

ATTACHMENT 2 FOR ADDENDUM No.1  
SPT'S AND PERCOLATION TEST FOR SW 152 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 1<sup>st</sup> Street  
Miami, Florida 33128

Re: SPT's and Percolation Test Report  
**Geotechnical Services for Projects 20200118 and 20200119**  
Old Cutler Road & SW 152<sup>nd</sup> Street  
Miami-Dade County, Florida  
NV5 Project No. 16966.1

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 30 engineering borings. However, due to site obstructions at the time of field tests, nine (9) 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 and 1B. 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 4 and 12, 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-31). 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.

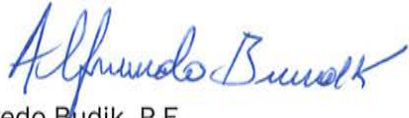
The results of the borehole percolation tests are presented in the table below, and appended on the sheets entitled South Florida Water Management District "usual open hole test". Included with the results are descriptions of the subsurface conditions encountered at the test locations.

<b><u>Test Number</u></b>	<b><u>Test Depth (feet)</u></b>	<b><u>Hydraulic Conductivity (K)</u> (cfs per square foot per foot of head)</b>
P-1	15	$4.32 \times 10^{-04}$
P-2	15	$9.76 \times 10^{-05}$
P-3	15	$9.82 \times 10^{-04}$
P-4	15	$1.31 \times 10^{-05}$

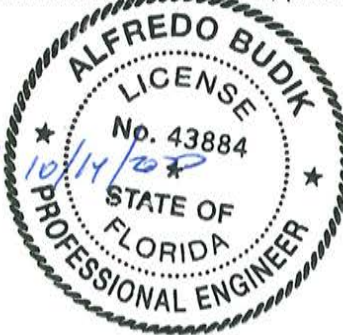
## CLOSURE

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



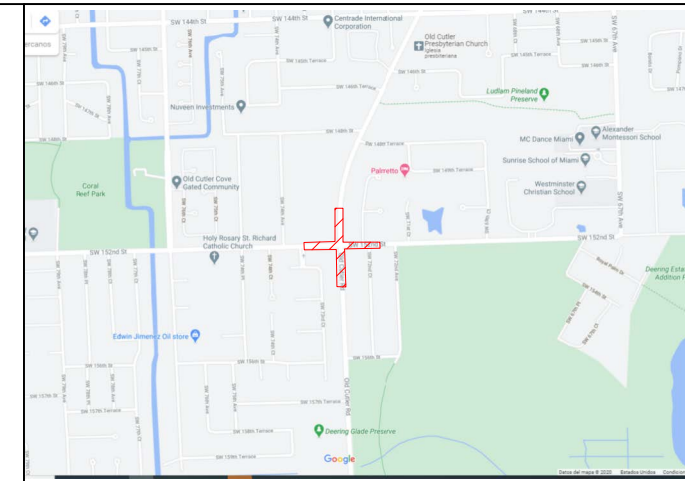
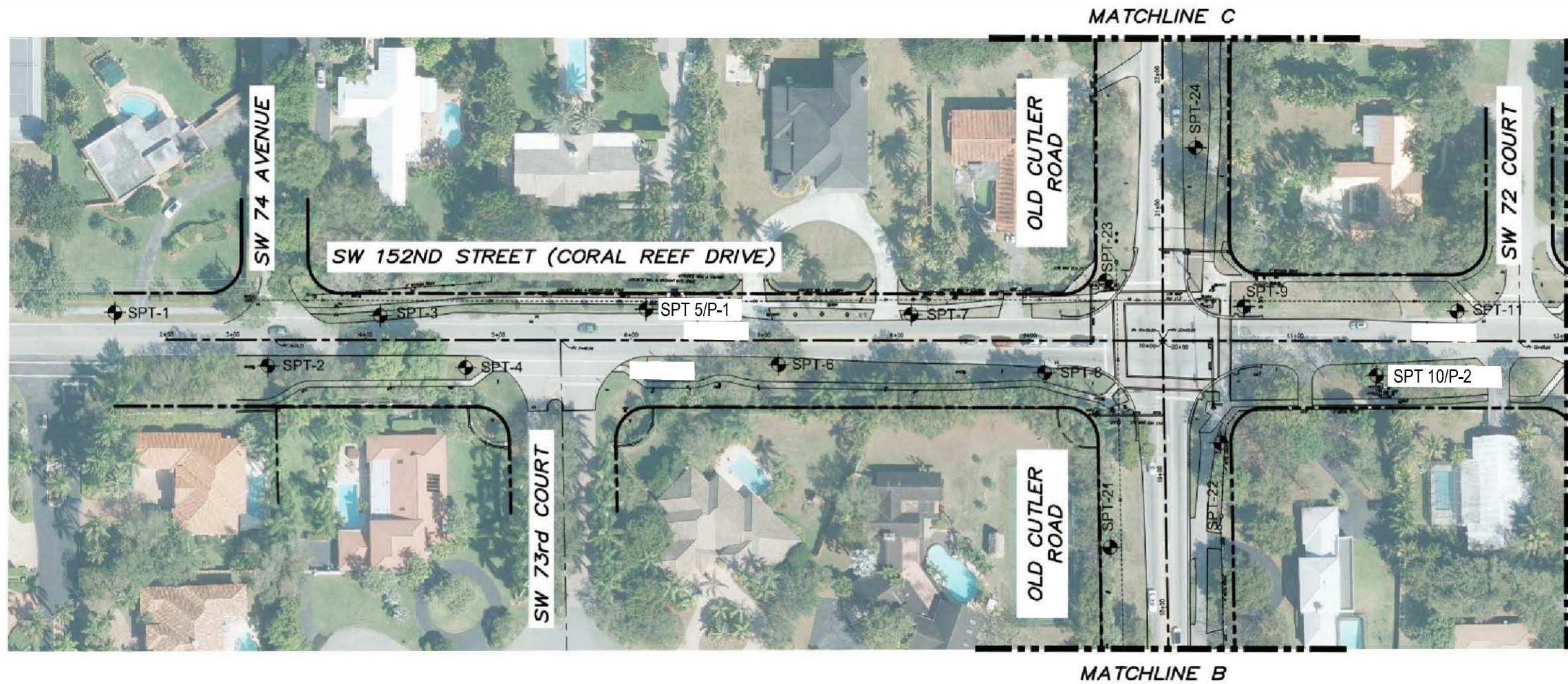
Attachments: Drawing Nos. 1A through 1D Vicinity Map & Test Location Plan  
Drawings 2A and 2B Boring Summary Sheet

Appendices: Appendix A – Standard Penetration Tests (A-1 through A-31)  
Appendix B - Field Permeability Test Data (B-1 through B-4)

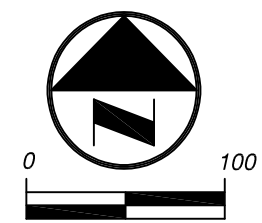
Distribution: Original & 2 Copies to Addressee via U.S. Mail  
Copy to Addressee via Email  
Copy to NV5 File

F:\DOC\NV5 Reports\16966.1\_SPT and PERC Tests\_Geotechnical Services for Projects 20200118 and 20200119\_Old Cutler Road and SW 152th Street\_Miami\_10-14-20.doc

