

1957
Year

Job No. 08236
Changes

County MONTGOMERY

013827
Project Identification MOT-25-0.00

File No. 5B-038 Proj. No.

Begin Sta. 15+00 End Sta. 220+00 Length 3.88 Miles

	RECON	AUGER	CORE	DRIVE ROD	RESISTIVITY
By	L.O.T.	CAC, D.J.H, B.E.B.	W.L.T.		
Dates	8/14/57- 8/15/57	12/10/56- 8/29/57	1/16/56- 9/19/56		
No. of Holes or Soundings		52	3		
Footage		490.0	158.0		
Samples Tested		118			

Drafting By D.M.
Completion Date 9-30-57
Drafting Hours
Topo Sheet

☐ Samples Accounted For

Transmittal Date 10-10-57 No. of Tracings 5 Filed with year 4-M-28
Revisions FET-28
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
3.88	52	490.0	118	3	158.0	—	—	—	—

* See Reverse Side

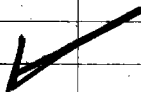
Dec-18-56

Mont. 25-00

in Hikeburg

H. E. Hinkle

H. E. Hinkle



FRAGMENTS 7 F.L.

Dec. 11-56

Plant - 25.0.0

L. Hillebrand

H. Schlegel

H. F. Nixon

Hand Nuga

40' LT EL- 950.1

Stone & Gravel (wet)

& Gravel



Dec-11-56

Mont-25-0.0

R. Hilbert

H. S. Hilbert

H. E. Nixon

25
=96+05 136'LT

EL-941.9

43
X

-WET

EL-943.2

X

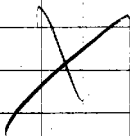
~~1000~~

↓ Casual < P.H.

EL = 958.7

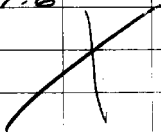
X

EL - 951.3



Cable Strong Fragment 15 L.P.H

75' LT EL 951.6



Cable Wet

7/16

↓ Strong Fragrance < P.L.

< F.L.

Dec-12-56

Mar-25-57

D. Hillebrand

H. Simpson

H. L. Nixon

Broken Stone < P.L.

73400

< P.L.

Stone Frag < P.L.

Broken Stone Frag. - < P.L.

Broken Stone Frag. - < P.L.

Stone Frag. < P.L.

Hard Grey Shale < P.L.

FRAGMENTS < P.L.

STONE FRAGMENTS < P.L.

72-289-72364

8-27-28-29-57

MOT-25-0.00

CRABTREE

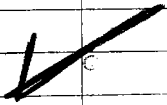
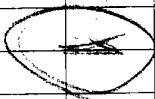
FAUBER

SWAIN

(22)

(2)

~~H~~
Specimen



EL & STONE FRAG L PL

& STONE FRAG L PL

WITH SMALL AMOUNT OF

L PL

PL

GRAVEL

L PL

1 GRAVEL L PL DENSE

EL = + 0.7'

DENSE

> PL DENSE

PL DENSE

GRAVEL & BOULDERS, > PL
 L & BOULDERS NEAR PL
 EL & STONE FRAG > PL DENSE

UGER

GRAVEL ZP

L PL

L PL SANDY

L PL DENSE

3' BOULDERS L L DENSE

LPL

GRAVEL LPL

LPL DENSE

LDERS LPL

MATS

54904

5

4373

BOULDERERS \leftarrow PL

ADERS \leftarrow PL

ADERS \leftarrow PL

BOULDERERS \leftarrow PL

-15.4

6

DENSE

PL

BOULDERS 4'-5'

FL = 970.0

VERY DENSE

FL = 1014.0

BOULDERS

5'-6'

6 ATTEMPTS

BOULDER AT 4

8 AT 100 FT

ERS & PL SHALE

DENSE

1 BOULDER & PL

1. ENSL

EL = +2.9

VFL & BOUNDARY L PL

ϕ EL = 949.3

EL = -2.3

STONE FLAG L PL MODERATE

RED G-CL L PL DENSE

1/2 STONE FRAG WET

1/2 STONE FRAG WET

1/2 STONE FRAG WET

1/2 STONE FRAG WET

DRY

1/2 ZPL

2. PC

NEAR WET

5.0'

EL = 947.5

LP

GRAVEL LP

WET

EL NEAR WET

6

EL = 952.4

1 GRAVEL LP

WET

AMOUNT OF GRAVEL

RSE GRAVEL WET

< PL

WEL VERY DAMP

EL < PL BOULDERS 10-11'

AUEL DAMP

WET

WET

FIELD DATA - SOIL LOG

Location No. _____ County: Mont. #20

Pier-Abut. _____ Bridge No. _____

Station: 219+50 Over: SECT. 3.74

Offset: 150' LT

Started: 9/17/57 Equipment: Cole drill

Completed: 9/19/57 Diameter _____

Proposed Footer: _____

Water Level: _____

Depth Feet	Log	Samples	Elevation	Ground Line
0				
NO RECOVERY				GREY LAYERED CLAY
65				
10				
15				
20				
25				

20		
30		
35		
40		
45		
50		
55		
60		

Remarks: _____

Party Smith

Chief of Party VAN FOSSEN

47

Location No. _____ County: Mont. 25

Pier - Abut.	Bridge No.
1-2	100
2-3	101
3-4	102
4-5	103
5-6	104
6-7	105
7-8	106
8-9	107
9-10	108
10-11	109
11-12	110
12-13	111
13-14	112
14-15	113
15-16	114
16-17	115
17-18	116
18-19	117
19-20	118
20-21	119
21-22	120
22-23	121
23-24	122
24-25	123
25-26	124
26-27	125
27-28	126
28-29	127
29-30	128
30-31	129
31-32	130
32-33	131
33-34	132
34-35	133
35-36	134
36-37	135
37-38	136
38-39	137
39-40	138
40-41	139
41-42	140
42-43	141
43-44	142
44-45	143
45-46	144
46-47	145
47-48	146
48-49	147
49-50	148
50-51	149
51-52	150
52-53	151
53-54	152
54-55	153
55-56	154
56-57	155
57-58	156
58-59	157
59-60	158
60-61	159
61-62	160
62-63	161
63-64	162
64-65	163
65-66	164
66-67	165
67-68	166
68-69	167
69-70	168
70-71	169
71-72	170
72-73	171
73-74	172
74-75	173
75-76	174
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77-78	176
78-79	177
79-80	178
80-81	179
81-82	180
82-83	181
83-84	182
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87-88	186
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93-94	192
94-95	193
95-96	194
96-97	195
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101-102	200
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104-105	203
105-106	204
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109-110	208
110-111	209
111-112	210
112-113	211
113-114	212
114-115	213
115-116	214
116-117	215
117-118	216
118-119	217
119-120	218
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121-122	220
122-123	221
123-124	222
124-125	223
125-126	224
126-127	225
127-128	226
128-129	227
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130-131	229
131-132	230
132-133	231
133-134	232
134-135	233
135-136	234
136-137	235
137-138	236
138-139	237
139-140	238
140-141	239
141-142	240
142-143	241
143-144	242
144-145	243
145-146	244
146-147	245
147-148	246
148-149	247
149-150	248
150-151	249
151-152	250
152-153	251
153-154	252
154-155	253
155-156	254
156-157	255
157-158	256
158-159	257
159-160	258
160-161	259
161-162	260
162-163	261
163-164	262
164-165	263
165	

Station: 214450 Over: SECT 3.74

Offset: 12047

Started: 9/18/57 Equipment: _____

Completed: 2/12/57 Diameter _____

Proposed Footer: _____

Elevation = 942.6 Water Level: _____

0	Loc	Sta	Ground Line
---	-----	-----	-------------

NO
RECOVER
AT ALL
5
Brown sandy gravelly
silt with
gravel

	SAME
--	------

10			
----	--	--	--

Brown sandy gravel
CLAY WITH
~~GRAVEL~~

			SAME
--	--	--	------

20				
----	--	--	--	--

[illegible]

26

30

35

40

45

50

55

60

Remarks:

Party

Chief of Party W. F. Fadden

FIELD DATA - SOIL LOG

Location No. 5 ^{WHR. MOT. 25-(8.53)(0.00)} County: Butte

Pier-Abut. Bridge No.

Station: Sta 75+00 Over Ohio Turnpike #2

Offset: 8 59

Started: 1-18-98 Equipment: Hand

Completed: 1-18-98 Diameter

Proposed Footer:

Water Level:

Depth Feet	Log	Samples	On Stake Elevation	Ground Line
0				
1.0				
5				Brown Silty Clay w/ith Limestone Boulders
6.0				Run Rec. 5.0 4.9
			$\frac{1}{12}$	Sandstone
10				
11.0				Run Rec. 5.0 4.8
			$\frac{0}{14}$	14 of Sandstone + 3.4 Shale
15				
18.0				Run Rec. 4.0 4.0
				Shale
20.0				
20				Run Rec. 3.0 3.0
				Shale
23.0				Run Rec. 5.0 4.8
25			$\frac{2}{12}$	Shale

26		
28.0		Run Rec. 5.0 4.9
30		Shale
		$\frac{1}{6}$
33.0		Run Rec. 5.0 5.0
35		Shale + Limestone
38.0		Run Rec. 5.0 5.0
40		Shale
43.0		Run Rec. 5.0 5.0
45		SHALE
48.0		Run Rec. 5.0 4.9
50		
55		
60		

Remarks:

Party BRIDGEMAN-MIXON-SAYRE
 Chief of Party PHEIFER THOMPSON

FIELD DATA - SOIL LOG

Location No. _____ County: Alameda

Pier-Abut. _____ Bridge No. _____

Station: 2194.50 Over: SECT 3.74

Offset: 150.17

Started: 9/17/57 Equipment: _____

Completed: 9/19/57 Diameter _____

Proposed Footer: _____

Water Level: _____

Depth Feet	Log Stratigraphic Stations	Elevation	Ground Line
0			
5			Brown Sandy gravelly CLAY WITH SMALL GRAVEL
10			Brown Sandy CLAY WITH LARGE BOULDERS
15			SAME
20			GREY SILTY SAND WITH LARGE GRAVEL Mostly sandy
25			SAME

EMERALD MOUNTAIN WATER FILLING

26			
30			SAME
35			SAME
40			GREY SANDY GRAVELLY SILT WITH GRAVEL
45	REP LOS	0.4 4.1	SAME
50	REP LOS	0.7 4.3	LIMESTONE BOULDERS LAYERED CLAY
55	REP LOS	0.8 4.3	GREY LAYERED CLAY
60			

Remarks: _____

Party Smith

936
10
720

Chief of Party VAN FOSSEN

FIELD DATA - SOIL LOG

Location No. _____ County: Mont. 25
 Pier-Abut. _____ Bridge No. _____
 Station: 253+00 Over: _____
 Offset: 2 Sect. 224
 Started: 9-24-57 Equipment: auger
 Completed: 9-25-57 Diameter: _____

Proposed Footer: _____

Water Level: _____

Depth Feet	Log	Samples	Elevation
0			837.6
	Brn		Ground Line
	Brn		Brn. clay silt with little sand.
	Brn		1 ft. above very sandy
5			832.6 1 ft. above with gravel
10			827.6
15	Gray		822.6 Gray sandy clay silt with gravel. large & small
20	Brn		810.6 Brn. clay silt with gravel very little sand.
25			812.6 limestone soft. gray clay w/ recovery

