

GENERAL INFORMATION

INTRODUCTION

The project consists of the relocation of C.3 mile of USR 224, beginning 1000 feet east of Glenmont Avenue, C.3 mile south of existing USR 224, extending eastward, and terminating 300 feet west of Arlington Street. Included in the report are profiles of the SR 2 (IR.77) Interchange ramps.

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

	CUTS (Max.)	FILL EMBANKMENTS (Max.)
USR 224	15'	35'
SR (IR.77) Interchange		
Ramp A	-	36'
Ramp B	10'	41'
Ramp B-1	-	39'
Ramp B-2	-	38'
Ramp C	14'	27'
Ramp C-1	3'	26'
Ramp C-2	-	22'
Ramp D	2'	22'

GEOLOGY OF THE PROJECT

The alignment traverses an area of glacial, alluvial, and sedimentary deposits in the Tuscarawas River valley, on the glaciated Allegheny Plateau. Underlying bedrock is comprised of shales, indurated clays, and sandstones, of Lower Pennsylvanian and Upper Mississippian age.

INVESTIGATIONAL DISCLOSURES

Materials occurring immediately below proposed grade consist predominantly of sandy silts (A-4a) and occasional sandy gravels (A-2-4) and silts (A-4b), having generally low moisture contents or moisture contents in the lower portions, or below the plastic range, as well as indurated clay bedrock.

Indurated clay bedrock is anticipated in the excavations at the following locations:

Ramp C-1

Stations 12+00 to 13+00 - in the ditches.

Stations 13+00 to 15+00 - at grade, in the ditches, and lower portion of the backslopes.

Stations 15+00 to 16+00 in the ditches.

In the embankment foundation areas, soils are predominantly comprised of the following:

USR 224

Stations 224+00 to 230+00 - sands (A-3a), silts (A-4a, A-4b), clays (A-7-5, A-7-6), having generally high moisture contents or moisture contents in the upper portion of the plastic range, containing various amounts of organic matter, and wet, low strength, highly compressible peats.

Stations 230+00 to 274+00 - sandy gravels (A-1-a, A-1-b, A-2-4), sands (A-3a), and silts (A-4a, A-4b), generally having low moisture contents or moisture contents in the lower portion of the plastic range. Wet materials were encountered between stations 231+00 and 233+00 and at stations 243+00 and 249+50.

Ramps A, B, B-1, B-2, C, C-1, C-2, and D - unstratified gravels, sandy gravels, sandy silts and silts, in the A-1-a, A-1-b, A-2-4, A-4 and A-6 classifications, generally having low moisture contents or moisture contents in the lower portion of the plastic range. Wet materials, occasionally containing organic matter, were encountered at the following locations: Ramp A - station 13+00; Ramp B - station 5+00; Ramp B-1 - station 16+00; Ramp B-2 - station 13+50; Ramp C - stations 8+00 and 9+00; Ramp C-2 - station 24+00 and 24+00; and Ramp D - stations 14+00 and 21+60.

A 3-foot at-surface interval of peat was encountered overlying bedrock surface at Ramp B, station 12+00.

LEGEND FOR PROJECT AVERAGE RESULTS OF TESTS—358 SAMPLES TESTED

DESCRIPTION	H. R. B. CLASS	OHIO CLASS	% AGG.	% SAND	% SAND	% SILT	% CLAY	LIQUID LIMIT	PLASTICITY INDEX	WATER CONTENT	SAMPLES TESTED
Gravel and stone fragments	A-1-a(C)	A-1-a	63	16	10	7	4	NP	NP	12	7
Stone fragments with sand	A-1-a(0)	A-1-a	45	19	22	6	6	NP	NP	12	20
Fine sand	A-3(0)	A-3	12	13	63	-	7	NP	NP	13	11
Coarse and fine sand	-----	A-3a	7	3	60	12	5	27	0	17	33
Stone fragments with sand and silt	A-2-4(0)	A-2-4	43	6	21	13	12	22	2	15	33
Sandy silt	A-4(C)	A-4a	20	5	24	32	19	23	2	16	115
Silt	A-4(3)	A-4b	2	1	12	59	26	25	3	23	41
Elastic silt and clay	A-5(11)	A-5	0	1	14	49	36	54	8	27	1
Silt and clay	A-6(7)	A-6a	20	2	11	37	30	27	11	19	13
Silty clay	A-6(10)	A-6b	0	2	17	35	45	33	16	13	1
Elastic clay	A-7-5(20)	A-7-5	0	1	8	58	33	66	43	70	13
Clay	A-7-6(15)	A-7-6	3	1	8	53	35	49	24	43	8
Fine-textured peat											17
Loamy peat											1
Sedimentary peat											21
Marly sedimentary peat											1
Weathered indurated clay											7
Weathered shale											2
Weathered sandstone											2
Shale											2
Sandstone											3
Various other materials											
Random fill											
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 high water content.											
Free water.											
Static water level.											
Indicates broken rock interval.											

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

SOIL PROFILE

SUMMIT COUNTY

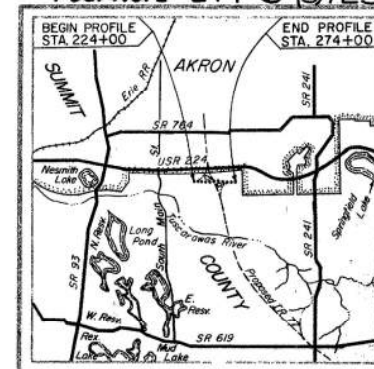
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OHIO STATE HIGHWAY TESTING LABORATORY
1620 W. BROAD ST. COLUMBUS 23, OHIO

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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.

Fed. No. I-277-G-(3)123



LOCATION MAP

Recon - M.P.L. - 7/31/63

Drilling - Auger - J.A.G., B.D.L., L.M.D., C.M.C., A.J.P., 8/7/63 - 8/20/63

Drafting - E.J.S., E.A. - 9/27/63

SUMMARY OF SOIL TEST DATA

NOTE: NP shown in Liquid Limit and Plasticity Index columns indicate that the material is non-plastic.
*Denotes sample taken at or near grade.

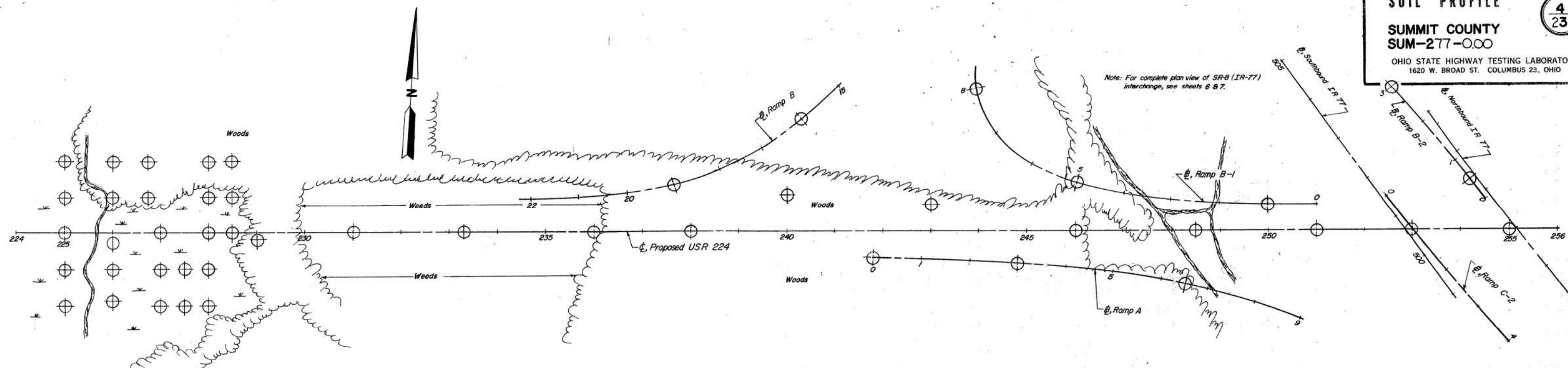
STATION & OFFSET	DEPTH FROM-TO	% AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	SHTL CLASS.
MAINLINE (USR 224)										
225+00	150' Lt	0.0-3.0	Brickbats, Stone Fragments and Wood with Soil	12	NP	NP	NP	NP	NP	Visual
		3.0-7.0	C 0 34 54	31	NP	NP	NP	NP	NP	A-4a
		7.0-10.0	C 1 16 46	37	NP	NP	NP	NP	NP	A-4a
		10.0-16.0	C 1 31 45	23	NP	NP	NP	NP	NP	A-4a
		16.0-24.0	Brown Silty Sedimentary Peat	236	-	177	Visual			A-7-5
		24.0-35.0	C 0 6 26 34	34	36	26	49	49	49	A-7-5
		35.0-43.0	Gray Sand							Visual
225+00	75' Lt	0.0-4.0	0 5 19 47	29	28	11	16	16	16	A-6a
		4.0-8.0	0 1 14 54	31	29	10	10	10	10	A-4a
		8.0-11.0	0 1 53 27	14	NP	NP	NP	NP	NP	A-4a
		11.0-13.0	0 1 13 51	35	47	16	35	35	35	A-7-5
		13.0-21.0	Brown Silty Sedimentary Peat	217	-	177	Visual			A-7-5
		21.0-33.0	C 0 5 51	44	100	43	72	72	72	A-7-5
		33.0-43.0	C 0 18 70	-12	NP	NP	NP	NP	NP	A-3a
225+00	CL	0.5-2.0	0 3 17 50	30	NP	NP	NP	NP	NP	A-4a
		2.0-4.0	0 14 46 21	19	NP	NP	NP	NP	NP	A-4a
		4.0-6.0	0 1 41 37	21	NP	NP	NP	NP	NP	A-4a
		6.0-9.0	0 0 2 34	24	NP	NP	NP	NP	NP	A-4a
		9.0-15.0	Black Fine-Textured Peat	133	-	232	Visual			A-7-5
		15.0-20.0	Brown Silty Sedimentary Peat	133	-	133	Visual			A-7-5
		20.0-28.0	0 0 3 65	32	48	13	39	39	39	A-3
		28.0-32.0	13 14 67 0	6	NP	NP	NP	NP	NP	A-3
225+00	75' Rt	0.5-3.0	0 11 57 12	20	27	10	17	17	17	A-3a
		3.0-8.0	0 0 5 66	23	26	6	19	19	19	A-4a
		8.0-17.0	Black Fine-Textured Peat	183	-	183	Visual			A-7-5
		17.0-32.0	0 0 3 60	37	65	22	33	33	33	A-7-5
		32.0-35.0	0 3 24 54	19	NP	NP	NP	NP	NP	A-4a
225+00	150' Rt	0.5-5.0	0 0 23 50	27	NP	NP	NP	NP	NP	A-4a
		5.0-6.0	0 0 3 43	54	41	19	32	32	32	A-7-6
		6.0-12.0	Brown Silty Sedimentary Peat	214	-	187	Visual			A-7-5
		12.0-14.0	Brown Silty Sedimentary Peat	75	-	72	Visual			A-3a
		14.0-20.0	12 19 58 1	10	NP	NP	NP	NP	NP	A-3a
		20.0-22.0	0 2 17 55	26	NP	NP	NP	NP	NP	A-4a
226+00	150' Lt	0.0-4.0	0 0 21 47	32	25	7	34	34	34	A-4a
		4.0-9.0	0 0 11 53	31	23	4	25	25	25	A-4a
		9.0-14.0	Black Fine-Textured Peat	110	-	174	Visual			A-7-5
		14.0-19.0	Brown Silty Sedimentary Peat	110	-	113	Visual			A-7-5
		19.0-23.0	Brown Silty Sedimentary Peat	100	-	76	Visual			A-3a
		23.0-31.0	11 43 40	-6	NP	NP	NP	NP	NP	A-3a
226+00	75' Lt	0.0-2.0	0 3 38 38	21	NP	NP	NP	NP	NP	A-4a
		2.0-4.0	0 3 60 22	15	NP	NP	NP	NP	NP	A-4a
		4.0-10.0	0 3 2 58	37	29	9	34	34	34	A-4a
		10.0-15.0	Black Fine-Textured Peat	139	-	139	Visual			A-7-5
		15.0-22.0	Brown Silty Sedimentary Peat	130	-	100	Visual			A-7-5
		22.0-30.0	0 0 1 62 37	64	36	65	65	65	65	A-7-6
		30.0-38.0	0 0 4 64	32	60	31	53	53	53	A-7-6
		38.0-43.0	17 12 49 15	7	NP	NP	NP	NP	NP	A-3a
226+00	20' Rt	0.5-4.0	0 1 46 32	21	NP	NP	NP	NP	NP	A-4a
		4.0-6.0	0 8 60 10	12	NP	NP	NP	NP	NP	A-3a
		6.0-11.0	0 2 12 74	12	NP	NP	NP	NP	NP	A-4a
		11.0-15.0	Black Fine-Textured Peat	237	-	237	Visual			A-7-5
		15.0-28.0	Brown Silty Sedimentary Peat	171	-	171	Visual			A-3
		28.0-36.0	20 20 43	-17	NP	NP	NP	NP	NP	A-3
226+00	75' Rt	0.0-3.0	13 8 32 25	22	27	12	21	21	21	A-6a
		3.0-9.0	0 0 5 57	38	29	11	31	31	31	A-6a
		9.0-16.0	Black Fine-Textured Peat	210	-	210	Visual			A-7-5
		16.0-23.0	0 0 2 65	33	71	36	105	105	105	A-7-5
		23.0-28.0	0 1 6 56	37	115	62	97	97	97	A-7-5
		28.0-31.0	4 14 68 9	5	NP	NP	NP	NP	NP	A-3a
226+00	140' Rt	0.5-4.0	0 1 24 42	33	29	12	22	22	22	A-6a
		4.0-6.0	0 7 55 24	14	NP	NP	NP	NP	NP	A-4a
		6.0-8.0	0 1 3 61	30	NP	NP	NP	NP	NP	A-4a
		8.0-13.0	Black Fine-Textured Peat	202	-	202	Visual			A-7-5
		13.0-18.0	Brown Silty Sedimentary Peat	174	-	130	Visual			A-7-5
		18.0-25.0	Black Organic Clay	47	-	47	Visual			A-1-b
		25.0-31.0	32 24 33	-11	NP	NP	NP	NP	NP	A-1-b
226+75	150' Lt	0.0-4.0	0 0 26 47	27	24	2	26	26	26	A-4a
		4.0-10.0	0 2 21 50	27	NP	NP	NP	NP	NP	A-4a
		10.0-15.0	Black Fine-Textured Peat	136	-	252	Visual			A-7-5
		15.0-18.0	Brown Silty Sedimentary Peat	136	-	127	Visual			A-7-5
		18.0-22.0	0 0 5 63	32	95	51	67	67	67	A-7-5
		22.0-27.0	Gray Organic Clay	7	-	7	Visual			A-3
		27.0-29.0	7 31 55	-7	NP	NP	NP	NP	NP	A-3
226+75	75' Lt	0.0-3.0	9 13 12 48	13	NP	NP	NP	NP	NP	A-4a
		3.0-5.0	0 1 4 70	23	NP	NP	NP	NP	NP	A-4a
		5.0-11.0	0 2 4 64	30	51	23	47	47	47	A-7-6
		11.0-15.0	Black Fine-Textured Peat	144	-	144	Visual			A-7-5
		15.0-20.0	Brown Silty Sedimentary Peat	135	-	135	Visual			A-7-5
		20.0-26.0	0 2 3 66	27	130	78	91	91	91	A-7-5
		26.0-31.0	0 1 7 58	34	92	54	65	65	65	A-7-5
		31.0-33.0	11 14 67	-8	NP	NP	NP	NP	NP	A-3
227+00	CL	0.5-2.0	0 1 29 42	28	NP	NP	NP	NP	NP	A-4a
		2.0-4.0	0 1 60 23	16	NP	NP	NP	NP	NP	A-4a
		4.0-9.0	0 1 30 46	23	NP	NP	NP	NP	NP	A-4a
		9.0-12.0	0 1 21 53	25	45	18	43	43	43	A-7-6
		12.0-19.0	Black Fine-Textured Peat	138	-	138	Visual			A-7-5
		19.0-24.0	Brown Silty Sedimentary Peat	137	-	137	Visual			A-7-5
		24.0-30.0	0 1 9 53	37	55	35	52	52	52	A-7-5
		30.0-43.0	Brown Sand							Visual
		43.0-45.0								Visual
227+00	75' Rt	0.3-4.0	0 3 10 41	46						

OHIO STATE HIGHWAY TESTING LABORATORY
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NOTE: NP shown in Liquid Limit and Plasticity Index columns indicates that the material is non-plastic.

