

REFERENCE: BD-5109V

PROJECT: 45355

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BD-5109V	1	9

STRUCTURE
SUBSURFACE INVESTIGATION

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9	SITE PHOTOGRAPH(S)

COUNTY DAVIDSON
PROJECT DESCRIPTION BRIDGE 011 OVER FIRST POTTS CREEK ON SR 1155 (SWICEGOOD RD.)

SITE DESCRIPTION _____

CAUTION NOTICE

THE SUBSURFACE INFORMATION AND THE SUBSURFACE INVESTIGATION ON WHICH IT IS BASED WERE MADE FOR THE PURPOSE OF STUDY, PLANNING AND DESIGN, AND NOT FOR CONSTRUCTION OR PAY PURPOSES. THE VARIOUS FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA AVAILABLE MAY BE REVIEWED OR INSPECTED IN RALEIGH BY CONTACTING THE N. C. DEPARTMENT OF TRANSPORTATION, GEOTECHNICAL ENGINEERING UNIT AT 1919 TOT-6850. THE SUBSURFACE PLANS AND REPORTS, FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA ARE NOT PART OF THE CONTRACT.

GENERAL SOIL AND ROCK STRATA DESCRIPTIONS AND INDICATED BOUNDARIES ARE BASED ON A GEOTECHNICAL INTERPRETATION OF ALL AVAILABLE SUBSURFACE DATA AND MAY NOT NECESSARILY REFLECT THE ACTUAL SUBSURFACE CONDITIONS BETWEEN BORINGS OR BETWEEN SAMPLED STRATA WITHIN THE BOREHOLE. THE LABORATORY SAMPLE DATA AND THE IN SITU (IN-PLACE) TEST DATA CAN BE RELIED ON ONLY TO THE DEGREE OF RELIABILITY INHERENT IN THE STANDARD TEST METHOD. THE OBSERVED WATER LEVELS OR SOIL MOISTURE CONDITIONS INDICATED IN THE SUBSURFACE INVESTIGATIONS ARE AS RECORDED AT THE TIME OF THE INVESTIGATION. THESE WATER LEVELS OR SOIL MOISTURE CONDITIONS MAY VARY CONSIDERABLY WITH TIME ACCORDING TO CLIMATIC CONDITIONS INCLUDING TEMPERATURES, PRECIPITATION AND WIND, AS WELL AS OTHER NON-CLIMATIC FACTORS.

THE BIDDER OR CONTRACTOR IS CAUTIONED THAT DETAILS SHOWN ON THE SUBSURFACE PLANS ARE PRELIMINARY ONLY AND IN MANY CASES THE FINAL DESIGN DETAILS ARE DIFFERENT. FOR BIDDING AND CONSTRUCTION PURPOSES, REFER TO THE CONSTRUCTION PLANS AND DOCUMENTS FOR FINAL DESIGN INFORMATION ON THIS PROJECT. THE DEPARTMENT DOES NOT WARRANT OR GUARANTEE THE SUFFICIENCY OR ACCURACY OF THE INVESTIGATION MADE, NOR THE INTERPRETATIONS MADE, OR OPINION OF THE DEPARTMENT AS TO THE TYPE OF MATERIALS AND CONDITIONS TO BE ENCOUNTERED. THE BIDDER OR CONTRACTOR IS CAUTIONED TO MAKE SUCH INDEPENDENT SUBSURFACE INVESTIGATIONS AS HE DEEMS NECESSARY TO SATISFY HIMSELF AS TO CONDITIONS TO BE ENCOUNTERED ON THE PROJECT. THE CONTRACTOR SHALL HAVE NO CLAIM FOR ADDITIONAL COMPENSATION OR FOR AN EXTENSION OF TIME FOR ANY REASON RESULTING FROM THE ACTUAL CONDITIONS ENCOUNTERED AT THE SITE DIFFERING FROM THOSE INDICATED IN THE SUBSURFACE INFORMATION.

- NOTES:
1. THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS ACCURATE NOR IS IT CONSIDERED PART OF THE PLANS, SPECIFICATIONS OR CONTRACT FOR THE PROJECT.
 2. BY HAVING REQUESTED THIS INFORMATION, THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIMS FOR INCREASED COMPENSATION OR EXTENSION OF TIME BASED ON DIFFERENCES BETWEEN THE CONDITIONS INDICATED HEREIN AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

