GENERAL INFORMATION

INTRODUCTION

THE PROJECT CONSISTS OF THE RELOCATION OF 2.12 MILES OF SR 29 AND 2.03 MILES OF USR 33. THE SR 29 RELOCATION BEGINS AT THE MERCER-AUGLAIZE COUNTY LINE, APPROXIMATELY 0.5 MILE NORTH OF EXISTING SR 29, EXTENDS EASTWARD AND TERMINATES AT EXISTING USR 33, APPROXIMATELY 1 MILE NORTHWEST OF ST. MARYS, USR 33 RELOCATION BEGINS AT THIS POINT AND EXTENDS EASTWARD AND TERMINATES 0.18 MILE EAST OF SR 66 APPROXIMATELY 0.2 MILE NORTH OF ST. MARYS.

PROPOSED GRADE INDICATES MAXIMUM PROPOSED 12-FOOT CUTS AND 12-FOOT FILL EMBANKMENTS.

GEOLOGY OF THE PROJECT

THE ALIGNMENT TRAVERSES A PORTION OF THE WABASH MORAINE, IN AN AREA WHERE DEEP MORAINAL DEPOSITS OVERLIE COLOMITE BEDROCK, OF SILURIAN AGE.

EXPLORATION

EXPLORATORY BORINGS WERE MADE BY MEANS OF TRUCK-MOUNTED MECHANICAL SOIL AUGER, BETWEEN JULY 17 AND 25, 1967.

INVESTIGATIONAL FINDINGS

MATERIALS ENCOUNTERED ON THE PROJECT WERE PREDOMINANTLY COMPRISED OF SILT CLAYS (A-6a AND A-6b), WITH OCCASIONAL SANDY SILTS (A-4a) AND CLAYS (A-7-6), GENERALLY HAVING LOW MOISTURE CONTENTS AND MOISTURE CONTENTS BELOW THE PLASTIC RANGE.

WET MATERIALS WERE ENCOUNTERED AT STATIONS 144+50 AND 214+65.

MATERIALS CONTAINING ORGANIC MATTER WERE ENCOUNTERED AT STATIONS 203+50 AND 214+65.

ELASTIC CLAYS WERE ENCOUNTERED AT STATIONS 203+50 TO 209+32.

LEGEND FOR PROJECT AVERAGE RESULTS OF TESTS — 186 SAMPLES TESTED

DESCRIPTION	H.R.B. CLASS	OHIO CLASS	% AGG.	% C. SAND	% F. SAND	% SILT	% CLAY	LIQUID LIMIT	PLASTICITY INDEX	WATER CONTENT	SAMPLES TESTED
GRAVEL WITH SAND	A-1-b(0)	A-1-b	41	23	20	-	16	NP	NP	15	4
SANDY SILT	A-4(4)	A-4a	14	9	20	30	27	24	6	12	10
SILT	A-4(8)	A-4b	1	3	4	52	40	12	3	15	2
SILT AND CLAY	A-6(9)	A-6a	5	5	12	31	47	31	12	15	133
SILTY CLAY	A-6(11)	A-6b	4	4	12	30	50	37	17	14	22
ELASTIC CLAY	A-7-5(14)	A-7-5	0	4	22	32	42	51	20	24	3
CLAY	A-7-6(13)	A-7-6	4	5	11	28	52	43	21	18	9

SOD AND/OR TOPSOIL=X'=APPROXIMATE DEPTH.

AUGER BORING-PLAN VIEW.

AUGER BORING PLOTTED TO VERTICAL SCALE ONLY.

WATER CONTENT NEARLY EQUAL TO OR GREATER THAN LIQUID LIMIT.

FREE WATER.

NOTE: FIGURES BESIDE BORINGS INDICATE WATER CONTENT IN PERCENT. E.G. 15.

F-629(12)

SOIL PROFILE

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AUGLAIZE COUNTY
AUG-29 & 33-(1.04)(2.71)

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OHIO STATE HIGHWAY TESTING LABORATORY
1620 W BROAD ST. COLUMBUS 23. OHIO

NOTE: INFORMATION SHOWN BY THIS SUBGRADE PROFILE WAS OBTAINED SOLELY FOR 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.

LOCATION MAP

Recon. - J.F.S. - 6/29/67
Drilling - Auger - 7/17/67 to 7/25/67
Drafting - E.J.S. - 12/18/67

MICROFILMED
JAN 17 1968

SOIL PROFILE
AUGLAIZE COUNTY
AUG-29&33-(104)(2.71)

OHIO STATE HIGHWAY TESTING LABORATORY
1620 W BROAD ST COLUMBUS 23 OHIO

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SUMMARY OF SOIL TEST DATA

NOTE NP SHOWN IN LIQUID LIMIT AND PLASTICITY INDEX COLUMNS INDICATES THAT THE MATERIAL IS NON-PLASTIC
*DENOTES SAMPLE TAKEN AT OR NEAR GRADE

STATION & OFFSET	DEPTH FROM	TO	% AGG	% C S	% F S	% SILT	% CLAY	LL	PI	% W C	SHTL CLASS
0+75 CL	0	5-2 0	0	4	12	47	37	37	11	9	A-6a*
	2	0-7 0	9	8	17	36	30	23	7	14	A-4a
	7	0-10 0	0	5	15	36	44	29	11	15	A-6a
9+00 90'Lt	0	5-2 0	0	5	11	35	51	40	18	13	A-6b
	2	0-7 0	7	3	10	32	48	41	24	19	A-7-6
	7	0-10 0	11	5	11	30	43	43	27	14	A-7-6
14+00 90'Lt	0	5-2 0	0	3	10	46	41	27	11	8	A-6a
	2	0-7 0	0	4	12	32	52	31	11	8	A-6a
	7	0-11 0	8	7	14	37	34	25	11	15	A-6a
	11	0-15 0	6	6	11	36	41	25	11	15	A-6a
19+00 85'Lt	0	5-3 0	0	3	10	34	53	39	17	16	A-6b
	3	0-8 0	8	4	12	32	47	35	17	18	A-6b
	8	0-10 0	0	5	13	33	49	32	13	19	A-6a
23+00 85'Lt	0	5-2.0	0	3	12	34	51	37	18	12	A-6b*
	2	0-7 0	0	6	17	30	47	27	12	12	A-6a
	7	0-10 0	7	6	12	27	48	32	16	12	A-6b
27+00 85'Lt	0	5-5.0	0	3	13	34	50	37	18	15	A-6b*
	5	0-10 0	9	5	11	29	46	32	16	15	A-6b
30+08 10'Rt	0	5-1 0	23	5	11	30	31	37	13	9	A-6a*
	1	0-6 0	0	4	12	52	32	35	15	18	A-6a*
	6	0-10 0	0	5	11	31	53	33	14	17	A-6a
35+00 CL	0	5-1 0	0	4	13	43	40	36	11	23	A-6a*
	1	0-6 0	0	4	12	35	49	30	11	14	A-6a*
	6	0-10 0	14	5	14	30	36	25	11	14	A-6a
40+00 CL	0	5-1 0	3	6	12	35	44	32	11	12	A-6a
	1	0-6 0	0	3	11	31	55	34	12	13	A-6a
	6	0-9 0	0	3	9	35	53	30	11	18	A-6a
	9	0-14 0	5	6	12	34	43	26	11	14	A-6a
	14	0-15 0	7	5	11	34	43	25	11	16	A-6a
44+50 CL	0	5-5.0	0	1	7	29	63	40	15	27	A-6a
	5	0-10 0	0	3	10	32	55	37	14	34	A-6a
	10	0-15 0	0	7	15	37	41	21	11	16	A-6a
50+00 CL	0	5-2 0	0	4	13	36	47	33	11	12	A-6a
	2	0-7.0	0	4	12	27	57	29	12	13	A-6a
	7	0-10 0	10	4	10	24	52	28	11	15	A-6a
	10	0-15 0	4	4	11	32	49	31	13	12	A-6a
55+50 CL	0	5-1 0	0	3	11	37	49	36	15	17	A-6a
	1	0-6 0	0	3	8	31	58	38	10	20	A-6b
	6	0-11 0	13	6	13	40	22	27	10	14	A-6a
	11	0-15 0	0	4	12	31	53	30	14	17	A-6a
60+00 CL	0	5-4 0	0	3	10	26	61	43	23	12	A-7-6
	4	0-7 0	0	2	6	21	71	44	23	16	A-7-6
	7	0-10 0	0	4	10	31	55	35	16	14	A-6b
61+50 CL	0	5-3 0	5	4	11	30	50	37	15	15	A-6a*
	3	0-5 0	8	4	11	25	52	36	16	16	A-6b*
	5	0-8 0	0	13	42	14	31	24	10	19	A-4a
	8	0-13 0	16	4	10	25	45	32	12	15	A-6a
63+00 CL	0	5-3 0	0	4	15	30	51	31	14	12	A-6a
	3	0-8 0	8	5	10	24	53	42	24	14	A-7-6
	8	0-13 0	7	4	11	26	52	37	17	15	A-6b
	13	0-18 0	6	5	11	26	52	36	17	14	A-6b
64+50 CL	0	5-4 0	0	3	12	34	51	36	14	11	A-6a
	4	0-9 0	0	4	10	26	60	38	18	12	A-6b
	9	0-12 0	12	6	12	24	46	36	17	14	A-6b
67+50 CL	0	5-2 0	6	4	10	31	52	43	21	12	A-6a*
	2	0-7 0	6	5	12	34	46	32	13	13	A-6a*
	7	0-10 0	6	5	10	28	51	36	14	17	A-6a
72+00 CL	0	5-1 0	0	3	12	37	48	36	16	13	A-6b
	1	0-6 0	6	4	11	29	51	31	13	11	A-6a
	6	0-8 0	5	5	11	32	47	32	14	14	A-6a
	8	0-13 0	13	8	16	27	36	23	8	13	A-4a
	13	0-15 0	6	6	17	32	35	23	8	14	A-4a
77+00 85'Rt	0	5-5 0	0	2	9	36	53	38	12	21	A-6a
	5	0-10 0	4	6	12	31	47	33	11	17	A-6a
	10	0-15 0	5	5	4	38	48	31	11	13	A-6a
82+00 85'Rt	0	5-5 0	0	2	10	29	59	38	14	17	A-6a
	5	0-8 0	0	5	14	31	49	31	11	14	A-6a
	8	0-10 0	5	4	11	34	45	33	11	23	A-6a
86+00 85'Rt	0	5-5 0	0	1	4	36	59	39	15	20	A-6a
	5	0-10 0	4	5	11	29	51	31	11	9	A-6a
	10	0-15 0	9	5	10	28	48	30	11	15	A-6a
89+75 85'Rt	0	5-5 0	0	2	9	26	63	42	16	12	A-7-6
	5	0-10 0	10	5	11	27	47	32	11	15	A-6a
	10	0-15 0	13	5	11	28	43	27	11	14	A-6a
94+00 CL	0	5-5 0	8	5	12	29	55	32	11	12	A-6a
	5	0-10 0	16	3	10	29	42	27	11	15	A-6a
98+00 CL	0	5-5 0	0	3	10	32	55	39	18	16	A-6b*
	5	0-10 0	4	5	11	29	51	31	11	15	A-6a
102+00 CL	0	5-5 0	4	4	12	31	49	31	12	13	A-6a
	5	0-10 0	4	5	11	29	51	33	14	15	A-6a
106+55 CL	0	5-5 0	6	3	11	34	46	36	17	16	A-6b
	5	0-10 0	5	5	11	27	52	30	12	15	A-6a
111+00 CL	0	5-5 0	3	6	11	27	53	32	12	15	A-6a
	5	0-10 0	6	6	12	24	52	29	11	12	A-6a
	10	0-15 0	0	5	12	27	56	28	11	15	A-6a
	15	0-20 0	6	5	11	27	51	33	13	13	A-6a
	20	0-25 0	5	5	11	28	51	31	14	15	A-6a
	25	0-30 0	6	5	11	33	48	31	12	15	A-6a
145+82 CL	0	5-5 0	26	6	11	20	37	40	15	19	A-6a
	5	0-10 0	6	10	19	26	39	34	14	26	A-6a
152+00 CL	0	5-3 0	4	4	14	29	49	34	11	14	A-6a
	3	0-8 0	5	5	12	28	50	32	12	14	A-6a
	8	0-10.0	6	5	12	26	51	32	13	15	A-6a
162+00 CL	0	5-5 0	3	4	9	45	39	32	12	13	A-6a*
	5	0-10 0	4	5	12	29	50	28	11	14	A-6a
166+00 CL	0	5-5 0	6	5	13	31	44	27	11	13	A-6a*
	5	0-8 0	0	12	20	31	37	25	8	12	A-4a
	8	0-10 0	28	3	24	32	13	NP	NP	7	A-4a
168+00 CL	0	5-5 0	0	4	13	28	55	34	11	19	A-6a
171+00 CL	0	5-5.0	3	4	12	30	48	32	11	14	A-6a
	5	0-10 0	5	5	11	29	50	29	11	16	A-6a
180+00 CL	0	5-5 0	0	4	12	25	59	35	13	16	A-6a
	5	0-8 0	4	5	12	35	43	30	11	15	A-6a
	8	0-13 0	9	5	11	27	48	27	11	13	A-6a
	13	0-15 0	5	5	11	30	49	26	11	15	A-6a
186+00 CL	0	5-5 0	0	3	9	33	55	35	13	14	A-6a*
	5	0-10.0	8	6	13	27	46	29	11	14	A-6a*
	10	0-14.0	5	7	16	26	44	28	11	14	A-6a
	14	0-19.0	4	5	12	30	49	29	12	15	A-6a
	19	0-24 0	6	5	13	29	47	30	11	15	A-6a
	24	0-28.0	5	5	13	17	29	36	25	9	15	A-4a
	28	0-30.0	6	6	12	29	47	28	11	15	A-6a
189+00 CL	0	5-5 0	3	4	11	33	49	32	12	10	A-6a*
	5	0-10 0	9	5	11	30	45	32	15	15	A-6a*
195+10 CL	0	5-5 0	0	4	12	28	56	36	12	16	A-6a*
	5	0-10 0	7	5	12	26	50	33	13	12	A-6a*
	10	0-15 0	6	5	12	33	44	30	11	15	A-6a
	15	0-20 0	6	6	12	32	44	30	11	17	A-6a
	20	0-25.0	6	8	7	23	51	33	14	19	A-6a
	25	0-30.0	2	1	1	51	45	25	6	12	A-4b
201+00 CL	0	5-5 0	4	6	13	31	46	30	12	13	A-6a
	5	0-10 0	10	5	12	27	46	28	11	14	A-6a
	10	0-15 0	13	5	11	27	44	32	12	14	A-6a*
	15	0-20.0	5	5	11	31	47	32	11	14	A-6a*
	20	0-25 0	8	5	11	34	42	27	11	15	A-6a
	25	0-28 0	7	6	13	29	45	25	11	12	A-6a
	28	0-30 0	47	18	14	- 21 -		NP	NP	10	A-1-b
203+50 CL	0	5-2 0	0	1	13	43	43	37	14	17	A-6a
	2	0-7 0	0	1	37	33	29	26	14	19	A-6a
	7	0-8 0	0	8	49	24	19	61	31	32	A-7-5
	8	0-13 0	28	10	16	27	19	30	15	13	A-5a
	13	0-17 0	23	12	17	29	19	NP	NP	9	A-4a
	17	0-20 0	44	7	9	17	23	34	11	13	A-5a
209+32 CL	0	5-2 0	0	1	6	39	54	48	16	20	A-7-5
	2	0-6 0	0	2	10	35	53	45	14	20	A-7-5
	6	0-8 0	0	1	24	37	38	34	13	26	A-6a
	8	0-12 0	0	7	15	37	41	24	11	16	A-6a
	12	0-17 0	21	10	17	31	21	19	5	14	A-4a
	17	0-20 0	0	6	10	30	48	28	11	13	A-6a
214+65 CL	0	5-2 0	0	5	7	52	36	NP	NP	18	A-4b
	2	0-5 0	0	7	22	15	56	39	13	15	A-6a
	5	0-10 0	0	3	9	38	50	30	11	33	A-6a
	10	0-15 0	0	17	25	36	22	43	17	31	A-7-6
	15	0-17 0	40	21	15	3	21	NP	NP	17	A-1-b
	17	0-22 0	11	9	17	31	32	26	11	13	A-4a
	22	0-26 0	43	8	13	21	15	21	5	13	A-4a
	26	0-30 0	24	11	19	33	13	NP	NP	11	A-4a
217+10 CL	0	5-2.0	0	3	14	32	51	34	14	15	A-6a
	5	0-10 0	0	5	11	33	51	38	15	14	A-6a*
	10	0-14 0	10	4	10	29	47	29	11	15	A-6a*
	14	0-19 0	0	5	12	32	51	34	16	14	A-6b
	19	0-21 0	7	5	11	32	45	31	12	13	A-6a
	21	0-26 0	38	28	25	- 9 -		NP	NP	12	A-1-b
	26	0-28 0	40	28	26	- 8 -		NP	NP	12	A-1-b
	28	0-30 0	16	13	17	29	25	36	18	12	A-6b
219+00 CL	0	5-5 0	5	5	11	32	47	33	11	13	A-6a
	5	0-10 0	0	5	12	34	49	32	14	14	A-6a*
222+00 CL	0	5-5 0	0	4	11	33	52	37	13	13	A-6a*
	5	0-10 0	0	5	12	33	50	32	11	13	A-6a*
	10	0-15 0	0	5	11	37	47	31	11	14	A-6a
	15	0-20 0	4	5	11	35	45	31	12	13	A-6a
226+50 CL	0	5-5 0	0	4	11	34	51	39	13	13	A-6a
	5	0-10 0	0	5	13	32	49	38	14	15	A-6a
229+00 CL	0	5-5 0	0	3	11	31	55	39	16	10	A-6b*
	5	0-10 0	0	5	13	32	50	40	20	13	A-6b*
	10	0-13 0	0	5	12	34	49	34	12	15	A-6a
	13	0-15 0	10	4	11	33	42	32	13	14	A-6a
235+36 CL	0	5-5 0	0	4	14	33	49	34	14	11	A-6a*
	5	0-10 0	0	5	10	36	49	34	11	14	A-6a
237+00 CL	0	5-5 0	9	1	9	27	54	44	17	27	A-7-6
	5	0-6 0	28	12	12	17	31	34	13	20	A-6a
	6	0-8 0	6	5	12	29	48	34	12	17	A-6a
	8	0-12 0	5	5	11	31	48	26	11	10	A-6a
	13	0-15 0	9	5	10	33	43	25	11	17	A-6a
242+00 CL	0	5-5 0	2	4	11	31	52	34	11	15	A-6a
	5	0-10 0	6	6	11	29	48	33	11	14	A-5a*
	10	0-15.0	5	6	18	31	40	28	11	23	A-6a*
	15	0-20 0	4	6	12	28	50	30	11	15	A-6a
246+50 CL	0	5-5 0	4	3	14	33	46	38	13	19	A-6a
	5	0-10 0	5	4	11	32	48	32	11	16	A-6a
248+50 CL	0	5-5 0	0	4	20	42	34	26	7	16	A-4a*
	5	0-10 0	4	6	11	31	48	30	11	15	A-6a*
	10	0-15 0	21	4	9	28	38	33	13	16	A-6a

