

## GEOLOGY

THE PROJECT SITE LIES WITHIN THE HURON-ERIE LAKE PLAINS AND TILL PLAINS SECTIONS OF THE CENTRAL LOWLAND PROVINCE. THE SOUTHERN PART OF THE PROJECT SITE IS LOCATED WITHIN THE FINDLAY EMBAYMENT DISTRICT OF THE MAUMEE LAKE PLAINS REGION OF THE HURON-ERIE LAKE PLAINS SECTION WHILE THE NORTHERN PART OF THE PROJECT SITE IS LOCATED WITHIN THE CENTRAL OHIO CLAYEY TILL PLAIN REGION OF THE TILL PLAINS SECTION. THE COLUMBUS ESCARPMENT SEPARATES THE FINDLAY EMBAYMENT DISTRICT FROM THE CENTRAL OHIO CLAYEY TILL PLAIN REGION. BOTH THE ILLINOIAN AND WISCONSIN GLACIERS PASSED OVER THE AREA AND LEFT A COATING OF DRIFT MATERIALS (LARGELY TILL) RANGING FROM 5 FEET TO 100 FEET IN THICKNESS. THE MAIN GEOLOGIC DEPOSIT IN THE SOUTHERN PART OF THE PROJECT SITE CONSISTS OF SILTY TO GRAVELLY WISCONSIN-AGE LACUSTRINE DEPOSITS AND WAVE-PLANED CLAY TILL; GROUND MORAINES, FLAT TO GENTLY UNDULATING OVER DOLOMITE BEDROCK OF SILURIAN-AGE. THE NORTHERN PART OF THE PROJECT SITE CONSISTS OF CLAYEY, HIGH-LIME WISCONSIN-AGE TILL; LAKE-PLANED MORAINES, VERY FLAT, PLAINED BY WAVES IN GLACIAL LAKES; SMALL PATCHES OF SAND, SILT, OR CLAY OVER DOLOMITE BEDROCK OF SILURIAN-AGE. BEDROCK IS EXPECTED TO CONSIST OF TYMOCHTEE/GREENFIELD GROUP DOLOMITE. TYMOCHTEE GROUP DOLOMITE IS DESCRIBED AS SHADES OF GRAY AND BROWN, VERY FINELY CRYSTALLINE WHICH OCCUR AS THIN TO MASSIVE BEDS WITH CARBONACEOUS SHALE LAMINAE AND BEDS. GREENFIELD GROUP DOLOMITE IS DESCRIBED AS SHADES OF GRAY AND BROWN; VERY FINELY TO COARSELY CRYSTALLINE WHICH OCCURS AS MASSIVE BEDS TO LAMINAE; ARGILLACEOUS AND LOCALLY BRECCIATED IN THE LOWER PORTION.