PERSONNEL

J.K. STICKNEY

C.L. SMITH

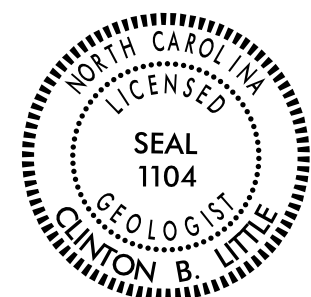
INVESTIGATED BY J.E. BEVERLY

DRAWN BY J.K. McCLURE

CHECKED BY C.B. LITTLE

SUBMITTED BY C.B. LITTLE

DATE OCTOBER 2014



DocuSigned by:
Clinton B. Little 10/14/2014

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS GEOTECHNICAL ENGINEERING UNIT

SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

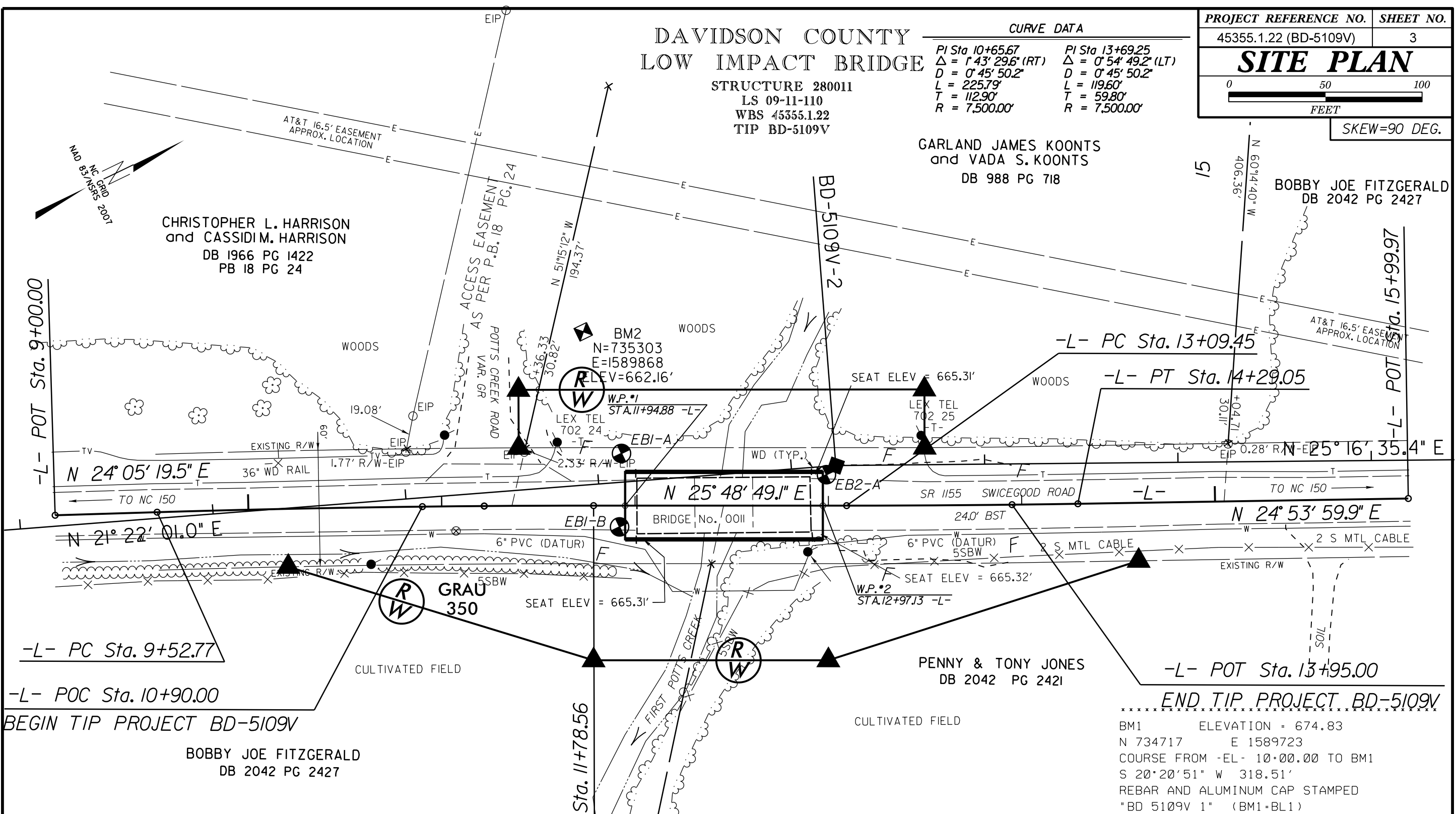
SOIL DESCRIPTION										GRADATION										ROCK DESCRIPTION										TERMS AND DEFINITIONS																																																																																																																																																																														
SOIL IS CONSIDERED UNCONSOLIDATED, 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 THE STANDARD PENETRATION TEST (AASHTO T 209, ASTM D1586). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM. BASIC DESCRIPTIONS GENERALLY INCLUDE THE FOLLOWING: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH AS MINERALOGICAL COMPOSITION, ANGULARITY, STRUCTURE, PLASTICITY, ETC. FOR EXAMPLE, VERY STIFF, GRAY, SILTY CLAY, MOIST WITH INTERBEDDED FINE SAND LAYERS, HIGHLY PLASTIC, A-7-6										WELL GRADED - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE. UNIFORMLY GRADED - INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE. GAP-GRADED - INDICATES A MIXTURE OF UNIFORM PARTICLE SIZES OF TWO OR MORE SIZES.										HARD ROCK IS NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT REFUSAL IF TESTED. 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 YIELD 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.										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, SUCH 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 (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 (SROD) - 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. 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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.										N 735303 E I589868										ELEVATION: 662.16 FEET																																																																																																																																																																																								