SOIL PROFILE

AUGLAIZE COUNTY
AUG-29833-(1.04)(2.71)

OHIO STATE HIGHWAY TESTING LABORATORY
1620 W. BROAD ST. COLUMBUS 23, OHIO

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SOIL PROFILE

AUGLAIZE COUNTY

AUG-29 & 33-(104)(2.71)

OHIO STATE HIGHWAY TESTING LABORATORY
1620 W BROAD ST COLUMBUS 23, OHIO

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TE - 127
1800-12-68

SOIL PROFILE

AUGLAIZE COUNTY
AUG-29&33-(1.04)(2.71)

OHIO STATE HIGHWAY TESTING LABORATORY
1620 W. BROAD ST. COLUMBUS, OHIO 43223

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TE - 127
1800-18-68

SOIL PROFILE

AUGLAIZE COUNTY
AUG-29&33-(1.04)(2.71)

OHIO STATE HIGHWAY TESTING LABORATORY
1620 W. BROAD ST. COLUMBUS, OHIO 43223

6/41

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TE - 127
1800-12-66

SOIL PROFILE

AUGLAIZE COUNTY

AUG-29&33-(1.04)(2.71)

OHIO STATE HIGHWAY TESTING LABORATORY
1620 W. BROAD ST. COLUMBUS, OHIO 43223

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TE - 127
1800-12-66

SOIL PROFILE

AUGLAIZE COUNTY

AUG-29&33-(1.04)(2.71)

OHIO STATE HIGHWAY TESTING LABORATORY
1620 W. BROAD ST. COLUMBUS, OHIO 43223

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GENERAL INFORMATION

INTRODUCTION

THE PROJECT CONSISTS OF THE CONSTRUCTION OF THE PROPOSED SR 29-KOENIG ROAD INTERCHANGE, THE SR 29-USR 33 INTERCHANGE AND THE SR 29 & USR 33-SR 66 INTERCHANGE. INCLUDED IN THIS REPORT ARE SOIL PROFILES FOR KOENIG ROAD, KOENIG ROAD INTERCHANGE RAMPS A, B, C, AND D, PROPOSED USR 33 (EXISTING), USR 33 INTERCHANGE RAMPS A, B, C, CC, D, E, EE, AND F, RELOCATED SR 66, AND THE SR 66 INTERCHANGE RAMPS A, B, C, D AND E.

FOR MAXIMUM PROPOSED CUTS AND FILL EMBANKMENTS, SEE THE PROJECT INDEX ON THIS SHEET.

GEOLOGY OF THE PROJECT

THE PROJECT IS LOCATED ON THE GLACIATED MISSISSIPPI VALLEY PLAIN, IN AN AREA WHERE MODERATELY DEEP TO DEEP GLACIAL DRIFT OVERLIES DOLOMITE BEDROCK, OF SILURIAN AGE.

EXPLORATION

EXPLORATORY BORINGS WERE MADE BY MEANS OF TRUCK-MOUNTED MECHANICAL SOIL AUGER AND HAND AUGER (IN AREAS OF DIFFICULT ACCESS), ON MAY 10, BETWEEN MAY 15 AND 17, AND ON JUNE 18 AND 19, 1968. INCLUDED IN THIS REPORT ARE LOGS OF BORINGS MADE FOR THE MAINLINE INVESTIGATION AND THE STRUCTURE FOUNDATION INVESTIGATIONS ON THE PROJECT.

INVESTIGATIONAL FINDINGS

MATERIALS ENCOUNTERED ON THE PROJECT WERE PREDOMINANTLY COMPRISED OF SILT CLAYS (A-6a), GENERALLY HAVING MOISTURE CONTENTS IN THE LOWER PORTIONS OF THE PLASTIC RANGE.

ELASTIC CLAY WAS ENCOUNTERED AT KOENIG ROAD INTERCHANGE RAMP C STATION 35+00.

WET MATERIALS WERE ENCOUNTERED AT KOENIG ROAD STATIONS 29+32 AND 31+16, USR 33 (EXISTING) STATION 145+75, AND RELOCATED SR 66 STATION 673+20.

LEGEND FOR PROJECT AVERAGE RESULTS OF TESTS— 156 SAMPLES TESTED

DESCRIPTION	H.R.B. CLASS	OHIO CLASS	% AGG.	% C. SAND	% F. SAND	% SILT	% CLAY	LIQUID LIMIT	PLASTICITY INDEX	WATER CONTENT	SAMPLES TESTED
GRAVEL AND/OR STONE FRAGMENTS	A-1-a(0)	A-1-a	59	20	10	-	11 -	NP	NP	10	-
GRAVEL AND/OR STONE FRAGMENTS WITH SAND	A-1-b(0)	A-1-b	19	47	21	-	13 -	NP	NP	17	-
GRAVEL AND/OR STONE FRAGMENTS WITH SAND AND SILT	A-2-4(0)	A-2-4	36	19	16	12	17	20	7	13	-
SANDY SILT	A-4(8)	A-4a	5	5	13	32	45	27	8	16	5
SILT	A-4(8)	A-4b	0	1	18	64	17	NP	NP	20	-
SILT AND CLAY	A-6(9)	A-6a	6	5	11	29	49	32	12	17	112
SILTY CLAY	A-6(10)	A-6b	4	3	10	30	53	37	17	17	14
ELASTIC CLAY	A-7-5(11)	A-7-5	5	2	9	24	60	47	15	24	2
CLAY	A-7-6(13)	A-7-6	4	2	9	28	57	44	20	22	23
BOULDERY ZONE					VISUAL CLASSIFICATION						-

TOPSOIL=X'=APPROXIMATE DEPTH.

AUGER BORING-PLAN VIEW.

DRIVE SAMPLE BORING-PLAN VIEW.

AUGER BORING PLOTTED TO VERTICAL SCALE ONLY.

DRIVE SAMPLE BORING PLOTTED TO VERTICAL SCALE ONLY.

WATER CONTENT NEARLY EQUAL TO OR GREATER THAN LIQUID LIMIT.

INDICATES A NON-PLASTIC MATERIAL WITH A HIGH WATER CONTENT.

FREE WATER.

NUMBER OF BLOWS FOR "STANDARD PENETRATION" TEST.
X=NUMBER OF BLOWS FOR FIRST 6 INCHES.
Y=NUMBER OF BLOWS FOR SECOND 6 INCHES.

NOTE: FIGURES BESIDE BORINGS INDICATE WATER CONTENT IN PERCENT. E.G. 15

SOIL PROFILE
AUGLAIZE COUNTY
AUG-29-33 (1.04)(2.71)
SUPPLEMENT

OHIO STATE HIGHWAY TESTING LABORATORY
1620 W. BROAD ST. COLUMBUS 23, OHIO

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NOTE: INFORMATION SHOWN BY THIS SUBGRADE PROFILE WAS OBTAINED SOLELY FOR 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.

LOCATION MAP

Recon- L S S 4/24/68
Drilling- Auger J A G, L M D.
5/10/68 to 5/16/68 and 6/18 & 9/68
Drafting- A.F 11/ /68

PROJECT INDEX

STATIONS FROM		TO	PLAN VIEW SHEET	PROFILE SHEET	CUT MAX.	FILL EMB. MAX.
KOENIG ROAD INTERCHANGE						
KOENIG ROAD 14+00	-	44+00	3	4	-	24'
RAMP A 20+00	-	33+00	3	5	-	18'
RAMP B 20+00	-	33+00	3	5	-	21'
RAMP C 30+00	-	42+00	3	5	-	21'
RAMP D 30+00	-	42+00	3	5	-	18'
SR 29-USR 33 INTERCHANGE						
USR 33 (EXISTING) 108+00	-	140+00	7	7		
140+00	-	178+00	8	8		
RAMP A 99+00	-	108+00	6	9		
RAMP B 111+00	-	131+00	6	11		
RAMP C 134+00	-	160+00	6	9		
RAMP CC 133+00	-	140+00	6	9		
RAMP D 126+00	-	144+00	6	11		
RAMP E 96+00	-	122+00	6	10		
RAMP EE 117+00	-	125+00	6	10		
RAMP F 147+00	-	157+00	6	10		
SR 29 & USR 33-SR 66 INTERCHANGE						
RELOCATED SR 66 660+00	-	686+00	12	13	-	18'
RAMP A 227+00	-	239+00	12	14	8'	18'
RAMP B 228+00	-	248+00	12	15	7'	13'
RAMP C 226+00	-	243+00	12	13	8'	20'
RAMP D 230+00	-	251+00	12	14	4'	11'
RAMP E 243+00	-	256+00	12	16	7'	15'

SOIL PROFILE

AUGLAIZE COUNTY
AUG-29-33 (1.04 X 2.71) FAP
SUPPLEMENT

OHIO STATE HIGHWAY TESTING LABORATORY
1620 W BROAD ST COLUMBUS 23 OHIO

SUMMARY OF SOIL TEST DATA

NOTE: NP SHOWN IN LIQUID LIMIT AND PLASTICITY INDEX COLUMNS INDICATES THAT THE MATERIAL IS NON-PLASTIC
*DENOTES SAMPLE TAKEN AT OR NEAR GRADE

