001677

1960
Year

Job. No.
Changes

County: CHAMPAIGN
Bridge No.: CHP-29-3145
Section:
Location: ☒ over ☐ under Little Darby CR.

FES-34
File No. 4J-56

DESIGN BY MICHAEL BAKER JR.

	RECON	AUGER	CORE	DRIVE ROD
By	N.P.L		GREGORY	KUTHER.
Dates	6/6/60.		6/8-14/60	6/9-14/60
No. of Holes or Soundings			2	4
Footage			132.0	215.0
Samples Tested			37	

SITE PLANS	
Date Rec'd	
Revised Plan	

Topo Sheet

☐ Samples Accounted For

Transmittal Date 7/8/60.
Revisions
Refer To

No. of Tracings
Filed with year
Remarks

Auger Data			Drive Rod		Core Data		
No. of Holes	Footage	Samples	No. of Soundings	Footage	No. of Holes	Footage	Samples
—	—	—	4	215.0.	2	132.0	37

folder

July 8, 1960

Micahel Baker, Jr.
Bryson Building
700 Bryden Road
Columbus 15, Ohio

Attention: S. O. Linzell

Re: Final Report of Bridge
Foundation Investigation
CHP-29-3145 S. R. 29 Over
Little Darby Creek

File: 13-4-1
Champaign

Gentlemen:

Superseding our preliminary report of June 22, 1960, transmitted herewith are the final results of the foundation investigation for the State Route 29 structure over Little Darby Creek.

Very truly yours,

R. R. Litehiser
Engineer of Tests

Per: _____
N. E. Mason
Assistant Engineer

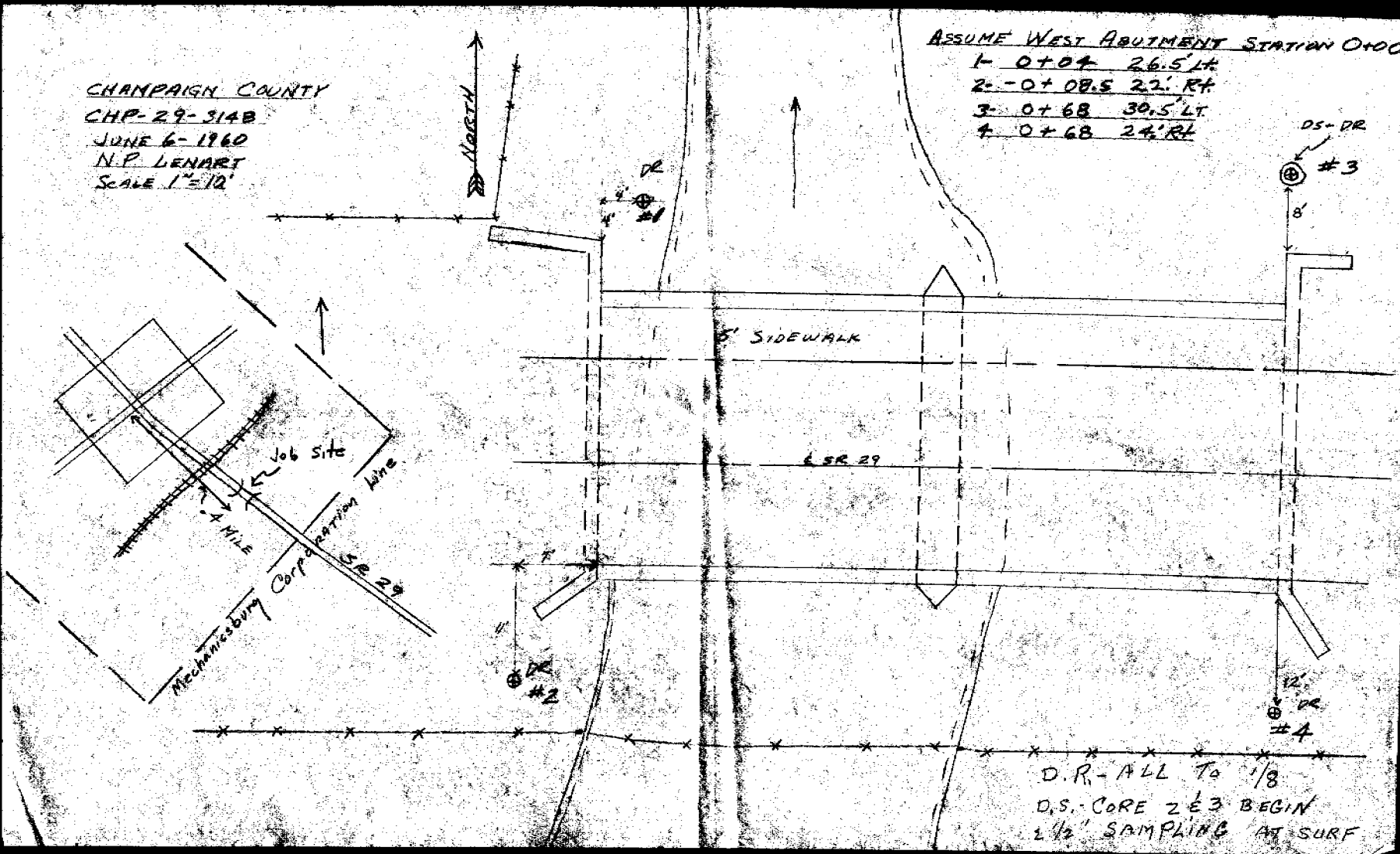
NEM:DJB:GPH:DEM:da
Encl.

cc: D. H. Overman, Attn: C. H. Altvater
N. H. Newton, Champaign County Engineer
N. E. Mason (4)

CHAMPAIGN COUNTY
CHP-29-314B
JUNE 6-1960
N.P. LENART
SCALE 1"=12'

ASSUME WEST ABUTMENT STATION 0+00

1- 0+04 26.5' Lt.
2- -0+08.5 22.' Rt.
3- 0+68 30.5' Lt.
4- 0+68 24.' Rt.



D.R.- ALL TO 1/8
D.S.- CORE 2 & 3 BEGIN
2 1/2" SAMPLING AT SURF

June 22, 1960

Michael Baker, Jr.
Bryson Building
700 Bryden Road
Columbus 15, Ohio

Attention: S. O. Linzell

Re: Preliminary Report of Bridge
Foundation Investigation
CHF-29-3145 S. R. 29 Over
Little Darby Creek

File: 13-4-1
Champaign

Gentlemen:

In accordance with your request, transmitted herewith is information available from the foundation investigation for the S. R. 29 structure over Little Darby Creek. The complete report will be forwarded as soon as laboratory tests are completed for samples from boring 2B, and should be within approximately a week.

R. R. Litehiser
Engineer of Tests

Per: _____
N. E. Mason
Assistant Engineer

NEM:WJR:GPH:DWN:bjm
Encl.
cc: D. H. Overman, Attn: C. H. Altvater
N. H. Newton, Champaign County Engineer
N. E. Mason (4)

Folder

August 4, 1960

J. A. Francis, Personnel Officer

N. E. Mason, Assistant Engineer

Information for Structure Foundation Investigation Charges
CHP-29-3145 Over Little Darby Creek

File: 14-18-1
Champaign

Transmitted herein is information relative to charges for the structure foundation investigation for the subject project.

I. Project Identification - No Job Number Assigned
CHP-29- 145 Over Little Darby Creek

II. Charges

A. Salaries and Expenses (Field Operations)
Pay Period: June 1-15, 1960

B. Equipment
Drill Unit Days 9

C. Sample Testing
Samples Tested 37

III. Authorization for Billing

See attached copy of letter of authorization from North H. Newton, Champaign County Engineer, to Mr. R.E. Litehiser, Ohio Department of Highways Testing Laboratory, dated June 1, 1960.

IV. It is our understanding, from the letter mentioned in Item III, that Champaign County is responsible for the plan preparation for this project.

N. E. Mason
Assistant Engineer

NEM:PAH:bjm
Encl.
cc: J. A. Francis
N. E. Mason (3)

June 1, 1960

Mr. D. R. Litcheiser
Ohio Department of Highways
Testing Laboratory
155 West Woodruff Ave.
Columbus, Ohio

Dear Mr. Litcheiser:

Confirming our telephone conversation of yesterday afternoon (May 31) it is requested that the State Highway Foundation Investigation Crew be employed to make the foundation investigation for the proposed replacement of State Highway Bridge No. CHP-29-3145 in the Village of Mechanicsburg.

Michael Baker, Jr., thru Mr. S. O. Linzell has been engaged by Champaign County to prepare the plans for this bridge.

The bridge is a joint project between Champaign County, the Ohio Department of Highways, and maybe the Bureau of Public Roads. Champaign County is to prepare the plans.

Mr. Linzell would like to have the work performed during the week of June 13th. This was agreeable with you. Mr. Linzell will have site plans ready on or before that time. He will deliver the site plans to Mr. Mason.

Champaign County will reimburse the Ohio Department of Highways for the expense of this work.

It was nice to talk to you yesterday. Thank you very much for your assistance with this project.

Very truly yours,

County Engineer

CC;
W.G.Knasel
S.O.Linzell

FOUNDATION EXPLORATION SECTION

SUBSURFACE INVESTIGATION RECONNAISSANCE REPORT

RECONNAISSANCE OF:

Roadway_____

Bridge ✓

Retaining Wall_____

Other_____; If other, specify_____

PROJECT: CHP-29-3145

BRIDGE NO.: _____

RECONN. BY: N.P. LENART

DATES: from 6-6-60 to _____

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

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

FOUNDATION EXPLORATION SECTION

SUBSURFACE INVESTIGATION RECONNAISSANCE REPORT

This job consists of subsurface investigation as regards the removal of an existing 2 span structure having spans of 34 each and replacement by a 68 foot single span structure over Little Darby Creek. Settlement of the central support, pier, has caused a slight shift in the alignment of the structure and differential weathering has caused rapid disintegration and spalling of the concrete in the abutments, pier, and lower portions of the deck. Near complete disintegration of the sidewalk portion of the structure has caused holes to open up through the entire deck at this point and the bridge is at present being repaired by the county engineers and only one lane traffic is open to the public

The project is located on a high gravel ridge at an approximate elevation of 1100 feet. Both Illinoian and Wisconsin ice sheets passed over the area and deposited a thick blanket of moraine drift ranging from 130 to 200 feet in thickness.
The project lies on the course of the Deep Stage Springfield Creek which flowed southwestward into the Deep Stage Middletown River at Springfield. Rock surface elevation stands at about 860 feet. The thick drift overlies the dolomites + limestones of the Monroe formation of upper Silurian age.

