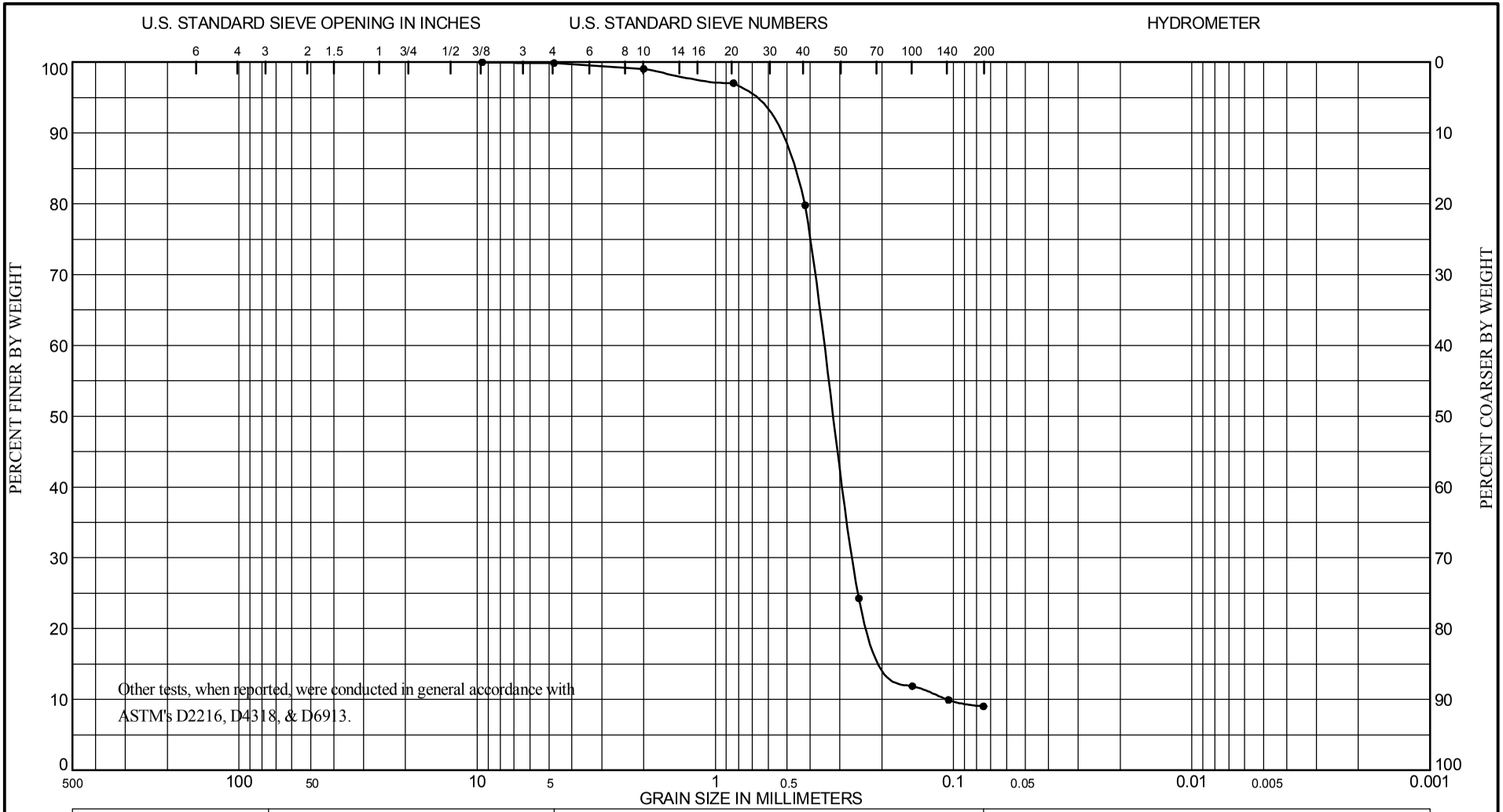
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
D	14.9 to 18.3	Light Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4016
Hole No. BI-PBS-185-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
E	18.3 to 20.0	Gray, Poorly Graded Silty Sand (SP-SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4017
Hole No. BI-PBS-185-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-186-13

DRILLING LOG	DIVISION South Atlantic	INSTALLATION Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS West
2. BORING DESIGNATION	BI-PBS-186-13
LOCATION COORDINATES	E = 1,108,889 N = 234,380
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	16.4 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED 1 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	48.4 Ft.
15. DATE BORING	STARTED 12-18-13 / COMPLETED 12-18-13
16. ELEVATION TOP OF BORING	-47.9 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-47.9	0.0				
-49.0	1.1		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little shell fragments, lt. gray (SP)	A	Classification: SP Color: GLEY1 10Y 6/1- D50: 0.253 mm % Fines: 2.3
-49.7	1.8		SAND, clayey, mostly fine to medium-grained sand-sized quartz, little shell fragments, lt. to medium gray (SC)		
-52.1	4.2		CLAY, lean, little shell fragments, lt. and medium gray (CL)		
-53.4	5.5		SAND, clayey, mostly fine-grained sand-sized quartz, lt. and medium gray (SC)		
			CLAY, lean, sandy, lt. and medium gray and pale orange (CL)	NS	
-63.8	15.9				
-64.3	16.4		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, medium gray (SP-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.

3. Seafloor elevation determined from 2013 USGS geophysical survey.

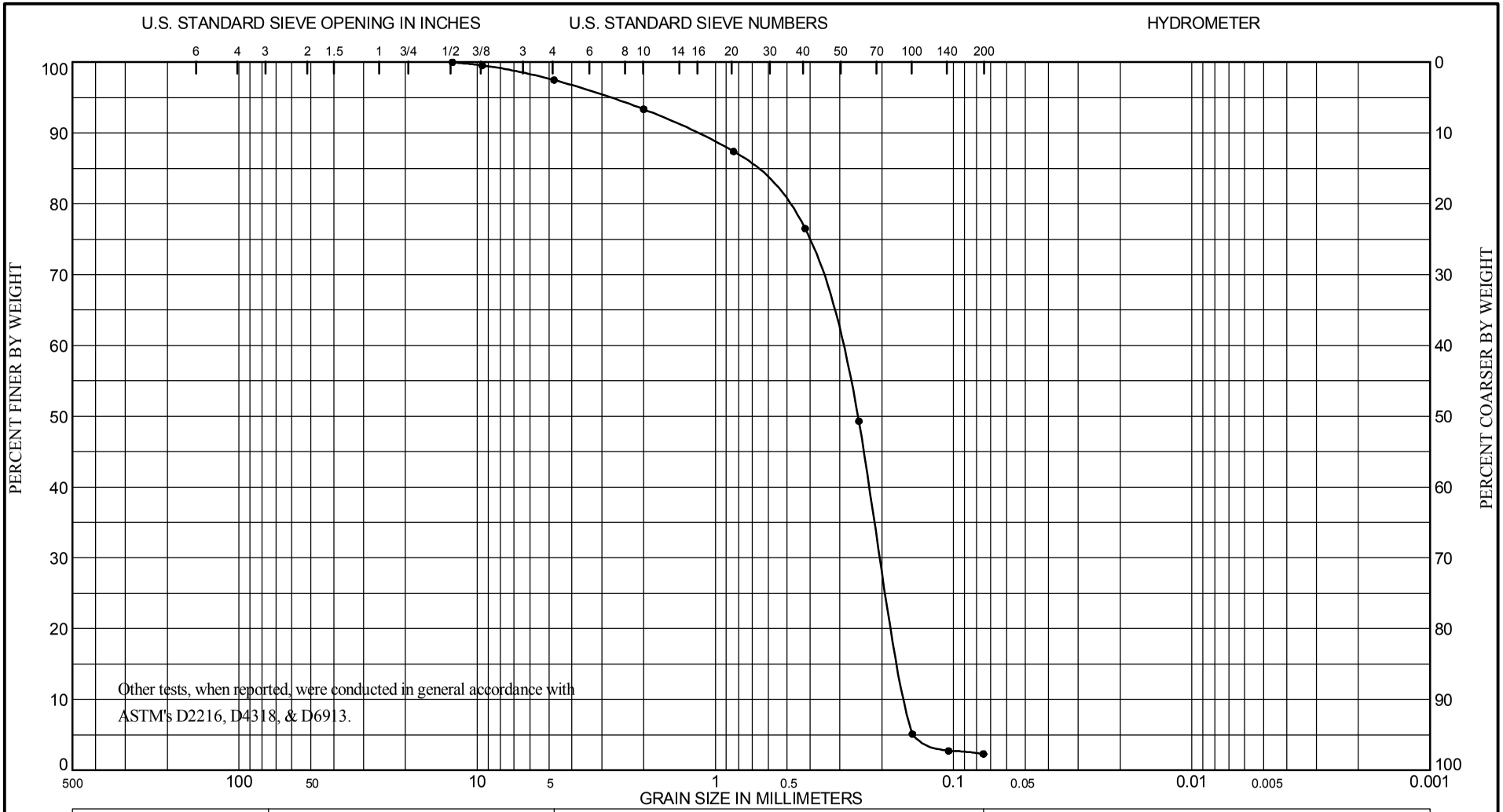
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14391° Long = -88.43901°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 1.1	Greenish Gray, Poorly Graded Sand (SP), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4046
Hole No. BI-PBS-186-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-188-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-188-13 — LOCATION COORDINATES: E = 1,102,609 N = 230,242	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 3 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 48.1 Ft.
	15. DATE BORING — STARTED: 01-18-14 — COMPLETED: 01-18-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -48.6 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 18.8 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Mike FitzHarris, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-48.6	0.0				
-49.6	1.0		SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace shell, gray (SP)	A	Classification: SP Color: GLEY1 10Y 6/1- D50: 0.2 mm % Fines: 4.1
-51.0	2.4		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, trace shell, gray (SP-SM)	B	Classification: SM Color: 2.5Y 5/1-gray D50: 0.163 mm % Fines: 13.7
-51.6	3.0		SAND, silty, mostly fine-grained sand-sized quartz, trace clay, gray (SM)		
-54.8	6.2		CLAY, lean, some fine-grained sand, trace shell, gray (CL)		
-59.0	10.4		CLAY, fat, trace sand, gray with brown, mottled (CH)	NS	
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, oxidation stains, lt. brown (SP)		
			At El. -61.2 Ft., mostly fine-grained sand-sized quartz, high quality sand, lt. gray to gray	C	Classification: SP Color: 2.5Y 7/2-light gray D50: 0.216 mm % Fines: 3.4
-67.4	18.8			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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

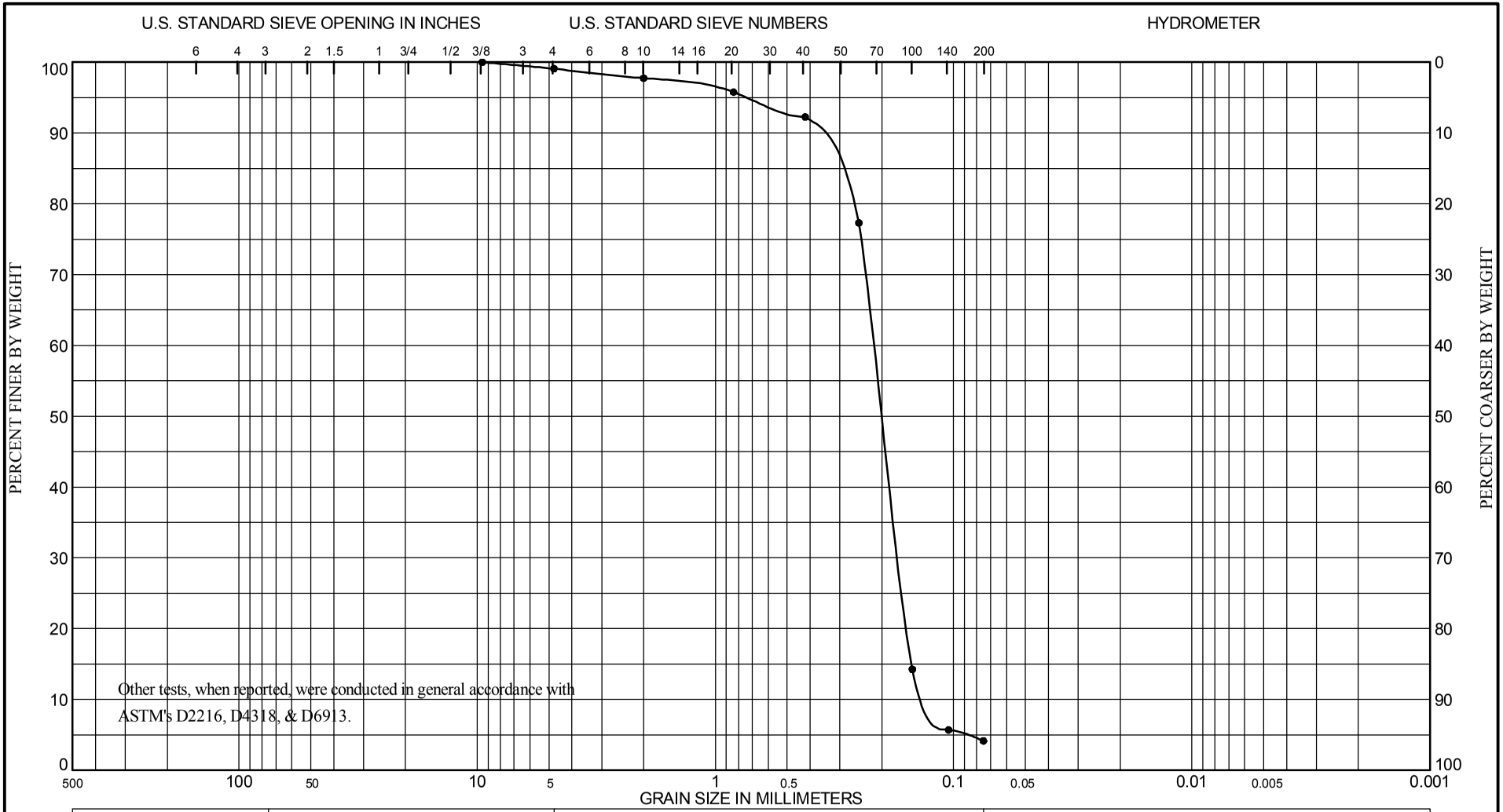
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.13259° Long = -88.45892°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

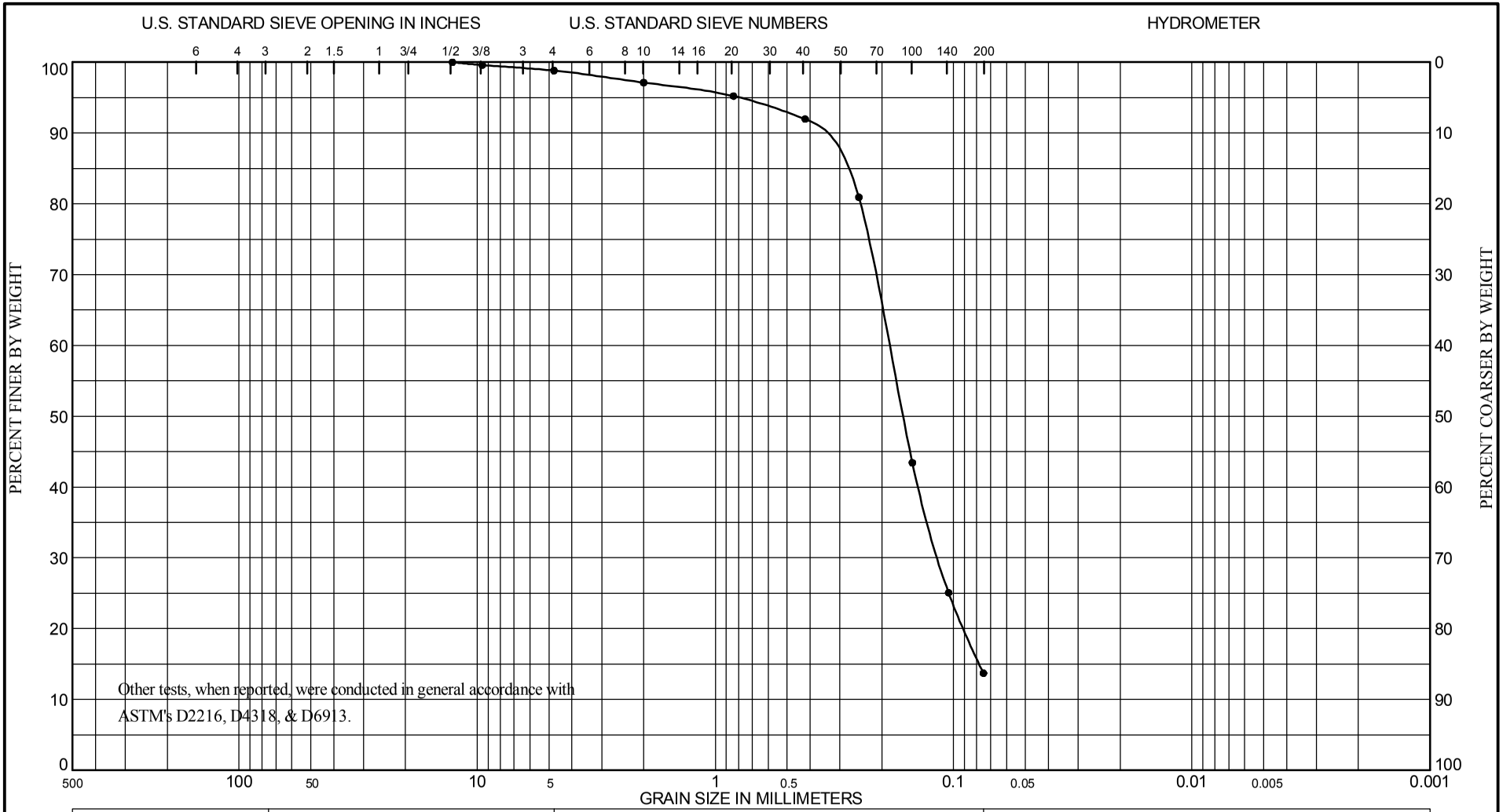
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 1.0	Greenish Black, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4209
Hole No. BI-PBS-188-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

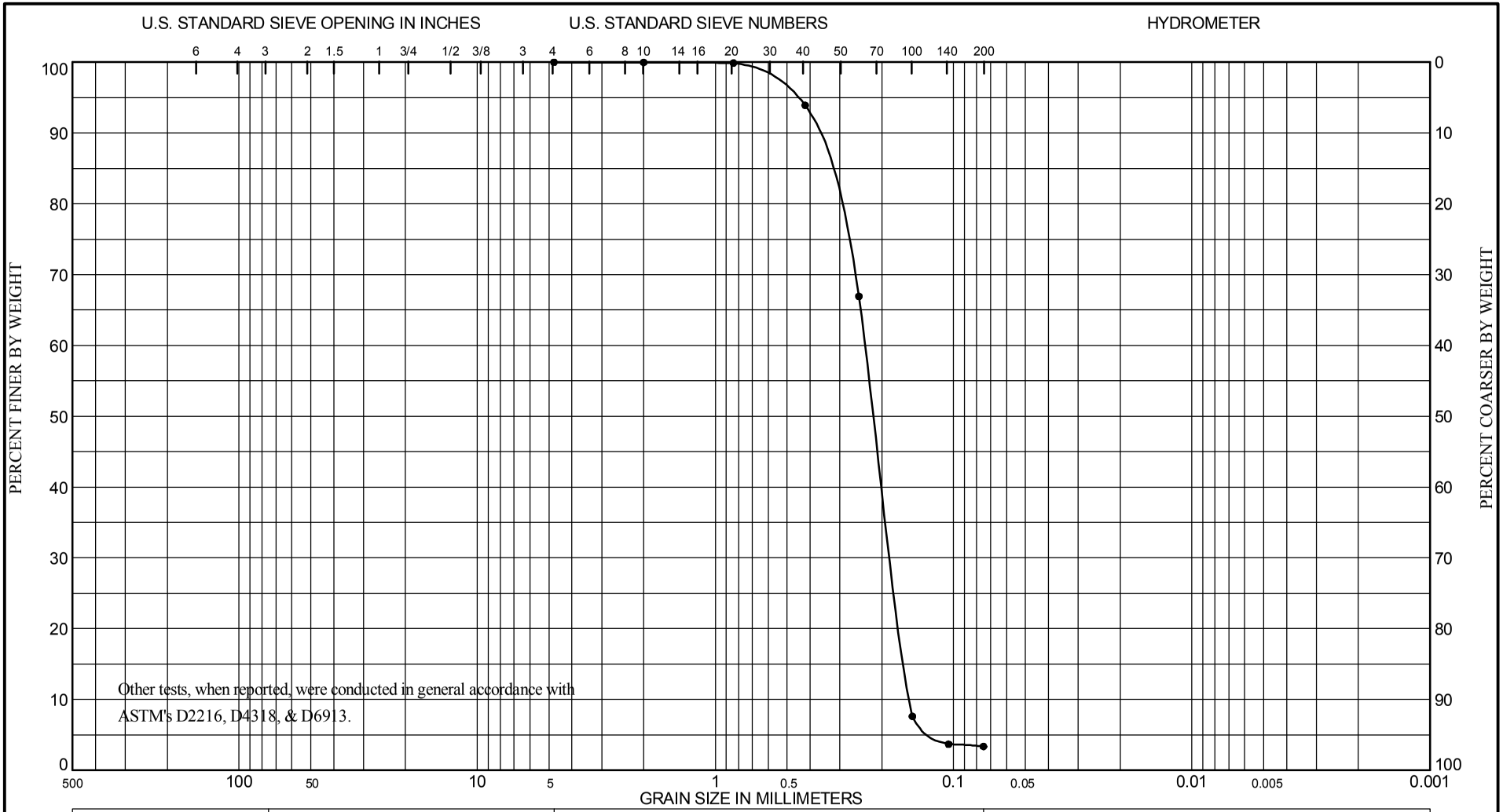
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	1.0 to 2.4	Greenish Black, Silty Sand (SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4210
Hole No. BI-PBS-188-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	11.7 to 15.0	Grayish Brown, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4211
Hole No. BI-PBS-188-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-190-13

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
	South Atlantic	Mobile District	

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS West
2. BORING DESIGNATION	BI-PBS-190-13
LOCATION COORDINATES	E = 1,113,398 N = 234,752
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	17.3 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED 5 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	51.3 Ft.
15. DATE BORING	STARTED 12-09-13 / COMPLETED 12-09-13
16. ELEVATION TOP OF BORING	-49.3 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-49.3	0.0				
-52.3	3.0		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, lt. gray (SP) At El. -50.7 Ft., fine-grained sand	A	Classification: SP Color: GLEY1 10Y 7/1- D50: 0.368 mm % Fines: 1.5
-52.5	3.2		SAND, silty, mostly fine-grained sand-sized quartz, lt. to medium gray (SM)	B	Classification: SM Color: 2.5Y 7/1-light gray D50: 0.238 mm % Fines: 13.8
-53.9	4.6		SAND, silty, clayey, mostly fine-grained sand-sized quartz, lt. to medium gray (SC-SM) SAND, poorly-graded, mostly fine-grained sand-sized quartz, lt. to medium gray (SP) At El. -54.6 Ft., trace silty sand and wood At El. -54.9 Ft., discontinue silty sand and wood	C	Classification: SP Color: 2.5Y 6/1-gray D50: 0.308 mm % Fines: 2.6
				D	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.314 mm % Fines: 2.9
-66.6	17.3			E	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.337 mm % Fines: 2.2

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.

3. Seafloor elevation determined from 12/17/2014 USACE survey.

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14489° Long = -88.42474°

Boring Designation BI-PBS-190-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT	Barrier Island Restoration Petit Bois Island South
2. BORING DESIGNATION	BI-PBS-190-13
LOCATION COORDINATES	E = 1,113,398 N = 234,752
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	17.3 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED: 5 UNDISTURBED (UD): 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	51.3 Ft.
15. DATE BORING	STARTED: 12-09-13 COMPLETED: 12-09-13
16. ELEVATION TOP OF BORING	-49.3 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-49.3	0.0				
-52.3	3.0		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, lt. gray (SP) At El. -50.7 Ft., fine-grained sand	A	Classification: SP Color: GLEY1 10Y 7/1- D50: 0.368 mm % Fines: 1.5
-52.5	3.2		SAND, silty, mostly fine-grained sand-sized quartz, lt. to medium gray (SM)	B	Classification: SM Color: 2.5Y 7/1-light gray D50: 0.238 mm % Fines: 13.8
-53.9	4.6		SAND, silty, clayey, mostly fine-grained sand-sized quartz, lt. to medium gray (SC-SM) SAND, poorly-graded, mostly fine-grained sand-sized quartz, lt. to medium gray (SP) At El. -54.6 Ft., trace silty sand and wood At El. -54.9 Ft., discontinue silty sand and wood	C	Classification: SP Color: 2.5Y 6/1-gray D50: 0.308 mm % Fines: 2.6
				D	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.314 mm % Fines: 2.9
-66.6	17.3			E	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.337 mm % Fines: 2.2

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.

3. Seafloor elevation determined from 12/17/2014 USACE survey.

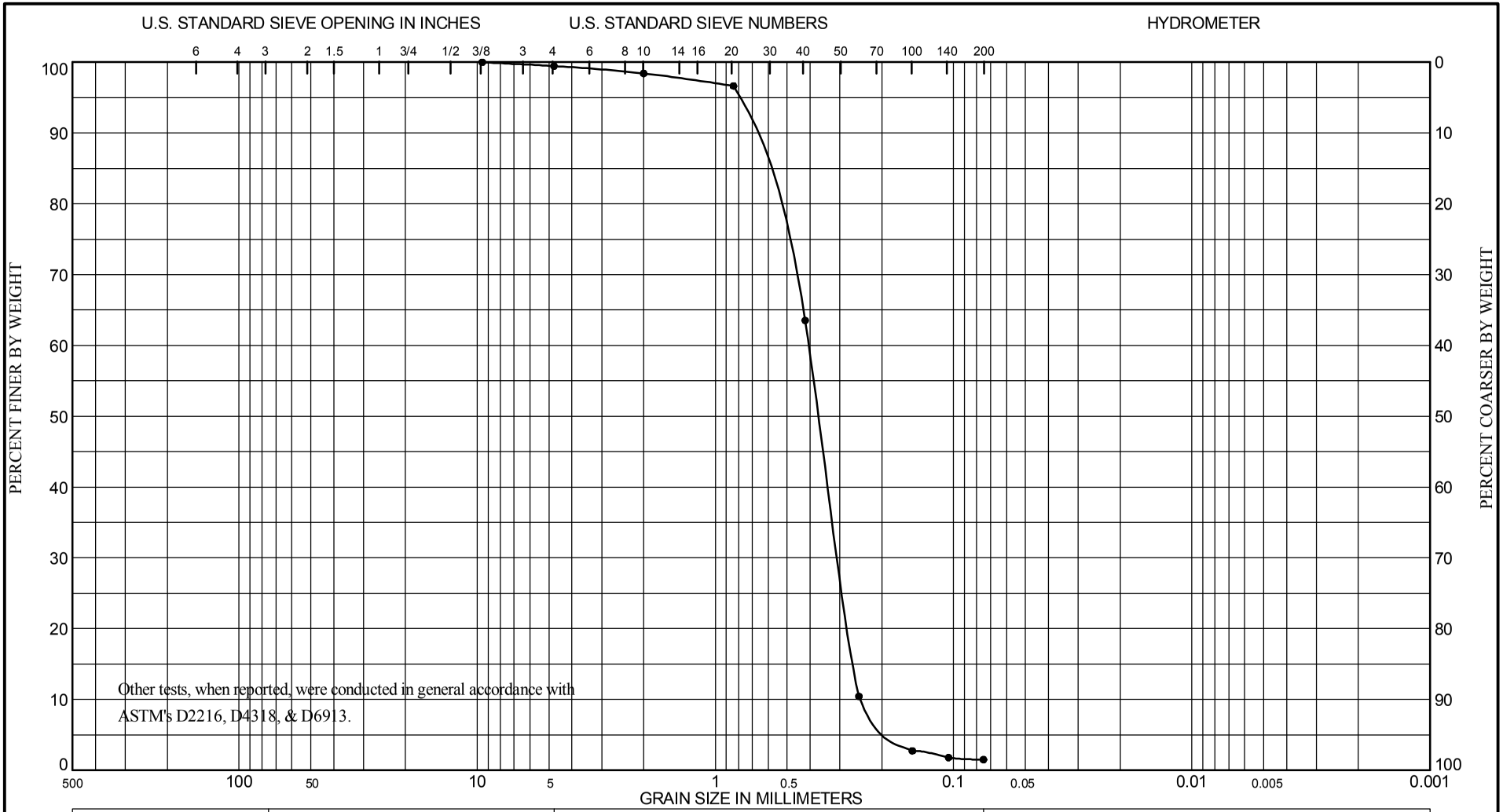
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14489° Long = -88.42474°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

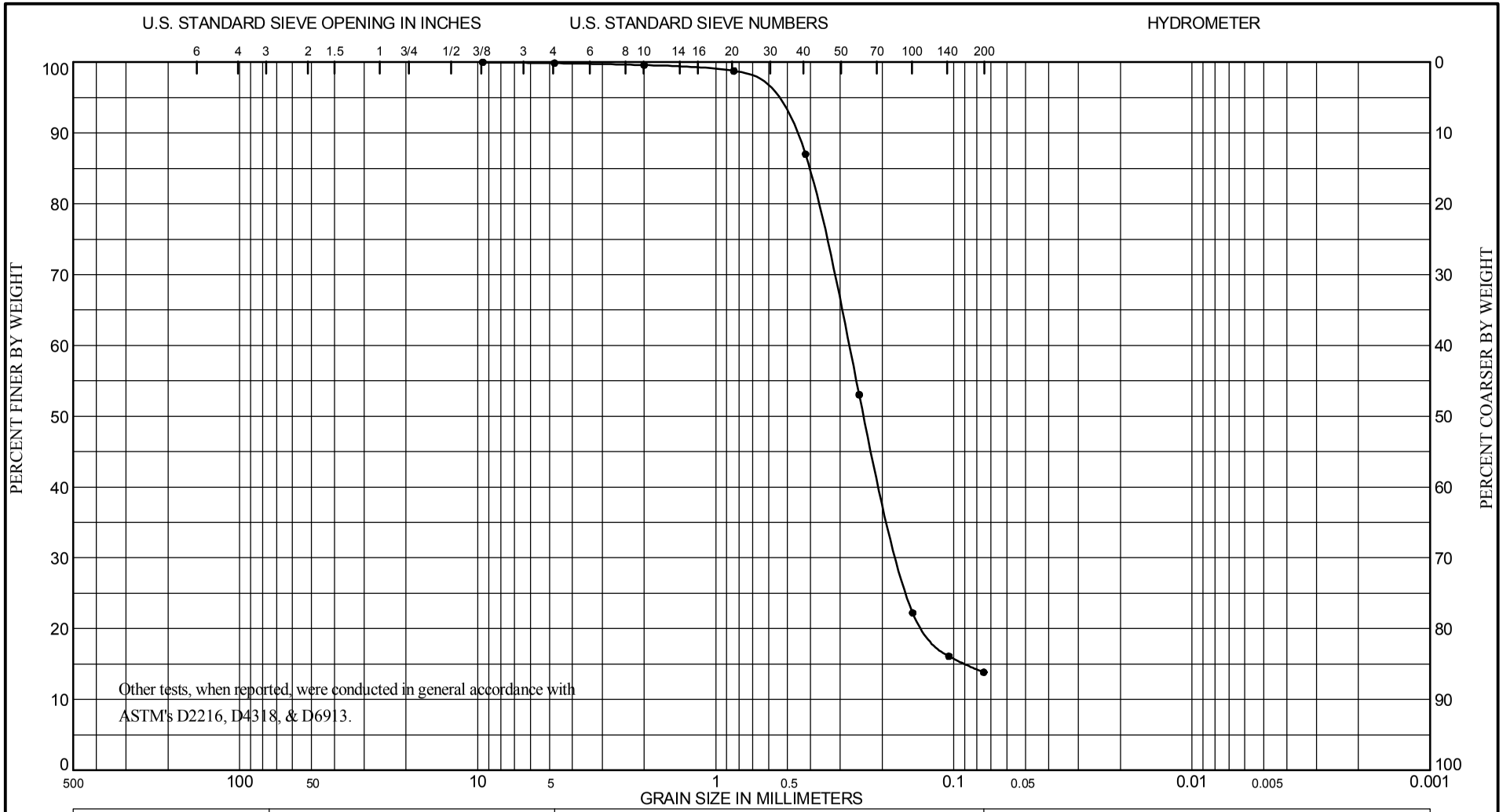
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 3.0	Light Greenish Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4000
Hole No. BI-PBS-190-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

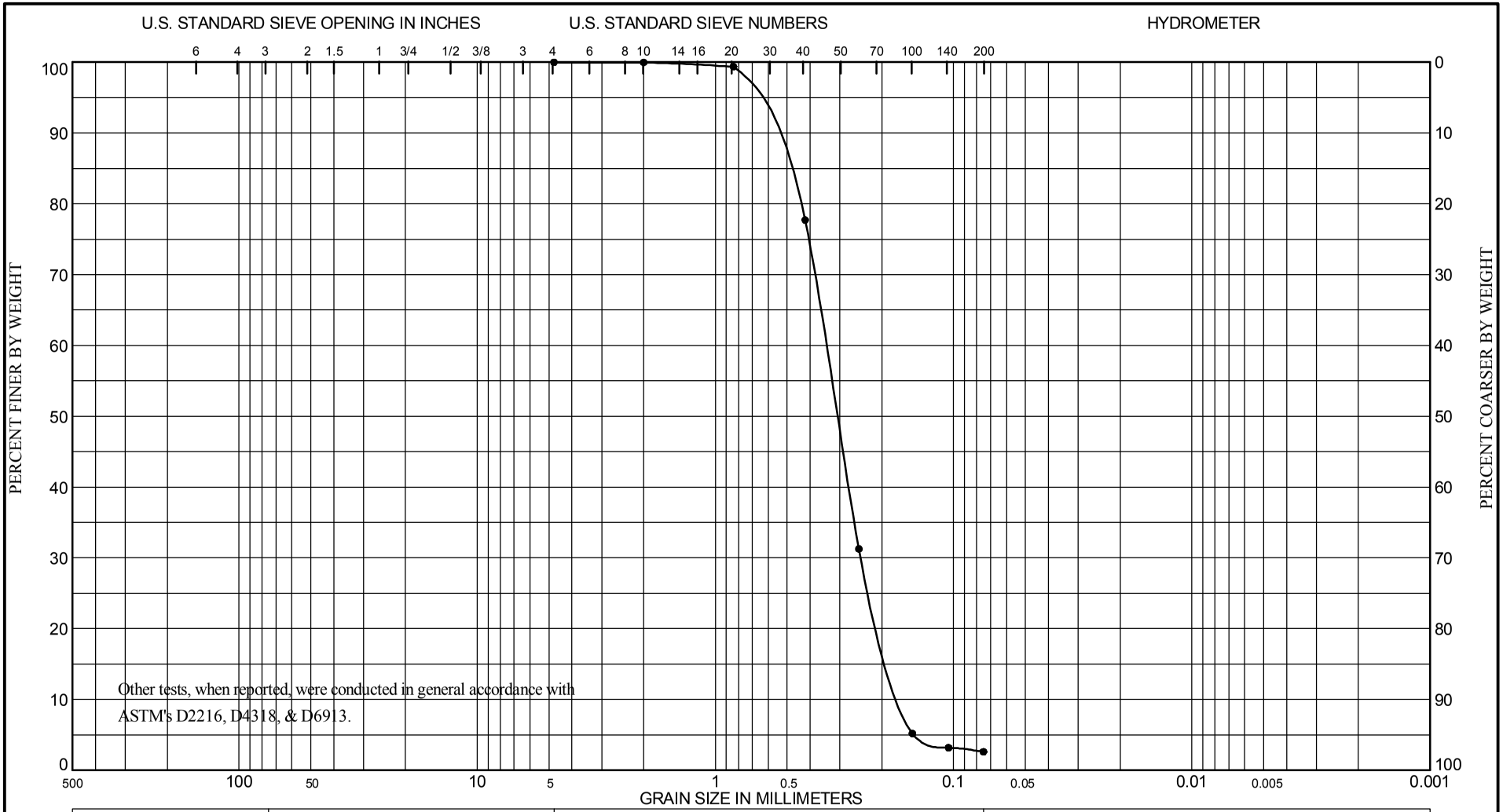
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	3.0 to 4.6	Light Greenish Gray, Silty Sand (SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4001
Hole No. BI-PBS-190-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

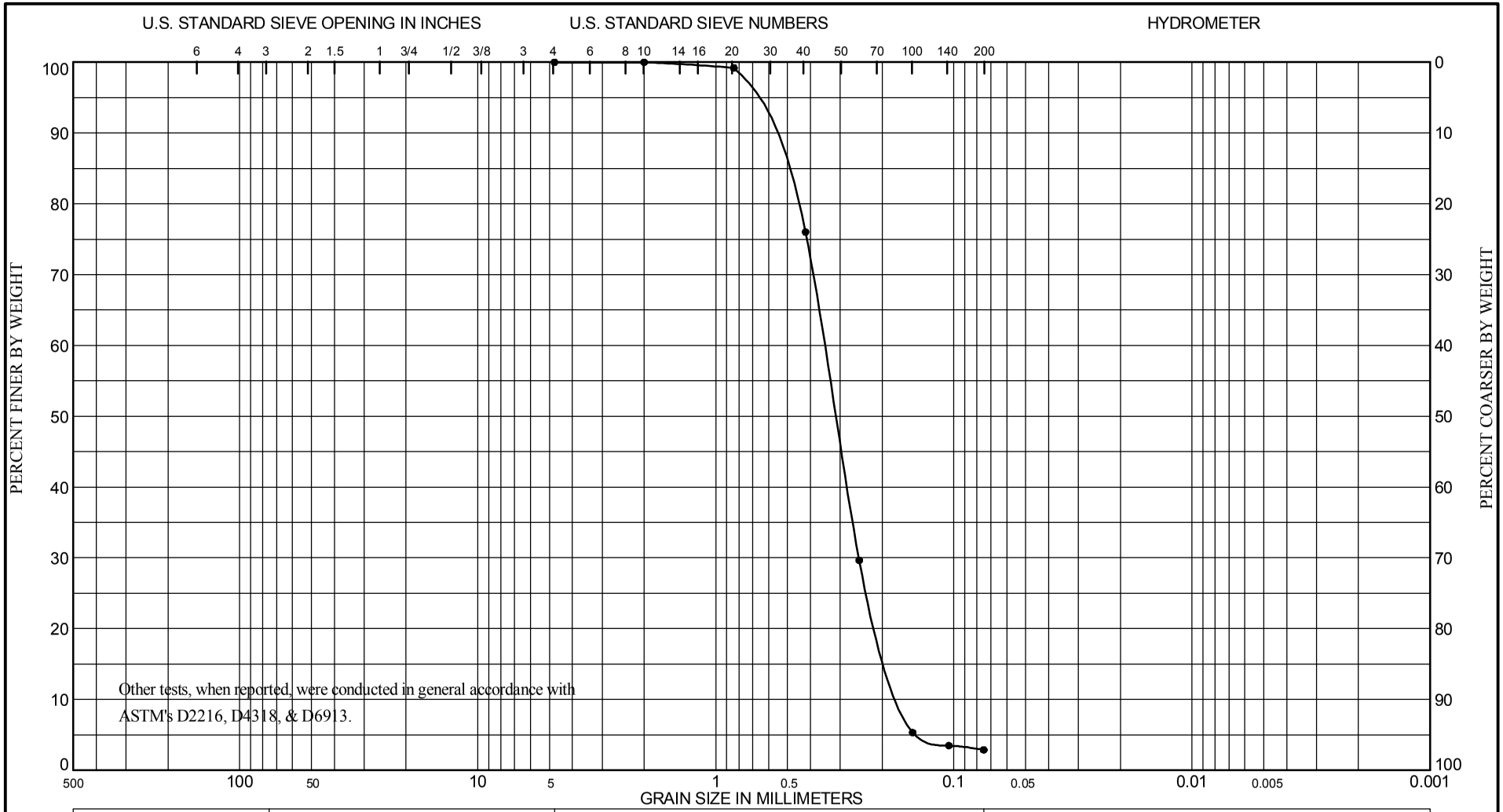
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	4.6 to 9.6	Greenish Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4002
Hole No. BI-PBS-190-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

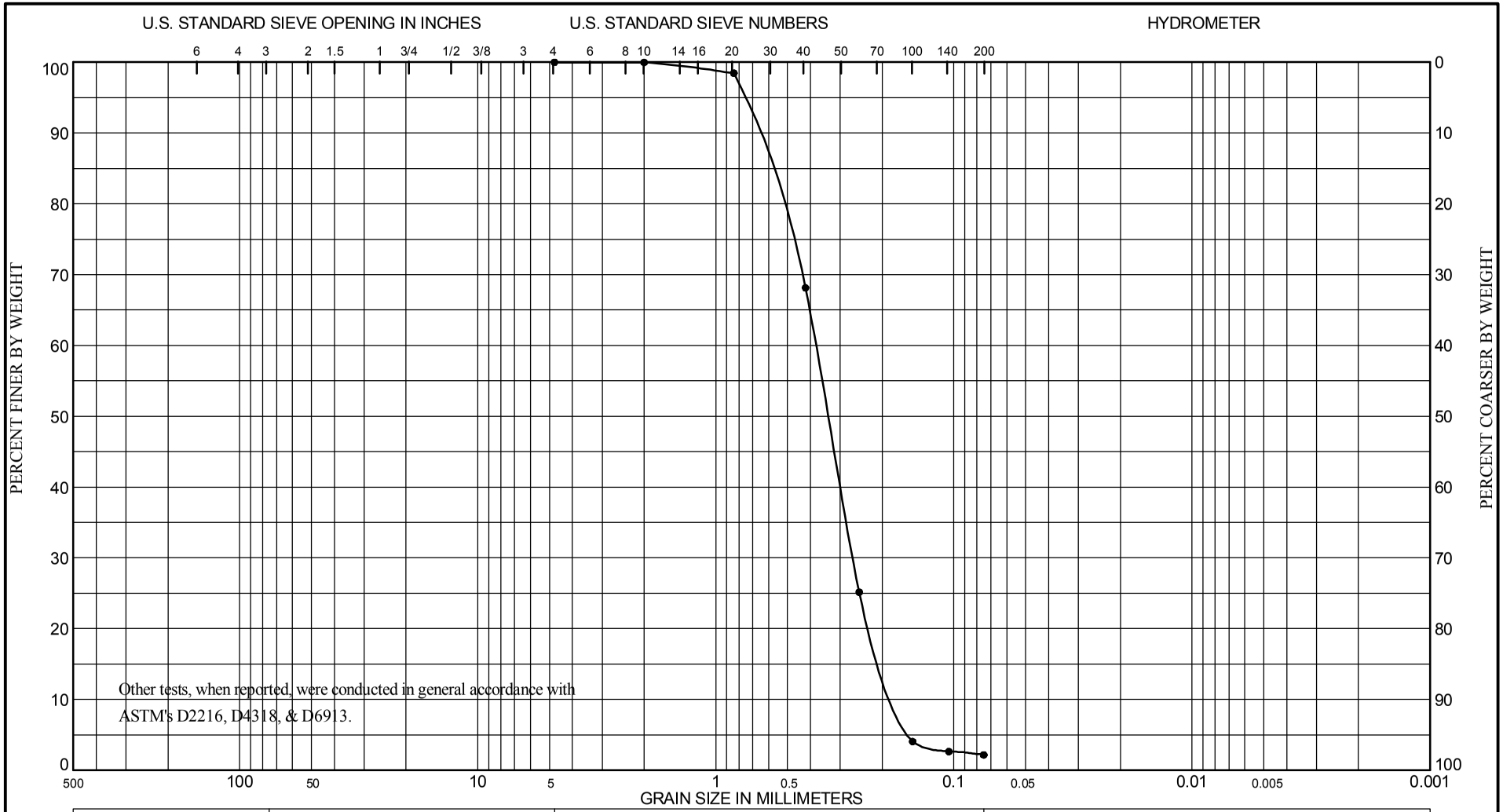
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
D	9.6 to 14.6	Light Greenish Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4003
Hole No. BI-PBS-190-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
E	14.6 to 17.3	Light Greenish Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4004
Hole No. BI-PBS-190-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-194-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-194-13 — LOCATION COORDINATES: E = 1,114,658 N = 234,222	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 4 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 51 Ft.
	15. DATE BORING — STARTED: 12-09-13 — COMPLETED: 12-09-13
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -49.8 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 14.4 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-49.8	0.0				
-51.3	1.5		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little shell, lt. gray (SP)	A	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.427 mm % Fines: 1.1
-55.0	5.2		SAND, silty, mostly fine-grained sand-sized quartz, medium gray (SM)	B	Classification: SM Color: 2.5Y 5/1-gray D50: 0.233 mm % Fines: 13.2
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, medium gray (SP)	C	Classification: SP Color: 2.5Y 6/1-gray D50: 0.335 mm % Fines: 3.9
-64.2	14.4			D	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.326 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.

3. Seafloor elevation determined from 12/17/2014 USACE survey.

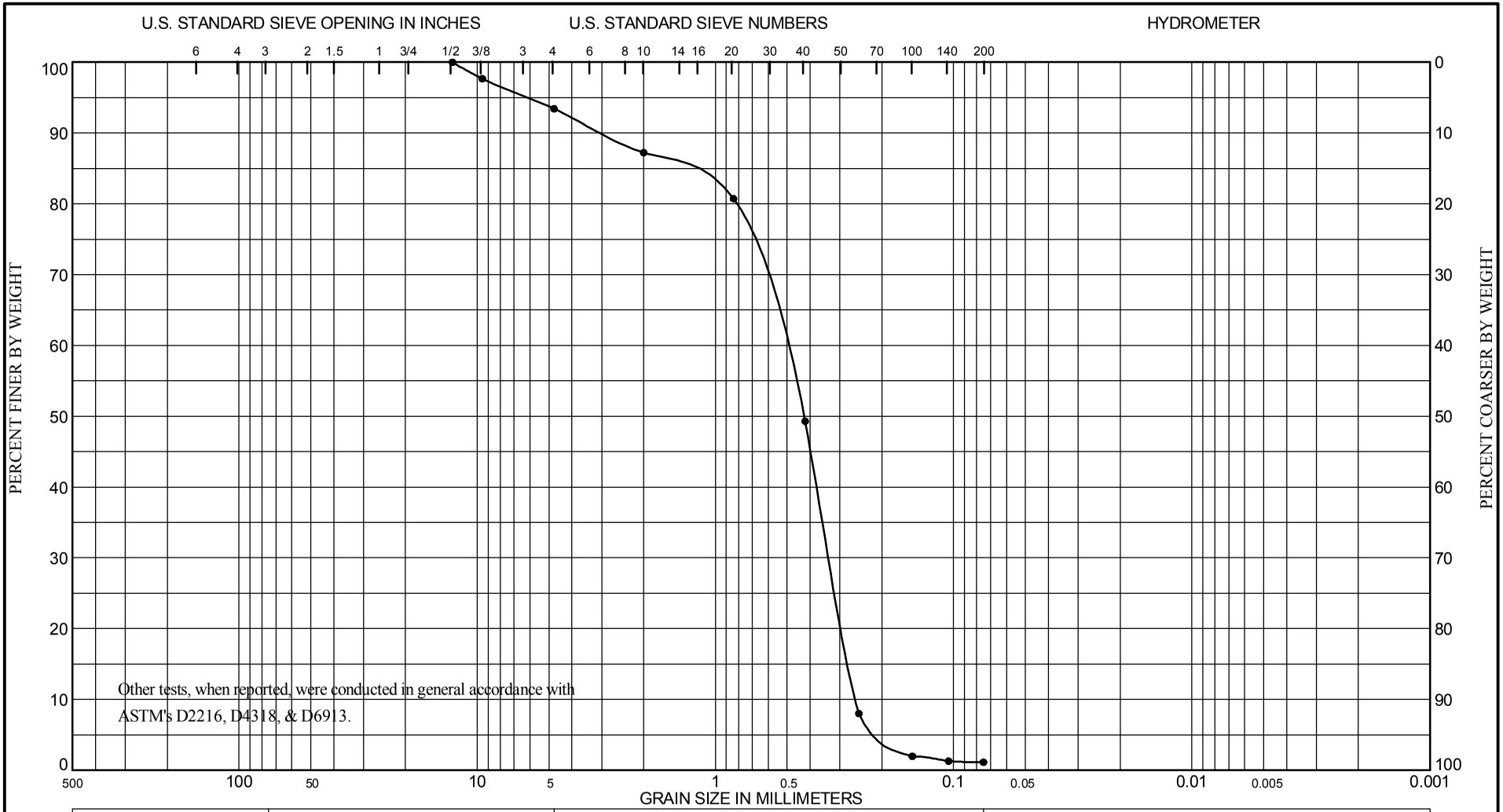
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14342° Long = -88.42076°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

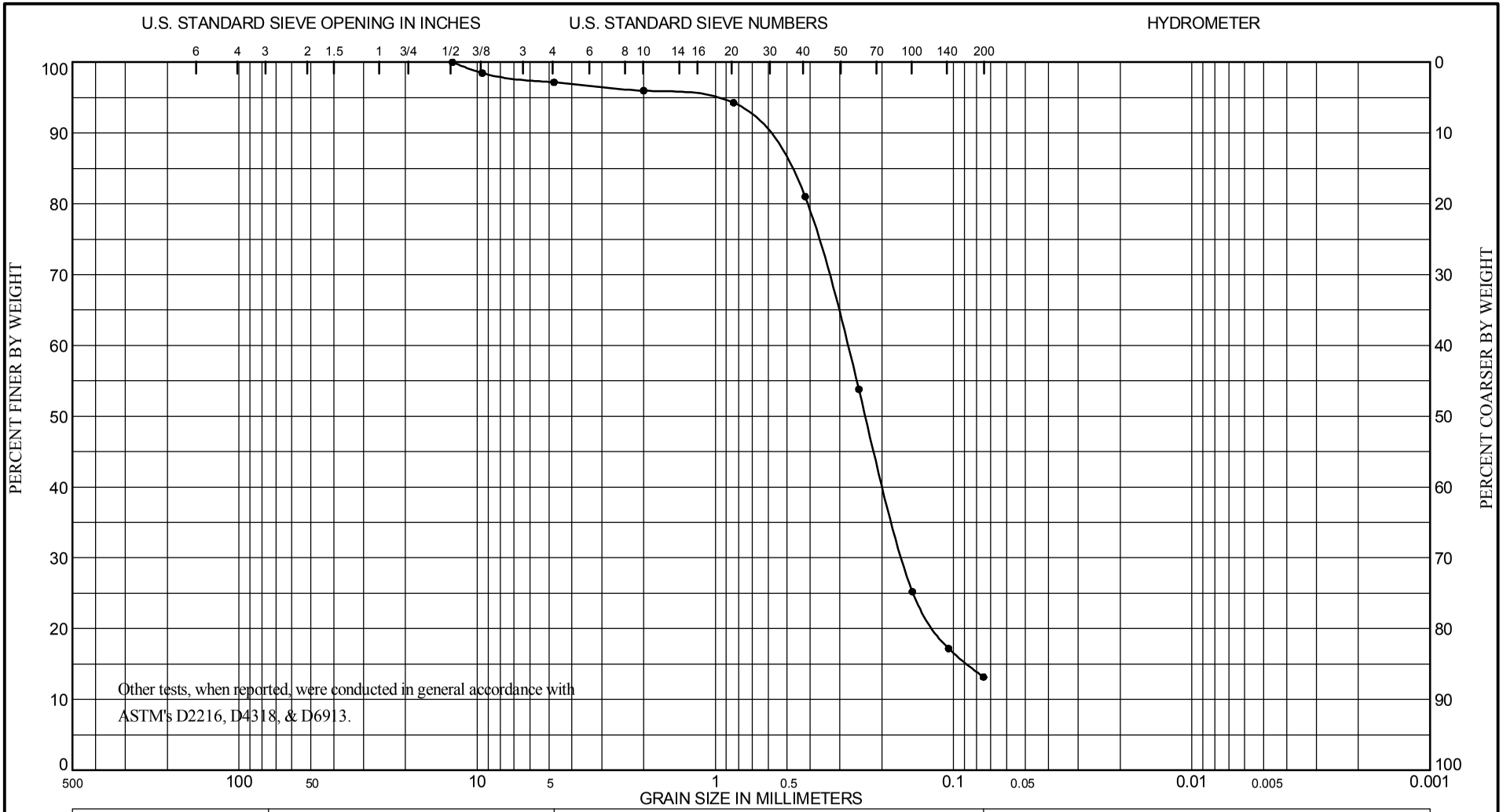
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 1.5	Light Greenish Gray, Poorly Graded Sand (SP), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3996
Hole No. BI-PBS-194-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

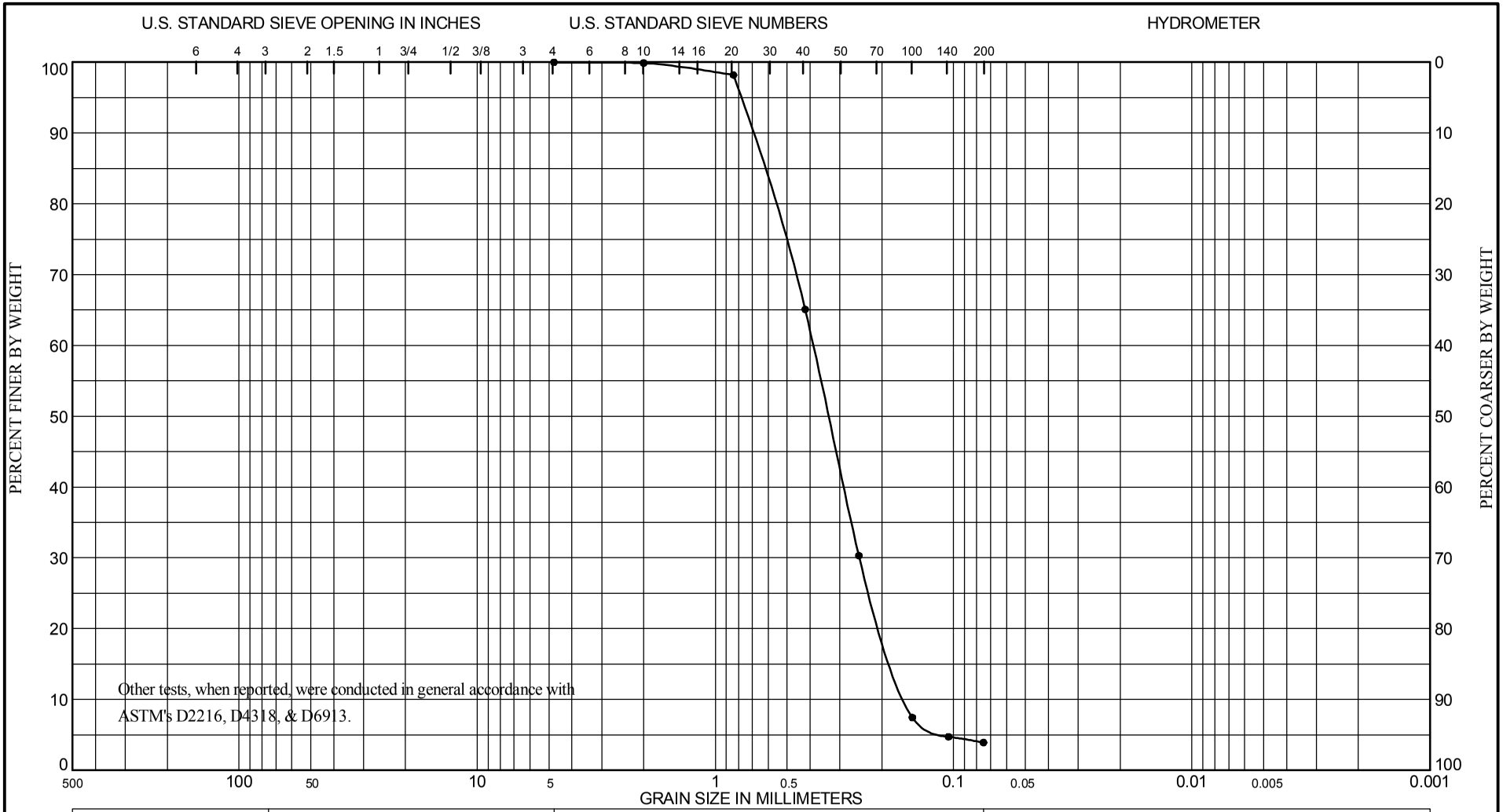
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	1.5 to 5.2	Dark Greenish Gray, Silty Sand (SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3997
Hole No. BI-PBS-194-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

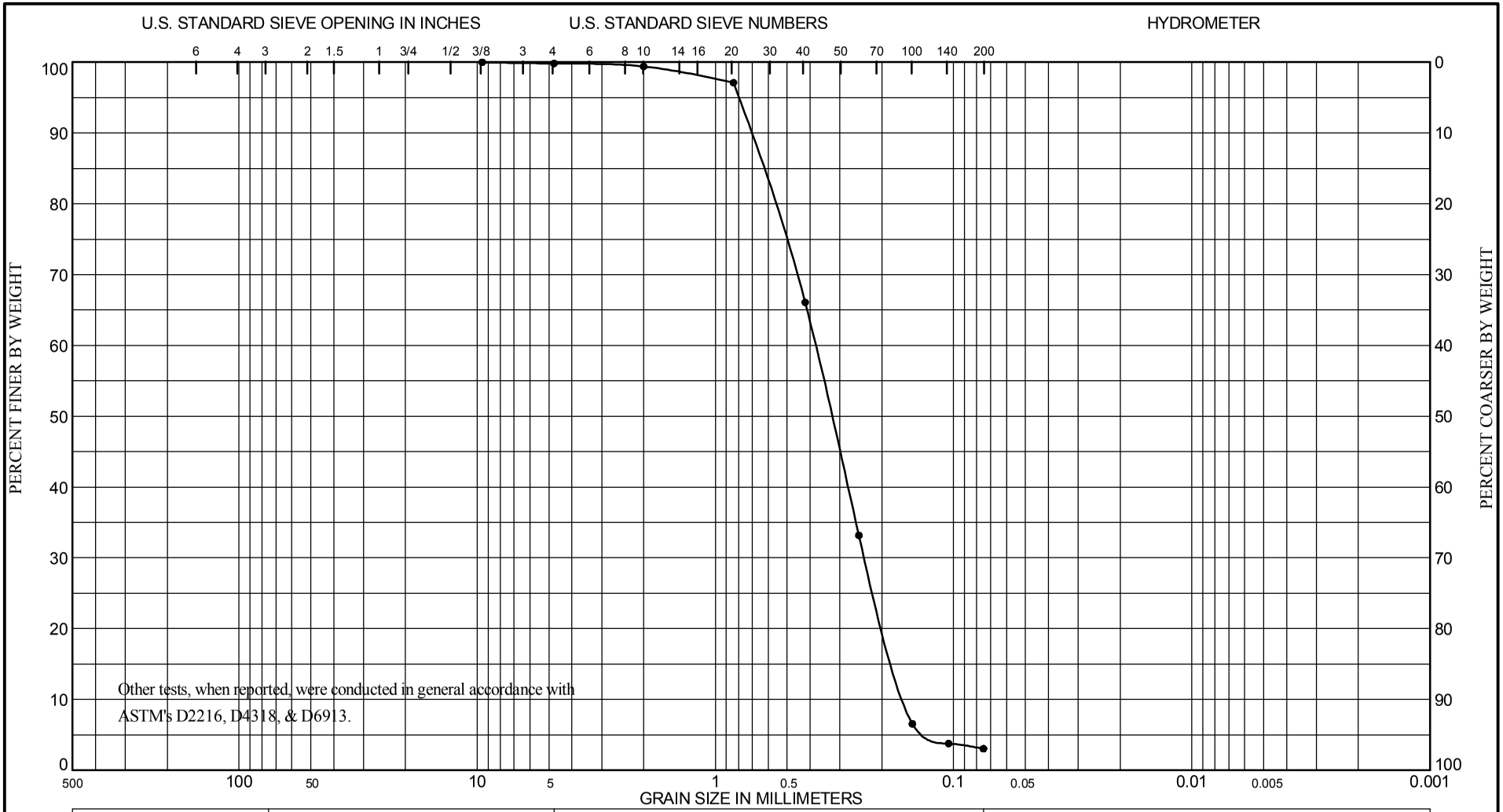
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	5.2 to 9.8	Greenish Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3998
Hole No. BI-PBS-194-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
D	9.8 to 14.4	Light Greenish Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3999
Hole No. BI-PBS-194-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-195-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 2 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-195-13 — LOCATION COORDINATES: E = 1,113,378 N = 232,512	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 1 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 49.7 Ft.
	15. DATE BORING — STARTED: 12-18-13 — COMPLETED: 12-18-13
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -49.7 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: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-49.7	0.0				
-50.3	0.6		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, little shell fragments, medium to lt. gray (SP-SM)	A	Classification: SP-SM Color: GLEY1 10Y 5/1- D50: 0.244 mm % Fines: 7
-51.8	2.1		CLAY, lean, sandy, medium to dark gray (CL)		
-52.5	2.8		SAND, clayey, mostly fine-grained sand-sized quartz, medium gray (SC)		
-54.7	5.0		CLAY, lean, medium gray (CL)		
-58.7	9.0		SAND, clayey, mostly fine-grained sand-sized quartz, wood fragments from 8 to 9 ft., medium gray and medium brown (SC)		
-61.8	12.1		CLAY, lean, wood fragments from 10 to 12 ft., medium gray (CL)	NS	
-64.7	15.0		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, medium gray (SP-SM)		
-66.1	16.4		SAND, silty, mostly fine-grained sand-sized quartz, medium gray (SM)		
-68.6	18.9		SAND, clayey, mostly fine-grained sand-sized quartz, medium to lt. gray (SC)		
-69.7	20.0		CLAY, lean, sandy, medium 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.

3. Seafloor elevation determined from 2013

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.13873° Long = -88.42483°

Boring Designation BI-PBS-195-13

DRILLING LOG (Cont. Sheet)	INSTALLATION Mobile District		SHEET 2 OF 2 SHEETS
PROJECT MsCIP Barrier Island Restoration	COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83	VERTICAL NAVD88
LOCATION COORDINATES X = 1,113,378 Y = 232,512	ELEVATION TOP OF BORING -49.7 Ft.		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
			USGS geophysical survey.		

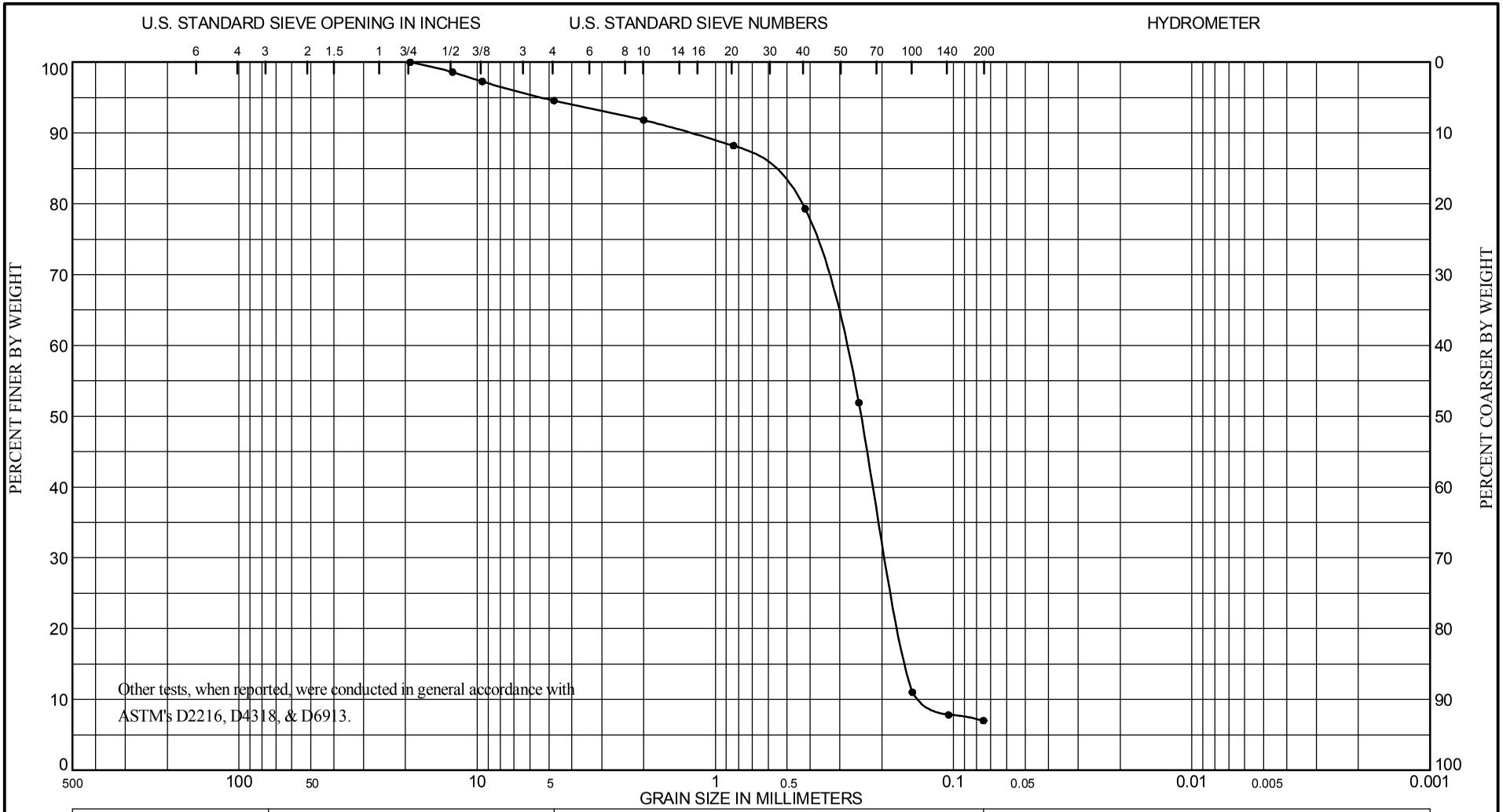
30
35
40
45
50
55
60

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.13873° Long = -88.42483°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 0.6	Greenish Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4043
Hole No. BI-PBS-195-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-197-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-197-13 — LOCATION COORDINATES: E = 1,116,344 N = 233,032	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 2 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 49 Ft.
	15. DATE BORING — STARTED: 12-09-13 — COMPLETED: 12-09-13
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -47.3 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 13.7 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-47.3	0.0				
-50.3	3.0		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little shell, lt. gray (SP)	A	Classification: SP Color: GLEY1 10Y 7/1- D50: 0.338 mm % Fines: 1.1
-51.4	4.1		SAND, silty, mostly fine-grained sand-sized quartz, little shell, lt. to medium gray (SM)	B	Classification: SP-SM Color: 2.5Y 6/1-gray D50: 0.232 mm % Fines: 5.8
-53.5	6.2		SAND, clayey, mostly fine-grained sand-sized quartz, trace shell, trace wood fragments, lt. to medium gray (SC)	NS	
-59.2	11.9		CLAY, lean, trace wood, lt. to medium and dark gray (CL)	NS	
-61.0	13.7		SAND, silty, mostly fine-grained sand-sized quartz, medium 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.

3. Seafloor elevation determined from 12/17/2014 USACE survey.

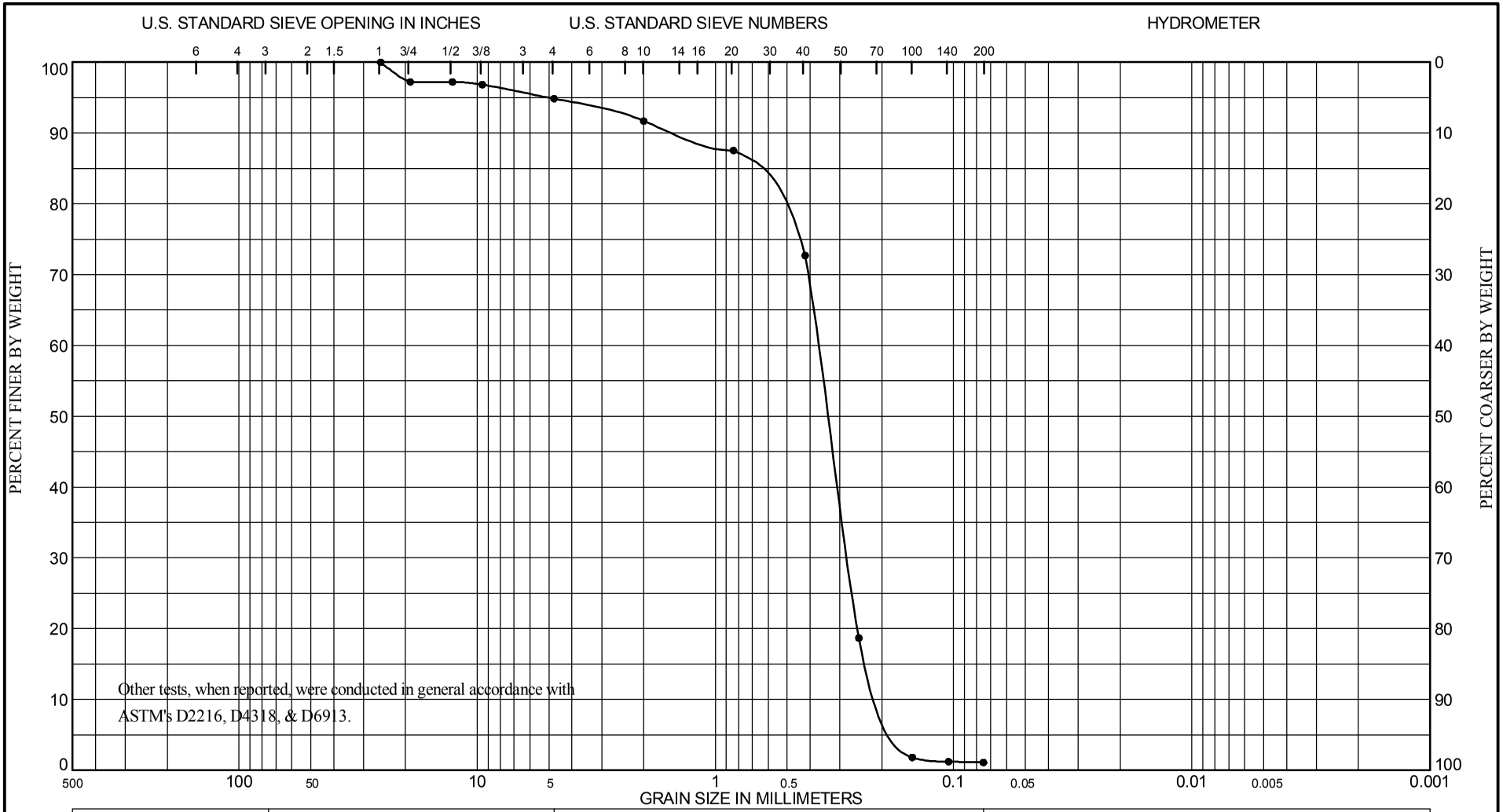
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14013° Long = -88.41544°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

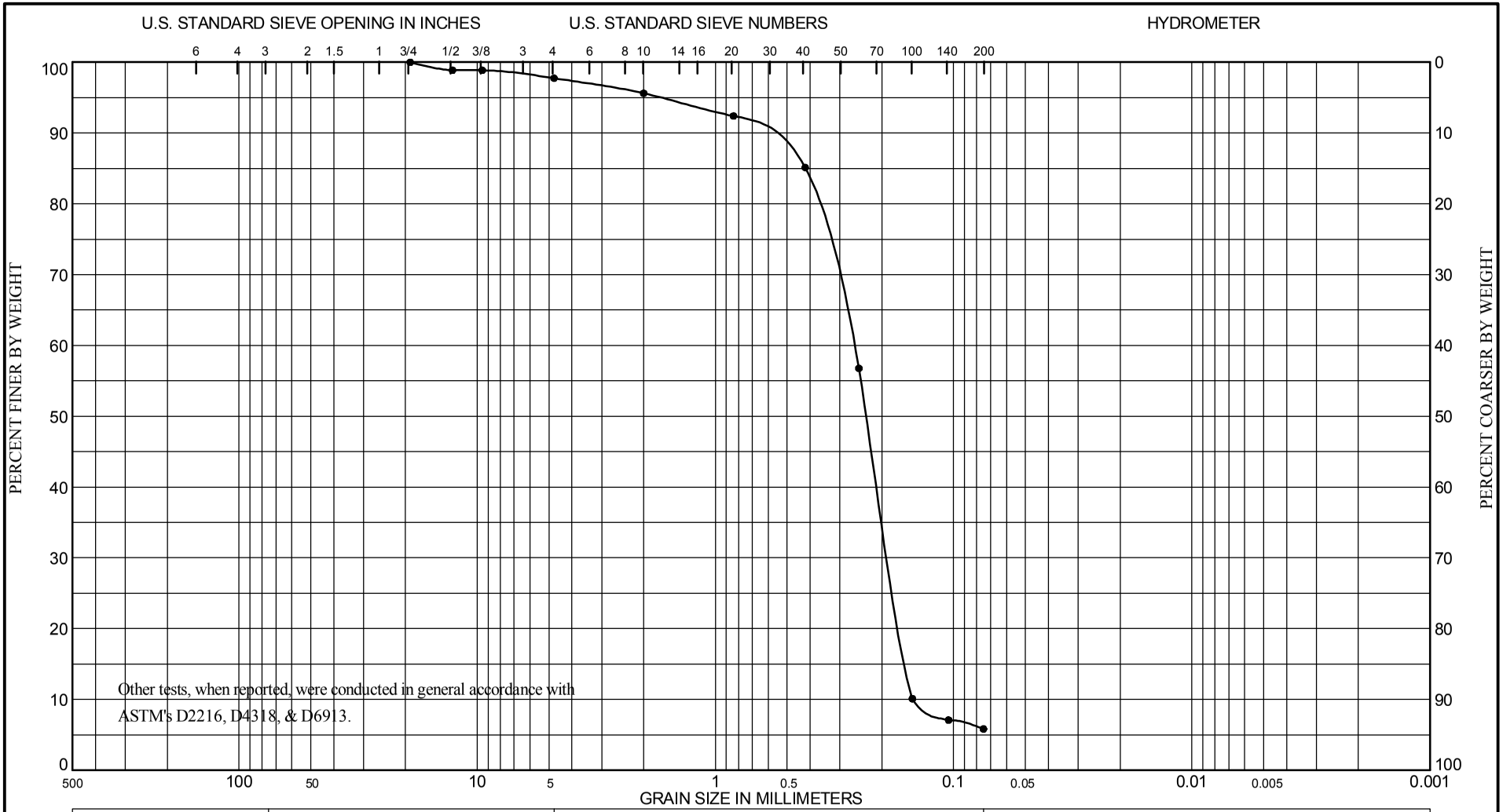
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 3.0	Light Greenish Gray, Poorly Graded Sand (SP), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3994
Hole No. BI-PBS-197-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	3.0 to 4.1	Greenish Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3995
Hole No. BI-PBS-197-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-198-13

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
	South Atlantic	Mobile District	

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS West
2. BORING DESIGNATION	BI-PBS-198-13
LOCATION COORDINATES	E = 1,118,790 N = 231,448
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	9.6 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED 1 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	49 Ft.
15. DATE BORING	STARTED 12-04-13 / COMPLETED 12-04-13
16. ELEVATION TOP OF BORING	-49.0 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-49.0	0.0				
-50.4	1.4		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little shell, lt. gray (SP)	A	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.31 mm % Fines: 1.6
-51.6	2.6		SAND, silty, clayey, mostly fine-grained sand-sized quartz, few shell, medium gray (SC-SM)	NS	
-52.7	3.7		CLAY, lean, interbedded with shell-laden SM and SP, lt. gray and orange (CL)		
-53.6	4.6		SAND, silty, high fines content, lt. gray (SM)		
-57.0	8.0		CLAY, lean, burrows filled with sand, lt. and medium gray (CL)		
-58.6	9.6		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, medium gray (SP-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.

3. Seafloor elevation determined from 2013 USGS geophysical survey.

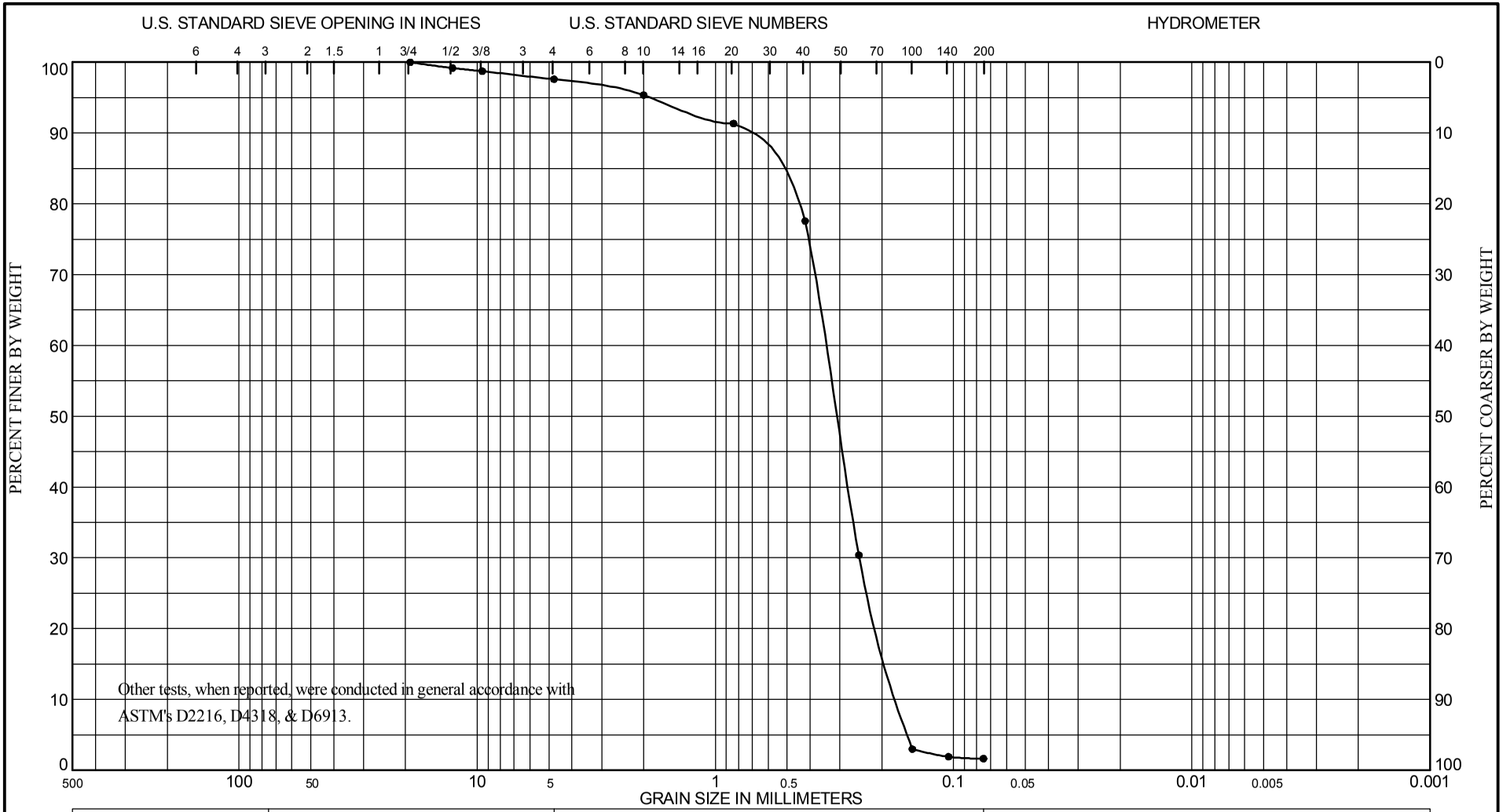
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.13575° Long = -88.40772°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 1.5	Light Greenish Gray, Poorly Graded Sand (SP), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3981
Hole No. BI-PBS-198-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-200-13

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
	South Atlantic	Mobile District	

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS West
2. BORING DESIGNATION	BI-PBS-200-13
LOCATION COORDINATES	E = 1,121,515 N = 232,429
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	18.8 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED 0 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	57 Ft.
15. DATE BORING	STARTED 12-03-13 / COMPLETED 12-03-13
16. ELEVATION TOP OF BORING	-57.2 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-57.2	0.0				
-58.4	1.2		SAND, clayey, with 1-inch thick wood layer, medium to dark gray (SC)		
-61.4	4.2		CLAY, lean, interbedded with fine to medium grained SC-SM, medium to dark gray (CL)		
-62.2	5.0		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, medium to lt. gray (SP)		
-73.0	15.8		SAND, poorly-graded with silt, mostly fine to medium-grained sand-sized quartz, few shell, medium gray (SP-SM)	NS	
-76.0	18.8		SAND, clayey, medium and dark 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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.13842° Long = -88.39909°

Boring Designation BI-PBS-201-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-201-13 — LOCATION COORDINATES: E = 1,119,851 N = 230,215	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 2 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 52 Ft.
	15. DATE BORING — STARTED: 12-03-13 — COMPLETED: 12-03-13
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -49.9 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 19.4 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-49.9	0.0				
-52.3	2.4		SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace shell, lt. gray (SP)	A	Classification: SP Color: GLEY1 10Y 6/1- D50: 0.279 mm % Fines: 2.8
-53.8	3.9		SAND, silty, mostly fine-grained sand-sized quartz, few shell, medium gray (SM)	B	Classification: SM Color: 2.5Y 5/1-gray D50: 0.179 mm % Fines: 29.6
-63.1	13.2		CLAY, lean, CL-CH, lt. gray and orange, lt. gray toward base (CL)	NS	
-69.3	19.4		SAND, poorly-graded, mostly fine-grained sand-sized quartz, no shell, medium 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.

3. Seafloor elevation determined from 12/17/2014 USACE survey.

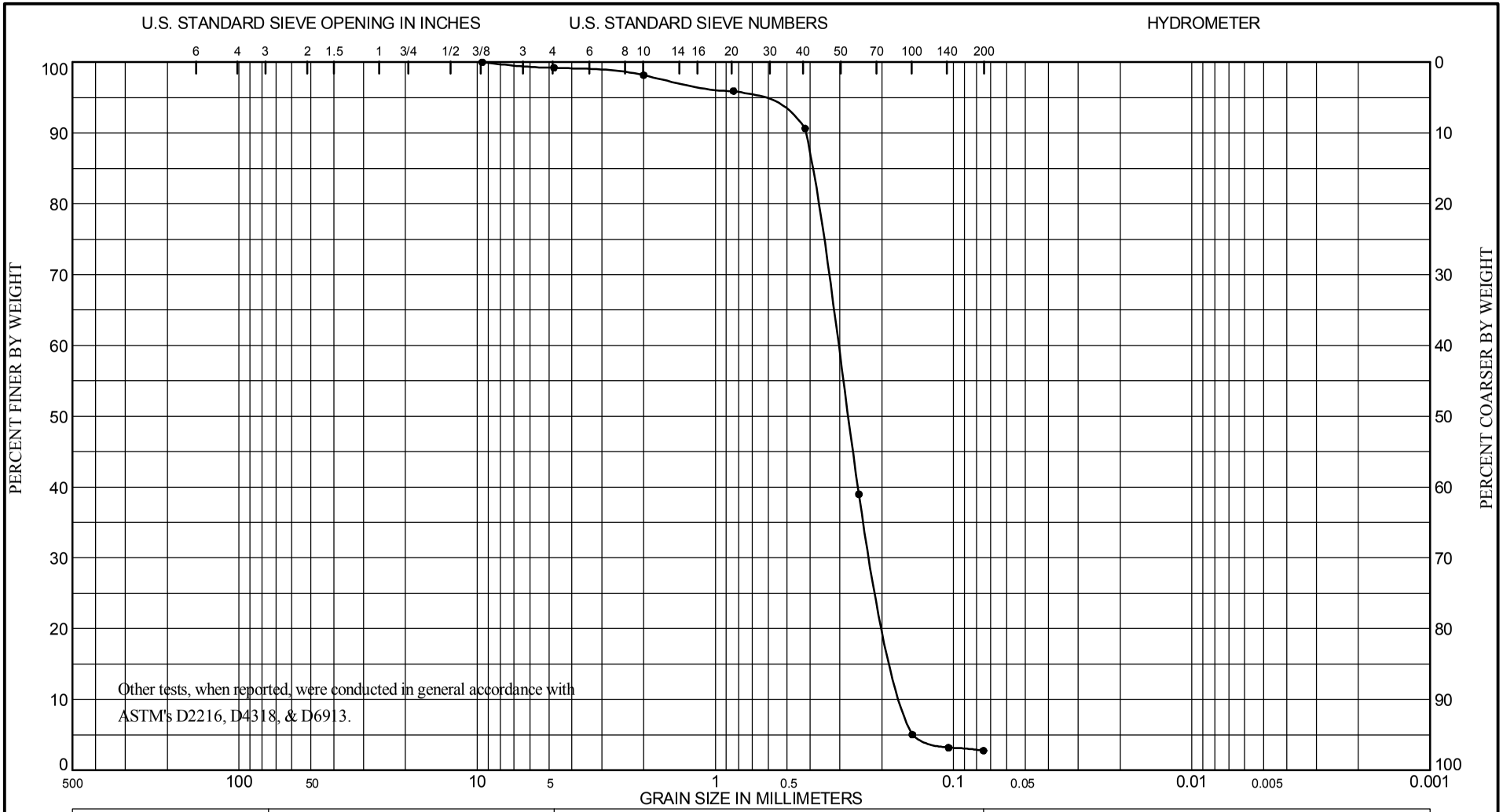
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.13235° Long = -88.40438°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

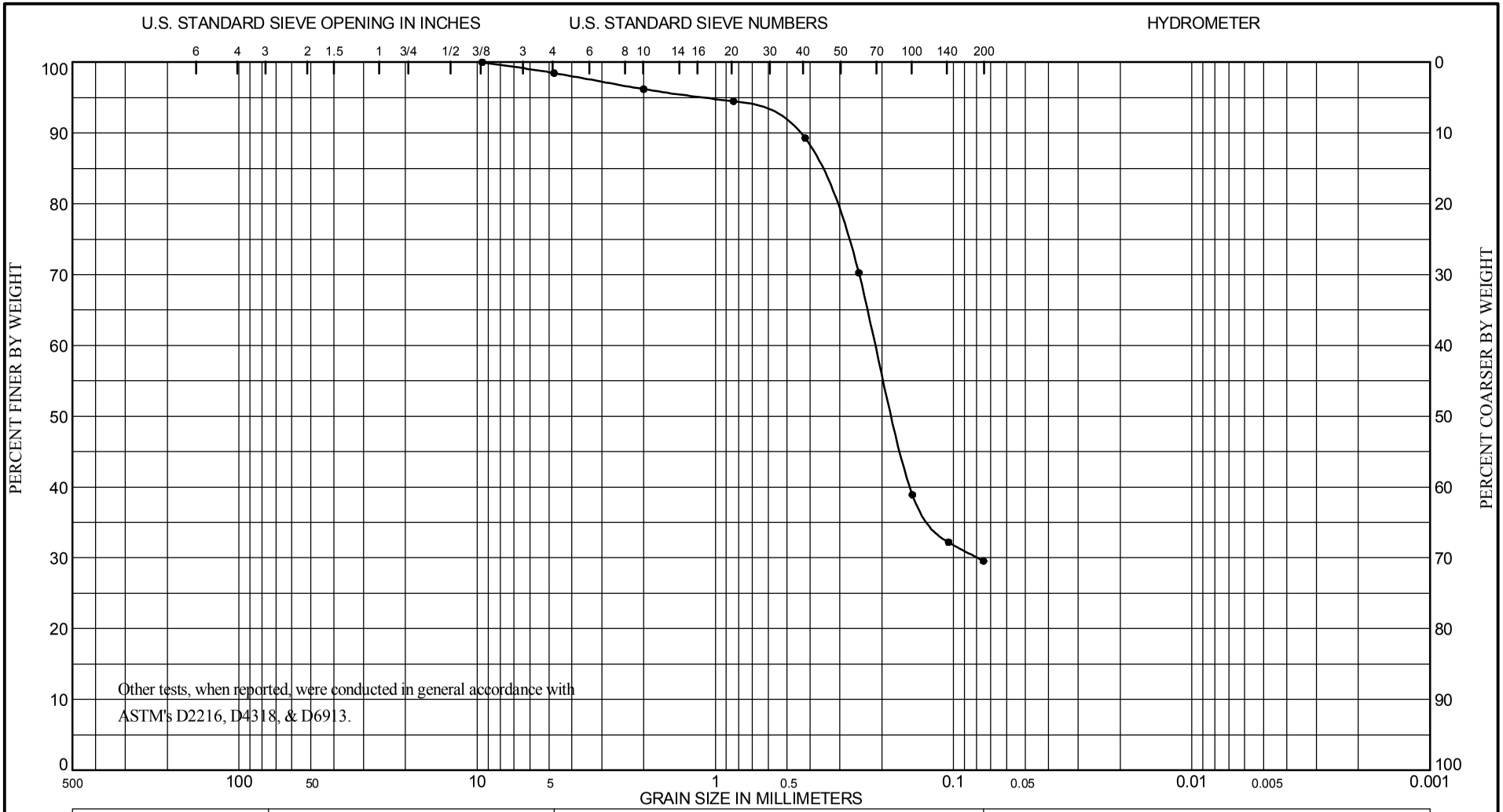
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 2.4	Olive Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3930
Hole No. BI-PBS-201-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	2.4 to 3.9	Dark Greenish Gray, Silty Sand (SM), with a trace of gravel size				
		shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3931
Hole No. BI-PBS-201-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-202-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-202-13 — LOCATION COORDINATES: E = 1,120,276 N = 231,472	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 1 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 50 Ft.
	15. DATE BORING — STARTED: 12-03-13 — COMPLETED: 12-03-13
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -48.9 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 16.0 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-48.9	0.0				
-50.1	1.2		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, few shell, lt. brown and lt. gray (SP)	A	Classification: SP Color: GLEY1 10Y 6/1- D50: 0.314 mm % Fines: 1.6
-51.8	2.9		CLAY, fat, pale greenish gray (CH)		
-53.9	5.0		CLAY, silty, trace very dark gray organics, lt. to medium gray and orange (CL-ML)		
-55.4	6.5		SAND, silty, mostly fine-grained sand-sized quartz, trace wood, shell, medium to dark gray (SM)		
-56.1	7.2		CLAY, lean, sandy, medium gray (CL)		
-60.0	11.1		SAND, silty, mostly fine-grained sand-sized quartz, interbedded with clay, medium gray (SM)	NS	
-62.9	14.0		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little shell, medium gray (SP)		
-64.9	16.0		SAND, silty, medium 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.

3. Seafloor elevation determined from 12/17/2014 USACE survey.

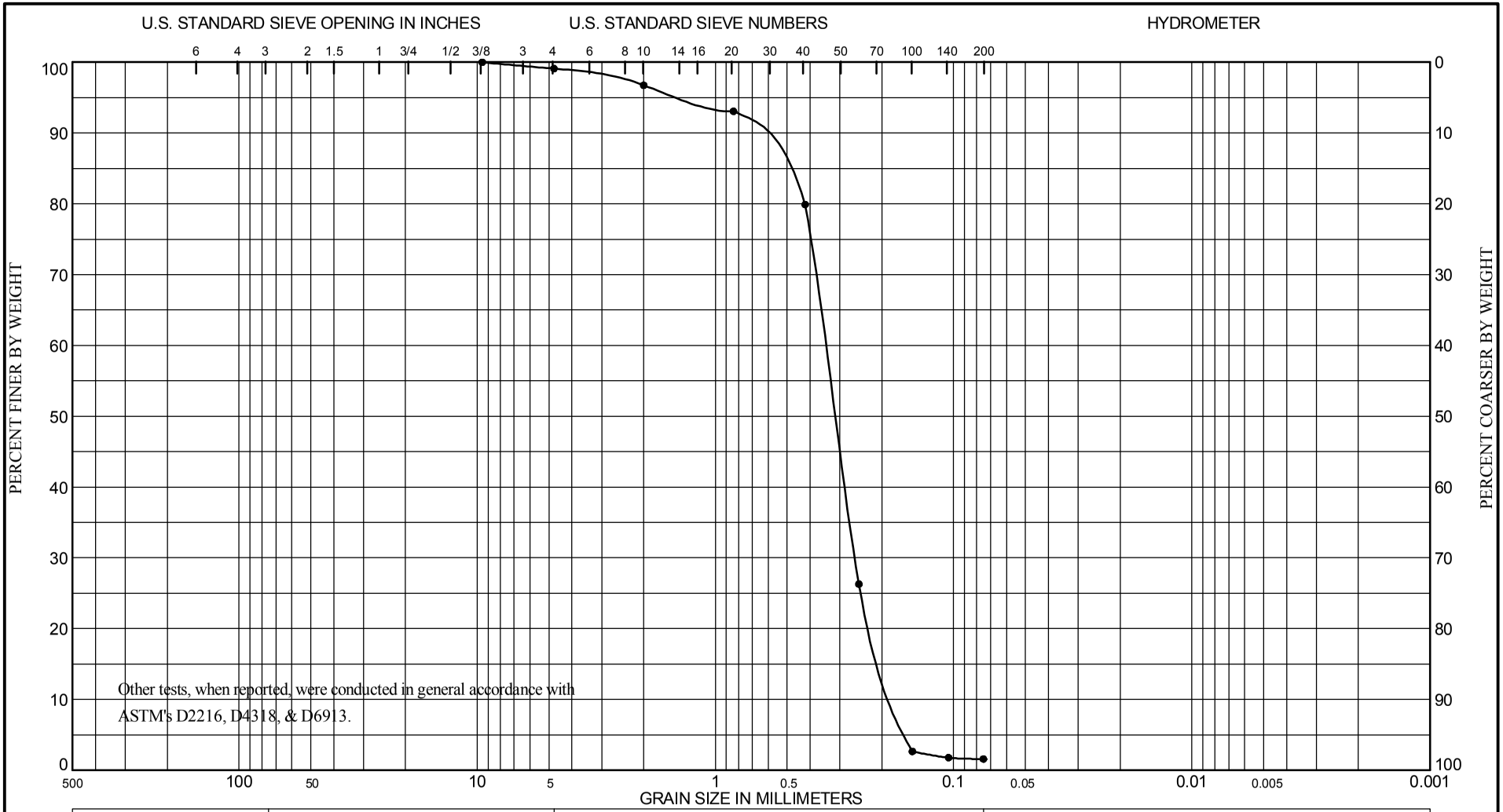
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.13580° Long = -88.40302°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 1.2	Olive Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3929
Hole No. BI-PBS-202-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-205-13

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 2 SHEETS
	South Atlantic	Mobile District	

1. PROJECT MsCIP Barrier Island Restoration Petit Bois Pass-OCS West		9. SIZE AND TYPE OF BIT N/A	
		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83 / VERTICAL NAVD88
2. BORING DESIGNATION BI-PBS-205-13	LOCATION COORDINATES E = 1,118,337 N = 228,460	11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore	☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY Corps of Engineers - CESAM	CONTRACTOR FILE NO.	12. TOTAL SAMPLES	DISTURBED 2 / UNDISTURBED (UD) 0
4. NAME OF DRILLER Construction Solutions International, Inc.		13. TOTAL NUMBER CORE BOXES	
5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED	DEG. FROM VERTICAL / BEARING	14. WATER DEPTH 54.3 Ft.	
		15. DATE BORING	STARTED 12-08-13 / COMPLETED 12-08-13
6. THICKNESS OF OVERBURDEN N/A		16. ELEVATION TOP OF BORING -53.9 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 Tom Powers, Geologist	

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-53.9	0.0				
-54.9	1.0		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little shell, lt. gray (SP)	A	Classification: SP Color: GLEY1 10Y 6/1- D50: 0.225 mm % Fines: 4.7
-57.1	3.2		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, lt. to medium gray (SP-SM)	B	Classification: SP-SM Color: GLEY1 10Y 6/1- D50: 0.209 mm % Fines: 6.8
-65.6	11.7		CLAY, fat, sandy; sand-filled voids over depths 3.2 to 4.6 ft., lt. gray to depth of 5.2 ft., pale green and orange to 11.7 ft. (CH)	NS	
-68.4	14.5		CLAY, lean, silty sand interbeds, 1/2 to 1-inch thick, medium gray (CL)		
-71.4	17.5		SAND, poorly-graded, mostly fine-grained sand-sized quartz, little shell, starting at 15.8 ft., brownish gray (SP)		
-73.9	20.0		SAND, silty, mostly fine-grained sand-sized quartz, little shell, brownish 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.

3. Seafloor elevation calculated using sampling

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.12754° Long = -88.40919°

DRILLING LOG (Cont. Sheet)	INSTALLATION Mobile District		SHEET 2 OF 2 SHEETS
PROJECT MsCIP Barrier Island Restoration	COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83	VERTICAL NAVD88
LOCATION COORDINATES X = 1,118,337 Y = 228,460	ELEVATION TOP OF BORING -53.9 Ft.		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
			vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.		

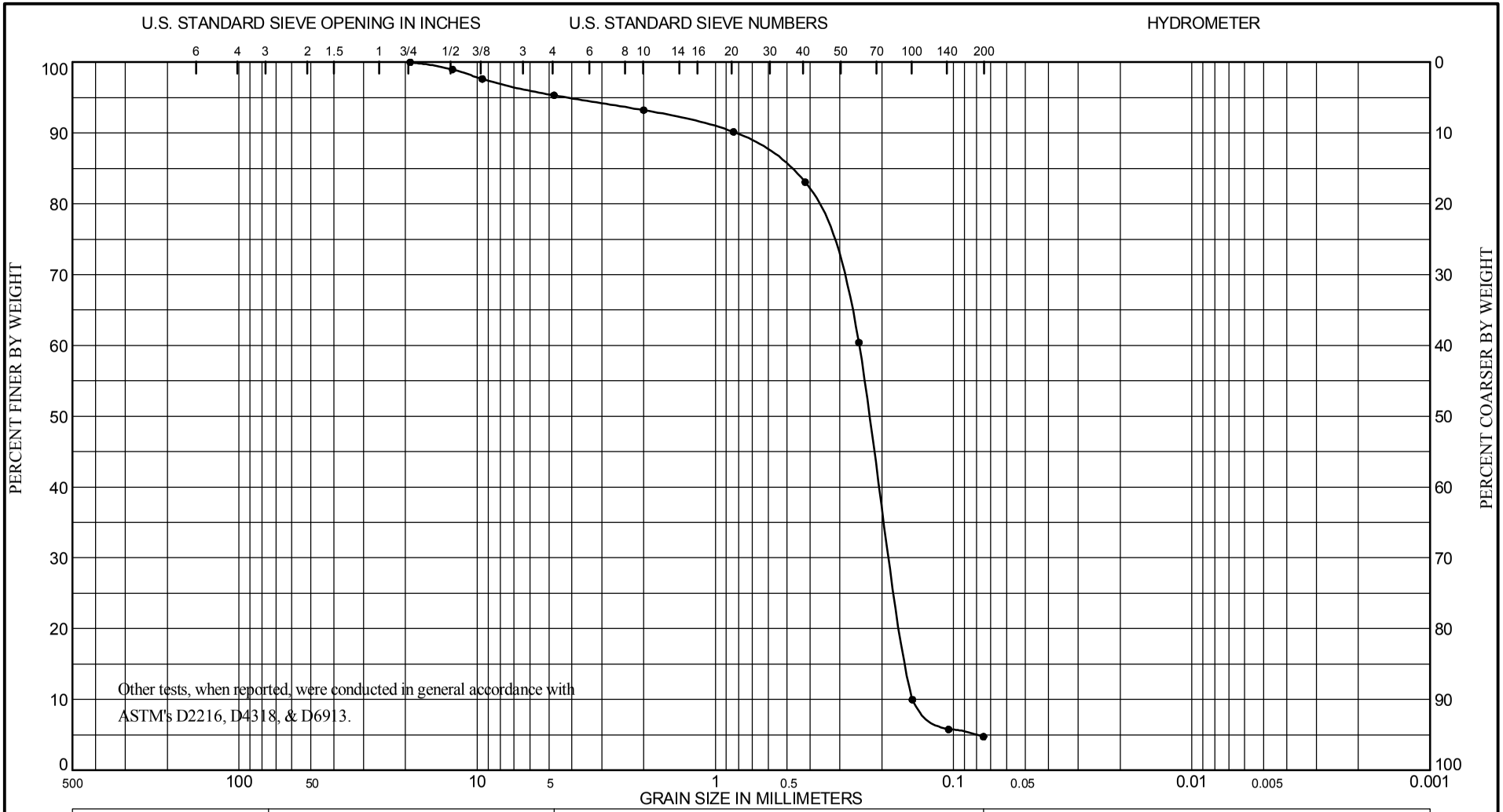
30
35
40
45
50
55
60

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.12754° Long = -88.40919°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

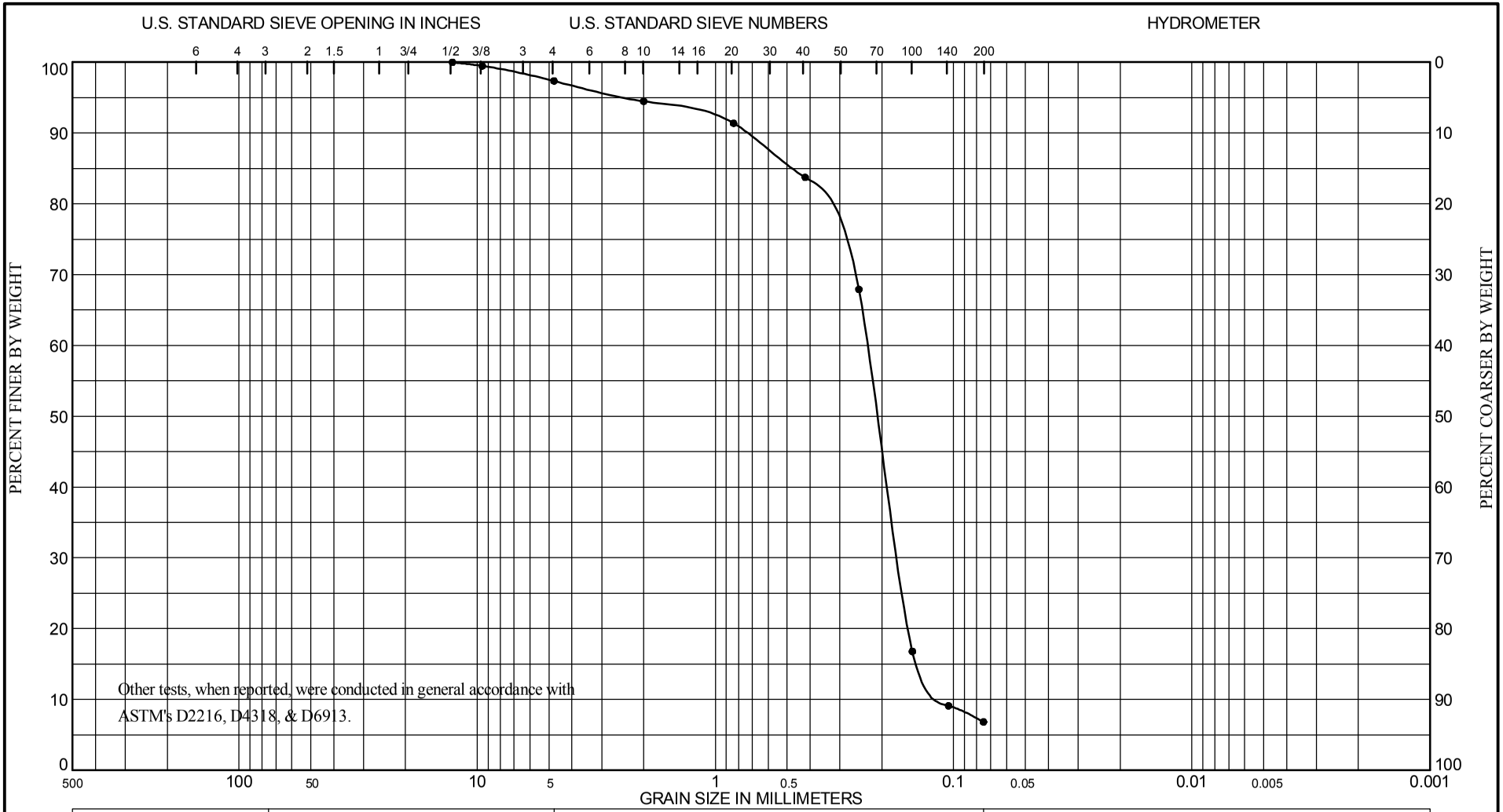
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 1.0	Greenish Gray, Poorly Graded Sand (SP), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3983
Hole No. BI-PBS-205-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	1.0 to 3.2	Greenish Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3984
Hole No. BI-PBS-205-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-206-13

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 2 SHEETS
	South Atlantic	Mobile District	

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS West
2. BORING DESIGNATION	BI-PBS-206-13
LOCATION COORDINATES	E = 1,119,905 N = 232,609
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	20.0 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED 0 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	55.5 Ft.
15. DATE BORING	STARTED 12-03-13 / COMPLETED 12-03-13
16. ELEVATION TOP OF BORING	-55.5 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-55.5	0.0				
-57.9	2.4		SAND, clayey, mostly fine-grained sand-sized quartz, few shell, medium gray (SC)		
-60.4	4.9		CLAY, lean, few shell, sandy with trace of wood, medium gray (CL)		
-63.0	7.5		SAND, silty, mostly fine-grained sand-sized quartz, little shell, trace of wood, medium gray (SM)		
-71.8	16.3		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little shell, medium gray (SP)	NS	
-75.5	20.0		SAND, silty, mostly fine-grained sand-sized quartz, few shell, medium 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.

3. Seafloor elevation determined from 2013

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.13893° Long = -88.40418°

DRILLING LOG (Cont. Sheet)	INSTALLATION Mobile District		SHEET 2 OF 2 SHEETS
PROJECT MsCIP Barrier Island Restoration	COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83	VERTICAL NAVD88
LOCATION COORDINATES X = 1,119,905 Y = 232,609	ELEVATION TOP OF BORING -55.5 Ft.		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
			USGS geophysical survey.		

30
35
40
45
50
55
60

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.13893° Long = -88.40418°

Boring Designation BI-PBS-207-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 2 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-207-13 — LOCATION COORDINATES: E = 1,117,339 N = 228,900	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 2 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 55 Ft.
	15. DATE BORING — STARTED: 12-08-13 — COMPLETED: 12-08-13
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -54.6 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 19.7 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-54.6	0.0				
-55.7	1.1		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little shell, lt. gray (SP)	A	Classification: SP Color: GLEY1 10Y 6/1- D50: 0.239 mm % Fines: 3.6
-57.1	2.5		SAND, silty, mostly fine-grained sand-sized quartz, little shell, lt. gray (SM)	B	Classification: SM Color: GLEY1 10Y 6/1- D50: 0.207 mm % Fines: 13.7
-61.1	6.5		CLAY, fat, sandy, sand-filled voids from depth of 2.5 to 3.0 ft., pale green and lt. gray (CH)		
-61.9	7.3		SAND, poorly-graded with silt, mostly fine to medium-grained sand-sized quartz, lt. gray (SP-SM)		
-63.3	8.7				
-64.1	9.5		SAND, clayey, mostly fine-grained sand-sized quartz, little wood debris, lt. and medium gray (SC)		
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, lt. gray (SP)	NS	
-74.3	19.7		SAND, silty, mostly fine-grained sand-sized quartz, clay at top of layer and at depth of 12.1 ft., little shell fragments from depth of 14.5 to base of strata, 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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.12876° Long = -88.41234°

DRILLING LOG (Cont. Sheet)	INSTALLATION Mobile District		SHEET 2 OF 2 SHEETS
PROJECT MsCIP Barrier Island Restoration	COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83	VERTICAL NAVD88
LOCATION COORDINATES X = 1,117,339 Y = 228,900	ELEVATION TOP OF BORING -54.6 Ft.		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
			applying NOAA tidal gauge data conversion factor.		

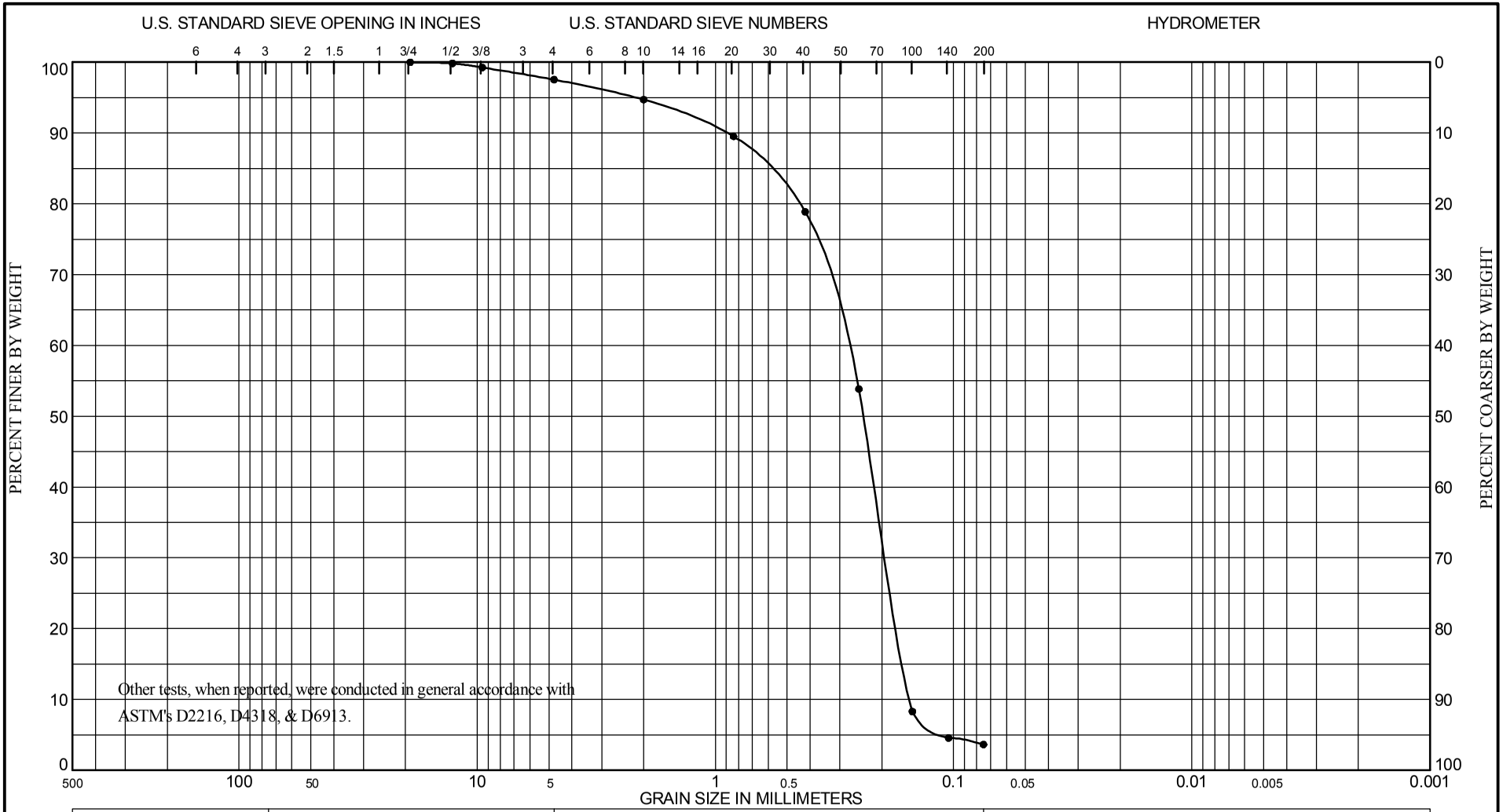
30
35
40
45
50
55
60

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.12876° Long = -88.41234°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

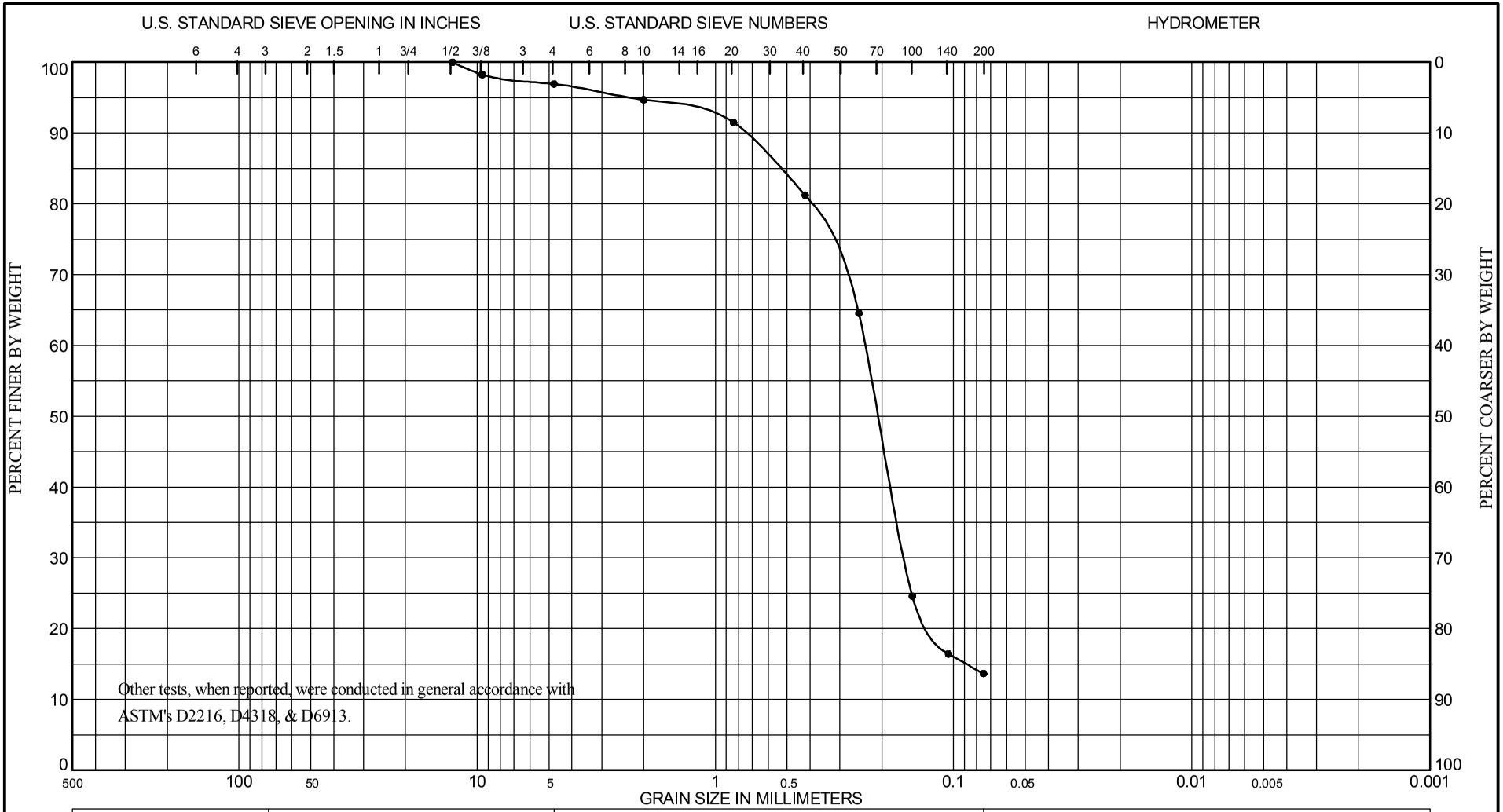
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 1.1	Greenish Gray, Poorly Graded Sand (SP), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3985
Hole No. BI-PBS-207-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	1.1 to 2.5	Greenish Gray, Silty Sand (SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3986
Hole No. BI-PBS-207-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-210-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-210-13 — LOCATION COORDINATES: E = 1,123,437 N = 230,702	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 6 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 56 Ft.
	15. DATE BORING — STARTED: 12-02-13 — COMPLETED: 12-02-13
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -54.6 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 19.8 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-54.6	0.0				
-56.1	1.5		SAND, silty, clayey, mostly fine-grained sand-sized quartz, few shell, lt. gray (SC-SM)	A	Classification: SM Color: 2.5Y 6/1-gray D50: 0.207 mm % Fines: 24.4
-58.0	3.4		SAND, clayey, mostly fine-grained sand-sized quartz, lt. gray (SC)	B	Classification: SC Color: 2.5Y 7/1-light gray D50: 0.085 mm % Fines: 48.2
-60.0	5.4		CLAY, lean, sandy, medium gray (CL)	NS	
-65.6	11.0		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few shell, medium gray (SP-SM)	C	Classification: SP-SM Color: 2.5Y 6/1-gray D50: 0.226 mm % Fines: 8.5
				NS	
-67.6	13.0		SAND, poorly-graded, mostly fine-grained sand-sized quartz, few shell, brownish gray (SP)	D	Classification: SP-SM Color: 2.5Y 6/1-gray D50: 0.211 mm % Fines: 6.8
-68.6	14.0		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few shell, brownish gray (SP-SM)	E	Classification: SP-SM Color: 2.5Y 6/1-gray D50: 0.193 mm % Fines: 9.2
			SAND, silty, mostly fine-grained sand-sized quartz, few shell, brownish gray (SM)	F	Classification: SM Color: 2.5Y 6/1-gray D50: 0.178 mm % Fines: 12.4
-74.4	19.8			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.

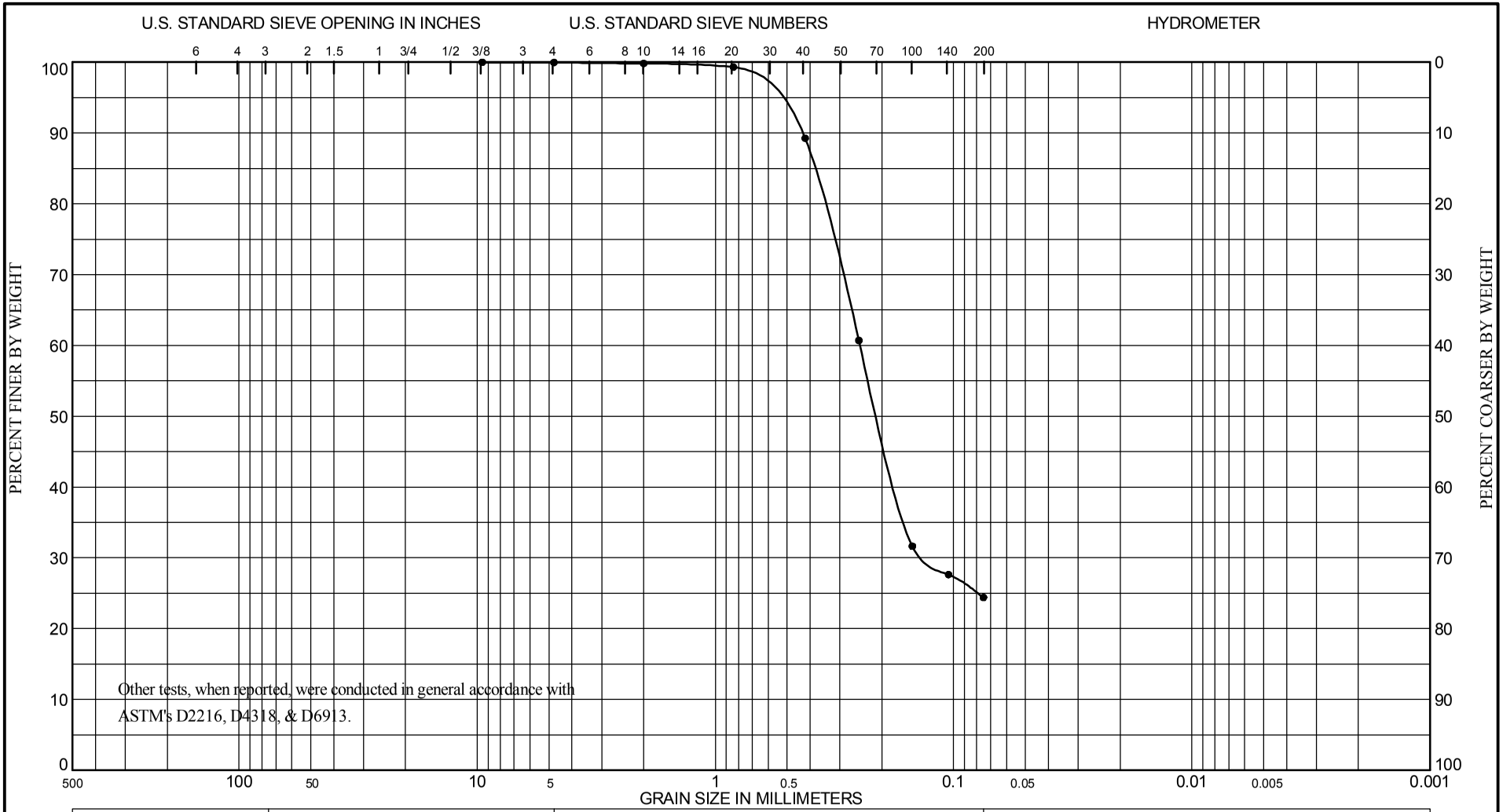
3. Seafloor elevation determined from 12/17/2014 USACE survey.

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.13365° Long = -88.39303°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

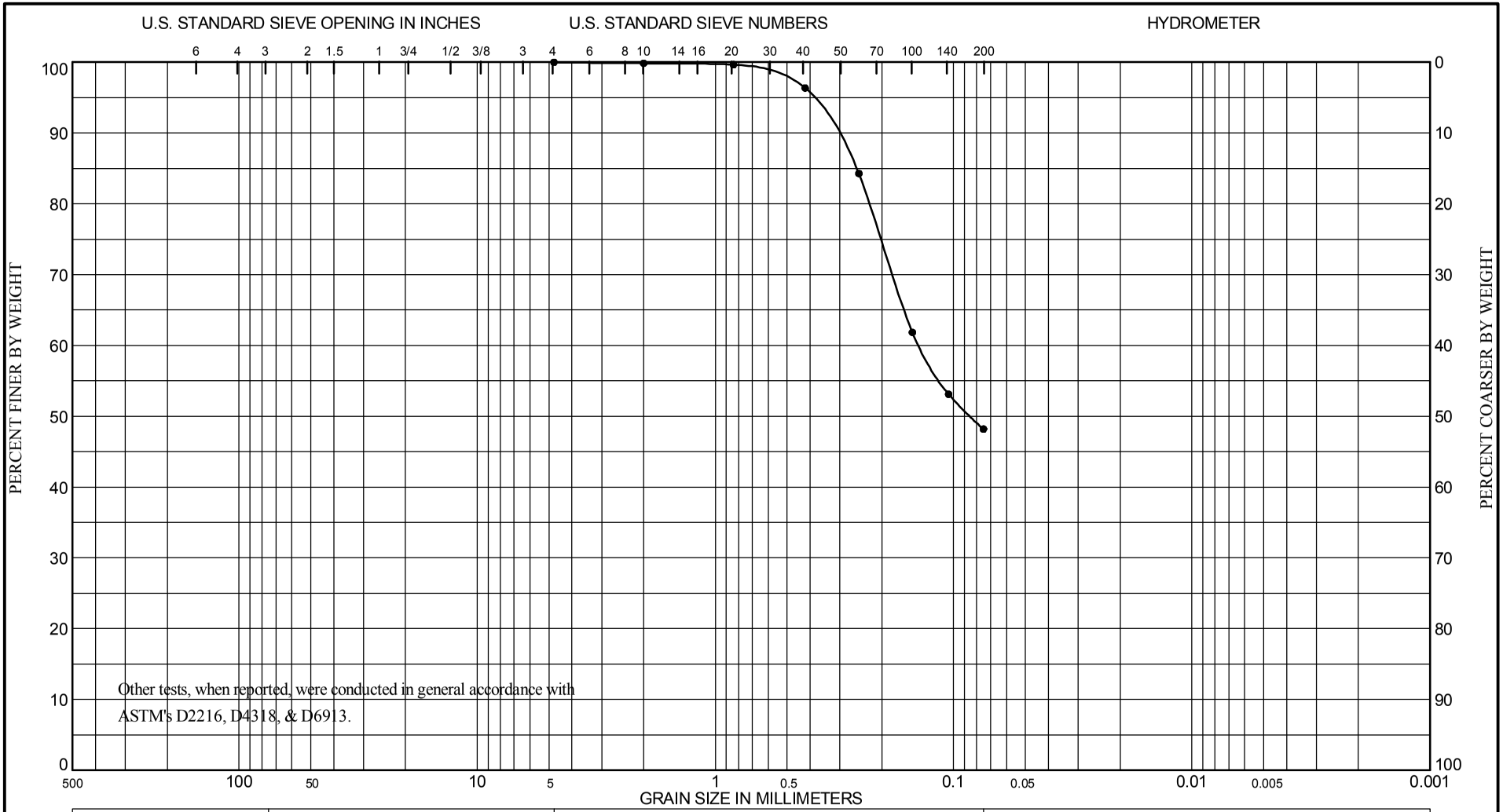
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 1.5	Gray, Silty Sand (SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3918
Hole No. BI-PBS-210-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

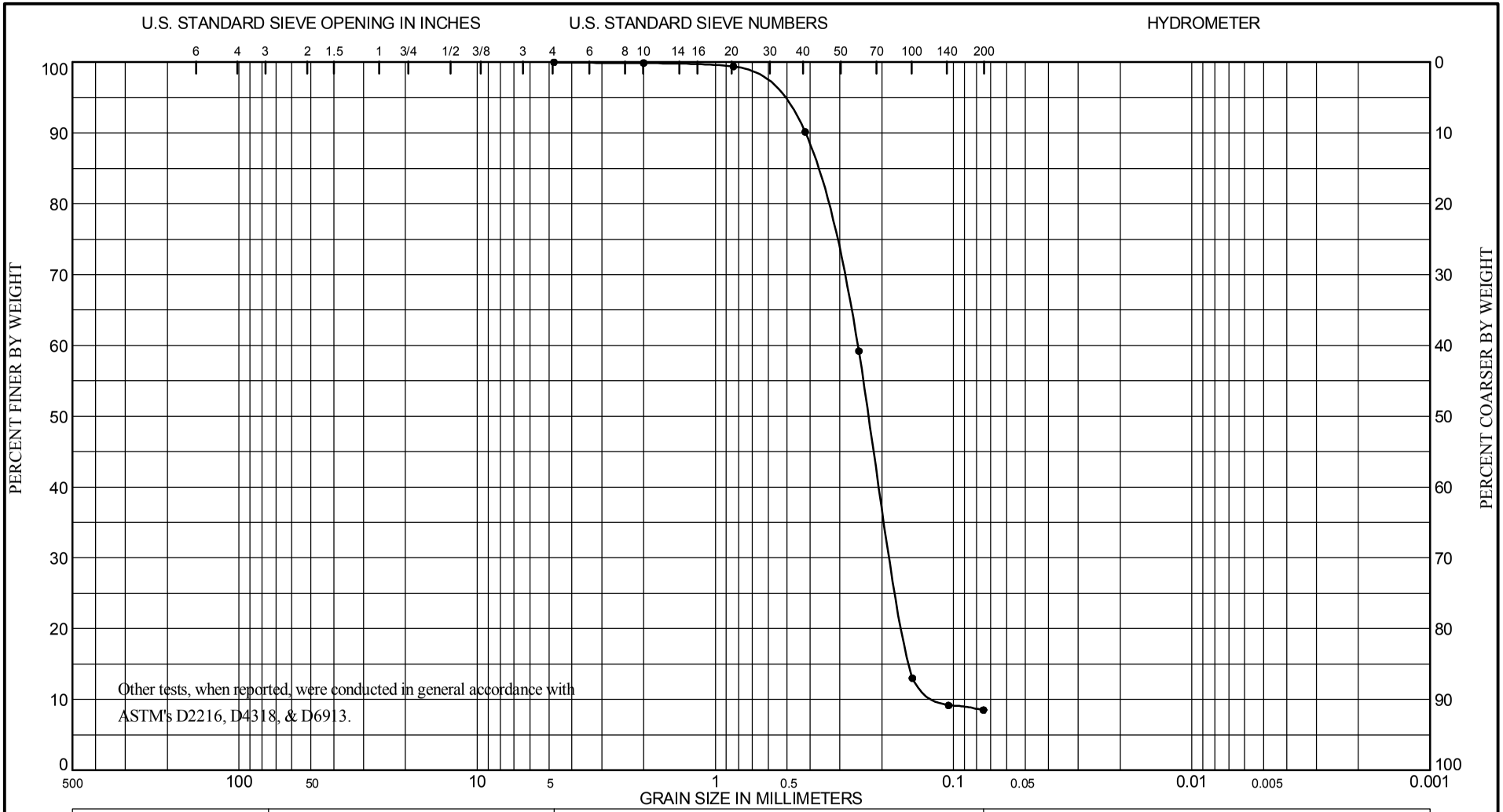
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	1.5 to 3.4	Gray, (Visual) Clayey Sand (SC).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3919
Hole No. BI-PBS-210-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

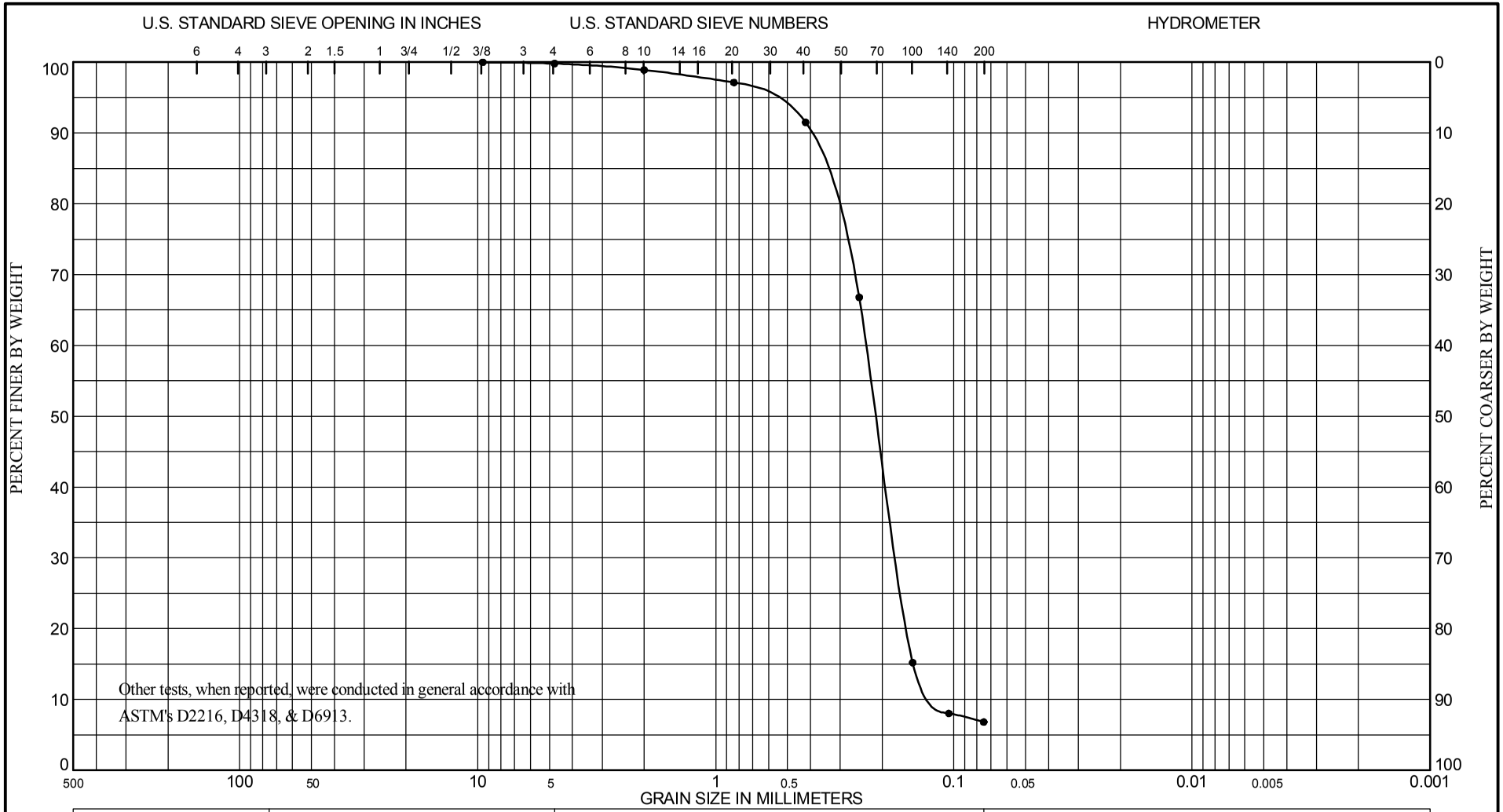
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	5.4 to 10.0	Greenish Gray, Poorly Graded Silty Sand (SP-SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3920
Hole No. BI-PBS-210-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

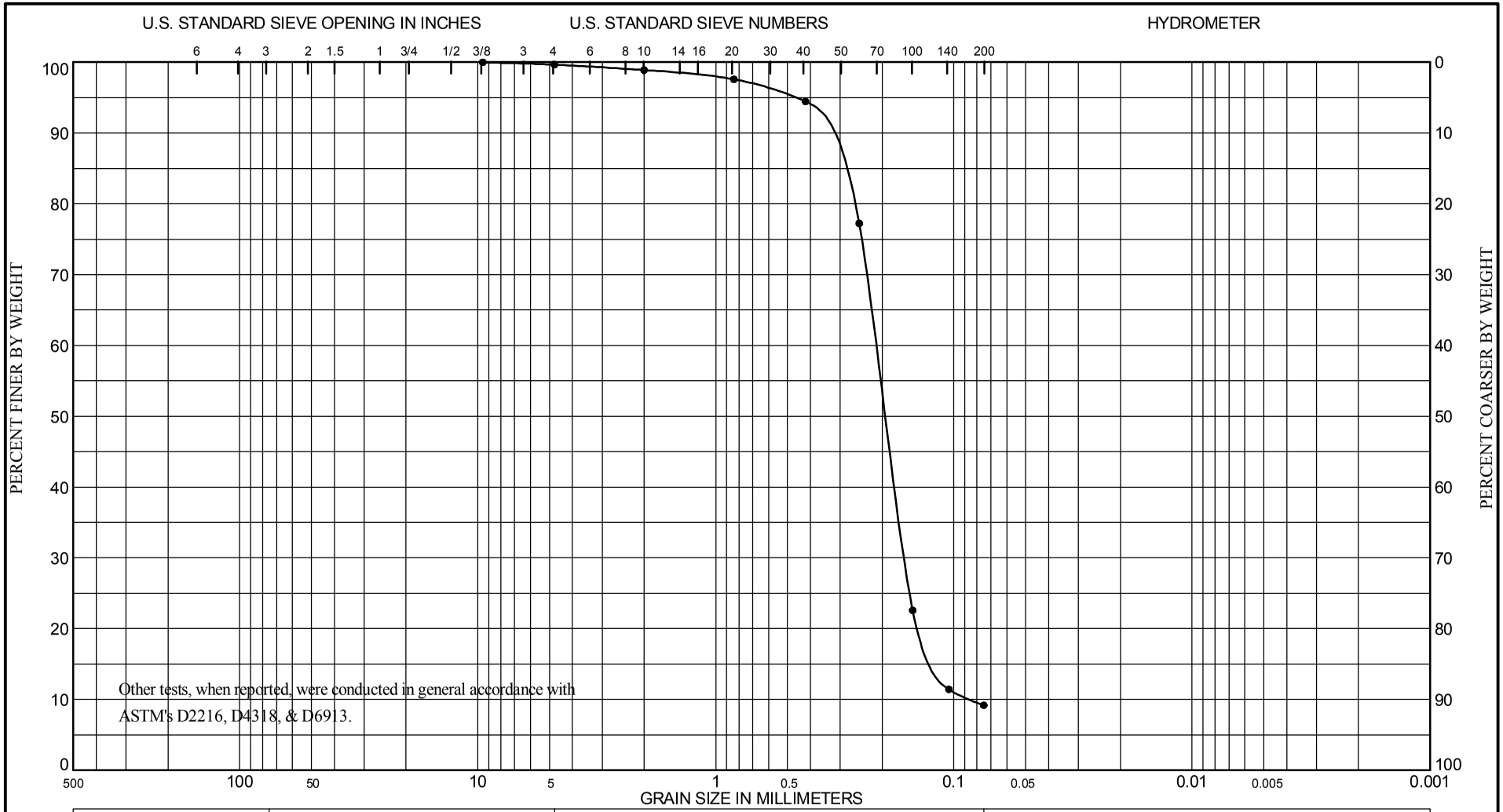
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
D	11.0 to 13.0	Gray, Poorly Graded Silty Sand (SP-SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3921
Hole No. BI-PBS-210-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

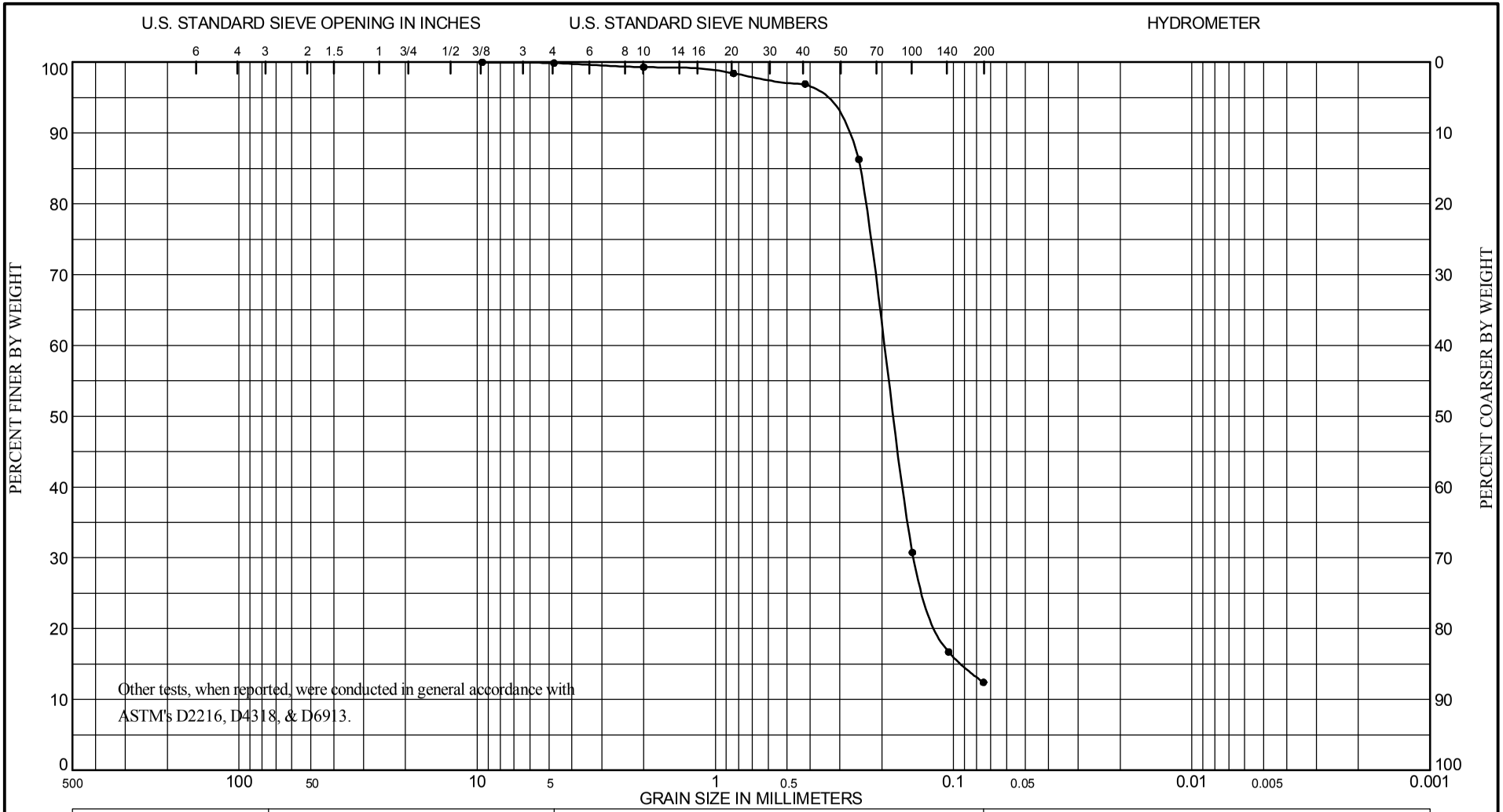
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
E	13.0 to 14.0	Greenish Gray, Poorly Graded Silty Sand (SP-SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3922
Hole No. BI-PBS-210-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
F	14.0 to 19.0	Greenish Gray, Silty Sand (SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3923
Hole No. BI-PBS-210-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-212-13

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
	South Atlantic	Mobile District	

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS West
2. BORING DESIGNATION	BI-PBS-212-13
LOCATION COORDINATES	E = 1,116,601 N = 231,149
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	11.9 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED 2 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	53 Ft.
15. DATE BORING	STARTED 12-09-13 / COMPLETED 12-09-13
16. ELEVATION TOP OF BORING	-52.8 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-52.8	0.0				
-53.8	1.0		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little shell, lt. gray (SP)	A	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.297 mm % Fines: 1.5
-54.5	1.7			B	Classification: SM Color: 2.5Y 5/1-gray D50: 0.218 mm % Fines: 13.5
-54.8	2.0		SAND, silty, mostly fine-grained sand-sized quartz, few shell, lt. to medium gray (SM)		
			SAND, clayey, mostly fine-grained sand-sized quartz, trace shell, medium gray (SC)		
-59.3	6.5		CLAY, lean, sandy, pale green, lt. and medium gray (CL)		
-60.0	7.2		SAND, clayey, mostly fine-grained sand-sized quartz, medium gray (SC)	NS	
-61.3	8.5		SAND, poorly-graded with silt, mostly fine to medium-grained sand-sized quartz, little shell, lt. to medium gray (SP-SM)		
-64.7	11.9		SAND, silty, mostly fine-grained sand-sized quartz, little shell, medium 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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

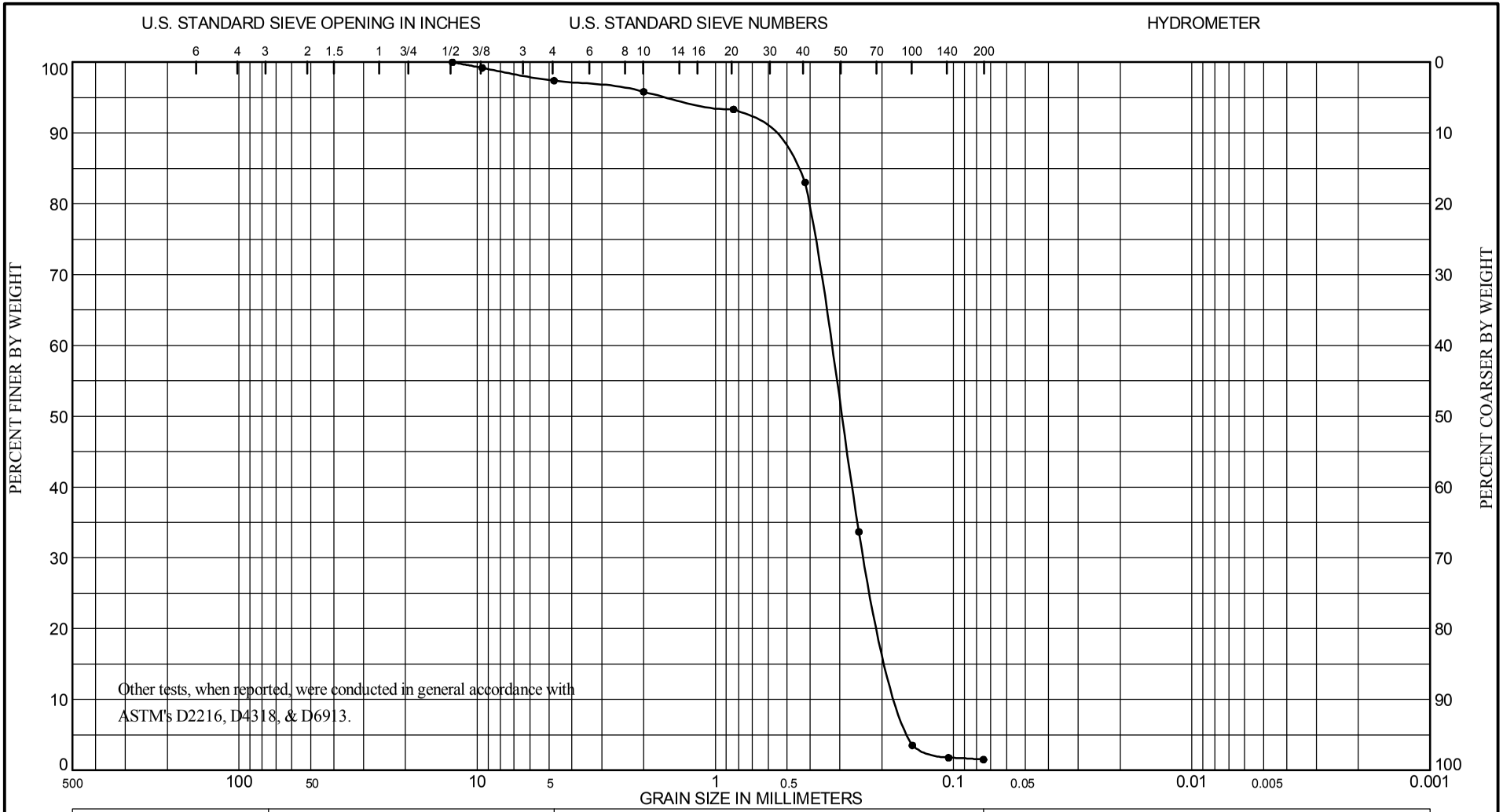
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.13495° Long = -88.41465°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

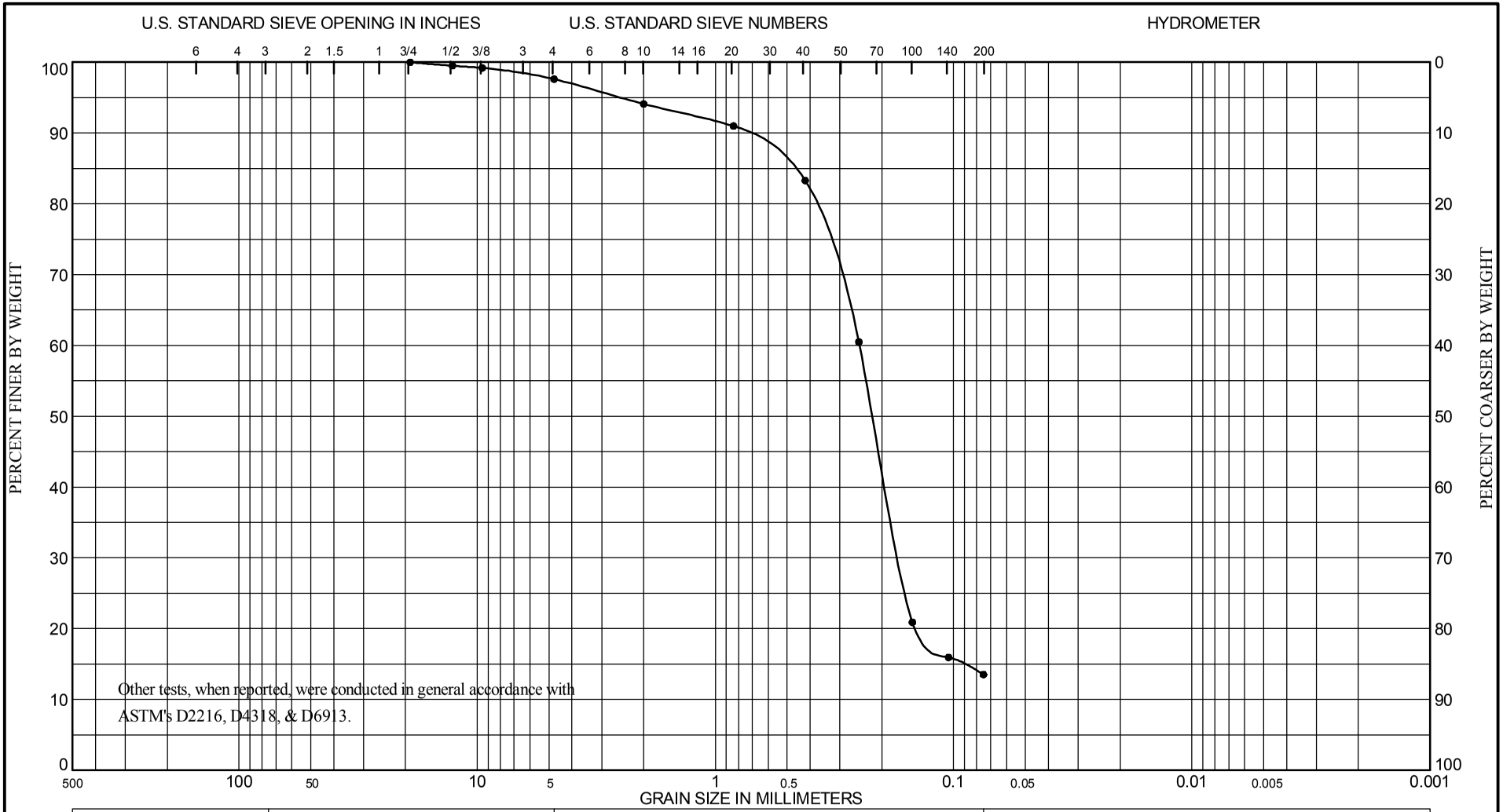
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 1.0	Light Greenish Gray, Poorly Graded Sand (SP), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3991
Hole No. BI-PBS-212-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	1.0 to 1.7	Dark Greenish Gray, Silty Sand (SM), with a trace of gravel size				
		shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3992
Hole No. BI-PBS-212-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-214-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-214-13 — LOCATION COORDINATES: E = 1,122,557 N = 229,244	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 3 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 49 Ft.
	15. DATE BORING — STARTED: 12-02-13 — COMPLETED: 12-02-13
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -48.6 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 19.8 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-48.6	0.0				
-55.8	7.2		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, few shell, lt. gray (SP)	A	Classification: SP Color: GLEY1 10Y 6/1- D50: 0.281 mm % Fines: 3.9
				B	Classification: SP Color: GLEY1 10Y 6/1- D50: 0.298 mm % Fines: 1.9
-56.3	7.7				
-57.6	9.0		SAND, silty, mostly fine-grained sand-sized quartz, little shell, medium gray (SM)	C	Classification: SM Color: GLEY1 10Y 5/1- D50: 0.209 mm % Fines: 16.7
-58.4	9.8		SAND, clayey, little shell, medium gray (SC)	NS	
-61.9	13.3		CLAY, lean, few shell, sandy, medium gray (CL) CLAY, fat, little sand, lt. gray over greenish gray; orange streaks throughout (CH)		
-62.9	14.3		SILT, inorganic-L, sandy, lt. gray (ML)		
-65.6	17.0		CLAY, fat, silty and non-silty, pale green (CH)		
-68.4	19.8		SAND, silty, mostly fine-grained sand-sized quartz, little shell, medium 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.

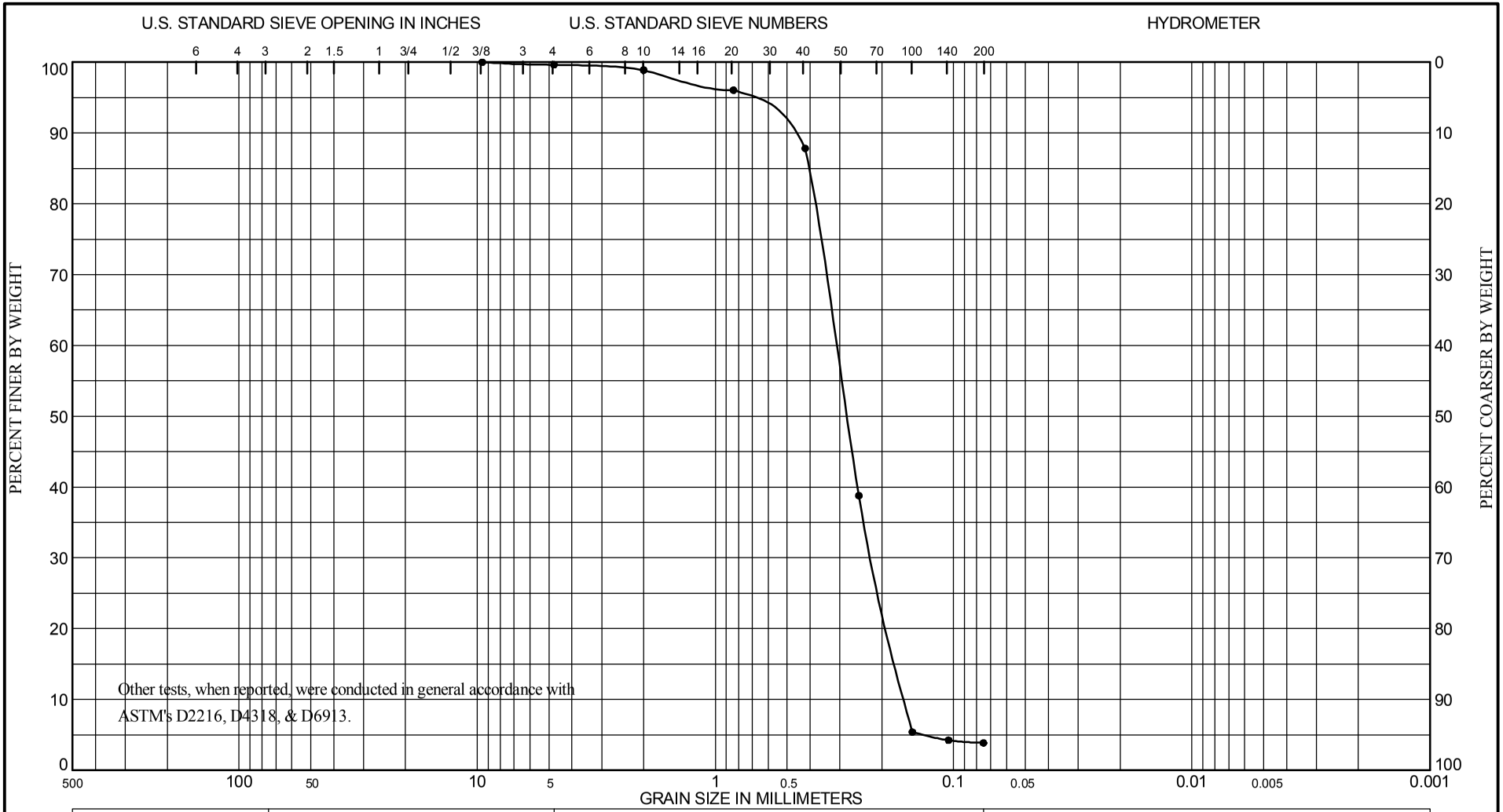
3. Seafloor elevation determined from 12/17/2014 USACE survey.

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.12965° Long = -88.39583°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

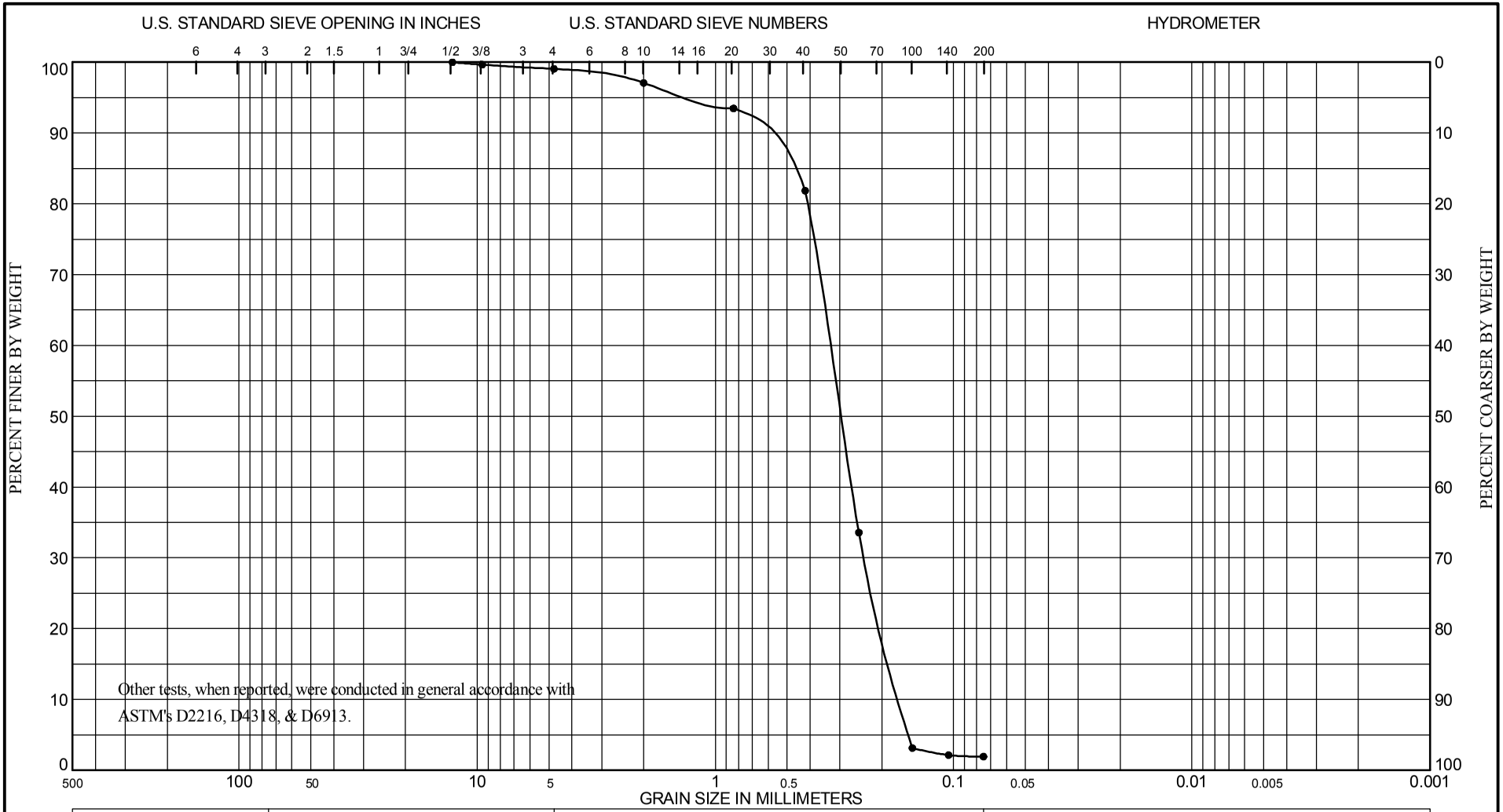
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 5.0	Olive Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3924
Hole No. BI-PBS-214-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

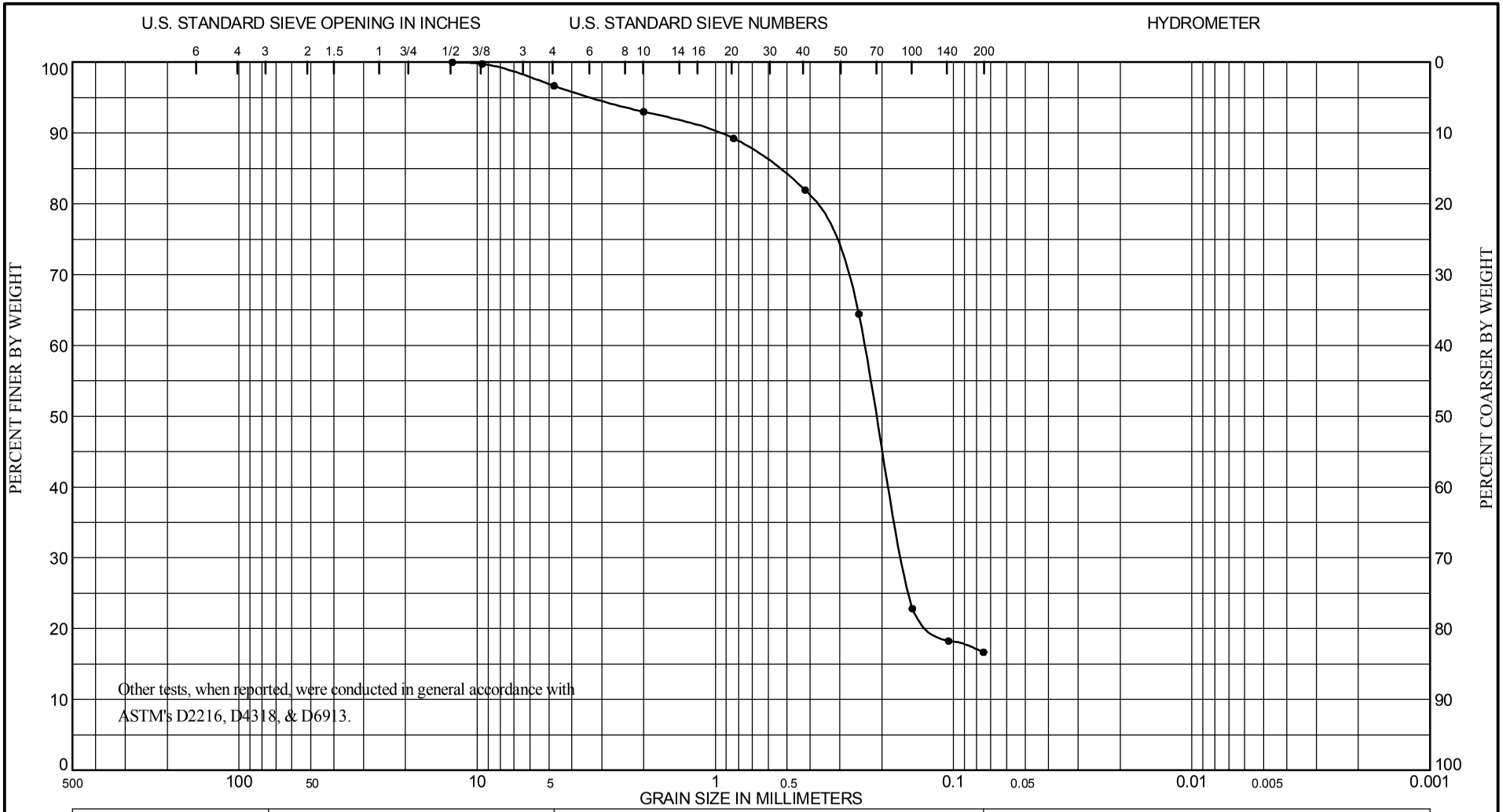
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	5.0 to 7.2	Olive Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3925
Hole No. BI-PBS-214-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	7.2 to 9.0	Dark Greenish Gray, Silty Sand (SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3926
Hole No. BI-PBS-214-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-215-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-215-13 — LOCATION COORDINATES: E = 1,120,997 N = 228,914	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 1 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 56.5 Ft.
	15. DATE BORING — STARTED: 12-02-13 — COMPLETED: 12-02-13
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -56.0 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 18.7 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-56.0	0.0				
-57.3	1.3		SAND, silty, mostly fine-grained sand-sized quartz, little shell, medium gray (SM)	A	Classification: SP-SM Color: GLEY1 10Y 6/1- D50: 0.206 mm % Fines: 8.5
-58.6	2.6		CLAY, lean, interbedded with 1-inch thick layers of silty sand, medium gray (CL)		
-64.1	8.1		CLAY, fat, pale green over medium gray (CH)		
-67.5	11.5		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, little shell, lt. gray (SP-SM)	NS	
-74.7	18.7		SAND, silty, mostly fine-grained sand-sized quartz, few shell, 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.

3. Seafloor elevation determined from 12/17/2014 USACE survey.

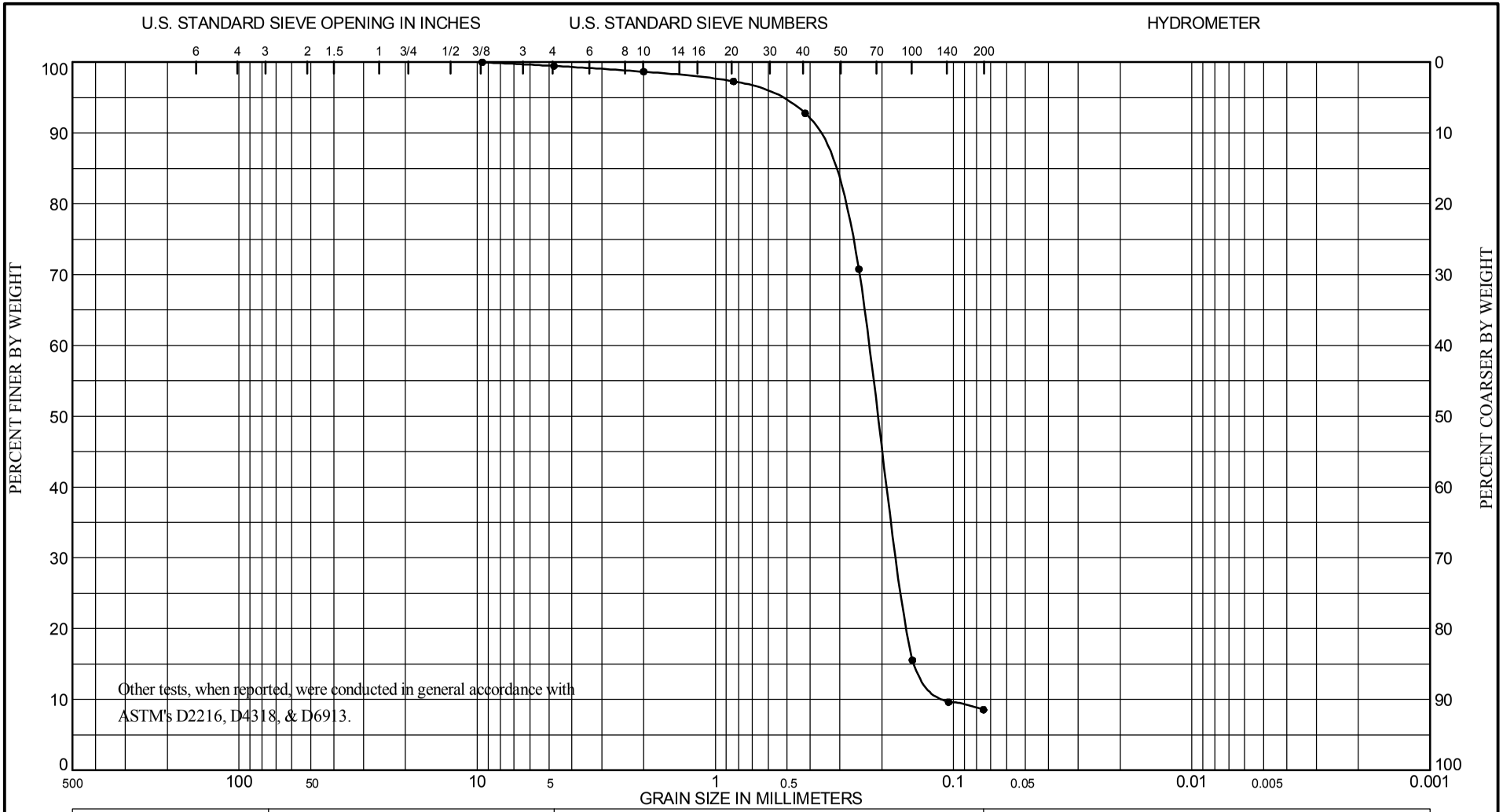
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.12876° Long = -88.40077°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 1.3	Dark Olive Gray, Poorly Graded Silty Sand (SP-SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3927
Hole No. BI-PBS-215-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-216-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-216-13 — LOCATION COORDINATES: E = 1,124,340 N = 229,254	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 2 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 50 Ft.
	15. DATE BORING — STARTED: 12-18-13 — COMPLETED: 12-18-13
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -49.9 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 19.7 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-49.9	0.0				
-53.3	3.4		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.291 mm % Fines: 2.2
-53.6	3.7		SAND, silty, mostly fine-grained sand-sized quartz, little shell fragments, medium gray (SM)	B	Classification: SP-SM Color: 2.5Y 5/1-gray D50: 0.235 mm % Fines: 8.3
-60.6	10.7		CLAY, lean, sandy, medium gray (CL) At El. -56.9 Ft., sandy, very loose - (liquefied?), medium to lt. gray		
-65.4	15.5		CLAY, fat, sandy with vertical burrows filled with pale brown silty sand, lt. gray and pale orange (CH)	NS	
-66.6	16.7		SAND, silty, mostly fine-grained sand-sized quartz, lt. gray and pale orange (SM)		
-69.6	19.7		SAND, poorly-graded, mostly fine-grained sand-sized quartz, few shell fragments, white and medium 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.

3. Seafloor elevation determined from 12/17/2014 USACE survey.

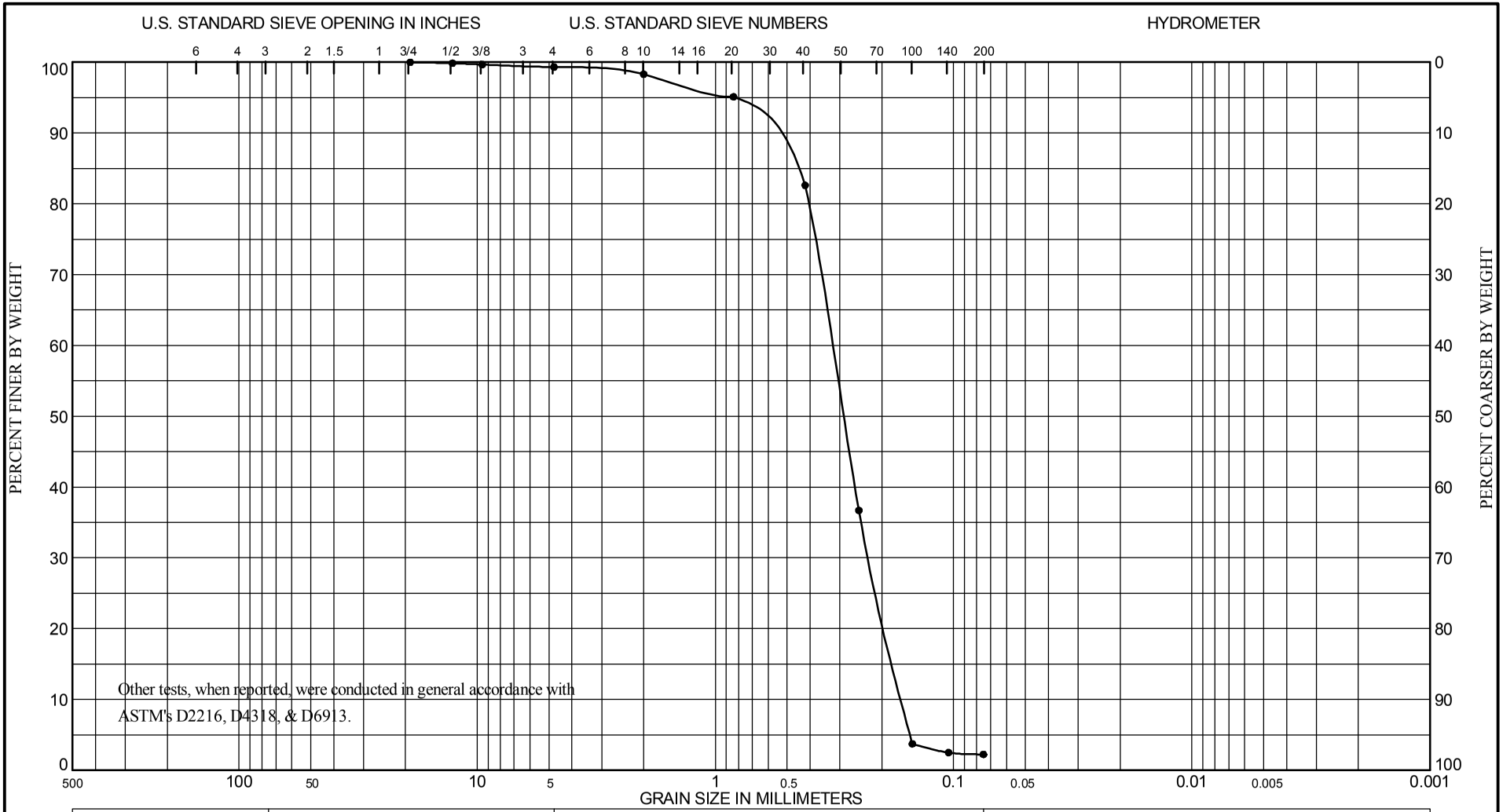
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.12966° Long = -88.39019°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

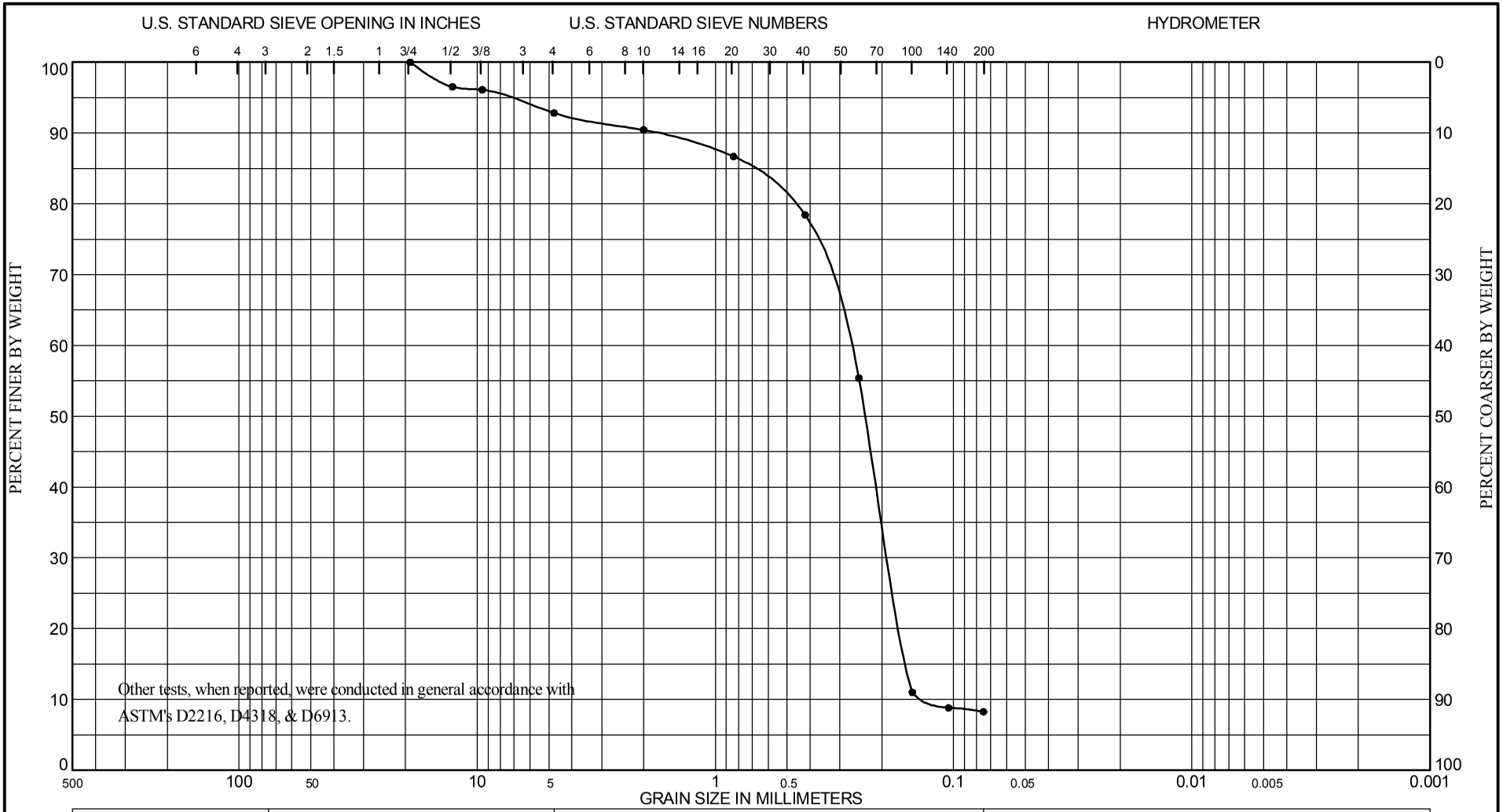
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 3.4	Light Greenish Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4041
Hole No. BI-PBS-216-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	3.4 to 3.7	Greenish Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4042
Hole No. BI-PBS-216-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-217-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-217-13 — LOCATION COORDINATES: E = 1,117,527 N = 232,098	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 1 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 48.7 Ft.
	15. DATE BORING — STARTED: 12-04-13 — COMPLETED: 12-04-13
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -48.7 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 11.5 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-48.7	0.0				
-49.8	1.1		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little shell, lt. gray (SP)	A	Classification: SP Color: GLEY1 10Y 7/1- D50: 0.277 mm % Fines: 1.3
-52.1	3.4		SAND, poorly-graded, mostly fine-grained sand-sized quartz, little shell between depth of 3 to 3.4 ft., lt. gray (SP)		
-54.6	5.9		CLAY, fat, sandy, interbedded with 3/4-inch thick layers of SM between depths of 4 to 5.9 ft., lt. gray and orange (CH)	NS	
-56.1	7.4		CLAY, lean, some shell, lt. gray (CL)		
-59.2	10.5		CLAY, fat, trace wood, trace white concretions or indistinguishable shell material, pale green, medium gray (CH)		
-60.2	11.5		SAND, silty, mostly fine-grained sand-sized quartz, little shell, medium 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.

3. Seafloor elevation determined from 2013 USGS geophysical survey.

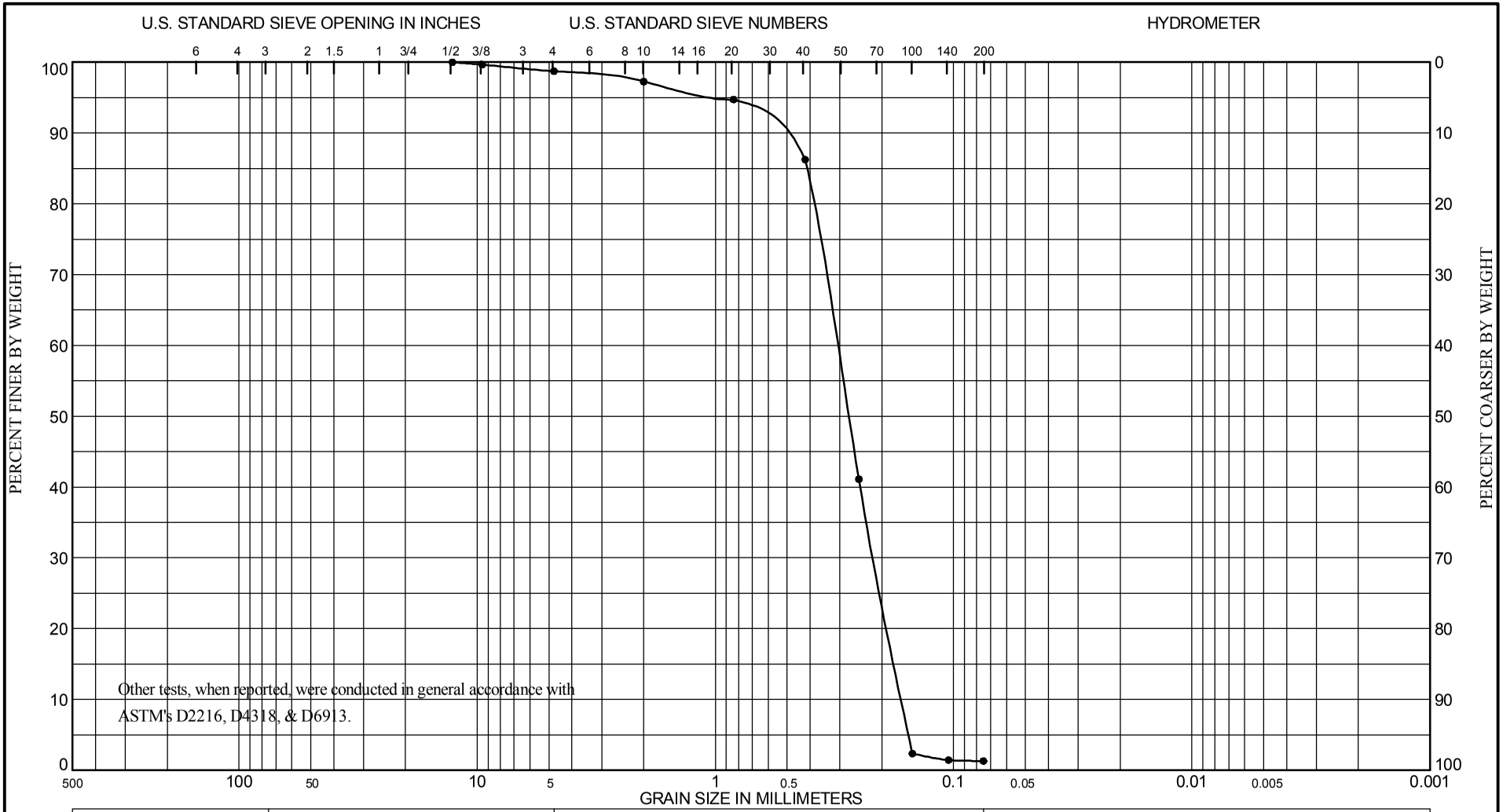
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.13755° Long = -88.41171°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 3.4	Light Greenish Gray, Poorly Graded Sand (SP), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3980
Hole No. BI-PBS-217-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-218-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 2 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-218-13 — LOCATION COORDINATES: E = 1,117,966 N = 230,412	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 1 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 55 Ft.
	15. DATE BORING — STARTED: 12-04-13 — COMPLETED: 12-04-13
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -54.1 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 19.5 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-54.1	0.0				
-54.4	0.3		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, little shell, medium gray (SP-SM)	A	Classification: SP-SM Color: 2.5Y 6/1-gray D50: 0.244 mm % Fines: 9.9
-57.1	3.0		CLAY, lean, little sand pockets, lt. gray, pale orange (CL)		
-62.1	8.0		CLAY, fat, sandy to depth of 6 ft., lt. gray, pale orange (CH)		
-63.5	9.4		CLAY, lean, lt. gray (CL)		
-69.6	15.5		SAND, silty, mostly fine-grained sand-sized quartz, little shell, medium gray (SM)	NS	
-73.6	19.5		SAND, poorly-graded, mostly fine-grained sand-sized quartz, little shell, medium 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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.13291° Long = -88.41034°

DRILLING LOG (Cont. Sheet)	INSTALLATION Mobile District		SHEET 2 OF 2 SHEETS
PROJECT MsCIP Barrier Island Restoration	COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83	VERTICAL NAVD88
LOCATION COORDINATES X = 1,117,966 Y = 230,412	ELEVATION TOP OF BORING -54.1 Ft.		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
			applying NOAA tidal gauge data conversion factor.		

30
35
40
45
50
55
60

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.13291° Long = -88.41034°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192

COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 0.3	Greenish Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3982
Hole No. BI-PBS-218-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-219-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-219-13 — LOCATION COORDINATES: E = 1,121,443 N = 225,555	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 1 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 53 Ft.
	15. DATE BORING — STARTED: 12-17-13 — COMPLETED: 12-17-13
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -54.0 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 17.5 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-54.0	0.0				
-58.5	4.5		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, few shell fragments, brownish gray (SP)	A	Classification: SP Color: GLEY1 10Y 6/1- D50: 0.227 mm % Fines: 3.1
-59.3	5.3		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few shell fragments, brownish gray (SP-SM)		
-64.0	10.0		CLAY, fat, sandy, lt. gray and pale orange (CH)		
-65.0	11.0		SAND, poorly-graded, mostly fine-grained sand-sized quartz, lt. gray and pale orange (SP)	NS	
-65.2	11.2		SILT, inorganic-L, sandy, fine-grained, lt. gray and pale orange (ML)		
-70.4	16.4		CLAY, lean, lt. gray to medium gray (CL)		
-71.5	17.5		SAND, silty, clayey, mostly fine to medium-grained sand-sized quartz, little shell fragments, medium gray (SC-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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

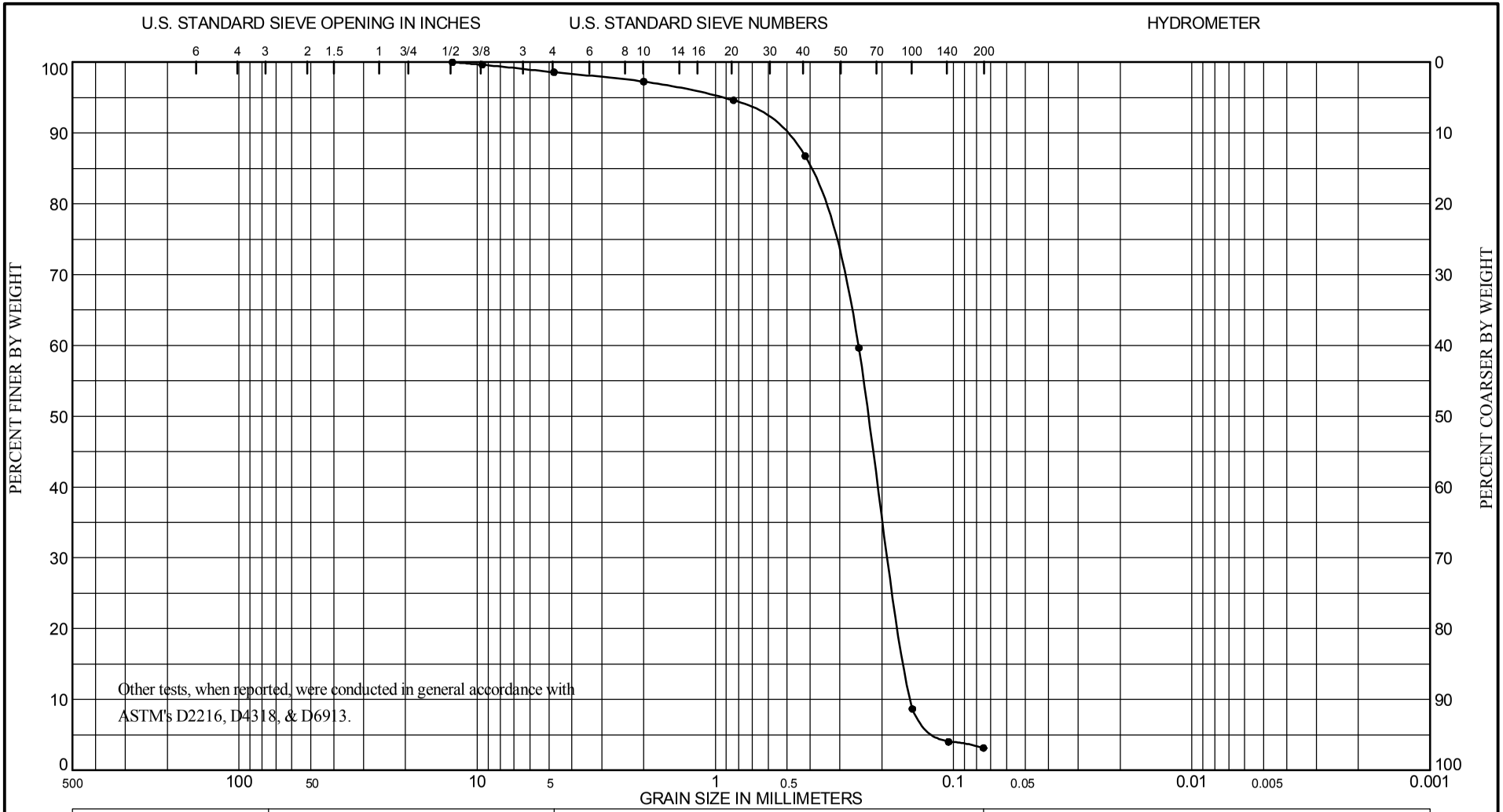
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.11952° Long = -88.39940°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 5.3	Greenish Gray, Poorly Graded Sand (SP), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4033
Hole No. BI-PBS-219-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-220-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 2 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-220-13 — LOCATION COORDINATES: E = 1,123,523 N = 232,157	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 5 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 59 Ft.
	15. DATE BORING — STARTED: 12-02-13 — COMPLETED: 12-02-13
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -59.7 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: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-59.7	0.0				
-60.8	1.1		SAND, silty, mostly fine-grained sand-sized quartz, few shell, brownish gray (SM)	A	Classification: SC Color: 2.5Y 5/1-gray D50: 0.168 mm % Fines: 34.6
-61.3	1.6			NS	
-61.9	2.2		CLAY, lean, sandy, medium gray (CL)	B	Classification: SP-SM Color: 2.5Y 6/1-gray D50: 0.276 mm % Fines: 10.9
			SAND, silty, mostly fine-grained sand-sized quartz, little shell, medium gray (SM)		
-66.7	7.0		SAND, poorly-graded, mostly fine-grained sand-sized quartz, few shell, medium gray (SP)	C	Classification: SP-SM Color: 2.5Y 6/1-gray D50: 0.225 mm % Fines: 9
-69.2	9.5		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few shell, medium gray (SP-SM)	D	Classification: SP-SM Color: 2.5Y 6/1-gray D50: 0.183 mm % Fines: 11.6
-75.2	15.5		SAND, silty, few shell, medium gray (SM)	E	Classification: SM Color: 2.5Y 6/1-gray D50: 0.15 mm % Fines: 16.7
-79.7	20.0		SAND, clayey, few shell, medium 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.

3. Seafloor elevation calculated using sampling

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.13765° Long = -88.39274°

DRILLING LOG (Cont. Sheet)	INSTALLATION Mobile District		SHEET 2 OF 2 SHEETS
PROJECT MsCIP Barrier Island Restoration	COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83	VERTICAL NAVD88
LOCATION COORDINATES X = 1,123,523 Y = 232,157	ELEVATION TOP OF BORING -59.7 Ft.		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
			vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.		

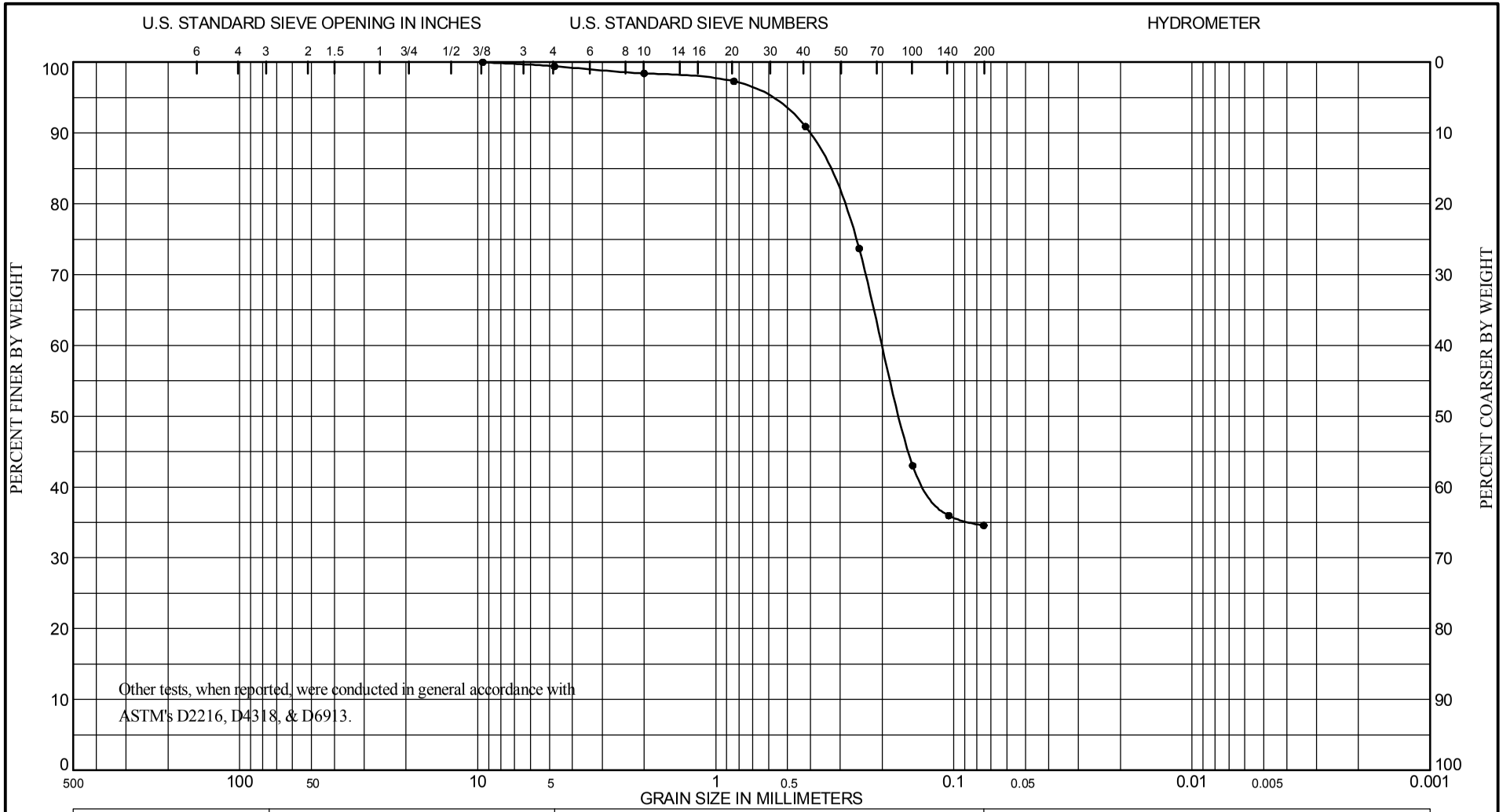
30
35
40
45
50
55
60

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.13765° Long = -88.39274°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

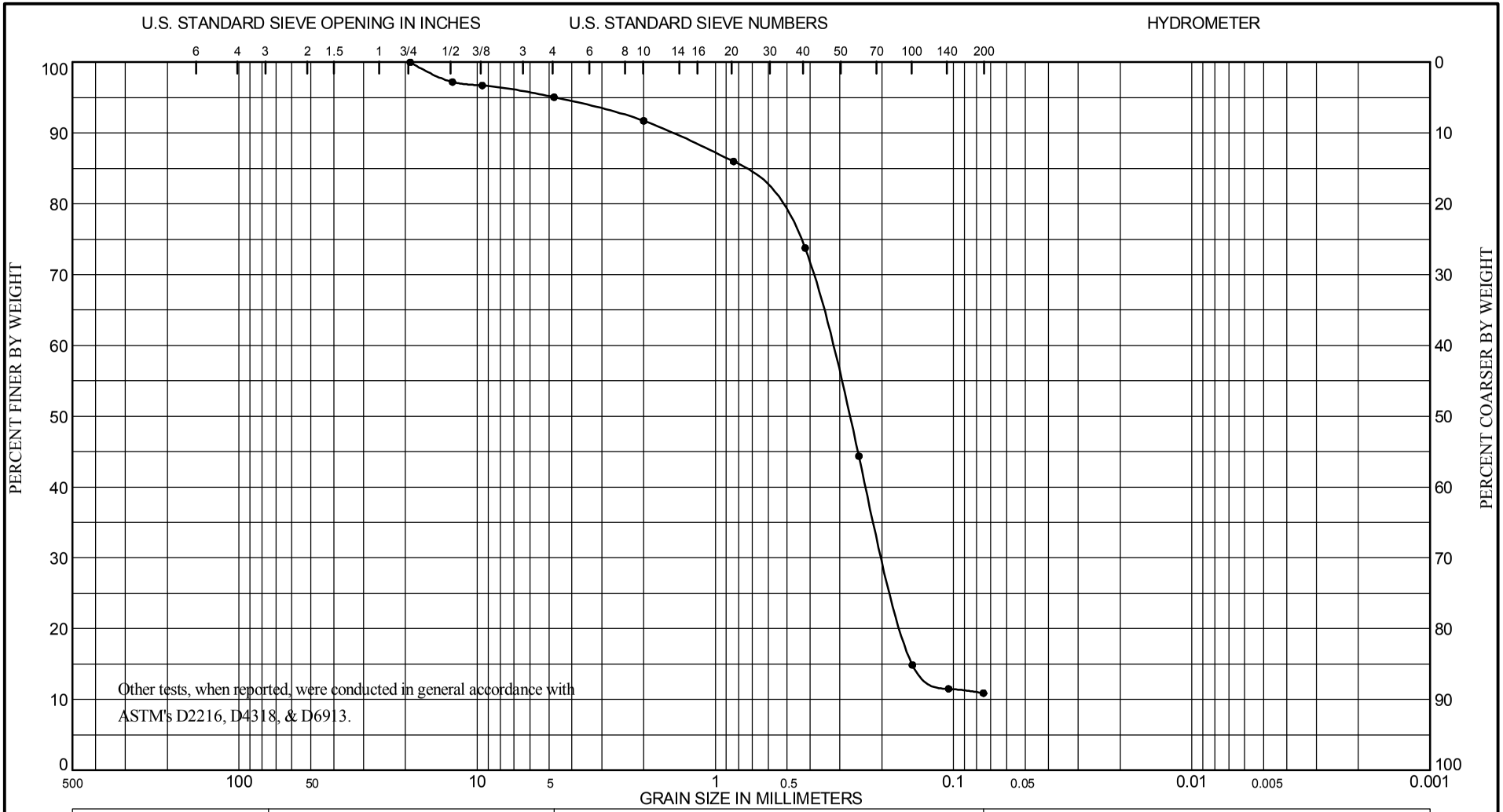
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 1.1	Dark Greenish Gray, (Visual) Clayey Sand (SC).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3913
Hole No. BI-PBS-220-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

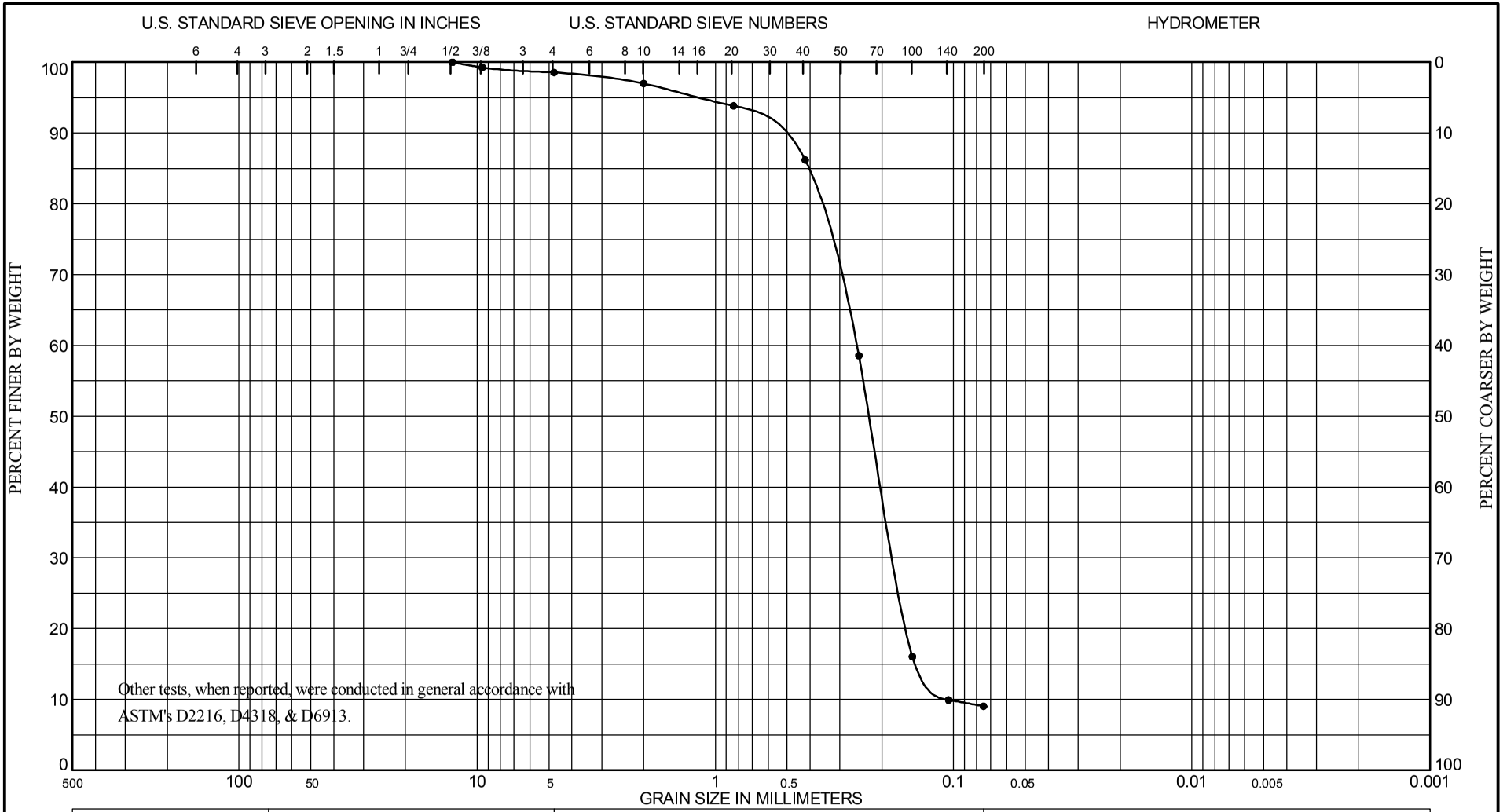
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	1.6 to 2.2	Greenish Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3914
Hole No. BI-PBS-220-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

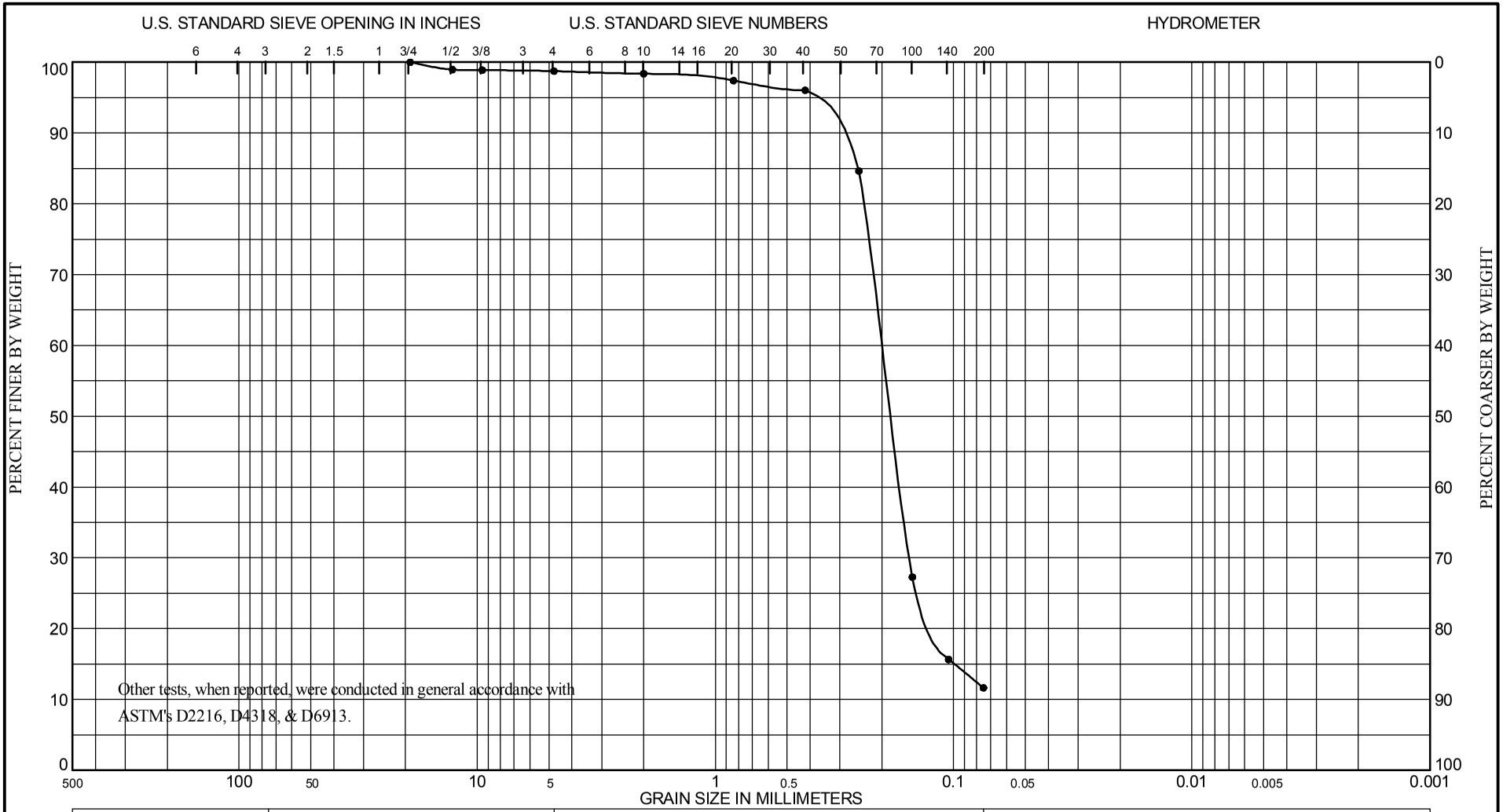
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	2.2 to 7.0	Greenish Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3915
Hole No. BI-PBS-220-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

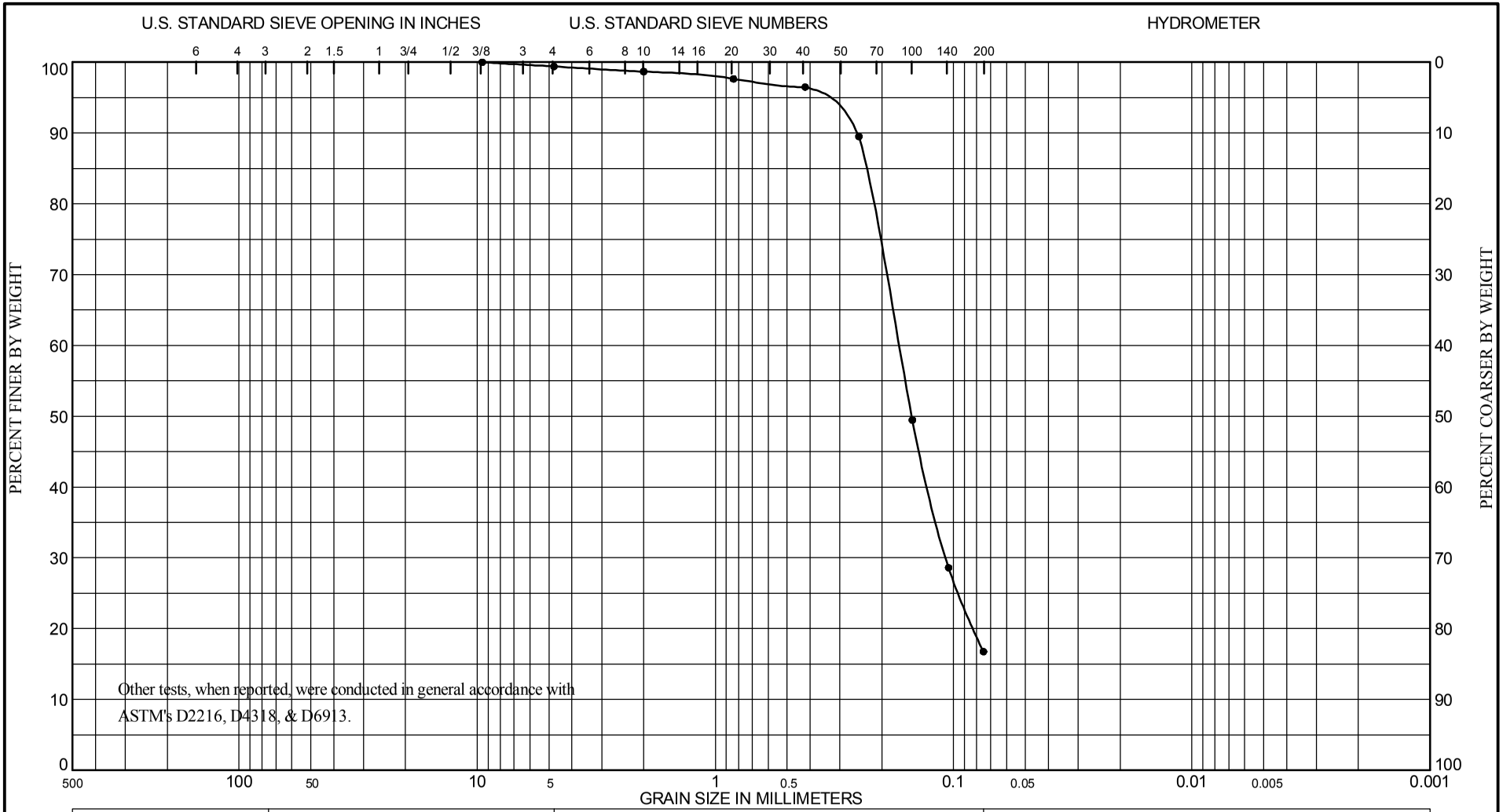
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
D	7.0 to 9.5	Greenish Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3916
Hole No. BI-PBS-220-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
E	9.5 to 14.5	Greenish Gray, Silty Sand (SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3917
Hole No. BI-PBS-220-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-222-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 2 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-222-13 — LOCATION COORDINATES: E = 1,116,523 N = 229,894	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 2 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 54 Ft.
	15. DATE BORING — STARTED: 12-08-13 — COMPLETED: 12-08-13
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -53.4 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: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-53.4	0.0				
-54.3	0.9		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little shell, lt. gray (SP)	A	Classification: SP Color: GLEY1 10Y 6/1- D50: 0.271 mm % Fines: 3.7
-55.3	1.9		SAND, silty, mostly fine-grained sand-sized quartz, little shell, lt. to medium gray (SM)	B	Classification: SP-SM Color: GLEY1 10Y 5/1- D50: 0.213 mm % Fines: 10
-59.9	6.5		CLAY, fat, sandy, pale green, lt. gray, orange (CH)	NS	
-62.0	8.6		CLAY, lean, trace wood at base of strata, lt. greenish gray (CL)		
-64.4	11.0		SAND, poorly-graded, mostly fine-grained sand-sized quartz, lt. to medium gray (SP)		
-66.3	12.9		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, little shell, lt. to medium gray (SP-SM)		
-73.4	20.0		SAND, silty, mostly fine-grained sand-sized quartz, little shell, medium 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.

3. Seafloor elevation calculated using sampling

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.13150° Long = -88.41491°

DRILLING LOG (Cont. Sheet)	INSTALLATION Mobile District		SHEET 2 OF 2 SHEETS
PROJECT MsCIP Barrier Island Restoration	COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83	VERTICAL NAVD88
LOCATION COORDINATES X = 1,116,523 Y = 229,894	ELEVATION TOP OF BORING -53.4 Ft.		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
			vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.		

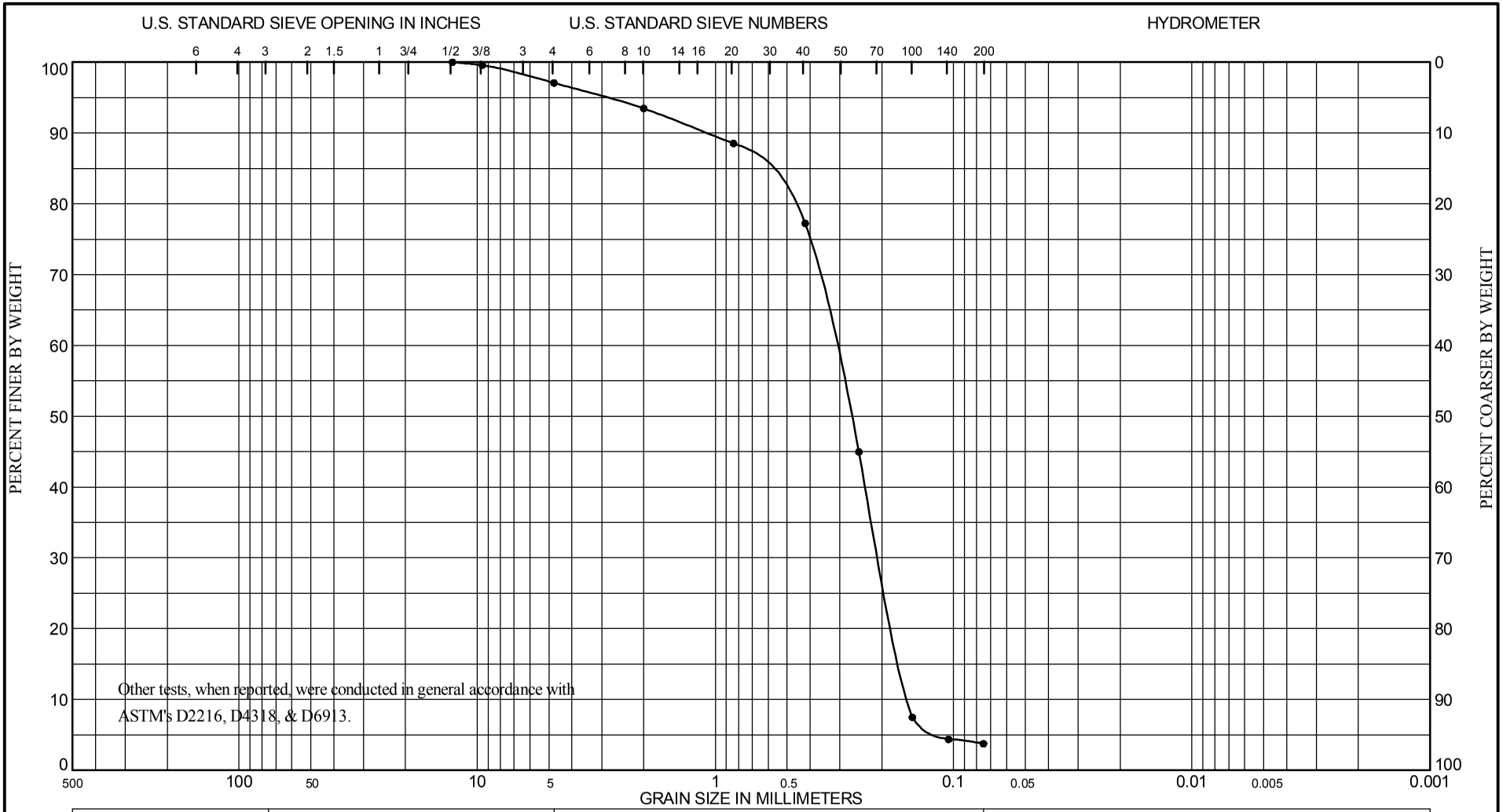
30
35
40
45
50
55
60

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.13150° Long = -88.41491°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

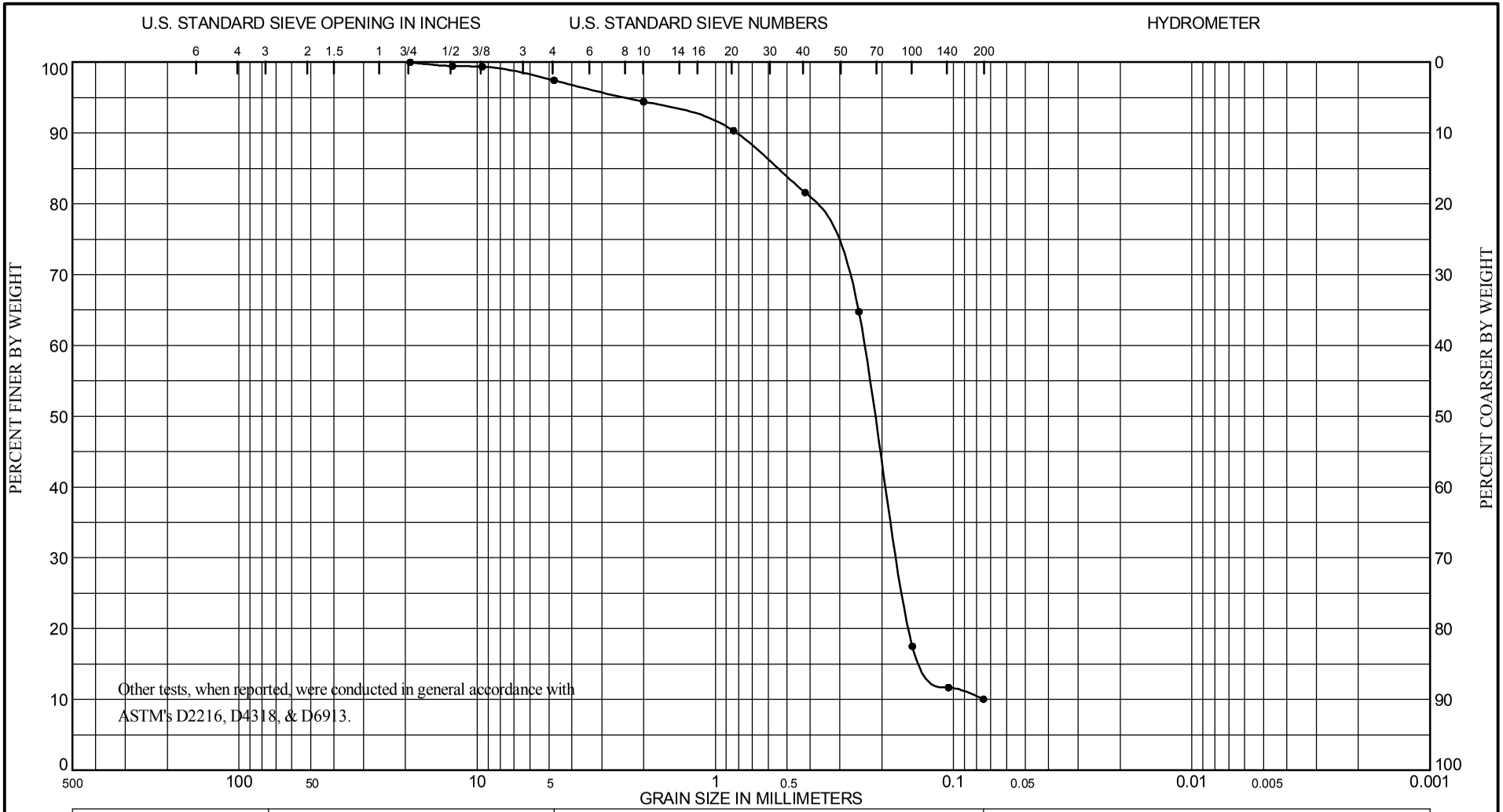
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 0.9	Greenish Gray, Poorly Graded Sand (SP), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3988
Hole No. BI-PBS-222-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	0.9 to 1.9	Greenish Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3989
Hole No. BI-PBS-222-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-223-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-223-13 — LOCATION COORDINATES: E = 1,118,733 N = 233,146	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 3 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 56 Ft.
	15. DATE BORING — STARTED: 12-04-13 — COMPLETED: 12-04-13
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -55.2 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 19.0 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-55.2	0.0				
-58.6	3.4		SAND, silty, mostly fine-grained sand-sized quartz, lt. to medium gray, brownish below 1 ft., medium to lt. gray below 2 ft. (SM)	A	Classification: SM Color: 2.5Y 5/1-gray D50: 0.2 mm % Fines: 14.9
-60.3	5.1		CLAY, lean, interbedded with 1/2-inch sand lenses, medium gray (CL)	NS	
-60.8	5.6		SAND, silty, mostly fine to medium-grained sand-sized quartz, little shell, lt. gray (SM)	B	Classification: SP-SM Color: 2.5Y 5/1-gray D50: 0.208 mm % Fines: 7.4
-64.0	8.8		SAND, poorly-graded, mostly fine-grained sand-sized quartz, little shell, lt. gray (SP)		
-64.3	9.1				
-65.5	10.3		SAND, silty, mostly fine-grained sand-sized quartz, lt. gray (SM)		
-71.2	16.0		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little shell, lt. gray (SP)	C	Classification: SP-SM Color: 2.5Y 6/1-gray D50: 0.189 mm % Fines: 7.2
-71.9	16.7		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, little shell, brownish gray (SP-SM)		
-74.2	19.0		SAND, silty, mostly fine-grained sand-sized quartz, little shell, brownish gray (SM)	NS	
			SAND, clayey, mostly fine-grained sand-sized quartz, few shell, medium brownish 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.

3. Seafloor elevation determined from 2013 USGS geophysical survey.

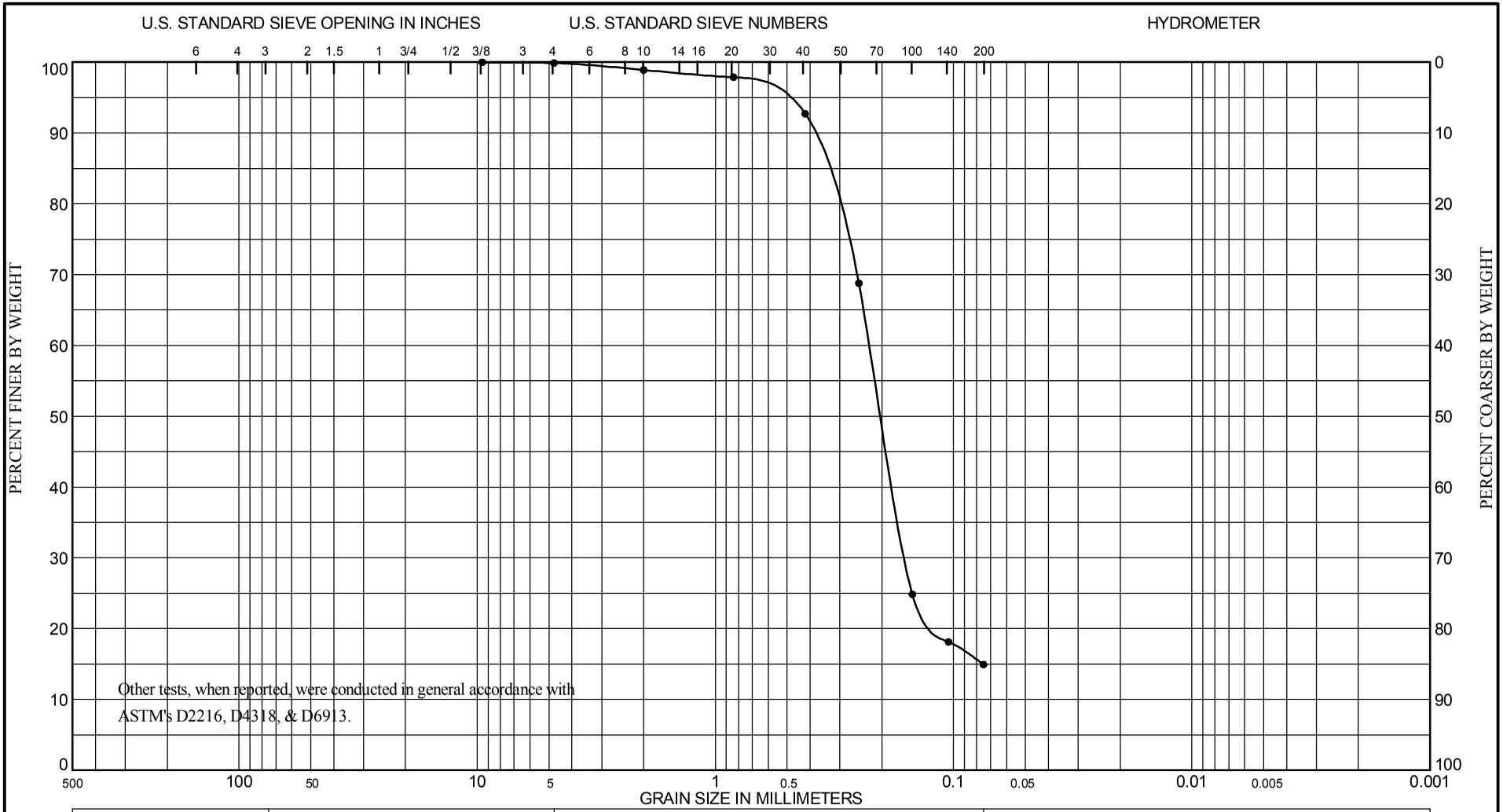
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14042° Long = -88.40788°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

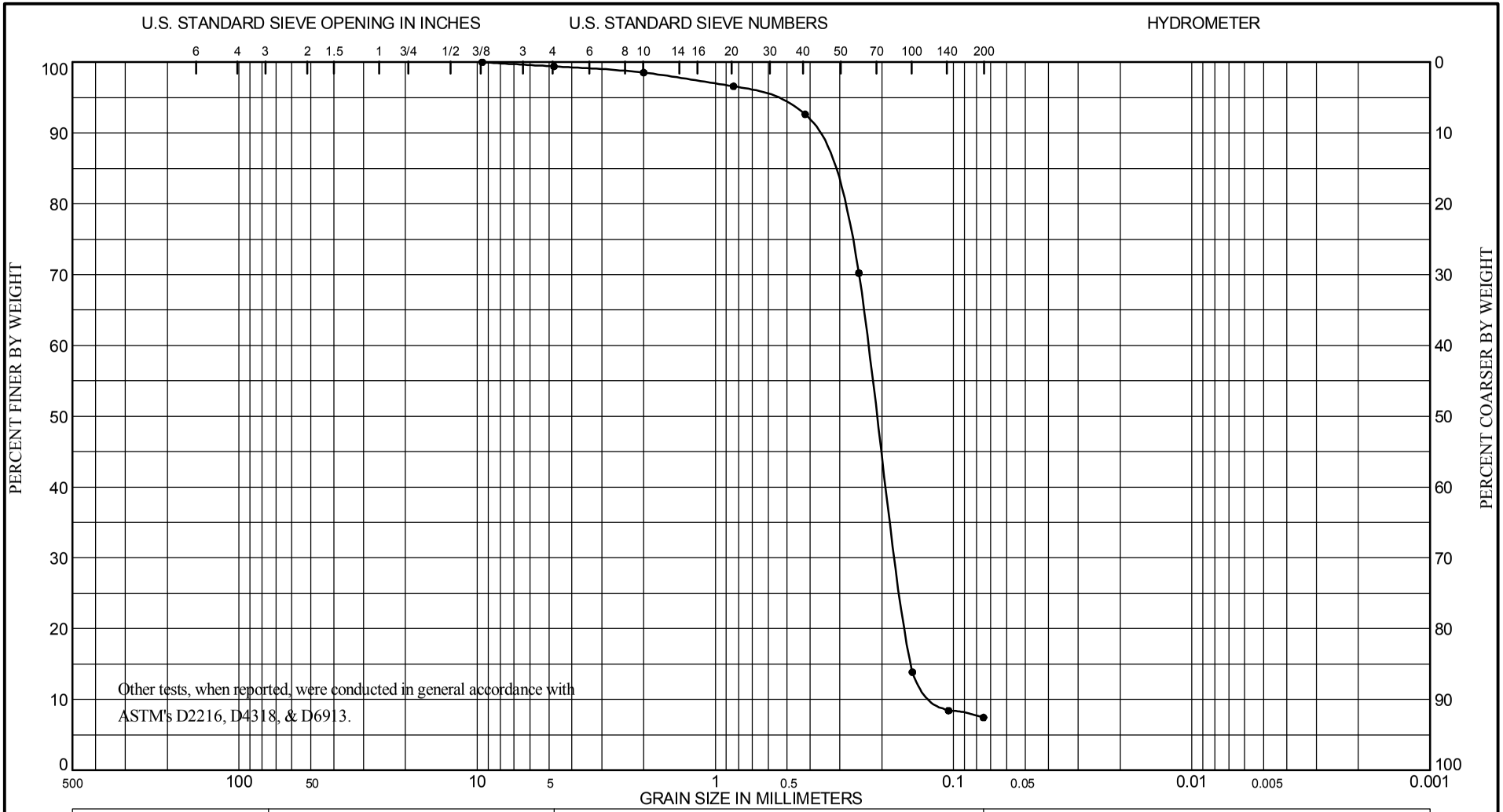
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 3.4	Very Dark Gray, Silty Sand (SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3975
Hole No. BI-PBS-223-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

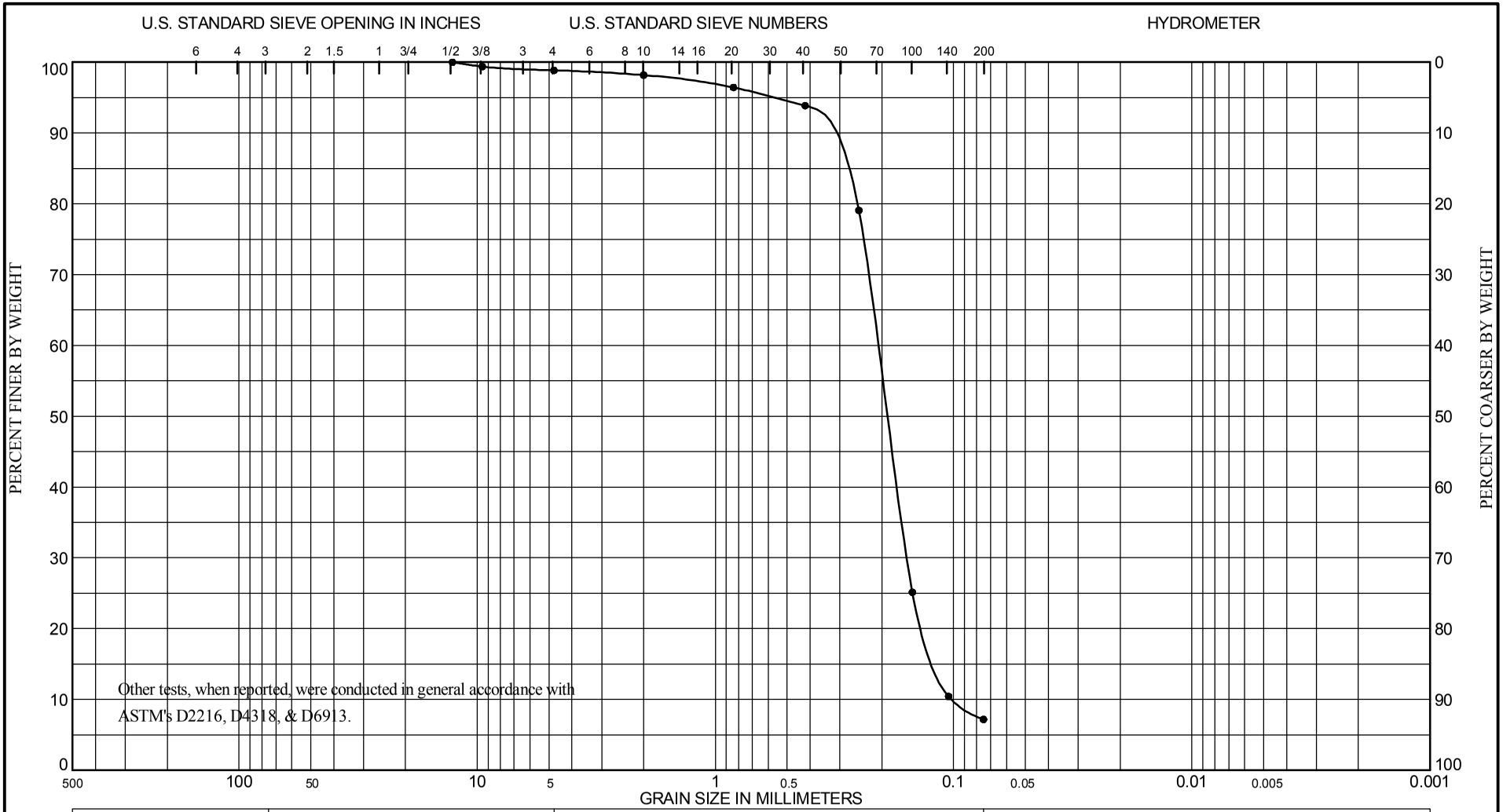
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	5.1 to 10.3	Dark Greenish Gray, Poorly Graded Silty Sand (SP-SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3976
Hole No. BI-PBS-223-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	10.3 to 15.3	Dark Greenish Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3977
Hole No. BI-PBS-223-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-224-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 2 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-224-13 — LOCATION COORDINATES: E = 1,117,483 N = 233,672	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 2 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 56 Ft.
	15. DATE BORING — STARTED: 12-04-13 — COMPLETED: 12-04-13
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -56.2 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 19.5 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-56.2	0.0				
-59.5	3.3		CLAY, lean, trace wood, sandy, medium gray (CL)	NS	
-60.1	3.9		SAND, silty, mostly fine-grained sand-sized quartz, medium gray (SM)		
-63.4	7.2		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, little shell, medium gray (SP-SM)	A	Classification: SP-SM Color: 2.5Y 5/1-gray D50: 0.199 mm % Fines: 7.6
-68.7	12.5		SAND, poorly-graded, mostly fine-grained sand-sized quartz, little shell, lt. gray (SP)	B	Classification: SP-SM Color: 2.5Y 6/1-gray D50: 0.201 mm % Fines: 5.8
-70.7	14.5		SAND, silty, mostly fine-grained sand-sized quartz, trace shell, lt. to medium gray (SM)	NS	
-74.2	18.0		SAND, clayey, mostly fine-grained sand-sized quartz, trace shell, lt. to medium gray (SC)		
-75.7	19.5		SAND, silty, mostly fine-grained sand-sized quartz, trace shell, lt. to medium 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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14188° Long = -88.41183°

DRILLING LOG (Cont. Sheet)	INSTALLATION Mobile District		SHEET 2 OF 2 SHEETS
PROJECT MsCIP Barrier Island Restoration	COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83	VERTICAL NAVD88
LOCATION COORDINATES X = 1,117,483 Y = 233,672	ELEVATION TOP OF BORING -56.2 Ft.		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
			applying NOAA tidal gauge data conversion factor.		

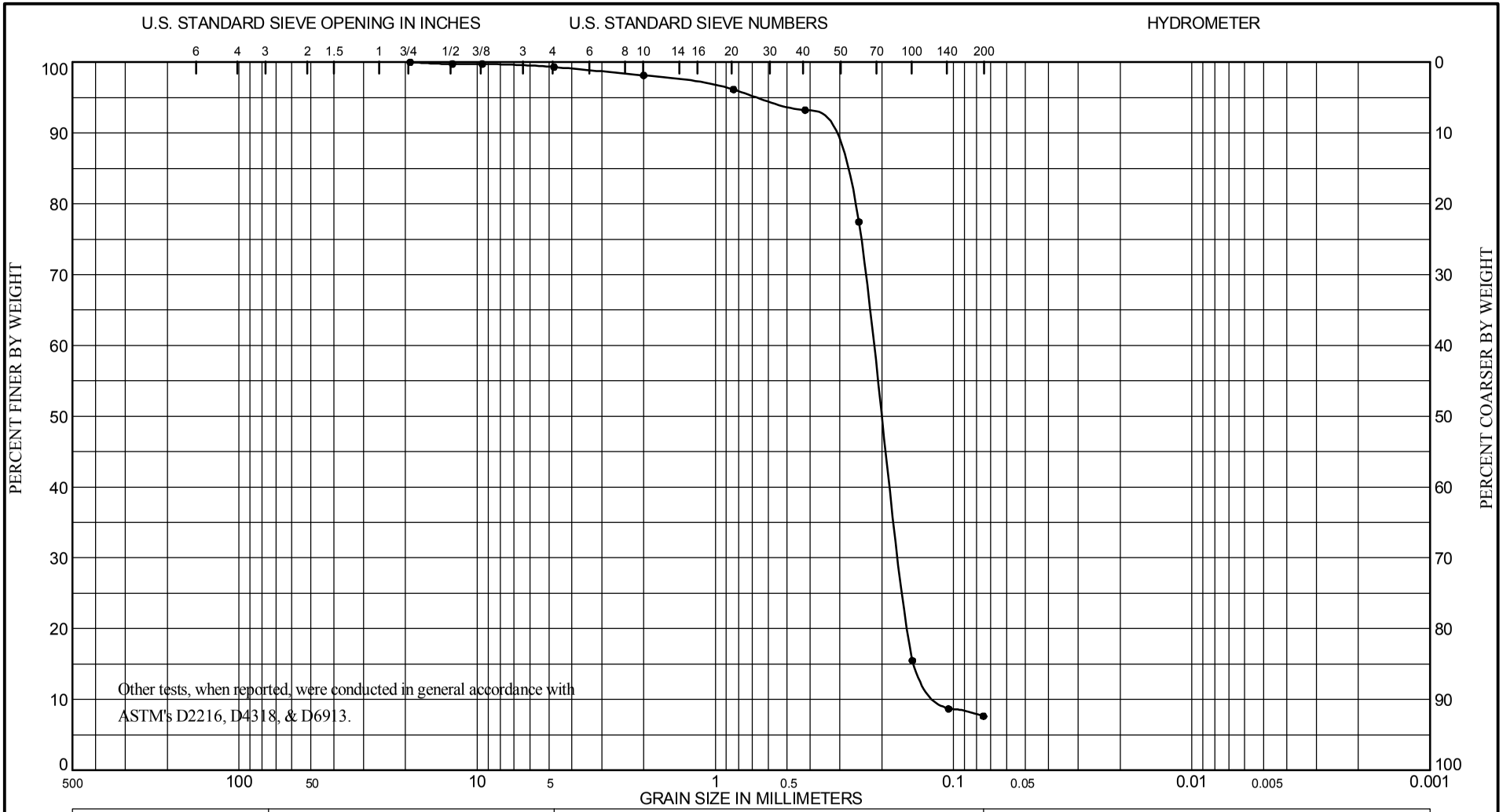
30
35
40
45
50
55
60

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14188° Long = -88.41183°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

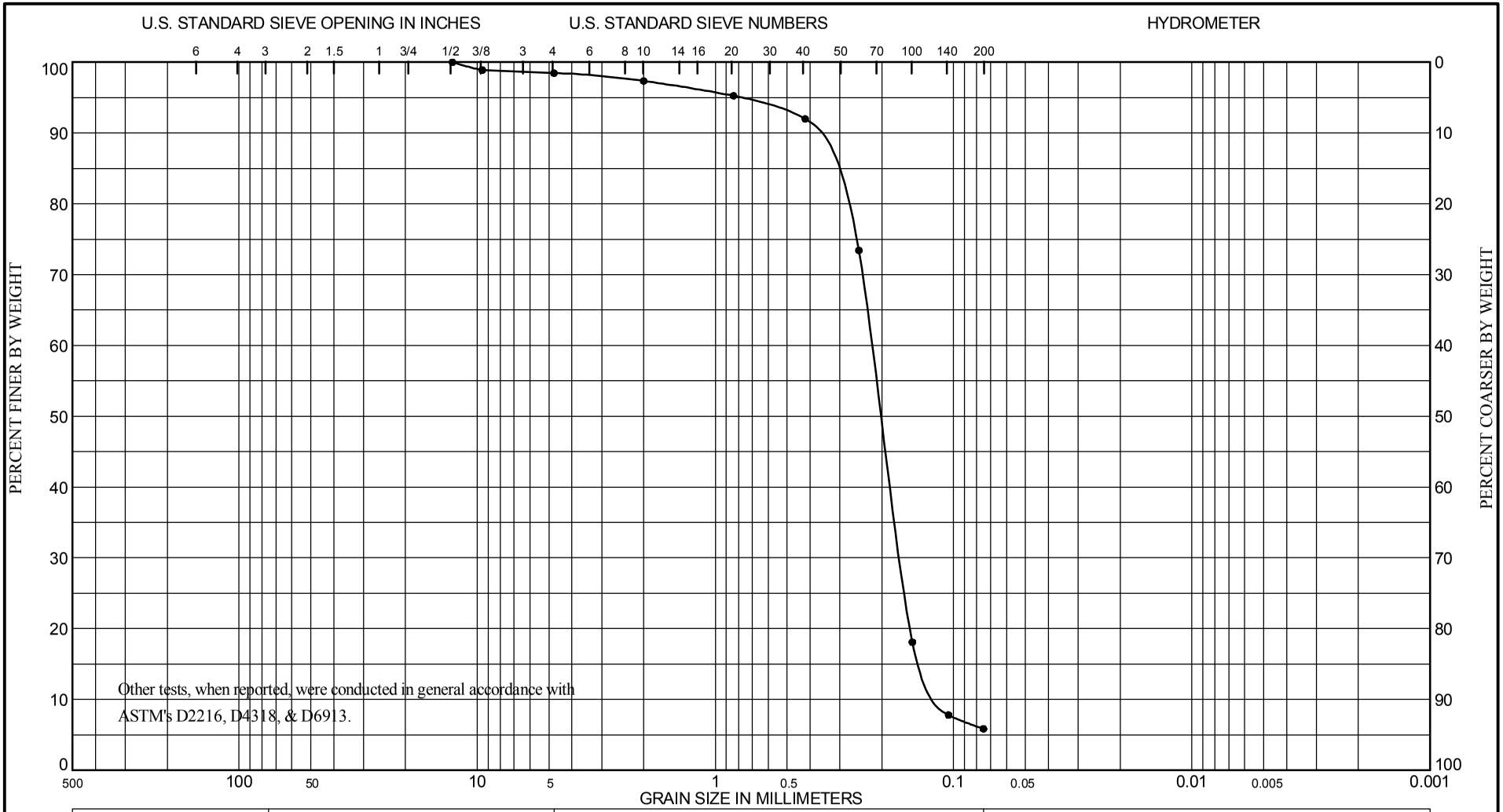
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	3.9 to 7.2	Dark Greenish Gray, Poorly Graded Silty Sand (SP-SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3978
Hole No. BI-PBS-224-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	7.2 to 12.5	Dark Greenish Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3979
Hole No. BI-PBS-224-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-225-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 2 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-225-13 — LOCATION COORDINATES: E = 1,110,452 N = 233,873	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 2 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 48.7 Ft.
	15. DATE BORING — STARTED: 12-18-13 — COMPLETED: 12-18-13
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -47.8 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: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-47.8	0.0				
-48.7	0.9		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 6/1-gray D50: 0.313 mm % Fines: 3.1
-49.2	1.4		SAND, silty, mostly fine-grained sand-sized quartz, little shell fragments, medium gray (SM)	B	Classification: SM Color: GLEY1 10Y 5/1- D50: 0.209 mm % Fines: 13.6
-56.3	8.5		CLAY, lean, little shell fragments, medium gray (CL)	NS	
-60.7	12.9		SAND, clayey, mostly fine-grained sand-sized quartz, lt. and medium gray and pale orange (SC)	NS	
-66.7	18.9		CLAY, lean, trace wood fragments, sandy, medium gray (CL)	NS	
-67.8	20.0		SAND, silty, clayey, mostly fine-grained sand-sized quartz, fine-grained wood fragments at 19.2 ft., lt. gray (SC-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.

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14250° Long = -88.43407°

DRILLING LOG (Cont. Sheet)	INSTALLATION Mobile District		SHEET 2 OF 2 SHEETS
PROJECT MsCIP Barrier Island Restoration	COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83	VERTICAL NAVD88
LOCATION COORDINATES X = 1,110,452 Y = 233,873	ELEVATION TOP OF BORING -47.8 Ft.		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
			3. Seafloor elevation determined from 12/17/2014 USACE survey.		

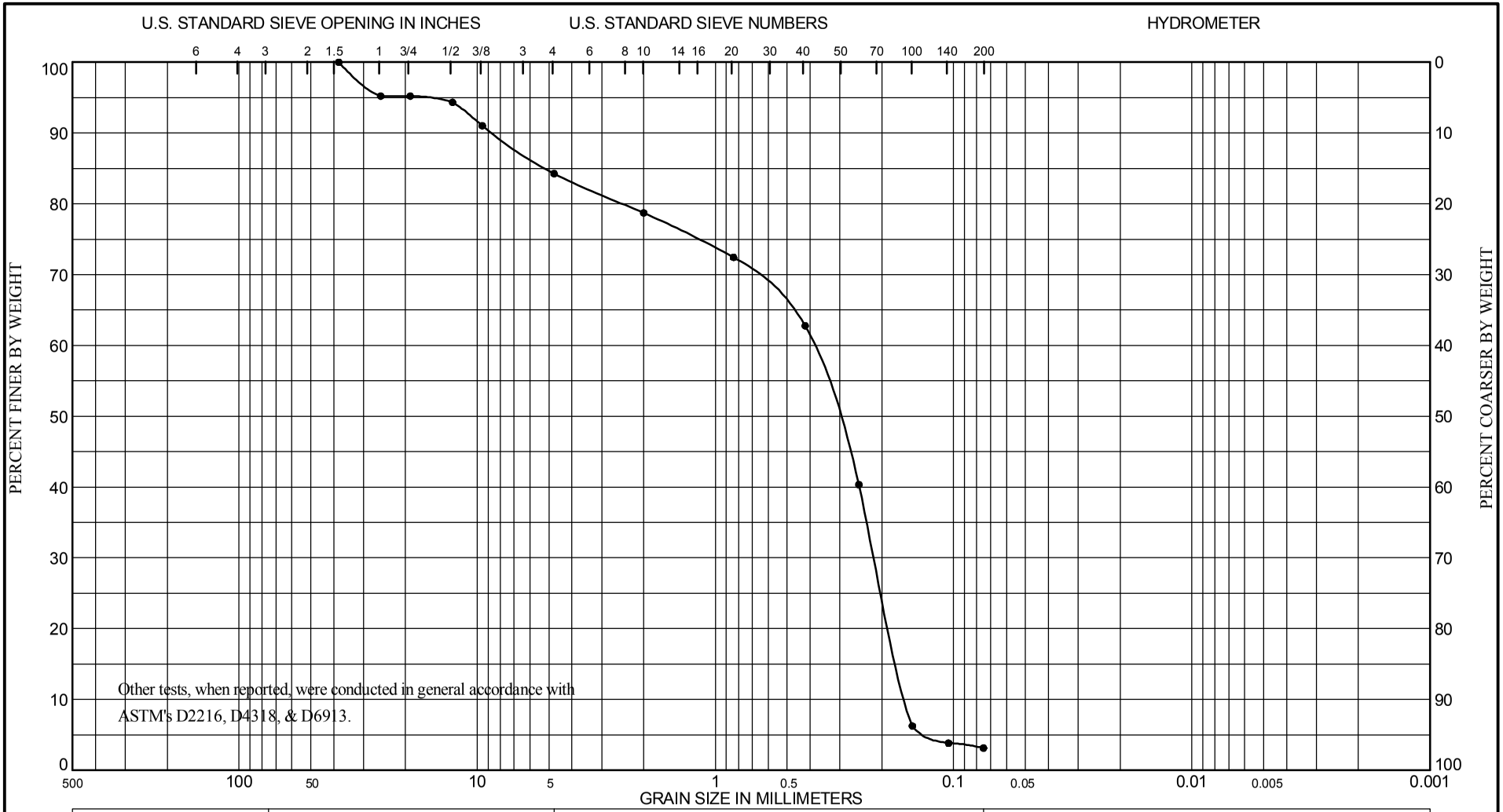
30
35
40
45
50
55
60

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14250° Long = -88.43407°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

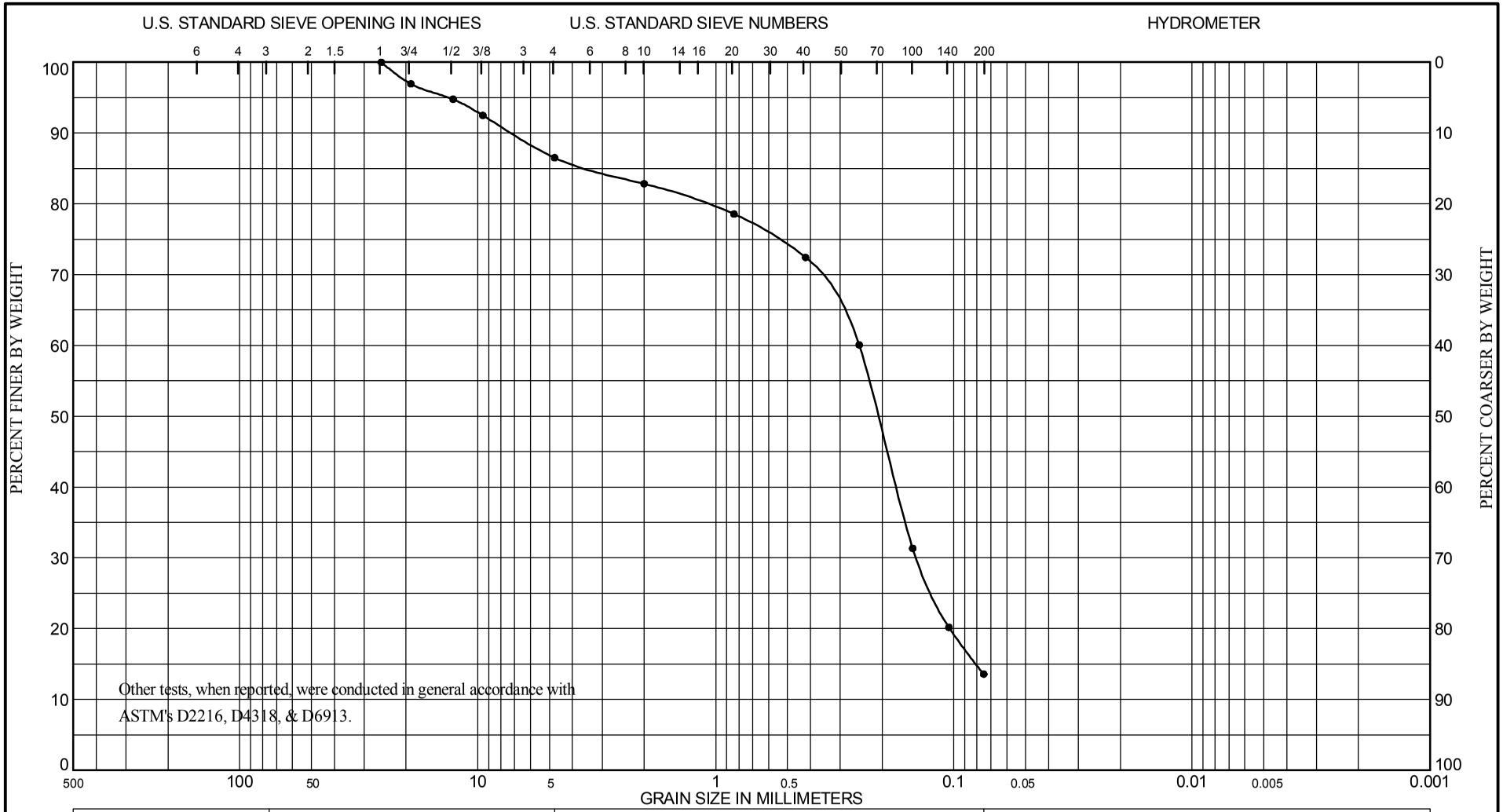
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 0.9	Greenish Gray, Poorly Graded Sand (SP), with a little gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4044
Hole No. BI-PBS-225-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	0.9 to 1.4	Dark Greenish Gray, Silty Sand (SM), with a little gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4045
Hole No. BI-PBS-225-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-228-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 2 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-228-13 — LOCATION COORDINATES: E = 1,112,266 N = 235,730	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 5 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 53 Ft.
	15. DATE BORING — STARTED: 12-16-13 — COMPLETED: 12-16-13
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -52.9 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: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-52.9	0.0				
-56.8	3.9		SAND, silty, mostly fine-grained sand-sized quartz, trace shell fragments, medium gray (SM)	A	Classification: SM Color: 2.5Y 5/1-gray D50: 0.248 mm % Fines: 19.8
-71.8	18.9		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace wood, lt. gray (SP)	B	Classification: SP Color: 2.5Y 6/1-gray D50: 0.342 mm % Fines: 2.6
				C	Classification: SP Color: GLEY1 10Y 6/1- D50: 0.324 mm % Fines: 3.1
			At El. -69.9 Ft., trace shell fragments	D	Classification: SP Color: 2.5Y 6/1-gray D50: 0.511 mm % Fines: 3.7
-72.9	20.0		SAND, silty, mostly fine-grained sand-sized quartz, medium gray (SM)	E	Classification: SM Color: GLEY1 10Y 6/1- D50: 0.189 mm % Fines: 14

NOTES:

1. Soils are field visually classified in accordance with the Unified Soils Classification System.

2. NS = Sample not submitted for laboratory analysis from this interval.

3. Seafloor elevation determined from

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14759° Long = -88.42831°

DRILLING LOG (Cont. Sheet)	INSTALLATION Mobile District		SHEET 2 OF 2 SHEETS
PROJECT MsCIP Barrier Island Restoration	COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83	VERTICAL NAVD88
LOCATION COORDINATES X = 1,112,266 Y = 235,730	ELEVATION TOP OF BORING -52.9 Ft.		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
			12/17/2014 USACE survey.		

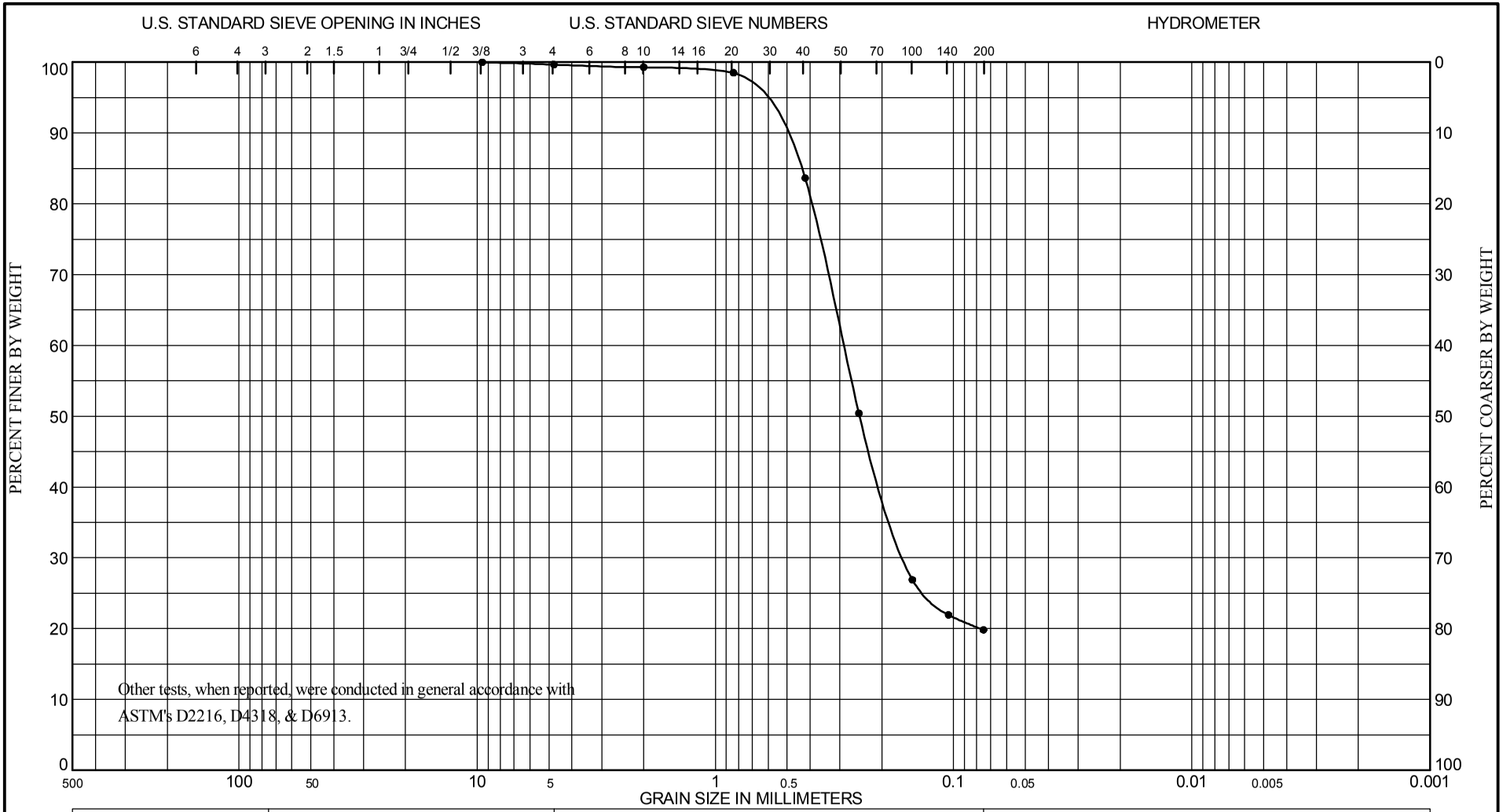
30
35
40
45
50
55
60

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14759° Long = -88.42831°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

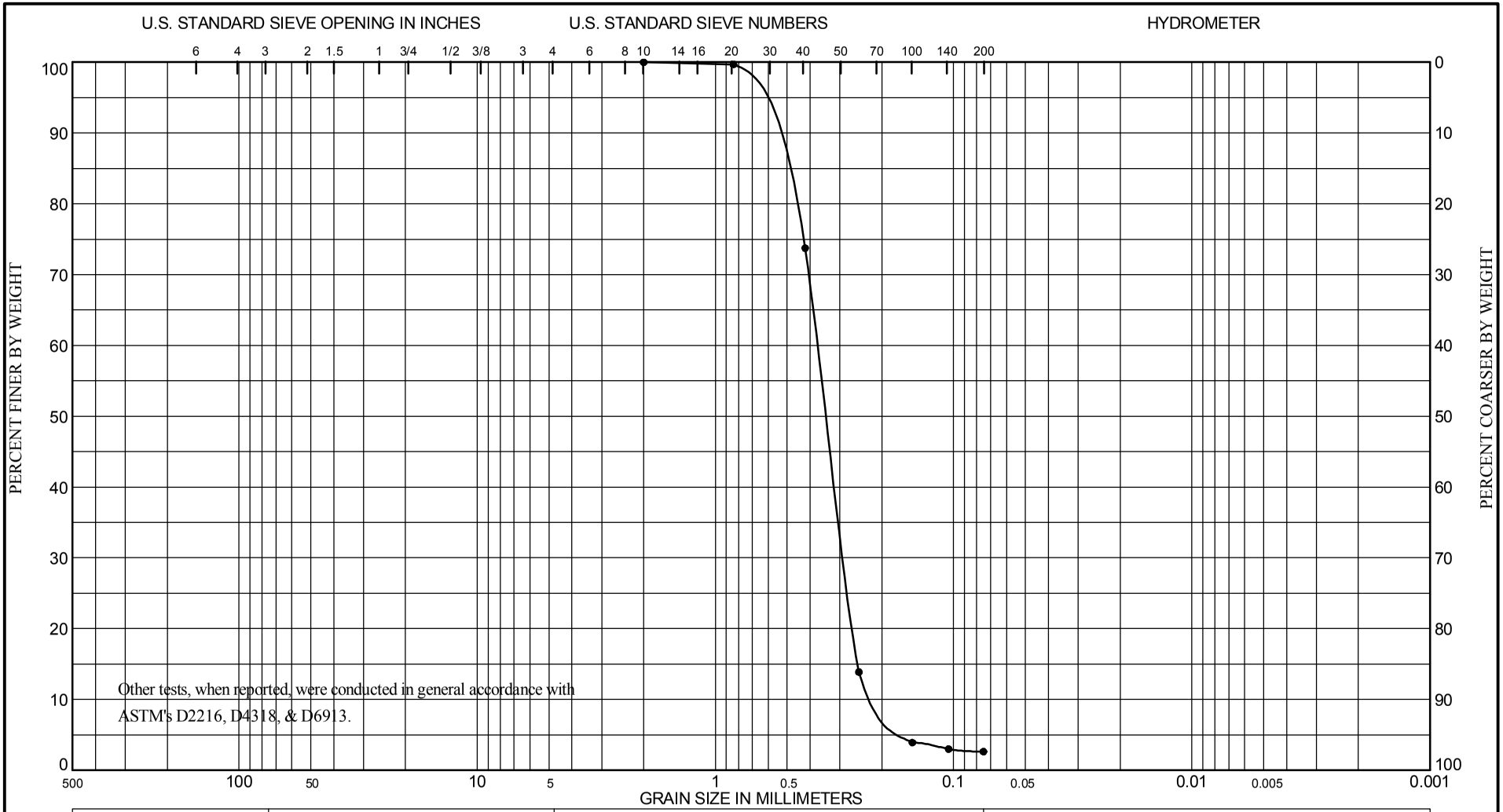
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 3.9	Dark Gray, Silty Sand (SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4008
Hole No. BI-PBS-228-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

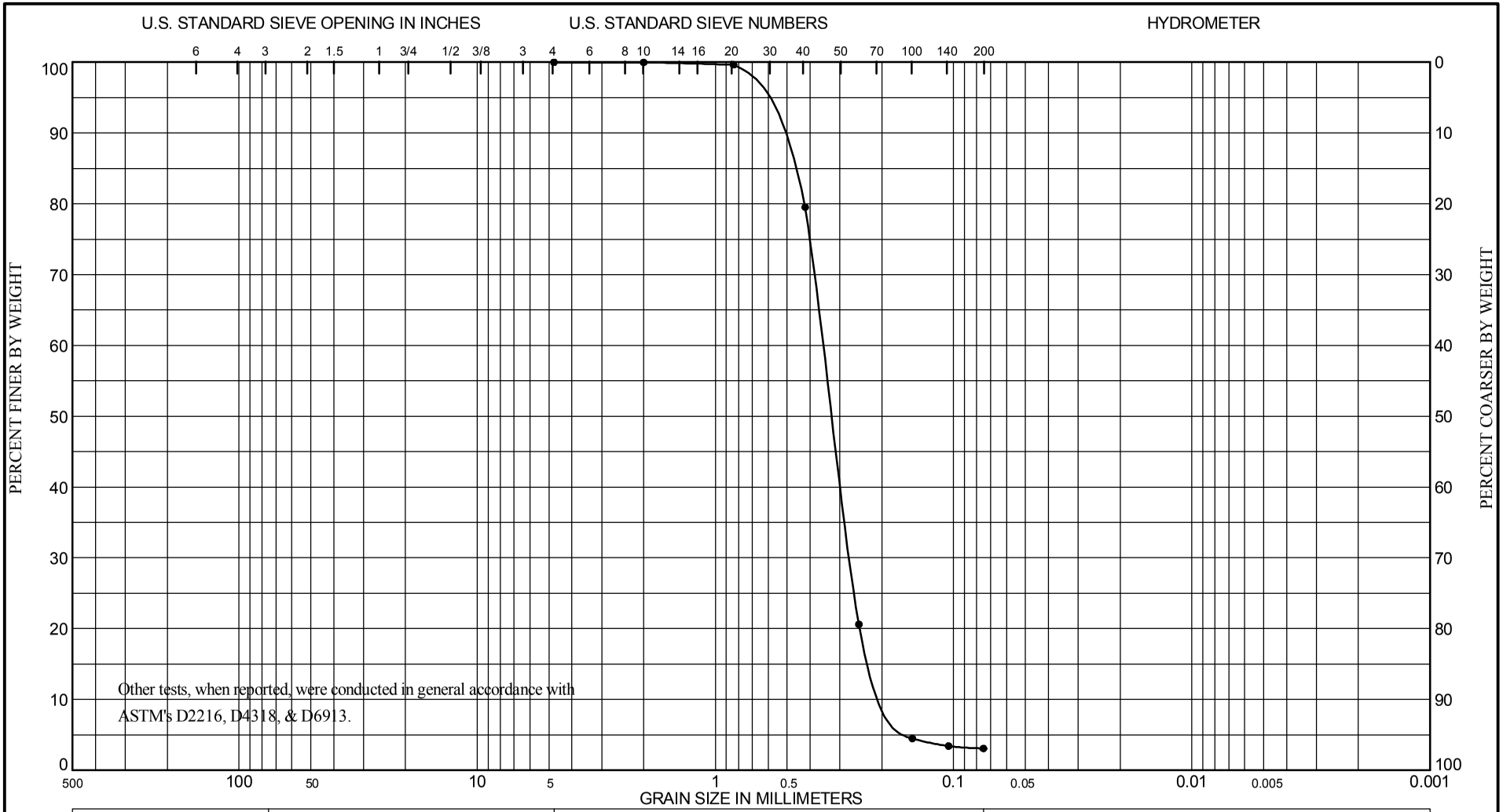
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	3.9 to 8.9	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4009
Hole No. BI-PBS-228-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

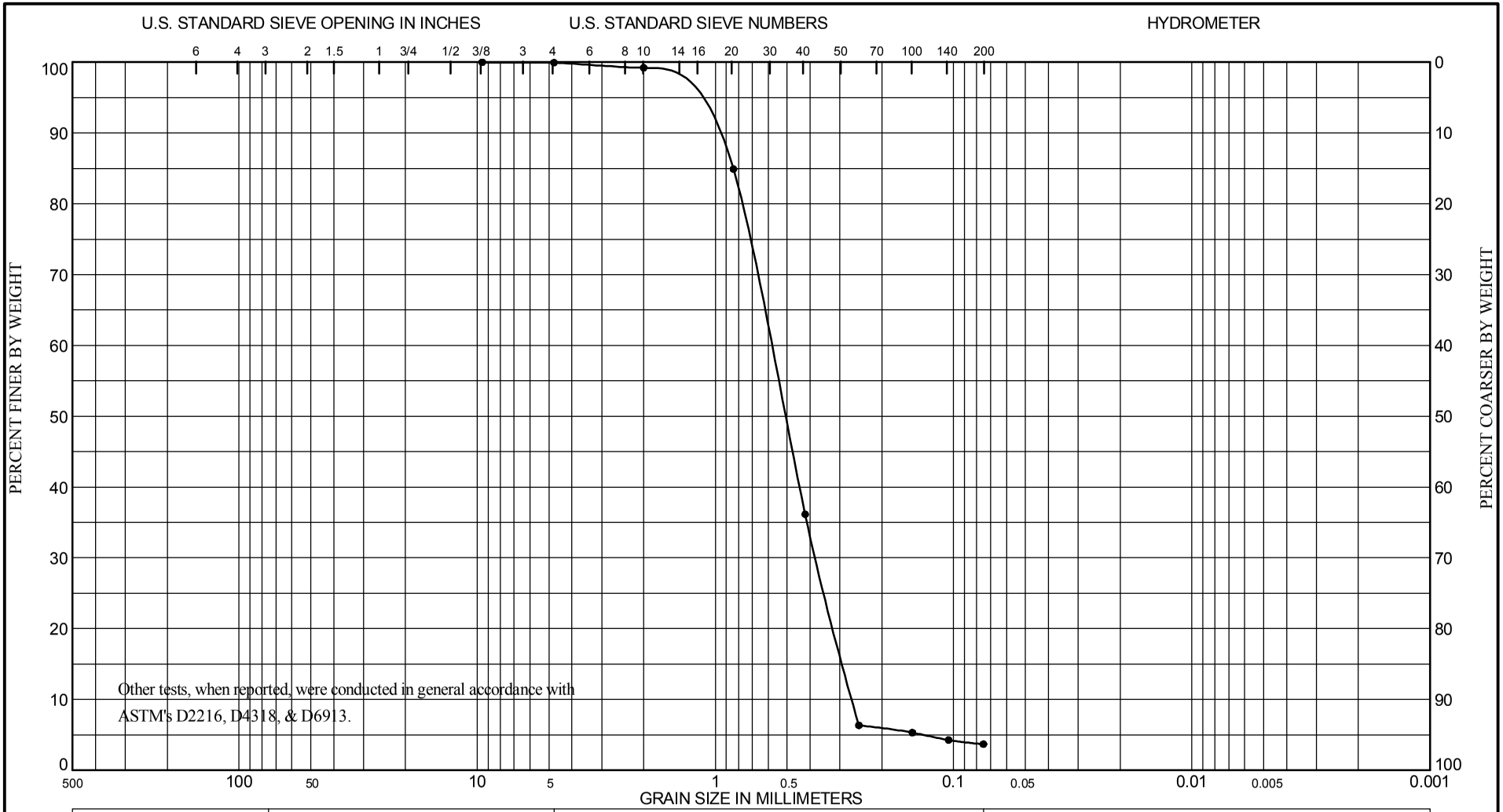
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	8.9 to 13.9	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4010
Hole No. BI-PBS-228-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

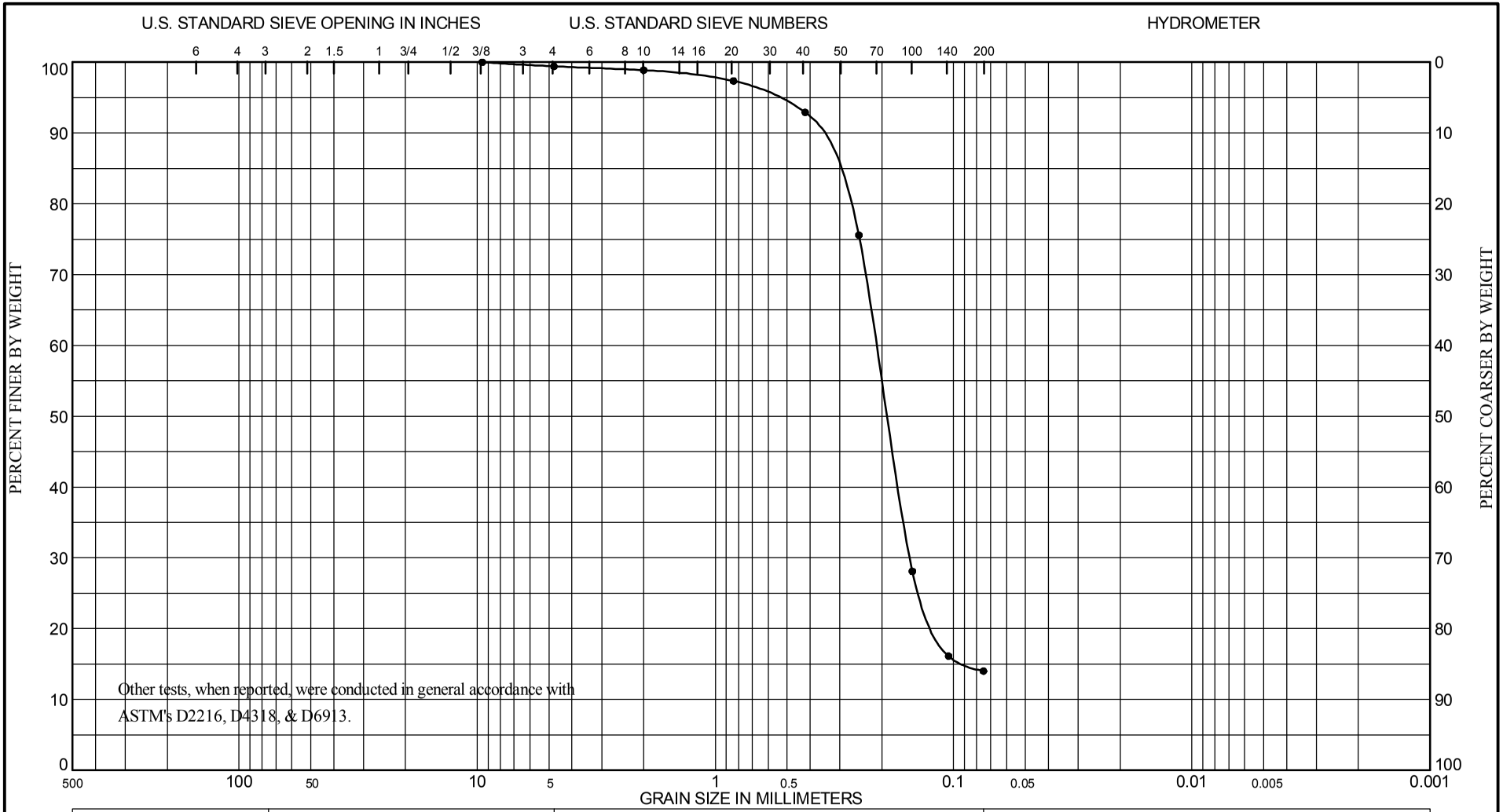
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
D	13.9 to 18.9	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4011
Hole No. BI-PBS-228-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
E	18.9 to 20.0	Gray, Silty Sand (SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4012
Hole No. BI-PBS-228-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-229-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS West
2. BORING DESIGNATION	BI-PBS-229-13
LOCATION COORDINATES	E = 1,111,305 N = 234,923
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	17.5 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED: 5 UNDISTURBED (UD): 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	48.7 Ft.
15. DATE BORING	STARTED: 12-16-13 COMPLETED: 12-16-13
16. ELEVATION TOP OF BORING	-47.0 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-47.0	0.0				
-50.6	3.6		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: 0.292 mm % Fines: 1.7
-51.8	4.8		SAND, silty, mostly fine-grained sand-sized quartz, medium gray (SM)	B	Classification: SM Color: 2.5Y 5/1-gray D50: 0.22 mm % Fines: 17
-53.2	6.2		SAND, clayey, mostly fine-grained sand-sized quartz, medium gray (SC)	NS	
-54.8	7.8		SAND, silty, mostly fine-grained sand-sized quartz, medium gray (SM)	C	Classification: SM Color: 2.5Y 4/1-dark gray D50: 0.227 mm % Fines: 14.1
-55.5	8.5		CLAY, lean, sandy, medium gray (CL)	NS	
-64.5	17.5		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, medium to lt. gray (SP)	D	Classification: SP Color: 2.5Y 6/1-gray D50: 0.27 mm % Fines: 4.3
				E	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.2 mm % Fines: 3.2

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.

