October 2, 2017

Mr. Paul Tschiderer, P.E.
AES Consulting Engineers
5248 Olde Towne Road, Suite 1
Williamsburg, Virginia 23188

ECS Project No. 07:13939

Reference: Letter of Test Results
Achilles Elementary School BMP Exploration
9306 Guinea Road
Gloucester County, Virginia

Dear Mr. Tschiderer,

ECS Mid-Atlantic, LLC has completed hand augers and infiltration testing for the above referenced project. This letter presents the infiltration test results of the proposed BMP facilities located at Achilles Elementary School in Gloucester County, Virginia.

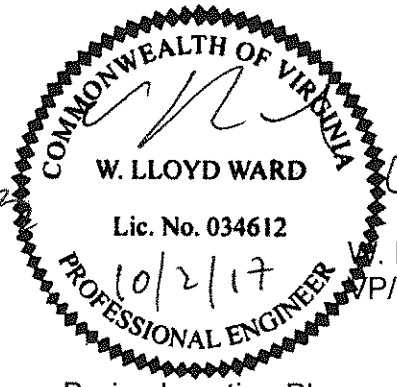
ECS arrived on-site on September 4, 2017 to perform four (4) 10-foot deep hand auger borings at the locations designated on the hand auger location plan of Appendix I. The hand auger samples were transported to Waypoint Analytical for laboratory testing. The hand auger boring logs are included in Appendix II. ECS returned to the site on September 20th, 2017 to perform two (2) 0.75-foot and two (2) 3-foot deep infiltration tests utilizing a Johnson Meter. The in-situ infiltration test results are included in Appendix III.

The groundwater table was encountered ranging in depth from 2- to 7-feet below the existing site elevations at the boring locations. The soils encountered within the BMP facilities predominantly consisted of SAND (SP-SM and SM). The tested soils would fall into Hydrologic Soil Groupings C and D. Typically, soils with the Hydrologic Soil Group designations of A and B are considered suitable for infiltration purposes. Some soils designated as C type soils are considered suitable for infiltration practices, but these soils would need to be evaluated on a case specific basis. Soils with group designations of D are generally not considered suitable.

We have appreciated being of service to you during this project. If you should have any questions regarding the information contained in this letter or if we can be of any further assistance, please contact our office.

Respectfully,

ECS MID-ATLANTIC, LLC



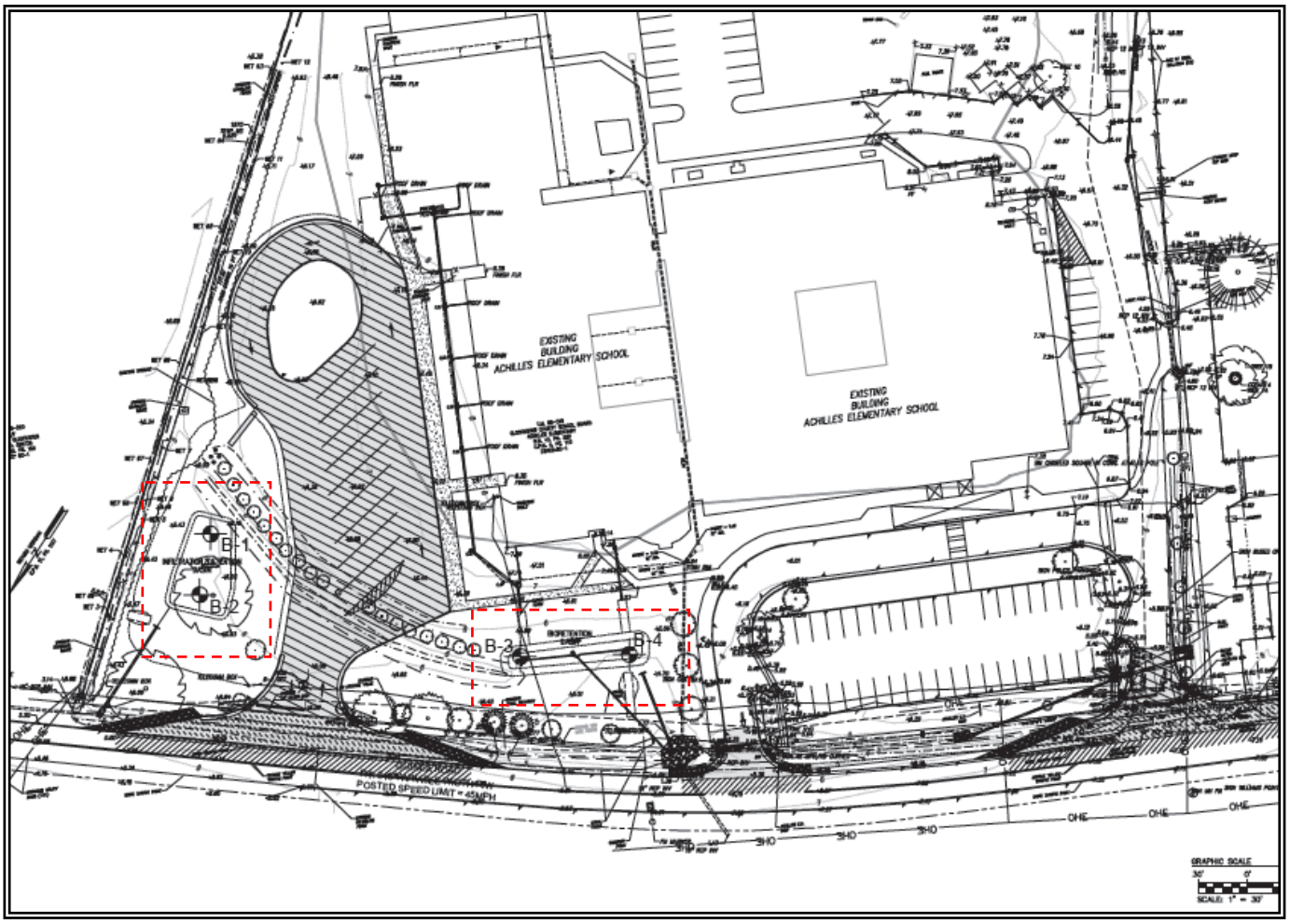
Sara B. Phillips
Senior Geotechnical
Project Manager

