

1972 Year 006638

08717

County

Montgomery

Job No.

Bridge No.

MOT-675-0000

Changes

Section

MOT-675-0.00

☐ Over☐ Under

Location

Ramp S over IR 75

## STORAGE DATA

## FOLDER

Section File No. FES 169

Record Center No. 10-H-28

## TRACINGS

Section File No. FEV-131

Record Center No. S-L-182

Topo Sheet

435-9-SW

Design data  
13-G-05

## Site Plans

Date Rec'd. 11-26-71

Revisions

No. Copies

4

Design By

A M Kinney

	RECON	AUGER	CORE	DRIVE ROD
By			SNYDER, BROWN	BROWN
Dates			12/27-29/71	12/14-17/71
No. of Holes or Soundings			3	5
Footage			129.0	171.6
Samples Tested			28	

☒ Samples Accounted

No. of Tracings

4

Remarks Box #FES-205

RECORDED #13-G-13

FOR DESIGN DATA FOLDER,

SEE

Transmittal Date 2/1/72 Revisions

Refer to

AUGER DATA			DRIVE ROD DATA		CORE DATA		
No. of Holes	Footage	Samples	No. of Soundings	Footage	No. of Holes	Footage	Samples
—	—	—	5	171.6	3	129.0	28

# FIELD DATA - SOIL LOG

Location No. B-6 County: MOT. 675  
 Center Pier - Abut. Bridge No. 0000  
 Station: 43+30 Over: 175  
 Offset: 55 FT  
 Started: 12-27-71 Equipment: CORE DRILL  
 Completed: 12-29-71 Diameter: 4520008

Depth Feet	Log	Soil Samples	Elevation	Proposed Footer:	Water Level:
0			960.29	Ground Line	
2.5	#	BROWN SILTY CLAY WITH TRACE OF SAND			
	#	DSFROM 22-32 BLOWS - 5-6			
29.55	#	BROWN SILTY CLAY			
	#	DSFROM 5-6 BLOWS - 5-6			
7.5	#	BROWN SILTY CLAY			
	#	DSFROM 7-8 BLOWS - 5-5			
	#	SILTY CLAY INTO SAND AND GRAVEL			
9.50	#	DSFROM 11-12 BLOWS - 8-9			
12.5	#	SAND AND GRAVEL			
	#	DSFROM 12-13 BLOWS - 6-6			
	#	SAND AND GRAVEL WITH BOULDERS			
19.45	#	DSFROM 15-16 BLOWS - 19-12			
	#	HOLE CAVED AT 17' NO D SAMPLE PUT IN CASING			
24.0	#	HARD GRAY TILL			
	#	DSFROM 20-21 BLOWS - 14-17			
	#	SOFT GRAY SILTY SAND			
29.95	#	DSFROM 25-26 BLOWS - 4-7			

WATER BROWN

GRAY

26	935.29	GRAY TILL WITH SAND AND GRAVEL
30	9930.29	DSFROM 30-31 BLOWS - 5-5
35		SAND AND GRAVEL WITH BOULDER
38	10925.29	DSFROM 35-36 BLOWS - 13-20
40	920.29	TOP OF ROCK AT 38'
		GRAY CLAY AND LIMESTONE
		RUN 2' REELS
45	915.29	LAYERS OF LIMESTONE AND CLAY
	913.29	REPLUGGED TWICE RUN 7' REELS
50		END OF BORING
55		RM OF CATCH BASIN
60		957.69 26 960.29 5.4 28 28 + 2.6

Remarks: 38' CASING IN HOLE  
 TOP OF ROCK AT 38'

Party HIGHMAN EVANS

Chief of Party BROWN

# FIELD DATA - SOIL LOG

Location No. B-9 County: M.T. L.T.S.

Pier-Abut. Bridge No. 0000

Over: 75'

Started: 12-29-71 Equipment: CORE DRILL

Completed: \_\_\_\_\_ Diameter: \_\_\_\_\_

Proposed Footer: \_\_\_\_\_

Water Level: \_\_\_\_\_

Elevation 5951.8 Ground Line

Depth Feet	Log	Soil
0		SIETY CLAY WITH SAND AND GRAVEL
1		DS FROM 24-32 BLOWS - 3-4
2		SILTY SAND AND GRAVEL
3		DS FROM 5-6 BLOWS - 3-3
4		SILTY SAND AND GRAVEL
5		DS FROM 7-8 BLOWS - 2-5
6		SILTY SAND AND GRAVEL WITH BOULDERS
7		DS FROM 10-11 BLOWS - 7-8
8		HOLE CAVED AT 12' NO D.S. DROVE 5' LACING TO 15'
9		SOFT GRAY SILT
10		DS FROM 15-16 BLOWS - 4-6
11		SOFT GRAY SILTY SAND
12		DS FROM 17-18 BLOWS - 2-2
13		FINE SAND AND SILT WITH TRACE OF ORGANIC MAT
14		DS FROM 20-21 BLOWS - 12-10
15		SILTY SAND AND GRAVEL
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WATER BEAD

GRAY

26		TOP OF ROCK AT 26.5
27		LIMESTONE + GRAY
28		RUN IN REC. 10
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31		
32		
33		Thin bedded Limestone + CALCAREOUS SHALE
34		REC - 21
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Remarks: \_\_\_\_\_

Party HIGHMAN EVANS

Chief of Party BROWN

1	1
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770t-675-0000

[illegible]

## County, Rt. No., Section

Mot-675

Bridge No.

0000

Lab. No. So.-	Sample No.	Station No.	Repre- sents Feet	Mechanical Analysis					Physical Characteristics			Ohio Class.	Remarks
				Agg %	C Sand %	F Sand %	Silt %	Clay %	L.L.	P.I.	Water Cont.		
43852	1	45+06 GRT	2.5-3.5	16	11	20	38	15	19	5	14	A-40	BR-SSM +
	3	"	5-6	29	20	14	28	9	17	4	15	A-40	BR-SSM +
	4	"	7.5-8.5	36	9	17	28	10	18	4	15	A-40	BR-SSM +
	5	"	10-11	57	15	12	14	2	N.P.		10	A-16	BR-SSM +
	6	"	15-16	17	10	18	39	16	17	5	10	A-42	GR-SSM +
	7	"	17-18.5	20	9	17	37	17	16	5	14	A-40	GR-SSM +
	8	"	20-21	10	13	39	29	9	N.P.		22	A-42	GR-SSM +
	9	"	25-26	34	23	16	19	8	15	3	12	A-29	BR-SSM +

Mot- 675

RAMPS 0000

Lab. No. So.-	Sample No.	Station No.	Represents Feet	Mechanical Analysis					Physical Characteristics			Ohio Class.	Remarks
				Agg %	C Sand %	F Sand %	Silt %	Clay %	L.L.	P.I.	Water Cont.		
43356	1	41+16 4/14	2.5-3.5	32	14	19	22	13	N	P	11	A-2.4	BR-MAG <sup>W</sup> /G-S + MSG
	7	11	5-6	26	58	11	-5	-	N	P	23	A-1-6	BR-GTS <sup>W</sup> + GSM
	8	11	15-8.5	15	10	18	37	20	17	4	12	A-4a	BR-GR-MAG <sup>W</sup> + GSM
	9	11	10-11	19	11	16	32	22	19	5	12	A-4a	GR-MAG <sup>W</sup> /G + GSM
43360	5	11	12.5-13.5	19	11	19	32	19	16	4	11	A-4a	GR-MAG <sup>W</sup> /G + GSM
	1	11	15-16	17	11	21	31	20	16	4	9	A-4a	GR-MAG <sup>W</sup> /G + GSM
	2	11	17.5-18.5	18	10	15	30	27	20	6	13	A-4a	GR-MAG <sup>W</sup> /G + GSM
	3	11	20-21	22	10	15	33	20	17	4	10	A-4a	GR-MAG <sup>W</sup> /G + GSM
	4	11	25-26	30	10	15	27	18	17	5	15	A-4a	GR-MAG <sup>W</sup> /G + GSM
	5	11	30-31	19	10	15	26	30	21	8	13	A-4a	GR-MAG <sup>W</sup> /G + GSM

LOGS OF CORE BORINGS

COUNTY, RT. NO. & SECTION MOT-675-0000

STATION 45+06 6B ELEVATION TOP OF ROCK \_\_\_\_\_

TOTAL DEPTH OF HOLE 350' ELEVATION BOTTOM OF HOLE \_\_\_\_\_

DEPTH	ELEV.	DESCRIPTION	CORE LOSS (%)
		OVERBURDEN _____ DRIVE SAMPLES	
		Top of Rock	
29.57		Clay Shale, gray, medium-fine, calcareous with thick clay seams and gray, fine, fossiliferous limestone interbeds (conglomerate 21% of the interval) very badly broken and pitted.	52
35.10		Bottom of Branch	

8590  
LOGS OF CORE BORINGS

BRIDGE \_\_\_\_\_ PROFILE \_\_\_\_\_ LOGGED BY: \_\_\_\_\_

COUNTY, RT. NO. &amp; SECTION MOT-675-0000 - PROP. RAMP S OVER I-75

HOLE NO. B-6 SURFACE ELEVATION \_\_\_\_\_

STATION 43+30, 55' LT. ELEVATION TOP OF ROCK \_\_\_\_\_

TOTAL DEPTH OF HOLE 47' ELEVATION BOTTOM OF HOLE \_\_\_\_\_

DEPTH	ELEV.	DESCRIPTION	CORE LOSS (%)
		OVERBURDEN _____ DRIVE SAMPLES	
38.0		<p>top of rock</p> <p>clay shale, gray, medium-fine, calcareous with thin clay seams and gray, fine, fossiliferous limestone interbeds (comprising 38% of the interval) broken and jointed.</p>	18%
47.0		<p>Bottom of Boring</p> <p>* High core loss due to mechanical disintegration encountered during drilling operations.</p>	



LOGS OF CORE BORINGS

COUNTY, RT. NO. & SECTION MOT-675-0000 RAMP "S"

STATION 41-16, 41' LT. ELEVATION TOP OF ROCK \_\_\_\_\_

TOTAL DEPTH OF HOLE 21' ELEVATION BOTTOM OF HOLE

DEPTH	ELEV.	DESCRIPTION	CORE LOSS (%)
		OVERBURDEN _____ DRIVE SAMPLES	
		Top of Rock	
32.0		Clay Shale, gray, medium-fine, calcareous with thick clay seams and gray, fine, fossiliferous laminations in tubercles (Containing 11% of the water-soluble broken and jointed	22
37.0		Bottom of Core	

Screen No. B-2

Project identification *MOL. 675 0000*

Grade or Footing Elevation

Surface Elevation 954.3'

Ramp. S

Crew, WALTER - WALLACE

Crew Chief *SNYDER*

[RECORD ELEVATION DATA ON BACK OF SHEET 1]

Station & Offset H/16 4147

Type & Size of Bit *DRY - 7/8 in*

Type of Sampler SS

Size 1/2

ID Wt. Hammer 140 Fall 30'

Depth of Casing Used 30

Size \_\_\_\_

ID Wt Hammer \_\_\_\_\_ Fall \_\_\_\_\_

Date Started 12/27/71

Date Completed 12/28/71

Check One

☐ Rock Above Footing

☐ Rock < 10' Below Footing

☐ Rock > 10' Below Footing

☐ No Rock Encountered☐ Rock Above Grade☐ Rock  $< 10$  Below Grade☐ Rock > 10' Below Grade☐ No Rock Encountered

<=Less than or equal to

> = Greater than

NOTE. CLEAN BORING THOROUGHLY  
BEFORE SAMPLING

## 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 Barrei

N = Damco Core Barrel

Surf Elev	Field No.	Type of Sampler	No. Blows	L.O.S.	Core Run	Rec'd	No. of Pieces	Water Color	Layer Description	Log
954.3	1	SS	4 1/2	7"				13A	21" <u>SOD</u> SAND & GRAVEL	SAND & GRAVEL TILL
950.8	2	SS	4 1/5	10"					SAND & GRAVEL	
945.8	3	SS	8 1/11	11.0'					TILL	
943.3	4	SS	5 1/8	8"					SILT CLAY TILL	
940.8	5	SS	7 1/8	10"					SANDY CLAY SILT TILL	
938.3	6	SS	7 1/8	11.0'						
935.9	7	SS	7 1/10	11.0'						
933.3	8	SS	10 1/2	11.0'					SANDY SILT TILL	





STATE OF OHIO  
**DEPARTMENT OF HIGHWAYS**

Columbus, Ohio 43216

J. PHILLIP RICHLEY  
Director of Highways

JOHN J. GILLIGAN  
Governor

WILLIAM P. McKENNA  
Chief Engineer

February 1, 1972

A. M. Kinney, Inc.  
Consulting Engineers  
2912 Vernon Place  
Cincinnati, Ohio 45219

Attn: Mr. J. C. Overmann

File: 203-1.2  
Montgomery

Re: Structure Foundation Investigation  
MOT-675-0000  
Ramp S over IR 75  
Fed. Proj. No. I-675-

Dear Mr. Overmann:

Transmitted herewith are the results of the foundation investigation made for the Ramp S structure over IR 75, on project MOT-675-0.00.