3. Seafloor elevation determined from 12/17/2014 USACE survey.

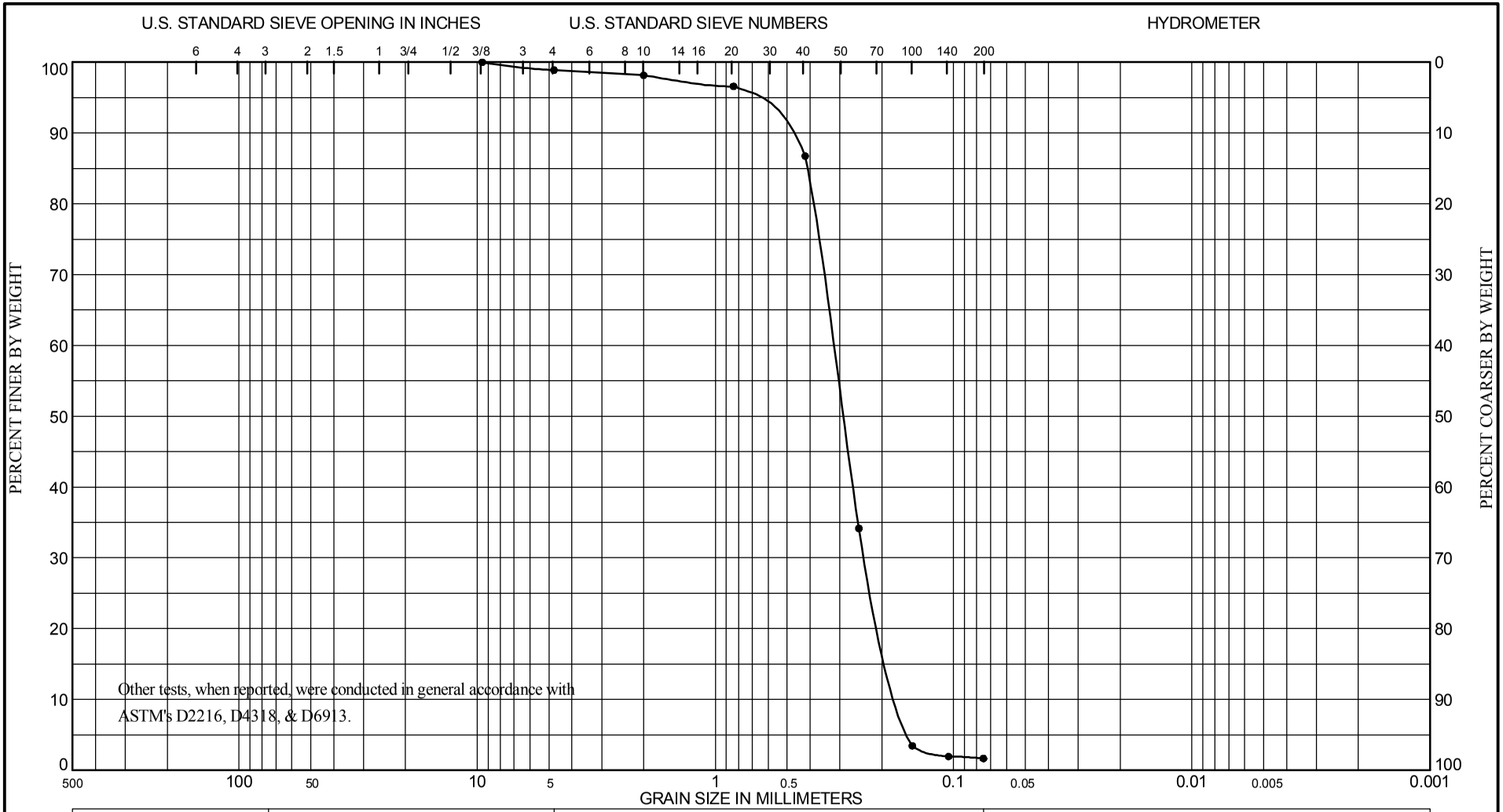
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14538° Long = -88.43136°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

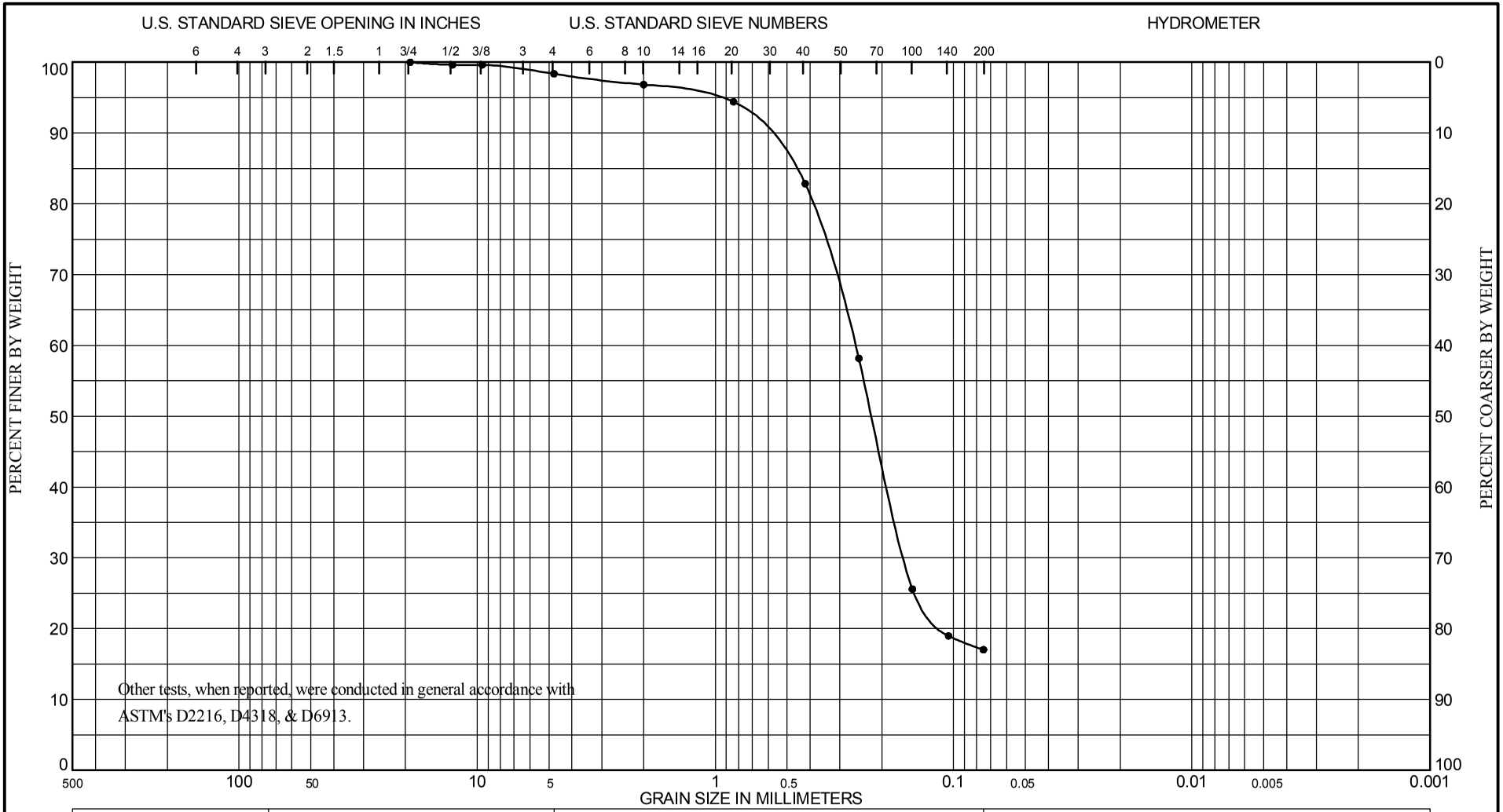
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 3.6	Light Gray, Poorly Graded Sand (SP), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4023
Hole No. BI-PBS-229-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

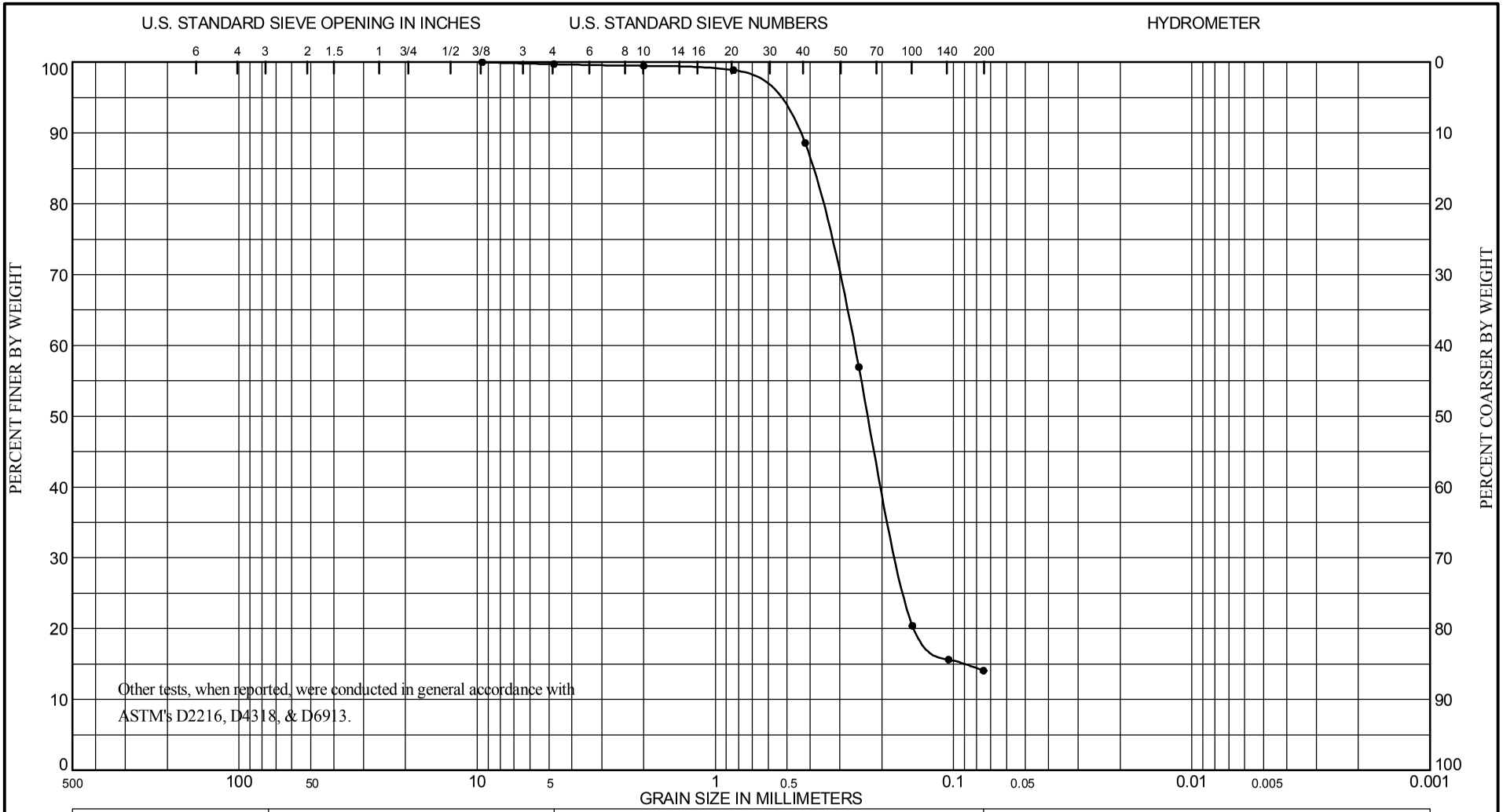
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	3.6 to 4.8	Greenish Gray, Silty Sand (SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4024
Hole No. BI-PBS-229-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

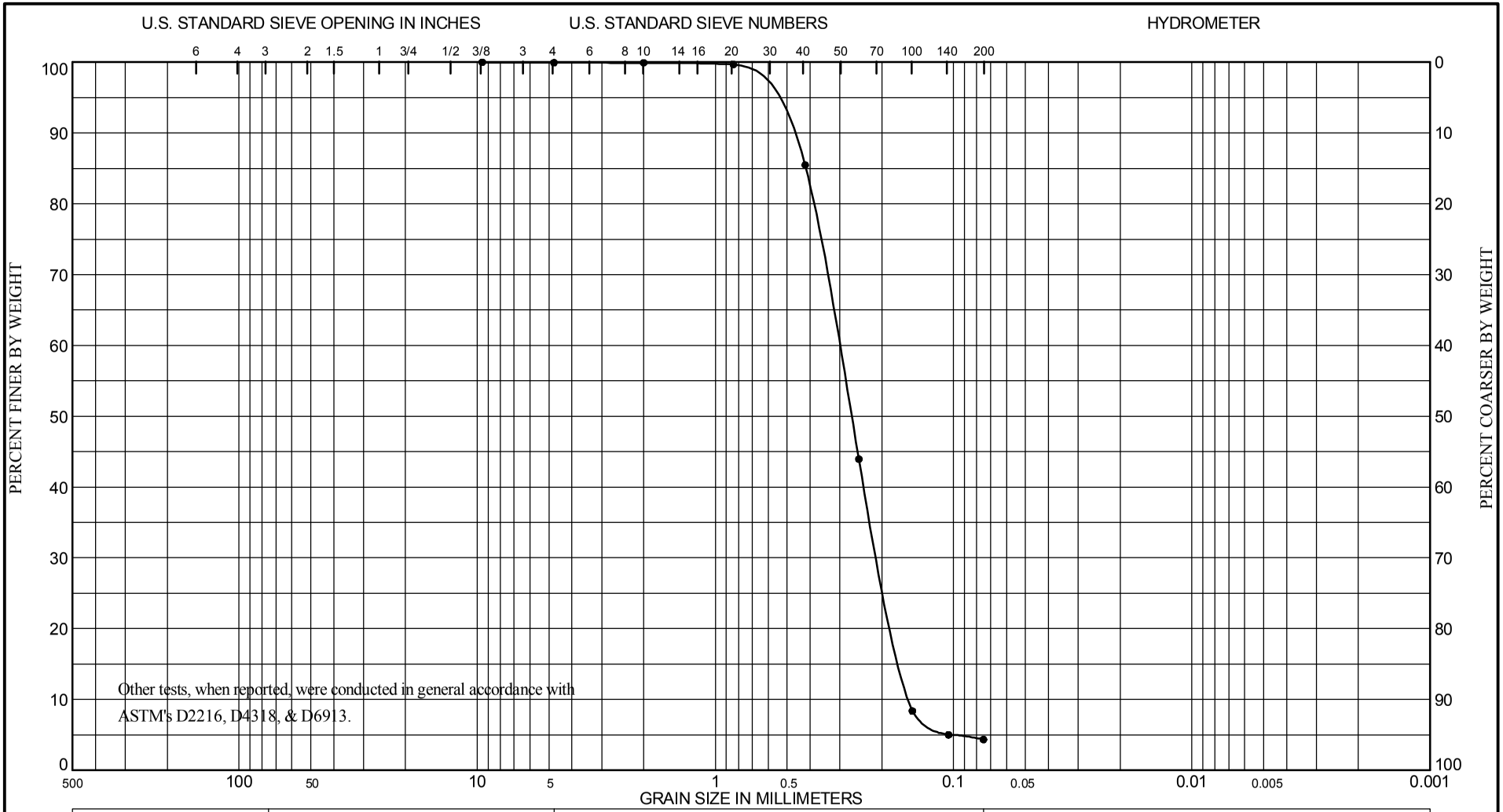
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	6.2 to 7.8	Very Dark Gray, Silty Sand (SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4025
Hole No. BI-PBS-229-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

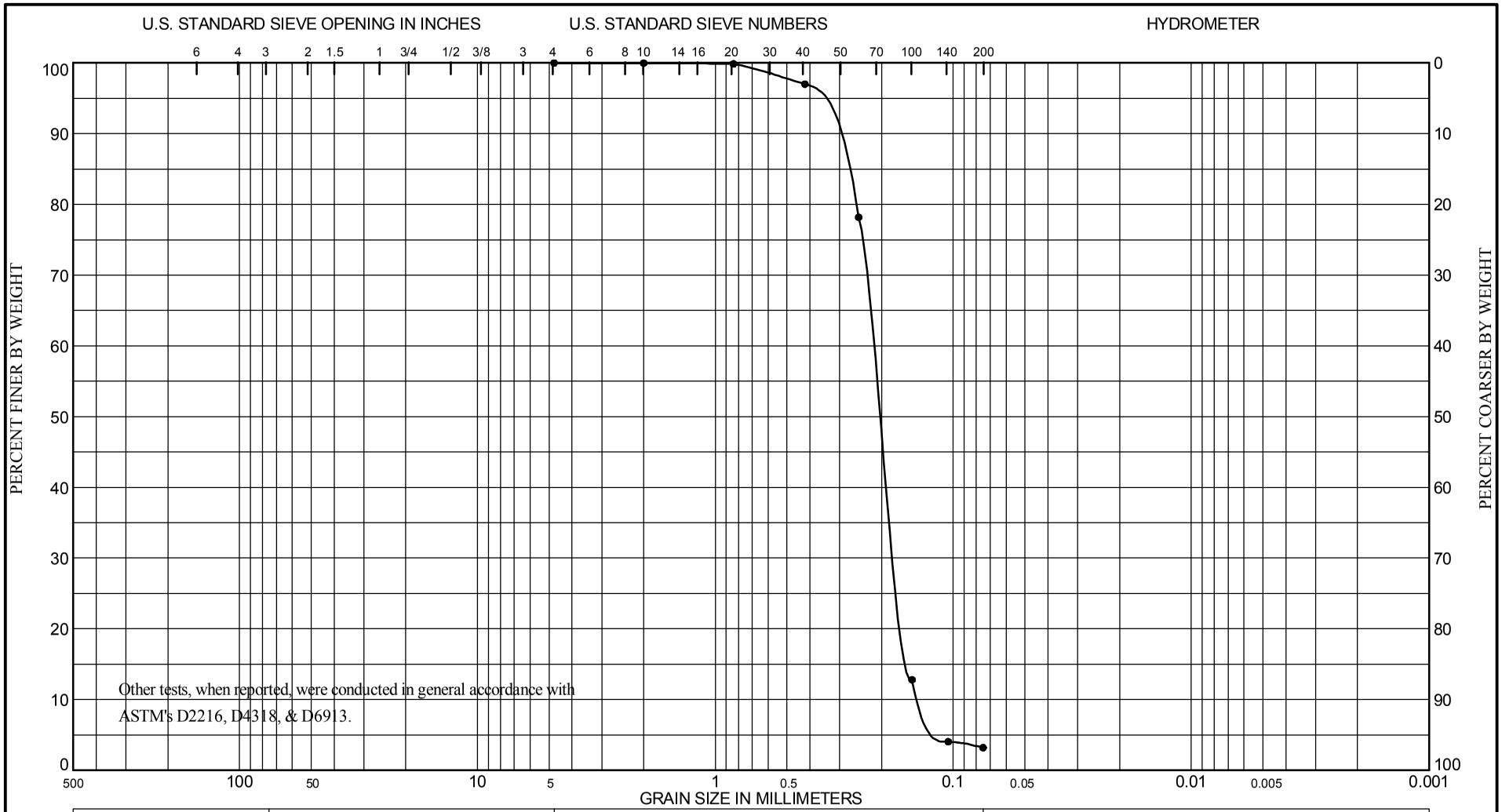
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
D	8.5 to 13.5	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4026
Hole No. BI-PBS-229-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
E	13.5 to 17.5	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4027
Hole No. BI-PBS-229-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-230-13

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
	South Atlantic	Mobile District	

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS West
2. BORING DESIGNATION	BI-PBS-230-13
LOCATION COORDINATES	E = 1,112,434 N = 233,770
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	18.2 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED 4 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	45.4 Ft.
15. DATE BORING	STARTED 12-17-13 / COMPLETED 12-17-13
16. ELEVATION TOP OF BORING	-45.7 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-45.7	0.0				
-50.1	4.4		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace shell fragments, lt. gray (SP)	A	Classification: SP Color: GLEY1 10Y 6/1- D50: 0.286 mm % Fines: 1.8
-50.7	5.0		GRAVEL, poorly-graded, mostly fine gravel-sized shell fragments, medium gray (GP)	B	Classification: SP Color: GLEY1 10Y 5/1- D50: 2.596 mm % Fines: 2.7
-52.5	6.8		SAND, silty, mostly fine-grained sand-sized quartz, few clay lenses 1/4-inch thick, medium gray (SM)	C	Classification: SM Color: 2.5Y 5/1-gray D50: 0.2 mm % Fines: 21.5
-53.9	8.2		WOOD, mostly wood fragments, medium brown	NS	
-55.5	9.8		SAND, silty, mostly fine-grained sand-sized quartz, medium gray (SM)	D	Classification: SM Color: 2.5Y 5/1-gray D50: 0.195 mm % Fines: 21
-56.8	11.1		WOOD, mostly wood fragments, medium brown	NS	
-58.4	12.7		SAND, clayey, mostly fine-grained sand-sized quartz, lt. grayish brown (SC)		
-61.7	16.0		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, lt. to medium gray (SP)		
-63.9	18.2		SAND, silty, clayey, mostly fine-grained sand-sized quartz, lt. to medium gray (SC-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.

3. Seafloor elevation determined from 12/17/2014 USACE survey.

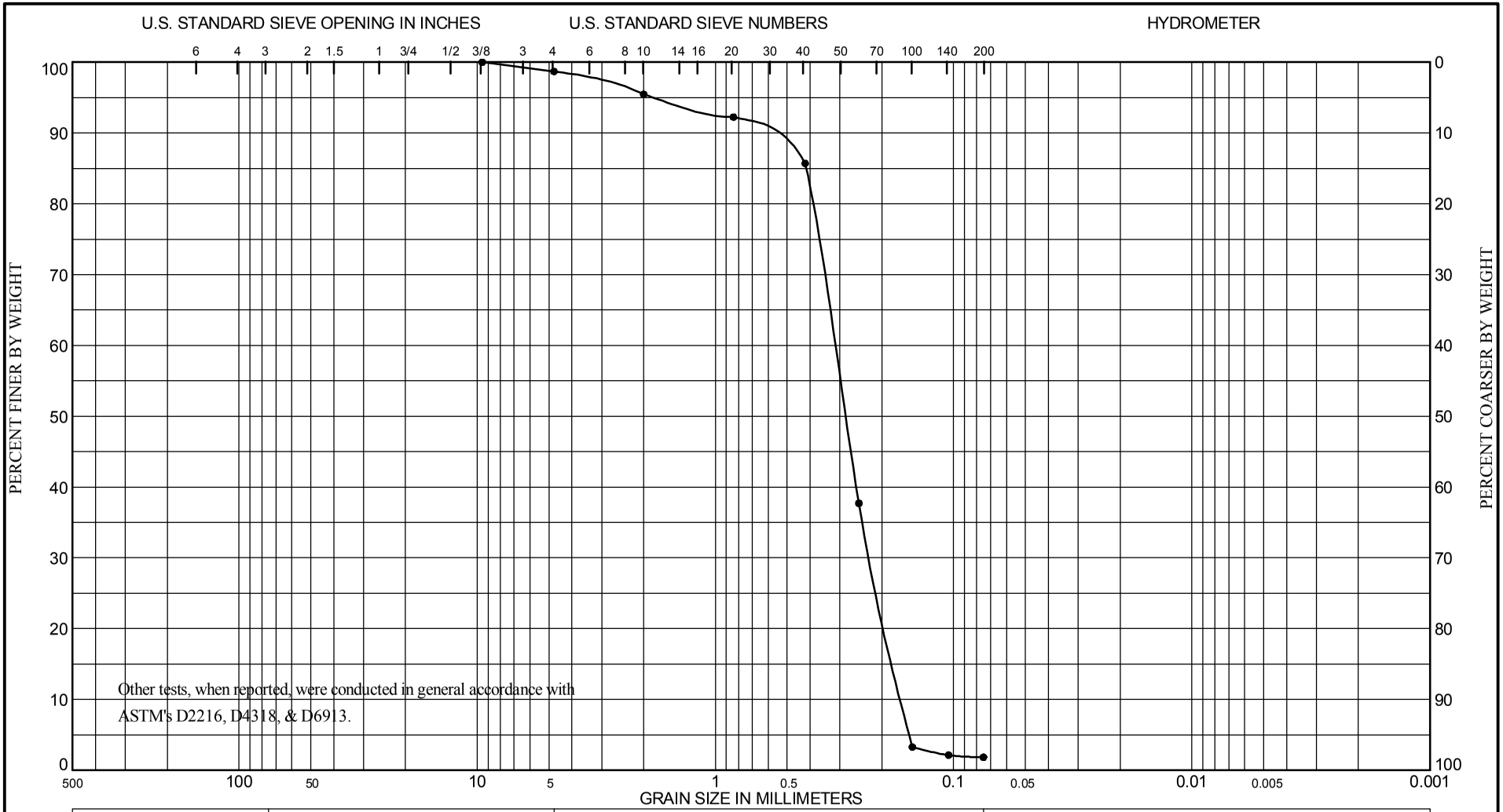
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14220° Long = -88.42780°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

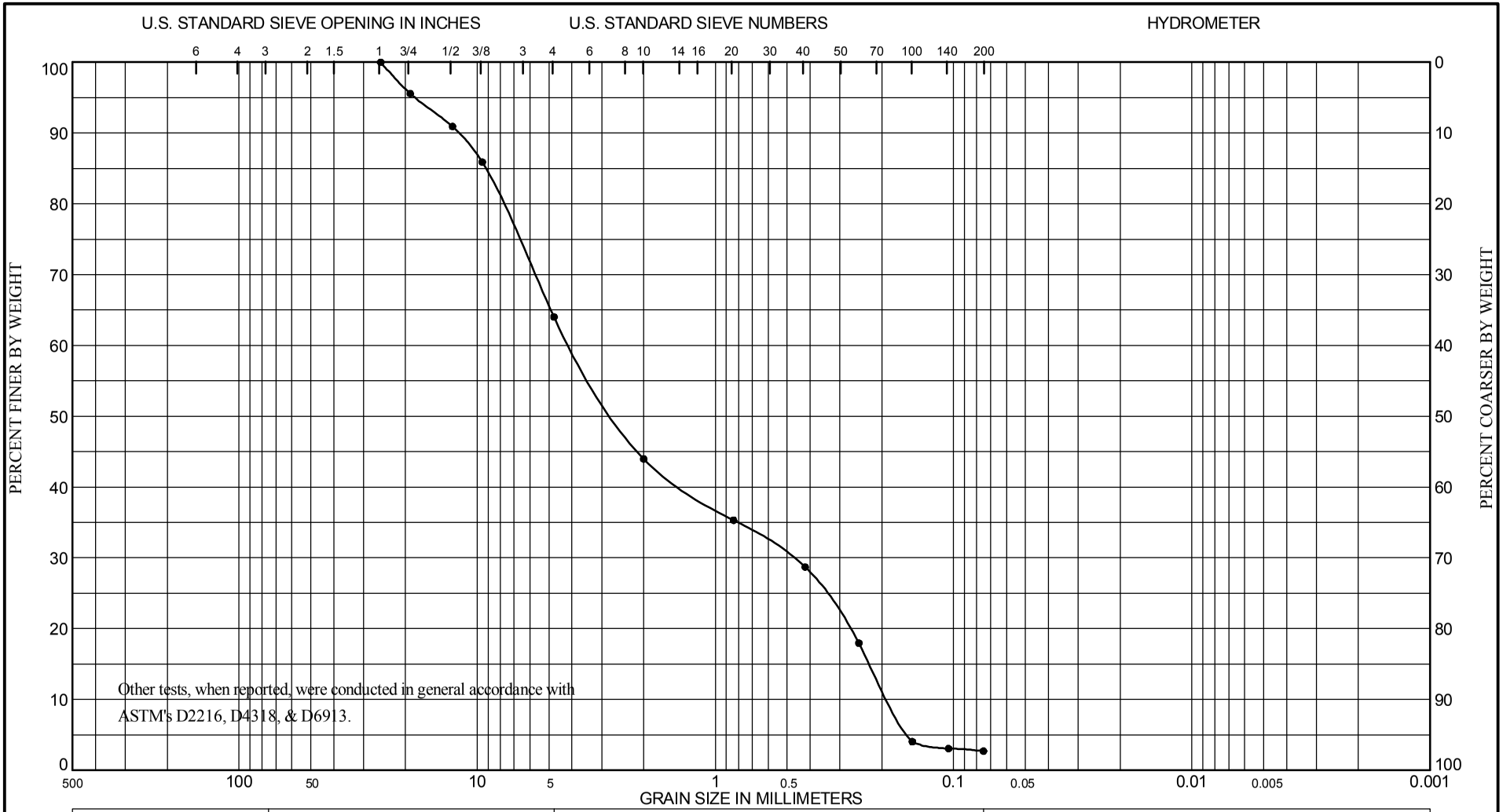
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 4.4	Gray, Poorly Graded Sand (SP), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4028
Hole No. BI-PBS-230-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

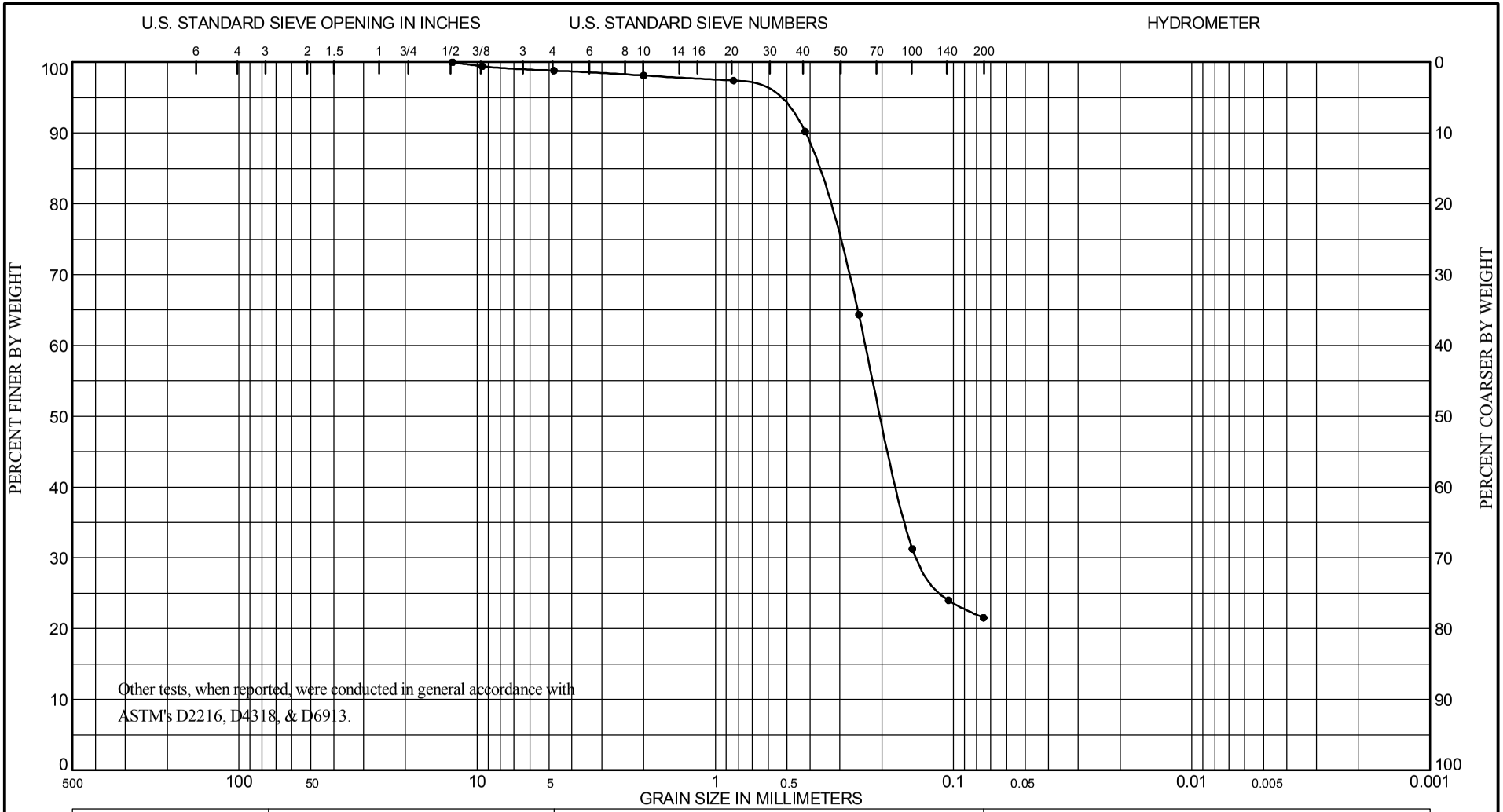
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	4.4 to 5.0	Dark Gray & Gray, Shelly Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4029
Hole No. BI-PBS-230-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

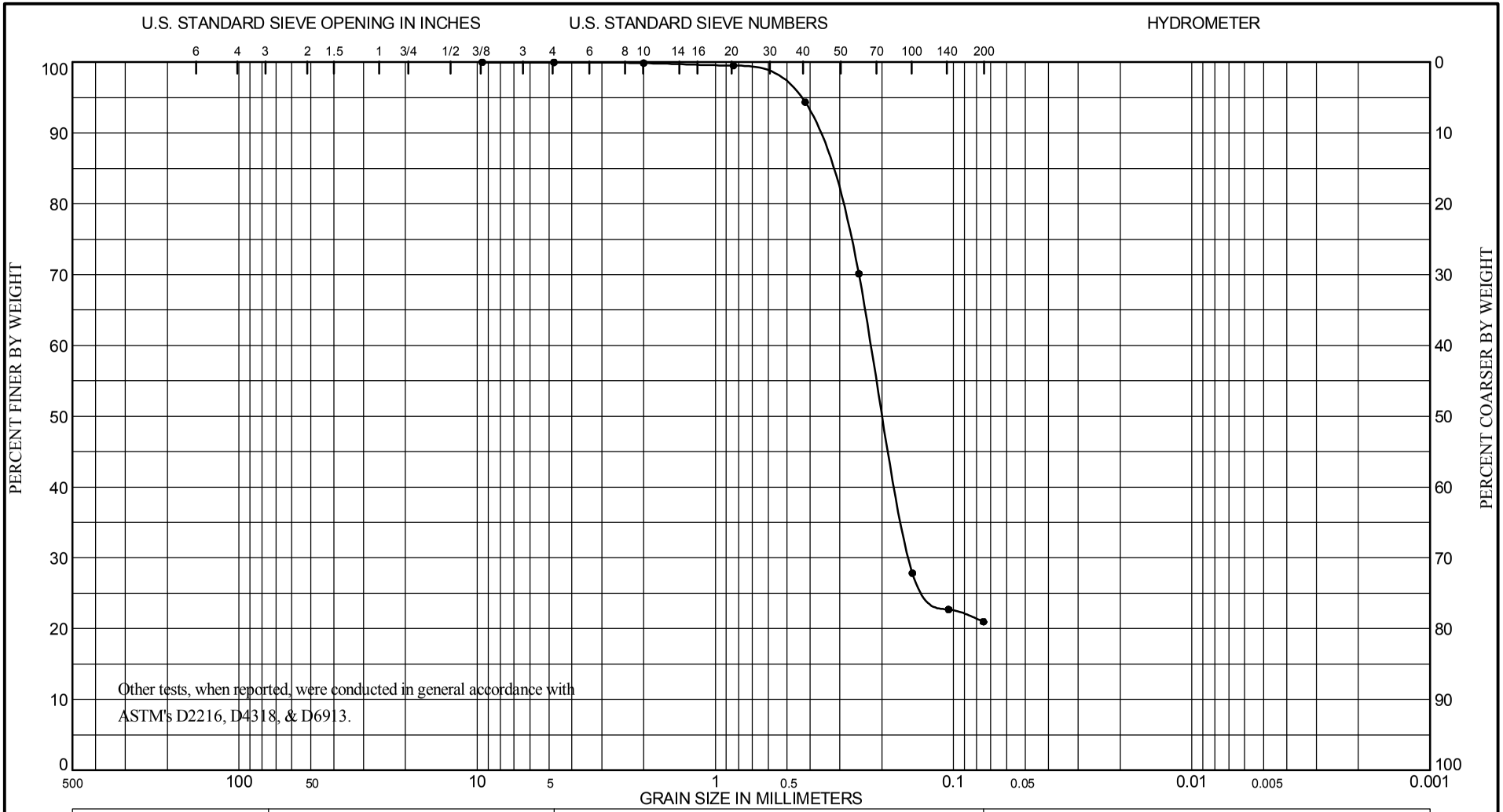
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	5.0 to 6.8	Dark Gray, Silty Sand (SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4030
Hole No. BI-PBS-230-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
D	8.2 to 9.8	Dark Gray, Silty Sand (SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4031
Hole No. BI-PBS-230-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-231-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-231-13 — LOCATION COORDINATES: E = 1,123,825 N = 227,517	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 1 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 54.6 Ft.
	15. DATE BORING — STARTED: 12-18-13 — COMPLETED: 12-18-13
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -55.1 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 19.7 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-55.1	0.0				
-58.1	3.0		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, few shell fragments, lt. gray (SP)	A	Classification: SP-SM Color: GLEY1 10Y 6/1- D50: 0.216 mm % Fines: 5.3
-59.6	4.5		CLAY, lean, sandy, medium gray (CL)	NS	
-60.6	5.5		SAND, clayey, mostly fine to medium-grained sand-sized quartz, little shell fragments, medium gray (SC)		
-67.7	12.6		CLAY, fat, lt. to medium gray and pale orange (CH)		
-69.1	14.0		SAND, silty, clayey, mostly fine to medium-grained sand-sized quartz, lt. gray and lt. brown (SC-SM)		
-74.8	19.7		SAND, poorly-graded with silt, mostly fine to medium-grained sand-sized quartz, lt. and medium gray and lt. brown (SP-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.

3. Seafloor elevation determined from 12/17/2014 USACE survey.

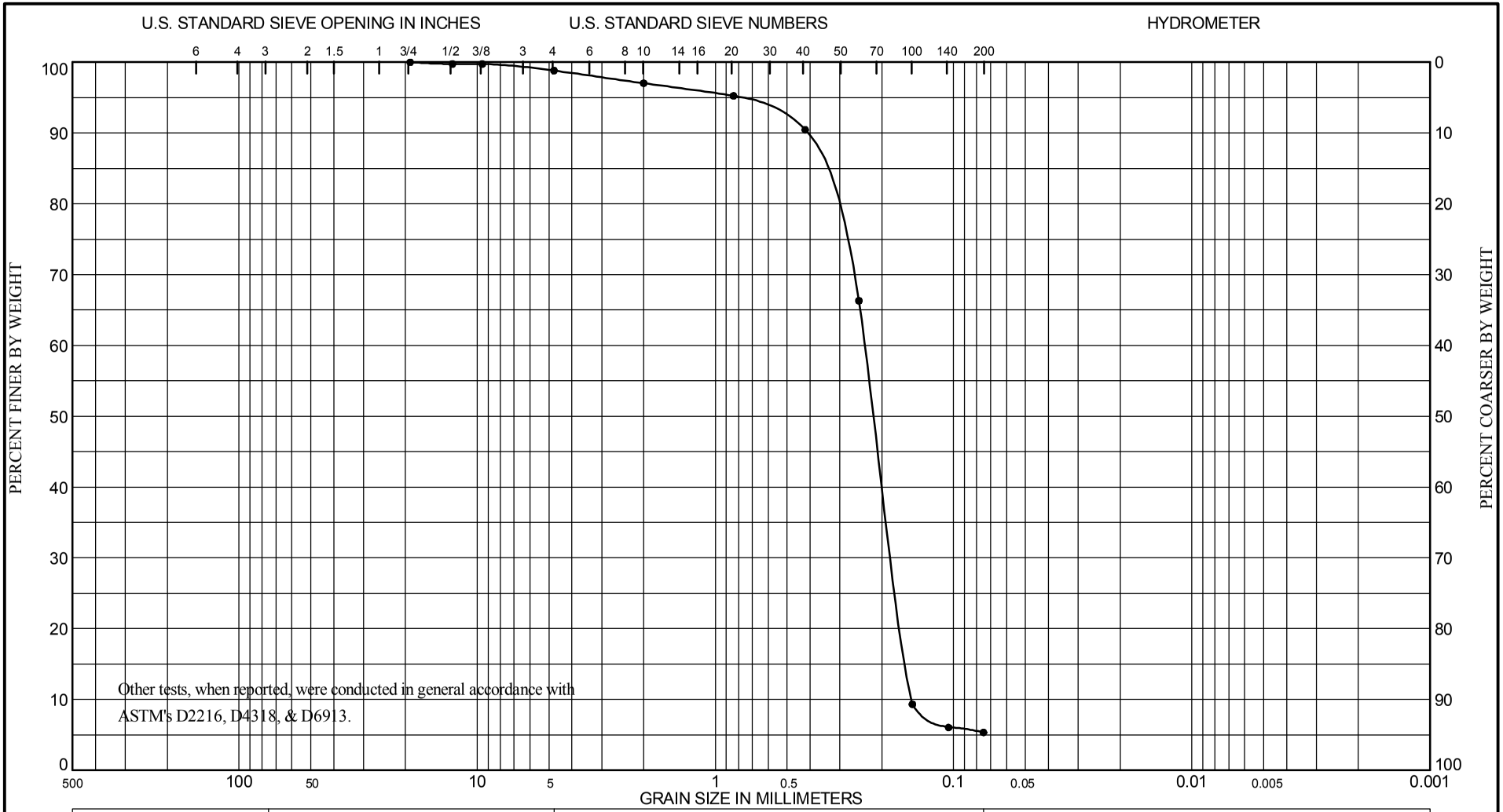
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.12489° Long = -88.39184°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 3.0	Greenish Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4040
Hole No. BI-PBS-231-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-233-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-233-13 — LOCATION COORDINATES: E = 1,115,256 N = 232,289	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 1 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 50 Ft.
	15. DATE BORING — STARTED: 12-09-13 — COMPLETED: 12-09-13
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -47.5 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 14.1 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-47.5	0.0				
-50.8	3.3		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little shell, lt. gray (SP)	A	Classification: SP Color: GLEY1 10Y 7/1- D50: 0.29 mm % Fines: 1.6
-57.5	10.0		CLAY, lean, sandy, trace of wood fragments, pale brown, medium gray (CL) At El. -56.0 Ft., sandy, medium gray	NS	
-57.8	10.3		SAND, clayey, mostly fine-grained sand-sized quartz, medium gray (SC)		
-60.8	13.3		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, medium gray (SP-SM)		
-61.6	14.1		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little shell, 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.

3. Seafloor elevation determined from 12/17/2014 USACE survey.

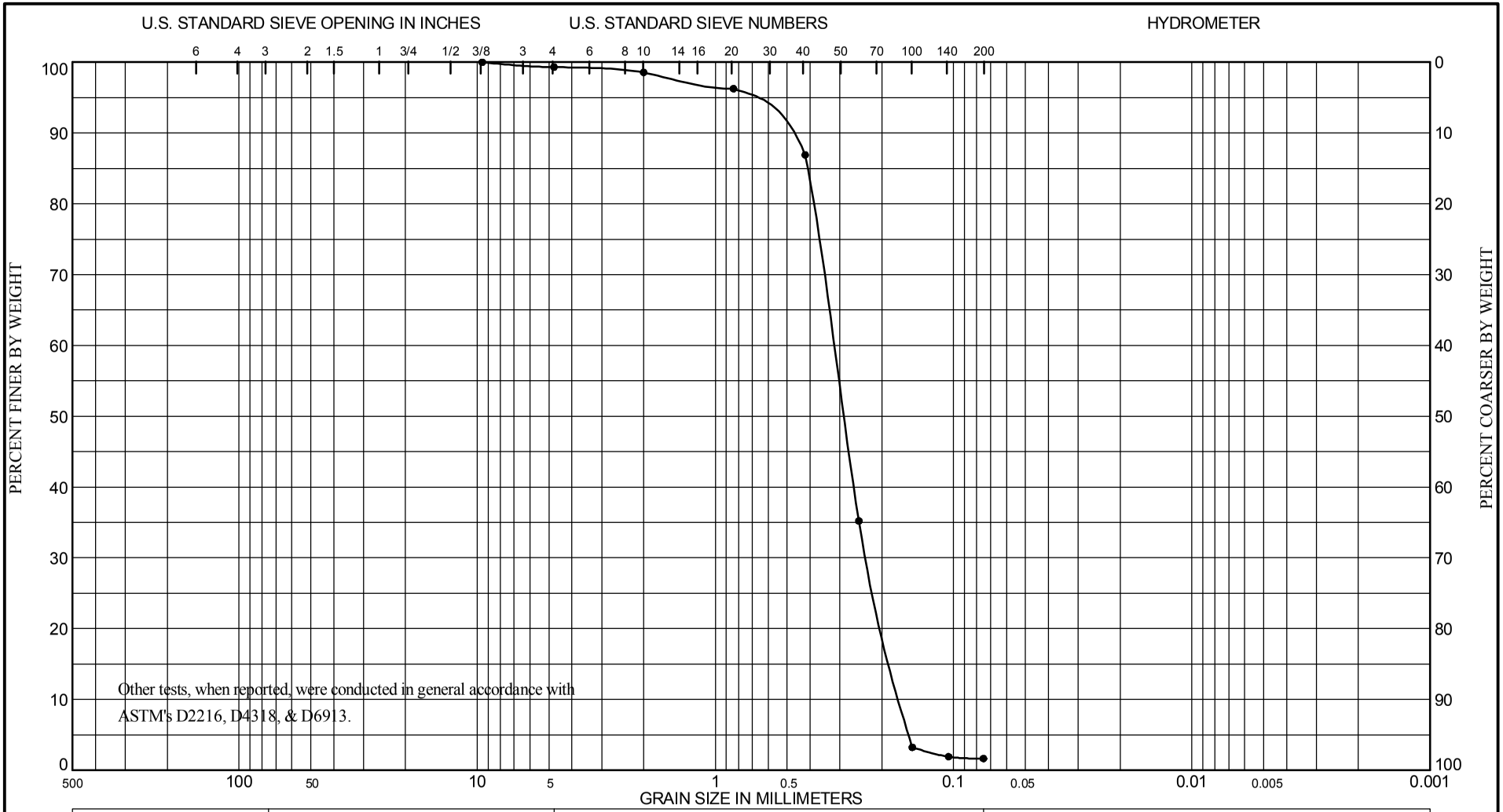
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.13810° Long = -88.41889°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 3.3	Light Greenish Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3993
Hole No. BI-PBS-233-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-234-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-234-13 — LOCATION COORDINATES: E = 1,100,118 N = 236,318	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 3 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 48.1 Ft.
	15. DATE BORING — STARTED: 01-08-14 — COMPLETED: 01-08-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -46.5 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 13.7 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-46.5	0.0				
-49.1	2.6		SAND, poorly-graded, mostly fine to coarse-grained sand-sized quartz, little shell fragments, shell increases from 15 to 25% at 2.0 ft. depth, lt. gray (SP)	A	Classification: SP Color: GLEY1 10Y 6/1- D50: 0.39 mm % Fines: 1.3
-49.8	3.3		SAND, poorly-graded, mostly fine-grained sand-sized quartz, few shell fragments, shell estimated to be <5% below 2.9 ft., lt. to medium gray (SP)	B	Classification: SP-SM Color: 2.5Y 6/1-gray D50: 0.206 mm % Fines: 5.1
-53.5	7.0		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, lt. to medium gray (SM)	C	Classification: SM Color: GLEY1 10Y 5/1- D50: 0.149 mm % Fines: 16.3
-56.3	9.8		CLAY, lean, few shell fragments, sandy, medium gray (CL)	NS	
-60.2	13.7		CLAY, fat, sandy, lt. gray, pale orange (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.

3. Seafloor elevation determined from 10/16/2014 USACE survey.

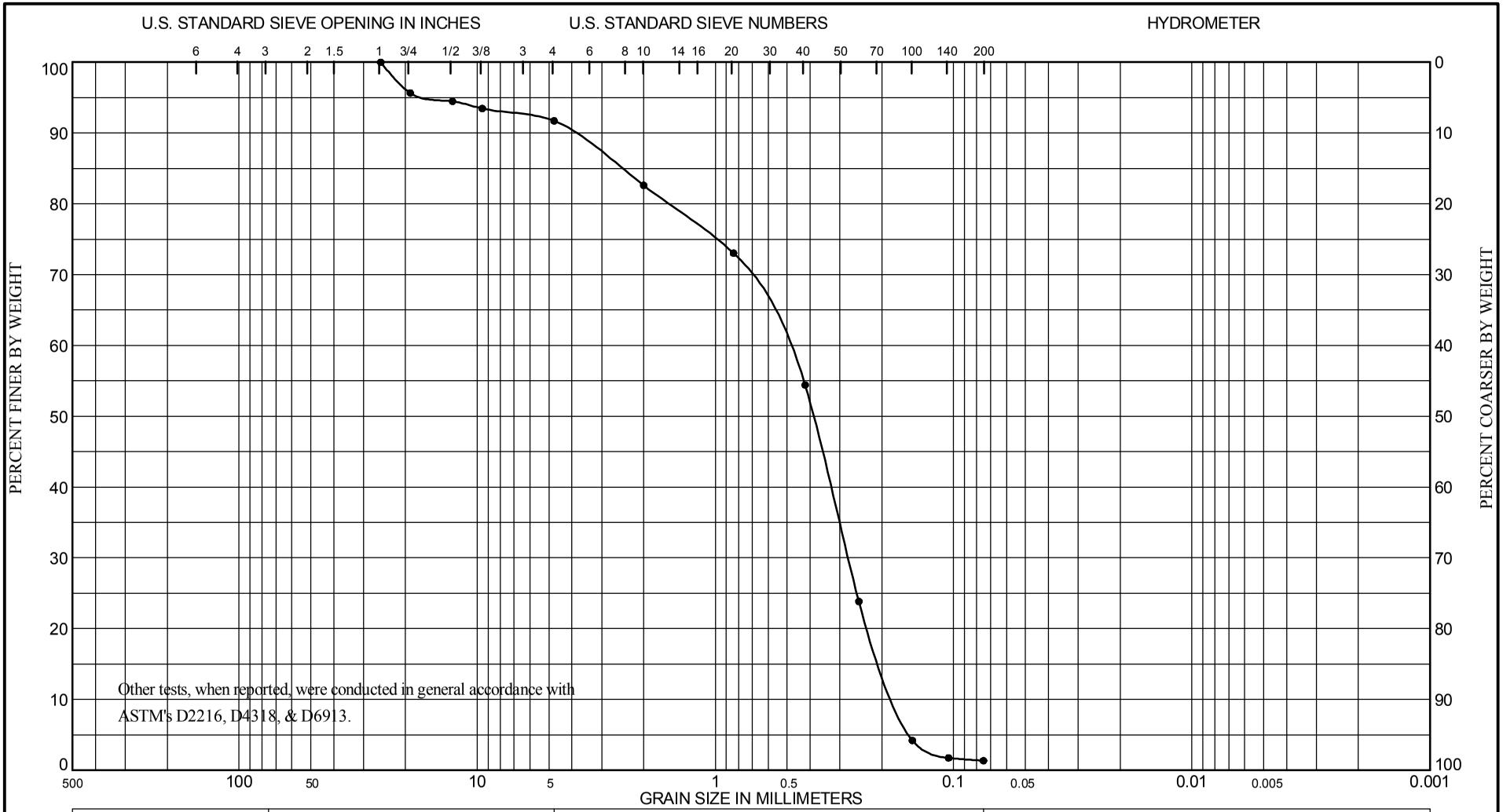
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14932° Long = -88.46674°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

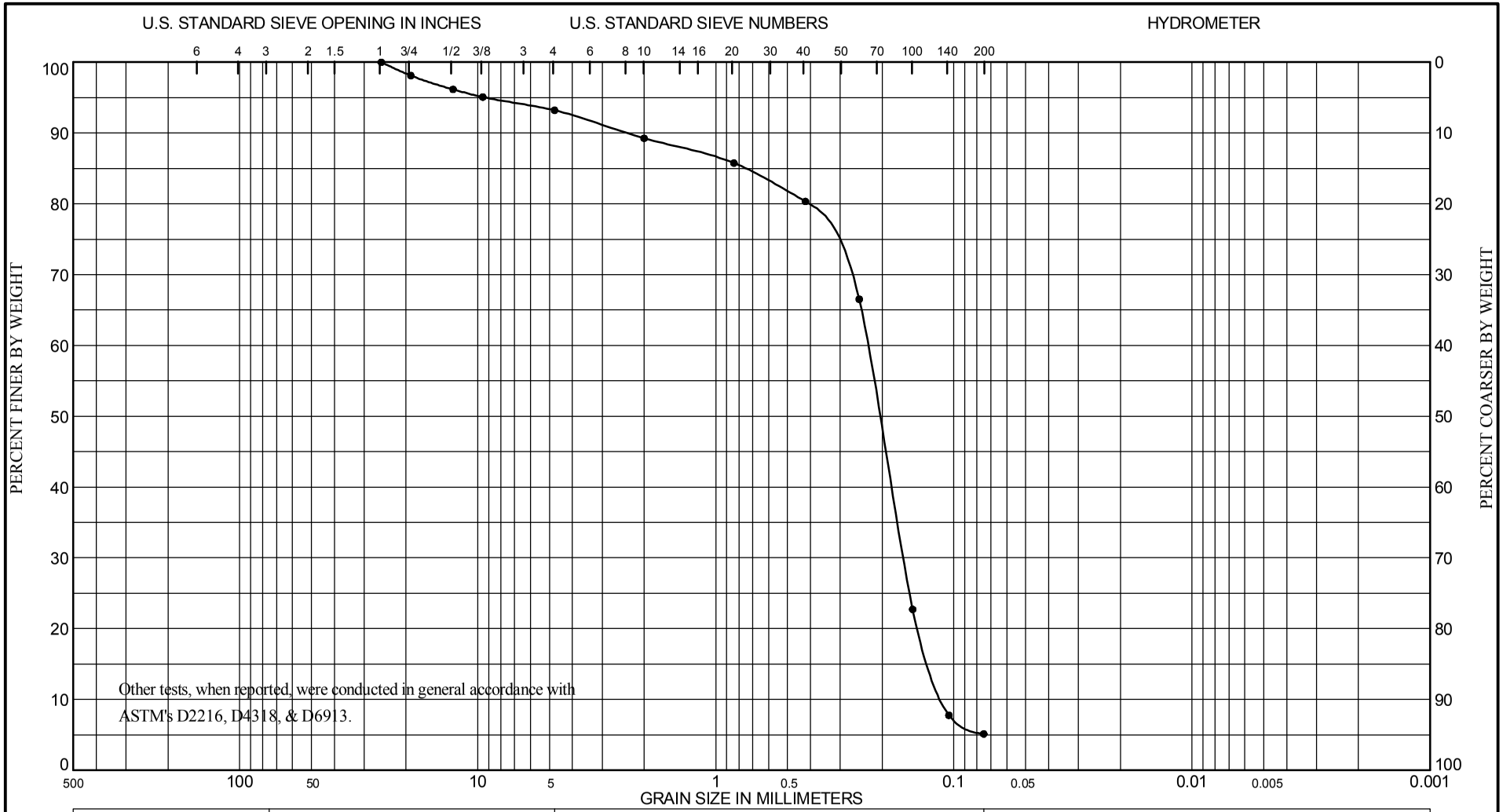
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 2.6	Very Dark Gray, Poorly Graded Sand (SP), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4154
Hole No. BI-PBS-234-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

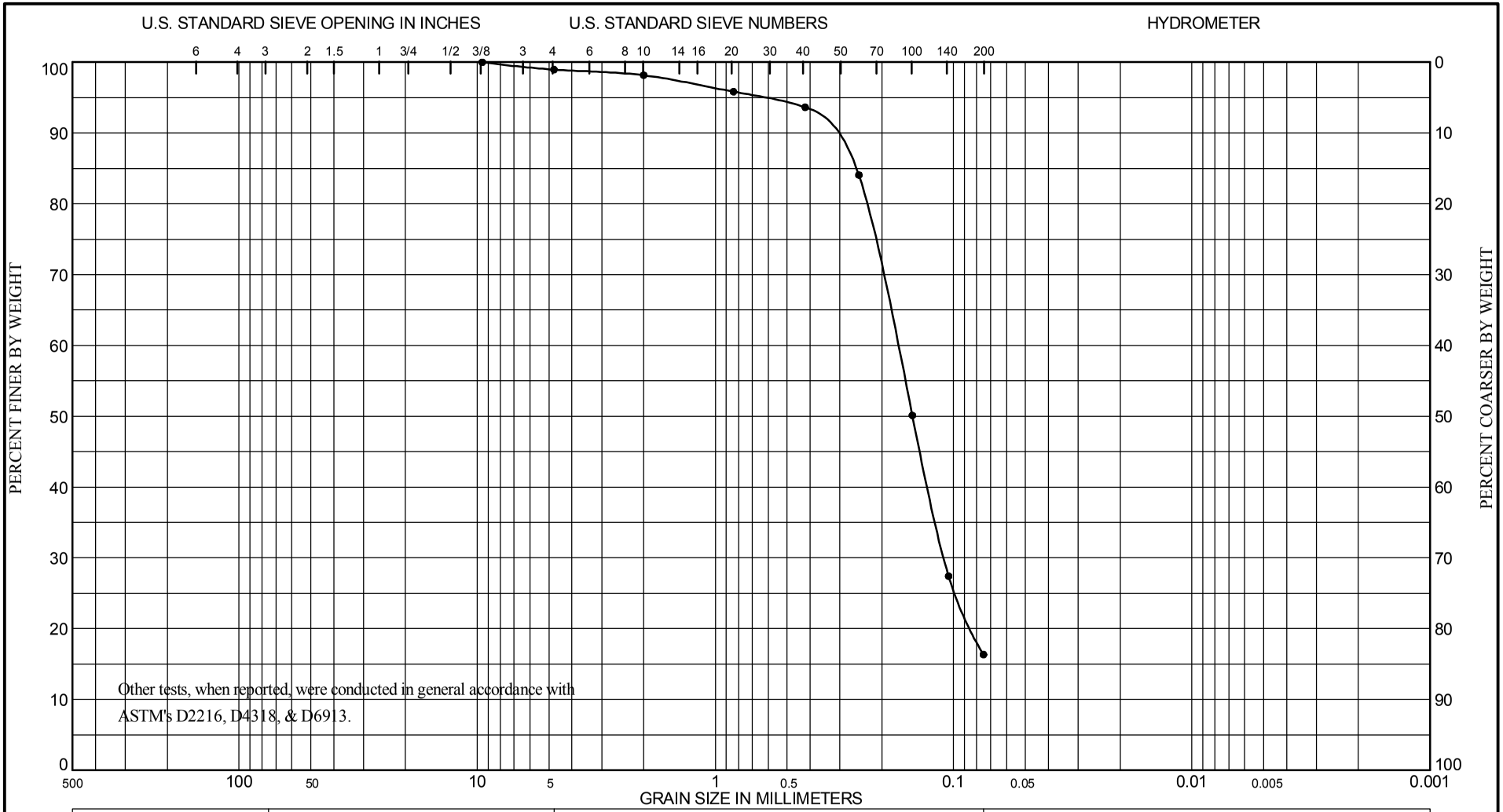
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	2.6 to 3.3	Dark Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4155
Hole No. BI-PBS-234-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	3.3 to 7.0	Very Dark Gray, Silty Sand (SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4156
Hole No. BI-PBS-234-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-235-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-235-13 — LOCATION COORDINATES: E = 1,106,130 N = 238,920	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 2 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 45.6 Ft.
	15. DATE BORING — STARTED: 12-27-13 — COMPLETED: 12-27-13
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -42.5 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 18.2 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-42.5	0.0				
-47.5	5.0		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, few shell fragments, lt. gray (SP)	A	Classification: SP Color: GLEY1 10Y 7/1- D50: 0.329 mm % Fines: 0.7
-50.1	7.6		SAND, silty, mostly fine-grained sand-sized quartz, little shell fragments, medium gray (SM)	B	Classification: SM Color: GLEY1 10Y 5/1- D50: 0.189 mm % Fines: 13.3
-54.7	12.2		CLAY, lean, few shell fragments, sandy, medium gray (CL)	NS	
-60.7	18.2		CLAY, fat, sandy, lt. and medium gray and pale green and pale orange (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.

3. Seafloor elevation determined from 10/28/2014 USACE survey.

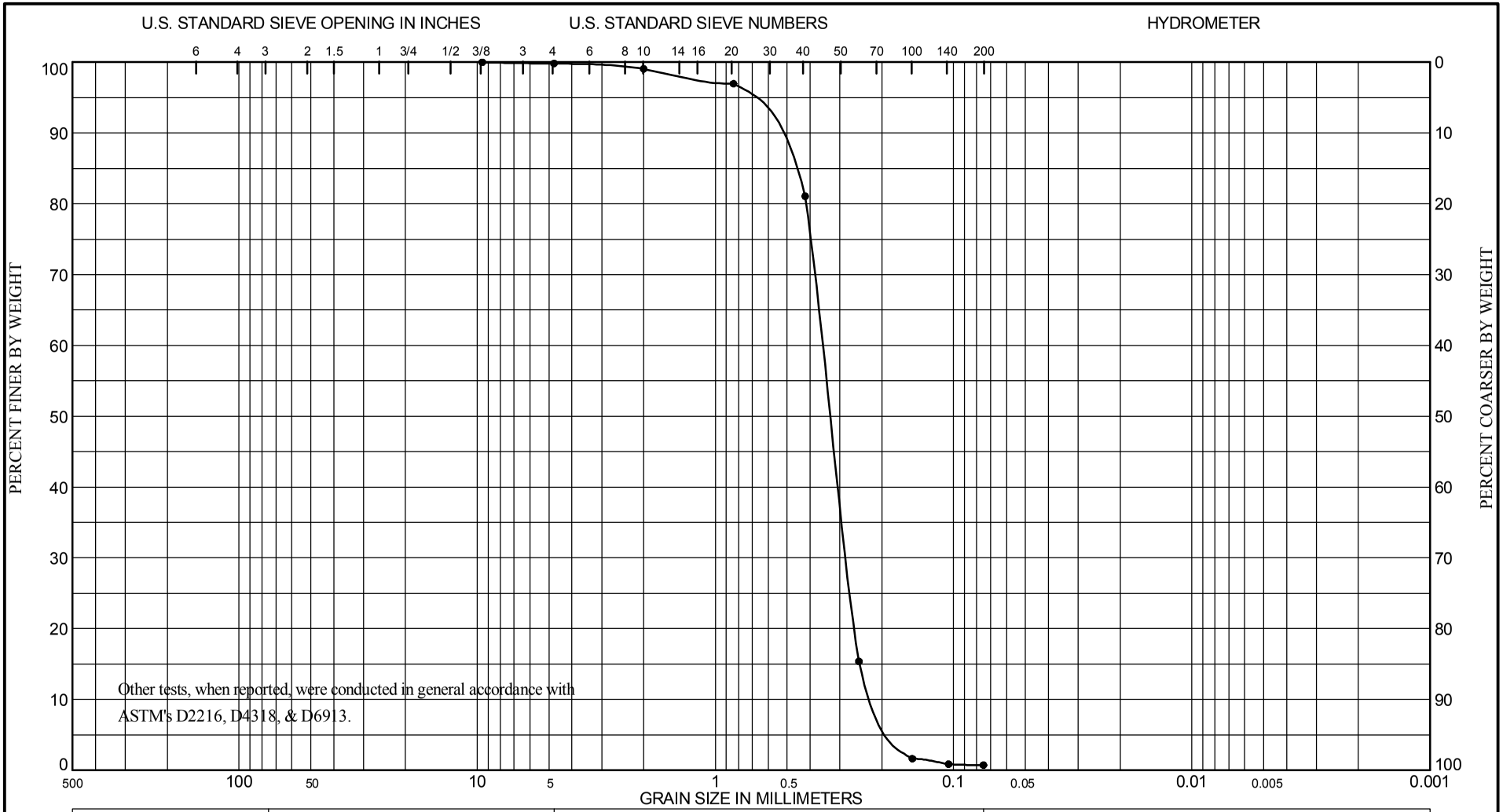
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15642° Long = -88.44769°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

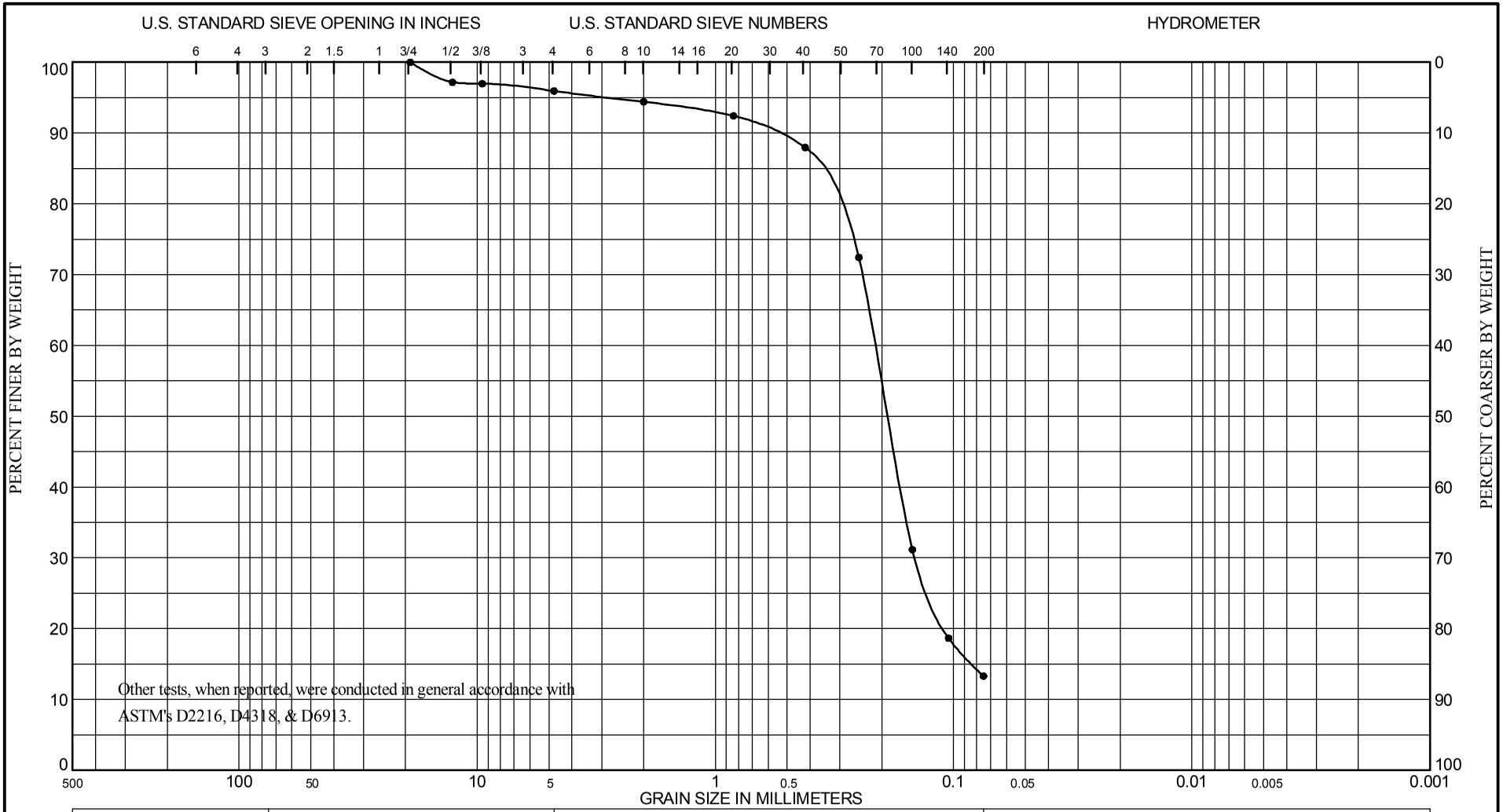
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 5.0	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4059
Hole No. BI-PBS-235-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	5.0 to 7.6	Greenish Gray, Silty Sand (SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4060
Hole No. BI-PBS-235-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-236-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-236-13 — LOCATION COORDINATES: E = 1,105,676 N = 237,686	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 2 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 49.3 Ft.
	15. DATE BORING — STARTED: 12-27-13 — COMPLETED: 12-27-13
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -47.8 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 19.8 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-47.8	0.0				
-48.4	0.6		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little shell fragments, lt. gray (SP)	A	Classification: SP Color: GLEY1 10Y 6/1- D50: 0.235 mm % Fines: 2.8
-50.7	2.9		SAND, silty, mostly fine-grained sand-sized quartz, little shell fragments, lt. to medium gray (SM)	B	Classification: SM Color: 2.5Y 5/1-gray D50: 0.206 mm % Fines: 12.1
-52.7	4.9		SAND, clayey, mostly fine-grained sand-sized quartz, few shell fragments, lt. to medium gray (SC)	NS	
-53.7	5.9		CLAY, lean, sandy, lt. gray (CL)		
-55.8	8.0		SAND, clayey, mostly fine-grained sand-sized quartz, little shell fragments, lt. to medium gray (SC)		
-56.6	8.8		CLAY, lean, sandy, lt. gray (CL)		
-58.0	10.2		SAND, clayey, mostly fine-grained sand-sized quartz, lt. to medium gray (SC)		
-59.8	12.0		CLAY, lean, lt. to medium gray (CL) At El. -59.1 Ft., sandy, very loose consistency, lt. gray		
-67.6	19.8		CLAY, fat, sandy, lt.and medium gray and pale orange (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.

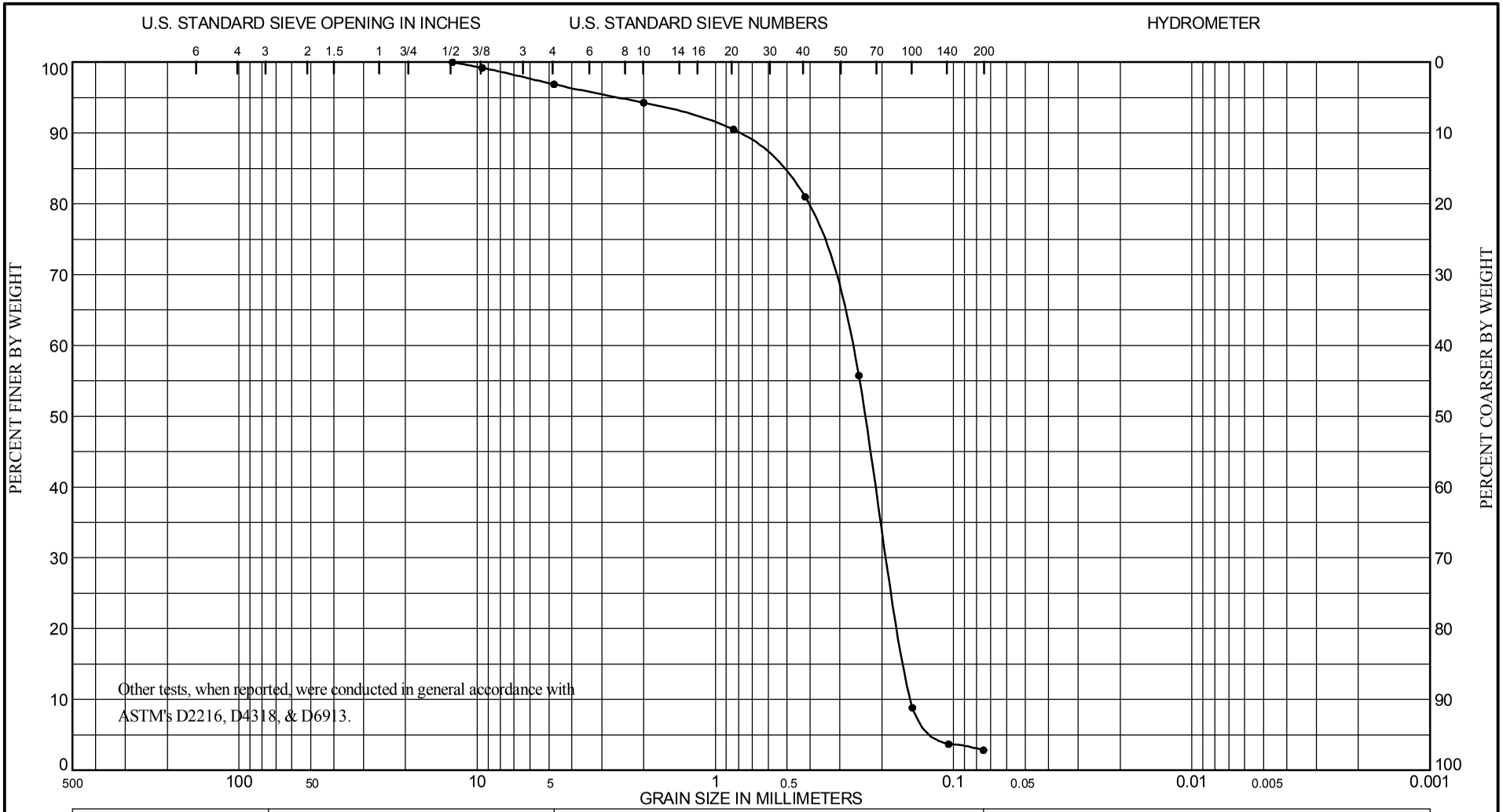
3. Seafloor elevation determined from 10/28/2014 USACE survey.

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15303° Long = -88.44914°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

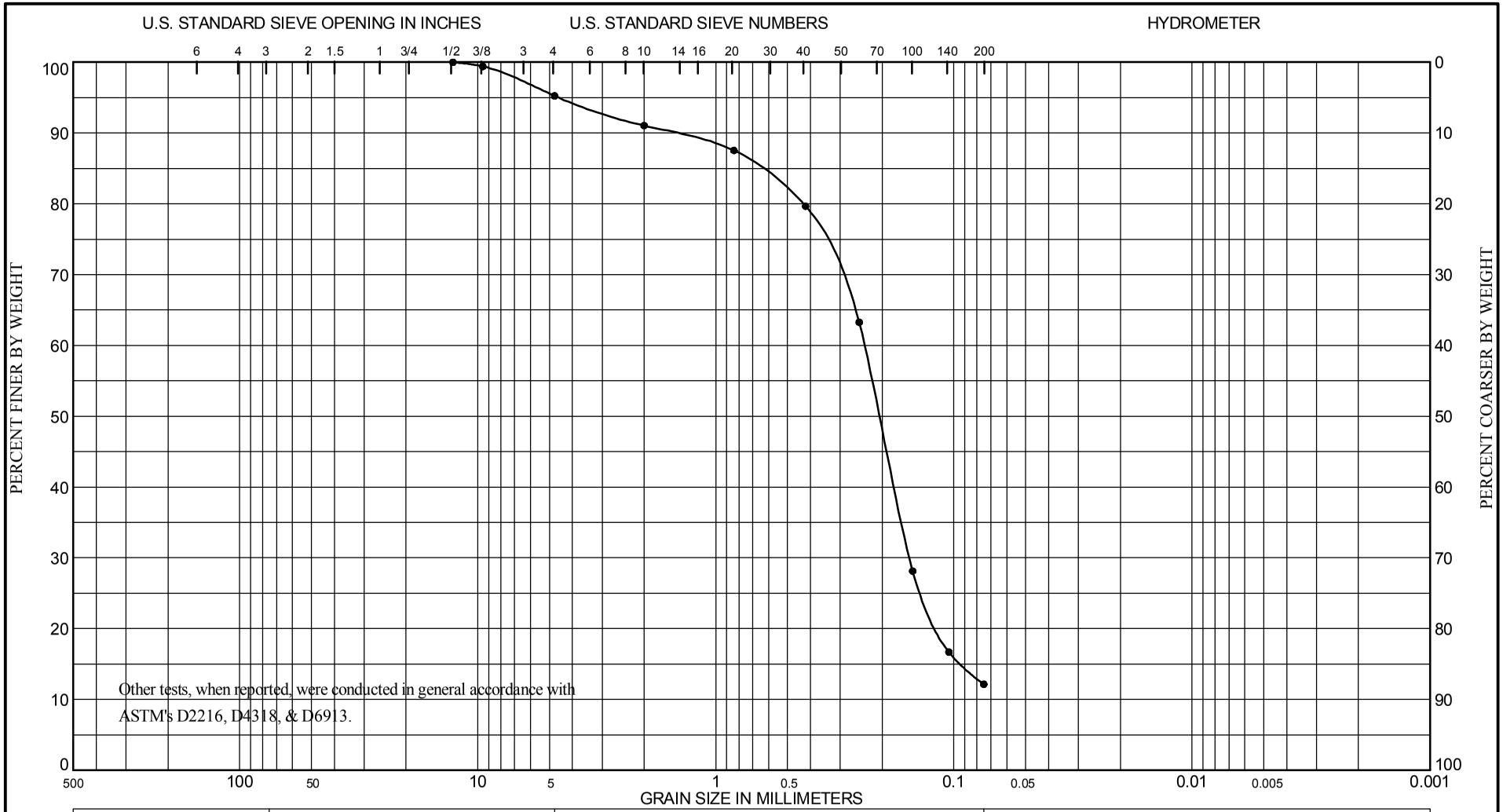
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 0.6	Greenish Gray, Poorly Graded Sand (SP), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4051
Hole No. BI-PBS-236-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	0.6 to 2.9	Dark Greenish Gray, Silty Sand (SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4052
Hole No. BI-PBS-236-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-237-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-237-13 — LOCATION COORDINATES: E = 1,106,930 N = 236,835	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 1 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 49.7 Ft.
	15. DATE BORING — STARTED: 12-19-13 — COMPLETED: 12-19-13
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -47.5 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 19.7 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-47.5	0.0				
-48.8	1.3		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few shell fragments, lt. gray (SP-SM)	A	Classification: SP-SM Color: 2.5Y 6/1-gray D50: 0.228 mm % Fines: 7
			CLAY, lean, trace shell fragments, sandy, lt. to medium gray and pale orange (CL)	NS	
			At El. -60.0 Ft., trace wood		
-65.4	17.9				
-67.2	19.7		SAND, clayey, little shell fragments (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.

3. Seafloor elevation determined from 2014 USACE survey.

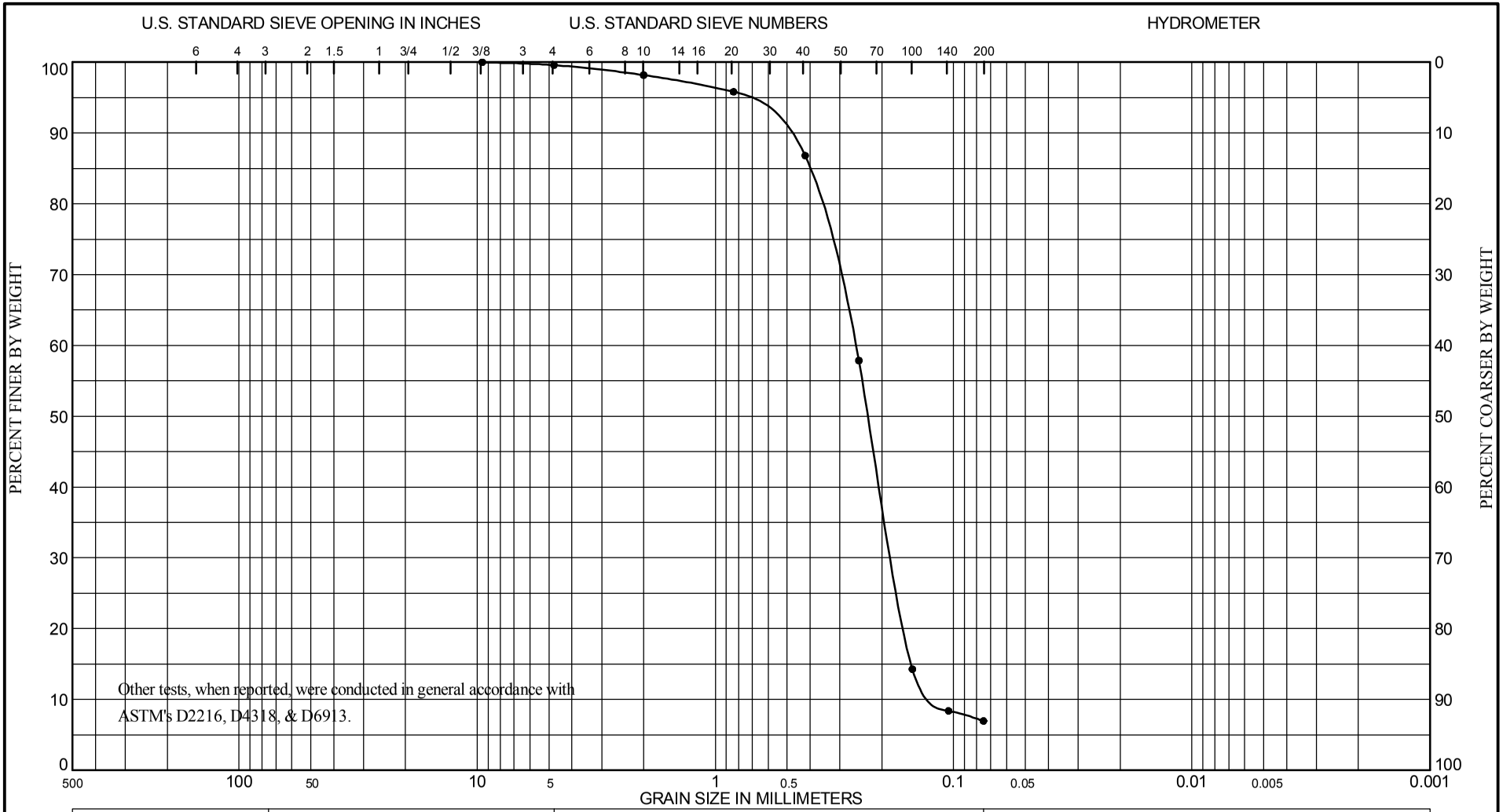
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15068° Long = -88.44518°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 1.3	Greenish Gray, Poorly Graded Silty Sand (SP-SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4050
Hole No. BI-PBS-237-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-238-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-238-13 — LOCATION COORDINATES: E = 1,104,458 N = 236,965	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 3 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 45.8 Ft.
	15. DATE BORING — STARTED: 01-08-14 — COMPLETED: 01-08-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -46.7 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 18.1 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-46.7	0.0				
-52.7	6.0		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, few shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 6/1-gray D50: 0.259 mm % Fines: 1.3
				B	Classification: SP Color: GLEY1 10Y 6/1- D50: 0.261 mm % Fines: 1.3
-53.7	7.0		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, medium gray (SM) At El. -53.0 Ft., trace of clay and fine to medium-grained sand	C	Classification: SP-SM Color: 2.5Y 5/1-gray D50: 0.229 mm % Fines: 8
-55.3	8.6		SAND, clayey, mostly fine-grained sand-sized quartz, medium gray (SC)	NS	
-58.1	11.4		CLAY, lean, sandy, medium gray (CL)		
-64.8	18.1		CLAY, fat, sandy, lt. gray, pale orange, and pale brown (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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

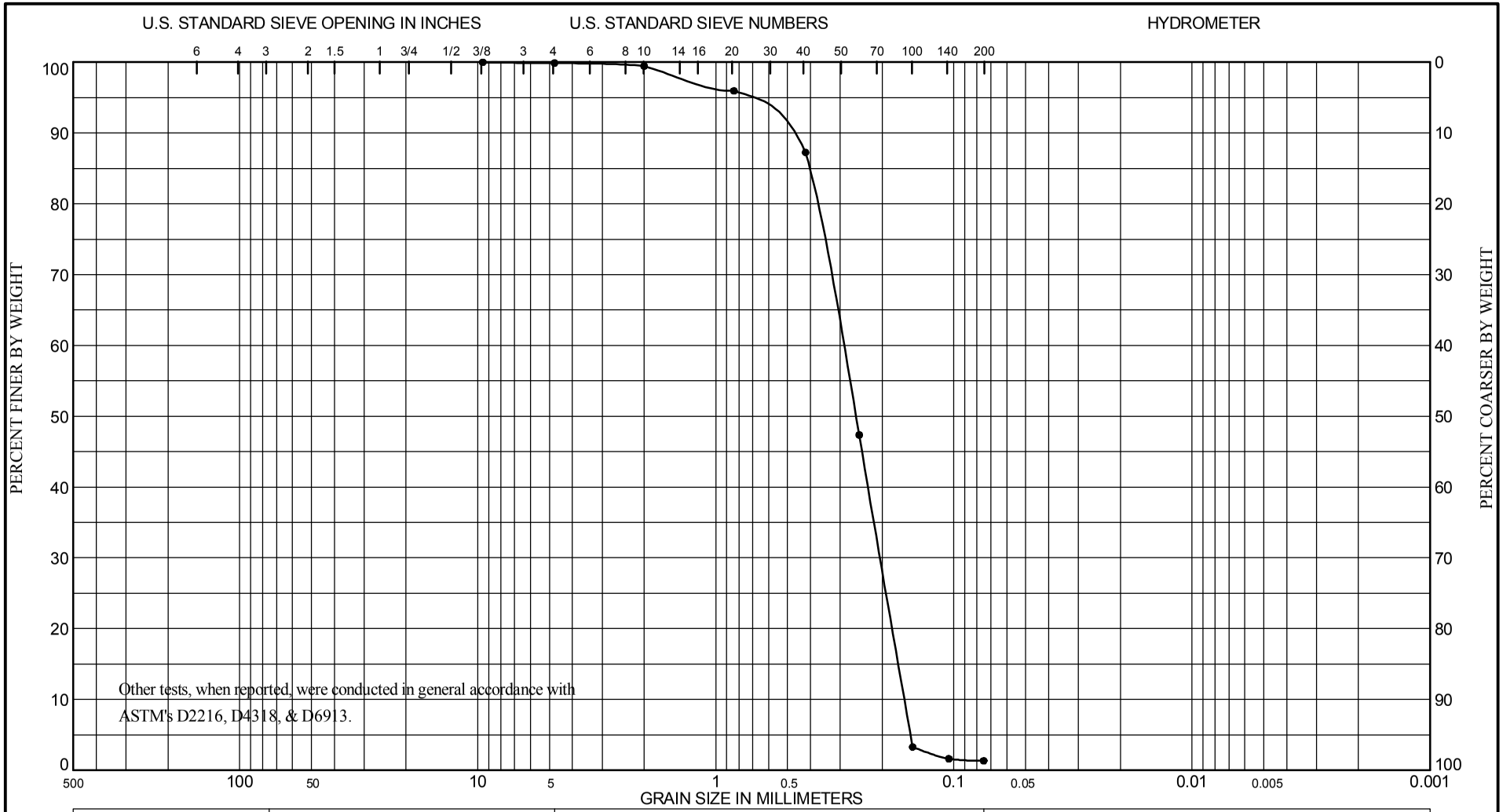
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15106° Long = -88.45300°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

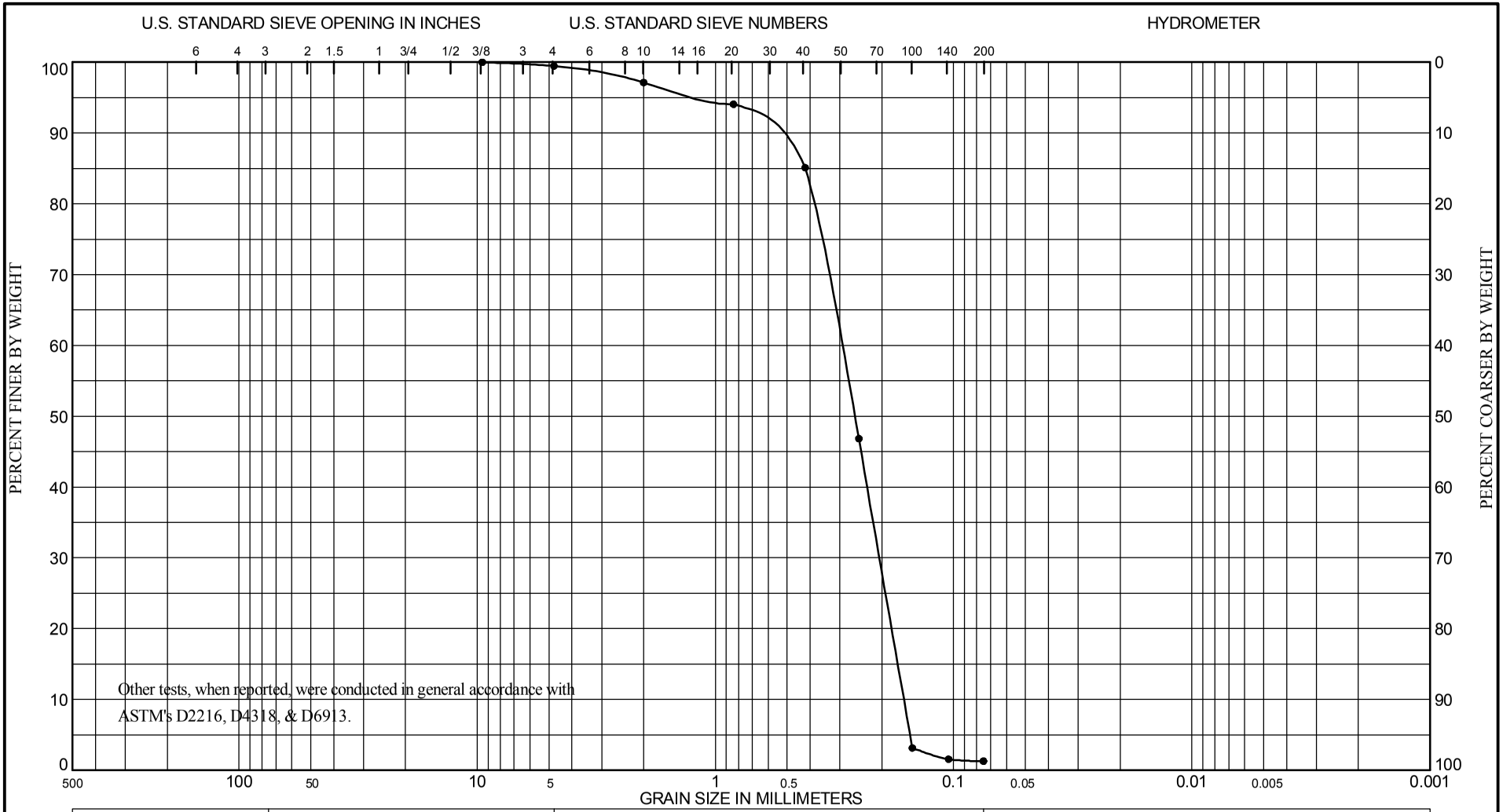
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 3.0	Dark Greenish Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4151
Hole No. BI-PBS-238-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

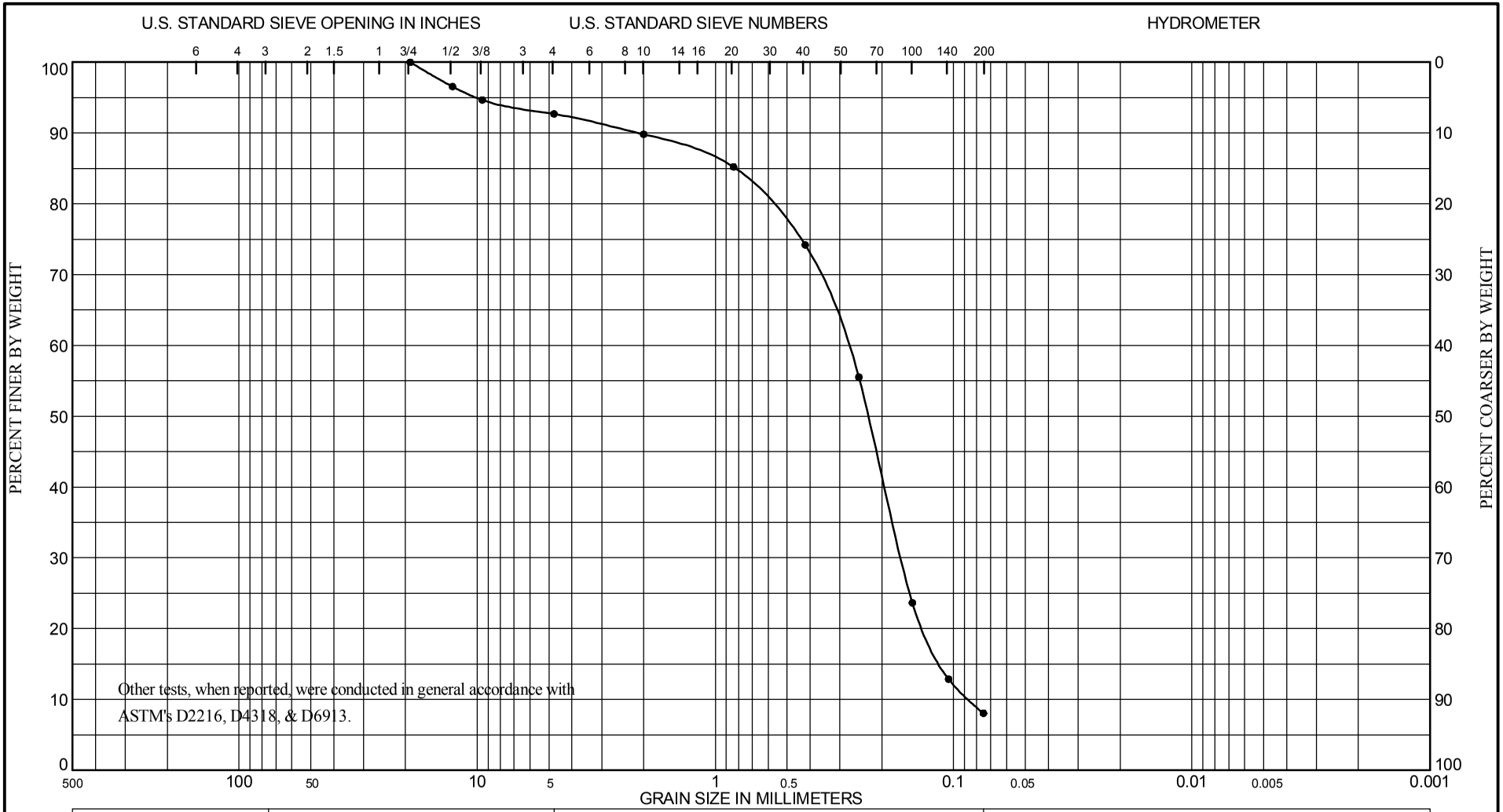
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	3.0 to 6.0	Dark Greenish Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4152
Hole No. BI-PBS-238-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	6.0 to 7.0	Greenish Black, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4153
Hole No. BI-PBS-238-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-239-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 2 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-239-13 — LOCATION COORDINATES: E = 1,122,038 N = 231,060	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 1 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 54 Ft.
	15. DATE BORING — STARTED: 12-02-13 — COMPLETED: 12-02-13
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -52.5 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 19.9 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-52.5	0.0				
-54.4	1.9		SAND, silty, mostly fine to medium-grained sand-sized quartz, medium gray (SM)	A	Classification: SM Color: GLEY1 10Y 5/1- D50: 0.219 mm % Fines: 17.9
-55.4	2.9		SAND, clayey, mostly fine-grained sand-sized quartz, medium gray (SC)		
-62.2	9.7		CLAY, fat, lt. grayish green with orange streaks (CH)		
-63.8	11.3		CLAY, lean, sandy, medium gray (CL)	NS	
-70.0	17.5		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, few shell, brownish gray (SP)		
-72.4	19.9		SAND, silty, mostly fine to medium-grained sand-sized quartz, little shell, brownish 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.

3. Seafloor elevation determined from

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.13465° Long = -88.39745°

Boring Designation BI-PBS-239-13

DRILLING LOG (Cont. Sheet)	INSTALLATION Mobile District		SHEET 2 OF 2 SHEETS
PROJECT MsCIP Barrier Island Restoration	COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83	VERTICAL NAVD88
LOCATION COORDINATES X = 1,122,038 Y = 231,060	ELEVATION TOP OF BORING -52.5 Ft.		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
			10/28/2014 USACE survey.		

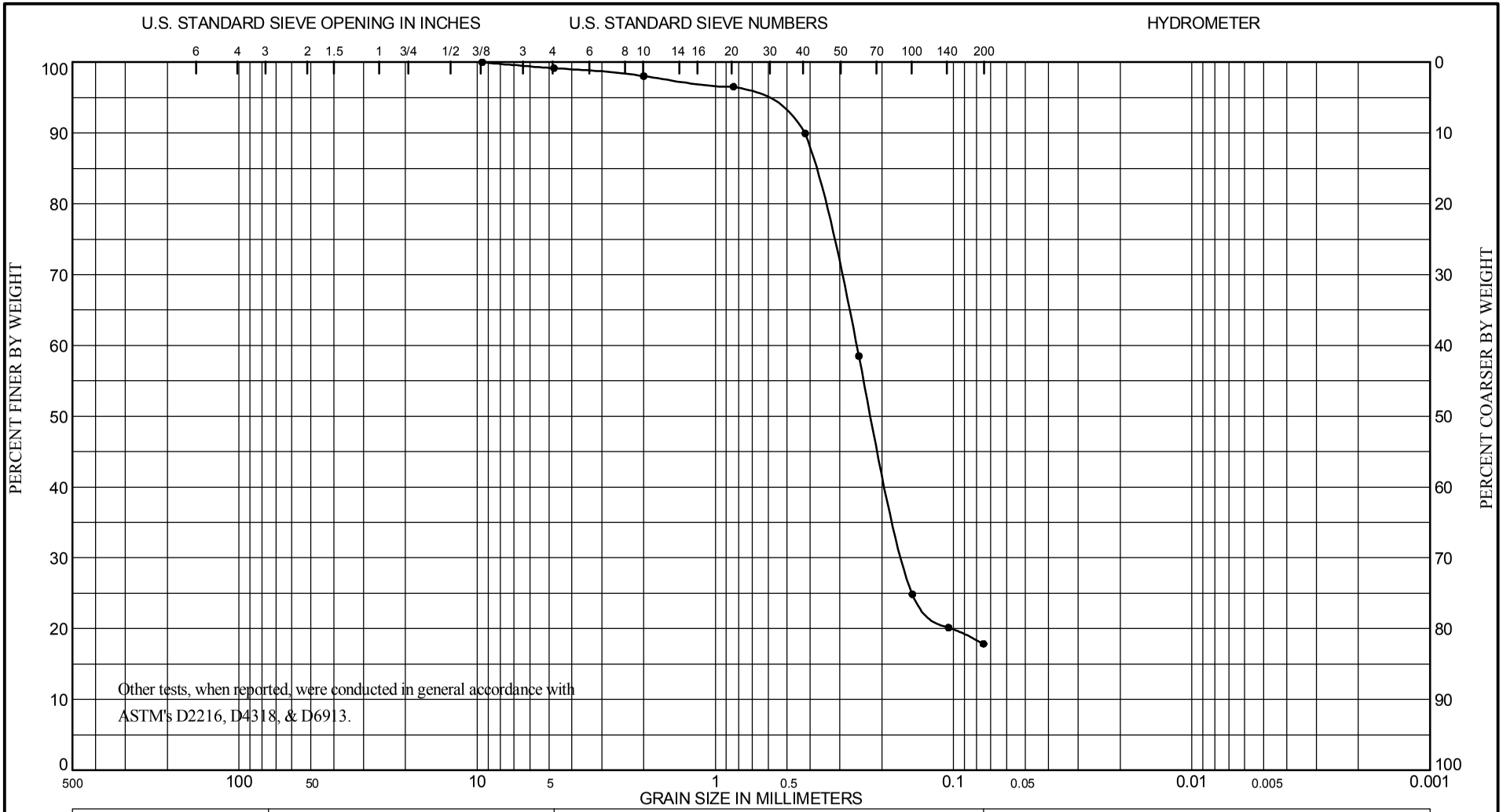
30
35
40
45
50
55
60

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.13465° Long = -88.39745°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 1.9	Dark Greenish Gray, Silty Sand (SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/3928
Hole No. BI-PBS-239-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-243-13

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
	South Atlantic	Mobile District	

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS West
2. BORING DESIGNATION	BI-PBS-243-13
LOCATION COORDINATES	E = 1,109,959 N = 226,688
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	12.2 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED 3 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	47.7 Ft.
15. DATE BORING	STARTED 01-13-14 / COMPLETED 01-13-14
16. ELEVATION TOP OF BORING	-47.6 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-47.6	0.0				
-51.3	3.7		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.225 mm % Fines: 1.5
-52.8	5.2		SAND, poorly-graded, mostly fine-grained sand-sized quartz, few shell fragments, lt. to medium gray (SP)	B	Classification: SP-SM Color: GLEY1 10Y 5/1- D50: 0.189 mm % Fines: 5
-53.4	5.8		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, medium gray (SM)	C	Classification: SM Color: 2.5Y 5/1-gray D50: 0.181 mm % Fines: 16.4
-59.5	11.9		CLAY, fat, hard, lt. gray, pale orange, pale green (CH)	NS	
-59.8	12.2		CLAY, lean, sandy, lt. 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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

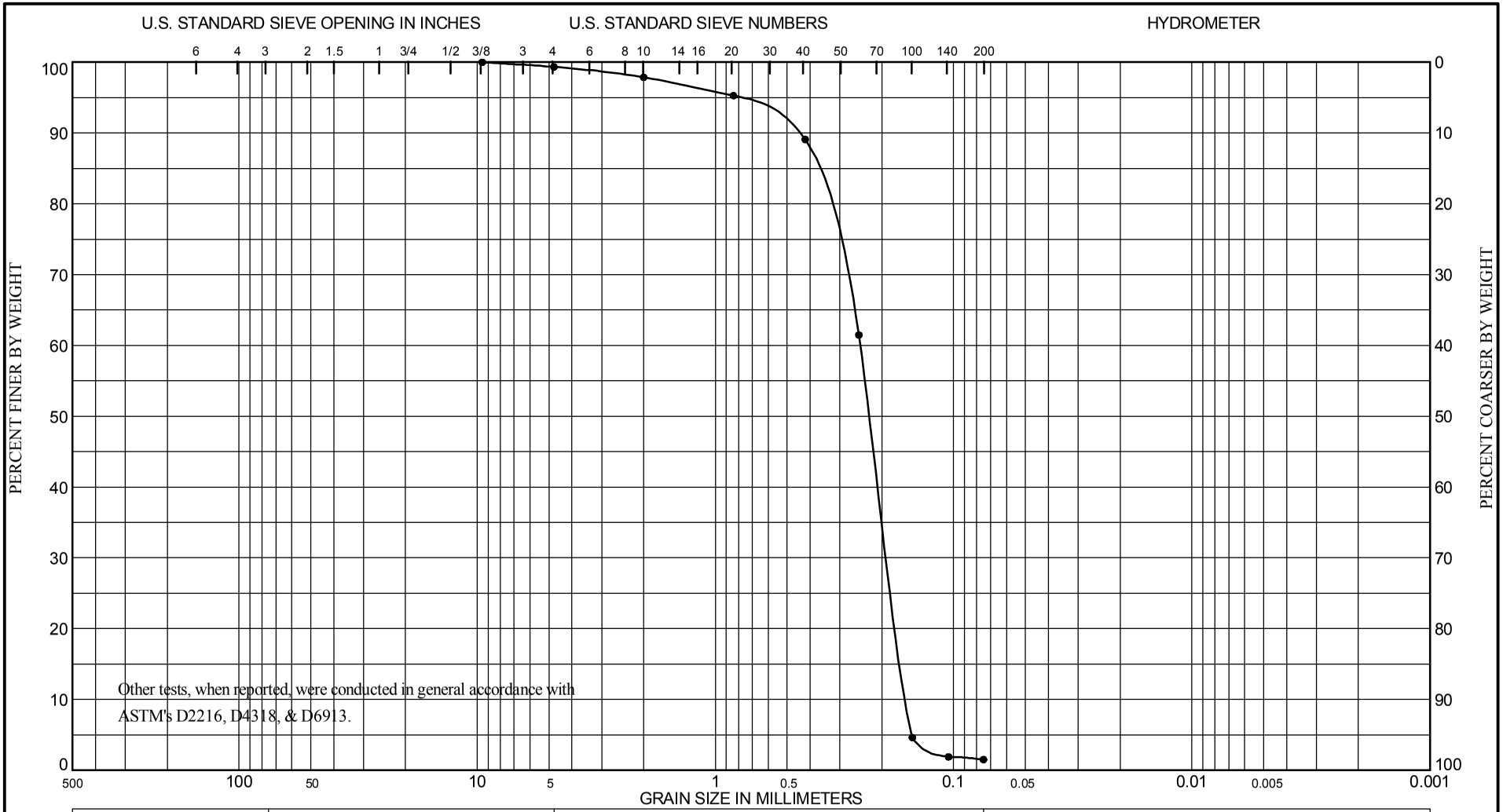
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.12275° Long = -88.43571°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

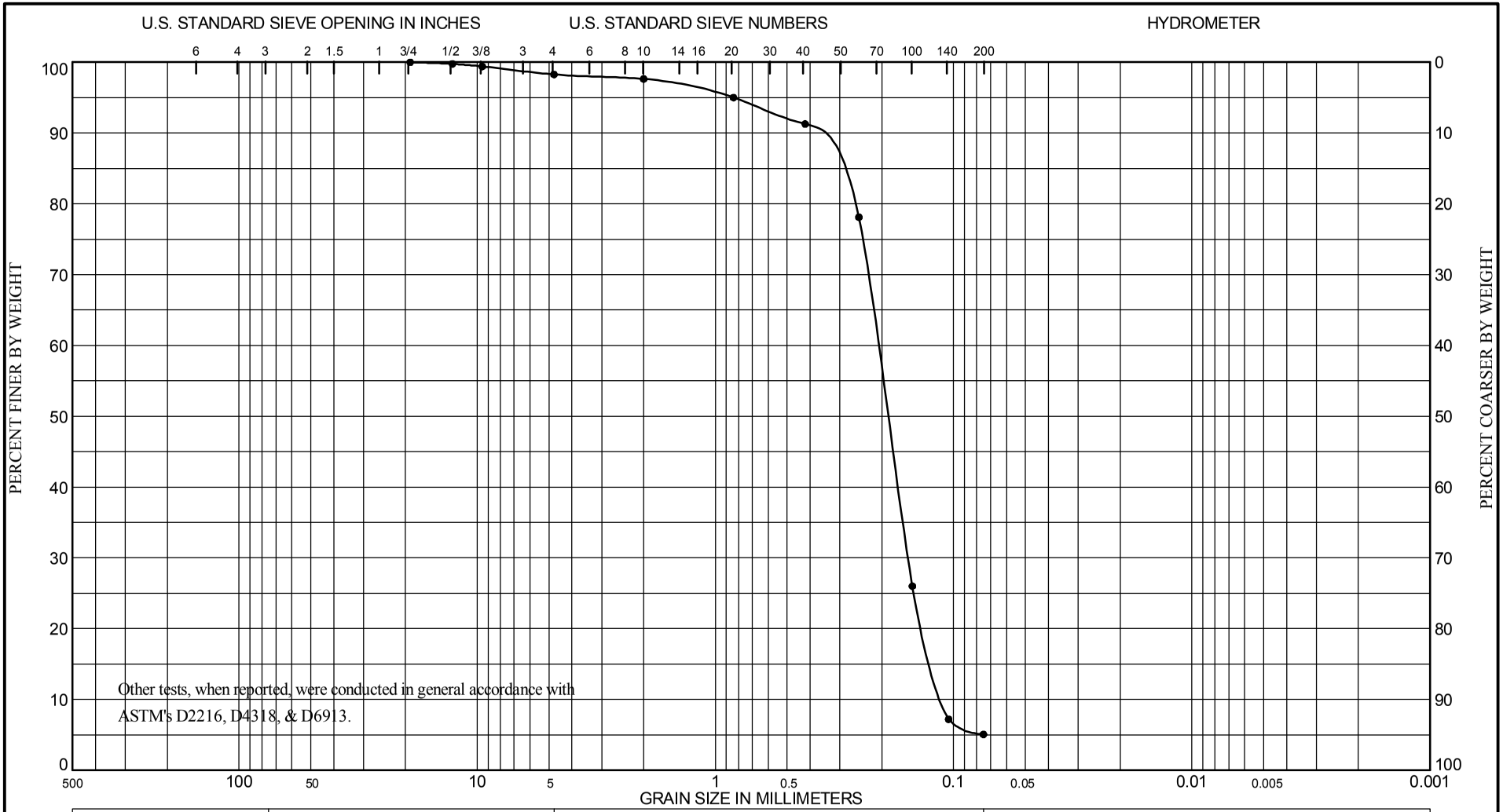
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 3.7	Dark Greenish Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4181
Hole No. BI-PBS-243-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

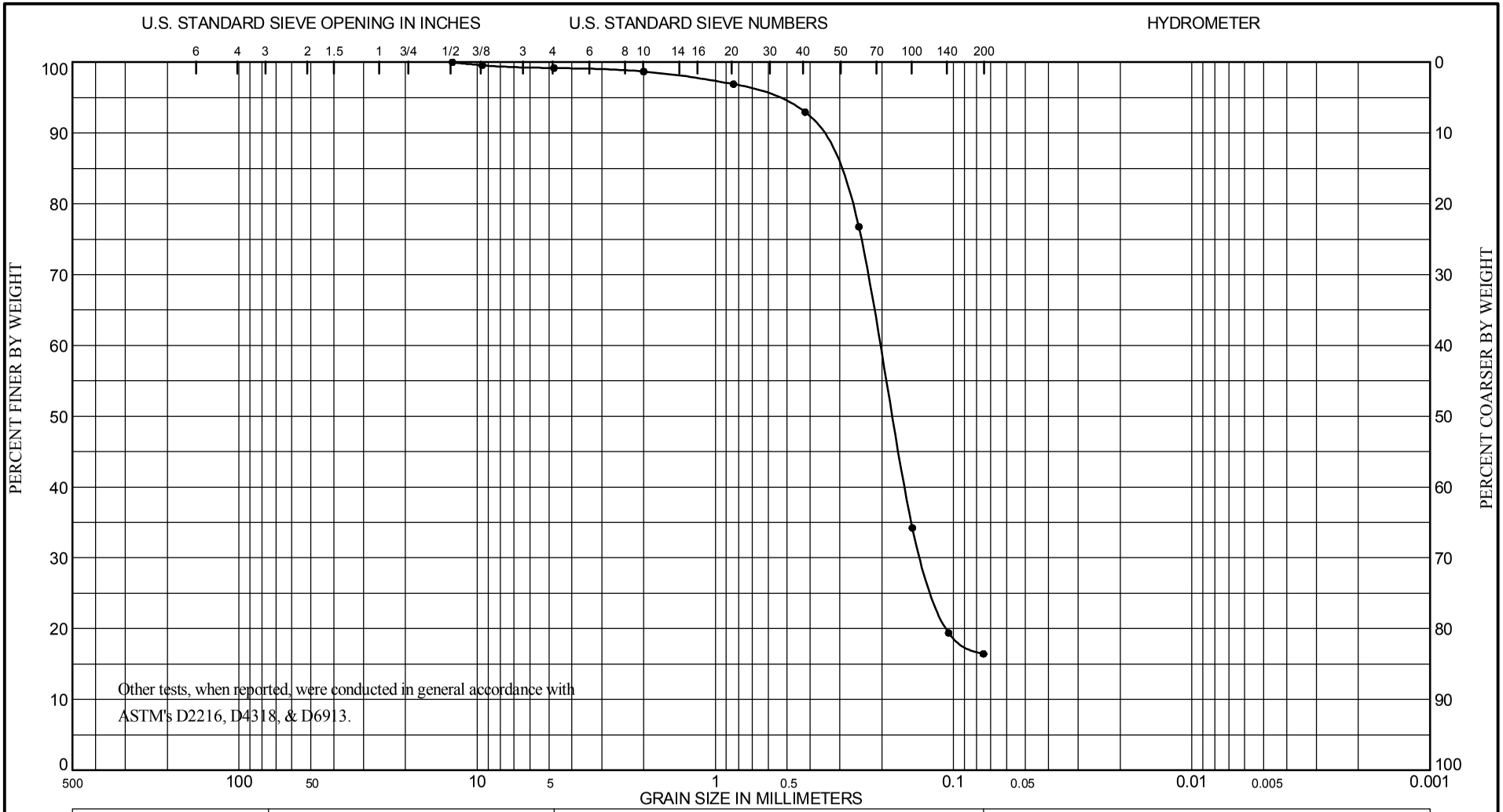
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	3.7 to 5.2	Very Dark Greenish Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4182
Hole No. BI-PBS-243-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	5.2 to 5.8	Very Dark Greenish Gray, Silty Sand (SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4183
Hole No. BI-PBS-243-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-244-13

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
	South Atlantic	Mobile District	

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS West
2. BORING DESIGNATION	BI-PBS-244-13
LOCATION COORDINATES	E = 1,110,997 N = 228,132
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	10.7 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED 1 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	53.3 Ft.
15. DATE BORING	STARTED 01-12-14 / COMPLETED 01-12-14
16. ELEVATION TOP OF BORING	-52.9 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-52.9	0.0				
-53.8	0.9		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few shell fragments, medium gray (SP-SM)	A	Classification: SP-SM Color: 2.5Y 5/1-gray D50: 0.206 mm % Fines: 5
-54.9	2.0		CLAY, lean, few shell fragments, sandy, lt. to medium gray, pale orange (CL) CLAY, fat, sandy, lt. gray, orange, pale brown, pale orange (CH)	NS	
-60.2	7.3		CLAY, lean, sandy with interbeds of SC, medium gray (CL)		
-63.6	10.7				

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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.12671° Long = -88.43241°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192

COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 0.9	Dark Greenish Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4180
Hole No. BI-PBS-244-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-245-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 2 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-245-13 — LOCATION COORDINATES: E = 1,109,960 N = 229,107	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 1 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 52 Ft.
	15. DATE BORING — STARTED: 01-12-14 — COMPLETED: 01-12-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -51.9 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 18.3 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-51.9	0.0				
-52.3	0.4		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 5/1-gray D50: 0.255 mm % Fines: 4
-53.2	1.3		SAND, silty, mostly fine-grained sand-sized quartz, little shell fragments, medium gray (SM)		
-62.3	10.4		CLAY, fat, voids (desiccation cracks?) filled with fine-grained quartz sand from depths of 1.3 to 4 ft., oyster fragments from depths of 4.5 to 5.5 ft., sandy below 6.6 ft., lt. gray, pale green, pale orange, pale brownish gray (CH)		
-66.8	14.9		CLAY, lean, trace shell fragments, sandy, medium gray (CL)		
-69.4	17.5		SAND, clayey, little shell fragments, medium gray (SC)		
-70.2	18.3		CLAY, fat, few circular sand-filled voids (burrows on vertical cut), medium 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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.12940° Long = -88.43568°

DRILLING LOG (Cont. Sheet)	INSTALLATION Mobile District		SHEET 2 OF 2 SHEETS
PROJECT MsCIP Barrier Island Restoration	COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83	VERTICAL NAVD88
LOCATION COORDINATES X = 1,109,960 Y = 229,107	ELEVATION TOP OF BORING -51.9 Ft.		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
			factor.		

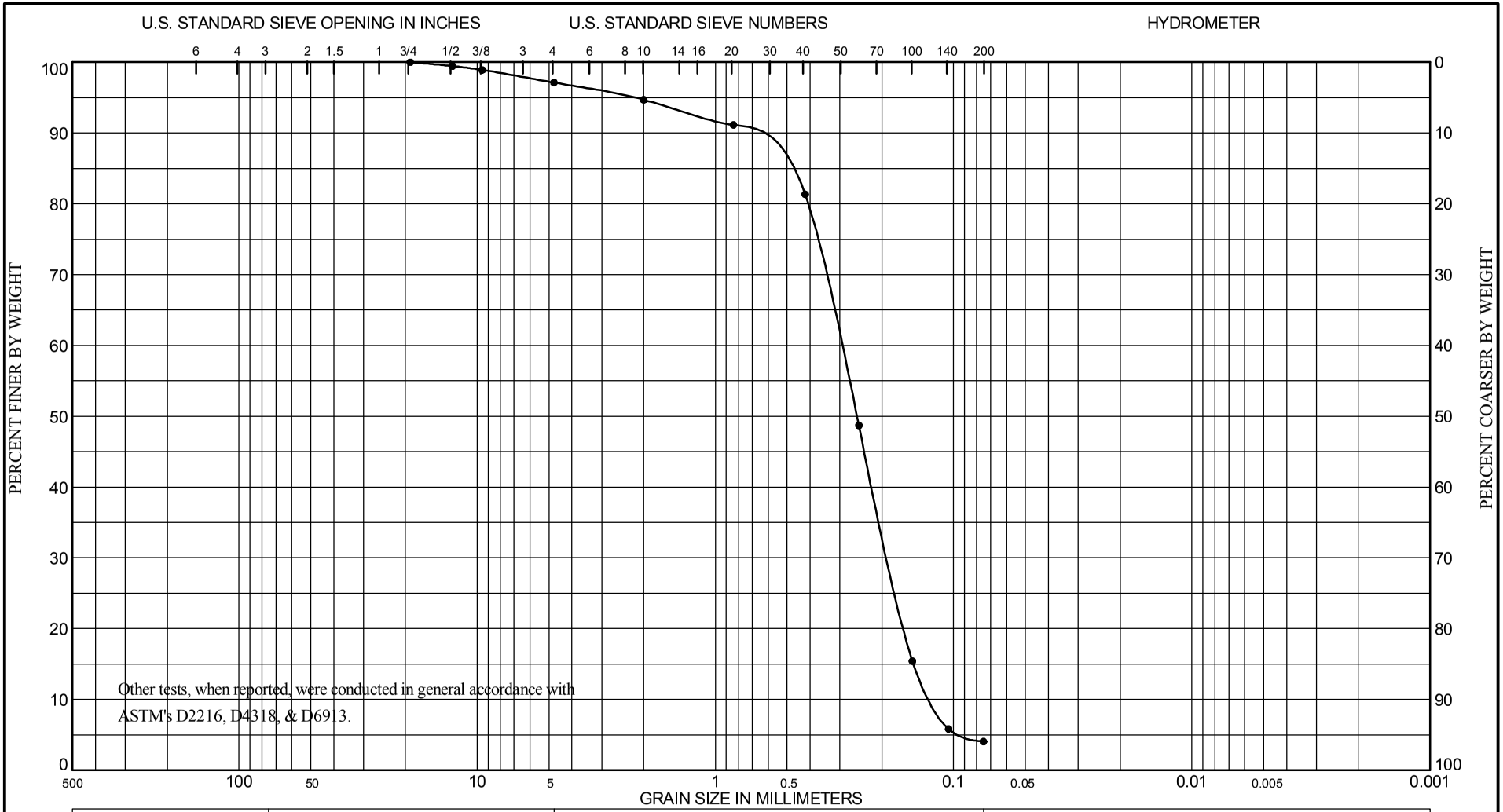
30
35
40
45
50
55
60

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.12940° Long = -88.43568°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 1.3	Very Dark Greenish Gray, Poorly Graded Sand (SP), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4179
Hole No. BI-PBS-245-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-248-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-248-13 — LOCATION COORDINATES: E = 1,098,163 N = 238,814	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 2 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 46.1 Ft.
	15. DATE BORING — STARTED: 01-08-14 — COMPLETED: 01-08-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -46.0 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 18.1 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-46.0	0.0				
-50.8	4.8		SAND, poorly-graded, mostly fine-grained sand-sized quartz, few shell fragments, lt. to medium gray (SP)	A	Classification: SP-SM Color: 2.5Y 5/1-gray D50: 0.171 mm % Fines: 11.7
-52.5	6.5		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, medium gray (SM)	B	Classification: SM Color: GLEY1 10Y 5/1- D50: 0.125 mm % Fines: 21.7
-54.0	8.0		SAND, clayey, mostly fine-grained sand-sized quartz, few shell fragments, medium gray (SC)	NS	
-57.0	11.0		CLAY, lean, no shell fragments, medium gray (CL)		
-64.1	18.1		CLAY, fat, medium gray and pale brown (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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

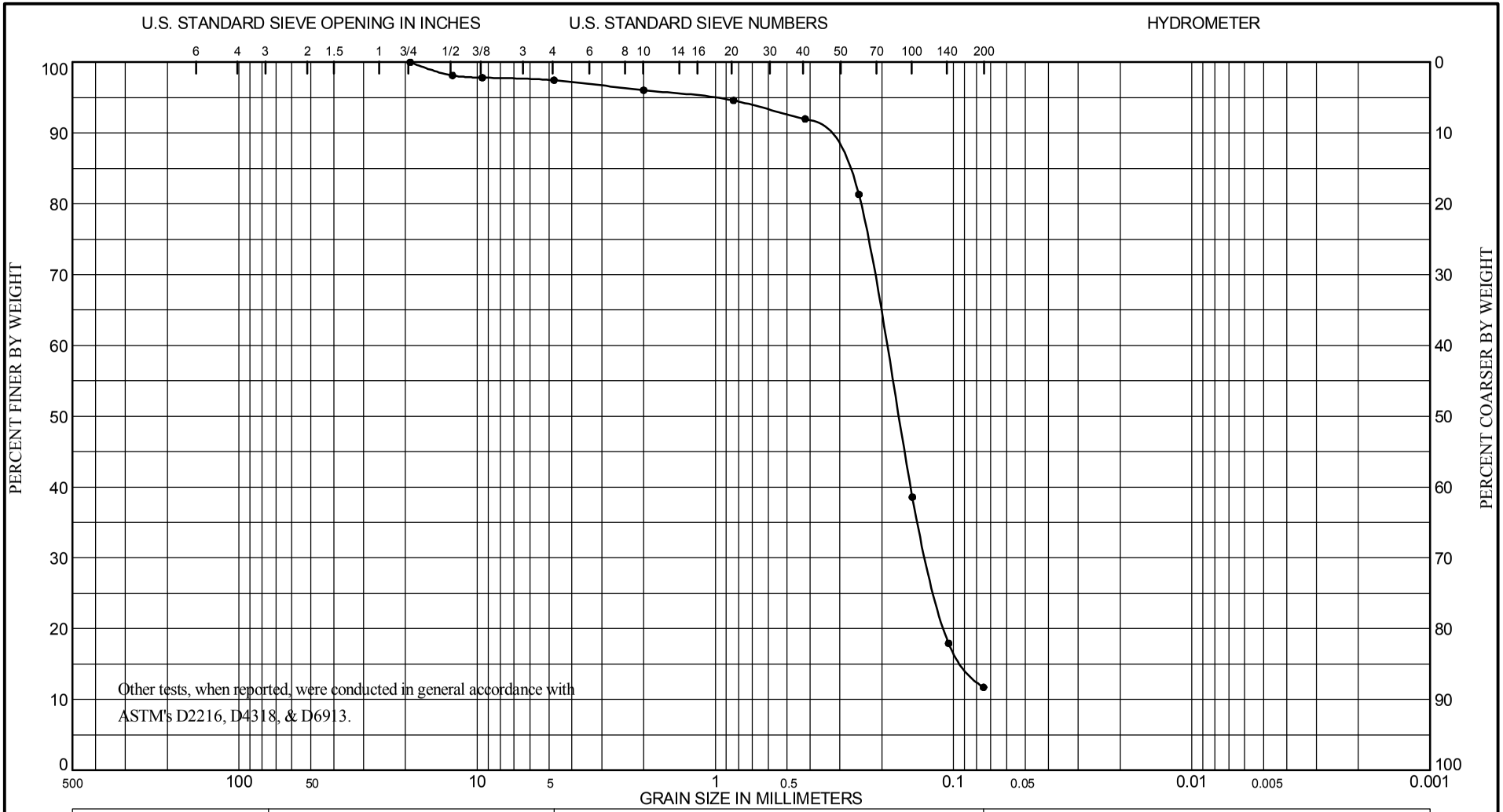
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15620° Long = -88.47290°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

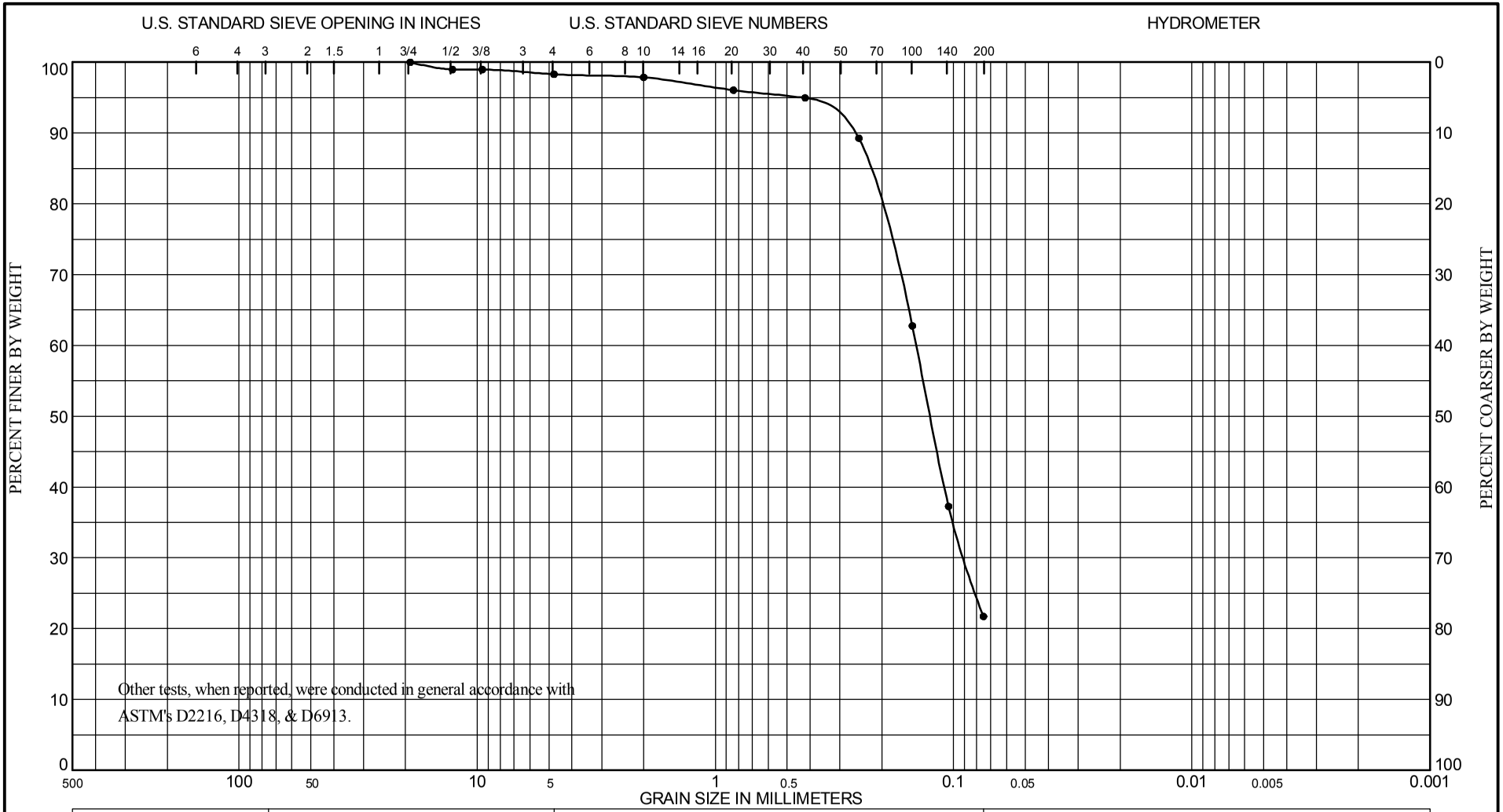
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 4.8	Very Dark Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4159
Hole No. BI-PBS-248-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	4.8 to 6.5	Very Dark Gray, Silty Sand (SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4160
Hole No. BI-PBS-248-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-250-13

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
	South Atlantic	Mobile District	

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS West
2. BORING DESIGNATION	BI-PBS-250-13
LOCATION COORDINATES	E = 1,096,532 N = 236,692
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	15.7 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED 2 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	44.5 Ft.
15. DATE BORING	STARTED 01-08-14 / COMPLETED 01-08-14
16. ELEVATION TOP OF BORING	-45.4 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-45.4	0.0				
-48.2	2.8		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, few shell fragments, lt. gray (SP)	A	Classification: SP Color: GLEY1 10Y 6/1- D50: 0.244 mm % Fines: 1.6
-49.6	4.2		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, lt. to medium gray (SM)	B	Classification: SP-SM Color: GLEY1 10Y 5/1- D50: 0.195 mm % Fines: 7.2
-56.6	11.2		SAND, clayey, mostly fine-grained sand-sized quartz, few shell fragments, medium gray (SC)	NS	
-61.1	15.7		CLAY, fat, sandy, lt. gray, pale orange, pale red (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.

3. Seafloor elevation determined from 2013 USGS geophysical survey.

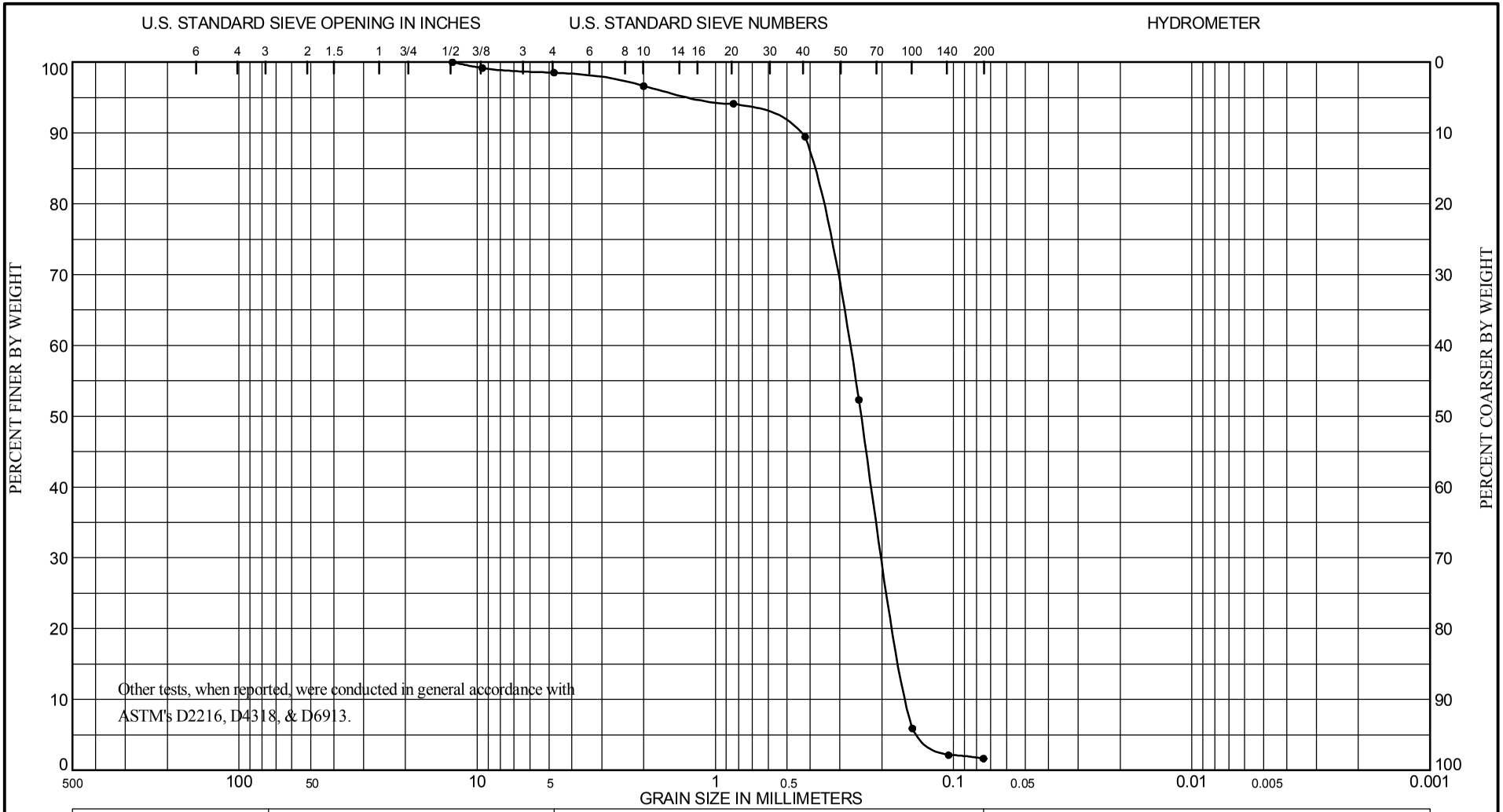
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15038° Long = -88.47808°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

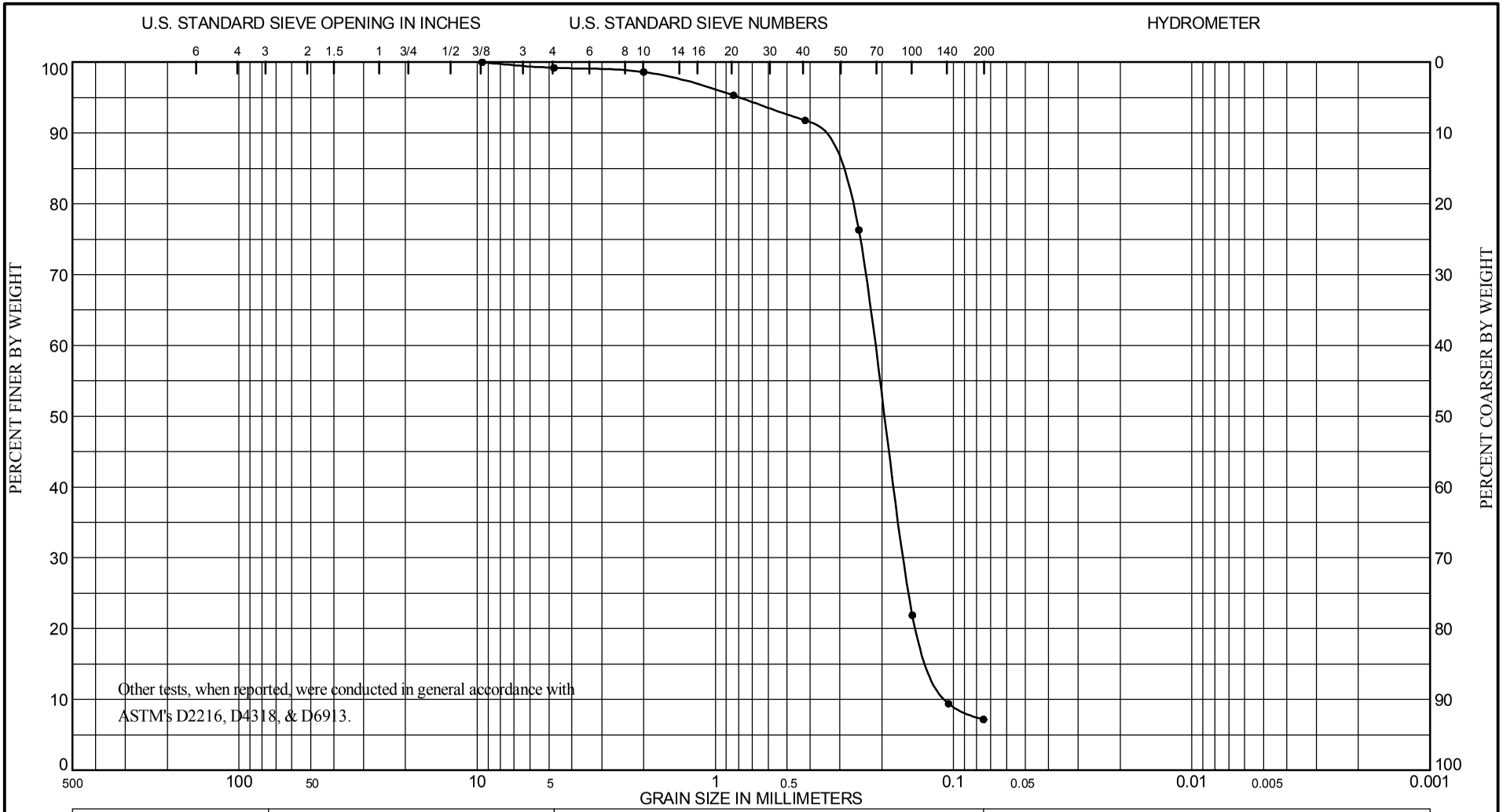
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 2.8	Dark Olive Gray, Poorly Graded Sand (SP), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4164
Hole No. BI-PBS-250-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	2.8 to 4.2	Very Dark Gray, Poorly Graded Silty Sand (SP-SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4165
Hole No. BI-PBS-250-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-251-13

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
	South Atlantic	Mobile District	

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS West
2. BORING DESIGNATION	BI-PBS-251-13
LOCATION COORDINATES	E = 1,107,268 N = 227,628
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	14.8 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED 2 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	48.4 Ft.
15. DATE BORING	STARTED 01-20-14 / COMPLETED 01-20-14
16. ELEVATION TOP OF BORING	-48.7 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-48.7	0.0				
-51.2	2.5		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, few shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 6/1-gray D50: 0.226 mm % Fines: 2
-51.9	3.2		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few shell fragments, lt. to medium gray (SP-SM)	B	Classification: SP-SM Color: 2.5Y 5/1-gray D50: 0.2 mm % Fines: 7
-53.3	4.6		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, medium gray (SM)		
-56.9	8.2		CLAY, lean, few shell fragments, sandy, medium to dark gray (CL)		
-63.5	14.8		CLAY, fat, sandy, hard, lt. gray, pale orange, pale green (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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

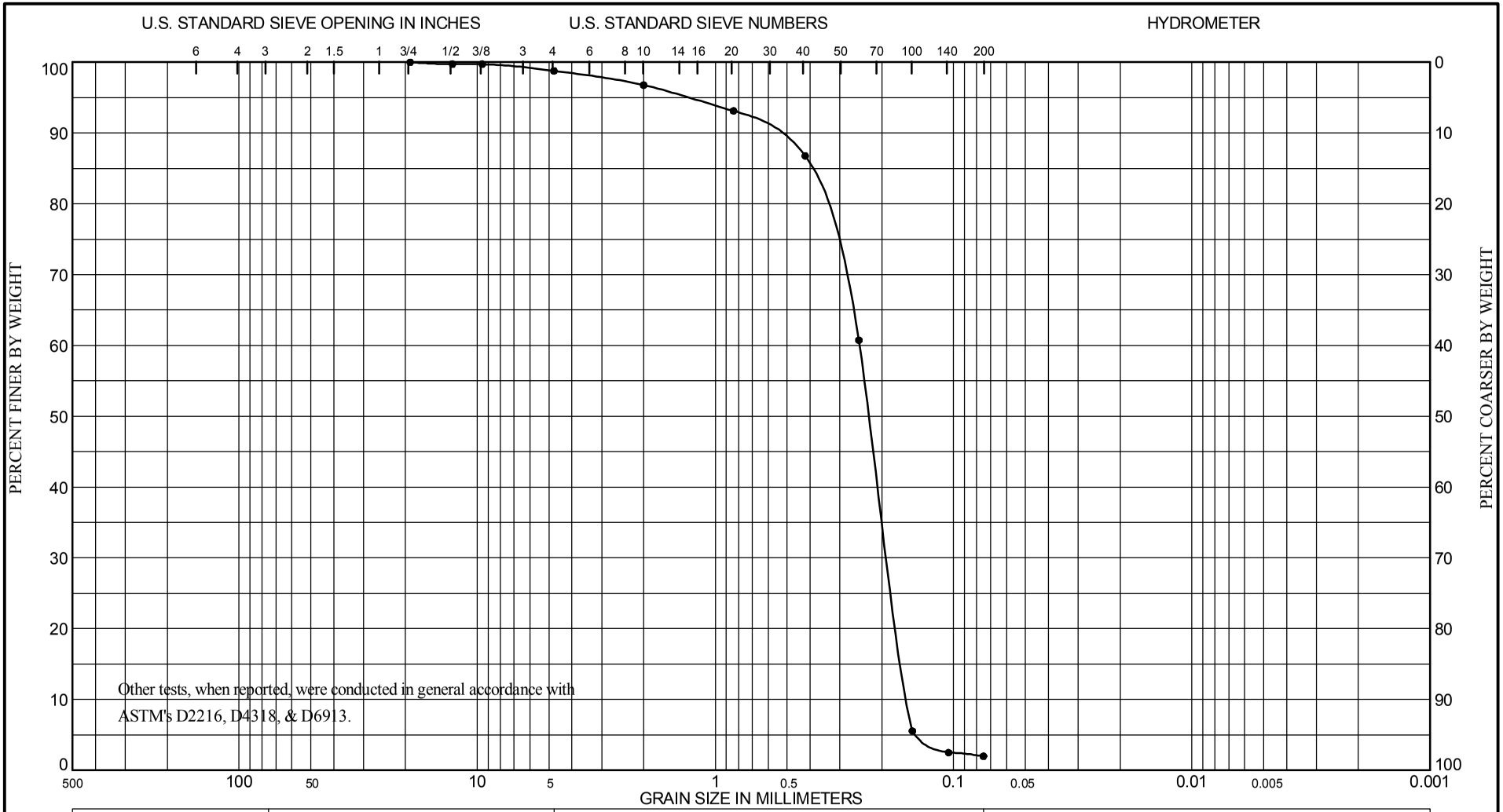
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.12536° Long = -88.44421°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

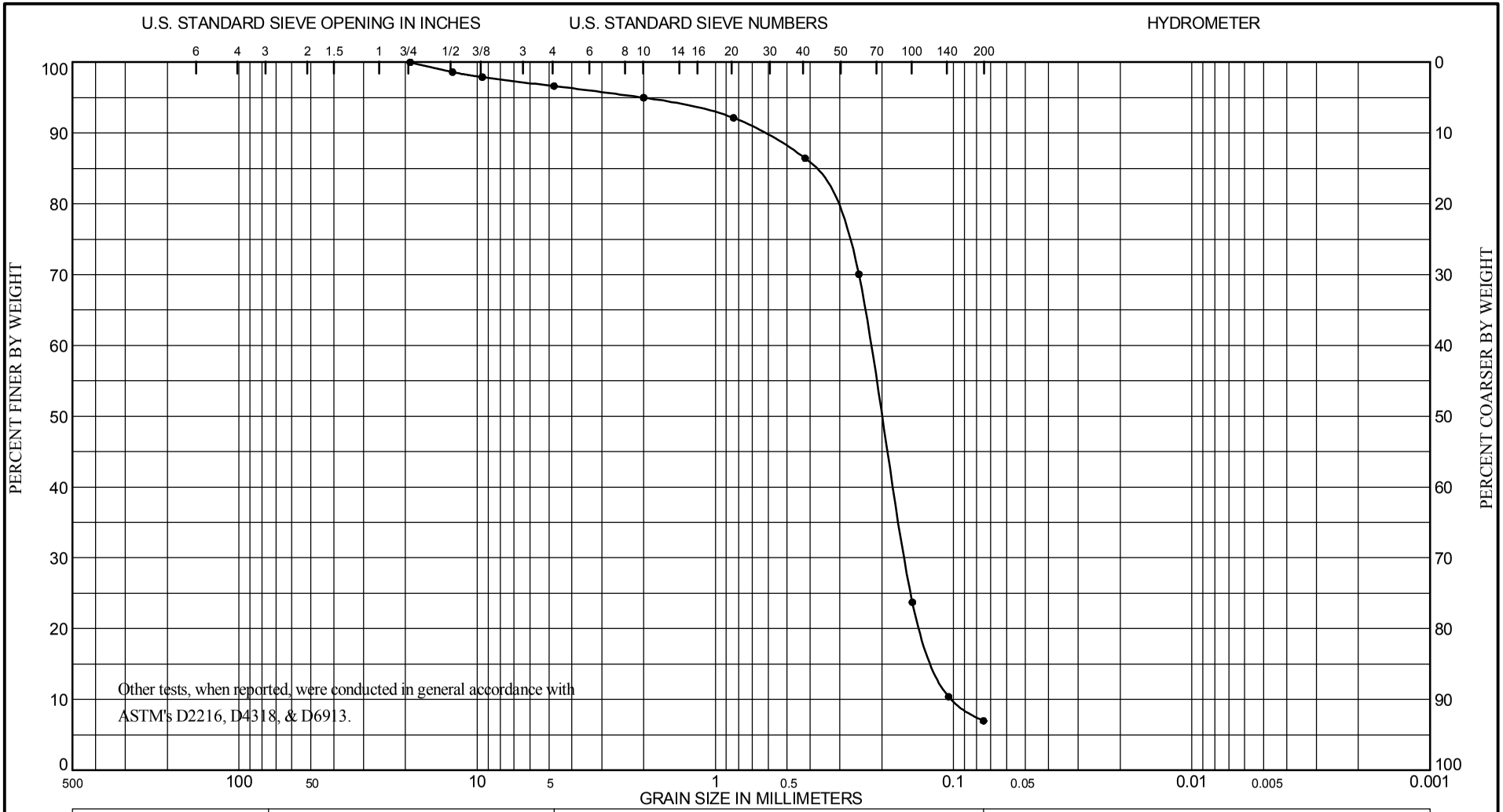
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 2.5	Dark Gray, Poorly Graded Sand (SP), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4220
Hole No. BI-PBS-251-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	2.5 to 4.6	Very Dark Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4221
Hole No. BI-PBS-251-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-252-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-252-13 — LOCATION COORDINATES: E = 1,109,130 N = 227,794	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 2 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 48.1 Ft.
	15. DATE BORING — STARTED: 01-13-14 — COMPLETED: 01-13-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -47.7 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 15.5 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-47.7	0.0				
-49.2	1.5		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, few shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.243 mm % Fines: 1.7
-49.6	1.9		SAND, poorly-graded, mostly fine-grained sand-sized quartz, few shell fragments, medium gray (SP)	B	Classification: SP-SM Color: 2.5Y 5/1-gray D50: 0.19 mm % Fines: 8
-50.5	2.8		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, medium gray (SM)	NS	
-51.3	3.6		SAND, clayey, mostly fine-grained sand-sized quartz, trace shell fragments, medium gray (SC)		
			CLAY, fat, sandy, lt. gray, pale orange (CH)		
-58.1	10.4		CLAY, lean, trace wood fragments at depth of 11.5 ft., medium gray (CL)		
-63.2	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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

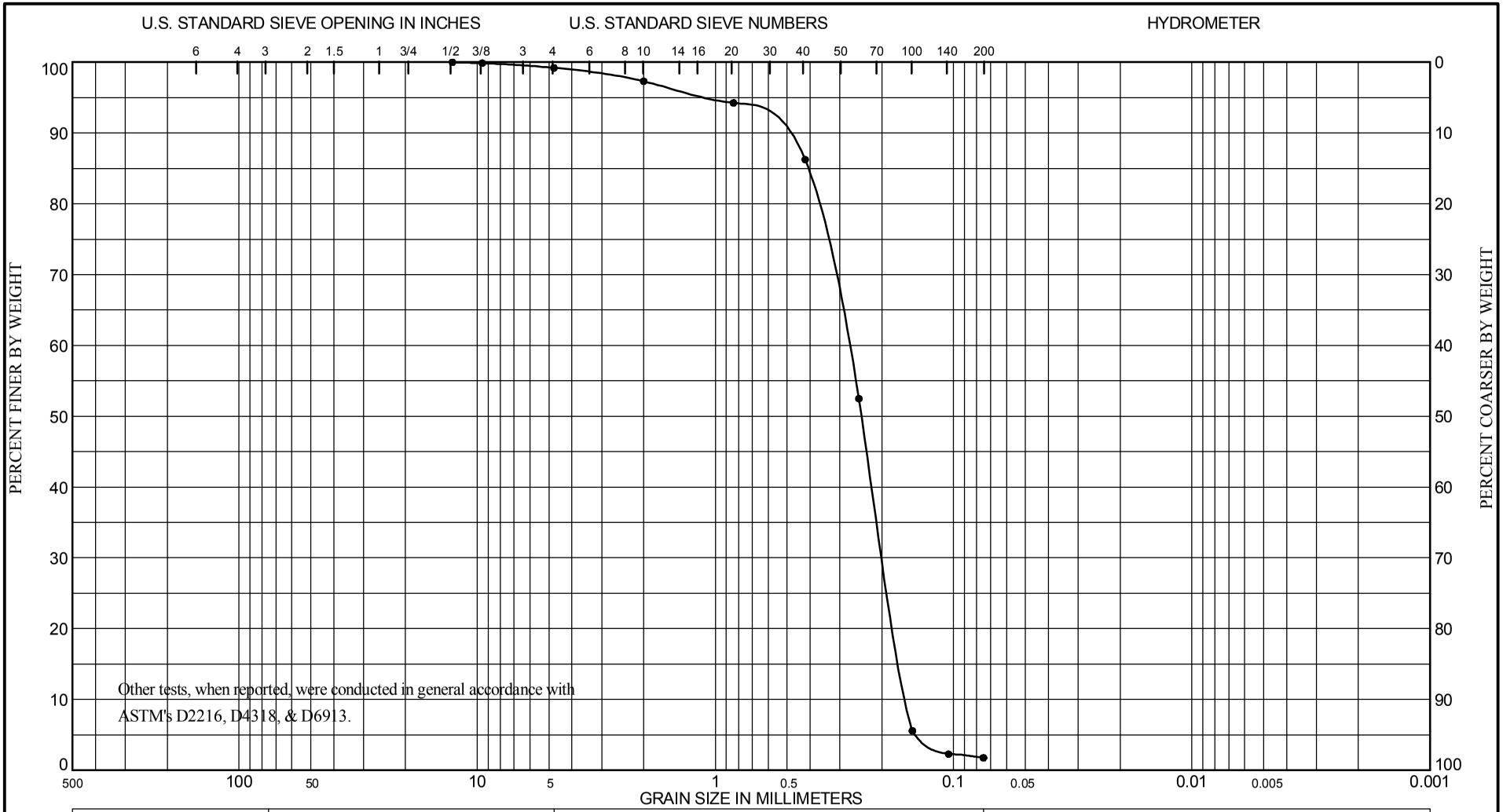
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.12580° Long = -88.43832°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

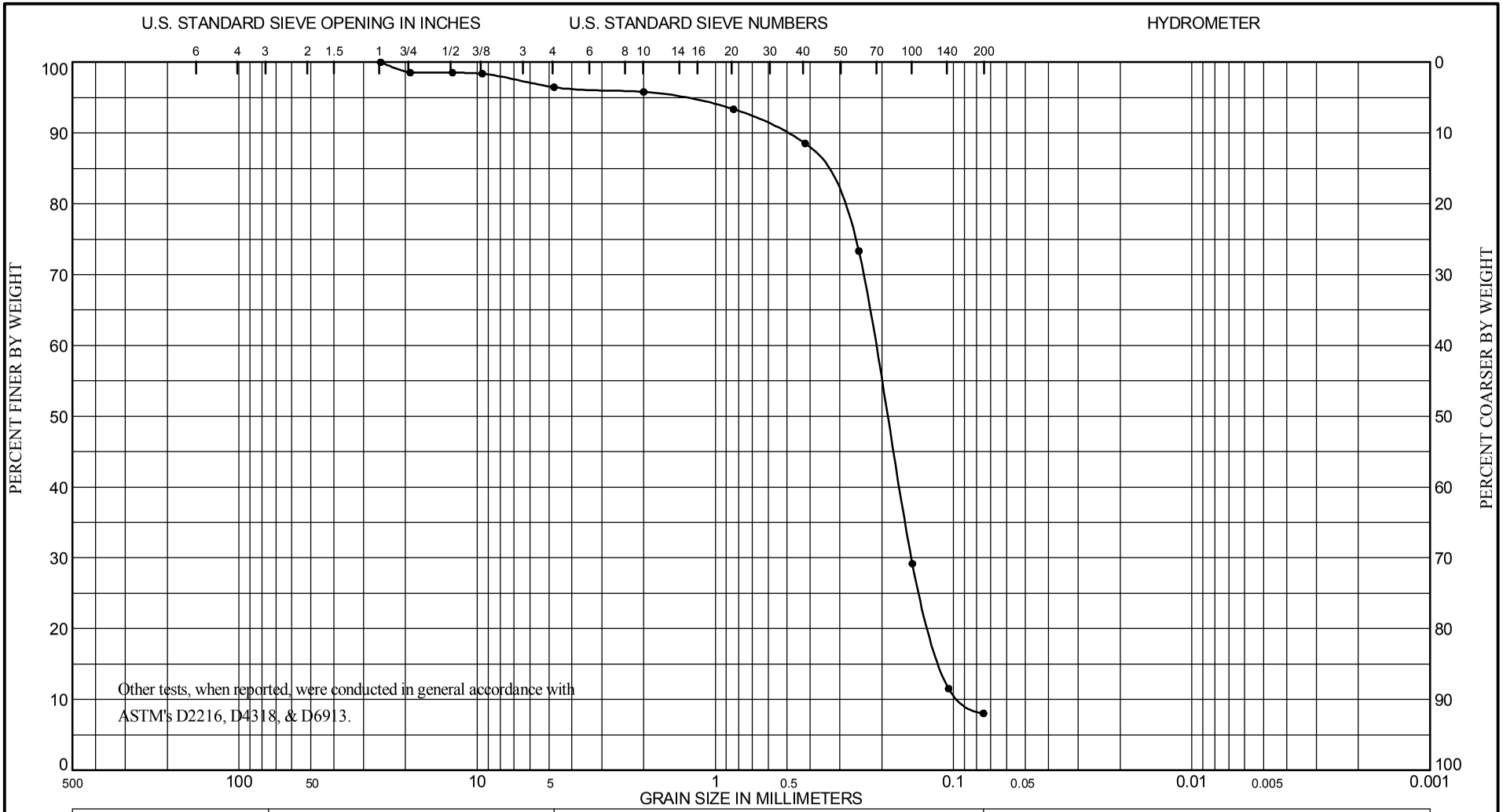
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 1.9	Greenish Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4184
Hole No. BI-PBS-252-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	1.9 to 2.8	Greenish Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4185
Hole No. BI-PBS-252-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-253-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-253-13 — LOCATION COORDINATES: E = 1,108,019 N = 228,925	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 3 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 48.1 Ft.
	15. DATE BORING — STARTED: 01-16-14 — COMPLETED: 01-16-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -48.2 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 11.7 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-48.2	0.0				
-49.3	1.1		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, few shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.316 mm % Fines: 0.8
-49.9	1.7			B	Classification: SP Color: GLEY1 10Y 6/1- D50: 0.233 mm % Fines: 4.9
-50.6	2.4		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few shell fragments, medium gray (SP-SM)	C	Classification: SP-SM Color: GLEY1 10Y 6/1- D50: 0.216 mm % Fines: 5.6
-52.9	4.7		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, medium gray (SM)		
			CLAY, lean, sandy, dark gray (CL)		
			CLAY, fat, sandy, hard, lt. gray, pale orange (CH)	NS	
-59.6	11.4				
-59.9	11.7				
			CLAY, lean, sandy, medium to 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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.12892° Long = -88.44182°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192

COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

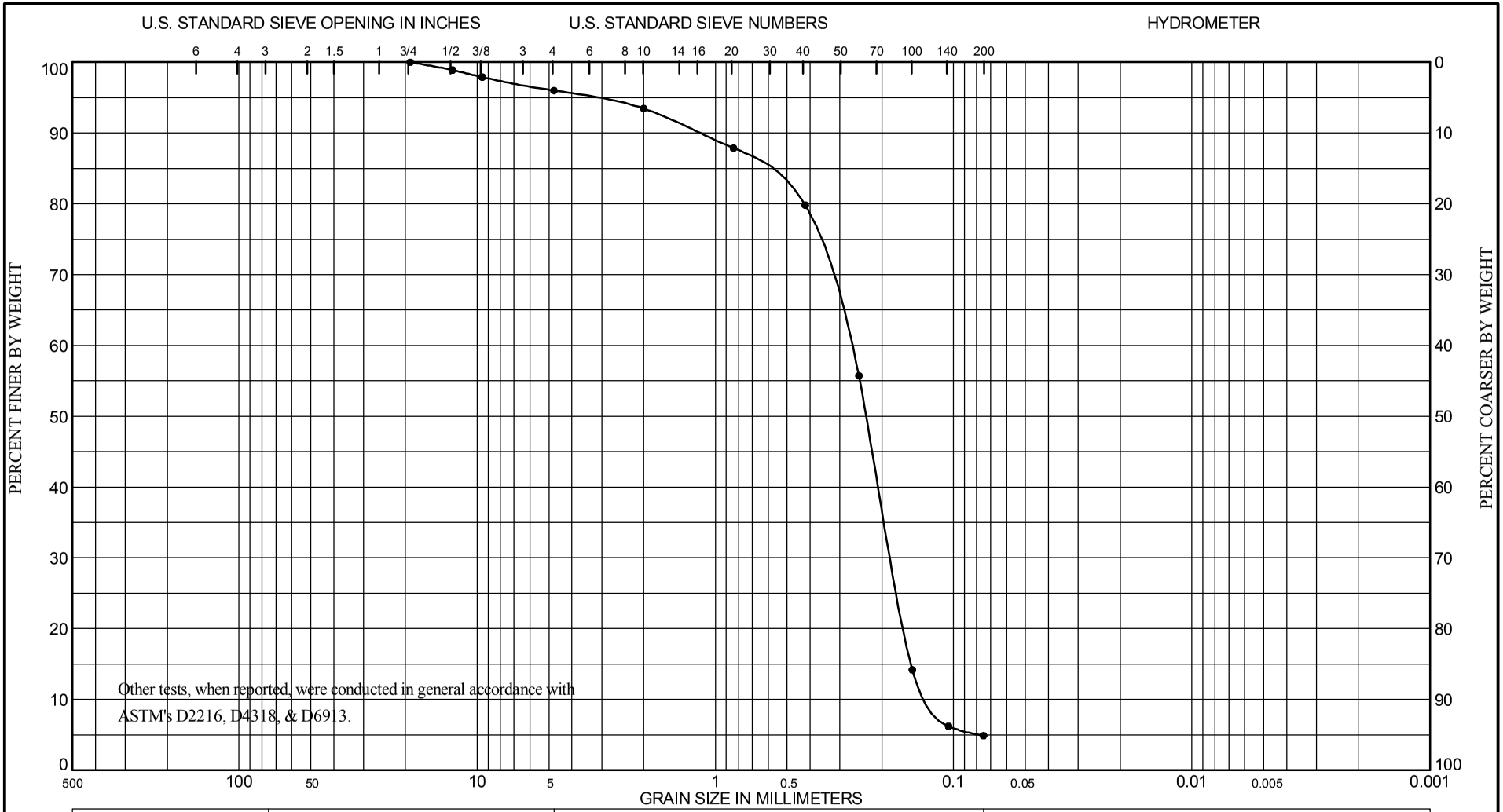
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 1.1	Gray, Poorly Graded Sand (SP), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4200
Hole No. BI-PBS-253-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

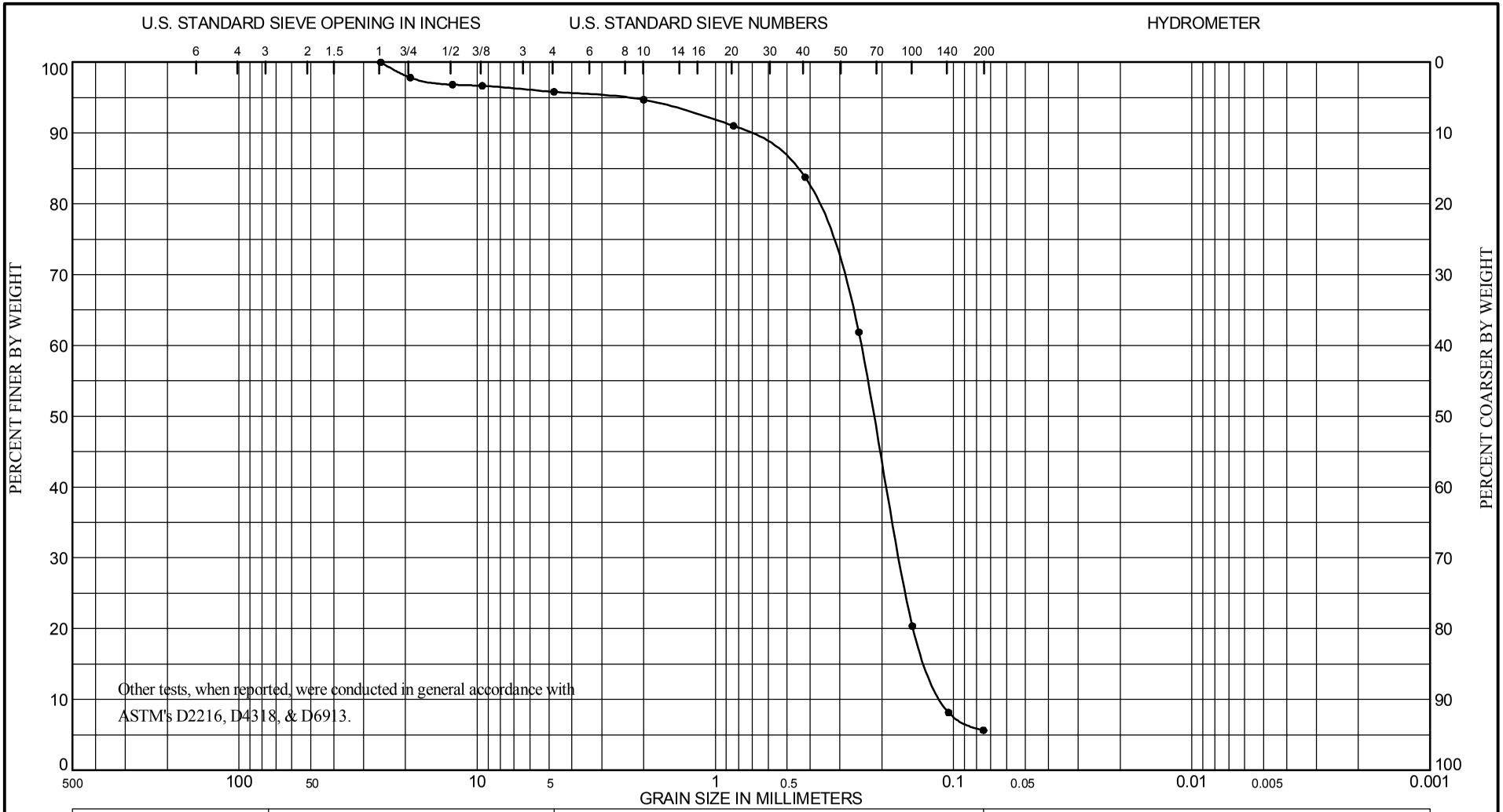
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	1.1 to 1.7	Dark Olive Gray, Poorly Graded Sand (SP), with a trace of gravel				
		size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4201
Hole No. BI-PBS-253-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	1.7 to 2.4	Very Dark Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4202
Hole No. BI-PBS-253-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-254-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 2 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-254-13 — LOCATION COORDINATES: E = 1,108,797 N = 230,026	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 1 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 52 Ft.
	15. DATE BORING — STARTED: 01-12-14 — COMPLETED: 01-12-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -52.1 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 16.4 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-52.1	0.0				
-52.7	0.6		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, medium gray (SM)	A	Classification: SP-SM Color: 2.5Y 5/1-gray D50: 0.196 mm % Fines: 9.1
-53.1	1.0		SAND, clayey, mostly fine-grained sand-sized quartz, trace shell fragments, medium gray (SC)		
-60.1	8.0		CLAY, fat, sandy, lt. gray, pale orange (CH)		
-62.8	10.7		CLAY, lean, medium gray (CL)	NS	
-63.0	10.9		GRAVEL, poorly-graded, mostly shell fragments, little quartz sand, medium to dark gray (GP)		
-64.5	12.4				
-65.3	13.2		SAND, silty, mostly fine-grained sand-sized quartz, little shell fragments, medium gray (SM)		
-66.7	14.6		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few shell fragments, medium brownish gray (SP-SM)		
-68.5	16.4		SAND, clayey, mostly fine-grained sand-sized quartz, medium gray (SC)		
			CLAY, fat, with pockets (burrows?) of SP-SM, medium 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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.13194° Long = -88.43935°

DRILLING LOG (Cont. Sheet)	INSTALLATION Mobile District		SHEET 2 OF 2 SHEETS
PROJECT MsCIP Barrier Island Restoration	COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83	VERTICAL NAVD88
LOCATION COORDINATES X = 1,108,797 Y = 230,026	ELEVATION TOP OF BORING -52.1 Ft.		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
			applying NOAA tidal gauge data conversion factor.		

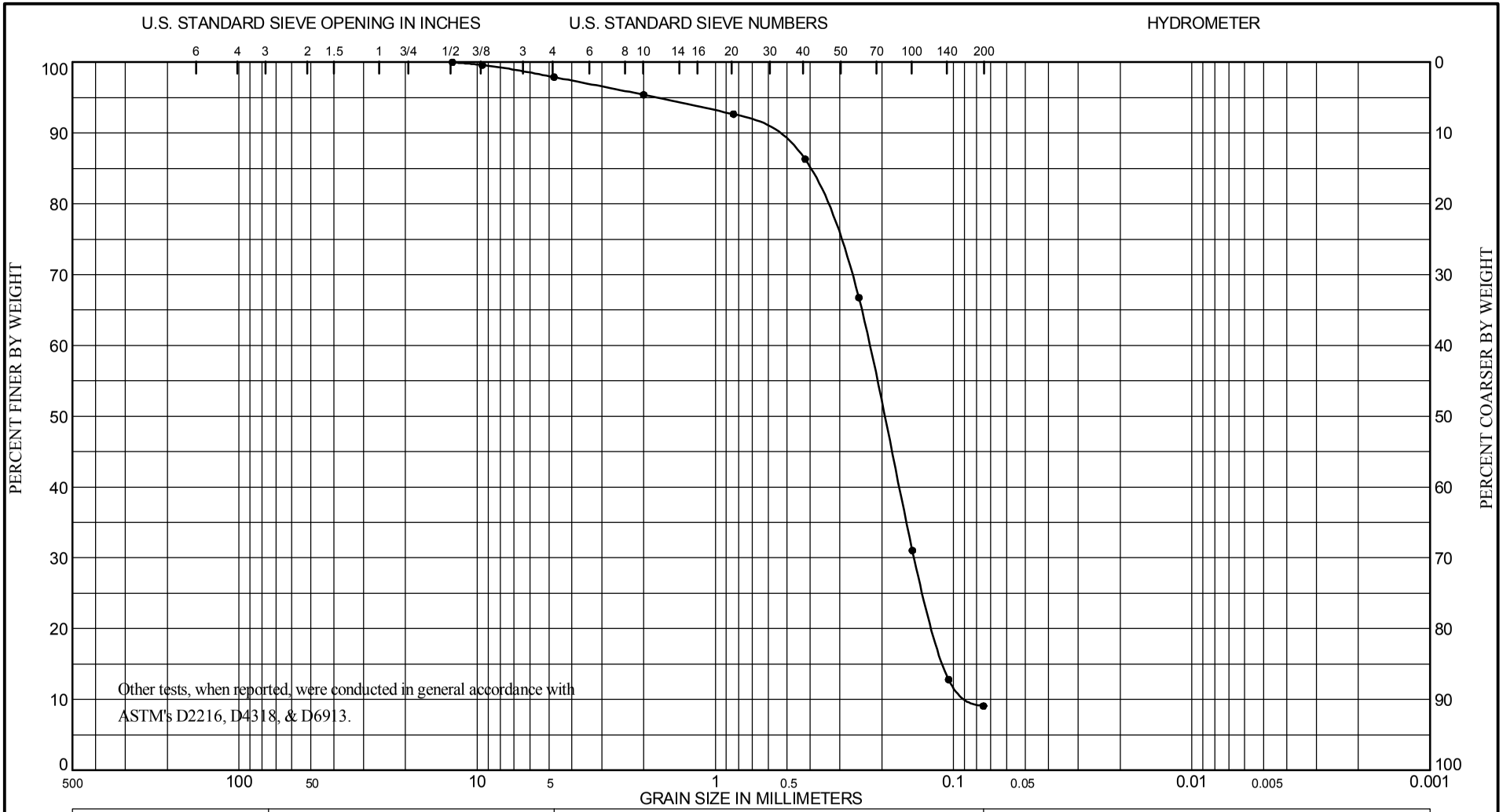
30
35
40
45
50
55
60

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.13194° Long = -88.43935°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 0.6	Very Dark Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4178
Hole No. BI-PBS-254-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-255-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-255-13 — LOCATION COORDINATES: E = 1,105,282 N = 228,040	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 2 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 49 Ft.
	15. DATE BORING — STARTED: 01-20-14 — COMPLETED: 01-20-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -49.4 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 16.7 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-49.4	0.0				
-51.6	2.2		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, few shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 6/1-gray D50: 0.211 mm % Fines: 2.4
-51.8	2.4				
-53.6	4.2		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few shell fragments, lt. to medium gray (SP-SM)	B	Classification: SM Color: 2.5Y 5/1-gray D50: 0.18 mm % Fines: 12.5
			SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, medium gray (SM)		
			CLAY, lean, sandy, medium to dark gray (CL) At El. -55.4 Ft., fine sand pocket At El. -56.1 Ft., fine sand pocket with shell At El. -57.1 Ft., dark brown At El. -57.4 Ft., very sandy		
-58.4	9.0				
			CLAY, fat, sandy, hard, lt. gray, pale orange, pale green, medium gray, medium brown (CH)	NS	
-66.1	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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

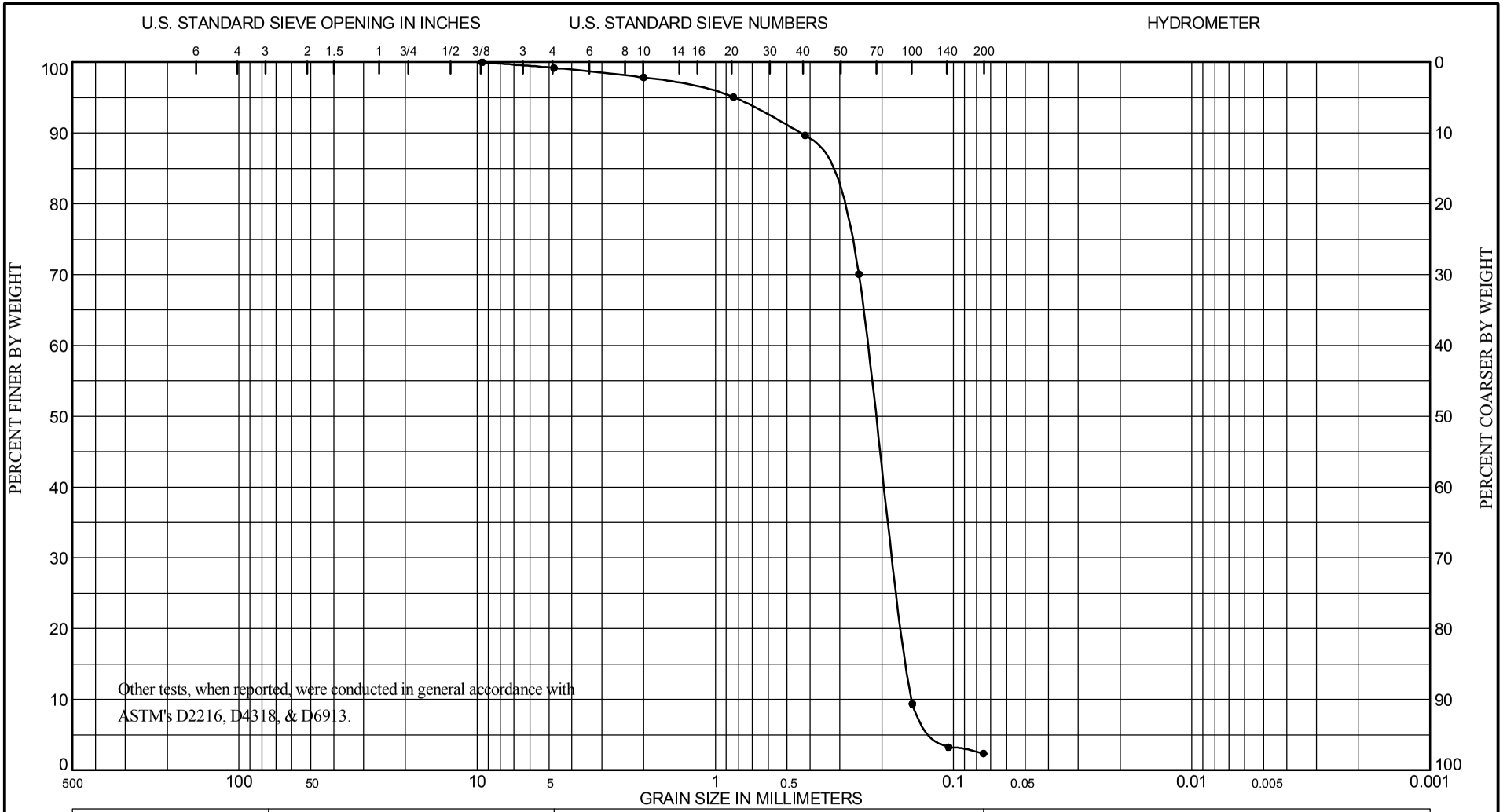
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.12651° Long = -88.45049°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

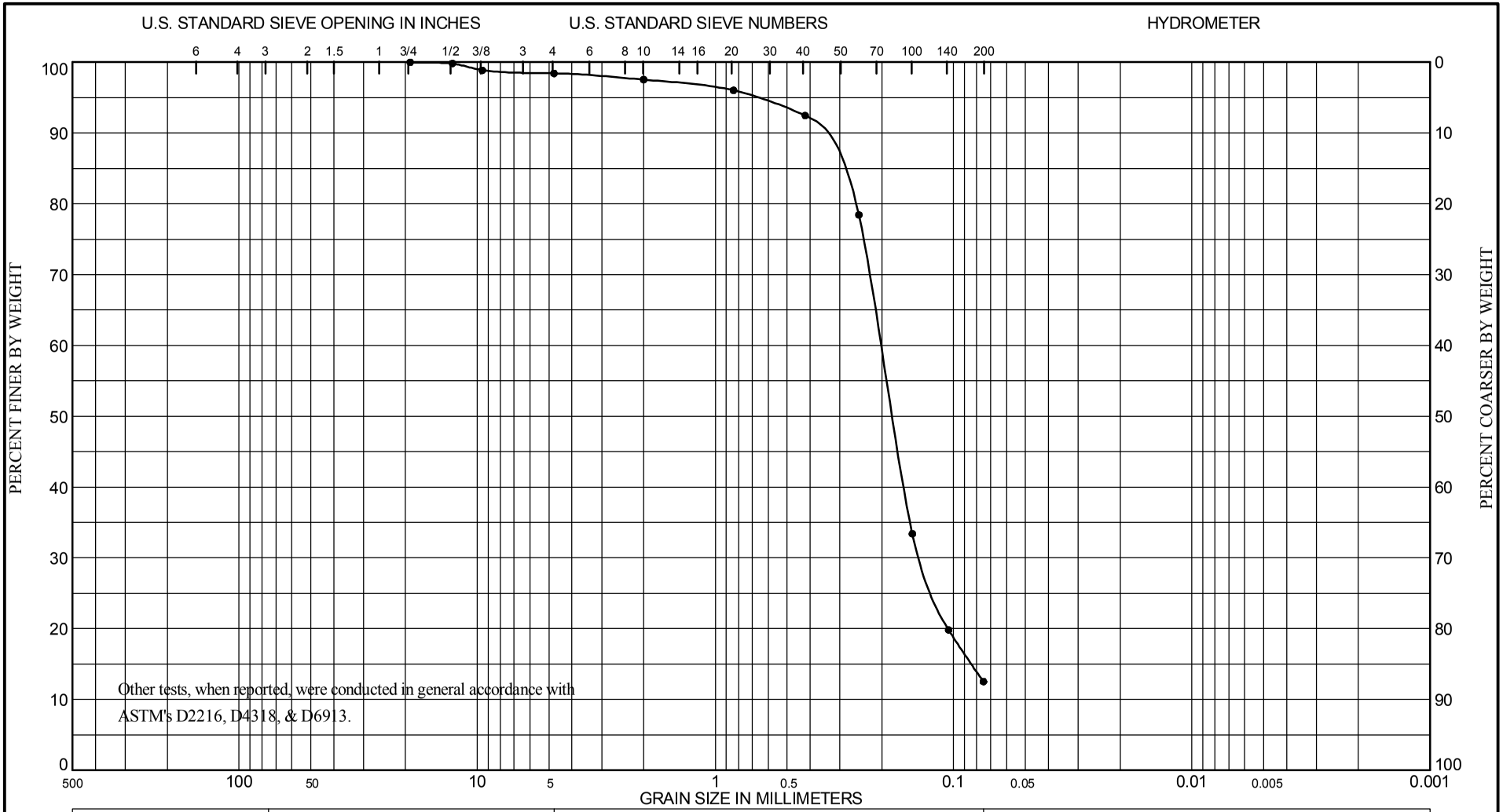
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 2.2	Very Dark Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4218
Hole No. BI-PBS-255-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	2.2 to 4.2	Very Dark Gray, Silty Sand (SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4219
Hole No. BI-PBS-255-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-257-13

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
	South Atlantic	Mobile District	

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS West
2. BORING DESIGNATION	BI-PBS-257-13
LOCATION COORDINATES	E = 1,106,127 N = 229,595
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	9.3 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED 2 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	47.1 Ft.
15. DATE BORING	STARTED 01-16-14 / COMPLETED 01-16-14
16. ELEVATION TOP OF BORING	-47.3 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-47.3	0.0				
-49.3	2.0		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, few shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 6/1-gray D50: 0.25 mm % Fines: 1.7
-49.8	2.5			B	Classification: SP Color: GLEY1 10Y 6/1- D50: 0.209 mm % Fines: 4.8
-50.6	3.3		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, medium gray (SM)		
			CLAY, lean, trace shell fragments, sandy, dark gray (CL)		
			CLAY, fat, sandy, lt. gray, pale orange, lt. brown (CH) At El. -53.0 Ft., little oyster shell fragments to 6.3 ft.	NS	
-56.6	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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

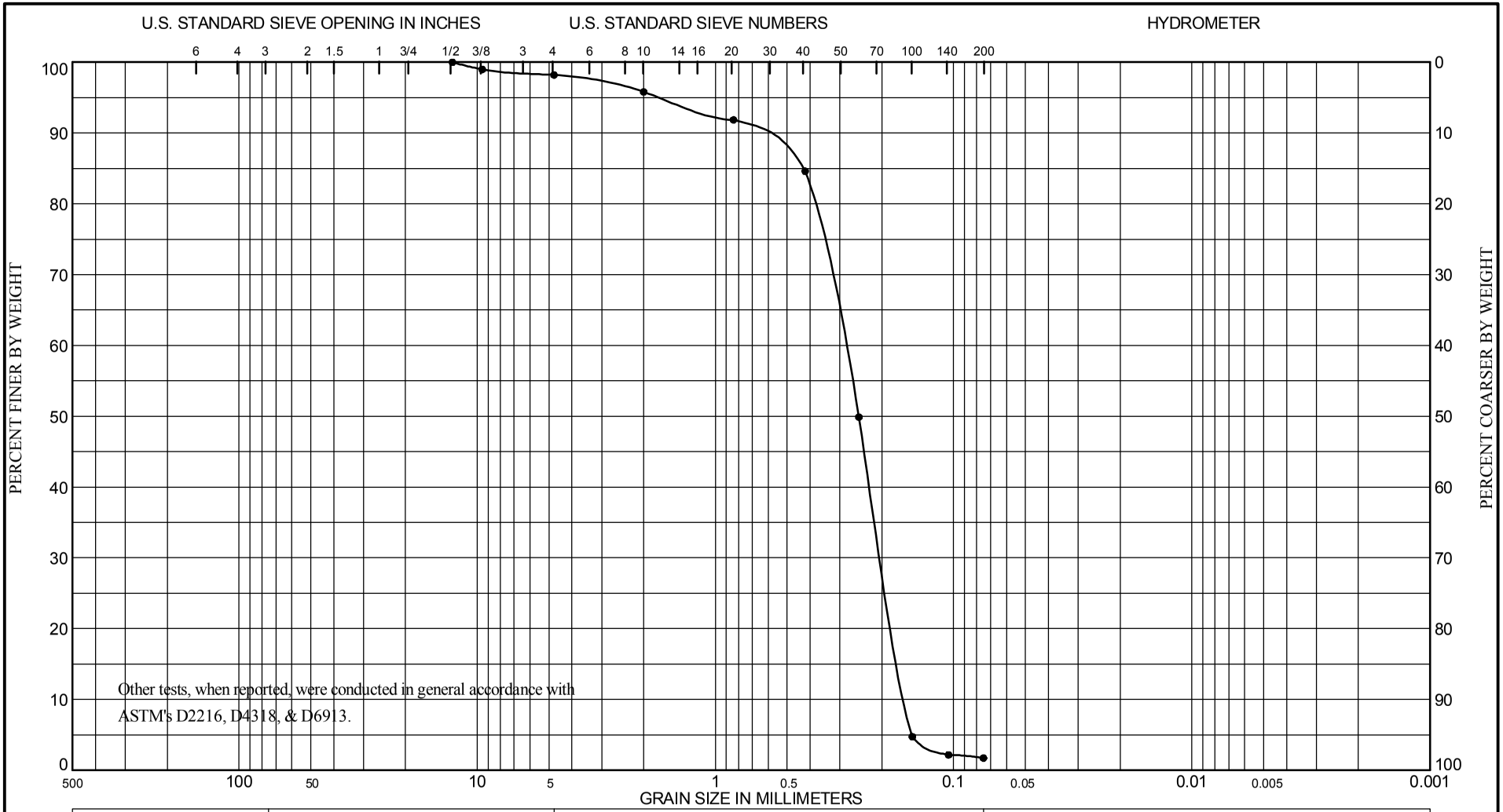
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.13078° Long = -88.44780°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

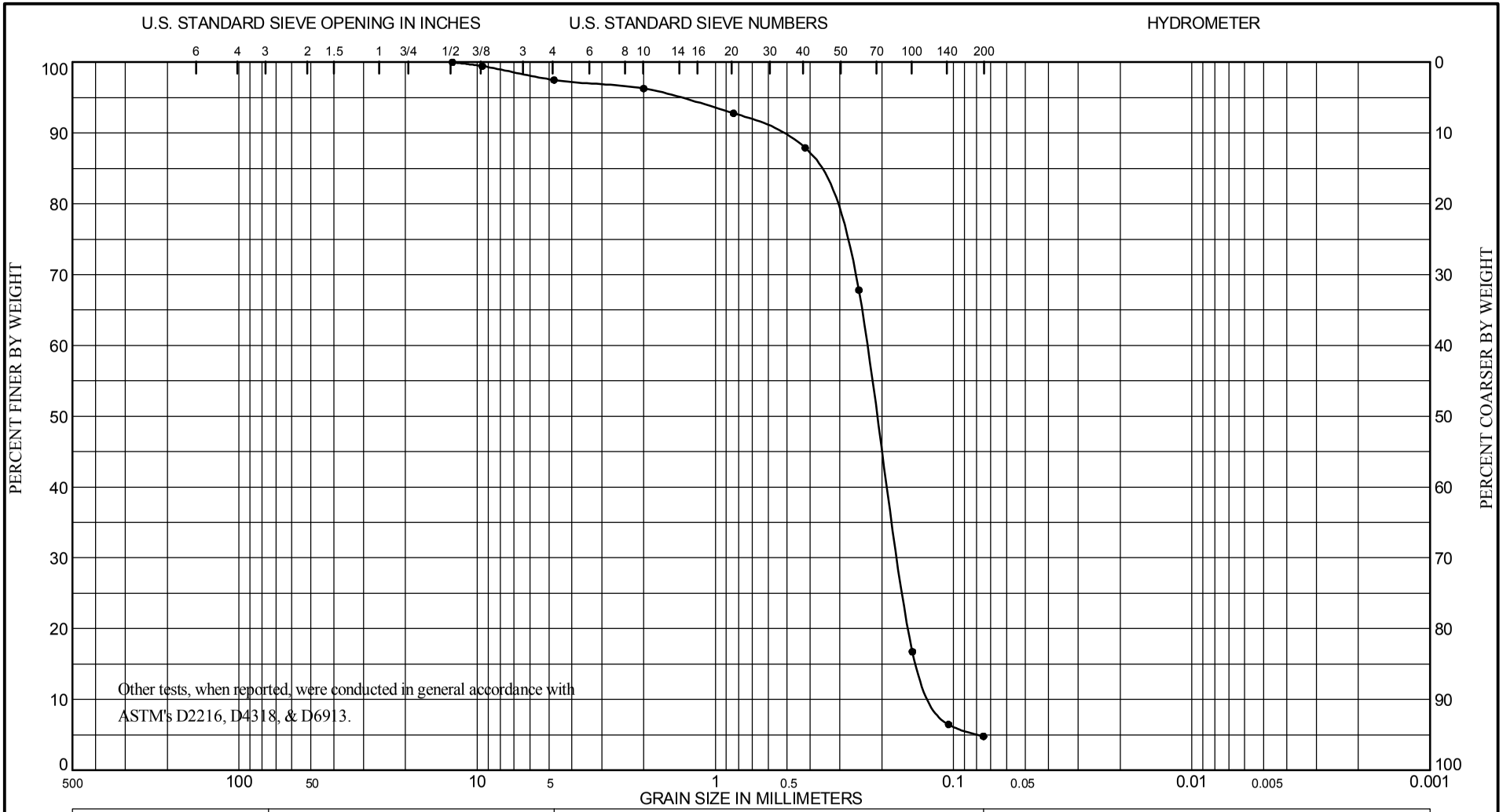
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 2.0	Dark Olive Gray, Poorly Graded Sand (SP), with a trace of gravel				
		size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4198
Hole No. BI-PBS-257-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	2.0 to 2.5	Dark Olive Gray, Poorly Graded Sand (SP), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4199
Hole No. BI-PBS-257-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-258-13

DRILLING LOG	DIVISION South Atlantic	INSTALLATION Mobile District	SHEET 1 OF 2 SHEETS

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS West
2. BORING DESIGNATION	BI-PBS-258-13
LOCATION COORDINATES	E = 1,107,389 N = 231,236
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	18.1 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED 0 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	51.7 Ft.
15. DATE BORING	STARTED 01-12-14 / COMPLETED 01-12-14
16. ELEVATION TOP OF BORING	-52.1 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-52.1	0.0				
-54.6	2.5		CLAY, lean, few shell fragments, sandy with lenses of SC, medium gray (CL)		
-60.6	8.5		CLAY, fat, sandy, oyster shell fragments from depths of 5.9 to 6.3 ft., lt. gray, pale orange, pale green (CH)		
-69.1	17.0		CLAY, lean, sandy, medium gray (CL)	NS	
-70.2	18.1		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few shell fragments, brownish gray (SP-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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.13528° Long = -88.44379°

DRILLING LOG (Cont. Sheet)	INSTALLATION Mobile District		SHEET 2 OF 2 SHEETS
PROJECT MsCIP Barrier Island Restoration	COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83	VERTICAL NAVD88
LOCATION COORDINATES X = 1,107,389 Y = 231,236	ELEVATION TOP OF BORING -52.1 Ft.		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
			factor.		

30
35
40
45
50
55
60

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.13528° Long = -88.44379°

Boring Designation BI-PBS-259-13

DRILLING LOG	DIVISION South Atlantic	INSTALLATION Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT MsCIP Barrier Island Restoration Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT N/A
	10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.) — HORIZONTAL NAD83 — VERTICAL NAVD88
2. BORING DESIGNATION BI-PBS-259-13 — LOCATION COORDINATES E = 1,097,511 N = 233,895	11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED 1 — UNDISTURBED (UD) 0
4. NAME OF DRILLER Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH 46.8 Ft.
	15. DATE BORING — STARTED 01-18-14 — COMPLETED 01-18-14
6. THICKNESS OF OVERBURDEN N/A	16. ELEVATION TOP OF BORING -46.9 Ft.
7. DEPTH DRILLED INTO ROCK N/A	17. TOTAL RECOVERY FOR BORING 100%
8. TOTAL DEPTH OF BORING 14.2 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR Mike FitzHarris, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-46.9	0.0				
-48.2	1.3		SAND, poorly-graded, mostly fine-grained sand-sized quartz, gray (SP)	A	Classification: SM Color: 2.5Y 5/1-gray D50: 0.162 mm % Fines: 12.1
-48.6	1.7		SAND, silty, mostly fine-grained sand-sized quartz, gray (SM)		
			CLAY, lean, trace sand, dark gray (CL)	NS	
-61.1	14.2		At El. -59.4 Ft., sandy, trace organics, organic odor, dark gray with 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.

3. Seafloor elevation determined from 2013 USGS geophysical survey.

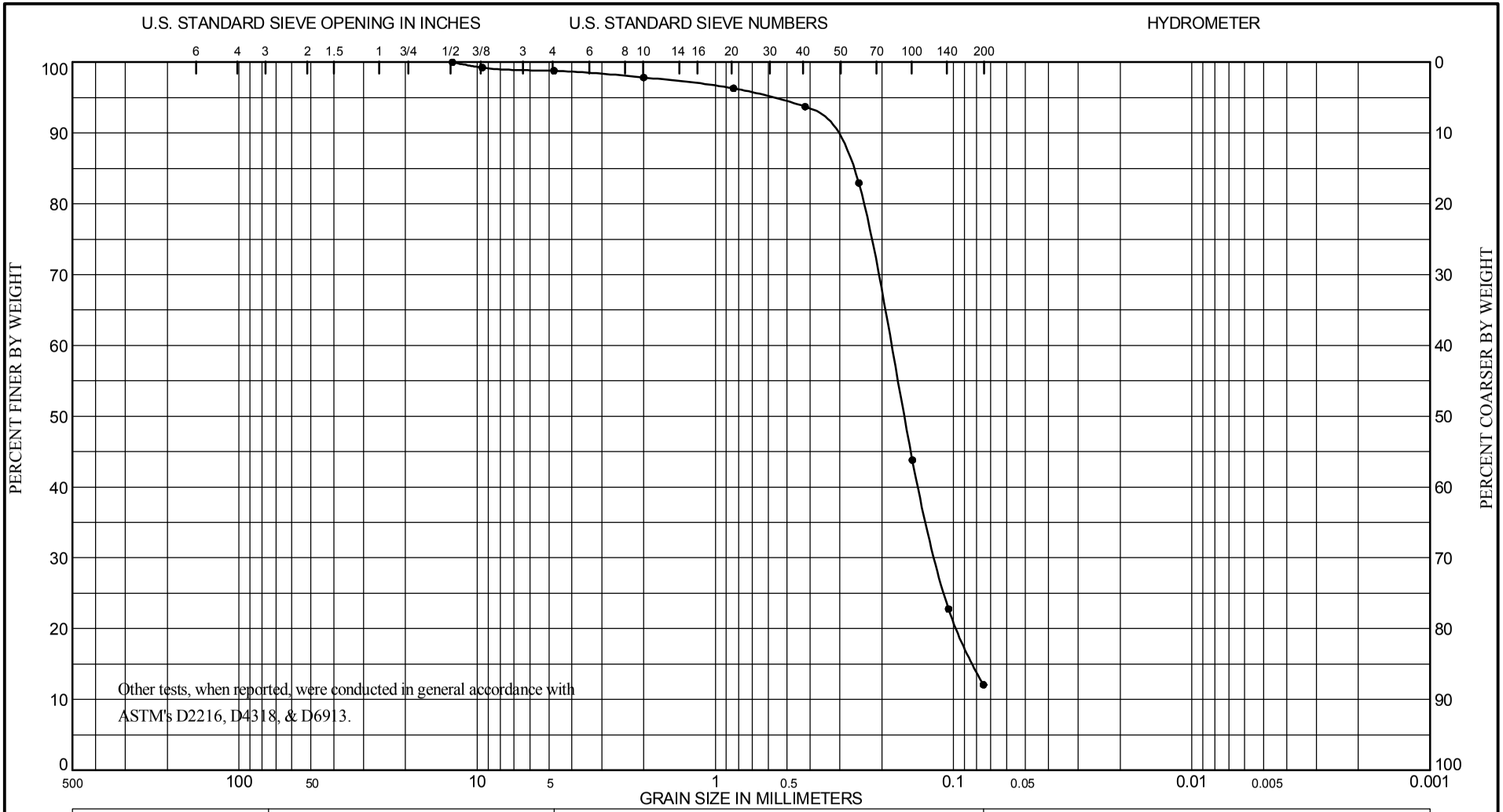
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14268° Long = -88.47501°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 1.3	Dark Olive Gray, Silty Sand (SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4203
Hole No. BI-PBS-259-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-260-13

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
	South Atlantic	Mobile District	

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS West
2. BORING DESIGNATION	BI-PBS-260-13
LOCATION COORDINATES	E = 1,100,132 N = 231,678
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	16.9 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED 2 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	47.4 Ft.
15. DATE BORING	STARTED 01-18-14 / COMPLETED 01-18-14
16. ELEVATION TOP OF BORING	-48.2 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Mike FitzHarris, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-48.2	0.0				
-49.7	1.5		SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace shell, gray (SP)	A	Classification: SP-SM Color: GLEY1 10Y 6/1- D50: 0.193 mm % Fines: 6.8
-51.8	3.6		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, trace shell fragments, gray (SP-SM)	B	Classification: SM Color: GLEY1 10Y 5/1- D50: 0.123 mm % Fines: 19.7
-60.9	12.7		CLAY, lean, trace shell fragments, soft, mottled from 5 to 5.5 ft., gray (CL) At El. -53.7 Ft., trace sand, stiff, lt. gray, green, gray, lt. brown, mottled At El. -58.6 Ft., soft, sandy, with alternating layers of sand and clay, lt. gray, green, gray, lt. brown, mottled	NS	
-61.6	13.4		CLAY, fat, soft, dark gray (CH)		
-65.1	16.9		SAND, silty, trace clay, gray (SM) At El. -63.5 Ft., trace shell fragments, with clayey lenses, 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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

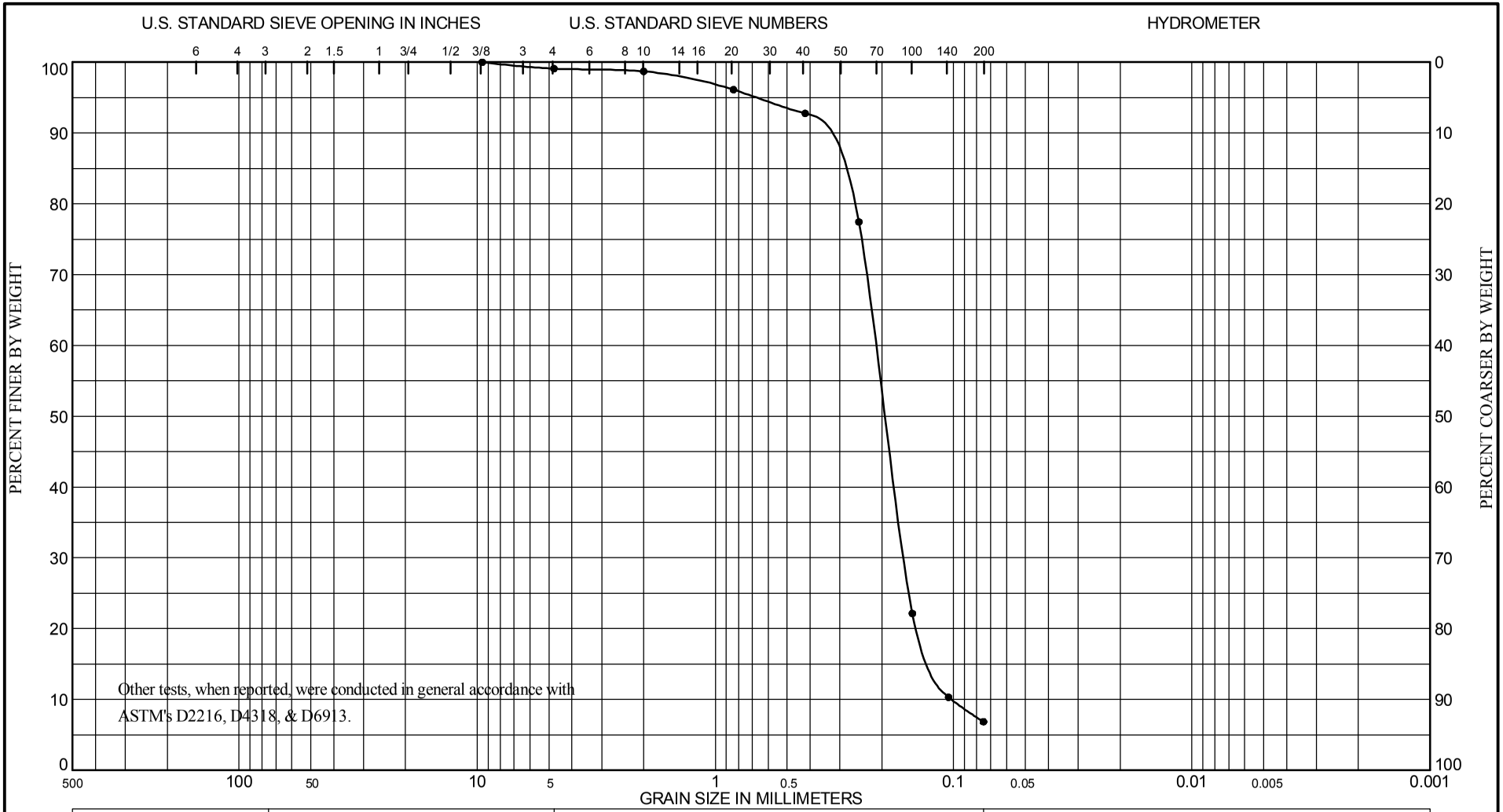
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.13656° Long = -88.46674°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

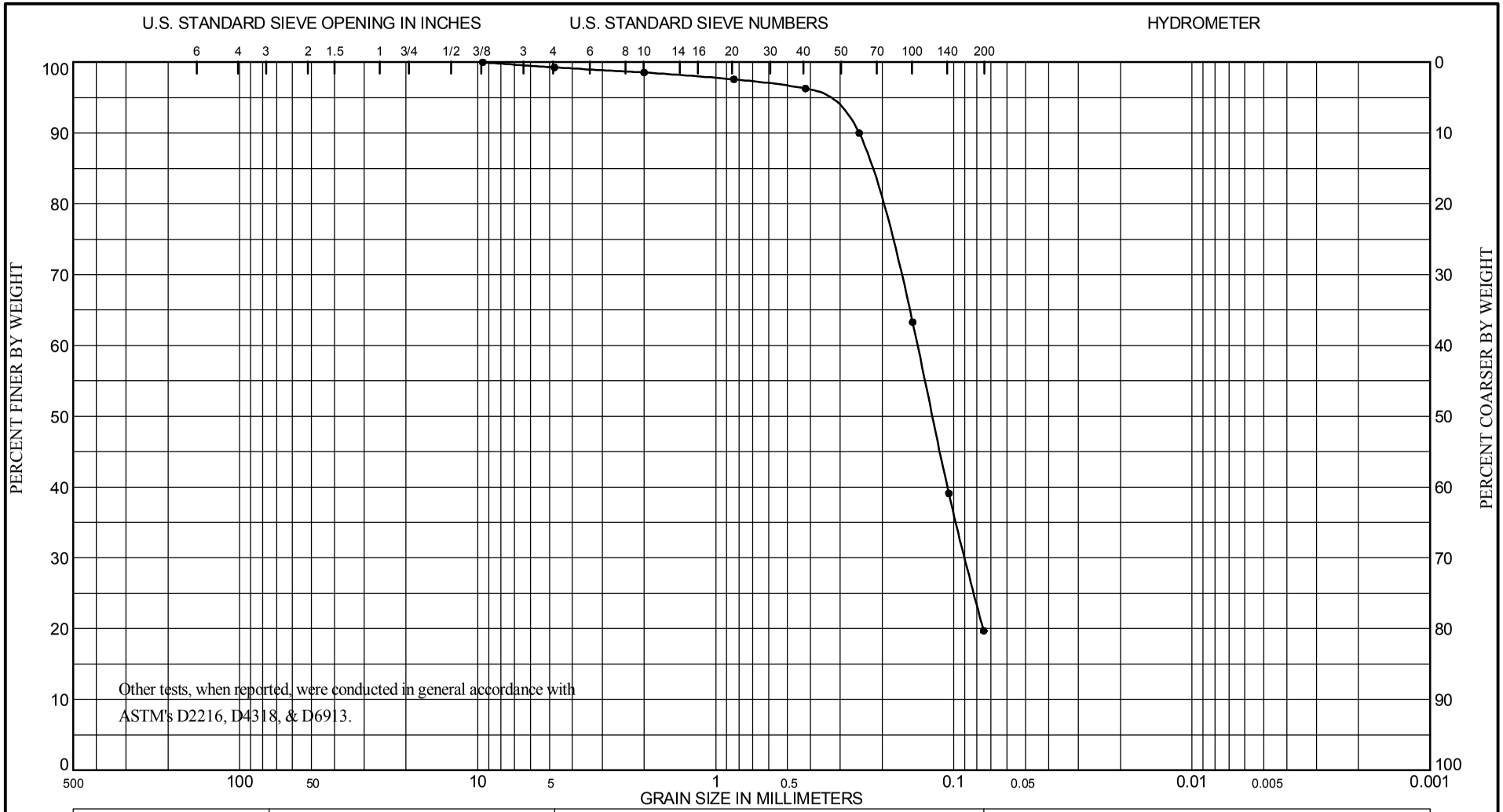
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 1.5	Dark Greenish Gray, Poorly Graded Silty Sand (SP-SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4206
Hole No. BI-PBS-260-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	1.5 to 3.6	Dark Greenish Gray, Silty Sand (SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4207
Hole No. BI-PBS-260-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-261-13

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
	South Atlantic	Mobile District	

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS West
2. BORING DESIGNATION	BI-PBS-261-13
LOCATION COORDINATES	E = 1,101,144 N = 230,608
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	12.4 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED 1 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	48.1 Ft.
15. DATE BORING	STARTED 01-18-14 / COMPLETED 01-18-14
16. ELEVATION TOP OF BORING	-48.8 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Mike FitzHarris, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-48.8	0.0				
-50.5	1.7		SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace shell fragments, gray (SP)	A	Classification: SM Color: 2.5Y 5/1-gray D50: 0.168 mm % Fines: 12.2
-51.5	2.7		CLAY, lean, sandy, soft, gray (CL)	NS	
-55.9	7.1		CLAY, fat, sandy, stiff, mottled gray with brown (CH)		
-59.6	10.8		SAND, poorly-graded, mostly fine-grained sand-sized quartz, gray (SP) At El. -58.7 Ft., clay lenses to 10.5 ft.		
-61.2	12.4		CLAY, lean, sandy pockets, soft, 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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

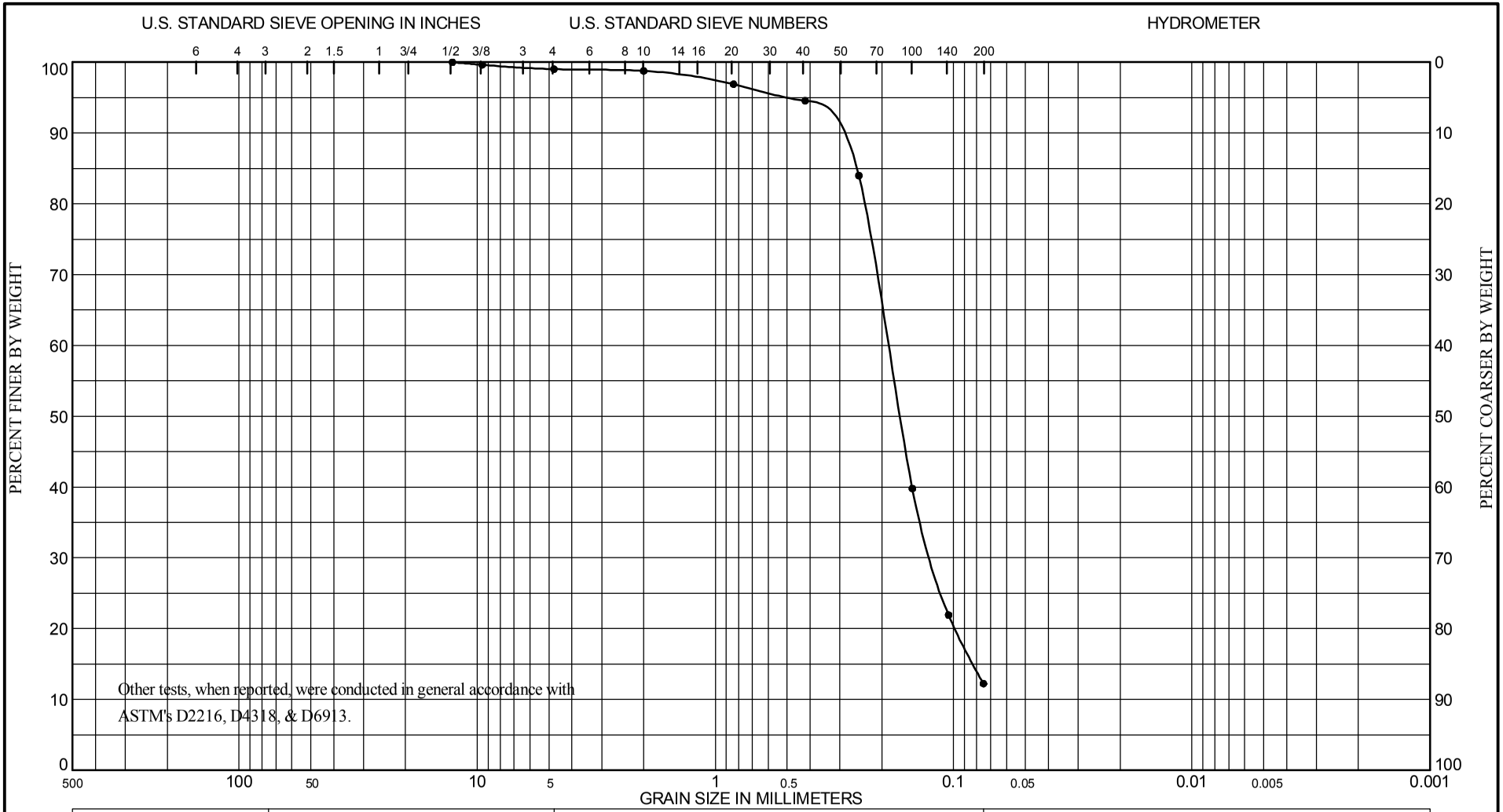
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.13361° Long = -88.46355°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 1.7	Very Dark Greenish Gray, Silty Sand (SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4208
Hole No. BI-PBS-261-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-262-13

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
	South Atlantic	Mobile District	

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS West
2. BORING DESIGNATION	BI-PBS-262-13
LOCATION COORDINATES	E = 1,103,171 N = 228,491
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	14.0 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED 2 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	49.4 Ft.
15. DATE BORING	STARTED 01-18-14 / COMPLETED 01-18-14
16. ELEVATION TOP OF BORING	-49.6 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Mike FitzHarris, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-49.6	0.0				
-51.9	2.3		SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace shell, gray (SP)	A	Classification: SP Color: GLEY1 10Y 6/1- D50: 0.201 mm % Fines: 2.7
-53.6	4.0		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, gray (SP-SM)	B	Classification: SP-SM Color: GLEY1 10Y 6/1- D50: 0.176 mm % Fines: 10.8
-58.6	9.0		CLAY, lean, trace fine-grained sand, gray to dark gray (CL)	NS	
-63.0	13.4		CLAY, fat, stiff, mottled lt. gray and lt. brown (CH)		
-63.6	14.0		SAND, poorly-graded, mostly fine-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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

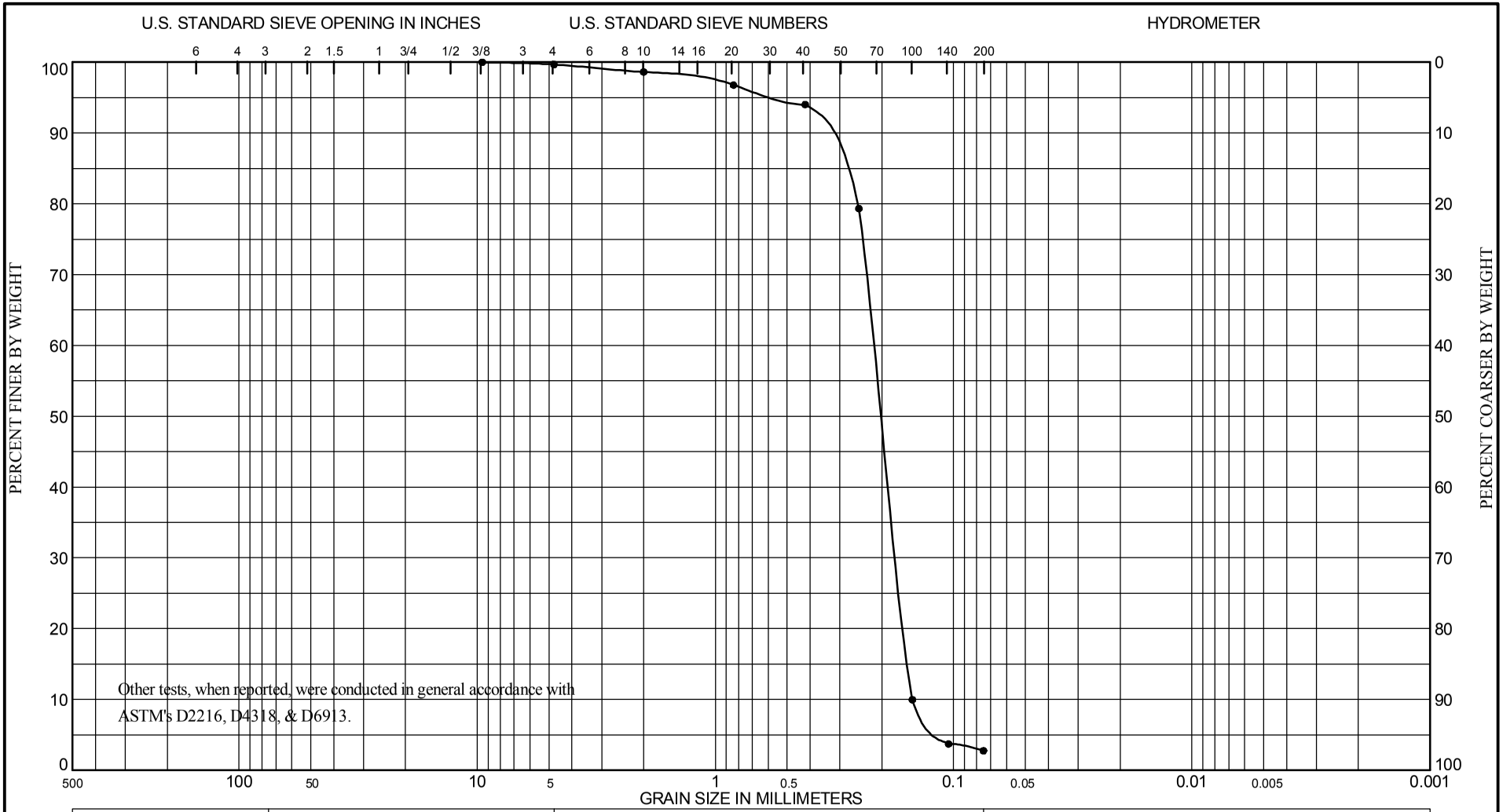
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.12777° Long = -88.45716°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 2.3	Very Dark Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4214
Hole No. BI-PBS-262-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192

COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	2.3 to 4.0	Dark Olive Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4215
Hole No. BI-PBS-262-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-263-13

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
	South Atlantic	Mobile District	

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS West
2. BORING DESIGNATION	BI-PBS-263-13
LOCATION COORDINATES	E = 1,098,520 N = 236,750
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	18.2 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED 3 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	45.4 Ft.
15. DATE BORING	STARTED 01-09-14 / COMPLETED 01-09-14
16. ELEVATION TOP OF BORING	-45.0 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-45.0	0.0				
-46.4	1.4		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, few shell fragments, lt. gray (SP)	A	Classification: SP Color: GLEY1 10Y 6/1- D50: 0.244 mm % Fines: 3.2
-47.6	2.6		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few shell fragments, lt. gray (SP-SM)	B	Classification: SP Color: 2.5Y 5/1-gray D50: 0.202 mm % Fines: 4.7
-54.2	9.2		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, lt. to medium gray (SM)	C	Classification: SP-SM Color: 2.5Y 5/1-gray D50: 0.171 mm % Fines: 10.5
-54.6	9.6		SAND, clayey, mostly fine-grained sand-sized quartz, trace shell fragments, medium gray (SC)		
-59.0	14.0		CLAY, lean, sandy, medium gray (CL)	NS	
-63.2	18.2		CLAY, fat, pale brown (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.

3. Seafloor elevation determined from 10/16/2014 USACE survey.

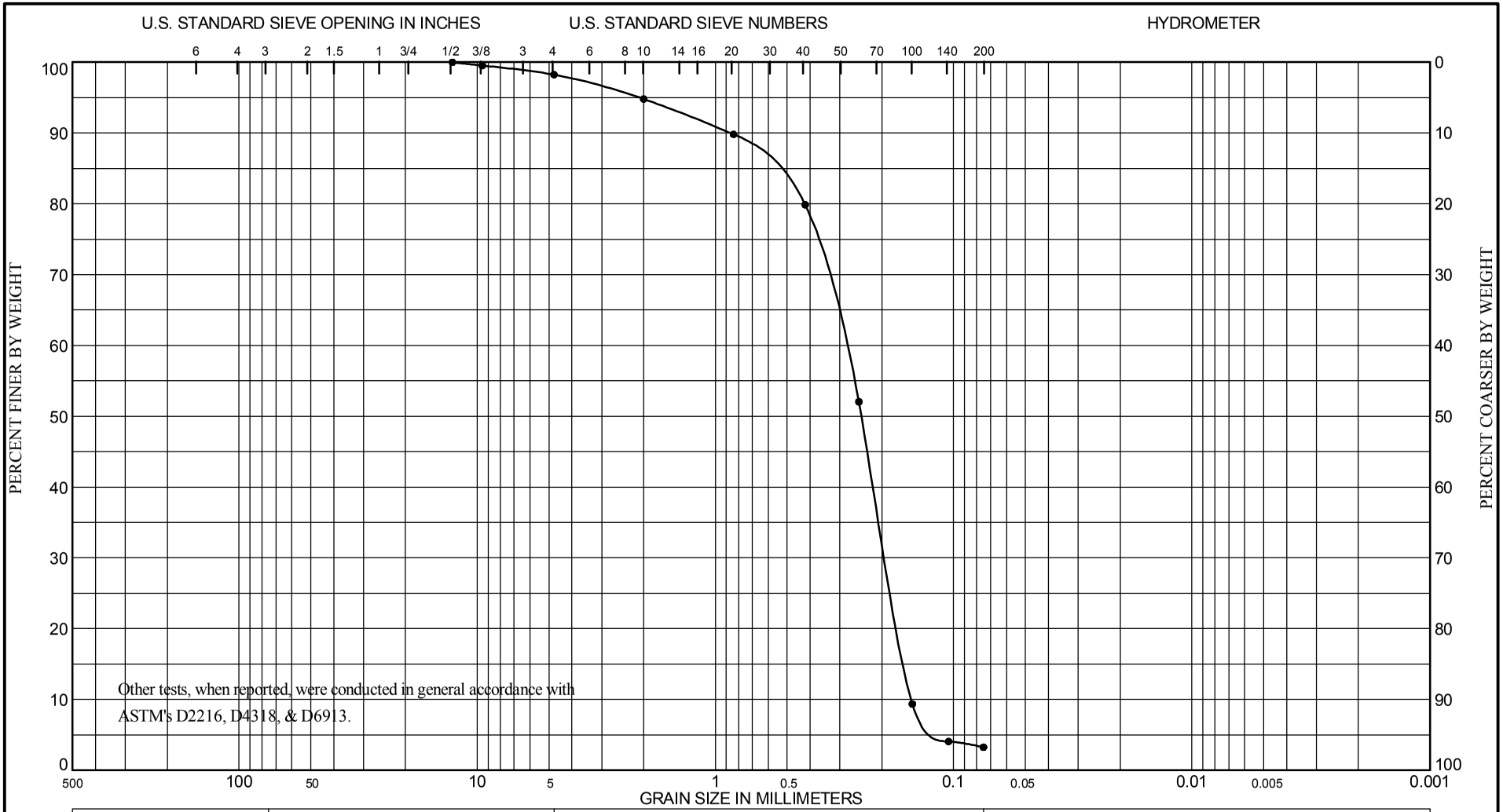
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15052° Long = -88.47179°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

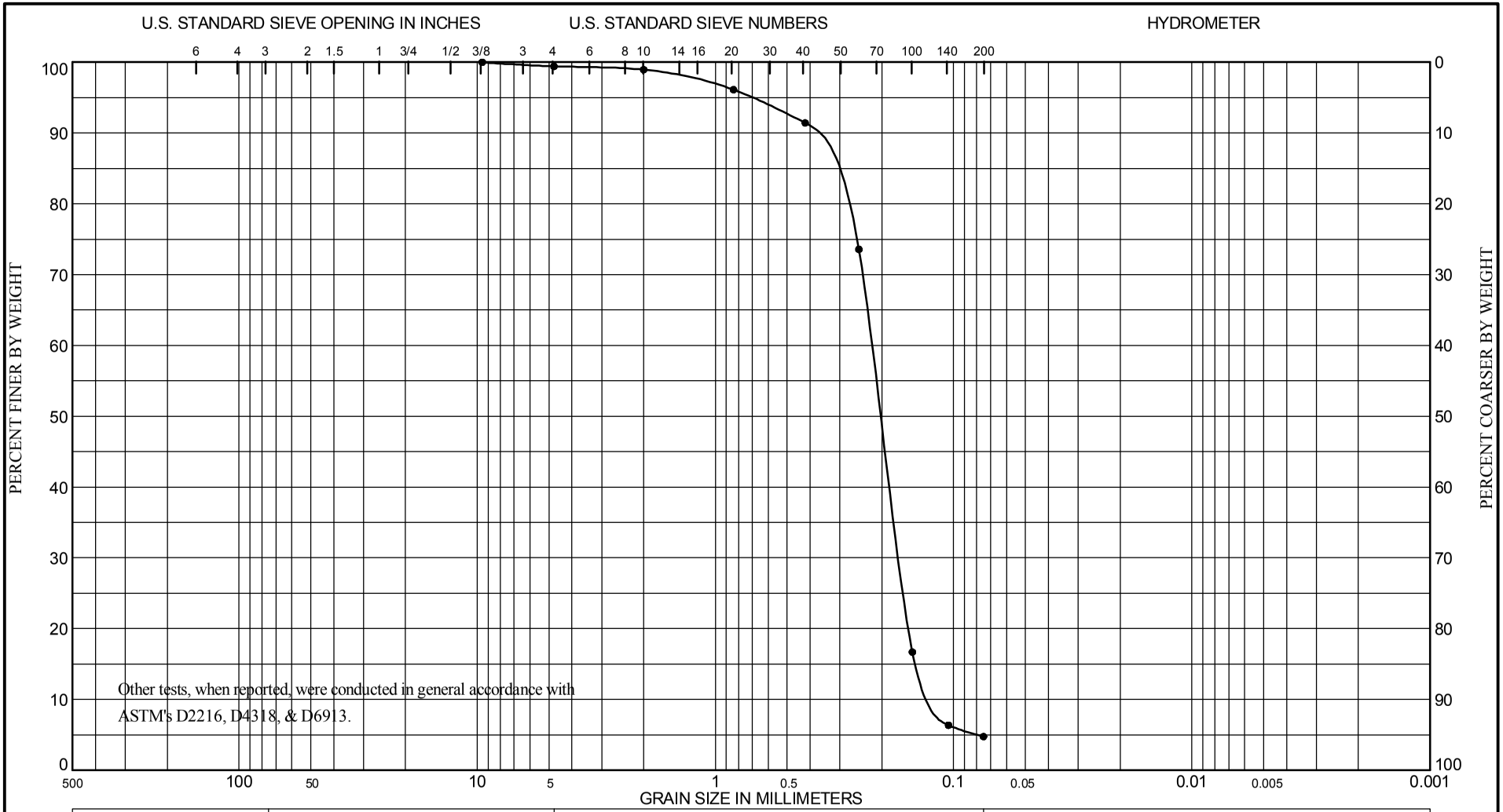
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 1.4	Very Dark Gray, Poorly Graded Sand (SP), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4166
Hole No. BI-PBS-263-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

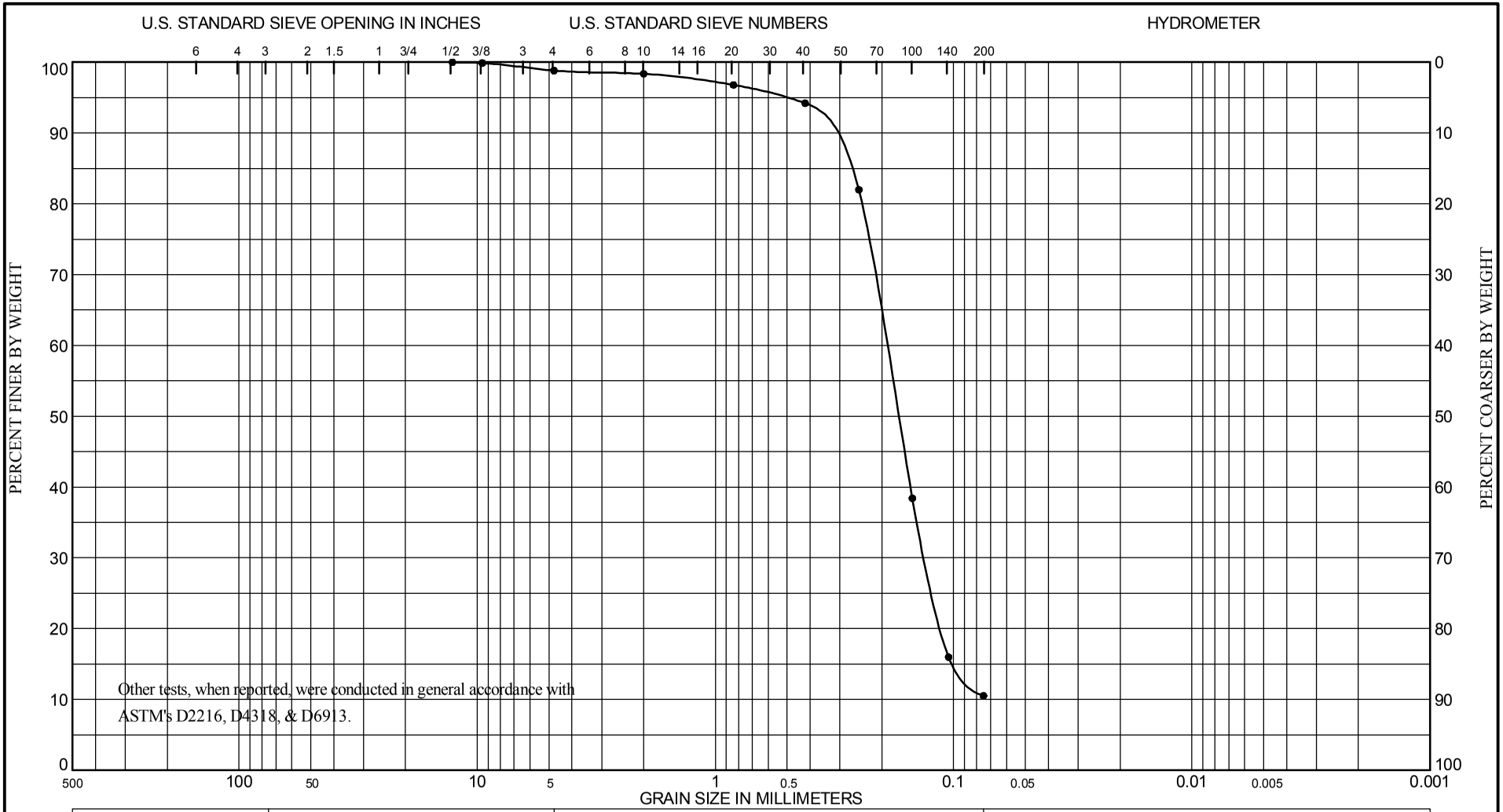
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	1.4 to 2.6	Greenish Black, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4167
Hole No. BI-PBS-263-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	2.6 to 9.2	Greenish Black, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4168
Hole No. BI-PBS-263-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-264-13

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 2 SHEETS
	South Atlantic	Mobile District	

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS West
2. BORING DESIGNATION	BI-PBS-264-13
LOCATION COORDINATES	E = 1,099,439 N = 238,040
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	20.0 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED 2 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	47.4 Ft.
15. DATE BORING	STARTED 01-08-14 / COMPLETED 01-08-14
16. ELEVATION TOP OF BORING	-47.6 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-47.6	0.0				
-51.4	3.8		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, little shell fragments, lt. to medium gray (SP-SM)	A	Classification: SP-SM Color: 2.5Y 5/1-gray D50: 0.172 mm % Fines: 11.9
-56.6	9.0		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, lt. to medium gray (SM)	B	Classification: SM Color: GLEY1 10Y 5/1- D50: 0.141 mm % Fines: 18.1
-58.4	10.8		SAND, clayey, mostly fine-grained sand-sized quartz, trace shell fragments, medium gray (SC)	NS	
-62.2	14.6		CLAY, lean, sandy, medium gray (CL)		
-67.6	20.0		CLAY, fat, sandy, lt. gray, pale orange, pale brown (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.

3. Seafloor elevation calculated using sampling

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15406° Long = -88.46887°

DRILLING LOG (Cont. Sheet)	INSTALLATION Mobile District		SHEET 2 OF 2 SHEETS
PROJECT MsCIP Barrier Island Restoration	COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83	VERTICAL NAVD88
LOCATION COORDINATES X = 1,099,439 Y = 238,040	ELEVATION TOP OF BORING -47.6 Ft.		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
			vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.		

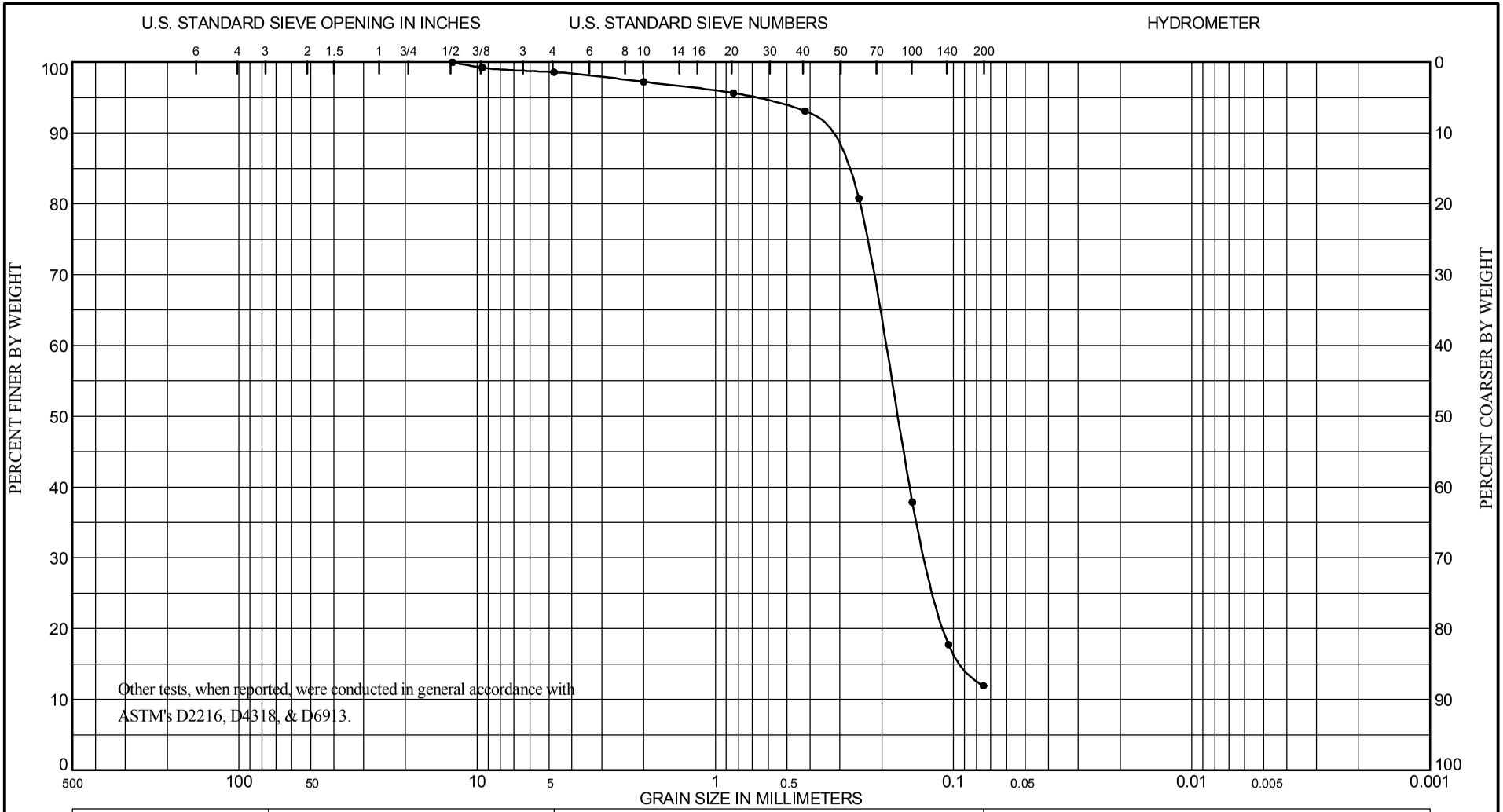
30
35
40
45
50
55
60

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15406° Long = -88.46887°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

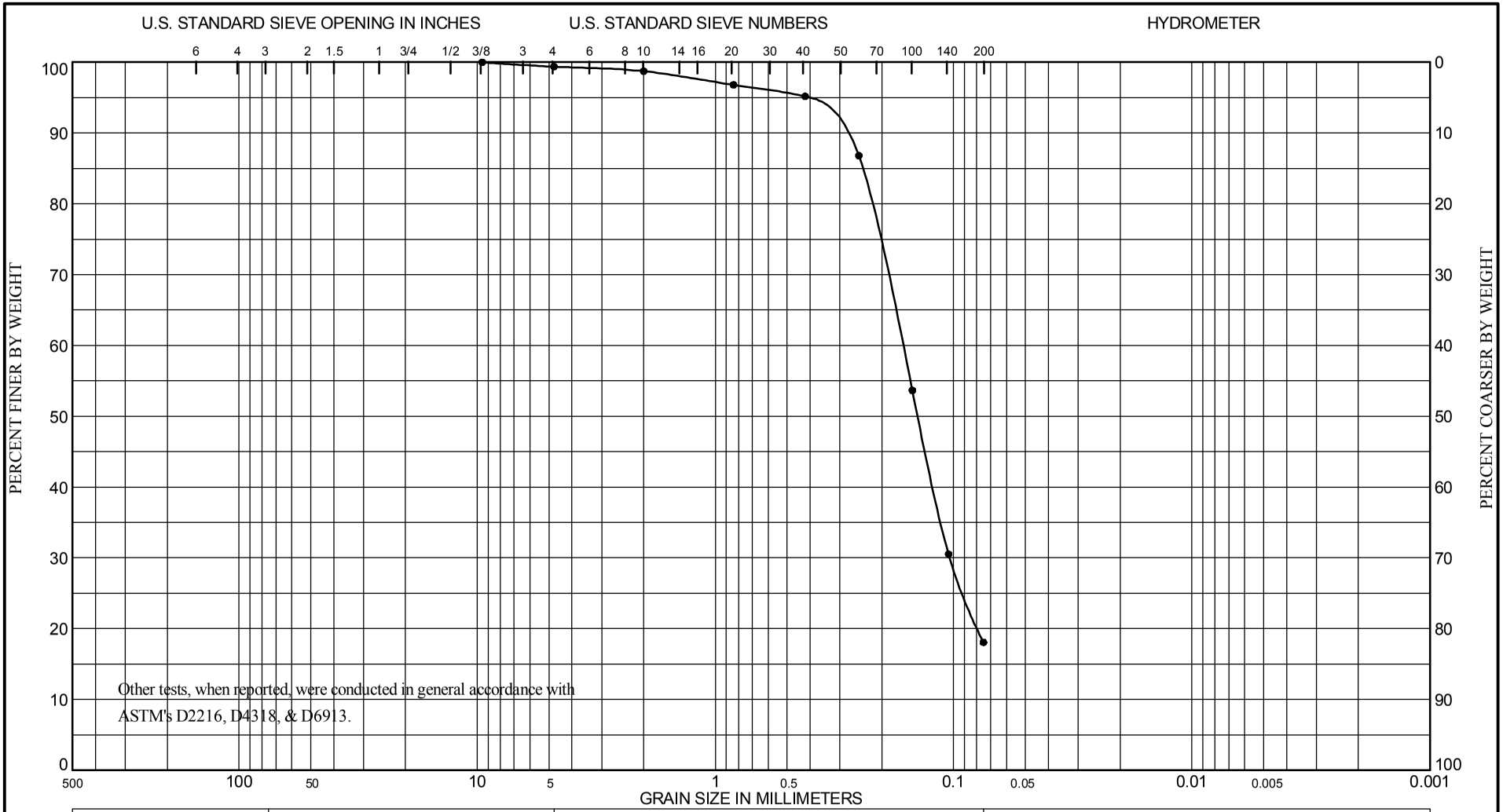
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 3.8	Very Dark Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4157
Hole No. BI-PBS-264-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	3.8 to 9.0	Very Dark Gray, Silty Sand (SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4158
Hole No. BI-PBS-264-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-265-13

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
	South Atlantic	Mobile District	

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS West
2. BORING DESIGNATION	BI-PBS-265-13
LOCATION COORDINATES	E = 1,097,832 N = 235,347
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	14.4 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED 3 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	44.1 Ft.
15. DATE BORING	STARTED 01-20-14 / COMPLETED 01-20-14
16. ELEVATION TOP OF BORING	-43.4 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-43.4	0.0				
-46.5	3.1		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, few shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 6/1-gray D50: 0.262 mm % Fines: 1.6
-47.4	4.0		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, medium gray (SM)	B	Classification: SP-SM Color: 2.5Y 5/1-gray D50: 0.198 mm % Fines: 6.7
-47.7	4.3			NS	
-48.7	5.3		SAND, clayey, mostly fine-grained sand-sized quartz, few shell fragments, medium gray (SC) CLAY, lean, few shell fragments, sandy, medium to dark gray (CL)	C	Classification: SM Color: 2.5Y 5/1-gray D50: 0.138 mm % Fines: 19.5
-51.4	8.0				
-52.1	8.7		SAND, silty, mostly fine-grained sand-sized quartz, trace shell fragments, medium gray (SM) SAND, clayey, mostly fine-grained sand-sized quartz, few shell fragments, medium to dark gray (SC) CLAY, lean, sandy; CL is interbedded with 0.5-inch thick layers of SM from 8.7 to 9.4 ft. depth, dark gray (CL) At El. -53.6 Ft., 0.5-inch sand lens At El. -54.1 Ft., 0.5-inch sand lens	NS	
-57.8	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.

3. Seafloor elevation determined from 10/16/2014 USACE survey.

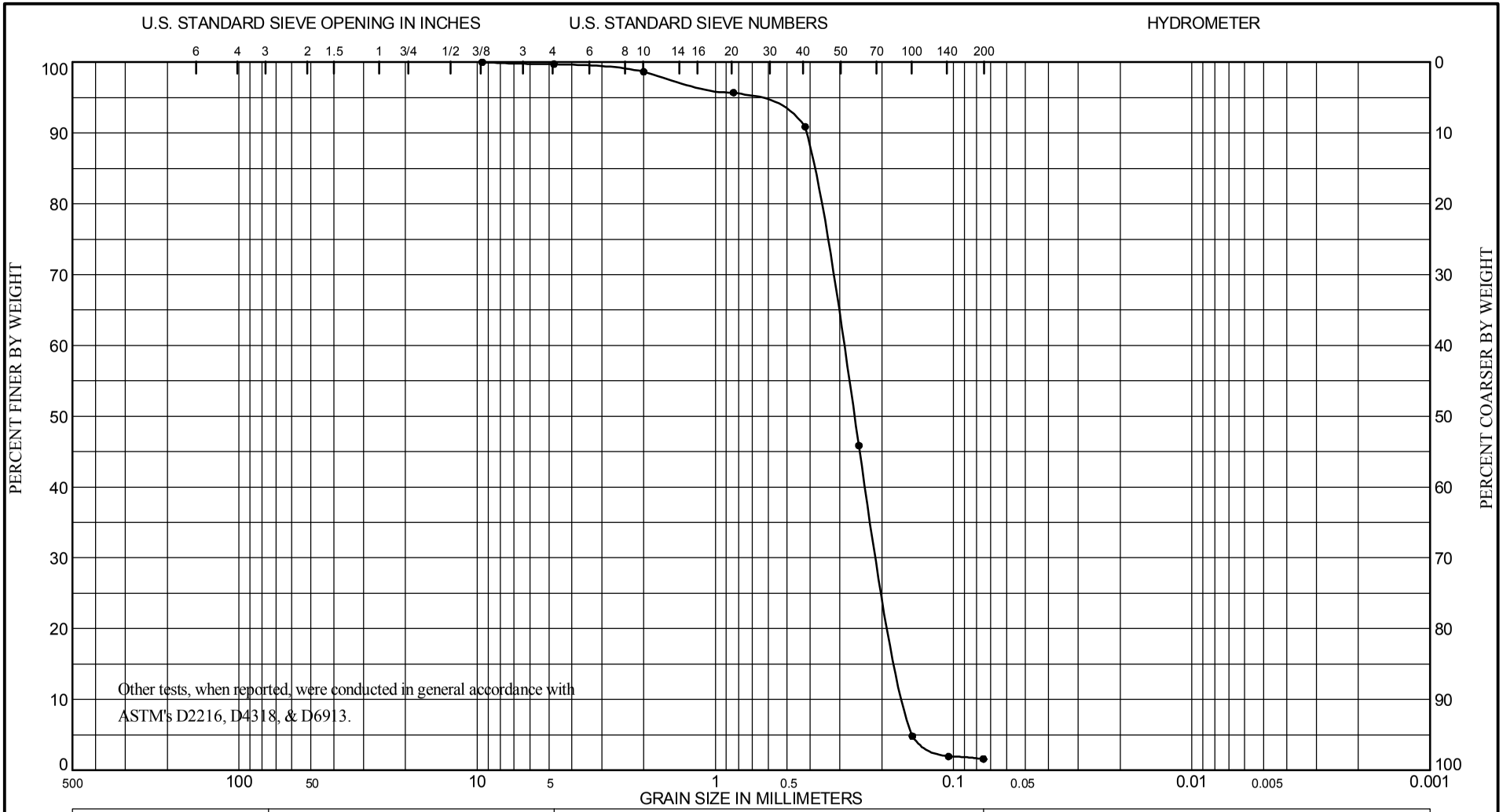
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14667° Long = -88.47398°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

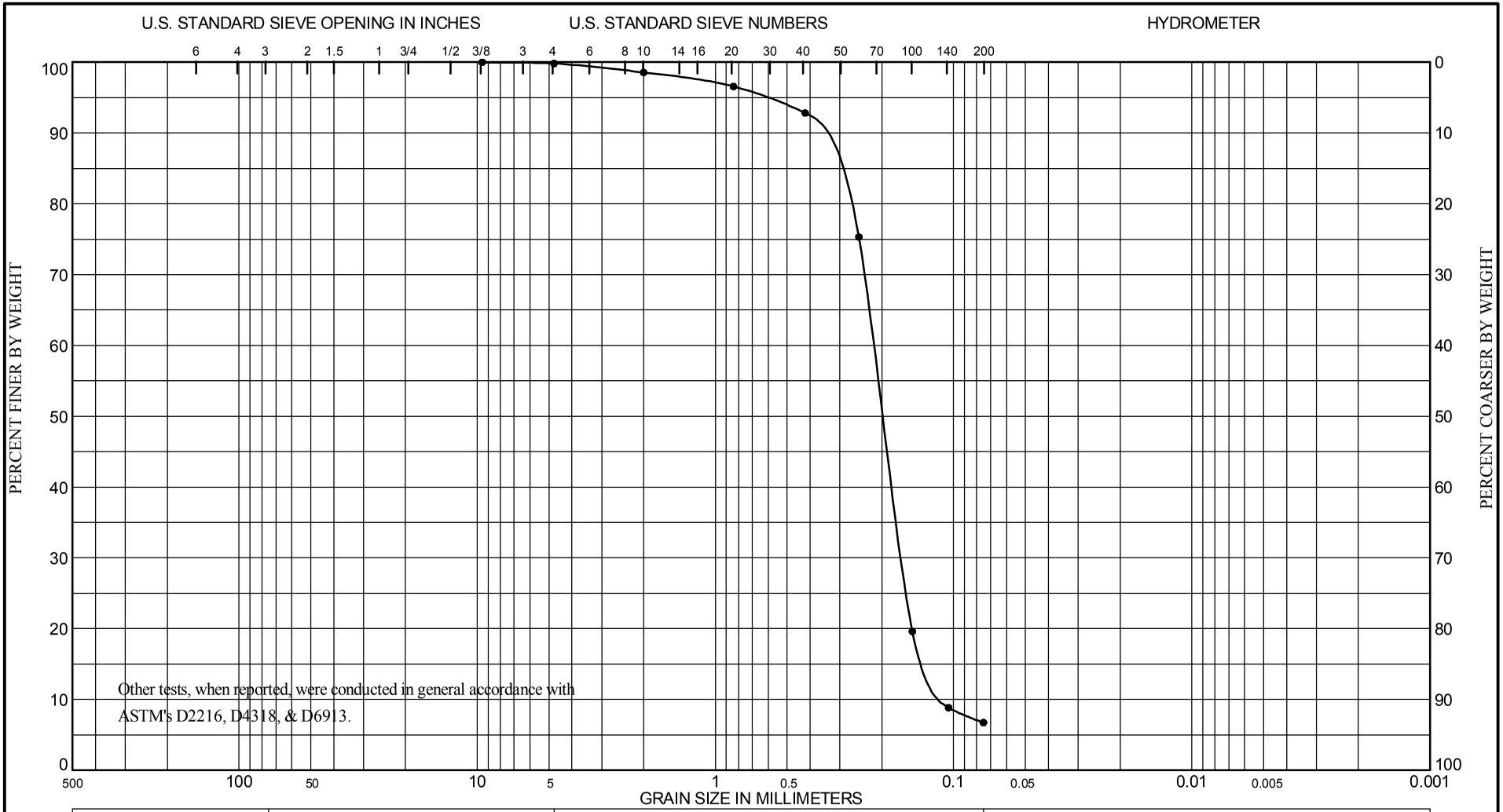
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 3.1	Very Dark Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4222
Hole No. BI-PBS-265-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

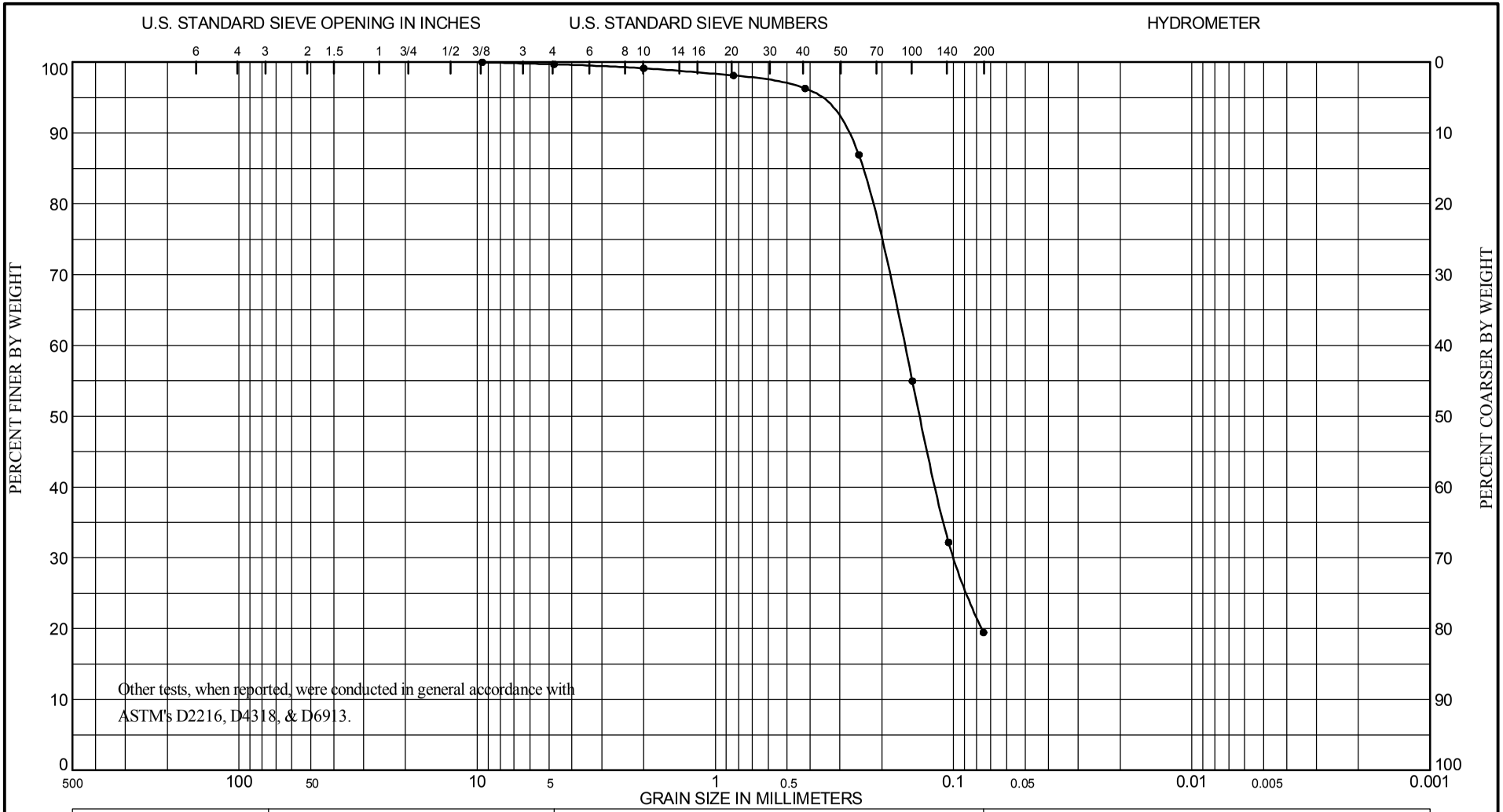
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	3.1 to 4.0	Very Dark Gray, Poorly Graded Silty Sand (SP-SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4223
Hole No. BI-PBS-265-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	5.3 to 8.0	Very Dark Gray, Silty Sand (SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4224
Hole No. BI-PBS-265-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-266-13

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
	South Atlantic	Mobile District	

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS West
2. BORING DESIGNATION	BI-PBS-266-13
LOCATION COORDINATES	E = 1,096,434 N = 238,754
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	17.7 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED 3 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	44.5 Ft.
15. DATE BORING	STARTED 01-08-14 / COMPLETED 01-08-14
16. ELEVATION TOP OF BORING	-44.2 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-44.2	0.0				
-45.2	1.0		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, few shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 6/1-gray D50: 0.3 mm % Fines: 1.2
			SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, lt. to medium gray (SM)	B	Classification: SP-SM Color: GLEY1 10Y 5/1- D50: 0.186 mm % Fines: 9.1
				C	Classification: SM Color: 2.5Y 5/1-gray D50: 0.135 mm % Fines: 19.2
-54.9	10.7				
-56.6	12.4		SAND, clayey, mostly fine-grained sand-sized quartz, trace shell fragments, lt. to medium gray (SC)		
			CLAY, fat, sandy, no shell fragments, lt. gray, pale orange (CH)	NS	
-61.9	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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

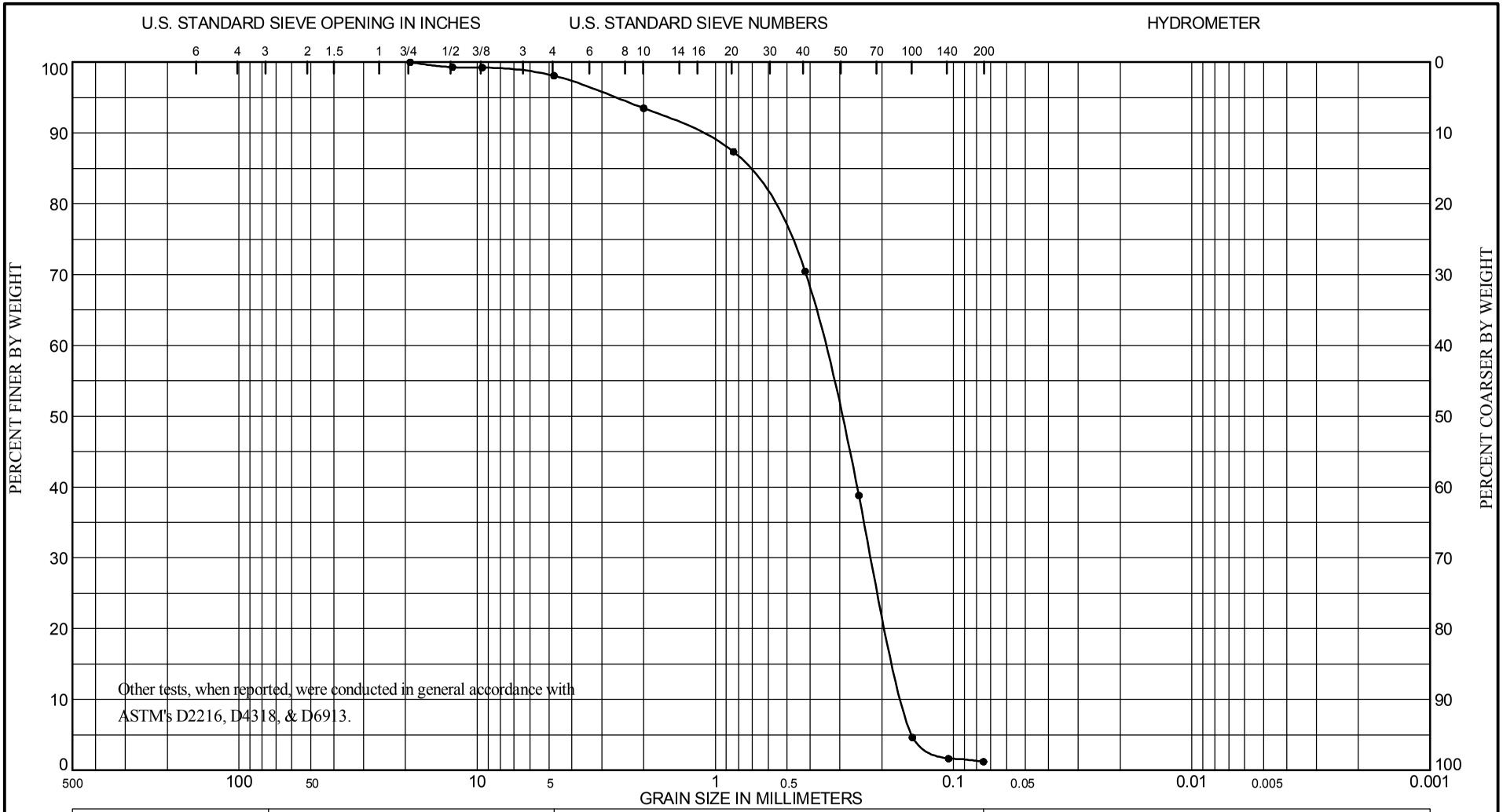
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15605° Long = -88.47837°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

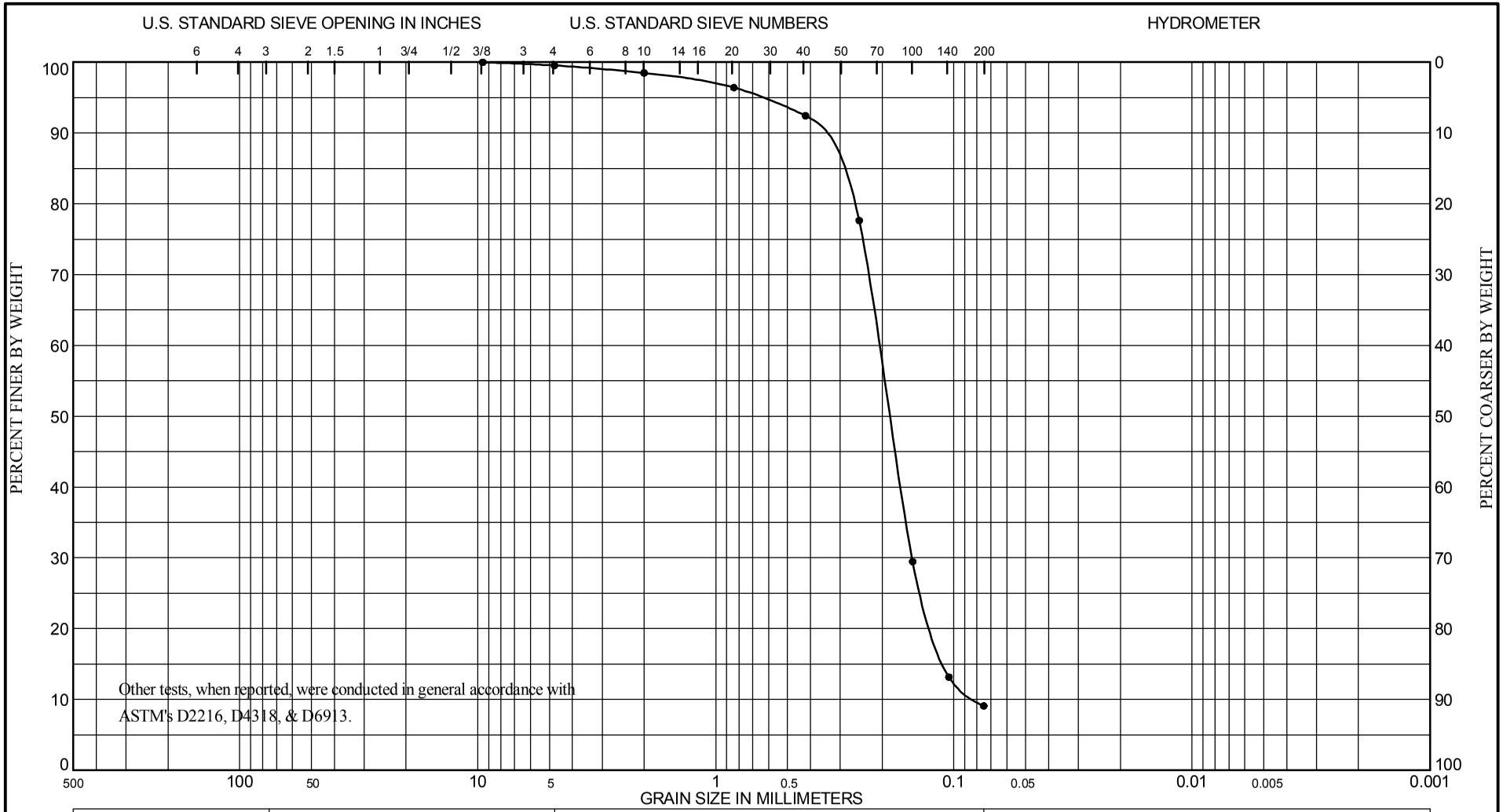
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 1.0	Very Dark Gray, Poorly Graded Sand (SP), with a trace of gravel				
		size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4161
Hole No. BI-PBS-266-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

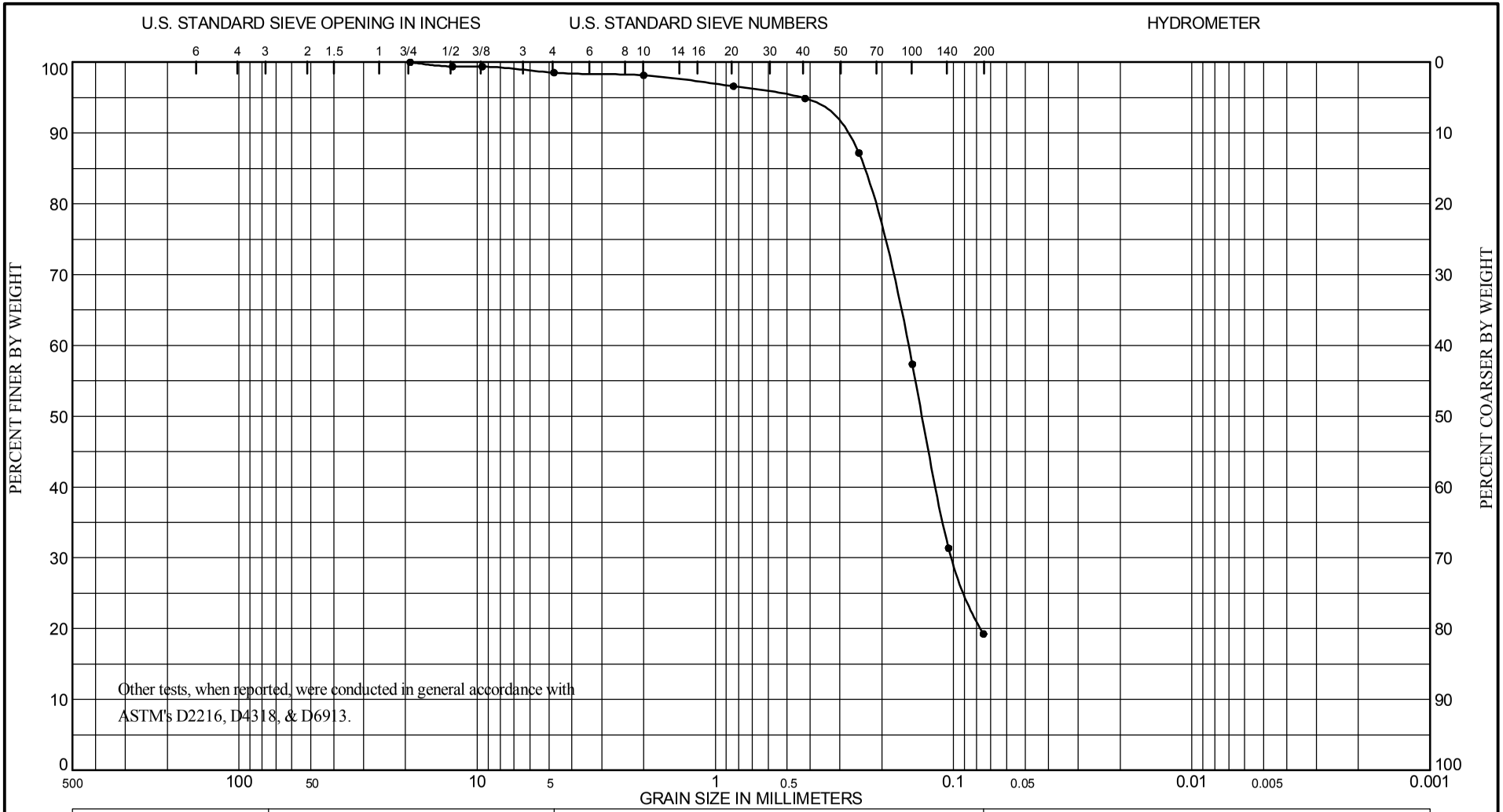
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	1.0 to 6.0	Greenish Black, Poorly Graded Silty Sand (SP-SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4162
Hole No. BI-PBS-266-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	6.0 to 10.7	Greenish Black, Silty Sand (SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4163
Hole No. BI-PBS-266-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-267-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 2 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-267-13 — LOCATION COORDINATES: E = 1,101,110 N = 235,252	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 3 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 50 Ft.
	15. DATE BORING — STARTED: 01-09-14 — COMPLETED: 01-09-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -48.7 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: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-48.7	0.0				
-49.6	0.9		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, few shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.316 mm % Fines: 1
-50.7	2.0			B	Classification: SP-SM Color: GLEY1 10Y 5/1- D50: 0.19 mm % Fines: 8.4
			SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few shell fragments, lt. gray (SP-SM)	C	Classification: SM Color: GLEY1 10Y 6/1- D50: 0.149 mm % Fines: 14.4
-53.7	5.0		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, lt. to medium gray (SM)		
-54.2	5.5		SAND, clayey, mostly fine-grained sand-sized quartz, trace shell fragments, lt. to medium gray (SC)		
-62.0	13.3		CLAY, lean, trace wood fragments, sandy to 9 ft. depth, lt. gray, pale brown (CL)	NS	
-65.4	16.7		SAND, clayey, mostly fine-grained sand-sized quartz, lt. gray (SC)		
-68.7	20.0		CLAY, fat, interbedded with fine-grained sand-sized clayey sand, lt. gray and pale orange (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.

