ATTACHMENT 1 FOR ADDENDUM No. 3

SPT'S AND PERCOLATION TEST FOR SW 136 ST

October 14, 2020

Ms. Barbara Mesa-Valdez
Miami-Dade County – Plans Review and Design Section
Highway Division
Department of Transportation and Public Works (CTPW)
111 NW 1st Street
Miami, Florida 33128

Re: SPT's and Percolation Test Report
Geotechnical Services for Projects 20200118 and 20200119
Old Cutler Road & SW 136th Street
Miami-Dade County, Florida
NV5 Project No. 16965

Dear Ms. Mesa-Valdes:

NV5, Inc. submits this report in fulfillment of the scope of services described in our proposal 20-0353 Rev2 dated June 17, 2020. The work was authorized by the Work Order for Engineering Services issued by Miami-Dade County dated June 19, 2020. This report contains the data collected and procedure used for the Standard Penetration Tests and Borehole Drainage Testing.

OBJECTIVE

The purpose of this phase of the study was to obtain information on the subsurface soil conditions and drainage data in the project area. The test locations requested were identified in the field by NV5 engineering personnel. A Test Location Plan identifying the locations where the drainage testing were performed is shown in appended Drawing Nos. 1A through 1D.

STANDARD PENETRATION TESTS

NV5 was provided by Miami-Dade County test location drawings for 29 engineering borings. However, due to site obstructions at the time of field tests, four (4) locations were not tested. The tested locations were advanced to either 10 or 15 feet below existing grade at the approximate location shown on Drawings 1A through 1D. The deeper tests correspond to locations where percolation tests were also performed in the same borehole. The test locations were marked and identified in the field by NV5. The SPTs were performed between July 29 and August 3, 2020. It should be noted that the boring locations shown are approximate. If accurate as-built boring location is required, they should be surveyed.

The borings were drilled with truck-mounted drill rig utilizing the rotary wash method. Samples of the subsurface materials were recovered at roughly 2-foot intervals within the upper 10 feet, and at approximately 5-foot intervals thereafter, where applicable, using a Standard Penetration Test split-spoon sampler (SPT) in substantial accordance with ASTM D-1586, "Standard Test Method for Standard Penetration Test and Split-Barrel Sampling of Soils." This test procedure drives a 1.4-inch I.D. split-tube sampler into the subsurface profile using a 140-pound hammer falling 30 inches. The total number of blows required to drive the sampler the second and third six-inch increments is the SPT N-value, in blows per foot, and is an indication of material strength. Upon completion of the borings, the boreholes were backfilled cement grout.

A geotechnical engineer classified the soil/rock samples recovered from the borings. The collected samples were later re-examined to confirm field classifications. Visual soil classifications were made in accordance with ASTM D2487 and ASTM D2488. The results of the classification and consequent generalized stratification are shown in Drawings 2A and 2B, the boring summary sheets, and in the records of test borings in Appendix A (sheets A-1 through A-28). Strata contacts shown on these drawings are approximate. Strata contacts shown on these drawings are approximate. The boring data reflect conditions at the specific test locations only, and at the time the borings were drilled.

We note that the top of boring elevation has been estimated. For an accurate elevation, the boring location should be surveyed.

SUBSURFACE DRAINAGE TESTS

Six (6) percolation tests were performed at selected locations. Four (4) percolation tests were performed in the same borehole where previously SPT's were advanced as shown in Drawing Nos.1A through 1D. The borehole drainage tests were performed by rotating a roller bit and casing to a test depth of 15 feet below grade. A slotted 6-inch diameter PVC pipe was installed within the full hole. Next, with the borehole open, borehole was purged until clear water was visible. Water was then pumped into the borehole to develop a test hydraulic head. Once the hydraulic head was stabilized, the average flow rate into the borehole was recorded. A formula developed by the South Florida Water Management District was used to estimate hydraulic conductivity.

The results of the borehole percolation tests are presented in the table below, and appended on the sheets entitled South Florida Water Management District "usual open hole test". Included with the results are descriptions of the subsurface conditions encountered at the test locations.

Test Number	Test Depth (feet)	Hydraulic Conductivity (K) (cfs per square foot per foot of head)
P-1	15	7.97×10^{-05}
P-2	15	2.09×10^{-04}
P-3	15	2.10×10^{-04}
P-4	15	1.75×10^{-03}
P-5	15	1.03×10^{-03}
P-6	15	5.47×10^{-04}

CLOSURE

We appreciate the opportunity in providing geotechnical engineering services on this phase of the project and we trust that the foregoing is responsive to your needs at this time. In the event that you have any questions or if you require additional information, please contact the undersigned.

Sincerely,
NV5, INC.

Alfredo Budik, P.E.
Senior Engineer
Florida License No. 43884

Attachments: Drawing Nos. 1A through 1D Vicinity Map & Test Location Plan
Drawings 2A and 2B Boring Summary Sheet

Appendices: Appendix A – Standard Penetration Tests (A-1 through A-28)
Appendix B - Field Permeability Test Data (B-1 through B-6)

Distribution: Original & 2 Copies to Addressee via U.S. Mail
Copy to Addressee via Email
Copy to NV5 File

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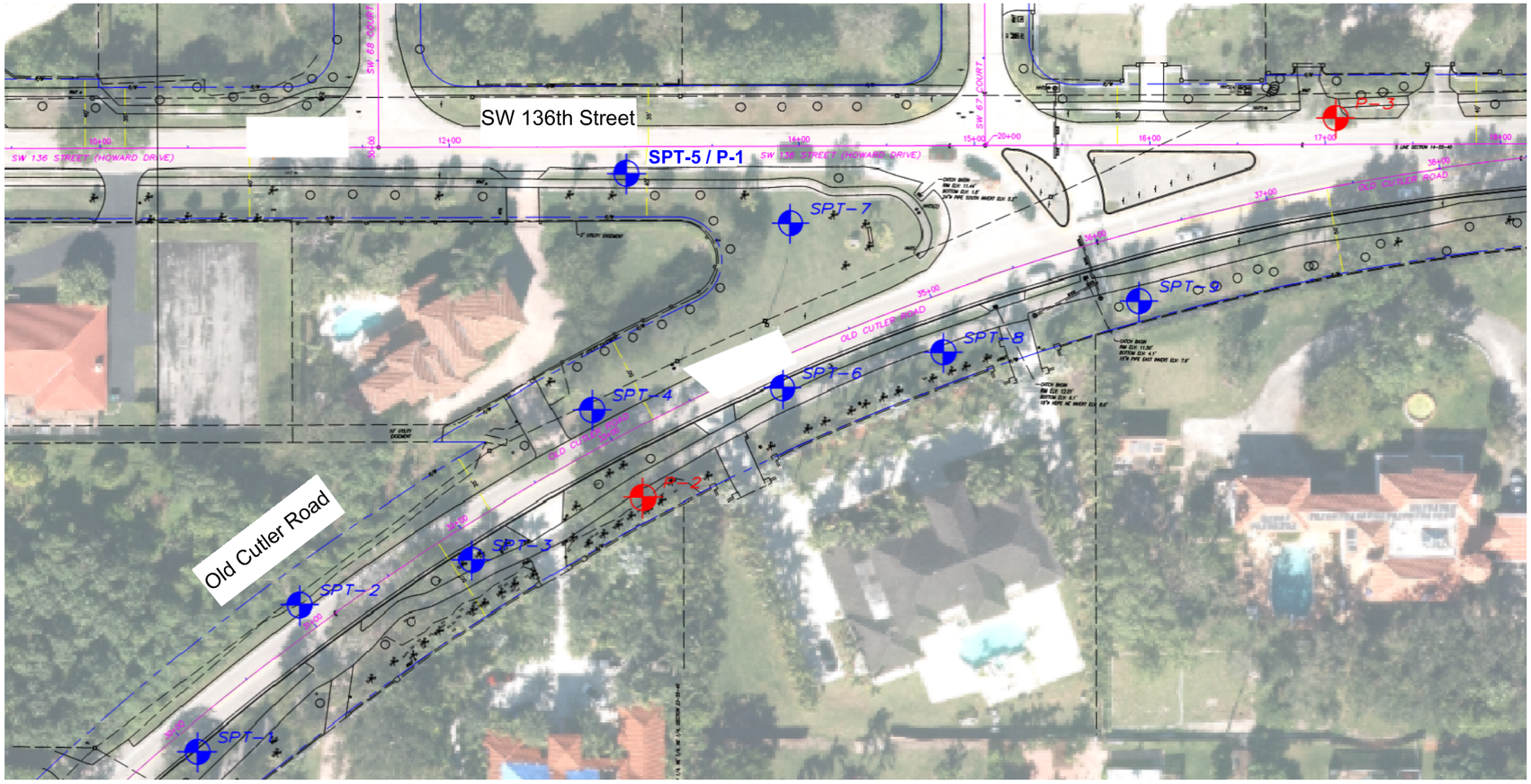
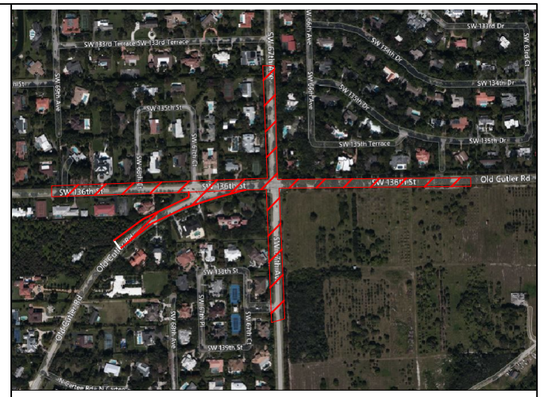
DRAWINGS





Site Vicinity Map

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Approximate Scale in Feet

LEGEND:

SPT- 1 - Number & Approximate Location of Test Boring.

