

LAKE COUNTY

BRS-595(2)

GENERAL INFORMATION

GEOLOGY OF THE SITE

THE STRUCTURE IS LOCATED IN THE DISSECTED, GLATIATED UPLAND PLANES OF THE APPALACHIAN PLATEAU PHYSIOGRAPHIC PROVINCE.

EXPLORATION

THE EXPLORATION CONSISTED OF DRIVE SAMPLE-CORE BORINGS MADE BY MEANS OF TRUCK MOUNTED DRILLING EQUIPMENT UTILIZING HOLLOW STEM FLIGHT AUGERS THROUGH THE OVERBURDEN SOILS AND DIAMOND ROCK CORE BARRELS WITHIN THE UNDERLYING SEDIMENTARY ROCK.

INVESTIGATION FINDINGS AND OBSERVATIONS

THE TEST BORINGS DISCLOSED THE EXISTING PAVEMENT TO CONSIST OF BETWEEN 8" AND 9.5" OF ASPHALT CONCRETE OVERLAY ON 9" THICK PORTLAND CEMENT CONCRETE. FINE GRAINED, HARD SANDSTONE BEDROCK WAS ENCOUNTERED AT APPROXIMATE ELEVATION OF 1060' IN THE TEST BORINGS. THE SANDSTONE IS EXPOSED ALONG THE FLOW CHANNEL AND INDICATES EROSION AND SCOUR ESPECIALLY AT THE NORTH SIDE OF EAST ABUTMENT. THE OVERBURDEN SOILS CONSIST PREDOMINANTLY OF SOFT TO VERY STIFF CONSISTENCY SILTY CLAYS. A ZONE OF BROKEN SANDSTONE AND SAND LAYERS WAS EVIDENT IN BORING TB-2 BETWEEN 9' AND 13' BELOW THE TOP OF THE PAVEMENT.

NO FREE WATER WAS NOTED IN THE TEST BORINGS.

GENERAL INFORMATION DRIVE SAMPLE/CORE BORINGS

DRIVE SAMPLE BORINGS ARE MADE BY MECHANICALLY-POWERED ROTARY TYPE DRILLING MACHINE EMPLOYING A 2" O.D., 1-3/8" I.D. SPLIT SPOON SAMPLING DEVICE, AT 2-1/2 OR 5-FOOT 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 SAMPLING DEVICE 12 INCHES AFTER AN INITIAL 6" SEATING PENETRATION IS TERMED THE STANDARD PENETRATION TEST.

CORE BORINGS ARE MADE BY MEANS OF A MECHANICALLY-POWERED ROTARY-TYPE DRILLING MACHINE EMPLOYING AN NW CORE BARREL WITH INDUSTRIAL DIAMOND CUTTING HEAD.

THE BORING LOG SHEETS DISPLAY GRAPHIC PLOTS OF THE INFORMATION OBTAINED, INCLUDING DEPTH AND ELEVATION OF THE SAMPLE, TYPE OF SAMPLE, BLOW COUNTS ON DRIVE SAMPLER IN 6" INCREMENTS, SAMPLE NUMBERS AND SAMPLE DESCRIPTIONS. THE SAMPLE DESCRIPTIONS WERE BASED ON LABORATORY TESTS INCLUDING GRADATION, PLASTICITY AND MOISTURE CONTENT DETERMINATIONS OF REPRESENTATIVE SOIL SAMPLES. IN ADDITION ALL SAMPLE MATERIALS OBTAINED IN THE BORINGS WERE CLASSIFIED VISUALLY PER ASTM 2488 AND WERE IDENTIFIED WITH THE APPROPRIATE GROUP SYMBOLS (IN PARENTHESIS) OF THE UNIFIED SOIL CLASSIFICATION SYSTEM.

ROCK SAMPLE CHARACTERISTICS ARE DISPLAYED ON THE LOG SHEETS INCLUDING DEPTH, CORE RECOVERY, COLOR AND TEXTURE, FRACTURED ZONES, ROCK QUALITY DESIGNATIONS AND OTHER QUALIFYING FACTORS.

NOTE: GEOTECHNICAL ENGINEERING REPORT FOR THIS PROJECT WAS PREPARED BY HERRON CONSULTANTS, INC. COPIES OF THIS INFORMATION 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.