*Denotes sample taken at or near grade

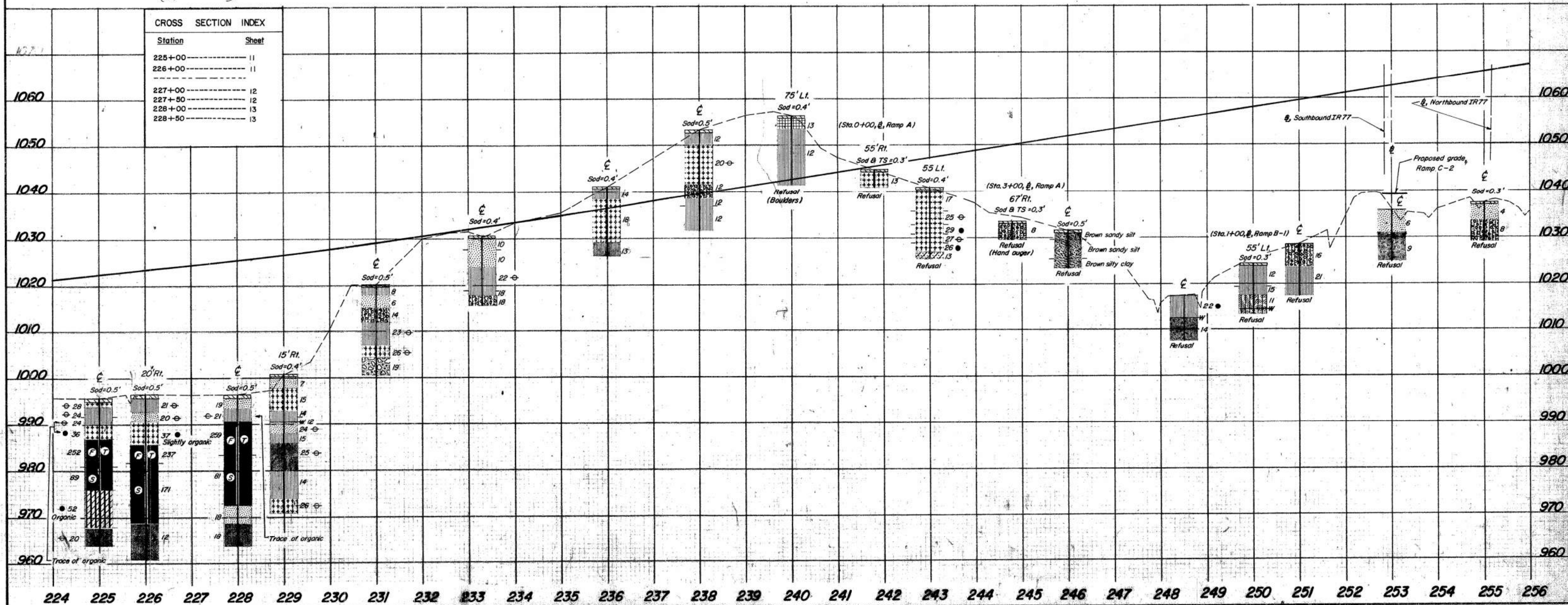
STATION & OFFSET		DEPTH FROM-TO	% AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.I.	P.I.	W.C.	SHIL CLASS.
RAMP C-1 (CONT'D)											
13+00	BL	0.0-2.5	13	11	36	17	12	NP	NP	10	A-2-4
		2.5-5.0	33	4	13	19	17	NP	NP	18	A-2-4
		5.0-10.0	35	9	24	18	14	NP	NP	16	A-2-4
		10.0-14.0	41	6	21	24	8	NP	NP	16	A-2-4
		14.0-16.0	13	5	65	8	9	NP	NP	20	A-3a
		16.0-18.0	43	7	13	24	8	NP	NP	17	A-2-4
RAMP C-2											
5+00	BL	0.5-3.0	16	7	40	20	17	NP	NP	16	A-4a
		3.0-8.0	24	6	17	35	17	NP	NP	14	A-4a
		5.0-8.5	64	4	13	12	7	NP	NP	13	A-1-0
		8.5-12.0	44	3	2	27	24	NP	NP	15	A-4a
8+00	BL	0.4-6.0	37	5	25	11	22	NP	NP	19	A-2-4
		6.0-11.0	32	6	18	30	14	NP	NP	12	A-4a
		11.0-14.0	34	4	13	21	28	NP	NP	13	A-4a
11+00	BL	0.3-7.0	41	6	19	13	16	NP	NP	12	A-2-4
		7.0-10.0	45	3	26	13	11	NP	NP	15	A-1-0
		10.0-16.5	48	3	5	21	23	NP	NP	13	A-6a
15+00	BL	C.3-6.0	39	4	19	13	20	NP	NP	12	A-4a
		6.0-9.0	Gray	Weathered	Inured	Clay				11	Visual
17+00	BL	0.3-4.0	0	2	17	35	45	NP	NP	16	A-5a
		4.0-7.0	0	3	5	42	50	NP	NP	11	A-6a
		7.0-9.0	77	1	6	10	6	NP	NP	14	A-1-0
		9.0-11.0	38	-	5	33	22	NP	NP	14	A-6a
RAMP D											
0+00	BL	C.4-3.0	29	4	13	30	19	NP	NP	12	A-4a *
		3.0-6.0	69	4	11	10	6	NP	NP	3	A-1-0 *
		6.0-9.0	36	2	7	33	22	NP	NP	4	A-4a
		9.0-13.5	Gray	Weathered	Inured	Clay				6	Visual
3+00	BL	0.0-1.5	Brown	Broken	Sandstone					6	Visual
6+00	BL	0.5-5.0	27	7	21	23	17	NP	NP	4	A-4a
		5.0-10.0	34	3	11	34	18	NP	NP	14	A-4a
		10.0-12.0	66	7	11	10	6	NP	NP	17	A-1-0
9+00	BL	C.6-2.5	55	3	11	19	12	NP	NP	7	A-2-4
11+20	BL	0.3-2.0	9	5	37	23	20	NP	NP	18	A-4a
		2.0-4.0	0	6	37	36	21	NP	NP	20	A-4a
		4.0-7.0	34	10	17	41	13	NP	NP	14	A-3
		7.0-8.5	27	3	27	42	11	NP	NP	17	A-4a
		8.5-11.0	26	3	17	32	17	NP	NP	15	A-4a
		11.0-16.5	47	1	2	32	18	NP	NP	14	A-6a
14+00	BL	0.3-4.0	16	17	34	17	16	NP	NP	21	A-3a
		4.0-6.0	24	7	15	33	21	NP	NP	18	A-4a
		6.0-11.0	44	4	16	21	15	NP	NP	13	A-4a
18+00	BL	C.4-3.0	20	14	33	19	14	NP	NP	15	A-2-4
		3.0-5.0	41	12	23	14	8	NP	NP	17	A-1-0
		5.0-10.0	20	4	19	40	19	NP	NP	16	A-4a
		10.0-15.0	58	8	6	18	9	NP	NP	14	A-2-4
		15.0-20.0	62	9	5	13	7	NP	NP	11	A-1-0
21+00	BL	C.4-3.0	36	1	27	20	17	NP	NP	9	A-4a
		3.0-6.0	0	3	22	62	22	NP	NP	20	A-4a
		6.0-8.0	11	7	22	49	11	NP	NP	20	A-4a
		8.0-12.0	23	4	13	44	16	NP	NP	15	A-4a
		12.0-17.0	29	6	17	36	16	NP	NP	16	A-4a
		17.0-20.0	28	10	23	29	9	NP	NP	12	A-4a

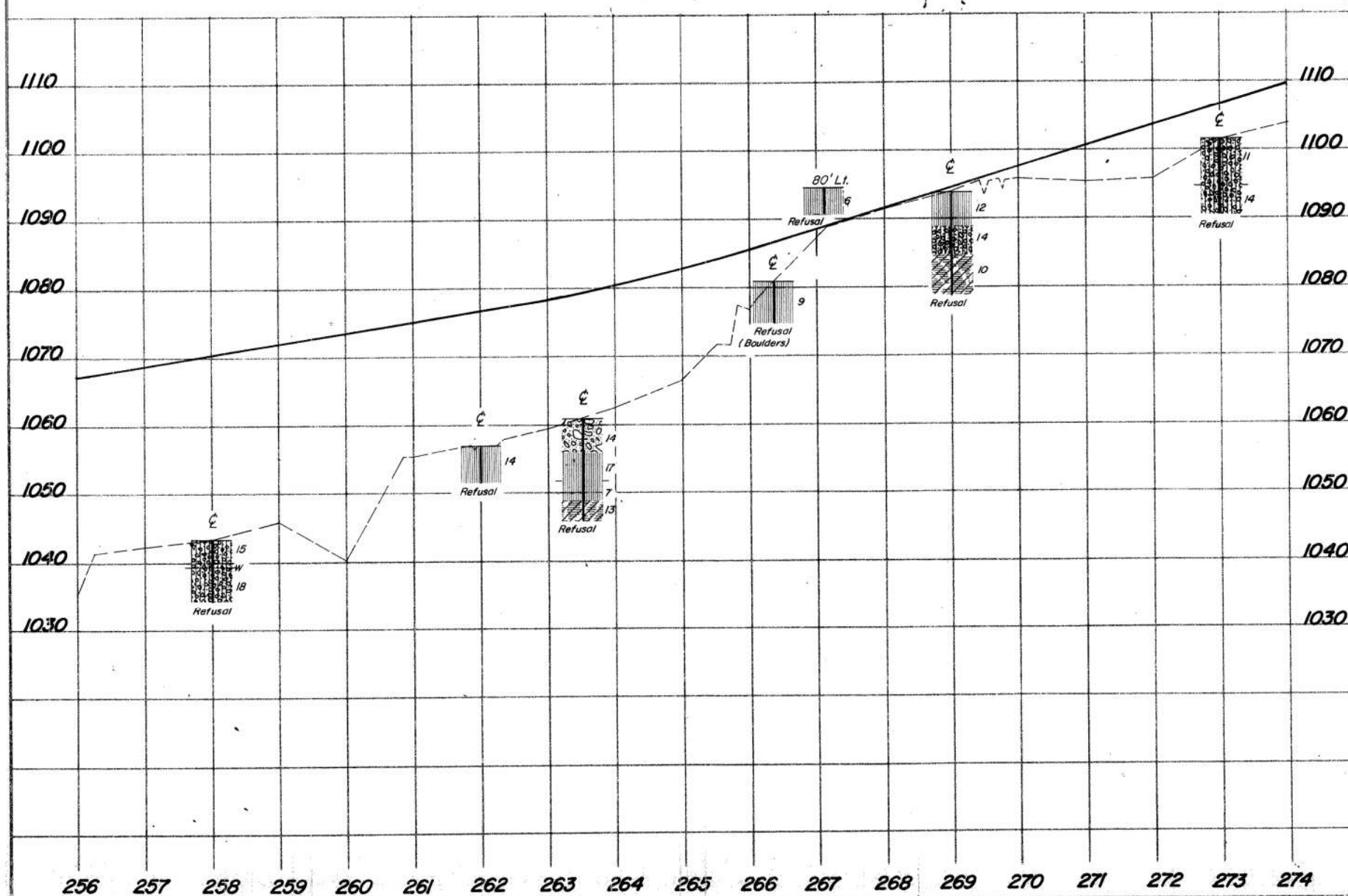
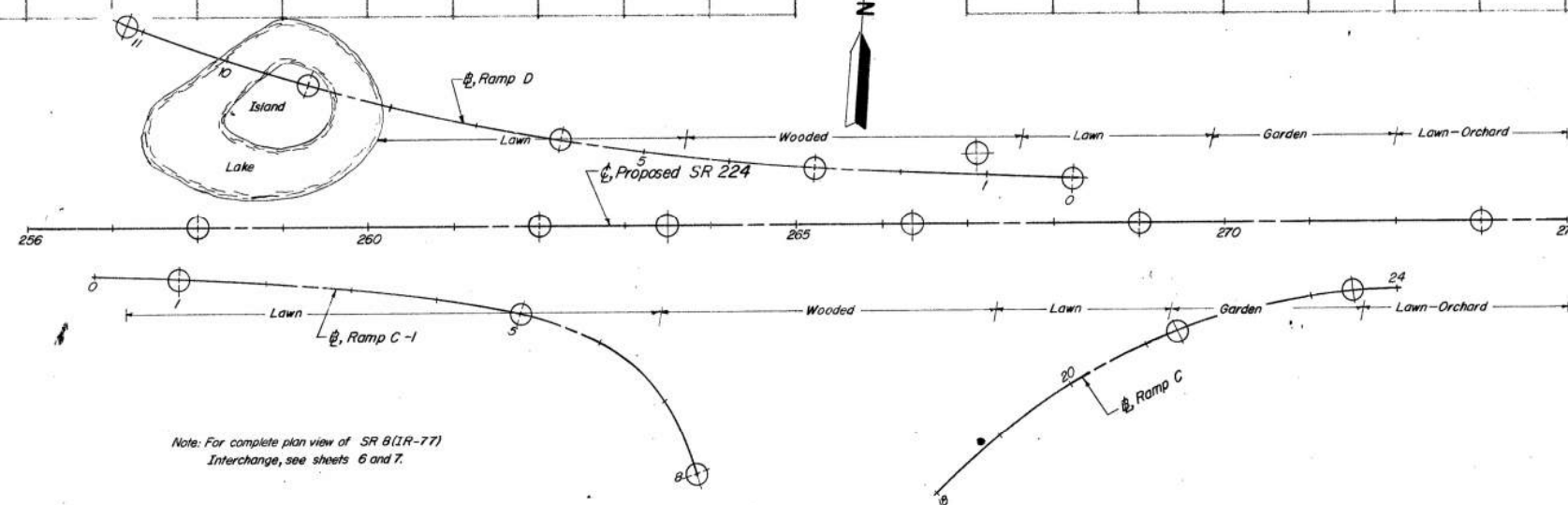


