TE-95
400-1-63

GENERAL INFORMATION

INTRODUCTION

The project consists of the addition of a portion of the S3 Lane, a portion of the N3 Lane, and relocation of 6.4 miles of USR 23, beginning 1000 feet north of the Marion-Wyandot County line, extending northwestward, generally adjacent to existing USR 23, and terminating on existing USR 23, 3000 feet south of Co. Rd. 62. Included in the report are profiles of the SR 294 Interchange and associated ramps, Co. Rd. 127, and the Little Sandusky Creek Relocation.

Proposed grades indicate the following maximum proposed cuts and fill embankments:

	CUTS (MAX.)	FILL EMBANKMENTS (MAX.)
Mainline (USR 23)	12'	19'
SR 294 Interchange		
SR 294	-	13'
Ramp A	-	11'
Ramp B	10'	10'
Ramp C	1'	6'
Ramp D	9'	8'
Co. Rd. 127	1'	4'

Little Sandusky Creek Relocation - excavation, maximum 14 feet in depth.

GEOLOGY OF THE PROJECT

The alignment traverses a gently rolling portion of the glaciated Mississippi Valley Plain, in an area where moderately deep glacial drift, overlies carbonate bedrock, of the Monroe formation.

EXPLORATION

Exploratory borings were made by means of truck-mounted mechanical soil auger and hand auger (in areas of difficult access), between March 30 and April 7, 1964.

INVESTIGATIONAL FINDINGS

Materials occurring immediately below proposed grade consist of silt clays (A-6a and A-6b) and clays (A-7-6), having moisture contents generally in the lower portion of the plastic range, and few silts.

Frost susceptible silts were encountered within three feet below proposed grade at stations 12+75, 100+50, 205+00, and 284+91.

Wet materials were encountered at mainline stations 12+75, 188+65, 205+00, and 285+00, and SR 294 station 604+25.

In the embankment foundations, soils are predominantly comprised of silts (A-4a and A-4b), silt clays (A-6a and A-6b), and clays (A-7-6), having moisture contents generally in the lower portion of the plastic range.

Wet materials were encountered at the following stations:

17+00	77+00	208+00
41+00	91+00	240+75
111+00	96+00	305+50
72+00	106+65	270+21
	205+65	

Organic material was encountered at stations 96+00 and 106+00.

The excavation for the Little Sandusky River Relocation will be in sandy silts (A-4a) and silt clays (A-6a and A-6b).

LEGEND FOR PROJECT AVERAGE RESULTS OF TESTS — 224 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	A-1-a(0)	A-1-a	64	18	8	- 10 -		NP	NP	14	2
Stone fragments with sand	A-1-b(0)	A-1-b	1	69	22	- 8 -		NP	NP	6	1
Coarse and fine sand	--------	A-3a	0	13	60	10	17	25	2	13	4
Sandy Silt	A-4(5)	A-4a	8	6	27	31	28	24	5	17	24
Silt	A-4(8)	A-4b	1	2	6	62	29	26	4	23	31
Silt and clay	A-6(9)	A-6a	6	5	10	38	41	31	12	20	78
Silty clay	A-6(11)	A-6b	2	2	7	40	49	38	17	24	30
Clay	A-7-6(14)	A-7-6	1	1	4	36	58	45	23	27	54

Sod and/or Topsoil =X'= Approximate depth.

Berm material

Auger boring - plan view.

Auger 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.

W — Free water.

Static water level.

NOTE: Figures beside borings indicate water content in percent. e.g. 15

SOIL PROFILE

WYANDOT COUNTY

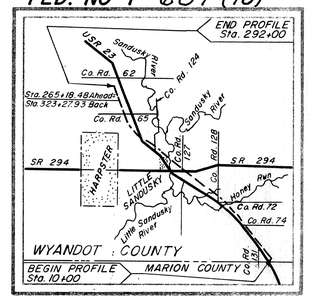
WYA-23-0.20

1 / 29

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.

FED. NO F-607 (10)



LOCATION MAP

Recon - J.S.M. 3/20/64
Drilling - A.P., B.D.L. 3/30/64 to 4/7/64
Drafting - A.F., S.P.W. 7/9/64

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.

