AB12...

GEOLOGY OF THE SITE

INVESTIGATIONAL FINDINGS

"Refusel

EXPLORATION

AREA WHERE SHALLOW GLACIAL TILL OVERLIES SHALE BEDROCK, OF DEVONIAN AGE.

CREASING DEPTH. AND WERE TERMINATED DUE TO RATHER ABBUPT REPUSAL TO PENETRATION AT 12 TO 27-POOT DEPTHS, ELEVATIONS 750 TO 740 FEET, CONSIDERED TO BE IN THE

VERY DENSE MATERIAL ABOVE BEDROCK SURFACE, AS REVEALED BY THE BORINGS.

PENETRATION TESTS, MADE RETWEEN PERSUARY 14 AND MARCH 5, 1968.

TO 712 FRET. AFTER PENETRATING 5 TO 15 FRET OF REDROCK.

NO FREE WATER WAS OBSERVED IN ANY OF THE ROD SCUNDING HOLES.

TE - 118 600 - 4 - 66

25

## THE STRUCTURE SITE IS LOCATED ON A PORTION OF THE GLACIATED LAKE PLAIN, IN AN THE EXPLORATION CONSISTED OF TWO DRIVE SAMPLE-CORE BORINGS AND FIVE DRIVE ROD BORINGS DISCLOSED MEDIUM-DENSE TO VERY DENSE SILTS, SANDS, AND GRAVELS, AND VERY STIFF CLAYS TO REDROCK SURPACE, ENCOUNTERED AT 35 TO 45-FOOT DEPTHS. ELEVATIONS 727 AND 725 FEET. THE BORINGS WERE TERMINATED AT 50-FOOT DEPTH. ELEVATIONS 720 THE ROD SOUNDINGS ENCOUNTERED RAPID INCREASE IN PENETRATION RESISTANCE WITH IN-

Indurated Clay

Weathered Shale

Shale

Boulders

Horizontal Bar on Boring Log Indicates Auger Boring Location - Plan View. the Depth the Sample Was Taken. Press and / or Drive Sample and / or Core Boring Location - Plan View. Figures Beside the Boring Log in Profile Indicate the Number of Blows for Standard Drive Rod Penetration Resistance Penetration Test. Sounding Location - Plan View. 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. Top of Rock Resistance "R" > 10.000 lbs. Indicates Final Measurement of Penetration, in Inches.

LEGEND

Indicates Static Water Elevation. SYMBOLS OF ROCK TYPES Weathered Sandstone Sandstone Weathered Indurated Clay

Leached Dolomite

Particle Size Definitions Boulders Cobbles Gravel Coarse Sand Fine Sand Silt Clay

GENERAL INFORMATION

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 High-

ways, Bureau of Bridges, on the basis of correlation study of rod penetration with past perform-

ance 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

Drive sample borings are made by means of a rotary-type drill rig, employing g 2" O.D.,

1-3/8" J.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

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 ad-

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 lab -

oratory tests and the Casagrande AC classification system-and gradation, plasticity, and moisture content determinations. Results of strength and consolidation testing, if performed, appear

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

overall uniformity of subsurface condition may be evaluated.

sampler 12 inches is considered the standard penetration test.

vanced by continuous uniform pressure, applied by the drill rig.

Drive Sample Borings - Drive-Press Sample Borings

on separate enclosures.

warrant laboratory testing.