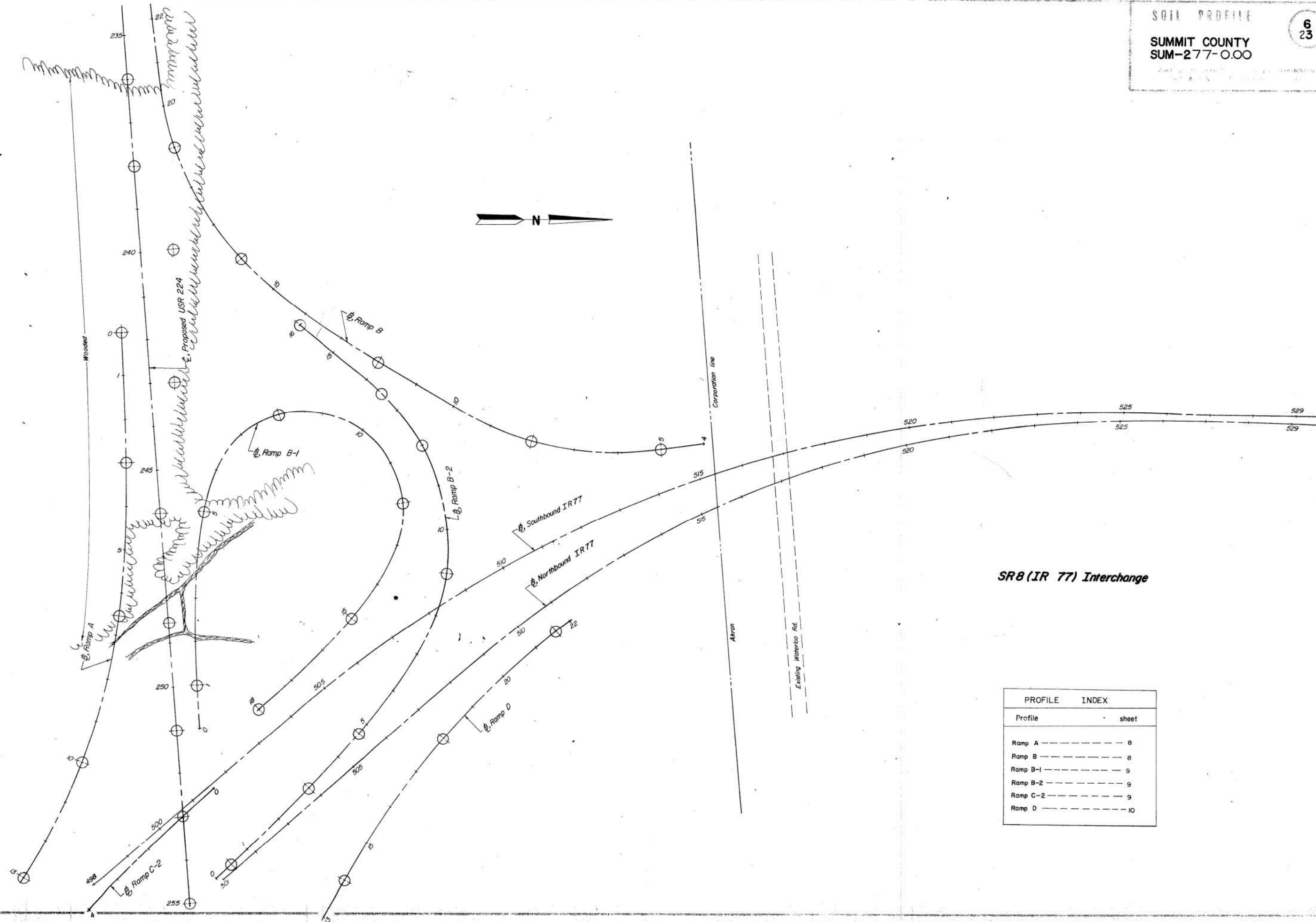
CROSS SECTION INDEX

Station Sheet

225+00	11
226+00	11
227+00	12
227+50	12
228+00	13
228+50	13

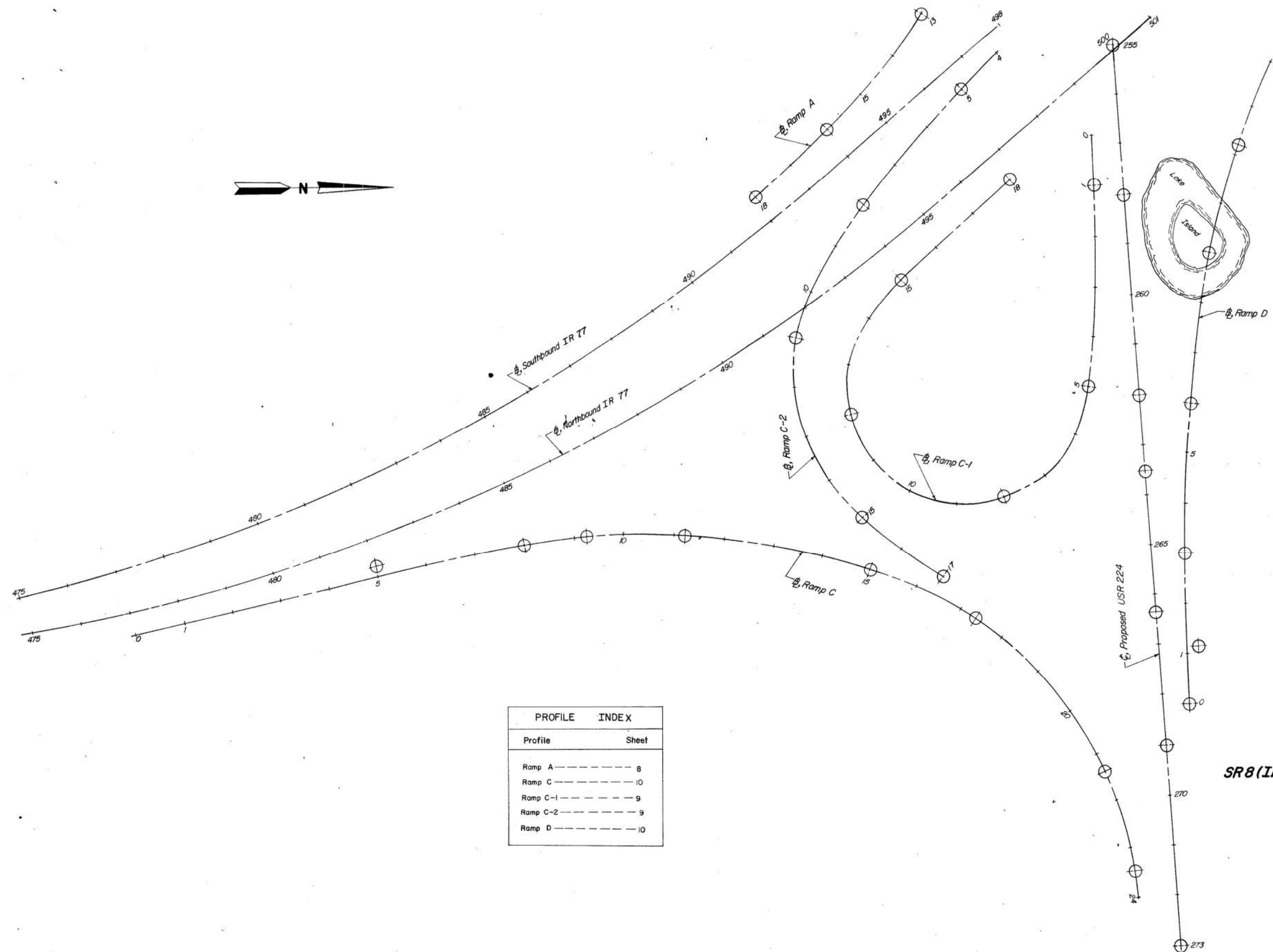






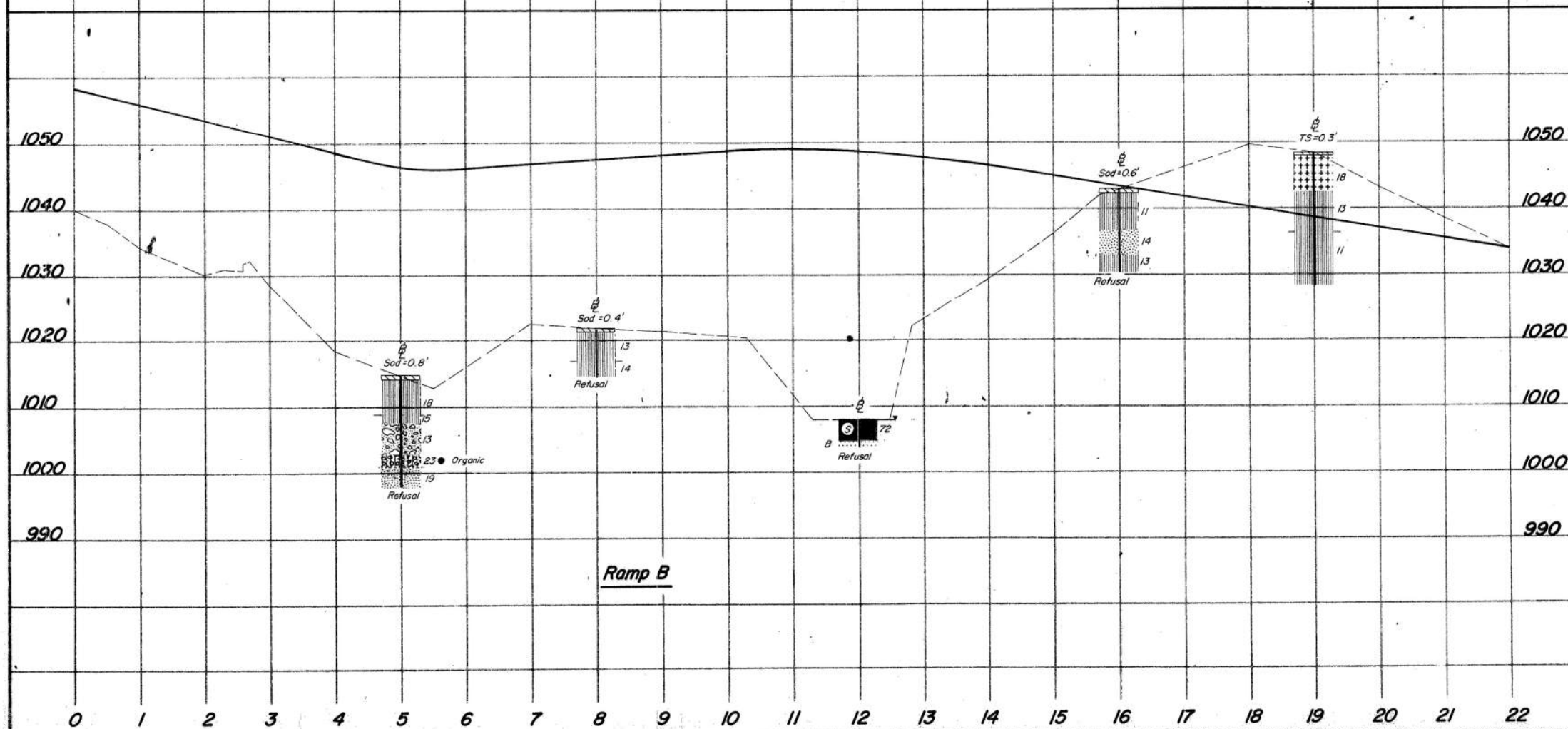
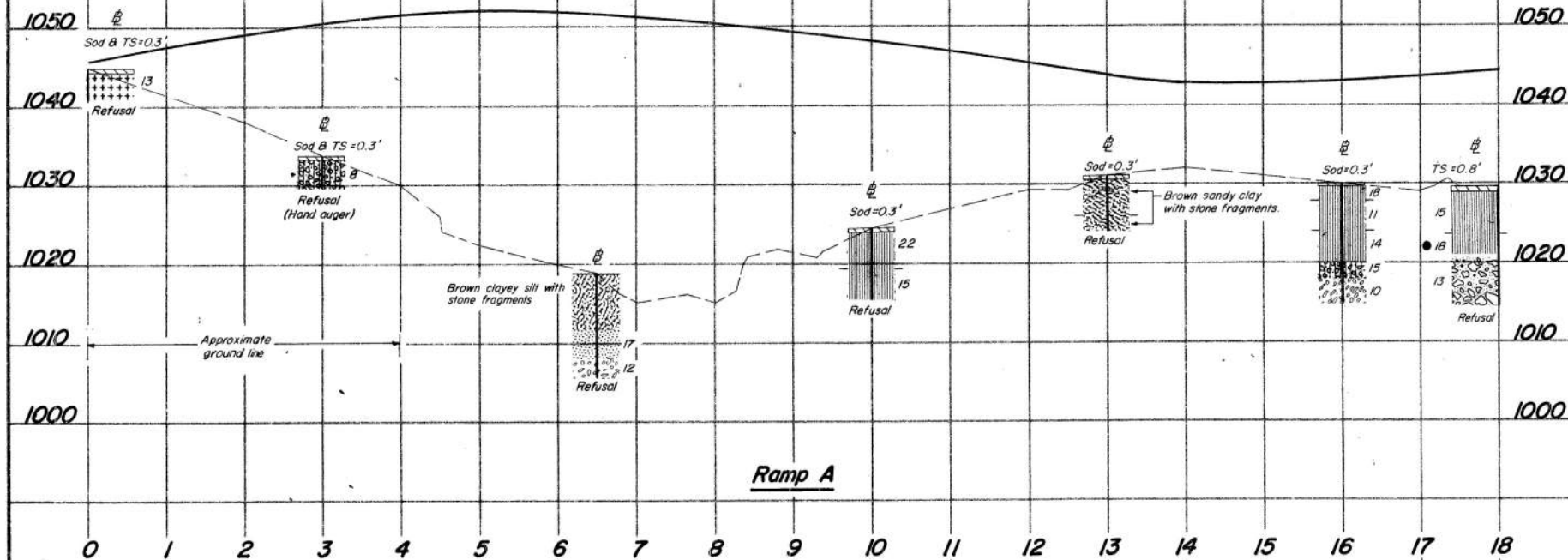
SR8 (IR 77) Interchange

