STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	42252.1.1 (B-5114)	1	13

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

STRUCTURE SUBSURFACE INVESTIGATION

PROJ. REFERENCE NO. 42252.1.1 (B-5114) F.A. PROJ. BRZ-1619 (5)

COUNTY RANDOLPH

PROJECT DESCRIPTION BRIDGE NO. 136 OVER US 29-70/I-85 BUSINESS ON SR 1619 (PROSPECT ST.)

ID: B-5114

PROJECT: 42252.1.1

CONTENTS

CAUTION NOTICE

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PERSONNEL

R. TOOTHMAN

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INVESTIGATED BY T. WELLS

CHECKED BY X. BARRETT

SUBMITTED BY KLEINFELDER

DATE MAY 2014

NORTH CAROLINA PROFESSIONAL SEAL 37898 ENGINEER THOMAS R. WELLS 5/23/14

DRAWN BY: W. FELDER

NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IT IS CONSIDERED TO BE PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT.

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PROJECT REFERENCE NO.	SHEET NO.
42252.1.1 (B-5114)	2

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

SOIL DESCRIPTION

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 (AASHTO T206, 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:

VERY STIFF, GRAY, SILTY CLAY, MOIST WITH INTERBEDDED FINE SAND LAYERS, HIGHLY PLASTIC, A-7-6

SOIL LEGEND AND AASHTO CLASSIFICATION

GENERAL CLASS.	GRANULAR MATERIALS (≤ 35% PASSING #200)							SILT-CLAY MATERIALS (> 35% PASSING #200)				ORGANIC MATERIALS		
GROUP	A-1		A-3	A-2				A-4	A-5	A-6	A-7	A-1, A-2	A-4, A-5	
CLASS.	A-1-a	A-1-b		A-2-4	A-2-5	A-2-6	A-2-7				A-7-5, A-7-6	A-3	A-6, A-7	
SYMBOL														
% PASSING #10	50 MX													
#40	30 MX	50 MX										GRANULAR SOILS	SILT-CLAY SOILS	MUCK, PEAT
#200	15 MX	25 MX	10 MX	35 MX	35 MX	35 MX	35 MX	36 MN	36 MN	36 MN	36 MN			
LIQUID LIMIT	6 MX		NP	40 MX	41 MN	40 MX	41 MN	40 MX	41 MN	40 MX	41 MN	SOILS WITH LITTLE OR MODERATE AMOUNTS OF ORGANIC MATTER		HIGHLY ORGANIC SOILS
PLASTIC INDEX				10 MX	10 MX	11 MN	11 MN	10 MX	10 MX	11 MN	11 MN			
GROUP INDEX	0		0	0	4 MX			8 MX	12 MX	16 MX	No MX			
USUAL TYPES OF MAJOR MATERIALS	STONE FRAGS. GRAVEL, AND SAND		FINE SAND	SILTY OR CLAYEY GRAVEL AND SAND				SILTY SOILS		CLAYEY SOILS				
GEN. RATING AS A SUBGRADE	EXCELLENT TO GOOD							FAIR TO POOR				FAIR TO POOR	POOR	UNSUITABLE

PI OF A-7-5 SUBGROUP IS ≤ LL - 30 ; PI OF A-7-6 SUBGROUP IS > LL - 30

CONSISTENCY OR DENSENESS

PRIMARY SOIL TYPE	COMPACTNESS OR CONSISTENCY	RANGE OF STANDARD PENETRATION RESISTENCE (N-VALUE)	RANGE OF UNCONFINED COMPRESSIVE STRENGTH ($TONS/FT^2$)
GENERALLY GRANULAR MATERIAL (NON-COHESIVE)	VERY LOOSE	<4	N/A
	LOOSE	4 TO 10	
	MEDIUM DENSE	10 TO 30	
	DENSE	30 TO 50	
	VERY DENSE	>50	
GENERALLY SILT-CLAY MATERIAL (COHESIVE)	VERY SOFT	<2	<0.25
	SOFT	2 TO 4	0.25 TO 0.50
	MEDIUM STIFF	4 TO 8	0.5 TO 1.0
	STIFF	8 TO 15	1 TO 2
	VERY STIFF	15 TO 30	2 TO 4
	HARD	>30	>4

TEXTURE OR GRAIN SIZE

U.S. STD. SIEVE SIZE	4	10	40	60	200	270
OPENING (MM)	4.76	2.00	0.42	0.25	0.075	0.053

BOULDER (BLDR.)	COBBLE (COB.)	GRAVEL (GR.)	COARSE SAND (CSE. SD.)	FINE SAND (F SD.)	SILT (SL.)	CLAY (CL.)

GRAIN SIZE	MM	305	75	2.0	0.25	0.05	0.005
	IN.	12	3				

SOIL MOISTURE - CORRELATION OF TERMS

SOIL MOISTURE SCALE (ATTERBERG LIMITS)	FIELD MOISTURE DESCRIPTION	GUIDE FOR FIELD MOISTURE DESCRIPTION
	- SATURATED - (SAT.)	USUALLY LIQUID; VERY WET, USUALLY FROM BELOW THE GROUND WATER TABLE
LL — LIQUID LIMIT (PLASTIC RANGE (PI))	- WET - (W)	SEMISOLID; REQUIRES DRYING TO ATTAIN OPTIMUM MOISTURE
PL — PLASTIC LIMIT	- MOIST - (M)	SOLID; AT OR NEAR OPTIMUM MOISTURE
OM — OPTIMUM MOISTURE		
SL — SHRINKAGE LIMIT	- DRY - (D)	REQUIRES ADDITIONAL WATER TO ATTAIN OPTIMUM MOISTURE

PLASTICITY

	PLASTICITY INDEX (PI)	DRY STRENGTH
NONPLASTIC	0-5	VERY LOW
LOW PLASTICITY	6-15	SLIGHT
MED. PLASTICITY	16-25	MEDIUM
HIGH PLASTICITY	26 OR MORE	HIGH

COLOR

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.