## RECONNAISSANCE

THE PROJECT SITE IS LOCATED TO THE WEST AND SOUTH-WEST OF THE FINDLAY DOWNTOWN AREA. THE BLANCHARD RIVER INTERSECTS THE PROJECT SITE ON THE NORTH SIDE. THIS SECTION OF IR-75 AND US 68 NB AND SB CONSISTS OF TWO TRAFFIC LANES IN EACH DIRECTION WITH PAVED SHOULDERS. EXISTING IR-75 AND US 68 TRAFFIC LANE PAVEMENT APPEARED TO BE IN GOOD CONDITION WITH FEW TRANSVERSE CRACKS OBSERVED ACROSS THE ENTIRE PROJECT SITE. OCCASIONAL EDGE CRACKING WAS OBSERVED ALONG THE EDGE OF PAVEMENT. MEDIAN SHOULDERS ALONG IR-75 ARE COVERED WITH GRASS SOUTH OF THE HARRISON STREET BRIDGE AND NORTH OF THE US 224 BRIDGE. THE EMBANKMENT SECTIONS OF EXISTING IR-75 AND US 68 WITHIN THE PROJECT SITE GENERALLY APPEARED TO BE IN GOOD CONDITION WITH OCCASIONAL MINOR EROSION. THESE EMBANKMENT SECTIONS ARE COVERED WITH GRASS AND/OR SMALL BUSHES. NO VISIBLE SIGNS OF EMBANKMENT SLOPE INSTABILITY OR SETTLEMENT WERE OBSERVED. THREE WETLAND AREAS ARE LOCATED IN THE VICINITY OF THE PROPOSED RAMP SITES AT THE IR-75/US 68 INTERCHANGE. FEW DRAINAGE DITCHES ARE LOCATED WITHIN THE PROJECT SITE AND TALL CATTAIL VEGETATION WAS OBSERVED ALONG THE DRAINAGE DITCHES AND IN THE WETLAND AREAS. THE PROPOSED RAMP SITE IS COVERED WITH GRASS, SMALL BUSHES, AND FEW TREES AND IS RELATIVELY FLAT. THE PAVEMENT SURFACE OF THE EXISTING RAMPS CONSISTS OF AN ASPHALTIC CONCRETE OVERLAY WHICH GENERALLY APPEARED TO BE IN FAIR CONDITION. UNDERGROUND OIL, GAS, SEWER, AND WATER LINES ARE PRESENT ACROSS THE PROJECT SITE. PAVEMENT ALONG THE SIDE ROADS CONSISTS OF ASPHALTIC CONCRETE, WHICH GENERALLY APPEARED TO BE IN FAIR TO POOR CONDITION WITH LONGITUDINAL AND LATERAL CRACKS OBSERVED THROUGHOUT THE SITE.

## SUBSURFACE EXPLORATION

223 TEST BORINGS WERE COMPLETED AS PART OF THIS SUBSURFACE EXPLORATION, FROM JUNE THROUGH SEPTEMBER, 2013. 133 TEST BORINGS WERE ADVANCED FOR PAVEMENT ROADWAY, AND EMBANKMENT DESIGN PURPOSES WHILE 90 TEST BORINGS; 41 FOR BRIDGES, 2 FOR RETAINING WALL, 43 FOR NOISE BARRIERS, AND 4 FOR CULVERTS WERE ADVANCED FOR STRUCTURAL DESIGN PURPOSES. 9 ADDITIONAL TEST BORINGS; 5 FOR SUBGRADE/ROADWAY ALONG I-75 NORTH OF BIGELOW ROAD, 2 FOR BRIDGE NO. HAN-68/1656, AND 2 FOR CULVERT C35 WILL BE DRILLED AT THE SITE. ALL TERRAIN VEHICLE (ATV) MOUNTED DIEDRICH D-50, DIEDRICH D-90, CME 45C TRACK, AND CME 750X AND TRUCK MOUNTED CME 55 AND CME 75 DRILL RIGS WERE USED TO ADVANCED THE TEST BORINGS THROUGH SOIL USING 2.25-INCH AND 3.25-INCH HOLLOW STEM AUGERS. DISTURBED SOIL SAMPLES WERE COLLECTED IN ACCORDANCE WITH THE STANDARD PENETRATION TEST (AASHTO T206) AT CONTINUOUS TO 5.0 FEET INTERVALS FOR FULL DEPTH OF THE SOIL PORTION OF THE BORINGS. AUTOMATIC HAMMERS WERE CALIBRATED ON 12/10/11 FOR DIEDRICH D-50, ON 9/18/2012 FOR DIEDRICH D-90, ON 1/6/2012 FOR CME 45C TRACK, ON 1/6/2012 FOR CME 750X, ON 6/13/2013 FOR CME 55, AND ON 1/6/2012 FOR CME 75 DRILLING RIGS WITH DRILL ROD ENERGY RATIOS OF 82%, 80%, 85%, 67%, 70%, AND 71%, RESPECTIVELY. A TOTAL OF 21 UNDISTURBED SOIL SAMPLES WERE OBTAINED IN ACCORDANCE WITH AASHTO T207.

