

RECORDED
INDEXED

GEOLOGY OF THE SITE

The structure site is located on the relatively flat portion of the glaciated Lake Plain Region, presently being incised by Big Creek, in an area where moderately deep glacial-derived soils overlie shale bedrock, of Mississippian age.

EXPLORATION

The exploration consisted of one drive sample boring and one drive sample-core boring, made between June 3 and 9, 1965, and four drive rod penetration tests, made on July 28, 1965.

INVESTIGATIONAL FINDINGS

The borings encountered unstratified intervals of very dense gravely sandy silts and gravels with large and intermediate sized boulders. Boring B-4 was terminated at 21-foot depth, elevation 754 feet, after penetrating 3 feet of boulders. Boring B-1 was terminated after penetrating 8 feet below bedrock surface, elevation 740 feet.

Rod soundings met gradual increase in penetration resistance with increase in depth and were terminated upon encounter with refusal to penetration 10 to 17 feet below ground surface, elevations 760 to 752 feet, considered to be in very dense gravely sandy silt and boulders, as revealed by the borings.

Free water was observed in the majority of the rod sounding holes, between elevations 767 and 764 feet.

- 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
- Top of Rock

- Coal
- Weathered Indurated Clay
- Indurated Clay
- Weathered Shale
- Shale
- Boulders and/or Cobbles

SYMBOLS OF ROCK TYPES

- Weathered Sandstone
- Sandstone
- Leached Dolomite
- Dolomite
- Leached Limestone
- Limestone

LEGEND

- Horizontal Bar on Boring Log Indicates the Depth the Sample Was Taken.
- 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.

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.

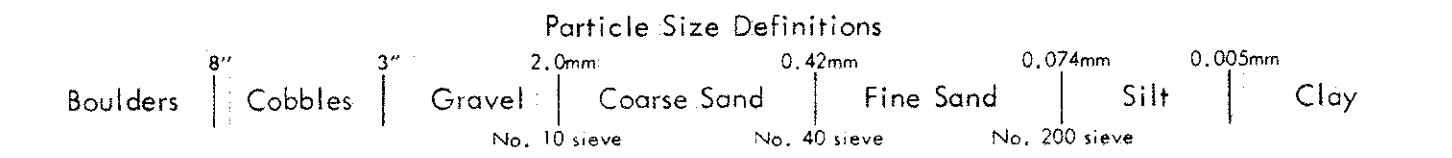
Drive Sample Borings - Drive-Press Sample Borings

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 gravely 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.



LOG OF BORING

Date Started 6-8-65 Sampler Type SS Dia. 1 3/8" Water Elev. _____
 Date Completed 6-9-65 Casing Length 7' Dia. 3 1/2"
 Boring No. B-1 Station & Offset 516+69, 22' Rt (Rear Abutment) Surface Elev. 774.7'

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	Physical Characteristics							SHTL Class.			
							% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.		W.C.		
774.7	0																
772.2	2	25/25			Gray Silty Sandy Gravel	1	48	12	10	20	10	HP	HP	5			
769.7	4																
767.7	6	24/19			Gray Silty Gravel	2	62	9	5	16	8	HP	HP	8			
	8																
	10																
	12																
	14																
759.7	16	50/*			Gray Gravely Silt	3	54	1	1	25	19	28	6	21			
757.2	18	50/*			Gray Silty Gravel	4	59	8	3	21	9	22	4	10			
754.7	20	50/*			Gray Clay and Stone Fragments	5	53	2	1	21	23	34	15	16			
	22																
	24																
	26																
747.7	28		4.4	0.6	TOP OF ROCK												
	30				Shale, black, carbonaceous, fissile, medium-firm, jointed and badly broken. Core loss 16%.												
	32																
	34		3.7	1.3													
739.7					BOTTOM OF BORING												

Sandstone (gray, very fine-grained, hard) and shale (black, carbonaceous) boulders, cobbles, and fragments. *

**Possible bedrock, drillers called them boulders.

LOG OF BORING

Date Started 6-3-65 Sampler Type SS Dia. 1 3/8" Water Elev. _____
 Date Completed 6-4-65 Casing Length 15' Dia. 3 1/2"
 Boring No. B-4 Station & Offset 517+23, 19' Lt (Forward Abutment) Surface Elev. 774.8'

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	Physical Characteristics							SHTL Class.			
							% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.		W.C.		
774.8	0																
772.3	2	11/32			Gray Clayey Silt	1	7	5	7	41	40	27	9	23			
769.8	4																
767.3	6	29/32			Gray Sandy Gravely Silt	2	31	9	12	28	20	22	7	11			
	8																
764.8	10	25/30			Gray Gravely Sandy Silt	3	27	13	14	31	15	20	3	11			
762.3	12	30/48			Gray Sandy Gravely Silt	4	39	12	8	29	12	HP	HP	9			
	14	50/*			Gray Sandy Gravely Silt	5	36	8	8	35	11	HP	HP	11			
759.8	16	50/*			Gray Sandy Silt with Stone Fragments	6	31	14	11	29	15	HP	HP	10			
	18																
756.1	20		2.3	0.0	Sandstone boulders and cobbles, gray, with some clay.												
753.8					BOTTOM OF BORING												

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.

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STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. CUY-1R80-0930
OVER WEST BRANCH OF BIG CREEK
SEC. CUY-1R80-8.54

CHECKED BY R.H.P.	REVIEWED BY R.D.R.	DATE 8/12/65
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