Enclosures consist of reproducible tracings which are to be attached to the plans.

Very truly yours,

F. M. Williams  
Engineer of Tests

Per:   
R. E. Calvin  
Assistant Engineer

REC:nja  
Encl.

cc: J. R. Leeke (no encl.)  
C. H. Altvater, Attn: Ray Grover  
R. F. Bevis, Attn: E. B. Stokes (no encl.)  
Attn: J. R. Grant (no encl.)  
Attn: J. L. Oswald (no encl.)  
R. C. Leathers, Attn: W. E. Lander  
T. J. Rennick (no encl.)  
R. E. Calvin (4)

513-751-3934

NEW YORK  
CHICAGO  
DENVER  
BASEL

Novel

BRIDGE BUREAU		
NOV 23 1971		
REFER TO		
CHA	GW	MPB
FHR	PES	JHB
MEW	RVH	RAG
BFG	WJJ	MEB

Mr. J. R. Leske  
Administrator of Production Control  
Bureau of Location and Design  
Department of Highways  
25 South Front Street  
Columbus, Ohio 43215

Subject: MOT-675-0.00  
Foundation Investigation  
Br. No. MOT-675-0000  
Br. No. MOT-675-0001  
Br. No. MOT-675-0012  
Br. No. MOT-675-0016

Dear Mr. Laeke:

Dear Mr. Laeke:

We are enclosing, for structure foundation investigation, four prints each of the following preliminary Site Plans:

1. Plans 8 over I-75.

1. Bridge No. MOT-675-0000, Proposed Ramp S over I-75.
2. Bridge No. MOT-675-0001, Proposed Ramp U over I-75.
3. Bridge No. MOT-675-0012, Proposed Ramp V over S.R. 741.
4. Bridge No. MOT-675-0016, Proposed Ramp U over S.R. 741.

4. Bridge No. MOT-675-0016, Proposed Ramp & Overpass

Also enclosed are four copies of the I-675 to I-75 interchange layout plan showing the relative locations of the subject structures within the interchange complex.

15 structures within the MOT-675-0.00

This submission concludes all of the 15 structures within the MOT-675-0.00 section.

Very truly yours,

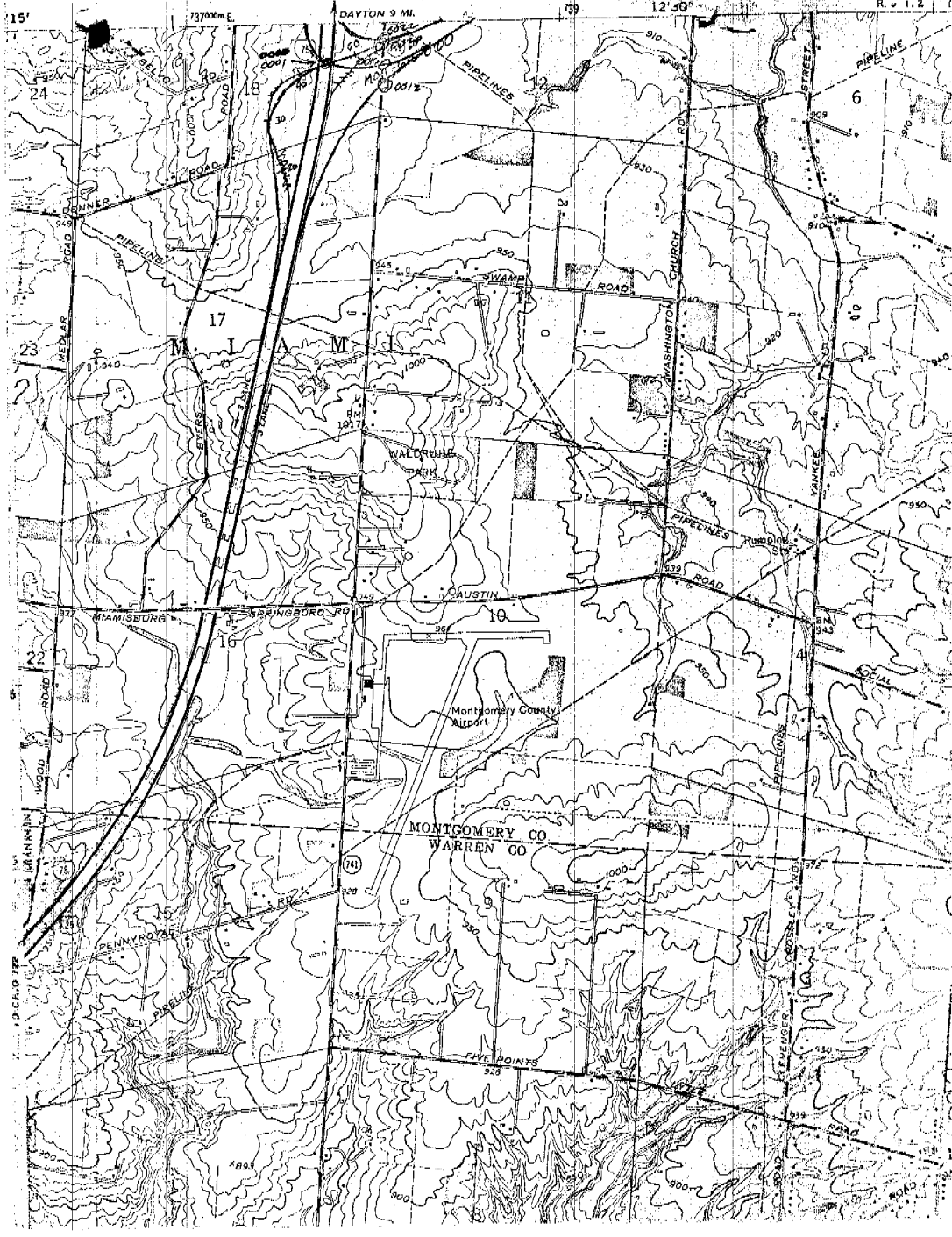
A. M. KINNEY, INC.

J. C. Overmann  
Project Manager

JCO/sa  
Encl.

cc: A. R. Petrocy





Sheet 1 of 10Ohio Department of Transportation  
Design and Construction

Montgomery County

Recorder: FischerSec. MOT-675-0.00Date: 8/17 - 8/22 - 82Br.No. MOT-675-0.000Location Ramp S over I-75PILING RECORD: Rear Abutment FOOTINGType of Pile: Steel HP 10 x 42Hammer: Linkbelt 520 w/e. gageWH or F = 20,000 Ft.lbs.Capacity formula: "R" = 2 DF/S+0.1Required "R" = 90,000 Lbs.Elev. of top of pile (cut-off elev.) 965.00Elev. of nominal point of zero penetration: 964.00

(SUBMIT IN DUPLICATE)

File No.	Pay Length	Indicated "R" (Pounds)	Remarks	Misc.
1	57.25	266,700	Battered Piles are 1:4	Vert.
2	58.92	263,400	"F" for Batt. Piles = 19,160	Batt.
3	56.42	278,700	Driving Log Submitted	Vert.
4	58.33	267,000		Batt.
5	51.00	266,700	Note: Design Bearing is	Vert.
6	52.17	263,400	45T for this unit, but	Batt.
7	51.17	267,000	Plan Note Requires Piles	Batt.
8	50.50	282,300	to be Driven to Refusal;	Vert.
9	51.75	263,400	Defined to be 20 Blows/in.	Batt.
10	50.83	267,000		Batt.
11	43.75	271,000		Vert.
12	45.00	263,400		Batt.
13	45.00	263,400		Batt.
14	44.58	266,700		Vert.
15	45.00	263,400		Batt.
16	44.83	263,400		Batt.
17	45.00	270,400		Batt.
18	45.00	263,400		Batt.
19	45.00	259,600		Batt.
20	45.00	263,400		Batt.
21	45.50	271,000		Vert.
22	44.08	282,300		Vert.
23	44.00	274,900		Vert.
24	43.75	266,700		Vert.
25	43.75	266,700		Vert.
26	45.00	263,400		Batt.
27	45.00	263,400		Batt.
28	45.00	267,000		Batt.
29	45.00	263,400		Batt.
30	45.00	263,400		Batt.
31	45.00	263,400		Batt.
32	45.00	270,400		Batt.
33	45.00	263,400		Batt.
34	45.00	267,000		Batt.
35	45.00	263,400		Batt.

Sheet 2 of 10Ohio Department of Transportation  
Design and ConstructionMontgomery CountyRecorder: FischerSec. MOT-675-0.00Date: 8/17 - 8/22-1982Br.No. MOT-675-0.000Location Ramp S over I-75PILING RECORD: Rear Abutment FOOTINGType of Pile: Steel HP 10 X 42Hammer: Linkbelt 520 w/o gage WH or F = 20,000 Ft.lbs.Capacity formula: "R" = 2 DF/S+0.10 Required "R" = 90,000 Lbs.Elev. of top of pile (cut-off elev.) 965.00Elev. of nominal point of zero penetration: 964.00

(SUBMIT IN DUPLICATE)

File No.	Pay Length	Indicated "R" (Pounds)	Remarks	Misc.
36	45.00	263,400		Batt.
37	45.00	263,400		Batt.
38	45.00	263,400	Driving Log Submitted	Batt.
39	45.00	270,400		Batt.
40	45.00	263,400		Batt.
41	45.00	255,500		Batt.
42	45.00	263,400		Batt.
43	45.00	263,400		Batt.
44	45.00	263,400		Batt.
45	45.00	273,700		Batt.
46	45.00	263,400		Batt.
47	45.00	263,400		Batt.
48	45.00	270,400		Batt.
49	45.00	263,400		Batt.
50	45.00	263,400		Batt.
51	45.00	263,400		Batt.
52	45.00	263,400		Batt.
53	43.67	274,900		Vert.
54	45.00	263,400		Batt.
55	45.00	263,400		Batt.
56	43.58	266,700		Vert.
57	45.00	270,400		Batt.
58	51.33	270,400		Batt.
59	51.00	266,700		Vert.
60	51.75	273,700		Batt.
61	52.33	263,400		Batt.
62	50.75	274,900		Vert.
63	53.42	266,800		Batt.
64	56.00	266,700		Vert.
65	57.92	255,500		Batt.
66	56.42	266,700		Vert.
67	59.58	263,400		Batt.
			Average Bearing this unit =	266,300 lb.
			Pay Length this unit =	3,184.33 L.F.



Sheet 3 of 10Ohio Department of Transportation  
Design and Construction

Montgomery County

Recorder: L. MutschlerSec. MOT-I675-0.00Date: Jan. 3, 1983Br. No. MOT-675-0000Location Ramp S over I 75PILING RECORD: Rear Pier

FOOTING

Type of Pile: Steel HP 10 x 42Hammer: Link Belt 520 w/O Bounce ChamerWH or F = 20,000 Ft. lbs.Capacity formula: "R" = 2 DF/S+0.10Required "R" = 100,000 Lbs.Elev. of top of pile (cut-off elev.) 956.0Elev. of nominal point of zero penetration: 955.0

(SUBMIT IN DUPLICATE)

File No.	Pay Length	Indicated "R" (Pounds)	Remarks	Misc.
68	32.75	255,500	Battered Piles are 1:4	Batt.
69	32.35	266,700	"F" for Batt. Piles = 19,160	Vert.
70	32.75	255,500		Batt.
71	31.75	266,700	Note: Design bearing is	Vert.
72	32.00	266,700	50T for this unit, but	Vert.
73	31.60	266,700	Plan Note Requires Piles	Vert.
74	32.75	255,500	to be Driven to Refusal;	Batt.
75	31.30	266,700	Defined to be 20 Blows/In.	Vert.
76	32.60	255,500		Batt.
77	32.50	255,500		Batt.
78	31.55	266,700		Vert.
79	32.35	255,500		Batt.
80	31.65	266,700		Vert.
81	31.70	266,700		Vert.
82	31.65	266,700		Vert.
83	32.75	255,500		Batt.
84	32.05	266,700		Vert.
85	32.80	255,500		Batt.
86	35.70	255,500		Batt.
87	34.40	266,700		Vert.
88	35.65	255,500		Batt.
89	34.40	266,700		Vert.
90	34.65	266,700		Vert.
91	34.85	266,700		Vert.
92	35.75	255,500		Batt.
93	34.75	266,700		Vert.
94	36.30	255,500		Batt.
95	35.65	255,500		Batt.
96	35.65	285,700		Vert.
97	35.50	255,500		Batt.
98	35.25	266,700		Vert.
99	35.20	266,700		Vert.
100	36.20	255,500		Batt.
101	36.20	255,500		Batt.
102	35.25	266,700		Vert.