P- 2 - Number & Approximate Location of Percolation Test.

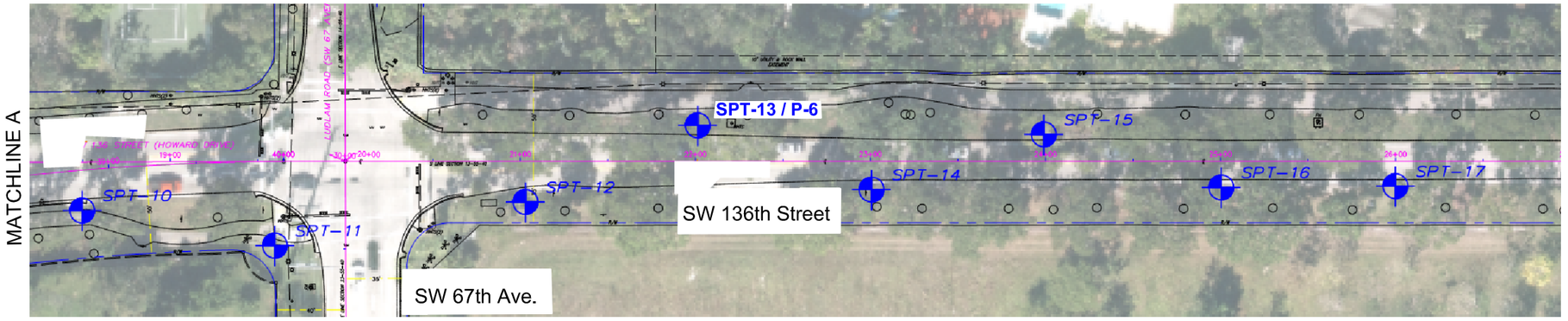
SPT-5 / P-1 - Number & Approximate Location of Test Boring and Percolation Test.

NOTES:

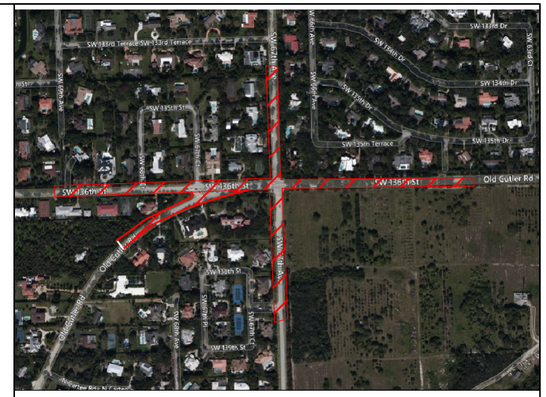
1. Test locations shown are approximate.
2. Test location symbols are not to scale.
3. Base drawing was taken from Sheet No.1, Geotech Investigation Old Cutler - SW 136th Street Plan, prepared by DOT, undated.

NV5	**DRAWING TITLE:** *Site Vicinity Map & Test Location Plan*				**DWN BY:** *RN*
	PROJECT NAME: *DTPW Project 20200118*				**CKD BY:** *AB*
	PROJECT LOCATION: *Old Cutler Road & SW 136th Street, Miami, Florida*	**PROJECT NO:** *16965*	**DATE:** *10/13/2020*	**DWG NO:** *1A*	**APD BY** —

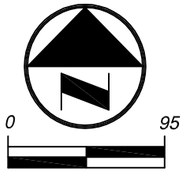
MATCHLINE C



MATCHLINE B



Site Vicinity Map



Approximate Scale in Feet

LEGEND:

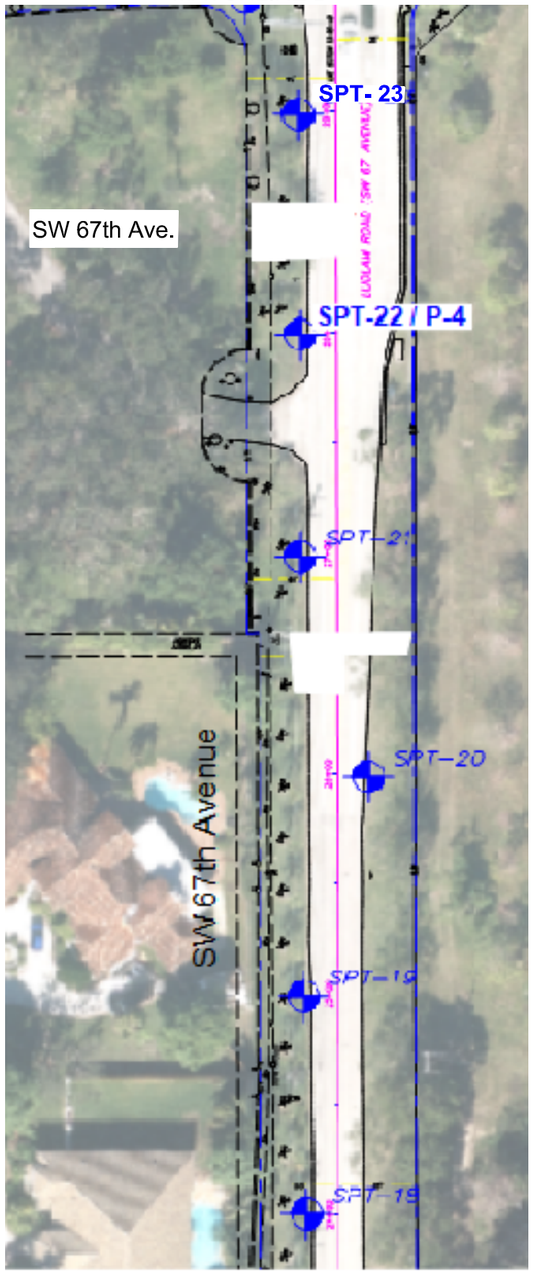
SPT- 10
- Number & Approximate Location of Test Boring.

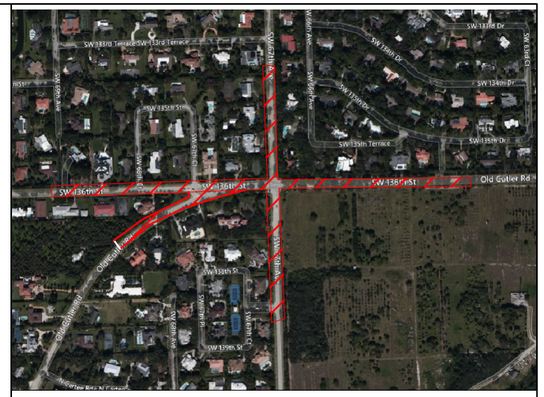
SPT-13 / P-6
- Number & Approximate Location of Test Boring and Percolation Test.

NOTES:

1. Test locations shown are approximate.
2. Test location symbols are not to scale.
3. Base drawing was taken from Sheet No.1, Geotech Investigation Old Cutler - SW 136th Street Plan, prepared by DOT, undated.

NV5	**DRAWING TITLE:** *Site Vicinity Map & Test Location Plan*				**DWN BY:** RN
	PROJECT NAME: *DTPW Project 20200118*				**CKD BY:** AB
	PROJECT LOCATION: *Old Cutler Road & SW 136th Street, Miami, Florida*	**PROJECT NO:** *16965*	**DATE:** *10/13/2020*	**DWG NO:** *1B*	**APD BY**





Site Vicinity Map

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Approximate Scale in Feet

LEGEND:

SPT- 18
- Number & Approximate Location of Test Boring.

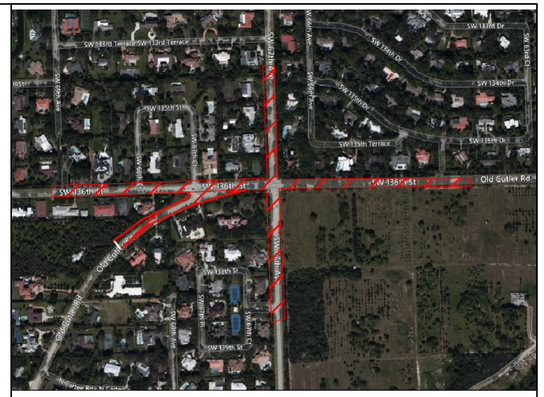
SPT-22 / P-4
- Number & Approximate Location of Test Boring and Percolation Test.

NOTES:

1. Test locations shown are approximate.
2. Test location symbols are not to scale.
3. Base drawing was taken from Sheet No.1, Geotech Investigation Old Cutler - SW 136th Street Plan, prepared by DOT, undated.