## EXPLORATION FINDINGS

ALL OF THE BORINGS ENCOUNTERED SOILS OF GLACIAL ORIGIN, EITHER GLACIAL OUTWASH OR GLACIAL TILL, COHESIVE SOILS ARE PREDOMINANT, CLASSIFIED AS ODOT A-4g, A-4b, A-6g, A-6b, AND A-7-6. GRANULAR/NON-COHESIVE SOILS, CLASSIFIED AS ODOT A-1-g, A-1-b, A-3, A-3g, AND OTHERS WERE LESS PREVALENT, BUT PRESENT THROUGHOUT THE SITE. LAYERS OF ELASTIC SILT AND CLAY (A-5) AND ELASTIC CLAY (A-7-5) WERE ENCOUNTERED IN TEST BORINGS AS NOTED. NOTE THAT THESE HIGHLY ELASTIC SOILS WITH HIGH MOISTURE CONTENTS ARE CONSIDERED AS UNSUITABLE SOILS ACCORDING TO ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS, ITEM 703.16A.

IR-75 PAVEMENT REHABILITATION & WIDENING: 37 TEST BORINGS; B-001-0-13 THROUGH B-011-0-13, B-028-0-13 THROUGH B-042-0-13, B-053-0-13, B-054-0-13, B-056-0-13, B-057-0-13, B-061-0-13 THROUGH B-064-0-13, B-066-0-13 THROUGH B-068-0-13 WERE ADVANCED ALONG EXISTING IR 75 NB AND SB LANES AND SHOULDERS FOR PAVEMENT REHABILITATION AND WIDENING PURPOSES. COHESIVE SOILS ARE PREDOMINANT, CLASSIFIED AS ODOT A-1-g, A-1-b, A-3, A-3g, A-4g, A-4b, AND A-4b WERE LESS PREVALENT, BUT PRESENT THROUGHOUT THE SITE. 23 OF THE 75 COHESIVE SOIL SAMPLES TESTED, FOR ATTERBERG LIMITS HAD NATURAL MOISTURE CONTENTS GREATER THAN OR EQUAL TO THEIR PLASTIC LIMITS. 4 OF THE 35 SAMPLES TESTED HAD SULFATE CONTENTS GREATER THAN 3,000 PPM IN THE SOUTH SECTION OF THE PROJECT. GROUNDWATER WAS ENCOUNTERED IN EIGHT OF THE TEST BORINGS AT DEPTHS RANGING FROM 11.0 FEET DURING DRILLING AND TO 14.0 FEET UPON COMPLETION.

IR-75 REALIGNMENT: EIGHT TEST BORINGS; B-012-0-13 THROUGH B-016-0-13, B-021-0-13, B-025-1-13, AND B-026-0-13 WERE ADVANCED ALONG PROPOSED IR 75 REALIGNMENT FOR EMBANKMENT DESIGN PURPOSES. COHESIVE SOILS ARE PREDOMINANT, CLASSIFIED AS ODOT A-4g, A-6g, AND A-7-6. GRANULAR/NON-COHESIVE SOILS, CLASSIFIED AS ODOT A-1g, A-3g, AND A-4b WERE LESS PREVALENT, BUT PRESENT THROUGHOUT THE SITE. 2 OF THE 13 COHESIVE SOIL SAMPLES TESTED FOR ATTERBERG LIMITS HAD NATURAL MOISTURE CONTENTS GREATER THAN OR EQUAL TO THEIR PLASTIC LIMITS. GROUNDWATER WAS ENCOUNTERED IN TEST BORINGS B-025-1-13 AND B-026-0-13 AT DEPTHS OF 9.0 FEET AND 33.5 FEET DURING DRILLING AND 9.0 FEET TO 27.0 FEET RESPECTIVELY, UPON COMPLETION.

IR-75 EMBANKMENT WIDENING: ELEVEN TEST BORINGS; B-118-0-13, B-026-2-13, B-027-0-13, B-027-2-13, B-043-0-13, B-044-0-13, B-044-1-13, B-047-1-13, B-049-0-13, B-049-1-13, and B-050-0-13 WERE ADVANCED ALONG SECTIONS OF EXISTING IR 75 FOR EMBANKMENT WIDENING DESIGN PURPOSES. COHESIVE SOILS ARE PREDOMINANT, CLASSIFIED AS ODOT A-4g, A-4b, A-6g, AND A-7-6. GRANULAR/NON-COHESIVE SOILS, CLASSIFIED AS ODOT A-2-4, A-3g, AND A-4g WERE LESS PREVALENT, BUT PRESENT THROUGHOUT THE SITE. 13 OF THE 27 COHESIVE SOIL SAMPLES TESTED FOR ATTERBERG LIMITS HAD NATURAL MOISTURE CONTENTS GREATER THAN OR EQUAL TO THEIR PLASTIC LIMITS. GROUNDWATER WAS ENCOUNTERED IN EIGHT OF THE TEST BORINGS AT DEPTHS RANGING FROM 7.0 FEET TO 41.0 FEET DURING DRILLING AND TO 27.0 FEET UPON COMPLETION.