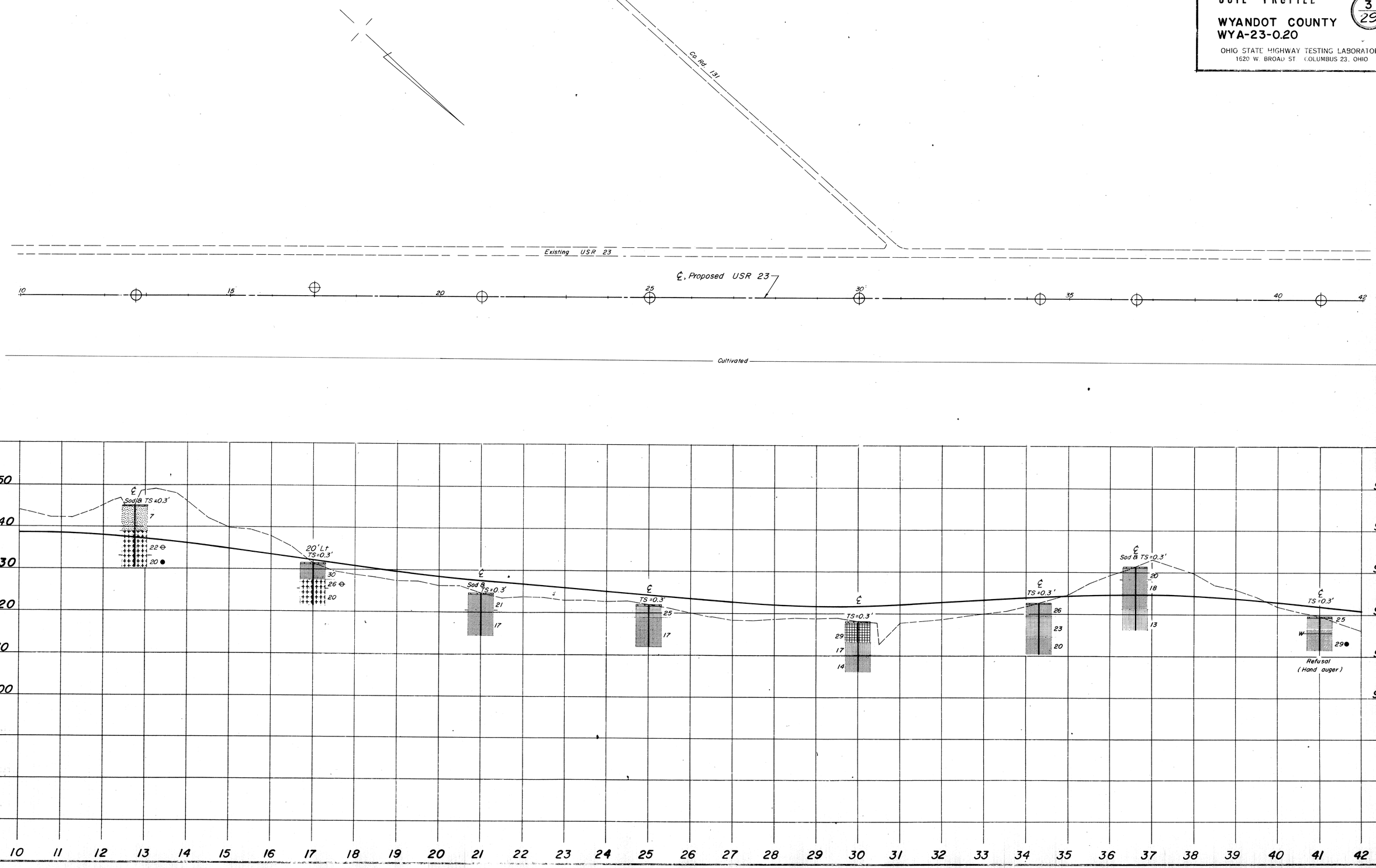
STATION & OFFSET		DEPTH FROM-TO	% AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	SHTL CLASS.
12+75	CL	0.3-6.0	0	0	74	11	15	NP	NP	7	A-3a
		6.0-12.0	0	0	14	50	36	NP	NP	22	A-4b *
		12.0-15.0	0	1	4	80	15	22	6	20	A-4b
17+00	20'Lt	0.3-4.0	0	1	0	63	36	35	14	30	A-6a *
		4.0-6.0	0	0	14	69	17	NP	NP	26	A-4b
		6.0-10.0	0	0	1	72	27	NP	NP	20	A-4b
21+00	CL	0.3-4.0	7	6	15	30	42	33	13	21	A-6a
		4.0-10.0	0	7	10	45	38	26	11	17	A-6a
25+00	CL	0.3-3.0	0	1	5	32	62	39	19	25	A-6b
		3.0-10.0	6	7	13	38	36	29	11	17	A-6a
30+00	CL	0.3-5.0	0	1	5	32	62	57	37	29	A-7-6
		5.0-8.0	18	10	10	31	25	6	17		A-4a
		8.0-12.0	5	4	8	45	38	24	11	14	A-6a
34+30	25'Lt	0.3-3.0	0	4	14	27	55	37	15	26	A-6a
		3.0-8.0	0	2	2	45	51	37	16	23	A-6b
		8.0-12.0	0	0	2	46	52	30	11	20	A-6a
36+60	CL	0.3-3.0	0	2	12	42	44	30	11	20	A-6a
		3.0-10.0	6	8	15	33	38	26	11	18	A-6a *
		10.0-15.0	8	9	16	46	21	21	5	13	A-4a
41+00	CL	0.3-3.0	0	5	13	29	53	38	16	25	A-6b
		3.0-8.0	9	6	2	45	38	29	11	29	A-6a
44+60	CL	0.3-6.0	9	3	15	28	45	41	22	24	A-7-6
		6.0-8.0	0	0	60	20	20	NP	NP	27	A-4a
48+15	CL	0.3-5.0	0	0	2	26	72	46	22	23	A-7-6 *
52+25	CL	0.3-5.0	0	2	7	63	28	NP	NP	24	A-4b
55+00	20'Lt	0.3-5.0	7	4	6	36	47	39	18	22	A-6b
		5.0-10.0	11	7	14	36	32	23	8	13	A-4a
60+00	CL	0.3-4.0	0	0	4	48	48	39	19	25	A-6b
		4.0-10.0	0	5	13	37	45	28	11	17	A-6a
66+00	CL	0.3-3.0	0	0	1	78	21	47	27	26	A-7-6
		3.0-8.0	9	7	13	31	40	28	11	18	A-6a
		8.0-10.0	16	7	13	31	33	23	7	13	A-4a
67+00	150'Rt	0.3-5.0	0	0	0	37	63	68	38	43	A-7-6
		5.0-10.0	0	0	3	60	37	29	8	27	A-4b
69+60	CL	0.3-6.0	0	0	0	22	78	45	19	24	A-7-6 *
		6.0-10.0	0	10	15	38	37	26	11	17	A-6a
72+00	CL	0.3-5.0	0	1	0	45	54	39	19	29	A-6b
		5.0-8.0	0	0	3	76	21	NP	NP	26	A-4b
77+00	CL	0.3-4.0	0	0	2	64	34	33	12	27	A-6a
		4.0-8.0	0	0	9	72	19	NP	NP	29	A-4b
		8.0-10.0	0	1	4	75	20	NP	NP	27	A-4b
81+50	CL	0.3-5.0	0	1	8	49	42	34	14	30	A-6a
		5.0-8.0	0	1	0	61	38	48	26	36	A-7-6
86+00	CL	0.3-3.0	0	0	1	53	46	36	15	27	A-6a
		3.0-5.0	0	2	2	23	73	51	24	26	A-7-6
		5.0-9.0	0	1	0	52	47	29	10	23	A-4b
91+00	CL	0.3-5.0	0	1	2	34	63	45	19	34	A-7-6
		5.0-10.0	0	1	11	69	19	NP	NP	23	A-4b
96+00	50'Lt	0.3-3.0	0	0	1	41	58	47	23	18	A-7-6
		3.0-10.0	0	0	0	62	38	22	6	28	A-4b
96+00	CL	0.3-3.0	0	1	1	31	67	61	35	34	A-7-6
		3.0-9.0	0	0	0	59	41	27	6	28	A-4b
100+50	CL	0.3-7.0	0	1	5	60	34	27	6	15	A-4b *
106+50	CL	0.3-2.0	0	4	28	37	31	41	15	54	A-7-6
		2.0-4.0	24	14	26	18	18	NP	NP	22	A-4a
		4.0-6.0	0	4	15	38	43	33	13	23	A-6a
109+96	CL	0.3-3.0	0	2	5	36	57	40	21	19	A-6b *
		3.0-9.0	11	7	11	30	41	28	11	17	A-6a *
		9.0-14.0	0	5	11	51	33	25	9	14	A-4b
114+00	CL	0.4-3.0	0	7	13	33	47	32	11	21	A-6a
		3.0-6.0	0	4	6	51	39	26	7	18	A-4b
120+00	CL	0.3-3.0	0	5	9	34	52	32	11	22	A-6a *
		3.0-7.0	0	0	1	16	83	51	24	23	A-7-6
125+00	CL	0.3-3.0	0	4	3	45	48	34	12	23	A-6a *
		3.0-6.0	0	4	2	24	70	43	20	22	A-7-6
130+00	CL	0.3-3.0	0	0	1	31	68	51	25	26	A-7-6
		3.0-6.0	0	0	1	33	66	45	22	18	A-7-6
135+00	CL	0.3-3.0	0	2	6	31	61	44	20	26	A-7-6
		3.0-7.0	0	9	76	5	10	NP	NP	23	A-3a
140+00	CL	0.3-3.0	0	1	4	37	58	44	22	24	A-7-6
		3.0-8.0	0	1	2	34	63	43	19	29	A-7-6
143+40	CL	0.3-3.0	0	1	1	51	47	38	17	26	A-6b *
		3.0-9.0	0	1	1	56	42	28	8	29	A-4b
		9.0-12.0	11	9	14	32	34	24	11	13	A-6a
150+00	CL	0.3-3.0	0	1	1	46	52	35	12	27	A-6a *
		3.0-7.0	0	1	1	52	46	30	9	25	A-4b
155+00	CL	0.3-5.0	0	0	0	47	53	41	18	24	A-7-6 *
158+00	CL	0.3-5.0	0	0	0	2	49	45	39	16	35	A-6b
161+60	CL	0.3-6.0	0	0	1	52	47	44	20	36	A-7-6
166+50	CL	0.3-4.0	0	1	2	45	52	40	18	33	A-6b
172+00	CL	0.3-5.0	0	1	2	47	50	43	22	28	A-7-6 *
177+00	CL	0.3-4.0	0	1	1	48	50	43	19	26	A-7-6
181+50	CL	0.4-4.0	0	3	11	35	51	40	18	28	A-6b
183+00	CL	0.3-5.0	13	2	6	35	44	39	16	26	A-6b
188+65	CL	0.3-5.0	0	5	8	39	48	39	19	26	A-6b
		5.0-11.0	0	1	13	41	45	28	11	15	A-6a *
		11.0-14.0	0	0	1	42	57	35	14	23	A-6a
		14.0-16.0	0	3	7	79	11	NP	NP	21	A-4b
		16.0-23.0	12	8	28	29	29	29	5	15	A-4a
		23.0-30.0	12	8	12	32	36	23	6	14	A-4a
193+00	CL	0.5-3.0	0	1	3	30	66	49	26	25	A-7-6
		3.0-10.0	12	5	9	31	43	32	14	16	A-6a *
		10.0-13.5	0	0	0	33	67	45	18	22	A-6b *
		13.5-16.0	0	10/	36	33	21	NP	NP	21	A-4a
		16.0-22.0	0	7	17	38	38	21	5	14	A-4a
196+10	CL	0.5-4.0	0	3	4	35	58	43	21	24	A-7-6
		4.0-7.5	20	7	14	24	35	31	12	14	A-6a
		7.5-13.0	12	7	16	30	35	24	11	13	A-6a
196+25	50'Lt	0.6-3.0	0	2	6	76	16	38	18	24	A-6b
		3.0-7.0	9	9	17	32	33	28	11	15	A-6a
		7.0-12.0	10	8	15	30	37	25	11	14	A-6a
200+00	CL	0.5-2.0	0	6	4	37	53	45	22	27	A-7-6
		2.0-7.5	7	8	13	30	42	30	11	15	A-6a
		7.5-13.0	8	6	10	33	43	27	11	15	A-6a *
		13.0-19.0	16	9	8	35	32	23	11	12	A-6a
		19.0-25.0	11	7	16	29	37	23	11	13	A-6a
205+00	CL	0.3-3.0	0	0	1	26	73	50	24	23	A-7-6
		3.0-8.0	9	7	9	35	40	28	11	12	A-6a
		8.0-12.0	5	3	7	39	46	30	12	17	A-6a *
		12.0-15.0	0	3	47	31	19	NP	NP	10	A-4a *
		15.0-17.0	0	2	6	63	29	NP	NP	21	A-4b
		17.0-21.0	8	6	12	53	21	20	5	14	A-4b
		21.0-25.0	9	7	19	30	35	22	7	12	A-4a
205+65	CL	0.3-4.0	0	2	43	30	25	NP	NP	21	A-4a
		4.0-7.0	0	2	41	29	28	28	8	25	A-4a
		7.0-9.5	20	10	28	25	17	31	11	27	A-6a
		9.5-13.0	63	17	10	- 10 -		NP	NP	14	A-1-a
208+00	CL	0.3-4.0	0	0	26	36	38	27	9	19	A-4a
		4.0-5.5	17	7	14	41	21	20	5	11	A-4a
		5.5-8.0	0	2	17	50	31	22	3	22	A-4b
		8.0-12.5	0	4	14	50	32	20	4	17	A-4b
211+00	CL	0.4-6.5	0	0	12	44	44	37	16	22	A-6b
		6.5-12.0	8	4	8	32	48	35	16	16	A-6b
		12.0-16.5	0	5	8	50	37	22	5	17	A-4b
215+00	CL	0.7-4.5	0	1	10	38	51	39	18	21	A-6b
218+40	CL	0.5-5.0	9	6	13	26	46	33	12	22	A-6a *
221+00	CL	0.4-4.0	9	5	16	25	45	33	13	22	A-6a
		4.0-6.0	0	20	22	20	38	-	-	18	A-6a *
222+80	CL	0.4-3.0	13	2	12	26	47	38	19	24	A-6a *
		3.0-5.0	Brownish-Gray Sandy Silty Clay					37	13	21	A-6a
225+00	CL	0.5-4.0	0	2	3	31	64	42	19	23	A-7-6
227+00	CL	0.6-5.0	0	3	36	26	35	24	7	18	A-4a
230+00	CL	0.6-5.0	4	6	16	31	43	32	13	19	A-6a *
233+80	CL	0.3-3.0	0	5	17	29	49	36	17	20	A-6b
		3.0-5.0	0	9	56	11	24	25	8	18	A-3a
		5.0-8.0	0	1	16	71	12	NP	NP	22	A-4b
		8.0-15.0	1	69	22	- 8 -		NP	NP	6	A-1-b *
238+40	CL	0.4-4.0	14	6	13	27	40	37	16	21	A-6b *
		4.0-8.5	15	7	5	40	33	26	11	15	A-6a
		8.5-10.0	0	34	32	23	11	NP	NP	5	A-3a
240+75	CL	0.4-4.0	0	1	5	37	57	46	17	27	A-7-6
		4.0-7.0	0	3	11	31	55	45	21	25	A-7-6
		7.0-10.0	13	5	21	30	31	24	7	14	A-4a
		10.0-16.0	0	4	57	28	11	NP	NP	21	A-4a
		16.0-20.0	Gray Sandy Silt					20	4	21	A-4a
		20.0-23.5	8	6	4	56	26	19	3	10	A-4b
244+00	CL	0.4-3.0	0	0	2	37	61	48	25	26	A-7-6 *
		3.0-5.0	0	1	1	33	65	43	18	22	A-7-6 *
		5.0-10.0	0	0	0	12	88	50	24	26	A-7-6
245+55	15'Lt	0.5-6.0	0	1	3	26	70	52	21	31	A-7-6
		6.0-12.0	22	9	9	22	38	35	13	23	A-6a
		12.0-15.0	9	7	0	46	38	27	11	11	A-6a
249+65	CL	0.5-3.0	0	0	1	28	71	50	26	24	A-7-6
		3.0-8.0	0	0	1	20	79	51	25	26	A-7-6
		8.0-10.0	0	0	0	64	36	44	20	25	A-7-6
255+00	CL	0.3-4.0	0	3	8	35	54	43	22	21	A-7-6
		4.0-10.0	0	0	1	27	72	44	18	21	A-7-6
259+50	CL	0.4-2.5	0	1	1	47	51	43	20	28	A-7-6 *
		2.5-7.0	0	1	1	40	58	39	15	19	A-6a
		7.0-10.0	0	1	2	41	56	38	16	21	A-6b
265+00	CL	0.4-4.0	0	3	0	50	47	37	16	24	A-6b *
		4.0-10.0	0	2	5	42	51	35	14	15	A-6a
269+45	CL	0.4-2.5	0	3	14	49	54	42	21	24	A-7-6
		2.5-8.5	0	2	5	45	53	38	16	21	A-6b
		8.5-12.0	0	2	4	45	49	31	12	13	A-6a
275+00	CL	0.6-3.0	0	1	6	38	55	46	22	26	A-7-6
		3.0-6.0	0	1	6	45	53	45	18	30	A-7-6
		6.0-10.0	0	3	8	43	46	28	11	15	A-6a
280+00	CL	0.6-3.0	0	1	4	34	61	51	27	28	A-7-6
		3.0-6.5	0	3	6	44	47	30	11	19	A-6a
		6.5-10.0	0	3	8	45	44	27	11	16	A-6a
285+00	CL	0.5-4.0	0	1	20	40	53	46	38	18	27	A-6b *
		4.0-7.5	0	3	10	46	41	34	14	31	A-6a
290+00	CL	0.4-5.0	0	2	8	46	52	37	16	23	A-6b *
		5.0-8.5	0	4	9	38	49	33	13	19	A-6a
		8.5-10.0	7	4	1	44	44	27	11	17	A-6a
297+58	CL	0.4-5.5	0	1	4	24	71	56	32	30	A-7-6
		5.5-10.0	0	3	9	38	50	31	12	19	A-6a
302+25	50'Rt	0.5-4.0	0	2	8	52	38	43	21	26	A-7-6 *
		4.0-10.0	0	4	5	45	46	33	13	17	A-6a
305+50	CL	0.6-5.0	0	6	19	30	45	33	14	36	A-6a
308+00	CL	0.5-5.5	0	4	10	38	48	35	14	28	A-6a *
313+00	CL	0.5-5.0	0	2	8	39	51	39	19	20	A-6b
		5.0-10.0	5	3	8	45	44	32	12	17	A-6a
318+00	75'Lt	0.4-5.0	18	5	7	33	37	39	20	24	A-6b
		5.0-9.0	0	3	8	49	40	33	13	19	A-6a
		9.0-10.0	0	4	8	48	40	30	11	22	A-6a
319+00	CL	0.4-5.0	20	2	5	32	41	35	15	20	A-6a
		5.0-10.0	8	4	2	44	42	31	11	17	A-6a
265+41	75'Lt	0.4-4.0	27	6	8	28	31	36	15	36	A-6a
265+41	CL	0.5-5.0	0	2	7	42	49	36	16	27	A-6b
270+21	CL	0.4-3.0	0	3	26	35	36	32	12	27	A-6a
		3.0-5.0	28	10	20	22	29	9	30		A-4a
273+16	CL	0.4-4.5	0	3	4	42	51	36	13	26	A-6a *
274+91	CL	0.5-5.0	0	2	6	33	59	43	19	28	A-7-6 *
279+91	CL	0.5-5.0	12	1	2	41	44	45	24	39	A-7-6 *
284+91	CL	0.5-4.0	0	1	1	63	35	32	10	27	A-4b *
		4.0-6.5	0	1	2	64	33	31	7	33	A-4b
291+91	CL	0.5-4.0	0	0	2	51	47	47	26	29	A-7-6 *
		4.0-7.0	0	1	6	46	47	34	12	30	A-6a
		SR 294 INTERCHANGE									
		SR 294									
600+50	12'Rt	0.3-6.0	28	6	23	11	32	32	15	19	A-6a
		6.0-10.0	17	9	15	24	35	24	11	12	A-6a
		10.0-18.0	11	4	6	55	24	NP	NP	17	A-4b
604+25	12'Rt	0.3-7.0	10	3	11	37	39	30	11	16	A-6a
		7.0-10.0	0	1	12	70	17	NP	NP	21	A-4b
607+50	12'Rt	0.3-5.0	0	2	5	38	55	41	19	24	A-7-6
		5.0-10.0	11	3	7	36	43	34	14	20	A-6a
617+00	12'Rt	0.3-6.0	11	3	7	36	43	33	13	20	A-6a
		6.0-12.0	0	3	8	40	49	32	13	19	A-6a
622+00	12'Rt	0.3-5.0	17	1	5	38	39	43	20	24	A-7-6
		5.0-10.0	0	4	12	41	43	29	11	18	A-6a
		RAMP B									
87+00	BL	0.3-5.0	0	1	3	41	55	44	20	32	A-7-6 *
		RAMP C									
197+00	BL	0.6-3.5	0	3	10	32	55	45	22	28	A-7-6
		3.5-7.0	8	9	18	31	34	26	11	12	A-6a
		7.0-12.0	7	8	14	31	40	29	12	15	A-6a
		RAMP D									
87+00	BL	0.3-5.0	0	7	15	23	55	39	17	25	A-6b *
		CO. RD. 127									
5+00	CL	0.3-5.0	0	1	2	42	55	48	24	32	A-7-6 *
		LITTLE SANDUSKY RIVER RELOCATION									
12+00	CL	0.6-5.0	0	1	37	33	29	25	8	19	A-4a
		5.0-11.0	3	6	10	39	45	25	11	15	A-6a *
		11.0-17.5	0	2	3	56	39	26	4	23	A-4b
16+00	CL	0.4-3.0	0	1	25	41	33	30	14	21	A-6a
		3.0-9.0	8	7	20	32	33	23	8	15	A-4a
		9.0-12.0	19	10	22	27	22	20	4	18	A-4a *
		12.0-15.0	64	19	6	- 11 -		NP	NP	14	A-1-a