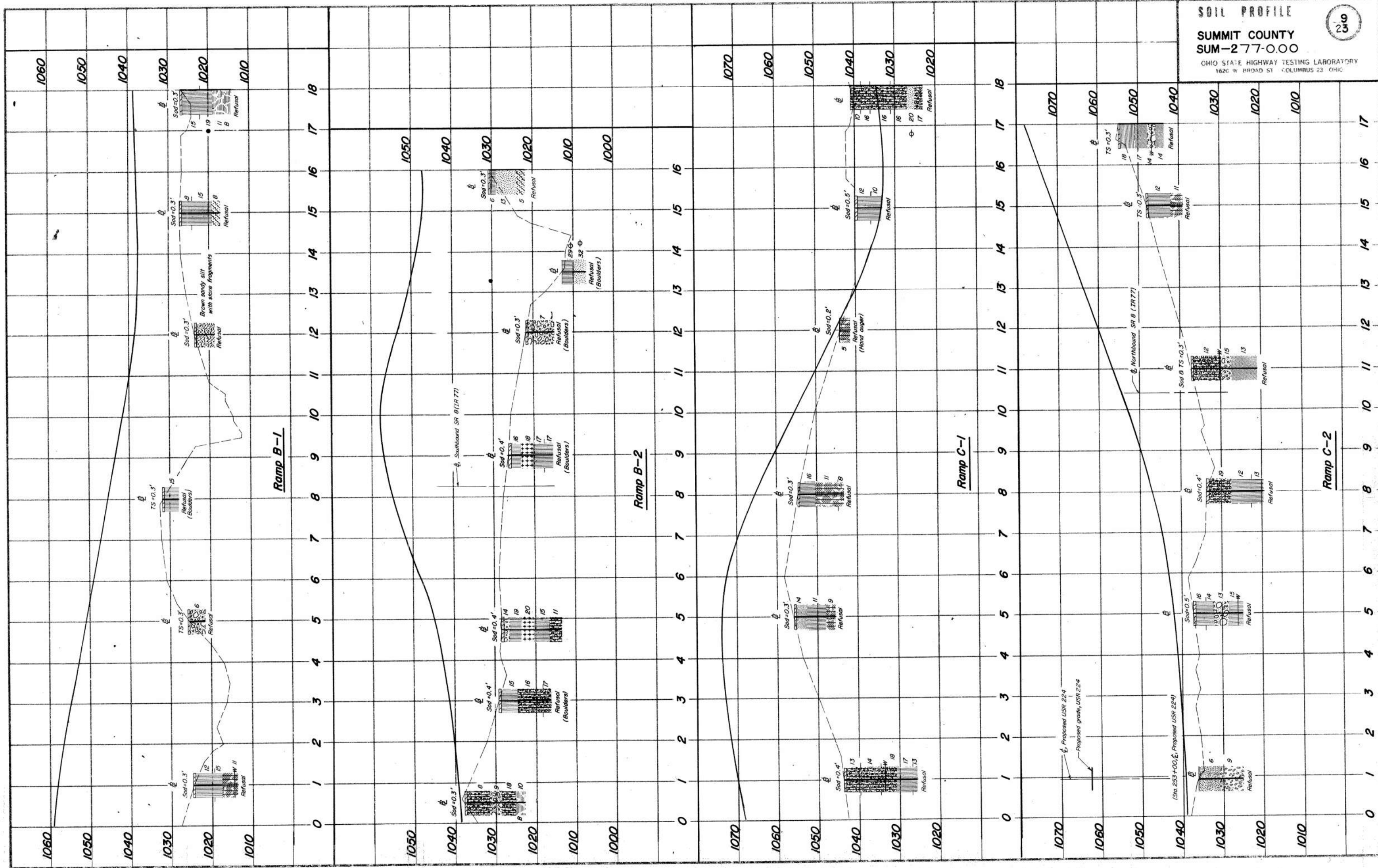
PROFILE INDEX	
Profile	sheet
Ramp A	8
Ramp B	8
Ramp B-1	9
Ramp B-2	9
Ramp C-2	9
Ramp D	10

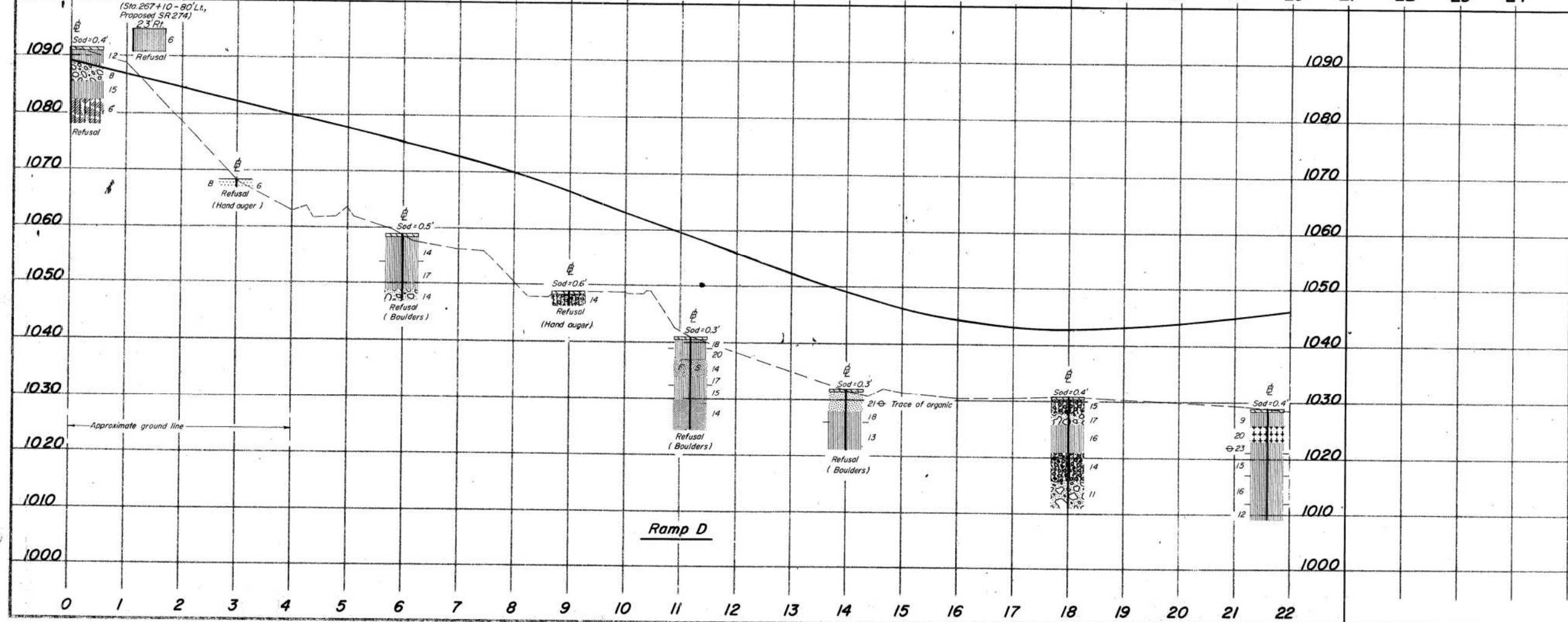
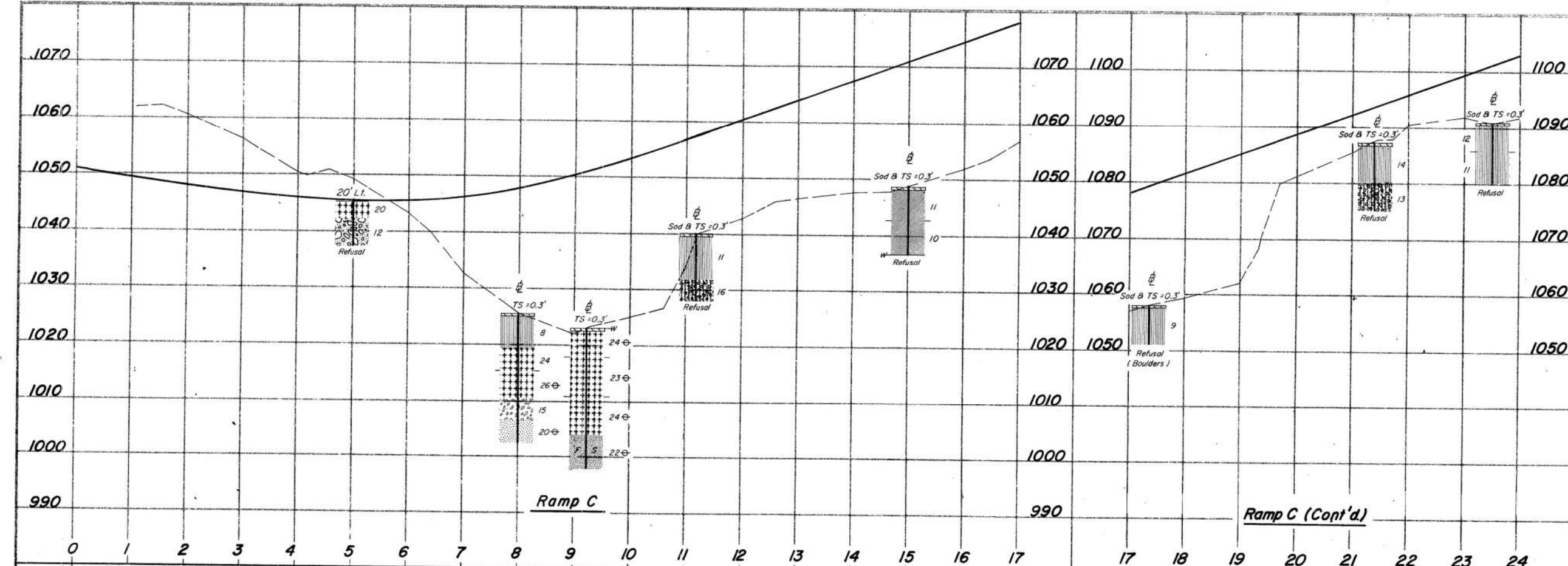


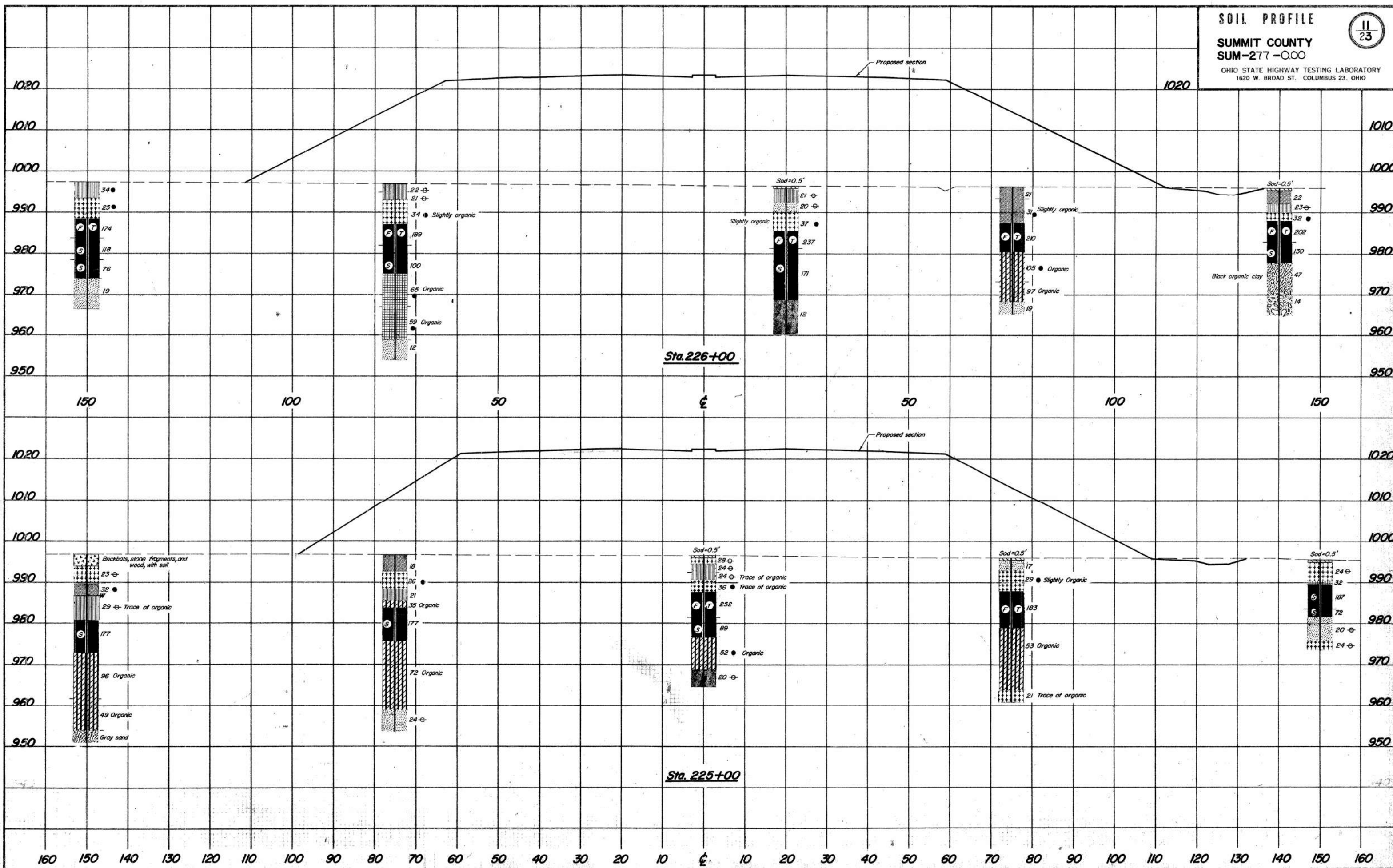
PROFILE	INDEX
Profile	Sheet
Ramp A	8
Ramp C	10
Ramp C-1	9
Ramp C-2	9
Ramp D	10

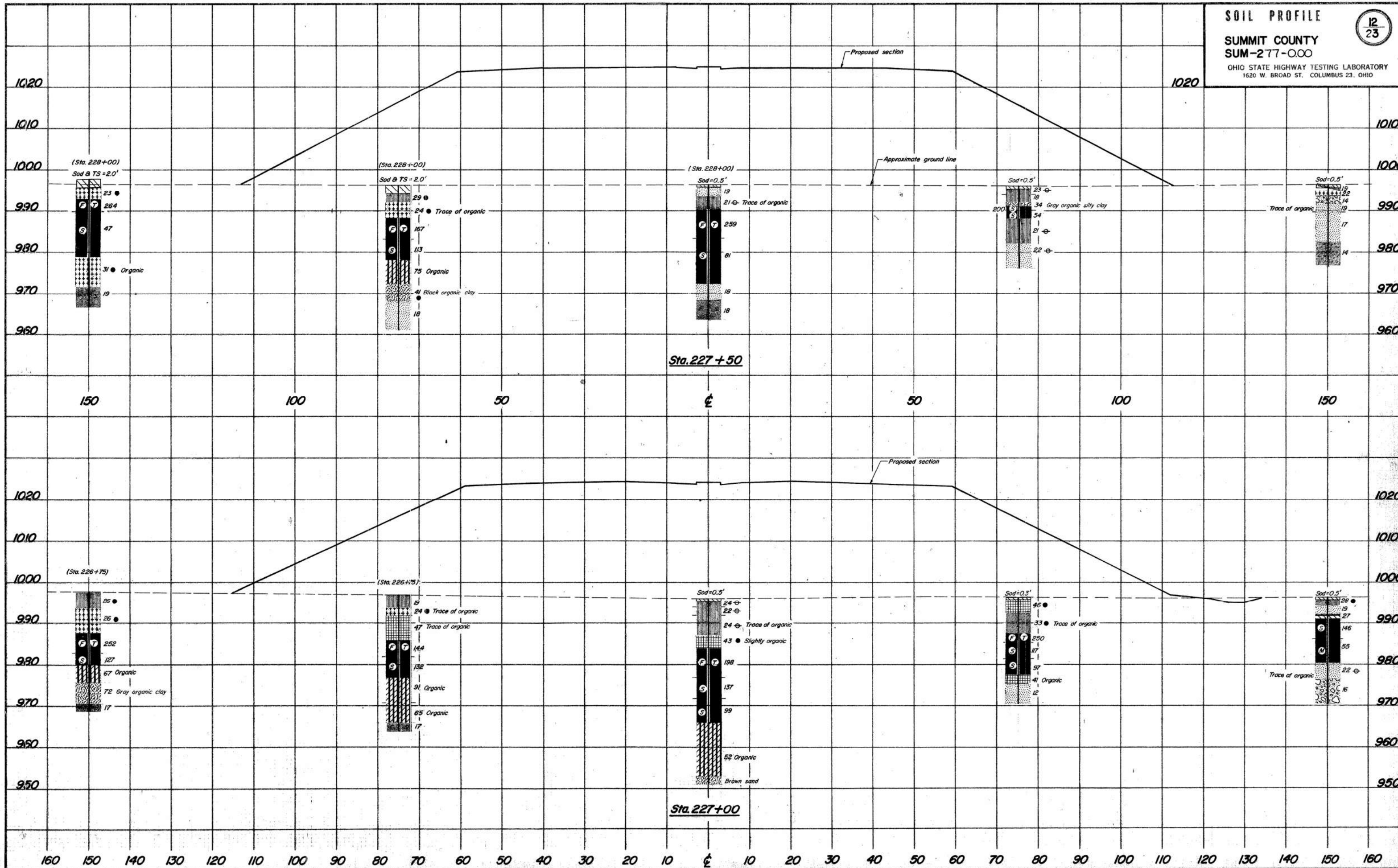
SR8 (IR 77) Interchange (Cont'd)