IR-75 RAMPS AT SR 12 INTERCHANGE: SIX TEST BORINGS; B-034-1-13, B-035-1-13, B-035-2-13, B-036-1-13, B-037-1-13, AND B-038-1-13 WERE ADVANCED ALONG EXISTING IR 75 RAMPS AT SR 12 INTERCHANGE FOR REALIGNMENT AND PAVEMENT REHABILITATION DESIGN PURPOSES. COHESIVE SOILS ARE PREDOMINANT, CLASSIFIED AS ODOT A-4g, A-6g, AND A-6b. NON-COHESIVE SOILS, CLASSIFIED AS ODOT A-4g AND A-4b WERE LESS PREVALENT, BUT PRESENT THROUGHOUT THE SITE. 3 OF THE 10 COHESIVE SOIL SAMPLES TESTED FOR ATTERBERG LIMITS HAD NATURAL MOISTURE CONTENTS GREATER THAN OR EQUAL TO THEIR PLASTIC LIMITS.

US 68 PAVEMENT REHABILITATION AND WIDENING: SIX TEST BORINGS; B-078-0-13 THROUGH B-082-0-13 AND B-088-0-13 WERE ADVANCED ALONG US 68 SB AND NB LANES FOR PAVEMENT REHABILITATION AND WIDENING DESIGN PURPOSES. ALL SIX TEST BORINGS CONSISTED ENTIRELY OF FILL MATERIAL. COHESIVE SOILS ARE PREDOMINANT, CLASSIFIED AS ODOT A-4g, A-6g, A-6b, AND A-7-6. GRANULAR SOIL, CLASSIFIED AS ODOT A-1-b WAS LESS PREVALENT, BUT PRESENT THROUGHOUT THE SITE. 1 OF THE 8 COHESIVE SOIL SAMPLES TESTED FOR ATTERBERG LIMITS HAD A NATURAL MOISTURE CONTENT EQUAL TO ITS PLASTIC LIMIT. 1 OF THE 6 SAMPLES TESTED HAD A SULFATE CONTENT GREATER THAN 3,000 PPM. AUGER REFUSAL WAS ENCOUNTERED IN TEST BORINGS B-079-0-13, B-080-0-13, AND B-082-0-13 AT DEPTHS RANGING FROM 6.0 FEET TO 6.5 FEET ON WHAT MAY HAVE BEEN BEDROCK.

US 68 RAMP A: NINE TEST BORINGS; B-089-0-13 THROUGH B-097-0-13 WERE ADVANCED ALONG THE PROPOSED US 68 RAMP A ALIGNMENT FOR ROADWAY/EMBANKMENT DESIGN PURPOSES. COHESIVE SOILS ARE PREDOMINANT, CLASSIFIED AS ODOT A-4g, A-6g, A-6b, A-7-5, AND A-7-6. GRANULAR/NON-COHESIVE SOILS, CLASSIFIED AS ODOT A-2-4 WAS LESS PREVALENT, BUT PRESENT THROUGHOUT THE SITE. UNUSUALLY HIGH MOISTURE CONTENTS OCCURRED IN SOILS CLASSIFIED AS ELASTIC CLAY (A-7-5) THAT WERE ENCOUNTERED IN TEST BORING B-091-0-13 BETWEEN DEPTHS OF 2 TO 11 FEET BELOW THE EXISTING GROUND SURFACE. 7 OF THE 13 COHESIVE SOIL SAMPLES TESTED FOR ATTERBERG LIMITS HAD NATURAL MOISTURE CONTENTS GREATER THAN OR EQUAL TO THEIR PLASTIC LIMITS. AUGER REFUSAL WAS ENCOUNTERED IN SEVEN OF THE TEST BORINGS AT DEPTHS RANGING FROM 4.5 FEET TO 36.0 FEET ON WHAT MAY HAVE BEEN BEDROCK.