SOIL PROFILE

3/29

WYANDOT COUNTY
WYA-23-0.20

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

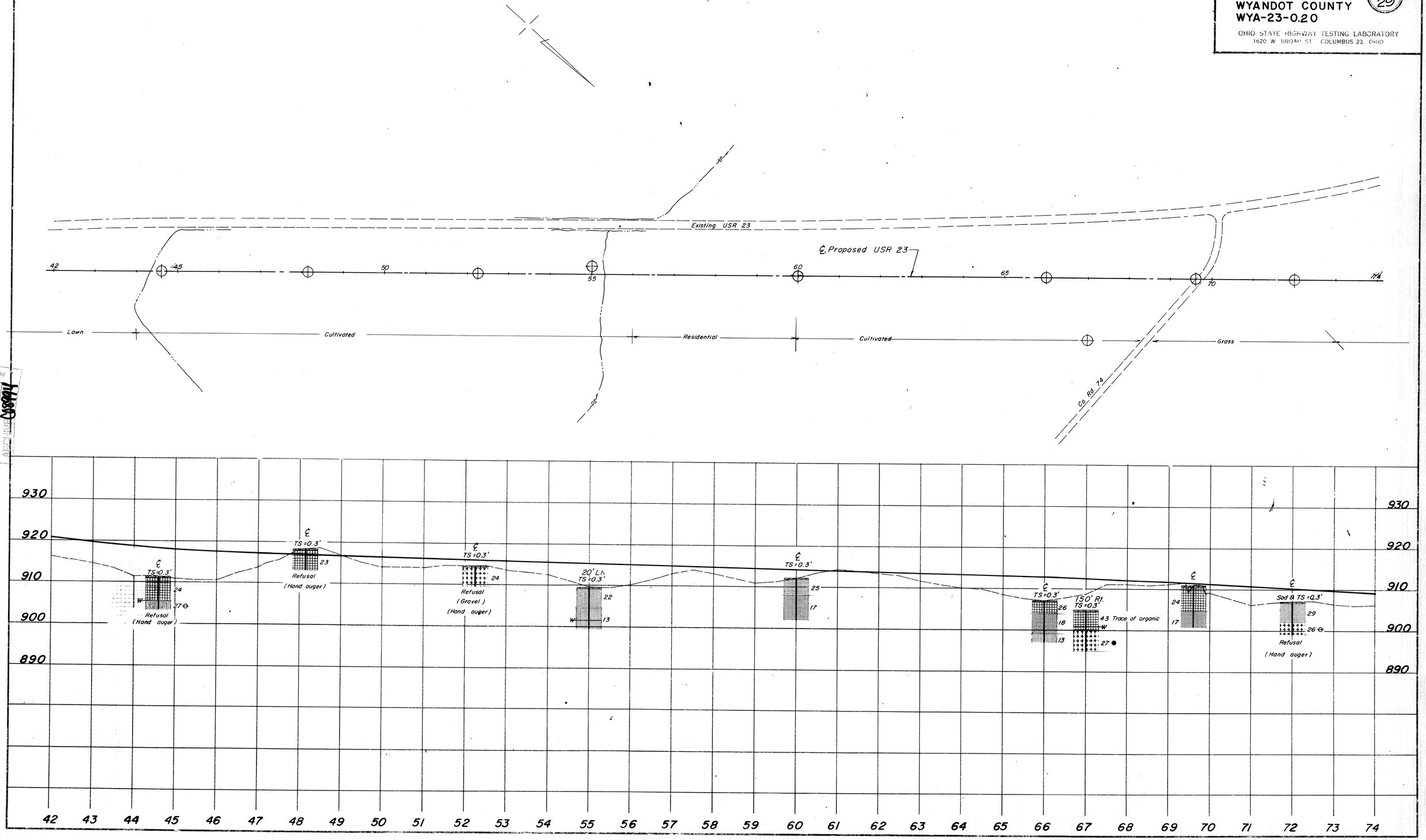


SOIL PROFILE

WYANDOT COUNTY
WYA-23-0.20

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

4
29



SOIL PROFILE

5/29

WYANDOT COUNTY
WYA-23-0.20

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

Existing USR 23
Cultivated
℄ Proposed USR 23
Cultivated
Co. Rd. 72
74
75
80
85
90
95
100
105
106
910
900
890
880
℄
TS=0.3'
27
W
29 ⊖
27 ⊖
℄
TS=0.3'
30
W
36
Refusal
(Hand auger)
℄
TS=0.3'
27
26
23
Refusal
(Gravel)
(Hand auger)
℄
Sod & TS=0.3'
34
W
23⊖
Hand auger
50'Lt.
Sod & TS=0.3
18
28●
(Hand auger)
℄
Sod & TS=0.3'
34
Trace of organic
W
28 ●
Refusal
(Hand auger)
℄
Sod & TS=0.3'
15
Refusal
(Hand auger)
74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106

SOIL PROFILE

6/29

WYANDOT COUNTY
WYA-23-0.20

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

SOIL PROFILE

7
29

WYANDOT COUNTY
WYA-23-0.20

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

Cultivated

Existing USR 23

℄, Proposed USR 23

138 140 145 150 155 160 165 170

Cultivated

℄ Sod & TS =0.3'
24
29
Refusal
(Hand auger)

℄ Sod & TS =0.3'
26
29
13

℄ TS =0.3
27
25
Refusal
(Gravel)
(Hand auger)

℄ Sod & TS =0.3'
24
Refusal
(Hand auger)

℄ Sod & TS =0.3'
35
Refusal
(Hand auger)

℄ TS=0.3'
W
36
Refusal
(Hand auger)

℄ TS=0.3'
33
Refusal
(Hand auger)

900
890
880
870

138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170

SOIL PROFILE

8/29

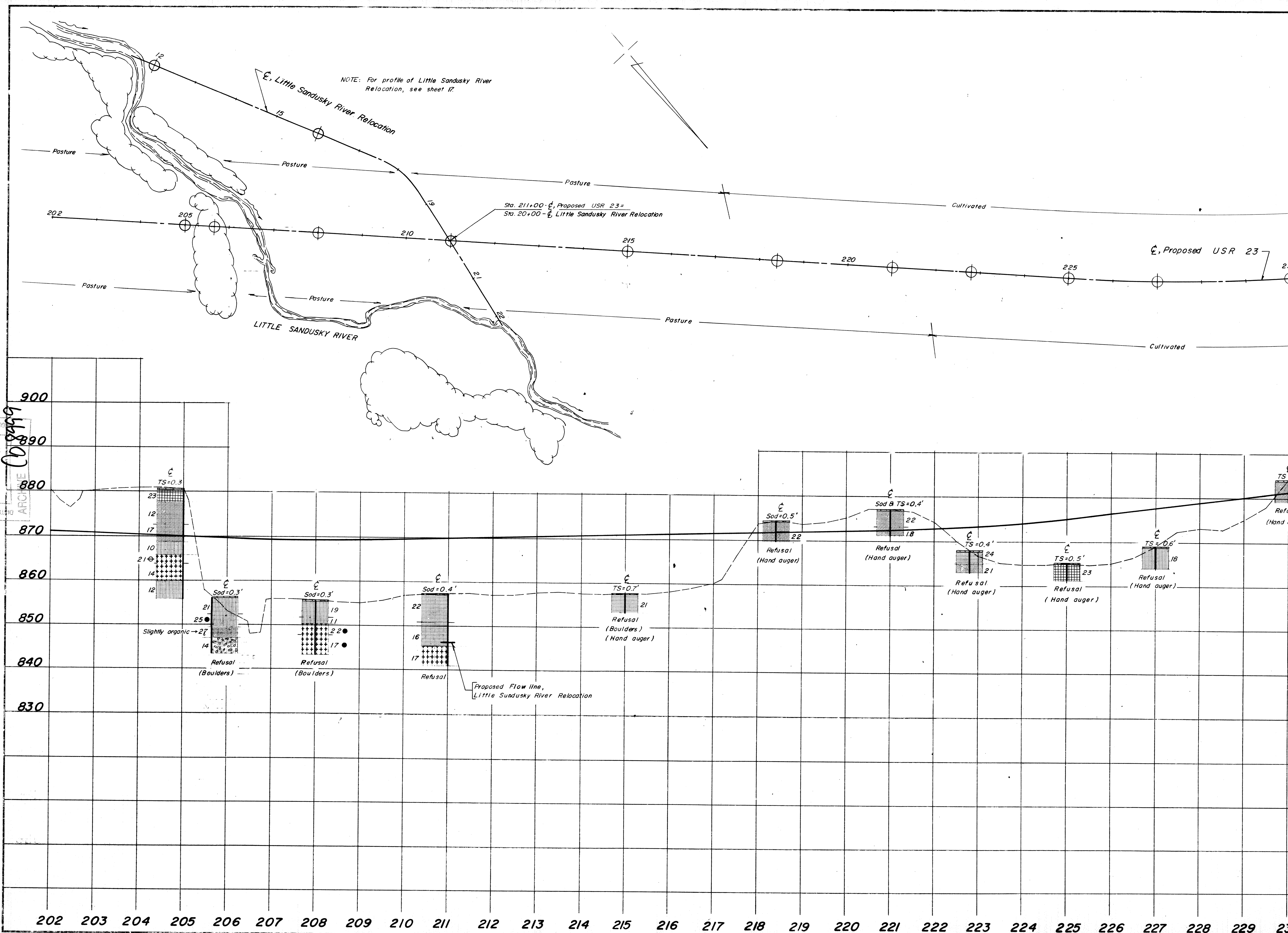
WYANDOT COUNTY
WYA-23-0.20

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

SOIL PROFILE

WYANDOT COUNTY
WYA-23-0.20

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

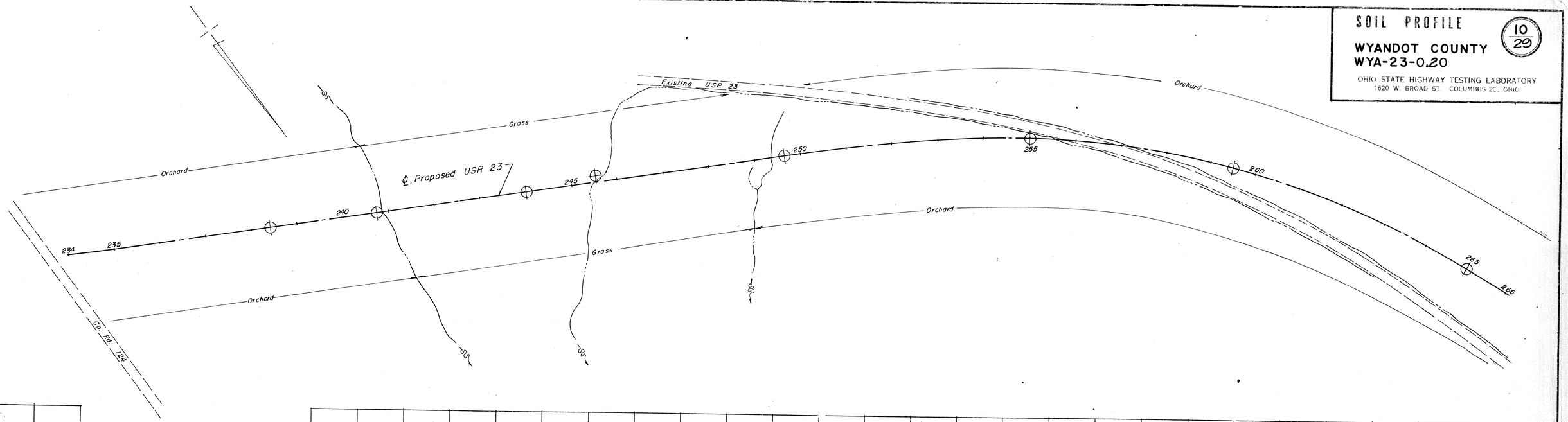

NOTE: For profile of Little Sandusky River Relocation, see sheet 17.
℄, Little Sandusky River Relocation
Pasture
Pasture
Pasture
Pasture
Pasture
Cultivated
Cultivated
Sta. 211+00-℄, Proposed USR 23 =
Sta. 20+00-℄, Little Sandusky River Relocation
℄, Proposed USR 23
Co. Rd. 124
LITTLE SANDUSKY RIVER
202
205
210
215
220
225
230
234
12
15
19
21
22
900
890
880
870
860
850
840
830
℄ TS=0.3
℄ Sod=0.3'
Slightly organic
Refusal (Boulders)
℄ Sod=0.3'
Refusal (Boulders)
℄ Sod=0.4'
Refusal
Proposed Flow line, Little Sandusky River Relocation
℄ TS=0.7'
Refusal (Boulders) (Hand auger)
℄ Sod=0.5'
Refusal (Hand auger)
℄ Sod & TS=0.4'
Refusal (Hand auger)
℄ TS=0.4'
Refusal (Hand auger)
℄ TS=0.5'
Refusal (Hand auger)
℄ TS=0.6'
Refusal (Hand auger)
℄ TS=0.6'
Refusal (Hand auger)
℄ Sod=0.3'
Hole caved in at elev. 885.1
202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234

