EXIHIBIT A-2-1 – EXPLORATION PLAN
P-475 Maintenance Hangar Facility ■ Beaufort, South Carolina
January 14, 2021 ■ Terracon Project No. HG205020

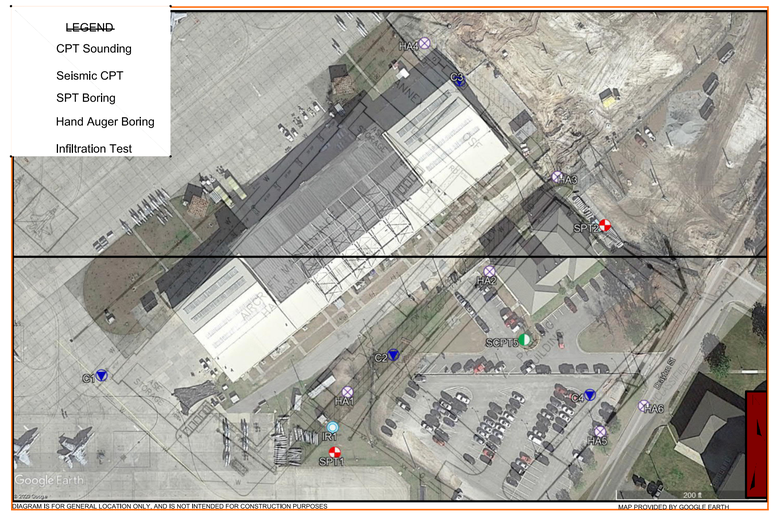
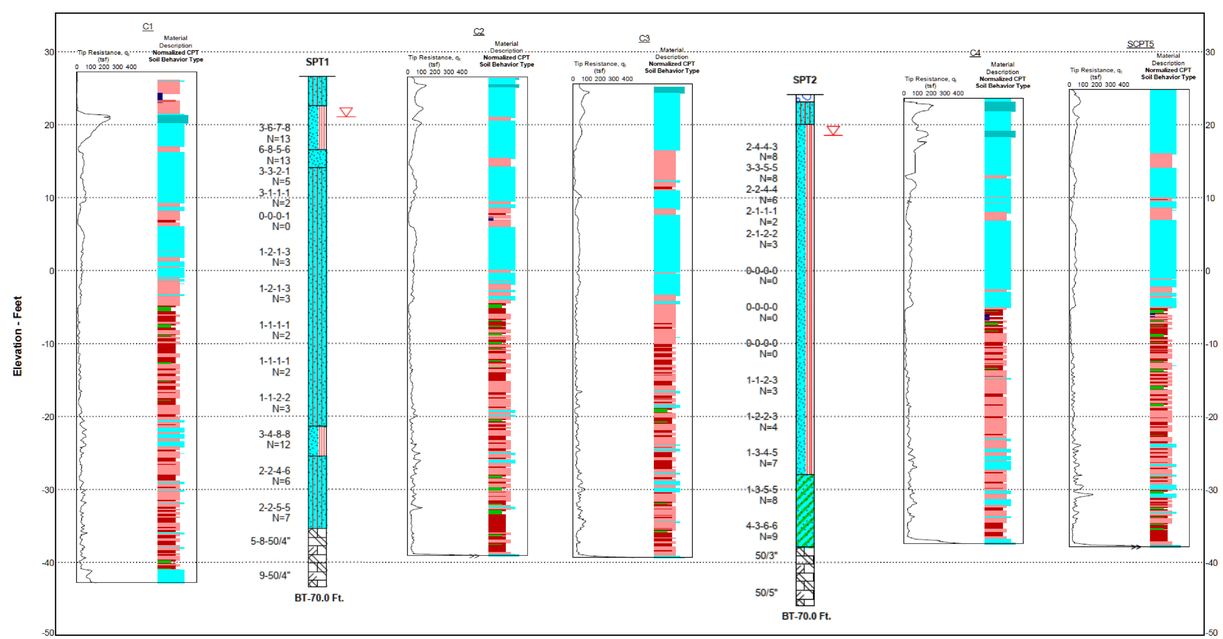


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

MAP PROVIDED BY GOOGLE EARTH



Explanation

C1 — Borehole Number
Moisture Content — Year
Sampling
LL PL — Liquid and Plastic Limits
Borehole Lithology
AR BT — Borehole Termination Type
Water Level Reading at time of drilling.
Water Level Reading after drilling.

Silty Sand | Poorly-graded Sand with Silt | Poorly-graded Sand | Weathered Limestone | Aggregate Base Course | Clayey Sand

NOTES:
See Exhibit for orientation of soil profile.
See General Notes in Appendix for symbols and soil classifications.
Soils profile provided for illustration purposes only.
Soils between borings may differ.
AR - Auger Refusal
BT - Boring Termination

Project Manager: TCB	Project No.: HG205020	Terracon 379 Browns Cove Rd Ste C Ridgeland, SC PH. 843-258-7070 FAX.	SUBSURFACE PROFILE
Drawn by: CZ	Scale: N.T.S.		P-475 HANGAR FACILITY, MCAS BEAUFORT, SC DRAYTON ST BEAUFORT, SC
Approved by: GL	File Name: HG205020		
Date: 11/11/2021			

EXHIBIT B-1

NOTE:
IF THIS DRAWING IS LESS THAN 34" X 22"
IT IS A REDUCED SIZE DRAWING

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. 11X17 CPT FENCE HG205020 P-475 HANGER FACILITY TERRACON DATATEMPLATE.GDT 1/11/21

STM	DESCRIPTION	DATE	APPR
	MOD P00006 AND MOD P00007	10/2025	
	MOD P00005	05/2023	

NAVFAC

COMMONWEALTH OF VIRGINIA
SCOTT A. BARNHILL
No. 012520
1/13/23
PROFESSIONAL ENGINEER
SEAL

BAMFORTH ENGINEERS + SURVEYORS
A/E INFO

APPROVED
FOR COMMANDER NAVFAC
ACTIVITY
Approved by J. Scott Roberts, Asset Management Branch Head & Supervisory Facility Planner, PWD Beaufort, SC via email.
SATISFACTORY TO DATE 12/15/2022

DES SAB	DRW SAB	CHK HNA	
PM/DM	KTB/RLH		
BRANCH MANAGER	FAD		
CHIEF ENG/ARCH	EJA		
FIRE PROTECTION	DSN		

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND - MID-ATLANTIC
NORFOLK, VA
DC CORE
MCAS BEAUFORT
BEAUFORT, SC
P-475 AIRCRAFT MAINTENANCE HANGAR - VOLUME 1 (BASE BID WITH OPTIONS
TESTING LOCATION PLAN & PROFILE

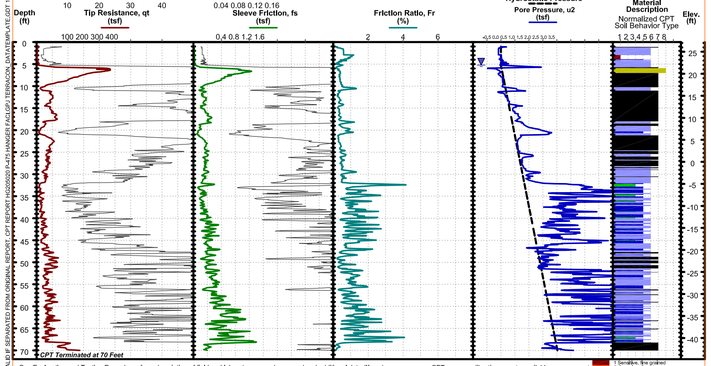
SCALE:
EPROJECT NO.: 1363603
CONSTR. CONTR. NO.
NAVFAC DRAWING NO. 12859179
SHEET 7 OF 1412
B-001

DRAWFORM REVISION: 25 AUGUST 2020

CPT LOG NO. C1

Page 1 of 1

PROJECT: P-475 Hangar Facility, MCAS Beaufort, SC
CLIENT: GeoEnvironmental Resources, Inc. Virginia Beach, VA
SITE: Drayton St Beaufort, SC
TEST LOCATION: See Exploration Plan
Surface Elev.: 27.2 ft
LL: 32.46781°,-80.72737°
NE: 230976.2084082



See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

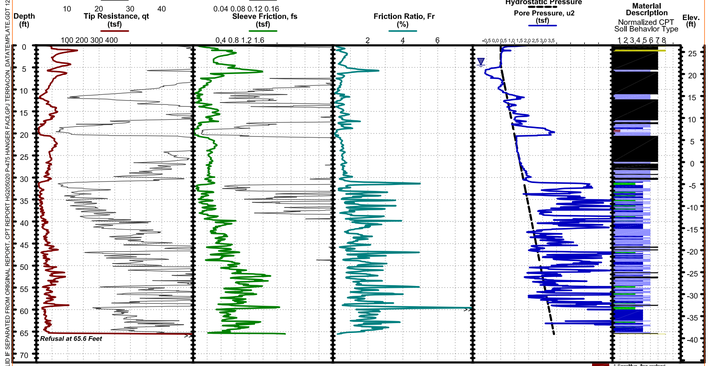
THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. CPT REPORT HG205020 P-475 HANGER FACILITY TERRACON_DATATEMPLATE.GDT 12/11/20