LIMA RAMP B: FOUR TEST BORINGS; B-098-0-13 THROUGH B-101-0-13 WERE ADVANCED ALONG PROPOSED LIMA RAMP B ALIGNMENT FOR ROADWAY/EMBANKMENT DESIGN PURPOSES. COHESIVE SOILS ARE PREDOMINANT THROUGHOUT THE SITE, CLASSIFIED AS ODOT A-4g, A-6g, AND A-7-6. HYDROCARBON ODOR WAS ENCOUNTERED IN TEST BORING B-098-0-13 AT A DEPTH OF 3.5 FEET. 1 OF THE 6 COHESIVE SOIL SAMPLES TESTED FOR ATTERBERG LIMITS HAD A NATURAL MOISTURE CONTENT GREATER THAN ITS PLASTIC LIMIT. GROUNDWATER WAS ENCOUNTERED IN TEST BORING B-098-0-13 AT A DEPTH OF 7.0 FEET DURING DRILLING AND WAS DRY UPON COMPLETION OF DRILLING OPERATIONS.

LIMA RAMP G: FOUR TEST BORINGS; B-102-0-13, B-103-0-13, B-119-0-13, AND B-120-0-13 WERE ADVANCED ALONG PROPOSED LIMA RAMP G FOR ROADWAY/EMBANKMENT DESIGN PURPOSES. COHESIVE SOILS ARE PREDOMINANT, CLASSIFIED AS ODOT A-4g, A-5, A-6b, AND A-7-6. GRANULAR SOIL CLASSIFIED AS ODOT A-1-g WAS LESS PREVALENT, BUT PRESENT THROUGHOUT THE SITE. UNUSUALLY HIGH MOISTURE CONTENTS OCCURRED IN SOILS CLASSIFIED AS ELASTIC SILT AND CLAY (A-5) ENCOUNTERED IN TEST BORING B-119-0-13 BETWEEN DEPTHS OF 3.5 FEET TO 8.5 FEET BELOW GROUND SURFACE AND ELASTIC CLAY (A-7-5) ENCOUNTERED IN TEST BORING B-119-0-13 BETWEEN DEPTHS OF 0.5 FEET TO 8.0 FEET BELOW THE GROUND SURFACE. 1 OF THE 6 COHESIVE SOIL SAMPLES TESTED FOR ATTERBERG LIMITS HAD A NATURAL MOISTURE CONTENT GREATER THAN ITS LIQUID LIMIT. GROUNDWATER WAS ENCOUNTERED IN TEST BORINGS B-103-0-13, B-104-0-13, B-119-0-13, AND B-120-0-13 AT DEPTHS RANGING FROM 7.0 FEET TO 13.0 FEET DURING DRILLING AND 4.7 FEET TO 8.5 FEET UPON COMPLETION. AN EXTENDED WATER LEVEL OF 5.2 FEET WAS MADE 14 HOURS AFTER COMPLETION OF TEST BORING B-119-0-13 DRILLING OPERATIONS.

