

ATTACHMENT 1 FOR ADDENDUM No.1
SPT'S AND PERCOLATION TEST FOR SW 184 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 184th Street
Miami-Dade County, Florida
NV5 Project No. 16966.2

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 37 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 corresponded 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 August 12 and September 11, 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-35). 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

Four (4) percolation tests were performed at selected locations 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.

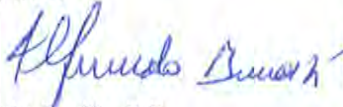
The results of the borehole percolation tests are presented in the table below, and appended on the sheets entitled South Florida Water Management District "usual open hole test". Included with the results are descriptions of the subsurface conditions encountered at the test locations.

<u>Test Number</u>	<u>Test Depth (feet)</u>	<u>Hydraulic Conductivity (K)</u> (cfs per square foot per foot of head)
P-1	15	5.44×10^{-05}
P-2	15	3.43×10^{-04}
P-3	15	1.03×10^{-03}
P-4	15	1.92×10^{-05}

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



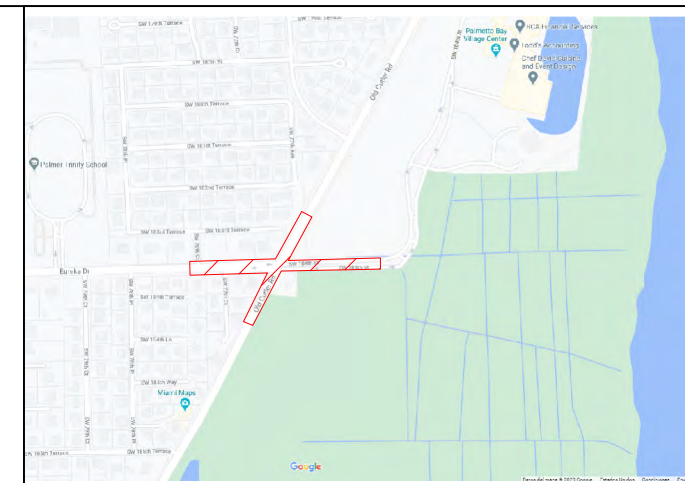
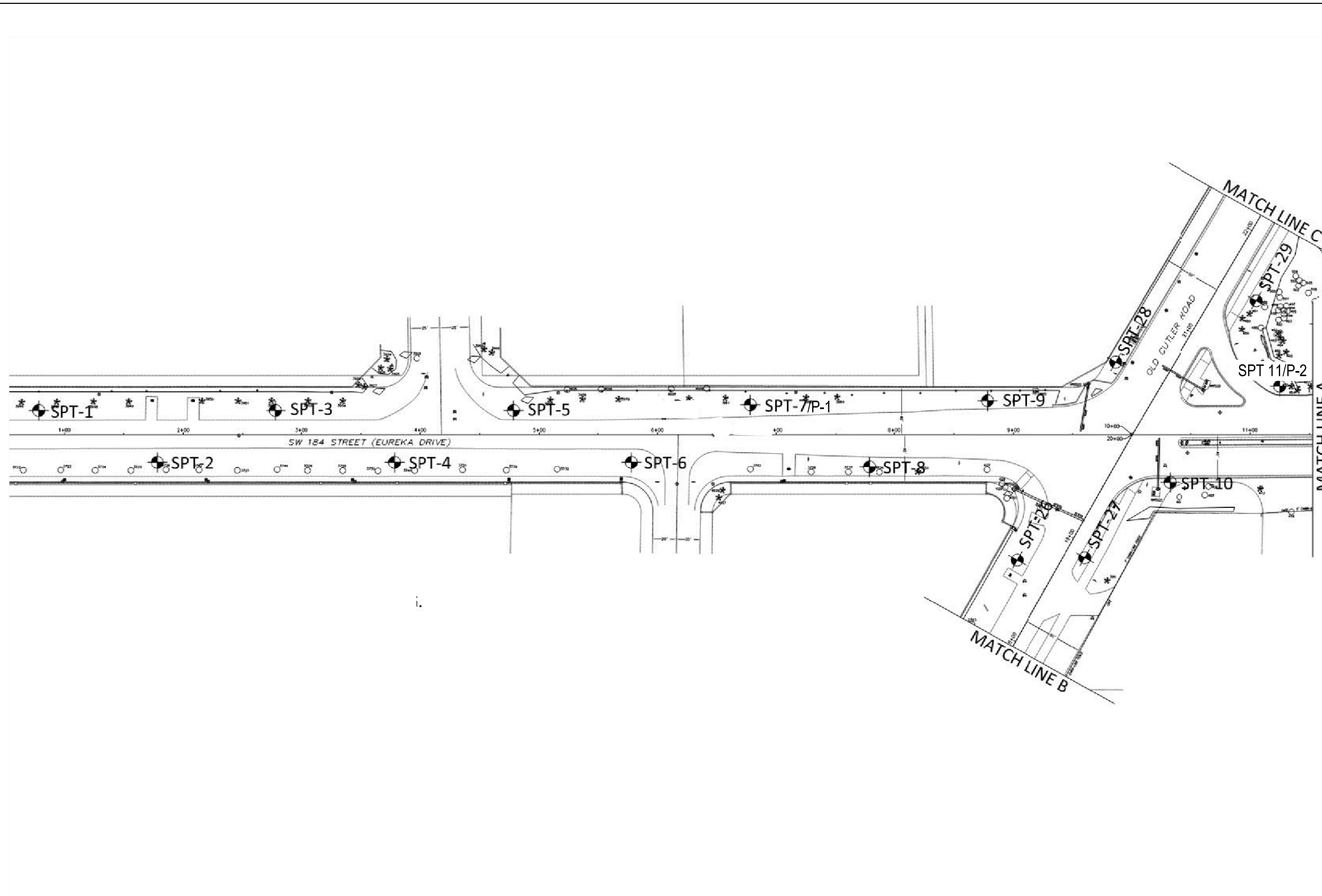
Attachments: Drawing Nos. 1A through 1D Vicinity Map & Test Location Plan
Drawings 2A and 2B Boring Summary Sheet

Appendices: Appendix A – Standard Penetration Tests (A-1 through A-35)
Appendix B - Field Permeability Test Data (B-1 through B-4)

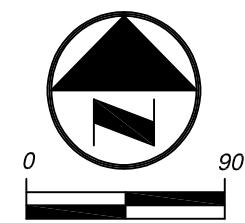
Distribution: Original & 2 Copies to Addressee via U.S. Mail
Copy to Addressee via Email
Copy to NV5 File

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DRAWINGS





Site Vicinity Map



Approximate Scale in Feet

LEGEND:

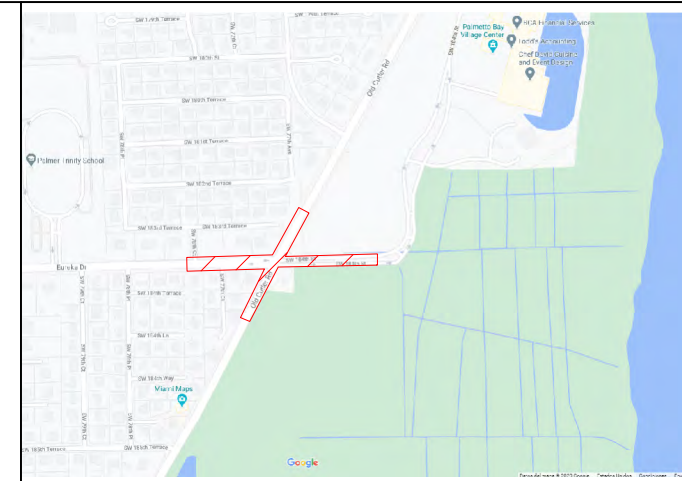
- SPT-1**
 - Number & Approximate Location of Test Boring.
- SPT-7 / P-1**
 - Number & Approximate Location of Test Boring and Percolation Test.

NOTES:

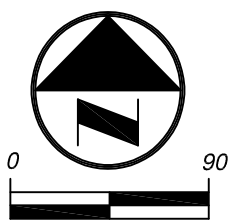
1. Test locations shown are approximate.
2. Test location symbols are not to scale.
3. Base drawing was taken from Sheet 1, Geotech. Investigation Old Cutler - SW 184th, prepared by DOT, undated.



	DRAWING TITLE:	Site Vicinity Map & Test Location Plan				DWN BY:	NVF
	PROJECT NAME:	DTPW Project 20200119 (SW 184th Street)				CKD BY:	AB
	PROJECT LOCATION:	Old Cutler Road & SW 184th Street, Miami, Florida	PROJECT NO:	16966.2	DATE:	10/12/2020	DWG NO:
						APD BY	_____




Site Vicinity Map



Approximate Scale in Feet

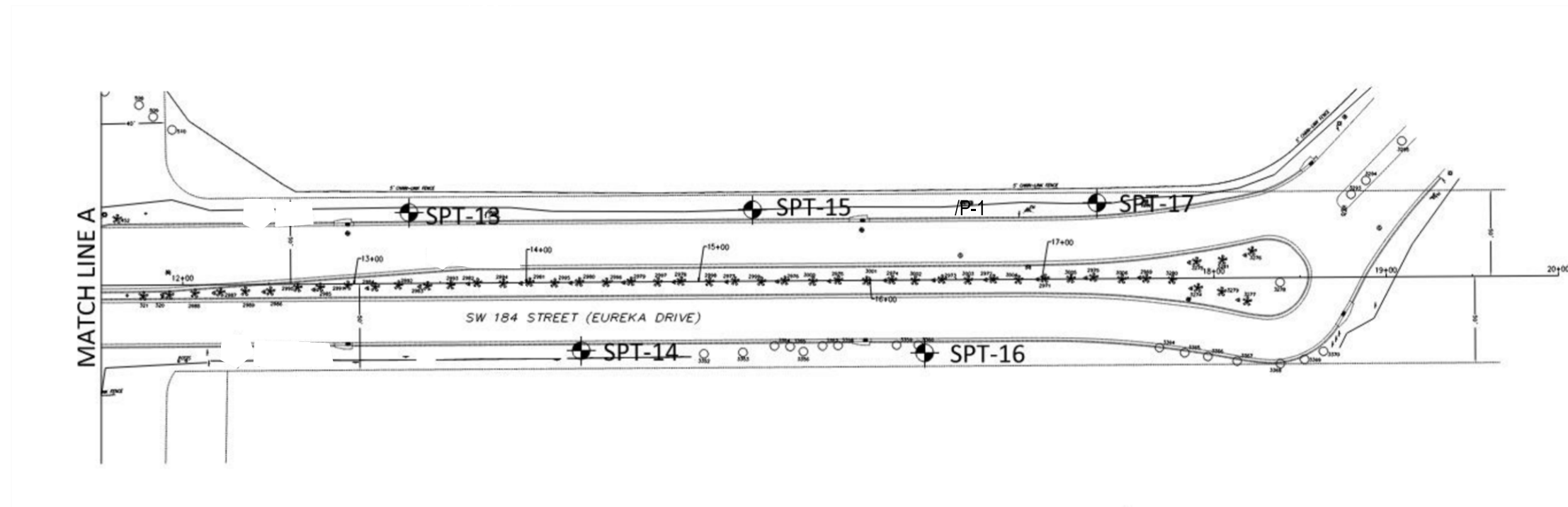
LEGEND:

SPT-13

 - Number & Approximate Location of Test Boring.