## DRAWINGS





Site Vicinity Map



Approximate Scale in Feet

**LEGEND:**

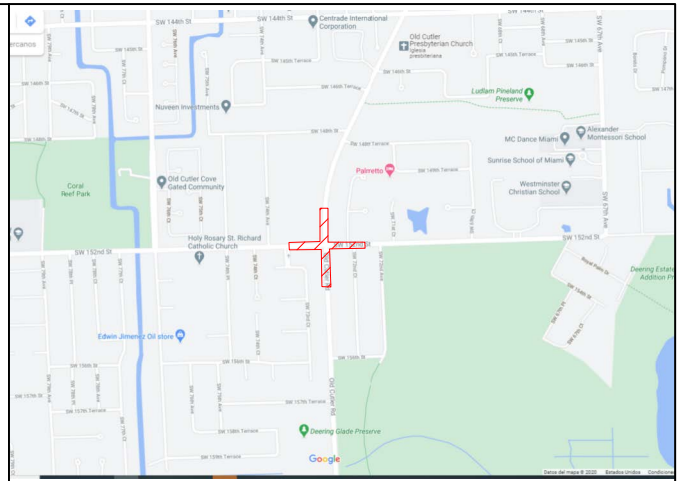
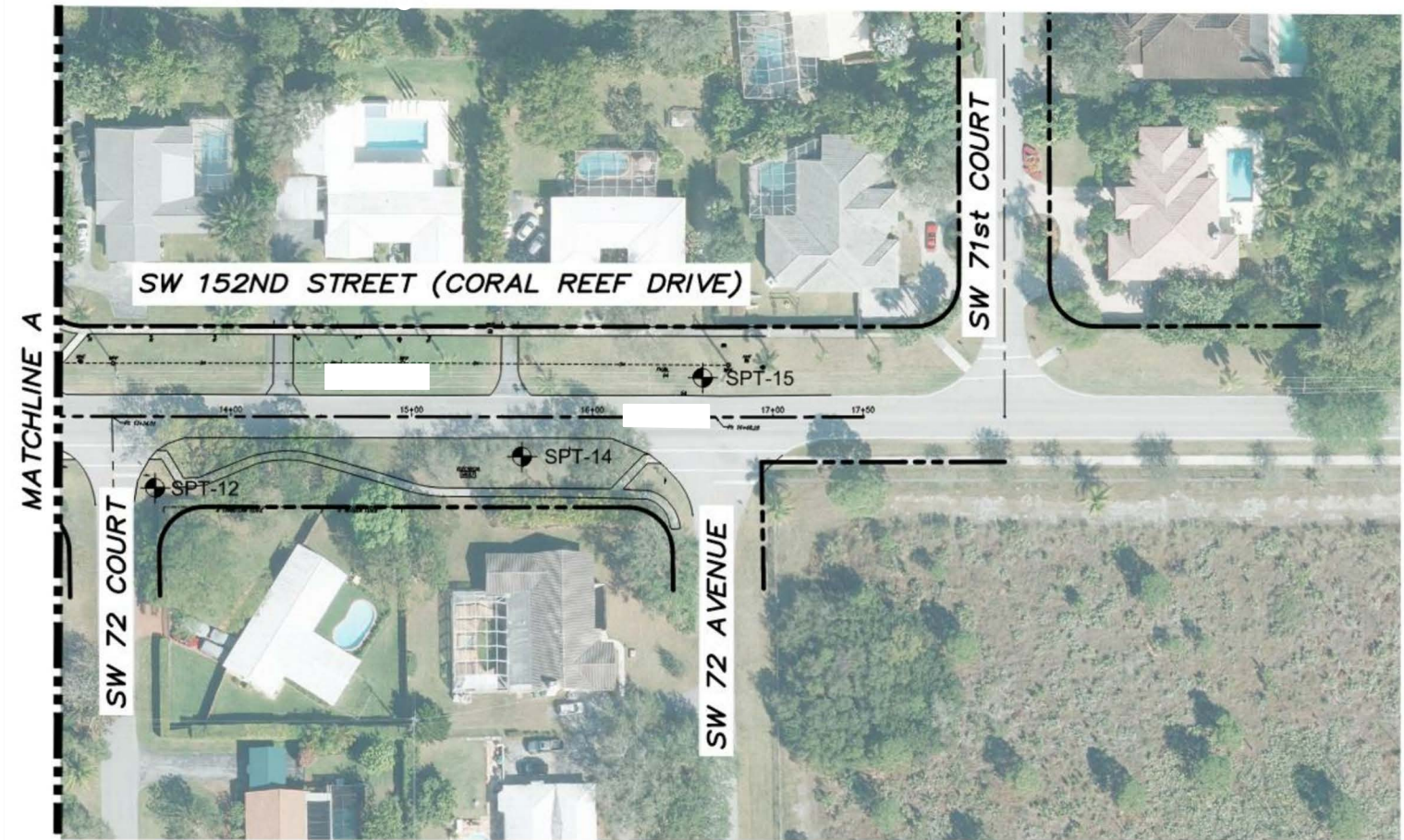
- SPT-1**  
 - Number & Approximate Location of Test Boring.
- SPT-5 / P-1**  
 - Number & Approximate Location of Test Boring and Percolation Test.

**NOTES:**

1. Test locations shown are approximate.
2. Test location symbols are not to scale.
3. Base drawing was taken from Sheet 1, Geotech. Investigation Old Cutler - SW 152nd, prepared by DOT, undated.



<b>DRAWING TITLE:</b>	Site Vicinity Map & Test Location Plan				<b>DWN BY:</b>	<i>NVF</i>
<b>PROJECT NAME:</b>	DTPW Project 20200119 (SW 152nd Street)				<b>CKD BY:</b>	<i>AB</i>
<b>PROJECT LOCATION:</b>	Old Cutler Road & SW 152nd Street, Miami, Florida		<b>PROJECT NO:</b>	16966.1	<b>DATE:</b>	10/12/2020
			<b>DWG NO:</b>	1A	<b>APD BY</b>	—



Site Vicinity Map



Approximate Scale in Feet

LEGEND:

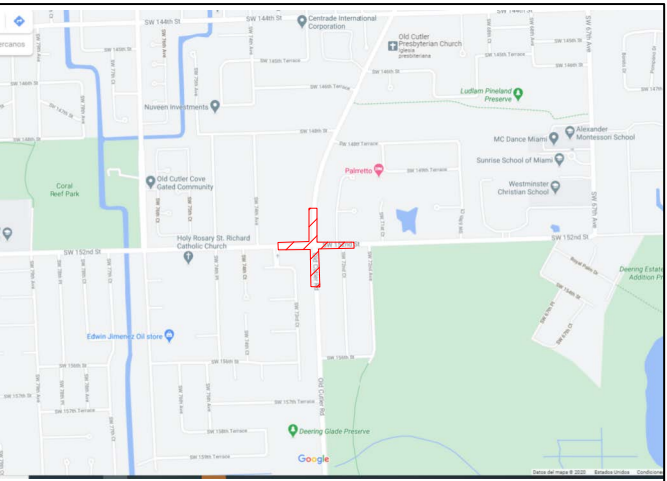
**SPT-12**  
 - Number & Approximate Location of Test Boring.

NOTES:

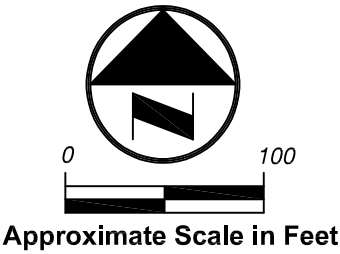
1. Test locations shown are approximate.
2. Test location symbols are not to scale.
3. Base drawing was taken from Sheet 2, Geotech. Investigation Old Cutler - SW 152nd, prepared by DOT, undated.



<b>DRAWING TITLE:</b>	Site Vicinity Map & Test Location Plan	<b>DWN BY:</b>	NVF
<b>PROJECT NAME:</b>	DTPW Project 20200119 (SW 152nd Street)	<b>CKD BY:</b>	AB
<b>PROJECT LOCATION:</b>	Old Cutler Road & SW 152nd Street, Miami, Florida	<b>PROJECT NO:</b>	16966.1
		<b>DATE:</b>	10/12/2020
		<b>DWG NO:</b>	1B
		<b>APD BY</b>	—



Site Vicinity Map



**LEGEND:**

- SPT-16**  
 - Number & Approximate Location of Test Boring.
- SPT-18 / P-3**  
 - Number & Approximate Location of Test Boring and Percolation Test.

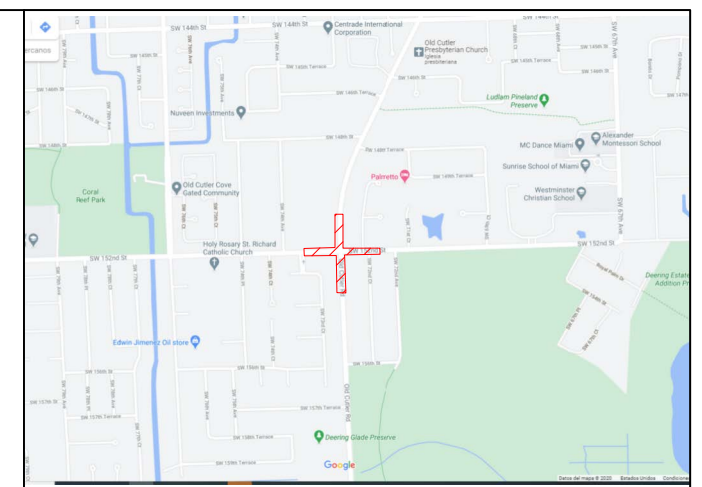
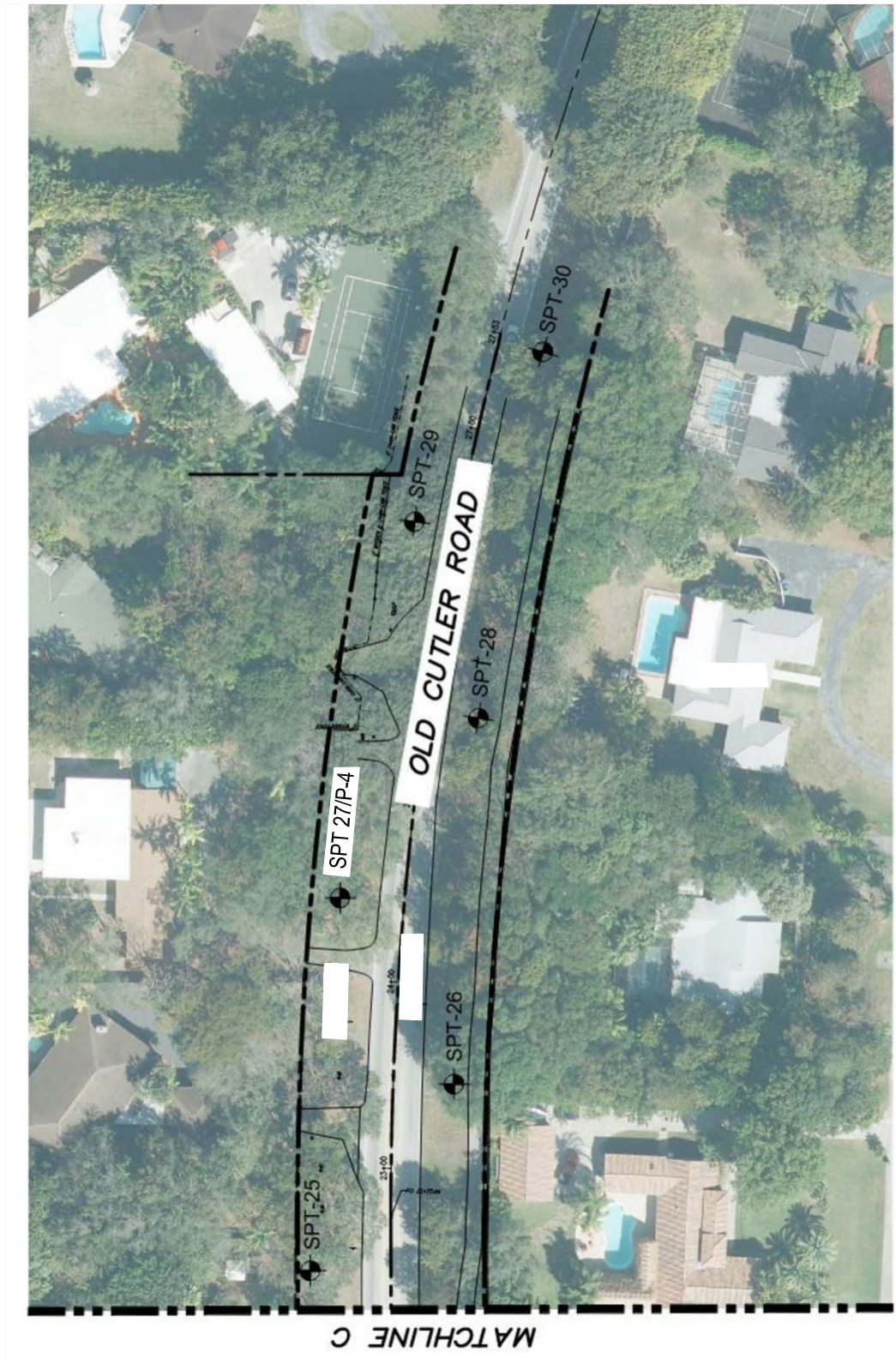
**NOTES:**