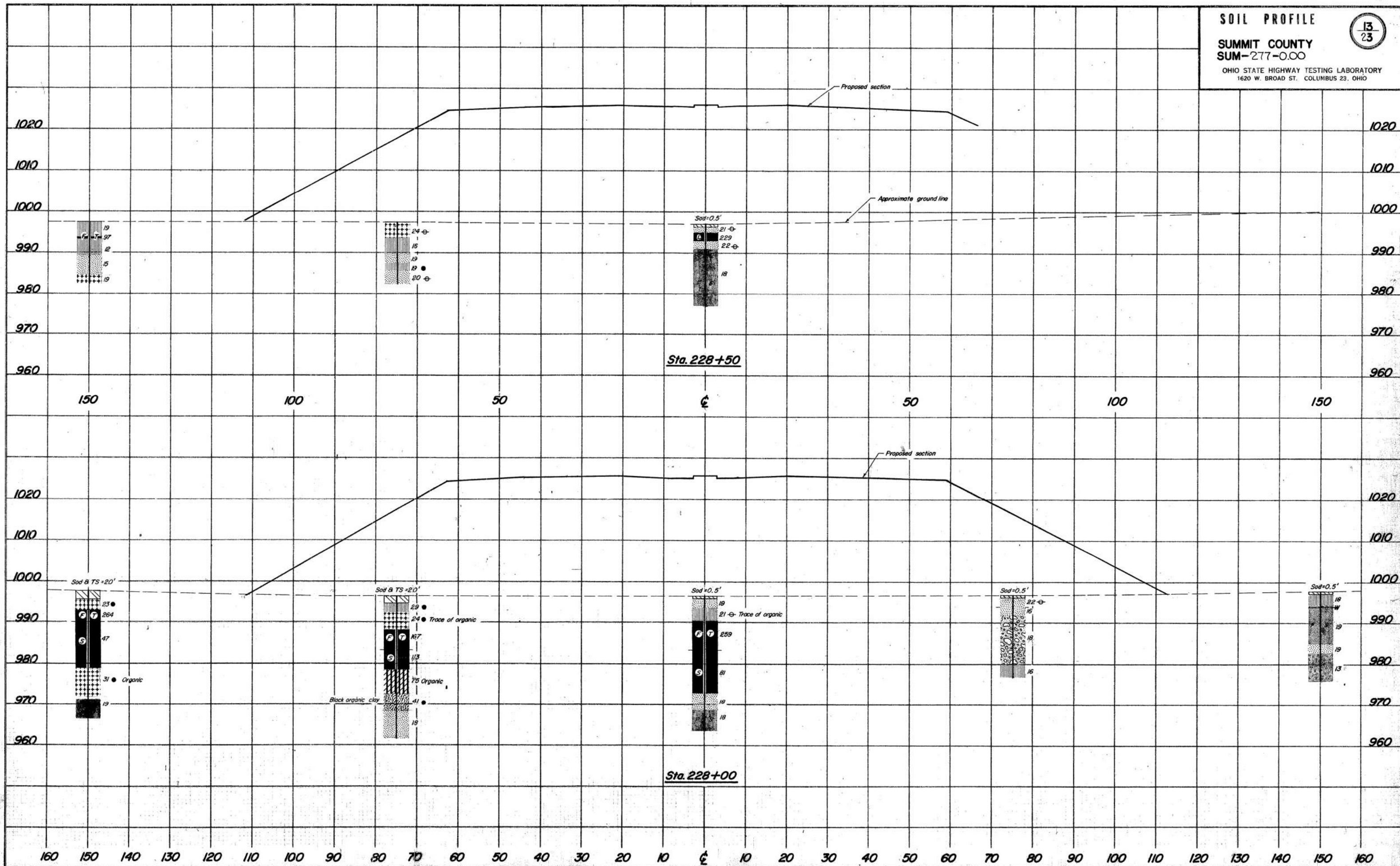


SOIL PROFILE

13
23

SUMMIT COUNTY
SUM-277-0.00

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



LEGEND

GENERAL INFORMATION

LOCATION OF THE SITE

The structure site is located on the rolling glaciated Allegheny Plateau. Thin glacial drift overlies shale and sandstone bedrock, of Pennsylvanian age.

EXPLORATION

The exploration consisted of two drive sample-core borings and twenty drive rod penetration tests, made between October 9 and 22, 1963.

INVESTIGATIONAL FINDINGS

Borings disclosed medium dense to dense silts, sands, and gravels to bedrock surface, encountered at 9 and 20-foot depths, elevations 1022 and 1016 feet. Borings were terminated at 25 and 30-foot depths, elevations 1012 and 1004 feet, after penetrating 10 and 16 feet of bedrock.

The rod soundings met uniform and erratic resistance to penetration with increasing depth and met refusal to penetration at 9 to 22-foot depths, elevations 1020 to 1014 feet, on the basis of the borings, considered to be on or above bedrock surface.

Following is a table indicating substructure units, proposed footing elevations, as shown on the site plan, and elevation of bedrock surface beneath each substructure unit, as determined by tests:

Substructure Unit	Proposed Footing Elevation	Approximate Elevation of Bedrock Surface
		Left Center Right
Rear Abutment	1046.7'	1016' 1019' 1022'
First Pier	1032.0'	1020' 1023' 1027'
Second Pier	1032.0'	1021' 1023' 1028'
Third Pier	1031.0'	1022' 1023' 1017'
Fourth Pier	1030.5'	1024' 1026' 1028'
Fifth Pier	1030.6'	1024' 1025' 1022'
Forward Abutment	1050.7'	1026' 1025' 1024'

Free water was encountered in rod sounding hole number 16 at elevation 1036 feet and at sounding hole number 17 at elevation 1035 feet.

- Auger Boring - Plan View.
- Press and/or Drive Sample and/or Core Boring - Plan View.
- Drive Rod Penetration Resistance Soundings - Plan View.
- Electrical Resistivity Probe - Plan View.
- Indicate Auger Boring.
- Indicate Press and/or Drive Sample and/or Core Boring.
- Electrical Resistivity Probe plotted to vertical scale only.
- Top of Rock.
- Water saturated zone.
- Total Depth.

- Horizontal bar on log indicates the depth the sample was taken.
- Figures to the right of boring log in profile view indicate the number of blows for Standard Penetration test.
X = First 6 inches
Y = Second 6 inches
- Casing.
- Resistance "R" < 10,000 lbs.
- Resistance "R" > 10,000 lbs.
- Indicates final measurement of penetration in inches.
- Indicates Free Water elevation.
- Indicates Static Water elevation.
- Footing.
- Footing on pile.

SYMBOLS OF ROCK TYPES

- Coal.
- Weathered Indurated Clay.
- Indurated Clay.
- Weathered Shale.
- Shale.
- Weathered Sandstone.
- Sandstone.
- Leached Dolomite.
- Dolomite.
- Leached Limestone.
- Limestone.

Drive Rod Penetration Tests

Drive rod penetration resistance tests constitute driving a 3 1/2 inch diameter steel rod, with a 45° cone point, into the ground, using a 22 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 conditions may be evaluated.

Drive Sample Borings - Drive Press Sample Borings

Drive sample borings are by means of a rotary type drilling, 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 40 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 drilling, 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 drilling 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, depths of press samples, field sample description based on laboratory test results and the Casagrande-A.C. classification system, and grain size, plasticity and moisture content determinations. Results of strength and consolidation testing 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.

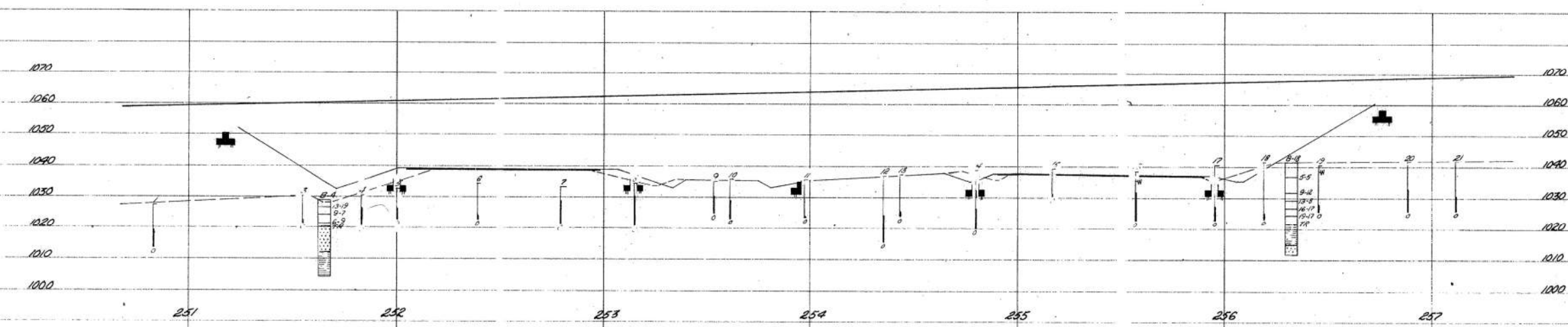
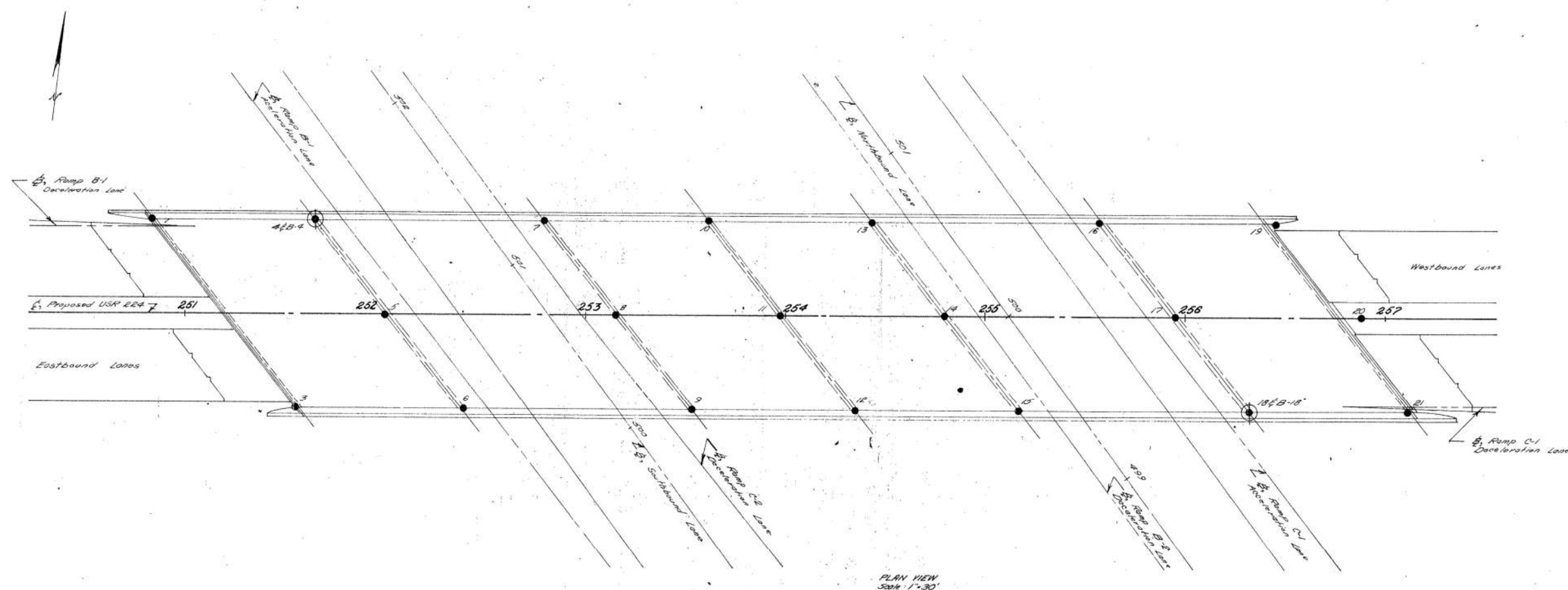
Particle Size Definitions								
8"	3"	2.0mm		0.42mm		0.075mm	0.0075mm	
Boulders	Cobbles	Gravel	Coarse Sand	Fine Sand	Silt	Clay		
No. 10 sieve		No. 40 sieve		No. 200 sieve				

LOG OF BORING															
Date Started <u>10-9-63</u>		Sampler Type <u>SS</u>		Dia. <u>1 3/8"</u>		Water Elev. <u> </u>									
Date Completed <u>10-10-63</u>		Casing Length <u>10'</u>		Dia. <u>3 1/2"</u>		Surface Elev. <u>1029.1'</u>									
Boring No. <u>B-4</u>		Station & Offset <u>251+65, 47' Lt. (FIRST PIER)</u>													
Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	% Agg.	% S.S.	% F.S.	% Silt	% Clay	LL	PI	W.C.	SHTL Class.
1029.1	0														
1026.6	2														
1024.1	4	13/19			Brown Sandy Silt	1	0	8	21	45	26	22	4	16	
1021.6	6	9/7			Brown and Gray Sandy Gravelly Silt	2	34	4	16	28	18	NP	NP	19	
1020.1	8	6/9			Brown Silty Sand with Stone Fragments	3	25	8	30	25	12	NP	NP	16	
1012.1	10		0.6	0.4	TOP OF ROCK										
	12		3.9	1.1	Sandstone, gray, firm, medium-grained, separated into beds 0.2' to 0.4' thick by soft damp clay seams (comprising 20% of interval). (Broken and jointed orange-brown colored above 12.7'). Core loss 25%.										
	14														
	16														
	18		5.0	0.0											
	20				Shale, gray, firm, arenaceous, carbonaceous, broken in wedges and thin beds 0.1' to 0.2' thick and separated by soft clay shale seams (comprising 6% of interval). Core loss 3%.										
	22														
	24		4.7	0.3											
1004.1															
BOTTOM OF BORING															

LOG OF BORING															
Date Started 10-9-63		Sampler Type SS		Dia. 1 3/8"		Water Elev.									
Date Completed 10-9-63		Casing Length 18'		Dia. 3 1/2"		Surface Elev. 1041.8'									
Boring No. B-18		Station & Offset 256+32, 47' Rt. (FIFTH PIER)													
Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	% Agg.	% G.S.	% F.S.	% Silt	% Clay	LL	PI	W.C.	SMTL Class.
1041.8	0														
	2														
1036.8	4														
	6	5/5			Brown Sandy Silt	1	0	7	26	44	23	20	2	17	
	8														
1031.8	10														
	12	9/12			Brown and Gray Silty Gravelly Sand	2	27	8	34	20	11	NP	NP	15	
1029.3	14				Gray and Brown Silty Gravel	3	76	4	10	5	5	NP	NP	12	
1026.8	16				Gray Silty Sandy Gravel	4		V	I	S	U	A	L	10	
1024.3	18														
	19/17				Gray Silt with Stone Fragments	5	45	1	3	37	14	NP	NP	12	
1021.8	20														
	22				TOP OF ROCK										
	24		4.8	0.2	Shale, dark-gray, firm, dense, very broken and jointed in angular fragments 0.05' to 0.3' thick and interbedded with soft gray clay seams (comprising 3% of interval). (From 20.4' to 21.1', gray argillaceous sandstone). Core loss 4%.										
1014.9	26														
	28		4.7	0.3	Sandstone, gray, firm, fine-grained, in beds 0.3' to 1.0' thick separated by clay shale seams (comprising 4% of interval). (Above 28.7', interval is very argillaceous). Core loss 6%.										
1011.8	30														
BOTTOM OF BORING															

