1963 Year

Job No. 04575

Changes

015340

County TUSCARAWAS-STARK

Project Identification TUS-STA-77-(40.55)6.60

FEP-142

File No. 5-M-34

Proj. No.

Begin Sta. 3+00 End Sta. 264+00 Length 6.85 Miles

	RECON	AUGER	CORE	DRIVE ROD	RESISTIVITY
By	P.L.H.	L.M.O.-T.R.S	D.W.B.-R.L.S		
Dates	11/6-28/62	11/4-12/6/62 4/9-6/7/63	4/28-5/16/63		
No. of Holes or Soundings		206	13.		
Footage		3528.5	661.0.		
Samples Tested		590	8.		

Drafting By E.J.S. A.E. E.F.H.S.S.

Completion Date 7/25/63

Drafting Hours 352

Topo Sheet

☐ Samples Accounted For

Transmittal Date 8/26/63

No. of Tracings 49 Filed with year 4-M-158 FET-158

Revisions

Remarks

Refer to

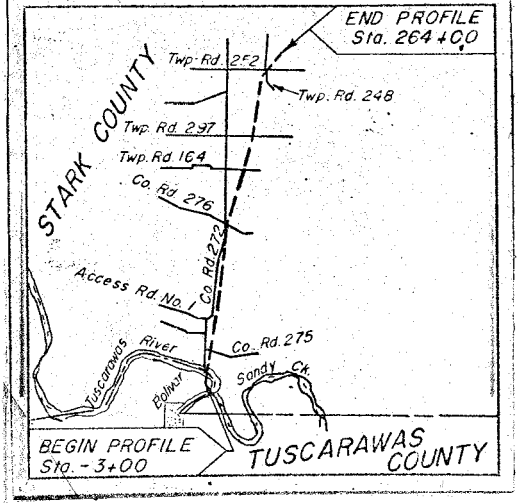
DO NOT WRITE IN THIS SPACE

Length	Auger Data			Core Data			Drive Rod Data		Resistivity
	No. of Holes	Footage	Samples	No. of Holes	Footage	Samples	No. of Soundings	Footage	No. of Locations
6.85	206	3528.5	590	13	661.5	8	—	—	—

* See Reverse Side

TOTAL SAMPLES 590					
Samples VOIDED	Auger 41	Drive	Samples USED	Auger 549	Drive

TOTAL MILEAGE 6.85		
Alignment	Stations From——To	Mileage
Reloc-Sherman		
Church-Cold 272	82+00 - 108+00	49
Seegman Rd. Tuppedday	11+00 - 21+00	.19
Fohl St. Twp Rd 252	32+00 - 64+00	61
Kieffer Rd Twp Rd. 248	37+00 - 63+00	49
MAINLINE	3+00 - 264+00	5.07



PLACE

015340

NBL

FIELD BORING LOG

County, Route No., Section TUS-STA-21-40.55 PM

Station -2+10 Offset ℄ Elev. ℄

Date 12-4-62 Water Elev. 75'

Crew Dickson Equipment 74-320-K

Walker

Drafting

Depth Feet	Field Number	Description
0		
6	22 1-D	Moist brown clay
5		
10	22 2-D	wet brown silty clay with sand
16	3-D 18	wet sand & gravel
15		Brown
16	4-D 16	wet sand
20	23 5-D	wet grey sand
A-3 25	20 6-D	Dark grey [illegible] Thin layer of silt
30		[illegible]

Use reverse side of this sheet for additional notes.

NBL

FIELD BORING LOG

County, Route No., Section Tus-ST 8-21

Station 100 Offset ℄ Elev. ℄

Date 12-4-62 Water Elev. 6 ft

Crew MCW Equipment

Drafting

Depth Feet	Field Number	Description
0.0		
7-6	36 25	moist brown silt clay
5		
8-5	37 26	watch wet muck or organic silt
10		sl. organic
4a	27 32	wet organic silt
15		
2-4	28 12	wet brown sand small gravel
20		
16	15 29	wet brown sand gravel
25		Conduit dust
		Refusal
30		

Use reverse side of this sheet for additional notes.

NBL

FIELD BORING LOG (4055)

County, Route No., Section TUS-STA-21-(000)

Station 4+25 Offset Q Elev. Q

Date 12-4-62 Water Elev.

Crew Dickason Walker Equipment 74-300-12

Drafting

4+5

Depth Feet	Field Number	Description
0.0-		
4a	12 21	dry brown sandy silt
5		
3a	22 8	dry brown sand
10		
16	20 23	wet brown sand
15		
20		
16	24 17	wet brown sand
25		Caving continued
30		

Use reverse side of this sheet for additional notes.

NBL

FIELD BORING LOG

935, B

County, Route No., Section TUS-STP-21 (4055

Station 7+50 Offset C Elev. 1

Date 12-4-62 Water Elev.

Crew DICKASON Equipment 74-300-12

WALKER

Drafting

Depth Feet	Field Number	4 Description
0.0-		
1a	7 18	Dry brown sand small gravel
5		
1a	19	sand & Large gravel
10		
1a	29	Dry Sand Large gravel 3"+4" boulders
15		Couldn't pull
Refusal		To dry To drill Stopped.
20		
25		
30		

Use reverse side of this sheet for additional notes.

NBL

FIELD BORING LOG

9/16, 3rd

County, Route No., Section IMS-STB-21-(4055)(000)

Station 9+50 Offset ℄ Elev. —

Date 12-7-62 Water Elev. Dry Hole

Crew Dickson Walker Equipment 74-306-12

Drafting

Depth Feet	Field Number	4 Description
0.0-		
6.0	14 21	moist brown silt
5		
3.0	15 6	Dry brown sand
10		
16	21 12	Dry brown sand
15		
16	57	Dry brown sand
		Caving continuing in dry sand
20		
25		
30		

Use reverse side of this sheet for additional notes.

NBL

FIELD BORING LOG 935, 1

County, Route No., Section Tus-STH-21-(Konsd(Oleo)

Station 120+50 Offset ℄ Elev. ℄

Date 12-4-62 Water Elev. Dry

Crew Dickson Equipment 74-300-12

Walker

Drafting

Depth Feet	Field Number	3+4 Description
0.0-		
4b	9	Moist brown sand + gravel
5	10-b	
3a		Streak of brown sand
10	12-D	Moist brown sand + gravel
1a	7	
15	13-D	Dry brown sand & gravel
1a	8	Caving at 17 ft
		Jensel to pull.
20		
25		
30		

Use reverse side of this sheet for additional notes.

NBL

FIELD BORING LOG

County, Route No., Section IMP-SJA-21-(40.55)(0.00)

Station 25+50 Offset 50 Rt Elev. ±0.0

Date 12-4-62 Water Elev.

Crew Dickason Walker Equipment D4-200-K

Drafting

Depth Feet	Field Number	Description
0.0-		3
	7-P	Sand & gravel - brown - moist
1b	13	
5		
1a	8-P	Sand w/ coal moist
10	9-P	Gravel w/ sand, very moist, tan-green.
1a	8	
15		
20		Refusal due to caving unable to pull drill out.
25		
30		

Use reverse side of this sheet for additional notes.

NBL

FIELD BORING LOG

County, Route No., Section 16-37 TUS-STA-21

Station 16+50 Offset 37'Rt Elev. ±

Date 1-5-82 Water Elev. ±4

Crew DICKSON Equipment 74-300-12

Drafting

Depth Feet	Field Number	Description
0.0-		
16	8 30	MOIST BROWN SAND
5		
19	31 10	MOIST BROWN SAND w/ GRAVEL
10		
A-3	6 32	MOIST BROWN SAND
30		SAND & COAL
		MOIST
15		
A-3	6 34	MOIST BROWN SAND
20		
		Auger-Core
25		Boring
30		

Use reverse side of this sheet for additional notes.

NBL

FIELD BORING LOG

7996

County, Route No., Section TUS - STA - 2

Station 18+50 Offset ℄ Elev. ℄

Date Water Elev. D.Y.

Crew DICKASON Equipment 74-300-12
WOLKER

Drafting

Depth Feet	Field Number	Description
0.0-		
6a	35	Brown sandy silt
5	36	soft weathered shale
8		worth. Sandstone
	Refusal	
10		Stopped by Hammer.
15		
20		
25		
30		

Use reverse side of this sheet for additional notes.

NBL

FIELD BORING LOG

1027.B

County, Route No., Section 7 US - 21 - 43.

Station 22+50 Offset Q Elev. Q

Date 12-5-62 Water Elev. D-7

Crew Dickason Equipment 74-350-12

Warner

Drafting

Depth Feet	Field Number	Description
0.0-		Spoil 6 Bank, Combined to 2 samples
	37	Soft Shale Has been moved by strip mine.
5		
	36	soft shale
10		SPOILS
	34	soft shale moved by strip mine
15		
	40	soft shale
20		← Refusal broken limestone
25		
30		

Use n[illegible] of th[illegible] for[illegible]

NBL

FIELD BORING LOG

1037.0 1042.3 6.00

County, Route No., Section Tus-Sta-21-40.55

Station 24+00 Offset E Elev.

Date 9-APR-63 Water Elev.

Crew Sabo R.C., J.B. Equipment Rig

Drafting

Depth Feet	Field Number	43 Description
0.0-		
	1-S	Spoil - Bank Soil Brownish-grey silty clay with some stone fragments
5		
	2-S	Same as 1-S Ditto Spoils
10		
	3-S	Spoil Bank Soil Brown silty clay with little stone fragments
	4-S	Same as 3-S Brownish-grey broken clay shale
20		
		Refusal Broken Rock Slabs
25		
30		

Use reverse side of this sheet for additional notes.

NBL

FIELD BORING LOG

County, Route No., Section 145-574-21-40.55 0.00

Station 30+00 Offset ℄ Elev. ℄

Date 9-APR-63 Water Elev. —

Crew Saeb R.C. J.G. Equipment R66

Drafting

Depth Feet	Field Number	43 Description
0.0	S-1	Spoil Bank Soil Brown clayey silt with some Shale fragments
5		
	S-2	Same as S-1 Brown silty clay with some shale
10		
	S-3	Spoil Bank Soil Brown silty clay with little shale
15		SPOILS
	S-4	Same as S-3 Brown silty clay with Trace of Shale
20		
	S-5	Spoil Bank Soil Brown silty clay with Trace of Shale
25		
	S-6	Same as S-5 Weathered Indurated Clay
	↑	Residual Rock 28'
30		

Use reverse side of this sheet for additional notes.

NBL

FIELD BORING LOG

9845 ✓

County, Route No., Section 745 - STA - 21 - 40.5 0.00

Station 36 + 00 Offset ℄ Elev. ℄

Date 9-APR-63 Water Elev. —

Crew SABO R.C. J.G Equipment R16

Drafting

Depth Feet	Field Number	Description
0.0-		~~Weath Ss~~
VOM	11-5	BR. Sandy S/CL / Sand stone fragments (MOIST)
	4-5	
VOM, 1.2	1.2-5	Same as 11-5 (DRY) ~~Weath SS~~
10	9-10	
	13-5	BR. Clay Shale (DRY) (Hard to DRILL) ~~Shale, B~~
	14-15	
15	↑	Refusal Shale 16'
20		
25		
30		

Use reverse side of this sheet for additional notes.

NBL

FIELD BORING LOG

9566-

County, Route No., Section Tus-ST 9-21

Station 40+00 Offset Q Elev. Q

Date 11-2-62 Water Elev. 18'

Crew Dickson Equipment 74-300-12

Wpikk.

Drafting

Depth Feet	Field Number	6+7 Description
0.0-		
6a	23 47	MOIST brown SILT C/Clay
5		
4a	18 48	MOIST brown SILT C/Clay
10		← color ch
6b	29 49	MOIST grey SILT clay
15		← water seep
4a	20 50	wetter grey SILT clay
20		
6a	51 22	MOIST STIFF grey SILT C/Clay
25		Refusal Too solid to drill deeper
30		

Use reverse side of this sheet for additional notes.

NBL

FIELD BORING LOG

942.3

County, Route No., Section TUS-8TH-21

Station 42+50 Offset — Elev. —

Date 12-6-62 Water Elev. 11 FT

Crew Dickson Equipment 24-300-12

Worrell

Drafting

Depth Feet	Field Number	6 Description
0.0-		Pasture NEAR creek
6a	18 41-D	moist brown silty clay
5		
4b	26 42-D	moist grey silt
10		WATER VEL
4a	23 43	wet grey silt
15		
4b	28 44	moist dense grey silt
20		
6a	21 45	moist grey silt
25		
6a	21 45 21	moist grey silt.
30		

Use reverse side of this sheet for additional notes.

NBL

FIELD BORING LOG

9+5.1

County, Route No., Section TUS-STA-21-40.55 0.00

Station 45+00 Offset ℄ Elev. ℄

Date 9-APR-63 Water Elev. 10'

Crew SABO R.C. J.G. Equipment RIG

Drafting | | |

7+8

Depth Feet	Field Number	Description
0.0-		
4b	20-S 26	BR. CLAY S. IT / STONE - FRAGS. (MOIST) 3-4
5	21-S	GR. CLAY S. IT / STONE - FRAGS. (MOIST)
4a	18	9-10 ← Water
10		
4a	22-S 23	SAME AS 21-S (DAMP)
15		14-15
4b	23-S 27	GR. CLAY S. IT (DAMP)
20		19-20
6a	18 24-S	BR. GR. CLAY S. IT / TRACES OF COAL
25	16 25-S	GR. CLAY / STONE - FRAGS. (MOIST)
6a		26-27
	↑	[redacted], COULD N'T PULL-AUGER
30		

Use reverse side of this sheet for additional notes.

NBL

FIELD BORING LOG

County, Route No., Section T45-STA-21-40.85 0.00

Station 97 + 45 Offset 30' Lt. Elev. -2.8

Date 9-APR 63 Water Elev.

Crew Sabo R.C. J.G. Equipment R16

Drafting

Depth Feet	Field Number	Description
00-		
	26-S	T.P. Org.
60	390	Gr. Si. Cl + Traces of Organics
		3-4
5		
60	27-S	Br. Clay Shale (Wo-St)
	24	6-7
	↑	Refusal Boulders
10		
15		
20		
25		
30		

Use reverse side of this sheet for additional notes.

NCL

FIELD BORING LOG

County, Route No., Section Tri-STA-21-40.55 0.00

Station 47+75 Offset 50' Rt. Elev. -2.1

Date 7-MAR-63 Water Elev. —

Crew SABO R.C. J.G. Equipment RIG

Drafting

Depth Feet	Field Number	8 Description
0.0-		
	28-S	BR. CLAY S.L.T (MOIST)
6a	22	
5		5-6
	29-S	BR. SANDY S.L.T CLAY
1b	7	(MOIST)
10		9-11
	30-S	BR. CLAY S.I.T / STONE -
4a	14	FRAGS. (MOIST)
15		14-15
	31-S	GR. CLAY SHALE (DRY)
	8	Weath Ind Clay
20		19-20
	↑	Refusal 20'
25		
30		

Use reverse side of this sheet for additional notes.

NBL

FIELD BORING LOG

74-8

County, Route No., Section TUS-STA-21-40.55 0.00

Station 51 + 00 Offset 35' Lt. Elev. +12

Date 12-APR-63 Water Elev. —

Crew Sec. R.C. S.G. Equipment R.G.

Drafting

Depth Feet	Field Number	17 Description
0.0-		
	175-5	Br. clay Sample (Moist)
60	15	
5		
	6-7	Refusal Rock
	↑	
10		
15		
20		
25		
30		

Use reverse side of this sheet for additional notes.

IVBL X-Sect

FIELD BORING LOG

County, Route No., Section IVS - STA - 21 - 40.55 0.00

Station SL 402 Offset 60' Rt. Elev. ~~718.6~~ 969.4

Date 9-Apr-63 Water Elev. —

Crew SABO R.C., D.G. Equipment R'G

Drafting

Depth Feet	Field Number	Description
0.0-		
	32-3	BR. Gr. Clay (Moist)
4a	2a	
5		4-5
6a	33/5	Gr. Clay Shale (Moist)
		6-7
	↑	Refusal 7'
10		
15		
20		
25		
30		

Use reverse side of this sheet for additional notes.

NBL x-Sec1

FIELD BORING LOG

9.16.0

County, Route No., Section IJS - STA - 21 - 90.55 0.0X

Station 54+00 Offset 60' Rt. Elev. +18.1

Date 9-APR-63 Water Elev. —

Crew SABO R.C. J.G. Equipment R16

Drafting

Depth Feet	Field Number	8+9 Description
0.0-		
	34-S	BR. GR. CLAY SILT/Stone -
4/a	21	FRAGS. (Moist)
5		4-5
	35-S	BR. CLAY SILT/Stone -
4/b	22	FRAGS. (Moist)
10		9-10
	36-S	GR. CLAY SILT/Shale -
6a	18	FRAGS. (Damp)
15		14-15
	37-S	GR. Sandy CLAY Shale
4/a	16	(Damp)
20		20-20.5
	↑	Refusal / 20.5
25		
30		

Use reverse side of this sheet for additional notes.

NBL

FIELD BORING LOG

98-1.7

County, Route No., Section TUS - STA - 21 - 40.55 0.00

Station 54+20 Offset 30' Lt. Elev. +2.9

Date 9-APR-63 Water Elev.

Crew SABO R.C. J.G. Equipment R16

Drafting

Depth Feet	Field Number	9 Description
0.0-		
	38-S	Br. Clay s./L /5ft a/c - 7 BAGS (Moist)
6a 5	20	5-6
	39-S	Br. Clay s./L/Sha/c - 7 BAGS (Damp)
6a 10	16	9-10
	40-S	SAME AS 39-S (DAMP)
6a 15	13	15-15.5
	↑	Refusal 15.5
20		
25		
30		

Use reverse side of this sheet for additional notes.

NBL

FIELD BORING LOG

961.6

County, Route No., Section TUS-STA-21-40.55 0.00

Station 56+40 Offset ℄ Elev. ℄

Date 9-APR-63 Water Elev.

Crew SAAD R.C. J.G. Equipment RIG

Drafting

Depth Feet	Field Number	Description
0.0-		9 Hole - DRILL IN DITCH
	41-S	BR. Sandy Clay Silt / Stone
4a	24	Frags. (Damp)
5		5-6
	42-S	Same AS 41-S (DAMP)
6a	20	
10		11-12
	↑	Refusal / 12'
15		
20		
25		
30		

Use reverse side of this sheet for additional notes.

NBL

FIELD BORING LOG

~~484.5~~ 484.1

County, Route No., Section TUS - STA-21-40.55 0.00

Station 60+00 Offset 50' Rt. Elev. ~~467~~ 467

Date 9-APR-63 Water Elev. ———

Crew SABA RC, JG Equipment RIG

Drafting

Depth Feet	Field Number	Description
0.0-		
	43-S	BR. GR. CLAY SILT (DAMP)
6U	24	
		4-5
	44-S	BR. CLAY SILT /Stone -
		Frags. (DAMP)
6A	22	
10		9-10
	↑	Refusal / 10'
15		
20		
25		
30		

Use reverse side of this sheet for additional notes.

NBL

FIELD BORING LOG

1003,6

County, Route No., Section TUS-STA-21-10.55 0.00

Station 63+00 Offset 50' Rt. Elev. +5.2

Date 16-APR-63 Water Elev.

Crew SABO R.C. J.G. Equipment RL6

Drafting

Depth Feet	Field Number	9+10 Description
0.0-		
	45-S	BR, BR. Clay (Moist)
7-5	21	
5		5-6
6.0	46-S	BR. Sandy Clay Shale
	11	(Moist)
10		10-11
6.0	47-S	BR. Clay Silt / Shale - FRAGS.
	14	(Moist)
15		15-16
6.0	48-S	BR. Clay Silt / Shale - FRAGS
	15	(Moist)
20		20-21
	48-S	BR. Clay Shale, (Dry)
	9	23-24
25	↑	Refusal 24' Shale
30		

Use reverse side of this sheet for additional notes.

NBL

FIELD BORING LOG

985.8

County, Route No., Section Tus - 5 TA - 21 - 40,55 0.00

Station 66+00 Offset ℄ Elev. ℄

Date 10-APR-63 Water Elev. —

Crew S.A.B. R.C. J.C. Equipment R I G

Drafting

Depth Feet	Field Number	Description
0.0-		
	55-5	BR. Clay SILT / Stone-Frags.
1/4	8	(Moist)
		4-5
5		
	56-5	
2-4	14	Same AS 55-5 (Moist)
		9-10
10		
	57-5	
7-5	20	GR. Clay Shale (Moist)
		12-13
	↑	Refusal 13' Shale
15		
20		
25		
30		

Use reverse side of this sheet for additional notes.

NBL

FIELD BORING LOG

1002, 5

County, Route No., Section TUS - STA - 21 - 40.65 0.60

Station 66+00 Offset 80' Rt Elev. +13.0

Date 10-APR-63 Water Elev.

Crew SABO R.C. J.G. Equipment R16

Drafting

Depth Feet	Field Number	10 Description
0.0-		
6a	50-S 16	BR. CLAY S.I.T. / SHALE - FRAGS. (MOIST)
5		5-6
6a	51-S 9	BR. CLAY S.I.T. / SHALE - FRAGS (MOIST)
10		10-11
6a	52-S 18	BR. CLAY SHALE (DAMP)
15		14-15
6a	53-S 23	BR. CLAY S.I.T. / SHALE - FRAGS. (DAMP)
20		19-20
6a	54-S 15	GR. CLAY SHALE (MOIST)
	↑	22-23
		Refusal 23' SHALE
25		
30		

Use reverse side of this sheet for additional notes.

NBL

FIELD BORING LOG

1020.5

County, Route No., Section TUS-STR-21-40.55 0.00

Station 69+00 Offset 50' Rt. Elev. +0.9

Date 10-APR-63 Water Elev. —

Crew S.A.B. R.C. J.G. Equipment B16

Drafting

Depth Feet	Field Number	10 Description
0.0-		
	58-5	Br. Gr. clay 5.1 f (Moist)
46 5	21	
		5-5
	59-5	Br. Sandy Silt / Sand - Stone - Frags. (Moist)
69 10	11	
	↑	Refusal 11'
15		
20		
25		
30		

Use reverse side of this sheet for additional notes.

NBL

FIELD BORING LOG

County, Route No., Section TUS-STA-21-40,55 0.00

Station 71+00 Offset ℄ Elev. ℄

Date 10-APR-63 Water Elev.:

Crew SABA R.C.J.G. Equipment R16

Drafting

Depth Feet	Field Number	10 Description
0.0-	60-S	SPOIL BANK SOIL Brown silty clay with stone fragments
5	61-S	SPOILS SAME AS 60-S Brown silty clay and shale fragments
10	62-S	DITTO SPOIL BANK SOIL
15	63-S	BRI GR. CLAY SHALE (MOIST)
20		21-2= REFUSAL / 22'
25		
30		

Use reverse side of this sheet for additional notes.

NBL

FIELD BORING LOG

1033.4

County, Route No., Section TUS-STA-21-40.55 0.00

Station 73+00 Offset ℄ Elev. ℄

Date 10-APR-63 Water Elev. —

Crew SABO R.C. J.B. Equipment R16

Drafting

Depth Feet	Field Number	43 Description
0.0-	64-S	Brown CH w/ Shale Frags Spoil Bank Soil
5		
	65-S	Same as 64-S Shale - B
10		3 spoils
	66-S	Spoil Bank Soil Brown Broken Shale Fragments Shale - B
15		
	67-J	Same as 66-S Shale - B
20		
		Refusal / 22' Rock Slope.
25		
30		

Use reverse side of this sheet for additional notes.

NBL

FIELD BORING LOG 1046.3D

County, Route No., Section T45-STA-21-40.55 0.0D

Station 75+50 Offset ℄ Elev. ℄

Date 10-APR-63 Water Elev. —

Crew SABO R.C. J.G. Equipment R-16

Drafting

Depth Feet	Field Number	// Description
0.0-		
	68-S	BR, CLAY SILT / STAINED - 7 RAGS (Moist)
6a	13	4-5
6a	69-S 15	SAME AS 68-S (MOIST) 8-9
10	70S 11	GR. CLAY SHALE (DRY) 13-14
15	↑	Refusal Rock 14'
20		
25		
30		

Use reverse side of this sheet for additional notes.

NBL

FIELD BORING LOG

1006.2
1054.4

County, Route No., Section TUS - STA - 21 - 40.55 0.00

Station 23+50 Offset ℄ Elev. ℄

Date 10-APR-63 Water Elev. ℄

Crew SAMP R.C., J.G. Equipment H.A. GAS-Liner

Drafting

Depth Feet	Field Number	11 Description
0.0-	0.6	TOP Soil
	71-S	Organic
		GR. CLAY / STONE - FRAGS
6a	34	(Dense)
	↑	Refusal / Boulders
5		
10		
15		
20		
25		
30		

Use reverse side of this sheet for additional notes.

FIELD BORING LOG

Log 3-5 1062.6-

County, Route No., Section 145-STA-21-40.55 0.00

Station 84 +20 Offset 25' Rt. Elev. -0.5

Date 10-APR-63 Water Elev. /

Crew Sais R.C. J.G. Equipment 14" A. Gas Lines

Drafting

Depth Feet	Field Number	// Description
0.0-		
	B84	Gr. Clay / Stone-Frags. (wet)
Ga	↑	Refusal Boulders
5		
10		
15		
20		
25		
30		

Use reverse side of this sheet for additional notes.

FIELD BORING LOG

1041.1

County, Route No., Section TUS-STA-21-4055 0.00

Station 87+00 Offset ℄ Elev. ℄

Date 10-APR-63 Water Elev.

Crew SABO R.C. J.G. Equipment R.C.

Drafting

Depth Feet	Field Number	11 ~~RT~~ Description
0.0-		
	735	BR. Clay S.I.T / Stone-Frags
6A	21	(Moist)
5		
		S-6
	743	Gne. Clay / Shale - Frags.
	12	(Moist)
10		
	↑	Refusal Shale
15		
20		
25		
30		

Use reverse side of this sheet for additional notes.

FIELD BORING LOG

11

11 00.1

County, Route No., Section TUS - STA-21 - 40.55 0.0

Station 94+00 Offset ℄ Elev. ℄

Date 10-APR-63 Water Elev.

Crew SAM R.C. J.G. Equipment R"6

Drafting

Depth Feet	Field Number	11 Description
0.0-		
	75-5	BR. CLAY SILT / STONE - FRAGS. (MOIST)
4a	13	4-5
5		
	76-5	
6a	20	SAME AS 75-5 (MOIST)
10		9-10
	77-5	BR. CLAY SILT / STONE -
6a	12	FRAGS. (MOIST)
		13-14
15		
	78-5	
		GR. CLAY SHALE (DRY)
6a	17	
20		19-20
	↑	Refuse / Shale
25		
30		

Use reverse side of this sheet for additional notes.

X-Sect

FIELD BORING LOG

County, Route No., Section TUS-STA-21-40,55 0.00

Station 98+00 Offset 130' Lt. Elev. 714.1

Date 10-APR-63 Water Elev. —

Crew SABO R.C. J.G. Equipment R L G

Drafting

Depth Feet	Field Number	11+12 Description
0.0-		
5	79-S 16	Br. Clay Silt / Stone-Frags. (Moist)
		5-6
10	80-S 21	Same as 79-S (Moist)
		11-12
15	81-S 15	Br. Clay (Shale) (Dry)
		Refusal 17' Shale
20		
25		
30		

Use reverse side of this sheet for additional notes.

FIELD BORING LOG

11 41, 1

County, Route No., Section TUS - STA - 21 - 40.55 0.00

Station 99 + 00 Offset C Elev. E

Date 10-APR-63 Water Elev. —

Crew SABO R.C. J.G. Equipment R.T.C.

Drafting

Depth Feet	Field Number	12 Description
0.0-		
	B2-S	
7-5	40	BR. CLAY / SILT / SAND / ROCKS
2.5		
	B3-S	Coal Blossom
10		
	8B	Weather Indurated Clay
15		
	1	R.F. 1 ft. Sandstone
20		
25		
30		

Use reverse side of this sheet for additional notes.

X-Sect

FIELD BORING LOG

11+95.5 ←

County, Route No., Section TUS - STA 21 - 40.55 0.00

Station 98 +00 Offset 90' RT Elev. -11.8

Date 10-APR-63 Water Elev.

Crew SASO R, C, J, G Equipment R/G

Drafting

Depth Feet	Field Number	12 Description
0.0-		
	85-S	Br. Clay Silt Stone -
6a	14	FRAGS. (MOIST)
5		
	86-S	Red & Br. Clay Silt
6a	11	(MOIST)
10		9-10
	87-S	Br. Clay Silt Stone -
6a	13	FRAGS. (MOIST)
15		14-15
	88-S	SAME AS 87-S (MOIST)
6a	19	
		18-19
20	89-S	GR. Clay Silt / Shale - FRAGS.
6b	18	(DAMP)
		24-25
25	↑	Refusal Hard - DRILLING Stale
30		

Use reverse side of this sheet for additional notes.

FIELD BORING LOG 1135.2

County, Route No., Section TUS-STA-21-40.55 0.0

Station 102+00 Offset ℄ Elev. ℄

Date 11-APR-63 Water Elev. —

Crew S480 R.C. J.G. Equipment R16

Drafting

12+13

Depth Feet	Field Number	Description
0.0-		
6a	93-5 18	BR. GR. CLAY S. LT (MOIST) 3-4
5	94-5 15	GR. CLAY SHALE (MOIST) Weather Indurated clay 9-10
10	95-5 10	GR. CLAY SHALE (MOIST) Weather Indurated clay 14-15
15	96-5 13	GR. CLAY Shale (DRY) 19-20
20	↑	Refusal Shale
25		
30		

Use reverse side of this sheet for additional notes.

FIELD BORING LOG

County, Route No., Section TUS-STA-21-10.65 0.00

Station 102+00 Offset 90' Rt. Elev. 449

Date 11-APR-63 Water Elev.

Crew SABO R.C. J.G. Equipment RIG

Drafting

Depth Feet	Field Number	12 Description
0.0-		
7-6	90-S 39	Br. Gr. Clay Silt / Coal Blossom
		3.4
5	91-S	
7-6	17	Br. Clay Silt (moist)
		8-9
10	92-S	
	11	Gr. Clay Shale (Weathered)
15		
	↑	Refusal 15' Shale
20		
25		
30		

Use reverse side of this sheet for additional notes.

1143.0

FIELD BORING LOG

County, Route No., Section TUS-STA-21-40.55 0.00

Station 103+00 Offset 90' Rt. Elev.

Date 11-APR-63 Water Elev.

Crew SACO R.C. J.G. Equipment R.I.G.

Drafting

Depth Feet	Field Number	13 Description
0.0-		
	975	GR. BR. CLAY S. I/F (MOIST)
4a	14	3-4
5		
	985	BR. GR. CLAY S. I/F (MOIST)
6a	13	
10		9-10
	995	BR. CLAY SHALE (DRY)
	10	WEATHER INDURATED CLAY
15		14-15
	↑	REFUSAL 15' SHALE,
20		
25		
30		

Use reverse side of this sheet for additional notes.

X-Sect

FIELD BORING LOG

112 C, Or

County, Route No., Section Jus-STA-21-40,55 0.00

Station 105+00 Offset 100'Lt. Elev. -9.2

Date 11-APR-63 Water Elev. Lt

Crew SABa R.C. J.C. Equipment R.C.

Drafting

Depth Feet	Field Number	13 Description
0.0-		
	1045	Br. Gr. Clay S. / L (Moist)
7-5	23	
5		4-5
6u	1055 16	Gr. Br. Clay S. / L (Moist)
10		
2-7	1065 14	Br. Clay Shale (Weathered)
		13-14
15		
2-7	1075 23	Gr. Shale (Dam)
		16-17
	↑	Refusal 17'
20		
25		
30		

Use reverse side of this sheet for additional notes.

FIELD BORING LOG

1152.5

County, Route No., Section Tus-STP-21-40.55 0.00

Station 105 +00 Offset ℄ Elev. —

Date 11-APR-63 Water Elev. —

Crew Saba R. C, J. A. Equipment R/6

Drafting

Depth Feet	Field Number	13 Description
0.0-		
	101-S	BR. Gr. Clay Silt (moist)
6b	15	
5		5-6
7-6	102-S	Gr. Clay Silt / Shale - Trace of (moist)
10	15	
		11-12
	103-S	GR Shale (moist)
15	12	
		17-18
	↑	Refusal Shale 18'
20		
25		
30		

Use reverse side of this sheet for additional notes.

X-Sect

FIELD BORING LOG

11376

County, Route No., Section TUS-STA-21-40.55 0.00

Station 105+00 Offset 100'Rt. Elev. +1.5

Date 11-Apr-63 Water Elev.

Crew Sage R.C. J.C. Equipment Rig

Drafting

Depth Feet	Field Number	13 Description
0.0-		
	100.5	Br. Gr. Sandy Clay 5.1Z)
6.4	12	Stone - Frags. (Grist)
		4.5
0	↑	Refusal 5'
10		
15		
20		
25		
30		

Use reverse side of this sheet for additional notes.

X-Sect

FIELD BORING LOG

11-42-

County, Route No., Section TUS-STA-21-40.56 0.00

Station 109+00 Offset 100' Lt. Elev. -16.5

Date 11-APR-63 Water Elev.

Crew SAAD R.C. J.G. Equipment RL6

Drafting

Depth Feet	Field Number	14 Description
0.0-	108-5	BR. weathered Shale
	10	Weathered S.S.
5		4-5
	109-5	Gr. weathered Shale (DRY)
	9	
10		
	↑	Refusal Hard DR. 11.0-5
15		
20		
25		
30		

Use reverse side of this sheet for additional notes.

FIELD BORING LOG

14 1.4

County, Route No., Section TUS-STA-21-40.55 0.00

Station 109+00 Offset ℄ Elev. ℄

Date 11-APR-63 Water Elev.

Crew SABO R.C. J.G. Equipment R16

Drafting

Depth Feet	Field Number	14 Description
0.0-		
	116-5	Br. clay silt stone - trace.
6a	20	(moist)
		I-4
5	117-5	Coal - ~~Bituminous~~
10	1185	Gr. fine clay
	9	Weathered indurated clay
		14 - 14,5
15	↑	Refusal 14,5
20		
25		
30		

Use reverse side of this sheet for additional notes.

X-Sect FIELD BORING LOG

Attach 11 78.5

County, Route No., Section TUS-STA-21-40.55 0.02

Station 109+00 Offset 100' Rt. Elev. +30'

Date 11-APR-63 Water Elev. —

Crew SABO R.C. J.G. Equipment RIG

Drafting

Depth Feet	Field Number	43 Description
0.0-	110-S	SPOIL BANK SOIL Gray silty clay and shale fragments
5		
	111-S	SAME AS 110-S Brownish-gray silty clay mix and shale fragments
10		
	112-S	SPOIL BANK SOIL Gray broken clay shale
15		Spoils
	113-S	SAME AS 112-S Ditto
20		
	114-S	SPOIL BANK FILL Brown broken clay shale
25		
	115-S	SAME AS 114-S Brownish-gray broken clay shale
(32')		

Use reverse side of this sheet for additional notes.

FIELD BORING LOG 1131.0-

County, Route No., Section TUS - STA - 21 - 40, 58 0.0

Station 112 +00 Offset E Elev. E

Date 11-APR-63 Water Elev. —

Crew SAGO R.C. J.G. Equipment R C G

Drafting

Depth Feet	Field Number	141 Description
0.0-		
	119-S	BR. CLAY SILT/STONE FRAG.
6a	18	
5		
7-6	120-S	BR. CLAY SILT/STONE
10	15	
	121-S	BR CLAY SILT/STONE
15	9	
		REFUSAL
20		
25		
30		

Use reverse side of this sheet for additional notes.

X-Sect

FIELD BORING LOG

1116.0

County, Route No., Section 145-STA-21-40.55 0.00

Station 115+00 Offset 120' Lt. Elev. -14.7

Date 11-APR-63 Water Elev.

Crew Sabo R.C. J.G. Equipment R.I.C.

Drafting

Depth Feet	Field Number	14 Description
0.0-		
	122-S	Br. Gr. Clay Silt (Moist)
7-5	17	
5		5-6
	21	
6	123-S	Br. Clay Silt (Moist)
10		11-12
	124-S	Gr. Br. Clay Silt
15	12	(Moist) Fine Clay
		Refusal 16'
20		
25		
30		

Use reverse side of this sheet for additional notes.

FIELD BORING LOG

11c,4-

County, Route No., Section ILL - STA - 21 - 40,55 0-02

Station 115 +00 Offset 4 Elev. 4

Date 11-APR-63 Water Elev. —

Crew SAAD R, C, J, G. Equipment R16

Drafting

Depth Feet	Field Number	14 Description
0.0-		
76	125 S 25	BR. GR. CLAY S, LT (MOIST.
		3-4
5	126-S 19	GR. CLAY SHALE (MOIST)
		9-10
	127-S 12	GR. CLAY SHALE B
15		16-16.5
	↑	Refusal HARD DRILLING
20		
25		
30		

Use reverse side of this sheet for additional notes.

X-Sect

FIELD BORING LOG

1165, 1

County, Route No., Section TUS-STA-21-40,55 0.00

Station 115+00 Offset 120' Rt Elev. +36.5

Date 11-APR-63 Water Elev.

Crew Sago R.C. JG. Equipment R16

Drafting

Depth Feet	Field Number	15 Description
0.0-		
	1325	BR. Gr. clay s. lt (Moist)
5	133-5	Shale frags (Spoils) BR Clay s. lt / Shale - B frags (Moist)
10	1345	Spoils Same AS 133-5 (Moist) Shale frags
15	1355	Shale frags BR. Clay s. lt / Shale B frags (Moist) 19-20
20	136-5	Same AS 135-5 (Moist) Weathered Shale 25-26
25	137-5	Light BR. Clay Shale Weathered (DRY) 31-32 Weathered Indurated Clay
30		

32' ↑ Use reverse side of this sheet for additional notes.

FIELD BORING LOG

1149-5

County, Route No., Section 145 - S TA - 21-48,55 0.00

Station 116+50 Offset — Elev. —

Date 11-APR-63 Water Elev. —

Crew SABO R.C., J.G. Equipment R16

Drafting

Depth Feet	Field Number	15 Description
0.0-	1285	BR. CLAY SILT (MOIST)
5	18	4-5
	1295	BR CLAY Shale (MOIST)
10	15	9-10
	1305	GR. CLAY Shale (MOIST)
15	14	15-16
	1315	GR. Shale (MOIST)
20	11	19-20
	↑	Refusal 20'
25		
30		

Use reverse side of this sheet for additional notes.

FIELD BORING LOG

113,2

County, Route No., Section IVS-STA-21-40.55 0.00

Station 118+00 Offset E Elev. E

Date 11-APR-63 Water Elev. 21'

Crew SABO R.C. V.G. Equipment RIG

Drafting

Depth Feet	Field Number	15+16 Description
0.0-		
	138-S	BR. GR. CLAY SILT (STONE-
6a	21	FRAGS, (MOIST)
5		4-5
	139-S	SAME AS 138-S (MOIST)
7-6	20	
10		9-10
	140-S	BR. GR. CLAY SILT (MOIST)
7-6	19	
15		14-15
	141-S	BR. GR. CLAY SILT (SHALE
		FRAGS (MOIST) B
	16	
20		20-21
	142-S	GR CLAY SHALE B (WET)
25	20	
		26-27
	T	REFUSAL 27'
30		

Use reverse side of this sheet for additional notes.

X-Sect

FIELD BORING LOG

County, Route No., Section TUS - STA - 21-40.65 9.00

Station 121+00 Offset 100' Lt. Elev. 8

Date 11-APR-63 Water Elev. -25

Crew SOSO R.C. J.G. Equipment R16

Drafting

Depth Feet	Field Number	Description
0		16
		OLD DUMP FILL MAT.
		GY clay with stone
5		Engineering road rubbish
		BR CLAY SILT / SHALE FRAGS
10	150-S	
		GR-CLAY SILT / SHALE FRAGS
15	151-S	
	10	Spoils Shale fragments
20		GR CLAY SILT / SHALE FRAGS
	152-S	
	10	
25		
		GR-CLAY SILT / SHALE FRAGS
	153-S	
	18	
		GR CLAY / SHALE B
	154-S	
30	18	TO 30' HARD SHALE

Use reverse side of this sheet for additional notes.

FIELD BORING LOG 1166.4

County, Route No., Section TUS-STA-21-40,55 0.00

Station 121 +00 Offset ℄ Elev. E

Date 11-APR-63 Water Elev. ⌐

Crew SAB, R.C., J.G. Equipment R.G.

Drafting

Depth Feet	Field Number	16 Description
0.0-	143.5 A	GR. CLAY SILT / SHALE FRAGS (MOIST)
5		
	1445 B	SAME AS 143-5 (MOIST) SHALE FRAGS (SPOILS) SHALE - B
10		9-10
	145.5 A	GR. CLAY SILT / SHALE - FRAGS (MOIST)
15		14-15
	146.5 A	GR. CLAY SILT / SHALE - B FRAGS. (MOIST)
20		20-21
	147.5 A	GR. CLAY SILT / SHALE - B FRAGS. (MOIST)
		22-24
25	148.5 A	BR. GR. CLAY SILT / SHALE - FRAGS. (MOIST) SHALE - B
30		

↑ Use reverse side of this sheet for additional notes.

1164.5

X-Sect FIELD BORING LOG

County, Route No., Section IMS-STA-21-40.55 0.00

Station 121+00 Offset 100' Rt. Elev. +0.6

Date 12-APR-63 Water Elev. 25'

Crew S.B.R.C.W.G. Equipment R.I.Co

Drafting

Depth Feet	Field Number	Description
0.0	155-S	17 2 samples SPOIL BANK FILL SOIL Gray broken clay shale
5	156-S	Same as 155-S Ditto Spoils
10	157-S	SPOIL BANK FILL Ditto
15	158-S	Same as 157-S Brownish gray broken clay shale
20	159-S	SPOIL BANK FILL Gray broken clay shale
25	160-S	CR Clay Shale (DAMP)
30	23	2 @ 30

Use reverse side of this sheet for additional notes.

X-Sect FIELD BORING LOG 11104-

County, Route No., Section TUS-STA-21-40.55 0.02

Station 122+00 Offset 100' Lt. Elev. ±117

Date 12-APR-63 Water Elev. 26

Crew Sage R.C., J.G. Equipment R.L.S.

Drafting

Depth Feet	Field Number	43 / Description
0.0-		2 samples
	169-S	Soil Bank Fill Dirt
5		Grey broken clay shale
	170-S	Same as 169-S
10		Ditto
	171-S	Soil Bank Fill
15		SPOILS
	172-S	Same as 171-S
20		Ditto
	173-S	Soil Bank Fill
25		Ditto
	174-S	Gr. Clay Shale (Damp)
30		Shale, B
32		31 32

Use reverse side of this sheet for additional notes.

FIELD BORING LOG 11643-

County, Route No., Section 745 - STA - 21 - 40,55 0.00

Station 122 + 00 Offset ℄ Elev. ℄

Date 12-APR-63 Water Elev. 24'

Crews Sano R.C. J.G. Equipment R-6

Drafting

17

Depth Feet	Field Number	Description
0.0		
	164-S	Spoil Bank Fill Dirt
		Brown broken clay shale
5		
		Ditto
	165-S	Same as 164-S
10		Brown Shale Fragments
		Spoils
	166-S	Spoil Bank Fill
15		Ditto
		Same as 166-S
20	167-S	Ditto
		Water
	168-S	Br. Tire Clay (Dry)
		26-27
		Refusal 27'
30		

Use reverse side of this sheet for additional notes.

X-Sect

FIELD BORING LOG

11-5-54

County, Route No., Section Tus-STA-2L-40.85 0.00

Station 122 +00 Offset 160 'Rt. Elev. ±70.5

Date 12-APR-63 Water Elev.

Crew Saba R.S. J.G. Equipment R & To

Drafting		

Depth Feet	Field Number	44 Description
0.0-		
	161-S	Soil Bank Fill Dirt
5		Gray broken clay shale
		Spoils
		Same as 161-S
10	162	Brownish-Gray-Clay and [illegible]
	1635	GR. Fire Clay (Dry)
15	12	14-15
		Refusal 15'
20		
25		
30		

Use reverse side of this sheet for additional notes.

X-Sect

FIELD BORING LOG

County, Route No., Section TUS-STA-21-40.55 0.0

Station 128 +00 Offset 180' Lt. Elev. [illegible]

Date 17-APR-63 Water Elev. —

Crew SAB, R.C., D.G. Equipment IR 170

Drafting

Depth Feet	Field Number	Description
0.0-	176-S	Spoil Bank Fill / Rubber Waste Gray Wea. Shale Frags.
5	177-S	Same As 176-S Gray Sand and Rubber Spoils
10	178-S	Spoil Bank Fill Brown and Gray Wea. Shale Frags.
15	179-S	Same As 178-S
20	↑	Refusal Boulders
25		
30		

Use reverse side of this sheet for additional notes.

FIELD BORING LOG

1 of 1

County, Route No., Section I-45 - STA 21-40.55 0.00

Station 123+00 Offset ℄ Elev. ℄

Date 7-APR-63 Water Elev. —

Crew Sapp R.C. J.G. Equipment R.T.G.

Drafting

Depth Feet	Field Number	Description
0.0-	180-S	Spoil Bank Fill & Rubber Waste Gray Sandy Silt and Rubber
5	181-S	Same As 180-S Br. and Gr. Wea. Shale Frags. W/Rubber Spoils
10	182-S	Spoil Bank Fill Gray Wea. Shale Frags.
15	183-S	Same As 182-S
20	↑	Refusal Boulders
25		
30		

Use reverse side of this sheet for additional notes.

X-Sect

FIELD BORING LOG

1164.0 -

County, Route No., Section TUS-STA-21-40.55 0.00

Station 123+00 Offset 100' Rt. Elev. -3.8

Date 17-APR-63 Water Elev.

Crew Sage R.C., J.G. Equipment RL6

Drafting

Depth Feet	Field Number	Description
0.0	184-S	Spl. Bank Fill & Rubber-oid
5	185-S	Same as 184-S Gr. Wea. Shale fragments
10	186-S	Spl. Bank Fill
15	187-S	Same as 186-S
20	↑	Hole - Closed at 20' Refusal Couldn't Pull #460
25		Note - Squeezed at Elev. 1154'
30		

Use reverse side of this sheet for additional notes.

X-Sect

FIELD BORING LOG

1166.6

County, Route No., Section Tus - STA-21-40.55 0.00

Station 125+00 Offset 100'Lt. Elev. -0.6

Date 17-APR-63 Water Elev. -25'

Crew Sabo R. C. J. G Equipment RIG

Drafting

Depth Feet	Field Number	17 Description
0.0-	194-S	SPOIL BANK FILL
5	195-S	SAME AS 194-S
10	196-S	SPOIL BANK FILL (Gr. Wea. Shale frags.
15	197-S	SAME AS 196-S
20	198-S	
25	199-S	GR. CLAY SHALE (DAMP)
30	20	28.30 Refusal 30' Shale

Use reverse side of this sheet for additional notes.

FIELD BORING LOG

1168.0 ←

County, Route No., Section TUS-5 TA-21-40,55 0.00

Station 125 + 00 Offset ℄ Eley. ℄

Date 17-APR-63 Water Eley. -25

Crew SABO R.C. J.G. Equipment RIG

Drafting

Depth Feet	Field Number	44 Description
0.0	188-S	Spo. 1 Bank 7, 11 Br. & Gr. Silty Clay
5	189-S	Same AS 188-S
10	190-S	Spo. 1 Bank 7, 11 Br. & Gr. Wea. Shale frags. Spoils
15	191-S	Same AS 189-S
20	192-S	Spo. 1 Bank 7, 11
25	193-S	Gr. Clay Shale (Damp)
60	22	Refusal @ 31' Shale
30 31		

↑ Use reverse side of this sheet for additional notes.

X-Sect

FIELD BORING LOG

1161.5 -

County, Route No., Section Tus-Sta-21-40.55 0.00

Station 125+00 Offset 125' Rt. Elev. +3.4

Date 17-APR-63 Water Elev.

Crew SABo R.C. J.G. Equipment RIG

Drafting

Depth Feet	Field Number	Description
0.0-	200-S	Spoil Bank Fill
5		Br. & Gr. Silty Clay
	201-S	Same as 200-S
10		Spoils
	202-S	Spoil Bank Fill
15		Br. Silty Clay W/ Shale frags.
	203-S	Spoil Bank Fill
20		
	204-S	Coal Blossom
25		26-27
	14	Gr. Shale (Dev)
7-6	205-S	Refusal 30' Shale
30		

Use reverse side of this sheet for additional notes.

Str. P - 1.14 X-Sect

FIELD BORING LOG

1156.0 ✓

County, Route No., Section TUS-STR-21-40.55 0.00

Station 125+65 Offset 100' Lt. Elev. 1144.2

Date 19-APR-63 Water Elev. +1.0

Crew SABO R.C. J.G. Equipment R.L.G.

Drafting

Depth Feet	Field Number	Description
0.0-	293-S	water 1' above hole 21
		COAL
		4-5
5	294-S	GR. GRAY Shale (WEATHERED)
		DR-U 7-7.5
		Underclay
		Refusal 7.5
10		
15		
20		
25		
30		

Use reverse side of this sheet for additional notes.

FIELD BORING LOG

1148.2

County, Route No., Section Tus-STP-21-40.55 0.00

Station 127+50 Offset ℄ Elev. ℄

Date 17-APR-63 Water Elev. -1'

Crew Sabo R.C. J.G. Equipment RL6

Drafting

Depth Feet	Field Number	Description
		17
0.0-		
	2065	Br. Gr. Clay / Coal Blossoms.
VOA		Black coal mixed with clay
		4-5
5		
	2075	Gr. weathered Shale
	5	Weath 5'
10		10-11
	↑	Refusal 11' Shale
15		
20		
25		
30		

Use reverse side of this sheet for additional notes.

X-Sect

FIELD BORING LOG

1106.4

County, Route No., Section TUS-STA-21-40.56 0.00

Station 130+00 Offset 200' Lt. Elev. -11.6

Date 17-APR-63 Water Elev. -12

Crew SASO R.C. J.G. Equipment R.G.

Drafting

Depth Feet	Field Number	Description
0.0-		
	220-S	BR. Clay Silt Stone Frags (DAMP)
6a	22	
5		4-5
2-4	221-S 28	SAME AS 220-S (DAMP) 8-9
10		
7-5	222-S 35	Gr. Silt Clay (DAMP) 11-12
	223-S	COAL (wet)
15		
	224-S	Underclay GR. CLAY (Moist) 17-18
	225-S	GR. weathered Ind. clay / CLAY Shale
20	8	(DRY)
	↑	Refusal ROCK 21'
25		
30		

Use reverse side of this sheet for additional notes.

X-Sect FIELD BORING LOG 1116.2 1116.8

County, Route No., Section TUS-STA-21-40.55 0.00

Station 130 +00 Offset 100' Lt. Elev. -9.6

Date 17-APR-63 Water Elev.

Crew Sano R.C. J.G. Equipment R/C

Drafting

Depth Feet	Field Number	18 Description
0.0-	217-5	Br. clay si. lt. /Stone-Trace (Damp)
60 5	21	4-5
7.6 10	218-5 22	Same as 217-5 Damp
		9-10
15	219-5 12	Weath Gr. Shale (Dry)
		15-16
20	↑	RC Core Rock 16'
25		
30		

Use reverse side of this sheet for additional notes.

FIELD BORING LOG

1120'+/-

County, Route No., Section 14s-STA-21-40.55 0.00

Station 130+00 Offset ℄ Elev. ℄

Date 17-APR-63 Water Elev. ———

Crew Sabo R.C. J.G. Equipment R16

Drafting

Depth Feet	Field Number	3-9 Hewitts 18 Description
0.0-		
2	216-S	Br. Broken Sandstone (Dry)
2-3	1	Refusal S.S. 3'
5		
10		
15		
20		
25		
30		

Use reverse side of this sheet for additional notes.

X-Sect

FIELD BORING LOG

1142.2

County, Route No., Section TUS-STA-21-40.55 0.00

Station 130 +00 Offset 100' Rt. Elev. +16.1

Date 17-APR-63 Water Elev.

Crew SABO R.C. J.G. Equipment RIG

Drafting

Depth Feet	Field Number	17+18 Description
0.0-		
	213-S	Br. GR. Clay Silt/Stone Frags. (Moist)
6U	20	
5		
	214-S	Same as 213-S (Moist)
7-6	21	
10		
	215-S	GR. Weathered Shale (Dry) Weath Ind Clay
	7	13-14
15	↑	Refusal Rock 14'
20		
25		
30		

Use reverse side of this sheet for additional notes.

X-Sect FIELD BORING LOG ℄ 1153.2+

County, Route No., Section TUS - STH-21-40.55 0.00

Station 130 + 00 Offset 165' Rt. Elev. ℄

Date 17-APR-63 (E-NRL) Water Elev. -22

Crew SABO R.C. V.G. Equipment R170

Drafting

Depth Feet	Field Number	Description
0		17
	208-S	SAND BANK FILL
5		4-5
	209-S	BR. MC W/ SHALE frags.
		SAME AS 208-S
10		9-10
	216-S	SAND BANK FILL
15		15-16
	211-S	BR. GR. CLAY SILT (Moist)
20	23	
		21-22
	24	GR. CLAY SHALE (Damp)
25	212-S	Refusal Rock 24'
30		

Use reverse side of this sheet for additional notes.

FIELD BORING LOG

1162.4

County, Route No., Section JUS-STR-21-40,55, 0.00

Station 131+10 Offset ℄ Elev. E

Date 17-APR-63 Water Elev. —

Crew Sage R. C. J. G. Equipment R16

Drafting

Depth Feet	Field Number	Description
0.0-	226-5	SPOIL BANK 7, 11
5		
	227-5	Same as 226-5 Brittle Shale frags. Spoils
10		
	228-5	SPOIL BANK 7, 11
15		
	229-5	SPOIL BANK 7, 11
20		
	230-5	Same as 229-5
25		
	231-5	Coal Blossom
30	232-5	Grey Sandy CLAY (Moist) 31-32

32'

Use reverse side of this sheet for additional notes.

FIELD BORING LOG 1151.3

County, Route No., Section LUS-STA-21-40.55 0.00

Station 133 + 00 Offset 130' Lt. Elev. -145

Date 18-APR-62 Water Elev. —

Crew SAB R.C. J.G. Equipment R16

Drafting

Depth Feet	Field Number	15 Description
0.0-	233-S	Spoil Bank Z,II Gray Wea. Shale Frags.
5		
	234-S	Spoil Bank Z,II
10		Spoils Br. SM and Shale Frags
	235-S	Same as 234-S
15		
	236-S	Spoil Bank Z,II Br. Clay W/ Shale Frags
20		
	237-S 6	Gr. weathered Fire Clay (CL) Weath Ss
25		25-26
	↑	Refusal 26'
30		

Use reverse side of this sheet for additional notes.

x-Sect

FIELD BORING LOG

1106.4

County, Route No., Section TUS-STR-21-40,55 0.00

Station 135+00 Offset 200' Lt. Elev. ~15.1

Date 18-APR-63 Water Elev. -5.0

Crew SAEG R.C. J.G. Equipment R-6

Drafting

Depth Feet	Field Number	18+19 Description
0.0-		
	238-S	BR. GR. S.L. CLAY (MOIST)
7-5	23	
5		4-5
	27	
7-5	239-S	BR. GR. CLAY S.L. (DAMP)
		8-5
10	240-S	GR. CLAY SHALE (DAMP)
60	33	10-11
	↑	REFUSAL 11'
15		(Note) DRAINAGE FROM COAL MINE ENTRANCE (VERY WET FROM 0.0 to 60)
		ENTRANCE IS AT STATION 134+00 25' Lt. Check-OK AF
20		
25		
30		

Use reverse side of this sheet for additional notes.

X-Sect FIELD BORING LOG 1125.5

County, Route No., Section TUS-STA-21-40,55 0.00

Station 235+00 Offset 100' Lt. Elev. -11.8

Date 18-APR-63 Water Elev. Seepage at -5'

Crew Sabo R.C. J.G. Equipment R.L.6

Drafting

Depth Feet	Field Number	19 Description
0.0-	241-S	Br. Gr. Clay Silt /Stone Frags. (Damp)
7-6 5	17	S.L.
6a 10	242-S 22	Same as 241-S (Damp)
6a 15	17 243-S	Br. weathered clay Shale (Damp)
		17-18
20	↑	Refusal 18'
25		
30		

Use reverse side of this sheet for additional notes.

FIELD BORING LOG

135.82

County, Route No., Section TUS - STA - 21 - 40.55 0.0R

Station 135+00 Offset ℄ Elev. ℄

Date 18-APR-63 Water Elev. —

Crew SAND R.C. J.G. Equipment R16

Drafting

Depth Feet	Field Number	19 Description
0.0-		
	244-5	Coal Blossom
		3-4
5		
7-6	245-3	Gr. Fire Clay (Moist)
	16	7-8
10	246-3	Sandy Shale (Moist)
4a	12	11-12
	↑	Refusal 12'
15		
20		
25		
30		

Use reverse side of this sheet for additional notes.

X-Sect

FIELD BORING LOG

1103.2

County, Route No., Section Tus-STA-21-40.55 0.00

Station 137+00 Offset 170' Lt. Elev. 7.4

Date 18-APR-63 Water Elev.

Crew Sgt. R.C.V.G. Equipment R-6

Drafting

Depth Feet	Field Number	20 Description
0.0-	260-S	BR & GR. CLAY SILT / STONE FRAGS "DAM"
4ft	16	3-4
5		
6ft	261-S	BR. CLAY SILT / STONE FRAGS "DAM"
	16	8-9
10		REF 10' ROCK
15		
20		
25		
30		

Use reverse side of this sheet for additional notes.

X-Sect

FIELD BORING LOG

County, Route No., Section TUS - STA - 21 - 40,55 0.00

Station 137 +00 Offset 100' Lt± Elev. -14.4

Date 18-APR-63 Water Elev. 17

Crew SABO R.C., J.G. Equipment R16

Drafting

Depth Feet	Field Number	19+20 Description
0.0-		
4a	2575 16	BR. GR. Clay Silt / Stone - FRAGS. (DAMP)
6		H-5
6b	258-S 19	BR. Clay Silt / Stone - FRAGS.
10		La - 11
	259-S	GR. weathered Shale (DRY)
15	15	
		14-17
	↑	Refusal 12' Shale
20		
25		
30		

Use reverse side of this sheet for additional notes.

FIELD BORING LOG

1120.0

County, Route No., Section 145-STA-21-40,55 0.00

Station 137+00 Offset ℄ Elev. -14.4

Date 18-APR-63 Water Elev. —

Crew SA BO R.C, J.G. Equipment R16

Drafting

Depth Feet	Field Number	19 Description
0.0-		
	253-S	BR. GR. CLAY S. / F / STONE-
GA	12	FRAGS. (MOIST)
		4-5
	254-S	SAME AS 253-S (MOIST)
GA	19	
10		
	20	
GA	255-S	BR. CLAY S. / F / STONE-FRAGS (DAMP)
15		
		16-17
	256-S	GR. WEATHERED SHALE (DRY)
20	7	
		21-22
	↑	REFUSAL SHALE 22'
25		
30		

Use reverse side of this sheet for additional notes.

X-Sect

FIELD BORING LOG

116 U.D.

County, Route No., Section TUS - STA - 21 - 40.85 0.00

Station 137 + 00 Offset 70' Rt. Elev. +31.9

Date 18-APR-63 Water Elev.

Crew SABO R.C. J.G. Equipment R16

Drafting

Depth Feet	Field Number	Description
0.0	2475	SPOIL BANK FILL
	2485	Br. Wea. Shale Frags. SPOIL BANK FILL
10	2495	SPOIL BANK FILL
15		SPOILS
	2505	SPOIL BANK FILL Br. Wea. Shale Frags. W/Sand
20	2515	Br. SM and St. Frags. SPOIL BANK FILL
25		Br. Wea. Shale Frags.
	2525	SPOIL BANK FILL Hole - Closed at 20' Auger Couldn't Pull Auger
30		

↑ Use reverse side of this sheet for additional notes.

FIELD BORING LOG 1166.4

County, Route No., Section Tus-STA-21-40.35-0.00

Station 140+50 Offset C Elev. E

Date 18-APR-63 Water Elev.

Crew SABO-R.C. N.G Equipment RIG

Drafting

Depth Feet	Field Number	Description
0.0-	262-S	SOIL BANK FILL
5		Brown Gr. Wea. Shale Frags
	263-S	SOIL BANK FILL
10		SHALE
	264-S	SOIL BANK FILL
15		
	17	REF - BEDROCK ? or LARGE BOULDER
20		17'
25		
30		

Use reverse side of this sheet for additional notes.

FIELD BORING LOG

~~1140.3~~ 1140.5

County, Route No., Section Tus.STA-21-40.55 0.00

Station 141 +00 Offset 150' Lt. Elev. ~7.1

Date 18-APR-63 Water Elev.

Crew Sago R.C. J.G. Equipment R.C.

Drafting

Depth Feet	Field Number	20 Description
0.0-	2655	BR. Coa. Clay, Silt (Mo. St)
6a	12	2-3
5	2665	Same as 265-5 (Moist)
4a	13	8-7
10	↑	Refusal 9'
15		
20		
25		
30		

Use reverse side of this sheet for additional notes.

X-Sect

FIELD BORING LOG

1141.8

County, Route No., Section JUS-STA-21-40.53 0.00

Station 145+00 Offset 130' Lt. Elev. 11.2

Date 18-APR-63 Water Elev.

Crew SAGO R.C. J.G. Equipment R.I.G.

Drafting

Depth Feet	Field Number	Description
0.0-	267-S	Br. Gr. Clay Silt (Moist)
1-6	18	3-4
5	268-S	Br. Weathered Shale
	13	(Dry)
10		9-10
	269-S	Same as 268-S
	9	Weath Sh
15		14-15
	↑	Refusal 15'
20		
25		
30		

Use reverse side of this sheet for additional notes.

FIELD BORING LOG

1141, Ur

County, Route No., Section TUS-STA-21-40.55 0.00

Station 145+00 Offset ℄ Elev. ℄

Date 18-APR-63 Water Elev.

Crew SABO R.C., S.G. Equipment R L 6

Drafting

Depth Feet	Field Number	1/6 Description
0.0-	270-S	Spoil Bank Till Br. Wea. Shale Frags.
5		
	271-S	Same as 270-S Br. MC and Shale frags. Spoils
10		
	272-S	Gr. Fine Silty (Moist) Br. & Gr. Wea Shale Frags
15		VT-18
	↑	Refusal 18'
20		
25		
30		

Use reverse side of this sheet for additional notes.

X-Sect

FIELD BORING LOG

1160.0-

County, Route No., Section TUS-5TA-21-40.55 0.00

Station 145+05 Offset 110' Rt. Elev.

Date 18-APR-89 Water Elev.

Crew Sabo R.C. J.G. Equipment RL6

Drafting

Depth Feet	Field Number	Description
0.0-	273-5	Spoil Bank Fill
5	274-5	Spoil Bank Fill
10		Br. Mica. SS. frags.
	275-5	Spoil Bank Fill
15		Spoils
	276-5	Spoil Bank Fill
20		Br. SM & St. frags.
	277-5	Spoil Bank Fill
25		
	278-5	Gr. Fine Clay (Moist)
30		28-30 Weath. Ina Clay

Use reverse side of this sheet for additional notes.

X-Sect

FIELD BORING LOG

1018.5

County, Route No., Section TUS-STA-21-40.55 0.00

Station 148+00 Offset 200' Lt. Elev.

Date 19-APR-63 Water Elev.

Crew SABO R.C. J.G. Equipment R-6

Drafting

Depth Feet	Field Number	20 & 21 Description
0.0-		
	282-5	BR. GR. CLAY SILT (Moist)
Coh	23	
		3-4
5	282-5	Coal Blossoms
	284-5	
Coh	16	BR CLAY SILT STONE-TRACE (Moist) 8-9
	↑	Refusal 9'
10		
15		
20		
25		
30		

Use reverse side of this sheet for additional notes.

X-Sect FIELD BORING LOG 1081.0

County, Route No., Section TUS-STA-21-10.55 0.00

Station 148 tod Offset 100' Lt. Elev.

Date 19-APR-63 Water Elev.

Crew SAAD R.C. J.G. Equipment R16

Drafting

Depth Feet	Field Number	Description
0.0-	279-S	BR. Clay S, F / Stone Frags (Damp)
4	24	
5		S-6
	21	
6	280-S	Same as 279-S (Dame)
10		
		11-12
	281-S	Sple weath Shale
	T	Refusal 13'
15		
20		
25		
30		

Use reverse side of this sheet for additional notes.

FIELD BORING LOG

1040.0+

County, Route No., Section TUS-579-21-40,55 0.00

Station 148+00 Offset ℄ Elev. ℄

Date 19-APR-63 Water Elev. —

Crew SAGO R.C. J.G. Equipment R 36

Drafting

Depth Feet	Field Number	21 Description
0.0		
	285-S	Br. weathered Shale (Moist)
	13	Weath Sandstone
5		4-5
	286-S	Same as 285-S (Moist)
	13	Weath Sh
10		
	289-S	Gr. weathered Shale (Dry)
	14	
15		
	289-S	Weath Shale (Moist)
		17-18
	↑	Refusal 18'
20		
25		
30		

Use reverse side of this sheet for additional notes.

X-Sect FIELD BORING LOG 11 W. 6.

County, Route No., Section TUS-STR-21-40.55 0.00

Station 148+50 Offset 100' Rt. Elev. —

Date 19-APR-63 Water Elev. —

Crew SAGO R.C. J.G. Equipment R L 6

Drafting

21

Depth Feet	Field Number	Description
0.0-		
	289.5	BR. BR. Clay
ba	2 B	
5		
	290.5	Coal Blossom.
6		
10	291.5	Dk. BR. Clay Sh. / Lt / Shale -
6b	13	Frags. (Moist)
	292.5	Same as 291-5.
15	9	Weath Sh
	↑	Refusal 16'
20		
25		
30		

Use reverse side of this sheet for additional notes.

X-Sect

FIELD BORING LOG

1000, 2

County, Route No., Section TUS-STA-21-40,55 0.00

Station 151+00 Offset 150' Lt. Elev. -13,4

Date 23-Apr.-63 Water Elev.

Crew SABO R.C. J.W. Equipment R/6

Drafting

Depth Feet	Field Number	23 Description
0.0-	3235	Br. Gr. Clay Si/Lt/Sand-Frags. (Moist)
4a	14	
5		5-6
	3248	Br. Weathered Sand (Moist)
	13	W + C
10		10-11
	↑	Refusal 11'
15		
20		
25		
30		

Use reverse side of this sheet for additional notes.

FIELD BORING LOG 100.9-

County, Route No., Section TUS-STA-21-40.55 0.00

Station 151+00 Offset ℄ Elev. 2

Date 23-AUG-63 Water Elev. ———

Crew SABO R.C. J.W. Equipment R16

Drafting

Depth Feet	Field Number	23 Description
0.0-		
	321-S	BR. GR. SI/T CLAY (MOIST)
Cal	23	
5		
	321-S	BR. CLAY SI/T /S FINE —
	12	FRAGS. MOIST
		AUGER T.C.
10	↑	REFUSAL 9.5
15		
20		
25		
30		

Use reverse side of this sheet for additional notes.

X-Sect

FIELD BORING LOG

11105 ✓

County, Route No., Section TUS-STA-21-40.55 0.00

Station 151+00 Offset 100' Rt. Elev. +10.9

Date 23-APR-63 Water Elev. —

Crew SARO R.C. J.W. Equipment R16

Drafting

Depth Feet	Field Number	23 Description
0.0-		
	318-S	Br. Gr. Clay s. Lt (Moist)
7-6	22	
5		4-5
	319-S	Gr. Br. Clay s. Lt / Coal —
2-4	22	Blossom
10		9-10
	320-S	Gr. weathered clay stone
	8	(moist)
		Fire clay
15		14-15
	↑	Refusal 15'
20		
25		
30		

Use reverse side of this sheet for additional notes.

X-Sect FIELD BORING LOG 1108.W

County, Route No., Section TUS-STA-21-40.55 0.06

Station 154+00 Offset 150 'Lt. Elev. -22.4

Date 23-Apr-63 Water Elev. —

Crew SABO R.C., J.W. Equipment RC6

Drafting

Depth Feet	Field Number	22+23 Description
0.0-	311-5	BR. GR. CLAY SL. 1/2 (MOIST)
	4-5	
7-6	27	
5		
	312.5	GR. FIRE-CLAY (MOIST)
	13	FIRE Clay
10		
	313-5	GR. WEATHERED CLAY SHALE
	10	SHALE-(MOIST)
		12-13 W. I. C.
	↑	Refusal / 13'
15		
20		
25		
30		

Use reverse side of this sheet for additional notes.

FIELD BORING LOG

/15W, 1

County, Route No., Section 145-577-21-4055 0.00

Station 154+00 Offset E Elev. E

Date 23-APR-63 Water Elev. —

Crew SABO R.C. J.W. Equipment RIG

Drafting

Depth Feet	Field Number	2R Description
0.0-	308-5	BR. GR. SILT CLAY (MOIST)
7.5	23	
5	309-5	BR. WEATHERED SHALE (MOIST)
	11	WEATH I C
10	310-5	GR. SHALE, (DRY)
	11	
15	↑	REFUSAL 15' SHALE
20		
25		
30		

Use reverse side of this sheet for additional notes.

X-Sect

FIELD BORING LOG

11588

County, Route No., Section 145 - STA-21 - 40.55 0.00

Station 154 + 00 Offset 70 'Rt. Elev. +10.1

Date 23-Apr-63 Water Elev.

Crew Sabo R.C. J.C.W. Equipment R16

Drafting

Depth Feet	Field Number	23 Description
0.0-	314-5	Soil - Bank Fill
5		Spoils
	315-5	Same as 314-5
10	316-5	Coal Blossom:
15	317-5	Bk. Shale (Dry) Weath IC
		Refusal (18')
20		
25		
30		

Use reverse side of this sheet for additional notes.

X-Sect FIELD BORING LOG 1094.0r

County, Route No., Section Tus-STA-21-40,55 0.00

Station B7+00 Offset 100'Lt. Elev.

Date 23-APR-63 Water Elev.

Crew SABO R.C. J.W. Equipment R.G.

Drafting

Depth Feet	Field Number	22 Description
0.0-		
	303.5	BR. GR CLAY (MOIST)
7-5	28	
		4-5
	12	
6.0	304.5	BR. GR CLAY 5.7/7.5 Hard - FROST, (MOIST)
10		
		10-11
	395-5	BR. weathered Shale (Fractured)
		12-13 Weath Ind Clay
	↑	
15		Refusal / 13.5
20		
25		
30		

Use reverse side of this sheet for additional notes.

FIELD BORING LOG 1110.4

County, Route No., Section 145-STR

Station 157+00 Offset ℄ Elev. E

Date 23-Apr-63 Water Elev.

Crew Bates, Mc, J. W. Equipment RIG

Drafting

Depth Feet	Field Number	22 Description
0.0-		
	300-S	BR. GR. Clay Si / L Stone —
4a	13	Frags. (Moist)
5		H-S
	301-S	Same as 300-S (Moist)
4a	14	
10		9-10
	302-S	Gr. Shale (Weathered)
	16	13-14
15	↑	Refusal 14'
20		
25		
30		

Use reverse side of this sheet for additional notes.

X-Sect FIELD BORING LOG 11.5.1.2

County, Route No., Section TUS-STA-21-4055 0.00

Station 157 + 00 Offset 100' Rt. Elev.

Date 23-APR-63 Water Elev.

Crew SMEO R.C. J.G. Equipment R 16

Drafting

Depth Feet	Field Number	22 Description
0.0-		
2-5	306-S 71	Cl. Clay S. TF / Coal Blossom Org.
5	307-S 12	Shale weathered Weath EC
	↑	Refusal
10		
15		
20		
25		
30		

Use reverse side of this sheet for additional notes.

FIELD BORING LOG 1103.0 ←

County, Route No., Section TUS-STA-21-40.55 O.D.

Station 161+00 Offset Ø Elev. Ø

Date 22-MAR-63 Water Elev. 5

Crew SABO R.C. J.W. Equipment R16

Drafting

21+22

Depth Feet	Field Number	Description
0.0-		
	29P-S 25	BR. GR. CLAY SILT (MOIST)
7.5	W	
		5-C
	29S-S 33	GR. CLAY SILT (SCALE-FINES
2-4		
10		(RAMP)
	↑	REFUSAL 11'
15		
20		
25		
30		

Use reverse side of this sheet for additional notes.

FIELD BORING LOG

1111-S ✓

County, Route No., Section IRE-STH-21-4.58 0.00

Station 16+700 Offset ℄ Elev. ℄

Date 22-APR-63 Water Elev. —

Crew Sgt. A.C., J.W., Equipment RT6

Drafting

Depth Feet	Field Number	"21" Description
00-	2953	BR. Gr. Clay, Silt (Moist)
4u	220	
5		4-5
	2963	Same as 2953 (Moist)
6cc	13	
10	2973	Gr. Shale, B
	↑	Refusal 13'
15		
20		
25		
30		

Use reverse side of this sheet for additional notes.

X-Sect

FIELD BORING LOG

1102.8L

County, Route No., Section 11-DS-STA-21-40.55 0.00

Station 170+00 Offset 150' LT Elev. -21.3

Date 23-APR-63 Water Elev.

Crew SABB R.C. J.W. Equipment R16

Drafting

Depth Feet	Field Number	21 Description
0.0-		
	335-S	BR. CLAY SILT / STONE -
6a	23	FRAGS. (MOIST)
5		
	336-S	GR. FIRE CLAY (DRY)
	7	8-9
10	↑	REFUSAL 9'
15		
20		
25		
30		

Use reverse side of this sheet for additional notes.

FIELD BORING LOG 1146.4

County, Route No., Section TUS-STA-21-40.55 0.00

Station 170+00 Offset 4 Elev.

Date 23-APR-63 Water Elev.

Crew SAGE R.C. S.W. Equipment R16

Drafting

Depth Feet	Field Number	24 Description
0.0-	333-S	BR. CLAY SILT STONE FRAG.
4a	16	
5		
4a	3345 10	BR. CLAY SILT STONE FRAG.
10		BR. 9.5 SHALE ROCK
15		
20		
25		
30		

Use reverse side of this sheet for additional notes.

X-Sect

FIELD BORING LOG

1157.1

County, Route No., Section TUS-STP-21-40.55 0.00

Station 170+00 Offset 100' Rt. Elev. 1305

Date 23-APR-63 Water Elev.

Crew SAGO R.C. J.W. Equipment RL6

Drafting

Depth Feet	Field Number	46 Description
0.0-	3255	Spo'l Bank Z, Y Sports
5	326-5	Same as 325-5 Br. Gr. MC W/ St. Frags Sports
10	327-5	Spo'l Bank Z, Y
15	328-5	Same as 327-5
20	329-5	Spo'l Bank Z, Y Coal frags.
25	330-5 13	Br Fine clay (DRY)
30		32

32 ↑ Use reverse side of this sheet for additional notes.

X-Sect

FIELD BORING LOG

1042.0

County, Route No., Section TEH-SR-21-40.55-0.00

Station 1737+0 Offset 200 LT. Elev.

Date 23-APR-63 Water Elev.

Crew SABO R.C.J.W. Equipment H.A.

Drafting		

Depth Feet	Field Number	24 Description
0.0-		
	341-S	BR. CLAY SILT/STONE FRAGS
4b	23	
5	↑	Refusal 4' Broken Rocks.
		(Handauger)
10		
15		
20		
25		
30		

Use reverse side of this sheet for additional notes.

X-Sect

FIELD BORING LOG

10+50, 0

County, Route No., Section TUS-STA-21-40.55 0.00

Station 173+00 Offset 130' Lt Elev. 9

Date 23-APR-63 Water Elev.

Crew SABS R.C. J.C.D. Equipment RIG

Drafting

Depth Feet	Field Number	24 Description
0.0-	338-S	BR. CLAY SILT/STONE-FRAGS (MOIST)
1a	11	
5		4-5
6a	339-S 18	SAME AS 338-S (MOIST)
10	340-S	BR CLAY SILT/STONE-FRAGS. (WET)
6a	19	
15		13-16
	↑	REFUSAL 16'
20		
25		
30		

Use reverse side of this sheet for additional notes.

FIELD BORING LOG

1105 J

County, Route No., Section TUS-5 TAF-21-40.55 0.00

Station 173+00 Offset E Elev. E

Date 23-APR-63 Water Elev. —

Crew Sabo R.C. J.W. Equipment R16

Drafting

Depth Feet	Field Number	24 3-Attempts Description
0.0-	338	Br. Sweathered Sandstone
	1-2	
	↑	Refusal Rock 2' S.S.
5		
10		
15		
20		
25		
30		

Use reverse side of this sheet for additional notes.

X-Sect

FIELD BORING LOG

1122.3

County, Route No., Section 74-SCR-21-40.25-0.00

Station 1740 Offset 100 RT Elev. 617.3

Date 23-APR-63 Water Elev.

Crew SABO R C J W Equipment B-6

Drafting

Depth Feet	Field Number	23 Description
00-	331-S	
2-4	13	BR-CLAY SILT/STONE FRAGS
5		
	332-S	BR CLAY SILT/STONE FRAGS
	11	Weath SS
10		
	2	ALT LO SAND ROCK
15		
20		
25		
30		

Use reverse side of this sheet for additional notes.

X-Sect FIELD BORING LOG

County, Route No., Section TUS-STA-21-40.55 0.00

Station 177+00 Offset 150 Lt. Elev. -27.7

Date 24-APR-63 Water Elev. ⊥

Crew SABO R.C. J.W. Equipment R16

Drafting

Depth Feet	Field Number	Description
0.0		
	363-S	Gr. Clay Silt (moist)
1-6	24	
		4-5
5		
	364-S	Gr. Clay Silt / Shale -
	11	TRACE
		Weath Sh
10		
	365-S	Light Gr Sandy Shale
		(Dev) Weath T.C.
	↑	Refusal 14'
15		
20		
25		
30		

Use reverse side of this sheet for additional notes.

X-Sect

FIELD BORING LOG

//33,2

County, Route No., Section TUS-STA-21-4055 0.00

Station 177+00 Offset ℄ Elev. ℄

Date 24-APR-63 Water Elev. ---

Crew SABO R.C. J.W. Equipment R160

Drafting

24+25

Depth Feet	Field Number	Description
0.0		
	3605	Br. clay 5, 2L, 1 stone.
6a	24	Moist
		4-5
5		
	3615	Same as 360-5
6a	20	
10		
	3625	Gr. weathered SS.
	↑	Refusal 14' SS.
15		
20		
25		
30		

Use reverse side of this sheet for additional notes.

X-Sect FIELD BORING LOG

County, Route No., Section TUS-STA-21-40.55 0.00

Station 177 +00 Offset 75' Rt. Elev. +21.5

Date 24-APR-62 Water Elev. 26'

Crew Sabo R.C. J. W. Equipment RIG

Drafting

Depth Feet	Field Number	46 Description
0.0	342-S	Spoil Bank Fill Gr. Cly & St. frags. H-S
5	343-S	Same AS 342-S Spoils
10	344-S	Spoil Bank Fill Gr. Shale frags.
15	345-S	Same AS 344-S
20	346-S	Spoil Bank Fill
25		
30	347-S	Gr. Clay Shale (Damp)
32'	21	S-32

Use reverse side of this sheet for additional notes.

X-Sect

FIELD BORING LOG

County, Route No., Section Tus-STA-21-40.55 0.00

Station 177+00 Offset 150' Rt. Elev. 13.1

Date 24-APR-63 Water Elev. 26

Crew Sabo R.C., J.W. Equipment RIG

Drafting

Depth Feet	Field Number	J7 Description
0.0	348-S	Spo. / BANK 7,11 Gray St. frags.
5	349-S	Gr. M and Shale frags. Spo. BANK 7,11
10	350-S	Spoils Spo. // BANK 7,11 Gray Shale frags
15	351-S	Spo. / BANK 7,11 Gr. Shale frags.
20	352-S	Spo. / BANK 7,11 Gr. Shale frags
25	353-S	Gr Clay / Shale - FRAGS.
30	31	(w 7) J1 32

J2 ↑ Use reverse side of this sheet for additional notes.

X-Sect

FIELD BORING LOG 075, 6

County, Route No., Section IVS-STA-21-40.55 0.00

Station 180+00 Offset 200' Lt. Elev. -12.7

Date 21-APR-63 Water Elev. —

Crew SABO R.C.J.W. Equipment RIG

Drafting

Depth Feet	Field Number	25+26 Description
0.0-	372-5	BR. GR. CLAY SILT (Moist)
4a 5	21	4-5
	373-5	BR. CLAY SILT /STONE - FRAGS. (DAMP)
4a 10	14	9-10
	374-5	LIGHT BR. SILT CLAY /STONE - FRAGS. (MOIST)
6a 15	20	
	375-5	GR. WEATHERED SHALE (Moist) 1.8
20	13	
	↑	REFUSAL 21'
25		
30		

Use reverse side of this sheet for additional notes.

X-Sect

FIELD BORING LOG

1005.8

County, Route No., Section IUS-STA-21-40.55 0.00

Station 180+00 Offset 130' Lt. Elev. -19.0

Date 24-APR-63 Water Elev. 11'

Crew SABO R.C. J.W. Equipment R16

Drafting

Depth Feet	Field Number	Description
0.0-	369-S	GR. BR. CLAY (MOIST)
5	21	5-6
10	370-S 13	BR. GR. CLAY SILT/STONE FRAGS, MOIST
15	371-S 17	BR. BROKEN S.S. Weath SS
20	↑	Refusal 16'
25		
30		

Use reverse side of this sheet for additional notes.

FIELD BORING LOG

110.9 -

County, Route No., Section TUS-STA-21-40.55 0.00

Station 180 + 00 Offset ℄ Elev. ℄

Date 24-APR-.GJ Water Elev. ——

Crew SAR, R.C J. W Equipment R 15

Drafting

Depth Feet	Field Number	25 Description
0.0-		
	366-S	BR. GR. Clay S. lt. Stone -
16	11	Frags. (Moist)
5		
		5-6
	367-S	BR. GR. Shale (weathered)
2-4	23	
10		
	368-S	GR. Clay Shale (Dry)
15	↑	Fire clay
		Refusal 15'
20		
25		
30		

Use reverse side of this sheet for additional notes.

FIELD BORING LOG

X-Sect

County, Route No., Section TUS-STA-21-40.55 0.00

Station 180+00 Offset 100' Rt. Elev. +477

Date 24-APR-53 Water Elev.

Crew SAGO R.C. J.W. Equipment RIG

Drafting

Depth Feet	Field Number	Description
0.0-	354-S	SOIL BANK FILL
5	355-S	SOIL BANK FILL
		Br. Wea. S.S. frags.
10	356-S	SOIL BANK FILL
		SPOILS
15	357-S	[illegible]
20		W/SS. frags.
	358-S	CM BANK FILL
25		
9	359-S	[illegible]
30		
32'		

Use reverse side of this sheet for additional notes.

FIELD BORING LOG

446.6
1108.0

County, Route No., Section TUS - STH-21-40,55 0.00

Station 183 +25 Offset 110 Rt. Elev. +162

Date 24-APR-63 Water Elev. 5'

Crew SAMS R.C.I. Equipment R16

Drafting

Depth Feet	Field Number	26 Description
0.0-		
	376-5	Br. Clay S.I.L. (Moist)
10	23	Stone-Frags.
		4-5
		Brown sandstone frags. w/ clayey silt
VOM	377-5	Br. Clay S.I.L./Stone-Frags. (wet)
		8-9
10		
Ha	378-5	Gr. Clay Shale (Moist)
	23	12-13
	↑	Refusal 13'
15		
20		
25		
30		

Use reverse side of this sheet for additional notes.

X-Sect

FIELD BORING LOG

County, Route No., Section IVS - STA - 21 - 40.55 0.00

Station 183+50 Offset 250' Lt Elev. +4.5

Date 24-APR-63 Water Elev. No - Free water

Crew Sam, R.C. J.W. Equipment R16

Drafting

Depth Feet	Field Number	26 Description
0.0-		
4b	384-S 25'	BR. Clay S, lt (wet) (Soft)
5		
4b	385.5 24'	Same as 384-S (wet) (Soft)
10		
4a	3[illegible]5 ↑	Dark Gr. Clay (pamp) Refusal //
15		
20		
25		
30		

Use reverse side of this sheet for additional notes.

X-Sect # FIELD BORING LOG 106+11 1073.5

County, Route No., Section TUS-STA-21-40,55 0.00

Station 183+50 Offset 175' Lt. Elev. -5.3

Date 24-APR-63 Water Elev. 6'

Crew SaBo R.C. J.W. Equipment R16

Drafting

Depth Feet	Field Number	26 Description
00-		
	381-S	Br. Clay Silt (Damp)
4a 5	24	
	382-S	Br. Gr. Clay Silt (wet)
4a 10	310	Stone Frags. (wet)
		16-11
	383-S	Gr. Clay Shale (mo.St.)
4a 15	18	14-15
	↑	Refusal 15'
20		
25		
30		

Use reverse side of this sheet for additional notes.

X-Sect FIELD BORING LOG

~~1072.4~~ 1076.3 ~ 0.00

County, Route No., Section Tus - STA - 21 - 40.55

Station 183 + 50 Offset 100' Lt. Elev. 22.7

Date 24-APR-63 Water Elev.