3. Seafloor elevation determined from

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14638° Long = -88.46361°

DRILLING LOG (Cont. Sheet)	INSTALLATION Mobile District		SHEET 2 OF 2 SHEETS
PROJECT MsCIP Barrier Island Restoration	COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83	VERTICAL NAVD88
LOCATION COORDINATES X = 1,101,110 Y = 235,252	ELEVATION TOP OF BORING -48.7 Ft.		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
			10/16/2014 USACE survey.		

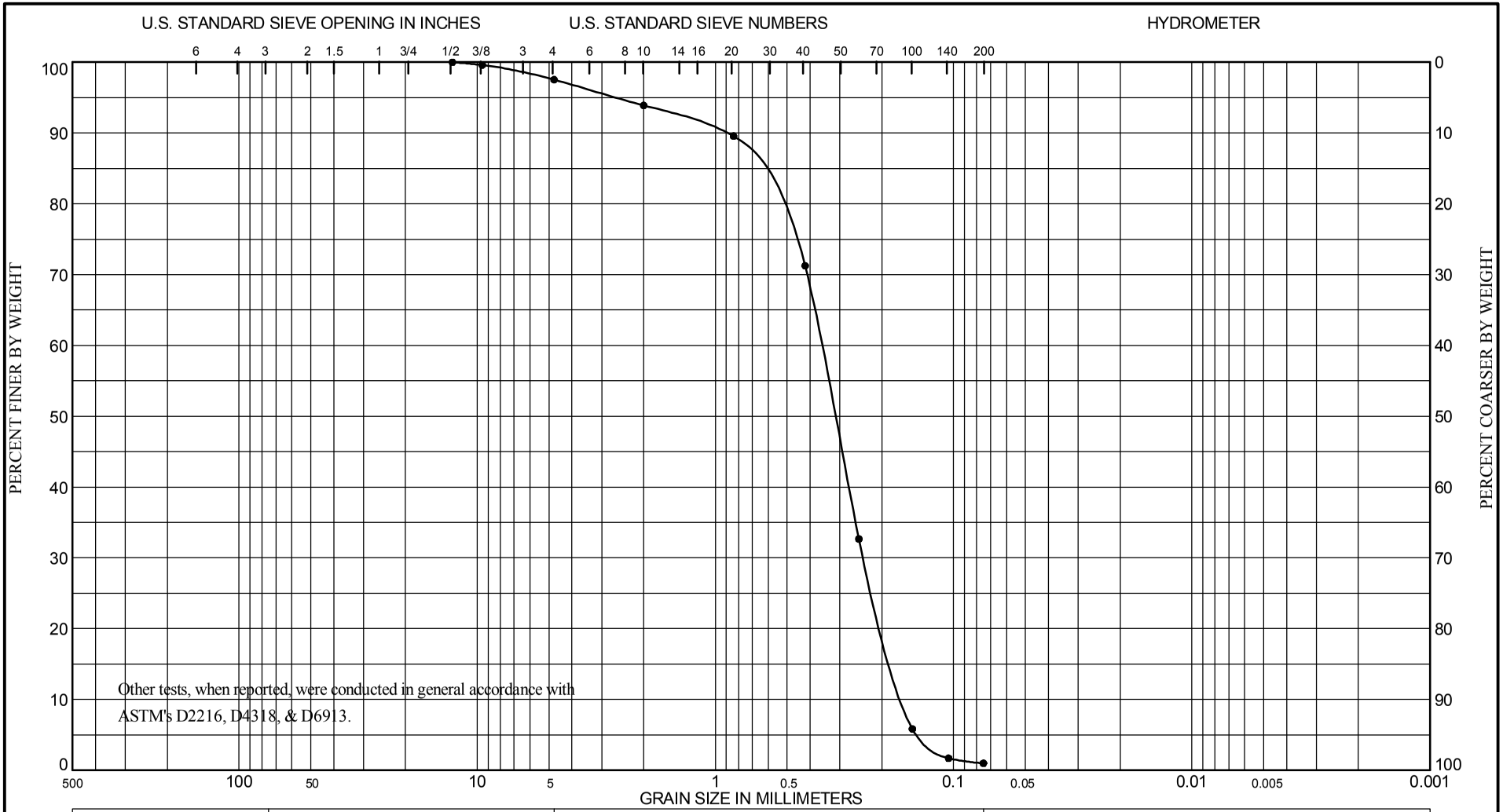
30
35
40
45
50
55
60

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14638° Long = -88.46361°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

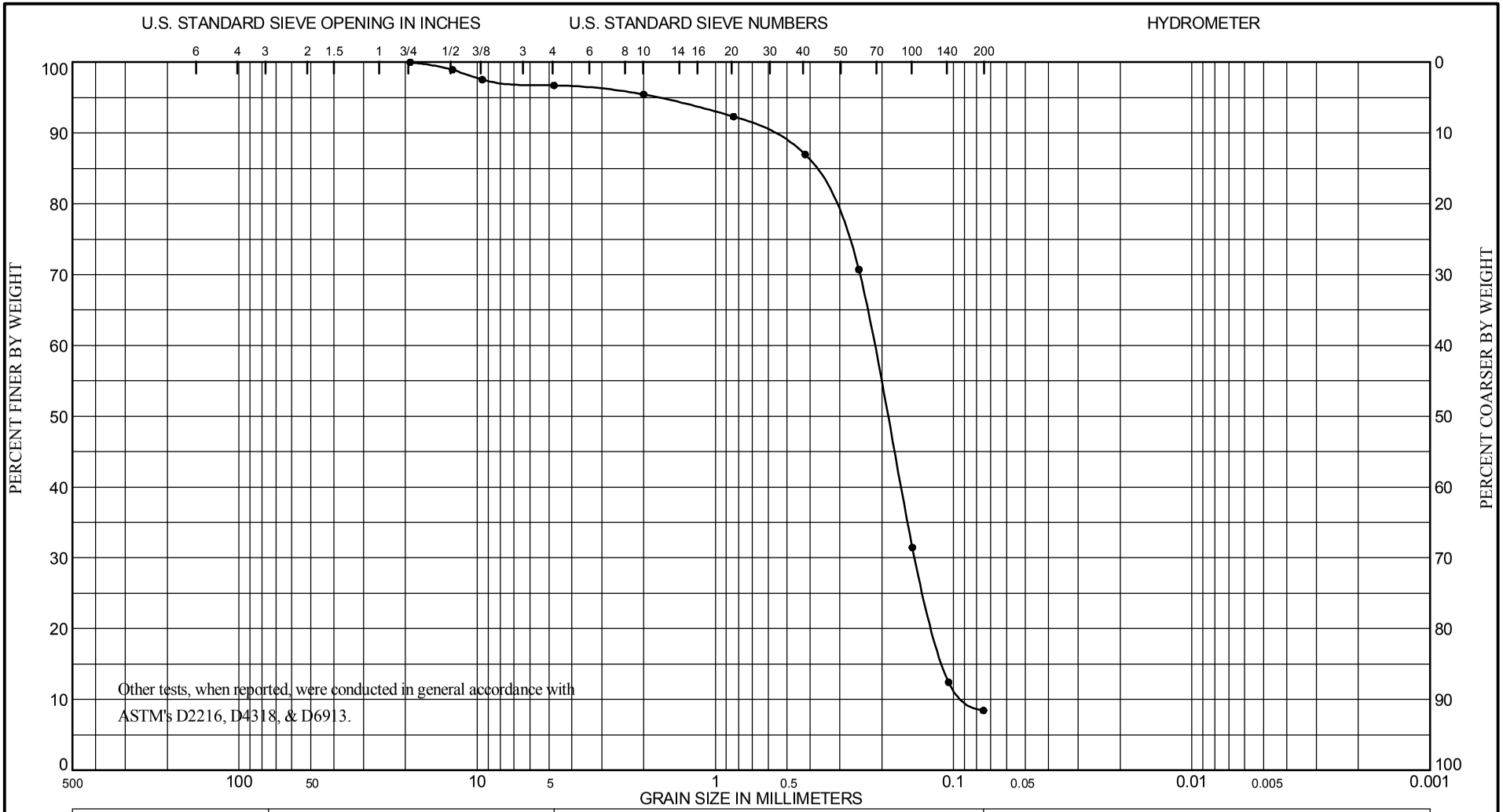
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 0.9	Very Dark Greenish Gray, Poorly Graded Sand (SP), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4170
Hole No. BI-PBS-267-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

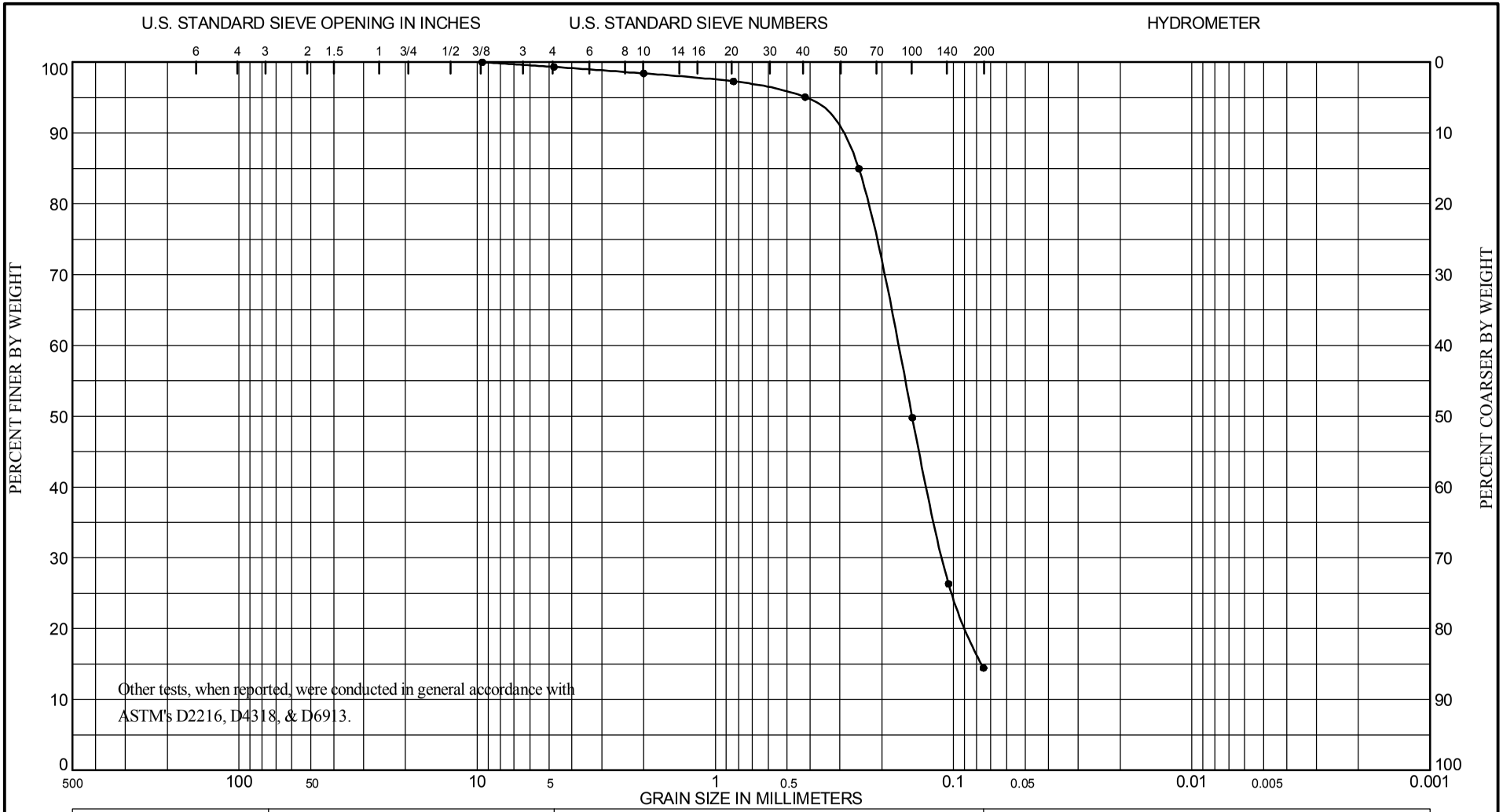
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	0.9 to 2.0	Greenish Black, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4171
Hole No. BI-PBS-267-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	2.0 to 5.0	Greenish Black, Silty Sand (SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4172
Hole No. BI-PBS-267-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-268-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-268-13 — LOCATION COORDINATES: E = 1,101,182 N = 233,499	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 4 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 42.5 Ft.
	15. DATE BORING — STARTED: 01-16-14 — COMPLETED: 01-16-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -42.3 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 14.6 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-42.3	0.0				
-46.8	4.5		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, few shell fragments, lt. gray (SP)	A	Classification: SP Color: GLEY1 10Y 7/1- D50: 0.284 mm % Fines: 0.9
-47.6	5.3		SAND, poorly-graded with silt, mostly fine to medium-grained sand-sized quartz, few shell fragments, lt. to medium gray (SP-SM)	B	Classification: SP Color: 2.5Y 6/1-gray D50: 0.25 mm % Fines: 3.4
-48.7	6.4			C	Classification: SP Color: 2.5Y 6/1-gray D50: 0.253 mm % Fines: 2.2
-50.6	8.3		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, few shell fragments, lt. to medium gray (SP)	D	Classification: SP-SM Color: 2.5Y 5/1-gray D50: 0.201 mm % Fines: 6.3
-51.2	8.9		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, medium to dark gray (SM)	NS	
-52.4	10.1		SAND, clayey, mostly fine-grained sand-sized quartz, trace shell fragments, medium to dark gray (SC)		
-56.3	14.0		CLAY, lean, sandy, no shell fragments, medium to dark gray (CL)		
-56.9	14.6		CLAY, fat, sandy, lt. gray, pale orange (CH)		
			SAND, clayey, mostly fine-grained sand-sized quartz, lt. 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.

3. Seafloor elevation determined from 10/16/2014 USACE survey.

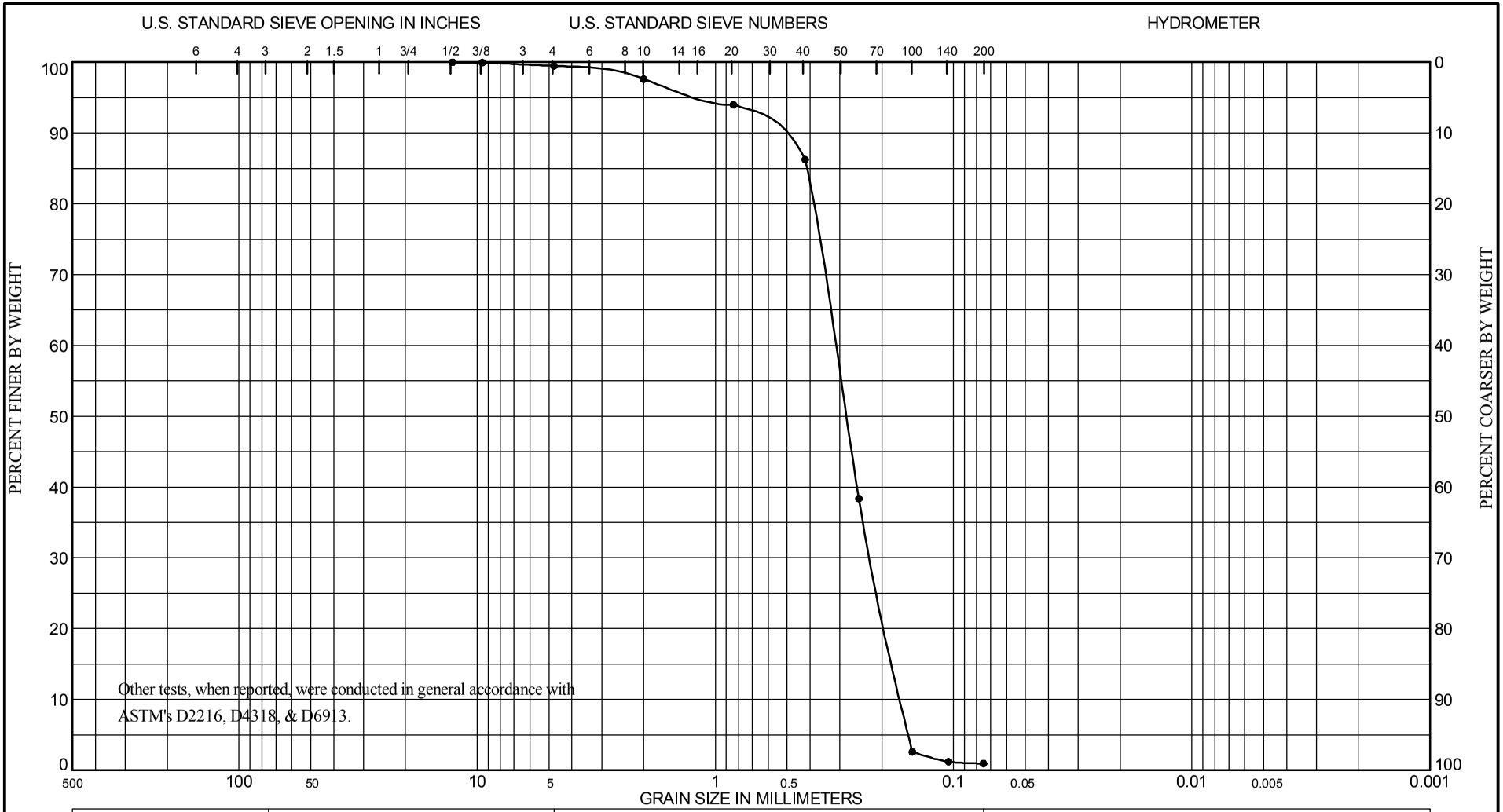
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14156° Long = -88.46340°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

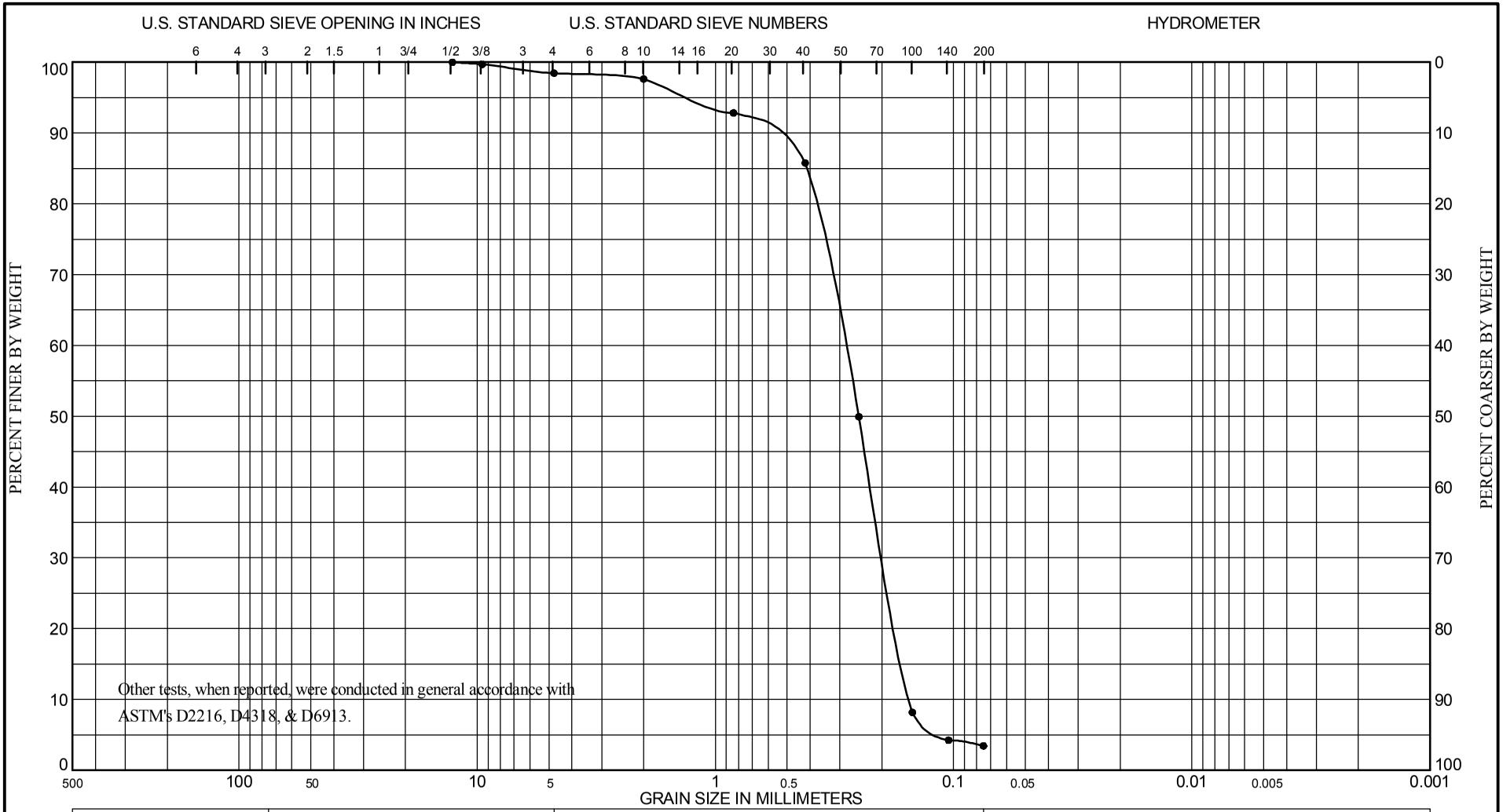
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 4.5	Greenish Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4186
Hole No. BI-PBS-268-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

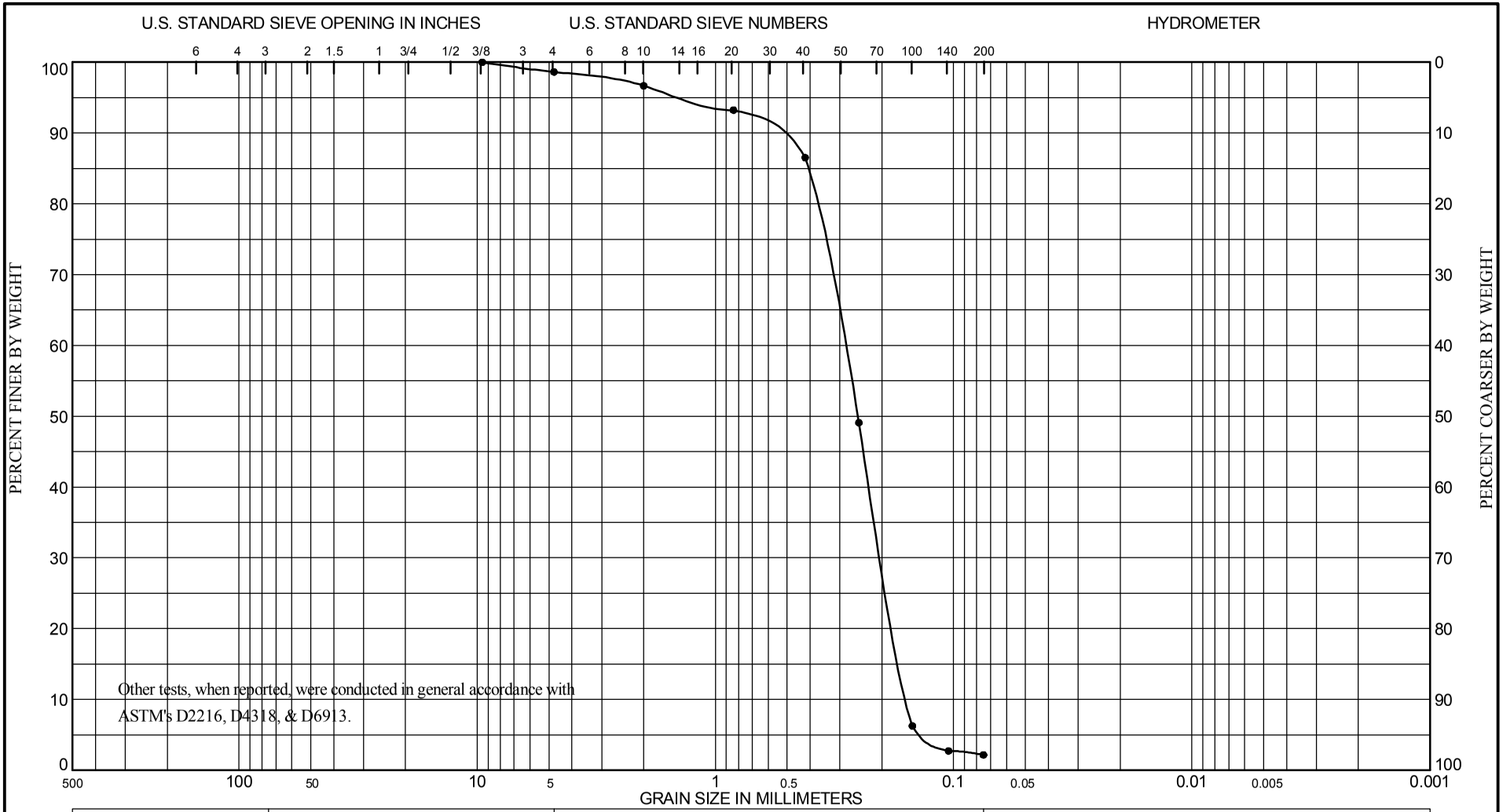
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	4.5 to 5.3	Greenish Gray, Poorly Graded Sand (SP), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4187
Hole No. BI-PBS-268-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

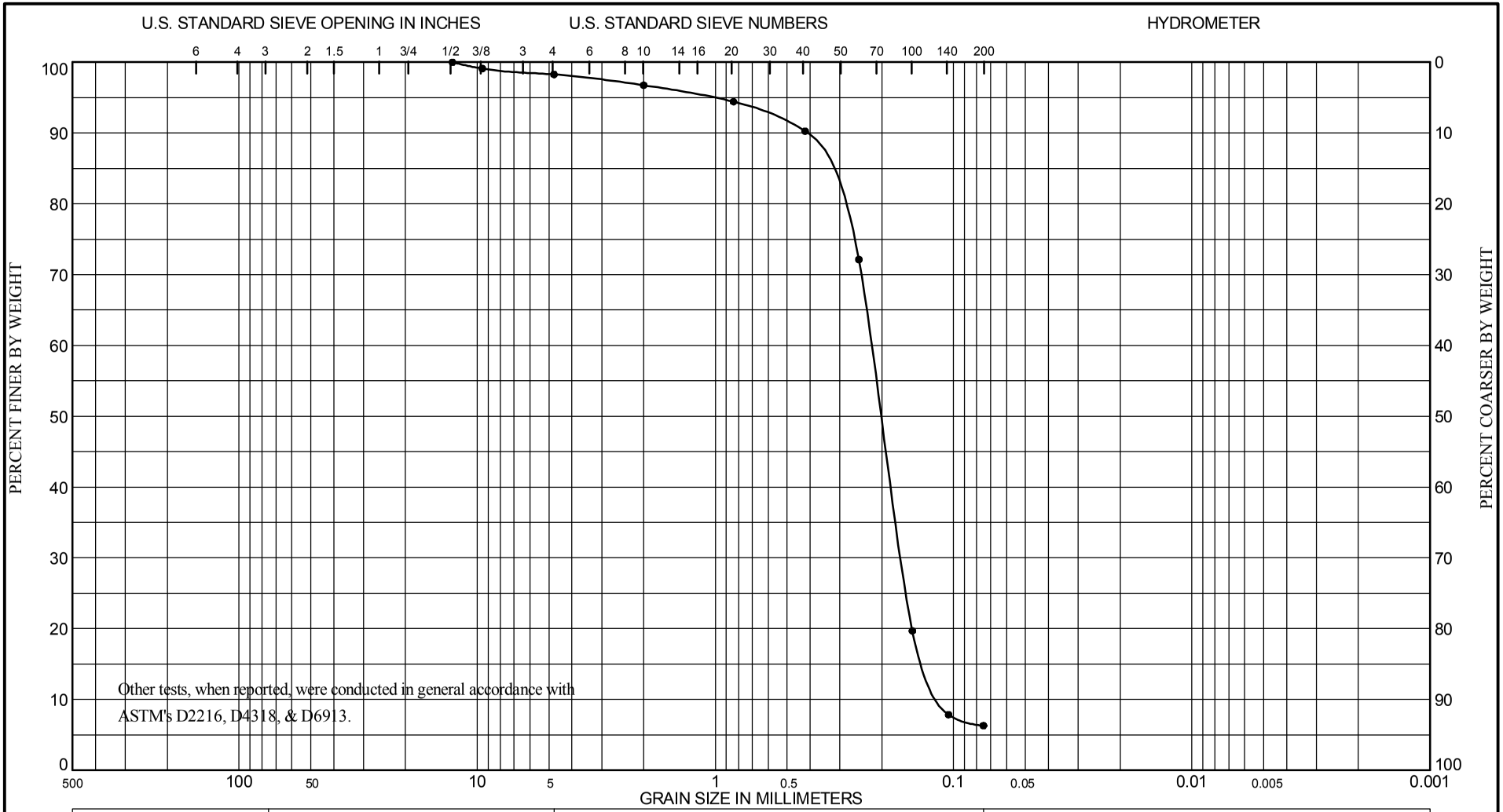
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	5.3 to 6.4	Greenish Gray, Poorly Graded Sand (SP), with a trace of gravel size				
		shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4188
Hole No. BI-PBS-268-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
D	6.4 to 8.3	Dark Greenish Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4189
Hole No. BI-PBS-268-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-269-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-269-13 — LOCATION COORDINATES: E = 1,099,035 N = 232,922	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 2 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 46.8 Ft.
	15. DATE BORING — STARTED: 01-18-14 — COMPLETED: 01-18-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -47.2 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 16.0 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Mike FitzHarris, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-47.2	0.0				
-48.0	0.8		SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace shell, gray (SP)	A	Classification: SP-SM Color: 2.5Y 6/1-gray D50: 0.203 mm % Fines: 5.1
-50.6	3.4		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, gray (SP-SM)	B	Classification: SM Color: 2.5Y 6/1-gray D50: 0.135 mm % Fines: 16.3
-52.4	5.2		SAND, silty, mostly fine-grained sand-sized quartz, with clayey lenses, gray (SM)	NS	
-54.2	7.0		CLAY, lean, clay with some fine-grained sand, gray (CL)		
-56.0	8.8		SAND, silty, mostly fine-grained sand-sized quartz, with clayey lenses, gray with lt. brown streaks (SM)		
-59.1	11.9		CLAY, lean, stiff, with sandy intervals, lenses, mottled (CL)		
-63.2	16.0		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, trace clay stringers, brown-gray (SP-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.

3. Seafloor elevation determined from 2013 USGS geophysical survey.

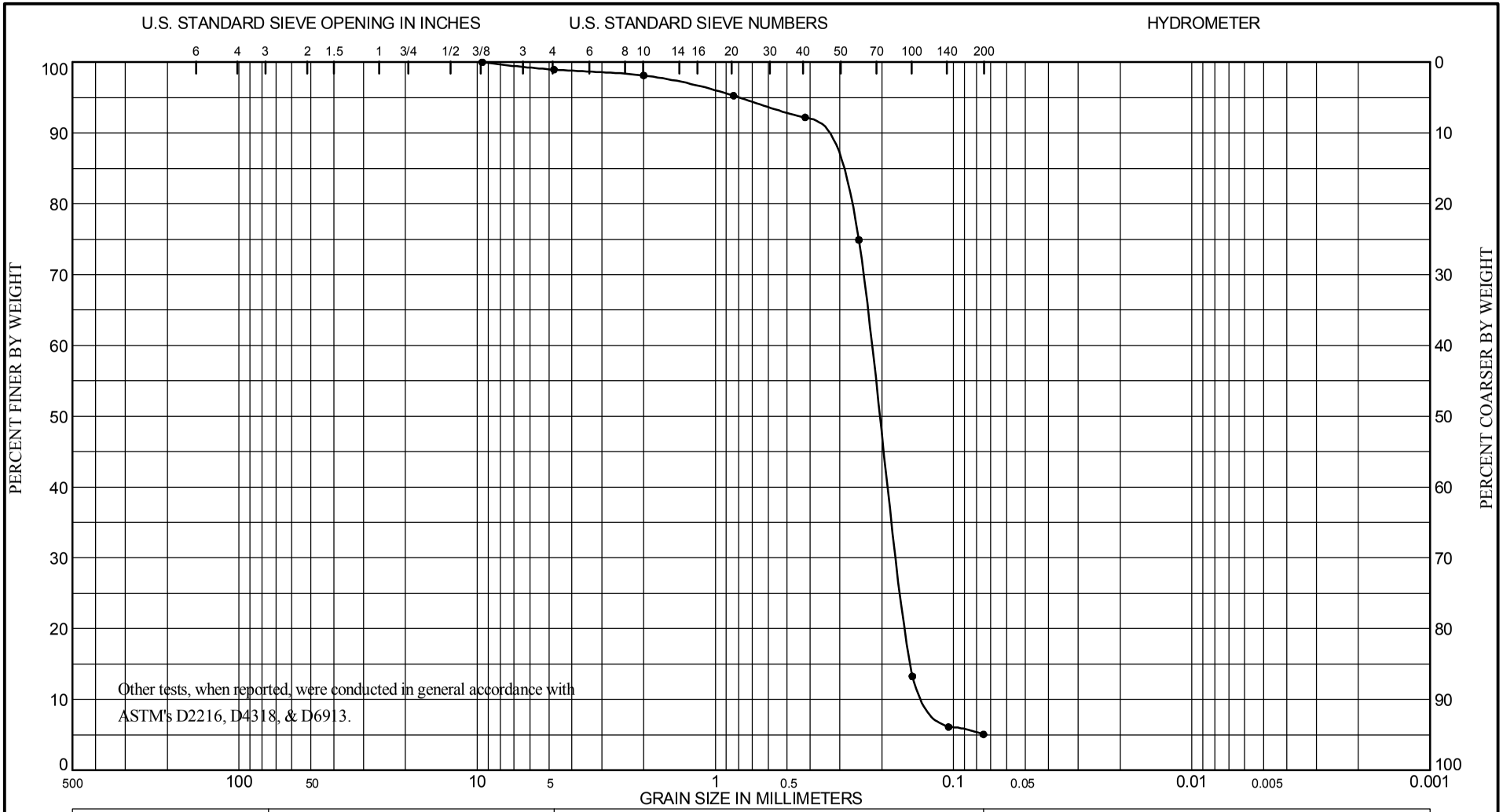
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.13999° Long = -88.47020°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

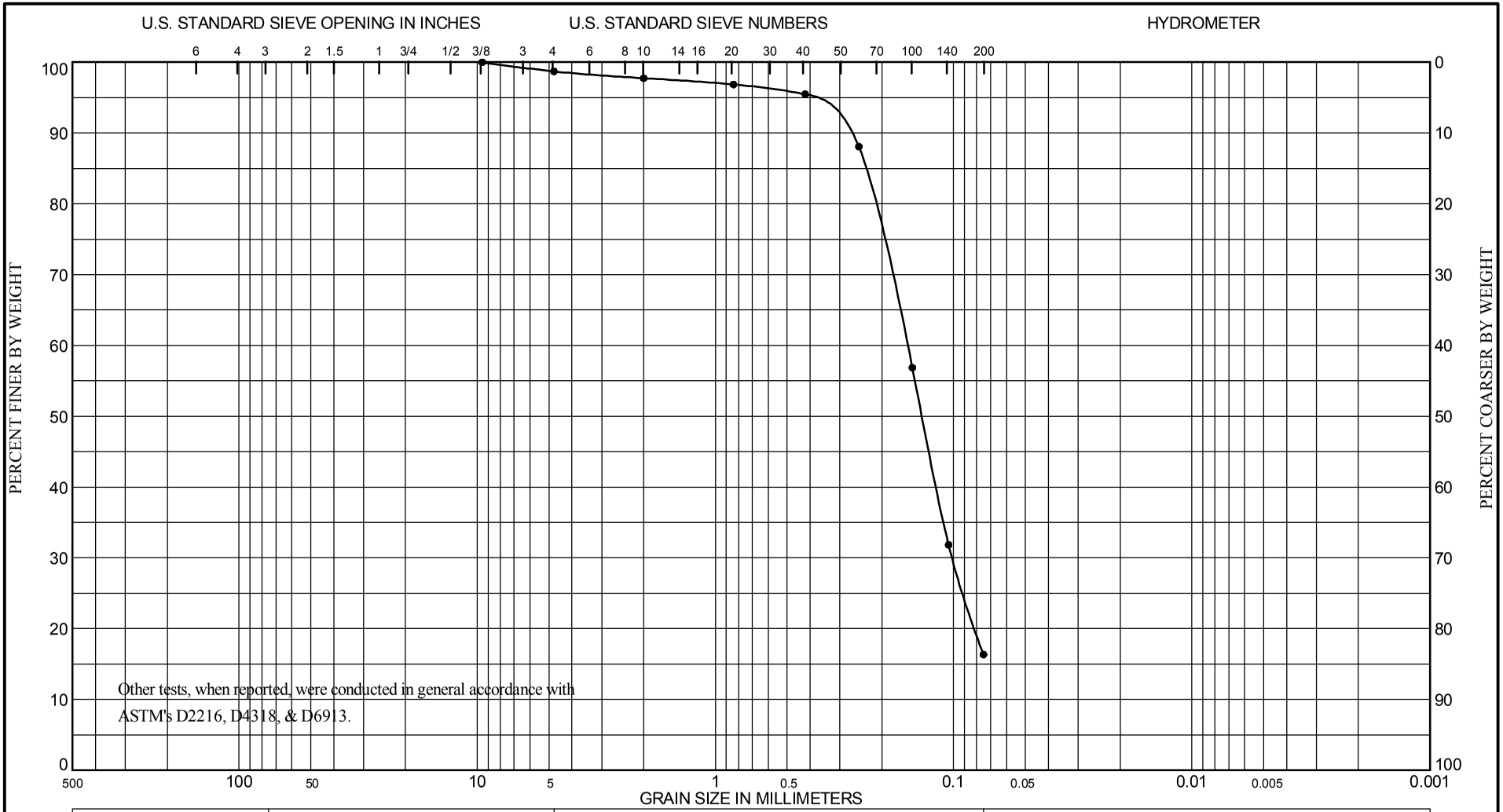
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 0.8	Dark Olive Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4204
Hole No. BI-PBS-269-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	0.8 to 3.4	Very Dark Gray, Silty Sand (SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4205
Hole No. BI-PBS-269-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-270-13

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
	South Atlantic	Mobile District	

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS West
2. BORING DESIGNATION	BI-PBS-270-13
LOCATION COORDINATES	E = 1,102,399 N = 234,598
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	8.5 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED 2 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	51 Ft.
15. DATE BORING	STARTED 01-09-14 / COMPLETED 01-09-14
16. ELEVATION TOP OF BORING	-49.1 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-49.1	0.0				
-50.4	1.3		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, lt. to medium gray (SM)	A1 A2	Classification: SP Color: GLEY1 10Y 6/1- D50: 0.286 mm % Fines: 1.2 Classification: SP-SM Color: GLEY1 10Y 5/1- D50: 0.188 mm % Fines: 8.1
-54.3	5.2		CLAY, lean, few shell fragments, sandy, medium gray (CL)	NS	
-57.6	8.5		CLAY, fat, very hard with sandy clay lenses, lt. gray, pale orange (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.

3. Seafloor elevation determined from 2013 USGS geophysical survey.

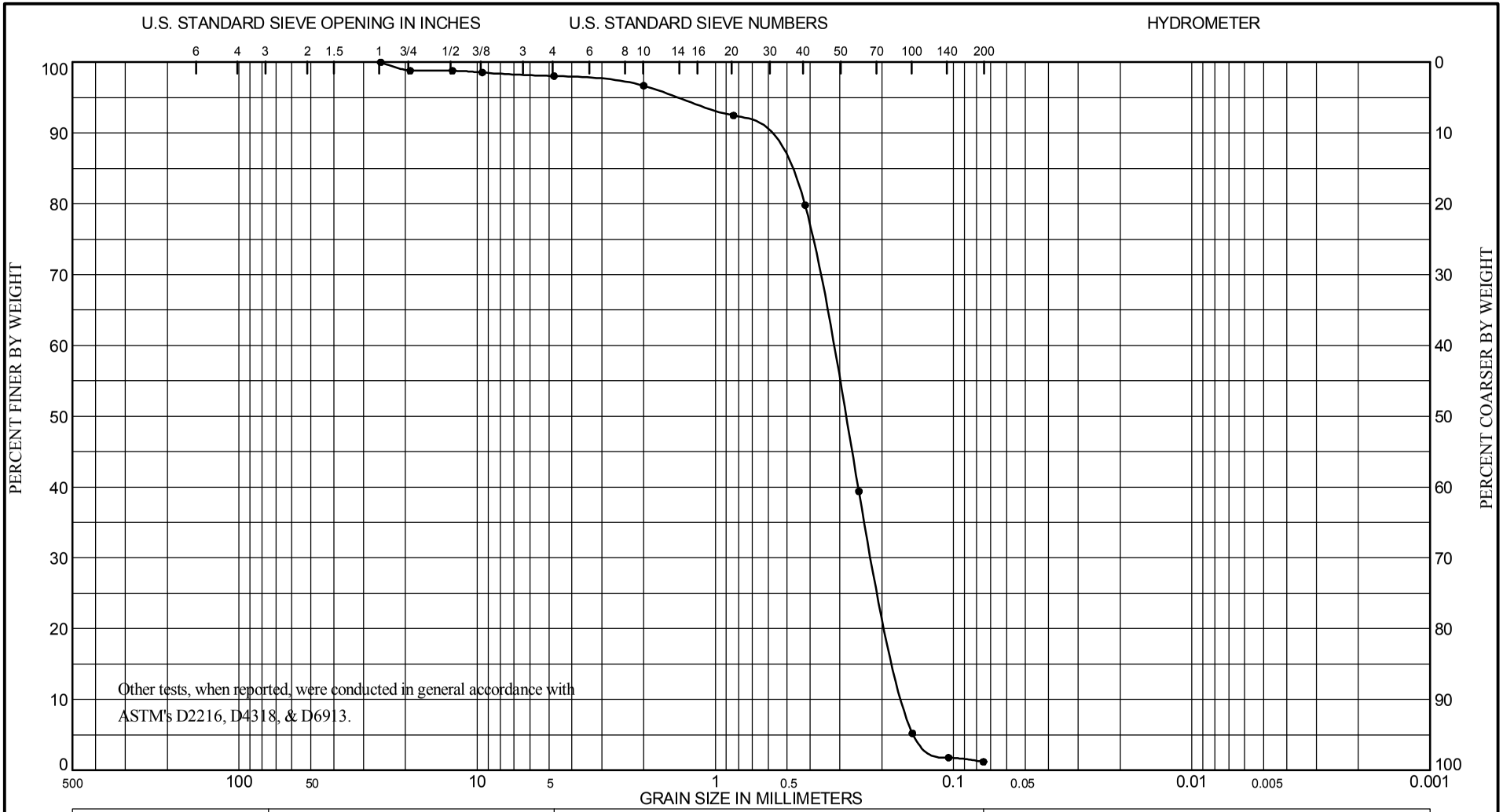
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14457° Long = -88.45954°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

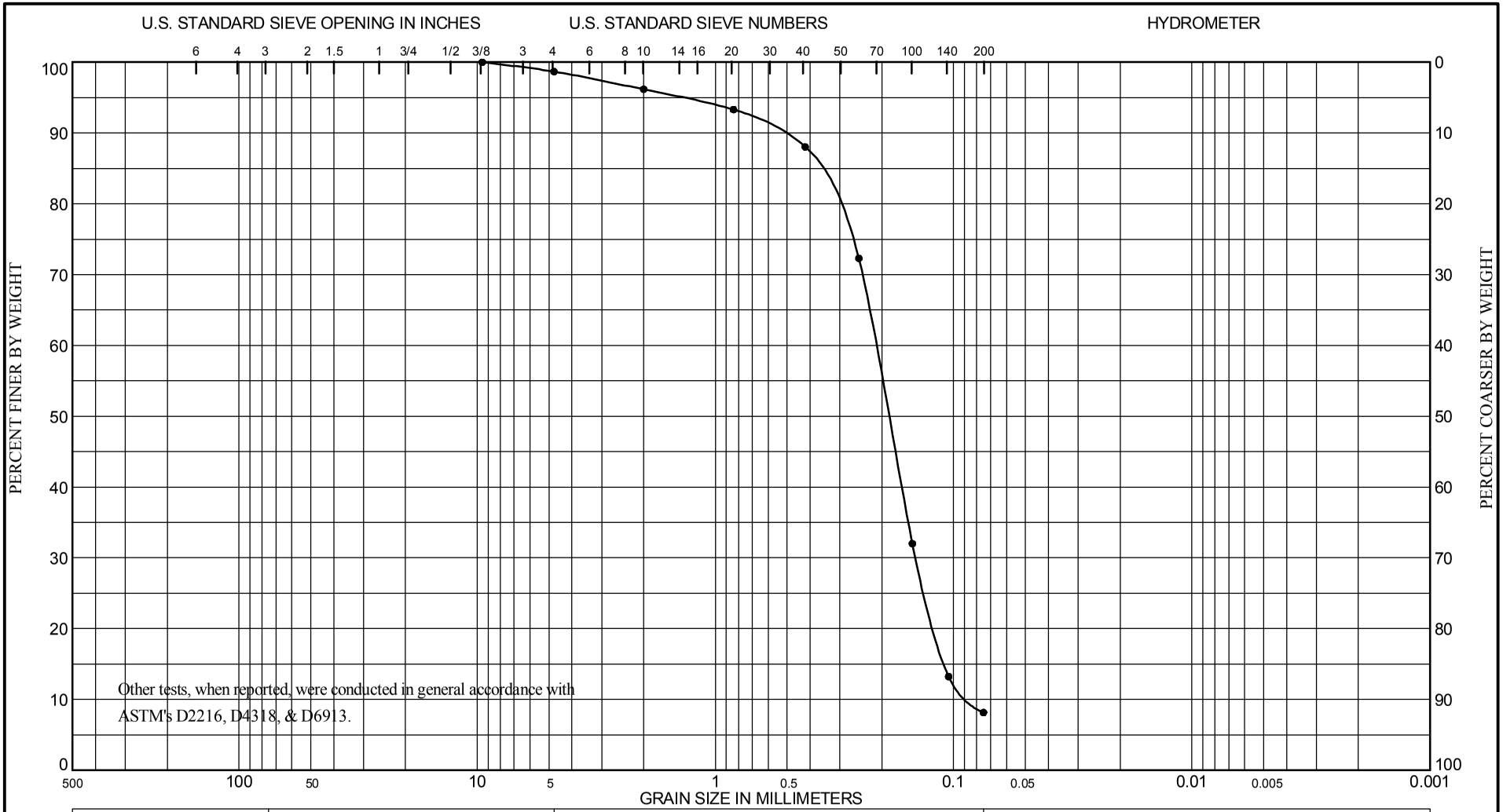
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A1	0.0 to 0.0	Dark Greenish Gray, Poorly Graded Sand (SP), with a trace of gravel				
		size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4173
Hole No. BI-PBS-270-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A2	0.0 to 1.3	Greenish Black, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4174
Hole No. BI-PBS-270-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-271-13

DRILLING LOG	DIVISION South Atlantic	INSTALLATION Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS West
2. BORING DESIGNATION	BI-PBS-271-13
LOCATION COORDINATES	E = 1,103,769 N = 231,253
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	8.6 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED 3 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	45.1 Ft.
15. DATE BORING	STARTED 01-16-14 / COMPLETED 01-16-14
16. ELEVATION TOP OF BORING	-44.7 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-44.7	0.0				
-47.0	2.3		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, few shell fragments, lt. gray (SP)	A1	Classification: SP Color: GLEY1 10Y 7/1- D50: 0.265 mm % Fines: 1.3
				A2	Classification: SP Color: 2.5Y 6/1-gray D50: 0.25 mm % Fines: 2
-48.1	3.4		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, medium gray (SM)	B	Classification: SP-SM Color: 2.5Y 6/1-gray D50: 0.203 mm % Fines: 6.3
-50.4	5.7		CLAY, lean, trace shell fragments, sandy, medium gray (CL)	NS	
-50.8	6.1				
-51.0	6.3		CLAY, fat, orangish gray (CH)		
-53.3	8.6		SAND, clayey, mostly fine-grained sand-sized quartz, little shell fragments, lt. brown (SC)		
			CLAY, fat, sandy, no shell fragments, lt. gray, pale orange (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.

3. Seafloor elevation determined from 10/16/2014 USACE survey.

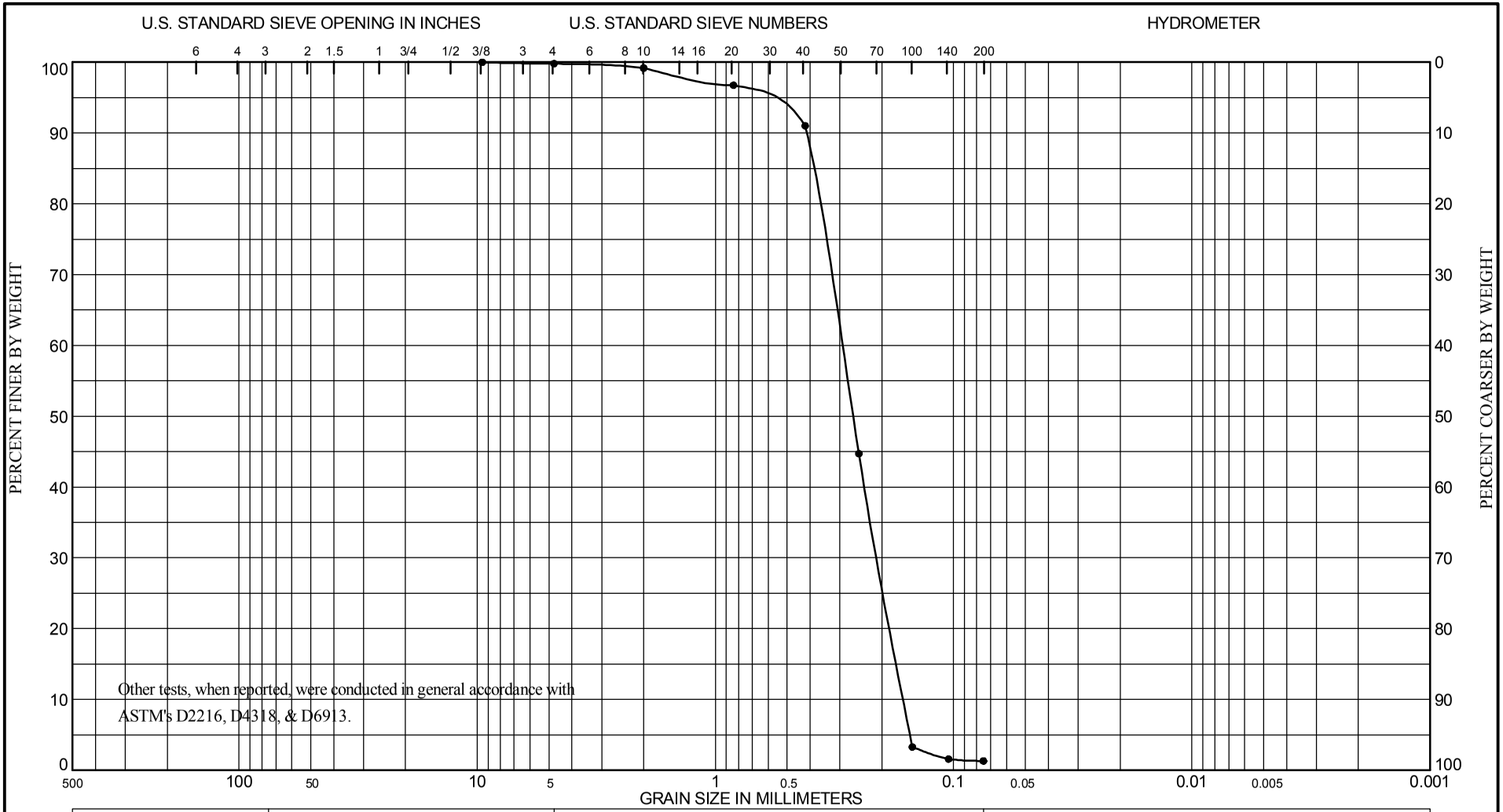
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.13536° Long = -88.45524°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

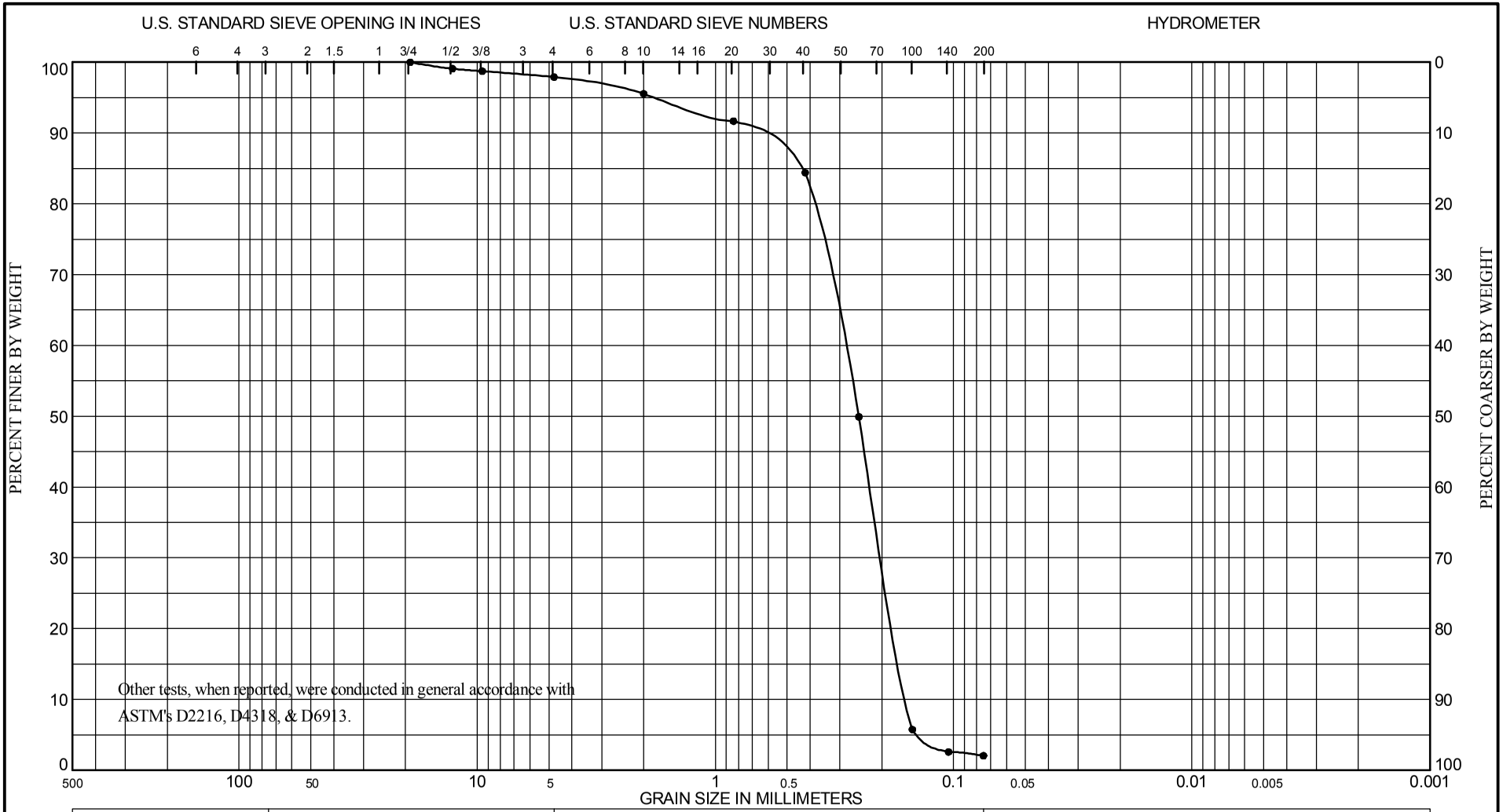
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A1	2.1 to 0.0	Dark Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4192
Hole No. BI-PBS-271-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

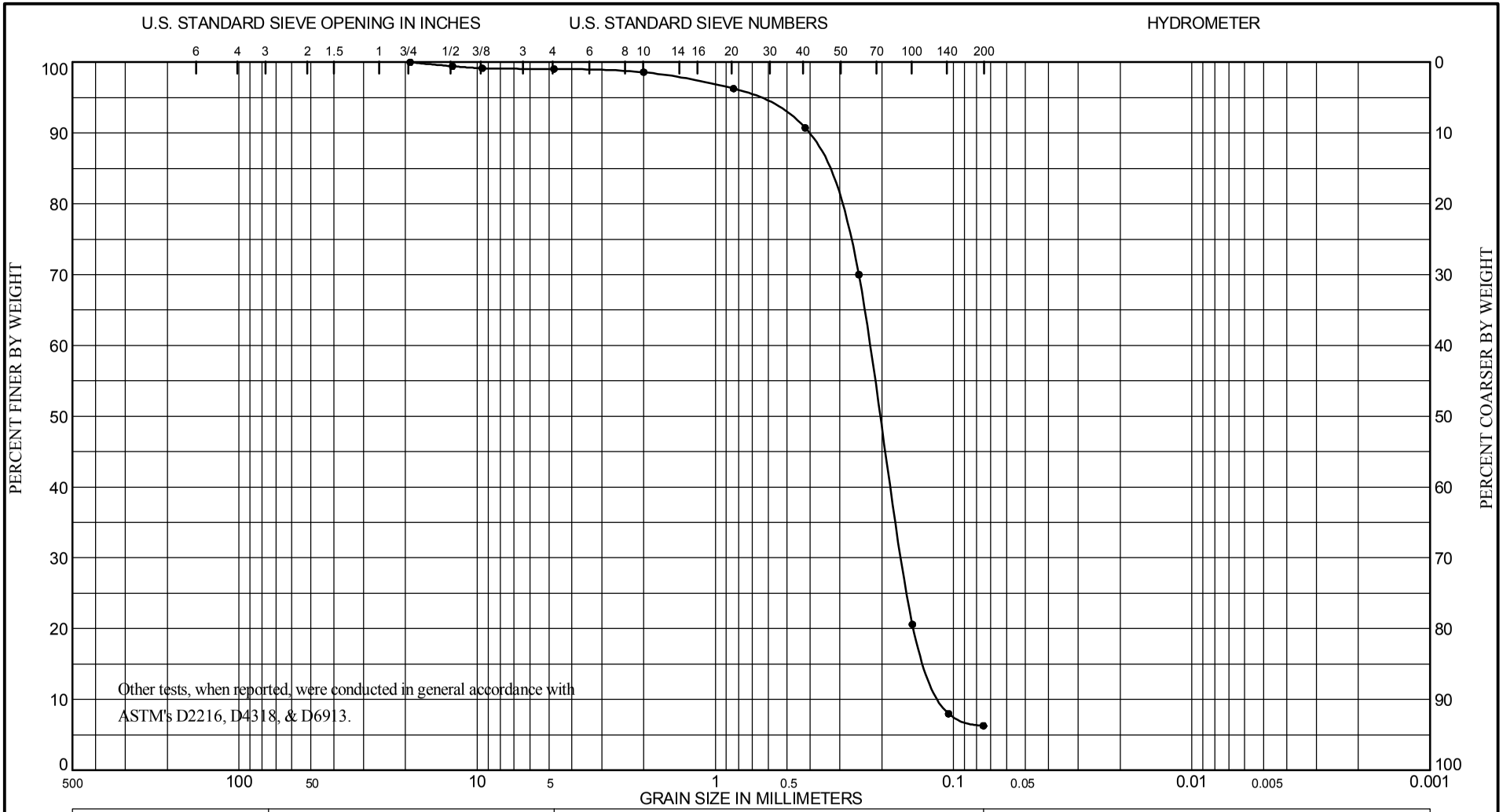
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A2	0.0 to 1.3	Dark Gray, Poorly Graded Sand (SP), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4193
Hole No. BI-PBS-271-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	1.3 to 2.4	Dark Olive Gray, Poorly Graded Silty Sand (SP-SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4194
Hole No. BI-PBS-271-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-272-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-272-13 — LOCATION COORDINATES: E = 1,102,573 N = 232,468	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 2 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 44.1 Ft.
	15. DATE BORING — STARTED: 01-16-14 — COMPLETED: 01-16-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -43.8 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 13.9 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-43.8	0.0				
-46.6	2.8		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, few shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 5/1-gray D50: 0.255 mm % Fines: 1.8
-49.1	5.3		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, medium gray (SM)	B	Classification: SP-SM Color: 2.5Y 5/1-gray D50: 0.198 mm % Fines: 8.4
-52.3	8.5		SAND, clayey, mostly fine-grained sand-sized quartz, few sandy clay interbeds, shell fragments, medium gray (SC)	NS	
-56.1	12.3		CLAY, fat, sandy, hard, lt. gray, pale orange, pale green (CH)		
-57.7	13.9		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace shell fragments, lt. brownish 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.

3. Seafloor elevation determined from 10/16/2014 USACE survey.

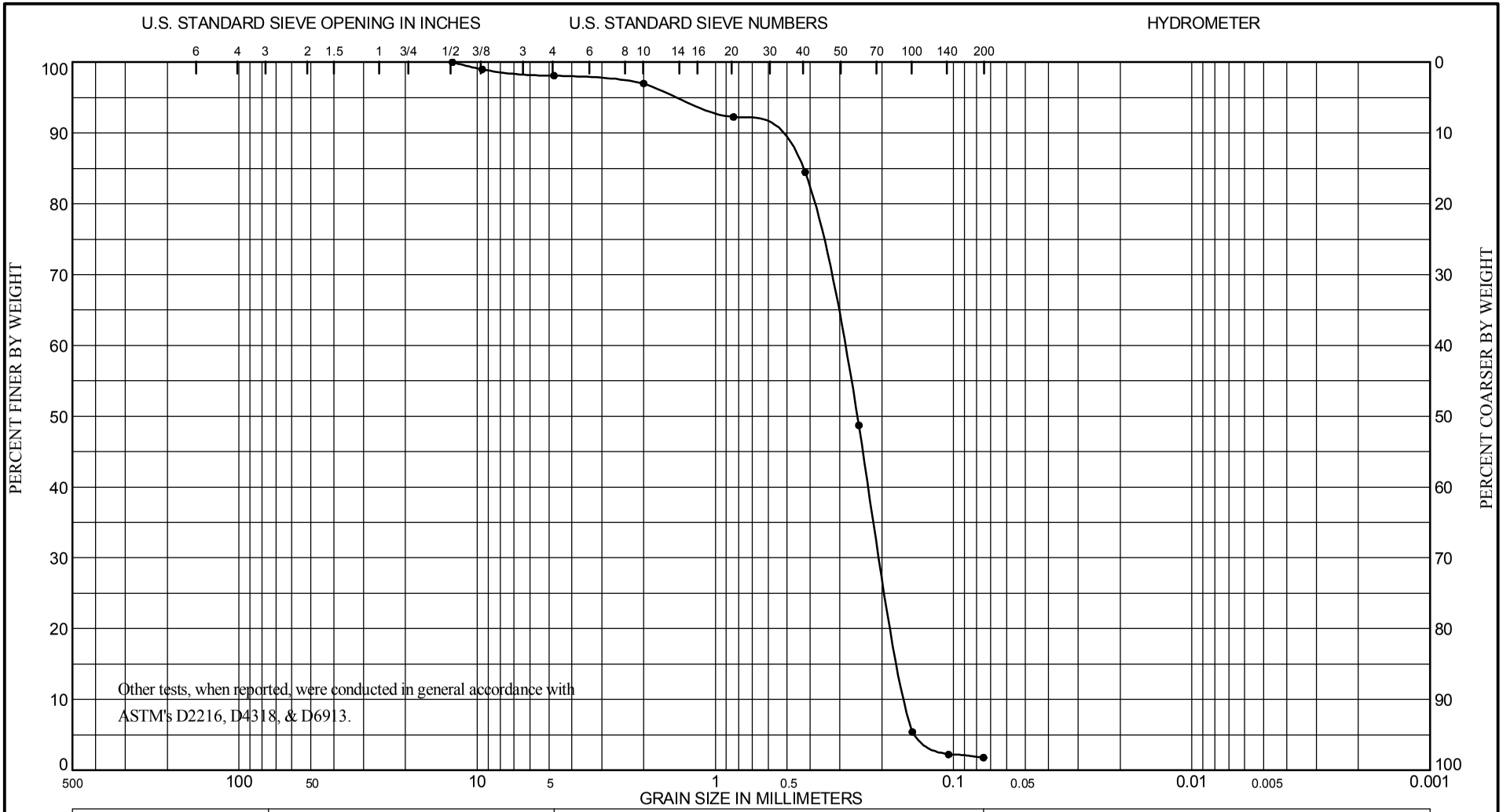
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.13871° Long = -88.45901°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

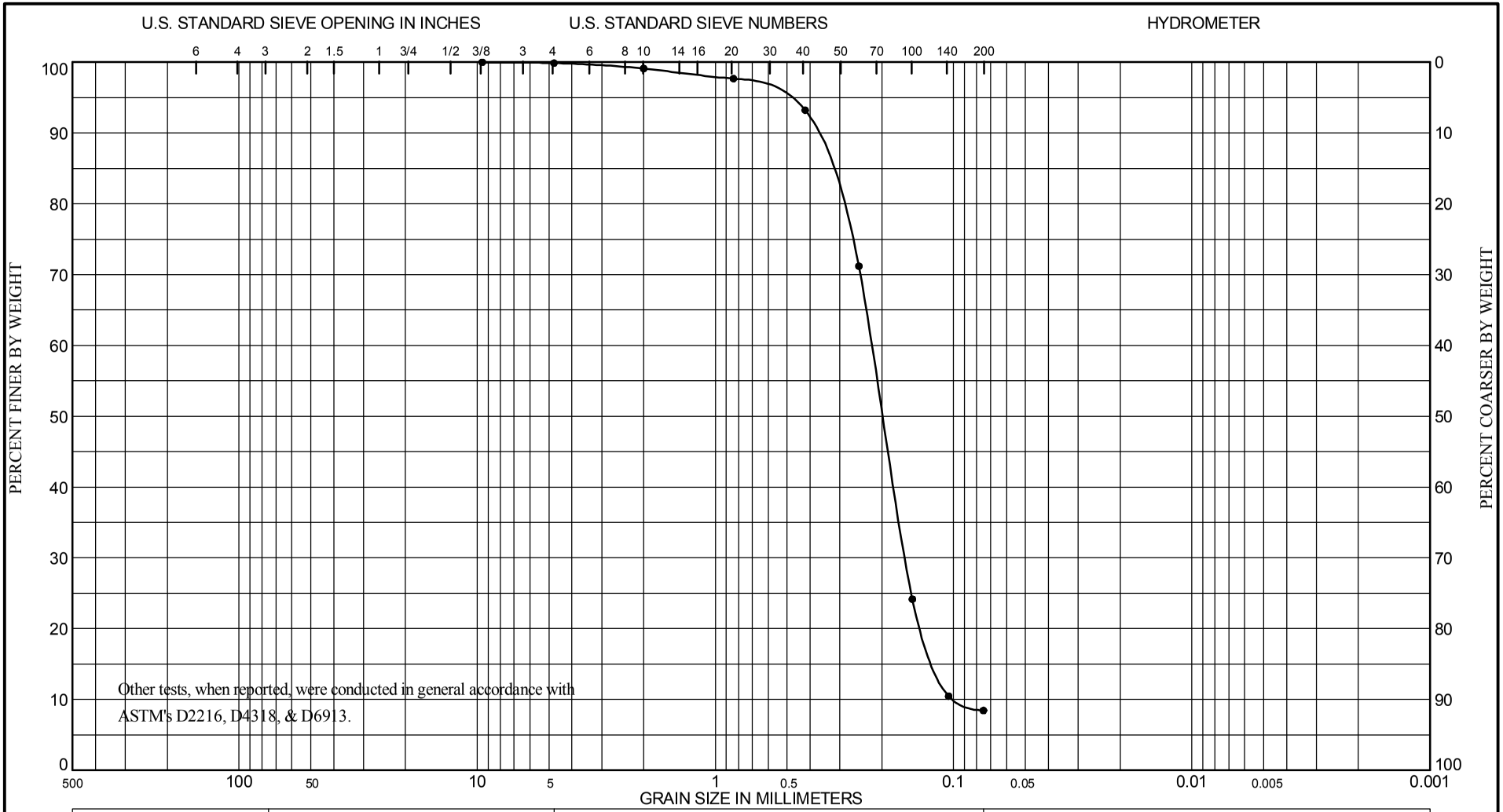
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 2.8	Greenish Gray, Poorly Graded Sand (SP), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4190
Hole No. BI-PBS-272-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	2.8 to 5.3	Olive Gray, Poorly Graded Silty Sand (SP-SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4191
Hole No. BI-PBS-272-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-273-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-273-13 — LOCATION COORDINATES: E = 1,104,147 N = 233,571	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 2 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 50 Ft.
	15. DATE BORING — STARTED: 01-09-14 — COMPLETED: 01-09-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -49.3 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 14.5 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-49.3	0.0				
-52.2	2.9		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 6/1-gray D50: 0.344 mm % Fines: 0.8
-52.6	3.3		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, medium gray (SM)	B	Classification: SP-SM Color: GLEY1 10Y 6/1- D50: 0.23 mm % Fines: 9.1
-55.4	6.1		CLAY, lean, sandy, medium to dark gray (CL)		
-61.4	12.1		CLAY, fat, very hard, lt. gray, pale orange (CH)	NS	
-62.4	13.1		CLAY, lean, sandy, medium dark gray, orangish brown (CL)		
-63.8	14.5		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, medium 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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

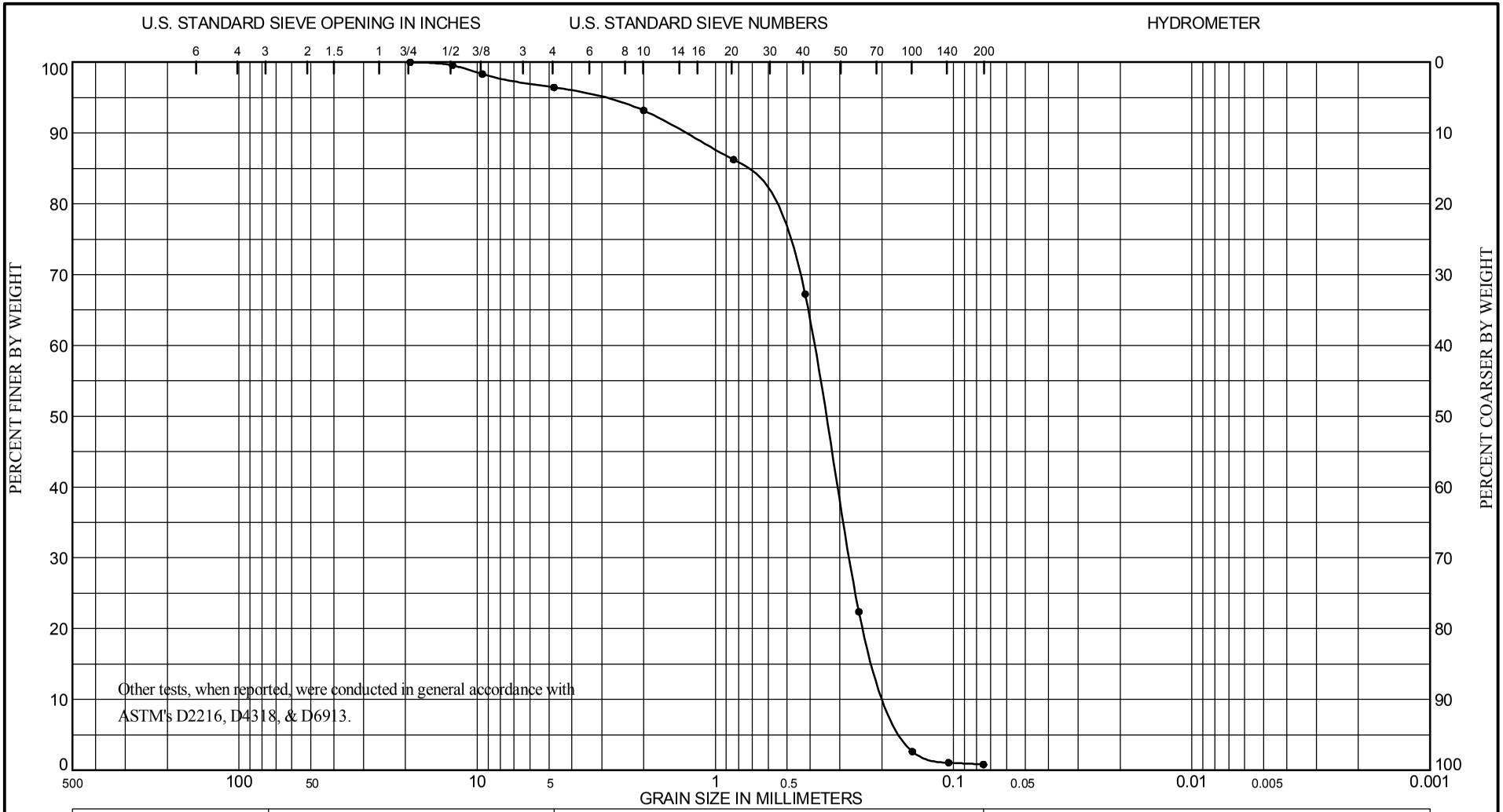
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14173° Long = -88.45402°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

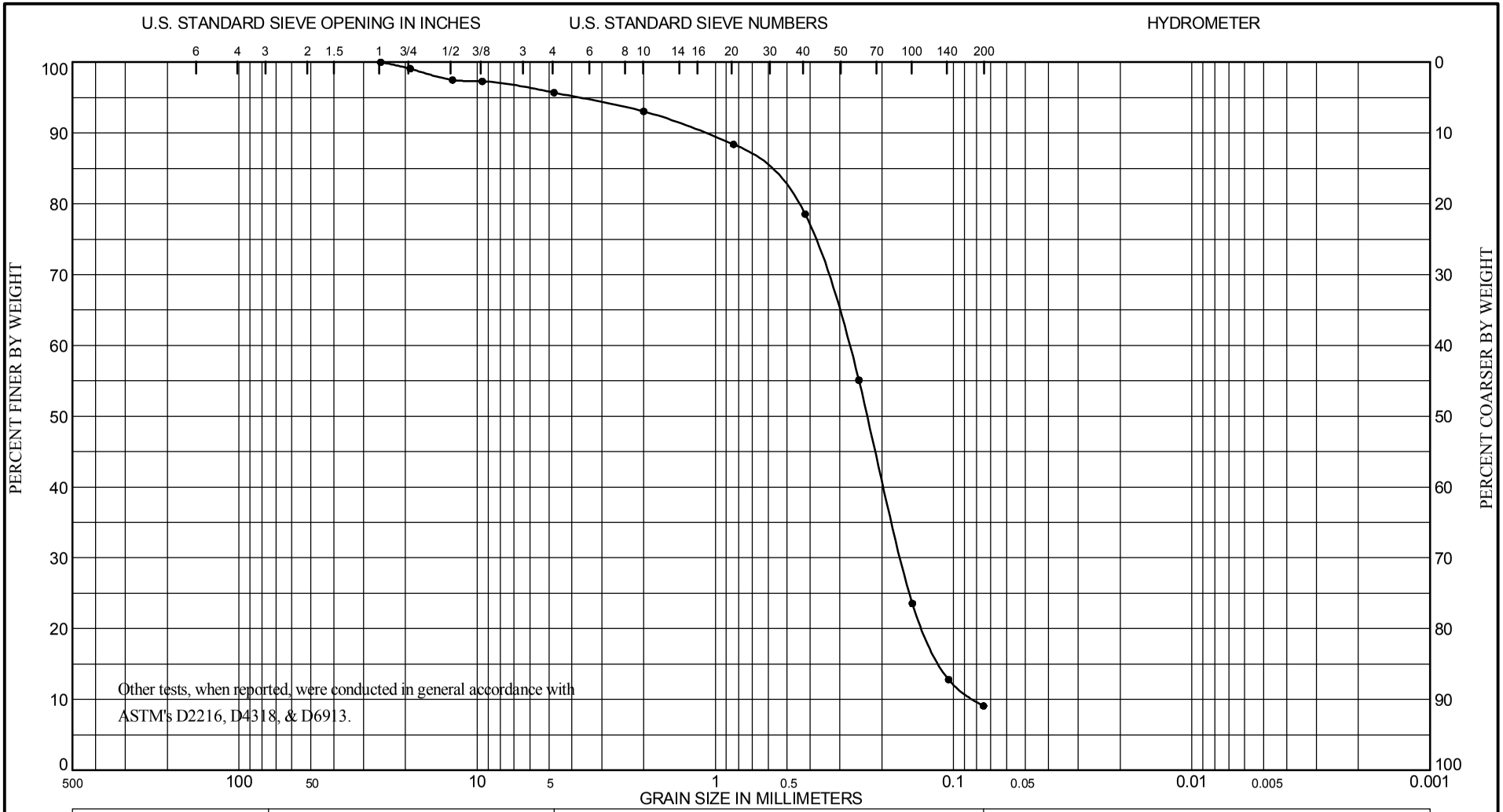
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 2.9	Greenish Gray, Poorly Graded Sand (SP), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4175
Hole No. BI-PBS-273-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	2.9 to 3.3	Very Dark Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4176
Hole No. BI-PBS-273-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-274-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-274-13 — LOCATION COORDINATES: E = 1,105,631 N = 231,150	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 3 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 46.8 Ft.
	15. DATE BORING — STARTED: 01-16-14 — COMPLETED: 01-16-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -47.2 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 8.9 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-47.2	0.0				
-48.6	1.4		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.325 mm % Fines: 0.9
-49.8	2.6		SAND, poorly-graded, mostly fine-grained sand-sized quartz, few shell fragments, lt. gray (SP)	B	Classification: SP Color: GLEY1 10Y 6/1- D50: 0.207 mm % Fines: 3.9
-50.7	3.5			C	Classification: SP-SM Color: GLEY1 10Y 6/1- D50: 0.198 mm % Fines: 8.3
-51.3	4.1		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, trace wood debris, medium gray (SM)		
			CLAY, lean, trace shell fragments, sandy, medium to dark gray (CL)	NS	
			CLAY, fat, sandy, hard, lt. gray, pale green, pale orange (CH)		
-56.0	8.8				
-56.1	8.9				
			CLAY, lean, sandy, lt. 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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

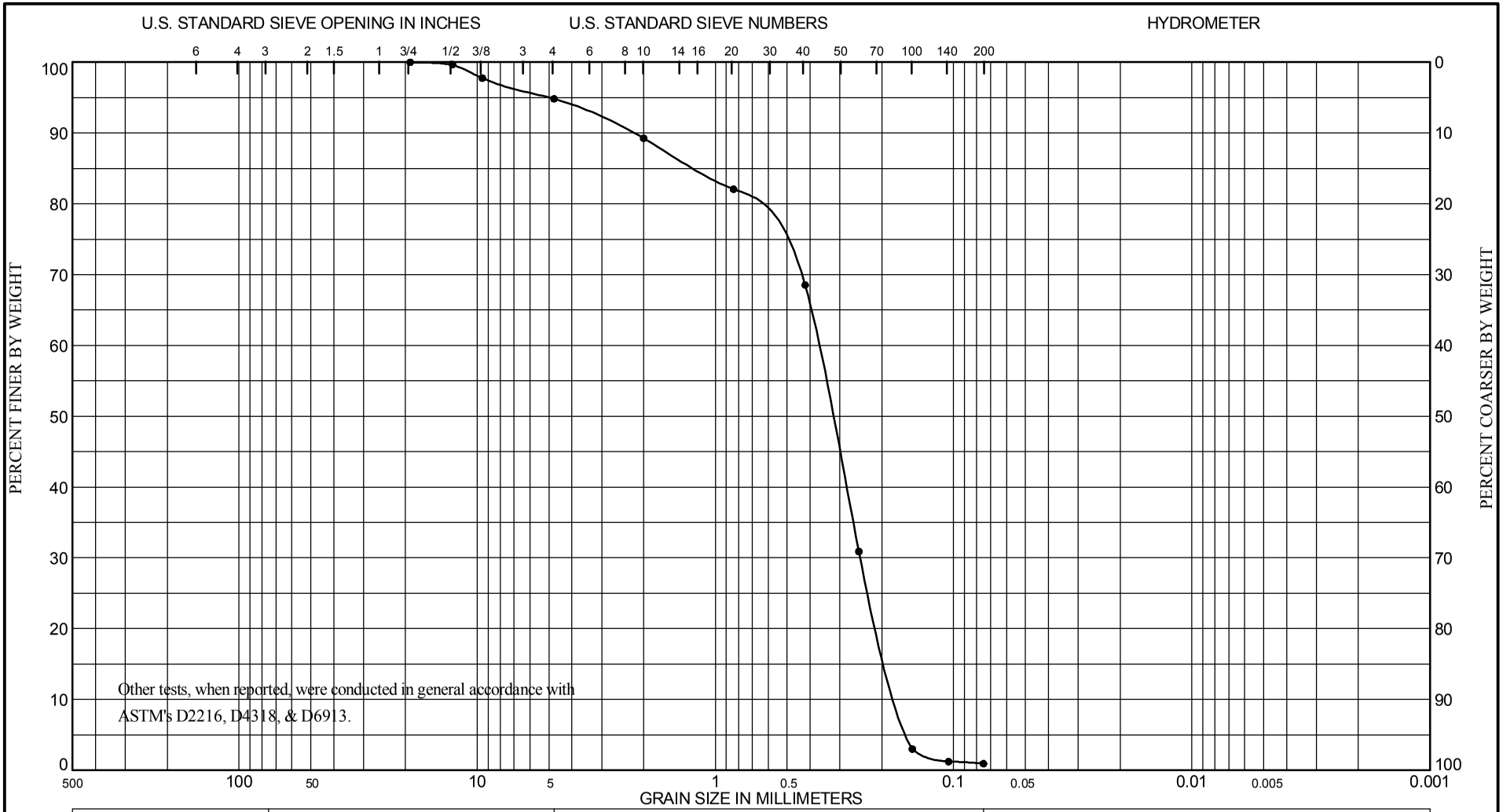
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.13506° Long = -88.44935°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

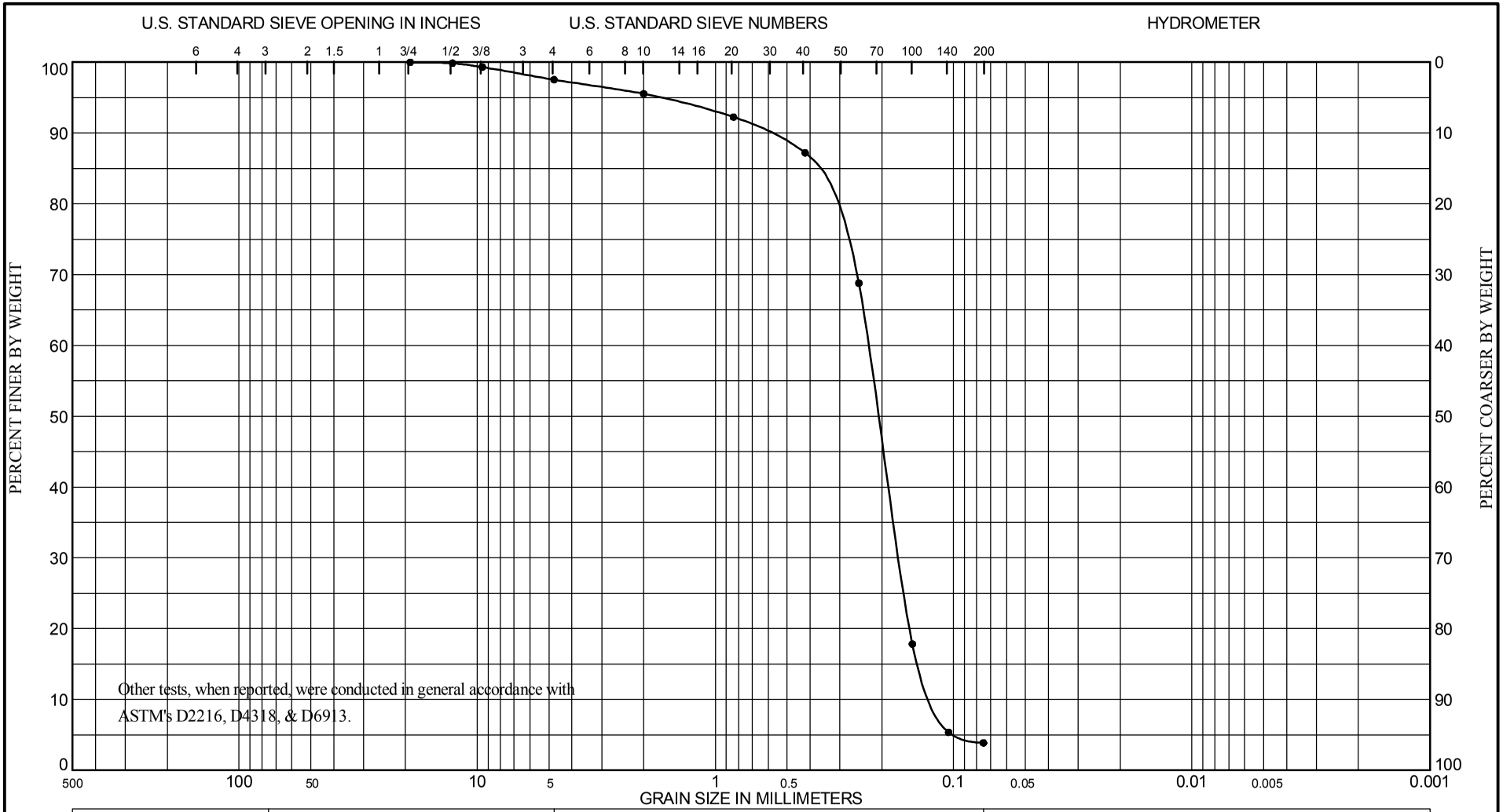
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 1.4	Olive Gray, Poorly Graded Sand (SP), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4195
Hole No. BI-PBS-274-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

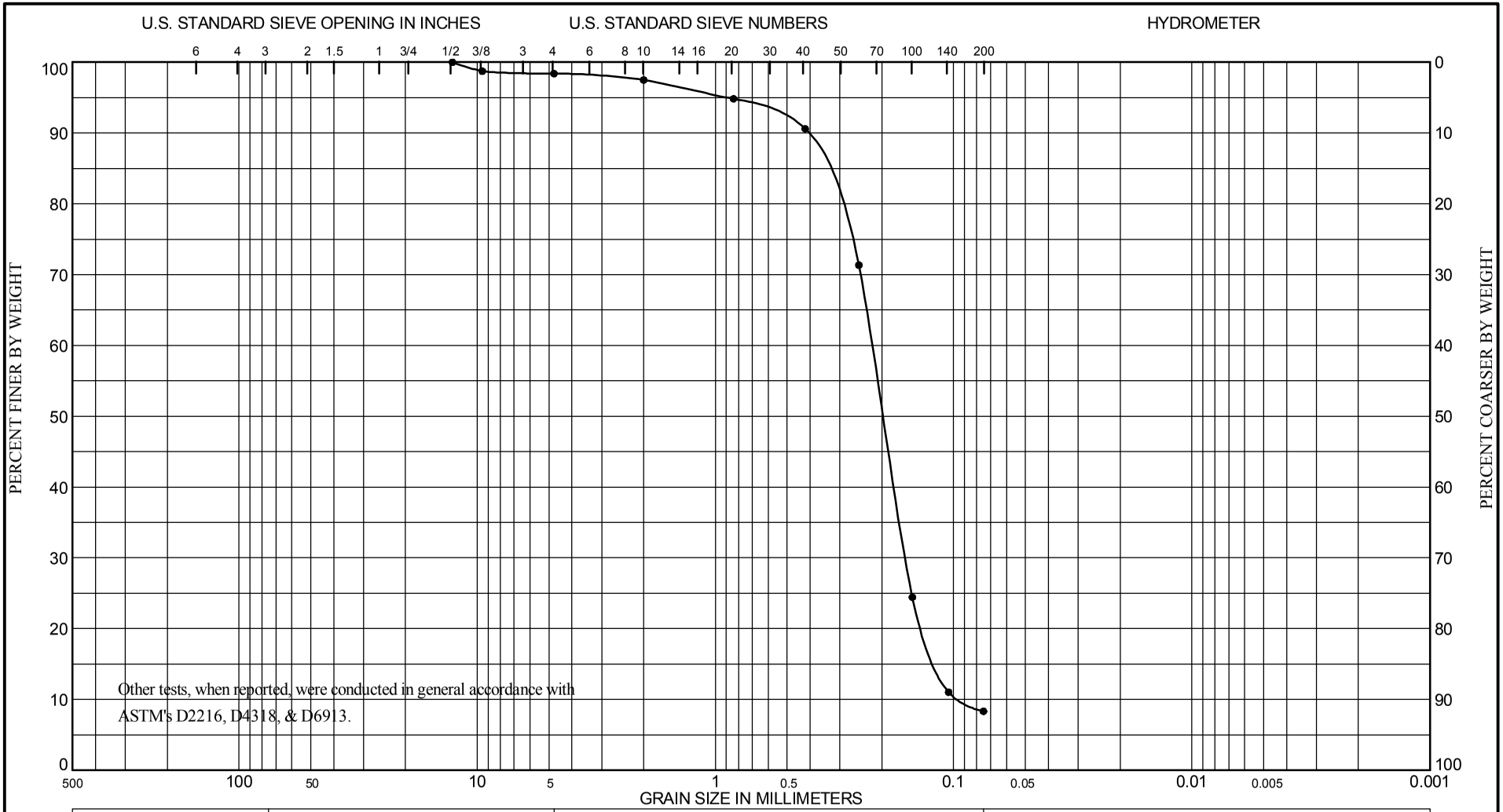
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	1.4 to 2.6	Dark Olive Gray, Poorly Graded Sand (SP), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4196
Hole No. BI-PBS-274-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	2.6 to 3.5	Dark Olive Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4197
Hole No. BI-PBS-274-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-275-13

DRILLING LOG	DIVISION South Atlantic	INSTALLATION Mobile District	SHEET 1 OF 2 SHEETS

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS West
2. BORING DESIGNATION	BI-PBS-275-13
LOCATION COORDINATES	E = 1,105,496 N = 232,757
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	16.9 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED 1 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	50.7 Ft.
15. DATE BORING	STARTED 01-12-14 / COMPLETED 01-12-14
16. ELEVATION TOP OF BORING	-51.4 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-51.4	0.0				
-53.0	1.6		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few shell fragments, medium gray (SP-SM)	A	Classification: SM Color: 2.5Y 5/1-gray D50: 0.173 mm % Fines: 14.1
-53.4	2.0		SAND, clayey, mostly fine-grained sand-sized quartz, trace shell fragments, medium gray (SC)		
-60.7	9.3		CLAY, lean, few shell fragments, interbedded with lenses of fine-grained SM and SC, medium gray (CL)	NS	
-67.0	15.6		CLAY, fat, sandy, lt. gray, pale orange (CH) At El. -65.8 Ft., grayish brown below this depth		
-67.3	15.9		GRAVEL, poorly-graded, mostly shell fragments, dark gray (GP)		
-68.3	16.9		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, little shell fragments, medium gray (SP-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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.13948° Long = -88.44976°

DRILLING LOG (Cont. Sheet)	INSTALLATION Mobile District		SHEET 2 OF 2 SHEETS
PROJECT MsCIP Barrier Island Restoration	COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83	VERTICAL NAVD88
LOCATION COORDINATES X = 1,105,496 Y = 232,757	ELEVATION TOP OF BORING -51.4 Ft.		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
			factor.		

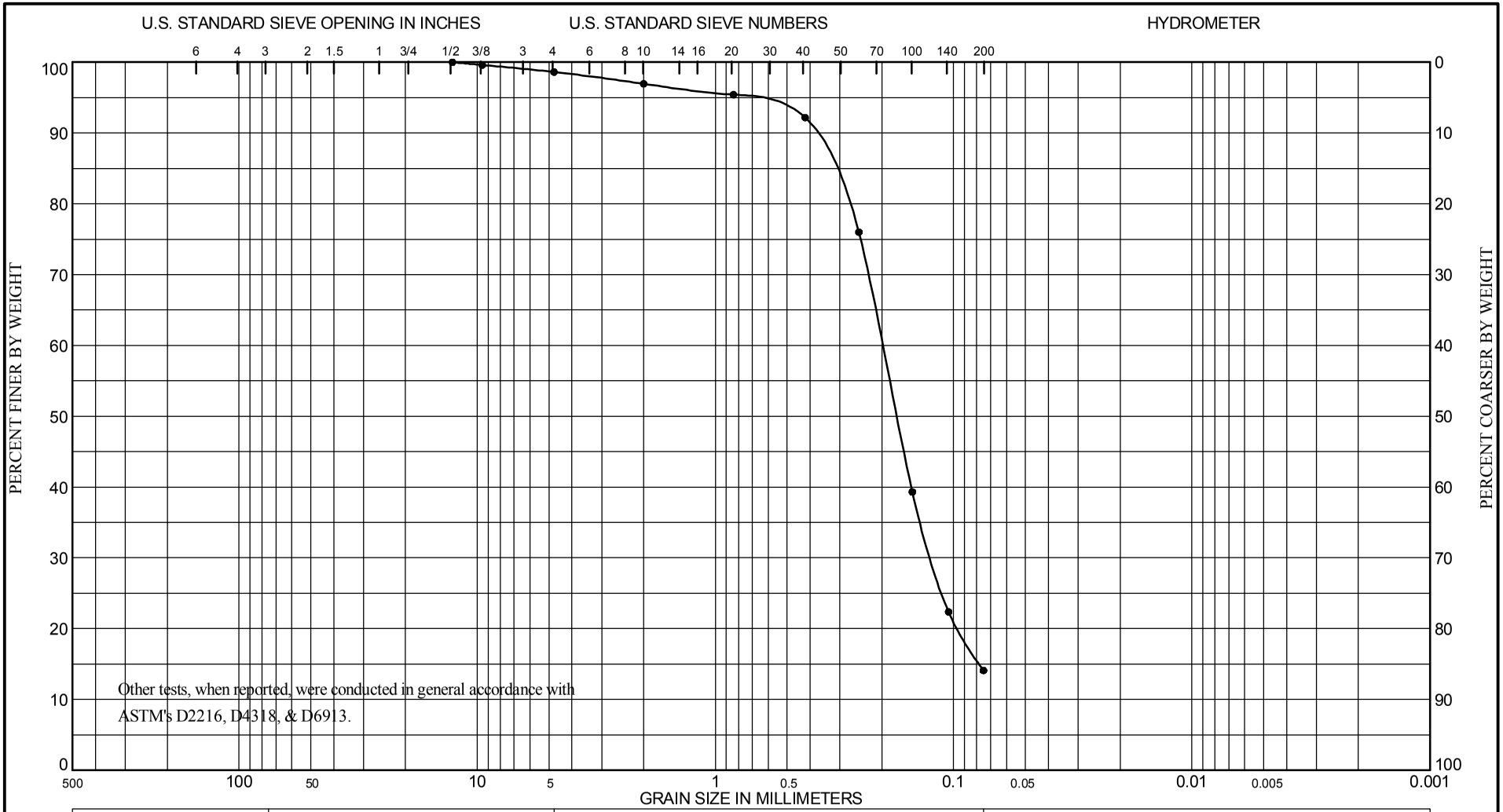
30
35
40
45
50
55
60

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.13948° Long = -88.44976°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 1.6	Very Dark Gray, Silty Sand (SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4177
Hole No. BI-PBS-275-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-276-13

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
	South Atlantic	Mobile District	

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS West
2. BORING DESIGNATION	BI-PBS-276-13
LOCATION COORDINATES	E = 1,104,125 N = 229,723
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	14.6 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED 2 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	47.7 Ft.
15. DATE BORING	STARTED 01-18-14 / COMPLETED 01-18-14
16. ELEVATION TOP OF BORING	-48.0 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Mike FitzHarris, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-48.0	0.0				
-49.8	1.8		SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace shell, gray (SP)	A	Classification: SP Color: 2.5Y 6/1-gray D50: 0.21 mm % Fines: 3
-53.4	5.4		SAND, silty, mostly fine-grained sand-sized quartz, trace shell, trace clay, gray (SM)	B	Classification: SP-SM Color: 2.5Y 5/1-gray D50: 0.187 mm % Fines: 10.1
-53.7	5.7		SAND, clayey, mostly fine-grained sand-sized quartz, gray (SC)	NS	
-57.9	9.9		CLAY, lean, trace fine-grained sand, soft, gray (CL)		
-62.6	14.6		CLAY, fat, stiff, mottled gray and lt. brown (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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

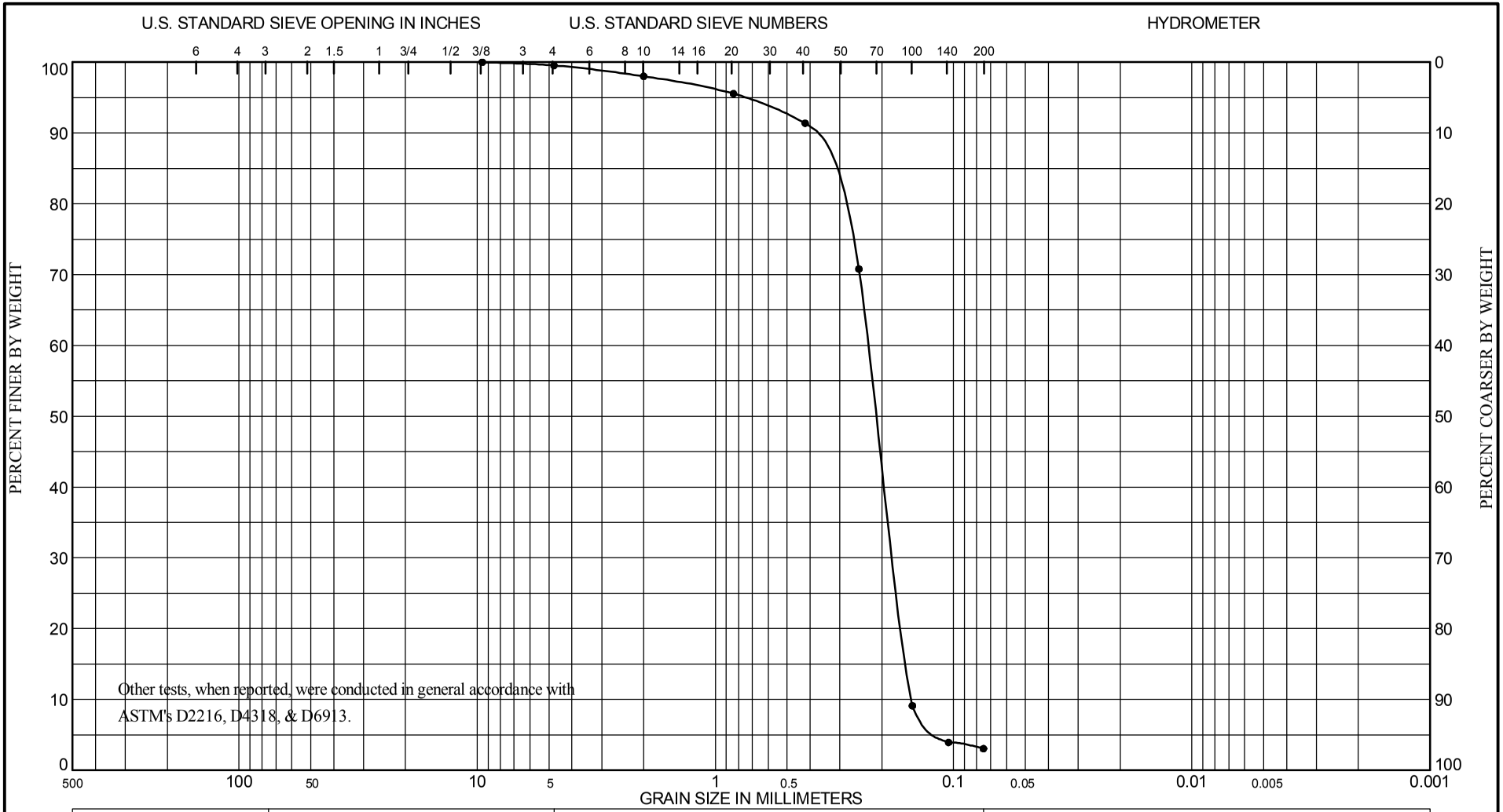
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.13115° Long = -88.45413°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

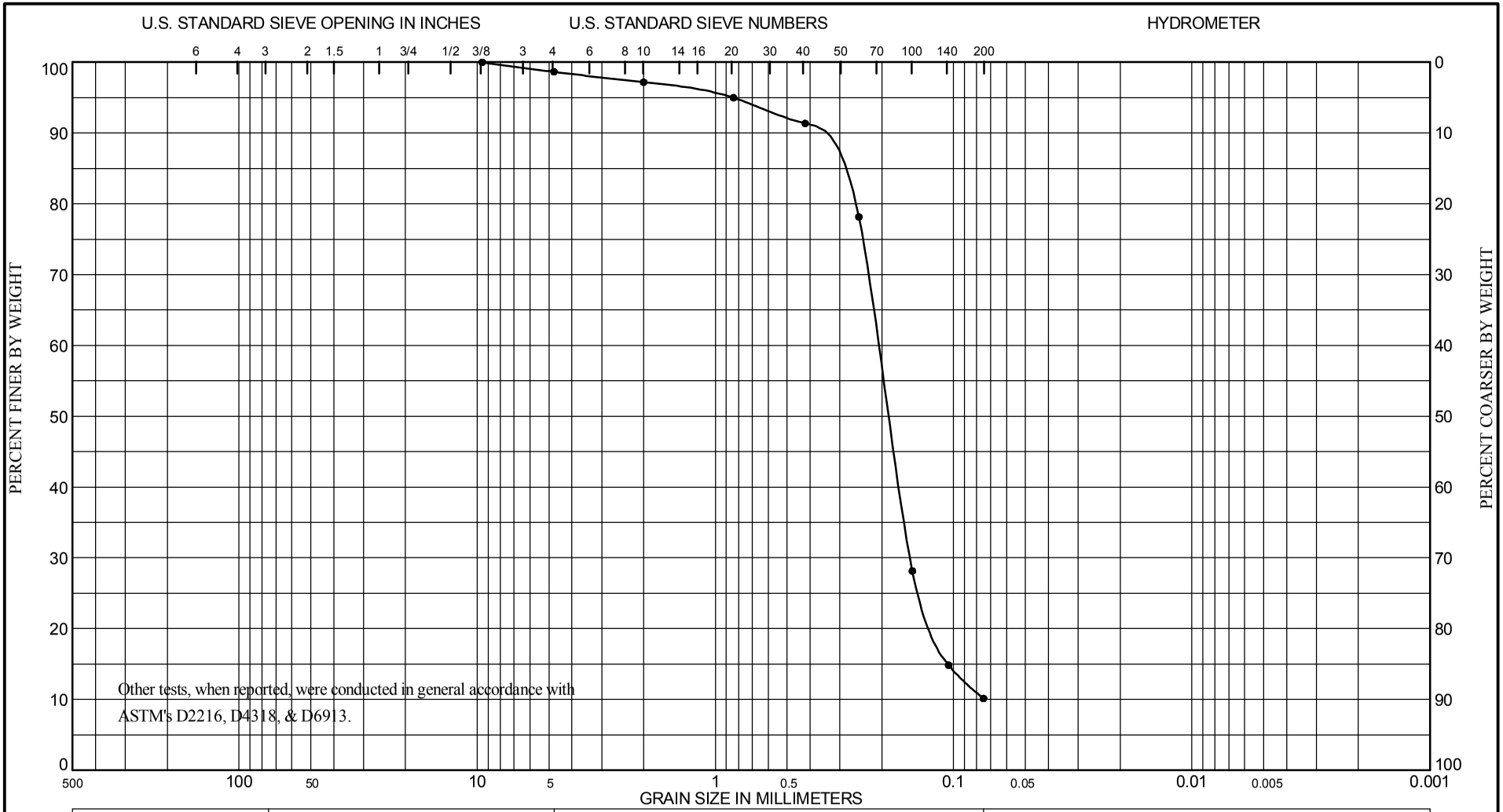
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 1.8	Very Dark Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4212
Hole No. BI-PBS-276-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	1.8 to 5.4	Very Dark Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4213
Hole No. BI-PBS-276-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-277-13

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
	South Atlantic	Mobile District	

1. PROJECT MsCIP Barrier Island Restoration Petit Bois Pass-OCS West		9. SIZE AND TYPE OF BIT N/A	
		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83 / VERTICAL NAVD88
2. BORING DESIGNATION BI-PBS-277-13	LOCATION COORDINATES E = 1,093,622 N = 224,984	11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore	☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY Corps of Engineers - CESAM	CONTRACTOR FILE NO.	12. TOTAL SAMPLES	DISTURBED: 3 UNDISTURBED (UD): 0
4. NAME OF DRILLER Construction Solutions International, Inc.		13. TOTAL NUMBER CORE BOXES	
5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED	DEG. FROM VERTICAL / BEARING	14. WATER DEPTH 48.4 Ft.	
		15. DATE BORING	STARTED: 01-27-14 COMPLETED: 01-27-14
6. THICKNESS OF OVERBURDEN N/A		16. ELEVATION TOP OF BORING -48.1 Ft.	
7. DEPTH DRILLED INTO ROCK N/A		17. TOTAL RECOVERY FOR BORING 100%	
8. TOTAL DEPTH OF BORING 14.6 Ft.		18. SIGNATURE AND TITLE OF INSPECTOR Tom Powers, Geologist	

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-48.1	0.0				
-50.5	2.4		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, few shell fragments, lt. gray (SP) At El. -49.5 Ft., fine grained to base of unit	A	Classification: SP Color: 2.5Y 5/1-gray D50: 0.209 mm % Fines: 2.5
-52.2	4.1		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few shell fragments, lt. to medium gray (SP-SM)	B	Classification: SP Color: 2.5Y 5/1-gray D50: 0.202 mm % Fines: 4.1
-54.4	6.3		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, medium gray (SM)	C	Classification: SM Color: 2.5Y 5/1-gray D50: 0.147 mm % Fines: 13
-55.4	7.3		SAND, silty, clayey, mostly fine-grained sand-sized quartz, few shell fragments, medium to dark gray (SC-SM)	NS	
-56.1	8.0		CLAY, lean, few shell fragments, sandy, medium to dark gray (CL)		
-59.5	11.4		CLAY, fat, few sand, lt. gray, pale orange, pale green (CH)		
-61.0	12.9		CLAY, lean, sandy, medium to lt. gray (CL)		
-62.7	14.6		CLAY, fat, sandy, medium to lt. 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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

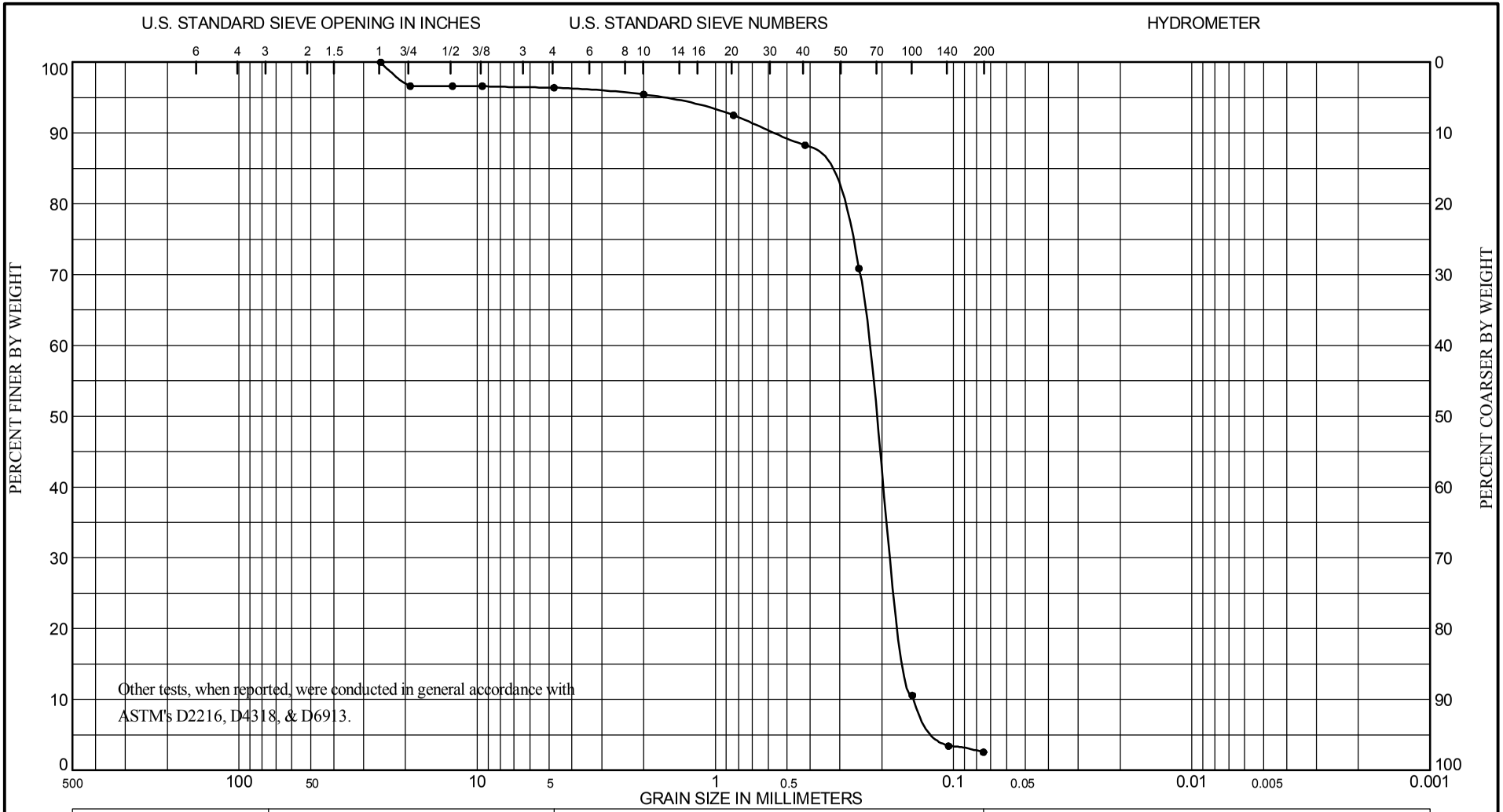
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.11821° Long = -88.48740°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

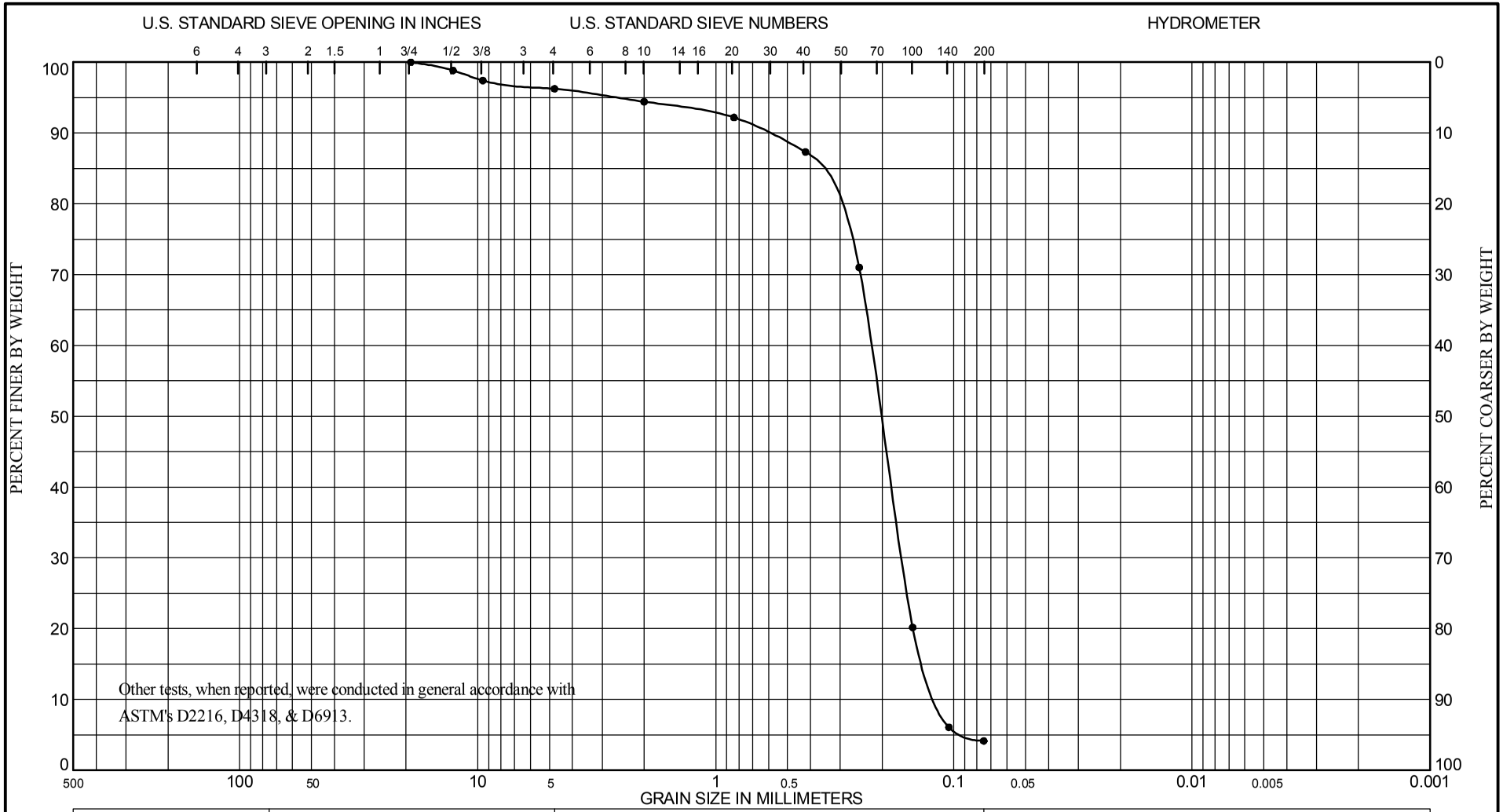
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 2.4	Dark Gray, Poorly Graded Sand (SP), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4570
Hole No. BI-PBS-277-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

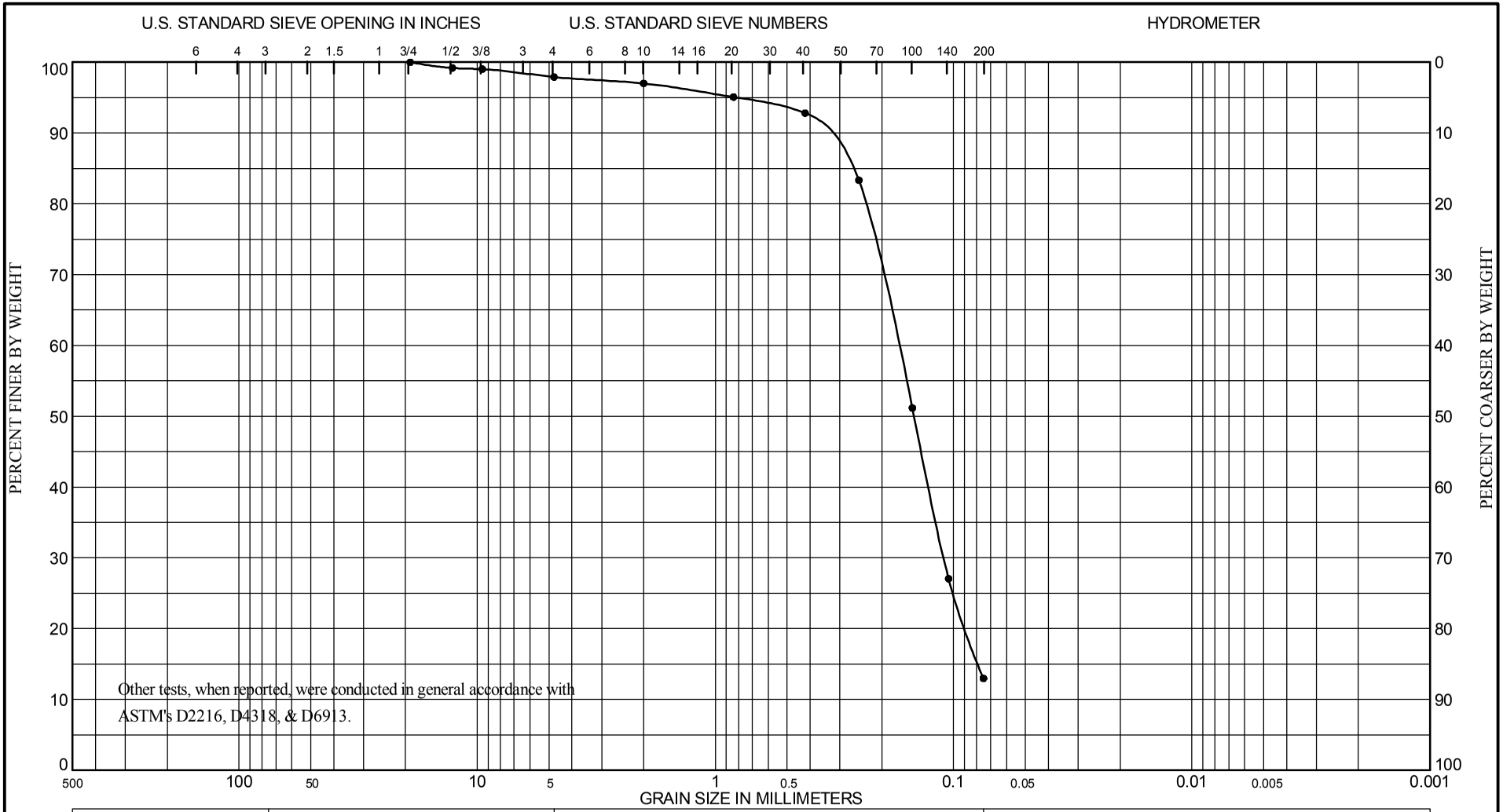
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	2.4 to 4.1	Very Dark Gray, Poorly Graded Sand (SP), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4571
Hole No. BI-PBS-277-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	4.1 to 6.3	Very Dark Gray, Silty Sand (SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4572
Hole No. BI-PBS-277-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-278-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 2 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-278-13 — LOCATION COORDINATES: E = 1,086,726 N = 227,389	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 3 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 50.7 Ft.
	15. DATE BORING — STARTED: 01-27-14 — COMPLETED: 01-27-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -50.1 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 19.1 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-50.1	0.0				
-53.6	3.5		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, medium gray (SM)	A	Classification: SP-SM Color: 2.5Y 5/1-gray D50: 0.178 mm % Fines: 7.2
-55.1	5.0		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few shell fragments, lt. to medium gray (SP-SM)	B	Classification: SP-SM Color: 2.5Y 5/1-gray D50: 0.18 mm % Fines: 7.3
-60.3	10.2		SAND, silty, mostly fine-grained sand-sized quartz, trace shell fragments, lt. to medium gray (SM)	C	Classification: SM Color: 2.5Y 5/1-gray D50: 0.113 mm % Fines: 16.9
-69.2	19.1		CLAY, lean, soft between depths of 10.2 to 14.3 ft., firm beneath to depth of 19.1 ft., medium 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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.12488° Long = -88.50919°

DRILLING LOG (Cont. Sheet)	INSTALLATION Mobile District		SHEET 2 OF 2 SHEETS
PROJECT MsCIP Barrier Island Restoration	COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83	VERTICAL NAVD88
LOCATION COORDINATES X = 1,086,726 Y = 227,389	ELEVATION TOP OF BORING -50.1 Ft.		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
			factor.		

30
35
40
45
50
55
60

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.12488° Long = -88.50919°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192

COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

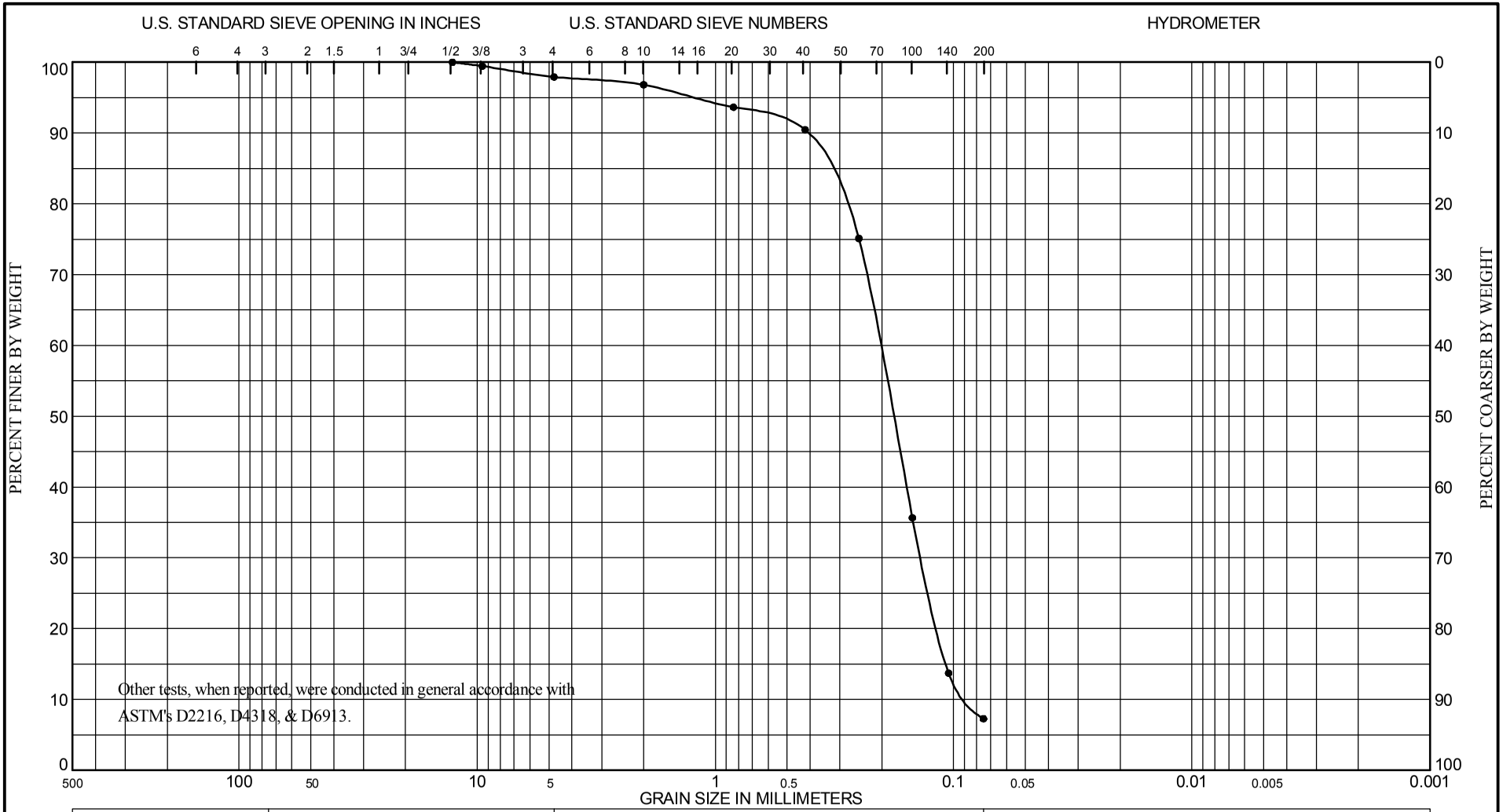
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 3.5	Very Dark Gray, Poorly Graded Silty Sand (SP-SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4576
Hole No. BI-PBS-278-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

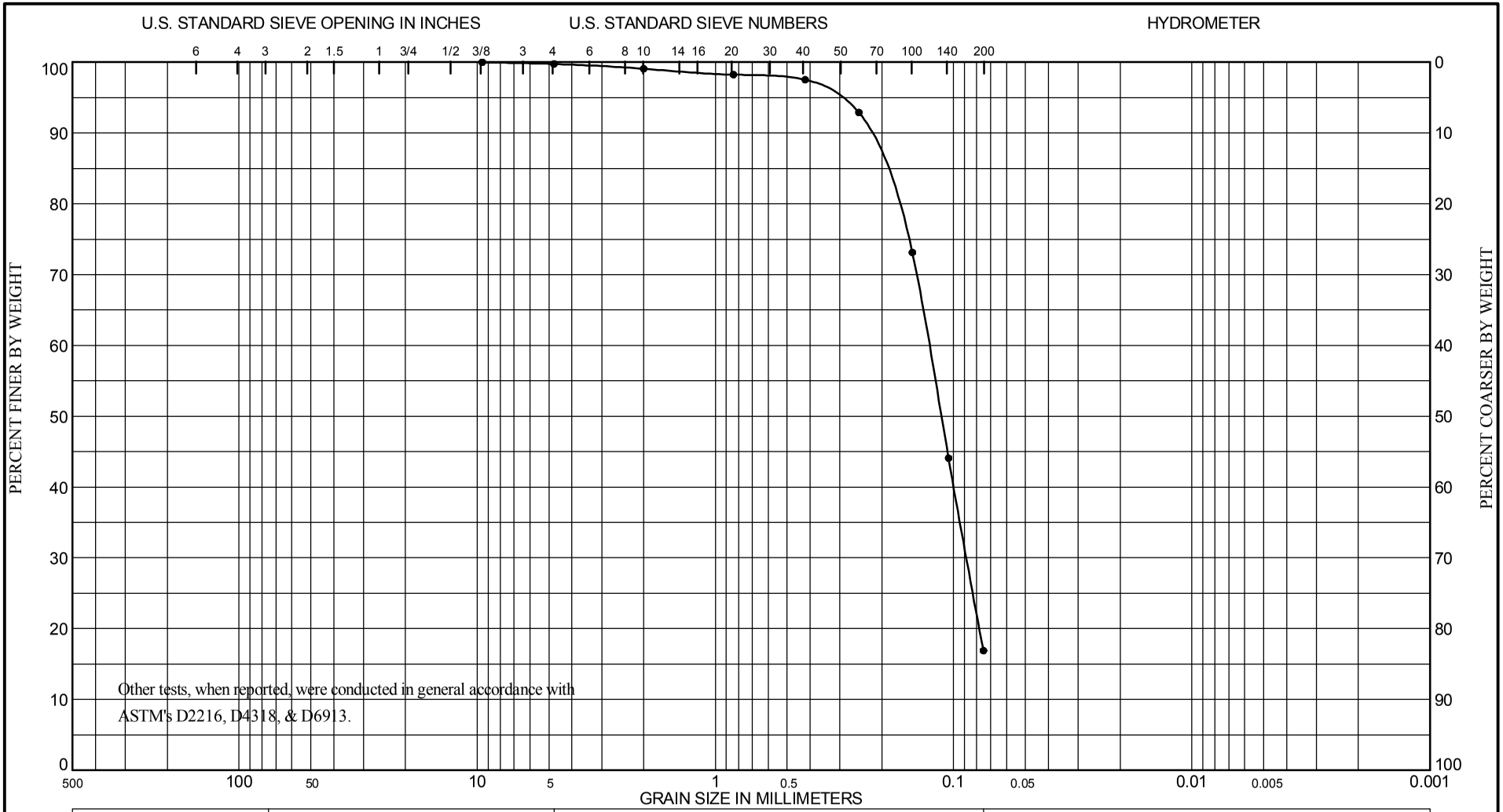
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	3.5 to 5.0	Dark Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel				
		size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4577
Hole No. BI-PBS-278-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	5.0 to 10.2	Dark Gray, Silty Sand (SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4578
Hole No. BI-PBS-278-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-279-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-279-13 — LOCATION COORDINATES: E = 1,094,971 N = 226,453	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 1 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 49.7 Ft.
	15. DATE BORING — STARTED: 01-27-14 — COMPLETED: 01-27-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -49.7 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 7.3 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-49.7	0.0				
-50.4	0.7		SAND, poorly-graded with silt, mostly fine to medium-grained sand-sized quartz, little shell fragments, lt. to medium gray (SP-SM)	A	Classification: SP-SM Color: 2.5Y 6/1-gray D50: 0.206 mm % Fines: 5.3
-51.4	1.7				
-51.7	2.0		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, trace shell fragments, grayish brown (SP-SM)		
			SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, medium gray (SM)	NS	
-55.0	5.3		CLAY, lean, sandy, medium dark gray (CL) At El. -53.2 Ft., lt. brown		
-57.0	7.3		CLAY, fat, sandy, red, lt. brown, lt. 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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

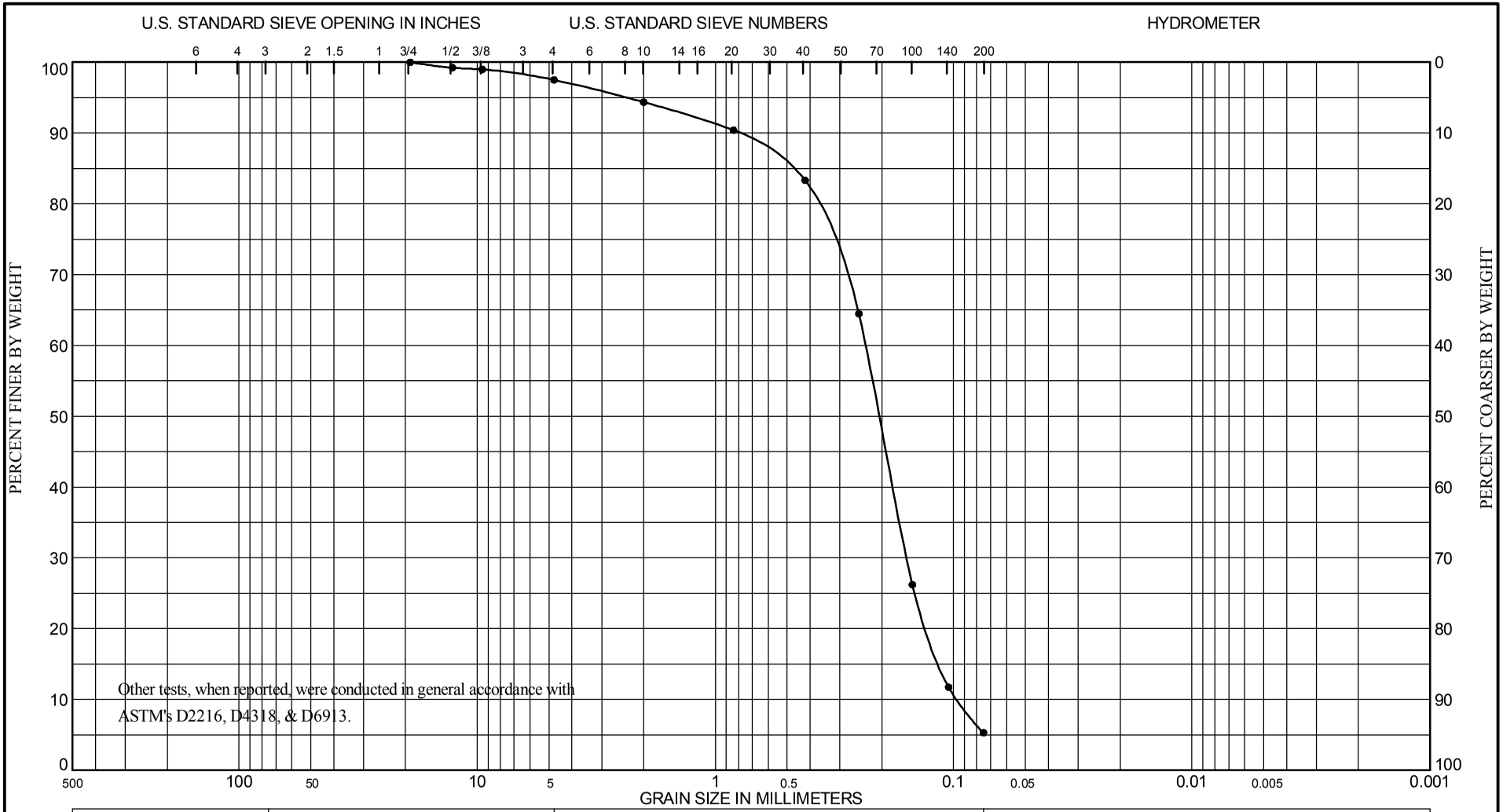
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.12224° Long = -88.48312°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 1.7	Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4566
Hole No. BI-PBS-279-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-281-13

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
	South Atlantic	Mobile District	

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS West
2. BORING DESIGNATION	BI-PBS-281-13
LOCATION COORDINATES	E = 1,093,394 N = 227,212
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	12.5 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED 2 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	48.7 Ft.
15. DATE BORING	STARTED 01-22-14 / COMPLETED 01-22-14
16. ELEVATION TOP OF BORING	-48.7 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-48.7	0.0				
-52.0	3.3		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, few shell fragments, lt. gray (SP)	A	Classification: SP Color: 10Y 8/1-light greenish gray D50: 0.225 mm % Fines: 2.1
-56.9	8.2		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, medium gray (SM)	B	Classification: SM Color: 10Y 7/1-light greenish gray D50: 0.14 mm % Fines: 12.2
-60.6	11.9		CLAY, fat, sandy, hard, sand-filled voids to 9.8 ft. depth, lt. gray, pale orange (CH)	NS	
-61.2	12.5		SAND, silty, mostly fine to medium-grained sand-sized quartz, very slight plasticity, 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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

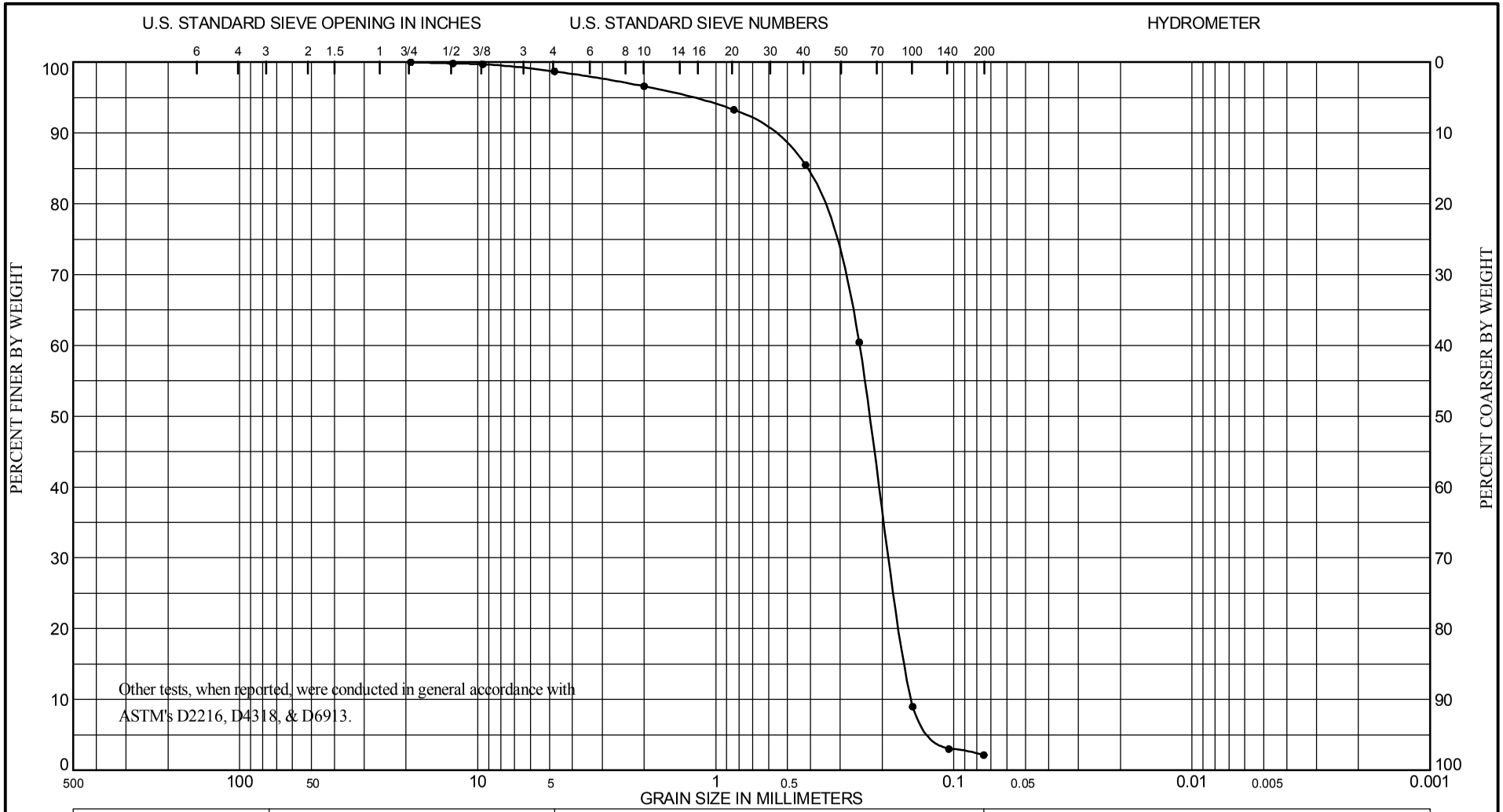
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.12434° Long = -88.48810°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

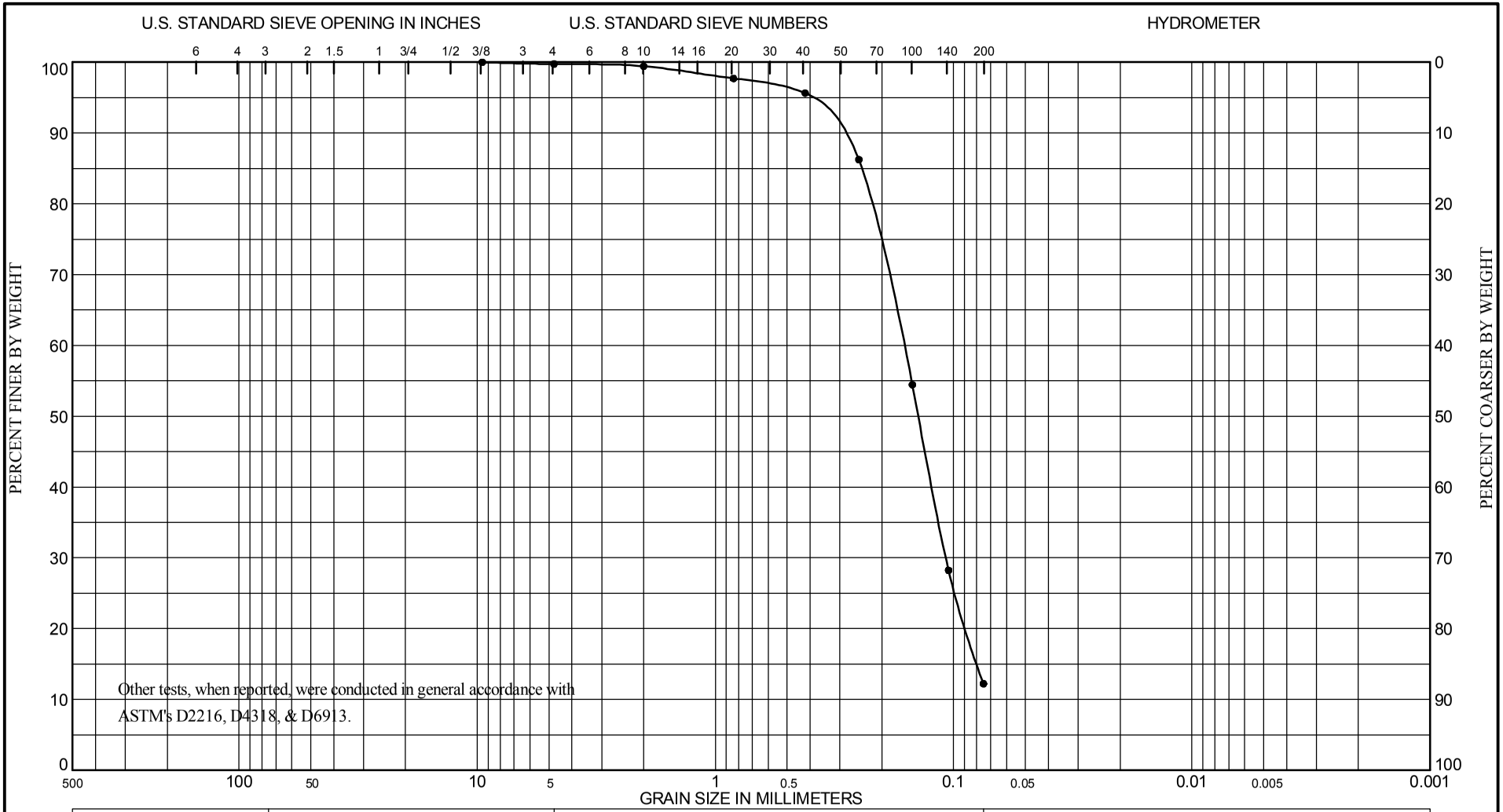
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 3.3	Gray, Poorly Graded Sand (SP), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4542
Hole No. BI-PBS-281-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	3.3 to 8.2	Very Dark Gray, Silty Sand (SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4543
Hole No. BI-PBS-281-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-282-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-282-13 — LOCATION COORDINATES: E = 1,091,333 N = 224,853	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 1 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 49.3 Ft.
	15. DATE BORING — STARTED: 02-18-14 — COMPLETED: 02-18-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -49.0 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 7.4 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-49.0	0.0				
-51.2	2.2		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, lt. to medium gray (SM)	A	Classification: SP-SM Color: 2.5Y 6/1-gray D50: 0.183 mm % Fines: 6.9
-56.4	7.4		CLAY, lean, trace shell fragments, soft to 4.5 ft., firm to base of unit; erosional contact with overlying SM, 45 degrees, medium 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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

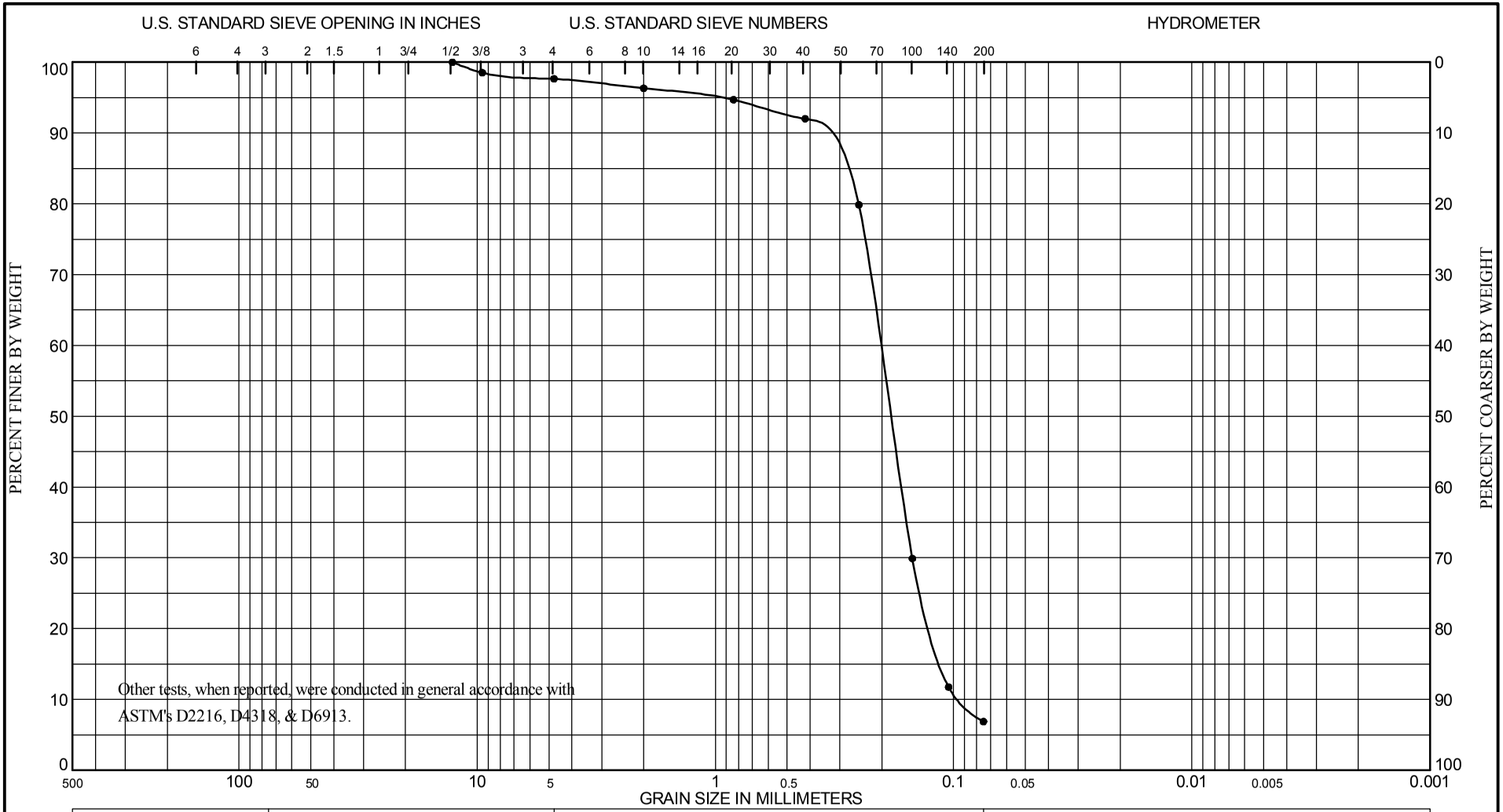
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.11787° Long = -88.49464°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 2.2	Greenish Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4851
Hole No. BI-PBS-282-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-283-13

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 2 SHEETS
	South Atlantic	Mobile District	

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS West
2. BORING DESIGNATION	BI-PBS-283-13
LOCATION COORDINATES	E = 1,089,620 N = 225,714
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	19.9 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED 3 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	50.4 Ft.
15. DATE BORING	STARTED 01-27-14 / COMPLETED 01-27-14
16. ELEVATION TOP OF BORING	-49.9 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-49.9	0.0				
-51.9	2.0		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few shell fragments, lt. to medium gray (SP-SM)	A	Classification: SP-SM Color: 2.5Y 5/1-gray D50: 0.183 mm % Fines: 6
-59.4	9.5		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, lt. to medium gray (SM)	B	Classification: SP-SM Color: 2.5Y 5/1-gray D50: 0.152 mm % Fines: 11
				C	Classification: SM Color: 2.5Y 5/1-gray D50: 0.111 mm % Fines: 19
-68.4	18.5		CLAY, lean, sandy, soft, very loose between 10 and 12 ft. depth, medium dark gray (CL)	NS	
-69.8	19.9		CLAY, fat, firm, 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.

3. Seafloor elevation calculated using sampling

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.12025° Long = -88.50005°

DRILLING LOG (Cont. Sheet)	INSTALLATION Mobile District		SHEET 2 OF 2 SHEETS
PROJECT MsCIP Barrier Island Restoration	COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83	VERTICAL NAVD88
LOCATION COORDINATES X = 1,089,620 Y = 225,714	ELEVATION TOP OF BORING -49.9 Ft.		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
			vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.		

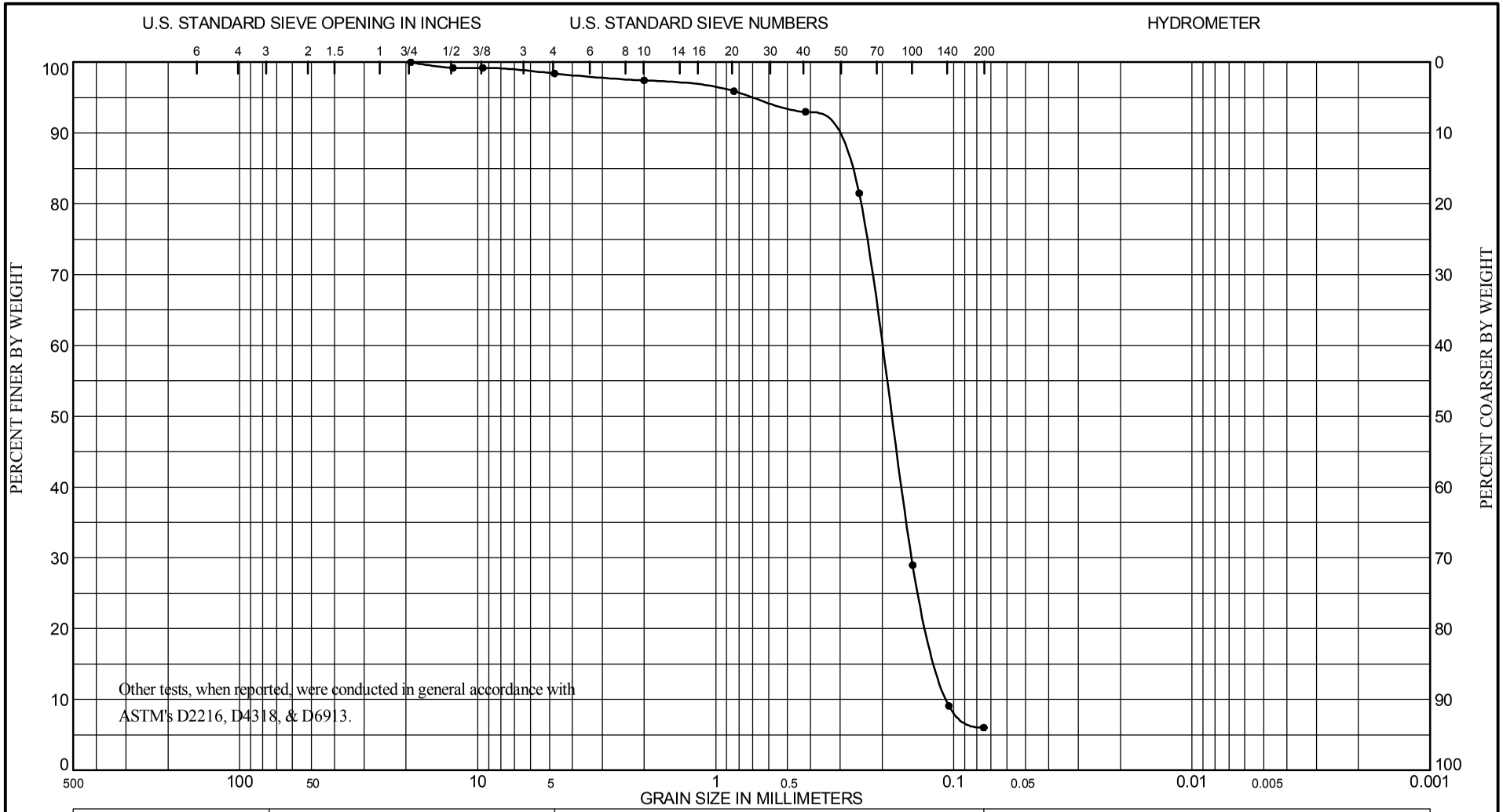
30
35
40
45
50
55
60

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.12025° Long = -88.50005°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

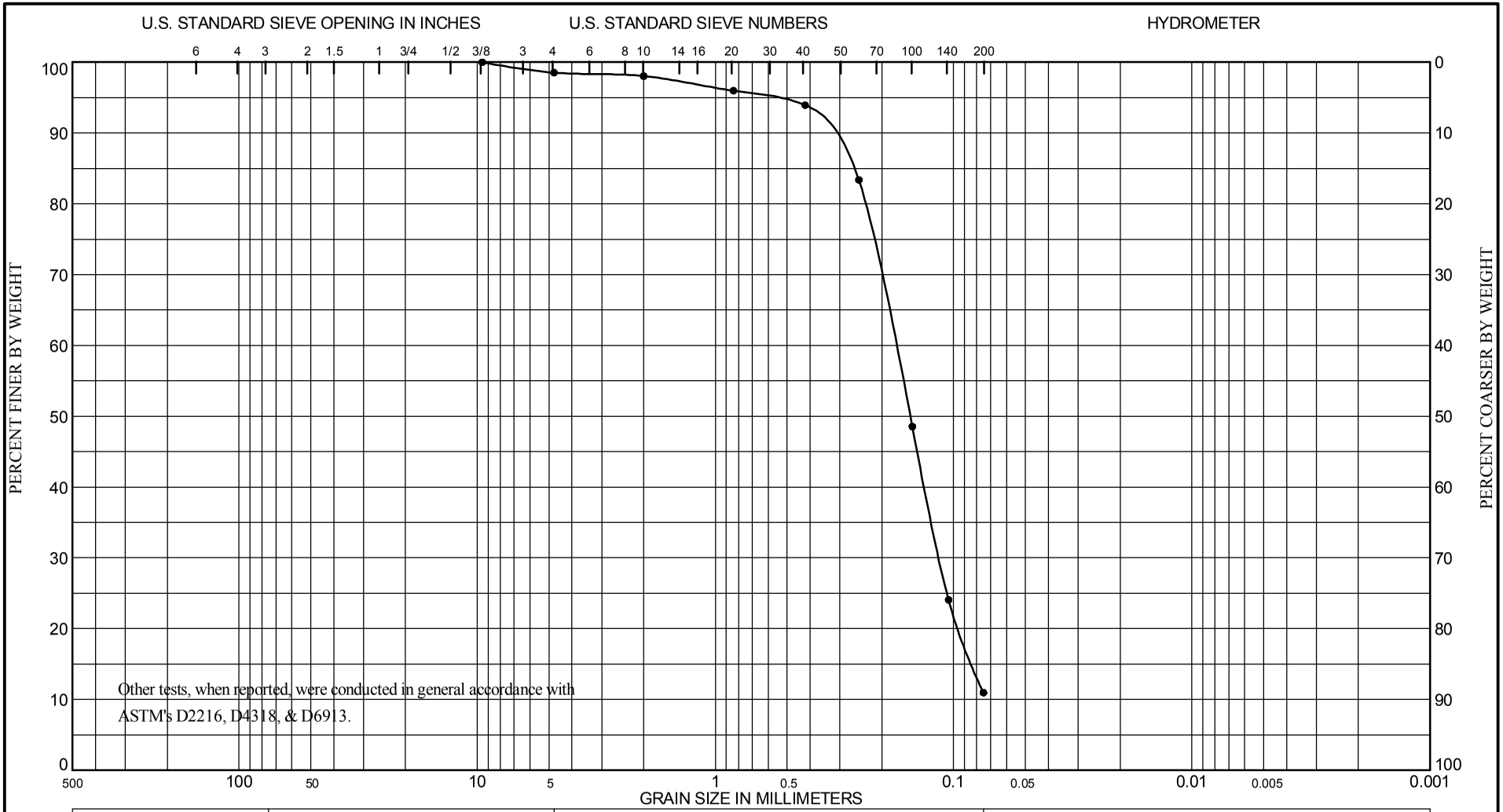
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 2.0	Very Dark Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4573
Hole No. BI-PBS-283-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

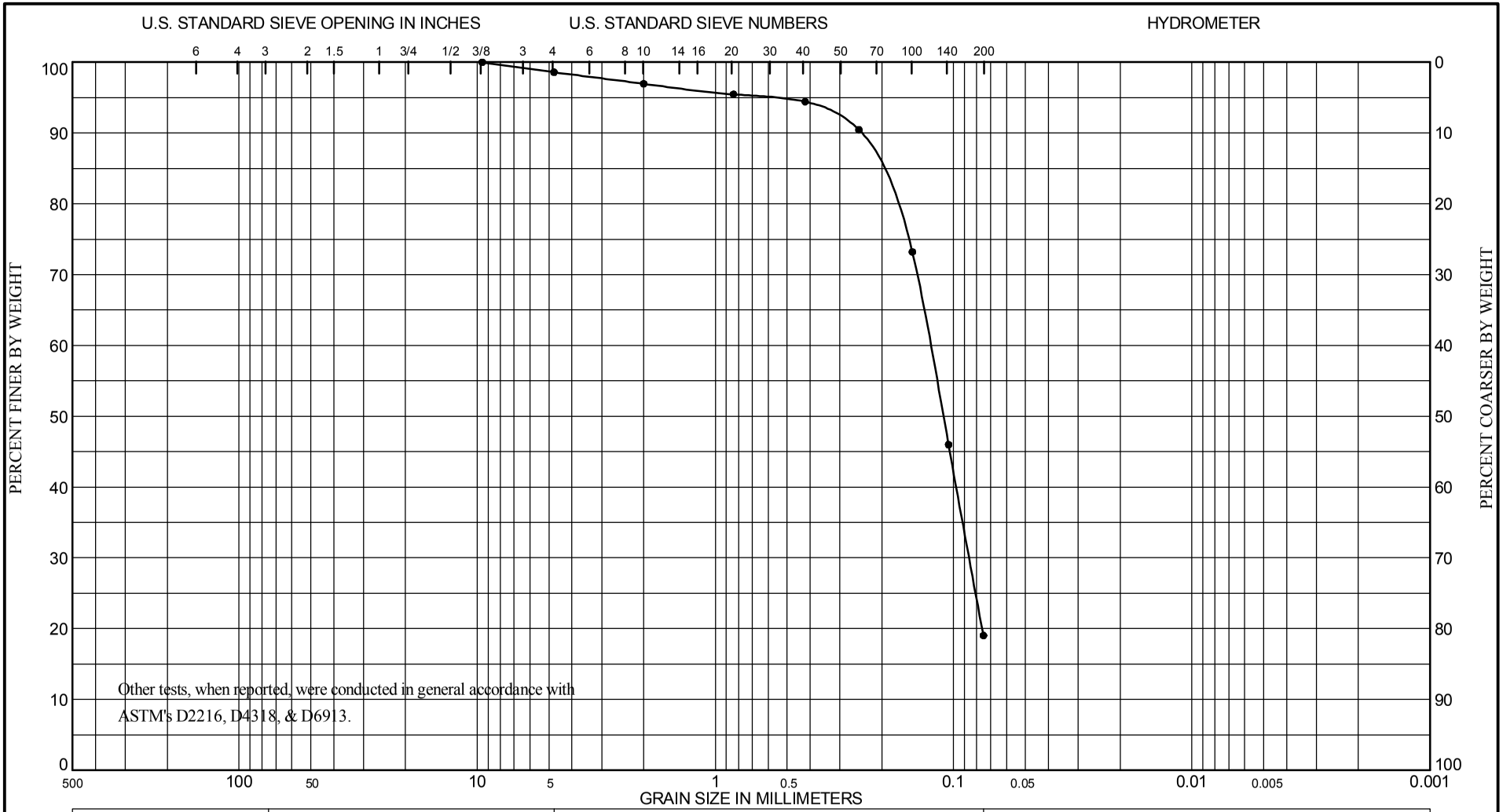
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	2.0 to 6.0	Very Dark Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4574
Hole No. BI-PBS-283-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	6.0 to 9.5	Very Dark Gray, Silty Sand (SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4575
Hole No. BI-PBS-283-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-284-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-284-13 — LOCATION COORDINATES: E = 1,090,648 N = 226,593	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 3 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 48.4 Ft.
	15. DATE BORING — STARTED: 01-26-14 — COMPLETED: 01-26-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -47.2 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 17.5 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-47.2	0.0				
-50.1	2.9		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace shell fragments, becomes fine-grained in lower half of unit, lt. gray (SP)	A	Classification: SP Color: 2.5Y 6/1-gray D50: 0.201 mm % Fines: 1.8
-57.7	10.5		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, brownish gray (SM)	B	Classification: SP-SM Color: 2.5Y 6/1-gray D50: 0.194 mm % Fines: 5.6
				C	Classification: SM Color: 2.5Y 6/1-gray D50: 0.133 mm % Fines: 13
-58.3	11.1		SILT, inorganic-L, few shell fragments, brownish gray (ML)		
-64.7	17.5		CLAY, lean, few shell fragments, sandy, medium to dark gray (CL) At El. -60.4 Ft., very sandy to 14.1 ft.	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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

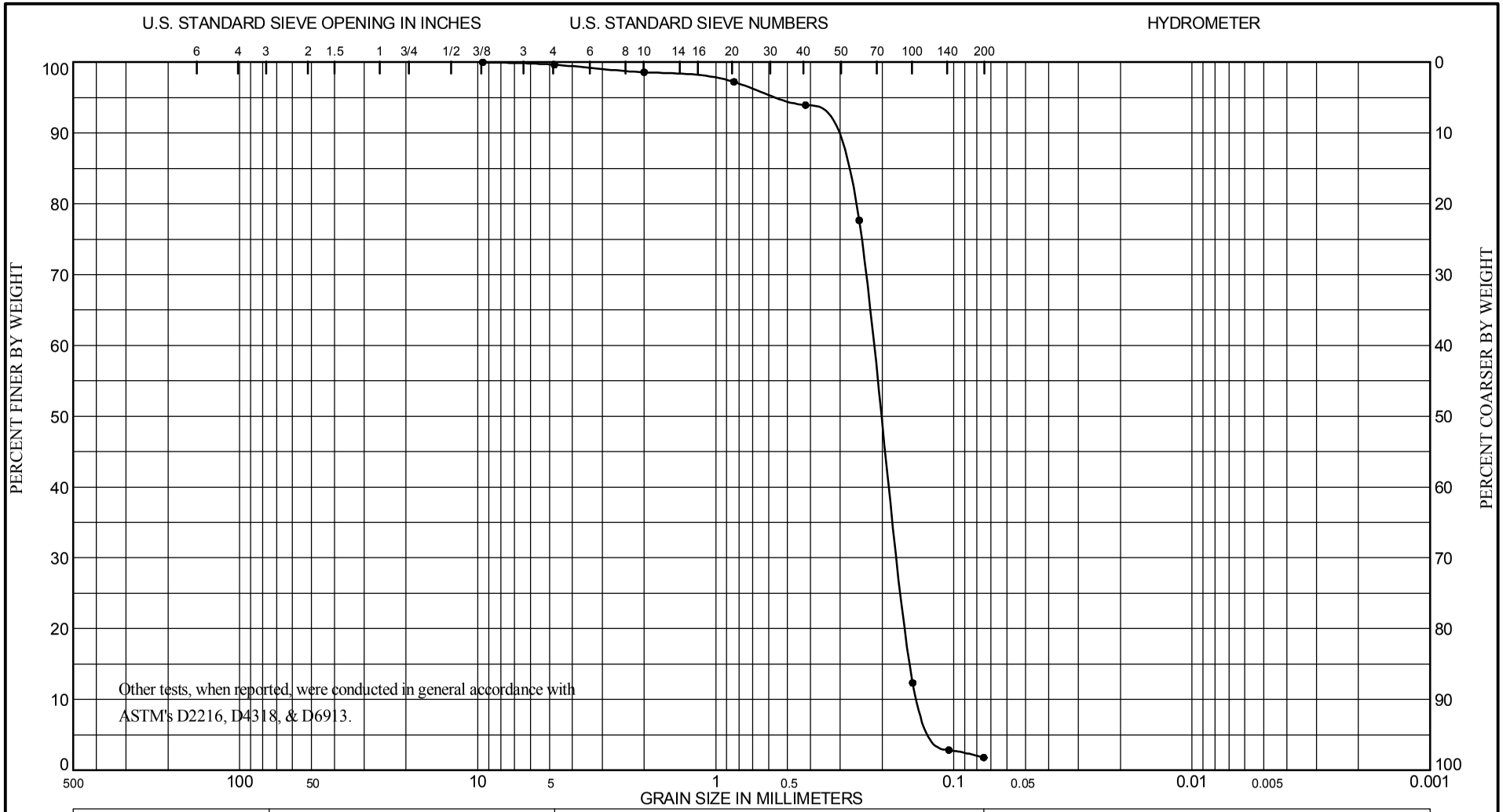
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.12266° Long = -88.49679°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

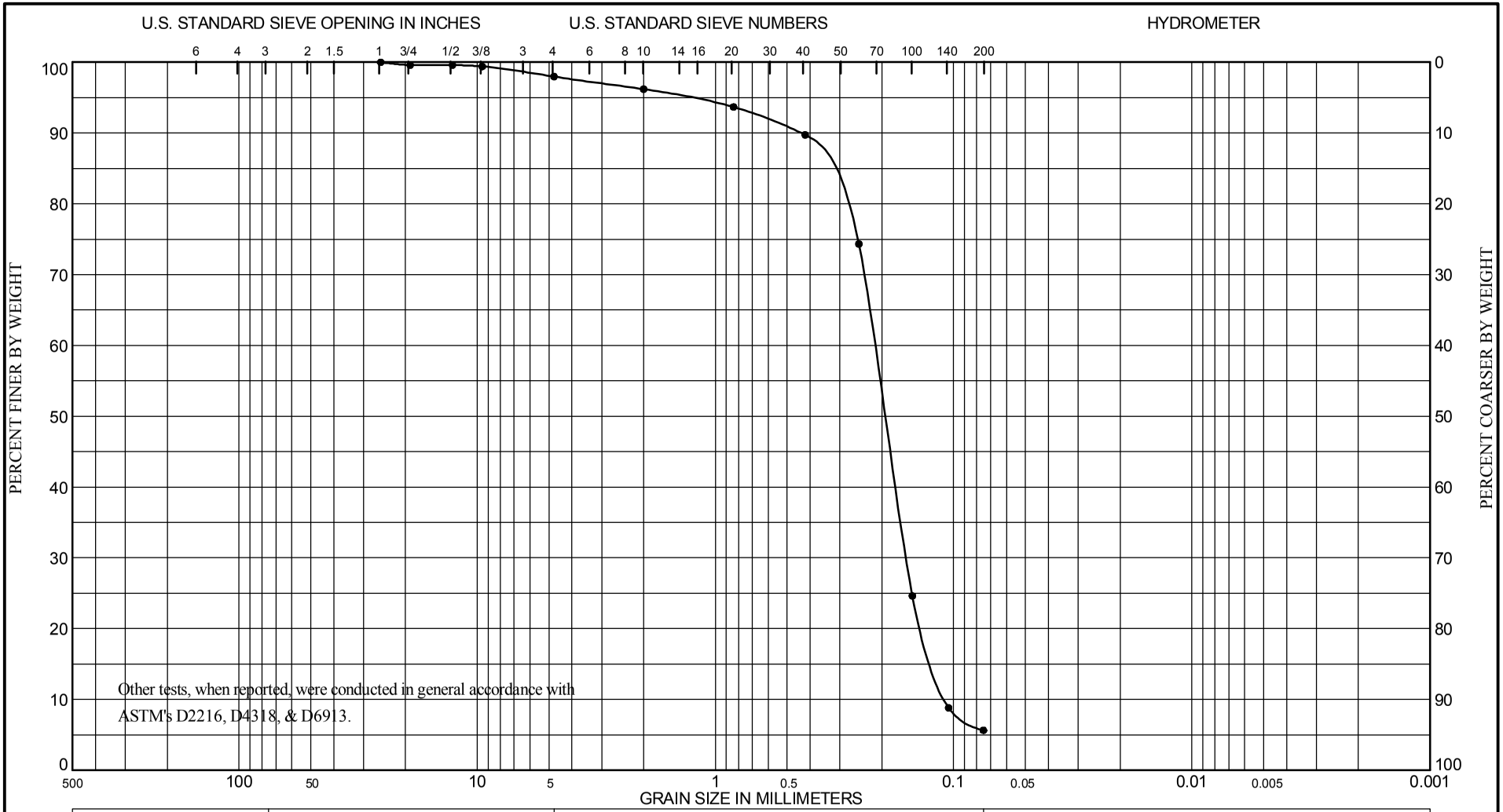
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 2.9	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4563
Hole No. BI-PBS-284-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

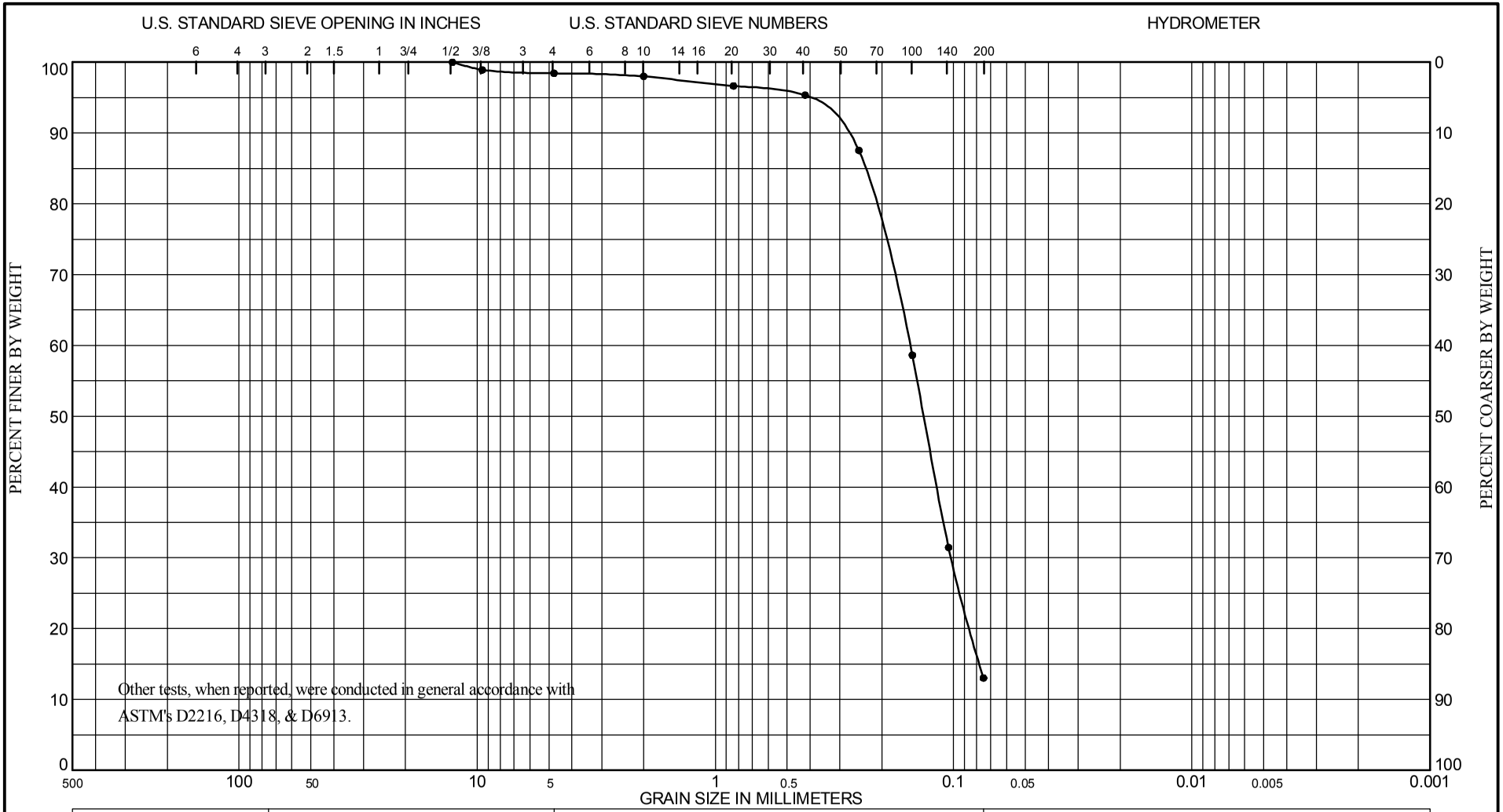
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	2.9 to 7.5	Dark Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4564
Hole No. BI-PBS-284-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	7.5 to 10.5	Dark Gray, Silty Sand (SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4565
Hole No. BI-PBS-284-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-285-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-285-13 — LOCATION COORDINATES: E = 1,091,878 N = 227,677	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 2 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 47.7 Ft.
	15. DATE BORING — STARTED: 01-22-14 — COMPLETED: 01-22-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -47.7 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 16.7 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-47.7	0.0				
-51.2	3.5		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, few shell fragments, lt. gray (SP)	A	Classification: SP Color: 10Y 8/1-light greenish gray D50: 0.218 mm % Fines: 2.2
-55.9	8.2		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, lt. to medium gray (SM)	B	Classification: SM Color: 10Y 7/1-light greenish gray D50: 0.142 mm % Fines: 12.2
-56.8	9.1		SAND, silty, clayey, mostly fine-grained sand-sized quartz, few shell fragments, very slightly plastic, medium gray (SC-SM)	NS	
-58.9	11.2		CLAY, lean, sandy, medium dark gray (CL)		
-60.2	12.5		SAND, silty, clayey, mostly fine-grained sand-sized quartz, few shell fragments, very slightly plastic, medium gray (SC-SM)		
-64.4	16.7		CLAY, fat, lt. gray, pale orange (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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

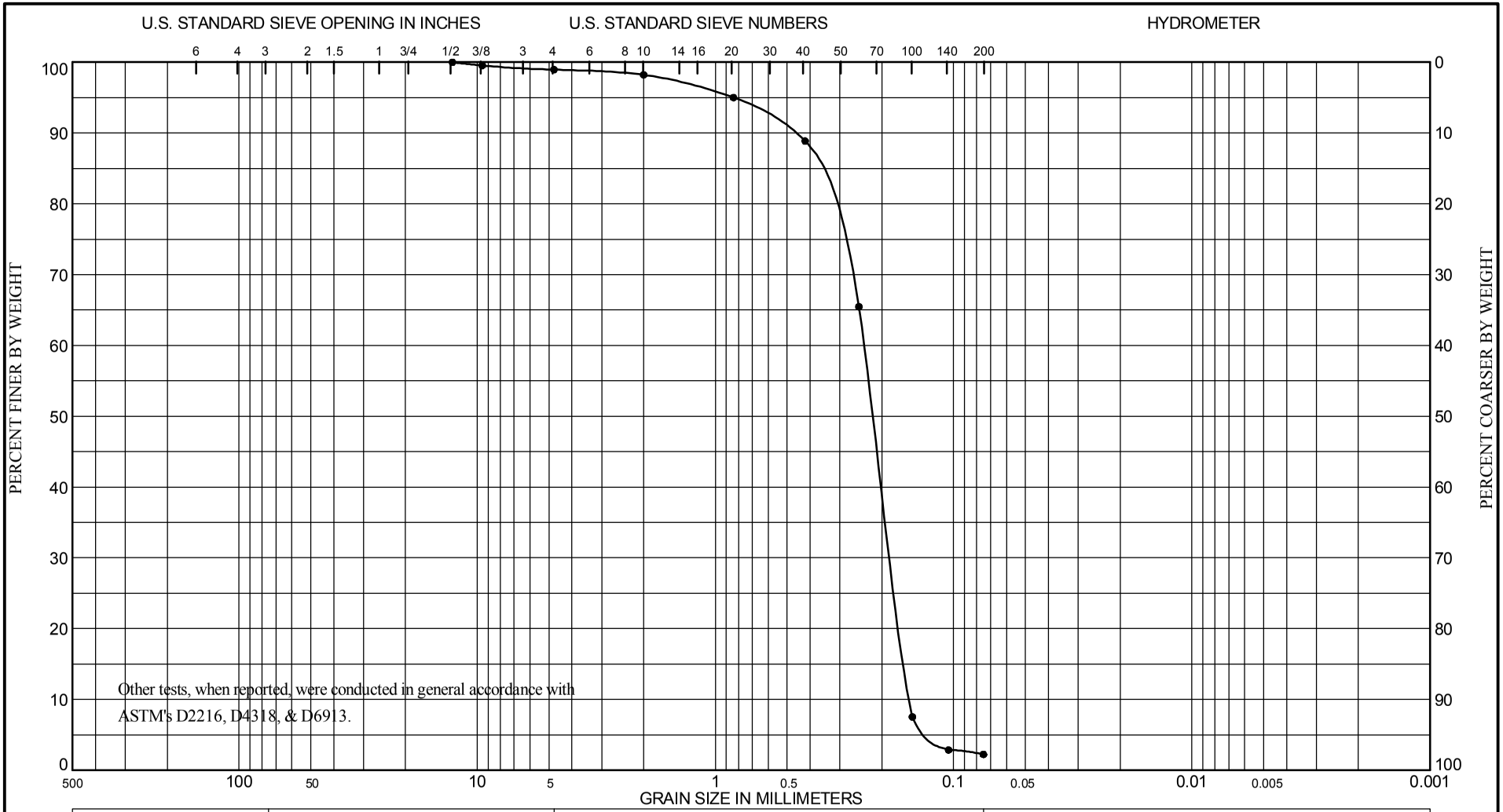
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.12563° Long = -88.49289°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

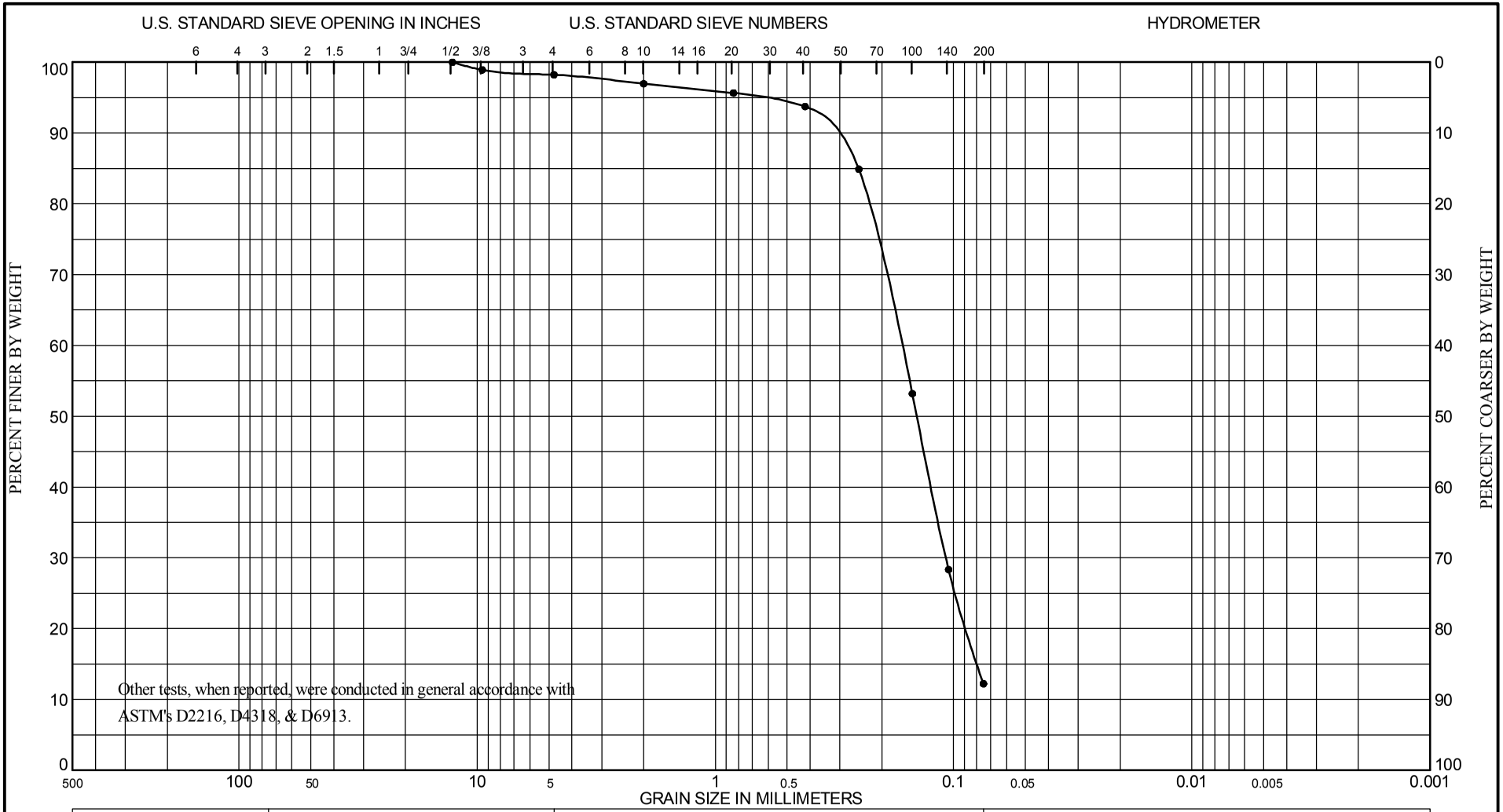
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 3.5	Dark Gray, Poorly Graded Sand (SP), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4540
Hole No. BI-PBS-285-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	3.5 to 8.2	Dark Gray, Silty Sand (SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4541
Hole No. BI-PBS-285-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-286-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 2 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-286-13 — LOCATION COORDINATES: E = 1,090,091 N = 227,839	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 3 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 47.7 Ft.
	15. DATE BORING — STARTED: 01-26-14 — COMPLETED: 01-26-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -46.7 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 19.2 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-46.7	0.0				
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, few shell fragments, brownish gray (SP)	A	Classification: SP Color: 2.5Y 6/1-gray D50: 0.203 mm % Fines: 1.9
			At El. -51.7 Ft., fine grained sand below this depth	B	Classification: SP-SM Color: 2.5Y 6/1-gray D50: 0.192 mm % Fines: 5.1
-53.7	7.0				
			SAND, silty, mostly fine-grained sand-sized quartz, trace shell fragments, brownish gray (SM)	C	Classification: SM Color: 2.5Y 6/1-gray D50: 0.122 mm % Fines: 15.7
-60.3	13.6				
-61.1	14.4		SAND, clayey, mostly fine-grained sand-sized quartz, trace shell fragments, medium gray (SC)	NS	
			CLAY, lean, trace shell fragments, sandy, medium dark gray (CL)		
-65.9	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. 3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion		

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.12609° Long = -88.49854°

DRILLING LOG (Cont. Sheet)	INSTALLATION Mobile District		SHEET 2 OF 2 SHEETS
PROJECT MsCIP Barrier Island Restoration	COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83	VERTICAL NAVD88
LOCATION COORDINATES X = 1,090,091 Y = 227,839	ELEVATION TOP OF BORING -46.7 Ft.		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
			factor.		

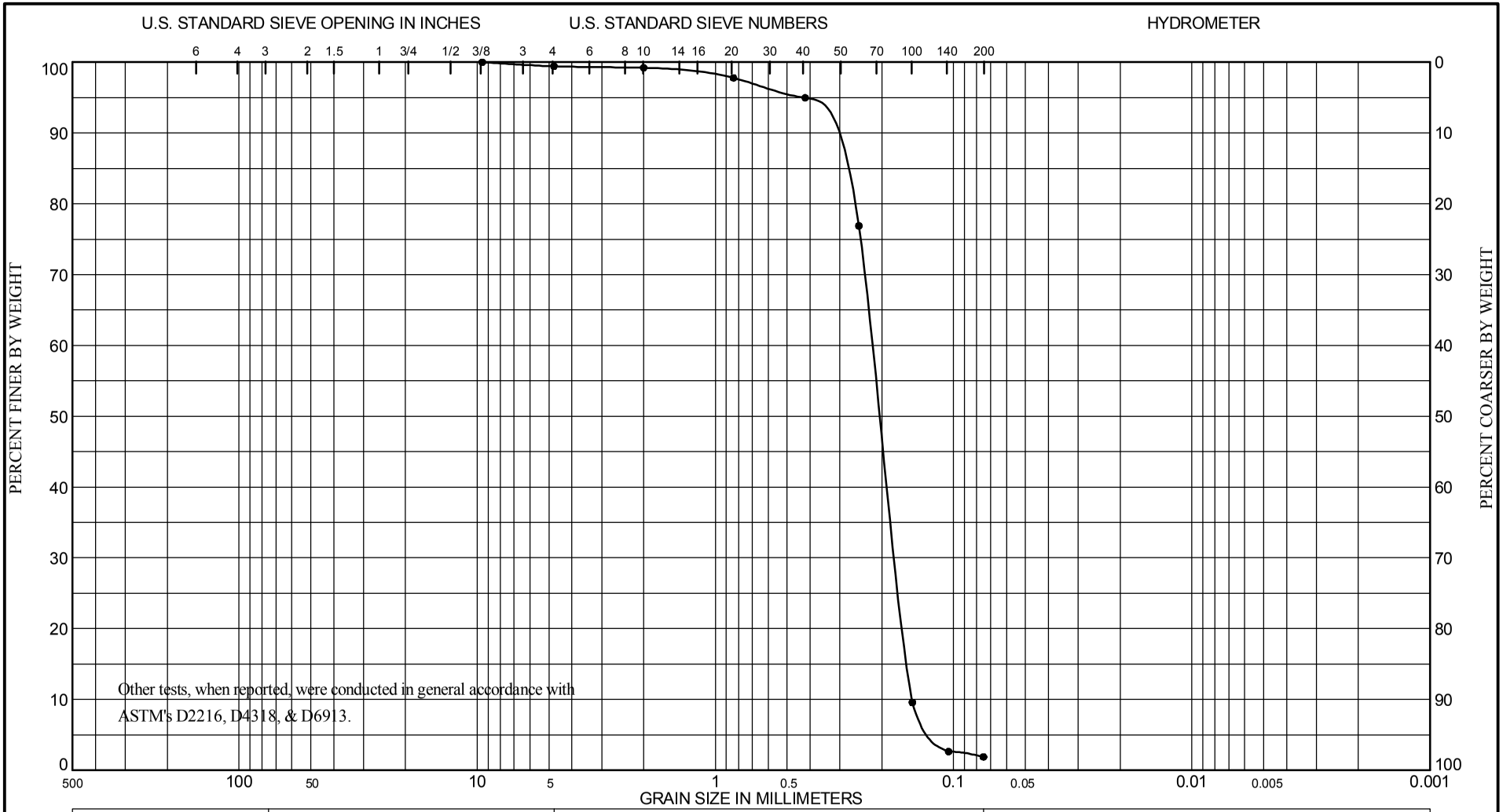
30
35
40
45
50
55
60

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.12609° Long = -88.49854°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

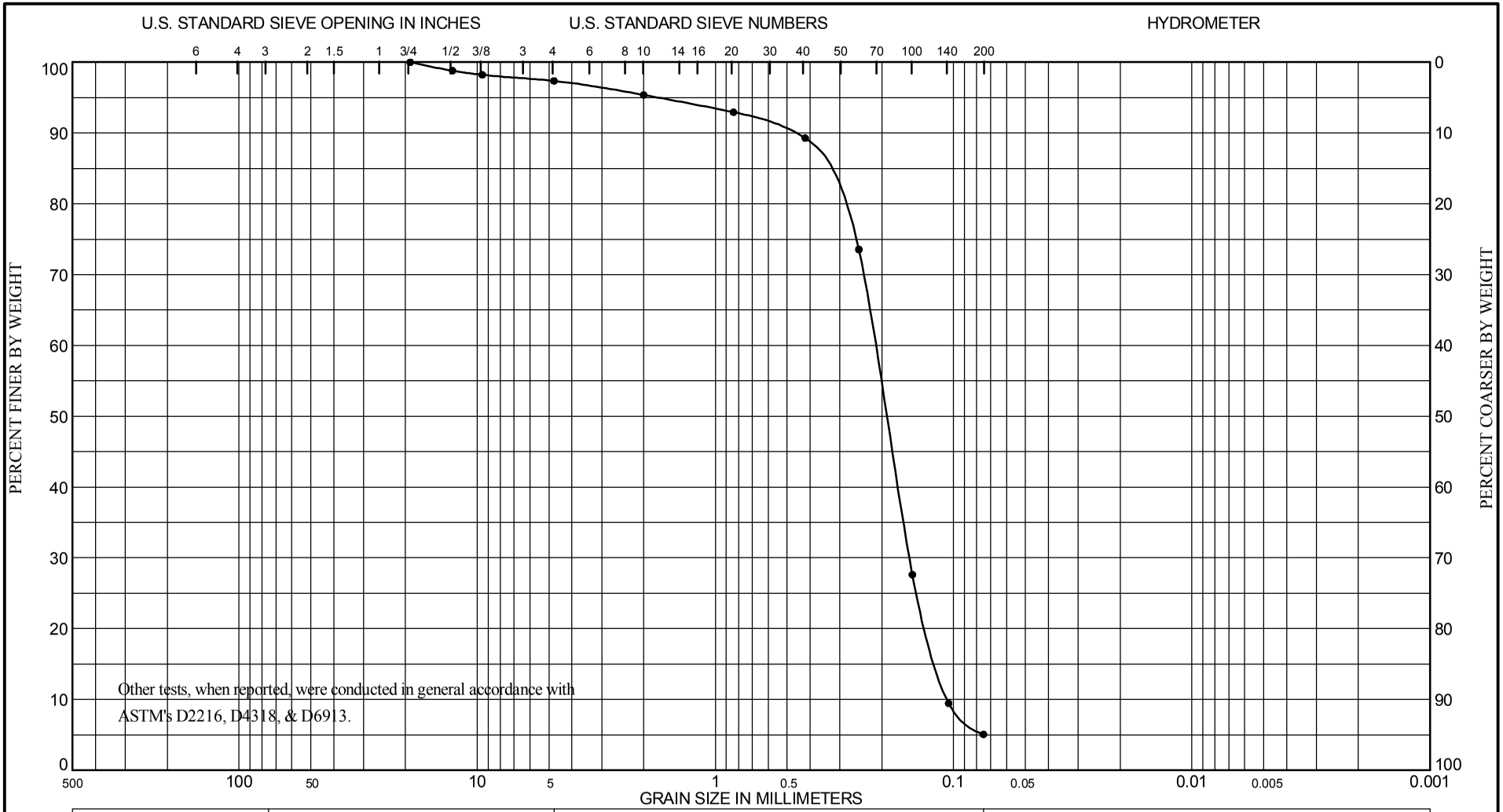
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 3.5	Dark Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4560
Hole No. BI-PBS-286-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

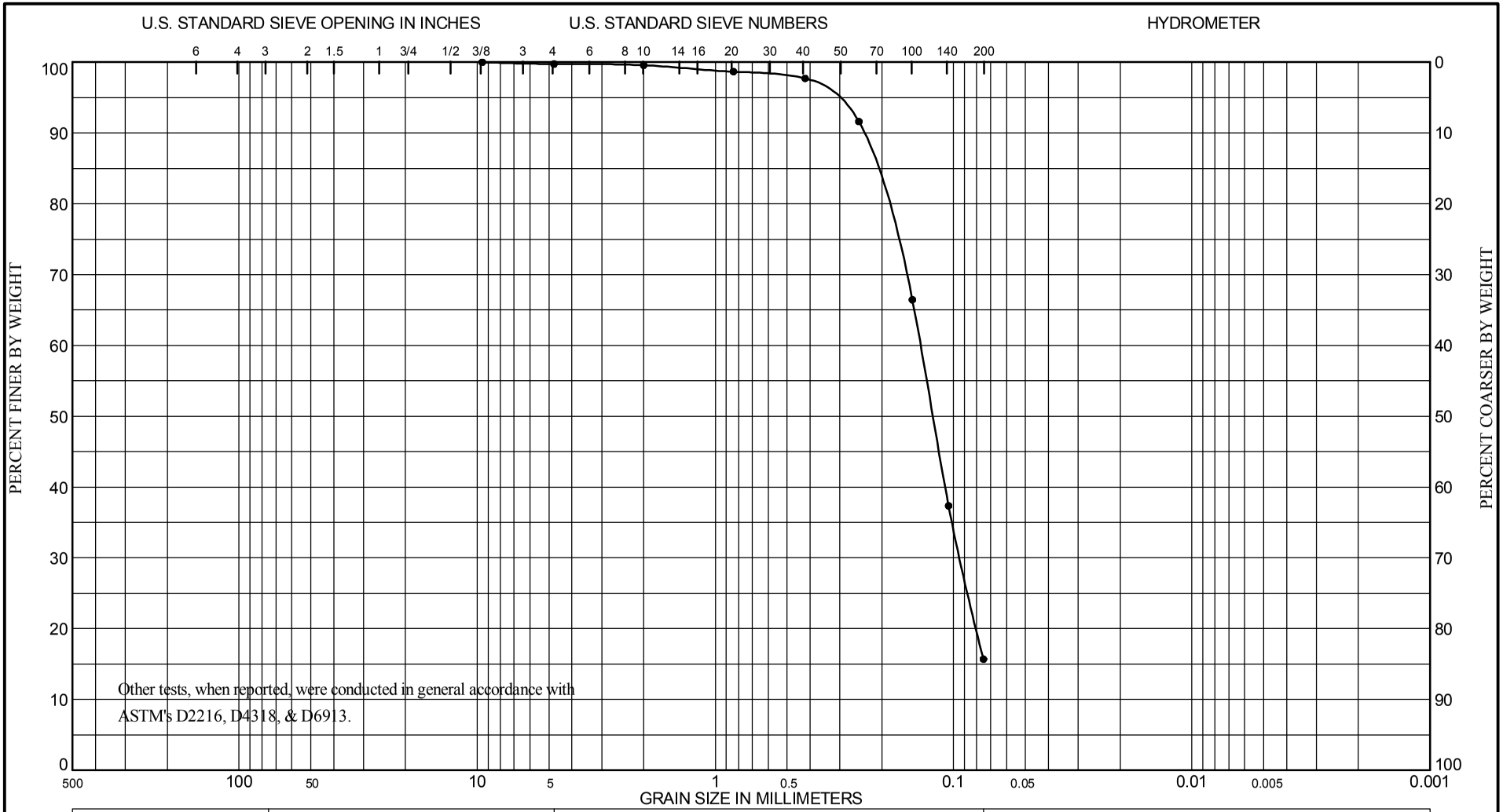
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	3.5 to 7.0	Dark Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4561
Hole No. BI-PBS-286-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	7.0 to 12.0	Dark Gray, Silty Sand (SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4562
Hole No. BI-PBS-286-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-287-13

DRILLING LOG	DIVISION South Atlantic	INSTALLATION Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS West
2. BORING DESIGNATION	BI-PBS-287-13
LOCATION COORDINATES	E = 1,087,968 N = 226,334
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	8.2 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED 1 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	50 Ft.
15. DATE BORING	STARTED 02-18-14 / COMPLETED 02-18-14
16. ELEVATION TOP OF BORING	-49.7 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-49.7	0.0				
-54.0	4.3		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, medium gray (SM)	A	Classification: SP-SM Color: 2.5Y 6/1-gray D50: 0.178 mm % Fines: 7.4
-56.0	6.3		SILT, inorganic-L, trace shell fragments, sandy, medium gray (ML)	NS	
-57.9	8.2		CLAY, lean, soft to 6.6 ft., firm to 8.0 ft., erosional contact with overlying ML, medium 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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

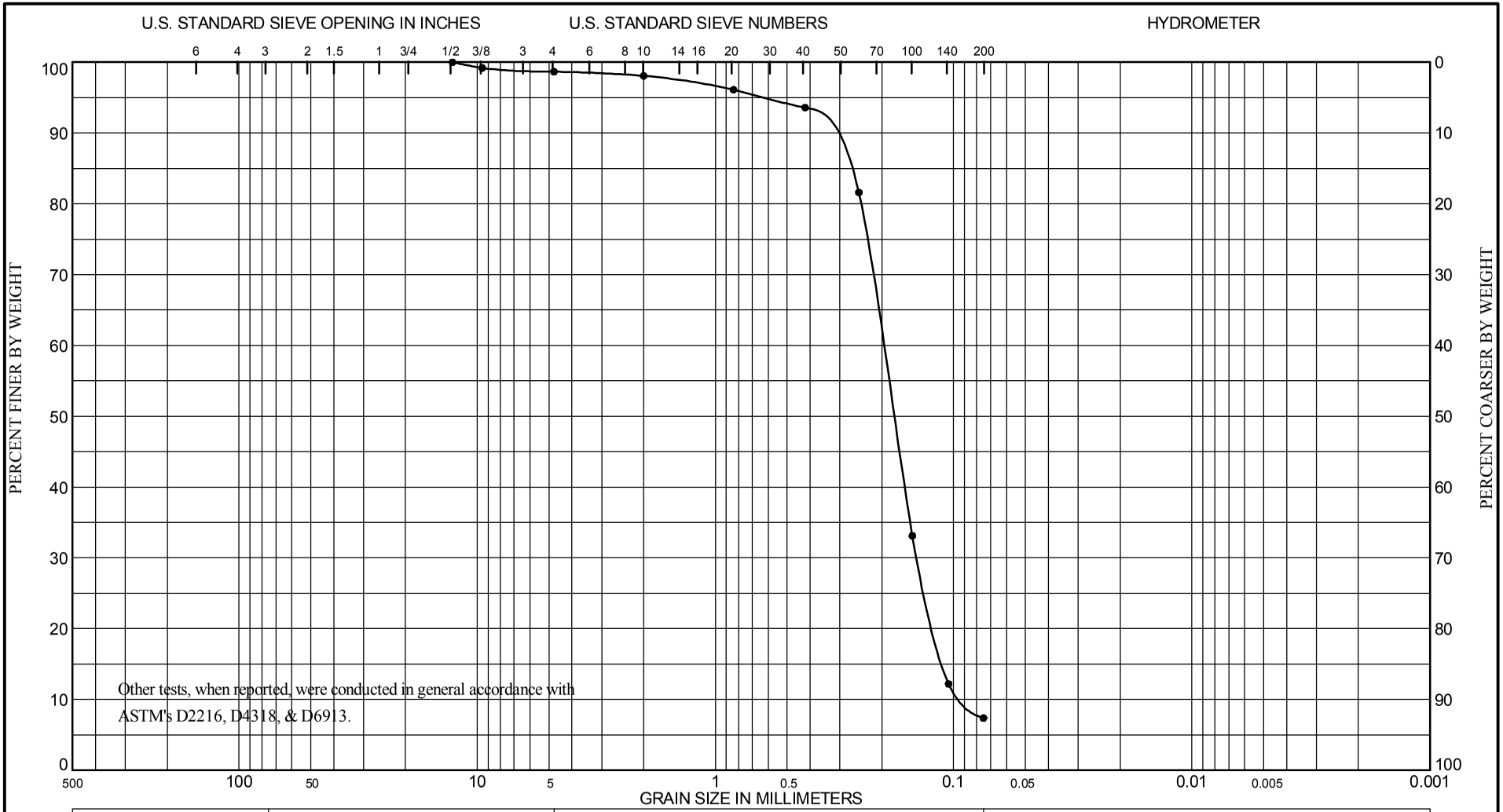
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.12197° Long = -88.50527°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 4.3	Greenish Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4852
Hole No. BI-PBS-287-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-288-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS West
2. BORING DESIGNATION	BI-PBS-288-13
LOCATION COORDINATES	E = 1,091,077 N = 229,082
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	14.7 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED: 5 UNDISTURBED (UD): 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	47.7 Ft.
15. DATE BORING	STARTED: 01-22-14 COMPLETED: 01-22-14
16. ELEVATION TOP OF BORING	-47.7 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-47.7	0.0				
-48.6	0.9		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, few shell fragments, lt. gray (SP)	A	Classification: SP Color: 10Y 8/1-light greenish gray D50: 0.251 mm % Fines: 1.4
-49.7	2.0		SAND, poorly-graded, mostly fine-grained sand-sized quartz, few shell fragments, lt. to medium gray (SP)	B	Classification: SP Color: 10Y 7/1-light greenish gray D50: 0.226 mm % Fines: 3.1
-51.2	3.5		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few shell fragments, lt. to medium gray (SP-SM)	C	Classification: SP-SM Color: 10Y 7/1-light greenish gray D50: 0.185 mm % Fines: 6.5
-53.7	6.0		SAND, silty, mostly fine-grained sand-sized quartz, trace shell fragments, medium dark gray (SM)	D	Classification: SP-SM Color: 10Y 7/1-light greenish gray D50: 0.137 mm % Fines: 9.5
-55.1	7.4		SAND, silty, clayey, mostly fine-grained sand-sized quartz, few shell fragments, medium dark gray (SC-SM)	NS	
-58.0	10.3		CLAY, lean, trace shell fragments, sandy, medium dark gray (CL)		
-62.4	14.7		SAND, silty, mostly fine-grained sand-sized quartz, trace shell fragments, grayish medium brown (SM) At El. -60.3 Ft., medium brown to base of unit	E	Classification: SM Color: 10Y 8/1-light greenish gray D50: 0.151 mm % Fines: 12.7

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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

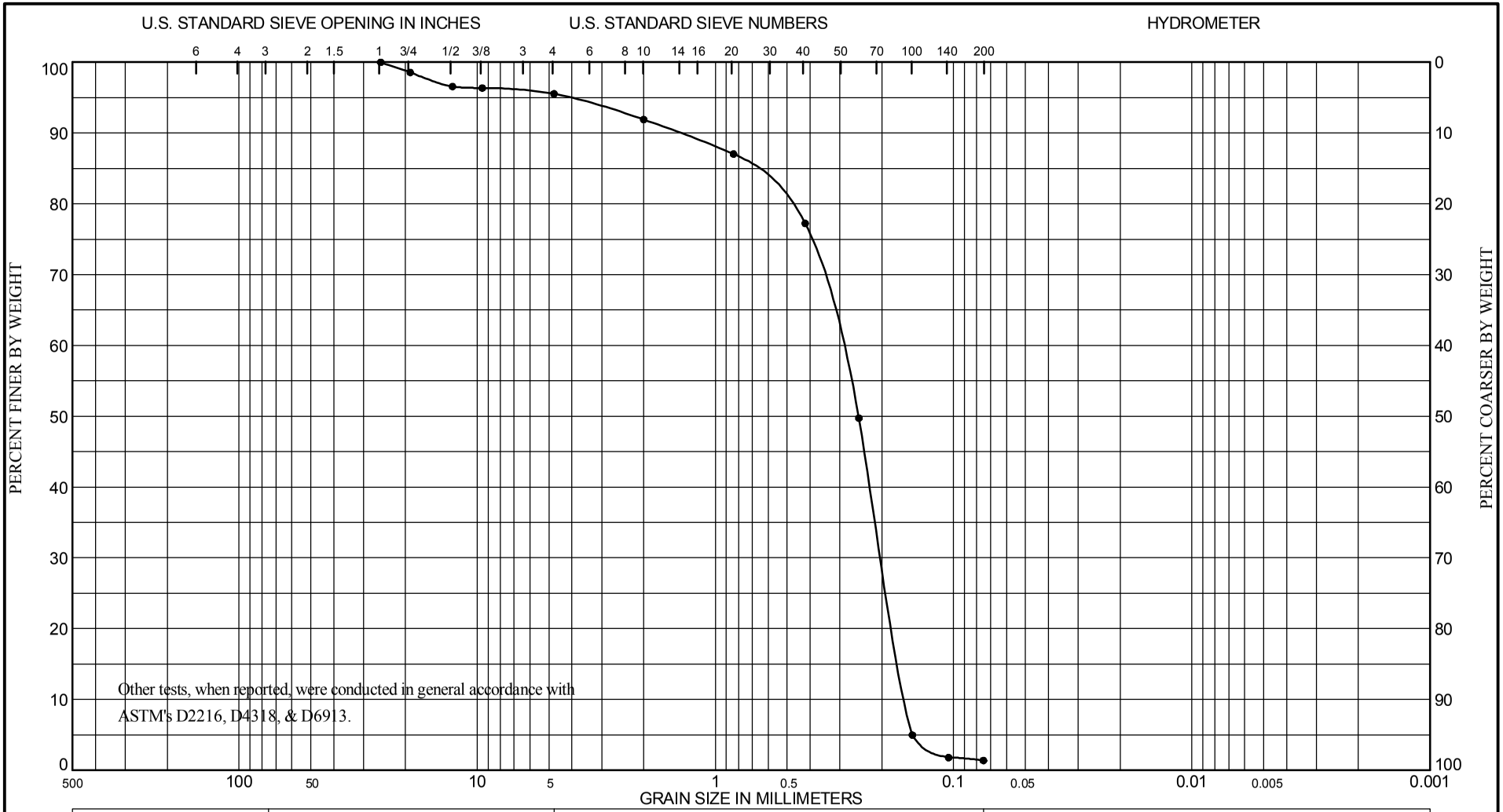
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.12950° Long = -88.49541°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

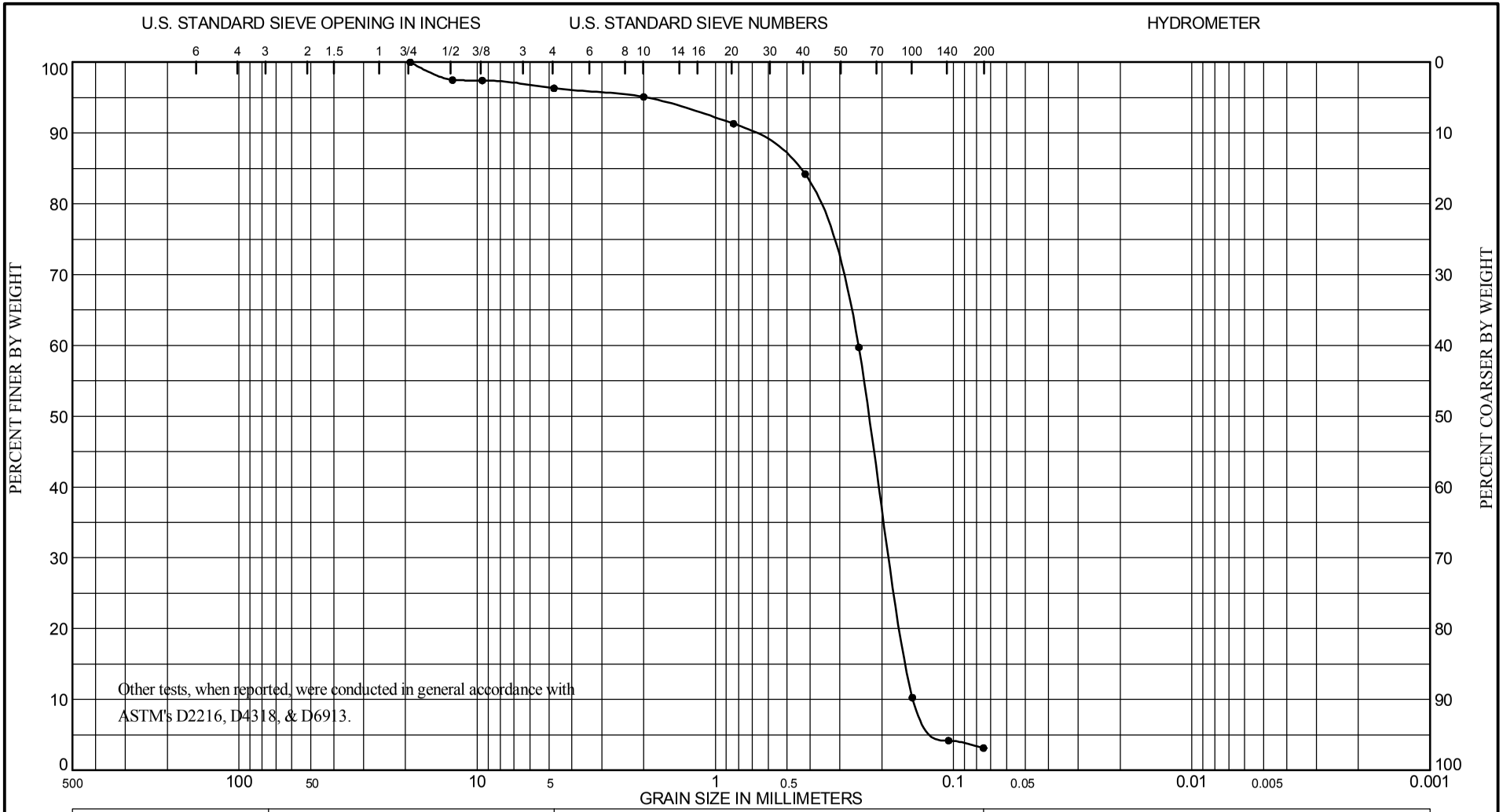
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 0.9	Dark Gray, Poorly Graded Sand (SP), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4535
Hole No. BI-PBS-288-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

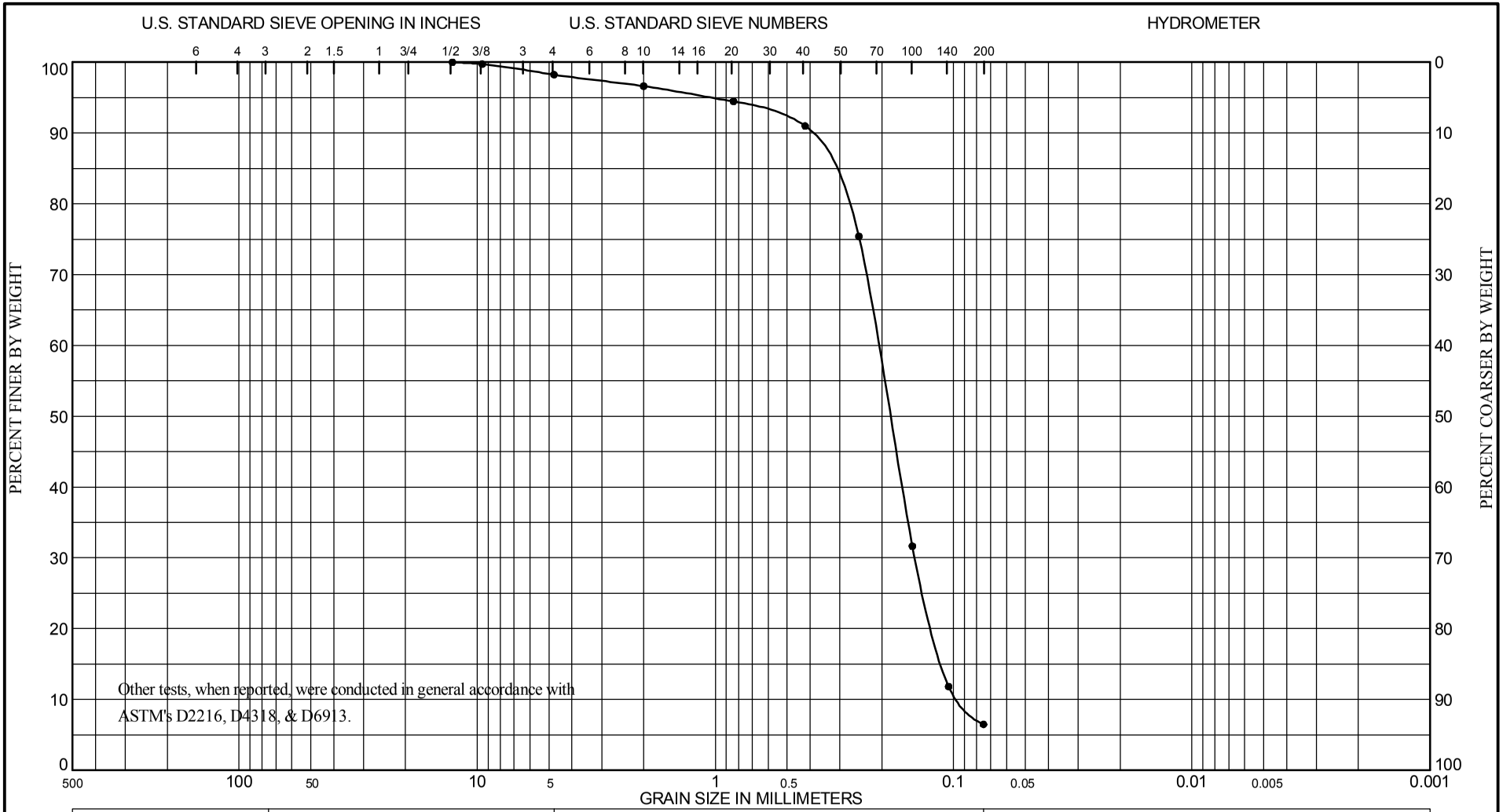
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	0.9 to 2.0	Dark Gray, Poorly Graded Sand (SP), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4536
Hole No. BI-PBS-288-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

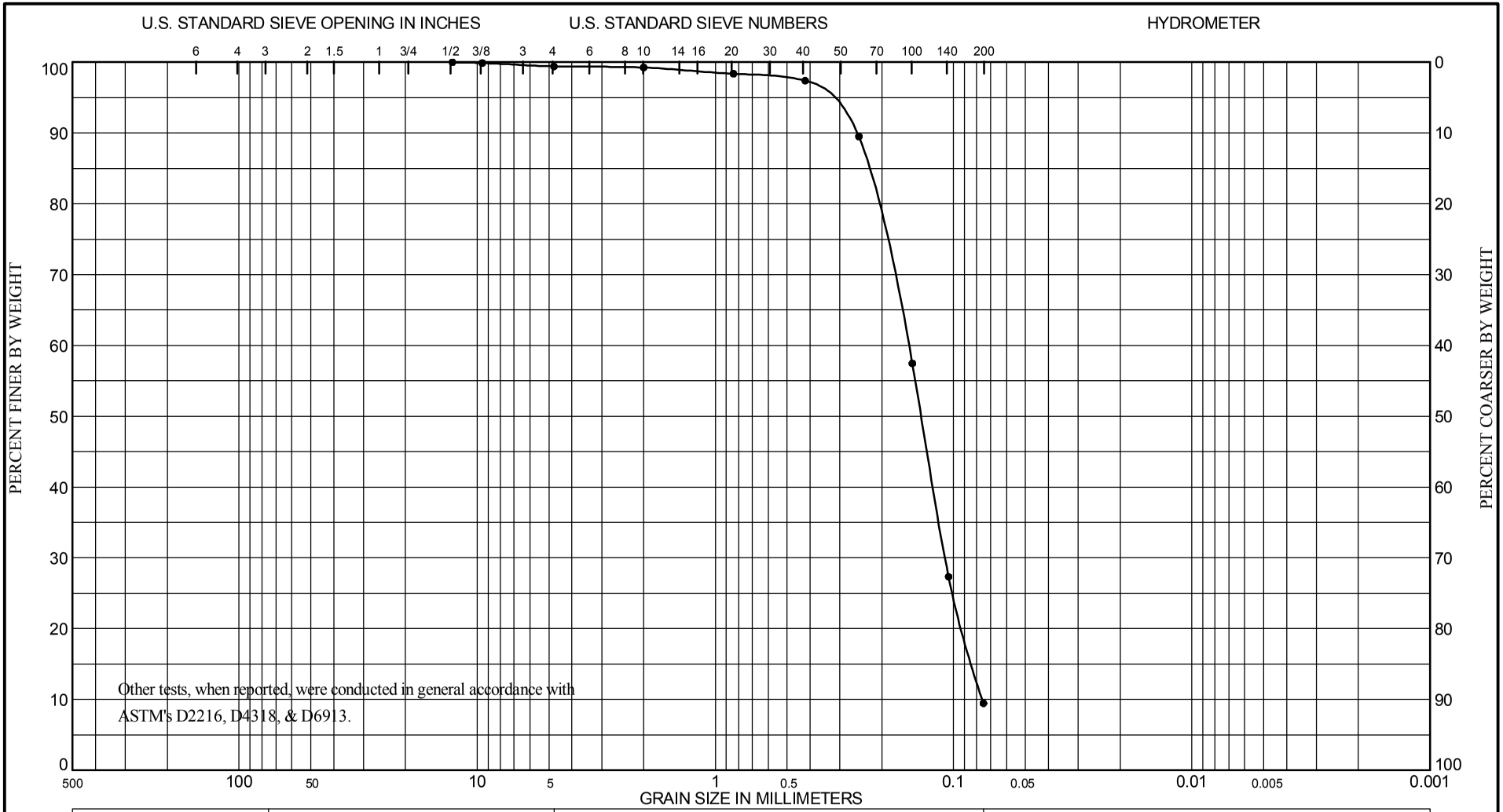
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	2.0 to 3.5	Dark Gray, Silty Sand (SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4537
Hole No. BI-PBS-288-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

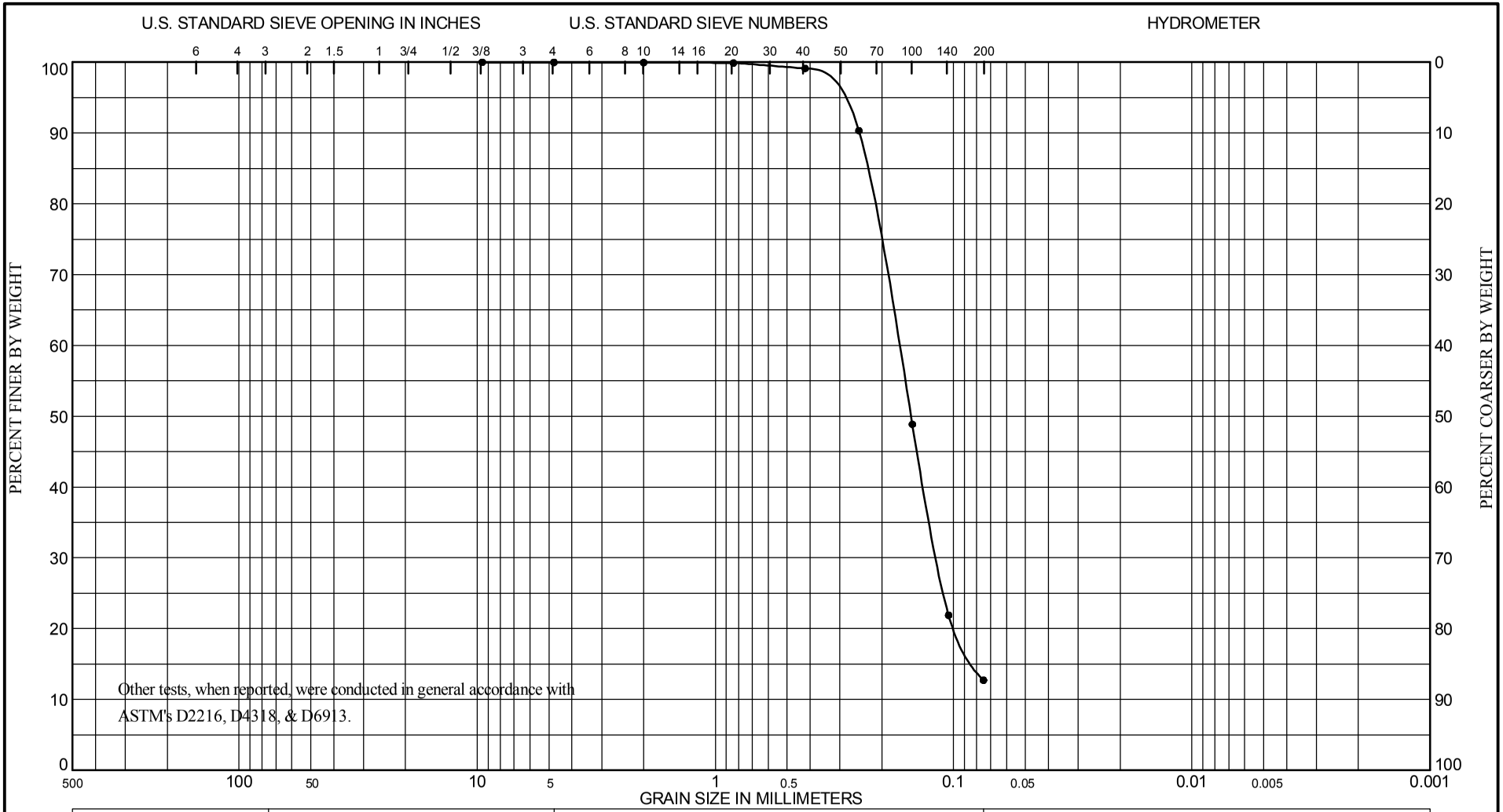
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
D	3.5 to 6.0	Dark Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4538
Hole No. BI-PBS-288-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
E	10.3 to 14.7	Dark Gray, Poorly Graded Silty Sand (SP-SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4539
Hole No. BI-PBS-288-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-290-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-290-13 — LOCATION COORDINATES: E = 1,088,950 N = 229,127	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 3 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 47.4 Ft.
	15. DATE BORING — STARTED: 01-26-14 — COMPLETED: 01-26-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -46.6 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 15.9 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-46.6	0.0				
-48.5	1.9		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, few shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 5/1-gray D50: 0.208 mm % Fines: 3
-49.1	2.5		At El. -47.5 Ft., trace clay lenses to 1.1 ft. At El. -47.7 Ft., trace SM to 1.2 ft.	B	Classification: SP Color: 2.5Y 5/1-gray D50: 0.203 mm % Fines: 4.8
			SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few shell fragments, brownish gray (SP-SM)	C	Classification: SP-SM Color: 2.5Y 5/1-gray D50: 0.184 mm % Fines: 5.8
			SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, brownish gray (SM)		
			At El. -54.1 Ft., finer-grained, siltier, and trace only of shell fragments below this depth	NS	
-60.1	13.5				
-60.8	14.2		SILT, inorganic-L, trace shell fragments, medium gray (ML)		
-62.5	15.9		CLAY, lean, trace shell fragments, sandy, medium 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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

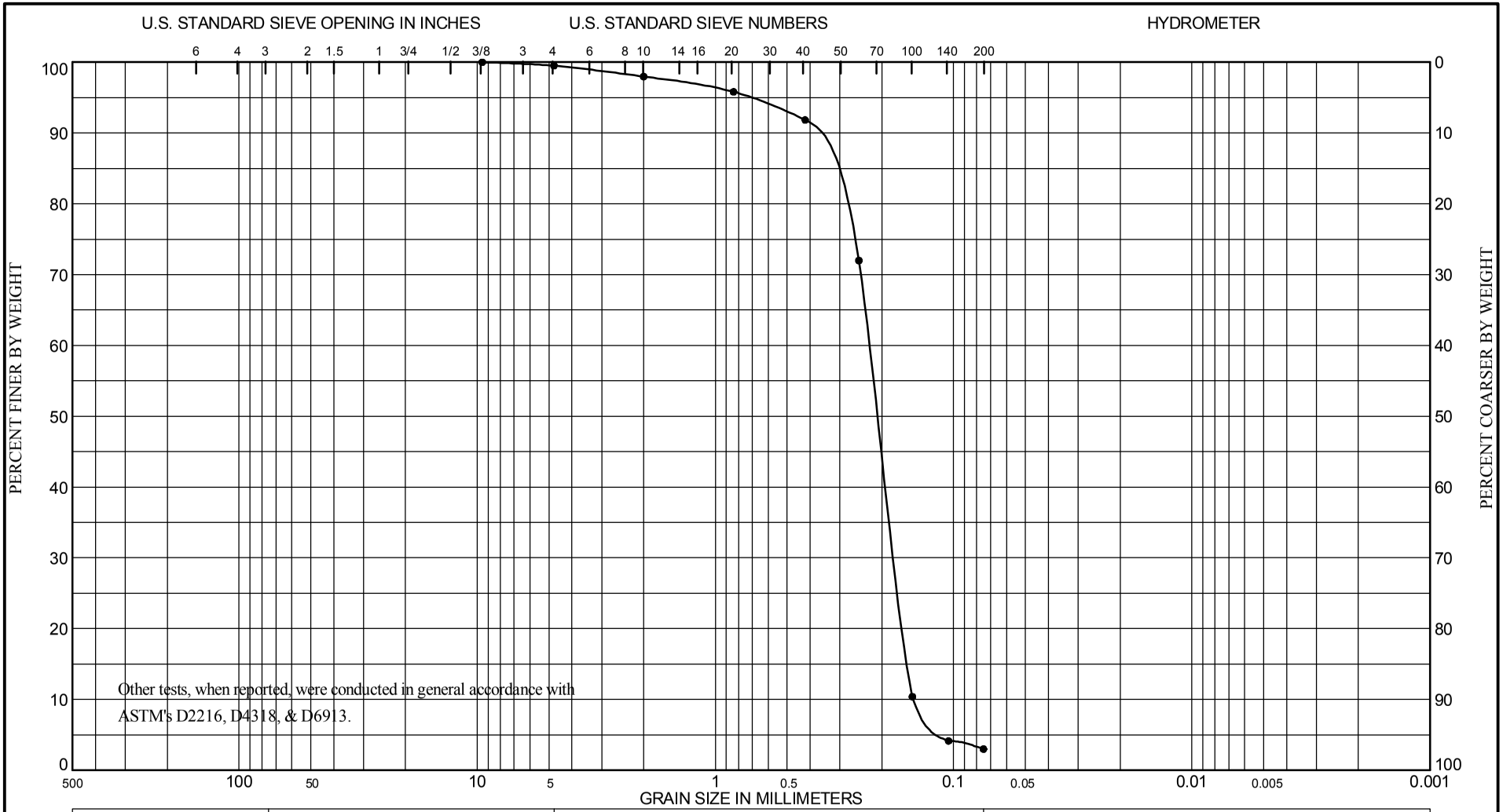
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.12964° Long = -88.50214°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

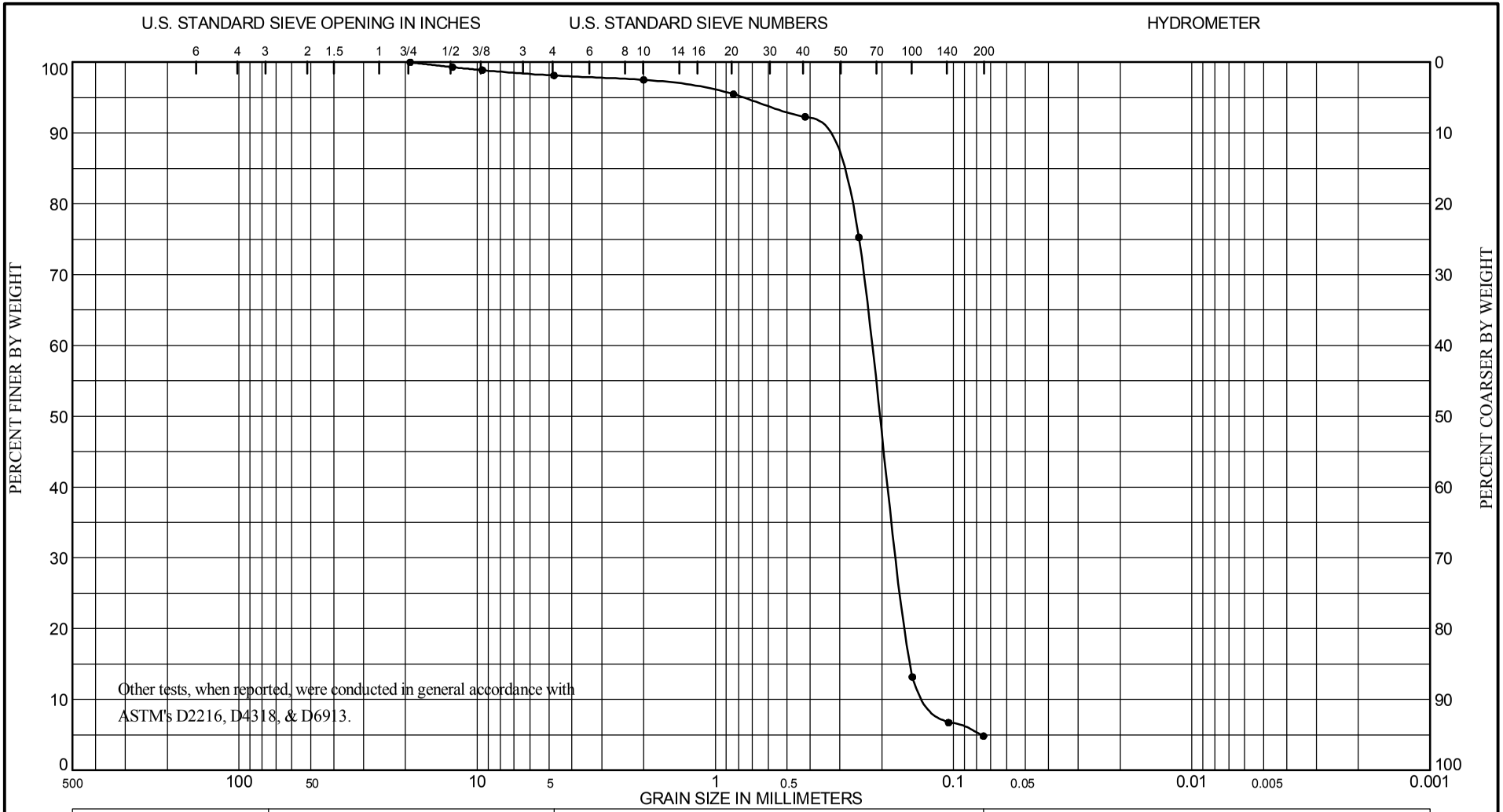
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 1.9	Dark Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4557
Hole No. BI-PBS-290-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

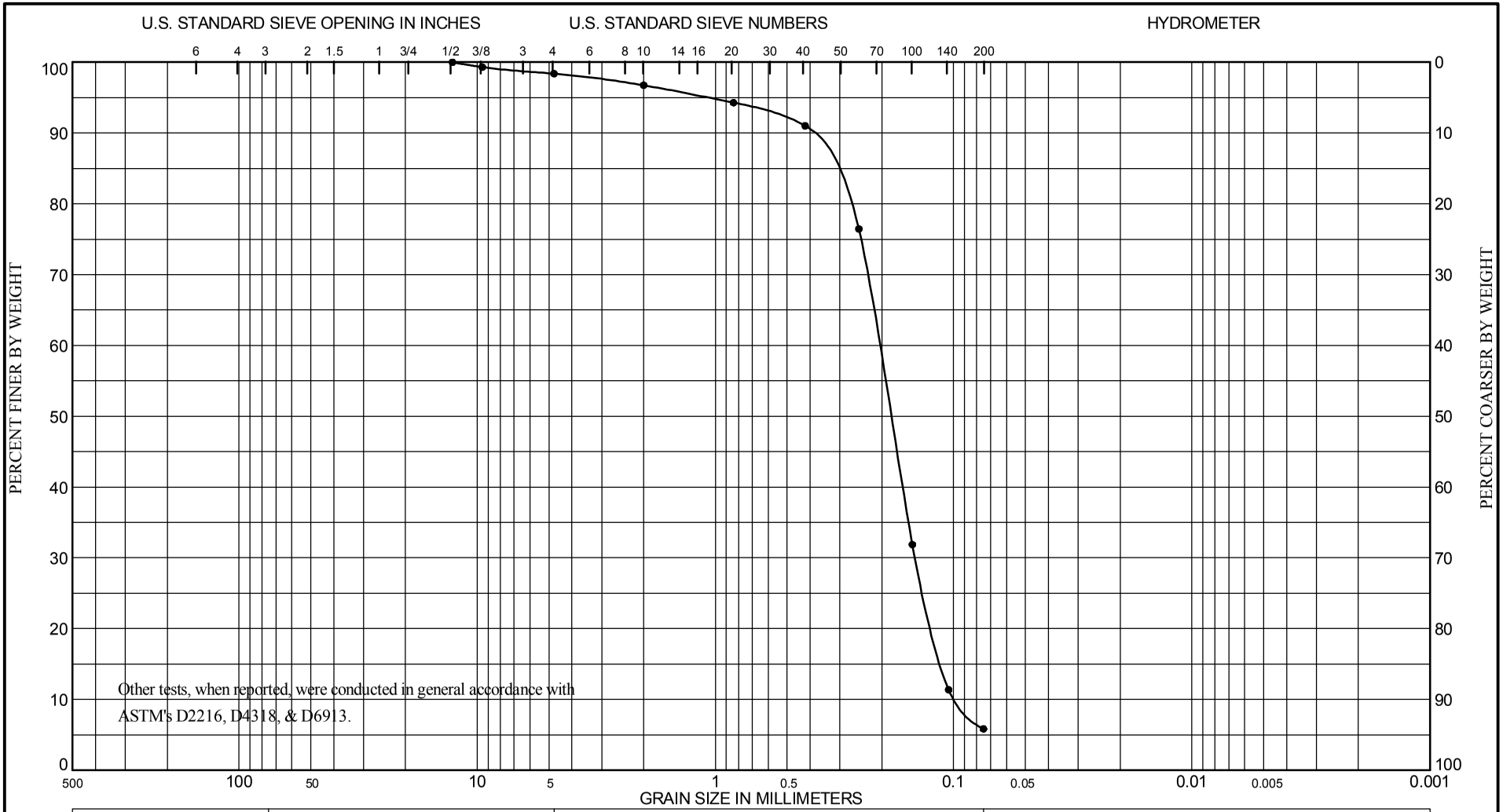
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	1.9 to 2.5	Gray, Poorly Graded Sand (SP), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4558
Hole No. BI-PBS-290-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	2.5 to 7.5	Dark Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4559
Hole No. BI-PBS-290-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-291-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-291-13 — LOCATION COORDINATES: E = 1,089,980 N = 230,334	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 3 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 47.7 Ft.
	15. DATE BORING — STARTED: 01-22-14 — COMPLETED: 01-22-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -47.9 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 17.6 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-47.9	0.0				
-50.1	2.2		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, few shell fragments, lt. gray (SP)	A	Classification: SP Color: 10Y 8/1-light greenish gray D50: 0.226 mm % Fines: 3
-51.9	4.0		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few shell fragments, medium gray (SP-SM)	B	Classification: SP-SM Color: 10Y 7/1-light greenish gray D50: 0.16 mm % Fines: 9.1
-55.3	7.4		SAND, silty, mostly fine-grained sand-sized quartz, trace shell fragments, medium gray (SM)	C	Classification: SM Color: 10Y 7/1-light greenish gray D50: 0.119 mm % Fines: 18
-60.9	13.0		CLAY, lean, trace shell fragments to depth of 8.5 ft., sandy, sand pockets and burrows to 9.6 ft., dark gray (CL)	NS	
-64.0	16.1		SAND, silty, mostly fine-grained sand-sized quartz, trace shell fragments, medium brown at 15.5 ft. to base of unit, dark gray (SM)		
-65.5	17.6		SAND, clayey, mostly fine-grained sand-sized quartz, trace shell fragments, orange, medium brown (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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

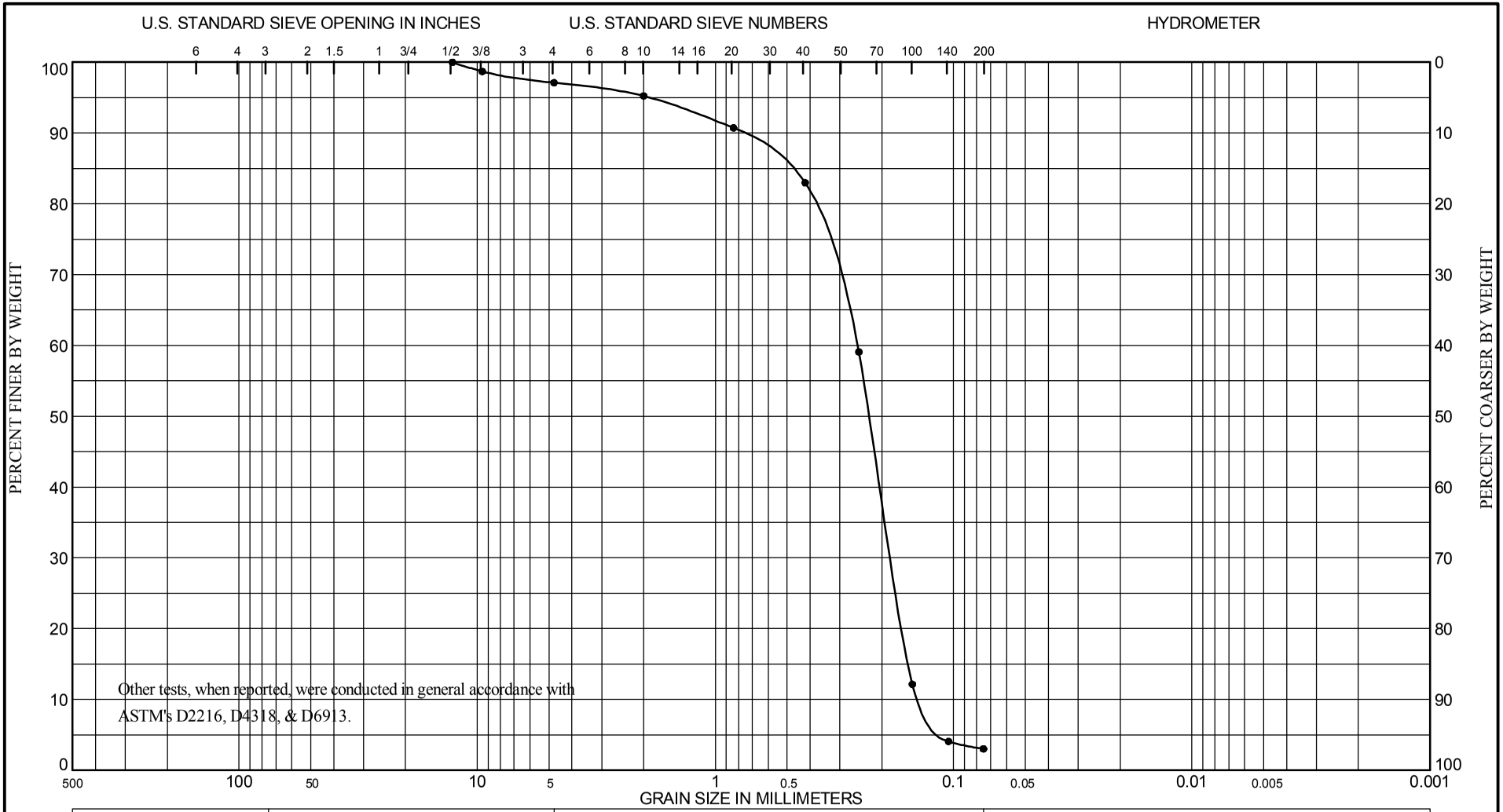
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.13295° Long = -88.49887°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

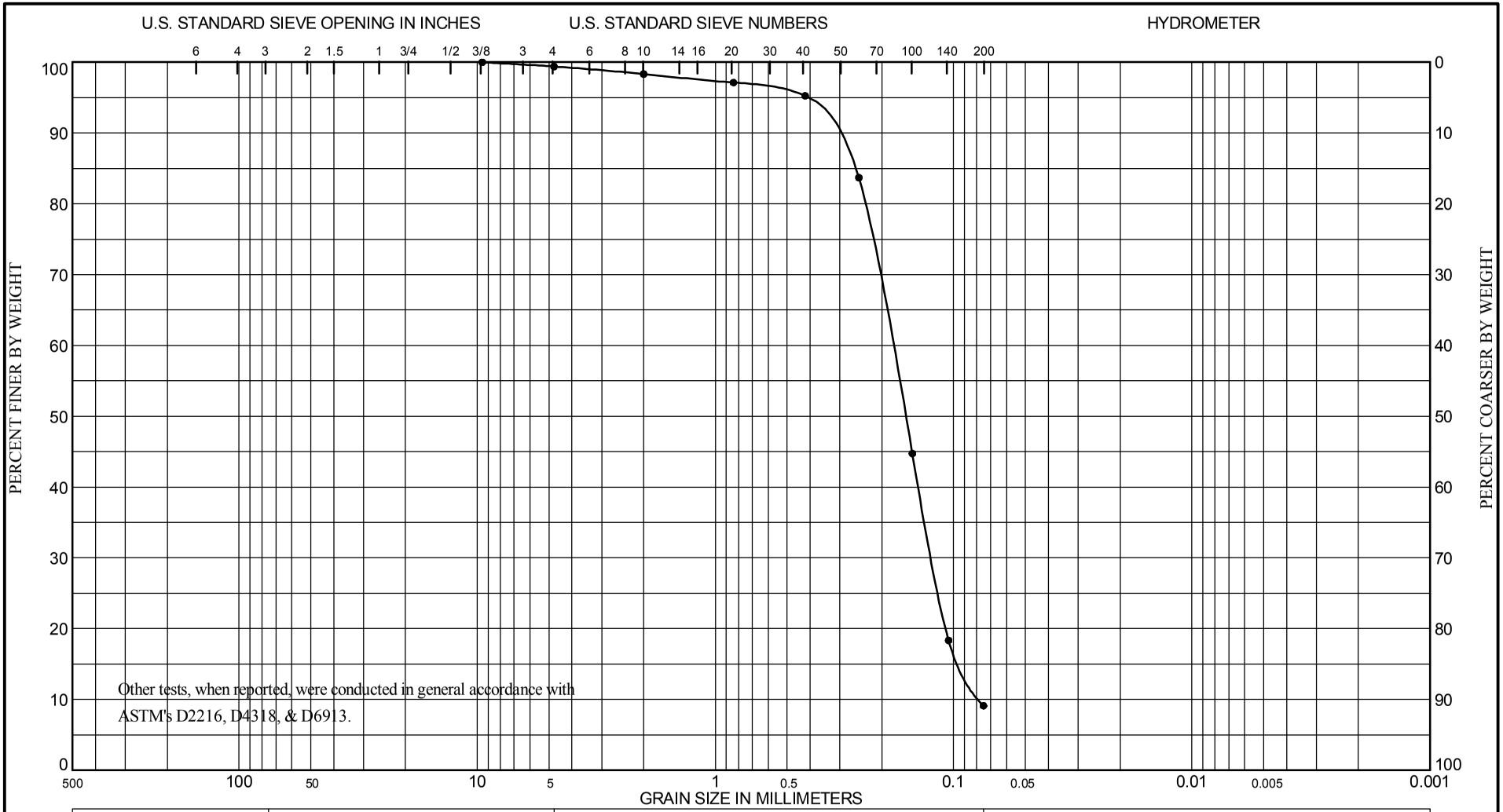
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 2.2	Gray, Poorly Graded Sand (SP), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4532
Hole No. BI-PBS-291-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

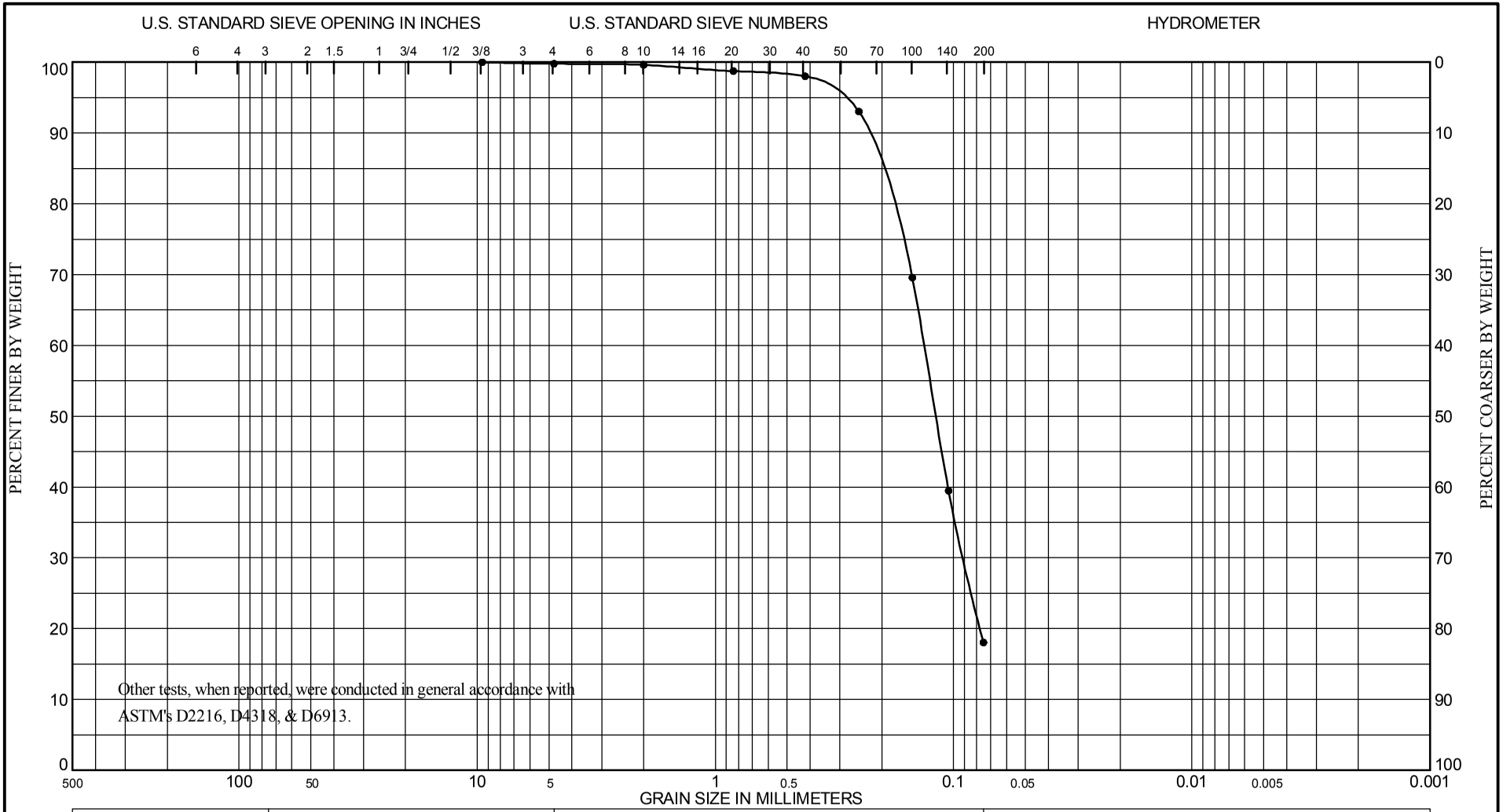
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	2.2 to 4.0	Dark Gray, Poorly Graded Silty Sand (SP-SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4533
Hole No. BI-PBS-291-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	4.0 to 7.4	Dark Gray, Silty Sand (SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4534
Hole No. BI-PBS-291-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-292-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 2 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-292-13 — LOCATION COORDINATES: E = 1,086,254 N = 228,930	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 2 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 48.5 Ft.
	15. DATE BORING — STARTED: 02-18-14 — COMPLETED: 02-18-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -48.3 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 19.0 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-48.3	0.0				
			SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, medium gray (SM)	A	Classification: SP-SM Color: 2.5Y 6/1-gray D50: 0.181 mm % Fines: 7.2
				B	Classification: SM Color: 2.5Y 6/1-gray D50: 0.125 mm % Fines: 17.7
-58.3	10.0				
			SILT, inorganic-L, few shell fragments, sandy, medium gray (ML)	NS	
-62.7	14.4				
			CLAY, lean, discontinue shell fragments, sandy, sand pockets, sand-filled burrows, soft and firm, medium gray (CL)		
-67.3	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. 3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion		

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.12912° Long = -88.51067°

DRILLING LOG (Cont. Sheet)	INSTALLATION Mobile District		SHEET 2 OF 2 SHEETS
PROJECT MsCIP Barrier Island Restoration	COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83	VERTICAL NAVD88
LOCATION COORDINATES X = 1,086,254 Y = 228,930	ELEVATION TOP OF BORING -48.3 Ft.		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
			factor.		