STATION & OFFSET	DEPTH FROM	TO	% AGG	% C S	% F S	% SILT	% CLAY	LL	PI	% WC	SHTL CLASS
PROPOSED SR 29 & USR 33											
23+00 85'Lt	0.5	2.0	0	3	12	34	51	37	18	12	A-6b
	2.0	7.0	0	6	17	30	47	27	12	12	A-6a
	7.0	10.0	7	6	12	27	48	32	16	12	A-6b
27+00 85'Lt	0.5	5.0	0	3	13	34	50	37	18	15	A-6b
	5.0	10.0	9	5	11	29	46	32	16	15	A-6b
30+98 10'Rt	0.5	1.0	23	5	11	30	31	37	13	9	A-6a
	1.0	6.0	0	4	12	52	32	35	15	18	A-6a
	6.0	10.0	0	5	11	31	53	33	14	17	A-6a
35+00 CL	0.5	1.0	0	4	13	43	40	36	11	23	A-6a
	1.0	6.0	0	4	12	35	49	30	11	14	A-6a
	6.0	10.0	14	6	14	30	36	25	11	14	A-6a
40+00 CL	0.5	1.0	3	6	12	35	44	32	11	12	A-6a
	1.0	6.0	0	3	11	31	55	34	13	13	A-6a
	6.0	9.0	0	3	9	35	53	30	11	18	A-6a
	9.0	14.0	5	6	12	34	43	26	11	14	A-6a
	14.0	15.0	7	5	11	34	43	25	11	16	A-6a
98+00 CL	0.5	5.0	0	3	10	32	55	39	18	16	A-6b
	5.0	10.0	4	5	11	29	51	31	11	15	A-6a
102+00 CL	0.5	5.0	4	4	12	31	49	31	13	13	A-6a
	5.0	10.0	4	5	11	29	51	33	14	15	A-6a
111+00 CL	0.5	5.0	3	6	11	27	53	32	12	15	A-6a
	5.0	10.0	6	6	12	24	52	29	11	12	A-6a
	10.0	15.0	0	5	12	27	56	26	11	15	A-6a
	15.0	20.0	6	5	11	27	51	33	13	13	A-6a
	20.0	25.0	5	5	11	28	51	31	14	15	A-6a
	25.0	30.0	6	5	11	30	48	31	12	16	A-6a
146+82 CL	0.5	5.0	26	6	11	20	37	40	15	19	A-6a
	5.0	10.0	6	10	19	26	39	34	14	26	A-6a
152+00 CL	0.5	3.0	4	4	14	29	49	34	11	14	A-6a
	3.0	8.0	5	5	12	28	50	32	12	14	A-6a
	8.0	10.0	6	5	12	25	51	33	13	15	A-6a
229+00 CL	0.5	5.0	0	3	11	31	55	39	16	10	A-6b
	5.0	10.0	0	5	13	32	50	40	20	13	A-6b
	10.0	13.0	0	5	12	34	49	34	12	15	A-6a
	13.0	15.0	10	4	11	33	42	32	13	14	A-6a
235+36 CL	0.5	5.0	0	4	14	33	49	34	11	11	A-6a
	5.0	10.0	0	5	10	36	49	34	11	14	A-6a
237+00 CL	0.5	5.0	9	1	9	27	54	44	17	27	A-7-6
	5.0	6.0	28	12	12	17	31	34	13	20	A-6a
	6.0	8.0	6	5	12	29	48	34	12	17	A-6a
	8.0	13.0	5	5	11	31	48	26	11	10	A-6a
	13.0	15.0	9	5	10	33	43	25	11	17	A-6a
242+00 CL	0.5	5.0	2	4	11	31	52	34	11	15	A-6a
	5.0	10.0	6	6	11	29	48	33	11	14	A-6a
	10.0	15.0	5	6	18	31	40	28	11	23	A-6a
	15.0	20.0	4	6	12	28	50	30	11	15	A-6a
246+50 CL	0.5	5.0	4	3	14	33	46	38	13	19	A-6a
	5.0	10.0	5	4	11	32	48	32	11	16	A-6a
248+50 CL	0.5	5.0	0	4	20	42	34	26	7	16	A-4a
	5.0	10.0	4	6	11	31	48	30	11	15	A-6a
	10.0	15.0	21	4	9	28	38	33	13	16	A-6a
KOENIG ROAD INTERCHANGE											
KOENIG ROAD											
15+00 11'Lt	0.0	5.0	8	4	10	29	49	30	11	15	A-6a *
	5.0	10.0	0	5	12	29	54	25	7	16	A-4a
20+00 11'Lt	0.0	5.0	0	1	7	34	58	15	23	21	A-7-6
	5.0	10.0	8	2	10	29	51	37	14	18	A-6a
25+00 11'Lt	0.0	5.0	5	3	10	24	58	44	20	17	A-7-6
	5.0	10.0	6	4	9	29	52	34	14	14	A-6a
35+00 11'Lt	0.0	5.0	0	5	10	33	52	35	14	16	A-6a
	5.0	10.0	7	4	11	27	51	33	12	16	A-6a
40+00 11'Lt	0.0	5.0	0	1	6	33	60	34	16	28	A-7-6
	5.0	10.0	0	2	7	26	65	18	24	24	A-7-6
44+00 11'Rt	0.0	5.0	0	3	9	22	66	40	15	22	A-6a
	5.0	10.0	0	4	10	36	50	32	12	16	A-6a *
RAMP A											
28+00 BL	0.0	5.0	0	3	12	27	58	46	21	18	A-7-6
	5.0	10.0	0	5	16	32	47	33	13	23	A-6a
RAMP B											
28+00 BL	0.0	4.0	6	2	8	25	59	51	23	27	A-7-6
	4.0	10.0	11	1	8	21	59	48	23	23	A-7-6
RAMP C											
35+00 BL	0.0	5.0	0	2	10	27	61	46	14	24	A-7-5
	5.0	10.0	10	2	8	21	59	47	16	23	A-7-5
RAMP D											
35+00 BL	0.8	5.0	0	3	10	26	61	41	15	6	A-7-6
	5.0	10.0	0	2	7	30	61	46	18	23	A-7-6
SR 29 & USR 33 INTERCHANGE											
USR 33 (EXISTING)											
109+00 13'Rt	0.0	5.0	0	3	10	32	55	41	15	21	A-7-6
	5.0	10.0	5	6	11	28	50	36	14	18	A-6a
115+00 13'Rt	0.0	5.0	8	6	13	35	38	26	11	18	A-6a
	5.0	10.0	10	6	11	27	46	32	11	16	A-6a
120+00 13'Rt	0.0	5.0	9	5	11	26	49	32	14	15	A-6a
	5.0	10.0	6	6	12	27	49	31	12	17	A-6a
125+00 13'Rt	0.0	5.0	4	6	11	31	48	30	11	16	A-6a
	5.0	10.0	4	1	11	37	47	30	11	16	A-6a
130+00 18'Rt	0.0	5.0	7	6	13	31	43	30	12	18	A-6a
	5.0	10.0	7	5	13	30	45	29	11	17	A-6a
138+00 18'Rt	0.0	5.0	4	3	10	27	56	41	19	23	A-7-6
	5.0	10.0	7	6	8	28	51	31	12	16	A-6a
156+00 18'Rt	0.0	5.0	8	7	14	28	43	30	11	15	A-6a
	5.0	10.0	6	5	12	31	46	30	11	16	A-6a
161+00 18'Rt	0.0	5.0	10	5	11	29	45	31	11	28	A-6a
	5.0	10.0	7	6	13	37	37	25	11	17	A-6a
166+00 18'Rt	0.0	5.0	9	5	10	30	46	32	12	18	A-6a
	5.0	10.0	6	5	11	28	50	31	12	16	A-6a
171+00 18'Rt	0.0	5.0	6	5	15	42	32	21	3	17	A-4a
	5.0	10.0	7	5	11	26	51	28	11	16	A-6a
176+00 18'Rt	0.0	5.0	7	2	10	26	55	36	15	20	A-6a
	5.0	10.0	11	4	10	27	48	30	11	17	A-6a
RAMP A											
105+00 BL	0.0	2.0	3	5	11	33	48	34	12	16	A-6a
	2.0	7.0	10	5	11	26	48	33	12	15	A-6a
RAMP B											
117+00 BL	0.0	5.0	6	9	14	24	47	45	25	18	A-7-6
	5.0	10.0	10	7	12	28	43	29	14	33	A-6a
122+50 BL	0.0	2.0	4	3	10	31	52	35	13	20	A-6a
	2.0	6.0	4	3	10	28	55	37	12	22	A-6b
	6.0	10.0	5	4	9	29	53	31	12	17	A-6a
RAMP C											
150+00 BL	0.0	4.0	8	2	8	23	59	45	24	23	A-7-6
	4.0	10.0	9	2	7	17	65	42	22	23	A-7-6
RAMP C-C											
135+00 BL	0.0	5.0	8	3	10	28	51	38	17	22	A-6b
	5.0	10.0	7	4	12	29	48	29	9	15	A-4a
RAMP D											
126+50 BL	0.0	2.0	0	2	9	27	62	45	21	22	A-7-6
	2.0	8.0	7	5	11	27	50	27	7	17	A-4a
	8.0	10.0	0	6	11	32	51	28	11	16	A-6a
130+00 BL	0.0	2.0	5	3	11	33	48	41	15	22	A-7-6
	2.0	6.0	2	2	9	33	54	42	21	24	A-7-6
140+00 BL	0.0	3.0	0	2	10	32	56	40	17	22	A-6b
	3.0	7.0		1	6	34	52	43	20	26	A-7-6
RAMP E											
104+50 BL	0.0	2.0	6	2	8	32	52	42	19	23	A-7-6
	2.0	6.0	3	1	7	30	59	47	25	26	A-7-6
110+00 BL	0.0	4.0	3	5	11	30	51	28	11	18	A-6a
	4.0	10.0	8	4	9	24	55	36	16	15	A-6b
115+00 40'Lt	0.0	5.0	6	5	13	36	40	29	11	13	A-6a
	5.0	10.0	9	5	14	28	44	32	12	17	A-6a
RAMP E-E											
120+00 BL	0.0	5.0	3	6	14	34	43	27	11	18	A-6a
	5.0	10.0	7	5	10	27	51	30	12	14	A-6a
RAMP F											
150+00 BL	0.0	5.0	7	6	12	25	50	29	11	13	A-6a
	5.0	10.0	11	5	12	25	47	31	13	15	A-6a
156+00 BL	0.8	5.0	12	3	7	27	51	46	21	25	A-7-6
	5.0	10.0	19	2	2	29	48	40	19	29	A-6b
USR 33 & SR 66 INTERCHANGE											
RELOCATED SR 66											
661+50 24'Rt	0.0	5.0	17	4	10	27	42	35	14	15	A-6a *
	5.0	10.0	8	5	11	28	48	33	12	17	A-6a
665+00 CL	0.0	5.0	6	5	12	25	52	33	11	16	A-6a
	5.0	10.0	8	5	11	24	52	33	12	20	A-6a
669+50 30'Rt	0.8	5.0	0	3	11	28	58	36	11	19	A-6a
	5.0	10.0	8	4	11	29	48	34	14	17	A-6a
	10.0	12.0	7	5	11	26	51	30	11	15	A-6a
	12.0	15.0	6	6	12	24	52	29	11	17	A-6a
680+00 12'Lt	0.0	5.0	6	5	11	26	52	32	11	17	A-6a
	5.0	10.0	8	5	12	22	53	28	11	19	A-6a
685+00 12'Rt	0.0	5.0	5	4	11	30	50	27	11	17	A-6a *
	5.0	7.0	8	5	11	27	49	33	11	17	A-6a
	7.0	10.0	5	5	11	26	53	25	11	15	A-6a
RAMP A											
234+00 BL	0.8	4.0	2	4	11	26	57	37	14	23	A-5a *
	4.0	7.0	4	3	10	26	57	40	17	22	A-6b *
RAMP B											
233+40 BL	0.8	5.0	3	3	17	29	48	36	13	24	A-6a
	5.0	8.0	3	4	10	30	47	37	15	19	A-6a
236+00 BL	0.8	5.0	8	4	11	27	50	29	11	15	A-6a *
	5.0	10.0	4	5	12	27	52	29	11	16	A-6a *
	10.0	13.0	9	5	10	25	51	29	11	17	A-6a
242+00 50'Rt	0.8	5.0	6	5	11	24	54	29	11	17	A-6a
	5.0	10.0	7	5	8	26	54	33	-	16	A-6a
RAMP C											
239+40 BL	0.8	5.0	0	3	10	25	62	43	20	20	A-7-6
	5.0	10.0	8	5	11	26	50	34	14	16	A-6a *
	10.0	15.0	8	5	11	25	51	32	12	16	A-6a
RAMP D											
240+00 BL	0.8	5.0	8	5	11	25	51	31	12	16	A-6a *
	5.0	10.0	7	6	11	23	53	31	11	16	A-6a
245+00 BL	0.8	5.0	6	6	11	28	49	30	11	15	A-6a
	5.0	8.0	6	5	11	27	51	29	11	15	A-6a
RAMP E											
247+00 BL	0.8	5.0	6	3	11	25	55	39	18	20	A-6a
	5.0	10.0	6	5	11	27	51	31	12	16	A-6a
254+00 BL	0.8	5.0	6	5	12	27	50	33	-	16	A-6a
	5.0	10.0	7	5	11	26	51	30	11	16	A-6a *
DRIVE SAMPLE SOIL TEST DATA											
KOENIG ROAD											
29+32 11'Rt	5.0	6.0	8	4	10	30	48	29	8	27	A-4a
	7.5	8.5	9	5	10	27	49	25	6	18	A-4a
	10.0	11.0	9	4	10	30	47	29	10	18	A-4a
	12.5	13.5	12	6	10	30	42	25	9	17	A-4a
	15.0	16.0	6	4	11	30	49	27	9	17	A-4a
	17.5	18.5	14	4	10	29	43	27	9	17	A-4a
	20.0	21.0	7	5	6	33	49	26	9	17	A-4a
	22.5	23.5	8	5	11	25	51	26	8	17	A-4a
	25.0	26.0	9	4	10	29	48	30	11	18	A-6a
	30.0	31.0	6	4	10	32	48	31	14	17	A-6a
	35.0	36.0	7	5	10	30	48	30	11	16	A-6a
	40.0	41.0	8	5	27	34	26	NP	NP	13	A-4a
	45.0	46.0	15	16	20	25	25	17	2	16	A-4a
	50.0	51.0	8	7	15	31	39	25	10	15	A-4a
	55.0	56.0	9	4	10	32	45	27	8	19	A-4a
	60.0	61.0	10	5	11	29	45	30	12	17	A-6a
	65.0	66.0	2	16	41	26	15	NP	NP	11	A-4a
	70.0	71.0	13	8	12	21	46	32	12	9	A-6a
	75.0	75.6	0	1	18	44	17	NP	NP		A-4b
	80.0	81.0	47	25	12	-	-	NP	NP		A-1-b
31+16 16'Lt	5.0	6.0	4	4	13	28	51	40	16	23	A-6b
	7.5	8.5	6	7	22	21	44	30	10	23	A-4a
	10.0	11.0	11	5	11	31	42	25	8	17	A-4a
	12.5	13.5	12	8	16	32	32	22	8	14	A-4a
	15.0	16.0	9	9	13	34	44	26	10	17	A-4a
	17.5	18.5	12	7	16	33	32	21	7	13	A-4a
	20.0	21.0	12	6	12	30	40	24	9	19	A-4a
	22.5	23.5	7	6	11	28	48	27	10	18	A-4a
	25.0	26.0	6	8	12	30	44	25	10	19	A-4a
	30.0	31.0	5	5	26	41	23	NP	NP	16	A-4a
	35.0	36.0	12	7	15	35	31	20	6	17	A-4a
	40.0	41.0	7	7	13	29	44	25	9	16	A-4a
	45.0	46.0	5	7	14	31	43	24	8	16	A-4a
	50.0	51.0	7	6	13	31	43	24	8	18	A-4a
	55.0	56.0	25	5	9	26	35	26	7	16	A-4a
	60.0	61.0	40	5	8	19	28	25	8	16	A-4a
	65.0	66.0	17	12	20	28	23	20	5	12	A-4a
	70.0	71.0	22	14	20	21	23	19	4	12	A-4a
USR 33 (EXISTING)											
145+75 20'Lt	2.5	3.5	9	4	11	23	53	39	18	23	A-6b
	5.0	6.0	4	3	12	29	52	41	21	21	A-7-6
	7.5	8.5	13	8	14	21	44	28	11	21	A-6a
	10.0	11.0	7	4	11	33	45	28	12	15	A-6a
	12.5	13.5	18	5	9	24	44	26	9	16	A-4a
	15.0	16.0	29	4	6	23	38	27	11	14	A-6a
	17.5	18.5	12	5	10	26	47	26	10	18	A-4a
	20.0	21.0	14	4	10	27	45	27	12	19	A-6a
	25.0	26.0	30	4	8	23	35	27	13	19	A-6a
	30.0	31.0	15	16	14	21	34	26	11	17	A-6a
	35.0	36.0	21	19	12	16	32	25	9	21	A-4a
	40.0	41.0	11	5	10	25	49	27	10	18	A-4a
	45.0	46.0	5	6	11	31	47	25	9	16	A-4a
	50.0	51.0	8	16	17	26	33	22	7	13	A-4a
	55.0	56.0	19	12	14	18	37	25	11	16	A-6a
	60.0	61.0	20	20	15	21	24	20	7	13	A-2-4
	65.0	65.6	13	55	24	-	8 -	NP	NP	23	A-1-b
	70.0	70.8	13	54	19	-	14 -	NP	NP	19	A-1-b
RELOCATED SR 66											
73+20 24'Rt	2.5	3.5	16	9	12	28	35	26	8	18	A-4a
	5.0	6.0	8	5	11	27	49	28	8	17	A-4a
	7.5	8.5	16	7	12	24	39	27	8	18	A-4a
	10.0	11.0	9	4	12	28	46	26	10	18	A-4a
	12.5	13.5	10	4	14	41	31	26	11	16	A-6a
	15.0	16.0	29	10	14	25	22	18	4	18	A-4a
	17.5	18.5	16	5	11	28	40	32	16	17	A-6b
	20.0	21.0	11	6	11	26	46	26	10	14	A-4a
	25.0	26.0	15	7	11	24	43	28	12	15	A-6a
	30.0	31.0	0	62	25	-	13 -	NP	NP	19	A-1-
	35.0	36.0	34	39	15	-	12 -	NP	NP	15	A-1-b
	40.0	40.8	65	21	5	-	9 -	NP	NP	8	A-1-
	45.0	45.9	64	15	6	5	10	20	9	17	A-2-4
	55.0	56.0	17	43	29	-	11 -	NP	NP	24	A-1-b
	60.0	61.0	12	48	26	-	14 -	NP	NP	16	A-1-b
675+35 42'Lt	2.5	3.5	12	5	11	40	32	32	12	20	A-6a
	5.0	6.0	12	8	14	20	46	29	12	19	A-6a
	7.5	8.5	21	10	12	22	35	27	12	18	A-6a
	10.0	11.0	13	6	11	24	46	26	10	16	A-4a
	12.5	13.5	18	5	10	26	41	17	4	17	A-4a
	15.0	16.0	16	6	11	27	40	28	8	17	A-4a
	17.5	18.5	16	6	11	26	38	25	9	17	A-4a
	20.0	21.0	11	6	11	25	47	25	8	17	A-4a
	25.0	26.0	26	6	10	21	37	17	5	17	A-4a
	30.0	31.0	20	24	27	7	22	26	9	10	A-2-4
	35.0	36.0	40	15	14	-	31 -	NP	NP	10	A-2-4
	40.0	40.8	57	16	12	-	15 -	NP	NP	7	A-1-a
	45.0	45.9	52	21	14	-	13 -	NP	NP	7	A-1-a
	50.0	51.0	11	9	15	27	35	25	8	12	A-4a
	55.0	55.9	36	18	18	16	12	16	3	14	A-2-4
	60.0	60.8	62	20	9	-	9 -	NP	NP	17	A-1-a