Crew Sgbo R.C. J.W. Equipment RIG

Drafting

Depth Feet	Field Number	26 Description
0.0-	380-S	BR. CLAY SILT / STONE - FRAGS.
4	23	(DAMP)
5	↑	Refusal / 5.5
10		
15		
20		
25		
30		

Use reverse side of this sheet for additional notes.

FIELD BORING LOG

County, Route No., Section Jus -STA-31 - 40.55 8.00

Station 183 +50 Offset Q Elev. —

Date 24-APR-63 Water Elev. —

Crew Sago R.C. J.W. Equipment R 16

Drafting

Depth Feet	Field Number	Mode 3-Amendments Description
0.0-		Q6
2-4	37&S 22	Br. clay silt / stone frags. (Dump)
	↑	Refusal Rock 2' S.S.
5		
10		
15		
20		
25		
30		

Use reverse side of this sheet for additional notes.

X-Sect FIELD BORING LOG 1101,0

County, Route No., Section Tus-STP-21-40.55 0.00

Station 186+00 Offset 150' Lt. Elev. -14.3

Date 24-APR-63 Water Elev.

Crew Sano R.C. J. W. Equipment R.6

Drafting

Depth Feet	Field Number	27 Description
0.0-		
	387-S	Br. Gr. clay silt (moist)
66	25	
5		5-6
	388-S	Br. clay silt / stone - frags.
44	14	(moist)
10		10-11
	389-S	Gr. clay silt / stone - frags.
44	18	(moist)
15		15-16
	390-S	Gr. silt / stone - frags.
44	16	(moist)
20		20-21
	391-S	Br. clay sample (dry)
	12	Weath I C
25		25-26
	↑	Refusal - 16'
30		

Use reverse side of this sheet for additional notes.

FIELD BORING LOG

1110.84

County, Route No., Section TUS-STA-21-40,55 0.00

Station 186+00 Offset ℄ Elev. ℄

Date 24-APR-63 Water Elev. 16

Crew SABA R.C. J.W. Equipment R 15

Drafting

27

Depth Feet	Field Number	Description
0.0-		
	392-5	BR. GR. SILT CLAY (DAMP)
24	22	
5		4-5
	393-5	BR. CLAY SILT /STONE - FRAGS.
4a	16	DAMP)
10		9-10
	394-5	BR. CLAY SILT /STONE - FRAGS.
6a	14	(MOIST)
15		
		15-16
		COAL BLOSSOM
	395-5	16-18
	396-5	DARK GR. SILTY CLAY /STONE
8a	33	FRAGS. (WET)
	↑	REFUSAL / 21'
25		
30		

Use reverse side of this sheet for additional notes.

FIELD BORING LOG

11.21.B

County, Route No., Section 12-SIA-21-R0.5/T 0.0

Station 1927+00 Offset 68 Elev. ℄

Date 4-27-63 Water Elev. —

Crew TS RC Equipment ACK

S.W 76°

Drafting

Depth Feet	Field Number	27+28 Description
0(0)		Soil Topsoil Brn Clay Silt (Moist)
6a	3975 29	
5	3976	Br Sandy Clay (Moist)
6a	21	
10	3975	Br Sandy Clay (Loose) (Moist)
6a	16	
	3975	Br to Gry Shaley Clay
15 6a	15	(Dense)
	4015	Br to Gry Shale
20	13	(Dense)
	4025	Gry Shale (Broken)
	8	Weath Shale (Dense)
25		Rock (Possibly Sandstone)
		Complete
30		

Use reverse side of this sheet for additional notes.

FIELD BORING LOG

1140.4

County, Route No., Section JUS-579-21-40.55 0.00

Station 195+00 Offset ℄ Elev. ℄

Date 24-APR-63 Water Elev.

Crew SABO R.C. J.W. Equipment RIG

Drafting

Depth Feet	Field Number	28 Description
0.0-		
7-6	403-5 22	Br. Gr. Clay (Moist)
5		4.5
7-5	409-5 22	Br. Clay 5, 7% /Stone — Frags. (Moist) @ 9
10		
	4055 14	Gr. Weathered Shale (Dry)
15	↑	Refusal 15'
20		
25		
30		

Use reverse side of this sheet for additional notes.

FIELD BORING LOG

County, Route No., Section Jus-SIA 21-40

Station 197+50 Offset — Elev. ?

Date 24-APR 63 Water Elev. -12'

Crew SAGO R.C. W.W Equipment R.B

Drafting

Depth Feet	Field Number	Description
0.0-	4065	BR+GR CLAY SILT
6.0	24	
5	4075	GR-SHALE "DRY"
		weath sh
	4085	GR SHALE "MOIST"
10	27	Clay bedrock
	4095	GR SHALE "WET"
	1	
15		REF. ROCK
20		
25		
30		

Use reverse side of this sheet for additional notes.

FIELD BORING LOG

County, Route No., Section Tus-STA-21-40.55 11/8.3/2.5

Station 199 + 50 Offset ℄ Elev. ℄

Date 25-APR-63 Water Elev. —

Crew SAGO Rue J. W. Equipment R 16

Drafting

Depth Feet	Field Number	47 Description
0.0-	410-S	Spoil Bank Fill Br. & Gr. MC W/ Sh. frags.
5	411-S	Same as 410-S Br. & Gr. Shale frags, Spots
10	412-S	Spoil Bank Fill Br. & Gr. Shale frags. W/ MC
15	413-S	Sp Br & Gr Silty Clay w/ Shale frags.
20	414-S	Cap / Blossom
		24-25
	415	Gr. Fire Clay (Dry)
11		29-30
30		RC Bed / 30'

Use reverse side of this sheet for additional notes.

FIELD BORING LOG

~~1144.3~~ 1139.2

County, Route No., Section TUS-STA-21-4.08 K 0.00

Station 208+50 Offset ℄ Elev. ℄

Date 25-APR-63 Water Elev.

Crew SABO, R.C. J.W. Equipment R-16

Drafting		

Depth Feet	Field Number	28 Description
0.0-	4165	Spoil Bank Fill
		Grayish-brown Cl & Shale frags.
5		
6b	417-5	Spoil Bank Fill
		Spoils
10		
	4185	Spoil Bank Fill
		Brown Shale fragments
15		
	4195	Spoil Bank Fill
20		
6a	4202-5	BR. GR. SILT (DAMP)
		BR. GR. CLAY SILT (Moist)
6b	4211-5	
25	14	25-26
	4222-5	BR. CLAY SILT / Shale -
	13	FRAGS. (DRY)
30		30-32 TILL C

32

Use reverse side of this sheet for additional notes.

X-Sect

FIELD BORING LOG 1111.0

County, Route No., Section TUS-5TR-21-40.55 0.00

Station 210 +50 Offset 200' Lt. Elev. +8.9

Date 25-APR-63 Water Elev. -30

Crew Saad R. C. J. W. Equipment R16

Drafting

Depth Feet	Field Number	Description
0.0-	427-S	Spoil Bank Fill (Very Soft)
5	4-5	
	428-S	Br. & Gr. MC Spoil Bank Fill (Soft) Spoils
10	429-S	Spoil Bank Fill (Soft)
15	430-S	BR. Gr. Sandy Clay S.T.L (Damp)
60	23	
20		19-20
70	431-S	GR. Clay (Moist) 21-22
40	432-S	Br. Gr. Clay S.T.L (Moist)
25	10	
	433-S	Br. Fine Clay (Moist)
30	22	29-30 Refusal 30'

↑ Use reverse side of this sheet for additional notes.

X-Sect FIELD BORING LOG 1110.0 ✓

County, Route No., Section TUS-STA-21 — 40,55 0.00

Station 210 + 50 Offset 100 Lt. Elev. 1110.5

Date 25-APR-63 Water Elev. -1.5

Crew Sago R.S. J.C.W. Equipment RC6

Drafting

Depth Feet	Field Number	29 Description
0.0-		
W	423-S	GR. Silt Clay / Shale - Trace
7-6	28	
5		
	424-S	Br. Gr. Sandy Silt / Stone Trace Q.S.
4a	27	
10		
6a	425-S	Same as 424-S (DAMP)
	426-S	Gr. Weath LC
15	↑	Refusal 14'
20		
25		
30		

Use reverse side of this sheet for additional notes.

FIELD BORING LOG

/120.5

County, Route No., Section Jus-STA-21-40.55 0.00

Station R11+00 Offset ℄ Elev. ℄

Date 25-APR-63 Water Elev. 24'

Crew SAB, R.S., J.W. Equipment Rig

Drafting

Depth Feet	Field Number	29 Description
0.0-	434-S	FILL
5		Gr. Clay and Shale frags. FILL
		3-5
10	435-S 21	BR. GR. SANDY CLAY SILT (DAMP) 9-10
15	436-S 21	BR. CLAY SILT / Shale frags. 14-15
	437-S	COAL Fragments 17-18
20	438-S 17	GR. Weathered Shale (Moist) 23-24
25	↑	Refusal 24'
30		

Use reverse side of this sheet for additional notes.

X-Sect FIELD BORING LOG 11-21-16-

County, Route No., Section Tus-Sta-21-90.55 0.06

Station 211+00 Offset 75' Rt. Elev. +5.0

Date 25-APR-63 Water Elev.

Crew SABO R.S. J.W. Equipment RIG

Drafting

Depth Feet	Field Number	29+30 Description
0.0-	439-S	BR. GR. Clay Silt (Moist)
4.0	23	
5		4-5
7.6	440-S 18	Same as 439-S (Moist)
10		9-10
6.0	441-S 16	BR. Clay Silt /Stone-Frags (Moist) 13-14
15	442-S 15	GR. WEATHERED Shale (DRY)
20	443-S 17	Same as 442-S (DRY)
	↑	Refusal 22'
25		
30		

Use reverse side of this sheet for additional notes.

X-Sect FIELD BORING LOG 1145.0

County, Route No., Section TUS-STA-21-90.55 0.00

Station 211+00 Offset 135' Rt. Elev. +7.6

Date 25-APR-63 Water Elev.

Crew SABO R.C. J.W. Equipment RIG

Drafting

Depth Feet	Field Number	30 Description
0.0-		
	444-5	Br. GR. Clay silt (Moist)
4.0	19	
5		4-5
	445-5	Br. Sandy Clay silt / Stone-
4.6	16	FRAGS. (Dense)
10		9-10
	↑	Refusal 10'
15		
20		
25		
30		

Use reverse side of this sheet for additional notes.

FIELD BORING LOG

County, Route No., Section TUS-STA-21-10.55 0.00

Station 214+75 Offset ℄ Elev. ℄

Date 25-APR-63 Water Elev.

Crew S.B.O. R.C. J.W. Equipment RIG

Drafting

Depth Feet	Field Number	48 Description
0.0-	446-S	Sltly Gr. Gd. Gvl. SS. Rnd Fgs-
5	447-S	Sltly Gr. Gd. Gvl. SS. Rnd Fgs.
10	448-S	Sltly Gr. Gd. Gvl. SS. Rnd Fgs. Spots
15	449-S	Gray GM & SS Fragments Spoil BANK Fill
20	450-S	Gr. St. Fragments Spoil BANK Fill
25		REF 25' LARGE Boulder
30		

Use reverse side of this sheet for additional notes.

X-Sect

FIELD BORING LOG

1169.0 -

County, Route No., Section Tus-SR 91-21-40.55 6.09

Station 223 + 00 Offset 75' Lt. Elev. -0.9

Date 1-May-63 Water Elev. ———

Crew S.B.B. R.C. T.S. Equipment R16

Drafting

Depth Feet	Field Number	35 Description
0.0-	521-S 12	BR. Broken Sand Stone Weath
5	522-S 11	BR. Broken Weath S.S.
10	↑	Refusal
15		
20		
25		
30		

Use reverse side of this sheet for additional notes.

Not Drilled Geol. Water 40.0'

X-Sect

FIELD BORING LOG

County, Route No., Section TUS-JTA-21-40,55 0.06

Station 223+00 Offset 35' Rt. Elev. -26.0

Date 2-MAY-63 Water Elev. —

Crew SGBS K.C.C.T.S. Equipment H.A.

Drafting

35

Depth Feet	Field Number	Description
0.0-		
GM	S23-S 14	BR. GR. SILT CLAY / STONE FRAGS. (MOIST)
5		Refusal Broken Rock 5'
		(H A)
10		
15		plate drilled edge of water check ok
20		AF
25		
30		

Use reverse side of this sheet for additional notes.

Spoil - Bank

FIELD BORING LOG 11343

County, Route No., Section Tus-STA-21-40.55 0.00

Station 230 + 50 Offset ℄ Elev. ℄

Date 30-APR-63 Water Elev. —

Crew Sabo R.C., T.S. Equipment RIG

Drafting

Depth Feet	Field Number	48 Description
0.0	4985	Spoil Bank 7,11 Br. Gr. MC & Shale frags.
		4-5
5	4995	Spoil Bank 7,11 Gr. Shale frags Spoils
10	5001-5	Spoil Bank 7,11 Br & Gr. MC w/Shale frags
15	5011-5	Spoil Bank 7,11 Br & Gr. MC w/shale and Coal frags.
20	5021-5 9	Dp Br. Fire Clay (DRY) W. Tod. Clay 23-24
25	5031-5 10	Br. Clay Shale (DRY) W. Sh 26-27
	T	Refusal 27'
30		

Use reverse side of this sheet for additional notes.

FIELD BORING LOG #2+40 4+59.4

County, Route No., Section TUS-STA-21-40.55 0.00

Station 231 + 50 Offset ℄ Elev. ℄

Date 30-APR-63 Water Elev.

Crew SAGE R.C. T.S. Equipment RIG

Drafting

33+34

Depth Feet	Field Number	Description
0.0-		
	504-S	Gr. Br. Clay Silt Stone -
6a	23	Frags. (Damp)
		3-4
5	24	Br. Gr. Clay Silt Stone -
6a	505-S	Frags. (Damp) 6-7
	13	Gr. Fire Clay (Moist)
6a	506-S	7-8
	507-S	
10		Gr. Clay Silt (Moist)
6b	14	
		13-14
15	7	Refusal 14'
20		
25		
30		

Use reverse side of this sheet for additional notes.

X-Sect

FIELD BORING LOG

11017
1094.1

County, Route No., Section TUS-579-21-40.55 6.00

Station 231+50 Offset 100' Rt Elev.

Date 30-APR-63 Water Elev.

Crew SABO R.C. T.S. Equipment R16

Drafting

Depth Feet	Field Number	34 Description
0.0-		
	513-S 12	Br. Clay Silt/Sand Trace Gravel (moist) W. Sh.
5		
	514-S 12	Gr. Clay Silt/Shale W. Sh.
10		
	↑	Refusal Shale
15		
20		
25		
30		

Use reverse side of this sheet for additional notes.

X-Sect

FIELD BORING LOG

~~1089.7~~ 1088.3

County, Route No., Section TUS-STA-21-40,55 ~~1088.2~~

Station 231+50 Offset 180 Rt. Elev. -12.3

Date 20-APR-63 Water Elev.

Crew Saba R.C. T.S. Equipment RC 6

Drafting

Depth Feet	Field Number	34 Description
0.0-		
	515-5	Br. Clay/ S tone - Trace.
-6.4	18	
5		
		5-6
	516-5	Fine Clay (Weak)
		W. SS.
	↑	Refusal
10		
15		
20		
25		
30		

Use reverse side of t pt for additional notes.

X-Sect

FIELD BORING LOG

1092.0

County, Route No., Section 745-5 TA-21-40.55 0.00

Station 233+00 Offset 100' Rt. Elev. +0.5

Date 30 APR -63 Water Elev. —

Crew SAGO R.C. T.S. Equipment RL6

Drafting

Depth Feet	Field Number	34 Description
0.0-		
	511-S	Tr. Org.
46	380	Gr. Clay S. (7) / Traces of Organic (Dama)
		3-4
5	512-S	Re. Gr. Clay / Stone - 7A4G5,
6a	19	(Moist)
		9-9.5
10	↑	Refusal 9.5
15		
20		
25		
30		

Use reverse side of this sheet for additional notes.

X-Sect

FIELD BORING LOG

Lt. Bd. W
104.3+
0.00

County, Route No., Section Tus-3 Tus 21-40.58

Station 233+80 Offset 200' Lt. Elev. +3.1

Date 1-May-63 Water Elev. +0.5

Crew SA BO R.C. T.S. Equipment 516

Drafting

Depth Feet	Field Number	34+35 Description
0.0-		
	5175	GR. S. / T / TRACES of ORGANIC
6a	35	(Wet)
5		5-6
6a	518-5 15	BR. Clay S. / T / Shale - FRAGS (Moist) 8-8.5
10 6a	519-5 15	DARK GR. Clay Shale (Moist) 10-11
7	520-5	GR. Shale (DRY) 11-12
		Refusal 12'
15		-W. Ind. Clay
20		
25		
30		

Use reverse side [illegible] sheet for additional notes.

X-Sect

FIELD BORING LOG

1094 B
1097 B

County, Route No., Section TUS-STA-21-40.95

Station 235 +50 Offset 60' Lt. Elev. ±

Date 30-APR-63 Water Elev. +0.5

Crew SaBo R.S. T.S. Equipment R16

Drafting

Depth Feet	Field Number	33 Description
0.0-7.5	66 4965	BR. S./L / TRACES of ORGANIC (wet) Org.
	4965	
6.5	38	GR. S./L CLAY / TRACES of - ORGANIC (VERY DAMP) Tr. Org
		7-8
	4985	GR. FILL CLAY (DRY)
10		9-10
	↑	Refusal 10'
15		
20		
25		
30		

Use reverse side of this sheet for additional notes.

FIELD BORING LOG

1094.8

County, Route No., Section Tus-STA-21-14.56-0.00

Station 233+50 Offset 9 Elev. 9

Date 30-MAR-63 Water Elev.

Crew SHBO-R.C-T.S Equipment B.G

Drafting

Depth Feet	Field Number	34 Description
0.0-		
	308.5	BR. SILTS STIFF
4a	32•	Sli. Org.
5		
	309.5	BR. SILTS STIFF
4a	32•	Tr Org.
10	59	GR ANDESITE
	1	
	1	BLK. 10.5
15		
20		
25		
30		

Use reverse side of this sheet for additional notes.

FIELD BORING LOG 094.9-

County, Route No., Section TUS-STA-21-4055 0.00

Station R34 +00 Offset ℄ Elev. ℄

Date 30-APR-63 Water Elev. +0.6

Crew SABO R.C. T.S. Equipment R.G

Drafting

Depth Feet	Field Number	33 Description
0.0-7-5	7/4 492-S	GR. Organic Silt (wet) 1-1.5
5 60	4935 30	BR. Sm. Clay Silt / Stone - Frags. (Dense)
10 40	494-S 280	BR. Clay Silt / Stone - Frags 9-10
	↑	Refusal 10'
15		
20		
25		
30		

Use reverse side of this sheet for additional notes.

FIELD BORING LOG

1144. D

County, Route No., Section TUS-STA-21-40.56 0.00

Station 239+00 Offset ℄ Elev. ℄

Date 30-APR-63 Water Elev.

Crew SaBo R.C. T.S. Equipment R.I.G

Drafting

Depth Feet	Field Number	32+33 Description
0.0-	488-S	Br. Gr. Silt Clay (Moist)
6α	21	4-5
5		
7-6	489-S 20	Br. Clay Silt / Shale - Frags 7-8
10	490-S 15	Gr. weathered Shale 12-13
15	491-S 10	Gr. Gr. Shale (Dry)
20	↑	Refusal 17'
25		
30		

Use reverse side of this sheet for additional notes.

X-Sect

FIELD BORING LOG

1184.0
1183.7

℄ 45+09 100' Lt

County, Route No., Section Ius-STH-21-40,55 0.09

Station ℄ 45+00 Offset 100' Lt Elev. +7.3

Date 26-APR-63 Water Elev. —

Crew Sago R.C. J.W. Equipment R/C

Drafting

Depth Feet	Field Number	31 Description
0.0-	4635	BR. GR. CLAY SILT (MOIST)
6U	26	3-4
5	4645	BR. CLAY SILT (MOIST)
6U	17	8-9
10	4655	LIGHT GR. WEATHERED SHALE
	13	13-14
15	4665	DARK GR. SHALE (DRY) 15-16 CC/
	↑	Refusal 16'
20		
25		
30		

Use reverse side of this sheet for additional notes.

FIELD BORING LOG 1170.04

County, Route No., Section ILL-STA-21-40,55 0.00

Station 245 +00 Offset ℄ Elev. ℄

Date 25-APR-63 Water Elev.

Crew SAMO R.C. J.W. Equipment RL6

Drafting

Depth Feet	Field Number	30 Description
0.0-		
	4585	BR. CLAY SILT (moist)
7-5	19	2-3
	457-5	GR. SILT WASHED COAL BLOSSOM
5		
	4605	GR WEATHERED SANDY SHALE
	11	(DRY) WEATH IC
		8-9
10	↑	REFUSAL 9'
15		
20		
25		
30		

Use reverse side of this sheet for additional notes.

X-Sect FIELD BORING LOG

114.0

County, Route No., Section IMS-5 TA-21-40.55 0.00

Station 245+00 Offset 90' Rt. Elev. -19.6

Date 25-APR-63 Water Elev. —

Crew Sarko R.C. J.W. Equipment R-6

Drafting

Depth Feet	Field Number	31 Description
0.0-	461-S	BR. GR. S/I/T CLAY / SHALE - FRAGS. (MOIST)
7.6	17	
5	462-S	GR. WEATHERED SHALE (MOIST)
6.0	14	
10	↑	REFUSAL 9.5
15		
20		
25		
30		

Use reverse side of this sheet for additional notes.

FIELD BORING LOG 11665

County, Route No., Section TUS-STA-21-40.55 0.00

Station 248+00 Offset ℄ Elev. ℄

Date 25-APR-63 Water Elev. 5'

Crew SABO R.C. J.W. Equipment RIG

Drafting

Depth Feet	Field Number	30 Description
0.0		
	455-S	Br. Gr. Clay S/L (DAMP)
60	31	
5		4-5
	456-S	COAL (wet)
		8-5
10	457-S 12	Gr. weathered Shale (MOIST)
		10-11 Underclay
		Refusal 11'5
15		
20		
25		
30		

Use reverse side of this sheet for additional notes.

FIELD BORING LOG

11 16.5

County, Route No., Section JUS-STA-21-40.56 0.00

Station 252+00 Offset ℄ Elev. ℄

Date 25-APR-63 Water Elev. ~~8~~

Crew SAG, R.C. J.W. Equipment R-6

Drafting

Depth Feet	Field Number	A 30 Description
0.0-		
	451-S	BR. Clay silt /stone - Trace.
4a	17	(moist)
5		4-5
7-6	452-S 24	BR. silt clay (Moist)
		8-9
10	453-S	Br. Clay silt /stone - Trace.
4b	20	(Damp)
15		14-15
	454-S	Dark-brown carbonaceous shale
VOA		Cor. Shale (wet) and coal frags.
		19-19.5
20		Refusal 19.5
25		
30		

Use reverse side of this sheet for additional notes.

FIELD BORING LOG

11716.07

County, Route No., Section TUS STA. 21-(40.55)(0.66)

Station 259+00 Offset ⊕ Elev. ⊕

Date 6 DEC 82 Water Elev.

Crew SHOULDERS Equipment D-163

Drafting

Depth Feet	Field Number	2+3 Description
0.0-		
6a	23.5 16	GR CLAY SILT/SHALE FRAG
6a	24.5 21	GR FOR CLAY SILT/SHALE FRAG
6a	25.5 18	GR- SHALEY CLAY SILT
6a	13 26.5	GR- CLAY SHALE
6a 20	20 27.5	GR- CLAY SILT/SHALE FRAGS
6a 25	17 28	GR-CLAY SILT/SHALE FRAGS
6a 30	29.5 17	GR CLAY SILT/STONE FRAGS

Use reverse side of this sheet for additional notes.

X Sect FIELD BORING LOG

County, Route No., Section Tus-STH-21-(40.55)(0.80)

Station 262+0 Offset 100' Rt. Elev.

Date 6-DEC-62 Water Elev. -30'

Crew SAB O. R.C.R.S Equipment B.G 30

Drafting

Depth Feet	Field Number	Description
0.0	1-S	
4b	18	BR. CLAY SILT
6a	2-S 23	BR. CLAY SILT
6a	3-S 22	BR & GR CLAY SILT
6a	4-S 23	GR. SILT CLAY
6b	5-S 28	GR. CLAY SILT
6b	6-S 24	BR & GR CLAY SILT & LITTLE STONE & GRAVEL
4a	7-S 14	BR CLAY SILT & SANDSTONE FRAGS

Use reverse side of this sheet for additional notes.

FIELD BORING LOG

County, Route No., Section 745-STH-21-(41.55)(5.08)

Station 262+0 Offset 9 Elev. [illegible]

Date 5 Oct 62 Water Elev. -27.0

Crew STAff-RC K.S. Equipment RIG 3

Drafting		

Depth Feet	Field Number	172 Description
0.0-		
	8-S	BR CLAY SILT / STONE FRAGS
4a	13	
5		
	9-S	BR-CLAY SILT STONE A
6a	18	
10		
	10-S	BR-SANDY CLAY SILT / SHALE FRAG
6a	17	
15	11-S	GR SILT CLAY
6a	26	
6a	12-S	GR CLAY SILT
20	29	
6b	17-S	BR & GR SILT CLAY
	16	
25	14-S	BR. CLAY SILT / STONE / LIME G.S
Ha	10	
2-4	20	BROKEN ROCK CWF
30		E ROCK

Use reverse side of this sheet for additional notes.

X-Sect

FIELD BORING LOG

County, Route No., Section Tus- STH 21- CHO. 55' 16.0 Sta

Station 262+0 Offset 100' Rt. Elev.

Date 5-DEC-62 Water Elev.

Crew SHOO-RC-RS Equipment R163

Drafting

Depth Feet	Field Number	Description
0.0-		
6a	16-S 14	BR. CLAY SILT/STONY FRAGS
5		
6a	17-S 14	BR. CLAY SILT/STONY FRAGS
10		
7-6	18-S 25	BR & GR. SILT CLAY
46	296	GR. CLAY SILT/TRACES OF GRS
15		
6a	299	GR CL[illegible] FRAGS
4a	21-S	BR & GR. CLAY SILT/STONY FRAGS (MOIST)
20		
VM	229	BROKEN SHALE Weathered sandstone fragments
	17	
25		RFT D.D. ROCK
30		

Use reverse side of this sheet for additional notes.

T.S. No. IE-77-(Hoa-3Hoa)-1

IE-77

Re: South [redacted] 77

FIELD BORING LOG 250.1

County, Route No., Section Tus - STA - 77 - 40.55 0.00

Station 15+50 Offset E Elev. 6

Date 7-June-63 Water Elev. ———

Crew SABo G.H. H-a. Equipment R. 6

Drafting

Depth Feet	Field Number	5X Description
0.0-		
	64-5	Br. Sand & Gravel (Damp)
3a	13	
5		5-5
4a	65 12	Br. Fine Sand (Damp)
		8-9
10	66-5	Sand & Gravel (Damp)
1a		11-13
	↑	~~Refusal~~ couldn't pull
		Hole closed at 4'
15		
		VOID 1/9/63
20		Core in same area
25		
30		

Use reverse side of this sheet for additional notes.

FIELD BORING LOG 9463

County, Route No., Section TUS-STA-77-40.55 0.00

Station 17+25 Offset ℄ Elev. ℄

Date 7-June-63 Water Elev. Seepage 9'

Crew Sgt B.H.H.Q. Equipment R15

Drafting

Depth Feet	Field Number	5X Description
0.0-	55-5 8	Br. Clay Silt / Stone - Frags. (Damp) W. SS.
5	56-5	Same as 55-5 (very damp) W. SS.
10	57-5 20	Gr. Clay Shale (Moist) Clay Bedrock
		Refusal / W.S.
15		
20		
		*-Test Hole
25		
30		

Use reverse side of this sheet for additional notes.

FIELD BORING LOG 9878

County, Route No., Section TUS-STA-77-40.55 0.00

Station 21+00 Offset ℄ Elev. ℄

Date 7-JUNE-69 Water Elev. Seepage 16'

Crew SABO B.N. N.Q. Equipment R.I.G.

Drafting

Depth Feet	Field Number	5X Description
0.0-		
	58-S	Br. Clay Silt / Stone-
6U	17	Frg & S. (MOIST)
5		5-6
	59-S	Br. Clay Silt / Shale-Frags
	14	(MOIST)
10		W-35%.
	60-S	Bk Brn Clay Silt / Stone-Frgs
	19	(MOIST)
15		15-16
	61-S	Br. Clay Silt (wet)
	19	Clay Bedrock
	62-S	Coal
20		
	63-S	Gy. Shale (DRY) 20-21
	↑	Refusal 21'
		Fire Clay
25		
30		

Use reverse side of this sheet for additional notes.

S.B.L.

FIELD BORING LOG 974.0 ±

County, Route No., Section TUS-STA-77-40,55 0.00

Station 24+00 Offset ℄ Elev. ℄

Date 7-June-63 Water Elev. —

Crew Saco G.M. N.O. Equipment R16

Drafting

Depth Feet	Field Number	5X Description
00-		
	53.5	Gr. Clay / Coal Blossoms.
76	21	
		3-4
5		
	54.5	W. Ss
	13	Gr. Br. Sandy Clay Silt (Moist)
		9-10
10		
	7	Hole Complete
15		
20		
25		
30		

Use reverse side of this sheet for additional notes.

S. B. Lane

FIELD BORING LOG 978.0

County, Route No., Section TUS-STA-77-40.55 0.00

Station 27+06 Offset 2 Elev. 4

Date 7-June-63 Water Elev. —

Crew SAMO G.H. H.O. Equipment R-6

Drafting

Depth Feet	Field Number	4 X Description
0.0-		Sandy
	51-S	BR. CLAY SILT/STONE-FRAGS (MOIST)
	15	W. SS. 3-4
5	52-S	W. SH. BR. CLAY SILT/STONE-FRAGS. (MOIST)
	11	9-10
10	↑	Hole Complete
15		
20		
25		
30		

Use reverse side of this sheet for additional notes.

S. B. Lane

FIELD BORING LOG 9646

County, Route No., Section I US-STA-77-40.55 0-6 6

Station 30 +00 Offset ℄ Elev. ℄

Date 7-June-68 Water Elev. ———

Crew SA30 G.H. H.O. Equipment R.C.6

Drafting

Depth Feet	Field Number	4/X Description
0.0-		
	48.5	W. Ss
	9	Br. C.R. Clay Silt / Stone Frags. (Moist)
		3-4
5	49-5	Br. Broken Weathered Shale (Moist)
	12	W. Sh.
		9-10
10	50.5	Same as 49-5 (Moist)
	9	W. Sh.
		Refusal 12.5
15		
20		
25		
30		

Use reverse side of this sheet for additional notes.

S. B. LANE

FIELD BORING LOG 954.2

County, Route No., Section TUS-STA-77-40.55 0.00

Station 33+00 Offset ℄ Elev. ℄

Date 7-June-63 Water Elev. —

Crew SABO G.H. H.O. Equipment R.6

Drafting

Depth Feet	Field Number	✓ X Description
0.0-		
	46-5	Br. Clay Silt / Stone-Frags. (Damp)
4	14	
5		
		S. Silt Stone
	7-5	Brown Sandstone (Moist)
		Refusal 7'
10		
15		
20		
25		
30		

Use reverse side of this sheet for additional notes.

FIELD BORING LOG 945.4

County, Route No., Section TUS-STA-77-40.55 0.00

Station 37+00 Offset ℄ Elev. E

Date 7-JUNE-73 Water Elev. —

Crew SABO G.H. H.O. Equipment R.G

Drafting

Depth Feet	Field Number	℄ X Description
0.0-		
	42.5	BR. CLAY S.T.F (DAMP)
46	22	
5		
		5-6
66	26 / 43-5	BR. GR CLAY S.I.F (DAMP)
		8-9
10	44-5	GR. CLAY S.I.F (MOIST)
44	17	
		14-15
15		
	45-5	GR SILTY CLAY (DAMP)
60	21	
		19-20
20	↑	Hole - Complete
25		
30		

Use reverse side of this sheet for additional notes.

S. B. LANG

FIELD BORING LOG

94N. 7 —

County, Route No., Section TUS-STA-77-40,55 0-02

Station 21+00 Offset ℄ Elev. ℄

Date 6-JUNE-63 Water Elev.

Crew SAGO G.N. N.O. Equipment R-6

Drafting

Depth Feet	Field Number	3X 4X Description
0.0-		
	39-S	BR. GR CLAY S.I.T (MOIST)
6a	23	
5		5-6
	38-S	BR. CLAY S.I.T /STONE - FRAGS.
4b	26●	(DAMP)
10		9-10
	39-S	GR. SANDY CLAY (DAMP)
4b	26●	13-14
15		TR. ORG.
	40-S	GR. CLAY S. LT / TRACES OF
4a	25●	ORGANIC (DAMP)
		17-18
4b	41-S	GR. CLAY / STONE - FRAGS.
20	28	(MOIST) 19-20
	↑	HOLE - COMPLETE
25		
30		

Use reverse side of this sheet for additional notes.

S, B, L,

FIELD BORING LOG 936.9

County, Route No., Section TUS-STA-77-40.55 0.00

Station 43+50 Offset ℄ Elev. ℄

Date 6-June-63 Water Elev. —

Crew SAGO G.H.N.O. Equipment R-6

Drafting

Depth Feet	Field Number	3X Description
0.0-		
6a	31-S 16	BR. SANDY SILT / GRAVEL (RAMP) 2-3
5	32-S	BR. GR. CLAY STONE-FRAGS.
6a	25	(MOIST) A 7-8
10	33-S	GR. SANDY CLAY SILT /
4b	240	STONE-FRAGS. (VERY DAMP) 12-13
15	34-S	SAME AS 33-S
4b	240	18-19
20	35-S	BR. CLAY SILT / STONE-FRAGS. (MOIST) HARD DRILLING
6a	21	24-25
25		
4a	36-S 20	SAME AS 35-S
30		29-30

↑ Use reverse side of this sheet for additional notes.

937.1

FIELD BORING LOG

S, B, Laney- figure elev. (see back)

County, Route No., Section TUS-STG-77-40,55 0.00

Station 75+00 Offset 50 Lt. Elev. 8

Date 6-June-73 Water Elev. Seepage 6

Crew SA30 G.H. H.O. Equipment R/6

Drafting

Depth Feet	Field Number	2K+3K Description
0.0-		Hole-Drilled in Swamp
6.0 5	24-S 27	Br. Gr. Clay Silt (Damp) 4-5
4.6 10	25-S	Gr. Sandy Silt (Damp) Tr. Org. 9-10
4.6 15	26-S 26	Br. Sandy Silt Very (Damp) 14-15
4.6 20	27-S 25	Same As 26-S 30-21
4.6 25	28-S 21	Br. Silt Stone-Traces (Damp) 25-26
4.6	29-S	Gr. Silty Clay (Damp)
4.9 30	36-S	Gr. Br. Clay Stone-Trace (Damp) 29-30

↑ Use reverse side of this sheet for additional notes.

NBL (45+90 20 LANES 63) FIELD BORING LOG 938.8

County, Route No., Section TUS - STA - 21 - 40.55 0.00

Station 45+00 Offset 175' LT Elev. +2.4

Date 9-APR-63 Water Elev. 7'

Crew SAB, R.C., J.G. Equipment RIG

Drafting

Depth Feet	Field Number	Description
0.0-		
	14-S	BR. SANDY CLAY SILT / STONE -
7-6	30	FRAGS. (DAMP)
5	4-5	32' hole
W 4b	15-S	GR. CLAY SILT / STONE -
	23	FRAGS. (DAMP)
10	9-10	
	16-S	SAME AS 15-S (DAMP)
4b	26	
15		
	17-S	GR. CLAY SILT (WET)
4b	26	0
20	19-20	
	18-S	GR. CLAY SILT (WET)
4b	27	0
25	25-26	
	19-S	GR. CLAY SILT (WET)
4b	27	0
30	31-32'	

32'

Use reverse side of this sheet for additional notes.

J. B. Lane

FIELD BORING LOG

939.9 ✓

County, Route No., Section TUS-STA-77-40.55 0.00

Station 48+00 Offset C Elev. 2

Date 6-June-63 Water Elev. —

Crew SABO G.H.H.Q. Equipment R/G

Drafting

Depth Feet	Field Number	2X Description
0.0-		
	21-S	BR. GR. CLAY S.I.L. STONE-
60	17	FRAGS. (MOIST)
		3-4
5	22-S	GR. SANDY SILT (DAMP)
4/6	260	Tr. Org.
		9-10
10	23-S	BR. SANDY CLAY S.I.L.
4/6	210	(DAMP)
		14-15
15	↑	Hole Complete
20		
25		
30		

Use reverse side of this sheet for additional notes.

S.B. LANE

FIELD BORING LOG 948.6 ✓

County, Route No., Section TUS-STA-77-10.55 2.00

Station 51 +50 Offset ℄ Elev. ℄

Date 6-June-63 Water Elev. —

Crew SAGO G.K. H.O. Equipment R16

Drafting

Depth Feet	Field Number	2 X Description
00-	19-S	BR. GR. CLAY S./T (MD-ST)
6a	24	
6	20S	SAME AS 19-S (MD.ST
46	24	
10		9-60
	↑	HOLE-COMPLETE
15		
20		
25		
30		

Use reverse side of this sheet for additional notes.

SR-4 LANE

FIELD BORING LOG 954.2

County, Route No., Section TUS-574-77-40.55 0-A 3

Station 55+00 Offset [redacted] Elev. [redacted]

Date 6-June-63 Water Elev.

Crew SAMO G.K. N.O. Equipment R16

Drafting

Depth Feet	Field Number	2X Description
00-0.3		Sod
	15-5	BR Modeled Fat Silt.
7-5	38	
5		
6A	87	BLACK WET Fat SILT.
		SOFT TO MED.
	175	
46	250	Stained Fat SILT (MOIST)
		To WET
		Tr. Org.
46	899	Stained Fat SILT & ST. NCGS
15		Complete
20		
25		
30		

Use reverse side of this sheet for additional notes.

S.B. Lane

FIELD BORING LOG 9603

County, Route No., Section TUS-STA-77-40.55 0.00

Station 59+00 Offset ℄ Elev. ℄

Date 6-June-63 Water Elev. Seepage 6

Crew Sano C.H. H.O. Equipment R16

Drafting

Depth Feet	Field Number	1X + 2X Description
0.0-		
	11-S	BR. CLAY SILT / STONE -
6a	22	TRACS. (DAMP)
5		5-6
4a	12-S 23	BR SANDY SILT / STONE - TRACS (WET)
10		9-10
4b	13-S 27B	BR CLAY SILT / TRACES OF [illegible] (DAMP) 12-13
4a	14-S 22	BR CLAY SILT / STONE - TRACS DAMP) 15-16
	↑	Hole Complete
20		
25		
30		

Use reverse side of this sheet for additional notes.

SIR LANE

FIELD BORING LOG 968.9

County, Route No., Section TUS-STA-77-90.55 0.00

Station 63+00 Offset ℄ Elev. ℄

Date 6-June-67 Water Elev. —

Crew S&B E.K. K.O. Equipment R. 6

Drafting

Depth Feet	Field Number	/ X Description
0.0-		
	7-S	BR. CLAY SILT / STONE -
7-5	31	FRAGS (MOIST)
5		
		5-6
	8-S	BR CLAY SILT / STONE -
7-4	19	FRAGS, (MOIST)
10		
		10-11'
4ft	H-S	SAME AS 8-S (MOIST)
		12-13
4ft 5in	16-S	
	↑	REFUSAL BOULDERS 15.5
20		
25		
30		

Use reverse side of this sheet for additional notes.

OLD LANE

FIELD BORING LOG 978.6

County, Route No., Section TUS-STA-77-40.55 0.00

Station 66+25 Offset -℄ Rt Elev. ℄

Date 6-June-63 Water Elev. —

Crew S.A.B. G.K. H.O. Equipment R.I.G.

Drafting

Depth Feet	Field Number	IK Description
0.0-		
	3-S	BR. CLAY SILT / STONE - FRAGS.
16	16	(DAMP)
5		4-5
	4-S	BR. SILTY CLAY (DAMP)
4b	350	
10		10-11
	5-S	BR BR. CLAY SILT / STONE - FRAGS.
4a	16	(MOIST)
15		15-16
	6-S	BR. CLAY SILT / STONE -
4a	21	FRAGS. (DAMP)
20		20-21
	↑	Refusal / Boulders
25		
30		

Use reverse side of this sheet for additional notes.

S. B. LANE

FIELD BORING LOG 985.4

County, Route No., Section TUS-STA-77-40.55 0.00

Station 69+00 Offset ℄ Elev. ℄

Date 6-June-63 Water Elev. —

Crew S.B.S. B.H.K.O. Equipment R-16

Drafting

Depth Feet	Field Number	/ X Description
0.0-		
	1-S	BR. GR. CLAY SH/ LT/ STONE -
7-5	19	FRAGS. (Ramp)
5		
		5-L
	2-S	GR. FIRE CLAY (moist)
	8	& W. hd. clay
10		
		11-11.5
	↑	Refusal 11.5
15		
20		
25		
30		

Use reverse side of this sheet for additional notes.

Tus-Sta. IR-77-(4)0.55)(0.0

Relocated

Sherman Church Rd

(C.R. 272)

C.R. #272

FIELD BORING LOG

County, Route No., Section TUS-STA-21-40.55 0.00

Station 86+00 Offset 10' Lt Elev. ℄

Date 5-MAY-65 Water Elev.

Crew SAMO R.C. T.S. Equipment R'6

Drafting

Depth Feet	Field Number	42 Description
0.0-		
1.5	619-5 2H	Br. Clay s. / L 15 bg lo - FRAGS (moist)
5	620-5	Coal Blossom 1-7.5
	↑	Refusal 7.5
10		
15		Sherman Church Rd
20		
25		
30		

Use reverse side of this sheet for additional notes.

C. N. #272

FIELD BORING LOG

TH 41 U
1142.81

County, Route No., Section Tus-STA-21-40.55 0-90

Station 89+00 Offset ℄ Elev. ℄

Date 2-May-03 Water Elev. —

Crew SAGO R.C. T.S.L. Equipment K 16

Drafting

Depth Feet	Field Number	40+41 Description
0.0-		
16	598.2	BR. GR. CLAY SILT (MOIST) 1-2
5	598.5 14	GR. CLAY SILT /SHALE-FRAGS. (MOIST) SH, B 6-7
10	599.5 10	BR. CLAY SHALE (MOIST) SH, B
15	600 12	SAME AS 599-5 (MOIST) W. SH.
	↑	Refusal 15
20		
25		
30		

Use reverse side of this sheet for additional notes.

C.1.c.2

FIELD BORING LOG

~~4240~~ 1125.1

County, Route No., Section TUS-STA-21-40.55 0.00

Station 92+00 Offset 0 Elev. 0

Date 3-MAY-63 Water Elev. 10

Crew Sago R.C. T.S. Equipment R16

Drafting

Depth Feet	Field Number	Description
0.0-		
1.5	601-S 23	BR. GR. CLAY SILT (MOIST)
5		4-5
1.5	602-S 16	BR. CLAY SILT / SHALE - FRAGS. (MOIST)
10		9-10
1.5	603-S	BR. SILT / SHALE FRAGS. (WET)
		REFUSAL ROCK
15		
20		
25		
30		

Use reverse side of this sheet for additional notes.

C.R. 272

FIELD BORING LOG

~~1160~~ 1113.8 ✓

County, Route No., Section TUS-STA-21-40.55 0.0

Station 25+00 Offset ℄ Elev. ℄

Date 3-MAY-63 Water Elev. WATER SEEPAGE AT 10'

Crew SARO R.C. T.S. Equipment R-6

Drafting

Depth Feet	Field Number	4/1 Description
0.0-		
	604-5	BR. GR. CLAY S. / F (MOIST)
5	19	
	605-5	SAME AS 604-5 (MOIST)
	7-8	
	606-5	COAL BLOSSOM (DAMP)
10	9-10	
	607-5	GR. SHALE (DRY)
	17	1/8
15	14-15	
	↑	REFUSAL 15'
20		
25		
30		

Use reverse side of this sheet for additional notes.

C.R. #272

FIELD BORING LOG

County, Route No., Section Tus-STA-21-40, 55 0.80

Station 99+60 Offset ℄ Elev. ℄

Date 3-MAY-63 Water Elev. -12'

Crew SAGO R.C. T.S. Equipment R16

Drafting

Depth Feet	Field Number	41 Description
0.0-		
	6085	BR. CLAY SILT 15 stone + frags
6a	21	(MOIST)
		3-4
5	6095	GR. CLAY SILT 15 shale - FRAGS.
6a	19	(MOIST)
	6195	BR. GR CLAY SILT (Moist)
6a 10	19	9-10
	[redacted]	BR. Shale (Moist)
		MW, SH,
	6125	GR. Shale (wet) 12-13
	↑	Refusal Shale 13'
15		Coal
20		
25		
30		

Use reverse side of this sheet for additional notes.

C.A. #272

FIELD BORING LOG

#4.1
1107.7 ✓

County, Route No., Section ILL-STA-21-40,55 0.00

Station 103+00 Offset 10' RT Elev. +5.1

Date 3-May-63 Water Elev. —

Crew SAO R.C.T.S. Equipment RIG

Drafting

Depth Feet	Field Number	41442 Description
0.0-	613-J	BR. Clay S.I.L (moist)
60a	21	Stone - Frags
5		5-6
7.0a	614-S	GR BR Clay S.I.L (Moist) 6-7
	615-S	BR. Clay S.I.L /Stone - Frags.
10 10a	16	(Damp)
		11-12
14a	616-S	BR. Clay S.I.L /Stone - Frags.
15	19	(Moist)
		15-16
	↑	Refusal (Boulders)
20		
25		
30		

Use reverse side of this sheet for additional notes.

O.R. 272

FIELD BORING LOG

1136.0
1155.2

County, Route No., Section TUS-STA-21-40.55 0.00

Station 107+00 Offset 12' Lt. Elev. ?

Date 3-May-65 Water Elev.

Crew Saab R.C. T.S. Equipment RIG

Drafting

Depth Feet	Field Number	42 Description
0.0-		
6	6175 25	Br. Gr. Clay s. lt / stone - frags (Base) Z-3
5	6185 14	Br. Shale (Dry) W. Sh S-9
10	↑	Refusal 9' Bottom
15		
20		
25		
30		

Use reverse side of this sheet for additional notes.

Tuscarawas - Stark Counties

IL-77

40.55-0.00

Relocated

Kerr Ave

Twp. Rd 248

(4)

Rel. T.R. #248 # 20.0

FIELD BORING LOG 1122.1

County, Route No., Section 145-STA-21-40.55 0.00

Station 40+50 Offset ℄ Elev. ℄

Date 1-MAY-63 Water Elev.

Crew Sambo R.C. T.S. Equipment R16

Drafting

Depth Feet	Field Number	Description
0.0-	524-S 7	W. I.C. Gr. Fire Clay (Dry) 2-3
5	525-S 11	BR. GR. Clay Shale (Dry) W. Sh. 5-6
	526-S 7	Fire Clay GR. Shale (weathered) 8-9
10	↑	Refusal Shale
15		
20		
25		
30		

Use reverse side of this sheet for additional notes.

Rel. T.R. #241

FIELD BORING LOG 1145.2

County, Route No., Section TUS-STA-21-40.55 0.00

Station 42+00 Offset ℄ Elev. ℄

Date 1-MAY-63 Water Elev. 20.0

Crew SaBo R.C. T.S. Equipment RL6

Drafting

Depth Feet	Field Number	36 Description
0.0-	5355	BR. Gr. S. / F Clay (Moist)
6a	19	4-5
6a	5365	BR. Gr. Clay S. / F (Moist) 7-8
10	5375	BR. Weathered Shale (Moist)
	16	
	538.5	Coal
15	539.5	Gr. Weath. Shale
	10	
20	549.5	Gr. Weath. Shale "WET"
	1'	Bedrock
		REF 20.5' Rock
25		
30		

Use reverse side of this sheet for additional notes.

Rel. 1, Rev. 6

FIELD BORING LOG

Job 1191.6

County, Route No., Section TUS-STA-21-40.55 0.00

Station 45+00 Offset Ø Elev. Ø

Date 1-MAY-63 Water Elev.

Crew Sabo R.C. T.S. Equipment R'6

Drafting

Depth Feet	Field Number	35+36 Description
0.0-	530-S 11	BR. weathered S.S. (Moist) 3-4
5	531-S 16	BR. Clay Shale (Moist) 7-8
10	532-S 11	GR. Weathered Shale (Dry) 12-13 W. Sh.
15	533-S 9	GR. weathered Shale 17-18
20	534-S 9	Same AS 532-S
25	↑	Refusal 23'
30		

Use reverse side of this sheet for additional notes.

Rel. I.R. #248

FIELD BORING LOG

County, Route No., Section TUL-8 TG-21-40.55 9.00

Station 49+00 Offset ℄ Elev. ℄

Date 1-MAY-63 Water Elev.

Crew SAMO R.C, T.S. Equipment R16

Drafting

Depth Feet	Field Number	35 Description
0.0-	529-S	BR. BROKEN Sandstone (DRY)
	9	4-5
5	528-S	BR BROKEN S.S. (DRY) Weath Sh
	8	9-10
10	529-S	BR. BROKEN S.S. (DRY)
	6	13-14
15	↑	Refusal 14' S.S.
20		
25		
30		

Use reverse side of this sheet for additional notes.

Rel. T.R. #248

FIELD BORING LOG

1160.2

County, Route No., Section Tus-Sta-21-40.55 0.00

Station 54+00 Offset ℄ Elev. ℄

Date 1-MAY-63 Water Elev. —

Crew Sao R.C J.S. Equipment R-6

Drafting

Depth Feet	Field Number	41+42 Description
0.0-		
	541-5	BR. GR. CLAY SILT (Moist)
60	15	
5		4-5
	542-5	BR. CLAY SILT / STONE -
60	16	FRAGS. (Moist)
		8-9
10	543-5	GR. BR. SILT CLAY / Stone -
60	22	FRAGS. (Damp)
15	544-5	GR. CLAY SILT / STONE - FRAGS
60	16	(Damp)
		16-17
40	545-5	BR. GR CLAY SILT / SMALL STONE
20	16	FRAGS. (Moist) 19-20
	546-5	GR. weathered CLAY Shale
	11	(Moist)
25		
	547-5	Same as 546-5 (Moist)
	10	(W. Sh.
		29
30	↑	Refusal 29'

Use reverse side of this sheet for additional notes.

Rel. T.R. #240

FIELD BORING LOG

467.0
115+2.8

County, Route No., Section TUS-S TR-21-40, S.E. Q.D.

Station 58+00 Offset ℄ Elev. ℄

Date 1-MAY-63 Water Elev. —

Crew SABO R.C. T.S. Equipment RIG

Drafting

37

Depth Feet	Field Number	Description
0.0-		
	548-S	BR. GR. CLAY SILT (DAMP)
5	28	4-5
	549-S	BR. CLAY SILT / STONE-FRAGS. DAMP)
10	14	9-10
	550-S	GR. CLAY SILT (MOIST)
15	19	14-15
	551-S	GR. CLAY SILT / SHALE-FRAGS.
	13	(MOIST)
		18-19
20	552	GR SHALE (DRY)
		20-21 — 15
	↑	REFUSAL 21'
25		
30		

Use reverse side of this sheet for additional notes.

Reloc. T.R. #48

FIELD BORING LOG

H-4.8
1153.9

County, Route No., Section TUS-STA-21-40.55 0.02

Station 67+50 Offset ℄ 10' Lt (A) Elev. ℄

Date 2-MAY-63 Water Elev. -13.0

Crew SaBo R.C. T.S. Equipment Rig

Drafting

Depth Feet	Field Number	37 Description
00-	553-S	BR. GR. CLAY SILT (Moist)
5	21	4-5
	554-S	BR. GR. CLAY SILT (MOIST)
10	17	9-10
	555-S	BR. GR. CLAY SILT / STONE -
15	18	FRAGS. (Moist) 12-13
	-S	GR CLAY SHALE (Moist)
	11	
20	557-S	GR. CLAY SHALE (Moist)
	11	22-23
25	558-S	GR CLAY SHALE (Moist)
	14	24-26.5
	↑	Refusal 26.5
30		

Use reverse side of this sheet for additional notes.

Stark-Tuscarawas

IR-77-

40.55-0.00

~~Relocated~~ Fohl/St.

(Twp. Rd. 252)

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(3)

Toh 1 - Sq, Eoh

FIELD BORING LOG

County, Route No., Section TUS-STA-21-40,55 0.00

Station 32+00 Offset 10' Lt. Elev. [illegible]

Date 26-APR-63 Water Elev. [illegible]

Crew [illegible] Equipment [illegible]

Drafting

Depth Feet	Field Number	Description
0.0-		
4.5	467-S 19	Br. clay silt & shale - frags. (moist) 4-5
6.6	468-S 0	coal (wet) 8-5
10 6.6	469-S 27	Gr. clay ~~shale~~ ~~weath~~
15	↑	Refusal Boulder?
20		
25		
30		

Use reverse side of this sheet for additional notes.

Tab 1, St. Rte 32

FIELD BORING LOG

HH 3.7
HH 3.8

County, Route No., Section TUS-STA-21-40.55 O.D.

Station 36 + 00 Offset 10' Lt. Elev. ℄

Date 26-APR-63 Water Elev. —

Crew SABO R.C. J.W. Equipment RIG

Drafting

Depth Feet	Field Number	31 Description
0.0-		
4b	470-S 24	BR. Clay silt / Stone - Frags. (Moist)
5		4-5
10	471-S 21	BR. Clay silt / Stone - Frags. Mo. S L
	↑	Refusal 8' Rock
15		
20		
25		
30		

Use reverse side of this sheet for additional notes.

Fohl Bt. Fohl-St. 1207.7 1207.2

FIELD BORING LOG

County, Route No., Section IUS-STA-21-40,55 0.00

Station 39 +00 Offset 10'Lt. Elev. ℄

Date 26-APR-63 Water Elev.

Crew SAB, R.C., J.W. Equipment R16

Drafting

Depth Feet	Field Number	31 Description
0.0-	4732-5	Br. clay Silt / Stone Frags.
4	15	(Moist)
5		4-5
	4735	Weath Br. Broken Sand Stone
	9	8-9
10	↑	Refusal S.S.
15		
20		
25		
30		

Use reverse side of this sheet for additional notes.

Tohl, St. McHenry St

FIELD BORING LOG

County, Route No., Section TUS-STA-21-40.55 0.00

Station 43+00 Offset 10' Lt. Elev. ?

Date 26-APR-63 Water Elev.

Crew Sago R.C. J.W. Equipment R16

Drafting

Depth Feet	Field Number	3+32 Description
0.0-	4745	Br. Clay Silt (Damp)
5	35	
10	4745 25	Br. Sandy Clay Silt / Small Stone - Frags. (Damp)
		11-12
15	4765 22	Gr. Salt, Clay / Stone - Frags (Moist)
	↑	Refusal Couldn't Pull
20		
25		
30		

Use reverse side of this sheet for additional notes.

Form 54

FIELD BORING LOG

County, Route No., Section Tus - STA-21-4055 0.00

Station 47+00 Offset 10' Lt. Elev. E

Date 26-APR-63 Water Elev.

Crew SABO R.C. J.W. Equipment R16

Drafting

Depth Feet	Field Number	32 Description
0.0-		
	4775	BR. Silty Clay (Moist)
7-5	17	
		4-5
5		
	4785	BR. Shale weathered (DRY)
	15	
		9-10
10	↑	Refusal Shale 10'
15		
20		
25		
30		

Use reverse side of this sheet for additional notes.

Tab 1 St. 1046 3' 11446 1163.9

FIELD BORING LOG

County, Route No., Section Jus - STA-21-40.55 0.00

Station 50 + 00 Offset 10' Lt. Rt. Elev. ±

Date 26-APR-63 Water Elev.

Crew Sears T. C, J. W. Equipment R 16

Drafting

32

Depth Feet	Field Number	Description
0.0-		
	479-5	Br. Gr. Clay Silt / Stone-
DA	29	Frags (Very Damp)
5		
	4805	Gr. Clay Shale (Dry)
DA	13	
10		9-10
	↑	Refusal 10' Shale
15		
20		
25		
30		

Use reverse side of this sheet for additional notes.

Tohl, St. FIELD BORING LOG #St-3

County, Route No., Section TUS-STA-21-40.55 0.00

Station 53+00 Offset 10' Lt. Elev. E.

Date 30-APR-63 Water Elev.

Crew JAGS R.C. TIS Equipment R-6

Drafting

Depth Feet	Field Number	32 Description
0.0-		
	4843	Br. clay silt / Stone - Frags.
Ha	25	(Fill)
		2-4
5	4855	Br. Clay silt / Shale Frags.
		(Moist)
	13	W. Sh
10	4865	Br. Clay Silt / Shale + Frags.
	14	(Moist) Sh
15	4875	Gr. Clay Silt / weathered
		Shale (Gray)
	12	W. Sh
20	↑	Refusal
25		
30		

Use reverse side of this sheet for additional notes.

Toh 1 St. #1446

FIELD BORING LOG

County, Route No., Section TUS-STA-31-40.55 0.0

Station 63+00 Offset 8' Rt. Elev. ±

Date 30-APR-63 Water Elev.

Crew Sayo R.C. T.S. Equipment R16

Drafting

32

Depth Feet	Field Number	Description
0.0-		
4	4815	BR. Sandy clay silt /stone
	18	frags. (moist)
		3-4
5	4825	Br. clay silt /stone - frags.
7-6	16	(damp)
		8-9
10	4835	Br. clay silt /shale -
	14	(Damp) Weath Sh
	↑	Refusal
15		
20		
25		
30		

Use reverse side of this sheet for additional notes.

Tuscarwas · Stark Counties

IR 77-

40.55-0.00

Relocated

Access #2

Deleted according to list elected 6/17/63

Access Rd #2

FIELD BORING LOG

462.0

County, Route No., Section TUS-STA-21-40,55 0.00

Station 42+78 AF Offset ℄ Elev. ℄

Date 2-MAY-63 Water Elev. NO FREE WATER

Crew SAMO R.C. TIS. Equipment R16

Drafting		

Depth Feet	Field Number	40 Description
0.0-		
	590-S	BR, GR. CLAY S, LT (DAMP)
4b	24	
5		5-6
	591-S	BR CLAY S, LT. / STONE -
4b	20	FRAGS. (DAMP)
10		32' hole
	592-S	
4b	24	BR. GR. S, LT (VERY DAMP)
15		
4b	[illegible]	BR. S, LT (WET)
20	594-S	BR. CLAY S, LT / STONE - FRAGS.
4a	18	(DAMP)
		22-23
	595-S	SLIGHT
4b	28	GR. S, LT (DAMP)
		26-27
	596-S	SL. SANDY CLAY S, LT / STONE
4a	20	[illegible] (DAMP)
30		32

32' ↑ Use reverse side of this sheet for additional notes.

Access 2

FIELD BORING LOG

9676

County, Route No., Section JUS-57-21-40.55 0.00

Station 46+50 Offset ℄ Elev. ℄

Date 2-MAY-63 Water Elev. -25

Crew SAND R.C. TJS, Equipment R16

Drafting

Depth Feet	Field Number	39440 Description
0.0-		
46	582.5 17	BR. Sandy Clay S, /f (DAMP) 3-4
5	583.5	BR. Gr. CLAY S, /f /Stone -
46	22	FRAGS. (DAMP)
10		9-10
46	[illegible]	Gen S, /f (DAMP) 10-11
60	585 20	Br. Clay S, /f /Stone - FRAGS. (MOIST)
15		15-16
46	586.5 20	BR. Sandy CLAY S, /f /Stone - FRAGS. (DAMP)
20		20-21
60	587.5 16	Br. CLAY S, /f /Stone - FRAGS (DAMP)
25		
60	588.5 26	Br. S, /f /Stone - FRAGS. (WET) 26-27
46	[illegible]	Gr. CLAY Shale (DAMP) 27-28.5
30	↑	Refusal 28.5

Use reverse side of this sheet for additional notes.

Accession No. 2 1160

FIELD BORING LOG

County, Route No., Section JUS-STA-21-40.55 0.00

Station 50+00 Offset ℄ Elev. ℄

Date 2-MAY-63 Water Elev. —

Crew JABO R.C. T.S. Equipment RIG

Drafting

Depth Feet	Field Number	39 Description
0.0-		
	580-S	BR GR CLAY SILT (MOIST)
60	24	
		3-4
5	581-S	BR. SANDSTONE
	↑	Weath
		REFUSAL S.S. 6'
10		
15		
20		
25		
30		

Reverse side of this sheet for additional notes.

Access 1, 1 & 2

FIELD BORING LOG

786.4

County, Route No., Section TUS-STA-21-40.55 0.00

Station 53+30 Offset ℄ Elev. ℄

Date 2-MAY-63 Water Elev. +10 inches

Crew SAB R.C.T.S. Equipment R16

Drafting

Depth Feet	Field Number	39 Description
0.0-		
6.1	5765 19	Br. Gr. Clay S.L. /Stone-Frags. (Moist) 2-3
5	5775 16	Gr. S.L. /Shale- Frags. (Moist) 5-6
	5785 H	> W. Sh. Gr. Weathered Shale (Moist)
10	594-5 ↑	Gr. Shale (Wet) 10-11 Refusal Shale 11'
15		
20		
25		
30		

Use reverse side of this sheet for additional notes.

Access Rd. 2

FIELD BORING LOG

10115

County, Route No., Section TUS-STA-21-40.55 0.02

Station 56+25 Offset ℄ Elev. ℄

Date 2-MAY-63 Water Elev. + 8 inches

Crew SABO R.C. T.L.S. Equipment RIG

Drafting

Depth Feet	Field Number	39 Description
0.0-		
	574-S 5	BR BROKEN Shale (moist)
		4-5 W. Sh.
6		
	575-S 12	BR. BROKEN Shale (moist)
		Refusal Shale
10		
15		
20		
25		
30		

...rse side of this sheet for additional notes.

Access Rd. 1 ←

FIELD BORING LOG

1008.5

County, Route No., Section TUS-STA-21-40,55 0.00

Station 60+00 Offset ℄ Elev. ℄

Date 2-MAY-63 Water Elev. —

Crew Sago R.C. T.S. Equipment A-6

Drafting

Depth Feet	Field Number	38+39 Description
0.0-	0,3	Top. Soil
6a	571-5 15	BR. GR. CLAY S. IT / Stone - FRAGS. (Moist)
5 4a	573-8 10	BR. GR. S. IT / Stone - FRAGS. (Moist) B-9
10 6a	5735 17	BR. S. IT / Shale - FRAGS. (Moist)
	↑	Refusal Shale
15		
20		
25		
30		

se side of this sheet for additional notes.

Access Rd. #2

FIELD BORING LOG

1015.0

County, Route No., Section Tus-STA-21-4055 0.00

Station 64+25 Offset ℄ Elev. ℄

Date 2-MAY-63 Water Elev.

Crews SaBo R.C. T.S. Equipment R-6

Drafting

Depth Feet	Field Number	38 Description
0.0-		
60	568-S 24	BR. Gr. S/L Clay (Mois't)
5	569-S 9	BR. Clay Silt /Stone - Frags (Mois't) W. Sh. 8-5 lot
10	570-S 19	Gr. Clay Silt /Shale - Frags Damp 10-11' Refusal 11' Clay Bedrock
15		
20		
25		
30		

...rse side of this sheet for additional notes.

Access rd. 2

FIELD BORING LOG

County, Route No., Section Tus-3 Tac 24-40.55 0-0.2

Station 6+00 Offset 2 Elev. 2

Date 2-May-03 Water Elev.

Crew Sano R.C. T.S. Equipment R16

Drafting

Depth Feet	Field Number	Description
0.0-		(-)
5	559-5	Br. clay silt/stone-frags, (Dense)
10	560-5	Same as 559-5 (Dense)
	10-11	Refusal 11'
15		
20		
25		
30		

rse side of this sheet for additional notes.

Access Rd. - 2

FIELD BORING LOG

1072.5

County, Route No., Section T45-STA-21-40.45 0.0

Station 72+50 Offset ℄ Elev. ℄

Date 2-MAY-63 Water Elev.

Crew SAC R.C. T/S, Equipment R16

Drafting

Depth Feet	Field Number	Description
0.0-		(-)
	565-5 10	BR. weathered Shale (Moist) 4-5
5	566-5 8	Same as 565-5 (Moist) 7 W. Sh. 10-11
10	567-5 9	BR. BROKEN Shale (Moist) 16-17
15	↑	Refusal @ 17
20		
25		
30		

...rse side of this sheet for additional notes.

ACCESS RD. 2

FIELD BORING LOG

1106.1

County, Route No., Section Tus-370-24.40/55 0.00

Station 97+00 Offset 12 RT Elev. ?

Date 2-MAY-63 Water Elev. 12

Crew Sage R.C. T.S. Equipment R-8

Drafting

Depth Feet	Field Number	29 38 Description
0.0		(-)
	527.5	Gr. Shale (Dry)
	12	W. Sh
5		5-6
	562.5	Coal
10		11-12
	563.5	Bl. Brown Shale (Wet)
15	—	W. Ss.
		15.1
	564.5	Gr. Olive Shale (Dry)
20	13	W. Ind. Clay
		20-21
	↑	Refusal 21'
25		
30		

Use reverse side of this sheet for additional notes.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS

INTER-OFFICE COMMUNICATION

Date August 26, 1963

To: E. Engineer of Location & Design Attention: H. E. Marshall

From: R. R. Litchiser Per: G. P. Hall

Subject: Report of Soil Profile Investigation

TUS-STA-IR77-(40.55) (0.00)
I-77-3(13)299

File: 13-3-1
Tuscarawas - Stark

Transmitted herewith is a copy of the soil profile for the subject project. General information regarding observations, the investigation, and findings, appears on drawing sheet number 1A.

The reproduced tracings of this report are being sent to the Consultant to be attached to the plans.

R. R. Litchiser
Engineer of Tests

Per: _____
George P. Hall
Assistant Engineer

RDR:DE:ca
Encl.
cc: C. M. Newhall (3)
A. W. Kasch, DOLE (no encl.)
Seiswanger, Hoch and Arnold, Attn: W. C. Lynn
K. R. Thompson (no encl.)
H. L. Krauser, Attn: C. H. Shepard
W. E. Reed (3) (no encl.)
Ohio State Geological Survey, Attn: Karl Hoover and J. L. Forsyth
R. E. Calvin (4)

15

ENGINEERING AND ARCHITECTURAL SERVICES

Beiswenger Hoch and Arnold — Consultants

3810 CHESTER AVE. · CLEVELAND 14, OHIO — 361-5660

June 14, 1963

Mr. R. R. Litchiser
Ohio State Testing Laboratory
1620 West Broad Street
Columbus 23, Ohio

Attention: Mr. George P. Hall

Re: TUS - IR77 - 40.55
STA - IR77 - 0.00

Dear Sir:

Enclosed herewith is the list of boring locations showing the existing ground elevation at each hole as requested.

Also for your information, the sections 0.00 & 2.60 have been combined and now have a project number as referenced above.

If we may be of further assistance on this project, please contact us at your convenience.

Very truly yours,

BEISWENGER HOCH and ARNOLD

W. C. Lynn

W. C. Lynn
Project Engineer

WCL:rhb
CC: Mr. K. R. Thompson w/o encls.
Mr. A. W. Kasch w/o encls.

STATION	OFFSET
-2+00	897.2 ✓ ℄
1+00	894.6 ✓ ℄
4+25	905.2 ✓ ℄
7+50	935.7 ✓ ℄
9+50	916.3 ✓ ℄
12+50	935.7 ✓ ℄
15+50	950.2 ✓ 50'RT
16+50	945.8 ✓ ℄
18+50	969.6 ✓ ℄
22+50	1027.7 ✓ ℄
24+00	1042.3 ✓ ℄
30+00	1048.4 ✓ ℄
36+00	984.3 ✓ ℄
40+00	956.6 ✓ ℄
42+50	942.8 ✓ ℄
45+00	943.1 ✓ ℄
45+40	938.8 ✓ ℄ (Change to 63'LT)
47+45	940.7 ✓ 20'
47+75	960.0 ✓
51+00	946.8 ✓
51+00	969.4 ✓
54+00	976.0 60'RT
54+20	951.7 30'LT
56+40	961.5 ℄
60+00	989.7 50'RT
63+00	1003.5 50'RT
66+00	988.8 ℄
66+00	1002.6 ✓ 50'RT
69+00	1020.6 ✓ 50'RT
72+00	1033.0 ✓ ℄
73+00	1033.4 ✓ ℄
75+50	1046.3 ✓ ℄
83+50	1056.4 ℄
84+00	1062.6 ✓ 85'LT
87+00	1091.7 ✓ ℄
91+00	1100.1 ✓ ℄
98+00	1136.4 ✓ 130'LT
98+00	1121.7 ✓ ℄
98+00	1105.4 ✓ 90'RT
102+00	1135.2 ✓ ℄
102+00	1136.3 ✓ 90'RT
103+00	1143.1 ✓ 70'RT
105+00	1122.0 ✓ 100'LT
105+00	1132.5 ✓ ℄
105+00	1137.6 ✓ 100'RT
107+00	1130.7 ✓ 100'LT
11	1147.4 ✓
11	1148.2 ✓ 20'RT

STATION	OFFSET
112+00	1156.0 ✓ ℄
115+00	1116.0 ✓ 120'LT
11	1129.4 ✓ ℄
11	1165.6 ✓ 120'RT
116+50	1129.3 ✓ ℄
118+00	1137.2 ✓ ℄
121+00	1165.0 ✓ 100'LT
11	1166.4 ✓ ℄
11	1164.4 ✓ 100'RT
122+00	1170.5 ✓ 100'LT
11	1164.3 ✓ ℄
11	1155.5 ✓ 100'RT
123+00	1159.1 ✓ 100'LT
11	1164.7 ✓ ℄
11	1164.0 ✓ 100'RT
125+00	1166.7 ✓ 100'LT
11	1168.0 ✓ ℄
11	1167.4 ✓ 125'RT
125+65	1156.0 ✓ 100'LT
127+50	1148.3 ✓ ℄
130+00	1105.4 ✓ 200'LT
11	1116.8 ✓ 100'LT
11	1128.9 ✓ ℄
11	1142.2 ✓ 100'RT
11	1153.2 ✓ 165'RT
134+10	1162.5 ✓ ℄
135+00	1106.3 ✓ 200'LT
11	1125.5 ✓ 100'LT
137+00	1103.2 ✓ 358'
11	1111.7 ✓ 70'LT
11	1128.0 ✓ ℄
11	1159.9 ✓ 70'RT
140+50	1166.5 ✓ ℄
141+00	1140.5 ✓ 150'LT
145+00	1140+1137.8 ✓ 130'LT
145+00	1147.0 ✓ ℄
11	1160.0 ✓ 110'RT
148+00	1078.5 ✓ 200'LT
11	1081.0 ✓ 100'LT
11	1090.0 ✓ ℄
11	1105.7 ✓ 100'RT
151+00	1088.1 ✓ 150'LT
11	1100.9 ✓ ℄
11	1110.4 ✓ 100'RT
154+00	1107.9 ✓ 150'LT
11	1130.9 ✓ ℄
11	1158.9 ✓ 70'RT
157+00	1094.8 ✓ 100'LT
11	1110.4 ✓ ℄
11	1131.1 ✓ 100'RT
11	1103.0 ✓ ℄

PROJECT 20S-5(2)-21

STATION		OFFSET
164+00	1111.3	℄
170+00	1102.9	150'LT
"	1126.9	℄
"	1157.6	100'RT
173+00	1072.8	200'LT
"	1085.0	130'LT
"	1105.3	℄
"	1122.3	100'RT
177+00	1104.7	150'LT
"	1135.2	℄
"	1153.5	75'RT
"	1156.2	150'RT
180+00	1095.6	200'LT
"	1085.7	130'LT
"	1109.9	℄
"	1155.2	100'RT
183+25	1108.0	110'RT
183+50	1064.7	250'LT
"	1093.5	175'LT
"	1076.3	100'LT
"	1086.1	℄
186+00	1101.0	150'LT
"	1113.8	℄
192+00	1121.8	℄
195+00	1108.4	℄
197+50	1098.0	℄
199+50	1143.2	℄
208+50	1139.3	℄
210+50	(1111.0)	200'LT
"	(1110.0)	100'LT
211+00	1120.5	℄
"	1121.7	75'RT
"	1145.0	175'RT
214+75	1171.1	℄
223+00	1169.8	75'LT
"	(1140.0)	35'RT
230+50	1134.2	℄
231+50	1129.4	℄
"	1099.1	100'
"	1088.3	150'RT
233+00	1092.0	100'RT
233+50	1104.3	200'LT
"	1097.7	60'LT
"	1094.9	℄
234+00	1094.9	℄
239+00	1144.0	℄
245+00	1183.7	100'LT
"	1170.0	℄
"	1149.7	90'RT
245+00	1166.5	℄
252+00	1176.8	℄

STATION		OFFSET	DRAFTSMAN NO OF SAMPL	PAGE NO	TYPING CHECK
36+00	1191.3	℄			
62+00	1182.8	100'LT			
"	1178.2	℄			
"	1172.4	100'RT			
		Access Rd. No. 2			
42+70		℄			
46+50		℄			
50+00		℄			
53+30		℄			
56+25		℄			
60+00		℄			
64+25		℄			
68+00		℄			
72+50		℄			
77+00		12'RT			
		Sherman Church Rd. (Co. Rd. 272)			
86+00	1126.5	10'LT			
89+00	1142.8	℄			
92+00	1125.1	℄			
95+00	1113.8	℄			
99+00	1116.0	℄			
103+00	1107.7	10'RT			
107+00	1135.2	12'LT			
		Keiffer Ave. (Co. Rd. 248)			
40+50	1122.1	℄			
42+00	1145.2	℄			
45+00	1191.6	℄			
49+00	1219.4	℄			
54+00	1160.2	℄			
58+00	1152.8	℄			
61+50	1153.9	10'LT			
		Fork (Co. Rd. 252)			
32+00	1171.5	10'LT			
36+00	1193.3	10'LT			
39+00	1207.2	10'LT			
43+00	1182.5	10'LT			
47+00	1192.4	10'LT			
50+00	1163.9	10'RT			
53+00	1181.8	10'LT			
63+00	1174.3	8'RT			

~~LOG FOR TOTALS~~ ~~CAS FOR TOTALS~~

DRIVE SAMPLE SOIL TEST DATA

Deleted Inner Plans

RECEIVED
MAY 29 1963
SCHWENGER, HOOK & ARBOLD

OHIO DEPARTMENT OF HIGHWAYS
TESTING LABORATORY
FOUNDATION EXPLORATION SECTION

SCHEDULE OF TEST BORINGS

Reconn. By: Howard ----------Co., Rt., Sec.: 705-STA-77-(40.55) (0.00)

----------Bridge No.: ----------

Date:----------Job No.:----------

Sheet 1 of 2

Southbound IR 77

Borings No.	Station and Offset	RURAL	URBAN	Type HA	Type TA	Type DC	DEPTH	Check Clearance Req'd A	W	S	G	E	T
1	15+50, ℄	950.1			✓		30						
	17+25, ℄	946.3			✓		30						
	21+00, ℄	987.8					27						
	24+00, ℄	974.0					10						
5	27+00, ℄	978.0					10						
	30+00, ℄	964.6					20						
	33+00, ℄	954.2					20						
	37+00, ℄	945.4					20						
	41+00, ℄	941.7					20						
10	43+50, ℄	936.9					30						
	45+00, ℄	937.1					30						
	45+50, 50'Lt	936.9					20						
	48+00, ℄	939.9					15						
	51+50, ℄	948.6					10						
15	55+00, ℄	954.2					12						

HA=Hand auger or other hand method
TA=Truck-mounted auger
DC=Drive Sample or rock core

A=Access to Private Property
W=Water lines
S=Sewer lines
G=Gas lines
E=Electrical Cables
T=Telephone Cables

FE

5

FOUNDATION EXPLORATION SECTION

SCHEDULE OF TEST BORINGS

TUS-STA-77-(4055)(200)

Southbound IR 77

CO., RT., SEC.

Borings No.	Borings Station and Offset	RURAL	URBAN	TYPE HA	TYPE TA	TYPE DC	DEPTH	Check Clearance Record A	W	S	G	E	T
16	59+00, ℄ 960.3						12						
	63+00, ℄ 968.9						To Refusal						
	66+25, ℄ 978.6						"	"					
19	69+00, ℄ 985.4						"	"					
	Drive Sample - Core Borings												
	79+00 60Rt ✓		1088.7										
	91+00 ℄ ✓		1129.1										
	121+50 130Rt ✓		1174.2										
	188+50 ℄ ✓		1164.1										
	205+50 ℄ ✓		1177.7										
	219+00 ℄ ✓		1191.1										
	226+00 ℄ ✓		1186.8										
	243+00 ℄ ✓		1177.0										
	255+00 ℄		1208.8										
	Fohl Street (252)												
	57+50 15Rt ✓		1229.1 ✓										
	Kieffer Rd (298)												
	47+00 ℄ ✓		1207.6 ✓										

Assumed these Borings are Parallel with Survey Line & Center

ENGINEERING AND ARCHITECTURAL SERVICES

Beiswenger Hoch Arnold and Associates

3810 CHESTER AVE. [illegible] AND TOWNE 361-8860

October 30, 1962

File: 13-3-1
TUS

Mr. R.R.Litchiser
Engineer of Tests
State Highway Testing Laboratory
1620 West Broad Street
Columbus 16, Ohio

Attention: Mr. Phil Hall

Re: TUS - IR 77 - 40.55 Interstate Route 77
STA - IR 77 - 0.00

Dear Sir:

Enclosed herewith are prints of the cross-sections and side road plan and profiles for the above referenced project as requested.

Prints of the cross-sections for the South bound lanes between Station 7+00 and Station 85+00 will be forwarded to you as soon as the information is available.

Also as pointed out in our telecon, the 0.00 and 2.60 projects from the Tuscarawas River, Station 0+00, to North of Fohl Road, Station 264+00, will be combined into one project and will be designated as referenced above.

In addition to this, the mileage figure of 35.45 for the TUS designation has been changed to 40.55.

Very truly yours,

Beiswenger, Hoch, Arnold and A[illegible]

W.C.Lynn
Project Engineer

WCL/lb
encls.
cc: Mr. R.E.M. Bar Inlets w/o encls.

ENGINEERING AND ARCHITECTURAL CONSULTANTS

[redacted] Associates

5810 CHESTER AVE · CLEVELAND 14, OHIO · 881-5880

October 15, 1962

Mr. R.E.M.des Islets
Rural Consultant Liaison Engineer
Ohio Department of Highways
Room 807 - Ohio Departments Building
Columbus 15, Ohio

Attention: Mr. R.R. Litchiser

Re: TUS - STA - IR 77 - (35.45 - 0.00) ~~and STA - IR 77 - 2.00~~

Dear Sir:

Enclosed herewith are two prints of the proposed line and grade for the above referenced project to be forwarded to the Testing Laboratory for the Soil Profile investigation and determination of pavement type.

One set of prints of the plan and profile sheets are also included which shows the existing ground elevation at the centerline of survey.

Very truly yours,

[redacted], Arnold and Associates

W.C. Lynn
W.C. Lynn
Project Engineer

WCL/tb
encls.
cc: Mr. R.W. Koch
Mr. H.E. Marshall

FOUNDATION EXPLORATION SECTION

SUBSURFACE INVESTIGATION RECONNAISSANCE REPORT

RECONNAISSANCE OF:

Roadway X

Bridge _____

Retaining Wall _____

Other _____; If other, specify _____

PROJECT: TUS-STA-21(40.55)(0.00)

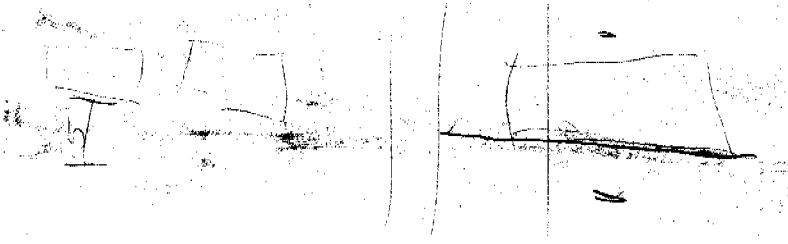
BRIDGE NO.: _____

RECONN. BY: P Howald

DATES: from 11-6 to 11-28

NOTE: In preparing the reconnaissance report, the above entries shall be completed. In accordance with instructions to reconnaissance personnel the report shall include the following:

1. Description of Work.
2. Geology of Location or Site.
3. Topography
4. General Subsurface conditions.
5. Schedule of Borings.
6. Sketches of Water Points
7. Sketches of off-plan access
8. Listing of Special Equipment Required.



FOUNDATION EXPLORATION SECTION

SUBSURFACE INVESTIGATION RECONNAISSANCE REPORT

Description Work:

The IVS-STA-21-(40.55)(0.00) project is about a five mile section of proposed I-77. The project starting, about 150 feet South of the Tuscarawas River and the the Tuscarawas - Stark County line, with sta. -2+00 runs northward over the upland hills to Sta. 268+00, 1400 feet north of Fahl Street (TR. 252). The project includes 10 grade separation structures and two bridges over the Tuscarawas River; also Access Road No. 1 from St. 92+70 to 77+0, relocated Sherman Church Rd (CR. 273) from Sta. 86+0 to 107+17, relocated Keifer Ave (TR. 248) from 40+50 to 62+0, and improvement of Fahl St. (TR. 252) from 31+0 to 63+50.

Geology:

The project, in general, is located on the upland hills less than one mile east of the glacial boundary. The start of the project, from sta. -2+0 to about Sta. 1770, lies on the floodplain and

FOUNDATION EXPLORATION SECTION

SUBSURFACE INVESTIGATION RECONNAISSANCE REPORT

Terraces of the Tuscarawas River Valley, an old valley of Pre-Stage origin. This valley contain upto 200 feet of outwash till materials, mostly sand and gravel. From Sta. 17+00 northward to bey and Sta. 269+00, end of project, the proposed roadway lies on the unglaciated upland hills of the Allegheny Plateau. In this area the residual soil over the rock surface averages about 3 feet. The underlying bedrock is the Allegheny formation from the Lire clay under the Brookville (No. 8) coal up to the shales overlying the Middle Kittanning (No. 6) coal. These strata consist, in most part, of shales and sandstone, with some beds of limestones (Putnam Hill and Vanport members), coals (No. 4, 5 and 6), and fire clays. The coal beds have been or are being mined by stripping and drift methods. (For further discussion of the mining see Subsurface Conditions.)

Topography

The project in most part lies on the unglaciated uplands of the Allegheny Plateau less than one mile east of the glacial boundary. The Tuscarawas River, at

FOUNDATION EXPLORATION SECTION

SUBSURFACE INVESTIGATION RECONNAISSANCE REPORT

the start of the project, is a major stream that flows in a broad, deep valley. The valley had its origin in Tesuque and Deep Stage time. Several terraces, are prominant along the valley wall. The contact between the highest terrace and the bedrock hill is between Sta 17+0 and Sta 19+0. The rest of the project lies on the hilly uplands that has been extensively strip mined (see Subsurface Conditions)

Subsurface Conditions:

In the Tuccaramas River Valley portion of the project, the deep valley fill is composed of well sorted sand and gravel up to two feet of depth. The uplands, where not disturbed by strip mining, has a thin mantle of residual soil, average thickness 3 feet, over the rock surface.

The strip mining areas are described in the following. Between Sta 22+15 to about Sta 32+50 the No. 4 coal has been stripped out. The fill lies on the spoil bank the toe of which ranges up to 170 feet left, the highwall (about 40 ft high) lies 35 to 100 ft. right. Between Sta 69+50 to Sta 75+0

FOUNDATION EXPLORATION SECTION

SUBSURFACE INVESTIGATION RECONNAISSANCE REPORT

is another strippmine which currently is being cut the No. 8 coal and the underlying fireclay. the ℄ lies on the spoil bank which tops out about 100 ft. left, its high wall (about 40 ft. high) is about 100 ft. right. A composite rock section was measured on the high wall, described as follows:

From top of cut at approx. Elv. 1050, thin bedded shale, siliceous, broken, unweathered limestone, massive, blue gray, 2.5 feet (Putman Hill)

Coal (No. 8) 2.0 ft, top Elv. 1021.9

Fire clay, 6.0 ft.

B.M., St. 76+0 = 1052.3.

Between Sta. 100+0 to Sta. 119+0 the ℄ lies on the spoil bank or less than 100 ft right of an old strippmined area. From Sta. 119+0 to 129+0 the ℄ lies on an old spoil bank that is being as a waste dump for a rubber factory. There is considerable rubber and other general factory waste mixed with the spoil.

From Sta. 130+50 through Sta. 145+30 the ℄ crosses a strippmine area where the No. 5 has been mined. A composite rock section was

FOUNDATION EXPLORATION SECTION

SUBSURFACE INVESTIGATION RECONNAISSANCE REPORT

measured at Sta. 1132+00, described as follows.