GRADATION

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.

ANGULARITY OF GRAINS

THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS IS DESIGNATED BY THE TERMS: ANGULAR, SUBANGULAR, SUBROUNDED, OR ROUNDED.

MINERALOGICAL COMPOSITION

MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHENEVER THEY ARE CONSIDERED OF SIGNIFICANCE.

COMPRESSIBILITY

SLIGHTLY COMPRESSIBLE	LIQUID LIMIT LESS THAN 31
MODERATELY COMPRESSIBLE	LIQUID LIMIT EQUAL TO 31-50
HIGHLY COMPRESSIBLE	LIQUID LIMIT GREATER THAN 50

PERCENTAGE OF MATERIAL

ORGANIC MATERIAL	GRANULAR SOILS	SILT - CLAY SOILS
TRACE OF ORGANIC MATTER	2 - 3%	3 - 5%
LITTLE ORGANIC MATTER	3 - 5%	5 - 12%
MODERATELY ORGANIC	5 - 10%	12 - 20%
HIGHLY ORGANIC	>10%	>20%

OTHER MATERIAL	
TRACE	1 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
HIGHLY	35% AND ABOVE

GROUND WATER

- WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING
- STATIC WATER LEVEL AFTER 24 HOURS
- PW — PERCHED WATER, SATURATED ZONE, OR WATER BEARING STRATA
- SPRING OR SEEP

MISCELLANEOUS SYMBOLS

- ROADWAY EMBANKMENT (RE) WITH SOIL DESCRIPTION
- SOIL SYMBOL
- ARTIFICIAL FILL (AF) OTHER THAN ROADWAY EMBANKMENT
- INFERRED SOIL BOUNDARY
- INFERRED ROCK LINE
- ALLUVIAL SOIL BOUNDARY
- 25/025 — DIP & DIP DIRECTION OF ROCK STRUCTURES
- SPT / DPT DMT / VST PMT — TEST BORING
- AUGER BORING
- CORE BORING
- MW — MONITORING WELL
- PIEZOMETER INSTALLATION
- SLOPE INDICATOR INSTALLATION
- CONE PENETROMETER TEST
- SOUNDING ROD
- TEST BORING W/ CORE
- SPT N-VALUE
- REF — SPT REFUSAL

ABBREVIATIONS

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
HI. - HIGHLY
MED. - MEDIUM
MICA. - MICACEOUS
MOD. - MODERATELY
NP - NON PLASTIC
ORG. - ORGANIC
PMT - PRESSUREMETER TEST
SAP. - SAPROLITIC
SD. - SAND, SANDY
SL. - SILT, SILTY
SLI. - SLIGHTLY
TCR - TRICONE REFUSAL
w - MOISTURE CONTENT
V - VERY
VST - VANE SHEAR TEST
WEA. - WEATHERED
γ - UNIT WEIGHT
γ_d - DRY UNIT WEIGHT

SAMPLE ABBREVIATIONS
S - BULK
SS - SPLIT SPOON
ST - SHELBY TUBE
RS - ROCK
RT - RECOMPACTED TRIAXIAL
CBR - CALIFORNIA BEARING RATIO

EQUIPMENT USED ON SUBJECT PROJECT

DRILL UNITS:
- [ ] MOBILE B- 57
- [ ] BK-51
- [ ] CME-45C
- [X] CME-550
- [ ] PORTABLE HOIST
- [ ] _____
- [ ] _____

ADVANCING TOOLS:
- [ ] CLAY BITS
- [ ] 6" CONTINUOUS FLIGHT AUGER
- [X] 8" HOLLOW AUGERS
- [ ] HARD FACED FINGER BITS
- [ ] TUNG.-CARBIDE INSERTS
- [X] CASING [ ] W/ ADVANCER
- [ ] TRICONE _____" STEEL TEETH
- [X] TRICONE 2 15/16 " TUNG.-CARB.
- [X] CORE BIT
- [ ] _____

HAMMER TYPE:
- [X] AUTOMATIC [ ] MANUAL

CORE SIZE:
- [ ] -B_____
- [X] -N 0 2
- [ ] -H_____

HAND TOOLS:
- [ ] POST HOLE DIGGER
- [ ] HAND AUGER
- [ ] SOUNDING ROD
- [ ] VANE SHEAR TEST
- [ ] _____

ROCK DESCRIPTION

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)	NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT N VALUES > 100 BLOWS PER FOOT IF TESTED.
CRYSTALLINE ROCK (CR)	FINE TO COARSE GRAIN IGNEOUS AND METAMORPHIC ROCK THAT WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES GRANITE, GNEISS, GABBRO, SCHIST, ETC.
NON-CRYSTALLINE ROCK (NCR)	FINE TO COARSE GRAIN METAMORPHIC AND NON-COASTAL PLAIN SEDIMENTARY ROCK THAT WOULD YEILD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES PHYLLITE, SLATE, SANDSTONE, ETC.
COASTAL PLAIN SEDIMENTARY ROCK (CP)	COASTAL PLAIN SEDIMENTS CEMENTED INTO ROCK, BUT MAY NOT YIELD SPT REFUSAL. ROCK TYPE INCLUDES LIMESTONE, SANDSTONE, CEMENTED SHELL BEDS, ETC.

