



**SUBSURFACE INVESTIGATION AND BRIDGE FOUNDATION
DESIGN RECOMMENDATIONS**

**TIP B-4861
BRIDGE ON RIDGE STREET (-L-) OVER
WSSB RAILROAD (-RR-)**

F&R PROJECT NO. 66L-0292

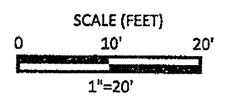
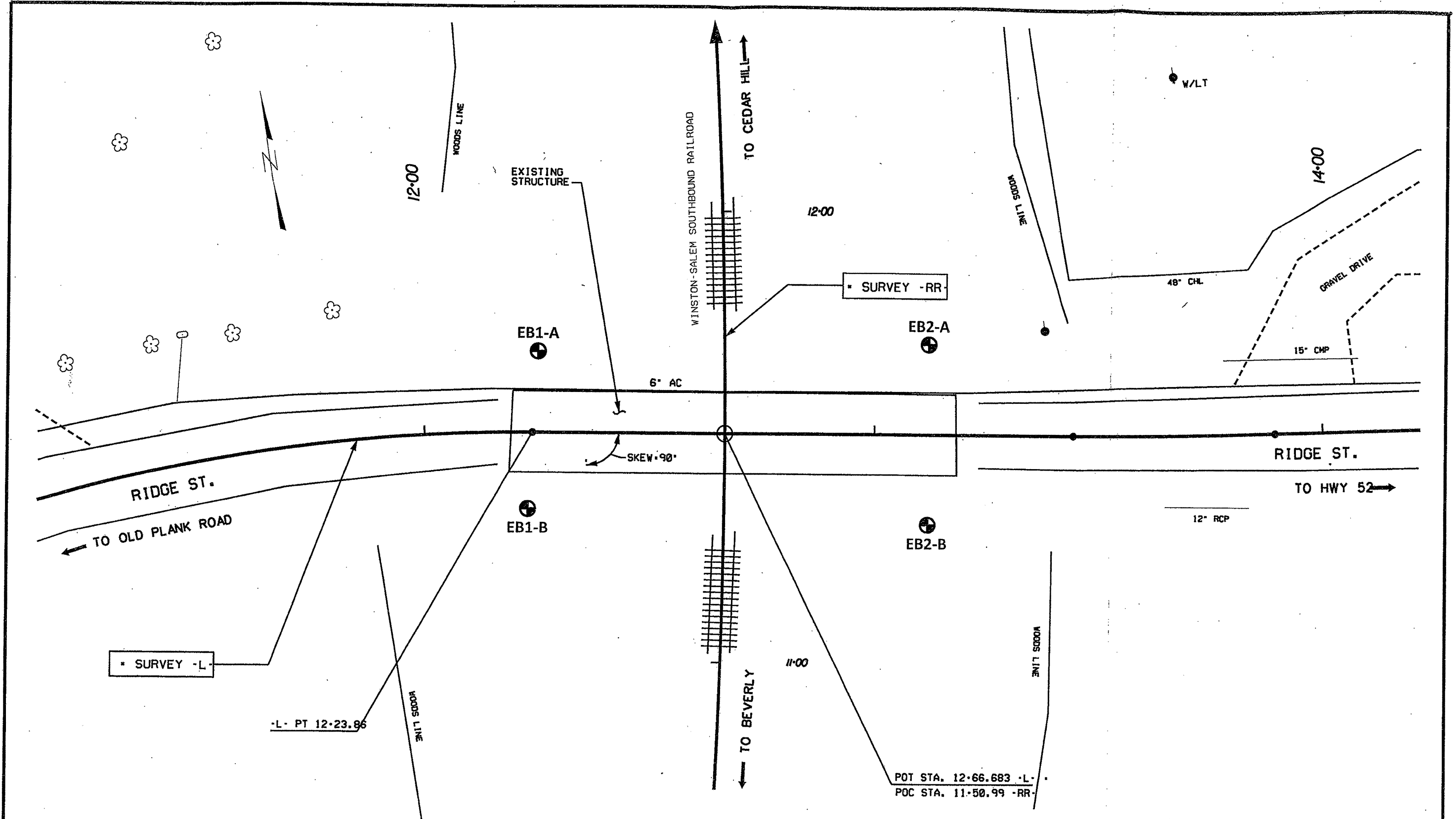
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BORING LOCATION PLAN	
CLIENT: TGS Engineers	
PROJECT: B-4861: Bridge on Ridge Street over WSSB Railroad	
LOCATION: Ansonville, Anson County, North Carolina	
F&R PROJECT No.: 66L-0292	
DRAWN BY: D. Racey	CHECKED BY: E. Howey, P.E., P.G.
DATE: December 2009	SCALE: 1"=20'
FIGURE No.: 1	