Drive Rod Penetration Sounding Tests

LOG OF BORING Sampler Type SS Dia. 1 3/8" Casing: Length 451 Dia. 3 1/2" Station & Offset 68+89, 24' Lt. (Rear Pier) Surface Elev. 769.81 Elev. Depth Std. Pen. Rec. Loss ft. 769.8 0 Sample Physical Characteristics SHTL No. Agg. C.S. F.S. Silt Clay L.L. P.I. W.C. Class. Description 764.8 Brown Sandy Gravel 759.8 10 2 23 21 22 15 19 23 6 18 4-2-4 Brownish-Gray Silty Gravelly Sand 754.8 11 7 12 28 42 27 9 14 4-44 Gray Sandy Silt 20 22 24 26 749.8 4 12 7 11 35 35 20 8 13 A-4a Gray Sandy Silt 744.8 Gray Sandy Silt 5 6 7 12 46 29 22 5 12 A-4a 28 742.3 6 14 11 13 36 26 20 3 12 4-44 Gray Sandy Silt 30 739.8 7 | 17 | 12 | 12 | 22 | 37 | 25 | 8 | 13 | A-4a Gray Gravelly Sandy Silt 8 11 9 11 33 36 27 8 12 4-4 Gray Sandy Silt 34 Gray Clay 4 2 3 19 72 45 21 26 4-7-6 36 40 729.8 0 1 1 15 83 55 29 36 4-7-6 44 TOP OF ROCK Shale, dark-gray, firm, carbonaceous and fissile, with a badly broken interval and clay seems between 45.7' and 47.0', broken and jointed in remainder. Core Loss 25.

\*\*BOTTOM OF BORING\*\* 48

Elev.	Depth	Std. Pen. (N)	Rec.	Loss	Description	Sample	Physical Characteristics SHTL							
762.1	0	LN)	11.	I	5	No.	Agg.	×5.	F.S.	Silt Cio	, LL	PI.	W.C.	
				<u> </u>		****								7
757.1	2				· A									
	4					• .					ļ.			
	6	16/11			Brown Sandy Silt	1	11	5	12	37 35	28	9	15	A-4
	8													
750 T								1						
752.1	10	11/16			Gray Gravelly Silt	2	25	4	9	23 39	30	10	16	A-di
	12													
	14	•												
47.1	16	22/26			Gray Gravelly Sandy Silt	3	15	7	11	39 28	23	4	13	4-4
	18													
							•	,	ŀ			r		,
742.1	-20	10/16			Gray Sandy Silt	4	11	7	9	36 37	26	7	14	A-6
739.6	22					,					,			
	24	10/12			Gray Silt and Glay	-5	7	2	3	23 65	40	12	25	A-6
37.1	26	6/10			Gray Silty Clay	6	0	1	1	21 77	45	16	27	A-7
134.6	28						.	_					, S	
		8/12			Gray Clay	7	0	0	0	18 82	53	23	30	A-7
732.1	30	8/12	1		Gray Silty Clay	8	0	0	1	11 88	46	16	32	A-7
29.6	32													
	34	9/13			Gray Silty Clay	9	0	1	1	14 84	48	17	28	A-7
27.1	36	30/*			Gray Weathered Shale	10	49	8	8	18 17	27	7	16	Vi.
24.6														
i Ti			2.5	2.0	200 OF BOOK		•	•		· · · · · · · · · · · · · · · · · · ·				11: <del>12</del>
فده خانبه	40	i Lieran sa				- <u></u>	. <del>* •==</del> =	.क च्य्ह्यंत्र	نا ميج عد		<del>line gaile sci</del>		i ang anggang ng Agasin	rripaceure se
	42													
	44		5.0	0.0	Shale, dark-gray, carbonaceous, firm, fissile, b	roken e	and je	int	ed.		.*			
	46	1			No Core Loss.									
	·									. :	ı			
	48		5.0	0.0					1					

Indicates Free Water Elevation.

NOTE: Information shown by this subsurface investigation was obtained solely he use in establishing design controls for the project. The State of Ohio does no varantee the accuracy of this data and it is not to be construed as a part of the lans governing construction of the project.

OHIO DEPARTMENT OF HIGHWAYS TESTING LABORATORY 1620 WEST BROAD STREET, COLUMBUS 23, OHIO

STRUCTURE FOUNDATION INVESTIGATION BRIDGE NO. CUY-80- RELOCATED SR 252 OVER PROPOSED IR 80 CUY-80-1.90

SEC.

CHECKED BY REVIEWED BY R.D.R

DATE 3/14/68