FHWA REGION	STATE	PROJECT	
5	OHIO		

1/2

LAKE COUNTY
LAK-86-2.23

SITE DESCRIPTIONS

The site is located in an area of severe stream cutting, approximately one-half mile southwest of the Grand River gorge. The south (right) bank of Big Creek at the structure site consists of an approximately 15 ft high exposed shale bedrock bank overlain by about 8 ft of fine grained stream terrace deposits. The stream bed, both upstream and downstream, is in the Devonian Age shale; however, a thin mantle of alluvium appears to overlie the shale at the bridge site. The north (left) bank generally consists of a 3 to 5 ft. high bank of coarse grained alluvium and an 18 ft. high existing roadway embankment.

The proposed bridge will replace a narrower existing structure at approximately the same location.

EXPLORATION

The exploration consisted of two test borings made on January 5 and 6, 1982. A limited number of laboratory tests were made.

GENERAL INTERPRETATION OF FINDINGS

The borings and exposed stream banks indicate that subsurface conditions at the south (forward) abutment consist of about 8 ft. of firm, silty, sandy, brown clay with some gravel overlying shale bedrock at about Elevation 630. At the north (rear) abutment, surficial soils consist of the existing 18± ft. high embankment and 3 to 5 ft. of loose, silty sand and gravel overlying shale bedrock at about Elevation 612.

Water table observations indicate that ground water in the north abutment area would be expected at approximately the same elevation as stream level (about El. 616 when the borings were made). Ground water levels in the south abutment area appeared to be near the top of the shale bedrock (about El. 630) when the borings were made.

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

Normal W.L. Normal Water Level
D.H.W. Design High Water

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 boring the number of hours indicated after completion.

GENERAL INFORMATION AND NOTES

SOIL SAMPLING

Borings were advanced to the depths of sampling by augering with a truck-mounted Pendrill unit using 4½" 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" o.d. split spoon sampler 18" 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

2⅛ inch diameter rock cores were obtained from the borings 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 water from the hole, and may not directly indicate the static ground water level.

Drill water return at the top of casing during rock coring was also observed to indicate general characteristics of the rock being cored. The loss of drill water return may indicate a pervious zone above the static ground water level.

Where available, other data which may be related to ground water levels are also indicated. This information may include stream water level, 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.

ADDITIONAL SOIL INFORMATION

All available soil and bedrock information which can be conveniently shown on the Soil Profile and/or Structure Foundation Investigation Sheets have been so reported. Additional Subsurface Investigations may have been made to study some special aspect of the project. Copies of this data, if any, may be inspected in the District Deputy Director's Office, the Bureau of Tests at 1600 West Broad Street, the Pavement and Soils Section of the Bureau of Location and Design or in the Bridge Bureau at 25 South Front Street.

CAPITOL ENGINEERING ASSOCIATES
CONSULTING CIVIL ENGINEERS
PAINESVILLE, OHIO

STRUCTURE FOUNDATION INVESTIGATION

BRIDGE NO. LAK-86-0229
OVER BIG CREEK

LAKE COUNTY — STA 9+72.88 TO STA 10+40.12

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
EWB	DPR	S	TAP	NGE	3/18/82	