Residual soil 1-2 feet.
Shale, weathered, broken, gray, 7-8 ft.
Sandstone, brown, cross-bedded, thin to medium bed, fine to medium grained, 5-8 ft (Elev. top at ss. 1150.0 ft.)
Shale, brown to gray, thin-bedded, blocky, easily broken, ferruginous, 6 ft.
talus.
B.M. Sta. 1132+0. Elev. 1163.0 ft.

An old drift mine shaft is located at Sta. 139+10-95 Lt.

The northbound lane will lie on a spoil bank from about Sta. 152+00 to Sta. 159+00 and from about Sta. 165+25 to Sta. 181+00. The No. 5 coal outcrops in a road cut at Sta. 167+00-50 Rt to Sta. 162+20-100 Rt. This outcrop shows 3.9 ft of coal over 1-2 ft. of fire clay. The elevation at the top of the coal is 1136.8 ft.

An old drift mine shaft is located at Sta. 190+40-18.5 Lt. This mine may have extensive working under the hill between Sta. 187+00 to Sta. 190+50.

FOUNDATION EXPLORATION SECTION

SUBSURFACE INVESTIGATION RECONNAISSANCE REPORT

From Sta 196+00 to Sta 232+00. The project crosses area that has been extensively strip mined for the No. 5 coal. In this there are three areas of undisturbed terrain, between Sta 201+50 to Sta 206+50, Sta 218+00 to Sta 222+00, and Sta 224+00 to Sta 226+75.

Between Sta 232+90 and 239+50 there is a bog condition caused by drainage off the spoil banks. There is probably about five feet of silty muck in the gully.

The No. 5 coal has probably drift mined from under the L between Sta 290+00 to Sta 296+00.

SOIL PROFILE PROJECT SUMMARY

COUNTY, RT. NO., & SEC. NO. Tus. Sta-IK-77 (40.35)(0.00

FEDERAL NO. I-77-3(13)279 LENGTH 5.1 MILES

BEGIN PROFILE STA. -3+00 END PROFILE STA. 266+00

PRESENT SURFACE _____ PROPOSED SURFACE _____

RECON. BY P.L.H FIELD WORK STARTED 11-6-62 FIELD WORK COMPLETED 11-28-62

EARTH AUGER: NO. OF HOLES 33380' LIN.FT. BORING 194 BY T.K.S. & O.L.D DAYS 25
CORE DRILL: NO. OF HOLES 660' LIN.FT. BORING 23 BY D.M.B & R.L.S DAYS 25

EARTH AUGER: SAMPLES INSP. _____ SAMPLES TESTED 549 TOTAL SAMPLES _____
CORE DRILL: SAMPLES INSP. _____ SAMPLES TESTED 8 TOTAL SAMPLES _____

DRAFTING BY S.J.H, G.F.A, L.E.S. DRAFTING COMPLETED 7-25-63 LETTER OR PROFILE SENT _____

REMARKS _____

AASHO GROUP DESIGNATION	OHIO GROUP DESIGNATION	AGGREGATE %	COARSE SAND %	FINE SAND %	SILT %	CLAY %	LIQUID LIMIT	PLASTICITY INDEX	WATER CONTENT	NO. SAMPLES TESTED	DENSITY DATA: NO. DENSITY SAMPLES	OPTIMUM MOISTURE	MAX. DRY WT. LBS/CU. FT.
A-1-a(0)	A-1-a	68	16	8	3	5	NP	NP	7	7			
A-1-b(0)	A-1-b	36	27	25	5	7	24	1	14	13			
A-3 (0)	A-3	2	18	75	-5-		-NP-		14	1			
-	A-3a	4	37	43	5	11	-NP-		12	4			
A-2-4(0)	A-2-4	55	6	9	12	18	28	6	21	13			
A-2-5(0)	A-2-5												
A-2-6(0)	A-2-6	62	6	3	7	20	40	13	18	4			
A-2-7( )	A-2-7												
A-4 (4)	A-4a	22	6	17	29	26	27	4	19	75			
A-4 (8)	A-4b	2	2	6	58	32	28	3	24	38			
A-5 (8)	A-5	0	4	17	43	36	42	10	28	2			
A-6 (8)	A-6a	19	4	7	31	39	35	12	20	163			
A-6 (11)	A-6b	13	3	5	28	51	38	17	21	17			
A-7-5(13)	A-7-5	9	9	5	27	54	50	17	29	30			
A-7-6(11)	A-7-6	17	4	5	26	48	43	16	20	30			

LAB. NOS. SAMPLES TESTED Undiff or Fire clay = 14, Clay bedrock 35 - Weathered Indurated clay = 26, Weathered Shale = 52, Weathered sandstone = 20, Shale = 34, Sandstone = 1, Indurated Clay, Limestone, Various other materials.

LAB. NOS. MOISTURE DENSITY SAMPLES Coal Glossopt, Coal, Indurated Clay,

COUNTY _____

SUMMARY OF TESTS ON SOIL PROFILE SAMPLE

County, Rt., No., & Section TUL-54A-21-(40,55) (0.00) (5980)

Lab. No. So.-	Sample No.	Station	Depth In Feet	Mechanical Analysis					Physical Charact.			Density		SHTL Class	Remarks
				Agg. %	C Sand %	F Sand %	Silt %	Clay %	L.L.	P.I.	Water Cont. %	Opt.	Max. Dry Wt.		
99318	L-3	262+0 100Lt	0-5	0	4	11	50	35	25	8	18			A-4b	
9	2	"	5-10	0	0	2	42	56	33	12	23			A-6a	
99320	3	"	10-15	0	0	1	41	58	31	11	22			A-6a	
1	4	"	15-20	0	0	0	38	62	38	15	23			A-6a	
2	5	"	20-25	0	0	1	22	77	40	20	28			A-6b	
3	6	"	25-27	0	1	4	30	65	40	18	24			A-6b	
4	7	"	27-30	25	1	30	17	27	24	9	14			A-4a	
5	8	262+0 Lt	0-5	21	6	18	36	29	26	9	13			A-4a	
6	9	"	5-10	10	4	15	34	37	30	11	18			A-6a	
7	10-3	"	10-13	0	3	12	52	33	29	11	17			A-6a	
8	1	"	13-18	0	0	0	29	71	39	14	26			A-6a	
9	2	"	18-21	0	0	0	31	69	39	15	29			A-6a	
99320	3	"	21-23	0	1	8	31	60	37	19	16			A-6b	

SUMMARY OF TESTS ON SOIL PROFILE SAMPLE

County, Rt., No., & Section TUS - 54A - 21

Lab. No. So.-	Sample No.	Station	Depth In Feet	Mechanical Analysis					Physical Charact.			Density		SHTL Class	Remarks
				Agg. %	C Sand %	F Sand %	Silt %	Clay %	L.L.	P.I.	Water Cont. %	Opt.	Max. Dry Wt.		
99331	14-S	260+0 ℄	23-27	6	0	39	26	30	21	7	10			A-4a	
2	5	"	27-28	58	1	17	12	12	22	7	20			A-2-4	Ost Frags
3	6	" 1004	0-4	19	4	16	32	29	30	11	14			A-6a	
4	7	"	4-8	0	3	14	41	42	30	11	14			A-6a	
5	8	"	8-13	0	0	1	24	75	41	13	25			A-7-6	
6	9	"	13-14.5	0	0	10	60	30	28	5	26			A-4b	
7	20-S	"	14.5-16	0	2	4	26	68	36	11	19			A-6a	
8	1	"	16-20	0	3	36	29	32	24	8	18			A-4a	
9	2	"	20-22	Brown Weathered Sandstone Frags.										Visual	
99340	3	268+00 ℄	0-5	57	2	3	13	25	39	12	16			A-6a	
1	4	"	5-10	28	4	5	22	41	37	12	21			A-6a	
2	5	"	10-15	32	3	4	21	40	34	11	18			A-6a	
3	6	"	15-17	21	2	3	28	46	39	12	13			A-6a	

30-6

NP

SUMMARY OF TESTS ON SOIL PROFILE SAMPLE

County, Rt., No., & Section TUS-S/A-21

3

Lab. No. Soils-	Sample No.	Station	Depth In Feet	Mechanical Analysis					Physical Charact.			Density		SHTL Class	Remarks
				Agg. %	C Sand %	F Sand %	Silt %	Clay %	L.L.	P.I.	Water Cont. %	Opt.	Max. Dry Wt.		
99344	21	258+60 ℄	17-23	26	3	5	23	43	36	11	20			A-6a	
5	8	"	23-27	53	3	8	28	28	34	11	17			A-6a	
99346	29S	"	27-30	19	4	10	32	35	31	11	17			A-6a	
99347	1-D	262+00 ℄	0-5	0	0	16	48	36	30	11	22			A-6a	
8	2	"	5-8	0	1	57	16	26	N-P		22			A-4a	⊖
9	3	"	8-13	39	29	20	2	11	N-P		18			A-1-b	GR
99350	4	"	13-19	27	24	42	-5-		N-P		16			A-1-b	GR
1	5	"	19-23	3	13	81	-3-		N-P		23			A-3	⊖
2	6	"	23-27	0	11	85	-4-		N-P		20			A-3	⊖
3	7	15+50 50Rt	0-6	34	32	16	8	10	N-P		13			A-1-b	GR
4	8	"	6-9	23	30	37	-10-		N-P		9			A-1-b	GR
5	9	"	9-20	65	17	13	-5-		N-P		8			A-1-a	GR
6	10-D	12+50 ℄	0-6	47	26	13	5	9	N-P		9			A-1-b	GR

SO-8

SUMMARY OF TESTS ON SOIL PROFILE SAMPLE

County, Rt., No., & Section Tus-STA-21-

Lab. No. Sa.-	Sample No.	Station	Depth In Feet	Mechanical Analysis					Physical Charact.			Density		SHTL Class	Remarks
				Agg. %	C Sand %	F Sand %	Silt %	Clay %	L.L.	P.I.	Water Cont. %	Opt.	Max. Dry Wt.		
99357	11-D	12+50 ℄	6-7'	0	49	39	1	11	N-P		5			A-3a	
8	2	"	7-12	78	13	6	-3-		N-P		7			A-1-a	GR
9	3	"	12-17	63	22	8	2	5	N-P		8			A-1-a	GR
99360	4	9+50 "	0-4	0	3	13	48	36	29	13	21			A-6a	
1	5	"	4-10	13	46	33	-8-		N-P		6			A-3a	
2	6	"	10-15	22	41	30	-7-		N-P		21			A-1-b	GR
3	7	"	15-18	14	52	26	-8-		N-P		5			A-1-b	GR
4	8	7+50 ℄	0-4	55	21	10	6	8	N-P		7			A-1-a	GR
5	9	"	4-9	80	6	6	-8-		N-P		4			A-1-a	GR
6	20-D	"	9-14	80	7	6	3	4	N-P		4			A-1-a	GR
7	1	4+25 ℄	0-4	14	7	28	16	35	22	6	12			A-4a	
8	2	"	4-12	3	21	61	0	15	N-P		8			A-3a	
9	3	"	12-18	20	36	38	-6-		N-P		20			A-1-b	GR

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SUMMARY OF TESTS ON SOIL PROFILE SAMPLE

County, Rt., No., & Section TUS - 51A - 21 -

5

Lab. No. So.-	Sample No.	Station	Depth In Feet	Mechanical Analysis: Agg. %	C Sand %	F Sand %	Silt %	Clay %	Physical Charact.: L.L.	P.I.	Water Cont. %	Density: Opt.	Max. Dry Wt.	SHTL Class	Remarks
99370	24-D	4+25 ℄	18-24	24	34	35	3	4	NP		17			A-1-b	GR
1	5	1+00 ℄	0-6	0	1	6	40	53	41	17	36			A-7-6	
2	6	"	6-10	0	1	22	47	30	44	10	27			A-5	(3.0)
3	7	"	10-13	0	40	19	32	9	28	5	32			A-4a	0
4	8	"	13-19	54	2	15	9	20	NP		17			A-2-4	GR
5	9	"	19-26	25	37	28	0	10	NP		15			A-1-b	GR
6	30-D	16+50 ℄	0-4	43	26	19	2	10	NP		8			A-1-b	GR
7	31	"	4-9	52	28	10	1	9	NP		10			A-1-a	GR
8	32-D	"	9-12	4	35	54	7		NP		6			A-3	
9	3	"	12-14	0	33	39	13	15	NP		27			A-2a	0
99380	4	"	14-20	0	15	78	7		NP		6			A-3	
1	5	18+50 ℄	0-2	0	3	17	33	47	32	11	15			A-6a	
2	6	"	2-8	Br Unco Ss.							8			VISUAL	

SO-8

(1)

SUMMARY OF TESTS ON SOIL PROFILE SAMPLE

County, Rt., No., & Section TUS - SIA - 21 -

6

Lab. No.	Sample No.	Location	Depth In Feet	Mechanical Analysis: Agg. %	C Sand %	F Sand %	Silt %	Clay %	Physical Charact.: L.L.	P.I.	Water Cont. %	Density: Opt.	Max. Dry Wt.	SHTL Class	Remarks
				Brown Clayey Silt and Shale Frags (5 parts)											
99383	37D	22+50 ℄	0-5	26	3	5	25	31	33	11	17			A-6(8)	
				Br. MC & Sh. Frags. (5 parts)											
4	8	"	5-22	35	2	5	28	30	44	15	18			A-7-6(12)	
5	9	"	10-16	29	2	5	28	36	34	11	16			A-6(8)	
6	10 D	"	16-20	45	2	4	16	31	41	13	21			A-7-6(11)	
7	1	42+50 "	0-4	0	7	16	33	44	34	11	18			A-6(8)	
8	2	"	4-11	0	1	3	54	42	30	8	26			A-6(10)	
9	3	"	11-16	17	7	12	36	28	25	5	23			A-6(6)	①
99380	4	"	16-20	0	1	4	61	34	0	-	28			A-6(10)	②
1	5	"	20-25	0	1	10	43	46	26	11	21			A-6(8)	
2	6	"	25-30	0	1	10	46	43	26	11	21			A-6(8)	
3	7	46+00 "	0-6	0	1	8	44	47	32	12	23			A-6(9)	
4	8	"	6-12	9	5	19	32	35	23	6	18			A-6(4)	
5	9	"	12-18	0	2	5	20	73	37	18	29			A-6(15)	

SUMMARY OF TESTS ON SOIL PROFILE SAMPLE

County, Rt., No., & Section TUS-STA-21- Sec (1)

7

Lab. No. Soil-	Sample No.	Station	Depth In Feet	Mechanical Analysis: Agg. %	C Sand %	F Sand %	Silt %	Clay %	Physical Charact.: L.L.	P.I.	Water Cont. %	Density: Opt.	Max. Dry Wt.	SHTL Class	Remarks
99896	50-D	40+00 E	18-24	18	6	16	31	29	25	5	20			A-4a	
397	51	"	24-26	0	4	12	30	54	25	11	22			A-6a	(1)
12894	11-S	36+0 E	0-5	Br.	Wea.	M.G	Ss				(8)			VISUAL	
5	2	"	5-10	"	"	M.G	"				(11)			VISUAL	
6	3	"	10-14	Brown	Broken	Shale					(8)			VISUAL	
7	4	45+40 63'LT 175'LT	0-5	0	5	21	31	43	42	14	30			A-7-6	
8	5	"	5-10	0	2	3	56	39	27	3	23			A-4b	
9	6	"	10-15	0	4	3	50	43	29	3	26			A-4b	(2)
12900	7	"	15-20	0	2	3	60	35	NP		26			A-4b	(2)
1	8	"	20-26	0	2	5	65	28	NP		27			A-4b	(2)
2	9	"	26-32	0	2	3	67	28	NP		27			A-4b	(2)
3	20-3	45+0 E	0-4	18	3	7	50	22	30	5	26			A-4b	
4	1	"	4-10	27	9	11	31	22	28	4	18			A-4a	

(3) VLS

SUMMARY OF TESTS ON SOIL PROFILE SAMPLES

8

County, Rt. No., & Section Tus - SIA - 21 - 4053, 0.0.0

Lab. No. So.-	Sample No.	Station	Depth In Feet	Mechanical Analysis: Agg. %	C Sand %	F Sand %	Silt %	Clay %	Physical Charact. Density: L.L.	P.I.	Water Cont. %	Opt.	Max. Dry Wt.	SHTL Class	Remarks
12905	22-S	45+0 ℄	10-15	37	8	9	26	20	31	4	23			A-4a	
6	3	"	15-20	0	0	2	69	29	N-P		27			A-4b	
7	4	"	20-23	23	2	9	31	35	33	12	18			A-6a	
8	5	"	23-27	37	2	3	34	24	33	11	16			A-6a	
9	6	47+45 30Lt	0-4	0	2	7	53	38	38	11	39			A-6a	①
12910	7	"	4-7	0	1	2	48	49	40	11	24			A-6a	
1	8	47+75 50Rt	0-6	0	2	7	48	43	38	15	22			A-6a	
2	9	"	6-10	54	1	28	9	15	N-P		7			A-1-b	S-S
3	30-S	"	10-15	39	3	8	30	20	31	4	14			A-4a	
4	1	"	15-20	Br. We. Mona. Clay							(8)			VISUAL	
5	2	51+0 60Lt	0-5	0	0	2	69	29	N-P		22			A-4a	✓
6	3	"	5-7	0	6	5	33	56	36	11	16			A-6a	
7	4	54+0 60Rt	0-5	18	4	8	44	26	29	4	21			A-4a	

SO-8

(1)

SUMMARY OF TESTS ON SOIL PROFILE SAMPLES

County, Rt. No., & Section Tus - Sta - 21 - 40.53 0.00

Lab. No. So.-	Sample No.	Station	Depth In Feet	Mechanical Analysis Agg. %	C Sand %	F Sand %	Silt %	Clay %	Physical Charact. Density L.L.	P.I.	Water Cont. %	Opt.	Max. Dry Wt.	SHTL Class	Remarks
12918	35	54+40 60Rt	5 - 10	13	4	5	52	26	27	2	22			A-4b	✓
9	6	"	10 - 15	44	1	3	24	28	35	13	18			A-6a	✓
12920	7	"	15 - 20.5	37	5	9	28	21	28	4	16			A-4a	✓
1	8	54+20 30Lt	0 - 6	51	7	6	16	20	34	11	20			A-6a	✓
2	9	"	6 - 10	21	6	11	27	35	27	11	16			A-6a	✓
3	40 3	"	10 - 15.5	26	3	7	26	38	30	11	13			A-6a	✓
4	1	54+40 ℄	0 - 6	30	5	6	32	27	29	5	24			A-4a	✓
5	2	"	6 - 12	44	5	6	19	26	31	11	20			A-6a	✓
6	3	60+40 50Rt	0 - 5	18	1	4	42	35	32	11	24			A-6a	✓
7	4	"	5 - 10	29	7	7	29	28	33	11	22			A-6a	✓
8	5	63+00 50Rt	0 - 6	0	0	1	36	63	44	14	21			A-7-5	✓
9	6	"	6 - 11	47	2	12	16	23	27	11	11			A-6a	✓
12930	7	"	11 - 16	38	4	4	26	28	34	11	14			A-6a	✓

SO-8

SUMMARY OF TESTS ON SOIL PROFILE SAMPLES

10

County, Rt. No., & Section Tus-Sta-21-40 S3 0.00

Lab. No. Soil	Sample No.	Station	Depth In Feet	Mechanical Analysis: Agg. %	C Sand %	F Sand %	Silt %	Clay %	Physical Charact. Density: L.L.	P.I.	Water Cont. %	Opt.	Max. Dry Wt.	SHTL Class	Remarks
12931	4	48+5 63+00 50Rt	16-21	56	3	1	20	20	38	12	15			A6a	
12935	49	"	21-24	Gray Broken Shale							9			Visual	
	3	50 3 66+00 80Rt	0-6	51	5	7	17	20	30	11	16			A6a	
	4	1 "	6-11	42	3	19	15	21	33	11	9			A6a	
	5	2 "	11-15	34	2	4	33	27	35	11	18			A6a	
	6	3 "	15-20	22	4	4	38	32	33	11	23			A6a	
	7	4 "	20-23	0	4	3	43	50	38	12	15			A6a	
	8	5 66+0 ℄	0-5	40	9	10	20	21	29	6	18			A4a	
	9	6 "	5-10	46	7	14	13	20	25	5	14			A2-4	St Frags
12940	7	"	10-13	0	3	2	36	59	51	18	20			A7-5	
	8	8 69+0 30Rt	0-6	0	1	3	55	41	31	10	21			A4b	
	9	9 "	6-11	43	4	13	14	26	29	11	11			A6a	
			0-16												
30-8	3	63-2 71+00, ℄	16-22	32	5	3	26	34	36	11	14			A6a	

0-5 Br MC w/ St. Frags (Spoils)
5-16 Br MC & Sh. Frags (Spoils)

(1) VIS

SUMMARY OF TESTS ON SOIL PROFILE SAMPLES

11

County, Rt. No., & Section Tus - Sta - 21 - 40.5 S, 0-0.0

Lab. No. Soil	Sample No.	Station	Depth In Feet	Mechanical Analysis: Agg. %	C Sand %	F Sand %	Silt %	Clay %	Physical Charact. Density: L.L.	P.I.	Water Cont. %	Opt.	Max. Dry Wt.	SHTL Class	Remarks
12944	68-S	75+50 ℄	0-5	22	3	2	39	34	38	11	13			A-6a	✓
5	9	"	5-9	15	2	1	45	37	35	11	15			A-6a	✓
6	70-S	"	9-14	Gr. Broken Shale							(11)			VISUAL	✓
7	1	83+50 ℄	0-4	22	4	4	34	36	35	11	34			A-6a	✓
8	2	84+20 25Rt	0-2	15	7	6	38	34	37	11	38			A-6a	✓
9	3	87+0 ℄	0-6	21	6	6	32	35	36	13	21			A-6a	✓
12950	4	"	6-11	Br. Broken Shale							(12)			VISUAL	✓
1	5	94+0 ℄	0-5	33	9	10	27	21	N-P		13			A-4a	✓
2	6	"	5-10	35	7	9	18	31	32	14	20			A-6a	✓
3	7	"	10-14	54	6	7	14	19	35	11	12			A-6a	✓
4	8	"	14-20	0	4	6	47	43	35	11	17			A-6a	✓
5	9	98+0 63'Lt	0-6	0	4	4	34	58	41	16	16			A-7-6	✓
6	80-S	"	6-12	15	4	6	19	56	47	15	21			A-7-5	✓

SO-8

(7) VIS

SUMMARY OF TESTS ON SOIL PROFILE SAMPLES

12

County, Rt. No., & Section Tus- Sta 21- 4053, 0.00

Lab. No. So.+	Sample No.	Station	Depth In Feet	Mechanical Analysis Agg. %	C Sand %	F Sand %	Silt %	Clay %	Physical Charact. Density L.L.	P.I.	Water Cont. %	Opt.	Max. Dry Wt.	SHTL Class	Remarks
12987	81-S	98+0 130Lt	12-17	Cr Broken Sh							(15)			Visual	
8	2	" " ℄	0-5.5	0	13	6	36	45	57	17	40			A-7-5	
			5.5-9	Coal Blossom										Visual	
9	4	"	9-14	Lt-Gr Wx. Ind. Clay							(8)			Visual	
12960	5	" 90Rt	0-6	21	9	13	25	32	36	12	14			A-6a	
1	6	"	6-10	42	0	2	30	24	33	11	11			A-6a	
2	7	"	10-15	27	8	12	25	28	35	12	13			A-6a	
3	8	"	15-19	29	7	9	20	35	39	15	19			A-6a	
4	9	"	19-25	36	2	5	16	41	34	16	18			A-6-6	
5	90S	102+0 90Rt	0-4	36	2	3	19	40	53	22	39			A-7-5	
6	1	"	4-9	0	4	4	39	53	41	14	17			A-7-6	
7	2	"	9-15	Cr Broken Shale							(11)			Visual	
8	3	" ℄	0-4	0	3	5	38	54	37	13	18			A-6a	
9	4	"	4-10	Br Weath. Ind. Clay							(15)			Visual	

SO-8

SUMMARY OF TESTS ON SOIL PROFILE SAMPLES

13

County, Rt. No., & Section Tus-Sta-21-

Lab. No. Sc.-	Sample No.	Station	Depth In Feet	Mechanical Analysis Agg. %	C Sand %	F Sand %	Silt %	Clay %	Physical Charact., Density L.L.	P.I.	Water Cont. %	Opt.	Max. Dry Wt.	SHTL Class	Remarks
12970	95-S	10240 ℄	10-15	Cr We. Mod Ind Clay							10			VISUAL	
	1	6 "	15-20	Br Broken Sh							13			VISUAL	
	2	7 103+50 20Rt	0-4	19	3	28	17	33	30	10	14			A-4a	
	3	8 "	4-10	17	3	10	29	41	36	12	13			A-6a	
	4	9 "	10-15	Br We. Mod Ind Clay							10			VISUAL	
	5	100-S 105+00 100Rt	0-5	28	3	16	23	30	29	11	12			A-6a	
	6	1 " ℄	0-6	25	4	6	28	37	38	17	15			A-6b	
	7	2 "	6-12	51	1	2	18	28	41	15	15			A-7-6	
	8	3 "	12-18	Cr Broken Sh							12			VISUAL	
	9	4 " 100 Lt	0-5	0	1	1	31	67	51	19	23			A-7-5	
12980	5	"	5-10	50	0	1	18	31	40	15	16			A-6a	
	1	6 "	10-14	61	2	2	9	26	42	11	19			A-2-7	SHALE
	2	7 "	14-17	75	1	0	6	18	44	15	23			A-2-7	"

30-8

SUMMARY OF TESTS ON SOIL PROFILE SAMPLES

14

County, Rt. No., & Section Tus - Sta - 21 -

Lab. No. So.-	Sample No.	Station	Depth In Feet	Mechanical Analysis Age. %	C Sand %	F Sand %	Silt %	Clay %	Physical Charact. Density L.L.	P.I.	Water Cont. %	Opt.	Max. Dry Wt.	SHTL Class	Remarks
12983	108-S	109+0 100'Lt	0 5	Br Weath Sandstone							10			VISUAL	
4	9	"	5-10	Gr Weath Sh							9			VISUAL	
5	116-S	" ℄	0-4'	40	5	3	19	33	38	12	20			A6a	
			4-8	Coal										V.S.	
6	8	"	8-14.5	~~Weath Sh~~ Gr Wc. Ind. Cly							9			VISUAL	
7	9	112+0 ℄	0 6'	28	7	6	27	32	30	11	18			A6a	
8	120-S	"	6-11	47	3	12	15	23	45	17	15			A-7-6	
9	1	"	11-17	Br Broken Sh							9			VISUAL	
12990	2	115+0 100'Lt	0-6	25	3	2	24	46	42	12	17			A-7-5	
1	3	"	6-12	24	5	4	19	48	40	16	21			A6b	
2	4	"	12-16	Lt-Br Fine clay							12			VISUAL	
3	5	" ℄	0-4	0	2	3	48	47	41	18	23			A-7-6	
4	6	"	4-10	Br-Gr Broken Sh							19			VISUAL	
5	7	"	10-16.5	Gr Broken Sh							12			VISUAL	

SO-8

7

SUMMARY OF TESTS ON SOIL PROFILE SAMPLES

15

County, Rt. No., & Section TUS-SIA-21-

Lab. No. So.-	Sample No.	Station	Depth In Feet	Mechanical Analysis Agg. %	C Sand %	F Sand %	Silt %	Clay %	Physical Charact. Density L.L.	P.I.	Water Cont. %	Opt.	Max. Dry Wt.	SHTL Class	Remarks
12996	128-5	116+50 ℄	0-5	36	4	4	25	21	38	12	18			A-6a	
7	9	"	5-10	Br-Gr Broken Sh							15			VISUAL	
8	130-5	"	10-16	Gr		M.O	"	"			14			VISUAL	
9	1	"	16-20	"		M.O	"	"			11			VISUAL	
13000	2	115+10 120Rt	0-4	25	8	6	28	36	38	11	17			A-6a	
1	3	"	4-10	Br Broken Sh							12			VISUAL	
2	4	"	10-15	"	"	M.O	"				11			VISUAL	
3	5	"	15-20	"	"	M.O	"				10			VISUAL	
4	6	"	20-26	Br Weath Sh							18			VISUAL	
5	7	"	26-32	Lt-Br & Gr Weath Ind Clay							7			VISUAL	
6	8	118+10 ℄	0-5	37	5	4	25	29	34	12	21			A-6a	
7	9	"	5-10	24	2	2	27	45	44	16	20			A-7-6	
8	140-5	"	10-15	0	1	3	30	66	43	14	19			A-7-6	

80-8

SUMMARY OF TESTS ON SOIL PROFILE SAMPLES

16

County, Rt. No., & Section TUS - STA - 21 -

Lab. No. Soils	Sample No.	Station	Depth In Feet	Mechanical Analysis: Agg. %	C Sand %	F Sand %	Silt %	Clay %	Physical Charact. Density: L.L.	P.I.	Water Cont. %	Opt.	Max. Dry Wt.	SHTL Class	Remarks
13009	141-S	118+10 ℄	15-21	Br-Gr Broken Sh							16			VISUAL	
13010	2	"	21-27	Gr Broken Sh							20			VISUAL	
	1	3	121+0 ℄	0-5	11		11	0	11				11		VISUAL
	2	4	"	5-10	11		11	0	11				13		VISUAL
	3	5	"	10-15	11		11	0	11				11		VISUAL
	4	6	"	15-21	11		11	0	11				7		VISUAL
	5	7	"	21-24	11		11	0	11				9		VISUAL
	6	8	"	24-30	Br		11	0	11				19		VISUAL
			→	0-7	Gr Clay with St. Frags. and Rubber										VIS
	7	150-S	121+0 100 Lt	7-12	67	2	2	12	17	38	12	15		A-6	SHALE
	8	1	"	12-18	Gr		Broken		Sh				10		VISUAL
	9	2	"	18-25	11		11	0	11				10		VISUAL
13020	3	"	25-28	11		11	0	11					18		VISUAL
	1	4	"	28-30	11		11	0	11				10		VISUAL

SO-8

12

0-25 Gray to Br-Gr Shale Frags. (Spoils)

SUMMARY OF TESTS ON SOIL PROFILE SAMPLES

17

County, Rt. No., & Section Jus - Sta - 21 - 40.55, 0.00

Lab. No. So.-	Sample No.	Station	Depth In Feet	Mechanical Analysis: Agg. %	C Sand %	F Sand %	Silt %	Clay %	Physical Charact. Density: L.L.	P.I.	Water Cont. %	Opt.	Max. Dry Wt.	SHTL Class	Remarks
13072	160-S	121+10 100Rt	25-30	32	3	3	22	40	37	11	23			A-6a	
3	2	122+10 "	6-12	Br-Gr Clay & Sh. Frags. (Spoils)							(18)			V-Wet	
4	2	"	12-15	Gray Fire clay							(12)			V-Wet	Trans. 44
			0-24	Brown Shale Frags. (Spoils)										V-S	
5	8	122+00 ℄	24-27	24	2	2	26	46	36	13	18			A-6a	
13026	175-S	51+10 35Lt	0-7	32	3	2	32	31	38	11	15			A-6a	
13041	188-S	105+10 ℄	25-30	12	3	3	25	58	38	11	22			A-6a	Trans. 44
			0-25	Gray We. Sh. Frags. (Spoils)										V-S	
5	199-S	125+00 100Lt	25-30	0	1	4	31	64	37	17	20			A-6b	
6	205-S	" 125Rt	27-30	0	—	4	28	68	52	28	14			A-7-6	Trans 45
			0-5	Coal mixed w/ Clay							—			V-S	
7	2	127+50 ℄	5-11	Br-Gr We. Ss							5			V-Wet	
			0-16	Br MC w/ Sh. Frags (Spoils)										V-S	
8	211-S	130+0 165Rt	16-22	0	5	5	45	45	34	11	23			A-6a	
9	2	"	22-24	0	3	8	29	60	35	15	24			A-6a	
13920	3	130+10 100Rt	0-5	0	6	8	34	52	39	14	20			A-6a	
1	4	"	5-10	0	4	3	31	62	44	16	21			A-7-6	

SOS-6

(3)

SUMMARY OF TESTS ON SOIL PROFILE SAMPLES

18

County, Rt. No., & Section Tus - STA - 21 - 4055,000

Lab. No. So.-	Sample No.	Station	Depth In Feet	Mechanical Analysis: Agg. %	C Sand %	F Sand %	Silt %	Clay %	Physical Charact. Density: L.L.	P.I.	Water Cont. %	Opt.	Max. Dry Wt.	SHTL Class	Remarks
13927	215-S	130+0 100Rt	10-14	Lt-Gr Ute. Ind Clay							7			Visual	
3	6	" ℄	0-3	Br Broken SS							9			Visual	
4	7	" 100 Lt	0-5	0	29	13	25	43	37	12	21			A-6a	
5	8	"	5-10	22	24	7	13	34	44	16	22			A-7-6	
6	9	"	10-16	Dk-Gr Mtle. Sh							12			Visual	
7	220-S	130+00, 200 Lt	0-5	23	9	11	15	82	33	11	22			A-6a	
8	1	"	5-9	43	9	11	16	16	33	8	28			A-2-4	Str Frags
9	2	"	9-12	0	0	1	17	82	56	26	35			A-7-5	
			12-15	Coal										Vis	
13930	4	"	15-18	Coal Underclay										A-6a	Vis
1	5	"	18-21	Lt-Gr Ute. Ind. Clay							8			Visual	
		℄	0-28												
2	232-S	131+10 ℄	28-32	0	0	5	35	60	39	18	15			A-6b	
3	237-S	130+0 130 Lt	21-26	Lt-Gr Ute. SS							6			Visual	Trans. 45
4	8	135+0 200 Lt	10-5	0	6	4	32	68	52	19	23			A-7-5	

30-8

131+10, ℄ 0-25 Br Weath Sh Frags. (Spoils) Vis
25-28 Coal Blossom Vis

5 Vis

SUMMARY OF TESTS ON SOIL PROFILE SAMPLES

19

County, Rt. No., & Section Tus - Sta - 21 - 40.55, 0.00

Lab. No. So.-	Sample No.	Station	Depth In Feet	Mechanical Analysis Agg. %	C Sand %	F Sand %	Silt %	Clay %	Physical Charact. Density L.L.	P.I.	Water Cont. %	Opt.	Max. Dry Wt.	SHTL Class	Remarks
13935	239-S	135+0 200 Lt	5 - 9	7	3	5	18	67	61	21	27			A-7-5	
6	240-S	"	9 - 11	0	8	5	25	62	40	15	33			A-6a	
7	1	135+0 100 Lt	0 - 6	0	4	11	30	55	45	18	17			A-7-6	
8	2	"	6 - 12	11	4	19	29	37	31	11	22			A-6a	
9	3	"	12 - 18	19	2	3	31	45	37	12	17			A-6a	
			0-4	Coal Blossom										V.S.	
13940	5	" E	4 - 8	0	0	3	38	59	41	16	16			A-7-6	
1	6	"	8 - 12	0	2	41	31	26	N-P		12			A-4a	
2	253-S	137+0 E	0 - 5	0	1	13	53	33	29	11	12			A-6a	
3	4	"	5 - 11	0	8	10	35	47	38	12	19			A-6a	
4	5	"	11 - 17	23	2	3	32	40	38	11	20			A-6a	
5	6	"	17 - 22	Gr Weath. Shale							(7)			Visual	
6	7	" 100 Lt	0 - 5	27	4	22	25	22	30	8	16			A-4a	
7	8	"	5 - 11	0	5	7	34	54	39	16	19			A-6b	

90-8

(1) 1/13

SUMMARY OF TESTS ON SOIL PROFILE SAMPLES

20

County, Rt. No., & Section TUS - STA - 21 - 40.53 0.00

Lab. No. So.-	Sample No.	Station	Depth In Feet	Mechanical Analysis: Agg. %	C Sand %	F Sand %	Silt %	Clay %	Physical Charact. Density: L.L.	P.I.	Water Cont. %	Opt.	Max. Dry Wt.	SHTL Class	Remarks
13948	259-S	137+0 100Lt	11-17	Gr Wea Sh							(15)			Visual	
9	260-S	" 170Lt	0-5	38	4	15	18	25	29	7	16			A-4a	
13950	1	"	5-10	19	5	13	24	39	35	11	16			A-6a	
1	265-S	141+0 150Lt	0-3	24	1	10	37	28	28	11	12			A-6a	
2	6	"	3-9	36	13	7	23	21	33	10	13			A-4a	
3	7	145+0 130Lt	0-4	0	2	6	38	54	43	17	18			A-7-6	
4	8	"	4-10	Br & Gr Mtle Sh							(13)			Visual	
5	9	"	10-15	Gray Mtl			11				(9)			Visual	
6	278-S	"	26-30	Dk-Gr Wc. Mtl. Clay							(8)			Visual	Trans. 46
7	9	148+0 100Lt	0-6	0	6	12	40	42	33	11	24			A-6a	
8	280-S	"	6-12	27	5	3	23	42	39	17	21			A-6a	
9	1	"	12-13	Dk-Gr Wc. Carbonaceous Sh							(18)			Visual	
13960	2	148+0 200Lt	0-4	9	5	11	35	40	30	11	23			A-6a	

4-6 Coal Blossom Vis

50-8

(Survey Mem. 4-5)

SUMMARY OF TESTS ON SOIL PROFILE SAMPLES

2-1

County, Rt. No., & Section Tus - STH - 21 - 10.55, 0.00

Lab. No. So.-	Sample No.	Station	Depth In Feet	Mechanical Analysis: Agg. %	C Sand %	F Sand %	Silt %	Clay %	Physical Charact. Density: L.L.	P.I.	Water Cont. %	Opt.	Max. Dry Wt.	SHTL Class	Remarks
13961	284-S	148+40 200'Lt	6-9'	19	6	4	18	53	31	17	16			A-6a	
2	5	" ℄	0-5	Br Weath Ss.							13			Visual	
3	6	"	5-10	Br Weath Sh							13			Visual	
4	7	"	10-15	Br-Gr We. Sh							14			VISUAL	
5	8	"	15-18	" "		Mo	"				11			Visual	
6	9	148+00, 100Rt	0-5	16	9	10	27	38	35	11	22			A-6a	
			5-9	Coal Blossom										V.S.	
7	291-S	" "	9-13	23	1	1	26	49	38	16	13			A-6b	
8	2		13-16	Br-Gr Weath Sh							9			VISUAL	
			0-7.5	Coal										V.S.	
13969	294-S	125+65 100Lt	5-7.5	Gray Underclay					41	23				A-7-6	
15290	295-S	164+0 ℄	0-5	20	4	12	44	20	25	1	22			A-4a	O
1	6	"	5-9	24	3	7	23	33	PX	NP	13			A-6a	
2	7	"	9-13	Gray Broken	Carbonaceous		Sh							VISUAL	
3	8	161+0 ℄	0-6	46	4	3	8	39	49	18	25			A-7-5	

50-S

(7) V.S.

SUMMARY OF TESTS ON SOIL PROFILE SAMPLES

32

County, Rt. No., & Section Tus - Sta - 21-4055 0.00

Lab. No. So.-	Sample No.	Station		Depth In Feet	Mechanical Analysis					Physical Charact. Density					SHTL Class	Remarks
					Agg. %	C Sand %	F Sand %	Silt %	Clay %	L.L.	P.I.	Water Cont. %	Opt.	Max. Dry Wt.		
19294	299-S	16140	℄	0-11	65	4	4	7	20	NP	NP	33			A-2-4	+
5	300-S	15740	℄	0-5	39	2	13	28	28	27	7	13			A-4a	
6	1	"		5-10	39	3	8	22	28	31	9	14			A-4a	
7	2	"		10-14	Gr. We. M. Sh.							16			VISUAL	
8	3	"	100℄	0-5	0	5	4	18	73	53	23	28			A-7-5	
9	4	"		5-11	25	15	5	18	37	38	15	12			A-6a	
15300	5	"		11-13.5	Brn Gr We. Inct. Clay							11			VISUAL	
1	6	"	100℄	0-4	0	3	13	40	44	81	15	71			A-7-5	Org.
2	7	"		4-7	Gr. We. Md. Clay							12			VISUAL	
3	8	15440	℄	0-4	0	1	2	34	63	51	18	23			A-7-5	
4	9	"		4-10	Br We. Md. Clay							11			VISUAL	
5	310-S	"		10-15	Gr Broken Shale							11			VISUAL	
6	1	"	150℄	0-5	36	16	9	7	32	NP	NP	17			A-7-6	

7

SUMMARY OF TESTS ON SOIL PROFILE SAMPLES

23

County, Rt. No., & Section TUS-SYA-21-A.55,0.0.0

Lab. No. So.-	Sample No.	Station	Depth In Feet	Mechanical Analysis Agg. %	C Sand %	F Sand %	Silt %	Clay %	Physical Charact. Density L.L.	P.I.	Water Cont. %	Opt.	Max. Dry Wt.	SHTL Class	Remarks
15307	312 S	154+00 150Rt	5 - 10	Lt-Gr Fine Clay							13			VISUAL	
8	3	"	10 - 13	Gr Wet Ind. Clay							10			VISUAL	
		154+00, 70'Rt	0-10	Brown Sand and St Frags (spots)											
		"	10-16	Coal Blossom											
9	7	"	16 - 18	Gr Wet Ind Clay							11			VISUAL	
15310	8	151+0 100Rt	0 - 5	39	10	8	8	35	43	19	22			A-7-6	
1	9	"	5 - 10	48	12	8	7	25	NP	NP	22			A-2-4	+
2	320 S	"	10 - 15	Lt-Gr Fine Clay							8			VISUAL	
3	1	" "	0 - 5	32	2	9	36	21	32	11	23			A-6a	
4	2	"	5 - 9.5	Br Wet Ind Clay							12			VISUAL	
5	3	" 150Rt	0' - 6'	54	2	6	22	16	31	9	14			A-4a	
6	4	"	6 - 11	Br Wet Mod Clay							13			VISUAL	
7	330 S	170+0 100Rt	26 - 30	Lt Gr Fine Clay							13			VISUAL	Trans 46
8	1	173+0 "	0 - 5	46	4	18	15	17	26	9	13			A-2-4	St. Frags
9	2	"	5 - 10	Br Wet Mod Clay							11			VISUAL	

SO-6

19

SUMMARY OF TESTS ON SOIL PROFILE SAMPLES

27

County, Rt. No., & Section Tus - STA - 21 - 40.55, 0.0.0

Lab. No. So.-	Sample No.	Station	Depth In Feet	Mechanical Analysis Age. %	C Sand %	F Sand %	Silt %	Clay %	Physical Charact. Density L.L.	P.I.	Water Cont. %	Opt.	Max. Dry Wt.	SHTL Class	Remarks
18370	333-S	170+0 ℄	0-5	45	3	11	21	20	26	8	16			A-4a	
1	4	"	5-9.5	35	7	16	22	20	24	6	10			A-4a	
2	5	" 150Lt	0-5	34	20	7	9	30	40	11	23			A-6a	
3	6	"	5-9	Lt-Gr Fine Clay							7			Visual	
4	7	173+0 ℄	0-2	Br Weath Ss							12			Visual	
5	8	" 130Lt	0-5	83	1	3	8	5	NP	NP	11			A-1-a	
6	9	"	5-9	43	8	9	19	21	33	11	18			A-6a	
7	340-S	"	9-16	55	2	2	22	19	32	12	19			A-6a	
8	1	" 200Lt C	4	0	4	6	59	31	26	3	23			A-4b	0
9	7	177+0 75Lt	26-32	47	4	8	38	43	33	11	21			A-6a	Trans. 46
19370	320-S	180Lt	26-32	45	5	9	17	24	NP	NP	34			A-2-4	Trans. 47
1	9	180+0 100Rt	26-32	Lt-Gr Fine Clay							9			Visual	
2	340-S	177+0 ℄	0-5	29	5	5	21	40	40	12	24			A-6a	

SUMMARY OF TESTS ON SOIL PROFILE SAMPLES

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County, Rt. No., & Section Tus - S1A - 21 - 40.55, 0.00

Lab. No. So.-	Sample No.	Station	Depth In Feet	Mechanical Analysis: Agg. %	C Sand %	F Sand %	Silt %	Clay %	Physical Charact. Density: L.L.	P.I.	Water Cont. %	Opt.	Max. Dry Wt.	SHTL Class	Remarks
15333	361-S	177+0 ℄	5-10	19	2	4	33	42	34	12	20			A6a	
4	2	"	10-14	Br-Gr	Wet	SS					7			VISUAL	
5	3	" 150 Lt	0-5	31	1	1	14	53	44	15	24			A-7-6	
6	4	"	5-11	Dk-Gr	Wet	Sh					11			VISUAL	
7	5	"	11-14	Lt-Gr	Wet	Ind Clay					7			VISUAL	
8	6	180+0 ℄	0-6	62	3	11	13	11	22	6	11			A-1-b	SH FRAG
9	7	"	6-12	56	11	6	7	20	NP	NP	23			A-2-4	+
15340	8	"	12-15	Lt-Gr	Fine	Clay					7			VISUAL	
1	9	" 120 Lt	0-6	44	4	6	8	38	41	15	21			A-7-6	
2	370-S	"	6-11	21	5	10	34	30	31	11	13			A6a	
3	1	"	11-16	Br	Wet	M-SS					17			VISUAL	
4	2	" 200 Lt	0-5	48	4	9	18	21	30	8	21			A-6a	
5	3	"	5-10	43	7	11	21	18	24	4	14			A-6a	

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SUMMARY OF TESTS ON SOIL PROFILE SAMPLES

26

County, Rt. No., & Section Tus-SHA-21,4055,0.00

Lab. No. So.	Sample No.	Station	Depth In Feet	Mechanical Analysis Agg. %	C Sand %	F Sand %	Silt %	Clay %	Physical Charact. Density L.L.	P.I.	Water Cont. %	Opt.	Max. Dry Wt.	SHTL Class	Remarks
15346	379-S	180+0 200Lt	10-16'	41	1	1	27	30	35	13	20			A6a	
7	5	"	16 21	Gr Broken Sh							13			visual	
8	6	183+25 110Rt	0 5	76	2	5	10	7	25	5	23			A-1-b	Ost Frag
9	7	"	5-9	Br Sandstone Frags w/ Clayey Silt Mx										visual	
15350	8	"	9-13	43	5	12	15	25	NP	NP	23			A-4a	
1	9	183+50 ℄	0-2	61	4	7	14	14	NP	NP	22			A-2-4	+
2	380-S	" 100Lt	0 5.5	35	1	3	38	23	30	11	23			A6a	
3	1	" 175Lt	0-6	38	6	10	26	20	28	3	24			A-4a	
4	2	"	6-11	33	4	11	36	16	NP		31			A-4a	O
5	3	"	11-15	24	2	18	29	27	27	10	18			A-4a	
6	4	" 250Lt	0 5	0	1	20	50	29	23	5	25			A-4b	O
7	5	"	5-10	0	2	6	63	29	27	4	24			A-4b	O
8	6	"	10-11	0	8	14	29	49	28	8	19			A-4a	

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SUMMARY OF TESTS ON SOIL PROFILE SAMPLES

27

County, Rt. No., & Section Tus - Sta - 21 - 40.55, 0.000

Lab. No. So.-	Sample No.	Station	Depth In Feet	Mechanical Analysis					Physical Charact., Density					SHTL Class	Remarks
				Agg. %	C Sand %	F Sand %	Silt %	Clay %	L.L.	P.L.	Water Cont. %	Opt.	Max. Dry Wt.		
15359	387-S	18640 15004	06-6'	24	3	7	32	34	40	16	25			A66	
15360	8	"	6-11	44	3	7	31	15	NP	NP	14			A-1a	
1	9	"	11-16	23	9	18	24	26	25	4	18			A-2a	
2	390-S	"	16-21	24	9	15	28	24	27	7	16			A-4a	
3	1	"	21-26	Coa. Wem. and Clay							13			VISUAL	
4	2	" &	0-5	56	2	7	15	20	30	10	22			A-2-4	STRATA
5	3	"	5-10	37	6	11	19	27	30	9	16			A-4a	
6	4	"	10-16	27	17	6	18	32	34	11	16			A6a	
			16-18	Coal Blossom										VIS	
7	6	"	18-21	31	6	6	15	52	40	11	33			A6a	
8	7	19240 &	0 5 3	27	5	3	25	40	40	15	29			A6a	
9	8	"	3-8	0	8	13	37	42	31	11	21			A6a	
15370	9	"	8-12	24	1	0	38	37	35	11	16			A6a	
1	400-S	"	12-17	51	1	2	20	26	39	12	15			A6a	

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(2) VIS

SUMMARY OF TESTS ON SOIL PROFILE SAMPLES

28

County, Rt. No., & Section Ius - 34A - 21 - 40.55, 0.00

Lab. No. So.-	Sample No.	Station	Depth In Feet	Mechanical Analysis: Agg. %	C Sand %	F Sand %	Silt %	Clay %	Physical Charact. Density: L.L.	P.I.	Water Cont. %	Opt.	Max. Dry Wt.	SHTL Class	Remarks
15372	401-5	192+0 ℄	17-20	Gr Broken Sh							13			VISUAL	
3	2	"	20-24	Gr Weath Sh							8			VISUAL	
4	3	195+0 ℄	0-5	28	1	3	19	49	45	17	22			A-7-6	
5	4	"	5-9	39	5	5	15	36	44	14	22			A-7-5	
6	5	"	9-15	Gr We MSh							14			VISUAL	
7	6	197+50 ℄	0-4	26	3	5	35	31	35	11	24			A6a	
8	7	"	4-7	Gr We M Sh							12			VISUAL	
9	8	"	7-11	Gr Clay Bedrock							27			VISUAL	
15380	9	"	11-12	11	11	M-O	11				27			VISUAL	
1	415	199+50 ℄	15-20	Lt-Gr Fine Clay							11			VISUAL	Trans. 47
2	420-5	208+50 ℄	0-20 20-22	0	4	7	47	42	33	11	22			A6a	
3	1	"	22-26	0	1	5	48	46	33	20	14			A6b	
4	2	"	26-32	Br We M Sd Clay							13			VISUAL	
			0-10	Gr-Br CM & Sh Frags (Spoils)										VIS	
			10-20	Br Sh Frags. (spoils)										VIS	

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8 VIS

SUMMARY OF TESTS ON SOIL PROFILE SAMPLES

29

County, Rt. No., & Section Tus - Sta 21 - 40-52 000

Lab. No. Soils	Sample No.	Station	Depth In Feet	Mechanical Analysis: Agg. %	C Sand %	F Sand %	Silt %	Clay %	Physical Charact. Density: L.L.	P.I.	Water Cont. %	Dpt.	Max. Dry Wt.	SHTL Class	Remarks
15385	423-S	210+50 100Lt	0-5	53	1	2	9	35	NP	NP	23			A-7-6	
6	4	"	5-10	0	7	15	38	40+	28	6	27			A-4a	①
7	~~425~~	"	10-12	27	6	11	24	32	34	12	24			A6a	
8	~~426~~	"	12-14	Gr Wc M and Clay							14			Visual	
			0-14	Br & Gr MC (Spoils)										Vis	
9	430	210+50, 200Lt	14-20	0	3	28	37	32	33	11	23			A6a	
15390	431	"	20-22	32	1	5	18	44	41	16	16			A-7-6	
1	432	"	22-26	11	1	6	41	41	26	6	10			A-4a	
2	433		26-30	Lt-Gr Mdc Clay							②			Visual	
			0-6	Gr C & Sh. Frags (Spoils)										Vis	
3	5	211+0 E	6-10	0	3	10	67	20	1	0	21			A-4b	
4	6	"	10-15	0	7	6	31	56	45	15	21			A-7-5	
			15-18	Coal Frags.										Vis	
5	8	"	18-24	67	5	2	14	12	NP	NP	17			~~A-2-4~~	+
6	9	" 1681	0-5	27	9	13	33	24	33	8	23			A-4a	
7	4403	"	5-10	41	3	5	22	29	41	12	18			A-7-6	

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(4)

SUMMARY OF TESTS ON SOIL PROFILE SAMPLES

30

County, Rt. No., & Section Tus-51A-21-40.55, 0.00

Lab. No. So.-	Sample No.	Station	Depth In Feet	Mechanical Analysis Agg. %	C Sand %	F Sand %	Silt %	Clay %	Physical Charact. Density L.L.	P.I.	Water Cont. %	Opt.	Max. Dry Wt.	SHTL Class	Remarks
15398	441-S	211+0 75Rt	10-14	46	4	9	16	25	31	11	16			A-6a	
9	2	"	14-19	Gr Weath Sh							15			Visual	
15400	3	"	19-22	"	"	"	M.O	"			17			Visual	14
1	4	" 135Rt	0-5	42	3	16	17	22	26	9	19			A-4a	
2	5	"	5-10	20	5	39	15	21	NP		16			A-2a	
3	457	252+0 ℄	0-5	23	5	15	26	31	24	4	17			A-4a	
4	492	"	5-9	0	0	1	34	65	42	17	24			A-7-6	
5	458	"	9-15	0	1	7	62	30	24	3	20			A-4b	
6	494	"	15-19.5	Dk-Br Carbonaceous Sh & Coal Frags.							X			Visual	
7	455	248+0 ℄	0-5	21	4	2	31	42	36	11	31			A-6a	
			5-9	Coal										Vis.	
8	7	4	9-11	Lt-Gr Underclay							(12)			Visual	
9	8	245+0 ℄	0-3	0	18	4	31	47	50	17	19			A-7-5	
			3-4	Coal Blossom										Vis	
15410	460S	"	4-9	Lt-Gr Weath. Ind. Clay							(11)			Visual	

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SUMMARY OF TESTS ON SOIL PROFILE SAMPLES

31

County, Rt. No., & Section IUS - STA - 21 - 40.55 L 0.00

Lab. No. So.-	Sample No.	Station	Depth In Feet	Mechanical Analysis: Agg. %	C Sand %	F Sand %	Silt %	Clay %	Physical Charact. Density: L.L.	P.I.	Water Cont. %	Opt.	Max. Dry Wt.	SHTL Class	Remarks
15911	461-S	245+0 90Rt	0-3	53	3	3	27	34	44	18	17			A-7-6	
2	2	"	5-9.5	45	3	4	22	26	37	12	14			A6a	
3	3	" 100Lt	0-4	0	8	8	48	36	37	11	26			A6a	
4	4	"	4-9	32	5	7	26	30	39	11	17			A6a	
5	5	"	9-14	Gray Weath. Shale							(13)			Visual	
			14-16	Coal											
6	7	32+00 10Lt	0-5	0	4	3	38	55	42	11	19			A7-5	
			5-9	Coal										V.S.	
7	9	"	9-14	51	5	5	12	27	40	16	27			A6b	
8	4703	36+0 10Lt	0-5	0	5	9	50	36	32	7	24			A-4b	
9	1	" "	5-8	22	4	21	29	24	30	9	21			A-4a	
13420	2	39+0 10Lt	0-5	26	5	11	27	31	29	6	15			A-4a	
1	3	"	5-9	Br. Weath. Ss							9			Visual	
2	4	43+0 10Lt	0-6	0	2	7	56	35	34	11	25			A6a	①
3	5	"	6-12	20	4	16	28	32	30	6	25			A-4a	

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(2)

SUMMARY OF TESTS ON SOIL PROFILE SAMPLES

32

County, Rt. No., & Section Tus-Sta-21-40.55,000

Lab. No. So.-	Sample No.	Station	Depth In Feet	Mechanical Analysis Agg. %	C Sand %	F Sand %	Silt %	Clay %	Physical Charact. Density L.L.	P.I.	Water Cont. %	Opt.	Max. Dry Wt.	SHTL Class	Remarks
15424	4765	43+0 10Lt	12-17	0	4	3	34	59	44	13	22			A-7-5	
5	7	47+0 "	0-5	45	7	4	17	27	42	11	17			A-7-5	
6	8	"	5-10	Br & Gr M Me. Sh.							(15)			Visual	
7	9	50+0 10'Rt	0-6	34	8	16	23	19	29	8	29			A-4a	O
15428	480-5	"	6-10	26	2	6	27	39	34	12	13			A6a	
16352	481-2	63+00 8Rt	0-4	10	8	28	29	25	[illegible]		18			A-4a	
3	2	"	4-9	45	17	7	11	20	37	13	16			A-2-6	SH
4	3	"	9-13	Br Weath Sh							(14)			Visual	
5	4	53+0 10Lt	0-4	19	10	20	22	29	28	7	25			A-4a	O
6	5	"	4-9	Br-Gr M Me. Sh							(13)			Visual	
7	6	"	9-13	Gray	M	"					(14)			Visual	
8	7	"	13-19	"	M	"					(12)			Visual	
9	8	23940 ℄	10-5	0	2	2	41	55	40	14	21			A6a	

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SUMMARY OF TESTS ON SOIL PROFILE SAMPLES

33

County, Rt. No., & Section Tus-S/A-21

Lab. No. Se.-	Sample No.	Station	Depth In Feet	Mechanical Analysis: Agg. %	C Sand %	F Sand %	Silt %	Clay %	Physical Charact. Density: L.L.	P.I.	Water Cont. %	Opt.	Max. Dry Wt.	SHTL Class	Remarks
16360	489-S	239+0 ℄	5-8	0	18	9	29	44	42	16	20			A-7-6	
1	490-S	"	8-13	Br Weath Shale							(15)			Visual	
2	1	"	13-19	Gr		"		"			(10)			Visual	
3	2	234+0 ℄	0-15	0	4	10	43	43	71	17	71			A-7-5	O Ore 7.1
4	3	"	15-6	0	2	10	35	53	38	14	30			A6a	
5	4	"	6-10	37	8	16	18	21	29	9	28			A4a	O
6	5	233+50 60'Rt	0-15	0	4	12	30	54	59	28	66			A7-5	O Ore
7	6	"	15-8	0	2	8	31	59	40	15	38			A6a	O
8	7	"	8-10	Lt-Gr Fine Clay							(13)			Visual	
9	502-S	230+50 ℄	19-27	Br + Gr Mtle. Ind Clay							(9)			Visual	3 Trans. 48
16370	3	"	24-27	Lt-Br Mtle. Sh.							(10)			Visual	
1	4	231+50 "	0-4	21	5	5	23	46	38	15	23			A6a	
2	5	"	4-6	0	13	10	39	38	29	11	24			A6a	

SUMMARY OF TESTS ON SOIL PROFILE SAMPLES

34

County, Rt. No., & Section Tus - STA 21

Lab. No. So.-	Sample No.	Station	Depth In Feet	Mechanical Analysis: Agg. %	C Sand %	F Sand %	Silt %	Clay %	Physical Charact. Density: L.L.	P.I.	Water Cont. %	Opt.	Max. Dry Wt.	SHTL Class	Remarks
16373	501-S	231+50 ℄	6-8	0	0	9	34	57	30	14	13			A6a	
4	7	"	8-14	0	6	8	32	54	36	17	14			A6b	
5	8	233+50 ℄	0-4	0	4	20	45	31	29	9	32			A4a	○
6	9	"	4-8.5	0	4	21	44	31	26	4	32			A4a	◎
7	510-S	"	8.5-10.5	Lt-Gr Unoth Sh.							(9)			Visual	
8	1	233+0 180Rt	0-4	0	3	17	50	30	NP		38			A-4b	○
9	2	"	4-9.5	0	4	9	38	49	36	13	19			A6a	
16380	3	231+50 180Rt	0-6	Br Unc MSh							(12)			Visual	
1	4	"	6-10	11	11	MH					(13)			Visual	
2	5	" 180Rt	0-6	36	11	6	20	25	31	11	18			A-6a	
3	6		6-8	Lt-Gr MUnc SS							(9)			Visual	
4	7	233+50 200Lt	0-6"	0	4	18	48	30	34	13	35			A6a	◎
5	8	"	6-8.5	43	3	7	24	24	31	11	15			A6a	

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(A)

SUMMARY OF TESTS ON SOIL PROFILE SAMPLES

35

County, Rt. No., & Section Tus-Sta-21-

Lab. No. So.-	Sample No.	Station	Depth In Feet	Mechanical Analysis Agg. %	C Sand %	F Sand %	Silt %	Clay %	Physical Charact. Density L.L.	P.I.	Water Cont. %	Opt.	Max. Dry Wt.	SHTL Class	Remarks
16386	519-5	233+50 200Lt	8.5-11	28	3	8	28	33	35	12	15			A6a	
7	520-5	"	11-12	Gr Weath Ind Clay							(7)			VISUAL	
8	1	233+0 75Lt	0-4	Br Weath Ss							(12)			VISUAL	
9	2	"	4-8	"		" M.O	"				(11)			VISUAL	
16390	3	" 35Rt	0-3	21	5	16	23	35	33	11	14			A6a	
1	4	40+50 ℄	0-3	Lt-Gr Wthr. Ind Clay							(9)			VISUAL	
2	5	"	3-6	Br+Gr Wthr Sh							(11)			VISUAL	
3	6	"	6-9	Lt-Gr Fire Clay							(9)			VISUAL	
4	7	44+0 ℄	0-5	Br Wthr. Shale							(9)			VISUAL	
5	8	"	5-10	"	"	M.O	"				(8)			VISUAL	
6	9	"	10-14	"	"	M.O	"				(6)			VISUAL	
7	530-5	45+0 ℄	0-4	Br Wthr. Sandstone							(11)			VISUAL	
8	1	"	4-8	Br Wthr. Shale							(16)			VISUAL	

SUMMARY OF TESTS ON SOIL PROFILE SAMPLES

36

County, Rt. No., & Section Tuss - STH - 21

Lab. No. Se.	Sample No.	Station	Depth In Feet	Mechanical Analysis: Agg. %	C Sand %	F Sand %	Silt %	Clay %	Physical Charact. Density: L.L.	P.I.	Water Cont. %	Opt.	Max. Dry Wt.	SHTL Class	Remarks
16399	537.5	454+0 ℄	8'-13'	Br We Sh							(11)			Visual	
16400	3	"	13-18	Gr " MH							(9)			Visual	
1	4	"	18.23	" " MH							(9)			Visual	
2	5	452+0 ℄	0 5	0	6	6	35	53	40	14	19			A6a	
3	6	"	5 8	12	6	6	28	48	39	14	20			A6a	
4	7	"	8 13	Br We Sh							(16)			Visual	
			13-14.5	Coal							—			Vis	
5	9	"	14.5 19	Gr We Sh							(10)			Visual	
6	540.5	"	19-20.5	Gr Clay Bedrock							(21)			Visual	
7	1	544+0 ℄	0 5	8	6	13	32	41	30	11	15			A6a	
8	2	"	5-9	0	6	12	36	46	33	13	16			A6a	
9	3	"	9-13	20	4	11	24	41	29	12	22			A6a	
16410	4	"	13-17	10	8	15	33	34	22	11	16			A6a	
1	5	"	17 20	0	9	29	30	32	23	6	16			A4a	

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SUMMARY OF TESTS ON SOIL PROFILE SAMPLES

37

County, Rt. No., & Section Tus - Sta - 21

Lab. No. So.-	Sample No.	Station	Depth In Feet	Mechanical Analysis Agg. %	C Sand %	F Sand %	Silt %	Clay %	Physical Charact. L.L.	P.I.	Density Water Cont. %	Opt.	Max. Dry Wt.	SHTL Class	Remarks
16417	5465	5440 ←	20-25	Gr Wea. Sh							(11)			Visual	
3	7	"	25-29	"	"	W.O	"				(10)			Visual	
4	8	58+0 ←	0-5	0	3	5	56	36	35	19	28			Aba	
5	9	"	5-10	29	6	13	22	30	24	11	14			Aba	
6	550-S	"	10-15	0	3	5	32	60	33	13	19			Aba	
7	1	"	15-19	0	0	1	47	52	36	12	13			Aba	
8	2	"	19-21	Gr Broken Shale							(11)			Visual	
9	3	61+50 10 Lt ←	0-5	0	7	8	33	52	37	14	21			Aba	
16420	4	"	5-10	0	3	10	45	42	30	11	17			Aba	
1	5	"	10-13	0	5	43	26	26	22	4	18			Aba	
2	6	"	13-18	Gray Shale							(11)			Visual	
3	7	"	18-23	Gr Weath Sh							(11)			Visual	
4	8	"	23-26.5	Gr		W.O		11			(14)			Visual	

SO-8

(6) VIS

SUMMARY OF TESTS ON SOIL PROFILE SAMPLES

38

County, Rt. No., & Section TUS - 51A - 21

Lab. No. So.-	Sample No.	Station	Depth In Feet	Mechanical Analysis: Agg. %	C Sand %	F Sand %	Silt %	Clay %	Physical Charact. Density: L.L.	P.I.	Water Cont. %	Opt.	Max. Dry Wt.	SHTL Class	Remarks
16425	559-S	68+00 ℄	0-5	31	15	13	16	25	29	11	21			A-6a	
6	560-S	"	5-11	0	5	7	53	35	24	6	21			A-4b	○
7	1	72+00 ℄	0-6	Gr-Br Mic Sh							(12)			Visual	
			6-12	Coal											
8	3	"	12-16	Br Wea Ss							(5)			Visual	
9	4	"	16-21	Gr Wea Ind Clay							(13)			Visual	
16430	5	70+50 ℄	0-5	Br Wea Sh							(10)			Visual	
1	6	"	5-11	"		M.D	"				(8)			Visual	
2	7	"	11-17	"		M.D	"				(9)			Visual	
3	8	69+25 ℄	0-3	0	3	3	33	61	39	13	24			A-6a	
4	9	"	3-9	Br Wea D Sh							(9)			Visual	
5	570-S	"	9-11	Gr Clay D Bedrock							(9)			Visual	
6	1	60+00 ℄	0.3-4	16	7	10	31	36	30	11	15			A-6a	
7	2	"	4-9	0	2	25	41	32	31	7	10			A-4a	

S-8

V13

SUMMARY OF TESTS ON SOIL PROFILE SAMPLES

39

County, Rt. No., & Section TUS - 54A - 21 -

Lab. No. So.-	Sample No.	Station	Depth In Feet	Mechanical Analysis: Agg. %	C Sand %	F Sand %	Silt %	Clay %	Physical Charact. Density: L.L.	P.I.	Water Cont. %	Opt.	Max. Dry Wt.	SHTL Class	Remarks
16438	S73-5	60+0 ℄	9-12	0	10	22	23	45	29	11	17			A-6a	✓
9	4	56+25 "	0-5	Br Lre M.O Sh							(5)			Visual	✓
16440	5	"	5-8	"	"	M.O	"				(12)			Visual	✓
1	6	53+30 ℄	0-3	27	6	6	33	28	28	11	19			A-6a	✓
2	7	"	3-6	Br Lre M.O Sh							(16)			Visual	✓
3	8	"	6-10	Gr	"	M.O	"				(14)			Visual	✓
4	9	"	10-11	Br-Gr Broken Shale							(X)			Visual	✓
5	S80-5	50+0 ℄	0-4	0	8	8	34	50	40	14	24			A-6a	✓
6	1	"	4-6	Br Lre Sh							(9)			Visual	✓
7	2	46+50 ℄	0-4	0	2	7	65	26	NP		17			A-4b	✓
8	3	"	4-10	26	6	7	36	25	26	5	22			A-4a	✓
9	4	"	10-11	0	1	3	71	25	NP		21			A-4b	✓
16450	5	"	11-16	25	7	5	38	29	27	11	20			A-6a	✓

(6)

SUMMARY OF TESTS ON SOIL PROFILE SAMPLES

40

County, Rt. No., & Section Tus-S/A-21-

Lab. No. Sa.-	Sample No.	Station	Depth In Feet	Mechanical Analysis: Agg. %	C Sand %	F Sand %	Silt %	Clay %	Physical Charact. Density: L.L.	P.I.	Water Cont. %	Opt.	Max. Dry Wt.	SHTL Class	Remarks
16457	586-S	46+50 ℄	16-21	17	11	30	17	25	NP		20			A-4a	✓
2	7	"	21-25	12	4	6	38	40	31	11	16			A-6a	✓
3	8	"	25-27	30	7	6	31	26	33	11	26			A-6a	✓
4	9	"	27-28.5	13	4	15	36	32	NP		18			A-4a	✓
5	580-S	42+70 ℄	0-6	0	2	2	59	37	29	8	24			A-4b	✓
6	1	"	6-12	0	1	3	57	39	28	9	20			A-4b	✓
7	2	"	12-17	20	6	7	46	21	NP		24			A-4a	✓
8	3	"	17-19	9	8	10	52	21	NP		24			A-4b	✓
9	4	"	19-23	11	11	13	39	26	24	5	18			A-4a	✓
16460	5	"	23-27	0	1	6	64	29	28	5	28			A-4b	✓
1	6	"	27-32	8	10	11	43	28	NP		20			A-4a	✓
2	7	39+40 ℄	0-2	0	7	10	25	58	41	16	22			A-7-6	✓
3	8	"	2-7	Br	Broken	Shale					NP			Visual	✓

(1)

SUMMARY OF TESTS ON SOIL PROFILE SAMPLES

41/42

County, Rt. No., & Section TUS - STA - 21

Lab. No. So.-	Sample No.	Station	Depth In Feet	Mechanical Analysis Agg. %	C Sand %	F Sand %	Silt %	Clay %	Physical Charact. Density L.L.	P.I.	Water Cont. %	Opt.	Max. Dry Wt.	SHTL Class	Remarks
16461	599-S	8940 ℄	7-12	Cr Broken Sh							(10)			Visual	
5	600-S	"	12-15	Cr Weath Shale							(2)			Visual	
6	1	9270 ℄	0-5	0	2	4	31	63	49	19	23			A-7-5	
7	2	"	5-10	14	7	5	18	56	43	13	16			A-7-5	
8	3	"	10-12	0	16	11	18	55	43	12	21			A-7-5	
9	4	9510 ℄	0-5	12	3	7	31	50	41	16	19			A-7-5	
16470	5	"	5-8	42	6	8	15	29	37	13	17			Aba	
			8-10	Coal Blossom										V.S.	
1	7	"	10-15	Cr Broken Sh							(7)			Visual	
2	8	9940 ℄	0-4	35	4	6	18	37	39	14	21			Aba	
3	9	"	4-7	0	0	1	26	73	40	15	19			Aba	
4	610-S	"	7-10	21	3	15	23	38	30	11	19			Aba	
5	1	"	10-12	Cr Weath Sh							(22)			Visual	
			12-13	Coal										V.S.	
6	3	10370 10RT	0-6	28	4	6	37	25	27	11	21			Aba	

(4)

SUMMARY OF TESTS ON SOIL PROFILE SAMPLES

42
42

County, Rt. No., & Section TUS-STA-21-4055, 0.00

Lab. No. So.-	Sample No.	Station	Depth In Feet	Mechanical Analysis Agg. %	C Sand %	F Sand %	Silt %	Clay %	Physical Charact. Density L.L.	P.I.	Water Cont. %	Opt.	Max. Dry Wt.	SHTL Class	Remarks
16477	614S	103+0 10Rt	6-7	0	4	21	34	41	25	11	18			A6a	
8	5	"	7-12	33	13	9	19	26	32	13	16			A6a	
9	6	"	12-16	38	8	11	26	17	25	5	19			A-4a	
16480	7	107+0 12Rt	0-3	23	5	7	27	38	36	17	25			A6b	
1	8	"	3-9	Br Weath Shale							(14)			UNWBL	
16482	614S	86+0 10Rt	0-4	14	7	6	20	53	49	15	24			A-7-5	
			4-7.5	Coal Blossom										VLS	

8-65

FE-27

(SP) = (Spoils)

VISUAL CLASSIFICATION OF SOIL SAMPLES

43

PROJECT: Tus - Sta. 21-40.55 0.00

DRILLER: Sabo CLASSIFIED BY: D.A.P DATE: 15-APRIL-63

			Field No.	Visual Description	Consistency	Moist. Cont.
24+00	C-10	No Test	5	BR-GR MC W/ SOME ST FRAGS (SP)		M
	[redacted]	No Test	6	[redacted]		M
	10-15	No Test	8	BR MC W/LITTLE ST FRAGS [redacted] (SP)		M
	15-21	No Test	4	GR-GR CRUMB C SH. Frags. (SP)		D
25+00, ℄	C-5	No Test	5 *	GR C M & SH. FRAGS (SP)	FILL MAT	D
	5-15	No Test	6 *	BR MC W/SOME SH. Frags (SP)		M
	[redacted]	No Test	7 *	[redacted]		M
	15-25	No Test	8 *	BR MC (SP) [redacted] (SP)		M
	[redacted]	[redacted]	[redacted]	[redacted]		D
	25-28	No Test	10 *	GR WEATH. IND C		D
			11	GR BROKEN WEATH SS		D
			12	DITTO		D
			13	BR BROKEN C SH.		D
		No Test	0 *	BR MC W/LITTLE ST FRAGS	S	M
		No Test	1 *	BR MC & SH [redacted]		M
		No Test	2 *	DITTO		D
			C3	BR CM W/LITTLE SH FRAGS		D
27+00, ℄	0-5	No Test	64 *	BR MC [redacted] ST FRAGS (SP)		M
	5-32	No Test	65 *	BR BROKEN SH. Frags. (SP)		D
	[redacted]	[redacted]	[redacted]	[redacted]		D
			67 *	DITTO		D
			68	BR CM & SH FRAGS		D
			69	DITTO		D
		M.D.	70	GR BROKEN C SH		D
29+00, 100'RT	C-11	No Test	107	[redacted]		D
		No Test	108 *	GR MC & SH FRAGS (SP)		D
	11-38	No Test	112 *	BR [redacted] SH Frags. (SP)		M
	[redacted]	[redacted]	[redacted]	[redacted]		D
	[redacted]	[redacted]	[redacted]	[redacted]		D
	[redacted]	[redacted]	[redacted]	[redacted]		D
32+00, 100'LT	0-26	Gray Shale Frags. (Spoils)			V.S	
	26-32	Gray Broken Shale			V.S	

SO-6

SUMMARY OF TESTS ON SOIL PROFILE SAMPLES

44

County, Rt. No. & Section _____

Lab. No. So.-	Field No.	Station	Depth in Feet	Mechanical Analysis					Physical Charact.			Density		SHTL Class	Remarks
				Agg %	C Sand %	F Sand %	Silt %	Clay %	LL	PI	Water Cont. %	Opt.	Max. Dry Wt.		
	161	123+00, 100'RT	0-6	Gr	Sh Frags (Spoils)									V/S	
	162		6-12	Br-Gr C & Sh. Frags.					(Spoils)					V/S	
	163		12-15	Gray Fire Clay							12			V/S	
	176	123+00, 100'LT	0-5	Gr Weath. Sh. Frags.					(Spoils)					V/S	
	177		5-10	Gr Sand & Rubber					(Spoils)					"	
	178		10-20	Br & Gr Weath Sh Frags.					(Sp—)					"	
		123+00, ℄	0-5	Gr	Sand Rubber				(Spoils)					"	
			5-10	Br & Gr We. Sh Frags. w/ Rubber					(Spoils)					"	
			10-21	Gr We. Sh. Frags (Spoils)										"	
		123+00, 100'RT	0-21	Gr We. Sh. Frags. (Spoils)										"	
	181	135+00, ℄	0-5	Br & Gr MC (Spoils)										V/S	
	182		5-25	Br & Gr Weath Sh. Frags.					(Spoils)					"	
139M	193		25-31	12	2	3	25	58	38	11	22			A-6a	

SO-6

SUMMARY OF TESTS ON SOIL PROFILE SAMPLES

45

County, Rt. No. & Section _____

Lab. No. So.-	Field No.	Station	Depth in Feet	Mechanical Analysis					Physical Charact.			Density		SHTL Class	Remarks
				Agg %	C Sand %	F Sand %	Silt %	Clay %	LL	PI	Water Cont. %	Opt.	Max. Dry Wt.		
	200, 201	123+00, 125'Rt	0-11	Br & Gr		MC.	(Spoils)							V-5	
	202, 203	"	11-22	Br MC. w/ Sh Frags				(Spoils)						"	
	204	"	22-27	Coal Blossom										"	
13916	205	"	27-30	0	1	4	26	69	52	28	14			A-7b	
	233	133+00, 130'Lt	0-5	Gr Weath Sh. Frags (Spoils)										V-5	
	234, 235	"	5-15	Br SM and Sh Frags (Sp)										V-5	
	236	"	15-21	Gr Clay w/ Sh. Frags (Sp)										"	
13933	237	"	21-26	Lt Gr Wea. Sandstone							6			V-3	
	247, 248, 249	137+00, 70'Rt	0-15	Br Weath Sh. Frags (Spoils)										"	
	250	"	15-20	Br Weath Sh. Frags. with Sand (Spoils)										"	
	251	"	20-25	Br SM and Sh. Frags. (Sp)										"	
	252	"	25-30	Br Weath Sh. Frags (Spoils)										"	
	262, 263, 264	140+50, ℄	0-17	Br & Gr Weath Sh Frags. (Spoils)										"	

SO-6

SUMMARY OF TESTS ON SOIL PROFILE SAMPLES

4/6

County, Rt. No. & Section _____

Lab. No. So.-	Field No.	Station	Depth in Feet	Mechanical Analysis					Physical Charact.			Density		SHTL Class	Remarks
				Agg %	C Sand %	F Sand %	Silt %	Clay %	LL	PI	Water Cont. %	Opt.	Max. Dry Wt.		
	270	145+00, ℄	0-5	Br	We.	Sh.	Frags	(Spoils)						V/S	
	271	"	5-12	Br	MC	℄	Sh.	Frags (Spoils)						"	
	272	"	12-18	Br ℄	Gr	We.	Sh	Frags. (Sp)						"	
	273-276	145+00, 110'Rt	0-26	Br	Weath	Sandstone	Frags. (Sp)							"	
	277	"	20-26	Br.	SM	℄	St.	Frags (Sp)						"	
13956	278	"	26-30	Lt-Gr	Weath	Md.	Clay				8			V/S	
	325-328	170+00, 100'Rt	0-20	Br-Gr	MC	w/	St.	Frags. (Spoils)						"	
	329 S	"	20-26	Coal	Fragments	(Spoils								"	
15317	330 S	"	26-32	Lt-Gr	Fire	Clay					13			V/S	
	342	177+00, 75'Rt	0-5	Gr	CM	℄	St.	Frags. (Spoils)						"	
	343-346	"	5-26	Gr	Shale	Frags.	(Spoils)							"	
15329	347	"	26-32	17	4	3	28	48	33	11	21			A-6a	

SO-6

SUMMARY OF TESTS ON SOIL PROFILE SAMPLES

47

County, Rt. No. & Section _____

Lab. No. So.-	Field No.	Station	Depth in Feet	Mechanical Analysis					Physical Charact.			Density		SHTL Class	Remarks
				Agg %	C Sand %	F Sand %	Silt %	Clay %	LL	PI	Water Cont. %	Opt.	Max. Dry Wt.		
	348	172+00, 150'Rt	0-5	Gray	Sh. Frags. (Spoils)									V-S	
	349	"	5-10	Gr	M & Shale Frags. (Spoils)									"	
	350	"	10-15	Gr	Sh. Frags. (Spoils)									"	
	351	"	15-20	Br	MC w/ Shale Frags. (Spoils)									"	
	352	"	20-26	Gr	Shale Frags (Spoils)									"	
15330	353	"	26-32	65	5	2	12	16	—	—	31			A-2-4	
	354-357	180+00, 100'Rt	10-21	Br	Weath. Sandstone Frags (Spoils)									V-S	
	358	"	21-26	Br	SCM w/ Ss Frags. (Spoils)									"	
15331	359	"	26-32	Lt-Gr	Fire Clay						9			V-S	
	410	199+50, ℄	0-5	Br & Gr	M & w/ Sh. Frags (Spoils)									"	
	411	"	5-10	Br &	Gr Shale Frags (Spoils)									"	
	412	"	10-15	Br &	Gr Sh. Frags. w/ MC (Spoils)									"	
	413	"	15-21	Br &	Gr MC w/ Sh Frags (Spoils)									"	
	414	"	21-25	Coal	Blossom									"	
15361	415	"	25-30	Lt-Gr.	Fire Clay						11			"	

SO-6

SUMMARY OF TESTS ON SOIL PROFILE SAMPLES

48

County, Rt. No. & Section _____

Lab. No. So.-	Field No.	Station	Depth in Feet	Mechanical Analysis					Physical Charact.			Density		SHTL Class	Remarks
				Agg %	C Sand %	F Sand %	Silt %	Clay %	LL	PI	Water Cont. %	Opt.	Max. Dry Wt.		
	446	214+75, "C	0-5	Br-Gr Weath. Ss Frags (Spoils)										V/S	
	447	"	5-10	Br-Gr CM & Ss Frags (Spoils										"	
	448	"	10-15	Br-Gr Weath Ss Frags. (Spoils										"	
	449	"	15-20	Gr CM & Ss Frags (Spoils)										"	
	450	"	20-25	Gr Sh Frags (Spoils										"	
	498	230+50, &	0-5	Br-Gr MC & Sh Frags (Spoils)										"	
	499	"	5-10	Gr Sh Frags (Spoils)										"	
	500	"	10-15	Br & Gr MC w/ Sh. Frags (Spoils)										"	
	501	"	15-19	Br & Gr MC w/ Sh. and Coal Frags (Spoils)										"	
16369	502	"	19-24	Br & Gr We. Ind. Clay							9			V/S	
16370	503	"	24-27	Lt-Br We. Shale							10			V/S	
6-															

SUMMARY OF TESTS ON SOIL PROFILE SAMPLES

1/5

County, Rt. No., & Section Tus - 54A - 77-4055, 0.00 (SABO)

Lab. No. So.-	Sample No.	Station	Depth In Feet	Mechanical Analysis					Physical Charact. Density					SHTL Class	Remarks
				Agg. %	C Sand %	F Sand %	Silt %	Clay %	L.L.	P.I.	Water Cont. %	Opt.	Max. Dry Wt.		
20031	1	69+0 ℄	0 - 6	13	6	7	24	50	43	16	19			A-7-5	
2	2	"	6 - 11.6	Gr We M. Sand Clay							8			Visual	
3	3	66+25 ℄	0 - 5	54	13	8	12	13	29	1	16			A-1-b	Gr
4	4	"	5 - 11	0	1	3	70	26	N-P		35			A-4b	O
5	5	"	11 - 16	45	5	10	19	21	27	5	16			A-2a	
6	6	"	16 - 21	34	7	9	25	25	29	7	21			A-4a	
7	7	63+0 ℄	0 - 6	0	2	5	43	50	41	11	31			A-7-5	
8	8	"	6 - 11	54	8	8	12	18	29	5	19			A-2-4	Sl Rock
9	9	"	11 - 13	40	10	10	18	22	~~NP~~	~~23~~	16			A-4b	
20040	10-5	"	13 - 15.5	18	6	10	36	30	25	5	19			A-2a	
1	1	59+0 ℄	0 - 6	33	10	10	19	28	36	11	22			A-2a	
2	2	"	6 - 10	34	11	12	16	27	31	9	23			A-4a	
3	3	"	10 - 13	0	1	7	56	36	N-P		27			A-4b	O

30-8

(2)

SUMMARY OF TESTS ON SOIL PROFILE SAMPLES

2/5

County, Rt. No., & Section Tus - Sta - 77 - 40.55, 0.00

Lab. No. So.-	Sample No.	Station	Depth In Feet	Mechanical Analysis					Physical Charact. Density					SHTL Class	Remarks
				Age. %	C Sand %	F Sand %	Silt %	Clay %	L.L.	P.I.	Water Cont. %	Opt.	Max. Dry Wt.		
20044	14-5	58+70 ℄	13-16	0	10	19	46	30	27	2	22			A-4a	
5	5	55+70 ℄	0-5	0	1	0	45	54	43	11	38			A-7-5	
6	6	"	5-7	15	4	5	40	36	31	11	27			A-6a	
7	7	"	7-12	0	2	15	50	33	24	4	25			A-4b	①
8	8	"	12-14	14	5	7	50	24	24	2	19			A-4b	
9	9	51+50 ℄	0-5	0	1	2	39	58	35	11	24			A-6a	
20050	20-5	"	5-10	0	1	6	50	43	30	7	24			A-4b	
1	1	48+70 ℄	0-4	17	10	13	28	32	32	11	17			A-6a	
2	2	"	4-10	0	1	1	69	29	N-P		26			A-4b	①
3	3	"	10-15	5	1	9	58	27	N-P		21			A-4b	①
4	4	45+70 50' ℄	0-5	0	6	13	29	47	39	11	27			A-6a	
5	5	"	5-10	0	2	7	59	32	N-P		X			A-4b	
6	6	"	10-15	0	3	9	54	34	26	4	26			A-4b	①

SUMMARY OF TESTS ON SOIL PROFILE SAMPLES

3
5

County, Rt. No., & Section Tus-STA - 77-40.55, 0.00

Lab. No. So.-	Sample No.	Station	Depth In Feet	Mechanical Analysis Agg. %	C Sand %	F Sand %	Silt %	Clay %	Physical Charact. Density L.L.	P.I.	Water Cont. %	Opt.	Max. Dry Wt.	SHTL Class	Remarks
20057	27-S	45+10 ℄	15-21	8	3	8	50	31	N-P		25			A-4b	(1)
8	8	"	21-26	15	1	3	54	27	N-P		21			A-4b	
9	9	"	26-28	0	4	10	53	33	N-P		25			A-4b	
20060	30-S	"	28-30	0	2	11	39	48	25	4	18			A-4a	
1	1	43+50 ℄	0-3	42	2	4	31	21	34	12	16			A-6a	
2	2	"	3-8	30	3	16	16	35	36	13	25			A-6a	
3	3	"	8-13	14	1	6	50	29	25	4	24			A-4b	(1)
4	4	"	13-19	0	7	10	55	28	N-P		24			A-4b	(2)
5	5	"	19-25	33	2	12	29	24	30	11	21			A-6a	
6	6	"	25-30	36	11	11	20	22	28	5	20			A-4a	
7	7	41+0 ℄	0-6	0	10	13	37	40	31	11	23			A-6a	
8	8	"	6-10	0	1	3	63	33	27	5	26			A-4b	(1)
9	9	"	10-17	11	3	12	50	24	24	3	26			A-4b	(1)

SC-3

SUMMARY OF TESTS ON SOIL PROFILE SAMPLES

4 X 5

County, Rt. No., & Section Tus - Sth -77 -40.55, 0.00

Lab. No. Sc.-	Sample No.	Station	Depth In Feet	Mechanical Analysis Agg. %	C Sand %	F Sand %	Silt %	Clay %	Physical Charact., Density L.L.	P.I.	Water Cont. %	Opt.	Max. Dry Wt.	SHTL Class	Remarks
20070	405	41+00 ℄	14-18	11	22	16	20	31	24	2	25			A-4a	O
1	1	"	18-20	13	3	8	50	26	24	5	20			A-4b	
2	2	32+00 ℄	0-6'	0	4	8	52	36	26	3	22			A-4b	
3	3	"	6-9	0	1	3	48	48	37	18	26			A-6b	
4	4	"	9-15	0	5	20	41	34	24	3	17			A-4a	
5	5	"	15-20	0	2	12	40	46	31	11	21			A-6a	
6	6	33+00 ℄	0-6	18	5	21	21	35	26	6	14			A-4a	
7	7	"	6-7	Br	We	M	O	Ss			6			Visual	
8	8	30+00 ℄	0-4	Br	Br	M	M	O	11		9			Visual	
9	9	"	4-10	Br	We	M	O	Shale			12			Visual	
20080	50-5	"	10-12.5	11	11	M	O	11			9			Visual	
1	1	27+00 ℄	0-4	Br	We	M	O	Ss			15			Visual	
2	2	"	4-10	Br	We	M	O	Sh			11			Visual	

3-8

Vis

SUMMARY OF TESTS ON SOIL PROFILE SAMPLES

5/5 X

County, Rt. No., & Section Tus Stn - 77-40.55, 0.00

Lab. No. Soil	Sample No.	Station	Depth In Feet	Mechanical Analysis: Agg. %	C Sand %	F Sand %	Silt %	Clay %	Physical Charact. Density: L.L.	P.I.	Water Cont. %	Opt.	Max. Dry Wt.	SHTL Class	Remarks
20083	53-S	24+40 ℄	0-4	28	2	6	19	45	44	15	21			A-7-6	
4	4	"	4-10	Br	Unc	SS					13			Visual	
5	5	17+25 ℄	0-5	Br-Gr	Mo		11				8			Visual	
6	6	"	5-9	Br	Mo		11				[illegible]			Visual	
7	7	"	9-11.5	Gray	Clay	Bedrock					20			Visual	
8	8	21+10 ℄	0-6	26	2	2	27	43	36	11	17			A-6a	
9	9	"	6-12	Br	Unc	SS					14			Visual	
20090	60-S	"	12-16	Br	Broken	Clay	Shale				19			Visual	
1	1	"	16-18	Br	Clay	Bedrock					14			Visual	
			18-20	Coal										Visual	
2	2	"	20-21	Lt-Gr	Fire	Clay					7			Visual	
3	4	15+50 ℄	0-6	25	14	36	5	20	NP		13			A-3a	
4	5	"	6-9	8	6	34	28	24	NP		12			A-4a	
20095	60-S	"	9-12	79	10	8	3	-	NP		5			A-1-a	GR

END

SC-8

FE-27

VISUAL CLASSIFICATION OF SOIL SAMPLES

PROJECT: IHS-STH-21 (60.55) (000)

DRILLER: SHBO CLASSIFIED BY: DAP DATE: 13-DEC-62

Field No.	Visual Description	Consistency	Moist. Cont.
1 S	Br C M T.O-S T. F A P S		M
2 S	Br M C	S	M
3 S	Br f Gr M C	S	M
4 S	Gr M C	M	M2
5 S	D.O.	M	M2
6 S	D.O.	M	M2
7 S	L T. Br f Gr C M W/ LITTLE S S F A P S		M
8 S	Br C S M T.O. S T. F A P S		D
9 S	Br-Gr C M T.O - S T. F A P S		M
10 S	Br S C M T.O. S T. F A P S		M
11 S	Gr f M C	M	M2
12 S	D.O.	M	M2
13 S	L T. Br f Gr M C	S	M
14 S	Br S M W/ LITTLE S T. F A P S		M
15 S	Br C M f S.S. F A P S		WET
16 S	Br S M W/ LITTLE S T. F A P S	L	D
17 S	Br C M W/ LITTLE S.S. F A P S		M
18 S	Br f Gr M C	S	M≡
19 S	Gr C S M T.O. or g		M+
20 S	Gr M C W/ LITTLE SH. F A P S	S	M
21 S	Br C M f S.S. F A P S		M
22 S	Br BROKEN WEATHERED S.S. F A P S		D
23 S	Gr M f SH. F A P S		M
24 S	Gr M C W/ SOME S T. F A P S		M
25 S	Gr M C W/ LITTLE S H. F A P S		M
26 S	D.O.		D
27 S	Br D.O.		M
28 S	Br f Gr M C W/ SOME SH. F A P S		M
29 S	Br M C W/ LITTLE SH. F A P S		M

O

MO

FE-27

VISUAL CLASSIFICATION OF SOIL SAMPLES

PROJECT: IVS-STH-21-40,55 0.00

DRILLER: RICK ASS'N CLASSIFIED BY: DAP DATE: 13-DEC-62

Field No.	Visual Description	Consistency	Moist. Cont.
1 D	Bk C M		M
2 D	Bk M S		WET
3 D	Bk S + GRAVEL		WET
4 D	D.O.		WET
5 D	Gr S		WET
6 D	Gr M S		WET
7 D	Bk S + GRAVEL	L	M
8 D	Bk SILTY LITTLE GRAVEL	L	D
9 D	Bk S + GRAVEL		D
10 D	D.O.		D
11 D	Bk S		D
12 D	Bk S + GRAVEL		M
13 D	D.O.		M
14 D	Bk C M		M
15 D	Bk S T.O. GRAVEL	L	D
16 D	Bk S + GRAVEL	L	D
17 D	Bk SILTY SOME GRAVEL	L	D
18 D	Bk S + GRAVEL		D
19 D	D.O.		D
20 D	D.O.		D
21 D	Bk SM T.O. GRAVEL		D
22 D	Bk S		D
23 D	D.O. W/ LITTLE GRAVEL		WET
24 D	Bk S + GRAVEL		WET
25 D	Bk C M	M	M
26 D	Gr C M SLIGHT G		W
27 D	D.O.		WET
28 D	Bk S + GRAVEL		WET
29 D	Bk S & SMALL GRAVEL		WET
30 D	Bk S + GRAVEL		D
31 D	D.O.	L	D
32 D	Bk S	L	D
33 D	D.O. COAL BLOSSEM	L	D
34 D	Bk S	L	D
35 D	Bk S M T.O. S.T. FLAGS	L	D
36 D	Bk BROKEN WEATHER S.S.		D
37 D	Bk C M + ST. FLAGS		M
38 D	Bk M C + S M. FLAGS		M
39 D	D.O.		M
40 D	D.O.		M
41 D	Bk C M		M
42 D	Gr FINE S C M	M	M
43 D	D.O. T.O. ST. FLAGS		M+
44 D	Gr FINE S M		M+
45 D	Gr M C	M	M2
46 D	D.O.	M	M2
47 D	Bk + Gr S. C M		M
48 D	D.O. T.O. S.T. FLAGS		M
49 D	Gr C M		M+

FE-27

VISUAL CLASSIFICATION OF SOIL SAMPLES

PROJECT: TUS - STA - 21 - 40, 55', 0,00

DRILLER: DICKASON CLASSIFIED BY: DAP DATE: 13-DEC-6[illegible]

Field No.	Visual Description	Consistency	Moist. Cont.
50 D	Pt - GRAVEL W/LITTLE SAND	M	M+
51 D	Pt - GRAVEL	M	M

P.V.S.