LIMA RAMP H: THREE TEST BORINGS; B-104-0-13, B-105-0-13, AND B-106-0-13 WERE ADVANCED ALONG PROPOSED LIMA RAMP H ALIGNMENT FOR ROADWAY/EMBANKMENT DESIGN PURPOSES. COHESIVE SOILS ARE PREDOMINANT, CLASSIFIED AS ODOT A-5, A-6g, A-6b, A-7-5 AND A-7-6. GRANULAR/NON-COHESIVE SOIL, CLASSIFIED AS ODOT A-1-a AND A-4g WAS LESS PREVALENT, BUT PRESENT THROUGHOUT THE SITE. UNUSUALLY HIGH MOISTURE CONTENTS OCCURRED IN SOILS CLASSIFIED AS ELASTIC SILT AND CLAY (A-5), AND ELASTIC CLAY (A-7-5) WHICH WERE ENCOUNTERED IN TEST BORING B-104-0-13 BETWEEN DEPTHS OF 4.0 FEET TO 6.0 FEET, IN TEST BORING B-105-0-13 BETWEEN DEPTHS OF 6.0 FEET AND 6.5 FEET, AND IN TEST BORING B-106-0-13 BETWEEN DEPTHS OF 0.7 FEET AND 8.5 FEET BELOW THE EXISTING GROUND SURFACE. 1 OF THE 4 COHESIVE SOIL SAMPLES TESTED FOR ATTERBERG LIMITS HAD A NATURAL MOISTURE CONTENT GREATER THAN ITS PLASTIC LIMIT. GROUNDWATER WAS ENCOUNTERED IN TEST BORING B-104-0-13 AT A DEPTH OF 8.5 FEET DURING DRILLING AND 6.6 FEET UPON COMPLETION.

US 68 RAMP D: SIX TEST BORINGS; B-107-0-13 THROUGH B-110-0-13, B-115-0-13, AND B-117-0-13 WERE ADVANCED ALONG PROPOSED US 68 RAMP D ALIGNMENT FOR ROADWAY/EMBANKMENT DESIGN PURPOSES. COHESIVE SOILS ARE PREDOMINANT, CLASSIFIED AS ODOT A-4g, A-4b, A-6g, A-6b, A-7-5 AND A-7-6. NON-COHESIVE SOIL, CLASSIFIED AS ODOT A-4g AND A-4b WAS LESS PREVALENT, BUT PRESENT THROUGHOUT THE SITE. UNUSUALLY HIGH MOISTURE CONTENTS OCCURRED IN SOILS CLASSIFIED AS ELASTIC CLAY (A-7-5) ENCOUNTERED IN TEST BORING B-108-0-13 BETWEEN DEPTHS OF 1.5 FEET AND 8.5 FEET, IN TEST BORING B-109-0-13 BETWEEN DEPTHS OF 3.5 FEET AND 7.5 FEET, IN TEST BORING B-110-0-13 BETWEEN DEPTHS OF 3.0 FEET AND 6.0 FEET. 1 OF THE 10 COHESIVE SOIL SAMPLES TESTED FOR ATTERBERG LIMITS HAD A NATURAL MOISTURE CONTENT GREATER THAN ITS LIQUID LIMIT. GROUNDWATER WAS ENCOUNTERED IN ALL OF THE TEST BORINGS WITH THE EXCEPTION OF B-107-0-13 AT DEPTHS RANGING FROM 8.0 FEET TO 38.5 FEET DURING DRILLING AND 6.5 FEET TO 38.5 FEET UPON COMPLETION.

US 68 RAMP C: NINE TEST BORINGS; B-121-0-13 THROUGH B-125-0-13, B-132-0-13, B-136-0-13, B-138-0-13, AND B-140-0-13 WERE ADVANCED ALONG PROPOSED US 68 RAMP C ALIGNMENT FOR ROADWAY/EMBANKMENT DESIGN PURPOSES. COHESIVE SOILS ARE PREDOMINANT, CLASSIFIED AS ODOT A-4b, A-6g, A-6b, AND A-7-6. NON-COHESIVE SOIL, CLASSIFIED AS ODOT A-4g AND A-4b WAS LESS PREVALENT, BUT PRESENT THROUGHOUT THE SITE. 2 OF THE 8 COHESIVE SOIL SAMPLES TESTED FOR ATTERBERG LIMITS HAD NATURAL MOISTURE CONTENTS GREATER THAN OR EQUAL TO THEIR PLASTIC LIMITS. GROUNDWATER WAS ENCOUNTERED IN FIVE OF THESE TEST BORINGS AT DEPTHS RANGING FROM 8.5 FEET TO 13.5 FEET DURING DRILLING AND AT 5.3 FEET TO 6.1 FEET UPON COMPLETION OF DRILLING OPERATIONS.

