

PROJECT DESCRIPTION

REPLACE EXISTING SINGLE SPAN BRIDGE ALONG SKIFFSVILLE ROAD OVER THE WEST BRANCH OF BULLSKIN CREEK.

GEOLOGY AND OBSERVATIONS

GEOLOGICALLY, THE SITE IS SITUATED IN A GLACIAL GROUND MORaine DEPOSIT COMPOSED OF AN UNSORTED, UNSTRATIFIED MIXTURE OF CLAY, SILT, SAND, AND COARSER FRAGMENTS, DEPOSITED DISCONTINUOUSLY BY THE RETREATING OF ICE DURING A GLACIER OVER BEDROCK. THIS AREA CONSISTS OF ASPHALT PAVEMENT AND GRANULAR BASE WHICH WAS PLACED DURING THE CONSTRUCTION OF THE EXISTING BRIDGE. THE BEDROCK AT THIS SITE BELONGS TO OVADOVICIAN AGE OF MAYSVILLE GROUP OF SHALE AND LIMESTONE.

SUBSURFACE EXPLORATIONS

TWO (2) TEST BORINGS WERE COMPLETED AS PART OF THE SUBSURFACE EXPLORATION, ON OCTOBER 22, 2007. THE BORINGS WERE DRILLED WITH A TRUCK MOUNTED DRILL RIG, USING 3 1/4-INCH I.D. HOLLOW STEM AUGERS TO ADVANCE THE HOLES THROUGH SOIL. DISTURBED SOIL SAMPLES WERE OBTAINED IN ACCORDANCE WITH THE STANDARD PENETRATION TEST (ASTM D1586), AT MAXIMUM DEPTH INTERVALS OF FIVE FEET OR AT MAJOR CHANGES IN STRATUM, WHICHEVER OCCURRED FIRST. BEDROCK WAS ENCOUNTERED AT DEPTHS OF 4 TO 13 FEET BELOW THE EXISTING GRADE.

EXPLORATION FINDINGS

THE SUBGRADE SOILS IN THE ABUTMENT AREAS CONSIST OF APPROXIMATELY ONE FOOT OF ASPHALT PAVEMENT AND GRANULAR BASE, BROWN GRAVEL WITH SAND (A-1-b), BROWN GRAVEL WITH SAND AND SILT (A-2-4), BROWN SANDY SILT (A-4a), BROWN SILTY CLAY (A-6b), AND BROWN CLAY (A-7-6) OVER GRAY LIMESTONE BEDROCK. BEDROCK IS GENERALLY DESCRIBED AS LIMESTONE, GRAY, HARD, AND HORIZONTAL BEDDED. B-001-0-07 WAS TERMINATED AFTER CORING 10.0 FEET OF BEDROCK. B-002-0-07, ENCOUNTERED APPROXIMATELY 2.0 FEET OF HIGHLY WEATHERED BEDROCK BEFORE CORING 10.0 FEET OF BEDROCK AND TERMINATING THE BORING.

GROUNDWATER WAS NOT ENCOUNTERED IN BORINGS B-001-0-07 AND B-002-0-07.

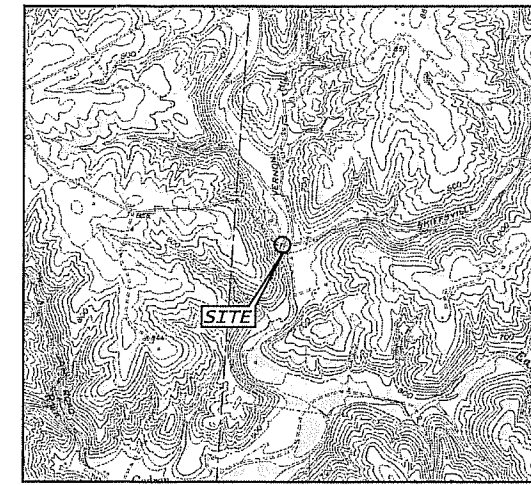
D50 VALUES WHICH HAVE BEEN CALCULATED FOR THE SCOUR ANALYSIS ARE PRESENTED ON THIS PAGE.

AVAILABLE INFORMATION

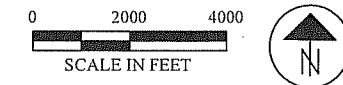
ALL AVAILABLE SOIL AND BEDROCK INFORMATION THAT CAN BE CONVENIENTLY SHOWN ON THE SOIL PROFILE SHEETS HAS BEEN SO REPORTED.