WATER LEVEL OBSERVATION			
5.25 ft measured water depth (used in normalizations and correlations: See Supporting Information)	Probe no. 5207 with net area ratio of .88 U2 pore pressure transducer location Manufactured by Geotech A.B.; calibrated 3/4/202 Tip and sleeve areas of 10 cm2and 150 cm2 Ring friction reducer with O.D. of 1.875 in	379 Browns Cove Rd Site C Ridgeland, SC	CPT Started: 11/10/2020 · CPT Completed: 11/10/2020 Rig: Truck-mounted · Operator: RH Project No.: HG205020 · Exhibit B-2-1

CPT LOG NO. C2

Page 1 of 1

PROJECT: P-475 Hangar Facility, MCAS Beaufort, SC
CLIENT: GeoEnvironmental Resources, Inc. Virginia Beach, VA
SITE: Drayton St Beaufort, SC
TEST LOCATION: See Exploration Plan
Surface Elev.: 26.5 ft
LL: 32.46788°,-80.72615°
NE: 230998.2084459



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1 Sensitive, fine grained
2 Organic soils - clay
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4 Silt mixtures - clayey silt to silty clay
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6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

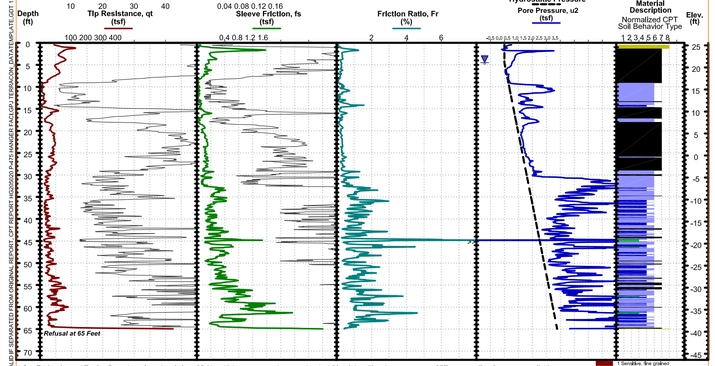
THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. CPT REPORT HG205020 P-475 HANGER FACILITY TERRACON_DATATEMPLATE.GDT 12/11/20

WATER LEVEL OBSERVATION			
4.5 ft estimated water depth (used in normalizations and correlations: See Supporting Information)	Probe no. 4815 with net area ratio of .87 U2 pore pressure transducer location Manufactured by Geotech A.B.; calibrated 2/13/2020 Tip and sleeve areas of 10 cm2and 150 cm2 Ring friction reducer with O.D. of 1.875 in	379 Browns Cove Rd Site C Ridgeland, SC	CPT Started: 10/29/2020 · CPT Completed: 10/29/2020 Rig: Truck-mounted · Operator: RH Project No.: HG205020 · Exhibit B-2-2

CPT LOG NO. C3

Page 1 of 1

PROJECT: P-475 Hangar Facility, MCAS Beaufort, SC
CLIENT: GeoEnvironmental Resources, Inc. Virginia Beach, VA
SITE: Drayton St Beaufort, SC
TEST LOCATION: See Exploration Plan
Surface Elev.: 25.6 ft
LL: 32.46886°,-80.72587°
NE: 231390.2084543



See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

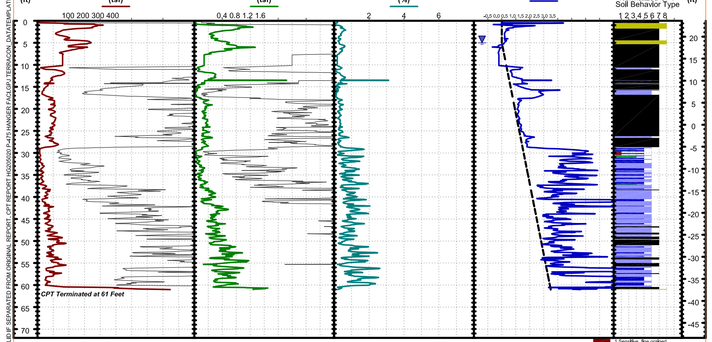
THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. CPT REPORT HG205020 P-475 HANGER FACILITY TERRACON_DATATEMPLATE.GDT 12/11/20

WATER LEVEL OBSERVATION			
4.5 ft estimated water depth (used in normalizations and correlations: See Supporting Information)	Probe no. 4815 with net area ratio of .87 U2 pore pressure transducer location Manufactured by Geotech A.B.; calibrated 2/13/2020 Tip and sleeve areas of 10 cm2and 150 cm2 Ring friction reducer with O.D. of 1.875 in	379 Browns Cove Rd Site C Ridgeland, SC	CPT Started: 10/30/2020 · CPT Completed: 10/30/2020 Rig: Truck-mounted · Operator: RH Project No.: HG205020 · Exhibit B-2-3

CPT LOG NO. C4

Page 1 of 1

PROJECT: P-475 Hangar Facility, MCAS Beaufort, SC
CLIENT: GeoEnvironmental Resources, Inc. Virginia Beach, VA
SITE: Drayton St Beaufort, SC
TEST LOCATION: See Exploration Plan
Surface Elev.: 23.6 ft
LL: 32.46774°,-80.72532°
NE: 230946.2084717



See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

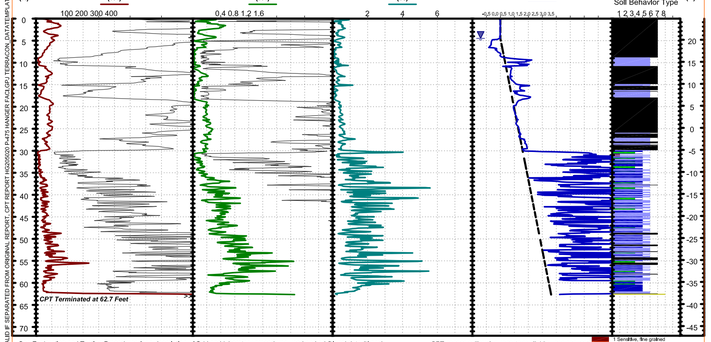
THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. CPT REPORT HG205020 P-475 HANGER FACILITY TERRACON_DATATEMPLATE.GDT 12/11/20

WATER LEVEL OBSERVATION			
5 ft estimated water depth (used in normalizations and correlations: See Supporting Information)	Probe no. 4815 with net area ratio of .87 U2 pore pressure transducer location Manufactured by Geotech A.B.; calibrated 2/13/2020 Tip and sleeve areas of 10 cm2and 150 cm2 Ring friction reducer with O.D. of 1.875 in	379 Browns Cove Rd Site C Ridgeland, SC	CPT Started: 10/30/2020 · CPT Completed: 10/30/2020 Rig: Truck-mounted · Operator: RH Project No.: HG205020 · Exhibit B-2-4

CPT LOG NO. SCPT5

Page 1 of 1

PROJECT: P-475 Hangar Facility, MCAS Beaufort, SC
CLIENT: GeoEnvironmental Resources, Inc. Virginia Beach, VA
SITE: Drayton St Beaufort, SC
TEST LOCATION: See Exploration Plan
Surface Elev.: 24.8 ft
LL: 32.46794°,-80.7256°
NE: 231021.2084629



See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. CPT REPORT HG205020 P-475 HANGER FACILITY TERRACON_DATATEMPLATE.GDT 12/11/20

WATER LEVEL OBSERVATION			
4.5 ft measured water depth (used in normalizations and correlations: See Supporting Information)	Probe no. 5207 with net area ratio of .88 U2 pore pressure transducer location Manufactured by Geotech A.B.; calibrated 3/4/202 Tip and sleeve areas of 10 cm2and 150 cm2 Ring friction reducer with O.D. of 1.875 in	379 Browns Cove Rd Site C Ridgeland, SC	CPT Started: 11/10/2020 · CPT Completed: 11/10/2020 Rig: Truck-mounted · Operator: RH Project No.: HG205020 · Exhibit B-2-5

NOTE:
IF THIS DRAWING IS LESS THAN 34" X 22"
IT IS A REDUCED SIZE DRAWING

SYM	DESCRIPTION	DATE	APPR
	MOD P00006 AND MOD P00007	10/2025	
	MOD P00005	05/2023	

NAVFAC

COMMONWEALTH OF VIRGINIA
SCOTT A. BARNHILL
No. 012520
1/13/23
PROFESSIONAL ENGINEER
SEAL

BAMFORTH ENGINEERS + SURVEYORS

A/E INFO

APPROVED
FOR COMMANDER NAVFAC

ACTIVITY: Approved by J. Scott Roberts, Asset Management Branch Head & Supervisory Facility Planner, PWD Beaufort, SC via email.