The topography expressed in this area results directly from the action of glacial deposition which heaped together great quantities of material, the so called Scioto Lobe. Post-glacial erosion has cut deeply into this soft moraine and as a result the surface

FOUNDATION EXPLORATION SECTION

SUBSURFACE INVESTIGATION RECONNAISSANCE REPORT

expression is that of a hilly or rolling landscape. Most areas are well drained but a few lack drainage and water stands until evaporated or soaked into the soil as groundwater. These undrained areas are common about 2 miles north of the project site.

Subsurface conditions are that of dense blue sandy silt clay with gravel. It was reported that piling driven for the existing structure penetrated 16 to 18 feet with 2000 pound hammer.

See sketch for boring locations

No special equipment needed.

LOSS OF IGNITION

Chp - 29 - 31.48

A SAMPLE No.	B No. of CRUCIBLE	C Wt. of SOIL plus CRUCIBLE Before Muffle Furnace	D Wt. of CRUCIBLE	E Wt. of Dry Material	F Wt. of SOIL plus CRUCIBLE After Muffle Furnace	G Loss in Grams	H % of Loss
61678							9.3

C - D = E C - F = G 100 X $\frac{G}{E}$ = H

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
COLUMBUS 15

MICHAEL V. DISALLE
GOVERNOR

E. S. PRESTON
DIRECTOR

June 2, 1960

COPY

Mr. North H. Newton
County Engineer
Champaign County
Urbana, Ohio

File: 14-18
Champaign

Dear Mr. Newton:

Referring to conversation which we exchanged when you called me by phone on May 31 and to your letter of June 1, Mr. Neil Mason, Engineer in Charge of the Laboratory's Foundation Exploration Section, is informed on the work which you wish performed. It will be necessary for Mr. Linzell to have the site plans for the proposed bridge in the Village of Mechanicsburg in Mr. Mason's hands not later than June 9, if the work is to be scheduled during the following week. Mr. Mason will lend every cooperation possible.

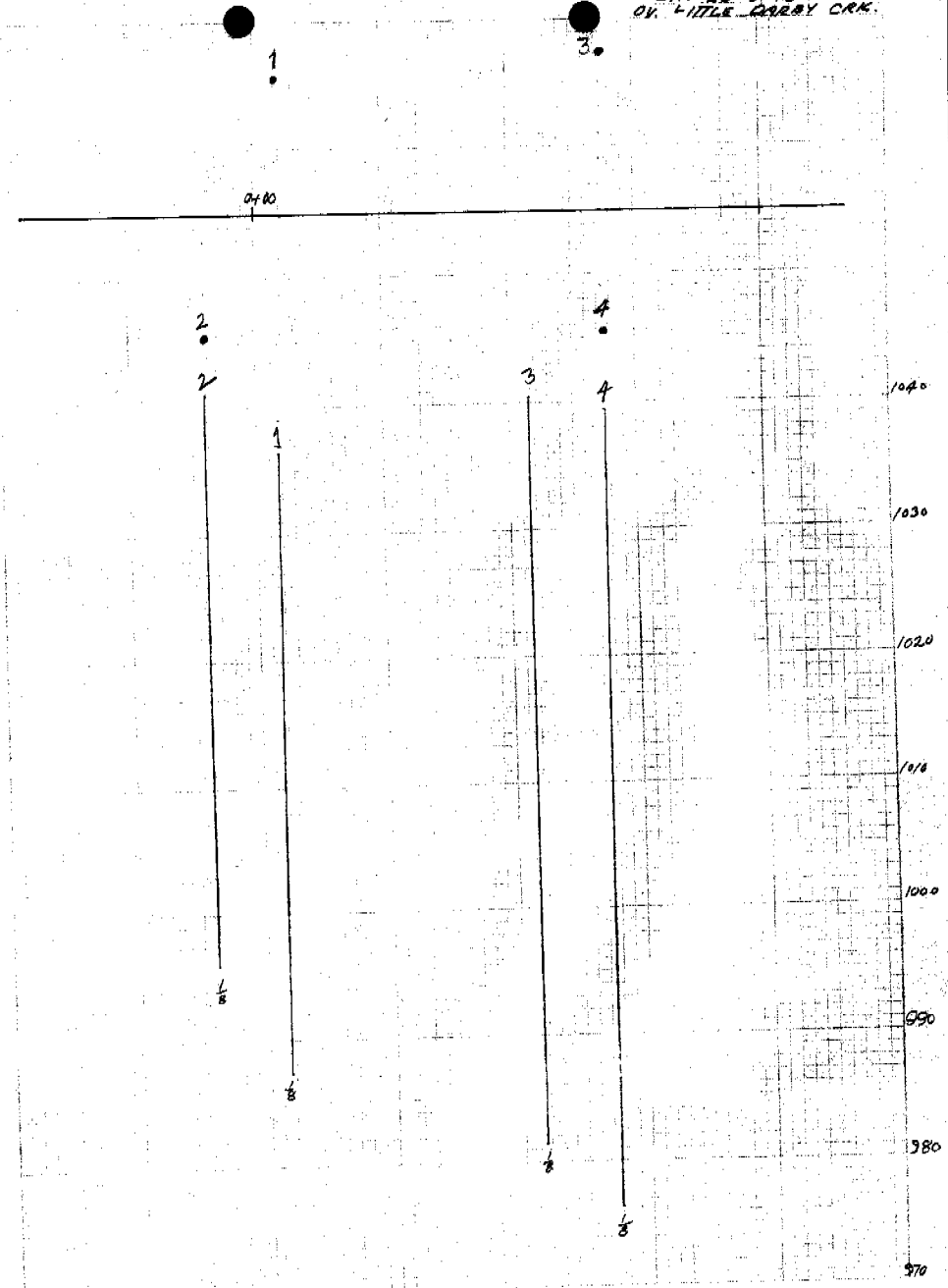
Very truly yours,

R. R. Litehiser
Engineer of Tests

RRLsN

cc: S. O. Linzell
N. E. Mason

CHAMPAIGN
CHP-29-3145
OV. LITTLE DARBY CRK.



FIELD DATA - SOIL LOG

Location No. 2 County: CHP-24-3148

Rear ~~Pier~~ Abut Bridge No.

Station: 6+37 Over:

Offset: 34' RT

Started: 6-13-60 Equipment: Core Drill

Completed: 6-14-60 Diameter

Proposed Footer:

Water Level:

Depth Feet	Casing Log	Samples	Elevation	Ground Line	Water Color
0			1040.4		
				NO HAND AUGER SAMPLE TAKEN.	
	Dark Brown Silty Clay			DARK BROWN SILTY CLAY - ROCK FRAG. IN END OF TUBE	Dark Brown
		1		3/6 BLOWS 1' PEN.	
				DARK GRAY SILTY CLAY - W/ SAND & GRAVEL	
		2	1035.4	2/3 BLOWS 1' PEN.	
				GRAY SAND AND GRAVEL	Dark Gray
	Gray Sand and Gravel	3		6/5 BLOWS 1' PEN.	
				GRAY SAND & GRAVEL W/ SOME GRAY SILTY CLAY.	Gray
		4	1030.4	5/3 BLOWS 1' PEN.	
				GRAY - FINE GRAINED SAND	
	Gray Sand	5		15/27 BLOWS 1' PEN.	
				GRAY SAND TO GRAY SILTY CLAY W/ GRAVEL	
		6	1025.4	20/14 BLOWS 1' PEN.	
				GRAY SILTY CLAY WITH SMALL GRAVEL.	
	Gray Silty Clay with Gravel	7		8/12 BLOWS 1' PEN.	
				GRAY SILTY CLAY W/ SMALL GRAVEL	
		8	1020.4	6/12 BLOWS 1' PEN	
				GRAY SILTY CLAY W/ GRAVEL	
		9		9/13 BLOWS 1' PEN.	
				GRAY SILTY CLAY W/ GRAVEL	
		10	1015.4	11/22 BLOWS 1' PEN.	

Depth Feet	Water Color	Casing	Samples	Elevation	Ground Line
26				1014.4	
		Gray Sand & Gravel			GRAY SAND & GRAVEL
			11		15/12 BLOWS 1' PEN.
					GRAY SAND & GRAVEL
			12	1010.4	14/47 BLOWS 1' PEN.
					GRAY SILTY CLAY W/ GRAVEL
		Brownish Silty Clay with Gravel	13	1005.4	13/21 BLOWS 1' PEN.
					GRAY SILTY CLAY WITH GRAVEL AND SOME SAND
			14	1000.4	19/17 BLOWS 1' PEN.
		Gray Silty Clay w/ Gravel & Sand			GRAY SILTY CLAY WITH GRAVEL AND SOME SAND.
45			15	995.4	35/55 BLOWS 1' PEN.
		Gray Silty Clay w/ Gravel			GRAY SILTY CLAY WITH GRAVEL.
50			16	990.4	12/20 BLOWS 1' PEN.
		Sand & Gravel			GRAY SAND AND GRAVEL
55			17	985.4	13/17 BLOWS 1' PEN.
					BOTTOM OF HOLE 55 FT
					56'
60					

Remarks:

TEST HOLE DRILLED 19' WEST OF ABUTMENT - 39' RT OF ℄

Party SHITZ BUCKLEY

Chief of Party GREGORY

VISUAL CLASSIFICATION OF DRIVE SAMPLES

PROJECT: Chp-29-3148

BORING LOCATION: 6+37 34' Rt

DRILLER: Gregory, CLASSIFIED BY: RDL-KMM, DATE: 6/15/60

Field No.	Visual Description	No. of Blows	Density	Moist. Cont.
1	~~K~~ Br organic CM w/ St. Frags	3/6	Soft	M+
2	DK Br organic MS and G	2/3	loose	M
3	Dr S & G	4/5	loose	M
4	Dr S & G w/ Gray ML contained	5/8	loose	M+
5	Gr MS	15/27	Med	M
6	Gr Fine Sm Few Sm G	20/14	Dense	M
7	Gr sm, little G Till (30'10")	8/12	Dense	M
8	Dr SM, w/ little G 3.0T/□'	6/12	Dense	M
9	do 3.0T/□'	9/13	dense	M
10	Dr SM w/some G 2.0T/□'	11/22	stiff	M
11	Dr S and G	8/17	dense	M
12	do w/fines	14/47	v. dense	D
13	Dr SM w/some G	13/21	v. dense	D
14	Dr SM w/ little G	14/17	dense	D
15	Dr SM w/G and St Frag	35/55	v. dense	D
16	Dr SC w/few G & St	12/20	STIFF	M+
17	Dr S & G w/fines	13/17	dense	M

SO-7

SUMMARY OF SOIL TEST DATA ON FOUNDATION SAMPLES

County, Rt. No., Section

Bridge No. CHR-29-3148 (Gregory)

1
2

Lab. No. So.-	Sample No.	Station No.	Represents Feet	Mechanical Analysis Agg. %	C Sand %	F Sand %	Silt %	Clay %	Physical Characteristics L.L.	P.I.	Water Cont.	Ohio Class.	Remarks
61678	1	6+37 34' RT	2.5-3.5	12	3	12	37	36	42	17	52	A-7-6	DBr SC, Organic
61679	2	"	5-6	26	28	14	17	15	38	NP	51	A-2-4	DBrk Br. MGS, Organic
61680	3	"	7.5-8.5	78	14	3	5	—	NP		14	A-1-a	Br SG
61681	4	"	10-11	66	15	5	8	6	19	8	13	A-2-4	Gr MGS
61682	5	"	12.5-13.5	0	1	77	22		NP		19	A-3a	Gr MS
61683	6	"	15-16	4	3	41	35	14	NP		13	A-4a	Gr SM
61684	7	"	17.5-18.5	45	7	11	23	14	19	6	10	A-4a	Gr MSG
61685	8	"	20-21	27	9	12	30	22	20	6	10	A-4a	Gr SGM
61686	9	"	22.5-23.5	75	4	4	9	8	20	7	12	A-2-4	Gr MG
61687	10	"	25-26	71	3	5	11	10	19	6	11	A-1-b	Gr MG
61688	11	"	27.5-28.5	70	26	0	0	4	NP		16	A-1-a	Gr SG
61689	12	"	30-31	58	29	7	6	—	NP		10	A-1-a	Gr SG
61690	13	"	35-36	25	9	13	30	23	20	7	12	A-4b	Gr SGM

SO-7

SUMMARY OF SOIL TEST DATA ON FOUNDATION SAMPLES

County, Rt. No., Section

Bridge No. CHP-29-3145

Lab. No. So.-	Sample No.	Station No.	Represents Feet	Mechanical Analysis Agg. %	C Sand %	F Sand %	Silt %	Clay %	Physical Characteristics L.L.	P.I.	Water Cont.	Ohio Class.	Remarks
61691	14	6+37 34' RT	40-41	49	8	11	22	10	18	6	13	A-2-4	Gr MSG
61692	15	"	45-46	66	5	8	10	11	17	2	12	A-1-b	Gr MG
61693	16	"	50-51	32	14	11	26	17	20	5	15	A-4a	Gr SGM
61694	17	"	55-56	40	52	6	-2	—	NP	NP	19	A-1-b	Gr GS

FIELD DATA - SOIL LOG

Location No. 31 **County:** CHP-29-3148 (3145)

Pier - Abut. **Bridge No.**

Station: 0+68 7+27 **Over:**

Offset: 33' LT

Started: 6-8-60 **Equipment:** CORE DRILL

Completed: 6-10-60 **Diameter**

Proposed Footer:

Water Level:

Depth Feet	Log	Samples	Elevation	Ground Line
0			1039.7	DARK BROWN SANDY SILT.
				4/5 BLOWS 1' PEN.
2.5				DARK BROWN SANDY SILT
		2	1037.7	2/3 BLOWS 1' PEN.
				DARK GRAY SAND TO LIGHT BROWN SAND AND GRAVEL
7.5		3		5/6 BLOWS 1' PEN.
				LIGHT BROWN SAND AND GRAVEL
		4	1029.7	12/16 BLOWS 1' PEN.
				BROWN SAND & GRAVEL TO GRAY SAND & GRAVEL
12.5		5		13/18 BLOWS 1' PEN.
				GRAY SAND & GRAVEL
		6	1024.7	18/19 BLOWS 1' PEN
				GRAY SILTY CLAY W/GRAVEL
17.5				6/11 BLOWS 1' PEN.
				GRAY SILTY CLAY W/GRAVEL
		7	1019.7	9/10 BLOWS 1' PEN.
				GRAY SILTY CLAY W/GRAVEL
22.5				6/10 BLOWS 1' PEN.
				GRAY SILTY CLAY W/GRAVEL
		* 10	1014.7	10/12 BLOWS 1' PEN.

*SEE REMARKS

WATER COLOR

Depth Feet	Log	Samples	Elevation	Ground Line
26			1013.7	GRAY SILTY CLAY W/GRAVEL
27.5		11		6/11 BLOWS 1' PEN.
				GRAY SAND W/FINE GRAVEL - WASH SAMPLE
		** 12	1009.7	5/9 BLOWS 1' PEN.
				FINE GRAVEL - TWO (2) LARGE GRAVEL IN END OF SAMPLE TUBE.
		13	1004.7	9/49 BLOWS 1' PEN.
				GRAY SILTY CLAY WITH SOME GRAVEL
		14	999.7	13/15 BLOWS 1' PEN.
				FINE TO MEDIUM GRAVEL WITH SOME GRAY SILTY CLAY
		* 15	994.7	14/20 BLOWS 1' PEN.
				GRAY SILTY CLAY WITH SOME GRAVEL
		* 16	989.7	21/50 BLOWS 1' PEN.
				GRAY SAND - FINE GRAVEL - GRAY SILTY CLAY
				WASH SAMPLE TAKEN.
		** 17	984.7	10/13 BLOWS 1' PEN.
				GRAY SILTY CLAY WITH GRAVEL
		18	979.7	17/32 BLOWS 1' PEN.

Remarks: * SAMPLE REJ. ON SECOND ATTEMPT.
** UNABLE TO REJ. SAMPLE - THIRD ATTEMPT - WASH SAMPLE TAKEN.

Party SHILTZ BUCKLEY

Chief of Party GREGORY

FIELD DATA - SOIL LOG

Location No. 3 **County:** CHP-29-3189

Pier-Abut. **Bridge No.**

Station: 0+68 **Over:**

Offset: 33' LT

Started: 6-8-60 **Equipment:** Core Drill

Completed: 6-10-60 **Diameter**

Proposed Footer:

Water Level:

Depth Feet	Log	Samples	Elevation	Ground Line	Water Color
10	Gravel		979.7	GRAY SAND AND GRAVEL. LARGE GRAVEL IN END OF SAMPLE TUBE. HOLE RUNNING WATER AT 65 FT	GRAY
15	Sand and Gravel	19	979.7	10/11 BLOWS 1' PEN. GRAY SAND AND GRAVEL - LARGE GRAVEL IN END OF SAMPLE TUBE. HOLE STILL RUNNING WATER.	
20	Sand and Gravel	20		19/20 BLOWS 1' PEN. UNABLE TO RE-ENTER HOLE WITH SAMPLE TUBE - WASH SAMPLE TAKEN. HOLE STILL FLOWING WATER.	
25		21		BLOW COUNT NOT OBTAINED. BOTTOM OF HOLE 75 FT.	

26			
30			
35			
40			
45			
50			
55			
60			

Remarks: HIT ARTEISAN WATER VEIN AT 64 FT. - APPROX FLOW - 30 GAL PER MINUTE.

Party SHITZ BUCKLEY

Chief of Party GREGORY

VISUAL CLASSIFICATION OF DRIVE SAMPLES

PROJECT: CNA-

BORING LOCATION: 0+68 33+

DRILLER: Gregory, CLASSIFIED BY: _____, DATE: _____

Field No.	Visual Description	No. of Blows	Density	Moist. Cont.
1	Br SC M	—	—	D
2	Br MC (LS)	—	Soft	wet
3	Br SMC w/G-Med w/Br MC	—	—	M+
4	Br MS w/G	—	—	M+
5	do	—	—	M+
6	do	—	—	M+
7	Br SMC w/Shale		Stiff	M
8	do	—	"	"
9	do w/Stone	—	"	"
10	do	—	"	"
11	Gr SMC do w/Shale	—	"	"
12	Gr S and fine G	—	—	wet
13	Gr S & G	—	—	wet
14	Br CM w/Shale	—	Stiff	D
15	Gr SC w/G	—	—	wet
16	Br MC w/Shale	—	Med	M
17	Gr CS w/G	—	—	wet
18	Gr SM w/G & Stone	—	—	D
19	Gr S & G	—	—	wet
20	do	—	—	wet
21	do (Wash Sample)			

SO-7

County, Rt. No., Section

Bridge No. CHP-29-3148 (0.6)