SOIL PROFILE

10/29

WYANDOT COUNTY
WYA-23-0.20

OHIO STATE HIGHWAY TESTING LABORATORY
1620 W. BROAD ST. COLUMBUS 22, OHIO



SOIL PROFILE

WYANDOT COUNTY
WYA-23-0.20

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

11/29

Orchard

Cultivated

Co. Rd. 65

℄, Proposed USR 23

266 270 275 280 285 290 295 298

Existing USR 23

920
910
900
890

℄ Sod = 0.4' — 24 / 21 / 13

℄ TS = 0.6' — 26 / 30 / 15

℄ TS = 0.6' — 28 / 19 / 16

℄ TS = 0.5' — 27 / W 31 ● — Refusal (Hand auger)

℄ Sod & TS = 0.4 — 23 / 19 / 17

℄ Sod = 0.4' — 30 / 19

266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298

SOIL PROFILE

12
29

WYANDOT COUNTY
WYA-23-0.20

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

Co 89912

Cultivated

℄, Proposed USR 23

Sta 323+27.93 Back = STATION EQUATION Sta 265+18.48 Ahead

Lawn

Grass

298 300 305 310 315 320 323 266 270 271

Existing USR 23

Max. 20' emb.

Max. 20' emb.

50' Rt.
TS=0.5'
26
17

TS=0.6'
36
Refusal
(Hand auger)

TS=0.5'
28
Refusal
(Hand auger)

Sod=0.5'
20
17

75' Lt.
Sod=0.4'
24
19
22

Sod=0.4'
20
17

Sod=0.5'
27
Refusal
Hand auger

LOG OF OFFSET BORING
75' Lt.
Sod=0.4'
36
Refusal
(Hand auger)

Sod=0.4'
27
30
Refusal
(Hand auger)

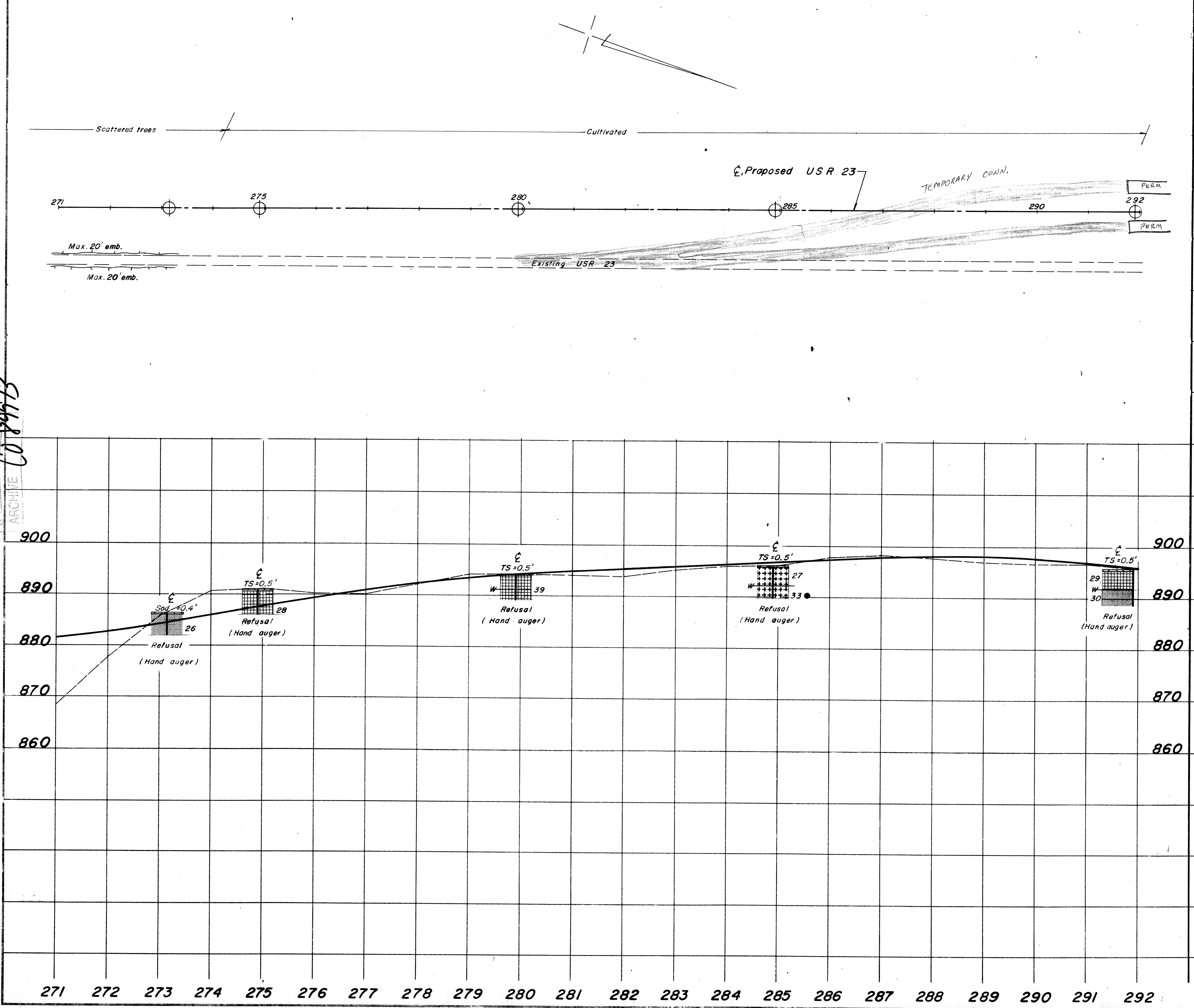
910 900 890 880 870 860 850

298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 266 267 268 269 270 271

SOIL PROFILE

WYANDOT COUNTY
WYA-23-0.20

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



-95
400-1-63

SOIL PROFILE

14
29

WYANDOT COUNTY
WYA-23-0.20

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

SR 294 INTERCHANGE

Sta.188+44.17-℄ Proposed U.S.R. 23 =
Sta.612+07.19-℄ Proposed SR 294

℄ Proposed Ramp D
℄ Proposed Ramp C
℄ Proposed Ramp A
℄ Proposed Ramp B
℄ Proposed SR 294
℄ Relocated Co. Rd. 127
Existing Co. Rd. 127
Existing SR 294

MATCH Sta. 604+50 LINE

Cultivated
Residential
Grass
Pasture
Grass and weeds

PROFILE INDEX	
Profile	Sheet
SR 294	15
Ramp A	16
Ramp B	16
Ramp C	16
Ramp D	16
Co. Rd. 127	17