26	811.6	
30	807.6	limestone & gray clay shale
		calc. seams
35	802.6	
40	797.6	
45	792.6	
50	790.6	
55		
60		

Remarks: _____

Party

Smith

Chief of Party

Van Fossen

LOGS OF CORE BORINGS
Prepared By
State Highway Testing Laboratory
for

County, Rt. No. & Section WAR-MOT-25-(853)(0.00)

Hole No. 31 Surface Elevation 1011.6

Station 73+50 290 RT Elevation Top of Rock

Total Depth of Hole 48.0' Elevation Bottom of Hole

DEPTH ELEV.	Description	Lab. No. So.	Class	Core Loss in Percent
0	BROWN SILTY CLAY WITH LIMESTONE BOULDERS.			
	<u>TOP OF ROCK</u>			
6.0	LIMESTONE, BROWNISH GRAY, THIN BEDDED, CRYSTALLINE, "MEDIUM FIRM, JOINTED AND BROKEN, WEATHERED.			5
8.1	SHALE, BROWN, SILICEOUS, FIRM, NON-FISSILE, GRADING IN PART TO ✓ SOFT SANDSTONE.			4
12.6	AND REDDISH BROWN, SHALE, BLUISH GRAY, SLIGHTLY SILICEOUS TO SILICEOUS AT TOP, VERY SOFT AND CRUMBLY TO MEDIUM FIRM AT TOP.			3
18.9	SHALE, GRAY, SLIGHTLY SILICEOUS, WITH LIMESTONE NODULES, FIRM.			3
25.8	✓ SHALE, GREENISH GRAY, SLIGHTLY SILICEOUS, SLIGHTLY CALcareous, SOFT, FISSILE.			7
29.9	SHALE, GRAY, SLIGHTLY SILICEOUS, WITH LIMESTONE NODULES, FIRM.			0
32.6	LIMESTONE, GRAY, CRYSTALLINE IN PART, FIRM, IN VERY IRREGULAR			0

for

Elevation Bottom of Hole

Core Loss
in
Percent

LOGS OF CORE BORINGS
Prepared By
State Highway Testing Laboratory
for

County, Rt. No. & Section

Hole No.

Station

Total Depth of Hole

DEPTH	ELEV.	Description	Lab. No. So.	Class	Core Loss in Percent
0		OVER BORDEN (THE SAMPLES?)			
45.0		BROWN SANDY SILT WITH GRAVEL AND BOULDERS.			
50.0		GRAY SILTY CLAY WITH GRAVEL AND LIMESTONE BOULDERS.			
55.0		GRAY SILTY CLAY.			
65.0		BOTTOM OF HOLE.			

LOGS OF CORE BORINGS
Prepared By
State Highway Testing Laboratory
for

County, Rt. No. & Section	<u>MO-25</u>	
Hole No.	Surface Elevation	<u>737.6'</u>
Station <u>25.3+00-4</u>	Elevation Top of Rock	<u>888.6'</u>
Total Depth of Hole <u>470'</u>	Elevation Bottom of Hole	<u>790.6'</u>

DEPTH	ELEV.	Description	Lab. No. So.	Class	Core Loss in Percent
0	837.6	BROWN GRAVELLY SILT CLAY, SANDY IN PART.			
13.0	824.6	GRAY GRAVELLY SANDY SILT CLAY.			
17.0	819.6	BROWN GRAVELLY SILT CLAY.			
24.0	813.6	GRAY CLAY WITH LIMESTONE FRAGMENTS AND BOULDERS.			
		<u>TOP OF BROKEN ROCK</u>			
29.0	808.6	SHALE, GRAY, SLIGHTLY CALCAREOUS, GENERALLY MEDIUM FIRM TO FIRM BUT WITH SOFT ZONES AND CLAY LENS, INTERMITTENTLY BROKEN, WITH STRINGERS (0.3' MAX. THICKNESS) OF CRYSTALLINE LIMESTONE.			49
47.0	790.6	BOTTOM OF HOLE.			

SOIL PROFILE PROJECT SUMMARY

COUNTY, RT. NO., & SEC. NO.

MOT-25-0.00

FEDERAL NO.

I-1101

LENGTH

3.88

MILES

BEGIN PROFILE STA.

15+00

END PROFILE STA.

220+00

PRESENT SURFACE

PROPOSED SURFACE

RECON. BY

L.O.T.

FIELD WORK STARTED

12-1-56

FIELD WORK COMPLETED

8-29-57

EARTH AUGER:

NO. OF HOLES

52

LIN. FT. BORING

492.0

BY

C.A.C.

DAYS

7

CORE DRILL:

NO. OF HOLES

3

LIN. FT. BORING

150

BY

W.B.B.

DAYS

6

EARTH AUGER:

SAMPLES INSP.

78

SAMPLES TESTED

118

TOTAL SAMPLES

196

CORE DRILL:

SAMPLES INSP.

78

SAMPLES TESTED

118

TOTAL SAMPLES

17

DRAFTING BY

D.M.

DRAFTING COMPLETED

7/30/57

LETTER OR PROFILE SENT

REMARKS

FEB GROUP DESIGNATION	OHIC 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	60	19	16	3	2	NP	11	1					
A-1-b (0)	A-1-b	39	21	20	13	7	NP	12	7					
A-3 (0)	A-3													
-	A-3a													
A-2-4 (0)	A-2-4	33	15	18	22	12	NP	12	2					
A-2-5 (0)	A-2-5													
A-2-6 ()	A-2-6													
A-2-7 ()	A-2-7													
A-4 (4)	A-4a	17	10	18	35	20	19	5	13	54				
A-4 (8)	A-4b	1	3	6	61	29	26	6	21	7				
A-5 ()	A-5													
A-6 (9)	A-6a	9	4	7	37	43	31	13	19	20				
A-6 (11)	A-6b	5	4	12	38	41	37	18	20	16				
A-7-5 (12)	A-7-5	0	2	7	52	39	48	17	30	1				
A-7-6 (14)	A-7-6	6	2	4	42	46	46	22	23	10				

LAB. NOS. SAMPLES TESTED

*55859-55863 incl. 55867-55874 incl.
55878-55900 incl. 72173-72261 incl.
72292-72364 incl.*

LAB. NOS. MOISTURE DENSITY SAMPLES

COUNTY

MONTGOMERY

SUMMARY OF TESTS ON SOIL PROFILE SAMPLES

County, Rt. No. & Section

MOT-25-0.00

1
2

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.		
		Total 1/4 AVE.		60	19	16	3	2	NP		11			A-1-a	
		Total ②		272	145	144	91	48	NP		12			A-1-b	
		AVE.		39	21	20	13	7	NP		12				
		Total ③		66	29	36	45	24	NP		24			A-2-a	
		AVE.		33	15	18	22	12	NP		12				
		Total ④		911	527	991	1905	1070	1021	257	705			A-4a	
		AVE.		17	10	18	35	20	19	5	13				
		Total ⑤		7	16	33	368	176	132	38	123			A-4b	
		AVE.		1	3	6	61	29	26	6	21				

SUMMARY OF TESTS ON SOIL PROFILE SAMPLES

County, Rt. No. & Section

MOT-25-0.00

2
2

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.		
		Total (20)		179	81	142	748	858	623	256	344			A-6a	10
		Ave.		9	4	7	37	43	31	13	17				
		Total (16)		75	71	193	615	652	594	288	313			A-6b	16
		Ave.		5	4	12	38	41	37	18	20				
		Total (1)		0	2	7	52	39	48	17	30			A-7-5	
		Ave.		0	2	7	52	39	48	17	30				
		Total (19)		58	16	45	419	462	458	221	228			A-7-6	19
		Ave.		6	2	4	42	46	46	22	23				

October 30, 1957

Yule, Stricklen, Jordan & McHoe
5564 North High Street
Worthington, Ohio

RE: MOT-25-0.00
MOT-25-0.00, WAR-25-B.46

Attention: Mr. G. T. Belsham

Dear Mr. Belsham:

Reference is made to the Soil Profile dated September 30 and September 17, 1957 for the subject projects.

Approval has been obtained for a rigid type pavement for these projects as follows:

- 10 T-71 Reinforced Portland Cement Concrete
- 6 I-22 Subbase

An 18' I-22 subbase is recommended in the frost susceptible A-4b silt from Station 43 to 49 on WAR-25.

Since this section is to be a six lane divided pavement the outer two lanes should slope downward to the outside on normal sections at $3/16$ inches per foot, and the inner lane should slope down at the same rate toward the median. Subbase should have a uniform thickness of 6 inches and should be drained throughout the project by I-4 drains. The centerline of the I-4's should be located 5 feet and 4 feet 10 inches from the edges of the main travel lanes on the outside and median side respectively. On super-elevated sections I-4's need be provided at the low edge of the pavement only, except that in earth cuts deep I-4 lines should always be provided at the outer edges. The I-4 lines should be shallow at the median edges throughout and should also be shallow at the outer edges on fill sections.

Paved shoulders 10 feet wide at the outer edge and 5 feet wide at the median edge should be provided as follows:

- T-31 Double Bituminous Seal
- B-33 3" Penetration Macadam
- I-18 5" Crushed Aggregate Shoulder Material
- I-22 Subbase - Variable depth thickness as follows;

Between the concrete slab and the I-4 drain 7
At the outer edge of the I-4 drain 6"
At the outside edge of the 10' paved shoulder 3"

The I-18 and I-22 should extend out 6 inches beyond the edge of the E-33.

In the rock cut from Station 68 to 81 on MOI-25, 1:1 slopes are recommended in the rock proper, with 2:1 slopes in the overburden (top 10').

It would appear from the Soil Profile that we may have a troublesome side hill cut and fill section in the vicinity of Station 208 to 220 on MOI-25. Mr. Grushmeyer's Office has requested cross-sections for this area and we will advise you of any necessary treatment after receipt of same.

Very truly yours,

R. E. Shultz
Engineer of Location and Design

RES:RHX:mwa
cc:
Masheter
Grushmeyer
Ricketts
Marshall
Mason
Fisher
Ackerman
Gamble
File

October 1, 1957

Fule, Samschion, Jordan & McNeel
Consulting Engineers

Box 31

Northampton, Ohio

Attn: Mr. Ted Seltsheim

File: 13-2-1

Contemporary

NOT-25-0.00 1-1101

Dear Mr. Seltsheim:

Transmitted herewith are the reproduced tracings of the soil profile for
NOT-25-0.00.

Drilling was performed on the initial alignment in December 1956, owing to major alignment changes it was necessary to do additional drilling in August and September, 1957. Borings were generally made by means of truck mounted mechanical earth auger, with hand auger being employed in areas of difficult access, and core drill in areas where the auger could not attain penetration of sufficient depth.

The legend showing average test results for each classification appears on sheet number one of the profile; the summary of test results for each individual sample is shown on sheet number five.

The alignment is in a gently rolling upland area where glacial drift in somewhat shallow overlying bedrock comprised of shale and limestone with exception of the area from approximately station 213 to the end of the section. In this area the alignment crosses deep moraine materials.

The proposed grade indicates slight to moderate cuts and fills. Borings disclose that the cut between about station 47 and 81 will be to a large extent in shale bedrock. Predominant subgrade materials for the project are sandy silt in the A-4 classification and shale. There is a small amount of silt at grade in the vicinity of station 13+00. Subsequent foundation areas were found to be generally satisfactory with exception of somewhat wet near surface materials between stations 49 and 102.