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 152nd, prepared by DOT, undated.

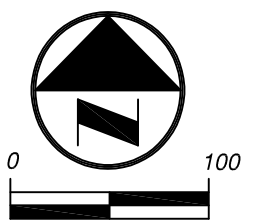


	<b>DRAWING TITLE:</b>	Site Vicinity Map & Test Location Plan	<b>DWN BY:</b>	NVF	
	<b>PROJECT NAME:</b>	DTPW Project 20200119 (SW 152nd Street)	<b>CKD BY:</b>	AB	
	<b>PROJECT LOCATION:</b>	Old Cutler Road & SW 152nd Street, Miami, Florida	<b>PROJECT NO:</b>	16966.1	
		<b>DATE:</b>	10/12/2020	<b>DWG NO:</b>	1C
		<b>APD BY:</b>	_____		





Site Vicinity Map



Approximate Scale in Feet

**LEGEND:**

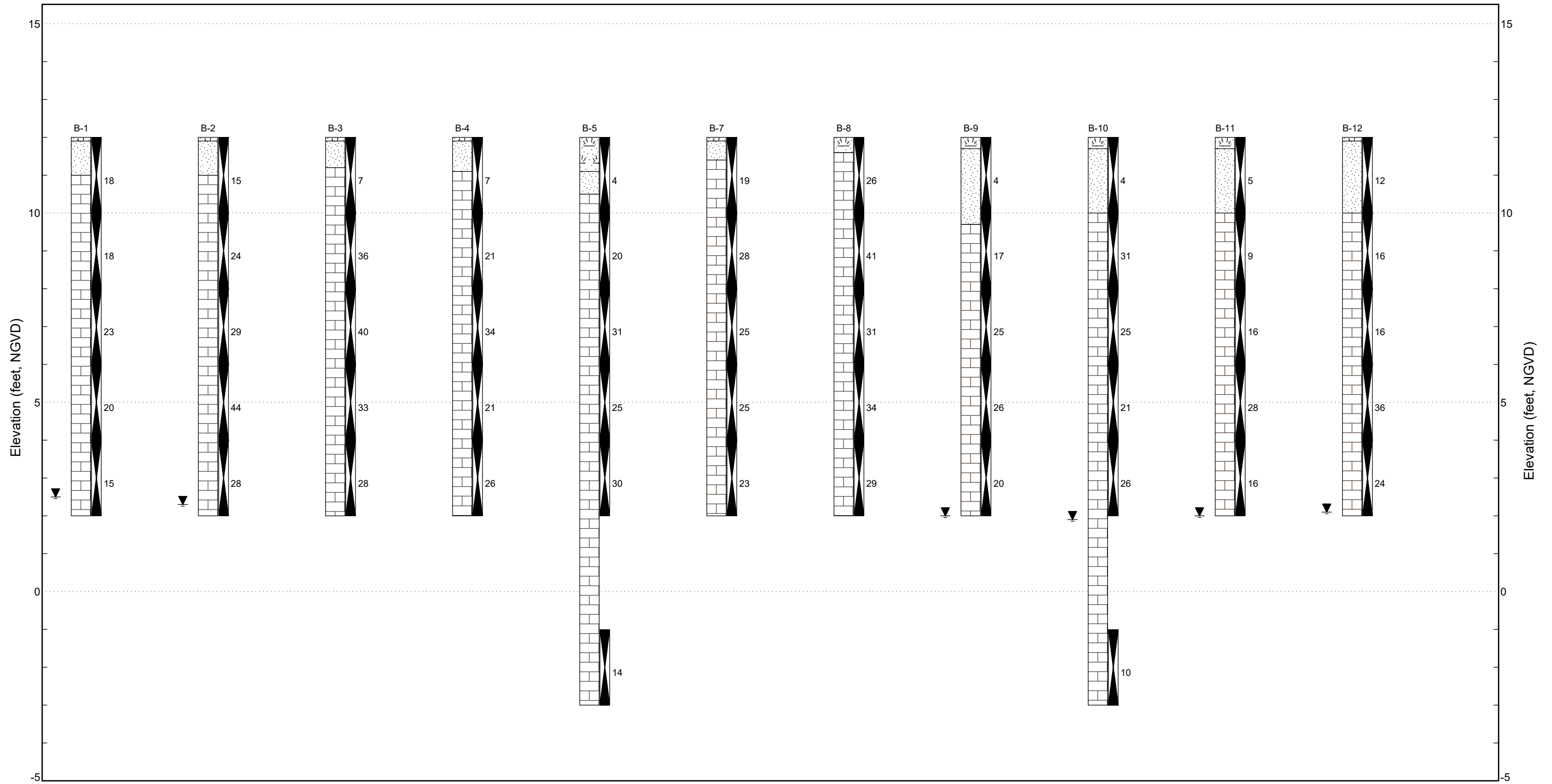
- SPT-25**  
 - Number & Approximate Location of Test Boring.
- SPT-27 / P-4**  
 - Number & Approximate Location of Test Boring and Percolation Test.

**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 152nd, prepared by DOT, undated.



<b>DRAWING TITLE:</b>	Site Vicinity Map & Test Location Plan				<b>DWN BY:</b>	NVF		
	<b>PROJECT NAME:</b>	DTPW Project 20200119 (SW 152nd Street)				<b>CKD BY:</b>	AB	
		<b>PROJECT LOCATION:</b>	Old Cutler Road & SW 152nd Street, Miami, Florida				<b>APD BY</b>	—
<b>PROJECT NO:</b>			16966.1		<b>DATE:</b>			10/12/2020
<b>DWG NO:</b>		1D						