WEATHERING

FRESH	ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING. ROCK RINGS UNDER HAMMER IF CRYSTALLINE.
VERY SLIGHT (V SLI.)	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 (SLI.)	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.

ROCK HARDNESS

VERY HARD	CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK.
HARD	CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. 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 GROOVED OR GOUGED 0.05 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK POINT. CAN BE EXCAVATED IN SMALL CHIPS TO PEICES 1 INCH MAXIMUM SIZE BY HARD BLOWS OF THE POINT OF A GEOLOGIST'S PICK.
SOFT	CAN BE GROVED 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 FINGERNAIL.

FRACTURE SPACING

TERM	SPACING
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

BEDDING

TERM	THICKNESS
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

INDURATION

FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF THE MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC.

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.

TERMS AND DEFINITIONS

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 DISLODGED 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 (N 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 (SREC.) - 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.

BENCH MARK: BM#1 (789,930 FT N, 1,694,932 FT E)
STA 20+81, 48' LT -L-
ELEVATION: 953.65 FT.

NOTES:
FIAD - FILLED IN AFTER DRILLING
CT - CORING TERMINATED

REVISED 09/23/09

PROJECT REFERENCE NO.	SHEET
42252.1.1 (B-5114)	3

SITE PLAN

0 30 60

FEET

NAD 83/NSRS 2007 NC GRID

N = BM #1
E = 789930
ELEV = 694932
WOODS
953.65

72" CHL W/ 3SBW

CONC

GRV

CONC

2 @ 10" CMP

72" CHL W/ 3SBW

HIGH POINT, THOMASVILLE AND DENTONVILLE RAILROAD (CSX)

BRDG NO. 118

18 19 20 21 22

B1-A

EB2-A

EB1-A

GAS TEST STATION

GAS VENT

EB1-B

BRDG NO. 136

24" RCP

B1-B

EB2-B

SR 1619 (PROSPECT STREET)