SATISFACTORY TO DATE 12/15/2022

DES SAB	DRW SAB	CHK HNA	
PM/DM	KTB/RLH		
BRANCH MANAGER	FAD		
CHIEF ENG/ARCH	EJA		
FIRE PROTECTION	DSN		

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND - MID-ATLANTIC NORFOLK, VA
DC CORE
MCAS BEAUFORT
BEAUFORT, SC
P-475 AIRCRAFT MAINTENANCE HANGAR - VOLUME 1 (BASE BID WITH OPTIONS)
PIEZOCONE SOUNDINGS

SCALE:
EPROJECT NO.: 1363603
CONSTR. CONTR. NO.
NAVFAC DRAWING NO. 12859180
SHEET 8 OF 1412

B-101

DRAWFORM REVISION: 25 AUGUST 2020

BORING LOG NO. SPT1

Page 1 of 1

PROJECT: P-475 Hangar Facility, MCAS Beaufort, SC

CLIENT: GeoEnvironmental Resources, Inc. Virginia Beach, VA

SITE: Drayton St Beaufort, SC

LOCATION See Exploration Plan
Latitude: 32.467538° Longitude: -80.726393°
Northing: 230887 Easting: 2084401
Surface Elev.: 26.6 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	FIELD TEST RESULTS
		SILTY SAND (SM), fine grained, light brown, loose, with trace concrete debris	
4.0	22.5	brown	
		POORLY GRADED SAND WITH SILT (SP-SM), fine grained, gray, loose	
		medium dense	3-6-7-8 N=13
			6-8-5-6 N=13
10.0	16.5	POORLY GRADED SAND (SP), fine grained, gray/light orange, loose	3-3-2-1 N=5
12.5	14	SILTY SAND (SM), fine grained, gray, very loose	3-1-1-1 N=2
			0-0-0-1 N=0
			1-2-1-3 N=3
			1-2-1-3 N=3
		with interbedded thin layers of silt	1-1-1-1 N=2
			1-1-1-1 N=2
		with broken shell fragment	1-1-2-2 N=3
48.0	-21.5	POORLY GRADED SAND WITH SILT (SP-SM), fine grained, light gray, medium dense	3-4-8-8 N=12
52.0	-25.5	SILTY SAND (SM), with trace shell, fine grained, gray, loose	2-2-4-6 N=6
			2-2-5-5 N=7
62.0	-35.5	**HIGHLY WEATHERED LIMESTONE, very dense**	5-8-50/4"
70.0	-43.5	***Boring Terminated at 70 Feet***	9-50/4"

Stratification lines are approximate. In-situ, the transition may be gradual.
Hand Augered from surface to 6 feet due to utilities

Hammer Type: Rope and Cathead

Advancement Method: Mud rotary 13-70 ft BGS

Abandonment Method: Backfilled with auger cuttings and capped with bentonite/grout to surface

Notes:

WATER LEVEL OBSERVATIONS
While drilling

Terracon, 379 Browns Cove Rd Ste C, Ridgeland, SC

Boring Started: 11-19-2020 | Boring Completed: 11-19-2020
Drill Rig: BR-2500 Track | Driller: JM
Project No.: HG205020

Exhibit B-3-1

BORING LOG NO. SPT2

Page 1 of 1

PROJECT: P-475 Hangar Facility, MCAS Beaufort, SC

CLIENT: GeoEnvironmental Resources, Inc. Virginia Beach, VA

SITE: Drayton St Beaufort, SC

LOCATION See Exploration Plan
Latitude: 32.468346° Longitude: -80.725258°
Northing: 231170 Easting: 2084754
Surface Elev.: 24.1 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	FIELD TEST RESULTS
1.0	23	AGGREGATE BASE COURSE, with crushed concrete	
4.0	20	SILTY SAND (SM), fine grained, dark brown, loose	
		POORLY GRADED SAND WITH SILT (SP-SM), fine grained, light gray, loose	
			2-4-4-3 N=8
			3-3-5-5 N=8
		brown, very loose	2-2-4-4 N=6
			2-1-1-1 N=2
		light gray	2-1-2-2 N=3
			0-0-0-0 N=0
		gray	0-0-0-0 N=0
			0-0-0-0 N=0
			1-1-2-3 N=3
		loose	1-2-2-3 N=4
			1-3-4-5 N=7
52.0	-28	CLAYEY SAND (SC), fine grained, gray, loose	1-3-5-5 N=8
			4-3-6-6 N=9
62.0	-38	**HIGHLY WEATHERED LIMESTONE, very dense**	50/3"
70.0	-46	***Boring Terminated at 70 Feet***	50/5"

Stratification lines are approximate. In-situ, the transition may be gradual.
Hand Augered from surface to 6 feet due to utilities

Hammer Type: Rope and Cathead

Advancement Method: Mud rotary 13-70 ft BGS

Abandonment Method: Backfilled with auger cuttings and capped with bentonite/grout to surface

Notes:

WATER LEVEL OBSERVATIONS
While drilling

Terracon, 379 Browns Cove Rd Ste C, Ridgeland, SC

Boring Started: 11-19-2020 | Boring Completed: 11-19-2020
Drill Rig: BR-2500 Track | Driller: JM
Project No.: HG205020

Exhibit B-3-2

BORING LOG NO. HA1

Page 1 of 1

PROJECT: P-475 Hangar Facility, MCAS Beaufort, SC

CLIENT: GeoEnvironmental Resources, Inc. Virginia Beach, VA

SITE: Drayton St Beaufort, SC

LOCATION See Exploration Plan
Latitude: 32.467753° Longitude: -80.726339°
Northing: 230980.554 Easting: 2084411.074
Surface Elev.: 26.6 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	PID SCREEN (PPM)	PERCENT FINES
		TOPSOIL, with grass, roots, gravel, debris			
0.5	26.5	SILTY SAND (SM), fine grained, brown			
			1	2.9	
			2	3.8	
			3	8.4	
		fine grained, light gray, mottling @ 4.5' BGS	4	8.6	22
			5	8.3	
5.0	22	***Boring Terminated at 5 Feet***			

Stratification lines are approximate. In-situ, the transition may be gradual.

Advancement Method: Hand Auger

Abandonment Method: Boring backfilled with Auger Cuttings and/or Bentonite

Notes:

WATER LEVEL OBSERVATIONS
While sampling

Terracon, 379 Browns Cove Rd Ste C, Ridgeland, SC

Boring Started: 11-04-2020 | Boring Completed: 11-04-2020
Drill Rig: | Driller: CR
Project No.: HG205020

Exhibit B-4-1

BORING LOG NO. HA2

Page 1 of 1

PROJECT: P-475 Hangar Facility, MCAS Beaufort, SC

CLIENT: GeoEnvironmental Resources, Inc. Virginia Beach, VA

SITE: Drayton St Beaufort, SC

LOCATION See Exploration Plan
Latitude: 32.468181° Longitude: -80.725743°
Northing: 231114.861 Easting: 2084573.393
Surface Elev.: 26.7 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	PID SCREEN (PPM)	PERCENT FINES
		TOPSOIL, with grass			
0.5	26	SILTY SAND (SM), with coarse gravel from 0" to 16" BGS, fine grained, brown			
			1		
1.5	25	CLAYEY SAND (SC), fine grained, brown/orange			
2.0	24.5	SILTY SAND (SM), fine grained, brown	2		
2.5	24	POORLY GRADED SAND WITH SILT (SP-SM), fine grained, brown, mottling @ 48" BGS	3		
			4		7
5.0	21.5	***Boring Terminated at 5 Feet***	5		

Stratification lines are approximate. In-situ, the transition may be gradual.

Advancement Method: Hand Auger

Abandonment Method: Boring backfilled with Auger Cuttings and/or Bentonite

Notes:

WATER LEVEL OBSERVATIONS
While sampling

Terracon, 379 Browns Cove Rd Ste C, Ridgeland, SC

Boring Started: 11-04-2020 | Boring Completed: 11-04-2020
Drill Rig: | Driller: CR
Project No.: HG205020

Exhibit B-4-2

BORING LOG NO. HA3

Page 1 of 1

PROJECT: P-475 Hangar Facility, MCAS Beaufort, SC

CLIENT: GeoEnvironmental Resources, Inc. Virginia Beach, VA

SITE: Drayton St Beaufort, SC

LOCATION See Exploration Plan
Latitude: 32.468517° Longitude: -80.725457°
Northing: 231249.383 Easting: 2084681.145
Surface Elev.: 25.4 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	PID SCREEN (PPM)	PERCENT FINES
		TOPSOIL, with grass			
0.5	25	SILTY SAND (SM), fine grained, brown			
			1		
			2		
			3		
4.0	21.5	POORLY GRADED SAND WITH SILT (SP-SM), fine grained, light brown, mottling @ 48" BGS	4		
5.0	20.5	***Boring Terminated at 5 Feet***	5		

Stratification lines are approximate. In-situ, the transition may be gradual.