## BORING SUMMARY SHEET

**PROJECT NAME:** DTPW Project 20200119 (SW 152nd Street)

**PROJECT LOCATION:** Old Cutler Road & SW 152nd Street, Miami, Florida

**PROJECT NUMBER:** 16966.1

**DATE:** 10/13/2020

**DRAWN BY:** NVF

**CHECKED BY:** AB

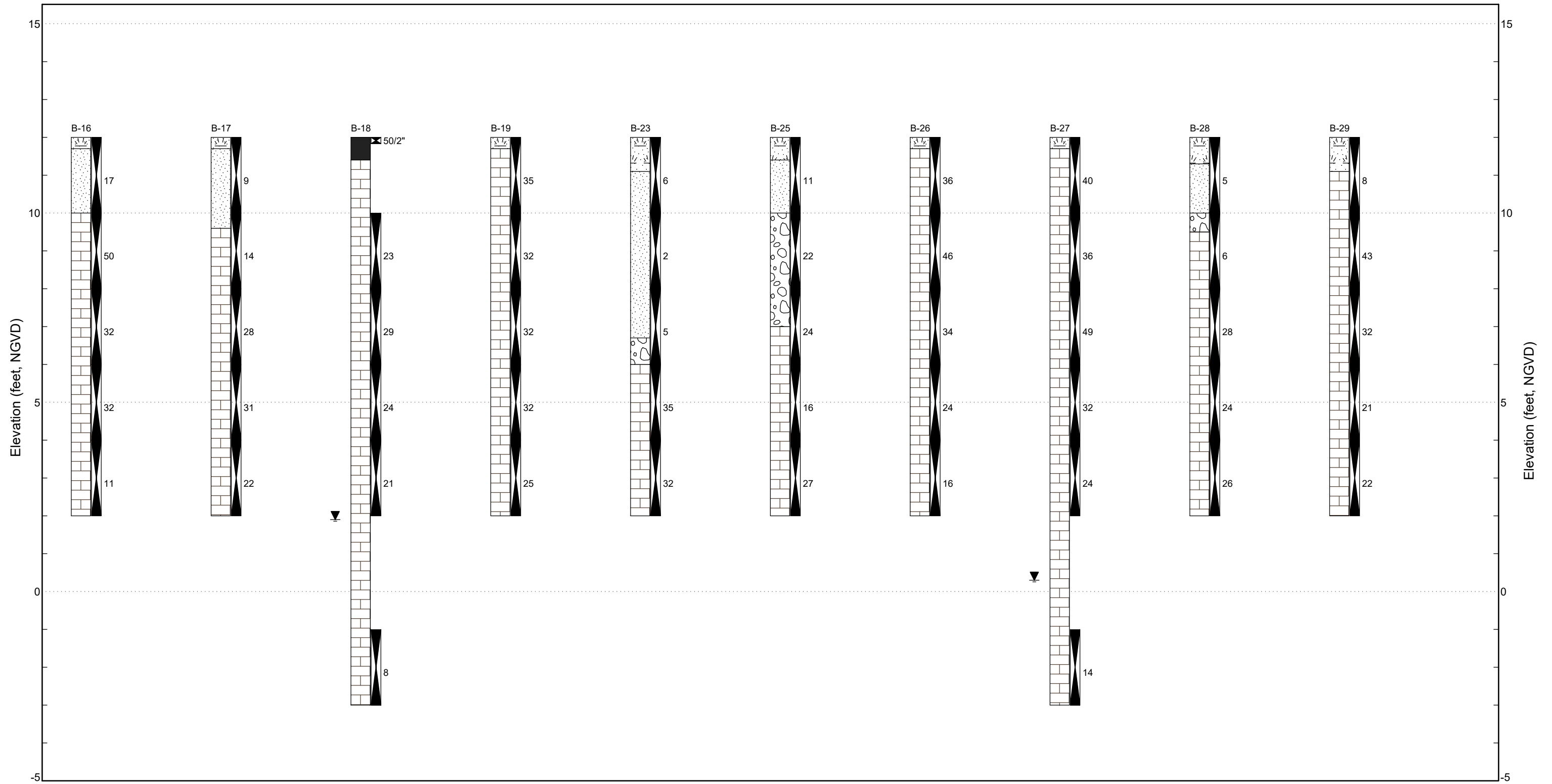
**DRAWING NO:** 2A

### LEGEND



Standard Penetration Test      Water Level

Note: Boring top elevations have been estimated



## BORING SUMMARY SHEET

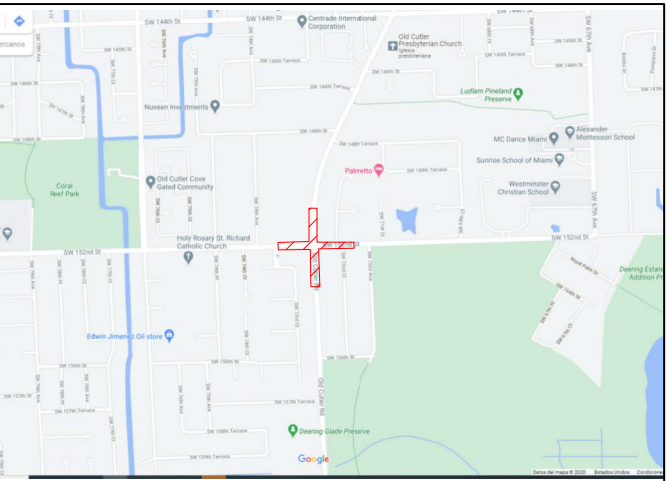


<b>PROJECT NAME:</b> DTPW Project 20200119 (SW 152nd Street)		
<b>PROJECT LOCATION:</b> Old Cutler Road & SW 152nd Street, Miami, Florida		
<b>PROJECT NUMBER:</b> 16966.1	<b>DATE:</b> 10/13/2020	
<b>DRAWN BY:</b> NVF	<b>CHECKED BY:</b> AB	<b>DRAWING NO:</b> 2B

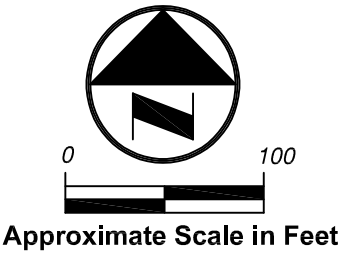
### LEGEND

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

Note: Boring top elevations have been estimated



Site Vicinity Map



**LEGEND:**

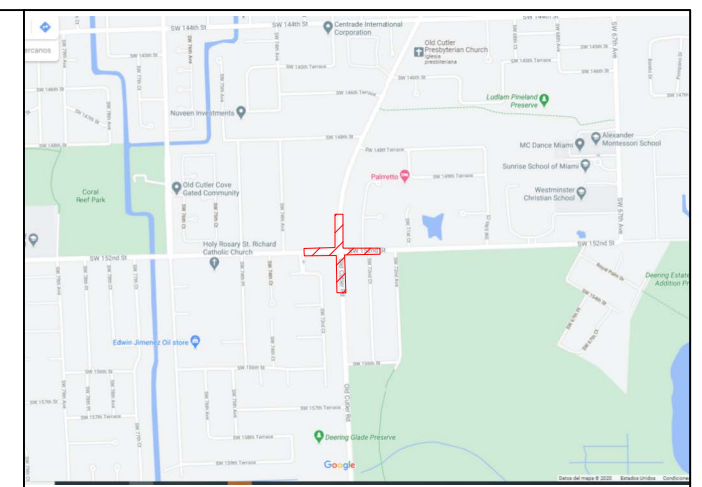
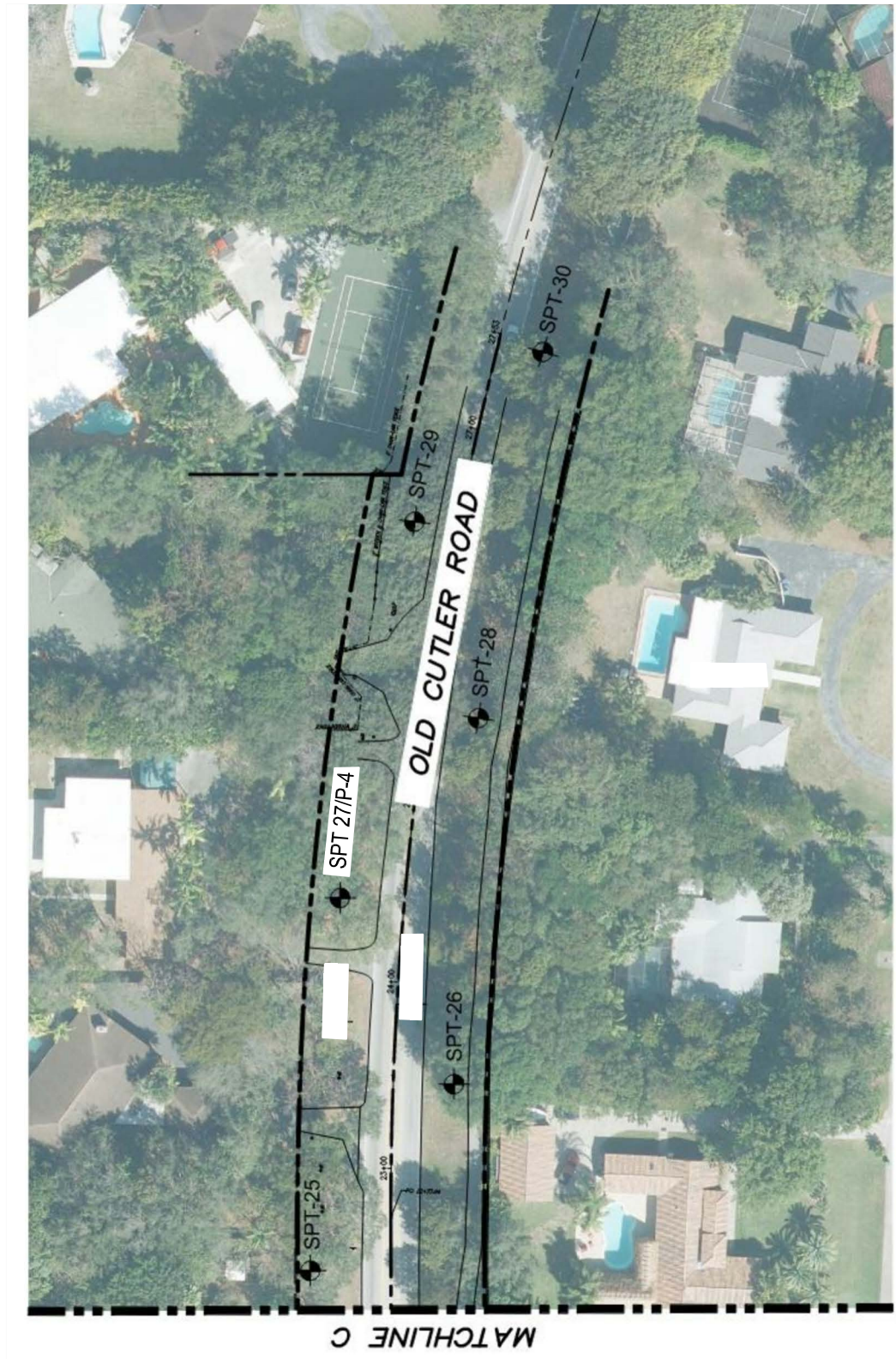
- SPT-16**  
 - Number & Approximate Location of Test Boring.
- SPT-18 / P-3**  
 - Number & Approximate Location of Test Boring and Percolation Test.

