

SOIL EVALUATION SERVICES INC.

DAVID R MILES, CPSS, OSE
506 N MAIN ST
PO BOX 2270
KILMARNOCK VA 22482

804-577-4100 (O)
804-694-9574 (C)

October 6, 2017

Foundation For Historic Christ Church, Inc.
P.O. Box 24
Irvington, VA 22480

Re: Soil borings in and around existing church.

To whom it may concern,

Soil Evaluation Services, Inc. is pleased to present findings regarding the soil conditions for the existing Christ Church. The attached sketch shows the location of the five soil borings. Although the borings vary from each other to some degree, it is believed that the soil morphology is consistent (in all borings) with a Craven silt loam. Depth to perched water table was 12-24"+, with restrictive to impermeable Silty clay loam to Silt Clay to Clay from 14"+. The soils were Massive in Boring #4 from 48-72"+ & Borings 1 & 3 from 68-72"+.

The existing brick foundation for the church extends to a depth of approximately 60". There is concern that the rain water runoff is migrating down the sides of the foundation, potentially to the depth of the footers, with nowhere to basically drain. This may be causing the water to wick upward, through the brick walls, causing degradation of the mortar. The Foundation is seeking recommendations for corrective measures to this potential problem.

There are presently no gutters to aid in redirecting the rain water. There were "skirts" around the perimeter of the church, but they have been removed. Although it appears that the gradient is away from the church, there is still considerable water which ultimately ponds around the outer walls and (most assuredly) under the church in the crawl.

The potential corrective measure is to divert the water completely away from the church. However, this will be no easy feat given that the walls extend to 60". It will be quite the endeavor to excavate to a depth of 60"+- around the entire perimeter of the church, install french drains with outfall to the woods, hundreds of feet away. Installation of gutters to tie into this drainage system would also be recommended.

While this is certainly not my forte, it is food for thought. A Structural Engineer should be consulted to gain greater insight and perspective to this situation. If there are any questions, please contact me.

Sincerely,



David R. Miles, Certified Professional Soil Scientist

Site and Soil Evaluation Report

VDH Use Only

HDIN: _____

General Information

Date: 10/6/2017 Lancaster County Health Department
 Owner: Foundation For Historic Christ Church, Inc. Phone: 804/ 761-1516
 Owner Address: P.O. Box 24, Irvington, VA 22480
 Property Address: 360 Christ Church Road
 Tax Map/GPIN #: 27-206
 Subdivision: _____ Section: _____ Block: _____ Lot: _____

Soil Information Summary

1. Position in landscape satisfactory: Yes No Describe landscape position: Upland, open, flat
2. Slope: 0-1 %
3. Depth to rock/impervious strata: Max. 72+ in. Min. 14 in. Not observed
4. Free Water Present: Yes No Range in inches: _____
5. Depth to seasonal water table (gray mottling or gray color): 12-24+ inches Not observed
6. Soil percolation rate estimated: Yes No Estimated rate: 45-120+ min/in at 0-120 inches depth
 Texture Group: I II III IV
7. Percolation test performed: Yes No If yes, provide additional data on percolation test results.
 Name and title of evaluator: David R. Miles, CPSS, OSE
 Signature: David R. Miles

Site approved: _____ (describe dispersal area, e.g. absorption trenches) dispersing
 _____ (proposed level of treatment at time of evaluation) to be placed at _____ (inches) depth at
 site designated on permit. Site provides a total of _____ square feet of absorption area for primary and
 reserve (if applicable).

Site disapproved: Reasons for rejection (check all that apply)

1. Position in landscape subject to flooding or periodic saturation.
2. Insufficient depth of suitable soil over hard rock.
3. Insufficient depth of suitable soil to seasonal water table.
4. Rates of absorption too slow.
5. Insufficient area of acceptable soil for required absorption area, and/or reserve area.
6. Proposed system too close to well.
7. Other (specify)

Date of Evaluation: 9/29/2017

Profile Description

SOIL EVALUATION REPORT

Property ID: T.M. #27-206

Where the local health department conducts the soil evaluation the location of profile holes may be shown on the schematic drawing on the construction permit or the sketch submitted with the application. If soil evaluations are conducted by a private Onsite Soil Evaluator or Professional Engineer, location of profile holes and sketch of the area investigated including all structural features (i.e. sewage disposal systems, wells, etc.) within 100 feet of the site and reserve site shall be shown on the reverse side of this page or prepared on a separate page and attached to this form.

See application sketch See Construction Permit See sketch on reverse side or page attached to this form.