Advancement Method: Hand Auger

Abandonment Method: Boring backfilled with Auger Cuttings and/or Bentonite

Notes:

WATER LEVEL OBSERVATIONS
While sampling

Terracon, 379 Browns Cove Rd Ste C, Ridgeland, SC

Boring Started: 11-04-2020 | Boring Completed: 11-04-2020
Drill Rig: | Driller: CR
Project No.: HG205020

Exhibit B-4-3

BORING LOG NO. HA4

Page 1 of 1

PROJECT: P-475 Hangar Facility, MCAS Beaufort, SC

CLIENT: GeoEnvironmental Resources, Inc. Virginia Beach, VA

SITE: Drayton St Beaufort, SC

LOCATION See Exploration Plan
Latitude: 32.468990° Longitude: -80.726016°
Northing: 231399.009 Easting: 2084533.377
Surface Elev.: 25.6 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	PID SCREEN (PPM)	PERCENT FINES
		SILTY SAND (SM), fine grained, No topsoil, graded/disturbed soils, possible fill			
			1		
			2		
			3		
4.0	21.5	SILTY SAND (SM), fine grained, brown, 4' to 5' native soils	4		9
5.0	20.5	***Boring Terminated at 5 Feet***	5		

Stratification lines are approximate. In-situ, the transition may be gradual.

Advancement Method: Hand Auger

Abandonment Method: Boring backfilled with Auger Cuttings and/or Bentonite

Notes:

WATER LEVEL OBSERVATIONS
While sampling

Terracon, 379 Browns Cove Rd Ste C, Ridgeland, SC

Boring Started: 11-04-2020 | Boring Completed: 11-04-2020
Drill Rig: | Driller: CR
Project No.: HG205020

Exhibit B-4-4

NOTE:
IF THIS DRAWING IS LESS THAN 34" X 22"
IT IS A REDUCED SIZE DRAWING

SYM	DESCRIPTION	DATE	APPR
	MOD P00006 AND MOD P00007	10/2025	
	MOD P00005	05/2023	

NAVFAC

COMMONWEALTH OF VIRGINIA
SCOTT A. BARNHILL
No. 012520
1/13/23
PROFESSIONAL ENGINEER
SEAL

BAMFORTH ENGINEERS + SURVEYORS
A/E INFO

APPROVED
FOR COMMANDER NAVFAC

ACTIVITY: Approved by J. Scott Roberts, Asset Management Branch Head & Supervisory Facility Planner, PWD Beaufort, SC via email

SATISFACTORY TO DATE 12/15/2022

DES SAB	DRW SAB	CHK HNA	
PM/DM KTB/RLH			
BRANCH MANAGER FAD			
CHIEF ENG/ARCH EJA			
FIRE PROTECTION DSN			

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND - MID-ATLANTIC
NORFOLK, VA
DC CORE
MCAS BEAUFORT BEAUFORT, SC
P-475 AIRCRAFT MAINTENANCE HANGAR - VOLUME 1 (BASE BID WITH OPTIONS)
BORING LOGS

SCALE:
EPROJECT NO.: 1363603
CONSTR. CONTR. NO.
NAVFAC DRAWING NO. 12859181
SHEET 9 OF 1412

B-102

DRAWFORM REVISION: 25 AUGUST 2020

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL HG205020 P-475 HANGER FACLGP3 TERRACON_DATATEMPLATE.GDT 12/3/20

BORING LOG NO. HA5

Page 1 of 1

PROJECT: P-475 Hangar Facility, MCAS Beaufort, SC

CLIENT: GeoEnvironmental Resources, Inc. Virginia Beach, VA

SITE: Drayton St Beaufort, SC

GRAPHIC LOG | DEPTH | ELEVATION (Ft.) | DEPTH (Ft.) | WATER LEVEL OBSERVATIONS | SAMPLE TYPE | PID SCREEN (PPM) | PERCENT FINES

LOCATION See Exploration Plan
Latitude: 32.467609° Longitude: -80.725275°
Northing: 230906.365 Easting: 2084739.211
Surface Elev.: 24.0 (Ft.)

Depth	Description	Elevation (Ft.)
	TOPSOIL, with roots, coarse gravel, brick fragments, and grass	
0.5	SILTY SAND (SM), fine grained, brown	23.5
4.0	POORLY GRADED SAND WITH SILT (SP-SM), fine grained, light gray, mottling @ 42" BGS	20
5.0	***Boring Terminated at 5 Feet***	19

Stratification lines are approximate. In-situ, the transition may be gradual.

Advancement Method: Hand Auger

Abandonment Method: Boring backfilled with Auger Cuttings and/or Bentonite

Notes:

WATER LEVEL OBSERVATIONS

While sampling

Terracon, 379 Browns Cove Rd Ste C, Ridgeland, SC

Boring Started: 11-04-2020 | Boring Completed: 11-04-2020

Drill Rig: | Driller: CR

Project No.: HG205020

Exhibit B-4-5

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL HG205020 P-475 HANGER FAC.GPJ TERRACON_DATATEMPLATE.GDT 12/8/20

BORING LOG NO. HA6

Page 1 of 1

PROJECT: P-475 Hangar Facility, MCAS Beaufort, SC

CLIENT: GeoEnvironmental Resources, Inc. Virginia Beach, VA

SITE: Drayton St Beaufort, SC

GRAPHIC LOG | DEPTH | ELEVATION (Ft.) | DEPTH (Ft.) | WATER LEVEL OBSERVATIONS | SAMPLE TYPE | PID SCREEN (PPM) | PERCENT FINES

LOCATION See Exploration Plan
Latitude: 32.467702° Longitude: -80.725090°
Northing: 230934.352 Easting: 2084789.438
Surface Elev.: 23.1 (Ft.)

Depth	Description	Elevation (Ft.)
	ASPHALT CONCRETE	
0.5	SILTY SAND (SM), fine grained, brown	22.5
5.0	**POORLY GRADED SAND WITH SILT (SP-SM), fine grained, light gray**	18
6.0	***Boring Terminated at 6 Feet***	17

Stratification lines are approximate. In-situ, the transition may be gradual.

Advancement Method: Hand Auger

Abandonment Method: Boring backfilled with Auger Cuttings Surface capped with asphalt

Notes:

WATER LEVEL OBSERVATIONS

While sampling

Terracon, 379 Browns Cove Rd Ste C, Ridgeland, SC

Boring Started: 11-19-2020 | Boring Completed: 11-19-2020

Drill Rig: | Driller: JM

Project No.: HG205020

Exhibit B-4-6

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL HG205020 P-475 HANGER FAC.GPJ TERRACON_DATATEMPLATE.GDT 12/8/20

BORING LOG NO. IR1

Page 1 of 1

PROJECT: P-475 Hangar Facility, MCAS Beaufort, SC

CLIENT: GeoEnvironmental Resources, Inc. Virginia Beach, VA

SITE: Drayton St Beaufort, SC

GRAPHIC LOG | DEPTH | ELEVATION (Ft.) | DEPTH (Ft.) | WATER LEVEL OBSERVATIONS | SAMPLE TYPE | PID SCREEN (PPM) | PERCENT FINES

LOCATION See Exploration Plan
Latitude: 32.467627° Longitude: -80.726401°
Northing: 230909.863 Easting: 2084385.789
Surface Elev.: 26.6 (Ft.)

Depth	Description	Elevation (Ft.)	PID Screen (PPM)
	TOPSOIL, with gravel/ brick fragments		
0.5	**SILTY SAND (SM), dark brown**	26	2.9
			3.1
			3.1
			3.0
			3.0
5.0	***Boring Terminated at 5 Feet***	21.5	

Stratification lines are approximate. In-situ, the transition may be gradual.

Advancement Method: Hand Auger

Abandonment Method: Boring backfilled with Auger Cuttings and/or Bentonite

Notes:

WATER LEVEL OBSERVATIONS

While sampling

Terracon, 379 Browns Cove Rd Ste C, Ridgeland, SC

Boring Started: 11-04-2020 | Boring Completed: 11-04-2020

Drill Rig: | Driller: CR

Project No.: HG205020

Exhibit B-4-7

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL HG205020 P-475 HANGER FAC.GPJ TERRACON_DATATEMPLATE.GDT 12/8/20

NOTE:
IF THIS DRAWING IS LESS THAN 34" X 22"
IT IS A REDUCED SIZE DRAWING

SYM	DESCRIPTION	DATE	APPR
	MOD P00006 AND MOD P00007	10/2025	
	MOD P00005	05/2023	

NAVFAC

COMMONWEALTH OF VIRGINIA
SCOTT A. BARNHILL
No. 012520
1/13/23
PROFESSIONAL ENGINEER
SEAL

BAMFORTH ENGINEERS + SURVEYORS

A/E INFO

APPROVED
FOR COMMANDER NAVFAC

ACTIVITY
Approved by J. Scott Roberts, Asset Management Branch Head & Supervisory Facility Planner, PWD Beaufort, SC via email.