THE GEOTECHNICAL ENGINEERING REPORT MAY CONTAIN SUBSURFACE INVESTIGATION RESULTS AND TEST DATA NOT SPECIFICALLY SHOWN ON THE STRUCTURE FOUNDATION INVESTIGATION SHEETS.

LEGEND FOR PROJECT & AVERAGE RESULTS OF TESTS

| DESCRIPTION | H.R.B. CLASS | OHIO CLASS | % AGG | % C SAND | % F SAND | % SILT | % CLAY | LIQUID LIMIT | PLASTICITY INDEX | WATER CONTENT | SAMPLES TESTED |
|--|--------------|------------|-------|----------|----------|--------|--------|--------------|------------------|---------------|----------------|
| COARSE TO FINE SAND | A-3(0) | A-3a | | | | | | | NP | | 1 |
| SILTY CLAY | A-6(8) | A-6a | 10 | 4 | 16 | 34 | 36 | 29 | 12 | 22 21 | 3 3 |
| SANDSTONE | | | | | | | | | | | |
| DRIVE SAMPLE AND/OR CORE BORING PLAN VIEW | | | | | | | | | | | |
| DRIVE SAMPLE AND/OR CORE BORING PLOTTED TO VERTICAL SCALE ONLY | | | | | | | | | | | |
| DRIVE ROD SOUNDING LOCATION-PLAN VIEW | | | | | | | | | | | |
| NORTH ROD SOUNDINGS TO VERTICAL SCALE | | | | | | | | | | | |
| SOUTH ROD SOUNDINGS TO VERTICAL SCALE | | | | | | | | | | | |
| T.R. TOP OF ROCK | | | | | | | | | | | |

FIGURES BESIDE THE BORING LOG IN PROFILE

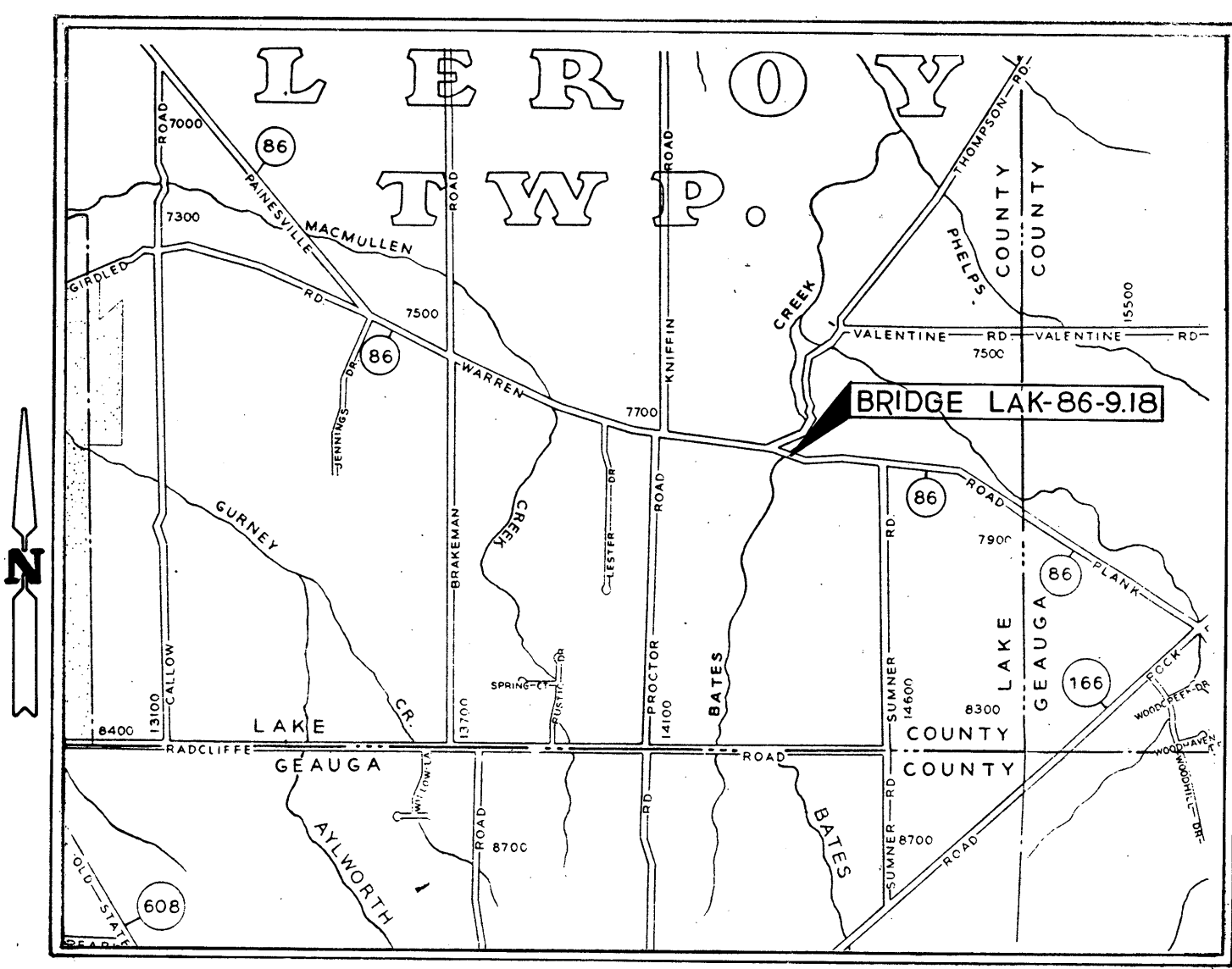
x/y/z INDICATE THE NUMBER OF BLOWS FOR STANDARD PENETRATION TEST.

