FHWA REGION	STATE	PROJECT	DATE
	OHIO	BRIDGE NO. LAK-283-11.65	2-19-90

2/3

LAKE COUNTY
LAK-283-11.65

GENERAL INFORMATION

INTRODUCTION

THIS REPORT SUMMARIZES THE RESULTS OF SUBSURFACE EXPLORATION STUDIES CONDUCTED IN CONNECTION WITH THE REPLACEMENT OF AN EXISTING STATE OF OHIO, DEPARTMENT OF TRANSPORTATION BRIDGE NO.: LAK-283-11.65 LOCATED ALONG STATE ROUTE 283 OVER MENTOR MARSH, IN THE CITY OF MENTOR, IN 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 AND UNCONFINED COMPRESSIVE STRENGTH 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:

THE THICKNESS OF THE UPPERLYING ASPHALT CONCRETE LAYER OF THE EXISTING PAVEMENT WAS FOUND TO BE ABOUT TEN (10) AND ELEVEN (11) INCHES AT B-1 AND B-2, RESPECTIVELY. THE ASPHALT CONCRETE LAYER IS UNDERLAIN BY CONCRETE HAVING A THICKNESS OF APPROXIMATELY SEVEN (7) AND SIX (6) INCHES AT LOCATIONS B-1 AND B-2, RESPECTIVELY.

UNDERLYING BROWN SAND, AREA'S PREDOMINANT SUBSURFACE FORMATIONS CONSIST OF BROWNISH-GRAY AND/OR BLACK-GRAY AND/OR GRAY SILTY CLAY AND/OR SANDY CLAY AND/OR SILTY SAND (POSSIBLE FILL MATERIALS) CONTAINING DIFFERING DEGREES OF ORGANIC MATERIALS, SAND, SILT, CLAY AND ROCK FRAGMENTS. THESE MATERIALS WERE FOUND TO EXTEND UP TO DEPTHS OF FORTY-THREE (43) FEET BELOW THE EXISTING GRADES AT BOTH BORING LOCATIONS.

SILTY CLAY AND/OR SANDY CLAY AND/OR SILTY SAND IS UNDERLAIN BY AN APPROXIMATE THREE (3) FOOT THICK LAYER OF SANDY CLAY WITH WEATHERED SHALE.

THE AREA'S BOTTOMMOST FORMATION CONSISTS OF GRAY WEATHERED SHALE.

THE SUBSURFACE GRANULAR MATERIALS EXHIBITED LOOSE TO SLIGHTLY COMPACT RELATIVE DENSITY STATES WHILE THE COHESIVE MATERIALS EXHIBITED SOFT TO HARD STRUCTURAL STATES. CONSISTENCIES OF THE SUBSURFACE MATERIALS WERE FOUND TO RANGE FROM MOIST TO SATURATED.

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

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Materials Testing ● Roof Consulting ● Analytical Services

SCALE : NTS	APPROVED BY : A.V.	DRAWN BY : MTG
DATE : 11-4-93		REVISED :
CLIENT : JOHN E. FORSTER & ASSOCIATES, INC.		
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