DAVIDSON COUNTY LOW IMPACT BRIDGE

STRUCTURE 280011
LS 09-11-110
WBS 45355.1.22
TIP BD-5109V

CURVE DATA	
PI Sta 10+65.67	PI Sta 13+69.25
$\Delta = 1^{\circ}43'29.6"$ (RT)	$\Delta = 0^{\circ}54'49.2"$ (LT)
$D = 0^{\circ}45'50.2"$	$D = 0^{\circ}45'50.2"$
$L = 225.79'$	$L = 119.60'$
$T = 112.90'$	$T = 59.80'$
$R = 7,500.00'$	$R = 7,500.00'$

PROJECT REFERENCE NO. 45355.1.22 (BD-5109V)	SHEET NO. 3
SITE PLAN	
SKEW=90 DEG.	



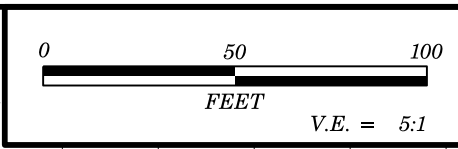
DATUM DESCRIPTION
THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "BD-5109V-1" WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF NORTHING: 734717.419(±) EASTING: 1589723.308(±) ELEVATION: 674.83(±±) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9998846939 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "BD-5109V-1" TO -L- STATION IS

ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

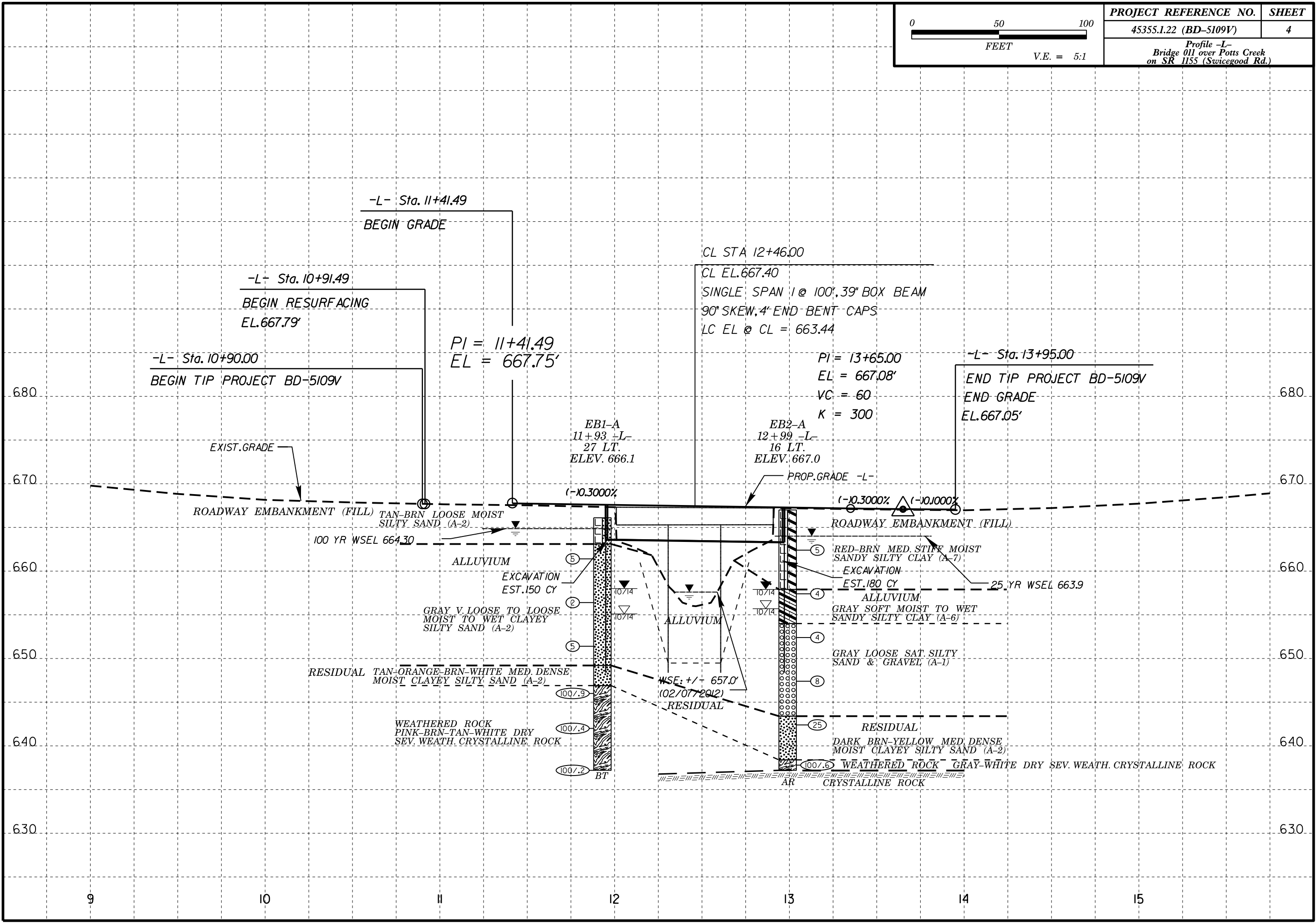
BL	POINT	DESC.	NORTH	EAST	ELEVATION	EL STATION	OFFSET
	1	BD-5109V-1	734717.4190	1589723.3080	674.83	OUTSIDE PROJECT LIMITS	
	2	BD-5109V-2	735390.7524	1589986.7365	666.62	14+03.84	20.73 LT
	3	BD-5109V-3	735865.6147	1590210.9645	674.72	OUTSIDE PROJECT LIMITS	