LEGEND

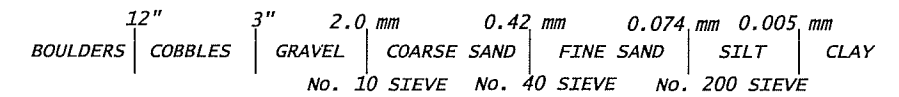
DESCRIPTION	ODOT CLASS	CLASSIFIED MECH./VISUAL	
GRAVEL AND/OR STONE FRAGS. WITH SAND	A-1-b	1	-
GRAVEL AND/OR STONE FRAGS. WITH SAND AND SILT	A-2-4	1	-
SANDY SILT	A-4a	1	-
SILTY CLAY	A-6b	1	1
CLAY	A-7-6	1	1
	TOTAL	5	2
LIMESTONE	VISUAL		
PAVEMENT OR BASE = X = APPROXIMATE THICKNESS	VISUAL		
BORING LOCATION - PLAN VIEW			
DRIVE SAMPLE AND/OR ROCK CORE BORING PLOTTED TO VERTICAL SCALE ONLY. HORIZONTAL BAR INDICATES A CHANGE IN STRATIGRAPHY.			
N_{60} INDICATES STANDARD PENETRATION RESISTANCE NORMALIZED TO 60% DRILL ROD ENERGY RATIO.			
w_c INDICATES WATER CONTENT IN PERCENT.			
W— INDICATES FREE WATER ELEVATION.			
INDICATES A PLASTIC MATERIAL WITH A MOISTURE CONTENT EQUAL TO OR GREATER THAN THE LIQUID LIMIT MINUS 3.			
INDICATES A NON-PLASTIC MATERIAL WITH A MOISTURE CONTENT GREATER THAN 25 % OR GREATER THAN 19 % WITH A WET APPEARANCE.			
NP INDICATES A NON-PLASTIC SAMPLE.			
SS INDICATES A SPLIT SPOON SAMPLE, STANDARD PENETRATION TEST.			
ST INDICATES A SHELBY TUBE SAMPLE.			
TR INDICATES TOP OF ROCK.			



LOCATION MAP



PARTICLE SIZE DEFINITIONS



D ₅₀ VALUES			
BORING NO.	SAMPLE NO.	ELEVATION	D ₅₀ VALUE
B-001-0-07	SS-1	617.3' - 615.8'	2.3800 mm
	SS-2	614.8' - 613.3'	0.0056 mm
	SS-4	609.8' - 608.3'	0.0319 mm
B-002-0-07	SS-1	614.8' - 613.3'	0.0450 mm
	SS-2	612.3' - 611.8'	3.8567 mm

PLANNING - 10/15/07
 DRILLING - 10/22/07
 DRAWN - 1/18/08
 REVISED BORING B-002-0-07 ELEVATION - 2/25/08
 REVIEWED - 1/18/08

