

**INTRODUCTION**

THIS REPORT SUMMARIZES THE PERFORMANCE AND RESULTS OF THE SOILS INVESTIGATION OF STATE ROUTE 615 (CENTER STREET) LOCATED FROM U.S. ROUTE 20 TO STATE ROUTE 84 IN MENTOR, LAKE COUNTY, OHIO.

**GEOLOGY OF SITE**

THE PROJECT SITE IS LOCATED IN AN AREA OF LACUSTRINE DEPOSITS, UNDERLAIN BY GLACIAL TILL WHICH IS CONSOLIDATED BY THE WEIGHT OF THE ICE SHEET TO A VERY STIFF CONSISTENCY. GEOLOGICAL REFERENCES INDICATE THAT THE SITE IS UNDERLAIN BY SHALE OF MISSISSIPPIAN AGE.

**EXPLORATION**

THE EXPLORATION CONSISTED OF DRIVE SAMPLE BORINGS MADE BY MEANS OF TRUCK-MOUNTED DRILLING EQUIPMENT UTILIZING HOLLOW STEM CONTINUOUS FLIGHT AUGERS ON MAY 19, 1991.

**INVESTIGATION FINDINGS AND OBSERVATIONS**

THE BORINGS REVEAL THAT THE AREA'S PREDOMINANT SUBSOIL FORMATIONS CONSIST OF SILT AND CLAYS (A-6a), COARSE AND FINE SANDS (A-3a) AND SANDY SILTS (A-4a). THESE SOILS GENERALLY CONTAINED ONLY MINOR FRACTIONS OF SAND AND GRAVEL AND EVIDENCED STIFF TO VERY STIFF, LOOSE TO MEDIUM DENSE CONSISTENCIES.

GROUNDWATER WAS ENCOUNTERED IN BORINGS B-8 AND B-9 AT SEVEN (7) FEET BELOW GRADE. BORINGS B-1, B-4, B-5, B-6 AND B-7 ENCOUNTERED GROUNDWATER BETWEEN FOUR (4) AND FIVE (5) FEET BELOW GRADE. NO GROUNDWATER WAS ENCOUNTERED IN BORING B-2 AND NO GROUNDWATER READINGS WERE TAKEN AT BORING B-3. UPON COMPLETION, GROUNDWATER WAS AT SEVEN AND ONE-HALF (7.5) FEET IN BORINGS B-8 AND B-9. THE REMAINING BORINGS APPEARED TO BE FREE OF WATER.

**GENERAL INFORMATION DRIVE SAMPLE 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 FREEFALL OF THIRTY (30) INCHES. THE NUMBER OF BLOWS REQUIRED TO DRIVE THE SAMPLING DEVICE TWELVE (12) INCHES AFTER AN INITIAL 6.0" SEATING PENETRATION IS TERMED THE STANDARD PENETRATION TEST.

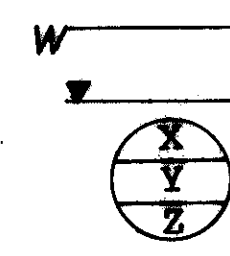
THE BORING LOG SHEETS DISPLAY GRAPHIC PLOTS OF THE INFORMATION OBTAINED, INCLUDING DEPTH AND ELEVATION OF THE SAMPLE, TYPE OF SAMPLE, BLOW COUNTS ON DRIVE SAMPLER IN 6.0" INCREMENTS, SAMPLE NUMBER AND SAMPLE DESCRIPTIONS. THE SAMPLE DESCRIPTIONS WERE BASED ON VISUAL CLASSIFICATION AND ON LABORATORY TESTS ON REPRESENTATIVE SAMPLES INCLUDING GRADATION (ASTM D-422), PLASTICITY (ASTM D-4318), AND MOISTURE CONTENT DETERMINATIONS (ASTM D-4959).