SOIL PROFILE

AUGLAIZE COUNTY

AUG-29-33 (1.04)(2.71)

SUPPLEMENT

OHIO STATE HIGHWAY TESTING LABORATORY

1620 W. BROAD ST. COLUMBUS 22, OHIO

11/41

6/15

SR 29 & USR 33 INTERCHANGE

PROFILE INDEX		SHEET
USR 33	(Existing)	7 & 8
Ramp	A	9
Ramp	B	11
Ramp	C	9
Ramp	CC	9
Ramp	D	11
Ramp	E	10
Ramp	EE	10
Ramp	F	10

◆ = Borings drilled for AUG-29-33(0.00)(2.72), dated 12/18/67

NOTE For complete plan-view of Proposed USR 33 (Existing), see sheets 7 and 8

TE - 127
1800 12 66

SOIL PROFILE
AUGLAIZE COUNTY
AUG-29-33(1.04)(2.71)
SUPPLEMENT

OHIO STATE HIGHWAY TESTING LABORATORY
1620 W BROAD ST COLUMBUS OHIO 43223

12/41

7/15

TE - 127
1500 12 66

SOIL PROFILE
AUGLAIZE COUNTY
AUG-29-33 (1.04)(2.71)
SUPPLEMENT

OHIO STATE HIGHWAY TESTING LABORATORY
1620 W BROAD ST COLUMBUS OHIO 43223

13/41

8/15

TE - 96
1900 12-66

SOIL PROFILE
AUGLAIZE COUNTY
AUG-29-33(1.04)(2.71)
SUPPLEMENT
OHIO STATE HIGHWAY TESTING LABORATORY
1620 W BROAD ST COLUMBUS, OHIO 43223

14/41

9/15

SR 29 & USR 33 INTERCHANGE

TE - 50
1900 12 66

SOIL PROFILE
AUGLAIZE COUNTY
AUG-29-33 (1.04)(2.71)
SUPPLEMENT
OHIO STATE HIGHWAY TESTING LABORATORY
1620 W BROAD ST COLUMBUS, OHIO 43223

15/41

10/15

SR 29 & USR 33 INTERCHANGE

Tt - 9b
1500 12 68

SOIL PROFILE
AUGLAIZE COUNTY
AUG-29-33 (1.04)(2.71)
SUPPLEMENT
OHIO STATE HIGHWAY TESTING LABORATORY
1620 W BROAD ST COLUMBUS, OHIO 43223

16/41

11/15

SR 29 & USR 33 INTERCHANGE

SOIL PROFILE
AUGLAIZE COUNTY
AUG-29-33 (1.04)(2.71)
SUPPLEMENT
OHIO STATE HIGHWAY TESTING LABORATORY
1620 W BROAD ST COLUMBUS 23 OHIO

17/41

12/15

SR 29 & USR 33-SR 66 INTERCHANGE

PROFILE INDEX	SHEET
Relocated SR 66	13
Ramp A	14
Ramp B	15
Ramp C	13
Ramp D	14
Ramp E	15

= Borings drilled for AUG-29-33(0.00)(2.72), dated 12/18/67

TE - 96
1900 12 66

SOIL PROFILE
AUGLAIZE COUNTY
AUG-29-33 (1.04) (2.71)
SUPPLEMENT
OHIO STATE HIGHWAY TESTING LABORATORY
1620 W BROAD ST COLUMBUS, OHIO 43223

18/41

13/15

SOIL PROFILE

AUGLAIZE COUNTY
AUG-29-33(1.04)(2.71)
SUPPLEMENT

OHIO STATE HIGHWAY TESTING LABORATORY
1620 W BROAD ST COLUMBUS OHIO 43223

19/41

14/15

SR29 & USR33-SR 66 INTERCHANGE

RAMP A

RAMP D

TE - 96
1900 12 66

SOIL PROFILE

AUGLAIZE COUNTY
AUG-29-33(1.04)(2.71)
SUPPLEMENT
OHIO STATE HIGHWAY TESTING LABORATORY
1620 W BROAD ST COLUMBUS OHIO 43223

20/41

15/15

SR 29 & USR 33 - SR 66 INTERCHANGE

RAMP B

RAMP E

TE - 118
600 - 4 - 66

F-629-(12) 21/41
AUGLAIZE COUNTY 1/4
AUG-29 & 33-(104) (271)

GEOLOGY OF THE SITE
THE STRUCTURE SITE IS LOCATED ON THE DISSECTED EAST-WEST END MORAINE, IN AN AREA WHERE MODERATELY DEEP GLACIAL-DERIVED SOILS OVERLIE DOLOMITE BEDROCK, OF SILURIAN AGE.

EXPLORATION
THE EXPLORATION CONSISTED OF TWO DRIVE SAMPLE BORINGS, MADE BETWEEN JUNE 4 AND 11, 1968, AND TEN DRIVE ROD PENETRATION TESTS, MADE BETWEEN MAY 21 AND JUNE 5, 1968.

INVESTIGATIONAL FINDINGS
THE BORINGS ENCOUNTERED UNSTRATIFIED INTERVALS OF DENSE TO VERY DENSE SANDS AND SILTS AND STIFF TO VERY STIFF CLAYS. THE BORINGS WERE TERMINATED AT 71-FOOT DEPTH, ELEVATION 819 FEET, AFTER PENETRATING IN EXCESS OF 20 FEET OF MATERIAL REQUIRING IN EXCESS OF 30 BLOWS PER FOOT IN THE STANDARD PENETRATION TEST.

THE ROD SOUNDINGS ENCOUNTERED GRADUAL INCREASE IN PENETRATION RESISTANCE WITH INCREASE IN DEPTH AND WERE TERMINATED DUE TO NEAR-REFUSAL TO PENETRATION AT 24 TO 33-FOOT DEPTH, ELEVATIONS 865 TO 856 FEET, CONSIDERED TO BE IN VERY DENSE SANDS AND SILTS OR VERY STIFF CLAYS, AS REVEALED BY THE BORINGS.

NO FREE WATER WAS ENCOUNTERED IN ANY OF THE ROD SOUNDING HOLES.

NO TEST PENETRATED TO BEDROCK SURFACE.

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 Indurated Clay
- Indurated Clay
- Weathered Shale
- Shale
- 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	8"	Cobbles	3"	Gravel	2.0mm (No. 10 sieve)	Coarse Sand	0.42mm (No. 40 sieve)	Fine Sand	0.074mm (No. 200 sieve)	Silt	0.005mm	Clay

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 23, OHIO

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. AUG-29-0212
UNDER EXISTING USR 33
SEC. AUG-29 & 33-(104) (271)

CHECKED BY	REVIEWED BY	DATE
L N L	R D R	7/8/68

MICROFILMED
DATE 75

TE - 119
1000 - 4 - 66

22
41

AUG-29 & 33-(1.04) (2.71) 2/4

SCALE: 1" = 20'

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

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO AUG-29-0212
UNDER EXISTING USR 33
SEC AUG-29 & 33-(1.04) (2.71)

PLAN AND PROFILE

DRAWN BY	CHECKED BY	REVIEWED BY	DATE
L N L	L N L	R D R	7/8/68

LOG OF BORING

Date Started 6-4-68 | Sampler Type: SS | Dia 1 3/8"
Completed 6-5-68 | Casing Length 70' | Dia 3 1/2"
B-5 | Station & Offset 141+20, 20' Rt. (Rear Pier) | Surface Elev 889.7'

Elev	Depth	Blows Per 6"	Pen. Ft.	Loss Ft.	Description	Sample No.	% Agg.	% L S	% F S	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class
889.7	0														
884.7	5	13/17			Brownish-Gray Gravelly Clay	1	21	5	10	24	40	35	14	19	A-6a
882.2	7.5	13/18			Brownish-Gray Gravelly Clay	2	22	4	9	25	40	34	15	17	A-6a
879.7	10	16/23			Brownish-Gray Gravelly Clay	3	17	5	8	34	36	33	13	17	A-6a
877.2	12	10/16			Gray Gravelly Clay	4	19	5	9	25	42	31	13	16	A-6a
874.7	15	8/16			Gray Sandy Clay	5	8	6	11	29	46	30	12	16	A-6a
872.2	17.5	11/13			Gray Silty Gravelly Sand	6	23	33	13	12	19	NP	NP	17	A-2-4
869.7	20	8/18			Gray Gravelly Silt	7	47	3	6	13	31	-	-	17	-
864.7	25	8/13			Gray Gravelly Silt	8	16	4	10	27	43	26	10	19	A-4a
859.7	30	7/13			Gray Gravelly Silt	9	34	4	7	20	35	27	9	18	A-4a
854.7	35	9/16			Gray Gravelly Silt	10	28	5	8	22	37	27	10	17	A-4a
849.7	40	10/18			Gray Sandy Gravelly Silt	11	18	5	10	24	43	27	10	17	A-4a
844.7	45	11/18			Gray Sandy Gravelly Silt	12	28	7	11	18	36	PL=	16	17	-
839.7	50	50*	(0.7')		Gray Gravelly Silt	13	V	I	S	U	A	L	22	6	20	-
834.7	55	17/32			Gray Sandy Gravelly Silt	14	29	7	13	20	31	24	10	13	A-4a
829.7	60	18/22			Gray Clayey Sand	15	14	37	26	10	13	31	15	18	A-2-6
824.7	65	40/*			Gray Sandy Silt	16	8	4	9	38	41	NP	NP	14	A-4a
819.7	70				Gray Silty Sand	17	0	51	36	-13	-	NP	NP	29	A-1-b
818.7					BOTTOM OF BORING										