30
35
40
45
50
55
60

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.12912° Long = -88.51067°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192

COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

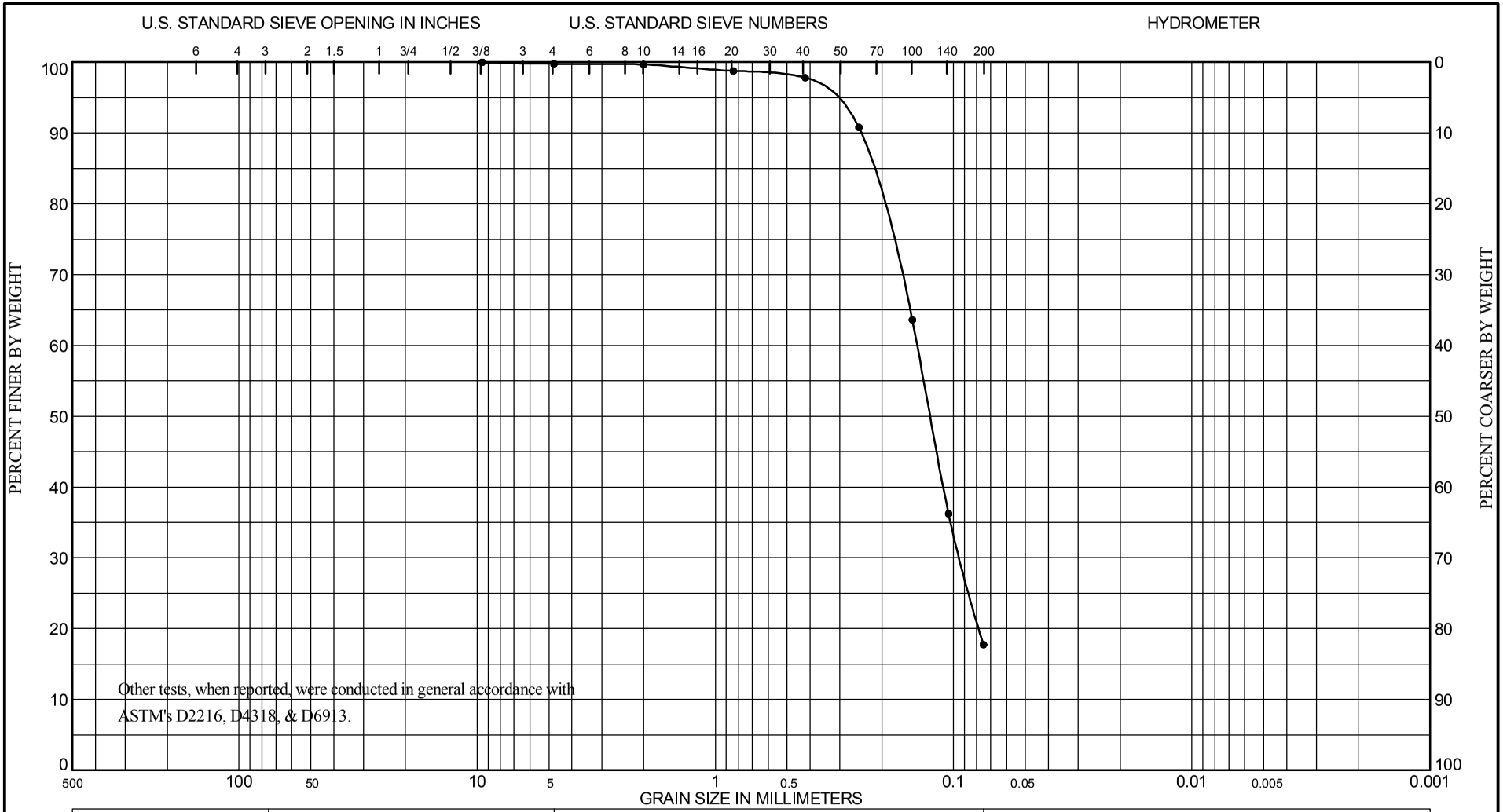
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 5.0	Greenish Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4853
Hole No. BI-PBS-292-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	5.0 to 10.0	Dark Greenish Gray, Silty Sand (SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4854
Hole No. BI-PBS-292-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-293-13

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
	South Atlantic	Mobile District	

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS West
2. BORING DESIGNATION	BI-PBS-293-13
LOCATION COORDINATES	E = 1,089,040 N = 231,626
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	15.7 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED 3 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	48.1 Ft.
15. DATE BORING	STARTED 01-22-14 / COMPLETED 01-22-14
16. ELEVATION TOP OF BORING	-48.4 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-48.4	0.0				
-50.9	2.5		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, few shell fragments, fine-grained sand from 2.5 to base of unit, lt. gray (SP)	A	Classification: SP Color: 10Y 8/1-light greenish gray D50: 0.249 mm % Fines: 2
-51.9	3.5		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few shell fragments, lt. gray (SP-SM)	B	Classification: SP-SM Color: 10Y 7/1-light greenish gray D50: 0.188 mm % Fines: 6.5
-57.9	9.5		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, medium gray (SM)	C	Classification: SM Color: 10Y 7/1-light greenish gray D50: 0.111 mm % Fines: 18.8
-64.1	15.7		CLAY, lean, few shell fragments, sandy, sand pockets and burrows between 9.5 and 11.4 ft. depth, medium 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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

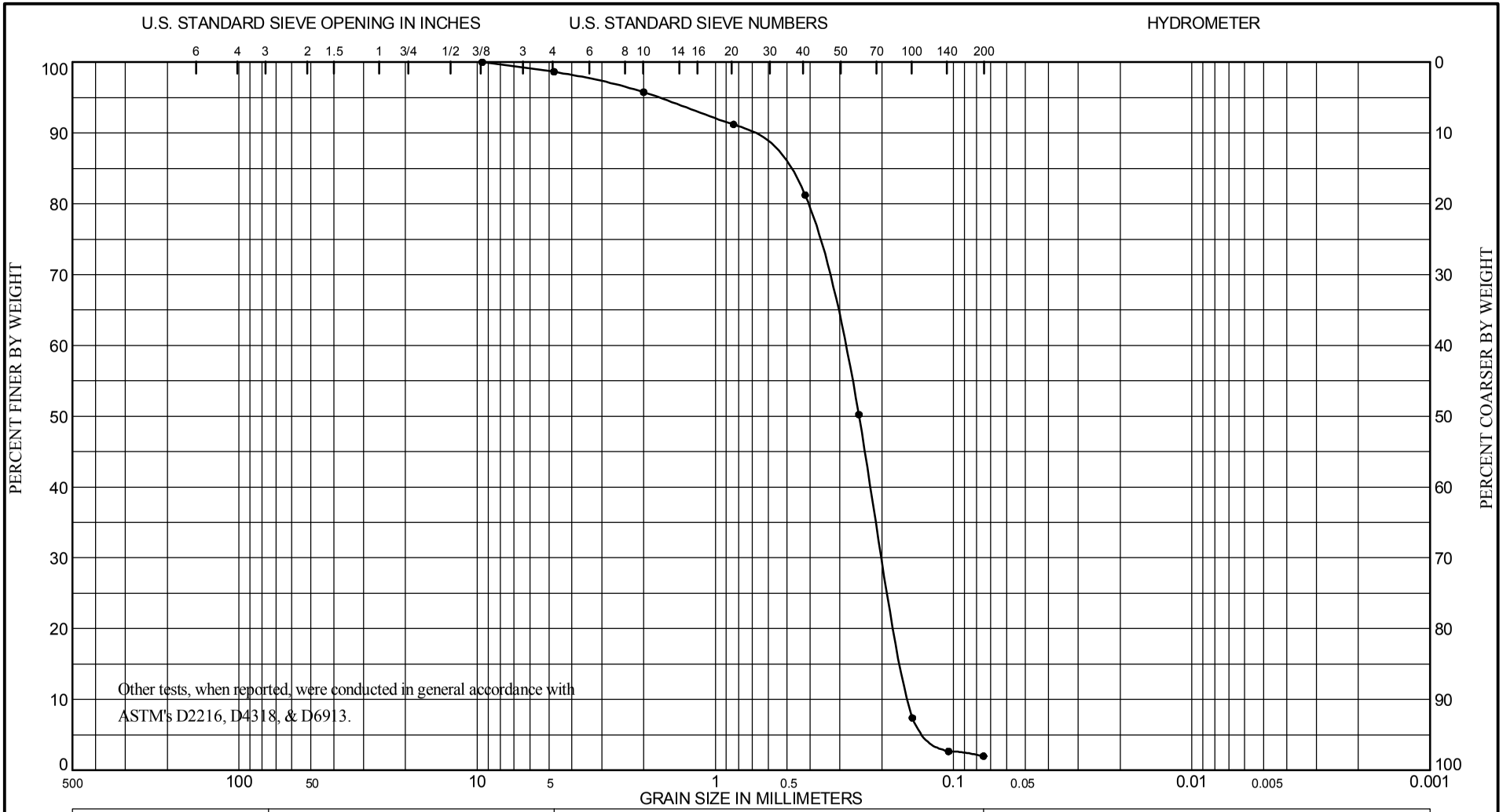
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.13651° Long = -88.50183°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

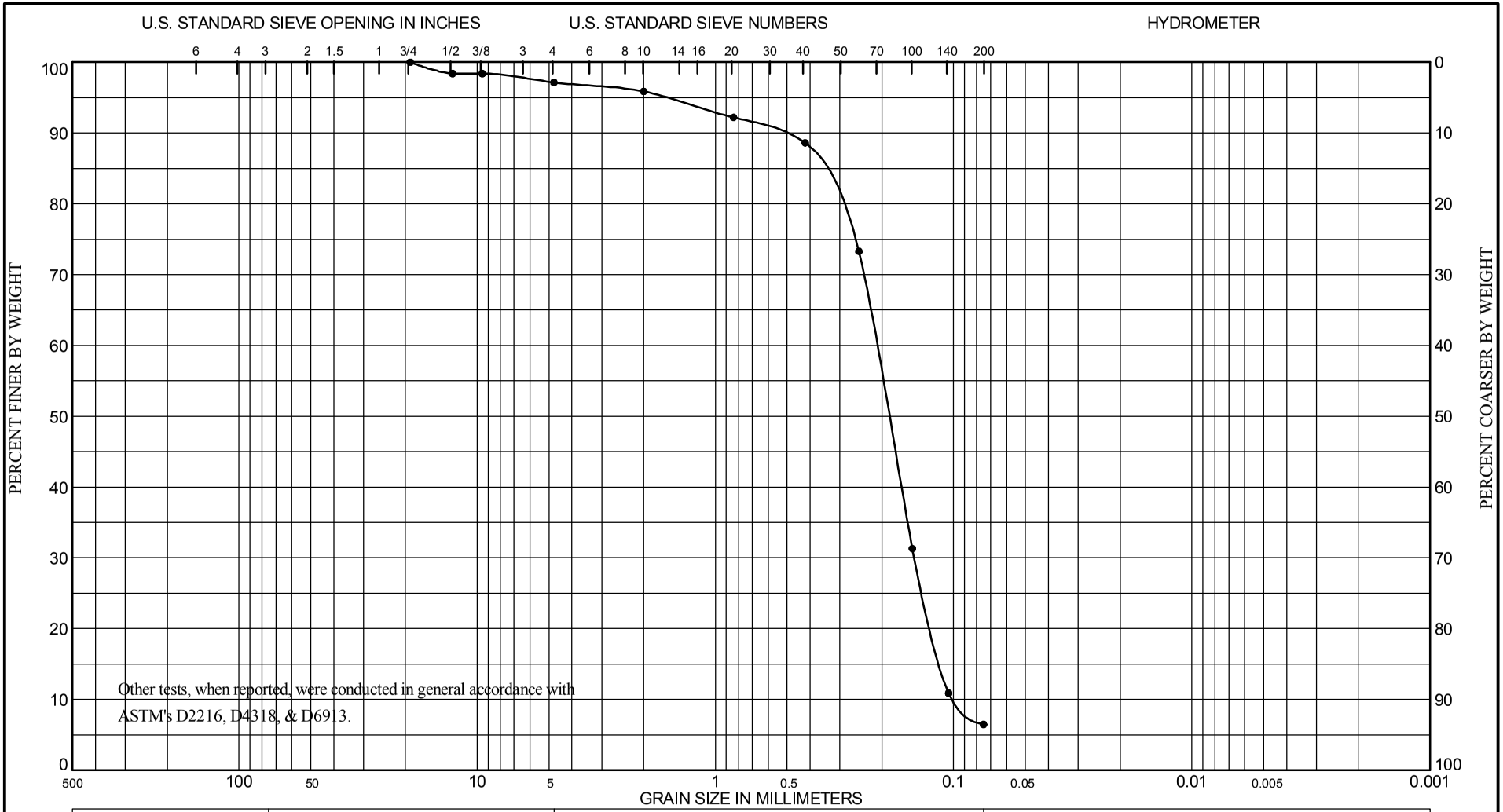
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 2.5	Gray, Poorly Graded Sand (SP), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4529
Hole No. BI-PBS-293-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

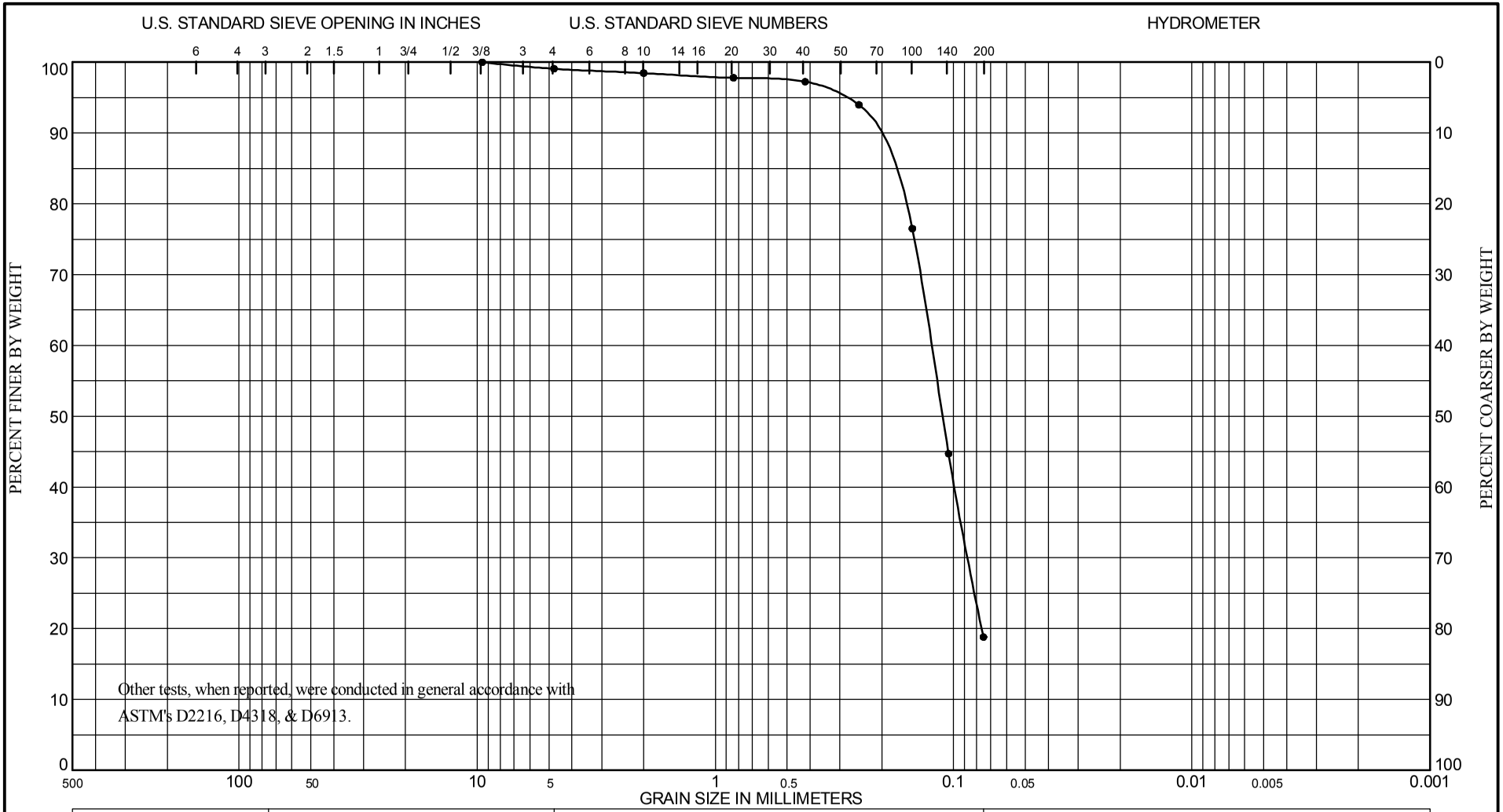
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	2.5 to 3.5	Dark Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4530
Hole No. BI-PBS-293-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	3.5 to 9.5	Dark Gray, Silty Sand (SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4531
Hole No. BI-PBS-293-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-294-13

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
	South Atlantic	Mobile District	

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS West
2. BORING DESIGNATION	BI-PBS-294-13
LOCATION COORDINATES	E = 1,087,901 N = 230,008
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	18.4 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED 3 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	46.8 Ft.
15. DATE BORING	STARTED 01-26-14 / COMPLETED 01-26-14
16. ELEVATION TOP OF BORING	-46.5 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-46.5	0.0				
-49.1	2.6		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, few shell fragments, trace clay lenses 0.8 to 1.0 ft., lt. gray (SP) At El. -47.5 Ft.	A	Classification: SP Color: 10Y 8/1-light greenish gray D50: 0.211 mm % Fines: 1.9
-50.2	3.7		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few shell fragments, lt. to medium gray (SP-SM)	B	Classification: SP Color: 10Y 7/1-light greenish gray D50: 0.207 mm % Fines: 3.4
			SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, lt. to medium gray (SM)	C	Classification: SP-SM Color: 10Y 7/1-light greenish gray D50: 0.167 mm % Fines: 6.8
			At El. -55.2 Ft., silt content increases downward	NS	
-61.5	15.0				
-62.5	16.0		SILT, inorganic-L, few shell fragments, medium gray (ML)		
-64.9	18.4		CLAY, lean, sandy, medium 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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

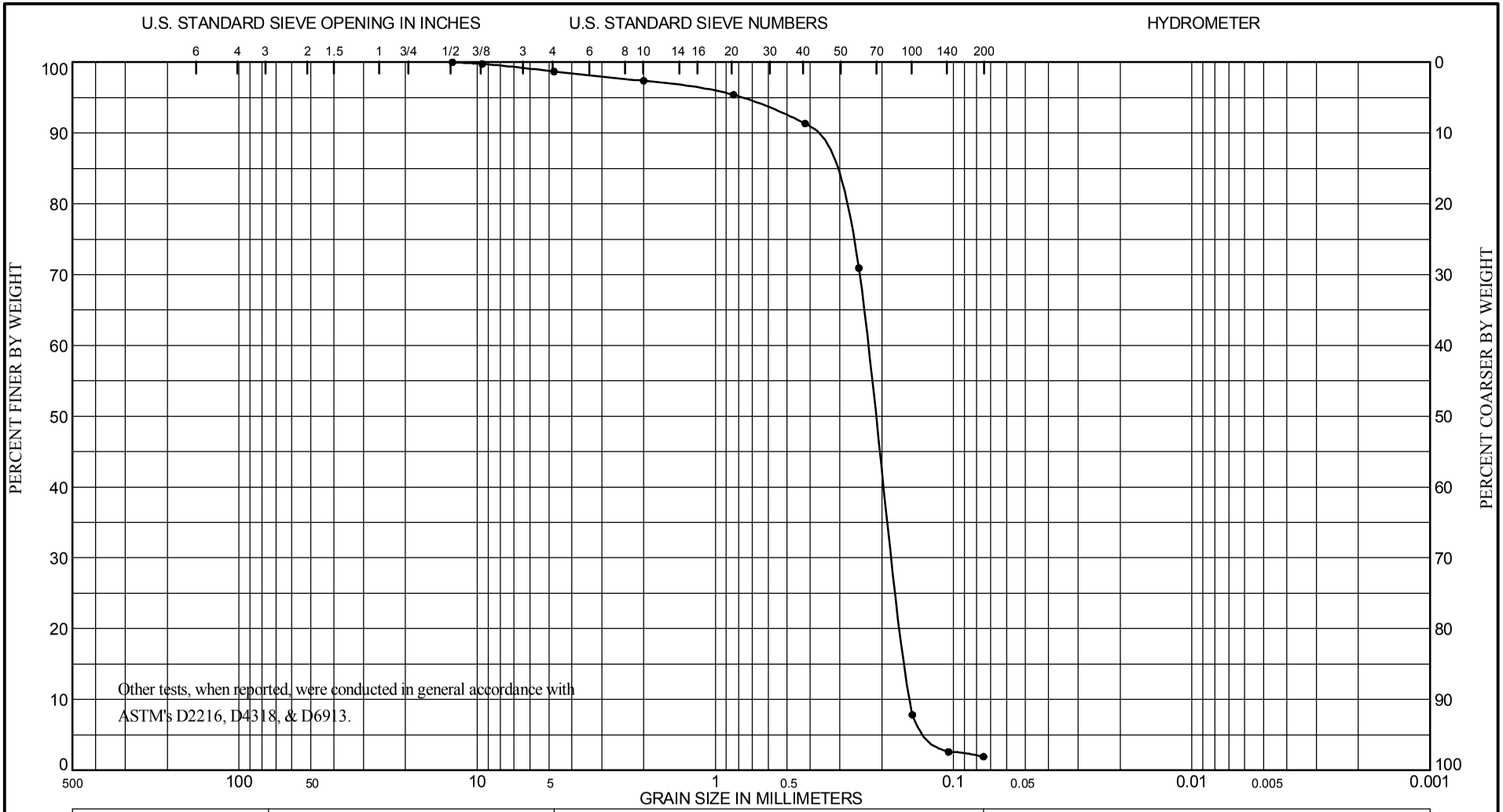
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.13207° Long = -88.50545°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

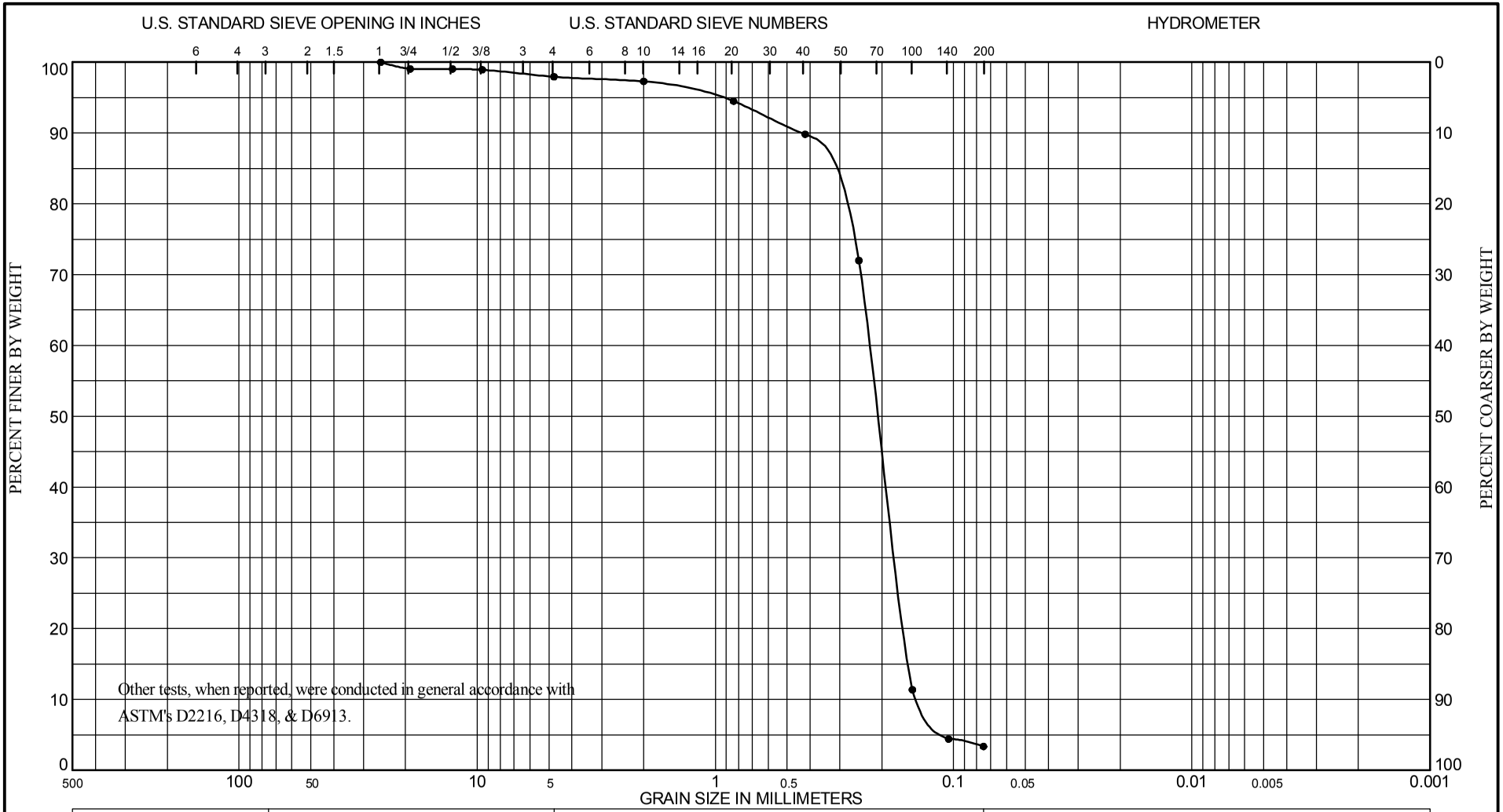
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 2.6	Dark Gray, Poorly Graded Sand (SP), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4554
Hole No. BI-PBS-294-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

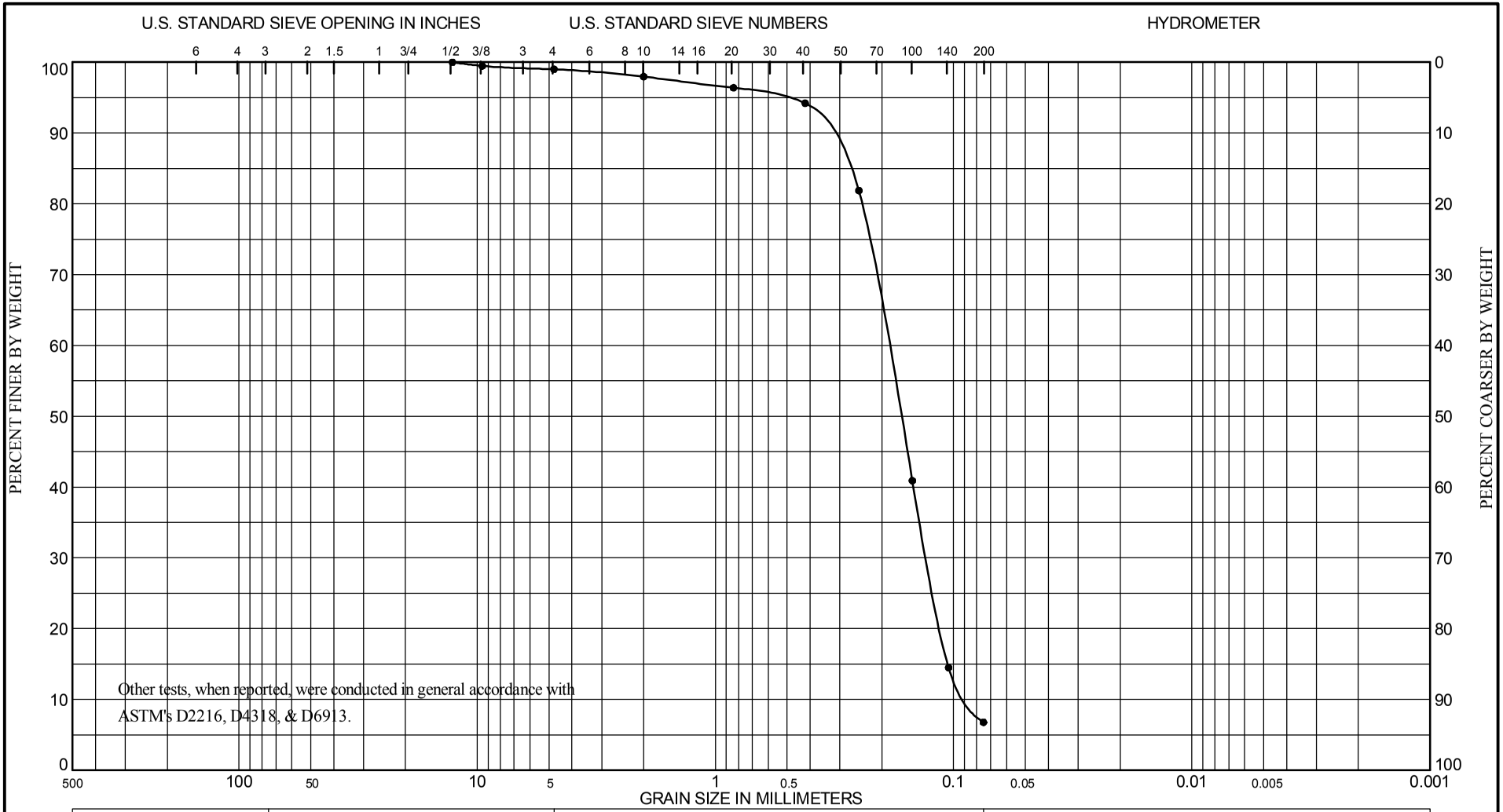
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	2.6 to 3.7	Dark Gray, Poorly Graded Sand (SP), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4555
Hole No. BI-PBS-294-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	3.7 to 8.7	Dark Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4556
Hole No. BI-PBS-294-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-295-13

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
	South Atlantic	Mobile District	

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS West
2. BORING DESIGNATION	BI-PBS-295-13
LOCATION COORDINATES	E = 1,088,146 N = 232,718
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	14.9 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED 3 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	48.1 Ft.
15. DATE BORING	STARTED 01-22-14 / COMPLETED 01-22-14
16. ELEVATION TOP OF BORING	-48.5 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-48.5	0.0				
-51.0	2.5		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, few shell fragments, lt. gray (SP)	A	Classification: SP Color: 10Y 7/1-light greenish gray D50: 0.228 mm % Fines: 4.5
-52.0	3.5		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few shell fragments, lt. gray (SP-SM)	B	Classification: SP Color: 10Y 7/1-light greenish gray D50: 0.214 mm % Fines: 4.1
-54.3	5.8		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, medium gray (SM)	C	Classification: SP-SM Color: 10Y 7/1-light greenish gray D50: 0.158 mm % Fines: 10.7
-58.8	10.3		SAND, silty, clayey, mostly fine-grained sand-sized quartz, trace shell fragments, medium dark gray (SC-SM)	NS	
-63.4	14.9		CLAY, lean, trace shell fragments, sandy, sand pockets between depths of 10.3 and 11.8 ft., medium 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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

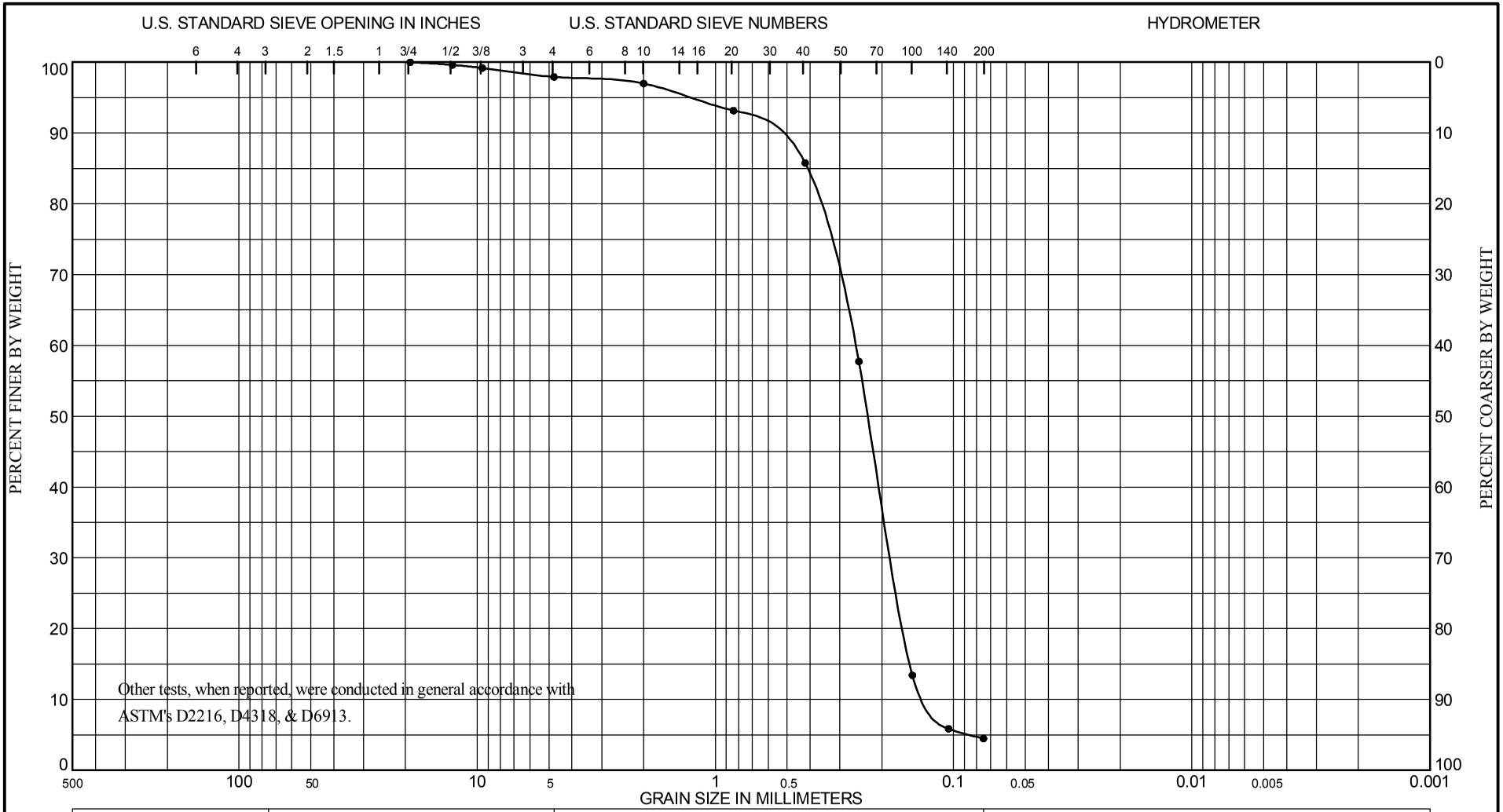
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.13952° Long = -88.50465°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

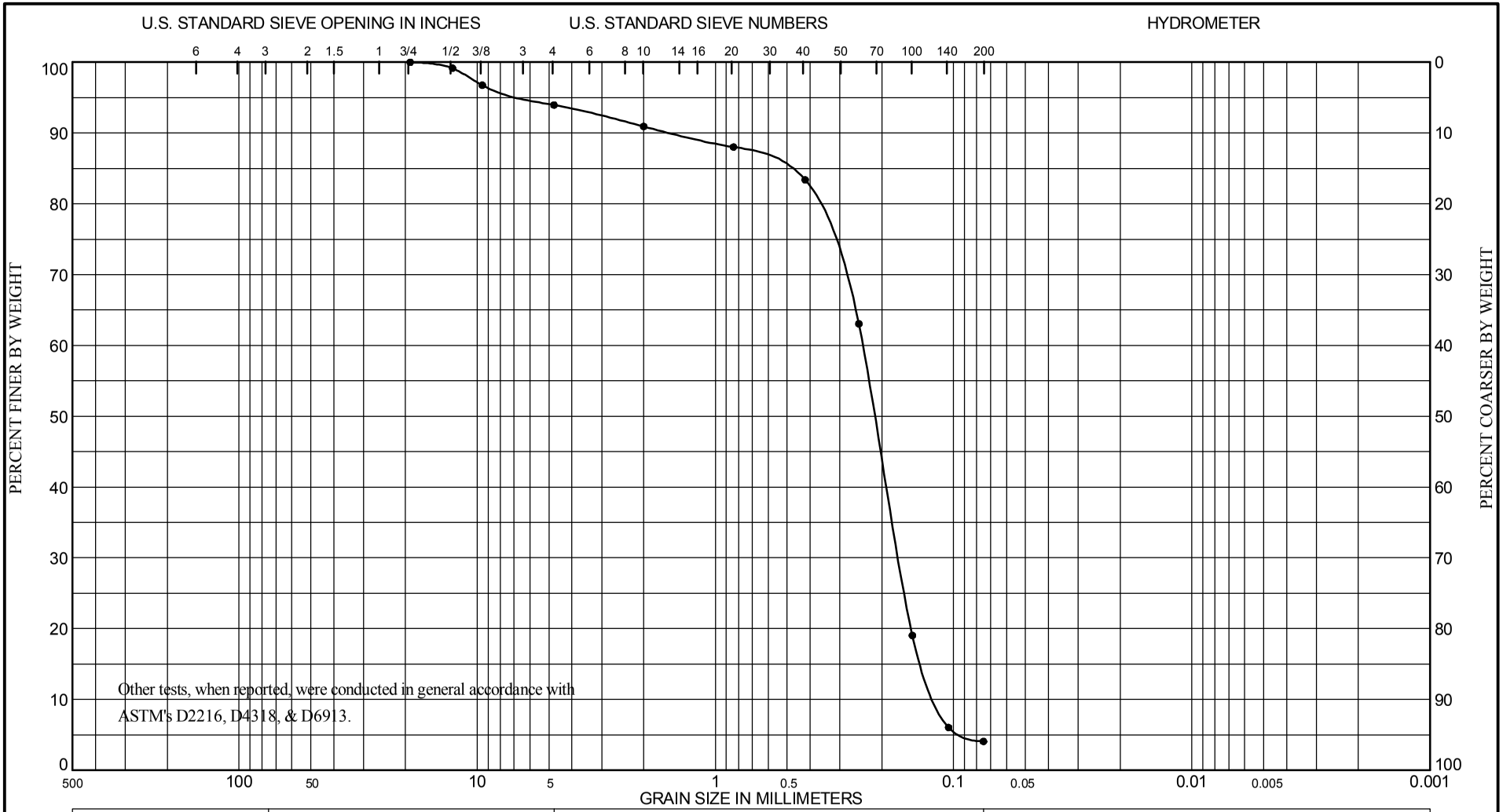
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 2.5	Dark Gray, Poorly Graded Sand (SP), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4526
Hole No. BI-PBS-295-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

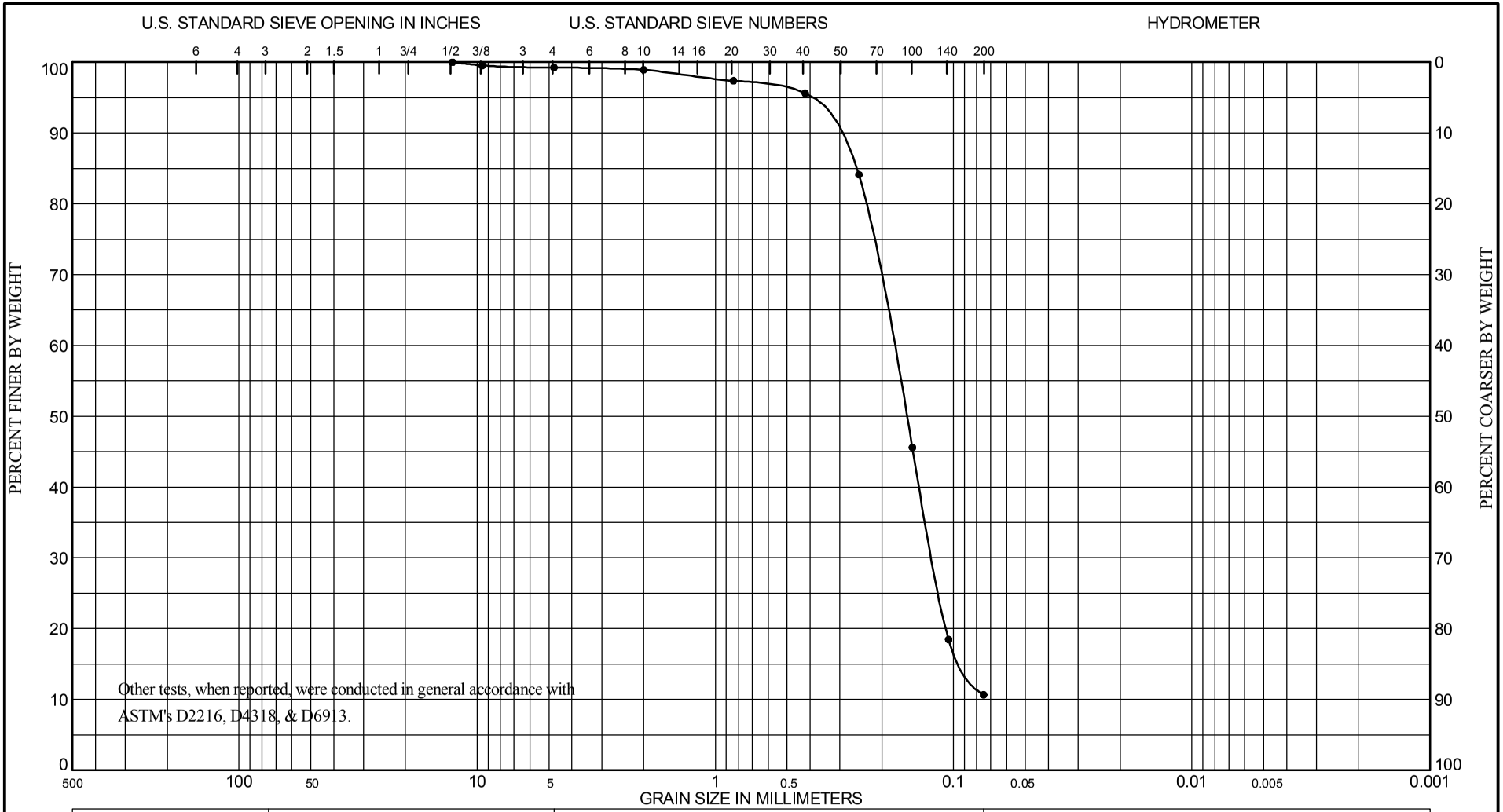
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	2.5 to 3.5	Gray, Poorly Graded Sand (SP), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4527
Hole No. BI-PBS-295-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	3.5 to 5.8	Dark Gray, Poorly Graded Silty Sand (SP-SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4528
Hole No. BI-PBS-295-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-296-13

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
	South Atlantic	Mobile District	

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS West
2. BORING DESIGNATION	BI-PBS-296-13
LOCATION COORDINATES	E = 1,085,423 N = 229,833
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	16.0 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED 1 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	48.5 Ft.
15. DATE BORING	STARTED 02-19-14 / COMPLETED 02-19-14
16. ELEVATION TOP OF BORING	-48.0 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-48.0	0.0				
-52.0	4.0		SAND, silty, mostly fine-grained sand-sized quartz, trace shell fragments, fines content increases below 1.7 ft. depth, medium gray (SM)	A	Classification: SP Color: 2.5Y 6/1-gray D50: 0.189 mm % Fines: 4.7
-58.0	10.0		SILT, inorganic-L, few shell fragments, sandy, medium gray (ML)	NS	
-59.6	11.6		CLAY, silty, trace shell fragments, medium gray (CL-ML)		
-64.0	16.0		CLAY, lean, discontinue shell fragments, pockets filled with ML in upper 1.2 ft. of unit, medium 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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

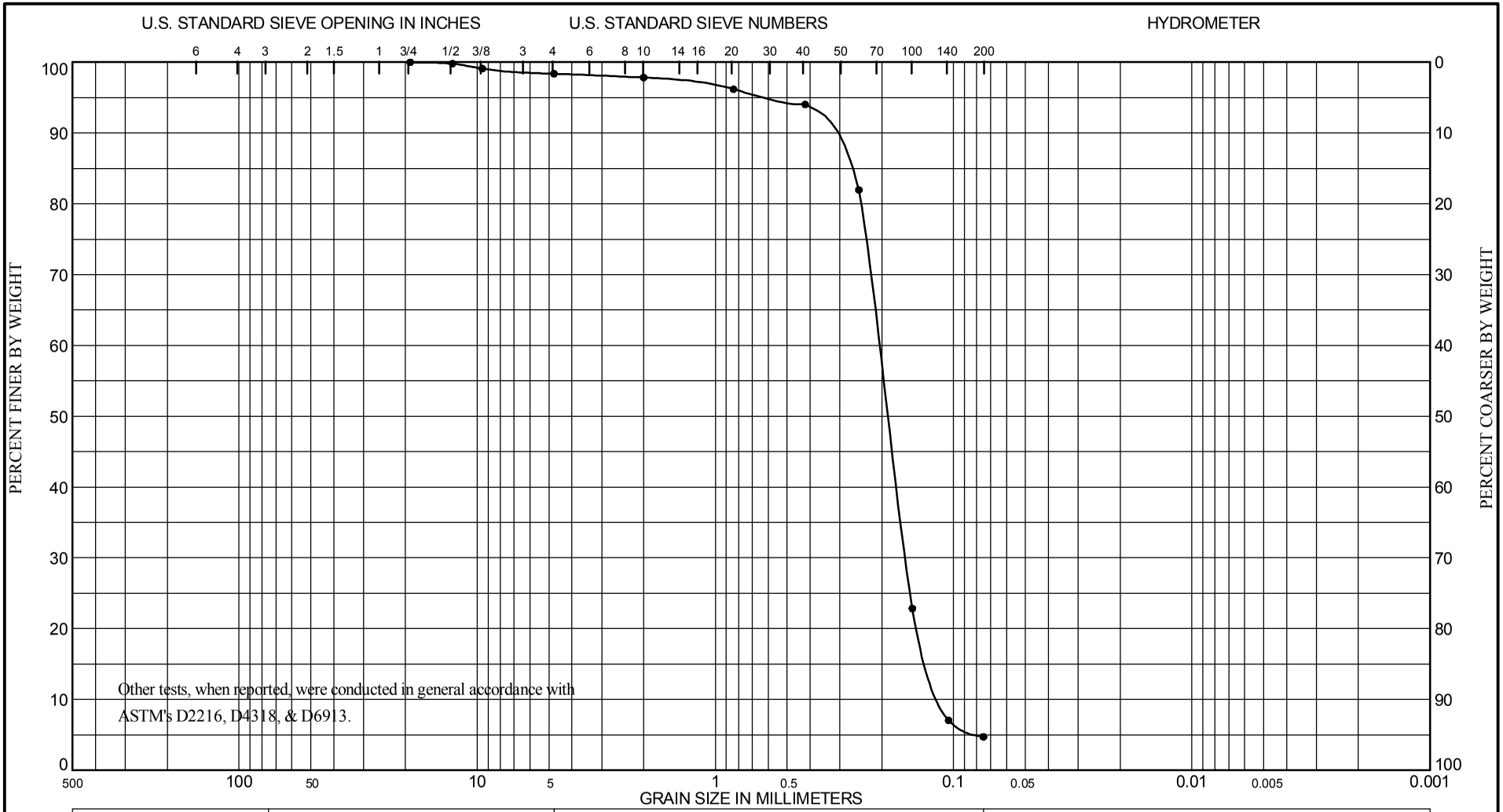
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.13161° Long = -88.51329°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 1.7	Greenish Gray, Poorly Graded Sand (SP), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4858
Hole No. BI-PBS-296-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-297-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 2 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-297-13 — LOCATION COORDINATES: E = 1,086,949 N = 231,289	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 3 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 46.8 Ft.
	15. DATE BORING — STARTED: 01-26-14 — COMPLETED: 01-26-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -46.7 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 19.3 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-46.7	0.0				
-48.5	1.8		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, few shell fragments, brownish gray (SP)	A	Classification: SP Color: 10Y 8/1-light greenish gray D50: 0.209 mm % Fines: 2.6
-53.7	7.0		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few shell fragments, brownish gray (SP-SM)	B	Classification: SP Color: 10Y 8/1-light greenish gray D50: 0.194 mm % Fines: 4
-58.7	12.0		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, brownish gray (SM)	C	Classification: SM Color: 10Y 7/1-light greenish gray D50: 0.134 mm % Fines: 14.2
-64.9	18.2		SILT, inorganic-L, trace shell fragments, medium gray (ML)	NS	
-66.0	19.3		SAND, silty, clayey, mostly fine-grained sand-sized quartz, few shell fragments, medium dark gray (SC-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.

3. Seafloor elevation calculated using sampling

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.13560° Long = -88.50845°

DRILLING LOG (Cont. Sheet)	INSTALLATION Mobile District		SHEET 2 OF 2 SHEETS
PROJECT MsCIP Barrier Island Restoration	COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83	VERTICAL NAVD88
LOCATION COORDINATES X = 1,086,949 Y = 231,289	ELEVATION TOP OF BORING -46.7 Ft.		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
			vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.		

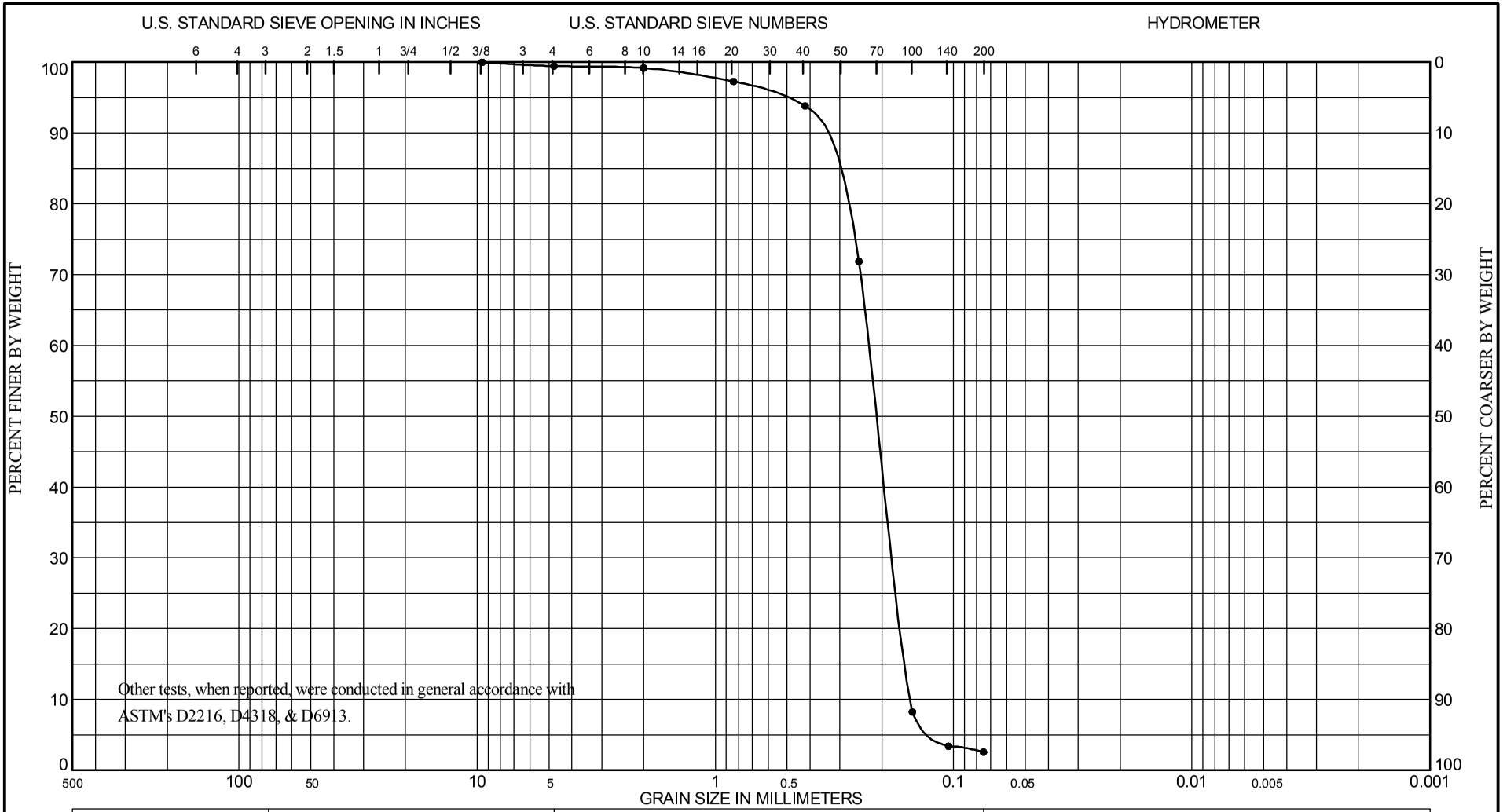
30
35
40
45
50
55
60

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.13560° Long = -88.50845°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

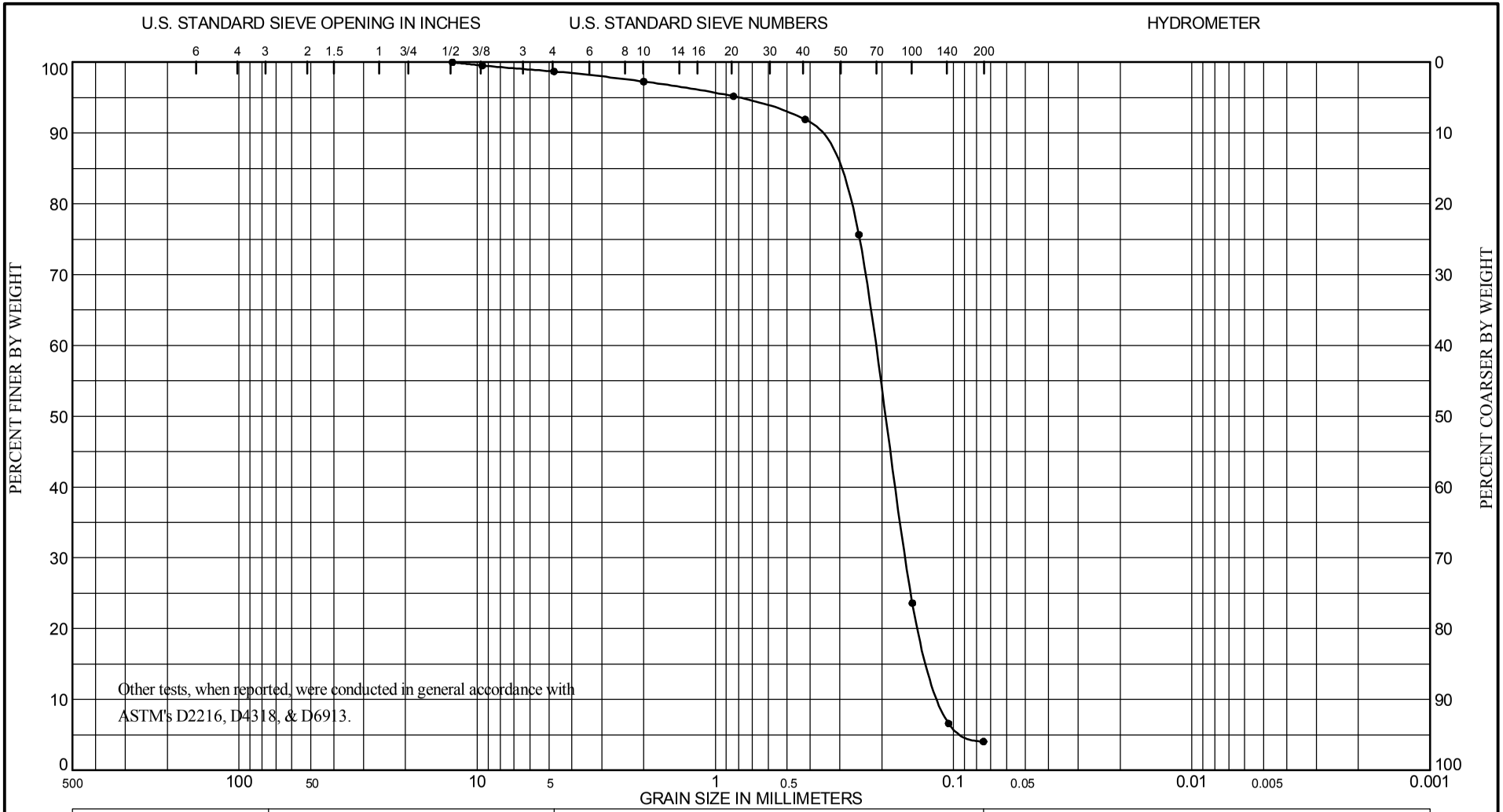
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 1.8	Dark Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4551
Hole No. BI-PBS-297-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

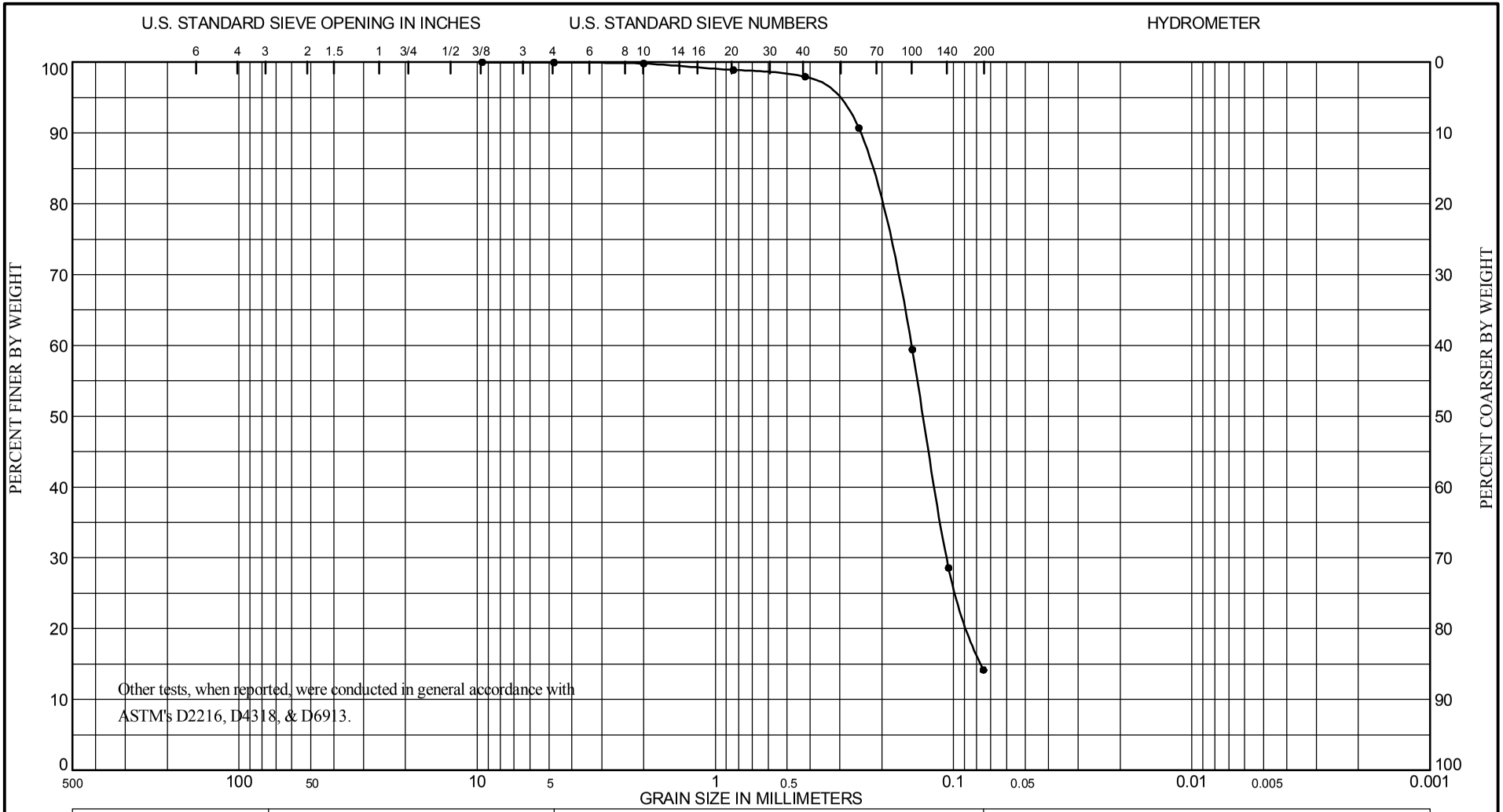
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	1.8 to 7.0	Dark Gray, Poorly Graded Sand (SP), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4552
Hole No. BI-PBS-297-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	7.0 to 12.0	Very Dark Gray, Silty Sand (SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4553
Hole No. BI-PBS-297-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-298-13

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
	South Atlantic	Mobile District	

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS West
2. BORING DESIGNATION	BI-PBS-298-13
LOCATION COORDINATES	E = 1,084,092 N = 230,939
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	17.5 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED 1 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	48.5 Ft.
15. DATE BORING	STARTED 02-19-14 / COMPLETED 02-19-14
16. ELEVATION TOP OF BORING	-48.0 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-48.0	0.0				
-54.5	6.5		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, medium gray (SM)	A	Classification: SP-SM Color: 2.5Y 6/1-gray D50: 0.16 mm % Fines: 10.6
-60.1	12.1		SILT, inorganic-L, few shell fragments, sandy, medium gray (ML)	NS	
-65.5	17.5		CLAY, lean, voids filled with shell fragments and ML, firm and soft, medium 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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

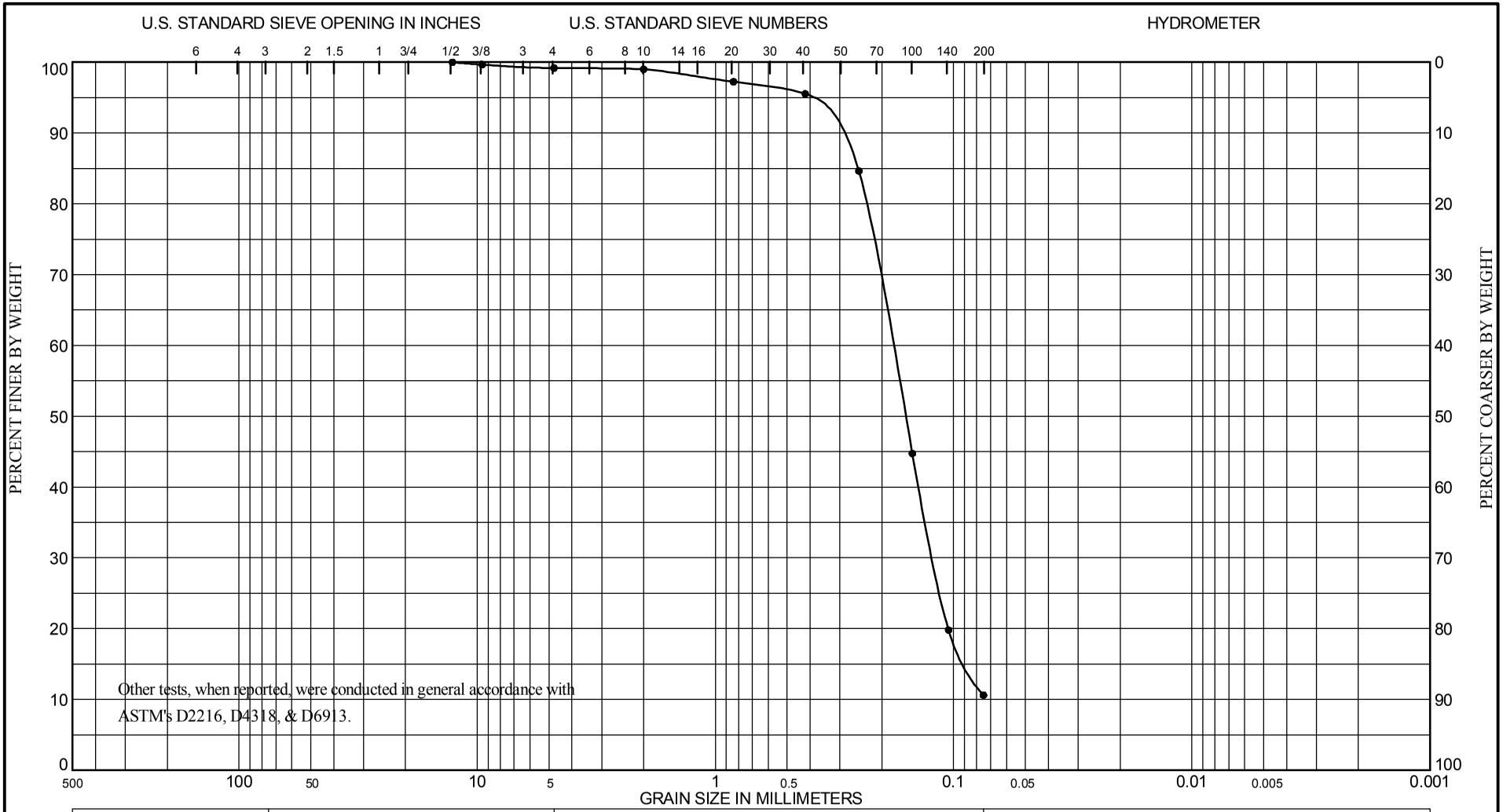
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.13466° Long = -88.51749°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 6.5	Dark Greenish Gray, Poorly Graded Silty Sand (SP-SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4857
Hole No. BI-PBS-298-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-299-13

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
	South Atlantic	Mobile District	

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS West
2. BORING DESIGNATION	BI-PBS-299-13
LOCATION COORDINATES	E = 1,086,658 N = 233,441
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	18.8 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED 2 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	47.4 Ft.
15. DATE BORING	STARTED 01-22-14 / COMPLETED 01-22-14
16. ELEVATION TOP OF BORING	-48.0 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-48.0	0.0				
-53.4	5.4		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few shell fragments, upper 1.5 ft. is less silty than remainder below, lt. to medium gray (SP-SM)	A	Classification: SP-SM Color: 10Y 7/1-light greenish gray D50: 0.206 mm % Fines: 5.4
-55.5	7.5		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few shell fragments, lt. to medium gray (SP-SM)	B	Classification: SP-SM Color: 10Y 7/1-light greenish gray D50: 0.159 mm % Fines: 9.7
-57.0	9.0		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, lt. to medium gray (SM)		
-63.9	15.9		SAND, silty, clayey, mostly fine-grained sand-sized quartz, trace shell fragments, lt. to medium gray (SC-SM)	NS	
-66.8	18.8		CLAY, lean, sandy, few shell fragments from 17.5 ft. depth to base of unit, medium to 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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

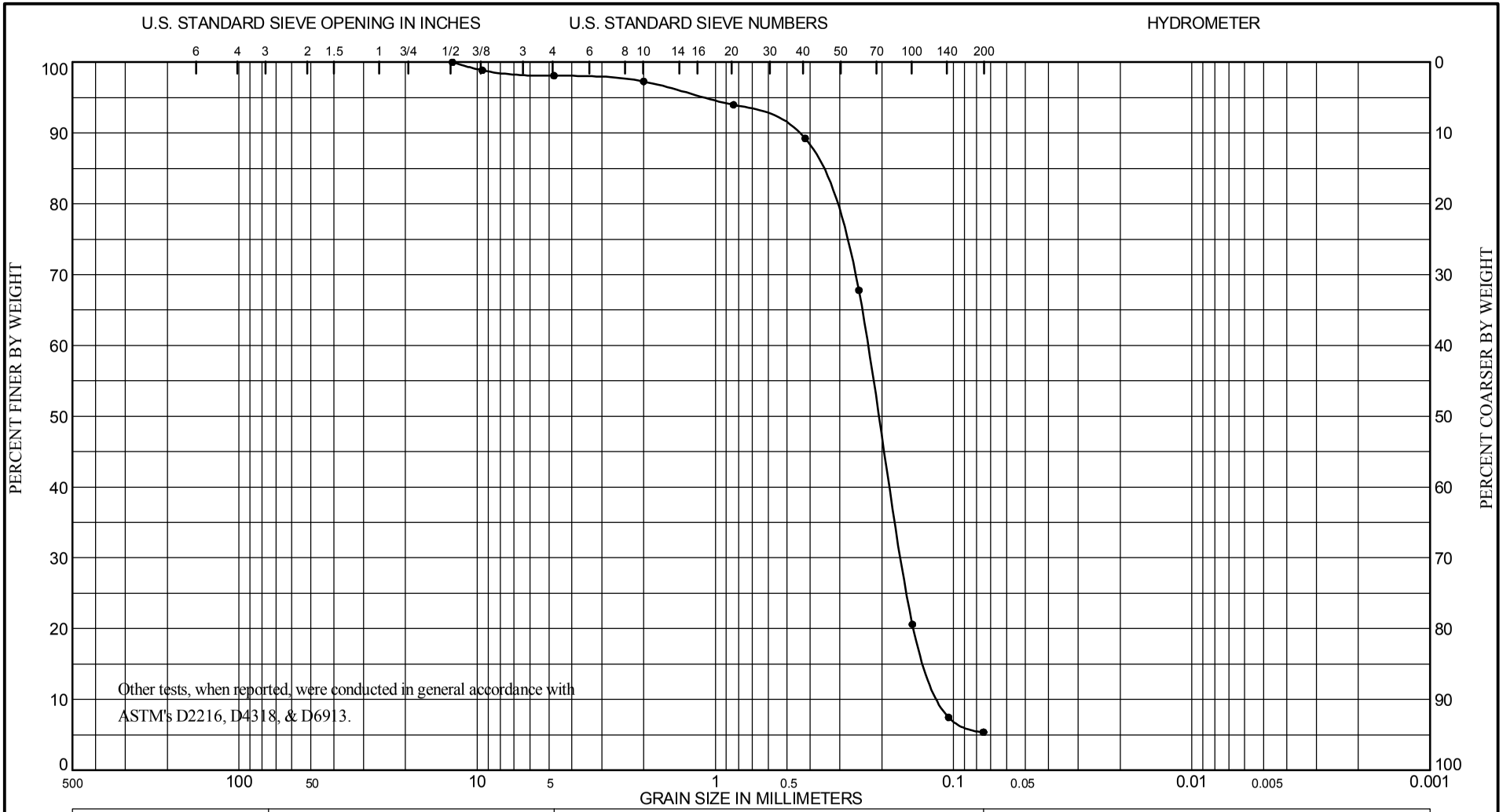
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14152° Long = -88.50935°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

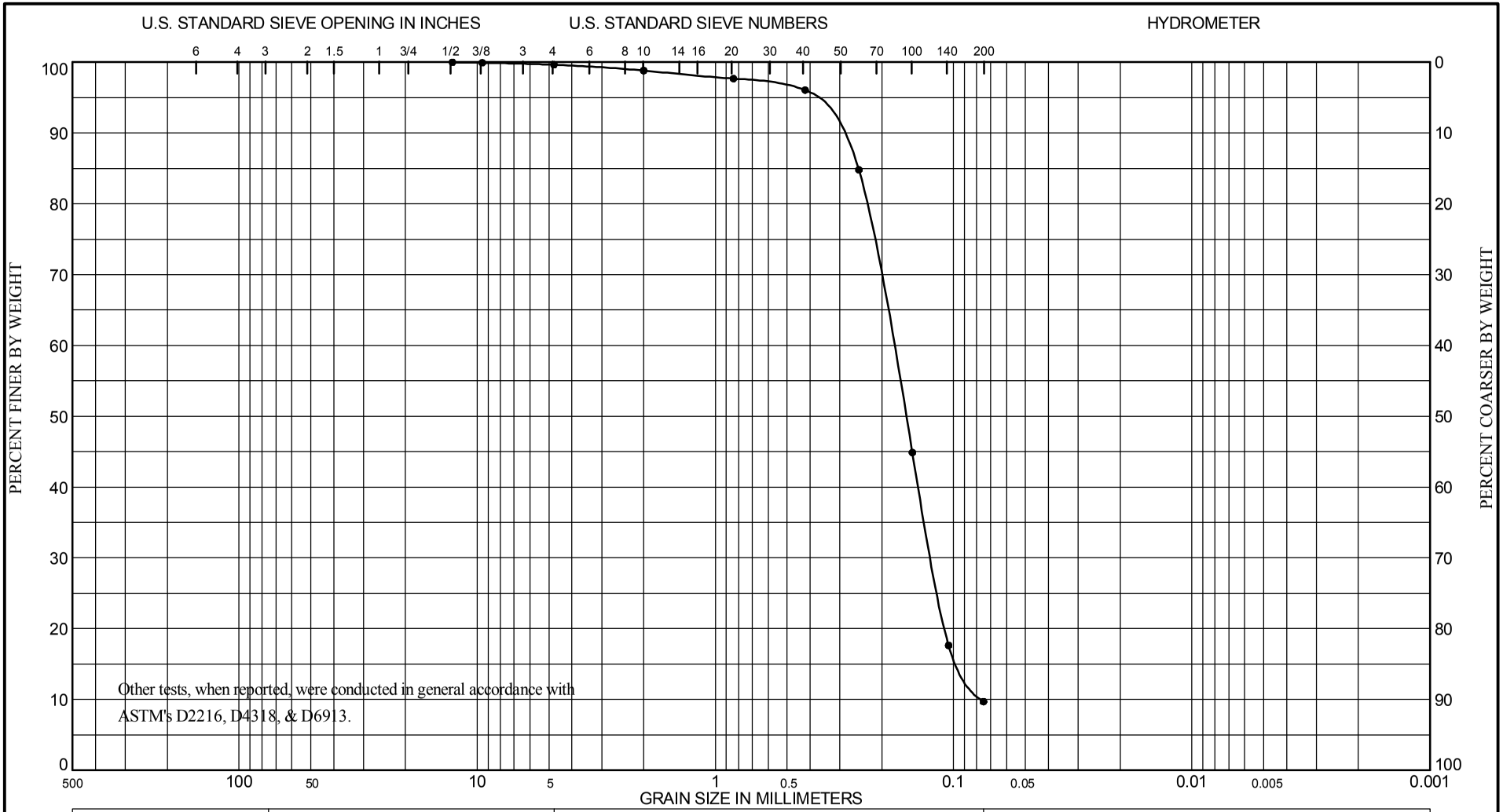
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 5.4	Dark Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4524
Hole No. BI-PBS-299-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	5.4 to 9.0	Dark Gray, Poorly Graded Silty Sand (SP-SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4525
Hole No. BI-PBS-299-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-300-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-300-13 — LOCATION COORDINATES: E = 1,085,776 N = 232,314	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 3 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 46.4 Ft.
	15. DATE BORING — STARTED: 01-26-14 — COMPLETED: 01-26-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -46.5 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 16.8 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-46.5	0.0				
-47.5	1.0		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, few shell fragments, brownish gray (SP)	A	Classification: SP Color: 10Y 8/1-light greenish gray D50: 0.214 mm % Fines: 1.9
-53.2	6.7		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few shell fragments, brownish gray (SP-SM)	B	Classification: SP Color: 10Y 7/1-light greenish gray D50: 0.192 mm % Fines: 4.8
			SAND, silty, mostly fine-grained sand-sized quartz, trace shell fragments, brownish gray (SM)	C	Classification: SM Color: 10Y 7/1-light greenish gray D50: 0.139 mm % Fines: 12.1
-63.3	16.8		At El. -56.0 Ft., few shell fragments, very fine grainedSM-ML, brownish 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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

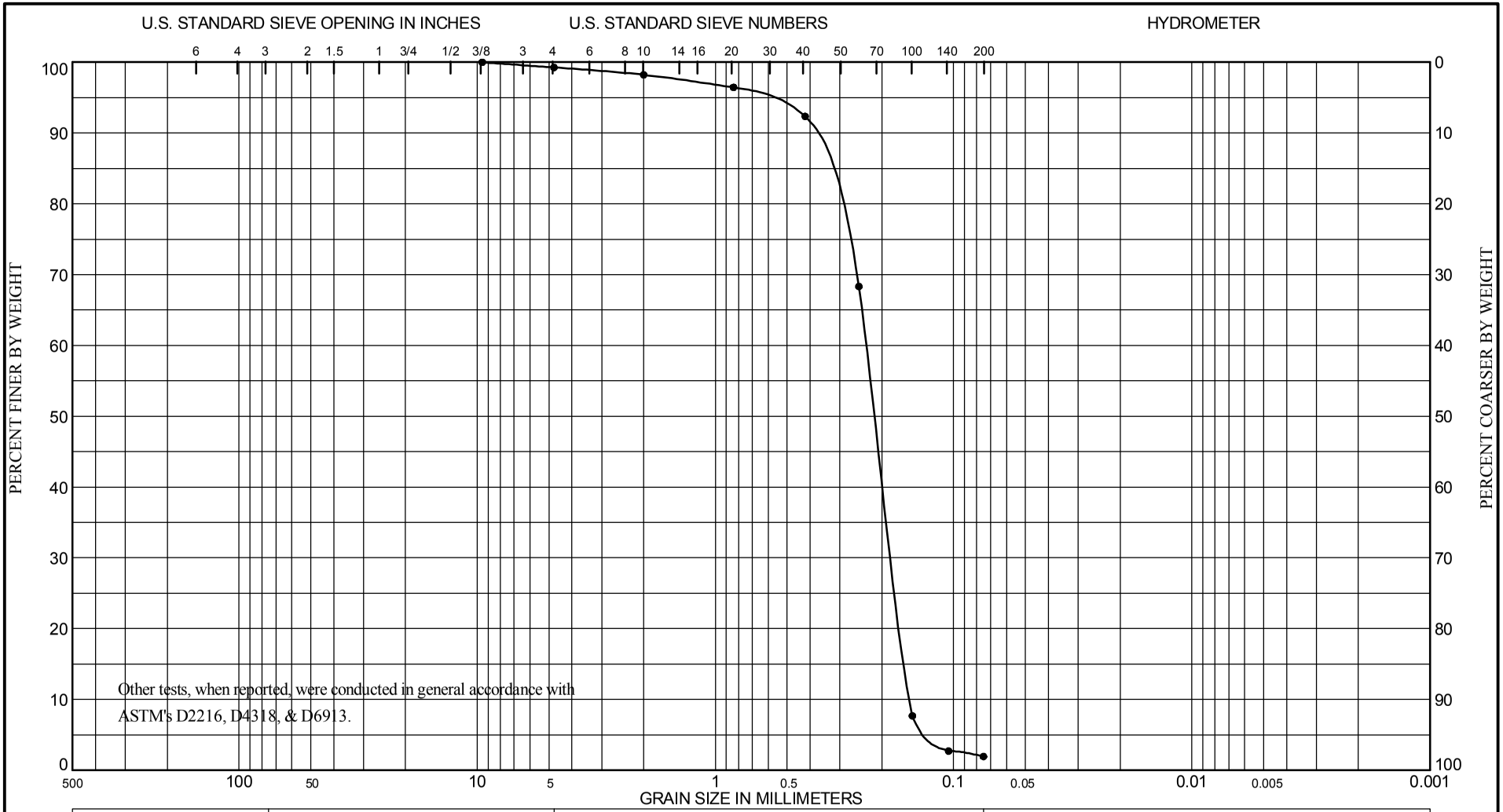
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.13843° Long = -88.51215°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

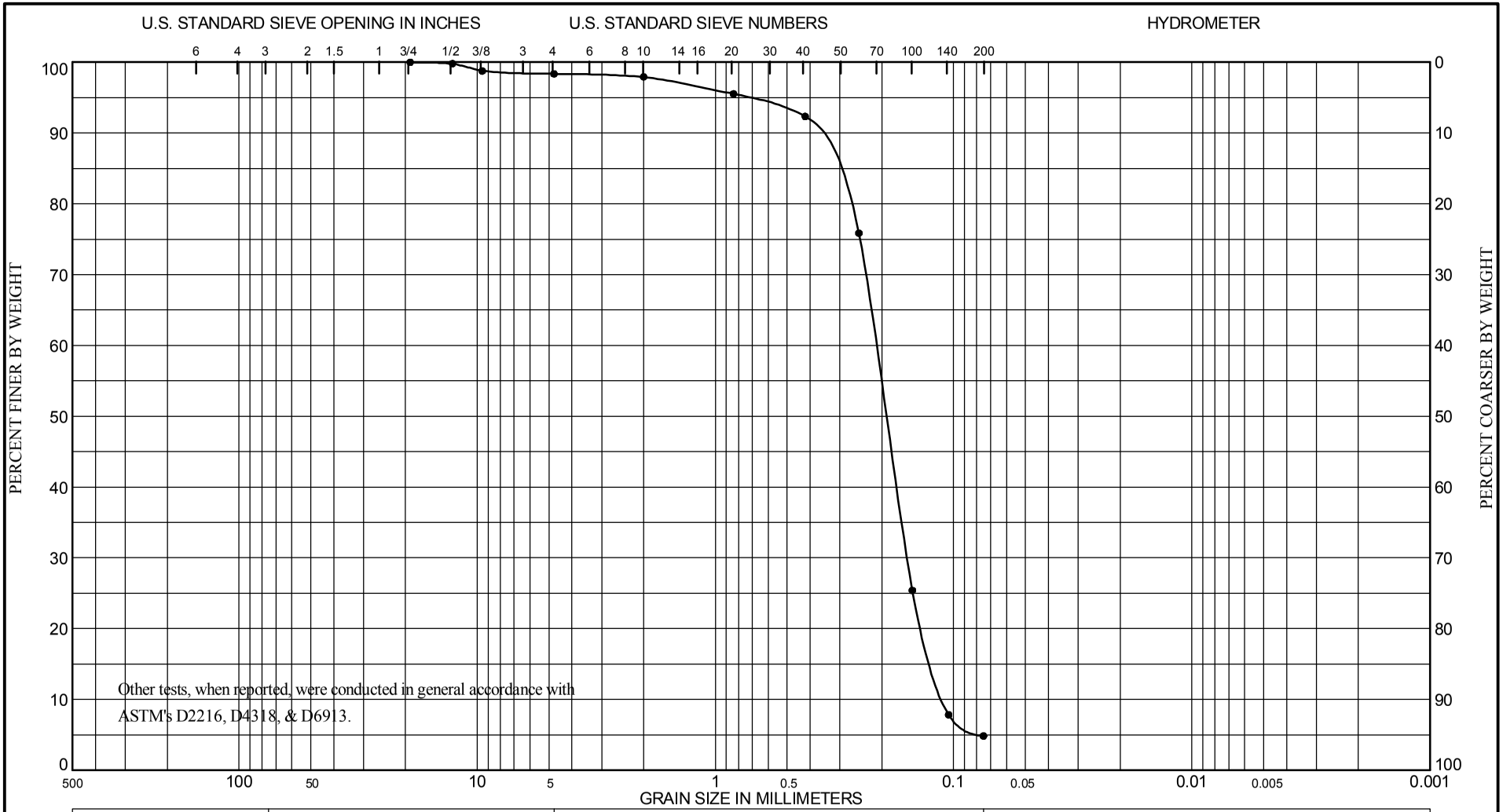
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 1.0	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4548
Hole No. BI-PBS-300-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

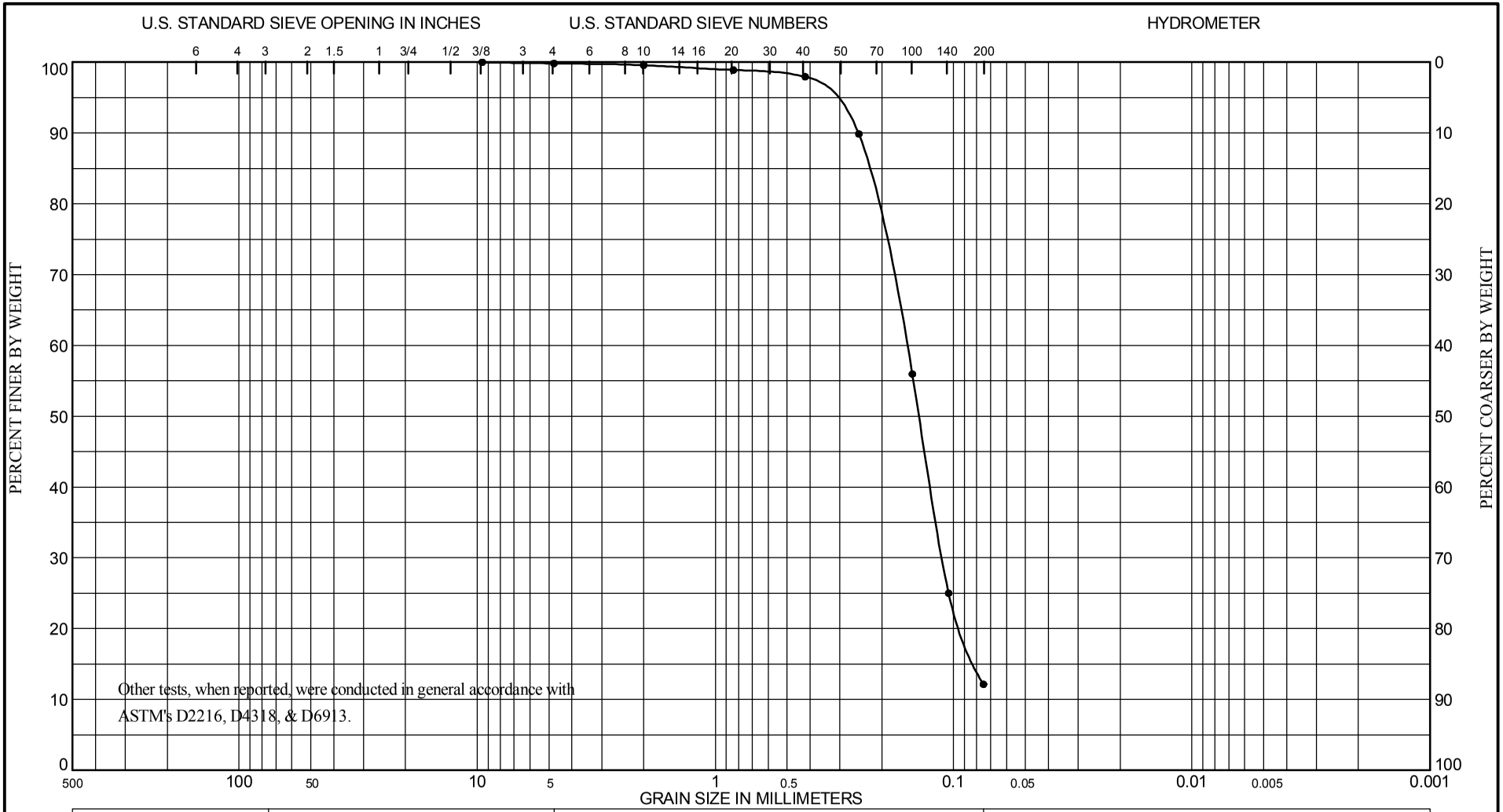
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	1.0 to 6.7	Gray, Poorly Graded Sand (SP), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4549
Hole No. BI-PBS-300-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	6.7 to 9.5	Dark Gray, Silty Sand (SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4550
Hole No. BI-PBS-300-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-301-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-301-13 — LOCATION COORDINATES: E = 1,083,194 N = 232,136	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 1 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 48.1 Ft.
	15. DATE BORING — STARTED: 02-19-14 — COMPLETED: 02-19-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -47.6 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 14.6 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-47.6	0.0				
-52.6	5.0		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, medium gray (SM)	A	Classification: SP-SM Color: 2.5Y 6/1-gray D50: 0.175 mm % Fines: 9.1
-59.7	12.1		SILT, inorganic-L, trace shell fragments, sandy, non-sandy in lower half of unit, slight plasticity over lower 0.5 ft., medium gray (ML)	NS	
-62.2	14.6		CLAY, lean, ML- and shell fragment-filled burrows, medium 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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

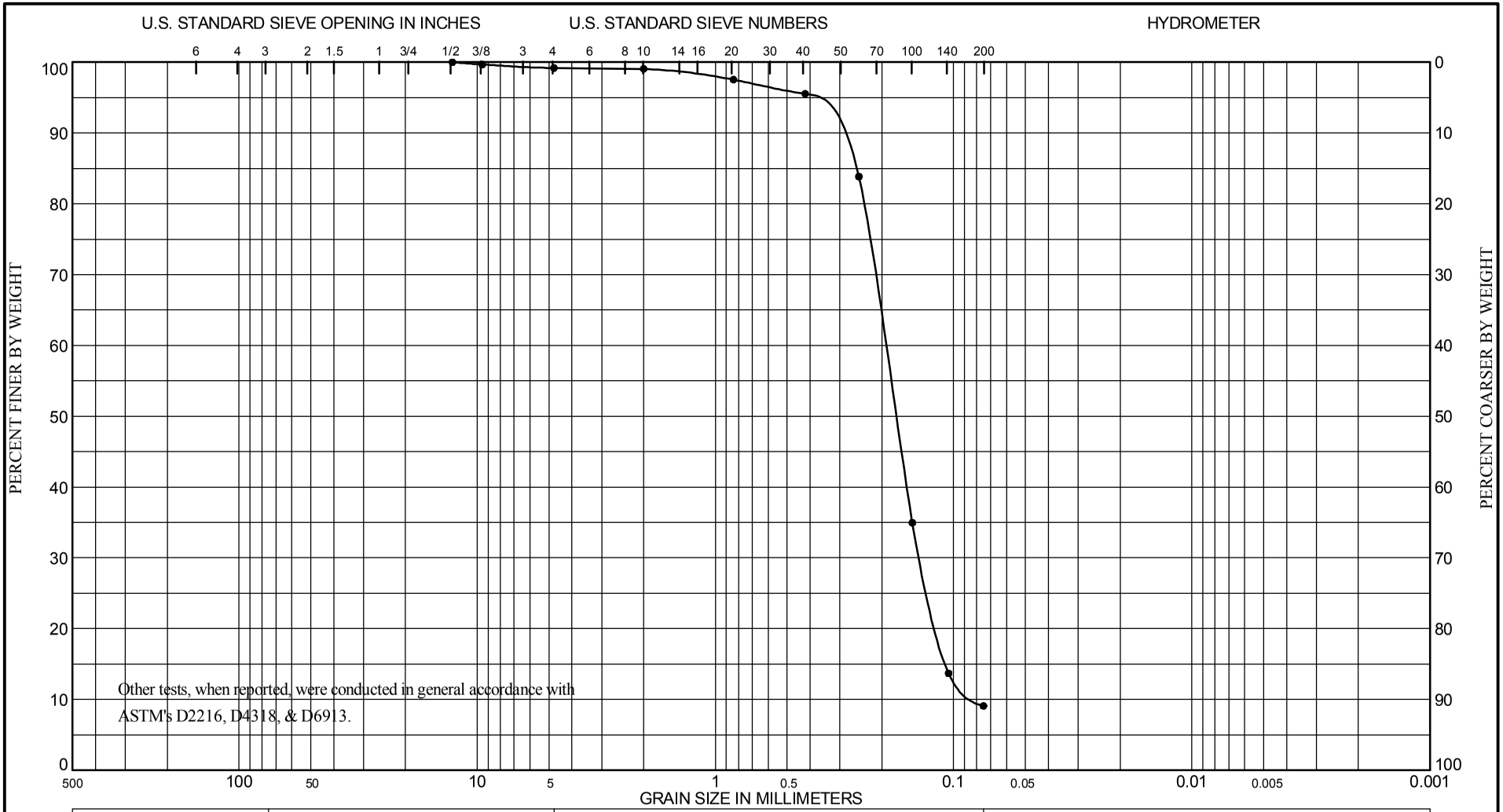
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.13796° Long = -88.52032°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 5.0	Dark Greenish Gray, Poorly Graded Silty Sand (SP-SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4856
Hole No. BI-PBS-301-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-302-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 2 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-302-13 — LOCATION COORDINATES: E = 1,084,485 N = 232,885	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 4 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 46.1 Ft.
	15. DATE BORING — STARTED: 01-26-14 — COMPLETED: 01-26-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -46.4 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 18.8 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-46.4	0.0				
-48.2	1.8		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few shell fragments, trace clay lenses 1.0 to 1.2 ft., brownish gray (SP-SM)	A	Classification: SP Color: 10Y 8/1-light greenish gray D50: 0.203 mm % Fines: 3.3
			SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, brownish gray (SM)	B	Classification: SP-SM Color: 10Y 7/1-light greenish gray D50: 0.185 mm % Fines: 7.3
-57.2	10.8			C	Classification: SM Color: 10Y 7/1-light greenish gray D50: 0.139 mm % Fines: 12.5
-61.9	15.5		SAND, silty, clayey, mostly fine-grained sand-sized quartz, few shell fragments, medium gray (SC-SM)	D	Classification: SM Color: 10Y 7/1-light greenish gray D50: 0.097 mm % Fines: 26.2
-62.6	16.2		SAND, clayey, mostly fine-grained sand-sized quartz, few shell fragments, medium dark gray (SC)	NS	
-65.2	18.8		CLAY, lean, sandy, sand pockets 16.2 to 17.5 ft., soft to firm clay, medium 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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14001° Long = -88.51623°

DRILLING LOG (Cont. Sheet)	INSTALLATION Mobile District		SHEET 2 OF 2 SHEETS
PROJECT MsCIP Barrier Island Restoration	COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83	VERTICAL NAVD88
LOCATION COORDINATES X = 1,084,485 Y = 232,885	ELEVATION TOP OF BORING -46.4 Ft.		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
			factor.		

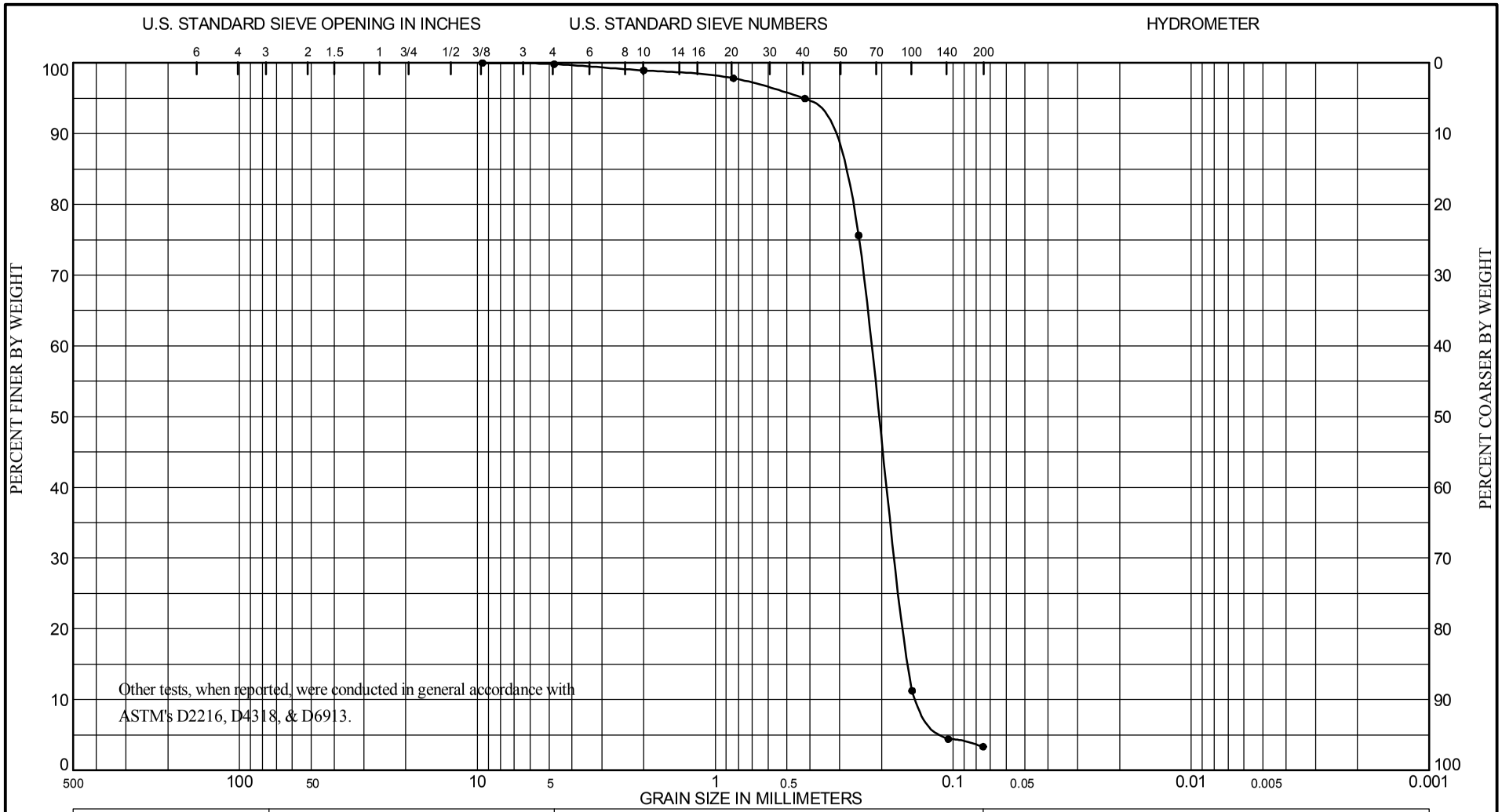
30
35
40
45
50
55
60

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14001° Long = -88.51623°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

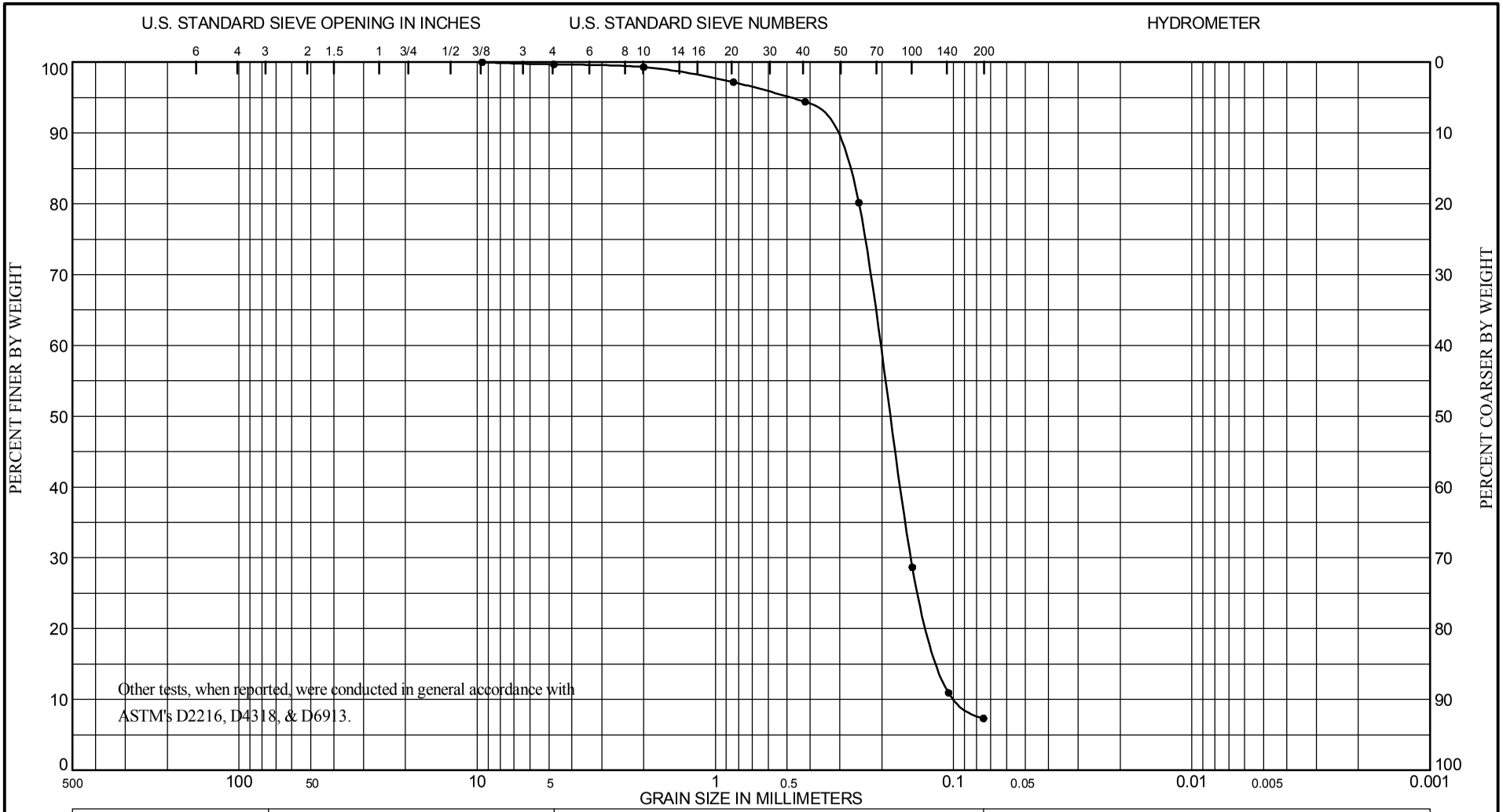
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 1.8	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4544
Hole No. BI-PBS-302-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

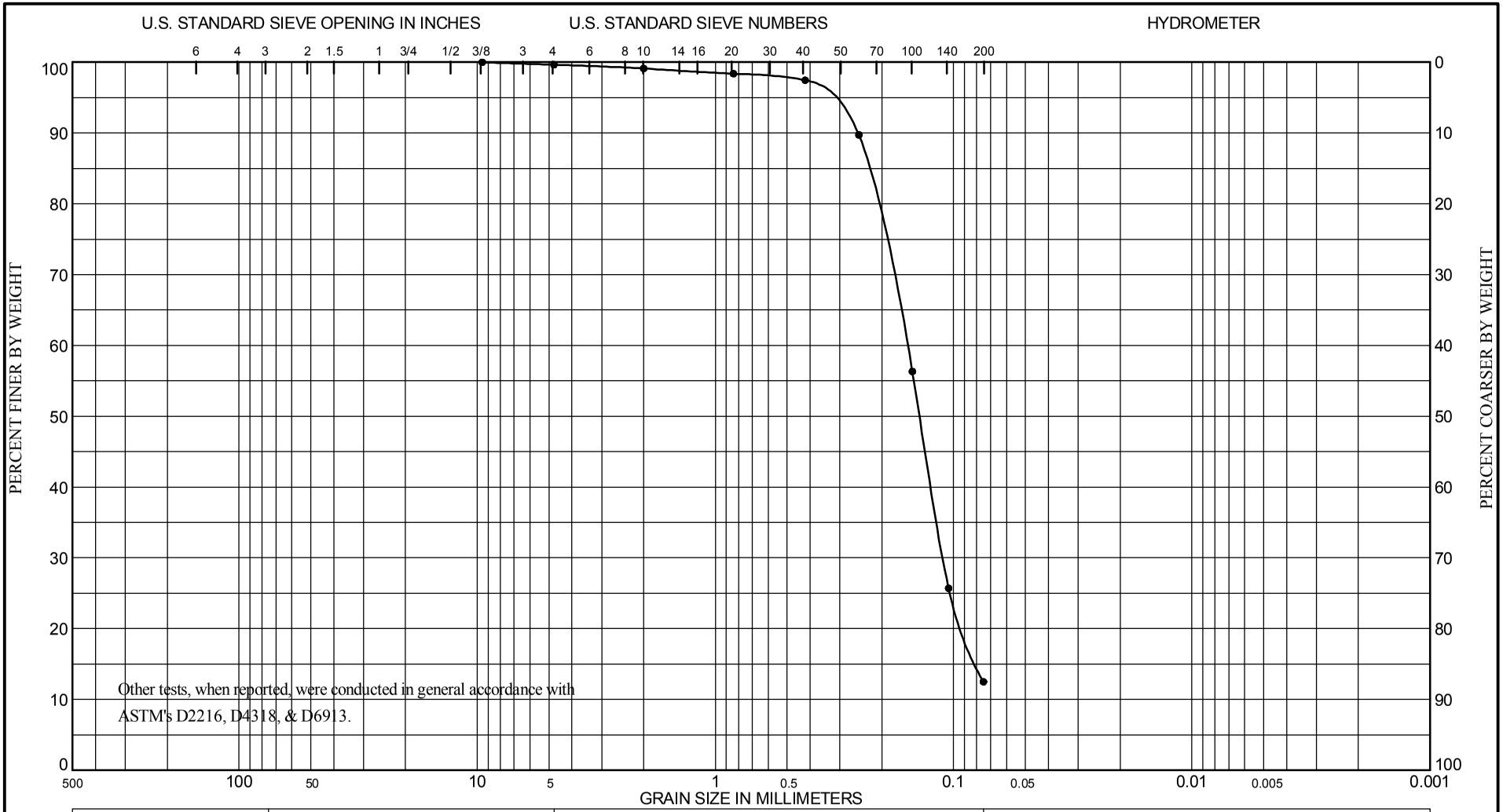
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	1.8 to 5.8	Gray, Poorly Graded Silty Sand (SP-SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4545
Hole No. BI-PBS-302-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

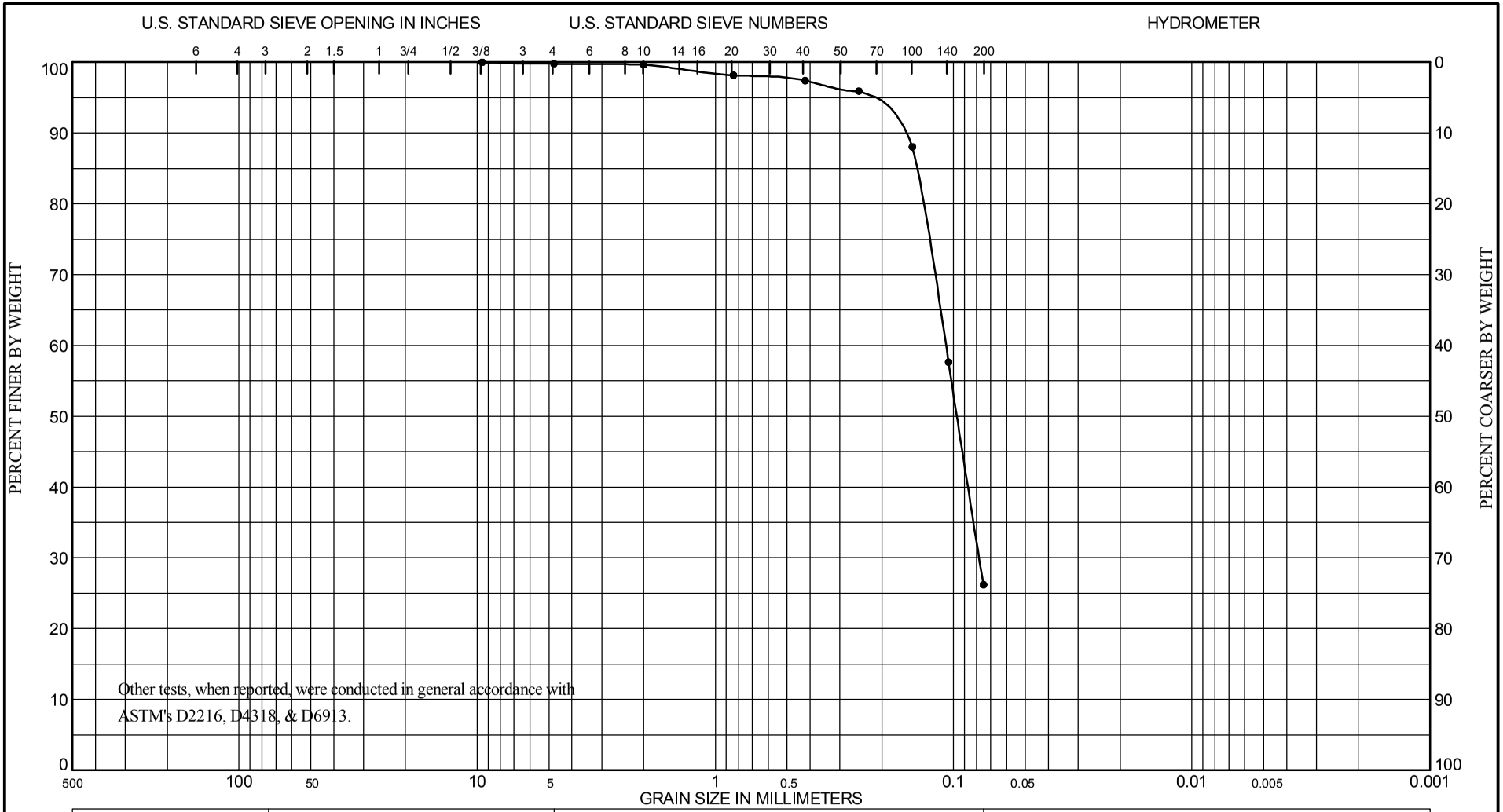
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	5.8 to 10.8	Dark Gray, Silty Sand (SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4546
Hole No. BI-PBS-302-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
D	10.8 to 15.5	Dark Gray, Silty Sand (SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4547
Hole No. BI-PBS-302-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-303-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-303-13 — LOCATION COORDINATES: E = 1,085,243 N = 234,091	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 2 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 46.4 Ft.
	15. DATE BORING — STARTED: 01-20-14 — COMPLETED: 01-20-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -46.6 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 12.8 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-46.6	0.0				
-48.0	1.4		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little shell fragments, lt. gray (SP)	A	Classification: SP-SM Color: 2.5Y 6/1-gray D50: 0.183 mm % Fines: 7.8
-50.7	4.1		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few shell fragments, lt. to medium gray (SP-SM)	B	Classification: SP Color: 2.5Y 5/1-gray D50: 0.279 mm % Fines: 1.8
-51.0	4.4		SAND, silty, mostly fine-grained sand-sized quartz, trace shell fragments, lt. to medium gray (SM)		
-56.4	9.8		SAND, silty, clayey, mostly fine-grained sand-sized quartz, few shell fragments, medium gray (SC-SM)	NS	
-59.4	12.8		CLAY, lean, few shell fragments, sandy, medium 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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

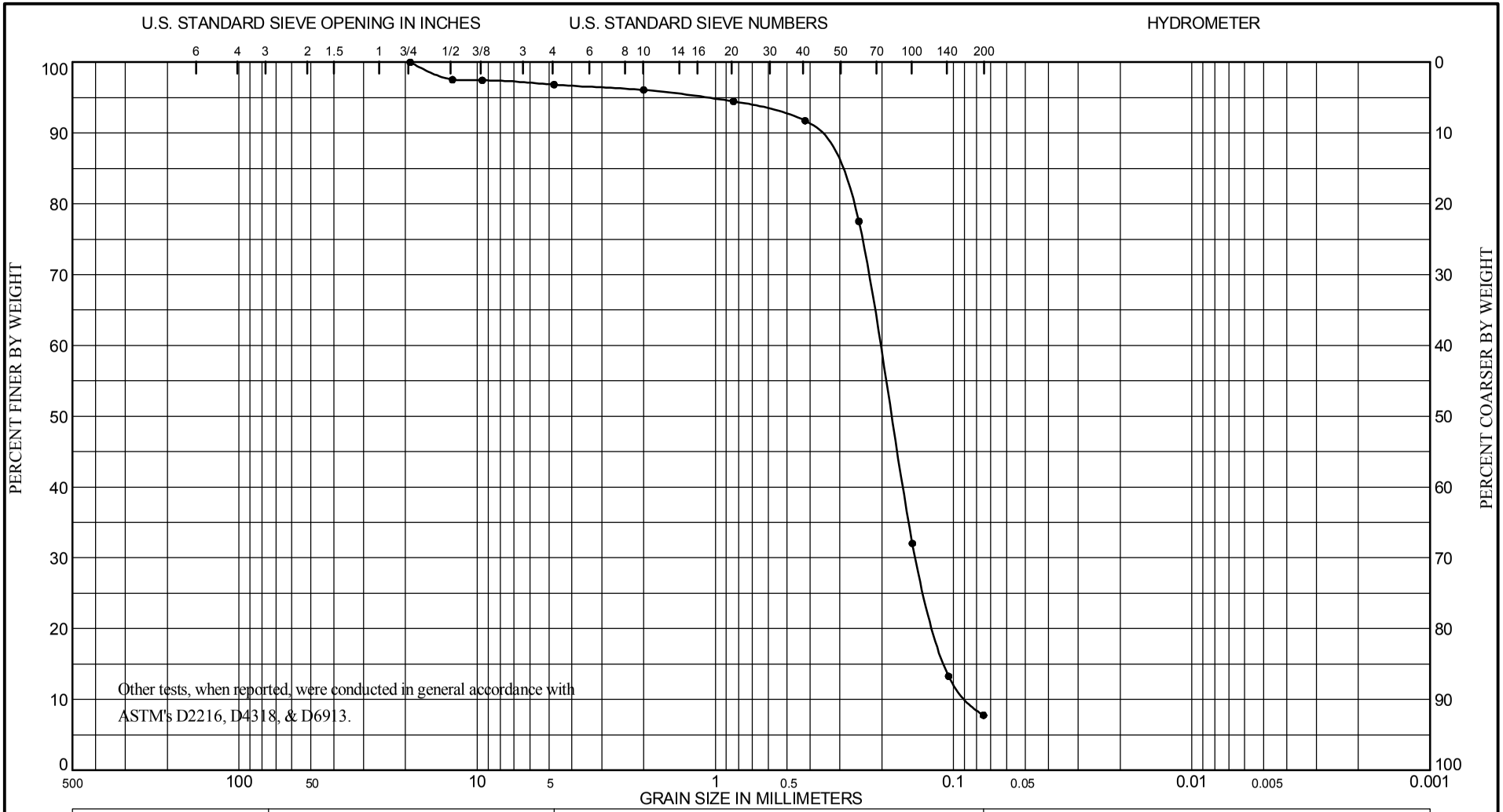
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14332° Long = -88.51382°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

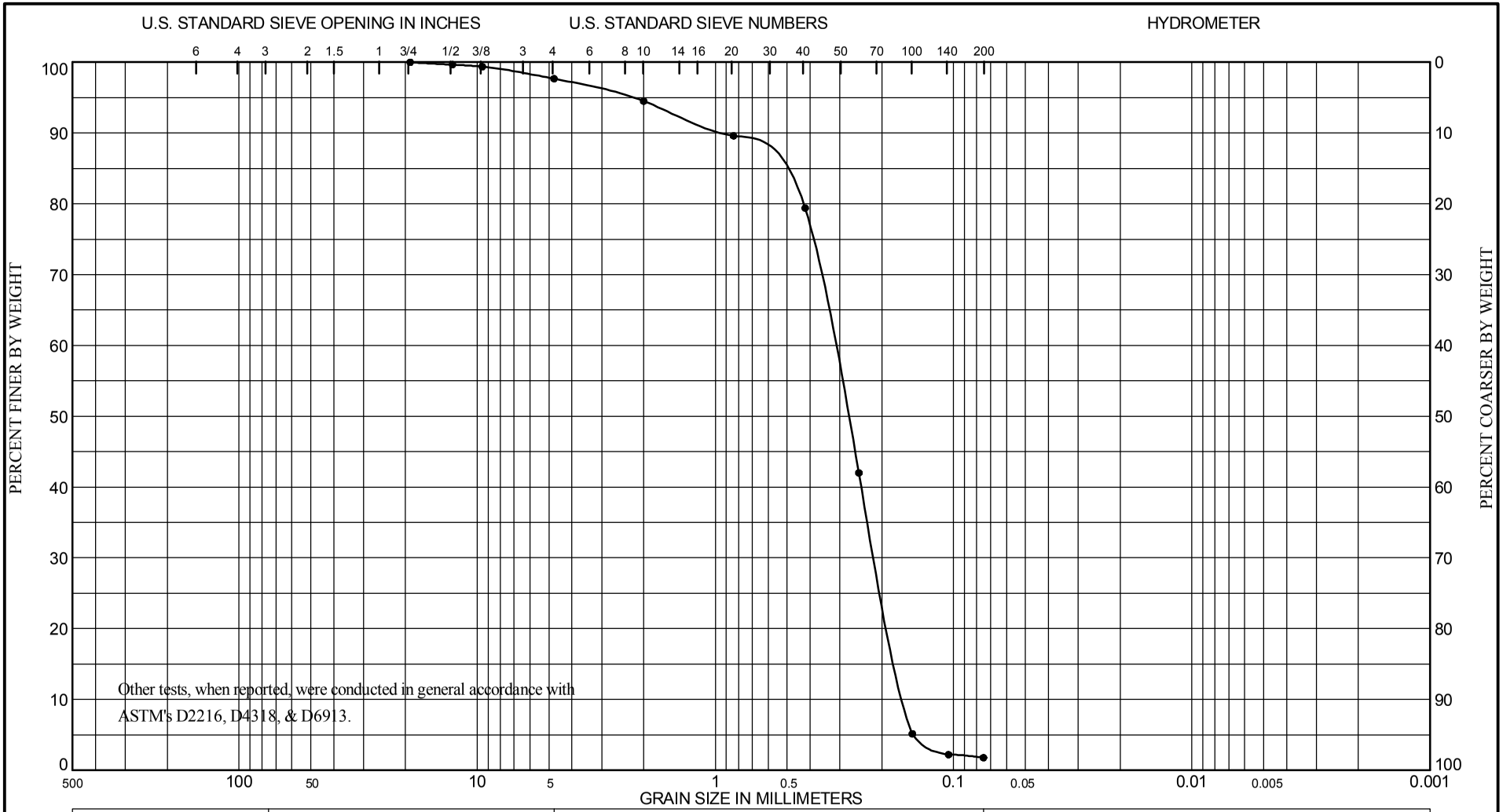
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 1.4	Very Dark Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4225
Hole No. BI-PBS-303-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	1.4 to 4.4	Dark Olive Gray, Poorly Graded Sand (SP), with a trace of gravel				
		size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4226
Hole No. BI-PBS-303-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-304-13

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
	South Atlantic	Mobile District	

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS West
2. BORING DESIGNATION	BI-PBS-304-13
LOCATION COORDINATES	E = 1,082,173 N = 233,366
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	17.6 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED 1 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	47.7 Ft.
15. DATE BORING	STARTED 02-19-14 / COMPLETED 02-19-14
16. ELEVATION TOP OF BORING	-47.2 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-47.2	0.0				
-47.4	0.2		CLAY, lean, sandy, medium to dark gray (CL)	NS	
			SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, trace CL at 0.5 ft., medium gray (SM)	A	Classification: SP-SM Color: 2.5Y 6/1-gray D50: 0.179 mm % Fines: 9.1
-53.2	6.0				
			SILT, inorganic-L, few shell fragments, sandy, medium gray (ML)		
-58.2	11.0				
			CLAY, silty, few shell fragments, sandy, medium gray (CL-ML)	NS	
-63.2	16.0				
-64.8	17.6		CLAY, lean, sand pockets, sand-filled burrows; firm, medium 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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

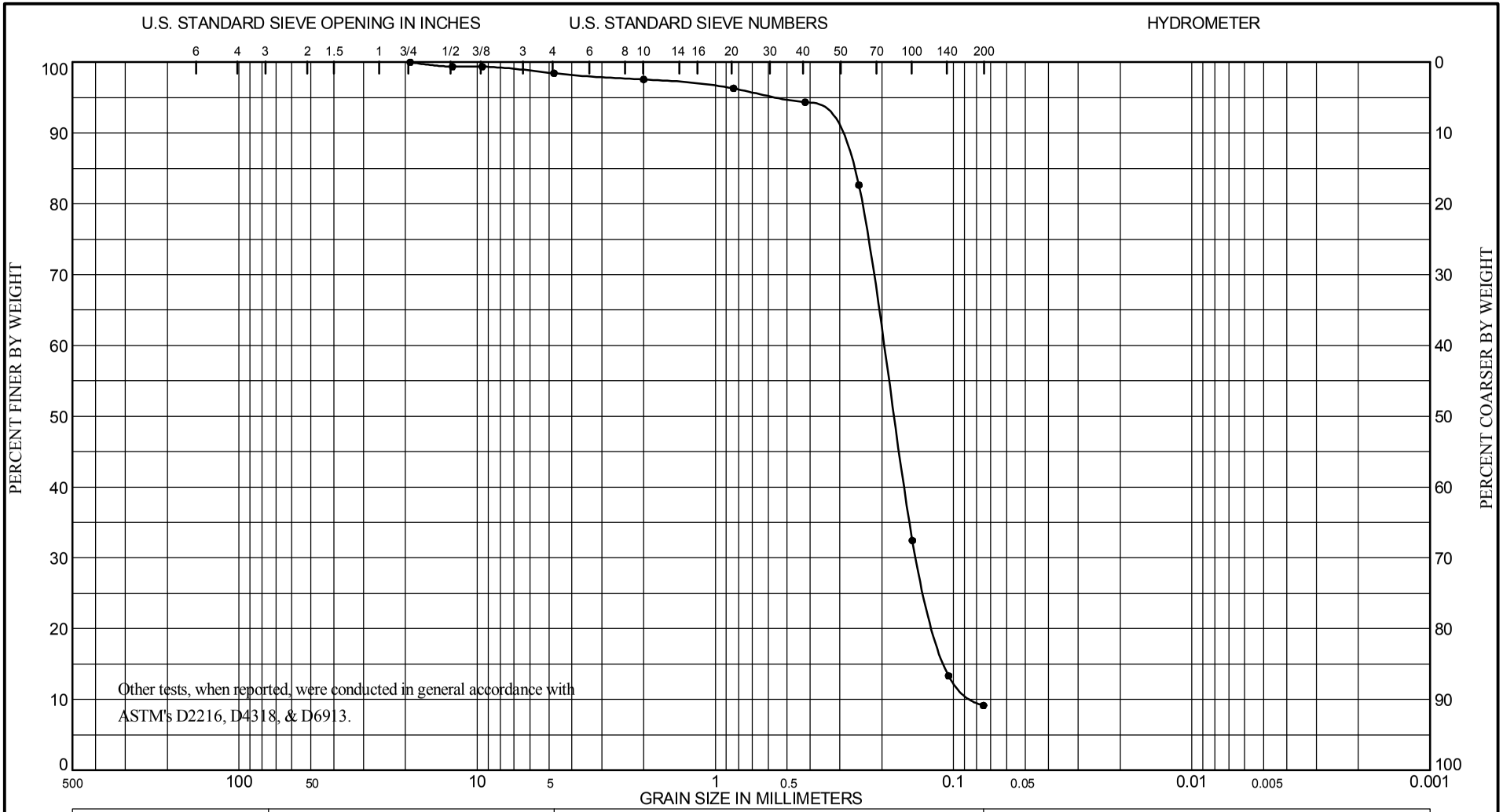
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14135° Long = -88.52354°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.2 to 5.0	Dark Greenish Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4855
Hole No. BI-PBS-304-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-306-13

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
	South Atlantic	Mobile District	

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS West
2. BORING DESIGNATION	BI-PBS-306-13
LOCATION COORDINATES	E = 1,083,474 N = 233,774
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	13.3 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED 2 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	46.1 Ft.
15. DATE BORING	STARTED 01-20-14 / COMPLETED 01-20-14
16. ELEVATION TOP OF BORING	-46.2 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-46.2	0.0				
-50.2	4.0		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few shell fragments, lt. gray (SP-SM)	A	Classification: SP-SM Color: 2.5Y 5/1-gray D50: 0.19 mm % Fines: 5.8
-54.5	8.3		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, lt. to medium gray (SM)	B	Classification: SM Color: 2.5Y 6/1-gray D50: 0.11 mm % Fines: 24.2
-55.2	9.0		SAND, clayey, mostly fine-grained sand-sized quartz, few shell fragments, medium gray (SC)		
-59.5	13.3		CLAY, lean, trace shell fragments, sandy; fine-grained sand-filled burrows between 9 and 10.9 ft., medium 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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14246° Long = -88.51942°

Boring Designation BI-PBS-306-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-306-13 — LOCATION COORDINATES: E = 1,083,474 N = 233,774	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 2 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 46.1 Ft.
	15. DATE BORING — STARTED: 01-20-14 — COMPLETED: 01-20-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -46.2 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 13.3 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-46.2	0.0				
-50.2	4.0		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few shell fragments, lt. gray (SP-SM)	A	Classification: SP-SM Color: 2.5Y 5/1-gray D50: 0.19 mm % Fines: 5.8
-54.5	8.3		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, lt. to medium gray (SM)	B	Classification: SM Color: 2.5Y 6/1-gray D50: 0.11 mm % Fines: 24.2
-55.2	9.0		SAND, clayey, mostly fine-grained sand-sized quartz, few shell fragments, medium gray (SC)		
-59.5	13.3		CLAY, lean, trace shell fragments, sandy; fine-grained sand-filled burrows between 9 and 10.9 ft., medium 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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

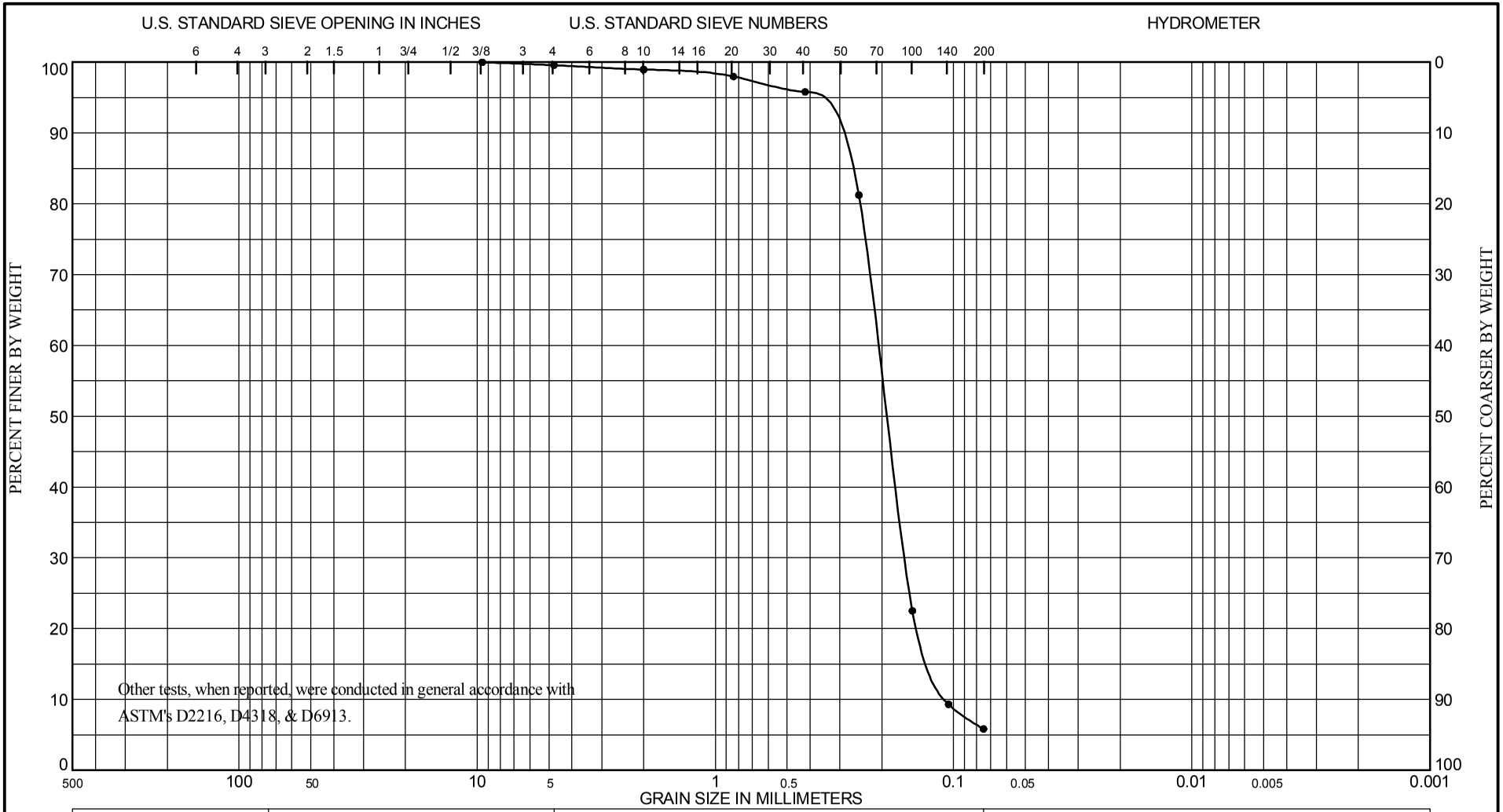
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14246° Long = -88.51942°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

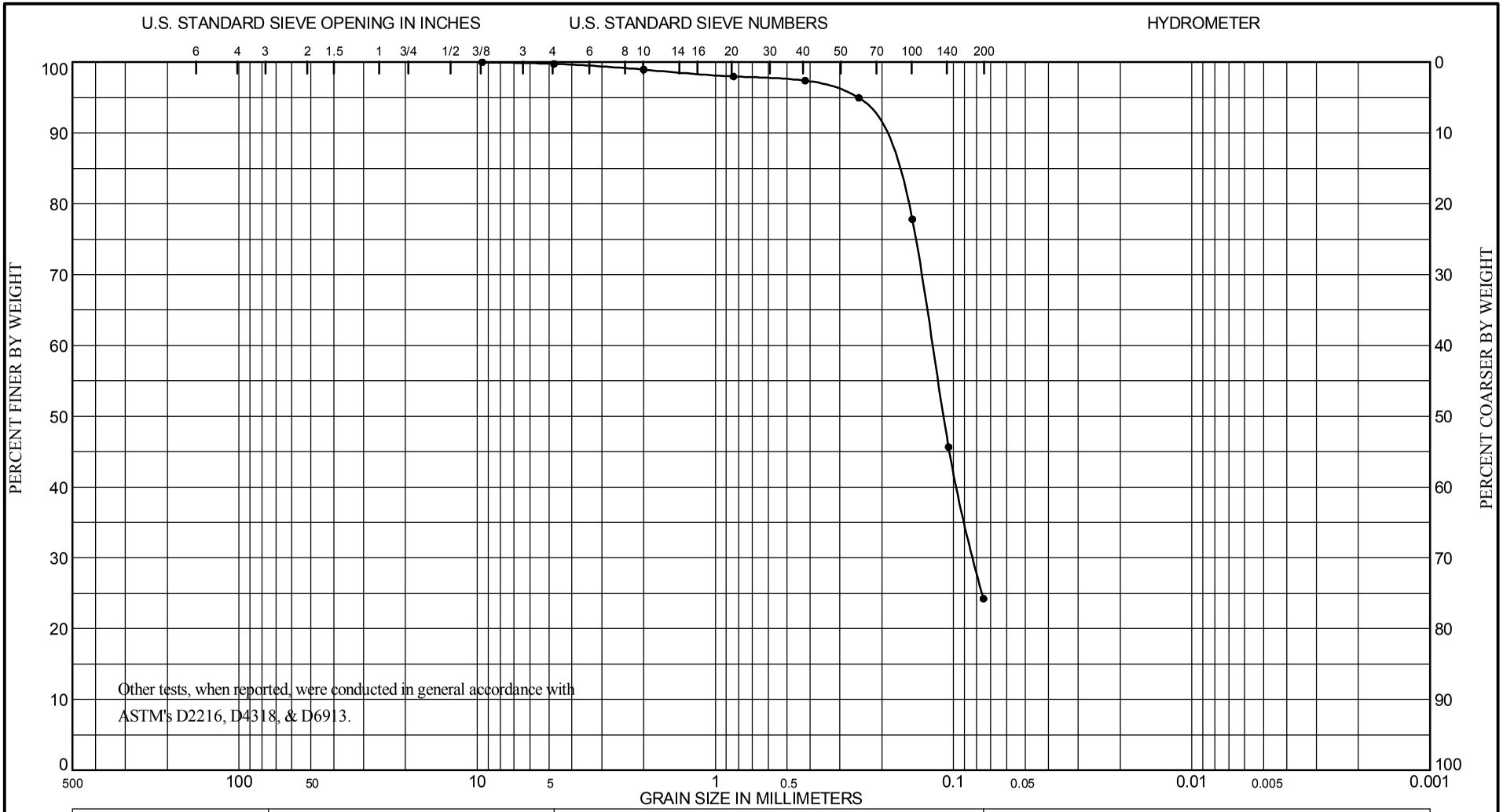
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 4.0	Greenish Black, Poorly Graded Silty Sand (SP-SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4227
Hole No. BI-PBS-306-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	4.0 to 8.3	Greenish Black, Silty Sand (SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4228
Hole No. BI-PBS-306-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-307-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 2 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-307-13 — LOCATION COORDINATES: E = 1,095,758 N = 225,350	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 3 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 50.4 Ft.
	15. DATE BORING — STARTED: 01-27-14 — COMPLETED: 01-27-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -50.3 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: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-50.3	0.0				
-52.5	2.2		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 6/1-gray D50: 0.216 mm % Fines: 4.7
-54.3	4.0		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few shell fragments, lt. to medium gray (SP-SM)	B	Classification: SP-SM Color: 2.5Y 5/1-gray D50: 0.136 mm % Fines: 11.6
-56.2	5.9		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, lt. to medium gray (SM)	C	Classification: SM Color: 2.5Y 5/1-gray D50: 0.124 mm % Fines: 16.3
-61.2	10.9		CLAY, lean, few shell fragments, sandy layers and sand-filled voids, medium dark gray (CL)		
-70.3	20.0		CLAY, fat, trace shell fragments, medium dark gray (CH) At El. -67.7 Ft., sandy, orange, lt. brown, lt. 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.

3. Seafloor elevation calculated using sampling

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.11920° Long = -88.48064°

DRILLING LOG (Cont. Sheet)	INSTALLATION Mobile District		SHEET 2 OF 2 SHEETS
PROJECT MsCIP Barrier Island Restoration	COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83	VERTICAL NAVD88
LOCATION COORDINATES X = 1,095,758 Y = 225,350	ELEVATION TOP OF BORING -50.3 Ft.		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
			vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.		

30
35
40
45
50
55
60

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.11920° Long = -88.48064°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192

COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

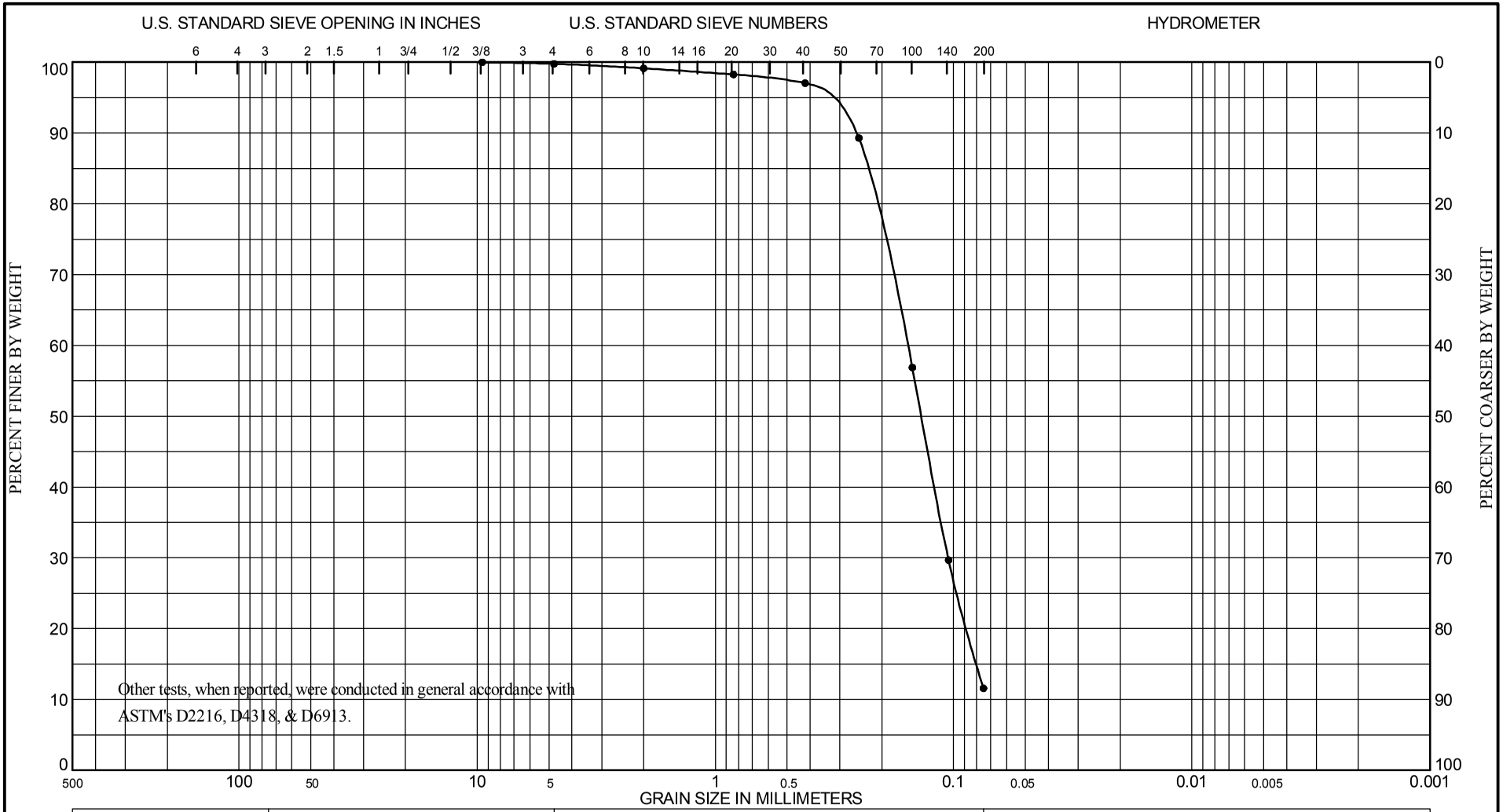
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 2.2	Dark Gray, Poorly Graded Sand (SP), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4567
Hole No. BI-PBS-307-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

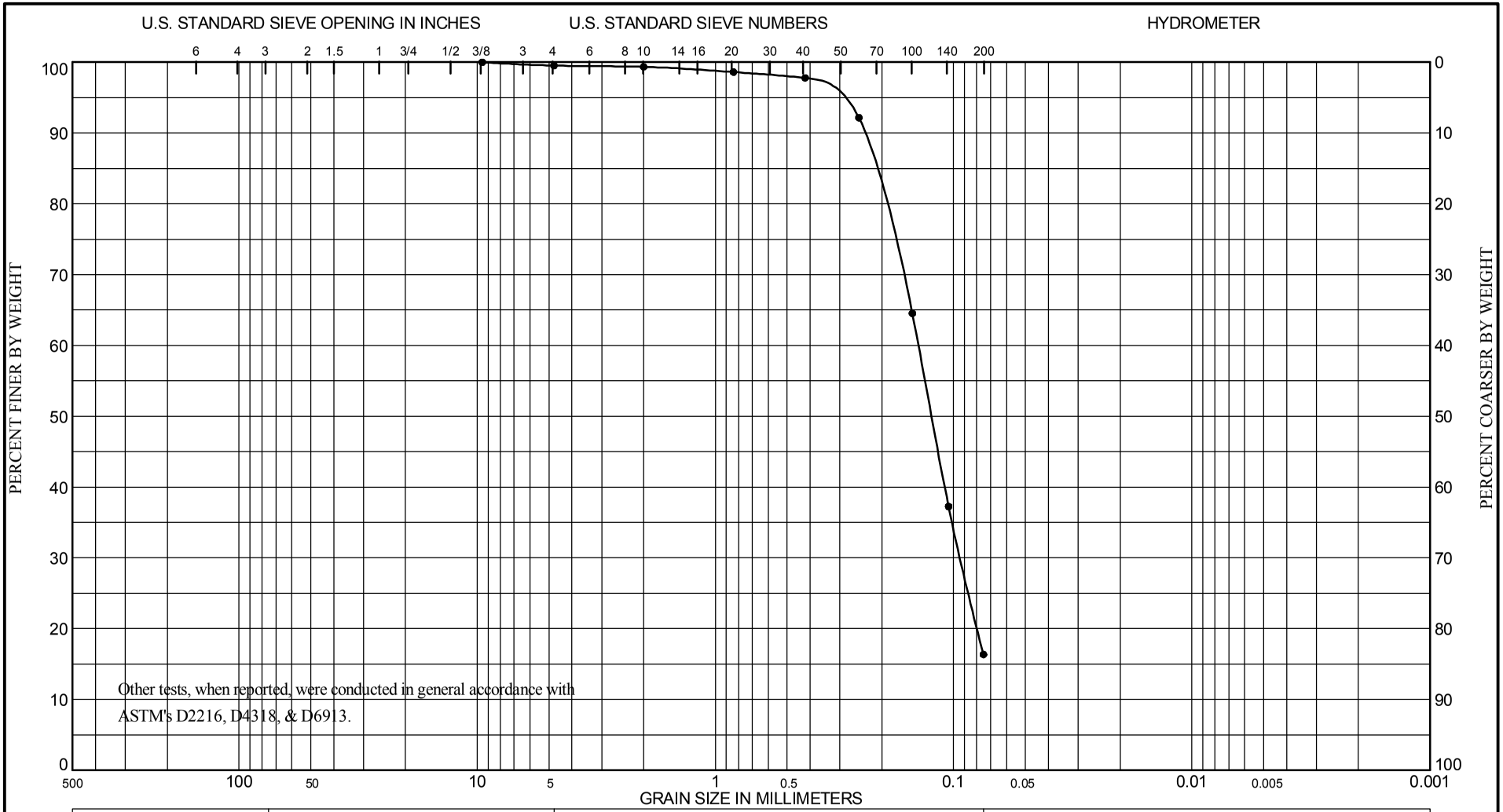
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	2.2 to 4.0	Dark Gray, Poorly Graded Silty Sand (SP-SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4568
Hole No. BI-PBS-307-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	4.0 to 4.9	Dark Gray, Silty Sand (SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4569
Hole No. BI-PBS-307-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-308-13

DRILLING LOG	DIVISION South Atlantic	INSTALLATION Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT MsCIP Barrier Island Restoration Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT N/A
	10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.) / HORIZONTAL NAD83 / VERTICAL NAVD88
2. BORING DESIGNATION BI-PBS-308-13 / LOCATION COORDINATES E = 1,120,207 N = 233,883	11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY Corps of Engineers - CESAM / CONTRACTOR FILE NO.	12. TOTAL SAMPLES DISTURBED 1 / UNDISTURBED (UD) 0
4. NAME OF DRILLER Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED / DEG. FROM VERTICAL / BEARING	14. WATER DEPTH 58.2 Ft.
	15. DATE BORING STARTED 01-31-14 / COMPLETED 01-31-14
6. THICKNESS OF OVERBURDEN N/A	16. ELEVATION TOP OF BORING -58.4 Ft.
7. DEPTH DRILLED INTO ROCK N/A	17. TOTAL RECOVERY FOR BORING 100%
8. TOTAL DEPTH OF BORING 14.5 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-58.4	0.0				
-61.4	3.0		CLAY, lean, sandy, very soft to 0.6 ft., firm to 3.0 ft. depth, medium gray (CL)	NS	
-65.1	6.7		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace shell fragments, lt. gray (SP)	A	Classification: SP Color: 10Y 7/1-light greenish gray D50: 0.205 mm % Fines: 4.7
-67.4	9.0		SAND, silty, mostly fine-grained sand-sized quartz, trace shell fragments, medium gray (SM)	NS	
-68.4	10.0		SAND, silty, clayey, mostly fine-grained sand-sized quartz, trace shell fragments, medium gray (SC-SM)		
-72.9	14.5		SAND, clayey, mostly fine-grained sand-sized quartz, trace shell fragments, medium 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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

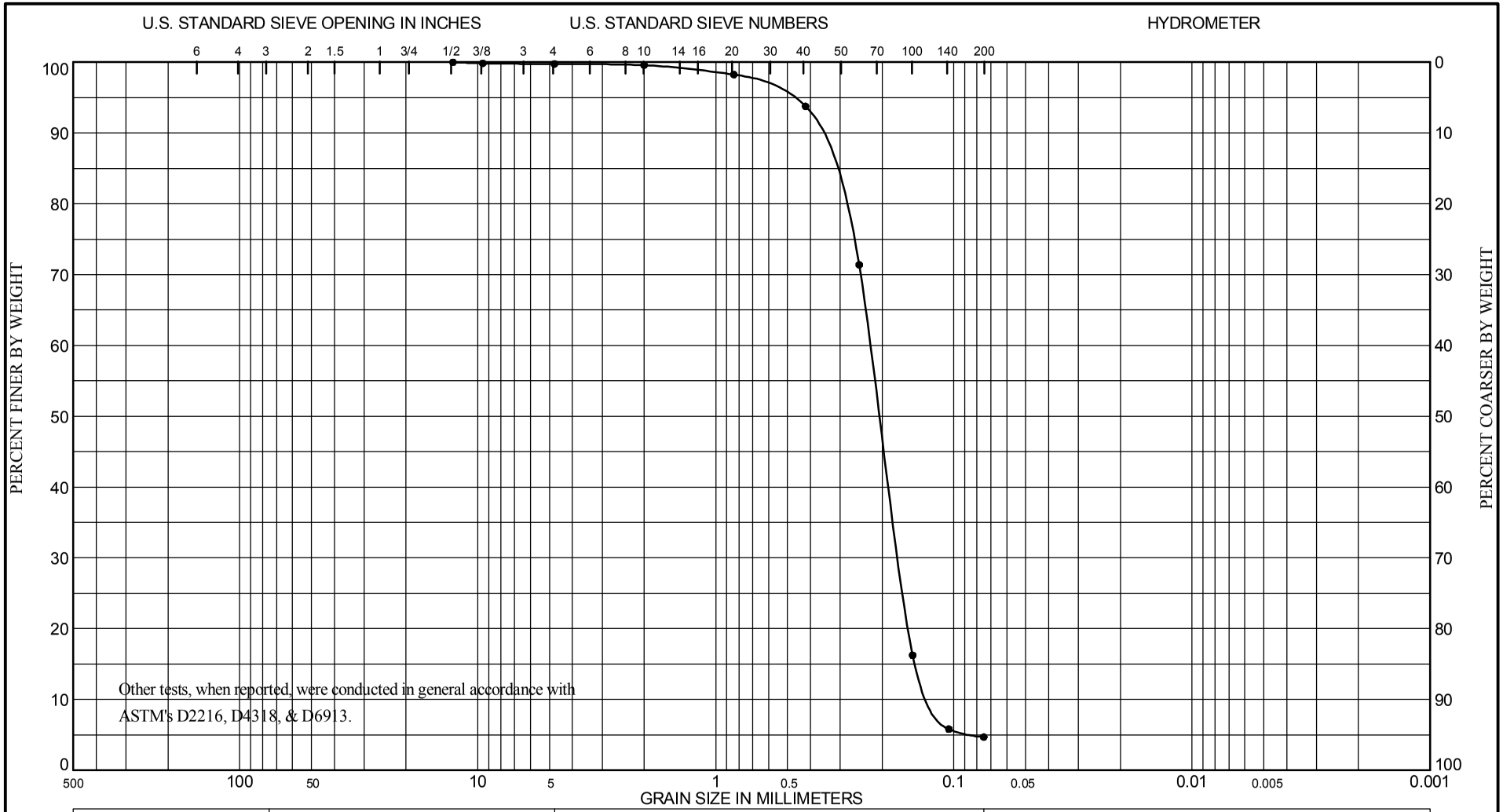
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14243° Long = -88.40321°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	3.0 to 6.7	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4594
Hole No. BI-PBS-308-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-309-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-309-13 — LOCATION COORDINATES: E = 1,122,062 N = 233,100	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ 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: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 58.9 Ft.
	15. DATE BORING — STARTED: 01-31-14 — COMPLETED: 01-31-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -59.0 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 12.5 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-59.0	0.0				
			CLAY, lean, trace shell fragments, sandy, more sandy from 1.4 to 4.1 ft., soft to 1.4 ft. (CL)		
-63.1	4.1		At El. -62.3 Ft., clay interbedded with SC		
-64.1	5.1		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, few shell fragments, lt. gray (SP)		
			SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, trace shell fragments below 7.3 ft. depth, medium gray (SM)	NS	
-69.0	10.0				
			SAND, silty, clayey, mostly fine-grained sand-sized quartz, trace shell fragments, medium gray (SC-SM)		
-71.5	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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14026° Long = -88.39735°

Boring Designation BI-PBS-310-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-310-13 — LOCATION COORDINATES: E = 1,118,547 N = 234,706	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 3 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 57.2 Ft.
	15. DATE BORING — STARTED: 01-31-14 — COMPLETED: 01-31-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -57.6 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 18.6 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-57.6	0.0				
-59.8	2.2		CLAY, lean, trace shell fragments, sandy, fine-grained; soft to 1.0 ft., firm to 2.2 ft., medium to dark gray (CL)	NS	
-60.3	2.7		SAND, clayey, mostly fine-grained sand-sized quartz, trace shell fragments, medium gray (SC)	A	Classification: SP Color: 10Y 7/1-light greenish gray D50: 0.227 mm % Fines: 4.8
-62.3	4.7		SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace shell fragments, trace wood from 3.3 to 3.7 ft. depth, lt. to medium gray (SP)	B	Classification: SP Color: 10Y 7/1-light greenish gray D50: 0.199 mm % Fines: 4.9
-63.8	6.2		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, trace shell fragments, lt. to medium gray (SP-SM)	C	Classification: SP Color: 10Y 7/1-light greenish gray D50: 0.195 mm % Fines: 4.5
-67.6	10.0		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, lt. to medium gray (SM) At El. -65.8 Ft., mostly fine-grained sand-sized quartz, few shell fragments, higher silt content than overlying SM, medium gray		
-76.2	18.6		SAND, silty, clayey, mostly fine-grained sand-sized quartz, few shell fragments, medium gray (SC-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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

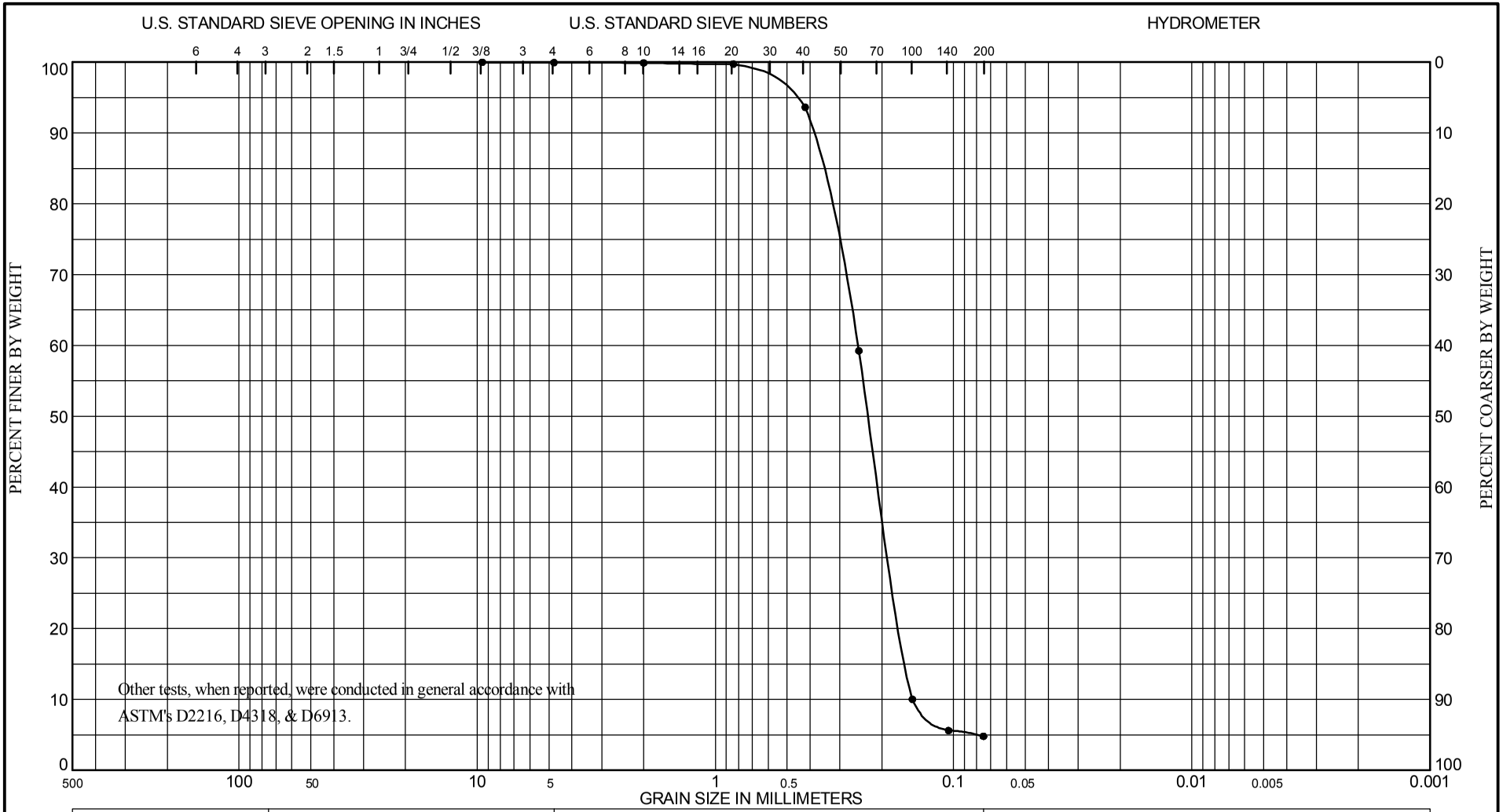
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14471° Long = -88.40845°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

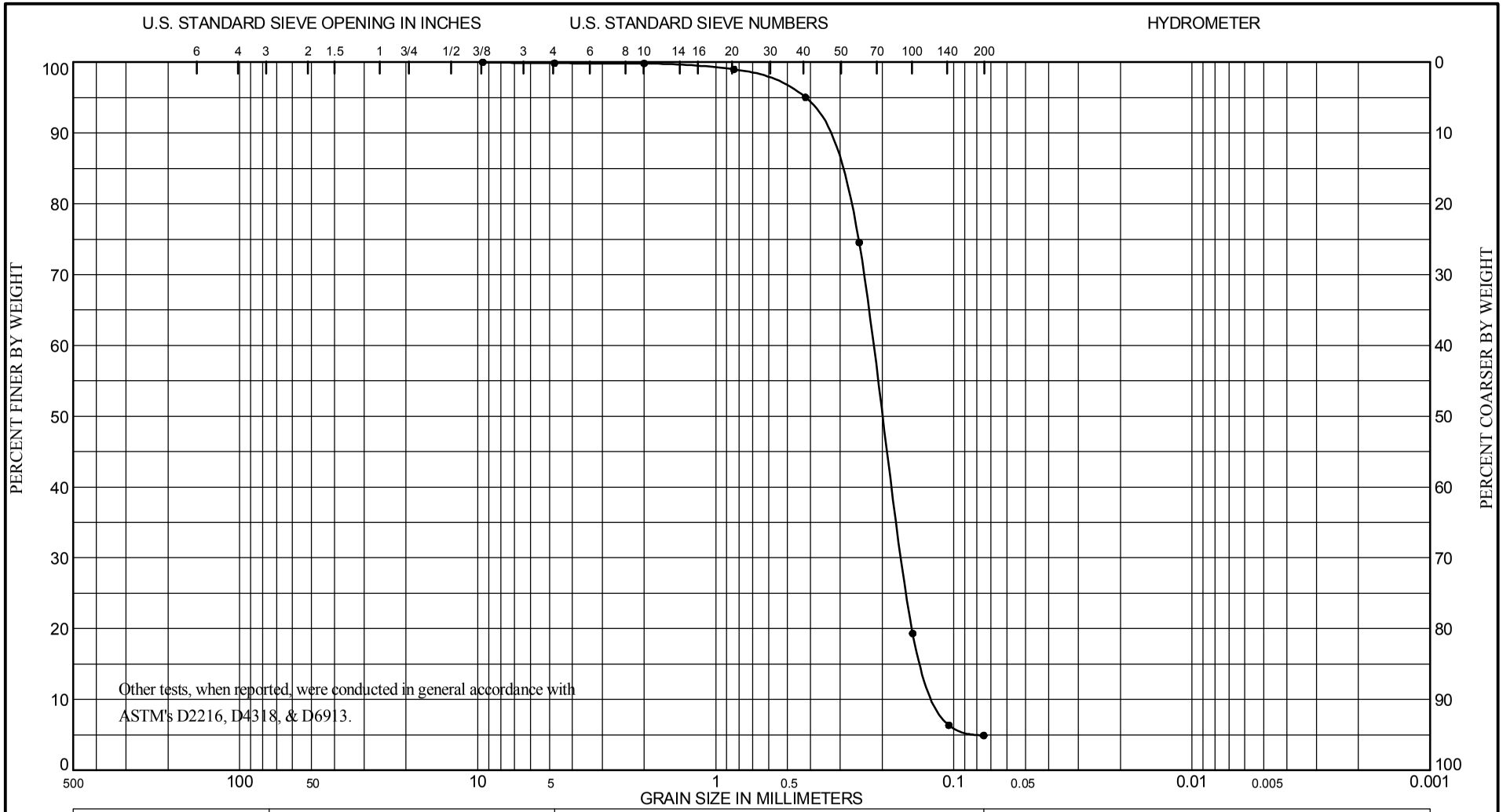
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	2.7 to 4.7	Dark Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4591
Hole No. BI-PBS-310-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

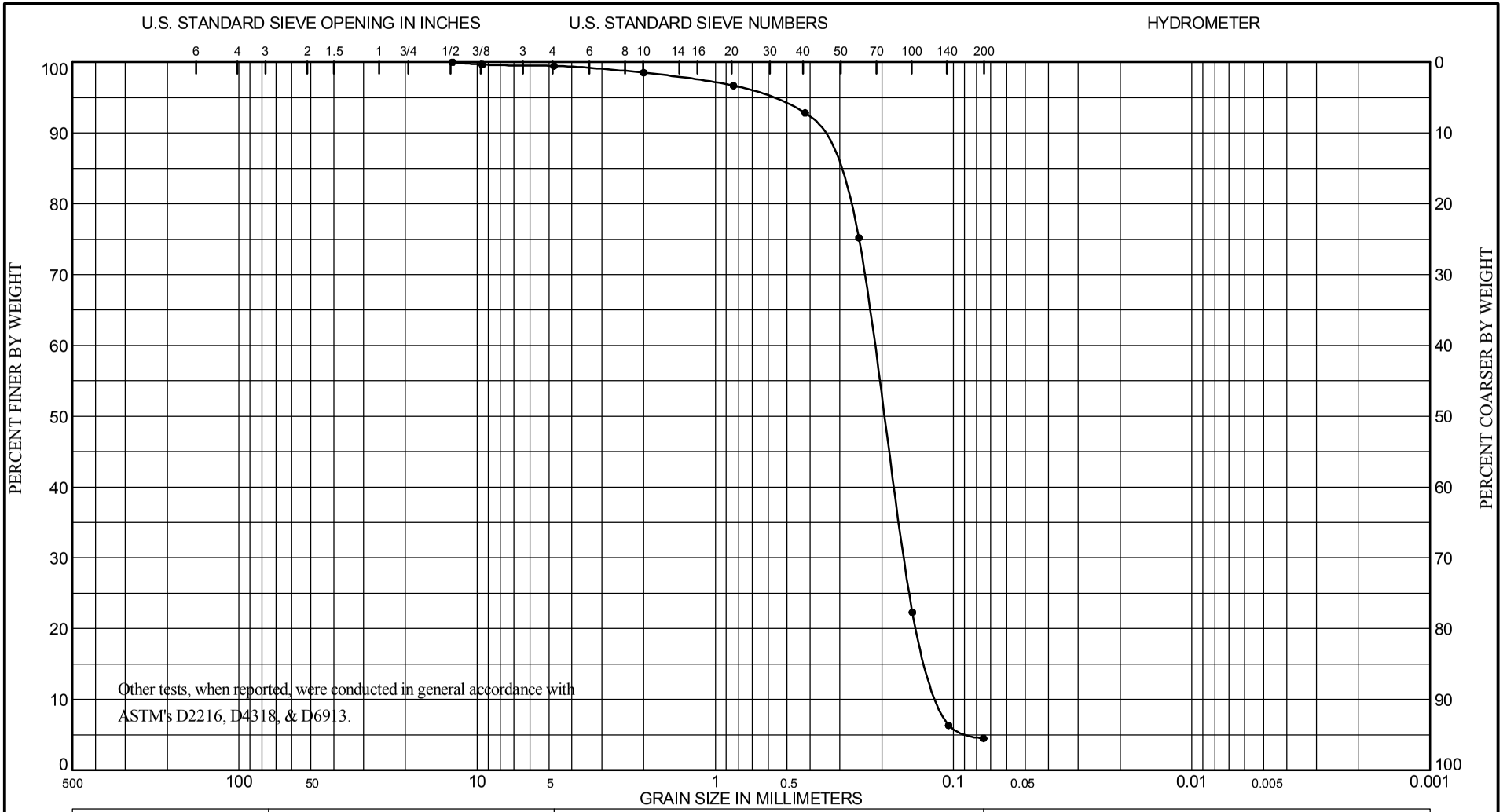
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	4.7 to 6.2	Dark Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4592
Hole No. BI-PBS-310-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	6.2 to 8.2	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4593
Hole No. BI-PBS-310-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-311-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-311-13 — LOCATION COORDINATES: E = 1,116,671 N = 235,371	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 3 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 56.3 Ft.
	15. DATE BORING — STARTED: 01-31-14 — COMPLETED: 01-31-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -59.4 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 15.5 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-59.4	0.0				
-62.0	2.6		SAND, silty, clayey, mostly fine-grained sand-sized quartz, trace shell fragments, very loose, medium gray (SC-SM)	NS	
-67.8	8.4		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few shell fragments, no shell below 7 ft., lt. to medium gray (SP-SM)	A	Classification: SP Color: 10Y 7/1-light greenish gray D50: 0.231 mm % Fines: 4.3
				B	Classification: SP Color: 10Y 7/1-light greenish gray D50: 0.208 mm % Fines: 3.1
-73.4	14.0		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, medium gray (SM)	C	Classification: SP Color: 10Y 7/1-light greenish gray D50: 0.187 mm % Fines: 4.5
-74.9	15.5		SAND, clayey, mostly fine-grained sand-sized quartz, few shell fragments, brownish medium 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.

3. Seafloor elevation determined from 2013 USGS geophysical survey.

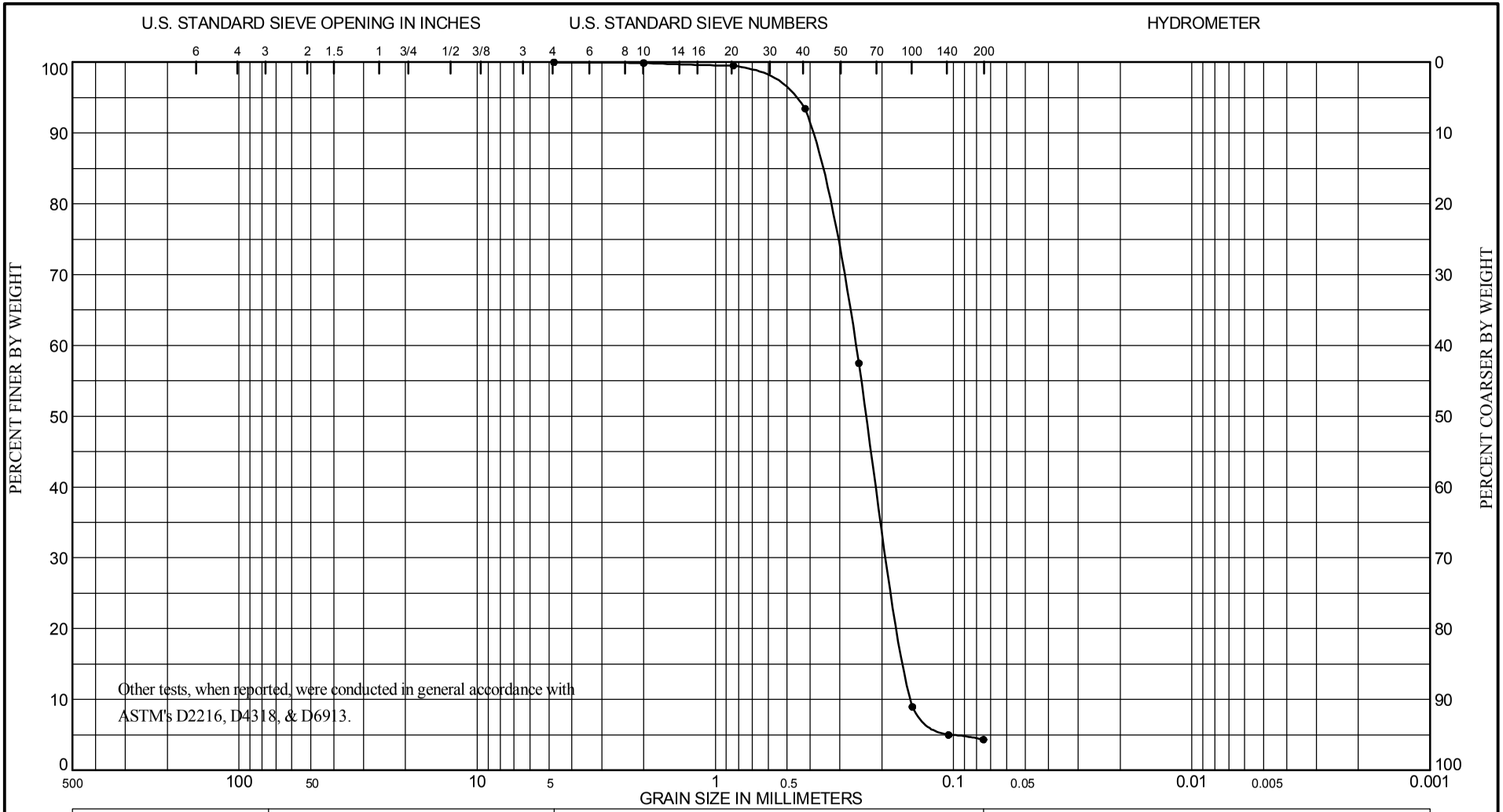
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14656° Long = -88.41438°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

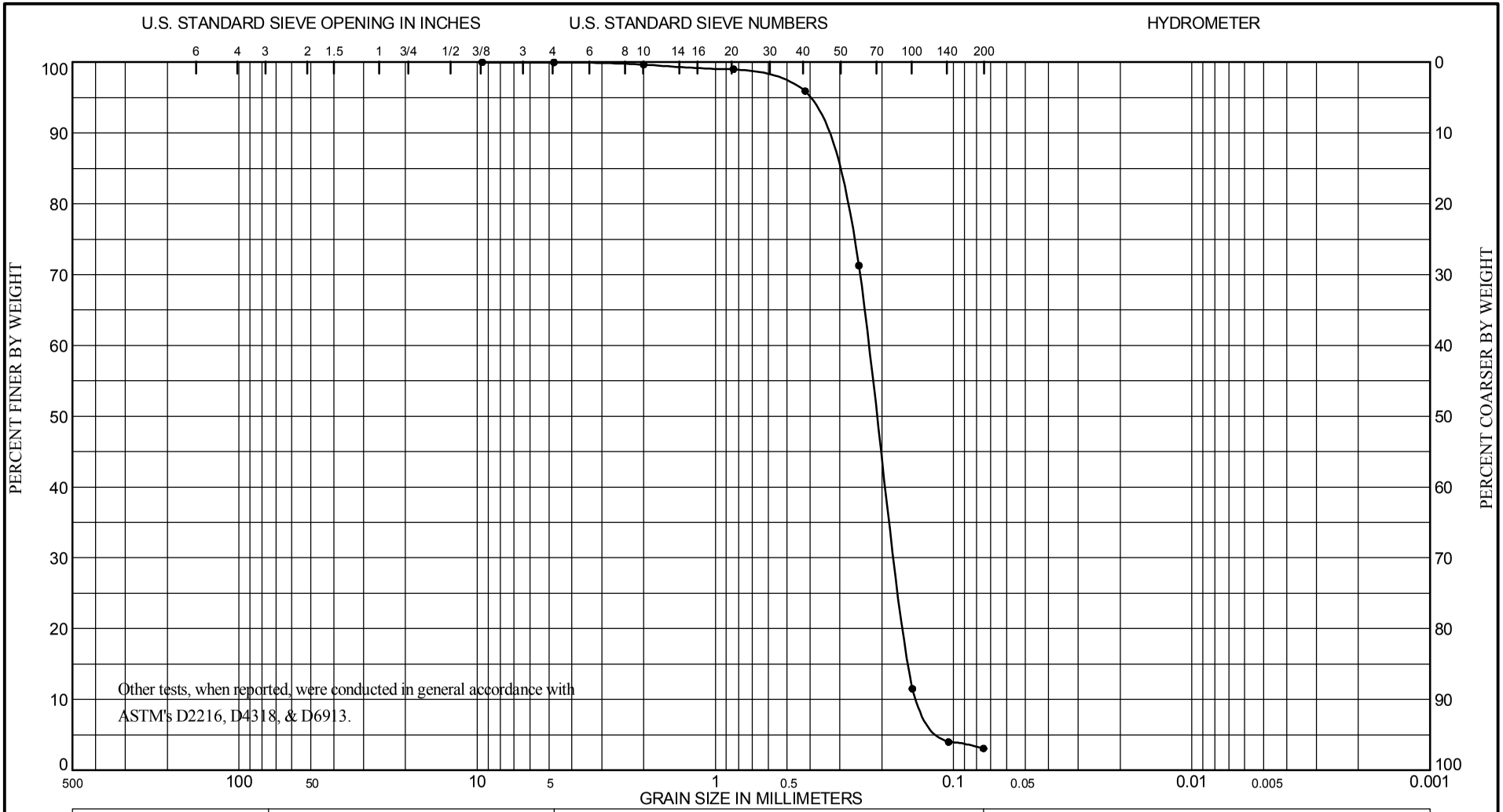
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	2.6 to 5.0	Dark Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4588
Hole No. BI-PBS-311-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

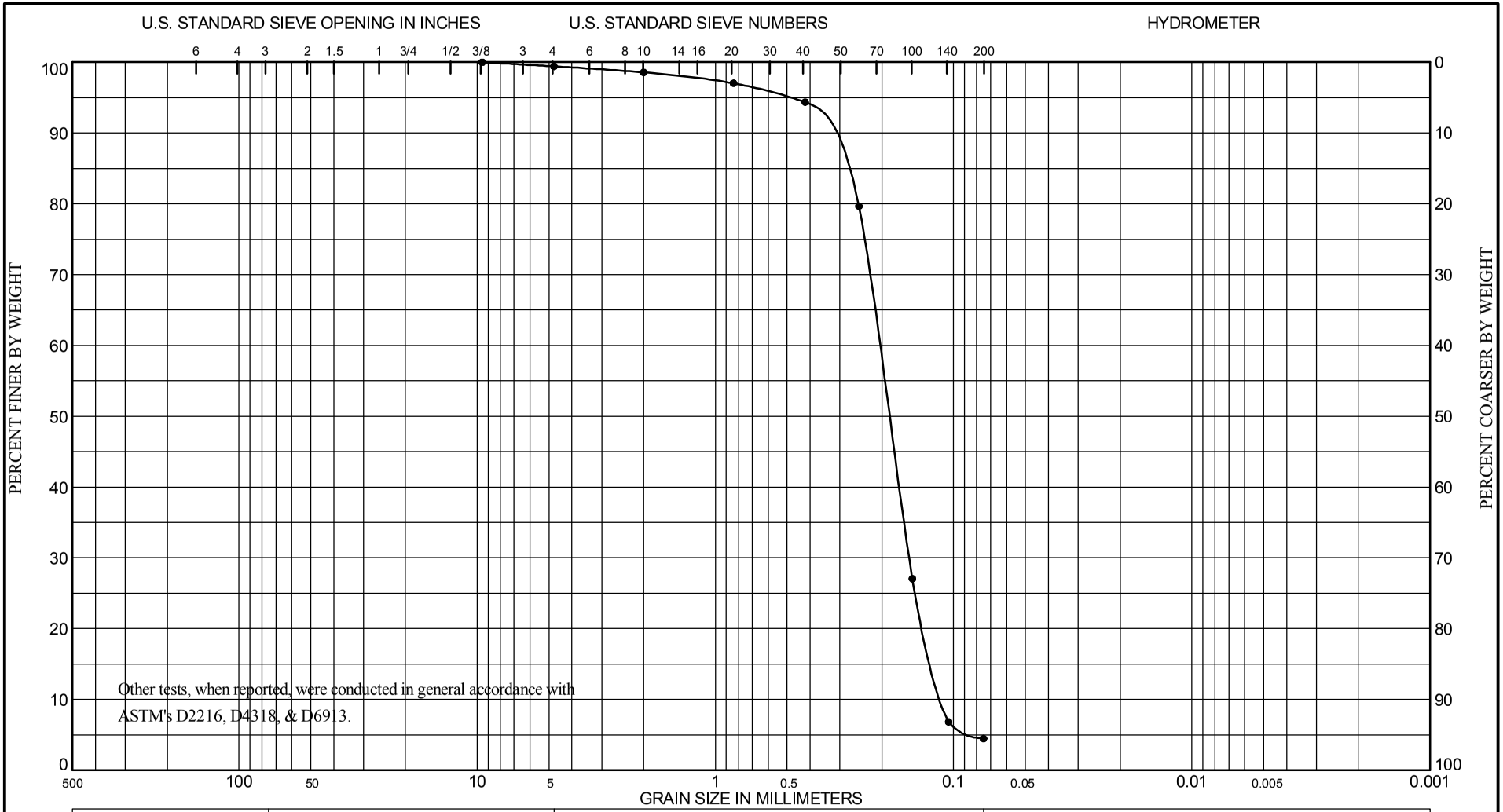
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	5.5 to 8.4	Dark Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4589
Hole No. BI-PBS-311-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	8.4 to 12.9	Dark Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4590
Hole No. BI-PBS-311-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-312-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-312-13 — LOCATION COORDINATES: E = 1,114,696 N = 236,026	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 4 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 55.3 Ft.
	15. DATE BORING — STARTED: 01-31-14 — COMPLETED: 01-31-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -54.6 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: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-54.6	0.0				
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace shell fragments, trace lt. brown clay from 7.0 to 7.1 ft. depth, lt. gray (SP)	A	Classification: SP Color: 10Y 7/1-light greenish gray D50: 0.266 mm % Fines: 2.9
			At El. -59.6 Ft., fine-grained sand	B	Classification: SP Color: 10Y 7/1-light greenish gray D50: 0.241 mm % Fines: 3
-62.6	8.0				
-64.7	10.1		SAND, poorly-graded with silt, mostly fine to medium-grained sand-sized quartz, trace shell fragments, lt. gray (SP-SM)	C	Classification: SP Color: 10Y 7/1-light greenish gray D50: 0.201 mm % Fines: 3.6
			SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, lt. to medium gray (SM)	D	Classification: SP Color: 10Y 7/1-light greenish gray D50: 0.192 mm % Fines: 4.8
			At El. -66.2 Ft., mostly fine-grained sand-sized quartz, few shell fragments, higher silt content than overlying SM, medium gray	NS	
-70.3	15.7				
-71.1	16.5		SAND, clayey, mostly fine-grained sand-sized quartz, few shell fragments, medium gray (SC)		
-72.3	17.7		CLAY, lean, trace shell fragments, sandy, medium to 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.

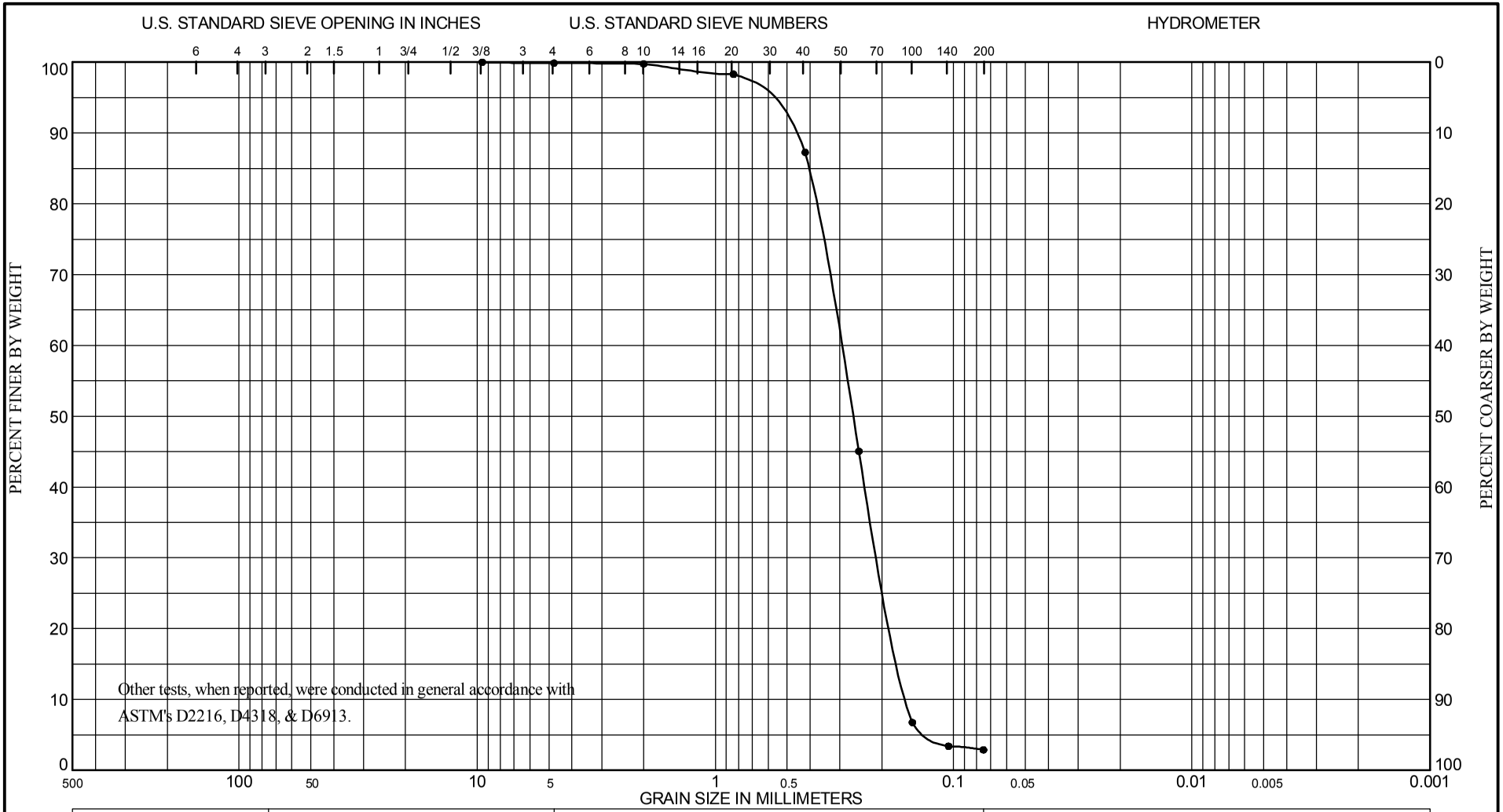
3. Seafloor elevation determined from 10/29/2014 USACE survey.

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14838° Long = -88.42062°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

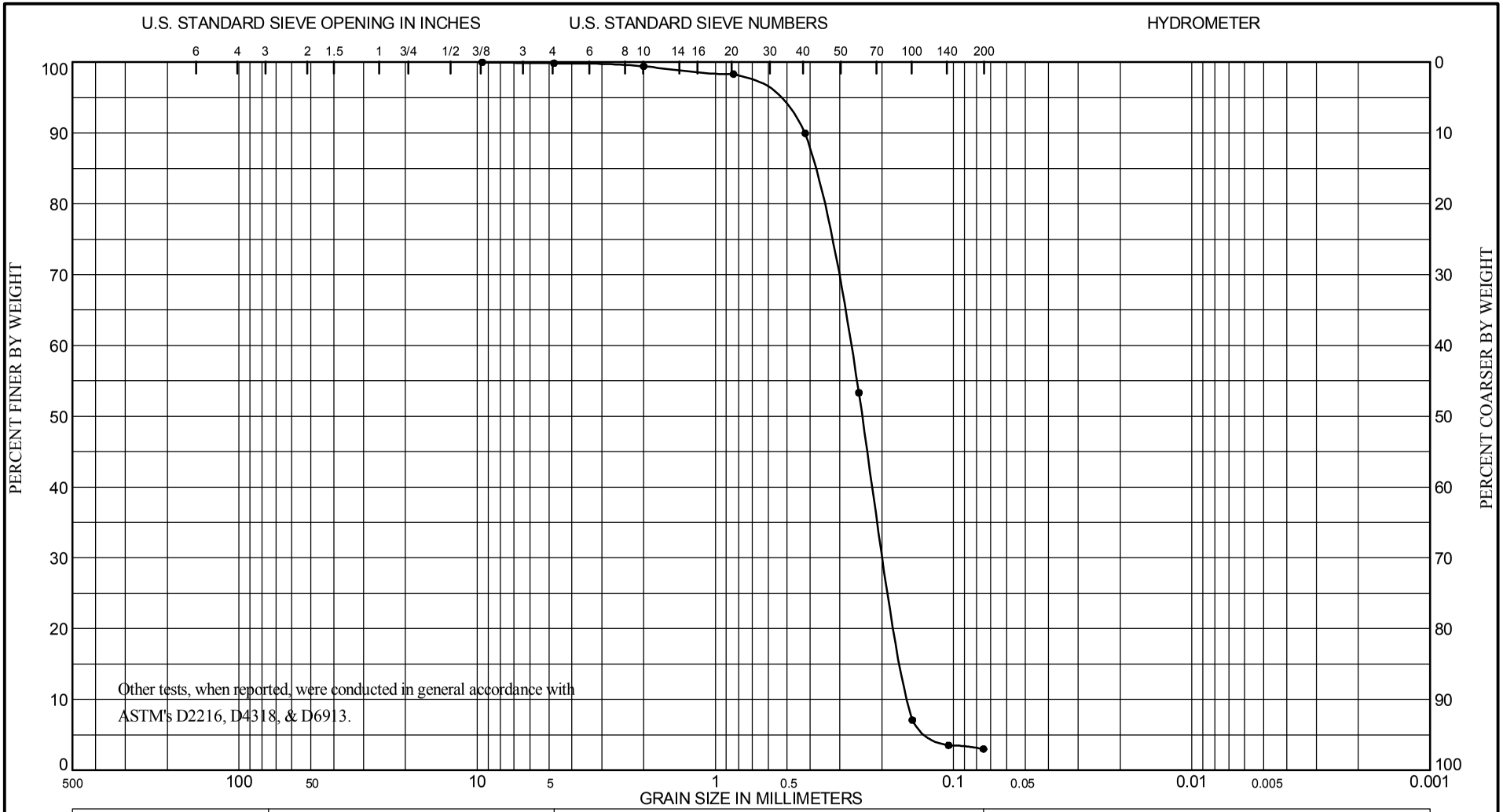
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 5.0	Dark Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4584
Hole No. BI-PBS-312-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

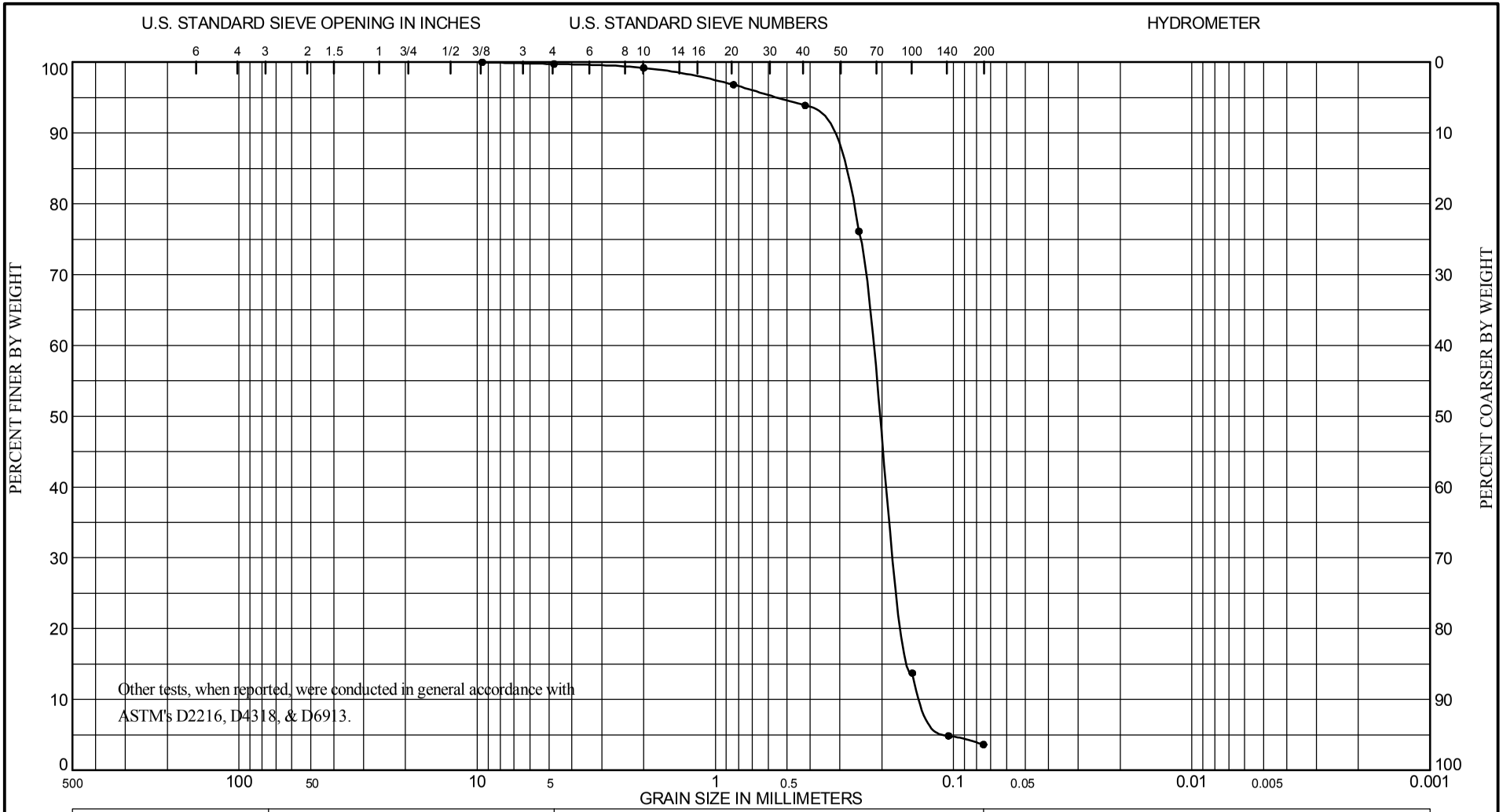
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	5.0 to 8.0	Dark Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4585
Hole No. BI-PBS-312-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

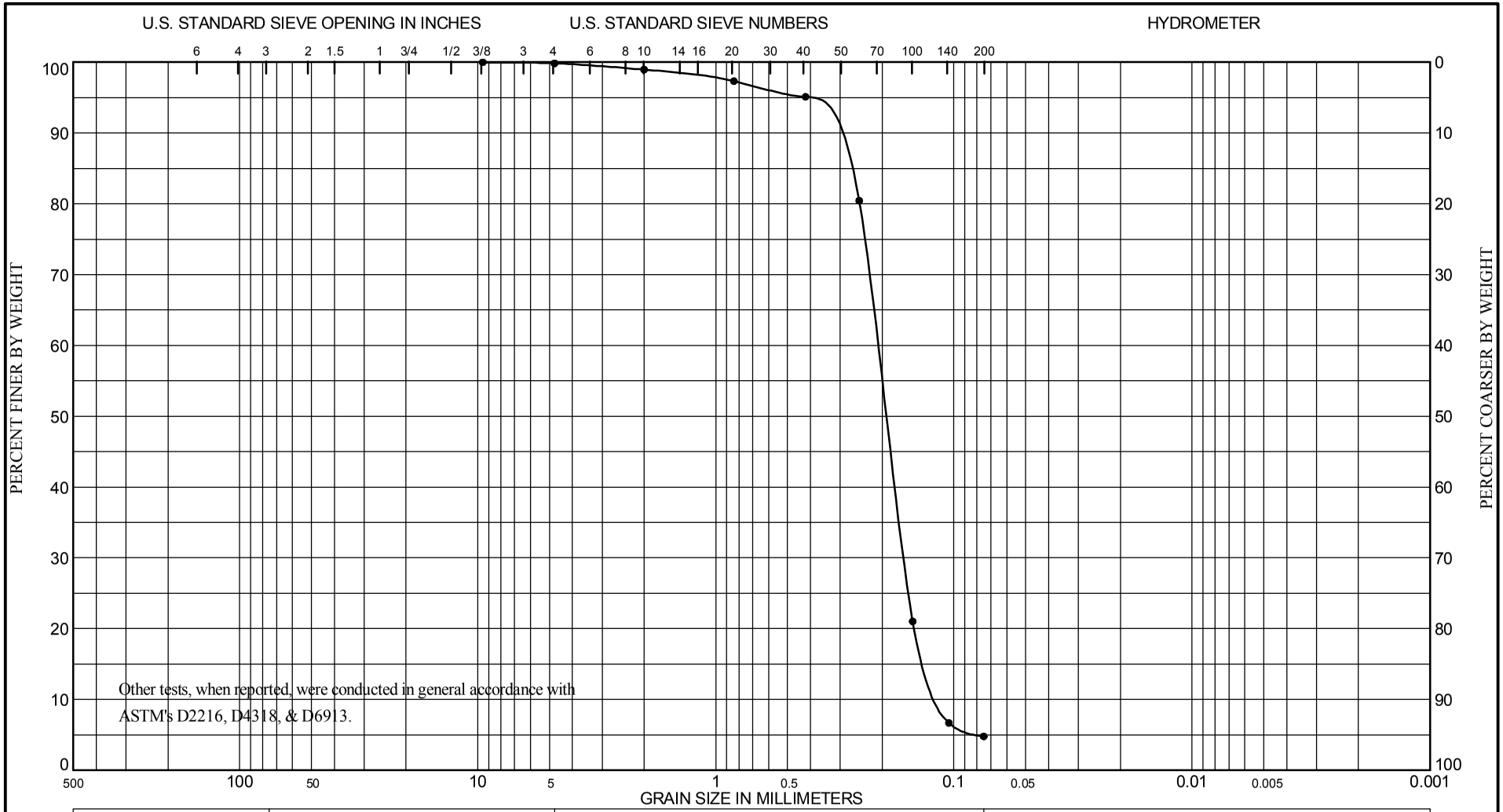
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	8.0 to 10.1	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4586
Hole No. BI-PBS-312-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
D	10.1 to 11.6	Dark Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4587
Hole No. BI-PBS-312-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-313-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 2 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-313-13 — LOCATION COORDINATES: E = 1,113,118 N = 236,966	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL: — BEARING:	14. WATER DEPTH: 54 Ft.
	15. DATE BORING — STARTED: 01-31-14 — COMPLETED: 01-31-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -53.9 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: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-53.9	0.0				
-54.5	0.6		SAND, clayey, mostly fine to medium-grained sand-sized quartz, medium gray (SC)	NS	
-57.4	3.5		SAND, poorly-graded with silt, mostly fine to medium-grained sand-sized quartz, trace shell fragments, grain size becomes finer with depth, medium gray (SP-SM)	A	Classification: SP Color: 2.5Y 5/1-gray D50: 0.197 mm % Fines: 4.9
-58.1	4.2				
-58.9	5.0		SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace shell fragments, lt. to medium gray (SP)	B	Classification: SP-SM Color: 2.5Y 5/1-gray D50: 0.201 mm % Fines: 6.8
-63.6	9.7		SAND, silty, mostly fine-grained sand-sized quartz, trace shell fragments, lt. to medium gray (SM) SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace shell fragments, lt. gray (SP)	C	Classification: SP Color: 10Y 7/1-light greenish gray D50: 0.222 mm % Fines: 3.9
-66.6	12.7		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few shell fragments, lt. to medium gray (SP-SM)	D	Classification: SP Color: 10Y 7/1-light greenish gray D50: 0.204 mm % Fines: 3.7
-71.9	18.0		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, lt. to medium gray (SM) At El. -68.3 Ft., mostly fine-grained sand-sized quartz, few shell fragments, high fines content, medium gray	E	Classification: SP-SM Color: 10Y 7/1-light greenish gray D50: 0.188 mm % Fines: 5.6
-73.9	20.0		SAND, clayey, mostly fine-grained sand-sized quartz, few shell fragments, slight plasticity, medium 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.

3. Seafloor elevation determined from

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15098° Long = -88.42560°

DRILLING LOG (Cont. Sheet)	INSTALLATION Mobile District		SHEET 2 OF 2 SHEETS
PROJECT MsCIP Barrier Island Restoration	COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83	VERTICAL NAVD88
LOCATION COORDINATES X = 1,113,118 Y = 236,966	ELEVATION TOP OF BORING -53.9 Ft.		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
			10/29/2014 USACE survey.		

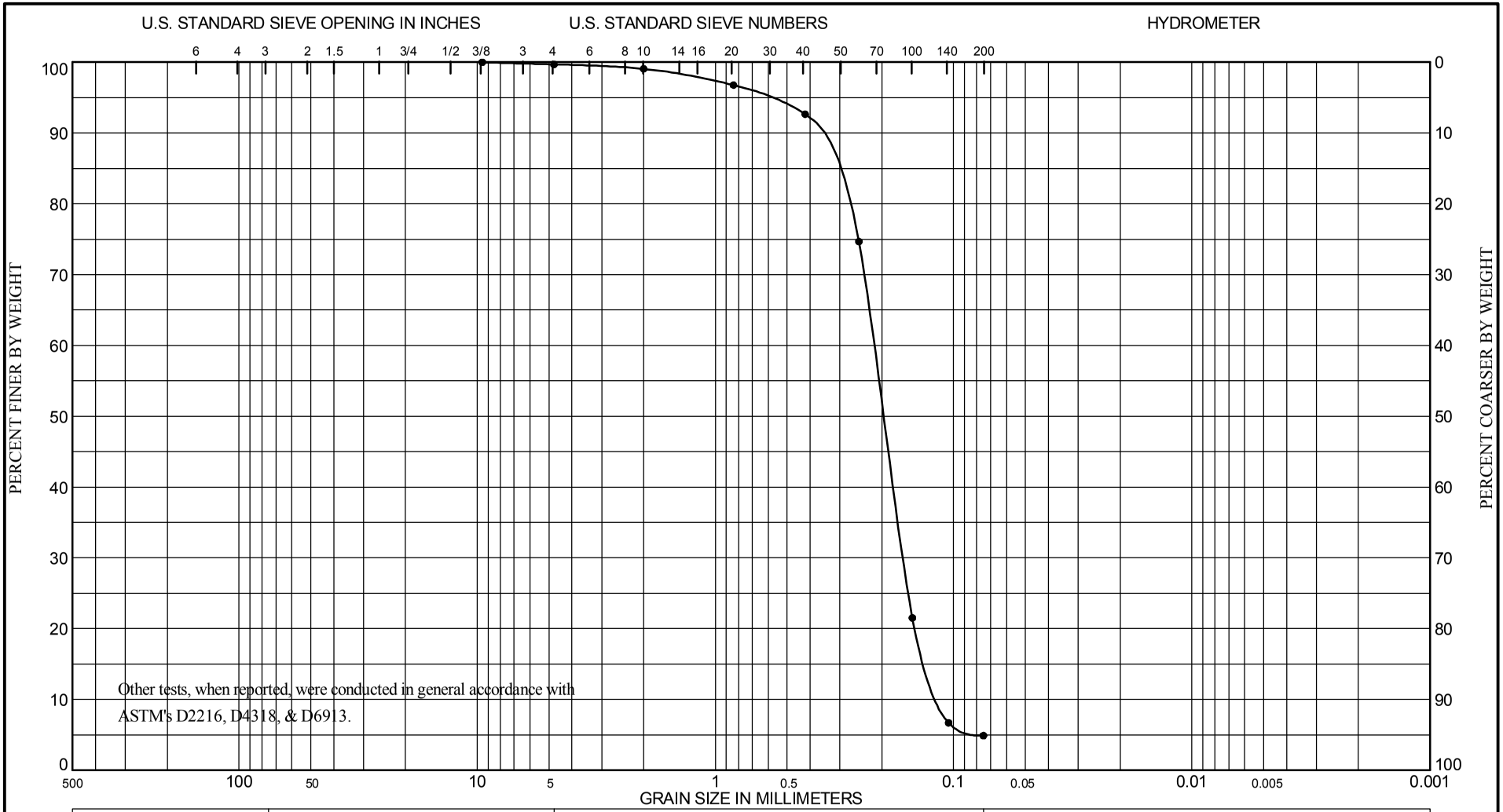
30
35
40
45
50
55
60

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15098° Long = -88.42560°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

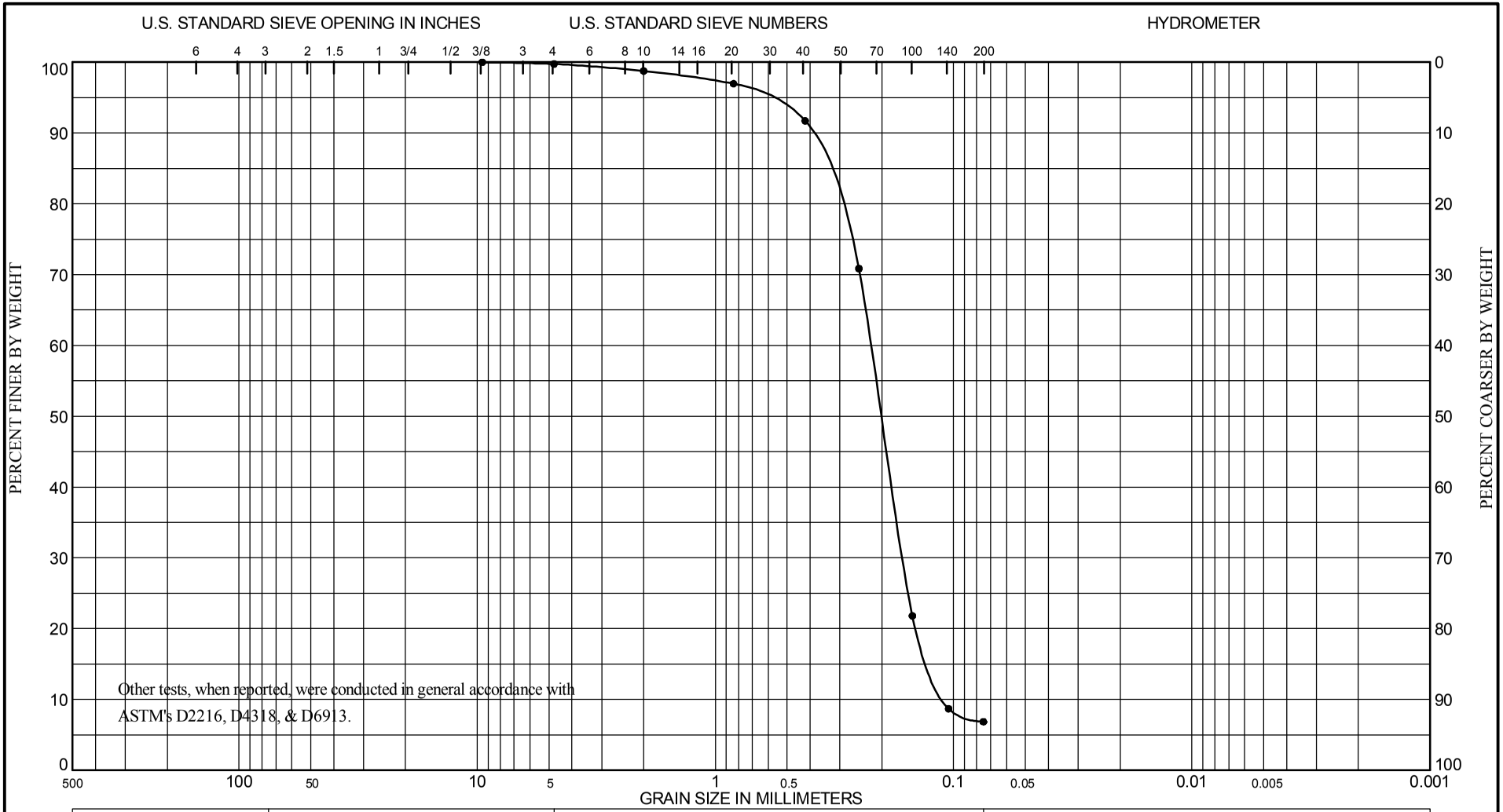
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.6 to 4.2	Very Dark Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4579
Hole No. BI-PBS-313-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

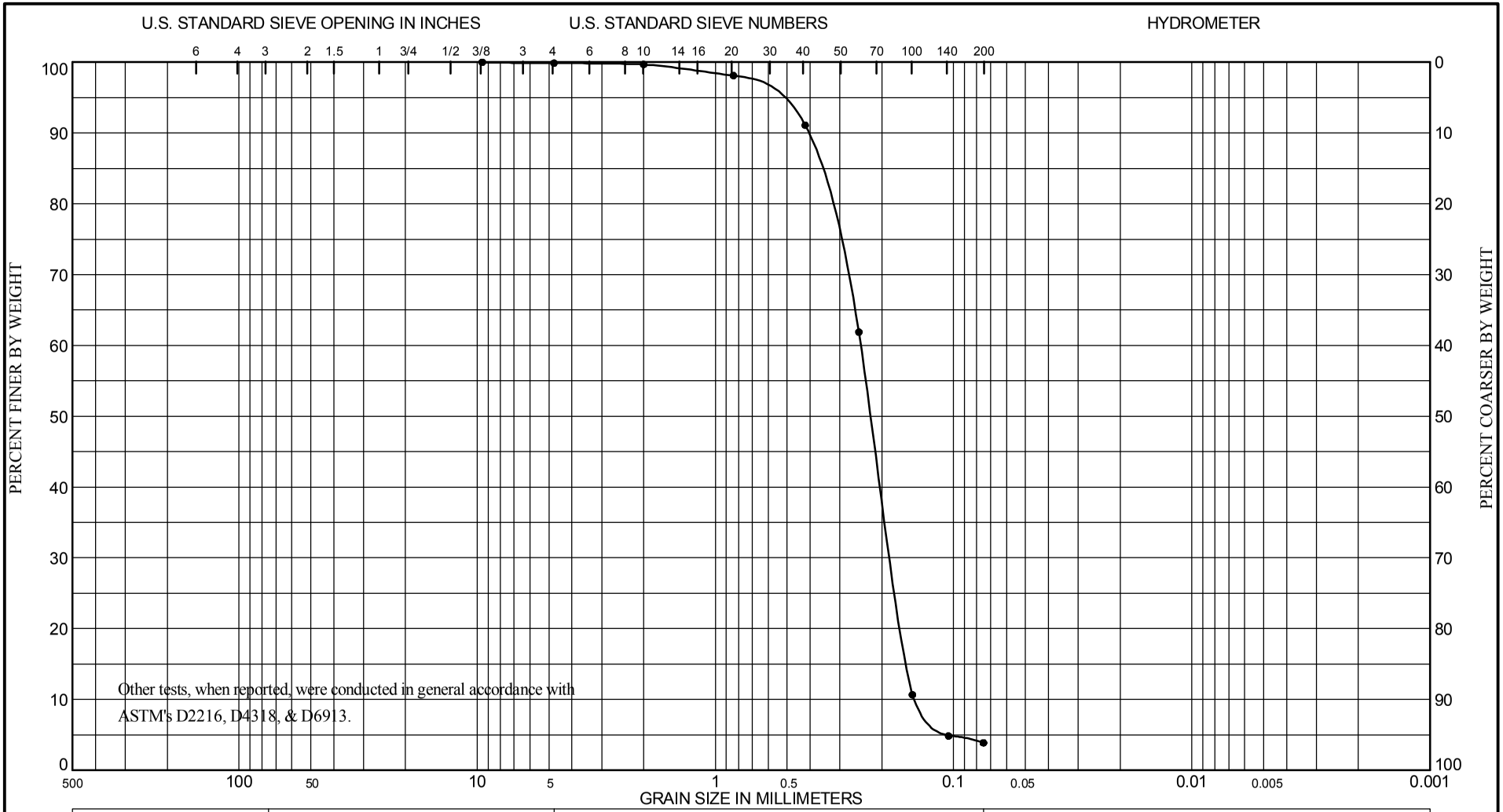
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	4.2 to 5.0	Dark Gray, Poorly Graded Silty Sand (SP-SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4580
Hole No. BI-PBS-313-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

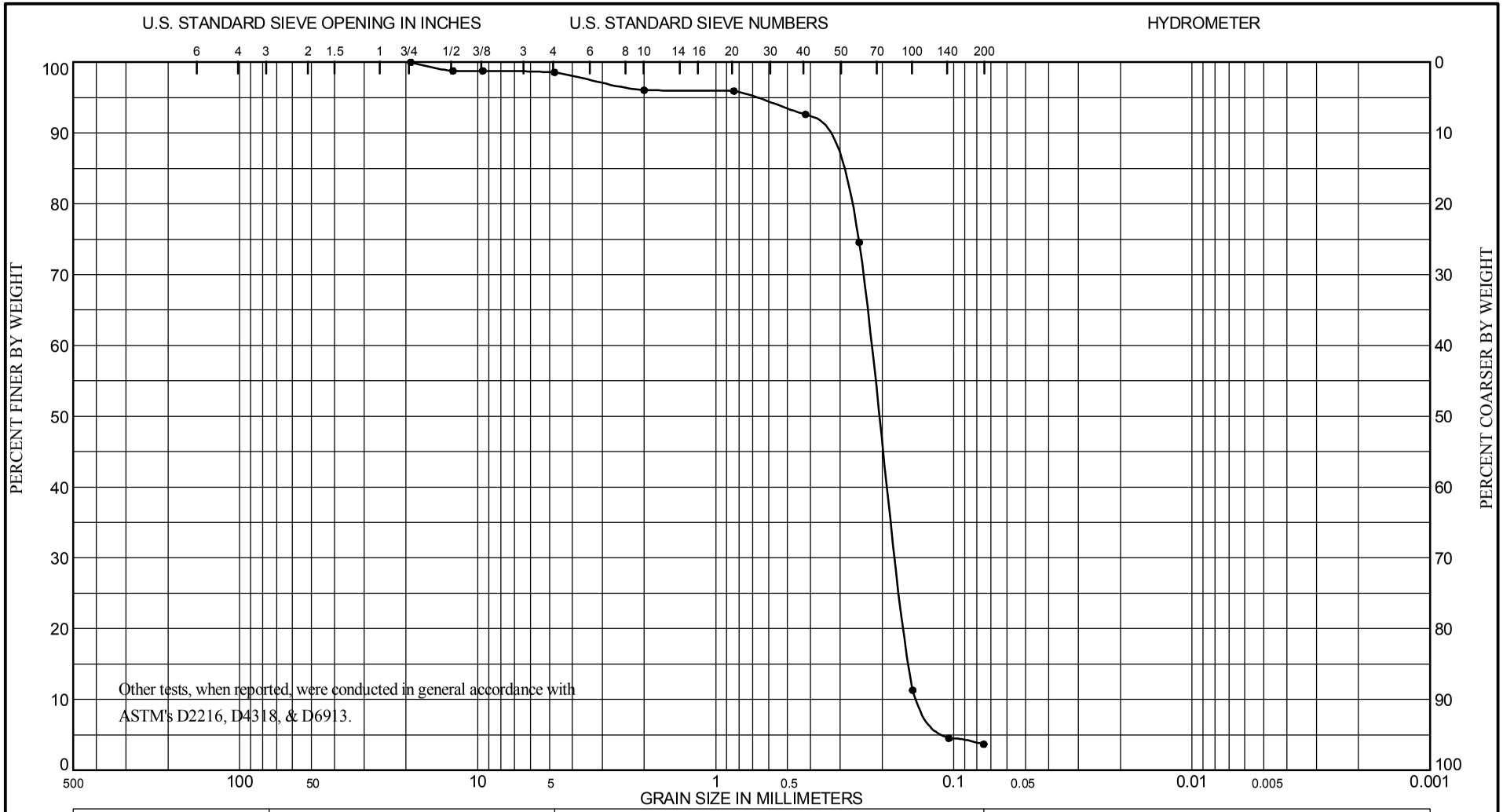
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	5.0 to 9.7	Dark Gray, Poorly Graded Silty Sand (SP-SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4581
Hole No. BI-PBS-313-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

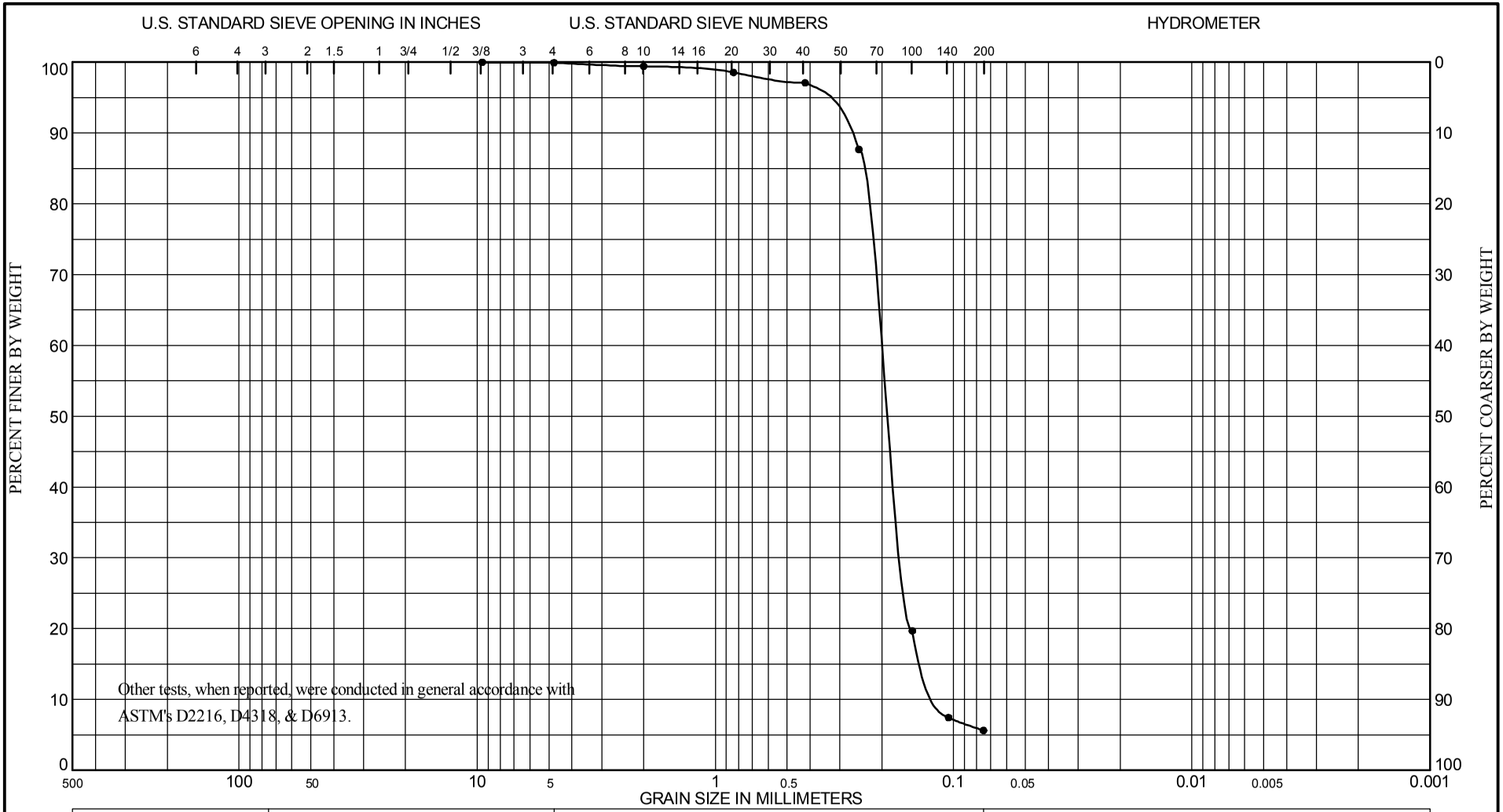
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
D	9.7 to 12.7	Dark Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4582
Hole No. BI-PBS-313-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
E	12.7 to 14.4	Dark Gray, Poorly Graded Sand (SP), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4583
Hole No. BI-PBS-313-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-314-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-314-13 — LOCATION COORDINATES: E = 1,116,114 N = 234,537	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 4 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 57.9 Ft.
	15. DATE BORING — STARTED: 01-31-14 — COMPLETED: 01-31-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -58.0 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 10.7 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-58.0	0.0				
-59.6	1.6		CLAY, lean, few shell fragments, sandy, trace wood 0.95 to 1.1 ft. depth, medium gray (CL)	NS	
-59.9	1.9		SAND, silty, apparent gap - material is SM and wood fragments - liquefied?, brownish gray (SM)		
-60.5	2.5			A	Classification: SP Color: 10Y 7/1-light greenish gray D50: 0.198 mm % Fines: 2.9
-62.0	4.0		SAND, silty, mostly fine-grained sand-sized quartz, medium gray (SM)	B	Classification: SP Color: 10Y 7/1-light greenish gray D50: 0.216 mm % Fines: 4.5
-63.3	5.3		SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace shell fragments, lt. to medium gray (SP)	C	Classification: SP Color: 10Y 7/1-light greenish gray D50: 0.236 mm % Fines: 3.9
-64.0	6.0		SAND, silty, mostly fine-grained sand-sized quartz, trace shell fragments, lt. to medium gray (SM)	D	Classification: SP-SM Color: 10Y 7/1-light greenish gray D50: 0.195 mm % Fines: 6.5
-68.7	10.7		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, trace shell fragments, lt. to medium gray (SP-SM)	NS	
			SAND, silty, mostly fine-grained sand-sized quartz, trace shell fragments, trace wood 7.7 to 7.8 ft. depth, medium gray (SM) At El. -66.0 Ft., mostly fine-grained sand-sized quartz, few shell fragments, high fines content, medium 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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

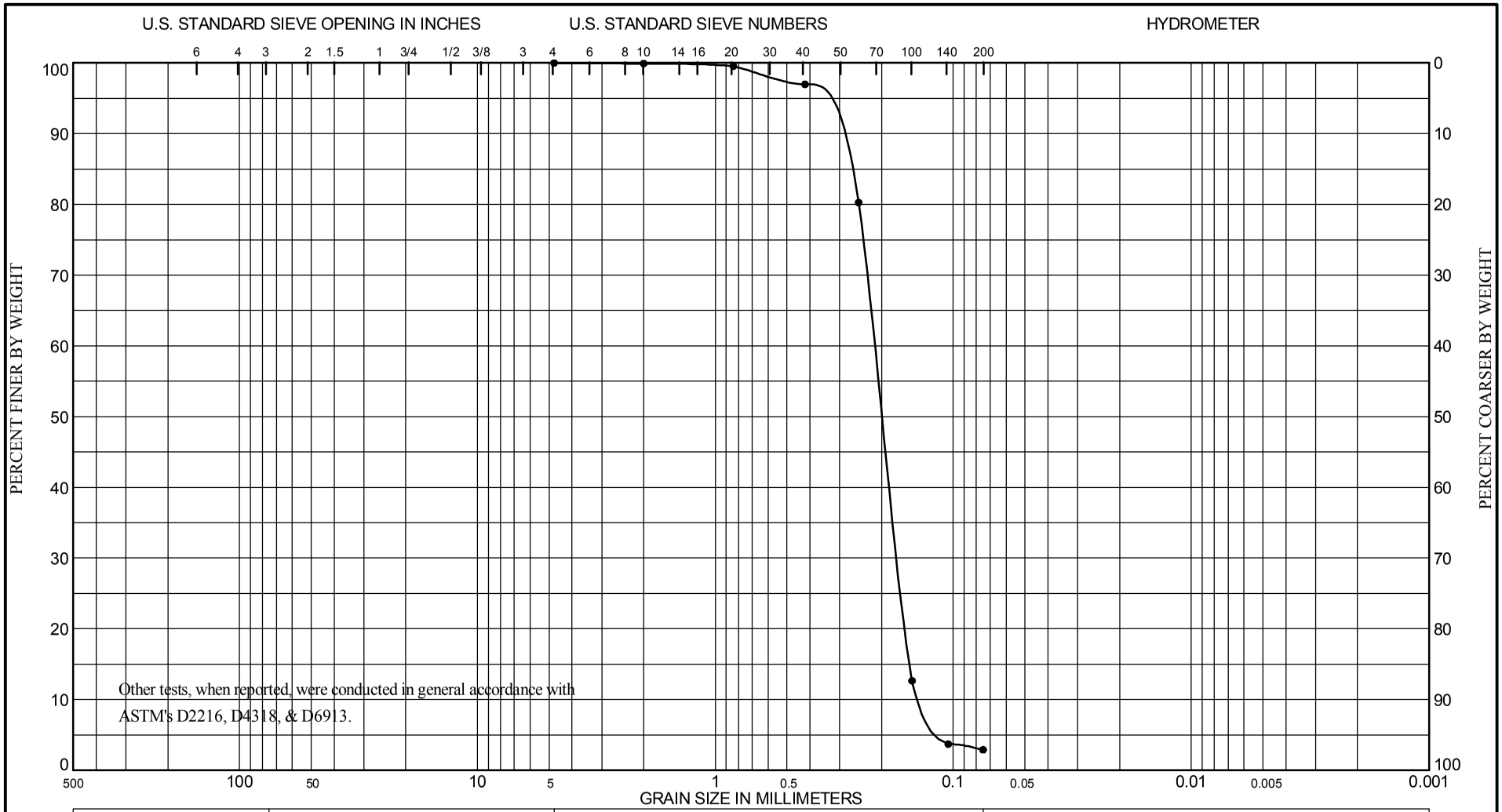
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14427° Long = -88.41615°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

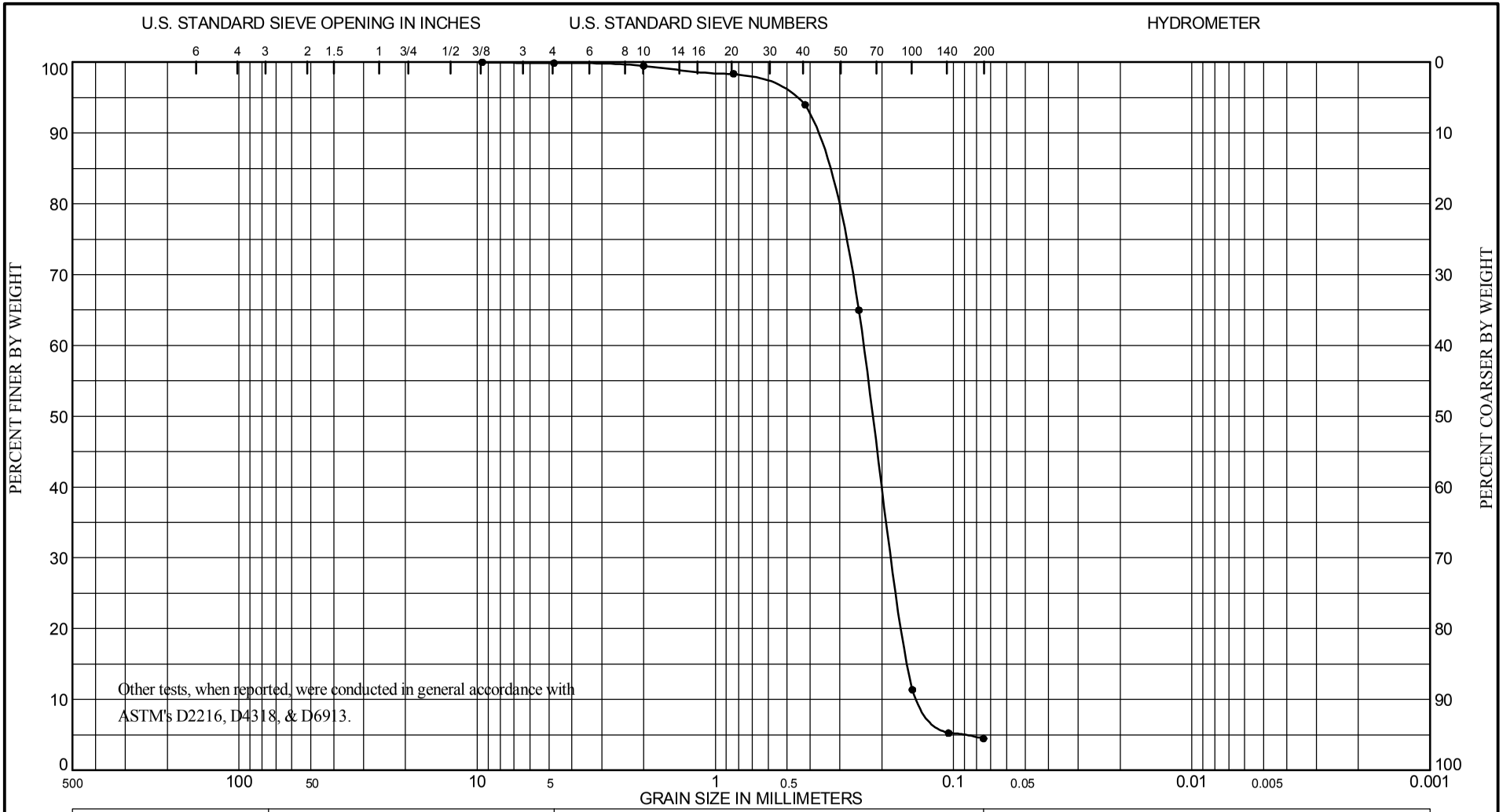
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	2.5 to 4.0	Dark Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4595
Hole No. BI-PBS-314-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

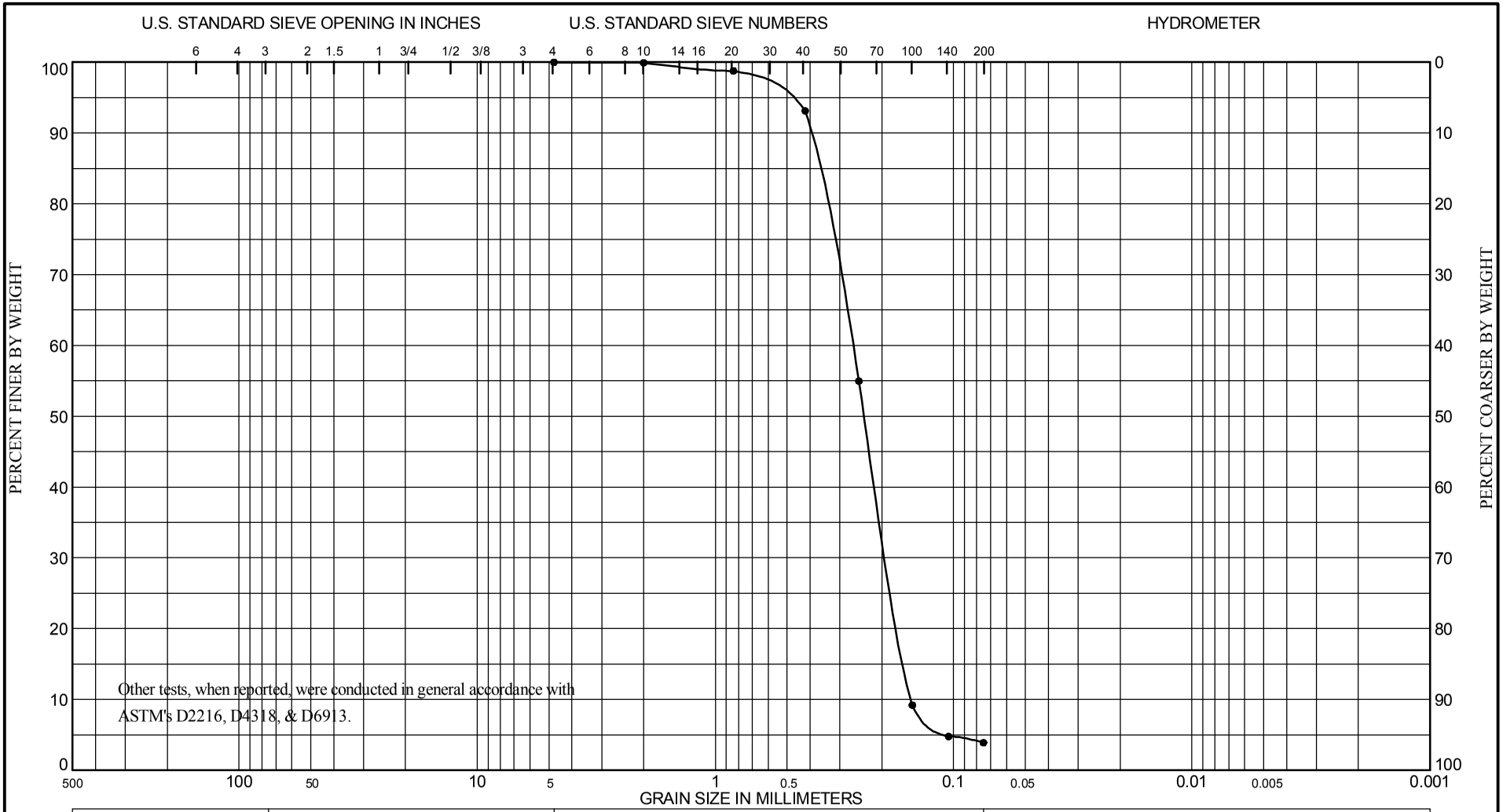
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	4.0 to 5.3	Dark Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4596
Hole No. BI-PBS-314-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

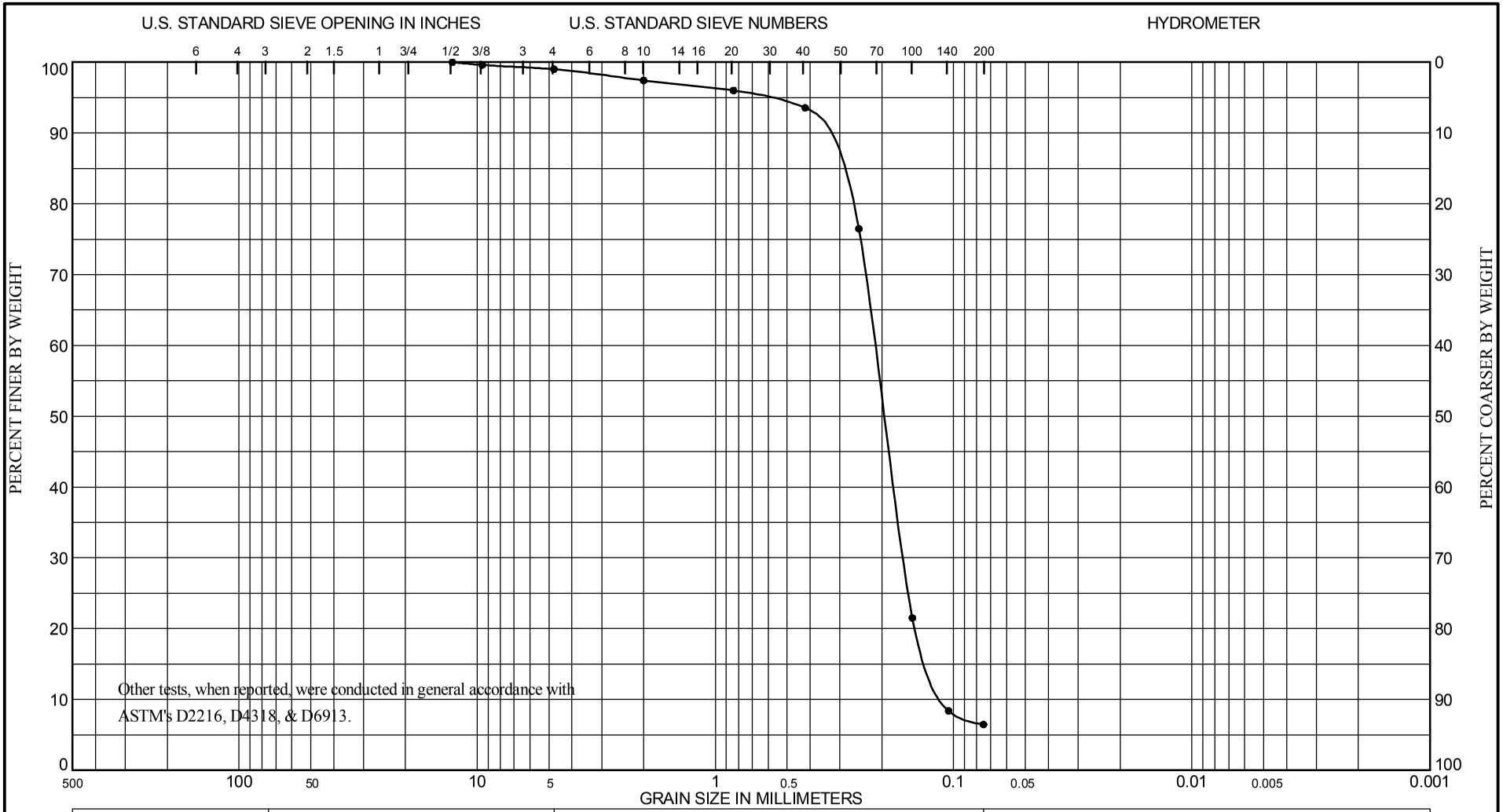
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	5.3 to 6.0	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4597
Hole No. BI-PBS-314-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
D	6.0 to 8.0	Dark Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel				
		size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4598
Hole No. BI-PBS-314-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-315-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-315-13 — LOCATION COORDINATES: E = 1,114,189 N = 235,450	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 1 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 55.3 Ft.
	15. DATE BORING — STARTED: 02-01-14 — COMPLETED: 02-01-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -54.3 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 18.6 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-54.3	0.0				
-58.8	4.5		CLAY, lean, trace shell fragments, sandy, interbedded with SC layers up to 1" thick to depth of 4.5 ft., soft to 4.0 ft., firm to 4.5 ft. depth, medium gray (CL)	NS	
-59.8	5.5		SAND, silty, mostly fine-grained sand-sized quartz, trace clay at 4.8 ft. depth, lt. gray (SM)		
-70.3	16.0		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace shell fragments, trace clay at 7.0 ft. depth, lt. gray (SP)	A	Classification: SP Color: 2.5Y 6/1-gray D50: 0.221 mm % Fines: 2.3
-72.9	18.6		SAND, silty, mostly fine-grained sand-sized quartz, trace shell fragments, low silt content, lt. to medium 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.

3. Seafloor elevation determined from 10/29/2014 USACE survey.

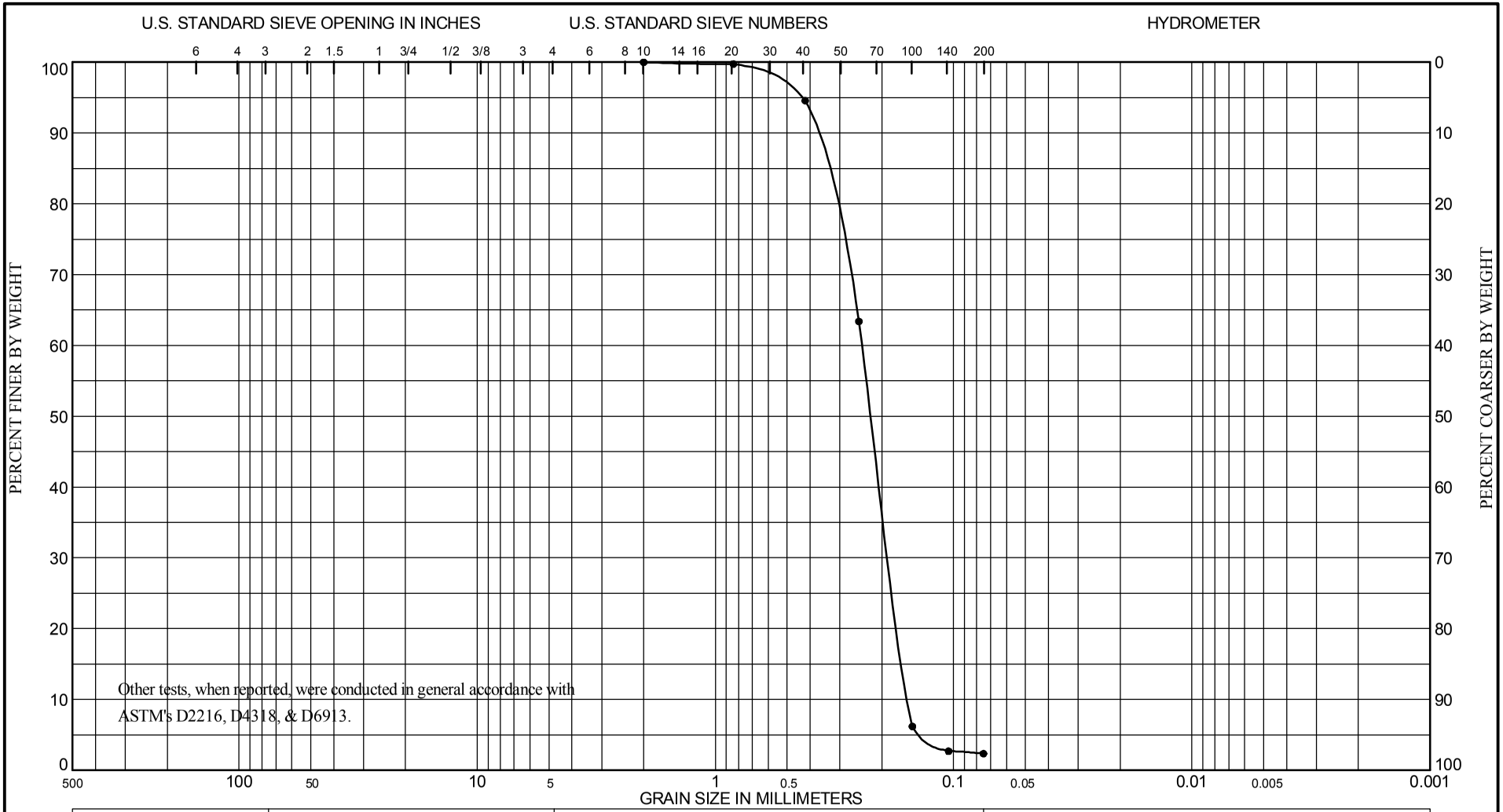
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14680° Long = -88.42223°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	5.5 to 10.5	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4599
Hole No. BI-PBS-315-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-316-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-316-13 — LOCATION COORDINATES: E = 1,113,143 N = 235,497	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 4 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 54 Ft.
	15. DATE BORING — STARTED: 02-02-14 — COMPLETED: 02-02-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -52.4 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 19.4 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-52.4	0.0				
-56.5	4.1		SAND, silty, clayey, mostly fine to medium-grained sand-sized quartz, few shell fragments, medium gray (SC-SM)	A	Classification: SM Color: 10Y 5/1-greenish gray D50: 0.218 mm % Fines: 15.4
-57.6	5.2		CLAY, lean, sandy, medium gray (CL)	NS	
-58.7	6.3		SAND, silty, mostly fine to medium-grained sand-sized quartz, medium gray (SM)	B	Classification: SP-SM Color: 10Y 5/1-greenish gray D50: 0.217 mm % Fines: 10.9
-59.7	7.3		CLAY, lean, soft, medium gray (CL)	NS	
-60.2	7.8		SAND, silty, mostly fine to medium-grained sand-sized quartz, medium dark gray (SM)		
			SAND, poorly-graded with silt, mostly fine to medium-grained sand-sized quartz, lt. to medium gray (SP-SM)	C	Classification: SP Color: 10Y 5/1-greenish gray D50: 0.217 mm % Fines: 4.7
-71.8	19.4			D	Classification: SP Color: 10Y 6/1-greenish gray D50: 0.201 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.

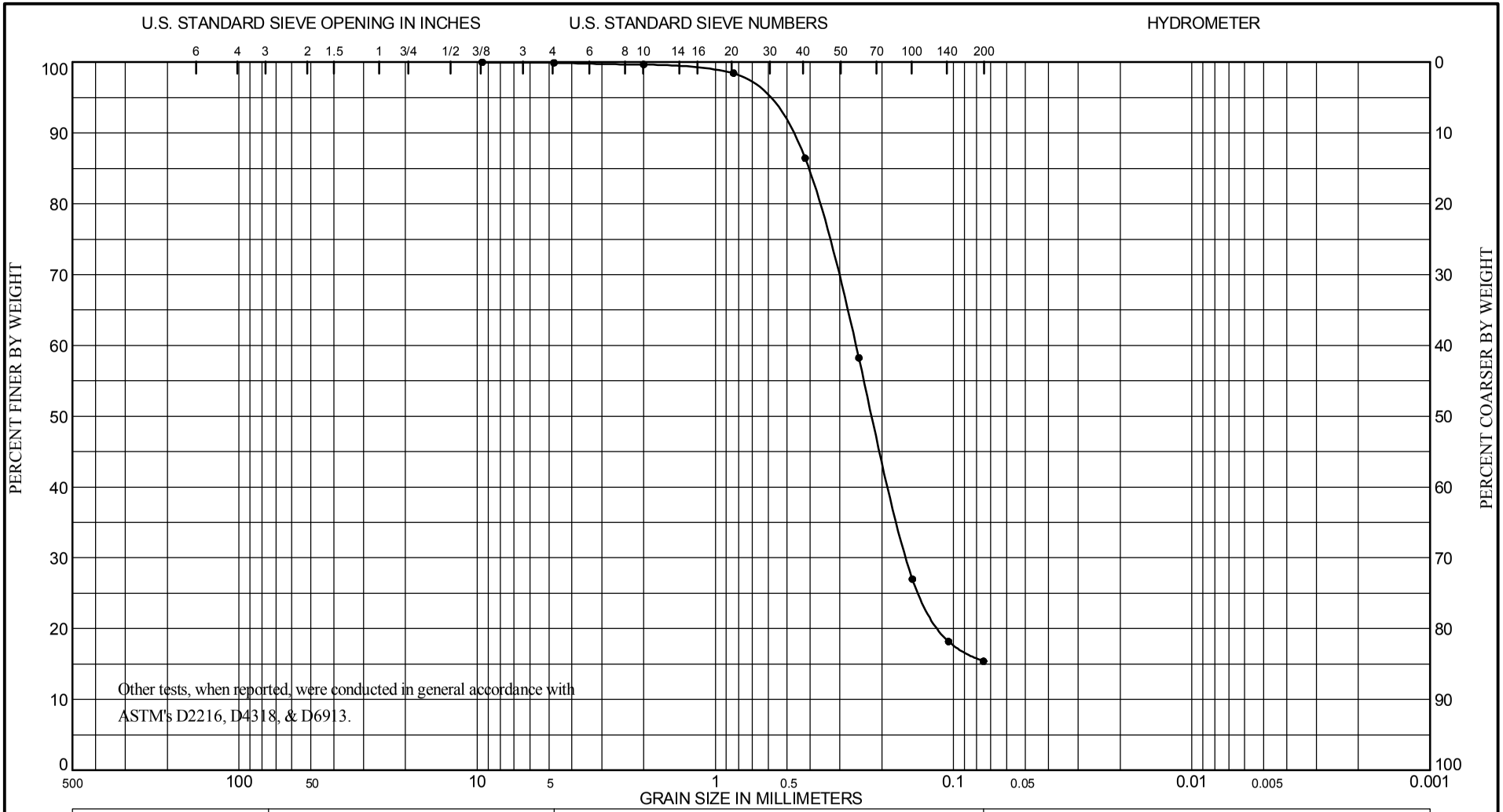
3. Seafloor elevation determined from 12/17/2014 USACE survey.

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14694° Long = -88.42554°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

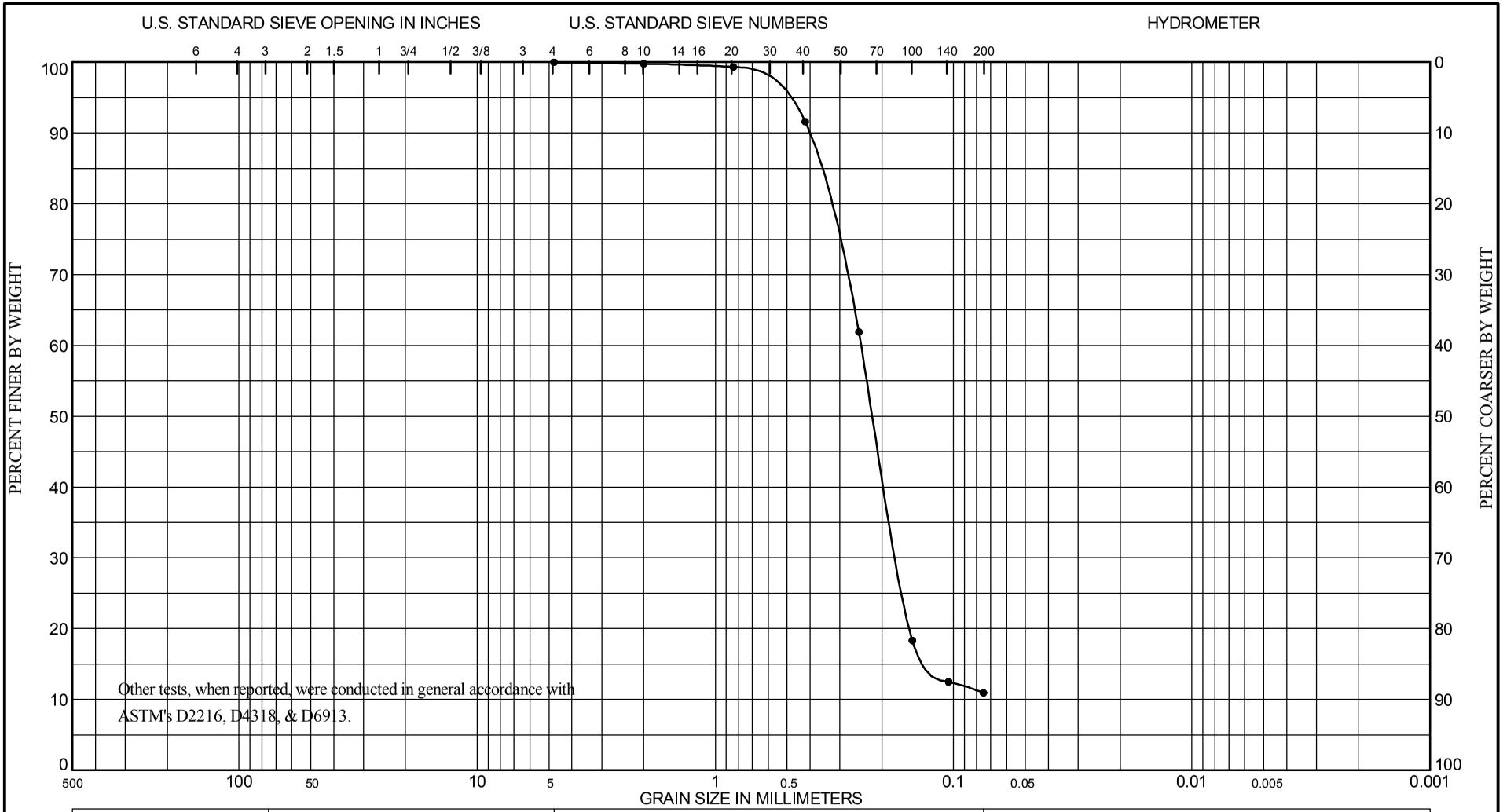
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 3.6	Dark Gray, Silty Sand (SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4615
Hole No. BI-PBS-316-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

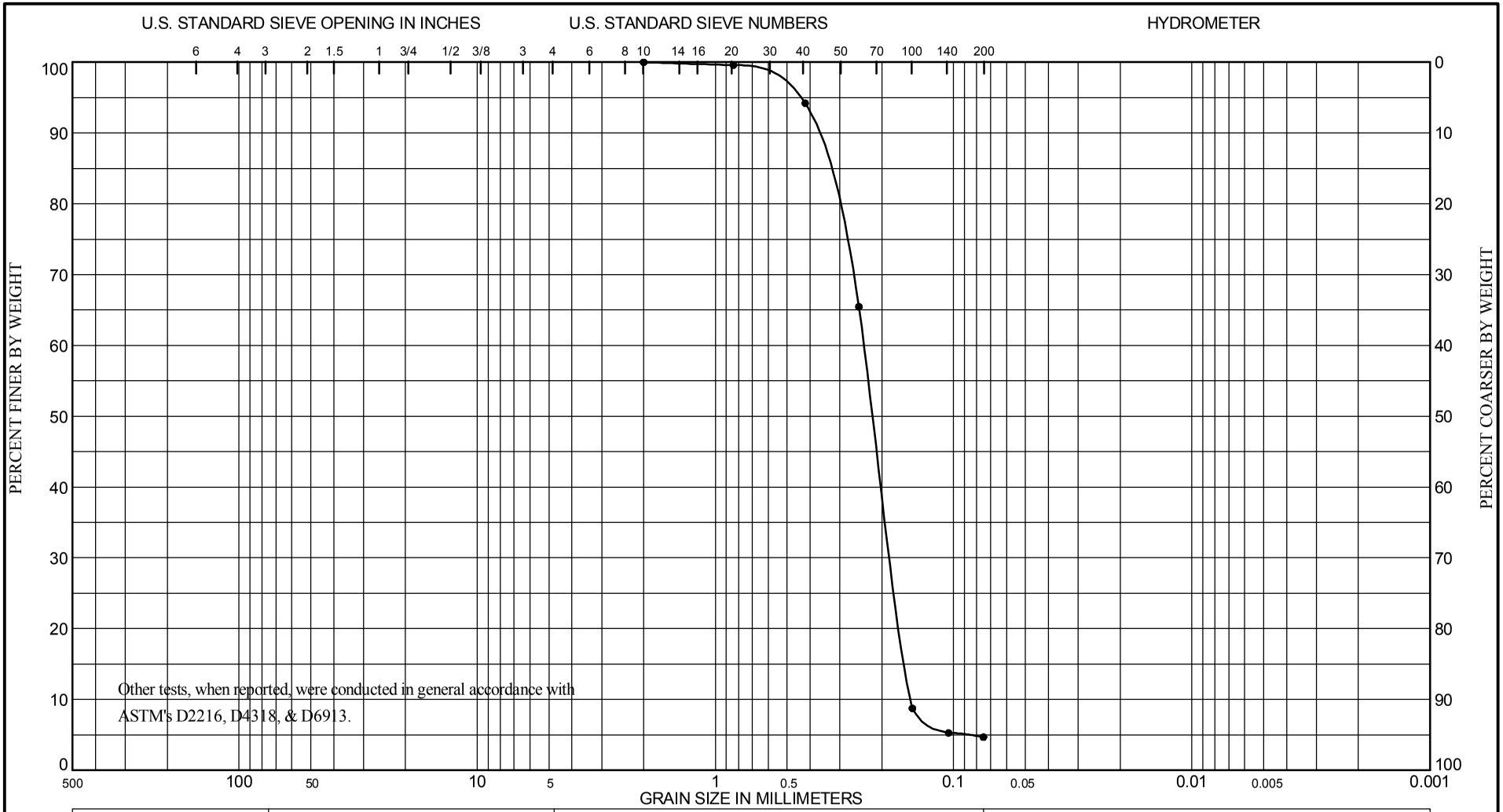
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	3.6 to 5.6	Dark Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4616
Hole No. BI-PBS-316-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

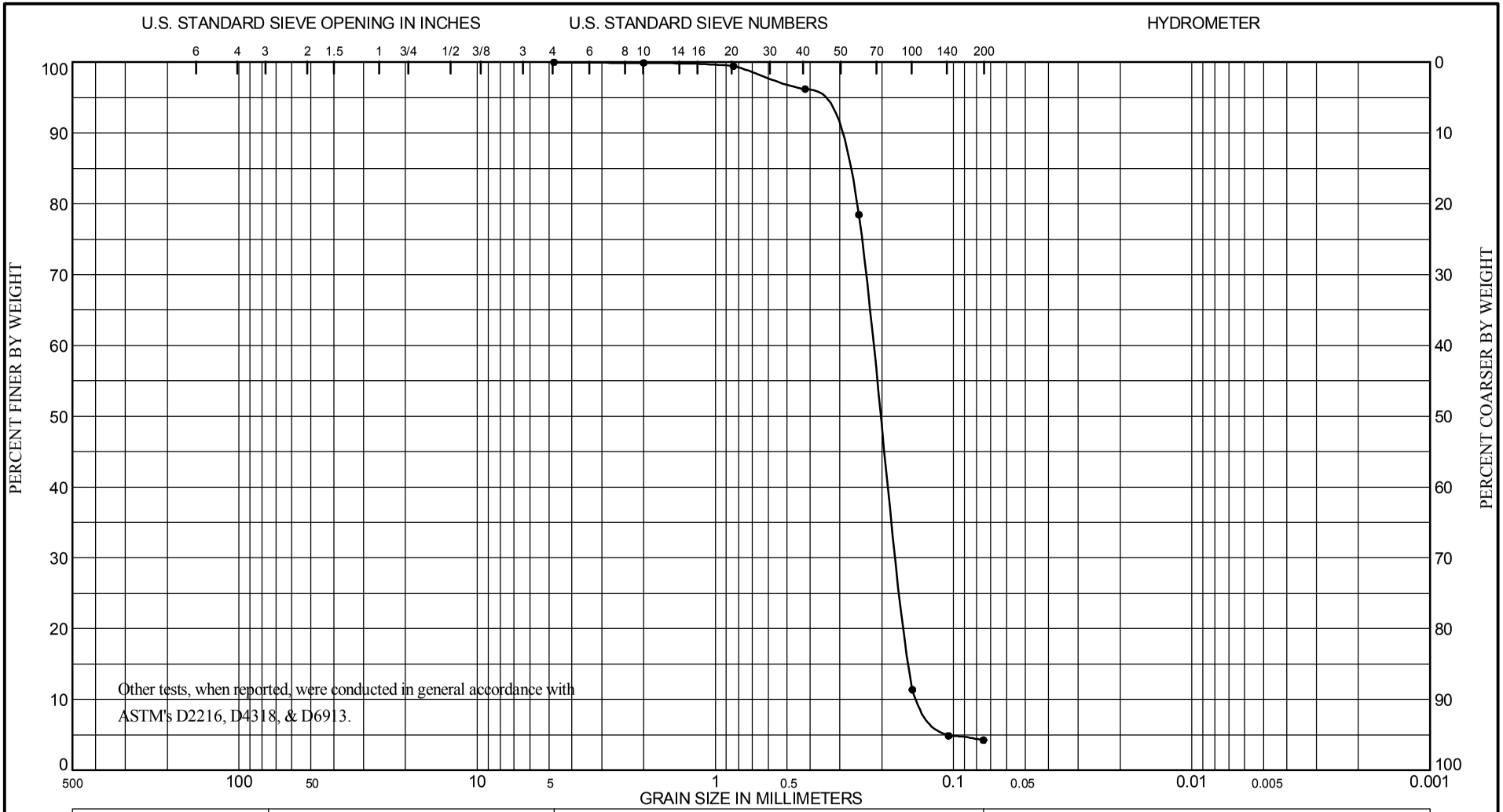
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	12.5 to 16.0	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4617
Hole No. BI-PBS-316-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
D	16.0 to 19.4	Dark Gray, Poorly Graded Silty Sand (SP-SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4618
Hole No. BI-PBS-316-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-317-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-317-13 — LOCATION COORDINATES: E = 1,112,080 N = 236,613	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ 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: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 53 Ft.
	15. DATE BORING — STARTED: 02-01-14 — COMPLETED: 02-01-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -51.7 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 18.7 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-51.7	0.0				
-52.4	0.7		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, medium gray (SM)		
-53.6	1.9		CLAY, lean, trace shell fragments, sandy, soft, medium dark gray (CL)		
-56.0	4.3		SAND, clayey, mostly fine-grained sand-sized quartz, few shell fragments, medium dark gray (SC)		
-56.9	5.2				
-57.5	5.8		CLAY, lean, brownish medium gray (CL)		
-58.2	6.5		SAND, clayey, dark gray (SC)		
-59.9	8.2		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace shell fragments, lt. gray (SP)		
-60.5	8.8				
-61.2	9.5		SAND, silty, mostly fine-grained sand-sized quartz, medium gray (SM)	NS	
			SAND, poorly-graded, lt. gray (SP)		
-63.7	12.0		SAND, poorly-graded with silt, lt. to medium gray (SP-SM)		
			SAND, poorly-graded, lt. to medium gray (SP)		
-66.7	15.0		SAND, poorly-graded with silt, lt. to medium gray (SP-SM)		
-68.4	16.7		SAND, silty, medium gray (SM)		
-70.4	18.7		SAND, clayey, medium 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.

3. Seafloor elevation determined from 2013 USGS geophysical survey.

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15002° Long = -88.42889°

Boring Designation BI-PBS-318-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-318-13 — LOCATION COORDINATES: E = 1,111,771 N = 237,329	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 2 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 54.3 Ft.
	15. DATE BORING — STARTED: 02-01-14 — COMPLETED: 02-01-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -55.2 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 19.1 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-55.2	0.0				
-57.5	2.3		CLAY, lean, sandy, firm, contains 0.25 ft. of wood, lt. to dark gray (CL)	NS	
-58.2	3.0		SAND, clayey, medium gray (SC)		
-63.2	8.0		SAND, poorly-graded with silt, mostly fine to medium-grained sand-sized quartz, trace shell fragments, trace wood 6.0 - 6.8 ft., lt. to medium gray (SP-SM)	A	Classification: SP Color: 10Y 7/1-light greenish gray D50: 0.216 mm % Fines: 2.9
-68.2	13.0		SAND, silty, mostly fine-grained sand-sized quartz, lt. to medium gray (SM)	B	Classification: SP Color: 10Y 7/1-light greenish gray D50: 0.194 mm % Fines: 2.7
-69.5	14.3		SAND, silty, clayey, mostly fine-grained sand-sized quartz, medium gray (SC-SM)		
-74.3	19.1		SAND, silty, mostly fine-grained sand-sized quartz, little shell fragments, trace clay at 16.6 and 17.8 ft., medium to 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.

3. Seafloor elevation determined from 2013 USGS geophysical survey.

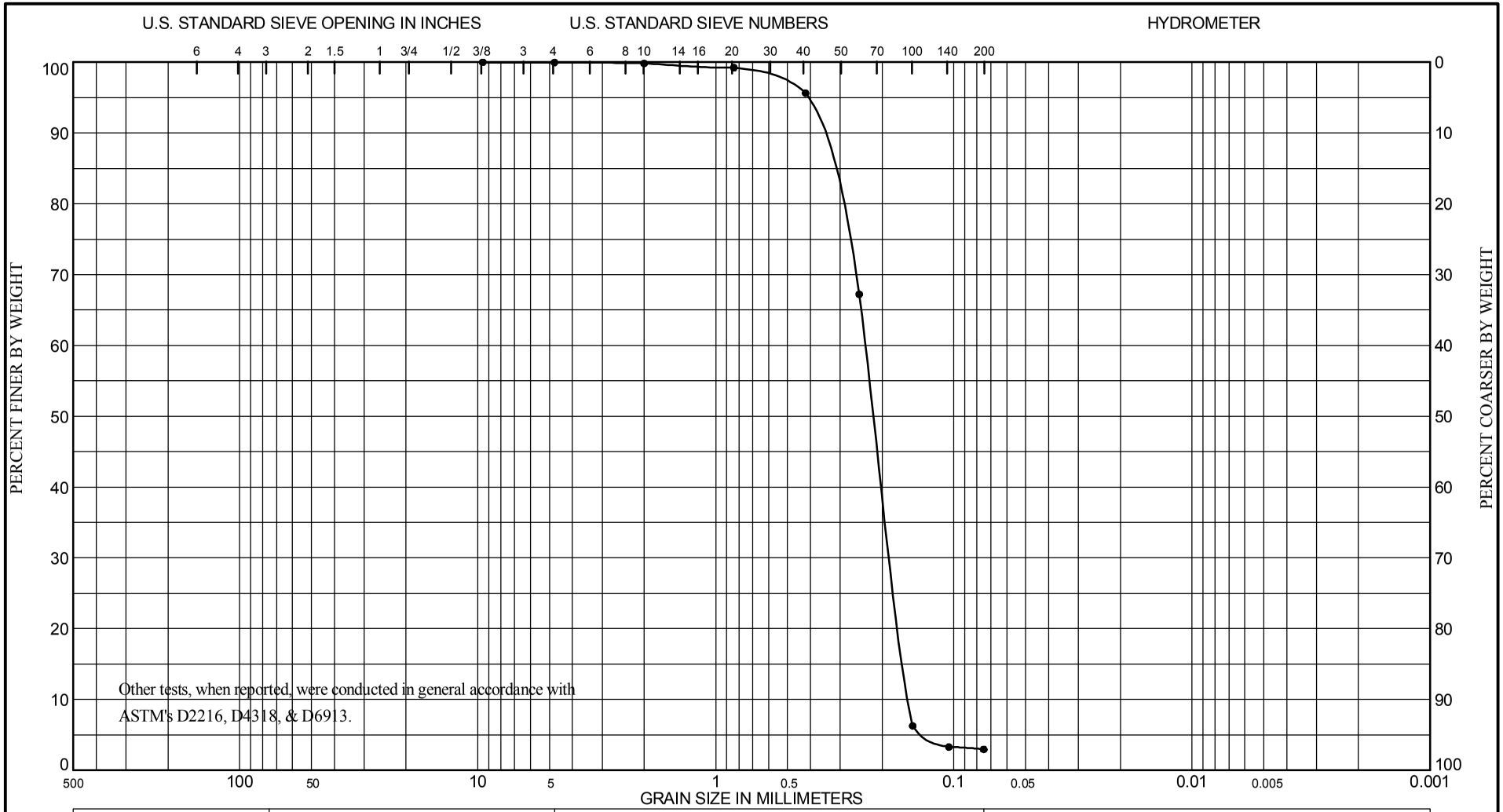
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15199° Long = -88.42986°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

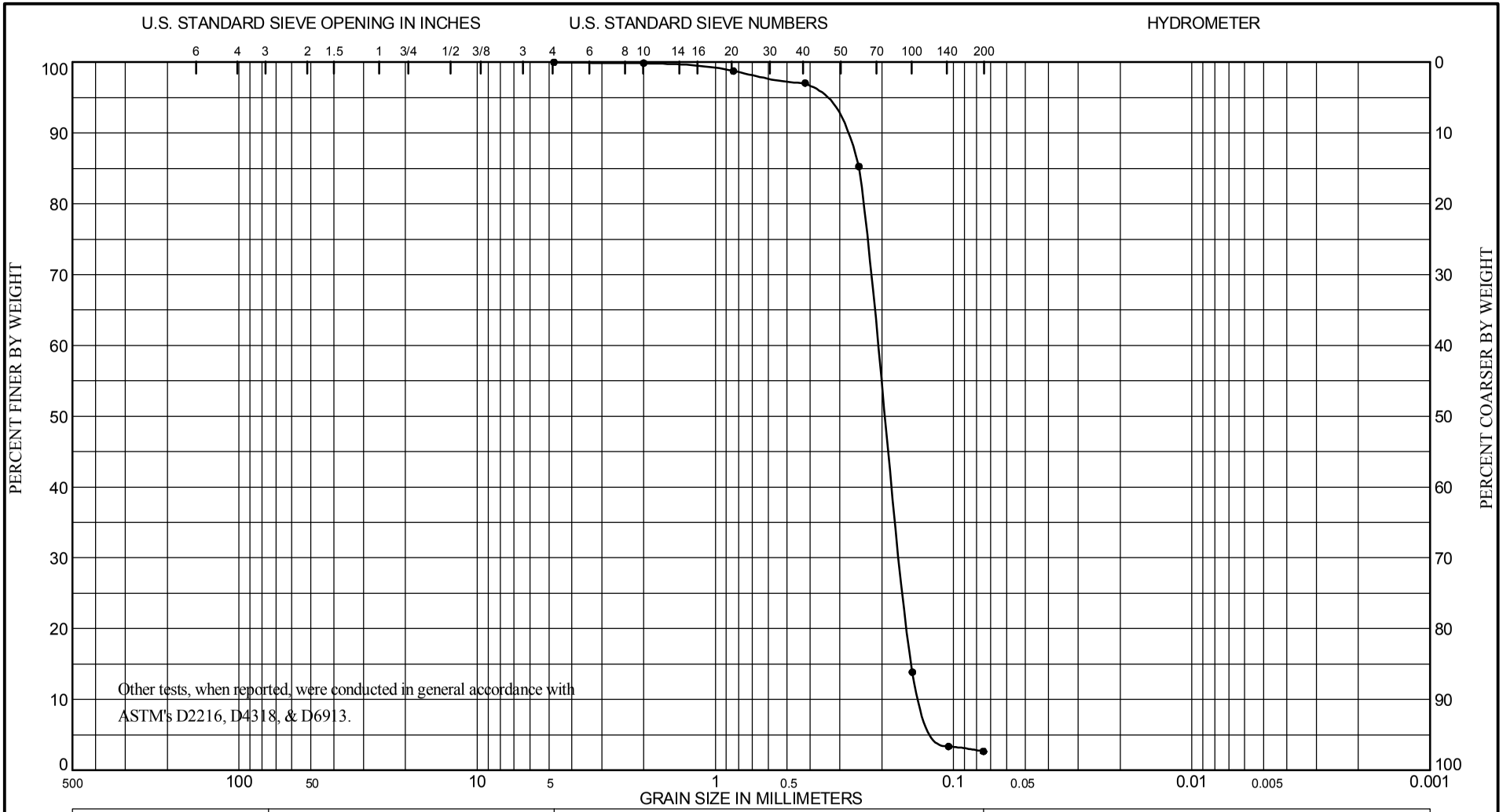
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	3.0 to 8.0	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4605
Hole No. BI-PBS-318-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	8.0 to 13.0	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4606
Hole No. BI-PBS-318-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-319-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-319-13 — LOCATION COORDINATES: E = 1,117,908 N = 235,816	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 3 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 55.3 Ft.
	15. DATE BORING — STARTED: 02-08-14 — COMPLETED: 02-08-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -55.3 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 16.9 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-55.3	0.0				
-56.4	1.1		SAND, poorly-graded, mostly fine-grained sand-sized quartz, few shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 6/1-gray D50: 0.228 mm % Fines: 2.8
-58.8	3.5		SAND, poorly-graded with silt, mostly fine to medium-grained sand-sized quartz, few shell fragments, lt. gray (SP-SM)	B	Classification: SP Color: 2.5Y 6/1-gray D50: 0.214 mm % Fines: 3.7
-66.6	11.3		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, lt. to medium gray (SM) At El. -58.9 Ft., trace clay At El. -60.8 Ft., high fines content to base of unit	C	Classification: SP Color: 2.5Y 6/1-gray D50: 0.194 mm % Fines: 4.8
-67.4	12.1		SAND, clayey, mostly fine-grained sand-sized quartz, trace shell fragments, medium gray (SC)	NS	
-68.4	13.1		CLAY, lean, trace shell fragments, sandy, medium gray (CL)		
-72.2	16.9		SAND, clayey, mostly fine-grained sand-sized quartz, trace shell fragments, medium 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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

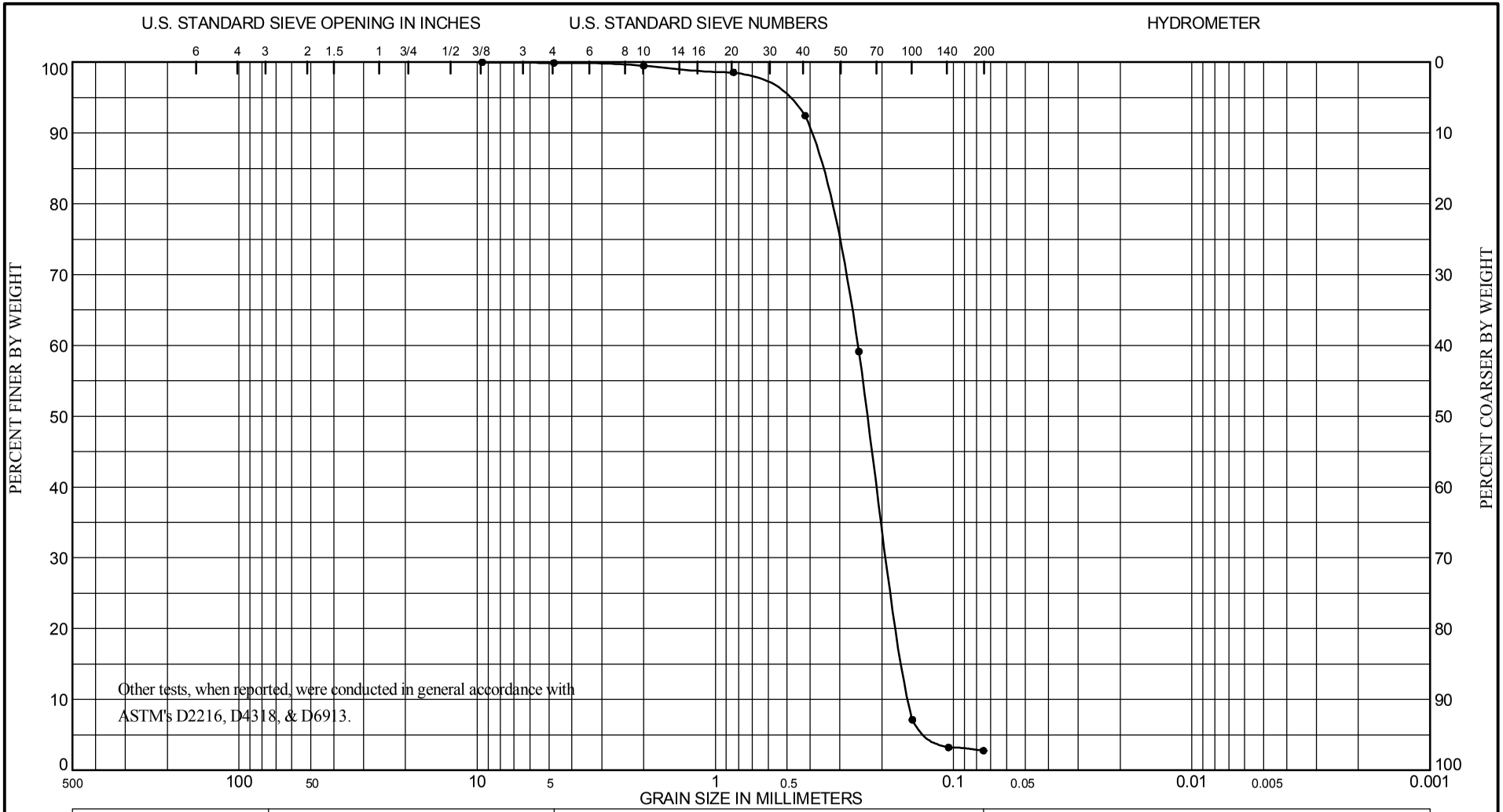
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14777° Long = -88.41046°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

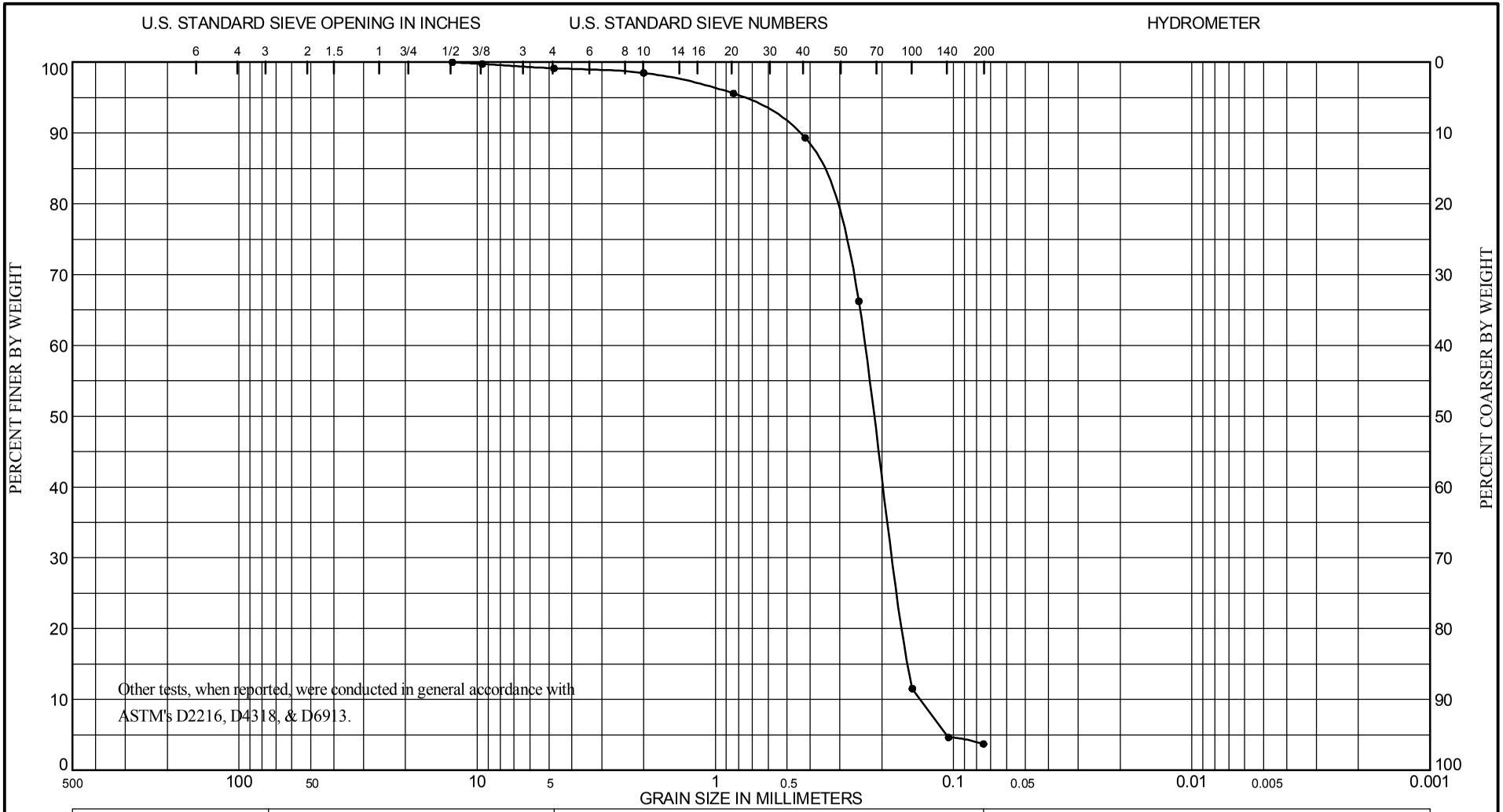
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 1.1	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4801
Hole No. BI-PBS-319-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

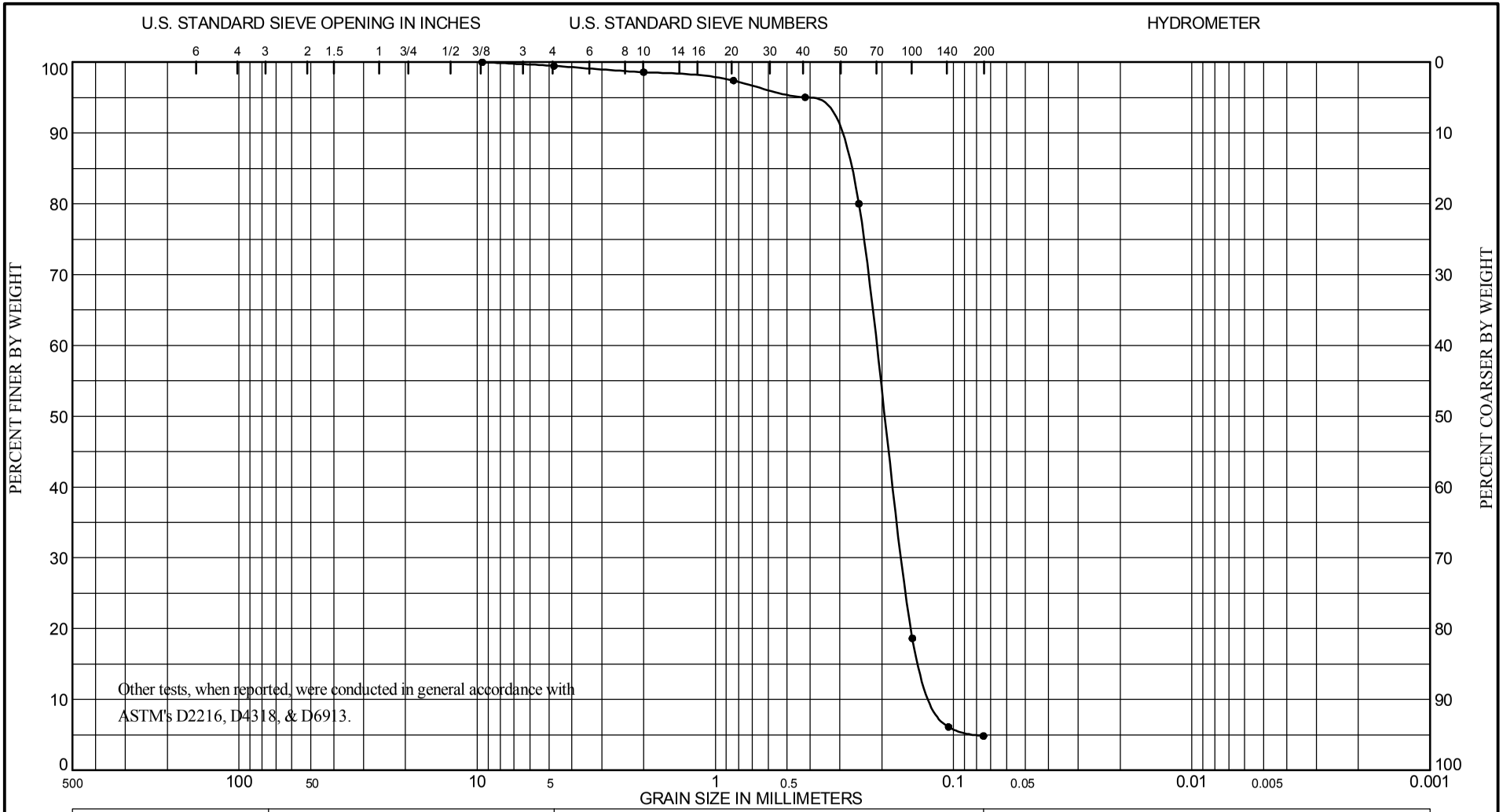
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	1.1 to 3.5	Greenish Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4802
Hole No. BI-PBS-319-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	3.5 to 5.5	Greenish Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4803
Hole No. BI-PBS-319-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-321-13

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
	South Atlantic	Mobile District	

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS West
2. BORING DESIGNATION	BI-PBS-321-13
LOCATION COORDINATES	E = 1,112,604 N = 237,590
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	19.6 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED 5 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	54 Ft.
15. DATE BORING	STARTED 02-01-14 / COMPLETED 02-01-14
16. ELEVATION TOP OF BORING	-52.8 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-52.8	0.0				
			SAND, silty, mostly fine-grained sand-sized quartz, trace shell fragments, medium gray (SM)	A	Classification: SP-SM Color: 10Y 7/1-light greenish gray D50: 0.22 mm % Fines: 6.5
				B	Classification: SP Color: 10Y 7/1-light greenish gray D50: 0.187 mm % Fines: 4.5
-59.1	6.3				
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace shell fragments, lt. to medium gray (SP)	C	Classification: SP Color: 10Y 7/1-light greenish gray D50: 0.222 mm % Fines: 3.8
				D	Classification: SP Color: 10Y 7/1-light greenish gray D50: 0.218 mm % Fines: 2.2
-68.8	16.0				
			SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, medium to dark gray (SM)	E	Classification: SP Color: 10Y 7/1-light greenish gray D50: 0.19 mm % Fines: 4.6
-72.4	19.6				
			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. 3. Seafloor elevation determined from 10/29/2014 USACE survey.		