**NOTES:**

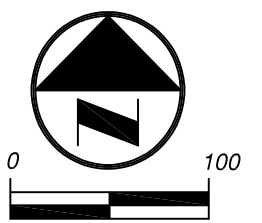
1. Test locations shown are approximate.
2. Test location symbols are not to scale.
3. Base drawing was taken from Sheet 3, Geotech. Investigation Old Cutler - SW 152nd, prepared by DOT, undated.



<b>DRAWING TITLE:</b>	Site Vicinity Map & Test Location Plan				<b>DWN BY:</b>	MVJ			
	<b>PROJECT NAME:</b>	DTPW Project 20200119 (SW 152nd Street)				<b>CKD BY:</b>	AB		
		<b>PROJECT LOCATION:</b>	Old Cutler Road & SW 152nd Street, Miami, Florida				<b>APD BY</b>	—	
<b>PROJECT NO:</b>			16966.1		<b>DATE:</b>			10/12/2020	
<b>DWG NO:</b>		1C							



Site Vicinity Map



Approximate Scale in Feet

**LEGEND:**

- SPT-25**  
 - Number & Approximate Location of Test Boring.
- SPT-27 / 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 152nd, prepared by DOT, undated.



<b>DRAWING TITLE:</b>	Site Vicinity Map & Test Location Plan				<b>DWN BY:</b>	NVF			
	<b>PROJECT NAME:</b>	DTPW Project 20200119 (SW 152nd Street)				<b>CKD BY:</b>	AB		
		<b>PROJECT LOCATION:</b>	Old Cutler Road & SW 152nd Street, Miami, Florida				<b>APD BY</b>	—	
<b>PROJECT NO:</b>			16966.1		<b>DATE:</b>			10/12/2020	
<b>DWG NO:</b>		1D							

**APPENDIX A**

**STANDARD PENETRATION TESTS**



# BORING NUMBER B-1

**PROJECT NAME** DTPW Project 20200119 (SW 152nd Street)  
**PROJECT NUMBER** 16966.1      **PROJECT LOCATION** Old Cutler Road & SW 152nd 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:** 9.5 ft / Elev 2.5 ft  
**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	10-8-10-13 (18)	SM SP	0.1	2" of Topsoil	11.9
				1.0	SAND, medium dense, fine, dark brown	11.0
					LIMESTONE, very soft, light brown	10
	SPT	6-8-10-9 (18)			LIMESTONE, soft, light brown	
5	SPT	10-9-14-15 (23)	LS		LIMESTONE, very soft, light brown	
	SPT	17-12-8-8 (20)			LIMESTONE, very soft, light brown	5
10	SPT	9-7-8-7 (15)			▼ LIMESTONE, very soft, light brown	2.0

Boring terminated at 10.0 feet.



# BORING NUMBER B-2

**PROJECT NAME** DTPW Project 20200119 (SW 152nd Street)  
**PROJECT NUMBER** 16966.1      **PROJECT LOCATION** Old Cutler Road & SW 152nd Street, Miami, Florida  
**DATE STARTED** 8/4/20      **COMPLETED** 8/4/20      **GROUND ELEVATION** 12 ft NGVD est.      **HOLE SIZE** 3 inches  
**DRILLING CONTRACTOR** NV5      **GROUND WATER LEVELS:** 9.7 ft / Elev 2.3 ft  
**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	3-3-12-18 (15)	SM SP	0.1	2" of Topsoil	11.9
				1.0	SAND, medium dense, fine, dark gray, with a trace of limestone fragments	11.0
					LIMESTONE, very soft, light brown	10
	SPT	12-12-12-12 (24)			LIMESTONE, soft, light brown	
5	SPT	3-12-17-19 (29)	LS		LIMESTONE, soft, light brown	
	SPT	25-23-21-13 (44)			LIMESTONE, medium hard, light brown	5
10	SPT	16-16-12-12 (28)			10.0 ▼ LIMESTONE, soft, light brown	2.0

Boring terminated at 10.0 feet.





**BORING NUMBER B-3**

**PROJECT NAME** DTPW Project 20200119 (SW 152nd Street)  
**PROJECT NUMBER** 16966.1      **PROJECT LOCATION** Old Cutler Road & SW 152nd Street, Miami, Florida  
**DATE STARTED** 8/4/20      **COMPLETED** 8/4/20      **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	2-2-5-11 (7)	SM SP		0.1 2" of Topsoil	11.9
					0.8 SAND, loose, fine, dark gray	11.2
					LIMESTONE, very soft, tan	10
	SPT	17-22-14-16 (36)	LS		LIMESTONE, medium hard, tan	
5	SPT	15-22-18-15 (40)			LIMESTONE, medium hard, light gray	
	SPT	15-15-18-16 (33)			LIMESTONE, medium hard, light gray	5
	SPT	23-15-13-15 (28)			LIMESTONE, soft, light gray	
10						10.0

Boring terminated at 10.0 feet.



# BORING NUMBER B-4

**PROJECT NAME** DTPW Project 20200119 (SW 152nd Street)  
**PROJECT NUMBER** 16966.1      **PROJECT LOCATION** Old Cutler Road & SW 152nd Street, Miami, Florida  
**DATE STARTED** 8/4/20      **COMPLETED** 8/4/20      **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	2-2-5-11 (7)	SM SP	0.1	2" of Topsoil	11.9
				0.9	SAND, loose, fine, dark gray	11.1
					LIMESTONE, very soft, light brown, with sand	10
	SPT	11-11-10-9 (21)			LIMESTONE, soft, light brown, with sand	
5	SPT	15-17-17-22 (34)	LS		LIMESTONE, medium hard, light gray	
	SPT	20-8-13-10 (21)			LIMESTONE, soft, light gray	5
10	SPT	14-13-13-16 (26)		10.0	LIMESTONE, soft, light gray	2.0

Boring terminated at 10.0 feet.



**BORING NUMBER B-5**

**PROJECT NAME** DTPW Project 20200119 (SW 152nd Street)  
**PROJECT NUMBER** 16966.1      **PROJECT LOCATION** Old Cutler Road & SW 152nd Street, Miami, Florida  
**DATE STARTED** 8/6/20      **COMPLETED** 8/6/20      **GROUND ELEVATION** 12 ft NGVD est.      **HOLE SIZE** 3 inches  
**DRILLING CONTRACTOR** NV5      **GROUND WATER LEVELS:** --- Not Encountered  
**DRILLING METHOD** Rotary drill with mud, wash & casing  
**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	1-2-2-8 (4)	SM		10" of Topsoil	11.1
			SP		SAND, very loose, fine, brown to tan, with a trace of limestone fragments	10.5
	SPT	9-9-11-11 (20)	LS		LIMESTONE, very soft, tan	10
					LIMESTONE, very soft, tan	
5	SPT	11-15-16-13 (31)			LIMESTONE, medium hard, light gray	
	SPT	15-13-12-11 (25)			LIMESTONE, soft, light gray	5
	SPT	30-15-15-17 (30)			LIMESTONE, soft, light gray	
10						0
	SPT	10-7-7-9 (14)			LIMESTONE, very soft, light gray	
15				15.0		-3.0

Boring terminated at 15.0 feet.



# BORING NUMBER B-7

**PROJECT NAME** DTPW Project 20200119 (SW 152nd Street)  
**PROJECT NUMBER** 16966.1      **PROJECT LOCATION** Old Cutler Road & SW 152nd Street, Miami, Florida  
**DATE STARTED** 8/4/20      **COMPLETED** 8/4/20      **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	2-2-17-20 (19)	SM SP		0.1 2" of Topsoil	11.9
					0.6 SAND, medium dense, fine, dark gray	11.4
					LIMESTONE, very soft, light gray	10
	SPT	16-16-12-12 (28)	LS		LIMESTONE, soft, light gray	
5	SPT	16-15-10-12 (25)			LIMESTONE, soft, light gray	
	SPT	13-12-13-13 (25)			LIMESTONE, soft, light gray	5
	SPT	8-12-11-12 (23)			LIMESTONE, soft, light gray	
10						10.0

Boring terminated at 10.0 feet.