R. E. Hatcher
Engineer of Record

Per:

[Signature]
M. E. Mason
Assistant Engineer

Enclosure: 3

Encl.

cc:

E. E. Shultz Attn: Marshall

E. E. Craig Attn: Shepard

A. Schofer (3) (20 encl.)

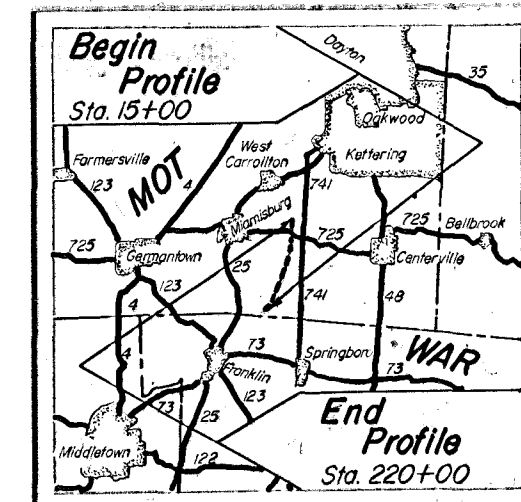
Ohio Geological Survey Attn: E. E. Forsyth

File

Grand (1)















NOTE: THE INFORMATION SHOWN BY THIS SUBGRADE
PROFILE WAS SECURED FOR THE USE OF THE STATE OF
OHIO AND IS NOT TO BE CONSTRUED AS A PART OF THE
PLANS GOVERNING THE CONSTRUCTION OF THE PROJECT.

Fed No. I-1101



LOCATION MAP

Recon - L.O.T. - 8/15/57
Drilling - Auger - CAG, DJH, BEB - 8/30/57
Core - LWT, JRV, WAM - 9/19/57
Drafting - DM - 9/30/57

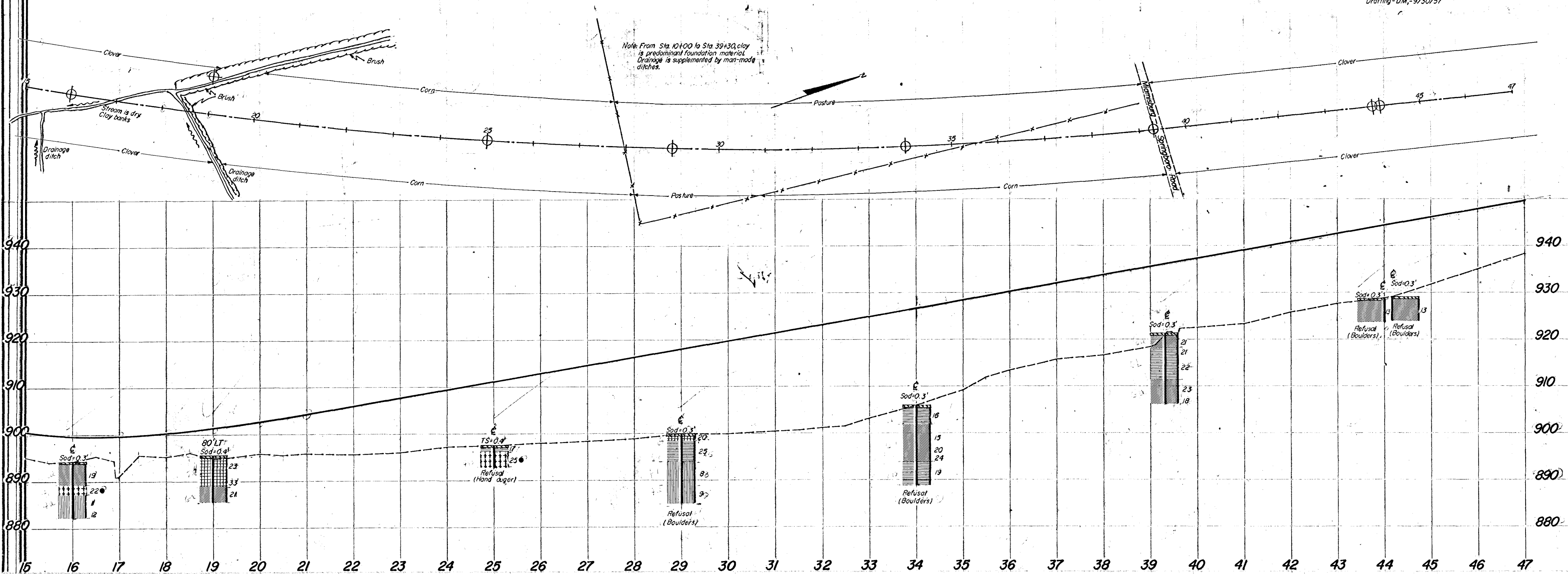
LEGEND FOR PROJECT-AVERAGE RESULTS OF TESTS-										118 SAMPLES TESTED		
DESCRIPTION	H. R. B. CLASS	OHIO CLASS	% AGG.	% C. SAND	% F. SAND	% SILT	% CLAY	LIQUID LIMIT	PLASTICITY INDEX	WATER CONTENT	SAMPLES TESTED	
 Gravel	A-1-a(1)	A-1-a	60	19	16	3	2	NP	NP	11	1	
 Gravel with sand	A-1-b(1)	A-1-b	39	21	20	13	7	NP	NP	12	7	
 Gravel with sand and silt	A-2-4(1)	A-2-4	33	15	18	22	12	NP	NP	12	2	
 Sandy silt	A-4(4)	A-4a	17	10	18	35	20	19	5	13	54	
 Silt	A-4(8)	A-4b	1	3	6	61	29	26	6	21	7	
 Silt and clay	A-6(9)	A-6a	9	4	7	37	43	31	13	17	20	
 Silty clay	A-6(11)	A-6b	5	4	12	38	41	37	18	20	16	
 Elastic clay	A-7-5(12)	A-7-5	0	2	7	52	39	48	17	30	1	
 Clay	A-7-6(14)	A-7-6	6	2	4	42	46	46	22	23	10	
 Overburden	Visual Classification	Auger boring plotted to vertical scale only. — W Free water										
 Shale	Visual Classification	Auger boring — plan view.  Sod & Topsoil = X ± Approx. depth.										
 Limestone	Visual Classification	Core boring — plan view.  Berm material										

• Water content nearly equal to or greater than liquid limit.

• This A-4a soil will be rubbery and unstable at water contents which exceed the optimum.










Note: Figures beside borings indicate water content in percent.






Samples Taken
Lab Nos. So
55859-55863 incl,
55867-55874 incl,
55898-55900 incl,
72173-72201 incl,
72292-72364 incl,



LEGEND FOR PROJECT-AVERAGE RESULTS OF TESTS-

118 SAMPLES TESTED

DESCRIPTION	H. R. B. CLASS	OHIO CLASS	% AGG.	% C. SAND	% F. SAND	% SILT	% CLAY	LIQUID LIMIT	PLASTICITY INDEX	WATER CONTENT	SAMPLES TESTED
 Gravel	A-1-a(0)	A-1-a	60	19	16	3	2	NP	NP	11	1
 Gravel with sand	A-1-b(0)	A-1-b	39	21	20	13	7	NP	NP	12	7
 Gravel with sand and silt	A-2-4(0)	A-2-4	33	15	18	22	12	NP	NP	12	2
 Sandy silt	A-4(4)	A-4a	17	10	18	35	20	19	5	13	54
 Silt	A-4(8)	A-4b	1	3	6	61	29	26	6	21	7
 Silt and clay	A-6(9)	A-6a	9	4	7	37	43	31	13	17	20
 Silty clay	A-6(11)	A-6b	5	4	12	38	41	37	18	20	16
 Elastic clay	A-7-5(12)	A-7-5	0	2	7	52	39	48	17	30	1
 Clay	A-7-6(14)	A-7-6	6	2	4	42	46	46	22	23	10

 Overburden	Visual Classification	Auger boring plotted to vertical scale only.	—W Free water
 Shale	Visual Classification	⊕ Auger boring—plan view.	 Sod & Topsoil=X ¹ / ₂ Approx. depth.
 Limestone	Visual Classification	⊕ Core boring—plan view.	 Berm material

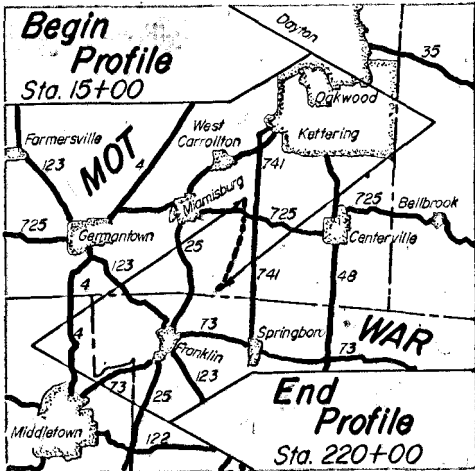
- Water content nearly equal to or greater than liquid limit.

- This A-4a soil will be rubbery and unstable at water contents which exceed the optimum.

Note: Figures beside borings indicate water content in percent.

Samples Taken
Lab Nos. So
55859-55863 incl,
55867-55874 incl,
55898-55900 incl,
72173-72201 incl,
72292-72364 incl,