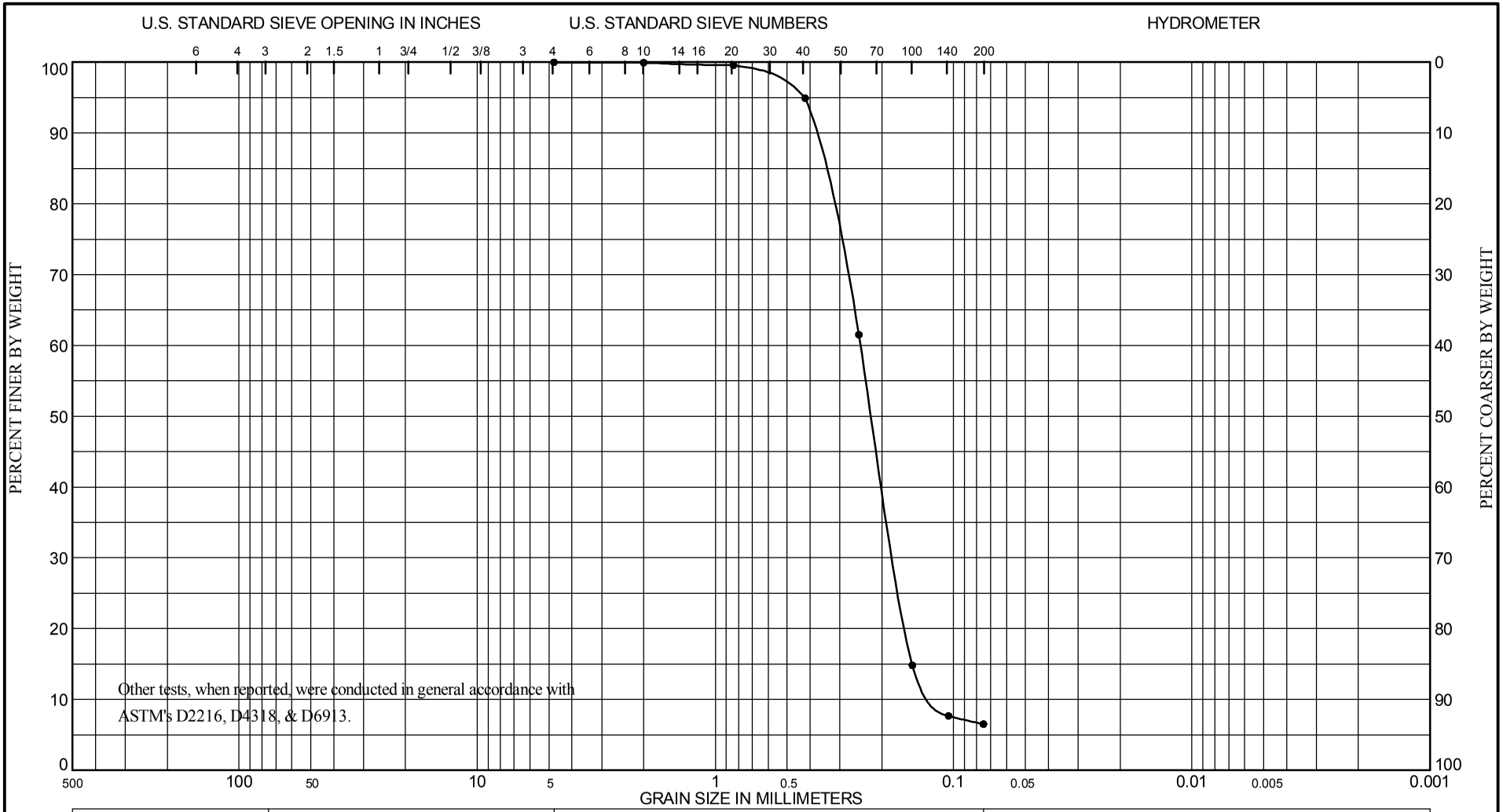
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15270° Long = -88.42722°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

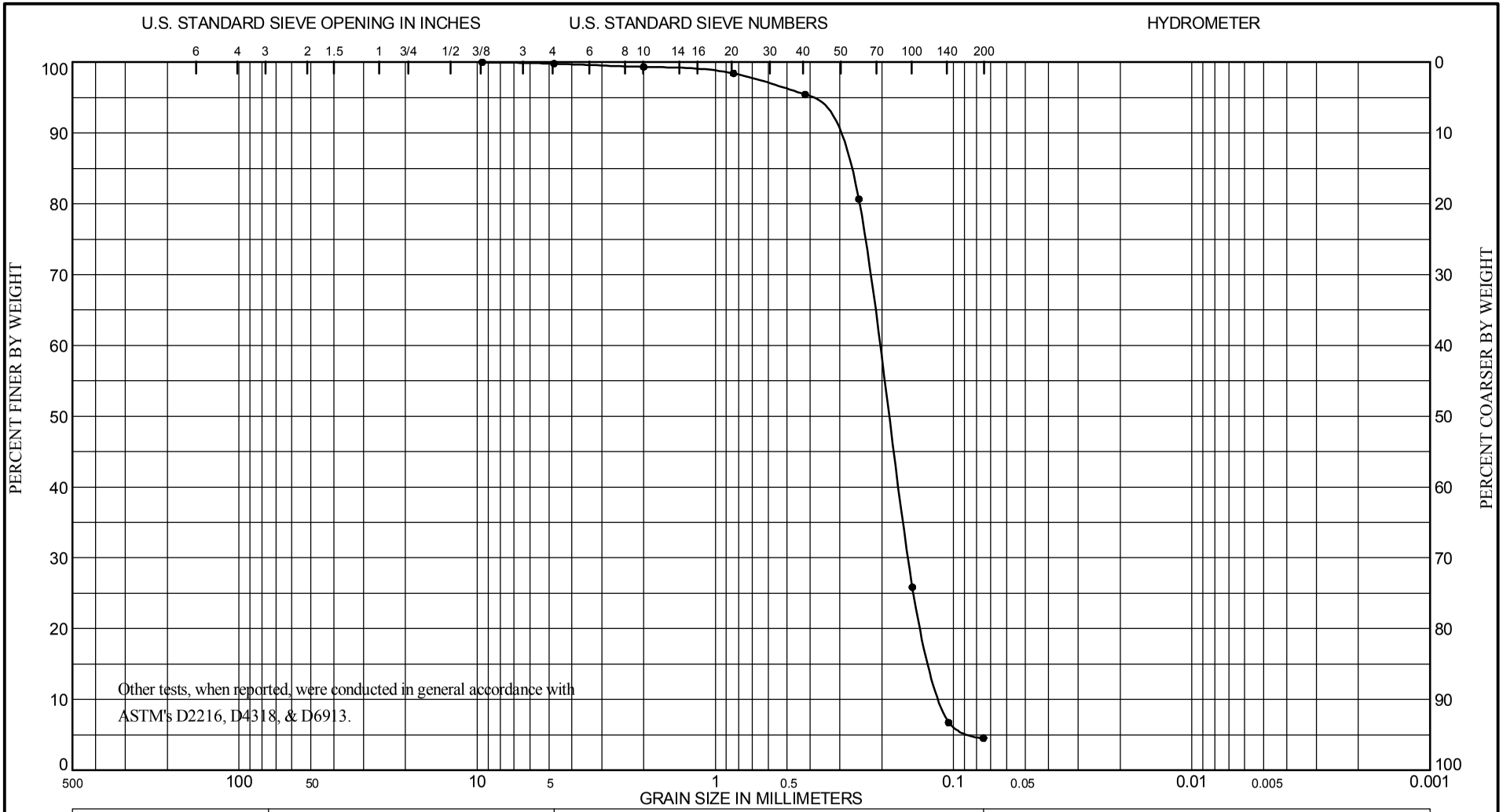
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 3.0	Gray, Poorly Graded Silty Sand (SP-SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4600
Hole No. BI-PBS-321-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

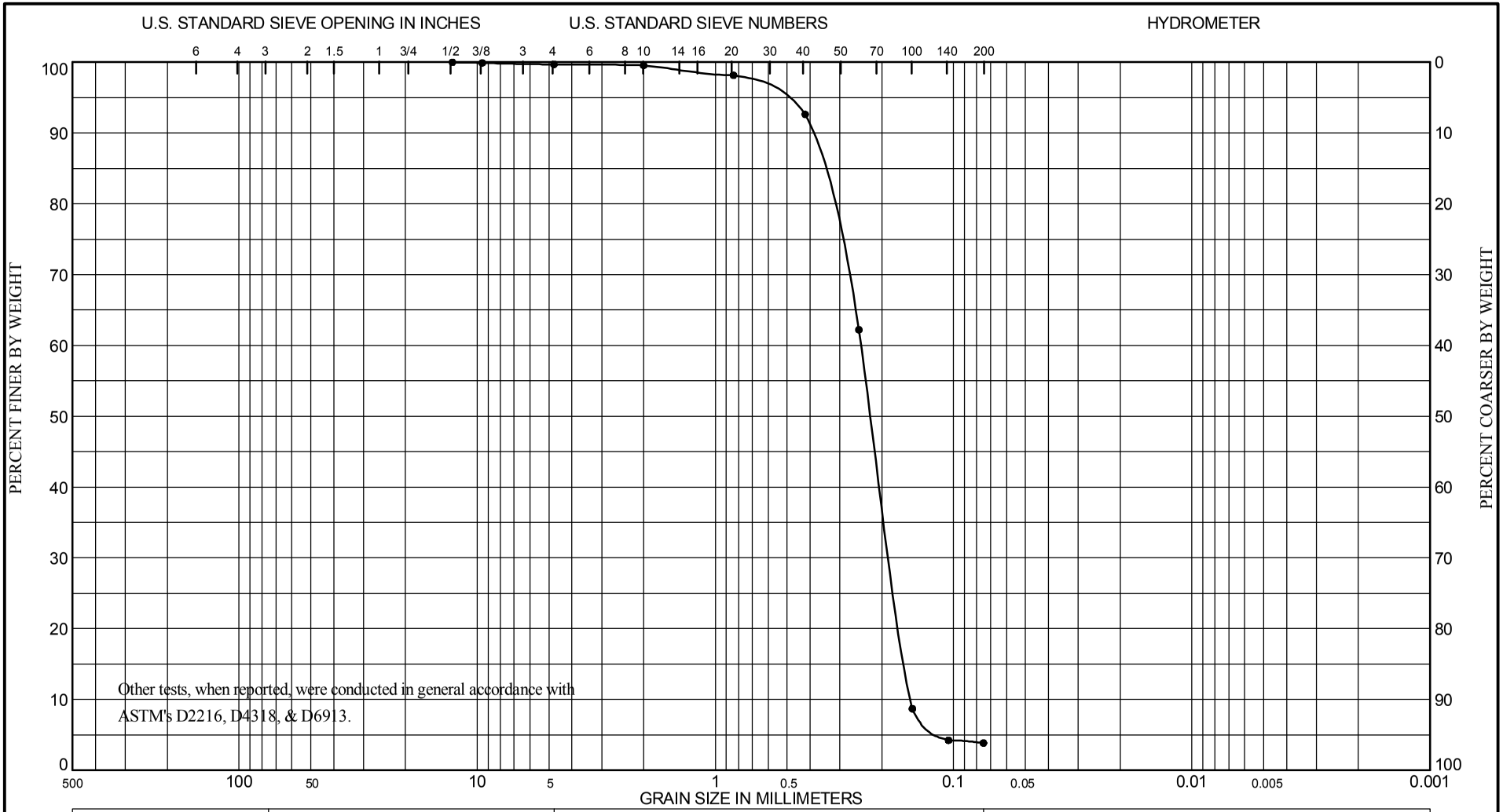
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	3.0 to 6.3	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4601
Hole No. BI-PBS-321-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

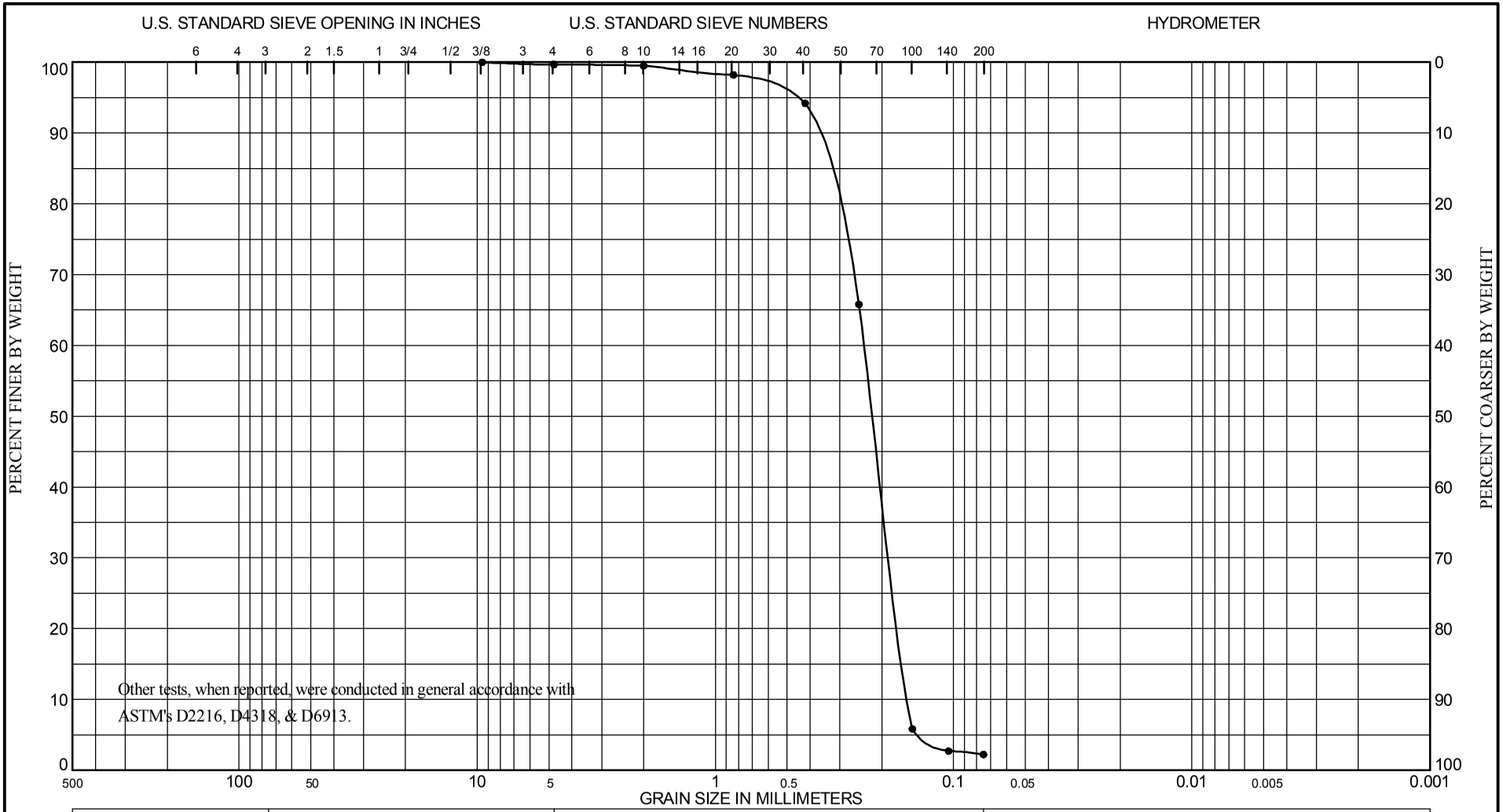
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	6.3 to 11.0	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4602
Hole No. BI-PBS-321-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

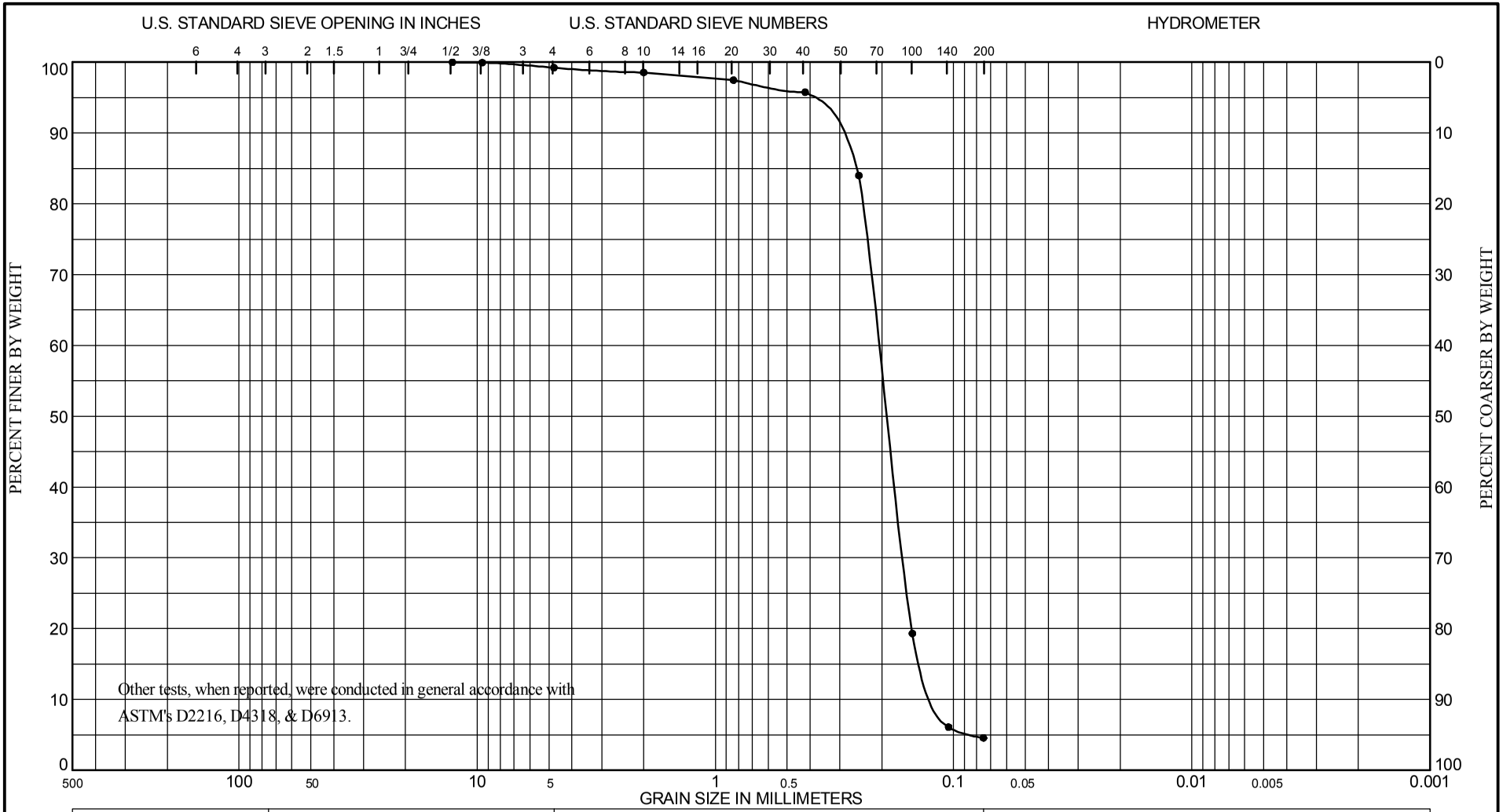
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
D	11.0 to 16.0	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4603
Hole No. BI-PBS-321-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
E	16.0 to 19.6	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4604
Hole No. BI-PBS-321-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-322-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 2 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-322-13 — LOCATION COORDINATES: E = 1,114,123 N = 237,228	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 5 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 55 Ft.
	15. DATE BORING — STARTED: 02-02-14 — COMPLETED: 02-02-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -53.3 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: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-53.3	0.0				
-54.5	1.2		CLAY, lean, sandy, trace shell fragments, trace wood, medium gray (CL)	NS	
-54.7	1.4		SAND, clayey, mostly fine to medium-grained sand-sized quartz, few shell fragments, dark gray (SC)	A	Classification: SP Color: 10Y 5/1-greenish gray D50: 0.232 mm % Fines: 4.8
-58.0	4.7		SAND, silty, mostly fine-grained sand-sized quartz, slight plasticity at depth of 3 ft., medium gray (SM)		
-62.3	9.0		SAND, poorly-graded with silt, mostly fine to medium-grained sand-sized quartz, few shell fragments, medium to lt. gray (SP-SM)	B	Classification: SP Color: 10Y 5/1-greenish gray D50: 0.243 mm % Fines: 3.8
-64.3	11.0		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, few shell fragments, lt. gray (SP)	C	Classification: SP Color: 10Y 5/1-greenish gray D50: 0.239 mm % Fines: 2.6
-66.3	13.0		SAND, poorly-graded with silt, mostly fine to medium-grained sand-sized quartz, few shell fragments, lt. gray (SP-SM)	D	Classification: SP Color: 10Y 5/1-greenish gray D50: 0.373 mm % Fines: 2.5
			SAND, silty, mostly fine-grained sand-sized quartz, little shell fragments, low fines content, lt. to medium gray (SM)	E	Classification: SP Color: 10Y 6/1-greenish gray D50: 0.206 mm % Fines: 3.1
-73.3	20.0		At El. -68.7 Ft., mostly fine-grained sand-sized quartz, few shell fragments, high fines content, medium to dark 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.

3. Seafloor elevation determined from

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15169° Long = -88.42242°

DRILLING LOG (Cont. Sheet)	INSTALLATION Mobile District		SHEET 2 OF 2 SHEETS
PROJECT MsCIP Barrier Island Restoration	COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83	VERTICAL NAVD88
LOCATION COORDINATES X = 1,114,123 Y = 237,228	ELEVATION TOP OF BORING -53.3 Ft.		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
			10/29/2014 USACE survey.		

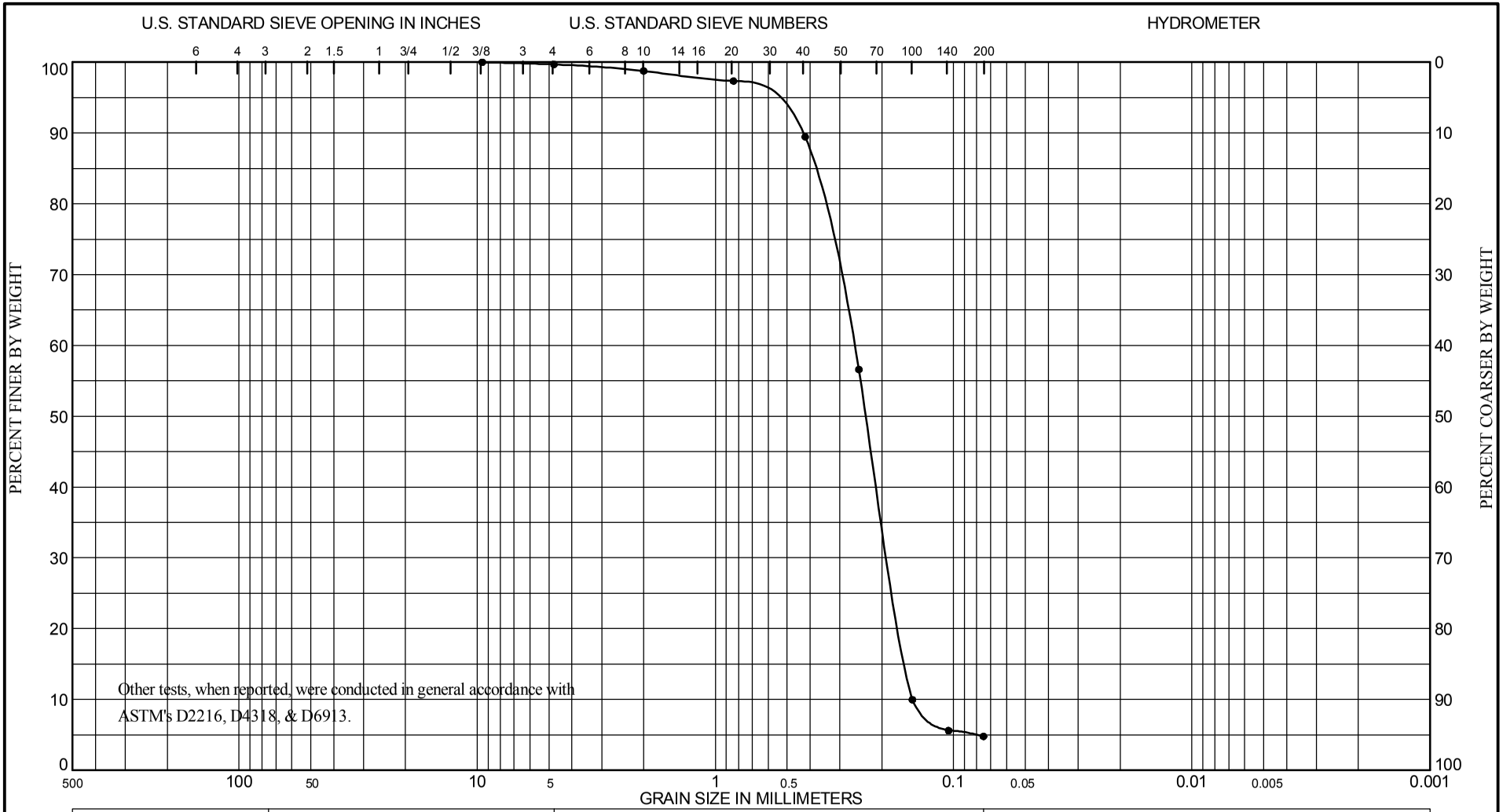
30
35
40
45
50
55
60

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15169° Long = -88.42242°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

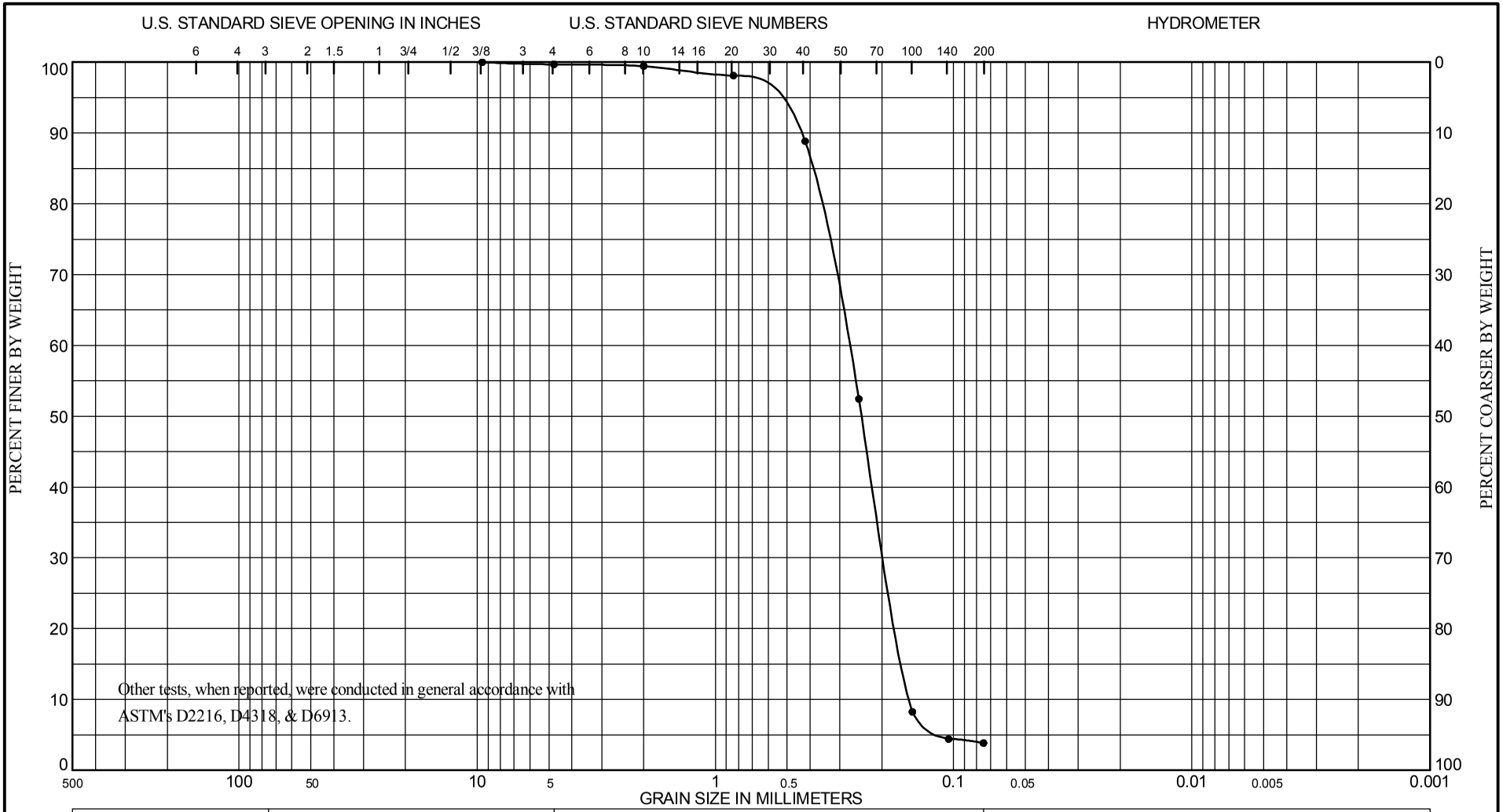
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	1.4 to 4.7	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4626
Hole No. BI-PBS-322-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

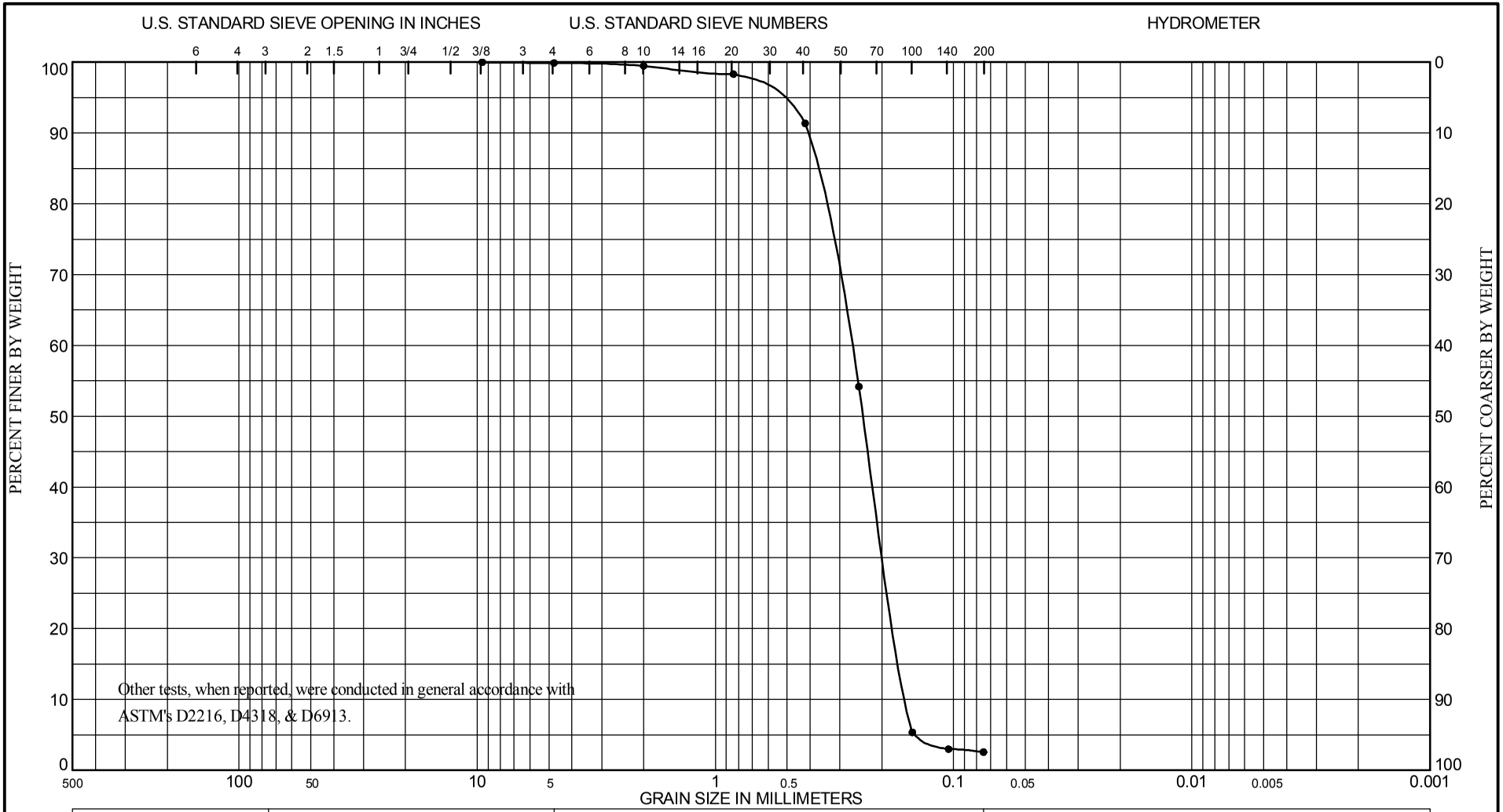
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	4.7 to 9.0	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4627
Hole No. BI-PBS-322-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

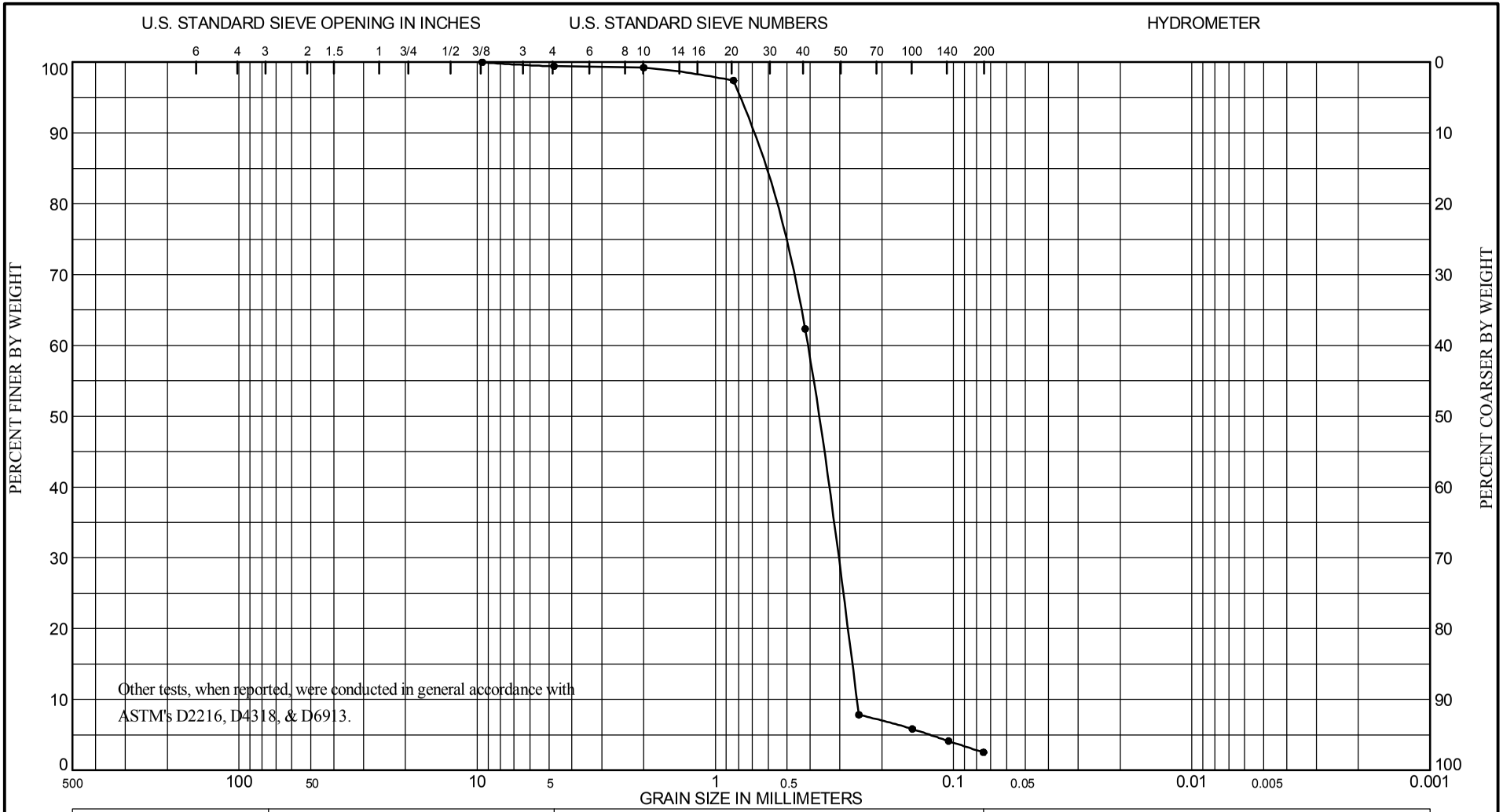
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	9.0 to 11.0	Gray, Poorly Graded Sand (SP), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4628
Hole No. BI-PBS-322-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

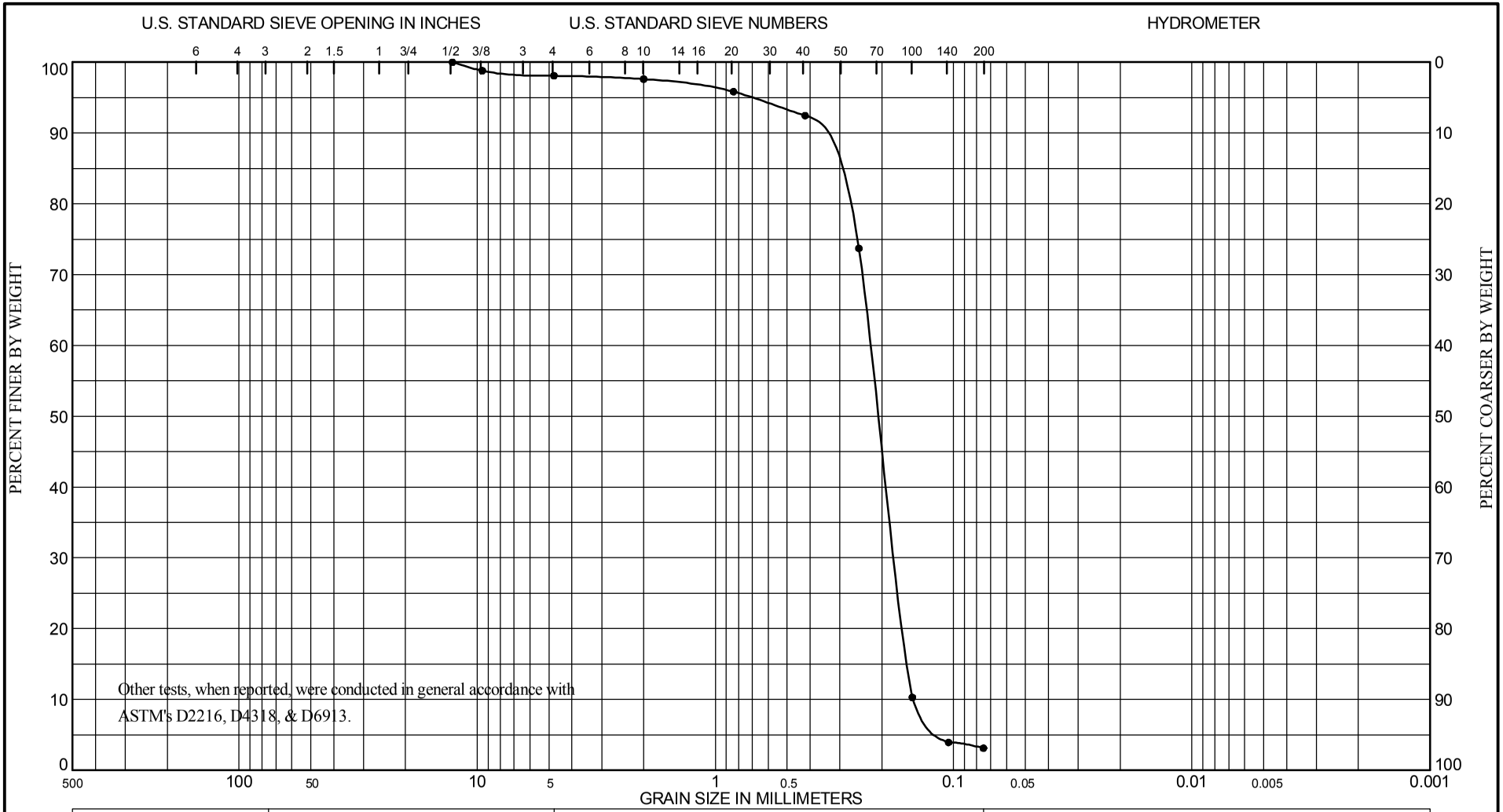
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
D	11.0 to 13.0	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4629
Hole No. BI-PBS-322-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
E	13.0 to 15.4	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4630
Hole No. BI-PBS-322-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-323-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-323-13 — LOCATION COORDINATES: E = 1,113,668 N = 236,270	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 3 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 55.6 Ft.
	15. DATE BORING — STARTED: 02-02-14 — COMPLETED: 02-02-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -54.9 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 18.6 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-54.9	0.0				
-56.3	1.4		CLAY, lean, sandy, firm, medium grayish brown (CL)	NS	
-56.5	1.6		SAND, clayey, mostly fine-grained sand-sized quartz, dark medium gray (SC)	A	Classification: SP Color: 10Y 6/1-greenish gray D50: 0.199 mm % Fines: 2.7
-58.9	4.0		SAND, poorly-graded, mostly fine-grained sand-sized quartz, few shell fragments, lt. gray (SP)		
-61.9	7.0		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, lt. gray (SM) At El. -60.4 Ft., fine- to medium-grained sand	B	Classification: SP Color: 10Y 6/1-greenish gray D50: 0.201 mm % Fines: 3.7
-67.4	12.5		SAND, poorly-graded with silt, mostly fine to medium-grained sand-sized quartz, few shell fragments, lt. to medium gray (SP-SM)	C	Classification: SP Color: 10Y 6/1-greenish gray D50: 0.209 mm % Fines: 3.8
-71.9	17.0		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, high fines content, medium gray (SM)	NS	
-73.5	18.6		SAND, silty, clayey, mostly fine-grained sand-sized quartz, trace shell fragments, medium gray (SC-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.

3. Seafloor elevation determined from 10/29/2014 USACE survey.

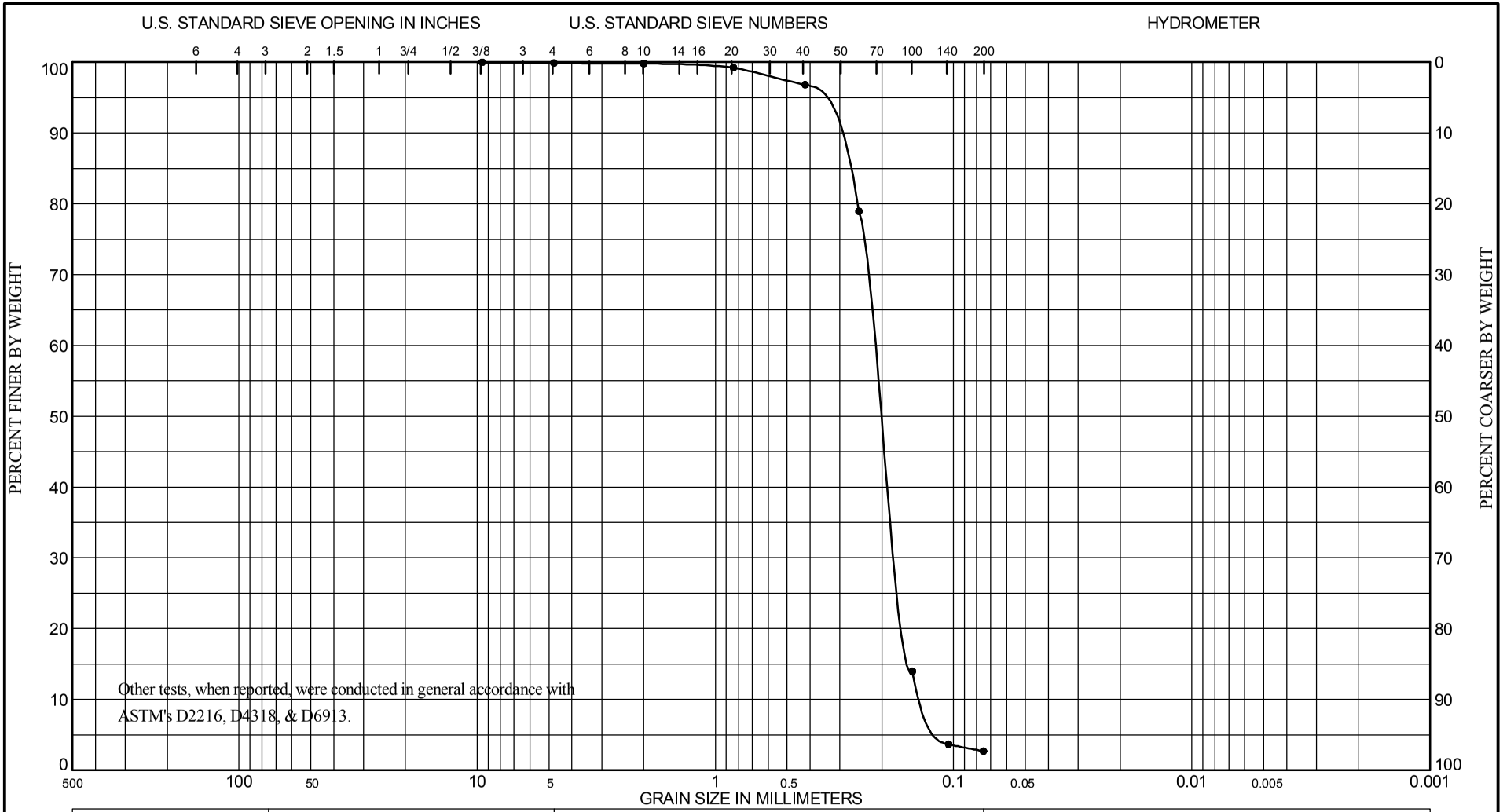
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14906° Long = -88.42387°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

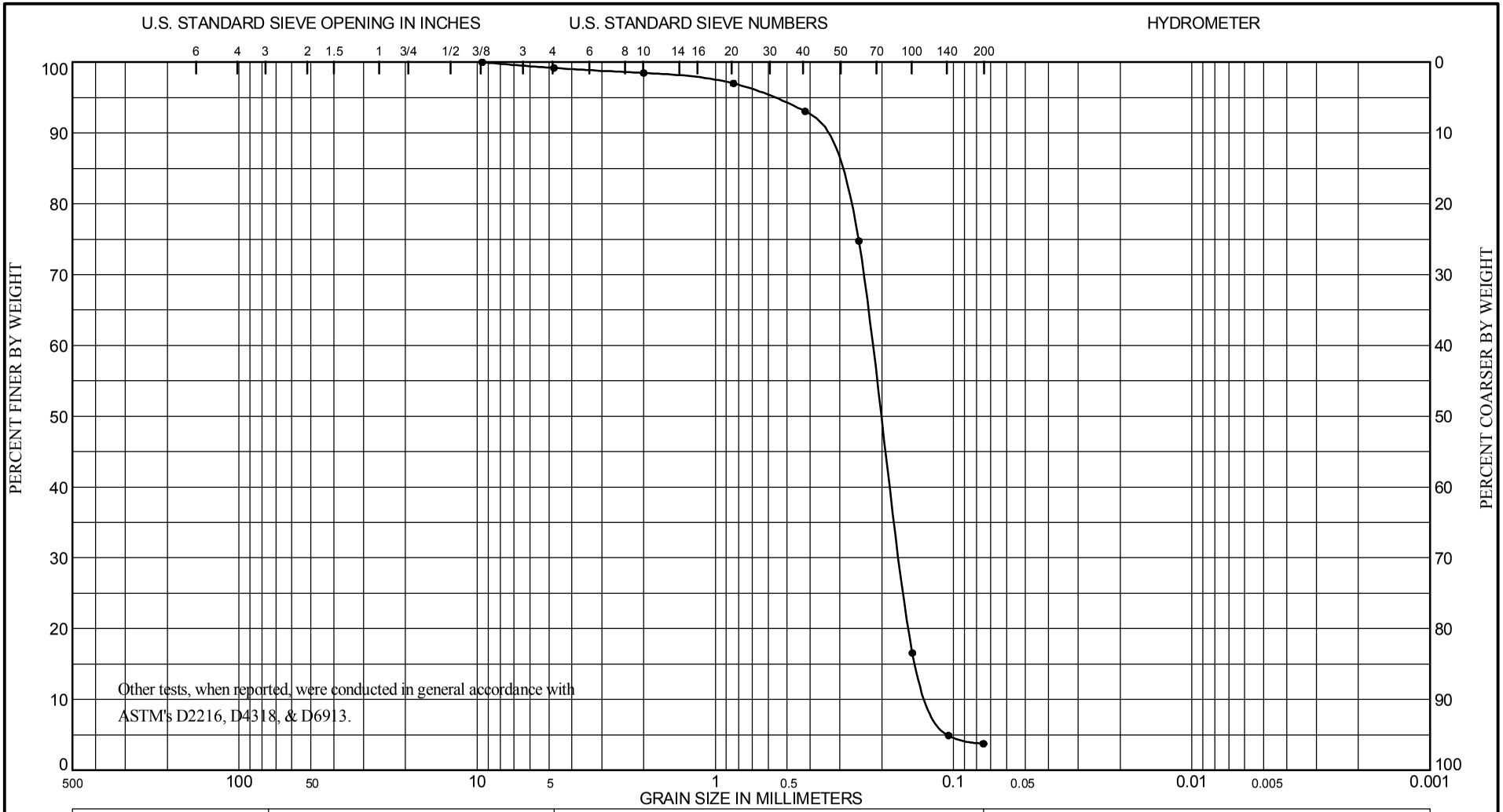
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	1.6 to 4.0	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4623
Hole No. BI-PBS-323-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

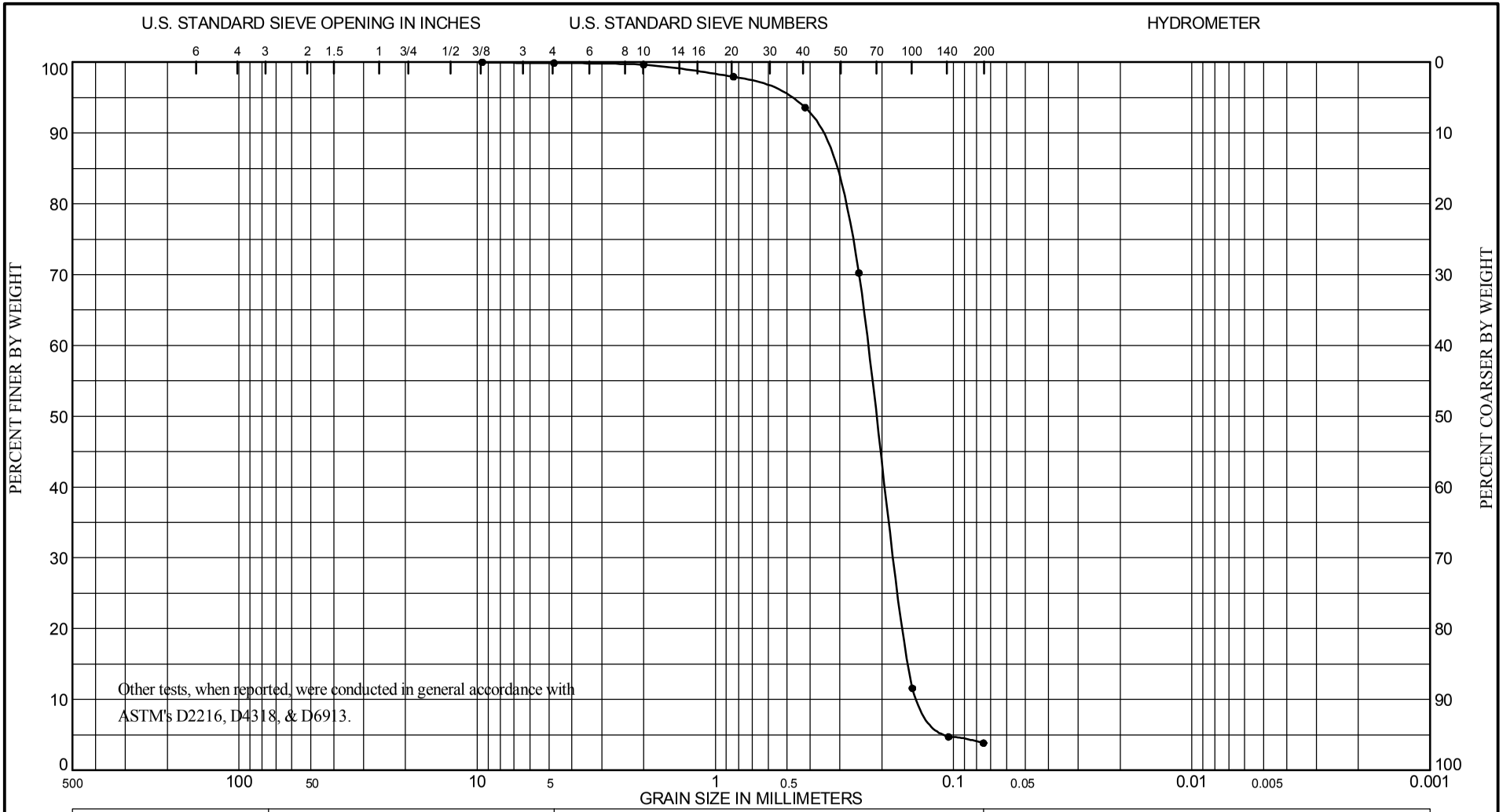
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	4.0 to 7.0	Dark Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4624
Hole No. BI-PBS-323-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	7.0 to 12.5	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4625
Hole No. BI-PBS-323-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-324-13

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
	South Atlantic	Mobile District	

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS West
2. BORING DESIGNATION	BI-PBS-324-13
LOCATION COORDINATES	E = 1,111,080 N = 236,006
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	18.8 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED 4 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	52.7 Ft.
15. DATE BORING	STARTED 02-01-14 / COMPLETED 02-01-14
16. ELEVATION TOP OF BORING	-51.3 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-51.3	0.0				
-53.3	2.0		CLAY, lean, sandy, interbedded with fine- to medium-grained SC, medium gray (CL)	NS	
-54.7	3.4		SAND, clayey, mostly quartz, interbedded with CL, medium to lt. gray (SC)		
-60.8	9.5		SAND, silty, mostly fine to medium-grained sand-sized quartz, trace wood 5.0 - 6.3 ft. depth, pale brown and brownish gray (SM)	A	Classification: SP-SM Color: 2.5Y 5/1-gray D50: 0.264 mm % Fines: 9.9
				B	Classification: SP Color: 2.5Y 5/1-gray D50: 0.282 mm % Fines: 4.6
-69.3	18.0		SAND, poorly-graded with silt, mostly fine to medium-grained sand-sized quartz, medium gray (SP-SM)	C	Classification: SP Color: 2.5Y 5/1-gray D50: 0.329 mm % Fines: 2.4
				D	Classification: SP Color: 10Y 5/1-greenish gray D50: 0.255 mm % Fines: 1.6
-70.1	18.8		SAND, silty, mostly quartz, medium 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.

3. Seafloor elevation determined from 12/17/2014 USACE survey.

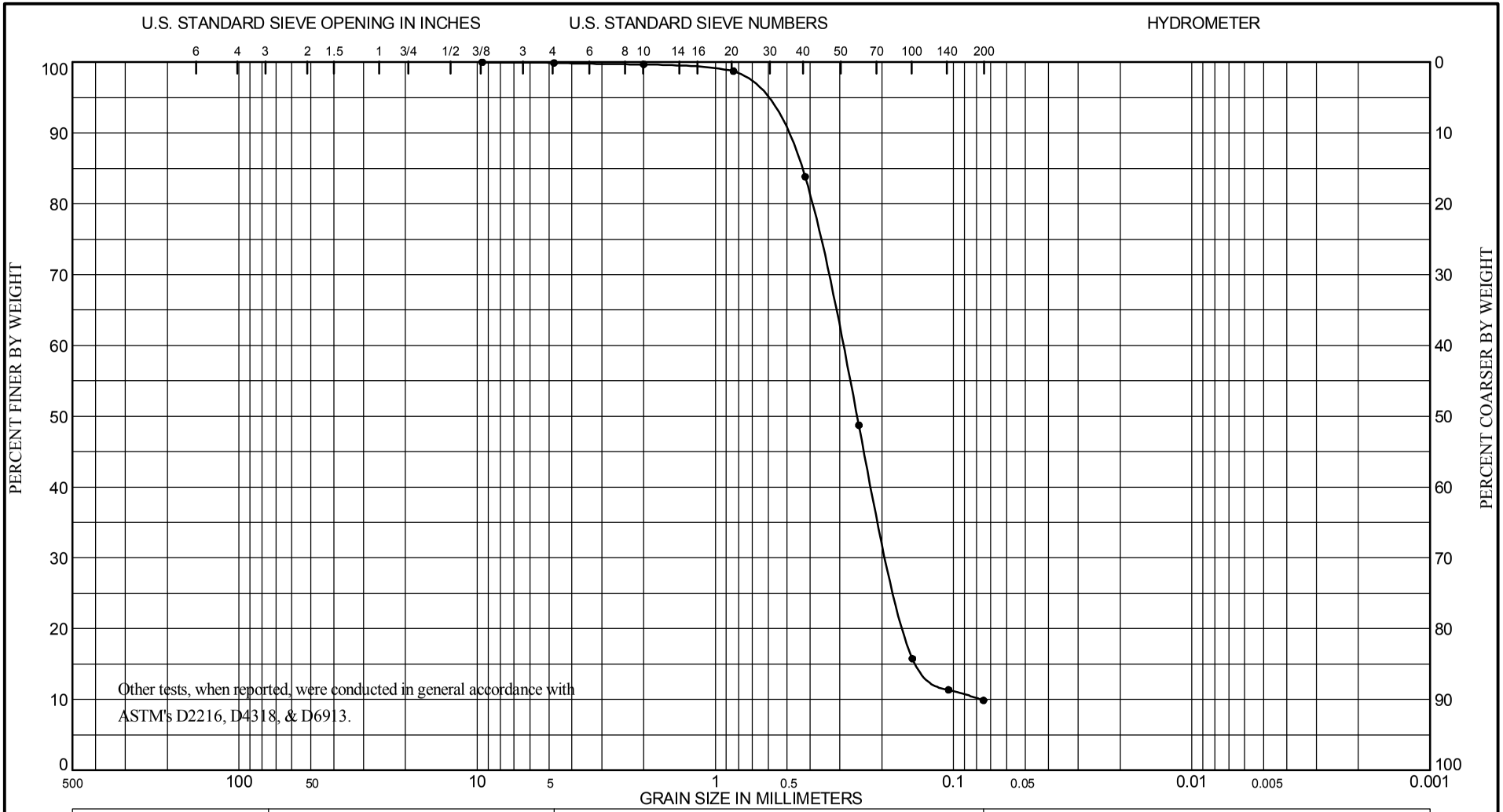
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14836° Long = -88.43206°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

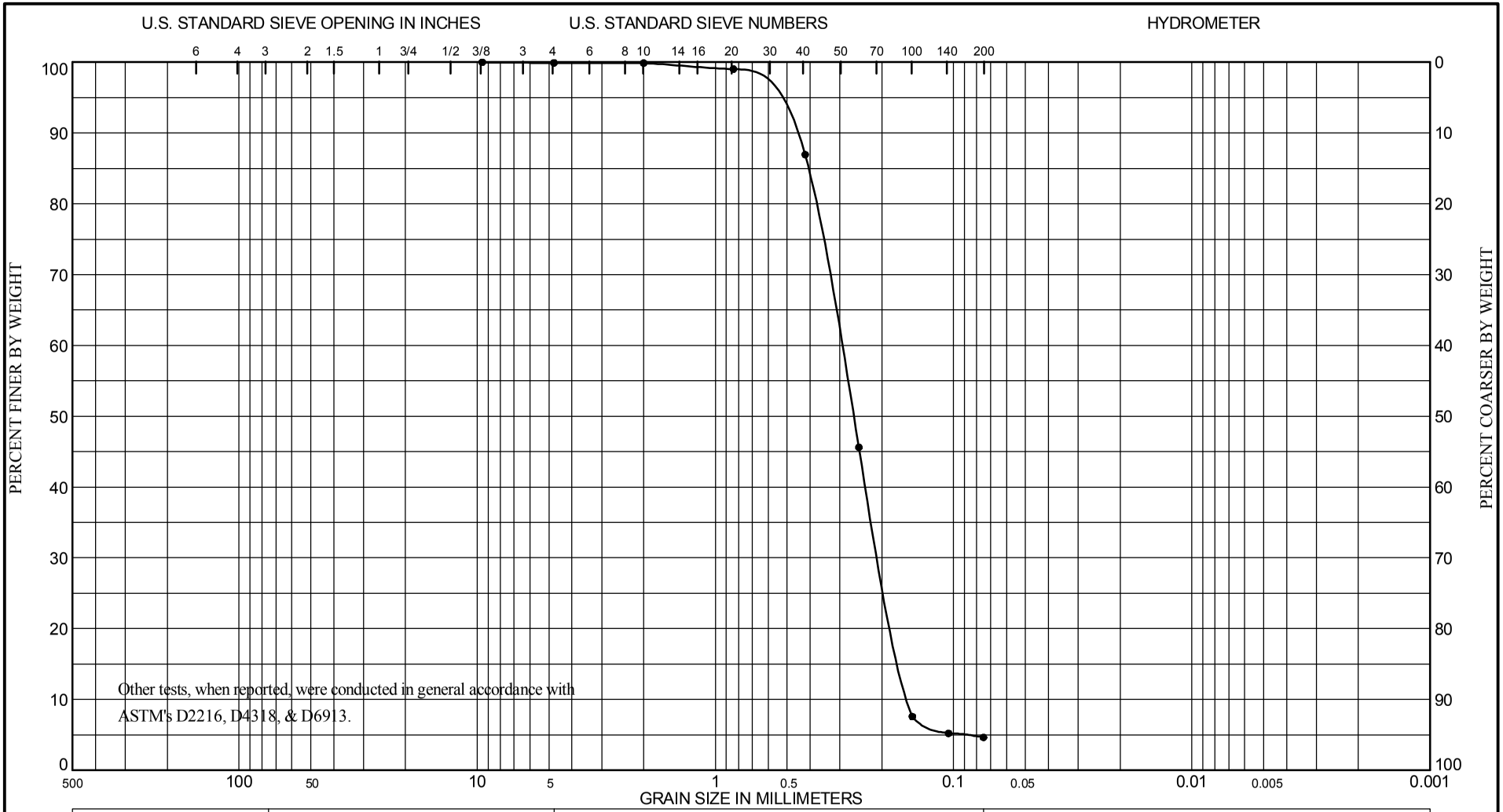
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	3.4 to 6.5	Dark Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4607
Hole No. BI-PBS-324-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

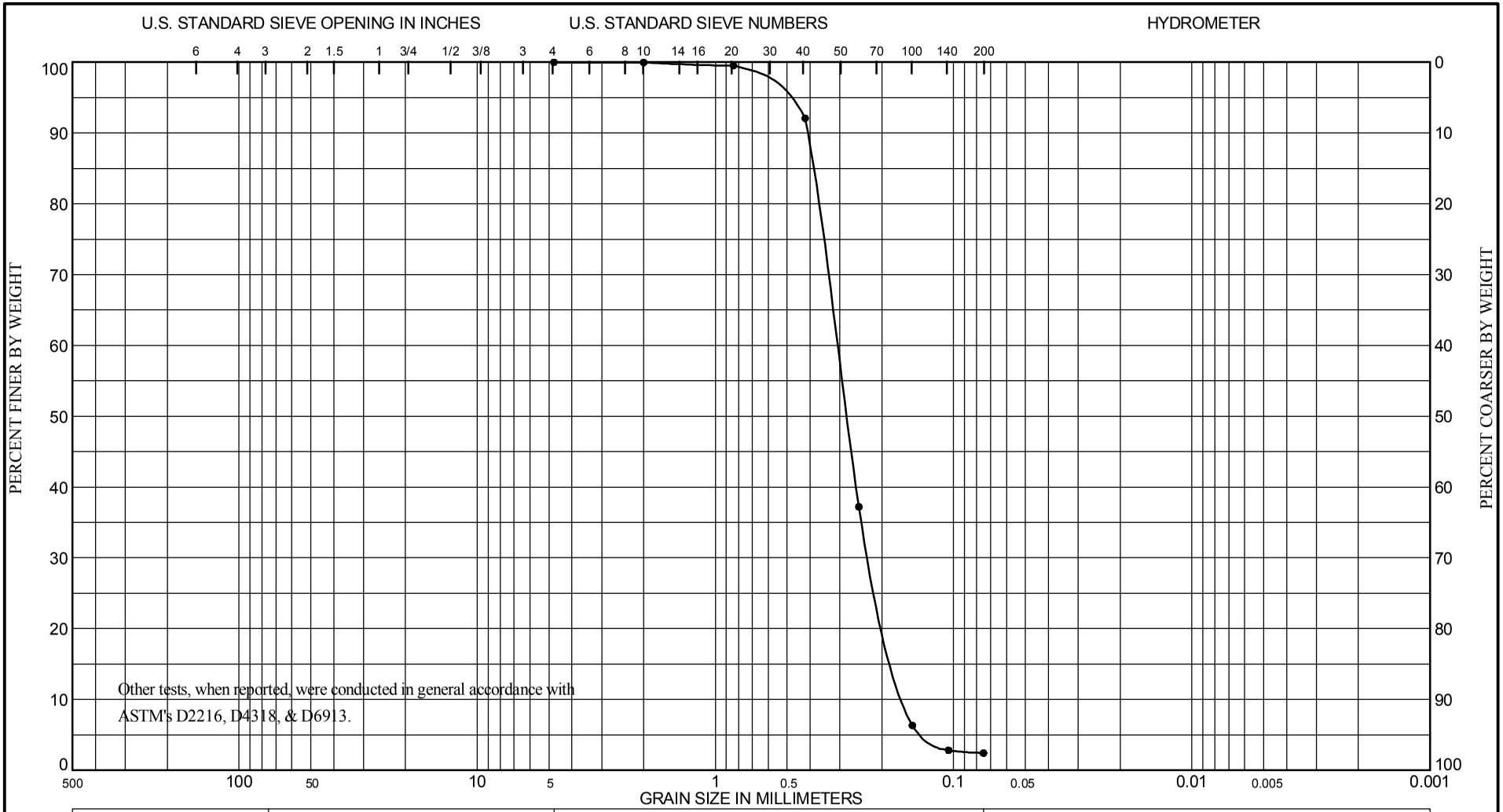
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	6.5 to 9.5	Dark Gray, Poorly Graded Silty Sand (SP-SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4608
Hole No. BI-PBS-324-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

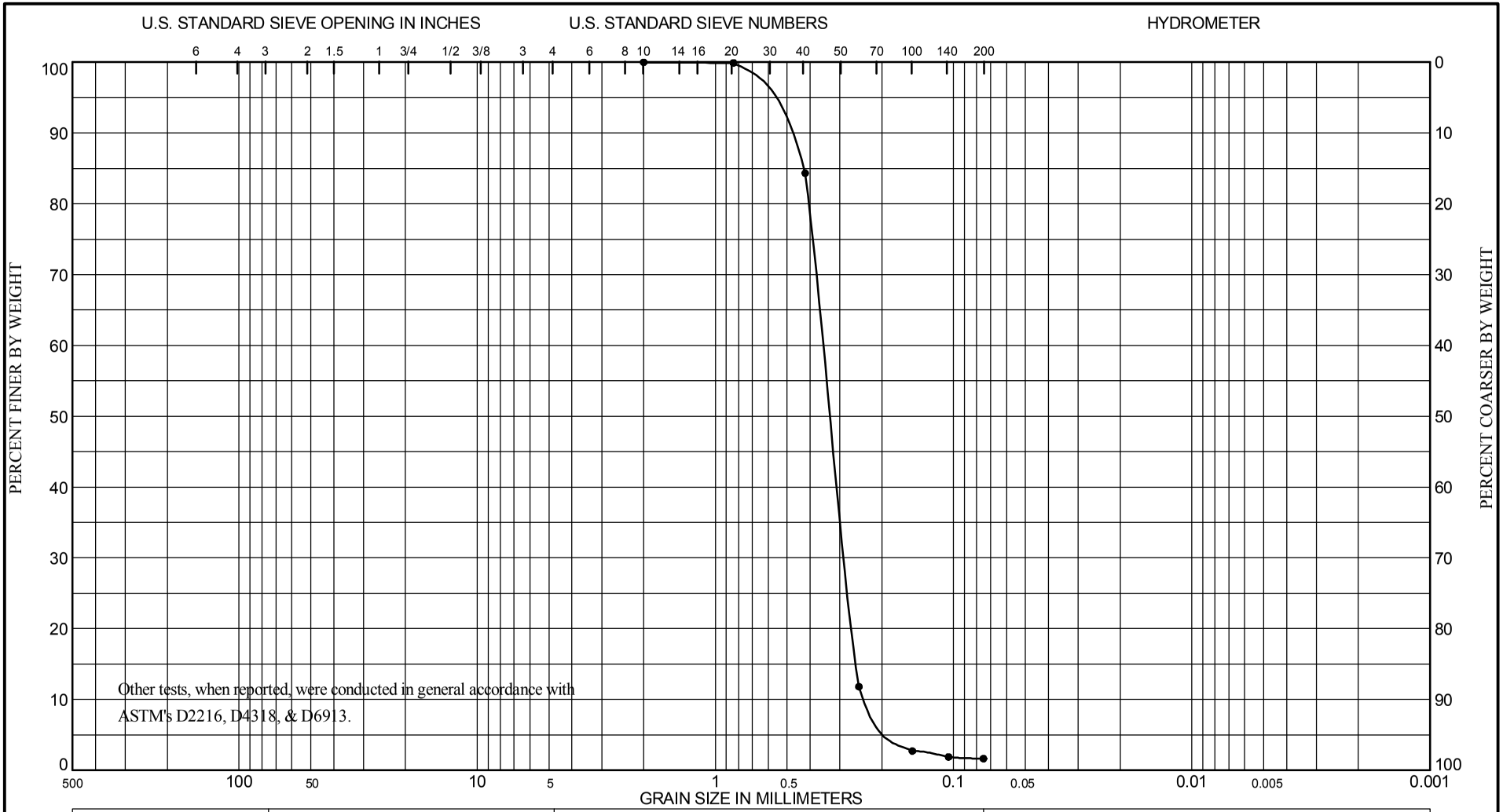
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	9.5 to 14.0	Dark Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4609
Hole No. BI-PBS-324-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
D	14.0 to 19.0	Dark Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4610
Hole No. BI-PBS-324-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-325-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS East	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-325-13 — LOCATION COORDINATES: E = 1,132,189 N = 238,647	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 2 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 50.7 Ft.
	15. DATE BORING — STARTED: 02-10-14 — COMPLETED: 02-10-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -49.1 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 18.4 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-49.1	0.0				
-51.0	1.9		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, few shell fragments, lt. greenish gray (SP)	A	Classification: SP Color: 2.5Y 6/1-gray D50: 0.339 mm % Fines: 1.9
-51.2	2.1				
-52.1	3.0		SAND, silty, mostly fine-grained sand-sized quartz, trace shell fragments, medium greenish gray (SM)	NS	
-54.0	4.9		SAND, clayey, mostly fine-grained sand-sized quartz, few shell fragments, medium dark greenish gray (SC)		
-55.1	6.0				
-55.6	6.5		CLAY, lean, sandy, soft, medium dark greenish gray (CL)	B	Classification: SP-SM Color: 2.5Y 6/1-gray D50: 0.269 mm % Fines: 6.8
			SAND, silty, mostly fine-grained sand-sized quartz, trace shell fragments, dark greenish gray (SM)	NS	
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace shell fragments, lt. brown (SP)		
-61.6	12.5		SAND, silty, mostly fine-grained sand-sized quartz, trace shell fragments, medium brown (SM)		
-65.1	16.0		SAND, poorly-graded with silt, mostly fine to medium-grained sand-sized quartz, trace shell fragments, lt. brown (SP-SM)		
-67.5	18.4		SAND, silty, mostly fine-grained sand-sized quartz, trace shell fragments, lt. brown and medium 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.

3. Seafloor elevation determined from USACE hydrographic survey completed April 2014.

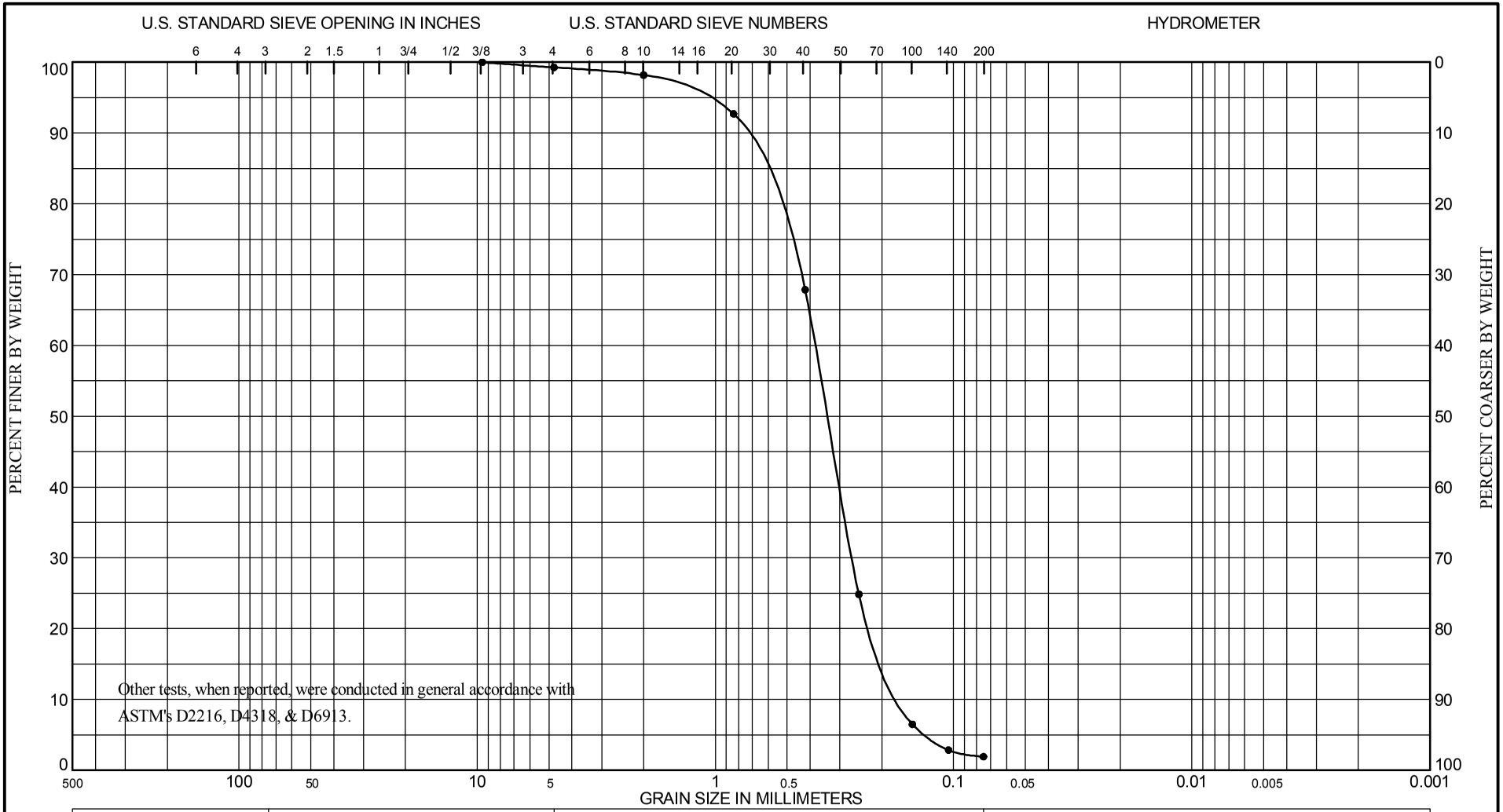
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15540° Long = -88.36524°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 1.9	Gray, Poorly Graded Sand (SP).				

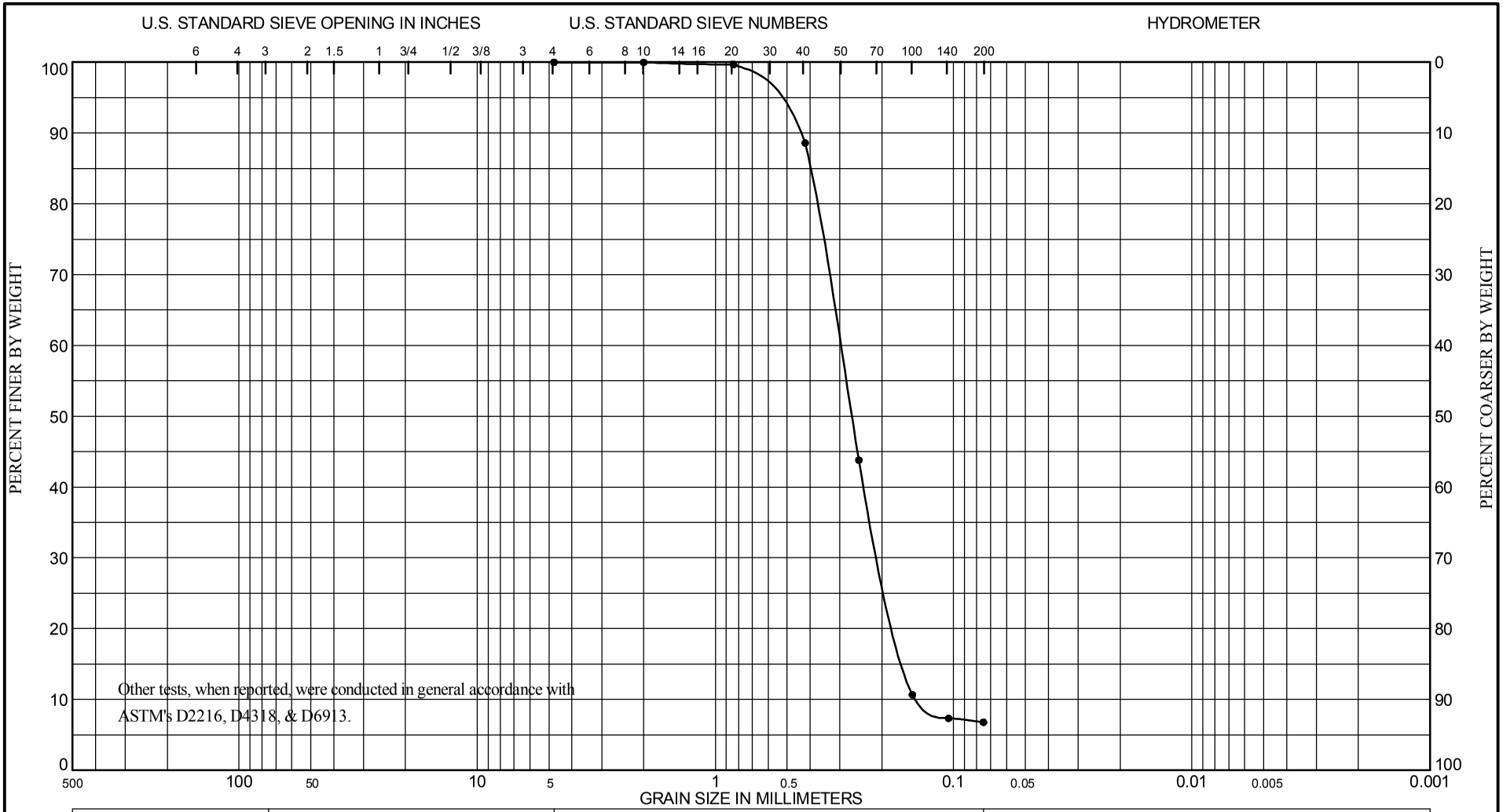
Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4832
Hole No. BI-PBS-325-13
Date 4/23/14

GRADATION CURVES

K-1000

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	6.0 to 7.0	Dark Gray, Poorly Graded Silty Sand (SP-SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4833
Hole No. BI-PBS-325-13
Date 4/23/14

GRADATION CURVES

K-1001

Boring Designation BI-PBS-326-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS East	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-326-13 — LOCATION COORDINATES: E = 1,131,355 N = 239,567	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 1 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 53.3 Ft.
	15. DATE BORING — STARTED: 02-10-14 — COMPLETED: 02-10-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -52.6 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 17.6 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-52.6	0.0				
-54.1	1.5		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, medium greenish gray (SM)	A	Classification: SP-SM Color: 2.5Y 5/1-gray D50: 0.204 mm % Fines: 10
-58.8	6.2		SAND, silty, clayey, mostly fine-grained sand-sized quartz, few shell fragments, medium greenish gray (SC-SM)	NS	
-59.4	6.8				
-60.1	7.5		SAND, silty, mostly fine-grained sand-sized quartz, trace shell fragments, medium gray (SM)		
-62.6	10.0		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, trace shell fragments, lt. gray (SP-SM)		
-67.2	14.6		SAND, silty, mostly fine-grained sand-sized quartz, trace shell fragments, medium gray (SM) SILT, inorganic-L, trace shell fragments, interbedded with CL lenses, medium gray (ML)		
-70.2	17.6		CLAY, lean, trace shell fragments, sandy, firm, medium 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.

3. Seafloor elevation determined from USACE hydrographic survey completed April 2014.

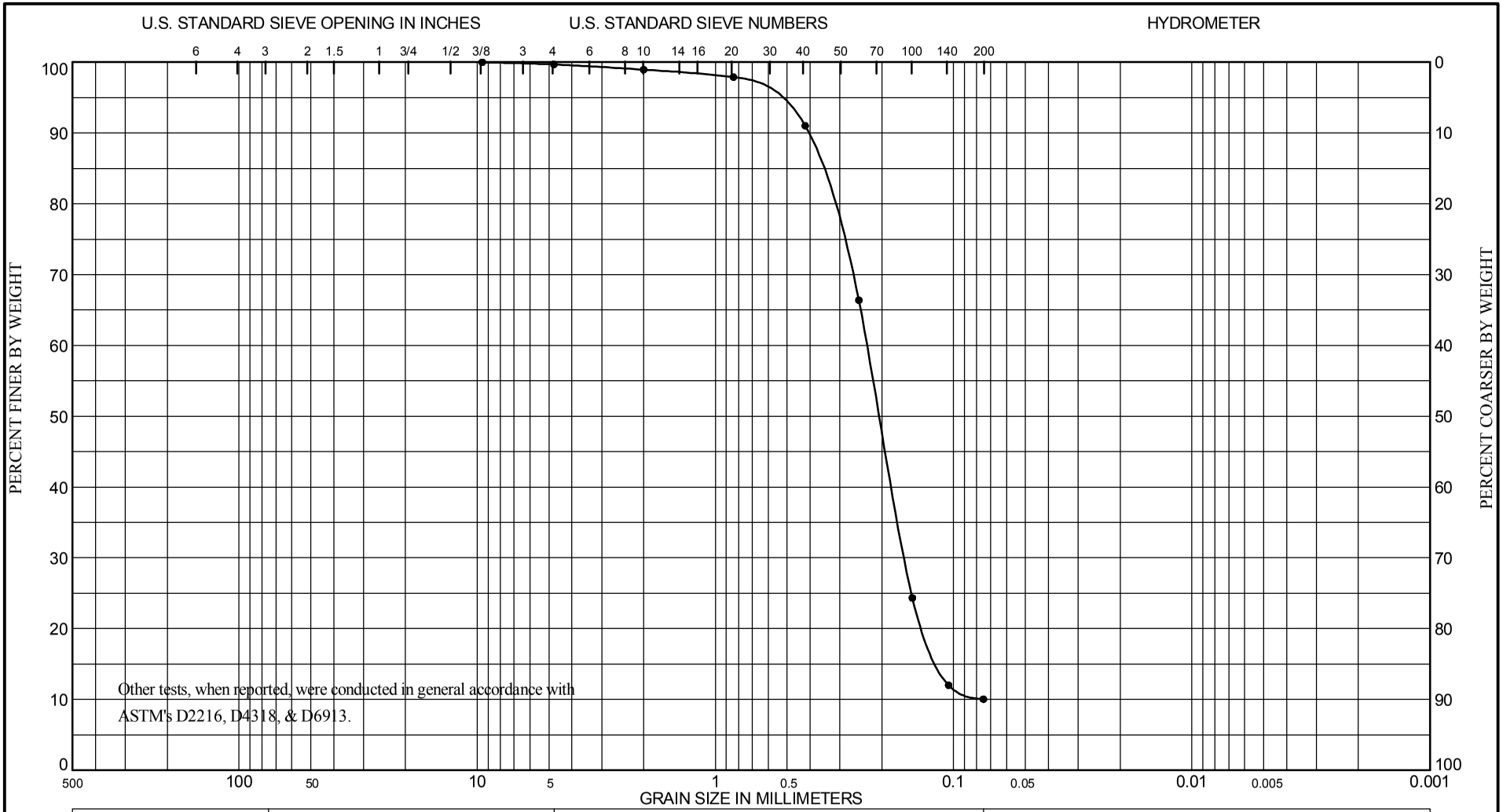
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15794° Long = -88.36787°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 1.5	Dark Greenish Gray, Poorly Graded Silty Sand (SP-SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4829
Hole No. BI-PBS-326-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-327-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS East	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-327-13 — LOCATION COORDINATES: E = 1,130,315 N = 240,232	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ 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: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 52.3 Ft.
	15. DATE BORING — STARTED: 02-10-14 — COMPLETED: 02-10-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -51.4 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 19.8 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-51.4	0.0				
-51.9	0.5		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few shell fragments, lt. greenish gray (SP-SM)		
-53.2	1.8		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, high fines content, medium gray (SM)		
-57.4	6.0		SAND, silty, clayey, mostly fine-grained sand-sized quartz, few shell fragments, slightly plastic, medium gray (SC-SM)		
-61.2	9.8		SAND, clayey, mostly fine-grained sand-sized quartz, discontinue shell fragments, interbedded with numerous CL lenses, medium to dark gray (SC)	NS	
-71.2	19.8		CLAY, lean, sandy, firm; hard at base, medium to 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.

3. Seafloor elevation determined from USACE hydrographic survey completed April 2014.

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15978° Long = -88.37115°

Boring Designation BI-PBS-328-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 2 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS East	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-328-13 — LOCATION COORDINATES: E = 1,130,422 N = 239,589	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 2 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 50 Ft.
	15. DATE BORING — STARTED: 02-10-14 — COMPLETED: 02-10-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -48.8 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 19.9 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-48.8	0.0				
-49.6	0.8		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, few shell fragments, lt. greenish gray (SP)	A	Classification: SP Color: 2.5Y 6/1-gray D50: 0.301 mm % Fines: 1.8
-52.3	3.5		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, high fines content at 3.0 ft. depth, medium greenish gray (SM)	B	Classification: SP Color: 2.5Y 5/1-gray D50: 0.232 mm % Fines: 3.9
-54.8	6.0		SAND, clayey, mostly fine-grained sand-sized quartz, few shell fragments, medium greenish gray (SC)	NS	
-56.2	7.4		CLAY, lean, trace shell fragments, sandy, trace wood from 4.6 to 4.8 ft. depths, medium to dark gray (CL)		
-58.2	9.4		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, high fines content, medium to dark gray (SM)		
-60.2	11.4		SAND, clayey, mostly fine-grained sand-sized quartz, few shell fragments, high fines content, medium to dark gray (SC)		
-65.8	17.0		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, high fines content, medium to dark gray (SM)		
-68.7	19.9		CLAY, lean, trace shell fragments, sandy, interbeds of SC, medium 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.

3. Seafloor elevation determined from USACE

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15801° Long = -88.37082°

DRILLING LOG (Cont. Sheet)	INSTALLATION Mobile District		SHEET 2 OF 2 SHEETS
PROJECT MsCIP Barrier Island Restoration	COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83	VERTICAL NAVD88
LOCATION COORDINATES X = 1,130,422 Y = 239,589	ELEVATION TOP OF BORING -48.8 Ft.		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
			hydrographic survey completed April 2014.		

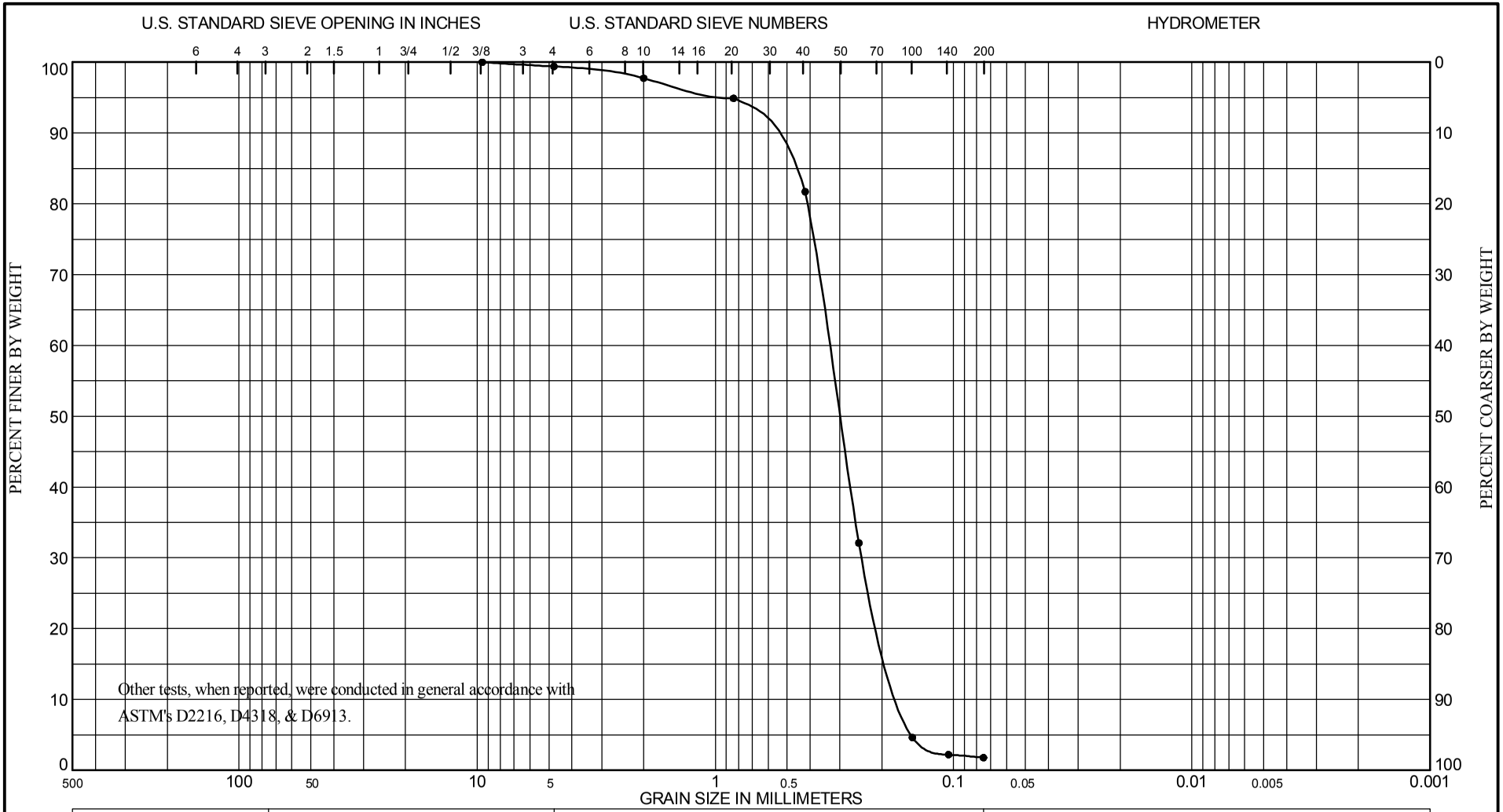
30
35
40
45
50
55
60

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15801° Long = -88.37082°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

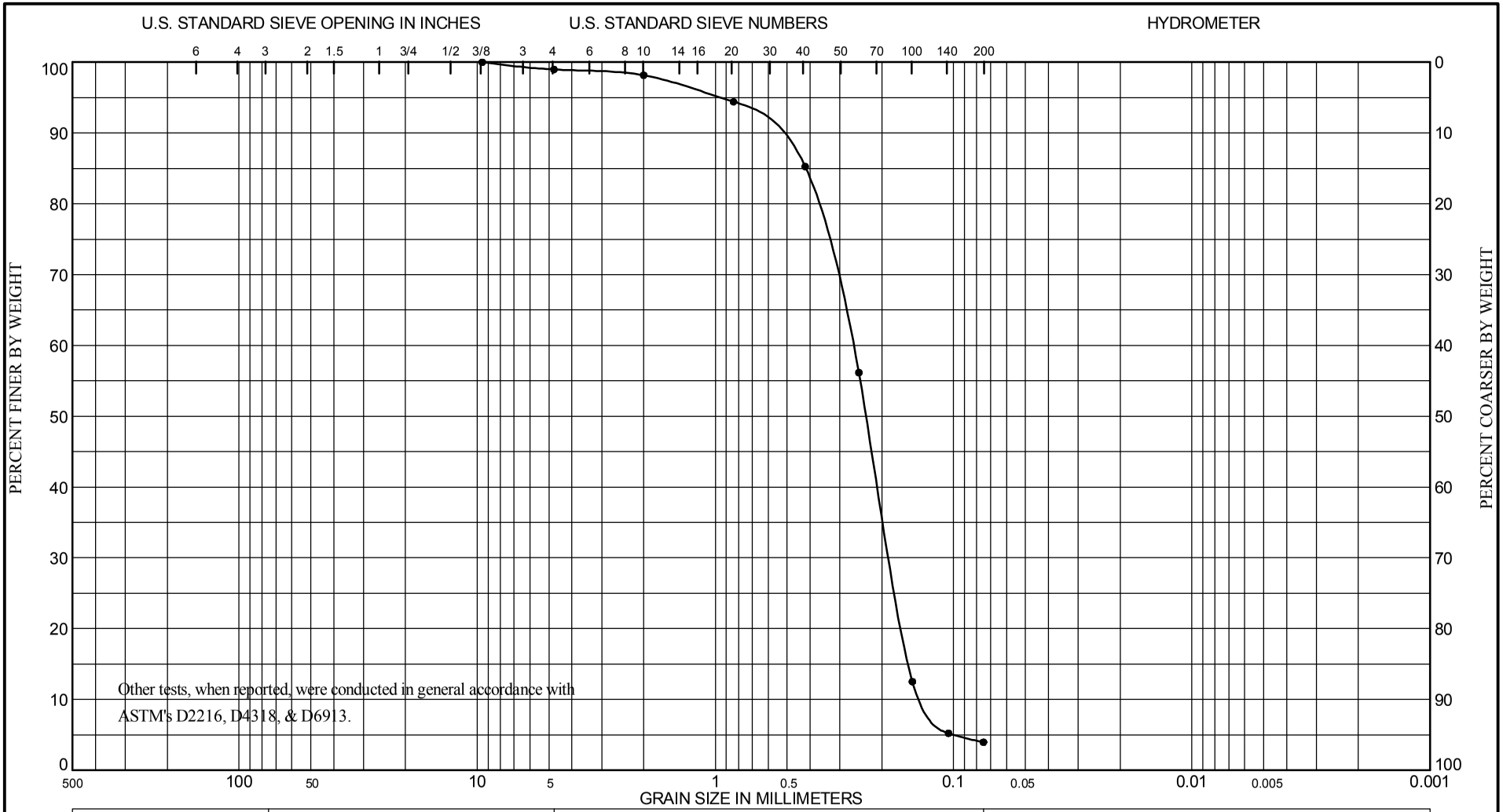
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 0.8	Greenish Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4827
Hole No. BI-PBS-328-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	0.8 to 3.5	Dark Greenish Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4828
Hole No. BI-PBS-328-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-329-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS East	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-329-13 — LOCATION COORDINATES: E = 1,131,275 N = 238,901	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 2 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 50.4 Ft.
	15. DATE BORING — STARTED: 02-10-14 — COMPLETED: 02-10-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -49.1 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 17.6 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-49.1	0.0				
-49.4	0.3				
-50.8	1.7		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, few shell fragments, lt. gray (SP)	A	Classification: SP-SM Color: GLEY1 10Y 6/1- D50: 0.223 mm % Fines: 9.1
-52.5	3.4		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, high fines content, lt. greenish gray (SM)	NS	
-53.8	4.7		SAND, clayey, mostly fine-grained sand-sized quartz, few shell fragments, medium greenish gray (SC)		
-54.3	5.2		CLAY, lean, trace shell fragments, soft, medium greenish gray (CL)		
-58.6	9.5		SAND, silty, clayey, mostly fine-grained sand-sized quartz, trace shell fragments, medium greenish gray (SC-SM)		
-61.2	12.1		SAND, silty, mostly fine-grained sand-sized quartz, trace shell fragments, high fines content, medium greenish gray (SM)		
-63.4	14.3		SAND, silty, clayey, mostly fine-grained sand-sized quartz, trace shell fragments, high fines content, medium greenish gray (SC-SM)		
-66.7	17.6		SAND, silty, mostly fine-grained sand-sized quartz, trace shell fragments, pale brown (SM)		
			SAND, poorly-graded with silt, mostly fine to medium-grained sand-sized quartz, trace shell fragments, pale brown (SP-SM)	B	Classification: SP Color: 2.5Y 6/1-gray D50: 0.282 mm % Fines: 2.7

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.

3. Seafloor elevation determined from USACE hydrographic survey completed April 2014.

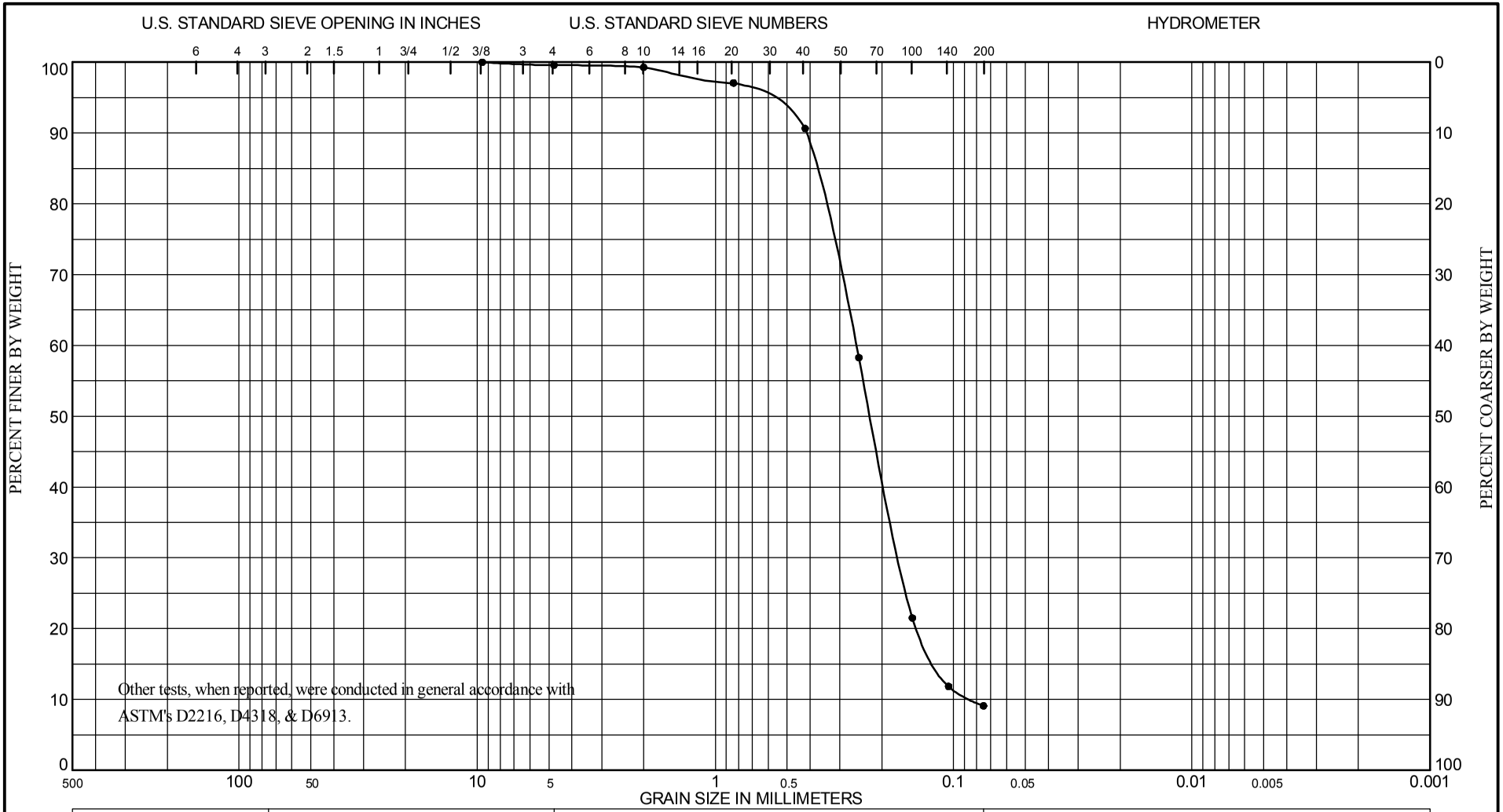
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15611° Long = -88.36813°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

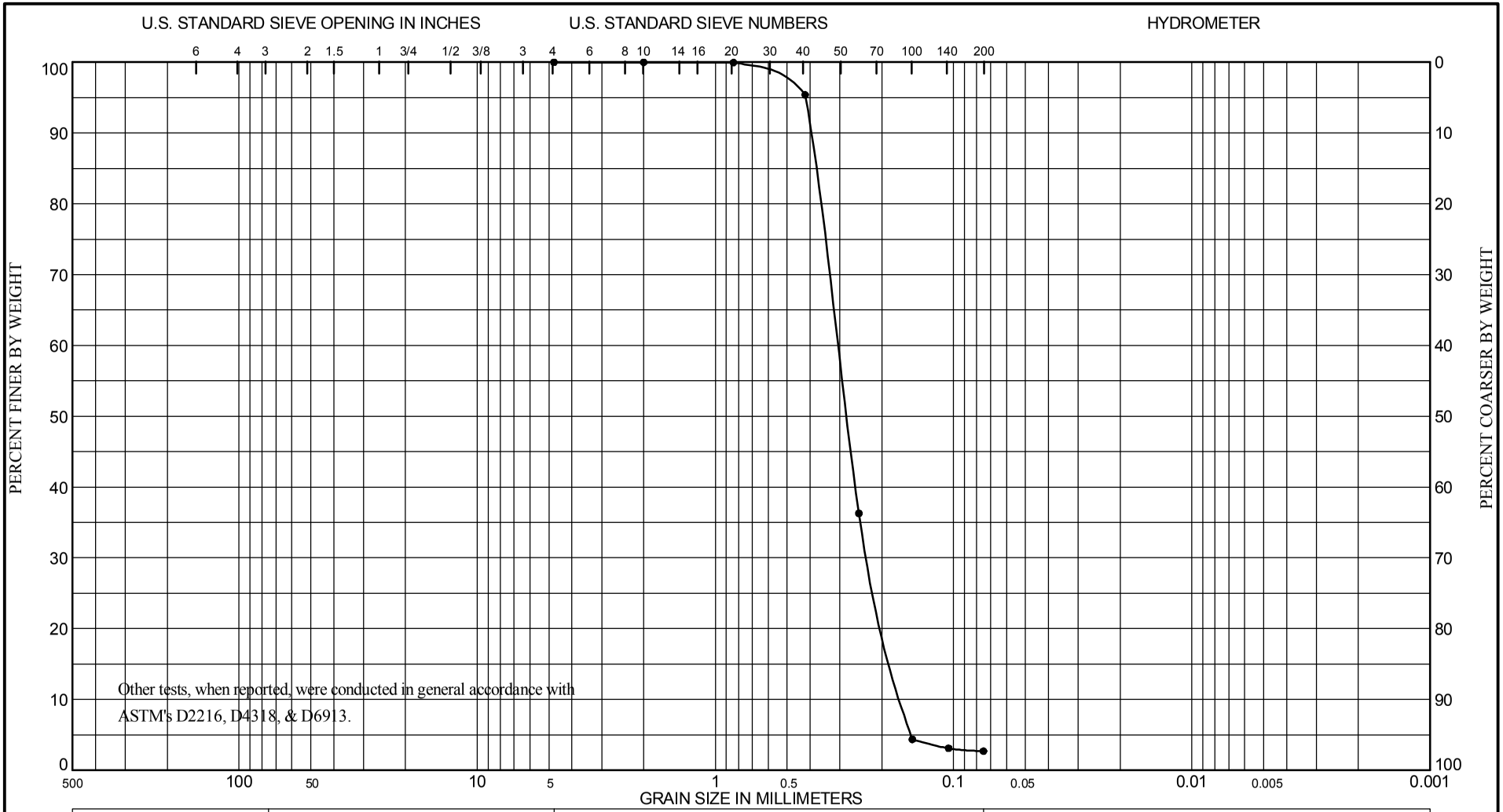
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 1.7	Dark Greenish Gray, Poorly Graded Silty Sand (SP-SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4830
Hole No. BI-PBS-329-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	14.3 to 17.6	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4831
Hole No. BI-PBS-329-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-330-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-330-13 — LOCATION COORDINATES: E = 1,115,507 N = 233,636	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 1 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 50.7 Ft.
	15. DATE BORING — STARTED: 02-03-14 — COMPLETED: 02-03-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -48.7 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 12.2 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-48.7	0.0				
-50.8	2.1		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, lt. gray (SP)	A	Classification: SP Color: 10Y 6/1-greenish gray D50: 0.327 mm % Fines: 0.7
-53.4	4.7		CLAY, lean, sandy, interbedded with SC, fine-grained, some wood fragments between 3.6 and 5.2 ft. depths, medium gray (CL)	NS	
-54.2	5.5		SAND, clayey, mostly fine-grained sand-sized quartz, few shell fragments, medium gray (SC)		
-56.0	7.3		SAND, silty, clayey, mostly fine-grained sand-sized quartz, wood between depths of 7.0 and 7.5 ft., medium gray (SC-SM)		
-56.8	8.1				
-57.8	9.1		CLAY, lean, sandy, firm, medium dark gray (CL)		
-60.9	12.2		SAND, silty, clayey, mostly fine-grained sand-sized quartz, trace shell fragments, medium gray (SC-SM)		
			SAND, poorly-graded with silt, mostly fine to medium-grained sand-sized quartz, trace shell fragments, medium to lt. gray (SP-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.

3. Seafloor elevation determined from 12/17/2014 USACE survey.

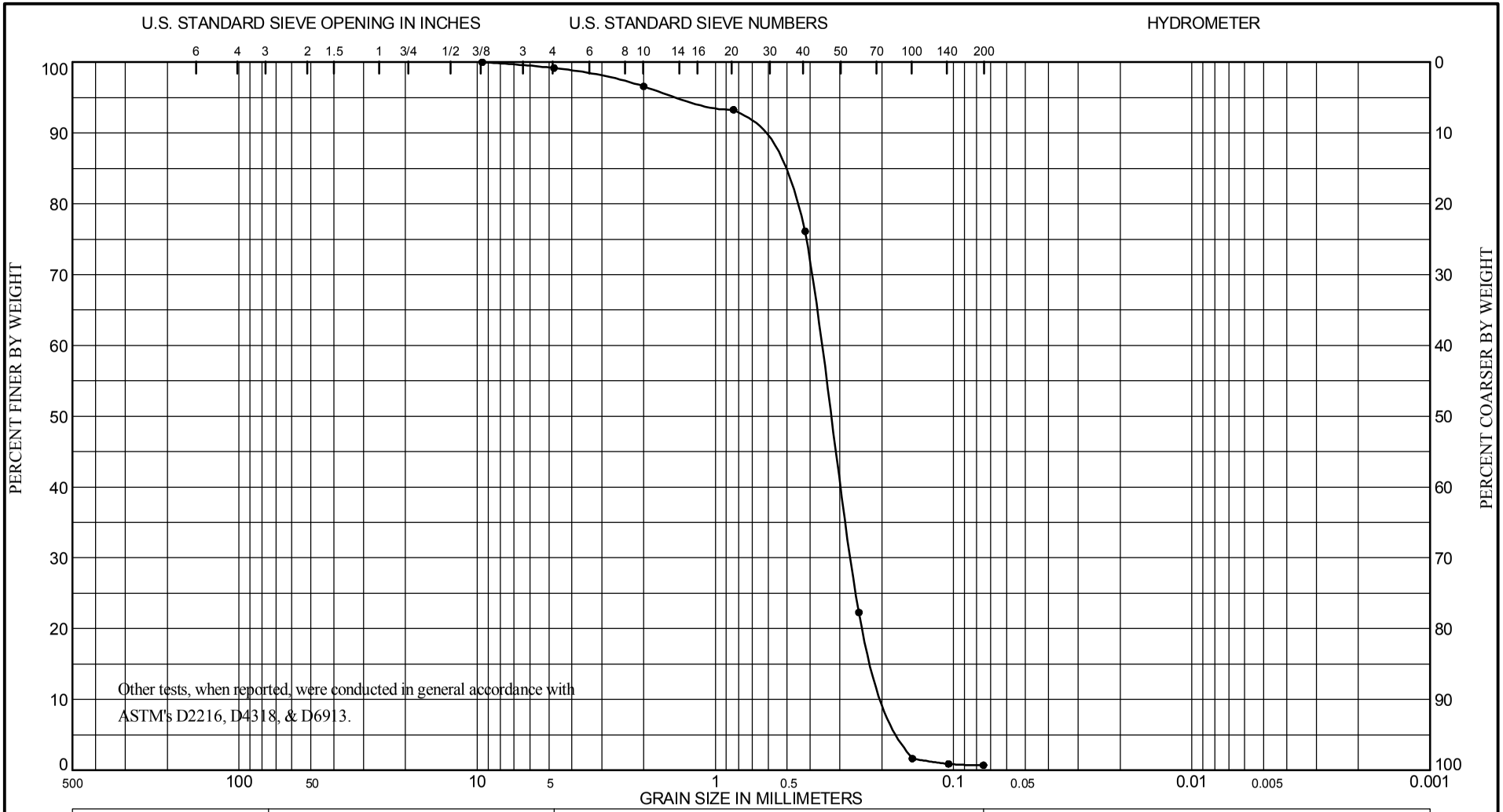
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14180° Long = -88.41808°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 2.1	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4635
Hole No. BI-PBS-330-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-331-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-331-13 — LOCATION COORDINATES: E = 1,116,192 N = 234,882	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 3 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 57.2 Ft.
	15. DATE BORING — STARTED: 02-03-14 — COMPLETED: 02-03-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -56.9 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 16.1 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-56.9	0.0				
-59.3	2.4		CLAY, lean, few shell fragments, sandy, soft, dark olive (CL) At El. -58.1 Ft., sandy, firm, few wood fragments, olive gray	NS	
-60.7	3.8		SAND, silty, clayey, mostly fine-grained sand-sized quartz, trace shell fragments, medium gray (SC-SM)	A	Classification: SP-SM Color: 10Y 5/1-greenish gray D50: 0.215 mm % Fines: 5.1
-62.2	5.3		SAND, silty, mostly fine to medium-grained sand-sized quartz, trace shell fragments, lt. to medium gray (SM)	B	Classification: SP Color: 10Y 6/1-greenish gray D50: 0.275 mm % Fines: 2
-64.8	7.9		SAND, poorly-graded with silt, mostly fine to medium-grained sand-sized quartz, few shell fragments, lt. gray (SP-SM) At El. -63.4 Ft., trace shell fragments to base of unit		
-70.4	13.5		SAND, silty, mostly fine-grained sand-sized quartz, trace shell fragments, high fines content, medium gray (SM)	C	Classification: SP-SM Color: 10Y 5/1-greenish gray D50: 0.189 mm % Fines: 8.4
-73.0	16.1		SILT, inorganic-L, few shell fragments, sandy, lt. greenish gray (ML)	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.

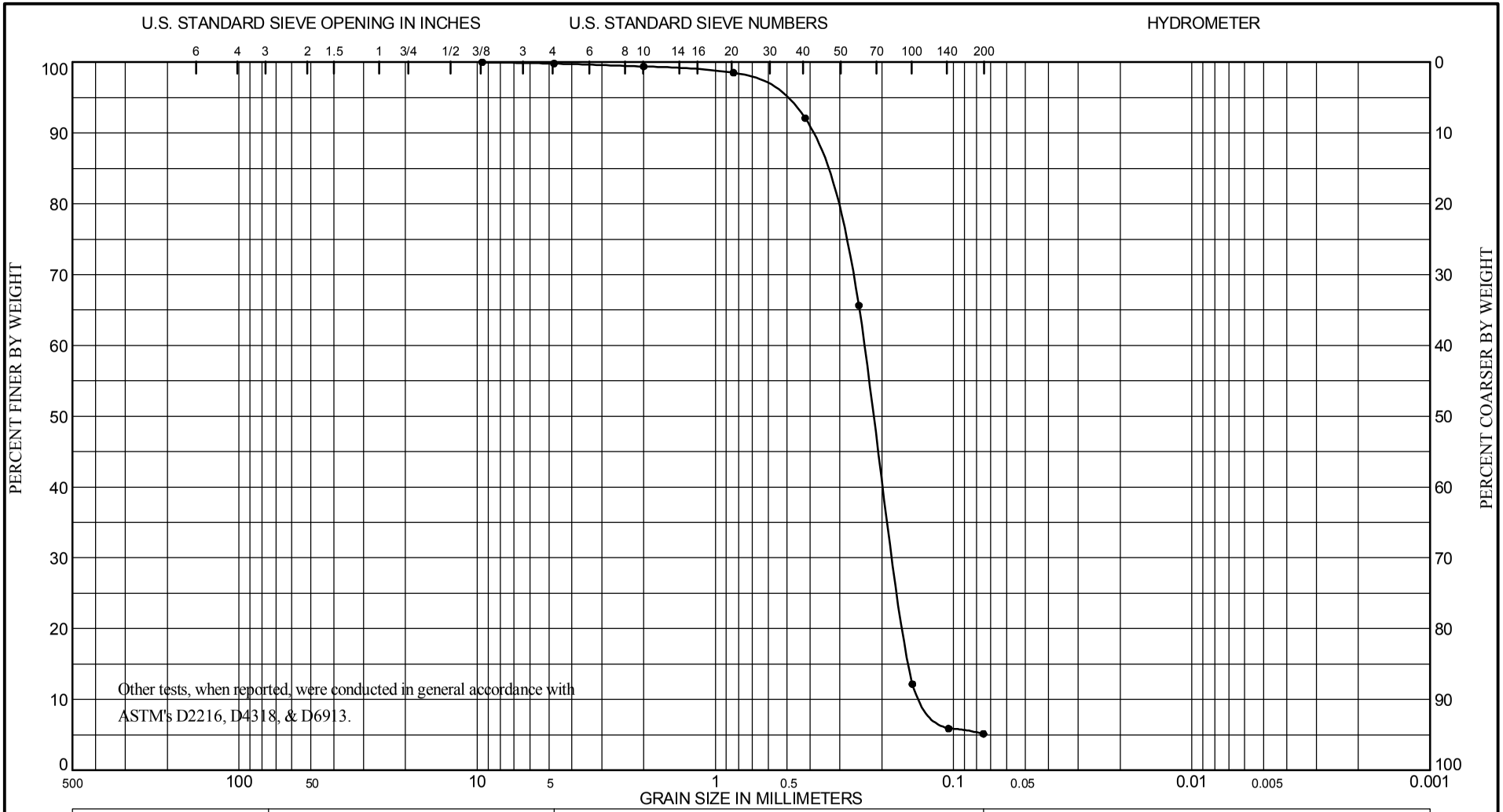
3. Seafloor elevation determined from 2013 USGS geophysical survey.

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14522° Long = -88.41590°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

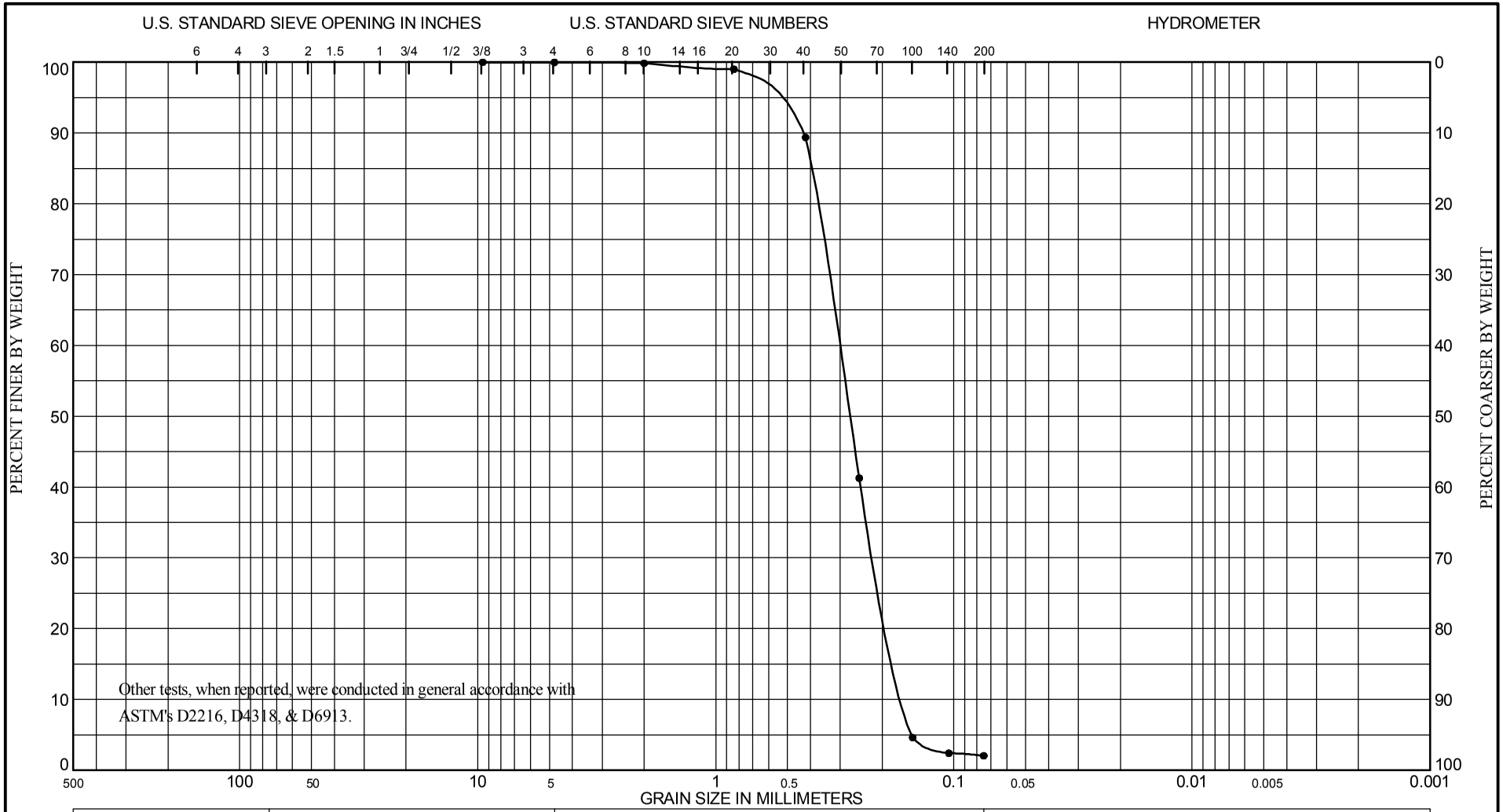
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	3.8 to 5.3	Dark Gray, Poorly Graded Silty Sand (SP-SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4636
Hole No. BI-PBS-331-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

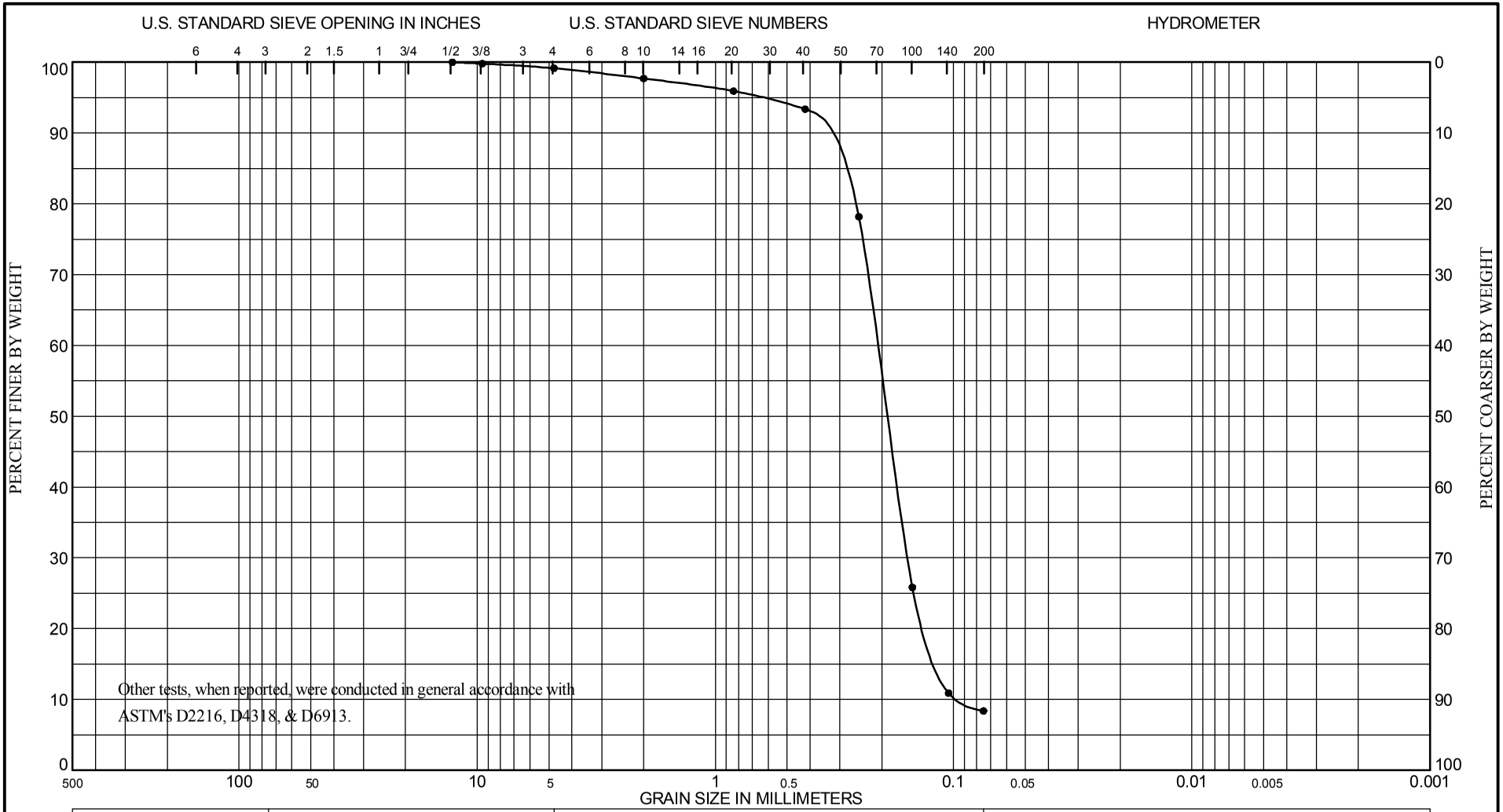
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	5.3 to 7.9	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4637
Hole No. BI-PBS-331-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	7.9 to 13.5	Dark Gray, Poorly Graded Silty Sand (SP-SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4638
Hole No. BI-PBS-331-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-332-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-332-13 — LOCATION COORDINATES: E = 1,115,699 N = 235,619	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL: — BEARING:	14. WATER DEPTH: 56.3 Ft.
	15. DATE BORING — STARTED: 02-03-14 — COMPLETED: 02-03-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -55.3 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 18.9 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-55.3	0.0				
-56.0	0.7		CLAY, lean, sandy; this 0.7 ft. thick layer was discovered above the 0 ft. tape measure mark, sample depths are adjusted downward after field work was completed., olive gray (CL)	NS	
-60.5	5.2		SAND, poorly-graded with silt, mostly fine to medium-grained sand-sized quartz, few shell fragments, lt. gray (SP-SM)	A	Classification: SP-SM Color: 10Y 5/1-greenish gray D50: 0.272 mm % Fines: 5.4
-65.0	9.7		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, few shell fragments, lt. gray (SP)	B	Classification: SP Color: 10Y 5/1-greenish gray D50: 0.287 mm % Fines: 1.6
-66.5	11.2		SAND, poorly-graded with silt, mostly fine to medium-grained sand-sized quartz, few shell fragments, lt. gray (SP-SM)	C	Classification: SP Color: 10Y 5/1-greenish gray D50: 0.262 mm % Fines: 2.2
-72.5	17.2		SAND, silty, mostly fine-grained sand-sized quartz, trace shell fragments, lt. to medium gray (SM)	D	Classification: SP-SM Color: 10Y 5/1-greenish gray D50: 0.194 mm % Fines: 5.8
-74.2	18.9		SILT, inorganic-L, few shell fragments, medium gray (ML)	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.

3. Seafloor elevation determined from 10/29/2014 USACE survey.

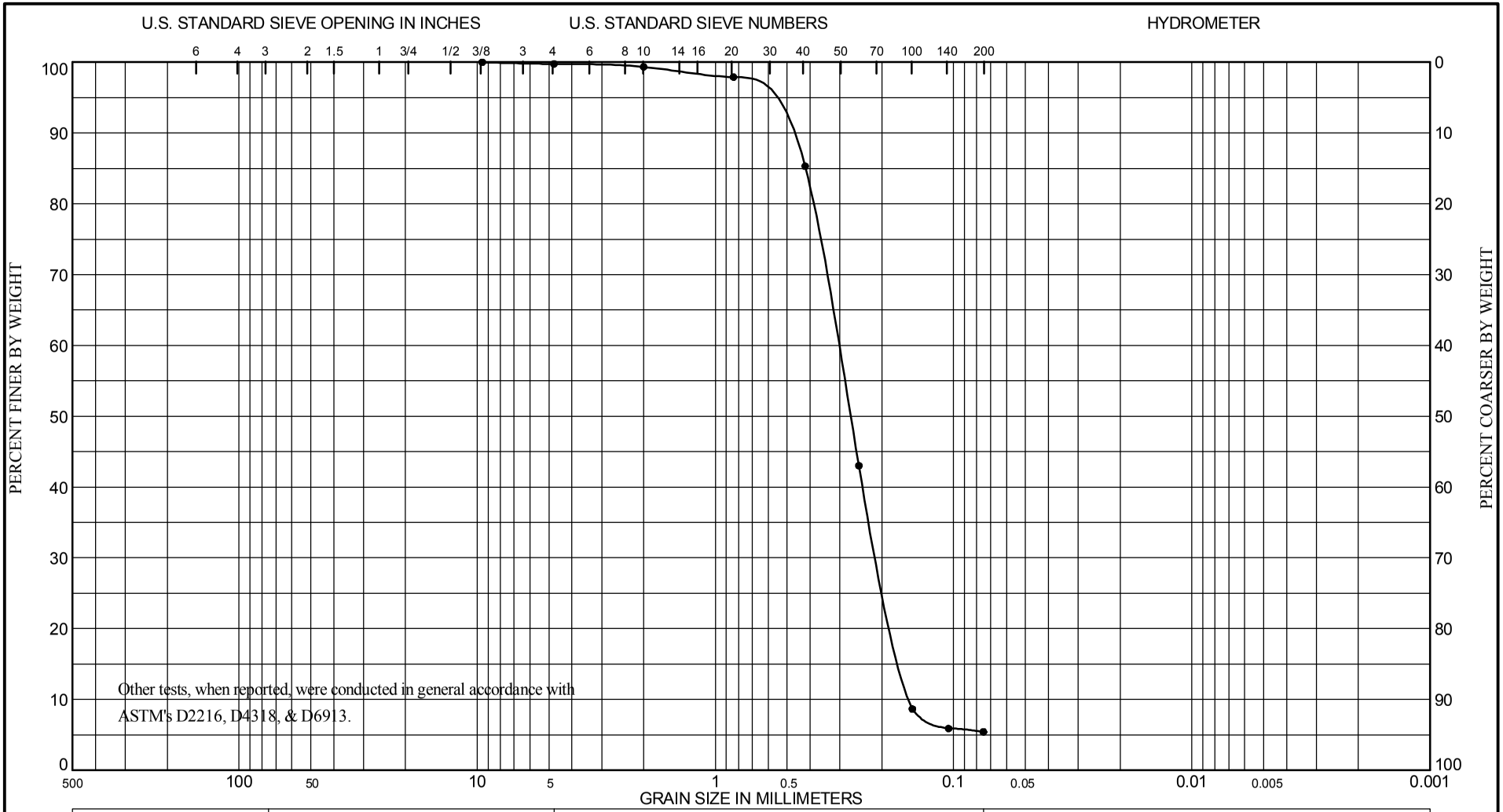
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14725° Long = -88.41745°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

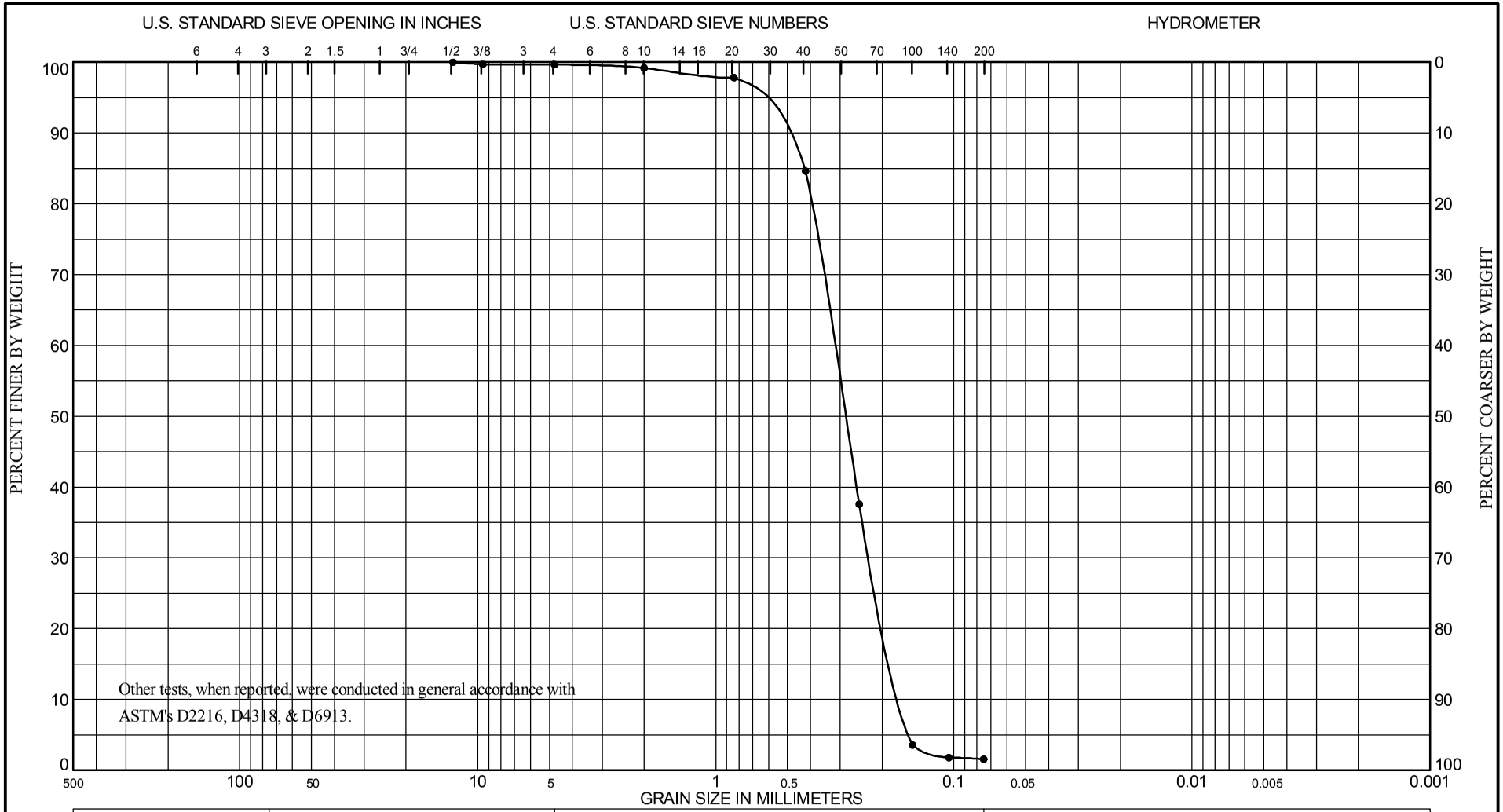
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 4.5	Gray, Poorly Graded Silty Sand (SP-SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4639
Hole No. BI-PBS-332-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

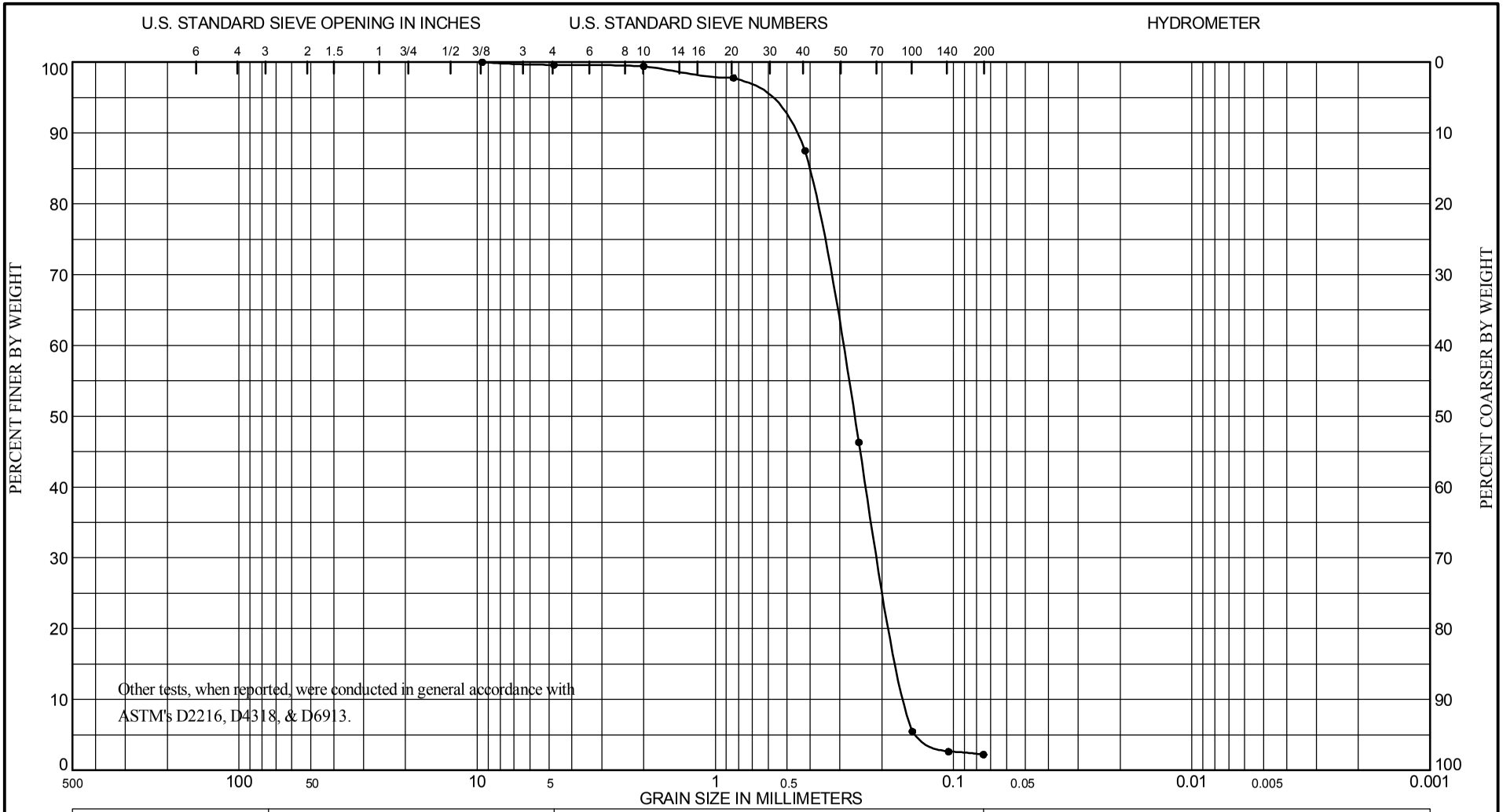
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	4.5 to 9.0	Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4640
Hole No. BI-PBS-332-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

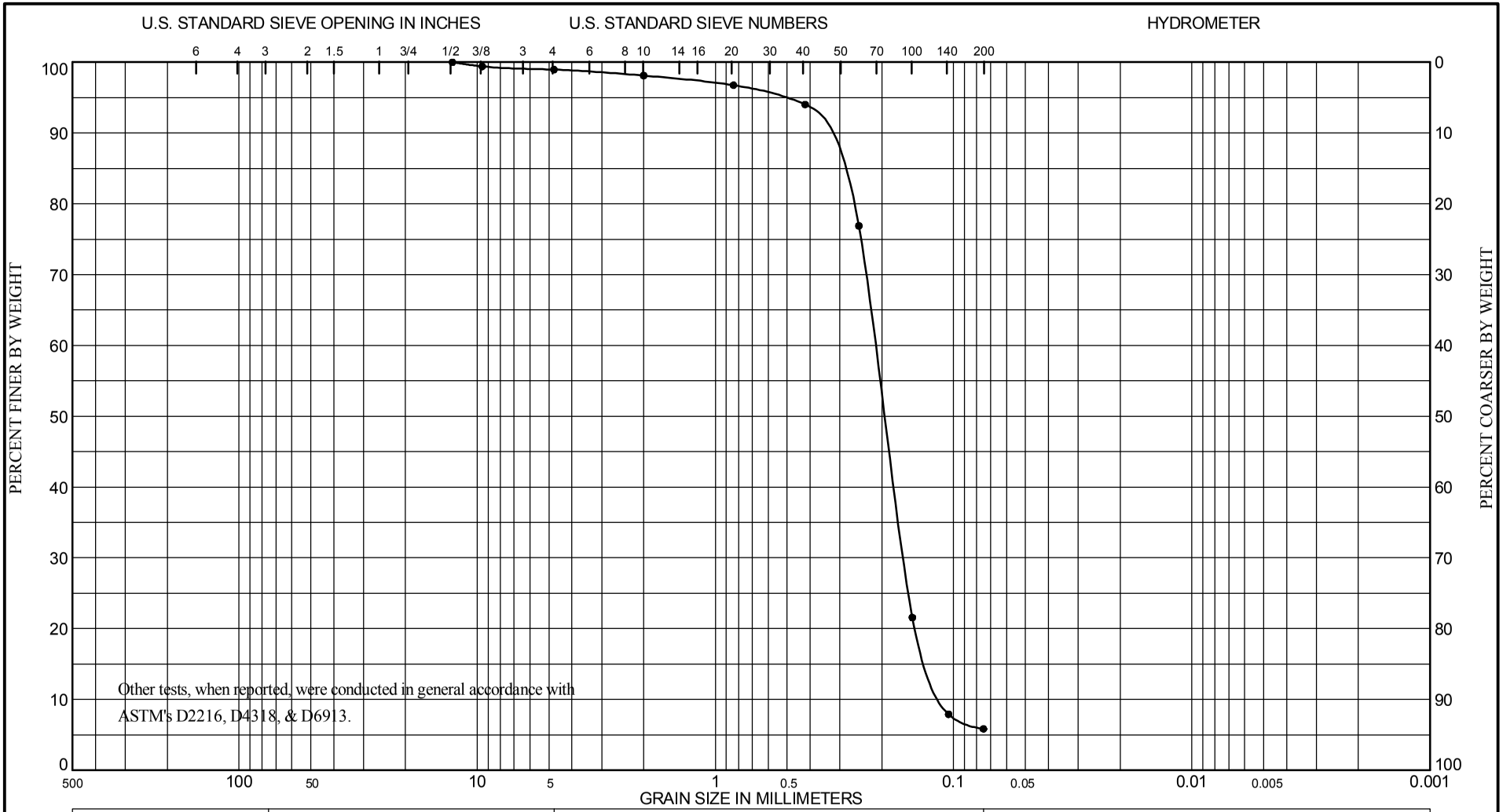
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	9.0 to 10.5	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4641
Hole No. BI-PBS-332-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
D	10.5 to 16.5	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4642
Hole No. BI-PBS-332-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-333-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-333-13 — LOCATION COORDINATES: E = 1,114,968 N = 236,689	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 4 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 55 Ft.
	15. DATE BORING — STARTED: 02-03-14 — COMPLETED: 02-03-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -53.8 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 16.5 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-53.8	0.0				
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, few shell fragments, trace wood 2.6 to 7 ft. depth, lt. gray (SP)	A	Classification: SP Color: 10Y 6/1-greenish gray D50: 0.27 mm % Fines: 2.4
			At El. -56.8 Ft., fine-grained sand size to base of unit	B	Classification: SP Color: 10Y 6/1-greenish gray D50: 0.229 mm % Fines: 2.7
-60.8	7.0				
-61.6	7.8		SAND, poorly-graded with silt, mostly fine to medium-grained sand-sized quartz, lt. gray (SP-SM)	C	Classification: SP-SM Color: 10Y 6/1-greenish gray D50: 0.207 mm % Fines: 5.3
-63.4	9.6		SAND, silty, mostly fine-grained sand-sized quartz, low fines content, lt. to medium gray (SM) At El. -62.3 Ft., fine- to medium-grained to 9.0 ft. depth	D	Classification: SP Color: 10Y 5/1-greenish gray D50: 0.194 mm % Fines: 4.9
-66.3	12.5		SAND, silty, mostly fine-grained sand-sized quartz, high fines content, lt. to medium gray (SM)		
			SILT, inorganic-L, few shell fragments, sandy, medium gray (ML)	NS	
-70.3	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.

3. Seafloor elevation determined from 10/29/2014 USACE survey.

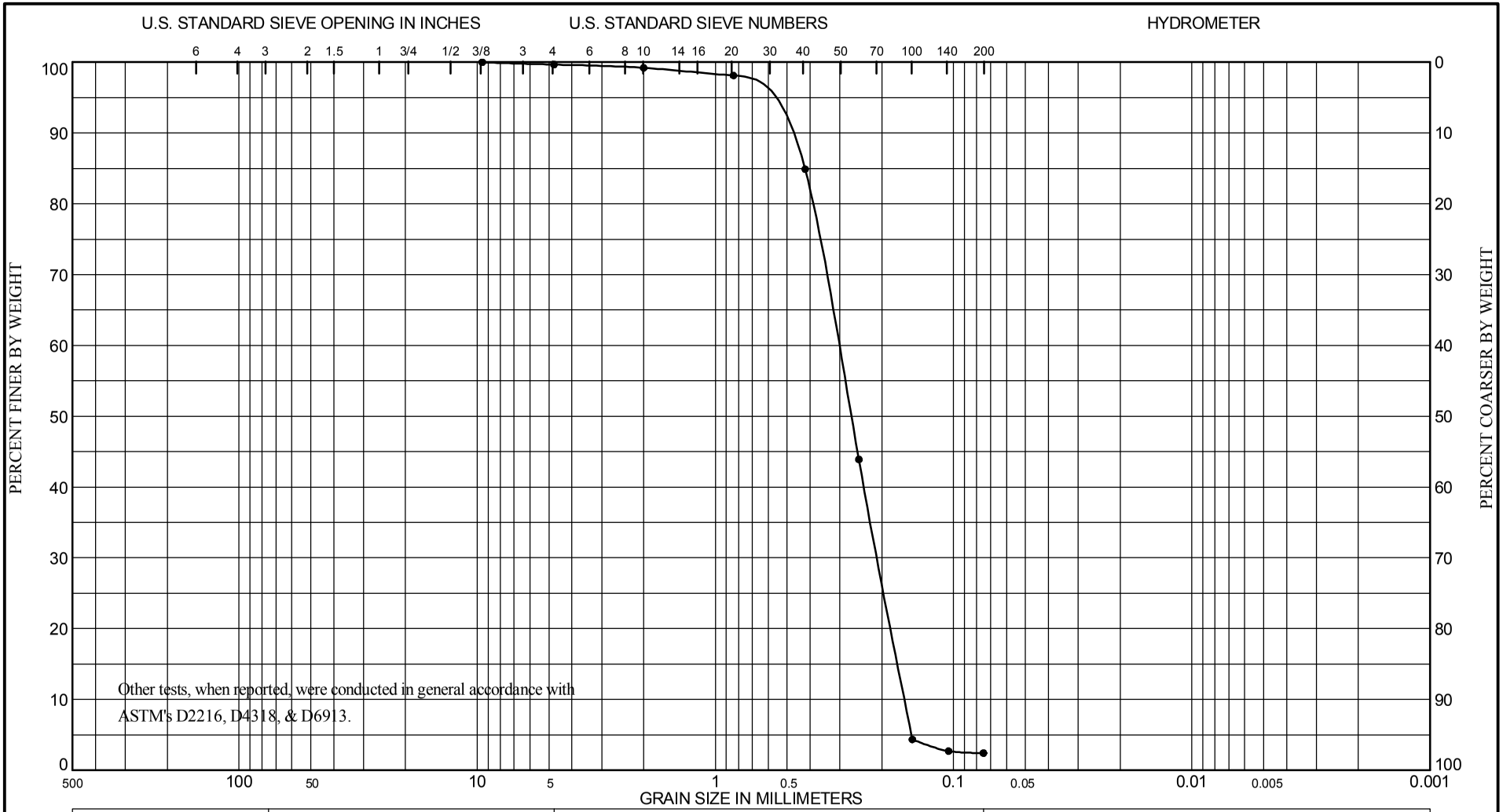
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15020° Long = -88.41975°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

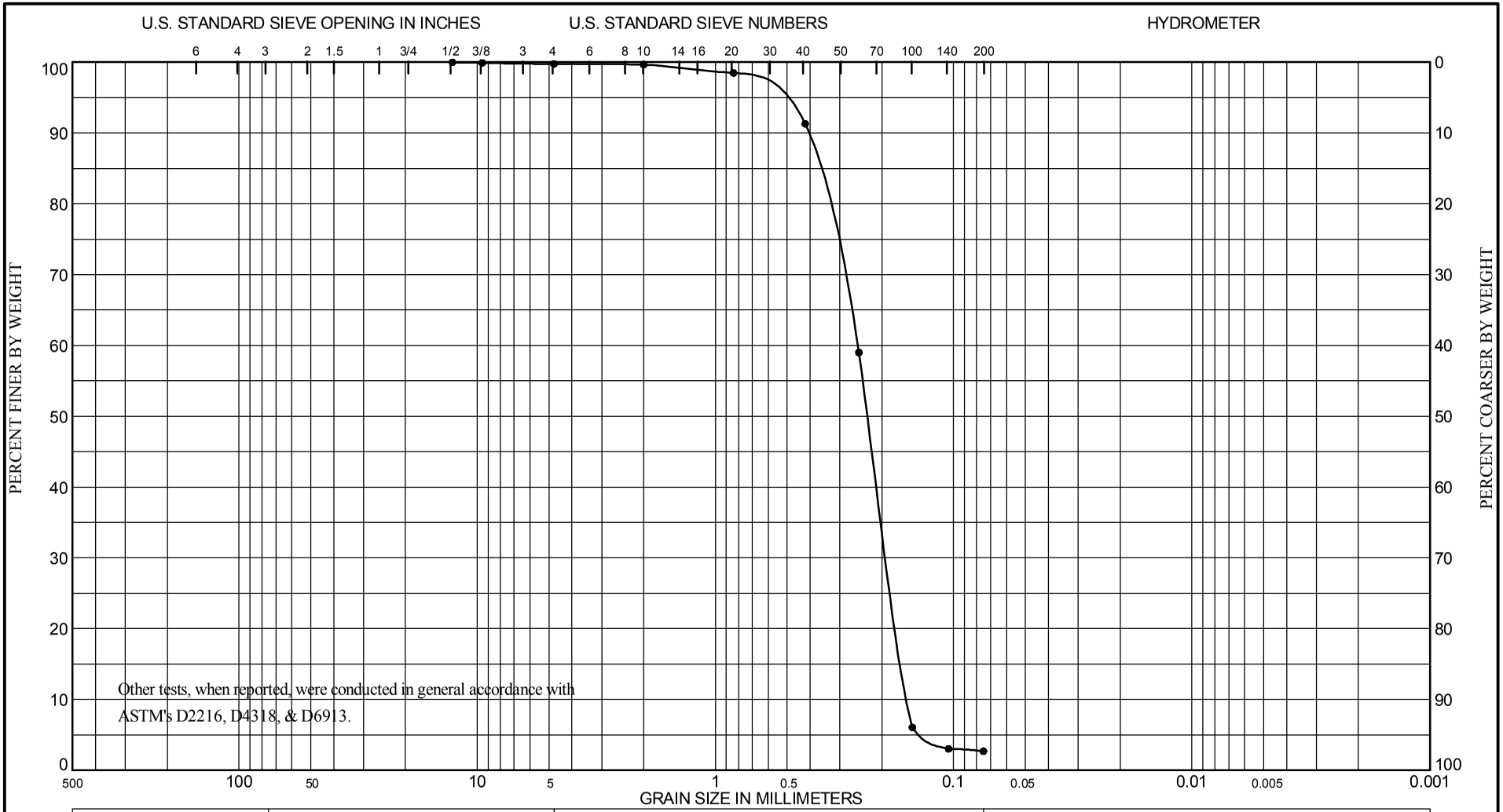
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 3.0	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4631
Hole No. BI-PBS-333-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

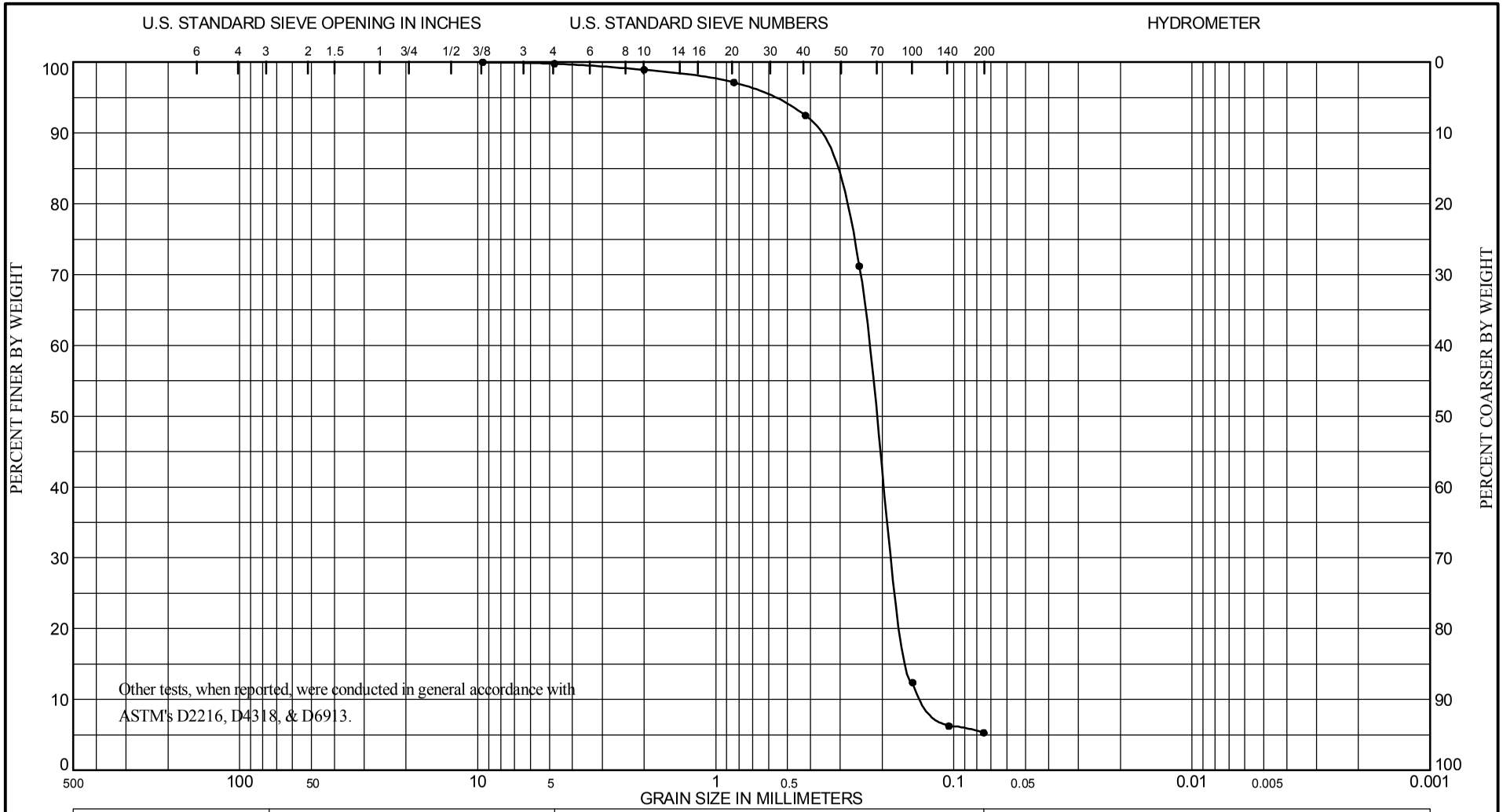
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	3.0 to 7.8	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4632
Hole No. BI-PBS-333-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

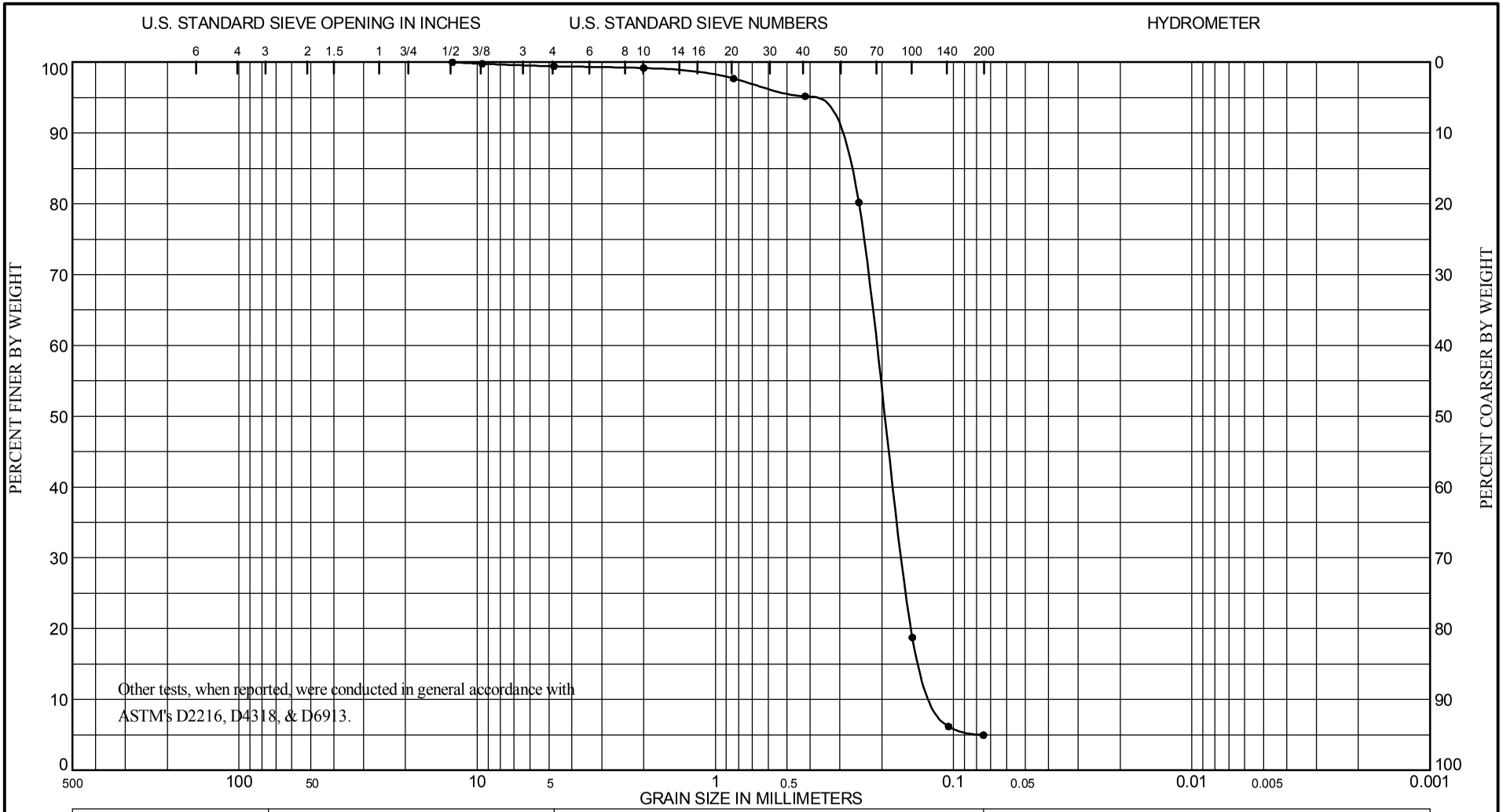
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	7.8 to 9.6	Gray, Poorly Graded Silty Sand (SP-SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4633
Hole No. BI-PBS-333-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
D	9.6 to 12.5	Dark Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4634
Hole No. BI-PBS-333-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-334-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-334-13 — LOCATION COORDINATES: E = 1,116,032 N = 236,257	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 4 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 55.3 Ft.
	15. DATE BORING — STARTED: 02-08-14 — COMPLETED: 02-08-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -54.4 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 17.8 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-54.4	0.0				
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, few shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.243 mm % Fines: 2.2
			At El. -59.4 Ft., trace clay At El. -61.6 Ft., fine-grained sand-sized	B	Classification: SP Color: 2.5Y 6/1-gray D50: 0.224 mm % Fines: 2.3
-63.4	9.0				
-65.2	10.8		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few shell fragments, lt. to medium gray (SP-SM)	C	Classification: SP Color: 2.5Y 6/1-gray D50: 0.207 mm % Fines: 4.1
			SAND, silty, mostly fine to medium-grained sand-sized quartz, little shell fragments, medium gray (SM) At El. -66.4 Ft., fine-grained sand-sized, trace shell fragments	D	Classification: SP-SM Color: 2.5Y 6/1-gray D50: 0.183 mm % Fines: 6
			At El. -70.4 Ft., high fines content	NS	
-72.2	17.8				
			At El. -72.2 Ft., slight plasticity at base		

NOTES:

1. Soils are field visually classified in accordance with the Unified Soils Classification System.

2. NS = Sample not submitted for laboratory analysis from this interval.

3. Seafloor elevation determined from 10/29/2014 USACE survey.

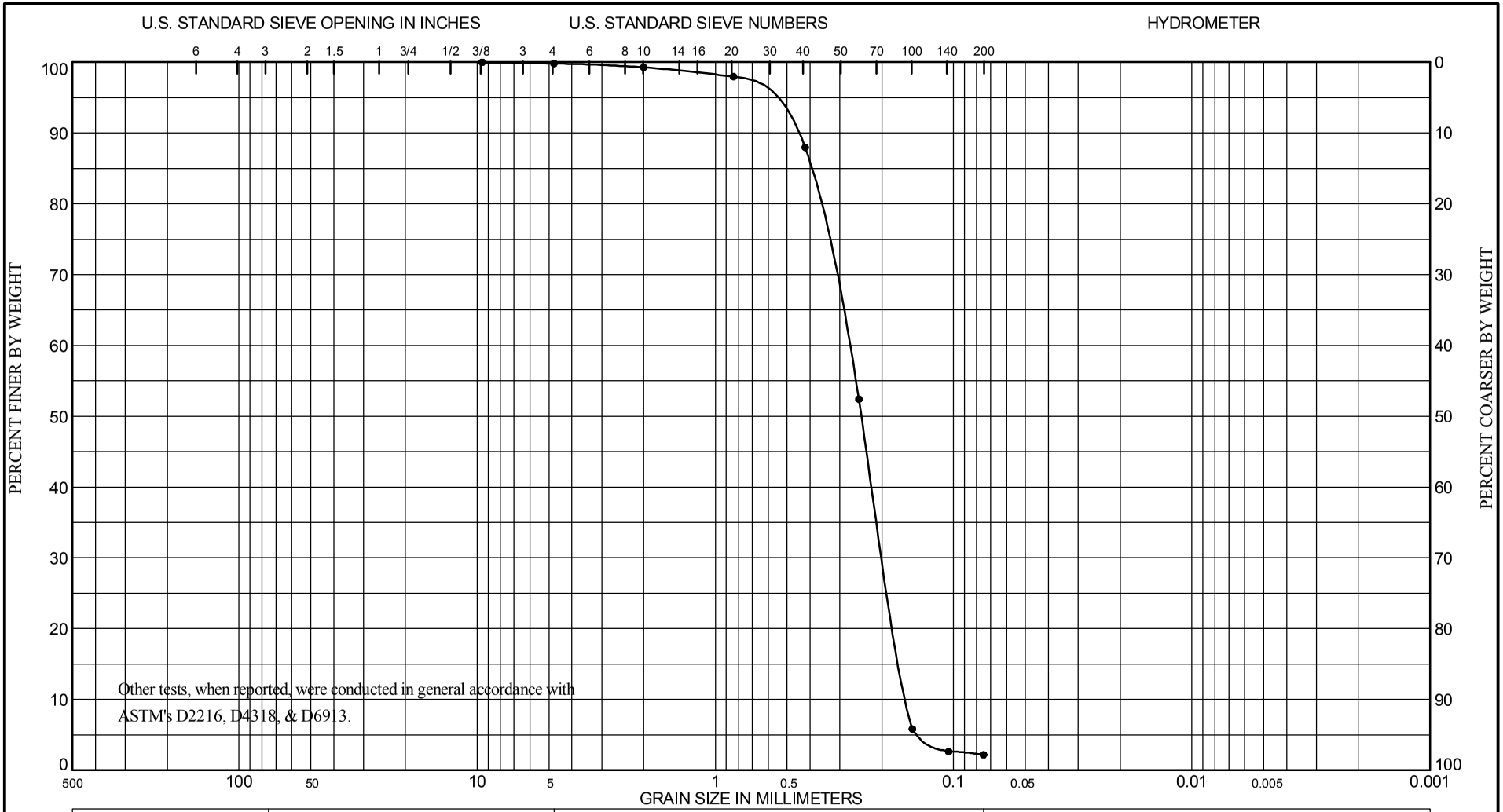
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14900° Long = -88.41639°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 4.5	Gray, Poorly Graded Sand (SP).				

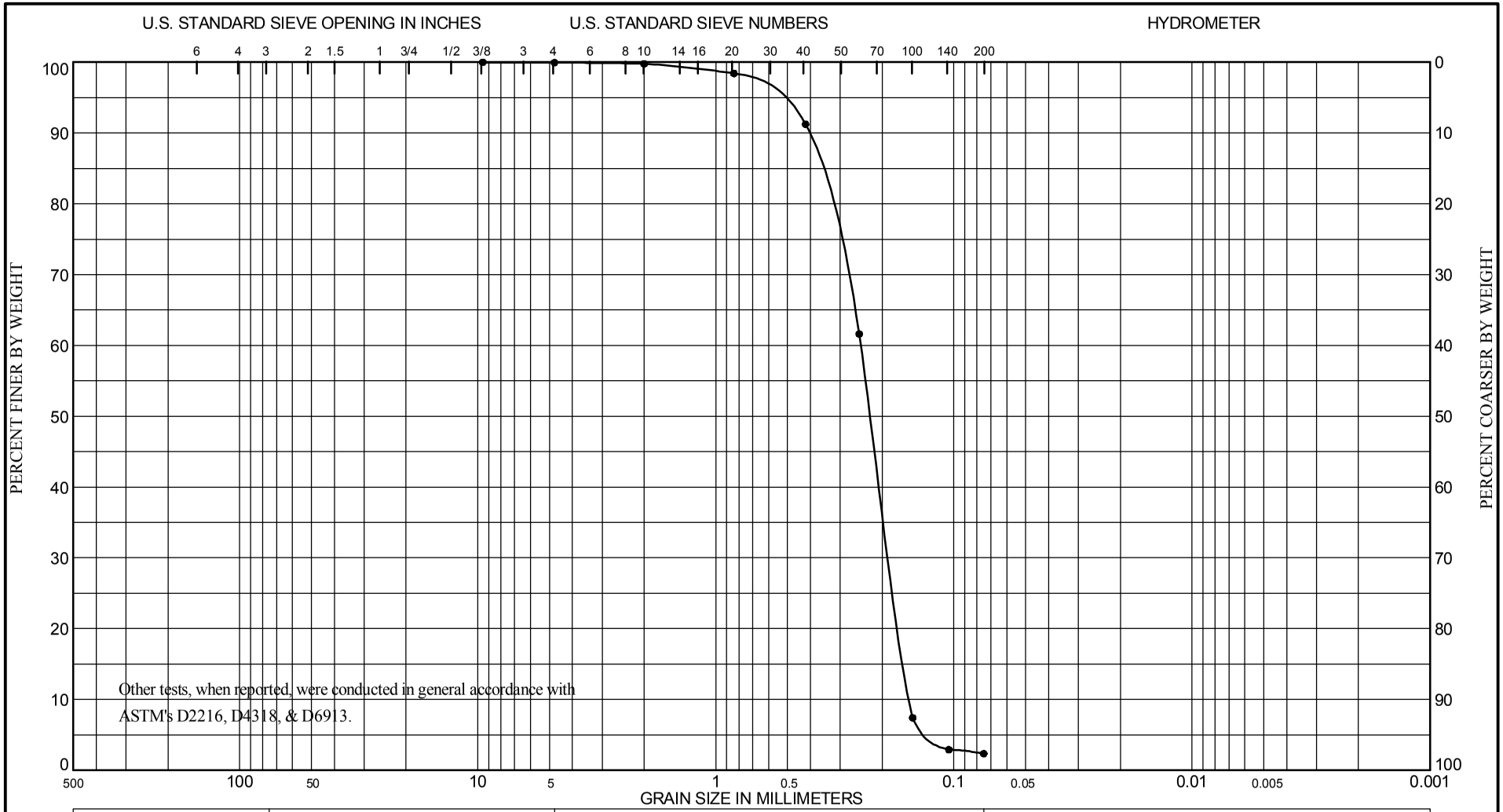
Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4794
Hole No. BI-PBS-334-13
Date 4/23/14

GRADATION CURVES

K-1029

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	4.5 to 9.0	Gray, Poorly Graded Sand (SP).				

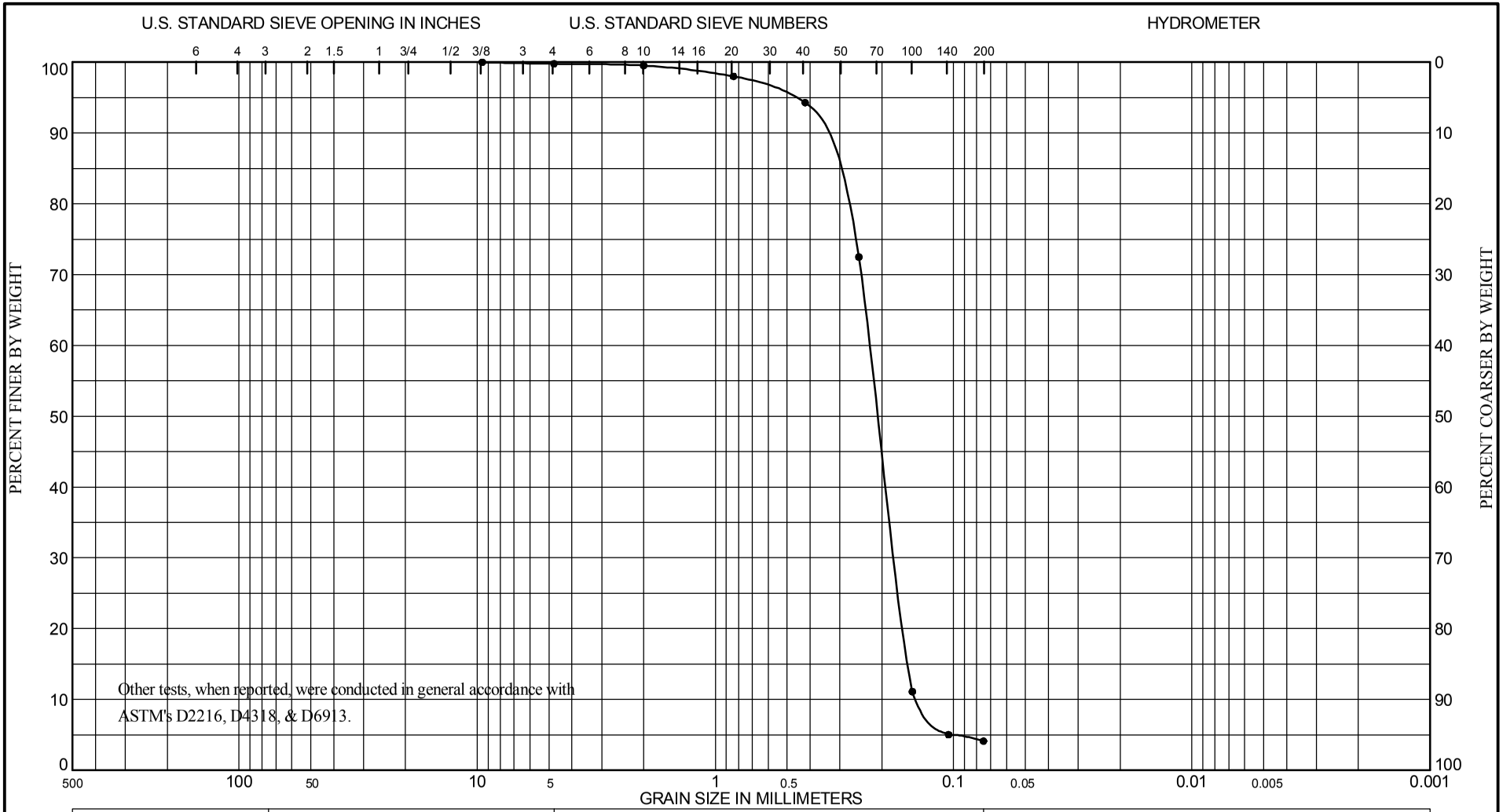
Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4795
Hole No. BI-PBS-334-13
Date 4/23/14

GRADATION CURVES

K-1030

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

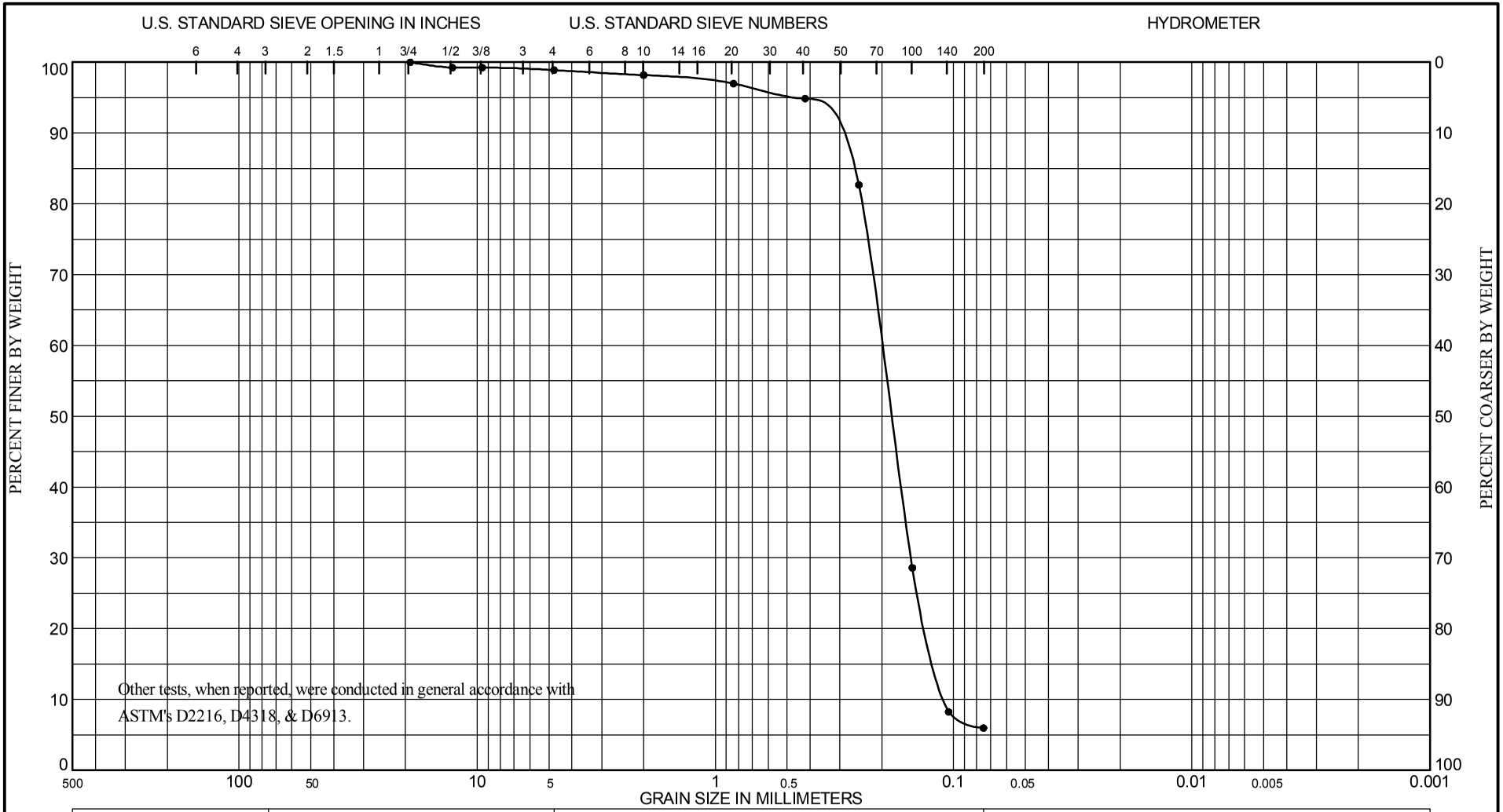
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	9.0 to 10.8	Greenish Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4796
Hole No. BI-PBS-334-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
D	10.8 to 16.0	Greenish Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4797
Hole No. BI-PBS-334-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-335-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS West
2. BORING DESIGNATION	BI-PBS-335-13
LOCATION COORDINATES	E = 1,118,798 N = 235,452
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	15.7 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED: 0 UNDISTURBED (UD): 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	56.2 Ft.
15. DATE BORING	STARTED: 02-17-14 COMPLETED: 02-17-14
16. ELEVATION TOP OF BORING	-56.2 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-56.2	0.0				
-60.9	4.7		CLAY, lean, sandy and soft in upper half, firm in lower half of unit, trace to few sand-filled voids, olive gray (CL)		
-62.2	6.0		SAND, silty, mostly fine to medium-grained sand-sized quartz, few shell fragments, lt. to medium gray (SM)		
-62.7	6.5		CLAY, lean, discontinue shell fragments, olive gray (CL)	NS	
-66.0	9.8		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, pale olive gray (SM)		
-69.2	13.0		SAND, clayey, mostly fine-grained sand-sized quartz, few shell fragments, pale olive gray (SC)		
-71.9	15.7		SILT, inorganic-L, few shell fragments, sandy, clayey, pale olive gray (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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14676° Long = -88.40765°

Boring Designation BI-PBS-337-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 2 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-337-13 — LOCATION COORDINATES: E = 1,116,940 N = 236,082	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 3 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 55.6 Ft.
	15. DATE BORING — STARTED: 02-08-14 — COMPLETED: 02-08-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -54.6 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 19.9 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-54.6	0.0				
-54.8	0.2		CLAY, lean, sandy, medium gray (CL)	NS	
-57.0	2.4		SAND, silty, mostly fine-grained sand-sized quartz, trace shell fragments, lt. to medium gray (SM)	A	Classification: SP Color: 2.5Y 6/1-gray D50: 0.247 mm % Fines: 4.1
-60.8	6.2		SAND, poorly-graded with silt, mostly fine to medium-grained sand-sized quartz, trace shell fragments, lt. to medium gray (SP-SM)	B	Classification: SP-SM Color: 2.5Y 6/1-gray D50: 0.244 mm % Fines: 5.5
-63.1	8.5		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, lt. to medium gray (SM)	C	Classification: SP Color: 2.5Y 6/1-gray D50: 0.204 mm % Fines: 4
-63.7	9.1		CLAY, lean, sandy, medium gray (CL)		
-69.1	14.5		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, medium gray (SM)	NS	
-69.6	15.0				
-70.1	15.5		SILT, inorganic-L, few shell fragments, medium gray (ML)		
			SAND, clayey, mostly fine-grained sand-sized quartz, few shell fragments, medium gray (SC)		
-74.5	19.9		CLAY, lean, trace shell fragments, sandy, medium to dark gray (CL) At El. -72.4 Ft., few shell fragments		

NOTES:

1. Soils are field visually classified in accordance with the Unified Soils Classification System.

2. NS = Sample not submitted for laboratory analysis from this interval.

3. Seafloor elevation determined from

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14851° Long = -88.41352°

DRILLING LOG (Cont. Sheet)	INSTALLATION Mobile District		SHEET 2 OF 2 SHEETS
PROJECT MsCIP Barrier Island Restoration	COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83	VERTICAL NAVD88
LOCATION COORDINATES X = 1,116,940 Y = 236,082	ELEVATION TOP OF BORING -54.6 Ft.		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
			10/29/2014 USACE survey.		

30
35
40
45
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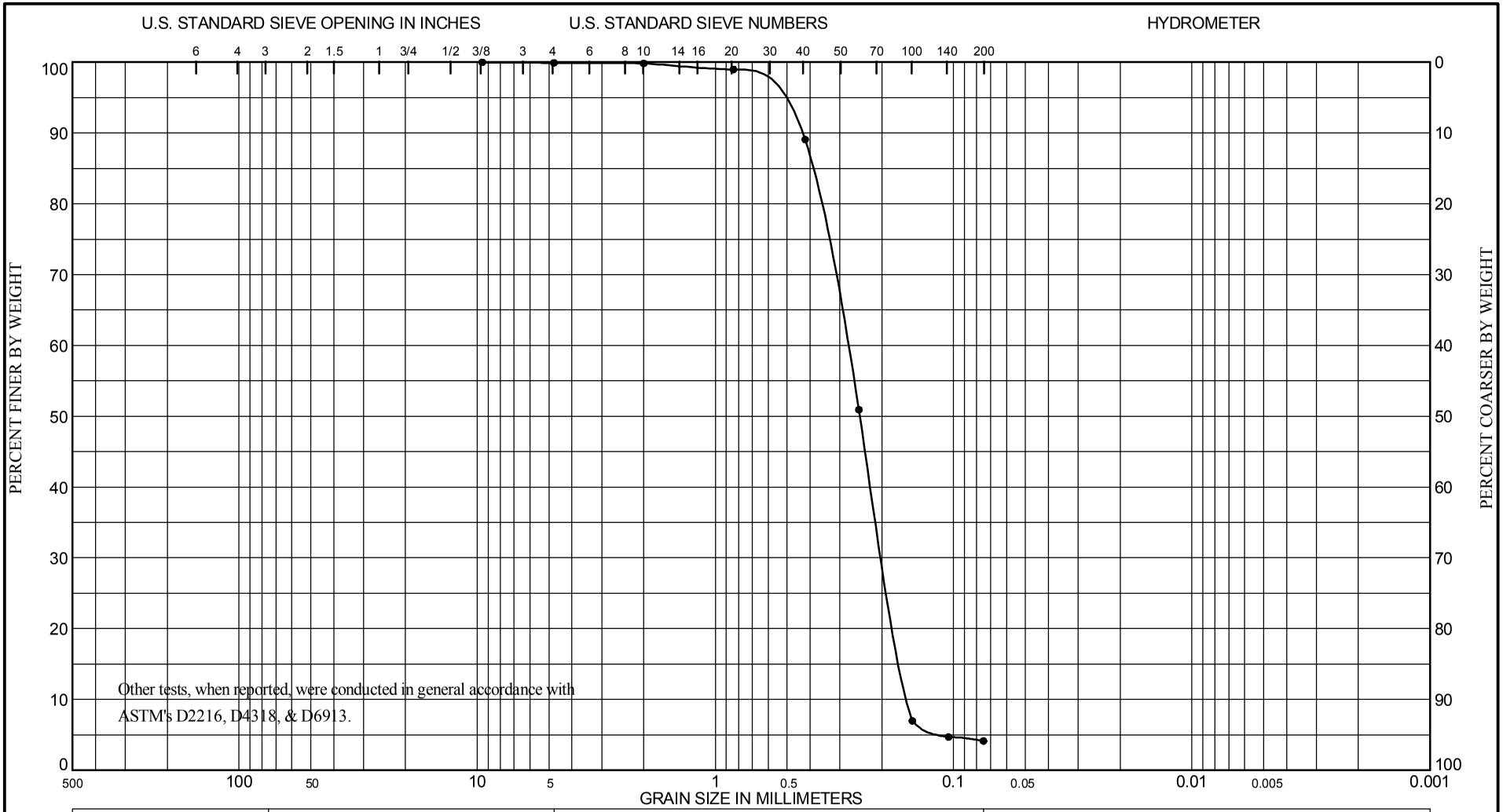
55
60

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14851° Long = -88.41352°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

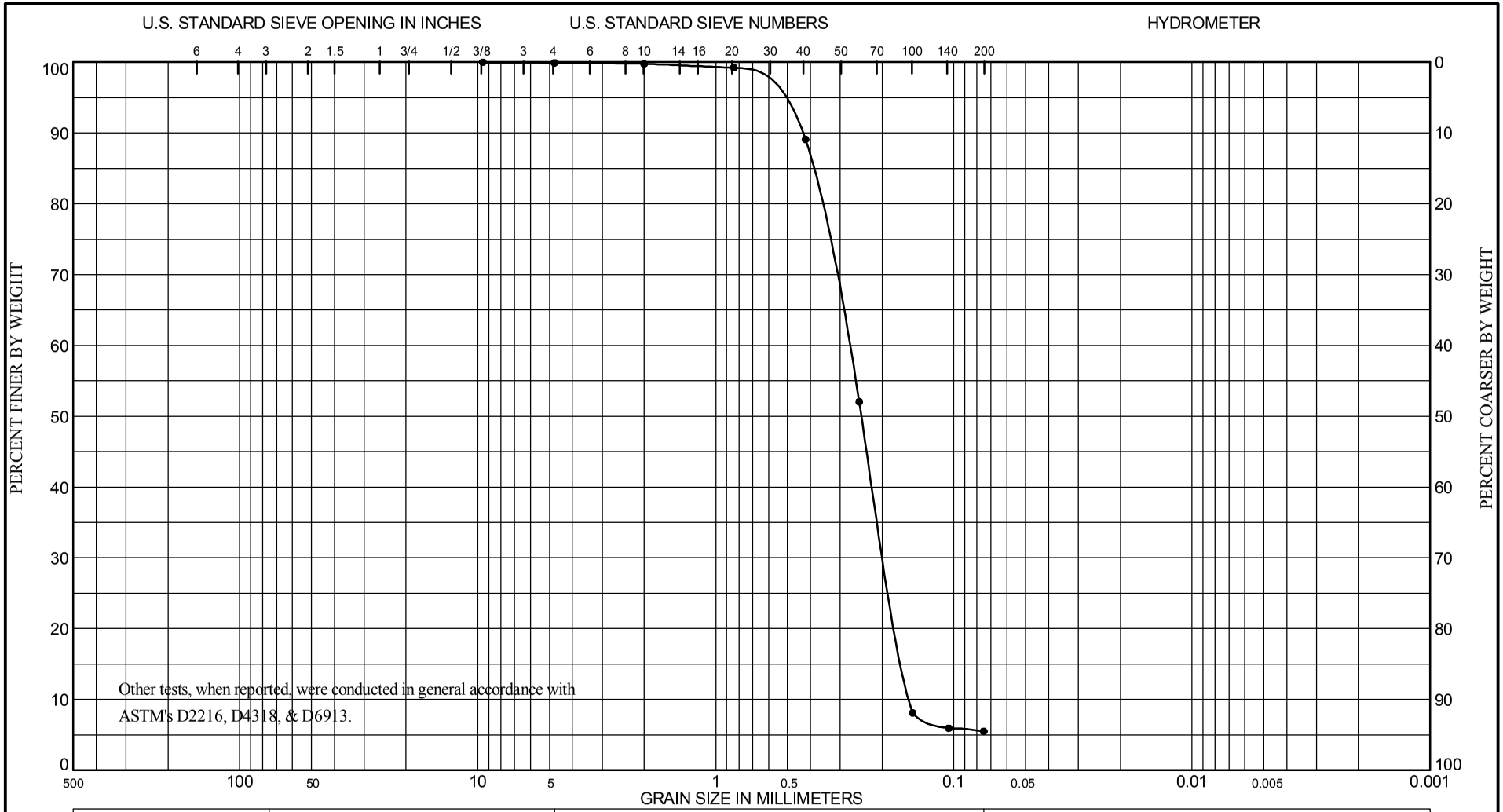
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.2 to 2.4	Greenish Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4798
Hole No. BI-PBS-337-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

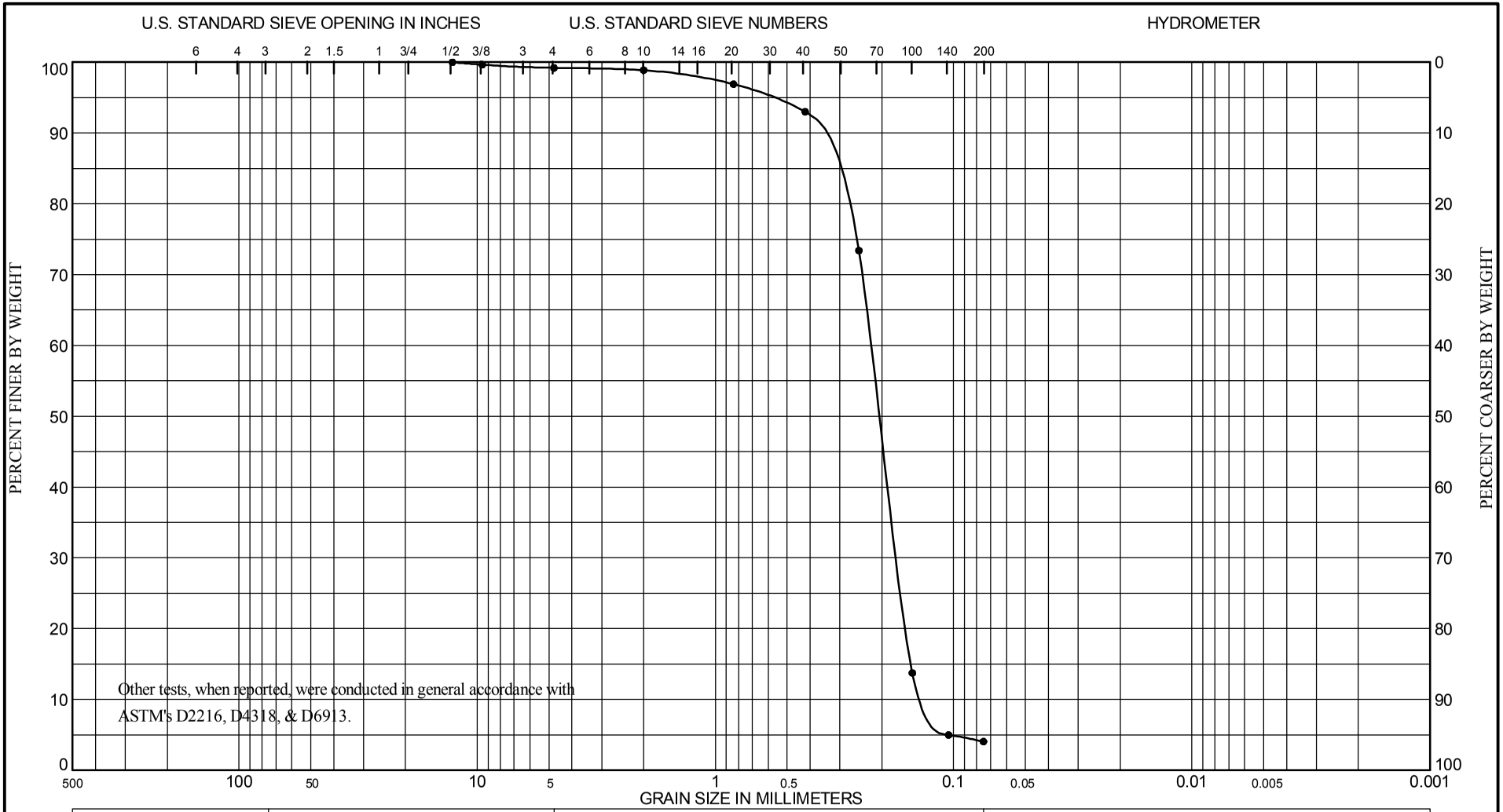
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	2.4 to 6.2	Gray, Poorly Graded Silty Sand (SP-SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4799
Hole No. BI-PBS-337-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	6.2 to 8.5	Greenish Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4800
Hole No. BI-PBS-337-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-338-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-338-13 — LOCATION COORDINATES: E = 1,111,853 N = 235,430	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 4 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 51 Ft.
	15. DATE BORING — STARTED: 02-01-14 — COMPLETED: 02-01-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -49.9 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 17.8 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-49.9	0.0				
-50.5	0.6		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace shell fragments, lt. gray (SP)	NS	
-55.9	6.0		SAND, silty, clayey, mostly fine to medium-grained sand-sized quartz, few shell fragments, trace clay, medium gray (SC-SM)	A	Classification: SM Color: 10Y 5/1-greenish gray D50: 0.229 mm % Fines: 15.6
-57.5	7.6		CLAY, lean, few wood debris, trace shell fragments, interbedded with SC,, brownish gray (CL)	NS	
-60.8	10.9		SAND, silty, mostly fine to medium-grained sand-sized quartz, trace wood debris, trace shell fragments, dark gray (SM)	B	Classification: SP Color: 10Y 5/1-greenish gray D50: 0.338 mm % Fines: 4.8
-63.4	13.5		SAND, poorly-graded with silt, mostly fine to medium-grained sand-sized quartz, trace shell fragments, dark gray (SP-SM)	C	Classification: SP Color: 10Y 5/1-greenish gray D50: 0.359 mm % Fines: 1.3
-67.7	17.8		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace shell fragments, trace wood at base of layer, medium to lt. gray (SP)	D	Classification: SP Color: 10Y 5/1-greenish gray D50: 0.345 mm % Fines: 1.2

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.

3. Seafloor elevation determined from 12/17/2014 USACE survey.

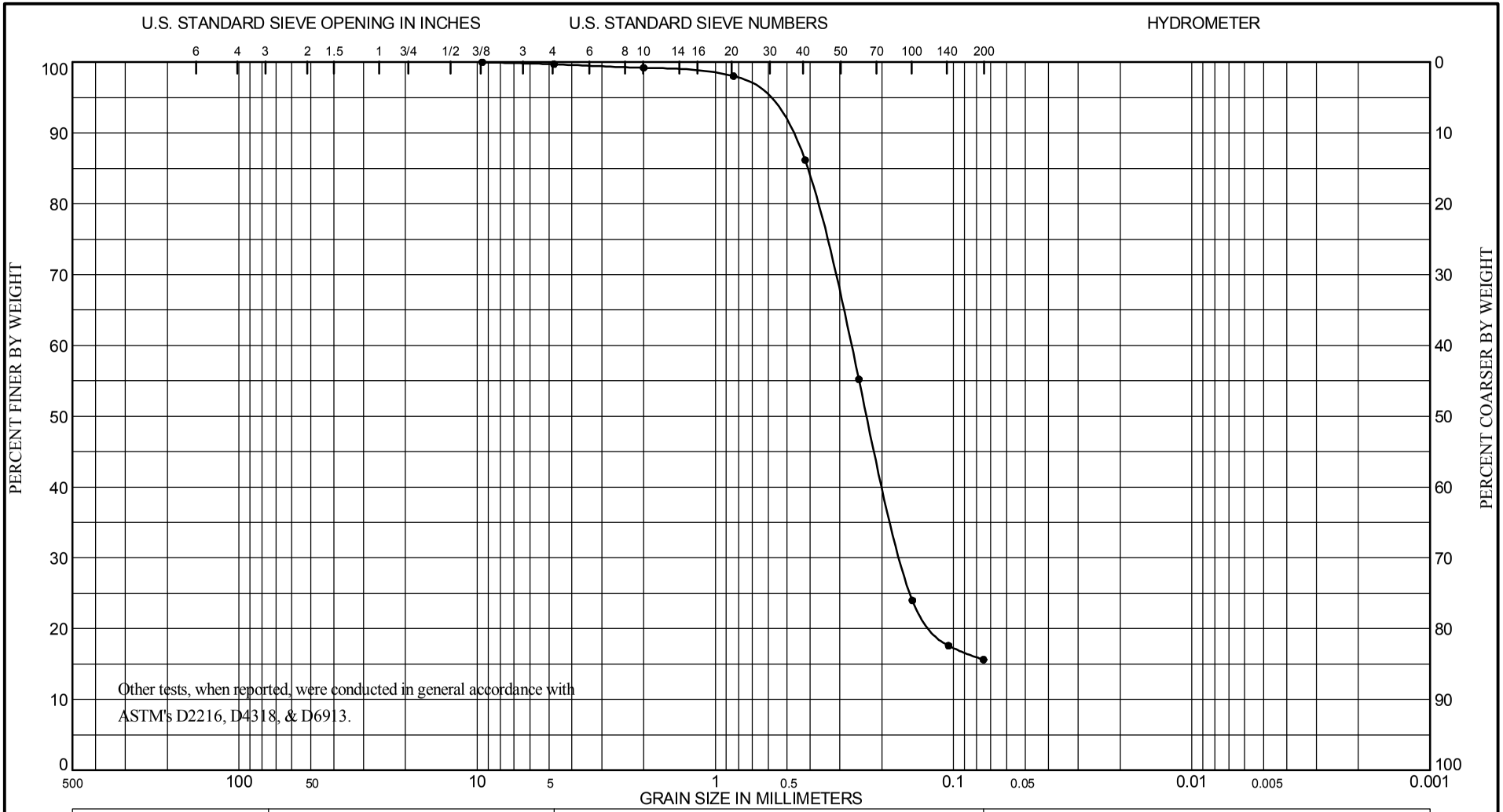
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14677° Long = -88.42962°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

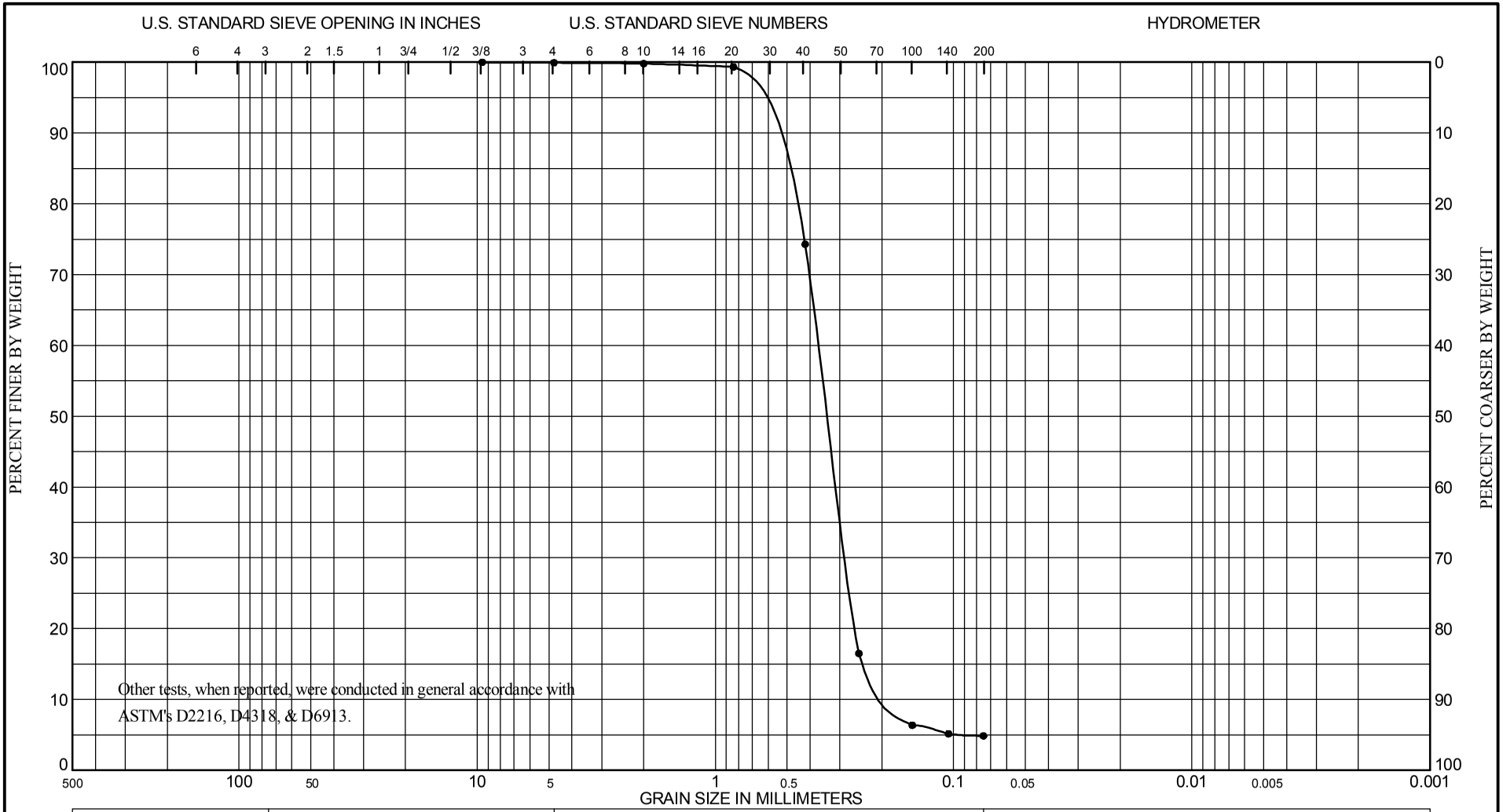
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.6 to 6.0	Dark Gray, Silty Sand (SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4611
Hole No. BI-PBS-338-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

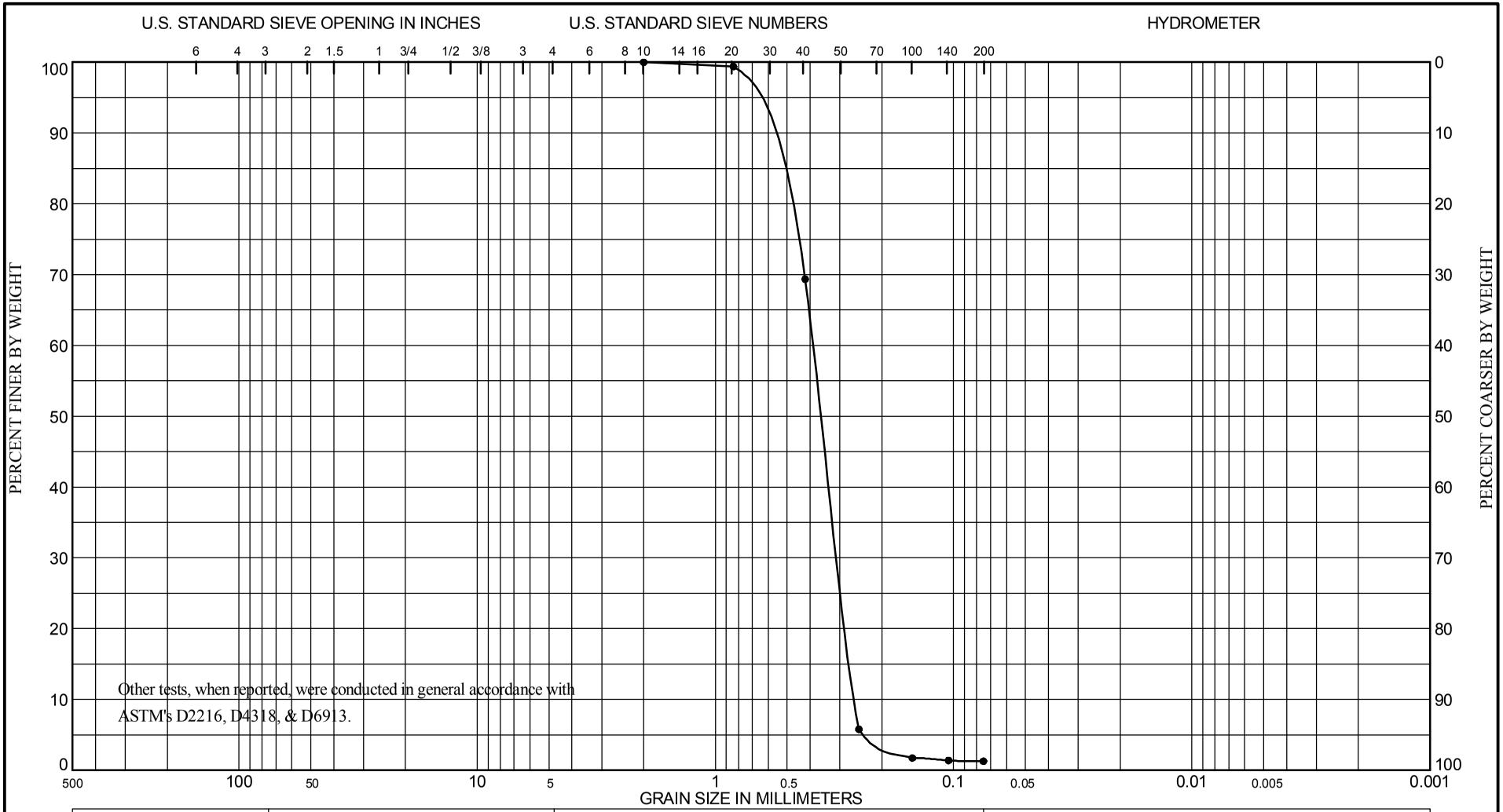
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	7.6 to 10.9	Dark Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4612
Hole No. BI-PBS-338-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

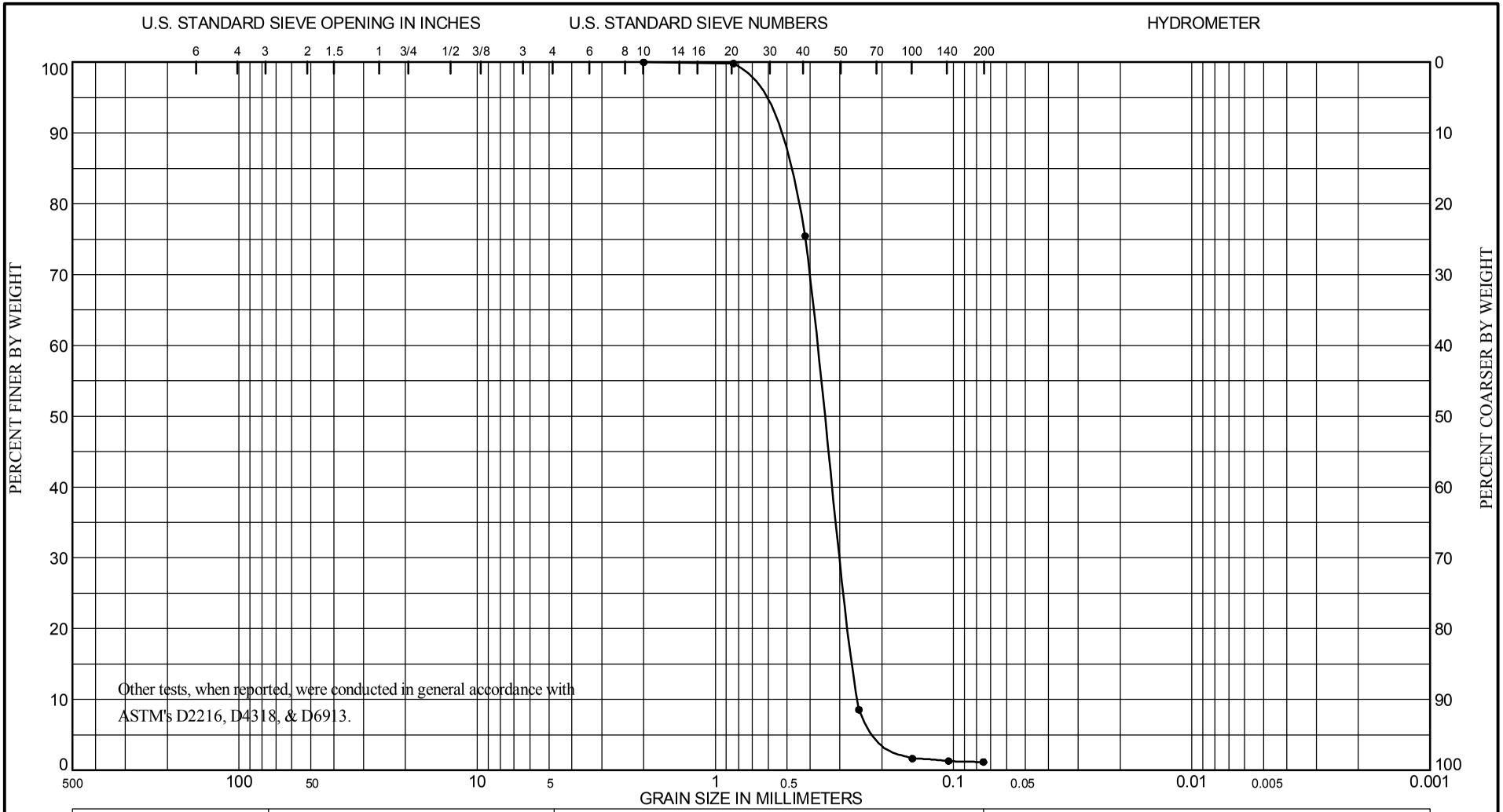
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	10.9 to 13.5	Dark Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4613
Hole No. BI-PBS-338-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
D	13.5 to 17.8	Dark Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4614
Hole No. BI-PBS-338-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-339-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 2 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-339-13 — LOCATION COORDINATES: E = 1,117,528 N = 235,124	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 3 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 57.2 Ft.
	15. DATE BORING — STARTED: 02-08-14 — COMPLETED: 02-08-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -56.8 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 18.6 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-56.8	0.0				
-58.5	1.7		SAND, silty, mostly fine-grained sand-sized quartz, trace shell fragments, trace clay, lt. to medium gray (SM)	A	Classification: SP Color: 2.5Y 6/1-gray D50: 0.241 mm % Fines: 4
-62.4	5.6		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, trace shell fragments, lt. gray (SP-SM)	B	Classification: SP Color: 2.5Y 6/1-gray D50: 0.213 mm % Fines: 2.5
-70.5	13.7		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, medium gray (SM)	C	Classification: SP-SM Color: 2.5Y 6/1-gray D50: 0.187 mm % Fines: 5.7
			At El. -66.8 Ft., high fines content to base of unit	NS	
-73.0	16.2		SAND, clayey, mostly fine-grained sand-sized quartz, trace shell fragments, medium gray (SC)		
-73.8	17.0		CLAY, lean, trace shell fragments, sandy, medium gray (CL)		
-75.4	18.6		SAND, clayey, mostly fine-grained sand-sized quartz, trace shell fragments, medium 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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14587° Long = -88.41167°

DRILLING LOG (Cont. Sheet)	INSTALLATION Mobile District		SHEET 2 OF 2 SHEETS
PROJECT MsCIP Barrier Island Restoration	COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83	VERTICAL NAVD88
LOCATION COORDINATES X = 1,117,528 Y = 235,124	ELEVATION TOP OF BORING -56.8 Ft.		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
			applying NOAA tidal gauge data conversion factor.		

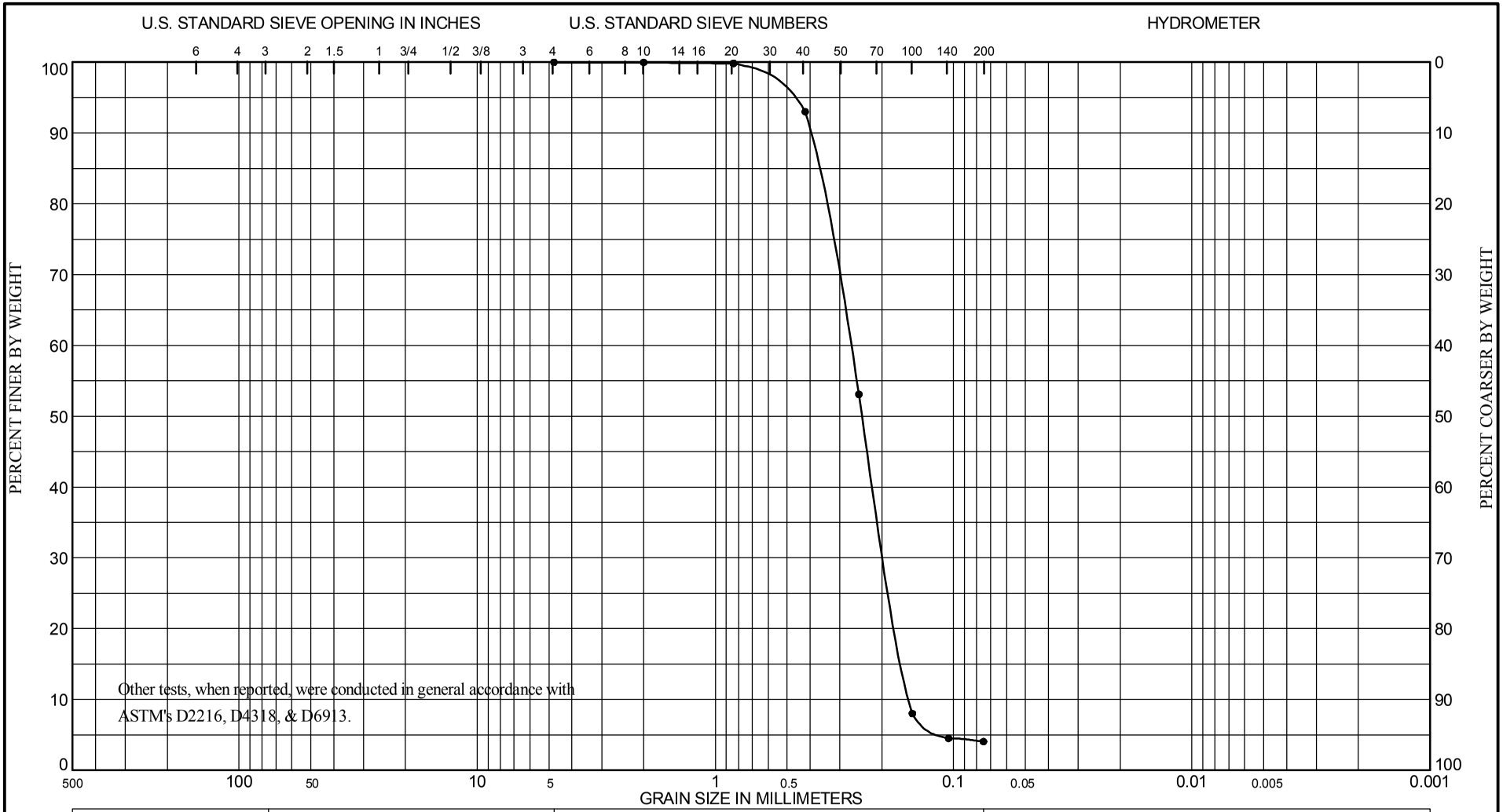
30
35
40
45
50
55
60

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14587° Long = -88.41167°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

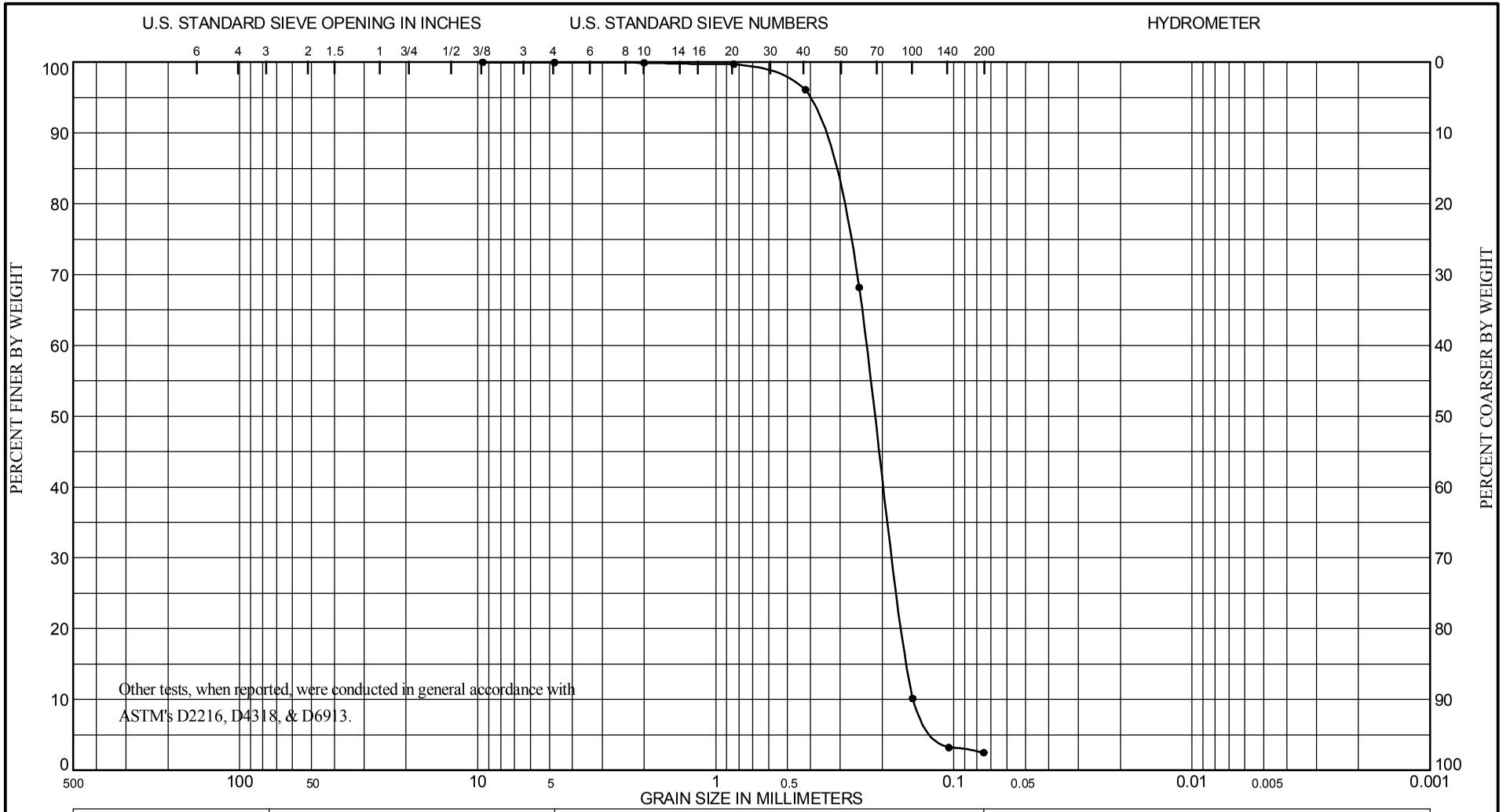
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 1.7	Greenish Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4804
Hole No. BI-PBS-339-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

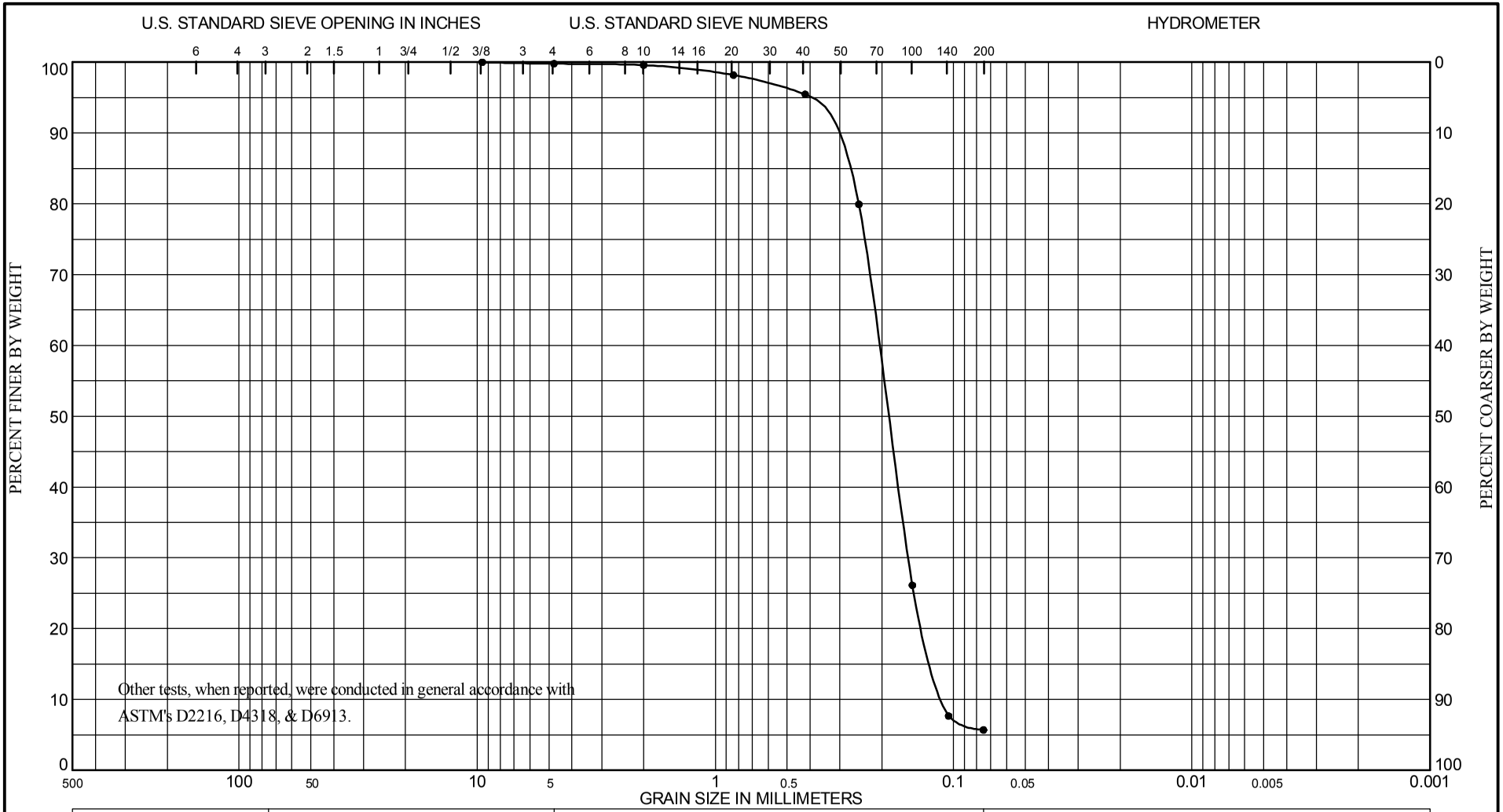
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	1.7 to 5.6	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4805
Hole No. BI-PBS-339-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	5.6 to 10.0	Greenish Gray, Poorly Graded Silty Sand (SP-SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4806
Hole No. BI-PBS-339-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-340-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-340-13 — LOCATION COORDINATES: E = 1,116,558 N = 234,145	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ 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: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 57 Ft.
	15. DATE BORING — STARTED: 02-03-14 — COMPLETED: 02-03-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -57.1 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 14.2 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-57.1	0.0				
-57.7	0.6		SAND, clayey, mostly fine to medium-grained sand-sized quartz, some shell fragments, medium to dark gray (SC)		
-60.8	3.7		CLAY, lean, interbedded with SC, firm, trace wood over 2.4 to 2.5 ft. and 3.0 to 3.6 ft., medium gray (CL)		
-69.6	12.5		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, medium to lt. gray (SM) At El. -64.8 Ft., mostly fine-grained sand-sized quartz, few shell fragments, low fines content, lt. to medium gray At El. -65.9 Ft., mostly fine-grained sand-sized quartz, few shell fragments, high fines content, medium gray	NS	
-71.3	14.2		SILT, inorganic-L, few shell fragments, sandy, medium gray (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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14319° Long = -88.41475°

Boring Designation BI-PBS-341-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-341-13 — LOCATION COORDINATES: E = 1,112,866 N = 234,325	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 4 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 47.7 Ft.
	15. DATE BORING — STARTED: 02-02-14 — COMPLETED: 02-02-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -46.4 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 19.4 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-46.4	0.0				
-50.0	3.6		SAND, poorly-graded, mostly fine to coarse-grained sand-sized quartz, little shell fragments, lt. gray (SP) At El. -48.4 Ft., fine- to medium-grained sand from 2.0 to 3.6-ft. depth	A	Classification: SP Color: 10Y 6/1-greenish gray D50: 0.342 mm % Fines: 0.7
-51.4	5.0		SAND, poorly-graded with silt, mostly fine to medium-grained sand-sized quartz, few shell fragments, lt. gray (SP-SM)	B	Classification: SP Color: 10Y 6/1-greenish gray D50: 0.223 mm % Fines: 2.3
-52.5	6.1		SAND, silty, mostly fine-grained sand-sized quartz, trace shell fragments, lt. gray (SM) At El. -52.0 Ft., interbedded with clay	NS	
-53.3	6.9		GRAVEL, silty, mostly shell fragments, few clay, dark gray (GM)		
-56.1	9.7		SAND, silty, mostly fine-grained sand-sized quartz, high fines content, dark gray (SM)		
-57.4	11.0		CLAY, lean, grayish brown (CL)		
-58.9	12.5		SAND, silty, high fines content (SM)		
			SAND, silty, mostly fine to medium-grained sand-sized quartz, trace shell fragments, medium gray (SM)	C	Classification: SP Color: 10Y 5/1-greenish gray D50: 0.213 mm % Fines: 3.1
-65.8	19.4		At El. -62.4 Ft., mostly fine-grained sand-sized quartz, trace shell fragments, medium gray	D	Classification: SP Color: 10Y 5/1-greenish gray D50: 0.192 mm % Fines: 4.4

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.

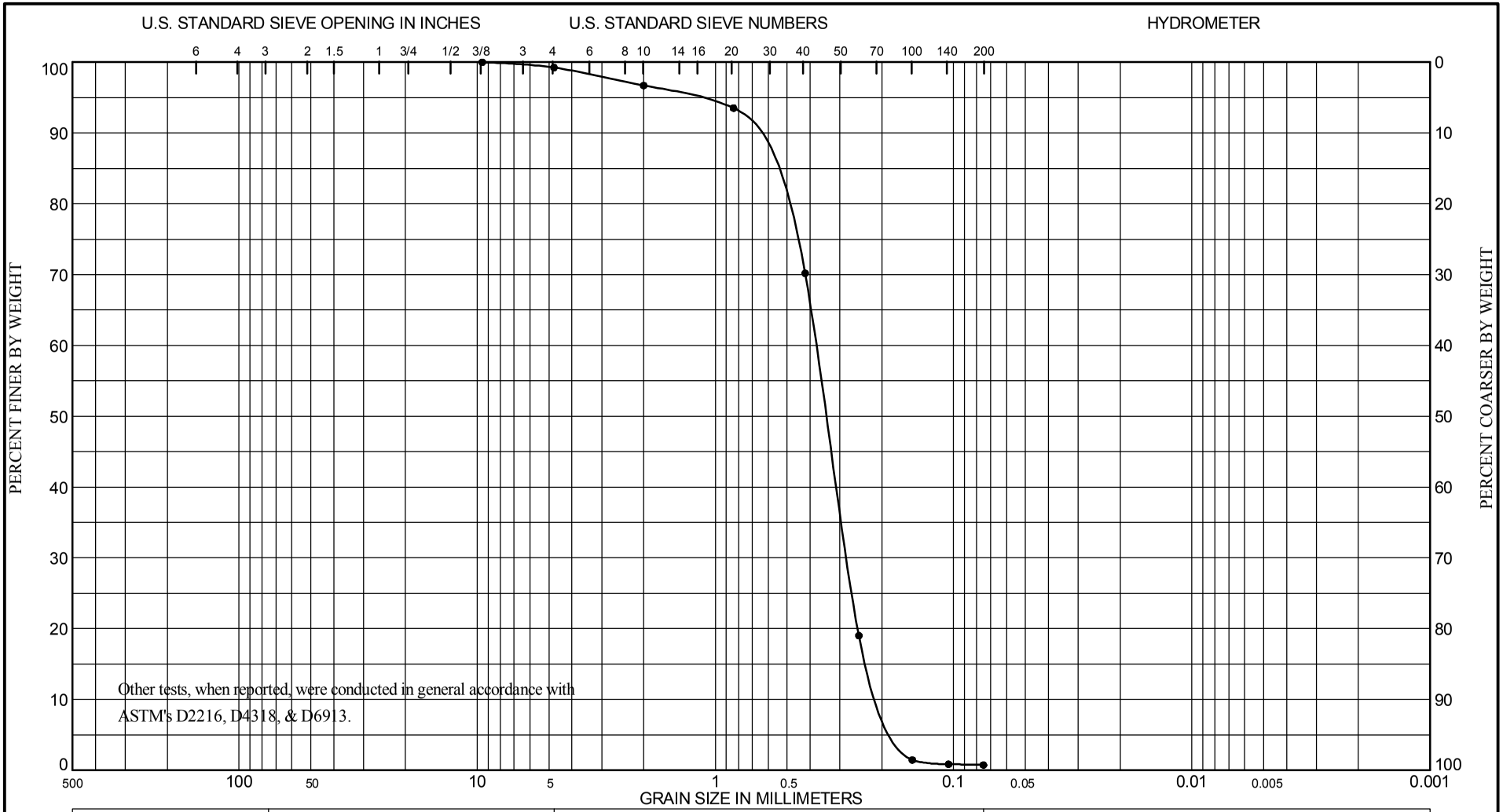
3. Seafloor elevation determined from 12/17/2014 USACE survey.

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14372° Long = -88.42643°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

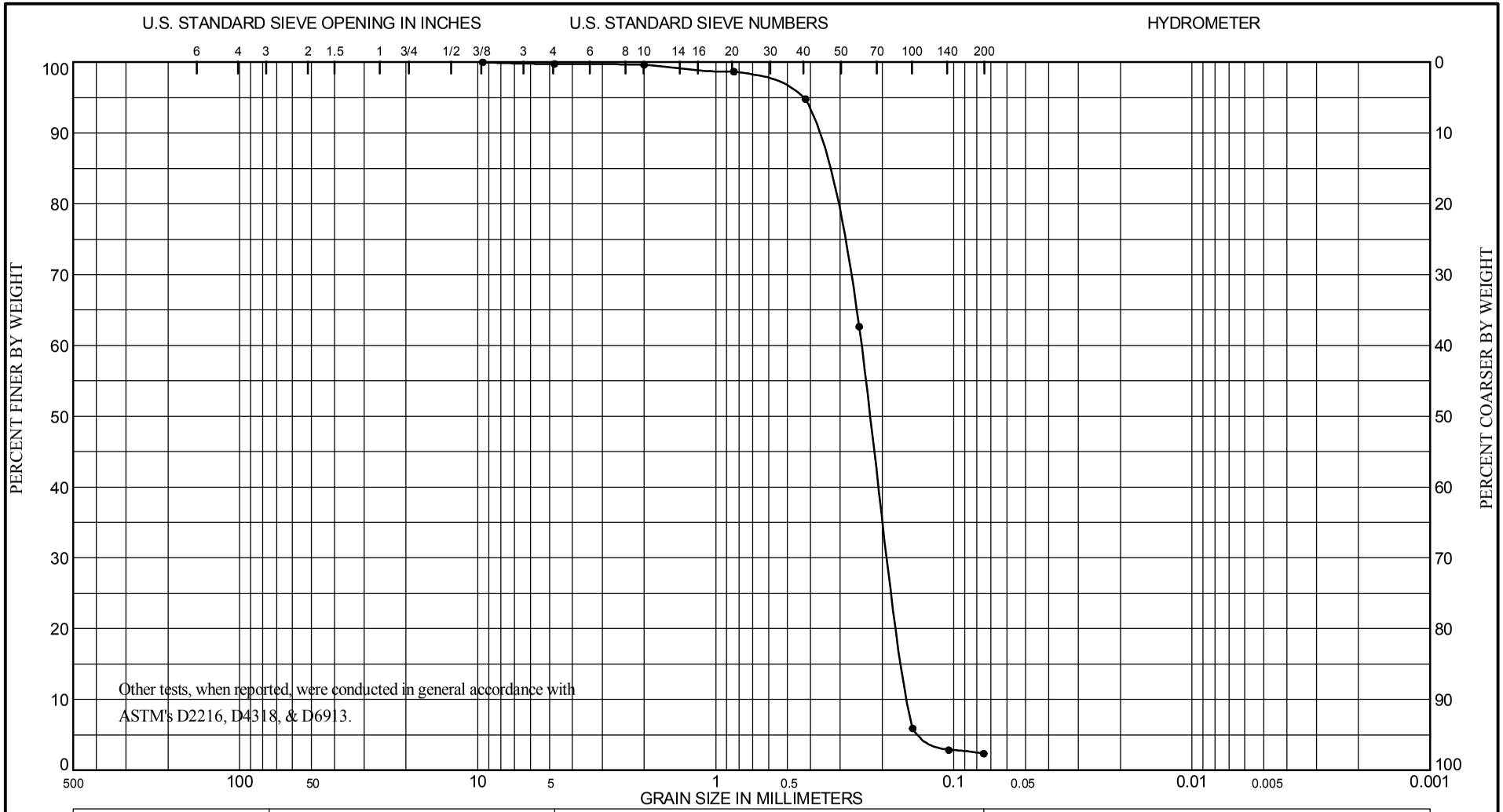
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 3.6	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4619
Hole No. BI-PBS-341-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

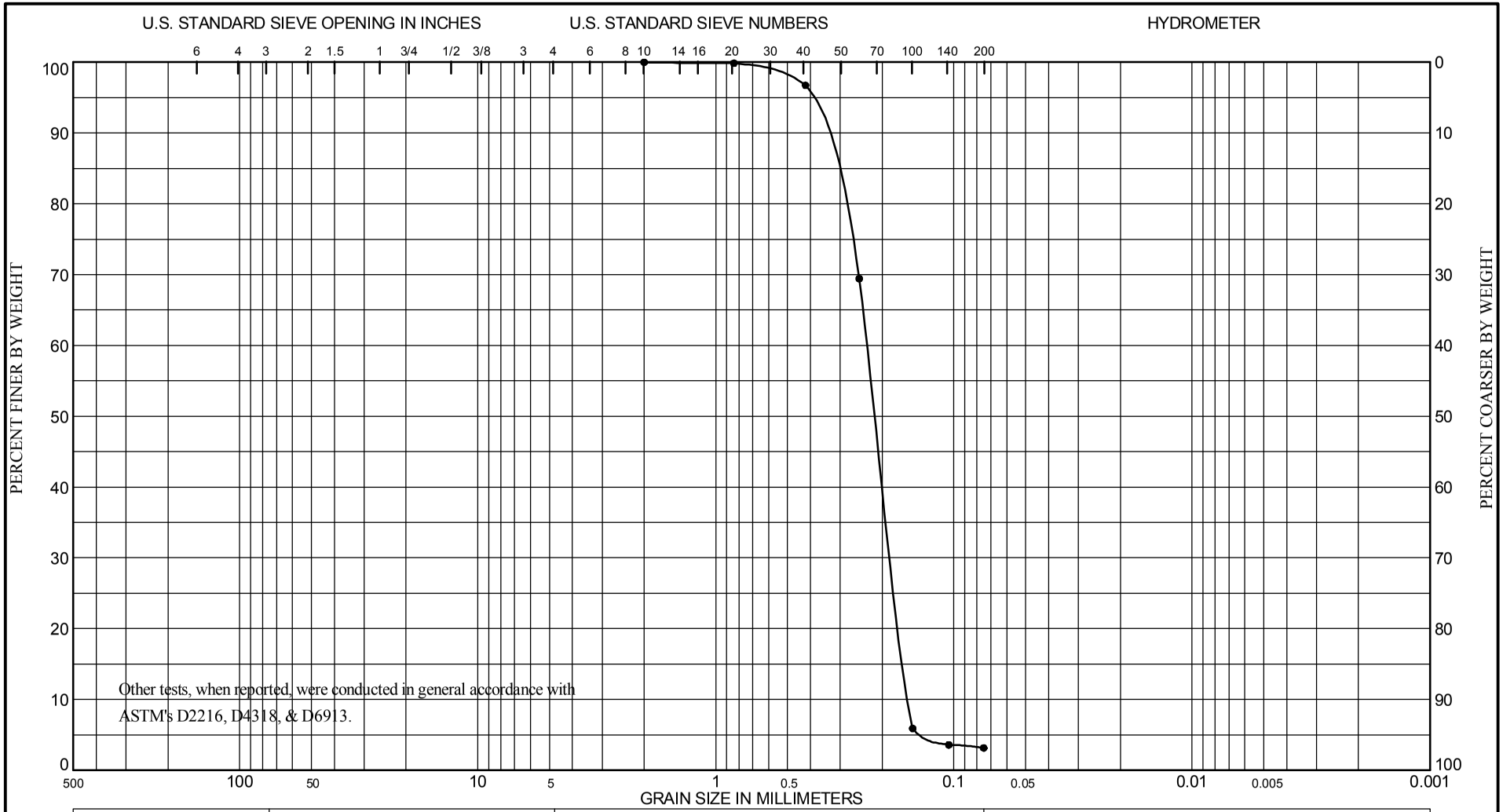
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	3.6 to 5.6	Dark Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4620
Hole No. BI-PBS-341-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

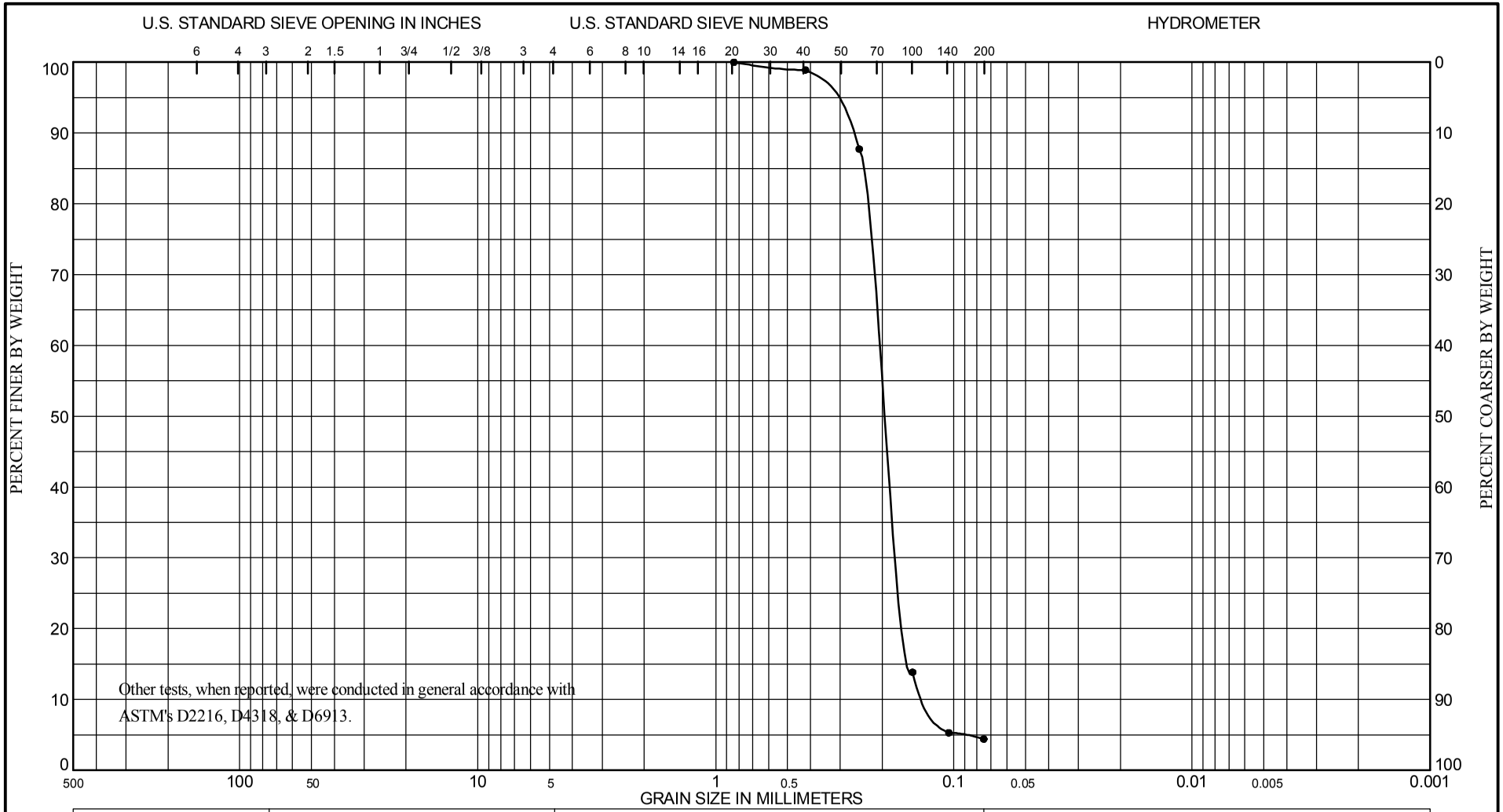
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	12.5 to 16.0	Dark Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4621
Hole No. BI-PBS-341-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
D	16.0 to 19.4	Dark Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4622
Hole No. BI-PBS-341-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-342-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-342-13 — LOCATION COORDINATES: E = 1,115,634 N = 236,968	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 3 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 55.3 Ft.
	15. DATE BORING — STARTED: 02-08-14 — COMPLETED: 02-08-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -53.5 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 18.6 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-53.5	0.0				
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, few shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.273 mm % Fines: 1.5
			At El. -58.3 Ft., trace clay 4.8 to 5.0 ft.	B	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.242 mm % Fines: 2
-64.0	10.5				
-64.7	11.2		SAND, poorly-graded with silt, mostly fine to medium-grained sand-sized quartz, few shell fragments, lt. gray (SP-SM)	C	Classification: SP-SM Color: 2.5Y 6/1-gray D50: 0.199 mm % Fines: 5.1
			SAND, silty, trace shell fragments, medium gray (SM) At El. -67.5 Ft., high fines content to base of unit	NS	
-71.8	18.3				
-72.1	18.6		CLAY, lean, trace shell fragments, sandy, lt. 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.

3. Seafloor elevation determined from 10/29/2014 USACE survey.

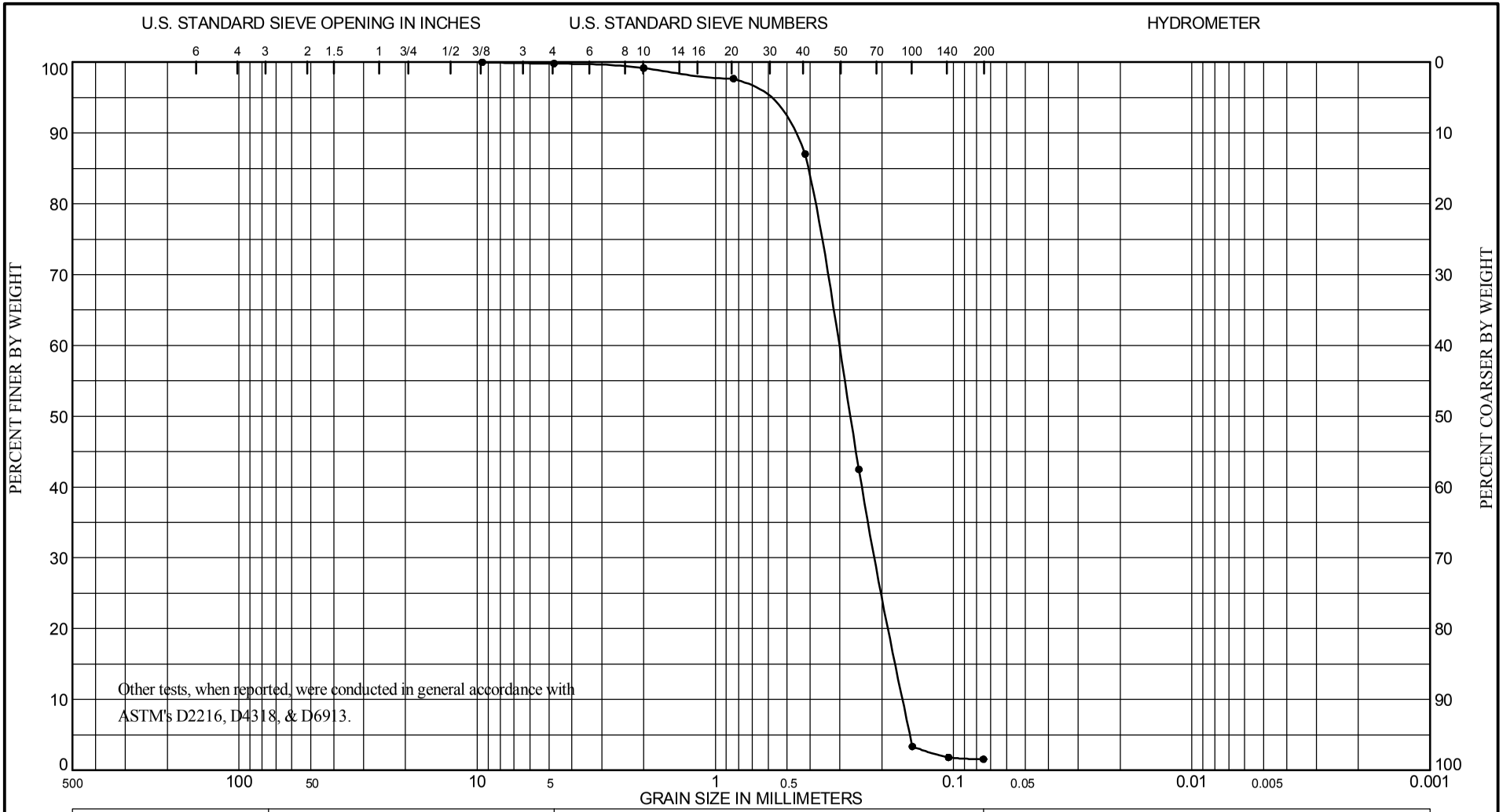
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15096° Long = -88.41764°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

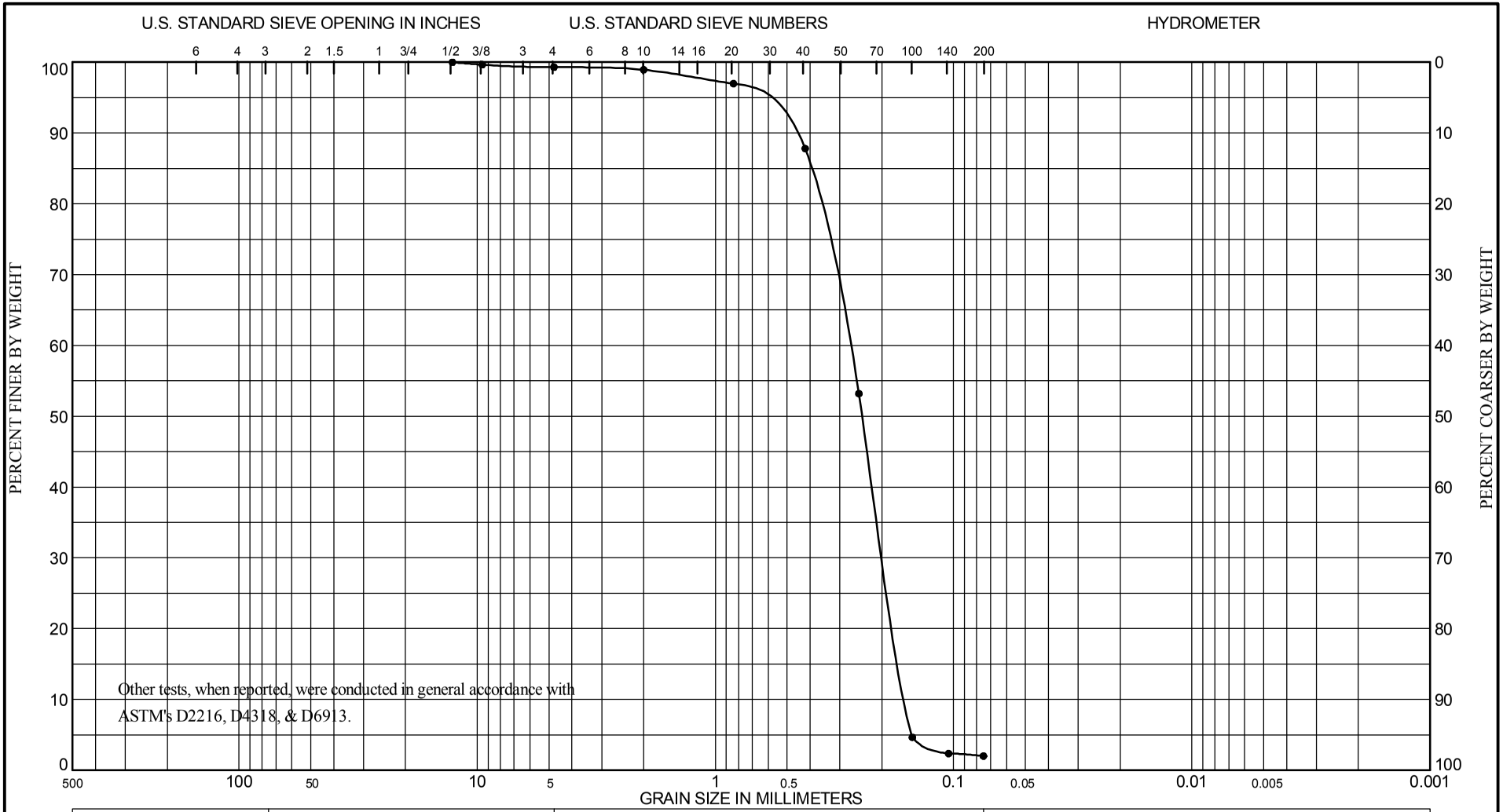
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 5.0	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4807
Hole No. BI-PBS-342-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

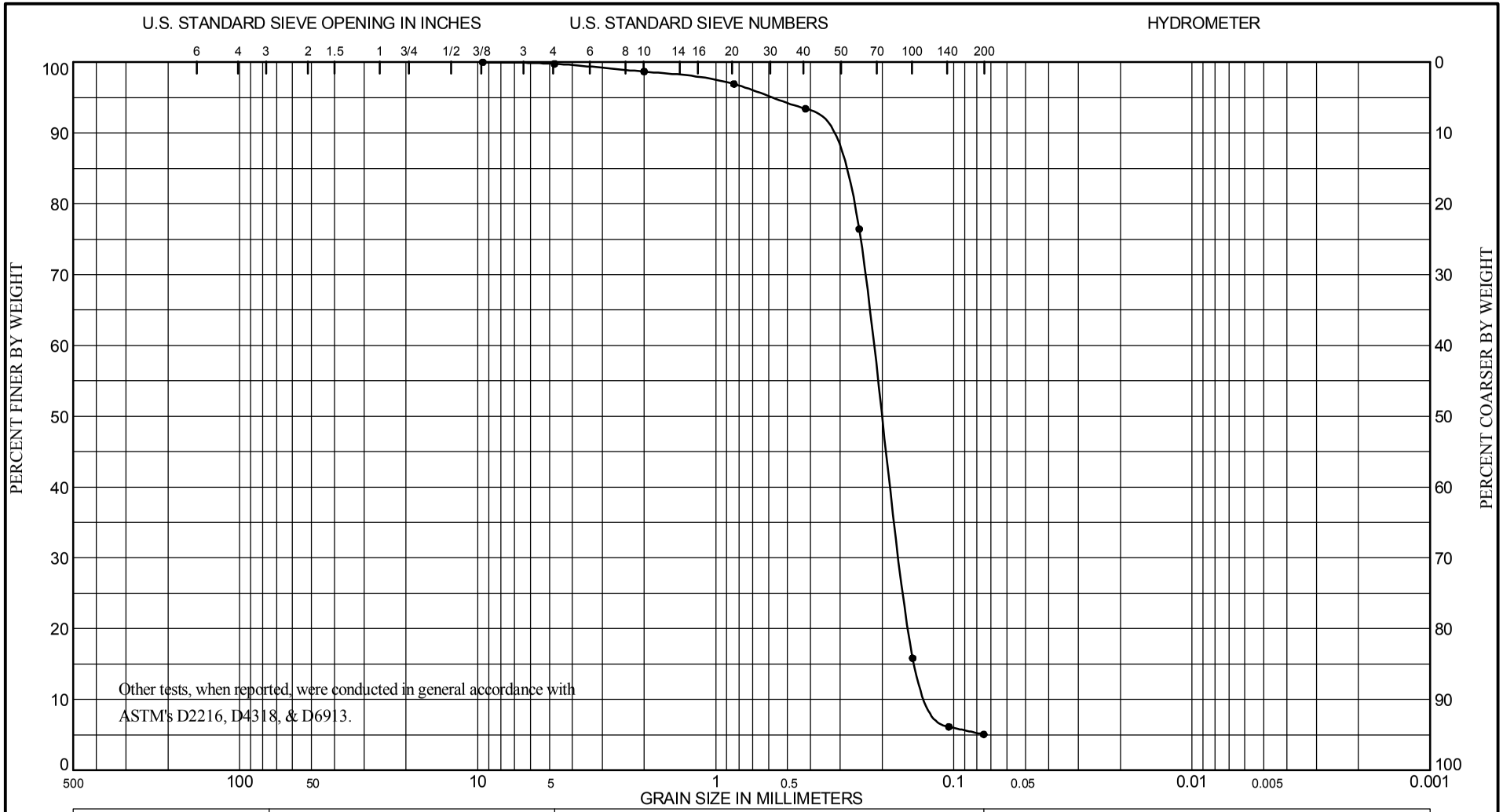
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	5.0 to 11.2	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4808
Hole No. BI-PBS-342-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	11.2 to 14.0	Greenish Gray, Poorly Graded Silty Sand (SP-SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4809
Hole No. BI-PBS-342-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-343-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-343-13 — LOCATION COORDINATES: E = 1,116,757 N = 236,757	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 3 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 55 Ft.
	15. DATE BORING — STARTED: 02-08-14 — COMPLETED: 02-08-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -54.3 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: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-54.3	0.0				
-54.8	0.5			NS	
-55.6	1.3		SAND, silty, mostly fine to medium-grained sand-sized quartz, few shell fragments, brownish medium gray (SM)	A	Classification: SP Color: 2.5Y 6/1-gray D50: 0.278 mm % Fines: 3.7
-58.3	4.0		SAND, poorly-graded with silt, mostly fine to medium-grained sand-sized quartz, few shell fragments, lt. to medium gray (SP-SM)	B	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.254 mm % Fines: 3.1
-61.3	7.0		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace shell fragments, lt. gray (SP)	C	Classification: SP Color: 2.5Y 6/1-gray D50: 0.22 mm % Fines: 2.2
-66.8	12.5		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, trace shell fragments, lt. to medium gray (SP-SM) SAND, silty, mostly fine to medium-grained sand-sized quartz, trace shell fragments, high fines content to base of unit, trace clay at 7.3 ft. depth, medium gray (SM) At El. -62.3 Ft., fine-grained sand-sized	NS	
-72.0	17.7		SAND, clayey, mostly fine-grained sand-sized quartz, trace shell fragments, medium to dark 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.

3. Seafloor elevation determined from 10/29/2014 USACE survey.

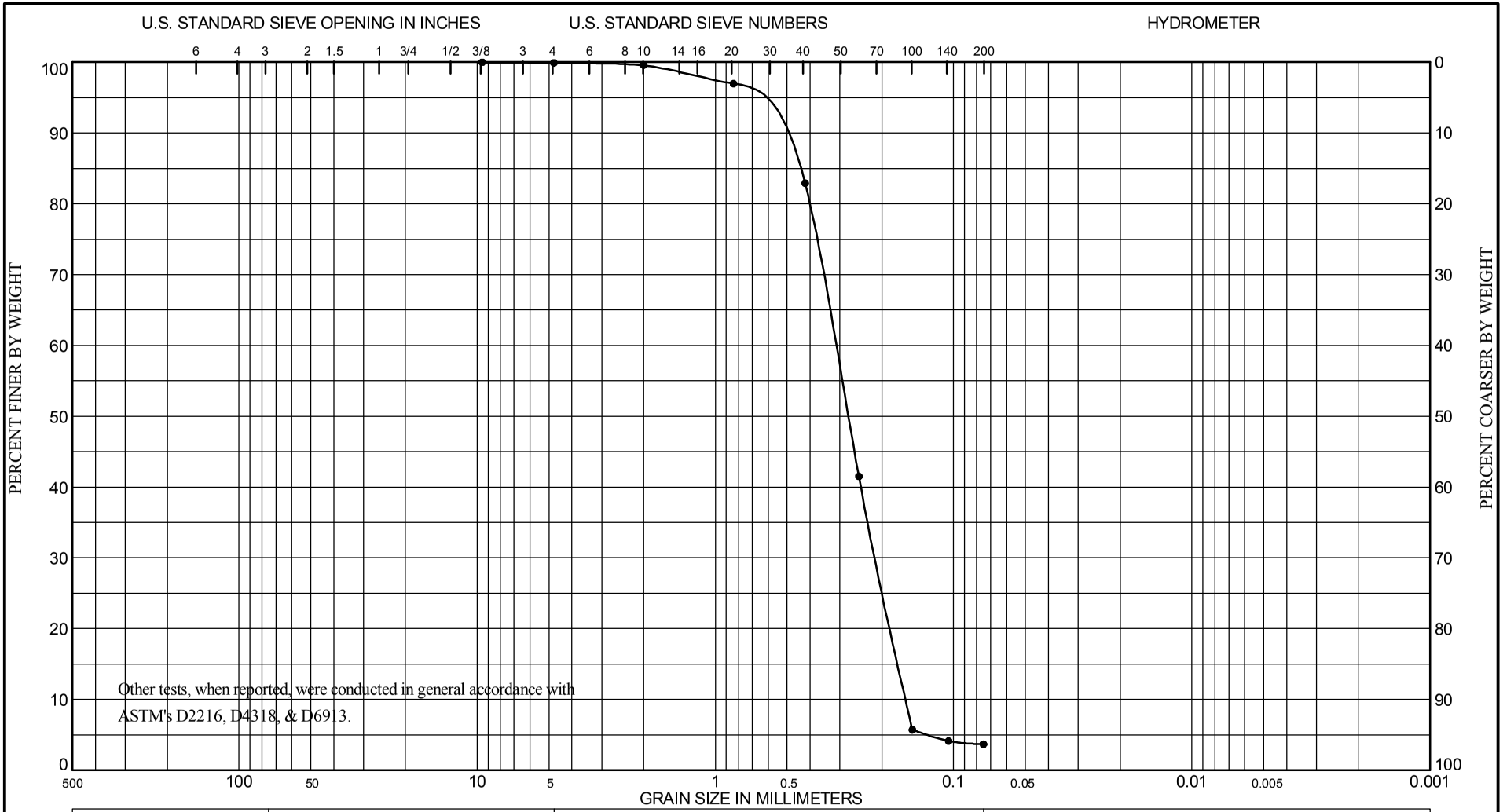
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15037° Long = -88.41409°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

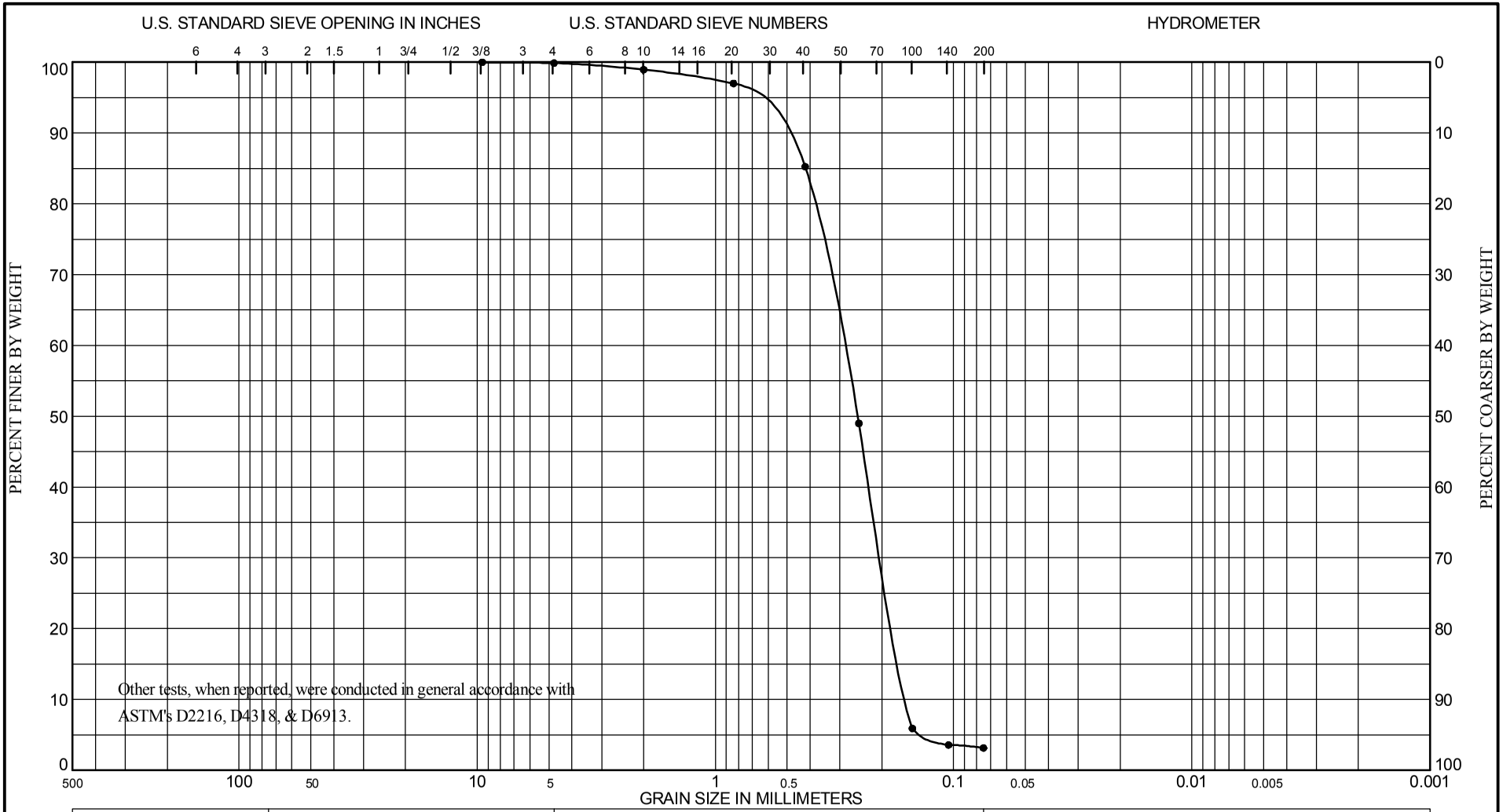
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.5 to 1.3	Greenish Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4810
Hole No. BI-PBS-343-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

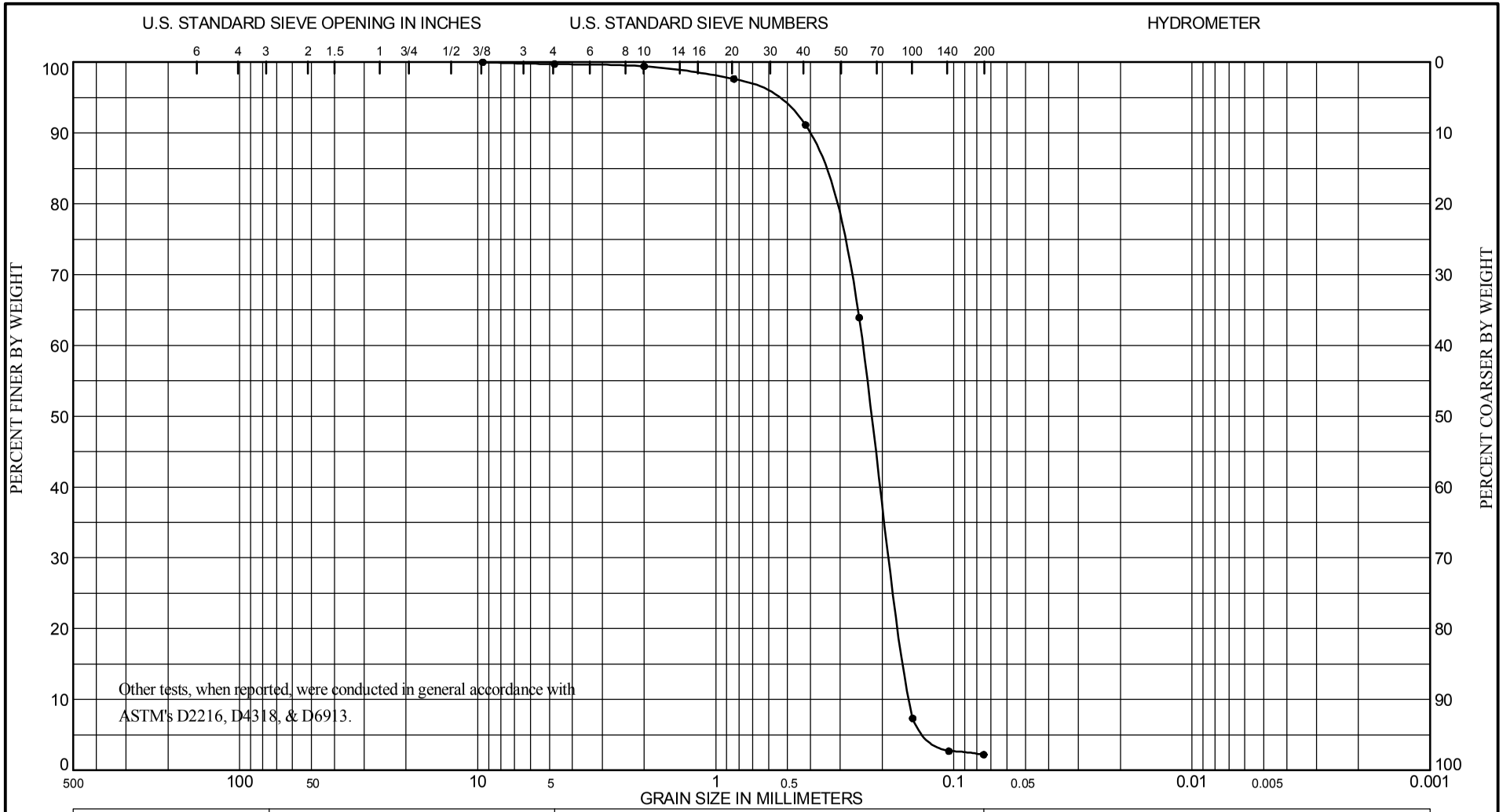
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	1.3 to 4.0	Greenish Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4811
Hole No. BI-PBS-343-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	4.0 to 7.0	Greenish Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4812
Hole No. BI-PBS-343-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-344-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 2 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-344-13 — LOCATION COORDINATES: E = 1,117,615 N = 236,495	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 3 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 54.6 Ft.
	15. DATE BORING — STARTED: 02-09-14 — COMPLETED: 02-09-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -56.5 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: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-56.5	0.0				
-57.3	0.8		CLAY, lean, firm to soft, medium gray (CL)	NS	
-57.6	1.1		SAND, clayey, mostly fine-grained sand-sized quartz, medium gray (SC)		
-63.5	7.0		SAND, silty, mostly fine to medium-grained sand-sized quartz, few shell fragments, lt. to medium gray (SM) At El. -61.5 Ft., trace clay 5.0 to 5.3 ft.	A	Classification: SP Color: 2.5Y 6/1-gray D50: 0.213 mm % Fines: 3.3
-65.0	8.5		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few shell fragments, lt. gray (SP-SM)	B	Classification: SP Color: 2.5Y 6/1-gray D50: 0.199 mm % Fines: 3.9
-69.5	13.0		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, medium gray (SM) At El. -66.5 Ft., high fines content to base of unit	C	Classification: SP Color: 2.5Y 6/1-gray D50: 0.194 mm % Fines: 4.7
-70.5	14.0		SILT, inorganic-L, trace shell fragments, sandy, medium to dark gray (ML)		
-75.5	19.0		SAND, clayey, mostly fine-grained sand-sized quartz, trace shell fragments, medium to dark gray (SC)	NS	
-76.5	20.0		CLAY, lean, trace shell fragments, sandy, medium to 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.

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14964° Long = -88.41138°

DRILLING LOG (Cont. Sheet)	INSTALLATION Mobile District		SHEET 2 OF 2 SHEETS
PROJECT MsCIP Barrier Island Restoration	COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83	VERTICAL NAVD88
LOCATION COORDINATES X = 1,117,615 Y = 236,495	ELEVATION TOP OF BORING -56.5 Ft.		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
			3. Seafloor elevation determined from 2013 USGS geophysical survey.		