US 29-70/I-85 BUSINESS NBL

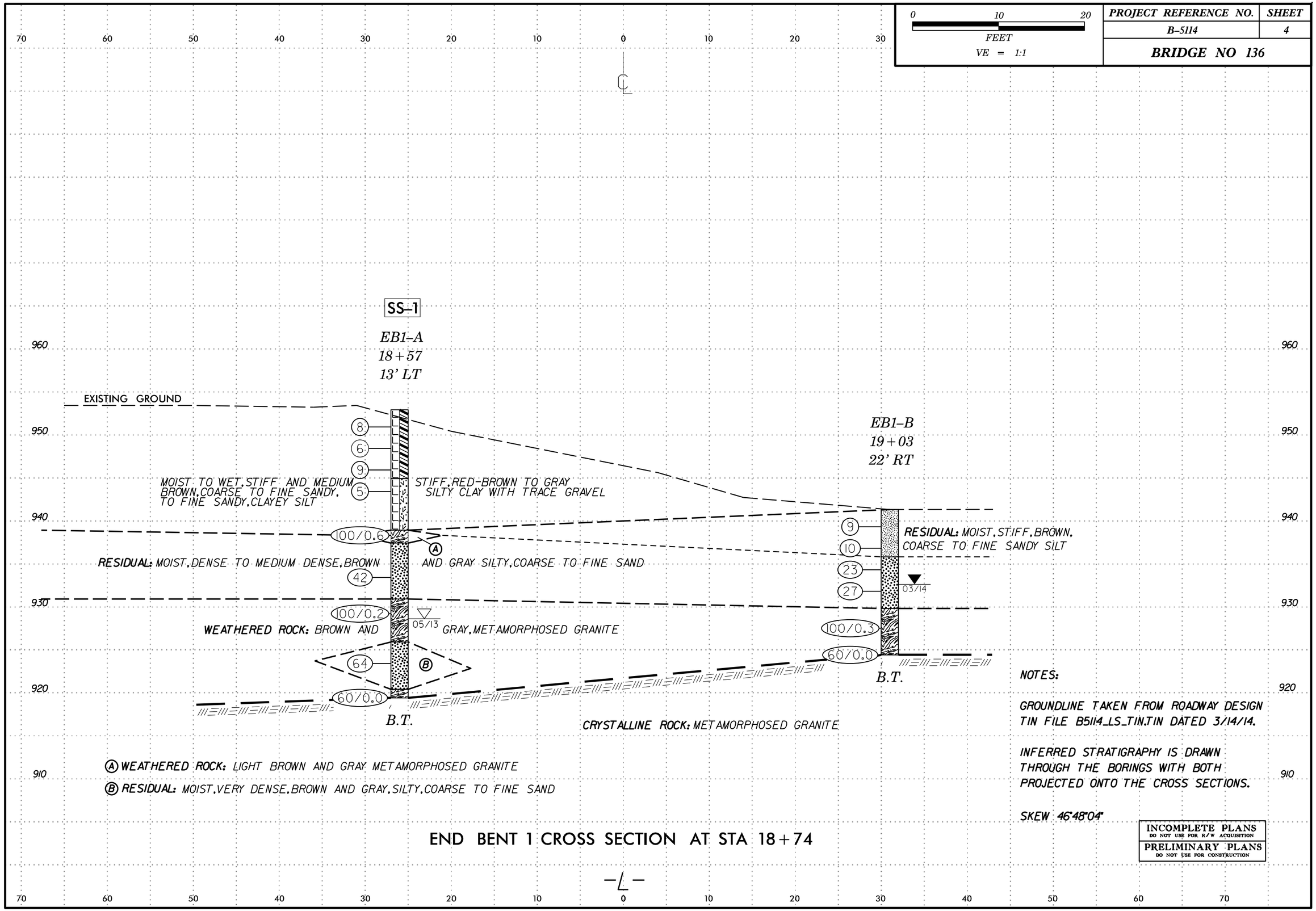
24" RCP

US 29-70/I-85 BUSINESS SBL

91

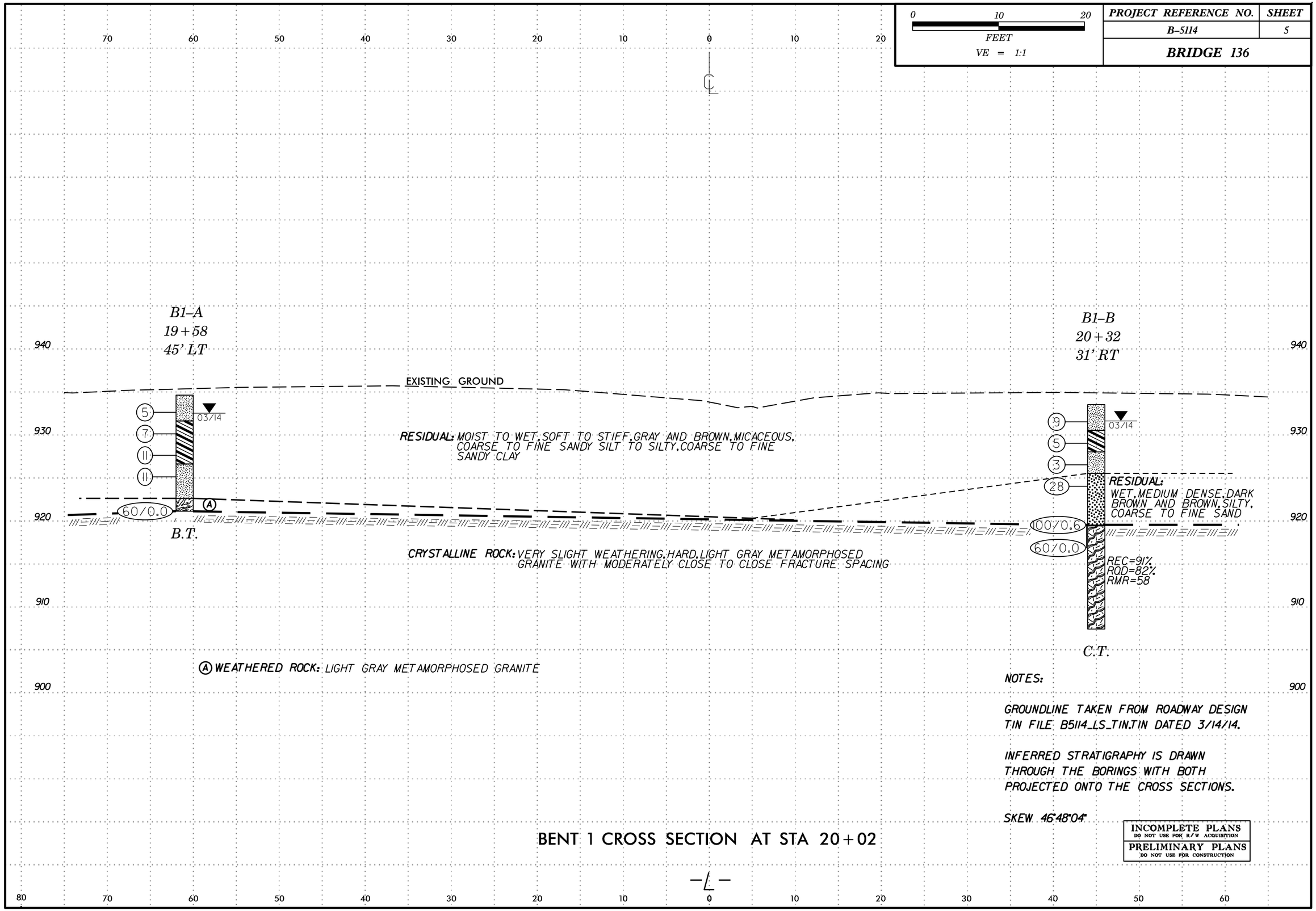
SKEW 46°48'04"

0 10 20 FEET VE = 1:1	PROJECT REFERENCE NO.	SHEET
	B-5114	4
	BRIDGE NO 136	



END BENT 1 CROSS SECTION AT STA 18+74

0 10 20 FEET VE = 1:1	PROJECT REFERENCE NO.	SHEET
	B-5114	5
	BRIDGE 136	



NOTES:

GROUNDLINE TAKEN FROM ROADWAY DESIGN TIN FILE B5114_LS_TIN.TIN DATED 3/14/14.

INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ONTO THE CROSS SECTIONS.

