

GENERAL INFORMATION

INTRODUCTION

THE PROJECT CONSISTS OF THE MINOR RELOCATION AND GRADE IMPROVEMENT OF 0.53 MILE OF TOWNSHIP ROAD 47 AND 1.73 MILES OF COUNTY ROAD 60. RELOCATED TOWNSHIP ROAD 47 BEGINS AT SR 146, APPROXIMATELY 1100 FEET NORTH OF THE SR 146-EXISTING TOWNSHIP ROAD 47 INTERSECTION, EXTENDS WESTWARD AND TERMINATES AT EXISTING TOWNSHIP ROAD 47. PROPOSED COUNTY ROAD 60 BEGINS APPROXIMATELY 500 FEET SOUTH OF THE COUNTY ROAD 60-TOWNSHIP ROAD 47 INTERSECTION, EXTENDS SOUTHEASTWARD TO EASTWARD, ALONG EXISTING COUNTY ROAD 60 AND TERMINATES ON EXISTING COUNTY ROAD 60.

PROPOSED GRADES INDICATE THE FOLLOWING MAXIMUM PROPOSED CUTS AND FILL EMBANKMENTS:

	CUTS (MAX.)	FILL EMBANKMENTS (MAX.)
RELOCATED TOWNSHIP ROAD 47	11'	14'
PROPOSED COUNTY ROAD 60	12'	17'

GEOLOGY AND OBSERVATIONS OF THE PROJECT

THE ALIGNMENT OF RELOCATED TOWNSHIP ROAD 47 IS LOCATED ON THE UPLANDS EAST OF THE LICKING RIVER, IN AN AREA WHERE THIN RESIDUAL SOILS OVERLIE SHALE AND SANDSTONE BEDROCK, OF PENNSYLVANIAN AGE. EXPOSED SANDSTONE BEDROCK WAS OBSERVED AND MEASURED IN AN EXISTING ROADWAY CUT IN THE VICINITY OF STATION 94+00.

THE PROPOSED COUNTY ROAD 60 ALIGNMENT INCEPTS AND TRAVERSES THE FLOODPLAIN OF A SMALL TRIBUTARY OF THE LICKING RIVER, ASCENDS THE SOUTH VALLEY WALL, TRAVERSES AND TERMINATES IN THE UPLANDS EAST OF THE LICKING RIVER. MODERATELY DEEP OUTWASH MATERIALS (IN THE FLOODPLAIN) AND THIN RESIDUAL SOILS (ON THE UPLANDS) OVERLIE SHALE AND SANDSTONE BEDROCK, OF PENNSYLVANIAN AGE.

SANDSTONE BEDROCK EXPOSURES WERE OBSERVED AND MEASURED IN EXISTING ROADWAY CUTS IN THE VICINITY OF STATIONS 122+00, 124+50 AND 135+50. A MAN-MADE POND WAS OBSERVED IN THE VICINITY OF STATION 122+50.

EXPLORATION

EXPLORATORY BORINGS WERE MADE BY MEANS OF TRUCK-MOUNTED MECHANICAL SOIL AUGER AND HAND AUGER (IN DIFFICULT ACCESS AREAS), BETWEEN AUGUST 7 AND 9, 1967.

INVESTIGATIONAL FINDINGS

MATERIALS ENCOUNTERED IN THE UPLANDS WERE PREDOMINANTLY COMPRISED OF SANDY SILTS (A-4a AND A-4b) AND SILT CLAYS (A-6a) WITH OCCASIONAL CLAYS (A-7-6), GENERALLY HAVING LOW MOISTURE CONTENTS AND MOISTURE CONTENTS IN THE LOWER PORTIONS OF THE PLASTIC RANGE. WHILE MATERIALS ENCOUNTERED IN THE FLOODPLAIN CONSISTED OF SANDY GRAVELS (A-1-b AND A-2-4) AND SANDS (A-3 AND A-3a), GENERALLY HAVING LOW MOISTURE CONTENTS.

FROST SUSCEPTIBLE SILTS WERE ENCOUNTERED WITHIN THREE FEET BELOW PROPOSED GRADE AT TOWNSHIP ROAD 47 STATION 67+00, AND COUNTY ROAD 60 STATIONS 134+00, 136+00, 143+00, 153+50 AND 162+00.

WET MATERIALS WERE ENCOUNTERED AT COUNTY ROAD 60 STATIONS 105+00, 111+00, 130+00, 150+00 AND 153+50.