Recorder: L. Mutschler

Sec. MOT-675-0.00

Date: Jan. 3, 1983

Br.No. Ramp S over I 75

Location \_\_\_\_\_

PILING RECORD:	Rear Pier	FOOTING
----------------	-----------	---------

Type of Pile: Steel HP 10 x 42

Hammer: Linkbelt 520 w/o Bounce Chamber

WH or F = 20,000 Ft.lbs.

Capacity formula: "R" = 2 DF/S+0.1

Required "R" = 100,000 Lbs.

Elev. of top of pile (cut-off elev.)	956.0
--------------------------------------	-------

Elev. of nominal point of zero penetration: 955.0

(SUBMIT IN DUPLICATE)

[illegible]

Sheet 5 of 10Ohio Department of Transportation  
Design and Construction

Montgomery County

Recorder: L. MutschlerSec. MOT-675-0.00Date: 1-3-83Br. No. MOT-675-0000Location Ramp S over I 75PILING RECORD: Center Pier FOOTINGType of Pile: Steel HP 10 x 42Hammer: Link belt 520 w/o bounce chamberWH or F = 20,000 Ft. lbs.Capacity formula: "R" = 2 DF/S+0.1Required "R" = 100,000 Lbs.Elev. of top of pile (cut-off elev.) 955.75Elev. of nominal point of zero penetration: 954.75

(SUBMIT IN DUPLICATE)

File No.	Pay Length	Indicated "R" (Pounds)	Remarks	Misc.
104	35.10	263,400	Battered Piles are 1/4	Batt.
105	35.50	263,400	"F" for Batt. Piles = 19,160	Batt.
106	35.35	268,200		Batt.
107	36.60	255,500	Note: Design Bearing is	Batt.
108	37.20	255,500	50T for this unit, but	Batt.
109	36.60	255,500	Plan Note Requires Piles	Batt.
110	34.20	273,600	to be Driven to Refusal;	Vert.
111	34.50	270,300	Defined to be 20 Blows/In.	Vert.
112	34.50	266,700		Vert.
113	35.45	263,400		Batt.
114	35.10	255,500		Batt.
115	34.50	264,600	Note: Numbers in	Batt.
116	35.35	255,500	Parentheses are not	Batt.
117	34.90	282,400	included in Totals.	Batt.
118	35.40	259,600		Batt.
119	35.35	259,600		Batt.
120	34.60	265,900		Batt.
121	35.80	268,200		Batt.
122	36.30	259,600		Batt.
123	35.30	264,600		Batt.
124	36.50	255,500		Batt.
125	34.75	271,000		Vert.
126	35.35	272,300		Vert.
127	36.00	271,000		Vert.
128	34.65	268,800		Vert.
129	(35.30)	284,100	Test File-drvg. log submitted	Vert.
130	35.10	266,700		Vert.
131	34.40	267,700		Vert.
132	34.00	287,400		Vert.
133	34.40	276,100		Vert.
134	35.10	279,900		Vert.
135	35.40	271,000		Vert.
136	34.85	300,100		Vert.
137	34.90	277,600		Vert.
138	35.80	266,700		Vert.

Ohio Department of Transportation  
Design and Construction

Montgomery County

Recorder: L. Mutschler

Sec. I-675-0.00

Date: 1-3-83

Br. No. MOT-675-0000

Location Ramp S over I 75

PILING RECORD:	Center Pier		FOOTING
----------------	-------------	--	---------

Type of Pile: Steel HP 10 x 42

Hammer: Linkbelt 520 w/o. Bounce Chamber

WH or F = 20,000 Ft.lbs.

Capacity formula: "R" =  $\frac{2 \text{ DF/S} + 0.1}{}$

Required "R" = 100,000 Lbs.

Elev. of top of pile (cut-off elev.) 955.75

Elev. of nominal point of zero penetration: 954.75

(SUBMIT IN DUPLICATE)

[illegible]

Sheet 7 of 10Ohio Department of Transportation  
Design and ConstructionMontgomery CountyRecorder: F. J. NeigerSec. I-675-0.00Date: 1-3-83Br. No. Ramp S over I 75Location Br. 0000PILING RECORD: Forward Pier (#3) FOOTINGType of Pile: Steel HP 10 x 42Hammer: Linkbelt 520 (WITHOUT GAGE)WH or F = 20,000 Ft. lbs.Capacity formula: "R" = 2 DF/S+0.1Required "R" = 100,000 Lbs.Elev. of top of pile (cut-off elev.) 956.0Elev. of nominal point of zero penetration: 955.0

(SUBMIT IN DUPLICATE)

File No.	Pay Length	Indicated "R" (Pounds)	Remarks	Misc.
163	46.25	255,500	Battered Piles are 1:4	Batt.
164	34.20	273,600	"F" for Batt. Piles = 19,160	Vert.
165	34.90	255,500		Batt.
166	35.00	266,700	Note: Design Bearing is	Vert.
167	33.95	273,600	50T for this unit, but	Vert.
168	34.60	266,700	Plan Note Requires Piles	Vert.
169	35.20	255,500	to be driven to refusal;	Batt.
170	33.90	274,900	Defined to be 20 Blows/IN.	Vert.
171	35.50	255,500		Batt.
172	35.50	255,500		Batt.
173	34.20	266,700		Vert.
174	35.00	255,500		Batt.
175	34.40	266,700		Vert.
176	34.50	266,700		Vert.
177	33.35	266,700		Vert.
178	35.55	255,500		Batt.
179	34.55	266,700		Vert.
180	35.15	255,500		Batt.
181	34.95	255,500		Batt.
182	35.10	266,700		Vert.
183	35.75	255,500		Batt.
184	35.10	266,700		Vert.
185	34.85	266,700		Vert.
186	34.10	266,700		Vert.
187	35.10	255,500		Batt.
188	35.05	266,700		Vert.
189	35.20	255,500		Batt.
191	35.65	255,500		Batt.
192	34.90	290,900		Vert.
193	34.65	255,500		Batt.
194	35.10	266,700		Vert.
195	34.70	290,900		Vert.
196	34.90	290,900		Vert.
197	35.35	255,500		Batt.
198	34.70	290,900		Vert.

Montgomery County

Sec. I.R. 675 - 0.00

Br.No. MOT-675-0000

Location Ramp S over I 75

PILING RECORD:	Forward Pier	FOOTING
----------------	--------------	---------

Elev. of nominal point of zero penetration: 955.0

(SUBMIT IN DUPLICATE)

[illegible]

Sheet 9 of 10Ohio Department of Transportation  
Design and Construction

Montgomery County

Recorder: R. BrowningSec. I.R. 675 - 0.00Date: 1-4-83Br. No. MOT-675-0000Location Ramp S over I.R. 75PILING RECORD: Forward Abut. FOOTINGType of Pile: Steel HP 10 x 42Hammer: Linkbelt 520 w/o gageWH or F = 20,000 Ft. lbs.Capacity formula: "R" = 2 DF/S\*0.1Required "R" = 90,000 Lbs.Elev. of top of pile (cut-off elev.) 962.00Elev. of nominal point of zero penetration: 961.00

(SUBMIT IN DUPLICATE)

File No.	Pay Length	Indicated "R" (Pounds)	Remarks	Misc.
200	40.05	274,900	Battered Piles are 1:4	Vert.
201	40.03	274,900	"F" for Batt. Piles = 19,160	Vert.
202	46.08	274,900		Vert.
203	45.01	274,900		Vert.
204	53.01	266,700	NOTE: Design Bearing is	Vert.
205	54.00	274,900	45T For this Unit, But	Vert.
206	40.08	263,400	Plan Note Requires Piles	Batt.
207	40.08	263,400	to be Driven to Refusal;	Batt.
208	40.03	263,400	Defined to be 20 Blows/In.	Batt.
209	54.08	263,400		Batt.
210	53.01	263,400		Batt.
211	46.01	263,400		Batt.
212	45.07	263,400		Batt.
213	46.01	263,400		Batt.
214	46.01	263,400		Batt.
215	41.01	263,400		Batt.
216	40.01	263,400		Batt.
217	41.01	263,400		Batt.
218	40.01	263,400		Batt.
219	41.34	266,700		Vert.
220	42.05	266,700		Vert.
221	38.42	266,700		Vert.
222	40.70	266,700		Vert.
223	41.83	266,700	Driving Log Submitted	Vert.
224	43.59	263,400		Batt.
225	41.97	263,400		Batt.
226	42.02	263,400		Batt.
227	41.83	263,400		Batt.
228	41.92	263,400		Batt.
229	43.67	263,400		Batt.
230	41.92	263,400		Batt.
231	42.33	263,400		Batt.
232	42.42	263,400		Batt.
233	42.58	263,400		Batt.
234	42.50	263,400		Batt.

Sheet 10 of 10Ohio Department of Transportation  
Design and ConstructionMontgomery CountyRecorder: R. BrowningSec. I.R. 675 - 0.00Date: 1-5-83Br.No. MOT-675-0000Location Ramp S over I-75PILING RECORD: Forward Abut. FOOTINGType of Pile: Steel HP 10 x 42Hammer: Link Belt 520 w/o gageWH or F = 20,000 Ft.lbs.Capacity formula: "R" = 2 DF/S+0.1Required "R" = 90,000 Lbs.Elev. of top of pile (cut-off elev.) 962.00Elev. of nominal point of zero penetration: 961.00(SUBMIT IN DUPLICATE)

File No.	Pay Length	Indicated "R" (Pounds)	Remarks	Misc.
235	41.44	263,400		Batt.
236	42.33	263,400		Batt.
237	42.83	263,400		Batt.
238	41.75	263,400		Batt.
239	41.58	263,400		Batt.
240	41.83	263,400		Batt.
241	41.92	263,400		Batt.
242	42.50	263,400		Batt.
243	42.08	263,400		Batt.
244	41.83	263,400		Batt.
245	42.66	263,400		Batt.
246	42.08	263,400		Batt.
247	42.42	263,400		Batt.
248	41.83	263,400		Batt.
249	42.17	263,400		Batt.
250	42.25	263,400		Batt.
251	42.42	263,400		Batt.
252	48.17	269,500		Vert.
253	46.58	266,700		Vert.
254	41.46	266,700		Vert.
255	41.79	266,700	Driving Log Submitted	Vert.
256	55.25	274,900		Vert.
257	55.83	274,900		Vert.
258	42.67	263,400		Batt.
259	42.17	263,400		Batt.
260	42.05	263,400		Batt.
261	48.00	263,400		Batt.
262	47.83	263,400		Batt.
263	48.08	263,400		Batt.
264	47.25	263,400		Batt.
265	55.75	263,400		Batt.
266	55.00	263,400		Batt.
Average Bearing this unit = 265,100 Lbs.				
Pay length this unit = 2,955.49 L.F.				
Total Pay Length for Bridge = <u>10,665.77 L.F.</u>				



File No. 129 (Vertical) Ohio Department of Transportation  
Design and Construction  
Bureau of Bridges Montgomery County  
Center XXXX Pier

Br. No. MOT-675-0.000

Date Driven 5/4/82

PILE DRIVING LOG

Location Center Pier  
50.25' Lt. Sta. 43+25.90

Type of Pile Steel HP 10 X 42

TEST PILE

Hammer: Link Belt 520 - No Gauge

WH or F = 20,000 Ft. lbs.

