

PROFILES
NOW IN

FED. RD. DIVISION	STATE	PROJECT	
5	OHIO		

1
2

LAKE COUNTY
LAK-84-30.85

SITE DESCRIPTION

The site is located in an area where Arcola Creek breaches an 8 to 10 ft. high glacial lake beach ridge; approximately 4 miles south of Lake Erie and about one-half mile north of the morainal lake escarpment. A pile supported, concrete T beam, 24 ft. span bridge built circa 1927 presently carries State Route 84 over the stream, along the east-west oriented beach ridge. The proposed pipe will replace the visibly deteriorated concrete bridge.

From its origin in the hilly terrain to the south, Arcola Creek flows in a northerly direction to Lake Erie. An abandoned railroad embankment of the Fairport, Painesville and Eastern Railway Co. crosses the stream on a 12 ft. by 5 ft. high box culvert about 180 ft. north of the site.

EXPLORATION

The exploration consisted of two test borings borings made on January 7 and 8, 1982, and pH tests of stream water on February 5, 1982. A limited number of laboratory soil tests were also made.

GENERAL INTERPRETATION OF FINDINGS




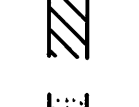
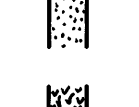
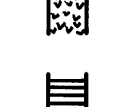



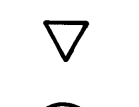

Subsurface conditions along the present streambed probably consist of a very shallow depth (2± ft.) of recent stream alluvium overlying (probably lacustrine) silty gray sand, with shale bedrock at a depth of 19 to 22 ft. (El. 696 to 693). The sand stratum consists of coarse to fine, silty sand with some gravel and (probably) cobbles or small boulders. Standard penetration tests indicate that the relative density of this material varies from loose to medium-dense.

Ground water levels should be approximately the same as stream level.

pH values of the stream water varied from 6.70 to 6.75 on February 5, 1982.

The elevated roadway embankment generally consists of medium to fine, silty, clayey brown sand with limited amounts of coarse sand and small gravel. The presence of clayey plastic material may indicate that the roadway is on a constructed embankment, although its alignment generally follows the natural beach ridge.

LEGEND & SYMBOLS

-  Location of test boring - plan view
-  Location of soil sample on log of boring
-  Location of rock coring on log of boring
-  Silt and clay on profile
-  Sand on profile
-  Gravel and rock fragments on profile
-  Shale on profile
-  = Flow Line
- X/Y/Z 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.
 - Z = Number of blows for third 6 inches.
-  24 Water level in the boring. The number of hours indicated after completion.
-  Water level observed while augering.
-  2 Approximate location and number of pH test of stream water.

GENERAL INFORMATION AND NOTES

SOIL SAMPLING

Borings were advanced to the depths of sampling by augering with a truck-mounted Pendrill unit using 4 1/2 inch o.d. solid stem continuous flight augers. Sampling was conducted by standard penetration testing procedures using a 140 lb. hammer falling 30 inches to drive a 2 inch o.d. split spoon sampler 18 inches or to refusal. The number of blows required to drive the sample spoon each 6 inch increment (or as otherwise noted) are indicated on the boring logs. Augering and soil sampling was continued until reaching spoon or auger refusal.

4 inch o.d. flush joint casing was used as required to keep the hole open during sampling. Since the holes remained open while sampling in soil, the casing was inserted in the open hole prior to using water to clean out the hole in preparation for coring rock.

ROCK CORING

2 1/8 inch diameter rock cores were obtained using an NX size, M series double tube core barrel with a diamond bit. Core recovery, expressed as a percentage of the total length of each run, is indicated on the boring logs. The rock quality designation (R.Q.D.), the cumulative length of core pieces more than 4 inches long relative to the total length cored, is also indicated on the logs.

WATER LEVEL OBSERVATIONS

Water level observations were made in the bore holes at times indicated after completion of drilling. These readings indicate the rate of drainage of drill water from the hole, and may not directly indicate the static ground water level.

Where available, other data which may be related to ground water levels are also indicated. This information includes the depth of water observed during drilling and sampling, stream water levels, etc. Water level observations are considered valid for the times and conditions indicated. It should be noted that ground water levels may fluctuate due to variation in rainfall and other factors.

LOGS OF BORINGS

Boring logs show data from the borings, visual descriptions of materials sampled, and field interpretation of subsurface conditions at that location. Results of laboratory soil tests on the sampled material are also indicated. Results of the borings are plotted schematically on the profile.

REFERENCE

"Specifications For Subsurface Investigations", Ohio Department of Transportation, August 1977.

CAPITOL ENGINEERING ASSOCIATES CONSULTING CIVIL ENGINEERS PAINESVILLE, OHIO					
STRUCTURE FOUNDATION INVESTIGATION					
BRIDGE NO. LAK-84-30.86 OVER ARCOLA CREEK					
LAKE COUNTY				STA. 2+73± TO STA. 7+00±	
<u>GENERAL DATA</u>					
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
EWB	GAS	☞	TAP	NGE	3/19/82