DAYTON, OHIO
TOLEDO, OHIO
LENNINGTON, NY

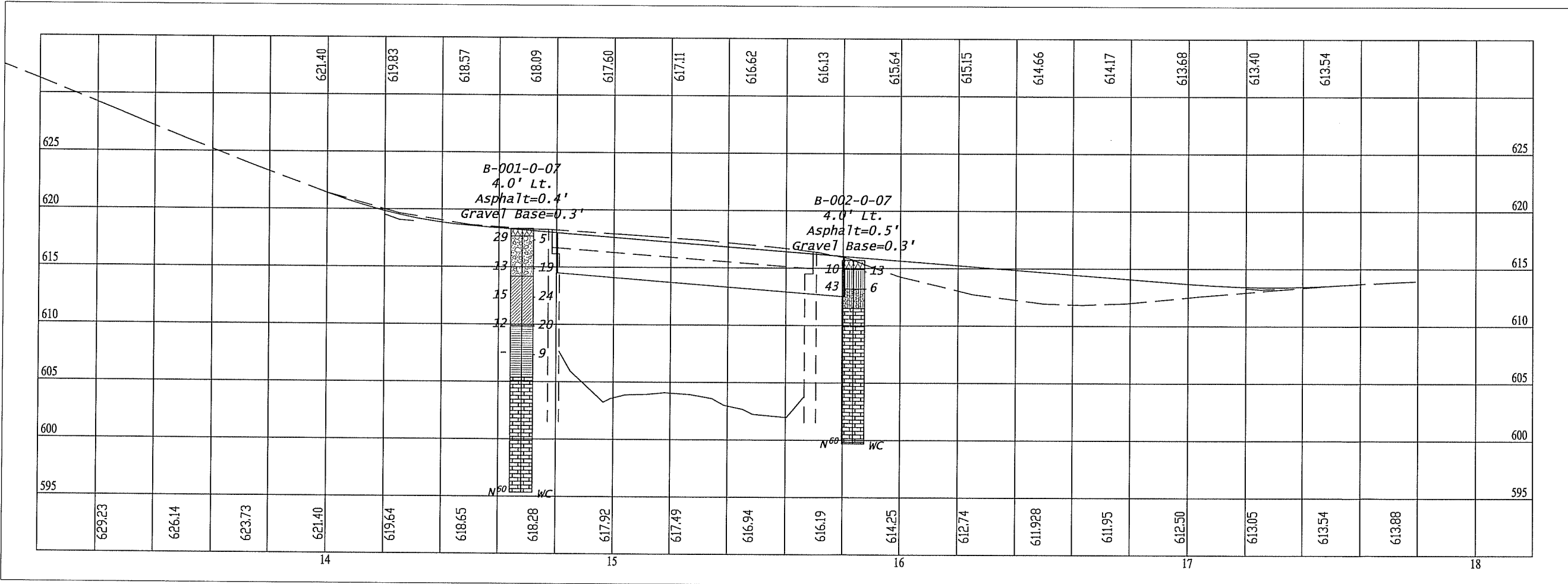
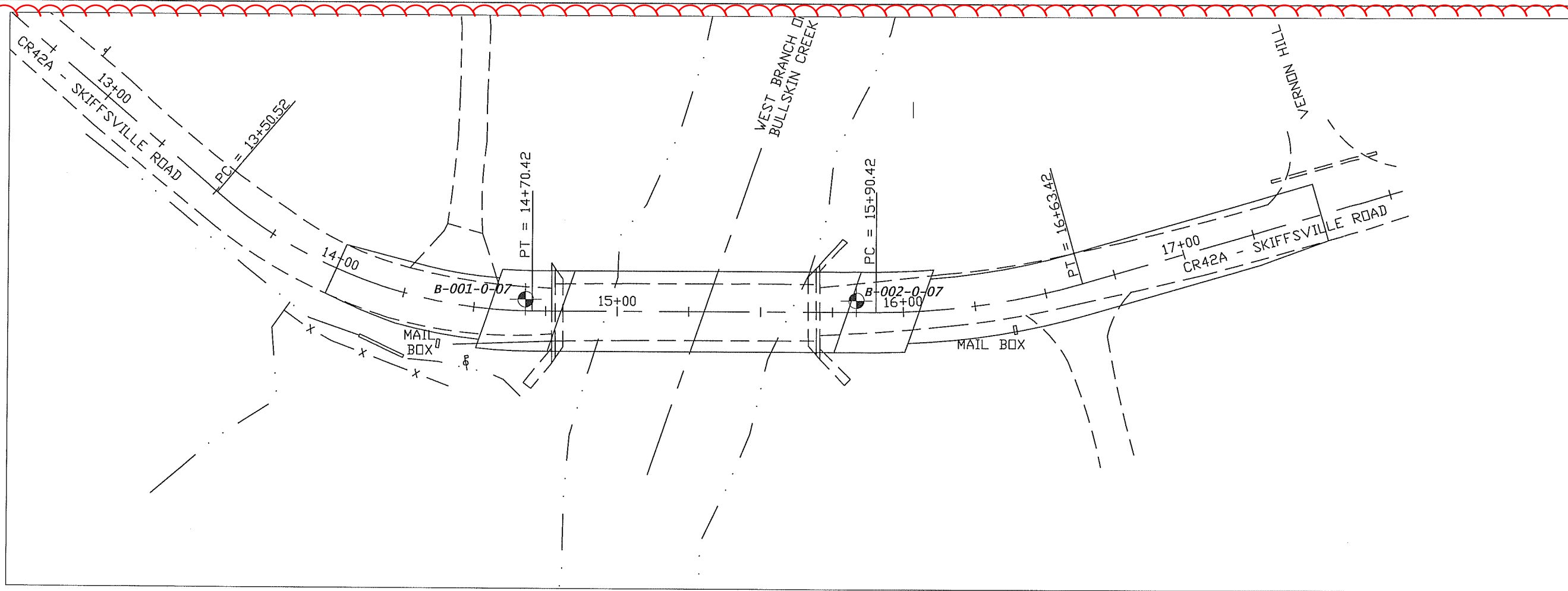
BOWSER MORNER