Max. 5' cut

Co 89914

SOIL PROFILE
WYANDOT COUNTY
WYA-23-0.20

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

15/29

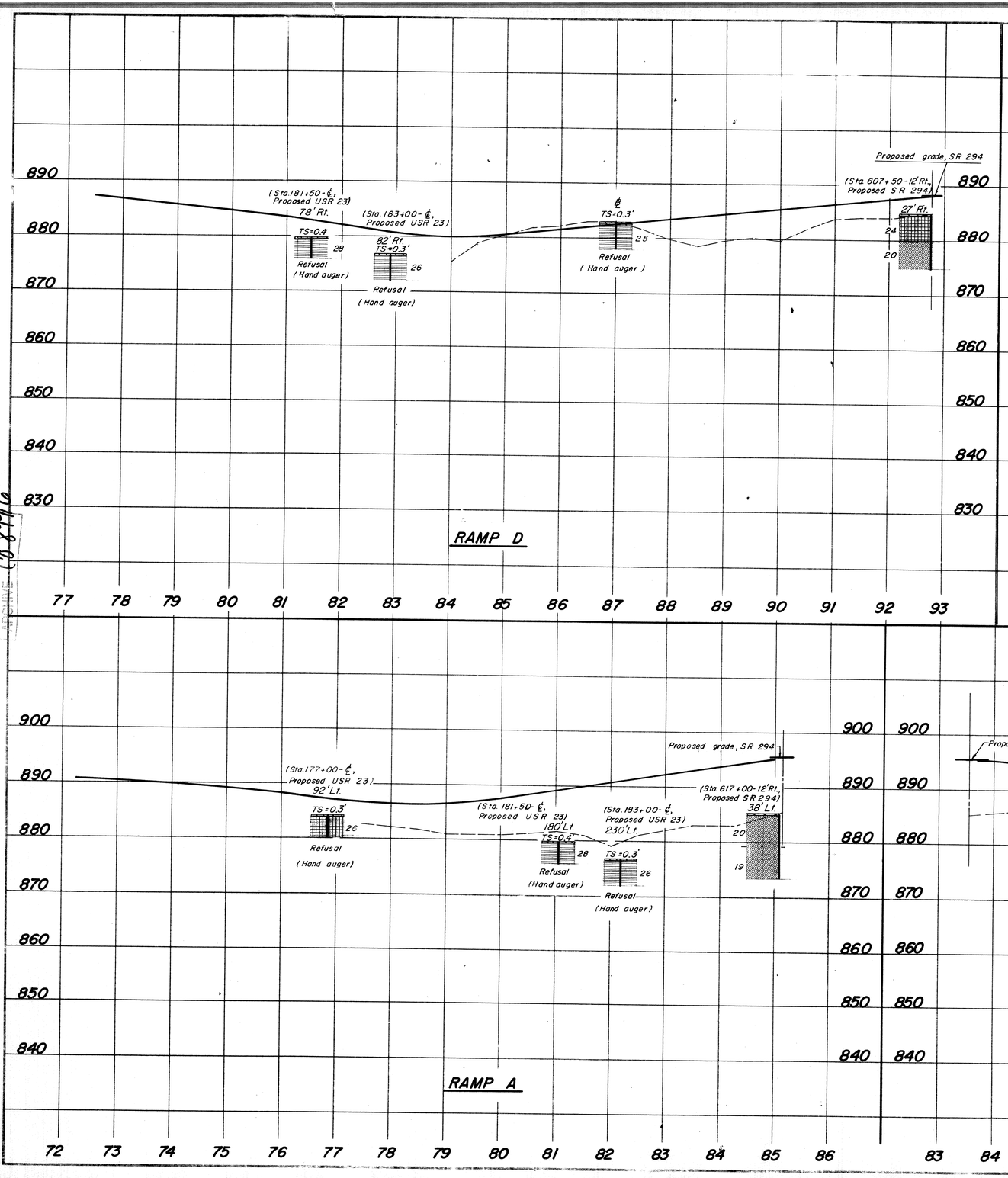
SR 294 INTERCHANGE

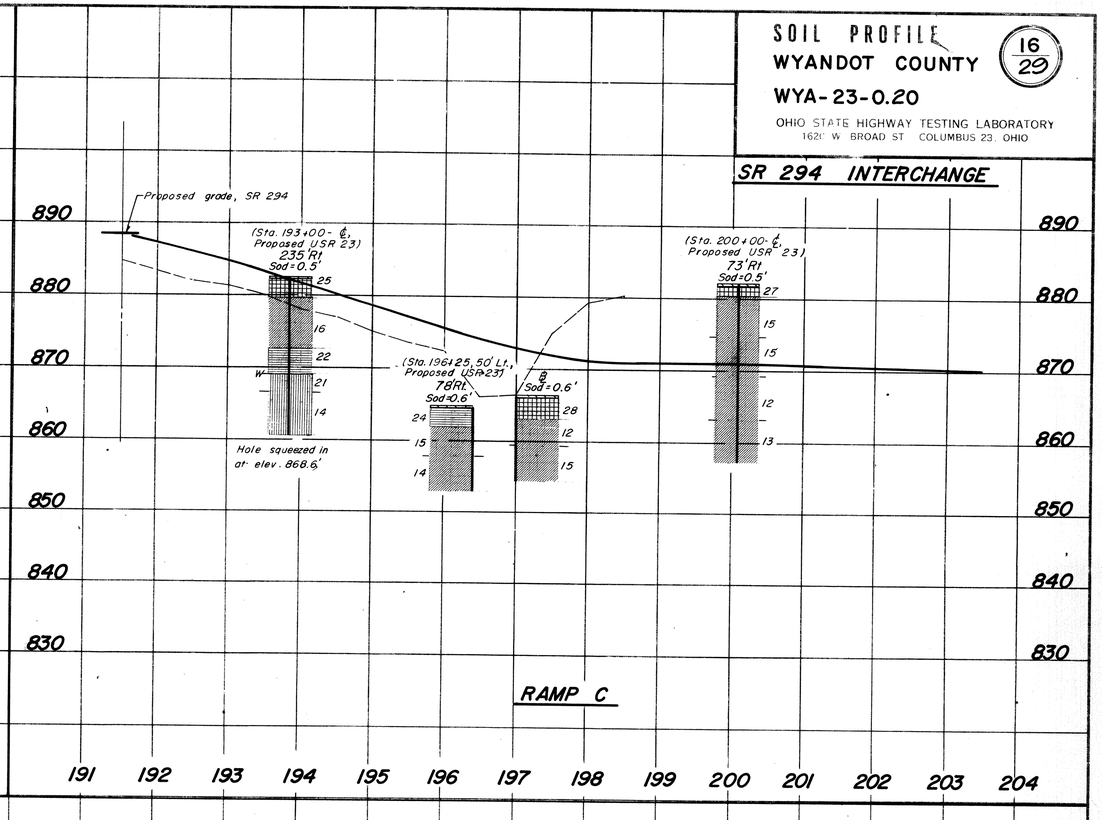
CO 8945

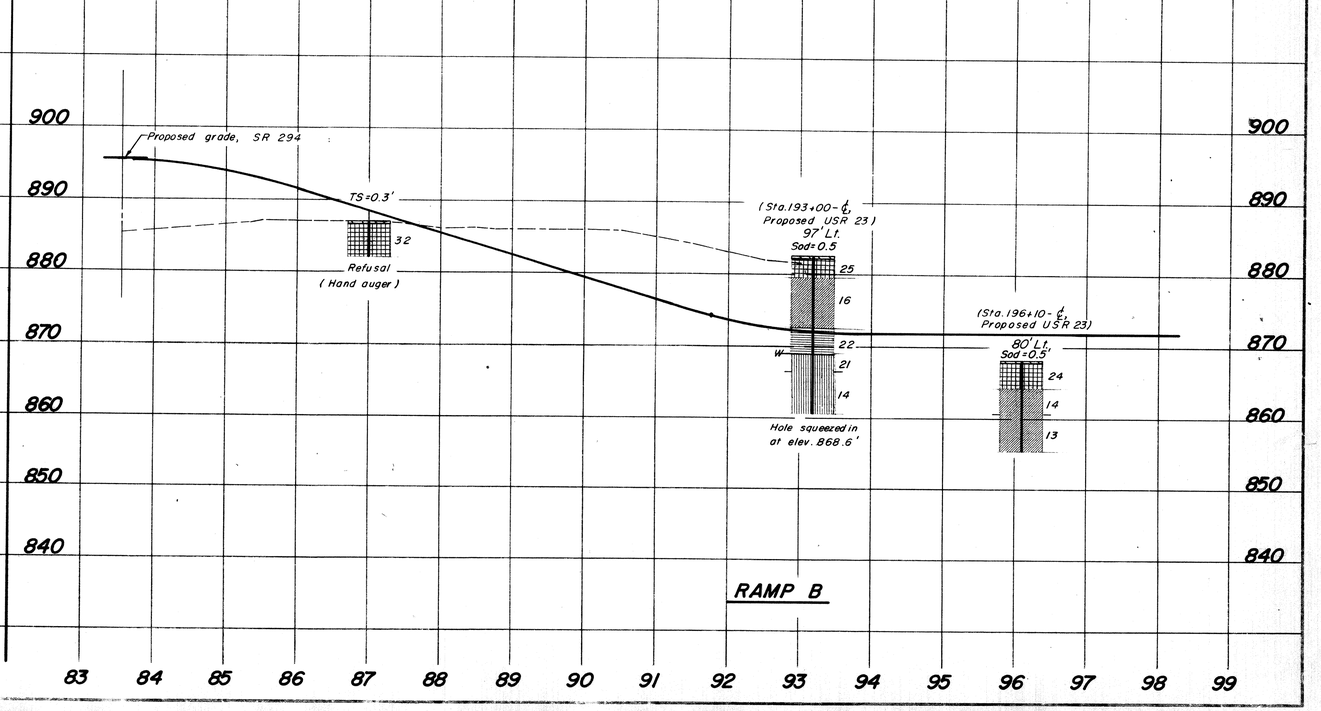
SOIL PROFILE
WYANDOT COUNTY
WYA-23-0.20

16/29

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





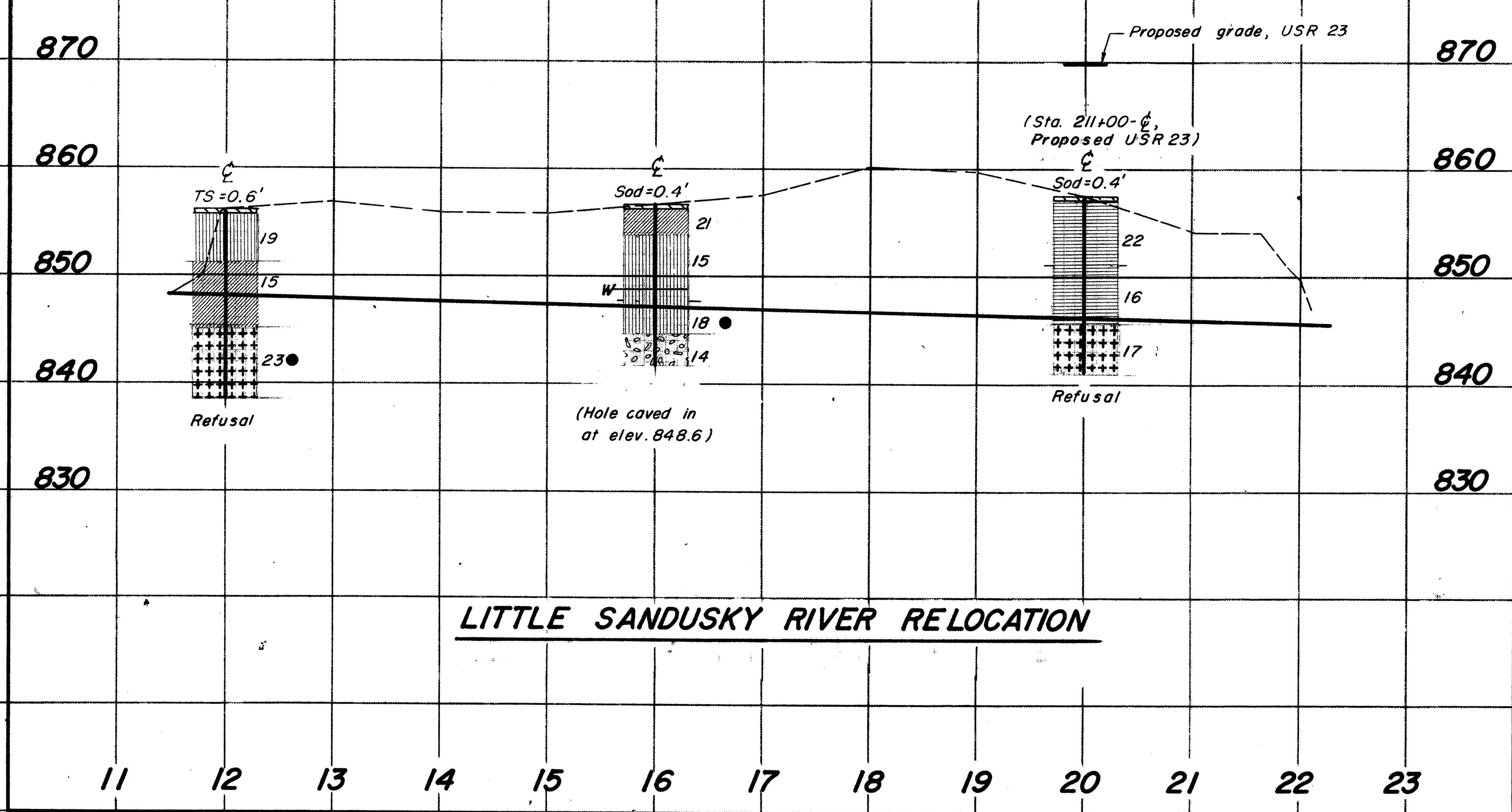


SOIL PROFILE
WYANDOT COUNTY

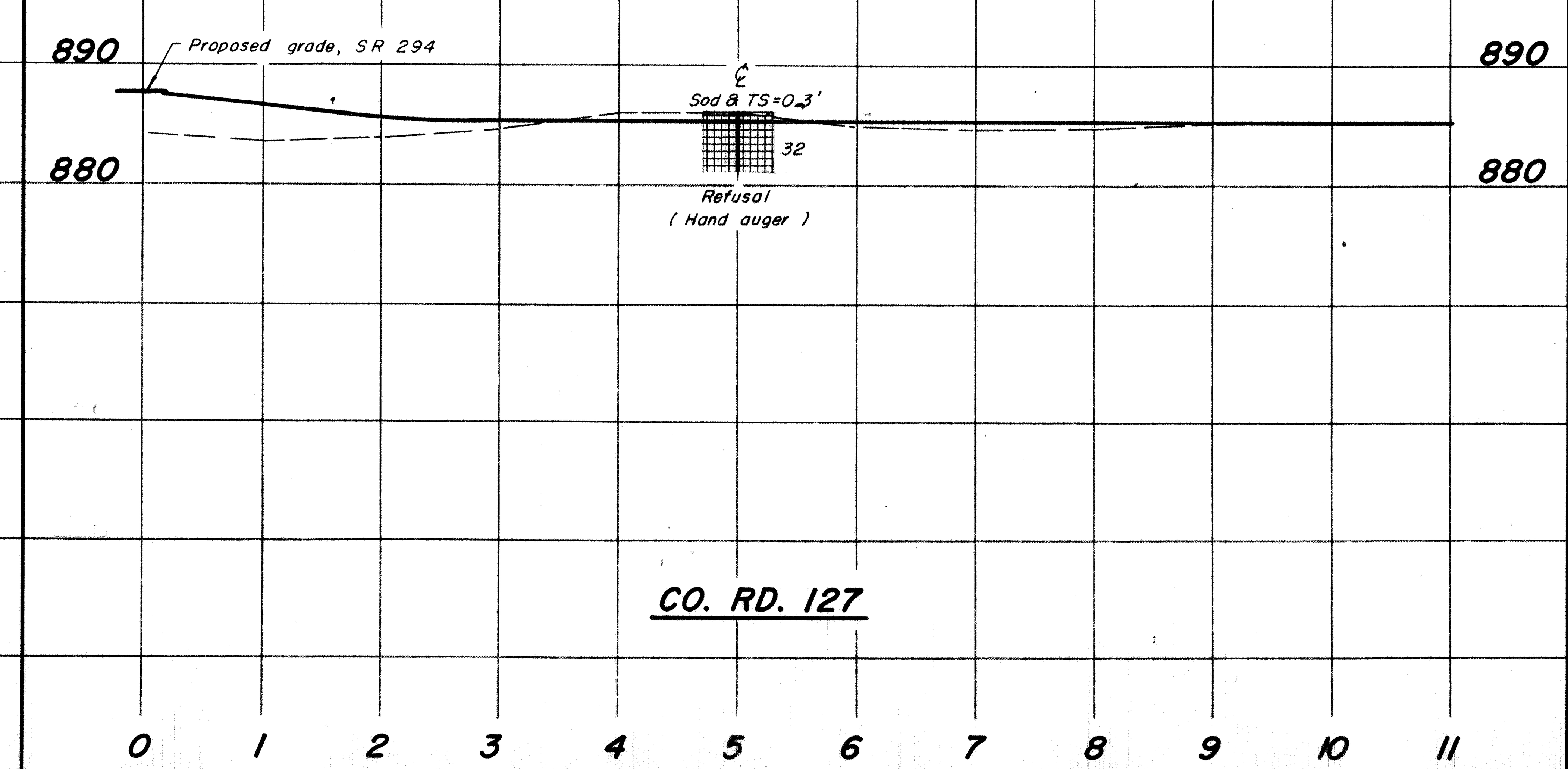
17/29

WYA - 23 - 0.20

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



LITTLE SANDUSKY RIVER RELOCATION



CO. RD. 127

18
29

WYANDOT COUNTY
WYA-23-0.20
1
4

GEOLOGY OF THE SITE

The structure site is located on the flat, glaciated Mississippi Valley Plain, on the flood plain of Little Sandusky River, where glacial drift, found to be about 20 feet deep, overlies dolomite bedrock, of the Monroe Series.

EXPLORATION

The exploration consisted of three drive sample-core borings made between December 23 and 30, 1964, and eight drive rod penetration tests, made on December 9 and 10, 1964.