# BORING NUMBER B-8

**PROJECT NAME** DTPW Project 20200119 (SW 152nd Street)  
**PROJECT NUMBER** 16966.1      **PROJECT LOCATION** Old Cutler Road & SW 152nd Street, Miami, Florida  
**DATE STARTED** 8/6/20      **COMPLETED** 8/6/20      **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						
0.4			SM		4" of Topsoil	11.6
	SPT	5-6-20-22 (26)	LS		LIMESTONE, soft, light gray	10
	SPT	20-21-20-25 (41)			LIMESTONE, medium hard, light gray	
5	SPT	12-16-15-16 (31)			LIMESTONE, medium hard, light gray	
	SPT	16-19-15-13 (34)			LIMESTONE, medium hard, light gray	5
10	SPT	25-16-13-13 (29)			LIMESTONE, soft, light gray	2.0

Boring terminated at 10.0 feet.



# BORING NUMBER B-9

**PROJECT NAME** DTPW Project 20200119 (SW 152nd Street)  
**PROJECT NUMBER** 16966.1      **PROJECT LOCATION** Old Cutler Road & SW 152nd Street, Miami, Florida  
**DATE STARTED** 8/11/20      **COMPLETED** 8/11/20      **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	2-2-2-1 (4)	SM		0.3 4" of Topsoil	11.7
			SP		SAND, very loose, fine, dark gray, with a trace of limestone fragments	10
	SPT	2-4-13-9 (17)			2.3 SAND, medium dense, fine, tan	9.7
					LIMESTONE, very soft, tan, with sand	
5	SPT	17-11-14-14 (25)	LS		LIMESTONE, soft, tan, with sand	
	SPT	17-15-11-9 (26)			LIMESTONE, soft, light gray	5
	SPT	7-9-11-10 (20)			LIMESTONE, very soft, light gray	
10					10.0 Boring terminated at 10.0 feet.	2.0



# BORING NUMBER B-10

**PROJECT NAME** DTPW Project 20200119 (SW 152nd Street)  
**PROJECT NUMBER** 16966.1      **PROJECT LOCATION** Old Cutler Road & SW 152nd Street, Miami, Florida  
**DATE STARTED** 8/10/20      **COMPLETED** 8/10/20      **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** 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						
0.3			SM		4" of Topsoil	11.7
2.0	SPT	3-2-2-4 (4)	SP		SAND, very loose, fine, dark gray, with a trace of limestone fragments	10 10.0
5	SPT	10-13-18-13 (31)	LS		LIMESTONE, medium hard, light brown, with sand	
	SPT	17-15-10-10 (25)			LIMESTONE, soft, tan, with sand	
	SPT	9-11-10-8 (21)			LIMESTONE, soft, light gray	5
10	SPT	15-13-13-13 (26)			LIMESTONE, soft, light gray	
15	SPT	6-5-5-6 (10)			LIMESTONE, very soft, light gray	0
15.0						-3.0

Boring terminated at 15.0 feet.



# BORING NUMBER B-11

**PROJECT NAME** DTPW Project 20200119 (SW 152nd Street)  
**PROJECT NUMBER** 16966.1      **PROJECT LOCATION** Old Cutler Road & SW 152nd Street, Miami, Florida  
**DATE STARTED** 8/11/20      **COMPLETED** 8/11/20      **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	2-2-3-3 (5)	SM		0.3 4" of Topsoil	11.7
	SPT	4-4-5-3 (9)	SP		2.0 SAND, loose, fine, dark gray, with a trace of limestone fragments	10 10.0
5	SPT	4-6-10-11 (16)	LS		LIMESTONE, very soft, tan, with sand	
	SPT	12-13-15-11 (28)			LIMESTONE, very soft, light brown, with sand	
	SPT	7-7-9-6 (16)			LIMESTONE, soft, light gray	5
10	SPT				LIMESTONE, very soft, light gray	10.0

Boring terminated at 10.0 feet.





# BORING NUMBER B-12

**PROJECT NAME** DTPW Project 20200119 (SW 152nd Street)  
**PROJECT NUMBER** 16966.1      **PROJECT LOCATION** Old Cutler Road & SW 152nd Street, Miami, Florida  
**DATE STARTED** 8/11/20      **COMPLETED** 8/11/20      **GROUND ELEVATION** 12 ft NGVD est.      **HOLE SIZE** 3 inches  
**DRILLING CONTRACTOR** NV5      **GROUND WATER LEVELS:** 9.9 ft / Elev 2.1 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	3-4-8-7 (12)	SM SP		0.1 1" of Topsoil	11.9
					2.0 SAND, medium dense, fine, dark gray to brown, with a trace of limestone fragments	10 10.0
	SPT	5-9-7-7 (16)	LS		LIMESTONE, very soft, light gray, with sand	
5	SPT	5-7-9-7 (16)			LIMESTONE, very soft, light gray	
	SPT	9-15-21-18 (36)			LIMESTONE, medium hard, light gray	5
	SPT	15-12-12-13 (24)			LIMESTONE, soft, light gray	
10					10.0 ▼	2.0

Boring terminated at 10.0 feet.



# BORING NUMBER B-14

**PROJECT NAME** DTPW Project 20200119 (SW 152nd Street)  
**PROJECT NUMBER** 16966.1      **PROJECT LOCATION** Old Cutler Road & SW 152nd 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:** 9.5 ft / Elev 2.5 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	3-8-13-8 (21)	SM GP		0.1 2" of Topsoil	11.9
					2.0 LIMESTONE FRAGMENTS, medium dense, fine, light brown	10 10.0
	SPT	WOH- WOH-4-8 (4)	SP		4.0 SAND, very loose, fine, tan, with a trace of limestone fragments	8.0
5	SPT	7-9-10-16 (19)	LS		LIMESTONE, very soft, light brown	
	SPT	16-18-21-17 (39)			LIMESTONE, medium hard, light brown	5
	SPT	14-15-17-14 (32)			10.0 ▼ LIMESTONE, medium hard, light brown	2.0

Boring terminated at 10.0 feet.



# BORING NUMBER B-15

**PROJECT NAME** DTPW Project 20200119 (SW 152nd Street)  
**PROJECT NUMBER** 16966.1      **PROJECT LOCATION** Old Cutler Road & SW 152nd Street, Miami, Florida  
**DATE STARTED** 8/11/20      **COMPLETED** 8/11/20      **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						
0.2	SPT	1-2-2-2 (4)	SM		3" of Topsoil	11.8
10	SPT	3-2-1-1 (3)	SP		SAND, very loose, fine, tan to dark gray, with a trace of limestone fragments	10
4.0	SPT	8-14-17-19 (31)	SP		SAND, very loose, fine, tan, with a trace of limestone fragments	8.0
5	SPT	13-12-15-12 (27)	LS		LIMESTONE, medium hard, light brown, with sand	5
10	SPT	12-16-10-12 (26)	LS		LIMESTONE, soft, light gray	
10.0					LIMESTONE, soft, light gray	2.0

Boring terminated at 10.0 feet.



**BORING NUMBER B-16**

**PROJECT NAME** DTPW Project 20200119 (SW 152nd Street)  
**PROJECT NUMBER** 16966.1      **PROJECT LOCATION** Old Cutler Road & SW 152nd Street, Miami, Florida  
**DATE STARTED** 8/6/20      **COMPLETED** 8/6/20      **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	2-12-5-3 (17)	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	14-25-25-34 (50)	LS		LIMESTONE, moderately hard, light gray	
5	SPT	20-15-17-20 (32)			LIMESTONE, medium hard, light gray	
	SPT	15-20-12-7 (32)			LIMESTONE, medium hard, light gray	5
	SPT	5-6-5-5 (11)			LIMESTONE, very soft, light gray	
10					10.0	2.0

Boring terminated at 10.0 feet.



# BORING NUMBER B-17

**PROJECT NAME** DTPW Project 20200119 (SW 152nd Street)  
**PROJECT NUMBER** 16966.1      **PROJECT LOCATION** Old Cutler Road & SW 152nd Street, Miami, Florida  
**DATE STARTED** 8/10/20      **COMPLETED** 8/10/20      **GROUND ELEVATION** 12 ft NGVD est.      **HOLE SIZE** 3 inches  
**DRILLING CONTRACTOR** NV5      **GROUND WATER LEVELS:** --- Not Encountered  
**DRILLING METHOD** Continuous Sampling  
**LOGGED BY** 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	2-4-5-2 (9)	SM		0.3 4" of Topsoil	11.7
			SP		SAND, loose, fine, tan	10
	SPT	3-7-7-11 (14)			2.4 SAND, medium dense, fine, tan, with a trace of limestone fragments	9.6
					LIMESTONE, very soft, light gray, with sand	
5	SPT	10-14-14-12 (28)			LIMESTONE, soft, light gray	
	SPT	20-14-17-16 (31)	LS		LIMESTONE, medium hard, light gray	5
	SPT	13-12-10-10 (22)			LIMESTONE, soft, light gray	
10					10.0	2.0

Boring terminated at 10.0 feet.