N V 5	**DRAWING TITLE:** *Site Vicinity Map & Test Location Plan*				**DWN BY:** *RN*
	PROJECT NAME: *DTPW Project 20200118*				**CKD BY:** *AB*
	PROJECT LOCATION: *Old Cutler Road & SW 136th Street, Miami, Florida*	**PROJECT NO:** *16965*	**DATE:** *10/13/2020*	**DWG NO:** *1C*	**APD BY** —

MATCHLINE C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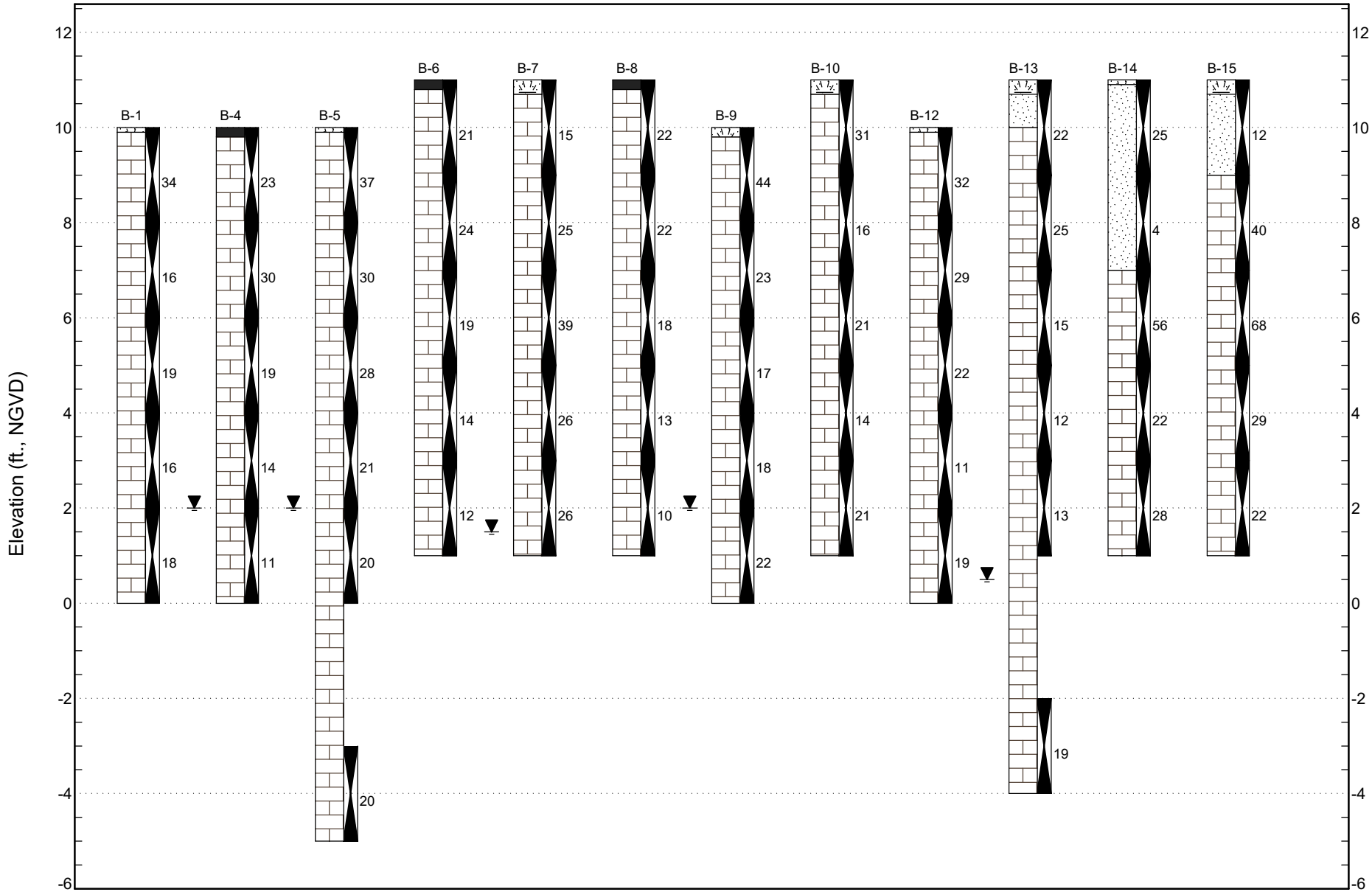


BORING SUMMARY SHEET

PROJECT NAME: DTPW Project 20200118

PROJECT LOCATION: Old Cutler Road & SW 136th Street, Miami, Florida

PROJECT NUMBER: 16965

DATE: 10/13/2020

DRAWN BY: RN

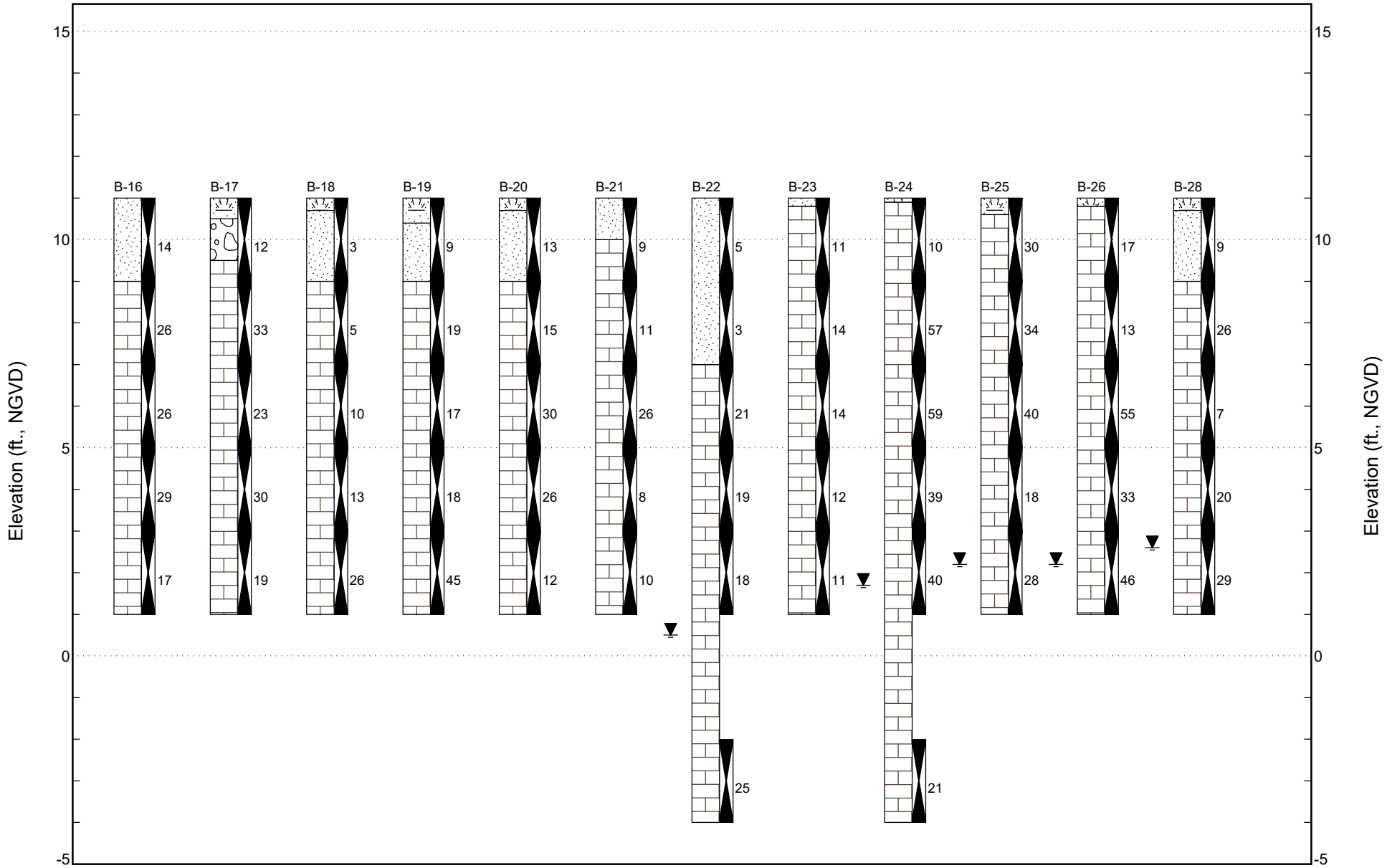
CHECKED BY: AB

DRAWING NO: 2A

LEGEND

- Topsoil
- Asphalt
- Standard Penetration Test
- Limestone
- Sand
- Water Level

Note: Boring top elevations have been estimated



BORING SUMMARY SHEET

PROJECT NAME: DTPW Project 20200118

PROJECT LOCATION: Old Cutler Road & SW 136th Street, Miami, Florida

PROJECT NUMBER: 16965

DATE: 10/13/2020

DRAWN BY: RN

CHECKED BY: AB

DRAWING NO: 2B

LEGEND

- Sand
- Topsoil
- Limestone
- Limestone Fragments
- Standard Penetration Test
- Water Level

Note: Boring top elevations have been estimated

APPENDIX A

STANDARD PENETRATION TESTS

BORING NUMBER B-1

PROJECT NAME DTPW Project 20200118

PROJECT NUMBER 16965 **PROJECT LOCATION** Old Cutler Road & SW 136th Street, Miami, Florida

DATE STARTED 7/31/20 **COMPLETED** 7/31/20 **GROUND ELEVATION** 10 ft NGVD est. **HOLE SIZE** 3 inches

DRILLING CONTRACTOR NV5 **GROUND WATER LEVELS:** --- Not Encountered

DRILLING METHOD Continuous Sampling

LOGGED BY T. Carson/ R. Jimenez **CHECKED BY** R. Numa

NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft., NGVD)
0						10
	SPT	3-14-20-16 (34)	LS	0.1	2" Topsoil	9.9
					LIMESTONE, medium hard, tan, with sand	
	SPT	6-9-7-7 (16)			LIMESTONE, very soft, light tan	
5	SPT	8-10-9-9 (19)			LIMESTONE, very soft, light tan	5
	SPT	10-9-7-8 (16)			LIMESTONE, very soft, light tan	
	SPT	4-8-10-9 (18)			LIMESTONE, very soft, light tan	
10				10.0		0 0.0

Boring terminated at 10.0 feet.

BORING NUMBER B-4

PROJECT NAME DTPW Project 20200118

PROJECT NUMBER 16965 **PROJECT LOCATION** Old Cutler Road & SW 136th Street, Miami, Florida

DATE STARTED 7/30/20 **COMPLETED** 7/30/20 **GROUND ELEVATION** 10 ft NGVD est. **HOLE SIZE** 3 inches

DRILLING CONTRACTOR NV5 **GROUND WATER LEVELS:** 8.0 ft / Elev 2.0 ft

DRILLING METHOD Continuous Sampling

LOGGED BY T. Carson/ R. Jimenez **CHECKED BY** R. Numa

NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft., NGVD)
0						10
	SPT	18-10-13-14 (23)	LS		0.2 3" of Asphalt	9.8
					LIMESTONE, soft, tan, with sand	
	SPT	12-16-14-11 (30)			LIMESTONE, soft, light tan	
5	SPT	15-10-9-10 (19)			LIMESTONE, very soft, light tan	5
	SPT	6-7-7-8 (14)			LIMESTONE, very soft, light tan	
	SPT	4-6-5-4 (11)			LIMESTONE, very soft, light tan	
10					10.0	0 0.0

Boring terminated at 10.0 feet.