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

PROJECT REFERENCE NO. 8-4861

SOIL DESCRIPTION		GRADATION		ROCK DESCRIPTION		TERMS AND DEFINITIONS							
SOIL IS CONSIDERED TO BE THE UNCONSOLIDATED, SEMI-CONSOLIDATED, OR WEATHERED EARTH MATERIALS THAT CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER, AND YIELD LESS THAN 100 BLOWS PER FOOT ACCORDING TO STANDARD PENETRATION TEST (ASTM D-1586). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM. BASIC DESCRIPTIONS GENERALLY SHALL INCLUDE: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH AS MINERALOGICAL COMPOSITION, ANGULARITY, STRUCTURE, PLASTICITY, ETC. EXAMPLE: <i>VERY STIFF, GRAY, SILTY CLAY, MOST WITH INTERBEDDED FINE SAND LAYERS, MHT PLSTC, A-7-6</i>		WELL GRADED - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE. UNIFORM - INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE (ALSO POORLY GRADED) GAP-GRADED - INDICATES A MIXTURE OF UNIFORM PARTICLES OF TWO OR MORE SIZES. THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS IS DESIGNATED BY THE TERMS: ANGULAR, SUBANGULAR, SUBROUNDED, OR ROUNDED.		HARD ROCK IS NON-COASTAL PLAIN MATERIAL THAT IF TESTED, WOULD YIELD SPT REFUSAL, AN INFERRED ROCK LINE INDICATES THE LEVEL AT WHICH NON-COASTAL PLAIN MATERIAL WOULD YIELD SPT REFUSAL. SPT REFUSAL IS PENETRATION BY A SPLIT SPOON SAMPLER EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS. IN NON-COASTAL PLAIN MATERIAL, THE TRANSITION BETWEEN SOIL AND ROCK IS OFTEN REPRESENTED BY A ZONE OF WEATHERED ROCK. ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS: WEATHERED ROCK (WR) CRYSTALLINE ROCK (CR) NON-CRYSTALLINE ROCK (NCR) COASTAL PLAIN SEDIMENTARY ROCK (CP)		ALLUVIUM (ALLUV.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER. AQUIFER - A WATER BEARING FORMATION OR STRATA. ARENACEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND. ARGILLACEOUS - APPLIED TO ALL ROCKS OR SUBSTANCES COMPOSED OF CLAY MINERALS, OR HAVING A NOTABLE PROPORTION OF CLAY IN THEIR COMPOSITION, AS SHALE, SLATE, ETC. ARTESIAN - GROUND WATER THAT IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL AT WHICH IT IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND SURFACE. CALCAREOUS (CALC.) - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE. COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE. CORE RECOVERY (REC%) - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. DIKE - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK. DIP - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE HORIZONTAL. DIP DIRECTION (DIP AZIMUTH) - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH. FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE. FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES. FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLOGGED FROM PARENT MATERIAL. FLOOD PLAIN (FP) - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM. FORMATION (FM) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD. JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED. LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO ITS LATERAL EXTENT. LENS - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS. MOTTLED (MOT.) - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS. MOTTLING IN SOILS USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE. PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE OF AN INTERVENING IMPERVIOUS STRATUM. RESIDUAL (RES.) SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK. ROCK QUALITY DESIGNATION (RQD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. SAPROLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK. SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS. SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE. STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS IN OR BPF OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS. STRATA CORE RECOVERY (SCRC) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE. STRATA ROCK QUALITY DESIGNATION (SRQD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE. TOPSOIL (TS) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.							
SOIL LEGEND AND AASHTO CLASSIFICATION		MINERALOGICAL COMPOSITION		WEATHERING		ROCK HARDNESS							
GENERAL CLASS. GRANULAR MATERIALS (<= 35% PASSING #200) SILT-CLAY MATERIALS (> 35% PASSING #200) ORGANIC MATERIALS		MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHENEVER THEY ARE CONSIDERED OF SIGNIFICANCE.		FRESH: ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING, ROCK RINGS UNDER HAMMER IF CRYSTALLINE. VERY SLIGHT (V SL): ROCK GENERALLY FRESH, JOINTS STAINED, SOME JOINTS MAY SHOW THIN CLAY COATINGS IF OPEN. CRYSTALS ON A BROKEN SPECIMEN FACE SHINE BRIGHTLY, ROCK RINGS UNDER HAMMER BLOWS IF OF A CRYSTALLINE NATURE. SLIGHT (SL): ROCK GENERALLY FRESH, JOINTS STAINED AND DISCOLORATION EXTENDS INTO ROCK UP TO 1 INCH. OPEN JOINTS MAY CONTAIN CLAY. IN GRANITOID ROCKS SOME OCCASIONAL FELDSPAR CRYSTALS ARE DULL AND DISCOLORED. CRYSTALLINE ROCKS RING UNDER HAMMER BLOWS. MODERATE (MOD): SIGNIFICANT PORTIONS OF ROCK SHOW DISCOLORATION AND WEATHERING EFFECTS. IN GRANITOID ROCKS, MOST FELDSPARS ARE DULL AND DISCOLORED, SOME SHOW CLAY. ROCK HAS DULL SOUND UNDER HAMMER BLOWS AND SHOWS SIGNIFICANT LOSS OF STRENGTH AS COMPARED WITH FRESH ROCK. MODERATELY SEVERE (MOD. SEV): ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. IN GRANITOID ROCKS, ALL FELDSPARS DULL AND DISCOLORED AND A MAJORITY SHOW KAOLINIZATION. ROCK SHOWS SEVERE LOSS OF STRENGTH AND CAN BE EXCAVATED WITH A GEOLOGIST'S PICK. ROCK GIVES "CLUNK" SOUND WHEN STRUCK. IF TESTED, WOULD YIELD SPT REFUSAL. SEVERE (SEV): ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC CLEAR AND EVIDENT BUT REDUCED IN STRENGTH TO STRONG SOIL. IN GRANITOID ROCKS ALL FELDSPARS ARE KAOLINIZED TO SOME EXTENT. SOME FRAGMENTS OF STRONG ROCK USUALLY REMAIN. IF TESTED, YIELDS SPT N VALUES > 100 BPF. VERY SEVERE (V SEV): ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC ELEMENTS ARE DISCERNIBLE BUT THE MASS IS EFFECTIVELY REDUCED TO SOIL STATUS, WITH ONLY FRAGMENTS OF STRONG ROCK REMAINING. SAPROLITE IS AN EXAMPLE OF ROCK WEATHERED TO A DEGREE SUCH THAT ONLY MINOR VESTIGES OF THE ORIGINAL ROCK FABRIC REMAIN. IF TESTED, YIELDS SPT N VALUES < 100 BPF. COMPLETE: ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE.		