ELASTIC CLAYS WERE ENCOUNTERED AT TOWNSHIP ROAD 47 STATION 71+00 AND COUNTY ROAD 60 STATION 136+00.

POSSIBLY SOME SANDSTONE BEDROCK WILL BE ENCOUNTERED IN THE EXCAVATION AREAS BETWEEN COUNTY ROAD 60 STATIONS 124+00 AND 126+00, 166+00 AND 167+50, AND 185+00 AND 187+50.

LEGEND FOR PROJECT AVERAGE RESULTS OF TESTS— 98 SAMPLES TESTED

DESCRIPTION	H.R.B. CLASS	OHIO CLASS	% AGG.	% C. SAND	% F. SAND	% SILT	% CLAY	LIQUID LIMIT	PLASTICITY INDEX	WATER CONTENT	SAMPLES TESTED
STONE FRAGMENTS	A-1-a(0)	A-1-a	69	4	18	4	5	NP	NP	4	1
GRAVEL WITH SAND	A-1-b(0)	A-1-b	36	30	16	-	18	NP	NP	12	6
FINE SAND	A-3(0)	A-3	2	2	26	-	10	NP	NP	6	1
COARSE AND FINE SAND	-----	A-3a	13	13	47	15	12	NP	NP	15	7
GRAVEL OR STONE FRAGMENTS WITH SAND AND SILT	A-2-4(0)	A-2-4	24	21	26	16	13	NP	NP	13	3
STONE FRAGMENTS WITH SAND, SILT AND CLAY	A-2-6(0)	A-2-6	65	2	6	11	16	35	11	8	1
SANDY SILT	A-4(3)	A-4a	13	5	31	29	22	25	5	11	23
SILT	A-4(8)	A-4b	1	1	8	63	27	30	5	18	20
ELASTIC SILT AND CLAY	A-5(8)	A-5	5	2	7	21	65	41	6	23	1
SILT AND CLAY	A-6(9)	A-6a	9	3	10	40	38	31	12	14	20
SILTY CLAY	A-6(11)	A-6b	6	2	9	30	45	38	17	18	4
ELASTIC CLAY	A-7-5(15)	A-7-5	4	1	5	23	62	56	19	35	3
CLAY	A-7-6(13)	A-7-6	9	2	3	26	60	47	20	17	8
SANDSTONE											1

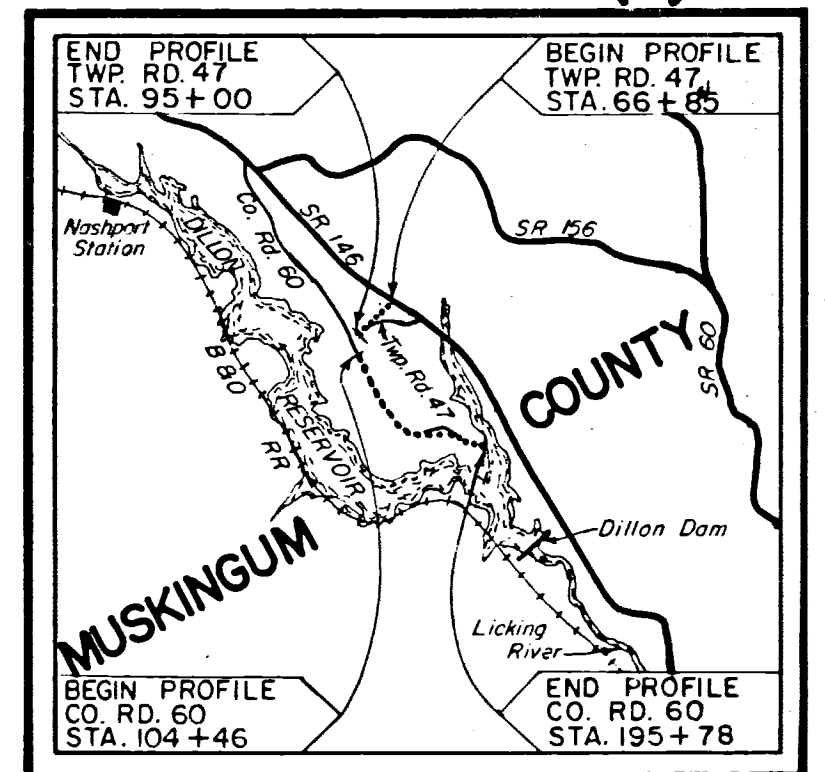
TOPSOIL - X' = APPROXIMATE DEPTH.	AUGER BORING PLOTTED TO VERTICAL SCALE ONLY.
BERM MATERIAL.	WATER CONTENT NEARLY EQUAL TO OR GREATER THAN LIQUID LIMIT.
AUGER BORING-PLAN VIEW.	INDICATES A NON-PLASTIC MATERIAL WITH A HIGH WATER CONTENT.
FIGURES BESIDE BORINGS INDICATE WATER CONTENT IN PERCENT. E.G. 15	FREE WATER.

