TE - 1 1 8
600 - 12 - 68

MICROFILMED
NOV 22 1982

11
18

CUYAHOGA COUNTY
CUY-480-0.00
1
2

GEOLOGY OF THE SITE

THE STRUCTURE SITE IS LOCATED ON THE GLACIATED LAKE PLAIN REGION, IN AN AREA WHERE MODERATELY DEEP GLACIAL DRIFT AND LACUSTRINE MATERIALS OVERLIE SANDSTONE BEDROCK, OF DEVONIAN AGE.

EXPLORATION

THE EXPLORATION CONSISTED OF TWO DRIVE SAMPLE-CORE BORINGS, MADE BETWEEN JULY 29 AND 31, 1969.

INVESTIGATIONAL FINDINGS

BORINGS DISCLOSED VERY STIFF TO HARD CLAYS AND VERY DENSE SILTS AND SANDS OVERLIE BEDROCK SURFACE, ENCOUNTERED AT 20 AND 25-FOOT DEPTHS, ELEVATIONS 756 AND 762 FEET. THE BORINGS WERE TERMINATED AT 35 AND 40-FOOT DEPTHS, ELEVATIONS 747 AND 741 FEET, AFTER PENETRATING 15 FEET OF BEDROCK.

LEGEND

- Auger Boring Location - Plan View.
- Press and / or Drive Sample and / or Core Boring Location - Plan View.
- Drive Rod Penetration Resistance Sounding Location - Plan View.
- Capped Pile
- Footing
- Footing on Pile
- TR — Top of Rock
- Horizontal Bar on Boring Log Indicates the Depth the Sample Was Taken.
- X/Y — Figures Beside the Boring Log in Profile Indicate the Number of Blows for Standard Penetration Test. X = Number of Blows for First 6 inches. Y = Number of Blows for Second 6 inches.
- Drive Rod Penetration Resistance Sounding Log - Profile
- Casing
- Resistance "R" < 10,000 lbs.
- Resistance "R" > 10,000 lbs.
- Z — Indicates Final Measurement of Penetration, in Inches.
- W — Indicates Free Water Elevation.
- Indicates Static Water Elevation.

SYMBOLS OF ROCK TYPES

- Coal
- Weathered Siltstone, Mudstone, or Claystone
- Siltstone, Mudstone, or Claystone
- Weathered Shale
- Shale
- Boulders or Cobbles
- Weathered Sandstone
- Sandstone
- Leached Dolomite
- Dolomite
- Leached Limestone
- Limestone

GENERAL INFORMATION

Drive Rod Penetration Sounding Tests

Drive rod penetration resistance tests constitute driving a 1.315-inch diameter steel rod, with a 45° cone point, into the ground, using a 122-pound drop-hammer with a free fall of five feet. At one or two-foot depth intervals, a measurement is taken to determine the amount of penetration achieved in three hammer drops. This reading is converted to an empirical value for capacity "R", in thousands of pounds (which is a measure of both the point resistance and frictional resistance on the rod), by using charts prepared by the Ohio Department of Highways, Bureau of Bridges, on the basis of correlation study of rod penetration with past performance of pile driving. For interpretation, a graph is prepared by plotting the value "R" against the depth at which the reading was taken, and connecting the plotted points. The curve so obtained reflects the density of subsurface materials in a manner that can be readily compared with data from similar tests at other locations on the structure site. From this comparison, the overall uniformity of subsurface condition may be evaluated.

Drive Sample Borings - Drive-Press Sample Borings

Drive sample borings are made by means of a rotary-type drill rig, employing a 2" O.D., 1-3/8" I.D. sampler, at 2-1/2 and / or 5-foot depth intervals, driven by means of a 140 - pound drop-hammer with a free fall of 30 inches. The number of blows required to drive the sampler 12 inches is considered the standard penetration test.

Drive-press sample borings are made by means of a rotary-type drill rig, employing a 2" O.D., 1-3/8" I.D. drive sampler, and 3" O.D. thin-wall press sampler. The press sampler is advanced by continuous uniform pressure, applied by the drill rig.