Hole #	Horizon	Depth (Inches)	Description of color, texture, etc.	Texture Group
1	A	0-05	Very Dark Gray Brown (10YR 3/2) Loam (Fine)	II
	E	05-14	Brown (10YR 5/3) Loam (Fine)	II
	B	14-24	Pale Brown (10YR 6/3) to Light Yellow Brown (10YR 6/4) mottled	III-IV
			Light Brownish Gray (10YR 6/2) Silty Clay Loam to Clay	
	B	24-32	Brown (10YR 4/3) & Dark Yellow Brown (10YR 4/6) Silty Clay Loam to Clay Loam	III
			Dark Gray Brown to Dark Gray mottled Light Brownish Gray (10YR 6/2)	III-IV
			Clay Loam to Sandy Clay	
	B	42-54	Yellow Brown (10YR 5/4) mottled Strong Brown (7.5YR 5/8), Light Gray (10YR 7/1,7/2),	III
			Light Brownish Gray (10YR 6/2), Gray (10YR 6/1), Gray Brown (10YR 5/2, White (10YR 8/2) &	
			Vary Pale Brown (10YR 8/3) Clay Loam (Sticky)	
	B	54-60	Light Gray (10YR 7/1,7/2), Strong Brown (7.5YR 5/8), Dark Brownish Gray (10YR 4/2) &	III
			Brown (10YR 4/3) Silty Clay Loam	
	B	60-68	Light Gray (10YR 7/2) mottled Strong Brown (7.5YR 5/8) Silty Clay	IV
B	68-72	Light Gray (10YR 7/2 mottled Strong Brown (7.5YR 5/8) Silty Clay to Clay (Massive)	IV	
2	A	0-06	Brown (10YR 4/3) Loam	II
	E	06-18	Pale Brown (10YR 6/3) Loam	II
	B	18-30	Yellow Brown (10YR 5/4) mottled Light Brownish Gray (10YR 6/2) Clay Loam	III
	B	30-36	Brown (10YR 4/3) mottled Gray Brown (10YR 5/2) & Gray (10YR 5/1) Silty Clay Loam	III
	B	36-52	Gray (10YR 6/1) to Light Brownish Gray (10YR 6/2) mottled Strong Brown (7.5YR 5/8)	III-II
			Clay Loam to Sandy Clay Loam	
	B	52-60	Light Gray (10YR 7/1,7/2) mottled Strong Brown (7.5YR 5/8), Gray Brown (10YR 5/2),	III-IV
			Light Brownish Gray (10YR 6/2) & Gray (10YR 6/1) Silty Clay Loam to Clay	
	B	60-90	Light Gray (10YR 7/2) mottled Strong Brown (7.5YR 5/8) Silty Clay Loam	III
	B	90-120	Strong Brown (7.5YR 5/8) mottled Light Gray (10YR 7/1) Silt Loam to Silty Clay Loam	III

REMARKS: No Free Water in any of the 5 soil borings.

Date of Evaluation: 9/29/2017

Profile Description

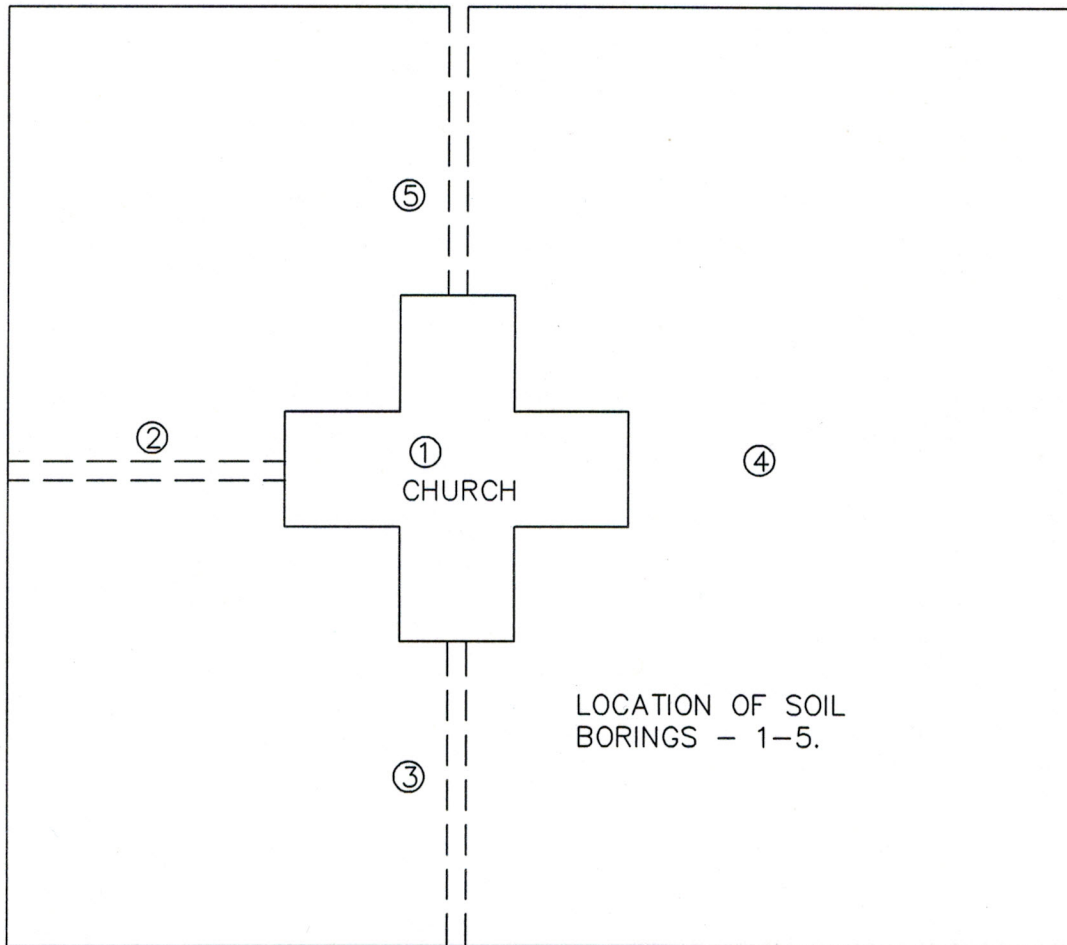
SOIL EVALUATION REPORTProperty ID: T.M. #27-206