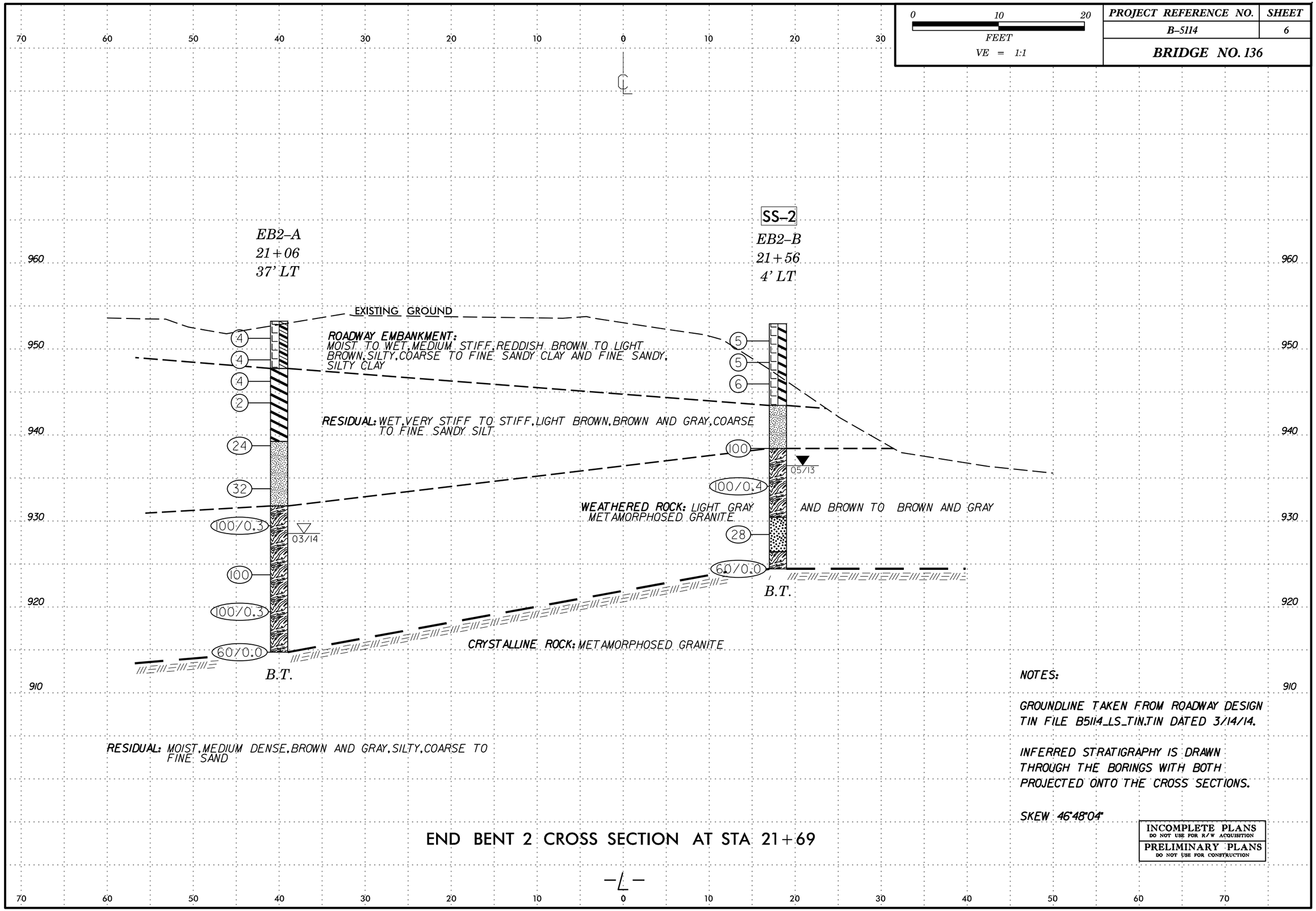
SKEW 46°48'04"

BENT 1 CROSS SECTION AT STA 20+02

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

0 10 20 FEET VE = 1:1	PROJECT REFERENCE NO.	SHEET
	B-5114	6
	BRIDGE NO. 136	



NOTES:

GROUNDLINE TAKEN FROM ROADWAY DESIGN TIN FILE B5114_LS_TIN.TIN DATED 3/14/14.

INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ONTO THE CROSS SECTIONS.

SKEW 46°48'04"

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

END BENT 2 CROSS SECTION AT STA 21+69

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

WBS 42252.1.1	**TIP** B-5114	**COUNTY** RANDOLPH	**GEOLOGIST** Wells, T. R.	
SITE DESCRIPTION Bridge No. 136 over US 29-70/I-85 Business on SR 1619 (Prospect St.)				**GROUND WTR (ft)**
BORING NO. EB1-A	**STATION** 18+57	**OFFSET** 13 ft LT	**ALIGNMENT** -L-	**0 HR.** 24.3
COLLAR ELEV. 952.8 ft	**TOTAL DEPTH** 33.5 ft	**NORTHING** 789,707	**EASTING** 1,694,892	**24 HR.** FIAD
DRILL RIG/HAMMER EFF./DATE TRI0055 CME-55 74% 02/15/2013		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER Toothman, R. E.	**START DATE** 05/13/13	**COMP. DATE** 05/13/13	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION ELEV. (ft)	DEPTH (ft)
955											
	951.8	1.0	2	4	4	8	SS-1	11%		952.8 GROUND SURFACE	0.0
950	949.3	3.5	3	3	3	6		W		**ROADWAY EMBANKMENT** Red-Brown, Coarse to Fine Sandy, Silty CLAY with Trace Gravel	
	946.8	6.0	4	4	5	9		W			
945	944.3	8.5	2	2	3	5		W		944.8 Gray-Brown, Fine Sandy, Clayey SILT	8.0
940	939.3	13.5	3	77	23/0.1	100/0.6				938.8	14.0
										937.3 **WEATHERED ROCK** Light Brown and Gray METAMORPHOSED GRANITE	15.5
935	934.3	18.5	15	21	21	42		M		**RESIDUAL** Brown and Gray, Silty Coarse to Fine SAND	
930	929.3	23.5	100/0.2			100/0.2				930.8 **WEATHERED ROCK** Brown and Gray METAMORPHOSED GRANITE	22.0
925	924.3	28.5	23	21	43	64		M		925.8 **RESIDUAL** Brown and Gray, Silty Coarse to Fine SAND	27.0
920	919.3	33.5	60/0.0			60/0.0				920.3	32.5
										919.3 **WEATHERED ROCK** Brown and Gray METAMORPHOSED GRANITE	33.5
										Boring Terminated with Standard Penetration Test Refusal at Elevation 919.3 ft on Crystalline Rock: METAMORPHOSED GRANITE	