x = NUMBER OF BLOWS FOR FIRST 6 INCHES
y = NUMBER OF BLOWS FOR SECOND 6 INCHES
z = NUMBER OF BLOWS FOR THIRD 6 INCHES

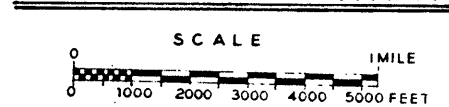
NP INDICATES NON-PLASTIC MATERIAL

SUMMARY OF SOIL TEST DATA

| BORING NO. | STATION & OFFSET | DEPTH FROM TO | % AGG. | % C.S. | % F.S. | % SILT | % CLAY | LL | PI | % W.C. | ODOT CLASS | |
|------------|------------------|---------------|--------|--------|--------|--------|--------|----|----|--------|------------|--------|
| TB-1 | 9+66 3'LT | 0.0 - 0.8 | | | | | | | | | VISUAL | |
| | | 0.8 - 1.5 | | | | | | | | | VISUAL | |
| | | 1.5 - 4.5 | | | | | | | | | 11 | VISUAL |
| | | 4.5 - 8.0 | 7 | 3 | 17 | 38 | 35 | -- | -- | 24 | A-6a | |
| | | 8.0 - 12.0 | 12 | 3 | 13 | 37 | 35 | 29 | 12 | 23 | A-6a | |
| | | 12.0 - 15.5 | | | | | | | | | 25 | VISUAL |
| | | 15.5 - 27.0 | | | | | | | | | VISUAL | |
| TB-2 | 10+34 9'RT | 0.0 - 0.7 | | | | | | | | | VISUAL | |
| | | 0.7 - 1.4 | | | | | | | | | VISUAL | |
| | | 1.4 - 5.0 | 11 | 5 | 17 | 32 | 35 | 28 | 12 | 17 | A-6a | |
| | | 5.0 - 9.0 | | | | | | | | | 18 | VISUAL |
| | | 9.0 - 13.0 | | | | | | | | | 7 | VISUAL |
| | | 13.0 - 25.0 | | | | | | | | | | VISUAL |



LOCATION MAP



| | | |
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| HERRON CONSULTANTS INC. | | |
| PROJECT: | | |
| STRUCTURE FOUNDATION INVESTIGATION BRIDGE LAK-86-9.18 LEROY TWP., LAKE CO., OHIO | | |
| CLIENT: | | |
| COLPETZER-THOMAS, INC. | | |
| DATE: | SCALE: | DRAWN BY: |
| 11-15-85 | | LD |
| PROJECT NO.: | DRAWING NO.: | |
| 5-4381 | DD-1-22-1 | |