The boring log sheets show a graphic plot of the information obtained, including depth and elevation of the sample, number of blows for the standard penetration tests in two 6-inch increments, depth of press samples, field sample number, sample description, based on laboratory tests and the Casagrande AC classification system-and gradation, plasticity, and moisture content determinations. Results of strength and consolidation testing, if performed, appear on separate enclosures.

At depths where materials are bouldery or gravelly to the extent that the sampler can not be driven, a wash sample is procured for visual classification, in order to determine the general character of the material. These samples are not considered sufficiently representative to warrant laboratory testing.

Particle Size Definitions

Boulders	Cobbles	Gravel	Coarse Sand	Fine Sand	Silt	Clay
12"	3"	2.0mm (No. 10 sieve)	0.42mm (No. 40 sieve)	0.074mm (No. 200 sieve)	0.005mm	

LOG OF BORING

Date Started 7-31-69 — Sampler Type SS — Dia 1 3/8" — Water Elev —
Date Completed 7-31-69 — Casing: Length 20' — Dia 3 1/2"
Boring No. B-1 — Station & Offset 0+43, 25' Lt. (Pedestrian Overpass) — Surface Elev. 782.0'

Elev.	Depth	Std. Pen. (ft)	Rec. ft	Loss ft	Description	Sample No.	% Agg	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class.
782.0	0														
	2														
777.0	4														
	6	15/19			Brown Sandy Clay	1	14	7	12	23	44	28	11	14	A-6a
	8														
772.0	10														
	12	17/29			Brownish-Gray Gravelly Sandy Silt	2	15	9	10	24	42	26	9	15	A-4a
	14														
767.0	16	23/25			Gray Sandy Silt	3	14	11	12	29	34	23	7	13	A-4a
	18														
762.0	20	50*/ (0.1')			TOP OF ROCK										
	22		1.0	4.0	Sandstone, gray, medium-firm, friable, slightly argillaceous, highly broken and fragmentive, thin-bedded. Core Loss 71%.										
	24														
	26														
	28		2.3	2.7											
	30														
	32		1.0	4.0											
747.0	34				BOTTOM OF BORING										

*Refusal

LOG OF BORING

Date Started 7-29-69 — Sampler Type SS — Dia 1 3/8" — Water Elev —
Date Completed 7-30-69 — Casing: Length 24.5' — Dia 3 1/2"
Boring No. B-3 — Station & Offset 3+17, CL (Pedestrian Overpass) — Surface Elev. 781.0'

Elev.	Depth	Std. Pen. (ft)	Rec. ft	Loss ft	Description	Sample No.	% Agg	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class.
781.0	0														
	2														
	4														
776.0	6	15/16			Brown Sandy Clay	1	12	6	11	26	45	30	16	19	A-6b
	8														
771.0	10														
	12	50/* (0.8')			Brown Gravelly Sandy Clay	2	16	6	12	26	40	27	11	17	A-6a
	14														
766.0	16	50/* (0.7')			Gray Sandy Gravelly Silt	3	20	8	10	30	32	22	8	12	A-4a
	18														
761.0	20														
	22	50/* (0.4')			Gray Silty Gravelly Sand	4	25	11	31	15	18	NP	NP	12	A-3a
	24	50/*			TOP OF BROKEN ROCK										
756.0	26	(0.6')			Bedrock (Driller's Description) TOP OF ROCK										
	28		2.5	2.5											
	30														
	32		4.2	0.8	Sandstone, gray, medium-firm to firm, slightly friable, argillaceous in part, fine-grained. Interbedded with shale seam from elevation 744.5 to elevation 745.0. Core Loss 27%.										
	34														
	36														
	38		4.2	0.8											
741.0	40				BOTTOM OF BORING										

*Refusal

NOTE: Information shown by this subsurface investigation was obtained solely for the use in establishing design controls for the project. The State of Ohio does not guarantee the accuracy of this data and it is not to be construed as a part of the plans governing construction of the project.

OHIO DEPARTMENT OF HIGHWAYS
TESTING LABORATORY
1620 WEST BROAD STREET, COLUMBUS, OHIO 43223

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. CUY-480-0127
PEDESTRIAN OVERPASS
SEC. CUY-480-0.00

CHECKED BY	REVIEWED BY	DATE
R.D.R.	G.P.H.	8/21/69