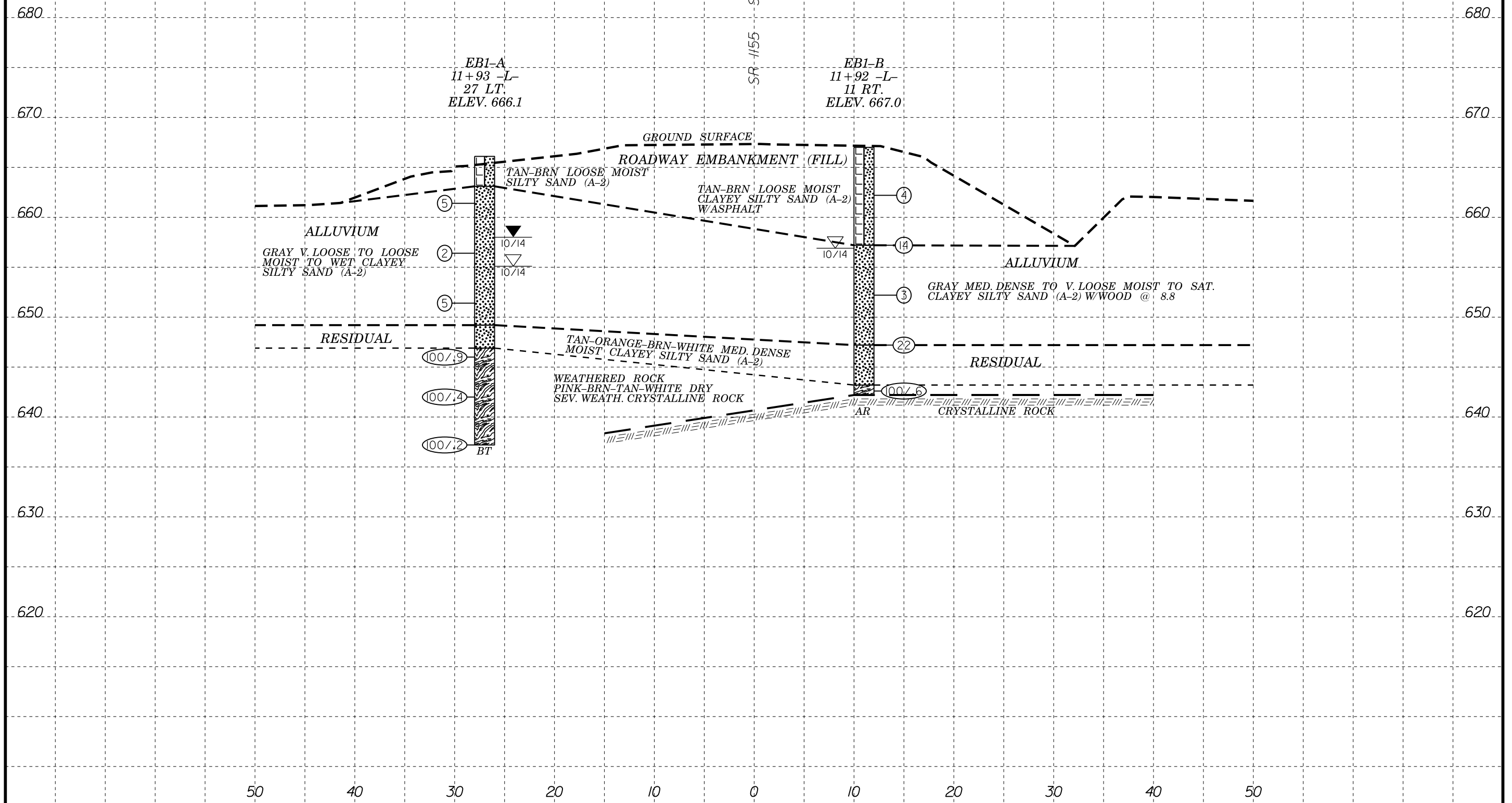
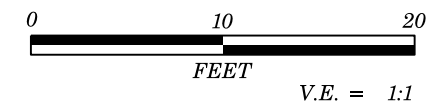
 BM1 ELEVATION = 674.83
 N 734717 E 1589723
 COURSE FROM -EL- 10+00.00 TO BM1
 S 20°20'51" W 318.51'
 REBAR AND ALUMINUM CAP STAMPED
 "BD 5109V 1" (BM1=BL1)