*Refusal

LOG OF BORING

Date Started 6/6/68 | Sampler Type SS | Dia 1 3/8"
Completed 6/11/68 | Casing Length 70' | Dia 3 1/2"
B-18 | Station & Offset 145+75, 20' Lt. (Forward Abutment) | Surface Elev 890.1

Elev	Depth	Blows Per 6"	Pen. Ft.	Loss Ft.	Description	Sample No.	% Agg.	% L S	% F S	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class
890.1	0														
887.6	2.5	4/9			Brown and Gray Sandy Clay	1	9	4	11	23	53	39	18	23	A-6b
885.1	5	5/10			Brown Clay	2	4	3	12	29	52	41	21	21	A-7-6
882.6	7.5	11/15			Brown Sandy Clay	3	13	8	14	21	44	28	11	21	A-6a
880.1	10	11/19			Gray Sandy Clay	4	7	4	11	33	45	28	12	15	A-6a
877.6	12.5	13/15			Gray Gravelly Silt	5	18	5	9	24	44	26	9	16	A-4a
875.1	15	15/15			Brown and Gray Gravelly Clay	6	29	4	6	23	38	27	11	14	A-6a
872.6	17.5	8/8			Gray Sandy Silt	7	12	5	10	26	47	26	10	18	A-4a
870.1	20	6/8			Gray Gravelly Clay	8	14	4	10	27	45	27	12	19	A-6a
865.1	25	10/11			Gray Gravelly Clay	9	30	4	8	23	35	27	13	19	A-6a
860.1	30	9/14			Gray Gravelly Sandy Clay	10	15	16	14	21	34	26	11	17	A-6a
855.1	35	9/14			Gray Gravelly Sandy Silt	11	21	19	12	16	32	25	9	21	A-4a
850.1	40	9/15			Gray Sandy Silt	12	11	5	10	25	49	27	10	18	A-4a
845.1	45	15/16			Gray Sandy Silt	13	5	6	11	31	47	25	9	16	A-4a
840.1	50	21/16			Gray Sandy Silt	14	8	16	17	26	33	22	7	13	A-4a
835.1	55	18/22			Gray Gravelly Sandy Clay	15	19	12	14	18	37	25	11	16	A-6a
830.1	60	15/16			Brown and Gray Gravelly Sandy Silt	16	20	20	15	21	24	20	7	13	A-2-4
825.1	65	50/*	(0.6')		Brown and Gray Sand	17	13	55	24	-8-		NP	NP	23	A-1-b
820.1	70	50/*	(0.8')		Brown and Gray Silty Sand	18	13	54	19	-14-		NP	NP	19	A-1-b
819.3					BOTTOM OF BORING										

* Refusal

MICROFILMED
JAN 27 1995

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

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO AUG-29-0212
UNDER EXISTING USR 33
SEC. AUG-29 & 33-(104) (2 71)

BORING DATA

TYPED BY	CHECKED BY	REVIEWED BY	DATE
A L A	R C	R D R	7/8/68

TE 115
500-1-64

24/41

AUG-29 & 33-(104) (2.71) 4/4

Test Location No. _____
Station & Offset _____
Surface Elev. _____ Water Elev. _____
Piling _____
Hammer _____
Formula _____
Reference _____
Rod Condition _____

Test Location No. _____
Station & Offset _____
Surface Elev. _____ Water Elev. _____
Piling _____
Hammer _____
Formula _____
Reference _____
Rod Condition _____

Test Location No. _____
Station & Offset _____
Surface Elev. _____ Water Elev. _____
Piling _____
Hammer _____
Formula _____
Reference _____
Rod Condition _____

Test Location No. 1
Station & Offset 140+24.16'RT
REAR ABUTMENT
Surface Elev. 883.1' Water Elev. _____
Piling _____
Hammer _____
Formula _____
Reference _____
Rod Condition GOOD

Test Location No. 3
Station & Offset 141+14.51'LT
REAR ABUTMENT
Surface Elev. 888.8' Water Elev. _____
Piling _____
Hammer _____
Formula _____
Reference _____
Rod Condition _____

Test Location No. 6
Station & Offset 141+77.21'LT
REAR PIER
Surface Elev. 889.5' Water Elev. _____
Piling _____
Hammer _____
Formula _____
Reference _____
Rod Condition _____

Test Location No. 8
Station & Offset 142+59.88'LT
REAR PIER
Surface Elev. 889.5' Water Elev. _____
Piling _____
Hammer _____
Formula _____
Reference _____
Rod Condition GOOD

Test Location No. 9
Station & Offset 142+74.24'RT
CENTER PIER
Surface Elev. 889.7' Water Elev. _____
Piling _____
Hammer _____
Formula _____
Reference _____
Rod Condition GOOD

Test Location No. _____
Station & Offset _____
Surface Elev. _____ Water Elev. _____
Piling _____
Hammer _____
Formula _____
Reference _____
Rod Condition _____

Test Location No. _____
Station & Offset _____
Surface Elev. _____ Water Elev. _____
Piling _____
Hammer _____
Formula _____
Reference _____
Rod Condition _____

Test Location No. 11
Station & Offset 143+68.52'LT
CENTER PIER
Surface Elev. 891.1' Water Elev. _____
Piling _____
Hammer _____
Formula _____
Reference _____
Rod Condition _____

Test Location No. 13
Station & Offset 144+30.24'RT
FORWARD PIER
Surface Elev. 889.1' Water Elev. DRY
Piling _____
Hammer _____
Formula _____
Reference _____
Rod Condition GOOD

Test Location No. 16
Station & Offset 145+67.88'LT
FORWARD PIER
Surface Elev. 889.5' Water Elev. _____
Piling _____
Hammer _____
Formula _____
Reference _____
Rod Condition _____

Test Location No. 17
Station & Offset 145+25.27'RT
FORWARD ABUTMENT
Surface Elev. 889.4' Water Elev. _____
Piling _____
Hammer _____
Formula _____
Reference _____
Rod Condition GOOD

Test Location No. 19
Station & Offset 146+24.52'LT
FORWARD ABUTMENT
Surface Elev. 888.8 Water Elev. _____
Piling _____
Hammer _____
Formula _____
Reference _____
Rod Condition GOOD

Test Location No. _____
Station & Offset _____
Surface Elev. _____ Water Elev. _____
Piling _____
Hammer _____
Formula _____
Reference _____
Rod Condition _____

OHIO STATE HIGHWAY TESTING LABORATORY
1620 WEST BROAD ST. COLUMBUS 23, OHIO

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. AUG-29-0212
UNDER EXISTING USR 33
SEC. AUG-29 & 33-(104) (2.71)

DRIVE ROD PENETRATION RESISTANCE DATA

PLOTTED BY	CHECKED BY	REVIEWED BY	DATE
R C	L N L	R D R	7/8/68

GEOLOGY OF THE SITE

THE STRUCTURE SITE IS LOCATED IN THE DISSECTED EAST-WEST END MORAINE REGION, IN AN AREA WHERE MODERATELY DEEP GLACIAL-DERIVED SOILS OVERLIE DOLOMITE BEDROCK, OF SILURIAN AGE.

EXPLORATION

THE EXPLORATION CONSISTED OF TWO DRIVE SAMPLE BORINGS, MADE BETWEEN MAY 8 AND 24, 1968, AND FIVE DRIVE ROD PENETRATION TESTS MADE BETWEEN MARCH 19 AND 26, 1968.

INVESTIGATIONAL FINDINGS

THE BORINGS ENCOUNTERED UNSTRATIFIED INTERVALS OF DENSE TO VERY DENSE GRAVELLY SANDY SILTS AND STIFF TO VERY STIFF SANDY CLAYS. THE BORINGS WERE TERMINATED AT 50 AND 65-FOOT DEPTHS, ELEVATIONS 828 AND 812 FEET, AFTER PENETRATING IN EXCESS OF 30 FEET OF MATERIAL REQUIRING IN EXCESS OF 30 BLOWS PER FOOT IN THE STANDARD PENETRATION TEST.

THE ROD SOUNDINGS ENCOUNTERED GRADUAL INCREASE IN PENETRATION RESISTANCE WITH INCREASE IN DEPTH AND WERE TERMINATED DUE TO REFUSAL AND NEAR-REFUSAL TO PENETRATION AT 25 TO 29-FOOT DEPTHS, ELEVATIONS 851 TO 848 FEET, CONSIDERED TO BE IN VERY DENSE AND VERY STIFF SANDY SILTS AND CLAYS, AS REVEALED BY THE BORINGS.

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

NO TEST PENETRATED TO BEDROCK SURFACE.

LOG OF BORING

Date Started 5-8-68 — Sampler Type SS — Dia 1 3/8" — Water Elev
Date Completed 5-8-68 — Casing. Length — Dia
Boring No B-3 — Station & Offset 70+46, 15' Rt. (Rear Pier) — Surface Elev 877.0'

Elev	Depth	Std Pen (N)	Rec ft.	Loss ft.	Description	Sample No	% Agg	% C S	% F S	% Silt	% Clay	L L	P I	W C	SHTL Class.
877.0	0														
	2														
	4														
872.0	6	7/10			Brown Sandy Clay	1	13	4	9	32	42	36	17	20	A-6b
869.5	8	12/25			Brown Gravelly Silt	2	18	4	9	30	39	31	10	17	A-4a
867.0	10	14/30			Brown Sandy Silt	3	13	5	10	32	40	29	7	24	A-4a
864.5	12	10/14			Gray Sandy Silt	4	11	4	9	37	39	29	9	18	A-4a
862.0	14	8/11			Gray Clayey Silt	5	0	6	9	38	47	27	8	16	A-4a
859.5	16	9/11			Gray Clayey Silt	6	0	5	10	40	45	28	9	16	A-4a
857.0	18	6/6			Gray Gravelly Silt	7	16	5	9	33	37	27	8	17	A-4a
	20														
	22														
852.0	24	14/12			Gray Clayey Silt	8	0	5	10	43	42	25	8	17	A-4a
	26														
	28														
847.0	30	6/11			Brown Gravelly Sandy Silt	9	16	8	21	34	21	NP	NP	13	A-4a
	32														
	34														
842.0	36	21/29			Gray Silty Gravelly Sand	10	19	13	46	-22	-	NP	NP	16	A-3a
	38														
837.0	40	21/29			Gray Silty Gravelly Sand	11	31	4	35	20	10	NP	NP	16	A-2-4
	42														
	44														
832.0	46	30/45			Gray Silty Sandy Gravel	12	39	20	17	15	9	NP	NP	14	A-1-b
	48														
827.0	50	40/50			Gray Sandy Gravelly Silt	13	35	8	13	29	15	NP	NP	9	A-4a
	52														
	54														
822.0	56	50* (0.3')			Gray Silty Gravelly Sand	14	V	I	S		U	A	L	11	
	58														
817.0	60	50* (0.3')			Gray Silty Sandy Gravel	15	55	17	9	-19	-	NP	NP	7	A-1-b
	62														
	64														
812.0	66	50* (0.3')			Gray Silty Gravelly Sand and Boulders	16	V	I	S		U	A	L	13	

*Refusal — BOTTOM OF BORING

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 Indurated Clay
- Indurated Clay
- Weathered Shale
- Shale
- Boulders
- Weathered Sandstone
- Sandstone
- Leached Dolomite
- Dolomite

LOG OF BORING

Date Started 5-21-68 — Sampler Type SS — Dia 1 3/8" — Water Elev
Date Completed 5-24-68 — Casing. Length 50' — Dia 3 1/2"
Boring No B-10 — Station & Offset 72+53, 15' Lt. (Forward Abutment) — Surface Elev 878.3'

Elev	Depth	Std Pen (N)	Rec ft.	Loss ft.	Description	Sample No	% Agg	% C S	% F S	% Silt	% Clay	L L	P I	W C	SHTL Class.
878.3	0														
	2														
	4														
873.3	6	11/19			Brown Sandy Clay	1	14	6	11	28	41	29	12	18	A-6a
	8														
868.3	10	17/30			Brown Sandy Silt	2	10	8	14	25	43	25	9	17	A-4a
	12														
	14														
863.3	16	15/17			Brownish-Gray Sandy Silt	3	9	7	11	28	45	28	9	20	A-4a
	18														
858.3	20	15/15			Gray Gravelly Clay	4	18	5	9	25	43	25	12	17	A-6a
	22														
	24														
853.3	26	11/15			Gray Clayey Silt	5	0	6	11	29	54	25	10	17	A-4a
	28														
848.3	30	11/15			Gray Silt and Clay	6	7	4	9	29	51	29	11	19	A-6a
	32														
843.3	34	16/15			Gray Sandy Silt	7	7	5	11	44	33	23	4	18	A-4a
	36														
	38														
838.3	40	50* (0.9')			Gray Sandy Gravelly Silt	8	24	10	13	24	29	24	8	15	A-4a
	42														
	44														
833.3	46	50* (0.9')			Gray Silty Gravelly Sand	9	21	30	16	13	20	21	7	17	A-2-4
	48														
828.3	50	50*													

*Refusal — BOTTOM OF BORING

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
8"	3"	2.0mm (No. 10 sieve)	0.42mm (No. 40 sieve)	0.074mm (No. 200 sieve)	0.005mm	

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 23, OHIO

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO AUG-33-0353
UNDER SR 116
SEC. AUG-29 & 33-(104)(2.71)

CHECKED BY	REVIEWED BY	DATE
G P H	R. D R	6/11/68

TF - 119
1000 - 4 - 66

26/41

AUG-29 & 33-(104)(271) 2/3

SCALE 1" = 20'

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

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO AUG-33-0353
UNDER SR 116
SEC AUG-29 & 33-(104)(271)

PLAN AND PROFILE

DRAWN BY	CHECKED BY	REVIEWED BY	DATE
J. E. C.	G. P. H.	R. D. R.	6/11/68

Test Location No. _____
Station & Offset _____
Surface Elev. _____ Water Elev. _____
Piling _____
Hammer _____
Formula _____
Reference _____
Rod Condition _____

Test Location No. _____
Station & Offset _____
Surface Elev. _____ Water Elev. _____
Piling _____
Hammer _____
Formula _____
Reference _____
Rod Condition _____

Test Location No. _____
Station & Offset _____
Surface Elev. _____ Water Elev. _____
Piling _____
Hammer _____
Formula _____
Reference _____
Rod Condition _____

Test Location No. 2
Station & Offset 70+07, 17' LT
REAR ABUTMENT
Surface Elev. 877.0' Water Elev. _____
Piling _____
Hammer _____
Formula _____
Reference _____
Rod Condition GOOD

Test Location No. 3
Station & Offset 70+46, 17' RT
REAR PIER
Surface Elev. 876.3 Water Elev. _____
Piling _____
Hammer _____
Formula _____
Reference _____
Rod Condition GOOD

Test Location No. 6
Station & Offset 71+30, 17' LT
CENTER PIER
Surface Elev. 872.2 Water Elev. _____
Piling _____
Hammer _____
Formula _____
Reference _____
Rod Condition GOOD

Test Location No. 7
Station & Offset 71+97, 18' RT
FORWARD PIER
Surface Elev. 871.4 Water Elev. _____
Piling _____
Hammer _____
Formula _____
Reference _____
Rod Condition GOOD

Test Location No. 10
Station & Offset 72+53, 17' LT
FORWARD ABUTMENT
Surface Elev. 875.2 Water Elev. _____
AUG-29&33-(1.04)(2.71)
Piling _____
Hammer _____
Formula _____
Reference _____
Rod Condition GOOD

OHIO STATE HIGHWAY TESTING LABORATORY
1620 WEST BROAD ST. COLUMBUS 23, OHIO

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. AUG-33-0353
UNDER SR 116
SEC. AUG-29&33-(1.04)(2.71)

DRIVE ROD PENETRATION RESISTANCE DATA

PLOTTED BY	CHECKED BY	REVIEWED BY	DATE
R. C.	G. P. H.	R. D. R.	6/11/68

TE - 118
600 - 4 - 66

GEOLOGY OF THE SITE

THE STRUCTURE SITE IS LOCATED IN THE DISSECTED EAST-WEST END MORAINE REGION, ON THE WEST VALLEY WALL OF ST. MARY'S RIVER, OVER ST. MARY'S RIVER AND ON THE FLOOD-PLAIN OF ST. MARY'S RIVER, WHERE SHALLOW ALLUVIUM AND MODERATELY DEEP GLACIAL-DERIVED SOILS OVERLIE DOLOMITE BEDROCK, OF SILURIAN AGE.