**LEGEND FOR PROJECT AVERAGE RESULTS OF TESTS - 3 SAMPLES TESTED**

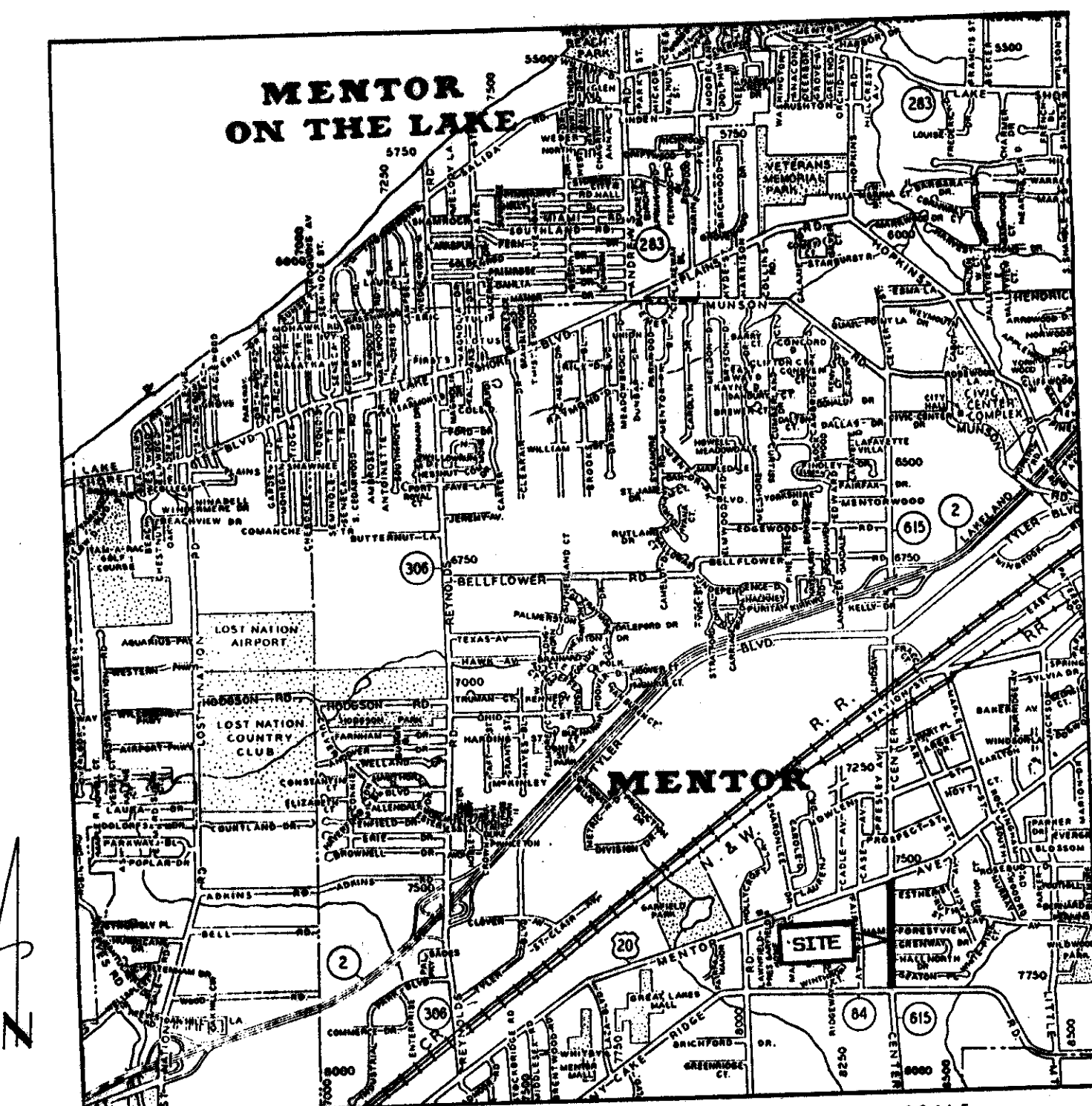
DESCRIPTION	H.R.B. CLASS	OHIO CLASS	% AGG.	% C.SAND	% F.SAND	% SILT	% CLAY	L.L.	P.I.	% W.C.	SAMPLES TESTED
COARSE AND FINE SAND	A-3	A-3a(0)	18	50	22	7	3	NP	NP	8	1
SANDY SILT	A-4	A-4a(0)	2	13	34	48	3	NP	NP	15	1
SILT AND CLAY	A-6	A-6a(8)	0	9	8	42	41	36	14	18	1