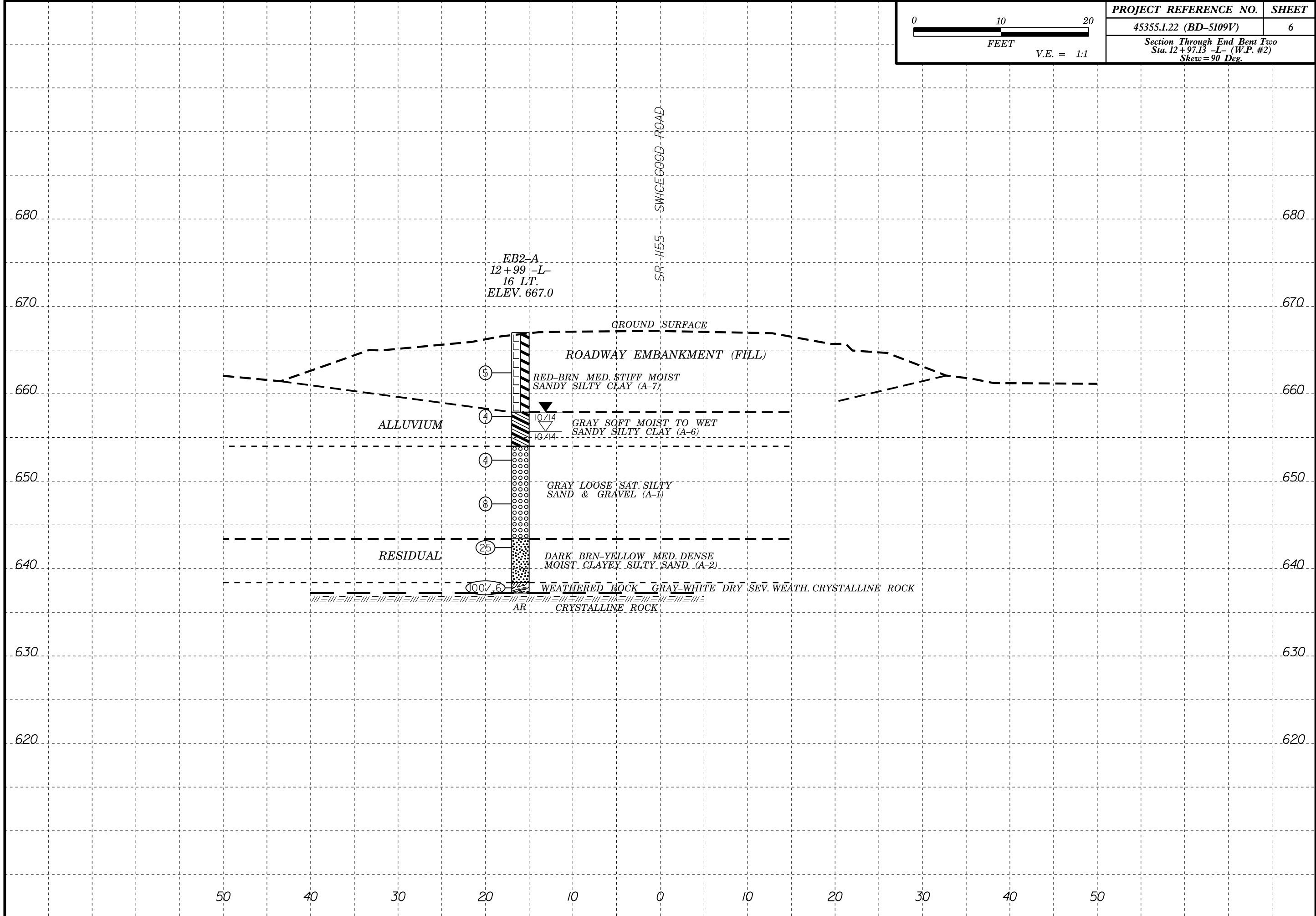
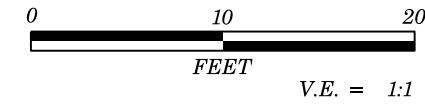
 BM2 ELEVATION = 662.16
 N 735303 E 1589868
 EL STATION 12+73.00 90 LEFT
 R/R SPIKE SET IN BASE OF 24" OAK TREE