SATISFACTORY TO DATE 12/15/2022

DES SAB | DRW SAB | CHK HNA
PM/DM KTB/RLH
BRANCH MANAGER FAD
CHIEF ENG/ARCH EJA
FIRE PROTECTION DSN

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND - MID-ATLANTIC
NORFOLK, VA
DC CORE
MCAS BEAUFORT
BEAUFORT, SC

P-475 AIRCRAFT MAINTENANCE HANGAR - VOLUME 1 (BASE BID WITH OPTIONS)

BORING LOGS

SCALE:
EPROJECT NO.: 1363603
CONSTR. CONTR. NO.
NAVFAC DRAWING NO. 12859182
SHEET 10 OF 1412

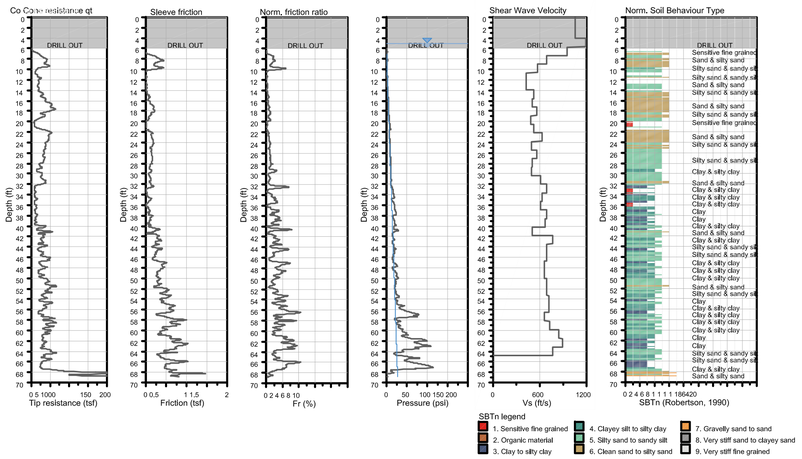
B-103

DRAWFORM REVISION: 25 AUGUST 2020

Geotechnical, Environmental and Construction Consultants
3359 Meeting Street, Suite 101
North Charleston, SC
www.InsightGrp.com

Project: 19-0121 P-475 Aircraft Maintenance Hangar
Location: Marine Corps Air Station Beaufort, SC

CPT: SCPT-1
Total depth: 68.83 ft, Date: 12/19/2019
Surface Elevation: 27.58 ft
Coords: X:2084637.54, Y:230827.62
Cone Type: Pagani 10 cm^2
Cone Operator: Z. Driggers



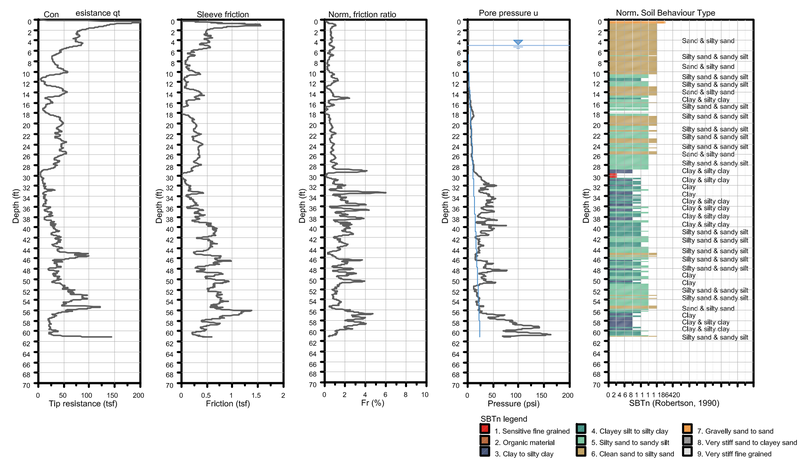
CPeT-IT v.2.3.1.8 - CPTU data presentation & interpretation software - Report created on: 2/3/2020, 1:13:07 PM
Project file: C:\Users\NickLacour\Insight Group\IGT - 2019\19-0121 MCAS Beaufort Hanger\WORKING FILES\Lab-Logs-Field Data\19-0121 MCAS P-475.cpt

1

Geotechnical, Environmental and Construction Consultants
3359 Meeting Street, Suite 101
North Charleston, SC
www.InsightGrp.com

Project: 19-0121 P-475 Aircraft Maintenance Hangar
Location: Marine Corps Air Station Beaufort, SC

CPT: CPT-2
Total depth: 61.15 ft, Date: 12/19/2019
Surface Elevation: 24.44 ft
Coords: X:2084121.01, Y:231033.91
Cone Type: Pagani 10 cm^2
Cone Operator: Z. Driggers



CPeT-IT v.2.3.1.8 - CPTU data presentation & interpretation software - Report created on: 2/3/2020, 1:14:37 PM
Project file: C:\Users\NickLacour\Insight Group\IGT - 2019\19-0121 MCAS Beaufort Hanger\WORKING FILES\Lab-Logs-Field Data\19-0121 MCAS P-475.cpt

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Exhibit A-4-2

Insight Group, LLC
3359 Meeting Street Road, Suite 101
North Charleston, SC 29405

KEY TO SYMBOLS

INSIGHT GROUP NUMBER: 19-0121
PROJECT: P-475 Aircraft Maintenance Hangar
CLIENT: HDR
LOCATION: MCAS Beaufort, SC
CLIENT ADDRESS: Charleston, SC

LITHOLOGIC SYMBOLS
(Unified Soil Classification System)

- ASPHALT: Asphalt
- CONCRETE: Concrete
- UNCONTROLLED FILL: Uncontrolled Fill
- ML: USCS Silt
- SC-SM: USCS Clayey Sand
- SM: USCS Silty Sand
- SP-SM: USCS Poorly-graded Sand with Silt
- SURFICIAL SOIL: Surficial Soil

SAMPLER SYMBOLS

- Grab Sample
- Split Spoon

WELL CONSTRUCTION SYMBOLS

ABBREVIATIONS

LL - LIQUID LIMIT (%)
PI - PLASTIC INDEX (%)
W - MOISTURE CONTENT (%)
DD - DRY DENSITY (PCF)
NP - NON PLASTIC
-200 - PERCENT PASSING NO. 200 SIEVE
pp - POCKET PENETROMETER (TSF)
SHWT - SEASONAL HIGH WATER TABLE
ADT - AFTER DRILLING TERMINATED
TV - TORVANE
PID - PHOTOIONIZATION DETECTOR
UC - UNCONFINED COMPRESSION
ppm - PARTS PER MILLION
Water Level at Time Drilling, or as Shown
Water Level at End of Drilling, or as Shown
Water Level After 24 Hours, or as Shown

Insight Group, LLC
3359 Meeting Street Road, Suite 101
North Charleston, SC 29405

BORING NUMBER B-1
PAGE 1 OF 3

PROJECT: P-475 Aircraft Maintenance Hangar
MCAS Beaufort, SC
DATE STARTED 12/12/19 COMPLETED 12/12/19
DRILLER/OPERATOR Gerald Fister - Carolina Drilling
ADVANCEMENT METHOD Rotary Wash
ADVANCEMENT RIG CME 55 (SN:Z2425) LOGGED BY Clayton Doyle
NOTES Continuous SPT to 12'; Mud rotary to 100'. Field N value displayed.

INSIGHT GROUP NUMBER: 19-0121
CLIENT: HDR
CLIENT LOCATION: Charleste, NC
GROUND ELEVATION 28.031 ft
GROUND WATER LEVELS:
SHWT Upper Limit: 2 ft
SHWT Lower Limit: 5 ft
ATD: 5 ft

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	MATERIAL DESCRIPTION
0	SS-1	42	0-0-5-8 (6)		PID: 15 ppm
	SS-2 / GB-1	100 / 100	13-16-18-13 (34)		Loose to very dense, moist, dark brown to light brown, subrounded, fine grained, POORLY GRADED SAND WITH SILT hydrocarbon odor PID: 60 ppm
5	SS-3	100	11-21-22-36 (43)		PID: 300 ppm
	SS-4	92	13-18-22-23 (40)	SM	Very dense to very loose, moist to wet, light brown to tan, subrounded, fine grained, SILTY SAND (SM), (A-2-4) hydrocarbon odor PID: 407 ppm
	SS-5	92	5-7-12-10 (19)		PID: 1054 ppm
10	SS-6	92	10-15-27-26 (42)		PID: 134 ppm
15	SS-7	78	1-1-2 (3)		PID: 134 ppm
20	SS-8	111	1-1-1 (2)		PID: 3.6 ppm
				SM	Very loose to loose, wet, light gray to gray, subrounded, fine grained, SILTY SAND (SM), (A-2-4)
25	SS-9	78	1-2-1 (3)		PID: 32 ppm
30	SS-10	78	1-1-1 (2)		PID: 2.5 ppm
				ML	Soft to firm, wet, dark gray, SANDY SILT (ML), (A-4) trace shells
35	SS-11	122	1-1-1 (2)		PID: 23.8 ppm

(Continued Next Page)

Insight Group, LLC
3359 Meeting Street Road, Suite 101
North Charleston, SC 29405