BORING NUMBER B-5

PROJECT NAME DTPW Project 20200118

PROJECT NUMBER 16965 **PROJECT LOCATION** Old Cutler Road & SW 136th Street, Miami, Florida

DATE STARTED 7/29/20 **COMPLETED** 7/29/20 **GROUND ELEVATION** 10 ft NGVD est. **HOLE SIZE** 3 inches

DRILLING CONTRACTOR NV5 **GROUND WATER LEVELS:** 8.0 ft / Elev 2.0 ft

DRILLING METHOD Rotary drill with mud, wash & casing

LOGGED BY T. Carson/ R. Jimenez **CHECKED BY** R. Numa

NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft., NGVD)
0						10
	SPT	8-20-17-17 (37)	LS		0.1 2" Topsoil	9.9
					LIMESTONE, medium hard, tan, with sand	
	SPT	20-14-16-16 (30)			LIMESTONE, soft, light tan	
5	SPT	20-11-17-20 (28)			LIMESTONE, soft, tan, light tan	5
	SPT	15-11-10-12 (21)			LIMESTONE, soft, light tan	
	SPT	9-10-10-11 (20)			LIMESTONE, very soft, light tan	
10						0
	SPT	10-10-10-8 (20)			15.0 LIMESTONE, very soft, light tan	-5 -5.0
15						

Boring terminated at 15.0 feet.

BORING NUMBER B-6

PROJECT NAME DTPW Project 20200118

PROJECT NUMBER 16965 **PROJECT LOCATION** Old Cutler Road & SW 136th Street, Miami, Florida

DATE STARTED 7/30/20 **COMPLETED** 7/30/20 **GROUND ELEVATION** 11 ft NGVD est. **HOLE SIZE** 3 inches

DRILLING CONTRACTOR NV5 **GROUND WATER LEVELS:** --- Not Encountered

DRILLING METHOD Continuous Sampling

LOGGED BY T. Carson/ R. Jimenez **CHECKED BY** R. Numa

NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft., NGVD)
0					0.2 3" of Asphalt	10.8
	SPT	14-9-12-16 (21)	LS		LIMESTONE, soft, light tan, with sand	10
	SPT	14-12-12-15 (24)			LIMESTONE, soft, light tan, with sand	
5	SPT	17-9-10-8 (19)			LIMESTONE, very soft, light tan, with sand	5
	SPT	7-7-7-6 (14)			LIMESTONE, very soft, light tan, with sand	
	SPT	6-5-7-8 (12)			LIMESTONE, very soft, light tan, with sand	
10					10.0	1.0

Boring terminated at 10.0 feet.

BORING NUMBER B-7

PROJECT NAME DTPW Project 20200118

PROJECT NUMBER 16965 **PROJECT LOCATION** Old Cutler Road & SW 136th Street, Miami, Florida

DATE STARTED 7/30/20 **COMPLETED** 7/30/20 **GROUND ELEVATION** 11 ft NGVD est. **HOLE SIZE** 3 inches

DRILLING CONTRACTOR NV5 **GROUND WATER LEVELS:** 9.5 ft / Elev 1.5 ft

DRILLING METHOD Continuous Sampling

LOGGED BY T. Carson/ R. Jimenez **CHECKED BY** R. Numa

NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft., NGVD)
0					0.3 4" Topsoil	10.7
	SPT	7-7-8-20 (15)	LS		LIMESTONE, very soft, tan, with sand	10
	SPT	5-10-15-25 (25)			LIMESTONE, soft, light tan	
5	SPT	16-23-16-15 (39)			LIMESTONE, medium hard, light tan	5
	SPT	12-12-14-11 (26)			LIMESTONE, soft, light tan	
10	SPT	10-14-12-11 (26)			10.0 ▼ LIMESTONE, soft, light tan	1.0

Boring terminated at 10.0 feet.

BORING NUMBER B-8

PROJECT NAME DTPW Project 20200118

PROJECT NUMBER 16965 **PROJECT LOCATION** Old Cutler Road & SW 136th Street, Miami, Florida

DATE STARTED 7/30/20 **COMPLETED** 7/30/20 **GROUND ELEVATION** 11 ft NGVD est. **HOLE SIZE** 3 inches

DRILLING CONTRACTOR NV5 **GROUND WATER LEVELS:** --- Not Encountered

DRILLING METHOD Continuous Sampling

LOGGED BY T. Carson/ R. Jimenez **CHECKED BY** R. Numa

NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft., NGVD)
0						
	SPT	17-12-10-10 (22)	LS		0.2 3" of Asphalt	10.8
					LIMESTONE, soft, tan, with sand	10
	SPT	13-10-12-12 (22)			LIMESTONE, soft, light tan	
5	SPT	18-9-9-8 (18)			LIMESTONE, very soft, light tan	5
	SPT	8-7-6-6 (13)			LIMESTONE, very soft, light tan	
	SPT	4-4-6-6 (10)			LIMESTONE, very soft, light tan	
10					10.0	1.0

Boring terminated at 10.0 feet.

BORING NUMBER B-9

PROJECT NAME DTPW Project 20200118

PROJECT NUMBER 16965 **PROJECT LOCATION** Old Cutler Road & SW 136th Street, Miami, Florida

DATE STARTED 7/30/20 **COMPLETED** 7/31/20 **GROUND ELEVATION** 10 ft NGVD est. **HOLE SIZE** 3 inches

DRILLING CONTRACTOR NV5 **GROUND WATER LEVELS:** 8.0 ft / Elev 2.0 ft

DRILLING METHOD Continuous Sampling

LOGGED BY T. Carson/ R. Jimenez **CHECKED BY** R. Numa

NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft., NGVD)
0						10
	SPT	1-16-28-18 (44)	LS		0.2 3" Topsoil	9.8
					LIMESTONE, medium hard, tan, with sand	
	SPT	10-11-12-9 (23)			LIMESTONE, soft, light tan	
5	SPT	10-9-8-8 (17)			LIMESTONE, very soft, light tan	5
	SPT	4-8-10-12 (18)			LIMESTONE, very soft, light tan	
10	SPT	10-10-12-14 (22)			10.0 LIMESTONE, soft, light tan	0 0.0

Boring terminated at 10.0 feet.

BORING NUMBER B-10

PROJECT NAME DTPW Project 20200118

PROJECT NUMBER 16965 **PROJECT LOCATION** Old Cutler Road & SW 136th Street, Miami, Florida

DATE STARTED 7/31/20 **COMPLETED** 7/31/20 **GROUND ELEVATION** 11 ft NGVD est. **HOLE SIZE** 3 inches

DRILLING CONTRACTOR NV5 **GROUND WATER LEVELS:** --- Not Encountered

DRILLING METHOD Continuous Sampling

LOGGED BY T. Carson/ R. Jimenez **CHECKED BY** R. Numa

NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft., NGVD)
0				0.3	4" Topsoil	10.7
	SPT	4-13-18-20 (31)	LS		LIMESTONE, medium hard, tan, with sand	10
	SPT	9-8-8-10 (16)			LIMESTONE, very soft, light tan	
5	SPT	8-10-11-17 (21)			LIMESTONE, very soft, light tan	5
	SPT	6-6-8-9 (14)			LIMESTONE, very soft, light tan	
	SPT	5-11-10-11 (21)			LIMESTONE, soft, light tan	
10				10.0		1.0

Boring terminated at 10.0 feet.

BORING NUMBER B-12

PROJECT NAME DTPW Project 20200118

PROJECT NUMBER 16965 **PROJECT LOCATION** Old Cutler Road & SW 136th Street, Miami, Florida

DATE STARTED 7/30/20 **COMPLETED** 7/30/20 **GROUND ELEVATION** 10 ft NGVD est. **HOLE SIZE** 3 inches

DRILLING CONTRACTOR NV5 **GROUND WATER LEVELS:** --- Not Encountered

DRILLING METHOD Continuous Sampling

LOGGED BY J. Rivera / H. Morales **CHECKED BY** R. Numa

NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft., NGVD)
0						10
	SPT	4-16-16-14 (32)	LS		0.1 2" Topsoil	9.9
	SPT	13-14-15-9 (29)			LIMESTONE, medium hard, light tan, with sand	
5	SPT	11-14-8-7 (22)			LIMESTONE, soft, light tan, with sand	5
	SPT	6-3-8-13 (11)			LIMESTONE, soft, light tan, with sand	
	SPT	12-10-9-9 (19)			LIMESTONE, very soft, light tan	
10					10.0 LIMESTONE, very soft, light tan	0 0.0

Boring terminated at 10.0 feet.

BORING NUMBER B-13

PROJECT NAME DTPW Project 20200118

PROJECT NUMBER 16965 **PROJECT LOCATION** Old Cutler Road & SW 136th Street, Miami, Florida

DATE STARTED 8/3/20 **COMPLETED** 8/3/20 **GROUND ELEVATION** 11 ft NGVD est. **HOLE SIZE** 3 inches

DRILLING CONTRACTOR NV5 **GROUND WATER LEVELS:** 10.5 ft / Elev 0.5 ft

DRILLING METHOD Rotary drill with mud, wash & casing

LOGGED BY J. Rivera / H. Morales **CHECKED BY** R. Numa

NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft., NGVD)
0						10.7
	SPT	4-6-16-18 (22)	SP		0.3 4" Topsoil	10
					1.0 SAND, medium dense, dark brown, with a trace of limestone fragments	10.0
	SPT	15-13-12-6 (25)			LIMESTONE, soft, light tan, with sand	
5	SPT	6-7-8-5 (15)			LIMESTONE, soft, light tan, with sand	5
	SPT	5-6-6-6 (12)	LS		LIMESTONE, soft, light tan, with sand	
	SPT	5-8-5-9 (13)			LIMESTONE, soft, light tan, with sand	
10					▼	0
	SPT	9-10-9-6 (19)			LIMESTONE, soft, light tan, with sand	
15					15.0	-4.0

Boring terminated at 15.0 feet.