SLIGHTLY COMPRESSIBLE MODERATELY COMPRESSIBLE HIGHLY COMPRESSIBLE		FRESH: ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING, ROCK RINGS UNDER HAMMER IF CRYSTALLINE. VERY SLIGHT (V SL): ROCK GENERALLY FRESH, JOINTS STAINED, SOME JOINTS MAY SHOW THIN CLAY COATINGS IF OPEN. CRYSTALS ON A BROKEN SPECIMEN FACE SHINE BRIGHTLY, ROCK RINGS UNDER HAMMER BLOWS IF OF A CRYSTALLINE NATURE. SLIGHT (SL): ROCK GENERALLY FRESH, JOINTS STAINED AND DISCOLORATION EXTENDS INTO ROCK UP TO 1 INCH. OPEN JOINTS MAY CONTAIN CLAY. IN GRANITOID ROCKS SOME OCCASIONAL FELDSPAR CRYSTALS ARE DULL AND DISCOLORED. 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HARD HAMMER BLOWS REQUIRED TO DETACH HAND SPECIMEN. MODERATELY HARD CAN BE SCRATCHED BY KNIFE OR PICK, GOUGES OR GROOVES TO 0.25 INCHES DEEP CAN BE EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK. HAND SPECIMENS CAN BE DETACHED BY MODERATE BLOWS. MEDIUM HARD CAN BE GROUDED OR GOUGED 0.05 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK POINT. CAN BE EXCAVATED IN SMALL CHIPS TO PIECES 1 INCH MAXIMUM SIZE BY HARD BLOWS OF THE POINT OF A GEOLOGIST'S PICK. SOFT CAN BE GROUDED OR GOUGED READILY BY KNIFE OR PICK. CAN BE EXCAVATED IN FRAGMENTS FROM CHIPS TO SEVERAL INCHES IN SIZE BY MODERATE BLOWS OF A PICK POINT. SMALL, THIN PIECES CAN BE BROKEN BY FINGER PRESSURE. VERY SOFT CAN BE CARVED WITH KNIFE. CAN BE EXCAVATED READILY WITH POINT OF PICK. PIECES 1 INCH OR MORE IN THICKNESS CAN BE BROKEN BY FINGER PRESSURE. CAN BE SCRATCHED READILY BY FINGER NAIL.	
PERCENTAGE OF MATERIAL		GROUND WATER		MISCELLANEOUS SYMBOLS		ROCK QUALITY DESIGNATION (RQD)							
PERCENTAGE OF MATERIAL		WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING STATIC WATER LEVEL AFTER 24 HOURS PERCHED WATER, SATURATED ZONE, OR WATER BEARING STRATA SPRING OR SEEP		ROADWAY EMBANKMENT (RE) WITH SOIL DESCRIPTION SOIL SYMBOL ARTIFICIAL FILL (AF) OTHER THAN ROADWAY EMBANKMENT INFERRED SOIL BOUNDARY INFERRED ROCK LINE ALLUVIAL SOIL BOUNDARY DIP & DIP DIRECTION OF ROCK STRUCTURES		RQD = (TOTAL LENGTH OF ROCK SEGMENTS > 4 INCHES / TOTAL LENGTH OF CORE RUN) * 100							
CONSISTENCY OR DENSITY		ABBREVIATIONS		EQUIPMENT USED ON SUBJECT PROJECT		FRACTURE SPACING							
PRIMARY SOIL TYPE COMPACTNESS OR CONSISTENCY RANGE OF STANDARD PENETRATION RESISTANCE (N-VALUE) RANGE OF UNCONFINED COMPRESSIVE STRENGTH (TONS/SQ FT)		AR - AUGER REFUSAL BT - BORING TERMINATED CL - CLAY CPT - CONE PENETRATION TEST CSE - COARSE DMT - DILATOMETER TEST DPT - DYNAMIC PENETRATION TEST e - VOID RATIO F - FINE FOSS - FOSSILIFEROUS FRAC. - FRACTURED, FRACTURES FRAGS. - FRAGMENTS HL - HIGHLY MED. - MEDIUM MICA - MICACEOUS MOD. - MODERATELY NP - NON PLASTIC ORG. - ORGANIC PMT - PRESSUREMETER TEST SAP. - SAPROLITIC SD. - SAND, SANDY SL. - SILT, SILTY SL. - SLIGHTLY TCR - TRICONE REFUSAL w - MOISTURE CONTENT V - VERY VST - VANE SHEAR TEST WEA. - WEATHERED UNIT WEIGHT DRY UNIT WEIGHT SAMPLE ABBREVIATIONS S - BULK SS - SPLIT SPOON ST - SHELBY TUBE RS - ROCK RT - RECOMPACTED TRIAXIAL CBR - CALIFORNIA BEARING RATIO		DRILL UNITS: MOBILE B- BK-SI CME-55 CME-550 PORTABLE HOIST		ADVANCING TOOLS: CLAY BITS 6" CONTINUOUS FLIGHT AUGER 6" HOLLOW AUGERS HARD FACED FINGER BITS TUNG-CARBIDE INSERTS CASING w/ ADVANCER TRICONE STEEL TEETH TRICONE TUNG-CARB. CORE BIT		HAMMER TYPE: AUTOMATIC MANUAL CORE SIZE: B N H HAND TOOLS: POST HOLE DIGGER HAND AUGER SOUNDING ROD VANE SHEAR TEST					
TEXTURE OR GRAIN SIZE		SOIL MOISTURE - CORRELATION OF TERMS		FRACTURE SPACING		BEDDING							
U.S. STD. SIEVE SIZE OPENING (MM) 4 10 40 60 200 270 4.75 2.00 0.42 0.25 0.075 0.053		SOIL MOISTURE SCALE (ATTERBERG LIMITS) FIELD MOISTURE DESCRIPTION GUIDE FOR FIELD MOISTURE DESCRIPTION LL - LIQUID LIMIT PL - PLASTIC LIMIT ON - OPTIMUM MOISTURE SL - SHRINKAGE LIMIT SAT - SATURATED - USUALLY LIQUID; VERY WET, USUALLY FROM BELOW THE GROUND WATER TABLE WET - (W) SEMISOLID; REQUIRES DRYING TO ATTAIN OPTIMUM MOISTURE MOIST - (M) SOLID; AT OR NEAR OPTIMUM MOISTURE DRY - (D) REQUIRES ADDITIONAL WATER TO ATTAIN OPTIMUM MOISTURE		VERY WIDE MORE THAN 10 FEET WIDE 3 TO 10 FEET MODERATELY CLOSE 1 TO 3 FEET CLOSE 0.16 TO 1 FEET VERY CLOSE LESS THAN 0.16 FEET		VERY THICKLY BEDDED > 4 FEET THICKLY BEDDED 1.5 - 4 FEET THINLY BEDDED 0.16 - 1.5 FEET VERY THINLY BEDDED 0.03 - 0.16 FEET THICKLY LAMINATED 0.008 - 0.03 FEET THINLY LAMINATED < 0.008 FEET							
PLASTICITY		EQUIPMENT USED ON SUBJECT PROJECT		INDURATION		BENCH MARK: TBM; BL-3 -L- Sta. 13+09.47, 17.46' RT.							
NONPLASTIC 0-5 VERY LOW LOW PLASTICITY 6-15 SLIGHT MED. PLASTICITY 16-25 MEDIUM HIGH PLASTICITY 26 OR MORE HIGH		DRILL UNITS: MOBILE B- BK-SI CME-55 CME-550 PORTABLE HOIST		FRIABLE RUBBING WITH FINGER FREES NUMEROUS GRAINS; GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE. MODERATELY INDURATED GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE; BREAKS EASILY WHEN HIT WITH HAMMER. INDURATED GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE; DIFFICULT TO BREAK WITH HAMMER. EXTREMELY INDURATED SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE; SAMPLE BREAKS ACROSS GRAINS.		ELEVATION: 349.51 FT.							
COLOR		FRACTURE SPACING		INDURATION		NOTES:							
DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YELLOW-BROWN, BLUE-GRAY). MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.		WIDE 3 TO 10 FEET MODERATELY CLOSE 1 TO 3 FEET CLOSE 0.16 TO 1 FEET VERY CLOSE LESS THAN 0.16 FEET		FRIABLE RUBBING WITH FINGER FREES NUMEROUS GRAINS; GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE. MODERATELY INDURATED GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE; BREAKS EASILY WHEN HIT WITH HAMMER. INDURATED GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE; DIFFICULT TO BREAK WITH HAMMER. EXTREMELY INDURATED SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE; SAMPLE BREAKS ACROSS GRAINS.									



NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

SHEET
 3 of 6

PROJECT NO. 66L-0292	ID. B-4861	COUNTY Anson	GEOLOGIST D. Racey
SITE DESCRIPTION Bridge on Ridge Street over WSSB RR			GROUND WTR (ft)
BORING NO. EB1-A	STATION 12+25	OFFSET 18ft LT	ALIGNMENT -L-
COLLAR ELEV. 346.9 ft	TOTAL DEPTH 27.6 ft	NORTHING N/A	EASTING N/A
DRILL MACHINE CME 55	DRILL METHOD 2.25" ID HSA	HAMMER TYPE Automatic	
START DATE 10/22/09	COMP. DATE 10/22/09	SURFACE WATER DEPTH N/A	DEPTH TO ROCK 21.5 ft

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100							
350																	
	346.9	0.0													346.9	GROUND SURFACE	0.0
345	344.9	2.0	2	4	3							SS-30	5%		344.9	RESIDUAL	2.0
	343.4	3.5	7	17	20									D	342.9	Tan-light gray, white & black, clayey SILT (A-4(3)), with little fine to coarse sand, trace rock fragments, trace roots, saprolitic.	4.0
340			37	62	38/0.2									D		Tan, light gray & red, clayey SILT (A-4), with quartz fragments, saprolitic.	
	338.4	8.5	100/0.3'											D		WEATHERED ROCK	
																Tan, white, brown & black, METASILTSTONE.	
335																	
	333.4	13.5	93	7/0.0'										D			
330																	
	328.4	18.5	28	32	29							SS-35	10%			Tan, white, brown & black, clayey SILT (A-4(0)), with little fine to coarse sand, saprolitic.	14.5
325																	
	323.4	23.5	60/0.0'											D		NON-CRYSTALLINE ROCK	21.5
																Light gray with tan, METASILTSTONE.	
320																	
	319.4	27.5	60/0.1'											D		Boring Terminated at Elevation 319.3 ft in NON-CRYSTALLINE ROCK (METASILTSTONE)	27.6
315																	
310																	
305																	
300																	
295																	
290																	
285																	
280																	
275																	
270																	

- NOTES:
- 1) 0.0'-0.5' Surficial Organic Soils
 - 2) Field Professional indicates strata break in split spoon at a depth of 4.0'.
 - 3) Driller indicates softer drilling at a depth of 14.5'.
 - 4) Driller indicates harder drilling at a depth of 21.5'.
 - 5) Drill rig broke while augering to 28.5', unable to advance, performed SPT at a depth of 27.5' and terminated boring.

NCDOT BORE SINGLE 66L-0292.GPJ NC_DOT.GDT 11/9/09

PROJECT NO. 66L-0292	ID. B-4861	COUNTY Anson	GEOLOGIST D. Racey
SITE DESCRIPTION Bridge on Ridge Street over WSSB RR			GROUND WTR (ft)
BORING NO. EB1-B	STATION 12+23	OFFSET 17ft RT	ALIGNMENT -L-
COLLAR ELEV. 347.1 ft	TOTAL DEPTH 38.6 ft	NORTHING N/A	EASTING N/A
DRILL MACHINE CME 55	DRILL METHOD 2.25" ID HSA	HAMMER TYPE Automatic	
START DATE 10/22/09	COMP. DATE 10/22/09	SURFACE WATER DEPTH N/A	DEPTH TO ROCK 13.5 ft

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	L O G	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
350															
	347.1	0.0												347.1	0.0
			2	3	2										
345	345.1	2.0									SS-20	6%	RESIDUAL	345.1	2.0
			18	37	61								Tan & light gray, clayey SILT (A-4(3)), with little fine to coarse sand, trace rock fragments, trace roots.	343.6	3.5
	343.6	3.5	57	43/0.3							SS-21	5%	White, tan, brown & black, clayey SILT (A-4(0)), with little fine to coarse sand, some rock & quartz fragments, saprolitic.		
340													WEATHERED ROCK		
			100/0.3										Tan, white & light gray, METASILTSTONE.		
	338.6	8.5													
335															
			60/0.0										NON-CRYSTALLINE ROCK	333.6	13.5
	333.6	13.5											Tan & brown, METASILTSTONE.		
330															
			60/0.1												
	328.6	18.5													
325															
			100/0.2										WEATHERED ROCK	323.6	23.5
	323.6	23.5											Brown, METASILTSTONE.		
320															
			60/0.0										NON-CRYSTALLINE ROCK	318.6	28.5
	318.6	28.5											Light gray & tan, METASILTSTONE.		
315															
			60/0.1												
	313.6	33.5													
310															
			60/0.1												
	308.6	38.5													
			60/0.1												
305															
300															
295															
290															
285															
280															
275															
270															

NOTES:
 1) 0.0'-0.4' Surficial Organic Soils
 2) Driller indicates difficult drilling from a depth of 13.5' to boring termination.