FE-27

VISUAL CLASSIFICATION OF SOIL SAMPLES

PROJECT: Tus - Sta. 21-40.55 0.00

DRILLER: Sabo CLASSIFIED BY: D.A.P DATE: 15-APRIL-63

	Field No.	Visual Description	Consistancy	Moist. Cont.
NO TEST	S	BR-GR MC W/SOME ST FRAGS	FILL MAT	M
NO TEST	2	DITTO (FILL MAT)		M
NO TEST	3	BR MC W/LITTLE ST FRAGS (FILL MAT)		M
NO TEST	4	BR-GR BROKEN C SH. (FILL MAT)		D
NO TEST	5 *	BR C M & SH FRAGS	FILL MAT	D
NO TEST	6 *	BR MC W/SOME SH.		M
NO TEST	7 *	DITTO W/LITTLE SH.		M
NO TEST	8 *	BR MC TO SH.		M
NO TEST	9 *	GR DITTO		D
NO TEST	10 *	GR WEATH. IND C		D
	11	BR BROKEN WEATH SS		D
	12	DITTO		D
	13	BR BROKEN C SH.		D
	14	BR SMC TO ST FRAGS	M	M2
	15	GR DITTO	M	M2
	16	BR DITTO	M	M2
	17	GR SCM	M	M+
	18	GR CM		W+
	19	DITTO		M+
	20	BR CM.		M
	21	BR-GR CM TO ST FRAGS & COAL GLASS		M
	22	BR & GR SCM W/LITTLE ST FRAGS		M+
	23	GR SCM		M+
	24	BR-GR SMC TO ST FRAGS		M
	25	BR-GR MC W/LITTLE ST FRAGS		M
	26	BR & GR SCM TO GRE		M+
	27	BR MC TO ST FRAGS		M
	28	BR MC		M
	29	BR MC & WEATH SS FRAGS		D
	30	BR SCM W/LITTLE ST FRAGS		M
MO	31	BR WEATH IND C		D
	32	LT BR & GR SM		M
	33	BR CM TO ST FRAGS	D	D
	34	BR CSM		M
	35	BR SCM		M
	36	GR SMC TO SH		M
	37	BR CM W/LITTLE ST FRAGS		M
	38	BR SMC W/LITTLE ST FRAGS		M
	39	GR SMC W/LITTLE ST FRAGS		M
	40	GR MC TO ST FRAGS		M
	41	BR CM W/LITTLE ST FRAGS		M+
	42	GR SMC W/LITTLE ST FRAGS	M	M2
	43	BR CM		M
	44	DITTO TO ST FRAGS		M
	45	LT BR & GR MC	S	M
	46	BR CM & SH FRAGS		D
	47	GR CM W/ LITTLE SH FRAGS		D
	48	GR CM & SH FRAGS		D
MO	49	GR BROKEN C SH		D
	50 S	BR CM & ST FRAGS		M P.I.:

* FILL MATERIAL

FE-27

VISUAL CLASSIFICATION OF SOIL SAMPLES

PROJECT: Tus. - Sta. 21 - 40.55

DRILLER: Sabo CLASSIFIED BY: D.A.P DATE:

	Field No.	Visual Description	Consistency	Moist. Cont.
	51 S	BR CM & SH FRAGS		D
	52 S	BR MC W/LITTLE SH FRAGS		M
	53	GR MC W/SOME SH FRAGS		M
	54	GR MC TO SH FRAGS		M
	55	BR CM W/LITTLE ST FRAGS		M
	56	BR SCM W/LITTLE ST FRAGS		M
	57	GR MC TO SH FRAGS		M
	58	BR & GR CM		M
	59	BR CSM W/SOME ST FRAGS		D
NO TEST	60 *	BR MC W/LITTLE ST FRAGS	S	M
NO TEST	61 *	BR MC & SH FRAGS		M
NO TEST	62 *	DITTO		D
	63	BR CM W/LITTLE SH FRAGS		D
NO TEST	64 *	BR MC W/SOME SH FRAGS		M
NO TEST	65 *	BR BROKEN C SH		D
NO TEST	66 *	DITTO		D
NO TEST	67 *	DITTO		D
	68	BR CM & SH FRAGS		D
	69	DITTO		D
M.O.	70	GR BROKEN C SH		D
	71	BR & GR MC TO ST FRAGS & ORG		WET
	72	GR-GR MC W/LITTLE ST FRAGS		WET
	73	BR CM TO ST FRAGS		M
M.O.	74	GR BROKEN C SH		D
	75	BR SM TO ST FRAGS		D
	76	DITTO		D
	77	BR SM W/LITTLE ST FRAGS		D
	78	BR & GR MC		M
	79	BR & GR MC TO ST FRAGS		D
	80	GR MC TO ST FRAGS		D
M.O.	81	GR BROKEN C SH		D
	82	BR & GR MC TO ST FRAGS		M
NO TEST	83	BLACK COAL BLOSSOM		
M.O.	84	LT GR WEATH IND C		DRY
	85	LT BR MC W/SH FRAGS		D
	86	RED & GR MC		D
	87	BR MC W/SOFT SS FRAGS		D
	88	BR MC W/LITTLE ST FRAGS		M
	89	BR CM TO ST FRAGS		M
	90	BR & GR MC TO ST FRAGS		M
	91	REDISH BR CM		D
M.O.	92	BR BROKEN C SH		D
	93	MOTT LT BR & GR MC	S	M
M.O.	94	GR WEATH IND C		D
M.O.	95	GR DITTO		D
M.O.	96	GR BROKEN C SH		D
	97	LT BR & GR CM		D
	98	BR CM TO SH FRAGS		D
M.O.	99	BR WEATH IND C		D
	100 S	GR-GR MC W/SOME SOFT SS		D

* FILL MATERIAL

FE-27

VISUAL CLASSIFICATION OF SOIL SAMPLES

PROJECT: Tus. Sta 21 - 40.55

DRILLER: Sabo CLASSIFIED BY: DAP DATE: 15-APRIL-63
16-APRIL-63

	Field No.	Visual Description	Consistency	Moist. Cont.
	101 S	BR-GR CM TO SH FRAGS		D
	102	DR MC & SH FRAGS		D
MD	103	GR BROKEN C SH		D
	104	LT BR & GR MC		M
	105	BR MC & SH FRAGS		D
	106	DITTO		M
	107	GR MC W/SAME SOFT SH FRAGS		M
M.D.	108	BR BROKEN WEATH SH SS		D
M.D	109	GR BROKEN WEATH S SH.		D
No TEST	110*	GR MC & SH FRAGS		D
No TEST	111*	BR & GR DITTO		M
No TEST	112*	GR BROKEN C SH		D
No TEST	113*	DITTO		D
No TEST	114*	GR DITTO		D
No TEST	115*	GR-GR DITTO		D
	116	GR MC W/LITTLE ST FRAGS		M
No TEST	117	BLACK COAL [illegible]		M
MD	118	GR WEATH IND C		D
	119	BR MC TO ST FRAGS		M
	120	BR CM & SS FRAGS		D
MD	121	GR BROKEN C SH		D
	122	MOTT BR & GR MC T.O SH FRAGS	STIFF	D
	123	[illegible] DO	STIFF	D
M.D	124	LT BR FINE S[illegible]		D
M.D	125	BR-GR MC		M
MD	126	BR-GR BROKEN C SH		D
MD	127	GR D.O		D
	128	MOTT LT BR & GR MC T.O SH FRAGS	STIFF	D
M.D	129	BR-GR BROKEN C SH		D
MD	130	GR. D.O		D
MD	131	BR D.O		D
	132	BR MC W/SOFT SH FRAGS	STIFF	D
M.D	133	BR BROKEN C SH		D
MD	134	D.O		D
MD	135	D.O		D
MD	136	BR BROKEN WEAT SH		D
M.D	137	LT BR & GR WEAT IND C		D
	138	BR C W/SOME SH FRAGS		M
	139	MOTT LT BR & GR MC T.O SH FRAGS		M
	140	BR & GR C T.O SH FRAGS		D
M.D	141	BR-GR BROKEN C SH		D
M.D	142	GR BROKEN C SH		M+
M.D	143	D.O		D
MD	144	D.O		D
M.D	145	D.O		D
MD	146	D.O		D
M.D	147	D.O		D
MD	148	BR D.O		D
No TEST	149	GR C W/ST FRAGS & RUBBER (FILL MAT)		
	150	BR C & SH FRAGS		D

* FILL MATERIAL

FE-27

VISUAL CLASSIFICATION OF SOIL SAMPLES

PROJECT: TUS - STA 21 - 40.535

DRILLER: SABO CLASSIFIED BY: D.A.D. DATE: 16-AUG-63

	Field No.	Visual Description	Consistency	Moist. Cont.
F.D	151 S	GR BROKEN C SH		D
M.O	152	D.O		D
F.O	153	D.O		M
M.O	154	D.O		D
2nd TEST	155	GR BROKEN C SH (FILL MAT)		
2nd TEST	156	D.O (FILL MAT)		
2nd TEST	157	D.O (FILL MAT)		
2nd TEST	158	BR-GR D.O (FILL MAT)		
2nd TEST	159	GR D.O (FILL MAT)		
	160	GR C T.O SH FRAGS	M	M>
2nd TEST	161	GR BROKEN C SH (FILL MAT)		
M.O	162	BR-GR C & SH FRAGS		M
M.O	163	GR FINE C		D
2nd TEST	164	BR BROKEN C SH (FILL MAT)		
2nd TEST	165	D.O		
2nd TEST	166	D.O		
2nd TEST	167	D.O		
	168	GR C & SOFT SH FRAGS		M
2nd TEST	169	GR BROKEN C SH (FILL MAT)		
2nd TEST	170	D.O		
2nd TEST	171	D.O		
2nd TEST	172	D.O		
2nd TEST	173	D.O		
	174	D.O		
	175 S	BR C & SH FRAGS		D

P FV:

VISUAL CLASSIFICATION OF SOIL SAMPLES

PROJECT: TUS - Sta. 21+40.55 0.00

DRILLER: Sabo CLASSIFIED BY: D.A.R DATE: 4-23-63

	Field No.	Visual Description	Consistency	Moist. Cont.
*	176-S	Gr BROKEN WEAT SHALE (FILL MAT)		
*	177	Gr S & RUBBER		
*	178	Br & Gr BROKEN WEAT SHALE		
*	179	Gr BROKEN WEAT SHALE		
*	180	Gr SM & RUBBER		
*	181	BR & GR BROKEN WEATH SH W/RUBBER		
*	182	GR BROKEN WEAT SHALE		
*	183	D.O		
*	184	D.O		
*	185	D.O		
*	186	D.O		
*	187	D.O		
*	188	BR & GR MC		
*	189	BR & GR BROKEN WEAT SH		
*	190	D.O		
*	191	D.O		
*	192	GR D.O		
	193	GR C W/ LITTLE SH FRAGS	M	M>
*	194	BR & GR BROKEN WEAT SH		
*	195	GR D.O		
*	196	D.O		
*	197	D.O		
*	198	D.O		
	199	GR MC T.O SOFT SH FRAGS	M	M>
*	200	BR & GR MC		
*	201	D.O		
*	202	BR MC W/ LITTLE SH FRAGS		
*	203	D.O T.O SH FRAGS		
NO TEST	204	BK COAL BLOSSOM		
NO TEST	205	GR MC T.O SOFT SH FRAGS	STIFF	D
M.O	206	BK COAL MIXED W/C		
	207	LT GR BROKEN WEAT S ST		D
*	208	BR C M W/ LITTLE SH FRAGS		
*	209	BR MC & SH FRAGS		
*	210	GR D.O		
	211	MOTT BR & GR MC T.O SH FRAGS	M	M>
	212	GR C T.O SH FRAGS	M	M>
	213	MOTT BR & GR MC T.O SH FRAGS	M	M
	214	BR & GR D.O		M
M.O	215	LT GR WEAT IND C		D
M.O	216	BR BROKEN S ST		D
	217	BR. C T.O ST FRAGS	M	M>
	218	BR MC W/ LITTLE ST FRAGS		M
M.O	219	DK GR. BROKEN WEAT SH		D
	220	BR CM T.O ST FRAGS		M+
	221	BR SCM & ST FRAGS		M
	222	GR MC	M	M>
NO TEST	223	BK COAL		
	224	GR C T.O ST FRAGS Underclay	M	M>
M.O	225	LT GR WEAT IND C		D

* FILL MATERIAL - NO TEST

VISUAL CLASSIFICATION OF SOIL SAMPLES

PROJECT: TUS-STA 21-40.55 0.00

DRILLER: SABO CLASSIFIED BY: D.A.P DATE: 4-23-69

	Field No.	Visual Description	Consistency	Moist. Cont.
*	226 S	BR. BROKEN WEAT SH		
*	227	D.O		
*	228	D.O		
*	229	D.O		
*	230	D.O		
NO TEST	231	BR COAL BLOSS.		
	232	GR ~~SH~~	STIFF	M
*	233	GR BROKEN WEAT SH		
*	234	BR SM & SH FRAGS		
*	235	D.O		
*	236	GR C W/LITTLE SOFT SH FRAGS		
M.O	237	LT W/ WEAT S ST		D
	238	BR & GR MC	STIFF	M
	239	D.O	STIFF	M
	240	GR MC T.O SH FRAGS		M
	241	MOTT BR & GR MC T.O SST FRAGS		M
	242	D.O T.O ST FRAGS		M
	243	GR MC W/LITTLE SOFT SH FRAGS		M
NO TEST	244	BR COAL BLOSS.		
	245	LT GR MC	STIFF	M
	246	LT BR SCM & WEAT S ST FRAGS		M
*	247	BR BROKEN WEAT SH		
*	248	D.O		
*	249	D.O		
*	250	D.O W/S		
*	251	BR SM & ST FRAGS		
*	252	BR BROKEN WEAT SH		
	253	LT BR & GR CM T.O SH FRAGS		M
	254	MOTT BR & GR MC		M
	255	GR MC T.O SH FRAGS	M	M+
M.O	256	GR BROKEN WEAT SH		D
	257	BR MC W/ LITTLE SST FRAGS		M
	258	BR MC		M
M.O	259	GR BROKEN WEAT SH		D
	260	BR-GR. MC & S SH FRAGS		M
	261	BR MC & SH FRAGS		D
*	262	GR BROKEN WEAT SH		
*	263	BR BROKEN WEATH S SH		
*	264	D.O		
	265	LT BR & GR SM W/LITTLE S ST FRAGS		D
	266	BR SM W/SH FRAGS		D
	267	LT BR & GR MC		M
M.O	268	BR & GR BROKEN WEAT SH		D
M.O	269	GR D.O		D
*	270	BR D.O		
*	271	BR MC & SH FRAGS W/COAL BLOSS		
*	272	LT BR & GR BROKEN WEAT SH		
*	273	BR BROKEN WEAT S ST		
*	274	D.O		
*	275 S	D.O		

* FILL MATERIAL — NO TEST

FE-27

VISUAL CLASSIFICATION OF SOIL SAMPLES

PROJECT: TUS - STA. 21 - 40.55 0.00

DRILLER: SABO CLASSIFIED BY: D. A. P DATE: 4-25-63

	Field No.	Visual Description	Consistency	Moist. Cont.
*	276 S	BR BROKEN WEAT S SST		
*	277	BR SH & ST FRAGS		
M.O	278	LT GR WEAT IND C		D
	279	BR CM T.O ST FRAGS	M	M2
	280	BR MC T.O SH FRAGS		M
M.O	281	GR BROKEN WEAT CARB SH		M
NO TEST	282	BR CM T.O ST FRAGS	M	M2
	283	BK COAL BLOSS.		
	284	BR MC W/ LITTLE SOFT SH FRAGS		D
M.O	285	BR BROKEN WEAT SH - S SST		D
M.O	286	D.O S SH		D
M.O	287	BR-GR. BROKEN WEAT SH & C SEAMS		M
M.O	288	D.O		M
	289	MOTT BR & GR MC	STIFF	M
NO TEST	290 S	BK COAL BLOSS		
	291	BR & GR. C & SH FRAGS		D
M.O	292	P.O BROKEN WEAT SH		D
NO TEST	293	BK COAL		
	294 S	~~GR MC T.O SOFT SH FRAGS~~ Underclay	M	M2

* FILL MATERIAL - NO TEST

FE-27

VISUAL CLASSIFICATION OF SOIL SAMPLES

PROJECT: TUS-STA-21-40.55-0.00

DRILLER: SAGE CLASSIFIED BY: DAP DATE: 20-Apr-63 / -MAY-63

	Field No.	Visual Description	Consistency	Moist. Cont.
	2955	BR CM W/LITTLE SST FRAGS		M
	296	BR-GR. CM W/SOME SOFT SH FRAGS		D
M.O	297	GR BROKEN CORE SH		D
	298	BR & GR MC	STIFF	M
	299	GR C & SH FRAGS		WET
	300	BR-GR MC T.O SH FRAGS		D
	301	D.O CM W/LITTLE SOFT SH FRAGS		D
M.O	302	GR BROKEN WEAT SH		D
	303	MOTT BR & GR MC	STIFF	M=
	304	BR & GR CM T.O SH FRAGS		D
M.O	305	BR & GR WEAT IND C		D
O	306	DK GR ORG CM T.O ST FRAGS		M+
M.O	307	GR WEATH IND C		D
	308	Mott br & gr MC	S	M
M.O.	309	Br Weat. Ind C		D
M.O.	310	Gr Broken C Shale		D
	311	Br-Gr MC T.O. Sh frags		M
M.O.	312	LT. Gr FINE C		D
M.O	313	GR WEAT IND C		D
WATER	314	BR S & ST FRAGS FILL MAT.		
NO TEST	315	D.O		
NO TEST	316	BR COAL BLOSS		
M.O	317	GR WEAT INDC		D
	318	BR & GR SMC T.O ST FRAGS		M
	319	DK BR-GR C & SOFT SH FRAGS		M
M.O	320	LT GR. FIRE C		D
	321	BR & GR C M		M
M.O	322	BR WEAT IND C		D
	323	BR MC & SH FRAGS		D
M.O	324	BR WEAT IND C		D
NO TEST	325	BR-GR MC W/ST FRAGS FILL MAT		
NO TEST	326	D.O & ST FRAGS		
NO TEST	327	D.O		
NO TEST	328	D.O W/LITTLE ST FRAGS		
NO TEST	329	BR COAL BLOSS FRAGS		
M.O	330	LT GR FIRE C		D
	331	BR & GR. C M & SST FRAGS		D
M.O	332	BR BROKEN WEAT SST W/ C SEAMS		D
	333	LT BR & GR MC T.O ST FRAGS	STIFF	D
	334	DR & GR MC W/LITTLE SOFT SST FRAGS		D
	335	BR MC W/LITTLE ST FRAGS		M
M.O.	336	LT GR FIRE C		D
M.O	337	Br Broken S.S. (WEATHERED)		D
	338	BR WEAT & ST W/LITTLE M		D
	339	BR MC W/LITTLE ST FRAGS	STIFF	D
	340	BR MC & ST FRAGS		M+
	341	BR CM		M
NO TEST	342	GR CM & ST FRAGS FILL MAT		
NO TEST	343	GR BROKEN C SH FILL MAT		
NO TEST	3445	D.O		D FVS

VISUAL CLASSIFICATION OF SOIL SAMPLES

PROJECT: 145 - STA - 21 - 40.55 - 0.00

DRILLER: SAGO CLASSIFIED BY: PAP DATE: 2 MAY 63

	Field No.	Visual Description	Consistancy	Moist. Cont.
NO TEST	345 S	GR BROKEN C SH (FILL MAT)		
NO TEST	346	D.O		M
NO TEST	347	GR C T.O SH FRAGS	M	M+
NO TEST	348	GR BROKEN C SH W/ S ST FRAGS FILL MAT		
NO TEST	349	GR M & SH FRAGS FILL MAT		
NO TEST	350	GR BROKEN C SH. FILL MAT		
NO TEST	351	BR MC W/ GR SH FRAG FILL MAT		
NO TEST	352	GR BROKEN C SH FILL MAT		
NO TEST	353	GR C & SH FRAGS		WET
NO TEST	354	BR.-GR BROKEN WEAT SST FILL MAT		
NO TEST	355	BR D.O		
NO TEST	356	D.O		
NO TEST	357	D.O W/C		
NO TEST	358	BR SCM W/LITTLE S ST FRAGS (FILL MAT)		
M.O	359	LT GR FIRE C		D
	360	BR-GR MC T.O SH FRAG & COAL BLOSS		M
M.O	361	BR MC T.O SH FRAGS		M+
	362	LT BR-GR BROKEN WEAT SST		D
M.O	363	GR MC T.O SH FRAGS	STIFF	M
M.O	364	DK GR BROKEN WEAT SH		D
M.O	365	LT GR WEAT IND C		D
	366	BR CM & SST FRAGS		M
M.O	367	DK BR-GR C & SOFT SH FRAGS		M
	368	LT GR FIRE C		D
	369	BR & GR C T.O SH. FRAGS	STIFF	D+
M.O	370	BR C W/LITTLE SOFT SH FRAGS	STIFF	D+
	371	BR BROKEN WEAT S ST		M+
	372	BR & GR C W/LITTLE ST FRAGS	STIFF	M
	373	BR CM & ST FRAGS		M
M.O	374	BR & GR MC T.O SH FRAGS	M	M+
	375	GR BROKEN C SH		D
	376	BR BROKEN SST FRAGS W/LITTLE M		D
	377	BR BROKEN S ST FRAGS W/LITTLE CM		M+
	378	GR C W/LITTLE SH FRAGS	M	M+
	379	BR CM & ST FRAGS		M
	380	BR-GR CM	M	M
	381	BR SCM & ST FRAGS		M
	382	BR.-GR S, CM W/LITTLE S ST FRAGS		WET
	383	GR SMC T.O S ST FRAGS	M	M
	384	BR SCM T.O COAL BLOSS	M	M
	385	BR. CM		M+
	386	DK BR-GR MC T.O ST FRAGS		M
	387	MOTT BR & GR MC	STIFF	M
	388	BR-GR CM & S ST FRAGS		D
	389	GR. SCM T.O ST FRAGS		M
M.O	390	GR SMC W/SOME SOFT S SH FRAGS		M
	391	GR BROKEN WEAT IND C		D
	392	MOTT BR & GR SMC W/SOME S ST FRAGS		M
	393	BR MC T.O S ST FRAGS		M
	394	D.O T.O SH FRAGS	STIFF	D+ M

VISUAL CLASSIFICATION OF SOIL SAMPLES

PROJECT: TH5-STA-21-40.55-0.00

DRILLER: SHAD CLASSIFIED BY: DAP DATE: 9-MAY-63

	Field No.	Visual Description	Consistency	Moist. Cont.
NO TEST	395	BLACK COAL BLOSS.		
	396	LT. GR MC T.O. Shale frags		M?
	397	Med. Br & Gr MC	M	M
	398	LT. Br MC	M	M
	399	Br & Gr CM		D
C.	400	Br-Gr MC T.O. Shale Frags	STIFF	D
M.O.	401	Gr Broken C Shale		D
M.O.	402	Gr Broken Weat Shale		D
	403	Br & Gr MC W/LITTLE Shale FRAGS	STIFF	D
	404	Br CM & Shale FRAGS		D
M.O.	405	Gr Broken Weat SHALE		D
	406	Br & Gr SMC	M	M
M.O	407	GR BROKEN WEAT SH		D
M.O	408	GR C BED ROCK		M
M.O	409	D.O		M
NO TEST	410	BR & GR MC W/LITTLE ST FRAGS FILL MAT		
NO TEST	411	BR & GR BROKEN C SH FILL MAT		
NO TEST	412	D.O W/LITTLE MC FILL MAT		
NO TEST	413	BR & GR MC W/LITTLE SH FRAGS FILL MAT		
NO TEST	414	BK COAL BLOSS.		
M.O	415	LT GR FIRE C.		D
NO TEST	416	GR-BR CM & SH FRAGS FILL MAT		
NO TEST	417	BR CM & SH FRAGS FILL MAT		
NO TEST	418	GR. BROKEN C SH FILL MAT		
NO TEST	419	D.O		
	420	BR-GR MC T.O SOFT SH FRAGS & ROOT		M
	421	LT BR & GR. CM		D
M.O	422	BR WEAT IND C		D
	423	GR MC W/ LITTLE SH FRAGS		WET
	424	BR & GR MC T.O S ST FRAGS	M	M?
	425	BR & GR MC T.O ST FRAGS	M	M+?
M.O	426	GR WEAT IND C		D
NO TEST	427	BR & GR MC T.O SH FRAGS FILL MAT		
NO TEST	428	ORG T.O ROOTS		
NO TEST	429	D.O		
	430	BR-GR CM T.O ST FRAGS	M	M?
	431	GR MC	STIFF	M
	432	LT BR & GR. CM		M
M.O	433	LT GR FIRE C		M
NO TEST	434	GR. C & SH FRAGS FILL MAT		
	435	BR-GR SM		M
	436	BR. -GR. SMC T.O SH FRAGS	STIFF	M
NO TEST	437	BK COAL (FRAGS) — USE		
	438	GR. MC W/ SOME SH FRAGS		M
	439	BR & GR. CM W/ SOME SST FRAGS		M
	440	D.O C W/ LITTLE ST FRAGS		D
	441	BR-GR CM & SST FRAGS		D
M.O	442	GR BROKEN WEAT SH		D
M.O	443	D.O		M
	444	BR & GR MC W/LITTLE ST FRAGS		M

FE-27

VISUAL CLASSIFICATION OF SOIL SAMPLES

PROJECT: TUS - STA 21 - 40.55

DRILLER: SABO CLASSIFIED BY: D.A.P DATE: 1 - MAY 63

	Field No.	Visual Description	Consistency	Moist. Cont.
	445 S	BA. CSM & ST FRAGS		M
NO TEST	446	BR-GR. BROKEN WEAT S ST FILL MAT		
NO TEST	447	D.O CM & S ST FRAGS FILL MAT		
NO TEST	448	BR-GR BROKEN WEAT SH & ST FILL MAT		
WITHDRAWN	449	GR CM & SH SST FRAGS FILL MAT		
NO TEST	450	GR BROKEN ST FRAGS FILL MAT		
	451	BR CM W/SOME ST FRAGS		D
	452	BR MC	STIFF	M
M.O	453	GR SCM	M	M
	454	DK BR CSM SH FRAGS & COAL FRAGS		WET
	455	BR-GR CM T.O ST FRAGS	M	M±
ROTTEN	456	BK COAL		
M.O	457	LT GR UNDER C		M
	458	BR. MC T.O ST FRAGS	STIFF	M
NO TEST	459	BK COAL BLOSS		
M.O	460	LT GR WEAT IND C		D
	461	BR-GR MC W/LITTLE SH FRAGS	STIFF	M
	462	BR-GR C & SH FRAGS		M
	463	BR-GR MC T.O ST FRAGS	M	M±
	464	BR. CM W/LITTLE SOFT SH FRAGS		D
M.O	465	GR BROKEN WEAT SH		D
NO TEST	466	BK GROUND-UP COAL		
NO TEST	467	BR MC T.O SH FRAGS		M
	468	BK GROUND-UP COAL		
	469	BR C W/LITTLE SH FRAGS Unoth sh		WET
	470	BR. CM		M
	471	BR SCM T.O. ST FRAGS	M	M
	472	BR. CSM DO		M
NO	473	BR BROKEN WEAT SH		D
	474	BR. CM T.O ROOTS		M+
	475	BR-GR. MC T.O ST FRAGS	M	M±
	476	GR MC W/LITTLE SH FRAGS	STIFF	M
M.O	477	BA-GR. MC T.O SH FRAGS	STIFF	M
	478	BR & GR BROKEN WEAT SH		D
	479 S	BR & GR DCM & S SH FRAGS		WET
	480	GR. MC T.O SH FRAGS	STIFF	D

FE-27

VISUAL CLASSIFICATION OF SOIL SAMPLES

PROJECT: Tus- Sta 21- 40.55 0.00

DRILLER: Sabo CLASSIFIED BY: DAP DATE: 2-MAY-63

	Field No.	Visual Description	Consistency	Moist. Cont.
	481 S	Br MC W/LITTLE S.St. FRAGS		M
	482	Br C & SOFT SH FRAGS		M
M.O.	483	DK BROKEN WEAT SHALE		D
	484	Br MC T.O S.S. FRAGS	M	M+
M.O.	485	Br-GL BROKEN WEAT SHALE		D
M.O	486	GA D.O		D
M.O.	487	D.O		D
	488	BA & GR MC	STIFF	M
	489	BA MC & SH FRAGS		M
M.O	490	BR BROKEN WEAT SH		D
M.O	491	GR D.O		D
O	492	BR T.O GR ORG CM W/ BOOTS		WET
	493	BA & GR MC	STIFF	M
	494	BA SMC W/LITTLE ST FRAGS		WET
O	495	BR TO GR ORG CM W/BOOTS		WET
O	496	GR & BR MC T.O ORG	M	M+
M.O	497	LT GA FINE C		D
*	498	BA-GR MC & SH FRAGS		
*	499	GA BROKEN SH		
*	500	BA & GA MC W/ SH FRAGS		
*	501	DO W/COAL BLOSS		
M.O	502	LT BR & GR WEAT IND C		D
M.O	503	LT BR BROKEN WEAT SH		D
	504	BR & GA MC W/LITTLE SH FRAGS		M
	505	BA MC T.O SH FRAGS	M	M+
	506	LT GR MC	STIFF	D
	507	LT BR D.O T.O SOFT SH FRAGS	STIFF	D
O	508	GA SC M SL ORG		M+
O	509	GR-BR SMC T.O ORG	M	M+
M O	510	LT GR. BROKEN WEAT SH W/C SEAMS		D
O	511	GR SCM T.O ORG	M	M+
	512	MOTT BR & GR MC T.O ST FRAGS	STIFF	M
M.O	513	BR. BROKEN WEAT SH		D
M.O	514	D.O		D
	515	BR MC W/LITTLE S ST FRAGS		M
M.O	516	LT GR BROKEN WEAT S ST		D
	517	BR TO BR ORG. SCM		M+
	518	GR. MC & SH FRAGS		M
	519	GR MC W/ SAME SH FRAGS		M
M.O	520	GR WEAT IND C		D
M.O	521	BR BROKEN WEAT S ST		D
M.O	522	D.O		D
M.O	523	BR & GA MC & SH FRAGS		M
M.O	524	LT GR WEAT IND C		D
M.O	525	LT BR & GR BROKEN WEAT S SH		D
M.O	526	LT GR FINE C		D
M.O	527	BR BROKEN WEAT S SH		D
M.O	528	D.O WEAT SH		D
M.O	529	D.O		D
M.O	530 S	D.O WEAT S ST		D FV:

* FILL MATERIAL - NO TEST

FE-27

VISUAL CLASSIFICATION OF SOIL SAMPLES

PROJECT: TUS-STA 22+ 40.55 0.00

DRILLER: SABO CLASSIFIED BY: DAP DATE: 9 MAY 63

	Field No.	Visual Description	Consistency	Moist. Cont.
M.O	531 S	FR BROKEN WEAT SH		D
MO	532	D.O		D
MO	533	GR D.O		D
M.O	534	D.O		D
	535	BR&GR. MC T	STIFF	D
	536	BR-GR D.O	STIFF	M
MO	537	BR BROKEN WEAT SH		D
NOTEST	538	BK COAL		
M.O	539	GR BROKEN WEAT SH		D
M.O	540	GR C BEDROCK		M
	541	BR MC T.O ST FRAGS	STIFF	M
	542	D.O T.O GRAVEL	STIFF	M
	543	GR D.O	M	M
	544	GR SMC T.O ST FRAGS	M	M
	545	BR & GR D.O		M
M.O	546	GR BROKEN WEAT SH		D
M.O	547	D.O		D
	548	BR & GR SCM	M	M
	549	BR-GR MC W/ GRAVEL & ST. FRAGS		M
	550	GR MC T.O. SHALE FRAGS	STIFF	M
	551	D.O	STIFF	M
M.O.	552	GR BROKEN SHALE		D
	553	BR & GR MC	STIFF	M
	554	BR & GR SMC T.O. COAL & GLASS		M
	555	BR-GR S SMC W/ LITTLE ST FRAGS		M
M.O	556	GR C SH		D
M.O	557	GR BROKEN WEAT SH		D
M.O	558	GR EXT WEAT SH		M
	559	BR SMC W/ LITTLE ST FRAGS		M+
	560	BR MC T.O ST FRAGS	M	M
M.O	561	GR-BR BROKEN WEAT SH		D
NOTEST	562	BK COAL		
M.O	563	BR BROKEN WEAT S ST		M
M.O	564	GR WEAT IND C		M
M.O	565	BR BROKEN WEAT SH		M
M.O	566	D.O S SH		M
M.O	567	D.O WEAT SH		M
	568	MOTT LT BR & GR MC		M
M.O	569	BR BROKEN WEAT S SH		M
MO	570	GR C BEDROCK		M+
	571	BR SCM W/ SOME ST FRAGS		M
	572	BR-GR MC W/ S ST. FRAGS		M
	573	BR MC T.O S ST FRAGS		M
M.O	574	BR BROKEN WEAT S SH		M
M.O	575	D.O WEAT SH		M
	576	BR MC & SH FRAGS		M
M.O	577	BR BROKEN WEAT SH		D
MO	578	GR D.O		D
M.O	579	BR-GR BROKEN SH W/ C SEAMS		WET
	580	D.O MC	STIFF	M

FE-27

VISUAL CLASSIFICATION OF SOIL SAMPLES

PROJECT: Tus-Sta 21-40.55 0.00

DRILLER: Sabo CLASSIFIED BY: DAC DATE: 2-MAY-62

	Field No.	Visual Description	Consistency	Moist. Cont.
M.O	581 S	Br Broken Weat. SH.		D
	582	Br SCM	M	M
	583	Br CM w/ LITTLE ST. FRAGS	M	M
	584	Gr SCM, T.P. ST. FRAGS		M
	585	Bl-Gr MC T.P. ST. FRAGS	M	M
	586	BR. SCM W/SOME S ST FRAGS		M
	587	BR MC W/ LITTLE SH FRAGS		D
	588	D.O & SH FRAGS		WET
	589	GR CM W/ LITTLE SH FRAGS	M	M
	590	BR-GR CM	M	M
	591	BR & GR SMC T.O COAL BLOSS		M
	592	BR-GR SCM		WET
	593	D.O T.O ST FRAGS		WET
	594	D.O		M
O	595	GR CSM SL. ORG		WET
O	596	GR SCM W/LITTLE ST FRAGS T.O ORGS.		M
	597	BR & GR MC	STIFF	M
M.O	598	BR BROKEN C SH		D
M.O	599	GR D.O		D
M.O	600	D.O WEAT SH		D
	601	MOTT BR & GR MC	STIFF	M
	602	BR MC W/ SOME SOFT SH FRAGS		M
	603	D.O W/LITTLE COAL BLOSS.		WET
	604	BR & GR MC T.O SH FRAGS		D
	605	BR C & SST FRAGS		D
NO TEST	606	BK COAL BLOSS		
M.O	607	GR BROKEN C SH		D
	608	BR MC W/LITTLE SOFT SH FRAGS		M
	609	GR. D.O. T.O SH FRAGS		M
	610	BR. MC & SST FRAGS		M
M.O NO TEST	611	GR BROKEN WEAT SH		D
	612	BK COAL		
	613	BR CM W/ SST FRAGS		M
	614	BR & GR D.O T.O ST FRAGS		M
	615	BR. D.O W/LITTLE ST FRAGS		M
	616	RED-BR. C M F S ST FRAGS		M
	617	BR MC W/ LITTLE ST FRAGS	M	M
M.O	618	BR BROKEN WEAT SH		D
	619	BR-GR MC T.O SH FRAGS		M
NO TEST	620	BK COAL BLOSS		

1 PVC

FE-27

VISUAL CLASSIFICATION OF SOIL SAMPLES

PROJECT: Tus-St. 77-40.55 0.00

DRILLER: Sabo CLASSIFIED BY: D.O.A DATE: 6-10-63

	Field No.	Visual Description	Consistency	Moist. Cont.
	1 S	BR CM TO ST FRAGS	M	M+
M.O.	2	BR WEAT. IND C		D
	3	BR SM & GRAVEL & ST FRAGS		D
	4	GR CSM		M
	5	BR-GR CM & ST FRAGS		M
	6	GR-BR MC ST FRAGS	M	M+
	7	BR CM TO ST FRAGS & ROOTS		M
	8	BR SCMC ST FRAGS		M
	9	DO. W/SOME ST FRAGS	M	M
	10	GR SCM W/LITTLE ST FRAG'S		M
	11	GR CM W/LITTLE ST FRAGS	M	M=
	12	BR SCM W/LITTLE ST FRAGS		M+
O	13	BR SCM TO ORGS		M+
	14	GR-BR CM W/LITTLE COAL Blkss. TO ST FRAGS	M	M
	15	MOTT. GR CM	M	M=
	16	DO. TO ST FRAGS	M	M+
O	17	BR SCM TO ST FRAGS ROOTS		M+
	18	GR CSM TO ST FRAGS		M
	19	MOTT BR GR CM		M
	20	DO.	M	M=
	21	BR GR SCM W/LITTLE COAL BLKS.		M
O	22	GR SM TO ORGS		M+
	23	GR SCM		M+
	24	BR-GR MC TO ST FRAGS	M	M+
O	25	GR SCM TO ORG		M+
	26	GR SCM TO ST FRAGS		M+
	27	DO.		WET
	28	GR CSM TO ST FRAGS		M
	29	GR FINE SCM	M	M
	30	GR-BR MC TO ST FRAGS		M
	31	BR CSM & ST FRAGS		M
	32	BR-GR CM TO ST FRAGS	M	M+
	33	GR SCM TO ST FRAGS	M	M+
	34	GR DO.	M	M+
	35	BR SCMG ST FRAGS		M
	36	BR-GR DO.		M
	37	MOTT-GR CM	M	M=
	38	BR SCM TO ST FRAGS		M+
	39	GR SM		M
O	40	GR CSM TO ORG		M
	41	GR TO ST FRAGS & IRON STAINS	M	M=
	42	BR SM		M
	43	MOTT BR GR CM	M	M
	44	GR CSM TO ST FRAGS		D
	45	GR SMC TO IRON STAINS	M	M+
M.O.	46	BR CSM W/LITTLE ST FRAGS		D
M.O.	47	BR BROKEN WEAT. SST		D
M.O.	48	BR-GR RO		D
M.O.	49	BR BROKEN WEAT SH.		D
M.O.	50 S	DO.		D

FE-27

VISUAL CLASSIFICATION OF SOIL SAMPLES

PROJECT: Tus- Sta 77- 40.55 0.00

DRILLER: Saba CLASSIFIED BY: D.A.P DATE: 6-10-63

Field No.	Visual Description	Consistency	Moist. Cont.
MD 61 S	BR BROKEN WEAT. S.S.T.		D
MD 62	BR BROKEN WEAT. SH.		D
63	DK GR MC TO ST FRAGS & COAL FLOSS		D
MD 64	BR BROKEN WEAT SST		D
MD 65	BR-GR DO.		D
MD 56	BR DO		M
MD 57	GR C BED ROCK		M
58	BR C M TO SH FRAGS		D
MD 59	BR BROKEN WEAT. SH		D
MD 60	BR BROKEN CH		D
MD 61	BR C BED ROCK		M+
NO TEST 62	BK COAL NO TEST		
MD 63	LT BR FIRE C		D
64	BR SH GRAVEL	L	D
65	BR MS	L	M
66 S	BR SH GRAVEL	L	D

P. Rvs

N Blaine

LOGS OF CORE BORINGS
Prepared By
State Highway Testing Laboratory
FOR

A

Complete

County, Rt. No. & Section TUS-77-4055R NB Over Tuscarawas River

Hole No. B-8 Surface Elevation 895.4

Station 1+04, 35'RT Elevation Top of Rock

Total Depth of Hole 75' Elevation Bottom of Hole

DEPTH	ELEV	Description	Core loss in percent
0.0		Overburden (jar samples)	
		TOP OF ROCK	
68.0		Shale, brown and gray, siliceous in part with	
		few thin scattered sandstone stringers,	
		extremely weathered, soft and crumbly.	
73.6		Sandstone, brown, medium-grained, massive, firm.	0%
75.0		BOTTOM OF BORING	

Blank
FB-23

VISUAL CLASSIFICATION OF DRIVE SAMPLES

PROJECT: T.S. IR 77 +055 R

BORING LOCATION: 1+04 35' Rt

DRILLER: Thompson, CLASSIFIED BY: D.O.P., DATE: 4-16-63

Field No.	Visual Description	No. Of Blows	Density	Moist. Cont.
1	BR. M.C.	1/1	SOFT	M+
2	BR & GR D.O. SL. ORG	1/1	SOFT	M+
3	GR. BR C.M.C.	5/6		M+
4	BR M.C. & GRAVEL	1/1		WET
No Test 5	BR BROKEN GRAVEL	18/24		
6	BR M.S. & F. GRAVEL	9/6		M+
No Test 7	BR BROKEN GRAVEL	5/5		
8	BR & T.O. GRAVEL	5/10		WET
9	BR & GR. SM.C. T.O. SMALL SIZE ST FRAGS	5/6	M	MT
10	GR. FINE SM M.C.	7/10		M
11	BR & W/LITTLE COAL FRAGS	9/21		M
12	BR. M.S.	8/10		WET
13	GR & T.O. ST FRAGS W/LITTLE COAL BLOCK	13/22		WET
14	BR M.S. T.O. ST FRAGS	12/13		WET

NB Lane

SUMMARY OF SOIL TEST DATA ON FOUNDATION SAMPLES

1/1

Sample No.	Bag No.	Boring No.	Depth in Feet	Mechanical Analysis: Gravel %	Coarse Sand %	Fine Sand %	Silt %	Clay %	Plastic Characteristics: Liquid Limit	Plasticity Index	Moisture Content	Ohio Class.	Remarks
1	1	1	1404	Surface	25-35	0	0	10	45	35	11	45	A-6a
2	2	1		5	6	0		3					A-4b
3	3	2			2-3	0	9		8				A-4a
4	4	2			13-14								
5	5	2			15-16	31	14	25	5	0	8		A-1-b
6	6	2			17-18	Brown Gravel - Visual							
7	7	2			20-21	Brown Gravel - Visual							A-1-b
8	8	2			40-41	15	38	38	9	1	5	20	A-3a
9	9	2			35-36	0	2	1	34	2	1	3	A-4b
10	10	2			46-47	0	0	0	45	2	1	3	A-4b
11	11	2			45-46	5	50					26	A-3a
12	12	2			50-51	14	1	6				12	A-3a
13	13	2			53-54	12	2	65	1	1	2	26	A-3a
14	14	2			60-61	18	4	58	15	9	1	22	A-3a

10[illegible] · 705-[illegible]A-21 - K(0.55) (0.[illegible]) check elev. OK

Complete · 29+00, 150'RT

Depth - 100'

Surface elev - 1072.0'
Top of Rock 1067.0
Bottom 972.0'

0.0 1072.0 Overburden - ℄ Survey

TOP OF ROCK-IN-PLACE

5.0 A 1067.0 Shale, light-gray, carbonaceous in part, with clay seams, slightly fissile, firm, broken. 1[illegible]%

10.0 B 1062.0 Shale, light-gray, carbonaceous in part, jointed, with few clay seams, firm; dark-gray and poorly cemented below elev. 1050.0'. (22.0') 2%

37.0 C 1035.0 Indurated clay, grayish-brown, iron stained, slightly arenaceous in part, jointed, broken; dark-gray, carbonaceous, soft and crumbly in bottom 0.4', with 0.3' limestone bed at base. 10%

45.5 D 1026.5 Coal, black, vitreous luster, broken, with few shaly coal seams, with 1.3' underclay bed (black and carbonaceous to light-gray and arenaceous, soft to firm) at base. 45%*

50.5 E 1021.5 Sandstone, light-gray, coarse-grained, with few carbonaceous and coal laminae, firm, porous. 35%*

58.6 F 1013.4 Shale, gray, with few clay seams, fissile, firm; calcareous, fossiliferous, and jointed below elev. 994.0'. (78.0') 5%

2 OF 2

TVS-311-21
09100, 150'NE

82.0 G	990.0	Sandstone, light-gray in top 3.0', buff with carbonaceous laminae in remainder, medium-grained, firm.	0%
90.7 H	981.3	Sandstone, dark-gray, medium-grained, with carbonaceous laminae, argillaceous, firm, jointed, friable and crumbly.	7%
96.0 I	976.0	Shale, gray to dark-gray, carbonaceous, fissile, firm.	0%
100.0	972.0	BOTTOM OF BORING	

* Void intervals, (0.2' to 1.0') were encountered between elevations 1026.0' to 1019.0' (46.0'-53.0') This interval probably mined.

LOGS OF CORE BORINGS
Prepared By
State Highway Testing Laboratory
FOR

1 of 4

(40,55) (0.00)

County, Rt. No. & Section TUS STA 21

Hole No. B-1 Surface Elevation 1072.0

Station 29+00 150 RT Elevation Top of Rock

Total Depth of Hole 100 Elevation Bottom of Hole

DEPTH	ELEV	Description	Core los in percent
		NO JAR SAMPLES	
		TOP OF ROCK IN PLACE	
5.0		(DRILLER) SHALE, LIGHT-GRAY, FIRM, SLIGHTLY FISSILE, WITH CARBONACEOUS MATERIAL ON CLEAVAGE PLANES, SOME FRACTURES RECEMENTED (IRON RICH CLAY STONE), SOME FRACTURES DIAGONAL, OPEN AND IRON STAINED FEW CLAY SEAMS SOFT AND CRUMBLY. (TOP 5.0' VERY WEATHERED, BROKEN, WITH CLAY INTER BEDS, BASAL 15.0' BECOMES DARK GRAY AND DENSE WITH POORLY CEMENTED DIAGONAL FRACTURES. ~~TO SHALE~~	10%
37.0		INDURATED CLAY, (CLAY STONE),	10%

LOGS OF CORE BORINGS
Prepared By
State Highway Testing Laboratory
FOR

(40.55)(0.00)

County, Rt. No. & Section TUS STH 21

Hole No. B-1 Surface Elevation 1072.0

Station 29+00 150 RT Elevation Top of Rock

Total Depth of Hole 100 Elevation Bottom of Hole

DEPTH	ELEV	Description	Core log in percent
		GRAY BROWN, RANDOM FRACTURES OPEN, IRON STAINED, BROKEN, FIRM, SLIGHTLY ARENACEOUS, SLIGHT DIAGONAL FISSILE CHARACTERISTIC IN PART. CARBONACEOUS ON FRACTURE PLANES, BECOMING SOFT, DARK GRAY, CARBONACEOUS, CRUMBLY, CLAYEY BASAL 1.4'. VERY DARK GRAY LIMESTONE THIN BED (OR LARGE NODULE) 0.25' THICK AT BASE.	
45.5		COAL, BLACK, VITREOUS ON FRESH FRACTURE, LAMINATED, BRITTLE BROKEN, FEW THIN CANNEL COAL ~~FILMS~~ LAYERS, TOP 0.1' LIGNITIC, BASAL 1.3' SOFT BLACK CARBONACEOUS CLAY GRADING TO LIGHT GRAY, (CARBONACEOUS FRAGMENTS) ARENACEOUS (SILTY), FIRM BROKEN CLAY. PROBABLE.	45 %

REPORTED MINE OPENING 44.0-53.0

LOGS OF CORE BORINGS
Prepared By
State Highway Testing Laboratory
FOR

3 of 4

(40.55)(0.00)

County, Rt. No. & Section TUS STA 21

Hole No. B-1 Surface Elevation

Station 29+00 150 RT Elevation Top of Rock

Total Depth of Hole 100 Elevation Bottom of Hole

DEPTH	ELEV	Description	Core log in percent
50.3		SANDSTONE, LIGHT-GRAY, FIRM, COARSE, GRAINED, WITH DIAGONAL CARBONACEOUS LAMINAE AND NUMEROUS ISOLATED COAL FRAGMENTS, POROUS, IRON STAIN ON OPEN BEDDING PLANES, CLEAVES EASILY.	85%
58.6		SHALE, GRAY, FISSILE, FIRM, PRIMARY PLASTIC FLOW STRUCTURES EVIDENT BY CARBONACEOUS LAMINAE. FEW DIAGONAL JOINTS WITH IRON STAINS. FEW CLAY SEAMS THROUGH OUT.	5%
78.0		TO BASE, FOSSILIFEROUS, (ORIGINAL SHELLS) CALCAREOUS WITH MINOR VERTICAL JOINT (2.7' EXPOSED) CONTAINING IRON CARBONATE, (SIDERITE)	
82.0		SANDSTONE, LIGHT-GRAY, FIRM MEDIUM-GRAINED. FROM 75.0' LIGHT-BROWN WITH CARBONACEOUS,	5%

LOGS OF CORE BORINGS
Prepared By
State Highway Testing Laboratory
FOR

4 OF 4

(4/0.55)(0.00)

County, Rt. No. & Section TUS STA 21

Hole No. B-1 BORT Surface Elevation 1072.0

Station 29+00 Elevation Top of Rock

Total Depth of Hole 100 Elevation Bottom of Hole

DEPTH	ELEV	Description	Core los in percent
		MICACEOUS LAMINAE, (CLEAVES EASILY). AT 90.7 BECOMES FRIABLE, JOINTED, CRUMBLY, INCREASE IN CARBONACEOUS LAMINAE, IRON STAINED FROM 91.7 TO BASE; DARK GRAY, INCREASE IN CARBONACEOUS LAMINAE, ARGILLACEOUS,	
96.0		SHALE, GRAY, ARENACEOUS (SILTSTONE), CARBONACEOUS, FISSILE AT CARBONACEOUS PARTINGS, FIRM, BASAL 1.5 DENSE, DARK GRAY SHALE, LAMINATED, SLIGHTLY FISSILE, CARBONACEOUS, FOSSILIFEROUS, (PLANT); IN PART,	0%
100.0		BOTTOM OF BORING.	

LOGS OF CORE BORINGS
Prepared By
State Highway Testing Laboratory
FOR

check elevation
Complete

Keiffer Ld

County, Rt. No. & Section TUS - STA 21 (40.55)(0.00)

Hole No. _____ Surface Elevation ~~1208.0~~ 1207.6

Station 47+00 ℄ Elevation Top of Rock _____

Total Depth of Hole _____ Elevation Bottom of Hole _____

DEPTH	ELEV	Br SM Description	Core los in percent
0	1207.6	~~JAR SAMPLES~~ OVER BURDEN	
		— TOP OF ROCK - IN PLACE	
5.0	1202.6	(~~DRILLER'S CALL~~)	3%
	1203.0	SANDSTONE, GRAY, FRIABLE, FIRM, COARSE-	2.3%
A'		GRAINED, POROUS, MICACEOUS, VERY IRON STAINED	
		ABOVE ~~TO~~ EL. 1189.6 (18.0). MODERATE CROSS	
		BEDDING THROUGH OUT. TOP 3.0, BADLY BROKEN.	
24.2	1188.8	Coal, black, dull to earthy, fissile in part,	0%
B	1183.4	clayey at base	
25.2	1188.8	Underclay, black, very carbonaceous, soft to	0%
C	1182.4	firm.	
26.9	1187.1	Shale, black, carbonaceous, micaceous in part,	0%
D	1180.7	iron stained in part, with few clay seams in	
		top 2.3', fissile, firm.	

FIELD DATA - SOIL LOG

Location No. PROFILE - KEFFER RD. Pier - Abut.
County: TUS-STA 71
Bridge No. (40.55)(000)
Station: 47+00 ℄
Over:
Offset:
Started: 5-15-63
Completed: 5-15-63
Equipment: CORE DRILL 70-367-13
Diameter
TOE-1160.0
Proposed Footer:
1207.6
Water Level:
Elevation 1208.0 Ground Line

Depth Feet	Log	Samples	
0			SOFT SANDSTONE
5		#1	1203.0 D.S FROM - 5'-6' BLOWS - 5-7
			SOFT SANDSTONE WITH CLAY SEAM
10			1198.0 RUN - 4' REC - 3.6
15			SOFT BROWN SANDSTONE DRILLED MED.
20			1188.0 RUN - 10' REC. 10''
			SANDSTONE WITH LITTLE COAL SEAM
25			1183.0 INTO SANDY-CLAY SHALE WITH COAL SEAMS
26			1183.0
			DRILLED MED
30			1178.0 RUN 10' REC 10'
			GRAY CLAY SANDY SHALE
35			DRILLED MED
40			1168.0 RUN - 10' REC - 10'
			GRAY CLAY WITH SHALE SHALE CLAY
50			DRILLED MED SEAMS
51			1158.0 1155.8 Run 11' REC. 11.2
			END OF BORING
55			
60			

WATER BROWN
LOST WATER
301 CHECK RUN

Remarks: 5' CASING IN HOLE
TOP OF ROCK AT 5'
WATER LEVEL - 32'

Party PAYNE GRIFFITH

Chief of Party BROWN

FE-23

VISUAL CLASSIFICATION OF DRIVE SAMPLES

PROJECT: IRS-STA 21-(40.55)(0.00)

BORING LOCATION: 47+00 ℄

DRILLER: Brown, CLASSIFIED BY: DRC DATE: 22-MAY-63

Field No.	Visual Description	No. Of Blows	Density	Moist. Cont.
Mo 1	BA EXTREMELY BROKEN WEAK SST	5/7		DAMP
	Don't use			

SUMMARY OF TESTS ON SOIL PROFILE SAMPLES

County, Rt. No., & Section TUS - STA 21 - 4055 - 0+00 DWB

Lab. No. So.-	Sample No.	Station	Depth In Feet	Mechanical Analysis					Physical Charact. Density					SHTL Class	Remarks
				Agg. %	C Sand %	F Sand %	Silt %	Clay %	L.L.	P.I.	Water Cont. %	Opt.	Max. Dry Wt.		
18786	1	47+00 C									13			Visual	
															Don't use

8-CS-8

LOGS OF CORE BORINGS
Prepared By
State Highway Testing Laboratory
FOR

Foh 1 St

TT Complete

TWP Rd-252

County, Rt. No. & Section TUS-STA-21-(40.55)(0.00)

Hole No. 10 Surface Elevation ~~1228.6~~ 1229.1

Station 57+50, 15'Rt Elevation Top of Rock

Total Depth of Hole 50.0 Elevation Bottom of Hole

	DEPTH	ELEV	Description	Core log in percent
	0.0	~~1228.6~~	Brown clay with shale fragments.	
	5.0	~~1223.6~~	TOP OF ROCK-IN-PLACE	
A	[redacted]		Sandstone, [redacted] buff, argillaceous, firm.	0%
B	5.9	~~1222.7~~	Shale, grayish-[redacted]brown, [redacted] gray in bottom 2.0', siliceous in part, poorly fissile, firm, jointed and broken.	5%
C	17.5	~~1211.1~~	Indurated Clay, dark-gray, [redacted] medium-firm in top 0.5', soft and crumbly in remainder, slickensided.	44%
D	20.0	~~1208.6~~	Clay, bedrock, gray, soft.	26%
E	23.0	~~1203.6~~	Clay Shale, yellow, soft.	
	[redacted]		~~Shale, clay, yellow~~	~~75%~~
F	30.0 [redacted]	~~1196.6~~	Shale, buff, weak, [redacted] siliceous.	40%
G	33.0 [redacted]	~~1195.6~~	~~Sandstone, yellow, fine-grained to medium-~~ grained, firm.	~~7%~~
H	47.0 [redacted]	~~1181.6~~	Shale, carbonaceous, black, firm.	25%
	50.0	~~1178.6~~	Bottom of Boring	

Page 2/10

Project Identification TUS-STA 21 (40,53) (0.00)

Fohl St.

Sheet 1 2

Crew: Gilbert McClelland Shuttleworth

Surface Elevation 1224.6-1229.1

RECORD LEVELLING DATA ON BACK OF SHEET

57+50 15 RT

Type & Size of Bit (4"R) (CL921)

Type of Sample SS Size 1"

Drill Rig Number 120 Fox

Date Started 4/24/03 Date Completed 4/29/03

ABBREVIATIONS

NOTE: CLEAR FOR MOST OF ON OIL SANDS SAMPLING

1228.6

1223.6

1218.6

1213.6

1208.6

1203.6

BR

BR

BR

5 4.9 15

5 4.8 20+

5 3.7 1/0+

5 2.8 10+

DRILLING MUD FAST

OR SANDY SHALE

DRILLING MUD FAST TO SLOW

OR SANDY SHALE

TO

GRAY SILTY SHALE

DRILLING SLOW

GRAY SILTY SHALE

5 BR S/S

BR & SANDY SHALE

17'

GRAY SILTY SHALE

FIELD BORING LOG (CONT.)

Boring No. 10 Project Identification #US-SHA 21 (4033)(0:00) Sheet 2 of 2

Sta. 5+750, 15 Rt.

Depth	Elev.	Field No.	Type of Sampler	No. Blows	L.O.S.	Core Run	Rec'd.	No of Pieces	Water Color	Layer Description	Log
										DRILLING SLOW	DR
									LOST 19'	BR BROKEN SHALE	BROKEN SHALE
30.0	1179.6	S	3.0	10							
										DRILLING SLOW TO FAST 34'	
										BR BROKEN SHALE TO	
36.0	1173.6	S	2.8	10						DR S/S 34'	34' DR S/S
										DRILLING FAST	
										DR S/S	BR S/S
40.0	1169.6	S	5	13							
										DRILLING FAST	
										DR S/S	
										TO	
45.0	1164.6	S	4.6	11						GRAY S/S 44½	44½ GRAY S/S
										DRILLING FAST	
										GRAY S/S 46'11" TO	46'11" BLACK SHALE
50.0	1159.6	S	4.3 4.4	8						BLACK-SHALE 46'11"	
										Bottom of Boring 50'	
										El. 1159.6	

LOGS OF CORE BORINGS
Prepared By
State Highway Testing Laboratory
FOR

Complete Survey

County, Rt. No. & Section TUS - STA 21 (40.55) (0.00)

Hole No. B-2 Surface Elevation ~~1088.0~~ 1088.7

Station 29+00 60RT Elevation Top of Rock

Total Depth of Hole 50 Elevation Bottom of Hole

DEPTH	ELEV	Description	Core log in percent
0.0	1088.7	Overburden Brown silty clay (assumed) NO CORE SAMPLES, OVER BURDEN	
		TOP OF ROCK - IN-PLACE	
5.0	1083.7	SHALE, LIGHT-BROWN, ARENACEOUS, ~~SOFT~~ FIRM, VERY BROKEN, SLIGHTLY FISSILE, WITH CRUMBLY CLAY SEAMS THROUGH OUT, FEW DIAGONAL FRACTURES WITH IRON STAIN, TOP 3.0' VERY WEATHERED.	0 %
18.5	1070.2	SHALE, DARK-GRAY, ~~VERY~~ FIRM, DENSE, CARBONACEOUS IN PART, FEW RECEMENTED VERTICAL JOINTS, FEW OPEN JOINTS WITH IRON STAINS, NON-FISSILE WITH SCATTERED FINE MICA above elev. 1043.7 / 45.0', BECOMES MODERATELY FISSILE BELOW elev. 1043.7' 45.0'	0 %
50.0	1038.7	BOTTOM OF BORING	

LOGS OF CORE BORINGS
Prepared By
State Highway Testing Laboratory
FOR

Complete

E

1 of 3

(40.55)(0.00)

County, Rt. No. & Section TUS - STA 21

Hole No. B-3 Surface Elevation 1127.1

Station 91+00 ℄ Elevation Top of Rock

Total Depth of Hole 60 Elevation Bottom of Hole

DEPTH	ELEV	Description	Core los in percent
0	1127.1	JAR SAMPLES OVERBURDEN	
		(~~[illegible]~~)	
8.0	1119.1	COAL, BLACK DULL LUSTER, LAMINATED, BRITTLE, BROKEN, ~~TOP 2.0'~~ WITH SOFT MOIST WEATHERED CARBONACEOUS COALY CLAY, ~~SEAM~~ IN TOP 0.2'.	63%
9.6	1117.5	Indurated clay, gray, micaceous in part, extremely ferruginous between elevations 1107.6 and 1107.1, ferruginous in bottom 2.5', with few clay seams, jointed and slickensided, firm.	1%

Top of rock 8.0 1.6 1.6

12.3 12.1 B

(19.5-20.0')

SOFT CLAY CENTER.

LOGS OF CORE BORINGS
Prepared By
State Highway Testing Laboratory
FOR

2 OF 3

(40.55)(0.00)

County, Rt. No. & Section IUS - 5TH 21

Hole No. B-3 Surface Elevation 1127.1'

Station 91+00 ℄ Elevation Top of Rock

Total Depth of Hole 60 Elevation Bottom of Hole

DEPTH	ELEV	Description	Core los in percent
		ELEV. AT 20.0' LIGHT GRAY CLAYSTONE FIRM AS ABOVE WITH ABUNDANT HEMATITE GRANULES THROUGH OUT TO 22.0'	
22.0'	1105.1	SHALE, GRAY, SLIGHTLY FISSILE TO FISSILE, FIRM, JOINTED IN PART, FERRUGINOUS WITH 0.4' SHALY COAL BED AT ELEV. 1093.1' (34.04') BROKEN BELOW ELEV. 1092.7'. ~~(34.44')~~	0%
		GRAY, FISSILE, ~~BROKEN TO SOLID~~	

C

16.0

LOGS OF CORE BORINGS
Prepared By
State Highway Testing Laboratory
FOR

3 OF 3

County, Rt. No. & Section JUS STA 21 (40.55)(0.00)

Hole No. B-3 Surface Elevation 1127.1

Station 91+00 ℄ Elevation Top of Rock

Total Depth of Hole 60 Elevation Bottom of Hole

DEPTH	ELEV	Description	Core log in percent
38.0	1089.1	LIMESTONE, DARK-GRAY, WITH CLAY INCLUSIONS, HARD. ~~(FRESH WATER)~~	0%
40	1087.1	SHALE, LIGHT-GRAY, FISSILE, FEW CARBONACEOUS FRAGMENTS, FIRM.	0%
40.5	1086.6	SAND STONE, LIGHT-GRAY, FIRM, FINE-GRAINED, CALCAREOUS FINELY MICACEOUS LIGHT IRON STAIN ON HAIRLINE HIAR LINE FRACTURES BECOMING ARGILLACEOUS AT BASE.	0%
43	1084.1	SHALE, DARK-GRAY, FIRM, FISSILE. CARBONACEOUS, BROKEN IN PART, WITH FEW LIGHT-BROWN ARENACEOUS INTERVALS, JOINTED IN PART.	0%
60.0	1067.1	BOTTOM OF BORING	

NOTE: OVER

FIELD DATA - SOIL LOG

Location No. 3 County: TUS-STA-21

PROFILE ~~Plan~~ Sht. Bridge No. (40.55/60.00)

Station: 91+00 Over: S P

Offset: ℄

Started: 5-3-63 70-369-13 Equipment: CORE DRILL

Completed: 5-7-63 Diameter

TD 1070 Proposed Footer:

Water Level:

Depth Feet	Log	Samples	Elevation	Ground Line
0			1127.1	WEATHERED SHALE INTO COAL BLOSSOM
		1	1122.1	D.S. FROM 2'-4' BLOWS- 5-15
				COAL INTO FIRE CLAY
				DRILLED MED
10			1117.1	RUN 2' REC 1
				FIRE CLAY INTO SANDY CLAY SHALE
				DRILLED MED
15			1112.1	RUN-5' REC. 5
				SANDY CLAY SHALE
				DRILLED MED 4.9
20			1107.1	RUN-5' REC. 4.5
				SANDY CLAY SHALE AND SANDSTONE
				DRILLED MED
25			1102.1	RUN-5' REC. 5.0
26			1102.1	SANDY CLAY SHALE
				DRILLED MED
30			1097.1	RUN-5' REC 4.7 5.0
				SANDSTONE CLAY SHALE SMALL SEAM OF COAL
				DRILLED MED
35			1092.1	RUN-5' REC-5.0
				SANDY CLAY SHALE
				DRILLED MED
40			1087.1	RUN-5' REC-5.0
				SANDY CLAY SHALE AND SHALE
				DRILLED MED
45			1082.1	RUN-5 REC-5.0
				SANDSTONE AND SHALE
				DRILLED MED
50			1077.1	RUN-5' REC-5.0
				SANDSTONE AND SHALE
				DRILLED MED
55			1072.1	RUN-5' REC-5.0
				SANDSTONE AND SHALE
				DRILLED MED
60			1067.1	RUN-5' REC 5.0

Remarks: CASING HOLE WATER LEVEL 28' TOP OF ROCK AT 8'

Party PAYNE POWELL

Chief of Party BROWN

FE-23

VISUAL CLASSIFICATION OF DRIVE SAMPLES

PROJECT: TUS-STA-21-(40.55)(0.00)

BORING LOCATION: 91+00 ℄

DRILLER: Brown, CLASSIFIED BY: RAP DATE: 14-MAY-63

Field No.	Visual Description	No. Of Blows	Density	Moist. Cont.
1	BR-GR MC w/ LITTLE COAL BLAS.	5/15		M
	1127.1			
	3440			
	10931			

10
1
1

SUMMARY OF TESTS ON SOIL PROFILE SAMPLES

County, Rt. No., & Section TUS-STA-21-40.55, 0.00

Lab. No. So.-	Sample No.	Station	Depth In Feet	Mechanical Analysis					Physical Charact. Density					SHTL Class	Remarks
				Agg. %	C Sand %	F Sand %	Silt %	Clay %	L.L.	P.I.	Water Cont. %	Opt.	Max. Dry Wt.		
17093	1	91+00 ℄	5'-6'	25	2	3	22	48	73	30	41			A-7-5	5.0

Bo Rel-276
Downing 1st

LOGS OF CORE BORINGS
Prepared By
State Highway Testing Laboratory
FOR

E

Complete

County, Rt. No. & Section STA-IR77-0221L

Hole No. B-3 Surface Elevation 1113.9

Station 117+17, 38Lt Elevation Top of Rock

Total Depth of Hole 40.0 Elevation Bottom of Hole

DEPTH	ELEV	Description	Core loss in percent
0.0		Overburden (jar samples)	
		Top of Rock	
18.5		Shale, reddish-brown to dark gray, fissile, carbonaceous, firm, with soft clayey seams above 30.0', with interbedded coal (black, blocky, shaly-in-part, vitreous) from 22.0' to 23.5'; moderately weathered to 22.5'.	37%
34.7		Coal, black, viterous, fossiliferous,	0%
36.0		Underclay, gray, soft, crumbly, very badly broken.	67%
40.0		BOTTOM OF BORING	

10.2
16.2

1.3
4.0

0.9

Use Structural Aer
A.F

#0221-
Co. Rd. 276

2D

LOG OF BORING

Date Started 3-26-63
Date Completed 3-27-63
Boring No. B-3
Sampler Type SS Dia. 1 3/8"
Casing: Length ____ Dia. ____
Station & Offset 117+17, 38' Lt. (REAR PIER)
Water Elev. ____
Surface Elev. 1132.9'

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.
1132.9	0														
	2														
	4														
1127.9	6	3/6	5-6		~~Brown Sandy Silt~~	1	14	6	9	31	40	34	6	17	A-4g
1125.4	8	12/14	7.5-8.5		~~Brown Gravelly Clay~~	2	20	6	8	30	36	41	11	20	A-7-5
1122.9	10	7/12	10-11		~~Brown Gravelly Silt~~	3	28	8	6	28	30	37	10	18	A-4g
1120.4	12	7/13	12.5-13.5		~~Brown and Gray Gravelly Sandy Clay~~	4	15	5	12	30	38	39	12	20	A-6g
1117.9	14														
	16	10/20	15-16		~~Brown and Gray Clay~~	5	14	2	3	15	66	52	22	17	A-7-5
1115.4	18	14/28	17.5-18.5		~~Gray Gravelly Clay~~	6	52	2	1	7	38	62	34	21	A-7-6
1114.4	20		0.9	0.6	TOP OF ROCK										
	22														
	24		3.0	2.0	Clay shale, reddish-brown to dark-gray, fissile, carbonaceous, firm, with soft clayey seams above 30.0', interbedded coal (black, blocky, shaly-in-part, vitreous) from ~~22.0' to 23.5'~~; moderately weathered to ~~22.5'~~. Core loss 37%. elev. 1102.9 elev's. 1110.9 to 1109.9 elev. 1110.4										
	26														
	28		1.7	3.3											
	30														
	32														
	34		4.9	0.1											
1098.2															
1096.9	36				Coal, black, vitreous, fossiliferous. No core loss.										
	38		2.7	2.3	Clay shale, gray, soft, crumbly, very badly broken. Core loss 67%.										
1092.9	40				BOTTOM OF BORING										

VISUAL CLASSIFICATION OF DRIVE SAMPLES

PROJECT: STARK 77-0221 & OVER CR. 276

BORING LOCATION: 117+17 38'L 7

DRILLER: Unknown, CLASSIFIED BY: DAC, DATE: 9-2-77

Sample No.	Visual Description	No. Of Blows	Density	Moisture Content
1	TR HC TO SOFT SH FRAG	3/6	M	Mo
2	TR MC WHITTLE SH FRAG	12/14	STIFF	M
3	Do.	11/12	-	M
4	TR ERR MC TO SHERRR.	11/13		M
5	TR & GR MC TO WEAT SH	10/12	STIFF	M
6	GR MC W/LITTLE WEATH SH	14/28	STIFF	M

SUMMARY OF SOIL TEST DATA ON FOUNDATION SAMPLES

County, Rt. No., Section .....

Bridge No. STA-77 -0221 L (GW)

Lab. No. So.-	Sample No.	Station No.	Represents Feet	Mechanical Analysis Agg. %	C Sand %	F Sand %	Silt %	Clay %	Physical Characteristics L.L.	P.I.	Water Cont.	Ohio Class.	Remarks
349	1	17+17 SALT	5-6	14	6	9	31	40	34	6	17	Br	SM A-4a
350	2	"	7.5-8.5	20	6	8	30	36	41	11	20	Br	GC A-7-5
1	3	"	10-11	28	8	6	28	30	37	10	18	Br	GM A-4a
2	4	"	13-13.5	15	5	12	30	38	39	12	20	Br Gr	GSC A-6a
3	5	"	15-16	14	2	3	15	66	52	22	19	Br Gr	C A-7-5
4	6	"	18.5-18.5	52	2	1	7	38	60	34	21	Br	GC A-7-6

SO-7

Complete
check elevation

LOGS OF CORE BORINGS
Prepared By
State Highway Testing Laboratory
FOR

(40.55)(0.00)

County, Rt. No. & Section TUS-STH 21

Hole No. _____ Surface Elevation 1174.2

Station 141+50 130RT Elevation Top of Rock 1170.2

Total Depth of Hole 35.0 Elevation Bottom of Hole 1139.2

DEPTH	ELEV	Description	Core los in percent
0	1174.2	Brown silty clay NO JAR OVER BURDEN	
		TOP OF ROCK-IN-PLACE	
4.0	1170.2	Sandstone, brown, coarse-grained, porous, weathered, ready friable, badly broken.	30%
20.0	1154.2	Sandstone, brown, coarse-grained, micaceous, carbonaceous in part, very friable, very friable, cross-bedded in part.	14%
		WITH THIN COAL SEAM AT TOP OF INTERVAL	
16.0	1158.2	SHALE, BLACK, CARBONACEOUS, FIRM, FISSILE, WITH LIMONITE STAIN ON CLEAVAGE PLANES, VERY BROKEN THROUGH OUT, DIAGONAL JOINTS WITH IRON STAIN, CLAY SEAMS THROUGHOUT. ~~(THIN LIGNITE SEAM AT TOP OF INTERVAL).~~ NOTE: 4.0-5.0' NOT RECOVERED LOSS COMPUTED FROM 50	1/2
35.0	1139.2	BOTTOM OF BORING.	

Complete

LOGS OF CORE BORINGS
Prepared By
State Highway Testing Laboratory
FOR

G

(40.55)(0.00)

County, Rt. No. & Section TUS - STA 21

Hole No. _____ Surface Elevation ~~1162.8~~ 1164.1

Station 188+50, ℄ Elevation Top of Rock ~~1154.8~~ 1154.1

Total Depth of Hole 55 Elevation Bottom of Hole ~~1107.8~~

DEPTH	ELEV	Description	Core los in percent
0	1164.1 1162.8	JAR SAMPLE OVER BROKEN	
6.0	1158.1 1156.8	~~CLAY SHALE, SANDSTONE FRAGMENTS~~	
		TOP OF ROCK-IN-PLACE	
8.0	1156.1 1154.8	~~LIGHT BROWN~~ SAND STONE, EXTREMLY WEATHERED, WITH THIN CARBONACEOUS SHALE PARTINGS, CRUMBLY.	0%
9.5	1154.6 1153.3	SHALE, DARK-BROWN TO DARK-GRAY, CARBONACEOUS FISSILE, WEATHERED ABOVE elev 1149.1 BADLY BROKEN THROUGH OUT, WITH SOME THIN SANDSTONE INTERVALS.	9%
26.9	1138.1 1136.8	VOID MINED INTERVAL	——
28.9	1136.2 1134.9	SAND STONE, GRAY, MEDIUM-GRAINED, (NEXT PAGE)	0%

LOGS OF CORE BORINGS
Prepared By
State Highway Testing Laboratory
FOR

L&F

(40,55)

County, Rt. No. & Section TUS-STA 21

Hole No. _____ Surface Elevation 1162.8

Station 188+50 ℄ Elevation Top of Rock _____

Total Depth of Hole 55 Elevation Bottom of Hole 1107.8

DEPTH	ELEV	Description	Core los in percent
		WITH THIN CARBONACEOUS	
		SHALE PARTINGS, JOINTED.	
34.9	1127.9 #27.9	SANDSTONE, GRAY AND BROWN,	82%
		FRIABLE, EXTREMELY BROKEN,	
D		WITH THICK CLAY SEAMS	
		THROUGH OUT. (POSSIBLE MINE WASTE)	
39.0	1123.8 #23.8	INDURATED CLAY, GRAY,	11%
		SOFT AND CRUMBLY, EXTREMELY	
F		BROKEN, WITH CLAY SEAMS THROUGH OUT.	
50.0	1112.8 #12.8	SHALE, GRAY, ARGILLACEOUS,	0%
		FIRM, FISSILE, BROKEN,	
G			
55.0	1107.8	BOTTOM OF BORING	

FE-23

VISUAL CLASSIFICATION OF DRIVE SAMPLES

PROJECT: ZUS-57A-21-(90.35)(0.00

BORING LOCATION: 188+50 ℄

DRILLER: Brown, CLASSIFIED BY: RAC DATE: 7-MAY-63

Field No.	Visual Description	No. Of Blows	Density	Moist. Cont.
1	BR-GR. MC w/WEAT S ST FRAGS	11/14		M

3D

SUMMARY OF TESTS ON SOIL PROFILE SAMPLES

County, Rt. No., & Section Tus - Sta - 21 - toss (0-00)

Lab. No. So.-	Sample No.	Station	Depth In Feet	Mechanical Analysis					Physical Charact., Density					SHTL Class	Remarks
				Agg. %	C Sand %	F Sand %	Silt %	Clay %	L.L.	P.I.	Water Cont. %	Opt.	Max. Dry Wt.		
15973	1	188+50 ℄	5-6'	10	11	13	43	33	28	8	20			A-4a	

S-8

Complete

LOGS OF CORE BORINGS
Prepared By
State Highway Testing Laboratory
FOR

1

40.55 from elev. list from consultant

1177.7

County, Rt. No. & Section IUS 5 TA 21

Hole No. B-6 Surface Elevation ~~1183.7~~ ~~1177~~

Station 205+50 ℄ Elevation Top of Rock

Total Depth of Hole 61 Elevation Bottom of Hole

	DEPTH	ELEV	Description	Core log in percent
	0	~~1177.7~~ ~~1183.7~~	JAR SAMPLES - OVER BURDEN	
			TOP OF - ROCK - IN - PLACE	
A A	10.6	~~1167.2~~ ~~1173.2~~	SHALE, GRAY ISH-BROWN, FIRM, FISSILE, CLEAVAGE PLANES CONTAIN BROWN CARBONACEOUS FOSSILIFEROUS MATERIAL, SOME CLAY SEAMS, JOINTED. ~~BROKEN BY~~ ~~FRACTURES~~	0%
B B	~~11.0~~ 14.0	~~1163.9~~ ~~1167.7~~	COAL, BLACK, VITREOUS IN PART, BROKEN, FISSILE, CRUMBLY.	50%
C C	~~14.7~~ 16.0	~~1163.0~~ ~~1167.0~~	SHALE, DARK-GRAY, FIRM, CARBONACEOUS, FISSILE, DIAGONAL FRACTURES WITH IRON STAIN, IN PART VERY FISSILE, CARBONACEOUS BROKEN. ~~DARK THIN BEDS~~	0%

LOGS OF CORE BORINGS
Prepared By
State Highway Testing Laboratory
FOR

2 OF 2

40.65

County, Rt. No. & Section TUS STA 21

Hole No. B-6 Surface Elevation ~~1145.7~~

Station 205 +50 ℄ Elevation Top of Rock

Total Depth of Hole 61 Elevation Bottom of Hole

DEPTH	ELEV		
PD 20.0	1157.7 ~~1145.7~~	Sandstone, mottled reddish-brown and gray above elev. ———, (220') gray in remainder, medium-grained, firm, jointed and badly broken above elev. ———. (220')	10%
EE 29.0	1148.7 ~~1136.7~~	SHALE, BLACK, FIRM, VERY CARBONACEOUS, FISSILE, FEW CLAY SEAMS, BADLY BROKEN IN ~~BASAL~~ 4.0'.	20%
61.0	1116.7 ~~1104.7~~	BOTTOM OF BORING	

FE-23

VISUAL CLASSIFICATION OF DRIVE SAMPLES

PROJECT: TUS-STA-21-(40.55)(0.00)

BORING LOCATION: 205+50 ℄

DRILLER SHUTTLEWORTH, CLASSIFIED BY: R.A.P. DATE: 15-MAY-63

Field No.	Visual Description	No. Of Blows	Density	Moist. Cont.
1	Br MC w/ some soft Sh. Frags	10/12		M
2	Br & Gr Ditto	6"=(30)		M

NOTE: PRINT ALL ENTRIES NEATLY

FIELD BORING LOG (Drive-Press-Core)

Sheet 1 of 2

Boring No. 6 Project Identification TOS-STA 21 (40.55) (0.00) Grade or Footing Elevation 1130.0

Surface Elevation ~~1127.7~~ 1127.7 Crew: WAGAT GRIFFITH

[RECORD ELEVATION DATA ON BACK OF SHEET 1] Crew Chief SHUTTLEWORTH

Type B Size of Bit (R-4") (NXM CH921) Station & Offset 205+50 ℄

Type of Sampler SS Size 1" ID Wt. Hammer 120 Fall

Depth of Casing Used 10' Size 3½" ID Wt. Hammer 300 Fall

Date Started Date Completed

Check One — Structures: ☐ Rock Above Footing ☐ Rock < 10' Below Footing ☐ Rock > 10' Below Footing ☐ No Rock Encountered — Profile: ☐ Rock Above Grade ☐ Rock < 10' Below Grade ☐ Rock > 10' Below Grade ☐ No Rock Encountered

<=Less than >=Greater than

ABBREVIATIONS
SS = Split Spoon
ST-2 = Shelby Tube - 2 inch ID
ST-3 = Shelby Tube - 3 inch ID
NXM = NXM Core Barrel
NX = NX Core Barrel
N = Damco Core Barrel

NOTE: CLEAN BORING THOROUGHLY BEFORE SAMPLING

Surf. Elev. 1133.7										
Depth	Elev.	Field No.	Type of Sampler	No. Blows	L.O.S.	Core Run	Rec'd	No. of Pieces	Water Color	Layer Description
										FAST
										BR SI. I+ CLAY
5.0	1128.7	1	SS	18	6"				BR	
	1127.7			12	6"					RC WEATH SHALE 5'6"
										FAST
										BR WEATH SHALE WIT CLAY TO
										HIGH HAMMER BOUNCH AT 10'4"
10.0	1123.7	2	SS	6(30)	6"					GRAY SANDY SHALE 10'4"
										SPARSE TO CORE 10'6"
						5.0	4.7	10+	BR+BLACK	WEATH. SANDY SHALE CLAY SEAMS H.T H
										BLOSSOM @ CORE AT 14 HAD 0.7 OF COAL
15.0	1118.7									DRILLED MED TO FAST.
									LOST 16'	SLOW
										GRAY SHALE
20.0	1113.7					5.0	4.1	10+		
										0.1 OF SHALE +0
										BR SI. CLAY
										GR SHALE 21'10"
25.0	1108.7									

Log: BR SI IT CLAY | 5'6" | WEATH SHALE WIT CLAY | 10'4" | GRAY SANDY SHALE | 14' | COAL 14' | SHALE | 20' | BR SLO | 21'10" | GRAY

FIELD BORING LOG (CONT.)