Capacity formula: "R" = 2 DF/S+0.1

Required "R" = 50 Tons Lbs.

Elev. of top of pile (cut-off elev.) 955.74

Elev. of nominal point of zero penetration 954.75

Elev. of pile point at final penetration 920.583

Length of pile in leads 50.0 Feet

(Explanatory Notes and Instructions on Reverse Side)

Penetration (feet)	Blows	"S" (inches)	Indicated "R" (Pounds)	Remarks
0 - 1				
1 - 2				Test Pile located near
2 - 3				boring B-6, Sta. 43+30,
3 - 4				55' Lt.
4 - 5				
5 - 6				
6 - 7				
7 - 8				
8 - 9				
9 - 10				
10 - 11	12	1.000	36,400	
11 - 12	10	1.200	30,800	
12 - 13	10	1.200	30,800	
13 - 14	13	0.923	39,100	
14 - 15	14	0.857	41,800	
15 - 16	13	0.923	39,100	
16 - 17	11	1.091	33,600	
17 - 18	15	0.800	44,400	
18 - 19	14	0.857	41,800	
19 - 20	16	0.750	47,100	
20 - 21	14	0.857	41,800	
21 - 22	14	0.857	41,800	
22 - 23	15	0.800	44,400	
23 - 24	22	0.545	62,000	
24 - 25	22	0.545	62,000	
25 - 26	20	0.600	57,100	
26 - 27	12	1.000	36,400	
27 - 28	12	1.000	36,400	
28 - 29	15	0.800	44,400	
29 - 30	10	1.200	30,800	
30 - 31	14	0.857	41,800	
31 - 32	26	0.4615	71,200	
32 - 33	46	0.261	110,800	
33 - 34	162	0.0741	229,800	
34'0"-34'2"	49	0.0408	284,100	294 B/F

File No. 38 (Battered 114) Ohio Department of Transportation  
Design and Construction  
Bureau of Bridges  
Rear About ~~XXXX~~ XXXX Montgomery County  
Br. No. MOT-675-0.000

# PILE DRIVING LOG

Date Driven 8-17-82

Type of Pile Steel H.P. 10 X 42

Br. No. MOT-675-0.000

Location Rear Abut. Sta.  
41+12.4 38.7' Lt.

Hammer: Link Belt 520 w/o Gauge WH or F = 20,000 Ft.lbs.

Capacity formula: "R" =  $\frac{2 \text{ DF}}{S+0.1}$  Required "R" = 90,000 Lbs.

Elev. of top of pile (cut-off elev.) 965.00

Elev. of nominal point of zero penetration 964.00

Elev. of pile point at final penetration	920.00
--	--------

Length of pile in leads      45.0      Feet

(Explanatory Notes and Instructions on Reverse Side)

[illegible]

Montgomery County

Rear	Abut. <del>XXXX</del>
------	-----------------------

Br.No. MOT-675-0.000

Date Driven 9-2-82

# PILE DRIVING LOG

Location Sta. 54+30.97  
10.11' Lt.

Type of Pile	Steel HP 10 X 42
--------------	------------------

Hammer: Link Belt 520 w/ energy gage

WH or F = 20,000 Ft.lbs.

Capacity formula: "R" =  $\frac{2DF}{S+0.10}$

Required "R" = 90,000 Lbs.

Elev. of top of pile (cut-off elev.)	952.29
--------------------------------------	--------

Elev. of nominal point of zero penetration	950.29
--	--------

Elev. of pile point at final penetration	920.34
--	--------

Length of pile in leads	31.95	Feet
-------------------------	-------	------

(Explanatory Notes and Instructions on Reverse Side)

[illegible]

Type of Pile	Steel HP 10 X 42
--------------	------------------

Capacity formula: "R" =  $\frac{2 \text{ DF/S} + 0.1}{}$  Required "R" =  $\frac{90,000}{}$  Lbs.

Elev. of nominal point of zero penetration	964.00
--	--------

Length of pile in leads	45	Feet
-------------------------	----	------

[illegible]





Montgomery County

Foraward      Abut. ~~Pier~~

# PILE DRIVING LOG

Br. No. MOT-675-0.000

Date Driven 8-27-82

Location Sta. 45+07.80  
0.80' Lt.

Type of Pile	Steel HP 10 X 42
--------------	------------------

Hammer: Link Belt 520 w/o gage

WH or F = 20,000 Ft.lbs.

Capacity formula: "R" =  $\frac{2DF}{S+0.1}$

Required "R" = 90,000 Lbs.

Elev. of top of pile (cut-off elev.) 962.00

Elev. of nominal point of zero penetration 961.00

Elev. of pile point at final penetration	920.166
--	---------

Length of pile in leads 45.0 Feet

(Explanatory Notes and Instructions on Reverse Side)

[illegible]

Montgomery County  
Br. No. MOT-I.R. 675 - 0.000

Forward      Abut. ~~2000~~

# PILE DRIVING LOG

Date Driven 8-30-82

Location Sta. 45+07.10

2.80' Rt.

Forward Abutment

Type of Pile      Steel HP 10 X 42

Hammer: Link Belt 520 w/o Bounce Chamber

WH or F = 20,000 Ft. lbs.

Capacity formula: "R" =  $\frac{2 \text{ DF}}{S+0.1}$

Required "R" = 90,000 Lbs.

Elev. of top of pile (cut-off elev.) 962.00

Elev. of nominal point of zero penetration	961.00
--	--------

Elev. of pile point at final penetration	920.21
--	--------

Length of pile in leads 40+ 6.4167 Feet

(Explanatory Notes and Instructions on Reverse Side)

[illegible]



REF 381  
SUBJECT - PILING LAYOUT  
ITEM 507 PROJECT # 46-82  
LOC BR. MOT 615 0000

REQ'D BEARING = 45T (DESIGN)  
EST. PLY LENGTH = 45' - BREAST WALL  
55' - WING WALL

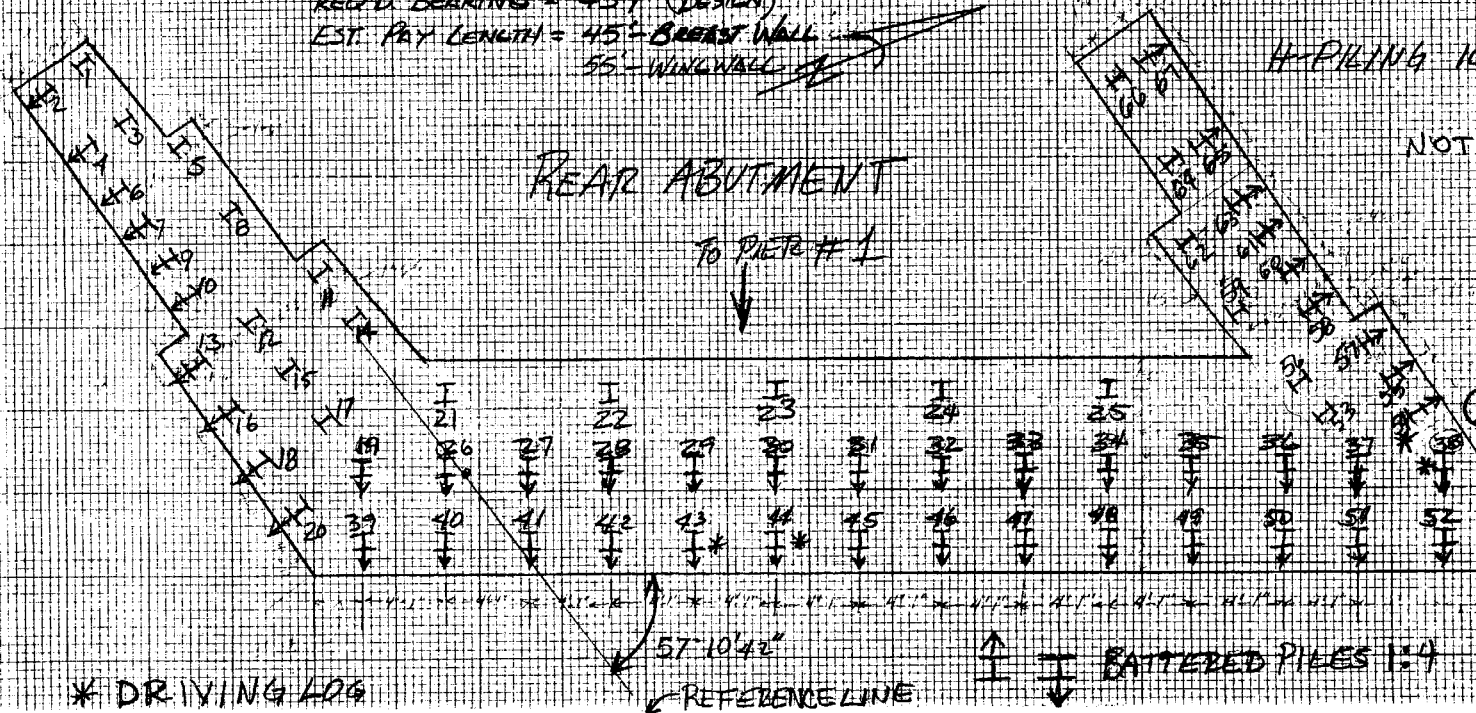
H. 11/10/10

H-PIILING 10x42

NOT TO SCALE

REAR ABUTMENT

TO PIER #1



\* DRIVING LOG

REFERENCE LINE

\* BATTERED PILES 1:4

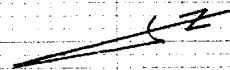
TEST BORING B-2

REF. NO. 381 SUBJECT PILING LAYOUT MEASUREMENT DATE \_\_\_\_\_ INITIALS H. J. [unclear]  
 ITEM NO. 507 PROJECT NO. 46-82 COMPUTATION DATE \_\_\_\_\_ INITIALS \_\_\_\_\_  
 LOCATION BR. No 675-0000

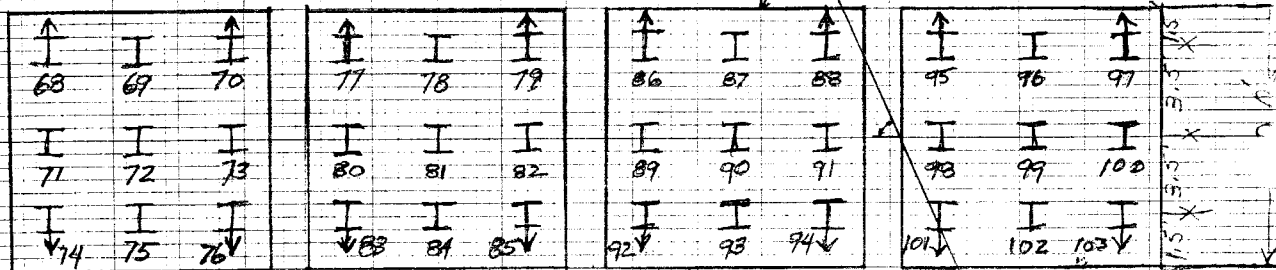
REAR PIER

REQ'D BEARING = 50 T

EST. PILE LENGTH = 35'



57° 18' 42"



15' | 3.5' | 3.5' | 15'  
 10.0'

DIMENSIONS ARE TYPICAL  
 FOR EACH PPD

↑ or ↓ BATTERED PILES 1:4 TO REAR ABUTMENT

H-PILING 10x42

NOT TO SCALE

Ref 381 SUBJECT: PILING LAYOUT  
 ITEM 507 PROJECT 46-82  
 LOC BR. NOT. 615 0000

CENTER PIER  
 REG'D BRNG = 50T  
 EST. PLY LENGTH = 35'