BORING NUMBER B-1
PAGE 2 OF 3

PROJECT: P-475 Aircraft Maintenance Hangar
MCAS Beaufort, SC

INSIGHT GROUP NUMBER: 19-0121
CLIENT: HDR
CLIENT LOCATION: Charleste, NC

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	MATERIAL DESCRIPTION
35					Soft to firm, wet, dark gray, SANDY SILT (ML), (A-4) trace shells (continued)
40	SS-12	122	1-2-1 (3)	ML	PID: 7.8 ppm
45	SS-13	89	1-1-1 (2)		PID: 5.5 ppm
				SM	46.8 — 18.7 Loose to medium dense, wet, dark gray to gray, subrounded, fine grained, SILTY SAND (SM), (A-2-4) trace shells
50	SS-14	111	1-1-1 (2)		PID: 32.5 ppm
55	SS-15	111	1-2-3 (5)		PID: 5.9 ppm
60	SS-16	89	3-4-6 (10)		PID: 1.2 ppm
				ML	61.8 — 33.7 Stiff, wet, dark gray, SANDY SILT (ML), (A-4)
65	SS-17	111	3-3-4 (7)		PID: 4.3 ppm
				SM	66.8 — 38.7 Very dense to dense, moist, light gray, subrounded, fine grained, SILTY SAND (SM), (A-2-4) contains angular limestone gravel
70	SS-18	22	31-50		PID: 4.2 ppm
75	SS-19	22	50		PID: 6.3 ppm

(Continued Next Page)

Insight Group, LLC
3359 Meeting Street Road, Suite 101
North Charleston, SC 29405

BORING NUMBER B-1
PAGE 3 OF 3

PROJECT: P-475 Aircraft Maintenance Hangar
MCAS Beaufort, SC

INSIGHT GROUP NUMBER: 19-0121
CLIENT: HDR
CLIENT LOCATION: Charleste, NC

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	MATERIAL DESCRIPTION
75					Very dense to dense, moist, light gray, subrounded, fine grained, SILTY SAND (SM), (A-2-4) contains angular limestone gravel (continued)
80	SS-20	72	13-12-10 (22)		PID: 12.2 ppm
85	SS-21	78	13-14-12 (26)	SM	PID: 17.6 ppm
90	SS-22	89	7-10-12 (22)		PID: 12.4 ppm
				SC-SM	91.8 — 63.7 Dense to medium dense, moist, light gray, subrounded, fine grained, SILTY, CLAYEY SAND (SC-SM), (A-2-4)
95	SS-23	100	11-12-12 (24)		PID: 0 ppm
100	SS-24	122	5-7-10 (17)		100.0 — 73.0 PID: 6.7 ppm

Terminated at 100 feet

NOTE:
IF THIS DRAWING IS LESS THAN 34" X 22"
IT IS A REDUCED SIZE DRAWING

SYM	DESCRIPTION	DATE	APPR
	MOD P00006 AND MOD P00007	10/2025	
	MOD P00005	05/2023	

NAVFAC

COMMONWEALTH OF VIRGINIA
SCOTT A. BARNHILL
No. 012520
1/13/23
PROFESSIONAL ENGINEER
SEAL

BAMFORTH ENGINEERS + SURVEYORS

A/E INFO

APPROVED
FOR COMMANDER NAVFAC
Approved by J. Scott Roberts, Asset Management Branch Head & Supervisory Facility Planner, PWD Beaufort, SC via email.
SATISFACTORY TO DATE 12/15/2022

DES SAB	DRW SAB	CHK HNA	
PM/DM	KTB/RLH		
BRANCH MANAGER	FAD		
CHIEF ENG/ARCH	EJA		
FIRE PROTECTION	DSN		

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND - MID-ATLANTIC NORFOLK, VA
DC CORE
MCAS BEAUFORT BEAUFORT, SC
P-475 AIRCRAFT MAINTENANCE HANGAR - VOLUME 1 (BASE BID WITH OPTIONS)
GOVERNMENT SUPPLIED TESTING DATA

SCALE:
EPROJECT NO.: 1363603
CONSTR. CONTR. NO.
NAVFAC DRAWING NO. 12859183
SHEET 11 OF 1412
B-104

DRAWFORM REVISION: 25 AUGUST 2020

BORING NUMBER B-2
PAGE 2 OF 2

Insight Group, LLC
3359 Meeting Street Road, Suite 101
North Charleston, SC 29405

PROJECT: P-475 Aircraft Maintenance Hangar
MCAS Beaufort, SC

INSIGHT GROUP NUMBER: ~~15-0121~~
CLIENT: ~~HDR~~
CLIENT LOCATION: ~~Charlotte, NC~~

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	Other Test	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
35				Fines = 25%			PID: 0 ppm Very loose to loose, wet, light gray, subrounded, fine grained, SILTY SAND (SM), (A-2-4) (continued)
40	SS-12	100	1-1-1 (2)				PID: 0 ppm
45	SS-13	100	1-1-1 (2)				PID: 0 ppm
50	SS-14	100	1-1-1 (2)	MC = 46% LL = NP PL = NP Fines = 29%	SM		PID: 0 ppm
55	SS-15	100	2-2-2 (4)				PID: 0 ppm
60	SS-16	100	2-2-3 (5)				PID: 0 ppm
65	SS-17	100	1-2-3 (3)				PID: 0 ppm
70	SS-18	17	50		SM		Very dense, wet, light gray, subrounded, fine grained, SILTY SAND (SM), (A-2-4) contains angular limestone gravel PID: 0 ppm
75	SS-19	0	50				PID: 0 ppm

Terminated at 75 feet

BORING NUMBER B-2
PAGE 2 OF 2

Insight Group, LLC
3359 Meeting Street Road, Suite 101
North Charleston, SC 29405

PROJECT: P-475 Aircraft Maintenance Hangar
MCAS Beaufort, SC

INSIGHT GROUP NUMBER: ~~15-0121~~
CLIENT: ~~HDR~~
CLIENT LOCATION: ~~Charlotte, NC~~

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	Other Test	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
35				Fines = 25%			PID: 0 ppm Very loose to loose, wet, light gray, subrounded, fine grained, SILTY SAND (SM), (A-2-4) (continued)
40	SS-12	100	1-1-1 (2)				PID: 0 ppm
45	SS-13	100	1-1-1 (2)				PID: 0 ppm
50	SS-14	100	1-1-1 (2)	MC = 46% LL = NP PL = NP Fines = 29%	SM		PID: 0 ppm
55	SS-15	100	2-2-2 (4)				PID: 0 ppm
60	SS-16	100	2-2-3 (5)				PID: 0 ppm
65	SS-17	100	1-2-3 (3)				PID: 0 ppm
70	SS-18	17	50		SM		Very dense, wet, light gray, subrounded, fine grained, SILTY SAND (SM), (A-2-4) contains angular limestone gravel PID: 0 ppm
75	SS-19	0	50				PID: 0 ppm

Terminated at 75 feet

BORING NUMBER B-3
PAGE 1 OF 2

Insight Group, LLC
3359 Meeting Street Road, Suite 101
North Charleston, SC 29405

PROJECT: P-475 Aircraft Maintenance Hangar
MCAS Beaufort, SC

INSIGHT GROUP NUMBER: ~~15-0121~~
CLIENT: ~~HDR~~
CLIENT LOCATION: ~~Charlotte, NC~~
DATE STARTED: ~~4/9/16~~ COMPLETED: ~~4/9/16~~
GROUND ELEVATION: ~~20.00 ft~~
DRILLER/OPERATOR: Gerald Fisher - Carolina Drilling
GROUND WATER LEVELS:
ADVANCEMENT METHOD: Rotary Wash
SHWT Upper Limit: 2.8
ADVANCEMENT RIG: CME 55 (SN 72425) LOGGED BY: Clayton Ongley
SHWT Lower Limit: 5.8
NOTES: Continuous SPT to 12'; Mud rotary to 100'; Eight N-values displayed
ATD: 4.8

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	Other Test	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0							Hand auger
2	SS-1	50	4-7-10-11 (17)				Medium dense, moist, dark brown to light brown, subrounded, fine grained, POORLY GRADED SAND WITH SILT trace roots PID: 0 ppm PID: 0 ppm
5	SS-2	50	6-7-6-6 (11)				
7	SS-3	50	5-6-5-5 (11)	MC = 12% LL = NP PL = NP Fines = 24%	SM		Medium dense to very loose, moist to wet, light brown to light gray, subrounded, fine grained, SILTY SAND (SM) PID: 0 ppm
10	SS-4	75	5-6-7-4 (13)				PID: 0 ppm
12	SS-5	50	5-5-3-2 (8)	MC = 26% LL = NP PL = NP Fines = 18%			PID: 0 ppm
14	SS-6	50	2-2-2-2 (4)				PID: 0 ppm
15.5	SS-7	45	2-1-1 (2)				PID: 0 ppm
17							Very loose, wet, light brown to light gray, subrounded, fine grained, POORLY GRADED SAND WITH SILT (SP-SM)
20	SS-8	55	1-1-1 (2)	MC = 27% LL = NP PL = NP Fines = 8%	SP-SM		PID: 0 ppm
22	SS-9	55	1-1-1 (2)				PID: 0 ppm
25	SS-10	45	1-50 (51)				PID: 0 ppm
27.5							Very loose to medium dense, wet, gray, subrounded, fine grained, SILTY SAND (SM), trace shells and interbedded clay/silt seams
30	SS-11	100	1-1-1 (2)		SM		PID: 0 ppm