**BORING NUMBER B-18**

**PROJECT NAME** DTPW Project 20200119 (SW 152nd Street)  
**PROJECT NUMBER** 16966.1      **PROJECT LOCATION** Old Cutler Road & SW 152nd Street, Miami, Florida  
**DATE STARTED** 8/10/20      **COMPLETED** 8/10/20      **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** 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						
0.6	SPT	50/2" (100)		0.6	7" of Asphalt	11.4
10	SPT	11-10-13-13 (23)	LS		LIMESTONE, hard, light gray	10
5	SPT	15-15-14-13 (29)			LIMESTONE, soft, light gray	
	SPT	15-16-8-10 (24)			LIMESTONE, soft, light gray	5
	SPT	11-12-9-9 (21)			LIMESTONE, soft, light gray	
15	SPT	5-4-4-4 (8)			LIMESTONE, very soft, light gray	-3.0

Boring terminated at 15.0 feet.



# BORING NUMBER B-19

**PROJECT NAME** DTPW Project 20200119 (SW 152nd Street)  
**PROJECT NUMBER** 16966.1      **PROJECT LOCATION** Old Cutler Road & SW 152nd Street, Miami, Florida  
**DATE STARTED** 8/10/20      **COMPLETED** 8/10/20      **GROUND ELEVATION** 12 ft NGVD est.      **HOLE SIZE** 3 inches  
**DRILLING CONTRACTOR** NV5      **GROUND WATER LEVELS:** --- Not Encountered  
**DRILLING METHOD** Continuous Sampling  
**LOGGED BY** 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						
0.3			SM		4" of Topsoil	11.7
	SPT	6-15-20-20 (35)	LS		LIMESTONE, medium hard, light gray	10
	SPT	21-17-15-17 (32)			LIMESTONE, medium hard, light gray	
5	SPT	18-16-16-15 (32)			LIMESTONE, medium hard, light gray	
	SPT	11-17-15-17 (32)			LIMESTONE, medium hard, light gray	5
10	SPT	16-12-13-12 (25)			LIMESTONE, soft, light gray	2.0

Boring terminated at 10.0 feet.



# BORING NUMBER B-23

**PROJECT NAME** DTPW Project 20200119 (SW 152nd Street)  
**PROJECT NUMBER** 16966.1      **PROJECT LOCATION** Old Cutler Road & SW 152nd Street, Miami, Florida  
**DATE STARTED** 8/5/20      **COMPLETED** 8/5/20      **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	2-2-4-2 (6)	SM		10" of Topsoil	11.1
						10
	SPT	2-1-1-2 (2)	SP		SAND, loose, fine, dark gray	
5	SPT	2-1-4-18 (5)	SP		SAND, very loose, fine, dark gray to tan	
	SPT	15-18-17-10 (35)	GP		SAND, loose, fine, dark gray to tan, with silt	6.7
						6.0
	SPT	13-15-17-17 (32)	LS		LIMESTONE FRAGMENTS, loose, light brown, with sand	5
10					LIMESTONE, medium hard, light gray	2.0
					LIMESTONE, medium hard, light gray	








Boring terminated at 10.0 feet.





**BORING NUMBER B-25**

**PROJECT NAME** DTPW Project 20200119 (SW 152nd Street)  
**PROJECT NUMBER** 16966.1      **PROJECT LOCATION** Old Cutler Road & SW 152nd Street, Miami, Florida  
**DATE STARTED** 8/5/20      **COMPLETED** 8/5/20      **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	4-5-6-11 (11)	SM		0.6 7" of Topsoil	11.4
			SP		2.0 SAND, loose, fine, brown	10 10.0
	SPT	10-11-11-11 (22)	GP		LIMESTONE FRAGMENTS, medium dense, fine, tan, with sand	
5	SPT	10-10-14-14 (24)			5.0 LIMESTONE FRAGMENTS, medium dense, fine, tan, with sand	7.0
	SPT	18-8-8-10 (16)	LS		LIMESTONE, soft, light gray	5
	SPT	13-15-12-12 (27)			LIMESTONE, very soft, light gray	
10					10.0 LIMESTONE, soft, light gray	2.0

Boring terminated at 10.0 feet.



**BORING NUMBER B-26**

**PROJECT NAME** DTPW Project 20200119 (SW 152nd Street)  
**PROJECT NUMBER** 16966.1      **PROJECT LOCATION** Old Cutler Road & SW 152nd Street, Miami, Florida  
**DATE STARTED** 8/5/20      **COMPLETED** 8/5/20      **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						
0.3			SM		4" of Topsoil	11.7
3.0	SPT	3-16-20-18 (36)	LS		LIMESTONE, medium hard, light gray	10
4.5	SPT	20-23-23-18 (46)			LIMESTONE, moderately hard, light gray	
6.0	SPT	16-18-16-16 (34)			LIMESTONE, medium hard, light gray	
7.5	SPT	14-14-10-10 (24)			LIMESTONE, soft, light gray	5
10.0	SPT	13-10-6-10 (16)			LIMESTONE, very soft, light gray	2.0

Boring terminated at 10.0 feet.



**BORING NUMBER B-27**

**PROJECT NAME** DTPW Project 20200119 (SW 152nd Street)  
**PROJECT NUMBER** 16966.1      **PROJECT LOCATION** Old Cutler Road & SW 152nd Street, Miami, Florida  
**DATE STARTED** 8/5/20      **COMPLETED** 8/5/20      **GROUND ELEVATION** 12 ft NGVD est.      **HOLE SIZE** 3 inches  
**DRILLING CONTRACTOR** NV5      **GROUND WATER LEVELS:** 11.7 ft / Elev 0.3 ft  
**DRILLING METHOD** Rotary drill with mud, wash & casing  
**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						
0.3			SM		4" of Topsoil	11.7
1.0	SPT	7-9-31-21 (40)	LS		LIMESTONE, medium hard, tan, with sand	10
2.0	SPT	18-20-16-14 (36)			LIMESTONE, medium hard, light gray, with sand	
3.0	SPT	22-22-27-20 (49)			LIMESTONE, moderately hard, light gray	
4.0	SPT	20-20-12-13 (32)			LIMESTONE, medium hard, tan, with sand	5
5.0	SPT	15-12-12-13 (24)			LIMESTONE, soft, light gray	
10.0						0
15.0	SPT	9-8-6-7 (14)			LIMESTONE, very soft, tan, with sand	-3.0

Boring terminated at 15.0 feet.



# BORING NUMBER B-28



**PROJECT NAME** DTPW Project 20200119 (SW 152nd Street)  
**PROJECT NUMBER** 16966.1      **PROJECT LOCATION** Old Cutler Road & SW 152nd Street, Miami, Florida  
**DATE STARTED** 8/5/20      **COMPLETED** 8/5/20      **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	2-3-2-6 (5)	SM		0.7 8" of Topsoil	11.3
			SP		2.0 SAND, loose, fine, tan, with a trace of limestone fragments	10 10.0
	SPT	5-2-4-17 (6)	GP		2.5 Limestone fragments, loose, fine, tan, with sand	9.5
					Limestone, very soft, light gray	
5	SPT	20-16-12-13 (28)	LS		Limestone, soft, light gray	
	SPT	10-14-10-10 (24)			Limestone, soft, light gray	5
	SPT	12-13-13-16 (26)			Limestone, soft, light gray	
10					10.0 Boring terminated at 10.0 feet.	2.0



**BORING NUMBER B-29**

**PROJECT NAME** DTPW Project 20200119 (SW 152nd Street)  
**PROJECT NUMBER** 16966.1      **PROJECT LOCATION** Old Cutler Road & SW 152nd Street, Miami, Florida  
**DATE STARTED** 8/5/20      **COMPLETED** 8/5/20      **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	2-3-5-16 (8)	SM		0.9 10" of Topsoil	11.1
	SPT	23-20-23-16 (43)	LS		LIMESTONE, very soft, tan, with sand	10
5	SPT	15-14-18-13 (32)			LIMESTONE, medium hard, tan	
	SPT	12-10-11-8 (21)			LIMESTONE, medium hard, light gray	5
10	SPT	8-11-11-10 (22)			LIMESTONE, soft, light gray	
				10.0	LIMESTONE, soft, light gray	2.0

Boring terminated at 10.0 feet.