INVESTIGATIONAL FINDINGS

Borings disclosed that bedrock encountered at 19 and 20-foot depths, between elevations 839 to 835 feet, is overlain by moist to wet, generally medium-dense and very stiff gravels, sands, silts, and clays.

Rod soundings met increasing penetration resistance with increasing depth and met refusal or near-refusal to penetration at 17 to 20-foot depths, elevations 841 to 836 feet, considered to be on or slightly above bedrock surface.

On the basis of tests, bedrock surface is considered to be sloping gently downward from the rear to the forward portion of the structure site between elevations 839 and 835 feet.

Free water was noted in the rod sounding holes between 5 and 12-foot depths, elevations 852 and 846 feet.

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
- 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 pest 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 plan governing construction of the project.

OHIO STATE HIGHWAY
TESTING LABORATORY
1620 WEST BROAD STREET, COLUMBUS 23, OHIO

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. WYA-23-0400
OVER RELOCATED LITTLE SANDUSKY RIVER
SEC. WYA-23-0.20

CHECKED BY	REVIEWED BY	DATE
L.N.L.	R.D.R.	1/14/65

SCALE: 1" = 20'

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

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. WYA-23-0400
OVER RELOCATED LITTLE SANDUSKY RIVER
SEC. WYA-23-0.20

PLAN AND PROFILE

DRAWN BY	CHECKED BY	REVIEWED BY	DATE
R.L.C.	L.N.L.	R.D.R.	1/14/65

LOG OF BORING

Date Started 12-23-64 · Sampler Type SS · Dia. 1 3/8" · Water Elev. ____
Date Completed 12-23-64 · Casing: Length ____ · Dia. ____
Boring No. B-1 · Station & Offset 209+98, 66' Lt (REAR ABUTMENT) · Surface Elev. 858.6'

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.
858.6	0														
853.6		7/12			Brown Clayey Silt	1	0	5	14	37	44	30	10	19	
851.1		6/8			Brown and Gray Silt	2	0	5	12	37	46	24	6	16	
848.6		8/12			Gray Gravelly Silt	3	30	2	5	21	42	30	9	21	
846.1		9/13			Gray Sandy Silt	4	0	2	21	45	32	NP	NP	22	
843.6		10/13			Gray Silt	5	0	3	9	46	42	NP	NP	20	
841.1		9/12			Gray Silt	6	0	2	9	45	44	NP	NP	8	
838.6	20				TOP OF ROCK										
			4.6	0.4	Dolomite, gray, hard, broken with thin shale stringers. Core Loss 12%.										
			4.2	0.8											
828.6	30				BOTTOM OF BORING										

LOG OF BORING

Date Started 12-28-64 · Sampler Type SS · Dia. 1 3/8" · Water Elev. ____
Date Completed 12-29-64 · Casing: Length 20' · Dia. 3 1/2"
Boring No. B-10 · Station & Offset 211+13, 20'Lt (FORWARD PIER) · Surface Elev. 857.9

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.
857.9	0														
852.9		6/10			Brown Sandy Clay, Trace of Roots	1		V	I	S	UAL	PL=	19	24	
850.4		9/18			Brown and Gray Sandy Clay	2	0	6	23	18	53	34	11	19	
847.9		9/15			Gray Clayey Silt	3	0	3	5	36	56	35	10	19	
845.4		5/9			Gray Clayey Silt	4	0	2	4	38	56	26	8	18	
842.9		20/22			Gray Gravelly Silt	5	33	3	4	34	26	24	5	18	
840.4		30* (0.3')			Gray Silty Sandy Gravel	6		V	I	S	U	A	L	10	
837.9	20				TOP OF ROCK										
			5.0	0.0	Dolomite, gray, hard, jointed with shale stringers. No core loss.										
			5.0	0.0											
827.9	30				BOTTOM OF BORING										

*Refusal

LOG OF BORING

Date Started 12-29-64 · Sampler Type SS · Dia. 1 3/8" · Water Elev. ____
Date Completed 12-30-64 · Casing: Length 19' · Dia. 3 1/2"
Boring No. B-16 · Station & Offset 212+02, 66'Rt (FORWARD ABUTMENT) · Surface Elev. 854.4

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.
854.4	0														
849.4		6/10			Brown Silty Sandy Gravel	1	45	16	16	19	9	20	4	8	
846.9		1/1			Gray Sandy Silt	2	0	8	21	35	36	21	6	22	
844.4		8/11			Gray Silty Sand	3	14	10	45	19	12	NP	NP	18	
841.9		9/12			Gray Silty Sand	4	0	3	74	10	13	NP	NP	22	
839.4		30* (0.4')			Gray Silty Sandy Gravel	5	65	13	11	-	11-	NP	NP	6	
836.9					No Sample Recovered - Stone Fragments (Driller's Description)			V	I	S	U	A	L		
835.4	20		1.0	0.0	TOP OF ROCK										
			5.0	0.0	Dolomite, gray, hard, jointed with few shale stringers. Core loss 2%.										
			4.8	0.2											
824.4	30				BOTTOM OF BORING										

*Refusal

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

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. WYA-23-0400
OVER RELOCATED LITTLE SANDUSKY RIVER
SEC. WYA-23-0.20

BORING DATA

TYPED BY	CHECKED BY	REVIEWED BY	DATE
B.J.M.	R.C.	G.P.H.	1/14/65

21
20

4
4

WYA-23-020

Test Location No. 1
Station & Offset 209+98 67' LT
REAR ABUTMENT
Surface Elev. 858.6' Water Elev. 851.6'
Piling
Hammer
Formula
Reference
Rod Condition

Test Location No. 3
Station & Offset 210+43 11' RT
REAR ABUTMENT
Surface Elev. 857.1' Water Elev. 851.1'
Piling
Hammer
Formula
Reference
Rod Condition GOOD

Test Location No. 6
Station & Offset 210+65 20' LT
REAR PIER
Surface Elev. 858.0 Water Elev. 850.0'
Piling
Hammer
Formula
Reference
Rod Condition GOOD

Test Location No. 8
Station & Offset 211+10 58' RT
REAR PIER
Surface Elev. 855.1' Water Elev. 847.1'
Piling
Hammer
Formula
Reference
Rod Condition GOOD

Test Location No. 9
Station & Offset 210+90 58' LT
FORWARD PIER
Surface Elev. 858.0' Water Elev. 846.0'
Piling
Hammer
Formula
Reference
Rod Condition GOOD

Test Location No. 11
Station & Offset 211+35 20' RT
FORWARD PIER
Surface Elev. 856.2' Water Elev. 848.2'
Piling
Hammer
Formula
Reference
Rod Condition GOOD

Test Location No. 14
Station & Offset 211+57 11' LT
FORWARD ABUTMENT
Surface Elev. 857.6' Water Elev. 848.6'
Piling
Hammer
Formula
Reference
Rod Condition GOOD

Test Location No. 16
Station & Offset 212+02 67' RT
FORWARD ABUTMENT
Surface Elev. 865.6 Water Elev. 850.6'
Piling
Hammer
Formula
Reference
Rod Condition GOOD

865 861 857 853 849 845 841 837 833

TEST ROD

10 20 30 40 50 60 70 80 90 100
Capacity "R" in Thousands of Pounds

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

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. WYA-23-0400
OVER RELOCATED LITTLE SANDUSKY RIVER
SEC. WYA-23-0.20

DRIVE ROD PENETRATION RESISTANCE DATA

PLOTTED BY	CHECKED BY	REVIEWED BY	DATE
R.C.	L.N.L.	R.D.R.	1/14/65

GEOLOGY OF THE SITE

The structure site is located on the flood plain of Honey Run, on the relatively flat, glaciated upland plain, in an area where moderately deep glacial deposits overlie dolomite bedrock, of Devonian age.

EXPLORATION

The exploration consisted of two drive sample-core borings and four drive rod penetration tests, made between December 8 and 22, 1964.

INVESTIGATIONAL FINDINGS

Borings disclosed medium-stiff gravelly clay and loose to very dense sands, silts, gravels, and boulders overlie bedrock surface, encountered in boring B-2 at 45-foot depth, elevation 838 feet. Boring B-2 was terminated at 55-foot depth, elevation 828 feet, after penetrating 10 feet below bedrock surface. Boring B-7 was terminated at 45-foot depth, elevation 837 feet, in broken rock, probably bedrock.

The rod soundings met with increasing resistance to penetration with increase in depth and were terminated due to refusal or near refusal to penetration at 31 and 36-foot depths, elevations 852 to 847 feet, considered to be in sand, gravel, and boulders, as revealed by the borings.

Free water was encountered in the rod sounding holes between elevations 879 and 876 feet.

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 sub-surface 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

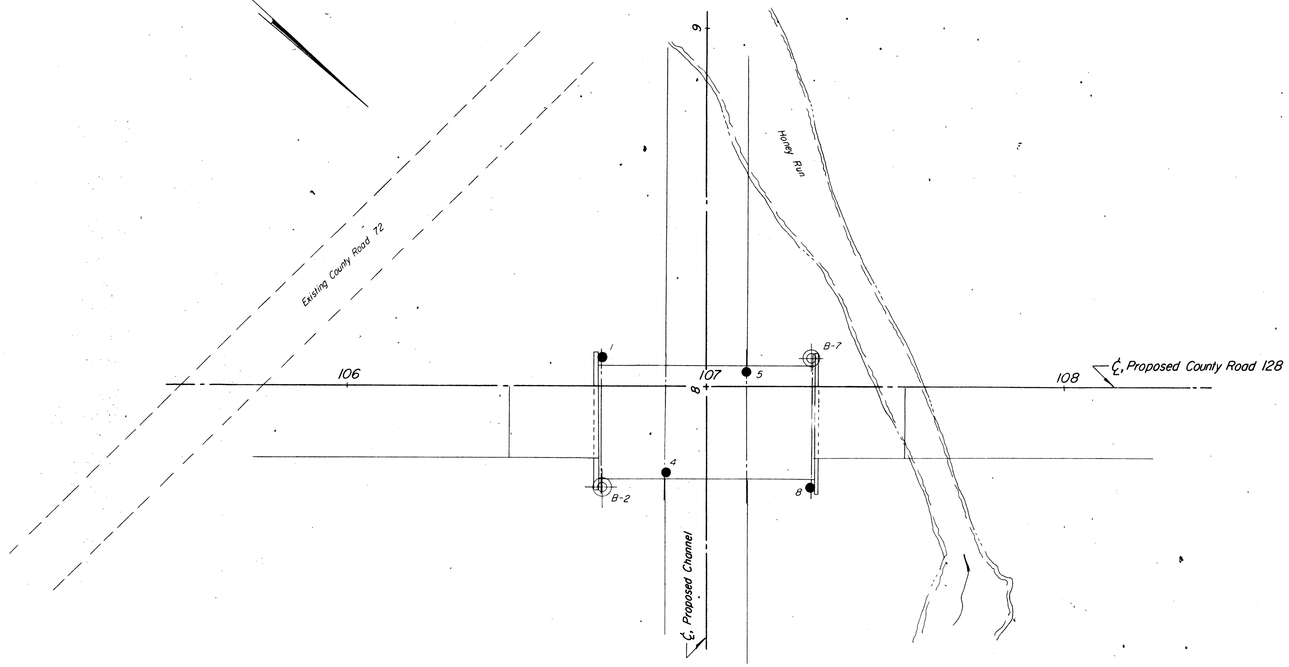
Boulders	Cobbles	Gravel	Coarse Sand	Fine Sand	Silt	Clay
8"	3"	2.0mm	0.42mm	0.074mm	0.005mm	
		No. 10 sieve	No. 40 sieve	No. 200 sieve		

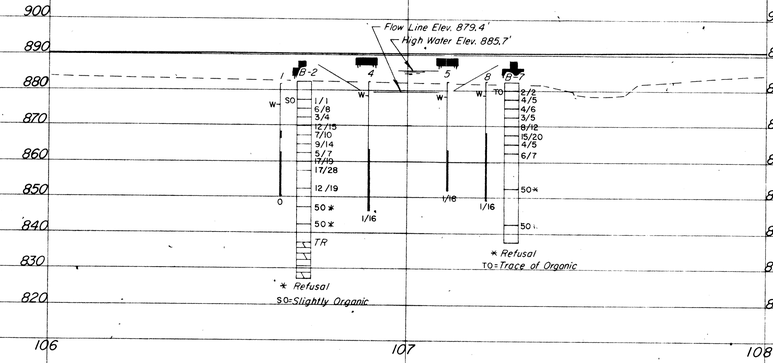
NOTE: Information shown by this subsurface investigation was obtained solely for the use in establishing design controls for the project. The State of Ohio does not guarantee the accuracy of this data and it is not to be construed as a part of the plans governing construction of the project.