Begin Profile
Sta. 15+00

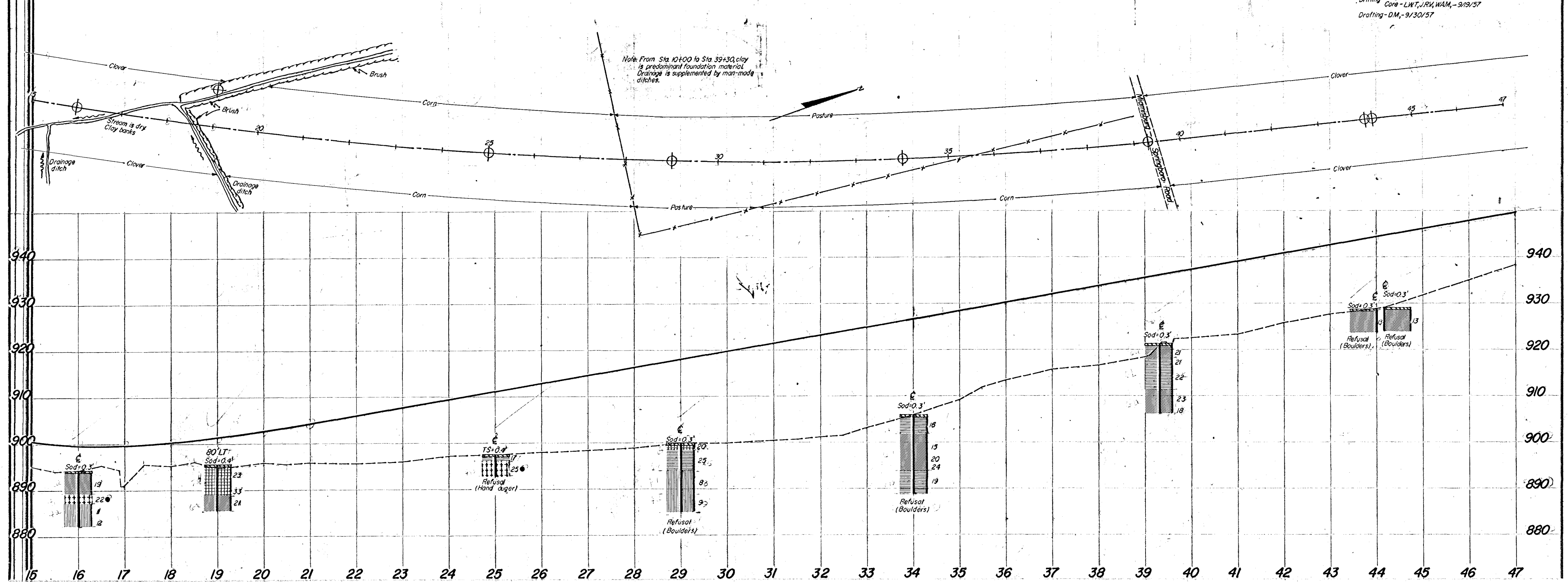


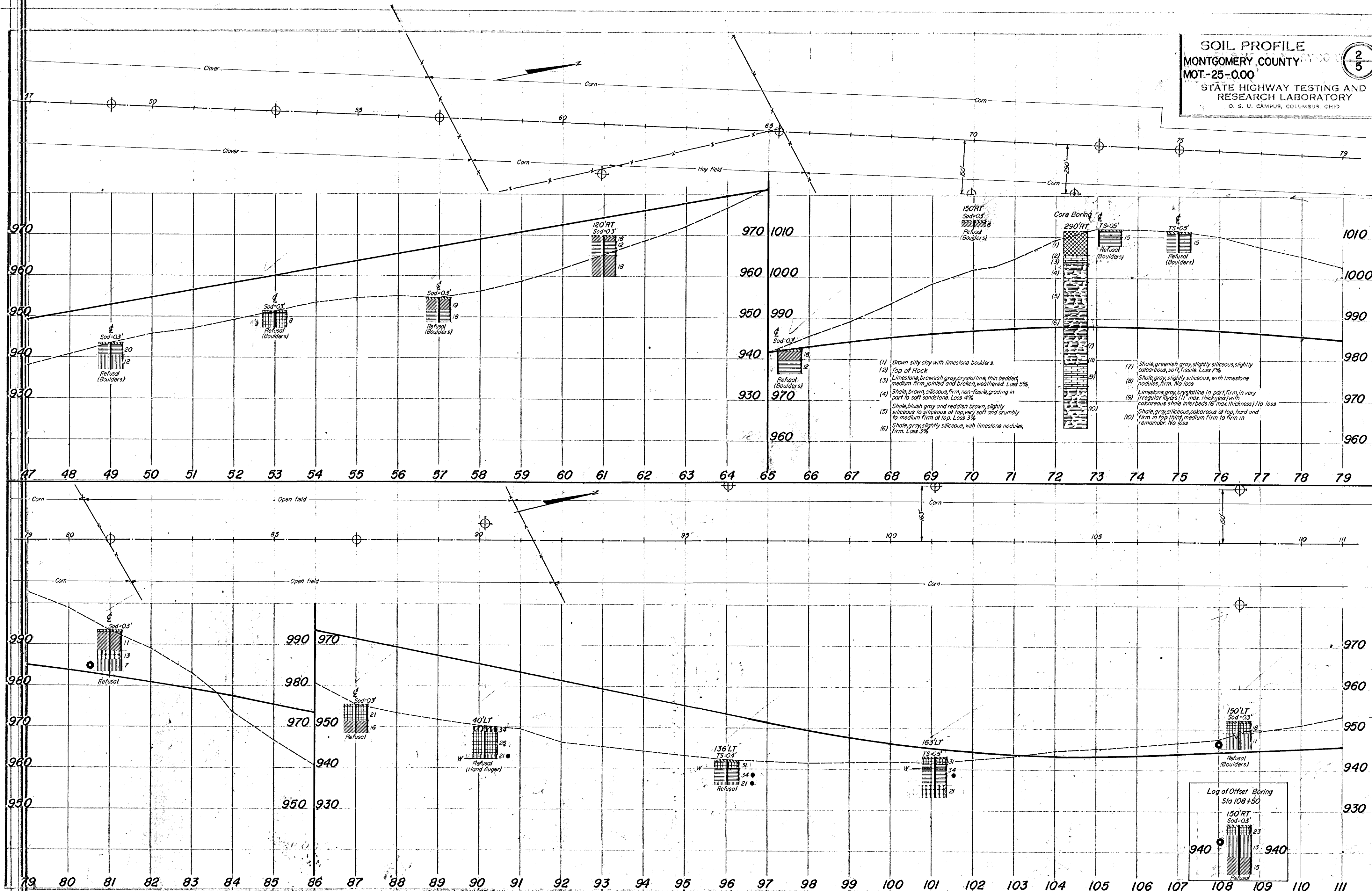
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Drilling - Auger - CAG, DJH, BEB - 8/30/57

Corb - LWT, JRV, WAM, - 9/19/57

Drafting-D.M.-9/30/57



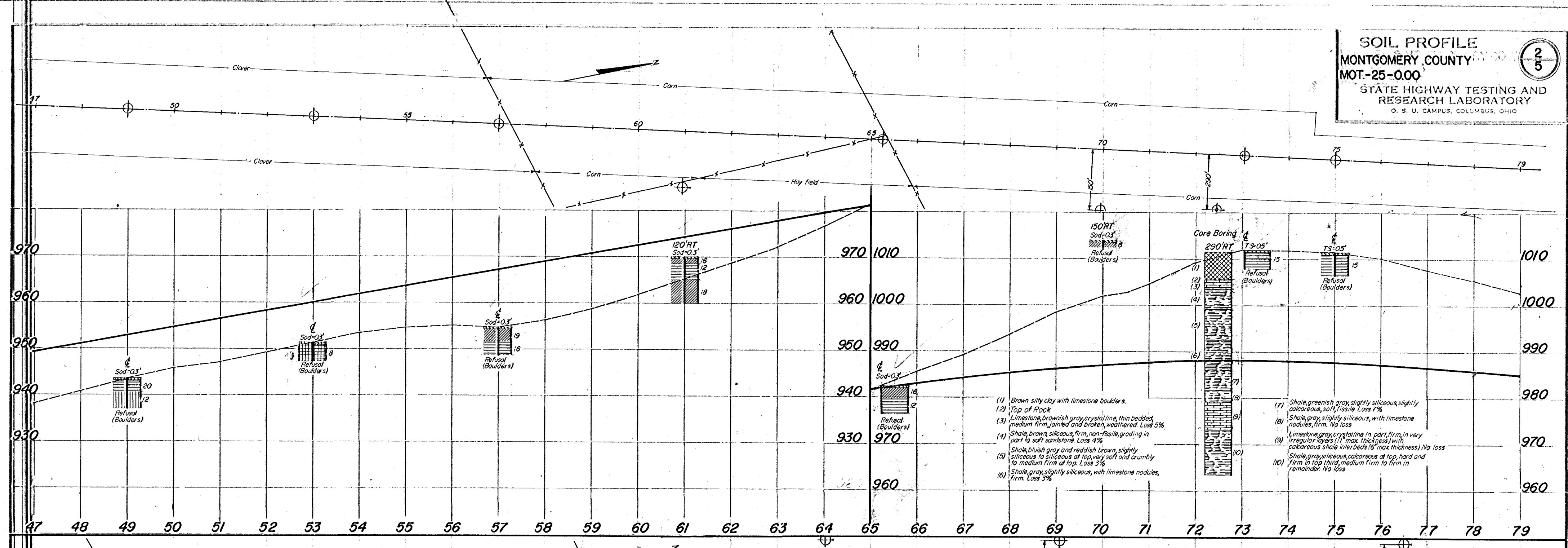


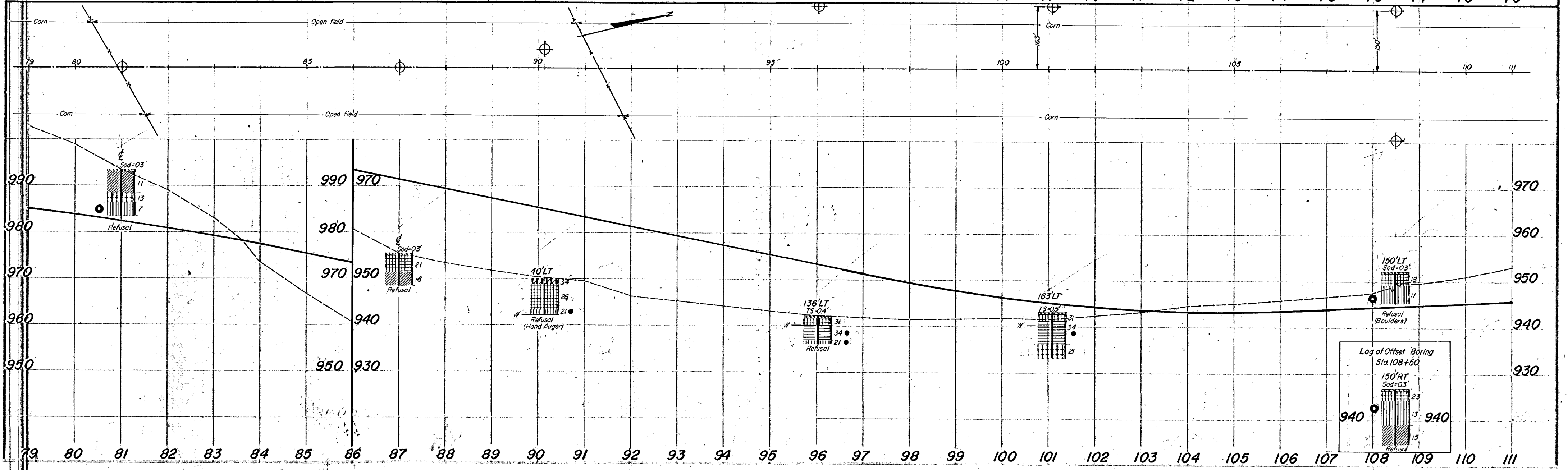
SOIL PROFILE
MONTGOMERY COUNTY
MOT-25-0.00