Boring No. 6 Project Identification [illegible] (40.55) (0.00) Sheet 2 of 2

Depth	Elev.	Field No.	Type of Sampler	No. Blows	L.O.S.	Core Run	Rec'd.	No. of Pieces	Water Color	Layer Description	Log
									Light	GRAY S/S TO	GRAY S/S
30.0	1153.7					10.0	8.7	10+		GRAY SHALE 29.1	29.1 GRAY SHALE
										SLOW	
										SHALE	
35.0	1141.7										
										GRAY	
										CLAY	
40.0	1143.7					10.0	10.0	20+			
										SHALE	
45.0	1138.7									GRAY	
50.0	1133.7					10.0	10.0	20			
										SLOW	
										GRAY CLAY SHALE	
55.6	1126.7									& GRAY CLAY	55
										MANY OPENINGS 55'6"	MANY OPENINGS
										57' OPEN	
										Could Not Get Back in Hole	
60.0	1122.7									BOTTOM OF HOLE 61	
61.0	1122.7					11.0	6.0	10+			

60

SUMMARY OF TESTS ON SOIL PROFILE SAMPLES

County, Rt. No., & Section Tus Sta 21 – 40.15,000 (KSO)

Lab. No. So.-	Sample No.	Station	Depth In Feet	Mechanical Analysis					Physical Charact. Density					SHTL Class	Remarks
				Agg. %	C Sand %	F Sand %	Silt %	Clay %	L.L.	P.I.	Water Cont. %	Opt.	Max. Dry Wt.		
16980	1	205+50 ℄	5-6	32	6	4	40	28	33	8	15			A-4a	
	2	"	10-10.5	31	5	5	22	37	29	12	18			A-6a	

Complete
check elevation

LOGS OF CORE BORINGS
Prepared By
State Highway Testing Laboratory
FOR

County, Rt. No. & Section IUS - STO 21 (40.55)(00.0) OF AF

Hole No. _____ Surface Elevation 1191.1' (DRILLER)

Station 219+00 ℄ Elevation Top of Rock _____

Total Depth of Hole 51.0 Elevation Bottom of Hole _____

DEPTH	ELEV	Description	Core log in percent
0	1191.1	NO JAR OVER-BURDEN	
		TOP OF ROCK-IN PLACE	
4.0		(DRILLER'S CALL)	
		SANDSTONE, ORANGISH BROWN IRON STAIN, CRUMBLES EASILY TO FIRM, COARSE GRAINED, POROUS, MICACEOUS, FRIABLE, CARBONACEOUS FRAGMENTS AND LAMINAE, BREAKS EASILY. VERY IRON STAINED TO EL ___ (36.0) SANDSTONE BELOW BECOMES DARK GRAY WITH INCREASE IN CARBONACEOUS LAMINAE AND THIN COAL VIENS. BASAL 11.0' CONTAINS VERY CONTORTED CLAY LAMINAE. (TOP TO EL ___ (8.5), VERY BROKEN)	0%
51.0		BOTTOM-OF-BORING.	
		4.0' TO 5.0' NO SAMPLE TAKEN	

4.0	1187.1	Sandstone, brown, coarse-grained, micaceous, 0% with some carbonaceous material, porous, firm to friable, badly broken in top 4.5'.
36.0	1155.1	Sandstone, dark-gray, coarse-grained, micaceous, 0% with carbonaceous laminae and thin coal veins, with clay laminae in bottom 11.0', firm to friable.
51.0	1140.1	BOTTOM OF BORING

Con't 1 of 2

LOGS OF CORE BORINGS
Prepared By
State Highway Testing Laboratory
FOR

(40,65)(0.00)

County, Rt. No. & Section TUS-STA-21

Hole No. B 7 Surface Elevation 1186.8

Station 226+00 ℄ Elevation Top of Rock

Total Depth of Hole 50 Elevation Bottom of Hole 1136.8

DEPTH	ELEV	Description	Core loss in percent
0.0	1186.8	Brown silty clay with sandstone fragments (JAR SAMPLES) OVER-BURDEN	
		TOP OF ROCK - IN - PLACE	
5.0'	1181.8	Sandstone, brown, weathered, broken.	29%
9.3	1177.5	(DRILLER'S TOP) ~ SANDSTONE, GRAY, WITH REDISH-BROWN LIMONITE STAIN FROM MANY CARBONACEOUS LAMINAE IN PART, MICACEOUS, FRIABLE, FIRM WITH SOME SOFT INTERVALS, CRUMBLY IN PART, BROKEN, DIAGONAL OPEN JOINTS, ~~FOR CORE VERY WEATHERED, SOME UNSTAINED INTERVALS, SALT AND PEPPER SAND STONE, GOOD RECOVERY THROUGHOUT.~~	2%
26.3	1160.5	SHALE, DARK-GRAY, HARD, BROKEN, FIRM, MODERATELY FISSILE, VERTICAL OPEN JOINTS (IRON STAINED), FEW CLAY SEAMS, SOME GYPSUM CRYSTALS ON CLEAVAGE PLANES AND JOINTS; BROKEN AND VERY CRUMBLY ~~TO SHATTERED~~ AT BASE, INDURATED CLAY GRAY MOIST ~~MATERIAL~~ INTERVAL ~~CAUGHT IN TOOL AT~~ 46-48 (DRILLER)	22%
46.0		— TOP OF LOST INTERVAL (MINE - DRILLER)	
48.0		— BOTTOM OF BORING (DRILLER)	

OVER

FE-23

VISUAL CLASSIFICATION OF DRIVE SAMPLES

PROJECT: THS-STA-21(40.55)(0.00)

BORING LOCATION: 226+00 ℄

DRILLER: SHUTTLEWORTH, CLASSIFIED BY: DAP DATE: 12-MAY-63

Field No.	Visual Description	No. Of Blows	Density	Moist. Cont.
M.O. 1	B- Broken Wea. S. S	6" (50)		M
	Don't use			

NOTE: PRINT ALL ENTRIES NEATLY

FIELD BORING LOG (Drive-Press-Core)

Sheet 1 of 2

Boring No. #7 Project identification Tus STA 21 Grade or Footing Elevation 1160.0

Surface Elevation 1186.8 (40.55) (0.00) Crew:

[RECORD ELEVATION DATA ON BACK OF SHEET 1] Crew Chief Shuttleworth

Type & Size of Bit (R.V) - NXM- 24921 Station & Offset 226+00 ℄

Type of Sampler SS Size 1" ID Wt. Hammer 120 Fall

Depth of Casing Used 5' Size 3½" ID Wt. Hammer 300' Fall X

Date Started 5/7/63 Date Completed 5/7/63

Check One

Structures
- ☐ Rock Above Footing
- ☐ Rock < 10' Below Footing
- ☐ Rock > 10' Below Footing
- ☐ No Rock Encountered

Profile
- ■ Rock Above Grade
- ☐ Rock < 10' Below Grade
- ☐ Rock > 10' Below Grade
- ☐ No Rock Encountered

<=Less than
>=Greater than

ABBREVIATIONS
- ✓SS = Split Spoon
- ST-2 = Shelby Tube - 2 inch ID
- ST-3 = Shelby Tube - 3 inch ID
- ✓NXM = NXM Core Barrel 5'
- NX = NX Core Barrel
- N = Damco Core Barrel

NOTE: CLEAN BORING THOROUGHLY BEFORE SAMPLING

Surf. Elev. 1186.8											
Depth	Elev.	Field No.	Type of Sampler	No. Blows	L.O.S.	Core Run	Rec'd	No. of Pieces	Water Color	Layer Description	Log
										FAST	BR SILT CLAY WITH S/S FRAG.
									BR	TO	
5.0	1185.9	1	SS	6 (30)	6"					WEAK BR S/S 5'2"	
										STARTED TO CORE 5'6" DRILLING FAST	TOP OF CRYSTAL RIDGE
									BR	TOP OF GOOD 6"	
										BR & GRAY S/S	TOP OF ROCK 6'8"
10.0	1176.8					4.5'	3.4'	10+			
										DRILLING FAST	BR & GRAY S/S
									DR	BR & GRAY S/S	
15.0	1171.8					5.0	5.0	10+			
									12½ GRAY	DRILLING FAST	16'4
										BR & GRAY S/S	GRAY S/S
									16½ SLIGHTLY GRAY	TO GRAY S/S 16'4" TO	18'6
20.0	1166.8					5.0	5.0	10+		BR & GRAY S/S 18'6	BR & GRAY S/S
										DRILLING FAST	
									21½	BR & GRAY S/S	
									LOST WATER	DRILL CHATTER AT 23' SLOW DOWN DRILLING	
25.0	1161.8					5.0	4.6	10+			

FIELD BORING LOG (CONT.)

Boring No. 7 | Project Identification HUS STA 21 (40+55) (0.00) | Sheet 2 of 2

Depth	Elev.	Field No.	Type of Sampler	No. Blows	Core Run	Core Rec'd	No. of Pieces	Water Color	Layer Description	Log
								LOST 21½	GRAY S/S TO GRAY SHALE DRILLING FAST NO CHATTER	26 GRAY S/S TO GRAY SHALE
30.0	1158.6				5.0	5.0	10+			
									DRILLING SLOW GRAY SHALE	
35.0	1153.8				5.0	4.1	20+		CHATTER 33'	
									SLOW GRAY SHALE	
									3.7 IN 240 BOX GRAY SOFT SHALE BROKEN DRILLED SLOW	
40.0	1148				5.0	4.0	26+			
									SLOW TO FAST GRAY-SHALE HIT A OPENING FROM 41-to-45' POSS MINE OPENING ?	GRAY SHALE OPEN
45.0	1143.8				5.0	0.8	4			

Could not Get Back in Hole
CALLED OFF BY CALVIN

SUMMARY OF TESTS ON SOIL PROFILE SAMPLES

1 / 1

County, Rt. No., & Section JUS-STA-21-40.55, 0.00 (RRD)

Lab. No. So.-	Sample No.	Station	Depth In Feet	Mechanical Analysis					Physical Charact. Density					SHTL Class	Remarks
				Agg. %	C Sand %	F Sand %	Silt %	Clay %	L.L.	P.I.	Water Cont. %	Opt.	Max. Dry Wt.		
16979	1	22640 ℄	5-5½'			19.0					13			VISUAL	
						Don't use									

Complete

LOGS OF CORE BORINGS
Prepared By
State Highway Testing Laboratory
FOR

J

(40.55)(0.00)

County, Rt. No. & Section TUS - STA 21

Hole No. B - 1 Surface Elevation 1177.0 ✓ 30

Station 243+00 ℄ Elevation Top of Rock

Total Depth of Hole 10' Elevation Bottom of Hole 1137.0

	DEPTH	ELEV	Description	Core loss in percent
	0	1177.0	OVER BURDEN	
A	9.0	1168.0	TOP OF ROCK-IN-PLACE Shale, gray, weathered, broken.	—
2.4/3.2 B	12.5	1164.5	COAL, BLACK, BRITTLE, IRIDESCENT LUSTRE, FISSILE, BROKEN FRACTURE PLANES IRON STAINED, WITH 0.4' SHALE SEAM (BLACK, VERY CARBONACEOUS, HARD FISSILE, BROKEN, WEATHERED) AT TOP.	25%
4.7/6.5				
C	15.7	1161.3	CLAY, BEDROCK GRAY, SOFT, WITH CARBONACEOUS INCLUSIONS, SLIGHTLY FISSILE, SLICKENSIDED, CRUMBLY, BECOMES FIRM AT BASE	6%
1.7/1.8				
4.9/5.0 D	17.5	1159.5	CLAY, BEDROCK LIGHT-GRAY, FIRM, WITH SOME CARBONACEOUS INCLUSIONS, ARENACEOUS, CRUMBLY, BECOMES SANDY AT BASE, SOME DIAGONAL FRACTURES, LIMONITE STAINED ON FRACTURE PLANES.	0%

LOGS OF CORE BORINGS
Prepared By
State Highway Testing Laboratory
FOR

(40.55)(0.00)

County, Rt. No. & Section TUS-5 TA 21

Hole No. B-8 Surface Elevation 1177.0

Station 243+00 ℄ Elevation Top of Rock ____

Total Depth of Hole 40 Elevation Bottom of Hole ____

DEPTH	ELEV	Description	Core los in percent
20.0	1157.0	SANDSTONE, LIGHT-GRAY, ~~FINE~~ FINE-GRAINED, ARGILLACEOUS, FIRM, VERTICAL FRACTURES, BROKEN IN PART, FEW CRUMBLY SILTSTONE VIENS.	0%
4.0 / 4.0			
24.0	1153.0	SHALE, LIGHT-GRAY, FIRM, ARENACEOUS AT TOP, ~~TRANSITIONAL FROM ABOVE UNIT,~~ MODERATELY FISSILE, BROKEN IN PART, SOME DIAGONAL FRACTURES, INTERBEDDED WITH VERY ARENACEOUS TO SANDY SILTSTONE INTERVALS. ~~TO 30.0' BASAL UNIT TO 40.0'~~	0%
17.8 / 18			
30.0'	1147.0	SHALE, GRAY TO DARK-GRAY, FISSILE SOME HARD MODERATELY CONCHOIDAL FRACTURES, DARK COLOR INCREASES TO BASE.	2%
40.0		BOTTOM OF BORING	

PAGE 1 OF 2

Rig 8 — Project Identification US-SR 21 (405½) (0.60) — Sht 1 2

Surface Elevation 1177.0 — Crew C Gilbert Jr Clelland Shuttleworth

RECORD LEVELLING DATA ON BACK OF SHEET

Coordinates 243+00 E

Type & Size of Bit (4"R) CL921

Type of Sample SS — Size 1' — ID We Have or 120° Type

Depth of Casing Used 15 IN HOLE — X — ID We Have X Type K

Date Started — Date Completed

ASSEMBLED BY — CHECKED BY

ELEVATION SAMPLING

1177.0

5.0	1172.0	1	SS	12/20	12"	
10.0	1167.0	2	SS	11/23	12"	
15	1162.0					
20	1157.0					
25	1152.0					

BR SLT CLAY WEATH SHALE

Milling FAST

BR SLT CLAY WEATH SHALE

"

GRAY WEATH SHALE - 9'

GR ⇒ 9

GRAY ⇒

BR SLT CLAY WEATH SHALE

GRAY WEATH SHALE 12½ COAL 13½

Drilling Slow to FAIR 13½ TOP of RICH GRAY SHALE to COAL 13½

COAL INTO FIRE CLAY INTO SANDY CLAY SHALE

5- 4.9

DRILLED MED

SANDY CLAY SHALE

3' 5.0

DRILLED MED

GRAY

243+00 E

FIELD SKETCH (REQUIRED)

Hole No. 8 Description TUS-STA. 21 (40.55) (0.00) Page 2 of 2

1152.0			
30 1147.0	5.0 - 5.0 ✓	GRAY	SANDY CLAY SHALE WITH CLAY SEAMS DRILLED MED
35 1142.0	5.0 - 5.0 ✓		SANDY CLAY SHALE WITH SANDSTONE DRILLED MED
40 1137.0	5.0 - 4.8 ✓	GRAY BLACK	GRAY SHALE INTO BLACK SHALE DRILLED MED

TOP OF ROCK AT - 13.5'
DROVE 15' CASING IN HOLE
WATER LEVEL - 12'

WATER
GRAY
GRAY BLACK

FE-23

VISUAL CLASSIFICATION OF DRIVE SAMPLES

PROJECT: TMS-STA-21-(20.55)(0.00)

BORING LOCATION: 243 Lane E

DRILLER: Shuttleworth, CLASSIFIED BY: DAP DATE: 2-MAY-63

Field No.	Visual Description	No. Of Blows	Density	Moist. Cont.
1	BR MC W/LITTLE SOFT S SH FRAGS	12/20		M
MO 2	GR BRO MED WEAT SH Don't use	18/23		M

SUMMARY OF TESTS ON SOIL PROFILE SAMPLES

70

County, Rt. No., & Section _____

Lab. No. So.-	Sample No.	Station	Depth In Feet	Mechanical Analysis					Physical Charact. Density					SHTL Class	Remarks
				Agg. %	C Sand %	F Sand %	Silt %	Clay %	L.L.	P.I.	Water Cont. %	Opt.	Max. Dry Wt.		
16055	1	243+0 ℄	5-6'	0	6	12	39	43	40	9	18			A-5	
16056	2	"	6 "			M.O					13				

Complete

LOGS OF CORE BORINGS
Prepared By
State Highway Testing Laboratory
FOR

A-A

County, Rt. No. & Section TUS-STA-21-(40.55)(0.00)

Hole No. _____ Surface Elevation 1211.5

Station 255+40, CL Elevation Top of Rock 1201.5

Total Depth of Hole 42 Elevation Bottom of Hole 1169.5

DEPTH	ELEV	Description	Core log in percent
0.0	1211.5	Overburden (jar samples)	
		TOP OF ROCK-IN-PLACE	
10.0	1201.5	Sandstone, buff, medium- to fine-grained,	35%
		argillaceous, weathered, [redacted] medium-firm,	
A		grading intermittently into a shale (buff, siliceous,	
		fissile, weathered, medium-firm) comprising about	
		20% of the interval.	
14.5	1196.5	Shale, buff to mottled buff and gray, siliceous	35%
		with sandstone laminae in part, with clay seams,	
B		weathered, poorly fissile, [redacted]	
		soft to medium-firm, jointed and broken.	
20.0	1191.5	Shale, gray, carbonaceous, fissile, with thin clay	20%
C		seams, [redacted], firm, broken.	
42.0	1169.5	BOTTOM OF BORING	

Check elev.

FIELD [illegible] LOG (Drive-Rock-Core)

Sheet 1 of 2

Boring No. 9

Project Identification FAS-STA-21

(40, 55) (0, 00)

Surface Elevation 1211.5

Footing Elevation

Crew: Cyclone McClelland

Crew Chief Shuttlewood

[RECORD LEVELING DATA ON BACK OF SHEET]

Station & Offset 2357+40 ℄

ABBREVIATIONS

Type & Size of Bit (4"R) (CL 921)

Type of Sampler SS

Size 1.41 ID Wt. Hammer 120 Fall

Depth of Casing [illegible] none Size X ID Wt. Hammer X Fall X

Date Started 4/25/63 Date Completed

SS = Split Spoon

ST = Shelby Tube - 3 inch OD

PT = Piston Tube - 3 inch OD

NW = NX Core Barrel

NX = NX Core Barrel

N = Diamond Core Barrel

Check One

Rock Quality Designation

Rock Structure

Rock < 10' Below Footing

Rock > 10' Below Footing

No Rock Encountered

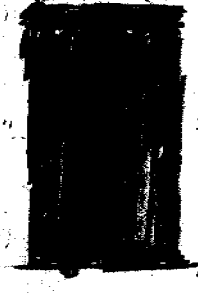
Rock < 10' Below Grade

Rock > 10' Below Grade

No Rock Encountered

NOTE: CLEAN BORING THOROUGHLY BEFORE SAMPLING

Depth	Elev.	Field Sample No.	Type of Sample	Blows per 6"	Core Run	Core Rec.	No. Pieces	Layer Description	Log
								DRILLING FAST BR SANDY SILT CLAY	BR SILT CLAY SANDY
5.0	1206.5	1	SS	4/5		18"		DRILLING FAST BR SANDY SILT CLAY	
10.0	1201.5	2	SS	void 7/11		4'		TOP OF ROCK BR S/S WITH CLAY SEAMS 9' SAMPLE TUBE STUCK AT 10 4' SCRAPED TO CORE DRILLING FAST BR S/S WITH CLAY SEAMS	9' BR SLI WITH CLAY SEAMS
15.0	1196.5			4.9 3.4	10			SLOW BR SHALE TO GRAY CLAY SHALE	15' BR SHALE TO GRAY SHALE
20.0	1191.5			5 2.2	10+			SLOW GRAY CLAY SHALE TO BLACK SHALE 24'9"	24'7" BLACK SHALE
25.0	1186.5			5 1.8	10+				



FIELD BORING LOG (CONT.)

Boring No. 9 Project Identification FHS STA 21 (40+5) (@ 0.0) Sheet 2 of 2

Sta 25+40, ℄

Depth	Elev.	Field Type of Sample	No.	L.O.S. Run	L.O.S. Pen'd.	Depth Water Encountered	Layer Description	Log
							DRILLING SLOW	
							GRAY CLAY SHALE	GRAY CLAY SHALE
300	1151.5			4.0	10'			
							SLOW	
340	1176.5			3.2	10'		"	"
							"	
400	1171.5						"	
420	1169.5			5.0	20'		"	

LOST 0.

Bottom of Borings 420'
El. 1169.5

FE-23

VISUAL CLASSIFICATION OF DRIVE SAMPLES

PROJECT: TUS-STA 21-40.55

BORING LOCATION: 255+40 ℄

DRILLER: SHOTTLEWORTH, CLASSIFIED BY: D.A.P. DATE: 4-30-63

Field No.	Visual Description	No. Of Blows	Density	Moist. Cont.
1	BR CMS	5/3		M
M-01	~~BR SHOTTLEWORTH S.T.~~ Don't use	4/17		D

SUMMARY OF SOIL TEST DATA ON FOUNDATION SAMPLES

8D

1
1

County, Rt. No., Section

Bridge No. Tus-SR-21 - (40.55) (4000) (RS)

Lab. No. So.-	Sample No.	Station No.	Represents Feet	Mechanical Analysis Agg. %	C Sand %	F Sand %	Silt %	Clay %	Physical Characteristics L.L.	P.I.	Water Cont.	Ohio Class.	Remarks
15144	1	255+60	℄ 5' 6'	0	1	52	16	31	NP		22	A-4a	
	2	"	10 10.4			NO					16		

BD-7

Knapp Rd

252 Fohl St

Complete

I

P

LOGS OF CORE BORINGS
Prepared By
State Highway Testing Laboratory
FOR

County, Rt. No. & Section STA-77-0473

Hole No. B-7 Surface Elevation 1160.5

Station 50+77, 32' Rt Elevation Top of Rock 1152.4

Total Depth of Hole 20.0 Elevation Bottom of Hole 1140.5

DEPTH	ELEV	Description	Core loss in percent
0.0	1160.5	OVErburden (jar samples)	
		TOP OF ROCK	
A 8.1	1152.4	Sandstone, light-gray, fine-grained, argillaceous,	
		jointed, firm.	0%
B 8.9	1151.6	Indurated Clay, light-gray, siliceous in part,	10%
		soft.	
C 9.9	1150.6	Sandstone, light-gray, fine-grained, with thin	
		shale laminae and clay seams, thin-bedded, firm.	0
12.1	1148.4	Shale, greenish-gray, argillaceous, slightly	
D		siliceous with thin sandstone laminae in top	
		2.0', fissile, medium-firm, jointed in part.	0
20.0	1140.5	BOTTOM OF BORING	

Little Sample Ice Jar

FE-2)

VISUAL CLASSIFICATION OF DRIVE SAMPLES

PROJECT: STR-12-77-0423

BORING LOCATION: SR 422 32'Rt

DRILLER: Shuttleworth CLASSIFIED BY: DAP DATE: 10-Apr-

Field No.	Visual Description	No. Of Blows	Density/Const.	Moist. Const.
M.O 1	BR-GR CM T.O SH FRAGS	2/2		M
2	FRAGS MC W/LITTLE COAL BLOCK.	4/4		M
3	LT BR & GR CM T.O SH FRAGS	7" (32)		M

Proj. No., Section

Bridge No. Sta 7+ - 6+98 (270)

Lab. No. So.-	Sample No.	Station No.	Depth Below Surface Feet	Mechanical Analysis % Agg.	% Gravel	% Sand	% Silt	% Clay	Physical Characteristics L.L.	P.I.	Water Cont.	State Class.	Remarks
15446	1	50+72	2RT 25 55	Brownish Gray Clayey Silt								VLS	
7	2	"	5-6	27	10	10	18	35	31	7	30	A-4a	
8	3	"	15-16	30	1	18	24	25	27	8	18	A-4a	

Survey 252

FIELD DATA - SOIL LOG

Location No. _____ County: TUS-STA-21
PROFILE Pier-Abut. Bridge No. (40.55.000)
Station: 188+60 Over: _____
Offset: ±0 70-369-13
Started: 5-1-63 Equipment: CORE DRILL
Completed: 5-2-63 Diameter _____
TO 1110 Proposed Footer: _____
Water Level: _____
Elevation 1164.1

Depth Feet	Log	Samples	Elevation 1162.8	Ground Line
0				CLAY WEATHERED SAND SHALE
			1157.8	D.S FROM 5'-6' BLOWS 11-14
				BROWN AND GRAY CLAY WEATHERED SHALE DRILLED MED
10			1152.8	RUN-4 REC-3.8
				WEATHERED SHALE CLAY SEAMS DRILLED MED
15			1147.8	RUN-5' REC-5.0
				SHALE WITH CLAY SEAMS
20			1142.8	RUN-5' REC-5.0
				SHALE SANDSTONE STREAKS OF COAL DRILLED MED
25			1137.8	RUN-5 REC-4.5
26			1137.8	SANDSTONE - VOID SPOT MINE ENTRY. DROPED 3'
				DRILLED FAST Lost Water 26'
30			1132.8	RUN-5-REC-1.1
				SANDSTONE AND SHALE
				DRILLED FAST
35			1127.8	RUN-5' REC 1.7
				BROKEN SHALE INTO HARD FIRECLAY DRILLED MED
40			1122.8	RUN-5' REC-1.1
				BBL PLUGE ONCE
				FIRECLAY AND CLAY SHALE DRILLED SLOW
45			1117.8	RUN-5-REC-4.2
				SANDY CLAY SHALE WITH CLAY SEAMS DRILLED SLOW
50			1112.8	RUN-5' REC-5.2
				SANDY CLAY SHALE
				DRILLED SLOW
55			1107.8	RUN-5 REC-5.2
				END OF BORING
60				

Remarks: 5' CASING IN HOLE
WATER LEVEL - 39'
TOP OF ROCK AT 6'
Party PAYNE POWELL _____

Chief of Party BROWN

(OVER)

FIELD DATA - SOIL LOG

Location No. _____ County: TUS-STA-21

PROFILE Pier-Abut. Bridge No. (40.55)(6.00)

Station: 141+50 Over: _____

Offset: 130' RT

Started: 5-16-63 Equipment: 76-369-13 CORE DRILL

Completed: 5-17-63 Diameter _____

TOEL-1140.0 Proposed Footer: _____

Water Level: _____

Depth Feet	Log	Samples	Elevation	
0			1174.2	Ground Line
				TOP OF ROCK AT 4'
				NO DRIVE SAMPLE IN
			1168.2	SOFT SANDSTONE
				SOFT SANDSTONE
				DRILLED MED
			1164.2	RUN-5' REC-3.6
				BROWN AND GRAY
				SANDSTONE
				DRILLED MED
15			1159.2	RUN-5' REC 4.7
				SANDSTONE INTO BROKEN
				WEATHERED SHALE-CLAY SEAMS
				DRILLED SLOW
20			1154.2	RUN-5' REC- 4.8
				BBL PLUGGED AT END
				WEATHERED SHALE
				WITH CLAY SEAMS
				DRILLED SLOW
25			1149.2	RUN-5' REC-5.0
26			1149.2	CLAY SHALE WITH
				CLAY SEAMS
				DRILLED SLOW
30			1144.2	RUN-5' REC-5.1
				CLAY SHALE WITH
				CLAY SEAMS
				DRILLED SLOW
35			1139.2	RUN-5' REC-5.2
				→ END OF BORING
40				
45				
50				
55				
60				

UNDER BROWN GRAY

GRAY BLACK GRAY

GRAY

Remarks: 5' CASING IN HOLE
TOP OF ROCK AT 4'
WATER LEVEL - 17'

Party PAYNE GRIFFITH

Chief of Party BROWN

FIELD DATA - SOIL LOG

U.S. SURVEY - A-

Location No. 2
PROFILE
Station: 79+00
Offset: 60' RT
Started: 5-7-63
Completed: 5-8-63
TO 1040.0
1088.7

County: TUS-ST A-21-1
Bridge No. (40.55)CO.00)
Over: SP
76-369-L3
Equipment: CORE DRILL
Diameter
Proposed Footer:
Water Level:

Depth Feet	Log	Samples	Elevation	
0			1088.0	Ground Line
				TOP OF ROCK AT 5'
				NO DRIVE SAMPLE
5			1083.0	HAMMER ROLLED
				CLAY AND WEATHERED SHALE
				DRILLED SLOW
10			1078.0	RUN-5 REC-5.0
				SANDY SHALE WITH CLAY SEAMS
				DRILLED SLOW
15			1073.0	RUN 5' REC 5'
				SANDY SHALE AND CLAY SEAMS
				DRILLED MED
20			1068.0	RUN-5' REC-5.1
				SANDY CLAY SHALE
				DRILLED MED
25			1063.0	RUN-5' REC-5.
26			1062.0	SANDY SHALE
				DRILLED MED
30			1058.0	RUN-5' REC 5.1
				HARD SANDY CLAY SHALE
				DRILLED MED
35			1053.0	RUN-5' REC-5.1
				SANDY CLAY SHALE
				DRILLED MED
40			1048.0	RUN-5 REC 5.
				SANDY CLAY SHALE WITH CLAY SEAMS
				DRILLED MED.
45			1043.0	RUN-5' REC-5.3
				SANDY CLAY SHALE WITH CLAY SEAMS
				DRILLED MED
50			1038.0	RUN-5' REC 5.0
				END OF HOLE
55				
60				

WATER
BROWN
BROWN AND GRAY

Remarks: CASING IN HOLE TOP OF ROCK 5'
WATER LEVEL - 29

Party PAYNE POWELL

Chief of Party BROWN

FIELD DATA - SOIL LOG

Location No. 1 County: TUS-STA-21

PROFILE Pier-Abut. Bridge No. (40.55) 0.00

Station: 29+00 Over:

Offset: 150' RT

Started: 5-8-63 Equipment: 70-36P-13 CORE DRILL

Completed: 5-8-63 Diameter

TOTAL 975 Proposed Footer:

Water Level:

Depth Feet	Log	Samples	Elevation	
0			1012.0	Ground Line
				(USED 10' BBL)
5	65		1007.0	
				CLAY SHALE WITH CLAY SEAMS
10	70		1002.0	
				BBL PLUGED TWICE
				DRILLED SLOW
15	75		997.0	RUN-15' REC- 14.6 ✓
				USED 10' BBL
20	80		992.0	CLAY SHALE INTO LIME-STONE SMALL SEAM OF COAL - CLAY AND SANDSTONE
				DRILLED SLOW
25	85		987.0	RUN-10- REC- 10.' ✓

LOST WATER

26		987.0	
30	90	982.0	GRAY AND BROWN SANDSTONE INTO CLAY SHALE WITH CLAY SEAMS
35	95	977.0	DRILLED MED RUN-10- REC- 9.6 GRAY SANDY SHALE
40	100	972.0	BARELL CHATTERED DRILLING MED. RUN 5.0' REC. 5.0
45			OLD MINE OPENING FROM 44' TO 53' ROD DROPED 1' AT 44' THEN DRILL A LITTLE AND DROP ONE OR TWO INCHES DOWN TO 53' HAD LITTLE FALLIN AFTER ROD THROUGH MINE OPENING
50			
55			
60			

Bottom of Hole

LOST WATER

Remarks:

Party PAYNE FOWELL

Chief of Party BROWN

FIELD DATA - SOIL LOG

Location No. 1 County: TUS-STR 21
PROFILE ~~Pier Abut.~~ Bridge No. (0055)(0060)
Station: 22+00 Over: S.P.
Offset: 158' RT ℄ Survey No-349-13
Started: 5-9-63 Equipment: CORE DRILL
Completed: 5-10-63 Diameter
TO EL. 975 Proposed Footer:
Water Level:

Depth Feet	Log	Samples	Elevation	Ground Line
0			1072.0	
				TOP OF ROCK AT 5'
			1067.0	NO DRIVE SAMPLE HAMMER BOUNCED BBL PLUGED TWICE
				WEATHERED SHALE WITH CLAY SEAMS DRILLED SLOW
10			1062.0	RUN-5' REC-2.7
				WEATHERED SHALE WITH CLAY SEAMS DRILLED SLOW
			1057.0	RUN-5' REC. 4.5
				WEATHERED SANDY SHALE WITH CLAY SEAMS DRILLED SLOW
20			1052.0	RUN-5' REC. 5.0
				WEATHERED SANDY SHALE WITH CLAY SEAM DRILLED SLOW
25			1047.0	RUN-5' REC. 5.0
				BROKEN SHALE WITH CLAY SEAMS DRILLED MED
30			1042.0	RUN-5' REC. 5.4
				SHALE WITH CLAY SEAMS DRILLED MED
35			1037.0	RUN-5' REC. 5.0
				SANDY CLAY SHALE WITH CLAY SEAMS DRILLED MED
40			1032.0	RUN-5 REC. 5.0
				BROKEN SANDY CLAY SHALE AND CLAY SEAMS LOST WATER AT 44'
45			1027.0	RUN-5' REC. 4.0 SMALL DROP AT 46.0 TO 47' SHALE AND COAL
50			1022.0	RUN-5 REC. 3.7
				COAL LOOSE FIRE CLAY AND SANDSTONE WITH CLAY SEAMS SHALE
55			1017.0	RUN-5' REC-2.7
				SANDSTONE WHITE STREAKS OF COAL INTO SANDY CLAY SHALE DRILLED SLOW
60			1012.0	RUN-5' REC 5.0 W/

WATERS BROWN AND GRAY

GRAY BROWN

LOST WATER

Remarks: FINAL WATER LEVEL - 48'

Party PAYNE POWELL

Chief of Party BROWN

FIELD DATA - SOIL LOG

Location No. _____ **County:** TUS-STA 21

Pier - Abut. E **Bridge No.** 40.55 (C000)

Station: 219+00 **Over:** _____

Offset: ℄ 76-369-13

Started: 5-16-63 **Equipment:** CORE DRILL

Completed: 5-16-63 **Diameter** _____

TOTAL 1145.9 **Proposed Footer:** _____

Water Level: _____

Depth Feet	Log	Samples	Elevation	Ground Line
0			1191.1	
				10 TOP SOIL TO SILTY CLAY + A BROKEN BR. SS.
5	BED ROCK		1186.1	NO SAMPLE IN S.S. BR. MED. GRAIN SS SOFT & BROKEN
			1181.1	5.0 RUN 5.0 REC. BROWN MED. GRAIN WITH SOFT BR. SS. SEAMS
15			1176.1	
20			1171.1	10.0' RUN 10.0' REC MED BROWN S.S. TO GRAY MED GRAIN SS WITH BR S.S. SEAMS
			1166.1	

BROWN

GRAY

26	1166.1	GRAY MED. GRAIN S.S. WITH THIN BR. SS. SEAMS WITH TRACES OF COAL
30	1161.1	10.0' RUN 10.0' REC. MED. GRAIN BROWN S.S. WITH GRAY SEAMS
	1156.1	SEAMED BROWN & GRAY S.S.
40	1151.1	10.0 RUN 10.0 REC. BROWN MED GRAIN WITH GRAY SEAMS
45	1146.1	S.S. WITH BR SOFT + INJECT SEAMS OF GRAY S.S. WITH TRACES OF COAL
50	1141.1	10.0 RUN 10.0 MED. FINE GRAIN SS (GRAY) TRACES OF COAL
	1140.1	50-51 REC 1.3
60		

Difference

Reference Elev.

Top of Boring

Remarks: TOP OF ROCK 1174'
WATER LEVEL 19'

Party PAYNE . GRIFFITH

Chief of Party BROWN

OHIO DEPARTMENT OF HIGHWAYS
TESTING LABORATORY
FOUNDATION EXPLORATION SECTION

SCHEDULE OF TEST BORINGS

Reconn. By: Howald Co., Rt., Sec. TRS-STA-21 (40.55) (0.00)

Bridge No:

Date: 12-3-62 Job No.: 24575

Sheet 1 of 9

Northbound Pf.

Borings No.	Station and Offset	RURAL	URBAN	Type HA	Type TA	Type DC	DEPTH	Check Clearance Req'd A	W	S	G	E	T
1	-2+0 - ℄	X			X		30						
	1+0 - ℄						30						
	4+25 - ℄						20						
	7+50 - ℄						to refusal						
	9+50 - ℄						"		"				
	12+50 - ℄						"		"				
	16+50 - ℄						"		"				
	18+50 - ℄						"		"				
	22+50 - ℄						"		"				
	24+0 - ℄						"		"				
	30+0 - ℄						"		"				
	36+0 - ℄						"		"				
	40+0 - ℄						"		"				
	42+50 - ℄						"		"				
15	45+0 - ℄	X			X		"		"				

HA=Hand auger or other hand method
TA=Truck-mounted auger
DC=Drive Sample or rock core

A=Access to Private Property
W=Water lines
S=Sewer lines
G=Gas lines
E=Electrical Cables
T=Telephone Cables

FOUNDATION EXPLORATION SECTION

SCHEDULE OF TEST BORINGS

Continued - Sheet 2 of 9

CO., RT., SEC. Tus-5TA-21 (40.5C)(20.0A)

Borings No.	Station and Offset	RURAL	URBAN	Type HA	Type TA	Type DC	DEPTH	Check Clearance Record A	W	S	G	E	T
1	46+0 - 12Lt	X			X		+	rock					
	47+75 - 50Rt						"	"					
	" " - 80Lt						"	"					
	51+0 - 40Rt						"	"					
20	" " - 20Lt						"	"					
	54+0 - 60Rt						"	"					
	" " - 30Lt						"	"					
	56+50 - ℄						"	"					
	60+0 - 50Rt						"	"					
25	63+0 - 50Rt						"	"					
	66+0 - ℄						"	"					
	" " - 80Rt						"	"					
	69+0 - 50Rt						"	"					
	71+0 - ℄						"	"					
30	73+0 - ℄						"	"					
	75+50 - ℄				X		"	"					
	81+50 - ℄	HA	HA				"	"	natural gas lines				
	84+20 - 35Rt				X		"	"	in opening				
	87+0 - ℄						"	"					
35	94+0 - ℄						"	"					
	98+0 - ℄						"	"					
	" " - 120Lt						"	"					
	" " - 100Rt						"	"					
	102+0 - ℄	X			X		"	"					

FOUNDATION EXPLORATION SECTION

SCHEDULE OF TEST BORINGS

Continued - Sheet 3 of 9

CO., RT., SEC. TUS-571-21-(90.57)0.00

No.	Borings Station and Offset	RURAL	URBAN	Type HA	Type TA	Type DC	DEPTH	Check Clearance Record A	W	S	G	E	T
44	102+0 -90Rt	X			X		to refusal						
	103+0 -90Rt						"		"				
	104+0 - ℄						"		"				
	" " -100Lt						"		"				
	" " -100Rt						"		"				
45	105+0 - ℄						"		"				
	" " -100Lt						"		"				
	" " -100Rt						"		"				
	112+0 - ℄						"		"				
	115+0 - ℄						"		"				
46	" " 120Lt						"		"				
	" " 120Rt						"		"				
	118+50 - ℄						"		"				
	118+0 - ℄						"		"				
	121+0 - ℄						"		"				
47	" " -100Lt						"		"				
	" " -100Rt						"		"				
	122+0 - ℄						"		"				
	" " -100Lt						"		"				
	" " -100Rt						"		"				
48	123+0 - ℄						"		"	R-21			
	" " 100Lt						"		"	R-21			
	" " 100Rt TOO RT						"		"	R-21			
	125+0 - ℄	X			X		"	✓	"				

FOUNDATION INVESTIGATION SECTION

SCHEDULE OF TEST BORINGS

Continued - Sheet 4 of 9

CO., RT., SEC. 705-STA-21 (9055)(0.00)

Borings No.	Station and Offset	RURAL	URBAN	Type HA	Type TA	Type DC	DEPTH	Check Clearance Record A	W	S	G	E	T
69	125+0 -125Lt	X			X		to Refusal						
	" " -125Rt						"	✓	"				
	128+0 - ℄						"	✓	"				
	130+0 - ℄						"	✓	"				
	" " - 100Rt						"	✓	"				
	" " - 100Lt						"	✓	"				
70	" " - 200Lt						"	✓	"				
	131+46 - ℄						"	✓	"				
	133+00 - 130Lt						"	✓	"				
	135+0 - ℄						"	✓	"				
	" " - 100Lt						"	✓	"				
75	" " - 200Lt						"	✓	"				
	137+0 - ℄						"	✓	"				
	" " - 70Rt						"	✓	"				
	" " - 100Lt						"	✓	"				
	" " - 200Lt 170'Lt						"	✓	"				
80	141+0 - ℄						"	✓	"				
	" " - 150Lt						"	✓	"				
	145+0 - ℄						"	✓	"				
	" " - 130Lt						"	✓	"				
	" " 110Rt						"	✓	"				
85	149+0 - ℄						"	✓	"				
	" " 100Lt						"	✓	"				
	" " 200Lt	X			X		"	✓	"				

FOUNDATION EXPLORATION SECTION

SCHEDULE OF TEST BORINGS

Continued - Sheet 5 of 9

CO., RT., SEC. 705 - STA - 21 (9055) (6.00)

Borings No.	Station and Offset	RURAL	URBAN	Type HA	Type TA	Type DC	DEPTH	Check Clearance Record A	W	S	G	E	T
B1	148+0 - 100Rt	X			X	✓	to ref	45a					
	151+0 - ℄						"	"					
	" " 150Lt						"	"					
	" " 100Rt						"	"					
	154+0 - ℄						"	"					
	" " - 150Lt						"	"					
	" " - 70Rt						"	"					
B2	157+0 - ℄						"	"					
	" " - 100Rt						"	"					
	" " - 150Lt						"	"					
	161+0 - ℄						"	"					
	164+0 - ℄						"	"					
B3	170+0 - ℄						"	"					
	" " - 150Lt						"	"					
	" " - 100Rt						"	"					
	173+0 - ℄						"	"					
	" " - 100Rt						"	"					
B4	" " - 130Lt						"	"					
	" " - 200Lt						"	"					
	177+0 - ℄						"	"					
	" " - 150Lt						"	"					
	" " - 75Rt						"	"					
B5	" " - 150Rt						"	"					
	180+0 ℄	X			X		"	"					

FOUNDATION EXPLORATION SECTION

SCHEDULE OF TEST BORINGS

Continued - Sheet 6 of 9

CO., RT., SEC. TUS-577-21 (40.55)(0.00)

Borings No.	Station and Offset	RURAL	URBAN	Type HA	Type TA	Type DC	DEPTH	Check Clearance Record A	W	S	G	E	T
B4	180+0 - 4.0 Rt	X			X		to refusal						
	" " - 130 Lt						"		"				
	" " - 200 Lt						"		"				
B5	183+50 - ℄						"		"				
	" " - 90 Rt						"		"				
	" " - 100 Lt						"		"				
	" " - 175 Lt						"		"				
	" " - 250 Lt						"		"				
B6	186+0 - ℄						"		"				
	" " - 150 Lt						"		"				
	192+0 - ℄						"		"				
	194+0 - ℄						"		"				
	197+50 - ℄						"		"				
B7	199+50 - ℄						"		"				
	202+50 - ℄						"		"				
	210+50 - 100 Lt						"		"				
	" " - 200 Lt						"		"				
	214+0 - ℄						"		"				
B8	" " - 75						"		"				
	" " - 150						"		"				
	219+75 - ℄						"		"				
	223+0 - 70 Lt						"		"	✓			
	230+50 - ℄						"		"	R-27'			
B9	231+50 - ℄	X			X		"		"	✓			

FOUNDATION EXPLORATION SECTION

SCHEDULE OF TEST BORINGS

Continued - Sheet 7 of 9

CO., RT., SEC. JUS-STA-21-(10.55)(000)

No.	Borings Station and Offset	RURAL	URBAN	Type HA	Type TA	Type DC	DEPTH	Check Clearance Record A	W	S	G	E	T
CL	231+50 - 100 Rt	X			X		to	rock			✓		
	" " - 180 Rt						"		"		✓		
	233+0 - 100 Rt						"		"	✓			
	233+50 - ℄						"		"	✓			
10	" " - 100 Lt						"		"	✓			
	" " - 200 Lt						"		"	✓			
	234+50 - ℄						"		"				
	239+0 - ℄						"		"	✓			
	245+0 - ℄						"		"				
15	" " - 100 Lt						"		"				
	" " - 100 Rt						"		"				
	248+0 - ℄						"		"				
	252+0 - ℄						"		"				
	258+50 - ℄						"		"				
20	262+0 - ℄						"		"				
	" " - 100 Lt						"		"				
21	" " - 100 Lt	X			X		"		"				
	Access Road #2												
10	42+85 ℄	X			X		to	rock			✓		
	46+50 - ℄						"		"	✓			
	50+0 - ℄						"		"	✓			
	53+30 - ℄						"		"	✓			
15	56+25 - ℄	X			X		"		"	✓			

FOUNDATION EXPLORATION SECTION

SCHEDULE OF TEST BORINGS

Continued - Sheet 8 of 9

CO., RT., SEC. IUS-STH-21(90.57)(0.00)

Borings No.	Station and Offset	RURAL	URBAN	Type HA	Type TA	Type DC	DEPTH	Check Clearance Record A	W	S	G	E	T
	Lac-Vieux Desert Road # 2 (cont.)												
108	40+0 - Rt	X			X		to refusal						
	44+25 - Rt	X			X		to refusal						
	48+0 - Rt	X			X		to refusal						
	72+50 - Rt	X			X		to refusal						
162	77+0 - 20 Rt	X			X		to refusal						
	Reloc. Sherman Church Rd - CR. 232												
112	86+0 - Rt	X			X		to refusal						
	89+0 - Rt						"						
	92+0 - Rt						"						
	95+0 - Rt						"						
	99+0 - Rt						"						
	103+0 - 10 Rt						"						
114	107+0 - 12 Rt	X			X		"						
	Reloc. Keiffer Rd - TR. 248												
120	40+50 - 8 Rt	X			X		to refusal						
	42+0 - Rt						"						
	45+0 - Rt						"						
	49+0 - Rt						"						
	54+0 - Rt						"						
126	58+0 - Rt						"						
	62+0 - Rt	X			X		"						

ROUND TICE AND LOCKWOOD TICK SECTION

SCHEDULE OF TEST BORINGS

Continued - Sheet 9 of 9

CO., RT., SEC.

No.	Borings Station and Offset	RURAL	URBAN	Type HA	Type TA	Type DC	DEPTH	Check Clearance Record A	W	S	G	E	T
	Fahl St - TR. 252												
177	33+0 - 10 Lt	X			X		to refusal						
	36+0 - 10 Lt						"		"				
	39+0 - 10 Lt						"		"				
180	93+0 - 10 Lt						"		"				
	47+0 - 10 Lt						"		"				
	50+0 - 10 Rt						"		"				
	53+0 - 10 Lt						"		"	R-17'			
184	63+0 - 8 Rt	X			X		"		"	R-17'			

OHIO DEPARTMENT OF HIGHWAYS
TESTING LABORATORY
FOUNDATION EXPLORATION SECTION

SCHEDULE OF TEST BORINGS

Reconn. By: Howard ----------Co., Rt., Sec.: 705-STA-77-(40.55) (0.00)

----------Bridge No: ----------

Date:----------Job No.:----------

Sheet 1 of 2

Southbound IR 77

Borings		Type					Check Clearance Req'd					
No.	Station and Offset	RURAL	URBAN	HA	TA	DC	DEPTH	A	W	S	G	E	T
1	15+50, ℄				✓		30						
	17+25, ℄				✓		30						
	21+00, ℄						27						
	24+00, ℄						10'						
5	27+00, ℄						10						
	30+00, ℄						20						
	33+00, ℄						20						
	37+00, ℄						20						
	41+00, ℄						20						
10	43+50, ℄						30						
	45+00, ℄						30						
	45+50, 50'Lt						20						
	48+00, ℄						15						
	51+50, ℄						10						
15	55+00, ℄						12						

HA=Hand auger or other hand method
TA=Truck-mounted auger
DC=Drive Sample or rock core

A=Access to Private Property
W=Water lines
S=Sewer lines
G=Gas lines
E=Electrical Cables
T=Telephone Cables

FE-3

FOUNDATION EXPLORATION SECTION

SCHEDULE OF TEST BORINGS

TUS-STA-77-(0055)(000)

Southbound IR 77

CO., RT., SEC.

Borings No.	Station and Offset	RURAL	URBAN	TYPE HA	TA	DC	DEPTH	Check Clearance Record A	W	S	G	E	T
16	59+00, ℄						12						
	63+00, ℄						To Refusal						
	66+25, ℄						"		"				
19	69+00, ℄						"		"				
	Drive Sample - Core Borings												
	79+00 60Rt												
	91+00 ℄												
	111+50 130Rt												
	188+50 ℄												
	205+50 ℄												
	219+00 ℄												
	226+00 ℄												
	243+00 ℄												
	255+00 ℄												
	Foht Street												
	57+50 45Rt												
	Kniffin Rd												
	47+00 ℄												

Completed

FE-11

Core

OHIO DEPARTMENT OF HIGHWAYS
TESTING LABORATORY
FOUNDATION EXPLORATION SECTION

SCHEDULE OF CORE BORINGS

Reconn. By: Hamald Co., Rt., Section: TRS-STA-21

Bridge No.: (40.50)2.00

Date: 12-3-62 Job No.: 24525

Sheet 1 of 1

Borings No.	Station and Offset	Rural	Urban	Drill to Elev.	C.L. Elev.	Type Drill	Special Equip.	Check Clearance Req'd A	W	S	G	E	T
188	29+0 - 150 Rt			975	?		Acker						
	75+0 - 60 Rt			1040	1084.1		Acker - Cat/w/blade						
	91+0 - ℄			1070	1127.1		Danco						
	167+30 - 150 Rt			1020	℄ sta. 168+0		Danco						
					= 1145.6								
	189+0 - ℄			1110	1159.9		Danco						
190	205+50 - ℄			1120	1183.7		Acker - Cat/w/blade						
	226+0 - ℄			1140	1184.8		Acker - Cat/w/blade						
	243+0 - ℄			1140	1177.0		Acker - Cat/w/blade						
	256+0 - ℄			1170	1212.5		Danco						
	Fohl 54 - TR. 252												
194	57+50 - 25 Rt			1130	1228.5		Danco						

A = Access to Private Property
W = Water Lines
S = Sewer Lines

G = Gas Lines
E = Electrical Cables
T = Telephone Cables

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Revised

OHIO DEPARTMENT OF HIGHWAYS
TESTING LABORATORY
FOUNDATION EXPLORATION SECTION

SCHEDULE OF CORE BORINGS

Reconn. By: _____ Co., Rt., Section: TUS-STA-1R77 (40.55 0.00)

_____ Bridge No.: _____

Date: May 14, 1963 Job No.: _____

Sheet _____ of _____

Borings No.	Station and Offset	Rural	Urban	Drill to Elev.	C.L. Elev.	Type Drill	Special Equip.	Check Clearance Req'd A	W	S	G	E	T
	140+00 30' Rt.			1130'	1167'	Core							
	219+00 ℄			1145'	1191'	Core							
	Kieffer Road												
	47+00 ℄			1208'	1160'	Core							

A = Access to Private Property
W = Water Lines
S = Sewer Lines
G = Gas Lines
E = Electrical Cables
T = Telephone Cables

PROJECT IDENTIFICATION
105-STA-21-(40.55)(000)

CORE BORING SCHEDULE

RECON BY PL H DATE 12-3-62 SHEET 1 OF 1 SHEETS

BORING NO.	STATION & OFFSET		DRILL TO ELEV.	℄ ELEV.	DRILLED BY	DATE DRILLED	DATE REPORTED	REMARKS
*	29+00	150'RT	975		Brown	5/8	5/10	CAT/Blade
	79+00	60'RT	1040	1084.1	Brown	5/7	5/8	CAT/Blade
	91+0	℄	1070	1127.1 sta 68+00	Brown	5/3	5/7	Damco
	167+30	150'RT	1090	1145.6				Damco
	~~180+50~~ 181+20	℄	1110	1159.9	Brown	5/11	5/12	Damco
	205+50	℄	1120	1183.7		—	—	CAT/Blade
	226+00	℄	1140	1186.8		5/7	5/7	CAT/Blade
	243+00	℄	1140	1177.0		—	—	CAT/Blade
	~~255+00~~ 256+00	℄	1170	1212.3		4/25	—	Damco
	FOHL ST							
	57+50	25'RT	1130	1228.5		4/24	4/24	Damco
check →	219+00	℄			Brown	5/16	5/16	
	47+00	℄			Brown	5/15	5/15	

CONTINUED ON NEXT PAGE

DATE

SUPPLEMENTARY AND REVISED BORINGS

	141+50	130 Rt		Brown	5/16	5/17

(*: ℄ survey or North bound lanes)

CONTINUED ON NEXT PAGE

FE-3

FOUNDATION EXPLORATION SECTION

SCHEDULE OF TEST BORINGS

Supplement Boring List.

Continued - Sheet ____ of ____

CO., RT., SEC. 7115-57A-21-(20.55)(0.00)

Borings No.	Station and Offset	RURAL	URBAN	TYPE HA	TYPE TA	TYPE DC	DEPTH	Check Clearance Record A	W	S	G	E	T
—	Southbound Lane						—						
	15+50 - ℄	X			X		30						
	17+25 - ℄						30						
	21+00 - ℄						27	(Probable Core Boring)					
	24+00 - ℄						10						
	27+00 - ℄						10						
	30+00 - ℄						20						
	33+00 - ℄						20						
	37+00 - ℄						20						
	41+00 - ℄						20						
	43+00 - ℄						30						
	45+00 - ℄						30						
	45+50 - 50 Lt						20						
	48+00 - ℄						15						
	51+50 - ℄						10						
	55+00 - ℄						12						
	59+00 - ℄						12						
	63+00 - ℄						to refusal						
	66+25 - ℄						to refusal						
	69+00 - ℄						to refusal						

NB Lane (Cold C15) Complete — Check if ... Cold C15

LOG OF BORING

Date Started 4-11-63 | Sampler Type SS | Dia. 1 3/8" | Water Elev.
Date Completed 4-16-63 | Casing: Length 70' | Dia. 3 1/2" | #10 #40 #200
Boring No. B-1 | Station & Offset 15+52, 77' Rt. (REAR ABUTMENT) | Surface Elev. 950.0'

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	Physical Characteristics: % Agg	% G.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class.
950.0	0				Main line Sta										
	2														
	4														
945.0	6	8/6			Brown Sand (Wash Sample) 5-6 B	1		V	I	S	U	A	L		
	8														
940.0	10	9/9			Gray Sandy Gravel 10-11	2	73	17	7	#3+		NP	NP	9	A-1-a
	12														
	14														
935.0	16	2/1			Brown Gravelly Sand (Wash Sample) 15-16	3		V	I	S	U	A	L		
	18														
930.0	20	9/11			Brown Gravelly Sand (Wash Sample) 20-21	4		V	I	S	U	A	L		
	22														
	24														
925.0	26	6/9			Brown Gravelly Sand (Wash Sample) 25-26	5		V	I	S	U	A	L		
	28														
920.0	30	8/11			Dark Brown Gravelly Sand (Wash Sample) 30-31	6		V	I	S	U	A	L		
	32														
	34														
915.0	36	12/13			Brown Sandy Gravel (Wash Sample) 35-36	7		V	I	S	U	A	L		
	38														
910.0	40	12/13			Brown Sand (Wash Sample) 40-41	8		V	I	S	U	A	L		
	42														
	44														
905.0	46	11/13			Brown Sand (Wash Sample) 45-46	9		V	I	S	U	A	L		
	48														
900.0	50	12/19			Brown Sand (Wash Sample) 50-51	10		V	I	S	U	A	L		
	52														
	54														
895.0	56	10/12			Brown Gravelly Sand (Wash Sample) 55-56	11		V	I	S	U	A	L		
	58														
890.0	60	12/18			Brown Sand (Wash Sample) 60-61	12		V	I	S	U	A	L		
	62														
	64														
885.0	66	9/13			Brown and Gray Silty Sand 65-66	13	0	5	56	19	20	NP	NP	19	A-4a
	68														
880.0	70	9/21			Gray and Brown Silty Clay 70-71	14	0	1	2	30	67	47	16	20	A-7-5
	72														
875.0	74														
	76				TOP OF ROCK										
	78		1.3	2.7	Shale, gray, with clay seams, soft to medium-firm, crumbly, badly broken. Core loss 67%.										
870.0	80														
	82		4.3	0.7	Shale, gray, siliceous with sandstone laminae from 85.0' to 87.9', poorly fissile, firm, with 0.5' soft crumbly zones at 82.4', 84.5', and 88.0', jointed-in-part, badly broken above 82.4', broken in remainder. Core loss 7%.										
	84														
	86														
	88		5.0	0.0											
860.0	90														

Plate NBL-(Cont'd 27-)

Check if needed Use

LOG OF BORING

Date Started 4-5-63
Date Completed 4-5-63
Boring No. B-6

Sampler Type SS Dia. 1 3/8"
Casing: Length 40' Dia. 3 1/2"
Station & Offset 16+37, 37' Rt. (FORWARD PIER)

Water Elev.

Surface Elev. 945.7'

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.
945.7	0				Main line Sta										
	2														
	4														
940.7	6	7/5			Brown Sand and Gravel										
	8														
935.7	10	2/3			No Sample Recovered										
	12														
	14														
930.7	16	12/8			Brown Silty Sand										
	18														
925.7	20														
	22	9/11			Brown Sand 20-21	3	0	1	92	-7+		NP	NP	21	A-3
	24														
920.7	26	9/11			Brown Sand 25-26	4	0	2	93	-5+		NP	NP	24	A-3
	28														
915.7	30	8/12			Brown Sand 30-31	5	11	34	49	-6+		NP	NP	19	A-2
	32														
	34														
910.7	36	11/15			Brown Sand (Wash Sample) 35-36	6		V	I	S	U	A	L		
	38														
905.7	40														
	42	17/19			Gray Gravelly Silt 40-41	7	29	1	8	28	34	29	8	14	A-4
	44														
900.7	46				TOP OF ROCK										
	48		1.9	3.1	Shale, gray, siliceous, carbonaceous, fissile, firm, badly broken, with 0.1' coaly seam at 48.0' and clayey seams at base. Core loss 62%. elev. 897.7										
895.7	50														
	52		4.7	0.3	Limestone, light-brown, dense, hard, highly argillaceous, thin-bedded with thin clay seams; leached and medium-firm from 52.7' to base. Core loss 6%. elev. 893.0										
890.7	54														
	56														
	58		5.0	0.0	Shale, dark-gray, fissile, firm, highly carbonaceous, with few limestone stringers in top 1.0'. No core loss.										
885.7	60														

BOTTOM OF BORING

Do not type First 20'

Use auger above 20

NB-Lanes

LOG OF BORING

Date Started 4-15-63
Date Completed 4-17-63
Boring No. B-6

Sampler Type SS Dia. 1 3/8"
Casing: Length 35' Dia. 3 1/2"
Station & Offset 43+38, 44' Rt.

Water Elev.
Surface Elev. 946.4'

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.
946.4'	0														
	2														
	4														
941.4	6	4/7			Brown and Gray Silty Clay 5-6	1	0	1	1	23	75	50	17	30	A-7-5
938.9	8	5/7			Brown and Gray Sandy Gravelly Silt 7.5 - 8.5	2	32	10	12	29	17	26	1	18	A-4a
936.4	10	2/2			Gray Sandy Silt 10 - 11	3	12	3	11	49	25	NP	NP	26	A-4a
933.9	12	2/2			Gray Sandy Silt 12.5 - 13.5	4	9	5	11	46	29	NP	NP	25	A-4a
931.4	14	2/3			Gray Gravelly Sandy Silt 15 - 16	5	15	4	12	44	25	NP	NP	26	A-4a
928.9	16	4/8			Brownish-Gray Silty Sandy Gravel 17.5 - 18.5	6	41	7	11	24	17	27	5	19	A-4a
926.4	18	7/10			Brown Silty Sandy Gravel 20 - 21	7	40	10	13	19	18	28	4	17	A-4a
923.9	20	9/11			Brown Silty Sandy Gravel 22.5 - 23.5	8	58	7	10	12	13	25	3	15	A-1-b
921.4	22	9/5			Brown Silty Sandy Gravel 25 - 26	9	51	15	9	12	13	28	6	15	A-1-b
	24														
	26														
916.4	28	15/14			Brown Silty Gravelly Sand 30 - 31	10	34	41	12	13		NP	NP	17	A-3a
	30														
	32														
911.4	34	9/13			Brown Silty Sandy Gravel 35 - 36	11	52	9	11	12	16	NP	NP	16	A-2-4
	36														
906.4	38	8/10			Brownish-Gray Sandy Gravelly Silt 40 - 41	12	23	5	11	28	33	30	7	20	A-4a
	40														
	42														
901.4	44	8/12			Gray Gravelly Silt 45 - 46	13	20	3	10	30	37	29	8	22	A-4a
	46														
	48														
896.4	50	11/15			Gray Gravelly Clay 50 - 51	14	27	6	5	19	43	36	13	22	A-6a
	52														
892.4	54				TOP OF ROCK										
	56														
	58		4.8	0.2	Shale, gray, slightly siliceous intervals, poorly fissile, firm, jointed and badly broken above 60.7', broken-in-part in remainder. Core loss 4%.										
	60														
	62		4.8	0.2	elev. 874.7										
881.4	64				BOTTOM OF BORING										

Complete

LOG OF BORING

Date Started 4-24-63
Date Completed 4-25-63
Boring No. B-7

Sampler Type SS Dia. 1 3/8"
Casing: Length 10' Dia. 3 1/2"
Station & Offset 195+79, 29' Rt. (FORWARD ABUTMENT)

Water Elev. ____
Surface Elev. 1107.9'

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.	AHTL Class.
1107.9	0														
1105.4	2														
	4	6/9			Brown and Gray Gravelly Clay 2.5-3.5	1	22	2	2	20	54	39	12	21	A-6 g
1102.9	6	4/8			Brown and Gray Sandy Clay 5-6	2	0	12	10	16	62	39	14	24	A-6 g
1100.4	8	9/24			Brown and Gray Clayey Gravel 7.5-8.5	3	56	8	5	8	23	~~PL~~ 29		29	A-2-6
1097.9	10														
	12	25/12			Brown and Gray Sandy Gravelly Clay 10-11	4	42	9	8	10	31	39	11	27	A-6 g
1094.4	14		1.3	2.7	TOP OF ROCK										
1093.4					Shale, dark-gray to black, carbonaceous, weathered, very soft. Core loss 10%.										
1092.5	16				Coal, black, blocky, badly broken. Core loss 11%.										
	18		4.5	0.5	Indurated clay, gray to light-gray, very soft in top 1.0', soft to medium-firm and crumbly in remainder, slickensided. Core loss 5%.										
	20														
	22														
1084.8	24		5.0	0.0	Shale, light-gray, argillaceous, poorly fissile, firm, jointed in part. Core loss 4%.										
1082.4	26														
1080.1	28		4.7	0.3	Sandstone, gray, fine-grained, firm. No core loss.										
1077.9	30				Shale, greenish-gray, siliceous, fissile, with thin sandstone laminae and beds, comprising about 35% of the interval. Core loss 9%.										
					BOTTOM OF BORING										

Complete SB Lanes

at Access Rd #1

LOG OF BORING

Date Started 4-10-63 | Sampler Type SS | Dia. 1 3/8" | Water Elev.
Date Completed 4-12-63 | Casing: Length 60' | Dia. 3 1/2"
Boring No. B-6 | Station & Offset 44+49, 35'Lt.(FORWARD PIER) | Surface Elev. 937.8

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	Physical Characteristics: % Agg.	% Gr.	% S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTI
937.8	0														
	2														
	4														
932.8	6	2/3			Brown and Gray Gravelly Clay N/C-L	1	39	4	5	31	36	35	10	32	A-4b
930.3	8	2/2			Gray Silt 7.5-8.5	2	0	2	11	58	29				A-4b
927.8	10	2/3			Gray Silt 10-11	3	0	4	9	64	23	NP	NP	24	A-4b
925.3	12	2/2			Gray Silt 12.5-13.5	4	0	2	5	64	29	NP	NP	33	A-4b
922.3	14	2/3			Gray Gravelly Silt 15-16	5	17	3	4	52	24	NP	NP	23	A-4b
920.3	16	3/3			Gray Silt 17.5-18.5	6	0	2	5	67	26	NP	NP	29	A-4b
917.8	18	6/10			Brown and Gray Sandy Gravelly Silt 20-21	7	29	6	11	30	24	NP	NP	14	A-4a
915.3	20	7/7			Brown and Gray Sandy Gravelly Silt 22.5-23.5	8	26	3	12	37	22	NP	NP	17	A-4b
912.8	22	2/3			Gray Clayey Silt 25-26	9	0	2	3	73	22	31	6	28	A-4b
	24														
907.8	26	7/7			Gray Gravelly Silt 30-31	10	46	5	6	30	15	NP	NP	23	A-4b
	28														
	30														
902.8	32	6/7			Brown and Gray Gravelly Silt 35-36	11	22	6	9	35	28	31	7	25	A-4a
	34														
897.8	36	8/16			Brown Silty Sandy Gravel 40-41	12	61	9	8	12	11			15	A-1-a
	38														
892.8	40	10/14			Gray Gravelly Silt 45-46	13	30	8	2	25	35	22	4	32	A-4a
	42														
887.8	44	7/11			Gray Sandy Silt 50-51	14		W	I	S	U	A	L		
	46														
882.8	48	--			Gray Cobbles 55-56	15		V	I	S	U	A	L		
877.8	50	17/25			Gray Clayey Silt 60-61	16	16	1	2	43	38	31	7	15	A-4a
876.8	52														
	54				TOP OF ROCK elev. 874.8;										
	56		4.0	0.0											
	58														
	60														
	62														
	64														
	66														
	68		4.5	0.5	Shale, gray, poorly fissile, firm, argillaceous; moderately weathered and iron stained to 65.0'; with brown and gray, firm, fine-grained sandstone interbeds from 64.8' to 66.0' and 70.0' to 71.0'. Core Loss 4%. elevs 873.0 to 871.8 and elevs 867.8 to 866.8										
	70														
	72														
864.6	74		5.0	0.0											
862.8					Sandstone, gray, fine-grained. No core loss.										

BOTTOM OF BORING

LOG OF BORING

Date Started 4-1-57 | Sampler Type SS Dia. 1 3/8" | Water Elev.
Date Completed 4-1-57 | Casing: Length Dia.
Boring No. B-7 | Station & Offset 17+16, 65' Rt. (FORWARD ABUTMENT) | Surface Elev. 944.7'

Complete

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.	St. Cl.
944.7	0														
	2														
942.2	4	6/9			Brown Clayey Gravel 2.5-3.5	1	56	9		17	18	X	X	13	
939.7	6	7/12			Mottled Brown and Gray Gravelly Silt 5-6	2	41	9		28	28	29	5	21	
937.2	8	9/9			Mottled Brown and Gray Gravelly Silt 7.5-8.5	3	44	1	1	24	30	35	6	20	
934.7	10	3/7			Mottled Brown and Gray Gravelly Silt 10-11	4									
932.2	12														
	14	8/12			Gray Gravelly Clay 12.5-13.5	5	40	1	3	21	36	X	X	17	
929.7	16	10/13			Gray Silt and Clay 15-16	6	0	1	5	56	45	33	11	11	
927.2	18	30/*			Gray Gravelly Silt 17.5-18.0	7	37	1	11	32	19	24	4	16	
926.2					TOP OF ROCK										
923.7	20		0.6	1.4	Shale, gray, arenaceous, firm, non-fissile, badly broken, carbonaceous below ~~20.0~~'; with few clay seams. Core loss 77%. elev 924.7										
922.2	22				Coal, black, shaly, badly broken. Core loss 33%.										
919.7	24		1.9	3.1	Underclay, gray, soft, crumbly. Core loss 68%.										
	26														
	28		4.2	0.0	Shale, gray, arenaceous, soft and crumbly to medium-firm, non-fissile, carbonaceous above ~~27.0~~', fossiliferous. Core loss 15%. elev. 917.7'										
914.2	30														
	32														
	34		5.0	0.0	Shale, brown to gray, slightly arenaceous, fissile, firm, with few sandy laminae, jointed in part. No core loss.										
909.2	36														
	38				*REFUSAL BOTTOM OF BORING										
	40														

SB Line (Cont'd - 275)

LOG OF BORING

Date Started 4-17-63
Date Completed 4-18-63
Boring No. B-2

Sampler Type SS Dia. 1 3/8"
Casing: Length 65' Dia. 3 1/2"
Station & Offset 15+53, 35' Lt.

Water Elev.
Surface Elev. 950.5'

Elev.	Depth	Blow Count per 6"	Rec. %	Loss ft.	Description	Sample No.	Physical Characteristics % Agg	% G.S.	% F.S.	% Silt	% Clay	L.L.	Pl.	W.C.	S.C.T.L. Class.
950.5	0				Complete main line SB Sta.										
945.5	6	4/6			Brown Gravelly Sand 5-6	1	46	37	16			NP	NP	17	A-1-b
940.5	10	3/5			Brown Sand (Wash Sample) 10-11	2		V	I	S	U	A	L		
935.5	16	1/2			Brown Sand (Wash Sample) 15-16	3		V	I	S	U	A	L		
930.5	20	6/7			Brown Gravelly Sand (Wash Sample) 20-21	4		V	I	S	U	A	L		
925.5	26	13/12			Brownish-Grey Gravelly Sand (Wash Sample) 25-26	5		V	I	S	U	A	L		
920.5	30	13/20			Brown Gravelly Sand (Wash Sample) 30-31	6		V	I	S	U	A	L		
915.5	36	20/14			Brown Sand (Wash Sample) 35-36	7		V	I	S	U	A	L		
910.5	40	8/11			Brown Sand (Wash Sample) 40-41	8		V	I	S	U	A	L		
905.5	46	8/12			Brown Sand (Wash Sample) 45-46	9		V	I	S	U	A	L		
900.5	50	16/16			Brown Gravelly Sand (Wash Sample) 50-51	10		V	I	S	U	A	L		
895.5	56	11/16			Brown Gravelly Sand (Wash Sample) 55-56	11		V	I	S	U	A	L		
890.5	60	25/25			Gray and Brown Silty Sandy Gravel 60-61	12	54	7	21	6	12	NP	NP	17	A-1-b
885.5	66				TOP OF ROCK										
	68		5.0	0.0											
	70				Shale, black to dark-gray, carbonaceous, fissile, firm; jointed and badly broken from ~~67.0' to 77.0'~~. No core loss. elevs 883.5 to 870.5										
	72														
875.5	74		5.0	0.0											

BOTTOM OF BORING

Twp Rd-464 Seaman Rd.

LOG OF BORING

Date Started 4-19-63 Sampler Type SS Dia. 1 3/8" Water
Date Completed 4-23-63 Casing: Length 18' Dia. 3 1/2"
Boring No. B-12 Station & Offset 17+43, 18' Lt. (FORWARD ABUTMENT) Surface Elev. 1142.3

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.	Shear
1142.3	0														
	2				Brownish-Gray Gravelly Silt										
1136.3	4				TOP OF ROCK										
	6														
	8		4.5	0.5	A Indurated Clay, gray in top 2.0', light-gray in remainder, [illegible] and crumbly above 7.0' and from 10.0' to 11.0', broken-in-part, slickensided in remainder. Core loss 5%. elev. 1134.5' elevs 1013.3 to 1129.8										
	10														
	12		5.0	0.0											
1126.3	14														
	16														
1122.8	18		5.0	0.0	B Shale, gray, siliceous in bottom half, poorly fissile to fissile, jointed and broken-in-part, firm. No core loss.										
	20				C Sandstone, gray, fine-grained, firm, interbedded with shale (gray, siliceous, poorly fissile, firm) comprising about 30% of the interval. No core loss.										
1119.3	22														
1117.9	24		5.0	0.0	D Shale, gray, siliceous with thin sandstone laminae, poorly fissile, firm. No core loss.										
	26														
1112.8	28		4.9	0.1	E Sandstone, gray, fine-grained, firm, interbedded with shale (gray above 25.0', dark-gray and carbonaceous in remainder, firm) comprising about 20% of the interval. No core loss. elev. 1116.3										
	30														
	32														
	34		5.0	0.0											
	36				F Shale, black, carbonaceous, argillaceous, fissile, firm, medium-firm from 29.8' to 32.4', jointed-in-part, with 0.5' shaly coal bed at 38.8'. Core loss 1%. elevs 1111.5' to 1108.9' elev. 1102.5'										
	38		4.9	1.0											
	40														
	42														
1098.0	44		5.0	0.0	Shale, black, carbonaceous, argillaceous, fissile, firm, medium-firm from [illegible], jointed-in-part, with 0.5' shaly coal bed at 38.8'. Core loss 1%.										
1096.8					G Coal, black, shaly in top 0.2', pyritiferous, broken. No core loss.										
1095.0	46				H Indurated Clay, gray to dark-gray, soft to medium-firm, and crumbly above 45.1'; light*										
1093.6	48		5.0	0.0	I Sandstone, light-gray, fine-grained, argillaceous, firm. No core loss.										
	50				Indurated Clay, gray, firm, slickensided. No core loss.										
	52		5.0	0.0											
1086.3	54				BOTTOM OF BORING										

*gray, siliceous, and firm in remainder. No core loss.

TE 148 (FORMERLY TE 24-A)
2-68 5 M

LEGEND FOR PROJECT-AVERAGE RESULTS OF TESTS- 539 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 or stone fragments	A-1-a(0)	A-1-a	63	16	3	3	5	NP	NP	7	7
Gravel and/or stone fragments with sand	A-1-b(0)	A-1-b	36	27	25	5	7	24	1	14	13
Fine sand	A-3(0)	A-3	2	18	75	- 5 -		NP	NP	14	4
Coarse and fine sand	-----	A-3a	4	37	43	5	11	NP	NP	12	4
Gravel or stone fragments with sand and silt	A-2-4(0)	A-2-4	55	6	9	12	18	23	6	21	13
Stone fragments with sand, silt, and clay	A-2-6(0)	A-2-6	62	6	3	9	20	40	13	18	3
Sandy silt	A-4a(4)	A-4a	22	6	17	29	26	27	4	19	75
Silt	A-4b(8)	A-4b	2	2	6	58	32	28	3	24	38
Elastic silt and clay	A-5(8)	A-5	0	4	17	43	36	42	10	28	2
Silt and clay	A-6a(8)	A-6a	19	4	7	31	29	35	12	20	162
Silty clay	A-6a(11)	A-6a	13	3	5	28	51	33	17	21	17
Elastic clay	A-7-5(13)	A-7-5	9	9	5	27	54	50	17	29	30
Clay	A-7-6(11)	A-7-6	17	4	5	26	48	43	16	20	30

Spoils	VISUAL CLASSIFICATION	-
Coal blossom	VISUAL CLASSIFICATION	-
Coal	VISUAL CLASSIFICATION	-
Under clay or fire clay	VISUAL CLASSIFICATION	14
Clay bedrock	VISUAL CLASSIFICATION	5
Weathered indurated clay	VISUAL CLASSIFICATION	26
Weathered shale	VISUAL CLASSIFICATION	51
Weathered sandstone	VISUAL CLASSIFICATION	18
Indurated Clay	VISUAL CLASSIFICATION	-
Shale	VISUAL CLASSIFICATION	26
Sandstone	VISUAL CLASSIFICATION	1
Limestone	VISUAL CLASSIFICATION	-
Various other materials	VISUAL CLASSIFICATION	-

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

Auger boring - plan view.

Drive sample and/or core boring - plan view.

Auger boring plotted to vertical scale only.

Drive sample and/or core boring plotted to vertical scale only.

Number of blows for "Standard Penetration" test.
X=number of blows for the first 6 inches.
Y=number of blows for the second 6 inches.

Water content nearly equal to or greater than liquid limit.

Indicates a non-plastic material with high water content.

——W Free water.

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

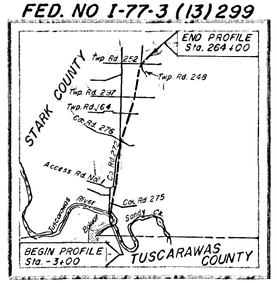
SOIL PROFILE
TUSCARAWAS-STARK COS.
TUS-IR 77-40.55
STA-IR 77-0.00

OHIO STATE HIGHWAY TESTING LABORATORY
1920 W. BROAD ST., COL. (MAIL) P.O. BOX 1964, COL. OHIO

48

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-77-3 (13)299



LOCATION MAP

Recon - P.L.H. - 11/28/62
Drilling
Auger - L.M.D., T.R.S.
11/4/62 to 12/6/62, 4/9/63 to 6/7/63
Core - D.W.B., R.L.S.
4/24/63 to 5/15/63
Drafting - A.F., S.J.H., E.F.A.
8/ /63

PROJECT / PROJECT INDEX

STATIONS FROM	STATIONS TO	PLAN VIEW SHEET	PROFILE SHEET	CUTS (Max.)	FILL EMBANKMENT (Max.)
		IR 77			
-3+00	29+00	5	6	66'	32'
29+00	61+00	7	8	71'	26'
61+00	93+00	9	10	40'	34'
93+00	125+00	11	12	12'	23'
125+00	157+00	13	13	26'	43'
157+00	189+00	14	14	30'	36'
189+00	220+00	15	16	43'	41'
220+00	252+00	17	18	33'	60'
252+00	264+00	19	19	30'	20'
		IR 77 (Southbound)			
-3+00	29+00	5	20	17'	31'
29+00	61+00	7	21	11'	25'
61+00	64+00	9	22	36'	20'
		RELOCATED SHERMAN CHURCH ROAD (Co. Rd. 272)			
82+00	103+00	11	23	7'	12'
		SHERMAN ROAD (Twp. Rd. 164)			
11+00	21+00	14	24	-	-
		FOHL ROAD (Twp. Rd. 252)			
32+00	64+00	25	26	30'	30'
		RELOCATED KEIFFER ROAD (Twp. Rd. 248)			
37+00	60+00	25	27	28'	3'

LEGEND FOR PROJECT-AVERAGE RESULTS OF TESTS- 539 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 or stone fragments	A-1-a(0)	A-1-a	68	16	8	3	5	NP	NP	7	7
Gravel and/or stone fragments with sand	A-1-b(0)	A-1-b	36	27	25	5	7	24	1	14	13
Fine sand	A-3(0)	A-3	2	18	75	- 5 -		NP	NP	14	4
Coarse and fine sand	-----	A-3a	4	37	43	5	11	NP	NP	12	4
Gravel or stone fragments with sand and silt	A-2-4(0)	A-2-4	55	6	9	12	18	23	6	21	13
Stone fragments with sand, silt, and clay	A-2-6(0)	A-2-6	62	6	3	9	20	40	13	18	3
Sandy silt	A-4a(4)	A-4a	22	6	17	29	26	27	4	19	75
Silt	A-4b(8)	A-4b	2	2	6	58	32	28	3	24	38
Elastic silt and clay	A-5(8)	A-5	0	4	17	43	36	42	10	28	2
Silt and clay	A-6a(8)	A-6a	19	4	7	31	29	35	12	20	162
Silty clay	A-6b(11)	A-6b	13	3	5	28	51	38	17	21	17
Elastic clay	A-7-5(13)	A-7-5	9	9	5	27	54	50	17	29	30
Clay	A-7-6(11)	A-7-6	17	4	5	26	48	43	16	20	30

Spoils	VISUAL CLASSIFICATION	-
Coal blossom	VISUAL CLASSIFICATION	-
Coal	VISUAL CLASSIFICATION	-
Under clay or fire clay	VISUAL CLASSIFICATION	14
Clay bedrock	VISUAL CLASSIFICATION	5
Weathered indurated clay	VISUAL CLASSIFICATION	26
Weathered shale	VISUAL CLASSIFICATION	51
Weathered sandstone	VISUAL CLASSIFICATION	18
Indurated Clay	VISUAL CLASSIFICATION	-
Shale	VISUAL CLASSIFICATION	26
Sandstone	VISUAL CLASSIFICATION	1
Limestone	VISUAL CLASSIFICATION	-
Various other materials	VISUAL CLASSIFICATION	-

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

Auger boring - plan view.

Drive sample and/or core boring - plan view.

Auger boring plotted to vertical scale only.

Drive sample and/or core boring plotted to vertical scale only.

Number of blows for "Standard Penetration" test.
X=number of blows for the first 6 inches.
Y=number of blows for the second 6 inches.

Water content nearly equal to or greater than liquid limit.