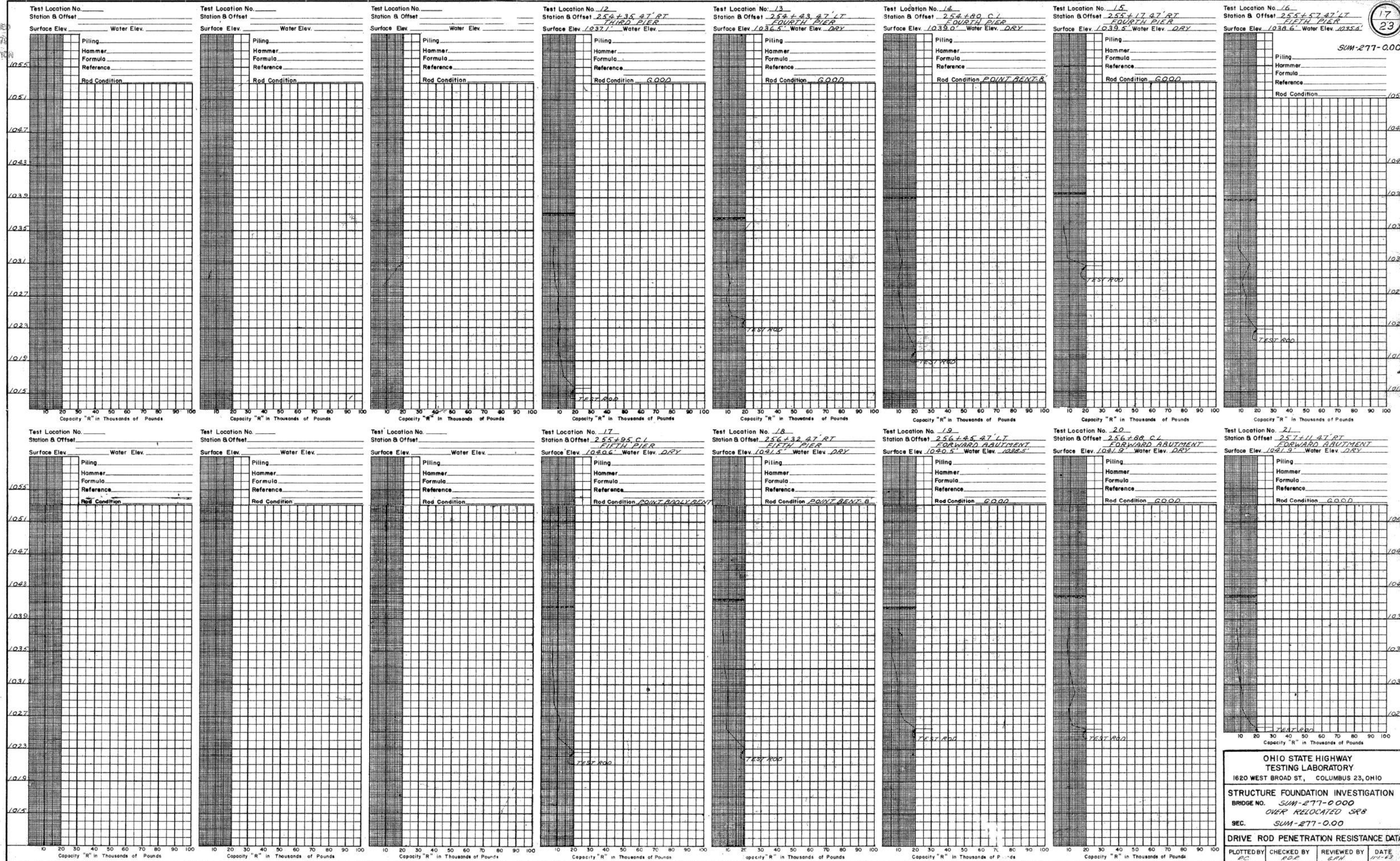
NOTE: Information shown by this subsurface investigation was obtained solely for the use in establishing design criteria for the project. The State of Ohio does not guarantee the accuracy of this data and shall not be construed as a part of the plans governing construction of the project.

OHIO STATE HIGHWAY TESTING LABORATORY 670 WEST BROAD STREET, COLUMBUS 23, OHIO		
STRUCTURE FOUNDATION INVESTIGATION		
PROJECT NO.	SUM-277-0000	
	OVER RELOCATED SR8	
SECTION	SUM-277-0.00	
DATE	BY	DATE
10-11-63	SM	11-63



OHIO STATE HIGHWAY TESTING LABORATORY 1620 WEST BROAD ST., COLUMBUS 23, OHIO			
STRUCTURE FOUNDATION INVESTIGATION			
BRIDGE NO. SUM-277-0000			
OVER RELOCATED SR 8			
SEC. SUM-277-000			
PLAN AND PROFILE			
DRAWN BY R.F.F.	CHECKED BY R.D.B.	REVIEWED BY G.P.H.	DATE 11-1-68

Test Location No. _____ Station & Offset _____ Surface Elev. _____ Water Elev. _____	Test Location No. _____ Station & Offset _____ Surface Elev. _____ Water Elev. _____	Test Location No. _____ Station & Offset _____ Surface Elev. _____ Water Elev. _____	Test Location No. <u>1</u> Station & Offset <u>250+83.47' LT</u> Surface Elev. <u>1027.7</u> Water Elev. <u>DRY</u>	Test Location No. <u>3</u> Station & Offset <u>251+55.47' RT</u> Surface Elev. <u>1030.6</u> Water Elev. <u>DRY</u>	Test Location No. <u>4</u> Station & Offset <u>251+65.47' LT</u> Surface Elev. <u>1030.5</u> Water Elev. <u>DRY</u>	Test Location No. <u>5</u> Station & Offset <u>252+00.01</u> Surface Elev. <u>1032.5</u> Water Elev. <u>DRY</u>	Test Location No. <u>6</u> Station & Offset <u>252+39.47' RT</u> Surface Elev. <u>1034.5</u> Water Elev. <u>DRY</u>
Piling _____ Hammer _____ Formula _____ Reference _____ Rod Condition _____	Piling _____ Hammer _____ Formula _____ Reference _____ Rod Condition _____	Piling _____ Hammer _____ Formula _____ Reference _____ Rod Condition _____	Piling _____ Hammer _____ Formula _____ Reference _____ Rod Condition <u>ROD BENT</u>	Piling _____ Hammer _____ Formula _____ Reference _____ Rod Condition <u>ROD BENT</u>	Piling _____ Hammer _____ Formula _____ Reference _____ Rod Condition _____	Piling _____ Hammer _____ Formula _____ Reference _____ Rod Condition _____	Piling _____ Hammer _____ Formula _____ Reference _____ Rod Condition <u>ROD BENT</u>



REPRODUCED
JUL 23 1969
BY INFORMATION

GEOLOGY OF THE SITE

The structure site is located on the upland portion of the north valley wall of the Tuscarawas River valley in the glaciated Allegheny Plateau Region. Glacial drift, found to be 12 feet in depth, overlies shale and sandstone bedrock, of Pennsylvanian age.

EXPLORATION

The exploration consisted of two drive sample-core borings and eight drive rod penetration tests, made between October 4 and 15, 1963.

INVESTIGATIONAL FINDINGS

Borings disclose that sloping bedrock surface, encountered 12 feet below ground surface, elevation 1017 and 1013 feet, is overlain by very dense gravels, sands and silts. Borings were terminated 12 and 23 feet below bedrock surface, elevations 1001 and 995 feet.

Rod soundings encountered rapid, occasionally erratic, resistance to penetration with increases in depth and were terminated between elevations 1019 and 1012 feet, considered to be above, on, or slightly below bedrock surface, as revealed by the borings.

No free water was observed in any of the rod sounding holes.

LEGEND

- Auger Boring - Plan View.
- Press and/or Drive Sample and/or Core Boring - Plan View.
- Drive Rod Penetration Resistance Soundings - Plan View.
- Electrical Resistivity Probe - Plan View.
- Indicates Auger Boring.
- Indicates Press and/or Drive Sample and/or Core Boring.
- Electrical Resistivity Probe plotted to vertical scale only.
- Top of Rock.
- Water saturated zone.
- Total Depth.

- Horizontal bar on log indicates the depth the sample was taken.
- Figures to the right of boring log in profile view indicate the number of blows for "Standard Penetration" test.
X = First 6 inches
Y = Second 6 inches
- Casing
- Resistance "R" < 10,000 lbs.
- Resistance "R" > 10,000 lbs.
- Indicates final measurement of penetration in inches.
- Indicates Free Water elevation.
- Indicates Static Water elevation.
- Footings
- Capped pile
- Footings on pile

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 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 conditions may be evaluated.

Drive Sample Borings - Drive - Press Sample Borings

Drive sample borings are 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, depths of press samples, field sample number, sample description based on laboratory test results and the Casagrande AC classification system and gradation, plasticity and moisture content determinations. Results of strength and consolidation testing 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

8"	3"	2.0mm	0.42mm	0.075mm	0.005mm
Boulders	Cobbles	Gravel	Coarse Sand	Fine Sand	Silt Clay
No 10 sieve		No 40 sieve		No 200 sieve	

Date Started 10-4-63
 Date Completed 10-8-63
 Boring No. B-1

LOG OF BORING
 Sampler Type SS Dia. 1 3/8"
 Casing Length 21' Dia. 3 1/2"
 Station & Offset 2+35.4' Lt. (REAR ABUTMENT)

Water Elev. _____
 Surface Elev. 1029.9'

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	% Agg.	% CS	% FS	% Silt	% Clay	LL	PL	W.C.	SHTL Class.	
1029.9	0															
1027.4	2	16/19			Brown Silty Sand	1	0	13	43	15	29	21	5	12		
1024.9	4	12/15			Brown Gravelly Silty Sand	2	17	5	22	35	21	NP	NP	16		
1022.4	6	14/16			Brown Gravelly Silty Sand	3	19	6	21	34	20	NP	NP	17		
1019.9	10	16/17			Brown Silty Gravelly Sand	4	38	10	34	17	11	NP	NP	8		
1017.4	12				TOP OF ROCK											
	14															
	16															
	18		1.4	2.9	Sandstone, brown, friable, medium-grained, porous, broken, in beds 0.1' to 1.5' thick at carbonaceous, cross-bedded, argillaceous laminae and clay seams (comprises 4% of total interval). (Above 22.0' sandstone very broken in fragments 0.05' thick and few beds 0.3' thick). Core loss 48%.											
	20															
	22															
1005.4	24		2.6	0.4												
1003.6	26				Shale, dark-gray, firm, arenaceous, in thin beds 0.1' thick, and is jointed and broken *											
	28															
	30		4.7	0.3												
	32															
	34		5.0	0.0	Sandstone, gray, firm, fine-grained, with numerous argillaceous, carbonaceous seams, broken in beds 0.1' to 0.4' thick and fractured by diagonal joints and interbedded with few very arenaceous shale thin beds 0.5' thick above 30.5'. Below 30.5' interval decreases in argillaceous content and is in beds 0.2' to 1.0' thick, broken at thin clay seams. Core loss 3%.											
994.9	36															

BOTTOM OF BORING

* in angular fragments, interbedded with soft, gray clay shale 0.2' thick (comprises 10% of interval). Core loss 80%.

LOG OF BORING

Date Started 10-8-63
 Date Completed 10-8-63
 Boring No. B-2

Sampler Type SS Dia. 1 3/8"
 Casing Length 10' Dia. 3 1/2"
 Station & Offset 2+25.23' Rt. (FORWARD ABUTMENT)

Water Elev. _____
 Surface Elev. 1025.7'

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	Physical Characteristics										SHTL Class.
							% Agg.	% CS	% F.S.	% Silt	% Clay	LL	PL	W.C.			
1025.7	0																
1023.2	2	18/15			Brown and Gray Silty Sandy Gravel	1	43	9	32	6	10	NP	NP	10			
1020.7	4	7/7			Brown Gravelly Sandy Silt	2	19	5	21	36	19	NP	NP	19			
1018.2	6	11/11			Brown Silty Sandy Gravel	3	46	4	12	24	14	NP	NP	16			
1015.7	10	19/21* (0.3')			Brown Silty Sand with Sandstone Fragments	4	34	6	17	27	16	NP	NP	16			
1013.2	12																
	14		2.3	0.2	TOP OF ROCK												
	16																
	18		5.0	0.0	Sandstone, reddish-brown, firm, porous, damp, medium grained, broken into beds 0.1' to 0.6' thick at argillaceous, friable, cross-bedded laminae and soft, damp, brown clay seams which comprise 2% of total interval. No core loss.												
	20																
	22																
	24		5.0	0.0													
1000.7	26																