LIMA RAMP E: FOUR TEST BORINGS; B-141-0-13, B-143-0-13 THROUGH B-145-0-13 WERE ADVANCED ALONG PROPOSED LIMA RAMP E ALIGNMENT FOR ROADWAY AND EMBANKMENT DESIGN PURPOSES. COHESIVE SOILS ARE PREDOMINANT, CLASSIFIED AS ODOT A-6g, A-6b, AND A-7-5. GRANULAR/NON-COHESIVE SOIL, CLASSIFIED AS ODOT A-2-4 AND A-4b WAS LESS PREVALENT, BUT PRESENT THROUGHOUT THE SITE. UNUSUALLY HIGH MOISTURE CONTENTS OCCURRED IN SOILS CLASSIFIED AS ELASTIC CLAY (A-7-5) WHICH WERE ENCOUNTERED IN TEST BORINGS B-144-0-13 AND B-141-0-13 BETWEEN DEPTHS OF 0.5 FEET TO 3.5 FEET AND BETWEEN DEPTHS OF 6.0 FEET TO 8.5 FEET, RESPECTIVELY BELOW THE EXISTING GROUND SURFACE. 2 OF THE 5 COHESIVE SOIL SAMPLES TESTED FOR ATTERBERG LIMITS HAD NATURAL MOISTURE CONTENTS GREATER THAN THEIR LIQUID LIMIT. GROUNDWATER WAS ENCOUNTERED AT A DEPTH OF 8.5 FEET IN B-143-0-13

LIMA RAMP A: FOUR TEST BORINGS; B-146-0-13 THROUGH B-149-0-13 WERE ADVANCED ALONG PROPOSED LIMA RAMP A ALIGNMENT FOR ROADWAY/EMBANKMENT DESIGN PURPOSES. COHESIVE SOILS CLASSIFIED AS ODOT A-4g, AND A-6b WERE ENCOUNTERED THROUGHOUT THE SITE. BOTH OF THE COHESIVE SOIL SAMPLES TESTED FOR ATTERBERG LIMITS HAD NATURAL MOISTURE CONTENTS GREATER THAN THEIR PLASTIC LIMITS. AUGER REFUSAL WAS ENCOUNTERED IN BOTH TEST BORINGS AT DEPTHS RANGING FROM 3.0 FEET TO 4.1 FEET ON WHAT MAY HAVE BEEN BEDROCK.

US 68 RAMP B: FIVE TEST BORINGS; B-150-0-13, B-153-0-13 THROUGH B-156-0-13 WERE ADVANCED ALONG PROPOSED US 68 RAMP B ALIGNMENT FOR ROADWAY AND EMBANKMENT DESIGN PURPOSES. COHESIVE SOILS, CLASSIFIED AS ODOT A-4g, A-6g, A-6b, A-7-5, AND A-7-6 WERE ENCOUNTERED THROUGHOUT THE SITE. UNUSUALLY HIGH MOISTURE CONTENTS OCCURRED IN SOILS CLASSIFIED AS ELASTIC CLAY (A-7-5) ENCOUNTERED IN TEST BORINGS B-154-0-13 AND B-155-0-13 TO APPROXIMATE DEPTHS OF 6.0 FEET AND 3.5 FEET BELOW THE GROUND SURFACE. 2 OF THE 4 COHESIVE SOIL SAMPLES TESTED FOR ATTERBERG LIMITS HAD NATURAL MOISTURE CONTENTS GREATER THAN THEIR PLASTIC LIMITS. AUGER REFUSAL WAS ENCOUNTERED IN TEST BORINGS B-154-0-13 AND 155-0-13 AT DEPTHS OF 8.0 FEET AND 8.6 FEET ON WHAT MAY HAVE BEEN BEDROCK. GROUNDWATER WAS ENCOUNTERED IN TEST BORING B-155-0-13 AT A DEPTH OF 6.0 FEET DURING DRILLING AND AT 3.0 FEET UPON COMPLETION OF DRILLING OPERATIONS.