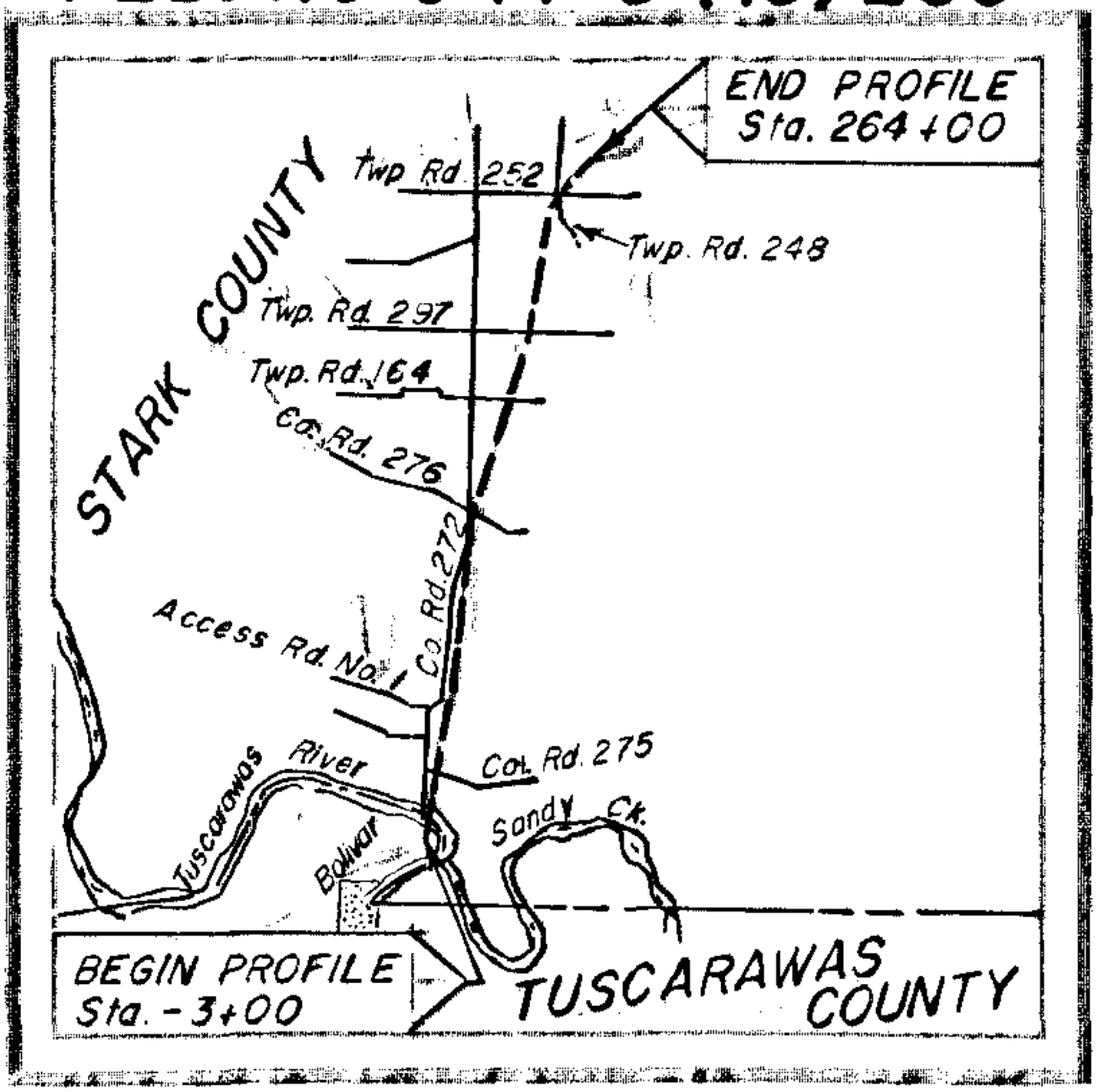
Indicates a non-plastic material with high water content.

W — Free water.

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

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-77-3 (13)299



LOCATION MAP

Recon - P.L.H. - 11/28/62

Drilling

Auger - L.M.D., T.R.S.
11/4/62 to 12/6/62, 4/9/63 to 6/7/63

Core - D.W.B., R.L.S.
4/24/63 to 5/16/63

Drafting - A.F., S.J.H., E.F.A.
8/ /63

Drafting- A.F., S.J.H., E.F.A.
81 163

PROJECT / PROJECT INDEX

STATIONS FROM	STATIONS TO	PLAN VIEW SHEET	PROFILE SHEET	CUTS (Max.)	FILL EMBANKMENT (Max.)
		IR 77			
-3+00	29+00	5	6	66'	32'
29+00	61+00	7	8	71'	32'
61+00	93+00	9	10	40'	34'
93+00	125+00	11	12	12'	23'
125+00	157+00	13	13	36'	43'
157+00	188+00	14	14	30'	35'
188+00	220+00	15	16	48'	41'
220+00	252+00	17	18	33'	60'
252+00	264+00	19	19	30'	20'
		IR 77 (Southbound)			
-3+00	29+00	5	20	17'	31'
29+00	61+00	7	21	1'	28'
61+00	84+00	9	22	36'	26'
		RELOCATED SHERMAN CHURCH ROAD (Co. Rd. 272)			
82+00	108+00	11	23	7'	12'
		SEEMAN ROAD (Twp. Rd. 164)			
11+00	21+00	14	24	-	-
		FOHL ROAD (Twp. Rd. 252)			
32+00	64+00	25	26	30'	30'
		RELOCATED KEIFFER ROAD (Twp. Rd. 248)			
37+00	60+00	25	27	26'	3'

TE 54 A
100 10 60

SOIL PROFILE
TUSCARAWAS-STARK COS.
TUS-IR 77-40.55
STA-IR 77-0.00
OHIO STATE HIGHWAY
TESTING LABORATORY
COLUMBUS, OHIO

2/48

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.

IR 77

STATION & OFFSET		DEPTH FROM-TO	% AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	SHTL CLASS.
-2+00	CL	0.0-5.0	0	0	16	48	36	30	11	22	A-6a
		5.0-8.0	0	1	57	16	26			26	A-4a
		8.0-13.0	39	29	20	2	11			18	A-1-b
		13.0-19.0	27	24	42	- 7 -				16	A-1-b
		19.0-23.0	3	13	61	- 3 -				23	A-3
		23.0-27.0	0	11	85	- 4 -				20	A-3
1+00	CL	0.0-6.0	0	1	6	40	33	41	17	36	A-7-6
		6.0-10.0	0	1	23	47	30	44	17	37	A-5
		10.0-13.0	0	40	19	32	9	23		32	A-4a
		13.0-19.0	54	2	15	9	20			12	A-2-4
		19.0-26.0	25	37	23	0	10			15	A-1-b
4+25	CL	0.0-4.0	14	7	23	16	35	22	6	12	A-4a
		4.0-12.0	3	21	61	0	15			8	A-3a
		12.0-18.0	20	36	33	- 6 -				20	A-1-b
		18.0-24.0	24	34	35	3	4			17	A-1-a
7+50	CL	0.0-4.0	55	21	10	6	8			7	A-1-a
		4.0-9.0	80	6	6	- 8 -				4	A-1-a
		9.0-14.0	80	7	6	3	4			4	A-1-a
9+50	CL	0.0-4.0	0	3	13	48	36	29	13	21	A-6a
		4.0-10.0	13	46	33	- 8 -				6	A-3a
		10.0-15.0	22	41	30	- 7 -				21	A-1-b
		15.0-18.0	14	32	36	- 8 -				5	A-1-b
12+50	CL	0.0-6.0	47	26	13	5	9			9	A-1-b
		6.0-7.0	0	49	39	1	11			5	A-3a
		7.0-12.0	73	13	6	- 3 -				7	A-1-a
		12.0-17.0	63	22	8	2	5			8	A-1-a
16+37	37'Rt	0.0-4.0	43	26	19	2	10			8	A-1-b
		4.0-9.0	52	23	10	1	9			10	A-1-a
		9.0-12.0	4	35	54	- 7 -				6	A-3
		12.0-14.0	0	33	39	13	15			27	A-3a
		14.0-20.0	0	15	79	- 7 -				6	A-3
18+50	CL	0.0-2.0	0	3	17	33	47	32	11	15	A-6a *
		2.0-3.0	Brown Weathered Sandstone							3	Visual
22+50	CL	0.0-5.0	Brown Clayey Silt and Shale Fragments(Spoils) -								Visual
		5.0-22.0	Brown Silty Clay & Shale Fragments (Spoils) -								Visual
24+00	CL	0.0-10.0	Brownish-Gray Silty Clay W/Some Stone Fragments (Spoils) -								Visual
		10.0-15.0	Brown Silty Clay W/Little Stone Fragments (Spoils) -								Visual
		15.0-21.0	Brownish-Gray Broken Clay Shale (Spoils) -								Visual
30+00	CL	0.0-5.0	Brown Clayey Silt & Shale Fragments (Spoils) -								Visual
		5.0-15.0	Brown Silty Clay W/Some Shale Fragments (Spoils)								Visual
		15.0-25.0	Brown Silty Clay (Spoils) -								Visual
		25.0-28.0	Gray Weathered Indurated Clay -								Visual
36+00	CL	0.0-10.0	Brown Sandy Silt with Sandstone Fragments								Visual *
		10.0-16.0	Brown Broken Shale							8	Visual
40+00	CL	0.0-6.0	0	1	8	44	47	32	12	23	A-6a
		6.0-12.0	9	5	19	32	35	23	8	13	A-6a
		12.0-18.0	0	2	5	20	73	37	18	29	A-6b
		18.0-21.0	18	6	16	31	29	26	5	20	A-4a
		21.0-26.0	0	4	12	30	54	25	11	22	A-6a
42+50	CL	0.0-4.0	0	7	16	33	44	34	11	18	A-6a
		4.0-11.0	0	1	3	54	42	30	9	26	A-4b
		11.0-16.0	17	7	12	36	28	25	5	23	A-4a
		16.0-20.0	0	1	4	61	34	26	4	23	A-4b
		20.0-25.0	0	1	10	43	46	26	11	21	A-6a
		25.0-30.0	0	1	10	46	43	26	11	21	A-6a
45+00	CL	0.0-4.0	18	3	7	30	22	20	5	26	A-4b
		4.0-10.0	27	9	11	31	22	23	4	18	A-4a
		10.0-15.0	37	9	9	26	20	31	6	23	A-4a
		15.0-20.0	0	0	5	69	26	NP	15	27	A-4b
		20.0-23.0	0	2	3	31	64	33	12	19	A-6a
		23.0-27.0	37	2	3	34	24	33	11	16	A-6a
47+45	30'Lt	0.0-4.0	0	2	7	53	38	38	11	39	A-6a
		4.0-7.0	0	1	2	48	49	40	11	24	A-6a
47+75	50'Rt	0.0-6.0	0	2	7	43	43	33	15	22	A-6a
		6.0-10.0	54	1	23	2	15	NP	NP	7	A-1-b
		10.0-15.0	39	3	3	30	20	31	4	14	A-4a
		15.0-20.0	Brown Weathered Indurated Clay							3	Visual
51+00	35'Lt	0.0-7.0	32	3	2	32	31	33	11	15	A-6a
51+00	60'Rt	0.0-5.0	0	0	2	82	29	NP	NP	22	A-4a
		5.0-7.0	0	6	5	33	56	36	11	16	A-6a
54+00	60'Rt	0.0-5.0	18	4	9	44	26	29	4	21	A-4a
		5.0-10.0	13	4	5	32	46	27	5	22	A-4b
		10.0-15.0	44	1	9	24	23	25	13	18	A-6a
		15.0-20.5	37	5	9	23	26	29	4	16	A-4a
54+20	30'Lt	0.0-6.0	51	7	6	16	20	34	11	20	A-6a
		6.0-10.0	21	6	11	27	35	27	11	16	A-6a
		10.0-15.5	25	3	7	26	38	30	11	13	A-6a
56+40	CL	0.0-6.0	30	5	6	32	27	29	5	24	A-4a
		6.0-12.0	44	5	6	19	26	31	11	20	A-6a
60+00	50'Rt	0.0-5.0	18	1	4	42	35	32	11	24	A-6a
		5.0-10.0	29	7	7	29	28	33	11	22	A-6a
63+00	50'Rt	0.0-6.0	0	0	1	36	63	44	14 *	21	A-7-5
		6.0-11.0	47	12	11	23	7	41	11	26	A-6a
		11.0-16.0	33	4	4	26	33	34	11	14	A-6a
		16.0-21.0	56	3	1	20	20	33	12	15	A-6a
		21.0-24.0	Gray Broken Shale							9	Visual
66+00	CL	0.0-5.0	40	9	10	20	21	29	8	18	A-4a
		5.0-10.0	46	7	14	13	20	29	5	14	A-2-4
		10.0-13.0	0	3	2	36	59	51	18	20	A-7-5
66+00	80'Rt	0.0-6.0	51	5	7	17	20	30	11	16	A-6a
		6.0-11.0	42	3	19	15	21	33	11	9	A-6a
		11.0-15.0	24	2	4	33	27	35	11	18	A-6a
		15.0-20.0	23	4	4	38	32	33	11	23	A-6a
		20.0-23.0	0	4	3	43	30	38	12	15	A-6a
69+00	50'Rt	0.0-6.0	0	1	3	55	41	31	10	21	A-4b
		6.0-11.0	43	4	13	14	26	29	11	11	A-6a
71+00	CL	0.0-5.0	Brown Silty Clay W/Stone Fragments(Spoils) -								Visual
		5.0-16.0	Brown Silty Clay & Shale Fragments(Spoils) -								Visual
		16.0-22.0	32	5	3	26	34	36	11	14	A-6a
73+00	CL	0.0-5.0	Brown Clayey Silt with Shale Fragments (Spoils) -								Visual
		5.0-22.0	Brown Broken Shale Fragments (Spoils) -								Visual
75+50	CL	0.0-5.0	22	3	2	39	34	33	11	13	A-6a *
		5.0-9.0	15	2	1	45	37	35	11	15	A-6a
		9.0-14.0	Gray Broken Shale							11	Visual
83+50	CL	0.0-6.0	22	4	4	34	36	35	11	34	A-6a
84+20	25'Rt	0.0-2.0	15	7	6	38	34	37	11	38	A-6a
87+00	CL	0.0-6.0	21	6	6	32	35	36	13	21	A-6a
		6.0-11.0	Brown Broken Shale							12	Visual *
94+00	CL	0.0-5.0	33	9	10	27	21	NP	NP	13	A-4a
		5.0-10.0	33	7	9	18	31	33	14	20	A-6a
		10.0-14.0	54	6	7	14	19	35	11	12	A-6a
		14.0-20.0	0	4	6	47	43	35	11	17	A-6a
96+00	130'Lt	0.0-6.0	0	4	4	34	59	41	16	16	A-7-6
		6.0-12.0	15	4	6	19	56	47	15	21	A-7-5
		12.0-17.0	Gray Broken Shale							15	Visual
98+00	CL	0.0-3.5	0	13	6	36	45	51	17	40	A-7-5 *
		3.5-9.0	Coal Blossom							-	Visual *
		9.0-14.0	Light-Gray Weathered Indurated Clay							8	Visual
98+00	30'Rt	0.0-6.0	21	9	13	25	32	36	12	14	A-6a
		6.0-10.0	42	0	12	32	24	33	11	11	A-6a
		10.0-15.0	23	8	12	20	33	35	12	13	A-6a
		15.0-19.0	29	7	9	20	35	39	15	19	A-6a
		19.0-25.0	36	2	5	16	41	34	16	18	A-6b
102+00	CL	0.0-4.0	0	3	5	38	54	37	13	18	A-6a
		4.0-10.0	Brown Weathered Indurated Clay							15	Visual *
		10.0-15.0	Gray Weathered Indurated Clay							15	Visual *
		15.0-20.0	Brown Broken Shale							13	Visual
102+00	90'Rt	0.0-4.0	36	2	3	19	40	33	22	39	A-7-5
		4.0-9.0	24	4	4	39	33	41	14	17	A-7-5 *
		9.0-15.0	Gray Broken Shale							11	Visual *
103+00	90'Rt	0.0-4.0	19	3	23	17	33	30	10	14	A-4a
		4.0-10.0	17	3	10	29	41	36	12	13	A-6a
		10.0-15.0	Brown Weathered Indurated Clay							10	Visual *
105+00	100'Lt	0.0-5.0	0	1	1	31	67	31	19	23	A-7-5
		5.0-10.0	30	0	1	18	31	40	15	16	A-6a
		10.0-14.0	61	2	2	9	26	25	11	19	A-2-7
		14.0-17.0	75	1	0	6	18	44	15	23	A-2-7
105+00	CL	0.0-6.0	25	4	6	23	37	33	17	15	A-6a *
		6.0-12.0	51	2	2	13	28	41	15	15	A-7-6
		12.0-18.0	Gray Broken Shale							12	Visual
105+00	100'Rt	0.0-5.0	33	3	16	23	30	29	11	12	A-6a
109+00	100'Lt	0.0-5.0	Brown Weathered Sandstone							10	Visual
		5.0-11.0	Gray Weathered Shale							9	Visual
109+00	CL	0.0-4.0	40	5	3	13	33	33	12	20	A-6a *
		4.0-9.0	Coal							-	Visual *
		9.0-14.5	Gray Weathered Indurated Clay							9	Visual *
109+00	100'Rt	0.0-11.0	Gray Silty Clay & Shale Fragments(Spoils) -								Visual
		11.0-32.0	Gray Shale Fragments(Spoils) -								Visual
112+00	CL	0.0-6.0	23	7	6	27	32	30	11	18	A-6a
		6.0-11.0	47	3	12	15	23	45	17	15	A-7-6
		11.0-17.0	Brown Broken Shale							9	Visual
115+00	120'Lt	0.0-6.0	25	3	2	24	46	42	12	17	A-7-5
		6.0-12.0	24	5	4	19	48	40	16	21	A-6b
		12.0-16.0	Light-Brown Fire Clay							12	Visual
115+00	CL	0.0-4.0	0	2	3	48	47	41	18	25	A-7-6
		4.0-10.0	Brownish-Gray Broken Shale							13	Visual
		10.0-16.5	Gray Broken Shale							12	Visual
115+00	120'Rt	0.0-10.0	Brown Broken Shale Fragments (Spoils)								Visual
		10.0-15.0	Brown Broken Shale Fragments (Spoils)								Visual
		15.0-20.0	Brown Broken Shale Fragments (Spoils)								Visual
		20.0-26.0	Brown Weathered Shale Fragments (Spoils)								Visual
		26.0-32.0	Light-Brown & Gray Weathered Indurated Clay							7	Visual
116+50	CL	0.0-5.0	36	4	4	25	31	38	12	18	A-6a
		5.0-10.0	Brownish-Gray Broken Shale							15	Visual
		10.0-16.0	Gray Broken Shale							14	Visual
		16.0-20.0	Gray Broken Shale							11	Visual
113+00	CL	0.0-5.0	37	5	4	25	29	34	12	21	A-6a
		5.0-10.0	24	2	2	27	45	44	16	20	A-7-6
		10.0-15.0	0	1	3	30	66	43	14	19	A-7-6
		15.0-21.0	Brownish-Gray Broken Shale							16	Visual
		21.0-27.0	Gray Broken Shale							20	Visual
121+00	100'Lt.	0.0-12.0	Gray Clay with Stone Fragments and Rubber								Visual
		12.0-18.0	Gray Broken Shale Fragments (Spoils)								Visual
		18.0-23.0	Gray Broken Shale Fragments (Spoils)								Visual
		23.0-28.0	Gray Broken Shale Fragments (Spoils)								Visual
		28.0-30.0	Gray Broken Shale Fragments (Spoils)								Visual
121+00	CL	0.0-5.0	Gray Broken Shale Fragments (Spoils)								Visual *
		5.0-10.0	Gray Broken Shale Fragments (Spoils)								Visual *
		10.0-15.0	Gray Broken Shale Fragments (Spoils)								Visual *
		15.0-21.0	Gray Broken Shale Fragments (Spoils)								Visual
		21.0-24.0	Gray Broken Shale Fragments (Spoils)								Visual
		24.0-30.0	Brown Broken Shale Fragments (Spoils)								Visual
121+00	100'Rt	0.0-25.0	Gray to Brownish-Gray Shale Fragments (Spoils)								Visual
		25.0-30.0	32	3	3	22	40	37	11	23	A-6a
122+00	100'Lt	0.0-26.0	Gray Shale Fragments (Spoils)							-	Visual
		26.0-32.0	Gray Broken Shale							-	Visual
122+00	CL	0.0-24.0	Brown Shale Fragments (Spoils)							-	Visual *
		24.0-27.0	24	2	2	26	46	36	13	18	A-6a *
122+00	100'Rt	0.0-6.0	Gray Shale Fragments (Spoils)							-	Visual
		6.0-12.0	Brownish Gray Clay & Shale Fragments (Spoils)							-	Visual
		12.0-15.0	Gray Fire Clay							12	Visual
123+00	100'Lt	0.0-5.0	Gray Weathered Shale Fragments (Spoils)							-	Visual
		5.0-10.0	Gray Sand & Rubber (Spoils)							-	Visual
		10.0-20.0	Brown & Gray Weathered Shale Fragments (Spoils)								Visual
123+00	CL	0.0-3.0	Gray Sandy Silt & Rubber (Spoils)							-	Visual *
		5.0-10.0	Brown & Gray Weathered Shale Fragments W/Rubber (Spoils)							-	Visual *
		10.0-21.0	Gray Weathered Shale Fragments (Spoils)							-	Visual
123+00	100'Rt	0.0-21.0	Gray Weathered Shale Fragments (Spoils)							-	Visual
125+00	100'Lt	0.0-25.0	Gray Weathered Shale Fragments (Spoils)							-	Visual
		25.0-30.0	0	1	4	31	64	37	17	20	A-6b
125+00	CL	0.0-5.0	Brown & Gray Silty Clay (Spoils)							-	Visual
		5.0-25.0	Brown & Gray Weathered Shale Fragments (Spoils)							-	Visual *
		25.0-31.0	12	2	3	25	58	33	11	22	A-6a *
125+00	125'Rt	0.0-11.0	Brown & Gray Silty Clay (Spoils)							-	Visual
		11.0-22.0	Brown Silty Clay W/Shale Fragments (Spoils)							-	Visual
		22.0-27.0	Coal Blossom							-	Visual
		27.0-30.0	0	1	4	26	69	52	28	14	A-7-6
123+65	100'Lt	0.0-5.0	Coal							-	Visual
		5.0-7.5	Gray Underclay							-	Visual
127+50	CL	0.0-5.0	Coal Mixed With Clay							-	Visual
		5.0-11.0	Light-Gray Weathered Sandstone							5	Visual
130+00	200'Lt	0.0-5.0	23	9	11	15	32	33	11	22	A-6a
		5.0-9.0	48	9	11	16	16	33	8	33	A-2-4
		9.0-12.0	0	0	1	17	82	56	26	35	A-7-5
		12.0-15.0	Coal							-	Visual
		15.0-18.0	Gray Underclay							-	Visual
		18.0-21.0	Light-Gray Weathered Indurated Clay							8	Visual
130+00	100'Lt	0.0-5.0	0	29	13	25	43	37	12	21	A-6a
		5.0-10.0	22	24	7	13	34	44	16	32	A-7-6
		10.0-16.0	Dark-Gray Weathered Shale							12	Visual
130+00	CL	0.0-3.0	Brown Broken Sandstone							9	Visual
130+00	100'Rt	0.0-5.0	0	6	8	34	52	39	14	20	A-6a
		5.0-10.0	0	4	3	31	62	44	16	21	A-7-6
		10.0-14.0	Light-Gray Weathered Indurated Clay							7	Visual
130+00	165'Rt	0.0-16.0	Brown Silty Clay W/Shale Fragments (Spoils) -								Visual
		16.0-22.0	0	5	5	45	45	34	11	23	A-6a
		22.0-24.0	0	3	8	29	60	35	15	24	A-6a
131+10	CL	0.0-25.0	Brown Weathered Shale Fragments (Spoils) -								Visual *
		25.0-29.0	Coal Blossom -								Visual *
		29.0-32.0	0	0	5	35	60	39	18	15	A-6b
133+00	130'Lt	0.0-5.0	Gray Weathered Shale Fragments (Spoils) -								Visual *
		5.0-15.0	Brown Sandy Silt & Shale Fragments (Spoils) -								Visual
		15.0-21.0	Gray Clay W/Shale Fragments (Spoils) -								Visual
		21.0-26.0	Light-Gray Weathered Sandstone							6	Visual
135+00	200'Lt	0.0-5.0	0	6	4	32	68	52	19	23	A-7-5
		5.0-9.0	7	3	5	18	67	51	21	27	A-7-5
		9.0-11.0	0	8	5	25	62	40	15	33	A-6a
135+00	100'Lt	0.0-6.0	0	4	11	30	55	45	18	17	A-7-6
		6.0-12.0	11	4	19	29	37	31	11	22	A-6a
		12.0-18.0	19	2	3	31	45	37	12	17	A-6a
135+00	CL	0.0-4.0	Coal Blossom							-	Visual
		4.0-8.0	0	0	3	38	59	41	16	18	A-7-6
		8.0-12.0	0	2	41	31	26	NP	NP	12	A-4a
137+00	170'Lt	0.0-5.0	38	4	15	18	25	29	7	16	A-4a
		5.0-10.0	19	5	13	24	39	35	11	16	A-6a
137+00	100'Lt	0.0-5.0	0	3	7	34	54	39	16	19	A-6b
		5.0-11.0	0	3	7	34	54	39	16	19	A-6b
		11.0-17.0	Gray Weathered Shale							15	Visual

STATION & OFFSET		DEPTH FROM-TO	% AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	SHTL CLASS.
137+00	CL	0.0-5.0	0	1	13	53	33	29	11	12	A-6a
		5.0-11.0	0	8	10	35	47	33	12 *	13	A-6a
		11.0-17.0	23	2	3	32	40	33	11	20	A-6a
		17.0-22.0	Gray Weathered Shale							7	Visual
137+00	70'Rt	0.0-15.0	Brown Weathered Shale Fragments (Spoils)							-	Visual
		15.0-20.0	Brown Weathered Shale Fragments W/Sand (Spoils)							-	Visual
		20.0-25.0	Brown Sandy Silt and Stone Fragments (Spoils)							-	Visual
		25.0-30.0	Brown Weathered Shale Fragments (Spoils)							-	Visual
140+50	CL	0.0-17.0	Brown & Gray Weathered Shale Fragments (Spoils)							-	Visual
141+00	150'Lt	0.0-3.0	24	1	10	37	28	33	11	12	A-6a
		3.0-9.0	36	13	7	23	21	33	10	13	A-4a *
145+00	130'Lt	0.0-4.0	0	2	6	38	54	43	17	18	A-7-6
		4.0-10.0	Brown & Gray Weathered Shale							13	Visual
		10.0-15.0	Gray Weathered Shale							9	Visual
145+00	CL	0.0-6.0	Brown Weathered Shale Fragments (Spoils)							-	Visual
		6.0-12.0	Brown Silty Clay & Shale Fragments (Spoils)							-	Visual *
		12.0-18.0	Brown & Gray Weathered Shale Fragments (Spoils)							-	Visual
145+00	110'Rt	0.0-20.0	Brown Weathered Sandstone Fragments (Spoils)							-	Visual
		20.0-26.0	Brown Sandy Silt & Stone Fragments (Spoils)							-	Visual
		26.0-30.0	Light-Gray Weathered Indurated Clay							8	Visual
148+00	200'Lt	0.0-4.0	3	5	11	35	40	30	11	23	A-6a
		4.0-6.0	Coal Blossom							-	Visual
		6.0-9.0	19	6	4	18	53	31	11	16	A-6a
148+00	100'Lt	0.0-6.0	0	6	12	40	42	33	11	24	A-6a
		6.0-12.0	27	3	3	23	42	39	12	21	A-6a
		12.0-13.0	Dark-Gray Weathered Carbonaceous Shale							18	Visual
148+00	CL	0.0-5.0	Brown Weathered Sandstone							13	Visual
		5.0-10.0	Brown Weathered Shale							13	Visual
		10.0-15.0	Brownish-Gray Weathered Shale							14	Visual
		15.0-18.0	Brownish-Gray Weathered Shale							11	Visual
148+00	100'Rt	0.0-5.0	16	9	10	27	38	35	11	22	A-6a
		5.0-9.0	Coal Blossom							-	Visual
		9.0-13.0	23	1	1	26	49	33	16	13	A-6b
		13.0-16.0	Brownish Gray Weathered Shale							9	Visual
151+00	150'Lt	0.0-6.0	54	2	6	22	16	31	9	14	A-4a
		6.0-11.0	Brown Weathered Indurated Clay							13	Visual
151+00	CL	0.0-5.0	32	2	9	36	21	32	11	23	A-6a
		5.0-9.5	Brown Weathered Indurated Clay							12	Visual
151+00	100'Rt	0.0-5.0	33	10	3	3	35	43	19	22	A-7-6
		5.0-10.0	49	12	3	7	25	-	-	26	A-2-4
		10.0-15.0	Light-Gray Fire Clay							8	Visual
154+00	150'Lt	0.0-5.0	36	16	3	7	32	-	-	27	A-7-6
		5.0-10.0	Light-Gray Fire Clay							13	Visual
		10.0-13.0	Gray Weathered Indurated Clay							10	Visual
154+00	CL	0.0-4.0	0	1	2	34	63	51	19	23	A-7-5
		4.0-10.0	Brown Weathered Indurated Clay							11	Visual *
		10.0-15.0	Gray Broken Shale							11	Visual *
154+00	70'Rt	0.0-10.0	Brown Sand & Stone Fragments (Spoils)							-	Visual
		10.0-16.0	Coal Blossom							-	Visual
		16.0-18.0	Gray Weathered Indurated Clay							11	Visual
157+00	100'Lt	0.0-5.0	0	5	4	18	73	53	23	33	A-7-5
		5.0-11.0	25	15	5	18	37	33	15	12	A-6a
		11.0-13.5	Brown & Gray Weathered Indurated Clay							11	Visual
157+00	CL	0.0-5.0	29	2	13	29	23	27	7	13	A-4a
		5.0-10.0	39	3	8	22	28	31	9	14	A-4a
		10.0-14.0	Gray Weathered Shale							16	Visual *
157+00	100'Rt	0.0-4.0	0	3	13	40	44	61	15	71	A-7-5
		4.0-7.0	Gray Weathered Indurated Clay							12	Visual
161+00	CL	0.0-6.0	46	4	3	8	39	49	18	25	A-7-5 *
		6.0-11.0	65	4	4	7	20	-	-	33	A-2-4 *
164+00	CL	0.0

STATION & OFFSET		DEPTH FROM-TO	% AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	SHTL	
						IR 77						
-2+00	Ct.	0.0-5.0	0	0	16	48	36	30	11	22	A-6a	
		5.0-8.0	0	1	57	16	26	NP	NP	22	A-4a	
		8.0-13.0	39	28	20	2	11	NP	NP	18	A-1-b	
		13.0-19.0	27	24	42	- 7 -		NP	NP	16	A-1-b	
		19.0-23.0	3	13	81	- 3 -		NP	NP	23	A-3	
		23.0-27.0	0	11	85	- 4 -		NP	NP	20	A-3	
1+00	Ct.	0.0-6.0	0	1	6	40	53	41	17	36	A-7-6	
		6.0-10.0	0	1	22	47	30	44	10	37	A-5	
		10.0-13.0	0	40	19	32	9	23	5	32	A-4a	
		13.0-19.0	54	2	15	9	20	NP	NP	12	A-2-4	
		19.0-26.0	25	37	28	0	10	NP	NP	15	A-1-b	
4+25	Ct.	0.0-4.0	14	7	28	16	35	22	6	12	A-4a	
		4.0-12.0	3	21	61	0	15	NP	NP	8	A-3a	
		12.0-18.0	20	36	38	- 6 -		NP	NP	20	A-1-b	
		18.0-24.0	24	34	35	3	4	NP	NP	17	A-1-b	
7+50	Ct.	0.0-4.0	55	21	10	6	8	NP	NP	7	A-1-a	
		4.0-9.0	80	6	6	- 8 -		NP	NP	4	A-1-a	
		9.0-14.0	80	7	6	3	4	NP	NP	4	A-1-a	
9+50	Ct.	0.0-4.0	0	3	13	48	36	29	13	21	A-6a	
		4.0-10.0	13	46	33	- 8 -		NP	NP	6	A-3a	
		10.0-15.0	22	41	30	- 7 -		NP	NP	21	A-1-b	
		15.0-18.0	14	52	26	- 8 -		NP	NP	5	A-1-b	
12+50	Ct.	0.0-6.0	47	26	13	5	9	NP	NP	9	A-1-b	
		6.0-7.0	0	49	39	1	11	NP	NP	5	A-3a	
		7.0-12.0	78	13	6	- 3 -		NP	NP	7	A-1-a	
		12.0-17.0	63	22	8	2	5	NP	NP	8	A-1-a	
16+37	37'Rt	0.0-4.0	43	26	19	2	10	NP	NP	8	A-1-b	
		4.0-9.0	52	28	10	1	9	NP	NP	10	A-1-a	
		9.0-12.0	4	35	54	- 7 -		NP	NP	6	A-3	
		12.0-14.0	0	33	39	13	15	NP	NP	27	A-3a	
		14.0-20.0	0	15	78	- 7 -		NP	NP	6	A-3	
18+50	Ct.	0.0-2.0	0	3	17	33	47	32	11	15	A-6a	*
		2.0-8.0	Brown Weathered Sandstone							8	Visual	
22+50	Ct.	0.0-5.0	Brown Clayey Silt and Shale Fragments (Spoils)							-	Visual	
		5.0-22.0	Brown Silty Clay & Shale Fragments (Spoils)							-	Visual	
24+00	Ct.	0.0-10.0	Brownish-Gray Silty Clay W/Some Stone Fragments (Spoils)							-	Visual	
		10.0-15.0	Brown Silty Clay W/Little Stone Fragments (Spoils)							-	Visual	
		15.0-21.0	Brownish-Gray Broken Clay Shale (Spoils)							-	Visual	
30+00	Ct.	0.0-5.0	Brown Clayey Silt & Shale Fragments (Spoils)							-	Visual	
		5.0-15.0	Brown Silty Clay W/Some Shale Fragments (Spoils)								Visual	
		15.0-25.0	Brown Silty Clay (Spoils)							-	Visual	
		25.0-28.0	Gray Weathered Indurated Clay							-	Visual	
36+00	Ct.	0.0-10.0	Brown Sandy Silt with Sandstone Fragments								Visual	*
		10.0-16.0	Brown Broken Shale							8	Visual	
40+00	Ct.	0.0-6.0	0	1	8	44	47	32	12	23	A-6a	
		6.0-12.0	9	5	19	32	35	23	6	18	A-4a	
		12.0-18.0	0	2	5	20	73	37	18	29	A-6b	
		18.0-21.0	18	6	16	31	29	25	5	20	A-4a	
		21.0-26.0	0	4	12	30	54	25	11	22	A-6a	
42+50	Ct.	0.0-4.0	0	7	16	33	44	34	11	18	A-6a	
		4.0-11.0	0	1	3	54	42	30	8	26	A-6b	
		11.0-16.0	17	7	12	36	28	25	5	23	A-4a	
		16.0-20.0	0	1	4	61	34	NP	NP	28	A-4b	
		20.0-25.0	0	1	10	43	46	26	11	21	A-6a	
		25.0-30.0	0	1	10	46	43	26	11	21	A-6a	
45+00	Ct.	0.0-4.0	18	3	7	50	22	30	5	26	A-6b	
		4.0-10.0	27	9	11	31	22	23	4	18	A-4a	
		10.0-15.0	37	8	9	26	20	31	6	23	A-4a	
		15.0-20.0	0	0	2	69	29	NP	NP	27	A-4b	
		20.0-23.0	23	2	9	31	35	33	12	18	A-6a	
		23.0-27.0	37	2	3	34	24	33	11	16	A-6a	
47+45	30'Lt	0.0-4.0	0	2	7	53	38	38	11	39	A-6a	
		4.0-7.0	0	1	2	48	49	40	11	24	A-6a	
47+75	50'Rt	0.0-6.0	0	2	7	48	43	38	15	22	A-6a	
		6.0-10.0	54	1	28	2	15	NP	NP	7	A-1-b	
		10.0-15.0	39	3	8	30	20	31	4	14	A-4a	
		15.0-20.0	Brown Weathered Indurated Clay							8	Visual	
51+00	35'Lt	0.0-7.0	32	3	2	32	31	33	11	15	A-6a	
51+00	60'Rt	0.0-5.0	0	0	2	69	29	NP	NP	22	A-4a	
		5.0-7.0	0	6	5	33	56	36	11	16	A-6a	
54+00	60'Rt	0.0-5.0	18	4	8	44	26	29	4	21	A-4a	
		5.0-10.0	13	4	5	52	26	27	2	22	A-4b	
		10.0-15.0	44	1	3	24	28	35	13	18	A-6a	
		15.0-20.5	37	5	9	28	21	28	4	16	A-4a	
54+20	30'Lt	0.0-6.0	51	7	6	16	20	34	11	20	A-6a	
		6.0-10.0	21	6	11	27	35	27	11	16	A-6a	
		10.0-15.5	26	3	7	26	38	30	11	13	A-6a	
56+40	Ct.	0.0-6.0	30	5	6	32	27	29	5	24	A-4a	
		6.0-12.0	44	5	6	19	26	31	11	20	A-6a	
60+00	30'Rt	0.0-5.0	18	1	4	42	35	32	11	24	A-6a	
		5.0-10.0	29	7	7	29	28	33	11	22	A-6a	

NOTE: NP shown in Liquid Limit and Plasticity Index c
*Denotes sample taken

STATION & OFFSET		DEPTH FROM-TO	% AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	SHTL CLASS.	
63+00	50'Rt	0.0-6.0	0	0	1	36	63	44	14	21	A-7-5	
		6.0-11.0	47	2	12	16	23	27	11	11	A-6a	
		11.0-16.0	38	4	4	26	28	34	11	14	A-6a	
		16.0-21.0	56	3	1	20	20	38	12	15	A-6a	
		21.0-24.0	Gray Broken Shale							9	Visual	
66+00	CL	0.0-5.0	40	9	10	20	21	29	6	18	A-4a	
		5.0-10.0	46	7	14	13	20	25	5	14	A-2-4	
		10.0-13.0	0	3	2	36	59	51	18	20	A-7-5	
66+00	80'Rt	0.0-6.0	51	5	7	17	20	30	11	16	A-6a	
		6.0-11.0	42	3	19	15	21	33	11	9	A-6a	
		11.0-15.0	34	2	4	33	27	35	11	18	A-6a	
		15.0-20.0	22	4	4	38	32	33	11	23	A-6a	
		20.0-23.0	0	4	3	43	50	38	12	15	A-6a	
69+00	50'Rt	0.0-6.0	0	1	3	55	41	31	10	21	A-4b	
		6.0-11.0	43	4	13	14	26	29	11	11	A-6a	
71+00	CL	0.0-5.0	Brown Silty Clay W/Stone Fragments(Spoils)							-	Visual	
		5.0-16.0	Brown Silty Clay & Shale Fragments(Spoils)							-	Visual	
		16.0-22.0	32	5	3	26	34	36	11	14	A-6a	
73+00	CL	0.0-5.0	Brown Clayey Silt with Shale Fragments (Spoils)							-	Visual	
		5.0-22.0	Brown Broken Shale Fragments (Spoils)							-	Visual	
75+50	CL	0.0-5.0	22	3	2	39	34	38	11	13	A-6a	*
		5.0-9.0	15	2	1	45	37	35	11	15	A-6a	
		9.0-14.0	Gray Broken Shale							11	Visual	
83+50	CL	0.6-4.0	22	4	4	34	36	35	11	34	A-6a	
84+20	25'Rt	0.0-2.0	15	7	6	38	34	37	11	38	A-6a	
87+00	CL	0.0-6.0	21	6	6	32	35	36	13	21	A-6a	
		6.0-11.0	Brown Broken Shale							12	Visual	*
94+00	CL	0.0-5.0	33	9	10	27	21	NP	NP	13	A-4a	
		5.0-10.0	35	7	9	18	31	38	14	20	A-6a	
		10.0-14.0	54	6	7	14	19	35	11	12	A-6a	
		14.0-20.0	0	4	6	47	43	35	11	17	A-6a	
98+00	130'Lt	0.0-6.0	0	4	4	34	58	41	16	16	A-7-6	
		6.0-12.0	15	4	6	19	56	47	15	21	A-7-5	
		12.0-17.0	Gray Broken Shale							15	Visual	
98+00	CL	0.0-5.5	0	13	6	36	45	51	17	40	A-7-5	*
		5.5-9.0	Coal Blossom							-	Visual	*
		9.0-14.0	Light-Gray Weathered Indurated Clay							8	Visual	
98+00	90'Rt	0.0-6.0	21	9	13	25	32	36	12	14	A-6a	
		6.0-10.0	42	0	2	32	24	33	11	11	A-6a	
		10.0-15.0	27	8	12	25	28	35	12	13	A-6a	
		15.0-19.0	29	7	9	20	35	39	15	19	A-6a	
		19.0-25.0	36	2	5	16	41	34	16	18	A-6b	
102+00	CL	0.0-4.0	0	3	5	38	54	37	13	18	A-6a	
		4.0-10.0	Brown Weathered Indurated Clay							15	Visual	*
		10.0-15.0	Gray Weathered Indurated Clay							10	Visual	*
		15.0-20.0	Brown Broken Shale							13	Visual	
102+00	90'Rt	0.0-4.0	36	2	3	19	40	53	22	39	A-7-5	
		4.0-9.0	0	4	4	39	53	41	14	17	A-7-6	*
		9.0-15.0	Gray Broken Shale							11	Visual	*
103+00	90'Rt	0.0-4.0	13	3	28	17	33	30	10	14	A-4a	
		4.0-10.0	17	3	10	29	41	36	12	13	A-6a	
		10.0-15.0	Brown Weathered Indurated Clay							10	Visual	*
105+00	100'Lt	0.0-5.0	0	1	1	31	67	51	19	23	A-7-5	
		5.0-10.0	50	0	1	18	31	40	15	16	A-6a	
		10.0-14.0	61	2	2	9	26	42	11	19	A-2-7	
		14.0-17.0	75	1	0	6	18	44	15	23	A-2-7	
105+00	CL	0.0-6.0	25	4	6	28	37	38	17	15	A-6b	*
		6.0-12.0	51	1	2	18	28	41	15	15	A-7-6	
		12.0-18.0	Gray Broken Shale							12	Visual	
105+00	100'Rt	0.0-5.0	28	3	16	23	30	29	11	12	A-6a	
109+00	100'Lt	0.0-5.0	Brown Weathered Sandstone							10	Visual	
		5.0-11.0	Gray Weathered Shale							9	Visual	
109+00	CL	0.0-4.0	40	5	3	19	33	38	12	20	A-6a	*
		4.0-8.0	Coal							-	Visual	*
		8.0-14.5	Gray Weathered Indurated Clay							9	Visual	*
109+00	100'Rt	0.0-11.0	Gray Silty Clay & Shale Fragments(Spoils)							-	Visual	
		11.0-32.0	Gray Shale Fragments(Spoils)							-	Visual	
112+00	CL	0.0-6.0	28	7	6	27	32	30	11	18	A-6a	
		6.0-11.0	47	3	12	15	23	45	17	15	A-7-6	
		11.0-17.0	Brown Broken Shale							9	Visual	
113+00	120'Lt	0.0-6.0	25	3	2	24	46	42	12	17	A-7-5	
		6.0-12.0	24	5	4	19	48	40	16	21	A-6b	
		12.0-16.0	Light-Brown Fire Clay							12	Visual	
115+00	CL	0.0-4.0	0	2	3	48	47	41	18	25	A-7-6	
		4.0-10.0	Brownish-Gray Broken Shale							19	Visual	
		10.0-16.5	Gray Broken Shale							12	Visual	
115+00	120'Rt.	0.0-10.0	Brown Broken Shale Fragments (Spoils)								Visual	
		10.0-15.0	Brown Broken Shale Fragments (Spoils)								Visual	
		15.0-20.0	Brown Broken Shale Fragments (Spoils)								Visual	
		20.0-26.0	Brown Weathered Shale Fragments (Spoils)								Visual	
		26.0-32.0	Light-Brown & Gray Weathered Indurated Clay							7	Visual	
116+50	CL	0.0-5.0	36	4	4	25	31	38	12	18	A-6a	
		5.0-10.0	Brownish-Gray Broken Shale							15	Visual	
		10.0-16.0	Gray Broken Shale							14	Visual	
		16.0-20.0	Gray Broken Shale							11	Visual	

n at or near grade.

STATION & OFFSET		DEPTH FROM-TO	% AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	SHTL CLASS.	
118+00	CL	0.0-5.0	37	5	4	25	29	34	12	21	A-6a	
		5.0-10.0	24	2	2	27	45	44	16	20	A-7-6	
		10.0-15.0	0	1	3	30	66	43	14	19	A-7-6	
		15.0-21.0	Brownish-Gray Broken Shale							16	Visual	
		21.0-27.0	Gray Broken Shale							20	Visual	
121+00	100'Lt.	0.0-12.0	Gray Clay with Stone Fragments and Rubber								Visual	
		12.0-18.0	Gray Broken Shale Fragments (Spoils)								Visual	
		18.0-25.0	Gray Broken Shale Fragments (Spoils)								Visual	
		25.0-28.0	Gray Broken Shale Fragments (Spoils)								Visual	
		28.0-30.0	Gray Broken Shale Fragments (Spoils)								Visual	
121+00	CL	0.0-5.0	Gray Broken Shale Fragments (Spoils)								Visual	
		5.0-10.0	Gray Broken Shale Fragments (Spoils)								Visual	*
		10.0-15.0	Gray Broken Shale Fragments (Spoils)								Visual	*
		15.0-21.0	Gray Broken Shale Fragments (Spoils)								Visual	
		21.0-24.0	Gray Broken Shale Fragments (Spoils)								Visual	
		24.0-30.0	Brown Broken Shale Fragments (Spoils)								Visual	
121+00	100'Rt	0.0-25.0	Gray to Brownish-Gray Shale Fragments (Spoils)								Visual	
		25.0-30.0	32	3	3	22	40	37	11	23	A-6a	
122+00	100'Lt	0.0-26.0	Gray Shale Fragments (Spoils)							—	Visual	
		26.0-32.0	Gray Broken Shale							—	Visual	
122+00	CL	0.0-24.0	Brown Shale Fragments (Spoils)							—	Visual	*
		24.0-27.0	24	2	2	26	46	36	13	18	A-6a	*
122+00	100'Rt	0.0-6.0	Gray Shale Fragments (Spoils)							—	Visual	
		6.0-12.0	Brownish Gray Clay & Shale Fragments (Spoils)								Visual	
		12.0-15.0	Gray Fire Clay							12	Visual	
123+00	100'Lt	0.0-5.0	Gray Weathered Shale Fragments (Spoils)							—	Visual	
		5.0-10.0	Gray Sand & Rubber (Spoils)							—	Visual	
		10.0-20.0	Brown & Gray Weathered Shale Fragments (Spoils)								Visual	
123+00	CL	0.0-3.0	Gray Sandy Silt & Rubber (Spoils)							—	Visual	*
		5.0-10.0	Brown & Gray Weathered Shale Fragments W/Rubber (Spoils)							—	Visual	*
		10.0-21.0	Gray Weathered Shale Fragments (Spoils)							—	Visual	
123+00	100'Rt	0.0-21.0	Gray Weathered Shale Fragments (Spoils)							—	Visual	
125+00	100'Lt	0.0-25.0	Gray Weathered Shale Fragments (Spoils)							—	Visual	
		25.0-30.0	0	1	4	31	64	37	17	20	A-6b	
125+00	CL	0.0-5.0	Brown & Gray Silty Clay (Spoils)							—	Visual	
		5.0-25.0	Brown & Gray Weathered Shale Fragments (Spoils)								Visual	*
		25.0-31.0	12	2	3	25	58	38	11	22	A-6a	*
125+00	125'Rt	0.0-11.0	Brown & Gray Silty Clay (Spoils)							—	Visual	
		11.0-22.0	Brown Silty Clay W/Shale Fragments (Spoils)							—	Visual	
		22.0-27.0	Coal Blossom							—	Visual	
		27.0-30.0	0	1	4	26	69	52	28	14	A-7-6	
125+65	100'Lt	0.0-5.0	Coal							—	Visual	
		5.0-7.5	Gray Underclay							—	Visual	
127+50	CL	0.0-5.0	Coal Mixed With Clay							—	Visual	
		5.0-11.0	Light-Gray Weathered Sandstone							5	Visual	
130+00	200'Lt	0.0-5.0	23	9	11	15	32	33	11	22	A-6a	
		5.0-9.0	48	9	11	16	16	33	8	28	A-2-4	
		9.0-12.0	0	0	1	17	82	56	26	35	A-7-5	
		12.0-15.0	Coal							—	Visual	
		15.0-18.0	Gray Underclay							—	Visual	
		18.0-21.0	Light-Gray Weathered Indurated Clay							8	Visual	
130+00	100'Lt	0.0-5.0	0	29	13	25	43	37	12	21	A-6a	
		5.0-10.0	22	24	7	13	34	44	16	22	A-7-6	
		10.0-16.0	Dark-Gray Weathered Shale							12	Visual	
130+00	CL	0.0-3.0	Brown Broken Sandstone							9	Visual	
130+00	100'Rt	0.0-5.0	0	6	8	34	52	39	14	20	A-6a	
		5.0-10.0	0	4	3	31	62	44	16	21	A-7-6	
		10.0-14.0	Light-Gray Weathered Indurated Clay							7	Visual	
130+00	165'Rt	0.0-16.0	Brown Silty Clay W/Shale Fragments (Spoils)							—	Visual	
		16.0-22.0	0	5	5	45	45	34	11	23	A-6a	
		22.0-24.0	0	3	8	29	60	35	15	24	A-6a	
131+10	CL	0.0-25.0	Brown Weathered Shale Fragments (Spoils)							—	Visual	*
		25.0-28.0	Coal Blossom							—	Visual	*
		28.0-32.0	0	0	5	35	60	39	18	15	A-6b	
133+00	130'Lt	0.0-5.0	Gray Weathered Shale Fragments (Spoils)							—	Visual	*
		5.0-15.0	Brown Sandy Silt & Shale Fragments (Spoils)							—	Visual	
		15.0-21.0	Gray Clay W/Shale Fragments (Spoils)							—	Visual	
		21.0-26.0	Light-Gray Weathered Sandstone							6	Visual	
135+00	200'Lt	0.0-5.0	0	6	4	32	68	52	19	23	A-7-5	
		5.0-9.0	7	3	5	18	67	51	21	27	A-7-5	
		9.0-11.0	0	8	5	25	62	40	15	33	A-6a	
135+00	100'Lt	0.0-6.0	0	4	11	30	55	45	18	17	A-7-6	
		6.0-12.0	11	4	19	29	37	31	11	22	A-6a	
		12.0-18.0	19	2	3	31	45	37	12	17	A-6a	
135+00	CL	0.0-4.0	Coal Blossom							—	Visual	
		4.0-8.0	0	0	3	38	59	41	16	18	A-7-6	
		8.0-12.0	0	2	41	31	26	NP	NP	12	A-4a	
137+00	170'Lt	0.0-5.0	38	4	15	18	25	29	7	16	A-4a	
		5.0-10.0	19	5	13	24	39	35	11	16	A-6a	
137+00	100'Lt	0.0-5.0	27	4	22	25	22	30	8	16	A-4a	
		5.0-11.0	0	3	7	34	54	39	16	19	A-6b	
		11.0-17.0	Gray Weathered Shale							15	Visual	

STATION & OFFSET		DEPTH FROM-TO	% AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	SHTL CLASS.	
137+00	CL	0.0-5.0	0	1	13	53	33	29	11	12	A-6a	
		5.0-11.0	0	8	10	35	47	38	12	19	A-6a	
		11.0-17.0	23	2	3	32	40	38	11	20	A-6a	
		17.0-22.0	Gray Weathered Shale							7	Visual	
137+00	70'Rt	0.0-15.0	Brown Weathered Shale Fragments (Spoils)							—	Visual	
		15.0-20.0	Brown Weathered Shale Fragments W/Sand (Spoils)							—	Visual	
		20.0-25.0	Brown Sandy Silt and Stone Fragments (Spoils)							—	Visual	
		25.0-30.0	Brown Weathered Shale Fragments (Spoils)							—	Visual	
140+50	CL	0.0-17.0	Brown & Gray Weathered Shale Fragments (Spoils)							-	Visual	
141+00	150'Lt	0.0-3.0	24	1	10	37	28	28	11	12	A-6a	
		3.0-9.0	36	13	7	23	21	33	10	13	A-4a	*
145+00	130'Lt	0.0-4.0	0	2	6	38	54	43	17	18	A-7-6	
		4.0-10.0	Brown & Gray Weathered Shale							13	Visual	
		10.0-15.0	Gray Weathered Shale							9	Visual	
145+00	CL	0.0-6.0	Brown Weathered Shale Fragments (Spoils)							—	Visual	
		6.0-12.0	Brown Silty Clay & Shale Fragments (Spoils)							—	Visual	*
		12.0-18.0	Brown & Gray Weathered Shale Frogments (Spoils)							—	Visual	
145+00	110'Rt	0.0-20.0	Brown Weathered Sandstone Fragments (Spoils)							—	Visual	
		20.0-26.0	Brown Sandy Silt & Stone Fragments (Spoils)							—	Visual	
		26.0-30.0	Light-Gray Weathered Indurated Clay							8	Visual	
148+00	200'Lt	0.0-4.0	9	5	11	35	40	30	11	23	A-6a	
		4.0-6.0	Coal Blossom								Visual	
		6.0-9.0	19	6	4	18	53	31	11	16	A-6a	
148+00	100'Lt	0.0-6.0	0	6	12	40	42	33	11	24	A-6a	
		6.0-12.0	27	5	3	23	42	39	12	21	A-6a	
		12.0-13.0	Dark-Gray Weathered Carbonaceous Shale							18	Visual	
148+00	CL	0.0-5.0	Brown Weathered Sandstone							13	Visual	
		5.0-10.0	Brown Weathered Shale							13	Visual	
		10.0-15.0	Brownish-Gray Weathered Shale							14	Visual	
		15.0-18.0	Brownish-Gray Weathered Shale							11	Visual	
148+00	100'Rt	0.0-5.0	16	9	10	27	38	35	11	22	A-6a	
		5.0-9.0	Coal Blossom							—	Visual	
		9.0-13.0	23	1	1	26	49	33	16	13	A-6b	
		13.0-16.0	Brownish Gray Weathered Shale							9	Visual	
151+00	150'Lt	0.0-6.0	54	2	6	22	16	31	9	14	A-4a	
		6.0-11.0	Brown Weathered Indurated Clay							13	Visual	
151+00	CL	0.0-5.0	32	2	9	36	21	32	11	23	A-6a	
		5.0-9.5	Brown Weathered Indurated Clay							12	Visual	
151+00	100'Rt	0.0-5.0	39	10	8	8	35	43	19	22	A-7-6	
		5.0-10.0	48	12	8	7	25	-	-	22	A-2-4	
		10.0-15.0	Light-Gray Fire Clay							8	Visual	
154+00	150'Lt	0.0-5.0	36	16	9	7	32	-	-	27	A-7-6	
		5.0-10.0	Light-Gray Fire Clay							13	Visual	
		10.0-13.0	Gray Weathered Indurated Clay							10	Visual	
154+00	CL	0.0-4.0	0	1	2	34	63	51	19	23	A-7-5	
		4.0-10.0	Brown Weathered Indurated Clay							11	Visual	*
		10.0-15.0	Gray Broken Shale							11	Visual	*
154+00	70'Rt	0.0-10.0	Brown Sand & Stone Fragments (Spoils)							—	Visual	
		10.0-16.0	Coal Blossom							—	Visual	
		16.0-18.0	Gray Weathered Indurated Clay							11	Visual	
157+00	100'Lt	0.0-5.0	0	5	4	18	73	53	23	28	A-7-5	
		5.0-11.0	25	15	5	18	37	33	15	12	A-6a	
		11.0-13.5	Brown & Gray Weathered Indurated Clay							11	Visual	
157+00	CL	0.0-5.0	29	2	13	28	28	27	7	13	A-4a	
		5.0-10.0	39	3	8	22	28	31	9	14	A-4a	
		10.0-14.0	Gray Weathered Shale							16	Visual	*
157+00	100'Rt	0.0-4.0	0	3	13	40	44	81	15	71	A-7-5	
		4.0-7.0	Gray Weathered Indurated Clay							12	Visual	
161+00	CL	0.0-6.0	46	4	3	8	39	49	18	25	A-7-5	*
		6.0-11.0	65	4	4	7	20	-	-	33	A-2-4	*
164+00	CL	0.0-5.0	20	4	12	44	20	25	1	22	A-4a	*
		5.0-9.0	34	3	7	23	33	-	-	13	A-6a	
		9.0-13.0	Gray Broken Carbonaceous Shale							—	Visual	*
170+00	150'Lt	0.0-5.0	34	20	7	9	30	40	11	23	A-6a	
		5.0-9.0	Light-Gray Fire Clay							7	Visual	
170+00	CL	0.0-5.0	45	3	11	21	20	26	8	16	A-4a	
		5.0-9.5	35	7	16	22	20	24	6	10	A-4a	
170+00	100'Rt	0.0-20.0	Brownish-Gray Silty Clay W/Stone Fragments (Spoils)							—	Visual	
		20.0-26.0	Coal Fragments (Spoils)							—	Visual	
		26.0-32.0	Light-Gray Fire Clay							13	Visual	
173+00	200'Lt	0.0-4.0	0	4	6	59	31	26	3	23	A-4b	
173+00	130'Lt	0.0-5.0	83	1	3	8	5	-	-	11	A-1-a	
		5.0-9.0	43	8	9	19	21	33	11	18	A-6a	
		9.0-16.0	56	2	2	22	19	32	12	19	A-6a	
173+00	CL	0.0-2.0	Brown Weathered Sandstone							12	Visual	*

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SOIL PROFILE
TUSCARAWAS-STARK COS.
TUS-IR 77-40.55
STA-IR 77-0.00
OHIO STATE HIGHWAY TESTING LABORATORY
COLUMBUS, OHIO

3/48

SUMMARY OF SOIL TEST DATA (Cont'd)
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.	
173+00	100'Rt	0.0-5.0	46	4	18	15	17	26	9	13	A-2-4	
		5.0-10.0	Brown Weathered Sandstone							11	Visual	
177+00	150'Lt	0.0-5.0	31	1	1	14	53	44	15	24	A-7-6	
		5.0-11.0	Dark-Gray Weathered Shale							11	Visual	
		11.0-14.0	Light-Gray Weathered Clay							7	Visual	
177+00	CL	0.0-5.0	29	5	5	21	40	40	12	24	A-6a	
		5.0-10.0	19	2	4	33	42	34	12	20	A-6a	
		10.0-14.0	Brownish-Gray Weathered Sandstone							7	Visual	*
177+00	75'Rt	0.0-5.0	Gray Clayey Silt & Stone Fragments (Spoils)							—	Visual	
		5.0-26.0	Gray Shale Fragments (Spoils)							—	Visual	
		26.0-32.0	17	4	3	29	48	33	11	21	A-6a	
177+00	150'Rt	0.0-5.0	Gray Stone Fragments (Spoils)							—	Visual	
		5.0-10.0	Gray Silt and Shale Fragments (Spoils)							—	Visual	
		10.0-15.0	Gray Shale Fragments (Spoils)							—	Visual	
		15.0-20.0	Brown Silty Clay W/Shale Fragments (Spoils)							—	Visual	
		20.0-26.0	Gray Shale Fragments (Spoils)							—	Visual	
		26.0-32.0	65	5	2	12	16	-	-	31	A-2-4	
180+00	200'Lt	0.0-5.0	48	4	9	16	21	30	8	21	A-4a	
		5.0-10.0	43	7	11	21	18	24	4	14	A-4a	
		10.0-16.0	41	11	1	27	30	35	12	20	A-6a	
		16.0-21.0	Gray Broken Shale							13	Visual	
180+00	130'Lt	0.0-6.0	44	4	6	8	38	41	15	21	A-7-6	
		6.0-11.0	21	5	10	34	30	31	11	13	A-6a	
		11.0-16.0	Brown Weathered Sandstone							17	Visual	
180+00	CL	0.0-6.0	62	3	11	13	11	22	6	11	A-1-b	
		6.0-12.0	56	11	6	7	20	-	-	23	A-2-4	
		12.0-15.0	Light-Gray Fire Clay							7	Visual	
180+00	100'Rt	0.0-21.0	Brown Weathered Sandstone Fragments (Spoils)							—	Visual	
		21.0-26.0	Brown Sandy Clayey Silt W/Sandstone Fragments (Spoils)							—	Visual	
		26.0-32.0	Light-Gray Fire Clay							9	Visual	
183+25	110'Rt	0.0-5.0	76	2	3	10	7	25	5	23	A-1-b	
		5.0-9.0	Brown Sandstone Fragments W/Clayey Silt							-	Visual	
		9.0-13.0	43	5	12	15	25	-	-	23	A-4a	
183+50	250'Lt	0.0-5.0	0	1	20	50	29	23	5	25	A-4b	
		5.0-10.0	0	2	6	63	29	27	4	24	A-4b	
		10.0-11.0	0	8	14	29	49	28	8	19	A-4a	
183+50	175'Lt	0.0-6.0	38	6	10	26	20	28	3	24	A-4a	
		6.0-11.0	33	4	11	36	16	NP	NP	31	A-4a	
		11.0-15.0	24	2	18	29	27	27	10	18	A-4a	
183+50	100'Lt	0.0-5.5	35	1	3	38	23	30	11	23	A-6a	
183+50	CL	0.0-2.0	61	4	7	14	14	-	-	22	A-2-4	
186+00	150'Lt	0.0-6.0	24	3	7	32	34	40	16	25	A-6b	
		6.0-11.0	44	9	7	31	15	-	-	14	A-4a	
		11.0-16.0	33	3	18	24	22	28	4	23	A-4a	
		16.0-21.0	24	9	15	23	24	27	7	16	A-4a	
		21.0-26.0	Gray Weathered Indurated Clay							12	Visual	
186+00	CL	0.0-5.0	56	2	7	15	20	30	10	22	A-2-4	
		5.0-10.0	37	6	11	19	27	34	9	16	A-4a	
		10.0-16.0	27	17	6	18	32	34	11	16	A-6a	
		16.0-18.0	Coal Blossom							—	Visual	
		18.0-21.0	21	6	6	15	52	40	11	33	A-6a	
192+00	CL	0.0-3.0	27	5	3	25	40	40	15	29	A-6a	*
		3.0-8.0	0	8	13	37	42	31	11	21	A-6a	
		8.0-12.0	24	1	0	38	37	35	11	16	A-6a	
		12.0-17.0	51	2	2	20	26	39	12	15	A-6a	
		17.0-20.0	Gray Broken Shale							13	Visual	
		20.0-24.0	Gray Weathered Shale							8	Visual	
195+00	CL	0.0-5.0	28	1	3	13	49	45	17	22	A-7-6	
		5.0-9.0	39	5	5	15	36	44	14	22	A-7-5	
		9.0-15.0	Gray Weathered Shale							14	Visual	
197+50	CL	0.0-4.0	26	3	5	35	31	35	11	24	A-6a	
		4.0-7.0	Gray Weathered Shale							27	Visual	
		7.0-11.0	Gray Clay Bedrock							27	Visual	
		11.0-12.0	Gray Clay Bedrock							27	Visual	
199+50	CL	0.0-5.0	Brown & Gray Silty Clay W/Stone Fragments (Spoils)							—	Visual	*
		5.0-10.0	Brown & Gray Shale Fragments (Spoils)							—	Visual	
		10.0-15.0	Brown & Gray Shale Fragments W/Silty Clay (Spoils)							—	Visual	
		15.0-21.0	Brown & Gray Silty Clay W/Shale Fragments (Spoils)							—	Visual	*
		21.0-25.0	Coal Blossom							—	Visual	
		25.0-30.0	Light-Gray Fire Clay							11	Visual	
208+50	CL	0.0-10.0	Grayish-Brown Clayey Silt & Shale Fragments (Spoils)							—	Visual	*
		10.0-20.0	Brown Shale Fragments (Spoils)							—	Visual	
		20.0-22.0	0	4	7	47	42	33	11	22	A-6a	
		22.0-26.0	0	0	5	48	47	33	20	14	A-6b	
		26.0-32.0	Brown Weathered Indurated Clay							13	Visual	
210+50	200'Lt	0.0-14.0	Brown & Gray Silty Clay (Spoils)							—	Visual	
		14.0-20.0	0	3	28	37	32	33	11	23	A-6a	
		20.0-22.0	32	11	5	18	44	41	16	16	A-7-6	
		22.0-26.0	11	1	6	41	41	26	6	10	A-4a	
		26.0-30.0	Light-Gray Fire Clay							12	Visual	
210+50	100'Lt	0.0-5.0	53	1	2	9	35	-	-	20	A-7-6	
		5.0-10.0	0	7	15	38	40	23	9	27	A-4a	
		10.0-12.0	27	6	11	24	32	34	12	24	A-6a	
		12.0-14.0	Gray Weathered Indurated Clay							14	Visual	

STATION & OFFSET		DEPTH FROM-TO	% AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	SHTL CLASS.	
211+00	CL	0.0-6.0	Gray Clay and Shale Fragments (Spoils)							—	Visual	
		6.0-10.0	0	3	10	47	30	NP	NP	21	A-4b	
		10.0-15.0	0	7	6	31	56	45	15	21	A-7-5	
		15.0-13.0	Coal Fragments							—	Visual	
		19.0-24.0	67	5	2	14	12	-	-	17	A-2-4	
211+00	75'Rt	0.0-5.0	27	3	13	33	24	33	8	23	A-4a	
		5.0-10.0	41	3	5	22	29	41	12	18	A-7-6	
		10.0-14.0	46	4	9	16	25	31	11	16	A-6a	
		14.0-13.0	Gray Weathered Shale							15	Visual	
		19.0-22.0	Gray Weathered Shale							17	Visual	
211+00	135'Rt	0.0-5.0	42	3	16	17	22	38	9	19	A-4a	
		5.0-10.0	20	5	39	15	21	NP	NP	16	A-4a	
214+75	CL	0.0-5.0	Brownish-Gray Weathered Sandstone Fragments (Spoils)							—	Visual	
		5.0-10.0	Brownish-Gray Clayey Silt & Sandstone Fragments (Spoils)							—	Visual	
		10.0-15.0	Brownish-Gray Weathered Sandstone Fragments (Spoils)							—	Visual	*
		15.0-20.0	Gray Clayey Silt & Sandstone Fragments (Spoils)							—	Visual	
		20.0-25.0	Gray Stone Fragments (Spoils)							—	Visual	*
223+00	75'Lt	0.0-4.0	Brown Weathered Sandstone							12	Visual	
		4.0-8.0	Brown Weathered Sandstone							11	Visual	
223+00	35'Rt	0.0,3.0	21	5	16	23	35	33	11	14	A-6a	
230+50	CL	0.0-5.0	Brownish-Gray Silty Clay & Shale Fragments (Spoils)							—	Visual	
		5.0-10.0	Gray Shale Fragments (Spoils)							—	Visual	
		10.0-15.0	Brown & Gray Silty Clay W/Shale Fragments (Spoils)							—	Visual	
		15.0-19.0	Brown & Gray Silty Clay W/Shale and Coal Fragments (Spoils)							—	Visual	
		19.0-24.0	Brown & Gray Weathered Indurated Clay							9	Visual	
		24.0-27.0	Light-Brown Weathered Shale							10	Visual	
231+50	CL	0.0-4.0	21	5	5	23	46	38	15	23	A-6a	
		4.0-6.0	0	13	10	39	38	29	11	24	A-6a	
		6.0-9.0	0	10	9	34	37	36	14	13	A-6a	
		9.0-14.0	0	6	8	32	54	36	17	14	A-6b	
231+50	100'Rt	0.0-6.0	Brown Weathered Shale							12	Visual	
		6.0-10.0	Brown Weathered Shale							12	Visual	
231+50	180'Rt	0.0-6.0	36	11	6	22	25	31	11	18	A-6a	
		6.0-8.0	Light-Gray Weathered Sandstone							9	Visual	
233+00	100'Rt	0.0-4.0	0	3	17	50	30	NP	NP	38	A-4b	
		4.0-9.5	0	4	9	38	49	36	13	19	A-6a	
233+50	200'Lt	0.0-6.0	0	4	18	43	30	34	12	35	A-6a	
		6.0-8.5	43	2	7	24	24	31	11	15	A-6a	
		8.5-11.0	28	3	9	28	33	35	12	15	A-6a	
		11.0-12.0	Gray Weathered Indurated Clay							7	Visual	
233+50	60'Lt	0.0-1.5	0	4	12	30	54	39	23	6	A-7-5	
		1.5-8.0	0	2	8	31	59	40	15	15	A-6a	
		8.0-10.0	Light-Gray Fire Clay							—	Visual	
233+50	CL	0.0-4.0	0	4	20	45	31	29	3	32	A-4a	
		4.0-8.5	0	4	21	44	31	26	4	33	A-4a	
		8.5-10.5	Light-Gray Weathered Shale							9	Visual	
234+00	CL	0.0-1.5	0	4	10	43	43	71	17	71	A-7-5	
		1.5-6.0	0	2	10	36	53	33	14	30	A-6a	
		6.0-10.0	37	8	16	13	21	29	9	23	A-4a	
239+00	CL	0.0-5.0	0	2	2	41	55	40	14	21	A-6a	
		5.0-8.0	0	18	5	22	44	42	16	20	A-7-6	
		8.0-13.0	Brown Weathered Shale							15	Visual	
		13.0-19.0	Gray Weathered Shale							10	Visual	
245+00	100'Lt	0.0-4.0	0	3	8	43	36	37	11	26	A-6a	
		4.0-9.0	32	5	7	26	30	39	11	17	A-6a	
		9.0-14.0	Gray Weathered Shale							13	Visual	
		14.0-16.0	Coal							—	Visual	
245+00	CL	0.0-3.0	0	18	4	31	47	50	17	19	A-7-5	
		3.0-4.0	Coal Blossom							—	Visual	
		4.0-9.0	Light-Gray Weathered Indurated Clay							11	Visual	*
245+00	30'Rt	0.0-5.0	33	3	3	27	34	44	13	17	A-7-6	
		5.0-9.5	45	3	4	22	26	37	12	14	A-6a	
248+00	CL	0.0-5.0	21	4	2	31	42	36	11	31	A-6a	*
		5.0-9.0	Coal							—	Visual	
		9.0-11.0	Light-Gray Underclay							12	Visual	
252+00	CL	0.0-5.0	23	5	15	26	31	24	4	17	A-4a	*
		5.0-9.0	0	0	7	34	55	42	17	24	A-7-6	
		9.0-15.0	0	1	7	82	10	24	3	20	A-4b	
		15.0-19.5	Dark-Brown Carbonaceous Shale & Coal Fragments								Visual	
258+00	CL	0.0-5.0	37	2	3	13	25	39	12	16	A-6a	
		5.0-10.0	23	4	5	22	41	37	12	21	A-6a	
		10.0-13.0	32	3	4	21	40	34	11	22	A-6a	
		13.0-17.0	21	2	3	23	46	39	12	13	A-6a	
		17.0-23.0	26	3	5	23	43	36	11	20	A-6a	
		23.0-27.0	33	3	5	28	33	34	11	17	A-6a	
		27.0-30.0	19	4	10	32	35	31	11	17	A-6a	
262+00	100'Rt	0.0-5.0	0	4	-	50	35	25	8	18	A-4b	
		5.0-10.0	0	0	7	42	58	33	12	23	A-6a	
		10.0-13.0	0	0	-	41	58	31	11	22	A-6a	
		13.0-20.0	0	0	0	39	61	32	11	23	A-6a	
		20.0-25.0	0	0	1	32	67	46	20	23	A-6a	
		25.0-27.0	0	—	4	30	66	46	20	24	A-6b	
		27.0-30.0	25	—	30	17	27	24	9	14	A-4a	

STATION & OFFSET		DEPTH FROM-TO	% AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	SHTL CLASS.	
262+00	CL	0.0-5.0	21	6	18	26	29	38	9	13	A-4a	
		5.0-10.0	10	4	15	34	37	30	11	18	A-6a	
		10.0-13.0	0	3	12	32	33	29	11	17	A-6a	
		13.0-13.0	0	0	0	29	71	39	14	26	A-6a	
		13.0-21.0	0	0	1	31	68	39	15	29	A-6a	
		21.0-23.0	0	1	3	31	65	39	15	29	A-6b	
		23.0-27.0	45	0	39	26	30	21	7	10	A-4a	
		27.0-29.0	53	1	17	12	12	22	7	20	A-2-4	
262+00	100'Rt	0.0-4.0	13	4	16	32	29	30	11	14	A-6a	
		4.0-8.0	0	3	14	41	42	30	11	14	A-6a	
		8.0-13.0	0	0	1	24	75	41	13	25	A-7-6	
		13.0-14.5	0	0	10	60	30	36	5	26	A-4b	
		14.5-16.0	0	2	4	29	65	36	11	19	A-6a	
		16.0-20.0	0	3	36	29	32	24	8	13	A-4a	
		20.0-22.0	Brown Weathered Sandstone Fragments							—	Visual	
			SOUTH BOUND IR 77									
17+25	BL	0.0-5.0	Brownish-Gray Weathered Sandstone							8	Visual	
		5.0-9.0	Brown Weathered Sandstone							-	Visual	
		9.0-11.5	Gray Clay Bedrock							20	Visual	
21+00	BL	0.0-6.0	26	2	2	27	43	36	11	17	A-6a	
		6.0-12.0	Brown Weathered Shale							14	Visual	
		12.0-16.0	Brown Broken Clay Shale							19	Visual	*
		16.0-18.0	Brown Clay Bedrock							14	Visual	*
		18.0-20.0	Coal							—	Visual	
		20.0-21.0	Light-Gray Fire Clay							7	Visual	
24+00	BL	0.0-4.0	23	2	6	19	45	44	15	21	A-7-6	*
		4.0-10.0	Brown Weathered Sandstone							13	Visual	
27+00	BL	0.0-4.0	Brown Weathered Sandstone							15	Visual	*
		4.0-10.0	Brown Weathered Shale							11	Visual	
30+00	BL	0.0-4.0	Brownish-Gray Weathered Sandstone							9	Visual	
		4.0-10.0	Brown Weathered Shale							12	Visual	
		10.0-12.5	Brown Weathered Shale							9	Visual	
33+00	BL	0.0-6.0	18	3	21	21	35	26	6	14	A-4a	
		6.0-7.0	Brown Weathered Sandstone							6	Visual	
37+00	BL	0.0-6.0	0	4	3	52	36	26	3	22	A-4b	
		6.0-9.0	0	1	3	48	48	37	13	36	A-6b	
		9.0-15.0	0	3	20	41	34	24	3	17	A-4a	
		15.0-20.0	0	2	12	40	46	31	11	21	A-6a	
41+00	BL	0.0-6.0	0	10	13	37	40	31	11	23	A-6a	
		6.0-10.0	0	1	3	63	33	27	5	23	A-4b	
		10.0-14.0	11	22	16	20	31	24	3	26	A-4a	
		14.0-18.0	13	3	3	30	26	24	3	20	A-4b	
43+50	BL	0.0-3.0	46	2	4	31	21	34	12	16	A-6a	
		3.0-8.0	20	3	16	16	45	36	12	16	A-6a	
		8.0-13.0	14	1	10	50	25	28	6	24	A-4b	
		13.0-19.0	0	7	16	52	25	29	6	24	A-4b	
		19.0-25.0	32	2	12	27	27	24	5	24	A-6a	
		25.0-30.0	36	11	11	20	22	28	5	20	A-4a	
45+00	CL	0.0-5.0	0	6	18	22	47	32	11	17	A-6a	
		5.0-10.0	0	3	7	39	51	32	11	21	A-6a	
		10.0-15.0	0	3	9	34	54	34	11	26	A-4b	
		15.0-21.0	13	3	9	30	45	31	11	25	A-4b	
		21.0-26.0	15	4	10	34	37	27	5	21	A-4b	
		26.0-28.0	0	4	11	39	46	35	11	19	A-6a	
		28.0-30.0	0	2	11	39	48	35	11	19	A-4a	
45+40	63'Lt	0.0-5.0	0	5	21	31	43	30	11	17	A-7-6	
		5.0-10.0	0	3	6	39	52	32	11	21	A-6a	
		10.0-15.0	0	2	3	38	57	33	11	26	A-4b	
		15.0-20.0	0	2	3	60	35	28	5	26	A-4b	
		20.0-26.0	0	2	3	65	30	26	5	26	A-4b	
		26.0-32.0	0	2	3	67	28	26	5	27	A-4b	
48+00	BL	0.0-4.0	17	10	13	23	37	32	11	17	A-6a	
		4.0-10.0	0	1	1	69	29	28	6	26	A-4b	
		10.0-15.0	5	1	9	58	27	26	6	21	A-4b	
51+50	BL	0.0-5.0	0	1	6	39	58	35	11	24	A-6a	*
		5.0-10.0	0	1	6	50	43	30	7	24	A-4b	
55+00	BL	0.3-5.0	0	1	0	45	54	43	11	38	A-7-5	*
		5.0-7.0	15	4	5	46	30	31	11	25	A-6a	
		7.0-12.0	0	2	5	50	43	24	4	25	A-4b	
		12.0-14.0	14	5	7	50	24	24	2	13	A-4b	
59+00	BL	0.0-6.0	33	10	10	19	28	36	11	22	A-6a	
		6.0-10.0	34	11	12	16	27	31	9	22	A-4a	
		10.0-13.0	0	1	7	56	36	26	6	27	A-4b	
		13.0-16.0	0	10	14	46	30	27	2	22	A-4a	
63+00	BL	0.0-6.0	0	2	5	43	50	41	11	31	A-7-5	
		6.0-11.0	54	3	6	19	29	5	13	-	A-2-4	
		11.0-13.0	40	10	6	16	28	-	-	16	A-4a	
		13.0-15.5	18	6	10	36	30	26	5	19	A-4a	
66+25	BL	0.0-5.0	34	13	8	12	13	29	1	16	A-1-b	
		5.0-11.0	0	1	3	70	26	26	6	35	A-4b	
		11.0-16.0	45	5	10	19	21	27	5	16	A-4a	
		16.0-21.0	34	7	9	25	25	29	7	21	A-4a	
69+00	BL	0.0-6.0	13	6	7	24	50	43	16	19	A-7-5	
		6.0-11.5	Gray Weathered Indurated Clay							8	Visual	

STATION & OFFSET		DEPTH FROM-TO	% AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	SHTL CLASS.	
		SHERMAN CHURCH ROAD (Co. Rd. 272)										
86+00	10'Lt	0.0-4.0	14	7	6	20	53	49	15	24	A-7-5	*
		4.0-7.5	Coal Blossom							—	Visual	
89+00	CL	0.0-2.0	0	7	10	25	58	41	16	22	A-7-6	*
		2.0-7.0	Brown Broken Shale							14	Visual	*
		7.0-12.0	Gray Broken Shale							10	Visual	
		12.0-15.0	Gray Weathered Shale							12	Visual	
92+00	CL	0.0-5.0	0	2	4	31	63	49	19	23	A-7-5	
		5.0-10.0	14	7	5	18	56	43	13	16	A-7-5	
		10.0-11.0	0	16	11	18	55	43	12	21	A-7-5	
95+00	CL	0.0-5.0	12	3	4	31	50	41	16	19	A-7-6	
		5.0-8.0	45	6	8	15	29	37	13	17	A-6a	
		8.0-10.0	Coal Blossom							—	Visual	
		10.0-15.0	Gray Broken Shale							17	Visual	
99+00	CL	0.0-4.0	35	4	6	18	37	39	14	21	A-6a	*
		4.0-7.0	0	0	1	26	73	40	15	19	A-6a	
		7.0-10.0	21	3	15	23	38	30	11	19	A-6a	
		10.0-12.0	Gray Weathered Shale							-	Visual	
		12.0-13.0	Coal							—	Visual	
103+00	10'Rt	0.0-6.0	23	4	6	37	25	27	11	21	A-6a	
		6.0-7.0	0	4	21	34	41	25	11	18	A-6a	
		7.0-12.0	33	13	9	19	26	36	12	16	A-6a	
		12.0-18.0	38	8	11	26	17	25	5	19	A-4a	
107+00	12'Lt	0.0-3.0	23	5	7	27	38	36	17	25	A-6b	*
		3.0-9.0	Brown Weathered Shale							14	Visual	
		KEIFFER AVENUE (Co. Rd. 243)										
40+50	CL	0.0-3.0	Light-Gray Weathered Indurated Clay							7	Visual	*
		3.0-6.0	Brown & Gray Weathered Shale							11	Visual	
		6.0-9.0	Light-Gray Fire Clay							7	Visual	
42+00	CL	0.0-5.0	0	6	6	35	53	40	14	19	A-6a	
		5.0-9.0	12	8	6	28	48	39	14	20	A-6a	*
		9.0-13.0	Brown Weathered Shale							16	Visual	*
		13.0-14.5	Coal							-	Visual	
		14.5-19.0	Gray Weathered Shale							10	Visual	
		19.0-20.5	Gray Clay Bedrock							21	Visual	
45+00	CL	0.0-4.0	Brown Weathered Sandstone							11	Visual	
		4.0-8.0	Brown Weathered Shale							16	Visual	
		8.0-13.0	Brown Weathered Shale							11	Visual	
		13.0-18.0	Gray Weathered Shale							9	Visual	
		18.0-23.0	Gray Weathered Shale							9	Visual	*
49+00	CL	0.0-5.0	Brown Weathered Shale							9	Visual	
		5.0-10.0	Brown Weathered Shale							8	Visual	
		10.0-14.0	Brown Weathered Shale							6	Visual	
53+00	CL	0.0-5.0	8	6	13	32	41	30	11	15	A-6a	
		5.0-9.0	0	6	12	36	46	33	13	16	A-6a	
		9.0-13.0	20	4	11	24	41	33	12	22	A-6a	
		13.0-17.0	0	9	15	33	34	28	11	16	A-6a	
		17.0-20.0	0	0	29	39	32	23	6	16	A-4a	
		20.0-25.0	Gray Weathered Shale							11	Visual	
		25.0-29.0	Gray Weathered Shale							10	Visual	
53+00	CL	0.0-5.0	0	3	5	56	36	35	12	23

STATION & OFFSET		DEPTH FROM-TO	% AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	SHTL CLASS.	
173+00	100'Rt	0.0-5.0	46	4	18	15	17	26	9	13	A-2-4	
		5.0-10.0	Brown Weathered Sandstone							11	Visual	
177+00	150'Lt	0.0-5.0	31	1	1	14	53	44	15	24	A-7-6	
		5.0-11.0	Dark-Gray Weathered Shale							11	Visual	
		11.0-14.0	Light-Gray Weathered Clay							7	Visual	
177+00	CL	0.0-5.0	29	5	5	21	40	40	12	24	A-6a	
		5.0-10.0	19	2	4	33	42	34	12	20	A-6a	
		10.0-14.0	Brownish-Gray Weathered Sandstone							7	Visual	*
177+00	75'Rt	0.0-5.0	Gray Clayey Silt & Stone Fragments (Spoils)							—	Visual	
		5.0-26.0	Gray Shale Fragments (Spoils)							—	Visual	
		26.0-32.0	17	4	3	28	48	33	11	21	A-6a	
177+00	150'Rt	0.0-5.0	Gray Stone Fragments (Spoils)							—	Visual	
		5.0-10.0	Gray Silt and Shale Fragments (Spoils)							—	Visual	
		10.0-15.0	Gray Shale Fragments (Spoils)							—	Visual	
		15.0-20.0	Brown Silty Clay W/Shale Fragments (Spoils)							—	Visual	
		20.0-26.0	Gray Shale Fragments (Spoils)								Visual	
		26.0-32.0	65	5	2	12	16	-	-	31	A-2-4	
180+00	200'Lt	0.0-5.0	48	4	9	18	21	30	8	21	A-4a	
		5.0-10.0	43	7	11	21	18	24	4	14	A-4a	
		10.0-16.0	41	1	1	27	30	35	12	20	A-6a	
		16.0-21.0	Gray Broken Shale							13	Visual	
180+00	130'Lt	0.0-6.0	44	4	8	8	38	41	15	21	A-7-6	
		6.0-11.0	21	5	10	34	30	31	11	13	A-6a	
		11.0-16.0	Brown Weathered Sandstone							17	Visual	
180+00	CL	0.0-6.0	62	3	11	13	11	22	6	11	A-1-b	
		6.0-12.0	56	11	6	7	20	-	-	23	A-2-4	
		12.0-15.0	Light-Gray Fire Clay							7	Visual	
180+00	100'Rt	0.0-21.0	Brown Weathered Sandstone Fragments (Spoils)							—	Visual	
		21.0-26.0	Brown Sandy Clayey Silt W/Sandstone Fragments (Spoils)							—	Visual	
		26.0-32.0	Light-Gray Fire Clay							9	Visual	
183+25	110'Rt	0.0-5.0	76	2	5	10	7	25	5	23	A-1-b	
		5.0-9.0	Brown Sandstone Fragments W/Clayey Silt							-	Visual	
		9.0-13.0	43	5	12	15	25	-	-	23	A-4a	
183+50	250'Lt	0.0-5.0	0	1	20	50	29	23	5	25	A-4b	
		5.0-10.0	0	2	6	63	29	27	4	24	A-4b	
		10.0-11.0	0	8	14	29	49	28	8	19	A-4a	
183+50	175'Lt	0.0-6.0	38	6	10	26	20	28	3	24	A-4a	
		6.0-11.0	33	4	11	36	16	NP	NP	31	A-4a	
		11.0-15.0	24	2	18	29	27	27	10	18	A-4a	
183+50	100'Lt	0.0-5.5	35	1	3	38	23	30	11	23	A-6a	
183+50	CL	0.0-2.0	61	4	7	14	14	-	-	22	A-2-4	
186+00	150'Lt	0.0-6.0	24	3	7	32	34	40	16	25	A-6b	
		6.0-11.0	44	3	7	31	15	-	-	14	A-4a	
		11.0-16.0	23	9	18	24	26	25	4	18	A-4a	
		16.0-21.0	24	9	15	28	24	27	7	16	A-4a	
		21.0-26.0	Gray Weathered Indurated Clay							12	Visual	
186+00	CL	0.0-5.0	56	2	7	15	20	30	10	22	A-2-4	
		5.0-10.0	37	6	11	19	27	30	9	16	A-4a	
		10.0-16.0	27	17	6	18	32	34	11	16	A-6a	
		16.0-18.0	Coal Blossom							—	Visual	
		18.0-21.0	21	6	6	15	52	40	11	33	A-6a	
192+00	CL	0.0-3.0	27	5	3	25	40	40	15	29	A-6a	*
		3.0-8.0	0	8	13	37	42	31	11	21	A-6a	
		8.0-12.0	24	1	0	38	37	35	11	16	A-6a	
		12.0-17.0	51	1	2	20	26	39	12	15	A-6a	
		17.0-20.0	Gray Broken Shale							13	Visual	
		20.0-24.0	Gray Weathered Shale							8	Visual	
195+00	CL	0.0-5.0	28	1	3	19	49	45	17	22	A-7-6	
		5.0-9.0	39	5	5	15	36	44	14	22	A-7-5	
		9.0-15.0	Gray Weathered Shale							14	Visual	
197+50	CL	0.0-4.0	26	3	5	35	31	35	11	24	A-6a	
		4.0-7.0	Gray Weathered Shale							12	Visual	
		7.0-11.0	Gray Clay Bedrock							27	Visual	
		11.0-12.0	Gray Clay Bedrock							27	Visual	
199+50	CL	0.0-5.0	Brown & Gray Silty Clay W/Stone Fragments (Spoils)							—	Visual	*
		5.0-10.0	Brown & Gray Shale Fragments (Spoils)							—	Visual	
		10.0-15.0	Brown & Gray Shale Fragments W/Siltly Clay (Spoils)							—	Visual	
		15.0-21.0	Brown & Gray Silty Clay W/Shale Fragments(Spoils)								Visual	*
		21.0-25.0	Coal Blossom							—	Visual	
		25.0-30.0	Light-Gray Fire Clay							11	Visual	
208+50	CL	0.0-10.0	Grayish-Brown Clayey Silt & Shale Fragments (Spoils)							—	Visual	*
		10.0-20.0	Brown Shale Fragments (Spoils)							—	Visual	
		20.0-22.0	0	4	7	47	42	33	11	22	A-6a	
		22.0-26.0	0	1	5	48	46	33	20	14	A-6b	
		26.0-32.0	Brown Weathered Indurated Clay							13	Visual	
210+50	200'Lt	0.0-14.0	Brown & Gray Silty Clay (Spoils)							—	Visual	
		14.0-20.0	0	3	28	37	32	33	11	23	A-6a	
		20.0-22.0	32	1	5	18	44	41	16	16	A-7-6	
		22.0-26.0	11	1	6	41	41	26	6	10	A-4a	
		26.0-30.0	Light-Gray Fire Clay							12	Visual	
210+50	100'Lt	0.0-5.0	53	1	2	9	35	-	-	28	A-7-6	
		5.0-10.0	0	7	15	38	40	28	6	27	A-4a	
		10.0-12.0	27	6	11	24	32	34	12	24	A-6a	
		12.0-14.0	Gray Weathered Indurated Clay							14	Visual	