SUMMARY OF SOIL TEST DATA ON FOUNDATION SAMPLES

1/2

Lab. No. So.-	Sample No.	Station No. 7+27, 33'Lt	Represents Feet	Mechanical Analysis: Agg. %	C Sand %	F Sand %	Silt %	Clay %	Physical Characteristics: L.L.	P.I.	Water Cont.	Ohio Class.	Remarks
60240	1	~~0+68 33'Lt~~	2.5-3.5	0	3	15	45	37	40	12	42	A4a(6)	Br M&C
1	2	"	5-6'	0	32	10	28	30	37	5	55	A4a(6)	Br SM
2	3	"	7.5-8.5'	31	18	12	26	13	N-P		27	A4a(0)	Br. MSG
3	4	"	10-11'	61	18	6	0	15	N-P		12	A1a	Br MSG
4	5	"	12.5-13.5'	31	11	5	43	10	N-P		18	A4a	Br. SGM
5	6	"	15-16'	46	5	22	21	6	N-P		12	A2-4	Br. MSG
6	7	"	17.5-18.5'	25	10	15	33	17	21	7	13	A4a	Br. GSM
7	8	"	20-21'	33	8	14	27	18	22	6	13	A4a	Br. SGM
8	9	"	22.5-23.5'	17	11	13	35	24	N-P		12	A4a	Br. GSM
9	10	"	25-26'	18	3	15	43	21	20	6	12	A4a	Br. GSM
60250	11	"	27.5-28.5'	0	81	14	1	4	N-P		13	A1-b	Br. S
1	12	"	30-31'	0	65	31	4	-	N-P		22	A1-b	Gr. S
60252	13	"	35-36'	74	25	1	0	0	N-P		12	A1a	Gr. SG

SO-7

SUMMARY OF SOIL TEST DATA ON FOUNDATION SAMPLES

County, Rt. No., Section

Bridge No. CHP-29-3148

Lab. No. So.-	Sample No.	Station No.	Represents Feet	Mechanical Analysis Agg. %	C Sand %	F Sand %	Silt %	Clay %	Physical Characteristics L.L.	P.I.	Water Cont.	Ohio Class.	Remarks
60253	14	0+68 — 33'Lt	40'-41'	14	17	17	30	22	21	5	10	A-4a	Br. SM
60254	15	"	45-46	39	37	10	14		N	P	14	A-1-b	Gr. MGS
60255	16	"	50-51'	18	11	13	34	24	22	6	16	A-4a	Br. GSM
60256	17	"	55-56'	11	29	15	45		N	P	19	A-4a	Gr. SM
60257	18	"	60-61	25	10	11	32	22	24	7	13	A-4a	Gr. SGM
60258	19	"	65-66	82	14	2	2		N	P	11	A-1-a	Gr. SG
60259	20	"	70-71'	58	22	13	7		N	P	16	A-1-a	Gr. SG
60260	21	—	—	V	1	150	UEST	A	L				Gr. SG (wash sample)

FIELD DATA - ROD PENETRATION

Location No. 1 County: CHAMPAIGN

REAR ~~Pier~~-Abut. Bridge No. 29-3148

Station: 8+046+63 Over:

Offset: 26.5' LT

Started: 6-13-60

Completed: 6-14-60 Equipment: 21-0-33

DE Diameter 1.55

Ground Line

Proposed Footer

Depth Feet	Penetration	Elevation 1036.3	
0			
	3 —		
5	2 7/16	1031.3	
	2 3/4		
	2 7/8		H2O @ Top of Hole
	2 3/4		Closed @ 12'
	2 3/4		
10	2 3/4	1026.3	
	2 3/16		over-into chert 2 3/8
	2 5/16		
	2 1/8		
	1 13/16		
15	1 5/8	1021.3	
	1 1/2		
	1 7/16		
	1 3/16		
	1 7/16		
20	1 —	1016.3	
	13/16		
	3/4		
	13/16		
	11/16		
25	5/8	1011.3	

Party J. B[illegible]

25			
	9/16		
	7/16		
	1/2		
	1/2		
30	7/16	1006.3	
	5/16		
	7/16		
	1/2		
	1/2		
35	1/2	1001.3	
	1/2		
	1/2		
	1/2		
	7/16		
40	7/16	996.3	
	1/2		
	1/2		
	3/8		
	7/16		
45	7/16	991.3	
	1/4		
	1/4		
	3/16		
	1/8	987.3	
50			
55			
60			

Rod Condition: OK

Chief of Party [illegible]

FIELD DATA - ROD PENETRATION

Location No. 2 County: CHAMPAIGN

REAR ~~Pier~~ - Abut. Bridge No. 29-3148

Station: 6+49 ~~0+10~~ Over:

Offset: — 24.5 RT.

Started: 6-9-60

Completed: 6-13-60 Equipment: 21-0-29

DR Diameter 1.35

Ground Line

Elevation 1041.0

Depth Feet	Penetration	Elevation	Proposed Footer
0			
	2 7/16		
5	4 11/16	1036.0	
	3 1/4		
	1 7/8		H2O EL 1034.0
	1 15/16		
	2 "		CLOSED @ 16'
10	1 7/8	1031.0	
	1 3/4		
	1 9/16		STA -
	1 3/4		
	1 1/2		10' BACK & FROM
15	1 5/16	1026.0	WEST EXIST. ABUT
	1 1/8		24.5' RT
	1 "		
	7/8		
	7/8		
20	13/16	1021.0	
	3/4		
	5/8		
	5/8		
	5/8		
25	5/8	1016.0	

Party M. Miller

25			
	9/16		
	9/16		
	1/2		
	9/16		OVER: 4.76 X = 1/2
30	1/2	1011.0	
	1/2		
	7/16		
	7/16		
	1/2		
35	5/8	1006.0	
	9/16		
	9/16		
	1/2		
	1/2		
40	7/16	1001.0	
	3/8		
	3/8		
	1/4		
	5/16		
45	1/8	996.0	
50			
55			
60			

Rod Condition: OK

Chief of Party Rytter

FIELD DATA - ROD PENETRATION

Location No. 3 County: CHAMPAIGN

FORWARD Pier - Abut. Bridge No. 29-3148

Station: 0+68 7+27 Over:

Offset: 30.5 LT

Started: 6-9-60

Completed: 6-10-60 Equipment: 21-0-33

DR Diameter 1.35

Ground Line Elevation 1040.4

Proposed Footer

Depth Feet	Penetration	Elevation	
0			
			H20EL 1037.4
	5 3/16		
5	3 5/16	1035.4	CLOSED 20'
	1 3/4		
	2 3/4		
	2 7/8		
	4"		
10	2 3/4	1030.4	
	2 5/8		
	2 7/8		
	2 5/8		
	1 3/16		
15	2 3/8	1025.4	
	1 3/4		
	1 9/16		
	1 7/4		
	1 1/4		
20	1 7/8	1020.4	
	1		
	15/16		
	7/8		
	3/4		
25	3/4	1015.4	

Party RyTAGE

25			
	3/4		
	11/16		
	5/8		
	5/8		
30	5/8	1010.4	
	1/2		
	3/4		
	3/4		
	5/8		
35	9/16	1005.4	over-nite check 5/8
	5/8		
	7/8		
	7/8		
	7/8		
40	7/8	1000.4	
	7/16		
	5/8		
	5/8		
	7/16		
45	1/2	995.4	
	1/2		
	9/16		
	1/2		
	3/8		
50	5/8	990.4	
	5/16		
	7/16		
	1/4		
	1/4+		
55	1/4	985.4	
	1/4		
	1/4		
	3/16		
	7/8	981.4	
60			

Rod Condition: OK

Chief of Party Ryter

FIELD DATA - ROD PENETRATION

Location No. 4 County: CHAMPAIGN

FORWARD Pier - Abut. Bridge No. 29-3148

Station: 0+68 7+27 Over:

Offset: 24' RT

Started: 6-13-60

Completed: 6-14-60 Equipment: 21-029

OK Diameter 1.35

Elevation 1039.3 Ground Line

Proposed Footer

Depth Feet	Penetration	Elevation	
0			
	3"		
5	6 5/8	1034.3	
	6 7/16		
	3 1/2		
	2 1/2		
	2 9/16		H20 EL 1030.3
10	2 7/16	1029.3	
	2 5/16		CLOSED @ 12'
	1 3/8		
	1 1/2		
	2 5/16		
15	1 1/2	1024.3	
	1 13/16		
	1 5/16		
	2 3/4		
	1 7/16		
20	1 3/16	1019.3	
	1 1/4		
	1"		
	1 1/4		
	1 1/16		
25	1"	1014.3	

Party M. Alice

25					
	15/16		61	3/16	
	3/4		62	1/8	996.3
	3/4				977.3
	11/16				
30	9/16	1009.3			
	9/16				
	1/2				
	1/2		OVER NITE CK 9/16		
	11/16				
35	9/16	1004.3			
	1/2				
	3/8				
	7/16				
	5/8				
40	5/8	999.3			
	5/8				
	9/16				
	5/8				
	9/16				
45	1/2	994.3			
	1/2				
	1/2				
	1/2				
	7/16				
50	7/16	989.3			
	3/8				
	5/16				
	5/16				
	1/4				
55	1/4	984.3			
	5/16				
	3/8				
	5/16				
	5/16				
60	1/4	979.3			

Rod Condition: Lost 32' in Hole

Chief of Party Ryther

STATE OF OHIO

DEPARTMENT OF HIGHWAYS

TESTING LABORATORY

FOUNDATION EXPLORATION SECTION

Structure Foundation Investigation

CHP-29-3145

OVER LITTLE DARBY CREEK

GEOLOGY OF THE SITE

The structure site is located in a glaciated region where thick glacial drift, reported to be in excess of 130 feet deep, overlies bedrock, of Silurian age.

EXPLORATION

The exploration consisted of four drive rod penetration tests and 2 drive sample borings, made between June 8 and 14, 1960.

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

Drive sample borings were 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 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. The Boring Log sheets enclosed show a graphic plot of the information obtained, including depth and elevation of the sample, number of blows for the standard penetration test in two 6-inch increments, laboratory sample number, sample description - based on laboratory test results and the Casagrande AC classification system - and the results of laboratory testing which consisted of gradation, plasticity, and moisture content determinations. At depths where the drift was bouldery or gravelly to the extent that the sampler could not be driven, a wash sample was 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.