Where the local health department conducts the soil evaluation the location of profile holes may be shown on the schematic drawing on the construction permit or the sketch submitted with the application. If soil evaluations are conducted by a private Onsite Soil Evaluator or Professional Engineer, location of profile holes and sketch of the area investigated including all structural features (i.e. sewage disposal systems, wells, etc.) within 100 feet of the site and reserve site shall be shown on the reverse side of this page or prepared on a separate page and attached to this form.

See application sketch See Construction Permit See sketch on reverse side or page attached to this form.

Hole #	Horizon	Depth (Inches)	Description of color, texture, etc.	Texture Group
3	A	0-06	Dark Gray Brown (10YR 4/2) Loam to Sandy Clay Loam	II
	E	06-12	Light Yellow Brown (10YR 6/4) Loam to Sandy Clay Loam	II
	B	12-24	Pale Brown (10YR 6/3) to Brown (10YR 5/3) mottled	III
			Light Brownish Gray (10YR 6/2) Clay Loam	
	B	24-36	Pale Brown (10YR 6/3) to Brown (10YR 5/3) mottled Light Brownish Gray (10YR 6/2),	III
			Strong Brown (7.5YR 5/8) & Gray (10YR 6/1,5/1) Clay Loam	III
	B	36-68	Pale Brown (10YR 6/3) mottled Strong Brown (7.5YR 5/8), Light Gray (10YR 7/2,7/1) &	III-IV
			White (10YR 8/2) Silty Clay Loam to Clay	
B	68-72	Light Gray (10YR 7/2) mottled Strong Brown (7.5YR 5/8) Silty Clay to Clay (Massive)	IV	
4	A	0-12	Dark Gray Brown (10YR 4/2) Loam to Sandy Clay Loam	II
	E	12-18	Light Yellow Brown (10YR 6/4) Loam	II
	B	18-24	Pale Brown (10YR 6/3) & Light Yellow Brown (10YR 6/4) Clay Loam	III
	B	24-48	Pale Brown (10YR 6/3) mottled Light Yellow Brown (10YR 6/4),	III
			Light Brownish Gray (10YR 6/2) & Strong Brown (7.5YR 5/8) Clay Loam	
	B	48-72	Light Gray (10YR 7/2-7/1) mottled Strong Brown (7.5YR 5/8), Gray (10YR 6/1),	IV
		Light Brownish Gray (10YR 6/2) & Brown (10YR 4/3) Clay (Massive)		
5	A	0-06	Dark Gray Brown (10YR 4/2) Loam to Sandy Clay Loam	II
	E	06-12	Light Yellow Brown (10YR 6/4) Loam to Sandy Clay Loam	II
	B	12-24	Pale Brown (10YR 6/3) to Light Yellow Brown (10YR 6/4) Clay Loam	III
	B	24-30	Brown (10YR 4/3) mottled Light Brownish Gray (10YR 6/2) & Strong Brown (7.5YR 5/8) Clay Loam	III
	B	30-42	Brown (10YR 4/3) mottled Gray (10YR 5/1), Gray Brown (10YR 5/2) &	III
			Strong Brown (7.5YR 5/8) Clay Loam	
	B	42-72	Light Gray (10YR 7/1) mottled Strong Brown (7.5YR 5/8), Gray (10YR 6/1),	IV
			Light Brownish Gray (10YR 6/2) & Brown (10YR 4/3) Silty Clay to Clay	

REMARKS: No Free Water in any of the 5 soil borings.



BORINGS 2-4 PLACED 30' OFF OF BUILDING. BORING #5 PLACED 22' OFF BUILDING DUE TO HITTING BRICK, OTHER DEBRIS, ETC. AT 30' OFF BUILDING.

Title	Soil Boring Locations		
Reference Subtitle	Historic Christ Church, Lancaster Co., VA Specific Site Layout		
Drawn By	DRM	Approved By	DRM
Date	10/6/2017	Scale	1" = 50'
Revision	0	Drawing No.	