ACA ENGINEERING, INC.
741 McCLURG ROAD, SUITE A
BOARDMAN, OHIO 44512
Telephone: 330-729-1222
Fax: 330-729-9222
Website: www.acaohio.com
E-Mail: info@acaohio.com

ACA Engineering, Inc.

Geotechnical & Environmental Engineering, Materials Testing & Inspection

February 20, 2020

Mr. Lew Jackson Jr.
City of Campbell
351 Tenney Ave.
Campbell, Ohio 44405

Roosevelt Park Bocce Pavilion
Test Pits
ACA Project No. Y20003x10

Dear Mr. Jackson,

Three (3) test pits were excavated at the proposed bocce pavilion on January 28, 2020. The original plan was to excavate nine (9) test pits however, due to wet conditions of the site, the backhoe could not excavate the remainder of the test pits. For the subsurface conditions, see attached test pit logs.

Site Preparation

Strip the entire proposed construction areas of all vegetation, wet soils, topsoil, soils contaminated with more than five (5) percent organics by weight, and any other unsuitable soils or materials. All areas, which will receive backfill should be filled in with suitable materials approved by ACA.

General Fill

The soil used for fill construction should be uncontaminated, clean, on-site or off-site material approved by ACA. Material considered suitable for use as structural backfill should be clean soil free of organics, trash, and other deleterious material. All backfill should be compacted to a minimum density of 98.0% as a percentage of standard proctor maximum dry density as per ASTM D 698. Each lift of soil should be placed in a maximum eight (8.0) inch loose thickness and should be within plus or minus two (2.0) percent of optimum moisture content as determined by ASTM D 698. All backfill should be evaluated and tested by ACA using nuclear densometers. At least one (1) test per every 1,000 square feet on each lift should be conducted.

Proposed Pavilion Foundation

Based on the test pits, the natural soils consisting of silty clay are suitable to support the proposed column footings. It is our recommendation that the columns be supported on column footings designed for a net maximum allowable bearing pressure of 2,000 pounds per square foot. All footings must be a minimum of three and one-half (3.5) feet below adjacent finished exterior grade to assure proper frost protection. All foundation bearing surfaces should be inspected by ACA to verify the suitability of the bearing materials.

GC:MS:tc:nc

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Proposed Pavilion Floor Slab

It is our recommendation that the proposed floor slab should be placed on six (6.0) inches of ODOT #304 compacted to a minimum 95% as a percentage of standard proctor maximum dry density as per ASTM D 698. The use of a polyethylene moisture barrier beneath the floor slab is recommended to break capillary moisture rise. In addition to the vapor barrier, the use of wire mesh or fibers in the concrete is recommended to help prevent cracking. It should be noted, due to the proposed floor slab exposure, freezing and thawing of the underlying soils will result in heaving to the floor slab throughout the lifetime of the structure. Cracking in the slab on grade will occur and should be expected.

Grading and Drainage Considerations

During the site visit, water ponding was present throughout the entire site. Majority of the water was ponding closer to the existing parking lot. Site grading should be taken into consideration and any areas receiving fill placement should be positively sloped away from the proposed structure.

General Considerations

The analyses and recommendations presented are based upon data obtained from the test pits at the location indicated on the information discussed in the report. The original plan was to excavate several test pits throughout the entire area. The possibility exists that conditions other than those during our investigation may be presented at the site. If substantial variations in the site conditions do exist or are revealed during construction, ACA should be contacted immediately.

If you have questions or need any further information, please feel free to contact our office.

Sincerely,
ACA Engineering, Inc.

George Chammas, E.I.
Geotechnical/Materials Engineer

Tony Chammas, P.E.
President

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TEST PIT LOG
Test Pit No.: TP-1

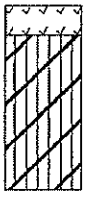
PROJECT	PROJECT NO.
Campbells' Roosevelt Park Proposed Bocce Pavilion	Y20003x10
CLIENT	DATE
City of Campbell	1-28-20
LOCATION	ELEV.
West Side of Bocce Pavilion	± 1123
EXCAVATION METHOD	LOGGER
CAT 420F Backhoe	G. Chammas
DEPTH TO - Water: When checked:	Caving:

ELEVATION/ DEPTH	SOIL SYMBOLS AND SAMPLERS: GRAPHIC	BULK	DRIVEN	USCS	DESCRIPTION	BEARING PRESSURE PSF	MOISTURE %
0							
					Topsoil and #8 Aggregate		
				CL-ML	Brown and Gray Silty Clay with sand	2000	
5					End of Test Pit at 5.0'		
10							
15							
20							
25							

Notes: **Test Pit locations are based on site plan 1.*

TEST PIT LOG
Test Pit No.: TP-2

PROJECT	PROJECT NO.
Campbells' Roosevelt Park Proposed Bocce Pavilion	Y20003x10
CLIENT	DATE
City of Campbell	1-28-20
LOCATION	ELEV.
South West Corner of Bocce Pavilion	± 1123
EXCAVATION METHOD	LOGGER
CAT 420F Backhoe	G. Chammas
DEPTH TO - Water: When checked:	Caving:

ELEVATION/ DEPTH	SOIL SYMBOLS AND SAMPLERS: GRAPHIC	BULK	DRIVEN	USCS	DESCRIPTION	BEARING PRESSURE PSF	MOISTURE %
0					Topsoil and #8 Aggregate		
				CL-ML	Brown and Gray Silty Clay with sand	2000	
5					End of Test Pit at 5.0'		
10							
15							
20							
25							

Notes: **Test Pit locations are based on site plan 1.*

TEST PIT LOG
Test Pit No.: TP-3

PROJECT	PROJECT NO.
Campbells' Roosevelt Park Proposed Bocce Pavilion	Y20003x10
CLIENT	DATE
City of Campbell	1-28-20
LOCATION	ELEV.
South Side of Bocce Pavilion	± 1124
EXCAVATION METHOD	LOGGER
CAT 420F Backhoe	G. Chammas
DEPTH TO - Water: When checked:	Caving:

ELEVATION/ DEPTH	SOIL SYMBOLS AND SAMPLERS: GRAPHIC	BULK	DRIVEN	USCS	DESCRIPTION	BEARING PRESSURE PSF	MOISTURE %
0					Topsoil and #8 Aggregate		
				CL-ML	Brown and Gray Silty Clay with sand	2000	
5					End of Test Pit at 5.0'		
10							
15							
20							
25							

Notes: **Test Pit locations are based on site plan 1.*