- SOD AND/OR TOPSOIL - X=APPROXIMATE DEPTH
- 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
- WATER CONTENT NEARLY EQUAL TO OR GREATER THAN LIQUID LIMIT
- INDICATES A NON-PLASTIC MATERIAL WITH A HIGH WATER CONTENT (W.C.)



FREE WATER  
STATIC WATER LEVEL  
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  
NOTE: FIGURES BESIDE BORINGS INDICATE WATER CONTENT (W.C.) IN PERCENT. e.g. 15



**SITE LOCATION MAP**  
DRILLING BY A.C.T. - 05-19-1991  
DRAFTING BY K.B.G. - 08-31-1992

PROJECT INDEX			
STATIONS FROM	TO	PLAN VIEW SHEET	PROFILE SHEET
8+00	36+00	2	2

**CLASSIFICATION TEST RESULTS**

BORING NO.	DEPTH (FT.)	% AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	OOOT CLASSIFICATION	GROUP INDEX
B-1	0.0-0.7	Concrete									
	0.7-1.3	Clay W/Sand Base									
	1.3-3.0	18	50	22	7	3	NP	NP	8	A-3a	0
	3.0-4.0	Brown Sandy Silt (Visual)									
	4.0-5.5	Brown Silt and Clay (Visual)									
B-2	0.0-0.5	Asphaltic Concrete									
	0.5-1.5	Granular Slag Base									
	1.5-10.0	Brown Coarse and Fine Sand (Visual)									
		7	(A-3a)								
B-3	0.0-0.5	Asphaltic Concrete									
	0.5-1.5	Granular Slag Base									
	1.5-10.0	Brown Coarse and Fine Sand (Visual)									
		8	(A-3a)								
B-4	0.0-0.5	Asphaltic Concrete									
	0.5-0.8	Red Brick									
	0.8-0.9	Sand									
	0.9-1.3	Concrete									
	1.3-5.0	2	13	34	48	3	NP	NP	15	A-4a	0
B-5	0.0-0.5	Asphaltic Concrete									
	0.5-0.8	Red Brick									
	0.8-0.9	Sand									
B-6	0.0-0.5	Asphaltic Concrete									
	0.5-0.8	Red Brick									
	0.8-0.9	Sand									
	0.9-1.4	Concrete									
	1.4-5.0	Gray Sandy Silt (Visual)									
B-7	0.0-0.5	Asphaltic Concrete									
	0.5-0.8	Red Brick									
	0.8-0.9	Sand									
	0.9-1.4	Concrete									
B-8	0.0-0.5	Asphaltic Concrete									
	0.5-0.8	Red Brick									
	0.8-0.9	Sand									
	0.9-1.4	Clay W/Sand Base									
	1.4-5.0	Brown and Gray Silt and Clay (Visual)									
B-9	0.0-0.6	Asphaltic Concrete									
	0.6-0.9	Red Brick									
	0.9-1.0	Sand									
	1.0-1.4	Concrete									
	1.4-1.5	Clay W/Sand Base									

NOTE: GEOTECHNICAL ENGINEERING REPORT FOR THIS PROJECT WAS PREPARED BY APPLIED CONSTRUCTION TECHNOLOGIES, 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 & SOILS SECTION OF THE BUREAU OF LOCATION & DESIGN OR IN THE BRIDGE BUREAU AT 25 SOUTH FRONT STREET.

INFORMATION SHOWN BY THIS SUBSURFACE INVESTIGATION WAS OBTAINED SOLELY FOR THE 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 PLANS GOVERNING CONSTRUCTION OF THIS PROJECT.