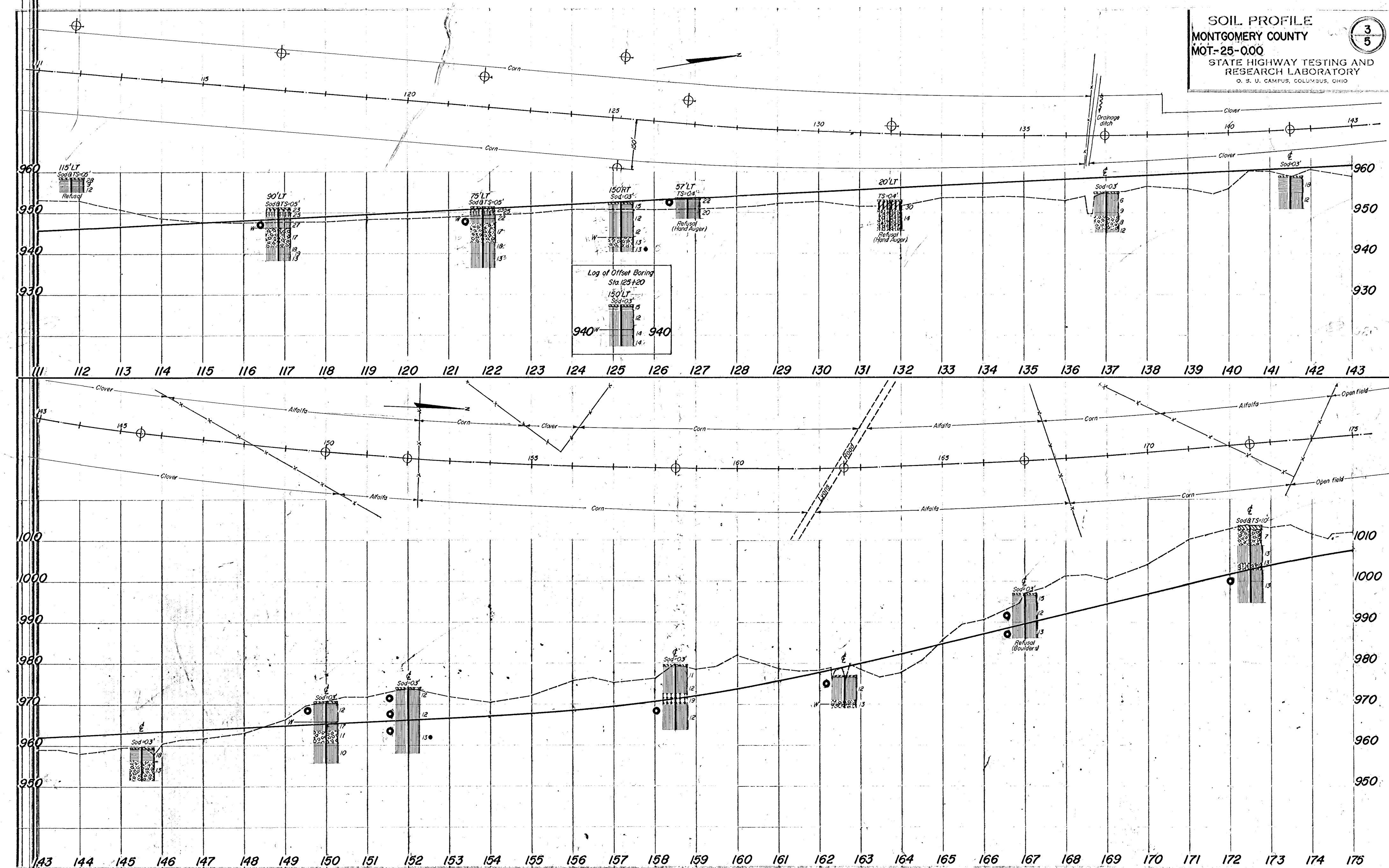
STATE HIGHWAY TESTING AND
RESEARCH LABORATORY

O. S. U. CAMPUS, COLUMBUS, OHIO

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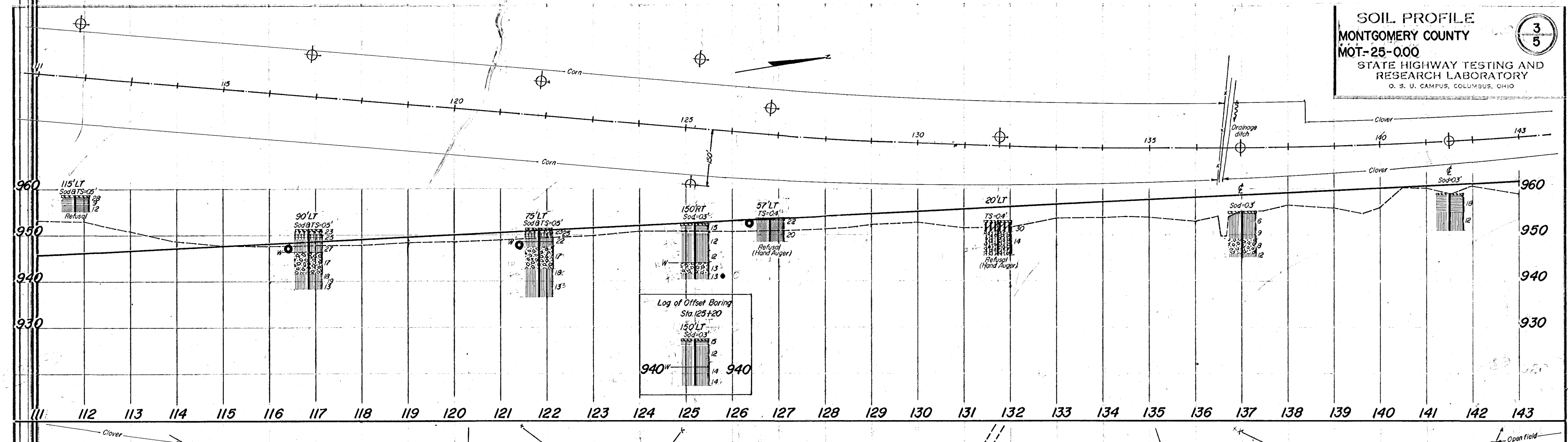


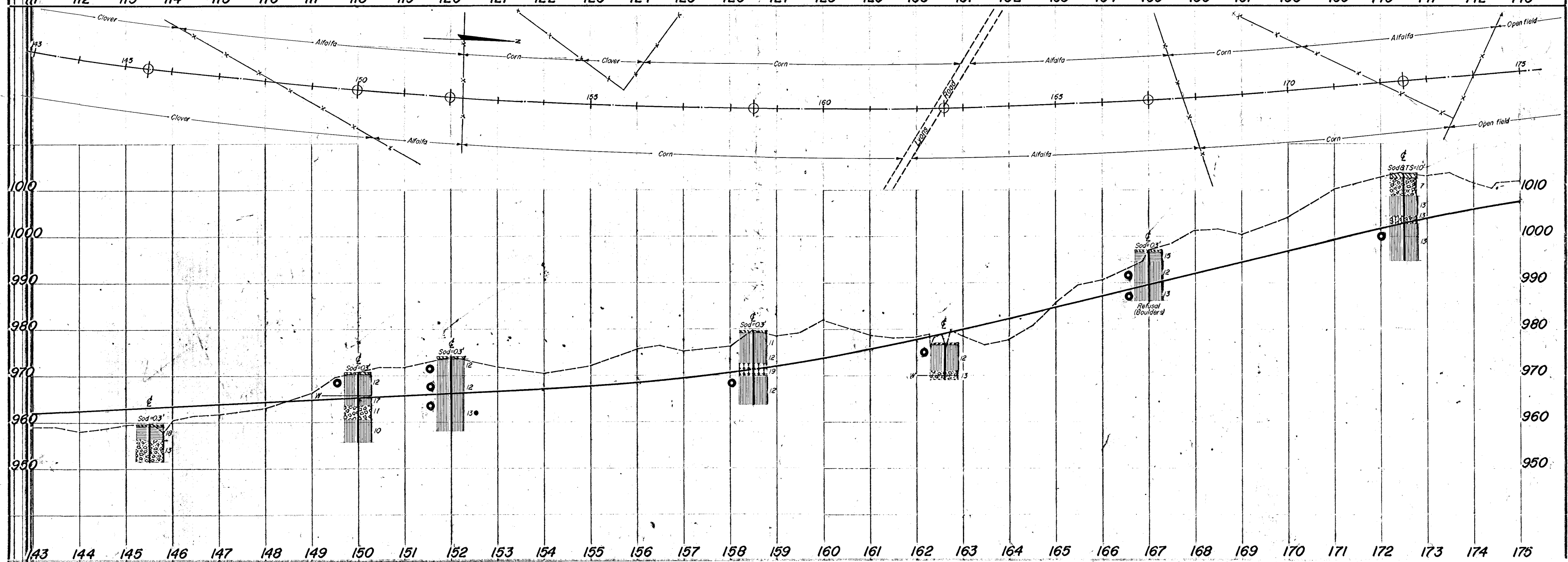


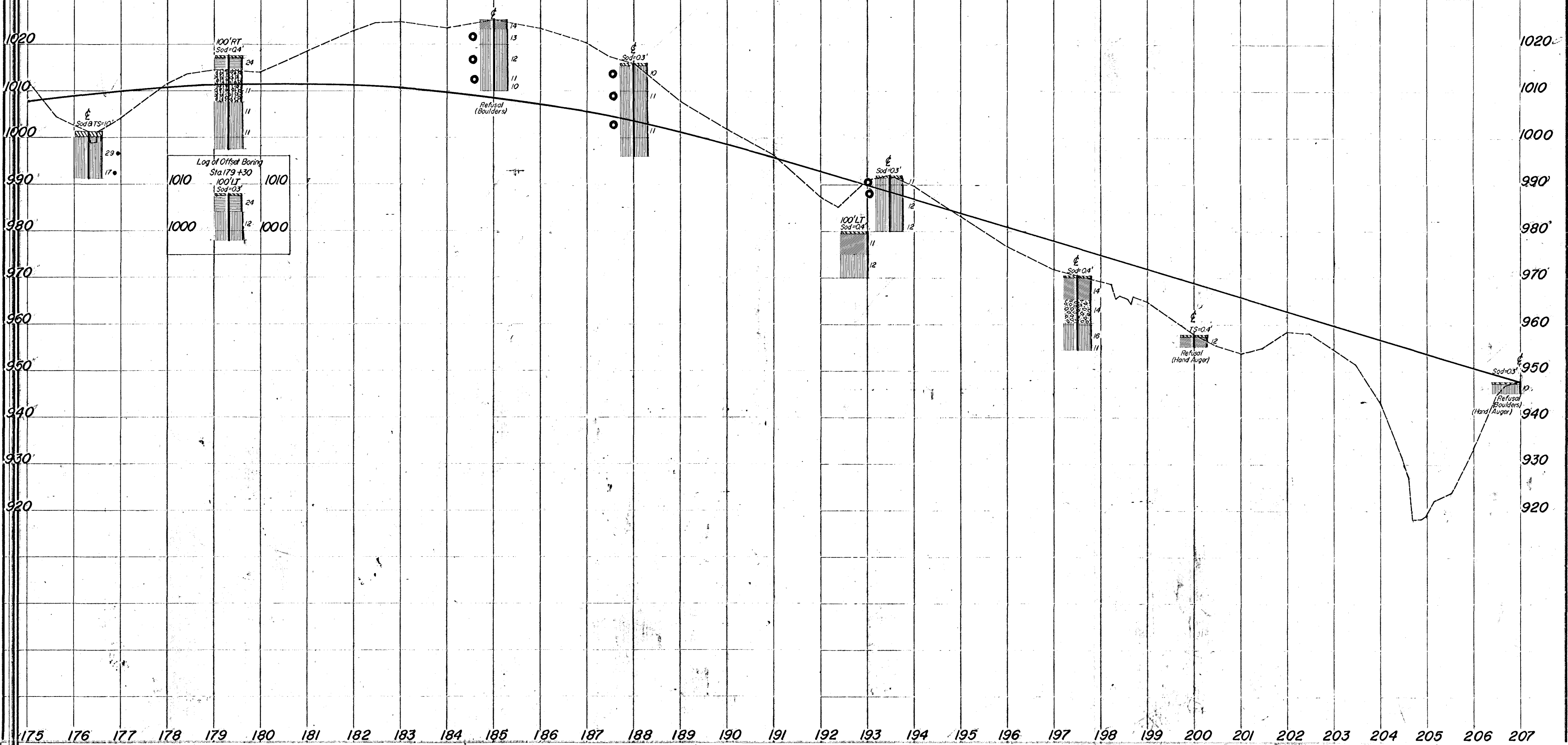
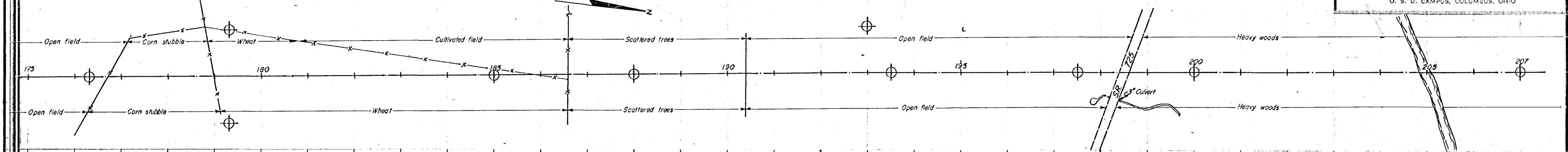