PROJECT REFERENCE NO.	SHEET
45355.1.22 (BD-5109V)	4
Profile -L- Bridge 011 over Potts Creek on SR 1155 (Swicegood Rd.)	







EB2-A
12+99 -L-
16 LT.
ELEV. 667.0

SR-155 SWICEGOOD ROAD

GROUND SURFACE

ROADWAY EMBANKMENT (FILL)

RED-BRN MED. STIFF MOIST
SANDY SILTY CLAY (A-7)

5

ALLUVIUM

4

GRAY SOFT MOIST TO WET
SANDY SILTY CLAY (A-6)

4

GRAY LOOSE SAT. SILTY
SAND & GRAVEL (A-1)

8

RESIDUAL

25

DARK BRN-YELLOW MED. DENSE
MOIST CLAYEY SILTY SAND (A-2)

100/6

WEATHERED ROCK GRAY-WHITE DRY SEV. WEATH. CRYSTALLINE ROCK
CRYSTALLINE ROCK

AR

50 40 30 20 10 0 10 20 30 40 50

NCDOT GEOTECHNICAL ENGINEERING UNIT BORELOG REPORT

WBS 45355.1.22	TIP BD-5109V	COUNTY DAVIDSON	GEOLOGIST Stickney, J. K.
SITE DESCRIPTION BRIDGE 011 OVER FIRST POTTS CREEK ON SR 1155 (SWICEGOOD RD.)			GROUND WTR (ft)
BORING NO. EB1-A	STATION 11+93	OFFSET 27 ft LT	ALIGNMENT -L-
COLLAR ELEV. 666.1 ft	TOTAL DEPTH 28.9 ft	NORTHING 735,294	EASTING 1,589,933
DRILL RIG/HAMMER EFF./DATE HFO0072 CME-550 88% 03/19/2014		DRILL METHOD H.S. Augers	HAMMER TYPE Automatic
DRILLER Smith, C. L.	START DATE 10/06/14	COMP. DATE 10/06/14	SURFACE WATER DEPTH N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
670															
665													GROUND SURFACE	0.0	
	662.4	3.7	1	2	3							M	ROADWAY EMBANKMENT TAN-BRN LOOSE MOIST SILTY SAND (A-2)	3.0	
660	657.4	8.7	1	1	1								ALLUVIAL GRAY V. LOOSE TO LOOSE MOIST TO WET CLAYEY SILTY SAND (A-2)		
655	652.4	13.7	2	2	3										
650	647.4	18.7	9	27	73/0.4							MW	RESIDUAL TAN-ORANGE-BRN-WHITE MED. DENSE MOIST CLAYEY SILTY SAND (A-2)	19.2	
645	642.4	23.7	100/0.4										WEATHERED ROCK PINK-BRN-TAN-WHITE DRY SEV. WEATH. CRYSTALLINE ROCK	100/0.4	
640	637.4	28.7	100/0.2									D	Boring Terminated at Elevation 637.2 ft IN SEV. WEATH. CRYSTALLINE ROCK	100/0.2	