W. Lloyd Ward, P.E.
VP/Williamsburg Branch Manager

Appendix:
I. Hand Auger Boring Location Plan
II. Hand Auger Boring Logs
III. Infiltration Test Results

APPENDIX I

HAND AUGER BORING LOCATION PLAN



APPENDIX II

HAND AUGER BORING LOGS

DEPTH **(inches)**	**LOCATION: #1**
	DESCRIPTION OF MATERIALS
0-6	Topsoil
6-96	Fine to Medium, Silty SAND (SM), Tan to Light Gray to Dark Gray , Moist to Wet
	GROUNDWATER ENCOUNTERED AT 84 INCHES AND 48 INCHES
	END OF BORING AT 96 INCHES – AUGER REFUSAL

DEPTH **(inches)**	**LOCATION: #2**
	DESCRIPTION OF MATERIALS
0-6	Topsoil
6-96	Fine to Medium, Silty SAND (SM), Brownish Gray to Brown to Dark Gray , Moist to Wet
	GROUNDWATER ENCOUNTERED AT 84 INCHES AND 48 INCHES
	END OF BORING AT 96 INCHES – AUGER REFUSAL

DEPTH **(inches)**	**LOCATION: #3**
	DESCRIPTION OF MATERIALS
0-6	Topsoil
6-48	Fine to Medium, Poorly Graded SAND with Silt (SP-SM), Gray to Brown , Moist to Wet
	GROUNDWATER ENCOUNTERED AT 24 INCHES
	END OF BORING AT 48 INCHES – AUGER REFUSAL

DEPTH **(inches)**	**LOCATION: #4**
	DESCRIPTION OF MATERIALS
0-6	Topsoil
6-48	Fine to Medium, Poorly Graded SAND with Silt (SP-SM), Gray to Brown , Moist to Wet
	GROUNDWATER ENCOUNTERED AT 24 INCHES
	END OF BORING AT 48 INCHES – AUGER REFUSAL

APPENDIX III

INFILTRATION TEST RESULTS

Test Location	Infiltration Test No.	Structure Type	Ksat Test Depth (Feet)	Ksat Rate (in/hour)	Water Table Depth (ft) Below Existing Site Elevations*	% Silt	% Clay	USDA Soil Classification
B-1	INF-1	Infiltration/Detention Basin	3	0.081	7 and 4	9.2	5.2	SM
B-2	INF-2	Infiltration/Detention Basin	3	0.070	7 and 4	13.2	7.2	SM
B-3	INF-3	Bioretention Basin	0.75	0.094	2	1.2	7.2	SP-SM
B-4	INF-4	Bioretention Basin	0.75	0.091	2	9.2	1.2	SP-SM

***Maximum depth explored was 10-feet below the existing site elevations. Groundwater can fluctuate based on seasonal and tidal changes; therefore shallow groundwater was encountered during the Ksat testing, therefore the Ksat testing depth changed.**

It should be noted that the soils encountered in the hand auger borings were in a medium dense condition and difficult to hand auger through.