FHWA REGION	STATE	PROJECT	DATE
	OHIO	PROPOSED RETAINING WALL STRUCTURE STATE ROUTE 84	5-21-93

LAKE COUNTY
LAK-84

ALL AVAILABLE SOIL AND BEDROCK INFORMATION WHICH CAN BE CONVENIENTLY SHOWN ON THE SOIL PROFILE FOUNDATION INVESTIGATION SHEETS HAS BEEN SO REPORTED. ADDITIONAL SUBSURFACE INVESTIGATION, SOIL TESTS, AND BEDROCK BORINGS 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, COLUMBUS, OHIO.

GENERAL INFORMATION

INTRODUCTION

THIS REPORT SUMMARIZES THE RESULTS OF THE SUBSURFACE EXPLORATION CONDUCTED IN CONNECTION WITH TWO RETAINING WALLS, DESIGNATED AS STATION Nos. 203 + 2.05 AND 208 + 73.22, PROPOSED TO BE CONSTRUCTED ALONG STATE ROUTE #84 IN THE CITY OF WILLOUGHBY, LAKE COUNTY, OHIO.

SITE GEOLOGY

LAKE COUNTY OCCUPIES PARTS OF TWO PHYSIOGRAPHIC PROVINCES: THE GLACIATED ALLEGHENY PLATEAU OF THE APPALACHIAN PLATEAUS PROVINCE IN THE SOUTH AND THE EASTERN LAKE SECTION OF THE CENTRAL LOWLAND PROVINCE IN THE NORTH. THE BEDROCK IS DEVONIAN OR MISSISSIPPIAN IN AGE, AND CONSISTS PRIMARILY OF SHALES AND SANDSTONES. THE OVERBURDEN SOILS ARE GLACIAL IN ORIGIN, INVOLVING GROUND MORRAINE DEPOSITS IN THE SOUTH AND LAKE DEPOSITS IN THE NORTH. THE DRIFT IS OF WISCONSINIAN AGE.

EXPLORATION

STRUCTURAL TEST BORINGS WERE ADVANCED BY ROTARY-DRIVE DRILLING PROCEDURES EMPLOYING 6.0-INCH O.D., 3.25-INCH I.D. HOLLOW STEM CONTINUOUS FLIGHT AUGERS. REPRESENTATIVE SAMPLES OF THE AREA'S VARIOUS SUBSURFACE FORMATIONS WERE TAKEN BY MEANS OF A TWO (2)-INCH O.D. SPLIT SPOON SAMPLING DEVICE, DRIVEN BY A 140-POUND HAMMER, FREE FALLING THROUGH A DISTANCE OF THIRTY (30) INCHES.

IN THE LABORATORY, REPRESENTATIVE SAMPLES OF THE SUBSURFACE SOILS WERE CLASSIFIED IN ACCORDANCE WITH THE OHIO DEPARTMENT OF TRANSPORTATION TESTING LABORATORY CLASSIFICATION OF SOILS PROCEDURES. PARTICLE SIZE ANALYSIS AND ATTERBERG LIMITS DETERMINATIONS TESTS WERE PERFORMED IN ACCORDANCE WITH APPLICABLE ASTM STANDARD METHODS.

DESCRIPTION OF SUBSURFACE MATERIALS

THE RESULTS OF THE FIELD DRILLING OPERATIONS HAVE BEEN DETAILED ON THE TEST BORING LOGS AND CAN BE SUMMARIZED AS FOLLOWS:

AT THE BORING LOCATIONS B-1 THROUGH B-7, THE EXISTING PAVEMENT STRUCTURES CONSIST OF ASPHALT CONCRETE SURFACE COURSE OVERLYING CONCRETE. THE THICKNESS OF THE ASPHALT CONCRETE SURFACE COURSE VARIES BETWEEN ABOUT FOUR (4) AND FIVE (5) INCHES WHILE THE UNDERLYING CONCRETE WAS FOUND TO BE SEVEN (7) TO EIGHT (8) INCHES IN THICKNESS.

UNDERLYING CONCRETE, BROWN/GRAY SAND AND/OR SILTY SAND CONTAINING VARIABLE FRACTIONS OF GRAVEL WERE ENCOUNTERED UP TO DEPTHS OF BETWEEN SEVENTEEN (17) AND TWENTY-THREE (23) FEET BELOW THE SURFACE GRADES.

UNDERLYING THE SAND FORMATION, GRAY CLAYEY SILT AND/OR SILT AND/OR FINE SAND CONTAINING VARIABLE FRACTIONS OF ROCK FRAGMENTS AND SAND WERE FOUND TO BE PRESENT UP TO THE TERMINAL DEPTHS OF BORINGS B-6, B-4, B-3 AND B-1 AND UP TO DEPTHS OF ABOUT FORTY-SEVEN AND ONE-HALF (47-1/2), FORTY-NINE (49) AND FIFTY AND ONE-HALF (50 1/2) FEET BELOW THE SURFACE GRADES AT BORINGS B-7, B-5 AND B-2, RESPECTIVELY.

AT BORINGS B-7, B-5 AND B-2, THE BOTTOMMOST FORMATION CONSISTS OF GRAY WEATHERED SHALE.

THE SUBSURFACE COHESIVE MATERIALS EXHIBITED STIFF STRUCTURAL STATES WHILE GRANULAR MATERIALS EXHIBITED LOOSE TO MEDIUM DENSE RELATIVE DENSITY. CONSISTENCIES OF THE SUBSURFACE MATERIALS WERE FOUND TO RANGE FROM MOIST TO WET.

NOTE

INFORMATION SHOWN ON THIS PROFILE SHEET WAS OBTAINED SOLELY FOR 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 PLAN GOVERNING CONSTRUCTION OF THIS PROJECT.

LEGEND

Gravel and/or Stone Fragments		(A – 1 – a)
Gravel and/or Stone Fragments with Sand		(A – 1 – b)
Fine Sand		(A – 3)
Coarse and Fine Sand		(A – 3a)
Gravel and/or Stone Fragments with Sand and Silt		(A – 2 – 4) & (A – 2 – 5)
Gravel and/or Stone Fragments with Sand, Silt and Clay		(A – 2 – 6) & (A – 2 – 7)
Sandy Silt	(A – 4a)	
Silt	(A – 4b)	
Elastic Silt and Clay	(A – 5)	
Silt and Clay	(A – 6a)	
Silty Clay	(A – 6b)	
Elastic Clay	(A – 7 – 5)	
Clay	(A – 7 – 6)	
Shale		
Weathered Shale		
Sandstone		
Limestone		
Mudstone		
Random Fill		
Various Other Materials		
Dolomite		
Leached Limestone		
Leached Dolomite		
Peat		

- Sod and/or Topsoil
- Berm Material
- Auger Boring—Plan View
- Drive Sample and/or Core Boring—Plan View
- Auger Boring Plotted to Vertical Scale Only
- Drive Sample and/or Core Boring Plotted to Vertical Scale Only
- X — Number of Blows for 12"
- Static Water Level

Professional Service Industries, Inc.
Geotechnical • Environmental Services • Engineering
Materials Testing • Roof Consulting • Analytical Services
5555 Canal Rd., Cleveland, Ohio 44125 (216) 447-1335

SCALE : NTS	APPROVED BY : A.V.	DRAWN BY : MTG
DATE : 1-24-94		REVISED : 4-25-94
CLIENT : CT CONSULTANTS		
PROJECT NAME : PROPOSED RETAINING STRUCTURE STATE ROUTE 84		DRAWING NUMBER : 142-35022

D:\GEOTECH\LAK84\GLAK84.DWG