SOIL PROFILE
MONTGOMERY COUNTY
MOT-25-0.00
STATE HIGHWAY TESTING AND
RESEARCH LABORATORY
O. S. U. CAMPUS, COLUMBUS, OHIO

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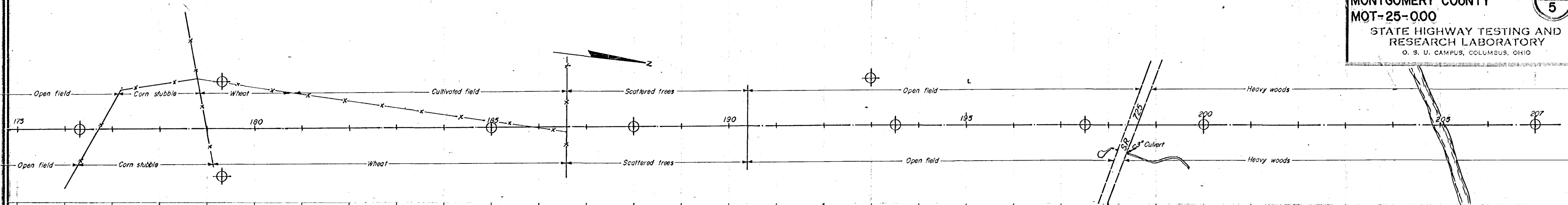


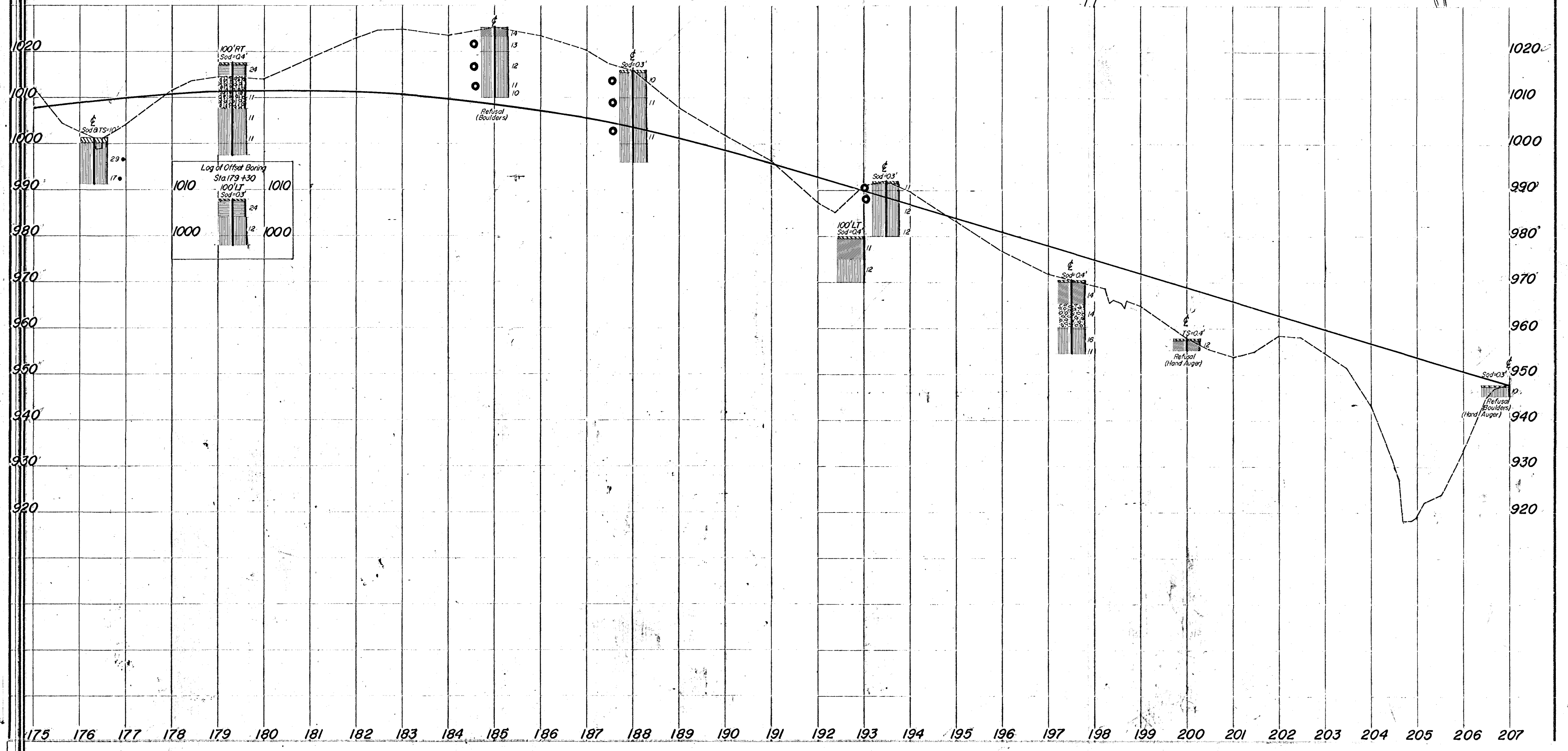


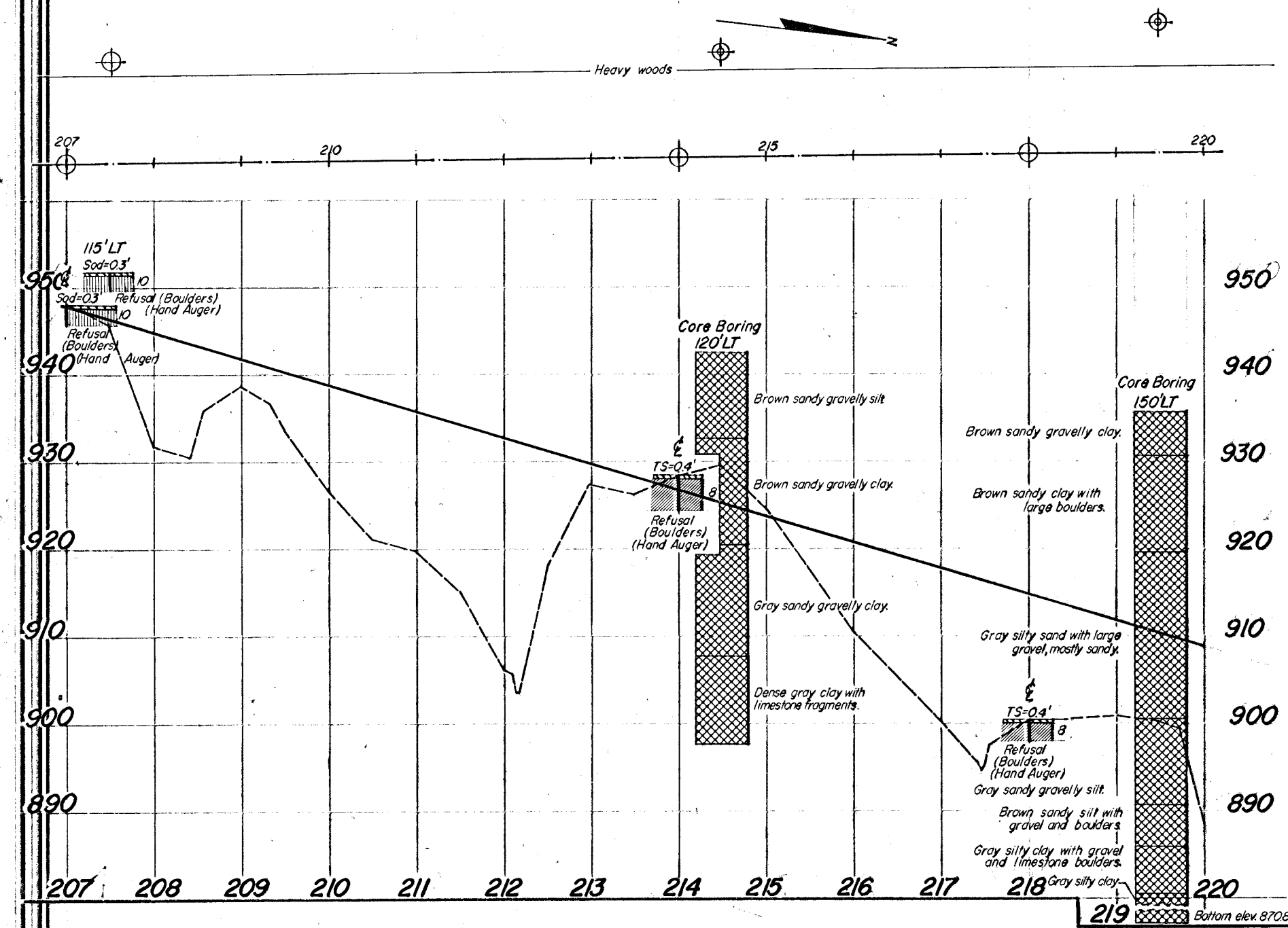
SOIL PROFILE
MONTGOMERY COUNTY
MOT-25-0.00

STATE HIGHWAY TESTING AND
RESEARCH LABORATORY
O. S. U. CAMPUS, COLUMBUS, OHIO

4
5







Summary of Soil Test Data

Station & Offset	Depth From To	% Agg.	% C.S.	% F.S.	% Sil.	% Clay	LL	PI	% W.C.	SHTL Class
16+00 CL	0.0-5.0'	0	0	1	31	68	35	19	19	A-6a
	5.0-7.0'	0	0	4	74	26	22	6	19	A-6b
	7.0-10.5'	32	10	14	29	16	18	5	11	A-4a
	10.5-12.0'	10	11	15	36	28	20	5	11	A-4a
19+00 80' Lt.	0.0-4.0'	0	1	4	41	54	31	22	21	A-7-a
	4.0-7.0'	0	0	2	37	60	30	22	21	A-7-b
	7.0-10.0'	0	0	0	38	62	31	25	21	A-7-c
25+00 CL	0.0-1.5'	0	2	8	52	38	28	19	19	A-6a
	1.5-7.5'	7	10	12	53	35	27	19	19	A-6b
29+00 OB	0.0-1.65'	0	1	3	54	46	44	20	20	A-7-6
	1.65-6.0'	0	0	11	45	44	37	21	20	A-6b
	6.0-11.0'	23	14	20	27	14	27	14	20	A-4a
	11.0-15.0'	10	12	18	33	27	21	16	20	A-4a
34+00 CL	0.0-4.0'	1	2	3	47	47	31	17	16	A-6b
	4.0-9.0'	13	7	10	34	36	31	11	11	A-6a
	9.0-11.0'	0	0	4	33	61	31	11	11	A-6a
	11.0-12.0'	0	0	13	55	28	31	11	11	A-6a
	12.0-17.0'	0	0	19	27	47	31	11	11	A-6a
39+30 CL	0.0-3.0'	0	2	6	61	31	31	12	12	A-6a
	3.0-4.5'	4	2	17	22	50	31	12	12	A-6b
	4.5-10.0'	2	0	9	33	52	31	12	12	A-6b
	10.0-19.0'	1	3	8	36	55	31	12	12	A-6b
	19.0-25.0'	0	0	0	45	55	31	12	12	A-6b
44+00 CL	0.0-3.0'	14	5	16	27	52	31	12	12	A-6a
49+00 CL	0.0-3.0'	2	3	11	43	44	31	12	12	A-6a
	3.0-6.5'	18	11	12	29	50	31	12	12	A-6a
53+00 CL	0.0-4.0'	25	7	9	22	66	31	12	12	A-6a
57+00 CL	0.0-3.0'	3	1	3	36	59	31	12	12	A-6a
	3.0-6.0'	16	7	1	29	40	35	16	16	A-6b
61+00 120' Lt.	5.0-10.0'	0	0	1	34	64	34	11	18	A-6a
65+20 CL	0.0-2.5'	10	2	6	38	44	37	15	16	A-6a
	2.5-6.0'	7	2	2	36	53	35	16	13	A-6a