WBS 42252.1.1	**TIP** B-5114	**COUNTY** RANDOLPH	**GEOLOGIST** Wells, T. R.	
SITE DESCRIPTION Bridge No. 136 over US 29-70/I-85 Business on SR 1619 (Prospect St.)				**GROUND WTR (ft)**
BORING NO. EB1-B	**STATION** 19+03	**OFFSET** 22 ft RT	**ALIGNMENT** -L-	**0 HR.** 13.2
COLLAR ELEV. 941.2 ft	**TOTAL DEPTH** 16.9 ft	**NORTHING** 789,739	**EASTING** 1,694,940	**24 HR.** 8.7
DRILL RIG/HAMMER EFF./DATE TRI8016 MOBILE B-57 92% 02/07/2014		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER Toothman, R. E.	**START DATE** 03/22/14	**COMP. DATE** 03/22/14	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
945										
940	940.2	1.0	3	3	6	9		M		941.2 GROUND SURFACE 0.0
	937.7	3.5	3	4	6	10		M		**RESIDUAL** Brown, Coarse to Fine Sandy SILT
935	935.2	6.0	7	10	13	23		M		935.7 5.5
	932.7	8.5	8	12	15	27		M		Brown, Silty, Coarse to Fine SAND
930	927.7	13.5	100/0.3			100/0.3				929.7 11.5
925	924.3	16.9	60/0.0			60/0.0				**WEATHERED ROCK** Light Brown METAMORPHOSED GRANITE
										924.3 16.9
										Boring Terminated with Standard Penetration Test Refusal at Elevation 924.3 ft on Crystalline Rock: METAMORPHOSED GRANITE

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

WBS 42252.1.1	**TIP** B-5114	**COUNTY** RANDOLPH	**GEOLOGIST** Wells, T. R.	
SITE DESCRIPTION Bridge No. 136 over US 29-70/I-85 Business on SR 1619 (Prospect St.)				**GROUND WTR (ft)**
BORING NO. B1-A	**STATION** 19+58	**OFFSET** 45 ft LT	**ALIGNMENT** -L-	**0 HR.** 9.0
COLLAR ELEV. 934.5 ft	**TOTAL DEPTH** 13.5 ft	**NORTHING** 789,812	**EASTING** 1,694,895	**24 HR.** 2.1
DRILL RIG/HAMMER EFF./DATE TRI8016 MOBILE B-57 92% 02/07/2014		**DRILL METHOD** H.S. Augers		**HAMMER TYPE** Automatic
DRILLER Toothman, R. E.	**START DATE** 03/22/14	**COMP. DATE** 03/22/14	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION ELEV. (ft)	DEPTH (ft)
935										934.5 GROUND SURFACE	0.0
	933.5	1.0	2	2	3	5				**RESIDUAL** Brown, Coarse to Fine Sandy SILT	
	931.0	3.5								931.5	3.0
930			2	3	4	7		W		Brown, Silty, Coarse to Fine Sandy CLAY	
	928.5	6.0	3	4	7	11		W			
	926.0	8.5								926.5	8.0
925			3	3	8	11		W		Brown, Silty, Coarse to Fine SAND	
										922.5	12.0
	921.0	13.5	60/0.0			60/0.0				**WEATHERED ROCK** 921.0 METAMORPHOSED GRANITE	13.5
										Boring Terminated with Standard Penetration Test Refusal at Elevation 921.0 ft on Crystalline Rock: METAMORPHOSED GRANITE	