BORING NUMBER B-14

PROJECT NAME DTPW Project 20200118

PROJECT NUMBER 16965 **PROJECT LOCATION** Old Cutler Road & SW 136th Street, Miami, Florida

DATE STARTED 7/30/20 **COMPLETED** 7/30/20 **GROUND ELEVATION** 11 ft NGVD est. **HOLE SIZE** 3 inches

DRILLING CONTRACTOR NV5 **GROUND WATER LEVELS:** --- Not Encountered

DRILLING METHOD Continuous Sampling

LOGGED BY J. Rivera / H. Morales **CHECKED BY** R. Numa

NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft., NGVD)
0				0.1	2" Topsoil	10.9
	SPT	5-12-13-15 (25)	SP		SAND, medium dense, dark brown to brown, with limestone fragments	10
	SPT	6-2-2-4 (4)		4.0	SAND, very loose, brown, with limestone fragments	7.0
5	SPT	5-32-24-16 (56)	LS		LIMESTONE, moderately hard, brown to tan, with sand	5
	SPT	14-14-8-12 (22)			LIMESTONE, soft, tan, with sand	
	SPT	14-18-10-13 (28)			LIMESTONE, soft, tan, with sand	
10				10.0		1.0

Boring terminated at 10.0 feet.

BORING NUMBER B-15

PROJECT NAME DTPW Project 20200118

PROJECT NUMBER 16965 **PROJECT LOCATION** Old Cutler Road & SW 136th Street, Miami, Florida

DATE STARTED 7/30/20 **COMPLETED** 7/30/20 **GROUND ELEVATION** 11 ft NGVD est. **HOLE SIZE** 3 inches

DRILLING CONTRACTOR NV5 **GROUND WATER LEVELS:** --- Not Encountered

DRILLING METHOD Continuous Sampling

LOGGED BY J. Rivera / H. Morales **CHECKED BY** R. Numa

NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft., NGVD)
0					0.3 4" Topsoil	10.7
	SPT	4-6-6-17 (12)	SP		SAND, medium dense, dark brown to brown, with limestone fragments 2.0	10
	SPT	17-20-20-30 (40)	LS		LIMESTONE, medium hard, brown to tan, with sand	9.0
5	SPT	40-38-30-28 (68)			LIMESTONE, hard, light tan	5
	SPT	15-17-12-10 (29)			LIMESTONE, soft, light tan	
10	SPT	8-12-10-10 (22)			LIMESTONE, soft, light tan 10.0	1.0

Boring terminated at 10.0 feet.

BORING NUMBER B-16

PROJECT NAME DTPW Project 20200118

PROJECT NUMBER 16965 **PROJECT LOCATION** Old Cutler Road & SW 136th Street, Miami, Florida

DATE STARTED 7/29/20 **COMPLETED** 7/29/20 **GROUND ELEVATION** 11 ft NGVD est. **HOLE SIZE** 3 inches

DRILLING CONTRACTOR NV5 **GROUND WATER LEVELS:** --- Not Encountered

DRILLING METHOD Continuous Sampling

LOGGED BY J. Rivera / H. Morales **CHECKED BY** R. Numa

NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft., NGVD)
0	SPT	4-7-7-8 (14)	SP		SAND, medium dense, dark brown to brown, with a trace of limestone fragments	10
2.0					SAND, medium dense, brown, with limestone fragments	9.0
	SPT	9-13-13-18 (26)	LS		LIMESTONE, soft, light tan, with sand	
5	SPT	16-13-13-13 (26)			LIMESTONE, soft, light tan, with sand	5
	SPT	14-16-13-8 (29)			LIMESTONE, soft, light tan	
	SPT	11-9-8-8 (17)			LIMESTONE, very soft, light tan	
10				10.0		1.0

Boring terminated at 10.0 feet.

BORING NUMBER B-17

PROJECT NAME DTPW Project 20200118

PROJECT NUMBER 16965 **PROJECT LOCATION** Old Cutler Road & SW 136th Street, Miami, Florida

DATE STARTED 7/30/20 **COMPLETED** 7/30/20 **GROUND ELEVATION** 11 ft NGVD est. **HOLE SIZE** 3 inches

DRILLING CONTRACTOR NV5 **GROUND WATER LEVELS:** --- Not Encountered

DRILLING METHOD Continuous Sampling

LOGGED BY J. Rivera / H. Morales **CHECKED BY** R. Numa

NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft., NGVD)
0						10.5
	SPT	4-5-7-13 (12)	GP		0.5 6" Topsoil	10
					1.5 LIMESTONE FRAGMENTS, medium dense, brown to tan, with sand	9.5
	SPT	15-24-9-5 (33)			LIMESTONE, medium hard, light tan, with sand	
5	SPT	5-10-13-16 (23)	LS		LIMESTONE, soft, light tan	5
	SPT	12-18-12-10 (30)			LIMESTONE, soft, light tan	
	SPT	8-10-9-7 (19)			LIMESTONE, very soft, light tan	
10					10.0	1.0

Boring terminated at 10.0 feet.

BORING NUMBER B-18

PROJECT NAME DTPW Project 20200118

PROJECT NUMBER 16965 **PROJECT LOCATION** Old Cutler Road & SW 136th Street, Miami, Florida

DATE STARTED 7/29/20 **COMPLETED** 7/29/20 **GROUND ELEVATION** 11 ft NGVD est. **HOLE SIZE** 3 inches

DRILLING CONTRACTOR NV5 **GROUND WATER LEVELS:** --- Not Encountered

DRILLING METHOD Continuous Sampling

LOGGED BY D. Correa/ Y. Parada **CHECKED BY** R. Numa

NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft., NGVD)
0						10.7
	SPT	4-2-1-WOH (3)	SP		0.3 4" Topsoil SAND, very loose, dark brown to brown, with a trace of limestone fragments and roots	10
					2.0 SAND, very loose, brown, with limestone fragments	9.0
	SPT	WOH-1-4-7 (5)	LS		LIMESTONE, very soft, light brown, with sand	
5	SPT	9-5-5-7 (10)			LIMESTONE, very soft, light brown, with sand	5
	SPT	5-7-6-5 (13)			LIMESTONE, very soft, tan, with sand	
	SPT	9-11-15-11 (26)			LIMESTONE, very soft, tan, with sand	
10					10.0	1.0

Boring terminated at 10.0 feet.

BORING NUMBER B-19

PROJECT NAME DTPW Project 20200118

PROJECT NUMBER 16965 **PROJECT LOCATION** Old Cutler Road & SW 136th Street, Miami, Florida

DATE STARTED 7/29/20 **COMPLETED** 7/29/20 **GROUND ELEVATION** 11 ft NGVD est. **HOLE SIZE** 3 inches

DRILLING CONTRACTOR NV5 **GROUND WATER LEVELS:** --- Not Encountered

DRILLING METHOD Continuous Sampling

LOGGED BY T. Carson/ R. Jimenez **CHECKED BY** R. Numa

NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft., NGVD)
0				0.6	7" Topsoil	10.4
	SPT	5-6-3-3 (9)	SP	2.0	SAND, loose, brown, with a trace of limestone fragments	10 / 9.0
	SPT	4-10-9-8 (19)	LS		LIMESTONE, very soft, light tan	
5	SPT	7-10-7-14 (17)			LIMESTONE, very soft, light tan	5
	SPT	9-8-10-9 (18)			LIMESTONE, very soft, light tan to tan	
10	SPT	WOH-15-30-13 (45)		10.0	LIMESTONE, medium hard, tan	1.0

Boring terminated at 10.0 feet.

BORING NUMBER B-20

PROJECT NAME DTPW Project 20200118

PROJECT NUMBER 16965 **PROJECT LOCATION** Old Cutler Road & SW 136th Street, Miami, Florida

DATE STARTED 7/29/20 **COMPLETED** 7/29/20 **GROUND ELEVATION** 11 ft NGVD est. **HOLE SIZE** 3 inches

DRILLING CONTRACTOR NV5 **GROUND WATER LEVELS:** --- Not Encountered

DRILLING METHOD Continuous Sampling

LOGGED BY T. Carson/ R. Jimenez **CHECKED BY** R. Numa

NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft., NGVD)
0					0.3 4" Topsoil	10.7
	SPT	6-6-7-5 (13)	SP		2.0 SAND, medium dense, dark brown to tan, with limestone fragments	10
	SPT	4-7-8-24 (15)	LS		LIMESTONE, very soft, tan to light tan	9.0
5	SPT	7-13-17-37 (30)			LIMESTONE, soft, light tan	5
	SPT	8-14-12-14 (26)			LIMESTONE, soft, light tan to tan	
10	SPT	8-7-5-9 (12)			10.0 LIMESTONE, very soft, tan	1.0

Boring terminated at 10.0 feet.