TEST PILE \*

REFERENCE  
 CHORD

TEST BORING  
 B-6

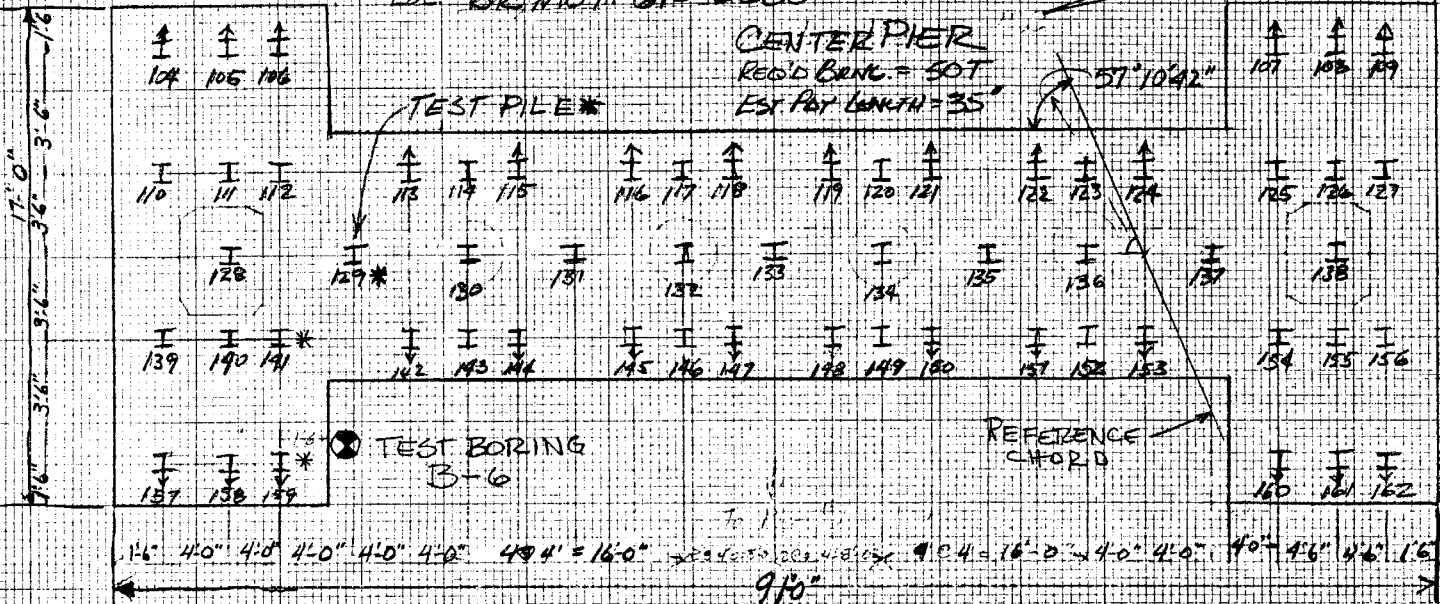
H-PILING 10X42

BATTERED PILES 1:4 \* DRIVING LOG

NOT TO SCALE

Center Pier or #2

4.5 10 X 10 TO THE INCH

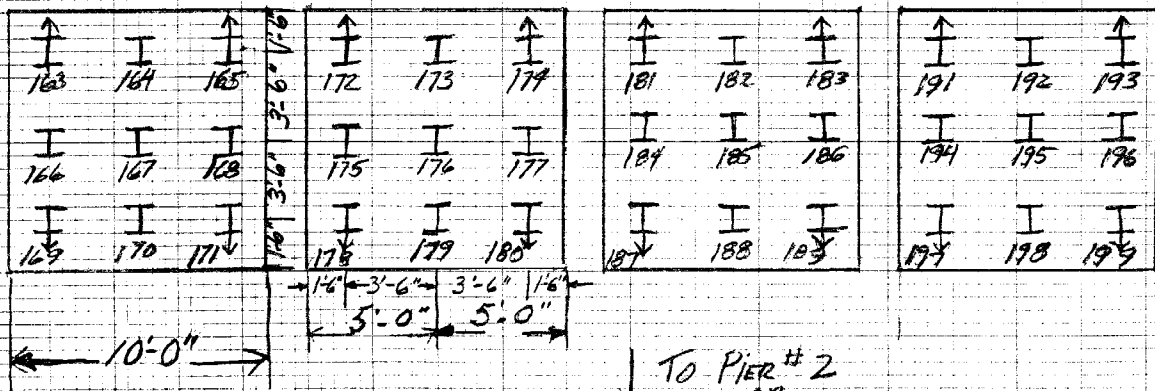


REF. NO. 381 SUBJECT PILING LAYOUT MEASUREMENT DATE 12-11-82 INITIALS Shiller  
 ITEM NO. 507 PROJECT NO. 46-82 COMPUTATION DATE \_\_\_\_\_ INITIALS \_\_\_\_\_  
 LOCATION BR.MOT-675-0000

# FORWARD PIER

REQ'D BEARING = 50T

EST. PLY LENGTH = 35'



TO PIER #2  
OR  
CENTER PIER

BATTERED PILES 1:4

H-PILING 10X42

NOT TO SCALE

~~SECRET~~

REQ'D BEARING: 45T (DESIGN)

BATTERED-PILE  
1:4 BATTER

TEST BORING  
B-9

3'-10" 10 SPACES @ 4' 0"  
H-PIILING 10 x 42 \* DRIVING LOG

NOT TO SCALE



# INTER-OFFICE COMMUNICATION

Re:Montgomery County  
I.R. 675 - 0.00  
Project No. 46 (1982)

TO R. Pfeifer, Engineer of Bridges DATE April 24, 1984  
FROM L. H. Wallace, District Deputy Director BY: D. L. Riddiough, Dist. Const. Engr.  
SUBJECT: Piling Report for Bridge No. MOT-675-0000

Attached find piling report for the above referenced structure. Included in this report are the following:

1. File Layout Sheets
2. File Driving Log (BR-2) for Test Pile 129, Center Pier
3. File Driving Log (BR-2) for piles closest to test hole
  - a. Rear Abutment Piles Nos. 3, 38 and 54.
  - b. Center Pier Piles Nos. 141 and 159
  - c. Forward Pier Piles Nos. 223 and 255
4. Piling Records (BR-5)

Final Pay Quantity for Reference No. 381 is shown below:

Rear Abutment	3,184.33
Rear Pier	1,216.20
Center Pier	2,043.15
Forward Pier	1,266.60
Forward Abutment	2,955.49
TOTAL	10,665.77 L.F.

USE 10,666 L.F.

*D.L.R.*  
DLR:DAA:cls

Attachments

cc: Mr. Copenhaver  
Mr. E. Johnson (Attach)  
File

BRIDGE BUREAU

APR 25 1984  
REFER TO

RBP	<input type="checkbox"/>	CPD	<input type="checkbox"/>	BFN	<input type="checkbox"/>
DHS	<input type="checkbox"/>	NJB	<input type="checkbox"/>	BDH	<input type="checkbox"/>
WJJ	<input type="checkbox"/>	JDJ	<input type="checkbox"/>	RLE	<input checked="" type="checkbox"/>
SER	<input type="checkbox"/>	JDR	<input type="checkbox"/>	REJ	<input type="checkbox"/>
	<input type="checkbox"/>	NRL	<input type="checkbox"/>	L	<input type="checkbox"/>

CARD NO.	(30) SOIL TYPE	(31) SPT VALUE	(32) P.I. NO.
1	6	10	18
2	12	17	7
3	12	11	0
4	18	34	0
5	5	31	5
6	5	11	5
7	5	16	7
8	18	36	0
9	20	99	0
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			

(30) Soil Type

1. Sand
2. Clay
3. Gravel
4. Silt
5. Sandy Silt
6. Sandy Clay
7. Gravelly Clay
8. Gravelly Silt
9. Clayey Sand
10. Clayey Gravel
11. Silty Sand
12. Silty Gravel
13. Fill
14. Slag
15. Organic
16. Clayey Silt
17. Silty Clay
18. Sandy Gravel
19. Gravelly Sand

CARD NO.	(33) SOIL LAYER BOUNDARY ELEVATIONS (FE)
1	95.4
2	95.1
3	94.8
4	94.6
5	94.2
6	93.6
7	93.1
8	92.6
9	92.3
10	91.4
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	

CARD NO.	(34) NO. OF FILES TO PLOT
1	
2	1

(34) Less than or equal to 4

(14) & (33) Top of pile and  
top soil elevation  
shall be the same

CARD NO.	(35)
	PILE NUMBER
1	.141

CARD NO.	(36)
	DATE DRIVEN
2	5-25-82

CARD NO.	(37)
	DRIVEN LENGTH (FT.)
3	34

CARD NO.	(38)
	WATER ELEVATION (FT.)
4	94.8

CARD NO.	(39)
	NO. OF BLOW COUNT PTS.
5	9

CARD NO.	(40)	(41)
	DEPTH TO BLOW COUNT (FEET)	BLOW COUNT
1	.11	.11
2	.14	.14
3	.18	.15
4	.22	.14
5	.26	.16
6	.28	.14
7	.30	.14
8	.32	.31
9	.34	.15.0
10		
11		
12		
13		
14		
15		
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49		
50		

(39) Less than or equal to 25

Duplicate this sheet according  
to value of (34)



STATE OF OHIO  
DEPARTMENT OF TRANSPORTATION  
PILE LOG-CAPACITY GRAPH (BLOWCAP) INPUT FORMAT  
SHEETS 1-2

CARD NO.	(1) STRUCTURE FILE #
1	003.F09.1

CARD NO.	(2) BRIDGE #
2	MOT.-6.75-.00.0.0

CARD NO.	(3) SECTION #
3	MOT.-6.75-.0.0.0

CARD NO.	(4) PROJECT #
4	461.82

CARD NO.	(5) SUB-STRUCTURE UNIT
5	CENTER PILE 2.5 RAMP 15" OVER I.R. 7.5

CARD NO.	(6) HAMMER TYPE
6	LINKBELT 5.00 W/QUAT. GEAR

(7)	(8)	(9)	(9A)
MANUFACTURER'S RATING (FT-LBS)	DROP HAMMER	STATE'S RATING (FT-LBS)	NO. OF SPANS
30000.0		30000.0	4

CARD NO.	(10) PILE TYPE
8	H.P. 12 X 42 STEEL

(8) DR. HAM = 1 If hammer is a drop hammer

= 0 If hammer is not a drop hammer

CARD NO.	(11)	(12)	(13)	(14)
	TOTAL # OF PILES	DESIGN LOAD (TONS)	ESTIMATED PILE LENGTH (FT.)	TOP OF PILE ELEVATION (FT.)
9	59	50	0	956

CARD NO.	(15)	(16)	(17)	(18)	(19)
	LOW RANGE OF PILE LENGTH (FT.)	HIGH RANGE OF PILE LENGTHS (FT.)	AVERAGE VERTICAL PILE LENGTH (FT.)	PILE CAPACITY INSTALLED (TONS)	AVERAGE BATTERED PILE LENGTH (FT.)
10	35	37	35	133	36

(20) BEDROCK = 0 Bedrock not encountered

= 1 Bedrock encountered

(21) & (22) leave blank if Bedrock (20) = 0

(23) Test Load = 1 if performed

= 0 if not performed

(24) NOTE = 0 If no notes  
= 1 If notes are to be added

CARD NO.	(20)	(21)	(22)	(23)
	BEDROCK	FINAL BLOW COUNT	FINAL CAPACITY (TONS)	TEST LOAD
11	1	240	133	0

CARD NO.	(24)
	NOTE
12	1

(25) NOTE 1

3 ALL PILES IN BRIDGE DELIVERED TO REFUSAL IN CLAY SHALE AT ELEVATION 922.

(26) NOTE 2

(27) NOTE 3

(7) SEVEN FEET OF SILTY CLAY REMOVED FROM BEFORE PILE DRIVING.

(28) NOTE 4

CARD NO.	(29)
	NO. OF SOIL LINES
17	1

(29) Less than or equal to 20.

(25-28) If (24) = 1, 4 lines must be input (blank if necessary)

**GEOLOGY OF THE SITE**

THE STRUCTURE SITE IS LOCATED ON THE DISSECTED GLACIATED LEXINGTON PENEPLAIN, IN AN AREA WHERE MODERATELY DEEP GLACIAL-DERIVED SOILS OVERLIE INTERBEDDED SHALE AND LIMESTONE BEDROCK, OF ORDOVICIAN AGE.

**EXPLORATION**

THE EXPLORATION CONSISTED OF THREE DRIVE SAMPLE-CORE BORINGS AND FIVE DRIVE ROD PENETRATION TESTS, MADE BETWEEN DECEMBER 14 AND 29, 1971.