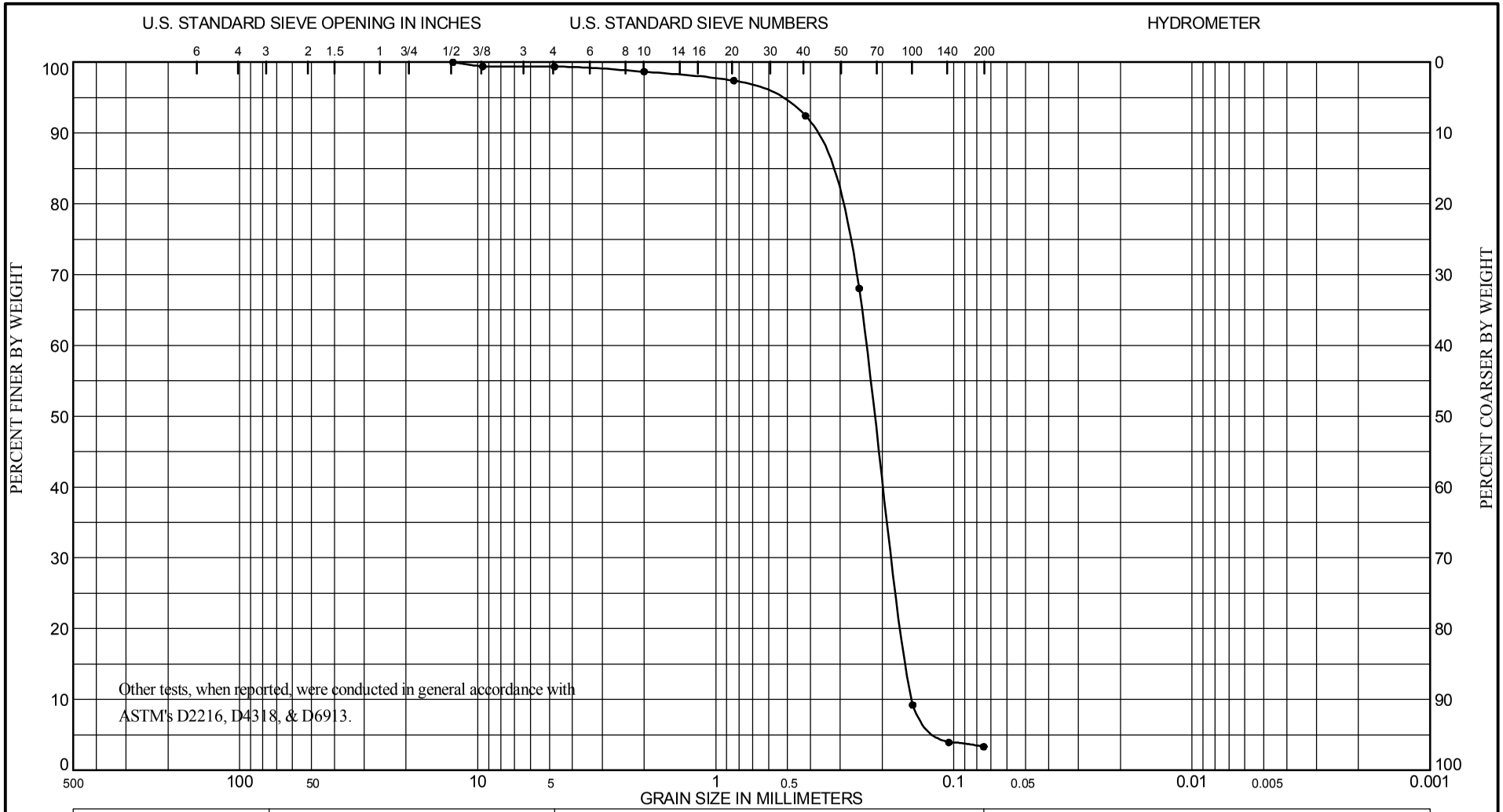
30
35
40
45
50
55
60

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14964° Long = -88.41138°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

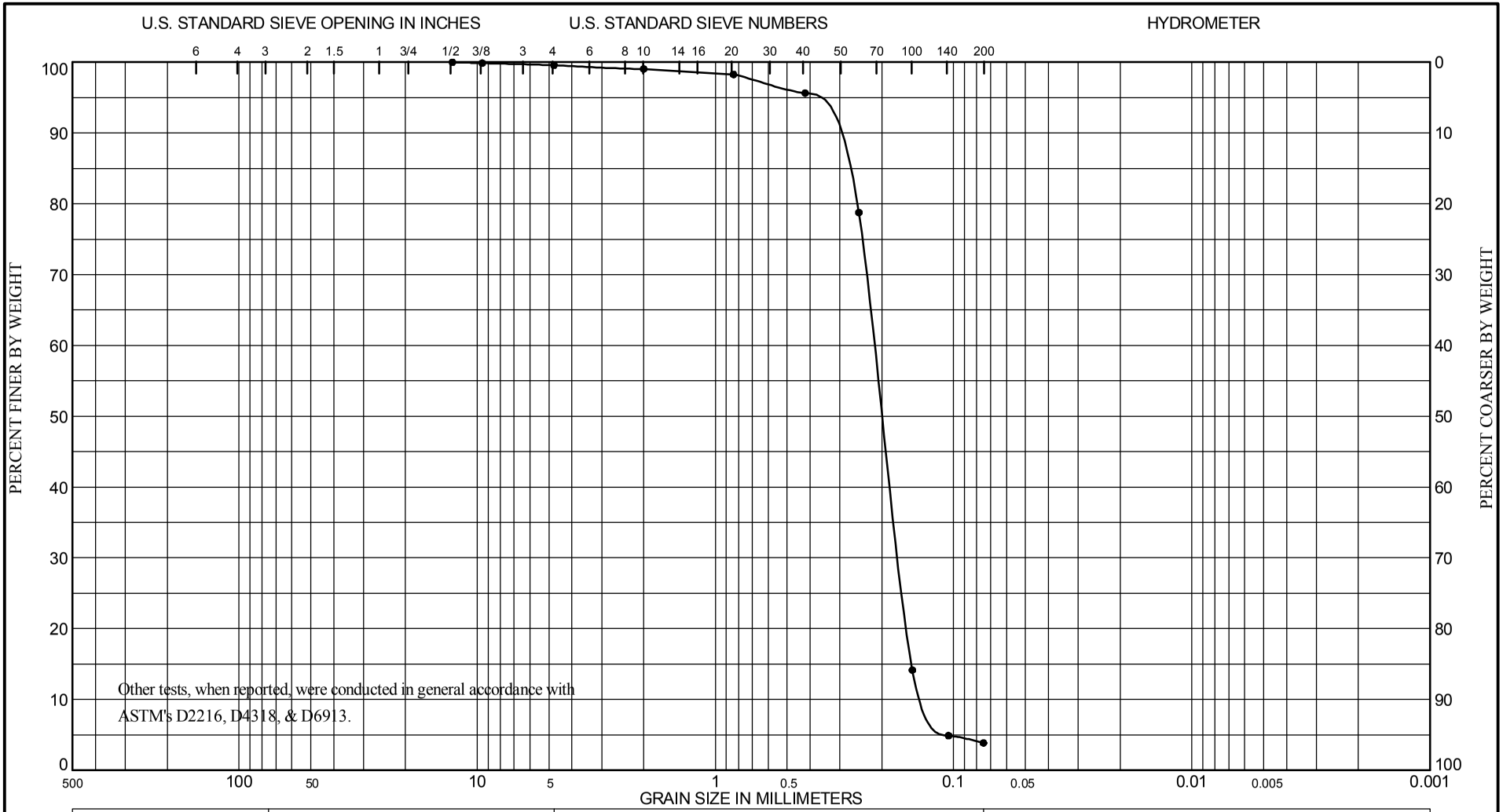
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	1.1 to 7.0	Greenish Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4813
Hole No. BI-PBS-344-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

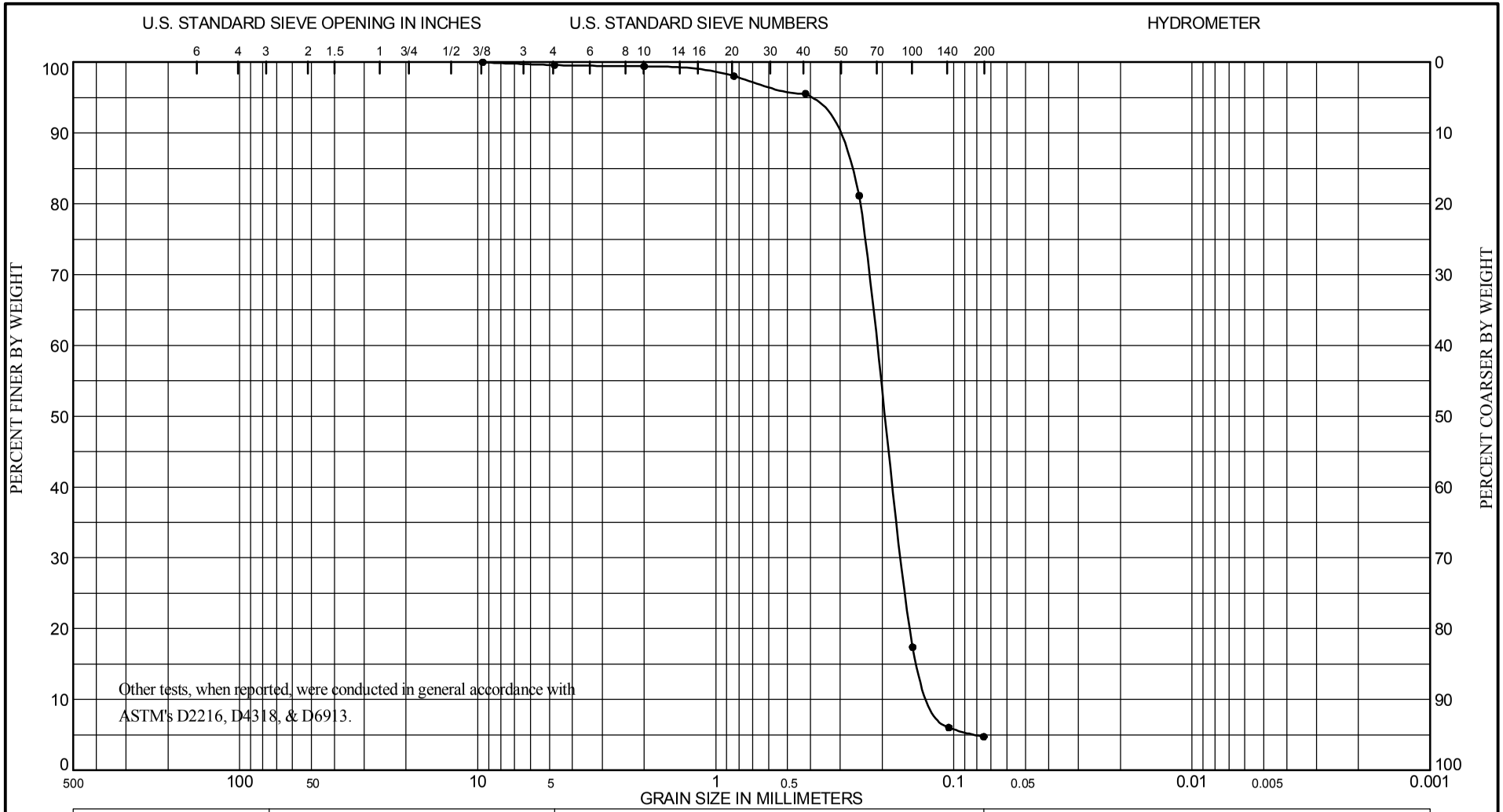
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	7.0 to 8.5	Greenish Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4814
Hole No. BI-PBS-344-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	8.5 to 10.0	Greenish Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4815
Hole No. BI-PBS-344-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-345-13

DRILLING LOG	DIVISION South Atlantic	INSTALLATION Mobile District	SHEET 1 OF 2 SHEETS

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS West
2. BORING DESIGNATION	BI-PBS-345-13
LOCATION COORDINATES	E = 1,118,602 N = 236,193
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	20.0 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED 0 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	55.3 Ft.
15. DATE BORING	STARTED 02-09-14 / COMPLETED 02-09-14
16. ELEVATION TOP OF BORING	-55.4 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-55.4	0.0				
-61.3	5.9		CLAY, lean, trace shell fragments, soft to 2.5 ft. depth, firm to base of unit, sandy and non-sandy, medium gray (CL)		
-71.4	16.0		SAND, silty, mostly fine to medium-grained sand-sized quartz, few shell fragments, medium to lt. gry (SM) At El. -63.4 Ft., fine-grained sand-sized to base of unit At El. -68.4 Ft., medium dark At El. -69.4 Ft., high fines content to base of unit	NS	
-75.4	20.0		SAND, clayey, mostly fine-grained sand-sized quartz, trace shell fragments, medium dark 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.

3. Seafloor elevation calculated using sampling

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14880° Long = -88.40826°

DRILLING LOG (Cont. Sheet)	INSTALLATION Mobile District		SHEET 2 OF 2 SHEETS
PROJECT MsCIP Barrier Island Restoration	COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83	VERTICAL NAVD88
LOCATION COORDINATES X = 1,118,602 Y = 236,193	ELEVATION TOP OF BORING -55.4 Ft.		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
			vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.		

30
35
40
45
50
55
60

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14880° Long = -88.40826°

Boring Designation BI-PBS-354-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-354-13 — LOCATION COORDINATES: E = 1,111,973 N = 238,173	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 3 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 53.3 Ft.
	15. DATE BORING — STARTED: 02-09-14 — COMPLETED: 02-09-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -52.3 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 16.9 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-52.3	0.0				
-55.8	3.5		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, lt. to medium gray (SM)	A	Classification: SP Color: 2.5Y 6/1-gray D50: 0.253 mm % Fines: 3.6
-60.8	8.5		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few shell fragments, lt. to medium gray (SP-SM) At El. -57.3 Ft., lt. gray to depth of 8.5 ft.	B	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.259 mm % Fines: 2
-63.3	11.0		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few shell fragments, lt. to medium gray (SP-SM) At El. -62.8 Ft., trace shell fragments to base of unit	C	Classification: SP Color: 2.5Y 6/1-gray D50: 0.232 mm % Fines: 3
-65.3	13.0		SAND, silty, mostly fine-grained sand-sized quartz, trace shell fragments, medium gray (SM) At El. -64.3 Ft., high fines content to base of unit	NS	
-68.3	16.0		SILT, inorganic-L, trace shell fragments, sandy, medium gray (ML)		
-69.2	16.9		SAND, clayey, mostly fine-grained sand-sized quartz, trace shell fragments, medium 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.

3. Seafloor elevation determined from 10/29/2014 USACE survey.

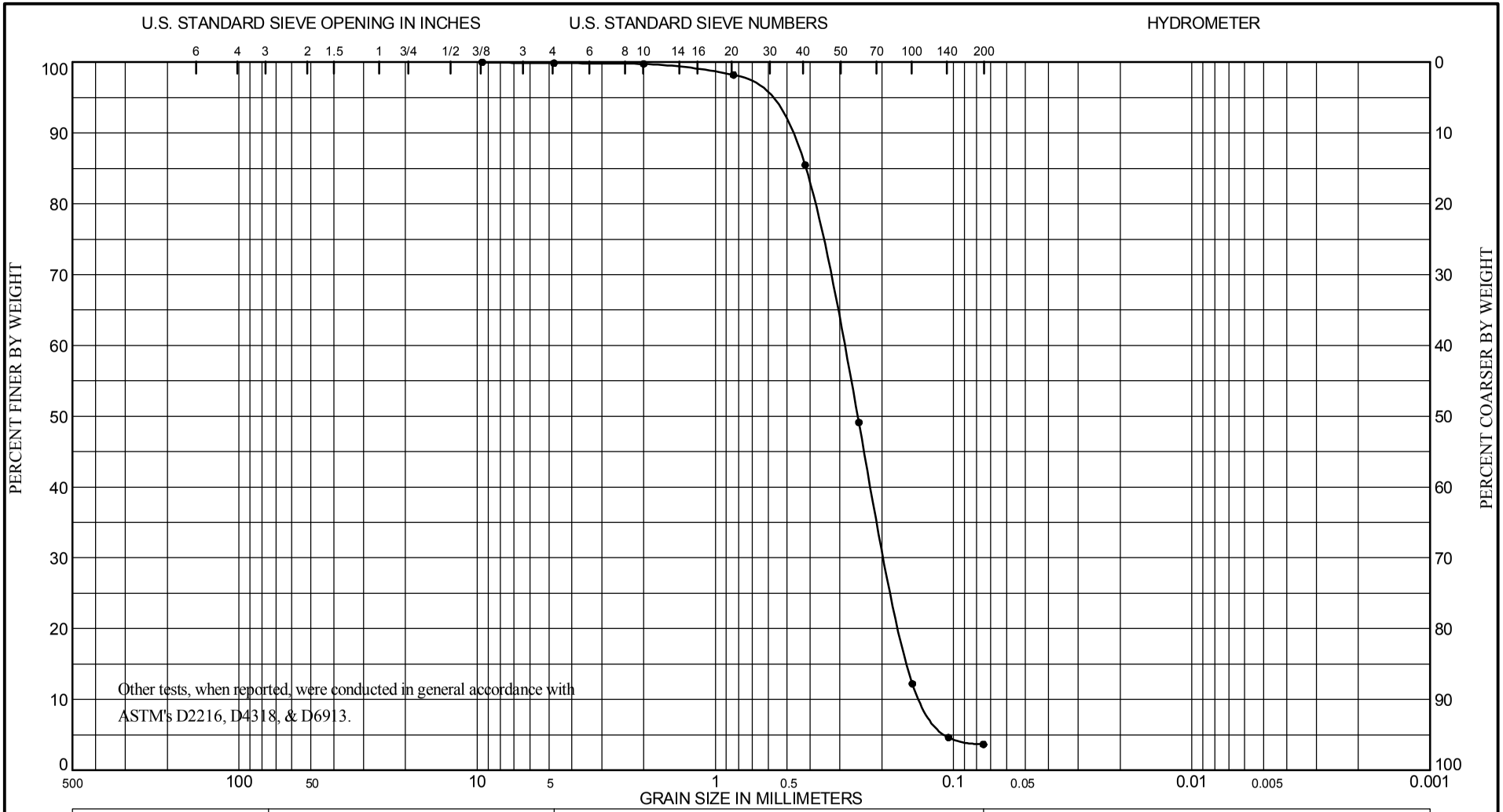
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15431° Long = -88.42921°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

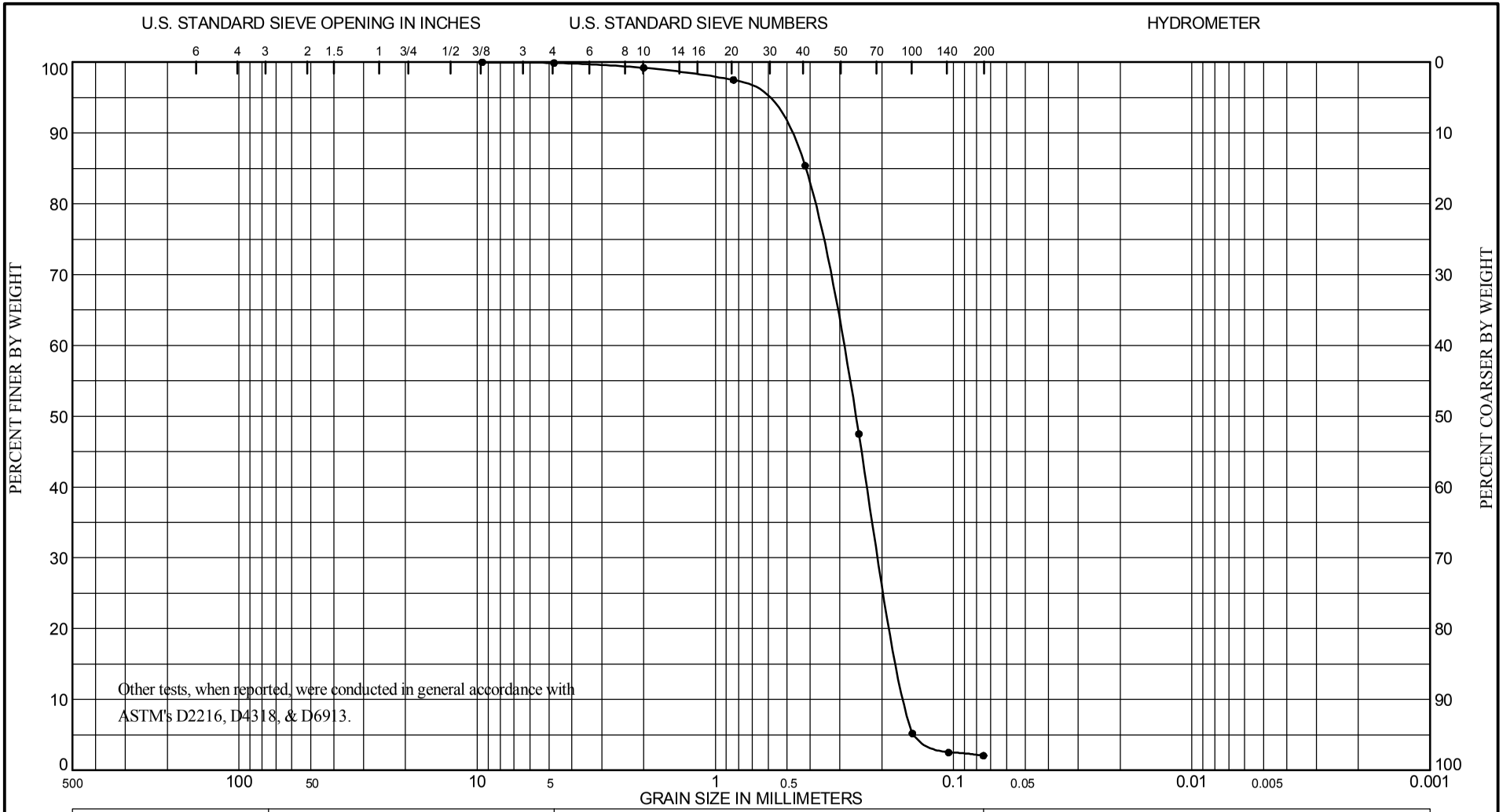
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 3.5	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4816
Hole No. BI-PBS-354-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

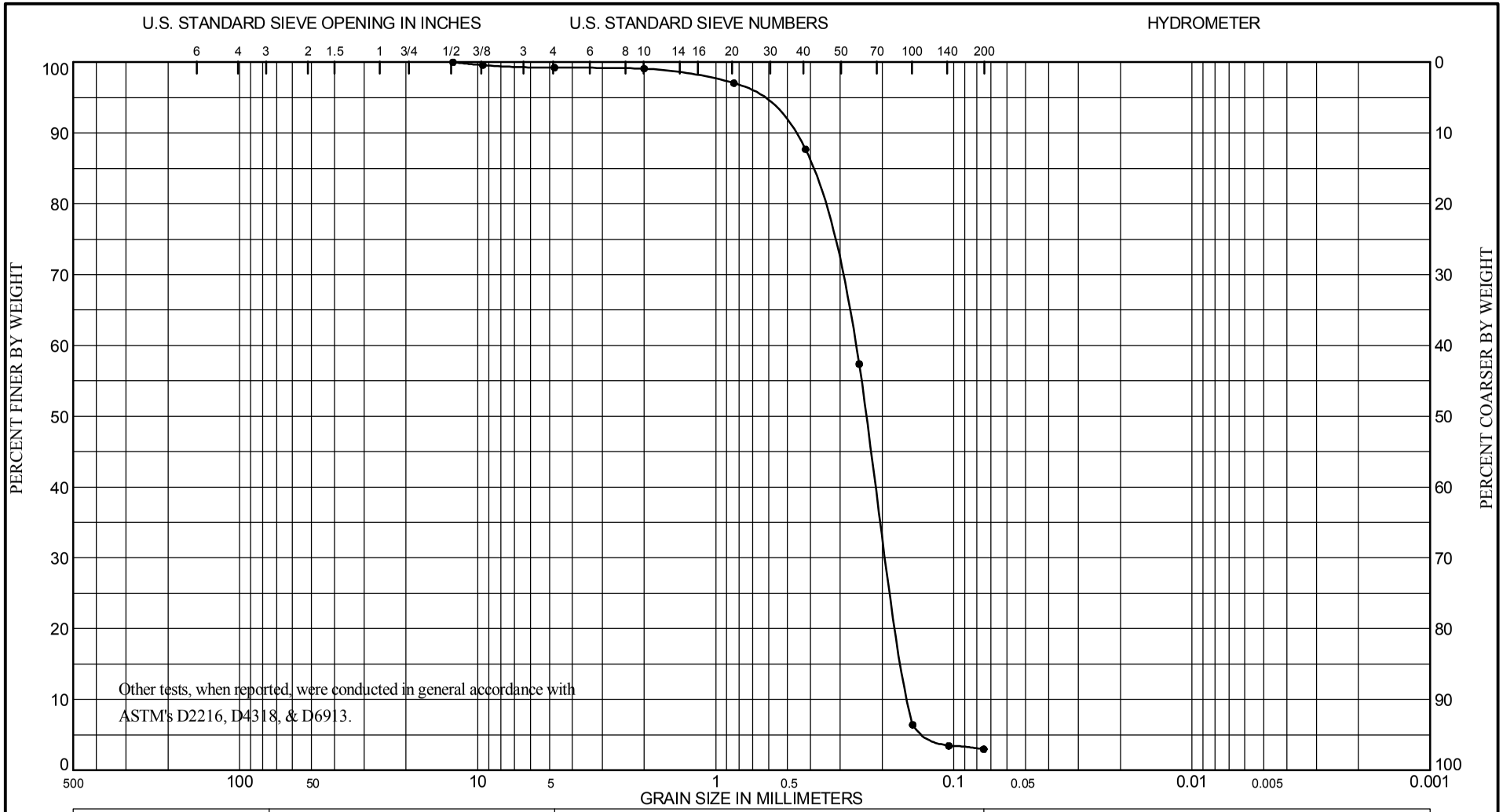
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	3.5 to 8.5	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4817
Hole No. BI-PBS-354-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	8.5 to 11.0	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4818
Hole No. BI-PBS-354-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-355-13

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
	South Atlantic	Mobile District	

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS West
2. BORING DESIGNATION	BI-PBS-355-13
LOCATION COORDINATES	E = 1,113,639 N = 238,066
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	18.0 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED 4 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	53.3 Ft.
15. DATE BORING	STARTED 02-09-14 / COMPLETED 02-09-14
16. ELEVATION TOP OF BORING	-53.1 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-53.1	0.0				
-56.7	3.6		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, trace shell fragments, lt. to medium gray (SP-SM)	A	Classification: SP Color: 2.5Y 6/1-gray D50: 0.297 mm % Fines: 3
-61.7	8.6		SAND, poorly-graded with silt, mostly fine to medium-grained sand-sized quartz, few shell fragments, lt. gray (SP-SM)	B	Classification: SP Color: 2.5Y 6/1-gray D50: 0.309 mm % Fines: 2.5
-65.6	12.5		SAND, poorly-graded, mostly fine-grained sand-sized quartz, few shell fragments, lt. gray (SP)	C	Classification: SP Color: 2.5Y 6/1-gray D50: 0.254 mm % Fines: 2.5
-69.1	16.0		SAND, silty, mostly fine-grained sand-sized quartz, trace shell fragments, medium gray (SM)	D	Classification: SP-SM Color: 2.5Y 6/1-gray D50: 0.196 mm % Fines: 6.2
-71.1	18.0		SILT, inorganic-L, few shell fragments, sandy, medium dark gray (ML)	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.

3. Seafloor elevation determined from 10/29/2014 USACE survey.

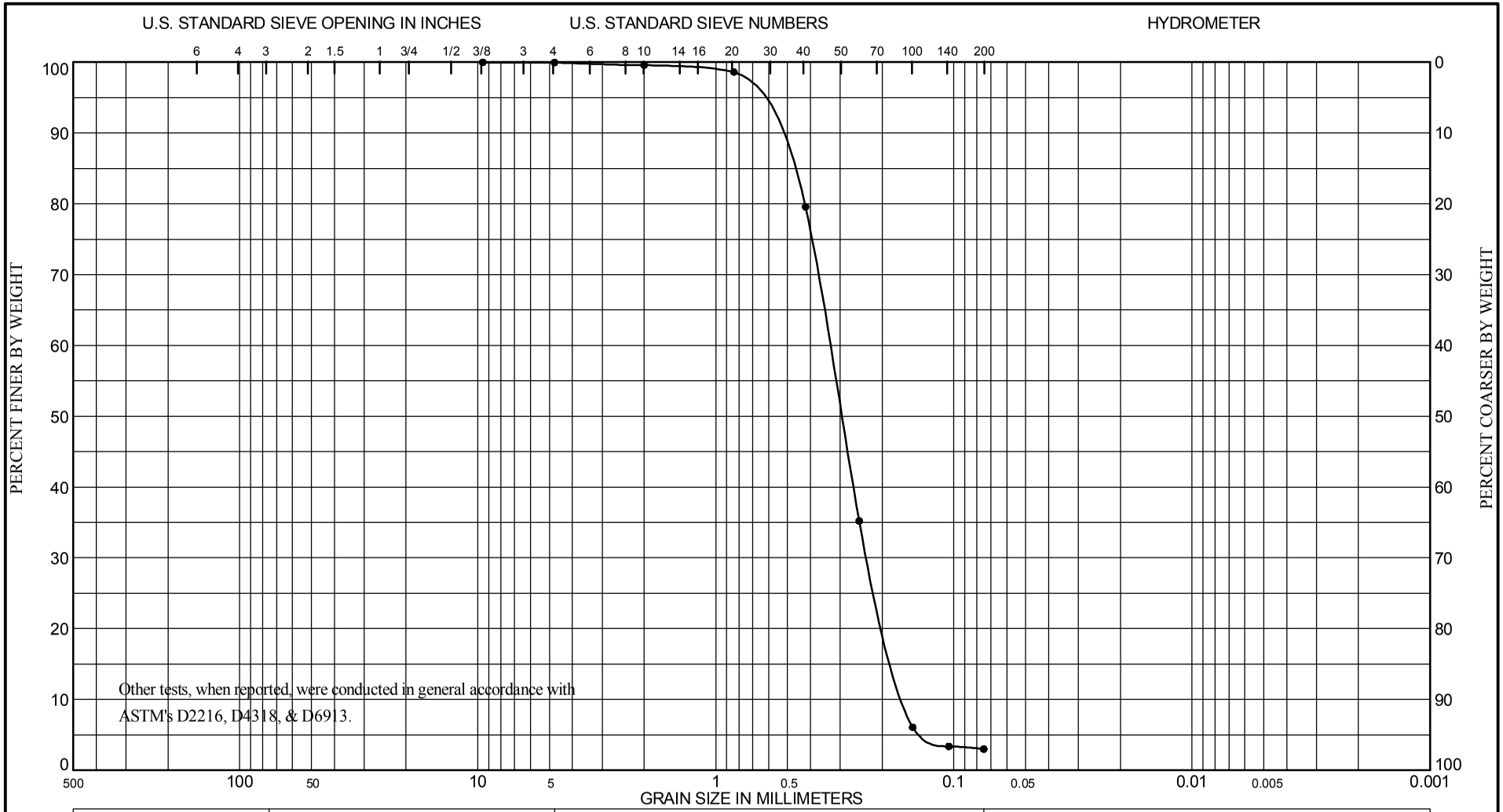
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15400° Long = -88.42394°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

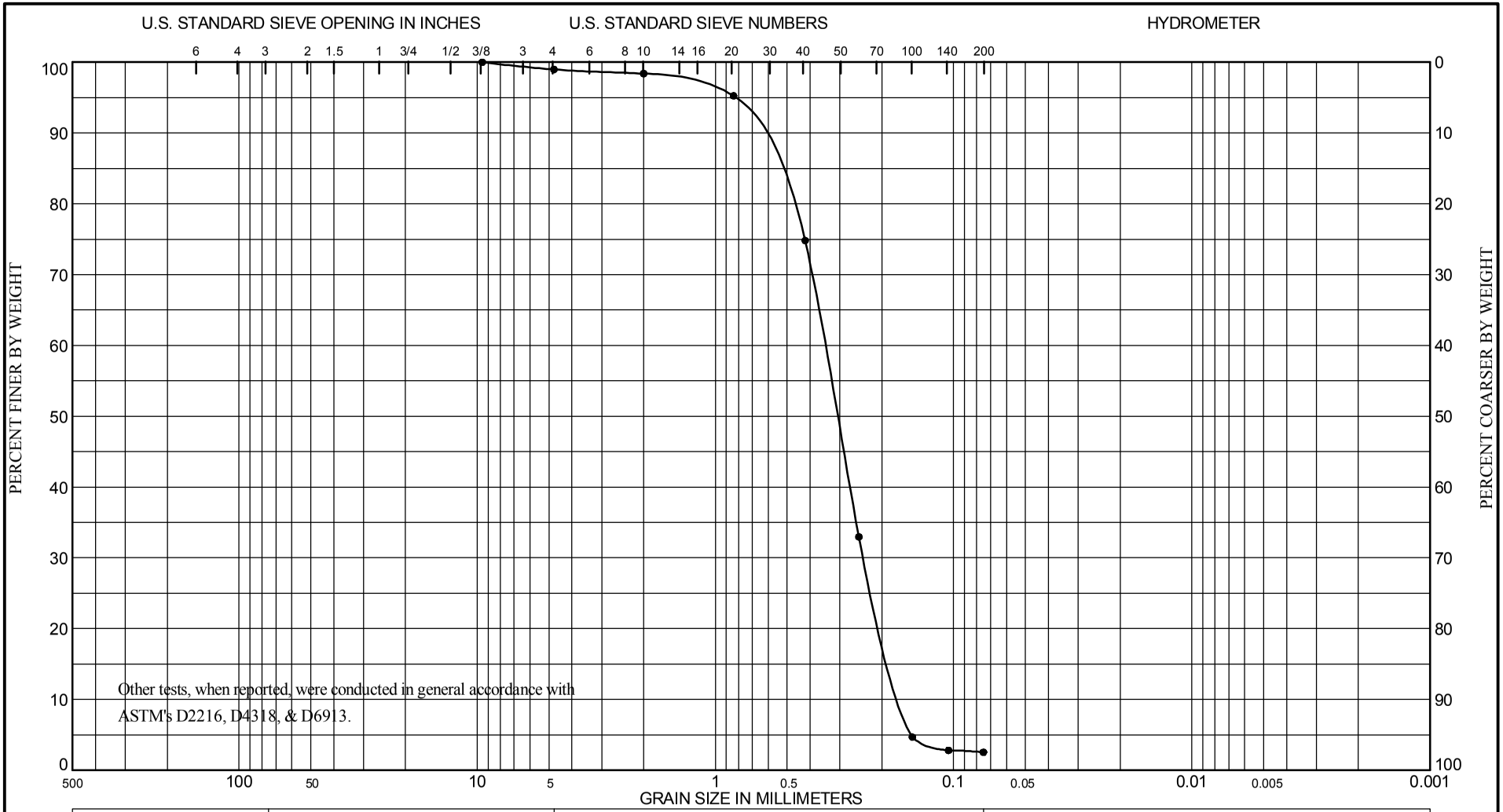
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 3.6	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4819
Hole No. BI-PBS-355-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

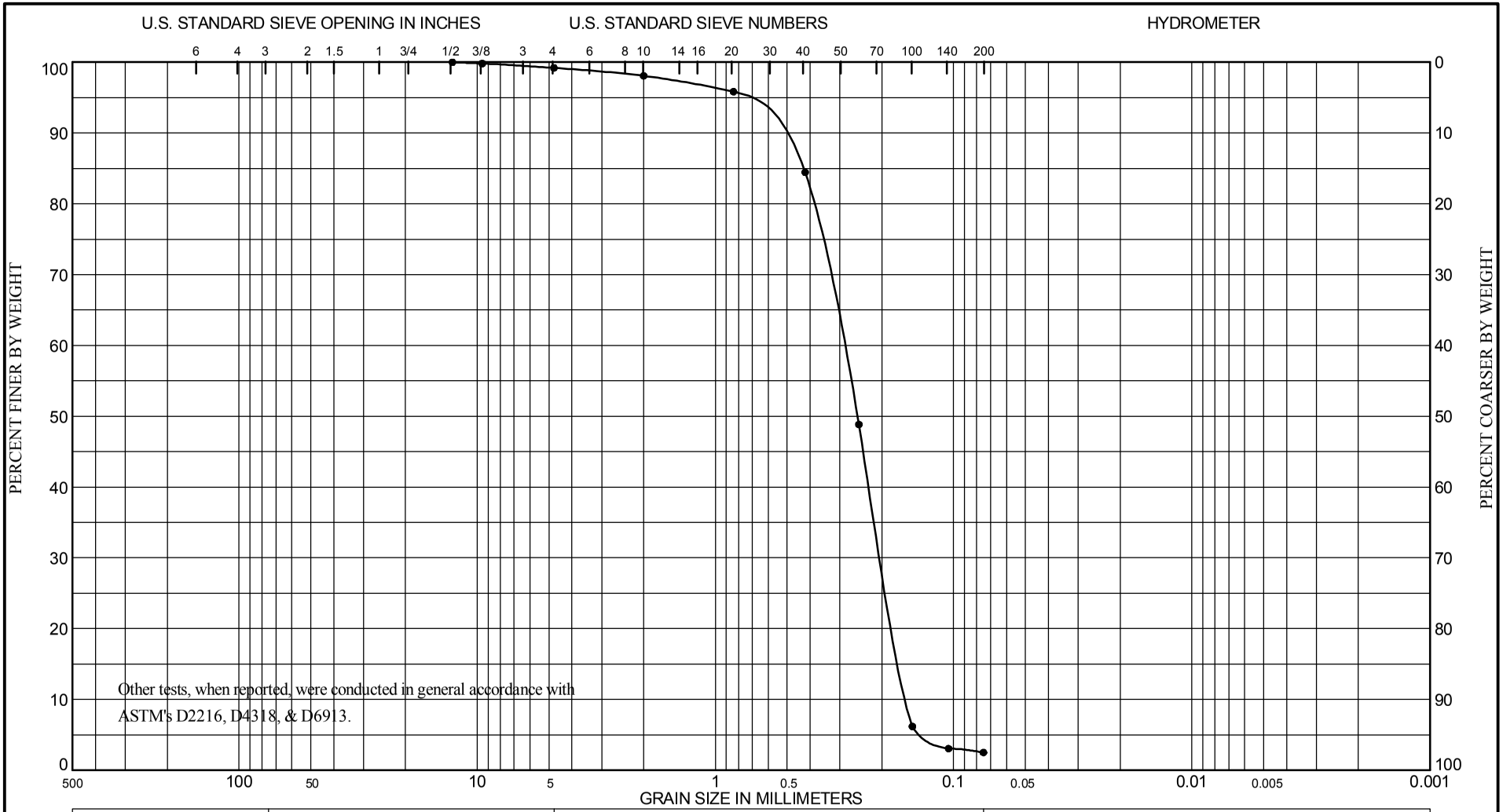
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	3.6 to 8.6	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4820
Hole No. BI-PBS-355-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	8.6 to 12.5	Gray, Poorly Graded Sand (SP).				

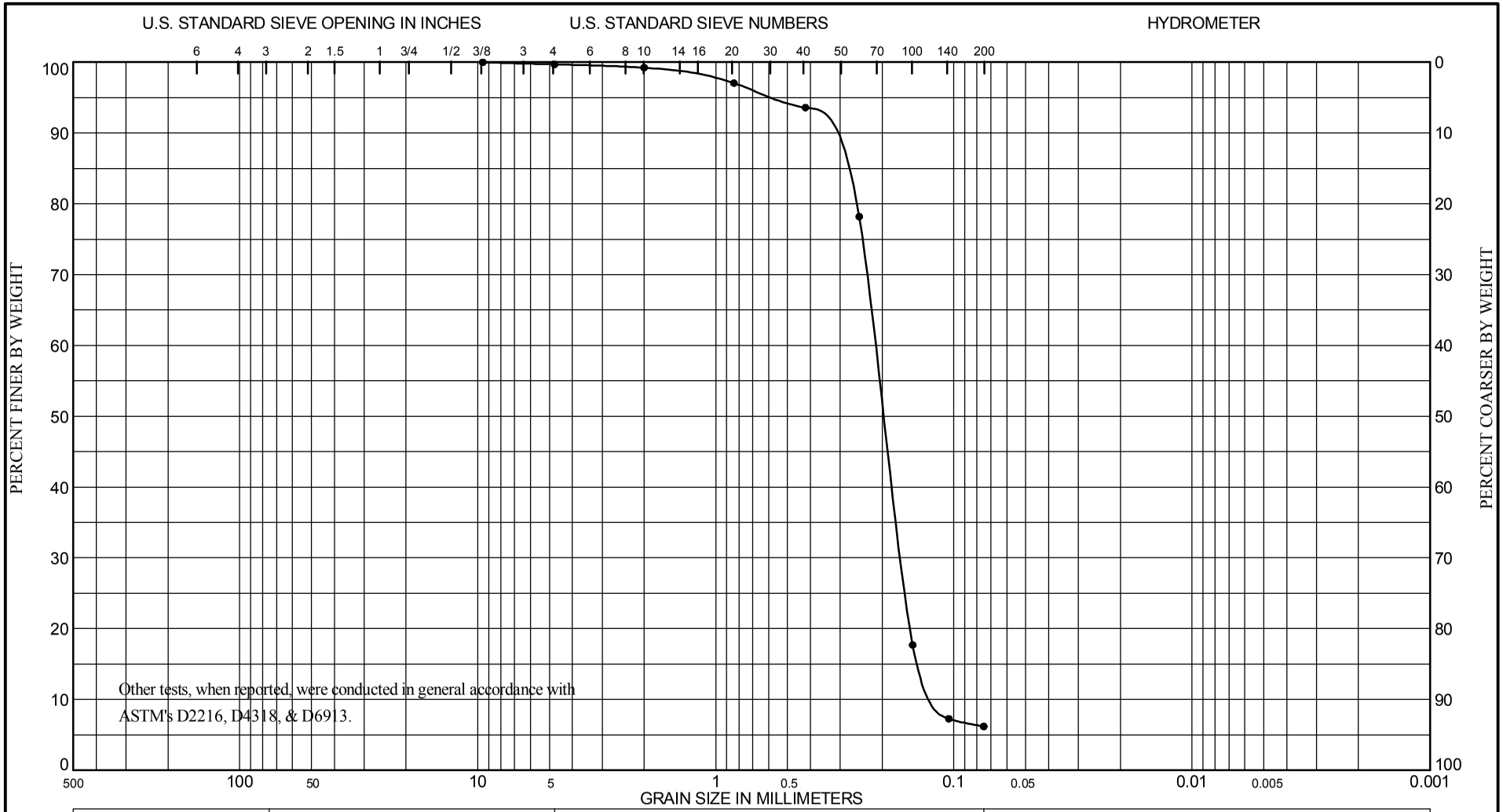
Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4821
Hole No. BI-PBS-355-13
Date 4/23/14

GRADATION CURVES

K-1077

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
D	12.5 to 16.0	Greenish Gray, Poorly Graded Silty Sand (SP-SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4822
Hole No. BI-PBS-355-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-356-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-356-13 — LOCATION COORDINATES: E = 1,115,018 N = 237,853	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 4 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 55 Ft.
	15. DATE BORING — STARTED: 02-09-14 — COMPLETED: 02-09-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -52.4 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 17.1 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-52.4	0.0				
-57.6	5.2		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few shell fragments, lt. grayish brown (SP-SM)	A	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.294 mm % Fines: 2.7
-64.4	12.0		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little shell fragments, lt. gray (SP)	B	Classification: SP Color: 2.5Y 6/1-gray D50: 0.388 mm % Fines: 2.2
			At El. -62.3 Ft., mostly fine to medium-grained sand-sized quartz, trace shell fragments, lt. gray	C	Classification: SP Color: 2.5Y 6/1-gray D50: 0.27 mm % Fines: 2.1
-67.7	15.3		SAND, silty, mostly fine-grained sand-sized quartz, trace shell fragments, medium to dark gray (SM) At El. -66.4 Ft., high fines to base of unit	D	Classification: SP-SM Color: 2.5Y 6/1-gray D50: 0.204 mm % Fines: 6.2
-69.5	17.1		SAND, clayey, mostly fine-grained sand-sized quartz, trace shell fragments, medium to 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.

3. Seafloor elevation determined from 10/29/2014 USACE survey.

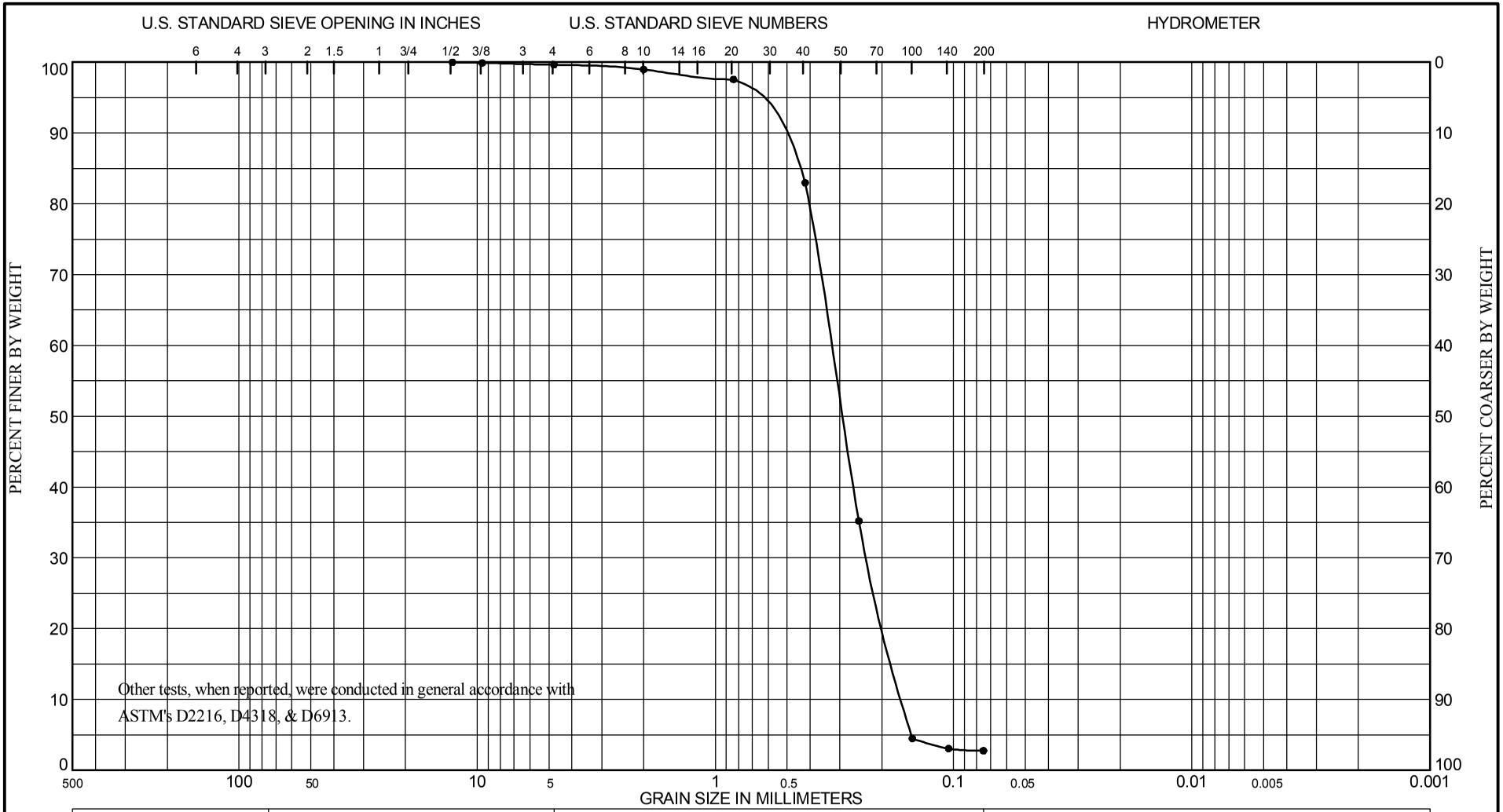
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15340° Long = -88.41958°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

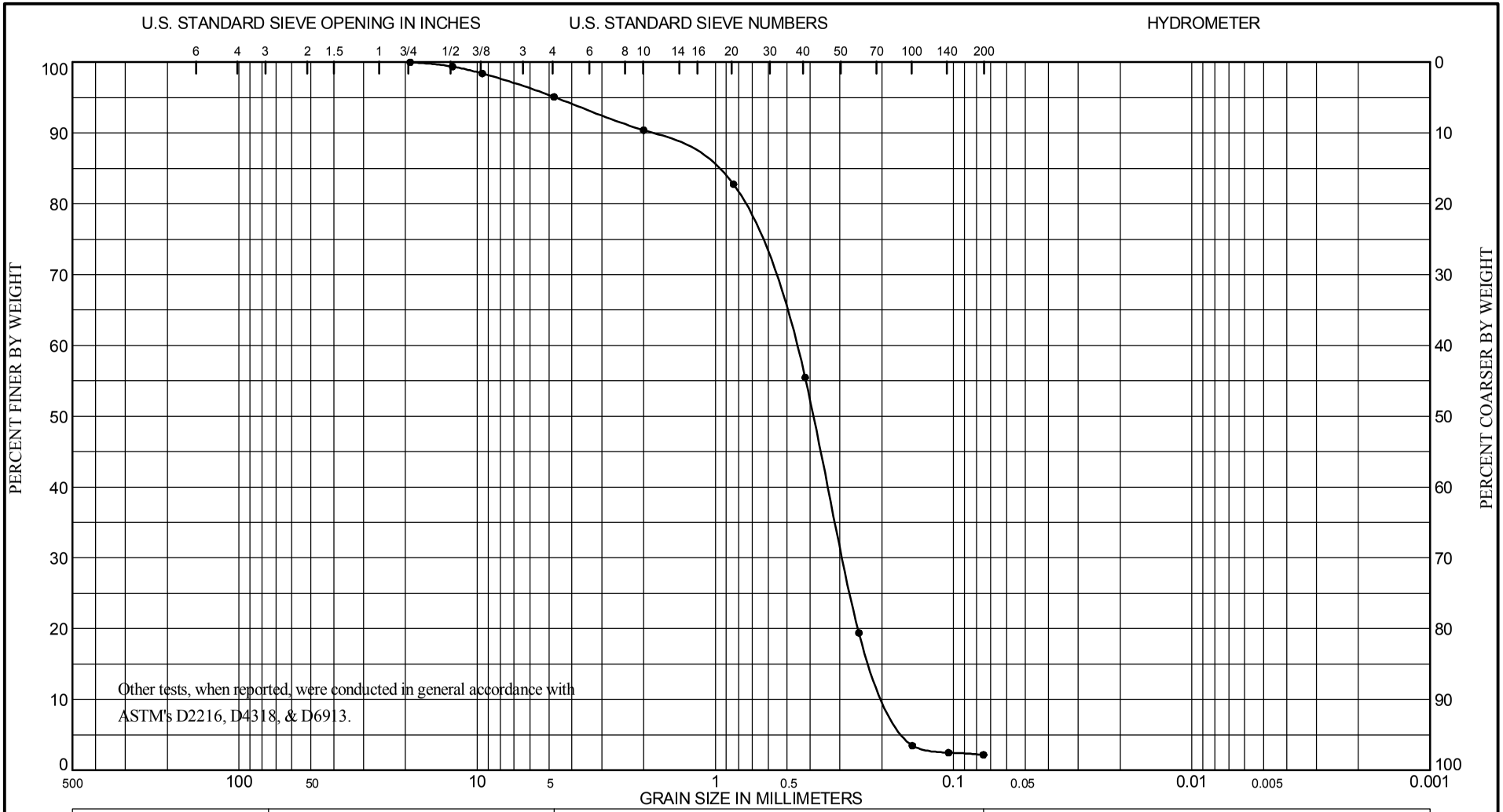
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 5.2	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4823
Hole No. BI-PBS-356-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

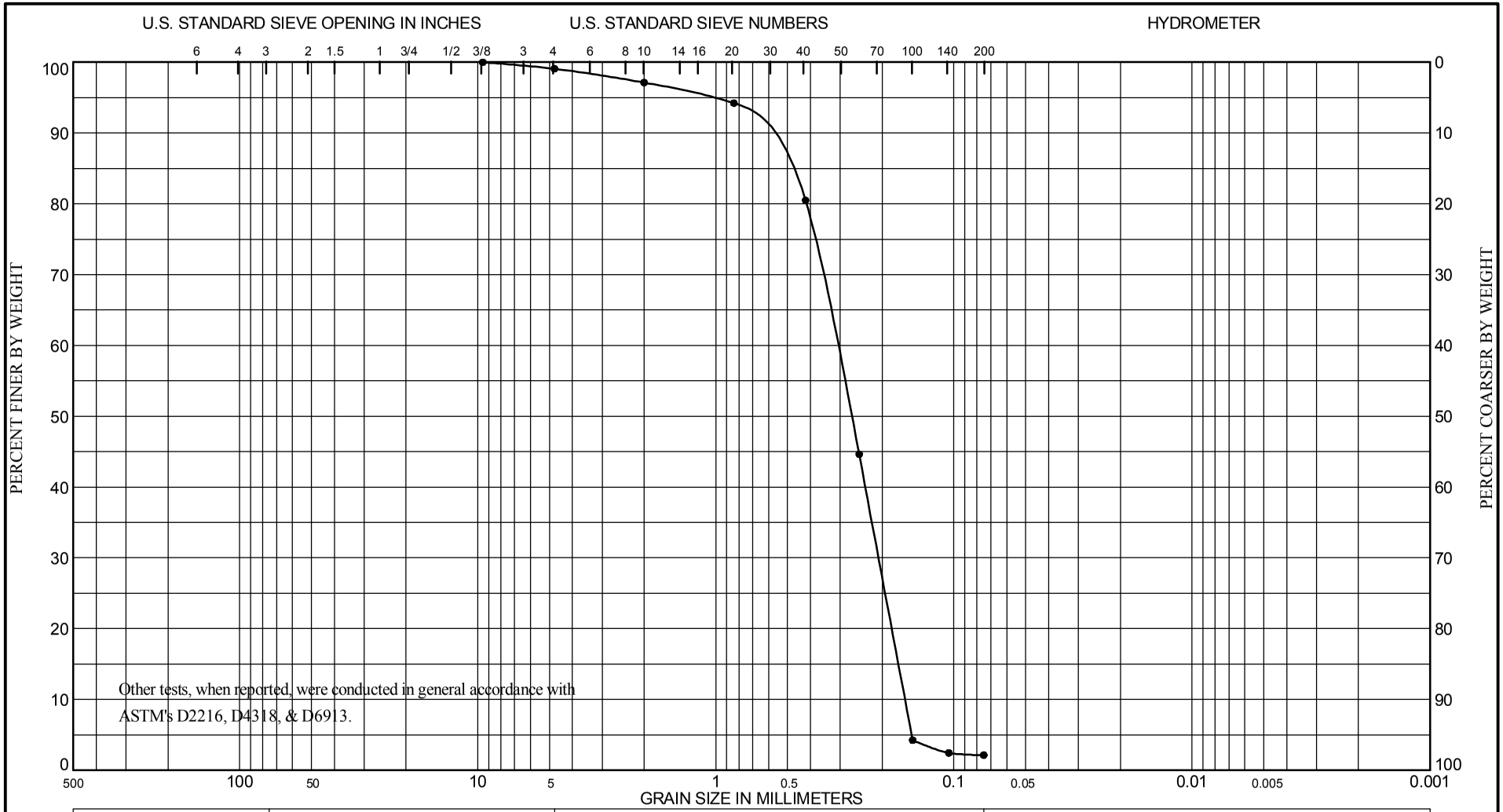
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	5.2 to 9.9	Gray, Poorly Graded Sand (SP), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4824
Hole No. BI-PBS-356-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

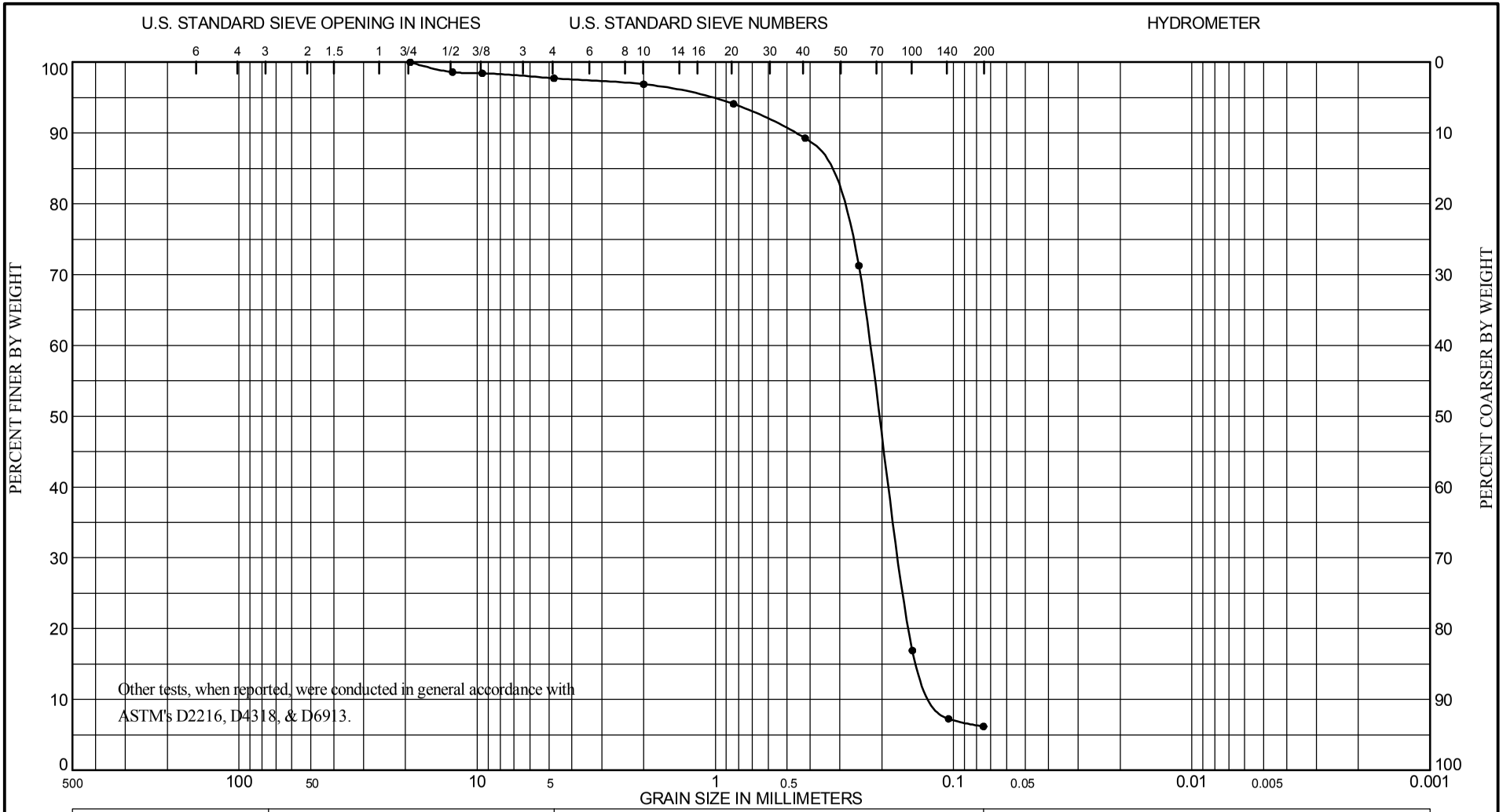
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	9.9 to 12.0	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4825
Hole No. BI-PBS-356-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
D	12.0 to 14.0	Greenish Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4826
Hole No. BI-PBS-356-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-357-13

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 2 SHEETS
	South Atlantic	Mobile District	

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS West
2. BORING DESIGNATION	BI-PBS-357-13
LOCATION COORDINATES	E = 1,116,388 N = 237,502
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	20.0 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED 0 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	54.3 Ft.
15. DATE BORING	STARTED 02-09-14 / COMPLETED 02-09-14
16. ELEVATION TOP OF BORING	-53.0 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-53.0	0.0				
-59.2	6.2		CLAY, lean, trace shell fragments, sandy, soft to 4 ft. depth, firm beneath, medium gray (CL)	NS	
-62.7	9.7		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, liquefied?, medium gray (SM)		
-69.0	16.0		SAND, poorly-graded with silt, and fine- to medium-grained sand-sized, lt. gray (SP-SM)		
-71.2	18.2		SAND, silty, few shell fragments, medium gray (SM)		
-73.0	20.0		SAND, clayey, trace shell fragments, medium 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.

3. Seafloor elevation determined from

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15242° Long = -88.41525°

DRILLING LOG (Cont. Sheet)	INSTALLATION Mobile District		SHEET 2 OF 2 SHEETS
PROJECT MsCIP Barrier Island Restoration	COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83	VERTICAL NAVD88
LOCATION COORDINATES X = 1,116,388 Y = 237,502	ELEVATION TOP OF BORING -53.0 Ft.		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
			10/29/2014 USACE survey.		

30
35
40
45
50
55
60

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15242° Long = -88.41525°

Boring Designation BI-PBS-361-13

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
	South Atlantic	Mobile District	

1. PROJECT MsCIP Barrier Island Restoration Petit Bois Pass-OCS West		9. SIZE AND TYPE OF BIT N/A	
		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83 / VERTICAL NAVD88
2. BORING DESIGNATION BI-PBS-361-13	LOCATION COORDINATES E = 1,112,866 N = 238,682	11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore	☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY Corps of Engineers - CESAM	CONTRACTOR FILE NO.	12. TOTAL SAMPLES	DISTURBED: 3 UNDISTURBED (UD): 0
4. NAME OF DRILLER Construction Solutions International, Inc.		13. TOTAL NUMBER CORE BOXES	
5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED	DEG. FROM VERTICAL / BEARING	14. WATER DEPTH 51.7 Ft.	
		15. DATE BORING	STARTED: 02-16-14 COMPLETED: 02-16-14
6. THICKNESS OF OVERBURDEN N/A		16. ELEVATION TOP OF BORING -51.0 Ft.	
7. DEPTH DRILLED INTO ROCK N/A		17. TOTAL RECOVERY FOR BORING 100%	
8. TOTAL DEPTH OF BORING 16.9 Ft.		18. SIGNATURE AND TITLE OF INSPECTOR Tom Powers, Geologist	

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-51.0	0.0				
-56.0	5.0		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, lt. to medium gray (SP)	A	Classification: SP Color: 2.5Y 6/1-gray D50: 0.29 mm % Fines: 2.3
-63.0	12.0		SAND, poorly-graded with silt, mostly fine to medium-grained sand-sized quartz, few shell fragments, lt. to medium gray (SP-SM)	B	Classification: SP Color: 2.5Y 6/1-gray D50: 0.301 mm % Fines: 3.3
				C	Classification: SP Color: 2.5Y 6/1-gray D50: 0.247 mm % Fines: 3.3
-67.9	16.9		SILT, inorganic-L, sandy, trace shell fragments, slightly plastic over bottom 1 ft., medium gray (ML)	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.

3. Seafloor elevation determined from 10/29/2014 USACE survey.

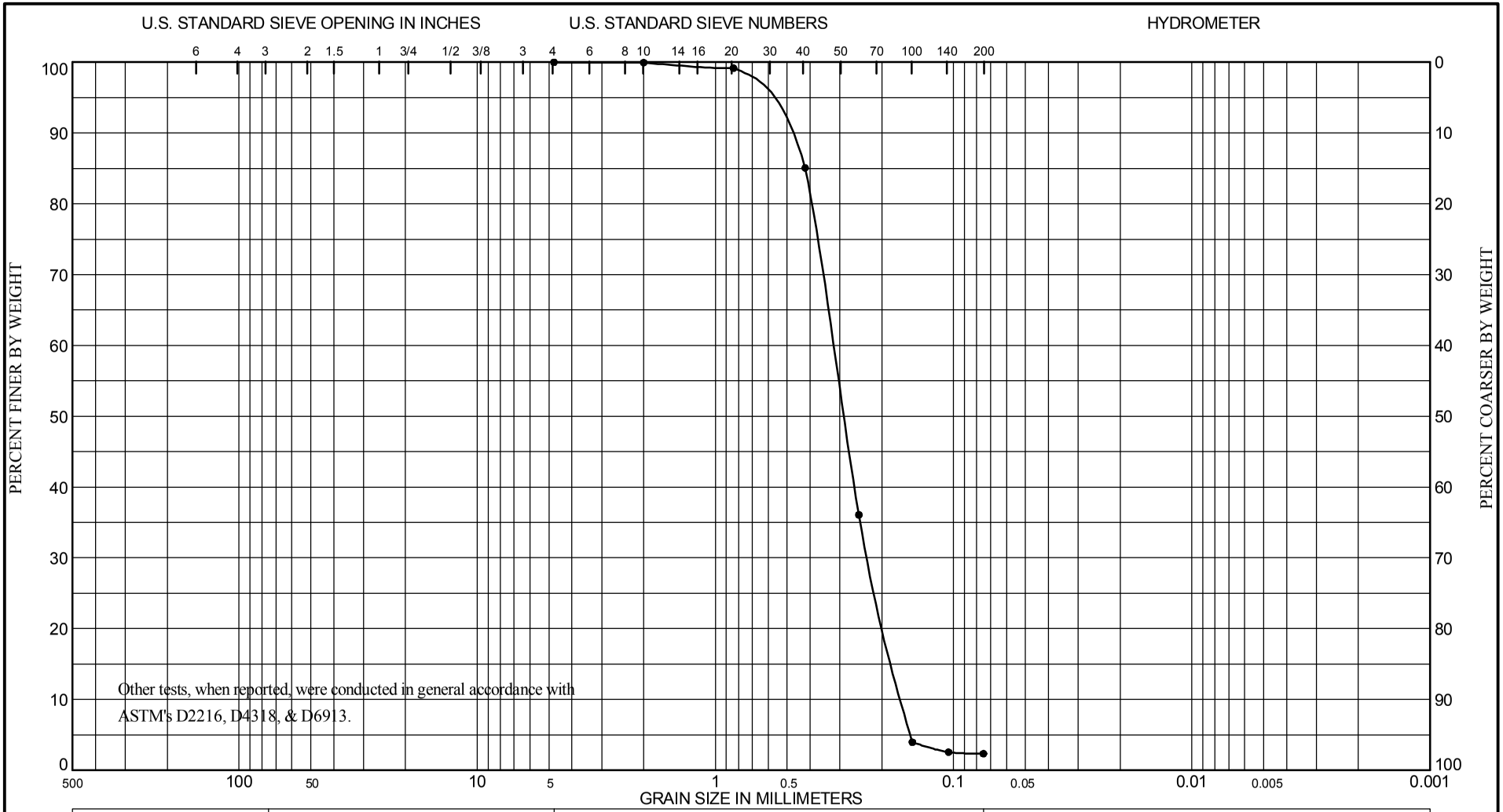
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15570° Long = -88.42638°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

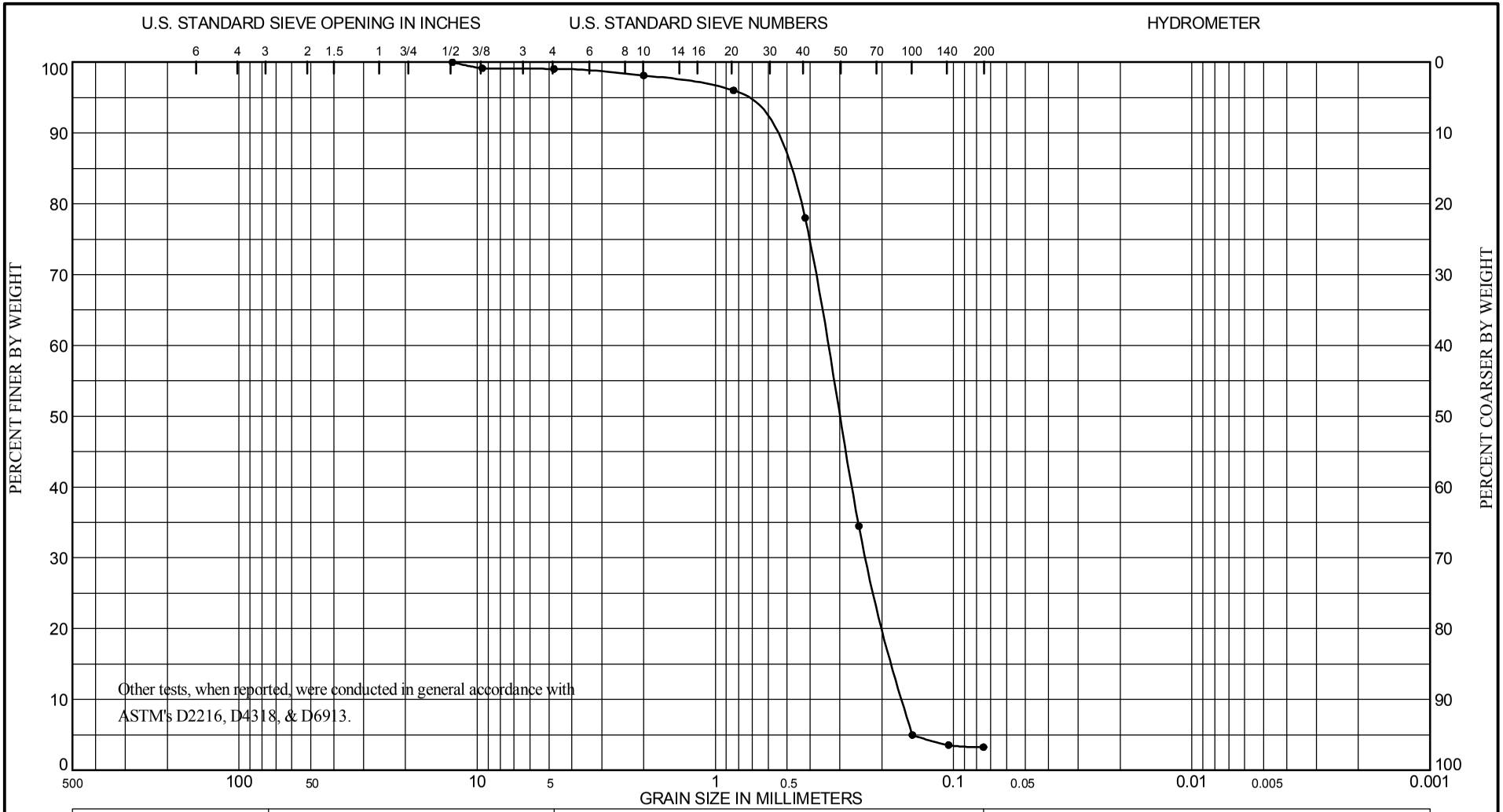
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 5.0	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4834
Hole No. BI-PBS-361-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

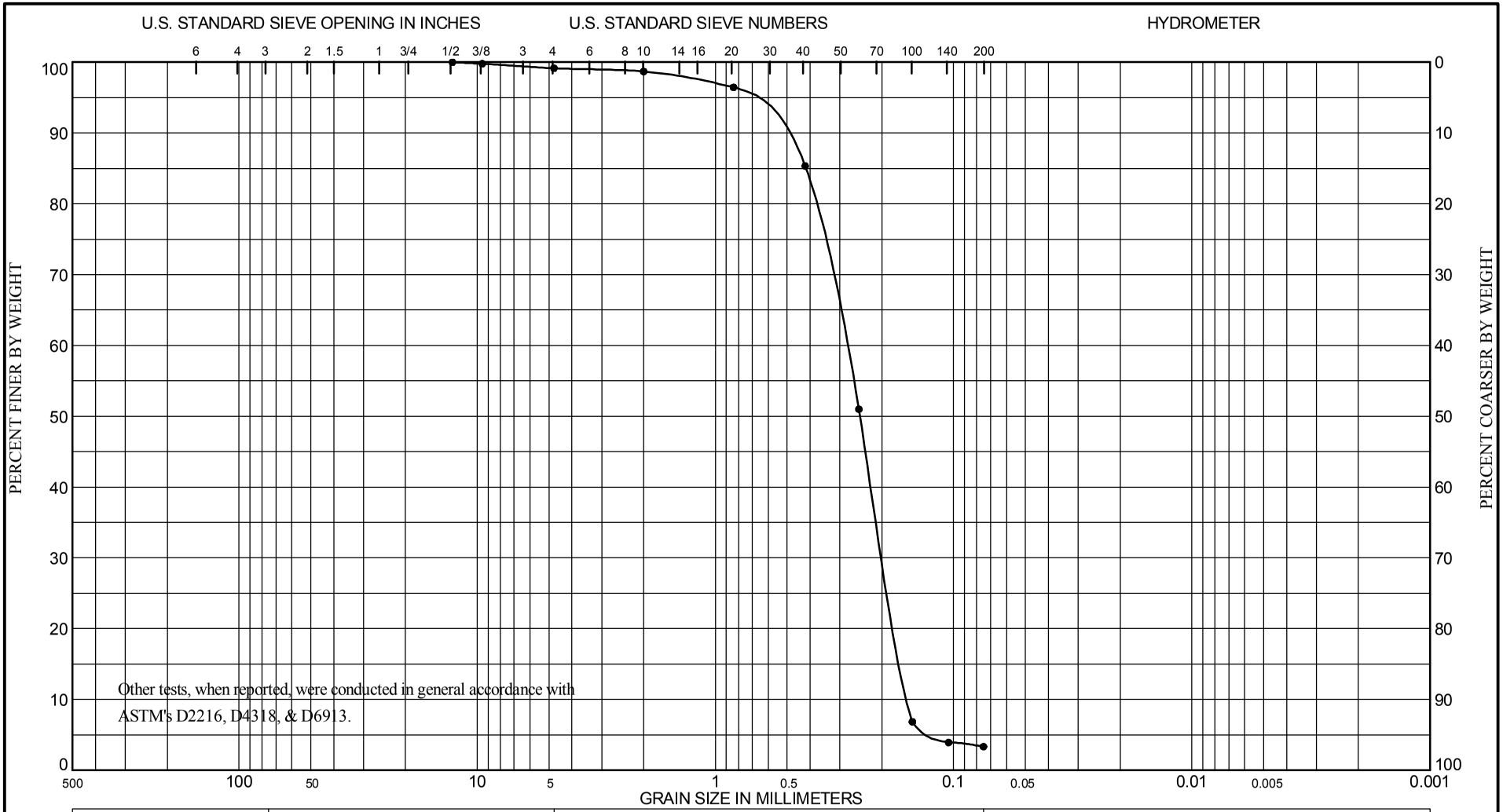
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	5.0 to 8.5	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4835
Hole No. BI-PBS-361-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	8.5 to 12.0	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4836
Hole No. BI-PBS-361-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-362-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-362-13 — LOCATION COORDINATES: E = 1,111,072 N = 238,272	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ 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: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 52.7 Ft.
	15. DATE BORING — STARTED: 02-16-14 — COMPLETED: 02-16-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -54.9 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 17.2 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-54.9	0.0				
-56.8	1.9		CLAY, lean, sandy and non-sandy clay, soft or firm throughout, trace wood fragments between 1.6 and 1.9 ft. depth, lt. to medium gray (CL)		
-62.6	7.7		SAND, silty, clayey, mostly fine-grained sand-sized quartz, trace shell fragments, loose, medium to dark gray (SC-SM)		
-64.9	10.0		SAND, silty, mostly fine to medium-grained sand-sized quartz, discontinue shell fragments, medium gray (SM)	NS	
-66.5	11.6		SAND, poorly-graded with silt, mostly fine to medium-grained sand-sized quartz, trace shell fragments, medium to lt. gray (SP-SM)		
-72.1	17.2		SAND, silty, mostly fine to medium-grained sand-sized quartz, trace shell fragments, medium gray (SM) At El. -68.9 Ft., fine-grained sand-sized, few shell fragments At El. -69.9 Ft., high fines content		

NOTES:

1. Soils are field visually classified in accordance with the Unified Soils Classification System.

2. NS = Sample not submitted for laboratory analysis from this interval.

3. Seafloor elevation determined from 2013 USGS geophysical survey.

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15459° Long = -88.43206°

Boring Designation BI-PBS-363-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 2 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-363-13 — LOCATION COORDINATES: E = 1,114,424 N = 238,607	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ 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: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 52.3 Ft.
	15. DATE BORING — STARTED: 02-17-14 — COMPLETED: 02-17-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -51.8 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 19.5 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-51.8	0.0				
-53.0	1.2		CLAY, lean, few shell fragments, sandy, whole shells at base of unit, olive gray (CL)	NS	
-53.8	2.0		SAND, clayey, mostly fine-grained sand-sized quartz, few shell fragments, olive gray (SC)		
-55.9	4.1		CLAY, lean, discontinue shell fragments, 20% interbeds of SC up to 1" thick, trace of SP-filled burrows, medium gray (CL)		
-58.8	7.0		SAND, silty, mostly fine-grained sand-sized quartz, very loose, medium gray (SM) At El. -56.3 Ft., mostly fine-grained sand-sized quartz, medium to lt. gray		
-64.3	12.5		SAND, poorly-graded with silt, mostly fine to medium-grained sand-sized quartz, lt. gray (SP-SM)		
-65.1	13.3		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, lt. gray (SP)		
-70.5	18.7		SAND, poorly-graded with silt, mostly fine to medium-grained sand-sized quartz, lt. gray (SP-SM)		
-71.3	19.5		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, medium 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.

3. Seafloor elevation determined from

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15548° Long = -88.42145°

Boring Designation BI-PBS-363-13

DRILLING LOG (Cont. Sheet)	INSTALLATION Mobile District		SHEET 2 OF 2 SHEETS
PROJECT MsCIP Barrier Island Restoration	COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83	VERTICAL NAVD88
LOCATION COORDINATES X = 1,114,424 Y = 238,607	ELEVATION TOP OF BORING -51.8 Ft.		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
			10/29/2014 USACE survey.		

30
35
40
45
50
55
60

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15548° Long = -88.42145°

Boring Designation BI-PBS-368-13

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
	South Atlantic	Mobile District	

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS West
2. BORING DESIGNATION	BI-PBS-368-13
LOCATION COORDINATES	E = 1,118,438 N = 236,960
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	18.7 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED 0 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	55 Ft.
15. DATE BORING	STARTED 02-10-14 / COMPLETED 02-10-14
16. ELEVATION TOP OF BORING	-54.4 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-54.4	0.0				
-63.9	9.5		CLAY, lean, trace wood, sandy, soft to 3.5 depth, firm to 7.5 ft. depth, v. sandy with concretions (including sections of cemented, sand-filled crab burrows) from depth of 9 to 9.5 ft., medium gray (CL)	NS	
-66.0	11.6		SAND, silty, mostly fine to medium-grained sand-sized quartz, medium gray (SM)		
-68.0	13.6		SAND, silty, clayey, mostly fine-grained sand-sized quartz, few shell fragments, medium gray (SC-SM)		
-69.9	15.5		CLAY, lean, trace shell fragments, sandy, medium gray (CL)		
-73.1	18.7		SAND, silty, clayey, discontinue shell fragments, medium gray (SC-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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15091° Long = -88.40877°

Boring Designation BI-PBS-369-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-369-13 — LOCATION COORDINATES: E = 1,111,735 N = 233,161	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 1 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 49.7 Ft.
	15. DATE BORING — STARTED: 02-17-14 — COMPLETED: 02-17-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -50.3 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 15.4 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-50.3	0.0				
-52.1	1.8		SAND, poorly-graded with silt, mostly fine to medium-grained sand-sized quartz, few shell fragments, lt. gray (SP-SM)	A	Classification: SP Color: 2.5Y 6/1-gray D50: 0.251 mm % Fines: 2
-52.5	2.2				
-53.5	3.2		SAND, silty, mostly fine-grained sand-sized quartz, discontinue shell fragments, high fines content, lt. to medium gray (SM)		
			CLAY, lean, sandy, SC interbeds, lt. to medium gray (CL)		
-56.6	6.3		SAND, clayey, mostly fine to medium-grained sand-sized quartz, interbedded with clay, trace wood, lt. to medium gray (SC)		
-59.3	9.0		CLAY, lean, sandy, soft; firm over bottom 1 ft. of unit, medium gray (CL)	NS	
-60.8	10.5		SAND, silty, mostly fine to medium-grained sand-sized quartz, medium gray (SM)		
-62.0	11.7		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, medium to lt. gray (SP-SM)		
-62.3	12.0				
-63.4	13.1		SAND, silty, mostly fine-grained sand-sized quartz, high fines content, medium gray (SM)		
-64.8	14.5		CLAY, lean, medium gray (CL)		
-65.7	15.4		SAND, clayey, mostly fine-grained sand-sized quartz, medium gray (SC)		
			CLAY, lean, sandy, firm, medium 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.

3. Seafloor elevation determined from 2013 USGS geophysical survey.

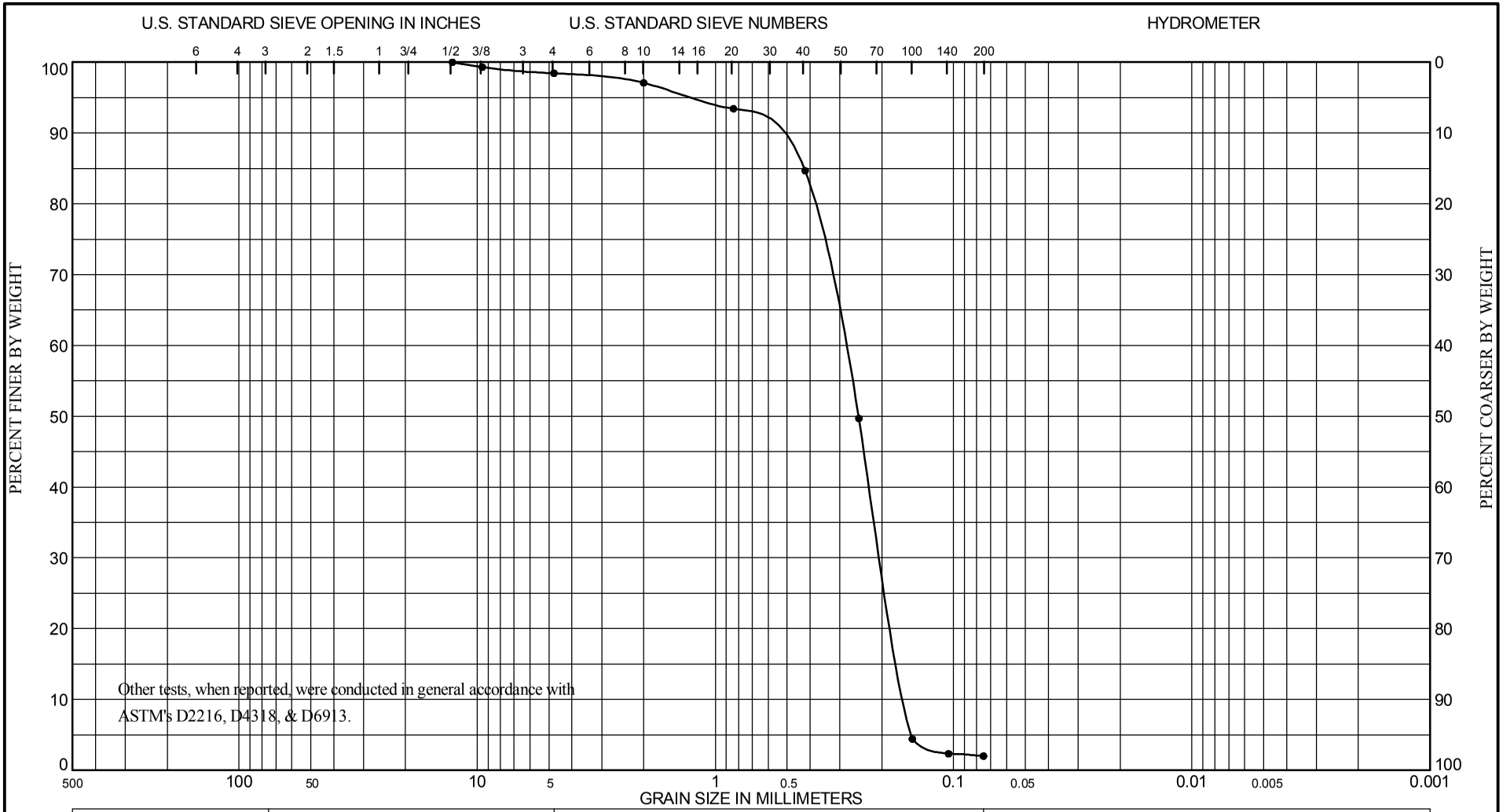
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14053° Long = -88.43002°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 1.8	Greenish Gray, Poorly Graded Sand (SP), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4850
Hole No. BI-PBS-369-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-370-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 2 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-370-13 — LOCATION COORDINATES: E = 1,110,721 N = 239,129	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.:	12. TOTAL SAMPLES — DISTURBED: 1 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES:
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL: — BEARING:	14. WATER DEPTH: 50.7 Ft.
	15. DATE BORING — STARTED: 02-16-14 — COMPLETED: 02-16-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -52.7 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 17.2 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-52.7	0.0				
-54.2	1.5		SAND, silty, clayey, mostly fine to medium-grained sand-sized quartz, trace shell fragments, trace wood, medium gray (SC-SM)	NS	
-56.0	3.3		CLAY, lean, discontinue shell fragments, trace wood, medium to lt. gray (CL)		
-56.5	3.8				
-57.1	4.4		SAND, clayey, mostly fine to medium-grained sand-sized quartz, medium to dark gray (SC)		
-57.6	4.9				
-59.2	6.5		SAND, silty, mostly fine to medium-grained sand-sized quartz, medium to dark gray (SM)	A	Classification: SP Color: 2.5Y 6/1-gray D50: 0.224 mm % Fines: 4.1
-60.9	8.2		SAND, poorly-graded with silt, mostly fine to medium-grained sand-sized quartz, medium gray (SP-SM)		
-62.9	10.2		SAND, silty, mostly fine to medium-grained sand-sized quartz, medium gray (SM)	NS	
-64.5	11.8		SAND, poorly-graded with silt, mostly fine to medium-grained sand-sized quartz, medium gray (SP-SM)		
-68.1	15.4		SAND, silty, mostly fine to medium-grained sand-sized quartz, medium to dark gray (SM) SAND, poorly-graded with silt, mostly fine to medium-grained sand-sized quartz, medium gray (SP-SM)		
-69.9	17.2		SAND, silty, mostly fine to medium-grained sand-sized quartz, medium to dark gray (SM) At El. -67.2 Ft., mostly fine to medium-grained sand-sized quartz, few shell fragments, medium gray		
			SAND, silty, clayey, mostly fine to medium-grained sand-sized quartz, trace shell fragments, trace clay over depth 15.4 to 15.7 ft., medium gray (SC-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.

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15695° Long = -88.43316°

DRILLING LOG (Cont. Sheet)	INSTALLATION Mobile District		SHEET 2 OF 2 SHEETS
PROJECT MsCIP Barrier Island Restoration	COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83	VERTICAL NAVD88
LOCATION COORDINATES X = 1,110,721 Y = 239,129	ELEVATION TOP OF BORING -52.7 Ft.		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
			3. Seafloor elevation determined from 2013 USGS geophysical survey.		

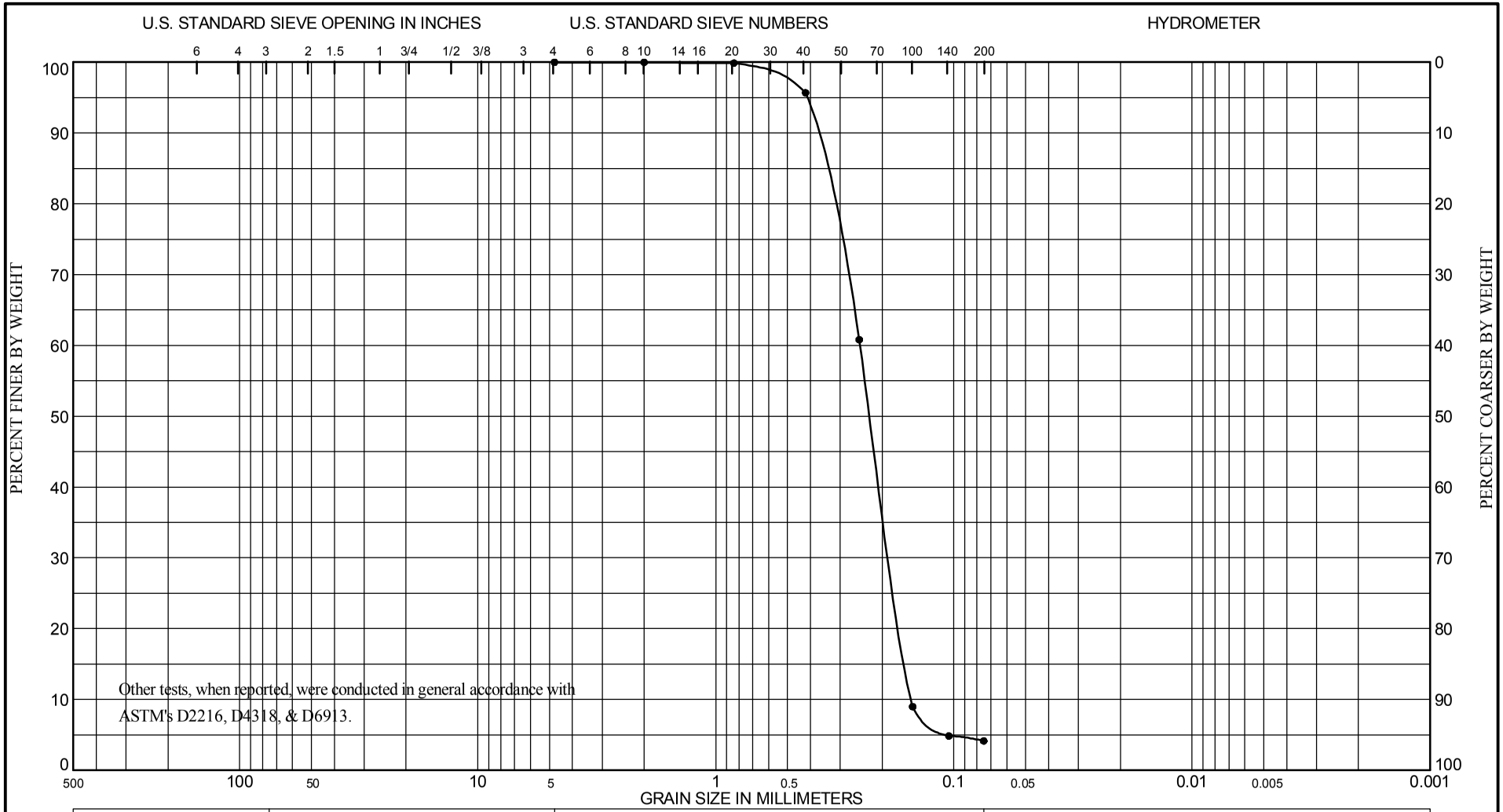
30
35
40
45
50
55
60

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15695° Long = -88.43316°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	3.8 to 8.8	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4837
Hole No. BI-PBS-370-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-371-13

DRILLING LOG	DIVISION South Atlantic	INSTALLATION Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT MsCIP Barrier Island Restoration Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT N/A
	10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.) | HORIZONTAL NAD83 | VERTICAL NAVD88
2. BORING DESIGNATION BI-PBS-371-13 | LOCATION COORDINATES E = 1,109,075 N = 239,069	11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore ☐ AUTO HAMMER ☐ 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 ☒ VERTICAL ☐ INCLINED | DEG. FROM VERTICAL | BEARING	14. WATER DEPTH 52.3 Ft.
	15. DATE BORING | STARTED 02-17-14 | COMPLETED 02-17-14
6. THICKNESS OF OVERBURDEN N/A	16. ELEVATION TOP OF BORING -52.5 Ft.
7. DEPTH DRILLED INTO ROCK N/A	17. TOTAL RECOVERY FOR BORING 100%
8. TOTAL DEPTH OF BORING 16.3 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-52.5	0.0				
-55.1	2.6		CLAY, lean, trace shell fragments, sandy, interbeds of SC, medium gray (CL)		
-57.9	5.4		SAND, clayey, mostly fine-grained sand-sized quartz, trace shell fragments, lt. and medium gray (SC)		
-58.7	6.2		CLAY, lean, discontinue shell fragments, sandy, interbeds of SC, lt. and medium gray and dark brown (CL)		
-59.3	6.8		SAND, clayey, mostly fine to medium-grained sand-sized quartz, medium to dark gray (SC)	NS	
-66.4	13.9		SAND, silty, mostly fine to medium-grained sand-sized quartz, medium gray (SM) At El. -63.5 Ft., fine-grained sand-sized		
-68.8	16.3		CLAY, lean, few shell fragments, very sandy, lt. olive 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.

3. Seafloor elevation determined from 2013 USGS geophysical survey.

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15680° Long = -88.43837°

Boring Designation BI-PBS-372-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-372-13 — LOCATION COORDINATES: E = 1,111,683 N = 239,820	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 5 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 50.7 Ft.
	15. DATE BORING — STARTED: 02-16-14 — COMPLETED: 02-16-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -50.8 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 17.8 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-50.8	0.0				
-54.4	3.6		SAND, poorly-graded with silt, mostly fine to medium-grained sand-sized quartz, medium to lt. gray (SP-SM)	A	Classification: SP Color: 2.5Y 5/1-gray D50: 0.243 mm % Fines: 4.1
-57.4	6.6		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, lt. gray (SP)	B	Classification: SP Color: 2.5Y 6/1-gray D50: 0.254 mm % Fines: 2.3
-62.6	11.8		SAND, poorly-graded with silt, mostly fine to medium-grained sand-sized quartz, lt. gray (SP-SM)	C	Classification: SP Color: 2.5Y 6/1-gray D50: 0.249 mm % Fines: 2.5
-65.0	14.2		SAND, silty, mostly fine to medium-grained sand-sized quartz, lt. to medium gray (SM)	D	Classification: SP Color: 2.5Y 6/1-gray D50: 0.257 mm % Fines: 1.9
			At El. -64.4 Ft., mostly fine-grained sand-sized quartz, high fines content, medium to lt. gray	E	Classification: SP-SM Color: 2.5Y 6/1-gray D50: 0.23 mm % Fines: 7.4
-68.6	17.8		SAND, silty, clayey, mostly fine-grained sand-sized quartz, trace shell fragments, medium to lt. gray (SC-SM) At El. -67.2 Ft., few shell fragments	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.

3. Seafloor elevation determined from 10/29/2014 USACE survey.

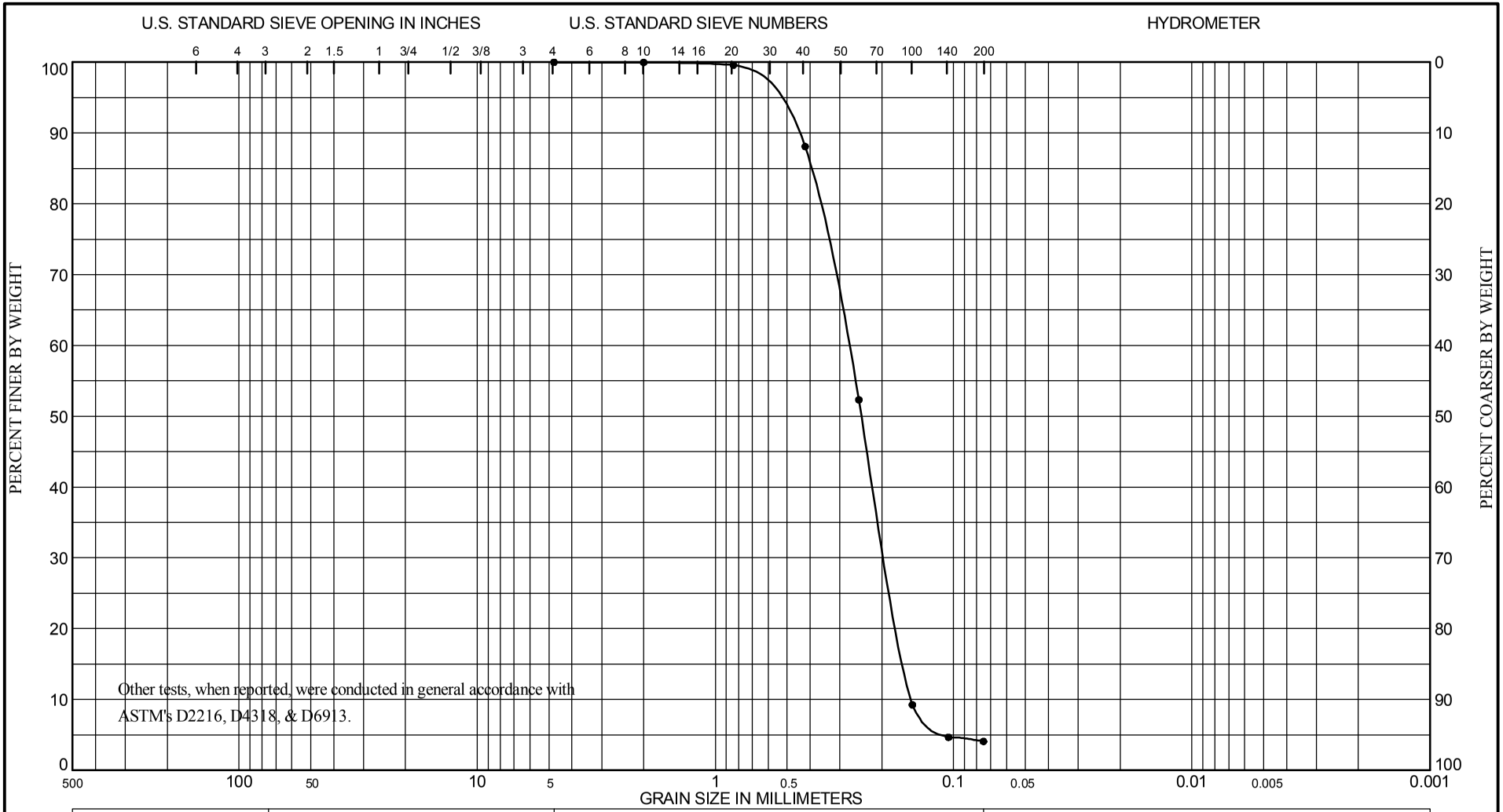
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15884° Long = -88.43011°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

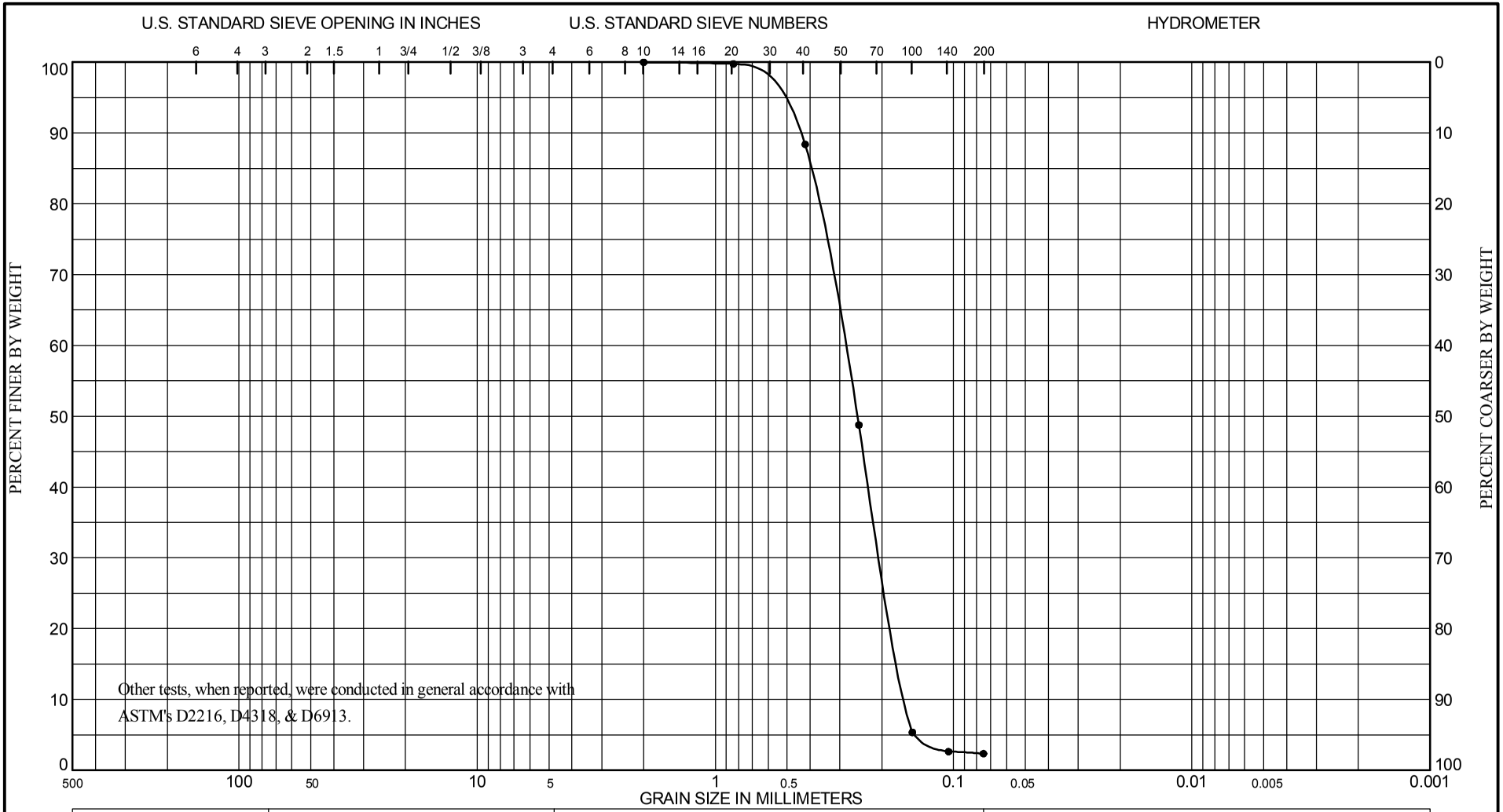
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 3.6	Dark Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4842
Hole No. BI-PBS-372-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

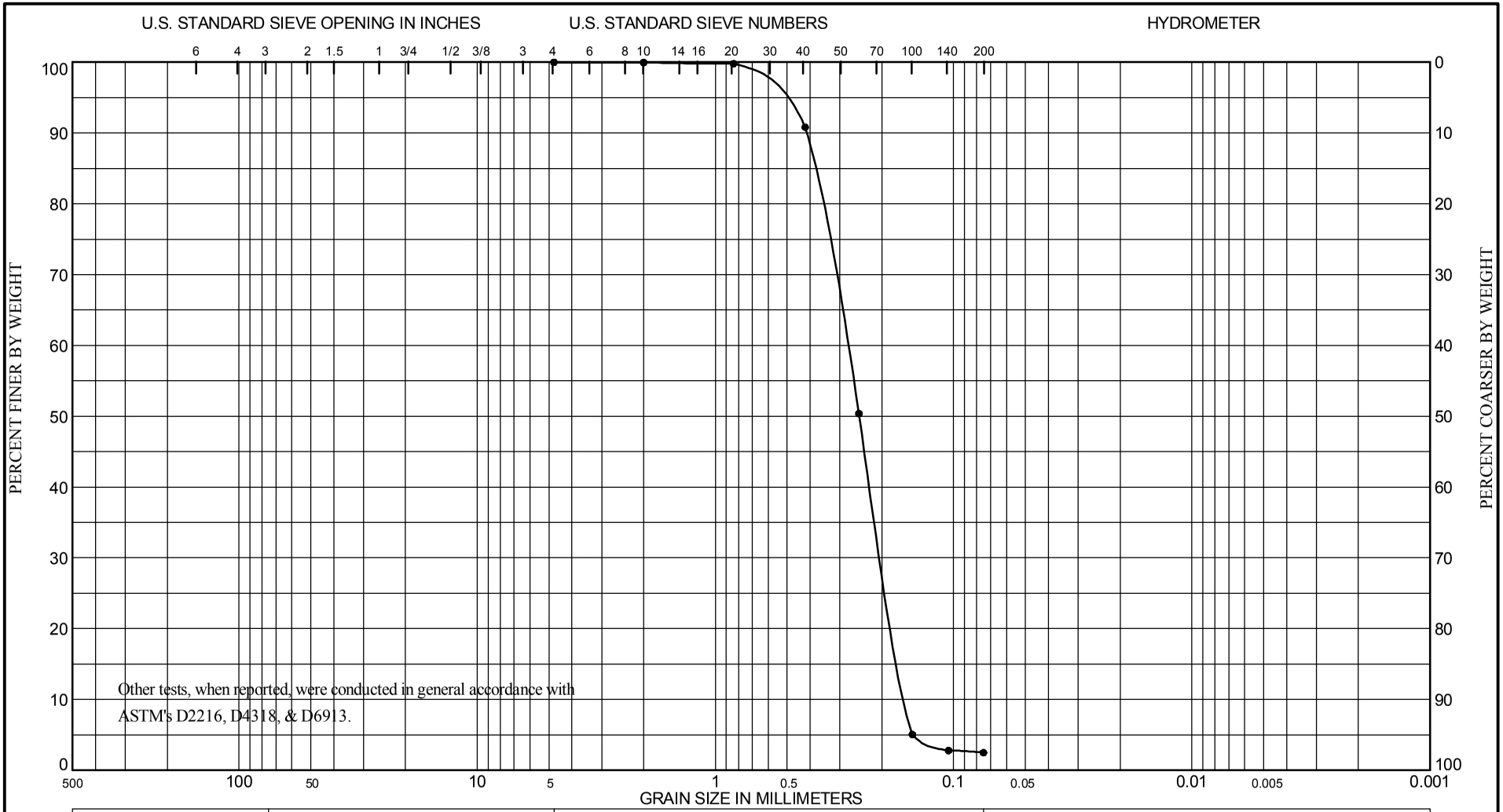
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	3.6 to 6.6	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4843
Hole No. BI-PBS-372-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

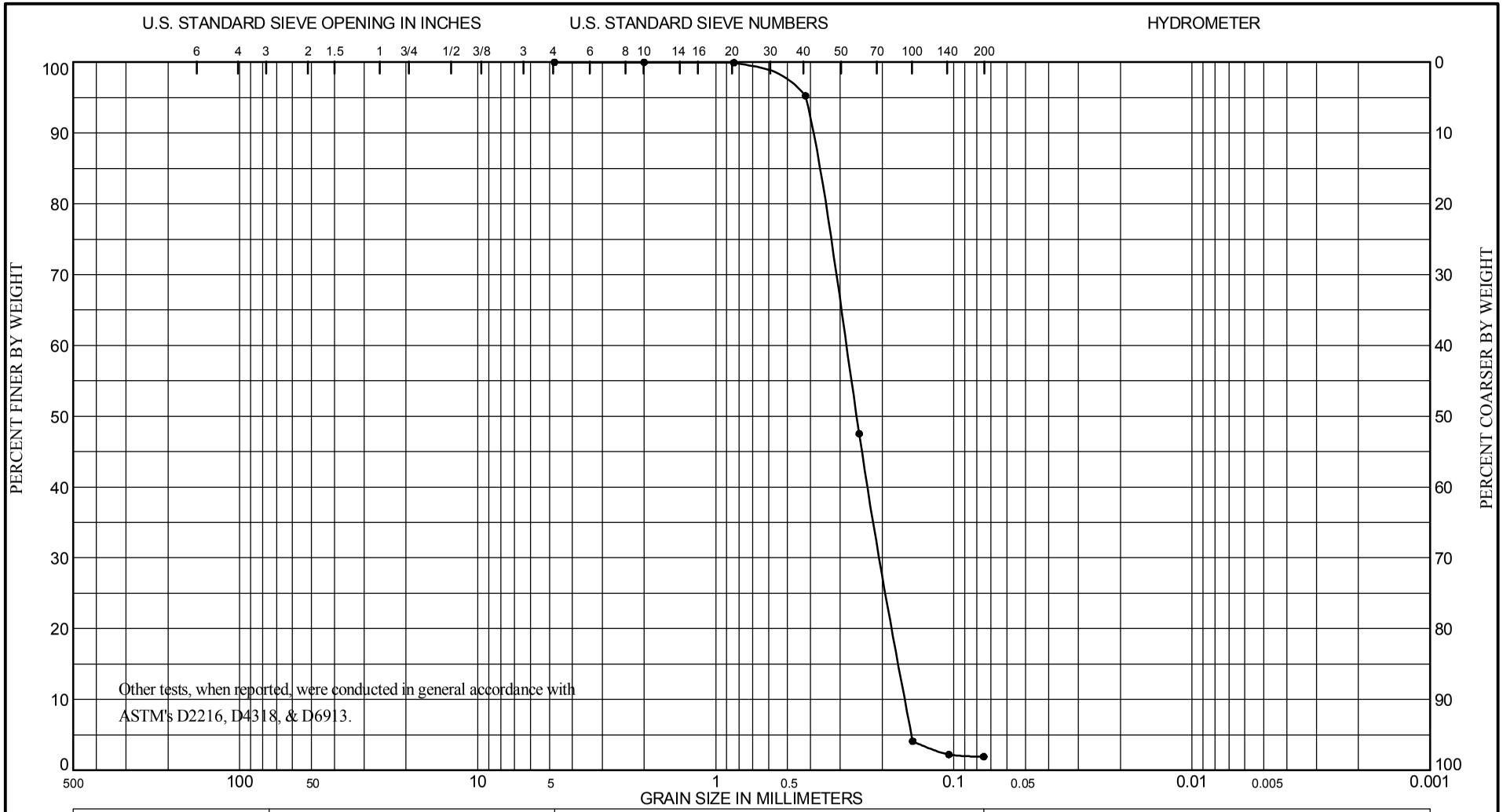
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	6.6 to 11.8	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4844
Hole No. BI-PBS-372-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

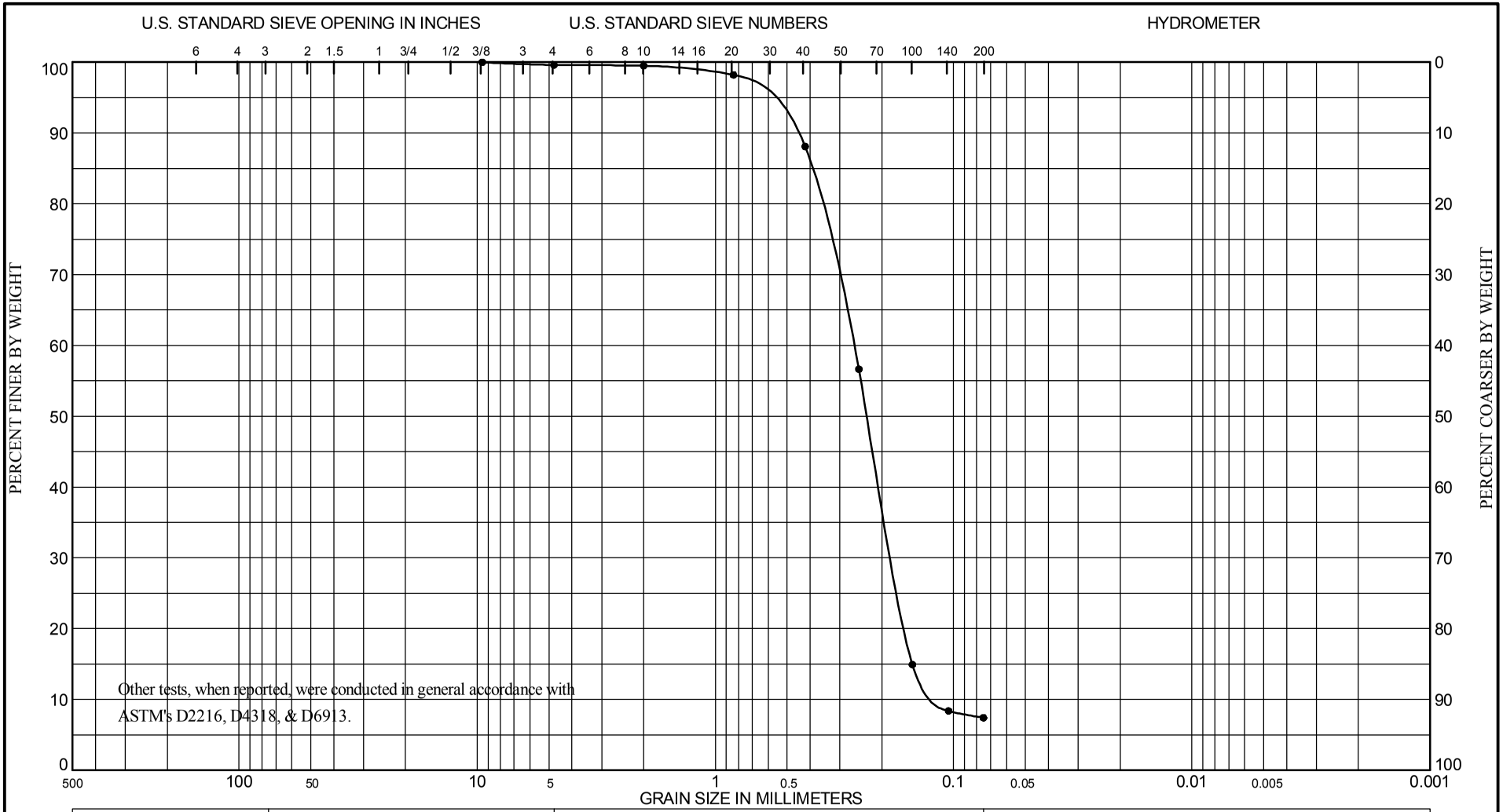
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
D	11.8 to 13.6	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4845
Hole No. BI-PBS-372-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
E	13.2 to 14.2	Dark Gray, Poorly Graded Silty Sand (SP-SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4846
Hole No. BI-PBS-372-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-373-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 2 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-373-13 — LOCATION COORDINATES: E = 1,112,995 N = 240,610	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 1 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 49.7 Ft.
	15. DATE BORING — STARTED: 02-17-14 — COMPLETED: 02-17-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -51.3 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 19.1 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-51.3	0.0				
-51.6	0.3				
-52.3	1.0		CLAY, lean, sandy, soft, brownish gray (CL)		
-53.3	2.0		SAND, clayey, mostly fine to medium-grained sand-sized quartz, few shell fragments, 0.5-inch interbeds of CL, brownish gray (SC)		
-53.7	2.4				
-56.3	5.0		SAND, silty, clayey, mostly fine-grained sand-sized quartz, few shell fragments, brownish gray (SC-SM)	NS	
-57.8	6.5		SAND, clayey, mostly fine-grained sand-sized quartz, few shell fragments, medium gray (SC)		
-59.8	8.5		CLAY, lean, discontinue shell fragments, soft, few 0.25-inch interbeds of SC, medium gray (CL)		
-60.8	9.5		SAND, silty, mostly fine-grained sand-sized quartz, medium gray (SM)	A	Classification: SP Color: 2.5Y 6/1-gray D50: 0.246 mm % Fines: 4
-62.3	11.0		At El. -57.1 Ft., mostly fine-grained sand-sized quartz, medium gray		
-64.8	13.5		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, lt. gray (SP)		
-66.8	15.5		SAND, poorly-graded with silt, mostly fine to medium-grained sand-sized quartz, lt. to medium gray (SP-SM)		
-70.4	19.1		SAND, silty, mostly fine to medium-grained sand-sized quartz, medium gray (SM)	NS	
			SAND, poorly-graded with silt, mostly fine to medium-grained sand-sized quartz, medium to lt. gray (SP-SM) At El. -63.3 Ft., dense to base of vibracore		
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, lt. gray (SP)		
			SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, lt. gray (SP-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.

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.16100° Long = -88.42595°

Boring Designation BI-PBS-373-13

DRILLING LOG (Cont. Sheet)	INSTALLATION Mobile District		SHEET 2 OF 2 SHEETS
PROJECT MsCIP Barrier Island Restoration	COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83	VERTICAL NAVD88
LOCATION COORDINATES X = 1,112,995 Y = 240,610	ELEVATION TOP OF BORING -51.3 Ft.		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
			3. Seafloor elevation determined from 2013 USGS geophysical survey.		

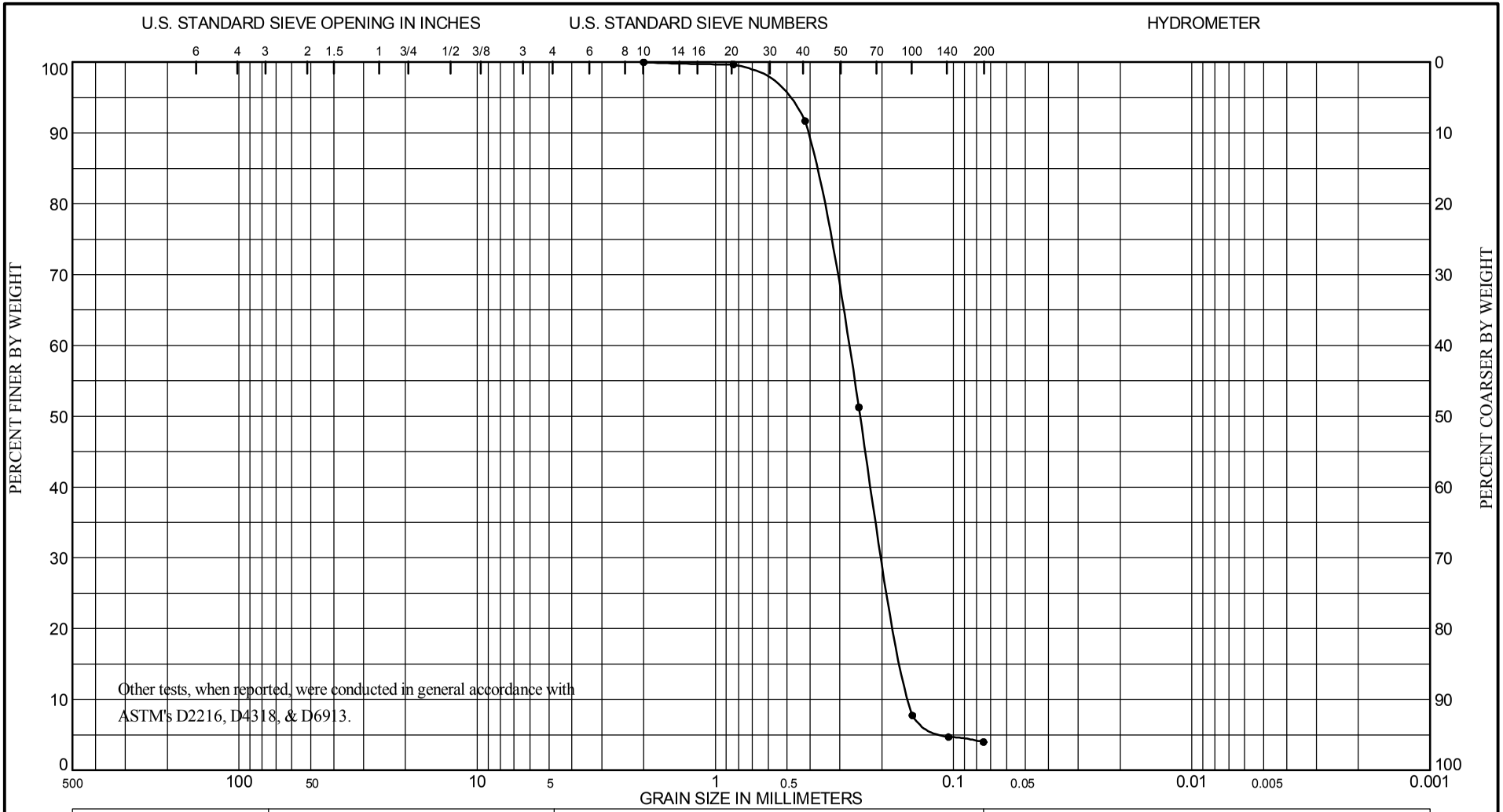
30
35
40
45
50
55
60

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.16100° Long = -88.42595°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	6.5 to 11.5	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4847
Hole No. BI-PBS-373-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-374-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 2 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-374-13 — LOCATION COORDINATES: E = 1,110,805 N = 240,504	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 3 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 50 Ft.
	15. DATE BORING — STARTED: 02-16-14 — COMPLETED: 02-16-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -49.4 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: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-49.4	0.0				
-51.0	1.6		SAND, clayey, mostly fine to medium-grained sand-sized quartz, medium gray (SC)	NS	
-55.4	6.0		SAND, silty, mostly fine-grained sand-sized quartz, very loose, medium gray (SM) At El. -51.6 Ft., mostly fine-grained sand-sized quartz, medium gray	A	Classification: SP-SM Color: 2.5Y 6/1-gray D50: 0.259 mm % Fines: 5.8
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, lt. to medium gray (SP)	B	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.227 mm % Fines: 2.4
-65.7	16.3			C	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.226 mm % Fines: 2.3
-66.1	16.7				
-69.4	20.0		SAND, silty, mostly fine-grained sand-sized quartz, medium gray (SM) SAND, silty, clayey, mostly fine-grained sand-sized quartz, few shell fragments over bottom 2 ft. of unit, medium gray (SC-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.

3. Seafloor elevation determined from

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.16073° Long = -88.43288°

DRILLING LOG (Cont. Sheet)	INSTALLATION Mobile District		SHEET 2 OF 2 SHEETS
PROJECT MsCIP Barrier Island Restoration	COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83	VERTICAL NAVD88
LOCATION COORDINATES X = 1,110,805 Y = 240,504	ELEVATION TOP OF BORING -49.4 Ft.		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
			10/29/2014 USACE survey.		

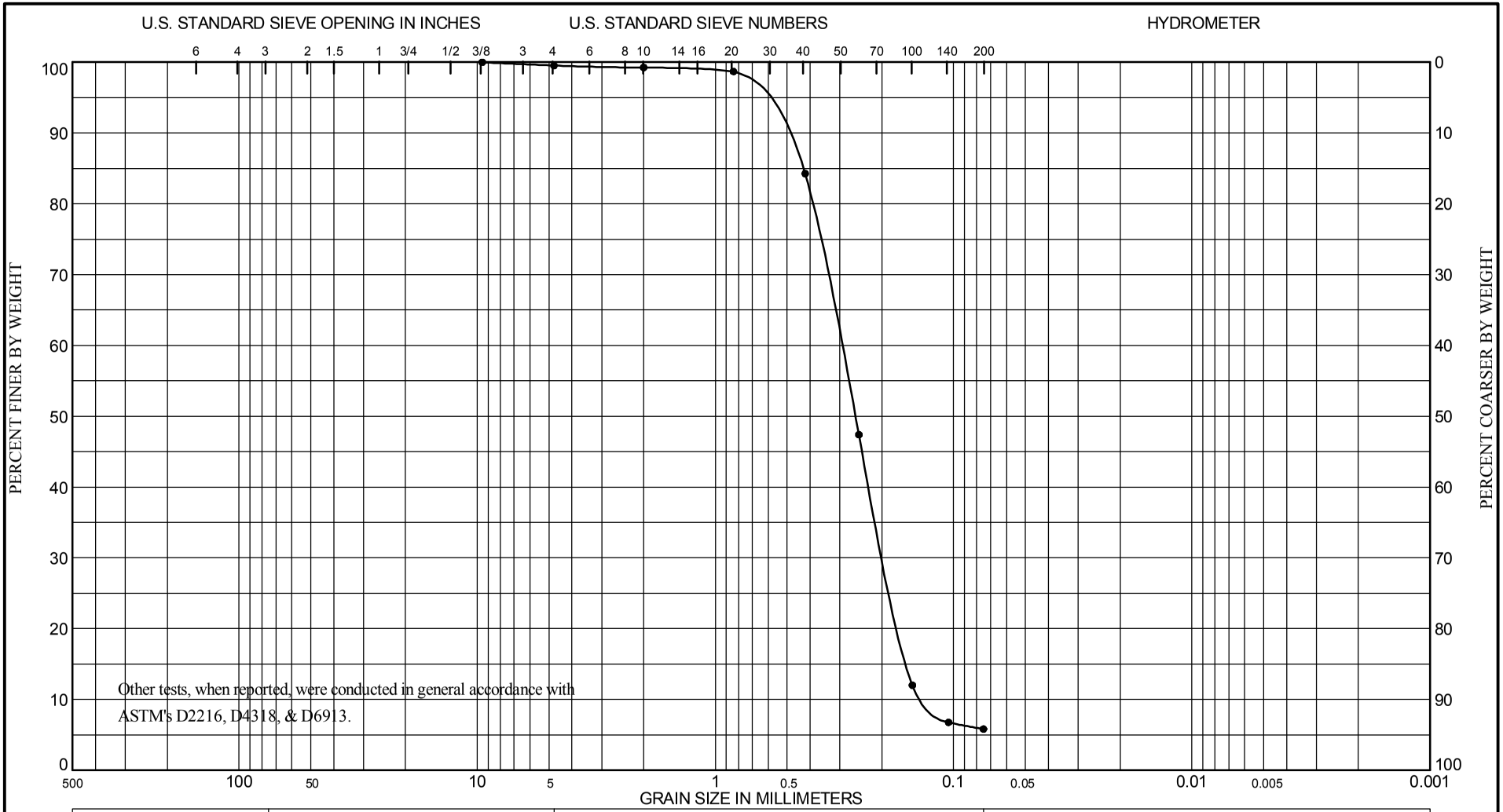
30
35
40
45
50
55
60

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.16073° Long = -88.43288°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

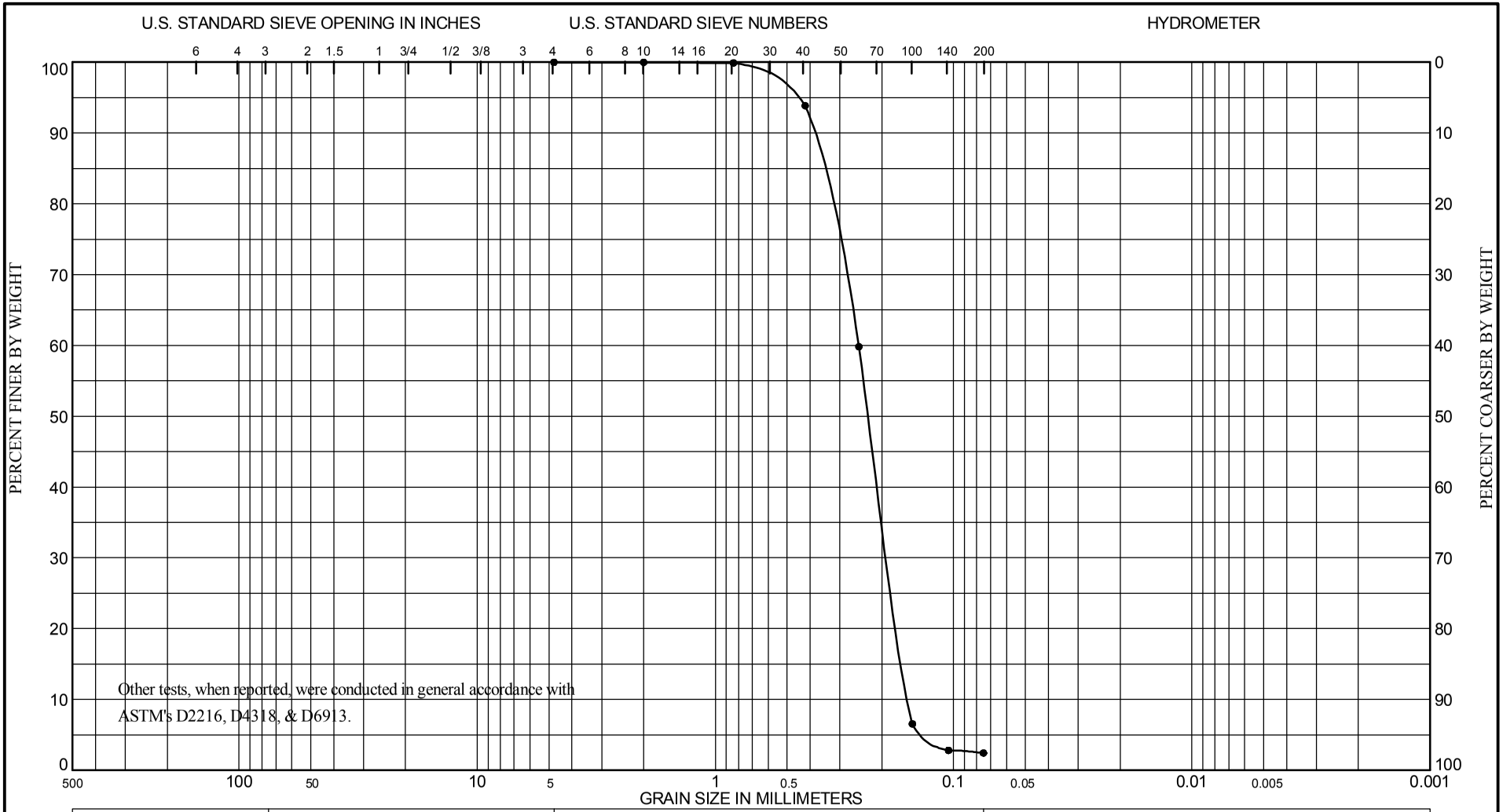
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	1.6 to 6.0	Gray, Poorly Graded Silty Sand (SP-SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4839
Hole No. BI-PBS-374-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

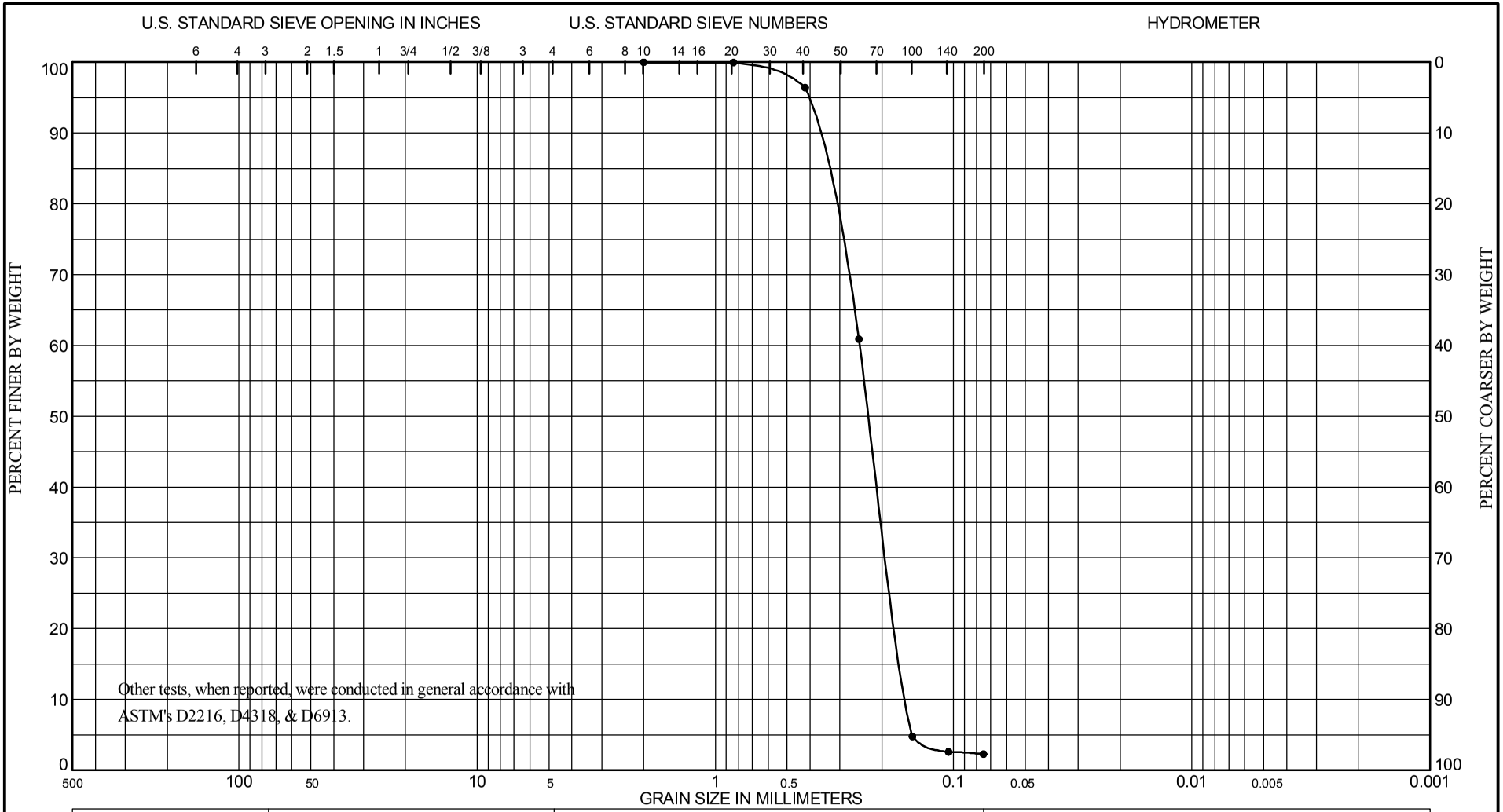
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	6.0 to 11.0	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4840
Hole No. BI-PBS-374-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	11.0 to 16.3	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4841
Hole No. BI-PBS-374-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-375-13

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
	South Atlantic	Mobile District	

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS West
2. BORING DESIGNATION	BI-PBS-375-13
LOCATION COORDINATES	E = 1,107,348 N = 240,445
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	13.8 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED 0 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	51.3 Ft.
15. DATE BORING	STARTED 02-18-14 / COMPLETED 02-18-14
16. ELEVATION TOP OF BORING	-51.6 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-51.6	0.0				
-53.6	2.0		CLAY, lean, few shell fragments, sandy, void fill of SC, soft to 1.4 ft., firm to 2.0, medium gray (CL)		
-58.9	7.3		CLAY, fat, sandy, hard, lt. gray, pale green, pale orange (CH)	NS	
-62.1	10.5		SAND, silty, clayey, mostly fine-grained sand-sized quartz, few shell fragments, medium gray (SC-SM)		
-65.4	13.8		CLAY, silty, few shell fragments, medium gray (CL-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.

3. Seafloor elevation determined from 2013 USGS geophysical survey.

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.16060° Long = -88.44382°

Boring Designation BI-PBS-376-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-376-13 — LOCATION COORDINATES: E = 1,113,657 N = 239,394	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 2 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 51.3 Ft.
	15. DATE BORING — STARTED: 02-17-14 — COMPLETED: 02-17-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -51.3 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 15.3 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-51.3	0.0				
-52.8	1.5		CLAY, lean, few shell fragments, sandy, olive gray (CL)		
-53.2	1.9		SAND, clayey, mostly fine-grained sand-sized quartz, few shell fragments, olive medium gray (SC)	NS	
-55.3	4.0		CLAY, lean, discontinue shell fragments, firm, trace SC interbeds, 0.25-inch thick, trace wood, medium gray (CL)		
-57.3	6.0		SAND, silty, mostly fine-grained sand-sized quartz, dense, lt. to medium gray (SM)	A	Classification: SP Color: 2.5Y 6/1-gray D50: 0.208 mm % Fines: 4
-62.3	11.0		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, dense, lt. to medium gray (SP-SM)		
-63.3	12.0		SAND, silty, mostly fine-grained sand-sized quartz, dense, lt. to medium gray (SM)	B	Classification: SP-SM Color: 2.5Y 6/1-gray D50: 0.205 mm % Fines: 5.2
-66.6	15.3		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, dense, lt. to medium gray (SP-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.

3. Seafloor elevation determined from 2013 USGS geophysical survey.

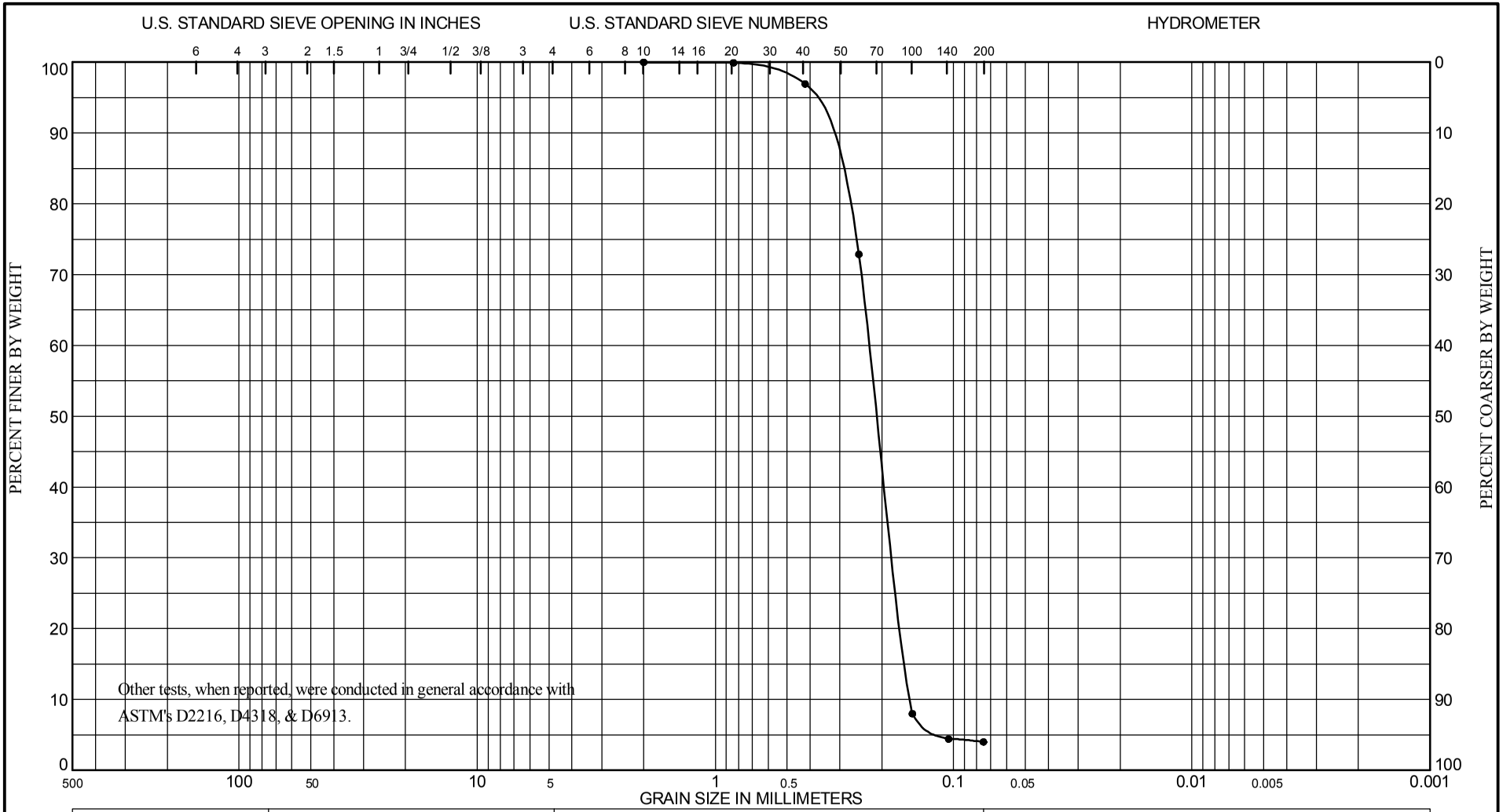
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15765° Long = -88.42387°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

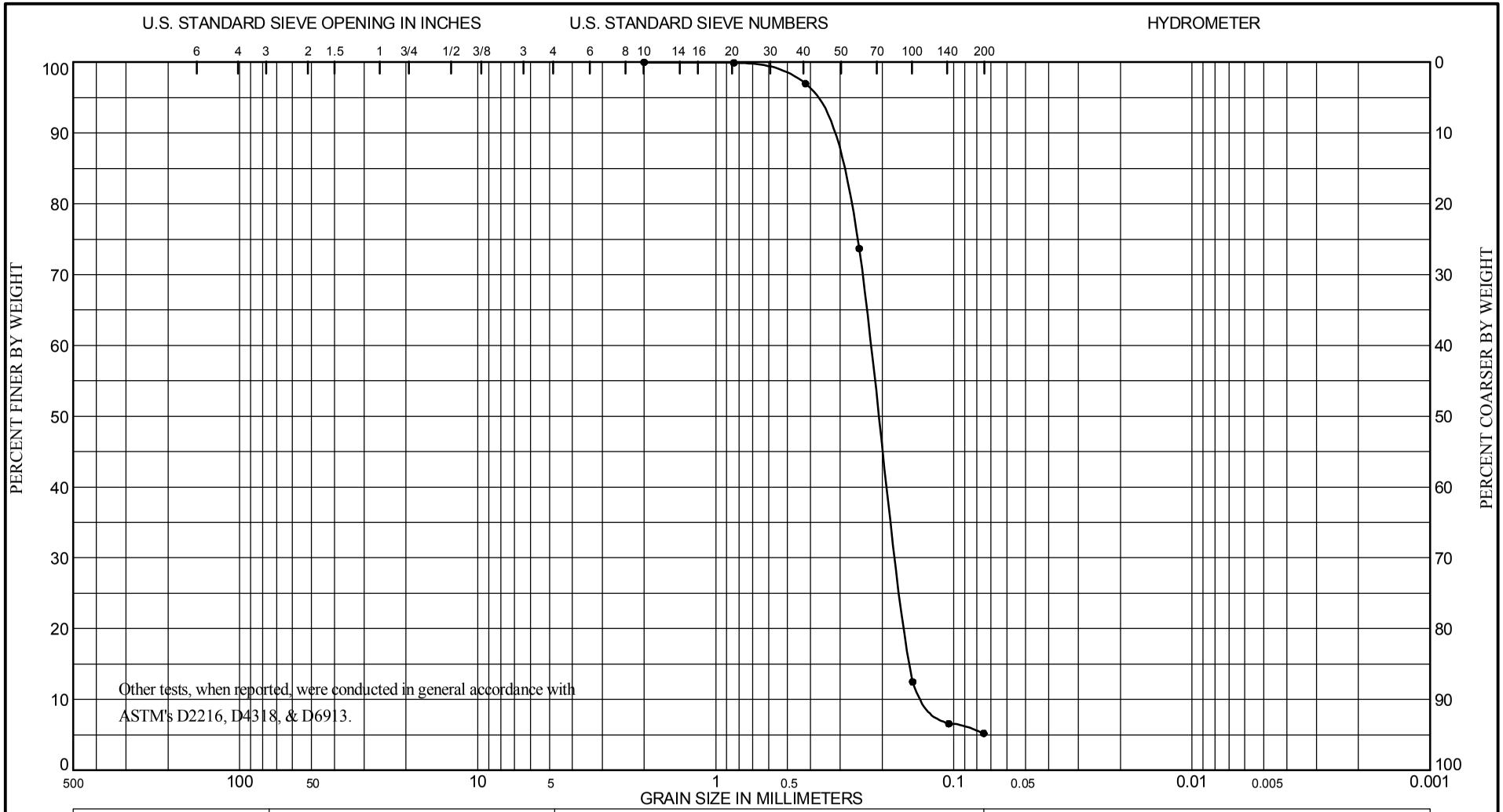
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	4.0 to 9.5	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4848
Hole No. BI-PBS-376-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	9.5 to 15.3	Gray, Poorly Graded Silty Sand (SP-SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4849
Hole No. BI-PBS-376-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-377-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 2 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-377-13 — LOCATION COORDINATES: E = 1,109,809 N = 239,824	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 1 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 51 Ft.
	15. DATE BORING — STARTED: 02-16-14 — COMPLETED: 02-16-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -51.5 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: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-51.5	0.0				
-55.1	3.6		CLAY, lean, sandy, soft from 0 to 1.5 ft. depth, firm from 1.5 to 3.6 ft., medium gray, dark gray at base (CL)	NS	
-55.8	4.3		SAND, silty, mostly fine to medium-grained sand-sized quartz, medium gray (SM)		
-56.5	5.0				
-56.9	5.4				
-57.5	6.0		CLAY, lean, medium and dark gray (CL)		
-60.5	9.0		SAND, clayey, mostly fine to medium-grained sand-sized quartz, medium gray (SC) SAND, poorly-graded with silt, mostly fine to medium-grained sand-sized quartz, trace wood fragments, medium gray (SP-SM)	A	Classification: SP Color: 2.5Y 5/1-gray D50: 0.25 mm % Fines: 4.9
-65.2	13.7		SAND, silty, mostly fine to medium-grained sand-sized quartz, medium dark gray (SM) SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, medium gray (SP-SM)		
-66.6	15.1		SAND, silty, mostly fine-grained sand-sized quartz, medium dark gray (SM)	NS	
-71.5	20.0		CLAY, lean, trace shell fragments, very sandy, medium 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.

3. Seafloor elevation determined from 2013

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15887° Long = -88.43604°

DRILLING LOG (Cont. Sheet)	INSTALLATION Mobile District		SHEET 2 OF 2 SHEETS
PROJECT MsCIP Barrier Island Restoration	COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83	VERTICAL NAVD88
LOCATION COORDINATES X = 1,109,809 Y = 239,824	ELEVATION TOP OF BORING -51.5 Ft.		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
			USGS geophysical survey.		

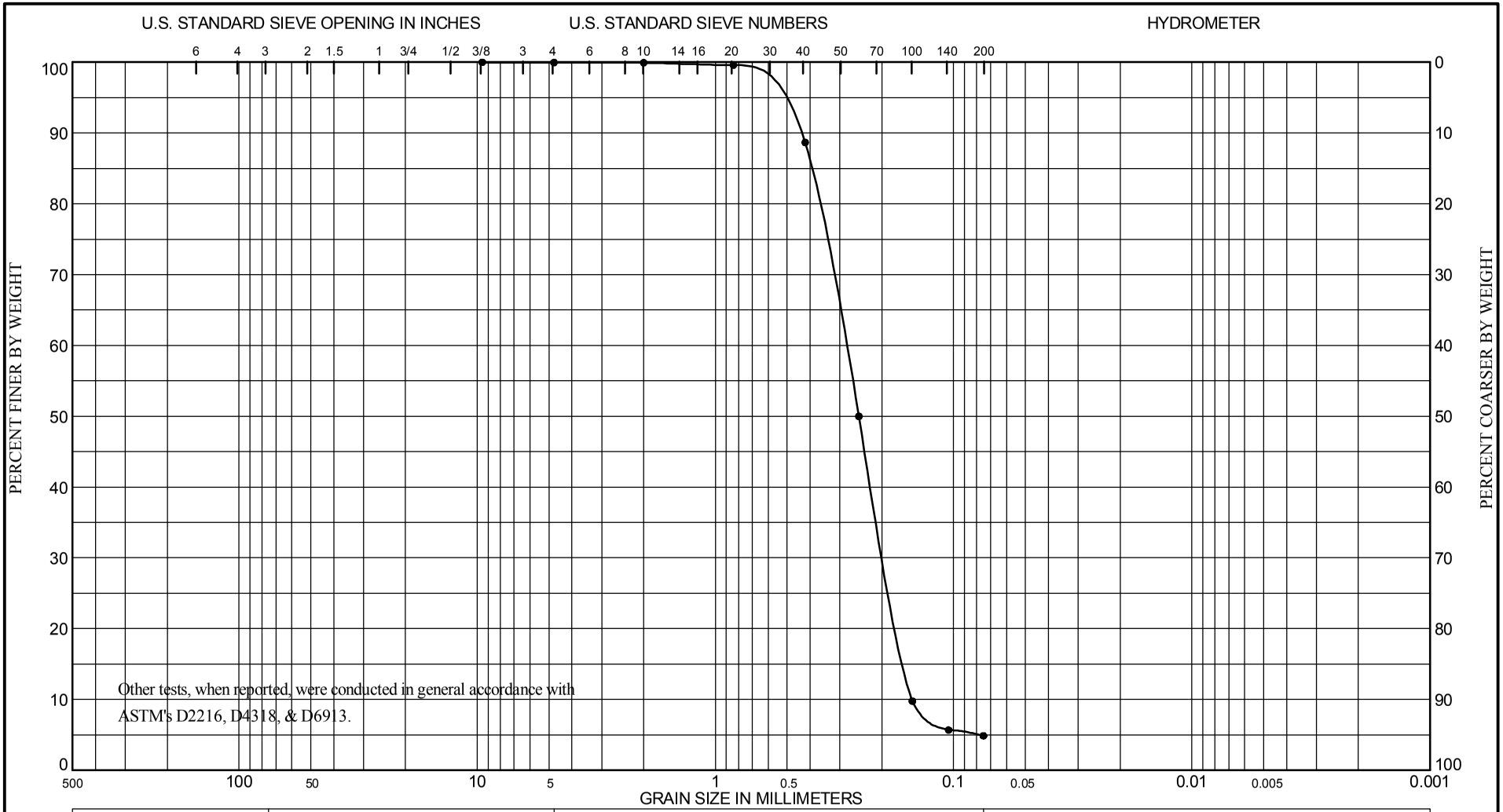
30
35
40
45
50
55
60

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15887° Long = -88.43604°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	5.4 to 10.4	Dark Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4838
Hole No. BI-PBS-377-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-378-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS East	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-378-13 — LOCATION COORDINATES: E = 1,132,503 N = 236,193	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 1 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 51.3 Ft.
	15. DATE BORING — STARTED: 02-22-14 — COMPLETED: 02-22-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -49.1 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 18.1 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-49.1	0.0				
-52.5	3.4		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 6/1-gray D50: 0.306 mm % Fines: 1.3
-55.1	6.0		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, high fines content, medium gray (SM)	NS	
-56.1	7.0		SAND, silty, clayey, mostly fine-grained sand-sized quartz, medium gray (SC-SM)		
-57.6	8.5		CLAY, lean, sandy, firm, medium gray (CL)		
-60.1	11.0		SAND, clayey, mostly fine-grained sand-sized quartz, trace shell fragments, medium gray (SC)		
-67.2	18.1		CLAY, lean, sandy between 11 to 13.4 ft. and 17 to 18.1 ft. with few shell fragments in the sandy zones, medium 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.

3. Seafloor elevation determined from USACE hydrographic survey completed April 2014.

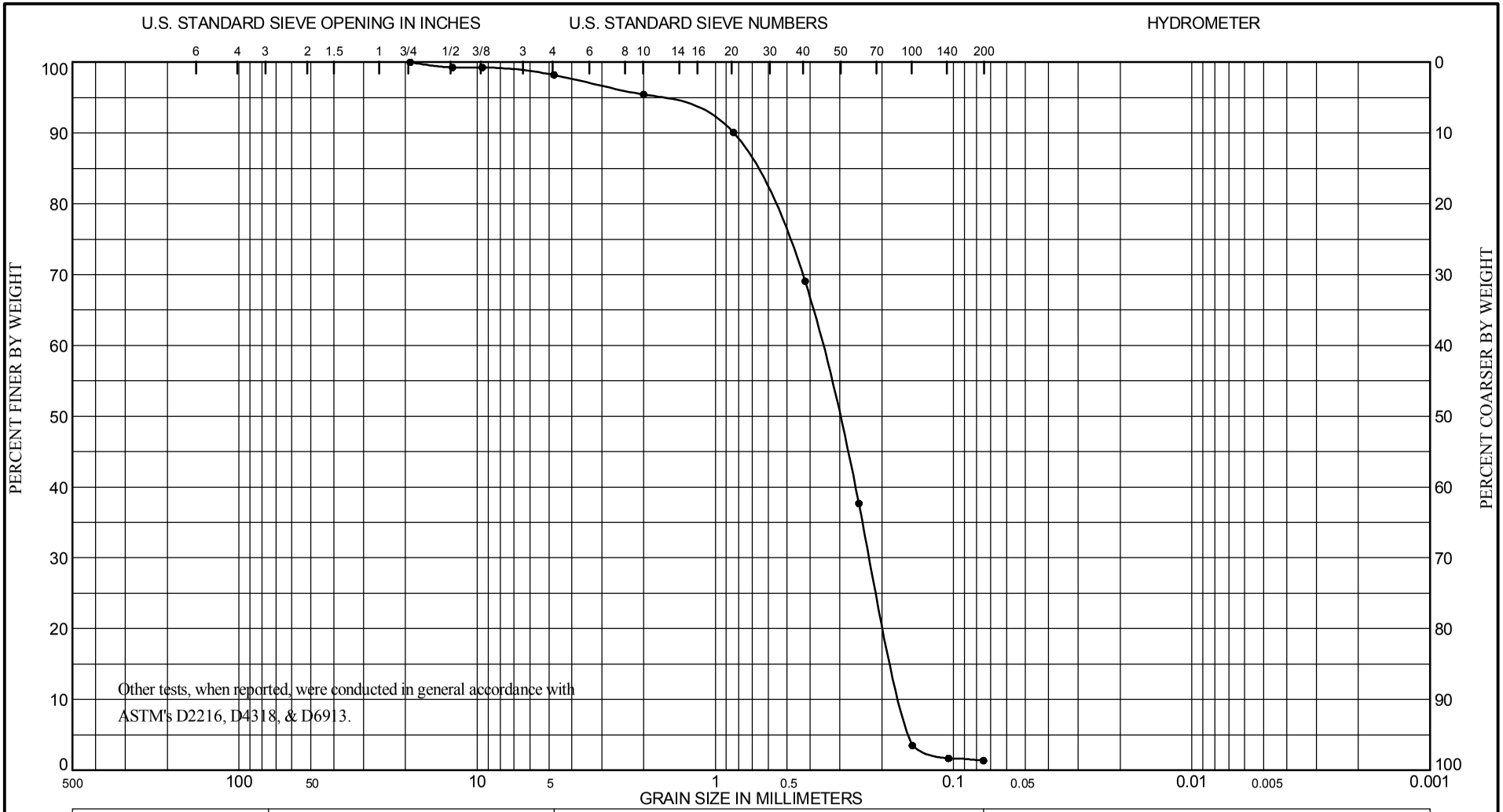
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14865° Long = -88.36428°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 3.4	Greenish Gray, Poorly Graded Sand (SP), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4862
Hole No. BI-PBS-378-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-379-13

DRILLING LOG	DIVISION South Atlantic	INSTALLATION Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS East
2. BORING DESIGNATION	BI-PBS-379-13
LOCATION COORDINATES	E = 1,134,184 N = 232,600
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	18.3 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED 1 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	55 Ft.
15. DATE BORING	STARTED 02-22-14 / COMPLETED 02-22-14
16. ELEVATION TOP OF BORING	-53.3 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-53.3	0.0				
-57.8	4.5		SAND, silty, mostly fine-grained sand-sized quartz, trace shell fragments, medium gray (SM) At El. -54.9 Ft., high fines content to base of unit, few shell fragments	A	Classification: SP Color: 2.5Y 6/1-gray D50: 0.216 mm % Fines: 2.5
-58.8	5.5		SILT, inorganic-L, few shell fragments, sandy, medium gray (ML)		
-60.2	6.9		CLAY, silty, few shell fragments, medium gray (CL-ML)		
-71.6	18.3		CLAY, lean, trace wood fragments, sandy between 13.4 and 14.3 ft. depths, firm to depth of 17.0 ft., soft to depth of 18.3 ft., medium 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.

3. Seafloor elevation determined from USACE hydrographic survey completed April 2014.

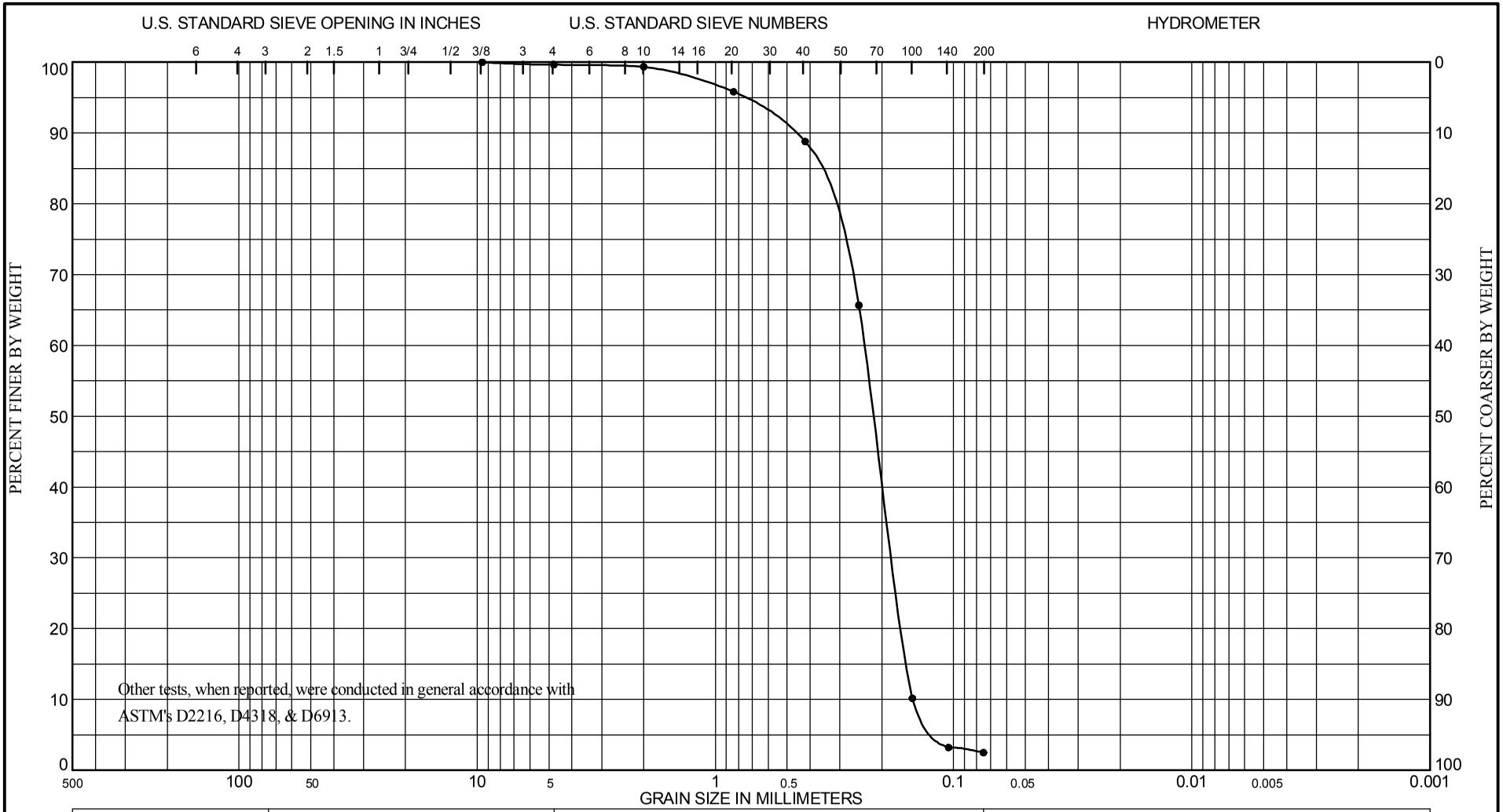
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.13875° Long = -88.35901°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 1.6	Greenish Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4861
Hole No. BI-PBS-379-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-380-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS East	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-380-13 — LOCATION COORDINATES: E = 1,137,169 N = 233,049	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 2 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 55.6 Ft.
	15. DATE BORING — STARTED: 02-22-14 — COMPLETED: 02-22-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -52.1 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 18.5 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-52.1	0.0				
-55.0	2.9		SAND, poorly-graded, mostly fine to coarse-grained sand-sized quartz, little shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 6/1-gray D50: 0.399 mm % Fines: 1.1
-56.1	4.0		SAND, silty, mostly fine-grained sand-sized quartz, trace shell fragments, high fines content, medium gray (SM)	B	Classification: SP-SM Color: 2.5Y 5/1-gray D50: 0.204 mm % Fines: 9.6
-58.0	5.9		SAND, clayey, mostly fine-grained sand-sized quartz, few shell fragments, medium gray (SC)	NS	
-63.1	11.0		CLAY, fat, discontinue shell fragments, sandy, firm, pale orange, pale green (CH)		
-64.6	12.5		CLAY, lean, trace shell fragments, sandy, medium gray (CL)		
-66.5	14.4		SAND, clayey, mostly fine to medium-grained sand-sized quartz, little shell fragments, medium gray (SC)		
-70.6	18.5		CLAY, fat, hard, medium 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.

3. Seafloor elevation determined from USACE hydrographic survey completed April 2014.

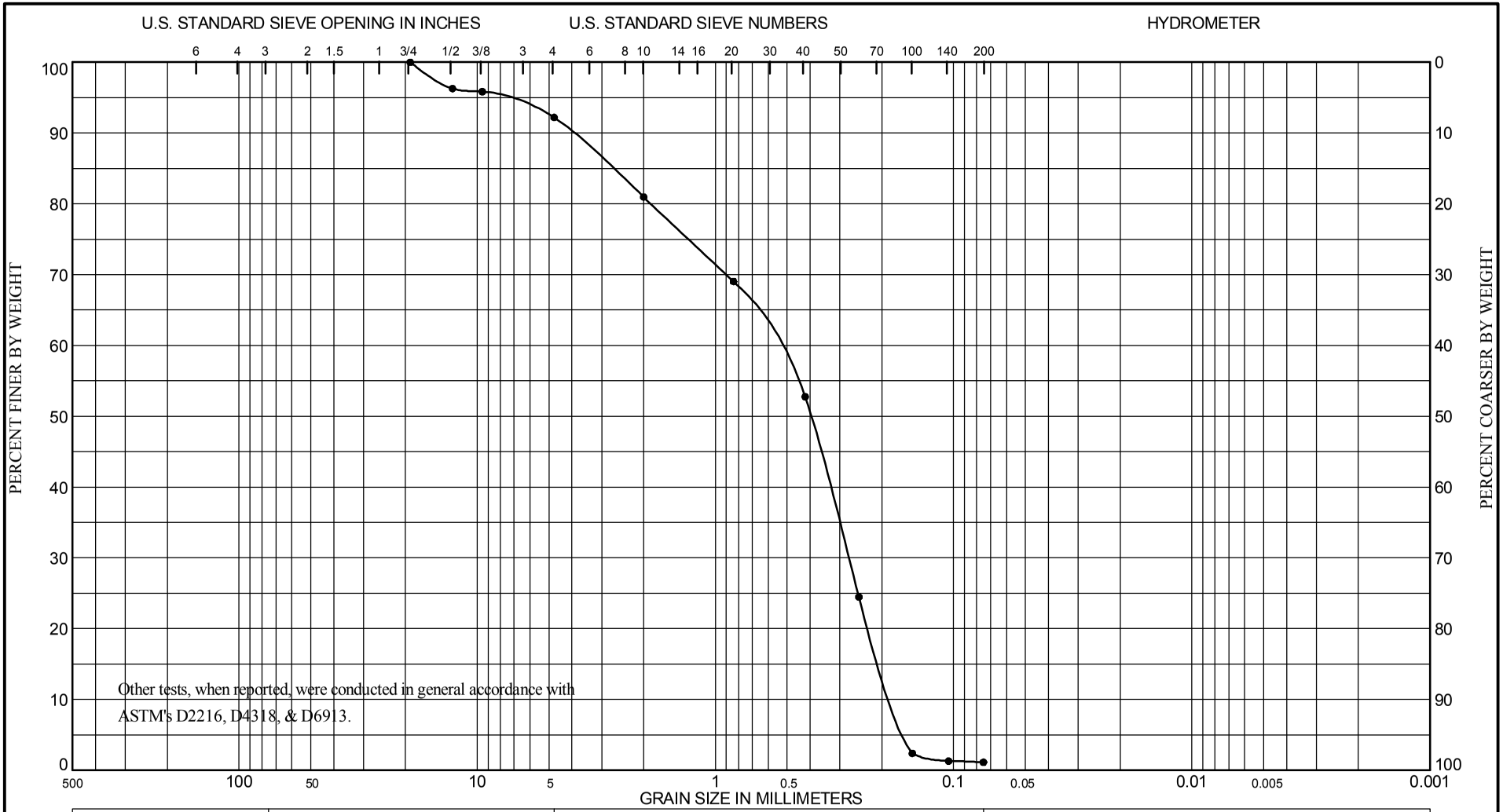
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.13995° Long = -88.34956°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

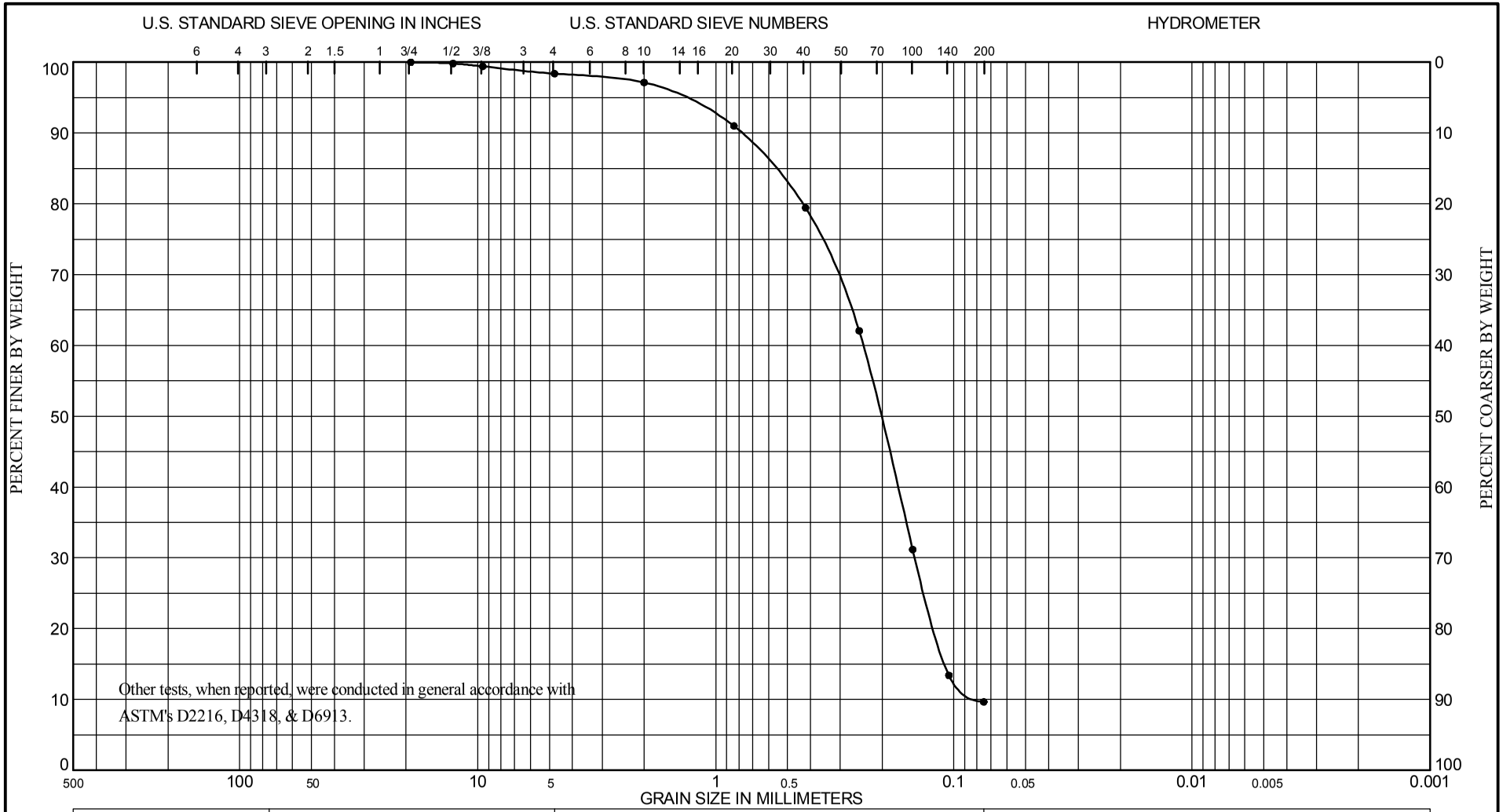
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 2.9	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4859
Hole No. BI-PBS-380-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	2.9 to 4.0	Dark Greenish Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4860
Hole No. BI-PBS-380-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-381-13

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
	South Atlantic	Mobile District	

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS West
2. BORING DESIGNATION	BI-PBS-381-13
LOCATION COORDINATES	E = 1,110,048 N = 234,628
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	18.8 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED 2 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	48.7 Ft.
15. DATE BORING	STARTED 02-22-14 / COMPLETED 02-22-14
16. ELEVATION TOP OF BORING	-46.8 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-46.8	0.0				
-48.6	1.8		SAND, poorly-graded, mostly fine-grained sand-sized quartz, lt. gray (SP)	A	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.296 mm % Fines: 1.1
-49.7	2.9		SAND, silty, mostly fine-grained sand-sized quartz, high fines content at 2.5 ft., lt. to medium gray (SM)	B	Classification: SP-SM Color: 2.5Y 6/1-gray D50: 0.242 mm % Fines: 7.5
-54.0	7.2		CLAY, lean, few shell fragments, sandy, interbedded with SM between 2.9 and 3.2 ft., medium gray, pale orange (CL)	NS	
-55.4	8.6		SAND, clayey, mostly fine to medium-grained sand-sized quartz, discontinue shell fragments, medium to lt. gray (SC)		
-61.8	15.0		CLAY, lean, trace shell fragments, medium to lt. gray (CL)		
-62.9	16.1		SAND, clayey, mostly fine to medium-grained sand-sized quartz, few shell fragments, medium to lt. gray (SC)		
-65.6	18.8		CLAY, lean, medium 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.

3. Seafloor elevation determined from 2013 USGS geophysical survey.

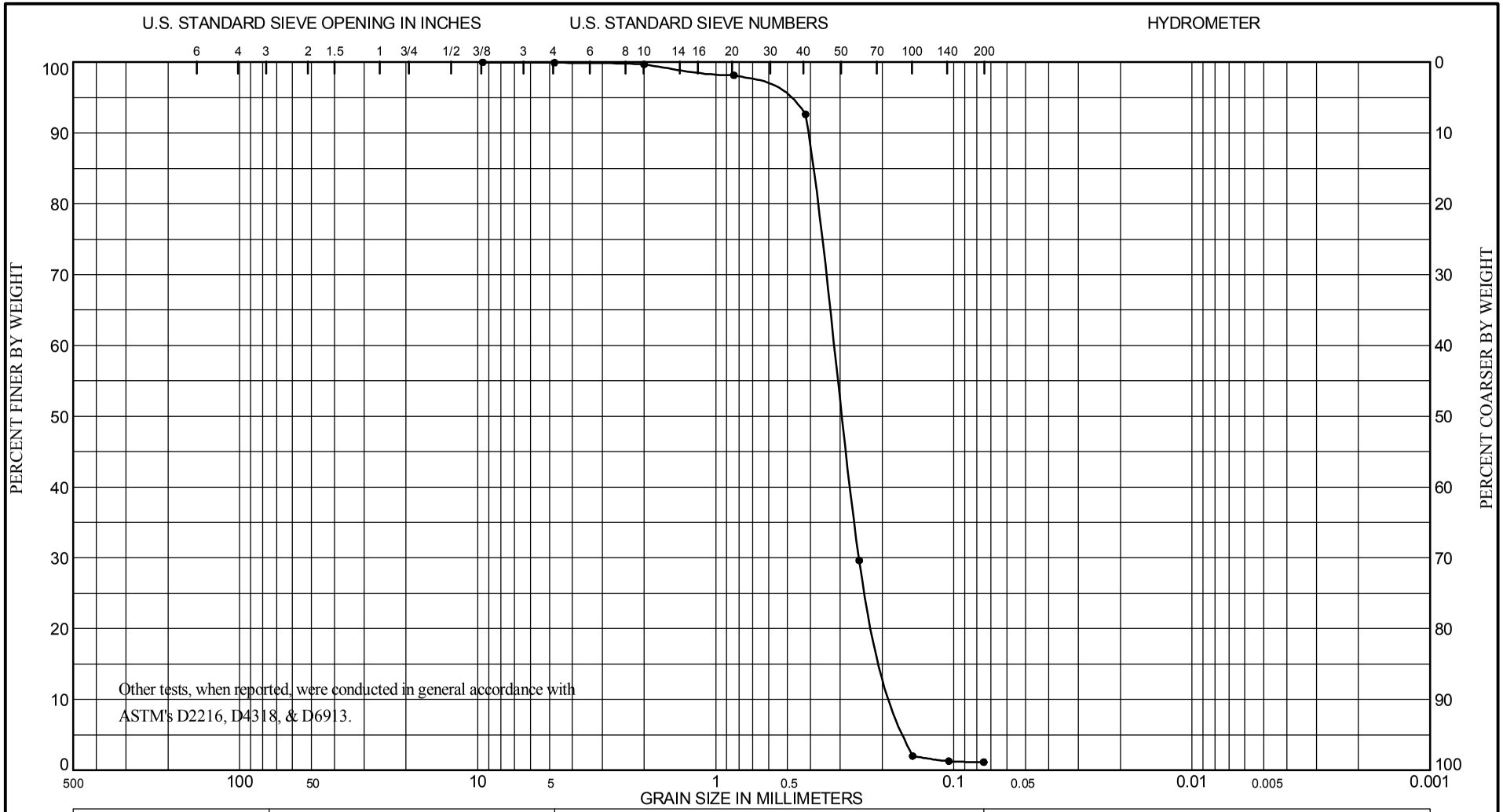
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.14458° Long = -88.43534°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 1.8	Greenish Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4867
Hole No. BI-PBS-381-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192

COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	1.8 to 2.9	Greenish Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4868
Hole No. BI-PBS-381-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-382-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass-OCS West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PBS-382-13 — LOCATION COORDINATES: E = 1,101,281 N = 232,321	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 1 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 47.4 Ft.
	15. DATE BORING — STARTED: 02-22-14 — COMPLETED: 02-22-14
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -45.3 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 19.3 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-45.3	0.0				
-45.6	0.3		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, few shell fragments, lt. gray (SP)	A	Classification: SP-SM Color: 2.5Y 6/1-gray D50: 0.202 mm % Fines: 7.3
-48.3	3.0		SAND, silty, mostly fine-grained sand-sized quartz, few shell fragments, lt. to medium gray (SM)		
-51.0	5.7		SILT, inorganic-L, trace shell fragments, sandy, medium gray (ML)		
-52.1	6.8		CLAY, lean, SM-filled voids between 5.9 to 6.8 ft., medium gray (CL)		
-58.0	12.7		CLAY, fat, sandy, hard, soft in sandy void-fill, lt. gray, pale orange, lt. green (CH)	NS	
-64.6	19.3		SAND, silty, little shell fragments between 13.3 to 15.6-ft. depths, pale orange, lt. gray, medium gray (SM) At El. -61.9 Ft., fine- to medium-grained sand-sized to base of boring		

NOTES:

1. Soils are field visually classified in accordance with the Unified Soils Classification System.

2. NS = Sample not submitted for laboratory analysis from this interval.

3. Seafloor elevation determined from 10/16/2014 USACE survey.

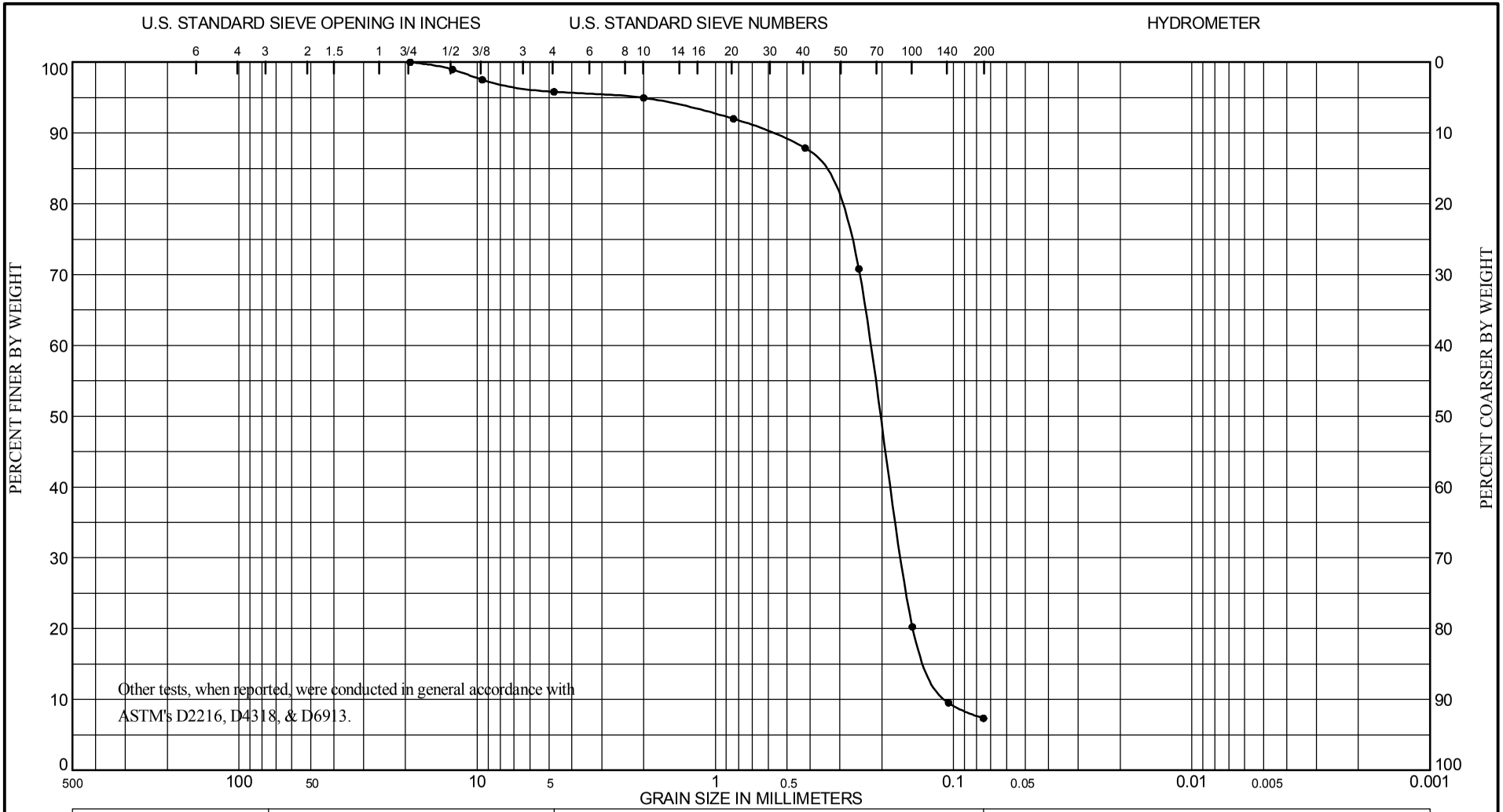
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.13832° Long = -88.46310°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 3.0	Greenish Gray, Poorly Graded Silty Sand (SP-SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4869
Hole No. BI-PBS-382-13
Date 4/23/14

GRADATION CURVES

Boring Designation BI-PBS-384-13

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
	South Atlantic	Mobile District	

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass-OCS East
2. BORING DESIGNATION	BI-PBS-384-13
LOCATION COORDINATES	E = 1,133,493 N = 239,180
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	17.5 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED 4 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	56.3 Ft.
15. DATE BORING	STARTED 02-22-14 / COMPLETED 02-22-14
16. ELEVATION TOP OF BORING	-53.6 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Tom Powers, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-53.6	0.0				
-55.9	2.3		SAND, silty, mostly fine-grained sand-sized quartz, trace CL at 0.8 ft. and at 1.9 ft. High fines content below 1.0 ft., medium gray (SM)	A	Classification: SM Color: 2.5Y 5/1-gray D50: 0.279 mm % Fines: 19.7
-56.5	2.9		CLAY, lean, firm, subhorizontal sand-filled voids, medium gray (CL)	NS	
-67.3	13.7		SAND, silty, mostly fine-grained sand-sized quartz, slightly plastic to 3.2 ft. depth, medium gray (SM)	B	Classification: SP-SM Color: 2.5Y 5/1-gray D50: 0.251 mm % Fines: 11.7
				C	Classification: SP-SM Color: 2.5Y 6/1-gray D50: 0.231 mm % Fines: 8.9
-71.1	17.5		SAND, poorly-graded with silt, mostly fine to medium-grained sand-sized quartz, fewer fines below 15.2 ft., trace wood from 14.0 to 14.2 ft., trace CL from 15.2 to 15.3 ft., lt. gray (SP-SM)	D	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.222 mm % Fines: 3.9

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.

3. Seafloor elevation determined from USACE hydrographic survey completed April 2014.

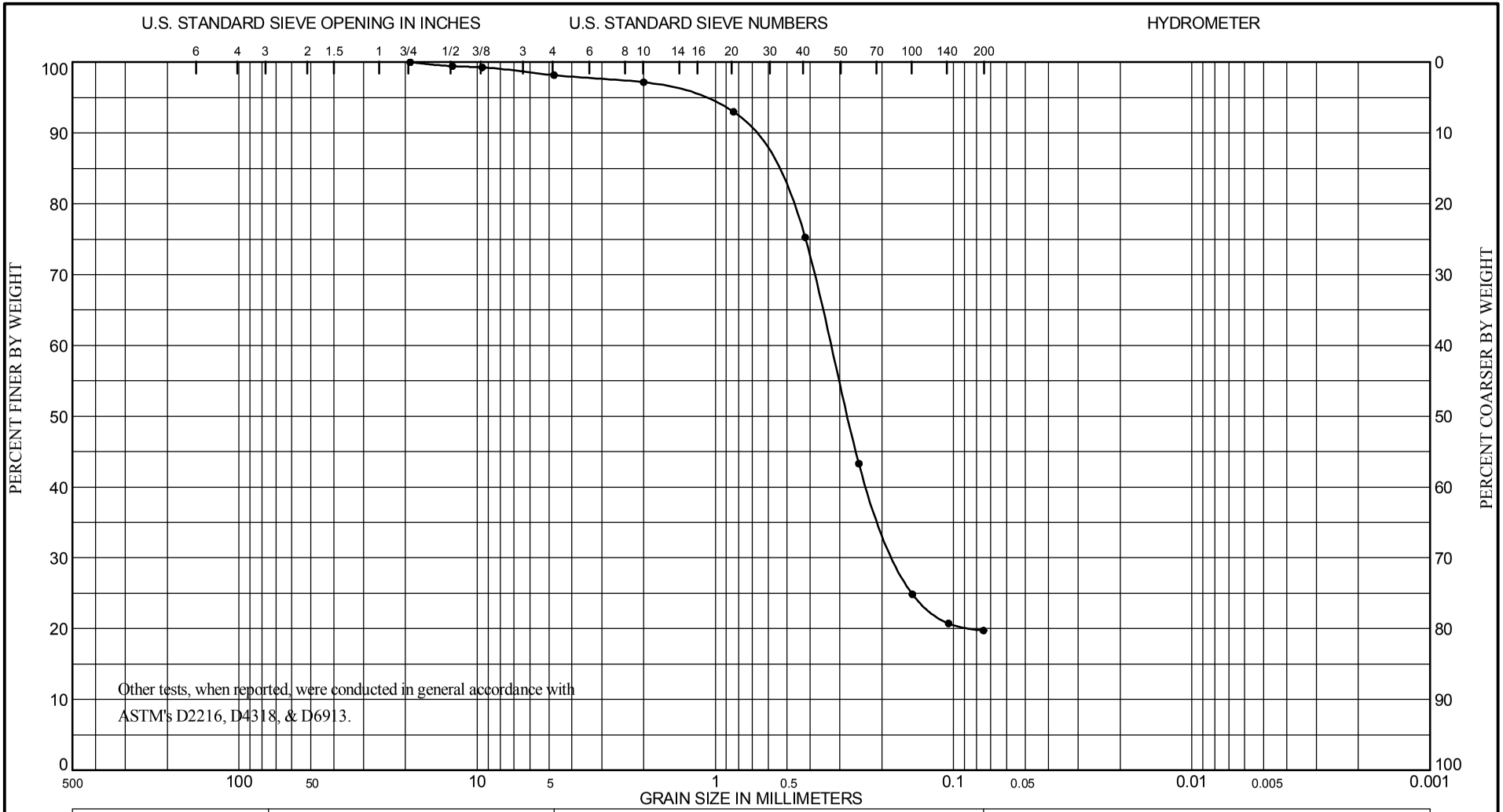
0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.15685° Long = -88.36111°

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

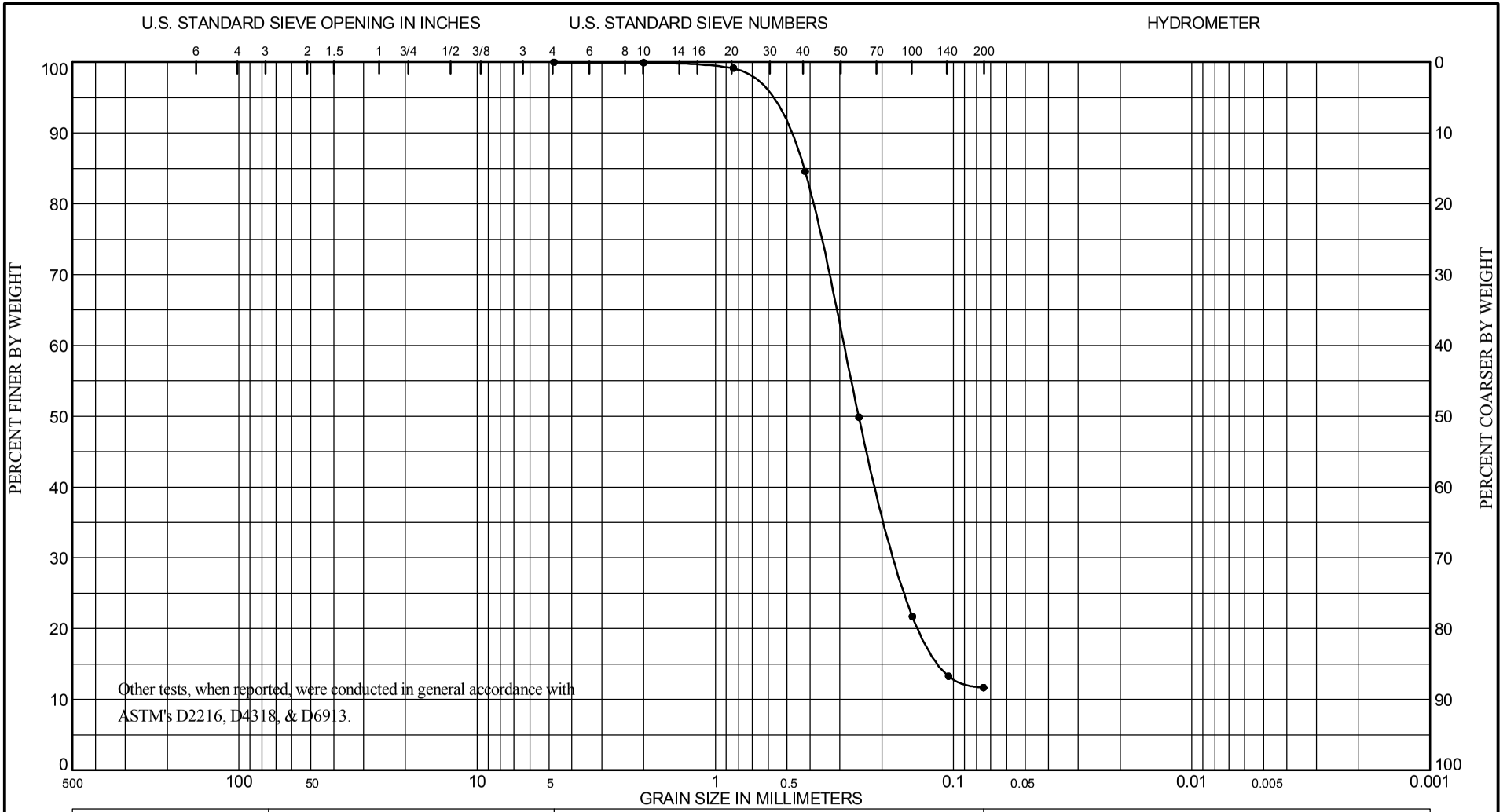
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
A	0.0 to 2.3	Very Dark Gray, Silty Sand (SM), with a trace of gravel size shell.				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4863
Hole No. BI-PBS-384-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

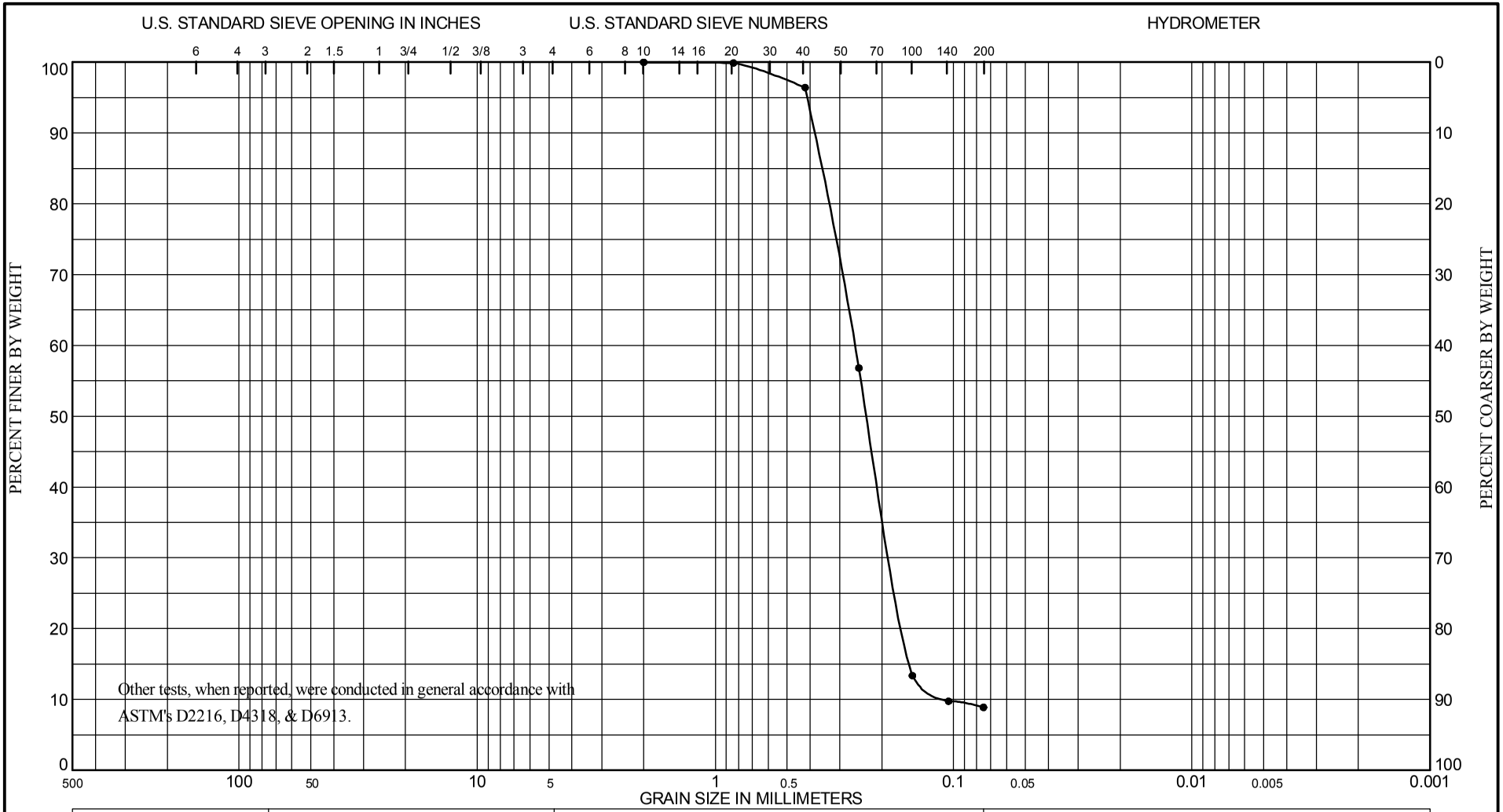
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
B	2.9 to 8.0	Dark Greenish Gray, Poorly Graded Silty Sand (SP-SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4864
Hole No. BI-PBS-384-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

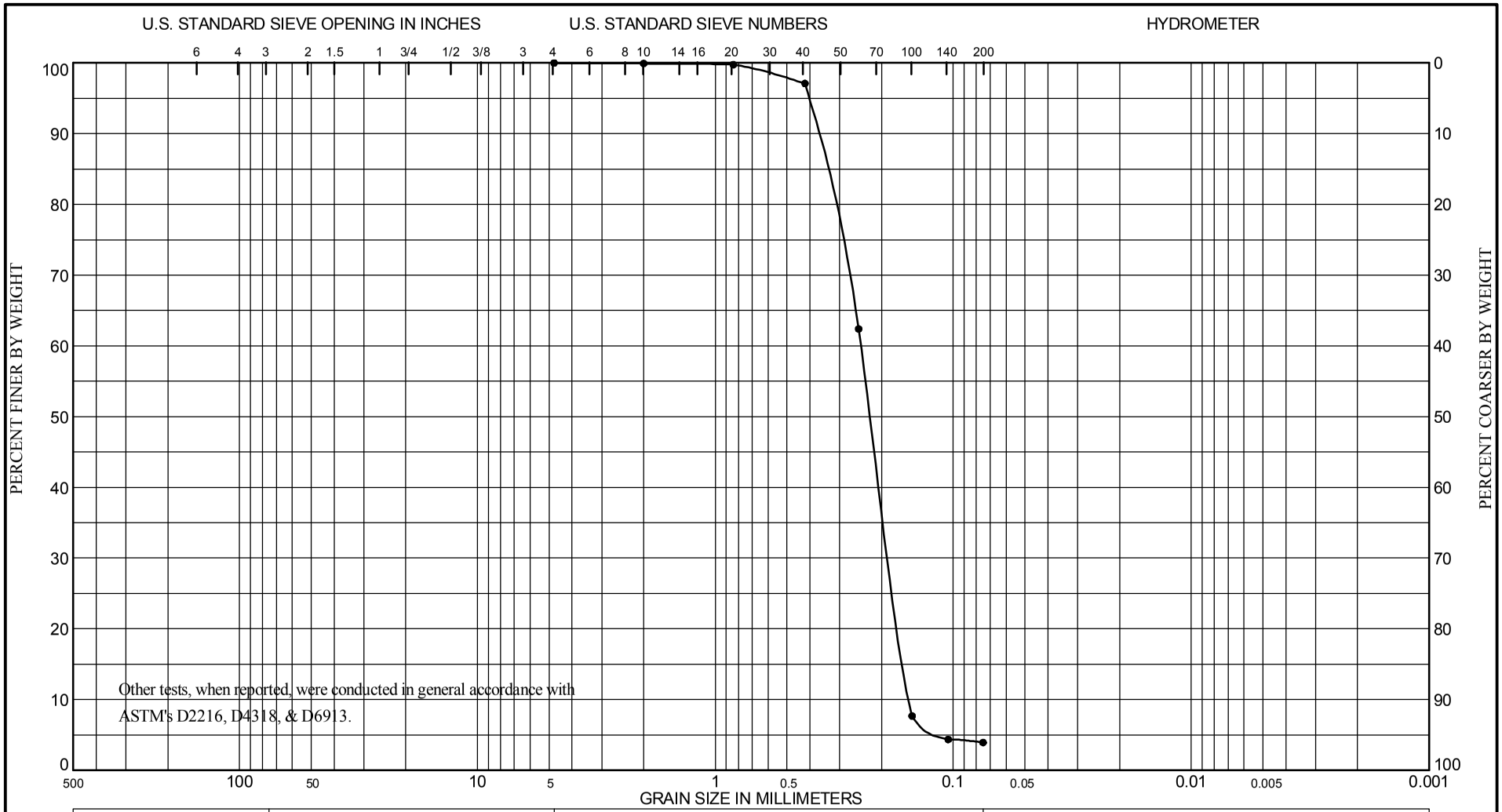
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
C	8.0 to 13.7	Greenish Gray, Poorly Graded Silty Sand (SP-SM).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4865
Hole No. BI-PBS-384-13
Date 4/23/14

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER: 848e
REQUISITION: W33SJG32900192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
D	13.7 to 17.5	Gray, Poorly Graded Sand (SP).				

Project MsCIP Barrier Island Restoration
Vibracore Sampling Pascagoula, MS
Lab No. K5/4866
Hole No. BI-PBS-384-13
Date 4/23/14

GRADATION CURVES

Appendix L

Petit Bois Pass-Alabama Vibracores and Lab Results

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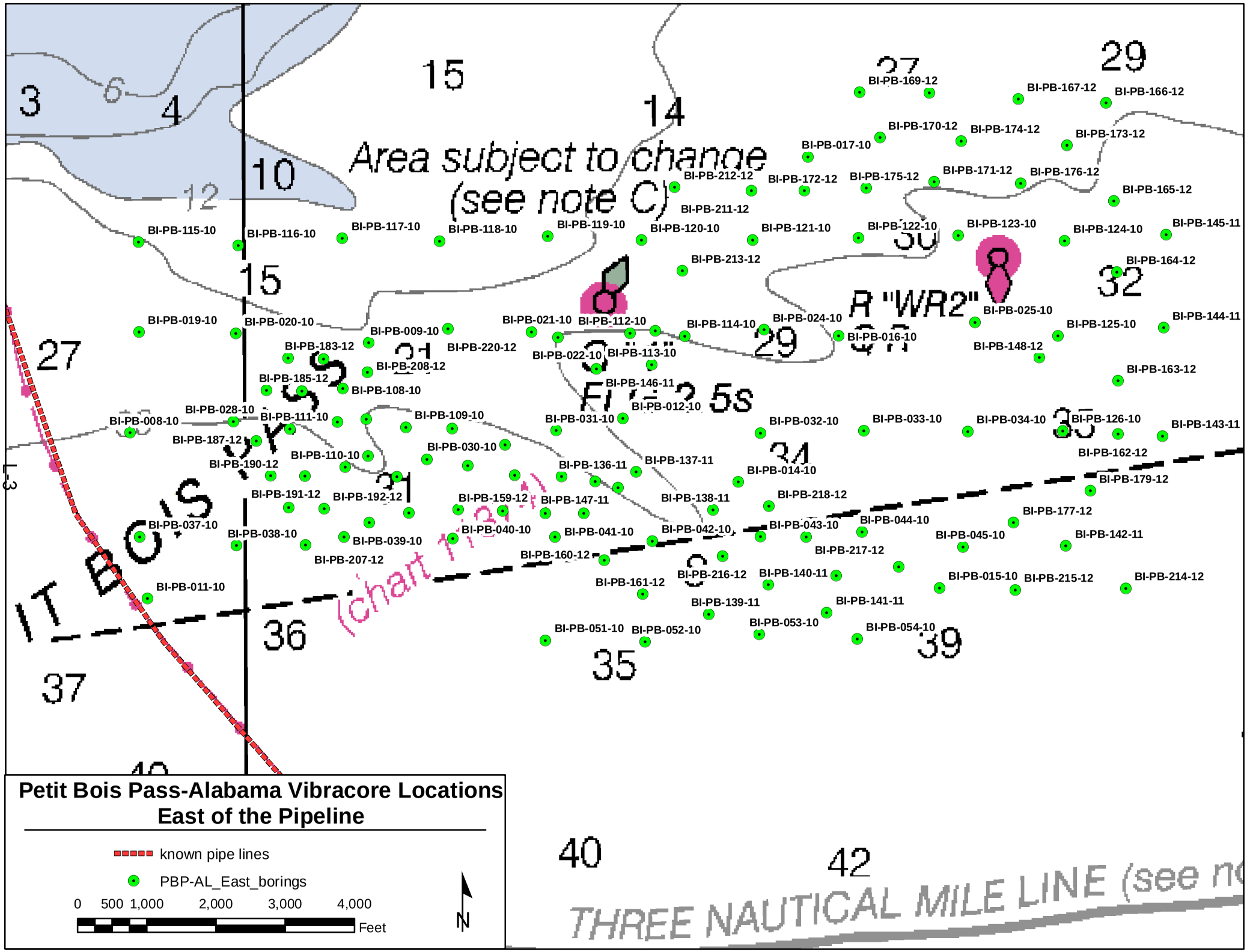
Petit Bois Pass-Alabama Vibracore Locations
East of the Pipeline
known pipe lines
PBP-AL_East_borings
0 500 1,000 2,000 3,000 4,000
Feet
N
Area subject to change
(see note C)
THREE NAUTICAL MILE LINE (see no
(chart datum)
BI-PB-169-12
BI-PB-167-12
BI-PB-166-12
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BI-PB-140-11
BI-PB-015-10
BI-PB-215-12
BI-PB-214-12
BI-PB-139-11
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BI-PB-051-10
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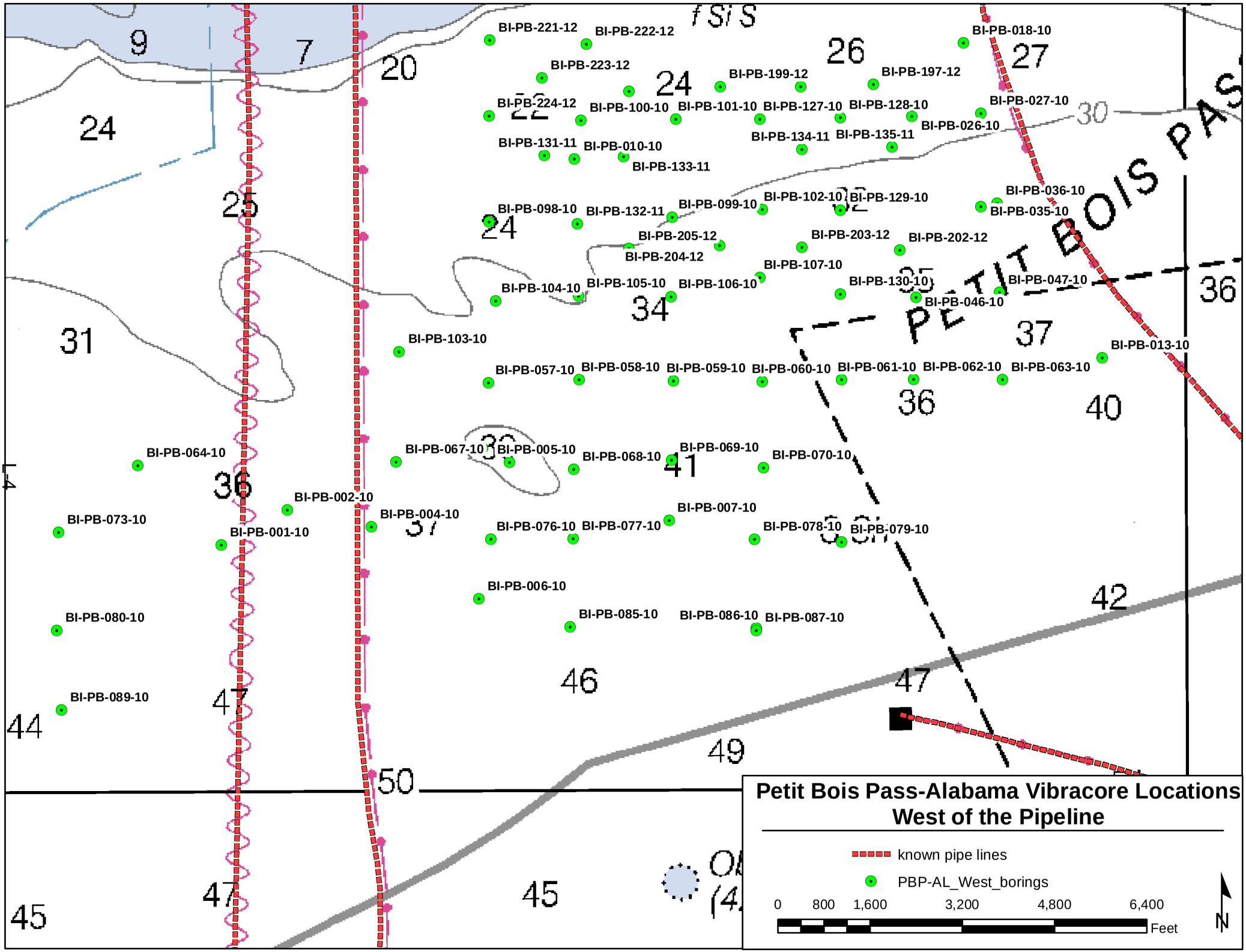
R "WR2"
L-3


Petit Bois Pass-Alabama Vibracore Locations
West of the Pipeline
known pipe lines
PBP-AL_West_borings
0 800 1,600 3,200 4,800 6,400
Feet
N
BI-PB-221-12
BI-PB-222-12
BI-PB-223-12
BI-PB-224-12
BI-PB-100-10
BI-PB-101-10
BI-PB-127-10
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BI-PB-134-11
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BI-PB-080-10
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BI-PB-086-10
BI-PB-087-10
BI-PB-089-10
PETIT BOIS PASS
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Vibracore / Sample ID	Investigation Area	Sample Event	Date of Sample	Time_CST	Latitude	Longitude	Northing_Y	Easting_X	Sample Method	Water Depth (feet)	Boring Depth (feet below seafloor surface)	Sample Depth (Feet below seafloor surface)	Sample Thickness (feet)	Field USCS	Lab USCS	Angularity	Wet Munsell Color	Wet Munsell Color Code	Wet Munsell Value	Dry Munsell Color	Dry Munsell Color Code	Dry Munsell Value	CaCO3	D50 (mm)	Graphic Mean (mm)	% Fines	Cu (D60/D10)	Cc (D30)^2 / (D10*D60)
BI-PB-001-10	PETIT BOIS PASS-ALABAMA WEST	2010	6/25/2010	9:20 AM	30.17841	-88.38620	246988.62530	1125532.25600	20-ft Vibracore	44.0	15.7																	
BI-PB-001-10A	PETIT BOIS PASS-ALABAMA WEST	2010	6/25/2010	9:20 AM	30.17841	-88.38620	246988.62530	1125532.25600	20-ft Vibracore	44.0	15.7	6.0 - 10.3	4.3	SM	SM	SUBANGULAR TO ROUNDED	DK GRAYISH BROWN	2.5Y 4/2	4	LT BROWNISH GRAY	2.5Y 6/2	6	NO	0.25	0.25	13.3	#VALUE!	#VALUE!
BI-PB-001-10B	PETIT BOIS PASS-ALABAMA WEST	2010	6/25/2010	9:20 AM	30.17841	-88.38620	246988.62530	1125532.25600	20-ft Vibracore	44.0	15.7	10.3 - 15.7	5.4	SP	SP	SUBANGULAR TO ROUNDED	GRAY	2.5Y 6/1	6	LT GRAY	2.5Y 7/1	7	NO	0.26	0.27	2.9	1.7	1.0
BI-PB-002-10	PETIT BOIS PASS-ALABAMA WEST	2010	6/25/2010	10:10 AM	30.18007	-88.38155	247598.13770	1126999.15400	20-ft Vibracore	43.0	15.5																	
BI-PB-002-10A	PETIT BOIS PASS-ALABAMA WEST	2010	6/25/2010	10:10 AM	30.18007	-88.38155	247598.13770	1126999.15400	20-ft Vibracore	43.0	15.5	7.6 - 13.3	5.7	SM	SM	SUBANGULAR TO ROUNDED	DK GRAYISH BROWN	2.5Y 4/2	4	GRAYISH BROWN	2.5Y 6/2	6	NO	0.24	0.24	14.6	#VALUE!	#VALUE!
BI-PB-003-10	PETIT BOIS PASS-ALABAMA WEST	2010	6/25/2010	11:20 AM	30.18298	-88.37183	248668.77000	1130066.11200	20-ft Vibracore	33.0	18.4																	
BI-PB-003-10A	PETIT BOIS PASS-ALABAMA WEST	2010	6/25/2010	11:20 AM	30.18298	-88.37183	248668.77000	1130066.11200	20-ft Vibracore	33.0	18.4	0.0 - 3.5	3.5	SP	SP	SUBANGULAR TO ROUNDED	GRAY	2.5Y 5/1	5	LT GRAY	2.5Y 7/1	7	NO	0.25	0.29	2.3	1.8	0.9
BI-PB-003-10B	PETIT BOIS PASS-ALABAMA WEST	2010	6/25/2010	11:20 AM	30.18298	-88.37183	248668.77000	1130066.11200	20-ft Vibracore	33.0	18.4	3.0 - 6.7	3.7	SM	SC	SUBANGULAR TO ROUNDED	VERY DK GRAYISH BROWN	2.5Y 3/2	3	GRAYISH BROWN	2.5Y 5/2	5	NO	0.21	#VALUE!	16.8	#VALUE!	#VALUE!
BI-PB-004-10	PETIT BOIS PASS-ALABAMA WEST	2010	6/25/2010	10:40 AM	30.17924	-88.37780	247300.99500	1128185.25300	20-ft Vibracore	43.0	20.0																	
BI-PB-004-10A	PETIT BOIS PASS-ALABAMA WEST	2010	6/25/2010	10:40 AM	30.17924	-88.37780	247300.99500	1128185.25300	20-ft Vibracore	43.0	20.0	8.0 - 12.0	4.0	SM	SM	SUBANGULAR TO ROUNDED	DK GRAYISH BROWN	2.5Y 4/2	4	GRAYISH BROWN	2.5Y 5/2	5	NO	0.25	#VALUE!	16.2	#VALUE!	#VALUE!
BI-PB-004-10B	PETIT BOIS PASS-ALABAMA WEST	2010	6/25/2010	10:40 AM	30.17924	-88.37780	247300.99500	1128185.25300	20-ft Vibracore	43.0	20.0	12.0 - 17.7	5.7	SP	SM	SUBANGULAR TO ROUNDED	DK GRAY	2.5Y 4/1	4	LT BROWNISH GRAY	2.5Y 6/2	6	NO	0.19	0.19	12.1	#VALUE!	#VALUE!
BI-PB-004-10C	PETIT BOIS PASS-ALABAMA WEST	2010	6/25/2010	10:40 AM	30.17924	-88.37780	247300.99500	1128185.25300	20-ft Vibracore	43.0	20.0	17.7 - 20.0	2.3	SM	SM	SUBANGULAR TO ROUNDED	DK GRAY	2.5Y 4/1	4	GRAYISH BROWN	2.5Y 5/2	5	NO	0.19	#VALUE!	19.1	#VALUE!	#VALUE!
BI-PB-005-10	PETIT BOIS PASS-ALABAMA WEST	2010	6/26/2010	9:15 AM	30.18230	-88.37035	248423.36020	1130534.74100	20-ft Vibracore	31.0	19.5																	
BI-PB-005-10A	PETIT BOIS PASS-ALABAMA WEST	2010	6/26/2010	9:15 AM	30.18230	-88.37035	248423.36020	1130534.74100	20-ft Vibracore	31.0	19.5	0.0 - 6.6	6.6	SP	SP	SUBANGULAR TO ROUNDED	GRAY	2.5Y 5/1	5	LT GRAY	2.5Y 7/2	7	NO	0.28	0.32	1.9	1.9	0.9
BI-PB-006-10	PETIT BOIS PASS-ALABAMA WEST	2010	6/26/2010	8:45 AM	30.17579	-88.37206	246053.57340	1130004.02300	20-ft Vibracore	45.0	18.6																	
BI-PB-006-10A	PETIT BOIS PASS-ALABAMA WEST	2010	6/26/2010	8:45 AM	30.17579	-88.37206	246053.57340	1130004.02300	20-ft Vibracore	45.0	18.6	4.2 - 8.2	4.0	SM	SM	SUBANGULAR TO ROUNDED	DK GRAYISH BROWN	2.5Y 4/2	4	GRAYISH BROWN	2.5Y 5/2	5	NO	0.24	#VALUE!	16.1	#VALUE!	#VALUE!
BI-PB-006-10B	PETIT BOIS PASS-ALABAMA WEST	2010	6/26/2010	8:45 AM	30.17579	-88.37206	246053.57340	1130004.02300	20-ft Vibracore	45.0	18.6	8.2 - 13.2	5.0	SP	SP	SUBANGULAR TO ROUNDED	GRAY	2.5Y 6/1	6	LT GRAY	2.5Y 7/1	7	NO	0.28	0.28	3.4	1.8	1.0
BI-PB-006-10C	PETIT BOIS PASS-ALABAMA WEST	2010	6/26/2010	8:45 AM	30.17579	-88.37206	246053.57340	1130004.02300	20-ft Vibracore	45.0	18.6	13.2 - 18.6	5.4	SP	SP-SM	SUBANGULAR TO ROUNDED	GRAY	2.5Y 6/1	6	LT GRAY	2.5Y 7/1	7	NO	0.29	0.29	5.0	1.9	1.1
BI-PB-007-10	PETIT BOIS PASS-ALABAMA WEST	2010	6/26/2010	12:35 PM	30.17950	-88.36157	247416.41560	1133313.12600	20-ft Vibracore	36.0	19.3																	
BI-PB-007-10A	PETIT BOIS PASS-ALABAMA WEST	2010	6/26/2010	12:35 PM	30.17950	-88.36157	247416.41560	1133313.12600	20-ft Vibracore	36.0	19.3	0.0 - 3.5	3.5	SP	SP	SUBANGULAR TO ROUNDED	GRAYISH BROWN	2.5Y 5/2	5	LT GRAY	2.5Y 7/1	7	NO	0.28	0.30	1.6	1.8	1.0
BI-PB-007-10B	PETIT BOIS PASS-ALABAMA WEST	2010	6/26/2010	12:35 PM	30.17950	-88.36157	247416.41560	1133313.12600	20-ft Vibracore	36.0	19.3	3.5 - 7.5	4.0	SP	SP	SUBANGULAR TO ROUNDED	GRAYISH BROWN	2.5Y 5/2	5	LT GRAY	2.5Y 7/1	7	NO	0.32	0.35	1.5	2.0	1.0
BI-PB-008-10	PETIT BOIS PASS-ALABAMA EAST	2010	6/26/2010	10:45 AM	30.19848	-88.33844	254350.19690	1140591.62100	20-ft Vibracore	33.0	16.9																	
BI-PB-008-10A	PETIT BOIS PASS-ALABAMA EAST	2010	6/26/2010	10:45 AM	30.19848	-88.33844	254350.19690	1140591.62100	20-ft Vibracore	33.0	16.9	0.0 - 6.0	6.0	SP	SP	SUBANGULAR TO ROUNDED	LT GRAY	2.5Y 7/1	7	WHITE	2.5Y 8/1	8	NO	0.38	0.41	1.7	1.5	0.9
BI-PB-008-10B	PETIT BOIS PASS-ALABAMA EAST	2010	6/26/2010	10:45 AM	30.19848	-88.33844	254350.19690	1140591.62100	20-ft Vibracore	33.0	16.9	6.0 - 12.0	6.0	SP	SP	SUBANGULAR TO ROUNDED	LT GRAY	2.5Y 7/1	7	WHITE	2.5Y 8/1	8	NO	0.40	0.43	1.7	1.6	0.9
BI-PB-008-10C	PETIT BOIS PASS-ALABAMA EAST	2010	6/26/2010	10:45 AM	30.19848	-88.33844	254350.19690	1140591.62100	20-ft Vibracore	33.0	16.9	12.0 - 16.9	4.9	SP	SP	SUBANGULAR TO ROUNDED	GRAYISH BROWN	2.5Y 5/2	5	LT BROWNISH GRAY	2.5Y 6/2	6	NO	0.37	0.40	4.3	2.4	0.9
BI-PB-009-10	PETIT BOIS PASS-ALABAMA EAST	2010	6/26/2010	11:00 AM	30.20201	-88.32751	255649.18460	1144038.85700	20-ft Vibracore	23.0	15.2																	
BI-PB-009-10A	PETIT BOIS PASS-ALABAMA EAST	2010	6/26/2010	11:00 AM	30.20201	-88.32751	255649.18460	1144038.85700	20-ft Vibracore	23.0	15.2	0.0 - 6.7	6.7	SP	SP	SUBANGULAR TO ROUNDED	GRAYISH BROWN	2.5Y 5/2	5	LT GRAY	2.5Y 7/2	7	NO	0.29	0.29	3.0	2.1	1.2
BI-PB-009-10B	PETIT BOIS PASS-ALABAMA EAST	2010	6/26/2010	11:00 AM	30.20201	-88.32751	255649.18460	1144038.85700	20-ft Vibracore	23.0	15.2	7.6 -12.6	5.0	SP	SP	SUBANGULAR TO ROUNDED	LT BROWNISH GRAY	2.5Y 6/2	6	LT GRAY	2.5Y 7/2	7	NO	0.34	0.36	2.5	1.7	1.0
BI-PB-009-10C	PETIT BOIS PASS-ALABAMA EAST	2010	6/26/2010	11:00 AM	30.20201	-88.32751	255649.18460	1144038.85700	20-ft Vibracore	23.0	15.2	12.6 - 15.2	2.6	SP	SP	SUBANGULAR TO ROUNDED	GRAYISH BROWN	2.5Y 5/2	5	LT GRAY	2.5Y 7/2	7	NO	0.35	0.38	2.4	1.8	1.1
BI-PB-010-10	PETIT BOIS PASS-ALABAMA WEST	2010	6/26/2010	9:40 AM	30.19676	-88.36670	253686.97380	1131666.47300	20-ft Vibracore	27.0	14.6																	
BI-PB-010-10A	PETIT BOIS PASS-ALABAMA WEST	2010	6/26/2010	9:40 AM	30.19676	-88.36670	253686.97380	1131666.47300	20-ft Vibracore	27.0	14.6	0.0 - 3.5	3.5	SP	SP	SUBANGULAR TO ROUNDED	GRAYISH BROWN	2.5Y 5/2	5	LT BROWNISH GRAY	2.5Y 6/2	6	NO	0.28	0.29	4.9	2.2	1.1
BI-PB-010-10B	PETIT BOIS PASS-ALABAMA WEST	2010	6/26/2010	9:40 AM	30.19676	-88.36670	253686.97380	1131666.47300	20-ft Vibracore	27.0	14.6	3.5 - 7.0	3.5	SP	SP-SM	SUBANGULAR TO ROUNDED	GRAYISH BROWN	2.5Y 5/2	5	LT BROWNISH GRAY	2.5Y 6/2	6	NO	0.30	0.30	6.3	1.9	1.1
BI-PB-011-10	PETIT BOIS PASS-ALABAMA EAST	2010	6/26/2010	10:30 AM	30.19180	-88.33768	251921.80640	1140842.28600	20-ft Vibracore	37.0	18.3	NO SAMPLE TAKEN		CL	NO SAMPLE TESTED													
BI-PB-012-10	PETIT BOIS PASS-ALABAMA EAST	2010	6/25/2010	2:10 PM	30.19896	-88.31590	254556.40970	1147711.52800	20-ft Vibracore	35.0	18.4																	
BI-PB-012-10A	PETIT BOIS PASS-ALABAMA EAST	2010	6/25/2010	2:10 PM	30.19896	-88.31590	254556.40970	1147711.52800	20-ft Vibracore	35.0	18.4	0.0 - 6.0	6.0	SP	SP-SM	SUBANGULAR TO ROUNDED	LT GRAY	2.5Y 7/2	7	LT GRAY	2.5Y 7/2	7	NO	0.33	0.34	6.3	2.1	1.3
BI-PB-012-10B	PETIT BOIS PASS-ALABAMA EAST	2010	6/25/2010	2:10 PM	30.19896	-88.31590	254556.40970	1147711.52800	20-ft Vibracore	35.0	18.4	6.0 - 12.0	6.0	SP	SP	SUBANGULAR TO ROUNDED	LT GRAY	2.5Y 7/2	7	WHITE	2.5Y 8/1	8	NO	0.33	0.34	4.3	1.8	1.1
BI-PB-012-10C	PETIT BOIS PASS-ALABAMA EAST	2010	6/25/2010	2:10 PM	30.19896	-88.31590	254556.40970	1147711.52800	20-ft Vibracore	35.0	18.4	12.0 - 18.3	6.3	SP	SP	SUBANGULAR TO ROUNDED	WHITE	2.5Y 8/1	8	WHITE	2.5Y 8/1	8	NO	0.33	0.33	2.0	1.5	1.0
BI-PB-013-10	PETIT BOIS PASS-ALABAMA WEST	2010	6/26/2010	10:10 AM	30.18716	-88.33778	250234.15910	1140818.03200	20-ft Vibracore	40.0	18.2	NO SAMPLE TAKEN		CL	NO SAMPLE TESTED													
BI-PB-014-10	PETIT BOIS PASS-ALABAMA EAST	2010	6/26/2010	12:30 PM	30.19641	-88.31064	253636.59050	1149377.48400	20-ft Vibracore	38.0	17.4																	
BI-PB-014-10A	PETIT BOIS PASS-ALABAMA EAST	2010	6/26/2010	12:30 PM	30.19641	-88.31064	253636.59050	1149377.48400	20-ft Vibracore	38.0	17.4	0.0 - 6.0	6.0	SP	SP	SUBANGULAR TO ROUNDED	LT GRAY	2.5Y 7/2	7	LT GRAY	2.5Y 7/2	7	NO	0.35	0.37	3.5	1.8	1.1
BI-PB-014-10B	PETIT BOIS PASS-ALABAMA EAST	2010	6/26/2010	12:30 PM	30.19641	-88.31064	253636.59050	1149377.48400	20-ft Vibracore	38.0	17.4	6.0 - 12.0	6.0	SP	SP	SUBANGULAR TO ROUNDED	LT GRAY	2.5Y 7/1	7	WHITE	2.5Y 8/1	8	NO	0.37	0.40	2.7	1.7	1.0
BI-PB-014-10C	PETIT BOIS PASS-ALABAMA EAST	2010	6/26/2010	12:30 PM	30.19641	-88.31064	253636.59050	1149377.48400	20-ft Vibracore	38.0	17.4	12.0 - 17.4	5.4	SP	SP	SUBANGULAR TO ROUNDED	GRAY	10YR 6/1	6	LT GRAY	2.5Y 7/1	7	NO	0.35	0.38	4.6	1.9	1.1
BI-PB-015-10	PETIT BOIS PASS-ALABAMA EAST	2010	6/26/2010	1:00 PM	30.19217	-88.30146	252107.97450	1152284.83900	20-ft Vibracore	42.0	19.1																	
BI-PB-015-10A	PETIT BOIS PASS-ALABAMA EAST	2010	6/26/2010	1:00 PM	30.19217	-88.30146	252107.97450	1152284.83900	20-ft Vibracore	42.0	19.1	4.7 - 9.0	4.3	SP	SP	SUBANGULAR TO ROUNDED	WHITE	2.5Y 8/1	8	WHITE	2.5Y 8/1	8	NO	0.38	0.40	1.5	1.6	0.9
BI-PB-015-10B	PETIT BOIS PASS-ALABAMA EAST	2010	6/26/2010	1:00 PM	30.19217	-88.30146	252107.97450	1152284.83900	20-ft Vibracore	42.0	19.1	9.0 - 12.1	3.1	SP	SP	SUBANGULAR TO ROUNDED	GRAY	2.5Y 6/1	6	LT GRAY	2.5Y 7/1	7	NO	0.35	0.37	1.9	1.7	1.0
BI-PB-016-10	PETIT BOIS PASS-ALABAMA EAST	2010	6/26/2010	12:00 PM	30.20221	-88.30602	255752.71300	1150827.27400	20-ft Vibracore	34.0	20.0																	
BI-PB-016-10A	PETIT BOIS PASS-ALABAMA EAST	2010	6/26/2010	12:00 PM	30.20221	-88.30602	255752.71300	1150827.27400	20-ft Vibracore	34.0	20.0	0.0 - 2.5	2.5	SM	SP-SM	SUBANGULAR TO ROUNDED	GRAYISH BROWN	2.5Y 5/2	5	LT BROWNISH GRAY	2.5Y 6/2	6	NO	0.30	0.31	7.8	2.5	1.4
BI-PB-016-10B	PETIT BOIS PASS-ALABAMA EAST	2010	6/26/2010	12:00 PM	30.20221	-88.30602	255752.71300	1150827.27400	20-ft Vibracore	34.0	20.0	2.5 - 8.5	6.0	SP	SP-SM	SUBANGULAR TO ROUNDED	LT GRAY	2.5Y 7/2	7	LT GRAY	2.5Y 7/2	7	NO	0.33	0.34	6.8	2.0	1.3
BI-PB-016-10C	PETIT BOIS PASS-ALABAMA EAST	2010	6/26/2010	12:00 PM	30.20221	-88.30602	255752.71300	1150827.27400	20-ft Vibracore	34.0	20.0	8.5 - 15.0	6.5	SP	SP-SM	SUBANGULAR TO ROUNDED	LT GRAY	2.5Y 7/2	7	LT GRAY	2.5Y 7/2	7	NO	0.34	0.35	5.1	1.6	1.1
BI-PB-016-10D	PETIT BOIS PASS-ALABAMA EAST	2010	6/26/2010	12:00 PM	30.20221	-88.30602	255752.71300	1150827.27400	20-ft Vibracore	34.0	20.0	15.0 - 20.0	5.0	SM	SP-SM	SUBANGULAR TO ROUNDED	GRAY	2.5Y 5/1	5	LT BROWNISH GRAY	2.5Y 6/2	6	NO	0.31	0.31	7.4	1.9	1.1

Cu: Coefficient of Uniformity
Cc: Coefficient of Curvature
The "#Value!" error message indicates that data was not available for that calculation.

Vibracore / Sample ID	Investigation Area	Sample Event	Date of Sample	Time_CST	Latitude	Longitude	Northing_Y	Easting_X	Sample Method	Water Depth (feet)	Boring Depth (feet below seafloor surface)	Sample Depth (Feet below seafloor surface)	Sample Thickness (feet)	Field USCS	Lab USCS	Angularity	Wet Munsell Color	Wet Munsell Color Code	Wet Munsell Value	Dry Munsell Color	Dry Munsell Color Code	Dry Munsell Value	CaCO3	D50 (mm)	Graphic Mean (mm)	% Fines	Cu (D60/D10)	Cc (D30)^2 / (D10*D60)
BI-PB-017-10	PETIT BOIS PASS-ALABAMA EAST	2010	6/26/2010	11:45 AM	30.20932	-88.30739	258336.54230	1150382.54500	20-ft Vibracore	28.0	20.0	NO SAMPLE TAKEN		CH	NO SAMPLE TESTED													
BI-PB-018-10	PETIT BOIS PASS-ALABAMA WEST	2010	7/9/2010	3:20 PM	30.20221	-88.34531	255697.38850	1138415.48200	20-ft Vibracore	27.0	15.8																	
BI-PB-018-10A	PETIT BOIS PASS-ALABAMA WEST	2010	7/9/2010	3:20 PM	30.20221	-88.34531	255697.38850	1138415.48200	20-ft Vibracore	27.0	15.8	0.0 - 3.3	3.3	SP	SP	SUBANGULAR TO ROUNDED	YELLOWISH BROWN	10YR 5/3	5	LT BROWNISH GRAY	10YR 6/2	6	NO	0.31	0.32	3.4	1.9	1.1
BI-PB-018-10B	PETIT BOIS PASS-ALABAMA WEST	2010	7/9/2010	3:20 PM	30.20221	-88.34531	255697.38850	1138415.48200	20-ft Vibracore	27.0	15.8	3.3 - 6.6	3.3	SP	SP	SUBANGULAR TO ROUNDED	YELLOWISH BROWN	10YR 5/3	5	LT BROWNISH GRAY	10YR 6/2	6	NO	0.30	0.30	4.1	1.6	1.1
BI-PB-019-10	PETIT BOIS PASS-ALABAMA EAST	2010	7/10/2010	9:05 AM	30.20248	-88.33801	255805.53960	1140721.13800	20-ft Vibracore	30.0	18.0																	
BI-PB-019-10A	PETIT BOIS PASS-ALABAMA EAST	2010	7/10/2010	9:05 AM	30.20248	-88.33801	255805.53960	1140721.13800	20-ft Vibracore	30.0	18.0	0.0 - 4.3	4.3	SP	SP	SUBANGULAR TO ROUNDED	LT GRAY	2.5Y 7/1	7	LT GRAY	2.5Y 7/2	7	NO	0.34	0.35	1.9	1.8	1.1
BI-PB-019-10B	PETIT BOIS PASS-ALABAMA EAST	2010	7/10/2010	9:05 AM	30.20248	-88.33801	255805.53960	1140721.13800	20-ft Vibracore	30.0	18.0	4.3 - 8.6	4.3	SP	SP	SUBANGULAR TO ROUNDED	LT GRAY	2.5Y 7/1	7	WHITE	2.5Y 8/1	8	NO	0.33	0.35	2.0	1.7	1.1
BI-PB-020-10	PETIT BOIS PASS-ALABAMA EAST	2010	7/10/2010	9:45 AM	30.20240	-88.33336	255782.86300	1142190.20500	20-ft Vibracore	27.0	17.0																	
BI-PB-020-10A	PETIT BOIS PASS-ALABAMA EAST	2010	7/10/2010	9:45 AM	30.20240	-88.33336	255782.86300	1142190.20500	20-ft Vibracore	27.0	17.0	0.0 - 4.4	4.4	SP	SP	SUBANGULAR TO ROUNDED	GRAY	2.5Y 6/1	6	LT GRAY	2.5Y 7/2	7	NO	0.32	0.33	2.3	1.7	1.0
BI-PB-020-10B	PETIT BOIS PASS-ALABAMA EAST	2010	7/10/2010	9:45 AM	30.20240	-88.33336	255782.86300	1142190.20500	20-ft Vibracore	27.0	17.0	4.0 - 8.0	4.0	SP	SP	SUBANGULAR TO ROUNDED	LT GRAY	2.5Y 7/1	7	LT GRAY	2.5Y 7/2	7	NO	0.33	0.35	1.9	1.7	1.0
BI-PB-020-10C	PETIT BOIS PASS-ALABAMA EAST	2010	7/10/2010	9:45 AM	30.20240	-88.33336	255782.86300	1142190.20500	20-ft Vibracore	27.0	17.0	8.0 - 12.0	4.0	SP	SP	SUBANGULAR TO ROUNDED	LT GRAY	5Y 7/1	7	LT GRAY	2.5Y 7/2	7	NO	0.32	0.33	2.0	1.7	1.0
BI-PB-020-10D	PETIT BOIS PASS-ALABAMA EAST	2010	7/10/2010	9:45 AM	30.20240	-88.33336	255782.86300	1142190.20500	20-ft Vibracore	27.0	17.0	12.0 - 17.0	5.0	SP	SP	SUBANGULAR TO ROUNDED	GRAY	2.5Y 6/1	6	LT GRAY	2.5Y 7/1	7	NO	0.30	0.30	3.4	1.7	1.1
BI-PB-021-10	PETIT BOIS PASS-ALABAMA EAST	2010	7/10/2010	10:25 AM	30.20242	-88.32005	255808.84040	1146394.82000	20-ft Vibracore	33.0	18.5																	
BI-PB-021-10A	PETIT BOIS PASS-ALABAMA EAST	2010	7/10/2010	10:25 AM	30.20242	-88.32005	255808.84040	1146394.82000	20-ft Vibracore	33.0	18.5	0.0 - 4.0	4.0	SP	SP	SUBANGULAR TO ROUNDED	LT GRAY	2.5Y 7/1	7	LT GRAY	2.5Y 7/1	7	NO	0.34	0.37	1.7	1.7	1.1
BI-PB-021-10B	PETIT BOIS PASS-ALABAMA EAST	2010	7/10/2010	10:25 AM	30.20242	-88.32005	255808.84040	1146394.82000	20-ft Vibracore	33.0	18.5	4.0 - 8.0	4.0	SP	SP	SUBANGULAR TO ROUNDED	LT GRAY	2.5Y 7/1	7	LT GRAY	2.5Y 7/1	7	NO	0.33	0.36	1.9	1.6	1.0
BI-PB-021-10C	PETIT BOIS PASS-ALABAMA EAST	2010	7/10/2010	10:25 AM	30.20242	-88.32005	255808.84040	1146394.82000	20-ft Vibracore	33.0	18.5	8.0 - 11.4	3.4	SP	SP	SUBANGULAR TO ROUNDED	LT GRAY	2.5Y 7/1	7	LT GRAY	2.5Y 7/2	7	NO	0.33	0.35	2.9	1.9	1.2
BI-PB-021-10D	PETIT BOIS PASS-ALABAMA EAST	2010	7/10/2010	10:25 AM	30.20242	-88.32005	255808.84040	1146394.82000	20-ft Vibracore	33.0	18.5	11.4 - 14.5	3.1	SM	SP	SUBANGULAR TO ROUNDED	LT BROWNISH GRAY	2.5Y 6/2	6	LT GRAY	2.5Y 7/2	7	NO	0.32	0.33	6.3	2.0	1.3
BI-PB-021-10E	PETIT BOIS PASS-ALABAMA EAST	2010	7/10/2010	10:25 AM	30.20242	-88.32005	255808.84040	1146394.82000	20-ft Vibracore	33.0	18.5	14.5 - 18.5	4.0	SM	SP-SM	SUBANGULAR TO ROUNDED	LT GRAY	2.5Y 7/1	7	LT GRAY	2.5Y 7/2	7	NO	0.38	0.41	8.9	2.5	1.3
BI-PB-022-10	PETIT BOIS PASS-ALABAMA EAST	2010	7/10/2010	11:06 AM	30.20220	-88.31886	255730.52500	1146771.10400	20-ft Vibracore	33.0	18.6																	
BI-PB-022-10A	PETIT BOIS PASS-ALABAMA EAST	2010	7/10/2010	11:06 AM	30.20220	-88.31886	255730.52500	1146771.10400	20-ft Vibracore	33.0	18.6	0.0 - 5.3	5.3	SP	SP	SUBANGULAR TO ROUNDED	GRAY	2.5Y 6/1	6	LT GRAY	2.5Y 7/1	7	NO	0.34	0.37	2.6	1.8	1.0
BI-PB-022-10B	PETIT BOIS PASS-ALABAMA EAST	2010	7/10/2010	11:06 AM	30.20220	-88.31886	255730.52500	1146771.10400	20-ft Vibracore	33.0	18.6	5.3 - 10.6	5.3	SP	SP	SUBANGULAR TO ROUNDED	LT GR	2.5Y 7/1	7	LT GRAY	2.5Y 7/1	7	NO	0.36	0.39	2.3	1.8	1.0
BI-PB-022-10C	PETIT BOIS PASS-ALABAMA EAST	2010	7/10/2010	11:06 AM	30.20220	-88.31886	255730.52500	1146771.10400	20-ft Vibracore	33.0	18.6	10.6 - 13.6	3.0	SM	SP-SM	SUBANGULAR TO ROUNDED	LT GRAY	2.5Y 7/1	7	LT GRAY	2.5Y 7/2	7	NO	0.33	0.35	6.5	1.7	1.1
BI-PB-022-10D	PETIT BOIS PASS-ALABAMA EAST	2010	7/10/2010	11:06 AM	30.20220	-88.31886	255730.52500	1146771.10400	20-ft Vibracore	33.0	18.6	13.6 - 17.0	3.4	SM	SP-SM	SUBANGULAR TO ROUNDED	LT GRAY	2.5Y 7/1	7	LT GRAY	2.5Y 7/2	7	NO	0.39	0.42	10.1	#VALUE!	#VALUE!
BI-PB-022-10E	PETIT BOIS PASS-ALABAMA EAST	2010	7/10/2010	11:06 AM	30.20220	-88.31886	255730.52500	1146771.10400	20-ft Vibracore	33.0	18.6	17.0 - 18.6	1.6	SM	SP-SM	SUBANGULAR TO ROUNDED	LT GRAY	2.5Y 7/2	7	WHITE	2.5Y 8/1	8	NO	0.38	0.41	5.8	1.6	1.0
BI-PB-023-10	PETIT BOIS PASS-ALABAMA EAST	2010	7/10/2010	12:25 PM	30.20243	-88.31441	255820.55100	1148176.48800	20-ft Vibracore	32.0	17.8																	
BI-PB-023-10A	PETIT BOIS PASS-ALABAMA EAST	2010	7/10/2010	12:25 PM	30.20243	-88.31441	255820.55100	1148176.48800	20-ft Vibracore	32.0	17.8	0.0 - 3.2	3.2	SP-SM	SP-SM	SUBANGULAR TO ROUNDED	LT BROWNISH GRAY	2.5Y 6/2	6	LT GRAY	2.5Y 7/1	7	NO	0.35	0.36	6.1	2.3	1.3
BI-PB-023-10B	PETIT BOIS PASS-ALABAMA EAST	2010	7/10/2010	12:25 PM	30.20243	-88.31441	255820.55100	1148176.48800	20-ft Vibracore	32.0	17.8	3.2 - 6.4	3.2	SP-SM	SP-SM	SUBANGULAR TO ROUNDED	GRAY	2.5Y 6/1	6	LT GRAY	2.5Y 7/1	7	NO	0.36	0.39	5.9	1.9	1.1
BI-PB-024-10	PETIT BOIS PASS-ALABAMA EAST	2010	7/10/2010	1:08 PM	30.20246	-88.30944	255838.64940	1149746.46900	20-ft Vibracore	31.0	18.2																	
BI-PB-024-10A	PETIT BOIS PASS-ALABAMA EAST	2010	7/10/2010	1:08 PM	30.20246	-88.30944	255838.64940	1149746.46900	20-ft Vibracore	31.0	18.2	0.0 - 3.6	3.6	SP	SP	SUBANGULAR TO ROUNDED	LT BROWNISH GRAY	2.5Y 6/2	6	LT GRAY	2.5Y 7/2	7	NO	0.34	0.36	2.0	1.4	1.0
BI-PB-024-10B	PETIT BOIS PASS-ALABAMA EAST	2010	7/10/2010	1:08 PM	30.20246	-88.30944	255838.64940	1149746.46900	20-ft Vibracore	31.0	18.2	3.6 - 8.6	5.0	SP-SM	SP-SM	SUBANGULAR TO ROUNDED	GRAY	2.5Y 6/1	6	LT GRAY	2.5Y 7/2	7	NO	0.33	0.35	6.4	1.9	1.3
BI-PB-024-10C	PETIT BOIS PASS-ALABAMA EAST	2010	7/10/2010	1:08 PM	30.20246	-88.30944	255838.64940	1149746.46900	20-ft Vibracore	31.0	18.2	8.6 - 13.6	5.0	SP-SM	SP-SM	SUBANGULAR TO ROUNDED	LT GRAY	2.5Y 7/2	7	LT GRAY	2.5Y 7/2	7	NO	0.34	0.37	5.3	1.5	1.0
BI-PB-024-10D	PETIT BOIS PASS-ALABAMA EAST	2010	7/10/2010	1:08 PM	30.20246	-88.30944	255838.64940	1149746.46900	20-ft Vibracore	31.0	18.2	13.6 - 18.2	4.6	SP-SM	SP	SUBANGULAR TO ROUNDED	LT GRAY	2.5Y 7/1	7	LT GRAY	2.5Y 7/2	7	NO	0.35	0.38	4.8	1.5	1.0
BI-PB-025-10	PETIT BOIS PASS-ALABAMA EAST	2010	7/10/2010	1:45 PM	30.20272	-88.29980	255947.34560	1152791.31900	20-ft Vibracore	35.0	15.8																	
BI-PB-025-10A	PETIT BOIS PASS-ALABAMA EAST	2010	7/10/2010	1:45 PM	30.20272	-88.29980	255947.34560	1152791.31900	20-ft Vibracore	35.0	15.8	0.0 - 0.3	0.3	SP	SP-SM	SUBANGULAR TO ROUNDED	LT BROWNISH GRAY	2.5Y 6/2	6	LT GRAY	2.5Y 7/2	7	NO	0.35	0.38	7.2	3.8	2.0
BI-PB-025-10B	PETIT BOIS PASS-ALABAMA EAST	2010	7/10/2010	1:45 PM	30.20272	-88.29980	255947.34560	1152791.31900	20-ft Vibracore	35.0	15.8	0.3 - 4.3	4.0	SM	SM	SUBANGULAR TO ROUNDED	GRAY	2.5Y 5/1	5	GRAYISH BROWN	2.5Y 5/2	5	NO	0.32	0.29	13.6	#VALUE!	#VALUE!
BI-PB-025-10C	PETIT BOIS PASS-ALABAMA EAST	2010	7/10/2010	1:45 PM	30.20272	-88.29980	255947.34560	1152791.31900	20-ft Vibracore	35.0	15.8	4.3 - 8.3	4.0	SM	SP-SM	SUBANGULAR TO ROUNDED	GRAY	2.5Y 5/1	5	LT BROWNISH GRAY	2.5Y 6/2	6	NO	0.33	0.33	6.1	1.4	1.0
BI-PB-025-10D	PETIT BOIS PASS-ALABAMA EAST	2010	7/10/2010	1:45 PM	30.20272	-88.29980	255947.34560	1152791.31900	20-ft Vibracore	35.0	15.8	8.3 - 12.3	4.0	SM	SM	SUBANGULAR TO ROUNDED	DK GRAY	2.5Y 4/1	4	GRAYISH BROWN	2.5Y 5/2	5	NO	0.32	0.31	12.3	#VALUE!	#VALUE!
BI-PB-025-10E	PETIT BOIS PASS-ALABAMA EAST	2010	7/10/2010	1:45 PM	30.20272	-88.29980	255947.34560	1152791.31900	20-ft Vibracore	35.0	15.8	12.3 - 15.8	3.5	SM	SP-SM	SUBANGULAR TO ROUNDED	DK GRAY	2.5Y 4/1	4	GRAYISH BROWN	2.5Y 5/2	5	NO	0.32	0.31	11.0	#VALUE!	#VALUE!
BI-PB-026-10	PETIT BOIS PASS-ALABAMA WEST	2010	7/19/2010	12:45 PM	30.19872	-88.34816	254424.27160	1137520.57000	20-ft Vibracore	30.0	20.0																	
BI-PB-026-10A	PETIT BOIS PASS-ALABAMA WEST	2010	7/19/2010	12:45 PM	30.19872	-88.34816	254424.27160	1137520.57000	20-ft Vibracore	30.0	20.0	0.0 - 2.0	2.0	SM	SP-SM	SUBANGULAR TO ROUNDED	BLACK	2.5Y 2.5/1	3	VERY DK GRAYISH BROWN	2.5Y 3/2	3	NO	0.28	0.28	6.0	2.2	1.2
BI-PB-026-10B	PETIT BOIS PASS-ALABAMA WEST	2010	7/19/2010	12:45 PM	30.19872	-88.34816	254424.27160	1137520.57000	20-ft Vibracore	30.0	20.0	2.0 - 7.0	5.0	SP	SP-SM	SUBANGULAR TO ROUNDED	VERY DK GRAYISH BROWN	2.5Y 3/2	3	DARK GRAYISH BROWN	2.5Y 4/2	4	NO	0.25	0.25	6.5	3.2	1.3
BI-PB-026-10C	PETIT BOIS PASS-ALABAMA WEST	2010	7/19/2010	12:45 PM	30.19872	-88.34816	254424.27160	1137520.57000	20-ft Vibracore	30.0	20.0	7.0 - 12.0	5.0	SP	SP	SUBANGULAR TO ROUNDED	DARK OLIVE BROWN	2.5Y 3/3	3	GRAYISH BROWN	2.5Y 5/2	5	NO	0.26	0.26	3.9	2.5	1.2
BI-PB-027-10	PETIT BOIS PASS-ALABAMA WEST	2010	7/19/2010	2:00 PM	30.19885	-88.34438	254476.65720	1138714.51700	20-ft Vibracore	30.0	18.0																	
BI-PB-027-10A	PETIT BOIS PASS-ALABAMA WEST	2010	7/19/2010	2:00 PM	30.19885	-88.34438	254476.65720	1138714.51700	20-ft Vibracore	30.0	18.0	0.0 - 5.0	5.0	SP	SP-SM	SUBANGULAR TO ROUNDED	LIGHT OLIVE BROWN	2.5Y 5/3	5	LIGHT BROWNISH GRAY	2.5Y 6/2	6	NO	0.32	0.33	5.3	3.0	1.8
BI-PB-027-10B	PETIT BOIS PASS-ALABAMA WEST	2010	7/19/2010	2:00 PM	30.19885	-88.34438	254476.65720	1138714.51700	20-ft Vibracore	30.0	18.0	5.0 - 10.0	5.0	SP	SP	SUBANGULAR TO ROUNDED	GRAYISH BROWN	2.5Y 5/2	5	LIGHT GRAY	2.5Y 7/2	7	NO	0.34	0.39	1.7	1.7	1.0
BI-PB-028-10	PETIT BOIS PASS-ALABAMA EAST	2010	7/16/2010	11:00 AM	30.19891	-88.33370	254513.11990	1142088.36600	20-ft Vibracore	32.0	18.6																	
BI-PB-028-10A	PETIT BOIS PASS-ALABAMA EAST	2010	7/16/2010	11:00 AM	30.19891	-88.33370	254513.11990	1142088.36600	20-ft Vibracore	32.0	18.6	0.0 - 5.0	5.0	SP	SP	SUBANGULAR TO ROUNDED	GRAY	2.5Y 6/1	6	LT GRAY	2.5Y 7/1	7	NO	0.25	0.26	1.7	1.7	1.0
BI-PB-028-10B	PETIT BOIS PASS-ALABAMA EAST	2010	7/16/2010	11:00 AM	30.19891	-88.33370	254513.11990	1142088.36600	20-ft Vibracore	32.0	18.6	5.0 - 10.0	5.0	SP	SP	SUBANGULAR TO ROUNDED	GRAY	2.5Y 6/1	6	LT GRAY	2.5Y 7/1	7	NO	0.26	0.27	1.9	1.7	1.0
BI-PB-028-10C	PETIT BOIS PASS-ALABAMA EAST	2010	7/16/2010	11:00 AM	30.19891	-88.33370	254513.11990	1142088.36600	20-ft Vibracore	32.0	18.6	10.0 - 15.0	5.0	SP	SP	SUBANGULAR TO ROUNDED	GRAY	2.5Y 6/1	6	LT GRAY	2.5Y 7/1	7	NO	0.29	0.30	2.5	1.9	1.0
BI-PB-028-10D	PETIT BOIS PASS-ALABAMA EAST	2010	7/16/2010	11:00 AM	30.19891	-88.33370	254513.11990	1142088.36600	20-ft Vibracore	32.0	18.6	15.0 - 19.2	4.2	SP	SP	SUBANGULAR TO ROUNDED	GRAY	2.5Y 6/1	6	LT GRAY	2.5Y 7/1	7	NO	0.33	0.34	1.8	1.7	1.1

Cu: Coefficient of Uniformity
Cc: Coefficient of Curvature
The "#Value!" error message indicates that data was not available for that calculation.

Vibracore / Sample ID	Investigation Area	Sample Event	Date of Sample	Time_CST	Latitude	Longitude	Northing_Y	Easting_X	Sample Method	Water Depth (feet)	Boring Depth (feet below seafloor surface)	Sample Depth (Feet below seafloor surface)	Sample Thickness (feet)	Field USCS	Lab USCS	Angularity	Wet Munsell Color	Wet Munsell Color Code	Wet Munsell Value	Dry Munsell Color	Dry Munsell Color Code	Dry Munsell Value	CaCO3	D50 (mm)	Graphic Mean (mm)	% Fines	Cu (D60/D10)	Cc (D30)^2 / (D10*D60)
BI-PB-029-10	PETIT BOIS PASS-ALABAMA EAST	2010	7/16/2010	9:50 AM	30.19887	-88.32897	254505.15790	1143582.69600	20-ft Vibracore	30.0	11.5																	
BI-PB-029-10A	PETIT BOIS PASS-ALABAMA EAST	2010	7/16/2010	9:50 AM	30.19887	-88.32897	254505.15790	1143582.69600	20-ft Vibracore	30.0	11.5	0.0 - 1.4	1.4	SP	SP	SUBANGULAR TO ROUNDED	GRAYISH BROWN	2.5Y 5/2	5	LT GRAY	2.5Y 7/2	7	NO	0.32	0.35	1.2	1.7	1.0
BI-PB-030-10	PETIT BOIS PASS-ALABAMA EAST	2010	7/16/2010	3:12 PM	30.19859	-88.32372	254410.70730	1145241.69400	20-ft Vibracore	33.0	18.8																	
BI-PB-030-10A	PETIT BOIS PASS-ALABAMA EAST	2010	7/16/2010	3:12 PM	30.19859	-88.32372	254410.70730	1145241.69400	20-ft Vibracore	33.0	18.8	0.0 - 5.0	5.0	SP	SP	SUBANGULAR TO ROUNDED	LT BROWNISH GRAY	2.5Y 6/2	6	LT GRAY	2.5Y 7/1	7	NO	0.41	0.45	2.0	1.7	0.9
BI-PB-030-10B	PETIT BOIS PASS-ALABAMA EAST	2010	7/16/2010	3:12 PM	30.19859	-88.32372	254410.70730	1145241.69400	20-ft Vibracore	33.0	18.8	5.0 - 10.0	5.0	SP	SP	SUBANGULAR TO ROUNDED	WHITE	N 8.5/1	9	WHITE	N 9/1	9	NO	0.38	0.41	1.8	1.6	0.9
BI-PB-030-10C	PETIT BOIS PASS-ALABAMA EAST	2010	7/16/2010	3:12 PM	30.19859	-88.32372	254410.70730	1145241.69400	20-ft Vibracore	33.0	18.8	10.0 - 14.9	4.9	SP	SP	SUBANGULAR TO ROUNDED	GRAY	2.5Y 6/1	6	LT GRAY	2.5Y 7/1	7	NO	0.39	0.43	2.0	1.9	1.0
BI-PB-031-10	PETIT BOIS PASS-ALABAMA EAST	2010	7/12/2010	2:30 PM	30.19849	-88.31895	254381.11190	1146748.76600	20-ft Vibracore	29.0	18.4																	
BI-PB-031-10A	PETIT BOIS PASS-ALABAMA EAST	2010	7/12/2010	2:30 PM	30.19849	-88.31895	254381.11190	1146748.76600	20-ft Vibracore	29.0	18.4	0.0 - 4.0	4.0	SP	SP-SM	SUBANGULAR TO ROUNDED	LT BROWNISH GRAY	2.5Y 6/2	6	LT GRAY	2.5Y 7/2	7	NO	0.28	0.29	6.2	2.4	1.2
BI-PB-031-10B	PETIT BOIS PASS-ALABAMA EAST	2010	7/12/2010	2:30 PM	30.19849	-88.31895	254381.11190	1146748.76600	20-ft Vibracore	29.0	18.4	4.0 - 7.0	3.0	SP	SP-SM	SUBANGULAR TO ROUNDED	GRAY	2.5Y 6/1	6	LT GRAY	2.5Y 7/1	7	NO	0.32	0.38	6.2	2.4	1.0
BI-PB-031-10C	PETIT BOIS PASS-ALABAMA EAST	2010	7/12/2010	2:30 PM	30.19849	-88.31895	254381.11190	1146748.76600	20-ft Vibracore	29.0	18.4	7.0 - 8.7	1.7	SP	SP	SUBANGULAR TO ROUNDED	LT BROWNISH GRAY	2.5Y 6/2	6	LT GRAY	2.5Y 7/1	7	NO	0.38	0.41	3.0	2.1	1.2
BI-PB-031-10D	PETIT BOIS PASS-ALABAMA EAST	2010	7/12/2010	2:30 PM	30.19849	-88.31895	254381.11190	1146748.76600	20-ft Vibracore	29.0	18.4	8.7 - 12.9	4.2	SM	SP-SM	SUBANGULAR TO ROUNDED	GRAYISH BROWN	2.5Y 5/2	5	GRAYISH BROWN	2.5Y 5/2	5	NO	0.33	0.34	8.9	3.2	1.6
BI-PB-032-10	PETIT BOIS PASS-ALABAMA EAST	2010	7/12/2010	1:40 PM	30.19836	-88.30961	254347.27810	1149699.62200	20-ft Vibracore	34.0	19.8																	
BI-PB-032-10A	PETIT BOIS PASS-ALABAMA EAST	2010	7/12/2010	1:40 PM	30.19836	-88.30961	254347.27810	1149699.62200	20-ft Vibracore	34.0	19.8	0.5 - 1.1	0.6	SP	SP-SM	SUBANGULAR TO ROUNDED	GRAYISH BROWN	2.5Y 5/2	5	LT BROWNISH GRAY	10YR 6/2	6	NO	0.38	0.41	5.4	2.2	1.0
BI-PB-032-10B	PETIT BOIS PASS-ALABAMA EAST	2010	7/12/2010	1:40 PM	30.19836	-88.30961	254347.27810	1149699.62200	20-ft Vibracore	34.0	19.8	1.1 -6.1	5.0	SP-SM	SP-SM	SUBANGULAR TO ROUNDED	LT BROWNISH GRAY	2.5Y 6/2	6	LT GRAY	2.5Y 7/2	7	NO	0.38	0.41	6.8	2.0	1.0
BI-PB-032-10C	PETIT BOIS PASS-ALABAMA EAST	2010	7/12/2010	1:40 PM	30.19836	-88.30961	254347.27810	1149699.62200	20-ft Vibracore	34.0	19.8	6.1 - 11.1	5.0	SP-SM	SP	SUBANGULAR TO ROUNDED	LT GRAY	2.5Y 7/2	7	VERY PALE BROWN	10YR 8/2	8	NO	0.42	0.45	4.6	2.4	1.2
BI-PB-032-10D	PETIT BOIS PASS-ALABAMA EAST	2010	7/12/2010	1:40 PM	30.19836	-88.30961	254347.27810	1149699.62200	20-ft Vibracore	34.0	19.8	11.1 - 15.8	4.7	SP-SM	SP	SUBANGULAR TO ROUNDED	LT GRAY	2.5Y 7/2	7	LT GRAY	2.5Y 7/2	7	NO	0.46	0.48	3.0	2.0	1.0
BI-PB-032-10E	PETIT BOIS PASS-ALABAMA EAST	2010	7/12/2010	1:40 PM	30.19836	-88.30961	254347.27810	1149699.62200	20-ft Vibracore	34.0	19.8	15.8 - 19.8	4.0	SP	SP	SUBANGULAR TO ROUNDED	GRAY	2.5Y 6/1	6	WHITE	2.5Y 8/1	8	NO	0.48	0.50	4.0	1.9	1.0
BI-PB-033-10	PETIT BOIS PASS-ALABAMA EAST	2010	7/12/2010	12:50 PM	30.19843	-88.30490	254379.60850	1151187.46300	20-ft Vibracore	37.0	19.1																	
BI-PB-033-10A	PETIT BOIS PASS-ALABAMA EAST	2010	7/12/2010	12:50 PM	30.19843	-88.30490	254379.60850	1151187.46300	20-ft Vibracore	37.0	19.1	0.0 - 2.0	2.0	SP	SP	SUBANGULAR TO ROUNDED	DK GRAY	10YR 4/1	4	GRAY	2.5Y 6/1	6	NO	0.37	0.40	3.9	1.9	1.1
BI-PB-033-10B	PETIT BOIS PASS-ALABAMA EAST	2010	7/12/2010	12:50 PM	30.19843	-88.30490	254379.60850	1151187.46300	20-ft Vibracore	37.0	19.1	2.0 - 7.0	5.0	SM	SP-SM	SUBANGULAR TO ROUNDED	DK GRAY	2.5Y 4/1	4	GRAY	2.5Y 5/1	5	NO	0.33	0.34	7.0	1.9	1.1
BI-PB-033-10C	PETIT BOIS PASS-ALABAMA EAST	2010	7/12/2010	12:50 PM	30.19843	-88.30490	254379.60850	1151187.46300	20-ft Vibracore	37.0	19.1	7.0 -11.0	4.0	SM	SP-SM	SUBANGULAR TO ROUNDED	VERY DK GRAY	2.5Y 3/1	3	GRAY	2.5Y 5/1	5	NO	0.33	0.34	6.4	1.8	1.1
BI-PB-033-10D	PETIT BOIS PASS-ALABAMA EAST	2010	7/12/2010	12:50 PM	30.19843	-88.30490	254379.60850	1151187.46300	20-ft Vibracore	37.0	19.1	11.0 - 13.3	2.3	SP	SP	SUBANGULAR TO ROUNDED	GRAY	2.5Y 5/1	5	GRAY	2.5Y 6/1	6	NO	0.32	0.34	3.8	1.7	1.0
BI-PB-033-10E	PETIT BOIS PASS-ALABAMA EAST	2010	7/12/2010	12:50 PM	30.19843	-88.30490	254379.60850	1151187.46300	20-ft Vibracore	37.0	19.1	13.3 - 19.1	5.8	SM	SP-SM	SUBANGULAR TO ROUNDED	VERY DK GRAYISH BROWN	2.5Y 3/2	3	GRAY	2.5Y 5/1	5	NO	0.32	0.34	8.0	1.9	1.1
BI-PB-034-10	PETIT BOIS PASS-ALABAMA EAST	2010	7/12/2010	11:35 AM	30.19838	-88.30013	254368.44650	1152694.46100	20-ft Vibracore	37.0	19.1																	
BI-PB-034-10A	PETIT BOIS PASS-ALABAMA EAST	2010	7/12/2010	11:35 AM	30.19838	-88.30013	254368.44650	1152694.46100	20-ft Vibracore	37.0	19.1	0.0 - 1.9	1.9	SP	SP	SUBANGULAR TO ROUNDED	GRAY	2.5Y 5/1	5	LT GRAY	2.5Y 7/1	7	NO	0.32	0.34	3.9	1.9	1.0
BI-PB-034-10B	PETIT BOIS PASS-ALABAMA EAST	2010	7/12/2010	11:35 AM	30.19838	-88.30013	254368.44650	1152694.46100	20-ft Vibracore	37.0	19.1	3.6 - 5.3	1.7	SP-SM	SP-SM	SUBANGULAR TO ROUNDED	DK GRAY	2.5Y 4/1	4	GRAY	2.5Y 5/1	5	NO	0.28	0.29	8.0	2.1	1.0
BI-PB-034-10C	PETIT BOIS PASS-ALABAMA EAST	2010	7/12/2010	11:35 AM	30.19838	-88.30013	254368.44650	1152694.46100	20-ft Vibracore	37.0	19.1	5.3 - 10.3	5.0	SM	SP-SM	SUBANGULAR TO ROUNDED	VERY DK GRAYISH BROWN	2.5Y 3/2	3	GRAY	2.5Y 5/1	5	NO	0.32	0.33	7.5	1.9	1.1
BI-PB-034-10D	PETIT BOIS PASS-ALABAMA EAST	2010	7/12/2010	11:35 AM	30.19838	-88.30013	254368.44650	1152694.46100	20-ft Vibracore	37.0	19.1	10.3 - 15.3	5.0	SM	SP-SM	SUBANGULAR TO ROUNDED	VERY DK GRAYISH BROWN	2.5Y 3/2	3	GRAY	2.5Y 5/1	5	NO	0.31	0.33	8.0	2.0	1.1
BI-PB-034-10E	PETIT BOIS PASS-ALABAMA EAST	2010	7/12/2010	11:35 AM	30.19838	-88.30013	254368.44650	1152694.46100	20-ft Vibracore	37.0	19.1	15.3 - 19.1	3.8	SM	SP-SM	SUBANGULAR TO ROUNDED	BLACK	2.5Y 2.5/1	3	DK GRAY	2.5Y 4/1	4	NO	0.31	0.31	7.5	1.8	1.1
BI-PB-035-10	PETIT BOIS PASS-ALABAMA WEST	2010	7/19/2010	2:45 PM	30.19439	-88.34438	252854.61010	1138721.47900	20-ft Vibracore	30.0	18.0																	
BI-PB-035-10A	PETIT BOIS PASS-ALABAMA WEST	2010	7/19/2010	2:45 PM	30.19439	-88.34438	252854.61010	1138721.47900	20-ft Vibracore	30.0	18.0	0.0 - 5.0	5.0	SM	SP	SUBANGULAR TO ROUNDED	DARK BROWN	10YR 3/3	3	BROWN	10Y 5/3	5	NO	0.35	0.36	1.5	1.6	1.0
BI-PB-035-10B	PETIT BOIS PASS-ALABAMA WEST	2010	7/19/2010	2:45 PM	30.19439	-88.34438	252854.61010	1138721.47900	20-ft Vibracore	30.0	18.0	5.0 - 10.0	5.0	SM	SP	SUBANGULAR TO ROUNDED	LIGHT OLIVE BROWN	2.5Y 5/3	5	LIGHT GRAY	2.5Y 7/1	7	NO	0.31	0.32	1.1	1.6	1.0
BI-PB-036-10	PETIT BOIS PASS-ALABAMA WEST	2010	7/19/2010	3:25 PM	30.19455	-88.34351	252913.98090	1138996.08500	20-ft Vibracore	33.0	19.5																	
BI-PB-036-10A	PETIT BOIS PASS-ALABAMA WEST	2010	7/19/2010	3:25 PM	30.19455	-88.34351	252913.98090	1138996.08500	20-ft Vibracore	33.0	19.5	0.0 - 5.0	5.0	SP	SP	SUBANGULAR TO ROUNDED	LIGHT BROWNISH GRAY	2.5Y 6/2	6	LIGHT GRAY	2.5Y 7/1	7	NO	0.29	0.29	1.9	1.7	1.0
BI-PB-036-10B	PETIT BOIS PASS-ALABAMA WEST	2010	7/19/2010	3:25 PM	30.19455	-88.34351	252913.98090	1138996.08500	20-ft Vibracore	33.0	19.5	5.0 - 10.0	5.0	SP	SP	SUBANGULAR TO ROUNDED	LIGHT BROWNISH GRAY	2.5Y 6/2	6	LIGHT GRAY	2.5Y 7/1	7	NO	0.32	0.34	2.0	2.2	1.2
BI-PB-036-10C	PETIT BOIS PASS-ALABAMA WEST	2010	7/19/2010	3:25 PM	30.19455	-88.34351	252913.98090	1138996.08500	20-ft Vibracore	33.0	19.5	10.0 - 14.5	4.5	SP	SP	SUBANGULAR TO ROUNDED	DARK GRAYISH BROWN	2.5Y 4/2	4	LIGHT GRAY	2.5Y 7/1	7	NO	0.34	0.37	3.9	1.9	1.0
BI-PB-037-10	PETIT BOIS PASS-ALABAMA EAST	2010	7/27/2010	3:00 PM	30.19434	-88.33804	252845.07840	1140724.53300	20-ft Vibracore	34.0	16.0																	
BI-PB-037-10A	PETIT BOIS PASS-ALABAMA EAST	2010	7/27/2010	3:00 PM	30.19434	-88.33804	252845.07840	1140724.53300	20-ft Vibracore	34.0	16.0	0.0 - 5.0	5.0	SP	SP-SM	SUBANGULAR TO ROUNDED	GRAYISH BROWN	2.5Y 5/2	5	LT BROWNISH GRAY	2.5Y 6/2	6	NO	0.30	0.31	7.0	2.6	1.3
BI-PB-037-10B	PETIT BOIS PASS-ALABAMA EAST	2010	7/27/2010	3:00 PM	30.19434	-88.33804	252845.07840	1140724.53300	20-ft Vibracore	34.0	16.0	5.0 - 10.0	5.0	SP	SP	SUBANGULAR TO ROUNDED	LT BROWNISH GRAY	2.5Y 6/2	6	LT GRAY	2.5Y 7/1	7	NO	0.34	0.36	2.0	1.7	1.1
BI-PB-037-10C	PETIT BOIS PASS-ALABAMA EAST	2010	7/27/2010	3:00 PM	30.19434	-88.33804	252845.07840	1140724.53300	20-ft Vibracore	34.0	16.0	10.0 - 15.0	5.0	SP	SP	SUBANGULAR TO ROUNDED	GRAY	2.5Y 6/1	6	LT GRAY	2.5Y 7/1	7	NO	0.30	0.31	3.9	1.7	1.1
BI-PB-038-10	PETIT BOIS PASS-ALABAMA EAST	2010	7/28/2010	9:30 AM	30.19398	-88.33360	252720.27680	1142127.82300	20-ft Vibracore	35.0	18.5																	
BI-PB-038-10A	PETIT BOIS PASS-ALABAMA EAST	2010	7/28/2010	9:30 AM	30.19398	-88.33360	252720.27680	1142127.82300	20-ft Vibracore	35.0	18.5	1.5 - 5.0	3.5	SP	SP-SM	SUBANGULAR TO ROUNDED	VERY DK GRAYISH BROWN	2.5Y 3/2	3	GRAYISH BROWN	2.5Y 5/2	5	NO	0.25	0.27	6.7	2.6	1.3
BI-PB-038-10B	PETIT BOIS PASS-ALABAMA EAST	2010	7/28/2010	9:30 AM	30.19398	-88.33360	252720.27680	1142127.82300	20-ft Vibracore	35.0	18.5	5.0 - 10.0	5.0	SP	SP	SUBANGULAR TO ROUNDED	OLIVE BROWN	2.5Y 4/3	4	LT GRAY	2.5Y7/2	7	NO	0.27	0.28	2.6	1.8	1.0
BI-PB-038-10C	PETIT BOIS PASS-ALABAMA EAST	2010	7/28/2010	9:30 AM	30.19398	-88.33360	252720.27680	1142127.82300	20-ft Vibracore	35.0	18.5	10.0 - 15.0	5.0	SP	SP	SUBANGULAR TO ROUNDED	LT BROWNISH GRAY	2.5Y6/2	6	LT GRAY	2.5Y 7/1	7	NO	0.30	0.30	3.0	1.9	1.1
BI-PB-038-10D	PETIT BOIS PASS-ALABAMA EAST	2010	7/28/2010	9:30 AM	30.19398	-88.33360	252720.27680	1142127.82300	20-ft Vibracore	35.0	18.5	15.0 - 18.5	3.5	SP	SP	SUBANGULAR TO ROUNDED	LT OLIVE BROWN	2.5Y 5/3	5	LT GRAY	2.5Y 7/1	7	NO	0.31	0.31	3.3	1.7	1.1
BI-PB-039-10	PETIT BOIS PASS-ALABAMA EAST	2010	7/28/2010	10:10 AM	30.19431	-88.32868	252847.14580	1143681.65800	20-ft Vibracore	35.0	13.0	NO SAMPLE TAKEN		CH	NO SAMPLE TESTED													
BI-PB-040-10	PETIT BOIS PASS-ALABAMA EAST	2010	7/28/2010	10:55 AM	30.19423	-88.32370	252825.05480	1145255.10600	20-ft Vibracore	33.0	14.0																	
BI-PB-040-10A	PETIT BOIS PASS-ALABAMA EAST	2010	7/28/2010	10:55 AM	30.19423	-88.32370	252825.05480	1145255.10600	20-ft Vibracore	33.0	14.0	0.0 - 2.0	2.0	SM	SM	SUBANGULAR TO ROUNDED	VERY DK GRAYISH BROWN	2.5Y 3/3	3	LT OLIVE BROWN	2.5Y 5/3	5	NO	0.24	0.25	12.8	#VALUE!	#VALUE!
BI-PB-041-10	PETIT BOIS PASS-ALABAMA EAST	2010	7/28/2010	12:30 PM	30.19427	-88.31903	252846.23280	1146730.42200	20-ft Vibracore	38.0	20.0	NO SAMPLE TAKEN		CH	NO SAMPLE TESTED													
BI-PB-042-10	PETIT BOIS PASS-ALABAMA EAST	2010	7/28/2010	1:30 PM	30.19408	-88.31458	252783.50650	1148136.61500	20-ft Vibracore	33.0	15.5																	

Cu: Coefficient of Uniformity
Cc: Coefficient of Curvature
The "#Value!" error message indicates that data was not available for that calculation.