EXPLORATION

THE EXPLORATION CONSISTED OF TWO DRIVE SAMPLE-CORE BORINGS, MADE BETWEEN FEBRUARY 20 AND MARCH 3, 1968, AND SIX DRIVE ROD PENETRATION TESTS MADE BETWEEN APRIL 25 AND 30, 1968.

INVESTIGATIONAL FINDINGS

THE BORINGS ENCOUNTERED UNSTRATIFIED INTERVALS OF DENSE TO VERY DENSE GRAVELLY SANDY SILTS AND STIFF TO VERY STIFF SANDY CLAYS WITH SCATTERED INTERVALS OF BOULDERS TO BEDROCK SURFACE, ENCOUNTERED AT 32 AND 51-FOOT DEPTHS, ELEVATIONS 820 AND 816 FEET. THE BORINGS WERE TERMINATED AT 42 AND 58-FOOT DEPTHS, ELEVATIONS 815 AND 806 FEET, AFTER PENETRATING 5 AND 10 FEET BELOW BEDROCK SURFACE.

THE ROD SOUNDINGS ENCOUNTERED GRADUAL INCREASE IN PENETRATION RESISTANCE WITH INCREASE IN DEPTH AND WERE TERMINATED DUE TO REFUSAL AND NEAR-REFUSAL TO PENETRATION AT 17 TO 26-FOOT DEPTHS, ELEVATIONS 856 TO 822 FEET, CONSIDERED TO BE IN VERY DENSE AND VERY STIFF SANDY SILTS AND CLAYS AND BOULDERS, AS REVEALED BY THE BORINGS.

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

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 Indurated Clay
- Indurated Clay
- Weathered Shale
- Shale
- Boulders
- 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 | 8" | Cobbles | 3" | Gravel | 2.0mm (No. 10 sieve) | Coarse Sand | 0.42mm (No. 40 sieve) | Fine Sand | 0.074mm (No. 200 sieve) | Silt | 0.005mm | Clay

LOG OF BORING

Date Started 2-29-68 — Sampler Type SS — Dia. 1 3/8" — Water Elev. ____
Date Completed 3-5-68 — Casing: Length 53' — Dia 3 1/2"
Boring No. B-14 — Station & Offset 201+20, 54' Rt. (Rear Pier) — Surface Elev. 873.3'

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class.
873.3	0														
	2														
	4														
868.3	6	7/12			Brown Sandy Silt	1	9	4	11	29	47	30	9	16	A-4a
865.8	8	9/13			Brown Silt and Clay	2	5	4	11	31	49	32	13	16	A-6a
863.3	10	10/13			Brownish-Gray Silt and Clay	3	6	4	10	34	46	30	13	17	A-6a
860.8	12	10/15			Brown Sandy Clay	4	7	4	11	33	45	28	11	17	A-6a
858.3	14	11/19			Brownish-Gray Silt and Clay with Boulders	5	V	I	S	U	A	L	29	11	18	A-6a
855.8	16	14/23			Gray Sandy Clay	6	11	6	13	26	44	31	12	14	A-6a
853.3	18	19/19			Gray Sandy Silt	7	12	8	13	38	29	31	5	16	A-4a
	20														
	22														
848.3	24	10/9			Brown Silty Gravelly Sand	8	18	20	36	14	12	NP	NP	12	A-3a
	26														
	28														
843.3	30	14/13			Gray Silty Sand	9	1	1	61	26	11	NP	NP	17	A-4a
	32														
	34														
838.3	36	23/19			Gray Gravelly Sandy Silt with Boulders	10	25	12	22	22	19	18	4	11	A-4a
	38														
833.3	40	18/21			Gray Sandy Silt	11	13	9	16	26	36	22	7	13	A-4a
	42														
	44														
828.3	46	17/25			Brown Silty Sand	12	0	28	47	12	13	NP	NP	17	A-3a
	48														
823.3	50	50/*			Gray Gravelly Sandy Silt with Boulders	13	V	I	S	U	A	L	10	-	
820.3	52				TOP OF ROCK										
	54														
	56		3.0	2.0	Dolomite, light-gray, extremely leached, vuggy, very badly broken and jointed. Core Loss 40%.										
815.3	58				BOTTOM OF BORING										

*Refusal

LOG OF BORING

Date Started 2-20-68 — Sampler Type SS — Dia 1 3/8" — Water Elev. ____
Date Completed 2-20-68 — Casing. Length 32' — Dia 3 1/2"
Boring No. B-16 — Station & Offset 204+07, 54' Lt. (Forward Abutment) — Surface Elev 848.5'

Elev.	Depth	Std Pen (N)	Rec ft.	Loss ft.	Description	Sample No	% Agg.	% C.S	% F.S	% Silt	% Clay	L.L	P.I	W.C.	SHTL Class.
848.5	0														
	2														
	4														
843.5	6	3/3			Brown Sandy Clay	1	4	5	14	28	49	43	23	24	A-7-6
841.0	8	3/4			Brown Sandy Clay	2	6	1	29	29	35	31	13	23	A-6a
838.5	10	5/6			Brown Silty Gravelly Sand	3	24	24	21	17	14	22	6	18	A-2-4
836.0	12	9/11			Gray Gravelly Sandy Silt	4	16	9	15	25	35	25	8	14	A-4a
833.5	14	16/20			Brown Gravelly Sandy Silt	5	V	I	S	U	A	L	8		
831.0	16	9/17			Brown Gravelly Sandy Silt	6	V	I	S	U	A	L	11		
828.5	18	14/19			Brownish-Gray Sandy Gravelly Clay	7	30	6	9	20	35	29	12	13	A-6a
	20														
	22														
823.5	24	14/19			Brownish-Gray Sandy Gravelly Silt	8	26	10	15	16	33	18	4	15	A-4a
	26														
	28														
818.5	30				No Sample Recovered- Sandy Gravel and Boulders (Driller's Description)		V	I	S	U		A	L		
816.5	32				TOP OF ROCK										
	34														
	36		5.0	0.0	Dolomitic Limestone, gray, hard, dense, vuggy, with calcite crystals, badly broken and jointed. No Core Loss.										
	38														
	40		5.0	0.0											
806.5	42				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.

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

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. AUG-33-0384 L/R
OVER ST MARYS RIVER
SEC. AUG-29 & 33-(0 00) (2.72)

CHECKED BY	REVIEWED BY	DATE
L N L	R D R	5/13/68

TE - 119
1000 - 4 - 66

RECEIVED
JUN 18 1985

AUG-29 & 33-(000) (2.72)

29/41

2/3

SCALE: 1" = 20'

OHIO DEPARTMENT OF HIGHWAYS TESTING LABORATORY 1620 WEST BROAD STREET, COLUMBUS 23, OHIO			
STRUCTURE FOUNDATION INVESTIGATION BRIDGE NO. AUG-33-0384 L/R OVER ST. MARYS RIVER SEC. AUG-29 & 33-(0 00) (2.72)			
PLAN AND PROFILE			
DRAWN BY L.N.L.	CHECKED BY L.N.L.	REVIEWED BY R.D.R.	DATE 5/13/68

14
1000-9-67

30
41
3/3

AUG-29 & 33-(000)(2.72)

Test Location No. _____
Station & Offset _____
Surface Elev. _____ Water Elev. _____
Piling _____
Hammer _____
Formula _____
Reference _____
Rod Condition _____

Test Location No. _____
Station & Offset _____
Surface Elev. _____ Water Elev. _____
Piling _____
Hammer _____
Formula _____
Reference _____
Rod Condition _____

Test Location No. 1
Station & Offset 201+21.54' RT REAR ABUTMENT
Surface Elev. 873.0' Water Elev. _____
Piling _____
Hammer _____
Formula _____
Reference _____
Rod Condition GOOD

Test Location No. 4
Station & Offset 201+91.54' LT REAR ABUTMENT
Surface Elev. 870.1' Water Elev. _____
Piling _____
Hammer _____
Formula _____
Reference _____
Rod Condition GOOD

Test Location No. 9
Station & Offset 202+61.54' RT. FORWARD PIER
Surface Elev. 847.2' Water Elev. _____
Piling _____
Hammer _____
Formula _____
Reference _____
Rod Condition GOOD

Test Location No. 11
Station & Offset 203+32.30' LT FORWARD PIER
Surface Elev. 848.0' Water Elev. _____
Piling _____
Hammer _____
Formula _____
Reference _____
Rod Condition GOOD

Test Location No. 14
Station & Offset 203+36.30' RT FORWARD ABUTMENT
Surface Elev. 848.1' Water Elev. _____
Piling _____
Hammer _____
Formula _____
Reference _____
Rod Condition GOOD

Test Location No. 16
Station & Offset 204+07.53' LT FORWARD ABUTMENT
Surface Elev. 848.9' Water Elev. _____
Piling _____
Hammer _____
Formula _____
Reference _____
Rod Condition GOOD

OHIO STATE HIGHWAY TESTING LABORATORY
1620 WEST BROAD ST. COLUMBUS 23, OHIO

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. AUG-33-0384 L/R
OVER ST. MARYS RIVER
SEC. AUG-29 & 33-(0.00) (2.72)

DRIVE ROD PENETRATION RESISTANCE DATA

PLOTTED BY	CHECKED BY	REVIEWED BY	DATE
R.C.	L.N.L.	R.D.R.	5/13/68

LE CO -80M-10-67-1000

GEOLOGY OF THE SITE
THE STRUCTURE SITE IS LOCATED ON THE DISSECTED EAST-WEST END MORAINE, IN AN AREA WHERE MODERATELY DEEP GLACIAL-DERIVED SOILS OVERLIE DOLOMITE BEDROCK, OF SILURIAN AGE.

EXPLORATION
THE EXPLORATION CONSISTED OF ONE DRIVE SAMPLE-CORE BORING AND ONE DRIVE SAMPLE BORING, MADE BETWEEN FEBRUARY 21 AND 28, 1968, AND FOUR DRIVE ROD PENETRATION TESTS, MADE BETWEEN MARCH 24 AND 26, 1968.

INVESTIGATIONAL FINDINGS
THE BORINGS ENCOUNTERED UNSTRATIFIED INTERVALS OF DENSE TO VERY DENSE GRAVELLY SANDY SILTS AND STIFF TO VERY STIFF SANDY CLAYS WITH SCATTERED INTERVALS OF BOULDERS TO BEDROCK SURFACE, ENCOUNTERED IN BORING B-3, IN THE VICINITY OF THE REAR ABUTMENT, AT 56-FOOT DEPTH, ELEVATION 796 FEET. BORING B-14, LOCATED IN THE FORWARD ABUTMENT AREA, WAS TERMINATED AT 66-FOOT DEPTH, ELEVATION 802 FEET, AFTER PENETRATING 20 FEET OF MATERIAL REQUIRING IN EXCESS OF 30 BLOWS PER FOOT IN THE STANDARD PENETRATION TEST. BORING B-1 WAS TERMINATED AT 61-FOOT DEPTH, ELEVATION 791 FEET, AFTER PENETRATING 5 FEET BELOW BEDROCK SURFACE.

THE ROD SOUNDINGS ENCOUNTERED GRADUAL INCREASE IN PENETRATION RESISTANCE WITH INCREASE IN DEPTH AND WERE TERMINATED DUE TO NEAR REFUSAL TO PENETRATION AT 33 AND 35-FOOT DEPTH, ELEVATIONS 833 AND 818 FEET, CONSIDERED TO BE IN VERY DENSE AND VERY STIFF SANDY SILTS AND CLAYS AND BOULDERS, AS REVEALED BY THE BORINGS.