NOTE: NP shown in Liquid Limit and Plasticity Ind
*Denotes sample t

STATION & OFFSET		DEPTH FROM-TO	% AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	SHTL CLASS.
211+00	CL	0.0-6.0	Gray Clay and Shale Fragments (Spoils)							—	Visual
		6.0-10.0	0	3	10	67	20	NP	NP	21	A-4b
		10.0-15.0	0	7	6	31	56	45	15	21	A-7-5
		15.0-18.0	Coal Fragments							—	Visual
		18.0-24.0	67	5	2	14	12	-	-	17	A-2-4
211+00	75'Rt	0.0-5.0	27	3	13	33	24	33	8	23	A-4a
		5.0-10.0	41	3	5	22	29	41	12	18	A-7-6
		10.0-14.0	46	4	9	16	25	31	11	16	A-6a
		14.0-19.0	Gray Weathered Shale							15	Visual
		19.0-22.0	Gray Weathered Shale							17	Visual
211+00	135'Rt	0.0-5.0	42	3	16	17	22	26	9	19	A-4a
		5.0-10.0	20	5	39	15	21	NP	NP	16	A-4a
214+75	CL	0.0-5.0	Brownish-Gray Weathered Sandstone Fragments (Spoils)							—	Visual
		5.0-10.0	Brownish-Gray Clayey Silt & Sandstone Fragments (Spoils)							—	Visual
		10.0-15.0	Brownish-Gray Weathered Sandstone Fragments (Spoils)							—	Visual
		15.0-20.0	Gray Clayey Silt & Sandstone Fragments (Spoils)								Visual
		20.0-25.0	Gray Stone Fragments (Spoils)							—	Visual
223+00	75'Lt	0.0-4.0	Brown Weathered Sandstone							12	Visual
		4.0-8.0	Brown Weathered Sandstone							11	Visual
223+00	35'Rt	0.0-3.0	21	5	16	23	35	33	11	14	A-6a
230+50	CL	0.0-5.0	Brownish-Gray Silty Clay & Shale Fragments (Spoils)							—	Visual
		5.0-10.0	Gray Shale Fragments (Spoils)							—	Visual
		10.0-15.0	Brown & Gray Silty Clay W/Shale Fragments (Spoils)								Visual
		15.0-19.0	Brown & Gray Silty Clay W/Shale and Coal Fragments (Spoils)							—	Visual
		19.0-24.0	Brown & Gray Weathered Indurated Clay							9	Visual
		24.0-27.0	Light-Brown Weathered Shale							10	Visual
231+50	CL	0.0-4.0	21	5	5	23	46	38	15	23	A-6a
		4.0-6.0	0	13	10	39	38	29	11	24	A-6a
		6.0-8.0	0	0	9	34	57	30	14	13	A-6a
		8.0-14.0	0	6	8	32	54	36	17	14	A-6b
231+50	100'Rt	0.0-6.0	Brown Weathered Shale							12	Visual
		6.0-10.0	Brown Weathered Shale							12	Visual
231+50	180'Rt	0.0-6.0	36	11	6	22	25	31	11	18	A-6a
		6.0-8.0	Light-Gray Weathered Sandstone							9	Visual
233+00	100'Rt	0.0-4.0	0	3	17	50	30	NP	NP	38	A-4b
		4.0-9.5	0	4	9	38	49	36	13	19	A-6a
233+50	200'Lt	0.0-6.0	0	4	18	48	30	34	12	35	A-6a
		6.0-8.5	43	2	7	24	24	31	11	15	A-6a
		8.5-11.0	28	3	8	28	33	35	12	15	A-6a
		11.0-12.0	Gray Weathered Indurated Clay							7	Visual
233+50	60'Lt	0.0-1.5	0	4	12	30	54	59	23	6	A-7-5
		1.5-8.0	0	2	8	31	59	40	15	13	A-6a
		8.0-10.0	Light-Gray Fire Clay							-	Visual
233+50	CL	0.0-4.0	0	4	20	45	31	29	9	32	A-4a
		4.0-8.5	0	4	21	44	31	26	4	32	A-4a
		8.5-10.5	Light-Gray Weathered Shale							9	Visual
234+00	CL	0.0-1.5	0	4	10	43	43	71	17	71	A-7-5
		1.5-6.0	0	2	10	35	53	38	14	30	A-6a
		6.0-10.0	37	8	16	18	21	29	9	28	A-4a
239+00	CL	0.0-5.0	0	2	2	41	55	40	14	21	A-6a
		5.0-8.0	0	18	9	29	44	42	16	20	A-7-6
		8.0-13.0	Brown Weathered Shale							15	Visual
		13.0-19.0	Gray Weathered Shale							10	Visual
245+00	100'Lt	0.0-4.0	0	8	8	48	36	37	11	26	A-6a
		4.0-9.0	32	5	7	26	30	39	11	17	A-6a
		9.0-14.0	Gray Weathered Shale							13	Visual
		14.0-16.0	Coal							—	Visual
245+00	CL	0.0-3.0	0	18	4	31	47	50	17	19	A-7-5
		3.0-4.0	Coal Blossom							—	Visual
		4.0-9.0	Light-Gray Weathered Indurated Clay							11	Visual
245+00	30'Rt	0.0-5.0	33	3	3	27	34	44	13	17	A-7-6
		5.0-9.5	45	3	4	22	26	37	12	14	A-6a
248+00	CL	0.0-5.0	21	4	2	31	42	36	11	31	A-6a
		5.0-9.0	Coal							—	Visual
		9.0-11.0	Light-Gray Underclay							12	Visual
252+00	CL	0.0-5.0	23	5	15	26	31	24	4	17	A-4a
		5.0-9.0	0	0	1	34	65	42	17	24	A-7-6
		9.0-15.0	0	1	7	62	30	24	3	20	A-4b
		15.0-19.5	Dark-Brown Carbonaceous Shale & Coal Fragments								Visual
258+00	CL	0.0-5.0	57	2	3	13	25	39	12	16	A-6a
		5.0-10.0	28	4	5	22	41	37	12	21	A-6a
		10.0-15.0	32	3	4	21	40	34	11	18	A-6a
		15.0-17.0	21	2	3	28	46	39	12	13	A-6a
		17.0-23.0	26	3	5	23	43	36	11	20	A-6a
		23.0-27.0	33	3	8	28	28	34	11	17	A-6a
		27.0-30.0	19	4	10	32	35	31	11	17	A-6a
262+00	100'Lt	0.0-5.0	0	4		50	35	25	8	18	A-4b
		5.0-10.0	0	0	-	42	58	33	12	23	A-6a
		10.0-15.0	0	0	1	41	58	31	11	22	A-6a
		15.0-20.0	0	0	0	38	62	38	15	23	A-6a
		20.0-25.0	0	0	1	22	77	40	20	28	A-6b
		25.0-27.0	0	1	4	30	65	40	16	24	A-6b
		27.0-30.0	25	1	30	17	27	24	9	14	A-4a

dex columns indicates that the material is non-plastic.
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.	
262+00	CL	0.0-5.0	21	6	18	26	29	26	9	13	A-4a	
		5.0-10.0	10	4	15	34	37	30	11	18	A-6a	
		10.0-13.0	0	3	12	52	33	29	11	17	A-6a	
		13.0-18.0	0	0	0	29	71	39	14	26	A-6a	
		18.0-21.0	0	0	0	31	69	39	15	29	A-6a	
		21.0-23.0	0	1	3	31	60	37	19	16	A-6b	
		23.0-27.0	5	0	39	26	30	21	7	10	A-4a	
		27.0-28.0	58	1	17	12	12	22	7	20	A-2-4	
262+00	100'Rt	0.0-4.0	19	4	16	32	29	30	11	14	A-6a	
		4.0-8.0	0	3	14	41	42	30	11	14	A-6a	
		8.0-13.0	0	0	1	24	75	41	13	25	A-7-6	
		13.0-14.5	0	0	10	60	30	23	5	26	A-4b	
		14.5-16.0	0	2	4	26	68	36	11	19	A-6a	
		16.0-20.0	0	3	36	29	32	24	8	18	A-4a	
		20.0-22.0	Brown Weathered Sandstone Fragments							—	Visual	

SOUTH BOUND I R 77

17+25	BL	0.0-5.0	Brownish-Gray Weathered Sandstone							8	Visual	
		5.0-9.0	Brown Weathered Sandstone							-	Visual	
		9.0-11.5	Gray Clay Bedrock							20	Visual	
21+00	BL	0.0-6.0	26	2	2	27	43	36	11	17	A-6a	
		6.0-12.0	Brown Weathered Shale							14	Visual	
		12.0-16.0	Brown Broken Clay Shale							19	Visual	*
		16.0-18.0	Brown Clay Bedrock							14	Visual	*
		18.0-20.0	Coal							—	Visual	
		20.0-21.0	Light-Gray Fire Clay							7	Visual	
24+00	BL	0.0-4.0	28	2	6	19	45	44	15	21	A-7-6	*
		4.0-10.0	Brown Weathered Sandstone							13	Visual	
27+00	BL	0.0-4.0	Brown Weathered Sandstone							15	Visual	*
		4.0-10.0	Brown Weathered Shale							11	Visual	
30+00	BL	0.0-4.0	Brownish-Gray Weathered Sandstone							9	Visual	
		4.0-10.0	Brown Weathered Shale							12	Visual	
		10.0-12.5	Brown Weathered Shale							9	Visual	
33+00	BL	0.0-6.0	18	5	21	21	35	26	6	14	A-4a	
		6.0-7.0	Brown Weathered Sandstone							6	Visual	
37+00	BL	0.0-6.0	0	4	8	52	36	26	3	22	A-4b	
		6.0-9.0	0	1	3	48	48	37	18	26	A-6b	
		9.0-15.0	0	5	20	41	34	24	3	17	A-4a	
		15.0-20.0	0	2	12	40	46	31	11	21	A-6a	
41+00	BL	0.0-6.0	0	10	13	37	40	31	11	23	A-6a	
		6.0-10.0	0	1	3	63	33	27	5	26	A-4b	
		10.0-14.0	11	3	12	50	24	24	3	26	A-4b	
		14.0-18.0	11	22	16	20	31	24	2	25	A-4a	
		18.0-20.0	13	3	8	50	26	24	5	20	A-4b	
43+50	BL	0.0-3.0	42	2	4	31	21	34	12	16	A-6a	
		3.0-8.0	30	3	16	16	35	36	13	25	A-6a	
		8.0-13.0	14	1	6	50	29	25	4	24	A-4b	
		13.0-19.0	0	7	10	55	28	NP	NP	24	A-4b	
		19.0-25.0	33	2	12	29	24	30	11	21	A-6a	
		25.0-30.0	36	11	11	20	22	28	5	20	A-4a	
45+00	50'Lt	0.0-5.0	0	6	18	29	47	39	11	27	A-6a	
		5.0-10.0	0	2	7	59	32	NP	NP	-	A-4b	
		10.0-15.0	0	3	9	54	34	26	4	26	A-4b	
		15.0-21.0	8	3	8	50	31	NP	NP	25	A-4b	
		21.0-26.0	15	1	3	54	27	NP	NP	21	A-4b	
		26.0-28.0	0	4	10	53	33	NP	NP	25	A-4b	
		28.0-30.0	0	2	11	39	48	25	4	18	A-4a	
45+40	63'Lt	0.0-5.0	0	5	21	31	43	42	14	30	A-7-6	
		5.0-10.0	0	2	3	56	39	27	3	23	A-4b	
		10.0-15.0	0	4	3	50	43	29	3	26	A-4b	
		15.0-20.0	0	2	3	60	35	NP	NP	26	A-4b	
		20.0-26.0	0	2	5	65	28	NP	NP	27	A-4b	
		26.0-32.0	0	2	3	67	28	NP	NP	27	A-4b	
48+00	BL	0.0-4.0	17	10	13	23	32	32	11	17	A-6a	
		4.0-10.0	0	1	1	69	29	NP	NP	26	A-4b	
		10.0-15.0	5	1	9	58	27	NP	NP	21	A-4b	
51+50	BL	0.0-5.0	0	1	2	39	58	35	11	24	A-6a	*
		5.0-10.0	0	1	6	50	43	30	7	24	A-4b	
55+00	BL	0.3-5.0	0	1	0	45	54	43	11	38	A-7-5	*
		5.0-7.0	15	4	5	40	36	31	11	27	A-6a	
		7.0-12.0	0	2	15	50	33	24	4	23	A-4b	
		12.0-14.0	14	5	7	50	24	24	2	19	A-4b	
59+00	BL	0.0-6.0	33	10	10	19	28	36	11	22	A-6a	
		6.0-10.0	34	11	12	16	27	31	9	23	A-4a	
		10.0-13.0	0	1	7	56	36	NP	NP	27	A-4b	
		13.0-16.0	0	10	14	46	30	27	2	22	A-4a	
63+00	BL	0.0-6.0	0	2	5	43	50	41	11	31	A-7-5	
		6.0-11.0	54	8	8	12	18	29	5	19	A-2-4	
		11.0-13.0	40	10	10	18	22	-	-	16	A-4a	
		13.0-15.5	18	6	10	36	30	25	5	19	A-4a	
66+25	BL	0.0-5.0	54	13	8	12	13	29	1	16	A-1-b	
		5.0-11.0	0	1	3	70	26	NP	NP	35	A-4b	
		11.0-16.0	45	5	10	19	21	27	5	16	A-4a	
		16.0-21.0	34	7	9	25	25	29	7	21	A-4a	
69+00	BL	0.0-6.0	13	6	7	24	50	48	16	19	A-7-5	
		6.0-11.5	Gray Weathered Indurated Clay							8	Visual	

STATION & OFFSET		DEPTH FROM-TO	% AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	SHTL CLASS.	
SHERMAN CHURCH ROAD (Co. Rd. 272)												
86+00	10'Lt	0.0-4.0	14	7	6	20	53	49	15	24	A-7-5	*
		4.0-7.5	Coal Blossom							—	Visual	
89+00	CL	0.0-2.0	0	7	10	25	58	41	16	22	A-7-6	*
		2.0-7.0	Brown Broken Shale							14	Visual	*
		7.0-12.0	Gray Broken Shale							10	Visual	
		12.0-15.0	Gray Weathered Shale							12	Visual	
92+00	CL	0.0-5.0	0	2	4	31	63	49	19	23	A-7-5	
		5.0-10.0	14	7	5	18	56	43	13	16	A-7-5	
		10.0-11.0	0	16	11	18	55	43	12	21	A-7-5	
95+00	CL	0.0-5.0	12	3	4	31	50	41	16	19	A-7-6	
		5.0-8.0	42	6	8	15	29	37	13	17	A-6a	
		8.0-10.0	Coal Blossom							—	Visual	
		10.0-15.0	Gray Broken Shale							17	Visual	
99+00	CL	0.0-4.0	35	4	6	18	37	39	14	21	A-6a	*
		4.0-7.0	0	0	1	26	73	40	15	19	A-6a	
		7.0-10.0	21	3	15	23	38	30	11	19	A-6a	
		10.0-12.0	Gray Weathered Shale							-	Visual	
		12.0-13.0	Coal							—	Visual	
103+00	10'Rt	0.0-6.0	28	4	6	37	25	27	11	21	A-6a	
		6.0-7.0	0	4	21	34	41	25	11	18	A-6a	
		7.0-12.0	33	13	9	19	26	32	12	16	A-6a	
		12.0-16.0	38	8	11	26	17	25	5	19	A-4a	
107+00	12'Lt	0.0-3.0	23	5	7	27	38	36	17	25	A-6b	*
		3.0-9.0	Brown Weathered Shale							14	Visual	
KEIFFER AVENUE (Co. Rd. 248)												
40+50	CL	0.0-3.0	Light-Gray Weathered Indurated Clay							7	Visual	*
		3.0-6.0	Brown & Gray Weathered Shale							11	Visual	
		6.0-9.0	Light-Gray Fire Clay							7	Visual	
42+00	CL	0.0-5.0	0	6	6	35	53	40	14	19	A-6a	
		5.0-8.0	12	6	6	28	48	39	14	20	A-6a	*
		8.0-13.0	Brown Weathered Shale							16	Visual	*
		13.0-14.5	Coal							-	Visual	
		14.5-19.0	Gray Weathered Shale							10	Visual	
		19.0-20.5	Gray Clay Bedrock							21	Visual	
45+00	CL	0.0-4.0	Brown Weathered Sandstone							11	Visual	
		4.0-8.0	Brown Weathered Shale							16	Visual	
		8.0-13.0	Brown Weathered Shale							11	Visual	
		13.0-18.0	Gray Weathered Shale							9	Visual	
		18.0-23.0	Gray Weathered Shale							9	Visual	*
49+00	CL	0.0-5.0	Brown Weathered Shale							9	Visual	
		5.0-10.0	Brown Weathered Shale							8	Visual	
		10.0-14.0	Brown Weathered Shale							6	Visual	
54+00	CL	0.0-5.0	8	6	13	32	41	30	11	15	A-6a	
		5.0-9.0	0	6	12	36	46	33	13	16	A-6a	
		9.0-13.0	20	4	11	24	41	29	12	22	A-6a	
		13.0-17.0	10	8	15	33	34	22	11	16	A-6a	
		17.0-20.0	0	9	29	30	32	23	6	16	A-4a	
		20.0-25.0	Gray Weathered Shale							11	Visual	
		25.0-29.0	Gray Weathered Shale							10	Visual	
58+00	CL	0.0-5.0	0	3	5	56	36	35	12	28	A-6a	
		5.0-10.0	29	6	13	22	30	24	11	14	A-6a	
		10.0-15.0	0	3	5	32	60	33	13	19	A-6a	
		15.0-19.0	0	0	1	47	52	36	12	13	A-6a	
		19.0-21.0	Gray Broken Shale							11	Visual	
61+50	10'Lt	0.0-5.0	0	7	8	33	52	37	14	21	A-6a	
		5.0-10.0	0	3	10	45	42	30	11	17	A-6a	
		10.0-13.0	0	5	43	26	26	22	4	18	A-4a	
		13.0-13.0	Gray Shale							11	Visual	
		18.0-23.0	Gray Weathered Shale							11	Visual	
		23.0-26.5	Gray Weathered Shale							14	Visual	
FOHL STREET (Co. Rd. 252)												
32+00	10'Lt	0.0-5.0	0	4	3	38	55	42	11	19	A-7-5	*
		5.0-9.0	Coal							—	Visual	
		9.0-14.0	51	5	5	12	27	40	16	27	A-6b	
36+00	10'Lt	0.0-5.0	0	5	9	50	36	32	4	24	A-4b	*
		5.0-8.0	22	4	21	29	24	30	9	21	A-4a	
39+00	10'Lt	0.0-5.0	26	5	11	27	31	29	6	15	A-4a	
		5.0-9.0	Brown Weathered Sandstone							9	Visual	
43+00	10'Lt	0.0-6.0	0	2	7	56	35	34	11	35	A-6a	*
		6.0-12.0	20	4	16	28	32	30	6	25	A-4a	
		12.0-17.0	0	4	3	34	59	44	12	22	A-7-5	
47+00	10'Lt	0.0-5.0	45	7	4	17	27	42	11	17	A-7-5	*
		5.0-10.0	Brown & Gray Weathered Shale							15	Visual	*
50+00	10'Rt	0.0-6.0	34	8	16	23	19	29	3	29	A-4a	
		6.0-10.0	26	2	6	27	39	34	12	13	A-6a	
53+00	10'Lt	0.0-4.0	19	10	20	22	29	28	7	25	A-4a	
		4.0-9.0	Brownish-Gray Weathered Shale							13	Visual	
		9.0-13.0	Gray Weathered Shale							14	Visual	
		13.0-19.0	Gray Weathered Shale							12	Visual	
63+00	8'Rt	0.0-4.0	10	8	28	29	25	NP	NP	18	A-4a	*
		4.0-9.0	45	17	7	11	20	37	13	16	A-2-6	
		9.0-13.0	Brown Weathered Shale							14	Visual	

SOIL PROFILE
TUSCARAWAS-STARK COS.
TUS-IR 77-40.55
STA-IR 77-0,00
OHIO STATE HIGHWAY TESTING LABORATORY
1620 W. BROAD ST. COLUMBUS, OHIO

4
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Core Sample

DRIVE SAMPLE SOIL TEST DATA

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

STATION & OFFSET		DEPTH FROM-TO	% AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	SHTD CLASS.
					IR 77						
1+04	35'Rt	2.5-3.5	0	0	10	46	44	33	11	15	A-6a
		5.0-6.0	0	1	13	50	36	38	10	22	A-4b
		7.5-8.5	0	3	56	13	18			23	A-4a
		13.0-14.0	46	31	14	- 9 -				18	A-1-b
		15.0-16.0	Brown Gravel								Visual
		17.5-18.5	77	8	10	- 5 -				16	A-1-b
		20.0-21.0	Brown Gravel								Visual
		30.0-31.0	15	38	38	- 9 -				20	A-3a
		35.0-36.0	0	2	1	63	34			34	A-4b
		40.0-41.0	0	0	0	54	46			31	A-4b
		45.0-46.0	15	12	36	13	24			26	A-3a
		50.0-51.0	14	9	61	6	10			22	A-3a
		55.0-56.0	12	8	63	4	11			26	A-3a
		60.0-61.0	14	4	33	15	9			23	A-3a
15+52	77'Rt	3.0-6.0	Brown Sand								Visual
		10.0-11.0	73	17	7	- 3 -				9	A-1-a
		13.0-16.0	Brown Gravelly Sand								Visual
		20.0-21.0	Brown Gravelly Sand								Visual
		25.0-26.0	Brown Gravelly Sand								Visual
		30.0-31.0	Dark Brown Gravelly Sand								Visual
		35.0-36.0	Brown Sandy Gravel								Visual
		40.0-41.0	Brown Sand								Visual
		45.0-46.0	Brown Sand								Visual
		50.0-51.0	Brown Sand								Visual
		55.0-56.0	Brown Gravelly Sand								Visual
		60.0-61.0	Brown Sand								Visual
		65.0-66.0	0	1	56	19	20	47	16	13	A-4a
		70.0-71.0	0	1	2	30	67	47	18	20	A-7-5
16+37	37'Rt	20.0-21.0	0	1	68	- 7 -				21	A-3
		25.0-26.0	0	2	38	- 9 -				24	A-3
		30.0-31.0	11	34	49	- 6 -				19	A-3
		35.0-36.0	Brown Sand								Visual
		40.0-41.0	29	8	18	28	34	29	8	14	A-4a
43+38	44'Rt	3.0-6.0	0	1	1	23	75	30	17	30	A-7-5
		7.5-8.5	58	10	12	20	17			13	A-4a
		10.0-11.0	16	3	11	49	21			28	A-4a
		12.5-13.5	9	5	11	46	29			25	A-4a
		15.0-16.0	15	4	12	44	25			26	A-4a
		17.5-18.5	41	7	11	24	17	27	5	19	A-4a
		20.0-21.0	40	10	13	19	18	28	4	17	A-4a
		22.5-23.5	58	7	10	12	13	23	3	15	A-1-b
		25.0-26.0	51	15	9	12	13	23	6	15	A-1-b
		30.0-31.0	34	41	12	- 13 -				17	A-3a
		35.0-36.0	38	9	11	22	18	26	10	16	A-2-4
		40.0-41.0	28	5	11	33	23	30	7	20	A-4a
		45.0-46.0	20	3	10	30	37	29	8	22	A-4a
		50.0-51.0	27	6	5	19	43	36	13	22	A-6a

Stop Here

STATION & OFFSET		DEPTH FROM-TO	% AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	SHTD CLASS.
91+00	OL	5.0-6.0	25	2	3	22	48	73	30	41	A-7-5
117+17	33'Lt	5.0-6.0	14	6	9	31	40	24	6	17	A-4a
		7.5-8.5	20	6	8	30	36	41	11	20	A-7-5
		10.0-11.0	28	9	6	30	27	32	10	18	A-4a
		12.5-13.5	15	5	5	50	25	32	10	20	A-6a
		15.0-16.0	14	5	3	51	27	28	11	17	A-7-5
		17.5-18.5	32	5	7	33	23	28	6	21	A-7-6
180+50	OL	5.0-6.0	0	11	13	43	33	23	8	20	A-4a
195+79	29'Rt	2.5-3.5	22	2	2	20	34	39	12	21	A-6a
		5.0-6.0	0	12	10	18	60	39	14	24	A-6a
		7.5-8.5	56	9	5	9	23	-	-	29	A-2-4
		10.0-11.0	42	9	8	10	31	33	11	27	A-6a
203+50	OL	5.0-6.0	22	8	4	40	26	33	8	15	A-4a
		10.0-10.5	31	3	5	22	37	33	12	18	A-6a
243+00	OL	5.0-6.0	0	6	12	39	43	40	9	18	A-5
255+40	OL	5.0-6.0	0	1	32	16	31	NP	NP	22	A-4a
					SOUTHBOUND LANES IR 77						
-1+03	6'Rt	2.5-3.5	0	0	40	41	19	NP	NP	23	A-4a
		5.0-6.0	0	0	27	47	26	NP	NP	23	A-4a
		7.5-8.5	0	2	21	45	32	31	9	28	A-4a
		10.0-11.0	Gray Sandy Gravel								Visual
		12.5-13.5	69	12	13	- 6 -		NP	NP	12	A-1-a
		20.0-21.0	21	24	45	- 10 -		NP	NP	19	A-3
		25.0-26.0	Brown Sand							-	Visual
		30.0-31.0	Brown Sand							-	Visual
		35.0-36.0	53	21	18	- 8 -		NP	NP	15	A-1-a
		40.0-41.0	0	0	1	31	68	33	10	32	A-4a
		45.0-46.0	22	7	47	11	13	NP	NP	28	A-3a
		50.0-51.0	7	10	54	13	16	NP	NP	61	A-3a
		55.0-56.0	Gray Gravel								Visual
		60.0-61.0	0	1	18	56	25	NP	NP	27	A-4b
		65.0-65.5	60	3	14	9	14	NP	NP	19	A-1-b
15+53	35'Lt	5.0-6.0	46	37	16	- 1 -		NP	NP	17	A-1-b
		10.0-11.0	Brown Sand							-	Visual
		15.0-16.0	Brown Sand							-	Visual
		20.0-21.0	Brown Gravelly Sand							-	Visual
		25.0-26.0	Brownish-Gray Gravelly Sand							-	Visual
		30.0-31.0	Brown Gravelly Sand							-	Visual
		35.0-36.0	Brown Sand							-	Visual
		40.0-41.0	Brown Sand							-	Visual
		45.0-46.0	Brown Sand							-	Visual
		50.0-51.0	Brown Gravelly Sand							-	Visual
		55.0-56.0	Brown Gravelly Sand							-	Visual
		60.0-61.0	54	7	21	6	12	NP	NP	17	A-1-b

STATION & OFFSET		DEPTH FROM-TO	% AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	SHTD CLASS.
17+16	05'Rt	2.5-3.5	56	8	6	17	13	-	-	18	A-2-4
		5.0-6.0	41	2	1	28	28	NP	NP	13	A-4a
		7.5-8.5	44	1	1	24	30			20	A-4a
		10.0-11.0	24	2	1	28	45	37	10	19	A-4a
		12.5-13.5	40	1	3	21	35	-	-	17	A-4a
		15.0-16.0	0	1	5	39	55	24	11	21	A-6a
		17.5-18.0	37	1	11	32	19	24	4	16	A-4a
44+49	35'Lt	3.0-6.0	34	4	5	21	36	NP	NP	18	A-4a
		7.5-8.5	0	2	11	28	59	NP	NP	28	A-4b
		10.0-11.0	0	4	9	24	63	NP	NP	28	A-4b
		12.5-13.5	0	2	5	24	69	NP	NP	28	A-4b
		15.0-16.0	17	3	4	28	48	NP	NP	23	A-4b
		17.5-18.5	0	3	5	37	55	NP	NP	29	A-4b
		20.0-21.0	29	3	11	30	27	NP	NP	14	A-4a
		22.5-23.5	0	3	12	37	48	NP	NP	17	A-4a
		25.0-26.0	0	3	7	32	58	NP	NP	23	A-4b
		30.0-31.0	44	3	6	30	17	NP	NP	13	A-4a
		35.0-36.0	62	3	9	35	31	27	7	23	A-4a
		40.0-41.0	61	3	9	12	11	-	-	11	A-1-a
		45.0-46.0	30	3	5	25	35	27	4	19	A-4a
		50.0-51.0	Brown Sandy Silt							-	Visual
		55.0-56.0	Gray Cobbles							-	Visual
		60.0-61.0	18	1	2	43	36	31	7	15	A-4a
					FOHL ST. (Twp. Rd. 232)						
50+77	32'Rt	2.5-3.5	Brownish-Gray Clayey Silt								Visual
		5.0-6.0	27	10	10	18	35	3	9	30	A-4a
		7.5-8.1	30	1	18	28	25	24	8	13	A-4a

STATION & OFFSET		DEPTH FROM-TO	% AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	SHTL CLASS.
					IR 77						
1+04	35'Rt	2.5-3.5	0	0	10	46	44	38	11	45	A-6a
		5.0-6.0	0	1	13	50	36	36	10	23	A-4b
		7.5-8.5	0	9	55	18	18	NP	NP	26	A-4a
		13.0-14.0	46	31	14	- 9 -		NP	NP	18	A-1-b
		15.0-16.0	Brown Gravel								Visual
		17.5-18.5	77	8	10	- 5 -		NP	NP	16	A-1-b
		20.0-21.0	Brown Gravel								Visual
		30.0-31.0	15	38	38	- 9 -		NP	NP	20	A-3a
		35.0-36.0	0	2	1	63	34	NP	NP	34	A-4b
		40.0-41.0	0	0	0	54	46	NP	NP	31	A-4b
		45.0-46.0	15	12	56	8	9	NP	NP	26	A-3a
		50.0-51.0	14	9	61	6	10	NP	NP	22	A-3a
		55.0-56.0	12	8	65	4	11	NP	NP	28	A-3a
		60.0-61.0	14	4	58	15	9	NP	NP	23	A-3a
15+52	77'Rt	5.0-6.0	Brown Sand							-	Visual
		10.0-11.0	73	17	7	- 3 -		NP	NP	9	A-1-a
		15.0-16.0	Brown Gravelly Sand							-	Visual
		20.0-21.0	Brown Gravelly Sand							-	Visual
		25.0-26.0	Brown Gravelly Sand							-	Visual
		30.0-31.0	Dark Brown Gravelly Sand							-	Visual
		35.0-36.0	Brown Sandy Gravel							-	Visual
		40.0-41.0	Brown Sand							-	Visual
		45.0-46.0	Brown Sand							-	Visual
		50.0-51.0	Brown Sand							-	Visual
		55.0-56.0	Brown Gravelly Sand							-	Visual
		60.0-61.0	Brown Sand							-	Visual
		65.0-66.0	0	5	56	19	20	NP	NP	19	A-4a
		70.0-71.0	0	1	2	30	67	47	16	20	A-7-5
16+37	37'Rt	20.0-21.0	0	1	92	- 7 -		NP	NP	21	A-3
		25.0-26.0	0	2	93	- 5 -		NP	NP	24	A-3
		30.0-31.0	11	34	49	- 6 -		NP	NP	19	A-3
		35.0-36.0	Brown Sand								Visual
		40.0-41.0	29	31	28	28	34	29	8	14	A-4a
43+38	44'Rt	5.0-6.0	0	1	1	23	75	50	17	30	A-7-5
		7.5-8.5	32	10	12	29	17	26	1	18	A-4a
		10.0-11.0	12	3	11	49	25	NP	NP	26	A-4a
		12.5-13.5	9	5	11	46	29	NP	NP	25	A-4a
		15.0-16.0	15	4	12	44	25	NP	NP	26	A-4a
		17.5-18.5	41	7	11	24	17	27	5	19	A-4a
		20.0-21.0	40	10	13	19	18	28	4	17	A-4a
		22.5-23.5	58	7	10	12	13	25	3	15	A-1-b
		25.0-26.0	51	15	9	12	13	28	6	15	A-1-b
		30.0-31.0	34	41	12	- 13 -		NP	NP	17	A-3a
		35.0-36.0	52	9	11	12	16	NP	NP	16	A-2-4
		40.0-41.0	23	5	11	28	33	30	7	20	A-4a
		45.0-46.0	20	3	10	30	37	29	8	22	A-4a
		50.0-51.0	27	6	5	19	43	36	13	22	A-6a

Stop Here

STATION & OFFSET		DEPTH FROM-TO	% AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	SHTL CLASS.
91+00	OL	5.0-6.0	25	2	3	22	48	73	30	41	A-7-5
117+17	38'Lt	3.0-6.0	14	6	9	31	40	34	6	17	A-4a
		7.5-8.5	20	6	9	30	36	41	11	20	A-7-5
		10.0-11.0	28	8	6	28	30	37	10	18	A-4a
		12.5-13.5	15	5	12	30	38	39	12	20	A-6a
		15.0-16.0	14	2	3	15	66	52	22	17	A-7-5
		17.5-18.5	52	2	1	7	38	82	34	21	A-7-6
188+50	OL	5.0-6.0	0	11	13	43	33	28	8	20	A-4a
195+79	29'Rt	2.5-3.5	22	2	2	20	54	39	12	21	A-6a
		5.0-6.0	0	12	10	18	60	39	14	24	A-6a
		7.5-8.5	56	8	5	8	23	-	-	29	A-2-4
		10.0-11.0	42	9	8	10	31	39	11	27	A-6a
205+50	OL	5.0-6.0	22	6	4	40	28	33	8	15	A-4a
		10.0-10.5	31	5	5	22	37	39	12	18	A-6a
243+00	OL	5.0-6.0	0	6	12	39	43	40	9	18	A-5
255+40	OL	5.0-6.0	0	1	52	16	31	NP	NP	22	A-4a
					SOUTHBOUND LANES IR 77						
-1+03	6'Rt	2.5-3.5	0	0	40	41	19	NP	NP	23	A-4a
		5.0-6.0	0	0	27	47	26	NP	NP	28	A-4a
		7.5-8.5	0	2	21	45	32	31	9	26	A-4a
		10.0-11.0	Gray Sandy Gravel							-	Visual
		12.5-13.5	69	12	13		- 6 -	NP	NP	12	A-1-a
		20.0-21.0	21	24	45		- 10 -	NP	NP	19	A-3
		25.0-26.0	Brown Sand							-	Visual
		30.0-31.0	Brown Sand							-	Visual
		35.0-36.0	53	21	18		- 8 -	NP	NP	15	A-1-a
		40.0-41.0	0	0	1	31	68	33	10	32	A-4a
		45.0-46.0	22	7	47	11	13	NP	NP	28	A-3a
		50.0-51.0	7	10	54	13	16	NP	NP	61	A-3a
		55.0-56.0	Gray Gravel								Visual
		60.0-61.0	0	1	18	56	25	NP	NP	27	A-4b
		65.0-65.5	60	3	14	9	14	NP	NP	19	A-1-b
15+53	35'Lt	5.0-6.0	46	37	16		- 1 -	NP	NP	17	A-1-b
		10.0-11.0	Brown Sand							-	Visual
		15.0-16.0	Brown Sand							-	Visual
		20.0-21.0	Brown Gravelly Sand							-	Visual
		25.0-26.0	Brownish-Gray Gravelly Sand							-	Visual
		30.0-31.0	Brown Gravelly Sand							-	Visual
		35.0-36.0	Brown Sand							-	Visual
		40.0-41.0	Brown Sand							-	Visual
		45.0-46.0	Brown Sand							-	Visual
		50.0-51.0	Brown Gravelly Sand							-	Visual
		55.0-56.0	Brown Gravelly Sand							-	Visual
		60.0-61.0	54	7	21	6	12	NP	NP	17	A-1-b

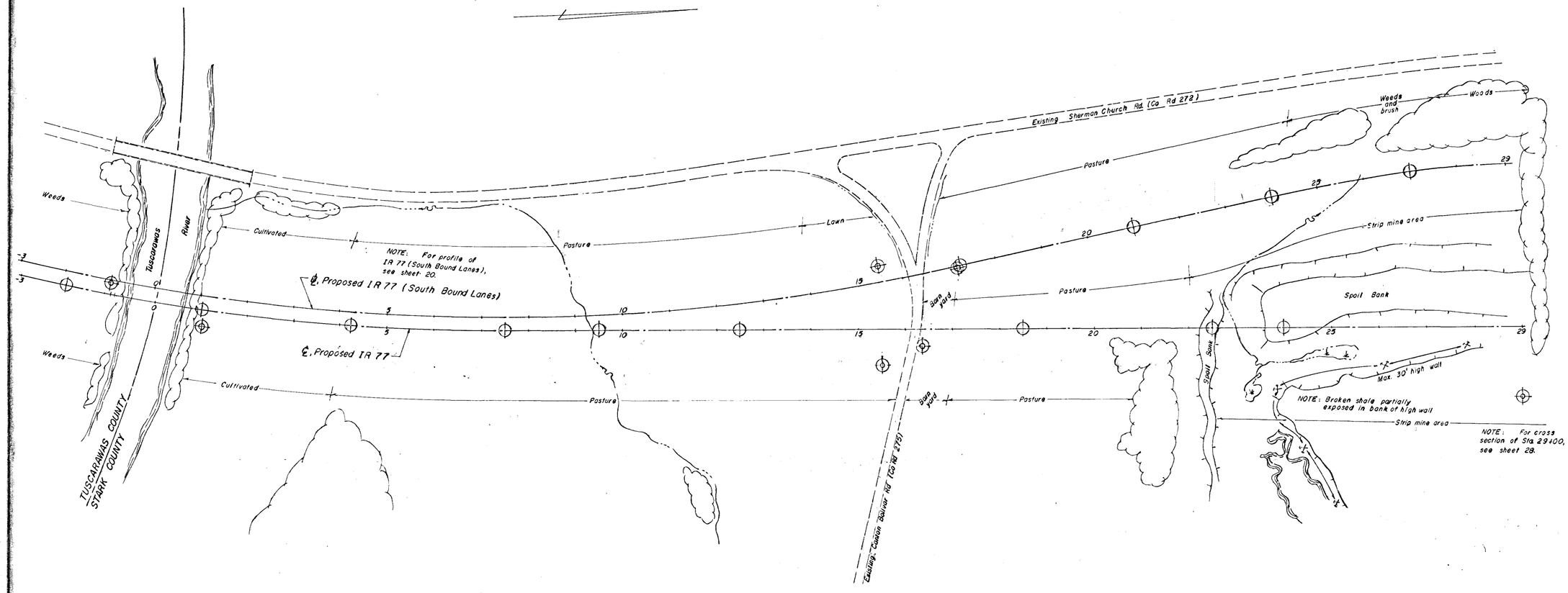
Tc.

STATION & OFFSET		DEPTH FROM-TO	% AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	SHTL CLASS.
17+16	05'Rt	2.5-3.5	56	6	6	17	15	-	-	18	A-2-4
		5.0-6.0	41	2	1	28	28	29	5	21	A-4a
		7.5-8.5	44	1	1	24	30	35	6	20	A-4a
		10.0-11.0	24	2	1	28	35	37	10	18	A-4a
		12.5-13.5	40	1	2	21	36	-	-	17	A-4a
		15.0-16.0	0	1	5	49	45	33	11	11	A-6a
		17.5-18.0	37	1	11	32	19	24	4	16	A-4a
44+49	35'Lt	5.0-6.0	34	4	5	21	36	35	10	32	A-4a
		7.5-8.3	0	2	11	58	29	NP	NP	26	A-4b
		10.0-11.0	0	4	9	64	23	NP	NP	26	A-4b
		12.5-13.5	0	2	5	64	29	NP	NP	33	A-4b
		15.0-16.0	17	3	4	52	24	NP	NP	23	A-4b
		17.5-18.5	0	2	5	67	26	NP	NP	29	A-4b
		20.0-21.0	29	6	11	30	24	NP	NP	14	A-4a
		22.5-23.5	26	3	12	37	22	NP	NP	17	A-4a
		25.0-26.0	0	2	3	73	22	31	6	28	A-4b
		30.0-31.0	44	5	6	30	15	NP	NP	23	A-4a
		35.0-36.0	22	6	9	35	28	31	7	25	A-4a
		40.0-41.0	61	3	8	12	11	-	-	19	A-1-a
		45.0-46.0	30	3	2	25	35	27	4	32	A-4a
		50.0-51.0	Brown Sandy Silt							-	Visual
		55.0-56.0	Gray Cobbles							-	Visual
		60.0-61.0	16	1	2	43	38	31	7	15	A-4a
			FOHL ST. (Twp. Rd. 252)								
50+77	32'Rt	2.5-3.5	Brownish-Gray Clayey Silt							-	Visual
		5.0-6.0	27	10	10	18	35	3	9	30	A-4a
		7.5-8.1	30	1	18	26	25	24	8	13	A-4a

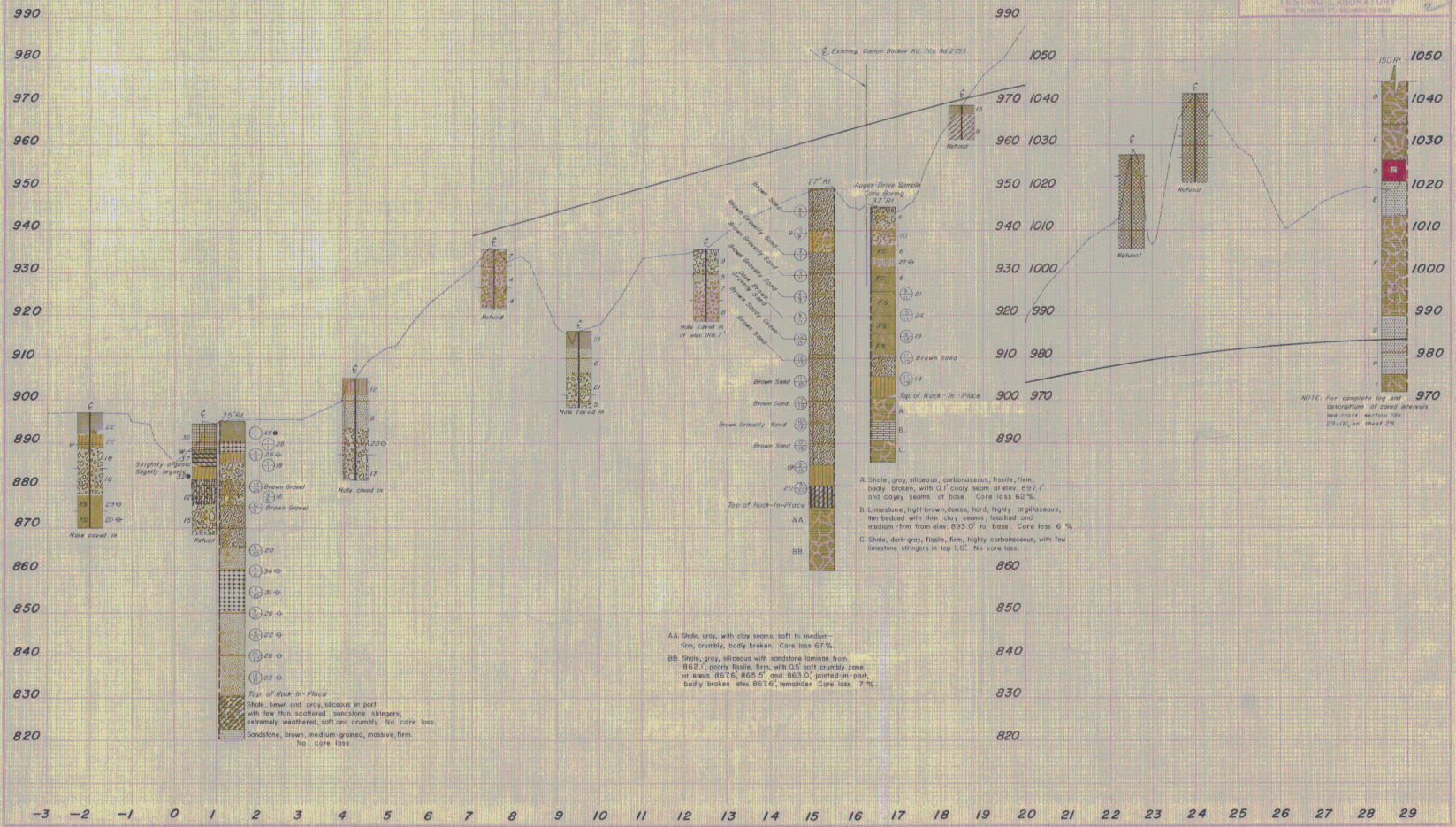
Tuscarawas-Stark Cos. TUS-IR 77-40.55 STA-IR 77-0.00

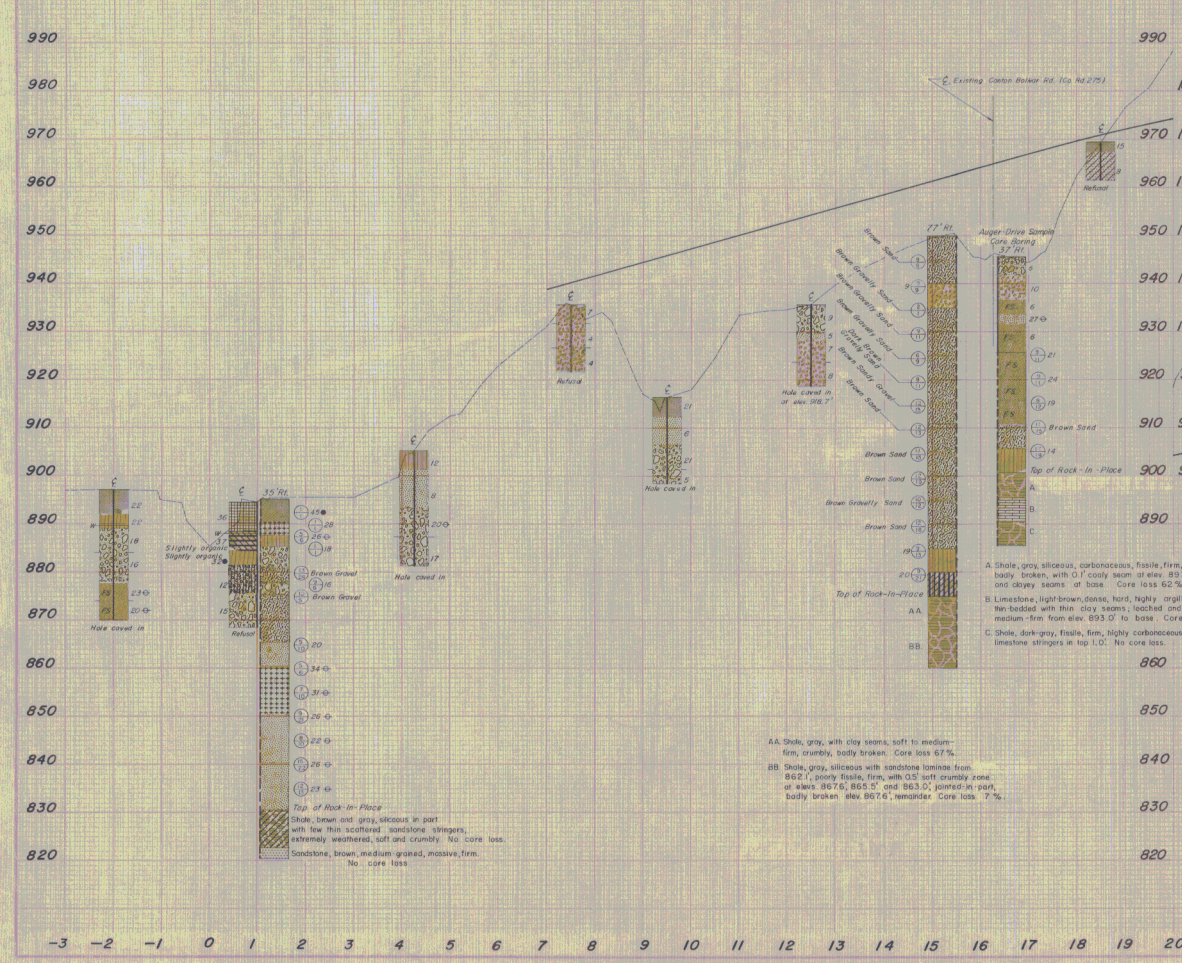
SOIL PROFILE
TUSCARAWAS-STARK COS.
TUS-IR 77-40.55
STA-IR 77-0.00
OHIO STATE HIGHWAY
TESTING LABORATORY
COLUMBUS OHIO

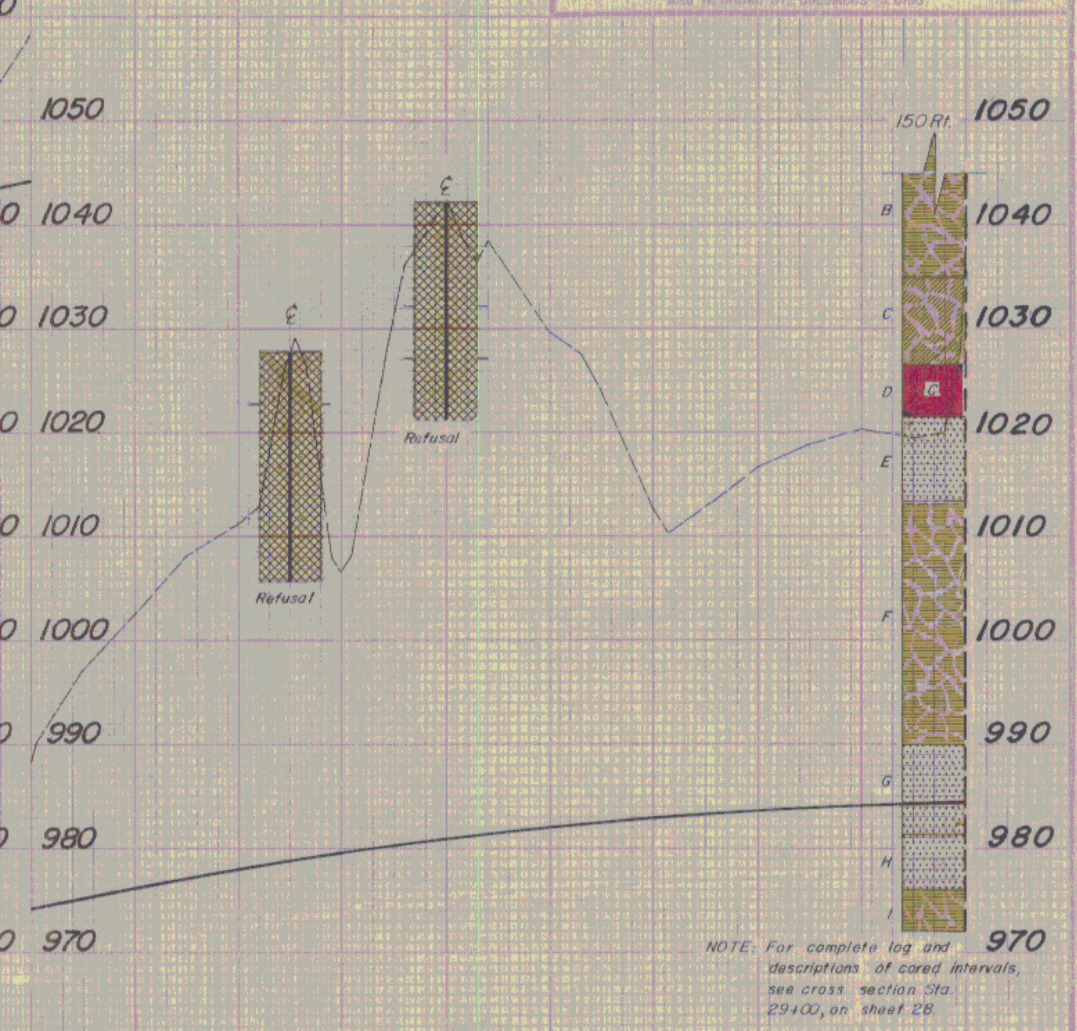
5
48



SOIL PROFILE
TUSCARAWAS · STARK COS.
TUS-IR 77-40.55
STA-IR77-0.00
6
48
OHIO STATE HIGHWAY TESTING LABORATORY




℄ Existing Clinton Bolivar Rd. (Co. Rd. 275)
Refusal
Hole caved in
Hole caved in at elev. 878.7'
Hole caved in
Refusal
Slightly organic
Brown Gravel
Brown Gravel
Refusal
15' Rt.
Top of Rock-In-Place
Shale, brown and gray, siliceous in part with few thin scattered sandstone stringers, extremely weathered, soft and crumbly. No core loss.
Sandstone, brown, medium grained, massive, firm. No core loss
77' Rt.
Brown Sand
Brown Gravelly Sand
Brown Gravelly Sand
Brown Gravelly Sand
Brown Sand
Brown Sandy Gravel
Brown Sand
Brown Sand
Brown Sand
Brown Gravelly Sand
Brown Sand
Top of Rock-In-Place
AA.
BB.
Auger-Drive Sample Core Boring 32' Rt.
Brown Sand
Top of Rock-In-Place
A.
B.
C.
A. Shale, gray, siliceous, carbonaceous, fissile, firm, badly broken, with 0.1' coaly seam at elev. 89 and clayey seams at base. Core loss 62 %
B. Limestone, light-brown, dense, hard, highly argil thin-bedded with thin clay seams; leached and medium-firm from elev. 893.0' to base. Core
C. Shale, dark-gray, fissile, firm, highly carbonaceous limestone stringers in top 1.0'. No core loss.
AA. Shale, gray, with clay seams, soft to medium-firm, crumbly, badly broken. Core loss 67 %.
BB. Shale, gray, siliceous with sandstone laminae from 862.1', poorly fissile, firm, with 0.5' soft crumbly zone at elevs. 867.6', 865.5' and 863.0', jointed in part, badly broken elev. 867.6', remainder. Core loss 7 %.
990
980
970
960
950
940
930
920
910
900
890
880
870
860
850
840
830
820
-3
-2
-1
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20



,firm,
v. 897.7'
62 %.

argillaceous,
d and
Core loss 6 %.

aceous, with few
s.

20 21 22 23 24 25 26 27 28 29

SOIL PROFILE
TUSCARAWAS-STARK COS.
TUS-IR-77-40.55
STA-IR 77-0.00
OHIO STATE HIGHWAY
TESTING LABORATORY
COLUMBUS OHIO
7
48
3

℄ Proposed IR 77 (South Bound Lanes)

NOTE: For profile of IR 77 (South Bound Lanes), see sheet 21.

℄ Proposed IR 77

Existing Sherman Church Rd (Co Rd 272)

Pasture
Cultivated
Woods
Pond
Spoil Bank
Max 30' high wall
Strip mine area
Max 9' cuts
Cultivated
Converted
Residential
Existing Access Rd No. 1

CROSS SECTION INDEX	
STATION	SHEET
29+00	28
42+92	29
51+00	29
54+00	30

SOIL PROFILE

TUSCARAWAS - STARK COS.

TUS-IR77-40.55

STA-IR77-0.00

OHIO STATE HIGHWAY TESTING LABORATORY

1920 W. BROAD ST., COLUMBUS 23, OHIO

8/48

1050 1040 1030 1020 1010 1000 990 980 970 960 950 940 930 920 910 900 890 880 870

29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61

150' Rt.

℄

B C D E F G H I

Refusal

NOTE: For complete log and descriptions of cored intervals, see cross section Sta. 29+00, on sheet 29.

℄ Existing Access Rd. No. 1

℄

Brown sandy silt with sandstone fragments

B B

Refusal

℄

23 18 29 W 20 22

Refusal

℄

19 26 W 23 28 21 21

℄

44' Rt.

18 25 19 15 17 20 22

30 26 26 17 15 16 22

Top of Rock-In-Place

Shale, gray, slightly siliceous intervals, poorly fissile, firm, jointed and badly broken above elev. 885.7', broken-in-part in remainder. Core loss 4%.

℄

26 18 W 23 27 18 16

50' Rt.

22 7 14 8

Refusal Trace of organic

30' Lt.

39 24

Refusal (Boulders)

35' Lt.

15

Refusal

50' Rt.

24 22

Refusal

30' Lt.

20 16 13

Refusal

℄

24 20

Refusal

SOIL PROFILE
TUSCARAWAS-STARK COS.
TUS-IR 77-40.55
STA-IR 77-0.00
OHIO STATE HIGHWAY TESTING LABORATORY
COLUMBUS, OHIO

9
48
5

NOTE: For profile of IR 77 (South Bound Lanes), see sheet 22.

Existing Sherman Church Rd. (Co Rd 272)

℄ Proposed IR 77 (South Bound Lanes)

Woods

Sta. 67+87.62 Back = Station Equation
Sta. 68+00.00 Ahead

Weeds and brush

Strip mine area

Existing Access Rd. No. 2

Spoil Bank

Weeds & brush

Weeds and brush

Lawn

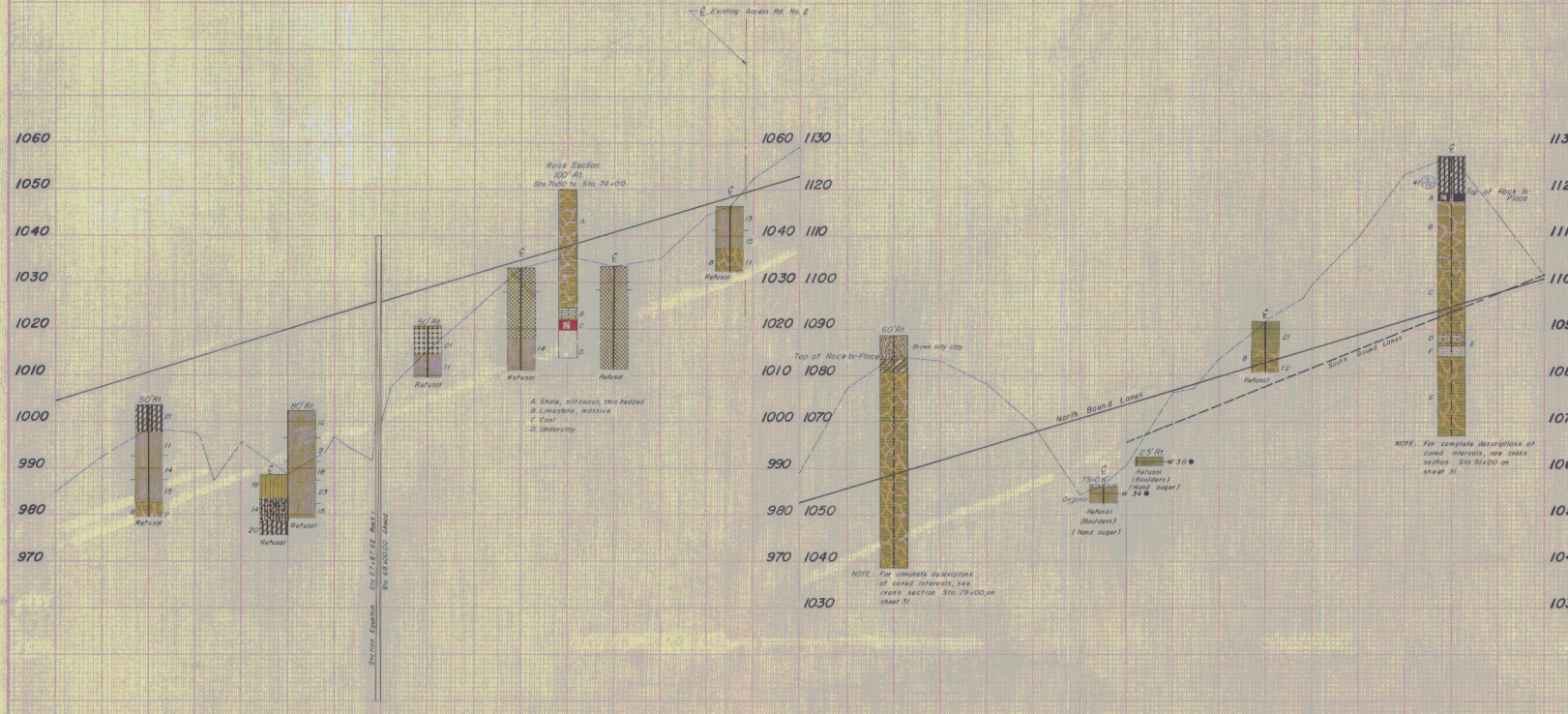
Spring

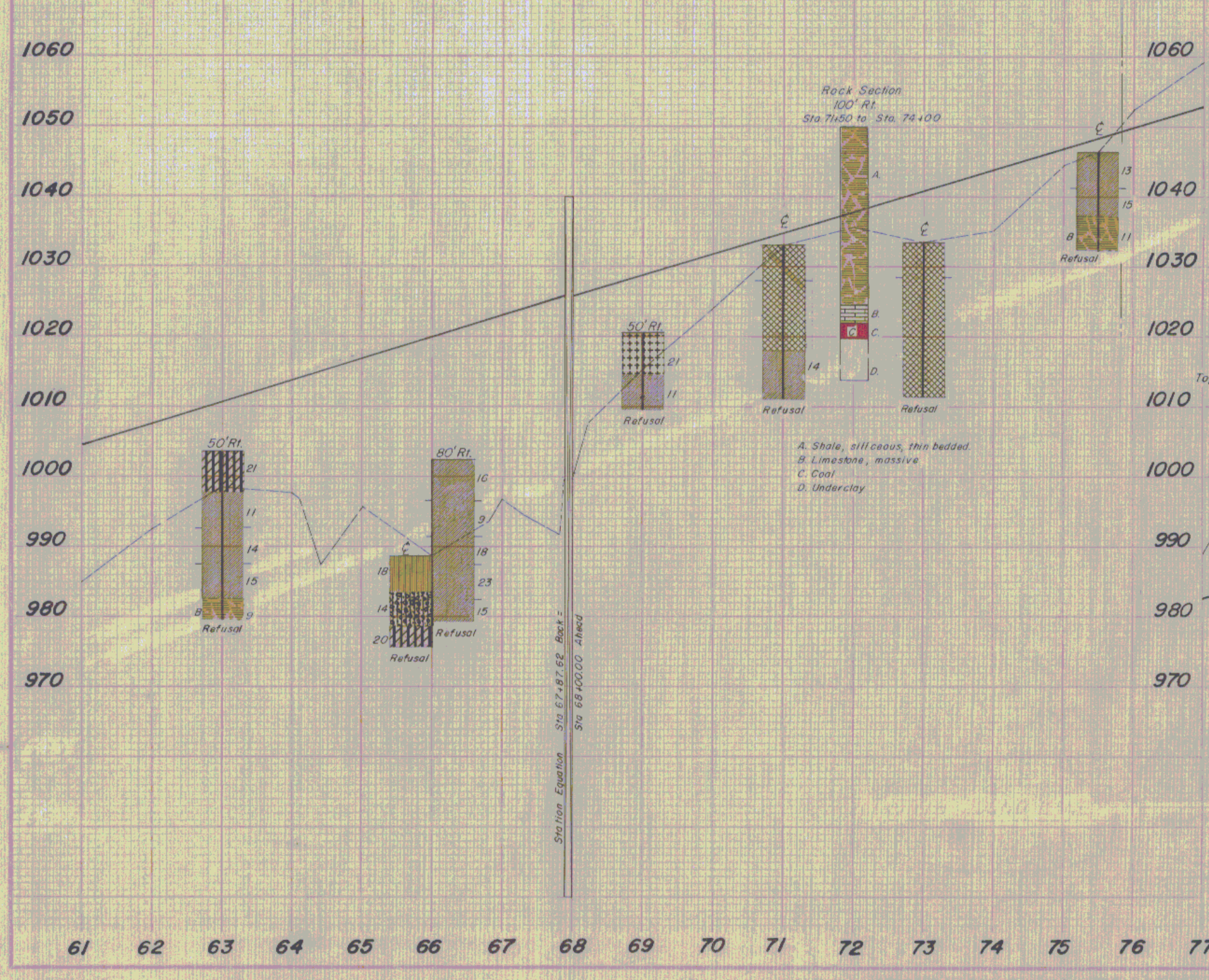
℄ Proposed IR 77

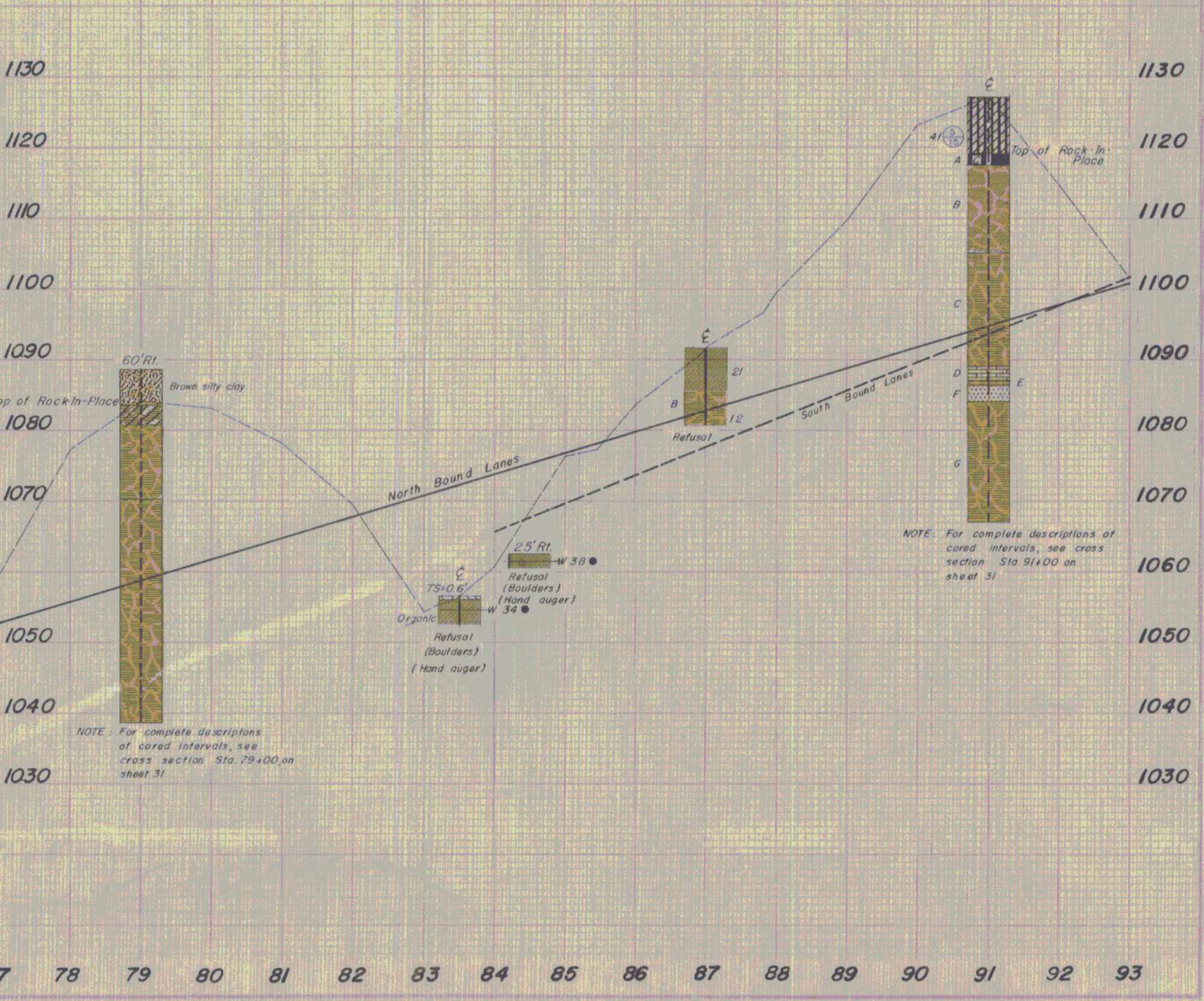
Garden

CROSS SECTION INDEX	
STATION	SHEET
66+00	30
79+00	31
91+00	31

SOIL PROFILE
TUSCARAWAS-STARK COS.
TUS-IR77-40.55
STA-IR77-0.00
OHIO STATE HIGHWAY TESTING LABORATORY
10
48
6




1060
1050
1040
1030
1020
1010
1000
990
980
970
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
Rock Section
100' Rt.
Sta. 71+50 to Sta. 74+00
℄
A.
B.
C.
D.
21
14
Refusal
℄
℄
℄
13
15
11
B
Refusal
50' Rt.
21
11
Refusal
50' Rt.
21
11
14
15
B
9
Refusal
80' Rt.
16
9
18
23
15
Refusal
℄
18
14
20
Refusal
A. Shale, siliceous, thin bedded.
B. Limestone, massive
C. Coal
D. Underclay
Station Equation
Sta 67+87.62 Back =
Sta 68+00.00 Ahead


1130
1120
1110
1100
1090
1080
1070
1060
1050
1040
1030
℄
41 5/15
A
Top of Rock-In-Place
B
C
D
E
F
G
NOTE: For complete descriptions of cored intervals, see cross section Sta. 91+00 on sheet 31
℄
21
B
12
Refusal
South Bound Lanes
North Bound Lanes
60'Rt.
Brown silty clay
op of Rock-In-Place
NOTE: For complete descriptons of cored intervals, see cross section Sta. 79+00 on sheet 31
℄
TS=0.6'
Organic
Refusal
(Boulders)
(Hand auger)
25'Rt.
W 38
Refusal
(Boulders)
(Hand auger)
W 34
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93

SOIL PROFILE
TUSCARAWAS-STARK COS.
TUS-IR 77-40.55
STA-IR 77-0.00
OHIO STATE HIGHWAY TESTING LABORATORY
COLUMBUS, OHIO

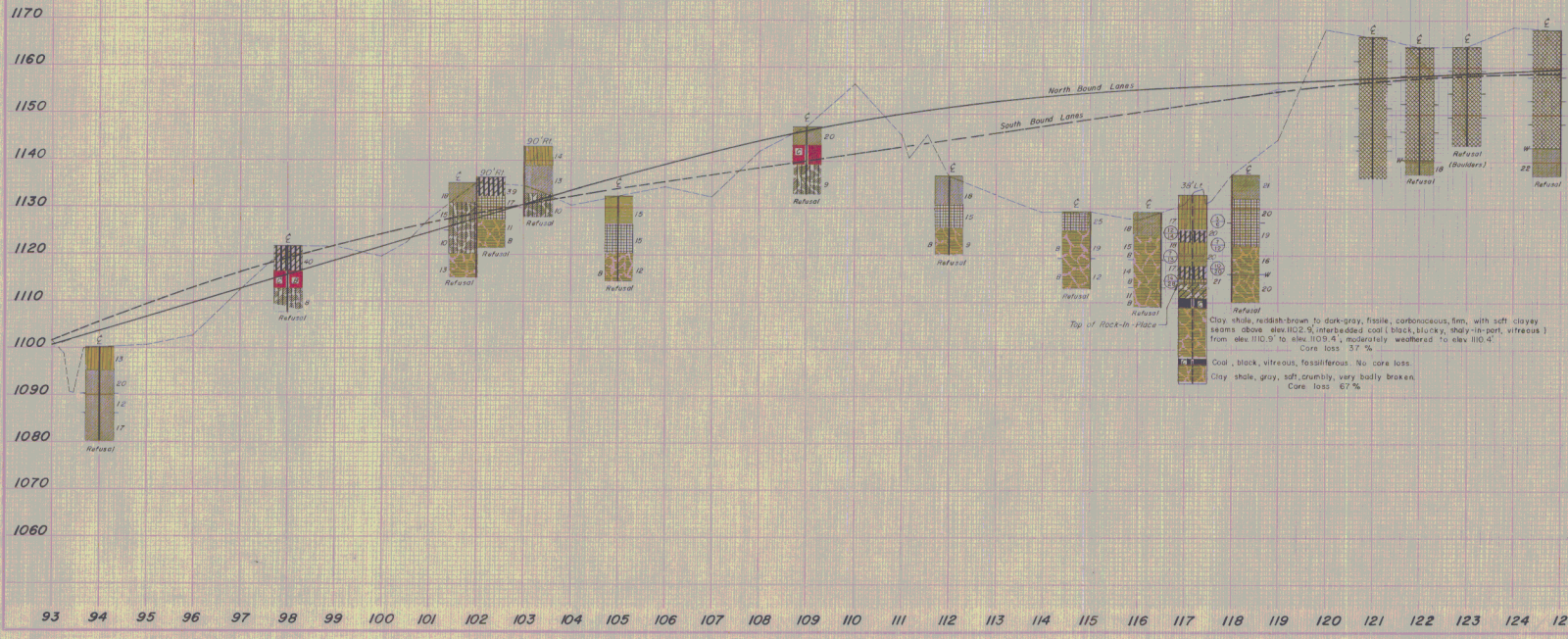
11
48
7

Weeds and brush
Lawn
NOTE: For complete profile of Relocated Sherman Church Rd. (Co. Rd. 272), see sheet 23.
℄, Relocated Sherman Church Rd. (Co. Rd. 272)
Weeds and brush
Lawn
Garden
Lawn
82
85
90
93
100
105
109
Weeds and brush
Lawn
Weeds & brush
Orchard
Lawn
Existing Sherman Church Rd (Co. Rd. 272)
93
95
100
105
℄, Proposed IR 77
110
113
120
125
Weeds and brush
Woods
Lawn
Weeds and brush
Strip mine area
Factory dump area
3' to 5' Rubber waste
Woods
Spoil bank
Strip mine area
Woods
Spoil bank
Weeds and brush
Weeds and brush
Strip mine area
Water approx. elev. 1036.3'
Water approx. elev. 1134.3'
Water approx. elev. 1142'
Existing Downing St (Co. Rd. 276)

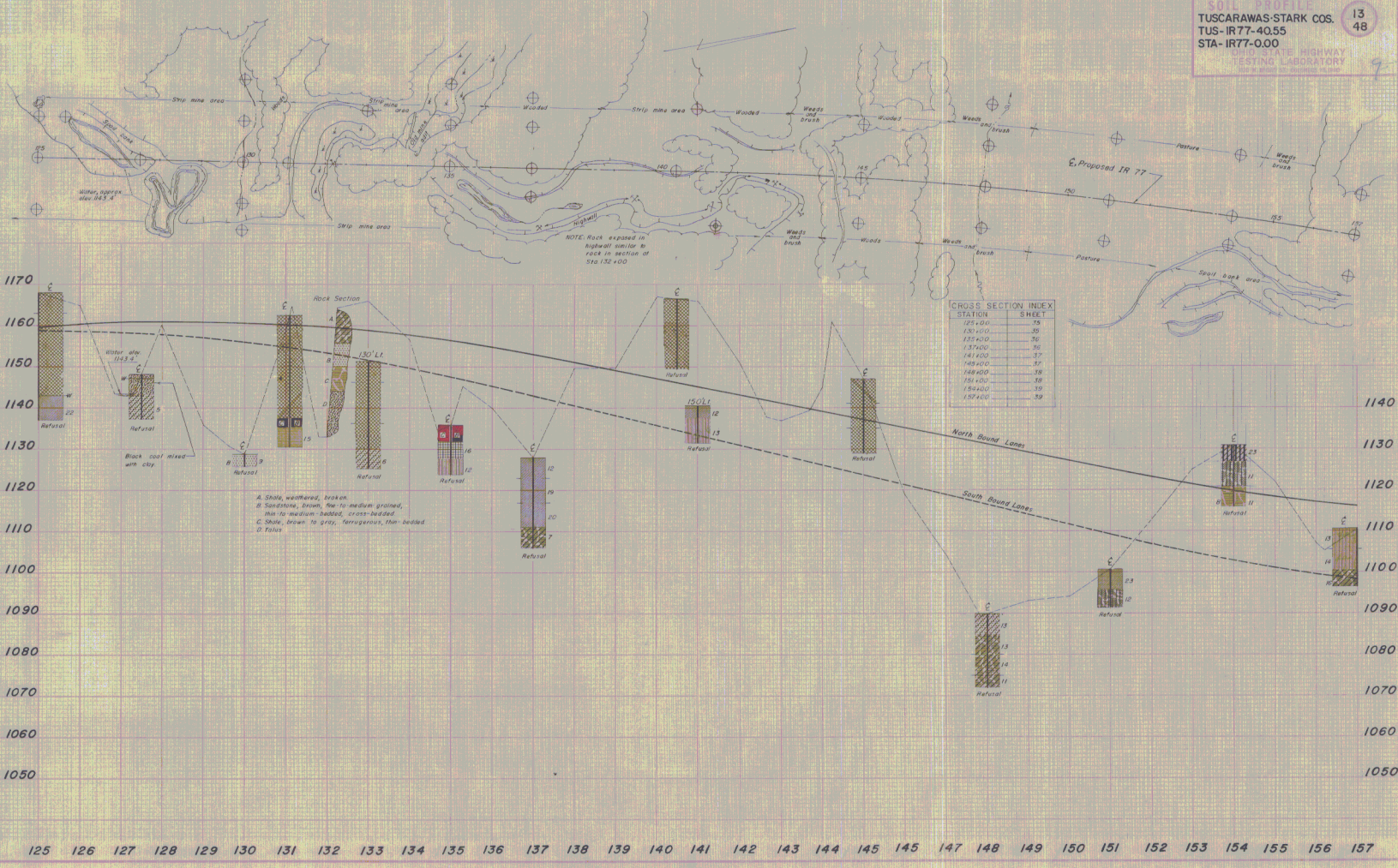
CROSS SECTION INDEX

STATION	SHEET
98+00	32
105+00	32
109+00	33
113+00	33
121+00	34
122+00	34
123+00	34
125+00	35

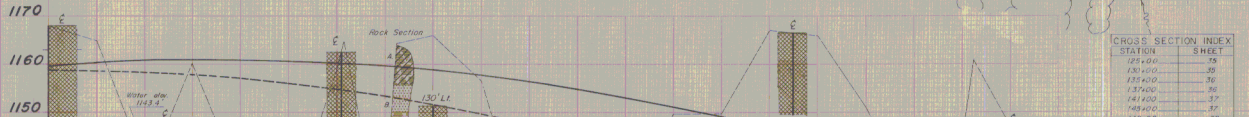
SOIL PROFILE
TUSCARAWAS-STARK COS.
TUS-IR77-40.55
STA-IR77-0.00
12
48
OHIO STATE HIGHWAY TESTING LABORATORY



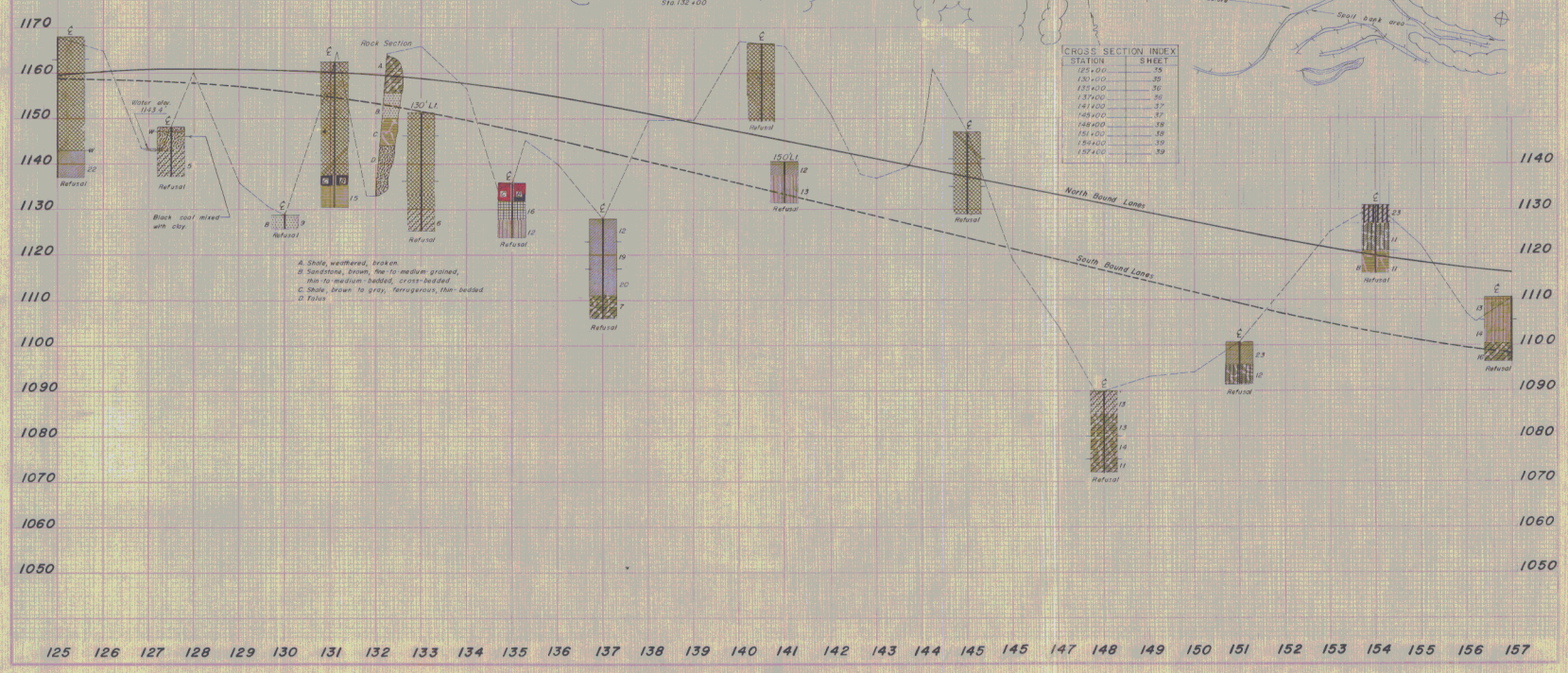
SOIL PROFILE
TUSCARAWAS-STARK COS. 13
TUS-IR77-40.55 48
STA-IR77-0.00
OHIO DEPARTMENT OF HIGHWAY
TESTING LABORATORY



SOIL PROFILE
TUSCARAWAS-STARK COS. 13
TUS-IR77-40.55 48
STA-IR77-0.00
OHIO STATE HIGHWAY
TESTING LABORATORY
100 W. Main St. Columbus 15, Ohio



CROSS SECTION INDEX	
STATION	SHEET
125+00	15
130+00	16
135+00	16
137+00	16
141+00	17
145+00	17


Sta 132+00
Spoil bank area
CROSS SECTION INDEX
STATION SHEET
125+00 35
130+00 35
135+00 36
137+00 36
141+00 37
145+00 37
148+00 38
151+00 38
154+00 39
157+00 39
Rock Section
A
B
C
D
130' Lt.
150' Lt.
Water elev. 1143.4
Black coal mixed with clay
A. Shale, weathered, broken.
B. Sandstone, brown, fine-to-medium grained, thin-to-medium-bedded, cross-bedded.
C. Shale, brown to gray, ferrugerous, thin-bedded.
D. Talus
North Bound Lanes
South Bound Lanes
Refusal
1170
1160
1150
1140
1130
1120
1110
1100
1090
1080
1070
1060
1050
125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 145 147 148 149 150 151 152 153 154 155 156 157

SOIL PROFILE

TUSCARAWAS-STARK COS.
TUS-IR77-40.55
STA-IR 77-0.00

OHIO STATE HIGHWAY TESTING LABORATORY
1620 W. BROAD ST. COLUMBUS 13, OHIO

14/48

10

Existing Seaman Rd. (Twp. Rd. 164)

Back = 167+19.55
Ahead = 166+66.22
Station Equation

Sta. 15+78.50-℄ Existing Seaman Rd.
Sta. 166+68.00-℄ Proposed IR 77

℄ Proposed IR 77

Woods
Cultivated
Woods
Pasture
Woods
Woods
Weeds and brush
Evergreens plantation
Orchard
Evergreens plantation
Weeds and brush
Woods
Strip mine area
Woods
Weeds and brush
Woods

NOTE: For complete profile of Seaman Rd. (Twp. Rd. 164), see sheet 24.