PROJECT NO. 142304
 DATE 01/08
 REVIEWED CR / JYT
 DRAWN SR
 CLIENT BROWN COUNTY ENGINEER OFFICE

PID -

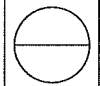
PROPOSED BRIDGE REPLACEMENT PROJECT
 BRIDGE ALONG SKIFFSVILLE ROAD
 OVER WEST BRANCH OF BULLSKIN CREEK

1 / 3



PROJECT NO.	142304
DATE	01/08
REVIEWED	CR/RJYT
DRAWN	SR
BROWN COUNTY ENGINEER OFFICE	

PROPOSED BRIDGE REPLACEMENT PROJECT
BRIDGE ALONG SKIFFSVILLE ROAD
OVER WEST BRANCH OF BULLSKIN CREEK



Job Number: 142304
 Client: Brown County Engineer Office
 Date Started 10/22/07 Sampler: Type Split Spoon Dia. Water Elev. (ft) None
 Date Completed 10/22/07 Casing: Length Dia.
 Boring No. B-001-0-07 Station & Offset 14+68.1, 4.0' Lt. Surface Elev. (ft) 618.3
 Project Description: Soil Study for Proposed Bridge
 Replacement Project, Bridge along Skiffsville Rd over
 West Branch of Bullskin Creek, Lewis Twp, Brown Co, OH

Elev. (ft)	Depth (ft)	Sid. Pen./RQD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics						ODOT Class			
							% Agg	% C.S.	% F.S.	% Silt	% Clay	L.L.		P.I.	W.C.	
618.3	0															
617.9					(FILL) ASPHALT pavement (0.4')	SS-1	51.8	15.3	11.0	11.6	10.3	19	4	5.0	A-1-b	
617.6	2	13/12/12			(FILL) GRAVEL base (0.3')											
614.8	4	4/4/7			(ORIGINAL) Medium dense brown GRAVEL with sand, little silt, trace clay - moist											
609.8	6	4/5/8			Stiff brown CLAY, some silt, some gravel, trace sand - damp	SS-2	22.9	0.8	1.6	24.7	50.0	50	22	19.0	A-7-6	
	8					SS-3					SAME AS SS-2			24.0	A-7-6 (Visual)	
	10	4/4/6			Stiff brown silty CLAY, and sand - moist	SS-4	0.0	2.1	38.5	31.2	28.2	36	16	20.0	A-6b	
605.3	12	12/14/50 (0.2')			(Becomes hard with trace cobbles at 11.0')	SS-5					SAME AS SS-4			9.0	A-6b (Visual)	
	14	0%	6.0	4.0	LIMESTONE, gray, hard, horizontal bedding, highly fractured (7" clay seam at 13.6')											
	16				(4" clay seam at 15.1')											
	18															
	20															
	22															
595.3																

Bottom of Boring at 23'

Job Number: 142304
 Client: Brown County Engineer Office
 Date Started 10/22/07 Sampler: Type Split Spoon Dia. Water Elev. (ft) None
 Date Completed 10/22/07 Casing: Length Dia.
 Boring No. B-002-0-07 Station & Offset 15+83.6, 4.0' Lt. Surface Elev. (ft) 615.8
 Project Description: Soil Study for Proposed Bridge
 Replacement Project, Bridge along Skiffsville Rd over
 West Branch of Bullskin Creek, Lewis Twp, Brown Co, OH

Elev. (ft)	Depth (ft)	Sid. Pen./RQD	Rec. (ft)	Loss (ft)	Description	Sample No.	Physical Characteristics						ODOT Class			
							% Agg	% C.S.	% F.S.	% Silt	% Clay	L.L.		P.I.	W.C.	
615.8	0															
615.3					(FILL) ASPHALT pavement (0.5')											
615.0	2	6/5/3			(FILL) GRAVEL base (0.3')	SS-1	7	4	27	35	26	24	8	13	A-4a	
613.3	4	9/19/17			(ORIGINAL) Medium stiff brown sandy SILT, some clay, trace gravel - damp											
611.6	6	7.5%	7.7	4.1	Dense brown GRAVEL with sand and silt, little clay - damp	SS-2	54	6	12	16	12	23	6	6	A-2-4	
	8				LIMESTONE, gray, hard, horizontal bedding, RQD = 7.5% (4.5" clay seam at 4.9')											
	10				(5" clay seam at 5.3')											
	12															
	14															
599.8	16															

Bottom of Boring at 16'