(Continued Next Page)

BORING NUMBER B-3
PAGE 2 OF 2

Insight Group, LLC
3359 Meeting Street Road, Suite 101
North Charleston, SC 29405

PROJECT: P-475 Aircraft Maintenance Hangar
MCAS Beaufort, SC

INSIGHT GROUP NUMBER: ~~15-0121~~
CLIENT: ~~HDR~~
CLIENT LOCATION: ~~Charlotte, NC~~

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	Other Test	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
35							Very loose to medium dense, wet, gray, subrounded, fine grained, SILTY SAND (SM), trace shells and interbedded clay/silt seams (continued)
40	SS-12	100	1-2-2 (3)				PID: 0 ppm
45	SS-13	67	2-2-2 (4)				PID: 0 ppm
50	SS-14	83	2-2-4 (6)		SM		PID: 0 ppm
55	SS-15	100	3-3-5 (8)				PID: 0 ppm
60	SS-16	100	2-4-5 (9)				PID: 0 ppm
65	SS-17	61	20-50				Very dense to dense, wet, light gray, subrounded, fine grained, SILTY SAND (SM), contains angular limestone gravel PID: 0 ppm
70	SS-18	100	14-13-11 (24)		SM		PID: 0 ppm
75	SS-19	78	10-11-10 (21)				PID: 0 ppm

Terminated at 75 feet

BORING NUMBER B-4
PAGE 1 OF 2

Insight Group, LLC
3359 Meeting Street Road, Suite 101
North Charleston, SC 29405

PROJECT: P-475 Aircraft Maintenance Hangar
MCAS Beaufort, SC

INSIGHT GROUP NUMBER: ~~15-0121~~
CLIENT: ~~HDR~~
CLIENT LOCATION: ~~Charlotte, NC~~
DATE STARTED: ~~4/9/16~~ COMPLETED: ~~4/9/16~~
GROUND ELEVATION: ~~25.20 ft~~
DRILLER/OPERATOR: Gerald Fisher - Carolina Drilling
GROUND WATER LEVELS:
ADVANCEMENT METHOD: Rotary Wash
SHWT Upper Limit: 2.8
ADVANCEMENT RIG: CME 55 (SN 72425) LOGGED BY: Clayton Ongley
SHWT Lower Limit: 5.8
NOTES: Continuous SPT to 12'; Mud rotary to 100'; Eight N-values displayed
ATD: 4.8

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	Other Test	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.1	SS-1	75	8-10-5-7 (15)	MC = 24% LL = NP PL = NP Fines = 5%			Medium dense, moist, tan, subrounded, fine grained, POORLY GRADED SAND WITH SILT PID: 0 ppm PID: 0 ppm
2.5	SS-2	75	4-7-7-6 (14)				
5	SS-3	75	4-6-5-4 (9)	MC = 24% LL = NP PL = NP Fines = 16%	SM		Medium dense to very loose, moist to wet, light gray to dark gray, subrounded, fine grained, SILTY SAND (SM), (A-2-4) PID: 0.1 ppm
7	SS-4	84	4-5-4-4 (9)				PID: 0 ppm
10	SS-5	84	2-3-1-1 (3)				PID: 0 ppm
12	SS-6	92	1-2-2-3 (4)				PID: 0 ppm
15	SS-7	67	1-1-1 (2)				PID: 0 ppm
17	SS-8	89	1-1-1 (2)				PID: 0 ppm
20	SS-9	122	1-1-1 (2)				PID: 0 ppm
22	SS-10	111	1-1-1 (2)				PID: 0 ppm
24.5							Soft to firm, wet, dark gray, SANDY SILT (ML), (A-4)
25	SS-11	122	1-1-1 (2)		ML		PID: 0 ppm

(Continued Next Page)

BORING NUMBER B-4
PAGE 2 OF 2

Insight Group, LLC
3359 Meeting Street Road, Suite 101
North Charleston, SC 29405

PROJECT: P-475 Aircraft Maintenance Hangar
MCAS Beaufort, SC

INSIGHT GROUP NUMBER: ~~15-0121~~
CLIENT: ~~HDR~~
CLIENT LOCATION: ~~Charlotte, NC~~

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	Other Test	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
27					ML		Soft to firm, wet, dark gray, SANDY SILT (ML), (A-4) (continued)
30	SS-12	0	1-2-2 (4)				PID: 0 ppm
32.5							Loose to medium dense, wet, dark gray, subrounded, fine grained, SILTY SAND (SM), (A-2-4) trace shells
35	SS-13	95	1-2-3 (5)		SM		PID: 0 ppm
37.5	SS-14	100	1-2-2 (4)				PID: 0 ppm
40	SS-15	89	2-3-7 (10)				PID: 0 ppm
42.5					ML		Firm, wet, dark gray, SANDY SILT (ML), (A-4) trace shells
45	SS-16	122	2-3-3 (6)				PID: 0 ppm
47.5							Very dense to dense, wet, light gray, subrounded, fine grained, SILTY SAND (SM), (A-2-4) contains angular limestone gravel
50	SS-17	17	50		SM		PID: 0 ppm
52.5	SS-18	55	15-13-13 (26)				PID: 0 ppm
55	SS-19	78	16-11-11 (22)				PID: 0 ppm

Terminated at 75 feet

SUMMARY OF SOIL INDEX PROPERTIES

BORING No.	Depth (ft.)	Matrial Description	USCS	Water Content (%)	Fine Grained Soil Classification			Coarse Grained Soil Classification				
					LL	PL	PI	% Gravel %	Sand	% Fine	Cc	Cu
HA1	4 to 5	SILTY SAND	SM	27,4	--	--	--	--	77,5	22,5	--	--
HA2	3,5 to 4	POORLY GRADED SAND	SP-SM	--	--	--	--	--	93,3	6,7	0,91	1,62
HA4	3,5 to 4	SILTY SAND	SM	--	--	--	--	6,9	84,0	9,1	0,88	1,84
SPT1	8 to 10	SILTY SAND	SM	28,0	--	--	--	--	85,0	15,0	--	--
SPT1	18 to 20	SILTY SAND	SM	28,5	--	--	--	--	88,0	12,0	0,87	2,06
SPT1	28 to 30	POORLY GRADED SAND	SP-SM	28,7	--	--	--	--	90,3	9,7	0,89	1,78
SPT1	38 to 40	SILTY SAND	SM	48,0	--	--	--	--	74,8	25,2	--	--
SPT1	48 to 50	SILTY SAND	SM	33,1	--	--	--	--	82,1	17,9	--	--
SPT1	58 to 60	CLAYEY SAND	SC	52,9	--	--	--	--	63,1	36,9	--	--
SPT2	10 to 12	POORLY GRADED SAND	SP-SM	24,4	--	--	--	--	89,5	10,5	0,87	2,16
SPT2	18 to 20	POORLY GRADED SAND	SP-SM	28,9	--	--	--	--	94,3	5,7	0,88	1,96
SPT2	28 to 30	SILTY SAND	SM	26,6	--	--	--	--	73,8	26,2	--	--
SPT2	38 to 40	SILTY SAND	SM	42,3	--	--	--	--	76,7	23,3	--	--
SPT2	48 to 50	SILTY SAND	SM	22,6	--	--	--	--	78,6	21,4	--	--
SPT2	58 to 60	SANDY LEAN CLAY	CL	67,3	--	--	--	--	31,3	68,7	--	--

PROJECT: P-475 Hangar Facility, MCAS
SITE: Beaufort, SC
2201 Rowland Ave Savannah, GA
PROJECT NUMBER: HG205020
CLIENT: GeoEnvironmental Resources, Inc.
Virginia Beach, VA

Exhibit C-1

NOTE:
IF THIS DRAWING IS LESS THAN 34" X 22"
IT IS A REDUCED SIZE DRAWING

SYM	DESCRIPTION	DATE	APPR
	MOD P00006 AND MOD P00007	10/2025	
	MOD P00005	05/2023	

NAVFAC

COMMONWEALTH OF VIRGINIA
SCOTT A. BARNHILL
No. 012520
1/13/23
PROFESSIONAL ENGINEER
SEAL

BAMFORTH ENGINEERS + SURVEYORS

A/E INFO

APPROVED
FOR COMMANDER NAVFAC

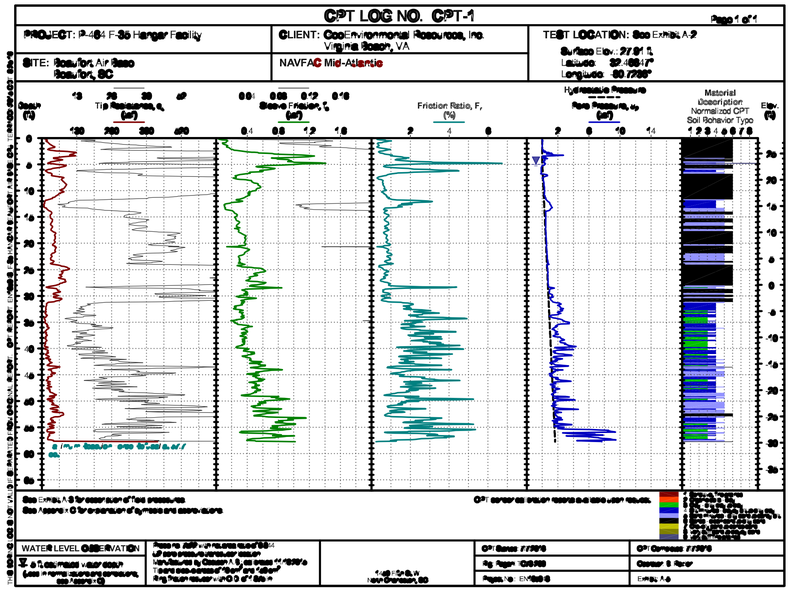
ACTIVITY
Approved by J. Scott Roberts, Asset Management Branch Head & Supervisory Facility Planner, PWD Beaufort, SC via email.