SOIL PROFILE
MUSKINGUM COUNTY
MUS - TWP. RD. 47
MUS - CO. RD. 60

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. APL-8505(3)



LOCATION MAP

Recon - J.F.S. - 6/7/67

Drilling - F.J.R. - 8/7/67 to 8/9/67

Drafting - C.L.I. - 10/10/67

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.
TOWNSHIP ROAD 47										
67+00 CL	0.5-5.0 5.0-10.0	0 0	1 0	36 36	70 43	27 21	NP NP	8 16	20 16	A-4b * A-4a
71+00 CL	0.5-2.0 2.0-7.0 7.0-10.0	0 23 12	5 1 0	16 37 25	42 37 62	37 40 47	17 17 19	12 33 35	13 12 13	A-6b * A-6b * A-7-5
75+00 CL	0.5-3.0 3.0-8.0 8.0-13.0 13.0-15.0	0 0 7 0	3 1 1 1	9 14 29 16	46 84 62 82	38 45 35 19	17 16 11 32	15 22 17 32	15 17 17 32	A-6b A-7-6 A-6a A-7-6
79+25 CL	0.5-5.0	14	3	37	20	26	23	6	5	A-4a *
83+00 CL	0.5-5.0 5.0-10.0	12 23	1 1	4 3	42 36	41 31	11 11	5 4	5 4	A-6a A-6a
87+00 29'Lt	0.5-2.5	33	3	17	22	13	27	8	13	A-4a *
90+00 33'Lt	0.5-5.5 5.0-7.5	14 69	1 4	41 18	25 4	19 5	NP NP	12 4	12 11	A-4a A-1-a
94+00 CL	0.5-4.0 4.0-5.0	6 9	5 3	36 42	28 27	25 19	NP NP	11 10	11 10	A-4a * A-4a
COUNTY ROAD 60										
105+00 40'Rt	0.5-5.0 5.0-10.0 10.0-15.0 15.0-18.0 18.0-20.0	2 59 16 1 8	10 24 21 1 3	41 30 10 4 7	20 6 18 78 42	27 10 15 16 36	22 NP NP NP 14	6 NP NP NP 14	15 18 18 22 36	A-4a A-1-b A-3a A-4b A-6a
111+00 55'Rt	0.5-5.0 5.0-10.0 10.0-12.0 12.0-18.0 18.0-22.0 22.0-25.0 25.0-30.0	2 17 37 20 25 20 17	2 21 18 45 22 22 23	86 43 25 19 25 23 33	- 13 25 16 12 19 19	10 - - 12 10 8	NP NP NP NP NP NP NP	6 28 15 15 14 14 13	6 28 15 15 14 14 13	A-3 A-3a A-1-b A-2-4 A-3a A-3a A-3a
115+00 70'Rt	0.5-5.0 5.0-10.0 10.0-15.0 15.0-20.0	37 21 20 45	24 17 13 1	17 12 13 10	14 12 25 7	3 14 - -	NP NP NP NP	6 19 16 13	19 19 16 13	A-1-b A-2-4 A-1-b A-1-b
119+00 32'Rt	0.5-5.0 5.0-10.0 10.0-11.5	0 0 65	1 2 2	8 26 11	27 25 11	64 37 16	16 14 11	11 8 7	11 8 7	A-6b A-6a A-2-6
122+25 CL	0.0-1.5	34	1	23	21	15	NP	NP	9	A-4a *
125+50 CL	0.5-5.0 5.0-10.0 10.0-12.0	0 0 2	1 6 2	14 31 20	43 31 46	36 58 32	31 41 27	11 14 7	11 12 7	A-6a A-7-6 A-4a *
127+00 CL	0.5-4.0 4.0-9.0 9.0-10.5	0 4 0	1 17 8	55 25 20	20 25 48	31 25 24	11 NP 28	14 7 5	14 7 9	A-6a * A-4b A-4a