← BOTTOM OF BORING

* REFUSAL

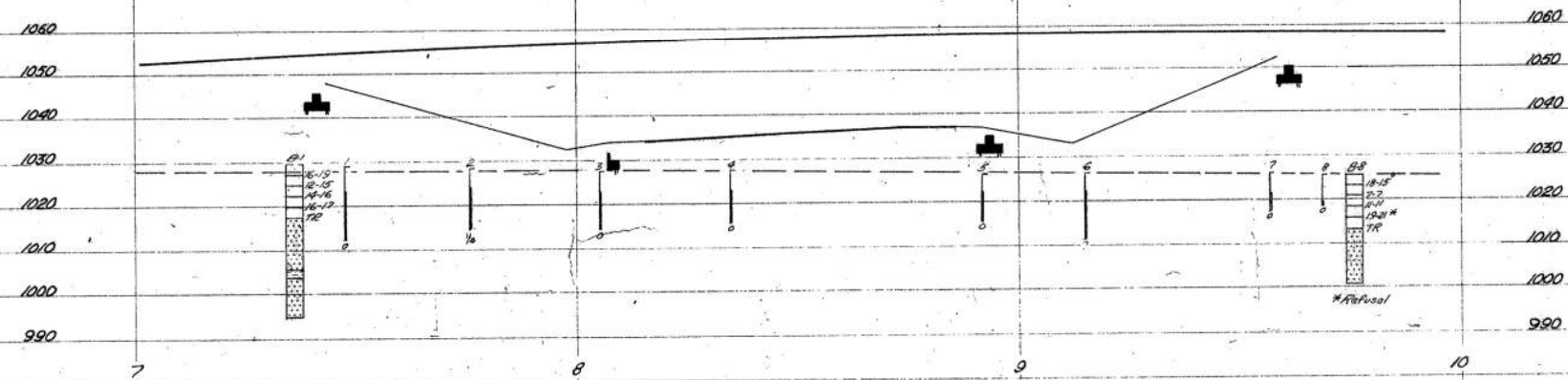
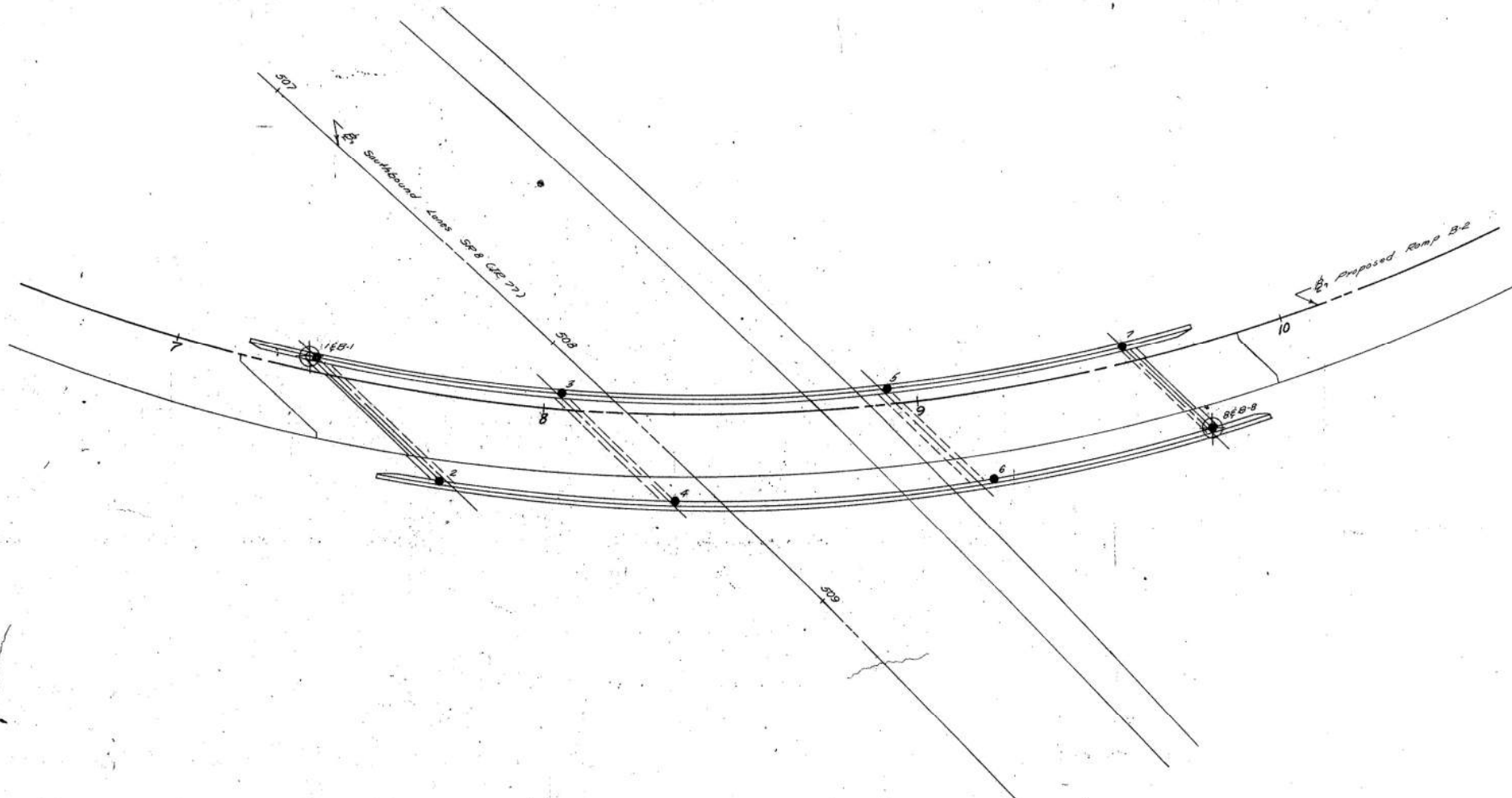
NOTE: Information shown by this subsurface investigation was obtained solely for the use in establishing design controls for the project. The State of Ohio does not guarantee the accuracy of the data and it is not to be construed as a part of the plans governing construction of the project.

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

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. SUM-8-0932
RAMP B-2 OVER RELOCATED SR8 CSB
SEC. SUM-277-0.00

CHECKED BY RFW, REVIEWED BY RDE, DATE 10-30-63

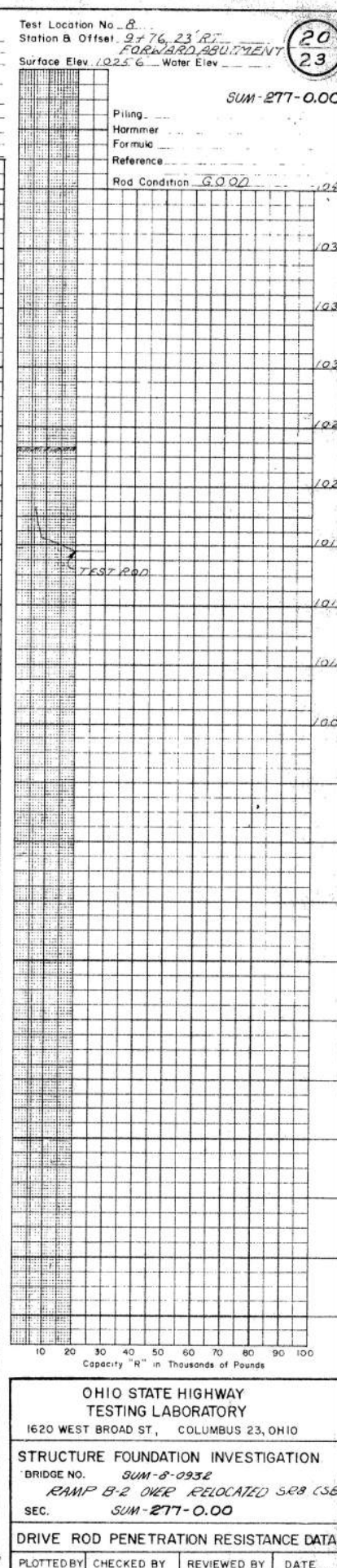
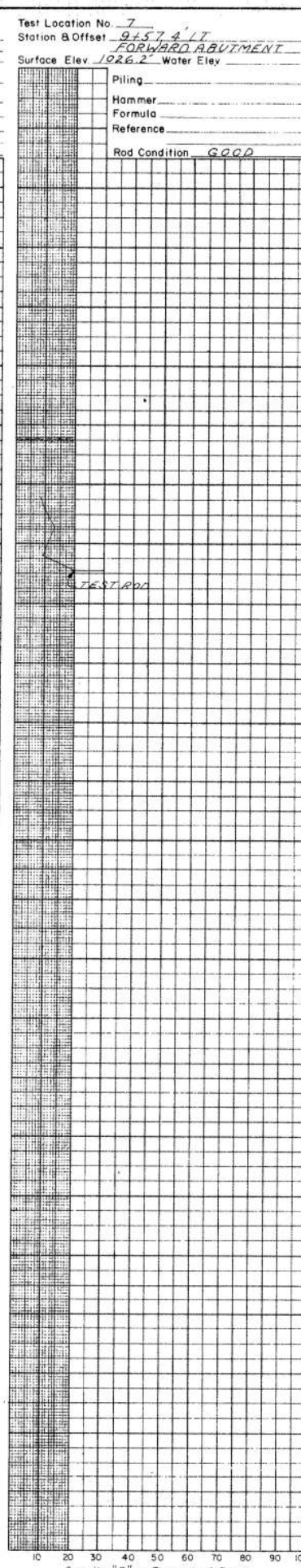
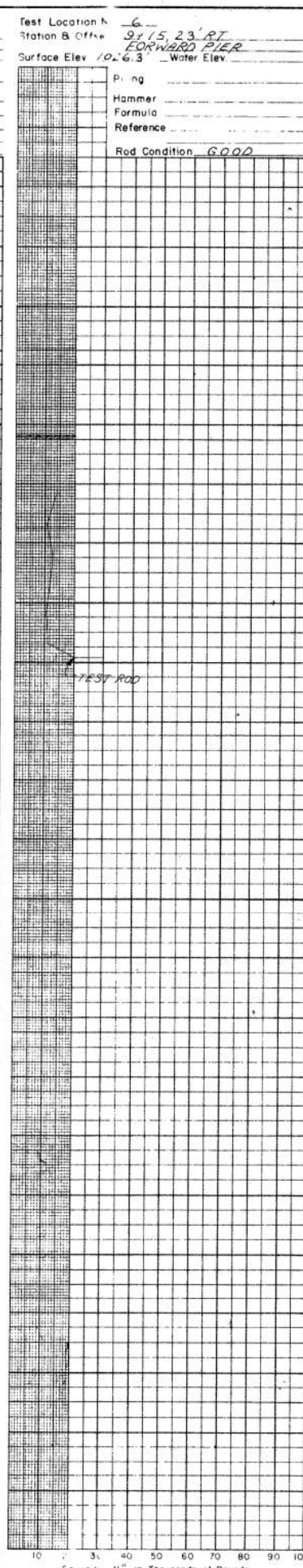
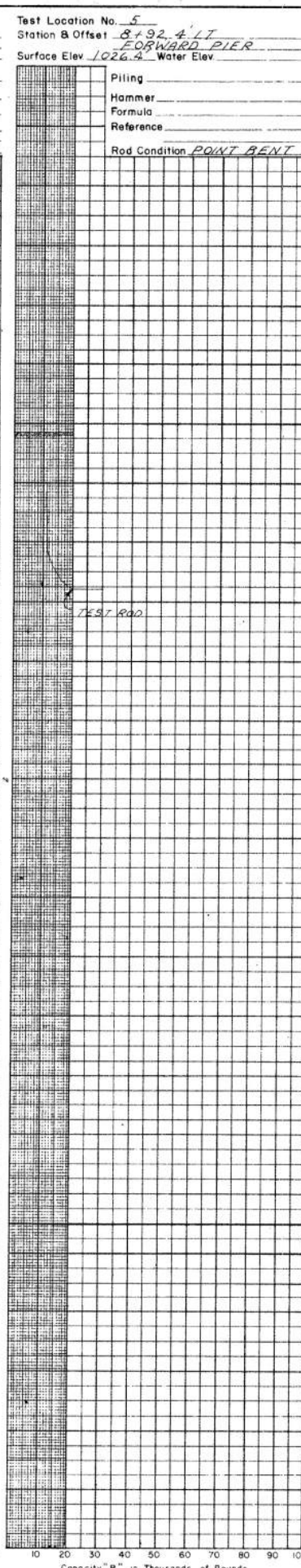
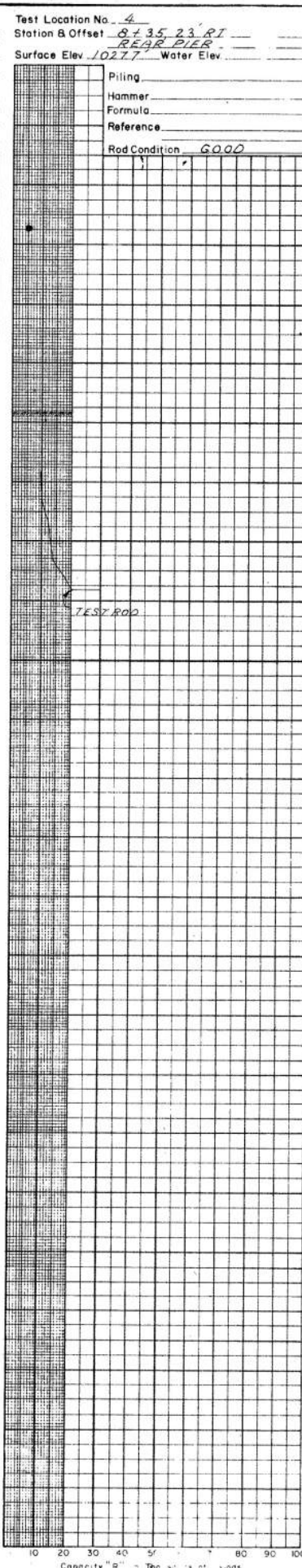
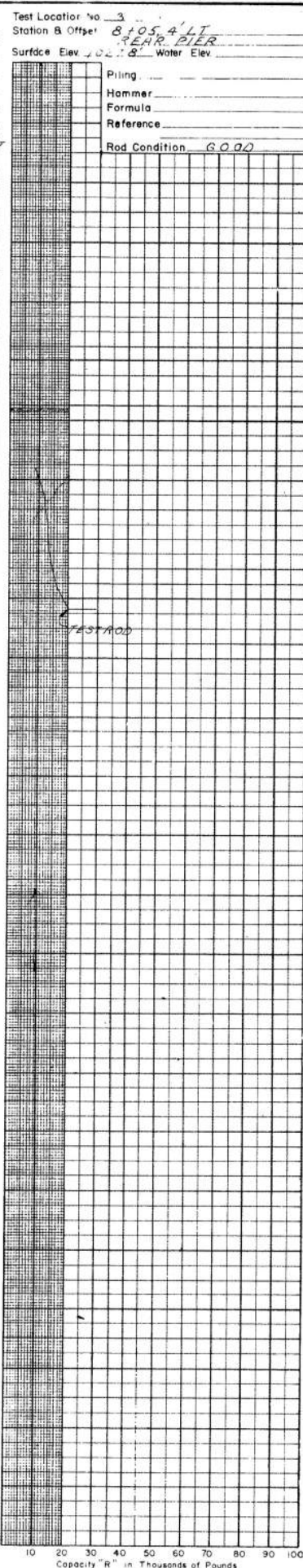
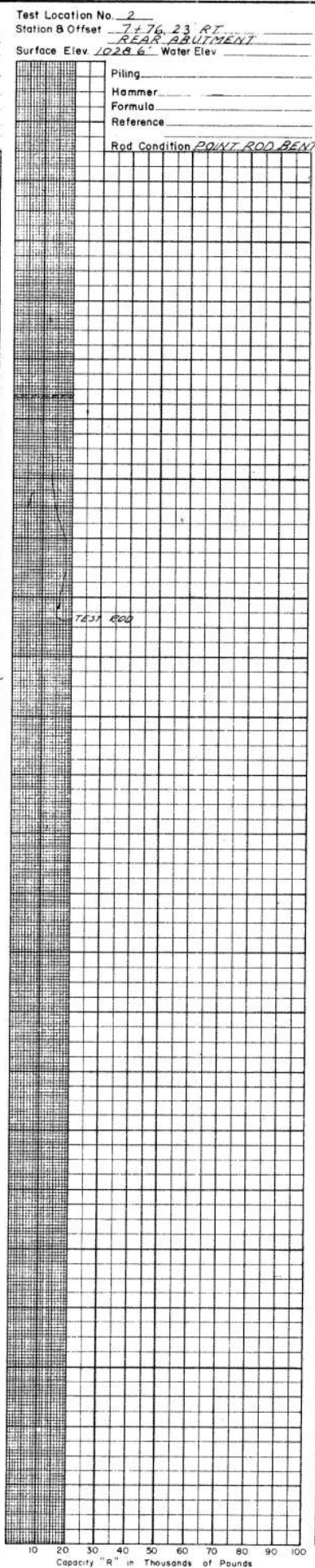
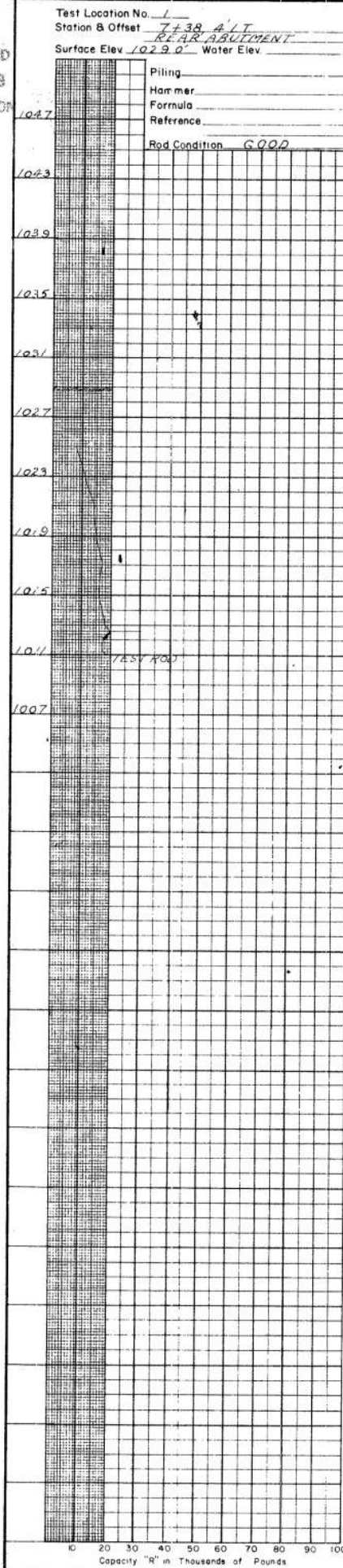
MICROFILMED
JUL 61 BY
REPRODUCTION



OHIO STATE HIGHWAY TESTING LABORATORY 1620 WEST BROAD ST., COLUMBUS 23, OHIO			
STRUCTURE FOUNDATION INVESTIGATION			
BRIDGE NO. SUM-8-0932			
RAMP B-2 OVER RELOCATED SR8 (S-2)			
SEC. SUM-277-0.00			
PLAN AND PROFILE			
DRAWN BY R.L.F.	CHECKED BY E.A.M.	REVIEWED BY R.G.R.	DATE 10-30-63

SCALE: 1" = 20'

MICROFILMED
JUL 11 1979
REPRODUCTION



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

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. SUM-8-0932
RAMP B-2 OVER RELOCATED SR8 (SB)
SEC. SUM-277-0.00

DRIVE ROD PENETRATION RESISTANCE DATA

PLOTTED BY	CHECKED BY	REVIEWED BY	DATE
EC	CPW	DDR	10-30-63

GENERAL INFORMATION

Drive Rod Penetration 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 conditions may be evaluated.