NOTES:

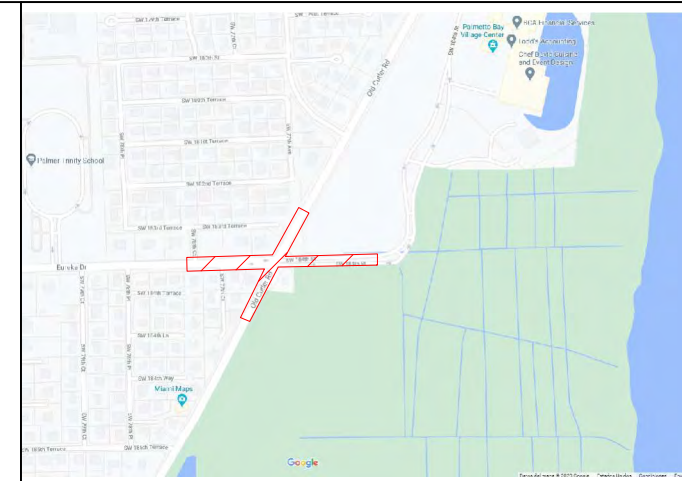
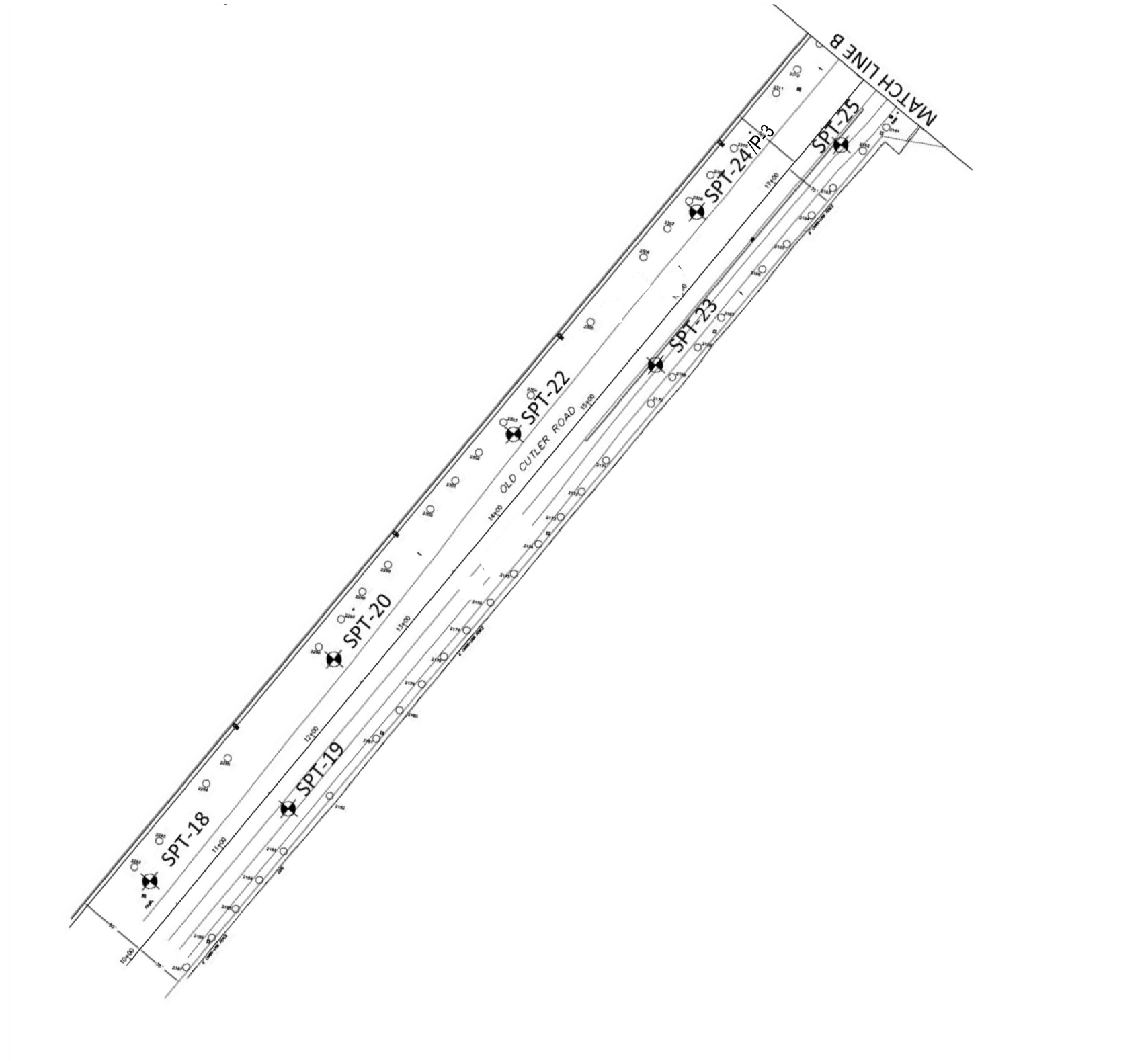
1. Test locations shown are approximate.
2. Test location symbols are not to scale.
3. Base drawing was taken from Sheet 2, Geotech. Investigation Old Cutler - SW 184th, prepared by DOT, undated.



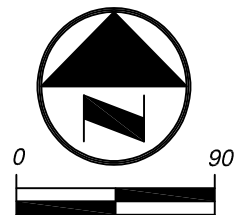
DRAWING TITLE: Site Vicinity Map & Test Location Plan
PROJECT NAME: DTPW Project 20200119 (SW 184th Street)
PROJECT LOCATION: Old Cutler Road & SW 184th Street, Miami, Florida

PROJECT NO: 16966.2 **DATE:** 10/12/2020 **DWG NO:** 1B

DWN BY: *NVF*
CKD BY: *AB*
APD BY: _____





Site Vicinity Map



Approximate Scale in Feet

LEGEND:

- SPT-18**
 - Number & Approximate Location of Test Boring.
- SPT-24 / P-3**
 - Number & Approximate Location of Test Boring and Percolation Test.

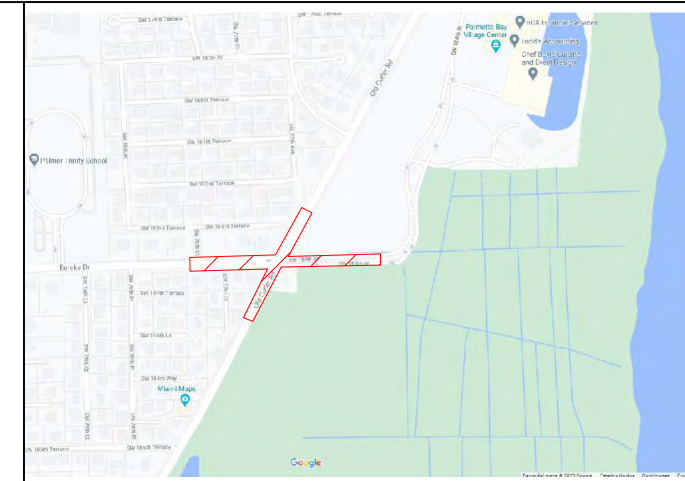
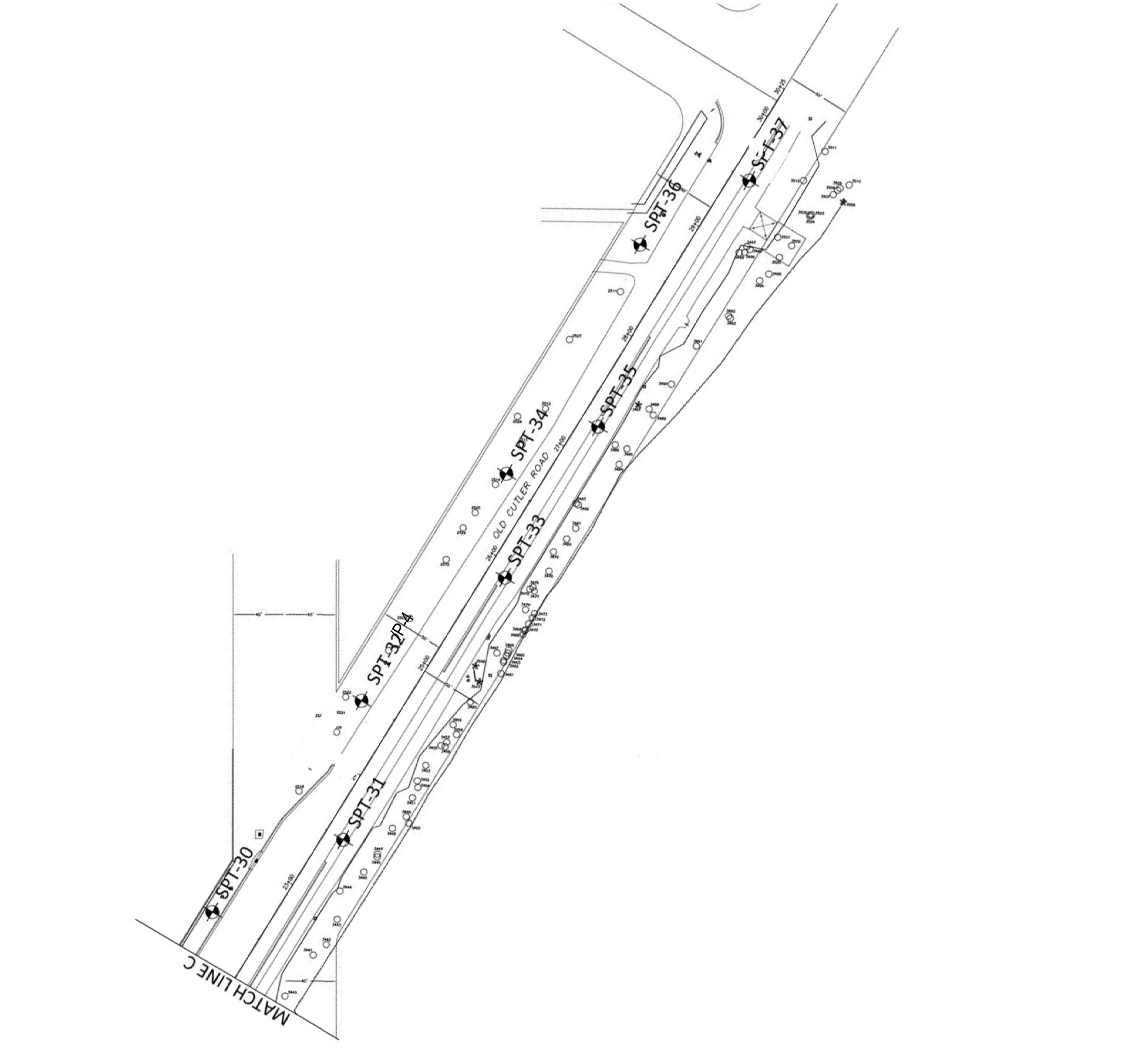
NOTES:

1. Test locations shown are approximate.
2. Test location symbols are not to scale.
3. Base drawing was taken from Sheet 3, Geotech. Investigation Old Cutler - SW 184th, prepared by DOT, undated.

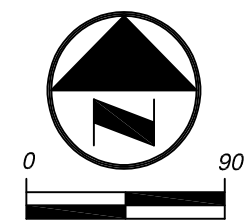


DRAWING TITLE: Site Vicinity Map & Test Location Plan
PROJECT NAME: DTPW Project 20200119 (SW 184th Street)
PROJECT LOCATION: Old Cutler Road & SW 184th Street, Miami, Florida

PROJECT NO: 16966.2 **DATE:** 10/12/2020 **DWG NO:** 1C **DWN BY:** *NVF* **CKD BY:** *AB* **APD BY:** _____



Site Vicinity Map



Approximate Scale in Feet

LEGEND:

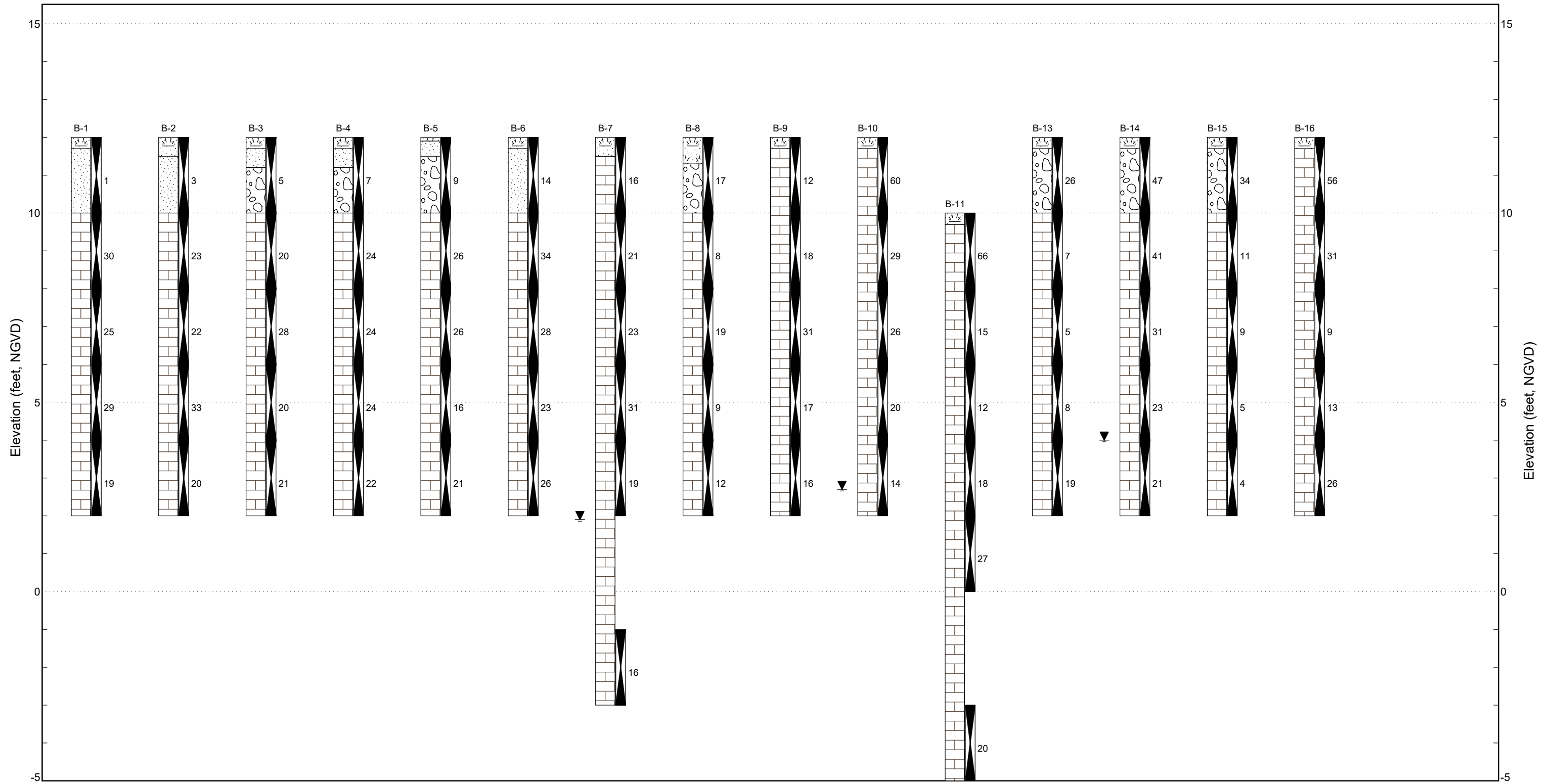
- SPT-30**
 - Number & Approximate Location of Test Boring.
- SPT-32 / P-4**
 - Number & Approximate Location of Test Boring and Percolation Test.

NOTES:

1. Test locations shown are approximate.
2. Test location symbols are not to scale.
3. Base drawing was taken from Sheet 4, Geotech. Investigation Old Cutler - SW 184th, prepared by DOT, undated.



DRAWING TITLE:	Site Vicinity Map & Test Location Plan	DWN BY:	<i>NVF</i>
PROJECT NAME:	DTPW Project 20200119 (SW 184th Street)	CKD BY:	<i>AB</i>
PROJECT LOCATION:	Old Cutler Road & SW 184th Street, Miami, Florida	PROJECT NO:	16966.2
		DATE:	10/12/2020
		DWG NO:	1D
		APD BY:	—



BORING SUMMARY SHEET



PROJECT NAME: DTPW Project 20200119 (SW 184th Street)