LIMA RAMP F: SEVEN TEST BORINGS; B-151-0-13, B-152-0-13, B-157-0-13 THROUGH B-161-0-13 WERE ADVANCED ALONG PROPOSED LIMA RAMP F ALIGNMENT FOR ROADWAY AND EMBANKMENT DESIGN PURPOSES. COHESIVE SOILS ARE PREDOMINANT, CLASSIFIED AS ODOT A-4g, A-5, A-6g, AND A-7-6. GRANULAR/NON-COHESIVE SOIL, CLASSIFIED AS ODOT A-1-b AND A-4g WAS LESS PREVALENT, BUT PRESENT THROUGHOUT THE SITE. UNUSUALLY HIGH MOISTURE CONTENTS OCCURRED IN SOILS CLASSIFIED AS ELASTIC SILT AND CLAY (A-5) ENCOUNTERED IN TEST BORING B-158-0-13 BETWEEN DEPTHS OF 6 FEET TO 7.2 FEET BELOW THE GROUND SURFACE. 1 OF THE 9 COHESIVE SOIL SAMPLES TESTED FOR ATTERBERG LIMITS HAD A MOISTURE CONTENT GREATER THAN ITS LIQUID LIMIT. AUGER REFUSAL WAS ENCOUNTERED IN TEST BORING B-158-0-13 AT A DEPTH OF 9.9 FEET ON WHAT MAY HAVE BEEN BEDROCK. GROUNDWATER WAS ENCOUNTERED IN TEST BORING B-159-0-13 AT A DEPTH OF 8.5 FEET DURING AND UPON COMPLETION OF DRILLING OPERATIONS.

SIDE ROADS IMPROVEMENTS: TEN TEST BORINGS; B-162-0-13 THROUGH B-166-0-13, B-176-0-13, AND B-177-0-13 THROUGH B-180-0-13 WERE ADVANCED ALONG THE SIDE ROADS FOR THE PROPOSED LIMA AVENUE RELOCATION, LOGAN AVENUE AND HARRISON STREET PAVEMENT REHABILITATION, AND PROPOSED SERVICE ROAD DESIGN PURPOSES. COHESIVE SOILS ARE PREDOMINANT, CLASSIFIED AS ODOT A-4g, A-6g, A-6b, AND A-7-6. GRANULAR/NON-COHESIVE SOILS, CLASSIFIED AS ODOT A-2-4, A-3g, AND A-4g WERE LESS PREVALENT, BUT PRESENT THROUGHOUT THE SITE. 3 OF THE 15 COHESIVE SOIL SAMPLES TESTED FOR ATTERBERG LIMITS HAD NATURAL MOISTURE CONTENTS GREATER THAN OR EQUAL TO THEIR PLASTIC LIMITS. A SAMPLE OBTAINED FROM B-180-0-13 AT A DEPTH OF 1 FOOT HAD AN ORGANIC CONTENT OF 9.7% WHICH CLASSIFIES THE SAMPLE AS "MODERATELY ORGANIC" A-6g. GROUNDWATER WAS ENCOUNTERED IN TEST BORING B-180-0-13 AT A DEPTH OF 8.5 FEET DURING AND AT 5.0 FEET UPON COMPLETION OF DRILLING OPERATIONS.

IR 75 BRIDGE NO. HAN-75-1526 L & R: SIX TEST BORINGS; B-016-1-13, B-017-0-13, B-018-0-13, B-019-0-13, B-020-0-13, AND B-020-1-13 WERE ADVANCED IN THE VICINITY OF THE PROPOSED REPLACEMENT BRIDGE. THE SUBSURFACE SOILS ENCOUNTERED IN THE TEST BORINGS CONSISTED OF BOTH FILL MATERIALS AND NATURAL SOILS. THE APPROXIMATE THICKNESS OF THE FILL MATERIALS RANGED FROM 3.5 FEET IN TEST BORINGS B-116-1-13, B-117-0-13, AND B-119-0-13 TO 27 FEET IN B-018-0-13. COHESIVE SOILS WERE PREDOMINANT, CLASSIFIED AS ODOT A-4g, A-6g, A-6b, AND A-7-6. GRANULAR/NON-COHESIVE SOILS, CLASSIFIED AS ODOT A-1-b, A-4g, AND A-4b WERE LESS PREVALENT.