BORING NUMBER B-21

PROJECT NAME DTPW Project 20200118

PROJECT NUMBER 16965 **PROJECT LOCATION** Old Cutler Road & SW 136th Street, Miami, Florida

DATE STARTED 7/29/20 **COMPLETED** 7/29/20 **GROUND ELEVATION** 11 ft NGVD est. **HOLE SIZE** 3 inches

DRILLING CONTRACTOR NV5 **GROUND WATER LEVELS:** --- Not Encountered

DRILLING METHOD Continuous Sampling

LOGGED BY D. Correa/ Y. Parada **CHECKED BY** R. Numa

NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft., NGVD)
0	SPT	3-5-4-5 (9)	SP	1.0	SAND, loose, dark brown to tan, with limestone fragments and fine roots	10 10.0
	SPT	8-6-5-5 (11)			LIMESTONE, very soft, tan, with sand	
5	SPT	6-15-11-11 (26)			LIMESTONE, very soft, tan, with sand	
	SPT	7-4-4-3 (8)	LS		LIMESTONE, soft, gray to tan, with sand	5
	SPT	5-5-5-6 (10)			LIMESTONE, very soft, tan to brown, with sand	
10					LIMESTONE, very soft, light brown, with sand	
	SPT	12-10-16-10 (26)		15.0	LIMESTONE, soft, light brown to gray, with sand	-4.0

Boring terminated at 10.0 feet.

BORING NUMBER B-22

PROJECT NAME DTPW Project 20200118

PROJECT NUMBER 16965 **PROJECT LOCATION** Old Cutler Road & SW 136th Street, Miami, Florida

DATE STARTED 7/29/20 **COMPLETED** 7/29/20 **GROUND ELEVATION** 11 ft NGVD est. **HOLE SIZE** 3 inches

DRILLING CONTRACTOR NV5 **GROUND WATER LEVELS:** 10.5 ft / Elev 0.5 ft

DRILLING METHOD Rotary drill with mud, wash & casing

LOGGED BY D. Correa/ Y. Parada **CHECKED BY** R. Numa

NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft., NGVD)
0	SPT	4-3-2-2 (5)	SP		SAND, loose, dark brown to brown, with limestone fragments, with a trace of fine roots	10
	SPT	2-2-1-1 (3)			SAND, loose, brown, with limestone fragments	
				4.0	SAND, very loose, brown to light brown, with limestone fragments	7.0
5	SPT	5-7-14-22 (21)	LS		LIMESTONE, soft, light brown, with sand	5
	SPT	7-10-9-9 (19)			LIMESTONE, very soft, light brown	
10	SPT	6-9-9-10 (18)			LIMESTONE, very soft, light brown	0
15	SPT	10-13-12-8 (25)		15.0	LIMESTONE, soft, light brown	-4.0

Boring terminated at 15.0 feet.

BORING NUMBER B-23

PROJECT NAME DTPW Project 20200118

PROJECT NUMBER 16965 **PROJECT LOCATION** Old Cutler Road & SW 136th Street, Miami, Florida

DATE STARTED 7/29/20 **COMPLETED** 7/29/20 **GROUND ELEVATION** 11 ft NGVD est. **HOLE SIZE** 3 inches

DRILLING CONTRACTOR NV5 **GROUND WATER LEVELS:** --- Not Encountered

DRILLING METHOD Continuous Sampling

LOGGED BY D. Correa/ Y. Parada **CHECKED BY** R. Numa

NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft., NGVD)
0			SP		0.2 SAND, loose, dark brown to brown, with limestone fragments, with a trace of fine roots	10.8
	SPT	2-4-7-15 (11)			LIMESTONE, very soft, light brown, with sand	10
	SPT	5-7-7-8 (14)			LIMESTONE, very soft, light brown to tan, with sand	
5	SPT	6-6-8-9 (14)	LS		LIMESTONE, very soft, light tan, with sand	5
	SPT	7-6-6-5 (12)			LIMESTONE, very soft, light tan	
	SPT	5-5-6-7 (11)			LIMESTONE, very soft, light tan	
10					10.0 Boring terminated at 10.0 feet.	1.0

BORING NUMBER B-24

PROJECT NAME DTPW Project 20200118

PROJECT NUMBER 16965 **PROJECT LOCATION** Old Cutler Road & SW 136th Street, Miami, Florida

DATE STARTED 8/3/20 **COMPLETED** 8/3/20 **GROUND ELEVATION** 11 ft NGVD est. **HOLE SIZE** 3 inches

DRILLING CONTRACTOR NV5 **GROUND WATER LEVELS:** 9.3 ft / Elev 1.7 ft

DRILLING METHOD Rotary drill with mud, wash & casing

LOGGED BY T. Carson/ R. Jimenez **CHECKED BY** R. Numa

NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft., NGVD)
0				0.1	2" Topsoil	10.9
	SPT	6-6-4-7 (10)	LS		LIMESTONE, very soft, light brown, with sand	10
	SPT	25-28-29-29 (57)			LIMESTONE, moderately hard, light brown to light tan, with sand	
5	SPT	24-37-22-23 (59)			LIMESTONE, moderately hard, light tan, with sand	5
	SPT	21-22-17-20 (39)			LIMESTONE, medium hard, light tan	
10	SPT	19-22-18-20 (40)			LIMESTONE, medium hard, light tan	0
15	SPT	12-9-12-12 (21)		15.0	LIMESTONE, very soft, light tan	-4.0

Boring terminated at 15.0 feet.

BORING NUMBER B-25

PROJECT NAME DTPW Project 20200118

PROJECT NUMBER 16965 **PROJECT LOCATION** Old Cutler Road & SW 136th Street, Miami, Florida

DATE STARTED 8/3/20 **COMPLETED** 8/3/20 **GROUND ELEVATION** 11 ft NGVD est. **HOLE SIZE** 3 inches

DRILLING CONTRACTOR NV5 **GROUND WATER LEVELS:** 8.8 ft / Elev 2.2 ft

DRILLING METHOD Continuous Sampling

LOGGED BY T. Carson/ R. Jimenez **CHECKED BY** R. Numa

NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft., NGVD)
0				0.4	5" Topsoil	10.6
	SPT	6-13-17-20 (30)	LS		LIMESTONE, soft, light brown, with sand	10
	SPT	15-17-17-7 (34)			LIMESTONE, medium hard, tan, with sand	
5	SPT	4-18-22-14 (40)			LIMESTONE, medium hard, tan, with sand	5
	SPT	11-8-10-8 (18)			LIMESTONE, very soft, tan	
	SPT	13-12-16-15 (28)		10.0	LIMESTONE, soft, tan	1.0
10					Boring terminated at 10.0 feet.	

BORING NUMBER B-26

PROJECT NAME DTPW Project 20200118

PROJECT NUMBER 16965 **PROJECT LOCATION** Old Cutler Road & SW 136th Street, Miami, Florida

DATE STARTED 8/3/20 **COMPLETED** 8/3/20 **GROUND ELEVATION** 11 ft NGVD est. **HOLE SIZE** 3 inches

DRILLING CONTRACTOR NV5 **GROUND WATER LEVELS:** 8.8 ft / Elev 2.2 ft

DRILLING METHOD Continuous Sampling

LOGGED BY T. Carson/ R. Jimenez **CHECKED BY** R. Numa

NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft., NGVD)
0					0.2 3" Topsoil	10.8
	SPT	5-11-6-10 (17)	LS		LIMESTONE, very soft, brown to light brown, with sand	10
	SPT	12-7-6-7 (13)			LIMESTONE, very soft, tan, with sand	
5	SPT	9-25-30-22 (55)			LIMESTONE, moderately hard, tan, with sand	5
	SPT	15-18-15-18 (33)			LIMESTONE, medium hard, tan	
10	SPT	13-20-26-30 (46)			10.0 LIMESTONE, moderately hard, tan	1.0

Boring terminated at 10.0 feet.

BORING NUMBER B-28

PROJECT NAME DTPW Project 20200118

PROJECT NUMBER 16965 **PROJECT LOCATION** Old Cutler Road & SW 136th Street, Miami, Florida

DATE STARTED 8/3/20 **COMPLETED** 8/3/20 **GROUND ELEVATION** 11 ft NGVD est. **HOLE SIZE** 3 inches

DRILLING CONTRACTOR NV5 **GROUND WATER LEVELS:** 8.4 ft / Elev 2.6 ft

DRILLING METHOD Continuous Sampling

LOGGED BY T. Carson/ R. Jimenez **CHECKED BY** R. Numa

NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft., NGVD)
0					0.3 4" Topsoil	10.7
	SPT	3-5-4-5 (9)	SP		2.0 SAND, loose, dark brown to brown, with limestone fragments	10
	SPT	10-7-19-2 (26)	LS		LIMESTONE, soft, brown to tan, with sand	9.0
5	SPT	2-3-4-6 (7)			LIMESTONE, very soft, tan, with sand	5
	SPT	11-11-9-11 (20)			LIMESTONE, very soft, light tan, with sand	
	SPT	19-15-14-15 (29)			LIMESTONE, soft, light tan, with sand	
10					10.0 Boring terminated at 10.0 feet.	1.0

KEY TO SYMBOLS

Symbol Description

Strata symbols

 Limestone Fragments

 Concrete

 Silty sand

 Asphalt

 Limestone

 Sandstone

 Sand

 Low Plasticity Clay

 Peat

Misc. Symbols

 Groundwater level measured at boring completion. The date checked is indicated.

 Boring continues

 End of Boring

Soil Samplers

 Standard penetration test. 140 lb. hammer dropped 30"

 Hand Auger

 Rock Core

Notes:

1. Exploratory borings were drilled between 07/29/20 and 08/03/20 using a 3-inch diameter rotary drill with mud, wash and casing.
2. Groundwater was encountered at depths between 7.8 and 10.5 feet below grade upon boring completion.
3. These logs are subject to the limitations, conclusions, and recommendations in this report.
4. Results of tests conducted on samples recovered are reported on the logs.

NOTES RELATED TO RECORDS OF TEST BORING AND GENERALIZED SUBSURFACE PROFILE

1. Groundwater level was encountered and recorded (if shown) following the completion of the soil test boring on the date indicated. Fluctuations in groundwater levels are common; consult report text for a discussion.