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

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 Indurated Clay
- Indurated Clay
- Weathered Shale
- Shale
- Boulders
- 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	8"	Cobbles	3"	Gravel	2.0mm (No. 10 sieve)	Coarse Sand	0.42mm (No. 40 sieve)	Fine Sand	0.074mm (No. 200 sieve)	Silt	0.005mm	Clay

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 23, OHIO

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. AUG-33-0407 L/R
OVER MIAMI & ERIE CANAL
SEC. AUG-29 & 33-(000) (2.72)

CHECKED BY	REVIEWED BY	DATE
L.N.L	R.D.R	5/8/68

TE - 119
1000 - 4 - 66

32/41

AUG-29 & 33-(0.00)(2.72)

2/4

SCALE: 1" = 20'

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

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. AUG-33-0407 L/R
OVER MIAMI & ERIE CANAL
SEC. AUG-29 & 33-(0.00) (2.72)

PLAN AND PROFILE

DRAWN BY	CHECKED BY	REVIEWED BY	DATE
L.N.L.	L.N.L.	R.D.R.	5/8/68

TE - 122
600 - 11 - 64

AUG-29 & 33-(000)(272)

33/41 3/4

LOG OF BORING

Date Started 2-21-68 | Sampler Type SS | Dia 1 3/8" | Water Elev.
Date Completed 2-23-68 | Casing: Length 55' | Dia 3 1/2"
Boring No. B-3 | Station & Offset 214+73, 30' Lt. (Rear Abutment) | Surface Elev 852.0'

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class.
852.0	0														
	2														
	4														
847.0	6	4/5			Brown Silty Sand	1	5	3	60	10	22	NP	NP	19	A-3a
844.5	8														
		3/5			Brown Sandy Clay	2	11	6	23	19	41	36	15	25	A-6a
842.0	10														
		4/4			Brownish-Gray Clay	3	13	1	2	23	61	60	35	31	A-7-6
839.5	12														
	14	5/3			Brownish-Gray Sandy Clay	4	0	1	27	33	39	30	15	30	A-6a
837.0	16	7/11			Brownish-Gray Gravelly Sandy Silt	5	21	8	17	21	33	21	6	16	A-4a
834.5	18														
		9/12			Gray Gravelly Sandy Silt	6	15	9	20	25	31	24	6	13	A-4a
832.0	20														
		6/8			Gray Gravelly Sandy Silt	7	25	11	16	25	23	22	5	12	A-4a
	22														
	24														
827.0	26	10/12			Gray Gravelly Sandy Silt	8	18	11	28	28	15	NP	NP	10	A-4a
	28														
822.0	30														
	32	50* (0.3')			Gray Gravelly Sandy Silt	9	V	I		S	U	A	L	26	
	34														
817.0	36	15/20			Brown Sandy Clay	10	13	8	18	29	32	29	11	11	A-6a
	38														
812.0	40														
		13/20			Brown Sandy Silt	11	15	7	18	32	28	28	10	12	A-4a
	42														
	44														
807.0	46	14/20			Brown Sandy Silt	12	11	6	14	29	40	29	7	17	A-4a
	48														
802.0	50														
		26/36			Brownish-Gray Clayey Sandy Gravel	13	37	8	16	16	23	28	11	11	A-6a
	52														
	54														
797.0					(Driller's Des.) No Sample Recovered-Sandy Gravel and Boulders/		V	I		S	U		A	L	
	56				TOP OF ROCK										
	58		4.5	0.5	Dolomitic Limestone, light gray, firm, leached, vuggy, with calcite crystals, very badly broken. Core Loss 10%.										
791.4	60				BOTTOM OF BORING										

*Refusal

LOG OF BORING

Date Started 2-27-68 | Sampler Type SS | Dia. 1 3/8" | Water Elev.
Date Completed 2-28-68 | Casing: Length 60' | Dia 3 1/2"
Boring No. B-14 | Station & Offset 215+70, 30' Rt. (Forward Abutment) | Surface Elev. 867.7'

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class.
867.7	0														
	2														
	4														
862.7	6	5/6			Brown Sandy Silt	1	14	11	20	33	22	20	2	17	A-4a
860.2	8														
		7/9			Brown Sandy Silt	2	10	7	14	30	39	23	5	20	A-4a
857.7	10														
		10/16			Brown Sandy Clay	3	8	5	9	26	52	32	13	18	A-6a
855.2	12														
	14	10/19			Brown Silt and Clay	4	5	4	10	24	57	36	15	17	A-6a
852.7	16	5/8			Brown Sandy Silt	5	10	8	22	28	32	20	5	17	A-4a
850.2	18														
		7/9			Gray Sandy Silt	6	9	5	11	30	45	29	9	16	A-4a
847.7	20														
		16/25			Gray Sandy Silt	7	0	0	25	64	11	NP	NP	20	A-4b
	22														
	24														
842.7	26	6/8			Gray Silty Sandy Gravel	8	54	10	14	-	22	- NP	NP	13	A-1-b
	28														
837.7	30														
	32	7/11			Gray Gravelly Sandy Silt	9	20	7	28	28	17	NP	NP	17	A-4a
	34														
832.7	36	9/13			Gray Clayey Silt	10	0	2	13	31	54	31	8	21	A-4a
	38														
827.7	40														
		16/29			Gray Silty Sandy Gravel with Boulders	11	51	27	10	-12	-	NP	NP	10	A-1-a
	42														
	44														
822.7	46	17/19			Gray Gravelly Sandy Silt	12	16	12	17	30	25	20	5	11	A-4a
	48														
817.7	50														
		21/25			Brown Gravelly Sandy Clay	13	19	6	16	25	34	28	12	12	A-6a
	52														
	54														
812.7	56	19/26			Brown Sandy Clay	14	13	7	18	40	22	29	11	11	A-6a
	58														
807.7	60														
	62	50* (0.7')			Brown Gravelly Sandy Silt	15	19	7	20	25	29	27	8	12	A-4a
	64				BOTTOM OF BORING										
802.7	66	50* (0.6')			Gray Silty Sandy Gravel with Boulders	16	46	24	12	-18	-	NP	NP	13	A-1-b

*Refusal

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

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. AUG-33-0407 L/R
OVER MIAMI & ERIE CANAL
SEC. AUG-29 & 33-(0.00)(2 72)

BORING DATA

TYPED BY	CHECKED BY	REVIEWED BY	DATE
S A J	R.C	R D R.	5/8/68

Test Location No. _____
Station & Offset _____
Surface Elev. _____ Water Elev. _____
Piling _____
Hammer _____
Formula _____
Reference _____
Rod Condition _____

Test Location No. _____
Station & Offset _____
Surface Elev. _____ Water Elev. _____
Piling _____
Hammer _____
Formula _____
Reference _____
Rod Condition _____

Test Location No. _____
Station & Offset _____
Surface Elev. _____ Water Elev. _____
Piling _____
Hammer _____
Formula _____
Reference _____
Rod Condition _____

Test Location No. _____
Station & Offset _____
Surface Elev. _____ Water Elev. _____
Piling _____
Hammer _____
Formula _____
Reference _____
Rod Condition _____

Test Location No. 1
Station & Offset 214+10.54' RT REAR ABUTMENT
Surface Elev. 848.6' Water Elev. _____
Piling _____
Hammer _____
Formula _____
Reference _____
Rod Condition GOOD

Test Location No. 4
Station & Offset 214+79.54' LT REAR ABUTMENT
Surface Elev. 852.8' Water Elev. _____
Piling _____
Hammer _____
Formula _____
Reference _____
Rod Condition GOOD

Test Location No. 13
Station & Offset 215+59.54' RT FORWARD ABUTMENT
Surface Elev. 867.2' Water Elev. _____
Piling _____
Hammer _____
Formula _____
Reference _____
Rod Condition GOOD

Test Location No. 16
Station & Offset 216+31.54' LT FORWARD ABUTMENT
Surface Elev. 865.8' Water Elev. _____
Piling _____
Hammer _____
Formula _____
Reference _____
Rod Condition GOOD

34
41
4
4

AUG-29 & 33(000)(2.72)

OHIO STATE HIGHWAY TESTING LABORATORY
1620 WEST BROAD ST. COLUMBUS 23, OHIO

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. AUG-33-0407 L/R
OVER MIAMI & ERIE CANAL
SEC. AUG-29 & 33-(000)(2.72)

DRIVE ROD PENETRATION RESISTANCE DATA

PLOTTED BY	CHECKED BY	REVIEWED BY	DATE
R.C.	L.N.L.	R.D.R.	5/8/68

AUGLAIZE COUNTY
AUG-29 & 33-(1 04)(2 71)

GEOLOGY OF THE SITE

THE STRUCTURE SITE IS LOCATED ON THE DISSECTED EAST-WEST END MORAINE, IN AN AREA WHERE MODERATELY DEEP GLACIAL-DERIVED SOILS OVERLIE DOLOMITE BEDROCK, OF SILURIAN AGE.

EXPLORATION

THE EXPLORATION CONSISTED OF TWO DRIVE SAMPLE BORINGS, MADE BETWEEN JUNE 11 AND 14, 1968, AND FIVE DRIVE ROD PENETRATION TESTS, MADE BETWEEN JUNE 5 AND 6,1968.

INVESTIGATIONAL FINDINGS

THE BORINGS ENCOUNTERED UNSTRATIFIED INTERVALS OF DENSE TO VERY DENSE SANDS AND SILTS AND STIFF TO VERY STIFF CLAYS. THE BORINGS WERE TERMINATED AT 61-FOOT DEPTH, ELEVATIONS 820 AND 819 FEET, AFTER PENETRATING IN EXCESS OF 20 FEET OF MATERIAL REQUIRING IN EXCESS OF 30 BLOWS PER FOOT IN THE STANDARD PENETRATION TEST.

THE ROD SOUNDINGS ENCOUNTERED GRADUAL INCREASE IN PENETRATION RESISTANCE WITH INCREASE IN DEPTH AND WERE TERMINATED DUE TO NEAR-REFUSAL TO PENETRATION AT 19 TO 28-FOOT DEPTHS, ELEVATIONS 862 TO 850 FEET, CONSIDERED TO BE IN VERY DENSE SANDS AND SILTS OR VERY STIFF CLAYS, AS REVEALED BY THE BORINGS.

NO FREE WATER WAS ENCOUNTERED IN ANY OF THE ROD SOUNDING HOLES.

NO TEST PENETRATED TO BEDROCK SURFACE.

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 Indurated Clay
- Indurated Clay
- Weathered Shale
- Shale
- Boulders

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 | 8" | Cobbles | 3" | Gravel | 2.0mm (No 10 sieve) | Coarse Sand | 0.42mm (No. 40 sieve) | Fine Sand | 0.074mm (No 200 sieve) | Silt | 0.005mm | Clay

LOG OF BORING

Date Drilled 6/11/68 — Sampler Type SS — Dia 1 3/8"
Date Completed 6/12/68 — Casing Length 60' — Dia 3 1/2"
No. B-3 — Station & Offset 673+20, 24' Rt. (Rear Abutment) — Surface Elev 881.0'

Elev	Depth	Std Pen (N)	Fac ft	Loss ft	Description	Sample No	% Agg	% C S	% F S	% Silt	% Clay	L L	P I	W C	SHTL Class.
881.0	0														
878.5	2	9/10			Brown Gravelly Sandy Silt	1	16	9	12	28	35	26	8	18	A-4a
876.0	4	10/10			Brown Sandy Silt	2	8	5	11	27	49	28	8	17	A-4a
873.5	6	8/13			Brown and Gray Gravelly Sandy Silt	3	18	7	12	24	39	27	8	18	A-4a
871.0	8	7/18			Brown and Gray Sandy Silt	4	9	5	12	28	46	26	10	18	A-4a
868.5	10	7/12			Brown and Gray Sandy Clay	5	10	2	14	41	31	26	11	16	A-6a
866.0	12	11/12			Brown and Gray Sandy Gravelly Silt	6	29	10	14	25	22	18	4	18	A-4a
863.5	14	11/12			Brown and Gray Gravelly Sandy Clay	7	16	5	11	28	40	32	16	17	A-6b
861.0	16	12/14			Brown and Gray Sandy Silt	8	11	6	11	26	46	26	10	14	A-4a
856.0	20	11/13			Brown and Gray Gravelly Sandy Clay	9	15	7	11	24	43	28	12	15	A-6a
851.0	25	20/21			Gray Silty Sand	10	0	62	25	-13-		NP	NP	19	A-1-b
846.0	30	14/25			Gray Silty Gravelly Sand	11	34	39	15	-12-		NP	NP	15	A-1-b
841.0	35	50/* (0.8')			Gray Sandy Gravel	12	65	21	5	-9-		NP	NP	8	A-1-a
836.0	40	50/* (0.9')			Gray Silty Sandy Gravel	13	64	15	6	5	10	20	9	17	A-2-4
831.0	45	50* (0.0')			No Sample Recovered-Boulders (Driller's Description)		V		I	S	U	A	L		
826.0	50	17/30			Brown Silty Gravelly Sand	14	17	43	29	-11-		NP	NP	24	A-1-b
821.0	55	17/20			Brown Silty Sand	15	12	48	26	-14-		NP	NP	16	A-1-b
820.0	60				BOTTOM OF BORING										

* Refusal

LOG OF BORING

Date Drilled 6/12/68 — Sampler Type SS — Dia 1 3/8"
Date Completed 6/14/68 — Casing Length 60' — Dia 3 1/2"
No. B-10 — Station & Offset 675+35, 42' Lt. (Forward Abutment) — Surface Elev 880.0'

Elev	Depth	Std Pen (N)	Fac ft	Loss ft	Description	Sample No	% Agg	% C S	% F S	% Silt	% Clay	L L	P I	W C	SHTL Class.
880.0	0														
877.5	2	9/12			Brown and Gray Sandy Clay	1	12	5	11	40	32	32	12	20	A-6a
875.0	4	13/19			Brown and Gray Sandy Clay	2	12	8	14	20	46	29	12	19	A-6a
872.5	6	15/17			Brown and Gray Gravelly Sandy Clay	3	21	10	12	22	35	27	12	18	A-6a
870.0	8	14/24			Brown Sandy Clay	4	13	6	11	24	46	26	10	16	A-6a
867.5	10	11/13			Brown and Gray Gravelly Silt	5	18	5	10	26	41	17	4	17	A-4a
865.0	12	11/14			Brown and Gray Gravelly Sandy Silt	6	16	6	11	27	40	28	8	17	A-4a
862.5	14	6/9			Gray Gravelly Sandy Silt	7	16	9	11	26	38	25	9	17	A-4a
860.0	16	6/8			Gray Sandy Silt	8	11	6	11	25	47	25	8	17	A-4a
855.0	20	8/12			Gray Sandy Gravelly Silt	9	26	6	10	21	37	17	5	17	A-4a
850.0	25	18/21			Gray Silty Gravelly Sand	10	20	24	27	7	22	26	9	10	A-2-4
845.0	30	21/24			Gray Silty Sandy Gravel	11	40	15	14	-31-		NP	NP	10	A-2-4
840.0	35	50/* (0.8')			Gray Silty Sandy Gravel	12	57	16	12	-15-		NP	NP	7	A-1-a
835.0	40	50/* (0.9')			Gray Silty Sandy Gravel	13	52	21	14	-13-		NP	NP	7	A-1-a
830.0	45	25/25			Brown and Gray Sandy Silt	14	14	9	15	27	35	25	8	12	A-4a
825.0	50	50/* (0.9')			Gray Silty Gravelly Sand	15	36	18	18	16	12	16	3	14	A-2-4
820.0	55	50/* (0.8')			Gray Sandy Gravel	16	62	20	9	-9-		NP	NP	17	A-1-a
819.2	60				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 23, OHIO