PROJECT LOCATION: Old Cutler Road & SW 184th Street, Miami, Florida

PROJECT NUMBER: 16966.2

DATE: 10/13/2020

DRAWN BY: NVF

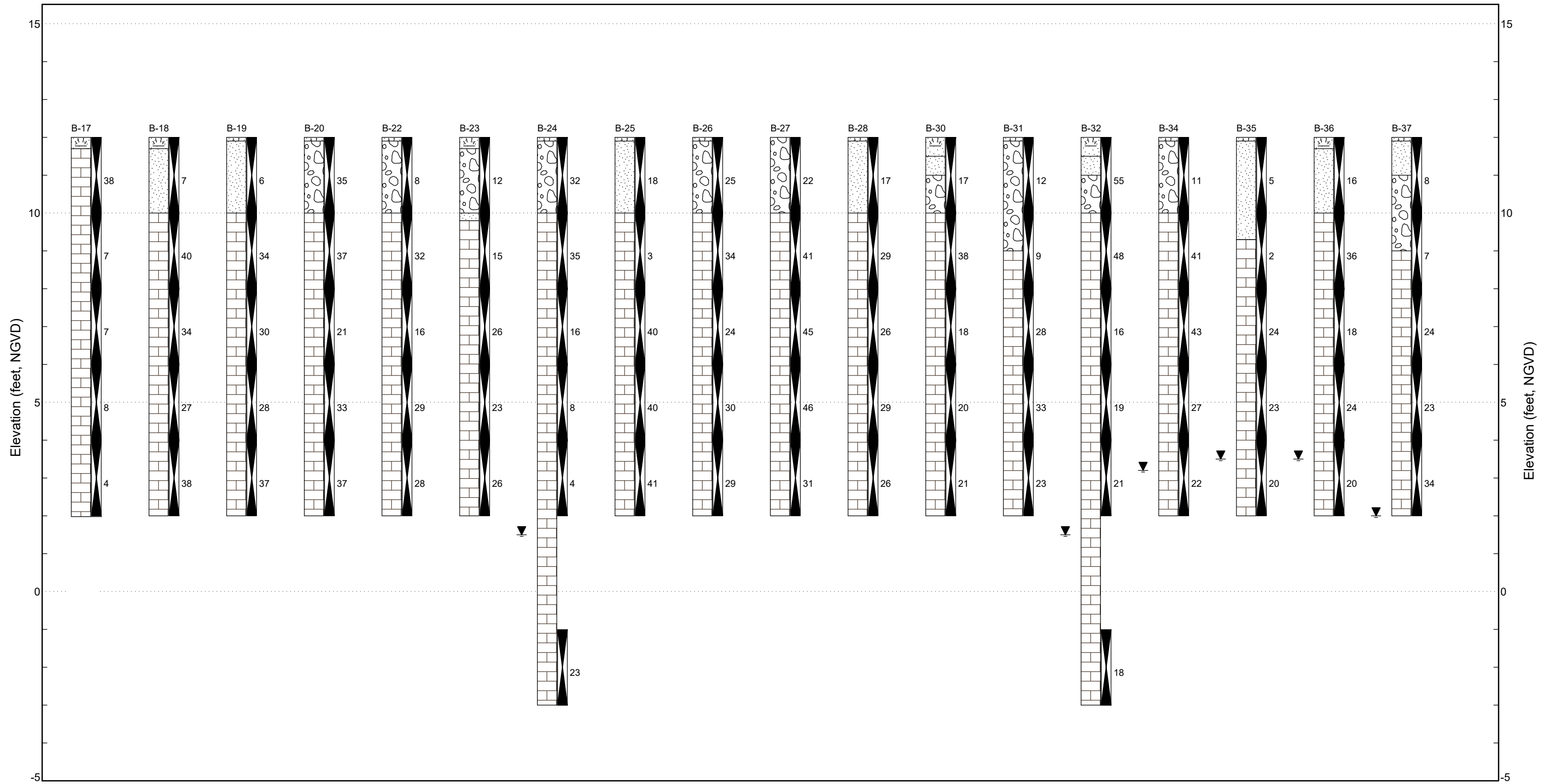
CHECKED BY: AB

DRAWING NO: 2A

LEGEND

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

Note: Boring top elevations have been estimated



BORING SUMMARY SHEET



PROJECT NAME: DTPW Project 20200119 (SW 184th Street)

PROJECT LOCATION: Old Cutler Road & SW 184th Street, Miami, Florida

PROJECT NUMBER: 16966.2

DATE: 10/12/2020

DRAWN BY: NVF

CHECKED BY: AB

DRAWING NO: 2B

LEGEND

- Topsoil
- Sand
- 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 20200119 (SW 184th Street)
PROJECT NUMBER 16966.2 **PROJECT LOCATION** Old Cutler Road & SW 184th Street, Miami, Florida
DATE STARTED 9/11/20 **COMPLETED** 9/11/20 **GROUND ELEVATION** 12 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** N.Vieira
NOTES _____




DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft., NGVD)
0						
0.3			SM		4" of Topsoil	11.7
2.0	SPT	1-WOH-1-1 (1)	SP		SAND, very loose, fine, dark gray to brown, with a trace of limestone fragments	10 10.0
5	SPT	13-15-15-14 (30)	LS		LIMESTONE, soft, light brown	
	SPT	13-12-13-12 (25)			LIMESTONE, soft, light brown	
	SPT	15-16-13-17 (29)			LIMESTONE, soft, light brown	5
10	SPT	14-9-10-14 (19)			LIMESTONE, very soft, light brown	2.0

Boring terminated at 10.0 feet.



BORING NUMBER B-2

PROJECT NAME DTPW Project 20200119 (SW 184th Street)
PROJECT NUMBER 16966.2 **PROJECT LOCATION** Old Cutler Road & SW 184th Street, Miami, Florida
DATE STARTED 9/11/20 **COMPLETED** 9/11/20 **GROUND ELEVATION** 12 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** N.Vieira
NOTES _____

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft., NGVD)
0						
	SPT	2-2-1-1 (3)	SM		6" of Topsoil	11.5
			SP		SAND, very loose, fine, tan to light brown, with a trace of limestone fragments	10 10.0
	SPT	10-10-13-15 (23)	LS		LIMESTONE, soft, light brown	
5	SPT	15-12-10-11 (22)			LIMESTONE, soft, light brown	
	SPT	17-18-15-15 (33)			LIMESTONE, medium hard, light brown	5
	SPT	16-10-10-12 (20)			LIMESTONE, very soft, light brown	
10						

Boring terminated at 10.0 feet.



BORING NUMBER B-3

PROJECT NAME DTPW Project 20200119 (SW 184th Street)
PROJECT NUMBER 16966.2 **PROJECT LOCATION** Old Cutler Road & SW 184th Street, Miami, Florida
DATE STARTED 9/11/20 **COMPLETED** 9/11/20 **GROUND ELEVATION** 12 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** N.Vieira
NOTES _____

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft., NGVD)
0						
	SPT	2-3-2-7 (5)	SM		0.3 4" of Topsoil	11.7
			SP		0.8 SAND, loose, fine, dark gray, with a trace of limestone fragments	11.2
			GP		2.0 LIMESTONE FRAGMENTS, loose, light brown, with sand	10 10.0
5	SPT	12-10-10-15 (20)	LS		LIMESTONE, very soft, light brown	
	SPT	17-14-14-12 (28)			LIMESTONE, soft, light brown	
	SPT	6-8-12-7 (20)			LIMESTONE, very soft, light brown	5
10	SPT	12-12-9-10 (21)			LIMESTONE, soft, light brown	2.0

Boring terminated at 10.0 feet.



BORING NUMBER B-4

PROJECT NAME DTPW Project 20200119 (SW 184th Street)
PROJECT NUMBER 16966.2 **PROJECT LOCATION** Old Cutler Road & SW 184th Street, Miami, Florida
DATE STARTED 9/11/20 **COMPLETED** 9/11/20 **GROUND ELEVATION** 12 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** N.Vieira
NOTES _____

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft., NGVD)
0						
	SPT	2-2-5-15 (7)	SM SP GP		0.3 4" of Topsoil	11.7
					0.8 SAND, loose, fine, dark gray, with a trace of limestone fragments	11.2
					2.0 LIMESTONE FRAGMENTS, loose, light brown, with sand	10 10.0
	SPT	15-13-11-12 (24)	LS		LIMESTONE, soft, light brown	
5	SPT	15-13-11-11 (24)			LIMESTONE, soft, light brown	
	SPT	8-8-16-9 (24)			LIMESTONE, soft, light brown	5
10	SPT	14-11-11-13 (22)			LIMESTONE, soft, light brown	2.0

Boring terminated at 10.0 feet.



BORING NUMBER B-5

PROJECT NAME DTPW Project 20200119 (SW 184th Street)
PROJECT NUMBER 16966.2 **PROJECT LOCATION** Old Cutler Road & SW 184th Street, Miami, Florida
DATE STARTED 9/11/20 **COMPLETED** 9/11/20 **GROUND ELEVATION** 12 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** N.Vieira
NOTES _____

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft., NGVD)
0						
	SPT	3-3-6-13 (9)	SM SP GP		0.1 2" of Topsoil 0.5 SAND, loose, fine, dark gray 2.0 LIMESTONE FRAGMENTS, loose, light brown, with sand	11.9 11.5 10 10.0
	SPT	17-13-13-14 (26)	LS		LIMESTONE, soft, light brown	
5	SPT	13-13-13-15 (26)			LIMESTONE, soft, light brown	
	SPT	14-10-6-4 (16)			LIMESTONE, very soft, light brown	5
10	SPT	11-11-10-12 (21)			LIMESTONE, soft, light brown	2.0

Boring terminated at 10.0 feet.



BORING NUMBER B-6

PROJECT NAME DTPW Project 20200119 (SW 184th Street)
PROJECT NUMBER 16966.2 **PROJECT LOCATION** Old Cutler Road & SW 184th Street, Miami, Florida
DATE STARTED 9/11/20 **COMPLETED** 9/11/20 **GROUND ELEVATION** 12 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** N.Vieira
NOTES _____

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft., NGVD)
0						
	SPT	3-6-8-7 (14)	SM		0.3 4" of Topsoil	11.7
			SP		2.0 SAND, medium dense, fine, dark gray, with a trace of limestone fragments	10 10.0
	SPT	7-17-17-15 (34)	LS		LIMESTONE, medium hard, tan	
5	SPT	14-14-14-11 (28)			LIMESTONE, soft, light brown	
	SPT	3-5-18-15 (23)			LIMESTONE, very soft, light brown	5
10	SPT	14-12-14-16 (26)			LIMESTONE, soft, light brown	2.0

Boring terminated at 10.0 feet.



BORING NUMBER B-7

PROJECT NAME DTPW Project 20200119 (SW 184th Street)
PROJECT NUMBER 16966.2 **PROJECT LOCATION** Old Cutler Road & SW 184th Street, Miami, Florida
DATE STARTED 9/10/20 **COMPLETED** 9/10/20 **GROUND ELEVATION** 12 ft NGVD est. **HOLE SIZE** 3 inches
DRILLING CONTRACTOR NV5 **GROUND WATER LEVELS:** 10.1 ft / Elev 1.9 ft
DRILLING METHOD Rotary drill with mud, wash & casing
LOGGED BY D. Correa/ Y. Parada **CHECKED BY** N.Vieira
NOTES _____




DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft., NGVD)
0						
	SPT	2-3-13-9 (16)	SM		6" of Topsoil	11.5
	SPT	10-10-11-11 (21)	LS		LIMESTONE, very soft, light brown	10
5	SPT	12-11-12-11 (23)			LIMESTONE, soft, light brown	
	SPT	12-17-14-12 (31)			LIMESTONE, soft, light brown	
	SPT	9-9-10-10 (19)			LIMESTONE, medium hard, light brown	5
10					LIMESTONE, very soft, light brown	
						0
15	SPT	8-8-8-7 (16)			LIMESTONE, very soft, light brown	-3.0

Boring terminated at 15.0 feet.