OHIO STATE HIGHWAY
TESTING LABORATORY
1620 WEST BROAD STREET, COLUMBUS 23, OHIO

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. WYA-23-
RELOCATED C.R. 128 OVER HONEY RUN
SEC. WYA-23-0.20

CHECKED BY	REVIEWED BY	DATE
R.H.P.	R.D.R.	1-12-65





SCALE: 1" = 20'

OHIO STATE HIGHWAY TESTING LABORATORY			
1620 WEST BROAD ST., COLUMBUS 23, OHIO			
STRUCTURE FOUNDATION INVESTIGATION BRIDGE NO. WYA-23- RELOCATED C.R. 128 OVER HONEY RUN SEC. WYA-23-0.20			
PLAN AND PROFILE			
DRAWN BY	CHECKED BY	REVIEWED BY	DATE
R. L. C.	R. H. P.	R. D. R.	1-12-65

WYA 23-0.20

24/29

3/4

LOG OF BORING

Date Started 12-18-64 | Sampler Type SS | Dia. 1 3/8" | Water Elev.
Date Completed 12-22-64 | Casing: Length 45' | Dia. 3 1/2"
Boring No. B-2 | Station & Offset 106+71, 28' Rt. (REAR ABUTMENT) | Surface Elev. 882.5'

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	Physical Characteristics: % Agg	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class.
882.5	0														
	2														
	4														
877.5	6	1/1			Gray Sandy Silt, Slightly Organic	1	0	5	44	30	21	28	8	33	
875.0	8	6/8			Brown and Gray Silt	2	0	0	5	59	36	NP	NP	22	
872.5	10	3/4			Brown and Gray Silt	3	0	0	3	67	30	NP	NP	22	
870.0	12	12/15			Gray Silty Sandy Gravel	4	45	12	9	15	19	PL=	17	16	
867.5	14	7/10			Gray Sandy Gravelly Silt	5	31	5	10	24	30	25	8	15	
865.0	16	9/14			Gray Sandy Gravelly Silt	6	28	15	9	23	25	25	8	17	
862.5	18	5/7			Gray Sandy Silt	7	0	6	22	34	38	23	7	15	
860.0	20	17/19			Gray Sandy Gravelly Silt	8	32	6	13	25	24	22	7	12	
857.5	22	17/28			Gray Sandy Gravelly Silt	9	41	8	9	23	19	25	9	12	
	24														
	26														
	28														
852.5	30	12/19			Gray Gravelly Silt	10	32	2	1	43	22	30	10	18	
	32														
	34														
847.5	36	50/*			Gray Silty Gravel	11	69	8	5	6	12	NP	NP	5	
	38														
842.5	40	50* (0.3)			Light-Gray Silty Sandy Gravel	12	45	10	10	18	17	NP	NP	15	
	42														
	44														
837.5	46				TOP OF ROCK										
	48		5.0	0.0	Dolomite, gray, hard, with many shale stringers. No Core Loss.										
	50														
	52														
	54		5.0	0.0	BOTTOM OF BORING										
827.5															

*Refusal

LOG OF BORING

Date Started 12-16-64 | Sampler Type SS | Dia. 1 3/8" | Water Elev.
Date Completed 12-17-64 | Casing: Length 40' | Dia. 3 1/2"
Boring No. B-7 | Station & Offset 107+29, 8'Lt (FORWARD ABUTMENT) | Surface Elev. 882.4'

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	Physical Characteristics: % Agg	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class.
882.4	0														
879.9	2														
	4	2/2			Dark Brown and Gray Gravelly Clay, Trace of Organic	1	45	2	8	20	25	37	16	24	
877.4	6	4/5			Gray and Brown Silt and Clay	2	0	4	9	39	48	33	12	22	
874.9	8	4/6			Gray Silt	3	0	1	6	64	29	24	3	28	
872.4	10	3/5			Gray Silt	4	0	2	5	66	27	NP	NP	24	
869.9	12	8/12			Gray Sandy Gravelly Silt	5	32	6	11	25	26	24	8	13	
867.4	14	15/20			Gray Sandy Gravelly Silt	6	V	I	S	U	AL	21	8	16	
864.9	16	4/5			Gray Sandy Gravelly Silt	7	V	I	S	U	A L	22	7	12	
862.4	18	6/7			Gray Gravelly Sandy Silt	8	27	3	30	22	18	NP	NP	16	
	20														
	22				No Sample Recovered-Boulders (Driller's Description)		V	I	S	U	A	L			
857.4	24														
	26														
	28														
852.4	30	50* (0.2)			Brown Silty Sandy Gravel	9	V	I	S	U	A	L		10	
	32														
	34				No Sample Recovered-Boulders (Driller's Description)		V	I	S	U	A	L			
847.4	36														
	38														
842.4	40	50* (0.2)			Gray Broken Dolomitic Limestone	11	V	I	S	U	A	L			
	42				BOTTOM OF BORING										
	44					12	V	I	S	U	A	L			
837.4															

*Refusal

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

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. WAY-23-
SEC. RELOCATED CR 128 OVER HONEY WAY-23-0.20

BORING DATA

TYPED BY	CHECKED BY	REVIEWED BY	DATE
P.A.S.	R.C.	G.P.H.	1-12-65

TE-114
1000-1-64

WYA-23-0.20 (4/4)

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

887
883
879
875
871
867
863
859
855
851
847
843

10 20 30 40 50 60 70 80 90 100
Capacity "R" in Thousands of Pounds

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

10 20 30 40 50 60 70 80 90 100
Capacity "R" in Thousands of Pounds

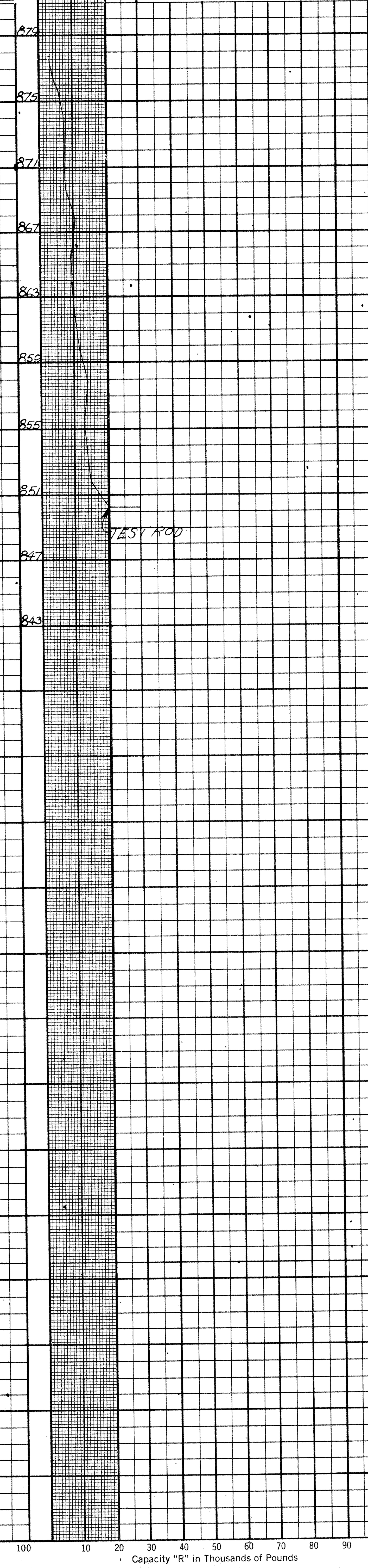
Test Location No. ______
Station & Offset ______
Surface Elev. ______ Water Elev. ______
Piling ______
Hammer ______
Formula ______
Reference ______
Rod Condition ______

10 20 30 40 50 60 70 80 90 100
Capacity "R" in Thousands of Pounds

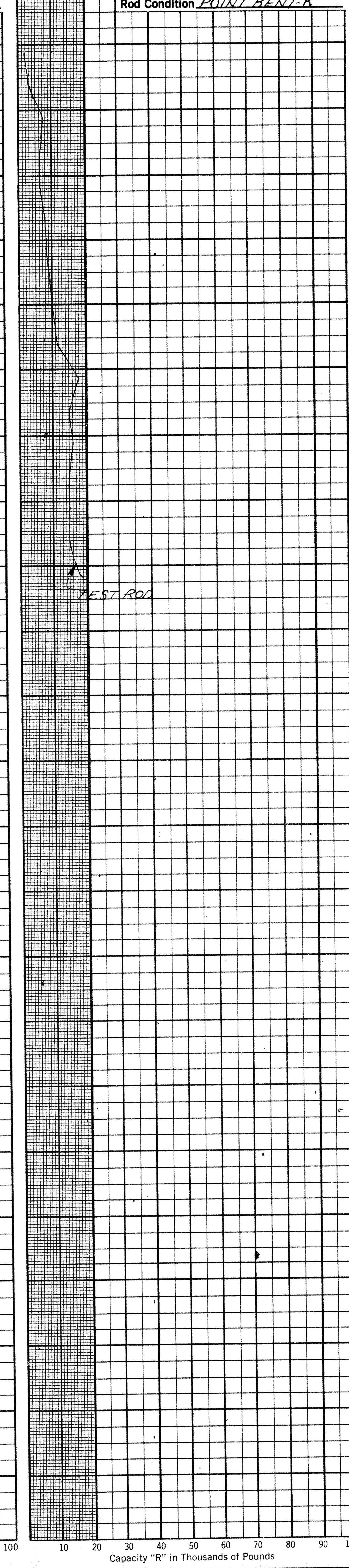
Test Location No. ______
Station & Offset ______
Surface Elev. ______ Water Elev. ______
Piling ______
Hammer ______
Formula ______
Reference ______
Rod Condition ______

10 20 30 40 50 60 70 80 90 100
Capacity "R" in Thousands of Pounds

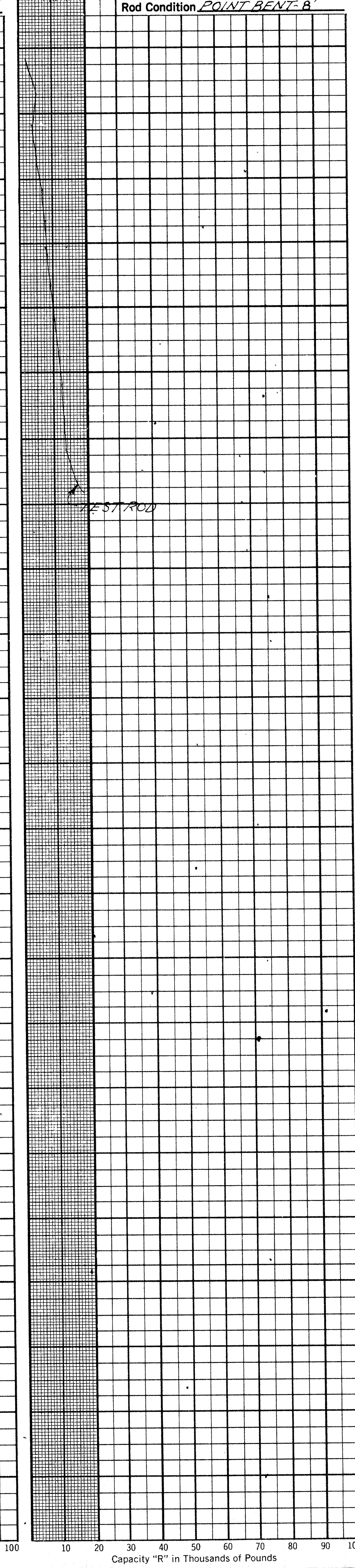
Test Location No. 1
Station & Offset 106+71, 8' LT
REAR ABUTMENT
Surface Elev. 881.8' Water Elev. 875.8'
Piling ______
Hammer ______
Formula ______
Reference ______
Rod Condition GOOD



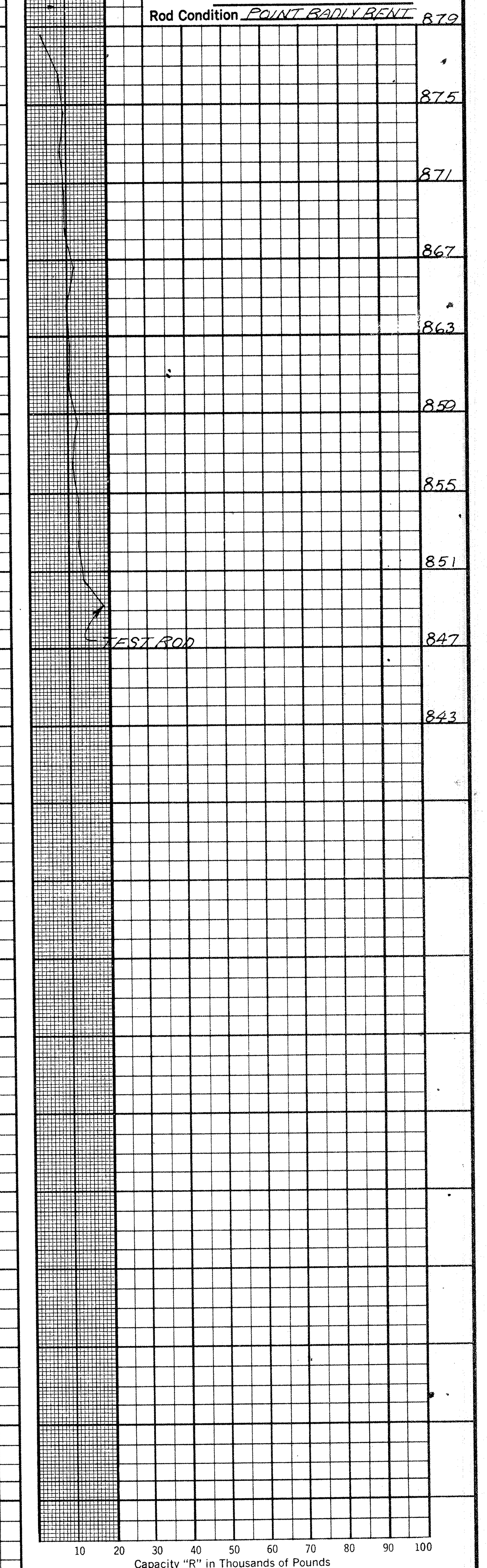
Test Location No. 4
Station & Offset 106+89, 24' RT
REAR PIER
Surface Elev. 882.5' Water Elev. 878.5'
Piling ______
Hammer ______
Formula ______
Reference ______
Rod Condition POINT BENT-8'