**INVESTIGATIONAL FINDINGS**

THE BORINGS DISCLOSED THAT BEDROCK SURFACE, ENCOUNTERED BETWEEN 83 AND 98-FOOT DEPTHS, ELEVATIONS 923 AND 922 FEET, IS overlain BY GENERALLY DENSE SILTS AND GRAVELS AND SCATTERED COBBLE INTERVALS. THE BORINGS WERE TERMINATED AT 35 TO 47-FOOT DEPTHS, ELEVATIONS 917 TO 914 FEET, AFTER PENETRATING 6 AND 9 FEET BELOW BEDROCK SURFACE.

ROD SOUNDINGS ENCOUNTERED INCREASING, SOMEWHAT ERRATIC, PENETRATION RESISTANCE WITH INCREASE IN DEPTH, AND WERE TERMINATED UPON ENCOUNTER WITH REFUSAL AND NEAR-REFUSAL TO PENETRATION AT 29 TO 37-FOOT DEPTHS, ELEVATIONS 932 TO 921 FEET, CONSIDERED TO BE ON BEDROCK SURFACE OR IN DENSE MATERIALS ABOVE BEDROCK SURFACE, AS REVEALED BY THE BORINGS.

NO FREE WATER OBSERVATIONS WERE MADE IN ANY OF THE ROD SOUNDING HOLES.

- ⊕ Auger Boring Location - Plan View.  
⊕ Press and / or Drive Sample and / or Core Boring Location - Plan View.  
● Drive Rod Penetration Resistance Sounding Location - Plan View.

- ▬ Capped Pile  
▬ Footing  
▬ Footing on Pile  
TR Top of Rock

- Coal  
▨ Weathered Mudstone or Claystone  
▧ Mudstone or Claystone  
▩ Weathered Shale  
▪ Shale  
▫ Weathered Siltstone  
▬ Siltstone

**LEGEND**

- ⊥ Horizontal Bar on Boring Log Indicates the Depth the Sample Was Taken.  
X/Y Figures Beside the Boring Log in Profile Indicate the Number of Blows for Standard Penetration Test.  
X = Number of Blows for First 6 inches.  
Y = Number of Blows for Second 6 inches.  
— Drive Rod Penetration Resistance Sounding Log - Profile  
Casing  
Resistance "R" < 10,000 lbs.  
Resistance "R" > 10,000 lbs.  
Z Indicates Final Measurement of Penetration, in Inches.  
W— Indicates Free Water Elevation.  
▼ Indicates Static Water Elevation.

**SYMBOLS OF ROCK TYPES**

- ▨ Weathered Sandstone  
▫ Sandstone  
▧ Leached Dolomite  
▩ Dolomite  
▪ Leached Limestone  
▫ Limestone  
▬ Boulders or Cobbles

**GENERAL INFORMATION**

**Drive Rod Penetration Sounding Tests**

Drive rod penetration resistance tests constitute driving a 1.315-inch diameter steel rod, with a 45° cone point, into the ground, using a 122-pound drop-hammer with a free fall of five feet. At one or two-foot depth intervals, a measurement is taken to determine the amount of penetration achieved in three hammer drops. This reading is converted to an empirical value for capacity "R", in thousands of pounds (which is a measure of both the point resistance and frictional resistance on the rod), by using charts prepared by the Ohio Department of Highways, Bureau of Bridges, on the basis of correlation study of rod penetration with past performance of pile driving. For interpretation, a graph is prepared by plotting the value "R" against the depth at which the reading was taken, and connecting the plotted points. The curve so obtained reflects the density of subsurface materials in a manner that can be readily compared with data from similar tests at other locations on the structure site. From this comparison, the overall uniformity of subsurface condition may be evaluated.

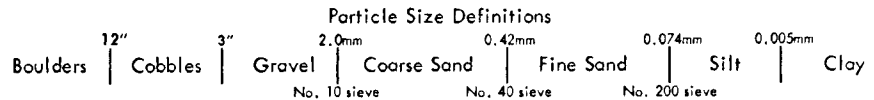
**Drive Sample Borings - Drive-Press Sample Borings**

Drive sample borings are made by means of a rotary-type drill rig, employing a 2" O.D., 1-3/8" I.D. sampler, at 2-1/2 and / or 5-foot depth intervals, driven by means of a 140 - pound drop-hammer with a free fall of 30 inches. The number of blows required to drive the sampler 12 inches is considered the standard penetration test.

Drive-press sample borings are made by means of a rotary-type drill rig, employing a 2" O.D., 1-3/8" I.D. drive sampler, and 3" O.D. thin-wall press sampler. The press sampler is advanced by continuous uniform pressure, applied by the drill rig.

The boring log sheets show a graphic plot of the information obtained, including depth and elevation of the sample, number of blows for the standard penetration tests in two 6-inch increments, depth of press samples, field sample number, sample description - based on laboratory tests and the Casagrande AC classification system - and gradation, plasticity, and moisture content determinations. Results of strength and consolidation testing, if performed, appear on separate enclosures.

At depths where materials are bouldery or gravelly to the extent that the sampler can not be driven, a wash sample is procured for visual classification, in order to determine the general character of the material. These samples are not considered sufficiently representative to warrant laboratory testing.



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

OHIO DEPARTMENT OF HIGHWAYS  
TESTING LABORATORY  
1600 WEST BROAD STREET, COLUMBUS, OHIO 43223

STRUCTURE FOUNDATION INVESTIGATION  
BRIDGE NO. MOT-675-0000  
RAMP S OVER I-75  
SEC. MOT-675-0.00

CHECKED BY R. D. R.	REVIEWED BY G. P. H.	DATE 2/1/72
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## GEOLOGY OF THE SITE

THE STRUCTURE SITE IS LOCATED ON THE DISSECTED GLACIATED LEXINGTON PENEPLAIN, IN AN AREA WHERE MODERATELY DEEP GLACIAL-DERIVED SOILS OVERLIE INTERBEDDED SHALE AND LIMESTONE BEDROCK, OF ORDOVICIAN AGE.

## EXPLORATION

THE EXPLORATION CONSISTED OF THREE DRIVE SAMPLE-CORE BORINGS AND FIVE DRIVE ROD PENETRATION TESTS, MADE BETWEEN DECEMBER 14 AND 29, 1971.




## INVESTIGATIONAL FINDINGS




THE BORINGS DISCLOSED THAT BEDROCK SURFACE, ENCOUNTERED BETWEEN 23 AND 38-FOOT DEPTHS, ELEVATIONS 923 AND 922 FEET, IS OVERLAIN BY GENERALLY DENSE SILTS AND GRAVELS AND SCATTERED COBBLE INTERVALS. THE BORINGS WERE TERMINATED AT 35 TO 47-FOOT DEPTHS, ELEVATIONS 917 TO 914 FEET, AFTER PENETRATING 5 AND 9 FEET BELOW BEDROCK SURFACE.


ROD SOUNDINGS ENCOUNTERED INCREASING, SOMEWHAT ERRATIC, PENETRATION RESISTANCE WITH INCREASE IN DEPTH, AND WERE TERMINATED UPON ENCOUNTER WITH REFUSAL AND NEAR-REFUSAL TO PENETRATION AT 29 TO 37-FOOT DEPTHS, ELEVATIONS 932 TO 921 FEET, CONSIDERED TO BE ON BEDROCK SURFACE OR IN DENSE MATERIALS ABOVE BEDROCK SURFACE, AS REVEALED BY THE BORINGS.


NO FREE WATER OBSERVATIONS WERE MADE IN ANY OF THE ROD SOUNDING HOLES.

## LEGEND





-  Auger Boring Location - Plan View.  
 Press and / or Drive Sample and / or Core Boring Location - Plan View.  
 Drive Rod Penetration Resistance Sounding Location - Plan View.

-  Capped Pile  
 Footing  
 Footing on Pile  
**TR** Top of Rock







 Horizontal Bar on Boring Log Indicates the Depth the Sample Was Taken.








 Figures Beside the Boring Log in Profile  
 Indicate the Number of Blows for Standard Penetration Test.  
 X = Number of Blows for First 6 inches.  
 Y = Number of Blows for Second 6 inches.

Drive Rod Penetration Resistance Sounding Log - Profile

 Casing  
 Resistance "R" < 10,000 lbs.  
 Resistance "R" > 10,000 lbs.  
 Indicates Final Measurement of Penetration, in Inches.  
 Indicates Free Water Elevation.  
 Indicates Static Water Elevation.

## SYMBOLS OF ROCK TYPES

-  Coal  
 Weathered Mudstone or Claystone  
 Mudstone or Claystone  
 Weathered Shale  
 Shale  
 Weathered Siltstone  
 Siltstone

-  Weathered Sandstone  
 Sandstone  
 Leached Dolomite  
 Dolomite  
 Leached Limestone  
 Limestone  
 Boulders or Cobbles

## GENERAL INFORMATION

### Drive Rod Penetration Sounding Tests

Drive rod penetration resistance tests constitute driving a 1.315-inch diameter steel rod, with a 45° cone point, into the ground, using a 122-pound drop-hammer with a free fall of five feet. At one or two-foot depth intervals, a measurement is taken to determine the amount of penetration achieved in three hammer drops. This reading is converted to an empirical value for capacity "R", in thousands of pounds (which is a measure of both the point resistance and frictional resistance on the rod), by using charts prepared by the Ohio Department of Highways, Bureau of Bridges, on the basis of correlation study of rod penetration with past performance of pile driving. For interpretation, a graph is prepared by plotting the value "R" against the depth at which the reading was taken, and connecting the plotted points. The curve so obtained reflects the density of subsurface materials in a manner that can be readily compared with data from similar tests at other locations on the structure site. From this comparison, the overall uniformity of subsurface condition may be evaluated.

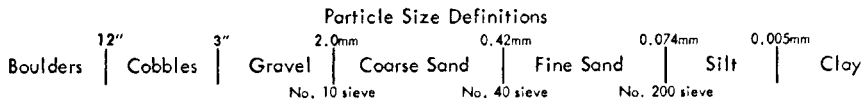
### Drive Sample Borings - Drive-Press Sample Borings