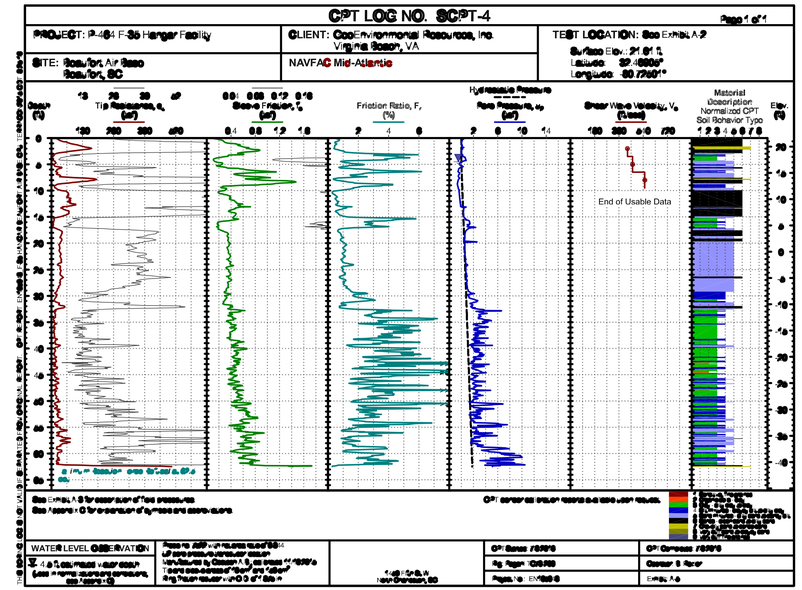
SATISFACTORY TO DATE 12/15/2022
DES SAB DRW SAB CHK HNA
PM/DM KTB/RLH
BRANCH MANAGER FAD
CHIEF ENG/ARCH EJA
FIRE PROTECTION DSN

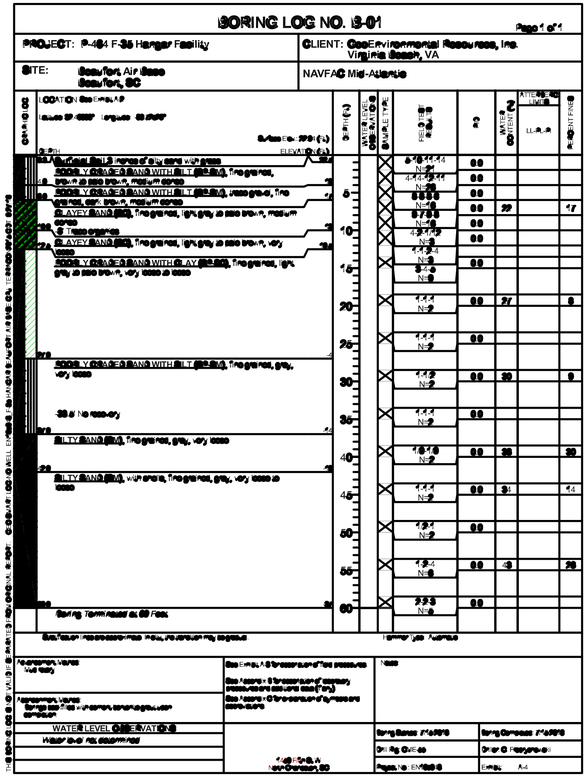
DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND - MID-ATLANTIC
NORFOLK, VA
DC CORE
MCAS BEAUFORT
BEAUFORT, SC
P-475 AIRCRAFT MAINTENANCE HANGAR - VOLUME 1 (BASE BID WITH OPTIONS)
GOVERNMENT SUPPLIED TESTING DATA

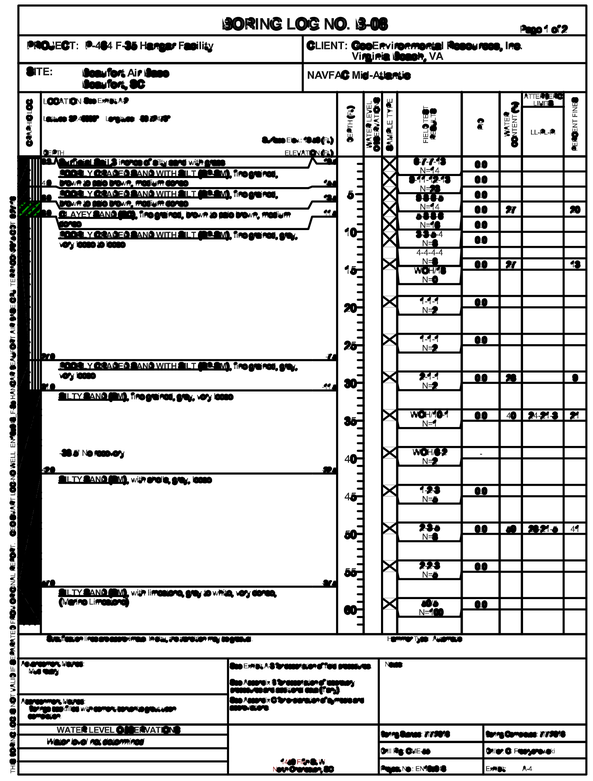
SCALE:
EPROJECT NO.: 1363603
CONSTR. CONTR. NO.
NAVFAC DRAWING NO. 12859184
SHEET 12 OF 1412
B-105

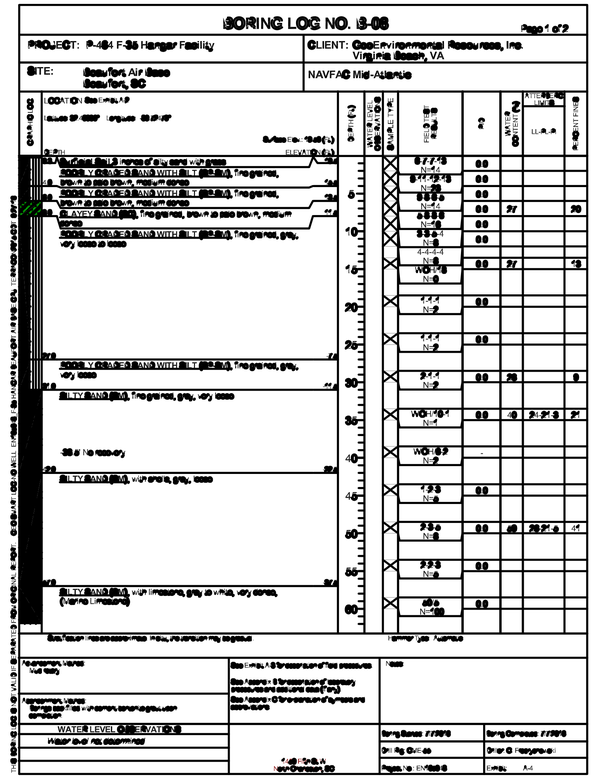
DRAWFORM REVISION: 25 AUGUST 2020











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SYM	DESCRIPTION	DATE	APPR.
	MOD P00006 AND MOD P00007	10/2025	
	MOD P00005	05/2023	

NAVFAC

COMMONWEALTH OF VIRGINIA
SCOTT A. BARNHILL
No. 012520
1/13/23
PROFESSIONAL ENGINEER
SEAL

BAMFORTH ENGINEERS + SURVEYORS

A/E INFO

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BRANCH MANAGER FAD
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NORFOLK, VA
DC CORE
MCAS BEAUFORT
BEAUFORT, SC

P-475 AIRCRAFT MAINTENANCE HANGAR - VOLUME 1 (BASE BID WITH OPTIONS)

GOVERNMENT SUPPLIED TESTING DATA

SCALE:
EPROJECT NO.: 1363603
CONSTR. CONTR. NO.
NAVFAC DRAWING NO. 12859185
SHEET 13 OF 1412

B-106

DRAWFORM REVISION: 25 AUGUST 2020