NCDOT BORE SINGLE 66L-0292.GPJ NC_DOT.GDT 11/9/09



NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

SHEET
5 of 6

PROJECT NO. 66L-0292	ID. B-4861	COUNTY Anson	GEOLOGIST D. Racey
SITE DESCRIPTION Bridge on Ridge Street over WSSB RR			GROUND WTR (ft)
BORING NO. EB2-A	STATION 13+12	OFFSET 20ft LT	ALIGNMENT -L-
COLLAR ELEV. 349.6 ft	TOTAL DEPTH 38.6 ft	NORTHING N/A	EASTING N/A
DRILL MACHINE CME 55	DRILL METHOD 2.25" ID HSA	HAMMER TYPE Automatic	
START DATE 10/22/09	COMP. DATE 10/22/09	SURFACE WATER DEPTH N/A	DEPTH TO ROCK 13.5 ft

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	L O G	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
350															
	349.6	0.0	2	4	3									349.6	0.0
	347.6	2.0													
	346.1	3.5	3	7	13									346.6	3.0
345			14	16	23										
	341.1	8.5												341.1	8.5
340			100/0.3												
	336.1	13.5												336.1	13.5
335			60/0.1												
	332.1	17.5												332.1	17.5
330			100/0.2											330.6	19.0
	326.1	23.5													
325			60/0.1												
	321.1	28.5													
320			60/0.1												
	316.1	33.5													
315			60/0.1												
	311.1	38.5												311.0	38.6
310			60/0.1												
305															
300															
295															
290															
285															
280															
275															
270															

- NOTES:
- 1) 0.0'-0.4' Surficial Organic Soils
 - 2) Field Professional indicates strata break in split spoon at a depth of 3.0'.
 - 3) Driller indicates softer drilling at a depth of 17.5'.
 - 4) Driller indicates harder drilling at a depth of 19.0'.
 - 5) Driller indicates softer drilling from a depth of 31.0'-33.1'.

NCDOT BORE-SINGLE 66L-0292.GPJ NC_DOT.GDT 11/9/09

PROJECT NO. 66L-0292	ID. B-4861	COUNTY Anson	GEOLOGIST D. Racey
SITE DESCRIPTION Bridge on Ridge Street over WSSB RR			GROUND WTR (ft)
BORING NO. EB2-B	STATION 13+12	OFFSET 20ft RT	ALIGNMENT -L-
COLLAR ELEV. 349.7 ft	TOTAL DEPTH 38.5 ft	NORTHING N/A	EASTING N/A
DRILL MACHINE CME 55	DRILL METHOD 2.25" ID HSA	HAMMER TYPE Automatic	
START DATE 10/21/09	COMP. DATE 10/21/09	SURFACE WATER DEPTH N/A	DEPTH TO ROCK 11.5 ft

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	L O G	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
350															
	349.7	0.0	2	5	4									GROUND SURFACE	0.0
	347.7	2.0												RESIDUAL	
	346.2	3.5	6	10	14									Tan, clayey SILT (A-4(6)), with little fine to coarse sand, trace rock fragments, trace roots.	2.0
345			23	29	32									Tan, light gray & white with red specks, clayey SILT (A-4(5)), with some fine to coarse sand, trace quartz fragments, saprolitic.	
	341.2	8.5													
340			25	22	59										
	338.2	13.5												NON-CRYSTALLINE ROCK	11.5
335			60/0.0											Tan & brown to light gray, METASILTSTONE.	
	331.2	18.5													
330			60/0.1												
	328.2	23.5													
325			60/0.1												
	321.2	28.5													
320			60/0.1												
	318.2	33.5													
315			60/0.0												
	311.2	38.5													
310														Boring Terminated at Elevation 311.2 ft in NON-CRYSTALLINE ROCK (METASILTSTONE)	38.5
305															
300															
295															
290															
285															
280															
275															
270															

NOTES:

- 1) 0.0'-0.3' Surficial Organic Soils
- 2) Driller indicates harder drilling at a depth of 11.5'.
- 3) Augers plugged, unable to perform SPT at 38.5'.