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

WBS 42252.1.1	**TIP** B-5114	**COUNTY** RANDOLPH	**GEOLOGIST** Wells, T. R.	
SITE DESCRIPTION Bridge No. 136 over US 29-70/I-85 Business on SR 1619 (Prospect St.)				**GROUND WTR (ft)**
BORING NO. B1-B	**STATION** 20+32	**OFFSET** 31 ft RT	**ALIGNMENT** -L-	**0 HR.** 4.0
COLLAR ELEV. 933.4 ft	**TOTAL DEPTH** 26.1 ft	**NORTHING** 789,858	**EASTING** 1,694,991	**24 HR.** 1.9
DRILL RIG/HAMMER EFF./DATE TRI8016 MOBILE B-57 92% 02/07/2014		**DRILL METHOD** Mud Rotary	**HAMMER TYPE** Automatic	
DRILLER Toothman, R. E.	**START DATE** 03/20/14	**COMP. DATE** 03/20/14	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
										ELEV. (ft) DEPTH (ft)
935										
										933.4 GROUND SURFACE 0.0
	932.4	1.0								**RESIDUAL**
			3	4	5	9				Gray Brown, Micaceous, Coarse to Fine Sandy SILT
930	929.9	3.5								930.4 3.0
			2	2	3	5		W		Gray Brown, Silty, Coarse to Fine Sandy CLAY
	927.4	6.0								927.9 5.5
			WOH	WOH	3	3		W		Brown, Coarse to Fine Sandy SILT
925	924.9	8.5								925.4 8.0
			5	10	18	28		W		Dark Brown and Brown, Silty, Coarse to Fine SAND
920	919.9	13.5								
	919.3	14.1	26	74/0.1						919.4 14.0
			60/0.0			100/0.6 60/0.0				919.3 14.1 **WEATHERED ROCK** Light Gray METAMORPHOSED GRANITE
915										**CRYSTALLINE ROCK** Light Gray METAMORPHOSED GRANITE
							RS-1			R1 = 7, R2 = 17, R3 = 10, R4 = 20, R5 = 4, RMR = 58 ROCK CLASS III, ROCK TYPE E
910										907.3 26.1
										Boring Terminated at Elevation 907.3 ft in Crystalline Rock: METAMORPHOSED GRANITE

NCDOT GEOTECHNICAL ENGINEERING UNIT
CORE BORING REPORT

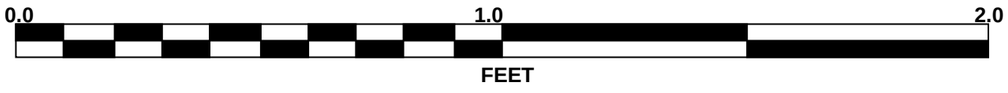
WBS 42252.1.1	**TIP** B-5114	**COUNTY** RANDOLPH	**GEOLOGIST** Wells, T. R.	
SITE DESCRIPTION Bridge No. 136 over US 29-70/I-85 Business on SR 1619 (Prospect St.)				**GROUND WTR (ft)**
BORING NO. B1-B	**STATION** 20+32	**OFFSET** 31 ft RT	**ALIGNMENT** -L-	**0 HR.** 4.0
COLLAR ELEV. 933.4 ft	**TOTAL DEPTH** 26.1 ft	**NORTHING** 789,858	**EASTING** 1,694,991	**24 HR.** 1.9
DRILL RIG/HAMMER EFF./DATE TRI8016 MOBILE B-57 92% 02/07/2014		**DRILL METHOD** Mud Rotary	**HAMMER TYPE** Automatic	
DRILLER Toothman, R. E.	**START DATE** 03/20/14	**COMP. DATE** 03/20/14	**SURFACE WATER DEPTH** N/A	
CORE SIZE NQ	**TOTAL RUN** 12.0 ft			

ELEV (ft)	RUN ELEV (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC. (ft) %	RUN RQD (ft) %	SAMP. NO.	STRATA REC. (ft) %	STRATA RQD (ft) %	LOG	DESCRIPTION AND REMARKS
											ELEV. (ft) DEPTH (ft)
919.3											Begin Coring @ 14.1 ft
	919.3	14.1	2.0	*N=60/0.0*	(1.7)	(1.7)		(10.9)	(9.8)		919.3 **CRYSTALLINE ROCK** 14.1
	917.3	16.1		4:30/1.0	85%	85%		91%	82%		Very Slight Weathering, Hard, Light Gray METAMORPHOSED GRANITE with Moderately Close to Close Fracture Spacing
				3:30/1.0							
915			5.0	2:45/1.0	(4.6)	(4.3)					R1 = 7, R2 = 17, R3 = 10, R4 = 20, R5 = 4, RMR = 58 ROCK CLASS III, ROCK TYPE E
				4:45/1.0	92%	86%					
				4:30/1.0							
	912.3	21.1		4:40/1.0			RS-1				
				4:30/1.0							
910			5.0	4:30/1.0	(4.6)	(3.8)					5 Fractures at 50 Degrees to 60 Degrees 3 Fractures at 20 Degrees to 30 Degrees 7 Fractures at 0 Degrees to 10 Degrees
				4:15/1.0	92%	76%					
				3:50/1.0							
				4:00/1.0							
	907.3	26.1		4:30/1.0							907.3 26.1
											Boring Terminated at Elevation 907.3 ft in Crystalline Rock: METAMORPHOSED GRANITE