BORING NUMBER B-8

PROJECT NAME DTPW Project 20200119 (SW 184th Street)
PROJECT NUMBER 16966.2 **PROJECT LOCATION** Old Cutler Road & SW 184th Street, Miami, Florida
DATE STARTED 9/10/20 **COMPLETED** 9/10/20 **GROUND ELEVATION** 12 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** N.Vieira
NOTES _____

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft., NGVD)
0						
	SPT	2-9-8-4 (17)	SM		0.7 8" of Topsoil	11.3
			GP		2.0 LIMESTONE FRAGMENTS, medium dense, fine, gray to light brown, with sand	10 10.0
	SPT	5-4-4-5 (8)	LS		LIMESTONE, very soft, light brown	
5	SPT	8-7-12-10 (19)			LIMESTONE, very soft, light brown	
	SPT	6-4-5-5 (9)			LIMESTONE, very soft, light brown	5
10	SPT	10-7-5-8 (12)			LIMESTONE, very soft, light brown	2.0

Boring terminated at 10.0 feet.



BORING NUMBER B-9

PROJECT NAME DTPW Project 20200119 (SW 184th Street)
PROJECT NUMBER 16966.2 **PROJECT LOCATION** Old Cutler Road & SW 184th Street, Miami, Florida
DATE STARTED 9/10/20 **COMPLETED** 9/10/20 **GROUND ELEVATION** 12 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** N.Vieira
NOTES _____

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft., NGVD)
0						
0.3			SM		4" of Topsoil	11.7
	SPT	2-2-10-7 (12)	LS		LIMESTONE, very soft, light brown	10
	SPT	8-9-9-12 (18)			LIMESTONE, very soft, light brown	
5	SPT	14-14-17-12 (31)			LIMESTONE, medium hard, light brown	
	SPT	8-7-10-7 (17)			LIMESTONE, very soft, light brown	5
10	SPT	7-9-7-8 (16)			LIMESTONE, very soft, light brown	2.0

Boring terminated at 10.0 feet.



BORING NUMBER B-10

PROJECT NAME DTPW Project 20200119 (SW 184th Street)
PROJECT NUMBER 16966.2 **PROJECT LOCATION** Old Cutler Road & SW 184th Street, Miami, Florida
DATE STARTED 9/2/20 **COMPLETED** 9/2/20 **GROUND ELEVATION** 12 ft NGVD est. **HOLE SIZE** 3 inches
DRILLING CONTRACTOR NV5 **GROUND WATER LEVELS:** 9.3 ft / Elev 2.7 ft
DRILLING METHOD Continuous Sampling
LOGGED BY D. Correa/ Y. Parada **CHECKED BY** N.Vieira
NOTES _____

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft., NGVD)
0						
0.3			SM		4" of Topsoil	11.7
	SPT	25-30-30-36 (60)	LS		LIMESTONE, hard, light brown	10
	SPT	16-15-14-12 (29)			LIMESTONE, soft, light brown	
5	SPT	15-14-12-11 (26)			LIMESTONE, soft, light brown	
	SPT	13-11-9-7 (20)			LIMESTONE, very soft, light brown	5
10	SPT	8-8-6-7 (14)			LIMESTONE, very soft, light brown	2.0

Boring terminated at 10.0 feet.



BORING NUMBER B-11

PROJECT NAME DTPW Project 20200119 (SW 184th Street)
PROJECT NUMBER 16966.2 **PROJECT LOCATION** Old Cutler Road & SW 184th Street, Miami, Florida
DATE STARTED 9/2/20 **COMPLETED** 9/2/20 **GROUND ELEVATION** 12 ft NGVD est. **HOLE SIZE** 3 inches
DRILLING CONTRACTOR NV5 **GROUND WATER LEVELS:** 7.8 ft / Elev 4.2 ft Not Recorded
DRILLING METHOD Rotary drill with mud, wash & casing
LOGGED BY D. Correa/ Y. Parada **CHECKED BY** N.Vieira
NOTES _____

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft., NGVD)
0						
0.3			SM		4" of Topsoil	11.7
	SPT	25-32-34-20 (66)	LS		LIMESTONE, hard, light brown	10
	SPT	13-10-5-7 (15)			LIMESTONE, very soft, light brown	
5	SPT	11-7-5-7 (12)			LIMESTONE, very soft, light brown	
	SPT	9-9-9-11 (18)			▼ LIMESTONE, very soft, light brown	5
10	SPT	9-12-15-12 (27)			LIMESTONE, soft, light brown	0
15	SPT	7-9-11-12 (20)			LIMESTONE, very soft, light brown	-3.0

Boring terminated at 15.0 feet.



BORING NUMBER B-13

PROJECT NAME DTPW Project 20200119 (SW 184th Street)
PROJECT NUMBER 16966.2 **PROJECT LOCATION** Old Cutler Road & SW 184th Street, Miami, Florida
DATE STARTED 9/1/20 **COMPLETED** 9/1/20 **GROUND ELEVATION** 12 ft NGVD est. **HOLE SIZE** 3 inches
DRILLING CONTRACTOR NV5 **GROUND WATER LEVELS:** --- Not Recorded
DRILLING METHOD Continuous Sampling
LOGGED BY D. Correa/ Y. Parada **CHECKED BY** N.Vieira
NOTES _____

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft., NGVD)
0						
	SPT	30-18-8-7 (26)	SM GP		0.3 4" of Topsoil	11.7
	SPT	3-4-3-2 (7)	LS		2.0 LIMESTONE FRAGMENTS, medium dense, light brown	10 10.0
	SPT	2-2-3-2 (5)			LIMESTONE, very soft, light brown	
5	SPT	3-4-4-3 (8)			LIMESTONE, very soft, light brown	
	SPT	10-10-9-10 (19)			LIMESTONE, very soft, light brown	
10					LIMESTONE, very soft, light brown	10.0

Boring terminated at 10.0 feet.



BORING NUMBER B-14

PROJECT NAME DTPW Project 20200119 (SW 184th Street)
PROJECT NUMBER 16966.2 **PROJECT LOCATION** Old Cutler Road & SW 184th Street, Miami, Florida
DATE STARTED 9/1/20 **COMPLETED** 9/1/20 **GROUND ELEVATION** 12 ft NGVD est. **HOLE SIZE** 3 inches
DRILLING CONTRACTOR NV5 **GROUND WATER LEVELS:** 8.0 ft / Elev 4.0 ft
DRILLING METHOD Continuous Sampling
LOGGED BY D. Correa/ Y. Parada **CHECKED BY** N.Vieira
NOTES _____

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft., NGVD)
0						
0.3	SPT	17-32-15-31 (47)	SM GP		4" of Topsoil	11.7
2.0	SPT	24-21-20-15 (41)			LIMESTONE FRAGMENTS, dense, light brown, with sand	10 10.0
5	SPT	13-18-13-13 (31)	LS		LIMESTONE, medium dense, light brown	
	SPT	11-12-11-10 (23)			LIMESTONE, medium dense, light brown	
	SPT	12-10-11-10 (21)			LIMESTONE, soft, light brown	5
10	SPT	12-10-11-10 (21)			LIMESTONE, soft, light brown	2.0

Boring terminated at 10.0 feet.



BORING NUMBER B-15

PROJECT NAME DTPW Project 20200119 (SW 184th Street)
PROJECT NUMBER 16966.2 **PROJECT LOCATION** Old Cutler Road & SW 184th Street, Miami, Florida
DATE STARTED 9/1/20 **COMPLETED** 9/1/20 **GROUND ELEVATION** 12 ft NGVD est. **HOLE SIZE** 3 inches
DRILLING CONTRACTOR NV5 **GROUND WATER LEVELS:** --- Not Recorded
DRILLING METHOD Continuous Sampling
LOGGED BY D. Correa/ Y. Parada **CHECKED BY** N.Vieira
NOTES _____

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft., NGVD)
0						
	SPT	36-25-9-11 (34)	SM GP		0.3 4" of Topsoil	11.7
	SPT	5-4-7-6 (11)	LS		2.0 LIMESTONE FRAGMENTS, dense, light brown, with sand	10 10.0
5	SPT	5-5-4-4 (9)			LIMESTONE, very soft, light brown	
	SPT	3-3-2-3 (5)			LIMESTONE, very soft, light brown	5
	SPT	2-2-2-2 (4)			LIMESTONE, very soft, light brown	
10					LIMESTONE, very soft, light brown	10.0

Boring terminated at 10.0 feet.



BORING NUMBER B-16

PROJECT NAME DTPW Project 20200119 (SW 184th Street)
PROJECT NUMBER 16966.2 **PROJECT LOCATION** Old Cutler Road & SW 184th Street, Miami, Florida
DATE STARTED 9/1/20 **COMPLETED** 9/1/20 **GROUND ELEVATION** 12 ft NGVD est. **HOLE SIZE** 3 inches
DRILLING CONTRACTOR NV5 **GROUND WATER LEVELS:** --- Not Recorded
DRILLING METHOD Continuous Sampling
LOGGED BY D. Correa/ Y. Parada **CHECKED BY** N.Vieira
NOTES _____

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft., NGVD)
0						
0.3			SM		4" of Topsoil	11.7
	SPT	22-32-24-27 (56)	LS		LIMESTONE, hard, light brown	10
	SPT	18-20-11-8 (31)			LIMESTONE, medium hard, light brown	
5	SPT	6-5-4-6 (9)			LIMESTONE, very soft, light brown	
	SPT	5-6-7-6 (13)			LIMESTONE, very soft, light brown	5
10	SPT	9-12-14-11 (26)			LIMESTONE, soft, light brown	2.0

Boring terminated at 10.0 feet.



BORING NUMBER B-17

PROJECT NAME DTPW Project 20200119 (SW 184th Street)
PROJECT NUMBER 16966.2 **PROJECT LOCATION** Old Cutler Road & SW 184th Street, Miami, Florida
DATE STARTED 9/1/20 **COMPLETED** 9/1/20 **GROUND ELEVATION** 12 ft NGVD est. **HOLE SIZE** 3 inches
DRILLING CONTRACTOR NV5 **GROUND WATER LEVELS:** --- Not Recorded
DRILLING METHOD Continuous Sampling
LOGGED BY D. Correa/ Y. Parada **CHECKED BY** N.Vieira
NOTES _____

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft., NGVD)
0						
0.3			SM		4" of Topsoil	11.7
	SPT	35-25-13-7 (38)	LS		LIMESTONE, medium hard, light brown	10
	SPT	4-4-3-3 (7)			LIMESTONE, very soft, light brown	
5	SPT	3-3-4-5 (7)			LIMESTONE, very soft, light brown	
	SPT	3-4-4-2 (8)			LIMESTONE, very soft, light brown	5
10	SPT	3-2-2-3 (4)			LIMESTONE, very soft, light brown	2.0

Boring terminated at 10.0 feet.