STATE OF OHIO

DEPARTMENT OF HIGHWAYS

TESTING LABORATORY

FOUNDATION EXPLORATION SECTION

Structure Foundation Investigation

CHR-29-3145

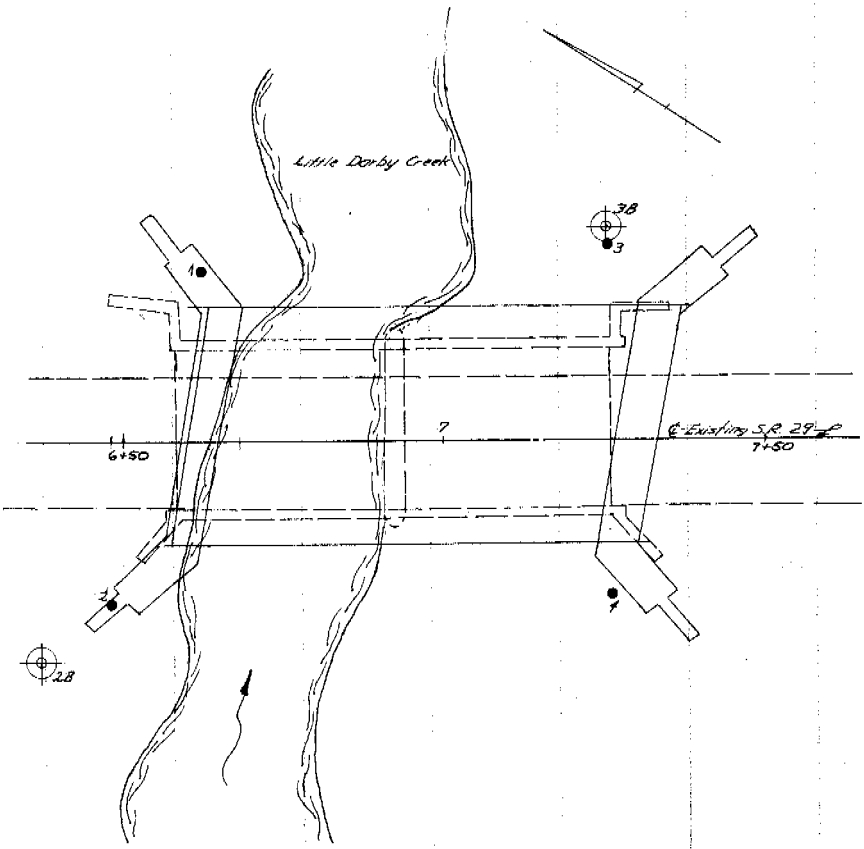
OVER LITTLE DARBY CREEK

INVESTIGATIONAL FINDINGS

Borings disclose that the glacial drift is composed of moist to wet, medium-dense to dense sand and gravel, and moist to wet, stiff to very stiff, slightly plastic silt, sand, and gravel. Borings were discontinued 56 abd 76 feet below ground surface, elevations 984.4 and 963.7 feet, after penetrating 30 or more feet of material requiring in excess of 30 blows per foot in the standard penetration test.

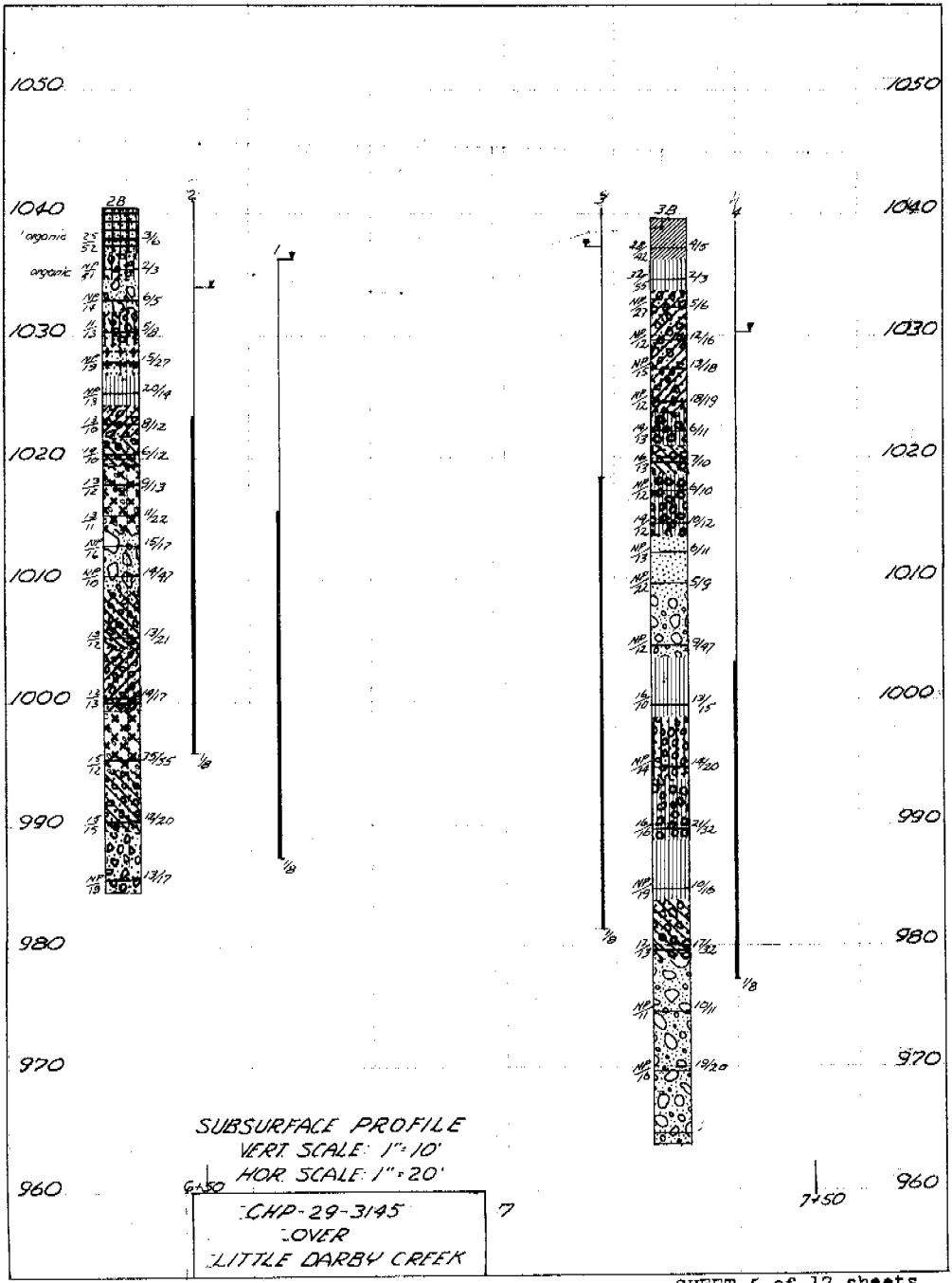
Rod soundings met with gradual increase in penetration resistance with increase in depth and were terminated because of encounter with high penetration resistance, attributed to encounter with the dense gravelly zones, approximately 45 to 62 feet below ground surface, elevations 996.0 to 977.3 feet.

No test penetrated to bedrock.



BORING PLAN
SCALE: 1" = 20'

CHP-29-3145
OVER
LITTLE DARBY CREEK


1050
1040
1030
1020
1010
1000
990
980
970
960
2B
3B
organic
organic
SUBSURFACE PROFILE
VERT. SCALE: 1" = 10'
HOR. SCALE: 1" = 20'
6+50
7+50
CHP-29-3145
OVER
LITTLE DARBY CREEK

State of Ohio
Department of Highways
Testing Laboratory

LOG OF BORING

Date Started 6-13-60 Sampler: Type S.S. Dia. 1 3/8" Water Elev: Immediate ____
Date Completed 6-14-60 Casing: Length 40' Dia. 3 1/2" After ____ Hours ____

Project Identification: CHAMPAIGN
CHP-29-
CHP-29-3145
OVER LITTLE DARBY CREEK

Boring No. 2B Station & Offset 6+37, 34' RT. (REAR ABUTMENT) Surface Elev. 1040.4

Elev.	Depth	Std. Pen. (N)	Description	Field No.	Lab. Nos.So.	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class.
1040.4	0													
	2													
1037.9	4	3/6	Brown Sandy Clay, Organic	1	61678	12	3	12	37	36	42	17	52	
1035.4	6	2/3	Dark-Brown Silty Gravelly Sand, Organic	2	61679	26	28	14	17	15	38	NP	51	
1032.9	8	6/5	Gray Sandy Gravel	3	61680	78	14	3	-5-		NP	NP	14	
1030.4	10	5/8	Gray Silty Gravelly Sand	4	61681	66	15	5	8	6	19	8	13	
1027.9	12	15/27	Gray Silty Sand	5	61682	0	1	77	-22-		NP	NP	19	
1025.4	14	20/14	Gray Sandy Silt	6	61683	4	3	41	38	14	NP	NP	13	
1022.9	16	8/12	Gray Silty Sandy Gravel	7	61684	45	7	11	23	14	19	6	10	
1020.4	18	6/12	Gray Sandy Gravelly Silt	8	61685	27	9	12	30	22	20	6	10	
1017.9	20	9/13	Gray Silty Gravel	9	61686	75	4	4	9	8	20	7	12	
1015.4	22	11/22	Gray Silty Gravel	10	61687	71	3	5	11	10	19	6	11	
1012.9	24	15/17	Gray Sandy Gravel	11	61688	70	26	0	0	4	NP	NP	16	
1010.4	26	14/47	Gray Sandy Gravel	12	61689	58	29	7	-6-		NP	NP	10	
	28													
	30													
	32													
	34													
1005.4	36	13/21	Gray Sandy Gravelly Silt	13	61690	25	9	13	30	23	20	7	12	

Particle Sizes: Agg. = >2.00mm , Coarse Sand= 2.00 - 0.42mm , Fine Sand=0.42-0.074mm, Silt=0.074-0.005mm , Clay = < 0.005 mm

Boring No. 2B Station & Offset 6+37, 34' RT. (REAR ABUTMENT) Surface Elev. 1040.4 Project: CHP-29-3145