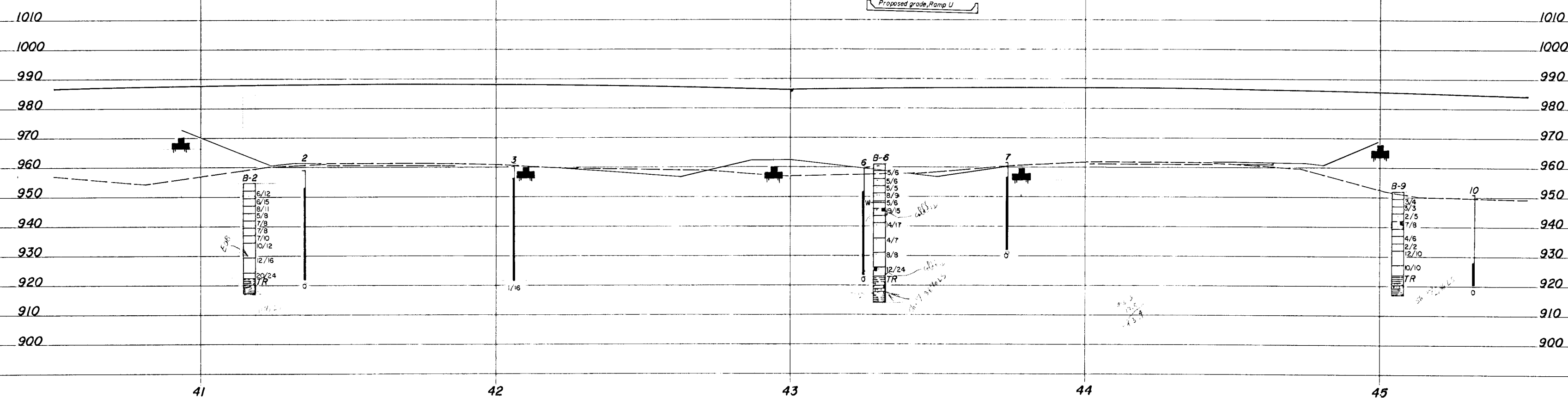
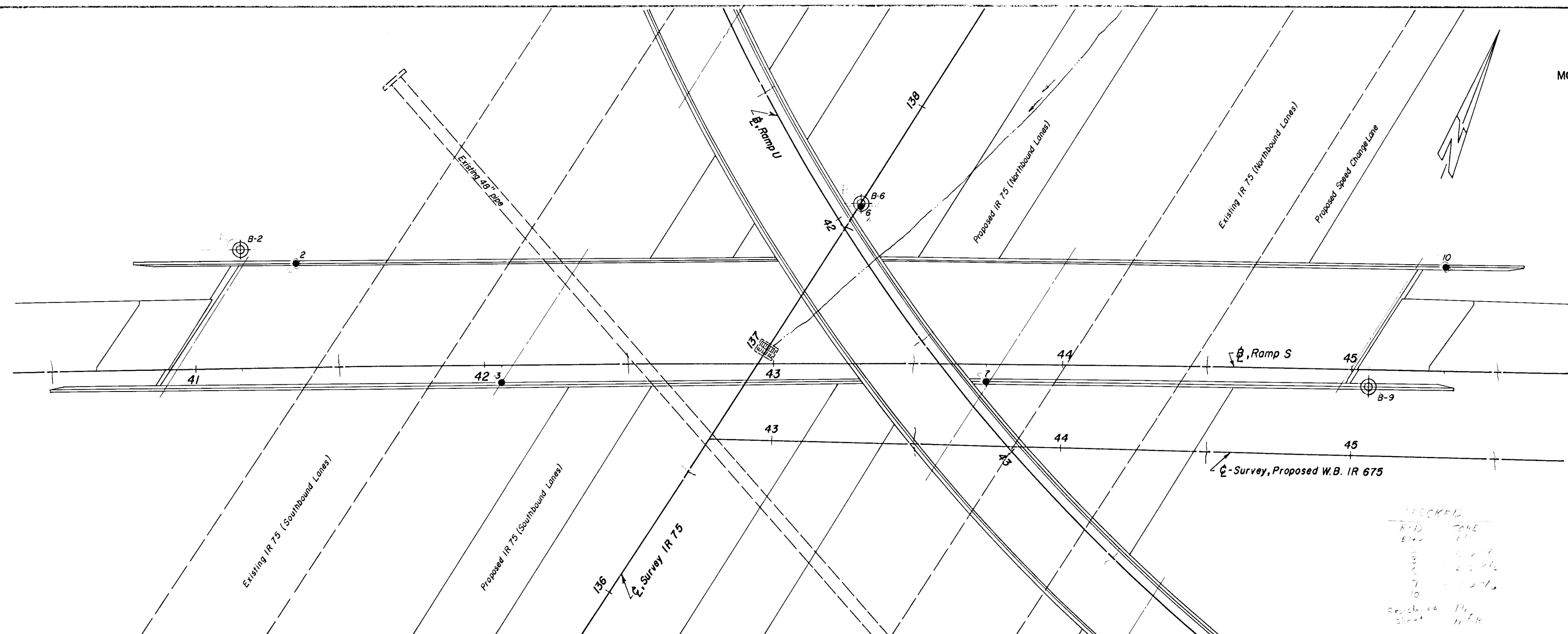
Drive sample borings are made by means of a rotary-type drill rig, employing a 2" O.D., 1-3/8" I.D. sampler, at 2-1/2 and / or 5-foot depth intervals, driven by means of a 140 - pound drop-hammer with a free fall of 30 inches. The number of blows required to drive the sampler 12 inches is considered the standard penetration test.

Drive-press sample borings are made by means of a rotary-type drill rig, employing a 2" O.D., 1-3/8" I.D. drive sampler, and 3" O.D. thin-wall press sampler. The press sampler is advanced by continuous uniform pressure, applied by the drill rig.

The boring log sheets show a graphic plot of the information obtained, including depth and elevation of the sample, number of blows for the standard penetration tests in two 6-inch increments, depth of press samples, field sample number, sample description - based on laboratory tests and the Casagrande AC classification system - and gradation, plasticity, and moisture content determinations. Results of strength and consolidation testing, if performed, appear on separate enclosures.

At depths where materials are bouldery or gravelly to the extent that the sampler can not be driven, a wash sample is procured for visual classification, in order to determine the general character of the material. These samples are not considered sufficiently representative to warrant laboratory testing.





A. Flow from an infinite flow stream.

B. Investment of 175 on 13-5 and another 200 on 14-5

C. Add a line at 200 to the following

D. Line at 12-5 on 13-5

E. Investment on 13-5

F. Value at 13 on 13-5

G. 500 - 800

<u>CHECKED</u>	
RID	TAKA
E140	L10
7	6-2-7
6	6-2-7
7	6-2-7
10	
Residual: 00	19.
Threat	11. 6. 18.

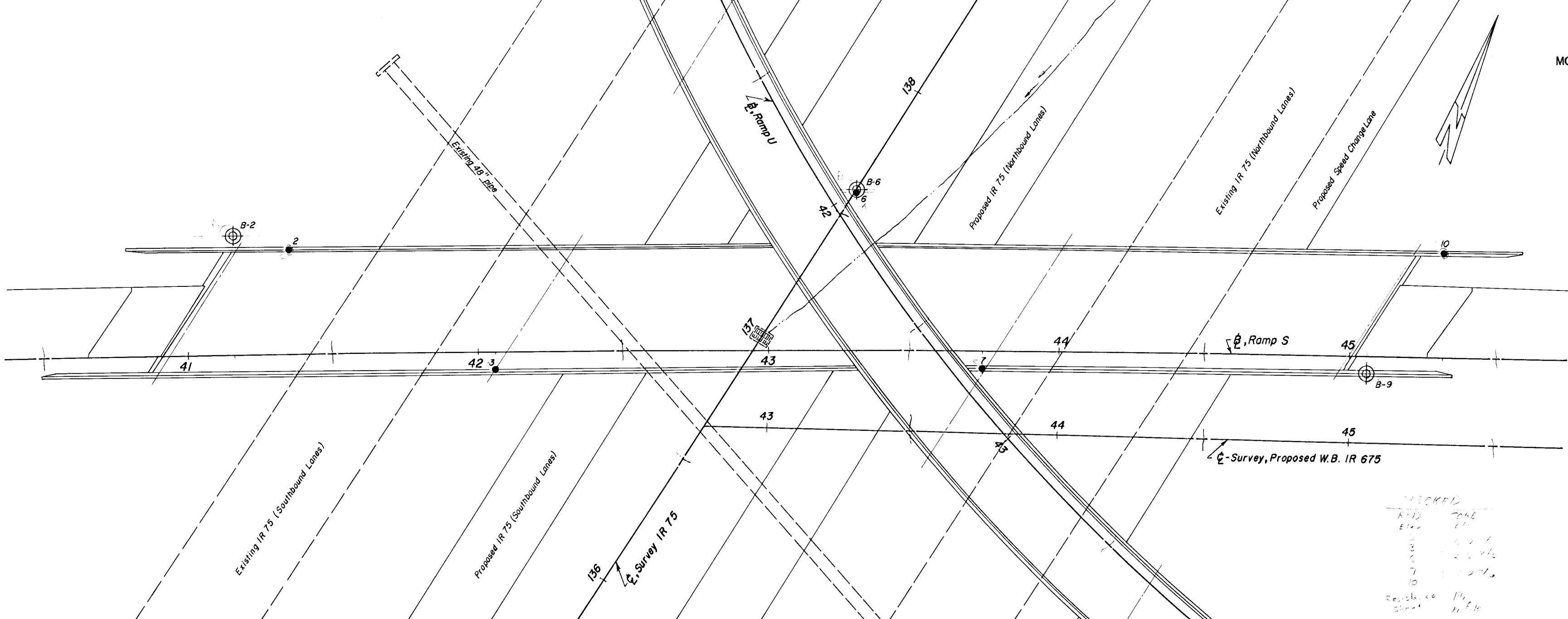
OHIO DEPARTMENT OF HIGHWAYS  
TESTING LABORATORY  
1600 WEST BROAD STREET, COLUMBUS, OHIO 43223

STRUCTURE FOUNDATION INVESTIGATION  
BRIDGE NO. MOT-675-0000  
RAMP S OVER IR 75  
SEC. MOT-675-000

## PLAN AND PROFILE

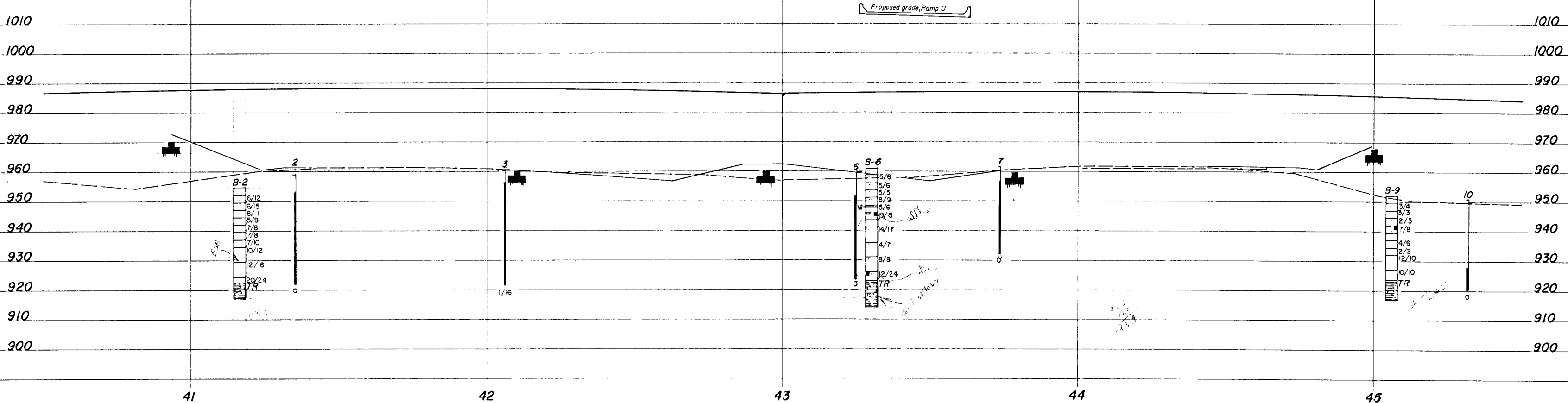
DRAWN BY D.E.N.	CHECKED BY R. D. R.	REVIEWED BY G. P. H.	DATE 2/1/72
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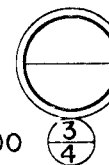
SCALE: 1" = 20'



CHECKED  
RED  
ELEV  
DATE  
BY  
10  
REVISION  
SHEET







LOG OF BORING

Date Started 12-27-71 Sampler Type SS Dia. 1 3/8" Water Elev. \_\_\_\_\_  
Date Completed 12-28-71 Casing Length 30' Dia. 3 1/2" Surface Elev. 954.3'  
Boring No. B-2 Station & Offset 41+16, 41' LT. (REAR ABUTMENT)

Elev.	Depth	Std. Pen (N)	Rec. ft.	Loss ft.	Description	Sample No.	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class.
954.3	0				300										
951.8	2														
949.3	4	6/12			BROWN SILTY SANDY GRAVEL	1	32	14	19	22	13	NP	NP	11	A-2-4
	6	6/15			BROWN GRAVELLY SILT	2	26	58	11	-	-	NP	NP	23	A-1-4
946.8	8	8/11			BROWN-GRAY GRAVELLY SANDY SILT	3	15	10	18	37	20	17	4	12	A-4a
944.3	10	5/8			GRAY GRAVELLY SANDY SILT	4	19	11	16	32	22	19	5	12	A-4a
941.8	12	7/8			GRAY GRAVELLY SANDY SILT	5	19	11	19	32	19	16	4	11	A-4a
939.3	14	7/8			GRAY GRAVELLY SANDY SILT	6	17	11	21	31	20	16	4	9	A-4a
936.8	16	7/10			GRAY GRAVELLY SANDY SILT	7	18	10	15	30	27	20	6	13	A-4a
934.3	18	10/12			GRAY GRAVELLY SANDY SILT	8	22	10	15	33	20	17	4	10	A-4a
	22														
929.3	24	12/16			GRAY SANDY GRAVELLY SILT	9	30	10	15	27	18	17	5	15	A-4a
	26														
924.3	30	20/24			GRAY GRAVELLY SANDY SILT TOP OF ROCK	10	19	10	15	26	30	21	8	13	A-4a
922.3	32														
	34		2.9	1.1	CLAY SHALE, GRAY, MEDIUM-FIRM, CALCAREOUS WITH THICK CLAY SEAMS AND GRAY, FIRM, FOSSILIFEROUS LIMESTONE INTERBEDS (COMPRISING 1% OF THE INTERVAL) BROKEN AND JOINTED. CORE LOSS 2%.										
917.3	36														