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO AUG-33-0452
UNDER SR 66
SEC. AUG-29 & 33-(1 04) (2 71)

CHECKED BY	REVIEWED BY	DATE
L N L	R D R	7/8/68

TE - 119
1000 - 4 - 66

36/41

AUG-29 & 33-(104) (2.71) 2/3

OHIO DEPARTMENT OF HIGHWAYS TESTING LABORATORY 1620 WEST BROAD STREET, COLUMBUS 23, OHIO			
STRUCTURE FOUNDATION INVESTIGATION BRIDGE NO AUG-33-0452 UNDER SR 66 SEC AUG-29 & 33-(104) (271)			
PLAN AND PROFILE			
DRAWN BY L N L	CHECKED BY L N L	REVIEWED BY R D R	DATE 7/8/68

37
41

AUG-29 & 33-(1.04) (2.71) 3/3

Test Location No. _____
Station & Offset _____
Surface Elev. _____ Water Elev. _____
Piling _____
Hammer _____
Formula _____
Reference _____
Rod Condition _____

Test Location No. _____
Station & Offset _____
Surface Elev. _____ Water Elev. _____
Piling _____
Hammer _____
Formula _____
Reference _____
Rod Condition _____

Test Location No. _____
Station & Offset _____
Surface Elev. _____ Water Elev. _____
Piling _____
Hammer _____
Formula _____
Reference _____
Rod Condition _____

Test Location No. 1
Station & Offset 672+78.46'LT
REAR ABUTMENT
Surface Elev. 881.0' Water Elev. _____
Piling _____
Hammer _____
Formula _____
Reference _____
Rod Condition GOOD

Test Location No. 6
Station & Offset 673+80.24'RT
REAR PIER
Surface Elev. 881.1 Water Elev. _____
Piling _____
Hammer _____
Formula _____
Reference _____
Rod Condition GOOD

Test Location No. 7
Station & Offset 674+18.40'LT
CENTER PIER
Surface Elev. 879.6 Water Elev. _____
Piling _____
Hammer _____
Formula _____
Reference _____
Rod Condition GOOD

Test Location No. 12
Station & Offset 675+88.25'RT
FORWARD PIER
Surface Elev. 876.5 Water Elev. _____
Piling _____
Hammer _____
Formula _____
Reference _____
Rod Condition GOOD

Test Location No. 13
Station & Offset 676+16.48'LT
FORWARD ABUTMENT
Surface Elev. 879.6 Water Elev. _____
Piling _____
Hammer _____
Formula _____
Reference _____
Rod Condition GOOD

OHIO STATE HIGHWAY TESTING LABORATORY
1620 WEST BROAD ST. COLUMBUS 23, OHIO

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. AUG-33-0452
UNDER SR 66
SEC. AUG-29 & 33-(1.04) (2.71)

DRIVE ROD PENETRATION RESISTANCE DATA

PLOTTED BY	CHECKED BY	REVIEWED BY	DATE
R. C.	L. N. L.	R. D. R.	7/8/68

TE - 118
600 - 4 - 66

MICROFILMED
JAN 18 '965

AUGLAIZE COUNTY
AUG-29 & 33-(0.00)(2.72)

GEOLOGY OF THE SITE
THE STRUCTURE SITE IS LOCATED ON THE DISSECTED EAST-WEST END MORAINE, IN AN AREA WHERE MODERATELY DEEP GLACIAL-DERIVED SOILS OVERLIE DOLOMITE BEDROCK, OF SILURIAN AGE.

EXPLORATION
THE EXPLORATION CONSISTED OF ONE DRIVE SAMPLE-CORE BORING AND ONE DRIVE SAMPLE BORING, MADE BETWEEN JANUARY 22 AND FEBRUARY 15, 1968, AND EIGHT DRIVE ROD PENETRATION TESTS, MADE BETWEEN FEBRUARY 28 AND MARCH 7, 1968.

INVESTIGATIONAL FINDINGS
THE BORINGS ENCOUNTERED UNSTRATIFIED INTERVALS OF DENSE TO VERY DENSE GRAVELLY SANDY SILTS AND STIFF TO VERY STIFF SANDY CLAYS WITH SCATTERED INTERVALS OF BOULDERS TO BEDROCK SURFACE, ENCOUNTERED IN BORING B-1, IN THE VICINITY OF THE REAR ABUTMENT, AT 66-FOOT DEPTH, ELEVATION 827 FEET. BORING B-16, LOCATED IN THE FORWARD ABUTMENT AREA, WAS TERMINATED AT 70-FOOT DEPTH, ELEVATION 822 FEET, AFTER PENETRATING 20 FEET OF MATERIAL REQUIRING IN EXCESS OF 30 BLOWS PER FOOT IN THE STANDARD PENETRATION TEST. BORING B-1 WAS TERMINATED AT 76-FOOT DEPTH, ELEVATION 817 FEET, AFTER PENETRATING 10 FEET BELOW BEDROCK SURFACE.

THE ROD SOUNDINGS ENCOUNTERED GRADUAL INCREASE IN PENETRATION RESISTANCE WITH INCREASE IN DEPTH AND WERE TERMINATED DUE TO NEAR REFUSAL TO PENETRATION AT 22 AND 35-FOOT DEPTH, ELEVATIONS 871 AND 857 FEET, CONSIDERED TO BE IN VERY DENSE AND VERY STIFF SANDY SILTS AND CLAYS, AS REVEALED BY THE BORINGS.

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

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 Indurated Clay
- Indurated Clay
- Weathered Shale
- Shale
- Boulders
- 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	8"	Cobbles	3"	Gravel	2.0mm (No 10 sieve)	Coarse Sand	0.42mm (No 40 sieve)	Fine Sand	0.074mm (No 200 sieve)	Silt	0.005mm	Clay

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 23, OHIO

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO AUG-33-0557 L/R
OVER N&W RR
SEC AUG-29 & 33-(0.00)(2.72)

CHECKED BY	REVIEWED BY	DATE
L.N.L	R.D.R	3/21/68

TE - 119
1000 - 4 - 66

MICROFILMED
JAN 18 1985

AUG - 29 & 33 - (0.00) (2.72)

39/41 2/4

SCALE: 1" = 20'

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

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. AUG-33-0557 L/R
OVER N&W RR.
SEC. AUG-29 & 33-(0.00)(2.72)

PLAN AND PROFILE

DRAWN BY	CHECKED BY	REVIEWED BY	DATE
J.E.C.	L.N.L.	R.D.R.	3/21/68

TE - 122
600 - 11 - 64

MICROFILMED
JAN 18 1965

AUG-29 & 33-(0.00) (2.72)

40
*41
3/4

LOG OF BORING

Date Started 1-25-68
Date Completed 2-15-68
Boring No. B-1

Sampler Type SS Dia. 1 3/8"
Casing: Length 65' Dia. 3 1/2"
Station & Offset 292+06, 54' Rt. (Rear Abutment)

Water Elev.
Surface Elev. 893.4'

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class.
893.4	0														
	2														
	4														
888.4	6	13/21			Brown Sandy Clay	1	7	4	10	29	50	34	12	17	A-6a
885.9	8	14/23			Brown Sandy Clay	2	8	4	11	25	52	32	13	18	A-6a
883.4	10	18/27			Brown Sandy Clay	3	6	5	11	28	50	33	12	17	A-6a
880.9	12	18/25			Brown Sandy Clay	4	9	4	10	26	51	31	14	17	A-6a
878.4	14	9/14			Gray Sandy Silt	5	6	5	10	30	49	26	9	17	A-4a
875.9	16	10/17			Gray Sandy Clay	6	8	5	10	29	48	31	13	18	A-6a
873.4	18	10/15			Gray Sandy Silt	7	8	4	10	28	50	25	9	17	A-4a
870.9	20	10/16			Gray Sandy Silt	8	6	5	11	30	48	26	10	17	A-4a
868.4	22	10/16			Gray Sandy Silt	9	9	6	11	26	48	28	10	15	A-4a
	24														
863.4	26	8/12			Gray Sandy Silt	10	7	6	10	28	49	29	10	18	A-4a
	28														
858.4	30	10/15			Gray Sandy Silt	11	9	8	16	28	39	23	6	18	A-4a
	32														
853.4	34	7/10			Gray Silty Sand Clay	12	6	4	9	32	49	29	12	17	A-4a
	36														
848.4	38	16/27			Brown Sandy Gravelly Silt with Boulders	13	44	4	11	27	14	NP	NP	12	A-1a
	40														
843.4	42	15/23			Brown Gravelly Sandy Silt	14	24	9	15	31	21	NP	NP	21	A-4a
	44														
838.4	46	50* (0.7')			Brown Silty Sandy Gravel	15	57	19	9	8	7	NP	NP	12	A-1-b
	48														
833.4	50	50* (0.2')			Gray Silty Sand with Boulders (Till Samples)	16	0	39	50	11	-	NP	NP	22	A-3a
	52														
828.4	54														
827.4	56				TOP OF ROCK										
	58														
	60		5.0	0.0	Dolomitic limestone, gray, hard, dense, vuggy, slightly leached, with calcite, very badly broken and jointed. No Core Loss.										
	62														
	64														
	66														
	68														
	70														
	72														
	74		5.0	0.0											
817.4	76				BOTTOM OF BORING										

LOG OF BORING

Date Started 1-22-68
Date Completed 1-24-68
Boring No. B-16

Sampler Type SS Dia. 1 3/8"
Casing: Length 65' Dia. 3 1/2"
Station & Offset 295+39, 54' Lt. (Forward Abutment)

Water Elev.
Surface Elev. 892.7'

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class.
892.7	0														
	2														
	4														
887.7	6	15/22			Brownish-Gray Sandy Clay	1	7	6	12	28	47	30	11	17	A-6a
885.2	8	14/24			Brown Sandy Clay	2	6	6	14	31	43	31	12	17	A-6a
882.7	10	18/25			Brown Sandy Clay	3	10	5	12	25	48	35	14	19	A-6a
880.2	12	8/12			Gray Sandy Gravelly Silt	4	19	6	10	32	33	30	10	17	A-4a
877.7	14	12/18			Brown Sandy Clay	5	6	5	11	26	52	37	16	19	A-6a
875.2	16	8/11			Gray Sandy Clay	6	8	5	9	31	47	33	12	18	A-6a
872.7	18	7/10			Gray Sandy Clay	7	6	5	11	29	49	33	13	18	A-6a
870.2	20	8/11			Gray Sandy Gravelly Clay	8	17	7	9	22	45	32	12	18	A-6a
867.7	22	8/14			Gray Sandy Clay	9	6	5	12	28	49	30	12	18	A-6a
	24														
862.7	26	13/14			Gray Silt	10	0	1	2	59	38	25	6	20	A-4b
	28														
857.7	30	12/18			Gray Sandy Clay	11	6	5	10	31	48	31	12	18	A-6a
	32														
852.7	34	9/11			Gray Sandy Silt	12	10	6	12	29	43	24	8	16	A-4a
	36														
847.7	38	10/14			Gray Sandy Silt	13	7	6	13	31	43	25	8	17	A-4a
	40														
842.7	42	50* (0.6')			Gray Sandy Silt with Boulders	14	9	10	17	27	37	20	7	13	A-4a
	44														
837.7	46	50* (0.6')			Gray Sandy Gravel	15	63	18	9	10	-	NP	NP	9	A-1-b
	48														
832.7	50	17/28			Gray Sandy Gravelly Silt	16	31	11	15	23	20	22	6	11	A-4a
	52														
827.7	54	60/*			Gray Gravelly Sandy Silt	17	22	12	20	24	18	NP	NP	9	A-4a
	56														
822.7	58	50* (0.1')			Gray Silty Sandy Gravel	18	45	24	11	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	A-1-b
	60				BOTTOM OF BORING										

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

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. AUG-33-0557 L/R
OVER N & W RR.
SEC. AUG-29 & 33-(0.00) (2.72)

BORING DATA

TYPED BY	CHECKED BY	REVIEWED BY	DATE
S.A.J.	L.N.L.	R.D.R.	3/21/68

41
41

AUG-29 & 33-(0.00)
(2.72)

4
4

Test Location No. 1
Station & Offset 292+06.53' RT.
REAR ABUTMENT
Surface Elev. 893.2 Water Elev.
Piling
Hammer
Formula
Reference
Rod Condition GOOD

Test Location No. 3
Station & Offset 293+03.30' LT.
REAR ABUTMENT
Surface Elev. 891.0 Water Elev.
Piling
Hammer
Formula
Reference
Rod Condition GOOD

Test Location No. 6
Station & Offset 293+85.5' RT.
REAR PIER
Surface Elev. 891.4 Water Elev.
Piling
Hammer
Formula
Reference
Rod Condition GOOD

Test Location No. 8
Station & Offset 293+95.99' LT.
REAR PIER
Surface Elev. 891.8 Water Elev.
Piling
Hammer
Formula
Reference
Rod Condition GOOD

Test Location No. 9
Station & Offset 293+50.89' RT.
FORWARD PIER
Surface Elev. 891.4 Water Elev.
Piling
Hammer
Formula
Reference
Rod Condition GOOD

Test Location No. 11
Station & Offset 294+47.61
FORWARD PIER
Surface Elev. 891.7 Water Elev.
Piling
Hammer
Formula
Reference
Rod Condition GOOD

Test Location No. 14
Station & Offset 294+83.30' RT.
FORWARD ABUTMENT
Surface Elev. 891.6 Water Elev.
Piling
Hammer
Formula
Reference
Rod Condition GOOD

Test Location No. 16
Station & Offset 295+13.54' LT.
FORWARD ABUTMENT
Surface Elev. 892.9 Water Elev.
Piling
Hammer
Formula
Reference
Rod Condition GOOD

OHIO STATE HIGHWAY TESTING LABORATORY
1620 WEST BROAD ST. COLUMBUS 23, OHIO

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. AUG-33-0557 L/R
OVER N & W RR.
SEC. AUG-29 & 33-(0.00)(2.72)

DRIVE ROD PENETRATION RESISTANCE DATA

PLOTTED BY	CHECKED BY	REVIEWED BY	DATE
R.C.	L.N.L.	R.D.R.	3/21/68

MICROFILMED
JAN 18 1965

LEE CO. -80M-10-67-1000