Elev.	Depth	Std. Pen. (N)	Description	Field No.	Lab. Nos. So.	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class.
						Physical Characteristics								
	38													
1000.4	40	14/17	Gray Silty Sandy Gravel	14	61691	49	8	11	22	10	18	6	13	
	42													
	44													
995.4	46	35/55	Gray Silty Gravel	15	61692	66	5	8	10	11	17	2	12	
	48													
990.4	50	12/20	Gray Sandy Gravelly Silt	16	61693	32	14	11	26	17	20	5	15	
	52													
	54													
985.5														
984.4	56	13/17	Gray Gravelly Sand	17	61694	40	52	6	-2-		NP	NP	19	
			← BOTTOM OF BORING											
	58													
	60													
	62													
	64													
	66													
	68													
	70													
	72													
	74													
	76													
	78													
	80													

State of Ohio
Department of Highways
Testing Laboratory

LOG OF BORING

Date Started 6-8-60 Sampler: Type SS Dia. 1 3/8" Water Elev: Immediate
Date Completed 6-10-60 Casing: Length 75' Dia. 3 1/2" After Hours

Project Identification: CHAMPAIGN
CHP-29
CHP-29-3145
OVER LITTLE DARBY CREEK

Boring No. 3B Station & Offset 7+27, 33'LT. (FORWARD ABUTMENT) Surface Elev. 1039.7

Elev.	Depth	Std. Pen. (N)	Description	Field No.	Lab. Nos.So.	Physical Characteristics % Agg.	% C.S.	% F.S.	% Silt	% Clay	LL.	Pl.	W.C.	SHTL Class.
1039.7	0													
	2													
1037.2	4	4/5	Brown Silt & Clay	1	60240	0	3	15	45	37	40	12	42	
1034.7	6	2/3	Brown Sandy Silt	2	60241	0	32	10	28	30	37	5	55	
1032.2	8	5/6	Brown Silty Sandy Gravel	3	60242	31	18	12	26	13	NP	NP	27	
1029.7	10	12/16	Brown Silty Sandy Gravel	4	60243	61	18	6	0	15	NP	NP	12	
	12													
1027.2	14	13/18	Brown Sandy Gravelly Silt	5	60244	31	11	5	43	10	NP	NP	15	
1024.7	16	18/19	Brown Silty Sandy Gravel	6	60245	46	5	22	21	6	NP	NP	12	
1022.2	18	6/11	Brown Gravelly Sandy Silt	7	60246	25	10	15	33	17	21	7	13	
1019.7	20	7/10	Brown Sandy Gravelly Silt	8	60247	33	8	14	27	18	22	6	13	
1017.2	22													
	24	6/10	Brown Gravelly Sandy Silt	9	60248	17	11	13	35	24	NP	NP	12	
1014.7	26	10/12	Brown Gravelly Sandy Silt	10	60249	18	3	15	43	21	20	6	12	
1012.2	28	6/11	Brown Sand	11	60250	0	81	14	1	4	NP	NP	13	
1009.7	30	5/9	Gray Sand	12	60251	0	65	31	-4-		NP	NP	22	
	32													
	34													
1004.7	36	9/47	Gray Sandy Gravel	13	60252	74	25	1	0	0	NP	NP	12	

Particle Sizes: Agg. = > 2.00mm , Coarse Sand = 2.00 - 0.42mm , Fine Sand = 0.42 - 0.074mm, Silt = 0.074 - 0.005mm , Clay = < 0.005 mm

Boring No. 3B Station & Offset 7+27, 33' LT. (FORWARD ABUTMENT) Surface Elev. 1039.7 Project: CHP-29-3145

Elev.	Depth	Std. Pen. (N)	Description	Field No.	Lab. Nos. So.	% Agg.	% C.S.	% F.S.	% Silt	% Clay	LL.	PI.	W.C.	SHTL Class.
						Physical Characteristics								
	38													
999.7	40	13/15	Brown Sandy Silt	14	60253	14	17	17	30	22	21	5	10	
	42													
	44													
994.7	46	14/20	Gray Silty Gravelly Sand	15	60254	39	37	10	-14-		NP	NP	14	
	48													
989.7	50	21/32	Brown Gravelly Sandy Silt	16	60255	18	11	13	34	24	22	6	16	
	52													
	54													
984.7	56	10/16	Gray Sandy Silt	17	60256	11	29	15	-45-		NP	NP	19	
	58													
979.7	60	17/32	Gray Sandy Gravelly Silt	18	60257	25	10	11	32	22	24	7	13	
	62													
	64													
974.7	66	10/11	Gray Sandy Gravel	19	60258	82	14	2	-2-		NP	NP	11	
	68													
969.7	70	19/20	Gray Sandy Gravel	20	60259	58	22	13	-7-		NP	NP	16	
	72													
	74													
964.7														
963.7	76	----	Gray Sandy Gravel (Wash Sample)					V I S U A L						
			BOTTOM OF BORING											
	78													
	80													

SHEET 9 of 12 Sheets

State of Ohio
Department of Highways
Testing Laboratory

10/12

FOUNDATION DATA

Boring No. 1 Station & Offset 6+63, 27' LT.
NEAR ABUTMENT

Surface Elev. 1036.3 Water Elev. 1036.3

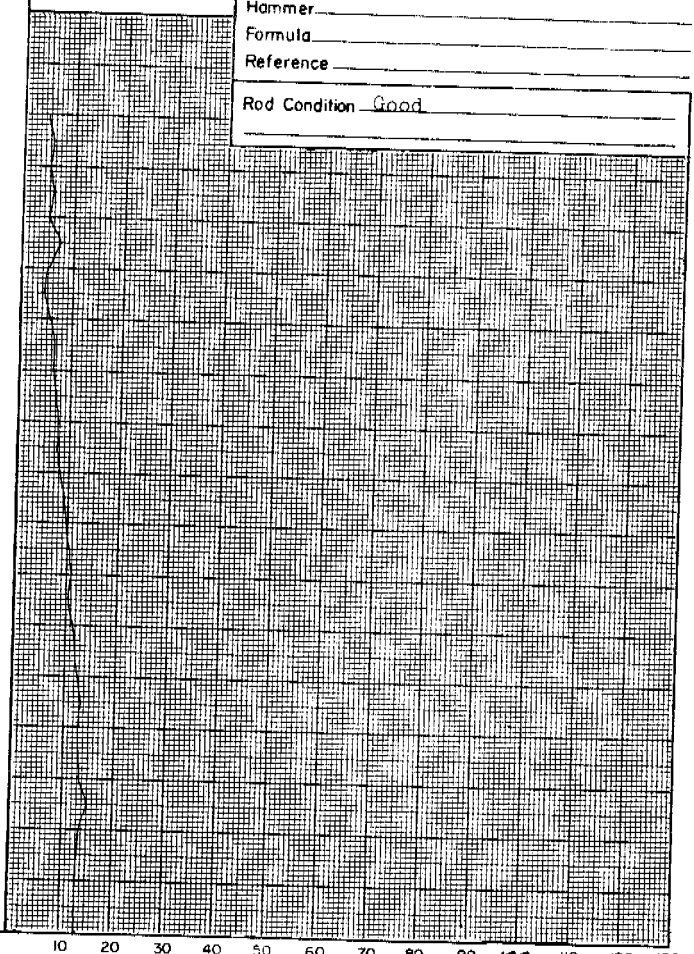
Date Completed 6-14-60

Project Identification CHAMPAIGN
CHP-29-
CHP-29-3145
OVER LITTLE DARBY CREEK

Piling
Hammer
Formula
Reference

Rod Condition Good

Elev.	Depth	Soil Log
1036.3	0	
	2	
1032.3	4	
	6	
1028.3	8	
	10	
1024.3	12	
	14	
1020.3	16	
	18	
1016.3	20	
	22	
1012.3	24	
	26	
1008.3	28	
	30	
1004.3	32	
	34	
1000.3	36	



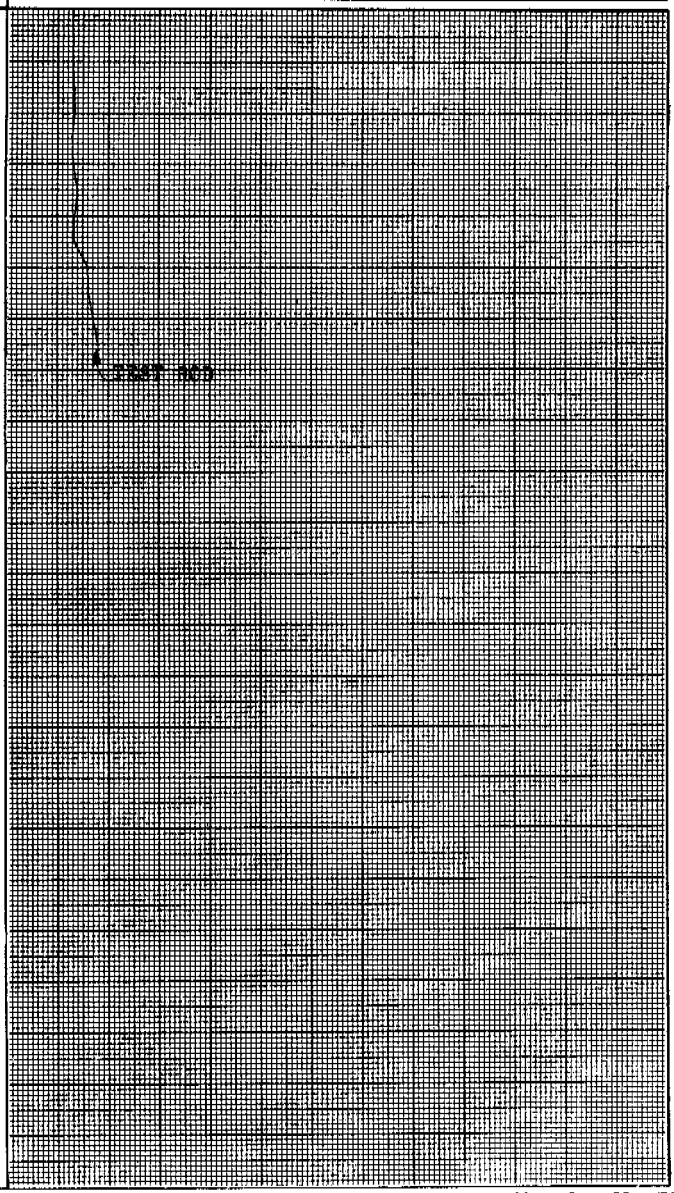
10 20 30 40 50 60 70 80 90 100 110 120 130
Capacity "Q" in Thousands of Pounds