WBS 45355.1.22	TIP BD-5109V	COUNTY DAVIDSON	GEOLOGIST Stickney, J. K.
SITE DESCRIPTION BRIDGE 011 OVER FIRST POTTS CREEK ON SR 1155 (SWICEGOOD RD.)			GROUND WTR (ft)
BORING NO. EB1-B	STATION 11+92	OFFSET 11 ft RT	ALIGNMENT -L-
COLLAR ELEV. 667.0 ft	TOTAL DEPTH 24.8 ft	NORTHING 735,276	EASTING 1,589,967
DRILL RIG/HAMMER EFF./DATE HFO0072 CME-550 88% 03/19/2014		DRILL METHOD H.S. Augers	HAMMER TYPE Automatic
DRILLER Smith, C. L.	START DATE 10/07/14	COMP. DATE 10/07/14	SURFACE WATER DEPTH N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
670															
665													GROUND SURFACE	0.0	
	663.2	3.8	1	2	2							M	ROADWAY EMBANKMENT TAN-BRN LOOSE MOIST CLAYEY SILTY SAND (A-2) W/ ASPHALT	3.0	
660	658.2	8.8	4	10	4										
655	653.2	13.8	1	2	1							Sat.	ALLUVIAL GRAY MED. DENSE TO V. LOOSE MOIST TO SAT. CLAYEY SILTY SAND (A-2) W/ WOOD @ 8.8	9.8	
650	648.2	18.8	4	11	11										
645	643.2	23.8	68	32/0.1								M	RESIDUAL TAN-ORANGE-BRN-WHITE MED. DENSE MOIST CLAYEY SILTY SAND (A-2)	19.8	
	642.2	24.8											WEATHERED ROCK PINK-BRN-TAN-WHITE SEV. WEATH. CRYSTALLINE ROCK	24.8	
													Boring Terminated BY AUGER REFUSAL at Elevation 642.2 ft ON CRYSTALLINE ROCK		

NCDOT BORE DOUBLE BD5109V_GEO_BH_BRD0011.GPJ NC_DOT_GDT 10/9/14

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

WBS 45355.1.22	TIP BD-5109V	COUNTY DAVIDSON	GEOLOGIST Stickney, J. K.
SITE DESCRIPTION BRIDGE 011 OVER FIRST POTTS CREEK ON SR 1155 (SWICEGOOD RD.)			GROUND WTR (ft)
BORING NO. EB2-A	STATION 12+99	OFFSET 16 ft LT	ALIGNMENT -L-
COLLAR ELEV. 667.0 ft	TOTAL DEPTH 29.8 ft	NORTHING 735,384	EASTING 1,589,989
DRILL RIG/HAMMER EFF./DATE HFO0072 CME-550 88% 03/19/2014		DRILL METHOD H.S. Augers	HAMMER TYPE Automatic
DRILLER Smith, C. L.	START DATE 10/06/14	COMP. DATE 10/06/14	SURFACE WATER DEPTH N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
670																
														667.0	GROUND SURFACE	0.0
665	663.4	3.6	1	2	3										ROADWAY EMBANKMENT RED-BRN MED. STIFF MOIST SANDY SILTY CLAY (A-7)	
660	658.4	8.6	3	2	2											
655	653.4	13.6	1	2	2									657.9	ALLUVIAL GRAY SOFT MOIST TO WET SANDY SILTY CLAY (A-6)	9.1
650	648.4	18.6	1	4	4									654.0	ALLUVIAL GRAY LOOSE SAT. SILTY SAND & GRAVEL (A-1)	13.0
645	643.4	23.6	8	10	15											
640	638.4	28.6	77	23/0.1										643.4	RESIDUAL DARK BRN-YELLOW MED. DENSE MOIST CLAYEY SILTY SAND (A-2)	23.6
														638.4		28.6
														637.2	WEATHERED ROCK GRAY-WHITE DRY SEV. WEATH. CRYSTALLINE ROCK	29.8
															Boring Terminated BY AUGER REFUSAL at Elevation 637.2 ft ON CRYSTALLINE ROCK	