Station & Offset	Depth From To	% Agg.	% C.S.	% F.S.	% Sil.	% Clay	LL	PI	% W.C.	SHTL Class
70+00 150' Lt.	0.0-1.5'	10	19	14	28	22	31	11	11	A-6a
73+05 CL	0.0-4.0'	0	5	11	40	44	31	12	12	A-6a
81+00 CL	0.0-5.0'	0	0	0	42	58	31	12	12	A-6a
	5.0-7.0'	0	0	0	38	62	31	12	12	A-6a
	7.0-10.0'	0	0	0	31	69	31	12	12	A-6a
87+00 CL	0.0-1.0'	23	0	0	38	59	31	12	12	A-6a
	1.0-7.0'	18	0	0	31	51	31	12	12	A-6a
90+15 40' Lt.	1.5-2.0'	0	0	0	51	49	49	25	26	A-7-6
	2.0-8.4'	44	5	9	36	59	31	12	12	A-6a
96+05 136' Lt.	0.0-2.0'	0	1	3	40	57	41	16	31	A-7-6
	2.0-5.5'	0	1	16	55	28	37	18	34	A-6b
101+10 163' Lt.	7.0-10.0'	0	1	4	54	41	22	16	21	A-4b
108+50 150' Lt.	0.0-3.0'	0	3	11	34	52	36	28	18	A-7-6
	3.0-7.0'	15	8	11	33	33	38	11	11	A-4a
108+50 150' Lt.	0.0-2.5'	0	1	4	53	42	44	12	23	A-7-6
	2.5-8.0'	11	10	14	33	32	28	13	13	A-4a
	8.0-12.0'	0	0	0	37	63	38	14	15	A-6a
116+35 50' Lt.	0.0-1.0'	0	2	8	56	34	31	9	23	A-4b
	1.0-2.5'	0	1	5	40	55	28	23	23	A-7-6
	2.5-1.0'	12	5	16	44	21	25	17	27	A-4a
	1.0-11.0'	40	19	21	15	5	17	17	17	A-1-b
	10.0-11.0'	16	8	14	43	31	38	13	13	A-4a
	11.0-13.0'	11	7	11	43	28	38	13	13	A-4a
	13.0-15.0'	1	4	6	69	20	38	19	19	A-4b
121+33 75' Lt.	0.0-1.0'	0	9	25	46	13	31	12	22	A-6a
125+20 150' Lt.	0.0-1.5'	5	11	32	22	30	31	14	15	A-6a
	1.5-1.0'	18	12	24	31	27	31	14	14	A-6a
	1.0-1.0'	18	18	26	25	19	31	14	14	A-6a
	0.0-10.0'	22	8	18	33	19	31	14	14	A-6a
125+20 150' Lt.	0.0-8.5'	14	11	19	31	25	22	6	12	A-6a
	8.5-11.0'	21	31	35	8	5	NP	NP	13	A-6a
	11.0-12.0'	12	12	20	38	13	16	2	13	A-6a

Station & Offset	Depth From To	% Agg.	% C.S.	% F.S.	% Sil.	% Clay	LL	PI	% W.C.	SHTL Class
126+32 57' Lt.	0.0-1.0'	7	4	11	43	25	28	8	22	A-4a
	1.0-5.1'	37	5	13	26	20	24	11	20	A-6a
131+75 20' Lt.	0.0-2.5'	0	2	17	32	49	17	17	30	A-2-5
137+00 CL	0.0-3.5'	14	12	22	38	20	22	7	6	A-4a
	3.5-6.0'	17	13	23	30	17	17	4	9	A-4a
	6.0-8.0'	40	19	19	13	4	NP	NP	8	A-1-b
	8.0-10.0'	13	11	22	39	15	16	2	12	A-4a
141+50 CL	4.0-8.0'	25	10	18	32	15	18	3	12	A-4a
145+50 CL	0.0-3.5'	0	1	3	50	46	42	19	18	A-6b
	3.5-8.0'	39	20	21	14	7	NP	NP	13	A-1-b
150+00 CL	0.0-4.0'	9	8	29	34	20	21	4	12	A-4a
	4.0-7.0'	18	13	31	29	9	NP	NP	17	A-4a
	7.0-10.0'	60	19	16	3	2	NP	NP	11	A-1-a
	10.0-15.0'	20	13	21	28	18	17	5	16	A-4a
152+00 CL	0.0-3.0'	15	9	16	39	21	19	4	12	A-4a
	3.0-16.0'	0	9	27	43	21	16	2	13	A-4a
158+50 CL	0.0-4.0'	20	15	26	25	14	NP	NP	11	A-4a
	4.0-7.0'	14	11	21	34	20	20	6	12	A-4a
	7.0-10.0'	0	1	3	82	14	NP	NP	19	A-4b
	10.0-16.0'	11	14	24	37	14	NP	NP	12	A-4a
162+60 CL	0.0-6.0'	17	10	21	29	23	17	4	12	A-4a
	6.0-8.0'	55	10	12	14	9	18	4	13	A-1-b
167+00 CL	0.0-2.5'	5	5	22	27	41	32	17	15	A-6a
	2.5-8.0'	14	10	22	32	22	20	6	12	A-4a
	8.0-11.0'	11	9	13	51	21	20	5	13	A-4a
172+50 CL	1.0-3.0'	46	19	13	10	12	NP	NP	7	A-1-b
	3.0-6.0'	33	7	14	32	14	19	3	13	A-4a
	6.0-11.0'	27	17	22	24	10	NP	NP	13	A-2-4
	11.0-19.0'	20	10	19	31	20	19	4	13	A-4a
176+30 CL	0.0-1.0'	12	7	21	35	25	28	10	29	A-4a
	1.0-17.0'	19	10	13	38	20	19	5	17	A-4a
179+30 100' Lt.	0.0-3.0'	0	11	120	38	17	12	3	12	A-4a
	3.0-10.0'	11	11	120	38	17	12	3	12	A-4a

Station & Offset	Depth From To	% Agg.	% C.S.	% F.S.	% Sil.	% Clay	LL	PI	% W.C.	SHTL Class
179+30 100' Lt.	0.0-3.0'	0	8	10	29	23	38	20	24	A-6b
	3.0-10.0'	39	12	14	21	14	NP	NP	11	A-4a
	10.0-19.0'	14	10	19	37	20	17	3	11	A-4a
	19.0-20.0'	17	10	13	37	13	18	4	11	A-4a
181+00 CL	0.0-2.0'	14	7	12	39	28	27	11	16	A-4a
	2.0-5.0'	26	5	12	37	20	6	13	13	A-4a
	5.0-11.0'	20	12	25	26	17	20	5	12	A-4a
	11.0-14.0'	11	8	16	39	26	19	5	13	A-4a
	14.0-19.0'	20	10	19	34	13	16	3	10	A-4a
183+00 CL	0.0-1.0'	20	8	16	32	20	21	6	10	A-4a
	1.0-10.0'	20	9	13	31	23	16	2	11	A-4a
	0.0-20.0'	22	9	13	31	23	16	4	11	A-4a
193+00 100' Lt.	0.0-5.5'	28	6	11	33	22	27	12	11	A-6a
	5.5-10.0'	11	9	21	33	21	19	5	12	A-4a
197+50 CL	0.0-2.0'	12	10	20	35	23	23	8	11	A-4a
	2.0-10.0'	16	11	18	37	19	21	8	12	A-4a
	10.0-12.0'	19	4	9	45	23	13	4	12	A-4a
197+50 CL	0.0-3.0'	13	10	16	36	25	24	11	14	A-6a
	3.0-10.0'	32	27	23	12	6	NP	NP	14	A-1-b
	10.0-19.0'	11	9	14	40	26	20	5	16	A-4a
	15.0-19.0'	11	10	19	37	23	19	5	11	A-4a
200+00 CL	0.0-2.5'	7	3	17	40	40	32	12	12	A-6b
	2.5-6.0'	18	11	12	29	40	32	12	12	A-6b
207+00 CL	0.0-3.0'	8	8	22	29	35	31	5	10	A-4a
210+00 CL	0.0-4.0'	9	7	17	34	33	23	11	8	A-6a