BOTTOM OF BORING

LOG OF BORING

Date Started 12-27-71 Sampler Type SS Dia. 1 3/8" Water Elev. 947.9'  
Date Completed 12-29-71 Casing Length 38' Dia. 3 1/2" Surface Elev. 960.9'  
Boring No. B-6 Station & Offset 43+30, 55' LT. (CENTER PIER)

Elev.	Depth	Std. Pen (N)	Rec. ft.	Loss ft.	Description	Sample No.	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class.
960.9	0														
958.4	2	5/6			BROWN SANDY GRAVELLY CLAY	1	32	4	12	26	26	36	18	18	A-6b
955.9	4	5/6			BROWN SILTY CLAY	2	0	1	6	51	42	41	19	25	A-7-6
953.4	6	5/5			BROWN SANDY CLAY	3	7	4	20	28	41	37	18	23	A-6b
950.9	8	8/9			BROWN SILTY SANDY GRAVEL	4	40	10	15	21	14	20	7	20	A-2-4
948.4	10	5/6			BROWN SILTY SANDY GRAVEL	5	37	15	17	24	7	NP	NP	9	A-2-4
945.9	14	19/15			BROWN SILTY SANDY GRAVEL WITH COBBLES	6	64	13	9	-	-	NP	NP	10	A-1-4
943.4	16				NO SAMPLE RECOVERED (HOLE CAVED IN)										
940.9	18	14/17			GRAY GRAVELLY SANDY SILT	7	23	10	17	32	18	18	5	9	A-4a
	22														
935.9	24	4/7			GRAY GRAVELLY SANDY SILT	8	17	9	16	35	23	18	5	13	A-4a
	26														
930.9	28	8/8			GRAY SANDY SILT	9	14	10	6	45	25	20	7	19	A-4a
	32														
925.9	34	12/24			GRAY SANDY GRAVEL WITH COBBLES	10	74	13	5	-	-	NP	NP	7	A-1-4
922.9	36														
	38		1.5	0.5	CLAY SHALE, GRAY, MEDIUM-FIRM, CALCAREOUS WITH THICK CLAY SEAMS AND GRAY, FIRM, FOSSILIFEROUS LIMESTONE INTERBEDS (COMPRISING 3% OF THE INTERVAL) BROKEN AND JOINTED. CORE LOSS 1%.										
	40														
	42														
	44		5.9	1.1											
913.9	46														

BOTTOM OF BORING

HIGH CORE LOSS DUE TO MECHANICAL DIFFICULTIES ENCOUNTERED DURING DRILLING OPERATIONS.

LOG OF BORING

Date Started 12-29-71 Sampler Type SS Dia. 1 3/8" Water Elev. \_\_\_\_\_  
Date Completed 12-29-71 Casing Length 35' Dia. 3 1/2" Surface Elev. 951.8'  
Boring No. B-9 Station & Offset 45+06, 06' RT. (FORWARD ABUTMENT)

Elev.	Depth	Std. Pen (N)	Rec. ft.	Loss ft.	Description	Sample No.	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class.
951.8	0														
949.3	2	3/4			BROWN GRAVELLY SANDY SILT	1	16	11	20	38	15	19	5	14	A-4a
946.8	4	3/3			BROWN SANDY GRAVELLY SILT	2	29	20	14	28	9	17	4	15	A-4a
944.3	6	2/5			BROWN SILTY SANDY GRAVEL	3	36	9	17	28	10	18	4	15	A-4a
941.8	8	7/8			BROWN SILTY SANDY GRAVEL WITH COBBLES	4	57	15	12	14	2	NP	NP	10	A-1-4
939.3	10				NO SAMPLE RECOVERED (HOLE CAVED IN)										
936.8	12	4/6			GRAY GRAVELLY SANDY SILT	5	17	10	18	39	16	17	5	10	A-4a
934.3	14	2/2			GRAY GRAVELLY SANDY SILT	6	20	9	17	37	17	16	5	14	A-4a
931.8	16	12/10			GRAY SILTY SAND	7	10	13	39	29	9	NP	NP	22	A-4a
	20														
926.8	22	10/10			BROWN SILTY GRAVELLY SAND	8	34	23	16	19	8	15	3	12	A-2-4
	24														
923.3	26		1.0	0.5	TOP OF ROCK										
	28														
	30		2.1	2.9	CLAY SHALE, GRAY, MEDIUM-FIRM, CALCAREOUS WITH THICK CLAY SEAMS AND GRAY, FIRM, FOSSILIFEROUS LIMESTONE INTERBEDS (COMPRISING 2% OF THE INTERVAL) VERY BADLY BROKEN AND JOINTED.										
	32														
916.8	34														

BOTTOM OF BORING

OHIO DEPARTMENT OF HIGHWAYS TESTING LABORATORY 1620 WEST BROAD STREET, COLUMBUS 23, OHIO			
STRUCTURE FOUNDATION INVESTIGATION BRIDGE NO. MOT-675-0000 RAMP S OVER I.R. 75 SEC. MOT-675-0.00			
BORING DATA			
TYPED BY S.A.C.	CHECKED BY R.D.R.	REVIEWED BY G.P.H.	DATE 2/1/72

## LOG OF BORING

Date Started 12-27-71  
 Date Completed 12-28-71  
 Boring No. B-2

Sampler Type SS Dia. 1 3/8"  
 Casing Length 30' Dia. 3 1/2"  
 Station & Offset 41+16, 41' LT. (REAR ABUTMENT)

Water Elev. \_\_\_\_\_

Surface Elev. 954.3'

Elev.	Depth	Std. Pen (N)	Rec. ft.	Loss ft.	Description	Sample No.	Physical Characteristics								SHTL Class.
							% Agg	% C.S	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	
954.3	0				SOD										
951.8	2														
949.3	4	6/12			BROWN SILTY SANDY GRAVEL	1	32	14	19	22	13	NP	NP	11	A-2-4
	6	6/15			BROWN GRAVELLY SILT	2	26	58	11	- 5	-	NP	NP	23	A-1-b
946.8	8	8/11			BROWN-GRAY GRAVELLY SANDY SILT	3	15	10	18	37	20	17	4	12	A-4a
944.3	10	5/8			GRAY GRAVELLY SANDY SILT	4	19	11	16	32	22	19	5	12	A-4a
941.8	12	7/8			GRAY GRAVELLY SANDY SILT	5	19	11	19	32	19	16	4	11	A-4a
939.3	14	7/8			GRAY GRAVELLY SANDY SILT	6	17	11	21	31	20	16	4	9	A-4a
936.8	16	7/10			GRAY GRAVELLY SANDY SILT	7	18	10	15	30	27	20	6	13	A-4a
934.3	20	10/12			GRAY GRAVELLY SANDY SILT	8	22	10	15	33	20	17	4	10	A-4a
	22														
	24														
929.3	26	12/16			GRAY SANDY GRAVELLY SILT	9	30	10	15	27	18	17	5	15	A-4a
	28														
924.3	30	20/24			GRAY GRAVELLY SANDY SILT TOP OF ROCK	10	19	10	15	26	30	21	8	13	A-4a
922.3	32														
	34		3.9	1.1	CLAY SHALE, GRAY, MEDIUM-FIRM, CALCAREOUS WITH THICK CLAY SEAMS AND GRAY, FIRM, FOSSILIFEROUS LIMESTONE INTERBEDS (COMPRISING 11% OF THE INTERVAL) BROKEN AND JOINTED. CORE LOSS 22%.										
917.3	36														

BOTTOM OF BORING

Date Started 12-27-71  
 Date Completed 12-29-71  
 Boring No. B-6

LOG OF BORING  
 SS  
 Sampler Type SS Dia. 1 3/8"  
 Casing Length 38' Dia. 3 1/2"  
 Station & Offset 43+30, 55' LT. (CENTER PIER)

Water Elev. 947.9'  
 Surface Elev. 960.9'

Elev.	Depth	Std. Pen (N)	Rec. ft.	Loss ft.	Description	Sample No.	Physical Characteristics								SHTL Class.
							% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	
960.9	0														
958.4	2														
	4	5/6			BROWN SANDY GRAVELLY CLAY	1	32	4	12	26	26	36	18	13	A-6b
955.9	6	5/6			BROWN SILTY CLAY	2	0	1	6	51	42	41	19	25	A-7c
953.4	8	5/5			BROWN SANDY CLAY	3	7	4	20	28	41	37	18	23	A-6b
950.9	10	8/9			BROWN SILTY SANDY GRAVEL	4	40	10	15	21	14	20	7	20	A-2-d
948.4	12														
	14	5/6			BROWN SILTY SANDY GRAVEL	5	37	15	17	24	7	NP	NP	9	A-2-d
945.9	16	19/15			BROWN SILTY SANDY GRAVEL WITH COBBLES	6	64	13	9	14	-	NP	NP	10	A-1-c
943.4	18				NO SAMPLE RECOVERED (HOLE CAVED IN)										
940.9	20	14/17			GRAY GRAVELLY SANDY SILT	7	23	10	17	32	18	18	5	9	A-4a
	22														
935.9	24														
	26	4/7			GRAY GRAVELLY SANDY SILT	8	17	9	16	35	23	18	5	13	A-4a
	28														
930.9	30	8/8			GRAY SANDY SILT	9	14	10	6	45	25	20	7	19	A-4a
	32														
925.9	34														
	36	12/24			GRAY SANDY GRAVEL WITH COBBLES	10	74	13	5	-	-	NP	NP	7	A-1-c
922.9	38				TOP OF ROCK										
	40		1.5	0.5											
	42														
	44		5.9	1.1											
913.9	46				CLAY SHALE, GRAY, MEDIUM-FIRM, CALCAREOUS WITH THICK CLAY SEAMS AND GRAY, FIRM, FOSSILIFEROUS LIMESTONE INTERBEDS (COMPRISING 3% OF THE INTERVAL) BROKEN AND JOINTED. *CORE LOSS 18%.										

BOTTOM OF BORING

\*HIGH CORE LOSS DUE TO MECHANICAL DIFFICULTIES ENCOUNTERED DURING DRILLING OPERATIONS.

## LOG OF BORING

Date Started 12-29-71Sampler Type S3Dia. 1 3/8"

Water Elev. \_\_\_\_\_

Date Completed 12-29-71Casing Length 35'Dia. 3 1/2"Boring No. B-9Station & Offset 45+06, 06' RT. (FORWARD ABUTMENT)Surface Elev. 951.8'

Elev.	Depth	Std. Pen (N)	Rec. ft.	Loss ft.	Description	Sample No.	Physical Characteristics								SHTL Class.
							% Agg	% C.S	% F.S	% Silt	% Clay	L.L	P.I.	W.C.	
951.8	0														
949.3	2														
946.8	4	3/4			BROWN GRAVELLY SANDY SILT	1	16	11	20	38	15	19	5	14	A-4a
	6	3/3			BROWN SANDY GRAVELLY SILT	2	29	20	14	28	9	17	4	15	A-4a
944.3	8	2/5			BROWN SILTY SANDY GRAVEL	3	36	9	17	28	10	18	4	15	A-4a
941.8	10	7/3			BROWN SILTY SANDY GRAVEL WITH COBBLES	4	57	15	12	14	2	NP	NP	10	A-1-3
939.3	12				NO SAMPLE RECOVERED (HOLE CAVED IN)										
	14														
936.8	16	4/6			GRAY GRAVELLY SANDY SILT	5	17	10	18	39	16	17	5	10	A-4a
934.3	18	2/2			GRAY GRAVELLY SANDY SILT	6	20	9	17	37	17	16	5	14	A-4a
931.8	20	12/10			GRAY SILTY SAND	7	10	13	39	29	9	NP	NP	22	A-4a
	22														
926.8	24														
	26	10/10			BROWN SILTY GRAVELLY SAND	8	34	23	16	19	8	15	3	12	A-2-4
923.3	28				TOP OF ROCK										
	30		1.0	0.5	CLAY SHALE, GRAY, MEDIUM-FIRM, CALCAREOUS WITH THICK CLAY SEAMS AND GRAY, FIRM, FOSSILIFEROUS LIMESTONE INTERBEDS (COMPRISING 21% OF THE INTERVAL) VERY BADLY BROKEN AND JOINTED.										
	32		2.1	2.9											
916.8	34														

BOTTOM OF BORING