130+00 CL	0.5-3.0 3.0-7.0 7.0-12.0 12.0-13.0	0 0 0 24	1 1 1 5	3 64 21 20	61 30 54 27	35 31 28 24	33 31 28 33	9 7 6 11	15 22 22 21	A-4b A-4b A-4b A-6a
134+00 CL	0.5-5.0 5.0-9.0 9.0-11.0 11.0-14.0	0 0 5 0	5 3 2 1	16 50 21 44	65 37 21 53	24 33 41 36	33 33 6 11	8 13 6 23	13 14 6 23	A-4b * A-4b A-5 A-6a
136+00 CL	0.5-5.0 5.0-8.0 8.0-10.0 10.0-14.0 14.0-16.0 16.0-18.5	0 0 0 3 0 0	0 1 0 4 1 1	5 2 3 24 16 2	63 73 31 64 58 49	27 24 NP 53 68 39	32 NP NP 21 17 11	3 NP NP 25 25 11	13 22 22 26 25 11	A-4b * A-4b A-4b A-7-6 A-7-5 A-6a
139+00 CL	0.5-4.0 4.0-9.0 9.0-11.0 11.0-15.0	0 4 2 0	2 9 2 1	14 30 18 71	65 29 18 14	49 28 27 14	NP 6 33 NP	NP 13 11 NP	NP 6 13 13	A-4b A-4b A-6a A-3a
143+00 CL	0.5-4.0 4.0-5.5	31 3	2 3	58 22	58 26	26 18	26 26	5 9	13 9	A-4b * A-4a
146+00 CL	0.5-5.0 5.0-8.0	29 26	1 4	3 10	33 36	34 24	40 24	15 8	13 8	A-6a * A-4a *
150+00 CL	0.5-3.0 3.0-5.0 5.0-9.0 9.0-11.0	0 0 1 1	0 0 1 4	62 72 68 64	36 28 29 14	40 NP 24 17	NP NP NP NP	14 22 23 9	22 23 23 9	A-6a * A-4b A-4b A-3a
153+50 CL	0.5-5.0 5.0-7.0 7.0-11.0 11.0-12.0 12.0-14.0 14.0-16.5	0 1 0 41 18 29	0 0 7 1 3 17	8 68 23 18 29 20	25 28 17 37 35 20	NP NP NP 51 55 38	24 28 10 27 35 20	NP NP NP 14 14 6	24 26 10 12 12 20	A-4b * A-4b A-4b A-7-6 A-6a A-4a
158+00 CL	0.5-1.0 1.0-2.0 2.0-10.0	0 14 12	0 5 2	21 35 37	43 43 44	32 43 46	32 20 21	11 20 16	13 17 13	A-6a * A-7-6 A-7-6
162+00 CL	0.5-4.0 4.0-6.5 6.0-10.0	2 0 10	1 0 2	17 63 43	16 25 35	NP 32 35	NP 12 13	13 12 16	13 12 16	A-4b * A-6a A-6a
165+00 10'Lt	0.5-3.0 3.0-5.5	12 5	1 2	55 20	11 33	14 34	NP NP	NP NP	13 21	A-3a A-4a
165+00 30'Rt	0.5-3.0	5	4	42	26	17	NP	NP	6	A-4a
168+00 5'Lt	0.5-1.0	29	3	37	17	14	NP	NP	6	A-2-4
171+00 30'Lt	0.5-3.0 3.0-7.0 7.0-3.5	4 10 3	1 10 3	37 40 18	40 33 22	33 27 18	10 11 -	16 16 5	16 16 5	A-4b A-6a A-4a
175+00 CL	0.5-5.0 5.0-10.0	4 16	0 5	65 16	23 36	33 27	10 32	16 9	16 12	A-4b A-4a
178+50 5'Lt	0.5-4.0	5	5	52	22	16	NP	NP	7	A-4a *
182+00 20'Rt	0.5-3.0 3.0-5.0	2 1	2 1	18 50	28 25	22 28	NP NP	4 5	12 5	A-4b A-4a
186+75 CL	0.5-2.0	18	5	12	29	36	39	15	6	A-6a
191+50 CL	0.5-3.5	15	4	26	36	19	25	6	6	A-4a
195+50 10'Rt	0.5-2.0	5	3	37	25	24	23	7	10	A-4a *