Heavy woods



207



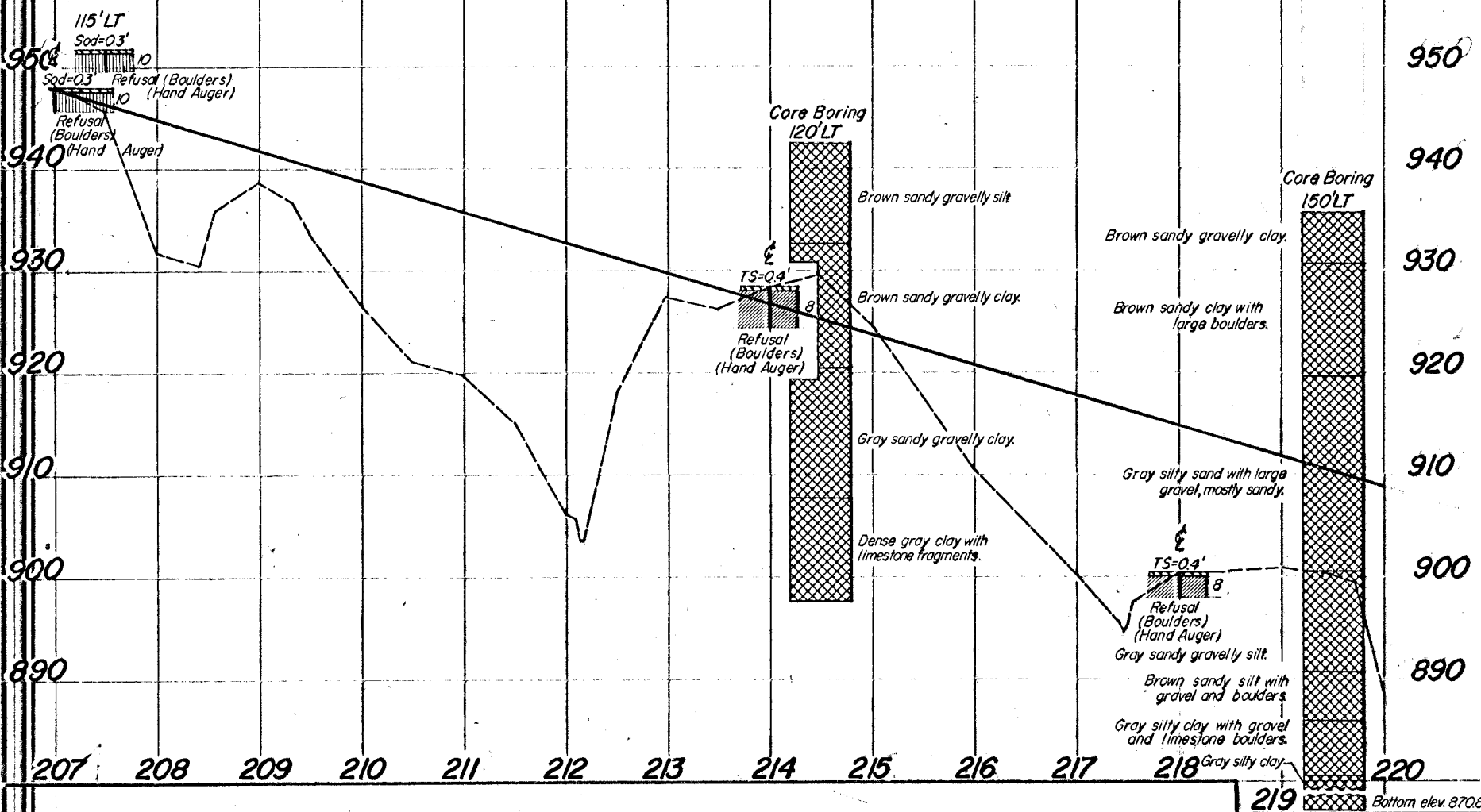
210



215



220



Station & Offset	Depth From To	% Agg.	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	SHTL Class
16+00 CL	0.2-5.0 5.0-7.0 7.0-10.0 10.0-12.0	0 0 32 10	0 2 10 11	1 4 14 15	31 24 29 36	68 20 16 28	35 23 16 20	14 6 5 5	19 19 11 11	A-6a A-6b A-4a A-4a
19+00 80' Lt.	0.4-4.0 4.0-7.0 7.0-10.0	0 0 0	1 0 0	4 3 0	41 37 38	51 20 52	23 23 21	2 3 3	23 23 21	A-7-6 A-7-6 A-6a
25+00 CL	0.4-1.5 1.5-4.5	0 7	2 10	8 12	52 53	33 19	19 23	19 23	19 23	A-6b A-4b
29+00 CL	0.3-1.5 1.5-6.0 6.0-11.0 11.0-15.0	0 0 25 10	1 4 14 12	3 11 20 13	54 45 27 33	42 40 14 27	28 23 14 23	20 23 16 16	20 23 16 16	A-7-6 A-6b A-4a A-4a
34+00 CL	0.3-4.0 4.0-9.0 9.0-11.0 11.0-12.0 12.0-17.0	1 13 0 0 0	2 7 4 4 7	3 10 33 53 27	47 36 61 61 47	47 36 21 21 27	17 15 17 13 13	16 15 13 13 13	16 15 13 13 13	A-6b A-6a A-6a A-6a A-6b
39+30 CL	0.3-1.0 1.0-4.5 4.5-10.0 10.0-14.0 14.0-15.0	0 4 2 2 0	2 7 9 8 0	6 17 33 36 45	61 22 52 36 55	31 50 32 33 35	15 19 17 15 15	21 19 17 17 17	21 19 17 17 17	A-6a A-6b A-6b A-6a A-6a
44+00 CL	0.3-5.0	14	5	16	27	50	15	15	15	A-6a
49+00 CL	0.3-3.0 3.0-6.5	2 18	3 11	11 12	43 29	33 23	16 23	16 23	16 23	A-6a A-4a
53+00 CL	0.3-4.0	35	7	9	22	27	17	17	17	A-7-6
57+00 CL	0.3-3.0 3.0-6.0	8 19	3 7	5 2	36 29	43 40	27 25	12 16	12 16	A-6a A-6b
61+00 120' Rt.	5.0-10.0	0	1	1	34	64	34	11	18	A-6a
65+20 CL	0.3-2.5 2.5-6.0	10 7	2 2	6 2	38 36	44 53	37 35	15 16	16 12	A-6a A-6b

Station & Offset	Depth From To	% Agg.	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	SHTL Class
70+00 150' Rt.	0.3-1.5	19	19	14	26	22	31	14	2	A-6a
73+05 CL	0.3-4.0	0	5	13	44	37	20	15	15	A-6a
81+00 CL	0.3-5.0 5.0-7.0 7.0-10.0	0 0 35	0 0 8	0 0 2	42 50 31	46 48 23	18 23 23	11 11 11	11 11 11	A-6a A-6a A-6a
87+00 CL	0.3-4.0 4.0-7.0	23 14	3 3	2 3	23 32	23 18	23 31	23 11	23 11	A-7-6 A-6a
90+15 40' Lt.	1.5-2.0 2.0-8.4	0 44	0 5	0 8	51 36	49 7	48 23	25 5	26 27	A-7-6 A-4b
96+05 136' Lt.	0.4-2.0 2.0-5.5	0 0	1 1	3 16	49 55	47 28	41 37	16 18	31 34	A-7-6 A-6b
101+10 163' Lt.	7.0-10.0	0	1	4	54	41	22	6	21	A-4b
108+50 150' Lt.	0.3-3.0 3.0-7.0	0 15	3 8	11 11	34 33	52 33	46 26	23 8	18 11	A-7-6 A-4a
108+50 150' Rt.	0.3-2.5 2.5-8.0 8.0-12.0	0 11 0	1 10 0	4 14 0	53 33 37	42 32 63	44 24 34	17 8 14	23 13 15	A-7-6 A-4a A-6a
116+35 90' Lt.	0.5-1.0 1.0-2.5 2.5-1.0 1.0-11.0 11.0-13.0 13.0-15.0	0 12 40 16 11 1	2 5 19 8 7 4	8 16 21 14 11 6	56 46 15 48 43 69	34 21 5 19 23 23	31 21 11 19 19 19	9 23 23 19 19 19	23 23 23 19 19 19	A-4b A-7-6 A-4a A-1-b A-4a A-4b
121+33 75' Lt.	0.4-1.0	5	9	25	46	15	22	1	22	A-6a
125+20 150' Lt.	0.1-1.5 1.5-5.0 5.0-11.0 11.0-15.0	5 18 18 22	11 12 18 8	32 22 26 18	22 31 25 33	30 17 13 19	34 17 18 19	16 2 1 2	15 15 15 15	A-6a A-6a A-6a A-6a
125+20 150' Lt.	0.3-8.5 8.5-11.0 11.0-12.0	14 21 12	11 31 12	19 35 20	31 8 28	25 5 13	22 NP 16	6 NP 2	12 13 13	A-6a A-6a A-6a

Station & Offset	Depth From To	% Agg.	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	SHTL Class
126+82 57' Lt.	0.4-1.0 1.0-5.0	7 37	4 5	11 12	13 26	25 20	28 28	8 11	22 20	A-4a A-6a
131+75 20' Lt.	0.4-2.5	0	2	7	52	32	48	17	30	A-7-5
137+00 CL	0.3-3.5 3.5-8.0 8.0-8.0 9.5-10.0	14 17 40 13	12 13 19 11	22 23 19 22	32 30 18 39	20 17 4 15	22 17 NP 16	7 4 NP 2	6 9 8 12	A-4a A-4a A-1-b A-4a
141+50 CL	4.0-8.0	25	10	18	32	15	18	3	12	A-4a
145+50 CL	0.3-3.5 3.5-8.0	0 38	1 20	3 21	50 14	46 7	42 NP	19 NP	18 13	A-6b A-1-b
150+00 CL	0.3-4.0 4.0-7.0 7.0-10.0 10.0-15.0	9 18 60 20	8 13 19 13	29 31 16 21	34 29 3 28	20 9 2 18	21 NP NP 17	4 NP NP 5	12 17 11 10	A-4a A-4a A-1-a A-4a
152+00 CL	4.5-9.0 9.0-16.0	15 0	9 9	16 27	39 43	21 21	19 16	4 2	12 13	A-4a A-4a
158+50 CL	0.3-4.0 4.0-7.0 7.0-10.0 10.0-16.0	20 14 0 11	15 11 1 14	26 21 3 24	25 34 82 37	14 20 14 14	NP 20 NP NP	NP 6 NP NP	11 12 19 12	A-4a A-4a A-4b A-4a
162+60 CL	0.3-6.0 6.0-8.0	17 55	10 10	21 12	29 14	23 9	17 18	4 4	12 13	A-4a A-1-b
167+00 CL	0.3-2.5 2.5-8.0 8.0-11.0	5 14 11	5 10 9	22 22 13	27 32 41	41 22 21	32 20 20	17 6 5	15 12 13	A-6b A-4a A-4a
172+50 CL	1.0-1.0 5.0-9.0 9.0-11.0 11.0-19.0	46 33 27 20	19 7 17 10	13 14 22 19	10 32 24 31	12 14 10 20	NP NP NP 19	NP 3 NP 4	7 13 13 13	A-1-b A-4a A-2-4 A-4a
176+30 CL	1.0-8.0 8.0-10.0	12 19	7 10	21 13	35 38	25 20	28 19	10 5	29 17	A-4a A-4a
179+30 100' Lt.	0.3-4.0 4.0-10.0	0 11	2 11	13 20	52 38	35 17	37 17	17 3	24 12	A-6b A-4a

Station & Offset	Depth From To	% Agg.	% C.S.	% F.S.	% Silt	% Clay	LL	PI	% W.C.	SHTL Class
179+30 100' Rt.	0.4-3.0 3.0-10.0 10.0-14.0 14.0-20.0	30 39 14 17	8 12 10 10	10 14 19 13	29 21 37 37	23 14 20 13	23 14 20 13	20 NP NP 18	24 NP NP 11	A-6b A-7-6 A-4a A-4a
181+00 CL	0.0-2.0 2.0-6.0 6.0-11.0 11.0-14.0 14.0-15.0	14 26 20 11 24	7 5 12 8 10	12 12 25 16 19	39 37 26 39 19	28 20 17 26 13	27 20 20 19 16	11 6 5 5 3	14 13 14 11 10	A-6a A-6a A-6a A-6a A-6a
188+00 CL	0.3-4.0 4.0-10.0 10.0-20.0	24 20 23	8 9 8	16 20 13	32 35 31	20 16 23	21 16 20	6 2 4	10 11 11	A-6a A-6a A-6a
193+00 100' Lt.	0.4-5.5 5.5-10.0	28 11	6 9	11 21	33 33	22 21	27 19	12 5	11 12	A-6a A-4a
193+50 CL	0.1-2.0 2.0-10.0 10.0-12.0	12 16 19	10 10 4	20 18 9	35 37 45	23 19 23	23 21 13	8 8 4	11 12 12	A-4a A-4a A-4a
197+50 CL	0.3-1.0 5.0-10.0 10.0-15.0 15.0-16.0	13 32 11 11	10 27 9 10	16 23 14 19	36 12 40 37	25 6 26 23	24 NP 20 19	11 NP 5 5	14 NP 16 11	A-6a A-1-b A-4a A-4a
200+00 CL	0.4-2.5 2.0-7.0	7 8	3 8	10 20	40 29	40 35	32 31	14 5	12 10	A-6a A-4a
207+00 CL	0.3-4.0	9	7	17	34	33	23	11	8	A-6a