## 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 08/04/20 and 08/12/20 using a 3-inch diameter rotary drill with mud, wash and casing.
2. Groundwater was encountered at depths between 9.5 and 10.1 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

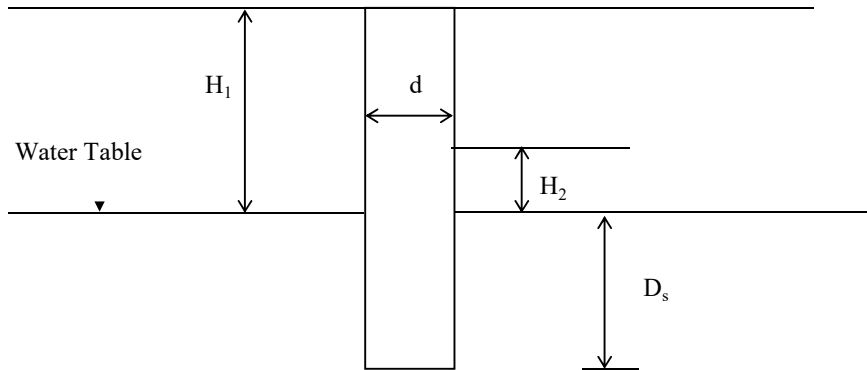
11. Definitions related to adjectives used in soil/rock descriptions:

<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**

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

**4.32E-04 CFS/FT<sup>2</sup>-FT HEAD**

Time (Min.)	Flow (GPM)		
1	30.00	Q = Average Flow Rate =	0.066840 CFS
2	30.00		
3	30.00	d = Diameter of Test Hole =	6.0 inches
4	30.00		
5	30.00	H <sub>2</sub> = Head on Water Table =	9.5 feet
6	30.00		
7	30.00	D <sub>s</sub> = Depth below Ground Water Table =	5.5 feet
8	30.00		
9	30.00		
10	30.00		

TEST LOCATION :		See Drawing No. 1
TEST ELEVATION :	+12.0'	NGVD (estimated)
DEPTH TO WATER TABLE H <sub>1</sub> :	9.5'	Below Existing Grade
DEPTH OF TEST HOLE :	15.0'	Below Existing Grade
AVERAGE FLOW RATE:	30.00	GPM

**SOIL PROFILE :**

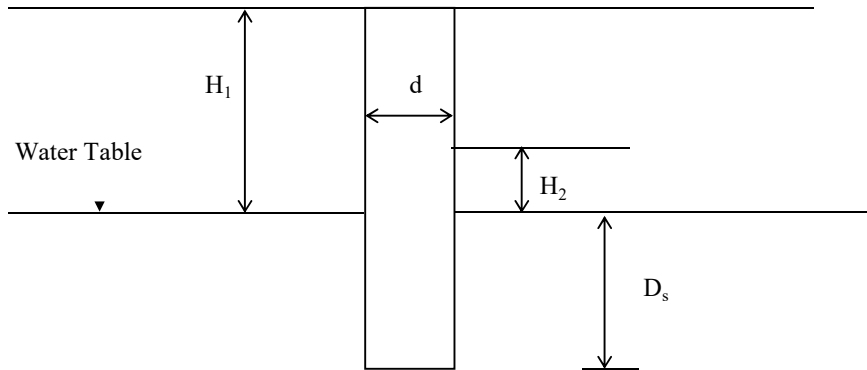
0.0' - 1.5'	10" of Topsoil over brown to tan Sand, with a trace of limestone fragments
1.5' - 15.0'	Tan Limestone

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**

<b>N   V   5</b>	<b>PROJECT NAME:</b> DTPW Project 20200119 (SW 152nd Street)		
	<b>PROJECT LOCATION:</b> Old Cutler Road & SW 152nd Street, Miami, Florida		
	<b>PROJECT NO:</b> 16966.1	<b>TEST DATE:</b> 08/06/2020	<b>TEST NO:</b> P-1
	<b>TESTED BY:</b> J. Rivera / H. Morales		<b>CHECKED BY:</b> AB

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



**HYDRAULIC CONDUCTIVITY**

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

**9.76E-05 CFS/FT<sup>2</sup>-FT HEAD**

Time (Min.)	Flow (GPM)		
1	7.00	Q = Average Flow Rate =	0.015596 CFS
2	7.00		
3	7.00	d = Diameter of Test Hole =	6.0 inches
4	7.00		
5	7.00	H <sub>2</sub> = Head on Water Table =	10.1 feet
6	7.00		
7	7.00	D <sub>s</sub> = Depth below Ground Water Table =	4.9 feet
8	7.00		
9	7.00		
10	7.00		

TEST LOCATION :		See Drawing No. 1
TEST ELEVATION :	+10.0'	NGVD (estimated)
DEPTH TO WATER TABLE H <sub>1</sub> :	10.1'	Below Existing Grade
DEPTH OF TEST HOLE :	15.0'	Below Existing Grade
AVERAGE FLOW RATE:	7.00	GPM

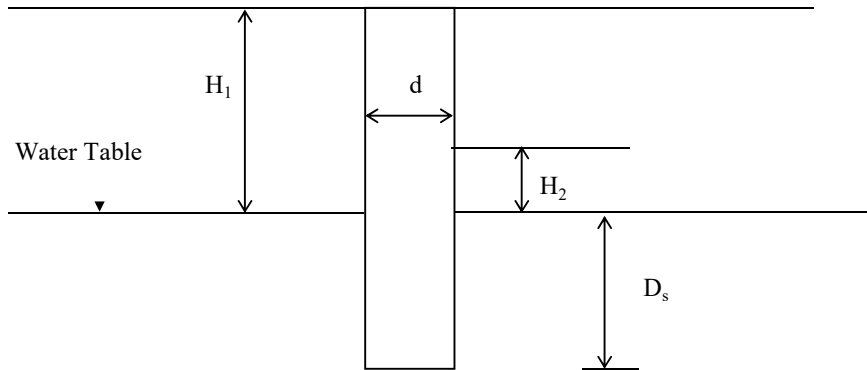
**SOIL PROFILE :**  
 0.0' - 2.0' 4" of Topsoil over dark gray Sand, with a trace of limestone fragments  
 2.0' - 15.0' Light brown Limestone, with sand

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**

<b>N   V   5</b>	<b>PROJECT NAME:</b> DTPW Project 20200119 (SW 152nd Street)		
	<b>PROJECT LOCATION:</b> Old Cutler Road & SW 152nd Street, Miami, Florida		
	<b>PROJECT NO:</b> 16966.1	<b>TEST DATE:</b> 08/10/2020	<b>TEST NO:</b> P-2
	<b>TESTED BY:</b> J. Rivera / H. Morales		<b>CHECKED BY:</b> AB

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



**HYDRAULIC CONDUCTIVITY**

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

**9.82E-04 CFS/FT<sup>2</sup>-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	H <sub>2</sub> = Head on Water Table =	8.0 feet
5	50.00	D <sub>s</sub> = Depth below Ground Water Table =	4.9 feet
6	50.00		
7	50.00		
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 <sub>1</sub> :	10.1'	Below Existing Grade
DEPTH OF TEST HOLE :	15.0'	Below Existing Grade
AVERAGE FLOW RATE:	50.00	GPM

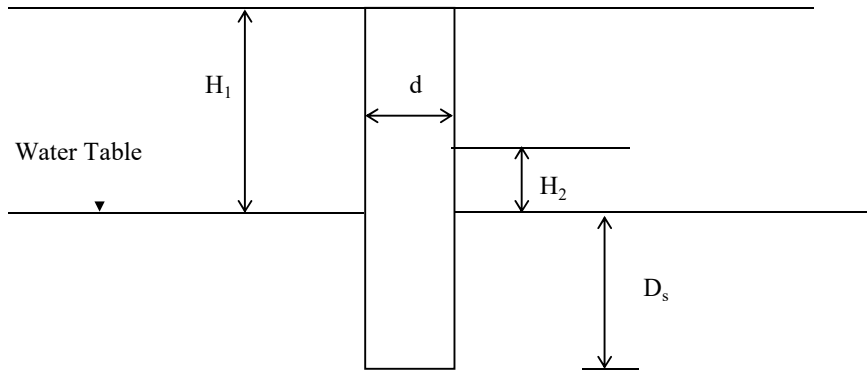
**SOIL PROFILE :**  
0.0' - 15.0' 3" of Asphalt over light gray Limestone

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**

<b>N   V   5</b>	<b>PROJECT NAME:</b> DTPW Project 20200119 (SW 152nd Street)		
	<b>PROJECT LOCATION:</b> Old Cutler Road & SW 152nd Street, Miami, Florida		
	<b>PROJECT NO:</b> 16966.1	<b>TEST DATE:</b> 08/10/2020	<b>TEST NO:</b> P-3
	<b>TESTED BY:</b> J. Rivera / H. Morales		<b>CHECKED BY:</b> AB

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



**HYDRAULIC CONDUCTIVITY**

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

**1.31E-05 CFS/FT<sup>2</sup>-FT HEAD**

Time (Min.)	Flow (GPM)		
1	1.00	Q = Average Flow Rate =	0.002228 CFS
2	1.00		
3	1.00	d = Diameter of Test Hole =	6.0 inches
4	1.00		
5	1.00	H <sub>2</sub> = Head on Water Table =	11.7 feet
6	1.00		
7	1.00	D <sub>s</sub> = Depth below Ground Water Table =	3.3 feet
8	1.00		
9	1.00		
10	1.00		

TEST LOCATION :		See Drawing No. 1
TEST ELEVATION :	+12.0'	NGVD (estimated)
DEPTH TO WATER TABLE H <sub>1</sub> :	11.7'	Below Existing Grade
DEPTH OF TEST HOLE :	15.0'	Below Existing Grade
AVERAGE FLOW RATE:	1.00	GPM

**SOIL PROFILE :**  
0.0' - 15.0'      4" of Asphalt over tan to light gray 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**

<b>N   V   5</b>	<b>PROJECT NAME:</b> DTPW Project 20200119 (SW 152nd Street)		
	<b>PROJECT LOCATION:</b> Old Cutler Road & SW 152nd Street, Miami, Florida		
	<b>PROJECT NO:</b> 16966.1	<b>TEST DATE:</b> 08/05/2020	<b>TEST NO:</b> P-4
	<b>TESTED BY:</b> J. Rivera / H. Morales		<b>CHECKED BY:</b> AB