NOTE: Shale partially exposed in stream channel. Channel also contains many sandstone boulders.

CROSS SECTION INDEX	
STATION	SHEET
157+00	39
170+00	40
173+00	40
177+00	41
180+00	41
183+43	42
186+00	42

℄ Proposed Seaman Rd. (Twp. Rd. 164)

Rock Section
Weathered shale
Coal
Underclay

Proposed grade, Seaman Rd. (Twp. Rd. 164)

(Sta. 17+43.18' Lt. Proposed Seaman Rd. (Twp. Rd. 164) 142' Rt.
Brownish-gray gravelly silt
Top of Rock-In-Place

A.
B
C
D.
E.
F.
G.
H.
I.
J.

NOTE: For complete descriptions of cored intervals, see sheet 24

Sta. 167+19.55 Back = Sta. 166+66.22 Ahead

STATION EQUATION

North Bound Lanes
South Bound Lanes

℄ 13 14 16 Refusal
W 25 33 Refusal
℄ 8 22 13 Refusal
℄ 16 10 Refusal
℄ 12 Refusal
℄ 24 20 7 Refusal
℄ 11 23 7 Refusal
℄ 22 Refusal
℄ 22 16 16 W 14 33 Refusal

1170 1160 1150 1140 1130 1120 1110 1100 1090 1080 1070 1060

157 158 159 160 161 162 163 164 165 166 167 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188

SOIL PROFILE

TUSCARAWAS-STARK COS.
TUS-IR77-40.55
STA-IR 77-0.00

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

14
48

10

Existing Seeman Rd. (Twp. Rd. 164)

Woods | Cultivated | Woods | Pasture | Woods

Sta. 15+76.50-℄ Existing Seeman Rd.=
Sta. 166+68.00-℄ Proposed IR 77

167+19.55 Back = Station Equation
166+66.22 Ahead

℄ Proposed IR 77

152 160 165 167 170 175 180 185 188

Woods | Weeds and brush | Evergreen plantation | Orchard | Evergreen plantation | Weeds and brush | Woods | Strip mine area | Woods | Weeds and brush | Woods

NOTE: Shale partially exposed in stream channel. Channel also contains many sandstone boulders.

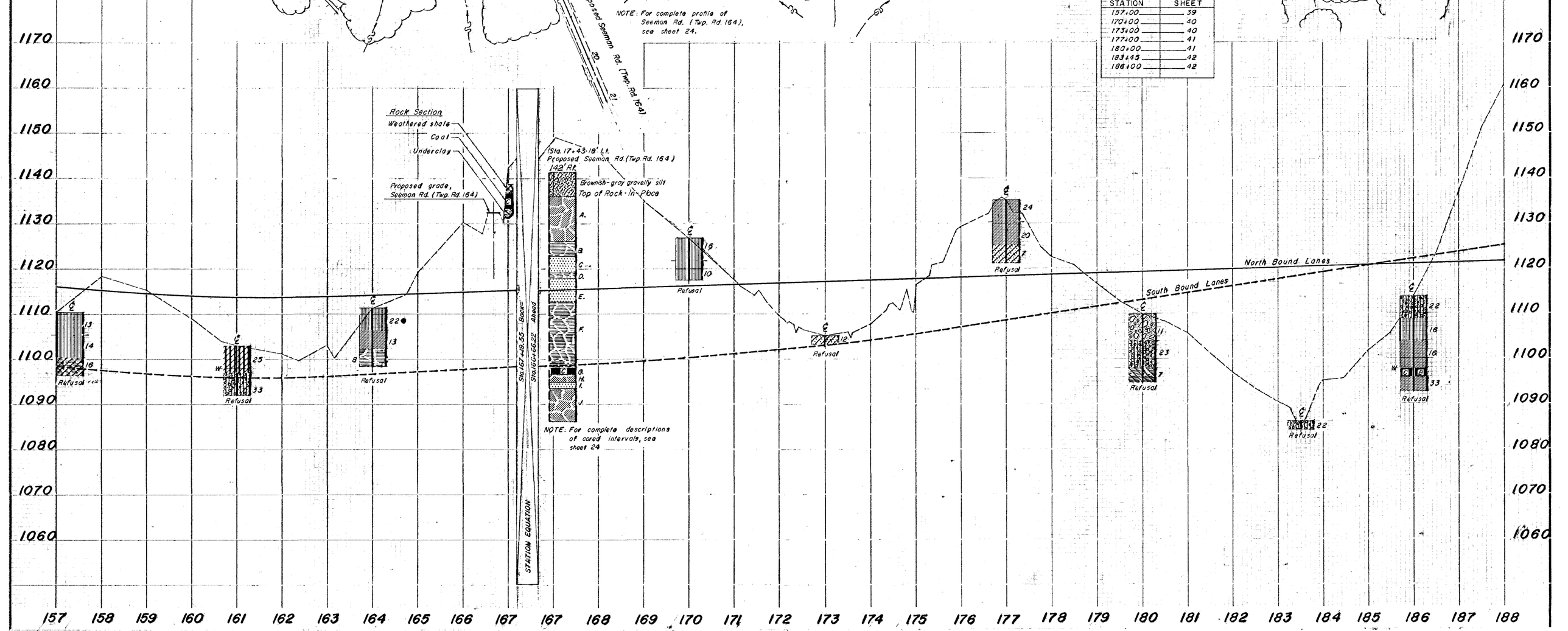
NOTE: For complete profile of Seeman Rd. (Twp. Rd. 164), see sheet 24.

℄ Proposed Seeman Rd. (Twp. Rd. 164)

CROSS SECTION INDEX	
STATION	SHEET
157+00	39
170+00	40
173+00	40
177+00	41
180+00	41
183+45	42
186+00	42

1170
1160

Rock Section
Weathered shale


NOTE: For complete profile of Seeman Rd. (Twp. Rd. 164), see sheet 24.
Proposed Seeman Rd. (Twp. Rd. 164)
STATION | SHEET
157+00 — 39
170+00 — 40
173+00 — 40
177+00 — 41
180+00 — 41
183+45 — 42
188+00 — 42
Rock Section
Weathered shale
Coal
Underclay
Proposed grade, Seeman Rd. (Twp. Rd. 164)
(Sta. 17+43.18' Lt. Proposed Seeman Rd. (Twp. Rd. 164) 142' Rt.
Brownish-gray gravelly silt
Top of Rock-In-Place
A.
B
C.
D.
E.
F.
G.
H.
I.
J.
NOTE: For complete descriptions of cored intervals, see sheet 24
Sta 167+48.55 Back = Sta 166+66.22 Ahead
STATION EQUATION
North Bound Lanes
South Bound Lanes
Refusal
1170
1160
1150
1140
1130
1120
1110
1100
1090
1080
1070
1060
157 158 159 160 161 162 163 164 165 166 167 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188

SOIL PROFILE
TUSCARAWAS-STARK COS.
TUS-IR 77-40.55
STA-IR 77-0.00
OHIO STATE HIGHWAY
TESTING LABORATORY
COLUMBUS, OHIO

15
48
11

Existing Bimler St. (Twp. Rd. 257)

Old mine cut

Residential

Residential

Weeds and brush

Cultivated

Cultivated

Lawn

Lawn

Woods

Strip mine area

Woods

Spoil bank

Water approx. elev. 1102.5'

Wooded

Spoil bank

Spoil bank

Strip mine area

Spoil bank

Strip mine area

Woods

Woods

Weeds and brush

Wooded

Wooded

Wooded

Wooded

Strip mine area

Woods

Woods

℄ Proposed IR 77

188

190

195

200

205

210

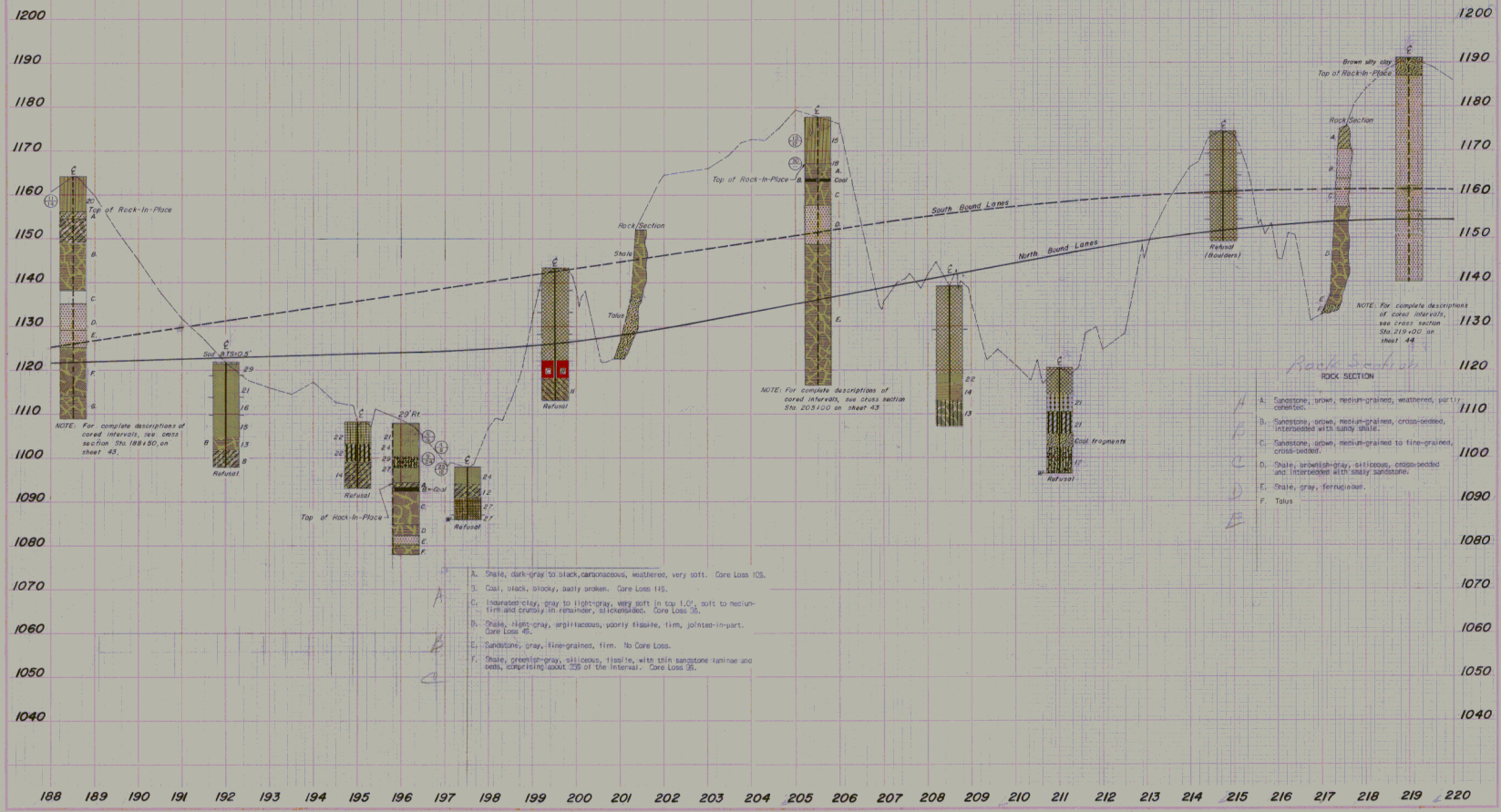
215

220

CROSS SECTION INDEX

STATION	SHEET
188+50	43
205+00	43
211+00	44
219+00	45

SOIL PROFILE
TUSCARAWAS-STARK COS. 16
TUS-IR 77-40.55 48
STA-IR 77-0.00
OHIO STATE HIGHWAY
TESTING LABORATORY
1600 W. BROAD ST. COLUMBUS 16, OHIO



SOIL PROFILE
TUSCARAWAS-STARK COS.
TUS-IR 77-40.55
STA-IR 77-0.00
OHIO STATE HIGHWAY
TESTING LABORATORY
COLUMBUS, OHIO

IVT 48

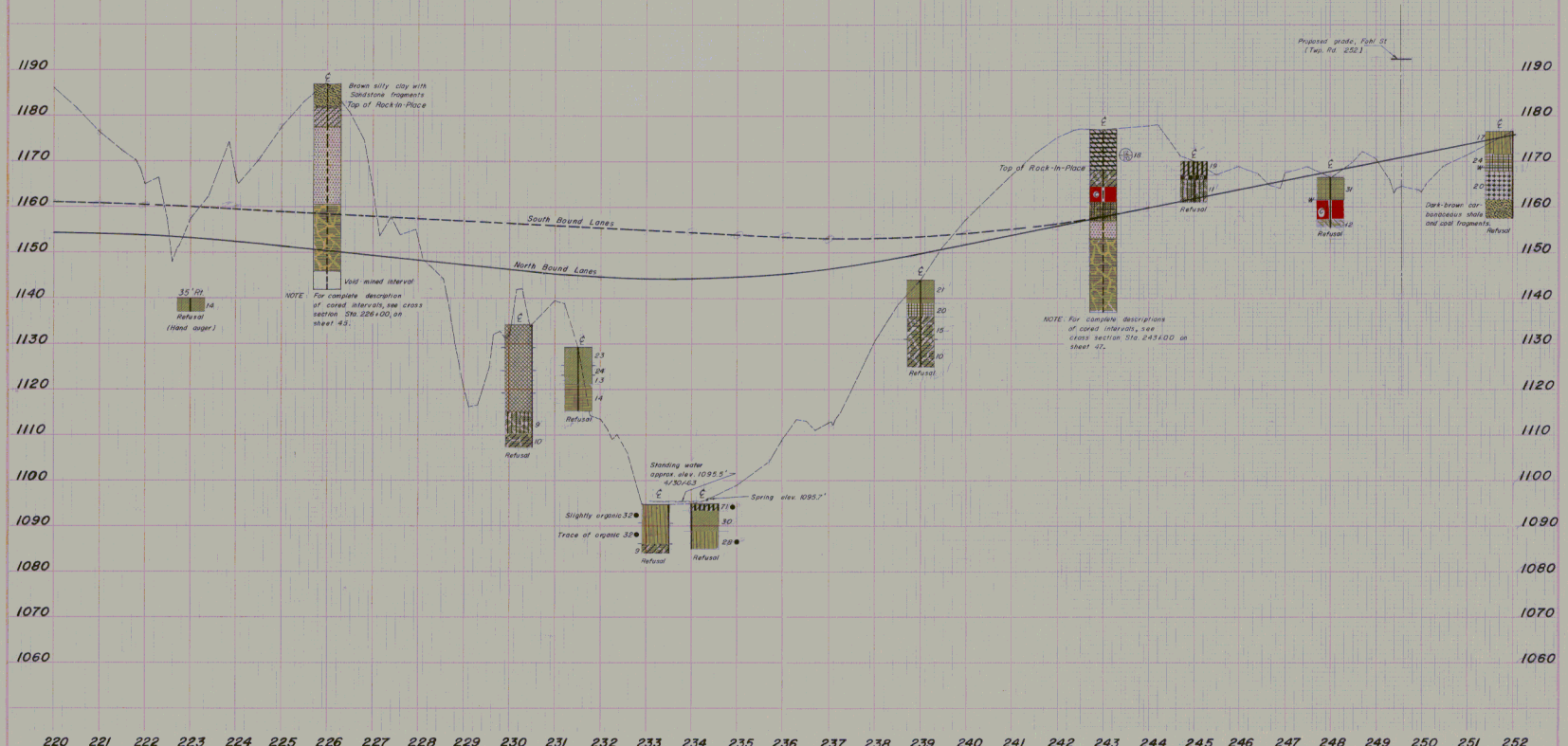
13

Weeds und brush
Woods
Dry lake bed
Strip mine area
Spoil bank
Standing water 4/30/63
Spring
Woods and brush
Wooded
Existing Fohl St. (Twp. Rd. 252)
℄ Proposed FAM St (Twp Rd 252)
℄ Relocated Keiffer Ave (Twp. Rd 248-West)
℄ Proposed IR 77
Sta 243+56 ℄ Proposed IR 77
Sta 50+00 ℄ Proposed FAM St (Twp. Rd 252)
Existing Keiffer Ave. (Twp Rd 249)
℄ Relocated Keiffer Ave. (Twp. Rd 248-East)
Coal storage

CROSS SECTION INDEX	
STATION	SHEET
223+00	44
226+00	45
231+20	46
233+63	46
243+00	47
245+00	47

NOTE: For complete plan-view of Fohl St. (Twp. Rd. 252) and Keiffer Ave. (Twp. Rd. 249), see sheet 25.

SOIL PROFILE
TUSCARAWAS-STARK COS.
TUS-IR 77-40.55
STA-IR 77-0.00
18
48
OHIO DEPT. OF HIGHWAY
TESTING LABORATORY



TE-98 (FORMERLY TE-54 B)
2006 10 IR

℄ Survey (North bound Lane)

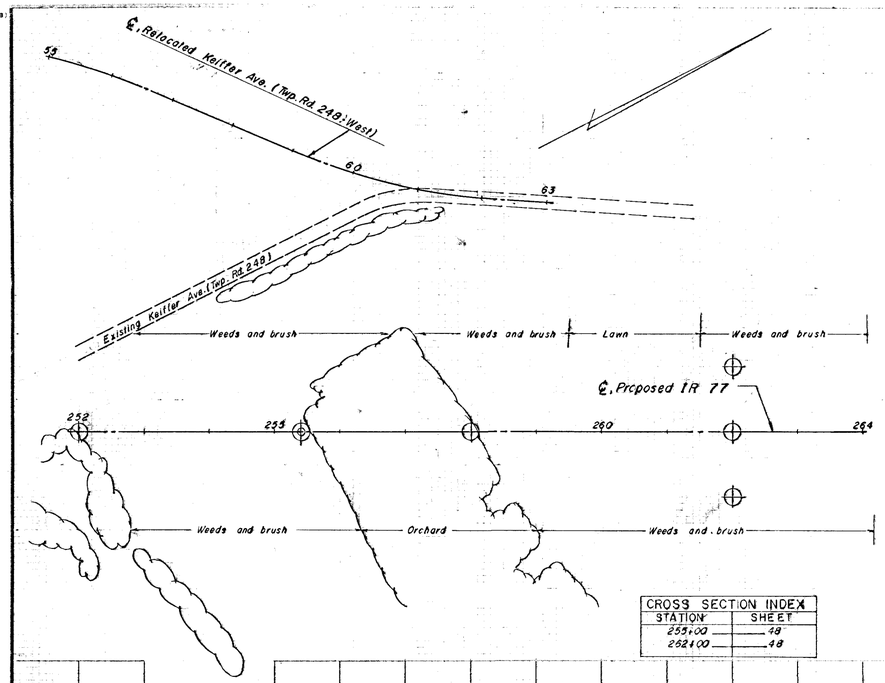
SOIL PROFILE

TUSCARAWAS-STARK COS.
TUS-IR 77-40.55
STA-IR 77-0.00

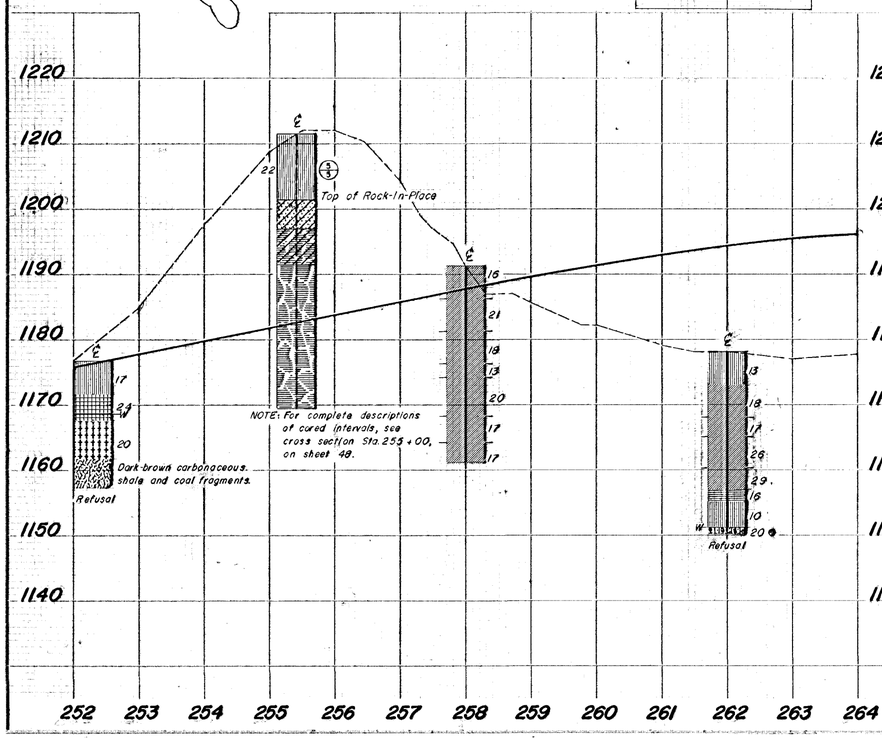
OHIO STATE HIGHWAY TESTING LABORATORY
1920 W. BROAD ST., COLUMBUS 23, OHIO

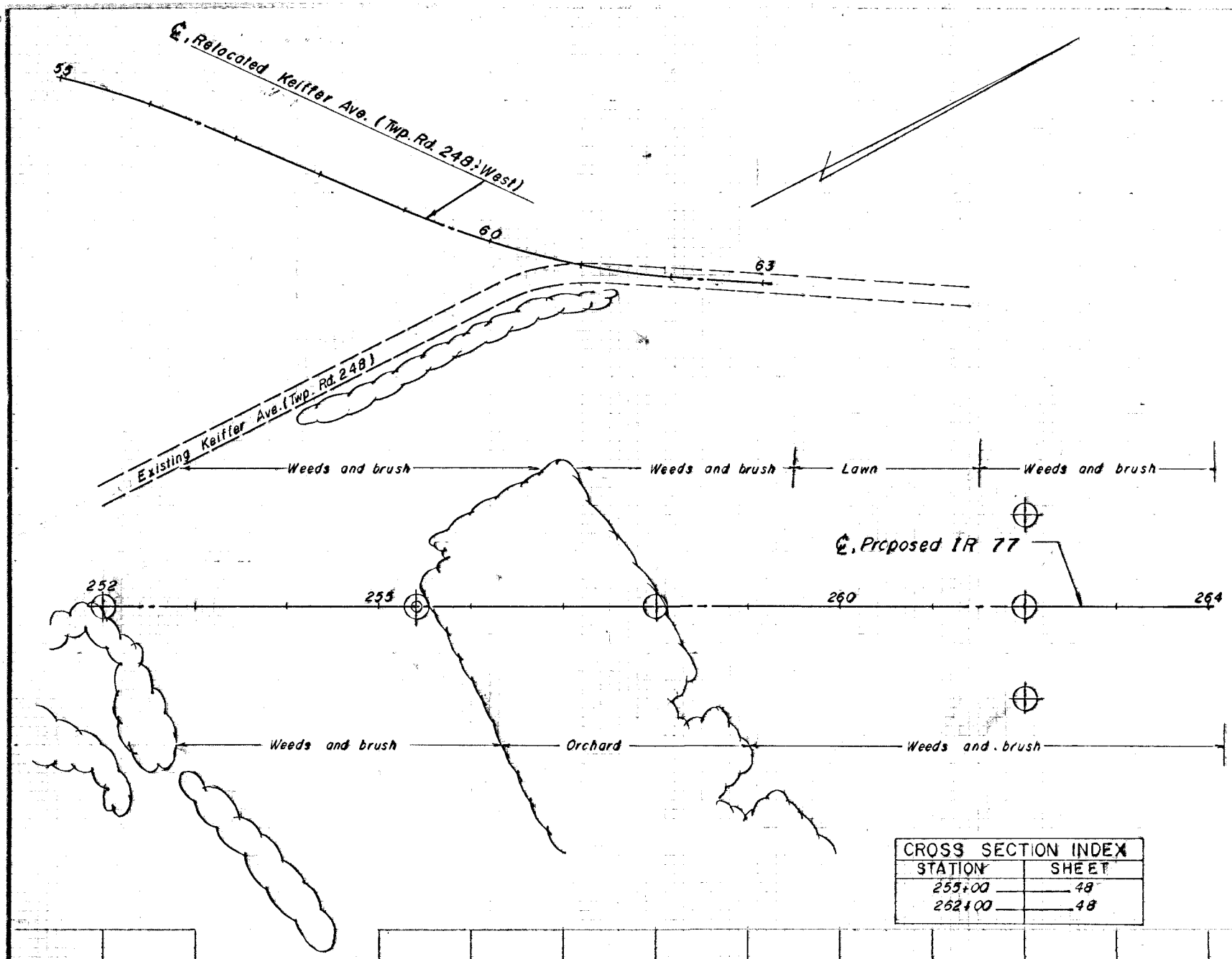
19/48

15

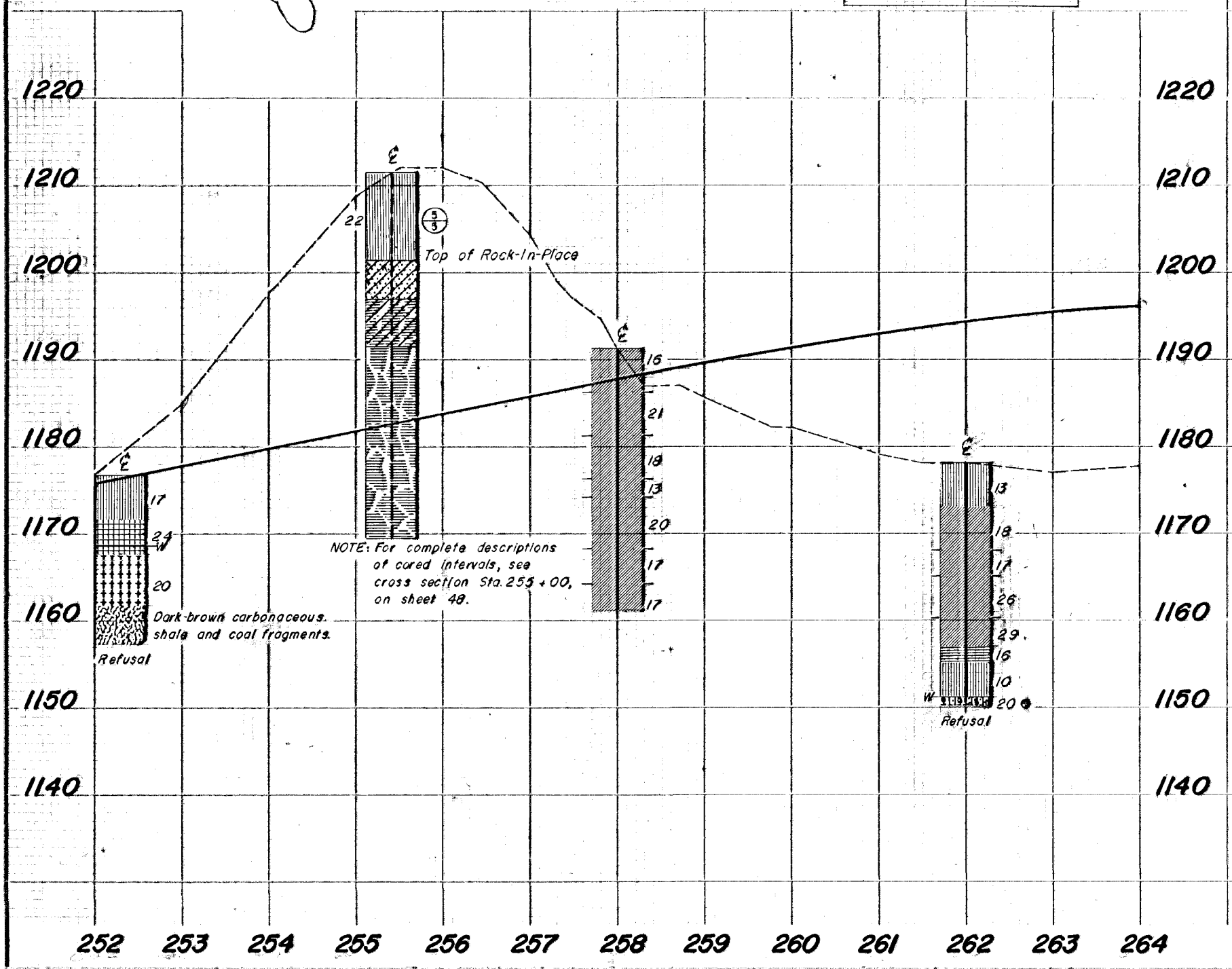


CROSS SECTION INDEX	
STATION	SHEET
255+00	48
262+00	48

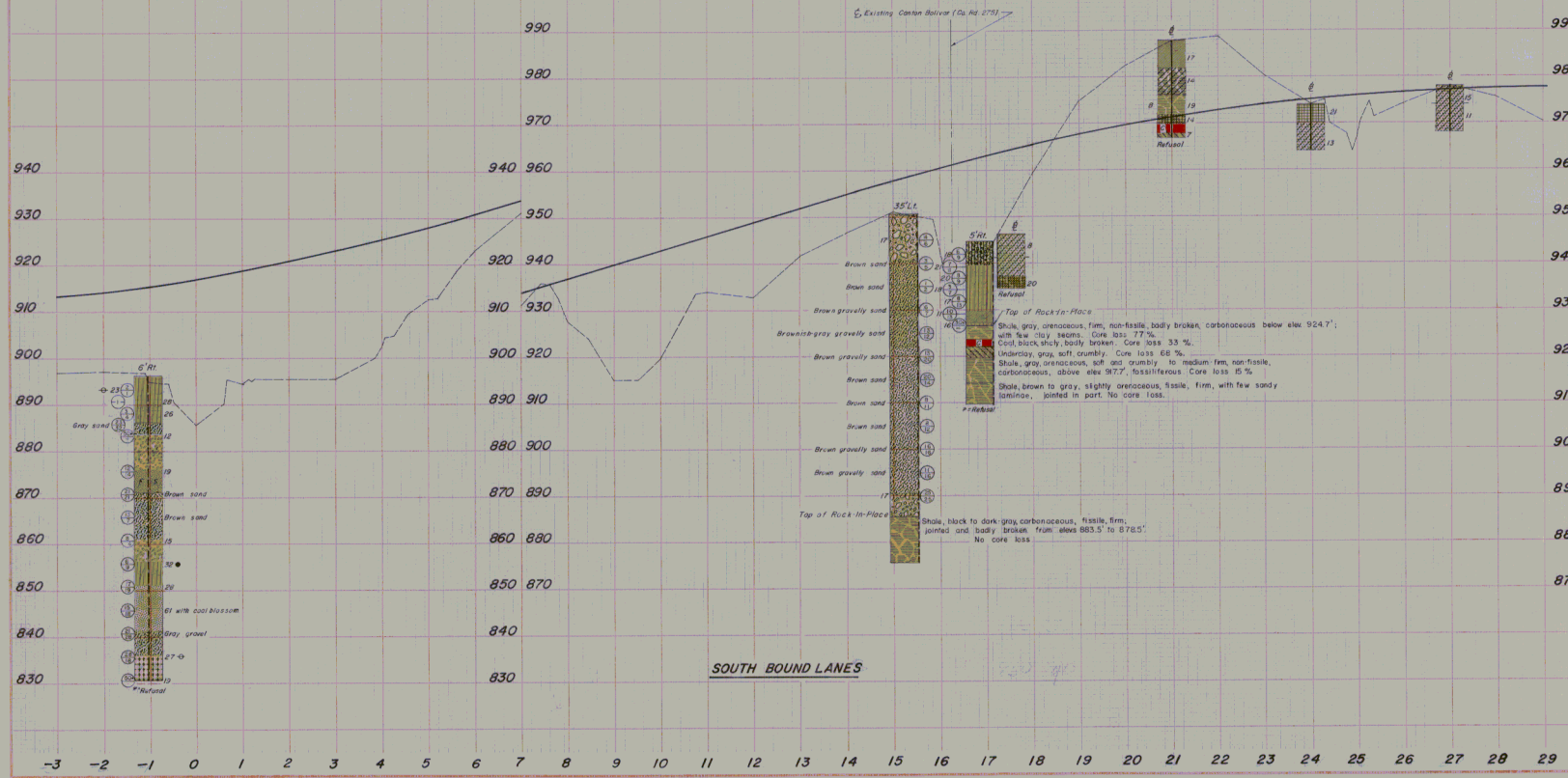


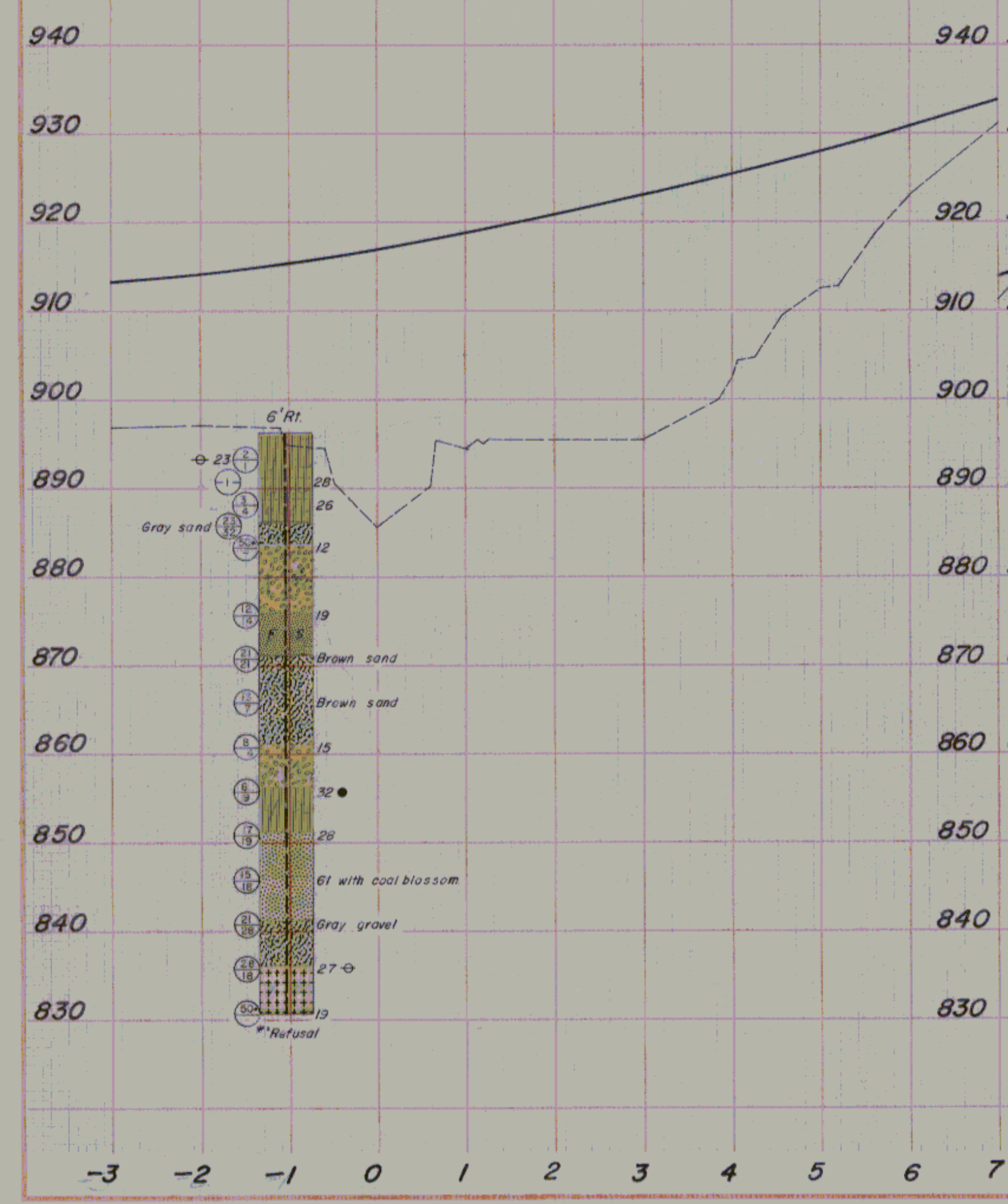


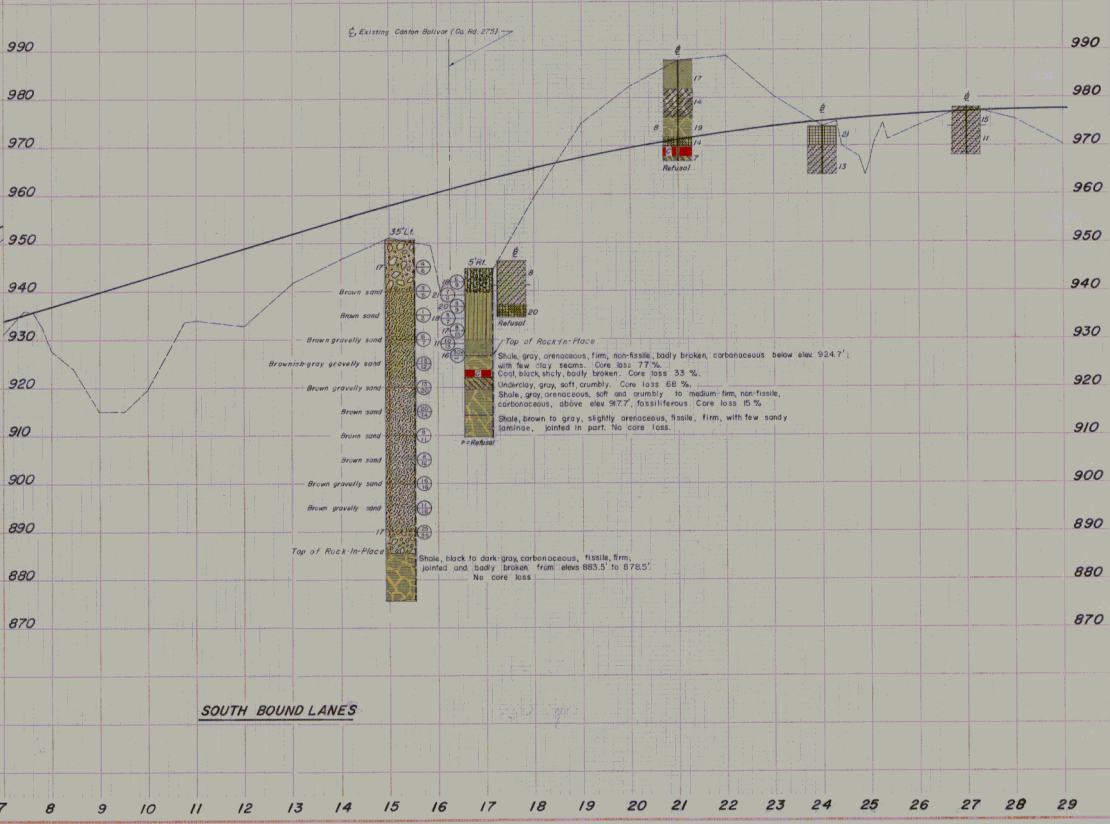
CROSS SECTION INDEX	
STATION	SHEET
255+00	48
262+00	48


1220
1210
1200
1190
1180
1170
1160
1150
1140
252
253
254
255
256
257
258
259
260
261
262
263
264
℄
22
5/5
Top of Rock-In-Place
17
24
W
20
Dark-brown carbonaceous shale and coal fragments.
Refusal
NOTE: For complete descriptions of cored intervals, see cross section Sta. 255+00, on sheet 48.
16
21
18
13
20
17
13
18
17
26
29
16
10
W
20
Refusal

SOIL PROFILE
TUSCARAWAS-STARK COS.
TUS-IR-77-40.55
STA-IR-77-0.00
OHIO STATE HIGHWAY TESTING LABORATORY
20
48




940
930
920
910
900
890
880
870
860
850
840
830
6' Rt.
23
28
26
Gray sand
12
19
Brown sand
Brown sand
15
32
28
61 with coal blossom
Gray gravel
27
19
Refusal
-3
-2
-1
0
1
2
3
4
5
6
7


℄ Existing Canton Bolivar (Co. Rd. 278)
990
980
970
960
950
940
930
920
910
900
890
880
870
℄
17
14
19
11
14
7
Refusol
℄
29
13
℄
15
11
35' Lt.
17
Brown sand
Brown sand
Brown gravelly sand
Brownish-gray gravelly sand
Brown gravelly sand
Brown sand
Brown sand
Brown sand
Brown gravelly sand
Brown gravelly sand
17
Top of Rock-In-Place
5' Rt.
℄
8
20
Refusol
Top of Rock-In-Place
Shale, gray, arenaceous, firm, non-fissile, badly broken, carbonaceous below elev. 924.7';
with few clay seams. Core loss 77 %.
Coal, black, shaly, badly broken. Core loss 33 %.
Underclay, gray, soft, crumbly. Core loss 68 %.
Shale, gray, arenaceous, soft and crumbly to medium-firm, non-fissile,
carbonaceous, above elev. 917.7', fossiliferous. Core loss 15 %.
Shale, brown to gray, slightly arenaceous, fissile, firm, with few sandy
laminae, jointed in part. No core loss.
Refusal
Shale, black to dark-gray, carbonaceous, fissile, firm,
jointed and badly broken from elevs 883.5' to 878.5'.
No core loss
SOUTH BOUND LANES
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29

SOIL PROFILE

TUSCARAWAS-STARK COS.

TUS-IR77-40.55

STA-IR77-0.00

OHIO STATE HIGHWAY TESTING LABORATORY

1820 W. BROAD ST., COLUMBUS 23, OHIO

21/48

17

45

South Bound Lanes

LOG OF OFFSET BORING

Sta 45+00

50' Lt.

27

W Trace of organic

26

25

21

25

18

940 930 920 910 900

980 970 960 950 940 930 920 910 900 890 880 870

Existing Access Rd. N.of

9 12 9 Refusal

14 16 Refusal

22 25 17 21

23 26 26 25 20 Trace of organic

16 25 24 24 21 20

35' Lt.

36 26 28 33 28 21 14 17 28 23 25 19 36 15

63' Lt.

30 23 W 26 26 27 27

17 26 Trace of organic 21

24 24

39 27 25 Trace of organic 19

22 W 23 27 Trace of organic 22

Gray sandy silt

Gray cobbles

Top of Rock-In-Place

Shale, gray, poorly fissile, firm, argillaceous; moderately weathered and iron stained to elev. 874.8'; with brown and gray, firm, fine-grained sandstone interbeds from elev.s 873.0' to 871.8' and elev.s 867.8 to 866.8'. Core loss 4%

Sandstone, gray, fine-grained. No core loss

SOUTH BOUND LANES

29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61

LOG OF OFFSET BORING

940

930

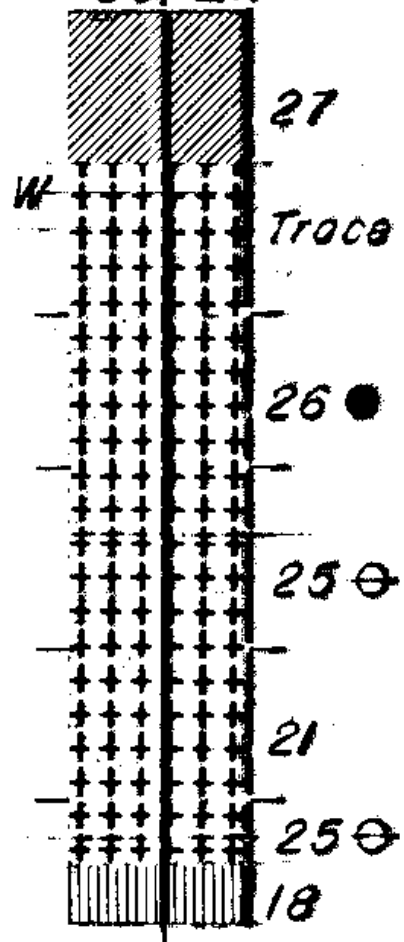
920

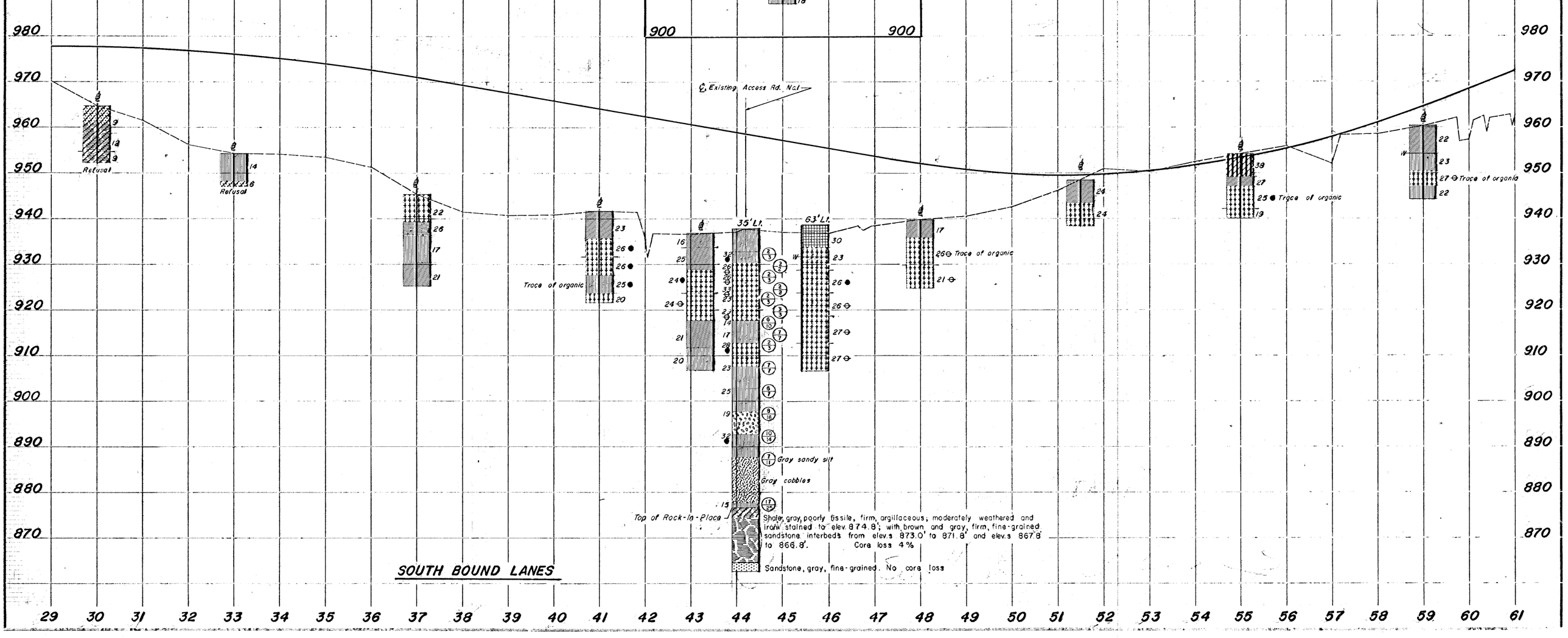
910

900

Sta 45+00

50' Lt.




900
900
℄ Existing Access Rd. N.&I.
Refusal
Refusal
Trace of organic
35' Lt.
63' Lt.
Trace of organic
Trace of organic
Trace of organic
Gray sandy silt
Gray cobbles
Top of Rock-In-Place
Shale, gray, poorly fissile, firm, argillaceous; moderately weathered and iron stained to elev. 874.8'; with brown and gray, firm, fine-grained sandstone interbeds from elevs 873.0' to 871.8' and elevs 867.8 to 866.8'. Core loss 4%
Sandstone, gray, fine-grained. No core loss
SOUTH BOUND LANES
980
970
960
950
940
930
920
910
900
890
880
870
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
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51
52
53
54
55
56
57
58
59
60
61

SOIL PROFILE

TUSCARAWAS-STARK COS.

TUS-IR77-40.55

STA-IR77-0.00

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

22
48

18

(Sta. 79+00-60' Rt. Proposed I.R. 77)

12' Rt.

Brown clay.

Top of Rock-In-Place

NOTE: For complete descriptions of cored intervals, see cross section Sta. 79+00, on sheet 31.

Refusal (Boulders)

31 19 16 19

Refusal (Boulders)

16 35 16 21

Refusal

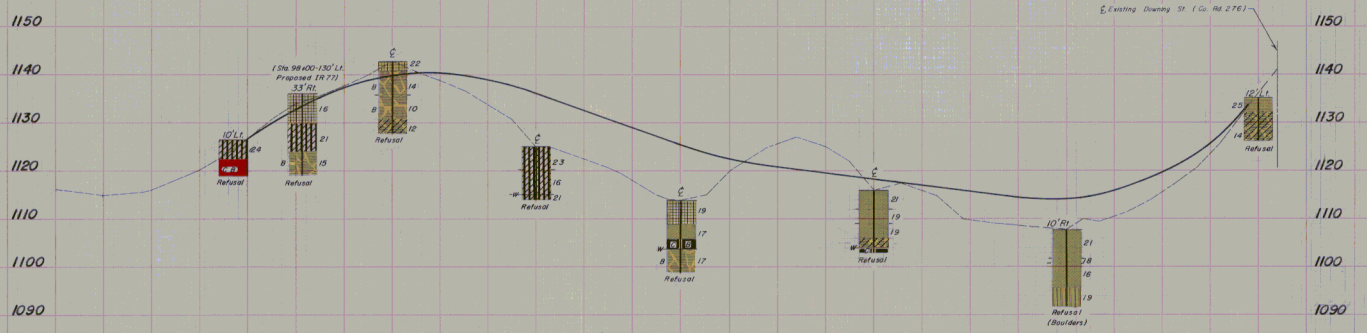
19 8

SOUTH BOUND LANES

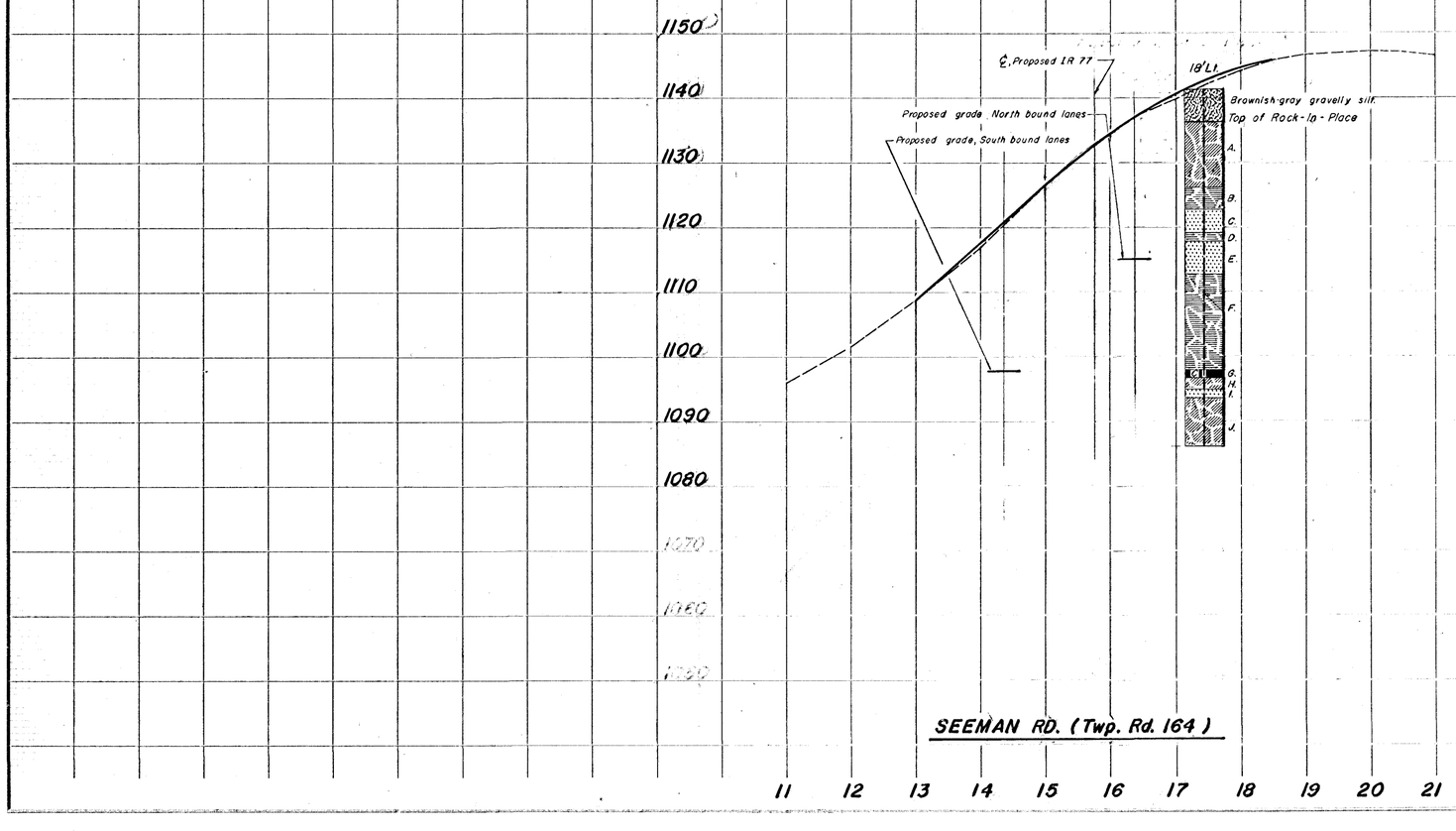
1090 1080 1070 1060 1050 1040 1030 1020 1010 1000 990 980 970 960 950 940 930

61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84

SOIL PROFILE
TUSCARAWAS - STARK COS. 23
TUS-IR 77-40.55 48
STA-IR 77- 0.00
OHIO STATE HIGHWAY
TESTING LABORATORY
1220 W. BROAD ST., COLUMBUS 15, OHIO



SOIL PROFILE
TUSCARAWAS-STARK COS. 24/48
TUS-IR 77-40.55
STA-IR 77-0.00
OHIO STATE HIGHWAY TESTING LABORATORY
1620 W. BROAD ST. COLUMBUS 23, OHIO
21



STATION 17+43, 18' Lt

A. Indurated Clay, gray in top 2.0', light-gray in remainder, soft to medium-firm and crumoly above elev. 1134.3' and from elevs. 1031.3' to 1129.3', broken-in-part, slickensided, firm in remainder. Core Loss 9%.

B. Shale, gray, siliceous in bottom half, poorly fissile to fissile, jointed and broken-in-part, firm. No Core Loss.

C. Sandstone, gray, fine-grained, firm, interbedded with shale (gray, siliceous, poorly fissile, firm) comprising about 30% of the interval. No Core Loss.

D. Shale, gray, siliceous with thin sandstone laminae, poorly fissile, firm. No Core Loss.

E. Sandstone, gray, fine-grained, firm, interbedded with shale (gray above elev. 1118.3', dark-gray and carbonaceous in remainder, firm) comprising about 20% of the interval. No Core Loss.

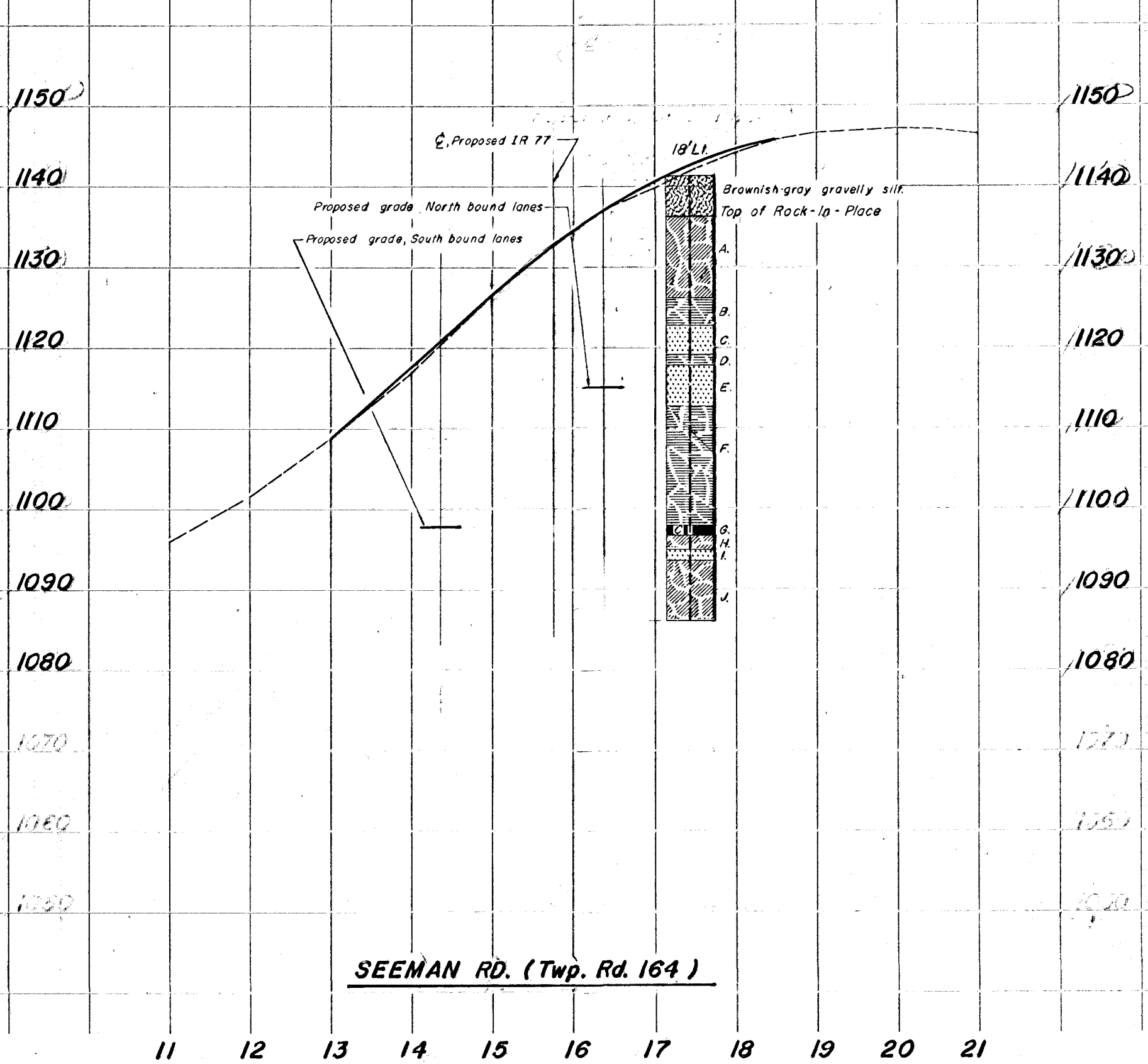
F. Shale, black, carbonaceous, argillaceous, fissile, firm, medium-firm from elevs. 1111.5' to 1103.3', jointed-in-part, with 0.3' shaly coal bed at elev. 1102.5'. Core Loss 1%.

G. Coal, black, shaly in top 0.2', pyritiferous, broken. No Core Loss.

H. Indurated Clay; gray to dark-gray, soft to medium-firm, and crumoly above elev. 1008.2', light-gray, siliceous, and firm in remainder. No Core Loss.

I. Sandstone, light-gray, fine-grained, argillaceous, firm. No Core Loss.

J. Indurated Clay, gray, firm, slickensided. No Core Loss.


1150
1140
1130
1120
1110
1100
1090
1080
℄, Proposed I R 77
18' Lt.
Proposed grade North bound lanes
Proposed grade, South bound lanes
Brownish-gray gravelly silt
Top of Rock-In-Place
A.
B.
C.
D.
E.
F.
G.
H.
I.
J.
SEEMAN RD. (Twp. Rd. 164)
11
12
13
14
15
16
17
18
19
20
21

STATION 17+43, 18'Lt

A. Indurated Clay, gray in top 2.0', light-gray in remainder, soft to medium-firm and crumbly above elev. 1134.3' and from elevs. 1031.3' to 1129.8', broken-in-part, slickensided, firm in remainder. Core Loss 5%.

B. Shale, gray, siliceous in bottom half, poorly fissile to fissile, jointed and broken-in-part, firm. No Core Loss.

C. Sandstone, gray, fine-grained, firm, interbedded with shale (gray, siliceous, poorly fissile, firm) comprising about 30% of the interval. No Core Loss.

D. Shale, gray, siliceous with thin sandstone laminae, poorly fissile, firm. No Core Loss.

E. Sandstone, gray, fine-grained, firm, interbedded with shale (gray above elev. 1116.3', dark-gray and carbonaceous in remainder, firm) comprising about 20% of the interval. No Core Loss.

F. Shale, black, carbonaceous, argillaceous, fissile, firm, medium-firm from elevs. 1111.5' to 1103.9', jointed-in-part, with 0.5' shaly coal bed at elev. 1102.5'. Core Loss 1%.

G. Coal, black, shaly in top 0.2', pyritiferous, broken. No Core Loss.

H. Indurated Clay; gray to dark-gray, soft to medium-firm, and crumbly above elev. 1006.2', light-gray, siliceous, and firm in remainder. No Core Loss.

I. Sandstone, light-gray, fine-grained, argillaceous, firm. No Core Loss.

J. Indurated Clay, gray, firm, slickensided. No Core Loss.

SOIL PROFILE
TUSCARAWAS STARK COS.
TUS-IR 77-40.55
STA-IR 77-0.00
OHIO STATE HIGHWAY
TESTING LABORATORY
COLUMBUS OHIO

26
48

Weeds and brush
Mark 9 amk
Weeds and brush
℄ Proposed Fohl St (Twp. Rd 252)
Weeds and brush
Residence
Residence
Woods
Sta 249+56 ℄ Proposed IR 77
Sta 50+00 ℄ Proposed Fohl St (Twp. Rd 252)
℄ Proposed IR 77
℄ Relocated Keiffer Ave. (Twp. Rd. 248-West)
Weeds and brush
Existing Keiffer Ave. (Twp. Rd 248)
Wooded
Weeds and brush
Existing Keiffer Ave (Twp. Rd. 248)
Spoil bank
℄ Relocated Keiffer Ave. (Twp. Rd 248-East)
Coal storage
Coal
Weeds and brush
Wooded
Weeds and brush
Wooded
Coal deposit area
Existing Fohl St. (Twp. Rd 252)
Wooded
Spring

PROFILE INDEX	
PROJECT	SHEET
Proposed Fohl St. (Twp. Rd. 252)	26
Relocated Keiffer Ave. (Twp. Rd. 248-East)	27
Relocated Keiffer Ave. (Twp. Rd. 248-West)	27

TE 26 (FORMERLY TE 54 B)
2-08-10-61

SOIL PROFILE
TUSCARAWAS-STARK COS
TUS-IR 77-40.55
STA-IR 77-0.00

OHIO STATE HIGHWAY TESTING LABORATORY
1920 W. BROAD ST., COLUMBUS 23, OHIO

126
48

23

1230 1220 1210 1200 1190 1180 1170 1160 1150 1140 1130 1120 1110 1100

32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64

℄ Relocated Kelffer Rd. (Twp. Rd. 248-East)

℄ Proposed IR 77

℄ Relocated Kelffer Rd. (Twp. Rd. 248-West)

Proposed grade, Relocated Kelffer Rd.

Proposed grade, IR 77

10'Lt. 19 W 27 Refusal (Boulders)

10'Lt. 24 21 Refusal

10'Lt. 15 9 Refusal

10'Lt. 35 25 22

10'Lt. 17 15 Refusal

10'Lt. 29 13 Refusal

10'Rt. 25 13 14 12 Refusal

15'Rt. Brown clay with shale fragments. Top of Rock-In-Place

32'Rt. Brownish-gray clayey silt 5 4 32+ Top of Rock in Place

«.8"» Penetration

9'Rt. 18 16 14 Refusal

FOHL ST. (Twp. Rd. 252)

A. Sandstone, light-gray, fine-grained, argillaceous, jointed, firm. No Core Loss.

B. Indurated Clay, light-gray, siliceous in part, soft. Core Loss 10%.

C. Sandstone, light-gray, fine-grained, with thin shale laminae and clay seams, thin-bedded, firm. No Core Loss.

D. Shale, greenish-gray, argillaceous, slightly siliceous with thin sandstone laminae in top 2.0', fissile, medium-firm, jointed in part. No Core Loss.

A. Sandstone, buff, argillaceous, firm. No Core Loss.

B. Shale, grayish-brown, gray in bottom 2.0, siliceous in part, poorly fissile, firm, jointed and broken. Core Loss 9%.

C. Indurated Clay, dark-gray, medium-firm in top 0.5', soft and crumbly in remainder, slickensided. Core Loss 44%.

D. Clay bedrock, gray, soft. Core Loss 26%.

E. Clay shale, yellow, soft. Core Loss 75%.

F. Shale, buff, weak, siliceous. Core Loss 40%.

G. Sandstone, yellow, fine-grained to medium-grained, firm. Core Loss 7%.

H. Shale, carbonaceous, black, firm. Core Loss 25%.

SOIL PROFILE
TUSCARAWAS-STARK COS. 27/48
TUS-IR 77-40.55
STA-IR 77-0.00
OHIO STATE HIGHWAY TESTING LABORATORY
1620 W. BROAD ST. COLUMBUS 23, OHIO

24

1230 1220 1210 1200 1190 1180 1170 1160 1150 1140 1130 1120 1110 1100 1090 1080 1070

℄, Proposed Fohl St. (Twp. Rd 252)

Sta. 56+00, Proposed grade Fohl St. (Twp. Rd. 252).

Sta. 43+50, Proposed grade Fohl St. (Twp. Rd. 252)

Brown sandy silt

Top of Rock-In Place

Refusal 9 8 6

Refusal 11 16 11 9 9

Coal A. B C. D.

Refusal 7 11 7

Refusal 19 20 16 W 10 21

Refusal 15 16 22 16 16 11 10

Refusal 28 14 19 13 B 11

10' Lt. Refusal 21 17 W 18 11 11 14

A. Sandstone, gray, friable, firm, coarse-grained, porous, micaceous, very iron-stained above elev. 1130.6', moderate cross bedding throughout top 3.0', badly broken. Core Loss 3%.

B. Coal, black, dull to earthy, fissile in part, clayey at base. No Core Loss.

C. Underclay, black, very carbonaceous, soft to firm. No Core Loss.

D. Shale, black, carbonaceous, micaceous in part, iron-stained in part, with few clay seams in top 7.3', fissile, firm. No Core Loss.

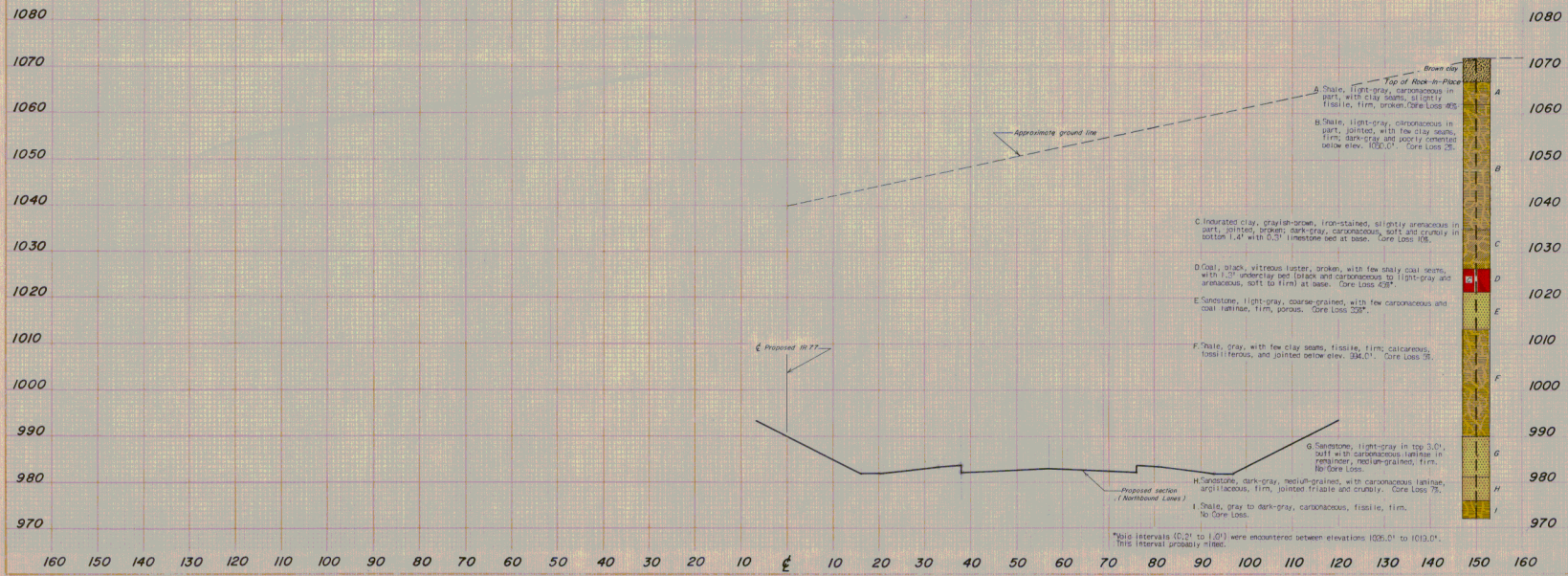
East — West

RELOCATED KEIFFER RD. (Twp. Rd. 248)

37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63

TUSCARAWAS-STARK COS. 28
TUS-IR 77-40.55 48
STA-IR 77-0.00

Sta. 29+00



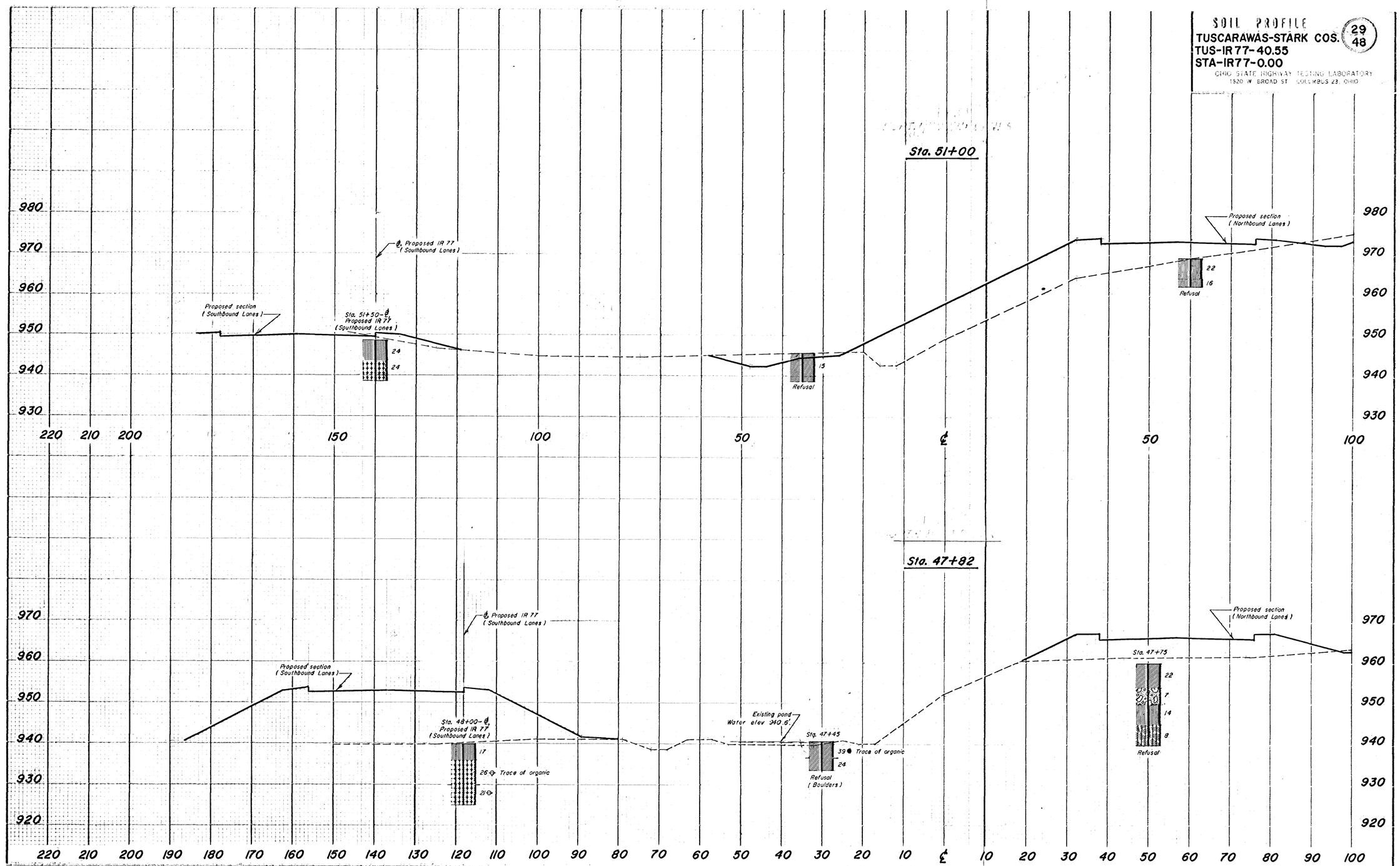
SOIL PROFILE

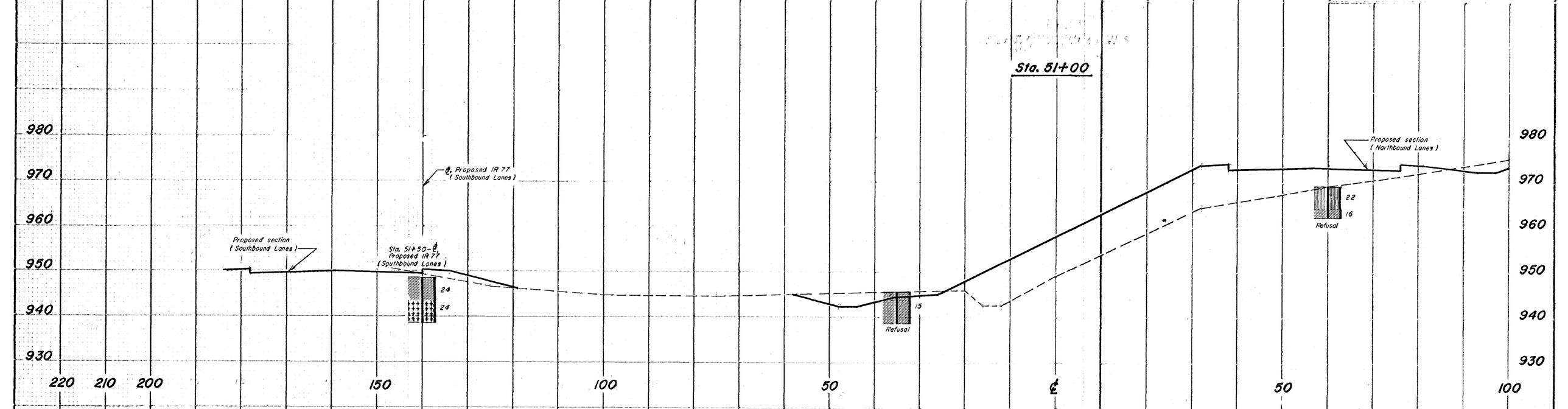
TUSCARAWAS-STARK COS. (29 / 48)

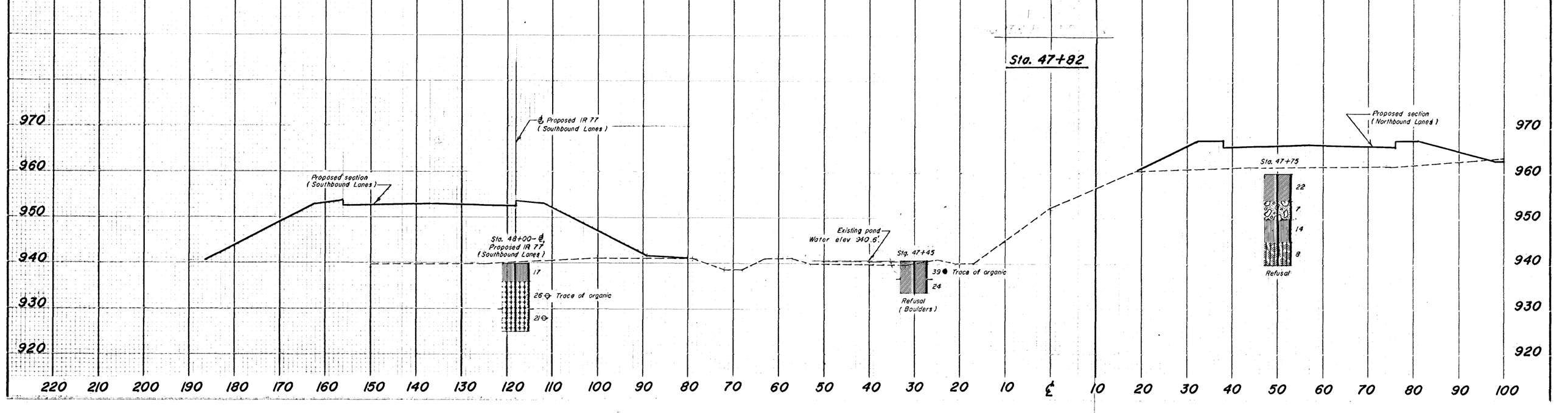
TUS-IR 77-40.55

STA-IR 77-0.00

OHIO STATE HIGHWAY TESTING LABORATORY
1520 W BROAD ST COLUMBUS 23, OHIO




Sta. 51+00
980
970
960
950
940
930
220
210
200
150
100
50
℄
50
100
Proposed section
(Southbound Lanes)
℄ Proposed IR 77
(Southbound Lanes)
Sta. 51+50 – ℄
Proposed IR 77
(Southbound Lanes)
24
24
15
Refusal
Proposed section
(Northbound Lanes)
22
16
Refusal


Sta. 47+82
Proposed section
(Southbound Lanes)
℄ Proposed IR 77
(Southbound Lanes)
Sta. 48+00 – ℄
Proposed IR 77
(Southbound Lanes)
17
26 Trace of organic
21
Existing pond
Water elev 940.6'
Sta. 47+45
39 Trace of organic
24
Refusal
(Boulders)
Sta. 47+75
22
7
14
8
Refusal
Proposed section
(Northbound Lanes)
970
960
950
940
930
920
220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70 80 90 100

SOIL PROFILE

TUSCARAWAS-STARK COS.

TUS-IR 77-40.55

STA-IR 77-0.00

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

30
48

Sta. 66+00

Proposed section
(Northbound Lanes)

℄, Proposed IR 77
(Southbound Lanes)

Proposed section
(Southbound Lanes)

Sta. 66+25-℄
Proposed IR 77
(Southbound Lanes)

16
35
16
21
Refusal
(Boulders)

18
14
20
Refusal

16
9
18
23
15
Refusal

Sta. 54+00

Proposed section
(Northbound Lanes)

℄ Proposed IR 77
(Southbound Lanes)

Proposed section
(Southbound Lanes)

Sta. 53+00-℄
Proposed IR 77
(Southbound Lanes)
Sod=0.3'

38
27
25 ● Trace of organic
19

Sta. 54+20

20
16
13
Refusal

21
22
18
16
Refusal

1020
1010
1000
990
980
970
960
950
940
930

220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70 80 90 100

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

Sta. 66+00

Proposed section
(Southbound Lanes)

℄, Proposed IR 77
(Southbound Lanes)

Sta. 66+25-℄
Proposed IR 77
(Southbound Lanes)

16
35
16
21
Refusal
(Boulders)

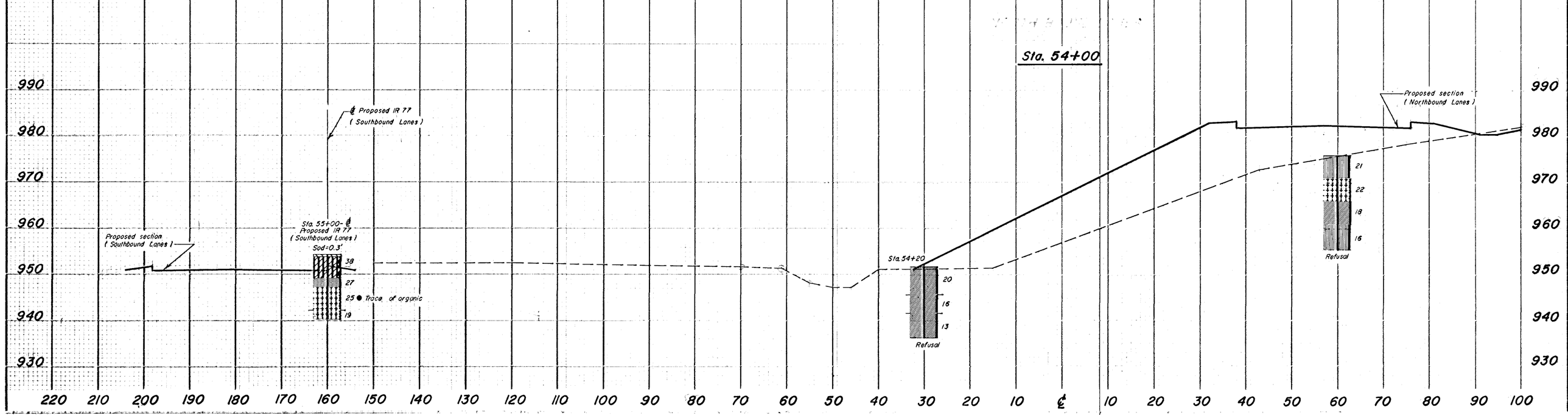
18
14
20
Refusal

Proposed section
(Northbound Lanes)

16
9
18
23
15
Refusal

1020
1010
1000
990
980
970
960
950

220 210 200 150 100 50 ℄ 50 100


Sta. 54+00
℄ Proposed IR 77
(Southbound Lanes)
Proposed section
(Southbound Lanes)
Sta. 55+00 - ℄
Proposed IR 77
(Southbound Lanes)
Sod-0.3'
38
27
25 ● Trace of organic
19
Sta. 54+20
20
16
13
Refusal
Proposed section
(Northbound Lanes)
21
22
18
16
Refusal
990
980
970
960
950
940
930
220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70 80 90 100

SOIL PROFILE

TUSCARAWAS-STARK COS. (31-48)

TUS-IR 77-40.55

STA-IR 77-0.00

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

Sta. 91+00

Top of Rock-In-Place

A. Coal, black, dull luster, laminated, brittle, broken, with soft moist weathered carbonaceous coaly clay seam in top 0.2'. Core Loss 62%.

B. Indurated Clay, gray, arenaceous in part, extremely ferruginous between elevs. 1107.6 and 1107.1, ferruginous in bottom 2.5', with few clay seams jointed and slickensided, firm. Core Loss 1%.

C. Shale, gray, slightly fissile to fissile, firm, jointed in part, ferruginous, with 0.4' shaly coal bed at elev. 1093.1' broken below elev. 1092.7'. No Core Loss

D. Limestone, dark-gray, with clay inclusions, hard. No Core Loss.

E. Shale, light-gray, fissile, few carbonaceous fragments, firm. No Core Loss.

F. Sandstone, light-gray, firm, fine-grained, calcareous, finely micaceous, light iron stain on hairline fractures becoming argillaceous at base. No Core Loss.

G. Shale, dark-gray, firm, fissile, carbonaceous, broken in part, with few light-brown arenaceous intervals, jointed in part. No Core Loss.

Proposed section (Southbound lanes)

Proposed section (Northbound lanes)

Sta. 79+00

Brown clay

Top of Rock-In-Place

Shale, light-brown, arenaceous, firm, very broken, slightly fissile, with crumbly clay seams throughout, few diagonal fractures with iron stain, top 3.0' very weathered. No Core Loss.

Shale, dark-gray, firm, dense, carbonaceous in part, few recemented vertical joints, few open joints with iron stains, non-fissile with scattered fine mica above elev. 1043.7'; becomes moderately fissile below elev. 1043.7'. No Core Loss.

℄, Proposed IR 77 (Southbound Lanes)

Proposed section (Southbound Lanes)

Proposed section (Northbound Lanes)