By R.C.
Date 7-8-60

FOUNDATION DATA (Continued)

Boring No. 1 Station & Offset 6+63, 27' LT. Project Identification CHAMPAIGN CHP-29- CHP-29-3145 OVER LITTLE DARBY CREEK

Elev.	Depth	Soil Log
1000.3		
	38	
996.3	40	
	42	
992.3	44	
	46	
988.3	48	
	50	
984.3	52	
	54	
	56	
	58	
	60	
	62	
	64	
	66	
	68	
	70	
	72	
	74	
	76	
	78	
	80	
	82	



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12/12

FOUNDATION DATA

Boring No. 2 Station & Offset 6+49, 25' RT.
REAR ABUTMENT

Surface Elev. 1041.0 Water Elev. 1034.0

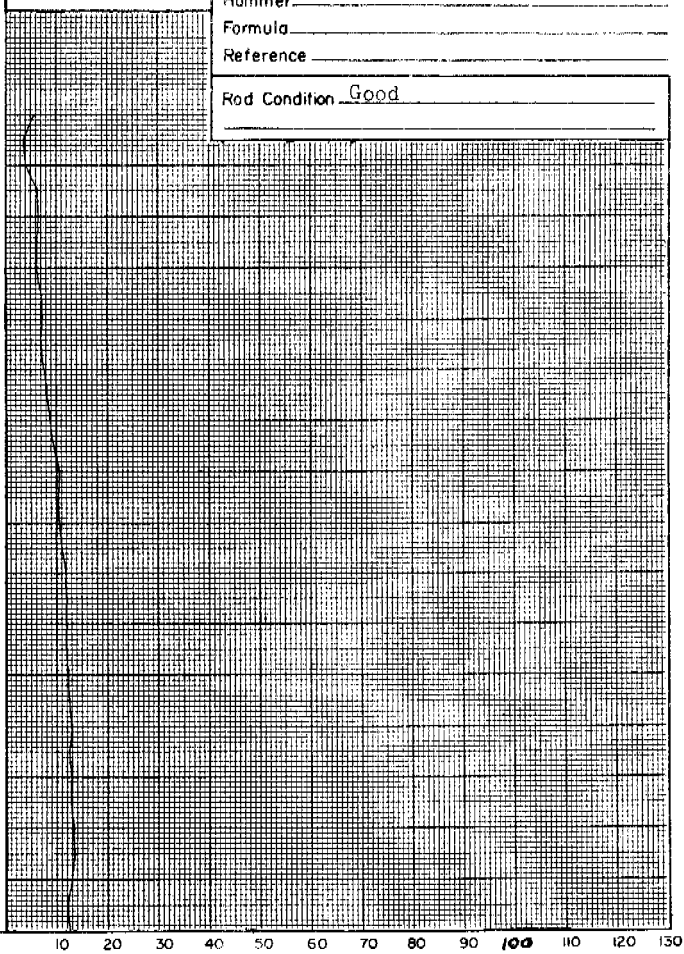
Date Completed 6-13-60

Project Identification CHAMPAIGN
CHP-29-
CHP-29-3145
OVER LITTLE DARBY CREEK

Piling
Hammer
Formula
Reference

Rod Condition Good

Elev.	Depth	Soil Log
1041.0	0	
	2	
1037.0	4	
	6	
1033.0	8	
	10	
1029.0	12	
	14	
1025.0	16	
	18	
1021.0	20	
	22	
1017.0	24	
	26	
1013.0	28	
	30	
1009.0	32	
	34	
1005.0	36	

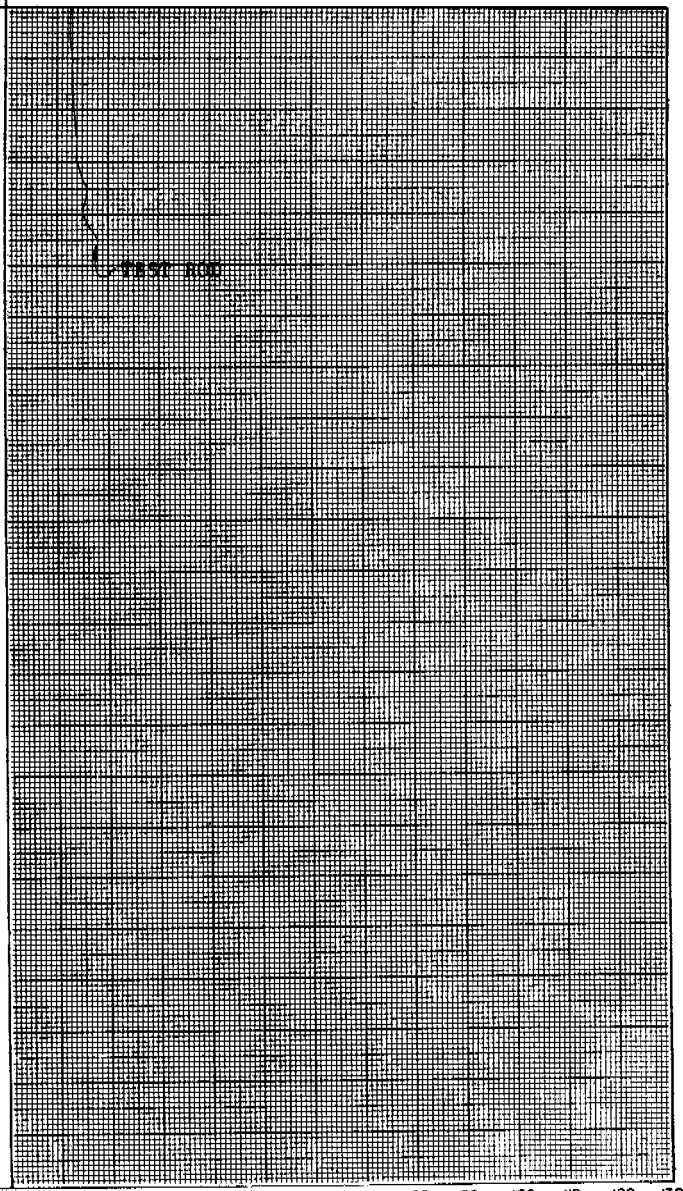


By R.C.
Date 7-1-60

FOUNDATION DATA (Continued)

Boring No. 2 Station & Offset 6+49, 25' RT. Project Identification CHAMPAIGN CHP-29- CHP-29-3145 OVER LITTLE DARBY CREEK

Elev.	Depth	Soil Log
1005.0		
	38	
1001.0	40	
	42	
997.0	44	
	46	
993.0	48	
	50	
	52	
	54	
	56	
	58	
	60	
	62	
	64	
	66	
	68	
	70	
	72	
	74	
	76	
	78	
	80	
	82	



State of Ohio
Department of Highways
Testing Laboratory

14/17

FOUNDATION DATA

Boring No. 3 Station & Offset 7+27, 31' LT.
FORWARD ABUTMENT

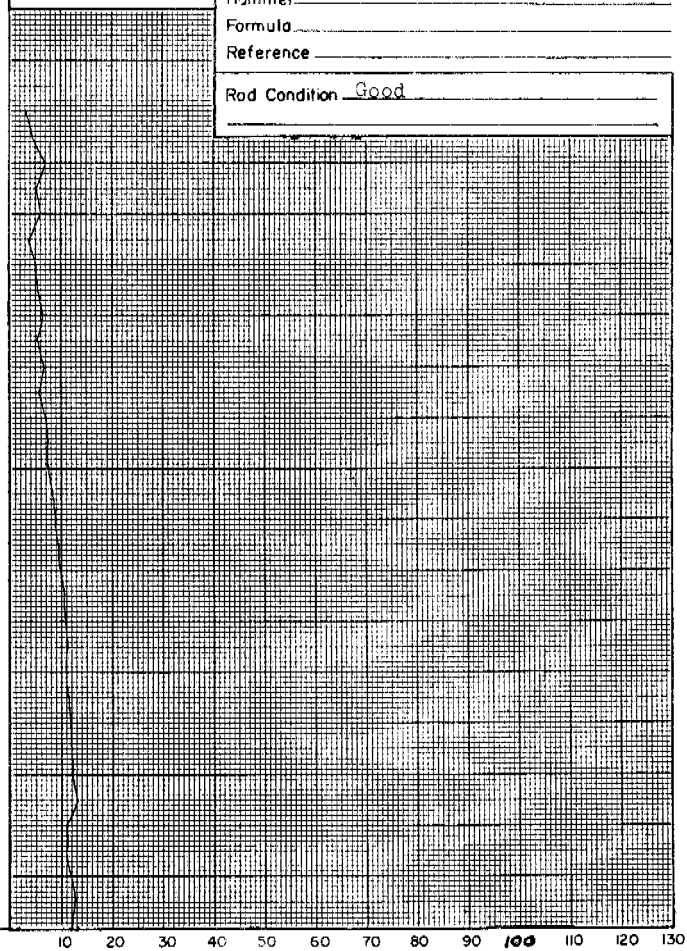
Surface Elev. 1040.4 Water Elev. 1037.4

Project Identification CHAMPAIGN
CHP-29
CHP-29-3145
OVER LITTLE DARBY CREEK

Date Completed 6-10-60

Piling
Hammer
Formula
Reference
Rod Condition Good

Elev.	Depth	Soil Log
1040.4	0	
	2	
1036.4	4	
	6	
1032.4	8	
	10	
1028.4	12	
	14	
1024.4	16	
	18	
1020.4	20	
	22	
1016.4	24	
	26	
1012.4	28	
	30	
1008.4	32	
	34	
1004.4	36	