2. The boring location was identified in the field by offsetting from existing reference marks and using a cloth tape and survey wheel.

3. The borehole was backfilled to site grade following boring completion, and patched with asphalt cold patch mix when pavement was encountered.

4. The Record of Test Boring represents our interpretation of field conditions based on engineering examination of the soil samples.

5. The Record of Test Boring is subject to the limitations, conclusions and recommendations presented in the report text.

6. "Field Test Data" shown on the Record of Test Boring indicated as 11/6 refers to the Standard Penetration Test (SPT) and means 11 hammer blows drove the sampler 6 inches. SPT uses a 140-pound hammer falling 30 inches.

7. The N-value from the SPT is the sum of the hammer blows required to drive the sampler the second and third 6-inch increments.

8. The soil/rock strata interfaces shown on the Record of Test Boring are approximate and may vary from those shown. The soil/rock conditions shown on the Record of Test Boring refer to conditions at the specific location tested; soil/rock conditions may vary between test locations.

9. Relative density for sands/gravels and consistency for silts/clays and limestone are described as follows:

SPT Blows/ Foot	Sands/Gravels Relative Density	SPT Blows/Foot	Silt/Clay Relative Consistency	SPT Blows/ Foot	Limestone Relative Consistency
0-4	Very loose	0-2	Very Soft	0-20	Very Soft
5-10	Loose	3-4	Soft	21-30	Soft
11-30	Medium Dense	5-8	Medium Stiff	31-45	Medium Hard
31-50	Dense	9-15	Stiff	46-60	Moderately Hard
Over 50	Very Dense	16-30	Very Stiff	61-50/2"	Hard
		Over 30	Hard	Over 50/2"	Very Hard

10. Grain size descriptions are as follows:

NAME	SIZE LIMITS
Boulder	12 inches or more
Cobbles	3 to 12 inches
Coarse Gravel	3/4 to 3 inches
Fine Gravel	No. 4 sieve to 3/4 inch
Coarse Sand	No. 10 to No. 4 sieve
Medium Sand	No. 40 to No. 10 sieve
Fine Sand	No. 200 to No. 40 sieve
Fines	Smaller than No. 200 sieve

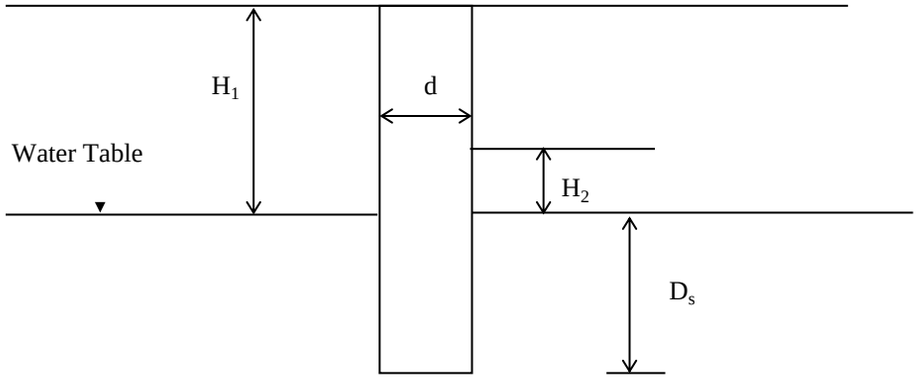
11. Definitions related to adjectives used in soil/rock descriptions:

PROPORTION	ADJECTIVE	APPROXIMATE ROOT DIAMETER	ADJECTIVE
About 5%	with a trace	Less than 1/32"	Fine roots
About 5% to 12%	with	1/32" to 1/4"	Small roots
About ≥ 12%	silty, sandy, etc.	1/4" top 1"	Medium roots
		Greater than 1"	Large roots

APPENDIX B

FIELD PERMEABILITY TEST DATA

SOUTH FLORIDA WATER MANAGEMENT DISTRICT
" USUAL OPEN - HOLE TEST "



HYDRAULIC CONDUCTIVITY

K = Hydraulic Conductivity = $4Q/[\pi d(2H_2^2 + 4H_2Ds + H_2d)]$

7.97E-05 CFS/FT^2-FT HEAD

Time (Min.)	Flow (GPM)
1	5.00
2	5.00
3	5.00
4	5.00
5	5.00
6	5.00
7	5.00
8	5.00
9	5.00
10	5.00

Q =	Average Flow Rate =	0.011140	CFS
d =	Diameter of Test Hole =	6.0	inches
H_2 =	Head on Water Table =	8.0	feet
D_s =	Depth below Ground Water Table =	7.0	feet

TEST LOCATION :		See Drawing No. 1
TEST ELEVATION :	+10.0'	NGVD (estimated)
DEPTH TO WATER TABLE H_1:	8.0'	Below Existing Grade
DEPTH OF TEST HOLE :	15.0'	Below Existing Grade
AVERAGE FLOW RATE:	5.00	GPM

SOIL PROFILE :

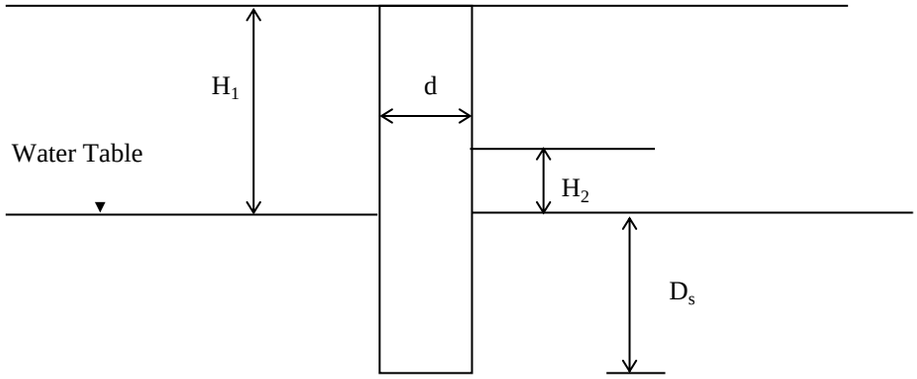
0.0' - 15.0' 2" of Topsoil over ligtht tan Limestone

NOTES: 1) The subsurface profile is determined by cuttings & should not be relied upon as an accurate record of soil type or for transition zones.

PERCOLATION TEST

PROJECT NAME: DTPW Project 20200118		
PROJECT LOCATION: Old Cutler Road & SW 136th Street, Miami, Florida		
PROJECT NO: 16965	**TEST DATE:** 7/29/2020	**TEST NO:** P-1
TESTED BY: T. Carson / R. Jimenez		**CHECKED BY:** AB

SOUTH FLORIDA WATER MANAGEMENT DISTRICT
" USUAL OPEN - HOLE TEST "



HYDRAULIC CONDUCTIVITY

K = Hydraulic Conductivity = $4Q/[\pi d(2H_2^2 + 4H_2Ds + H_2d)]$

2.09E-04 CFS/FT^2-FT HEAD

Time (Min.)	Flow (GPM)
1	12.00
2	12.00
3	12.00
4	12.00
5	12.00
6	12.00
7	12.00
8	12.00
9	12.00
10	12.00

Q =	Average Flow Rate =	0.026736	CFS
d =	Diameter of Test Hole =	6.0	inches
H_2 =	Head on Water Table =	7.0	feet
D_s =	Depth below Ground Water Table =	8.0	feet

TEST LOCATION :		See Drawing No. 1
TEST ELEVATION :	+10.0'	NGVD (estimated)
DEPTH TO WATER TABLE H_1:	7.0'	Below Existing Grade
DEPTH OF TEST HOLE :	15.0'	Below Existing Grade
AVERAGE FLOW RATE:	12.00	GPM

SOIL PROFILE :

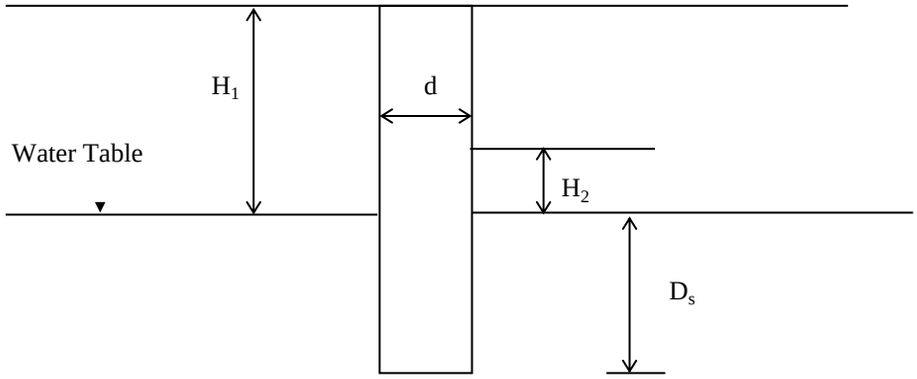
0.0' - 15.0' 3" of Asphalt over light tan Limestone

NOTES: 1) The subsurface profile is determined by cuttings & should not be relied upon as an accurate record of soil type or for transition zones.