BORING NUMBER B-18

PROJECT NAME DTPW Project 20200119 (SW 184th Street)
PROJECT NUMBER 16966.2 **PROJECT LOCATION** Old Cutler Road & SW 184th Street, Miami, Florida
DATE STARTED 9/2/20 **COMPLETED** 9/2/20 **GROUND ELEVATION** 12 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** N.Vieira
NOTES _____

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft., NGVD)
0						
0.3	SPT	3-3-4-7 (7)	SM		4" of Topsoil	11.7
2.0			SP		SAND, loose, fine, tan, with limestone fragments	10 10.0
5	SPT	14-23-17-19 (40)	LS		LIMESTONE, medium hard, tan	
	SPT	27-20-14-18 (34)			LIMESTONE, medium hard, tan	
	SPT	19-16-11-13 (27)			LIMESTONE, soft, light brown	5
10	SPT	20-20-18-27 (38)			LIMESTONE, medium hard, light brown	2.0

Boring terminated at 10.0 feet.



BORING NUMBER B-19

PROJECT NAME DTPW Project 20200119 (SW 184th Street)
PROJECT NUMBER 16966.2 **PROJECT LOCATION** Old Cutler Road & SW 184th Street, Miami, Florida
DATE STARTED 9/2/20 **COMPLETED** 9/2/20 **GROUND ELEVATION** 12 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** N.Vieira
NOTES _____

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft., NGVD)
0						
	SPT	5-3-3-5 (6)	SM SP		0.1 1" of Topsoil	11.9
					2.0 SAND, loose, fine, tan, with limestone fragments	10 10.0
	SPT	16-19-15- 16 (34)	LS		LIMESTONE, medium hard, light tan	
5	SPT	22-16-14- 20 (30)			LIMESTONE, medium hard, light brown	
	SPT	20-15-13- 10 (28)			LIMESTONE, soft, light brown	5
	SPT	18-19-18- 26 (37)			LIMESTONE, medium hard, light brown	
10						10.0

Boring terminated at 10.0 feet.



BORING NUMBER B-20

PROJECT NAME DTPW Project 20200119 (SW 184th Street)
PROJECT NUMBER 16966.2 **PROJECT LOCATION** Old Cutler Road & SW 184th Street, Miami, Florida
DATE STARTED 8/31/20 **COMPLETED** 8/31/20 **GROUND ELEVATION** 12 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** N.Vieira
NOTES _____

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft., NGVD)
0						
	SPT	4-17-18-14 (35)	SM GP		0.1 1" of Topsoil	11.9
					2.0 LIMESTONE FRAGMENTS, dense, light brown, with sand	10 10.0
	SPT	16-17-20- 15 (37)	LS		LIMESTONE, medium hard, light brown	
5	SPT	10-10-11- 13 (21)			LIMESTONE, soft, light brown	
	SPT	13-17-16- 21 (33)			LIMESTONE, medium hard, light brown	5
	SPT	18-17-20- 19 (37)			LIMESTONE, medium hard, light brown	
10					10.0 LIMESTONE, medium hard, light brown	2.0

Boring terminated at 10.0 feet.



BORING NUMBER B-22

PROJECT NAME DTPW Project 20200119 (SW 184th Street)
PROJECT NUMBER 16966.2 **PROJECT LOCATION** Old Cutler Road & SW 184th Street, Miami, Florida
DATE STARTED 8/31/20 **COMPLETED** 8/31/20 **GROUND ELEVATION** 12 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** N.Vieira
NOTES _____

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft., NGVD)
0						
	SPT	7-4-4-15 (8)	SM GP		0.1 1" of Topsoil	11.9
					2.0 LIMESTONE FRAGMENTS, loose, light brown, with sand	10 10.0
	SPT	17-12-20- 14 (32)	LS		LIMESTONE, medium hard, light brown	
5	SPT	8-6-10-12 (16)			LIMESTONE, soft, light brown	
	SPT	10-13-16- 16 (29)			LIMESTONE, soft, light brown	5
	SPT	15-12-16- 18 (28)			LIMESTONE, soft, light brown	
10				10.0		2.0

Boring terminated at 10.0 feet.



BORING NUMBER B-23

PROJECT NAME DTPW Project 20200119 (SW 184th Street)
PROJECT NUMBER 16966.2 **PROJECT LOCATION** Old Cutler Road & SW 184th Street, Miami, Florida
DATE STARTED 8/31/20 **COMPLETED** 8/31/20 **GROUND ELEVATION** 12 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** N.Vieira
NOTES _____

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft., NGVD)
0						
	SPT	4-7-5-3 (12)	SM GP		0.3 4" of Topsoil	11.7
					2.0 LIMESTONE FRAGMENTS, loose, light brown, with sand	10 10.0
	SPT	3-7-8-10 (15)	SP		2.2 SAND, medium dense, fine, brown to dark brown, with limestone fragments	9.8
					LIMESTONE, very soft, light brown	
5	SPT	10-15-11-7 (26)	LS		LIMESTONE, soft, light brown	
	SPT	9-11-12-13 (23)			LIMESTONE, soft, light brown	5
	SPT	13-14-12-12 (26)			LIMESTONE, soft, light brown	
10					LIMESTONE, soft, light brown	2.0

Boring terminated at 10.0 feet.



BORING NUMBER B-24

PROJECT NAME DTPW Project 20200119 (SW 184th Street)
PROJECT NUMBER 16966.2 **PROJECT LOCATION** Old Cutler Road & SW 184th Street, Miami, Florida
DATE STARTED 8/31/20 **COMPLETED** 8/31/20 **GROUND ELEVATION** 12 ft NGVD est. **HOLE SIZE** 3 inches
DRILLING CONTRACTOR NV5 **GROUND WATER LEVELS:** 10.5 ft / Elev 1.5 ft
DRILLING METHOD Rotary drill with mud, wash & casing
LOGGED BY D. Correa/ Y. Parada **CHECKED BY** N.Vieira
NOTES _____

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft., NGVD)
0						
0.1			SM		2" of Topsoil	11.9
2.0	SPT	19-17-15-13 (32)	GP		LIMESTONE FRAGMENTS, dense, light brown, with sand	10 10.0
5	SPT	17-18-17-15 (35)	LS		LIMESTONE, medium hard, light brown	
	SPT	13-10-6-4 (16)			LIMESTONE, very soft, light light brown	
	SPT	3-4-4-3 (8)			LIMESTONE, very soft, light brown	5
10	SPT	3-2-2-3 (4)			LIMESTONE, very soft, light brown	
						▼
15	SPT	4-11-12-10 (23)			LIMESTONE, soft, light light brown	-3.0

Boring terminated at 15.0 feet.



BORING NUMBER B-25

PROJECT NAME DTPW Project 20200119 (SW 184th Street)
PROJECT NUMBER 16966.2 **PROJECT LOCATION** Old Cutler Road & SW 184th Street, Miami, Florida
DATE STARTED 9/11/20 **COMPLETED** 9/11/20 **GROUND ELEVATION** 12 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** N.Vieira
NOTES _____

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft., NGVD)
0						
	SPT	6-10-8-3 (18)	SM SP		0.1 2" of Topsoil	11.9
					2.0 SAND, medium dense, light brown, with limestone fragments	10 10.0
	SPT	3-2-1-2 (3)	LS		LIMESTONE, very soft, tan	
5	SPT	12-20-20-16 (40)			LIMESTONE, medium hard, light brown	
	SPT	22-22-18-16 (40)			LIMESTONE, medium hard, light brown	5
	SPT	20-21-20-13 (41)			LIMESTONE, medium hard, light brown	
10					10.0	2.0

Boring terminated at 10.0 feet.



BORING NUMBER B-26

PROJECT NAME DTPW Project 20200119 (SW 184th Street)
PROJECT NUMBER 16966.2 **PROJECT LOCATION** Old Cutler Road & SW 184th Street, Miami, Florida
DATE STARTED 8/28/20 **COMPLETED** 8/28/20 **GROUND ELEVATION** 12 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** N.Vieira
NOTES _____

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft., NGVD)
0						
	SPT	5-10-15-16 (25)	SM GP		0.1 2" of Topsoil	11.9
					2.0 LIMESTONE FRAGMENTS, medium dense, light brown, with sand	10 10.0
	SPT	15-16-18-19 (34)	LS		LIMESTONE, medium hard, light brown	
5	SPT	18-13-11-12 (24)			LIMESTONE, soft, light light brown	
	SPT	12-13-17-19 (30)			LIMESTONE, soft, light light brown	5
	SPT	14-16-13-15 (29)			LIMESTONE, soft, light light brown	
10					10.0 LIMESTONE, soft, light light brown	2.0

Boring terminated at 10.0 feet.



BORING NUMBER B-27

PROJECT NAME DTPW Project 20200119 (SW 184th Street)
PROJECT NUMBER 16966.2 **PROJECT LOCATION** Old Cutler Road & SW 184th Street, Miami, Florida
DATE STARTED 9/11/20 **COMPLETED** 9/11/20 **GROUND ELEVATION** 12 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** N.Vieira
NOTES _____

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft., NGVD)
0						
	SPT	14-15-7-4 (22)	GP		LIMESTONE FRAGMENTS, medium dense, light gray, with sand	10 10.0
	SPT	14-19-22-23 (41)	LS		LIMESTONE, medium hard, light brown	
5	SPT	19-23-22-18 (45)			LIMESTONE, medium hard, light brown	
	SPT	11-17-29-18 (46)			LIMESTONE, moderately hard, light brown	5
10	SPT	16-16-15-17 (31)			LIMESTONE, medium hard, light brown	2.0

Boring terminated at 10.0 feet.