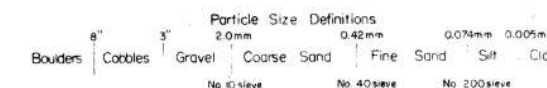
Drive Sample Borings - Drive-Press Sample Borings

Drive sample borings are 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, depths of press samples, field sample number, sample description based on laboratory test results and the Casagrande A.C. classification system, and gradation, plasticity and moisture content determinations. Results of strength and consolidation testing 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.



LEGEND

- ⊕ Auger Boring - Plan View.
- ⊕ Press and/or Drive Sample and/or Core Boring - Plan View.
- Drive Rod Penetration Resistance Soundings - Plan View
- ⊕ Electrical Resistivity Probe - Plan View.
- A Indicates Auger Boring.
- B Indicates Press and/or Drive Sample and/or Core Boring.
- ⊕ Electrical Resistivity Probe plotted to vertical scale only.
- TR Top of Rock
- Water saturated zone.
- TD Total Depth.
- Horizontal bar on log indicates the depth the sample was taken.
- X-Y Figures to the right of boring log in profile view indicate the number of blows for "Standard Penetration" test.
X = First 6 inches
Y = Second 6 inches
- Casing
- Resistance "R" < 10,000 lbs.
- Resistance "R" > 10,000 lbs.
- Indicates final measurement of penetration in inches.
- Indicates Free Water elevation.
- Indicates Static Water elevation.
- Footings
- Capped pile
- Footings on pile

SYMBOLS OF ROCK TYPES

- Coal
- Weathered Indurated Clay
- Indurated Clay
- Weathered Shale
- Shale
- Weathered Sandstone
- Sandstone
- Leached Dolomite
- Dolomite
- Leached Limestone
- Limestone

GEOLOGY OF THE SITE

The structure site is located on the upland portion of the north valley of the Tuscarawas River valley, in the glaciated Allegheny Plateau Region. Glacial drift, found to be 17 to 21 feet in depth, overlies shales and sandstone, of Pennsylvanian age.

EXPLORATION

The exploration consisted of two drive sample-core borings and eight drive rod penetration tests, made on October 2, 3, 9, and 10, 1963.

INVESTIGATIONAL FINDINGS

Borings disclosed moist, medium-dense to very dense sandy gravels with occasional silts, to 17 and 21-foot depths, elevations 1021 and 1013 feet, where bedrock surface was encountered. Borings were terminated 17 and 19 feet below bedrock surface at elevations 1009 and 994 feet.

Rod soundings met generally high, somewhat erratic resistance to penetration and encountered refusal or near refusal to penetration at 15 to 24-foot depths, between elevations 1024 and 1011 feet, on the basis of borings, considered to be on or slightly below bedrock surface.

On the basis of tests, bedrock surface is considered to slope downward from forward to rear, between approximate elevations 1022 and 1013 feet.

No free water was observed in any of the rod sounding holes.

LOG OF BORING															
Date Started 10-2-63			Sampler Type SS			Dia. 1 3/8"			Water Elev.						
Date Completed 10-2-63			Casing Length 20'			Dia. 3 1/2"			Surface Elev. 1033.9'						
Boring No. B-1			Station & Offset 9444.4' 14' 14" (REAR ABUTMENT)												
Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	% Agg.	% G.S.	% F.S.	% Silt	% Clay	LL	PI	W.C.	SHTL. Class.
1033.9	0														
1031.4	2	7/8			Brown and Gray Sandy Gravelly Silt	1	22	1	17	45	15	20	4	17	
1028.9	5	27/19			Brown Broken Sandstone with Soil	2		V	I	S	U	A	L	10	
1026.4	8	22/9			Brown Silty Sandy Gravel	3	36	4	20	28	12	NP	NP	14	
1023.9	10	7/5			Gray Silty Sandy Gravel	4	56	6	18	13	7	NP	NP	10	
1021.4	12	9/9			Gray Sandy Gravel	5	53	29	13	5	-	NP	NP	17	
1018.9	15	15/20			Gray Gravelly Silt	6	46	1	6	31	16	NP	NP	10	
1016.4	18	27/46			Gray Silty Gravel	7	66	8	2	16	8			7	
1013.9	20	39/10*			Gray Silt with Shale Fragments	8	52	1	8	30	15	25	8	9	
1012.9	22	(9.4')			TOP OF ROCK										
1005.6	24		2.0	3.0	Clay shale, dark-gray, soft, very moist. Core loss 56%.										
	26														
	28														
	30														
	32	4.6				0.4	Sandstone, gray, firm, fine-grained, with argillaceous, carbonaceous crossbedded laminae; sandstone is porous and damp throughout. Few frequent intervals of thin dark-gray carbonaceous, clay shale (comprising 5% of interval); an interval of clay shale, dark-gray, firm, carbonaceous, very argillaceous, between 37.7' and 38.7'. Core loss 6%.								
34															
36															
38	4.8	0.2													
993.9	40				BOTTOM OF BORING										

LOG OF BORING															
Date Started 10-2-63			Sampler Type SS			Dia. 1 3/8"			Water Elev.						
Date Completed 10-3-63			Casing Length 18'			Dia. 3 1/2"			Surface Elev. 1038.6'						
Boring No. B-2			Station & Offset 11404.23' Rt (FORWARD ABUTMENT)												
Elev.	Depth	Std. Pen. (N)	Rec. R.	Loss H.	Description	Sample No.	% Agg.	% CS.	% F.S.	% Silt	LL	PI	W.C.	SHTL Closes	
1038.6	0														
1036.1	2	15/16			Brownish-Gray Silty Sandy Gravel	1	47	6	14	17	16	24	4	14	
1033.6	4	5/9			Brown Silty Sandy Gravel	2	57	3	20	12	8	NP	NP	17	
1031.1	6	25* (0.3')			Brown Silty Sandy Gravel	3	45	6	34	1	5	NP	NP	15	
1028.6	8	20* (0.3')			Gray Silt with Stone Fragments	4	V	I	S	U	A	L	25	6	13
1026.1	10	16/20			Gray Silt	5	0	1	3	66	30	26	6	8	
1023.6	12				No Sample Recovered - Gravel										
1021.1	14				TOP OF ROCK										
1019.9	16		2.8	2.2	Sandstone, light-gray, firm, with carbonaceous laminae (comprising 80% of interval) **										
	20														
	22		2.8	2.2	Shale, dark-gray, soft to firm, carbonaceous, arenaceous, very broken throughout. Core loss 20%.										
	24														
	26														
	28		5.0	0.0											
1006.6	30				BOTTOM OF BORING										

*REFUSAL

** interbedded with dark-gray, broken arenaceous, shale (comprising 20% of interval). Core loss 50%.

*REFUSAL

** Interbedded with dark-gray, broken arenaceous, shale (comprising 20% of interval). Core loss 50%.

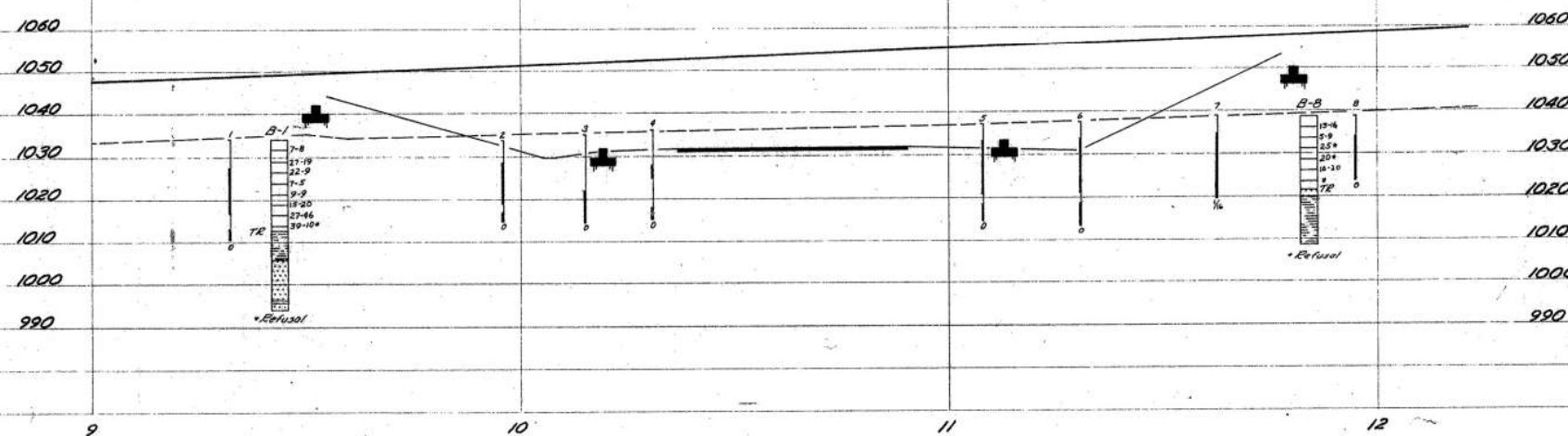
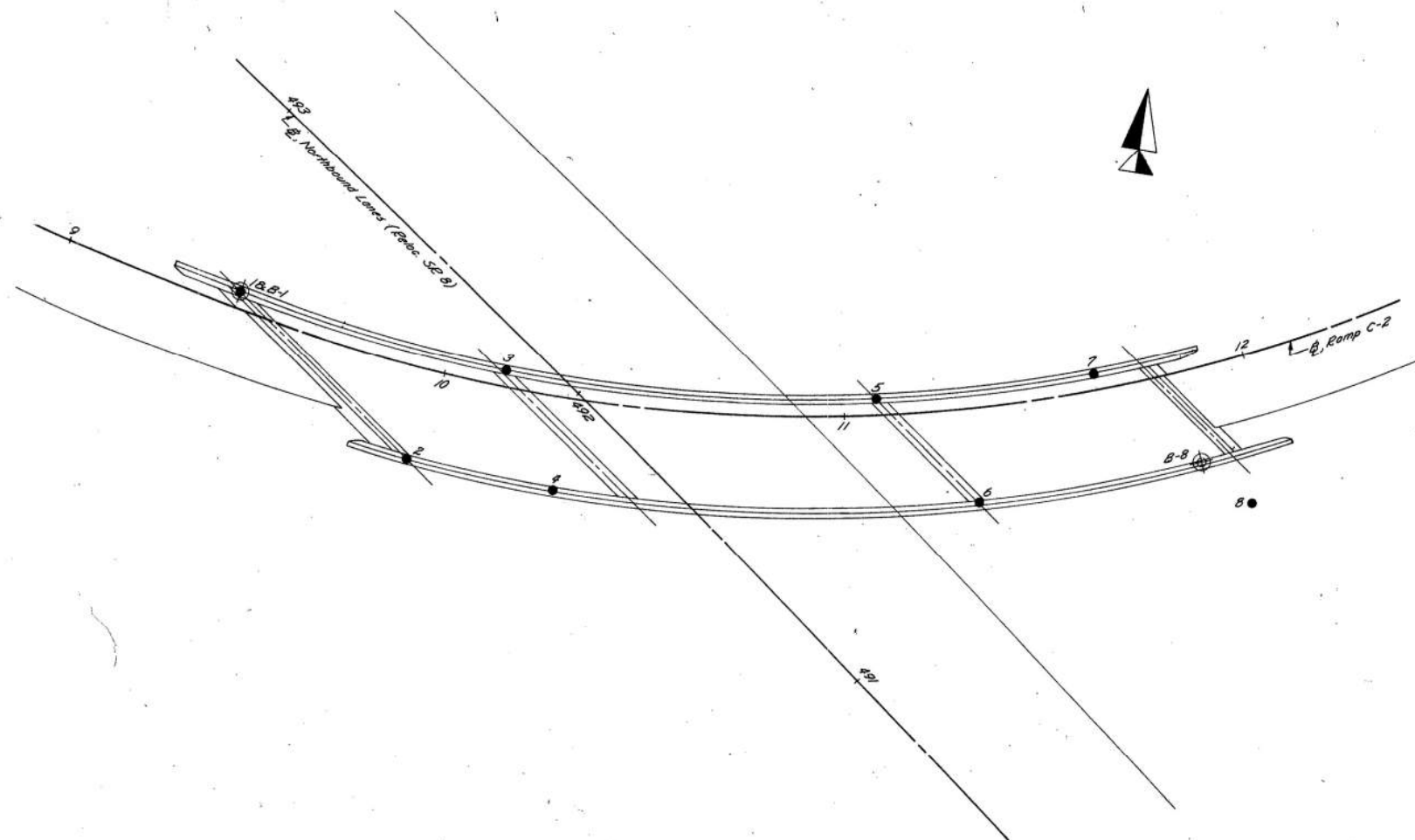
NOTE: Information shown by this subsurface investigation was obtained solely for the use in establishing design controls for the project. The State of Ohio does not guarantee the accuracy of the data and it is not to be construed as a part of the plans governing construction of the project.

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

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. SUM-8-0930
RAMP C-2 OVER RELOC. SR 8 (NB)
SEC SUM-277-0.00

CHECKED BY EDE
REVIEWED BY G.H.
DATE 10-25-66

MICROFILMED
JUL 21 1978
REPRODUCTION



OHIO STATE HIGHWAY TESTING LABORATORY 1620 WEST BROAD ST., COLUMBUS 23, OHIO			
STRUCTURE FOUNDATION INVESTIGATION			
BRIDGE NO. SUM-8-0930			
RAMP C-2 OVER RELOC. SEP 8 (NB)			
SEC. SUM-277-0.00			
PLAN AND PROFILE			
DRAWN BY EPH	CHECKED BY R.P.P.	REVIEWED BY G.P.H.	DATE 10-15-62

SCALE: 1" = 20'

MICROFILMED
JUL 31 1979
REPRODUCTION