Vibracore / Sample ID	Investigation Area	Sample Event	Date of Sample	Time_CST	Latitude	Longitude	Northing_Y	Easting_X	Sample Method	Water Depth (feet)	Boring Depth (feet below seafloor surface)	Sample Depth (Feet below seafloor surface)	Sample Thickness (feet)	Field USCS	Lab USCS	Angularity	Wet Munsell Color	Wet Munsell Color Code	Wet Munsell Value	Dry Munsell Color	Dry Munsell Color Code	Dry Munsell Value	CaCO3	D50 (mm)	Graphic Mean (mm)	% Fines	Cu (D60/D10)	Cc (D30)^2 / (D10*D60)
BI-PB-042-10A	PETIT BOIS PASS-ALABAMA EAST	2010	7/28/2010	1:30 PM	30.19408	-88.31458	252783.50650	1148136.61500	20-ft Vibracore	33.0	15.5	0.0 - 5.0	5.0	SP	SP-SM	SUBANGULAR TO ROUNDED	VERY DK GRAYISH BROWN	2.5Y 3/3	3	GRAYISH BROWN	2.5Y 5/2	5	NO	0.24	0.27	6.5	2.3	1.2
BI-PB-042-10B	PETIT BOIS PASS-ALABAMA EAST	2010	7/28/2010	1:30 PM	30.19408	-88.31458	252783.50650	1148136.61500	20-ft Vibracore	33.0	15.5	5.0 - 10.0	5.0	SP	SP-SM	SUBANGULAR TO ROUNDED	DK GRAY	2.5Y 4/1	4	LT BROWNISH GRAY	2.5Y 6/2	6	NO	0.27	0.27	5.2	1.9	1.0
BI-PB-042-10C	PETIT BOIS PASS-ALABAMA EAST	2010	7/28/2010	1:30 PM	30.19408	-88.31458	252783.50650	1148136.61500	20-ft Vibracore	33.0	15.5	10.0 - 15.0	5.0	SP	SP	SUBANGULAR TO ROUNDED	GRAY	5Y 6/1	6	WHITE	5Y 8/1	8	NO	0.26	0.27	3.7	1.7	1.0
BI-PB-043-10	PETIT BOIS PASS-ALABAMA EAST	2010	7/28/2010	2:05 PM	30.19424	-88.30964	252848.83730	1149697.03300	20-ft Vibracore	38.0	20.0																	
BI-PB-043-10A	PETIT BOIS PASS-ALABAMA EAST	2010	7/28/2010	2:05 PM	30.19424	-88.30964	252848.83730	1149697.03300	20-ft Vibracore	38.0	20.0	0.0 - 5.0	5.0	SP	SP-SM	SUBANGULAR TO ROUNDED	GRAYISH BROWN	2.5Y 5/2	5	LT GRAY	2.5Y 7/2	7	NO	0.33	0.35	5.8	2.2	1.2
BI-PB-043-10B	PETIT BOIS PASS-ALABAMA EAST	2010	7/28/2010	2:05 PM	30.19424	-88.30964	252848.83730	1149697.03300	20-ft Vibracore	38.0	20.0	5.0 - 10.0	5.0	SP	SM	SUBANGULAR TO ROUNDED	LT BROWNISH GRAY	2.5Y 6/2	6	LT GRAY	2.5Y 7/2	7	NO	0.31	0.31	12.4	#VALUE!	#VALUE!
BI-PB-043-10C	PETIT BOIS PASS-ALABAMA EAST	2010	7/28/2010	2:05 PM	30.19424	-88.30964	252848.83730	1149697.03300	20-ft Vibracore	38.0	20.0	15.0 - 20.0	5.0	SC	SP	SUBANGULAR TO ROUNDED	GRAY	2.5Y 5/1	5	LT GRAY	2.5Y 7/1	7	NO	0.22	0.23	3.7	1.9	1.1
BI-PB-044-10	PETIT BOIS PASS-ALABAMA EAST	2010	7/28/2010	2:50 PM	30.19441	-88.30499	252917.44770	1151165.81100	20-ft Vibracore	38.0	20.0																	
BI-PB-044-10A	PETIT BOIS PASS-ALABAMA EAST	2010	7/28/2010	2:50 PM	30.19441	-88.30499	252917.44770	1151165.81100	20-ft Vibracore	38.0	20.0	0.0 - 5.0	5.0	SP	SP	SUBANGULAR TO ROUNDED	GRAYISH BROWN	2.5Y 5/2	5	GRAY	2.5Y 6/1	6	NO	0.33	0.36	2.0	1.7	1.1
BI-PB-044-10B	PETIT BOIS PASS-ALABAMA EAST	2010	7/28/2010	2:50 PM	30.19441	-88.30499	252917.44770	1151165.81100	20-ft Vibracore	38.0	20.0	5.0 - 10.0	5.0	SP	SP	SUBANGULAR TO ROUNDED	GRAY	2.5Y 6/1	6	LT GRAY	2.5Y 7/1	7	NO	0.34	0.37	2.1	1.7	1.1
BI-PB-044-10C	PETIT BOIS PASS-ALABAMA EAST	2010	7/28/2010	2:50 PM	30.19441	-88.30499	252917.44770	1151165.81100	20-ft Vibracore	38.0	20.0	10.0 - 15.0	5.0	SP	SP	SUBANGULAR TO ROUNDED	GRAY	2.5Y 7/2	7	LT GRAY	2.5Y 7/1	7	NO	0.33	0.35	2.3	1.7	1.1
BI-PB-044-10D	PETIT BOIS PASS-ALABAMA EAST	2010	7/28/2010	2:50 PM	30.19441	-88.30499	252917.44770	1151165.81100	20-ft Vibracore	38.0	20.0	15.0 - 20.0	5.0	SP	SP	SUBANGULAR TO ROUNDED	LT BROWNISH GRAY	2.5Y 6/2	6	LT GRAY	2.5Y 7/1	7	NO	0.36	0.38	3.6	2.0	1.2
BI-PB-045-10	PETIT BOIS PASS-ALABAMA EAST	2010	7/29/2010	9:30 AM	30.19380	-88.30038	252702.38170	1152623.27500	20-ft Vibracore	37.0	20.0																	
BI-PB-045-10A	PETIT BOIS PASS-ALABAMA EAST	2010	7/29/2010	9:30 AM	30.19380	-88.30038	252702.38170	1152623.27500	20-ft Vibracore	37.0	20.0	0.0 - 5.0	5.0	SP	SP-SM	SUBANGULAR TO ROUNDED	VERY DK GRAYISH BROWN	5Y 3/2	3	GRAYISH BROWN	5Y 5/2	5	NO	0.39	0.43	6.0	2.2	1.0
BI-PB-046-10	PETIT BOIS PASS-ALABAMA WEST	2010	8/6/2010	10:10 AM	30.19009	-88.34798	251285.89100	1137590.80600	20-ft Vibracore	37.0	20.0	NO SAMPLE TAKEN		CH	NO SAMPLE TESTED													
BI-PB-047-10	PETIT BOIS PASS-ALABAMA WEST	2010	8/6/2010	10:55 AM	30.19031	-88.34341	251372.08180	1139034.30900	20-ft Vibracore	36.0	18.0																	
BI-PB-047-10A	PETIT BOIS PASS-ALABAMA WEST	2010	8/6/2010	10:55 AM	30.19031	-88.34341	251372.08180	1139034.30900	20-ft Vibracore	36.0	18.0	0.0 - 2.0	2.0	SP	SP	SUBANGULAR TO ROUNDED	OLIVE BROWN	2.5Y 4/3	4	LIGHT BROWNISH GRAY	2.5Y 6/2	6	NO	0.34	0.37	2.1	2.3	1.2
BI-PB-047-10B	PETIT BOIS PASS-ALABAMA WEST	2010	8/6/2010	10:55 AM	30.19031	-88.34341	251372.08180	1139034.30900	20-ft Vibracore	36.0	18.0	2.0 - 6.0	4.0	SP	SM	SUBANGULAR TO ROUNDED	BLACK	2.5Y 2.5/1	3	DARK GRAYISH BROWN	2.5Y 4/2	4	NO	0.19	#VALUE!	23.4	#VALUE!	#VALUE!
BI-PB-051-10	PETIT BOIS PASS-ALABAMA EAST	2010	8/6/2010	2:00 PM	30.19016	-88.31949	251350.81880	1146591.83700	20-ft Vibracore	36.0	14.7																	
BI-PB-051-10A	PETIT BOIS PASS-ALABAMA EAST	2010	8/6/2010	2:00 PM	30.19016	-88.31949	251350.81880	1146591.83700	20-ft Vibracore	36.0	14.7	0.0 - 4.0	4.0	SP-SM	SP-SM	SUBANGULAR TO ROUNDED	DARK GRAYISH BROWN	2.5Y 4/2	4	LIGHT BROWNISH GRAY	2.5Y 6/2	6	NO	0.23	0.28	5.3	2.0	1.1
BI-PB-052-10	PETIT BOIS PASS-ALABAMA EAST	2010	8/6/2010	3:15 PM	30.19009	-88.31494	251331.87260	1148029.48400	20-ft Vibracore	40.0	20.0																	
BI-PB-052-10A	PETIT BOIS PASS-ALABAMA EAST	2010	8/6/2010	3:15 PM	30.19009	-88.31494	251331.87260	1148029.48400	20-ft Vibracore	40.0	20.0	5.0 - 10.0	5.0	SP	SP	SUBANGULAR TO ROUNDED	GRAYISH BROWN	2.5Y 5/2	5	LIGHT GRAY	2.5Y 7/1	7	NO	0.22	0.23	1.2	1.6	1.0
BI-PB-052-10B	PETIT BOIS PASS-ALABAMA EAST	2010	8/6/2010	3:15 PM	30.19009	-88.31494	251331.87260	1148029.48400	20-ft Vibracore	40.0	20.0	10.0 - 15.0	5.0	SP	SP-SM	SUBANGULAR TO ROUNDED	LIGHT BROWNISH GRAY	2.5Y 6/2	6	WHITE	2.5Y 8/1	8	NO	0.19	0.20	6.1	2.1	1.4
BI-PB-053-10	PETIT BOIS PASS-ALABAMA EAST	2010	8/7/2010	9:00 AM	30.19036	-88.30971	251437.62460	1149681.40400	20-ft Vibracore	39.0	18.0																	
BI-PB-053-10A	PETIT BOIS PASS-ALABAMA EAST	2010	8/7/2010	9:00 AM	30.19036	-88.30971	251437.62460	1149681.40400	20-ft Vibracore	39.0	18.0	0.0 - 5.0	5.0	SP	SM	SUBANGULAR TO ROUNDED	VERY DK GRAYISH BROWN	2.5Y 3/2	3	GRAYISH BROWN	2.5Y 5/2	5	NO	0.23	#VALUE!	25.3	#VALUE!	#VALUE!
BI-PB-053-10B	PETIT BOIS PASS-ALABAMA EAST	2010	8/7/2010	9:00 AM	30.19036	-88.30971	251437.62460	1149681.40400	20-ft Vibracore	39.0	18.0	5.0 - 10.0	5.0	SP	SP	SUBANGULAR TO ROUNDED	LIGHT GRAY	2.5Y 7/1	7	WHITE	2.5Y 8/1	8	NO	0.28	0.29	3.1	1.8	1.0
BI-PB-053-10C	PETIT BOIS PASS-ALABAMA EAST	2010	8/7/2010	9:00 AM	30.19036	-88.30971	251437.62460	1149681.40400	20-ft Vibracore	39.0	18.0	10.0 - 15.0	5.0	SP	SP	SUBANGULAR TO ROUNDED	LIGHT BROWNISH GRAY	2.5Y 6/2	6	WHITE	2.5Y 8/1	8	NO	0.25	0.26	4.1	2.3	1.1
BI-PB-053-10D	PETIT BOIS PASS-ALABAMA EAST	2010	8/7/2010	9:00 AM	30.19036	-88.30971	251437.62460	1149681.40400	20-ft Vibracore	39.0	18.0	15.0 - 18.0	3.0	SP	SP-SM	SUBANGULAR TO ROUNDED	GRAYISH BROWN	2.5Y 5/2	5	WHITE	2.5Y 8/1	8	NO	0.21	0.22	6.3	2.1	1.3
BI-PB-054-10	PETIT BOIS PASS-ALABAMA EAST	2010	8/9/2010	11:45 AM	30.19016	-88.30524	251371.40510	1151093.99400	20-ft Vibracore	40.0	17.5																	
BI-PB-054-10A	PETIT BOIS PASS-ALABAMA EAST	2010	8/9/2010	11:45 AM	30.19016	-88.30524	251371.40510	1151093.99400	20-ft Vibracore	40.0	17.5	0.0 - 1.5	1.5	SP	SP	SUBANGULAR TO ROUNDED	VERY DK GRAYISH BROWN	2.5Y 3/2	3	LIGHT BROWNISH GRAY	2.5Y 6/2	6	YES	0.27	0.30	4.2	2.5	1.1
BI-PB-057-10	PETIT BOIS PASS-ALABAMA WEST	2010	8/6/2010	9:25 AM	30.18609	-88.37147	249800.29530	1130175.27400	20-ft Vibracore	38.0	15.3	NO SAMPLE TAKEN		CH	NO SAMPLE TESTED													
BI-PB-058-10	PETIT BOIS PASS-ALABAMA WEST	2010	8/4/2010	3:00 PM	30.18622	-88.36650	249853.97350	1131745.36400	20-ft Vibracore	36.0	20.0																	
BI-PB-058-10A	PETIT BOIS PASS-ALABAMA WEST	2010	8/4/2010	3:00 PM	30.18622	-88.36650	249853.97350	1131745.36400	20-ft Vibracore	36.0	20.0	10.0 - 14.0	4.0	SP	SP-SM	SUBANGULAR TO ROUNDED	DARK GRAYISH BROWN	2.5Y 4/2	4	LIGHT BROWNISH GRAY	2.5Y 6/2	6	NO	0.26	0.26	5.2	2.5	1.2
BI-PB-059-10	PETIT BOIS PASS-ALABAMA WEST	2010	8/4/2010	2:30 PM	30.18615	-88.36133	249835.24470	1133378.94200	20-ft Vibracore	35.0	19.0																	
BI-PB-059-10A	PETIT BOIS PASS-ALABAMA WEST	2010	8/4/2010	2:30 PM	30.18615	-88.36133	249835.24470	1133378.94200	20-ft Vibracore	35.0	19.0	10.0 - 13.0	3.0	SP	SP	SUBANGULAR TO ROUNDED	GRAYISH BROWN	2.5Y 5/2	5	LIGHT GRAY	2.5Y 7/1	7	NO	0.25	0.26	4.4	2.2	1.1
BI-PB-060-10	PETIT BOIS PASS-ALABAMA WEST	2010	8/4/2010	1:45 PM	30.18609	-88.35645	249819.84320	1134920.88200	20-ft Vibracore	37.0	18.0																	
BI-PB-060-10A	PETIT BOIS PASS-ALABAMA WEST	2010	8/4/2010	1:45 PM	30.18609	-88.35645	249819.84320	1134920.88200	20-ft Vibracore	37.0	18.0	0.0 - 2.0	2.0	SP	CL	SUBANGULAR TO ROUNDED	BLACK	2.5Y 2.5/1	3	DARK GRAYISH BROWN	2.5Y 4/2	4	NO	*	#VALUE!	51.4	#VALUE!	#VALUE!
BI-PB-061-10	PETIT BOIS PASS-ALABAMA WEST	2010	8/4/2010	1:15 PM	30.18618	-88.35209	249858.36660	1136298.29800	20-ft Vibracore	36.0	18.5	NO SAMPLE TAKEN		CH	NO SAMPLE TESTED													
BI-PB-062-10	PETIT BOIS PASS-ALABAMA WEST	2010	8/6/2010	1:00 PM	30.18617	-88.34811	249860.06250	1137555.80500	20-ft Vibracore	38.0	20.0																	
BI-PB-062-10A	PETIT BOIS PASS-ALABAMA WEST	2010	8/6/2010	1:00 PM	30.18617	-88.34811	249860.06250	1137555.80500	20-ft Vibracore	38.0	20.0	0.0 - 1.5	1.5	SP	SM	SUBANGULAR TO ROUNDED	VERY DK GRAYISH BROWN	2.5Y 3/2	3	GRAYISH BROWN	2.5Y 5/2	5	YES	0.14	#VALUE!	18.0	#VALUE!	#VALUE!
BI-PB-063-10	PETIT BOIS PASS-ALABAMA WEST	2010	8/6/2010	12:20 PM	30.18615	-88.34326	249859.34670	1139088.20700	20-ft Vibracore	39.0	16.0	NO SAMPLE TAKEN		CH	NO SAMPLE TESTED													
BI-PB-064-10	PETIT BOIS PASS-ALABAMA WEST	2010	7/9/2010	2:30 PM	30.18222	-88.39075	248368.65590	1124089.18100	20-ft Vibracore	39.0	18.5																	
BI-PB-064-10A	PETIT BOIS PASS-ALABAMA WEST	2010	7/9/2010	2:30 PM	30.18222	-88.39075	248368.65590	1124089.18100	20-ft Vibracore	39.0	18.5	11.0 - 12.8	1.8	SM	SM	SUBANGULAR TO ROUNDED	DK GRAY	2.5Y 4/1	4	GRAYISH BROWN	2.5Y 5/2	5	NO	0.30	0.28	12.9	#VALUE!	#VALUE!
BI-PB-064-10B	PETIT BOIS PASS-ALABAMA WEST	2010	7/9/2010	2:30 PM	30.18222	-88.39075	248368.65590	1124089.18100	20-ft Vibracore	39.0	18.5	12.8 - 15.8	3.0	SP	SP-SM	SUBANGULAR TO ROUNDED	GRAYISH BROWN	2.5Y 5/2	5	LT GRAY	2.5Y 7/2	7	NO	0.30	0.29	9.3	3.8	2.3
BI-PB-064-10C	PETIT BOIS PASS-ALABAMA WEST	2010	7/9/2010	2:30 PM	30.18222	-88.39075	248368.65590	1124089.18100	20-ft Vibracore	39.0	18.5	15.8 - 18.8	3.0	SP	SP	SUBANGULAR TO ROUNDED	GRAYISH BROWN	2.5Y 5/2	5	LT GRAY	2.5Y 7/2	7	NO	0.32	0.32	3.0	1.7	1.2
BI-PB-067-10	PETIT BOIS PASS-ALABAMA WEST	2010	8/5/2010	9:10 AM	30.18234	-88.37656	248429.98960	1128572.54300	20-ft Vibracore	37.0	19.5																	
BI-PB-067-10A	PETIT BOIS PASS-ALABAMA WEST	2010	8/5/2010	9:10 AM	30.18234	-88.37656	248429.98960	1128572.54300	20-ft Vibracore	37.0	19.5	5.0 - 10.0	5.0	SP	SP	SUBANGULAR TO ROUNDED	GRAYISH BROWN	2.5Y 5/2	5	LIGHT GRAY	2.5Y 7/1	7	NO	0.30	0.30	2.4	2.7	1.6
BI-PB-067-10B	PETIT BOIS PASS-ALABAMA WEST	2010	8/5/2010	9:10 AM	30.18234	-88.37656	248429.98960	1128572.54300	20-ft Vibracore	37.0	19.5	10.0 - 15.0	5.0	SP	SP	SUBANGULAR TO ROUNDED	DARK GRAYISH BROWN	2.5Y 4/2	4	LIGHT BROWNISH GRAY	2.5Y 6/2	6	NO	0.26	0.27	4.5	2.3	1.1
BI-PB-068-10	PETIT BOIS PASS-ALABAMA WEST	2010	8/5/2010	10:20 AM	30.18195	-88.36682	248300.61850	1131650.61700	20-ft Vibracore	36.0	20.0																	
BI-PB-068-10A	PETIT BOIS PASS-ALABAMA WEST	2010	8/5/2010	10:20 AM	30.18195	-88.36682	248300.61850	1131650.61700	20-ft Vibracore	36.0	20.0	7.0 - 10.0	3.0	SP	SM	SUBANGULAR TO ROUNDED	VERY DK GRAYISH BROWN	2.5Y 3/2	3	GRAYISH BROWN	2.5Y 5/2	5	NO	0.16	#VALUE!	16.0	#VALUE!	#VALUE!

Cu: Coefficient of Uniformity
Cc: Coefficient of Curvature
The "#Value!" error message indicates that data was not available for that calculation.

Vibracore / Sample ID	Investigation Area	Sample Event	Date of Sample	Time_CST	Latitude	Longitude	Northing_Y	Easting_X	Sample Method	Water Depth (feet)	Boring Depth (feet below seafloor surface)	Sample Depth (Feet below seafloor surface)	Sample Thickness (feet)	Field USCS	Lab USCS	Angularity	Wet Munsell Color	Wet Munsell Color Code	Wet Munsell Value	Dry Munsell Color	Dry Munsell Color Code	Dry Munsell Value	CaCO3	D50 (mm)	Graphic Mean (mm)	% Fines	Cu (D60/D10)	Cc (D30)^2 / (D10*D60)
BI-PB-068-10B	PETIT BOIS PASS-ALABAMA WEST	2010	8/5/2010	10:20 AM	30.18195	-88.36682	248300.61850	1131650.61700	20-ft Vibracore	36.0	20.0	10.0 - 15.0	5.0	SP	SP	SUBANGULAR TO ROUNDED	GRAYISH BROWN	2.5Y 5/2	5	LIGHT GRAY	2.5Y 7/1	7	NO	0.26	0.26	2.5	1.9	1.0
BI-PB-068-10C	PETIT BOIS PASS-ALABAMA WEST	2010	8/5/2010	10:20 AM	30.18195	-88.36682	248300.61850	1131650.61700	20-ft Vibracore	36.0	20.0	15.0 - 20.0	5.0	SP	SP	SUBANGULAR TO ROUNDED	GRAYISH BROWN	2.5Y 5/2	5	LIGHT GRAY	2.5Y 7/1	7	NO	0.25	0.26	4.4	2.3	1.2
BI-PB-069-10	PETIT BOIS PASS-ALABAMA WEST	2010	8/7/2010	1:25 PM	30.18238	-88.36146	248463.97630	1133343.54600	20-ft Vibracore	40.0	20.0	NO SAMPLE TAKEN		CH	NO SAMPLE TESTED													
BI-PB-070-10	PETIT BOIS PASS-ALABAMA WEST	2010	8/5/2010	2:20 PM	30.18200	-88.35640	248332.43090	1134942.90500	20-ft Vibracore	40.0	20.0																	
BI-PB-070-10A	PETIT BOIS PASS-ALABAMA WEST	2010	8/5/2010	2:20 PM	30.18200	-88.35640	248332.43090	1134942.90500	20-ft Vibracore	40.0	20.0	7.0 - 10.0	3.0	SP	SP	SUBANGULAR TO ROUNDED	GRAYISH BROWN	2.5Y 5/2	5	LIGHT BROWNISH GRAY	2.5Y 6/2	6	NO	0.22	0.24	4.1	2.0	1.1
BI-PB-073-10	PETIT BOIS PASS-ALABAMA WEST	2010	7/9/2010	11:15 AM	30.17877	-88.39512	247108.60500	1122713.24100	20-ft Vibracore	43.0	18.3																	
BI-PB-073-10A	PETIT BOIS PASS-ALABAMA WEST	2010	7/9/2010	11:15 AM	30.17877	-88.39512	247108.60500	1122713.24100	20-ft Vibracore	43.0	18.3	13.8 - 18.3	4.5	SP	SP-SM	SUBANGULAR TO ROUNDED	GRAY	2.5Y 6/1	6	LT GRAY	2.5Y 7/1	7	NO	0.20	0.21	6.1	2.0	1.3
BI-PB-076-10	PETIT BOIS PASS-ALABAMA WEST	2010	8/5/2010	3:15 PM	30.17863	-88.37138	247087.31150	1130214.70700	20-ft Vibracore	40.0	18.0	NO SAMPLE TAKEN		CH	NO SAMPLE TESTED													
BI-PB-077-10	PETIT BOIS PASS-ALABAMA WEST	2010	8/5/2010	1:45 PM	30.17866	-88.36686	247104.03920	1131642.87600	20-ft Vibracore	41.0	18.0	NO SAMPLE TAKEN		CH	NO SAMPLE TESTED													
BI-PB-078-10	PETIT BOIS PASS-ALABAMA WEST	2010	8/5/2010	12:45 PM	30.17859	-88.35692	247091.57280	1134783.78700	20-ft Vibracore	38.0	18.5																	
BI-PB-078-10A	PETIT BOIS PASS-ALABAMA WEST	2010	8/5/2010	12:45 PM	30.17859	-88.35692	247091.57280	1134783.78700	20-ft Vibracore	38.0	18.5	0.0 - 2.0	2.0	SP	SP-SM	SUBANGULAR TO ROUNDED	OLIVE BROWN	2.5Y 4/3	4	LIGHT BROWNISH GRAY	2.5Y 6/2	6	NO	0.28	0.34	6.0	3.4	1.1
BI-PB-078-10B	PETIT BOIS PASS-ALABAMA WEST	2010	8/5/2010	12:45 PM	30.17859	-88.35692	247091.57280	1134783.78700	20-ft Vibracore	38.0	18.5	7.0 - 10.0	3.0	SP	SP-SM	SUBANGULAR TO ROUNDED	DARK GRAYISH BROWN	2.5Y 4/2	4	LIGHT BROWNISH GRAY	2.5Y 6/2	6	NO	0.20	0.20	6.9	2.5	1.4
BI-PB-078-10C	PETIT BOIS PASS-ALABAMA WEST	2010	8/5/2010	12:45 PM	30.17859	-88.35692	247091.57280	1134783.78700	20-ft Vibracore	38.0	18.5	10.0 - 13.5	3.5	SP	SM	SUBANGULAR TO ROUNDED	VERY DK GRAYISH BROWN	2.5Y 3/2	3	GRAYISH BROWN	2.5Y 5/2	5	NO	0.16	#VALUE!	18.3	#VALUE!	#VALUE!
BI-PB-079-10	PETIT BOIS PASS-ALABAMA WEST	2010	8/5/2010	11:10 AM	30.17843	-88.35213	247039.74140	1136297.56100	20-ft Vibracore	43.0	17.5	NO SAMPLE TAKEN		CH	NO SAMPLE TESTED													
BI-PB-080-10	PETIT BOIS PASS-ALABAMA WEST	2010	7/9/2010	12:20 PM	30.17437	-88.39525	245508.23190	1122678.31500	20-ft Vibracore	43.5	19.4																	
BI-PB-080-10A	PETIT BOIS PASS-ALABAMA WEST	2010	7/9/2010	12:20 PM	30.17437	-88.39525	245508.23190	1122678.31500	20-ft Vibracore	43.5	19.4	9.4 - 14.4	5.0	SP	SP	SUBANGULAR TO ROUNDED	GRAY	2.5Y 6/1	6	LT GRAY	2.5Y 7/1	7	NO	0.21	0.22	4.4	2.3	1.3
BI-PB-080-10B	PETIT BOIS PASS-ALABAMA WEST	2010	7/9/2010	12:20 PM	30.17437	-88.39525	245508.23190	1122678.31500	20-ft Vibracore	43.5	19.4	14.4 - 19.4	5.0	SP	SP-SM	SUBANGULAR TO ROUNDED	LT GRAY	2.5Y 7/1	7	LT GRAY	2.5Y 7/1	7	NO	0.17	0.17	9.1	2.4	1.2
BI-PB-085-10	PETIT BOIS PASS-ALABAMA WEST	2010	8/10/2010	8:45 AM	30.17444	-88.36705	245569.03870	1131589.11900	20-ft Vibracore	46.0	20.0	NO SAMPLE TAKEN		CH	NO SAMPLE TESTED													
BI-PB-086-10	PETIT BOIS PASS-ALABAMA WEST	2010	8/10/2010	12:40 PM	30.17434	-88.36176	245539.54670	1133260.85500	20-ft Vibracore	46.0	17.0	NO SAMPLE TAKEN		CH	NO SAMPLE TESTED													
BI-PB-087-10	PETIT BOIS PASS-ALABAMA WEST	2010	8/10/2010	3:15 PM	30.17422	-88.35683	245502.38280	1134818.86900	20-ft Vibracore	46.0	20.0	NO SAMPLE TAKEN		CH	NO SAMPLE TESTED													
BI-PB-089-10	PETIT BOIS PASS-ALABAMA WEST	2010	7/9/2010	1:41 PM	30.17057	-88.39507	244126.44730	1122740.50600	20-ft Vibracore	43.0	16.6																	
BI-PB-089-10A	PETIT BOIS PASS-ALABAMA WEST	2010	7/9/2010	1:41 PM	30.17057	-88.39507	244126.44730	1122740.50600	20-ft Vibracore	43.0	16.6	0.0 - 1.4	1.4	SP	SP	SUBANGULAR TO ROUNDED	GRAY	2.5Y 5/1	5	LT GRAY	2.5Y 7/1	7	NO	0.35	0.39	3.4	1.7	1.0
BI-PB-098-10	PETIT BOIS PASS-ALABAMA WEST	2010	8/3/2010	11:25 AM	30.19377	-88.37141	252593.48530	1130182.90700	20-ft Vibracore	25.0	17.5																	
BI-PB-098-10A	PETIT BOIS PASS-ALABAMA WEST	2010	8/3/2010	11:25 AM	30.19377	-88.37141	252593.48530	1130182.90700	20-ft Vibracore	25.0	17.5	0.0 - 5.0	5.0	SP	SP	SUBANGULAR TO ROUNDED	DARK GRAYISH BROWN	2.5Y 4/2	4	LIGHT BROWNISH GRAY	2.5Y 6/2	6	NO	0.33	0.34	4.2	2.3	1.4
BI-PB-098-10B	PETIT BOIS PASS-ALABAMA WEST	2010	8/3/2010	11:25 AM	30.19377	-88.37141	252593.48530	1130182.90700	20-ft Vibracore	25.0	17.5	5.0 - 10.0	5.0	SP	SP-SM	SUBANGULAR TO ROUNDED	VERY DK GRAYISH BROWN	2.5Y 3/2	3	GRAYISH BROWN	2.5Y 5/2	5	NO	0.27	0.28	7.4	3.4	1.3
BI-PB-098-10C	PETIT BOIS PASS-ALABAMA WEST	2010	8/3/2010	11:25 AM	30.19377	-88.37141	252593.48530	1130182.90700	20-ft Vibracore	25.0	17.5	10.0 - 15.0	5.0	SP	SP	SUBANGULAR TO ROUNDED	DARK GRAYISH BROWN	2.5Y 4/2	4	LIGHT BROWNISH GRAY	2.5Y 6/2	6	NO	0.32	0.31	4.5	3.5	2.1
BI-PB-098-10D	PETIT BOIS PASS-ALABAMA WEST	2010	8/3/2010	11:25 AM	30.19377	-88.37141	252593.48530	1130182.90700	20-ft Vibracore	25.0	17.5	15.0 - 17.5	2.5	SP	SP	SUBANGULAR TO ROUNDED	DARK GRAYISH BROWN	2.5Y 4/2	4	LIGHT BROWNISH GRAY	2.5Y 6/2	6	NO	0.29	0.29	4.9	2.1	1.2
BI-PB-099-10	PETIT BOIS PASS-ALABAMA WEST	2010	8/3/2010	1:10 PM	30.19397	-88.36133	252679.27610	1133367.16000	20-ft Vibracore	30.0	20.0																	
BI-PB-099-10A	PETIT BOIS PASS-ALABAMA WEST	2010	8/3/2010	1:10 PM	30.19397	-88.36133	252679.27610	1133367.16000	20-ft Vibracore	30.0	20.0	1.0 - 5.0	4.0	SP	SP-SM	SUBANGULAR TO ROUNDED	DARK GRAYISH BROWN	2.5Y 4/2	4	GRAYISH BROWN	2.5Y 5/2	5	NO	0.30	0.27	5.5	3.7	2.1
BI-PB-099-10B	PETIT BOIS PASS-ALABAMA WEST	2010	8/3/2010	1:10 PM	30.19397	-88.36133	252679.27610	1133367.16000	20-ft Vibracore	30.0	20.0	5.0 - 10.0	5.0	SP	SP-SM	SUBANGULAR TO ROUNDED	DARK GRAYISH BROWN	2.5Y 4/2	4	LIGHT BROWNISH GRAY	2.5Y 6/2	6	NO	0.28	0.27	5.4	3.1	1.6
BI-PB-100-10	PETIT BOIS PASS-ALABAMA WEST	2010	8/3/2010	12:25 PM	30.19860	-88.36634	254356.62420	1131777.46100	20-ft Vibracore	25.0	13.0																	
BI-PB-100-10A	PETIT BOIS PASS-ALABAMA WEST	2010	8/3/2010	12:25 PM	30.19860	-88.36634	254356.62420	1131777.46100	20-ft Vibracore	25.0	13.0	0.0 - 5.0	5.0	SP	SP	SUBANGULAR TO ROUNDED	VERY DK GRAYISH BROWN	2.5Y 3/2	3	DARK GRAYISH BROWN	2.5Y 4/2	4	NO	0.30	0.31	4.7	2.3	1.3
BI-PB-100-10B	PETIT BOIS PASS-ALABAMA WEST	2010	8/3/2010	12:25 PM	30.19860	-88.36634	254356.62420	1131777.46100	20-ft Vibracore	25.0	13.0	5.0 - 10.0	5.0	SP	SP-SM	SUBANGULAR TO ROUNDED	VERY DK GRAYISH BROWN	2.5Y 3/2	3	GRAYISH BROWN	2.5Y 5/2	5	NO	0.30	0.29	6.5	2.8	1.7
BI-PB-100-10C	PETIT BOIS PASS-ALABAMA WEST	2010	8/3/2010	12:25 PM	30.19860	-88.36634	254356.62420	1131777.46100	20-ft Vibracore	25.0	13.0	10.0 - 15.0	5.0	SP	SM	SUBANGULAR TO ROUNDED	DARK OLIVE GRAY	5Y 3/2	3	GRAY	5Y 5/1	5	NO	0.21	#VALUE!	16.4	#VALUE!	#VALUE!
BI-PB-101-10	PETIT BOIS PASS-ALABAMA WEST	2010	7/31/2010	12:30 PM	30.19863	-88.36113	254374.32040	1133423.32000	20-ft Vibracore	27.0	16.0																	
BI-PB-101-10A	PETIT BOIS PASS-ALABAMA WEST	2010	7/31/2010	12:30 PM	30.19863	-88.36113	254374.32040	1133423.32000	20-ft Vibracore	27.0	16.0	0.0 - 5.0	5.0	SP	SP	SUBANGULAR TO ROUNDED	BLACK	2.5Y 2.5/1	3	VERY DK GRAYISH BROWN	2.5Y 3/3	3	NO	0.38	0.41	1.4	1.6	0.9
BI-PB-101-10B	PETIT BOIS PASS-ALABAMA WEST	2010	7/31/2010	12:30 PM	30.19863	-88.36113	254374.32040	1133423.32000	20-ft Vibracore	27.0	16.0	5.0 - 10.0	5.0	SP	SP-SM	SUBANGULAR TO ROUNDED	VERY DARK BROWN	10YR 2/2	2	BLACK	2.5Y 2.5/1	3	NO	0.28	0.27	5.5	2.6	1.3
BI-PB-101-10C	PETIT BOIS PASS-ALABAMA WEST	2010	7/31/2010	12:30 PM	30.19863	-88.36113	254374.32040	1133423.32000	20-ft Vibracore	27.0	16.0	10.0 - 11.0	1.0	CH	SP-SM	SUBANGULAR TO ROUNDED	VERY DK GRAYISH BROWN	2.5Y 3/2	3	GRAY	2.5Y 5/1	5	NO	0.29	0.28	5.4	2.1	1.2
BI-PB-102-10	PETIT BOIS PASS-ALABAMA WEST	2010	8/3/2010	2:00 PM	30.19432	-88.35639	252813.06670	1134927.30900	20-ft Vibracore	31.0	20.0																	
BI-PB-102-10A	PETIT BOIS PASS-ALABAMA WEST	2010	8/3/2010	2:00 PM	30.19432	-88.35639	252813.06670	1134927.30900	20-ft Vibracore	31.0	20.0	0.0 - 4.0	4.0	SP	SP-SM	SUBANGULAR TO ROUNDED	VERY DK GRAYISH BROWN	2.5Y 3/2	3	GRAYISH BROWN	2.5Y 5/2	5	NO	0.33	0.33	7.1	4.1	2.2
BI-PB-102-10B	PETIT BOIS PASS-ALABAMA WEST	2010	8/3/2010	2:00 PM	30.19432	-88.35639	252813.06670	1134927.30900	20-ft Vibracore	31.0	20.0	4.0 - 8.0	4.0	SP	SP	SUBANGULAR TO ROUNDED	DARK GRAYISH BROWN	2.5Y 4/2	4	LIGHT BROWNISH GRAY	2.5Y 6/2	6	NO	0.33	0.34	3.1	2.3	1.3
BI-PB-102-10C	PETIT BOIS PASS-ALABAMA WEST	2010	8/3/2010	2:00 PM	30.19432	-88.35639	252813.06670	1134927.30900	20-ft Vibracore	31.0	20.0	8.0 - 11.0	3.0	SP	SP-SM	SUBANGULAR TO ROUNDED	DARK GRAYISH BROWN	2.5Y 4/2	4	LIGHT BROWNISH GRAY	2.5Y 6/2	6	NO	0.26	0.24	7.3	3.7	0.8
BI-PB-103-10	PETIT BOIS PASS-ALABAMA WEST	2010	8/4/2010	10:00 AM	30.18760	-88.37637	250343.21980	1128624.90500	20-ft Vibracore	33.0	19.0	NO SAMPLE TAKEN		CH	NO SAMPLE TESTED													
BI-PB-104-10	PETIT BOIS PASS-ALABAMA WEST	2010	8/4/2010	10:45 AM	30.19001	-88.37107	251226.45890	1130295.87100	20-ft Vibracore	33.0	20.0																	
BI-PB-104-10A	PETIT BOIS PASS-ALABAMA WEST	2010	8/4/2010	10:45 AM	30.19001	-88.37107	251226.45890	1130295.87100	20-ft Vibracore	33.0	20.0	2.0 - 5.0	3.0	SP	SM	SUBANGULAR TO ROUNDED	VERY DK GRAYISH BROWN	2.5Y 3/2	3	DARK GRAYISH BROWN	2.5Y 4/2	4	NO	0.16	#VALUE!	20.8	#VALUE!	#VALUE!
BI-PB-104-10B	PETIT BOIS PASS-ALABAMA WEST	2010	8/4/2010	10:45 AM	30.19001	-88.37107	251226.45890	1130295.87100	20-ft Vibracore	33.0	20.0	5.0 - 8.0	3.0	SP	SM	SUBANGULAR TO ROUNDED	BLACK	2.5Y 2.5/1	3	VERY DK GRAYISH BROWN	2.5Y 3/2	3	YES	0.11	#VALUE!	37.5	#VALUE!	#VALUE!
BI-PB-105-10	PETIT BOIS PASS-ALABAMA WEST	2010	8/4/2010	12:00 PM	30.19023	-88.36653	251312.31820	1131729.91100	20-ft Vibracore	31.0	18.0																	
BI-PB-105-10A	PETIT BOIS PASS-ALABAMA WEST	2010	8/4/2010	12:00 PM	30.19023	-88.36653	251312.31820	1131729.91100	20-ft Vibracore	31.0	18.0	0.0 - 4.0	4.0	SP	SM	SUBANGULAR TO ROUNDED	DARK GRAYISH BROWN	2.5Y 4/2	4	GRAY	2.5Y 6/1	6	NO	0.21	0.37	12.8	#VALUE!	#VALUE!
BI-PB-105-10B	PETIT BOIS PASS-ALABAMA WEST	2010	8/4/2010	12:00 PM	30.19023	-88.36653	251312.31820	1131729.91100	20-ft Vibracore	31.0	18.0	4.0 - 8.0	4.0	SP	SM	SUBANGULAR TO ROUNDED	VERY DK GRAYISH BROWN	2.5Y 3/2	3	GRAYISH BROWN	2.5Y 5/2	5	YES	0.19	#VALUE!	23.0	#VALUE!	#VALUE!
BI-PB-106-10	PETIT BOIS PASS-ALABAMA WEST	2010	8/4/2010	12:45 PM	30.19016	-88.36144	251293.48470	1133338.14800	20-ft Vibracore	33.0	9.5																	

Cu: Coefficient of Uniformity
Cc: Coefficient of Curvature
The "#Value!" error message indicates that data was not available for that calculation.

Vibracore / Sample ID	Investigation Area	Sample Event	Date of Sample	Time_CST	Latitude	Longitude	Northing_Y	Easting_X	Sample Method	Water Depth (feet)	Boring Depth (feet below seafloor surface)	Sample Depth (Feet below seafloor surface)	Sample Thickness (feet)	Field USCS	Lab USCS	Angularity	Wet Munsell Color	Wet Munsell Color Code	Wet Munsell Value	Dry Munsell Color	Dry Munsell Color Code	Dry Munsell Value	CaCO3	D50 (mm)	Graphic Mean (mm)	% Fines	Cu (D60/D10)	Cc (D30)^2 / (D10*D60)
BI-PB-106-10A	PETIT BOIS PASS-ALABAMA WEST	2010	8/4/2010	12:45 PM	30.19016	-88.36144	251293.48470	1133338.14800	20-ft Vibracore	33.0	9.5	2.0 - 5.0	3.0	SP	SP-SM	SUBANGULAR TO ROUNDED	VERY DARK GRAY	2.5Y 3/1	3	DARK GRAYISH BROWN	2.5Y 4/2	4	NO	0.25	0.30	9.2	4.1	0.7
BI-PB-106-10B	PETIT BOIS PASS-ALABAMA WEST	2010	8/4/2010	12:45 PM	30.19016	-88.36144	251293.48470	1133338.14800	20-ft Vibracore	33.0	9.5	5.0 - 9.5	4.5	SP	SM	SUBANGULAR TO ROUNDED	DARK OLIVE GRAY	5Y 3/2	3	OLIVE GRAY	5Y 5/2	5	YES	0.26	#VALUE!	19.3	#VALUE!	#VALUE!
BI-PB-107-10	PETIT BOIS PASS-ALABAMA WEST	2010	8/3/2010	2:45 PM	30.19107	-88.35654	251630.88510	1134884.86700	20-ft Vibracore	32.0	13.5	NO SAMPLE TAKEN		CH	NO SAMPLE TESTED													
BI-PB-108-10	PETIT BOIS PASS-ALABAMA EAST	2010	7/29/2010	11:00 AM	30.20020	-88.32870	254989.24110	1143665.85000	20-ft Vibracore	31.0	16.0	NO SAMPLE TAKEN		CH	NO SAMPLE TESTED													
BI-PB-109-10	PETIT BOIS PASS-ALABAMA EAST	2010	7/29/2010	10:25 AM	30.19865	-88.32584	254429.53840	1144571.85900	20-ft Vibracore	32.0	16.5																	
BI-PB-109-10A	PETIT BOIS PASS-ALABAMA EAST	2010	7/29/2010	10:25 AM	30.19865	-88.32584	254429.53840	1144571.85900	20-ft Vibracore	32.0	16.5	0.0 - 5.0	5.0	SP	SP	SUBANGULAR TO ROUNDED	DK GRAYISH BROWN	5Y 4/2	4	LT GRAY	5Y 7/2	7	NO	0.37	0.43	2.5	1.9	1.0
BI-PB-109-10B	PETIT BOIS PASS-ALABAMA EAST	2010	7/29/2010	10:25 AM	30.19865	-88.32584	254429.53840	1144571.85900	20-ft Vibracore	32.0	16.5	5.0 - 10.0	5.0	SP	SP	SUBANGULAR TO ROUNDED	GRAY	2.5Y 6/1	6	LT GRAY	2.5Y 7/1	7	NO	0.33	0.36	2.4	1.7	1.1
BI-PB-109-10C	PETIT BOIS PASS-ALABAMA EAST	2010	7/29/2010	10:25 AM	30.19865	-88.32584	254429.53840	1144571.85900	20-ft Vibracore	32.0	16.5	10.0 - 13.0	3.0	SP	SP	SUBANGULAR TO ROUNDED	GRAYISH BROWN	2.5Y 5/2	5	LT GRAY	2.5Y 7/1	7	NO	0.33	0.35	2.8	1.9	1.2
BI-PB-110-10	PETIT BOIS PASS-ALABAMA EAST	2010	7/30/2010	9:15 AM	30.19708	-88.32862	253854.64580	1143696.15000	20-ft Vibracore	31.0	12.0	NO SAMPLE TAKEN		CH	NO SAMPLE TESTED													
BI-PB-111-10	PETIT BOIS PASS-ALABAMA EAST	2010	7/29/2010	3:00 PM	30.19861	-88.33113	254407.58390	1142900.74200	20-ft Vibracore	31.0	20.0	NO SAMPLE TAKEN		CH	NO SAMPLE TESTED													
BI-PB-112-10	PETIT BOIS PASS-ALABAMA EAST	2010	7/30/2010	12:30 PM	30.20235	-88.31556	255789.80250	1147813.33300	20-ft Vibracore	31.0	11.0																	
BI-PB-112-10A	PETIT BOIS PASS-ALABAMA EAST	2010	7/30/2010	12:30 PM	30.20235	-88.31556	255789.80250	1147813.33300	20-ft Vibracore	31.0	11.0	1.0 - 5.0	4.0	SP	SP-SM	SUBANGULAR TO ROUNDED	GRAY	5Y 6/1	6	LT GRAY	2.5Y 7/1	7	NO	0.30	0.30	9.8	4.3	2.1
BI-PB-112-10B	PETIT BOIS PASS-ALABAMA EAST	2010	7/30/2010	12:30 PM	30.20235	-88.31556	255789.80250	1147813.33300	20-ft Vibracore	31.0	11.0	5.0 - 9.0	4.0	SP	SP-SM	SUBANGULAR TO ROUNDED	LT BROWNISH GRAY	2.5Y 6/2	6	LT GRAY	2.5Y 7/2	7	NO	0.33	0.34	6.2	2.3	1.4
BI-PB-112-10C	PETIT BOIS PASS-ALABAMA EAST	2010	7/30/2010	12:30 PM	30.20235	-88.31556	255789.80250	1147813.33300	20-ft Vibracore	31.0	11.0	9.0 - 11.0	2.0	SP	SP-SM	SUBANGULAR TO ROUNDED	GRAY	2.5Y 6/1	6	LT GRAY	2.5Y 7/2	7	NO	0.33	0.34	6.6	2.0	1.2
BI-PB-113-10	PETIT BOIS PASS-ALABAMA EAST	2010	7/30/2010	9:55 AM	30.20109	-88.31458	255332.96340	1148125.00400	20-ft Vibracore	32.0	17.5																	
BI-PB-113-10A	PETIT BOIS PASS-ALABAMA EAST	2010	7/30/2010	9:55 AM	30.20109	-88.31458	255332.96340	1148125.00400	20-ft Vibracore	32.0	17.5	0.0 - 5.0	5.0	SP	SM	SUBANGULAR TO ROUNDED	GRAY	5Y 2.5/1	3	VERY DK GRAYISH BROWN	2.5Y 3/1	3	NO	0.29	#VALUE!	17.2	#VALUE!	#VALUE!
BI-PB-113-10B	PETIT BOIS PASS-ALABAMA EAST	2010	7/30/2010	9:55 AM	30.20109	-88.31458	255332.96340	1148125.00400	20-ft Vibracore	32.0	17.5	5.0 - 10.0	5.0	SP	SM	SUBANGULAR TO ROUNDED	DK GRAYISH BROWN	5Y 4/2	4	GRAYISH BROWN	5Y 5/2	5	NO	0.29	#VALUE!	19.4	#VALUE!	#VALUE!
BI-PB-113-10C	PETIT BOIS PASS-ALABAMA EAST	2010	7/30/2010	9:55 AM	30.20109	-88.31458	255332.96340	1148125.00400	20-ft Vibracore	32.0	17.5	10.0 - 15.0	5.0	SP	SM	SUBANGULAR TO ROUNDED	DK GRAYISH BROWN	2.5Y 4/2	4	GRAY	2.5Y 6/1	6	NO	0.27	#VALUE!	20.8	#VALUE!	#VALUE!
BI-PB-113-10D	PETIT BOIS PASS-ALABAMA EAST	2010	7/30/2010	9:55 AM	30.20109	-88.31458	255332.96340	1148125.00400	20-ft Vibracore	32.0	17.5	15.0 - 17.5	2.5	SP	SP-SM	SUBANGULAR TO ROUNDED	GRAY	2.5Y 5/1	5	GRAY	2.5Y 6/1	6	NO	0.31	0.31	9.9	4.5	2.2
BI-PB-114-10	PETIT BOIS PASS-ALABAMA EAST	2010	7/30/2010	10:40 AM	30.20222	-88.31305	255746.13640	1148606.46300	20-ft Vibracore	30.0	19.0																	
BI-PB-114-10A	PETIT BOIS PASS-ALABAMA EAST	2010	7/30/2010	10:40 AM	30.20222	-88.31305	255746.13640	1148606.46300	20-ft Vibracore	30.0	19.0	0.0 - 5.0	5.0	SP	SM	SUBANGULAR TO ROUNDED	DARK OLIVE GRAY	5Y 3/2	3	OLIVE GRAY	5Y 5/2	5	NO	0.23	#VALUE!	26.9	#VALUE!	#VALUE!
BI-PB-114-10B	PETIT BOIS PASS-ALABAMA EAST	2010	7/30/2010	10:40 AM	30.20222	-88.31305	255746.13640	1148606.46300	20-ft Vibracore	30.0	19.0	5.0 - 10.0	5.0	SP	SP-SM	SUBANGULAR TO ROUNDED	GRAYISH BROWN	2.5Y 5/2	5	LT GRAY	2.5Y 7/2	7	NO	0.34	0.35	6.7	2.1	1.2
BI-PB-114-10C	PETIT BOIS PASS-ALABAMA EAST	2010	7/30/2010	10:40 AM	30.20222	-88.31305	255746.13640	1148606.46300	20-ft Vibracore	30.0	19.0	10.0 - 15.0	5.0	SP	SP-SM	SUBANGULAR TO ROUNDED	VERY DK GRAYISH BROWN	2.5Y 3/2	3	GRAY	2.5Y 5/1	5	NO	0.33	0.34	6.6	2.0	1.2
BI-PB-114-10D	PETIT BOIS PASS-ALABAMA EAST	2010	7/30/2010	10:40 AM	30.20222	-88.31305	255746.13640	1148606.46300	20-ft Vibracore	30.0	19.0	15.0 - 19.0	4.0	SP	SM	SUBANGULAR TO ROUNDED	GRAY	2.5Y 2.5/1	3	DK GRAY	2.5Y 4/1	4	NO	0.30	0.27	13.8	#VALUE!	#VALUE!
BI-PB-115-10	PETIT BOIS PASS-ALABAMA EAST	2010	7/29/2010	2:25 PM	30.20605	-88.33801	257103.90680	1140715.49100	20-ft Vibracore	18.0	15.0																	
BI-PB-115-10A	PETIT BOIS PASS-ALABAMA EAST	2010	7/29/2010	2:25 PM	30.20605	-88.33801	257103.90680	1140715.49100	20-ft Vibracore	18.0	15.0	0.0 - 4.0	4.0	SP	SP	SUBANGULAR TO ROUNDED	DK GRAYISH BROWN	2.5Y 4/2	4	LT BROWNISH GRAY	2.5Y 6/2	6	YES	0.24	0.26	2.2	1.8	0.9
BI-PB-115-10B	PETIT BOIS PASS-ALABAMA EAST	2010	7/29/2010	2:25 PM	30.20605	-88.33801	257103.90680	1140715.49100	20-ft Vibracore	18.0	15.0	4.0 - 8.0	4.0	SP	SP	SUBANGULAR TO ROUNDED	GRAYISH BROWN	2.5Y 5/2	5	LT BROWNISH GRAY	2.5Y 6/2	6	NO	0.22	0.24	4.8	2.1	1.0
BI-PB-115-10C	PETIT BOIS PASS-ALABAMA EAST	2010	7/29/2010	2:25 PM	30.20605	-88.33801	257103.90680	1140715.49100	20-ft Vibracore	18.0	15.0	8.0 - 11.5	3.5	SP	SP-SM	SUBANGULAR TO ROUNDED	DK GRAYISH BROWN	5Y 4/2	4	LT BROWNISH GRAY	5Y 6/2	6	NO	0.29	0.29	5.5	2.1	1.1
BI-PB-116-10	PETIT BOIS PASS-ALABAMA EAST	2010	7/29/2010	1:35 PM	30.20590	-88.33345	257055.64770	1142156.18600	20-ft Vibracore	16.0	15.0																	
BI-PB-116-10A	PETIT BOIS PASS-ALABAMA EAST	2010	7/29/2010	1:35 PM	30.20590	-88.33345	257055.64770	1142156.18600	20-ft Vibracore	16.0	15.0	0.0 - 5.0	5.0	SP	SP	SUBANGULAR TO ROUNDED	OLIVE BROWN	2.5Y 4/3	4	LT BROWNISH GRAY	2.5Y 6/2	6	NO	0.34	0.37	2.7	1.7	1.0
BI-PB-116-10B	PETIT BOIS PASS-ALABAMA EAST	2010	7/29/2010	1:35 PM	30.20590	-88.33345	257055.64770	1142156.18600	20-ft Vibracore	16.0	15.0	5.0 - 7.0	2.0	SP	SP	SUBANGULAR TO ROUNDED	GRAYISH BROWN	2.5Y 5/2	5	LT GRAY	2.5Y 7/1	7	NO	0.28	0.28	4.6	2.1	1.1
BI-PB-117-10	PETIT BOIS PASS-ALABAMA EAST	2010	7/29/2010	12:30 PM	30.20617	-88.32869	257160.47530	1143659.38800	20-ft Vibracore	16.0	20.0																	
BI-PB-117-10A	PETIT BOIS PASS-ALABAMA EAST	2010	7/29/2010	12:30 PM	30.20617	-88.32869	257160.47530	1143659.38800	20-ft Vibracore	16.0	20.0	0.0 - 5.0	5.0	SP	SP	SUBANGULAR TO ROUNDED	GRAY	2.5Y 6/1	6	LT GRAY	2.5Y 7/1	7	NO	0.32	0.33	1.7	1.7	1.0
BI-PB-117-10B	PETIT BOIS PASS-ALABAMA EAST	2010	7/29/2010	12:30 PM	30.20617	-88.32869	257160.47530	1143659.38800	20-ft Vibracore	16.0	20.0	5.0 - 10.0	5.0	SP	SP	SUBANGULAR TO ROUNDED	GRAYISH BROWN	5Y 5/2	5	LT GRAY	5Y 7/1	7	YES	0.31	0.32	1.8	1.6	1.0
BI-PB-117-10C	PETIT BOIS PASS-ALABAMA EAST	2010	7/29/2010	12:30 PM	30.20617	-88.32869	257160.47530	1143659.38800	20-ft Vibracore	16.0	20.0	10.0 - 15.0	5.0	SP	SP	SUBANGULAR TO ROUNDED	GRAY	2.5Y 5/1	5	LT GRAY	2.5Y 7/1	7	YES	0.26	0.27	4.5	2.2	1.1
BI-PB-117-10D	PETIT BOIS PASS-ALABAMA EAST	2010	7/29/2010	12:30 PM	30.20617	-88.32869	257160.47530	1143659.38800	20-ft Vibracore	16.0	20.0	15.0 - 20.0	5.0	SP	SP-SM	SUBANGULAR TO ROUNDED	VERY DK GRAY	2.5Y 3/1	3	GRAYISH BROWN	2.5Y 5/2	5	NO	0.20	0.21	9.8	3.0	1.5
BI-PB-118-10	PETIT BOIS PASS-ALABAMA EAST	2010	7/30/2010	1:00 PM	30.20604	-88.32426	257119.42420	1145058.98900	20-ft Vibracore	16.0	20.0																	
BI-PB-118-10A	PETIT BOIS PASS-ALABAMA EAST	2010	7/30/2010	1:00 PM	30.20604	-88.32426	257119.42420	1145058.98900	20-ft Vibracore	16.0	20.0	0.0 - 5.0	5.0	SW	SP	SUBANGULAR TO ROUNDED	GRAY	2.5Y 5/1	5	LT GRAY	2.5Y 7/1	7	NO	0.31	0.31	1.6	1.8	1.1
BI-PB-118-10B	PETIT BOIS PASS-ALABAMA EAST	2010	7/30/2010	1:00 PM	30.20604	-88.32426	257119.42420	1145058.98900	20-ft Vibracore	16.0	20.0	5.0 - 10.0	5.0	SW	SP-SM	SUBANGULAR TO ROUNDED	GRAYISH BROWN	2.5Y 5/2	5	LT GRAY	2.5Y 7/1	7	NO	0.31	0.31	6.1	1.9	1.1
BI-PB-118-10C	PETIT BOIS PASS-ALABAMA EAST	2010	7/30/2010	1:00 PM	30.20604	-88.32426	257119.42420	1145058.98900	20-ft Vibracore	16.0	20.0	10.0- 15.0	5.0	SW	SP	SUBANGULAR TO ROUNDED	GRAYISH BROWN	5Y 5/2	5	LT GRAY	5Y 7/1	7	NO	0.36	0.38	1.8	1.8	1.0
BI-PB-118-10D	PETIT BOIS PASS-ALABAMA EAST	2010	7/30/2010	1:00 PM	30.20604	-88.32426	257119.42420	1145058.98900	20-ft Vibracore	16.0	20.0	15.0 - 20.0	5.0	SW	SP	SUBANGULAR TO ROUNDED	GRAYISH BROWN	5Y 5/2	5	LT GRAY	5Y 7/1	7	NO	0.29	0.30	2.5	1.8	1.0
BI-PB-119-10	PETIT BOIS PASS-ALABAMA EAST	2010	7/30/2010	2:05 PM	30.20621	-88.31930	257188.28950	1146625.52400	20-ft Vibracore	16.0	20.0																	
BI-PB-119-10A	PETIT BOIS PASS-ALABAMA EAST	2010	7/30/2010	2:05 PM	30.20621	-88.31930	257188.28950	1146625.52400	20-ft Vibracore	16.0	20.0	0.0 - 5.0	5.0	SP	SP	SUBANGULAR TO ROUNDED	LT BROWNISH GRAY	2.5Y 6/2	6	LT GRAY	2.5Y 7/1	7	NO	0.33	0.34	1.3	1.5	1.0
BI-PB-119-10B	PETIT BOIS PASS-ALABAMA EAST	2010	7/30/2010	2:05 PM	30.20621	-88.31930	257188.28950	1146625.52400	20-ft Vibracore	16.0	20.0	5.0 - 10.0	5.0	SP	SP	SUBANGULAR TO ROUNDED	GRAYISH BROWN	5Y 5/2	5	LT GRAY	5Y 7/1	7	YES	0.31	0.31	1.9	1.6	1.0
BI-PB-119-10C	PETIT BOIS PASS-ALABAMA EAST	2010	7/30/2010	2:05 PM	30.20621	-88.31930	257188.28950	1146625.52400	20-ft Vibracore	16.0	20.0	10 - 15.0	5.0	SP	SP	SUBANGULAR TO ROUNDED	DK GRAYISH BROWN	5Y 4/2	4	LT GRAY	5Y 7/1	7	NO	0.23	0.24	2.3	1.9	1.0
BI-PB-119-10D	PETIT BOIS PASS-ALABAMA EAST	2010	7/30/2010	2:05 PM	30.20621	-88.31930	257188.28950	1146625.52400	20-ft Vibracore	16.0	20.0	15.0 - 20.0	5.0	SP	SP	SUBANGULAR TO ROUNDED	DK GRAY	2.5Y 4/1	4	LT BROWNISH GRAY	2.5Y 6/2	6	NO	0.34	0.39	4.6	2.4	1.0
BI-PB-120-10	PETIT BOIS PASS-ALABAMA EAST	2010	7/30/2010	2:40 PM	30.20604	-88.31503	257132.57620	1147974.65400	20-ft Vibracore	23.0	15.0																	
BI-PB-120-10A	PETIT BOIS PASS-ALABAMA EAST	2010	7/30/2010	2:40 PM	30.20604	-88.31503	257132.57620	1147974.65400	20-ft Vibracore	23.0	15.0	0.0 - 5.0	5.0	SP	SP	SUBANGULAR TO ROUNDED	LT OLIVE BROWN	2.5Y 5/3	5	LT BROWNISH GRAY	2.5Y 6/2	6	NO	0.30	0.30	4.1	2.2	1.2
BI-PB-120-10B	PETIT BOIS PASS-ALABAMA EAST	2010	7/30/2010	2:40 PM	30.20604	-88.31503	257132.57620	1147974.65400	20-ft Vibracore	23.0	15.0	5.0 - 10.0	5.0	SP	SP	SUBANGULAR TO ROUNDED	OLIVE BROWN	2.5Y 4/3	4	LT BROWNISH GRAY	2.5Y 6/2	6	NO	0.30	0.30	3.5	1.8	1.1
BI-PB-120-10C	PETIT BOIS PASS-ALABAMA EAST	2010	7/30/2010	2:40 PM	30.20604	-88.31503	257132.57620	1147974.65400	20-ft Vibracore	23.0	15.0	10.0- 15.0	5.0	SP	SP	SUBANGULAR TO ROUNDED	GRAY	2.5Y 5/1	5	LT GRAY	2.5Y 7/1	7	NO	0.27	0.27	3.1	1.9	1.0

Cu: Coefficient of Uniformity
Cc: Coefficient of Curvature
The "#Value!" error message indicates that data was not available for that calculation.

Vibracore / Sample ID	Investigation Area	Sample Event	Date of Sample	Time_CST	Latitude	Longitude	Northing_Y	Easting_X	Sample Method	Water Depth (feet)	Boring Depth (feet below seafloor surface)	Sample Depth (Feet below seafloor surface)	Sample Thickness (feet)	Field USCS	Lab USCS	Angularity	Wet Munsell Color	Wet Munsell Color Code	Wet Munsell Value	Dry Munsell Color	Dry Munsell Color Code	Dry Munsell Value	CaCO3	D50 (mm)	Graphic Mean (mm)	% Fines	Cu (D60/D10)	Cc (D30)^2 / (D10*D60)
BI-PB-121-10	PETIT BOIS PASS-ALABAMA EAST	2010	7/31/2010	9:20 AM	30.20603	-88.30993	257136.30770	1149585.71000	20-ft Vibracore	29.0	20.0																	
BI-PB-121-10A	PETIT BOIS PASS-ALABAMA EAST	2010	7/31/2010	9:20 AM	30.20603	-88.30993	257136.30770	1149585.71000	20-ft Vibracore	29.0	20.0	0.0 - 5.0	5.0	SW	SP	SUBANGULAR TO ROUNDED	GRAYISH BROWN	2.5Y 5/2	5	LT GRAY	2.5Y 7/1	7	NO	0.28	0.29	4.6	1.9	1.0
BI-PB-121-10B	PETIT BOIS PASS-ALABAMA EAST	2010	7/31/2010	9:20 AM	30.20603	-88.30993	257136.30770	1149585.71000	20-ft Vibracore	29.0	20.0	5.0 - 10.0	5.0	SW	SP-SM	SUBANGULAR TO ROUNDED	OLIVE BROWN	2.5Y 4/3	4	LT GRAY	2.5Y 7/1	7	NO	0.27	0.27	10.4	#VALUE!	#VALUE!
BI-PB-121-10D	PETIT BOIS PASS-ALABAMA EAST	2010	7/31/2010	9:20 AM	30.20603	-88.30993	257136.30770	1149585.71000	20-ft Vibracore	29.0	20.0	10.0 - 15.0	5.0	SW	SP-SM	SUBANGULAR TO ROUNDED	GRAYISH BROWN	2.5Y 5/2	5	LT GRAY	2.5Y 7/2	7	NO	0.31	0.32	6.2	1.8	1.1
BI-PB-121-10E	PETIT BOIS PASS-ALABAMA EAST	2010	7/31/2010	9:20 AM	30.20603	-88.30993	257136.30770	1149585.71000	20-ft Vibracore	29.0	20.0	15.0 - 20.0	5.0	SP	SP-SM	SUBANGULAR TO ROUNDED	GRAYISH BROWN	2.5Y 5/2	5	LT GRAY	2.5Y 7/2	7	NO	0.31	0.30	6.1	2.0	1.2
BI-PB-122-10	PETIT BOIS PASS-ALABAMA EAST	2010	7/31/2010	10:00 AM	30.20609	-88.30508	257165.20320	1151117.67700	20-ft Vibracore	30.0	18.5																	
BI-PB-122-10A	PETIT BOIS PASS-ALABAMA EAST	2010	7/31/2010	10:00 AM	30.20609	-88.30508	257165.20320	1151117.67700	20-ft Vibracore	30.0	18.5	1.0 - 5.0	4.0	SW	SP-SM	SUBANGULAR TO ROUNDED	GRAY	2.5Y 5/1	5	LT BROWNISH GRAY	2.5Y 6/2	6	NO	0.32	0.33	5.5	1.9	1.1
BI-PB-122-10B	PETIT BOIS PASS-ALABAMA EAST	2010	7/31/2010	10:00 AM	30.20609	-88.30508	257165.20320	1151117.67700	20-ft Vibracore	30.0	18.5	5.0 - 10.0	5.0	SW	SM	SUBANGULAR TO ROUNDED	GRAY	2.5Y 5/1	5	LT GRAY	2.5Y 7/1	7	NO	0.26	0.25	12.8	#VALUE!	#VALUE!
BI-PB-122-10C	PETIT BOIS PASS-ALABAMA EAST	2010	7/31/2010	10:00 AM	30.20609	-88.30508	257165.20320	1151117.67700	20-ft Vibracore	30.0	18.5	10.0 - 15.0	5.0	SW	SP-SM	SUBANGULAR TO ROUNDED	LT BROWNISH GRAY	2.5Y 6/2	6	LT GRAY	2.5Y 7/2	7	NO	0.32	0.34	6.5	1.8	1.1
BI-PB-122-10D	PETIT BOIS PASS-ALABAMA EAST	2010	7/31/2010	10:00 AM	30.20609	-88.30508	257165.20320	1151117.67700	20-ft Vibracore	30.0	18.5	15.0 - 16.5	1.5	SW	SP	SUBANGULAR TO ROUNDED	GRAY	2.5Y 5/1	5	LT GRAY	2.5Y 7/1	7	NO	0.33	0.34	4.3	2.3	1.4
BI-PB-123-10	PETIT BOIS PASS-ALABAMA EAST	2010	7/31/2010	10:40 AM	30.20617	-88.30053	257200.99430	1152554.84100	20-ft Vibracore	31.0	16.0																	
BI-PB-123-10A	PETIT BOIS PASS-ALABAMA EAST	2010	7/31/2010	10:40 AM	30.20617	-88.30053	257200.99430	1152554.84100	20-ft Vibracore	31.0	16.0	0.0 - 5.0	5.0	SW	SP	SUBANGULAR TO ROUNDED	LT BROWNISH GRAY	2.5Y 6/2	6	LT GRAY	2.5Y 7/2	7	NO	0.35	0.37	4.9	1.8	1.0
BI-PB-123-10B	PETIT BOIS PASS-ALABAMA EAST	2010	7/31/2010	10:40 AM	30.20617	-88.30053	257200.99430	1152554.84100	20-ft Vibracore	31.0	16.0	5.0 - 10.0	5.0	SW	SP	SUBANGULAR TO ROUNDED	LT GRAY	2.5Y 7/1	7	WHITE	2.5Y 8/1	8	NO	0.30	0.30	3.2	1.9	1.1
BI-PB-123-10C	PETIT BOIS PASS-ALABAMA EAST	2010	7/31/2010	10:40 AM	30.20617	-88.30053	257200.99430	1152554.84100	20-ft Vibracore	31.0	16.0	10.0 - 15.0	5.0	SW	SP	SUBANGULAR TO ROUNDED	LT GRAY	2.5Y 7/1	7	WHITE	2.5Y 8/1	8	NO	0.30	0.30	4.5	2.1	1.1
BI-PB-124-10	PETIT BOIS PASS-ALABAMA EAST	2010	8/7/2010	12:15 PM	30.20593	-88.29567	257120.92440	1154090.47900	20-ft Vibracore	32.0	13.6																	
BI-PB-124-10A	PETIT BOIS PASS-ALABAMA EAST	2010	8/7/2010	12:15 PM	30.20593	-88.29567	257120.92440	1154090.47900	20-ft Vibracore	32.0	13.6	0.0 - 4.0	4.0	SP	SP	SUBANGULAR TO ROUNDED	GRAYISH BROWN	2.5Y 5/2	5	LIGHT GRAY	2.5Y 7/2	7	NO	0.34	0.37	4.8	2.1	1.1
BI-PB-124-10B	PETIT BOIS PASS-ALABAMA EAST	2010	8/7/2010	12:15 PM	30.20593	-88.29567	257120.92440	1154090.47900	20-ft Vibracore	32.0	13.6	4.0 - 8.0	4.0	SP	SP	SUBANGULAR TO ROUNDED	GRAYISH BROWN	2.5Y 5/2	5	LIGHT GRAY	2.5Y 7/2	7	NO	0.33	0.34	3.8	1.9	1.1
BI-PB-125-10	PETIT BOIS PASS-ALABAMA EAST	2010	8/7/2010	10:45 AM	30.20216	-88.29599	255749.33800	1153995.86300	20-ft Vibracore	37.0	10.5																	
BI-PB-125-10A	PETIT BOIS PASS-ALABAMA EAST	2010	8/7/2010	10:45 AM	30.20216	-88.29599	255749.33800	1153995.86300	20-ft Vibracore	37.0	10.5	0.0 - 5.0	5.0	SP	SP-SM	SUBANGULAR TO ROUNDED	VERY DK GRAYISH BROWN	2.5Y 3/2	3	GRAYISH BROWN	2.5Y 5/2	5	NO	0.26	0.27	8.9	3.0	1.6
BI-PB-125-10B	PETIT BOIS PASS-ALABAMA EAST	2010	8/7/2010	10:45 AM	30.20216	-88.29599	255749.33800	1153995.86300	20-ft Vibracore	37.0	10.5	5.0 - 10.0	5.0	SP	SP-SM	SUBANGULAR TO ROUNDED	VERY DK GRAYISH BROWN	2.5Y 3/2	3	GRAY	2.5Y 5/1	5	NO	0.30	0.29	9.4	4.0	2.5
BI-PB-126-10	PETIT BOIS PASS-ALABAMA EAST	2010	8/7/2010	9:45 AM	30.19839	-88.29581	254378.49780	1154059.19600	20-ft Vibracore	36.0	14.7																	
BI-PB-126-10A	PETIT BOIS PASS-ALABAMA EAST	2010	8/7/2010	9:45 AM	30.19839	-88.29581	254378.49780	1154059.19600	20-ft Vibracore	36.0	14.7	0.0 - 5.0	5.0	SP	SP-SM	SUBANGULAR TO ROUNDED	DARK OLIVE BROWN	2.5Y 3/3	3	GRAYISH BROWN	2.5Y 5/2	5	NO	0.33	0.33	9.1	4.4	2.3
BI-PB-126-10B	PETIT BOIS PASS-ALABAMA EAST	2010	8/7/2010	9:45 AM	30.19839	-88.29581	254378.49780	1154059.19600	20-ft Vibracore	36.0	14.7	5.0 - 10.0	5.0	SP	SP-SM	SUBANGULAR TO ROUNDED	VERY DK GRAYISH BROWN	2.5Y 3/2	3	GRAY	2.5Y 5/1	5	NO	0.32	0.33	6.2	1.7	1.0
BI-PB-126-10C	PETIT BOIS PASS-ALABAMA EAST	2010	8/7/2010	9:45 AM	30.19839	-88.29581	254378.49780	1154059.19600	20-ft Vibracore	36.0	14.7	10.0 - 14.7	4.7	SP	SP-SM	SUBANGULAR TO ROUNDED	DARK GRAYISH BROWN	2.5Y 4/2	4	GRAY	2.5Y 5/1	5	NO	0.32	0.31	11.0	#VALUE!	#VALUE!
BI-PB-127-10	PETIT BOIS PASS-ALABAMA WEST	2010	8/9/2010	2:45 PM	30.19862	-88.35651	254376.76370	1134882.85200	20-ft Vibracore	29.0	15.5																	
BI-PB-127-10A	PETIT BOIS PASS-ALABAMA WEST	2010	8/9/2010	2:45 PM	30.19862	-88.35651	254376.76370	1134882.85200	20-ft Vibracore	29.0	15.5	0.0 - 5.0	5.0	SP	SP	SUBANGULAR TO ROUNDED	VERY DARK GRAYISH BROWN	10YR 3/2	3	DRAK GRAYISH BROWN	10YR 4/2	4	NO	0.29	0.29	2.4	2.4	1.3
BI-PB-127-10B	PETIT BOIS PASS-ALABAMA WEST	2010	8/9/2010	2:45 PM	30.19862	-88.35651	254376.76370	1134882.85200	20-ft Vibracore	29.0	15.5	5.0 - 10.0	5.0	SP	SP	SUBANGULAR TO ROUNDED	DARK OLIVE BROWN	2.5Y 3/3	3	GRAYISH BROWN	2.5Y 5/2	5	NO	0.28	0.27	4.5	2.6	1.3
BI-PB-128-10	PETIT BOIS PASS-ALABAMA WEST	2010	8/9/2010	2:05 PM	30.19868	-88.35211	254404.43060	1136272.77600	20-ft Vibracore	30.0	14.0																	
BI-PB-128-10A	PETIT BOIS PASS-ALABAMA WEST	2010	8/9/2010	2:05 PM	30.19868	-88.35211	254404.43060	1136272.77600	20-ft Vibracore	30.0	14.0	1.0 - 6.0	5.0	SP	SP	SUBANGULAR TO ROUNDED	DARK OLIVE BROWN	2.5Y 3/3	3	GRAYISH BROWN	2.5Y 5/2	5	NO	0.27	0.27	3.8	2.4	1.3
BI-PB-129-10	PETIT BOIS PASS-ALABAMA WEST	2010	8/9/2010	1:25 PM	30.19426	-88.35211	252796.93190	1136279.56700	20-ft Vibracore	33.0	17.8																	
BI-PB-129-10A	PETIT BOIS PASS-ALABAMA WEST	2010	8/9/2010	1:25 PM	30.19426	-88.35211	252796.93190	1136279.56700	20-ft Vibracore	33.0	17.8	1.0 - 4.0	3.0	SP	SP	SUBANGULAR TO ROUNDED	OLIVE BROWN	2.5Y 4/3	4	LIGHT BROWNISH GRAY	2.5Y 6/2	6	NO	0.34	0.36	3.4	1.9	1.2
BI-PB-129-10B	PETIT BOIS PASS-ALABAMA WEST	2010	8/9/2010	1:25 PM	30.19426	-88.35211	252796.93190	1136279.56700	20-ft Vibracore	33.0	17.8	4.0 - 8.0	4.0	SP	SP	SUBANGULAR TO ROUNDED	OLIVE BROWN	2.5Y 4/3	4	LIGHT BROWNISH GRAY	2.5Y 6/2	6	NO	0.30	0.29	4.7	2.9	1.7
BI-PB-130-10	PETIT BOIS PASS-ALABAMA WEST	2010	8/9/2010	12:45 PM	30.19027	-88.35214	251345.77980	1136276.21900	20-ft Vibracore	36.0	16.9	NO SAMPLE TAKEN		CH	NO SAMPLE TESTED													
BI-PB-131-11	PETIT BOIS PASS-ALABAMA WEST	2011	6/30/2011	10:24 AM	30.19693	-88.36834	253746.68190	1131148.11500	20-ft Vibracore	28.5	14.3																	
BI-PB-131-11A	PETIT BOIS PASS-ALABAMA WEST	2011	6/30/2011	10:24 AM	30.19693	-88.36834	253746.68190	1131148.11500	20-ft Vibracore	28.5	14.3	0.0 - 3.3	3.3	SP	SP-SM	SUBANGULAR TO SUBROUNDED	LT OLIVE GREY	5Y 6/2	6	LT GREY	5Y 7/1	7	NA	0.31	0.31	6.5	2.1	1.3
BI-PB-131-11B	PETIT BOIS PASS-ALABAMA WEST	2011	6/30/2011	10:24 AM	30.19693	-88.36834	253746.68190	1131148.11500	20-ft Vibracore	28.5	14.3	3.3 - 8.3	5.0	SP-SM	SP-SM	SUBANGULAR TO SUBROUNDED	OLIVE GREY	5Y 5/2	5	LT BROWNISH GREY	2.5Y 6/2	6	NA	0.30	0.29	7.2	2.5	1.4
BI-PB-132-11	PETIT BOIS PASS-ALABAMA WEST	2011	6/30/2011	9:26 AM	30.19366	-88.36657	252559.71230	1131712.16200	20-ft Vibracore	33.0	18.0																	
BI-PB-132-11A	PETIT BOIS PASS-ALABAMA WEST	2011	6/30/2011	9:26 AM	30.19366	-88.36657	252559.71230	1131712.16200	20-ft Vibracore	33.0	18.0	0.0 - 5.0	5.0	SP	SP	SUBANGULAR TO SUBROUNDED	DARK GREY	5Y 4/1	4	LT BROWNISH GREY	2.5Y 6/2	6	NA	0.31	0.32	4.0	2.1	1.2
BI-PB-132-11B	PETIT BOIS PASS-ALABAMA WEST	2011	6/30/2011	9:26 AM	30.19366	-88.36657	252559.71230	1131712.16200	20-ft Vibracore	33.0	18.0	5.0 - 10.0	5.0	SP	SP-SM	SUBANGULAR TO SUBROUNDED	GREY	5Y 5/1	5	LT BROWNISH GREY	2.5Y 6/2	6	NA	0.31	0.32	5.0	2.3	1.3
BI-PB-132-11C	PETIT BOIS PASS-ALABAMA WEST	2011	6/30/2011	9:26 AM	30.19366	-88.36657	252559.71230	1131712.16200	20-ft Vibracore	33.0	18.0	10.0 - 14.8	4.8	SP	SP	SUBANGULAR TO SUBROUNDED	OLIVE GREY	5Y 5/2	5	LT GREY WITH SOME YELLOW	2.5Y 7/1	7	NA	0.32	0.32	2.5	1.7	1.1
BI-PB-133-11	PETIT BOIS PASS-ALABAMA WEST	2011	6/30/2011	11:07 AM	30.19686	-88.36402	253726.82080	1132512.98500	20-ft Vibracore	29.5	18.4																	
BI-PB-133-11A	PETIT BOIS PASS-ALABAMA WEST	2011	6/30/2011	11:07 AM	30.19686	-88.36402	253726.82080	1132512.98500	20-ft Vibracore	29.5	18.4	0.0 - 4.0	4.0	SP	SP-SM	SUBANGULAR TO SUBROUNDED	LT GREY TO MED GREY	2.5Y 5/1	5	LT GREY WITH SOME YELLOW	2.5Y 7/1	7	NA	0.27	0.29	6.6	2.2	1.1
BI-PB-133-11B	PETIT BOIS PASS-ALABAMA WEST	2011	6/30/2011	11:07 AM	30.19686	-88.36402	253726.82080	1132512.98500	20-ft Vibracore	29.5	18.4	4.0 - 8.0	4.0	SP	SP	SUBANGULAR TO SUBROUNDED	GREYISH BROWN	2.5Y 5/2	5	LT BROWNISH GREY	2.5Y 6/2	6	NA	0.28	0.29	3.6	1.9	1.1
BI-PB-133-11C	PETIT BOIS PASS-ALABAMA WEST	2011	6/30/2011	11:07 AM	30.19686	-88.36402	253726.82080	1132512.98500	20-ft Vibracore	29.5	18.4	8.0 - 13.0	5.0	SP	SP	SUBANGULAR TO SUBROUNDED	DARK GREYISH BROWN	2.5Y 4/2	4	LT BROWNISH GREY	2.5Y 6/2	6	NA	0.29	0.29	2.8	1.9	1.1
BI-PB-134-11	PETIT BOIS PASS-ALABAMA WEST	2011	6/30/2011	12:02 PM	30.19717	-88.35423	253852.43920	1135605.35100	20-ft Vibracore	32.5	16.4																	
BI-PB-134-11A	PETIT BOIS PASS-ALABAMA WEST	2011	6/30/2011	12:02 PM	30.19717	-88.35423	253852.43920	1135605.35100	20-ft Vibracore	32.5	16.4	0.0 - 5.0	5.0	SP-SM	SP	SUBANGULAR TO SUBROUNDED	DARK OLIVE GREY	5Y 3/2	3	DARK GREYISH BROWN	2.5Y 4/2	4	NA	0.30	0.31	4.7	1.7	1.1
BI-PB-134-11B	PETIT BOIS PASS-ALABAMA WEST	2011	6/30/2011	12:02 PM	30.19717	-88.35423	253852.43920	1135605.35100	20-ft Vibracore	32.5	16.4	5.0 - 8.0	3.0	SP-SM	SP-SM	SUBANGULAR TO SUBROUNDED	OLIVE GREY	5Y 4/2	4	GREYISH BROWN	2.5Y 5/2	5	NA	0.27	0.27	5.9	2.2	1.2
BI-PB-135-11	PETIT BOIS PASS-ALABAMA WEST	2011	6/30/2011	12:26 PM	30.19726	-88.34927	253891.79570	1137172.16300	20-ft Vibracore	32.5	12.2																	
BI-PB-135-11A	PETIT BOIS PASS-ALABAMA WEST	2011	6/30/2011	12:26 PM	30.19726	-88.34927	253891.79570	1137172.16300	20-ft Vibracore	32.5	12.2	0.0 - 2.0	2.0	SP-SM	SP-SM	SUBANGULAR TO SUBROUNDED	OLIVE GREY	5Y 4/2	4	GREYISH BROWN	2.5Y 5/2	5	NA	0.32	0.35	6.6	1.9	1.1
BI-PB-135-11B	PETIT BOIS PASS-ALABAMA WEST	2011	6/30/2011	12:26 PM	30.19726	-88.34927	253891.79570	1137172.16300	20-ft Vibracore	32.5	12.2	2.0 - 5.5	3.5	SP	SP-SM	SUBANGULAR TO SUBROUNDED	DARK GREY	5Y 4/1	4	GREYISH BROWN	2.5Y 5/2	5	NA	0.24	0.25	8.4	3.1	1.6

Cu: Coefficient of Uniformity
Cc: Coefficient of Curvature
The "#Value!" error message indicates that data was not available for that calculation.

Vibracore / Sample ID	Investigation Area	Sample Event	Date of Sample	Time_CST	Latitude	Longitude	Northing_Y	Easting_X	Sample Method	Water Depth (feet)	Boring Depth (feet below seafloor surface)	Sample Depth (Feet below seafloor surface)	Sample Thickness (feet)	Field USCS	Lab USCS	Angularity	Wet Munsell Color	Wet Munsell Color Code	Wet Munsell Value	Dry Munsell Color	Dry Munsell Color Code	Dry Munsell Value	CaCO3	D50 (mm)	Graphic Mean (mm)	% Fines	Cu (D60/D10)	Cc (D30)^2 / (D10*D60)
BI-PB-136-11	PETIT BOIS PASS-ALABAMA EAST	2011	6/30/2011	1:55 PM	30.19666	-88.31871	253715.90450	1146827.59200	20-ft Vibracore	32.0	14.9																	
BI-PB-136-11A	PETIT BOIS PASS-ALABAMA EAST	2011	6/30/2011	1:55 PM	30.19666	-88.31871	253715.90450	1146827.59200	20-ft Vibracore	32.0	14.9	0.0 - 3.0	3.0	SP-SM	SP-SM	SUBANGULAR TO SUBROUNDED	DARK GREYISH BROWN	5Y 4/2	4	LT OLIVE GREY	5Y 6/2	6	NA	0.26	0.29	5.0	1.9	0.9
BI-PB-136-11B	PETIT BOIS PASS-ALABAMA EAST	2011	6/30/2011	1:55 PM	30.19666	-88.31871	253715.90450	1146827.59200	20-ft Vibracore	32.0	14.9	3.0 - 6.5	3.5	SP	SP-SM	SUBANGULAR TO SUBROUNDED	DARK GREYISH BROWN	5Y 4/2	4	LT OLIVE GREY	5Y 6/2	6	NA	0.30	0.32	7.2	2.4	1.2
BI-PB-137-11	PETIT BOIS PASS-ALABAMA EAST	2011	6/30/2011	1:26 PM	30.19683	-88.31532	253782.58580	1147898.28000	20-ft Vibracore	32.0	16.9																	
BI-PB-137-11A	PETIT BOIS PASS-ALABAMA EAST	2011	6/30/2011	1:26 PM	30.19683	-88.31532	253782.58580	1147898.28000	20-ft Vibracore	32.0	16.9	0.0 - 4.0	4.0	SP	SP	SUBANGULAR TO SUBROUNDED	GREYISH BROWN	5Y 5/2	5	LT TO MED GREY	5Y 7/1	7	NA	0.29	0.32	2.9	1.9	0.9
BI-PB-137-11B	PETIT BOIS PASS-ALABAMA EAST	2011	6/30/2011	1:26 PM	30.19683	-88.31532	253782.58580	1147898.28000	20-ft Vibracore	32.0	16.9	4.0 - 8.0	4.0	SP-SM	SP-SM	SUBANGULAR TO SUBROUNDED	GREY	5Y 5/1	5	LT BROWNISH GREY	2.5Y 6/2	6	NA	0.26	0.28	6.6	2.8	1.3
BI-PB-137-11C	PETIT BOIS PASS-ALABAMA EAST	2011	6/30/2011	1:26 PM	30.19683	-88.31532	253782.58580	1147898.28000	20-ft Vibracore	32.0	16.9	8.0 - 12.0	4.0	SP-SM	SP	SUBANGULAR TO SUBROUNDED	LT TO MED GREY	5Y 6/1	6	LT GREY WITH SOME BROWN	2.5Y 7/2	7	NA	0.30	0.31	4.9	1.9	1.1
BI-PB-137-11D	PETIT BOIS PASS-ALABAMA EAST	2011	6/30/2011	1:26 PM	30.19683	-88.31532	253782.58580	1147898.28000	20-ft Vibracore	32.0	16.9	12.0 - 16.9	4.9	SP	SP	SUBANGULAR TO SUBROUNDED	LT TO MED GREY	5Y 6/1	6	WHITE	2.5Y 8/1	8	NA	0.29	0.30	4.4	1.9	1.1
BI-PB-138-11	PETIT BOIS PASS-ALABAMA EAST	2011	6/30/2011	2:17 PM	30.19531	-88.31180	253234.85340	1149012.84800	20-ft Vibracore	37.5	18.5																	
BI-PB-138-11A	PETIT BOIS PASS-ALABAMA EAST	2011	6/30/2011	2:17 PM	30.19531	-88.31180	253234.85340	1149012.84800	20-ft Vibracore	37.5	18.5	0.0 - 5.0	5.0	SP	SP-SM	SUBANGULAR TO SUBROUNDED	LT TO MED GREY	2.5Y 6/1	6	MED GREY	5Y 6/1	6	NA	0.29	0.30	8.6	3.6	1.6
BI-PB-138-11B	PETIT BOIS PASS-ALABAMA EAST	2011	6/30/2011	2:17 PM	30.19531	-88.31180	253234.85340	1149012.84800	20-ft Vibracore	37.5	18.5	5.0 - 10.0	5.0	SP	SP	SUBANGULAR TO SUBROUNDED	LT TO MED GREY	2.5Y 6/1	6	MED GREY	5Y 6/1	6	NA	0.32	0.34	3.2	1.9	1.0
BI-PB-138-11C	PETIT BOIS PASS-ALABAMA EAST	2011	6/30/2011	2:17 PM	30.19531	-88.31180	253234.85340	1149012.84800	20-ft Vibracore	37.5	18.5	10.0 - 15.0	5.0	SP-SM	SP	SUBANGULAR TO SUBROUNDED	LT TO MED GREY	2.5Y 6/1	6	LT GREY WITH SOME YELLOW	2.5Y 7/1	7	NA	0.33	0.34	2.9	1.8	1.0
BI-PB-138-11D	PETIT BOIS PASS-ALABAMA EAST	2011	6/30/2011	2:17 PM	30.19531	-88.31180	253234.85340	1149012.84800	20-ft Vibracore	37.5	18.5	15.0 - 16.5	1.5	SP	SP-SM	SUBANGULAR TO SUBROUNDED	GREY	2.5Y 5/1	5	LT GREY WITH SOME YELLOW	2.5Y 7/1	7	NA	0.31	0.32	5.7	2.0	1.1
BI-PB-138-11E	PETIT BOIS PASS-ALABAMA EAST	2011	6/30/2011	2:17 PM	30.19531	-88.31180	253234.85340	1149012.84800	20-ft Vibracore	37.5	18.5	16.5 - 18.5	2.0	SP	SP-SM	SUBANGULAR TO SUBROUNDED	GREY	2.5Y 5/1	5	LT GREY WITH SOME YELLOW	2.5Y 7/1	7	NA	0.27	0.28	11.4	#VALUE!	#VALUE!
BI-PB-139-11	PETIT BOIS PASS-ALABAMA EAST	2011	7/1/2011	4:44 PM	30.19117	-88.31200	251728.89420	1148956.55300	20-ft Vibracore	39.0	6.0																	
BI-PB-139-11A	PETIT BOIS PASS-ALABAMA EAST	2011	7/1/2011	4:44 PM	30.19117	-88.31200	251728.89420	1148956.55300	20-ft Vibracore	39.0	6.0	0.0 - 2.0	2.0	SP	SP	SUBANGULAR TO SUBROUNDED	LIGHT GREY	5Y 7/1	7	WHITE	2.5Y 8/1	8	NA	0.26	0.27	2.7	1.8	1.0
BI-PB-139-11B	PETIT BOIS PASS-ALABAMA EAST	2011	7/1/2011	4:44 PM	30.19117	-88.31200	251728.89420	1148956.55300	20-ft Vibracore	39.0	6.0	2.0 - 4.0	2.0	SP	SP	SUBANGULAR TO SUBROUNDED	LT GREY	5Y 7/1	7	WHITE	2.5Y 8/1	8	NA	0.27	0.28	1.6	1.8	1.0
BI-PB-139-11C	PETIT BOIS PASS-ALABAMA EAST	2011	7/1/2011	4:44 PM	30.19117	-88.31200	251728.89420	1148956.55300	20-ft Vibracore	39.0	6.0	4.0 - 6.0	2.0	SP	SP	SUBANGULAR TO SUBROUNDED	LT GREY	5Y 7/1	7	WHITE	2.5Y 8/1	8	NA	0.26	0.27	2.9	1.8	1.0
BI-PB-140-11	PETIT BOIS PASS-ALABAMA EAST	2011	7/1/2011	8:28 AM	30.19233	-88.30930	252154.68620	1149807.64400	20-ft Vibracore	38.0	19.4																	
BI-PB-140-11A	PETIT BOIS PASS-ALABAMA EAST	2011	7/1/2011	8:28 AM	30.19233	-88.30930	252154.68620	1149807.64400	20-ft Vibracore	38.0	19.4	0.0 - 1.5	1.5	SP	SP-SM	SUBANGULAR TO SUBROUNDED	LIGHT GREY	5Y 7/1	7	WHITE	2.5Y 8/1	8	NA	0.26	0.31	9.1	3.7	1.5
BI-PB-140-11B	PETIT BOIS PASS-ALABAMA EAST	2011	7/1/2011	8:28 AM	30.19233	-88.30930	252154.68620	1149807.64400	20-ft Vibracore	38.0	19.4	1.5 - 5.2	3.7	SM	SP	SUBANGULAR TO SUBROUNDED	LT GREY	5Y 7/1	7	WHITE	2.5Y 8/1	8	NA	0.32	0.33	3.9	1.8	1.0
BI-PB-140-11C	PETIT BOIS PASS-ALABAMA EAST	2011	7/1/2011	8:28 AM	30.19233	-88.30930	252154.68620	1149807.64400	20-ft Vibracore	38.0	19.4	5.2 - 10.5	5.3	SM	SP	SUBANGULAR TO SUBROUNDED	LT GREY	5Y 7/1	7	WHITE	2.5Y 8/1	8	NA	0.30	0.30	3.9	1.8	1.0
BI-PB-141-11	PETIT BOIS PASS-ALABAMA EAST	2011	7/1/2011	4:12 PM	30.19121	-88.30662	251751.25970	1150656.23000	20-ft Vibracore	40.5	18.1	NO SAMPLE TAKEN		CH	NO SAMPLE TESTED													
BI-PB-142-11	PETIT BOIS PASS-ALABAMA EAST	2011	7/1/2011	9:26 AM	30.19382	-88.29568	252716.63270	1154108.11000	20-ft Vibracore	41.0	15.1																	
BI-PB-142-11A	PETIT BOIS PASS-ALABAMA EAST	2011	7/1/2011	9:26 AM	30.19382	-88.29568	252716.63270	1154108.11000	20-ft Vibracore	41.0	15.1	0.0 - 2.8	2.8	SP-SM	SP-SM	SUBANGULAR TO SUBROUNDED	DARK OLIVE GREY	5Y 3/2	3	LT OLIVE GREY	5Y 6/2	6	NA	0.35	0.38	6.1	1.9	1.0
BI-PB-142-11B	PETIT BOIS PASS-ALABAMA EAST	2011	7/1/2011	9:26 AM	30.19382	-88.29568	252716.63270	1154108.11000	20-ft Vibracore	41.0	15.1	2.8 - 7.8	5.0	SP-SM	SP	SUBANGULAR TO SUBROUNDED	DARK OLIVE GREY	5Y 3/2	3	GREYISH BROWN	5Y 5/2	5	NA	0.39	0.41	4.6	1.7	1.0
BI-PB-142-11C	PETIT BOIS PASS-ALABAMA EAST	2011	7/1/2011	9:26 AM	30.19382	-88.29568	252716.63270	1154108.11000	20-ft Vibracore	41.0	15.1	7.8 - 12.0	4.2	SP	SP-SM	SUBANGULAR TO SUBROUNDED	DARK GREY	5Y 4/1	4	GREYISH BROWN	5Y 5/2	5	NA	0.36	0.39	7.5	2.0	1.2
BI-PB-142-11D	PETIT BOIS PASS-ALABAMA EAST	2011	7/1/2011	9:26 AM	30.19382	-88.29568	252716.63270	1154108.11000	20-ft Vibracore	41.0	15.1	12.0 - 15.2	3.2	SP	SP	SUBANGULAR TO SUBROUNDED	GREY	5Y 5/1	5	MED GREY	5Y 6/1	6	NA	0.36	0.39	4.0	1.7	1.0
BI-PB-143-11	PETIT BOIS PASS-ALABAMA EAST	2011	7/1/2011	9:50 AM	30.19816	-88.29124	254301.69120	1155503.32600	20-ft Vibracore	41.5	19.5	NO SAMPLE TAKEN		CH	NO SAMPLE TESTED													
BI-PB-144-11	PETIT BOIS PASS-ALABAMA EAST	2011	7/1/2011	3:07 AM	30.20246	-88.29115	255865.69100	1155524.31400	20-ft Vibracore	35.0	16.2																	
BI-PB-144-11A	PETIT BOIS PASS-ALABAMA EAST	2011	7/1/2011	3:07 AM	30.20246	-88.29115	255865.69100	1155524.31400	20-ft Vibracore	35.0	16.2	0.0 - 4.0	4.0	SP	SP-SM	SUBANGULAR TO SUBROUNDED	GREY	5Y 5/1	5	LT OLIVE BROWN	2.5Y 7/1	7		0.27	0.33	7.1	2.7	1.1
BI-PB-144-11B	PETIT BOIS PASS-ALABAMA EAST	2011	7/1/2011	3:07 AM	30.20246	-88.29115	255865.69100	1155524.31400	20-ft Vibracore	35.0	16.2	4.0 - 8.0	4.0	SP-SM	SP-SM	SUBANGULAR TO SUBROUNDED	DARK GREY	5Y 4/1	4	LT OLIVE BROWN	2.5Y 6/2	6		0.25	0.27	5.9	1.9	1.0
BI-PB-144-11C	PETIT BOIS PASS-ALABAMA EAST	2011	7/1/2011	3:07 AM	30.20246	-88.29115	255865.69100	1155524.31400	20-ft Vibracore	35.0	16.2	8.0 - 12.0	4.0	SP-SM	SM	SUBANGULAR TO SUBROUNDED	DARK GREYISH BROWN	5Y 4/2	4	OLIVE BROWN	2.5Y 5/1	5		0.24	#VALUE!	18.8	#VALUE!	#VALUE!
BI-PB-144-11D	PETIT BOIS PASS-ALABAMA EAST	2011	7/1/2011	3:07 AM	30.20246	-88.29115	255865.69100	1155524.31400	20-ft Vibracore	35.0	16.2	12.0 - 16.2	4.2	SP-SM	SM	SUBANGULAR TO SUBROUNDED	DARK GREYISH BROWN	5Y 4/2	4	LIGHT OLIVE YELLOW BROWN	2.5Y 5/2	5		0.34	#VALUE!	17.9	#VALUE!	#VALUE!
BI-PB-145-11	PETIT BOIS PASS-ALABAMA EAST	2011	7/1/2011	3:30 AM	30.20616	-88.29102	257211.53810	1155558.97400	20-ft Vibracore	36.6	16.4																	
BI-PB-145-11A	PETIT BOIS PASS-ALABAMA EAST	2011	7/1/2011	3:30 AM	30.20616	-88.29102	257211.53810	1155558.97400	20-ft Vibracore	36.6	16.4	0.0 - 4.0	4.0	SP	SP	SUBANGULAR TO SUBROUNDED	LT TO MED GREY	5Y 6/1	6	LT OLIVE BROWN	5Y 7/1	7		0.33	0.34	4.1	1.8	1.0
BI-PB-145-11B	PETIT BOIS PASS-ALABAMA EAST	2011	7/1/2011	3:30 AM	30.20616	-88.29102	257211.53810	1155558.97400	20-ft Vibracore	36.6	16.4	4.0 - 7.3	3.3	SP	SP	SUBANGULAR TO SUBROUNDED	LT TO MED GREY	5Y 6/1	6	LT OLIVE BROWN	5Y 7/1	7		0.35	0.38	2.9	1.9	1.1
BI-PB-145-11C	PETIT BOIS PASS-ALABAMA EAST	2011	7/1/2011	3:30 AM	30.20616	-88.29102	257211.53810	1155558.97400	20-ft Vibracore	36.6	16.4	7.3 - 11.3	4.0	SC	SM	SUBANGULAR TO SUBROUNDED	DARK OLIVE GREY	5Y 3/2	3	OLIVE BROWN	2.5Y 5/1	5		0.19	#VALUE!	21.2	#VALUE!	#VALUE!
BI-PB-146-11	PETIT BOIS PASS-ALABAMA EAST	2011	6/30/2011	1:01 PM	30.20093	-88.31710	255271.15610	1147329.18500	20-ft Vibracore	35.0	18.9																	
BI-PB-146-11A	PETIT BOIS PASS-ALABAMA EAST	2011	6/30/2011	1:01 PM	30.20093	-88.31710	255271.15610	1147329.18500	20-ft Vibracore	35.0	18.9	0.0 - 4.0	4.0	SP	SP	SUBANGULAR TO SUBROUNDED	LT TO MED GREY	5Y 6/1	6	LT OLIVE BROWN	2.5Y 7/1	7		0.35	0.37	3.8	1.9	1.1
BI-PB-146-11B	PETIT BOIS PASS-ALABAMA EAST	2011	6/30/2011	1:01 PM	30.20093	-88.31710	255271.15610	1147329.18500	20-ft Vibracore	35.0	18.9	4.0 -8.0	4.0	SP	SP-SM	SUBANGULAR TO SUBROUNDED	LT GREY WITH SOME YELLOW	2.5Y 7/1	7	LT OLIVE BROWN	2.5Y 7/1	7		0.35	0.37	5.3	2.0	1.2
BI-PB-146-11C	PETIT BOIS PASS-ALABAMA EAST	2011	6/30/2011	1:01 PM	30.20093	-88.31710	255271.15610	1147329.18500	20-ft Vibracore	35.0	18.9	8.0 - 12.0	4.0	SP	SP	SUBANGULAR TO SUBROUNDED	LT GREY WITH SOME YELLOW	2.5Y 7/1	7	LT OLIVE BROWN	2.5Y 7/1	7		0.35	0.37	3.5	1.8	1.1
BI-PB-146-11D	PETIT BOIS PASS-ALABAMA EAST	2011	6/30/2011	1:01 PM	30.20093	-88.31710	255271.15610	1147329.18500	20-ft Vibracore	35.0	18.9	12.0 - 16.0	4.0	SP	SP	SUBANGULAR TO SUBROUNDED	LT GREY WITH SOME YELLOW	2.5Y 7/1	7	LT OLIVE BROWN	2.5Y 7/1	7		0.35	0.37	2.5	1.5	1.0
BI-PB-146-11E	PETIT BOIS PASS-ALABAMA EAST	2011	6/30/2011	1:01 PM	30.20093	-88.31710	255271.15610	1147329.18500	20-ft Vibracore	35.0	18.9	16.0 - 18.9	2.9	SP	SP	SUBANGULAR TO SUBROUNDED	LT GREY WITH SOME YELLOW	2.5Y 7/1	7	LT OLIVE BROWN	2.5Y 8/1	8		0.36	0.38	2.1	1.5	1.0
BI-PB-147-11	PETIT BOIS PASS-ALABAMA EAST	2011	7/1/2011	8:52 AM	30.19646	-88.31718	253645.35370	1147311.27900	20-ft Vibracore	33.0	15.4																	
BI-PB-147-11A	PETIT BOIS PASS-ALABAMA EAST	2011	7/1/2011	8:52 AM	30.19646	-88.31718	253645.35370	1147311.27900	20-ft Vibracore	33.0	15.4	0.0 - 2.0	2.0	SP	SP	SUBANGULAR TO SUBROUNDED	GREYISH BROWN	5Y 5/2	5	LT OLIVE BROWN	2.5Y 6/2	6		0.29	0.30	2.0	1.8	1.0
BI-PB-147-11B	PETIT BOIS PASS-ALABAMA EAST	2011	7/1/2011	8:52 AM	30.19646	-88.31718	253645.35370	1147311.27900	20-ft Vibracore	33.0	15.4	2.0 - 6.0	4.0	SP-SM	SP-SM	SUBANGULAR TO SUBROUNDED	DARK GREYISH BROWN	5Y 4/2	4	LT OLIVE BROWN	2.5Y 6/2	6		0.20	0.21	6.2	2.1	1.3
BI-PB-147-11C	PETIT BOIS PASS-ALABAMA EAST	2011	7/1/2011	8:52 AM	30.19646	-88.31718	253645.35370	1147311.27900	20-ft Vibracore	33.0	15.4	6.0 - 8.2	2.2	SM	SP	SUBANGULAR TO SUBROUNDED	DARK OLIVE GREY	5Y 3/2	3	LIGHT OLIVE YELLOW BROWN	2.5Y 5/2	5		0.32	0.34	4.4	2.0	1.1
BI-PB-148-12	PETIT BOIS PASS-ALABAMA EAST	2012	12/6/2012	11:30 AM	30.20130	-88.29687	255435.25470	1153719.34200	20-ft Vibracore	38.4	17.1		13.5															
BI-PB-148-12A	PETIT BOIS PASS-ALABAMA EAST	2012	12/6/2012	11:30 AM	30.20130	-88.29687	255435.25470	1153719.34200	20-ft Vibracore	38.4	17.1	2.5-7	4.5	SP-SM	SP-SM	SUBANGULAR TO SUBROUNDED	DK GRAYISH BROWN	2.5Y 4/2	4	LT BROWNISH GRAY	2.5Y 6/2	6	NO	0.29	0.30	7.2	2.0	1.1

Cu: Coefficient of Uniformity
Cc: Coefficient of Curvature
The "#Value!" error message indicates that data was not available for that calculation.

Vibracore / Sample ID	Investigation Area	Sample Event	Date of Sample	Time_CST	Latitude	Longitude	Northing_Y	Easting_X	Sample Method	Water Depth (feet)	Boring Depth (feet below seafloor surface)	Sample Depth (Feet below seafloor surface)	Sample Thickness (feet)	Field USCS	Lab USCS	Angularity	Wet Munsell Color	Wet Munsell Color Code	Wet Munsell Value	Dry Munsell Color	Dry Munsell Color Code	Dry Munsell Value	CaCO3	D50 (mm)	Graphic Mean (mm)	% Fines	Cu (D60/D10)	Cc (D30)^2 / (D10*D60)
BI-PB-148-12B	PETIT BOIS PASS-ALABAMA EAST	2012	12/6/2012	11:30 AM	30.20130	-88.29687	255435.25470	1153719.34200	20-ft Vibracore	38.4	17.1	7-12	5.0	SP-SM	SP-SM	SUBANGULAR TO SUBROUNDED	OLIVE GRAY	5Y 5/2	5	LT BROWNISH GRAY	2.5Y 6/2	6	NO	0.32	0.32	6.2	1.9	1.2
BI-PB-148-12C	PETIT BOIS PASS-ALABAMA EAST	2012	12/6/2012	11:30 AM	30.20130	-88.29687	255435.25470	1153719.34200	20-ft Vibracore	38.4	17.1	12-16	4.0	SP-SM	SP-SM	SUBANGULAR TO SUBROUNDED	GRAYISH BROWN	2.5Y 5/2	5	GRAY	2.5Y 6/1	6		0.32	0.32	6.1	1.8	1.2
BI-PB-149-12	PETIT BOIS PASS-ALABAMA EAST	2012	12/6/2012	11:26 AM	30.19520	-88.31772	253186.33380	1147142.75700	20-ft Vibracore	37.6	14.7	NO SAMPLE TAKEN		SC	NO SAMPLE TESTED													
BI-PB-150-12	PETIT BOIS PASS-ALABAMA EAST	2012	12/12/2012	12:34 PM	30.19530	-88.32142	253217.43080	1145973.67200	20-ft Vibracore	39.2	17.4	NO SAMPLE TAKEN		CH	NO SAMPLE TESTED													
BI-PB-151-12	PETIT BOIS PASS-ALABAMA EAST	2012	12/12/2012	10:32 AM	30.19673	-88.32087	253738.28630	1146145.09100	20-ft Vibracore	35.9	20.0		8.5															
BI-PB-151-12A	PETIT BOIS PASS-ALABAMA EAST	2012	12/12/2012	10:32 AM	30.19673	-88.32087	253738.28630	1146145.09100	20-ft Vibracore	35.9	20.0	1.5-5	3.5	SP	SP	SUBANGULAR TO SUBROUNDED	LT OLIVE GRAY	5Y 6/2	6	LT GRAY	5Y 7/2	7		0.35	0.38	4.3	1.8	1.0
BI-PB-151-12B	PETIT BOIS PASS-ALABAMA EAST	2012	12/12/2012	10:32 AM	30.19673	-88.32087	253738.28630	1146145.09100	20-ft Vibracore	35.9	20.0	5-10	5.0	SP	SP	SUBANGULAR TO SUBROUNDED	LT GRAY	5Y 7/1	7	WHITE	5Y 8/1	8		0.38	0.41	2.0	1.8	1.0
BI-PB-152-12	PETIT BOIS PASS-ALABAMA EAST	2012	12/12/2012	9:54 AM	30.19793	-88.32130	254174.10150	1146007.28400	20-ft Vibracore	33.6	18.8		11.1															
BI-PB-152-12A	PETIT BOIS PASS-ALABAMA EAST	2012	12/12/2012	9:54 AM	30.19791	-88.32130	254166.82770	1146007.31600	20-ft Vibracore	33.6	18.8	0-1.2	1.2	SP	SP	SUBANGULAR TO SUBROUNDED	LT OLIVE GRAY	5Y 6/2	6	LT GRAY	5Y 7/2	7		0.29	0.32	2.0	1.9	0.9
BI-PB-152-12B	PETIT BOIS PASS-ALABAMA EAST	2012	12/12/2012	9:54 AM	30.19791	-88.32130	254166.82770	1146007.31600	20-ft Vibracore	33.6	18.8	2.8-5.9	3.1	SP	SP	SUBANGULAR TO SUBROUNDED	LT OLIVE GRAY	5Y 6/2	6	LT GRAY	5Y 7/2	7		0.34	0.37	3.1	1.8	1.0
BI-PB-152-12C	PETIT BOIS PASS-ALABAMA EAST	2012	12/12/2012	9:54 AM	30.19791	-88.32130	254166.82770	1146007.31600	20-ft Vibracore	33.6	18.8	5.9-10.9	5.0	SP	SP	SUBANGULAR TO SUBROUNDED	GRAY	5Y 6/1	6	LT GRAY	5Y 7/1	7		0.34	0.36	2.5	1.7	1.0
BI-PB-152-12D	PETIT BOIS PASS-ALABAMA EAST	2012	12/12/2012	9:54 AM	30.19791	-88.32130	254166.82770	1146007.31600	20-ft Vibracore	33.6	18.8	12.0-13.8	1.8	SP-SM	SP-SM	SUBANGULAR TO SUBROUNDED	GRAY	5Y 5/1	6	LT GRAY	5Y 7/1	7		0.29	0.29	10.7	#VALUE!	#VALUE!
BI-PB-153-12	PETIT BOIS PASS-ALABAMA EAST	2012	12/12/2012	11:00 AM	30.19520	-88.31947	253183.83560	1146589.88800	20-ft Vibracore	38.7	20.0	NO SAMPLE TAKEN		CH	NO SAMPLE TESTED													
BI-PB-154-12	PETIT BOIS PASS-ALABAMA EAST	2012	12/11/2012	2:07 PM	30.19668	-88.32627	253712.46760	1144439.20600	20-ft Vibracore	33.4	15.0		2.3															
BI-PB-154-12A	PETIT BOIS PASS-ALABAMA EAST	2012	12/11/2012	2:07 PM	30.19668	-88.32627	253712.46760	1144439.20600	20-ft Vibracore	33.4	15.0	0-2.3	2.3	SP	SP	SUBANGULAR TO SUBROUNDED	OLIVE GRAY	5Y 5/2	5	LT GRAY	5Y 7/2	7		0.30	0.33	2.9	2.0	1.0
BI-PB-155-12	PETIT BOIS PASS-ALABAMA EAST	2012	12/7/2012	2:42 PM	30.19898	-88.32765	254547.01250	1143999.52300	20-ft Vibracore	35.1	13.4		5.0															
BI-PB-155-12A	PETIT BOIS PASS-ALABAMA EAST	2012	12/7/2012	2:42 PM	30.19898	-88.32765	254547.01250	1143999.52300	20-ft Vibracore	35.1	13.4	8.4-13.4	5.0	SP	SP	SUBANGULAR TO SUBROUNDED	OLIVE	5Y 4/4	4	PALE OLIVE	5Y 6/4	6		0.29	0.30	3.3	1.8	1.0
BI-PB-156-12	PETIT BOIS PASS-ALABAMA EAST	2012	12/19/2012	1:33 PM	30.19525	-88.32573	253193.15330	1144612.12000	20-ft Vibracore	35.4	15.6		1.6															
BI-PB-156-12A	PETIT BOIS PASS-ALABAMA EAST	2012	12/19/2012	1:33 PM	30.19525	-88.32573	253193.15330	1144612.12000	20-ft Vibracore	35.4	15.6	0.0-1.6	1.6	SP	SP	SUBANGULAR TO SUBROUNDED	OLIVE GRAY	5Y 5/2	5	LT GRAY	5Y 7/2	7		0.29	0.30	1.5	1.8	1.0
BI-PB-157-12	PETIT BOIS PASS-ALABAMA EAST	2012	12/11/2012	2:36 PM	30.19737	-88.32490	253965.34170	1144870.89600	20-ft Vibracore	36.7	19.8		7.8															
BI-PB-157-12A	PETIT BOIS PASS-ALABAMA EAST	2012	12/11/2012	2:36 PM	30.19737	-88.32490	253965.34170	1144870.89600	20-ft Vibracore	36.7	19.8	0-5	5.0	SP	SP	SUBANGULAR TO SUBROUNDED	LT BROWNISH GRAY	2.5Y 6/2	6	LT GRAY	2.5Y 7/2	7		0.34	0.36	2.4	1.4	1.0
BI-PB-157-12B	PETIT BOIS PASS-ALABAMA EAST	2012	12/11/2012	2:36 PM	30.19737	-88.32490	253965.34170	1144870.89600	20-ft Vibracore	36.7	19.8	5-7.8	2.8	SP	SP	SUBANGULAR TO SUBROUNDED	LT GRAY	2.5Y 7/1	7	WHITE	2.5Y 8/1	8		0.35	0.38	1.9	1.7	1.0
BI-PB-158-12	PETIT BOIS PASS-ALABAMA EAST	2012	12/12/2012	9:18 AM	30.19712	-88.32303	253877.06130	1145462.06900	20-ft Vibracore	36.4	19.7		9.7															
BI-PB-158-12A	PETIT BOIS PASS-ALABAMA EAST	2012	12/12/2012	9:18 AM	30.19712	-88.32303	253877.06130	1145462.06900	20-ft Vibracore	36.4	19.7	0-1.4	1.4	SP	SP	SUBANGULAR TO SUBROUNDED	LT OLIVE GRAY	5Y 6/2	6	LT GRAY	5Y 7/2	7		0.41	0.47	2.1	2.2	1.0
BI-PB-158-12B	PETIT BOIS PASS-ALABAMA EAST	2012	12/12/2012	9:18 AM	30.19712	-88.32303	253877.06130	1145462.06900	20-ft Vibracore	36.4	19.7	1.4-4.7	3.3	SP	SP-SM	SUBANGULAR TO SUBROUNDED	LT GRAY	2.5Y 7/1	7	WHITE	2.5Y 8/1	8		0.36	0.38	5.8	1.5	1.0
BI-PB-158-12C	PETIT BOIS PASS-ALABAMA EAST	2012	12/12/2012	9:18 AM	30.19712	-88.32303	253877.06130	1145462.06900	20-ft Vibracore	36.4	19.7	4.7-7.3	2.6	SP-SM	SP	SUBANGULAR TO SUBROUNDED	LT GRAY	2.5Y 7/1	7	WHITE	2.5Y 8/1	8		0.34	0.34	1.8	1.4	1.0
BI-PB-158-12D	PETIT BOIS PASS-ALABAMA EAST	2012	12/12/2012	9:18 AM	30.19712	-88.32303	253877.06130	1145462.06900	20-ft Vibracore	36.4	19.7	7.3-9.7	2.4	SM	SP-SM	SUBANGULAR TO SUBROUNDED	OLIVE GRAY	5Y 4/2	4	OLIVE GRAY	5Y 5/2	5		0.26	0.27	8.9	2.3	1.1
BI-PB-159-12	PETIT BOIS PASS-ALABAMA EAST	2012	12/19/2012	1:02 PM	30.19537	-88.32348	253239.97030	1145322.75400	20-ft Vibracore	36.2	17.0	NO SAMPLE TAKEN		CH	NO SAMPLE TESTED													
BI-PB-160-12	PETIT BOIS PASS-ALABAMA EAST	2012	12/12/2012	2:17 PM	30.19333	-88.31678	252507.58200	1147442.80900	20-ft Vibracore	39.8	19.2	NO SAMPLE TAKEN		CH	NO SAMPLE TESTED													
BI-PB-161-12	PETIT BOIS PASS-ALABAMA EAST	2012	12/12/2012	2:50 PM	30.19198	-88.31505	252019.08520	1147991.60300	20-ft Vibracore	41.7	11.6	NO SAMPLE TAKEN		CH	NO SAMPLE TESTED													
BI-PB-162-12	PETIT BOIS PASS-ALABAMA EAST	2012	12/6/2012	1:25 PM	30.19825	-88.29327	254331.37690	1154861.86200	20-ft Vibracore	40.6	20.0		15.0															
BI-PB-162-12A	PETIT BOIS PASS-ALABAMA EAST	2012	12/6/2012	1:25 PM	30.19825	-88.29327	254331.37690	1154861.86200	20-ft Vibracore	40.6	20.0	0-5	5.0	SP	SP	SUBANGULAR TO SUBROUNDED	GRAYISH BROWN	2.5Y 5/2	5	LT BROWNISH GRAY	2.5Y 6/2	6		0.33	0.34	4.8	1.7	1.0
BI-PB-162-12B	PETIT BOIS PASS-ALABAMA EAST	2012	12/6/2012	1:25 PM	30.19825	-88.29327	254331.37690	1154861.86200	20-ft Vibracore	40.6	20.0	5-10	5.0	SP-SM	SP	SUBANGULAR TO SUBROUNDED	DK GRAYISH BROWN	2.5Y 4/2	4	GRAYISH BROWN	2.5Y 5/2	5		0.32	0.33	4.7	1.7	1.0
BI-PB-162-12C	PETIT BOIS PASS-ALABAMA EAST	2012	12/6/2012	1:25 PM	30.19825	-88.29327	254331.37690	1154861.86200	20-ft Vibracore	40.6	20.0	10-15	5.0	SP-SM	SP-SM	SUBANGULAR TO SUBROUNDED	GRAYSIH BROWN	2.5Y 5/1.5	5	GRAY	2.5Y 6/1	6		0.31	0.30	7.8	1.9	1.3
BI-PB-163-12	PETIT BOIS PASS-ALABAMA EAST	2012	12/6/2012	12:18 PM	30.20037	-88.29327	255102.39820	1154858.20600	20-ft Vibracore	38.2	20.0		13.2															
BI-PB-163-12A	PETIT BOIS PASS-ALABAMA EAST	2012	12/6/2012	12:18 PM	30.20037	-88.29327	255102.39820	1154858.20600	20-ft Vibracore	38.2	20.0	0-5	5.0	SP-SM	SP-SM	SUBANGULAR TO SUBROUNDED	GRAYISH BROWN	2.5Y 5/2	5	LT BROWNISH GRAY	2.5Y 6/2	6	NO	0.30	0.31	7.2	1.9	1.1
BI-PB-163-12B	PETIT BOIS PASS-ALABAMA EAST	2012	12/6/2012	12:18 PM	30.20037	-88.29327	255102.39820	1154858.20600	20-ft Vibracore	38.2	20.0	5-10	5.0	SP-SM	SP-SM	SUBANGULAR TO SUBROUNDED	DK GRAYISH BROWN	2.5Y 4/2	4	GRAYISH BROWN	2.5Y 5/2	5		0.31	0.31	5.7	1.7	1.1
BI-PB-163-12C	PETIT BOIS PASS-ALABAMA EAST	2012	12/6/2012	12:18 PM	30.20037	-88.29327	255102.39820	1154858.20600	20-ft Vibracore	38.2	20.0	10-13.2	3.2	SP-SM	SP-SM	SUBANGULAR TO SUBROUNDED	GRAY	2.5Y 5/1	5	GRAY	2.5Y 6/1	6	NO	0.31	0.31	6.9	1.7	1.1
BI-PB-164-12	PETIT BOIS PASS-ALABAMA EAST	2012	12/6/2012	10:38 AM	30.20468	-88.29327	256669.89980	1154850.77300	20-ft Vibracore	34.0	20.0		10.0															
BI-PB-164-12A	PETIT BOIS PASS-ALABAMA EAST	2012	12/6/2012	10:38 AM	30.20468	-88.29327	256669.89980	1154850.77300	20-ft Vibracore	34.0	20.0	0-2.6	3.9	SP	SP	SUBANGULAR TO SUBROUNDED	OLIVE GRAY	5Y 5/2	5	LT OLIVE GRAY	5Y 6/2	6		0.34	0.35	2.0	1.7	1.0
BI-PB-164-12B	PETIT BOIS PASS-ALABAMA EAST	2012	12/6/2012	10:38 AM	30.20468	-88.29327	256669.89980	1154850.77300	20-ft Vibracore	34.0	20.0	2.6-5	1.1	SP	SP	SUBANGULAR TO SUBROUNDED	LT BROWNISH GRAY	2.5Y 6/2	6	LT GRAY	2.5Y 7/2	7		0.34	0.36	4.2	1.6	1.0
BI-PB-164-12C	PETIT BOIS PASS-ALABAMA EAST	2012	12/6/2012	10:38 AM	30.20468	-88.29327	256669.89980	1154850.77300	20-ft Vibracore	34.0	20.0	5-8.7	5.0	SP	SP	SUBANGULAR TO SUBROUNDED	LT BROWNISH GRAY	5Y 6/2	6	LT GRAY	5Y 7/2	7		0.33	0.35	3.0	1.6	1.0
BI-PB-164-12D	PETIT BOIS PASS-ALABAMA EAST	2012	12/6/2012	10:38 AM	30.20468	-88.29327	256669.89980	1154850.77300	20-ft Vibracore	34.0	20.0	8.7-10	1.3	SP-SC	SP-SM	SUBANGULAR TO SUBROUNDED	GRAYISH BROWN	2.5Y 5/2	5	LT BROWNISH GRAY	2.5Y 6/2	6	NO	0.31	0.32	5.6	2.1	1.1
BI-PB-165-12	PETIT BOIS PASS-ALABAMA EAST	2012	12/6/2012	9:35 AM	30.20750	-88.29342	257695.27990	1154798.52600	20-ft Vibracore	33.1	15.0		15.0															
BI-PB-165-12A	PETIT BOIS PASS-ALABAMA EAST	2012	12/6/2012	9:35 AM	30.20750	-88.29342	257695.27990	1154798.52600	20-ft Vibracore	33.1	15.0	1.3-1.9	1.9	SP	SP-SM	SUBANGULAR TO SUBROUNDED	GRAYSIH BROWN	2.5Y 5/2	5	LT GRAY	2.5Y 7/2	7	NO	0.31	0.32	7.9	2.6	1.4
BI-PB-165-12B	PETIT BOIS PASS-ALABAMA EAST	2012	12/6/2012	9:35 AM	30.20750	-88.29342	257695.27990	1154798.52600	20-ft Vibracore	33.1	15.0	1.9-2.8	-0.4	SP	SP	SUBANGULAR TO SUBROUNDED	WHITE	5Y 8/1	8	WHITE	5Y 8/1	8	YES	0.38	0.43	2.1	1.8	1.0
BI-PB-165-12C	PETIT BOIS PASS-ALABAMA EAST	2012	12/6/2012	9:35 AM	30.20750	-88.29342	257695.27990	1154798.52600	20-ft Vibracore	33.1	15.0	2.8-3.5	0.7	SP	SP	SUBANGULAR TO SUBROUNDED	WHITE	2.5Y 8/1	8	WHITE	2.5Y 8.5/1	9	NO	0.34	0.36	1.3	1.7	1.0
BI-PB-165-12D	PETIT BOIS PASS-ALABAMA EAST	2012	12/6/2012	9:35 AM	30.20750	-88.29342	257695.27990	1154798.52600	20-ft Vibracore	33.1	15.0	3.5-10	6.5	SP	SP	SUBANGULAR TO SUBROUNDED	GRAY	2.5Y 6/1	6	LT GRAY	2.5Y 7/1	7		0.33	0.35	2.4	1.8	1.0
BI-PB-165-12E	PETIT BOIS PASS-ALABAMA EAST	2012	12/6/2012	9:35 AM	30.20750	-88.29342	257695.27990	1154798.52600	20-ft Vibracore	33.1	15.0	10-15	5.0	SP	SP	SUBANGULAR TO SUBROUNDED	WHITE	2.5Y 8/1	8	WHITE	2.5Y 8/1	8		0.32	0.33	1.9	1.7	1.1
BI-PB-166-12	PETIT BOIS PASS-ALABAMA EAST	2012	11/29/2012	2:34 PM	30.21140	-88.29375	259113.17620	1154687.56300	20-ft Vibracore	32.3	10.2	NO SAMPLE TAKEN		CH	NO SAMPLE TESTED													

Cu: Coefficient of Uniformity
Cc: Coefficient of Curvature
The "#Value!" error message indicates that data was not available for that calculation.

Vibracore / Sample ID	Investigation Area	Sample Event	Date of Sample	Time_CST	Latitude	Longitude	Northing_Y	Easting_X	Sample Method	Water Depth (feet)	Boring Depth (feet below seafloor surface)	Sample Depth (Feet below seafloor surface)	Sample Thickness (feet)	Field USCS	Lab USCS	Angularity	Wet Munsell Color	Wet Munsell Color Code	Wet Munsell Value	Dry Munsell Color	Dry Munsell Color Code	Dry Munsell Value	CaCO3	D50 (mm)	Graphic Mean (mm)	% Fines	Cu (D60/D10)	Cc (D30)^2 / (D10*D60)
BI-PB-167-12	PETIT BOIS PASS-ALABAMA EAST	2012	11/29/2012	1:51 PM	30.21157	-88.29777	259169.00830	1153417.46100	20-ft Vibracore	29.7	15.5	NO SAMPLE TAKEN		CH	NO SAMPLE TESTED													
BI-PB-168-12	PETIT BOIS PASS-ALABAMA EAST	2012	11/29/2012	12:58 PM	30.21183	-88.30185	259257.52880	1152128.25800	20-ft Vibracore	29.2	16.6		2.5															
BI-PB-168-12A	PETIT BOIS PASS-ALABAMA EAST	2012	11/29/2012	12:58 PM	30.21183	-88.30185	259257.52880	1152128.25800	20-ft Vibracore	29.2	16.6	13.5-16	2.5	SP	SP	SUBANGULAR TO SUBROUNDED	GRAYISH BROWN	2.5Y 5/2	5	LT GRAYISH BROWN	2.5Y 6/2	6	NO	0.35	0.36	4.1	1.7	1.1
BI-PB-169-12	PETIT BOIS PASS-ALABAMA EAST	2012	11/29/2012	12:19 PM	30.21187	-88.30502	259267.41630	1151126.87700	20-ft Vibracore	28.7	14.9		2.4															
BI-PB-169-12A	PETIT BOIS PASS-ALABAMA EAST	2012	11/29/2012	12:19 PM	30.21187	-88.30502	259267.41630	1151126.87700	20-ft Vibracore	28.7	14.9	0.2-2.4	2.4	SM	SM	SUBANGULAR TO SUBROUNDED	OLIVE GRAY	5Y 4/2	4	OLIVE GRAY	5Y 5/2	5	YES	0.19	#VALUE!	17.3	#VALUE!	#VALUE!
BI-PB-170-12	PETIT BOIS PASS-ALABAMA EAST	2012	12/5/2012	10:06 AM	30.21007	-88.30410	258614.12460	1151420.52200	20-ft Vibracore	31.7	11.5	NO SAMPLE TAKEN		CH	NO SAMPLE TESTED													
BI-PB-171-12	PETIT BOIS PASS-ALABAMA EAST	2012	12/5/2012	3:06 PM	30.20830	-88.30163	257974.02880	1152203.74500	20-ft Vibracore	31.6	20.0		10.0															
BI-PB-171-12A	PETIT BOIS PASS-ALABAMA EAST	2012	12/5/2012	3:06 PM	30.20830	-88.30163	257974.02880	1152203.74500	20-ft Vibracore	31.6	20.0	1.7-2.7	2.0	SP-SC	SM	SUBANGULAR TO SUBROUNDED	GRAYISH BROWN	2.5Y 4.5/2	5	LT BROWNISH GRAY	2.5Y 5.5/2	6	NO	0.32	0.28	14.8	#VALUE!	#VALUE!
BI-PB-171-12B	PETIT BOIS PASS-ALABAMA EAST	2012	12/5/2012	3:06 PM	30.20830	-88.30163	257974.02880	1152203.74500	20-ft Vibracore	31.6	20.0	2.7-5	1.3	SP	SP-SM	SUBANGULAR TO SUBROUNDED	GRAY	2.5Y 5/1	5	GRAY	2.5Y 6/1	6	NO	0.31	0.32	9.2	2.7	1.5
BI-PB-171-12C	PETIT BOIS PASS-ALABAMA EAST	2012	12/5/2012	3:06 PM	30.20830	-88.30163	257974.02880	1152203.74500	20-ft Vibracore	31.6	20.0	5-10	6.3	SP	SP-SM	SUBANGULAR TO SUBROUNDED	GRAYISH BROWN	2.5Y 5/2	5	LT BROWNISH GRAY	2.5Y 6/2	6	NO	0.33	0.35	8.2	2.9	1.3
BI-PB-171-12D	PETIT BOIS PASS-ALABAMA EAST	2012	12/5/2012	3:06 PM	30.20830	-88.30163	257974.02880	1152203.74500	20-ft Vibracore	31.6	20.0	14.2-16.3	2.1	SP	SP-SM	SUBANGULAR TO SUBROUNDED	LT BROWNISH GRAY	2.5Y 6/2	6	PALE BROWN	2.5Y 7.5/2	8	NO	0.38	0.41	10.8	#VALUE!	#VALUE!
BI-PB-172-12	PETIT BOIS PASS-ALABAMA EAST	2012	12/5/2012	1:11 PM	30.20797	-88.30757	257845.29900	1150327.95400	20-ft Vibracore	30.1	10.9		11.8															
BI-PB-172-12A	PETIT BOIS PASS-ALABAMA EAST	2012	12/5/2012	1:11 PM	30.20797	-88.30757	257845.29900	1150327.95400	20-ft Vibracore	30.1	10.9	0-.5	0.5	SP	SP	SUBANGULAR TO SUBROUNDED	LT GRAY	2.5Y 6.5/2	7	LT GRAY	2.5Y 7/2	7	YES	0.35	0.38	0.3	1.8	1.0
BI-PB-172-12B	PETIT BOIS PASS-ALABAMA EAST	2012	12/5/2012	1:11 PM	30.20797	-88.30757	257845.29900	1150327.95400	20-ft Vibracore	30.1	10.9	3.1-3.6	0.5	SP-SC	SC	SUBANGULAR TO SUBROUNDED	DK GRAYISH BROWN	2.5Y 4/2	4	LT BROWNISH GRAY	2.5Y 5.5/2	6	NO	0.30	#VALUE!	19.9	#VALUE!	#VALUE!
BI-PB-172-12C	PETIT BOIS PASS-ALABAMA EAST	2012	12/5/2012	1:11 PM	30.20797	-88.30757	257845.29900	1150327.95400	20-ft Vibracore	30.1	10.9	3.6-5.2	1.6	SP-SM	SP	SUBANGULAR TO SUBROUNDED	LT BROWNISH GRAY	2.5Y 5.5/2	6	LT BROWNISH GRAY	2.5Y 6/2	6	NO	0.30	0.30	2.9	1.7	1.0
BI-PB-172-12D	PETIT BOIS PASS-ALABAMA EAST	2012	12/5/2012	1:11 PM	30.20797	-88.30757	257845.29900	1150327.95400	20-ft Vibracore	30.1	10.9	5.2-10.9	5.7	SP	SP-SM	SUBANGULAR TO SUBROUNDED	LT GRAY	2.5Y 7/1	7	LT GRAY	2.5Y 7/1	7	NO	0.29	0.29	7.1	1.9	1.1
BI-PB-173-12	PETIT BOIS PASS-ALABAMA EAST	2012	11/29/2012	3:10 PM	30.20973	-88.29555	258503.12420	1154121.85900	20-ft Vibracore	31.1	13.6		3.6															
BI-PB-173-12A	PETIT BOIS PASS-ALABAMA EAST	2012	11/29/2012	3:10 PM	30.20973	-88.29555	258503.12420	1154121.85900	20-ft Vibracore	31.1	13.6	0.0-0.8	0.8	SP	SP	SUBANGULAR TO SUBROUNDED	LT GRAY	2.5Y 7/2	7	LT GRAY	2.5Y 7/2	7	NO	0.36	0.39	1.4	1.5	1.0
BI-PB-173-12B	PETIT BOIS PASS-ALABAMA EAST	2012	11/29/2012	3:10 PM	30.20973	-88.29555	258503.12420	1154121.85900	20-ft Vibracore	31.1	13.6	1.9-3.1	1.2	SP-SC	SM	SUBANGULAR TO SUBROUNDED	GRAY	2.5Y 5/1	5	LT BROWNISH GRAY	2.5Y 6/2	6	NO	0.31	#VALUE!	17.8	#VALUE!	#VALUE!
BI-PB-173-12C	PETIT BOIS PASS-ALABAMA EAST	2012	11/29/2012	3:10 PM	30.20973	-88.29555	258503.12420	1154121.85900	20-ft Vibracore	31.1	13.6	3.1-8.6	5.0	SP	SP	SUBANGULAR TO SUBROUNDED	LT GRAY	2.5Y 7/2	7	PALE BROWN	2.5Y 8/2	8	NO	0.35	0.37	2.0	1.7	1.0
BI-PB-173-12D	PETIT BOIS PASS-ALABAMA EAST	2012	11/29/2012	3:10 PM	30.20973	-88.29555	258503.12420	1154121.85900	20-ft Vibracore	31.1	13.6	8.6-13.6	5.0	SP	SP	SUBANGULAR TO SUBROUNDED	WHITE	5Y 8/1	8	WHITE	5Y 8/1	8	NO	0.33	0.35	1.7	1.9	1.0
BI-PB-174-12	PETIT BOIS PASS-ALABAMA EAST	2012	11/29/2012	3:54 PM	30.20992	-88.30038	258565.05190	1152595.84200	20-ft Vibracore	30.9	7.3	NO SAMPLE TAKEN		CH	NO SAMPLE TESTED													
BI-PB-175-12	PETIT BOIS PASS-ALABAMA EAST	2012	12/5/2012	2:05 PM	30.20807	-88.30473	257885.82120	1151224.89600	20-ft Vibracore	30.1	15.8		11.6															
BI-PB-175-12A	PETIT BOIS PASS-ALABAMA EAST	2012	12/5/2012	2:05 PM	30.20807	-88.30473	257885.82120	1151224.89600	20-ft Vibracore	30.1	15.8	4.2-5.8	1.6	SP-SM	SM	SUBANGULAR TO SUBROUNDED	GRAYISH BROWN	2.5Y 5/2	5	LT BROWNISH GRAY	2.5Y 6/2	6	NO	0.31	0.30	12.1	#VALUE!	#VALUE!
BI-PB-175-12B	PETIT BOIS PASS-ALABAMA EAST	2012	12/5/2012	2:05 PM	30.20807	-88.30473	257885.82120	1151224.89600	20-ft Vibracore	30.1	15.8	5.8-8.3	2.5	SP	SP-SM					LT GRAY				0.30	0.31	5.7	2.0	1.1
BI-PB-175-12C	PETIT BOIS PASS-ALABAMA EAST	2012	12/5/2012	2:05 PM	30.20807	-88.30473	257885.82120	1151224.89600	20-ft Vibracore	30.1	15.8	8.3-11.3	3.0	SP	SP	SUBANGULAR TO SUBROUNDED	LT BROWNISH GRAY	2.5Y 6/2	6	LT GRAY	2.5Y 7/2	7		0.32	0.33	2.7	1.7	1.0
BI-PB-175-12D	PETIT BOIS PASS-ALABAMA EAST	2012	12/5/2012	2:05 PM	30.20807	-88.30473	257885.82120	1151224.89600	20-ft Vibracore	30.1	15.8	11.3-15.8	4.5	SP	SP	SUBANGULAR TO SUBROUNDED	WHITE	2.5Y 8/1	8	WHITE	2.5Y 8/1	8	NO	0.31	0.31	3.8	1.8	1.1
BI-PB-176-12	PETIT BOIS PASS-ALABAMA EAST	2012	12/5/2012	4:04 PM	30.20822	-88.29765	257950.82590	1153461.09700	20-ft Vibracore	33.7	14.3		11.7															
BI-PB-176-12A	PETIT BOIS PASS-ALABAMA EAST	2012	12/5/2012	4:04 PM	30.20822	-88.29765	257950.82590	1153461.09700	20-ft Vibracore	33.7	14.3	0-1	1.0	SP	SP-SM	SUBANGULAR TO SUBROUNDED	LT BROWNISH GRAY	2.5Y 5.5/2	6	LT GRAY	2.5Y 7/2	7	NO	0.31	0.30	10.9	#VALUE!	#VALUE!
BI-PB-176-12B	PETIT BOIS PASS-ALABAMA EAST	2012	12/5/2012	4:04 PM	30.20822	-88.29765	257950.82590	1153461.09700	20-ft Vibracore	33.7	14.3	2.6-3.7	0.1	SM	SP-SM	SUBANGULAR TO SUBROUNDED	GRAYISH BROWN	2.5Y 5/1.5	5	GRAY	2.5Y 6/1	6	NO	0.32	0.33	10.5	#VALUE!	#VALUE!
BI-PB-176-12C	PETIT BOIS PASS-ALABAMA EAST	2012	12/5/2012	4:04 PM	30.20822	-88.29765	257950.82590	1153461.09700	20-ft Vibracore	33.7	14.3	3.7-4.8	1.1	SP-SM	SP-SM	SUBANGULAR TO SUBROUNDED	LT BROWNISH GRAY	2.5Y 6/1.5	6	LT GRAY	2.5Y 7/1	8		0.33	0.35	6.3	1.8	1.1
BI-PB-176-12D	PETIT BOIS PASS-ALABAMA EAST	2012	12/5/2012	4:04 PM	30.20822	-88.29765	257950.82590	1153461.09700	20-ft Vibracore	33.7	14.3	4.8-9.3	4.5	SP	SP	SUBANGULAR TO SUBROUNDED	PALE BROWN	2.5Y 7.5/2	8	WHITE	2.5Y 8/1	8	NO	0.34	0.36	0.5	1.8	1.0
BI-PB-176-12E	PETIT BOIS PASS-ALABAMA EAST	2012	12/5/2012	4:04 PM	30.20822	-88.29765	257950.82590	1153461.09700	20-ft Vibracore	33.7	14.3	9.3-14.3	5.0	SP	SP	SUBANGULAR TO SUBROUNDED	WHITE	2.5Y 8/1	8	WHITE	2.5Y 8/1	8		0.32	0.33	1.8	1.7	1.0
BI-PB-177-12	PETIT BOIS PASS-ALABAMA EAST	2012	12/19/2012	9:53 AM	30.19475	-88.29807	253051.30770	1153351.44900	20-ft Vibracore	40.7	19.3		19.3															
BI-PB-177-12A	PETIT BOIS PASS-ALABAMA EAST	2012	12/19/2012	9:53 AM	30.19475	-88.29807	253051.30770	1153351.44900	20-ft Vibracore	40.7	19.3	0.0-4.3	4.3	SP-SM	SP-SM	SUBANGULAR TO SUBROUNDED	DK GRAYISH BROWN	2.5Y 4/2	4	GRAYISH BROWN	2.5Y 5/2	5		0.35	0.38	5.9	1.8	1.0
BI-PB-177-12B	PETIT BOIS PASS-ALABAMA EAST	2012	12/19/2012	9:53 AM	30.19475	-88.29807	253051.30770	1153351.44900	20-ft Vibracore	40.7	19.3	4.3-9.3	5.0	SP	SP	SUBANGULAR TO SUBROUNDED	GRAY	2.5Y 6/1	6	LT GRAY	2.5Y 7/1	7		0.36	0.38	1.9	1.6	1.0
BI-PB-177-12C	PETIT BOIS PASS-ALABAMA EAST	2012	12/19/2012	9:53 AM	30.19475	-88.29807	253051.30770	1153351.44900	20-ft Vibracore	40.7	19.3	9.3-14.3	5.0	SP	SP	SUBANGULAR TO SUBROUNDED	GRAY	5Y 6/1	6	LT GRAY	5Y 7/1	7		0.36	0.38	0.7	1.5	1.0
BI-PB-177-12D	PETIT BOIS PASS-ALABAMA EAST	2012	12/19/2012	9:53 AM	30.19475	-88.29807	253051.30770	1153351.44900	20-ft Vibracore	40.7	19.3	14.3-19.3	5.0	SP	SP	SUBANGULAR TO SUBROUNDED	GRAY	5Y 6/1	6	LT GRAY	5Y 7/1	7		0.38	0.41	1.6	1.5	0.9
BI-PB-179-12	PETIT BOIS PASS-ALABAMA EAST	2012	12/19/2012	9:24 AM	30.19600	-88.29455	253511.16140	1154461.36100	20-ft Vibracore	37.1	19.1		17.2															
BI-PB-179-12A	PETIT BOIS PASS-ALABAMA EAST	2012	12/19/2012	9:24 AM	30.19600	-88.29455	253511.16140	1154461.36100	20-ft Vibracore	37.1	19.1	0.0-2.2	2.2	SP	SP	SUBANGULAR TO SUBROUNDED	LT BROWNISH GRAY	2.5Y 6/2	6	LT GRAY	2.5Y 7/2	7		0.37	0.41	0.9	1.7	1.0
BI-PB-179-12B	PETIT BOIS PASS-ALABAMA EAST	2012	12/19/2012	9:24 AM	30.19600	-88.29455	253511.16140	1154461.36100	20-ft Vibracore	37.1	19.1	2.2-7.2	5.0	SP-SM	SP-SM	SUBANGULAR TO SUBROUNDED	DK GRAYISH BROWN	2.5Y 4/2	4	GRAYISH BROWN	2.5Y 5/2	5		0.32	0.33	8.2	1.9	1.2
BI-PB-179-12C	PETIT BOIS PASS-ALABAMA EAST	2012	12/19/2012	9:24 AM	30.19600	-88.29455	253511.16140	1154461.36100	20-ft Vibracore	37.1	19.1	7.2-12.2	5.0	SP-SM	SP-SM	SUBANGULAR TO SUBROUNDED	GRAY	2.5Y 5/1	5	GRAY	2.5Y 6/1	6		0.31	0.31	5.8	1.7	1.1
BI-PB-179-12D	PETIT BOIS PASS-ALABAMA EAST	2012	12/19/2012	9:24 AM	30.19600	-88.29455	253511.16140	1154461.36100	20-ft Vibracore	37.1	19.1	12.2-17.2	5.0	SP-SM	SP-SM	SUBANGULAR TO SUBROUNDED	DK GRAY	5Y 4/1	4	GRAY	5Y 5/1	5		0.31	0.31	5.9	1.6	1.1
BI-PB-181-12	PETIT BOIS PASS-ALABAMA EAST	2012	12/19/2012	10:24 AM	30.19302	-88.30333	252414.35650	1151692.60300	20-ft Vibracore	40.7	15.4		15.4															
BI-PB-181-12A	PETIT BOIS PASS-ALABAMA EAST	2012	12/19/2012	10:24 AM	30.19302	-88.30333	252414.35650	1151692.60300	20-ft Vibracore	40.7	15.4	0.0-3.5	3.5	SP-SM	SP-SM	SUBANGULAR TO SUBROUNDED	OLIVE GRAY	5Y 4/2	4	OLIVE GRAY	5Y 5/2	5		0.33	0.34	7.8	2.5	1.3
BI-PB-181-12B	PETIT BOIS PASS-ALABAMA EAST	2012	12/19/2012	10:24 AM	30.19302	-88.30333	252414.35650	1151692.60300	20-ft Vibracore	40.7	15.4	3.5-5.4	1.9	SP	SP	SUBANGULAR TO SUBROUNDED	GRAY	2.5Y 6/1	6	LT GRAY	2.5Y 7/1	7		0.35	0.37	1.2	1.6	1.0
BI-PB-181-12C	PETIT BOIS PASS-ALABAMA EAST	2012	12/19/2012	10:24 AM	30.19302	-88.30333	252414.35650	1151692.60300	20-ft Vibracore	40.7	15.4	5.4-10.4	5.0	SP	SP	SUBANGULAR TO SUBROUNDED	LT GRAY	5Y 7/1	7	WHITE	5Y 8/1	8		0.34	0.36	0.6	1.6	1.0
BI-PB-181-12D	PETIT BOIS PASS-ALABAMA EAST	2012	12/19/2012	10:24 AM	30.19302	-88.30333	252414.35650	1151692.60300	20-ft Vibracore	40.7	15.4	10.4-15.4	5.0	SP	SP	SUBANGULAR TO SUBROUNDED	WHITE	2.5Y 8/1	8	WHITE	2.5Y 8.5/1	9		0.32	0.33	0.8	1.6	1.0
BI-PB-182-12	PETIT BOIS PASS-ALABAMA EAST	2012	12/12/2012	3:50 AM	30.19268	-88.30618	252286.52470	1150792.76900	20-ft Vibracore	38.4	12.0		8.2															
BI-PB-182-12A	PETIT BOIS PASS-ALABAMA EAST	2012	12/12/2012	3:50 AM	30.19268	-88.30618	252286.52470	1150792.76900	20-ft Vibracore	38.4	12.0	0-2	2.0	SP	SP	SUBANGULAR TO SUBROUNDED	OLIVE	5Y 5/3	5	PALE OLIVE	5Y 6/3	6		0.33	0.35	1.2	1.7	1.0

Cu: Coefficient of Uniformity
Cc: Coefficient of Curvature
The "#Value!" error message indicates that data was not available for that calculation.

Vibracore / Sample ID	Investigation Area	Sample Event	Date of Sample	Time_CST	Latitude	Longitude	Northing_Y	Easting_X	Sample Method	Water Depth (feet)	Boring Depth (feet below seafloor surface)	Sample Depth (Feet below seafloor surface)	Sample Thickness (feet)	Field USCS	Lab USCS	Angularity	Wet Munsell Color	Wet Munsell Color Code	Wet Munsell Value	Dry Munsell Color	Dry Munsell Color Code	Dry Munsell Value	CaCO3	D50 (mm)	Graphic Mean (mm)	% Fines	Cu (D60/D10)	Cc (D30)^2 / (D10*D60)
BI-PB-182-12B	PETIT BOIS PASS-ALABAMA EAST	2012	12/12/2012	3:50 AM	30.19268	-88.30618	252286.52470	1150792.76900	20-ft Vibracore	38.4	12.0	3.8-5	1.2	SP	SP-SM	SUBANGULAR TO SUBROUNDED	GRAY	5Y 5/1	5	GRAY	5Y 6/1	6		0.28	0.28	6.9	1.9	1.1
BI-PB-182-12C	PETIT BOIS PASS-ALABAMA EAST	2012	12/12/2012	3:50 AM	30.19268	-88.30618	252286.52470	1150792.76900	20-ft Vibracore	38.4	12.0	7-12	5.0	SP	SP	SUBANGULAR TO SUBROUNDED	GRAY	5Y 6/1	6	LT GRAY	5Y 7/1	7		0.26	0.27	2.7	1.7	1.0
BI-PB-183-12	PETIT BOIS PASS-ALABAMA EAST	2012	12/7/2012	11:45 AM	30.20143	-88.33120	255433.08720	1142874.10700	20-ft Vibracore	27.0	12.6		12.2															
BI-PB-183-12A	PETIT BOIS PASS-ALABAMA EAST	2012	12/7/2012	11:45 AM	30.20143	-88.33120	255433.08720	1142874.10700	20-ft Vibracore	27.0	12.6	0-2.2	2.2	SP	SP	SUBANGULAR TO SUBROUNDED	LT OLIVE GRAY	5Y 6/2	6	LT GRAY	5Y 7/2	7		0.39	0.44	1.3	1.9	1.0
BI-PB-183-12B	PETIT BOIS PASS-ALABAMA EAST	2012	12/7/2012	11:45 AM	30.20143	-88.33120	255433.08720	1142874.10700	20-ft Vibracore	27.0	12.6	2.2-7.2	5.0	SP	SP	SUBANGULAR TO SUBROUNDED	OLIVE GRAY	5Y 5/2	5	LT GRAY	5Y 7/2	7		0.26	0.28	2.0	1.7	0.9
BI-PB-183-12C	PETIT BOIS PASS-ALABAMA EAST	2012	12/7/2012	11:45 AM	30.20143	-88.33120	255433.08720	1142874.10700	20-ft Vibracore	27.0	12.6	7.2-12.2	5.0	SP	SP	SUBANGULAR TO SUBROUNDED	LT GRAY	2.5Y 7/1	7	WHITE	2.5Y 8/1	8		0.30	0.31	1.2	1.7	1.0
BI-PB-184-12	PETIT BOIS PASS-ALABAMA EAST	2012	12/7/2012	10:55 AM	30.20137	-88.32958	255413.52580	1143385.96800	20-ft Vibracore	28.2	18.5		12.7															
BI-PB-184-12A	PETIT BOIS PASS-ALABAMA EAST	2012	12/7/2012	10:55 AM	30.20137	-88.32958	255413.52580	1143385.96800	20-ft Vibracore	28.2	18.5	0-2.8	2.8	SP	SP	SUBANGULAR TO SUBROUNDED	LT OLIVE GRAY	5Y 6/2	6	LT GRAY	5Y 7/2	7		0.34	0.36	1.6	1.8	1.0
BI-PB-184-12B	PETIT BOIS PASS-ALABAMA EAST	2012	12/7/2012	10:55 AM	30.20137	-88.32958	255413.52580	1143385.96800	20-ft Vibracore	28.2	18.5	2.8-6.1	3.6	SP-SC	SP	SUBANGULAR TO SUBROUNDED	OLIVE	5Y 5/3	5	PALE OLIVE	5Y 6/3	6		0.28	0.29	4.0	1.8	1.0
BI-PB-184-12C	PETIT BOIS PASS-ALABAMA EAST	2012	12/7/2012	10:55 AM	30.20137	-88.32958	255413.52580	1143385.96800	20-ft Vibracore	28.2	18.5	6.1-8.5	2.4	SP	SP	SUBANGULAR TO SUBROUNDED	LT GRAY	5Y 7/1	7	WHITE	5Y 8/1	8		0.27	0.28	1.6	1.7	1.0
BI-PB-184-12D	PETIT BOIS PASS-ALABAMA EAST	2012	12/7/2012	10:55 AM	30.20137	-88.32958	255413.52580	1143385.96800	20-ft Vibracore	28.2	18.5	8.5-12.4	3.9	SP	SP	SUBANGULAR TO SUBROUNDED	LT BROWNISH GRAY	2.5Y 6/2	6	LT GRAY	2.5Y 7/2	7		0.28	0.29	1.9	1.7	1.0
BI-PB-185-12	PETIT BOIS PASS-ALABAMA EAST	2012	12/7/2012	1:11 PM	30.20015	-88.33220	254966.17490	1142560.25100	20-ft Vibracore	31.0	5.1		5.1															
BI-PB-185-12A	PETIT BOIS PASS-ALABAMA EAST	2012	12/7/2012	1:11 PM	30.20015	-88.33220	254966.17490	1142560.25100	20-ft Vibracore	31.0	5.1	0-2.1	2.1	SP	SP	SUBANGULAR TO SUBROUNDED	OLIVE GRAY	5Y 5/2	5	LT OLIVE GRAY	5Y 6/2	6		0.26	0.30	2.0	2.0	0.9
BI-PB-185-12B	PETIT BOIS PASS-ALABAMA EAST	2012	12/7/2012	1:11 PM	30.20015	-88.33220	254966.17490	1142560.25100	20-ft Vibracore	31.0	5.1	2.1-5.1	3.0	SP	SP	SUBANGULAR TO SUBROUNDED	LT GRAY	2.5Y 7/1	7	WHITE	2.5Y 8/1	8		0.32	0.32	1.3	1.6	1.0
BI-PB-186-12	PETIT BOIS PASS-ALABAMA EAST	2012	12/7/2012	1:52 AM	30.20010	-88.33057	254950.25980	1143075.26200	20-ft Vibracore	28.8	18.9		8.7															
BI-PB-186-12A	PETIT BOIS PASS-ALABAMA EAST	2012	12/7/2012	1:52 AM	30.20010	-88.33057	254950.25980	1143075.26200	20-ft Vibracore	28.8	18.9	0-3.9	3.9	SP	SP	SUBANGULAR TO SUBROUNDED	PALE OLIVE	5Y 6/3	6	PALE YELLOW	5Y 7/3	7		0.31	0.32	1.5	1.8	1.0
BI-PB-186-12B	PETIT BOIS PASS-ALABAMA EAST	2012	12/7/2012	1:52 AM	30.20010	-88.33057	254950.25980	1143075.26200	20-ft Vibracore	28.8	18.9	3.9-6.9	3.0	SP	SP	SUBANGULAR TO SUBROUNDED	GRAYISH BROWN	2.5Y 5/2	5	LT BROWNISH GRAY	2.5Y 6/2	6		0.22	0.25	4.5	1.9	1.0
BI-PB-186-12C	PETIT BOIS PASS-ALABAMA EAST	2012	12/7/2012	1:52 AM	30.20010	-88.33057	254950.25980	1143075.26200	20-ft Vibracore	28.8	18.9	6.9-8.7	1.8	SP	SP	SUBANGULAR TO SUBROUNDED	OLIVE GRAY	5Y 5/2	5	LT OLIVE GRAY	5Y 6/2	6		0.33	0.37	3.3	2.2	1.0
BI-PB-187-12	PETIT BOIS PASS-ALABAMA EAST	2012	12/11/2012	9:19 AM	30.19813	-88.33268	254230.85800	1142411.84400	20-ft Vibracore	33.7	15.5		14.4															
BI-PB-187-12A	PETIT BOIS PASS-ALABAMA EAST	2012	12/11/2012	9:19 AM	30.19813	-88.33268	254230.85800	1142411.84400	20-ft Vibracore	33.7	15.5	1.1-2.2	1.1	SP-SM	SP-SM	SUBANGULAR TO SUBROUNDED	OLIVE	5Y 5/3	5	PALE OLIVE	5Y 6/3	6		0.29	0.30	5.3	3.0	1.3
BI-PB-187-12B	PETIT BOIS PASS-ALABAMA EAST	2012	12/11/2012	9:19 AM	30.19813	-88.33268	254230.85800	1142411.84400	20-ft Vibracore	33.7	15.5	2.2-7.2	5.0	SP	SP	SUBANGULAR TO SUBROUNDED	LT BROWNISH GRAY	2.5Y 6/2	6	LT GRAY	2.5Y 7/2	7		0.35	0.36	1.2	1.7	1.0
BI-PB-187-12C	PETIT BOIS PASS-ALABAMA EAST	2012	12/11/2012	9:19 AM	30.19813	-88.33268	254230.85800	1142411.84400	20-ft Vibracore	33.7	15.5	7.2-12.2	5.0	SP	SP	SUBANGULAR TO SUBROUNDED	LT GRAY	2.5Y 7/1	7	WHITE	2.5Y 8/1	8		0.33	0.35	3.0	1.7	1.0
BI-PB-187-12D	PETIT BOIS PASS-ALABAMA EAST	2012	12/11/2012	9:19 AM	30.19813	-88.33268	254230.85800	1142411.84400	20-ft Vibracore	33.7	15.5	12.2-15.5	3.3	SP	SP	SUBANGULAR TO SUBROUNDED	LT GRAY	2.5Y 7/1	7	WHITE	2.5Y 8/1	8		0.38	0.41	1.6	1.7	1.0
BI-PB-189-12	PETIT BOIS PASS-ALABAMA EAST	2012	12/11/2012	11:24 AM	30.19548	-88.33122	253269.11490	1142877.32800	20-ft Vibracore	36.4	15.6	NO SAMPLE TAKEN		ML	NO SAMPLE TESTED													
BI-PB-190-12	PETIT BOIS PASS-ALABAMA EAST	2012	12/11/2012	10:10 AM	30.19675	-88.33203	253729.87160	1142619.39700	20-ft Vibracore	34.5	18.2		8.9															
BI-PB-190-12A	PETIT BOIS PASS-ALABAMA EAST	2012	12/11/2012	10:10 AM	30.19675	-88.33203	253729.87160	1142619.39700	20-ft Vibracore	34.5	18.2	1.4-3.2	1.8	SM	SP-SM	ANGULAR TO SUBROUNDED	OLIVE GRAY	5Y 4/2	4	LT OLIVE GRAY	5Y 6/2	6		0.27	0.30	7.7	2.6	1.2
BI-PB-190-12B	PETIT BOIS PASS-ALABAMA EAST	2012	12/11/2012	10:10 AM	30.19675	-88.33203	253729.87160	1142619.39700	20-ft Vibracore	34.5	18.2	3.2-8	4.8	SP	SP	SUBANGULAR TO SUBROUNDED	LT GRAY	5Y 7/1	7	WHITE	5Y 8/1	8		0.31	0.31	2.3	1.6	1.0
BI-PB-190-12C	PETIT BOIS PASS-ALABAMA EAST	2012	12/11/2012	10:10 AM	30.19675	-88.33203	253729.87160	1142619.39700	20-ft Vibracore	34.5	18.2	8-10.3	2.3	SP	SP	SUBANGULAR TO SUBROUNDED	LT GRAY	2.5Y 7/1	7	WHITE	2.5Y 8/1	8		0.28	0.29	2.7	1.7	1.0
BI-PB-191-12	PETIT BOIS PASS-ALABAMA EAST	2012	12/11/2012	10:49 AM	30.19673	-88.33047	253724.77010	1143112.26300	20-ft Vibracore	34.8	15.8	NO SAMPLE TAKEN		ML	NO SAMPLE TESTED													
BI-PB-192-12	PETIT BOIS PASS-ALABAMA EAST	2012	12/11/2012	12:02 PM	30.19543	-88.32960	253253.19000	1143389.20400	20-ft Vibracore	36.4	15.3	NO SAMPLE TAKEN		CL-ML	NO SAMPLE TESTED													
BI-PB-197-12	PETIT BOIS PASS-ALABAMA WEST	2012	12/22/2012	9:11 AM	30.20025	-88.35030	254977.84050	1136842.15700	20-ft Vibracore	28.2	17.7		9.4															
BI-PB-197-12A	PETIT BOIS PASS-ALABAMA WEST	2012	12/22/2012	9:11 AM	30.20025	-88.35030	254977.84050	1136842.15700	20-ft Vibracore	28.2	17.7	0.0-3.9.	3.9	SP-SM	SP-SM	SUBANGULAR TO SUBROUNDED	DK GRAYISH BROWN	2.5Y 4/2	4	GRAYISH BROWN	2.5Y 5/2	5		0.29	0.29	5.5	1.9	1.1
BI-PB-197-12B	PETIT BOIS PASS-ALABAMA WEST	2012	12/22/2012	9:11 AM	30.20025	-88.35030	254977.84050	1136842.15700	20-ft Vibracore	28.2	17.7	3.9-5.2	1.3	SP	SP	SUBANGULAR TO SUBROUNDED	GRAYISH BROWN	2.5Y 5/2	5	LT BROWNISH GRAY	2.5Y 6/2	6		0.30	0.31	2.4	1.6	1.0
BI-PB-197-12C	PETIT BOIS PASS-ALABAMA WEST	2012	12/22/2012	9:11 AM	30.20025	-88.35030	254977.84050	1136842.15700	20-ft Vibracore	28.2	17.7	5.2-7.6	2.4	SM	SP-SM	SUBANGULAR TO SUBROUNDED	VERY DK GRAYISH BROWN	2.5Y 3/2	3	DK GRAYISH BROWN	2.5Y 4/2	4		0.30	0.30	5.9	2.3	1.4
BI-PB-197-12D	PETIT BOIS PASS-ALABAMA WEST	2012	12/22/2012	9:11 AM	30.20025	-88.35030	254977.84050	1136842.15700	20-ft Vibracore	28.2	17.7	7.6-9.4	1.8	SM	SP-SM	SUBANGULAR TO SUBROUNDED	DK OLIVE GRAY	5Y 3/2	3	OLIVE GRAY	5Y 5/2	5		0.22	0.23	7.6	2.2	1.2
BI-PB-198-12	PETIT BOIS PASS-ALABAMA WEST	2012	12/22/2012	9:44 AM	30.20015	-88.35428	254936.16160	1135584.99700	20-ft Vibracore	27.6	18.8		11.0															
BI-PB-198-12A	PETIT BOIS PASS-ALABAMA WEST	2012	12/22/2012	9:44 AM	30.20015	-88.35428	254936.16160	1135584.99700	20-ft Vibracore	27.6	18.8	0.0-1.5	1.5	SP	SP	SUBANGULAR TO SUBROUNDED	OLIVE GRAY	5Y 5/2	5	LT OLIVE GRAY	5Y 6/2	6		0.28	0.29	1.5	1.8	1.0
BI-PB-198-12B	PETIT BOIS PASS-ALABAMA WEST	2012	12/22/2012	9:44 AM	30.20015	-88.35428	254936.16160	1135584.99700	20-ft Vibracore	27.6	18.8	1.5-6.0	4.5	SP-SM	SP	SUBANGULAR TO SUBROUNDED	DK GRAYISH BROWN	2.5Y 4/2	4	GRAYISH BROWN	2.5Y 5/2	5		0.29	0.29	2.5	1.7	1.0
BI-PB-198-12C	PETIT BOIS PASS-ALABAMA WEST	2012	12/22/2012	9:44 AM	30.20015	-88.35428	254936.16160	1135584.99700	20-ft Vibracore	27.6	18.8	6.0-11.0	5.0	SM	SP-SM	SUBANGULAR TO SUBROUNDED	VERY DK GRAYISH BROWN	2.5Y 3/2	3	GRAYISH BROWN	2.5Y 5/2	5		0.28	0.28	5.3	2.0	1.1
BI-PB-199-12	PETIT BOIS PASS-ALABAMA WEST	2012	12/13/2012	11:38 AM	30.20017	-88.35868	254937.61600	1134194.97200	20-ft Vibracore	27.0	20.0		10.2															
BI-PB-199-12A	PETIT BOIS PASS-ALABAMA WEST	2012	12/13/2012	11:38 AM	30.20017	-88.35868	254937.61600	1134194.97200	20-ft Vibracore	27.0	20.0	0-5	5.0	SP	SP	SUBANGULAR TO SUBROUNDED	GRAYISH BROWN	2.5Y 5/2	5	LT BROWNISH GRAY	2.5Y 6/2	6		0.31	0.31	2.3	1.5	1.0
BI-PB-199-12B	PETIT BOIS PASS-ALABAMA WEST	2012	12/13/2012	11:38 AM	30.20017	-88.35868	254937.61600	1134194.97200	20-ft Vibracore	27.0	20.0	5-10.2	5.2	SP	SP	SUBANGULAR TO SUBROUNDED	GRAYISH BROWN	2.5Y 5/2	5	LT BROWNISH GRAY	2.5Y 6/2	6		0.29	0.29	2.8	1.7	1.1
BI-PB-200-12	PETIT BOIS PASS-ALABAMA WEST	2012	12/13/2012	11:03 AM	30.19998	-88.36372	254861.91570	1132603.08200	20-ft Vibracore	25.9	20.0		10.0															
BI-PB-200-12A	PETIT BOIS PASS-ALABAMA WEST	2012	12/13/2012	11:03 AM	30.19998	-88.36372	254861.91570	1132603.08200	20-ft Vibracore	25.9	20.0	0-2	2.0	SP	SP	SUBANGULAR TO SUBROUNDED	GRAYISH BROWN	2.5Y 5/2	5	LT BROWNISH GRAY	2.5Y 6/2	6		0.32	0.33	3.0	1.7	1.0
BI-PB-200-12B	PETIT BOIS PASS-ALABAMA WEST	2012	12/13/2012	11:03 AM	30.19998	-88.36372	254861.91570	1132603.08200	20-ft Vibracore	25.9	20.0	2-5	3.0	SP	SP	SUBANGULAR TO SUBROUNDED	DK OLIVE BROWN	2.5Y 3/3	3	OLIVE BROWN	2.5Y 4/3	4		0.28	0.28	2.2	1.8	1.0
BI-PB-200-12C	PETIT BOIS PASS-ALABAMA WEST	2012	12/13/2012	11:03 AM	30.19998	-88.36372	254861.91570	1132603.08200	20-ft Vibracore	25.9	20.0	5-7	2.0	SP	SP	SUBANGULAR TO SUBROUNDED	GRAYISH BROWN	2.5Y 5/2	5	LT BROWNISH GRAY	2.5Y 6/2	6		0.25	0.26	2.9	1.9	1.0
BI-PB-200-12D	PETIT BOIS PASS-ALABAMA WEST	2012	12/13/2012	11:03 AM	30.19998	-88.36372	254861.91570	1132603.08200	20-ft Vibracore	25.9	20.0	7-10	3.0	SP	SP	SUBANGULAR TO SUBROUNDED	DK GRAYISH BROWN	2.5Y 4/2	4	GRAYISH BROWN	2.5Y 5/2	5		0.30	0.30	3.1	1.8	1.1
BI-PB-202-12	PETIT BOIS PASS-ALABAMA WEST	2012	12/19/2012	2:03 PM	30.19235	-88.34888	252106.61400	1137302.96500	20-ft Vibracore	36.3	19.8		7.5															
BI-PB-202-12A	PETIT BOIS PASS-ALABAMA WEST	2012	12/19/2012	2:03 PM	30.19235	-88.34888	252106.61400	1137302.96500	20-ft Vibracore	36.3	19.8	1.1-2.5	1.4	SP	SP	SUBANGULAR TO SUBROUNDED	LT BROWNISH GRAY	2.5Y 6/2	6	LT GRAY	2.5Y 7/2	7		0.30	0.32	2.1	2.0	1.0
BI-PB-202-12B	PETIT BOIS PASS-ALABAMA WEST	2012	12/19/2012	2:03 PM	30.19235	-88.34888	252106.61400	1137302.96500	20-ft Vibracore	36.3	19.8	2.-7.5	5.0	SP	SP	SUBANGULAR TO SUBROUNDED	LT OLIVE GRAY	5Y 6/2	6	LT GRAY	5Y 7/2	7		0.34	0.36	1.7	1.7	1.0

Cu: Coefficient of Uniformity
Cc: Coefficient of Curvature
The "#Value!" error message indicates that data was not available for that calculation.

Vibracore / Sample ID	Investigation Area	Sample Event	Date of Sample	Time_CST	Latitude	Longitude	Northing_Y	Easting_X	Sample Method	Water Depth (feet)	Boring Depth (feet below seafloor surface)	Sample Depth (Feet below seafloor surface)	Sample Thickness (feet)	Field USCS	Lab USCS	Angularity	Wet Munsell Color	Wet Munsell Color Code	Wet Munsell Value	Dry Munsell Color	Dry Munsell Color Code	Dry Munsell Value	CaCO3	D50 (mm)	Graphic Mean (mm)	% Fines	Cu (D60/D10)	Cc (D30)^2 / (D10*D60)
BI-PB-203-12	PETIT BOIS PASS-ALABAMA WEST	2012	12/19/2012	2:33 PM	30.19250	-88.35423	252154.01940	1135612.49400	20-ft Vibracore	35.1	19.6		2.9															
BI-PB-203-12A	PETIT BOIS PASS-ALABAMA WEST	2012	12/19/2012	2:33 PM	30.19250	-88.35423	252154.01940	1135612.49400	20-ft Vibracore	35.1	19.6	3.0-5.9	2.9	SP	SP	SUBANGULAR TO SUBROUNDED	GRAYISH BROWN	2.5Y 5/2		LT BROWNISH GRAY	2.5Y 6/2			0.31	0.40	4.5	2.8	1.1
BI-PB-204-12	PETIT BOIS PASS-ALABAMA WEST	2012	12/19/2012	3:05 PM	30.19260	-88.35875	252184.41110	1134184.32900	20-ft Vibracore	34.7	19.3		10.0															
BI-PB-204-12A	PETIT BOIS PASS-ALABAMA WEST	2012	12/19/2012	3:05 PM	30.19260	-88.35875	252184.41110	1134184.32900	20-ft Vibracore	34.7	19.3	3.0-4.6	1.6	SM	SP-SM	SUBANGULAR TO SUBROUNDED	DK GRAYISH BROWN	2.5Y 4/2	4	GRAYISH BROWN	2.5Y 5/2	5		0.26	0.27	9.5	3.6	1.6
BI-PB-204-12B	PETIT BOIS PASS-ALABAMA WEST	2012	12/19/2012	3:05 PM	30.19260	-88.35875	252184.41110	1134184.32900	20-ft Vibracore	34.7	19.3	4.6-9.6	5.0	SP	SP	SUBANGULAR TO SUBROUNDED	GRAYISH BROWN	2.5Y 5/2	5	LT BROWNISH GRAY	2.5Y 6/2	6		0.32	0.33	3.8	1.8	1.1
BI-PB-204-12C	PETIT BOIS PASS-ALABAMA WEST	2012	12/19/2012	3:05 PM	30.19260	-88.35875	252184.41110	1134184.32900	20-ft Vibracore	34.7	19.3	11.9-15.3	3.4	SP	SP	SUBANGULAR TO SUBROUNDED	GRAY	2.5Y 6/1	6	LT GRAY	2,5Y 7/1	7		0.29	0.29	1.8	1.7	1.0
BI-PB-205-12	PETIT BOIS PASS-ALABAMA WEST	2012	12/19/2012	3:35 PM	30.19247	-88.36373	252130.61210	1132611.18300	20-ft Vibracore	32.7	19.1		13.9															
BI-PB-205-12A	PETIT BOIS PASS-ALABAMA WEST	2012	12/19/2012	3:35 PM	30.19247	-88.36373	252130.61210	1132611.18300	20-ft Vibracore	32.7	19.1	0.0-2.6	2.6	SP	SP	SUBANGULAR TO SUBROUNDED	LT BROWNISH GRAY	2.5Y 6/2	6	LT GRAY	2.5Y 7/2	7		0.25	0.29	3.9	1.8	0.9
BI-PB-205-12B	PETIT BOIS PASS-ALABAMA WEST	2012	12/19/2012	3:35 PM	30.19247	-88.36373	252130.61210	1132611.18300	20-ft Vibracore	32.7	19.1	3.3-7.2	3.9	SM	SP-SM	SUBANGULAR TO SUBROUNDED	DK GRAYISH BROWN	2.5Y 4/2	4	GRAYISH BROWN	2.5Y 5/2	5		0.26	0.29	6.2	3.0	1.0
BI-PB-205-12C	PETIT BOIS PASS-ALABAMA WEST	2012	12/19/2012	3:35 PM	30.19247	-88.36373	252130.61210	1132611.18300	20-ft Vibracore	32.7	19.1	7.2-14.6	7.4	SP	SP	SUBANGULAR TO SUBROUNDED	LT BROWNISH GRAY	2.5Y 6/2	6	LT GRAY	2.5Y 7/2	7		0.31	0.32	3.3	1.9	1.1
BI-PB-207-12	PETIT BOIS PASS-ALABAMA EAST	2012	12/11/2012	1:04 PM	30.19400	-88.33045	252731.92980	1143122.96500	20-ft Vibracore	37.5	16.6	NO SAMPLE TAKEN		SC	NO SAMPLE TESTED													
BI-PB-208-12	PETIT BOIS PASS-ALABAMA EAST	2012	12/6/2012	3:57 PM	30.20085	-88.32758	255227.20780	1144018.61700	20-ft Vibracore	32.8	11.9		7.0															
BI-PB-208-12A	PETIT BOIS PASS-ALABAMA EAST	2012	12/6/2012	3:57 PM	30.20085	-88.32758	255227.20780	1144018.61700	20-ft Vibracore	32.8	11.9	0-2.6	2.6	SP-SM	SP	SUBANGULAR TO SUBROUNDED	LT GRAY	2.5Y 6.5/2	7	LT GRAY	2.5Y 7/2	7	NO	0.34	0.37	3.6	2.0	1.0
BI-PB-208-12B	PETIT BOIS PASS-ALABAMA EAST	2012	12/6/2012	3:57 PM	30.20085	-88.32758	255227.20780	1144018.61700	20-ft Vibracore	32.8	11.9	2.6-4.3	1.7	SP	SP	SUBANGULAR TO SUBROUNDED	PALE BROWN	2.5Y 8/2	8	PALE BROWN	2.5Y 8/1.5	8	NO	0.45	0.48	0.8	1.8	0.9
BI-PB-208-12C	PETIT BOIS PASS-ALABAMA EAST	2012	12/6/2012	3:57 PM	30.20085	-88.32758	255227.20780	1144018.61700	20-ft Vibracore	32.8	11.9	4.3-7	2.7	SP	SP	SUBANGULAR TO SUBROUNDED	LT GRAY	2.5Y 7/1	7	WHITE	2.5Y 8/1	8		0.40	0.43	1.2	1.6	0.9
BI-PB-209-12	PETIT BOIS PASS-ALABAMA EAST	2012	12/7/2012	3:25 AM	30.19752	-88.32757	254016.13980	1144027.15400	20-ft Vibracore	32.6	17.2		15.4															
BI-PB-209-12A	PETIT BOIS PASS-ALABAMA EAST	2012	12/7/2012	3:25 AM	30.19752	-88.32757	254016.13980	1144027.15400	20-ft Vibracore	32.6	17.2	0-1.8	1.8	SP	SP	SUBANGULAR TO SUBROUNDED	LT OLIVE GRAY	5Y 6/2	6	LT GRAY	5Y 7/2	7		0.32	0.33	1.3	1.6	1.0
BI-PB-209-12B	PETIT BOIS PASS-ALABAMA EAST	2012	12/7/2012	3:25 AM	30.19752	-88.32757	254016.13980	1144027.15400	20-ft Vibracore	32.6	17.2	2.3-3.5	1.2	SC	SP-SM	SUBANGULAR TO SUBROUNDED	OLIVE BROWN	2.5Y 4/3	4	LT OLIVE BROWN	2.5Y 5/3	5		0.21	0.23	9.1	2.5	1.4
BI-PB-209-12C	PETIT BOIS PASS-ALABAMA EAST	2012	12/7/2012	3:25 AM	30.19752	-88.32757	254016.13980	1144027.15400	20-ft Vibracore	32.6	17.2	4.8-5.4	0.6	SP-SM	SP-SM	SUBANGULAR TO SUBROUNDED	OLIVE	5Y 4/3	4	OLIVE	5Y 5/3	5		0.30	0.30	11.2	#VALUE!	#VALUE!
BI-PB-209-12D	PETIT BOIS PASS-ALABAMA EAST	2012	12/7/2012	3:25 AM	30.19752	-88.32757	254016.13980	1144027.15400	20-ft Vibracore	32.6	17.2	5.4-7.2	1.8	SP	SP	SUBANGULAR TO SUBROUNDED	GRAYISH BROWN	2.5Y 5/2	5	LT BROWNISH GRAY	2.5Y 6/2	6		0.32	0.32	3.4	1.6	1.0
BI-PB-209-12E	PETIT BOIS PASS-ALABAMA EAST	2012	12/7/2012	3:25 AM	30.19752	-88.32757	254016.13980	1144027.15400	20-ft Vibracore	32.6	17.2	7.2-12.2	5.0	SP	SP	SUBANGULAR TO SUBROUNDED	OLIVE	5Y 4/3	4	OLIVE	5Y 5/3	5		0.28	0.29	4.4	1.8	1.0
BI-PB-209-12F	PETIT BOIS PASS-ALABAMA EAST	2012	12/7/2012	3:25 AM	30.19752	-88.32757	254016.13980	1144027.15400	20-ft Vibracore	32.6	17.2	12.2-17.2	5.0	SM	SP-SM	SUBANGULAR TO SUBROUNDED	OLIVE	5Y 4/3	4	OLIVE	5Y 5/3	5		0.22	0.24	9.8	3.0	1.6
BI-PB-210-12	PETIT BOIS PASS-ALABAMA EAST	2012	12/11/2012	1:38 PM	30.19487	-88.32755	253052.39440	1144037.75200	20-ft Vibracore	37.6	15.3	NO SAMPLE TAKEN		ML	NO SAMPLE TESTED													
BI-PB-211-12	PETIT BOIS PASS-ALABAMA EAST	2012	12/5/2012	11:41 AM	30.20798	-88.30997	257845.44360	1149569.81500	20-ft Vibracore	31.1	15.7		8.1															
BI-PB-211-12A	PETIT BOIS PASS-ALABAMA EAST	2012	12/5/2012	11:41 AM	30.20798	-88.30997	257845.44360	1149569.81500	20-ft Vibracore	31.1	15.7	0-1.1	1.1	SP	SP	SUBANGULAR TO SUBROUNDED	LT BROWNISH GRAY	2.5Y 6/2	6	LT GRAY	2.5Y 7/2	7	YES	0.31	0.34	3.2	2.3	1.1
BI-PB-211-12B	PETIT BOIS PASS-ALABAMA EAST	2012	12/5/2012	11:41 AM	30.20798	-88.30997	257845.44360	1149569.81500	20-ft Vibracore	31.1	15.7	5.1-7.2	2.1	SP-SC	SP	SUBANGULAR TO SUBROUNDED	LT OLIVE BROWN	2.5Y 5/6	5	OLIVE YELLOW	2.5Y 6/6	6		0.35	0.38	0.3	1.4	1.0
BI-PB-211-12C	PETIT BOIS PASS-ALABAMA EAST	2012	12/5/2012	11:41 AM	30.20798	-88.30997	257845.44360	1149569.81500	20-ft Vibracore	31.1	15.7	7.2-12.1	4.9	SP	SP	SUBANGULAR TO SUBROUNDED	LT GRAY	2.5Y 7/1	7	PALE BROWN	2.5Y 7.5/2	8		0.35	0.36	3.6	1.6	1.0
BI-PB-212-12	PETIT BOIS PASS-ALABAMA EAST	2012	12/5/2012	10:57 AM	30.20813	-88.31348	257894.91820	1148460.81300	20-ft Vibracore	26.4	14.8		2.7															
BI-PB-212-12A	PETIT BOIS PASS-ALABAMA EAST	2012	12/5/2012	10:57 AM	30.20813	-88.31348	257894.91820	1148460.81300	20-ft Vibracore	26.4	14.8	0-2.7	2.7	SP	SP	SUBANGULAR TO SUBROUNDED	GRAYISH BROWN	2.5Y 5/2	5	LT GRAY	2.5Y 7/2	7		0.30	0.33	2.0	2.0	1.0
BI-PB-213-12	PETIT BOIS PASS-ALABAMA EAST	2012	12/6/2012	2:20 PM	30.20482	-88.31317	256691.55450	1148564.23600	20-ft Vibracore	29.4	7.7		7.7															
BI-PB-213-12A	PETIT BOIS PASS-ALABAMA EAST	2012	12/6/2012	2:20 PM	30.20482	-88.31317	256691.55450	1148564.23600	20-ft Vibracore	29.4	7.7	0-4.3	4.3	SP-SM	SP	SUBANGULAR TO SUBROUNDED	LT BROWNISH GRAY	2.5Y 6/2	6	LT GRAY	2.5Y 7/2	7		0.31	0.32	2.2	1.7	1.0
BI-PB-213-12B	PETIT BOIS PASS-ALABAMA EAST	2012	12/6/2012	2:20 PM	30.20482	-88.31317	256691.55450	1148564.23600	20-ft Vibracore	29.4	7.7	4.3-7.7	3.4	SP	SP	SUBANGULAR TO SUBROUNDED	LT GRAY	2.5Y 7/1	7	WHITE	2.5Y 8/1	8		0.30	0.32	2.4	1.9	1.0
BI-PB-214-12	PETIT BOIS PASS-ALABAMA EAST	2012	12/19/2012	11:35 AM	30.19212	-88.29295	252102.44230	1154973.53000	20-ft Vibracore	38.4	15.8		13.1															
BI-PB-214-12A	PETIT BOIS PASS-ALABAMA EAST	2012	12/19/2012	11:35 AM	30.19212	-88.29295	252102.44230	1154973.53000	20-ft Vibracore	38.4	15.8	0.0-2.6	2.6	SP	SP	SUBANGULAR TO SUBROUNDED	LT OLIVE GRAY	5Y 6/2	6	LT GRAY	5Y 7/2	7		0.31	0.32	1.3	1.8	1.0
BI-PB-214-12B	PETIT BOIS PASS-ALABAMA EAST	2012	12/19/2012	11:35 AM	30.19212	-88.29295	252102.44230	1154973.53000	20-ft Vibracore	38.4	15.8	3.3-5.4	2.1	SP-SM	SP-SM	SUBANGULAR TO SUBROUNDED	OLIVE GRAY	5Y 5/2	5	LT OLIVE GRAY	5Y 6/2	6		0.35	0.37	6.3	2.0	1.2
BI-PB-214-12C	PETIT BOIS PASS-ALABAMA EAST	2012	12/19/2012	11:35 AM	30.19212	-88.29295	252102.44230	1154973.53000	20-ft Vibracore	38.4	15.8	5.4-10.5	5.0	SP	SP	SUBANGULAR TO SUBROUNDED	LT GRAY	2.5Y 7/1	7	WHITE	2.5Y 8/1	8		0.38	0.41	1.2	1.6	0.9
BI-PB-214-12D	PETIT BOIS PASS-ALABAMA EAST	2012	12/19/2012	11:35 AM	30.19212	-88.29295	252102.44230	1154973.53000	20-ft Vibracore	38.4	15.8	10.4-13.8	3.4	SP	SP	SUBANGULAR TO SUBROUNDED	LT BROWNISH GRAY	2.5Y 6/2	6	LT GRAY	2.5Y 7/2	7		0.39	0.42	2.0	1.7	0.9
BI-PB-215-12	PETIT BOIS PASS-ALABAMA EAST	2012	12/19/2012	10:58 AM	30.19208	-88.29800	252080.36240	1153378.12700	20-ft Vibracore	40.1	19.1		5.3															
BI-PB-215-12A	PETIT BOIS PASS-ALABAMA EAST	2012	12/19/2012	10:58 AM	30.19208	-88.29800	252080.36240	1153378.12700	20-ft Vibracore	40.1	19.1	0.0-1.8	1.8	SP	SP	SUBANGULAR TO SUBROUNDED	OLIVE GRAY	5Y 5/2	5	LT OLIVE GRAY	5Y 6/2	6		0.30	0.32	3.2	1.9	1.0
BI-PB-215-12B	PETIT BOIS PASS-ALABAMA EAST	2012	12/19/2012	10:58 AM	30.19208	-88.29800	252080.36240	1153378.12700	20-ft Vibracore	40.1	19.1	2.7-4.1	1.4	SP	SP	SUBANGULAR TO SUBROUNDED	OLIVE GRAY	5Y 5/2	5	LT OLIVE GRAY	5Y 6/2	6		0.35	0.38	3.8	2.1	1.0
BI-PB-215-12C	PETIT BOIS PASS-ALABAMA EAST	2012	12/19/2012	10:58 AM	30.19208	-88.29800	252080.36240	1153378.12700	20-ft Vibracore	40.1	19.1	4.1-6.2	2.1	SP	SP	SUBANGULAR TO SUBROUNDED	LT BROWNISH GRAY	2.5Y 6/2	6	LT GRAY	2.5Y 7/2	7		0.39	0.42	4.9	1.8	1.0
BI-PB-216-12	PETIT BOIS PASS-ALABAMA EAST	2012	12/12/2012	1:46 PM	30.19347	-88.31138	252566.27430	1149148.60200	20-ft Vibracore	35.8	14.4		14.4															
BI-PB-216-12A	PETIT BOIS PASS-ALABAMA EAST	2012	12/12/2012	1:46 PM	30.19347	-88.31138	252566.27430	1149148.60200	20-ft Vibracore	35.8	14.4	0-4.4	4.4	SP	SP	SUBANGULAR TO SUBROUNDED	OLIVE GRAY	5Y 5/2	5	LT OLIVE GRAY	5Y 6/2	6		0.27	0.30	2.9	1.9	0.9
BI-PB-216-12B	PETIT BOIS PASS-ALABAMA EAST	2012	12/12/2012	1:46 PM	30.19347	-88.31138	252566.27430	1149148.60200	20-ft Vibracore	35.8	14.4	4.4-9.4	5.0	SP	SP	SUBANGULAR TO SUBROUNDED	LT GRAY	2.5Y 7/1	7	WHITE	2.5Y 8/1	8		0.34	0.36	2.7	1.7	1.0
BI-PB-216-12C	PETIT BOIS PASS-ALABAMA EAST	2012	12/12/2012	1:46 PM	30.19347	-88.31138	252566.27430	1149148.60200	20-ft Vibracore	35.8	14.4	9.4-14.4	5.0	SP	SP	SUBANGULAR TO SUBROUNDED	LT GRAY	2.5Y 7/1	7	WHITE	2.5Y 8/1	8		0.29	0.30	1.6	1.7	1.0
BI-PB-217-12	PETIT BOIS PASS-ALABAMA EAST	2012	12/12/2012	3:21 PM	30.19423	-88.30757	252848.21270	1150351.02100	20-ft Vibracore	38.9	15.7		8.0															
BI-PB-217-12A	PETIT BOIS PASS-ALABAMA EAST	2012	12/12/2012	3:21 PM	30.19423	-88.30757	252848.21270	1150351.02100	20-ft Vibracore	38.9	15.7	0-0.5	0.5	SP	SP	SUBANGULAR TO SUBROUNDED	OLIVE GRAY	5Y 5/2	5	LT GRAY	5Y 7/2	7		0.32	0.34	1.3	1.6	1.0
BI-PB-217-12B	PETIT BOIS PASS-ALABAMA EAST	2012	12/12/2012	3:21 PM	30.19423	-88.30757	252848.21270	1150351.02100	20-ft Vibracore	38.9	15.7	1.2-5.7	4.5	SP	SP-SM	SUBANGULAR TO SUBROUNDED	PALE OLIVE	5Y 6/3	6	PALE YELLOW	5Y 7/3	7		0.34	0.35	5.9	1.8	1.1
BI-PB-217-12C	PETIT BOIS PASS-ALABAMA EAST	2012	12/12/2012	3:21 PM	30.19423	-88.30757	252848.21270	1150351.02100	20-ft Vibracore	38.9	15.7	5.7-8.7	3.0	SP	SP	SUBANGULAR TO SUBROUNDED	LT BROWNISH GRAY	2.5Y 6/2	6	LT GRAY	2.5Y 7/2	7		0.35	0.37	4.1	1.9	1.1
BI-PB-218-12	PETIT BOIS PASS-ALABAMA EAST	2012	12/12/2012	1:03 PM	30.19545	-88.30927	253289.43800	1149811.90200	20-ft Vibracore	37.3	17.3		15.7															

Cu: Coefficient of Uniformity
Cc: Coefficient of Curvature
The "#Value!" error message indicates that data was not available for that calculation.

Vibracore / Sample ID	Investigation Area	Sample Event	Date of Sample	Time_CST	Latitude	Longitude	Northing_Y	Easting_X	Sample Method	Water Depth (feet)	Boring Depth (feet below seafloor surface)	Sample Depth (Feet below seafloor surface)	Sample Thickness (feet)	Field USCS	Lab USCS	Angularity	Wet Munsell Color	Wet Munsell Color Code	Wet Munsell Value	Dry Munsell Color	Dry Munsell Color Code	Dry Munsell Value	CaCO3	D50 (mm)	Graphic Mean (mm)	% Fines	Cu (D60/D10)	Cc (D30)^2 / (D10*D60)
BI-PB-218-12A	PETIT BOIS PASS-ALABAMA EAST	2012	12/12/2012	1:03 PM	30.19545	-88.30927	253289.43800	1149811.90200	20-ft Vibracore	37.3	17.3	0-5	5.0	SP	SP-SM	SUBANGULAR TO SUBROUNDED	LT BROWNISH GRAY	2.5Y 6/2	6	LT GRAY	2.5Y 7/2	7		0.32	0.33	9.7	3.1	1.6
BI-PB-218-12B	PETIT BOIS PASS-ALABAMA EAST	2012	12/12/2012	1:03 PM	30.19545	-88.30927	253289.43800	1149811.90200	20-ft Vibracore	37.3	17.3	5-8.8	3.8	SP	SP	SUBANGULAR TO SUBROUNDED	LT BROWNISH GRAY	2.5Y 6/2	6	LT GRAY	2.5Y 7/2	7		0.34	0.36	4.4	1.7	1.0
BI-PB-218-12C	PETIT BOIS PASS-ALABAMA EAST	2012	12/12/2012	1:03 PM	30.19545	-88.30927	253289.43800	1149811.90200	20-ft Vibracore	37.3	17.3	8.8-13.8	5.0	SP	SP	SUBANGULAR TO SUBROUNDED	LT GRAY	2.5Y 7/2	7	PALE YELLOW	2.5Y 8/2	8		0.32	0.34	2.1	1.7	1.0
BI-PB-218-12D	PETIT BOIS PASS-ALABAMA EAST	2012	12/12/2012	1:03 PM	30.19545	-88.30927	253289.43800	1149811.90200	20-ft Vibracore	37.3	17.3	13.8-15.7	1.9	SP	SP-SM	SUBANGULAR TO SUBROUNDED	LT GRAY	2.5Y 7/2	7	PALE YELLOW	2.5Y 8/2	8		0.26	0.27	6.2	1.8	1.0
BI-PB-219-12	PETIT BOIS PASS-ALABAMA EAST	2012	12/12/2012	11:57 AM	30.19622	-88.31615	253559.54440	1147637.07400	20-ft Vibracore	31.4	15.9		15.9															
BI-PB-219-12A	PETIT BOIS PASS-ALABAMA EAST	2012	12/12/2012	11:57 AM	30.19622	-88.31615	253559.54440	1147637.07400	20-ft Vibracore	31.4	15.9	0-5.9	5.9	SP	SP	SUBANGULAR TO SUBROUNDED	OLIVE GRAY	5Y 5/2	5	LT GRAY	5Y 7/2	7		0.27	0.30	2.1	1.8	0.9
BI-PB-219-12B	PETIT BOIS PASS-ALABAMA EAST	2012	12/12/2012	11:57 AM	30.19622	-88.31615	253559.54440	1147637.07400	20-ft Vibracore	31.4	15.9	5.9-10.9	5.0	SP-SM	SP-SM	SUBANGULAR TO SUBROUNDED	OLIVE GRAY	5Y 5/2	5	LT OLIVE GRAY	5Y 6/2	6		0.25	0.27	7.3	2.2	1.0
BI-PB-219-12C	PETIT BOIS PASS-ALABAMA EAST	2012	12/12/2012	11:57 AM	30.19622	-88.31615	253559.54440	1147637.07400	20-ft Vibracore	31.4	15.9	10.9-15.9	5.0	SP	SP	SUBANGULAR TO SUBROUNDED	LT GRAY	2.5Y 7/1	7	WHITE	2.5Y 8/1	8		0.31	0.32	2.1	1.6	1.0
BI-PB-220-12	PETIT BOIS PASS-ALABAMA EAST	2012	12/6/2012	3:06 PM	30.20255	-88.32390	255850.65930	1145178.38700	20-ft Vibracore	26.1	11.8		11.8															
BI-PB-220-12A	PETIT BOIS PASS-ALABAMA EAST	2012	12/6/2012	3:06 PM	30.20255	-88.32390	255850.65930	1145178.38700	20-ft Vibracore	26.1	11.8	0-4.2	4.2	SP	SP	SUBANGULAR TO SUBROUNDED	LT BROWNISH GRAY	2.5Y 6/2	6	LT GRAY	2.5Y 7/2	7		0.32	0.33	1.1	1.5	1.0
BI-PB-220-12B	PETIT BOIS PASS-ALABAMA EAST	2012	12/6/2012	3:06 PM	30.20255	-88.32390	255850.65930	1145178.38700	20-ft Vibracore	26.1	11.8	4.2-6.8	2.6	SP	SP	SUBANGULAR TO SUBROUNDED	GRAY	5Y 5/1	5	LT GRAY	5Y 7/1	7		0.24	0.26	2.3	1.8	1.0
BI-PB-220-12C	PETIT BOIS PASS-ALABAMA EAST	2012	12/6/2012	3:06 PM	30.20255	-88.32390	255850.65930	1145178.38700	20-ft Vibracore	26.1	11.8	6.8-11.8	5.0	SP	SP	SUBANGULAR TO SUBROUNDED	LT GRAY	5Y 6.5/1	7	LT GRAY	5Y 7/1	7		0.22	0.23	1.9	1.5	1.0
BI-PB-221-12	PETIT BOIS PASS-ALABAMA WEST	2012	12/13/2012	9:53 AM	30.20243	-88.37135	255743.09210	1130189.08900	20-ft Vibracore	22.0	16.3		16.3															
BI-PB-221-12A	PETIT BOIS PASS-ALABAMA WEST	2012	12/13/2012	9:53 AM	30.20243	-88.37135	255743.09210	1130189.08900	20-ft Vibracore	22.0	16.3	0-5	5.0	SP	SP	SUBANGULAR TO SUBROUNDED	LT BROWNISH GRAY	2.5Y 6/2	6	LT GRAY	2.5Y 7/2	7		0.32	0.35	1.7	1.7	1.0
BI-PB-221-12B	PETIT BOIS PASS-ALABAMA WEST	2012	12/13/2012	9:53 AM	30.20243	-88.37135	255743.09210	1130189.08900	20-ft Vibracore	22.0	16.3	5-10	5.0	SP	SP	SUBANGULAR TO SUBROUNDED	LT GRAY	2.5Y 7/1	7	WHITE	2.5Y 8/1	8		0.29	0.29	1.9	1.7	1.0
BI-PB-221-12C	PETIT BOIS PASS-ALABAMA WEST	2012	12/13/2012	9:53 AM	30.20243	-88.37135	255743.09210	1130189.08900	20-ft Vibracore	22.0	16.3	10-16.3	6.3	SP	SP	SUBANGULAR TO SUBROUNDED	GRAY	5Y 6/1	6	LT GRAY	5Y 7/1	7		0.29	0.29	1.7	1.7	1.0
BI-PB-222-12	PETIT BOIS PASS-ALABAMA WEST	2012	12/13/2012	10:26 AM	30.20223	-88.36605	255677.18500	1131863.65900	20-ft Vibracore	22.8	16.6		16.0															
BI-PB-222-12A	PETIT BOIS PASS-ALABAMA WEST	2012	12/13/2012	10:26 AM	30.20223	-88.36605	255677.18500	1131863.65900	20-ft Vibracore	22.8	16.6	0-5	5.0	SP	SP	SUBANGULAR TO SUBROUNDED	LT BROWNISH GRAY	2.5Y 6/2	6	LT GRAY	2.5Y 7/2	7		0.37	0.40	1.5	1.6	1.0
BI-PB-222-12B	PETIT BOIS PASS-ALABAMA WEST	2012	12/13/2012	10:26 AM	30.20223	-88.36605	255677.18500	1131863.65900	20-ft Vibracore	22.8	16.6	5-10	5.0	SP	SP	SUBANGULAR TO SUBROUNDED	GRAYISH BROWN	2.5Y 5/2	5	LT BROWNISH GRAY	2.5Y 6/2	6		0.31	0.32	2.5	1.6	1.0
BI-PB-222-12C	PETIT BOIS PASS-ALABAMA WEST	2012	12/13/2012	10:26 AM	30.20223	-88.36605	255677.18500	1131863.65900	20-ft Vibracore	22.8	16.6	10-12.7	2.7	SP	SP	SUBANGULAR TO SUBROUNDED	GRAYISH BROWN	2.5Y 5/2	5	LT BROWNISH GRAY	2.5Y 6/2	6		0.31	0.31	3.0	1.6	1.0
BI-PB-222-12D	PETIT BOIS PASS-ALABAMA WEST	2012	12/13/2012	10:26 AM	30.20223	-88.36605	255677.18500	1131863.65900	20-ft Vibracore	22.8	16.6	12.7-16.0	3.3	SP-SM	SP-SM	SUBANGULAR TO SUBROUNDED	DK GRAYISH BROWN	2.5Y 4/2	4	GRAYISH BROWN	2.5Y 5/2	5		0.29	0.29	6.2	2.1	1.2
BI-PB-223-12	PETIT BOIS PASS-ALABAMA WEST	2012	12/13/2012	9:22 AM	30.20063	-88.36848	255092.14400	1131098.39500	20-ft Vibracore	25.0	20.0		11.4															
BI-PB-223-12A	PETIT BOIS PASS-ALABAMA WEST	2012	12/13/2012	9:22 AM	30.20063	-88.36848	255092.14400	1131098.39500	20-ft Vibracore	25.0	20.0	0-5	5.0	SP	SP	SUBANGULAR TO SUBROUNDED	LT GRAY	2.5Y 7/1	7	WHITE	2.5Y 8/1	8		0.28	0.29	1.2	1.7	1.0
BI-PB-223-12B	PETIT BOIS PASS-ALABAMA WEST	2012	12/13/2012	9:22 AM	30.20063	-88.36848	255092.14400	1131098.39500	20-ft Vibracore	25.0	20.0	5-10	5.0	SP	SP	SUBANGULAR TO SUBROUNDED	GRAYISH BROWN	2.5Y 5/2	5	LT BROWNISH GRAY	2.5Y 6/2	6		0.18	0.18	2.5	1.6	1.0
BI-PB-223-12C	PETIT BOIS PASS-ALABAMA WEST	2012	12/13/2012	9:22 AM	30.20063	-88.36848	255092.14400	1131098.39500	20-ft Vibracore	25.0	20.0	10-11.4	1.4	SP-SM	SP	SUBANGULAR TO SUBROUNDED	DK GRAYISH BROWN	2.5Y 4/2	4	GRAYISH BROWN	2.5Y 5/2	5		0.24	0.25	4.4	1.8	1.0
BI-PB-224-12	PETIT BOIS PASS-ALABAMA WEST	2012	12/13/2012	8:45 AM	30.19883	-88.37140	254433.75410	1130178.60400	20-ft Vibracore	23.8	20.0		14.0															
BI-PB-224-12A	PETIT BOIS PASS-ALABAMA WEST	2012	12/13/2012	8:45 AM	30.19883	-88.37140	254433.75410	1130178.60400	20-ft Vibracore	23.8	20.0	0-5	5.0	SP	SP	SUBANGULAR TO SUBROUNDED	LT GRAY	2.5Y 7/1	7	WHITE	2.5Y 8/1	8		0.35	0.37	1.0	1.5	1.0
BI-PB-224-12B	PETIT BOIS PASS-ALABAMA WEST	2012	12/13/2012	8:45 AM	30.19883	-88.37140	254433.75410	1130178.60400	20-ft Vibracore	23.8	20.0	5-10	5.0	SP	SP	SUBANGULAR TO SUBROUNDED	LT GRAY	2.5Y 7/1	7	WHITE	2.5Y 8/1	8		0.35	0.37	0.8	1.5	1.0
BI-PB-224-12C	PETIT BOIS PASS-ALABAMA WEST	2012	12/13/2012	8:45 AM	30.19883	-88.37140	254433.75410	1130178.60400	20-ft Vibracore	23.8	20.0	10-14	4.0	SP-SM	SP	SUBANGULAR TO SUBROUNDED	GRAYISH BROWN	2.5Y 5/2	5	LT BROWNISH GRAY	2.5Y 6/2	6		0.30	0.30	3.6	1.7	1.1

Cu: Coefficient of Uniformity
Cc: Coefficient of Curvature
The "#Value!" error message indicates that data was not available for that calculation.

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Boring Designation BI-PB-001-10

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
	South Atlantic	Mobile District	

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass- AL West
2. BORING DESIGNATION	BI-PB-001-10
LOCATION COORDINATES	E = 1,125,532 N = 246,989
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	15.7 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED 2 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	44 Ft.
15. DATE BORING	STARTED 06-25-10 / COMPLETED 06-25-10
16. ELEVATION TOP OF BORING	-42.2 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
-42.2	0.0				
-48.2	6.0		CLAY, lean, dark gray (CL)	NS	
-52.5	10.3		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
-57.9	15.7		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

NOTES:

1. Soils are field visually classified in accordance with the Unified Soils Classification System.

2. NS = Sample not submitted for laboratory analysis from this interval.

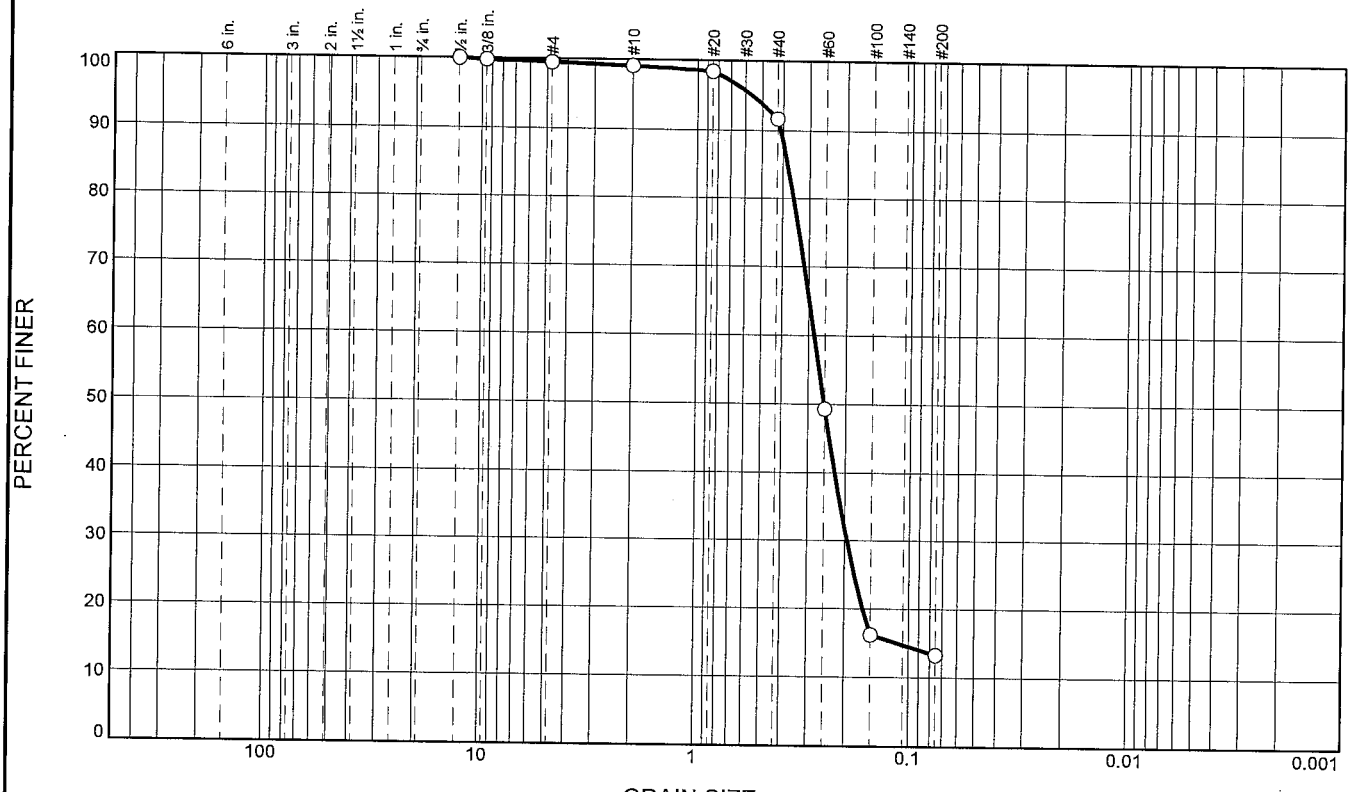
3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.17841° Long = -88.3862°

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

D_{90}= 0.4121 D_{85}= 0.3808 D_{60}= 0.2821
D_{50}= 0.2522 D_{30}= 0.1951 D_{15}= 0.1133
D_{10}= 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

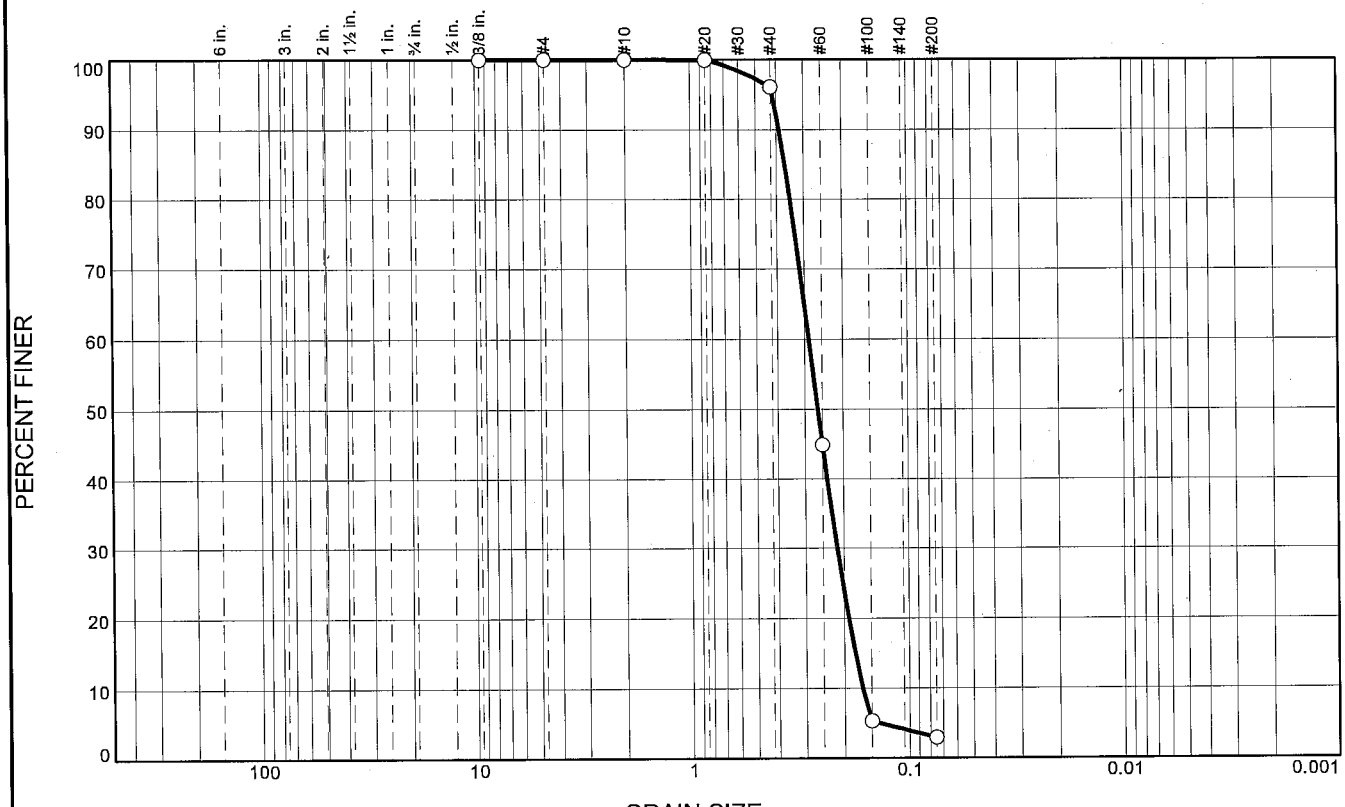
Thompson Engineering

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

D_{90}= 0.3891 D_{85}= 0.3666 D_{60}= 0.2873
D_{50}= 0.2622 D_{30}= 0.2149 D_{15}= 0.1784
D_{10}= 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: MsCIP Barrier Island Restoration, Petit Bois Pass- AL West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PB-002-10 — LOCATION COORDINATES: E = 1,126,999 N = 247,598	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 1 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 43 Ft.
	15. DATE BORING — STARTED: 06-25-10 — COMPLETED: 06-25-10
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -41.4 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 15.5 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Marty Gates, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-41.4	0.0				
-49.0	7.6		CLAY, lean, dark gray (CL)	NS	
-54.7	13.3		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, gray (SM)	A	Classification: SM Color: 2.5Y 65/2- D50: 0.2445 mm % Fines: 14.6
-56.9	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.

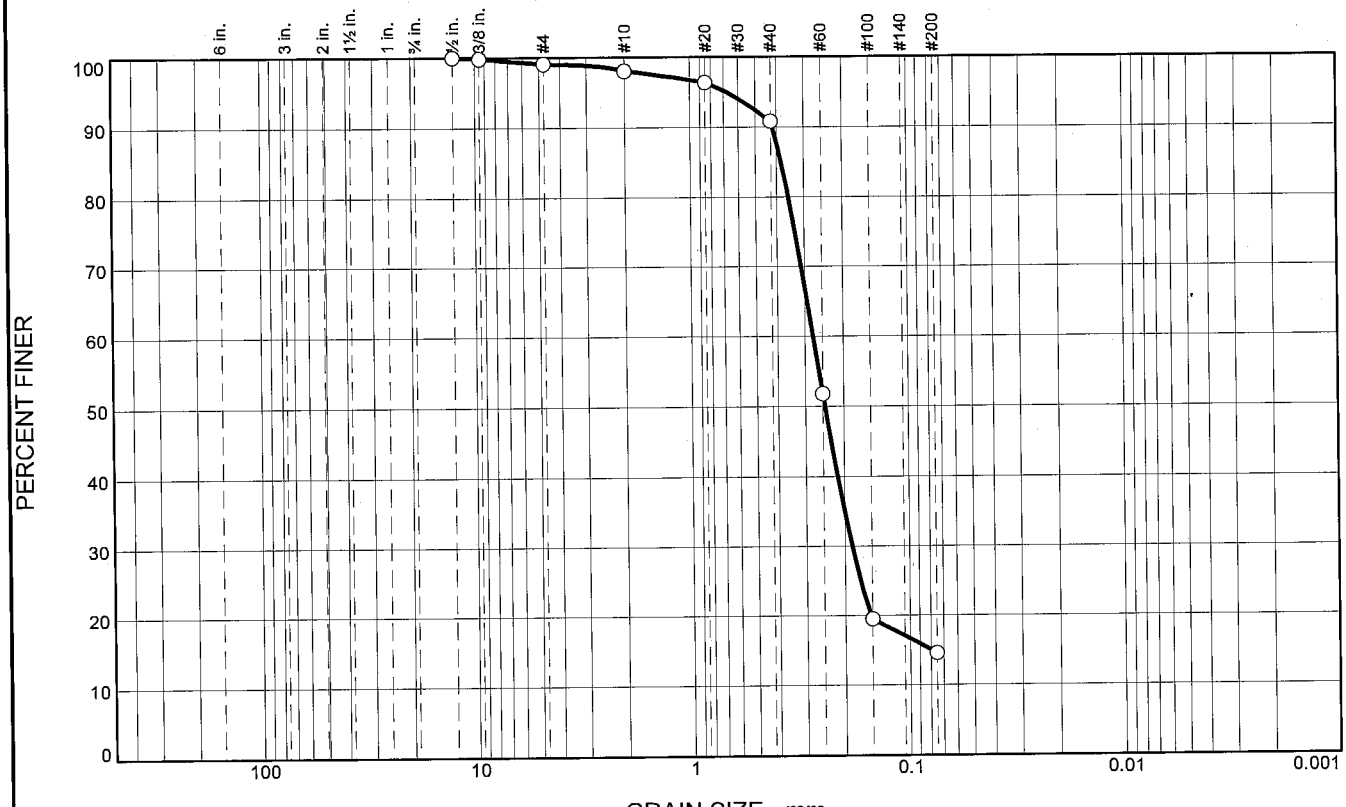
3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.18007° Long = -88.38155°

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

D_{90}= 0.4176 D_{85}= 0.3819 D_{60}= 0.2759
D_{50}= 0.2445 D_{30}= 0.1852 D_{15}= 0.0797
D_{10}= 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: MsCIP Barrier Island Restoration, Petit Bois Pass- AL West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PB-003-10 — LOCATION COORDINATES: E = 1,130,066 N = 248,669	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.:	12. TOTAL SAMPLES — DISTURBED: — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES:
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL: — BEARING:	14. WATER DEPTH: 33 Ft.
	15. DATE BORING — STARTED: 06-25-10 — COMPLETED: 06-25-10
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -31.5 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 18.4 Ft.	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.

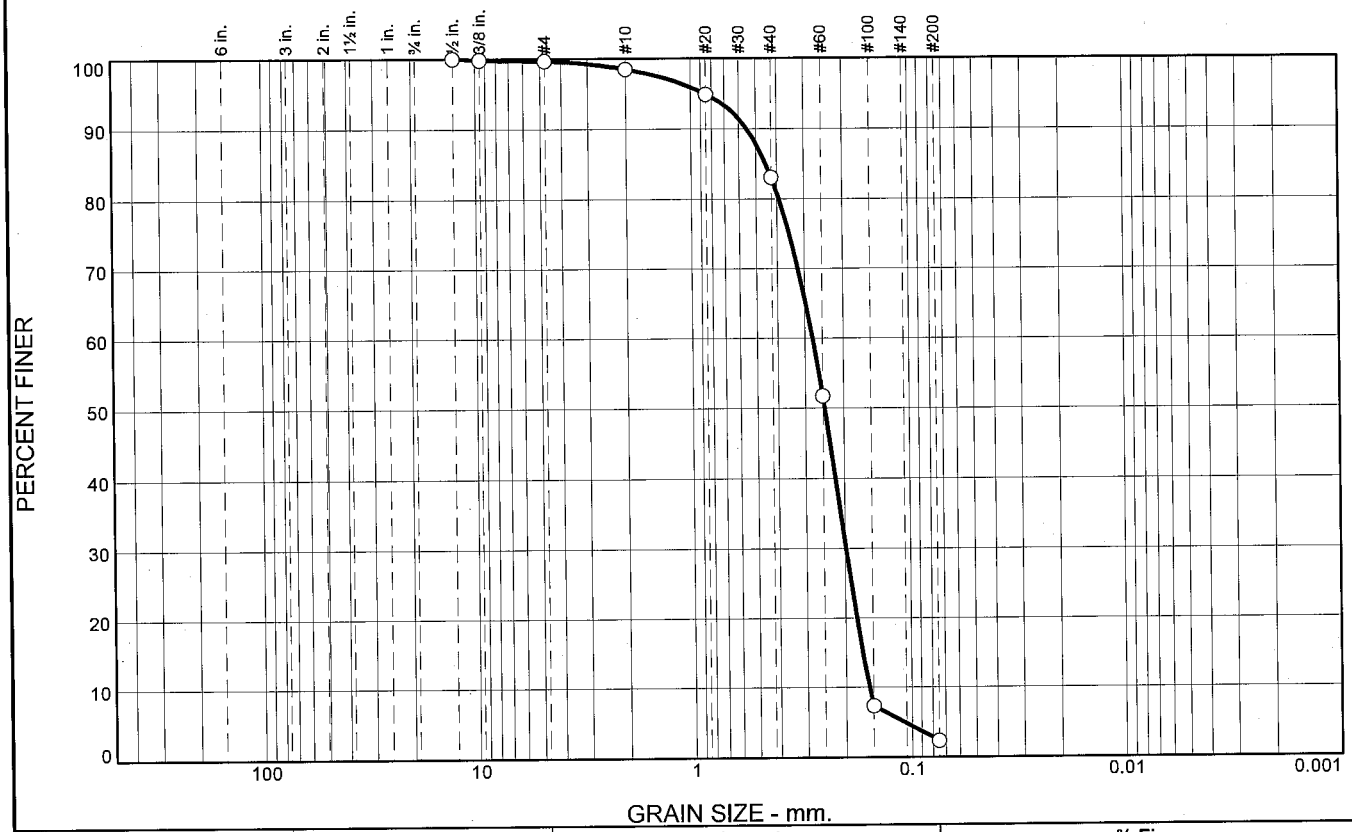
3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.18298° Long = -88.37183°

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

D_{90}= 0.5509 D_{85}= 0.4502 D_{60}= 0.2770
D_{50}= 0.2451 D_{30}= 0.1982 D_{15}= 0.1674
D_{10}= 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

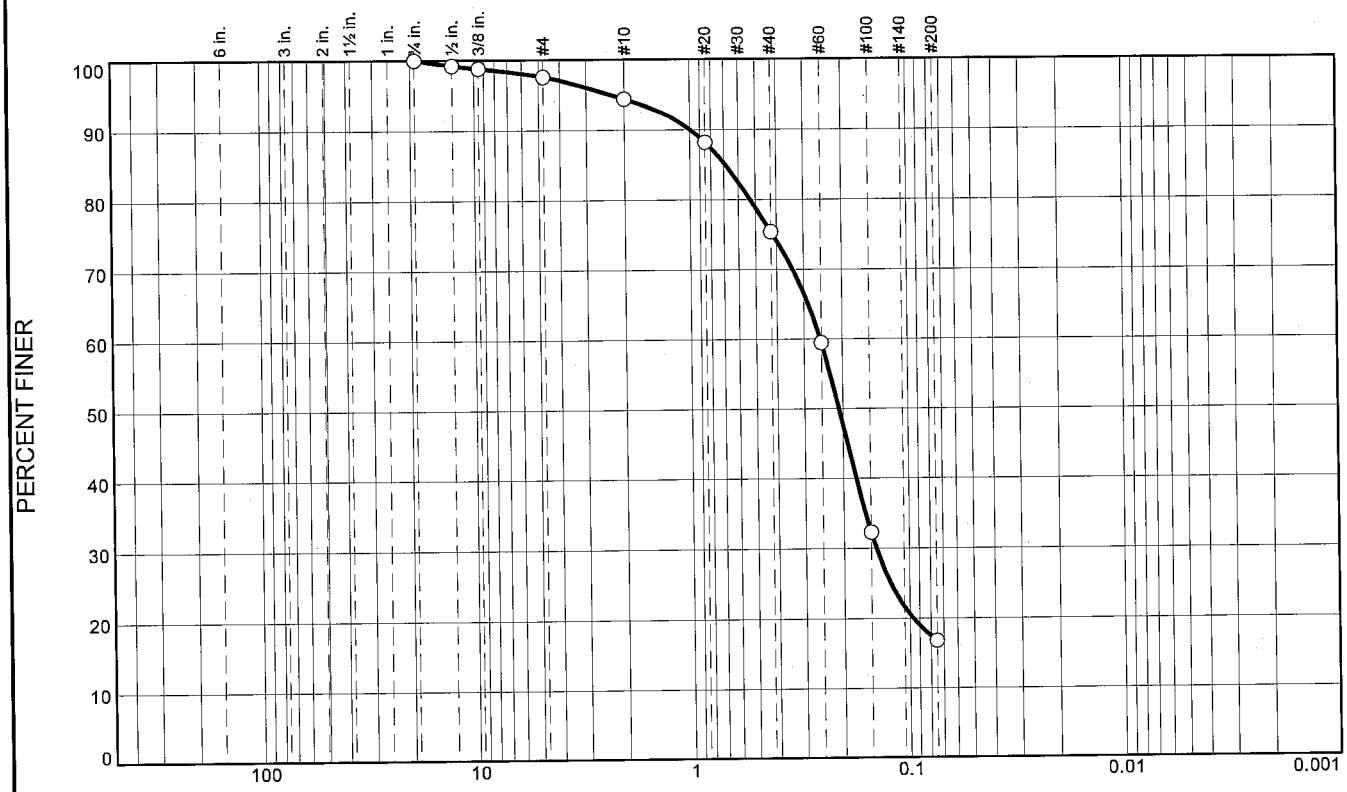
Thompson Engineering

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

D_{90}= 0.9957 D_{85}= 0.6906 D_{60}= 0.2530
D_{50}= 0.2086 D_{30}= 0.1420 D_{15}=
D_{10}= 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 2 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass- AL West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PB-004-10 — LOCATION COORDINATES: E = 1,128,185 N = 247,301	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 3 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 43 Ft.
	15. DATE BORING — STARTED: 06-25-10 — COMPLETED: 06-25-10
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -41.4 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: Marty Gates, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-41.4	0.0				
-49.4	8.0		CLAY, lean, dark gray (CL)	NS	
-53.4	12.0		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
-59.1	17.7		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
-61.4	20.0		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
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval. 3. Seafloor elevation calculated using sampling		

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.17924° Long = -88.37795°

DRILLING LOG (Cont. Sheet)	INSTALLATION Mobile District		SHEET 2 OF 2 SHEETS
PROJECT MsCIP Barrier Island Restoration	COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83	VERTICAL NAVD88
LOCATION COORDINATES X = 1,128,185 Y = 247,301	ELEVATION TOP OF BORING -41.4 Ft.		

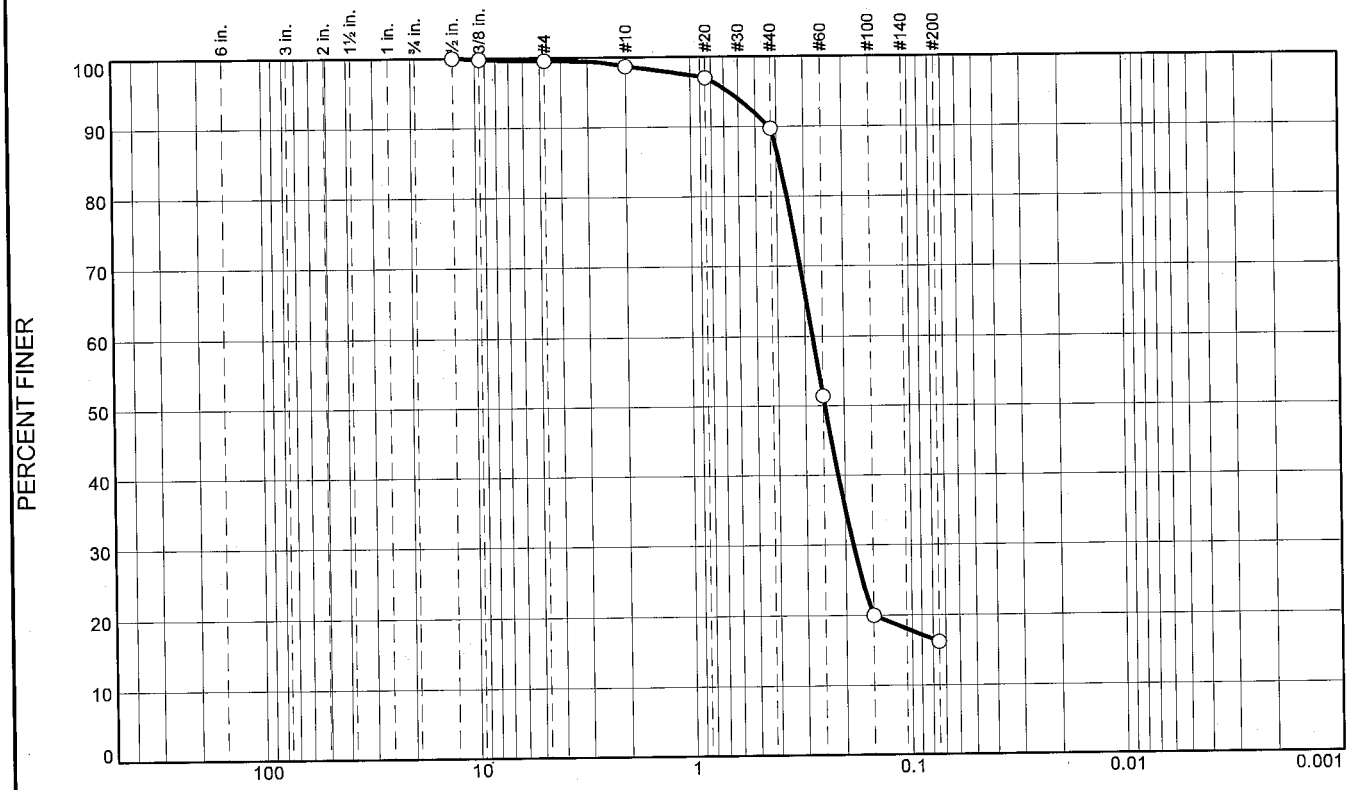
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
			vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.		

30
35
40
45
50
55
60

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.17924° Long = -88.37795°

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)

Material Description

SILTY SAND, (SM), fine grained, with some clay pockets

Atterberg Limits

PL= LL= PI=

Coefficients

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=

Classification

USCS= SM AASHTO=

Remarks

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

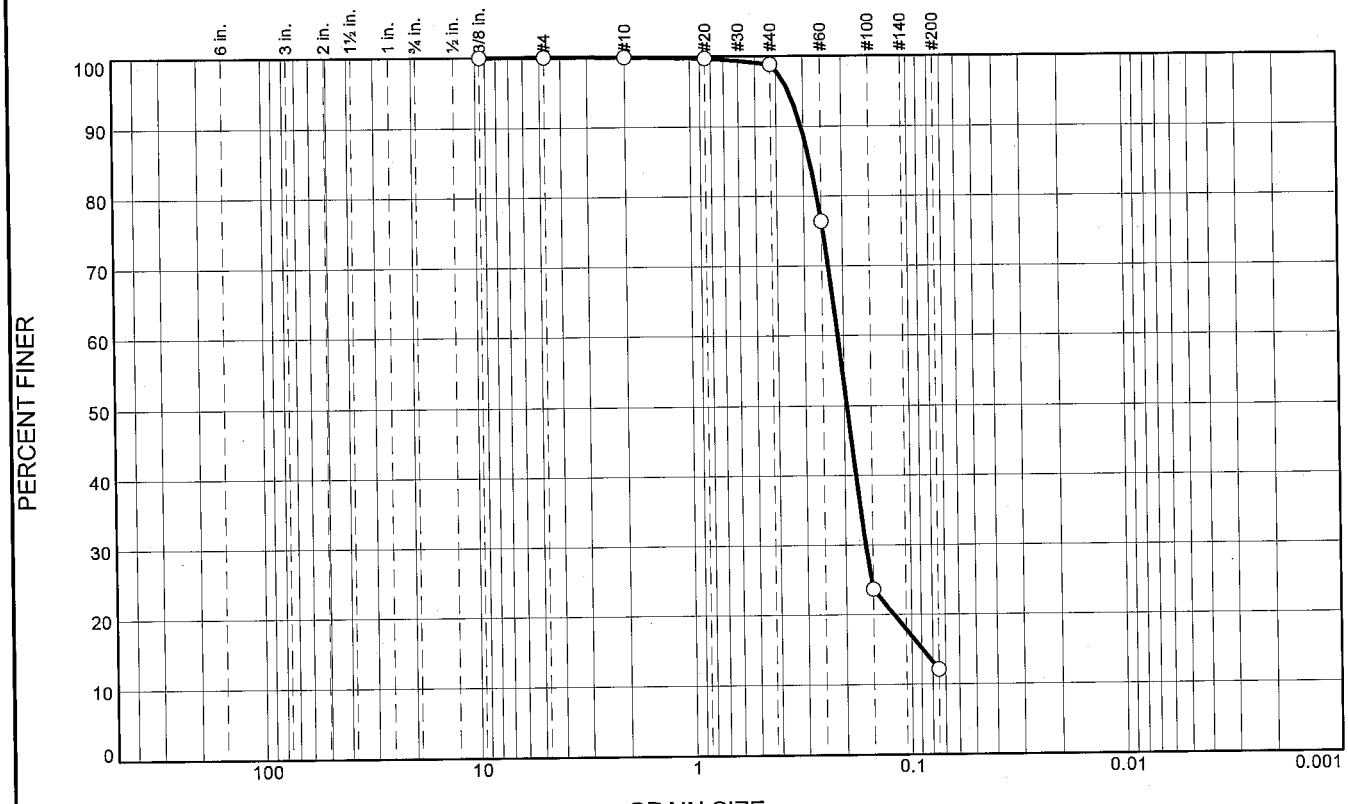
Thompson Engineering

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

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	86.7	12.1	

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		

* (no specification provided)

Material Description

SILTY SAND, (SM), fine grained, with some clay pockets

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.3072 D_{85}= 0.2806 D_{60}= 0.2127
D_{50}= 0.1947 D_{30}= 0.1615 D_{15}= 0.0893
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-4-10B
Sample Number: TE Lab ID: 4569.08 **Depth:** 12.0 - 17.7 (ft.) **Date:** 7/8/10

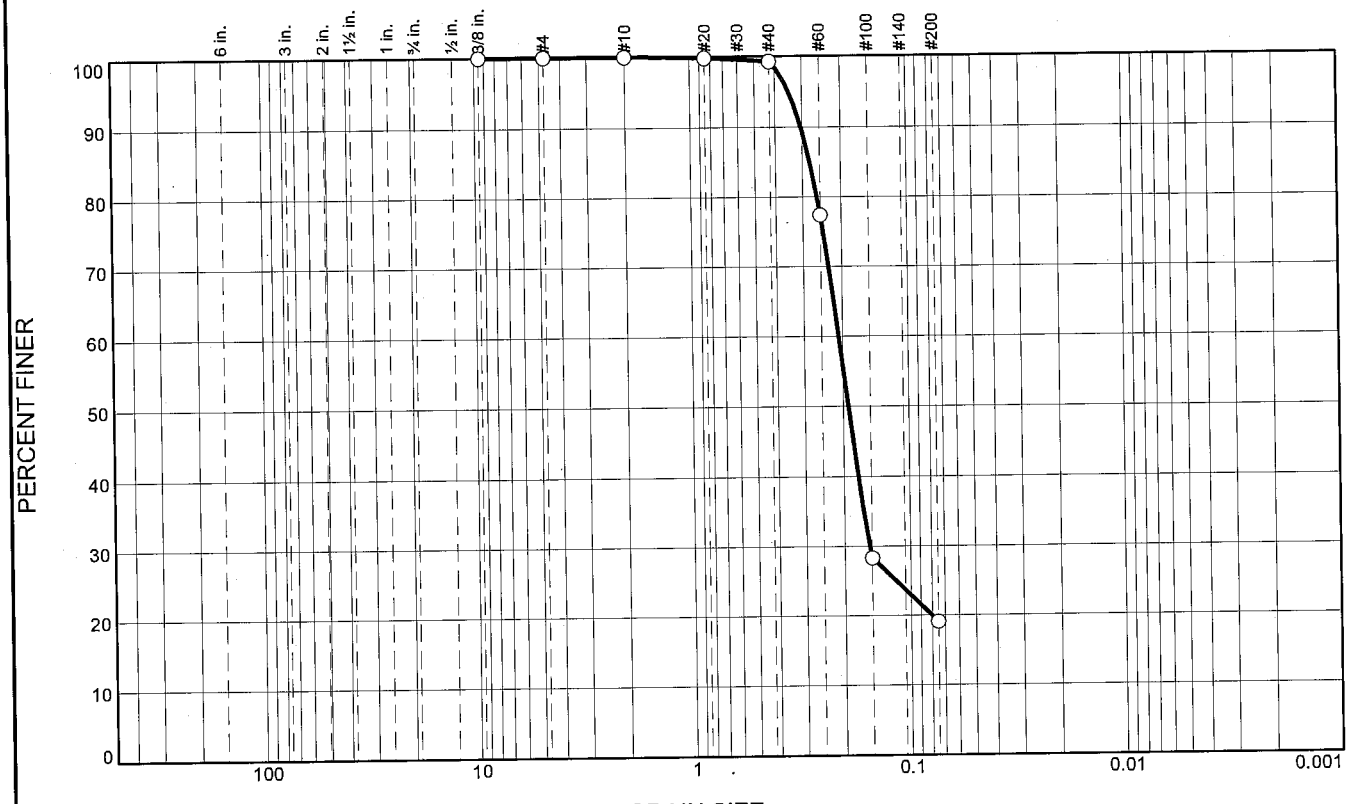
Thompson Engineering

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	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

D_{90}= 0.3041 D_{85}= 0.2777 D_{60}= 0.2086
D_{50}= 0.1898 D_{30}= 0.1535 D_{15}=
D_{10}= 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 2 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass- AL West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PB-005-10 — LOCATION COORDINATES: E = 1,130,535 N = 248,423	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.:	12. TOTAL SAMPLES — DISTURBED: 1 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES:
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL: — BEARING:	14. WATER DEPTH: 31 Ft.
	15. DATE BORING — STARTED: 06-26-10 — COMPLETED: 06-26-10
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -29.4 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 19.5 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Marty Gates, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-29.4	0.0				
-36.0	6.6		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
-44.2	14.8		CLAY, lean, dark gray (CL)	NS	
-46.7	17.3		SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, trace shell fragments, gray (SM)		
-48.9	19.5		SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, 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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.18230° Long = -88.37035°

DRILLING LOG (Cont. Sheet)	INSTALLATION Mobile District		SHEET 2 OF 2 SHEETS
PROJECT MsCIP Barrier Island Restoration	COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83	VERTICAL NAVD88
LOCATION COORDINATES X = 1,130,535 Y = 248,423	ELEVATION TOP OF BORING -29.4 Ft.		

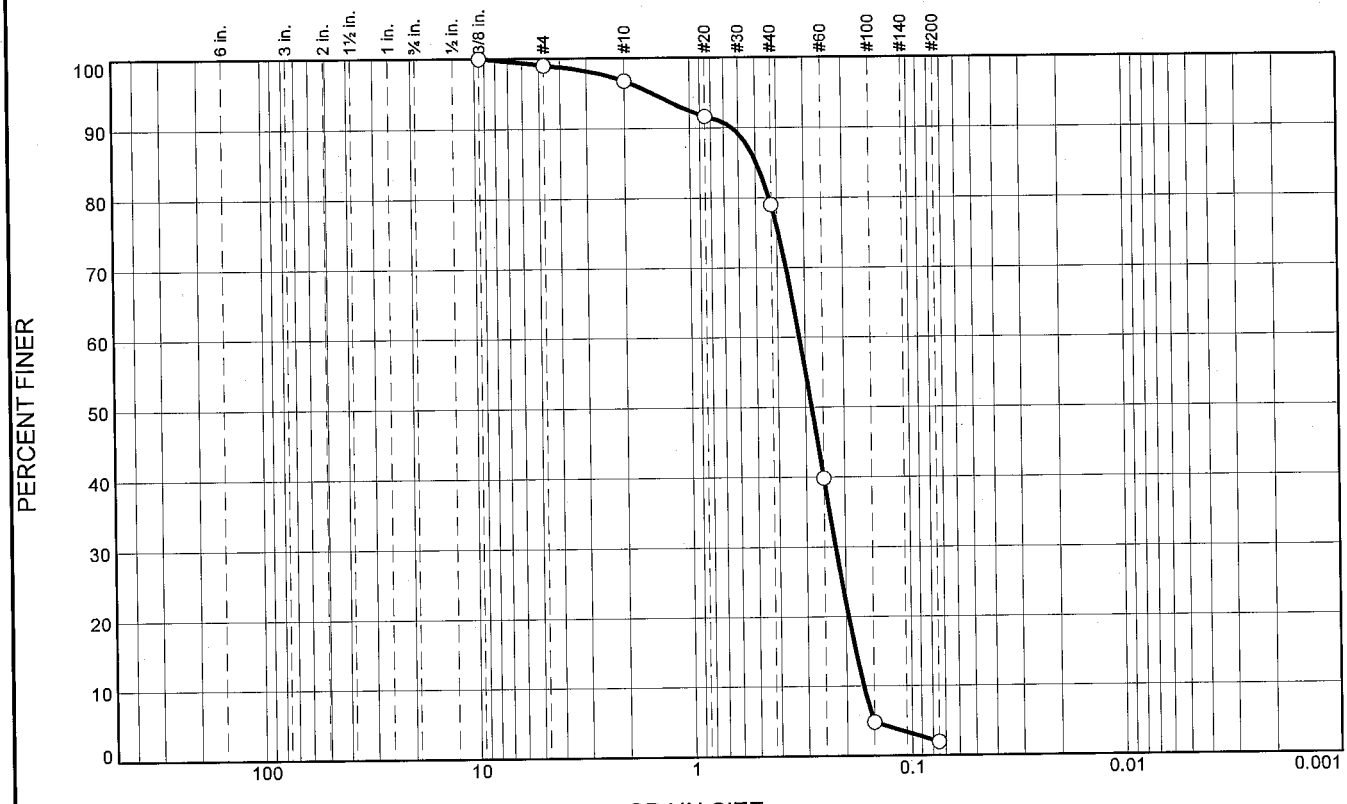
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
			applying NOAA tidal gauge data conversion factor.		

30
35
40
45
50
55
60

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.18230° Long = -88.37035°

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

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.6383 D_{85}= 0.4938 D_{60}= 0.3190
D_{50}= 0.2821 D_{30}= 0.2220 D_{15}= 0.1813
D_{10}= 0.1670 C_u= 1.91 C_c= 0.93

Classification

USCS= SP 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: MsCIP Barrier Island Restoration, Petit Bois Pass- AL West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PB-006-10 — LOCATION COORDINATES: E = 1,130,004 N = 246,054	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 3 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 45 Ft.
	15. DATE BORING — STARTED: 06-26-10 — COMPLETED: 06-26-10
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -43.4 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 18.6 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Marty Gates, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-43.4	0.0				
-47.6	4.2		CLAY, lean, dark gray (CL)	NS	
-51.6	8.2		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
			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
-62.0	18.6			C	Classification: SP-SM Color: - D50: 0.2879 mm % Fines: 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.

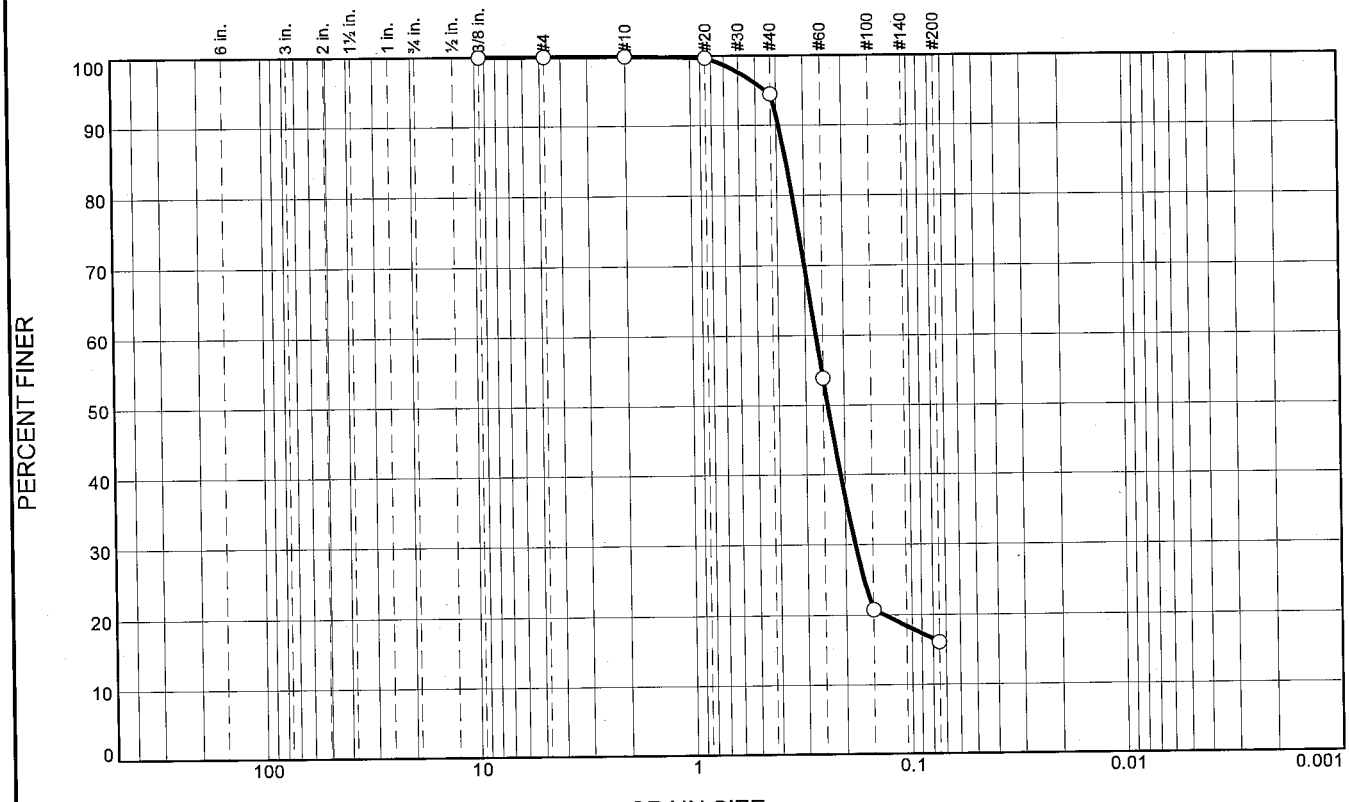
3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.17579° Long = -88.37206°

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)

Material Description

SILTY SAND, (SM), fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

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=

Classification

USCS= SM AASHTO=

Remarks

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

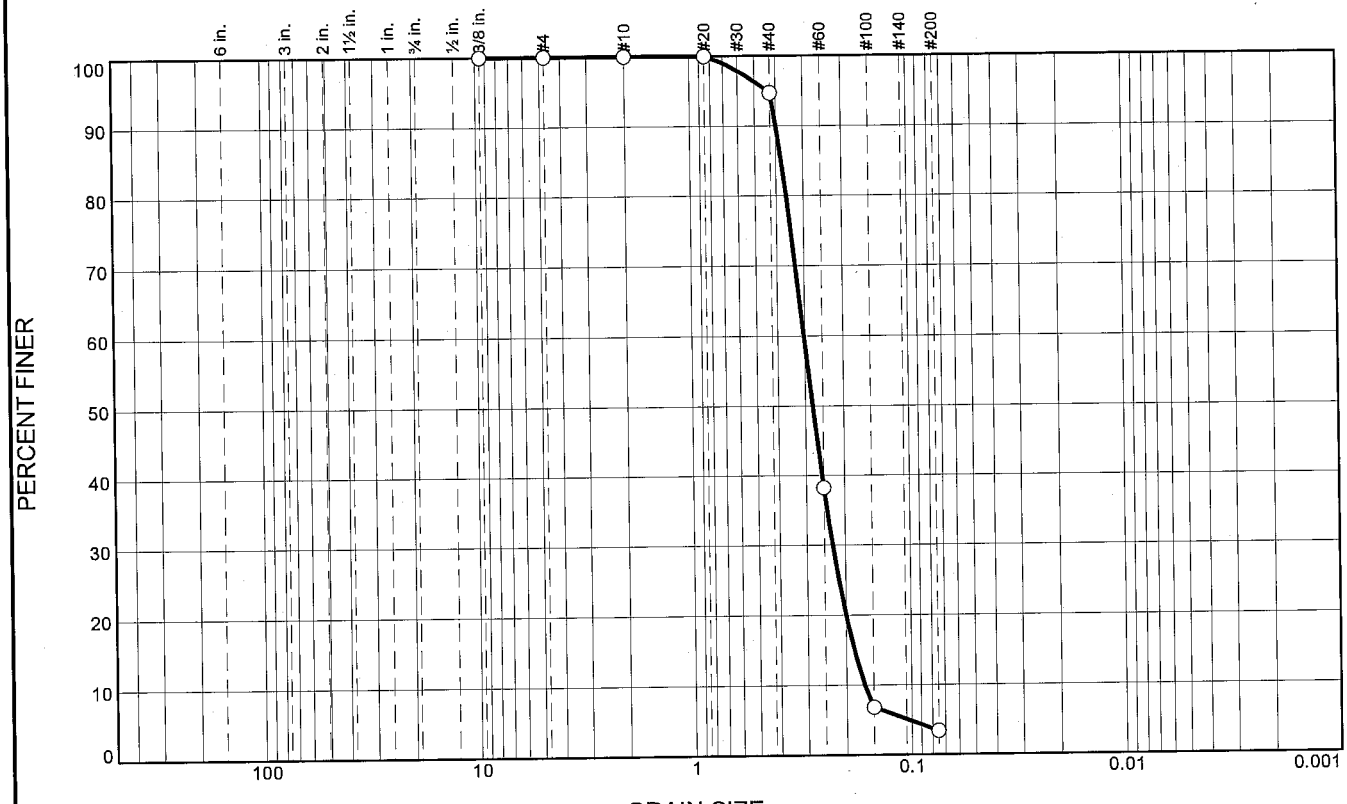
Thompson Engineering

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

D_{90}= 0.4001 D_{85}= 0.3789 D_{60}= 0.3032
D_{50}= 0.2785 D_{30}= 0.2288 D_{15}= 0.1839
D_{10}= 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

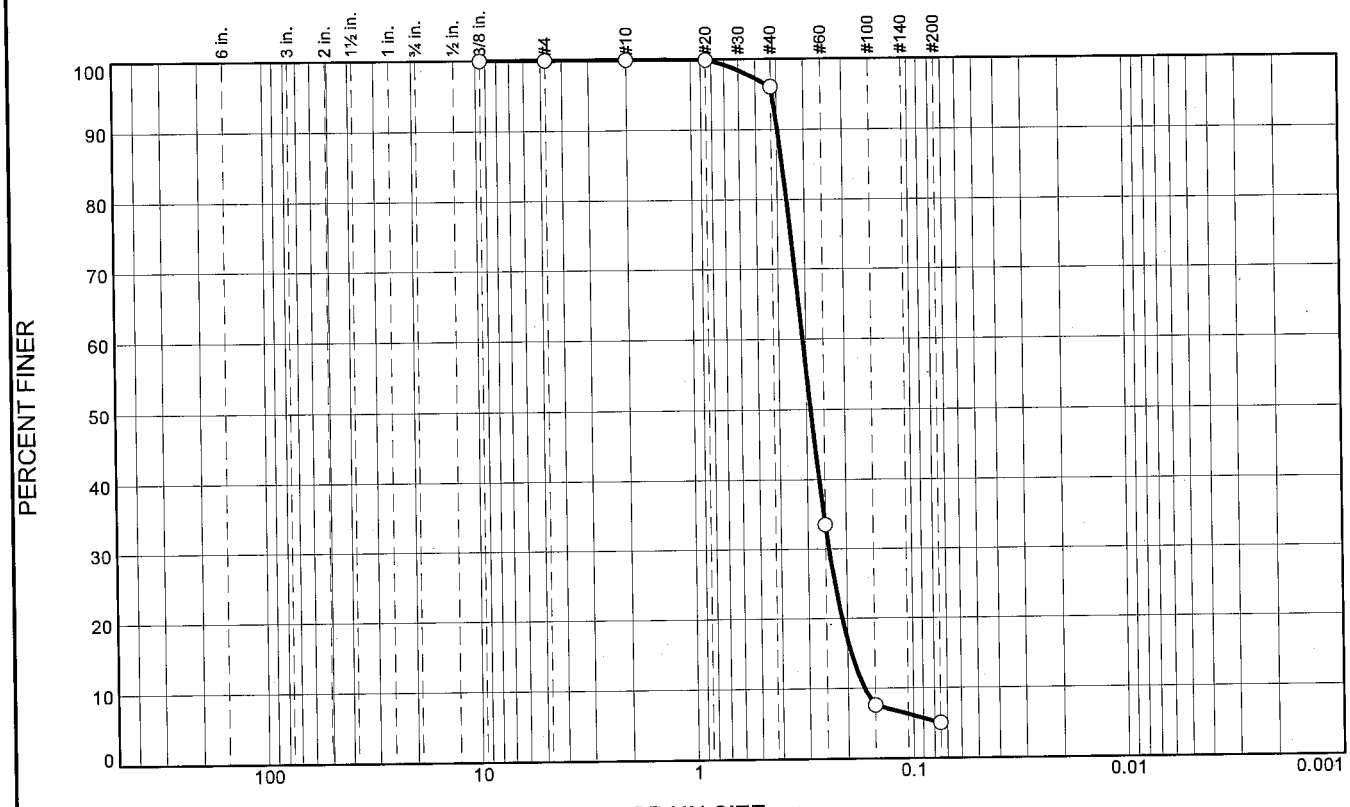
Thompson Engineering

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

D_{90}= 0.3973 D_{85}= 0.3791 D_{60}= 0.3108
D_{50}= 0.2879 D_{30}= 0.2411 D_{15}= 0.1929
D_{10}= 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 2 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass- AL West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PB-007-10 — LOCATION COORDINATES: E = 1,133,313 N = 247,416	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.:	12. TOTAL SAMPLES — DISTURBED: 2 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES:
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL: — BEARING:	14. WATER DEPTH: 36 Ft.
	15. DATE BORING — STARTED: 06-26-10 — COMPLETED: 06-26-10
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -34.6 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 19.3 Ft.	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. 3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion		

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.17950° Long = -88.36157°

DRILLING LOG (Cont. Sheet)	INSTALLATION Mobile District		SHEET 2 OF 2 SHEETS
PROJECT MsCIP Barrier Island Restoration	COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83	VERTICAL NAVD88
LOCATION COORDINATES X = 1,133,313 Y = 247,416	ELEVATION TOP OF BORING -34.6 Ft.		

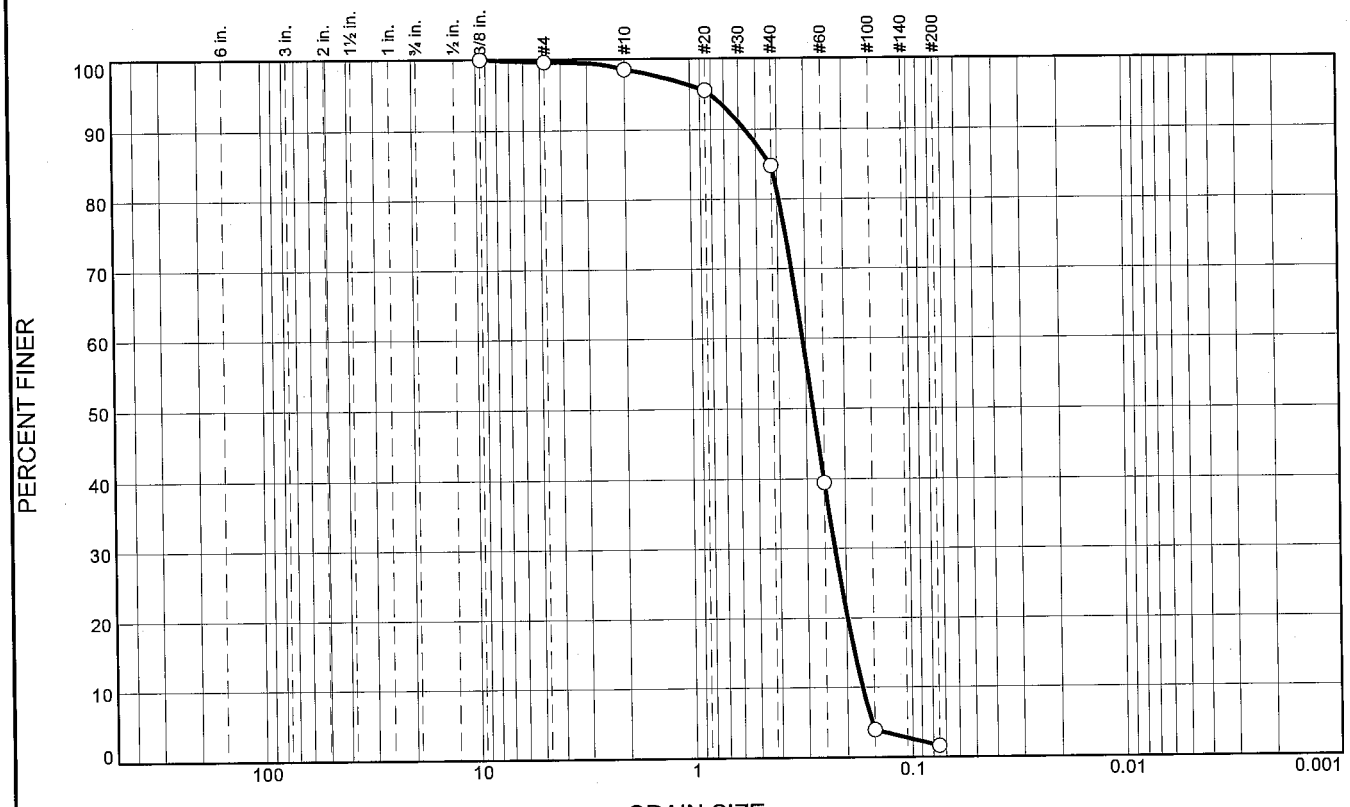
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
			factor.		

30
35
40
45
50
55
60

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.17950° Long = -88.36157°

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

D_{90}= 0.5608 D_{85}= 0.4287 D_{60}= 0.3104
D_{50}= 0.2794 D_{30}= 0.2247 D_{15}= 0.1846
D_{10}= 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

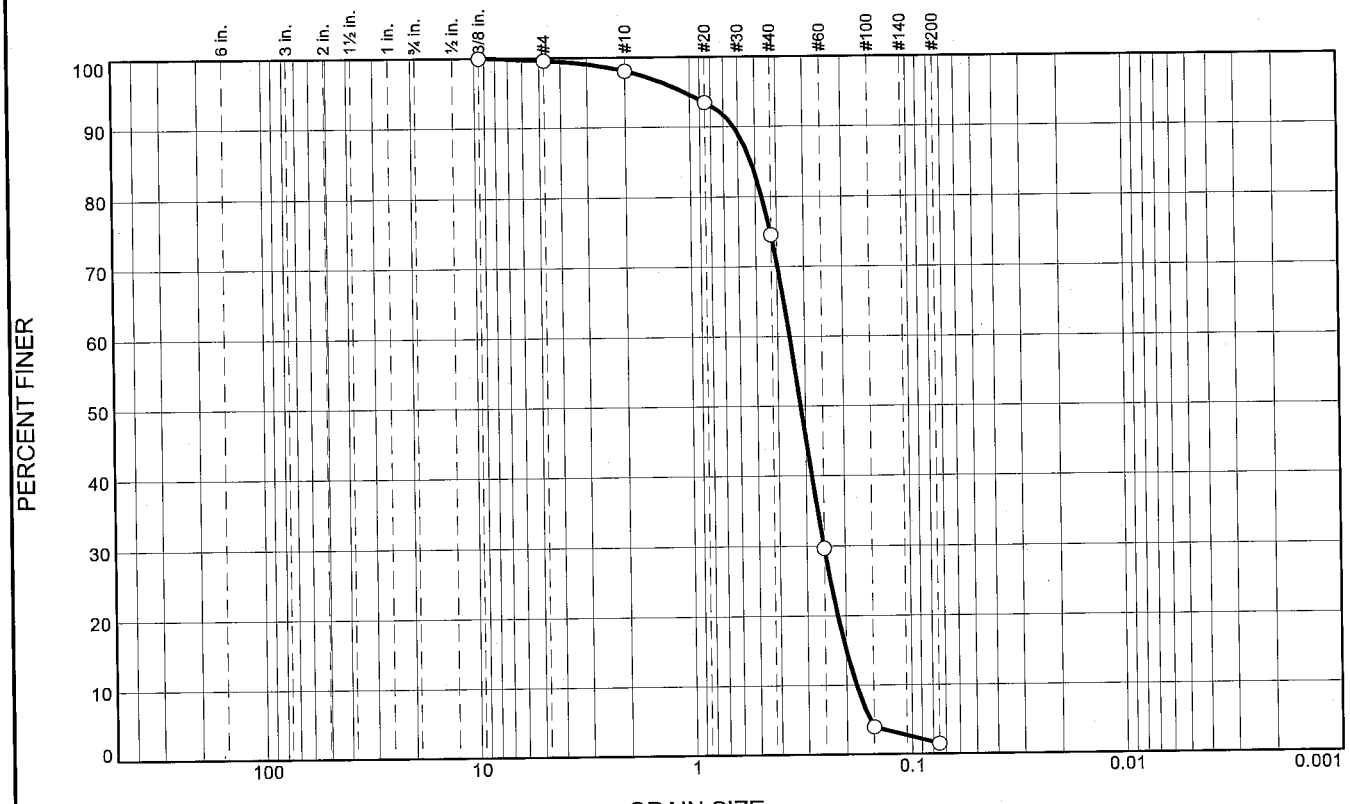
Thompson Engineering

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

D_{90}= 0.6273 D_{85}= 0.5227 D_{60}= 0.3528
D_{50}= 0.3157 D_{30}= 0.2511 D_{15}= 0.1998
D_{10}= 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: MsCIP Barrier Island Restoration, Petit Bois Pass- AL East	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PB-008-10 — LOCATION COORDINATES: E = 1,140,592 N = 254,350	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 3 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 33 Ft.
	15. DATE BORING — STARTED: 06-26-10 — COMPLETED: 06-26-10
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -31.5 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 16.9 Ft.	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.