BORING NUMBER B-28

PROJECT NAME DTPW Project 20200119 (SW 184th Street)
PROJECT NUMBER 16966.2 **PROJECT LOCATION** Old Cutler Road & SW 184th Street, Miami, Florida
DATE STARTED 9/11/20 **COMPLETED** 9/11/20 **GROUND ELEVATION** 12 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** N.Vieira
NOTES _____





DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft., NGVD)
0						
	SPT	4-5-12-17 (17)	SM SP		0.1 2" of Topsoil	11.9
					2.0 SAND, medium dense, dark gray, with limestone fragments	10 10.0
	SPT	12-15-14-12 (29)	LS		LIMESTONE, soft, tan	
5	SPT	11-15-11-12 (26)			LIMESTONE, soft, light brown	
	SPT	7-13-16-16 (29)			LIMESTONE, soft, light brown	5
10	SPT	14-12-14-16 (26)			LIMESTONE, soft, light brown	2.0

Boring terminated at 10.0 feet.



BORING NUMBER B-30

PROJECT NAME DTPW Project 20200119 (SW 184th Street)
PROJECT NUMBER 16966.2 **PROJECT LOCATION** Old Cutler Road & SW 184th Street, Miami, Florida
DATE STARTED 8/28/20 **COMPLETED** 8/28/20 **GROUND ELEVATION** 12 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** N.Vieira
NOTES _____

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft., NGVD)
0						
	SPT	3-3-14-18 (17)	SM		0.5 6" of Topsoil	11.5
			SP		1.0 SAND, medium dense, gray, with limestone fragments	11.0
			GP		2.0 LIMESTONE FRAGMENTS, medium dense, light brown, with sand	10 10.0
	SPT	20-19-19-15 (38)	LS		LIMESTONE, medium hard, light brown	
5	SPT	11-12-6-7 (18)			LIMESTONE, very soft, light brown	
	SPT	11-11-9-10 (20)			LIMESTONE, very soft, light brown	5
	SPT	8-12-9-7 (21)			LIMESTONE, soft, light brown	
10						10.0

Boring terminated at 10.0 feet.



BORING NUMBER B-31

PROJECT NAME DTPW Project 20200119 (SW 184th Street)
PROJECT NUMBER 16966.2 **PROJECT LOCATION** Old Cutler Road & SW 184th Street, Miami, Florida
DATE STARTED 8/28/20 **COMPLETED** 8/28/20 **GROUND ELEVATION** 12 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** N.Vieira
NOTES _____

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft., NGVD)
0						
	SPT	8-8-4-3 (12)	SM		0.1 2" of Topsoil	11.9
			GP		LIMESTONE FRAGMENTS, medium dense, light gray, with sand	10
	SPT	2-3-6-15 (9)			3.0 LIMESTONE FRAGMENTS, loose, light gray, with sand	9.0
5					LIMESTONE, very soft, light brown	
	SPT	12-13-15-16 (28)			LIMESTONE, soft, light brown	
			LS		LIMESTONE, medium hard, light brown	5
	SPT	13-16-17-14 (33)			LIMESTONE, medium hard, light brown	
10					10.0 LIMESTONE, soft, light brown	2.0
	SPT	10-10-13-11 (23)			LIMESTONE, soft, light brown	

Boring terminated at 10.0 feet.



BORING NUMBER B-32

PROJECT NAME DTPW Project 20200119 (SW 184th Street)
PROJECT NUMBER 16966.2 **PROJECT LOCATION** Old Cutler Road & SW 184th Street, Miami, Florida
DATE STARTED 8/28/20 **COMPLETED** 8/28/20 **GROUND ELEVATION** 12 ft NGVD est. **HOLE SIZE** 3 inches
DRILLING CONTRACTOR NV5 **GROUND WATER LEVELS:** 10.5 ft / Elev 1.5 ft
DRILLING METHOD Rotary drill with mud, wash & casing
LOGGED BY D. Correa/ Y. Parada **CHECKED BY** N.Vieira
NOTES _____

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft., NGVD)
0						
	SPT	6-26-29-17 (55)	SM SP GP		0.5 6" of Topsoil 1.0 SAND, very dense, gray, with limestone fragments 2.0 LIMESTONE FRAGMENTS, very dense, light brown, with sand	11.5 11.0 10 10.0
	SPT	23-24-24-16 (48)	LS		LIMESTONE, medium hard, light brown	
5	SPT	16-8-8-7 (16)			LIMESTONE, very soft, light brown	
	SPT	8-8-11-14 (19)			LIMESTONE, very soft, light brown	5
	SPT	7-10-11-6 (21)			LIMESTONE, soft, light brown	
10						
	SPT	5-8-10-15 (18)			LIMESTONE, very soft, light brown	
15				15.0		-3.0

Boring terminated at 15.0 feet.



BORING NUMBER B-34

PROJECT NAME DTPW Project 20200119 (SW 184th Street)
PROJECT NUMBER 16966.2 **PROJECT LOCATION** Old Cutler Road & SW 184th Street, Miami, Florida
DATE STARTED 8/13/20 **COMPLETED** 8/13/20 **GROUND ELEVATION** 12 ft NGVD est. **HOLE SIZE** 3 inches
DRILLING CONTRACTOR NV5 **GROUND WATER LEVELS:** 8.8 ft / Elev 3.2 ft
DRILLING METHOD Continuous Sampling
LOGGED BY D. Correa/ Y. Parada **CHECKED BY** N.Vieira
NOTES _____

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft., NGVD)
0						
	SPT	2-6-5-6 (11)	SM GP		0.1 2" of Topsoil	11.9
					2.0 LIMESTONE FRAGMENTS, medium dense, light gray to dark brown, with sand	10 10.0
	SPT	9-20-21-28 (41)	LS		LIMESTONE, medium hard, light brown	
5	SPT	22-28-15-13 (43)			LIMESTONE, medium hard, light brown	
	SPT	16-15-12-10 (27)			LIMESTONE, soft, light brown	5
	SPT	10-10-12-11 (22)			LIMESTONE, soft, light brown	
10					10.0	LIMESTONE, soft, light brown

Boring terminated at 10.0 feet.



BORING NUMBER B-35

PROJECT NAME DTPW Project 20200119 (SW 184th Street)
PROJECT NUMBER 16966.2 **PROJECT LOCATION** Old Cutler Road & SW 184th Street, Miami, Florida
DATE STARTED 8/13/20 **COMPLETED** 8/13/20 **GROUND ELEVATION** 12 ft NGVD est. **HOLE SIZE** 3 inches
DRILLING CONTRACTOR NV5 **GROUND WATER LEVELS:** 8.5 ft / Elev 3.5 ft
DRILLING METHOD Continuous Sampling
LOGGED BY D. Correa/ Y. Parada **CHECKED BY** N.Vieira
NOTES _____

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft., NGVD)
0						
	SPT	2-2-3-2 (5)	SM		0.1 2" of Topsoil	11.9
			SP		SAND, loose, fine, brown, with limestone fragments	10
	SPT	1-1-1-14 (2)			2.7 SAND, very loose, fine, gray, with limestone fragments LIMESTONE, very soft, light brown	9.3
5	SPT	12-13-11- 16 (24)			LIMESTONE, soft, light brown	
	SPT	12-11-12- 13 (23)	LS		LIMESTONE, soft, light brown	5
10	SPT	15-8-12-11 (20)			▼ LIMESTONE, very soft, light brown	2.0

Boring terminated at 10.0 feet.



BORING NUMBER B-36

PROJECT NAME DTPW Project 20200119 (SW 184th Street)
PROJECT NUMBER 16966.2 **PROJECT LOCATION** Old Cutler Road & SW 184th Street, Miami, Florida
DATE STARTED 8/13/20 **COMPLETED** 8/13/20 **GROUND ELEVATION** 12 ft NGVD est. **HOLE SIZE** 3 inches
DRILLING CONTRACTOR NV5 **GROUND WATER LEVELS:** 8.5 ft / Elev 3.5 ft
DRILLING METHOD Continuous Sampling
LOGGED BY D. Correa/ Y. Parada **CHECKED BY** N.Vieira
NOTES _____

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft., NGVD)
0						
	SPT	2-6-10-18 (16)	SM SP		0.3 4" of Topsoil	11.7
	SPT	16-21-15-14 (36)			2.0 SAND, medium dense, fine, light gray, with limestone fragments	10 10.0
5	SPT	18-9-9-11 (18)	LS		LIMESTONE, soft, light brown	
	SPT	10-13-11-11 (24)			LIMESTONE, very soft, light brown	
	SPT	13-9-11-10 (20)			LIMESTONE, soft, light brown	
10					LIMESTONE, very soft, light brown	10.0

Boring terminated at 10.0 feet.



BORING NUMBER B-37










PROJECT NAME DTPW Project 20200119 (SW 184th Street)
PROJECT NUMBER 16966.2 **PROJECT LOCATION** Old Cutler Road & SW 184th Street, Miami, Florida
DATE STARTED 8/12/20 **COMPLETED** 8/12/20 **GROUND ELEVATION** 12 ft NGVD est. **HOLE SIZE** 3 inches
DRILLING CONTRACTOR NV5 **GROUND WATER LEVELS:** 10.0 ft / Elev 2.0 ft
DRILLING METHOD Continuous Sampling
LOGGED BY D. Correa/ Y. Parada **CHECKED BY** N.Vieira
NOTES _____

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft., NGVD)
0						
	SPT	4-5-3-5 (8)	SM SP		0.1 2" of Topsoil	11.9
					1.0 SAND, loose, fine, dark brown	11.0
			GP		LIMESTONE FRAGMENTS, loose, light brown, with sand	10
	SPT	2-3-4-6 (7)			3.0 LIMESTONE FRAGMENTS, loose, light brown, with sand	9.0
					LIMESTONE, very soft, light gray	
5	SPT	12-12-12-11 (24)			LIMESTONE, soft, light brown	
	SPT	11-11-12-10 (23)	LS		LIMESTONE, soft, light brown	5
	SPT	11-15-19-13 (34)			LIMESTONE, medium hard, light brown	
10					10.0 ▼ Boring terminated at 10.0 feet.	2.0




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 08/12/20 and 09/11/20 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:

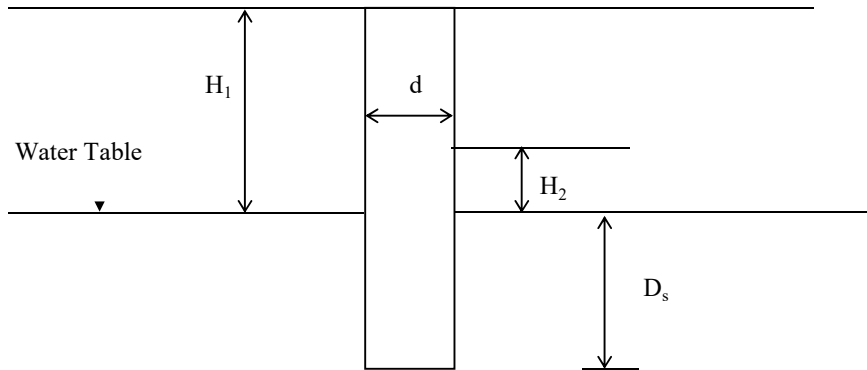
<u>NAME</u>	<u>SIZE LIMITS</u>
Boulder	12 inches or more
Cobbles	3 to 12 inches
Coarse Gravel	3/4 to 3 inches
Fine Gravel	No. 4 sieve to 3/4 inch
Coarse Sand	No. 10 to No. 4 sieve
Medium Sand	No. 40 to No. 10 sieve
Fine Sand	No. 200 to No. 40 sieve
Fines	Smaller than No. 200 sieve

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

<u>PROPORTION</u>	<u>ADJECTIVE</u>	<u>APPROXIMATE ROOT DIAMETER</u>	<u>ADJECTIVE</u>
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

$$K = \text{Hydraulic Conductivity} = 4Q / [\pi r d (2H_2^2 + 4H_2 D_s + H_2 d)]$$

5.44E-05 CFS/FT²-FT HEAD

Time (Min.)	Flow (GPM)		
1	4.00	Q = Average Flow Rate =	0.008689 CFS
2	4.00		
3	4.00	d = Diameter of Test Hole =	6.0 inches
4	4.00		
5	4.00	H ₂ = Head on Water Table =	10.1 feet
6	4.00		
7	4.00	D _s = Depth below Ground Water Table =	4.9 feet
8	4.00		
9	3.50		
10	3.50		

TEST LOCATION :		See Drawing No. 1
TEST ELEVATION :	+12.0'	NGVD (estimated)
DEPTH TO WATER TABLE H ₁ :	10.1'	Below Existing Grade
DEPTH OF TEST HOLE :	15.0'	Below Existing Grade
AVERAGE FLOW RATE:	3.90	GPM

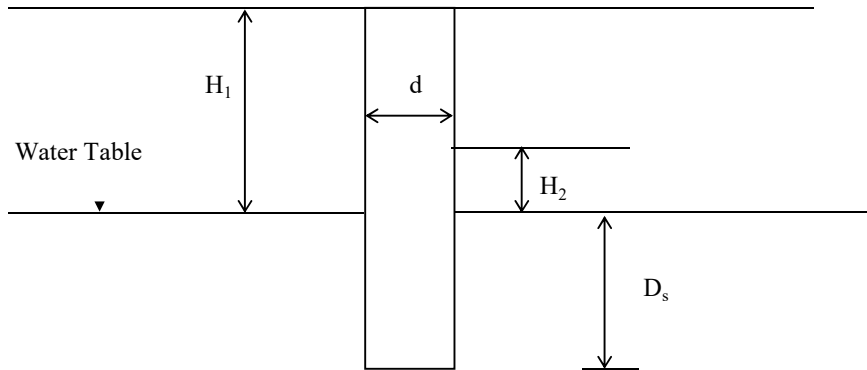
SOIL PROFILE :
0.0' - 15.0' 6" of Topsoil over Light brown Limestone

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

N V 5	PROJECT NAME: DTPW Project 20200119 (SW 184th Street)		
	PROJECT LOCATION: Old Cutler Road & SW 184th Street, Miami, Florida		
	PROJECT NO: 16966	TEST DATE: 10/05/2020	TEST NO: P-1
	TESTED BY: D. Correa / Y. Parada		CHECKED BY: AB

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



HYDRAULIC CONDUCTIVITY

$$K = \text{Hydraulic Conductivity} = \frac{4Q}{\pi d(2H_2^2 + 4H_2D_s + H_2d)}$$

3.43E-04 CFS/FT²-FT HEAD

Time (Min.)	Flow (GPM)		
1	23.00	Q = Average Flow Rate =	0.047234 CFS
2	22.00		
3	22.00	d = Diameter of Test Hole =	6.0 inches
4	22.00		
5	21.00	H ₂ = Head on Water Table =	7.8 feet
6	21.00		
7	21.00	D _s = Depth below Ground Water Table =	7.2 feet
8	20.00		
9	20.00		
10	20.00		

TEST LOCATION :		See Drawing No. 1
TEST ELEVATION :	+10.0'	NGVD (estimated)
DEPTH TO WATER TABLE H ₁ :	7.8'	Below Existing Grade
DEPTH OF TEST HOLE :	15.0'	Below Existing Grade
AVERAGE FLOW RATE:	21.20	GPM

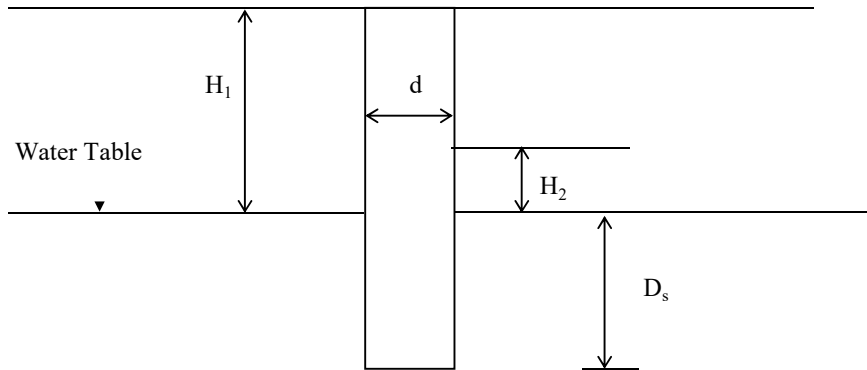
SOIL PROFILE :
0.0' - 15.0' 4" of Topsoil over Light brown Limestone

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

N V 5	PROJECT NAME: DTPW Project 20200119 (SW 184th Street)		
	PROJECT LOCATION: Old Cutler Road & SW 184th Street, Miami, Florida		
	PROJECT NO: 16966	TEST DATE: 10/06/2020	TEST NO: P-2
	TESTED BY: D. Correa / Y. Parada		CHECKED BY: AB

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



HYDRAULIC CONDUCTIVITY

$$K = \text{Hydraulic Conductivity} = 4Q / [\pi d (2H_2^2 + 4H_2D_s + H_2d)]$$

1.03E-03 CFS/FT²-FT HEAD

Time (Min.)	Flow (GPM)		
1	50.00	Q = Average Flow Rate =	0.111400 CFS
2	50.00		
3	50.00	d = Diameter of Test Hole =	6.0 inches
4	50.00		
5	50.00	H ₂ = Head on Water Table =	8.0 feet
6	50.00		
7	50.00	D _s = Depth below Ground Water Table =	4.5 feet
8	50.00		
9	50.00		
10	50.00		

TEST LOCATION :		See Drawing No. 1
TEST ELEVATION :	+12.0'	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

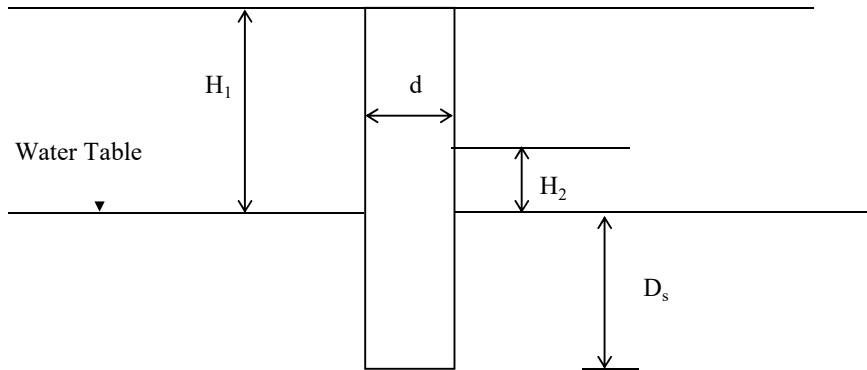
SOIL PROFILE :
 0.0' - 2.0' 2" of Topsoil over light brown Limestone Fragments with sand
 2.0' - 15.0' Light brown Limestone

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

N V 5	PROJECT NAME: DTPW Project 20200119 (SW 184th Street)		
	PROJECT LOCATION: Old Cutler Road & SW 184th Street, Miami, Florida		
	PROJECT NO: 16966	TEST DATE: 10/05/2020	TEST NO: P-3
	TESTED BY: D. Correa / Y. Parada		CHECKED BY: AB

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



HYDRAULIC CONDUCTIVITY

$$K = \text{Hydraulic Conductivity} = 4Q / [\pi d (2H_2^2 + 4H_2 D_s + H_2 d)]$$

1.92E-05 CFS/FT²-FT HEAD

Time (Min.)	Flow (GPM)		
1	1.50	Q = Average Flow Rate =	0.003119 CFS
2	1.50		
3	1.50	d = Diameter of Test Hole =	6.0 inches
4	1.50		
5	1.50	H ₂ = Head on Water Table =	10.5 feet
6	1.50		
7	1.50	D _s = Depth below Ground Water Table =	4.5 feet
8	1.50		
9	1.00		
10	1.00		

TEST LOCATION :		See Drawing No. 1
TEST ELEVATION :	+12.0'	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:	1.40	GPM

SOIL PROFILE :

0.0' - 1.0'	6" of Topsoil over gray Sand with limestone fragments
1.0' - 2.0'	Light brown Limestone Fragments
2.0' - 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

N V 5	PROJECT NAME: DTPW Project 20200119 (SW 184th Street)		
	PROJECT LOCATION: Old Cutler Road & SW 184th Street, Miami, Florida		
	PROJECT NO: 16966	TEST DATE: 10/05/2020	TEST NO: P-4
	TESTED BY: D. Correa / Y. Parada		CHECKED BY: AB