CORE PHOTOGRAPHS

B1-B

BOXES 1 and 2: 14.1 - 26.1 FEET



NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

WBS 42252.1.1	**TIP** B-5114	**COUNTY** RANDOLPH	**GEOLOGIST** Wells, T. R.
SITE DESCRIPTION Bridge No. 136 over US 29-70/I-85 Business on SR 1619 (Prospect St.)			**GROUND WTR (ft)**
BORING NO. EB2-A	**STATION** 21+06	**OFFSET** 37 ft LT	**ALIGNMENT** -L-	**0 HR.** 24.7
COLLAR ELEV. 953.1 ft	**TOTAL DEPTH** 38.5 ft	**NORTHING** 789,950	**EASTING** 1,694,951	**24 HR.** FIAD
DRILL RIG/HAMMER EFF./DATE TRI8016 MOBILE B-57 92% 02/07/2014		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic
DRILLER Toothman, R. E.	**START DATE** 03/24/14	**COMP. DATE** 03/24/14	**SURFACE WATER DEPTH** N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION ELEV. (ft) DEPTH (ft)
955										953.1 GROUND SURFACE 0.0
	952.1	1.0	1	2	2	4		M		**ROADWAY EMBANKMENT** Reddish Brown, Silty, Coarse to Fine Sandy CLAY
950	949.6	3.5	1	2	2	4		W		
	947.1	6.0	1	2	2	4		W		947.6 5.5
945	944.6	8.5	WOH	1	1	2		W		**RESIDUAL** Reddish Brown, Coarse to Fine Sandy. Silty CLAY
940	939.6	13.5	2	12	12	24		M		939.1 14.0 Light Brown, Coarse to Fine Sandy SILT
935	934.6	18.5	5	9	23	32		M		931.6 21.5 **WEATHERED ROCK** Light Gray and Brown METAMORPHOSED GRANITE
930	929.6	23.5	100/0.3			100/0.3				
925	924.6	28.5	48	37	63	100				
920	919.6	33.5	100/0.3			100/0.3				
915	914.6	38.5	60/0.0			60/0.0				914.6 38.5 Boring Terminated with Standard Penetration Test Refusal at Elevation 914.6 ft on Crystalline Rock: METAMORPHOSED GRANITE

WBS 42252.1.1	**TIP** B-5114	**COUNTY** RANDOLPH	**GEOLOGIST** Wells, T. R.
SITE DESCRIPTION Bridge No. 136 over US 29-70/I-85 Business on SR 1619 (Prospect St.)			**GROUND WTR (ft)**
BORING NO. EB2-B	**STATION** 21+56	**OFFSET** 4 ft LT	**ALIGNMENT** -L-	**0 HR.** 25.3
COLLAR ELEV. 952.8 ft	**TOTAL DEPTH** 28.5 ft	**NORTHING** 789,986	**EASTING** 1,694,998	**24 HR.** 16.5
DRILL RIG/HAMMER EFF./DATE TRI0055 CME-55 74% 02/15/2013		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic
DRILLER Toothman, R. E.	**START DATE** 05/13/13	**COMP. DATE** 05/13/13	**SURFACE WATER DEPTH** N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
955										952.8 GROUND SURFACE 0.0
	951.8	1.0	2	2	3	5		M		**ROADWAY EMBANKMENT** Red-Brown to Light Brown, Fine Sandy, Silty CLAY
950	949.3	3.5	1	2	3	5	SS-2	32%		
	946.8	6.0	1	2	4	6		W		943.3 9.5
945										**RESIDUAL** Brown and Gray, Fine Sandy SILT
940	939.3	13.5	12	31	69					938.3 14.5
935	934.3	18.5	100/0.4			100/0.4				**WEATHERED ROCK** Brown and Gray METAMORPHOSED GRANITE
930	929.3	23.5	12	15	13	28		M		930.3 22.5 **RESIDUAL** Brown and Gray, Silty Coarse to Fine SAND
925	924.3	28.5	60/0.0			60/0.0				926.3 26.5 **WEATHERED ROCK** 924.3 Brown and Gray METAMORPHOSED GRANITE 28.5 Boring Terminated with Standard Penetration Test Refusal at Elevation 924.3 ft on Crystalline Rock: METAMORPHOSED GRANITE

LABORATORY SUMMARY FOR SOIL TEST DATA

PROJECT NO. 42252.1.1 (B-5114)
FA NO. BRZ-1619(5)
COUNTY: RANDOLPH
BRIDGE NO. 136 OVER US 29-70/I-85 BUSINESS ON SR 1619 IN HIGH POINT

									Atterberg Limits			Gradation Results							
Boring Number	Station	Offset	Alignment	Sample Depth (ft.)	Sample No.	Natural Moisture Content (%)	AASHTO Class (Group Index)	N-Value (blows/ ft.)	L.L.	P.L.	P.I.	Pass #10 Sieve	Pass #40 Sieve	Pass #200 Sieve	Retained #270 Sieve	Coarse Sand (%)	Fine Sand (%)	Silt (%)	Clay (%)
EB1-A	18+57	13' LT	-L-	1.0 - 2.5	SS-1	10.9	A-6 (5)	8	32	21	11	92.5	92.5	66.7	39.1	13.4	25.7	33.7	27.2
EB2-B	21+56	4' LT	-L-	3.5 -5.0	SS-2	32.3	A-7-5 (19)	5	51	32	19	99.7	98.0	84.2	18.5	4.1	14.4	40.7	40.8

SS = Split-Barrel Sample (ASTM-D-1586) ST = Shelby Tube (Undisturbed) Sample
S = Grab Sample
NP -- Non Plastic NA-- Non Applicable

Page: 1 of 1

Lab Technician: NCDOT Certification No.: 111-06-1203

Christopher Carroll

LABORATORY SUMMARY FOR ROCK CORE SAMPLES

Sample No.	Boring No.	Depth (ft)	Rock Type	Geologic Map Unit	Run RQD	Length (in)	Diameter (in)	Unit Weight (PCF)	Unconfined Compressive Strength (PSI)	Young's Modulus (PSI)	Splitting Tensile Strength (PSI)	Remarks
RS-1	B1-B	19.9-20.2	META. GRANITE	CZg	86	3.97	1.95	N/A	10,180	N/M	N/M	RMR=58

SITE PHOTOGRAPHS

View Looking North along -L- from End Bent 1

Profile of Bridge From B1-B Looking West