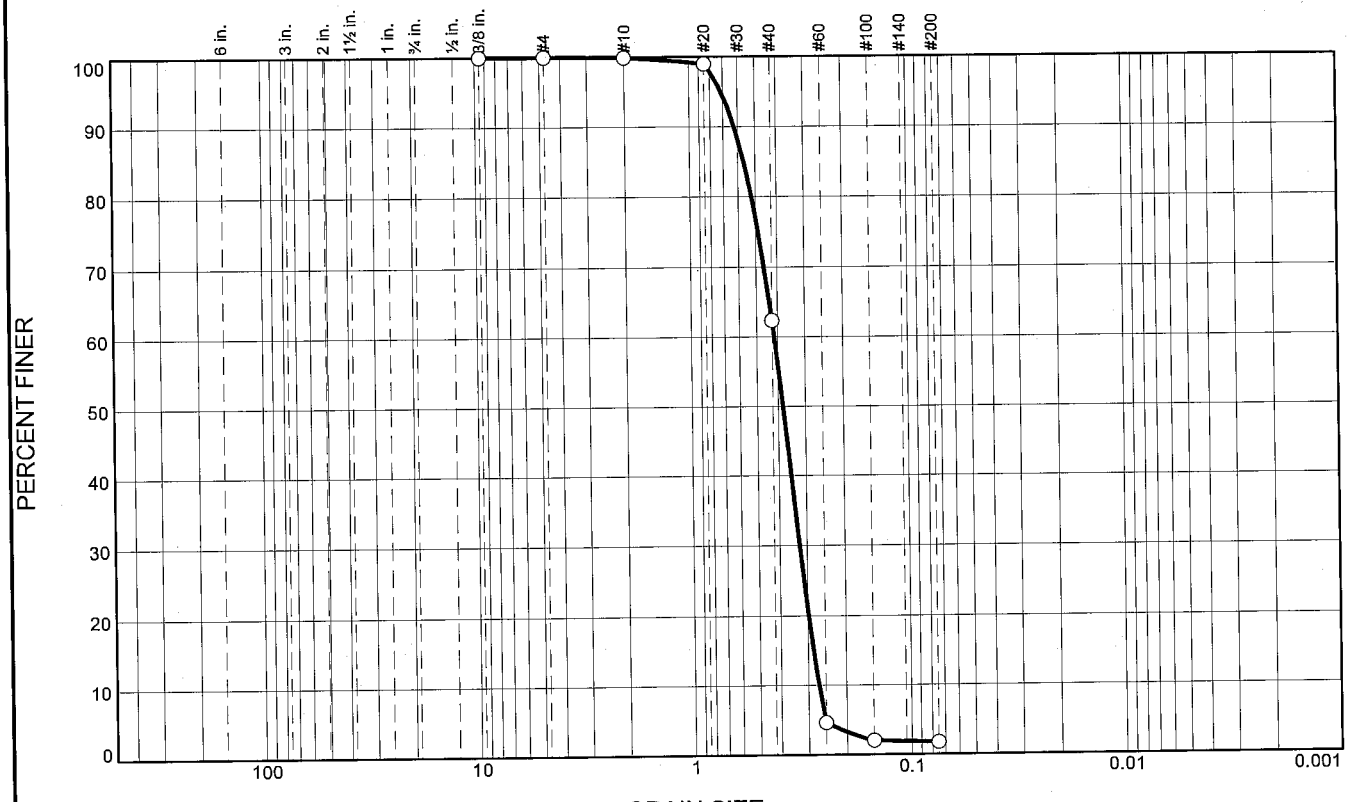
3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.19848° Long = -88.33844°

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

D_{90}= 0.6221 D_{85}= 0.5637 D_{60}= 0.4159
D_{50}= 0.3816 D_{30}= 0.3245 D_{15}= 0.2837
D_{10}= 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

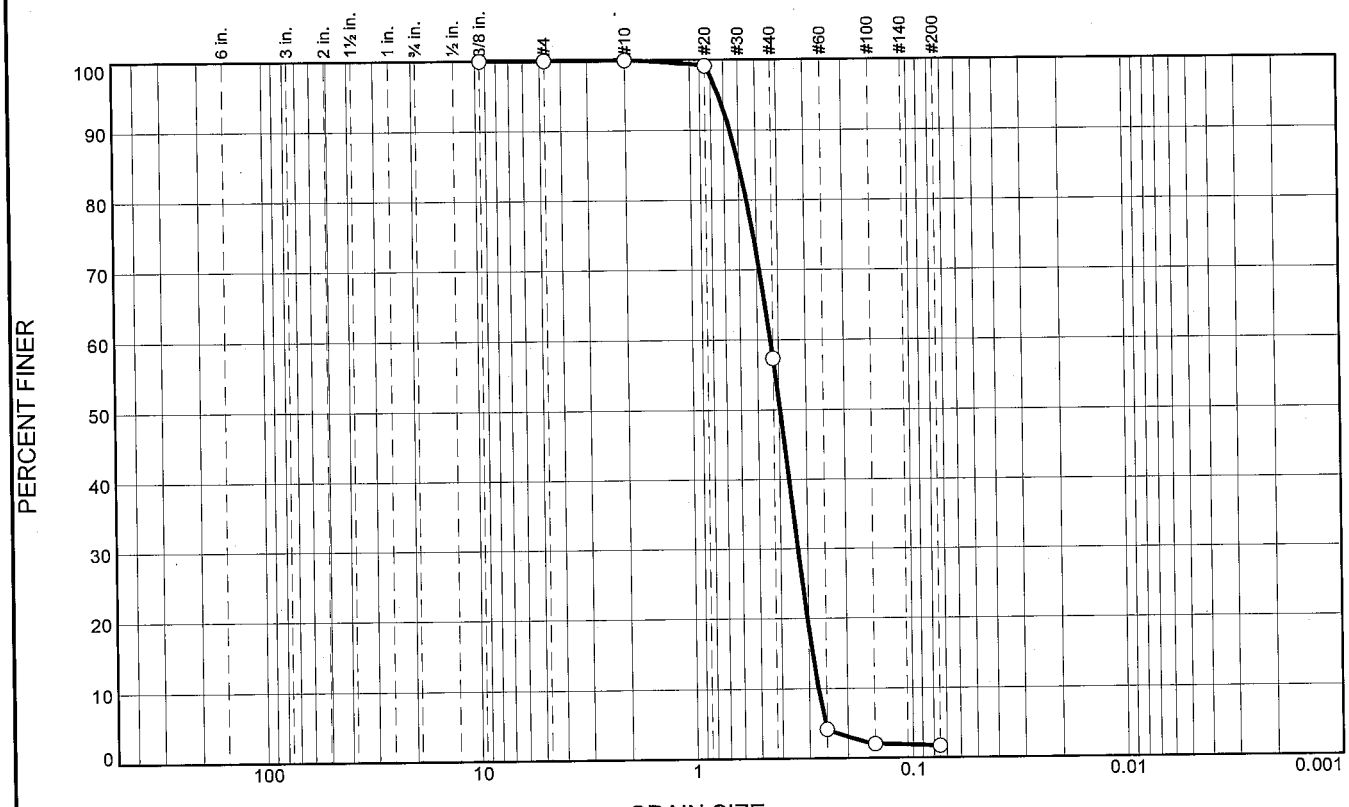
Thompson Engineering

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



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	42.6	55.7	1.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.2		
#40	57.4		
#60	4.2		
#100	2.1		
#200	1.7		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.6566 D_{85}= 0.5984 D_{60}= 0.4361
D_{50}= 0.3970 D_{30}= 0.3333 D_{15}= 0.2886
D_{10}= 0.2724 C_u= 1.60 C_c= 0.93

Classification

USCS= SP AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-8-10B
Sample Number: TE Lab ID: 4569.17 **Depth:** 6.0 - 12.0 (ft.) **Date:** 7/8/10

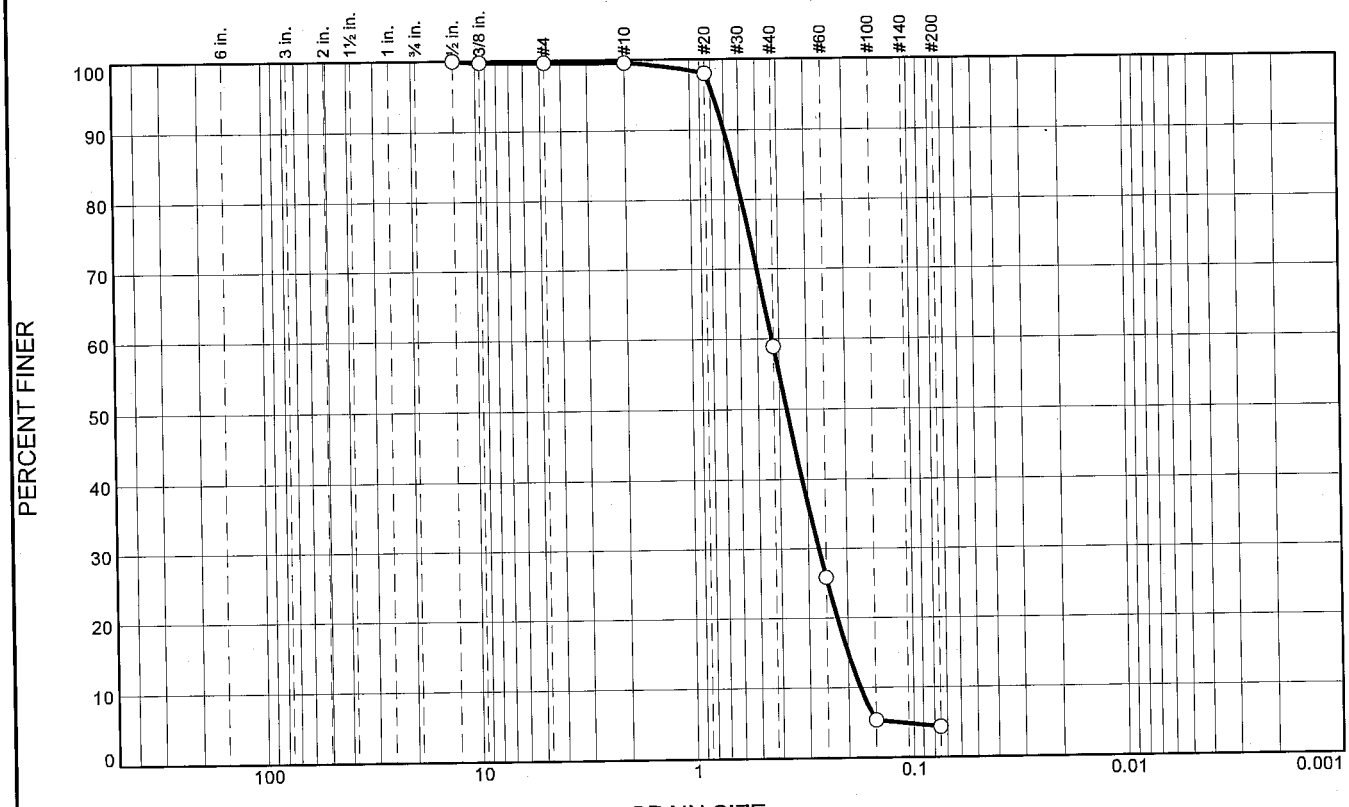
Thompson Engineering

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	0.4	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

D_{90}= 0.6990 D_{85}= 0.6366 D_{60}= 0.4319
D_{50}= 0.3718 D_{30}= 0.2692 D_{15}= 0.2006
D_{10}= 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: MsCIP Barrier Island Restoration, Petit Bois Pass- AL East	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PB-009-10 — LOCATION COORDINATES: E = 1,144,039 N = 255,649	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 3 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 23 Ft.
	15. DATE BORING — STARTED: 06-26-10 — COMPLETED: 06-26-10
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -21.5 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 15.2 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Marty Gates, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-21.5	0.0				
-28.2	6.7		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
-29.1	7.6		CLAY, lean, dark gray (CL)	NS	
-36.7	15.2		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

NOTES:

1. Soils are field visually classified in accordance with the Unified Soils Classification System.

2. NS = Sample not submitted for laboratory analysis from this interval.

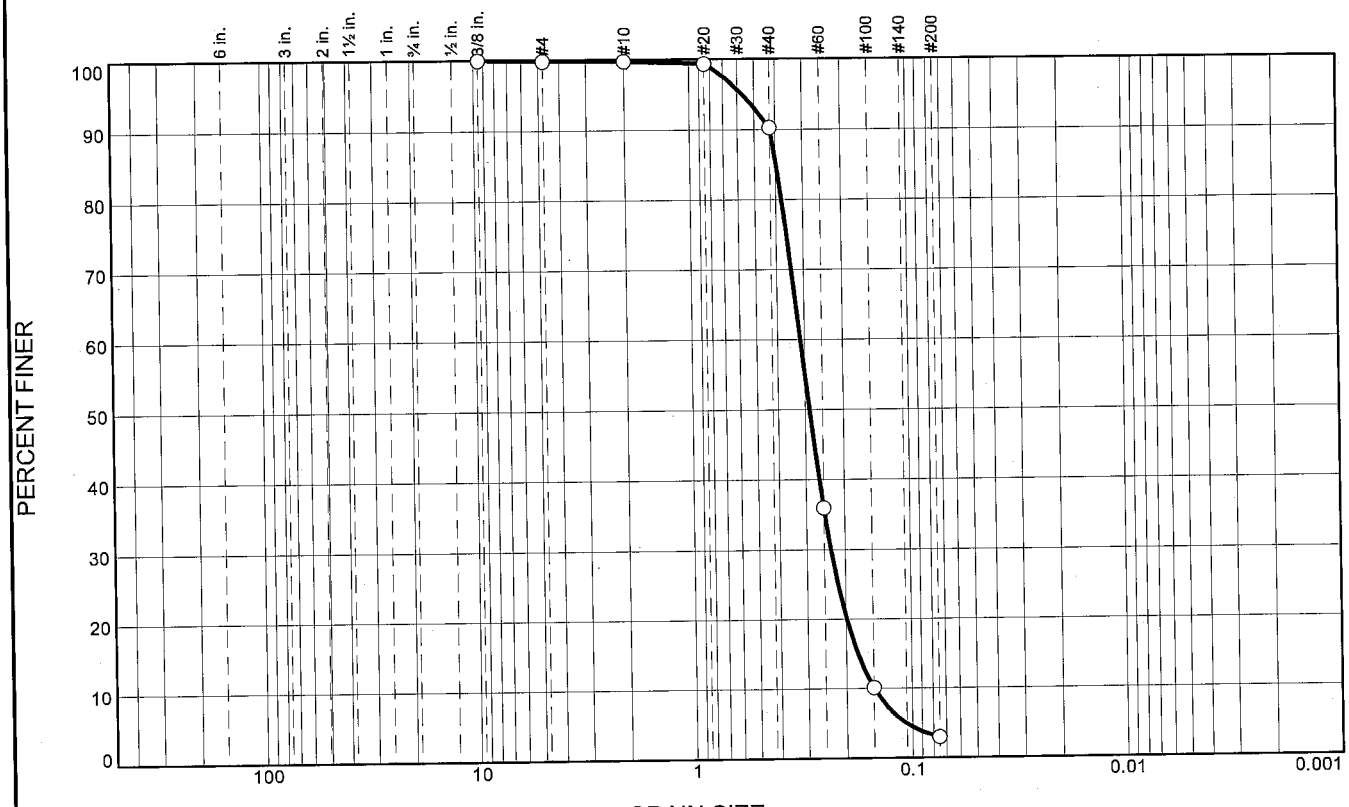
3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.20201° Long = -88.32751°

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

D_{90}= 0.4235 D_{85}= 0.3980 D_{60}= 0.3138
D_{50}= 0.2871 D_{30}= 0.2328 D_{15}= 0.1769
D_{10}= 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

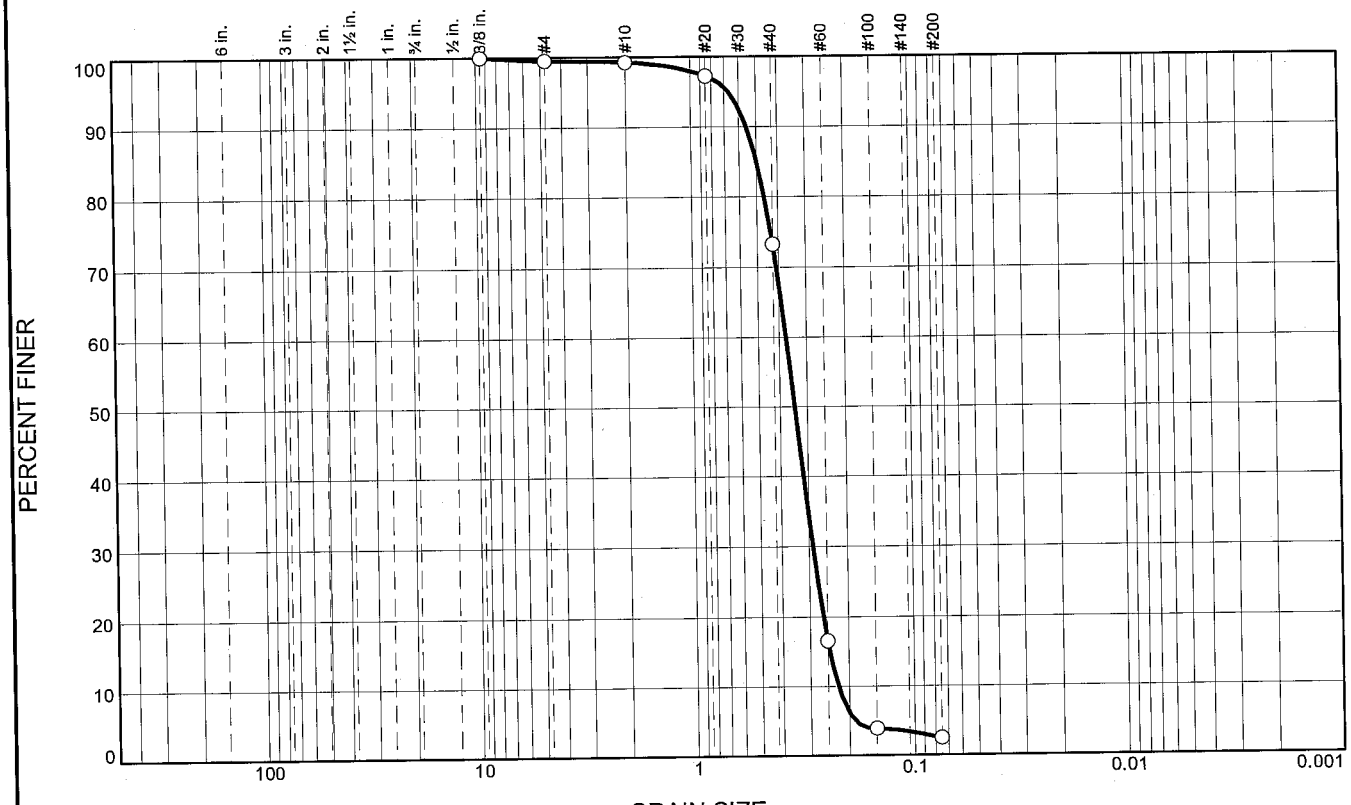
Thompson Engineering

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	0.5	0.3	25.9	70.8	2.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.5		
#10	99.2		
#20	97.2		
#40	73.3		
#60	16.6		
#100	3.9		
#200	2.5		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.5545 D_{85}= 0.4991 D_{60}= 0.3739
D_{50}= 0.3432 D_{30}= 0.2887 D_{15}= 0.2445
D_{10}= 0.2240 C_u= 1.67 C_c= 1.00

Classification

USCS= SP AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-9-10B
Sample Number: TE Lab ID: 4569.20 **Depth:** 7.6 12.6 (ft.) **Date:** 7/8/10

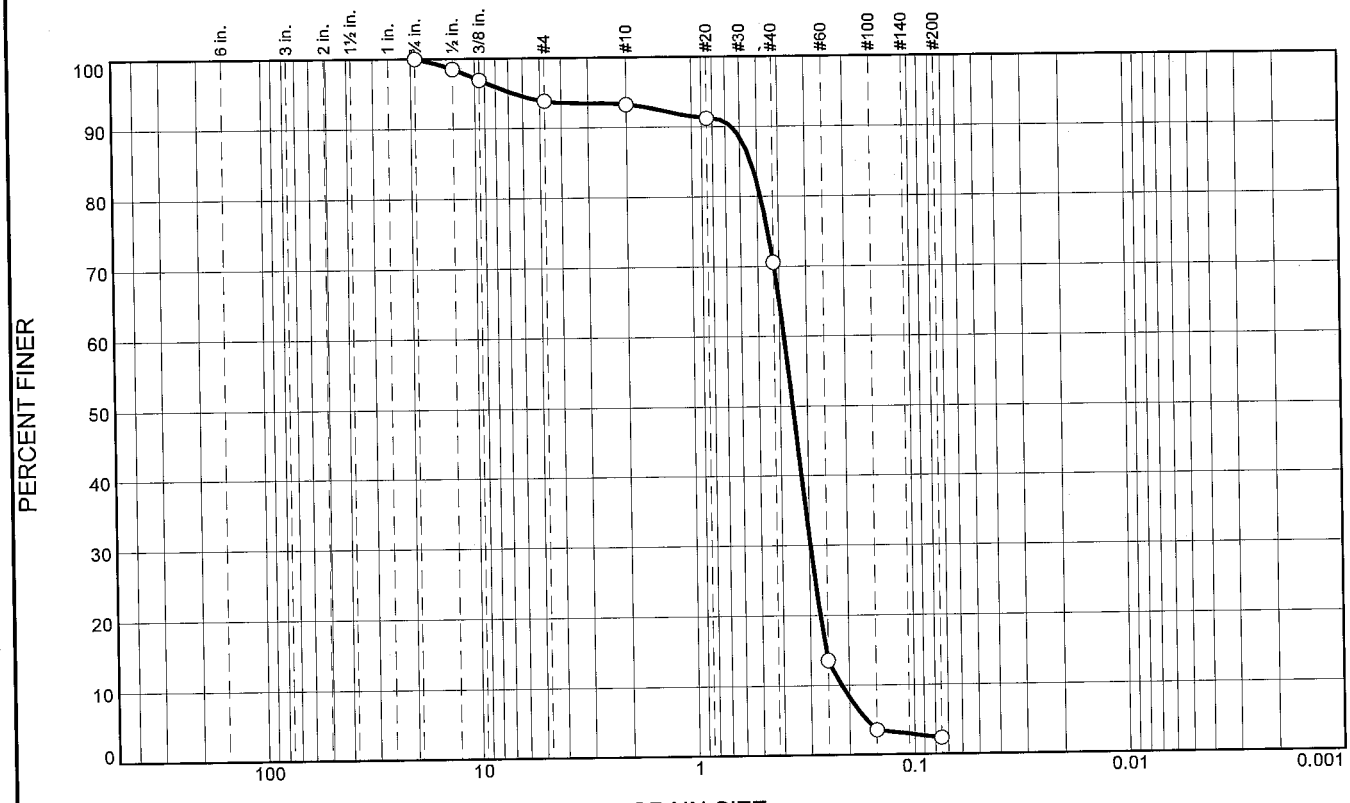
Thompson Engineering

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

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

D_{90}= 0.6529 D_{85}= 0.5341 D_{60}= 0.3828
D_{50}= 0.3513 D_{30}= 0.2968 D_{15}= 0.2547
D_{10}= 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: MsCIP Barrier Island Restoration, Petit Bois Pass- AL West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PB-010-10 — LOCATION COORDINATES: E = 1,131,666 N = 253,687	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.:	12. TOTAL SAMPLES — DISTURBED: 2 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES:
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL: — BEARING:	14. WATER DEPTH: 27 Ft.
	15. DATE BORING — STARTED: 06-26-10 — COMPLETED: 06-26-10
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -26.8 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 14.6 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Marty Gates, Geologist

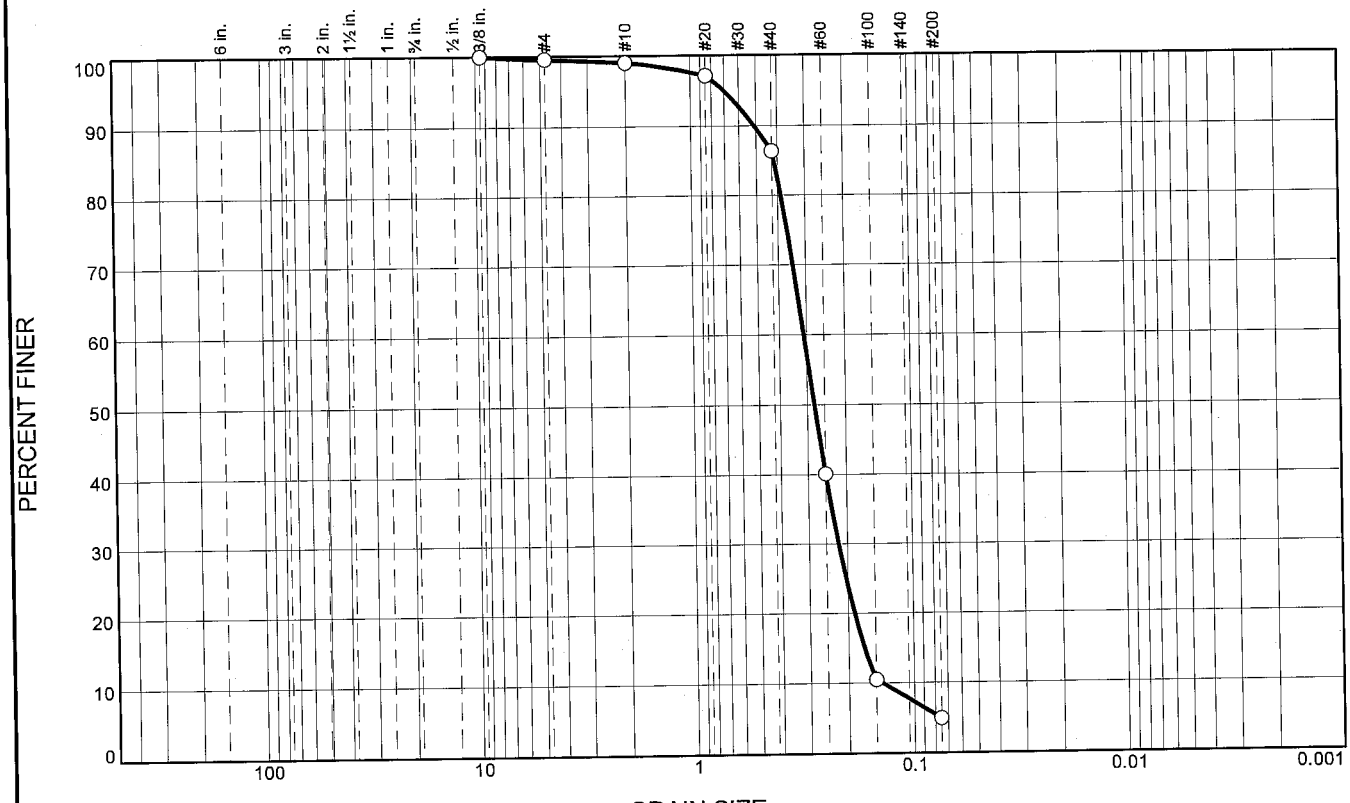
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-26.8	0.0				
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, trace shell fragments, lt. gray (SP)	A	Classification: SP Color: 2.5Y 6/2-light brownish gray D50: 0.2788 mm % Fines: 4.9
				B	Classification: SP-SM Color: 2.5Y 6/2-light brownish gray D50: 0.3014 mm % Fines: 6.3
-33.8	7.0				
			CLAY, lean, dark gray (CL)	NS	
-36.7	9.9				
			SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt (SM)		
-38.4	11.6				
			CLAY, lean, dark gray (CL)		
-41.4	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. 3. Seafloor elevation determined from 2010 USACE survey.		

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.19676° Long = -88.3667°

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.5	0.5	12.6	81.5	4.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.5		
#10	99.0		
#20	97.2		
#40	86.4		
#60	40.1		
#100	10.5		
#200	4.9		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.5096 D_{85}= 0.4158 D_{60}= 0.3095
D_{50}= 0.2788 D_{30}= 0.2197 D_{15}= 0.1692
D_{10}= 0.1410 C_u= 2.20 C_c= 1.11

Classification

USCS= SP AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-10-10A
Sample Number: TE Lab ID: 4569.22 **Depth:** 0.0 - 3.5 (ft.) **Date:** 7/8/10

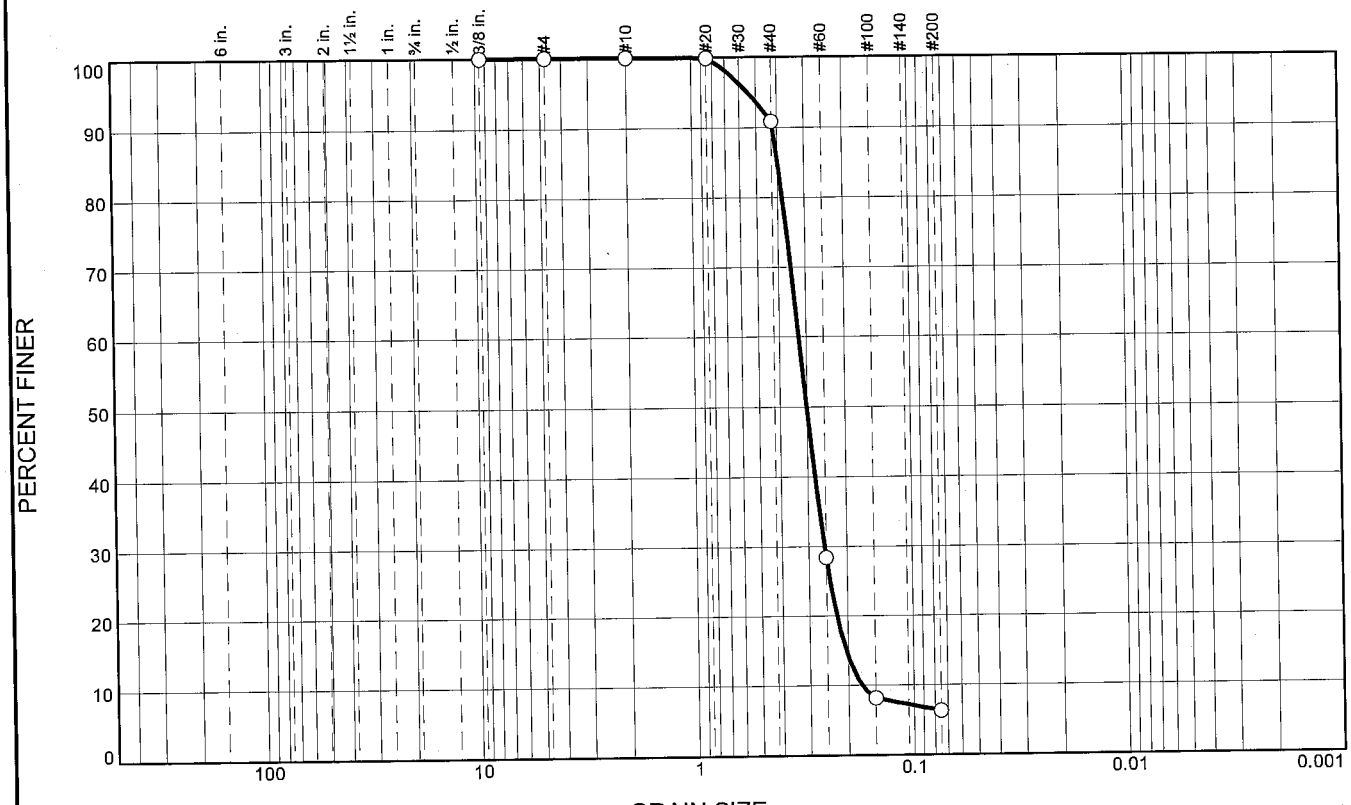
Thompson Engineering

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	0.0	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

D_{90}= 0.4207 D_{85}= 0.3993 D_{60}= 0.3253
D_{50}= 0.3014 D_{30}= 0.2541 D_{15}= 0.2045
D_{10}= 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	MsCIP Barrier Island Restoration Petit Bois Pass- AL East
2. BORING DESIGNATION	BI-PB-011-10
LOCATION COORDINATES	E = 1,140,842 N = 251,922
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	18.3 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED 0 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	37 Ft.
15. DATE BORING	STARTED 06-26-10 / COMPLETED 06-26-10
16. ELEVATION TOP OF BORING	-35.5 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
-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)		
-45.5	10.0			NS	
			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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.19180° Long = -88.33768°

Boring Designation BI-PB-012-10

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass- AL East	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PB-012-10 — LOCATION COORDINATES: E = 1,147,712 N = 254,556	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 3 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 35 Ft.
	15. DATE BORING — STARTED: 06-25-10 — COMPLETED: 06-25-10
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -34.8 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 18.4 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Marty Gates, Geologist

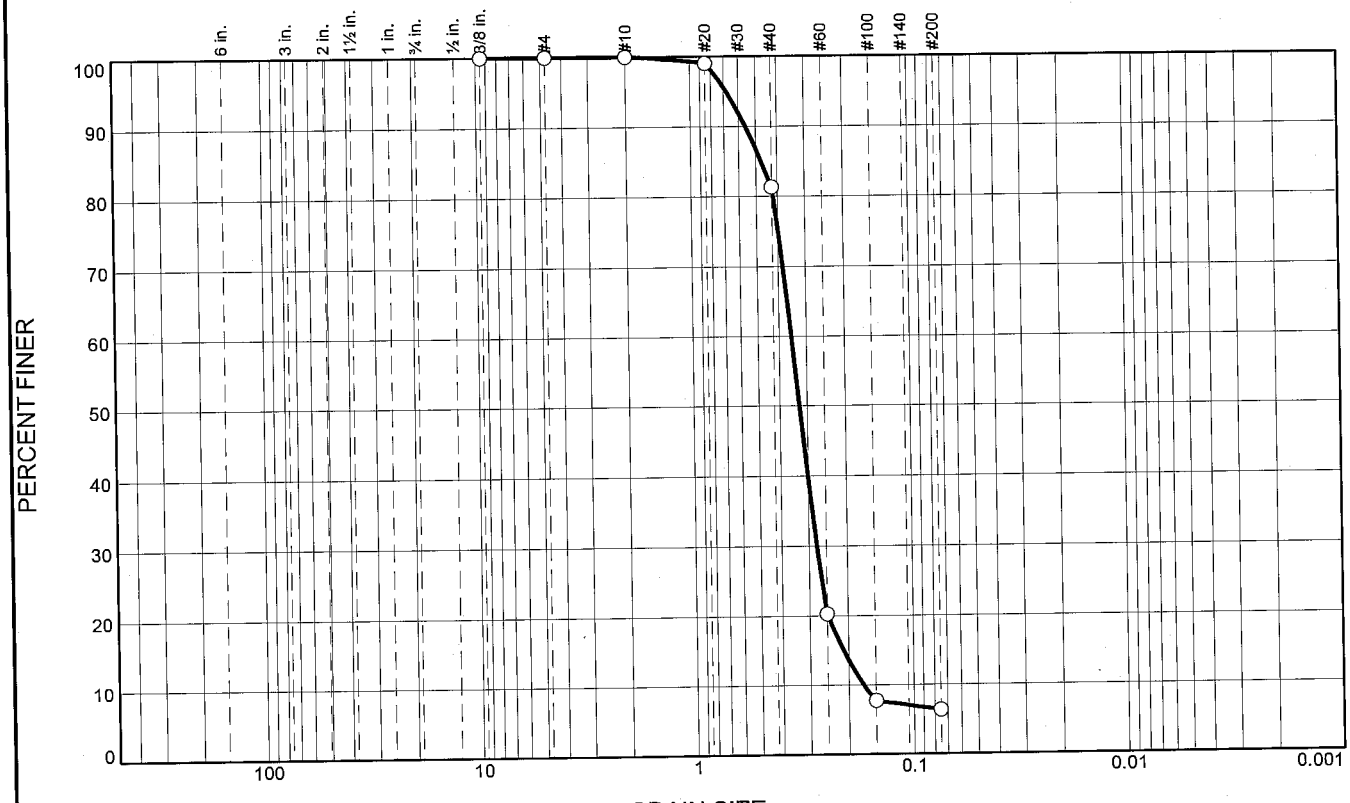
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-34.8	0.0				
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace silt, lt. gray (SP)	A	Classification: SP-SM Color: 2.5Y 7/2-light gray D50: 0.3257 mm % Fines: 6.3
				B	Classification: SP Color: 2.5Y 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
-53.2	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. 3. Seafloor elevation determined from 2010 USACE survey.		

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.19896° Long = -88.3159°

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

D_{90}= 0.5565 D_{85}= 0.4724 D_{60}= 0.3520
D_{50}= 0.3257 D_{30}= 0.2764 D_{15}= 0.2106
D_{10}= 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

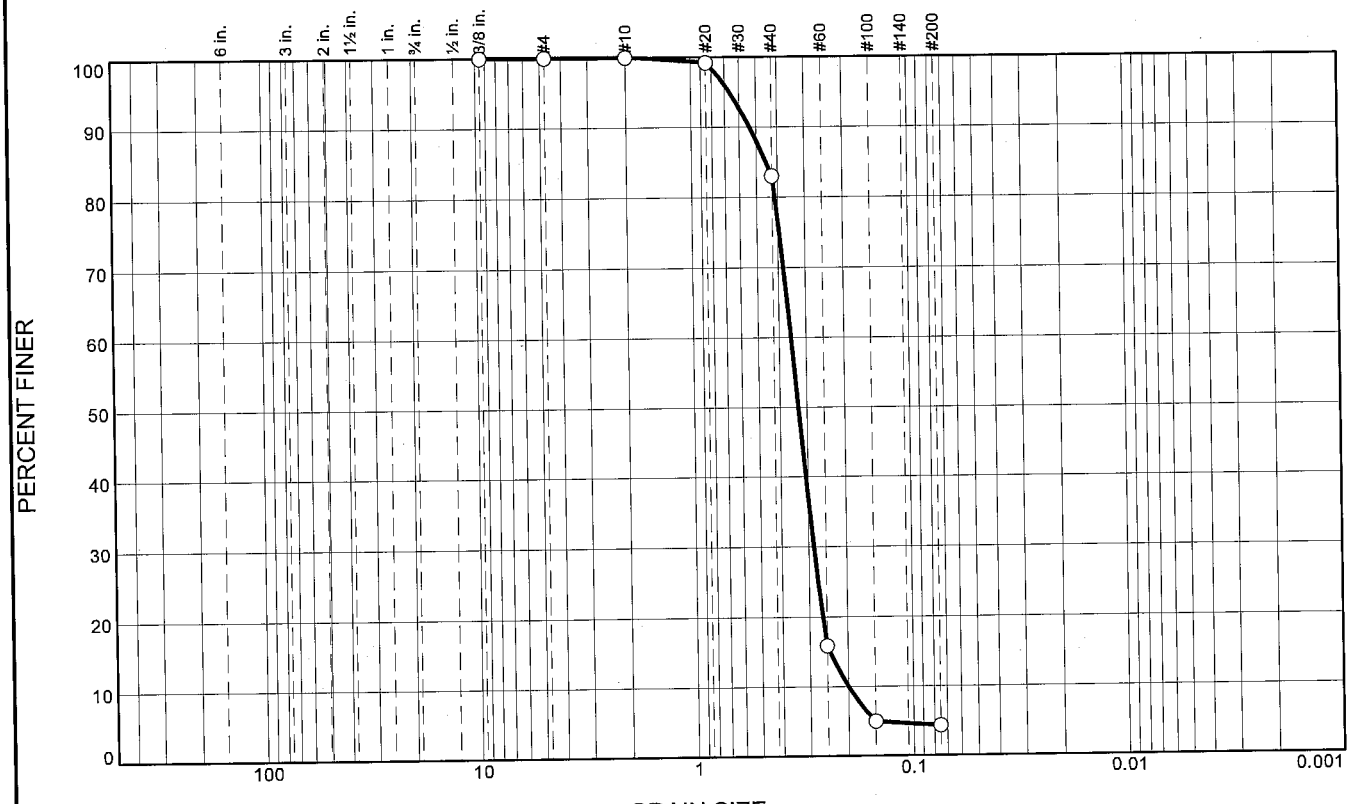
Thompson Engineering

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



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	17.0	78.7	4.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.2		
#40	83.0		
#60	15.9		
#100	5.0		
#200	4.3		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.5361 D_{85}= 0.4517 D_{60}= 0.3532
D_{50}= 0.3292 D_{30}= 0.2847 D_{15}= 0.2426
D_{10}= 0.1996 C_u= 1.77 C_c= 1.15

Classification

USCS= SP AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-12-10B
Sample Number: TE Lab ID: 4569.25 **Depth:** 6.0 - 12.0 (ft.) **Date:** 7/8/10

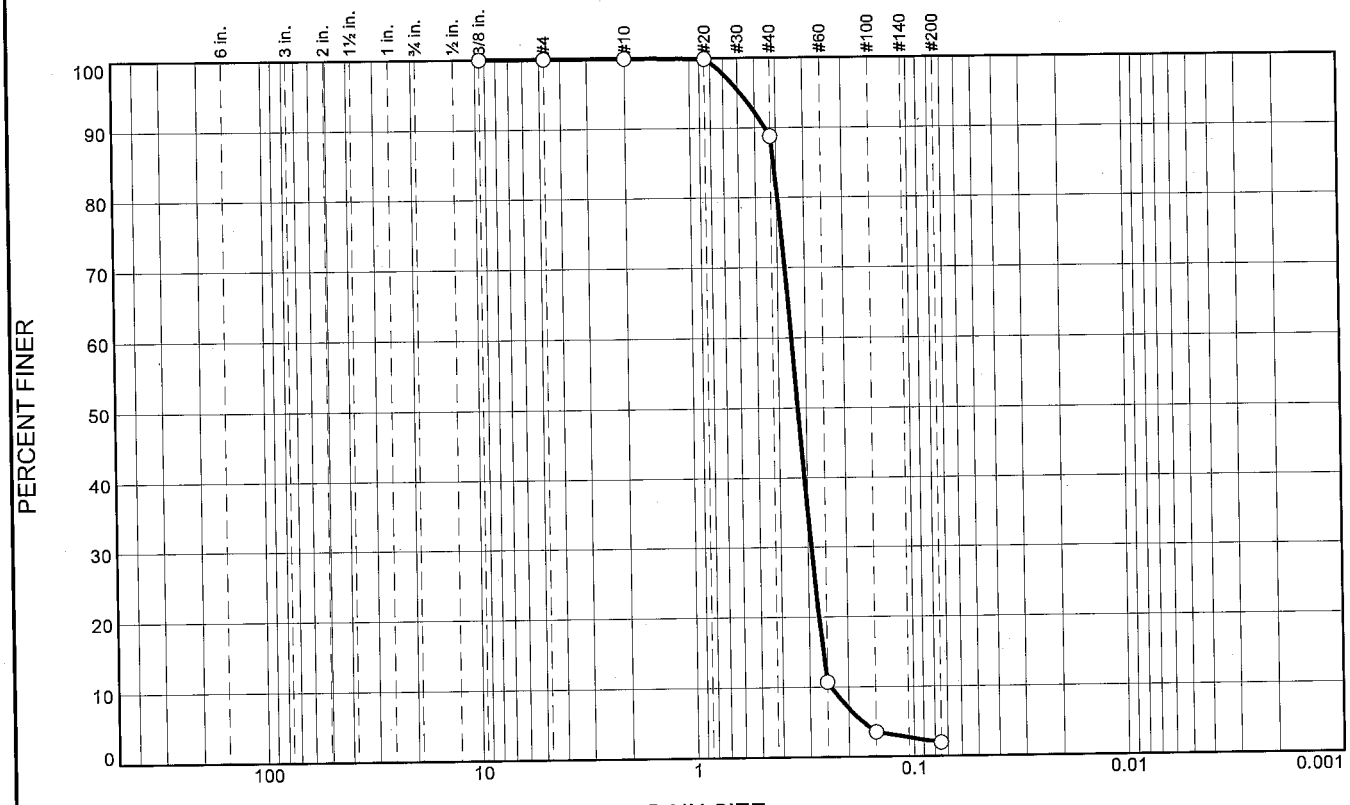
Thompson Engineering

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	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

D_{90}= 0.4483 D_{85}= 0.4117 D_{60}= 0.3487
D_{50}= 0.3286 D_{30}= 0.2907 D_{15}= 0.2603
D_{10}= 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	INSTALLATION	SHEET 1 OF 1 SHEETS
	South Atlantic	Mobile District	

1. PROJECT MsCIP Barrier Island Restoration Petit Bois Pass- AL West		9. SIZE AND TYPE OF BIT N/A	
		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83 / VERTICAL NAVD88
2. BORING DESIGNATION BI-PB-013-10	LOCATION COORDINATES E = 1,140,818 N = 250,234	11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore	☐ AUTO HAMMER ☐ 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 ☒ VERTICAL ☐ INCLINED	DEG. FROM VERTICAL / BEARING	14. WATER DEPTH 40 Ft.	
		15. DATE BORING	STARTED 06-26-10 / COMPLETED 06-26-10
6. THICKNESS OF OVERBURDEN N/A		16. ELEVATION TOP OF BORING -38.4 Ft.	
7. DEPTH DRILLED INTO ROCK N/A		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				
-48.8	10.4		CLAY, lean, dark gray (CL)	NS	
-56.6	18.2		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.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.18716° Long = -88.33778°

Boring Designation BI-PB-014-10

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass- AL East	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PB-014-10 — LOCATION COORDINATES: E = 1,149,377 N = 253,637	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 3 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 38 Ft.
	15. DATE BORING — STARTED: 06-26-10 — COMPLETED: 06-26-10
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -36.8 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 17.4 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Marty Gates, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-36.8	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
-54.2	17.4			C	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.3535 mm % Fines: 4.6

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.

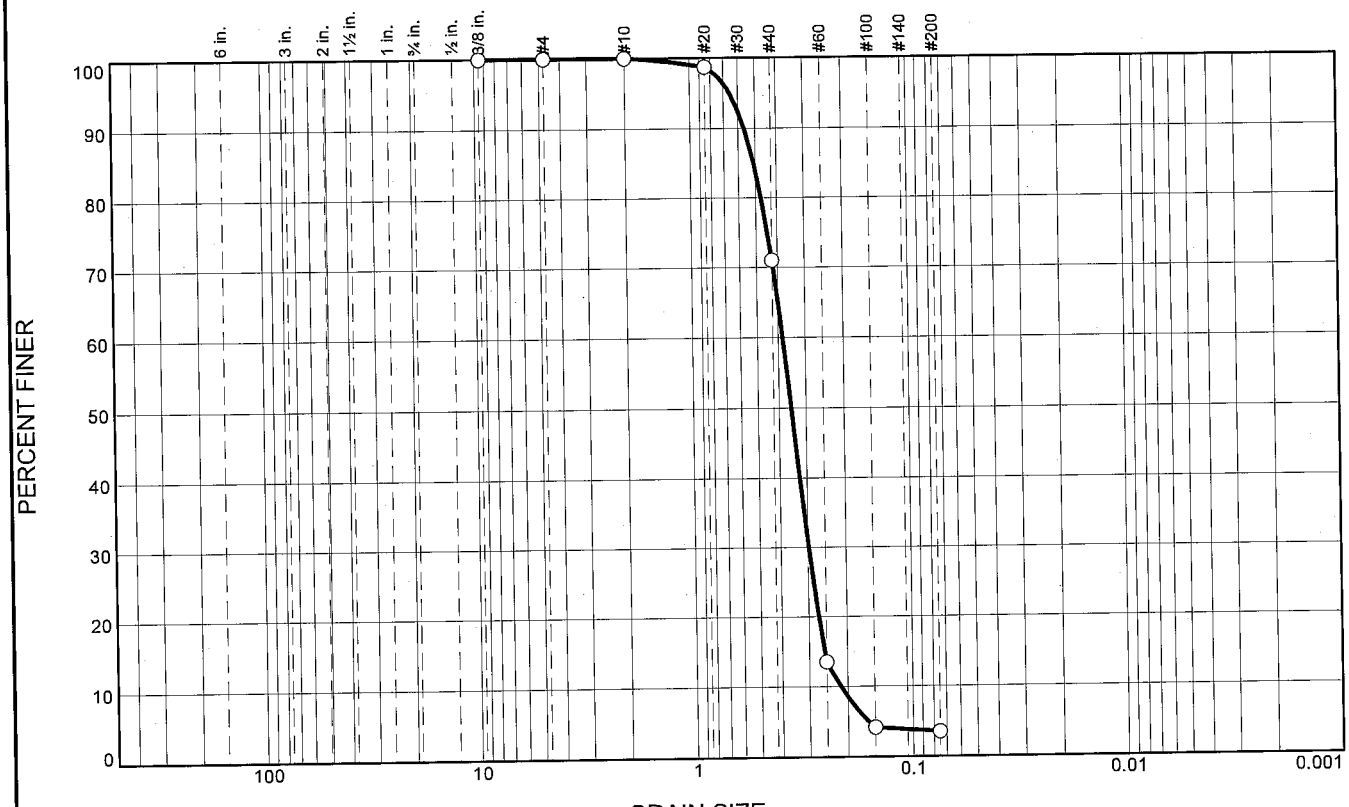
3. Seafloor elevation determined from 2010 USACE survey.

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.19641° Long = -88.31064°

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

D_{90}= 0.5625 D_{85}= 0.5098 D_{60}= 0.3831
D_{50}= 0.3521 D_{30}= 0.2977 D_{15}= 0.2550
D_{10}= 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

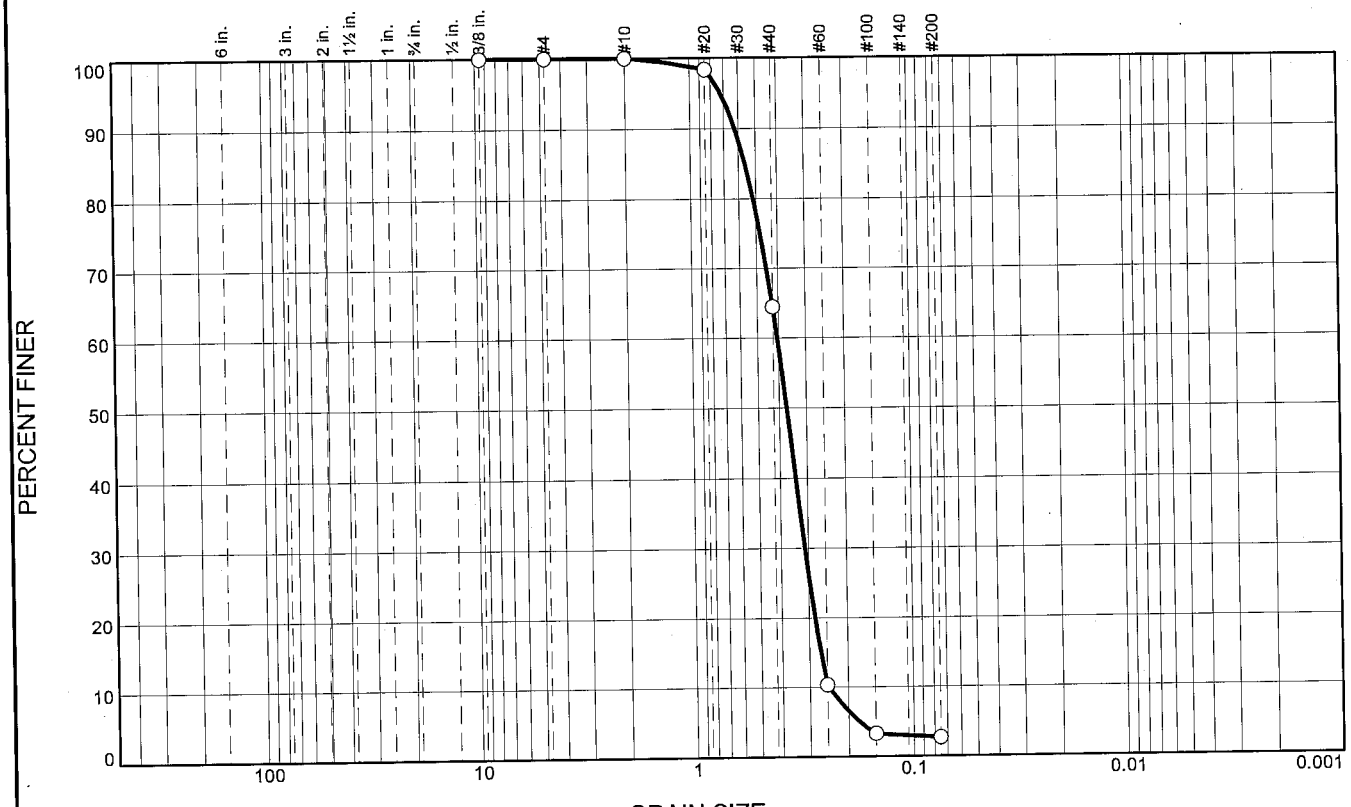
Thompson Engineering

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), meidum to fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.6226 D_{85}= 0.5601 D_{60}= 0.4064
D_{50}= 0.3710 D_{30}= 0.3110 D_{15}= 0.2665
D_{10}= 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

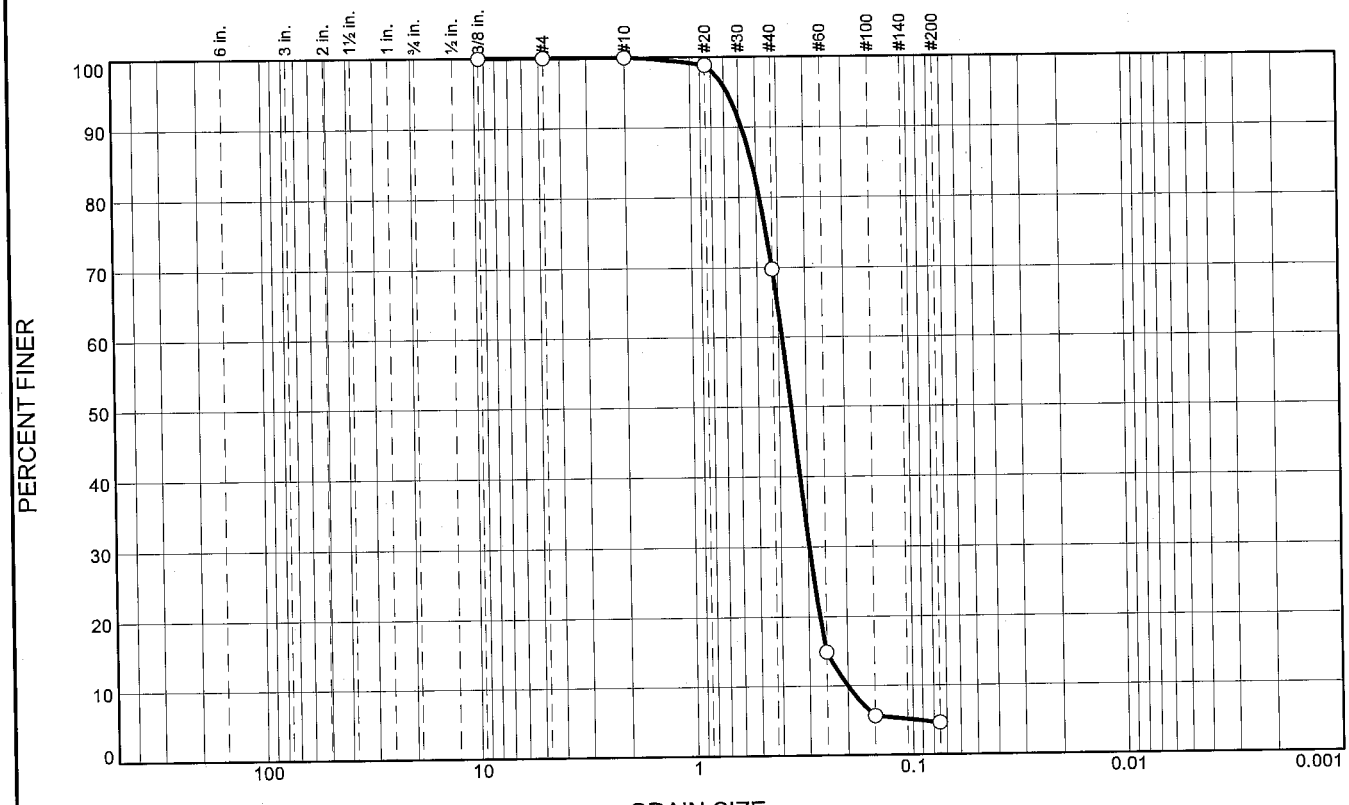
Thompson Engineering

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

D_{90}= 0.5779 D_{85}= 0.5217 D_{60}= 0.3862
D_{50}= 0.3535 D_{30}= 0.2963 D_{15}= 0.2505
D_{10}= 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 2 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass- AL East	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PB-015-10 — LOCATION COORDINATES: E = 1,152,285 N = 252,108	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 2 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 42 Ft.
	15. DATE BORING — STARTED: 06-26-10 — COMPLETED: 06-26-10
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -40.7 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 19.1 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Marty Gates, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-40.7	0.0				
-45.4	4.7		CLAY, lean, dark gray (CL)	NS	
-52.8	12.1		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
				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)		

NOTES:

1. Soils are field visually classified in accordance with the Unified Soils Classification System.

2. NS = Sample not submitted for laboratory analysis from this interval.

3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.19217° Long = -88.30146°

DRILLING LOG (Cont. Sheet)	INSTALLATION Mobile District		SHEET 2 OF 2 SHEETS
PROJECT MsCIP Barrier Island Restoration	COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83	VERTICAL NAVD88
LOCATION COORDINATES X = 1,152,285 Y = 252,108	ELEVATION TOP OF BORING -40.7 Ft.		

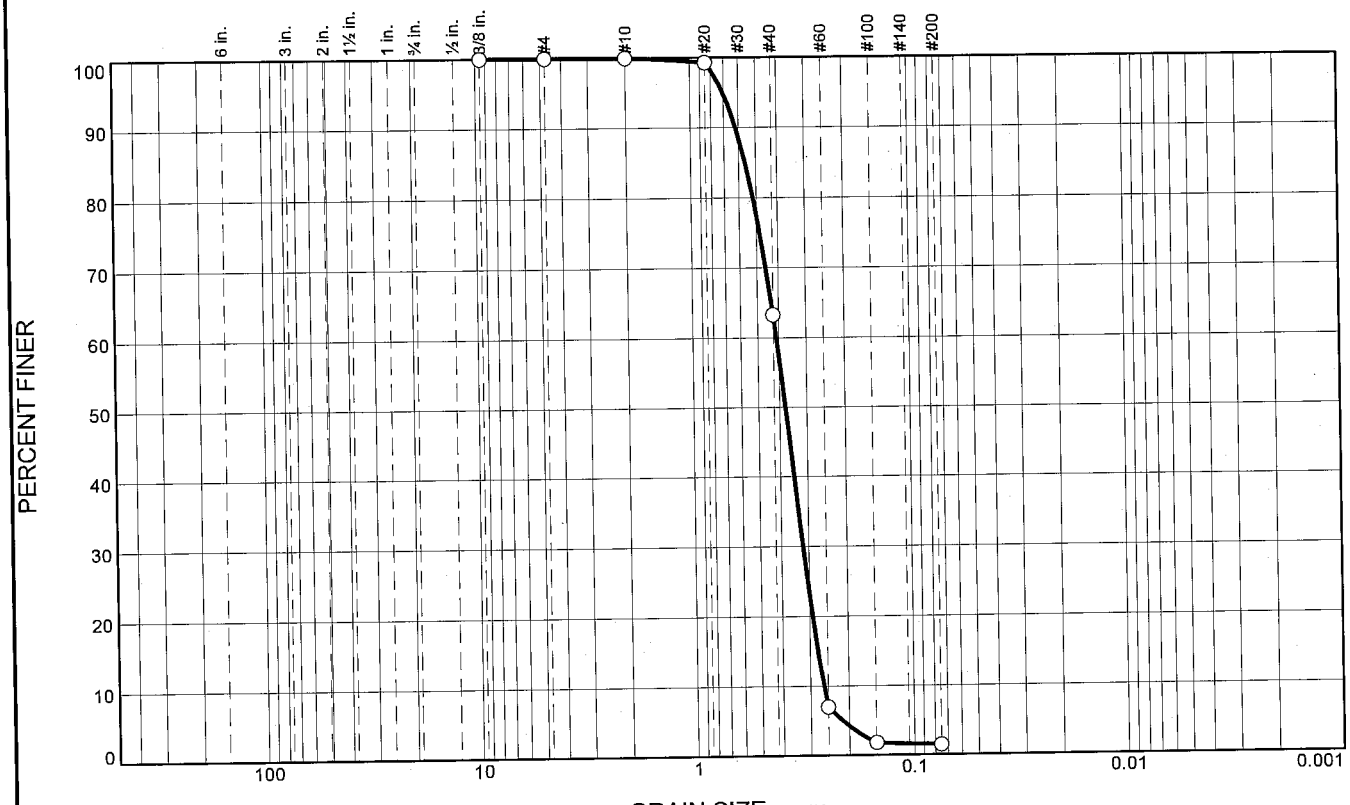
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
			factor.		

30
35
40
45
50
55
60

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.19217° Long = -88.30146°

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	36.7	61.8	1.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	100.0		
#20	99.3		
#40	63.3		
#60	7.0		
#100	1.8		
#200	1.5		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.6172 D_{85}= 0.5597 D_{60}= 0.4119
D_{50}= 0.3772 D_{30}= 0.3189 D_{15}= 0.2767
D_{10}= 0.2609 C_u= 1.58 C_c= 0.95

Classification

USCS= SP AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-15-10A
Sample Number: TE Lab ID: 4569.30 **Depth:** 4.7 - 9.0 (ft.) **Date:** 7/8/10

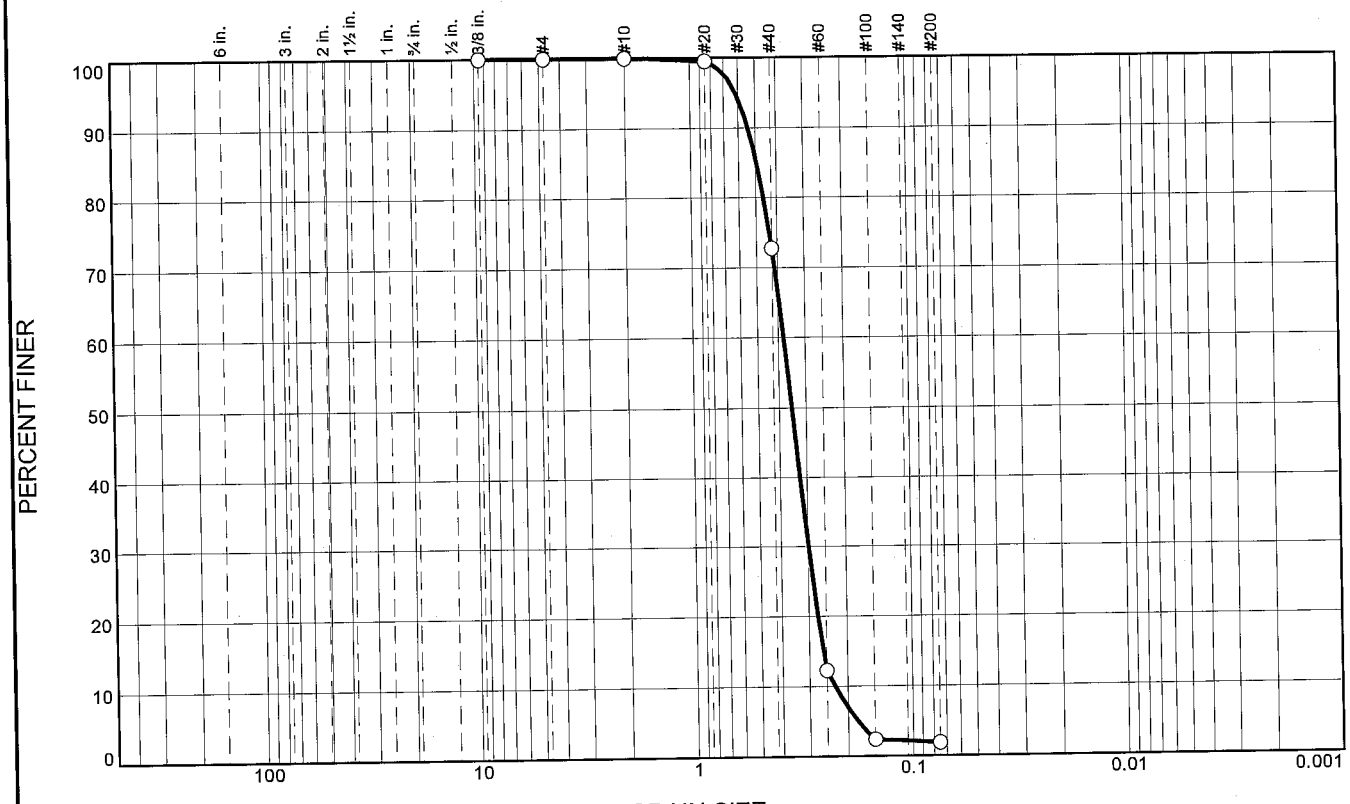
Thompson Engineering

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	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

D_{90}= 0.5398 D_{85}= 0.4941 D_{60}= 0.3791
D_{50}= 0.3500 D_{30}= 0.2984 D_{15}= 0.2585
D_{10}= 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 2 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass- AL East	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PB-016-10 — LOCATION COORDINATES: E = 1,150,827 N = 255,753	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 4 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 34 Ft.
	15. DATE BORING — STARTED: 06-26-10 — COMPLETED: 06-26-10
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -32.7 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: Marty Gates, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-32.7	0.0				
-35.2	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
-47.7	15.0			C	Classification: SP-SM Color: 2.5Y 7/2-light gray D50: 0.3364 mm % Fines: 5.1
-52.7	20.0		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
			NOTES: 1. Soils are field visually classified in accordance with the Unified Soils Classification System. 2. NS = Sample not submitted for laboratory analysis from this interval. 3. Seafloor elevation determined from 2010		

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.20221° Long = -88.30602°

DRILLING LOG (Cont. Sheet)	INSTALLATION Mobile District		SHEET 2 OF 2 SHEETS
PROJECT MsCIP Barrier Island Restoration	COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83	VERTICAL NAVD88
LOCATION COORDINATES X = 1,150,827 Y = 255,753	ELEVATION TOP OF BORING -32.7 Ft.		

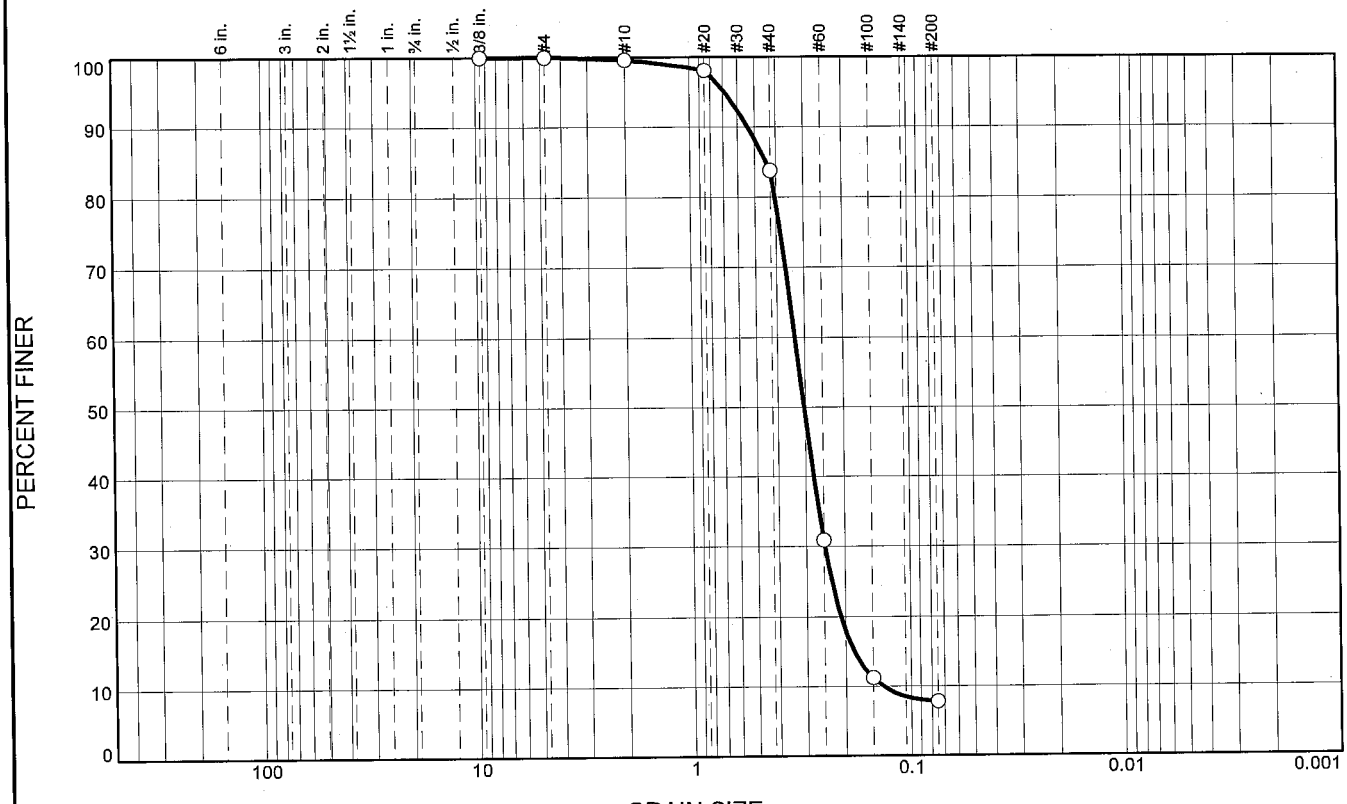
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
			USACE survey.		

30
35
40
45
50
55
60

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.20221° Long = -88.30602°

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

D_{90}= 0.5387 D_{85}= 0.4434 D_{60}= 0.3329
D_{50}= 0.3040 D_{30}= 0.2472 D_{15}= 0.1830
D_{10}= 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

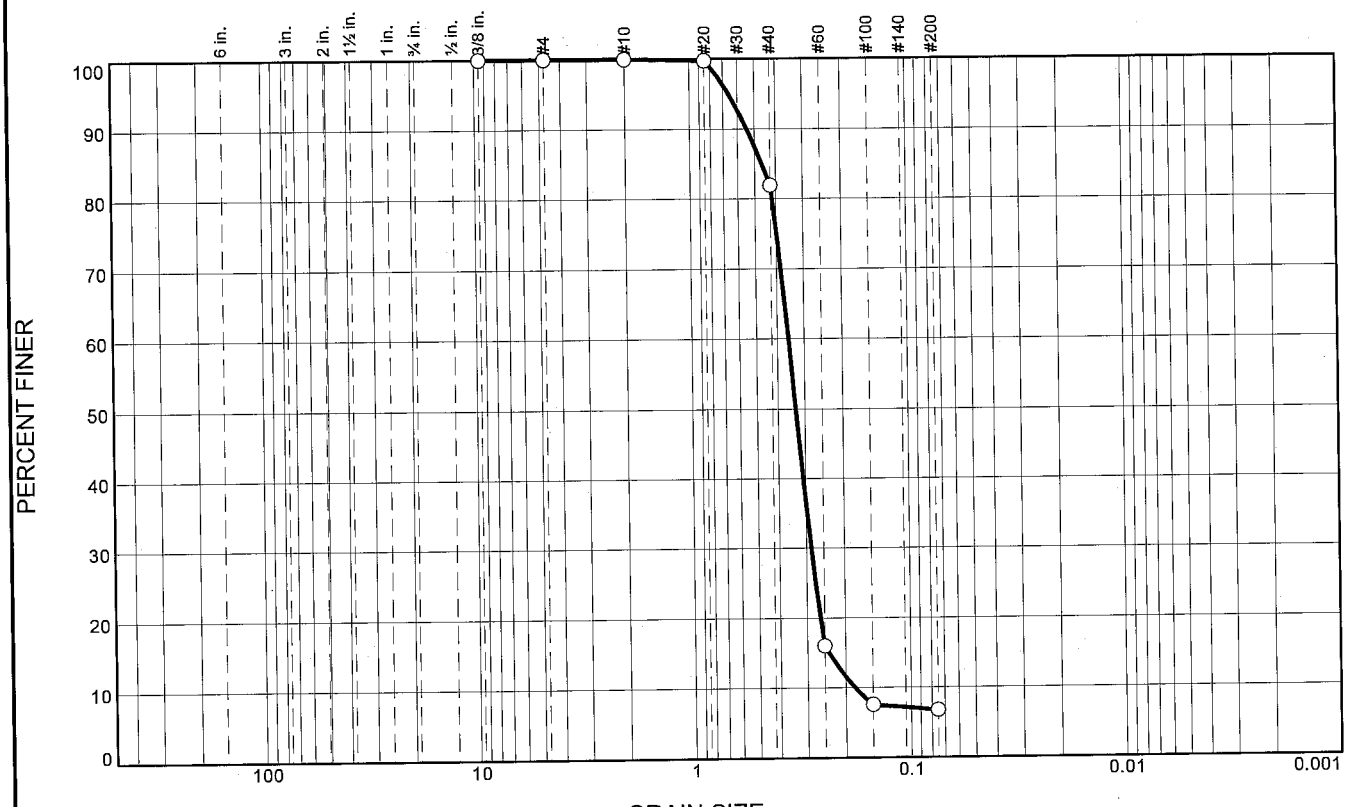
Thompson Engineering

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)

Material Description

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

Atterberg Limits

PL= LL= PI=

Coefficients

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

Classification

USCS= SP-SM AASHTO=

Remarks

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

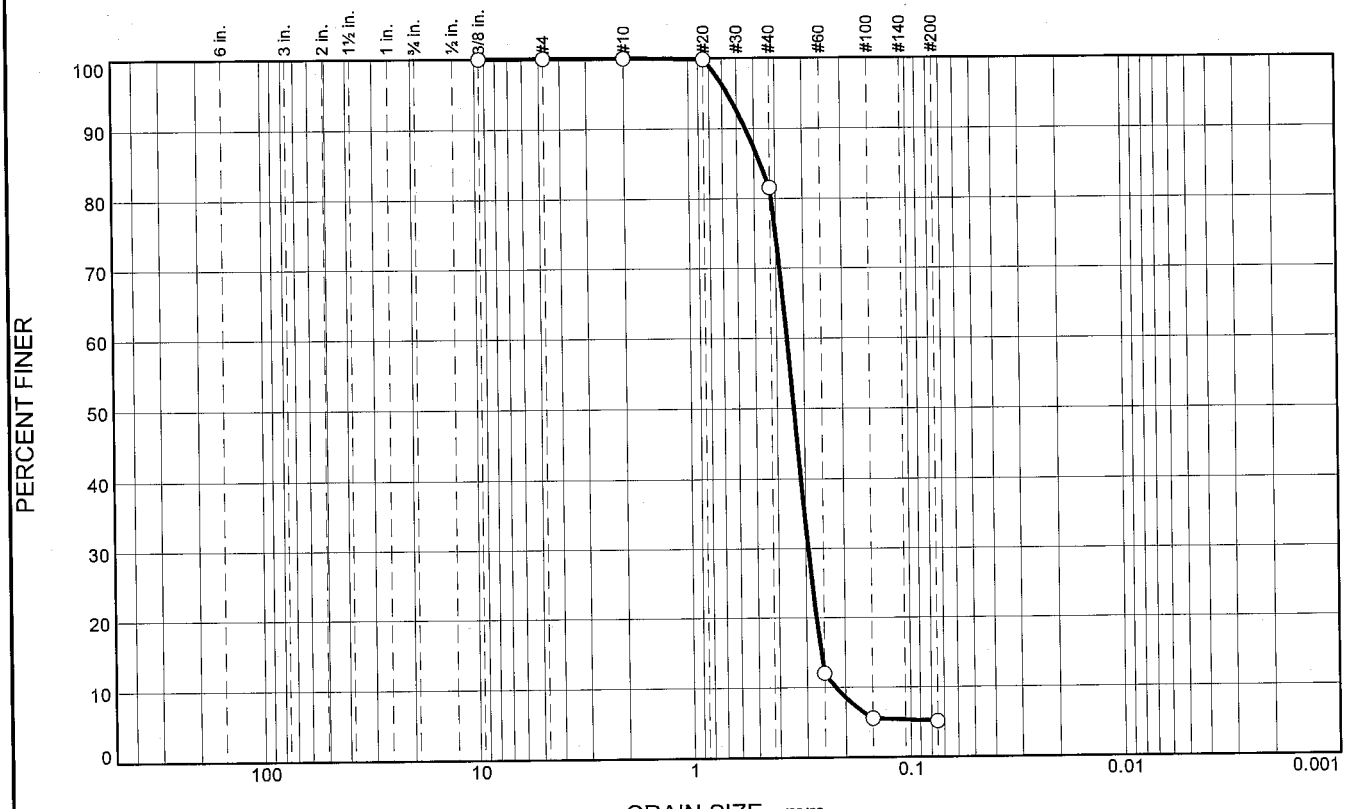
Thompson Engineering

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)

Material Description

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

Atterberg Limits

PL= LL= PI=

Coefficients

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

Classification

USCS= SP-SM AASHTO=

Remarks

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

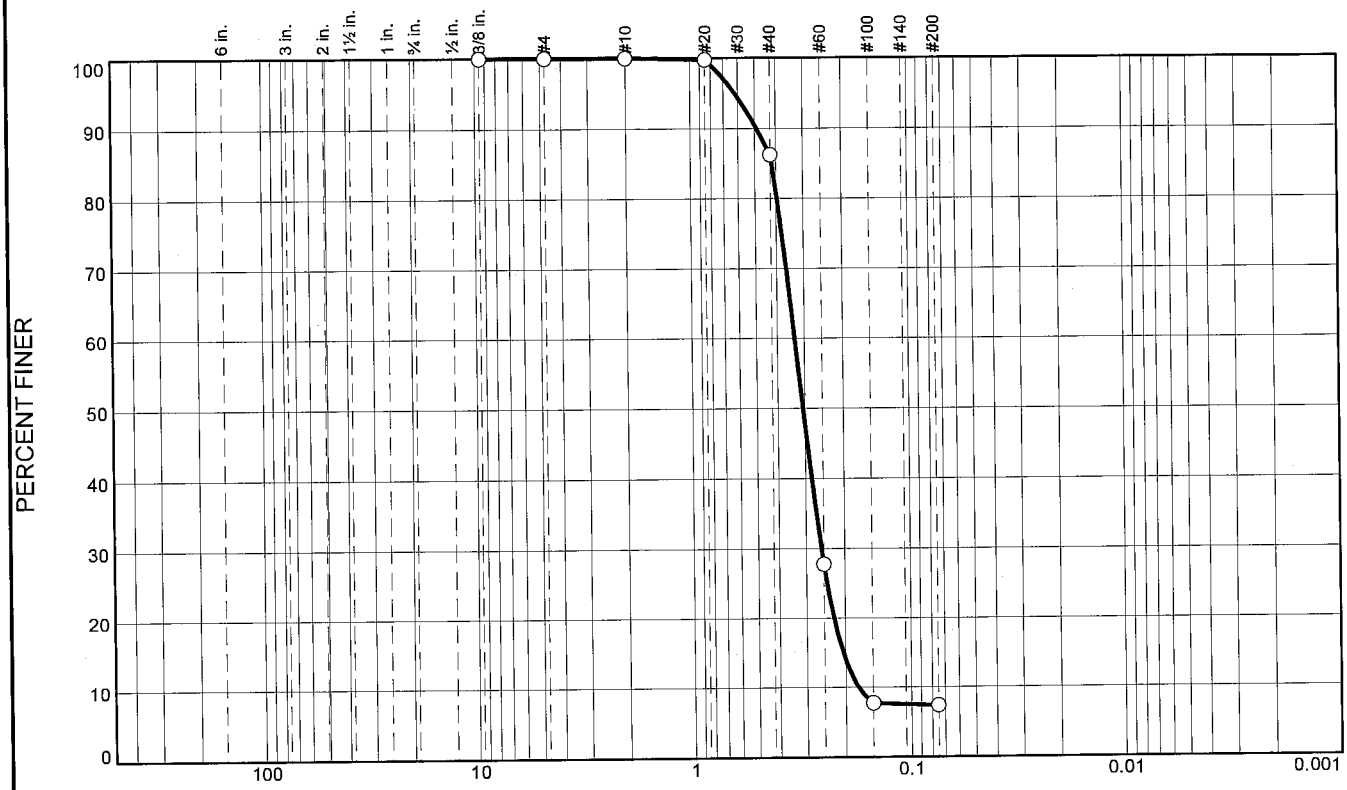
Thompson Engineering

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)

Material Description

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

Atterberg Limits

PL= LL= PI=

Coefficients

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

Classification

USCS= SP-SM AASHTO=

Remarks

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 2 SHEETS

1. PROJECT MsCIP Barrier Island Restoration Petit Bois Pass- AL East	9. SIZE AND TYPE OF BIT N/A
	10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.) | HORIZONTAL NAD83 | VERTICAL NAVD88
2. BORING DESIGNATION BI-PB-017-10 | LOCATION COORDINATES E = 1,150,383 N = 258,337	11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore ☐ AUTO HAMMER ☐ 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 ☒ VERTICAL ☐ INCLINED | DEG. FROM VERTICAL | BEARING	14. WATER DEPTH 28 Ft.
	15. DATE BORING | STARTED 06-26-10 | COMPLETED 06-26-10
6. THICKNESS OF OVERBURDEN N/A	16. ELEVATION TOP OF BORING -26.6 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 Marty Gates, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-26.6	0.0				
			CLAY, lean, dark gray (CL)	NS	
-45.6	19.0				
-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.

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.20932° Long = -88.30739°

DRILLING LOG (Cont. Sheet)	INSTALLATION Mobile District		SHEET 2 OF 2 SHEETS
PROJECT MsCIP Barrier Island Restoration	COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83	VERTICAL NAVD88
LOCATION COORDINATES X = 1,150,383 Y = 258,337	ELEVATION TOP OF BORING -26.6 Ft.		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
			3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.		

30
35
40
45
50
55
60

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.20932° Long = -88.30739°

Boring Designation BI-PB-018-10

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Mobile District	SHEET 1 OF 1 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass- AL West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PB-018-10 — LOCATION COORDINATES: E = 1,138,415 N = 255,697	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 2 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 27 Ft.
	15. DATE BORING — STARTED: 07-09-10 — COMPLETED: 07-09-10
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -26.8 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 15.8 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Valerie Morrow, Geotechnical Engineer

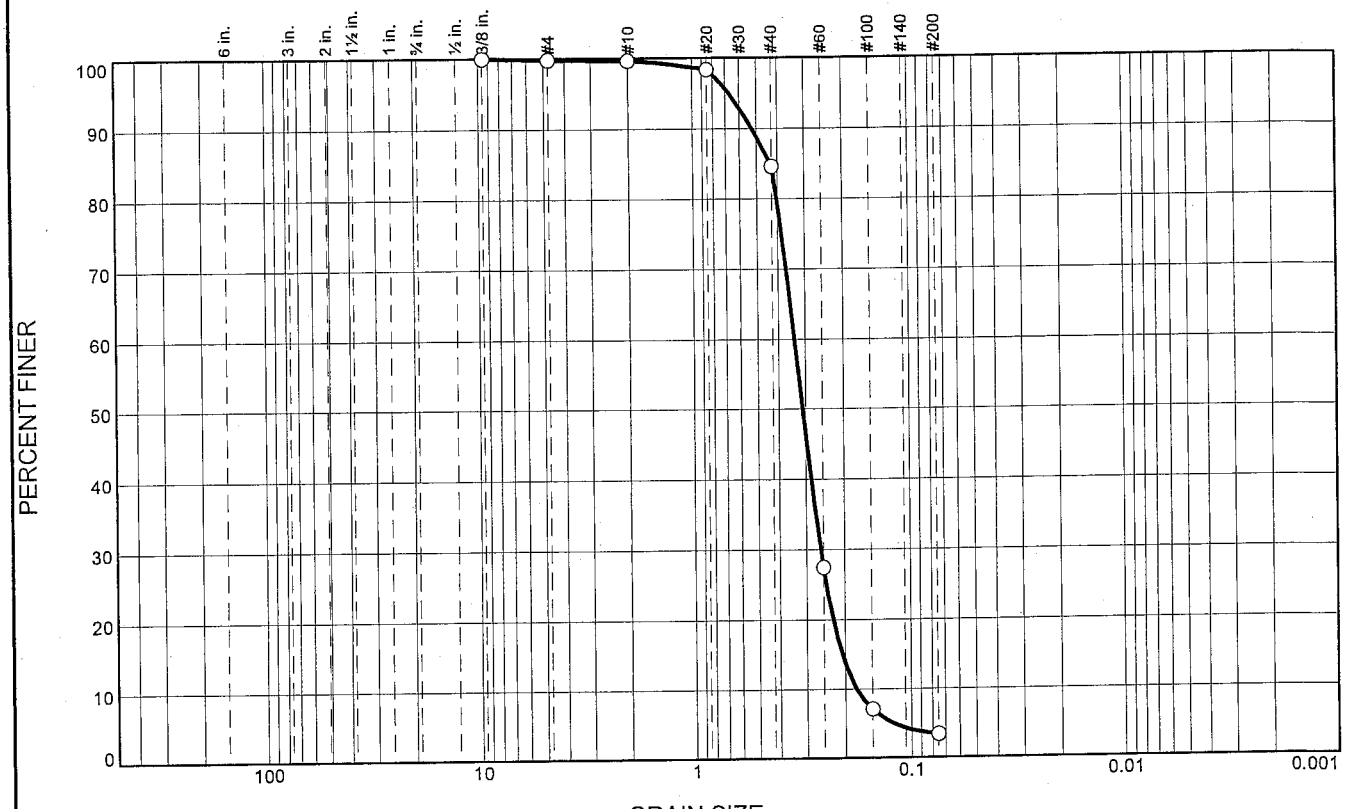
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-26.8	0.0				
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, lt. brown (SP)	A	Classification: SP Color: 10YR 6/2-light brownish gray D50: 0.309 mm % Fines: 3.4
				B	Classification: SP Color: 10YR 6/2-light brownish 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. 3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.		

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.20221° Long = -88.34531°

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		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.5255 D_{85}= 0.4318 D_{60}= 0.3360
D_{50}= 0.3090 D_{30}= 0.2572 D_{15}= 0.2060
D_{10}= 0.1777 C_u= 1.89 C_c= 1.11

Classification

USCS= SP AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-18-10A
Sample Number: TE Lab ID: 4578.08 **Depth:** 0.0 - 3.3 (ft.) **Date:** 7/16/10

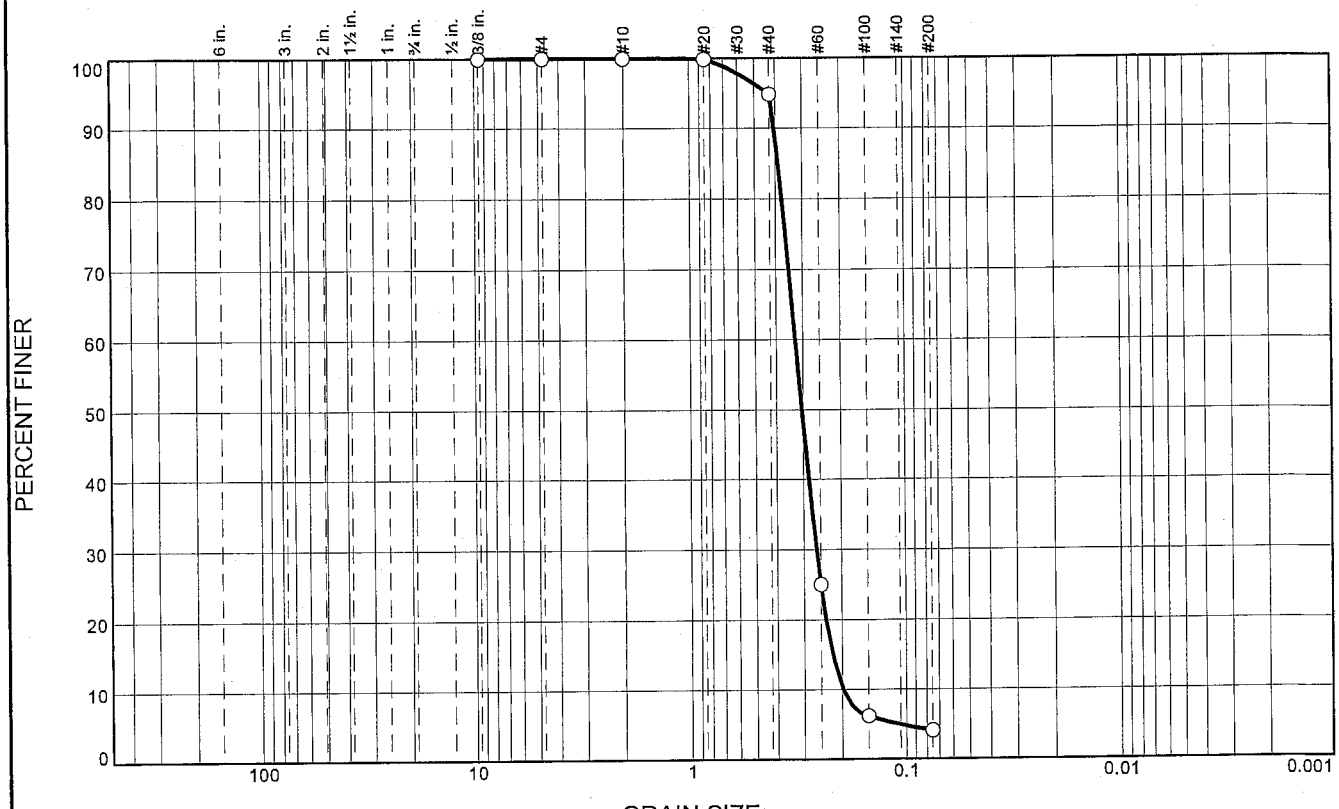
Thompson Engineering

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

D_{90}= 0.4051 D_{85}= 0.3882 D_{60}= 0.3248
D_{50}= 0.3036 D_{30}= 0.2617 D_{15}= 0.2205
D_{10}= 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: MsCIP Barrier Island Restoration, Petit Bois Pass- AL East	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PB-019-10 — LOCATION COORDINATES: E = 1,140,721 N = 255,806	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 2 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 30 Ft.
	15. DATE BORING — STARTED: 07-10-10 — COMPLETED: 07-10-10
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -28.3 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 18.0 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Valerie Morrow, Geotechnical Engineer

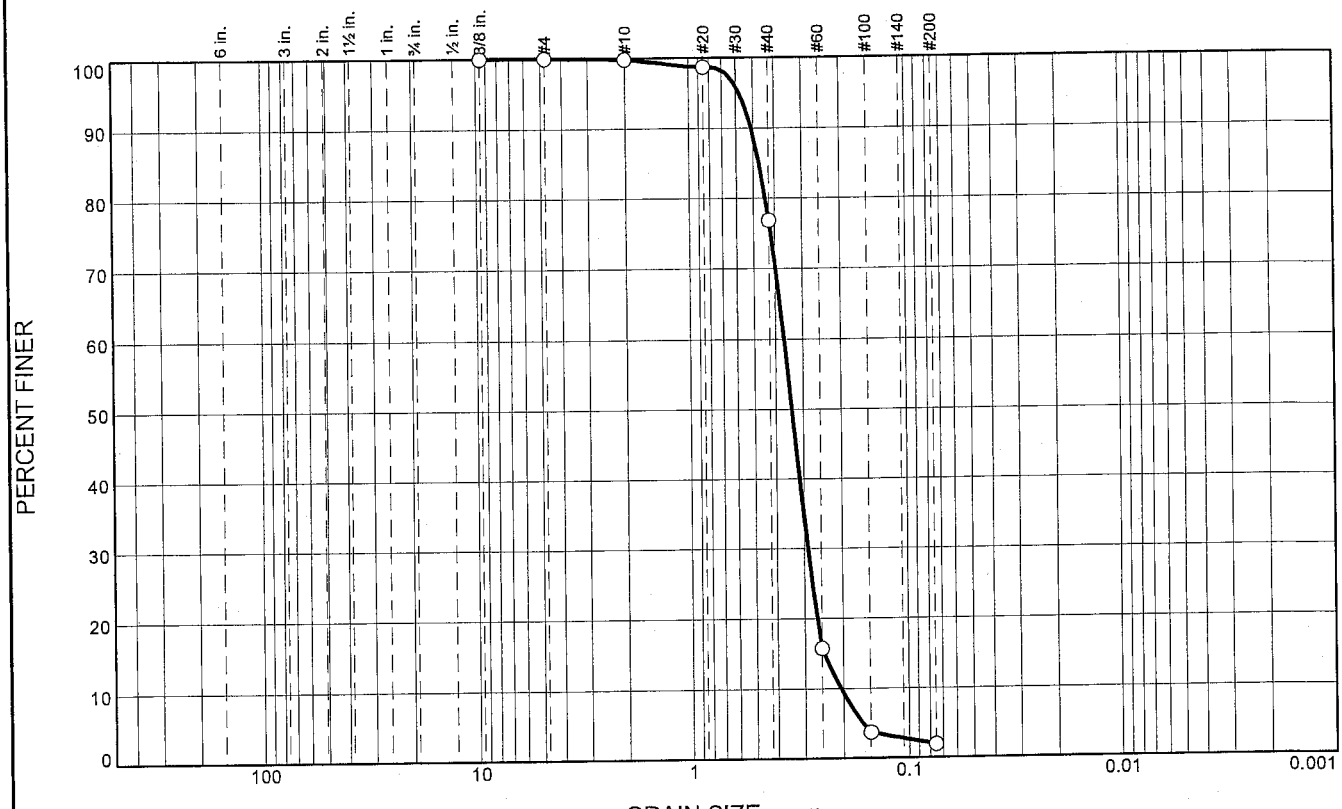
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-28.3	0.0				
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, lt. gray (SP)	A	Classification: SP Color: 2.5Y 7/2-light gray D50: 0.3382 mm % Fines: 1.9
				B	Classification: SP Color: 2.5Y 8/1-white D50: 0.3338 mm % Fines: 2
-36.9	8.6				
			SAND, clayey, mostly fine to medium-grained sand-sized quartz, some clay, gray (SC)	NS	
-39.2	10.9				
			CLAY, fat, trace silt, dark gray (CH)		
-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. 3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.		

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.20248° Long = -88.33801°

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	23.0	74.9	1.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.8		
#20	98.7		
#40	76.8		
#60	15.7		
#100	3.7		
#200	1.9		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.5095 D_{85}= 0.4692 D_{60}= 0.3658
D_{50}= 0.3382 D_{30}= 0.2883 D_{15}= 0.2445
D_{10}= 0.2052 C_u= 1.78 C_c= 1.11

Classification

USCS= SP AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-19-10A
Sample Number: TE Lab ID: 4578.10 **Depth:** 0.0 - 4.3 (ft.) **Date:** 7/16/10

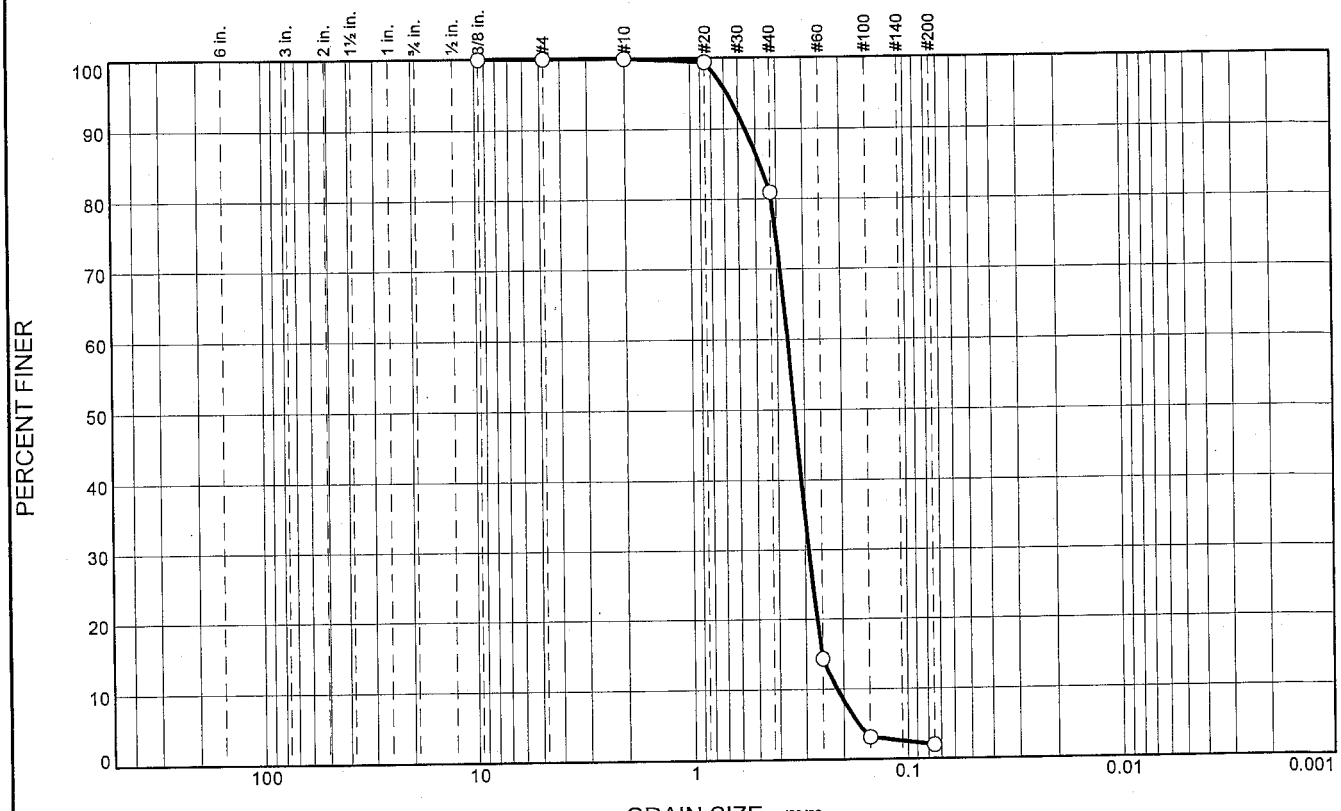
Thompson Engineering

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	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		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.5555 D_{85}= 0.4749 D_{60}= 0.3584
D_{50}= 0.3338 D_{30}= 0.2886 D_{15}= 0.2520
D_{10}= 0.2143 C_u= 1.67 C_c= 1.08

Classification

USCS= SP AASHTO=

Remarks

CADD CODE = CH10D965

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	INSTALLATION	SHEET 1 OF 1 SHEETS
	South Atlantic	Mobile District	

1. PROJECT MsCIP Barrier Island Restoration Petit Bois Pass- AL East		9. SIZE AND TYPE OF BIT N/A	
		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83 / VERTICAL NAVD88
2. BORING DESIGNATION BI-PB-020-10	LOCATION COORDINATES E = 1,142,190 N = 255,783	11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore	☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY Corps of Engineers - CESAM	CONTRACTOR FILE NO.	12. TOTAL SAMPLES	DISTURBED: 4 UNDISTURBED (UD): 0
4. NAME OF DRILLER Construction Solutions International, Inc.		13. TOTAL NUMBER CORE BOXES	
5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED	DEG. FROM VERTICAL / BEARING	14. WATER DEPTH 27 Ft.	
		15. DATE BORING	STARTED: 07-10-10 COMPLETED: 07-10-10
6. THICKNESS OF OVERBURDEN N/A		16. ELEVATION TOP OF BORING -25.3 Ft.	
7. DEPTH DRILLED INTO ROCK N/A		17. TOTAL RECOVERY FOR BORING 100%	
8. TOTAL DEPTH OF BORING 17.0 Ft.		18. SIGNATURE AND TITLE OF INSPECTOR Valerie Morrow, Geotechnical Engineer	

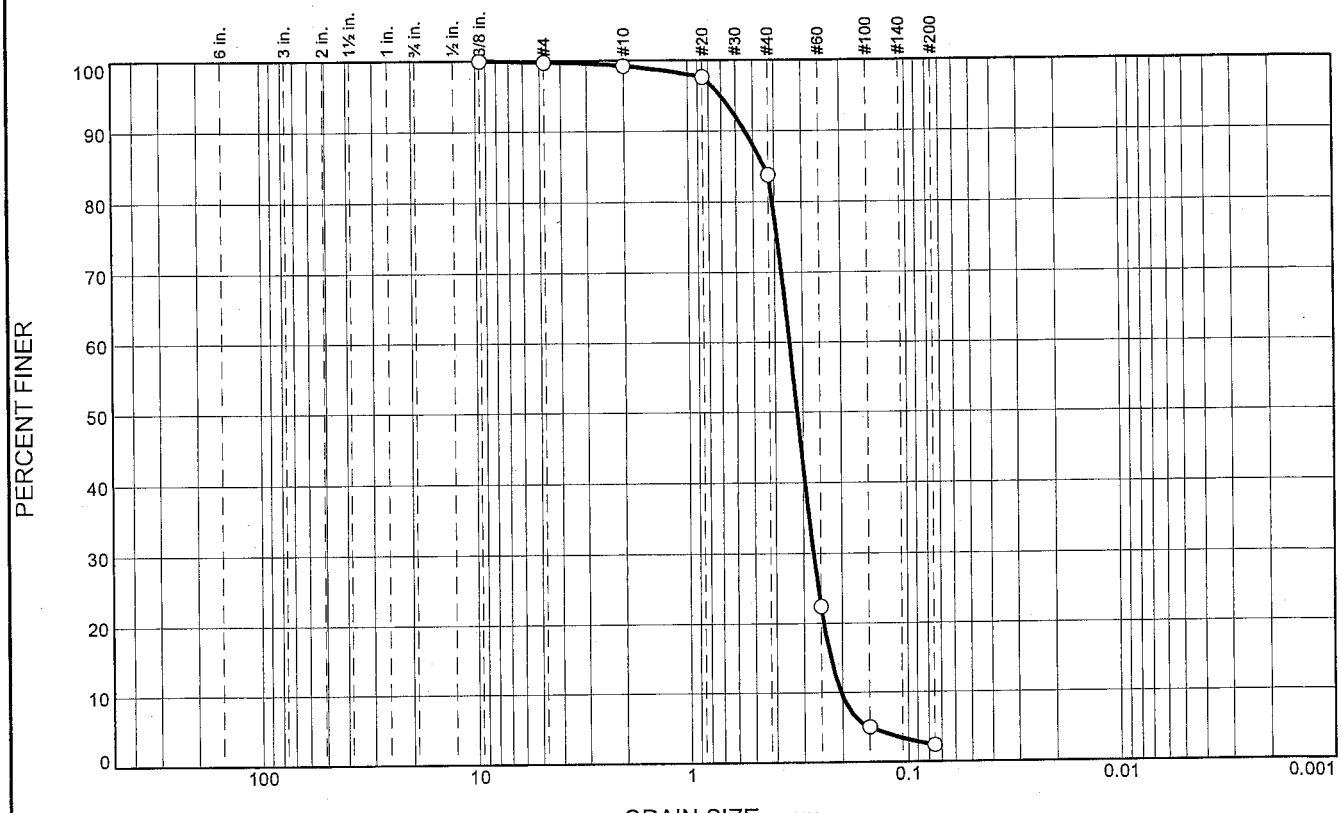
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-25.3	0.0				
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, lt. gray (SP)	A	Classification: SP Color: 2.5Y 7/2-light gray D50: 0.3183 mm % Fines: 2.3
				B	Classification: SP Color: 2.5Y 7/2-light gray 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. 3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.		

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.20240° Long = -88.33336°

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		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.5434 D_{85}= 0.4442 D_{60}= 0.3439
D_{50}= 0.3183 D_{30}= 0.2700 D_{15}= 0.2260
D_{10}= 0.2033 C_u= 1.69 C_c= 1.04

Classification

USCS= SP AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-20-10A
Sample Number: TE Lab ID: 4578.12 **Depth:** 0.0 - 4.4 (ft.) **Date:** 7/16/10

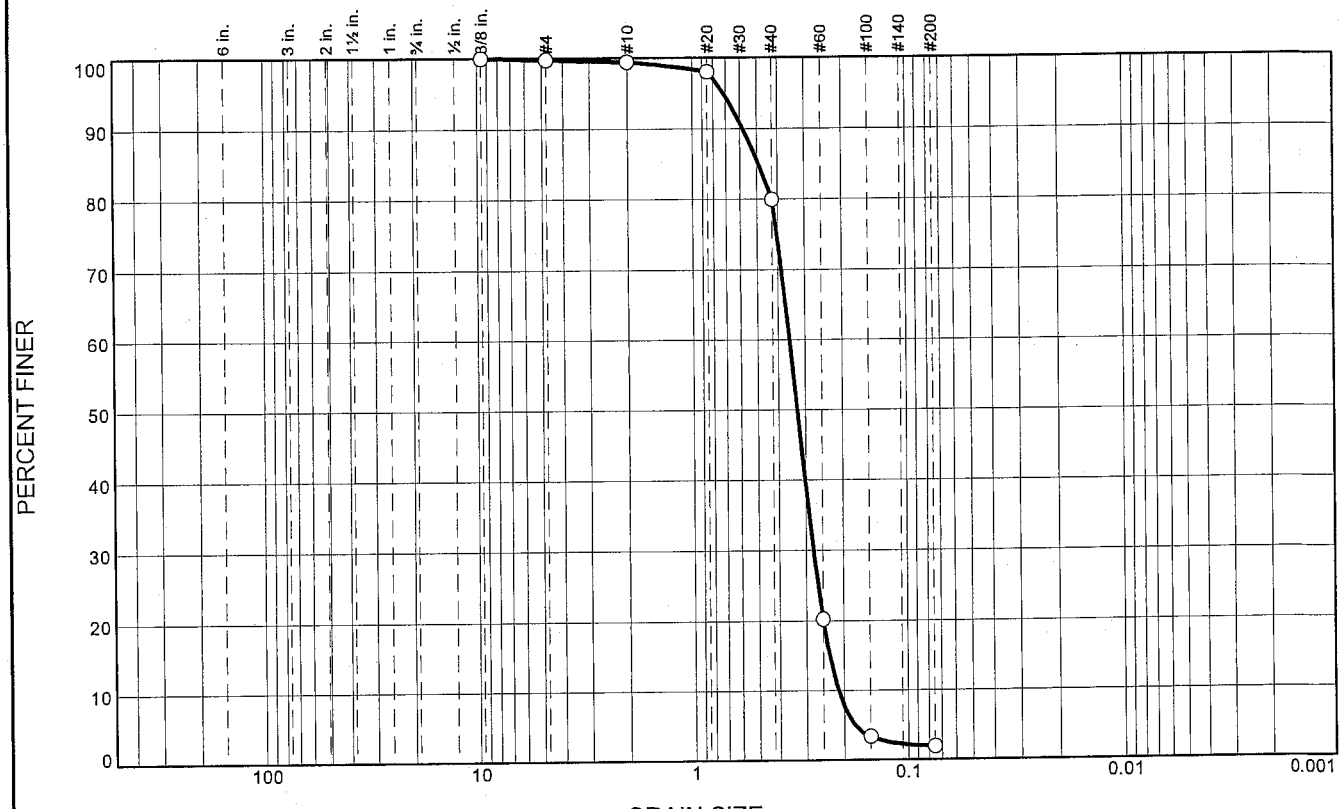
Thompson Engineering

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

D_{90}= 0.5814 D_{85}= 0.4919 D_{60}= 0.3539
D_{50}= 0.3265 D_{30}= 0.2763 D_{15}= 0.2331
D_{10}= 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

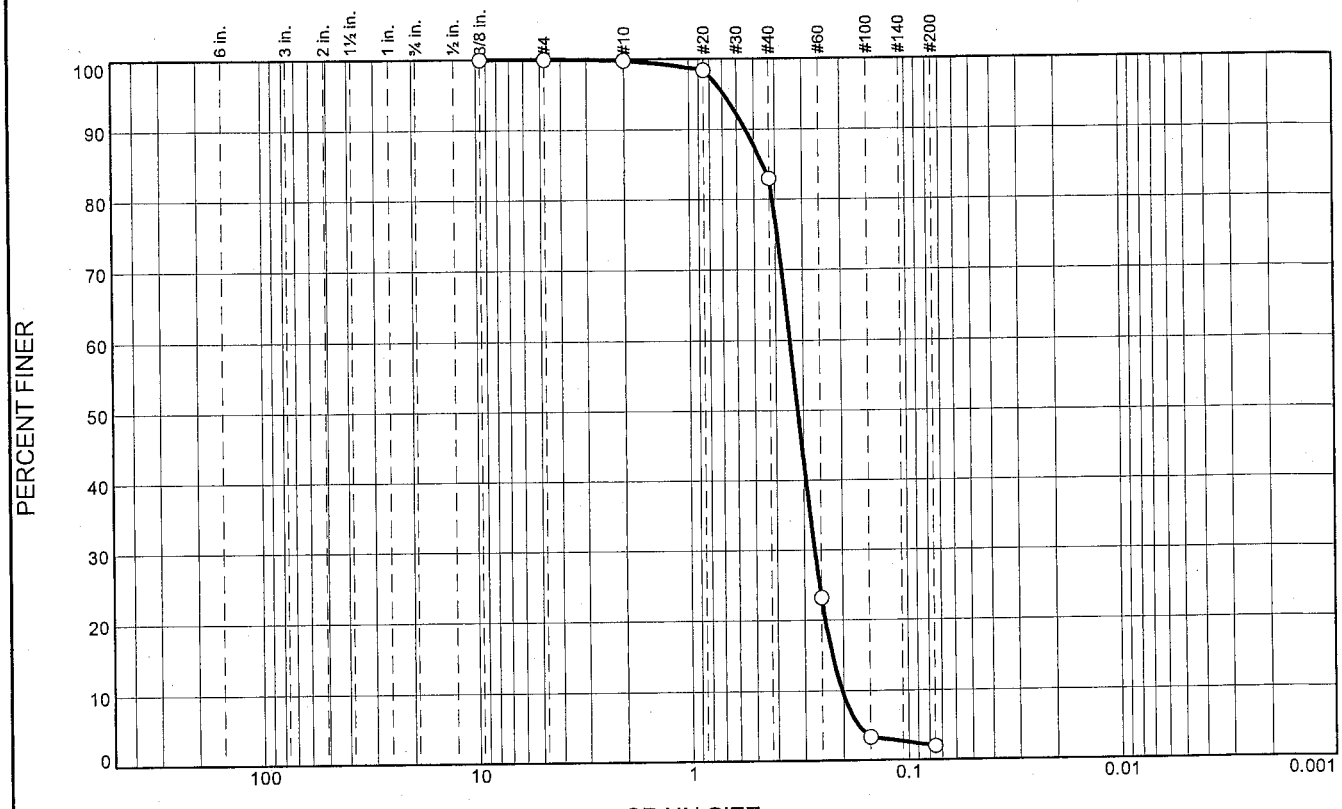
Thompson Engineering

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

D_{90}= 0.5461 D_{85}= 0.4546 D_{60}= 0.3441
D_{50}= 0.3176 D_{30}= 0.2681 D_{15}= 0.2242
D_{10}= 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

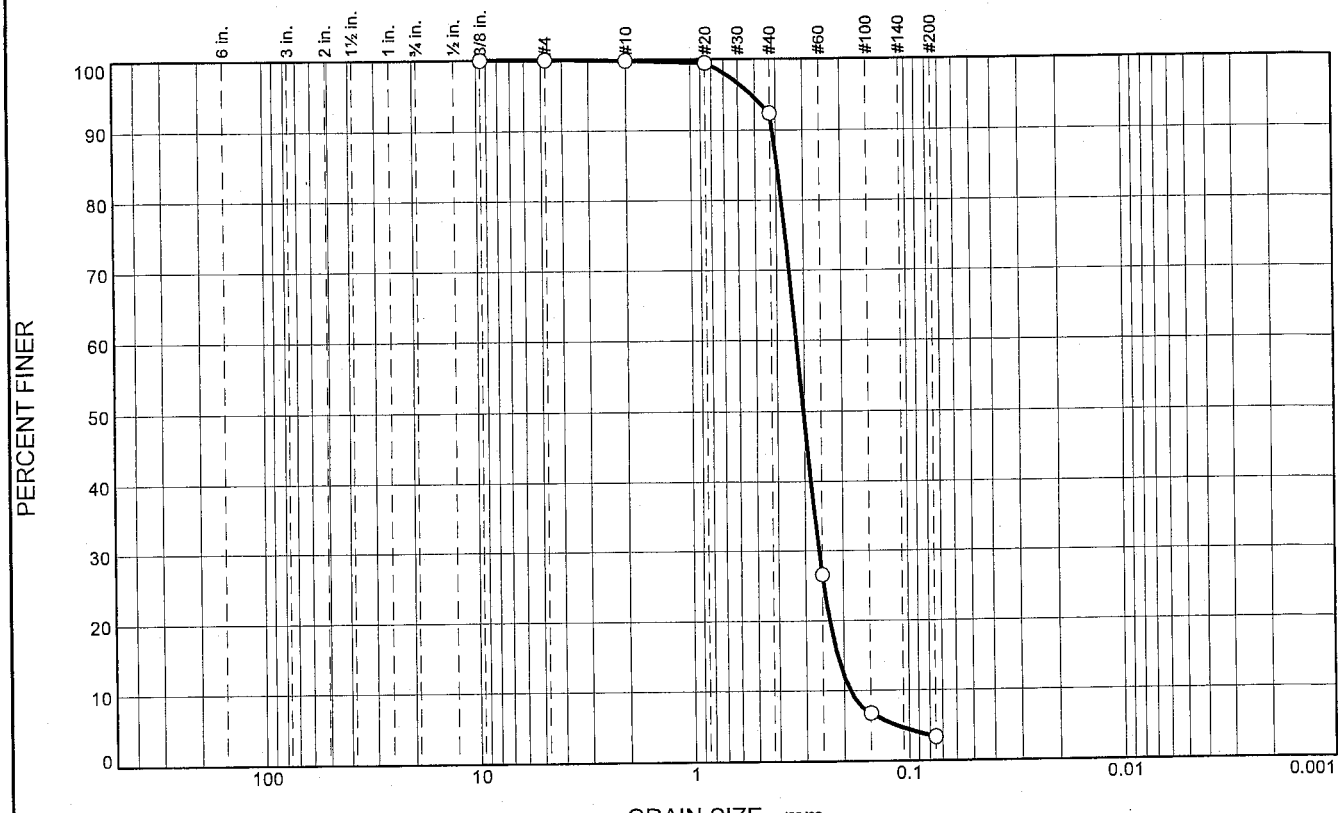
Thompson Engineering

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		

* (no specification provided)

Material Description

SAND, (SP), fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.4142 D_{85}= 0.3949 D_{60}= 0.3258
D_{50}= 0.3032 D_{30}= 0.2586 D_{15}= 0.2136
D_{10}= 0.1875 C_u= 1.74 C_c= 1.09

Classification

USCS= SP AASHTO=

Remarks

CADD CODE = CH10D965

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	MsCIP Barrier Island Restoration Petit Bois Pass- AL East
2. BORING DESIGNATION	BI-PB-021-10
LOCATION COORDINATES	E = 1,146,395 N = 255,809
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	18.5 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED: 5 / UNDISTURBED (UD): 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	33 Ft.
15. DATE BORING	STARTED: 07-10-10 / COMPLETED: 07-10-10
16. ELEVATION TOP OF BORING	-31.2 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
-31.2	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
-42.6	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
-49.7	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.

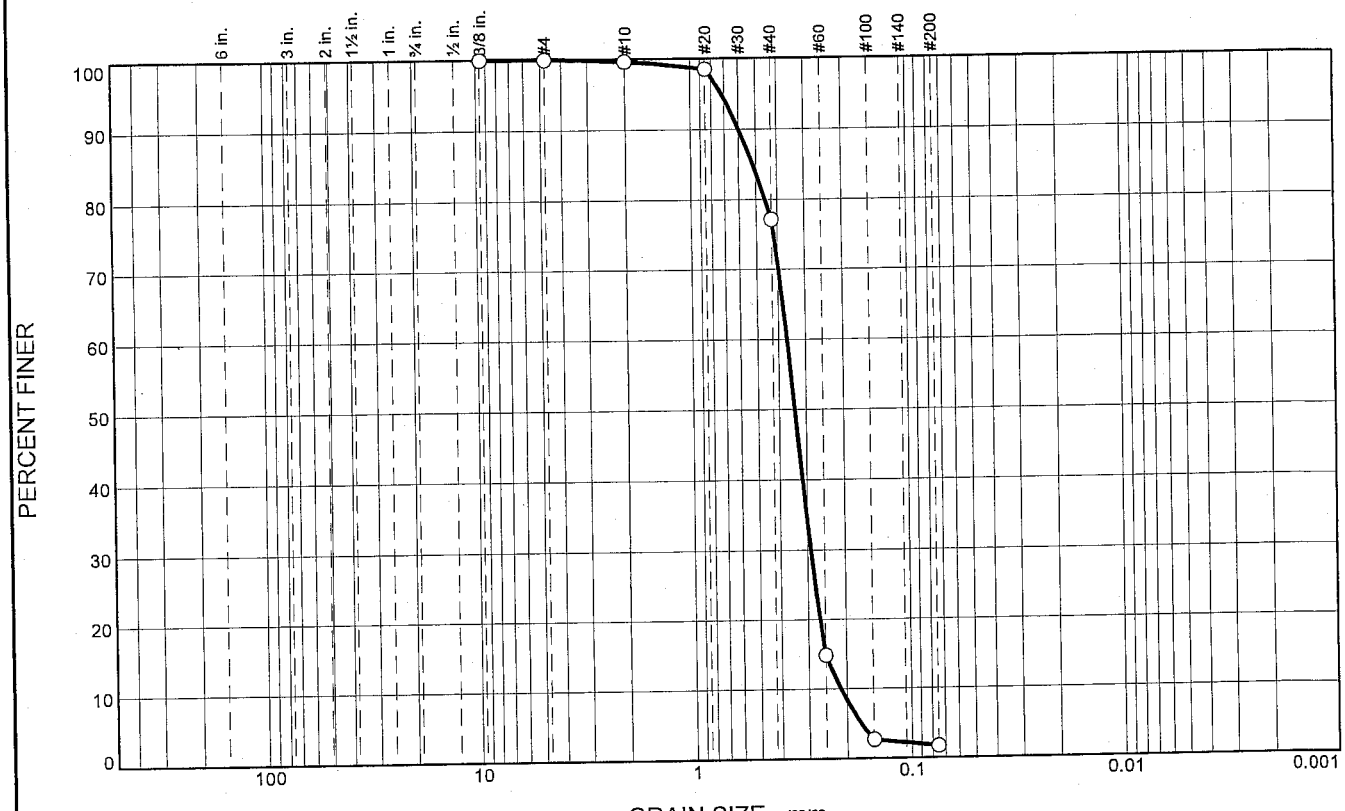
3. Seafloor elevation determined from 2010 USACE survey.

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.20242° Long = -88.32005°

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

D_{90}= 0.5989 D_{85}= 0.5165 D_{60}= 0.3658
D_{50}= 0.3387 D_{30}= 0.2898 D_{15}= 0.2506
D_{10}= 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

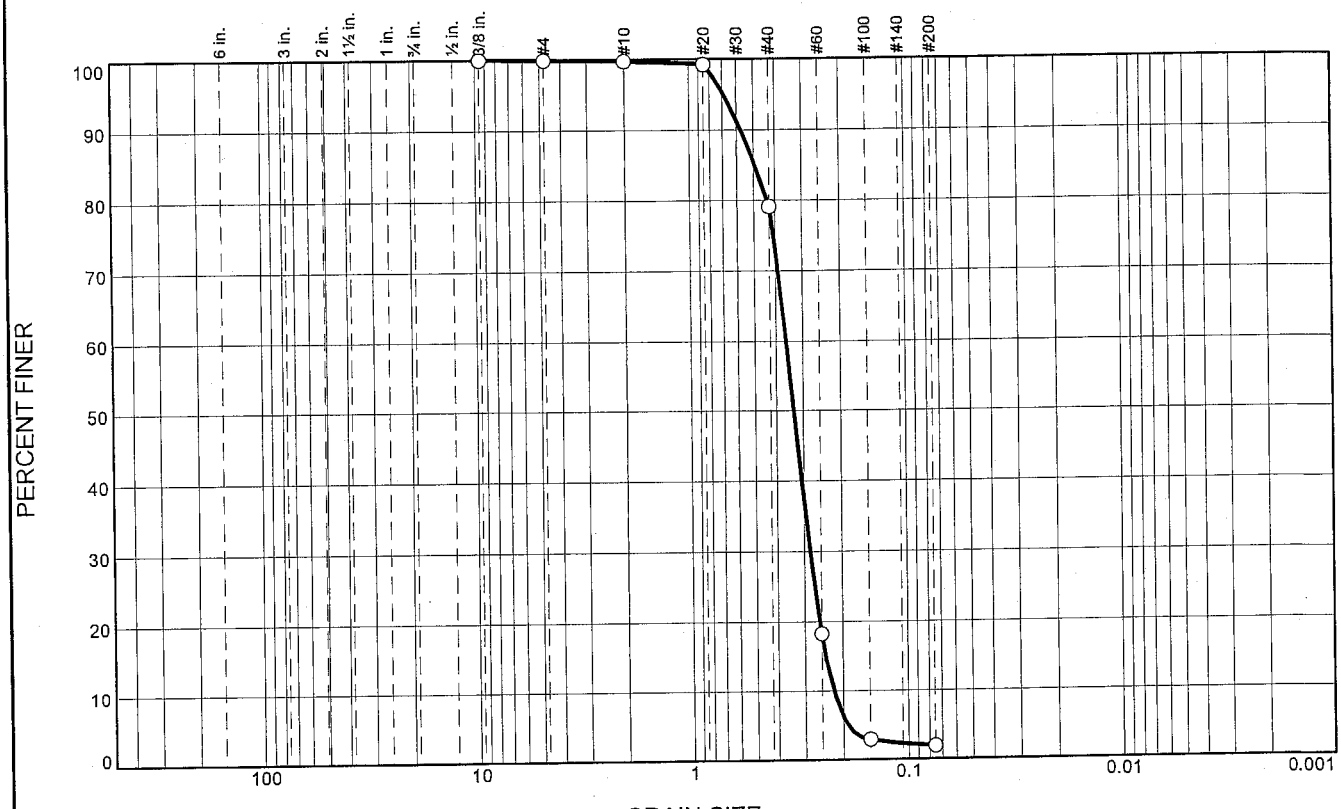
Thompson Engineering

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

D_{90}= 0.5737 D_{85}= 0.4943 D_{60}= 0.3581
D_{50}= 0.3309 D_{30}= 0.2813 D_{15}= 0.2398
D_{10}= 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

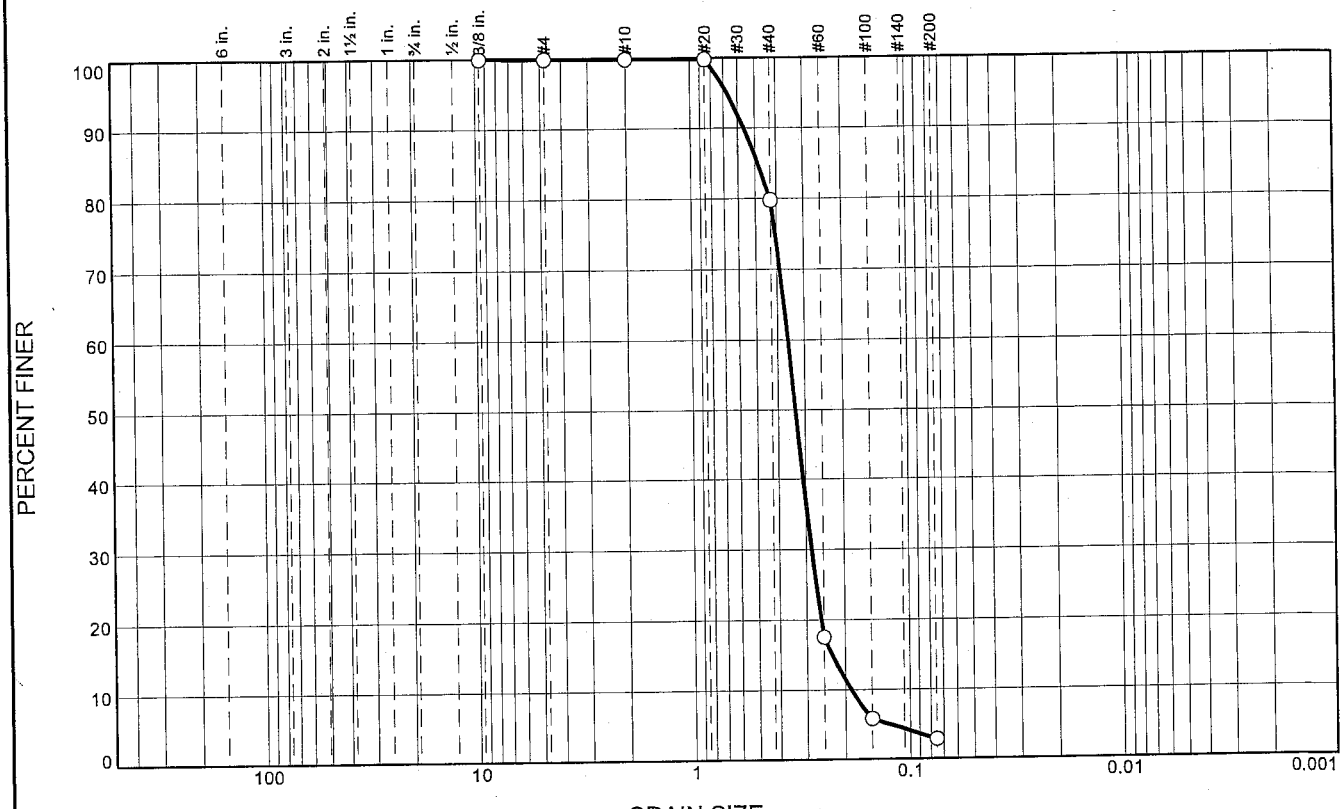
Thompson Engineering

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

D_{90}= 0.5624 D_{85}= 0.4858 D_{60}= 0.3582
D_{50}= 0.3319 D_{30}= 0.2833 D_{15}= 0.2293
D_{10}= 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

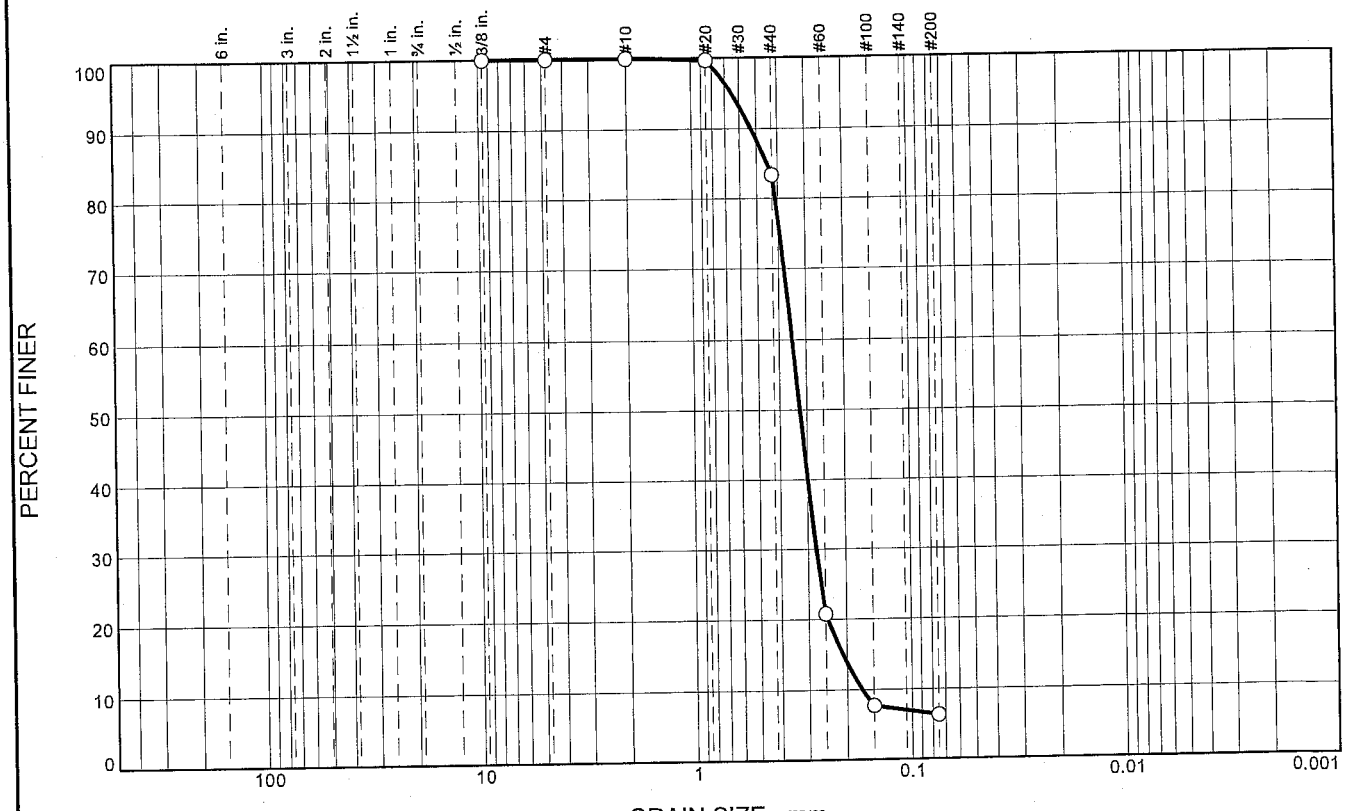
Thompson Engineering

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

D_{90}= 0.5284 D_{85}= 0.4473 D_{60}= 0.3478
D_{50}= 0.3225 D_{30}= 0.2746 D_{15}= 0.2088
D_{10}= 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

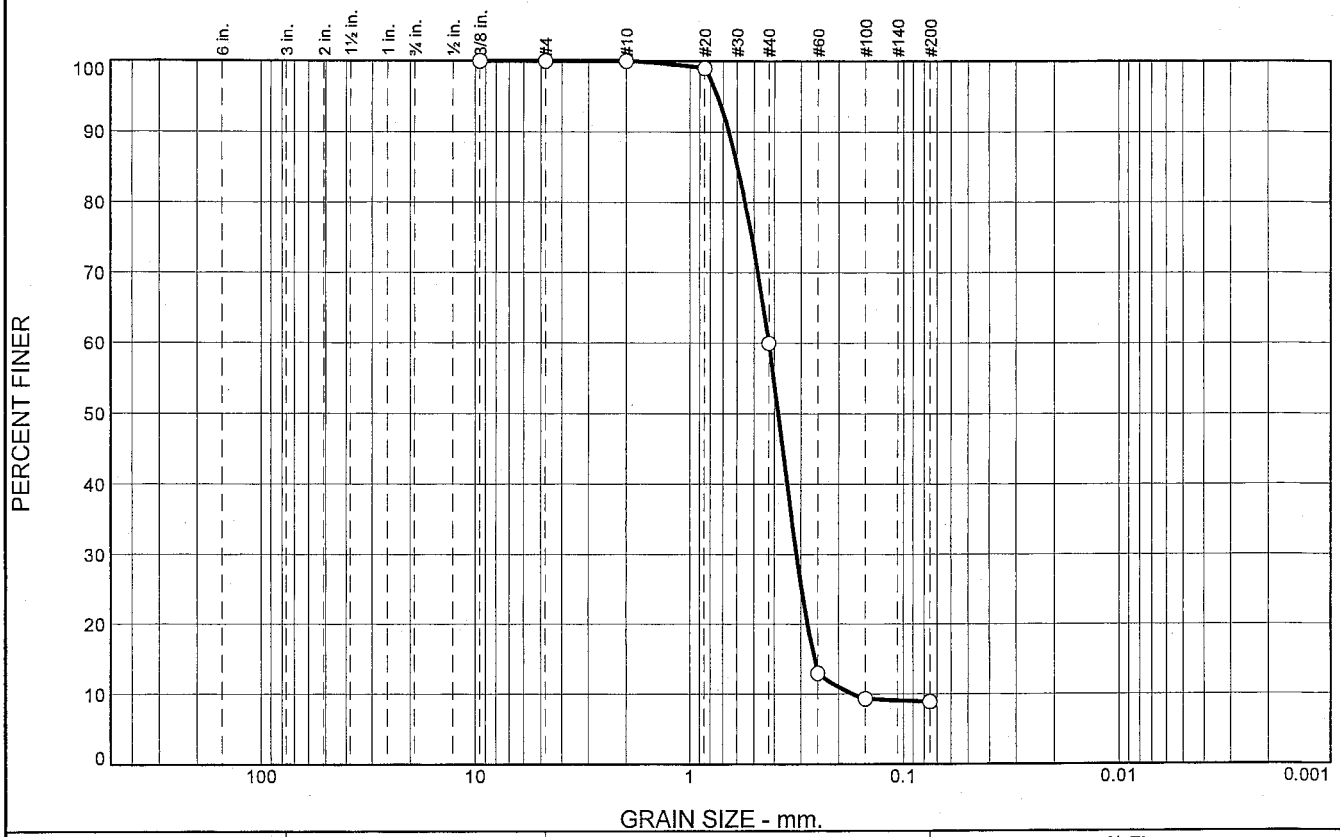
Thompson Engineering

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

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.6561 D_{85}= 0.5957 D_{60}= 0.4254
D_{50}= 0.3838 D_{30}= 0.3139 D_{15}= 0.2596
D_{10}= 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: MsCIP Barrier Island Restoration, Petit Bois Pass- AL East	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PB-022-10 — LOCATION COORDINATES: E = 1,146,771 N = 255,731	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 5 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 33 Ft.
	15. DATE BORING — STARTED: 07-10-10 — COMPLETED: 07-10-10
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -31.9 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 18.6 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Valerie Morrow, Geotechnical Engineer

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-31.9	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
-42.5	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
-48.9	17.0				
-50.5	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.

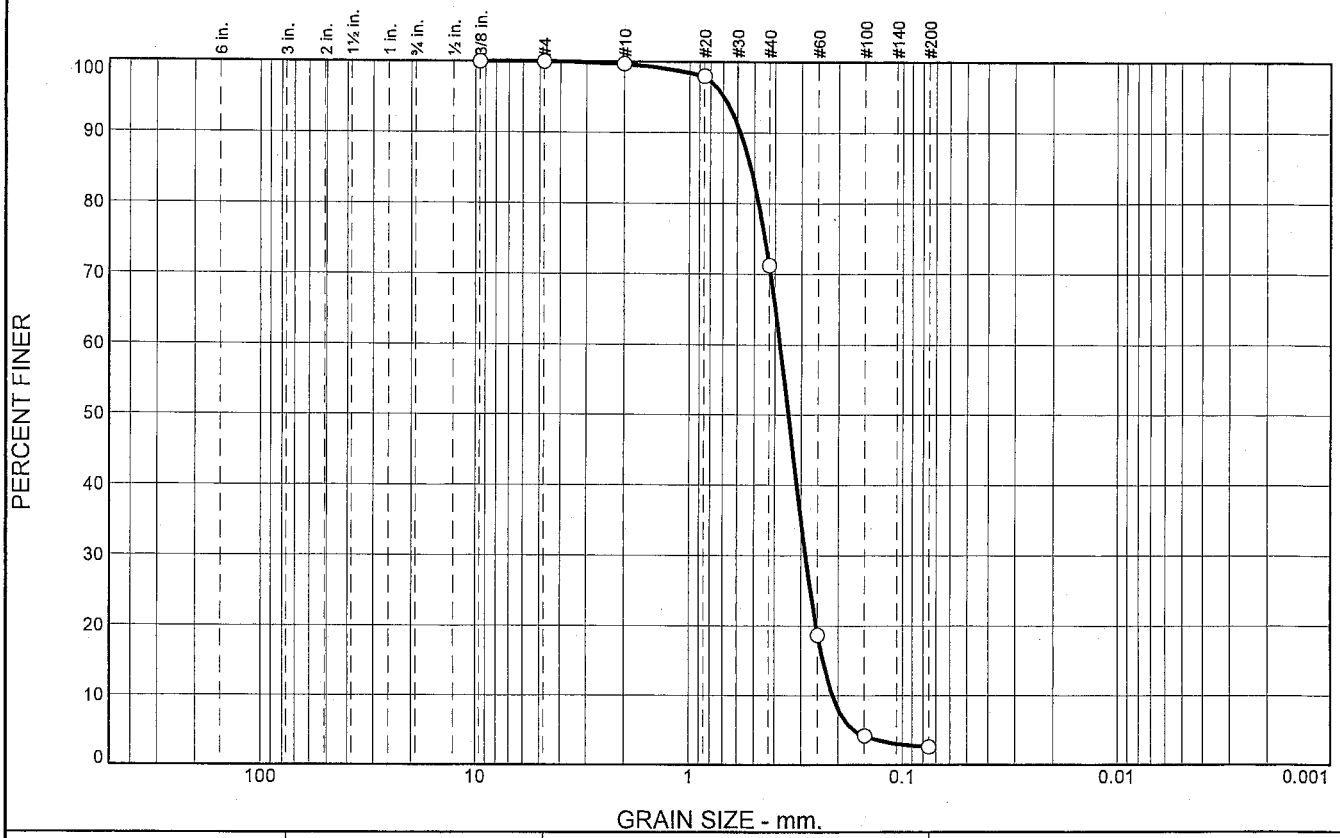
3. Seafloor elevation determined from 2010 USACE survey.

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.20220° Long = -88.31886°

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		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.5800 D_{85}= 0.5192 D_{60}= 0.3783
D_{50}= 0.3445 D_{30}= 0.2851 D_{15}= 0.2362
D_{10}= 0.2126 C_u= 1.78 C_c= 1.01

Classification

USCS= SP AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-22-10A
Sample Number: TE Lab ID: 4578.21 **Depth:** 0.0 - 5.3 (ft.) **Date:** 7/16/10

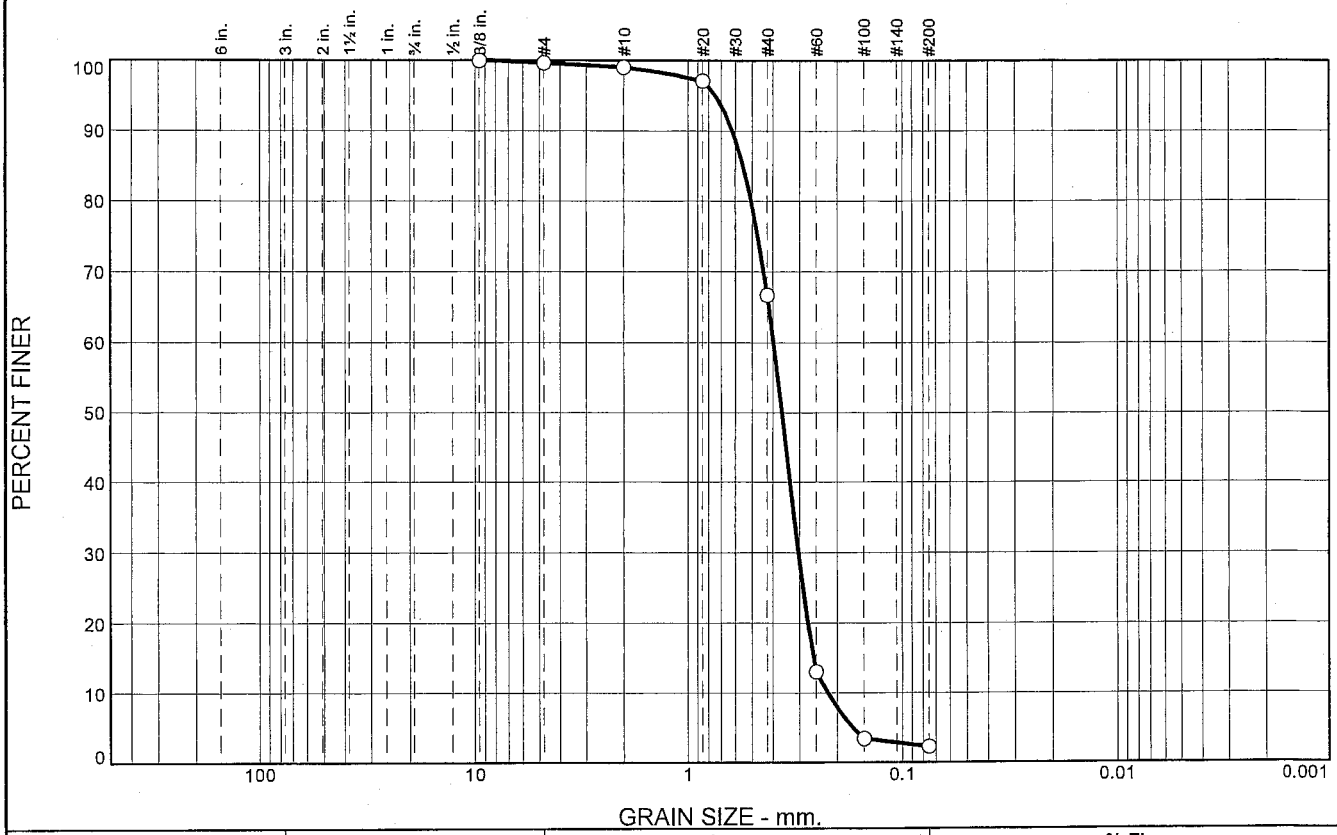
Thompson Engineering

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), medioum to fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.6195 D_{85}= 0.5513 D_{60}= 0.3971
D_{50}= 0.3622 D_{30}= 0.3026 D_{15}= 0.2571
D_{10}= 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

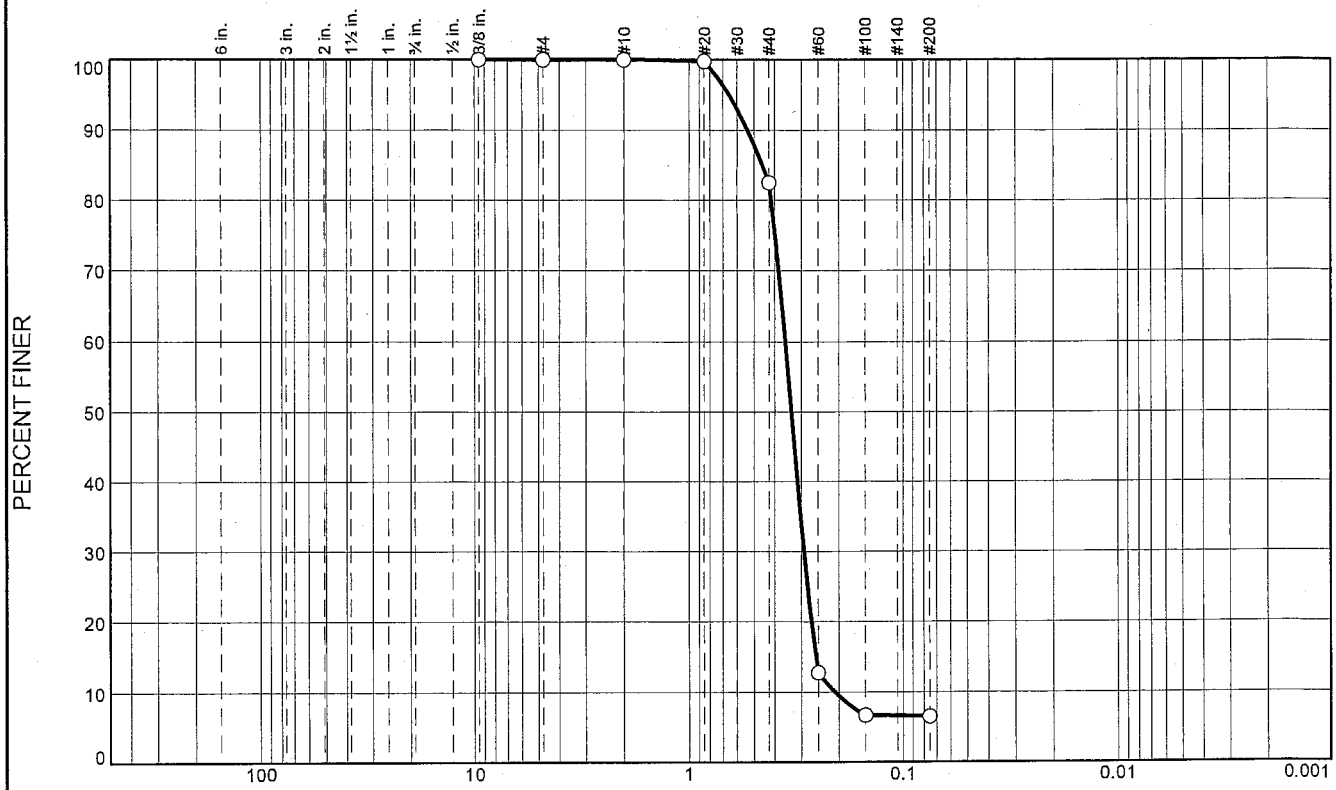
Thompson Engineering

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		

* (no specification provided)

Material Description

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

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.5364 D_{85}= 0.4567 D_{60}= 0.3576
D_{50}= 0.3345 D_{30}= 0.2914 D_{15}= 0.2563
D_{10}= 0.2082 C_u= 1.72 C_c= 1.14

Classification

USCS= SP-SM AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-22-10C
Sample Number: TE Lab ID: 4578.23 **Depth:** 10.6 - 13.6 (ft.) **Date:** 7/16/10

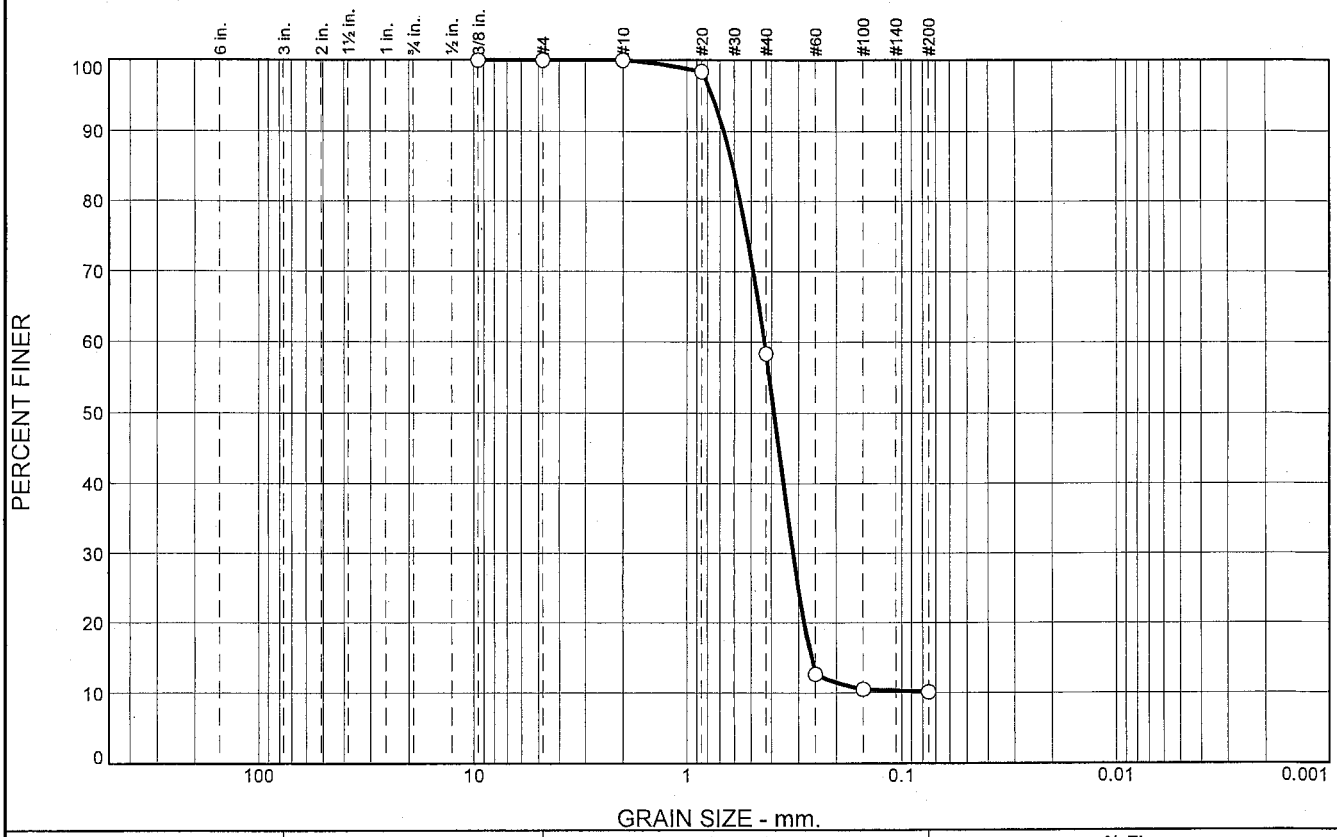
Thompson Engineering

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

D_{90}= 0.6720 D_{85}= 0.6096 D_{60}= 0.4327
D_{50}= 0.3895 D_{30}= 0.3174 D_{15}= 0.2615
D_{10}= 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

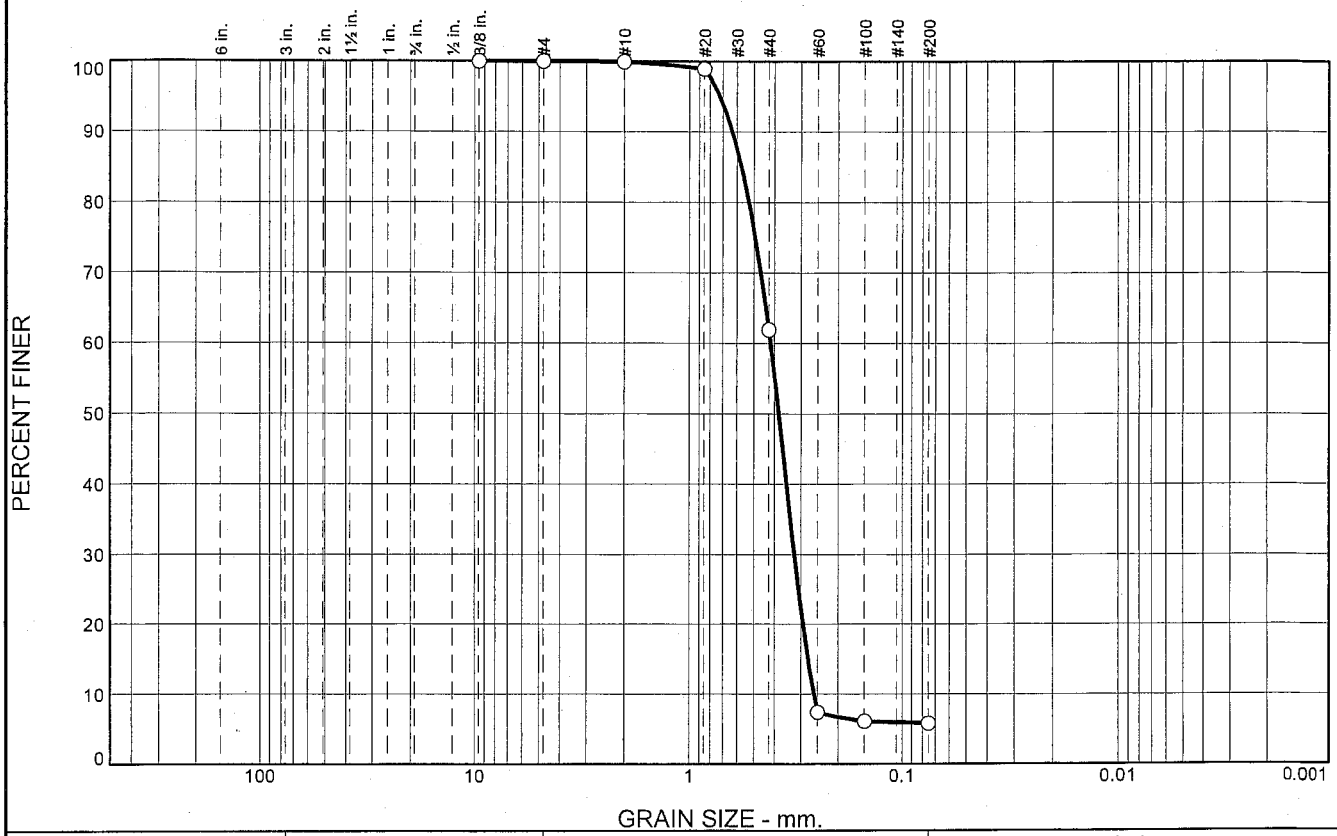
Thompson Engineering

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		

* (no specification provided)

Material Description

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

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.6308 D_{85}= 0.5713 D_{60}= 0.4175
D_{50}= 0.3815 D_{30}= 0.3215 D_{15}= 0.2775
D_{10}= 0.2605 C_u= 1.60 C_c= 0.95

Classification

USCS= SP-SM AASHTO=

Remarks

CADD CODE = CH10D965

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	INSTALLATION	SHEET 1 OF 1 SHEETS
	South Atlantic	Mobile District	

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass- AL East
2. BORING DESIGNATION	BI-PB-023-10
LOCATION COORDINATES	E = 1,148,176 N = 255,821
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	17.8 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED 2 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	32 Ft.
15. DATE BORING	STARTED 07-10-10 / COMPLETED 07-10-10
16. ELEVATION TOP OF BORING	-30.6 Ft.
17. TOTAL RECOVERY FOR BORING	100%
18. SIGNATURE AND TITLE OF INSPECTOR	Valerie Morrow, Geotechnical Engineer

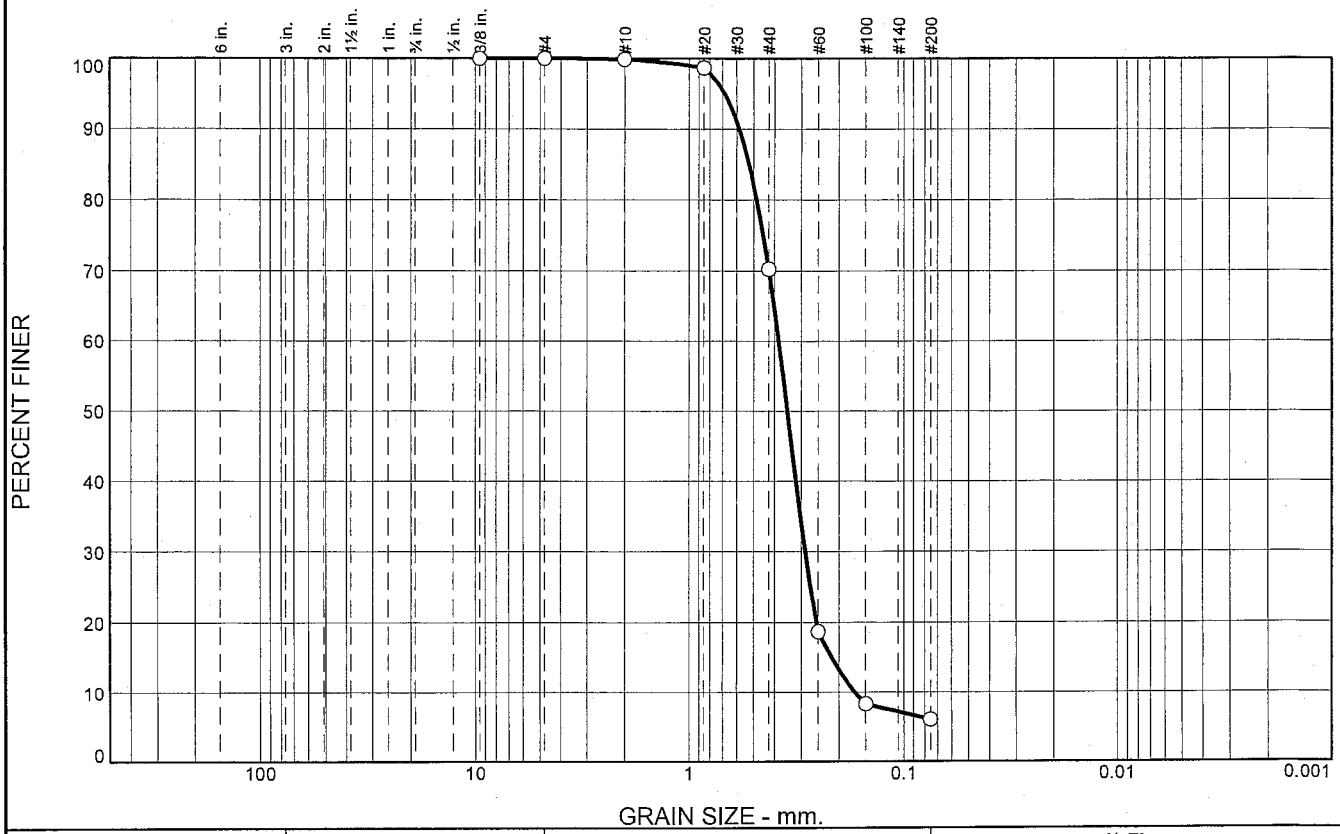
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-30.6	0.0				
			SAND, poorly-graded with silt, lt. gray (SP-SM)	A	Classification: SP-SM Color: 2.5Y 7/1-light gray D50: 0.3479 mm % Fines: 6.1
				B	Classification: SP-SM Color: 2.5Y 7/1-light gray D50: 0.3649 mm % Fines: 5.9
-37.0	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. 3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.		

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.20243° Long = -88.31441°

Particle Size Distribution Report



% +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		

* (no specification provided)

Material Description

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

Atterberg Limits

PL= LL= PI=

Coefficients

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

Classification

USCS= SP-SM AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-23-10A
Sample Number: TE Lab ID: 4578.26 **Depth:** 0.0 - 3.2 (ft.) **Date:** 7/16/10

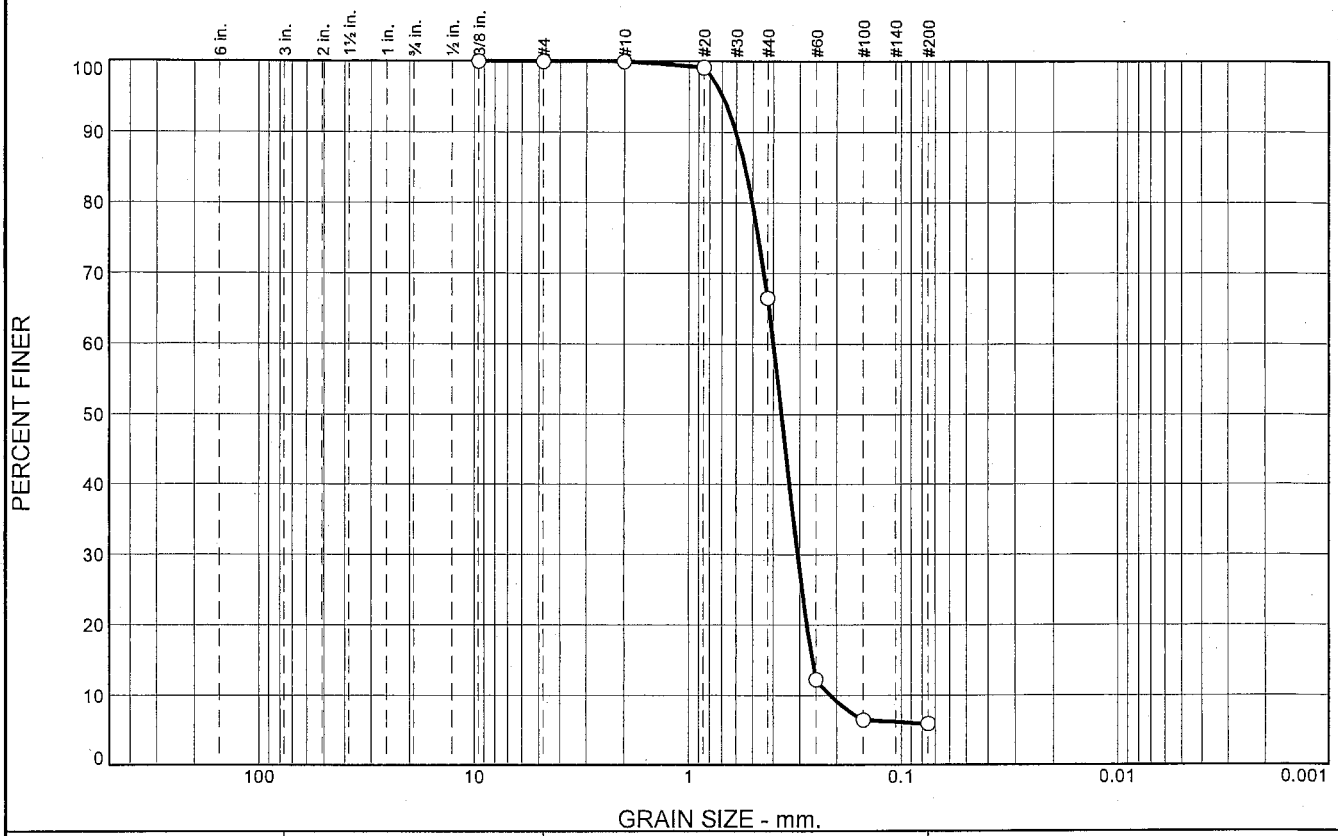
Thompson Engineering

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

D_{90}= 0.6017 D_{85}= 0.5438 D_{60}= 0.3992
D_{50}= 0.3649 D_{30}= 0.3059 D_{15}= 0.2603
D_{10}= 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: MsCIP Barrier Island Restoration, Petit Bois Pass- AL East	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PB-024-10 — LOCATION COORDINATES: E = 1,149,746 N = 255,839	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 4 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 31 Ft.
	15. DATE BORING — STARTED: 07-10-10 — COMPLETED: 07-10-10
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -29.7 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 18.2 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Valerie Morrow, Geotechnical Engineer

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-29.7	0.0				
-33.3	3.6		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
-47.9	18.2		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

NOTES:

1. Soils are field visually classified in accordance with the Unified Soils Classification System.

2. NS = Sample not submitted for laboratory analysis from this interval.

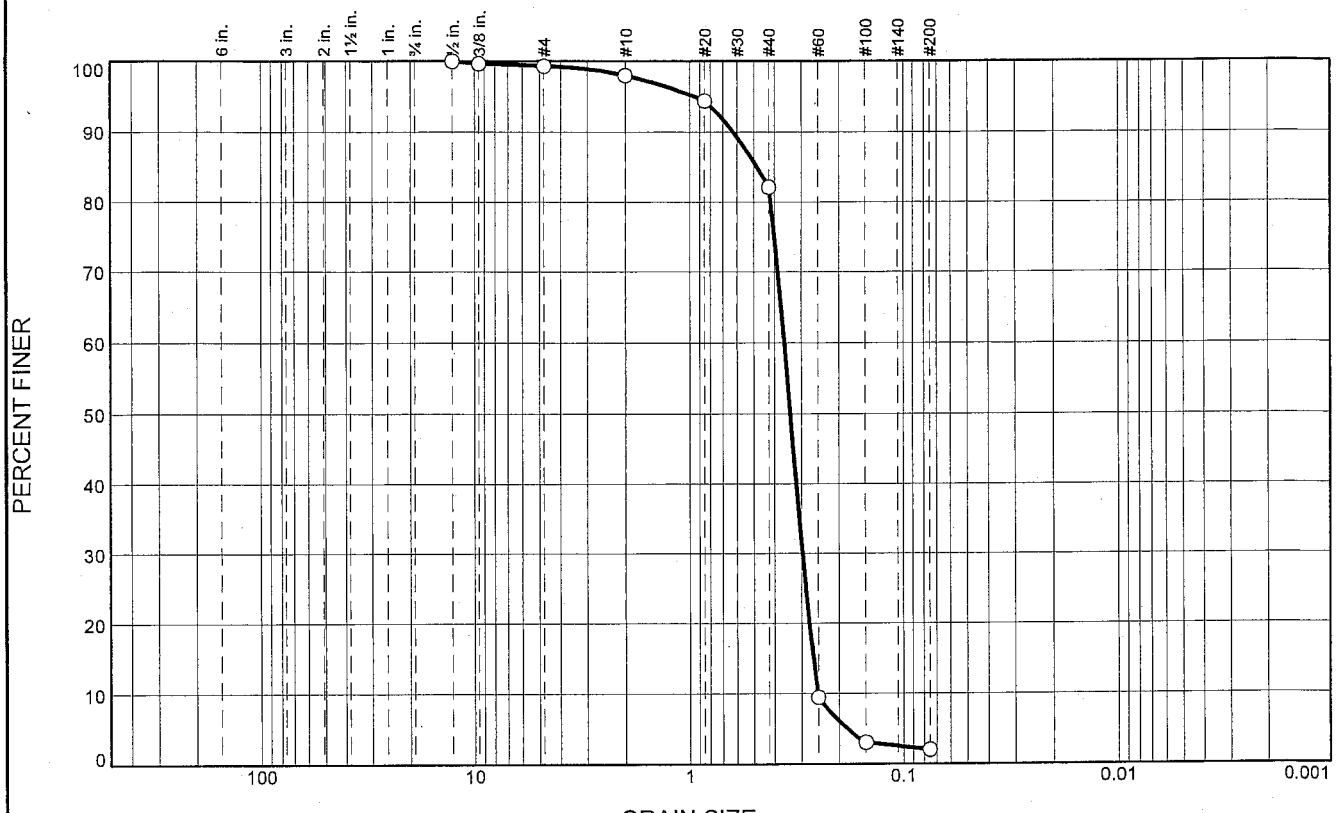
3. Seafloor elevation determined from 2010 USACE survey.

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.20246° Long = -88.30944°

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

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.6258 D_{85}= 0.4830 D_{60}= 0.3598
D_{50}= 0.3373 D_{30}= 0.2962 D_{15}= 0.2642
D_{10}= 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

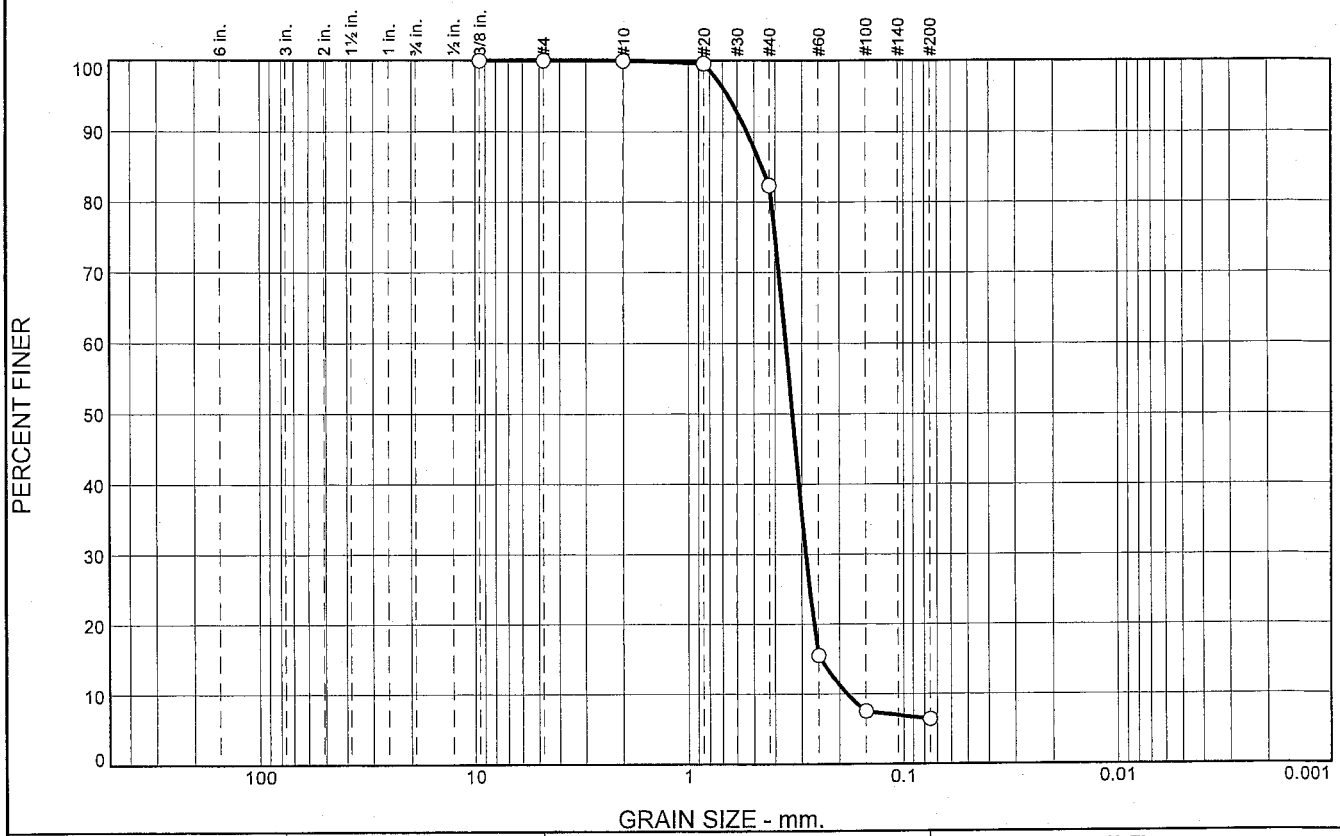
Thompson Engineering

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

D_{90}= 0.5403 D_{85}= 0.4595 D_{60}= 0.3555
D_{50}= 0.3315 D_{30}= 0.2866 D_{15}= 0.2448
D_{10}= 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

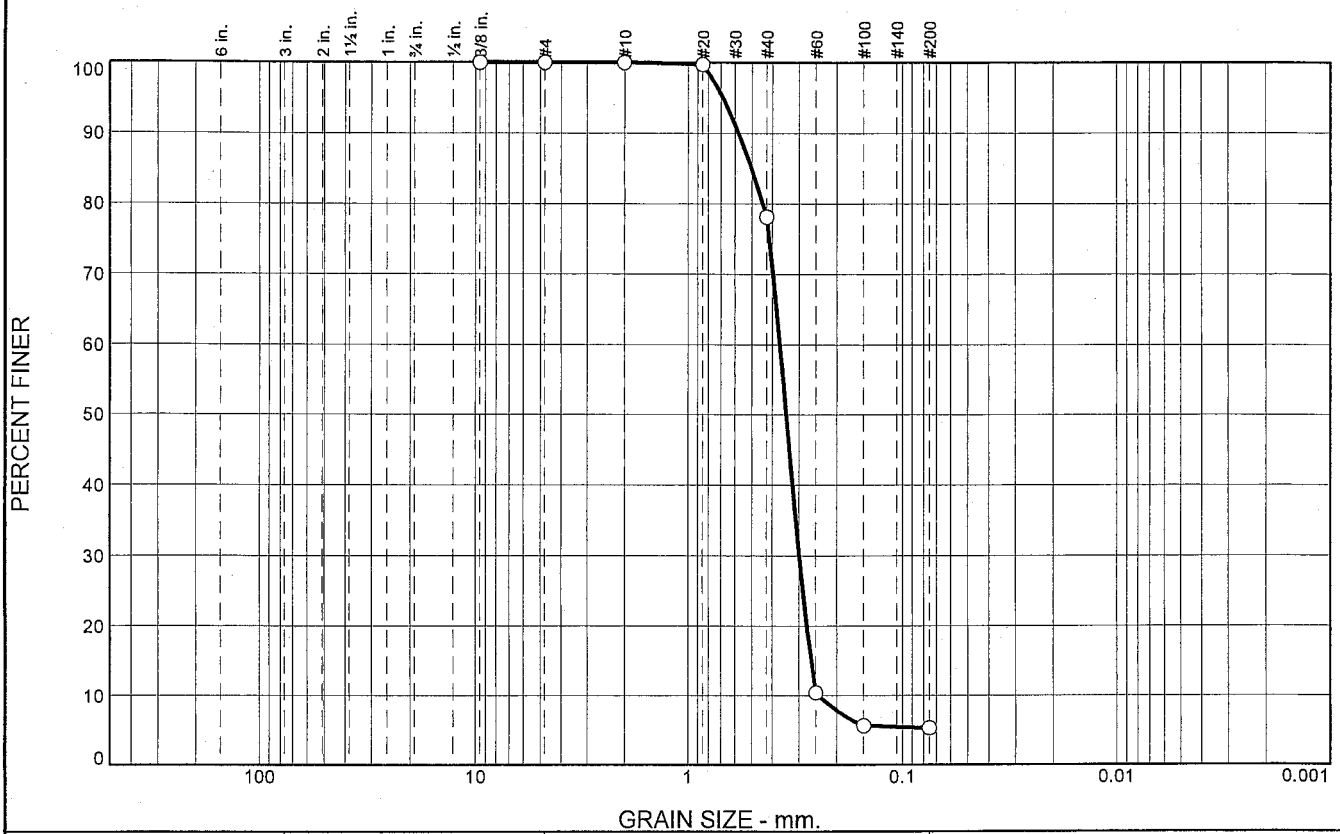
Thompson Engineering

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		

* (no specification provided)

Material Description

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

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.5771 D_{85}= 0.5014 D_{60}= 0.3683
D_{50}= 0.3435 D_{30}= 0.2985 D_{15}= 0.2632
D_{10}= 0.2425 C_u= 1.52 C_c= 1.00

Classification

USCS= SP-SM AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-24-10C
Sample Number: TE Lab ID: 4578.30 **Depth:** 8.6 - 13.6 (ft.) **Date:** 7/16/10

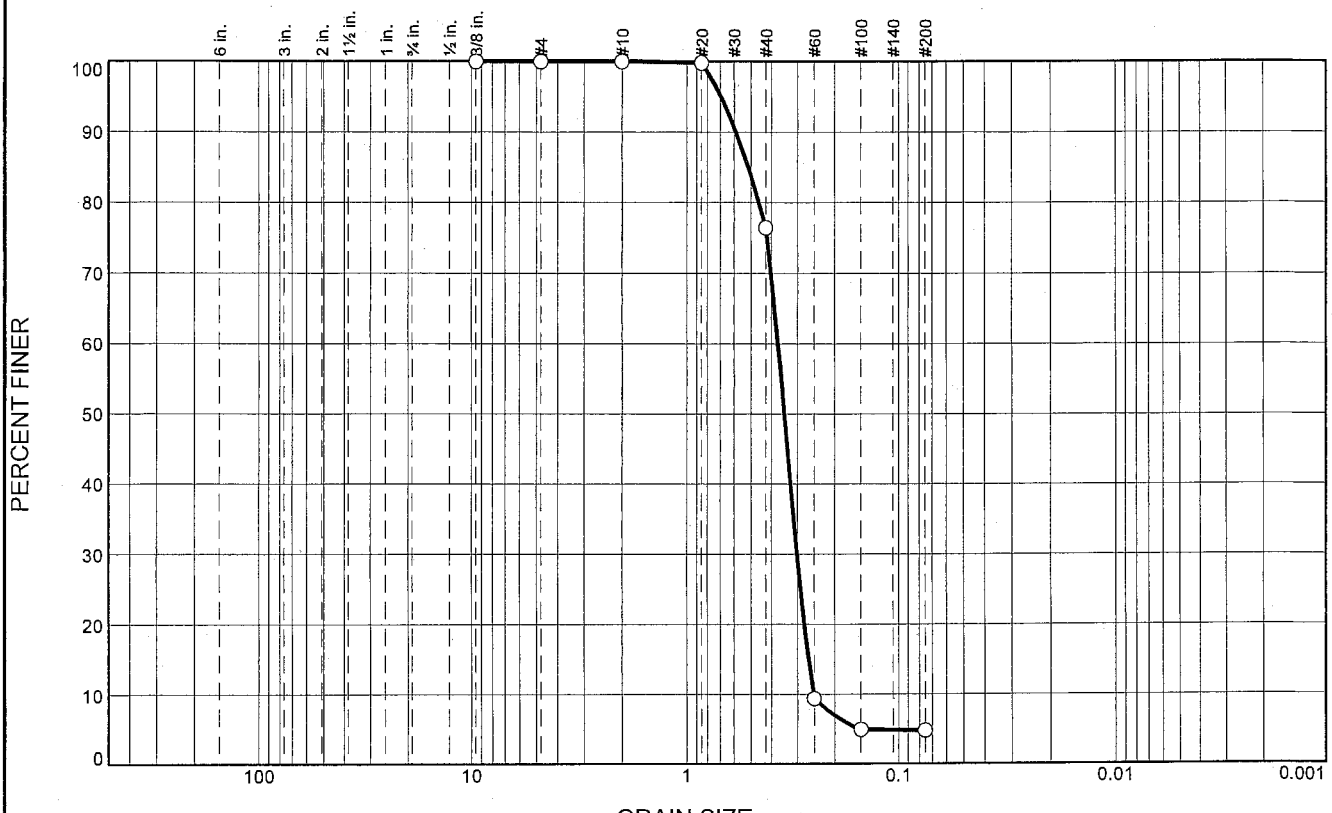
Thompson Engineering

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

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.5885 D_{85}= 0.5151 D_{60}= 0.3726
D_{50}= 0.3472 D_{30}= 0.3015 D_{15}= 0.2661
D_{10}= 0.2520 C_u= 1.48 C_c= 0.97

Classification

USCS= SP 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: MsCIP Barrier Island Restoration, Petit Bois Pass- AL East	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PB-025-10 — LOCATION COORDINATES: E = 1,152,791 N = 255,947	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 5 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 35 Ft.
	15. DATE BORING — STARTED: 07-10-10 — COMPLETED: 07-10-10
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -35.2 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 15.8 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Valerie Morrow, Geotechnical Engineer

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-35.2	0.0				
-35.5	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
-51.0	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.

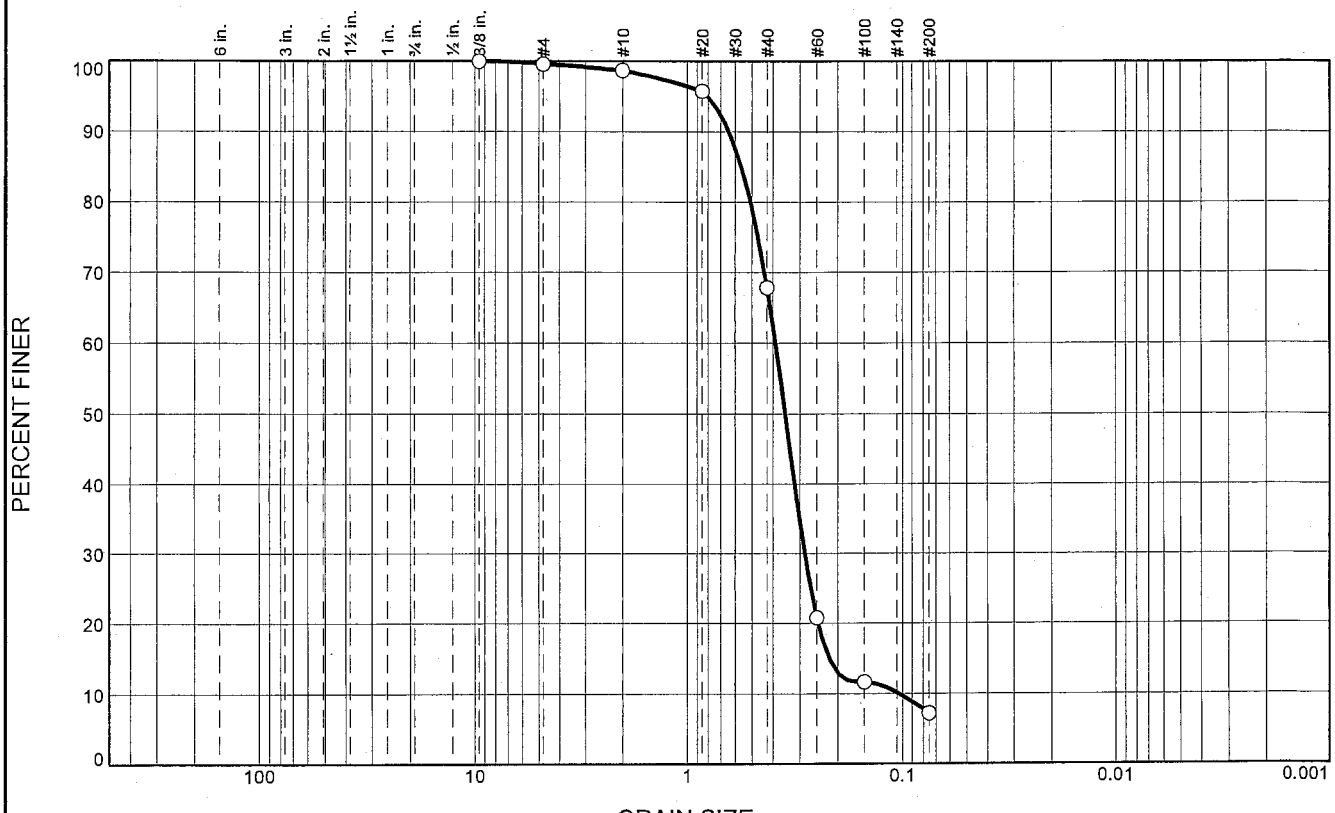
3. Seafloor elevation determined from 2010 USACE survey.

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.20272° Long = -88.2998°

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

D_{90}= 0.6420 D_{85}= 0.5609 D_{60}= 0.3890
D_{50}= 0.3509 D_{30}= 0.2840 D_{15}= 0.2189
D_{10}= 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

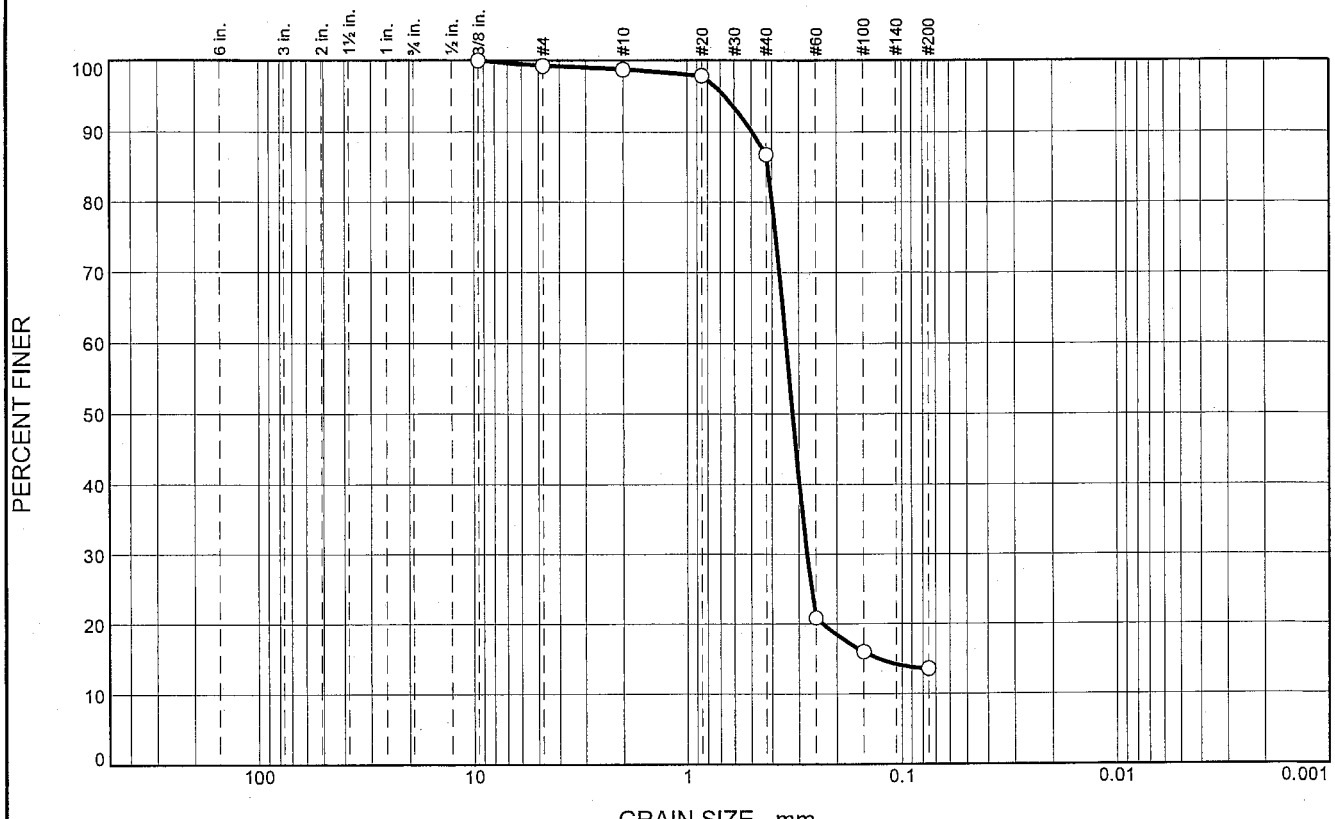
Thompson Engineering

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

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.4945 D_{85}= 0.4175 D_{60}= 0.3432
D_{50}= 0.3200 D_{30}= 0.2746 D_{15}= 0.1279
D_{10}= 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

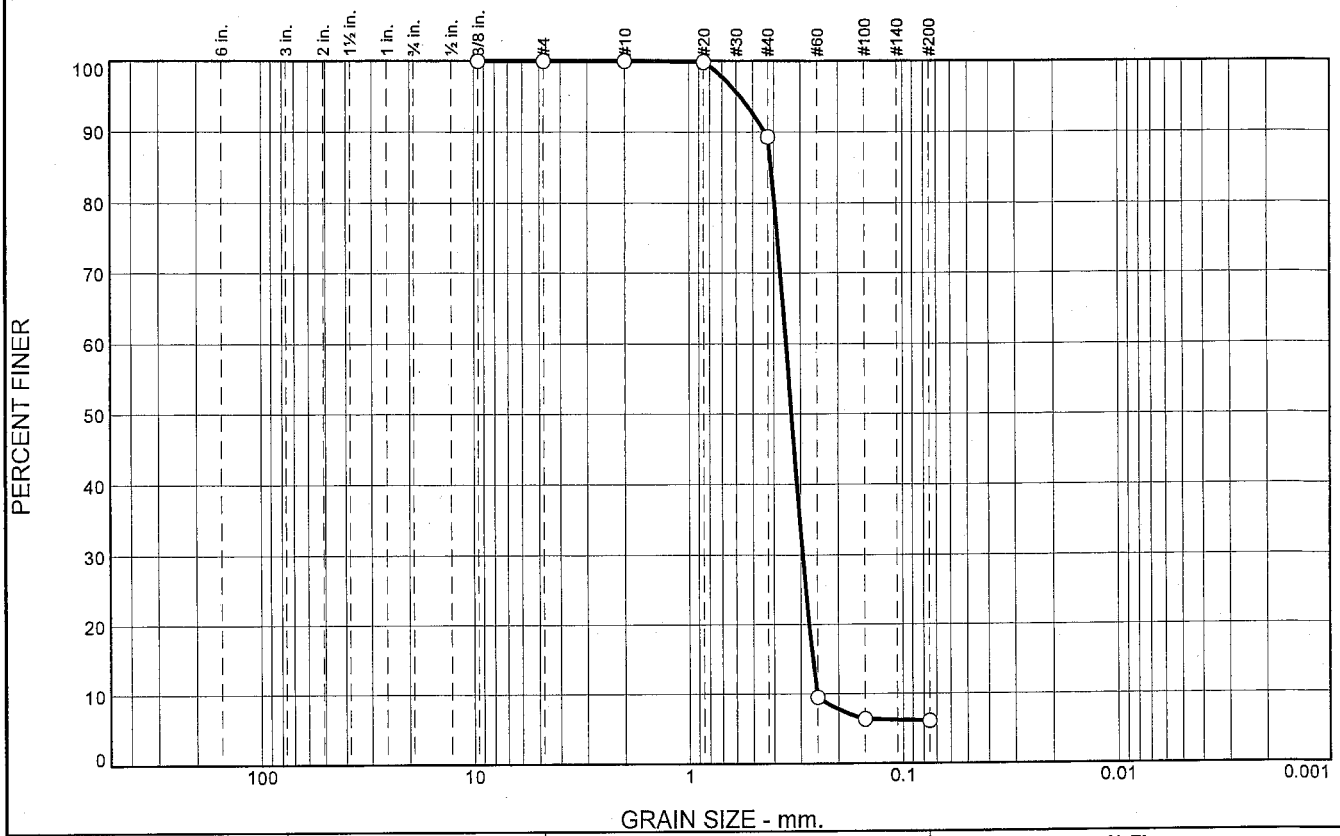
Thompson Engineering

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

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.4395 D_{85}= 0.4106 D_{60}= 0.3496
D_{50}= 0.3300 D_{30}= 0.2929 D_{15}= 0.2632
D_{10}= 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

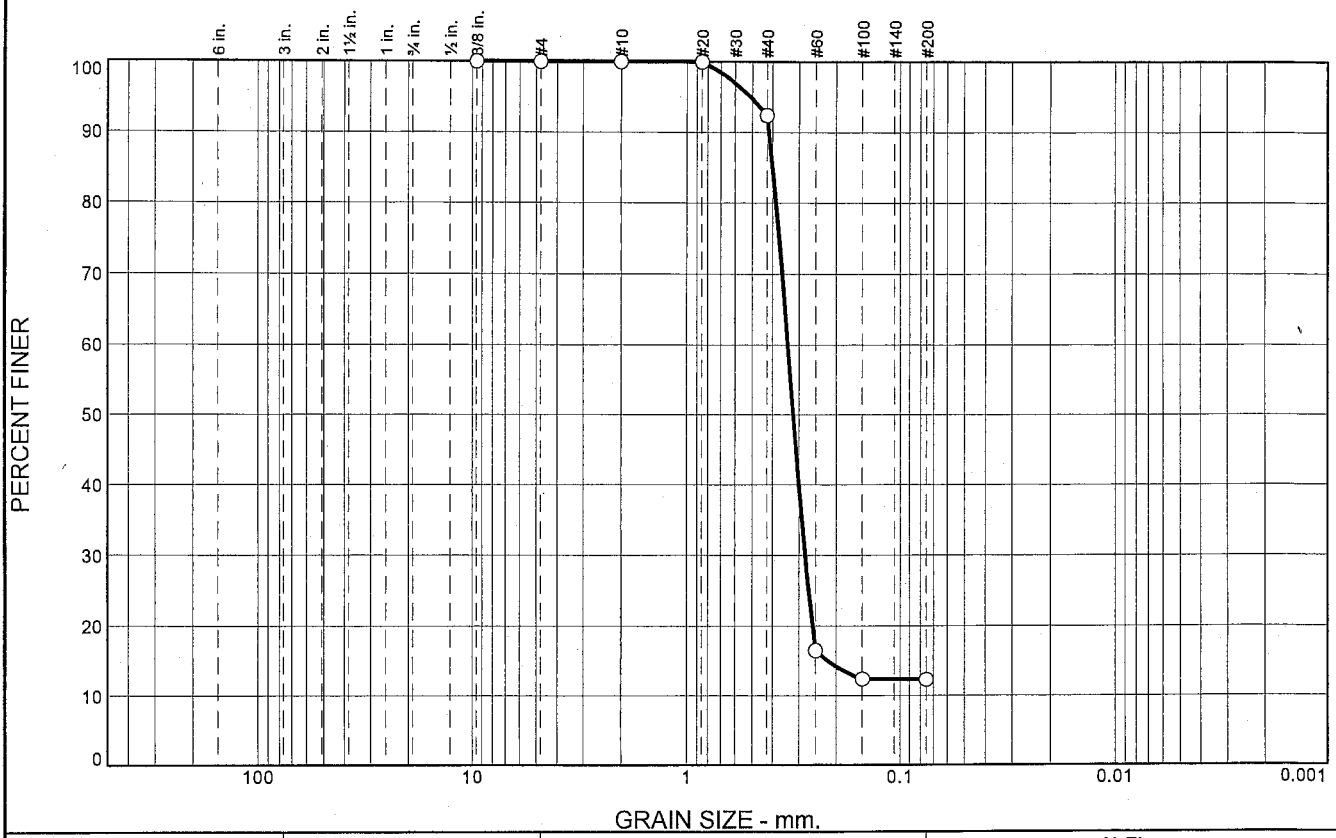
Thompson Engineering

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

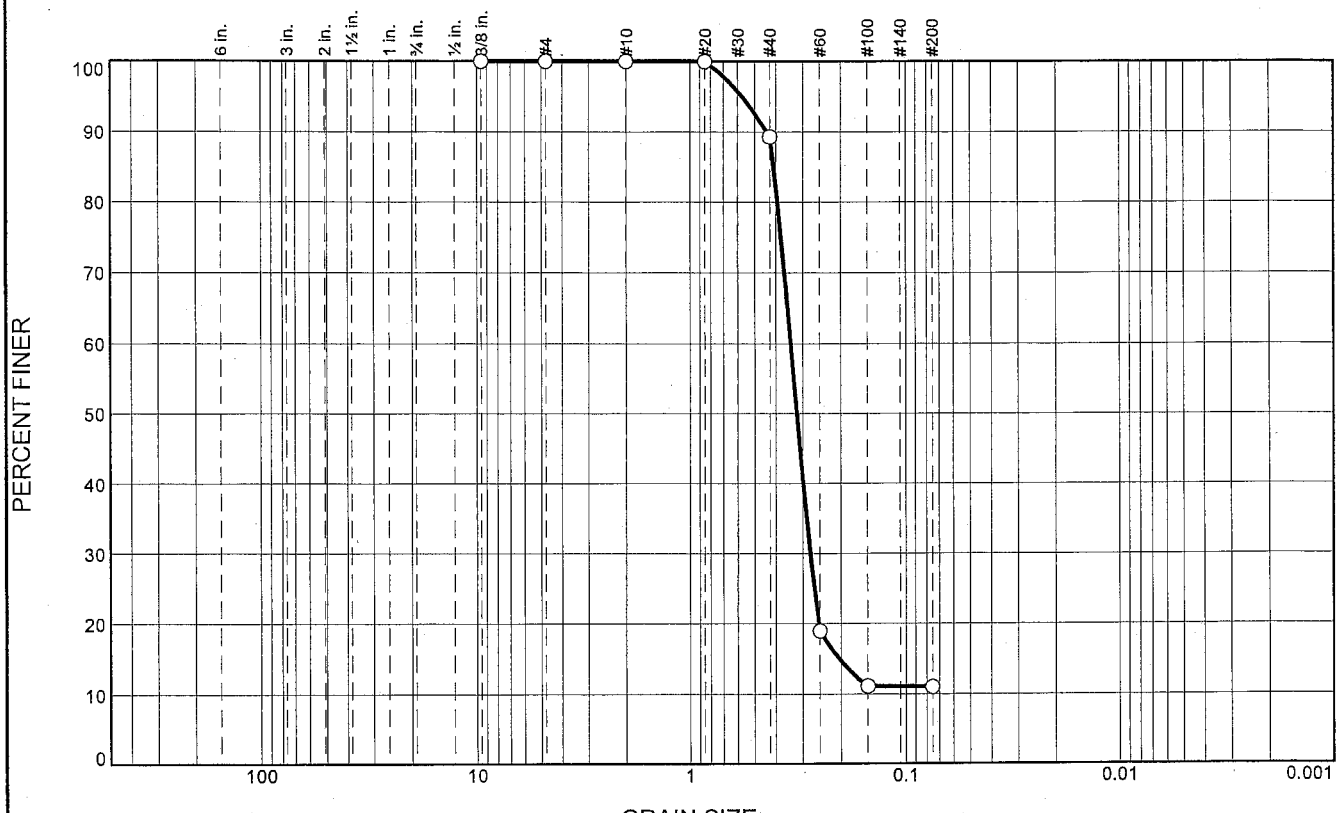
Thompson Engineering

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		

* (no specification provided)

Material Description

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

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.4395 D_{85}= 0.4087 D_{60}= 0.3409
D_{50}= 0.3191 D_{30}= 0.2769 D_{15}= 0.2034
D_{10}= C_u= C_c=

Classification

USCS= SP-SM AASHTO=

Remarks

CADD CODE = CH10D965

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 2 SHEETS

1. PROJECT: MsCIP Barrier Island Restoration, Petit Bois Pass- AL West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PB-026-10 — LOCATION COORDINATES: E = 1,137,521 N = 254,424	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 3 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 30 Ft.
	15. DATE BORING — STARTED: 07-19-10 — COMPLETED: 07-19-10
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -30.5 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
-30.5	0.0				
-32.1	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
-32.5	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
-42.5	12.0				
			CLAY, fat, gray (CH)	NS	
-50.5	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.

3. Seafloor elevation determined from 2010

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.19872° Long = -88.34816°

Boring Designation BI-PB-026-10

DRILLING LOG (Cont. Sheet)	INSTALLATION Mobile District		SHEET 2 OF 2 SHEETS
PROJECT MsCIP Barrier Island Restoration	COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83	VERTICAL NAVD88
LOCATION COORDINATES X = 1,137,521 Y = 254,424	ELEVATION TOP OF BORING -30.5 Ft.		

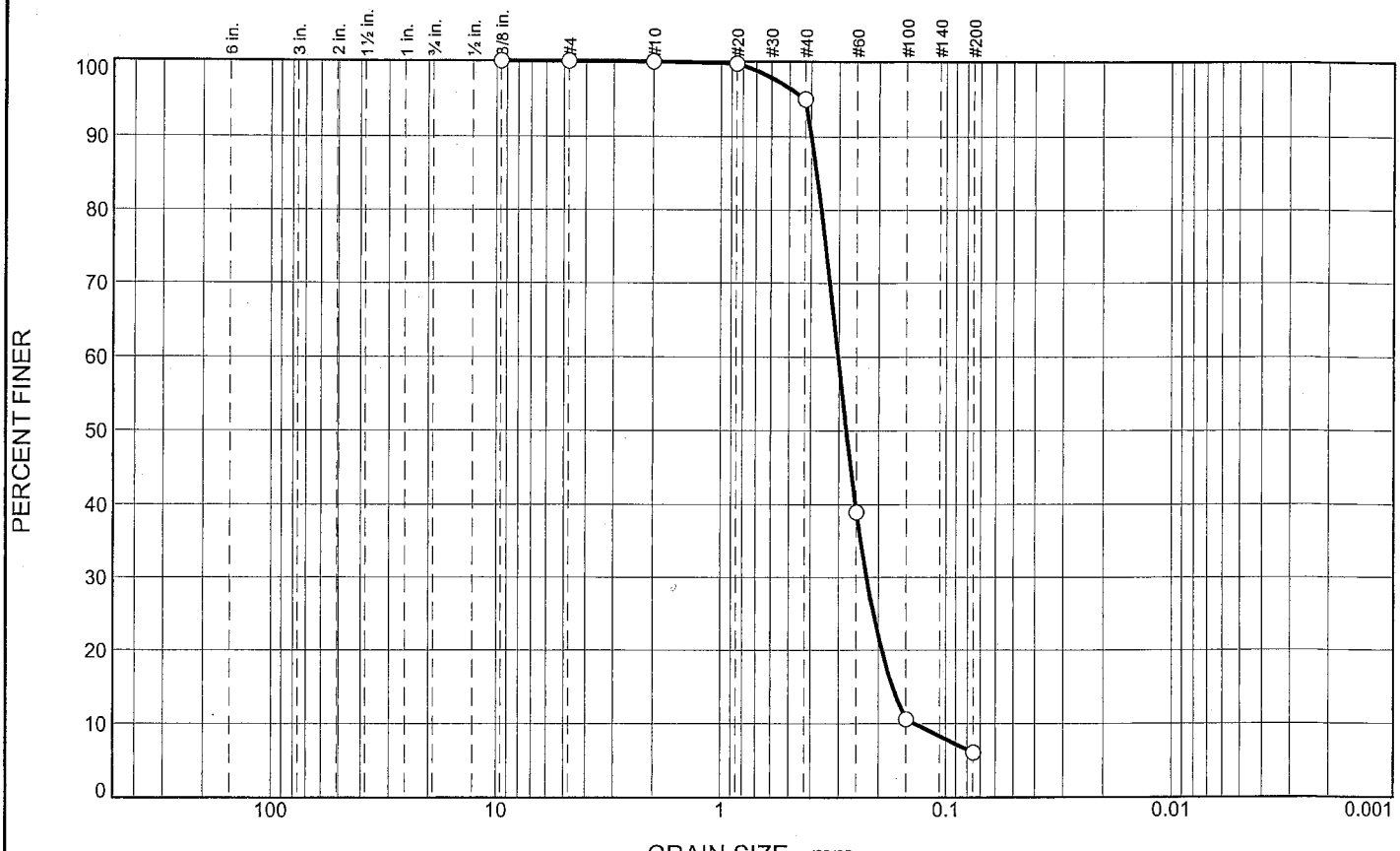
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
			USACE survey.		

30
35
40
45
50
55
60

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.19872° Long = -88.34816°

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)

Material Description

SAND, (SP-SM), fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

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

Classification

USCS= SP-SM AASHTO=

Remarks

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

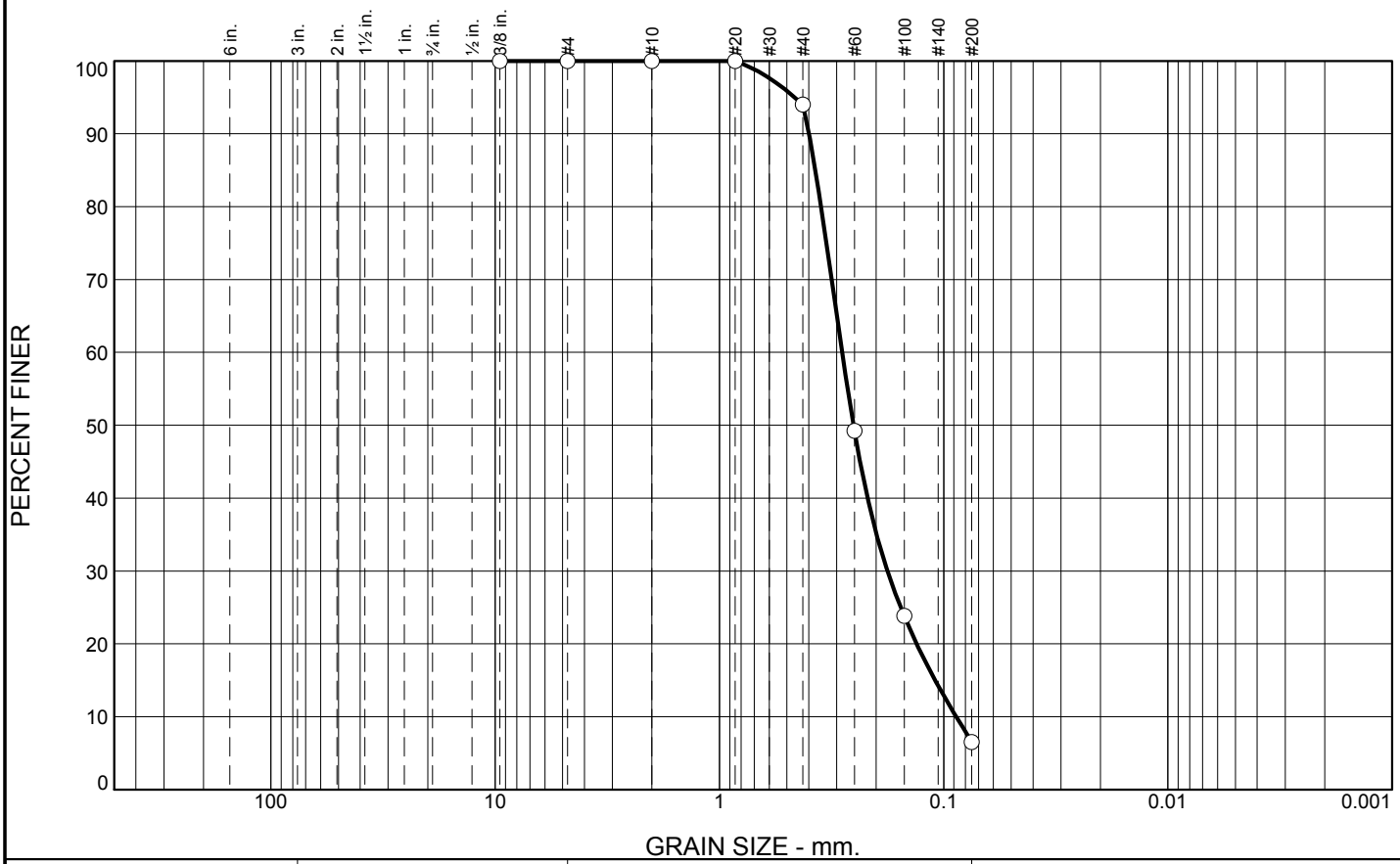
Thompson Engineering

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)

Material Description

SAND, (SP-SM), fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

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

Classification

USCS= SP-SM AASHTO=

Remarks

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

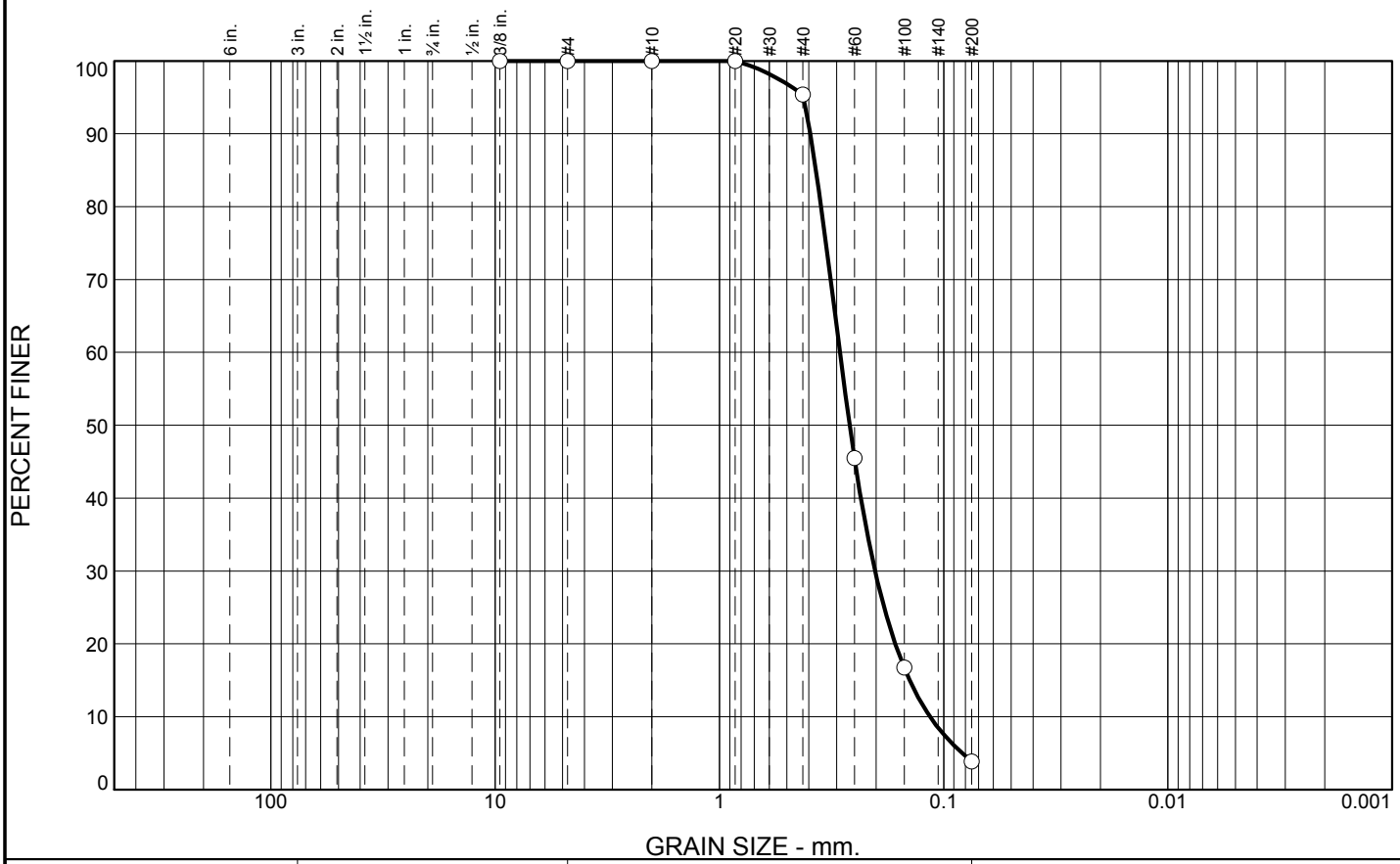
Thompson Engineering

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

D_{90}= 0.3939 D_{85}= 0.3714 D_{60}= 0.2900
D_{50}= 0.2625 D_{30}= 0.2024 D_{15}= 0.1417
D_{10}= 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: MsCIP Barrier Island Restoration, Petit Bois Pass- AL West	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PB-027-10 — LOCATION COORDINATES: E = 1,138,715 N = 254,477	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 2 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 30 Ft.
	15. DATE BORING — STARTED: 07-19-10 — COMPLETED: 07-19-10
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -29.9 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 18.0 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Chris Gillentine, Geologist

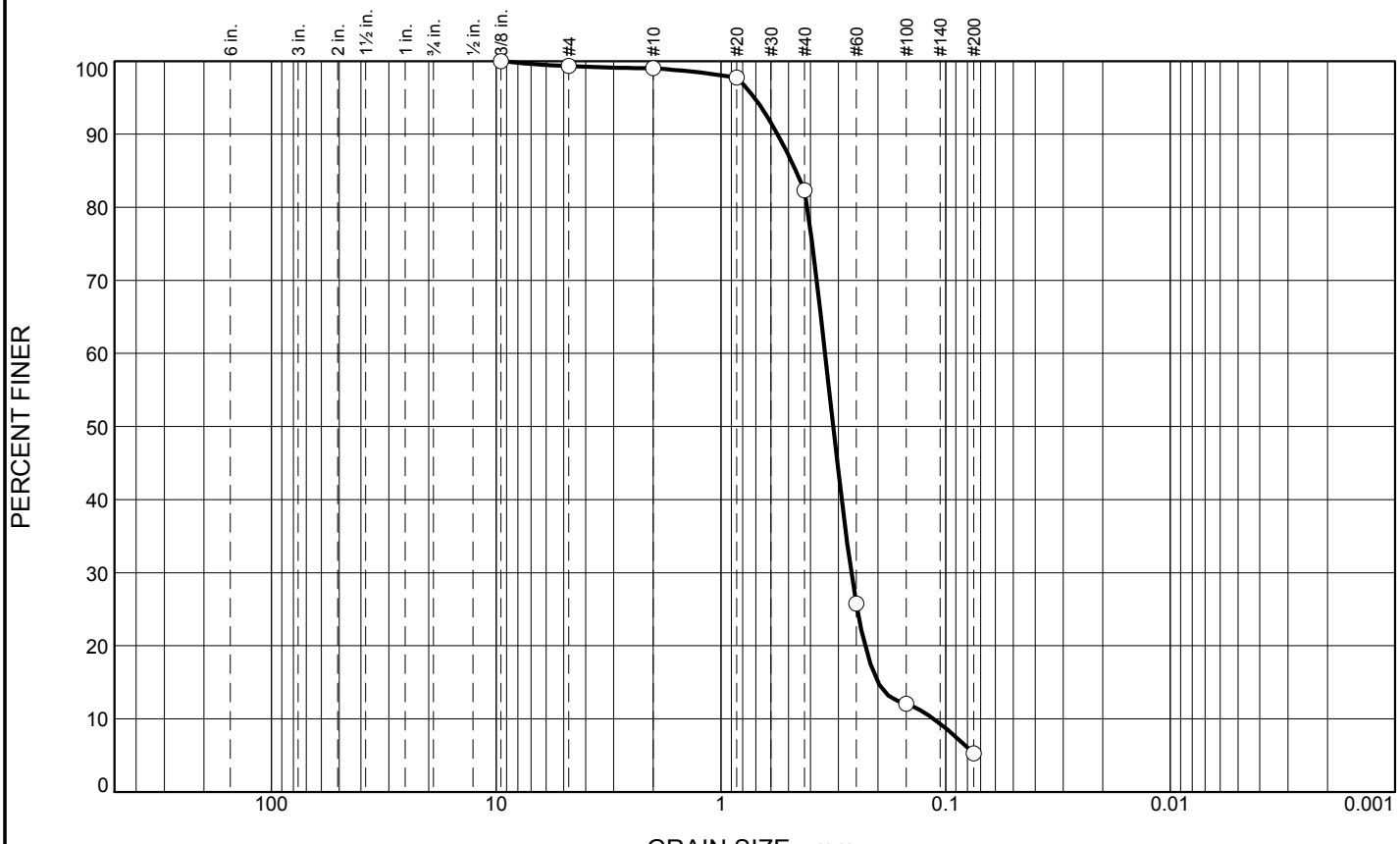
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-29.9	0.0				
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, trace shell fragments, brownish tan (SP)	A	Classification: SP-SM Color: 2.5Y 6/2-light brownish gray D50: 0.3163 mm % Fines: 5.3
				B	Classification: 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. 3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.		

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.19885° Long = -88.34438°

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)

Material Description

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

Atterberg Limits

PL= LL= PI=

Coefficients

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

Classification

USCS= SP-SM AASHTO=

Remarks

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

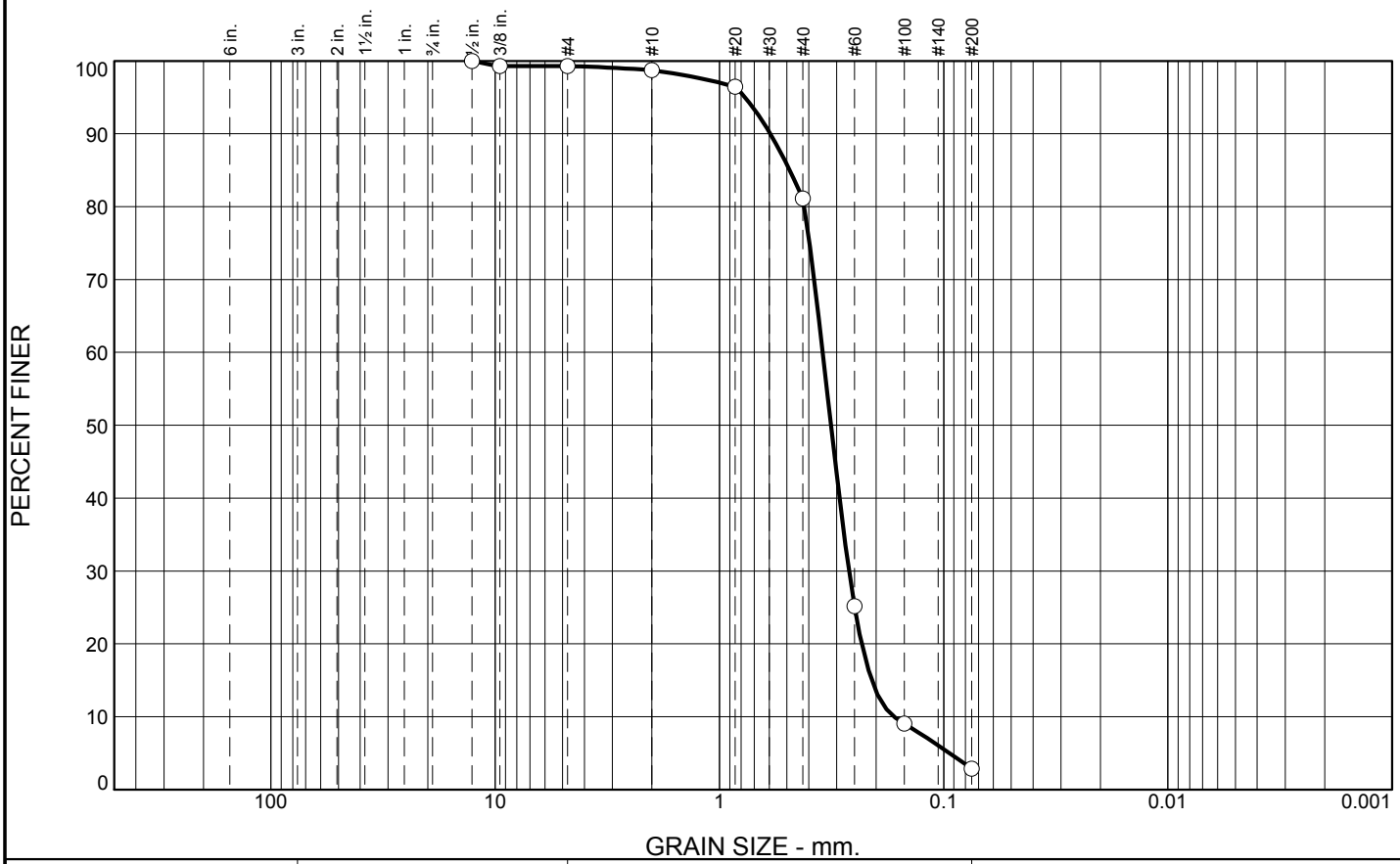
Thompson Engineering

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

D_{90}= 0.5932 D_{85}= 0.4857 D_{60}= 0.3462
D_{50}= 0.3179 D_{30}= 0.2643 D_{15}= 0.2093
D_{10}= 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	INSTALLATION	SHEET 1 OF 1 SHEETS
	South Atlantic	Mobile District	

1. PROJECT MsCIP Barrier Island Restoration Petit Bois Pass- AL East		9. SIZE AND TYPE OF BIT N/A	
		10. COORDINATE SYSTEM/DATUM State Plane, MSE (U.S. Ft.)	HORIZONTAL NAD83 / VERTICAL NAVD88
2. BORING DESIGNATION BI-PB-028-10	LOCATION COORDINATES E = 1,142,088 N = 254,513	11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore	☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY Corps of Engineers - CESAM	CONTRACTOR FILE NO.	12. TOTAL SAMPLES	DISTURBED: 4 UNDISTURBED (UD): 0
4. NAME OF DRILLER Construction Solutions International, Inc.		13. TOTAL NUMBER CORE BOXES	
5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED	DEG. FROM VERTICAL / BEARING	14. WATER DEPTH 32 Ft.	
		15. DATE BORING	STARTED: 07-16-10 COMPLETED: 07-16-10
6. THICKNESS OF OVERBURDEN N/A		16. ELEVATION TOP OF BORING -31.6 Ft.	
7. DEPTH DRILLED INTO ROCK N/A		17. TOTAL RECOVERY FOR BORING 100%	
8. TOTAL DEPTH OF BORING 18.6 Ft.		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.

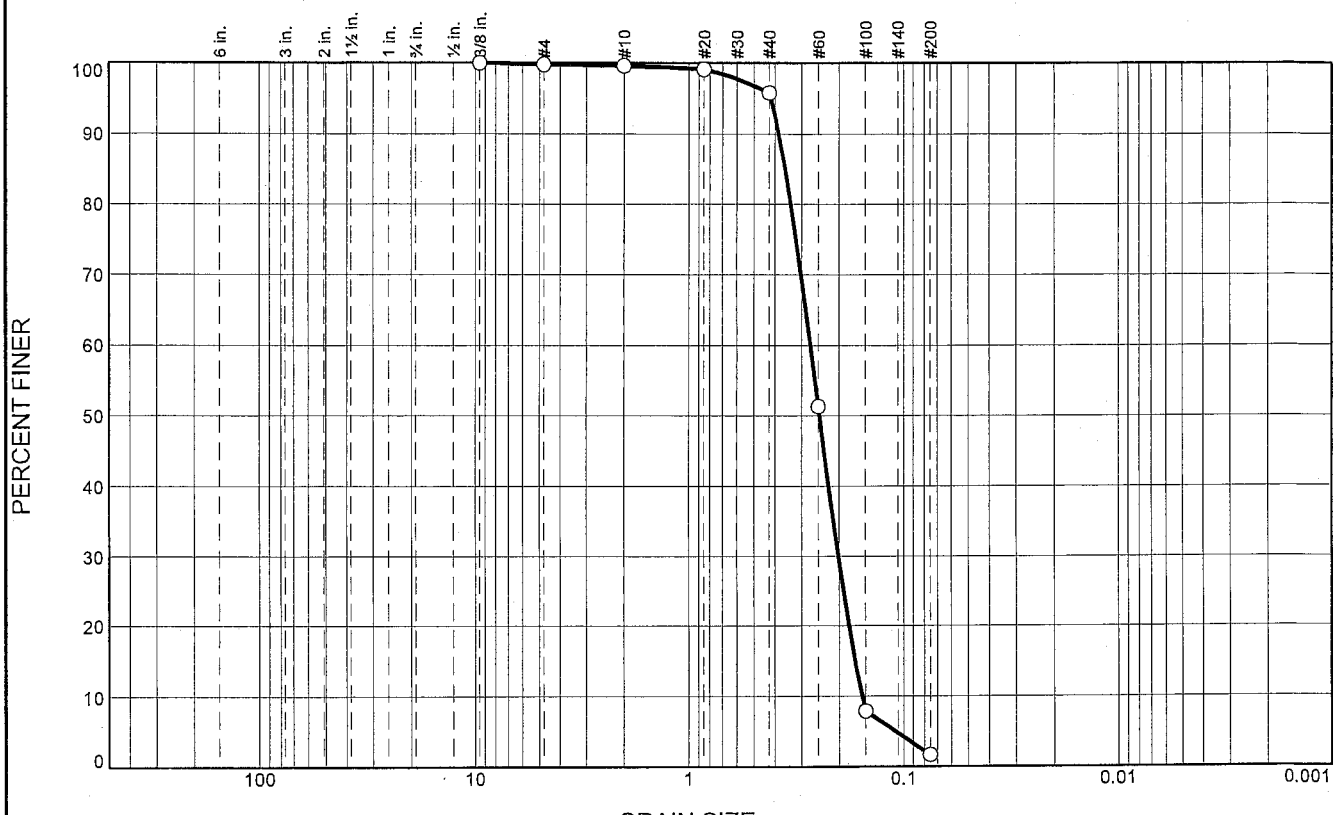
3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.19891° Long = -88.3337°

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

D_{90}= 0.3841 D_{85}= 0.3583 D_{60}= 0.2724
D_{50}= 0.2468 D_{30}= 0.2013 D_{15}= 0.1681
D_{10}= 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

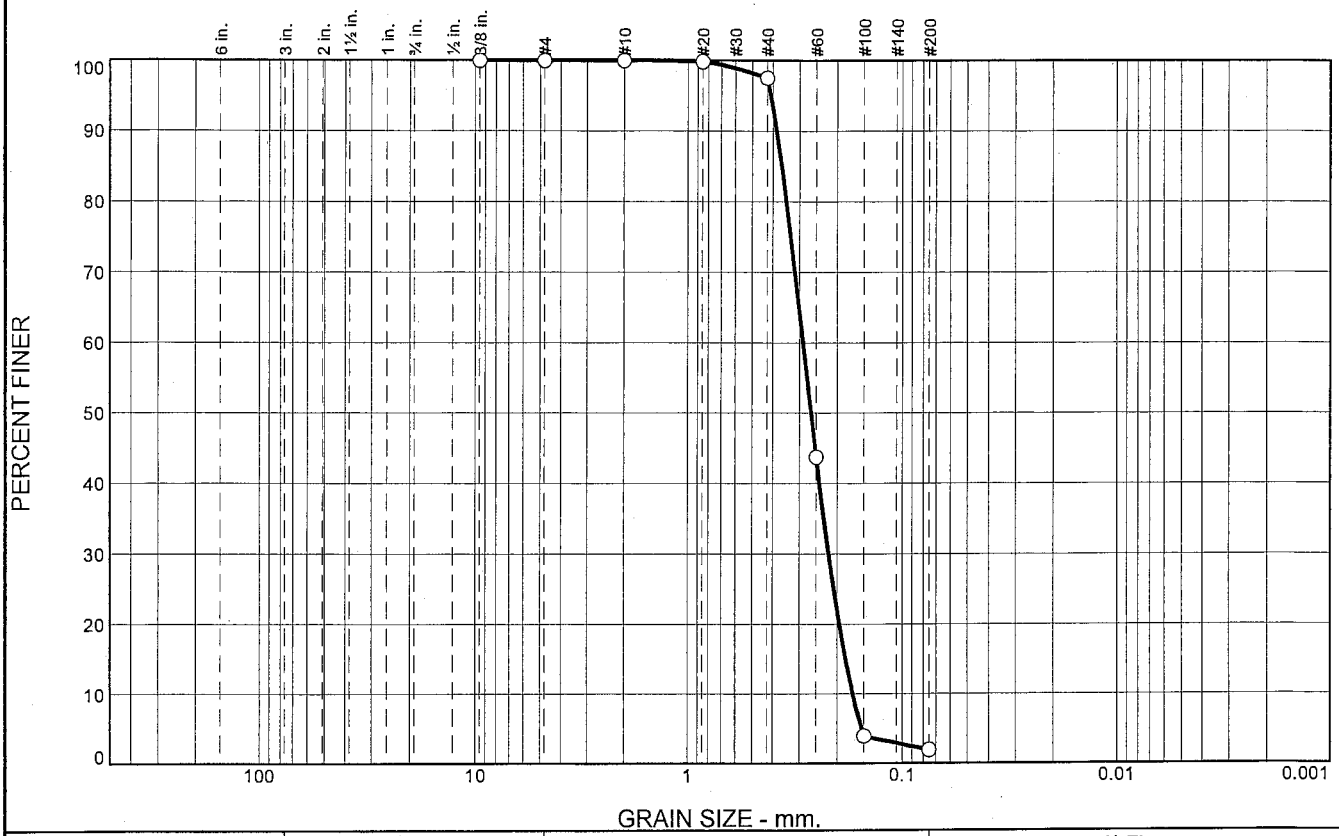
Thompson Engineering

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



% +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

D_{90}= 0.3837 D_{85}= 0.3632 D_{60}= 0.2887
D_{50}= 0.2646 D_{30}= 0.2186 D_{15}= 0.1825
D_{10}= 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

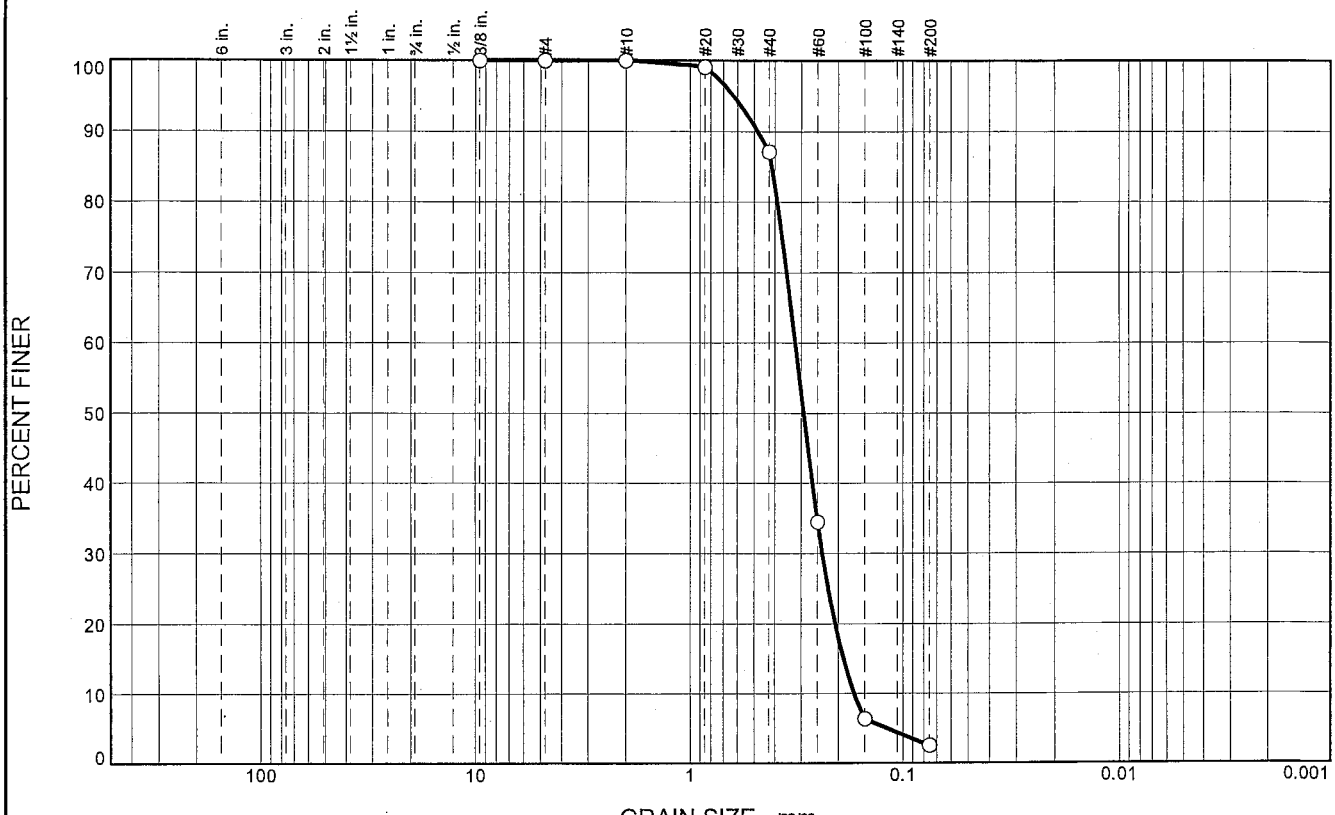
Thompson Engineering

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

D_{90}= 0.4813 D_{85}= 0.4131 D_{60}= 0.3197
D_{50}= 0.2917 D_{30}= 0.2376 D_{15}= 0.1891
D_{10}= 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

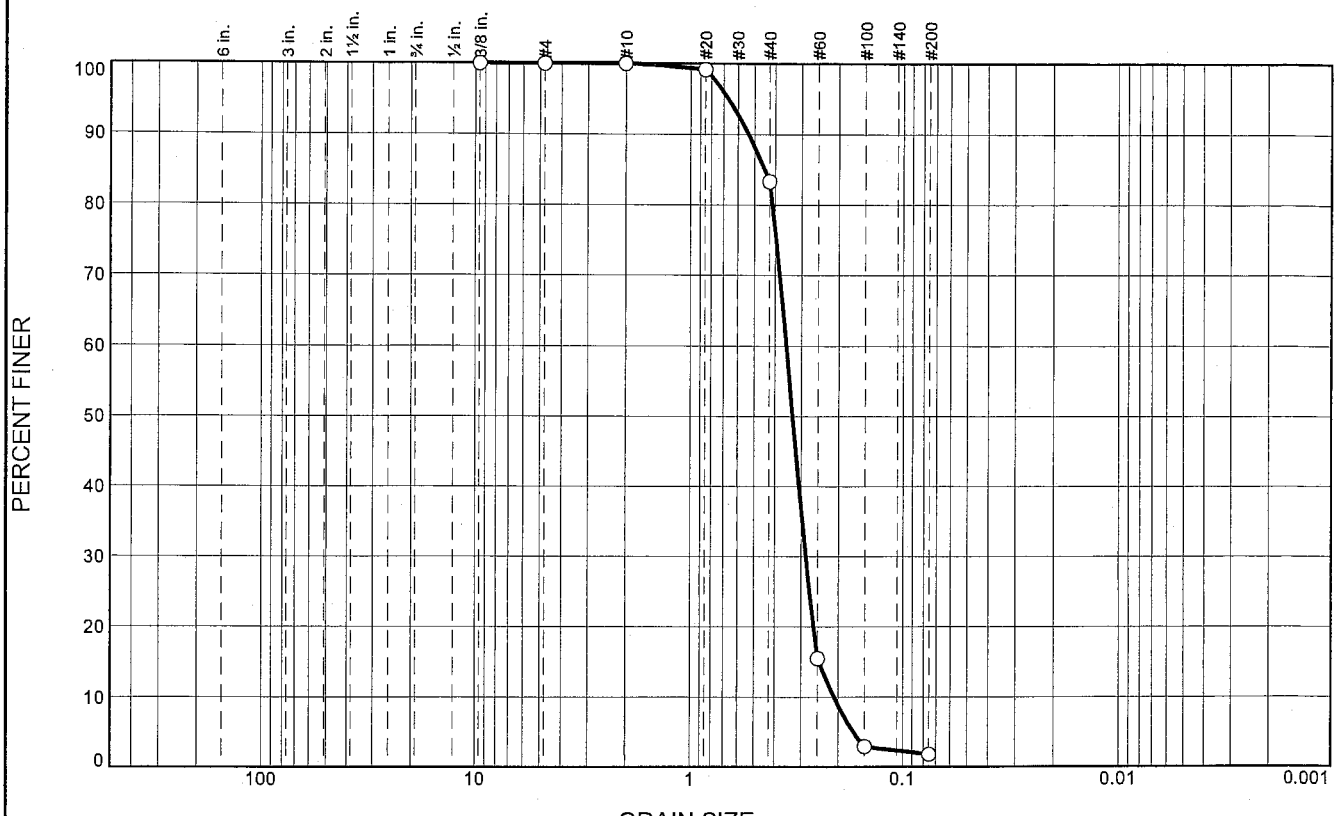
Thompson Engineering

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

D_{90}= 0.5337 D_{85}= 0.4483 D_{60}= 0.3527
D_{50}= 0.3289 D_{30}= 0.2849 D_{15}= 0.2466
D_{10}= 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	INSTALLATION	SHEET 1 OF 1 SHEETS
	South Atlantic	Mobile District	

1. PROJECT	MsCIP Barrier Island Restoration Petit Bois Pass- AL East
2. BORING DESIGNATION	BI-PB-029-10
LOCATION COORDINATES	E = 1,143,583 N = 254,505
3. DRILLING AGENCY	Corps of Engineers - CESAM
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Construction Solutions International, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	11.5 Ft.
9. SIZE AND TYPE OF BIT	N/A
10. COORDINATE SYSTEM/DATUM	State Plane, MSE (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	NAVD88
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED 1 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	
14. WATER DEPTH	30 Ft.
15. DATE BORING	STARTED 07-16-10 / COMPLETED 07-16-10
16. ELEVATION TOP OF BORING	-29.6 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
-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)		
-41.1	11.5		CLAY, lean, 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.

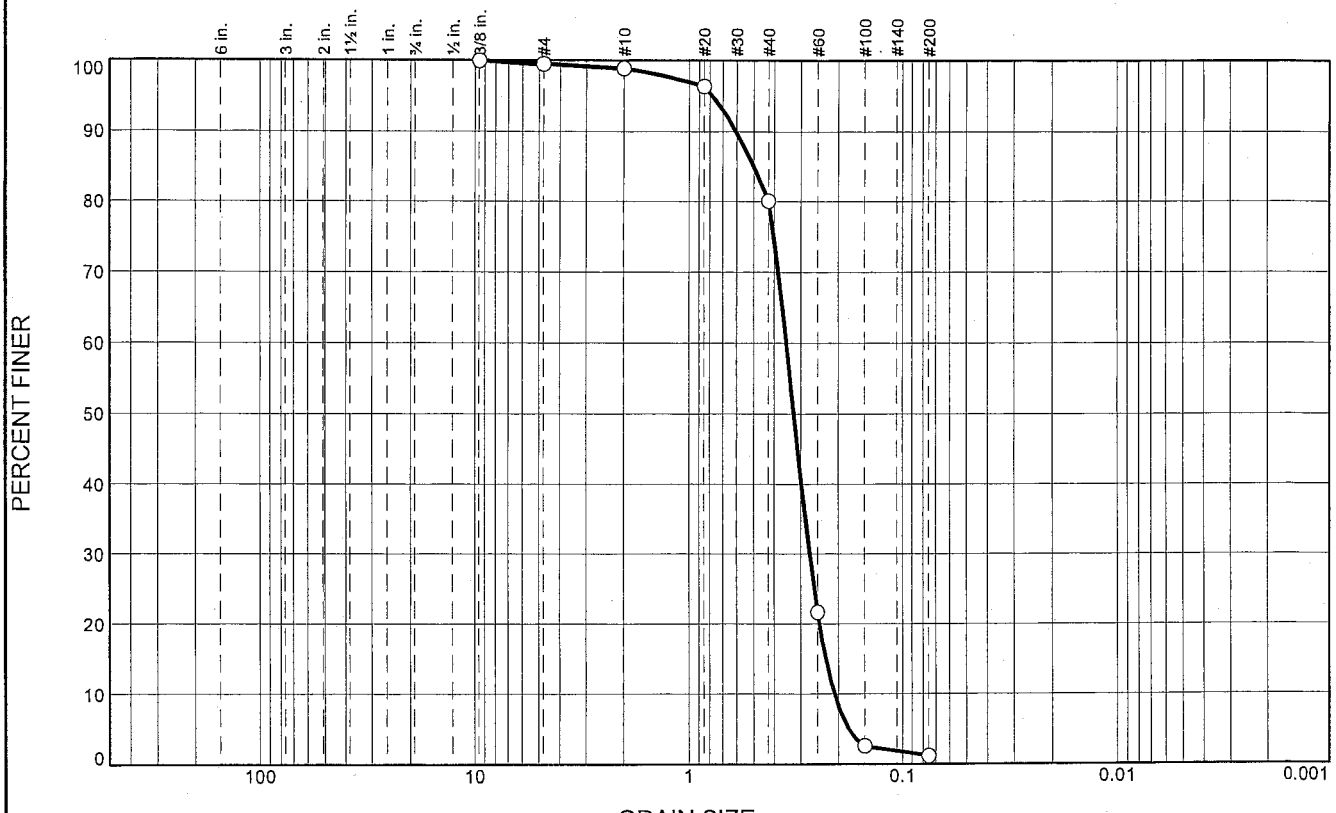
3. Seafloor elevation calculated using sampling vessel's fathometer water depth reading and applying NOAA tidal gauge data conversion factor.

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.19887° Long = -88.32897°

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		

* (no specification provided)

Material Description

SAND, (SP), medium to fine grained

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.6056 D_{85}= 0.4996 D_{60}= 0.3513
D_{50}= 0.3235 D_{30}= 0.2725 D_{15}= 0.2287
D_{10}= 0.2085 C_u= 1.68 C_c= 1.01

Classification

USCS= SP AASHTO=

Remarks

CADD CODE = CH10D965

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: MsCIP Barrier Island Restoration, Petit Bois Pass- AL East	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PB-030-10 — LOCATION COORDINATES: E = 1,145,242 N = 254,411	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 3 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 33 Ft.
	15. DATE BORING — STARTED: 07-16-10 — COMPLETED: 07-16-10
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -33.7 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 18.8 Ft.	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 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
-48.6	14.9			C	Classification: SP Color: 2.5Y 7/1-light gray D50: 0.39 mm % Fines: 2
-52.5	18.8		CLAY, lean, occ. sand pockets, 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.

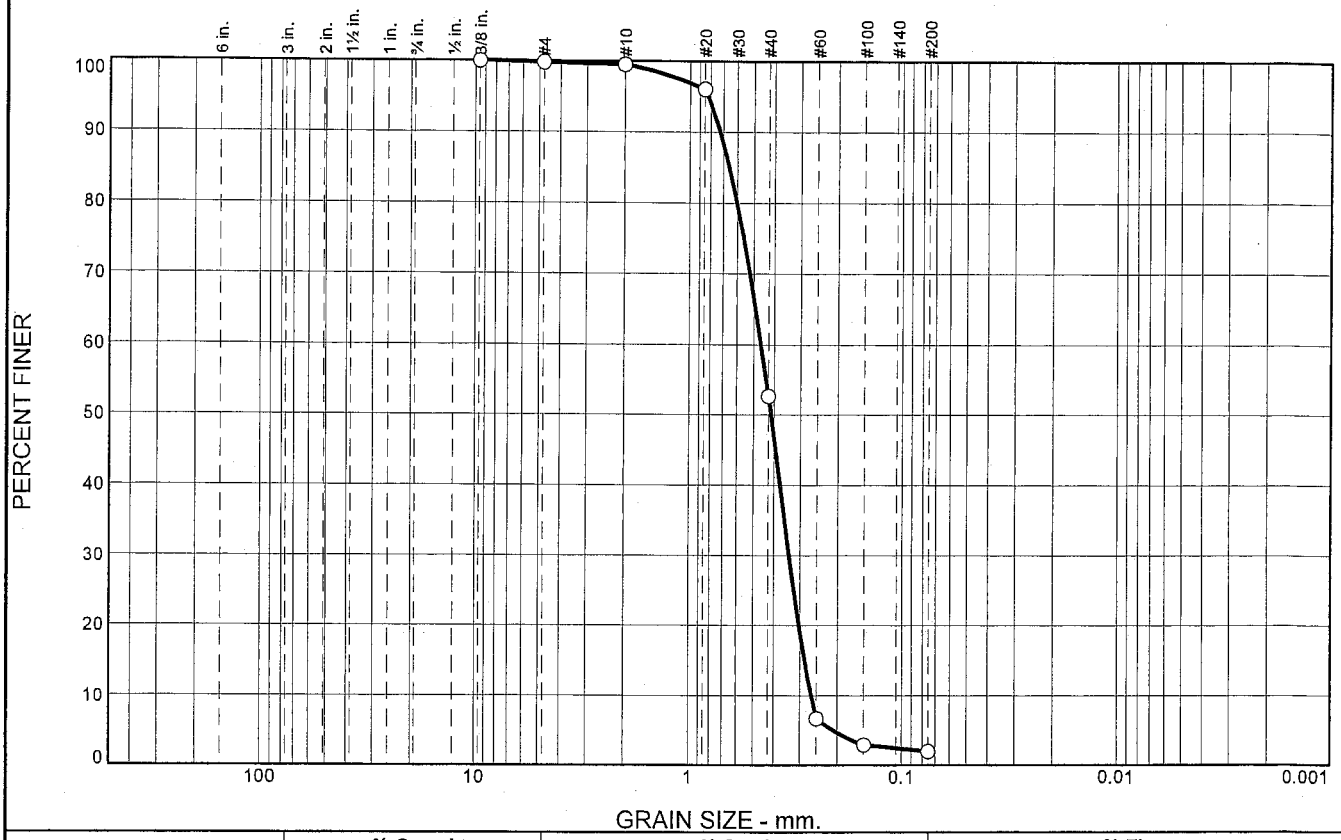
3. Seafloor elevation determined from 2010 USACE survey.

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.19859° Long = -88.32372°

Particle Size Distribution Report



% +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

D_{90}= 0.7231 D_{85}= 0.6548 D_{60}= 0.4613
D_{50}= 0.4137 D_{30}= 0.3379 D_{15}= 0.2851
D_{10}= 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

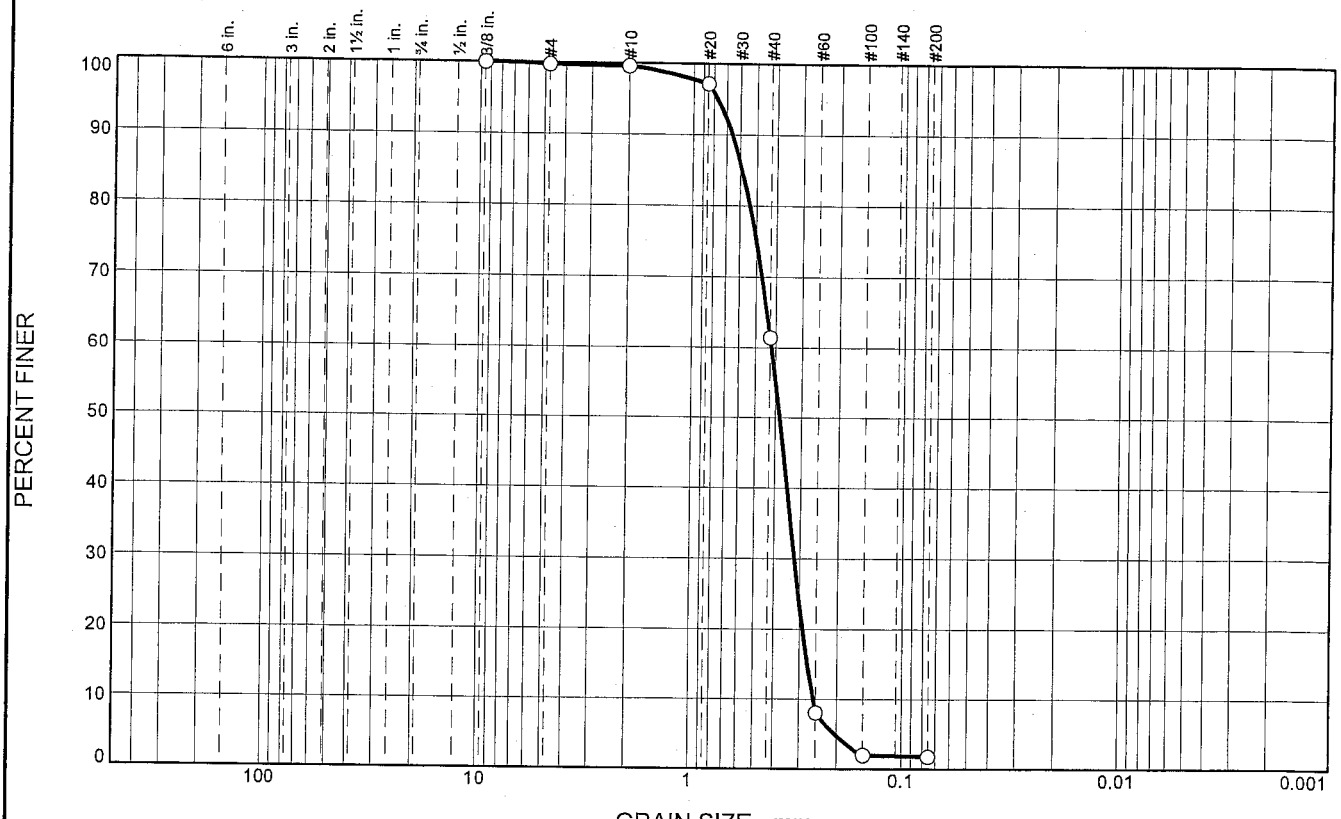
Thompson Engineering

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

D_{90}= 0.6557 D_{85}= 0.5866 D_{60}= 0.4189
D_{50}= 0.3812 D_{30}= 0.3192 D_{15}= 0.2746
D_{10}= 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

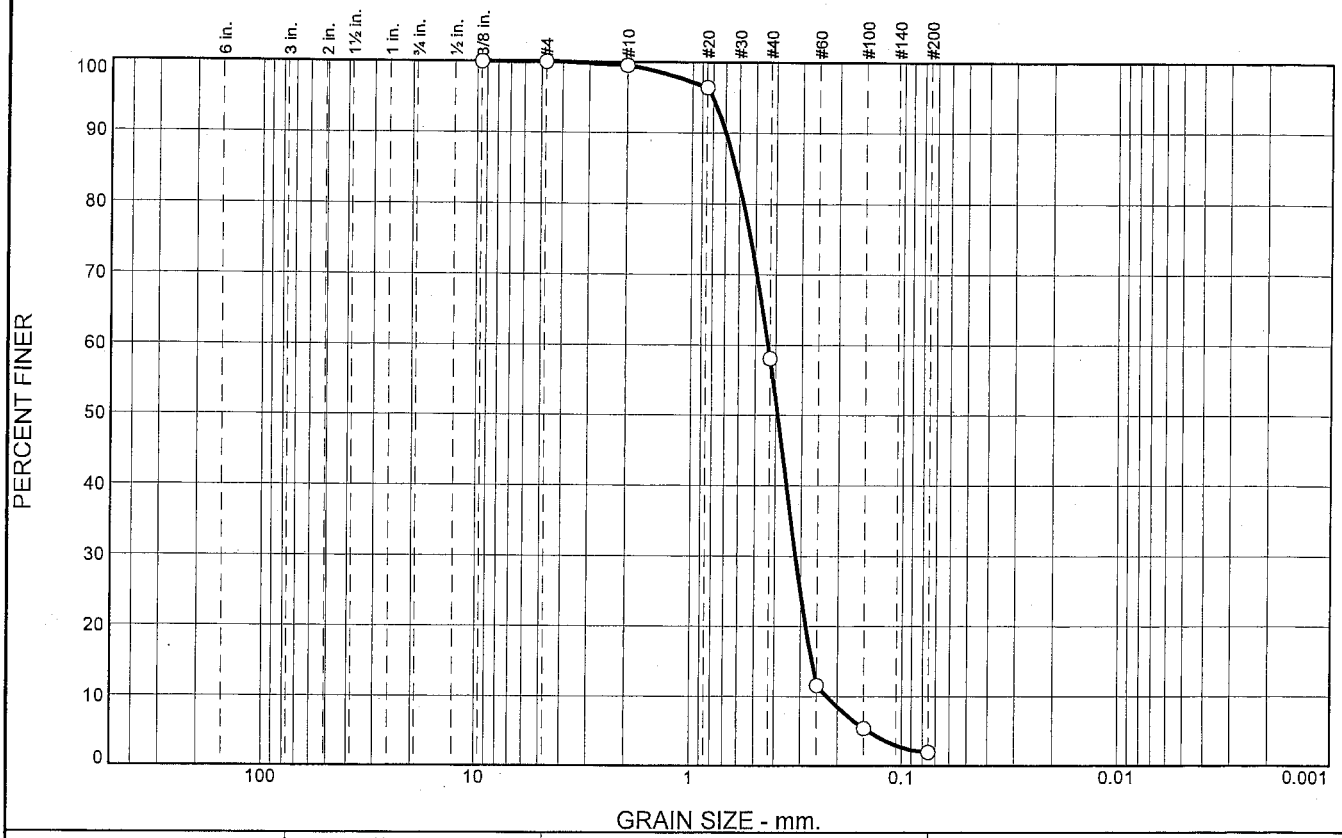
Thompson Engineering

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



% +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

D_{90}= 0.6967 D_{85}= 0.6244 D_{60}= 0.4342
D_{50}= 0.3900 D_{30}= 0.3180 D_{15}= 0.2647
D_{10}= 0.2236 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: MsCIP Barrier Island Restoration, Petit Bois Pass- AL East	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PB-031-10 — LOCATION COORDINATES: E = 1,146,749 N = 254,381	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 4 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 29 Ft.
	15. DATE BORING — STARTED: 07-12-10 — COMPLETED: 07-12-10
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -28.8 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 18.4 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: John Baehr, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-28.8	0.0				
-32.8	4.0		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
-35.8	7.0		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
-37.5	8.7		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
-41.7	12.9		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
-47.2	18.4		CLAY, lean, occ. sand pockets, 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.

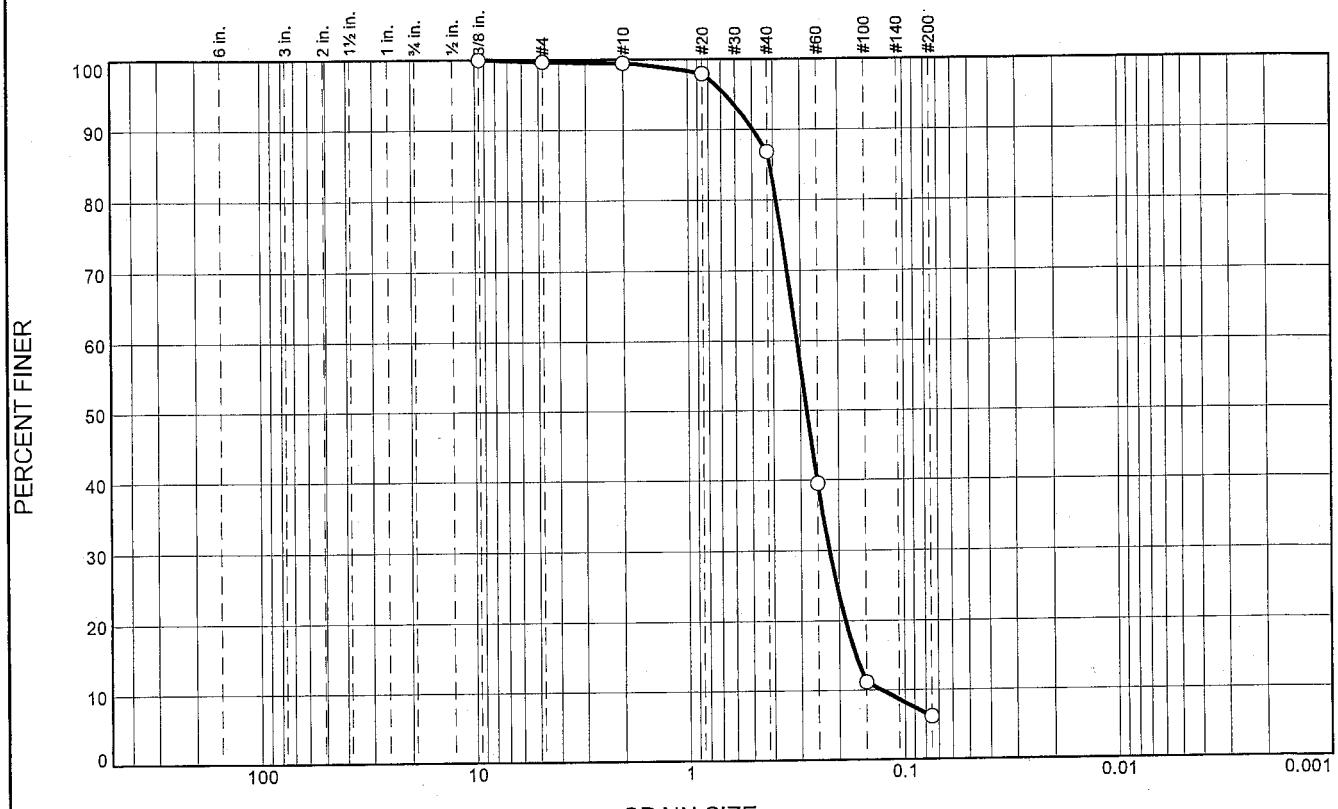
3. Seafloor elevation determined from 2010 USACE survey.

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.19849° Long = -88.31895°

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		

* (no specification provided)

Material Description

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

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.4942 D_{85}= 0.4133 D_{60}= 0.3108
D_{50}= 0.2805 D_{30}= 0.2212 D_{15}= 0.1678
D_{10}= 0.1273 C_u= 2.44 C_c= 1.24

Classification

USCS= SP-SM AASHTO=

Remarks

CADD CODE = CH10D965

Location: USACE Sample # BI-PB-31-10A
Sample Number: TE Lab ID: 4593.16 **Depth:** 0.0 - 4.0 (ft.) **Date:** 7/26/10

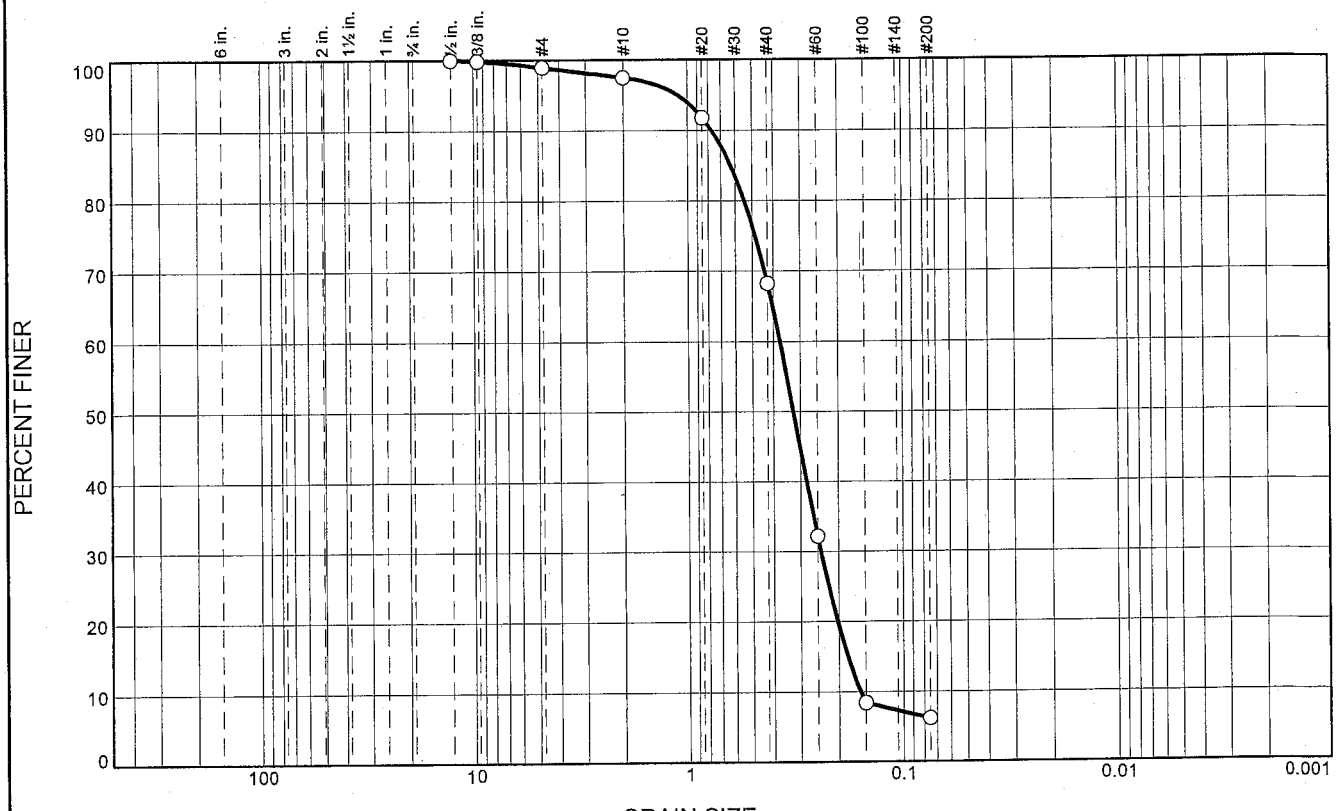
Thompson Engineering

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

D_{90}= 0.7698 D_{85}= 0.6283 D_{60}= 0.3728
D_{50}= 0.3229 D_{30}= 0.2416 D_{15}= 0.1820
D_{10}= 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

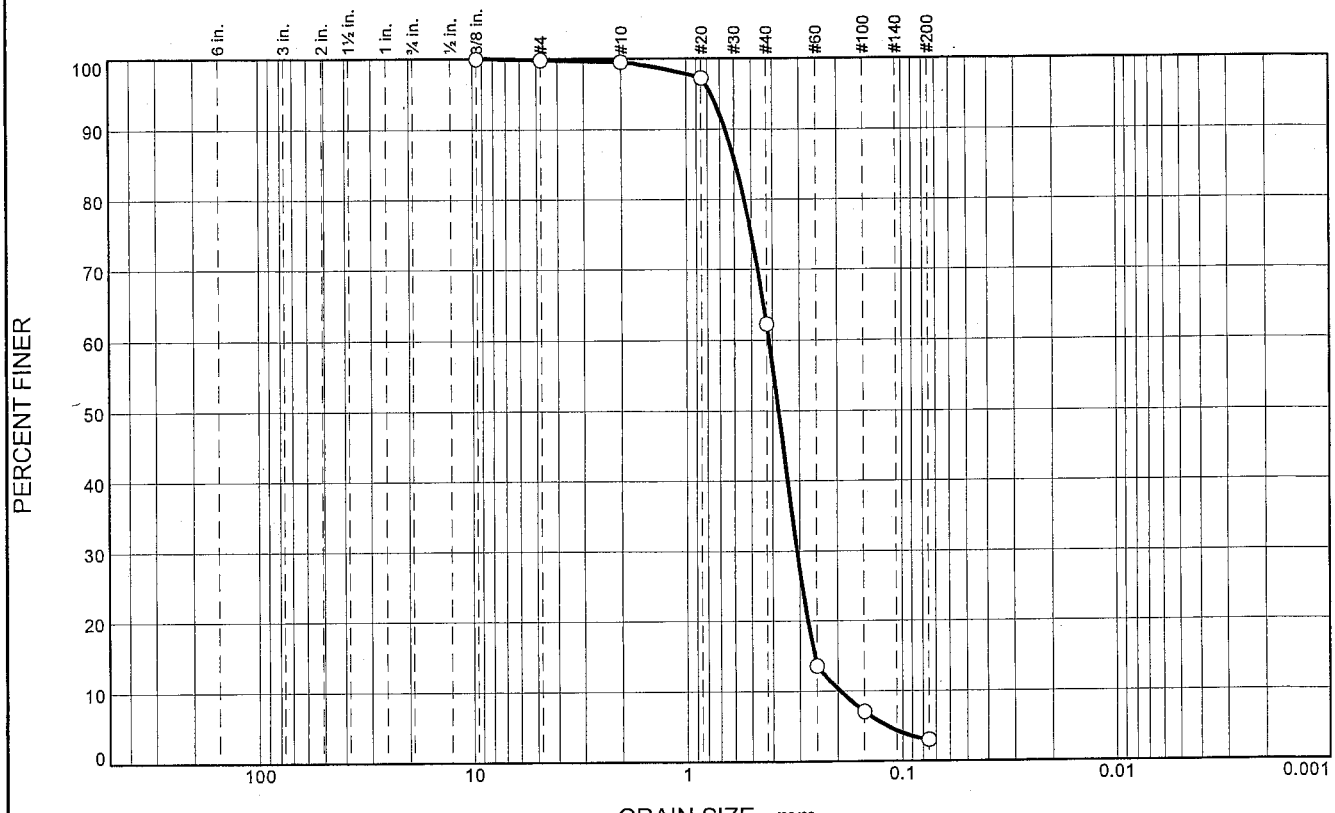
Thompson Engineering

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

D_{90}= 0.6592 D_{85}= 0.5895 D_{60}= 0.4150
D_{50}= 0.3751 D_{30}= 0.3082 D_{15}= 0.2564
D_{10}= 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

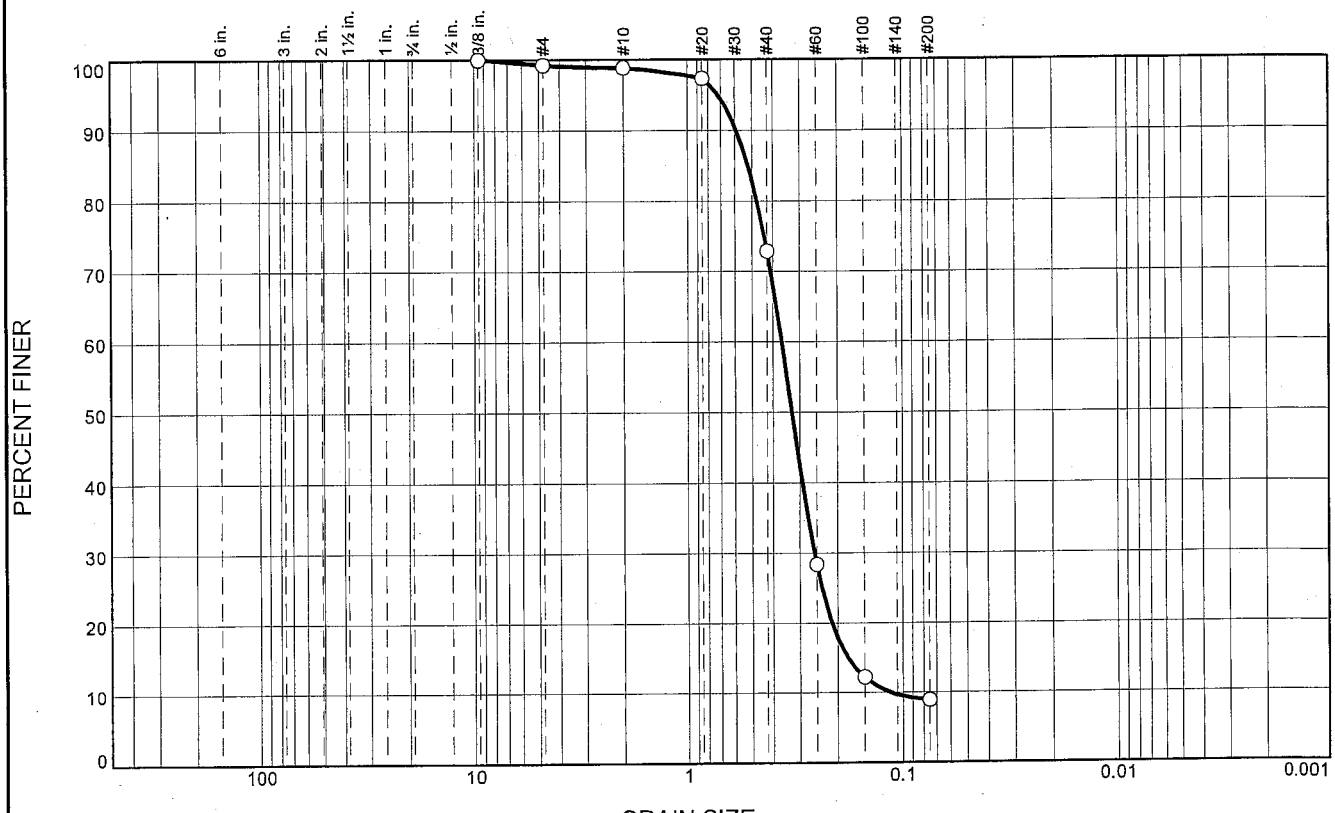
Thompson Engineering

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: MsCIP Barrier Island Restoration, Petit Bois Pass- AL East	9. SIZE AND TYPE OF BIT: N/A
	10. COORDINATE SYSTEM/DATUM: State Plane, MSE (U.S. Ft.) — HORIZONTAL: NAD83 — VERTICAL: NAVD88
2. BORING DESIGNATION: BI-PB-032-10 — LOCATION COORDINATES: E = 1,149,700 N = 254,347	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore — ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAM — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED: 5 — UNDISTURBED (UD): 0
4. NAME OF DRILLER: Construction Solutions International, Inc.	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. WATER DEPTH: 34 Ft.
	15. DATE BORING — STARTED: 07-12-10 — COMPLETED: 07-12-10
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -34.5 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 100%
8. TOTAL DEPTH OF BORING: 19.8 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: John Baehr, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	SAMPLE	LABORATORY RESULTS
-34.5	0.0				
-35.0	0.5		SAND, clayey, trace shell fragments, dark gray (SC)	NS	Classification: SP-SM Color: 10YR 6/2-light brownish gray D50: 0.3755 mm % Fines: 5.4
-35.6	1.1		SAND, poorly-graded, mostly medium-grained sand-sized quartz, gray (SP)	A	
			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
-50.3	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
-54.3	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.

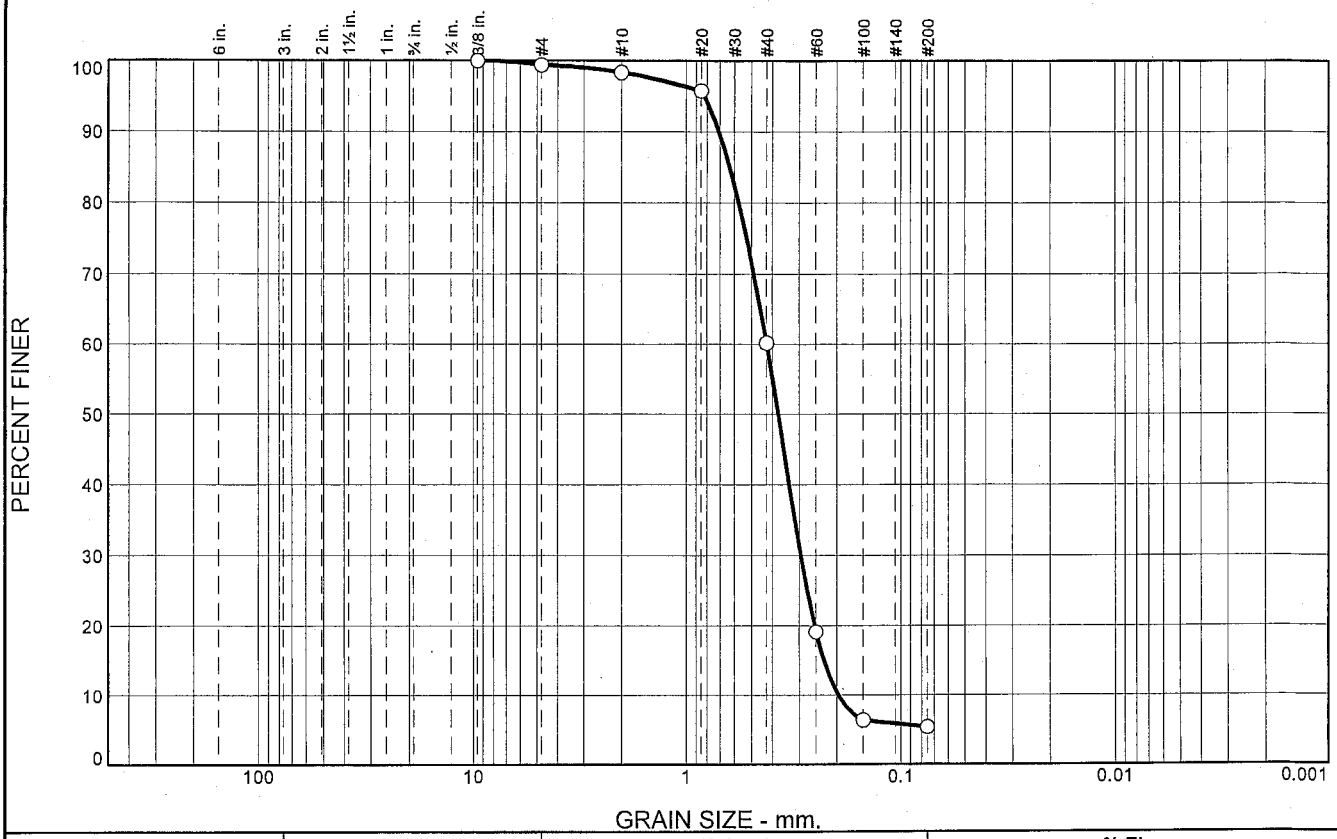
3. Seafloor elevation determined from 2010 USACE survey.

0 5 10 15 20 25

SAM FORM 1836 - MsCIP
MAY 2010

Lat = 30.19836° Long = -88.30961°

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

D_{90}= 0.7064 D_{85}= 0.6293 D_{60}= 0.4241
D_{50}= 0.3755 D_{30}= 0.2946 D_{15}= 0.2298
D_{10}= 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

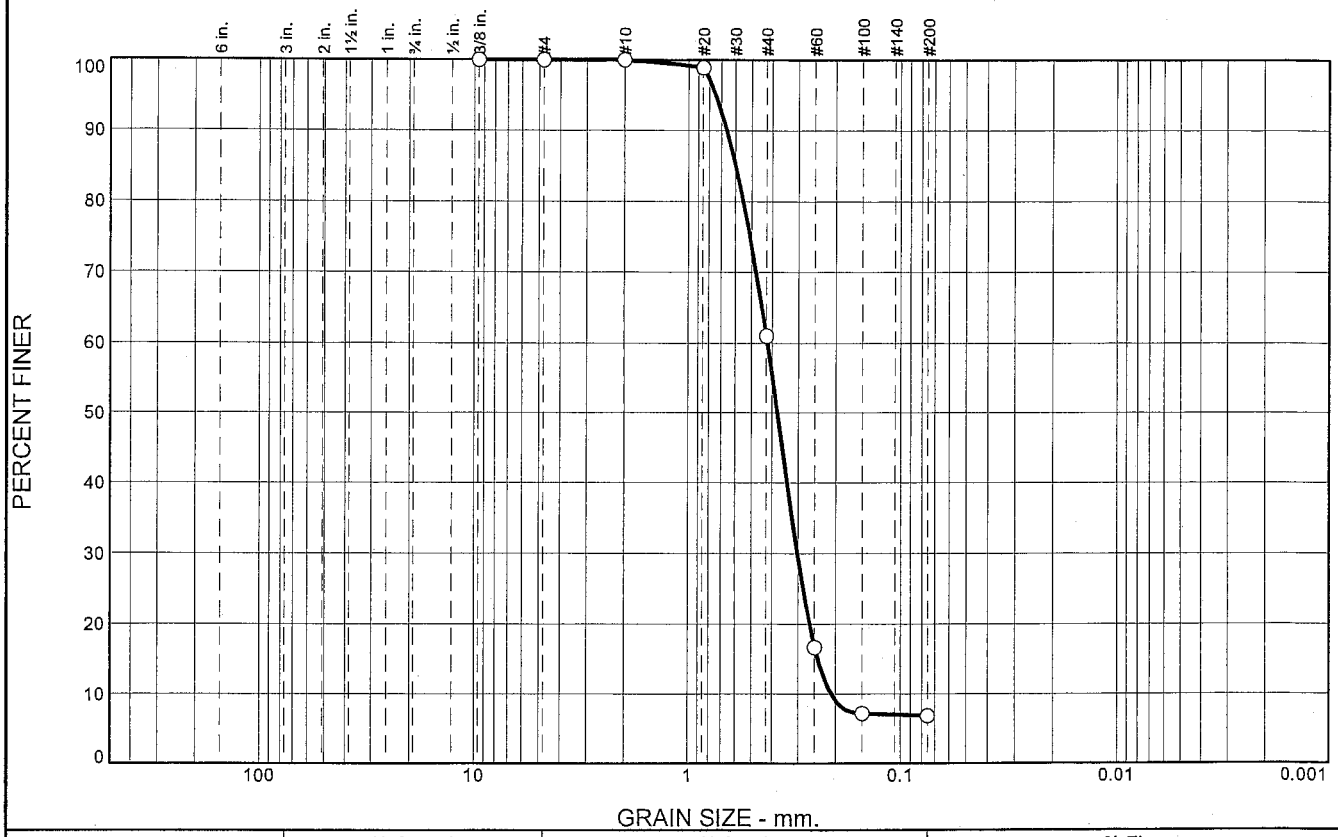
Thompson Engineering

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

D_{90}= 0.6589 D_{85}= 0.5973 D_{60}= 0.4203
D_{50}= 0.3764 D_{30}= 0.3019 D_{15}= 0.2420
D_{10}= 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