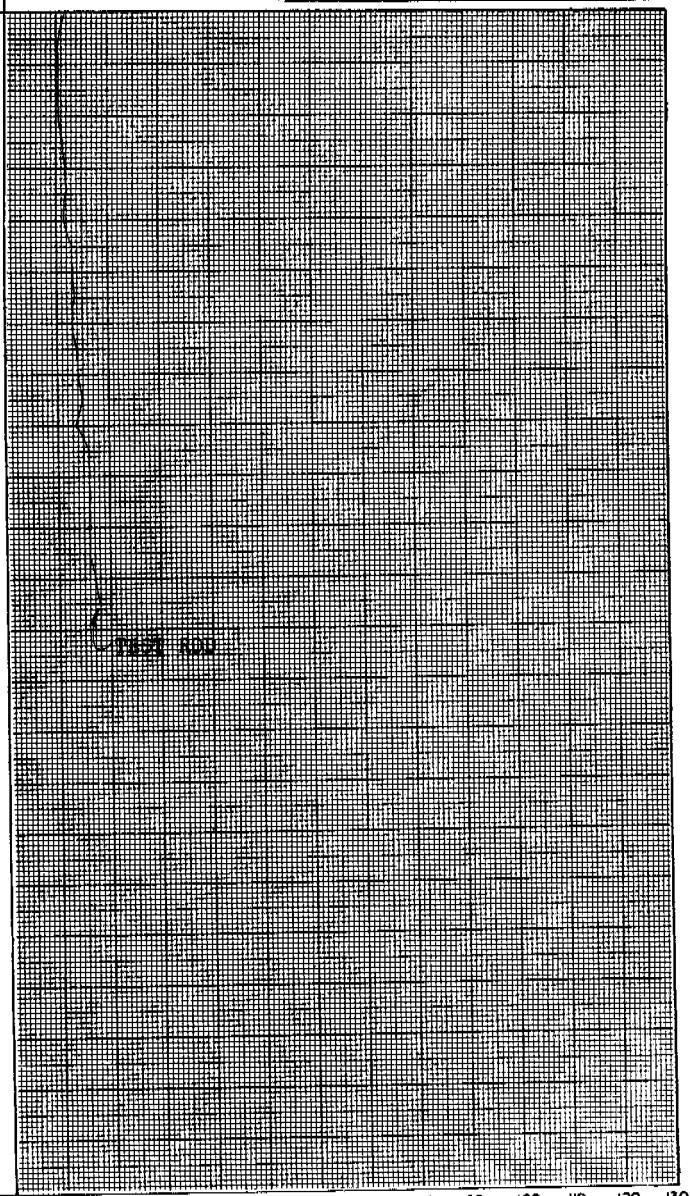


By RC
Date 7-8-60

FOUNDATION DATA (Continued)

Boring No. 3 Station & Offset 7+27, 31' LT. Project Identification CHAMPAIGN
CHP-29
CHP-29-3145
OVER LITTLE DARBY CREEK

Elev.	Depth	Soil Log
1004.4		
	38	
1000.4	40	
	42	
996.4	44	
	46	
992.4	48	
	50	
988.4	52	
	54	
984.4	56	
	58	
980.4	60	
	62	
	64	
	66	
	68	
	70	
	72	
	74	
	76	
	78	
	80	
	82	



State of Ohio
Department of Highways
Testing Laboratory

FOUNDATION DATA

Boring No. 4 Station & Offset 7+27, 24' RT.
FORWARD ABUTMENT
Surface Elev. 1039.3 Water Elev. 1030.3

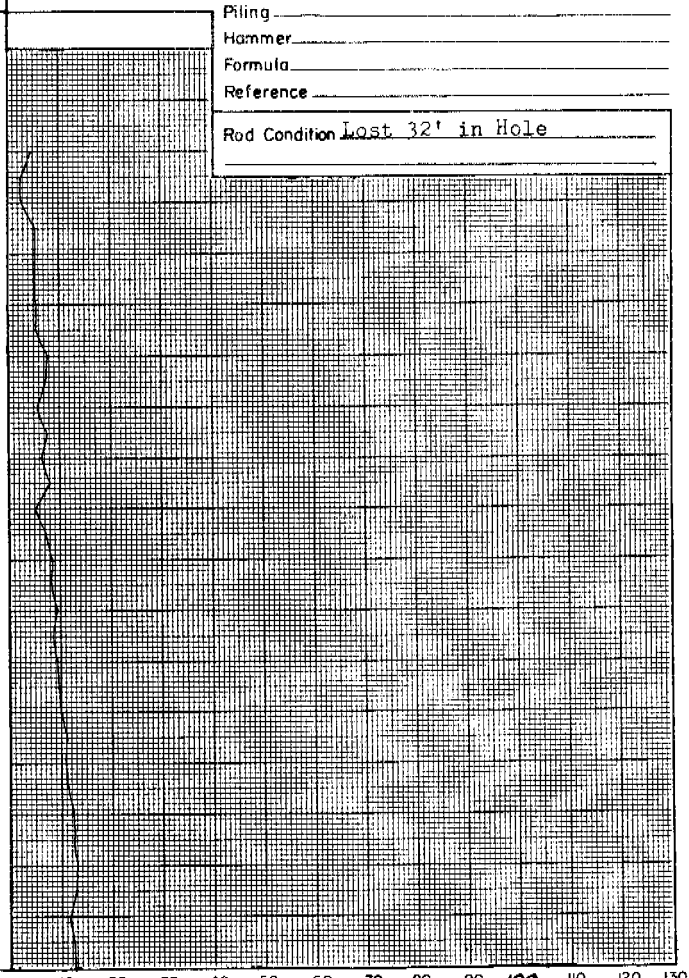
Project Identification CHAMPAIGN
CHP-29-
CHP-29-3145
OVER LITTLE DARBY CREEK

Date Completed 6-14-60

Piling
Hammer
Formula
Reference

Rod Condition Lost 32' in Hole

Elev.	Depth	Soil Log
1039.3	0	
	2	
1035.3	4	
	6	
1031.3	8	
	10	
1027.3	12	
	14	
1023.3	16	
	18	
1019.3	20	
	22	
1015.3	24	
	26	
1011.3	28	
	30	
1007.3	32	
	34	
1003.3	36	

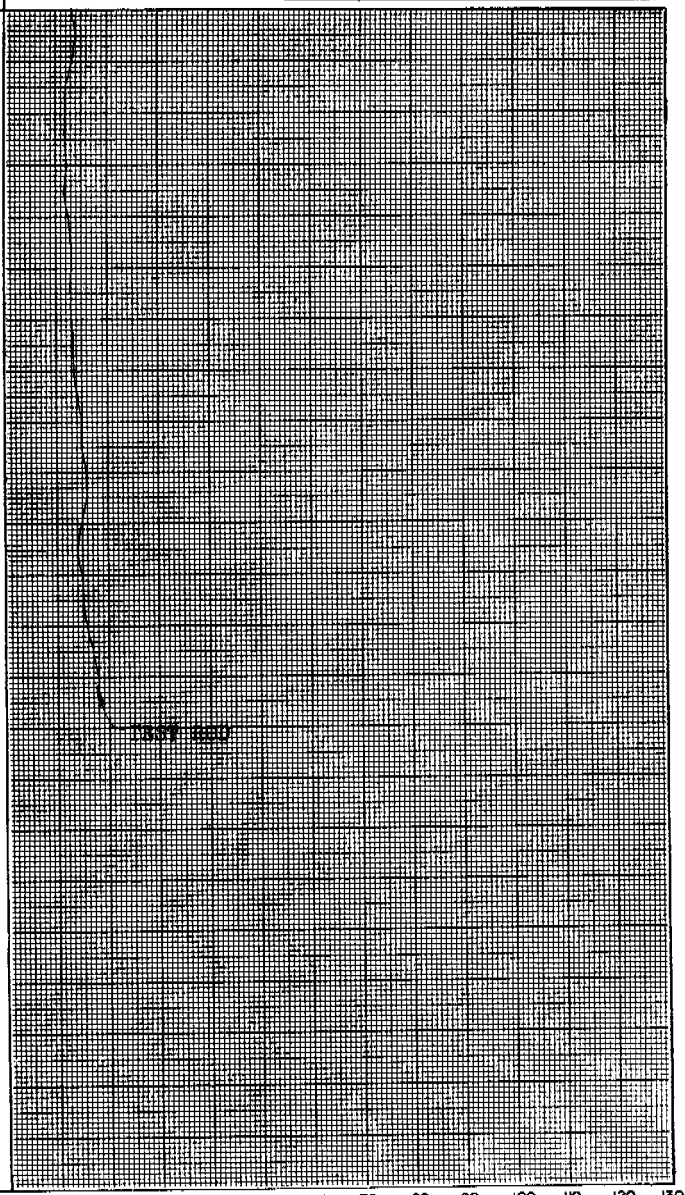


By R.C.
Date 7-8-60

FOUNDATION DATA (Continued)

Boring No. 4 Station & Offset 7+27, 24' RT. Project Identification CHAMPAIGN CHP-29- CHP-29-3145 OVER LITTLE DARBY CREEK

Elev.	Depth	Soil Log
1003.3		
	38	
999.3	40	
	42	
995.3	44	
	46	
991.3	48	
	50	
987.3	52	
	54	
983.3	56	
	58	
979.3	60	
	62	
975.3	64	
	66	
	68	
	70	
	72	
	74	
	76	
	78	
	80	
	82	



EXISTING BRIDGE DATA

TYPE: Reinforced concrete Tee beam
SPANS: 2@ 32' clear
ROADWAY: 21'-0"
CONDITION: Poor

PROPOSED STRUCTURE

TYPE: Prestressed non-composite box girders with reinforced concrete substructure.
SPAN: 69'-0" % of girders
ROADWAY: 30'-0" f/f of 1'-0" curb and 4'-0" sidewalk
SKEW: 10°-00'-00" left forward
LOAD FREQUENCY: CF 400
WEARING SURFACE: Asphaltic Concrete
ALIGNMENT: Tangent
SUPERELEVATION: None
APPROACH SLAB: AS1-54 (25' long)