PERCOLATION TEST

PROJECT NAME: DTPW Project 20200118		
PROJECT LOCATION: Old Cutler Road & SW 136th Street, Miami, Florida		
PROJECT NO: 16965	**TEST DATE:** 7/30/2020	**TEST NO:** P-2
TESTED BY: D. Carson / R. Jimenez		**CHECKED BY:** AB

SOUTH FLORIDA WATER MANAGEMENT DISTRICT
" USUAL OPEN - HOLE TEST "



HYDRAULIC CONDUCTIVITY

K = Hydraulic Conductivity = $4Q/[\pi d(2H_2^2 + 4H_2Ds + H_2d)]$

2.10E-04 CFS/FT^2-FT HEAD

Time (Min.)	Flow (GPM)
1	7.00
2	7.00
3	7.00
4	7.00
5	6.50
6	6.50
7	6.50
8	6.00
9	6.00
10	6.00

Q =	Average Flow Rate =	0.014593	CFS
d =	Diameter of Test Hole =	3.0	inches
H_2 =	Head on Water Table =	8.0	feet
D_s =	Depth below Ground Water Table =	7.0	feet

TEST LOCATION :		See Drawing No. 1
TEST ELEVATION :	+10.0'	NGVD (estimated)
DEPTH TO WATER TABLE H_1:	8.0'	Below Existing Grade
DEPTH OF TEST HOLE :	15.0'	Below Existing Grade
AVERAGE FLOW RATE:	6.55	GPM

SOIL PROFILE :

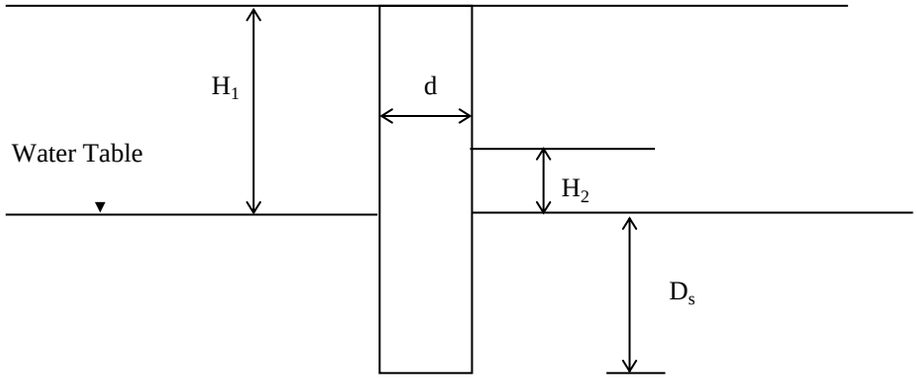
0.0' - 15.0' 3" of Topsoil over light tan Limestone

NOTES: 1) The subsurface profile is determined by cuttings & should not be relied upon as an accurate record of soil type or for transition zones.

PERCOLATION TEST

PROJECT NAME: DTPW Project 20200118		
PROJECT LOCATION: Old Cutler Road & SW 136th Street, Miami, Florida		
PROJECT NO: 16965	**TEST DATE:** 7/31/2020	**TEST NO:** P-3
TESTED BY: T. Carson / R. Jimenez		**CHECKED BY:** AB

SOUTH FLORIDA WATER MANAGEMENT DISTRICT
" USUAL OPEN - HOLE TEST "



HYDRAULIC CONDUCTIVITY

K = Hydraulic Conductivity = $4Q/[\pi d(2H_2^2 + 4H_2Ds + H_2d)]$

1.75E-03 CFS/FT^2-FT HEAD

Time (Min.)	Flow (GPM)
1	50.00
2	50.00
3	50.00
4	50.00
5	50.00
6	50.00
7	50.00
8	50.00
9	50.00
10	50.00

Q =	Average Flow Rate =	0.111400	CFS
d =	Diameter of Test Hole =	6.0	inches
H_2 =	Head on Water Table =	5.5	feet
D_s =	Depth below Ground Water Table =	4.5	feet

TEST LOCATION :		See Drawing No. 1
TEST ELEVATION :	+11.0'	NGVD (estimated)
DEPTH TO WATER TABLE H_1:	10.5'	Below Existing Grade
DEPTH OF TEST HOLE :	15.0'	Below Existing Grade
AVERAGE FLOW RATE:	50.00	GPM

SOIL PROFILE :

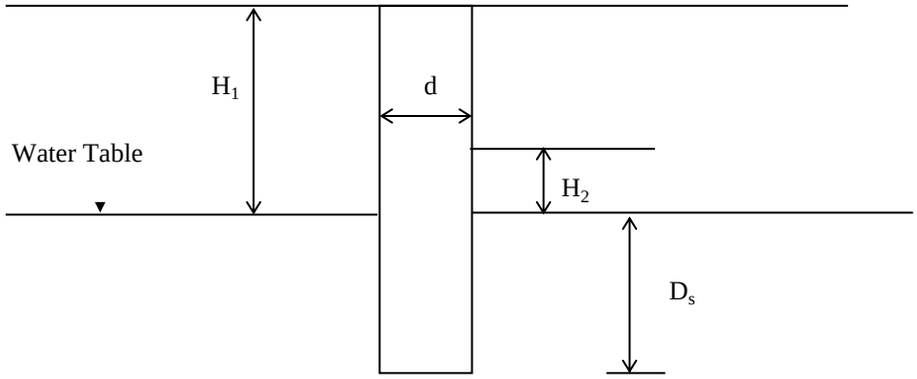
0.0' - 4.0'	Brown Sand with limestone fragments
4.0' - 15.0'	Light brown Limestone

NOTES: 1) The subsurface profile is determined by cuttings & should not be relied upon as an accurate record of soil type or for transition zones.

PERCOLATION TEST

PROJECT NAME: DTPW Project 20200118		
PROJECT LOCATION: Old Cutler Road & SW 136th Street, Miami, Florida		
PROJECT NO: 16965	**TEST DATE:** 7/29/2020	**TEST NO:** P-4
TESTED BY: D. Correa / Y. Parada		**CHECKED BY:** AB

SOUTH FLORIDA WATER MANAGEMENT DISTRICT
" USUAL OPEN - HOLE TEST "



HYDRAULIC CONDUCTIVITY

K = Hydraulic Conductivity = $4Q/[\pi d(2H_2^2 + 4H_2Ds + H_2d)]$

1.03E-03 CFS/FT^2-FT HEAD

Time (Min.)	Flow (GPM)
1	50.00
2	50.00
3	50.00
4	50.00
5	50.00
6	50.00
7	50.00
8	50.00
9	50.00
10	50.00

Q =	Average Flow Rate =	0.111400	CFS
d =	Diameter of Test Hole =	6.0	inches
H_2 =	Head on Water Table =	7.3	feet
D_s =	Depth below Ground Water Table =	5.7	feet

TEST LOCATION :		See Drawing No. 1
TEST ELEVATION :	+11.0'	NGVD (estimated)
DEPTH TO WATER TABLE H_1:	9.3'	Below Existing Grade
DEPTH OF TEST HOLE :	15.0'	Below Existing Grade
AVERAGE FLOW RATE:	50.00	GPM

SOIL PROFILE :

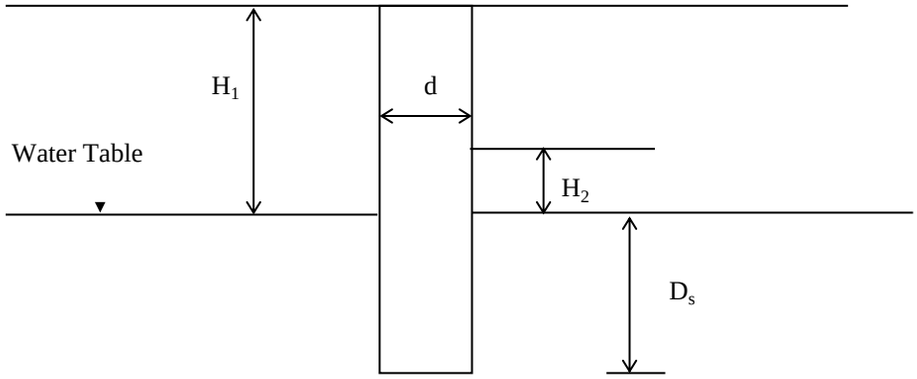
0.0' - 15.0' 2" of Topsoil over Light brown Limestone with sand to light tan Limestone

NOTES: 1) The subsurface profile is determined by cuttings & should not be relied upon as an accurate record of soil type or for transition zones.

PERCOLATION TEST

PROJECT NAME: DTPW Project 20200118		
PROJECT LOCATION: Old Cutler Road & SW 136th Street, Miami, Florida		
PROJECT NO: 16965	**TEST DATE:** 8/03/2020	**TEST NO:** P-5
TESTED BY: J. Rivera / H. Morales		**CHECKED BY:** AB

SOUTH FLORIDA WATER MANAGEMENT DISTRICT
" USUAL OPEN - HOLE TEST "



HYDRAULIC CONDUCTIVITY

K = Hydraulic Conductivity = $4Q/[\pi d(2H_2^2 + 4H_2Ds + H_2d)]$

5.47E-04 CFS/FT^2-FT HEAD

Time (Min.)	Flow (GPM)
1	40.00
2	40.00
3	40.00
4	40.00
5	40.00
6	40.00
7	40.00
8	40.00
9	40.00
10	40.00

Q =	Average Flow Rate =	0.089120	CFS
d =	Diameter of Test Hole =	6.0	inches
H_2 =	Head on Water Table =	10.5	feet
D_s =	Depth below Ground Water Table =	4.5	feet

TEST LOCATION :		See Drawing No. 1
TEST ELEVATION :	+10.0'	NGVD (estimated)
DEPTH TO WATER TABLE H_1:	10.5'	Below Existing Grade
DEPTH OF TEST HOLE :	15.0'	Below Existing Grade
AVERAGE FLOW RATE:	40.00	GPM

SOIL PROFILE :

0.0' - 1.0'	4" of Topsoil over dark brown Sand with limestone fragments
1.0' - 15.0'	Light tan Limestone

NOTES: 1) The subsurface profile is determined by cuttings & should not be relied upon as an accurate record of soil type or for transition zones.

PERCOLATION TEST

PROJECT NAME: DTPW Project 20200118		
PROJECT LOCATION: Old Cutler Road & SW 136th Street, Miami, Florida		
PROJECT NO: 16965	**TEST DATE:** 8/03/2020	**TEST NO:** P-6
TESTED BY: J. Rivera / H. Morales		**CHECKED BY:** AB