Test Location No. 5
Station & Offset 107+11, 4' LT
FORWARD PIER
Surface Elev. 882.3' Water Elev. 878.3'
Piling ______
Hammer ______
Formula ______
Reference ______
Rod Condition POINT BENT-8'



Test Location No. 8
Station & Offset 107+29, 28' RT
FORWARD ABUTMENT
Surface Elev. 882.6' Water Elev. 878.6'
Piling ______
Hammer ______
Formula ______
Reference ______
Rod Condition POINT BADLY BENT



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

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. WYA-23-
RELOCATED C.R. 128 OVER HONEY RUN
SEC. WYA-23-0.20

DRIVE ROD PENETRATION RESISTANCE DATA

PLOTTED BY	CHECKED BY	REVIEWED BY	DATE
R C	R.H.P.	R.D.R.	1-12-65

WYANDOT COUNTY
WYA-23-0.20

26
29
1
4

GEOLOGY OF THE SITE

The structure site is located on the flood plain of Honey Run on the relatively flat, glaciated upland plain, in an area where moderately deep glacial deposits overlie dolomite bedrock, of Devonian age.

EXPLORATION

The exploration consisted of two drive sample-core borings and seven drive rod penetration tests, made between December 2 and 15, 1964.

EXPLORATIONAL FINDINGS

Borings disclosed medium-stiff gravelly clay and loose to very dense sands, silts, gravels, and boulders to bedrock surface, encountered at 45-foot depth, elevations 836 and 837 feet. The borings were terminated at 55-foot depth, elevations 826 and 827 feet, after penetrating 10 feet of bedrock.

The rod soundings met with increasing resistance to penetration with increase in depth and were terminated due to refusal or near refusal to penetration at 30 to 33-foot depths, elevations 852 to 850 feet, considered to be in sand and gravel, as revealed by the borings.

Free water was encountered in the rod sounding holes between elevations 880 and 876 feet.

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
- 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

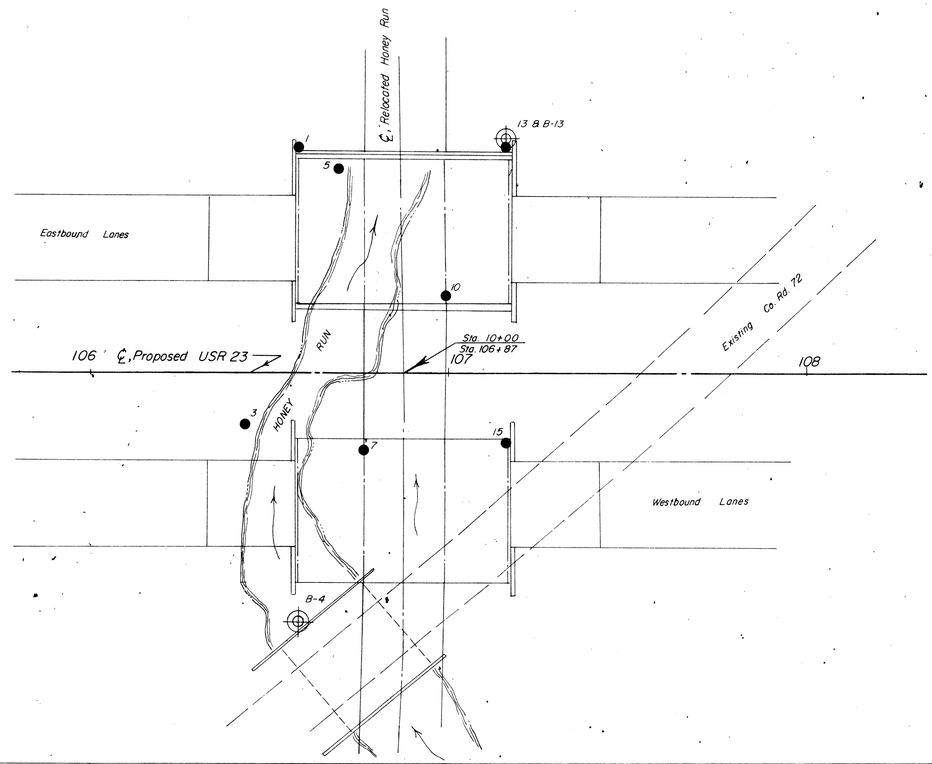
Boulders	8"	Cobbles	3"	Gravel	2.0mm (No. 10 sieve)	Coarse Sand	0.42mm (No. 40 sieve)	Fine Sand	0.074mm (No. 200 sieve)	Silt	0.005mm	Clay

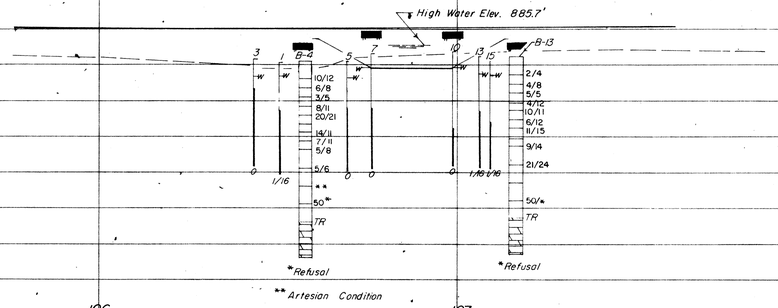
NOTE: Information shown by this subsurface investigation was obtained solely for the use in establishing design controls for the project. The State of Ohio does not guarantee the accuracy of this data and it is not to be construed as a part of the plans governing construction of the project.

OHIO STATE HIGHWAY
TESTING LABORATORY
1620 WEST BROAD STREET, COLUMBUS 23, OHIO

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. WYA-23-0202 L/R
OVER RELOC. HONEY RUN
SEC. WYA-23-0.20

CHECKED BY	REVIEWED BY	DATE
R.H.P.	G.P.H.	1/6/65





SCALE: 1"=20'

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

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. WYA-23-0202 L/R
OVER RELOC. HONEY RUN
SEC. WYA-23-0.20

PLAN AND PROFILE

DRAWN BY	CHECKED BY	REVIEWED BY	DATE
R.L.F.	R.H.P.	G.P.H.	1/6/65

LOG OF BORING

Date Started 12-7-64
Date Completed 12-10-64
Boring No. B-4

Sampler Type SS Dia. 1 3/8"
Casing: Length 45' Dia. 3 1/2"
Station & Offset 106+58, 70'Rt (REAR ABUTMENT)

Water Elev. _____

Surface Elev. 881.0'

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample no.	Physical Characteristics % Agg	% C.S.	% F.S.	% Silt	% Clay	L.L.	Pl.	W.C.	SHTL Class.
881.0	0														
	2														
876.0	4														
	6	10/12			Gray Sandy Clayey Silt	1	11	4	7	47	31	27	9	16	
873.5	8	6/8			Gray Sandy Silt	2	0	2	28	49	21	NP	NP	19	
871.0	10	3/5			Gray Silt	3	0	1	3	73	23	NP	NP	27	
868.5	12	8/11			Gray Silt	4	0	5	7	55	33	NP	NP	20	
866.0	16	20/21			Gray Sandy Gravelly Silt	5	33	10	16	31	10	NP	NP	16	
863.5	18				Gray Sand (Wash Sample)	6		V	I	S	U	A	L		
861.0	20	14/11			Gray Sandy Gravelly Silt	7	37	7	11	23	22	20	5	15	
858.5	22	7/11			Gray Sandy Gravelly Silt	8	33	7	12	30	18	23	7	18	
856.0	24	5/8			Gray Sandy Gravelly Silt	9	29	11	16	28	16	20	5	11	
851.0	30	5/6			Gray and Brown Silty Sandy Gravel	10	47	8	15	19	11	NP	NP	13	
846.0	36				Gray Dolomitic Boulder	11		V	I	S	U	A	L		
841.0	40														
	42	50/5 (0.4')			Gray Silty Gravel	12	68	6	4	13	9	NP	NP	8	
836.0	46				TOP OF ROCK										
	48		5.0	0.0	Dolomite, gray, very argillaceous, hard. No core loss.										
	50														
	52		5.0	0.0											
826.0	54				BOTTOM OF BORING										

* Refusal

Artesian condition encountered at elevation 846.0'.

LOG OF BORING

Date Started 12-10-64
Date Completed 12-15-64
Boring No. B-13

Sampler Type SS Dia. 1 3/8"
Casing: Length 45' Dia. 3 1/2"
Station & Offset 107+16, 65' Lt (FORWARD ABUTMENT)

Water Elev. _____

Surface Elev. 882.2'

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample no.	Physical Characteristics % Agg	% C.S.	% F.S.	% Silt	% Clay	L.L.	Pl.	W.C.	SHTL Class.
882.2	0														
	2														
877.2	4														
	6	2/4			Brown and Gray Gravelly Silt and Clay, Trace of Organic	1	42	3	11	23	21	32	11	26	
874.7	8	4/8			Gray Gravelly Clayey Silt	2	34	2	5	24	35	31	10	17	
872.2	10	5/5			Gray Sandy Gravelly Silt	3	20	2	17	40	21	NP	NP	23	
869.7	12	4/12			Gray Gravelly Silt, Trace of Roots	4	26	3	5	31	35	27	5	22	
867.2	14	10/11			Gray Sandy Gravelly Silt	5	43	7	8	20	22	25	6	17	
864.7	16	6/12			Gray Gravelly Silt	6	30	3	6	30	31	26	8	16	
862.2	18	11/15			Gray Gravelly Sandy Silt	7	VI	S	U	A	L	24	7	17	
859.7	22				Gray Sand (Wash Sample)	8	V	I	S	U	A	L			
857.2	24	9/14			Gray Gravelly Silt	9	27	8	6	30	29	24	7	14	
852.2	30	21/24			Gray Silty Sandy Gravel	10	60	12	10	11	7	NP	NP	14	
847.2	34				Brown Sand (Wash Sample)	11		V	I	S	U	A	L		
842.2	40	50/5			Light Brown Silty Sandy Gravel	12	49	7	8	29	7	NP	NP	13	
837.2	46				TOP OF ROCK										
	48		5.0	0.0	Dolomite, gray, extremely argillaceous, hard. No core loss.										
	50														
	52		5.0	0.0											
827.2	54				BOTTOM OF BORING										

* Refusal

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

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. WYA-23-0202 L/R
OVER RELOC. HONEY RUN
SEC. WYA-23-0.20

BORING DATA

TYPED BY	CHECKED BY	REVIEWED BY	DATE
P.A.S.	R.C.	G.P.H.	1/6/65

29
29
4
4

WYA-23-0.20

Capacity "R" in Thousands of Pounds

Test Location No.	Station & Offset	Surface Elev.	Water Elev.	Piling	Hammer	Formula	Reference	Rod Condition
		888						
		884						
		880						
		876						
		872						
		868						
		864						
		860						
		856						
		852						
		848						
1	106+58.63' LT REAR ABUTMENT	880.8'	876.8'					
3	106+43.15' RT REAR ABUTMENT	881.5'	876.5'					GOOD
5	106+69.57' LT REAR PIER	881.0'	876.0'					GOOD
7	106+76.22' RT REAR PIER	883.2'	879.2'					GOOD
10	106+99.22' LT FORWARD PIER	883.5'	879.5'					POINT BEAR'G
13	107+16.63' LT FORWARD ABUTMENT	882.2'	877.2'					POINT BEAR'G
15	107+16.20' RT FORWARD ABUTMENT	881.0'	877.0'					

TEST ROD

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

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. WYA-23-0202 L/R
OVER RELOC. HONEY RUN
SEC. WYA-23-0.20

DRIVE ROD PENETRATION RESISTANCE DATA

PLOTTED BY	CHECKED BY	REVIEWED BY	DATE
R.C.	R.H.P.	G.P.H.	1/6/65