NCDOT BORE DOUBLE BD5109V_GEO_BH_BRD0011.GPJ NC_DOT.GDT 10/9/14

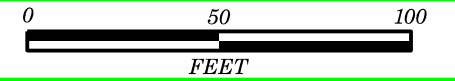
DAVIDSON COUNTY LOW IMPACT BRIDGE

STRUCTURE 280011
LS 09-11-110
WBS 45355.1.22
TIP BD-5109V

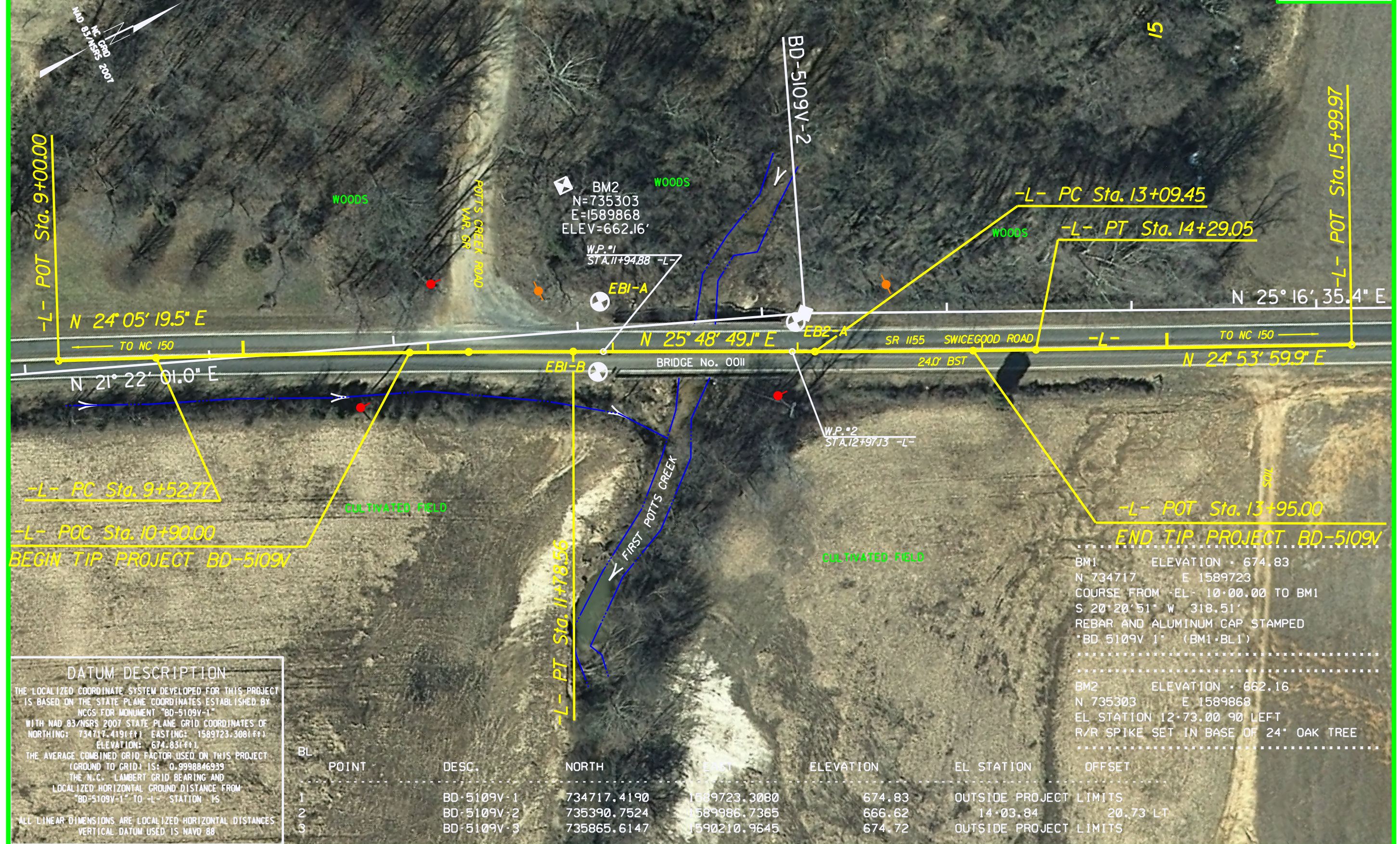
PROJECT REFERENCE NO. SHEET NO.

45355.1.22 (BD-5109V) 9

Aerial Photo



SKEW=90 DEG.



BEGIN TIP PROJECT BD-5109V

END TIP PROJECT BD-5109V

DATUM DESCRIPTION
THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "BD-5109V-1" WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF NORTHING: 734717.4191(±) EASTING: 1589723.3081(±) ELEVATION: 674.83(±±). THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9998846939. THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "BD-5109V-1" TO "L-" STATION IS

ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

BM1 ELEVATION - 674.83
N 734717 E 1589723
COURSE FROM EL - 10+00.00 TO BM1
S 20°20'51" W 318.51'
REBAR AND ALUMINUM CAP STAMPED
"BD 5109V 1" (BM1-BL1)

BM2 ELEVATION - 662.16
N 735303 E 1589868
EL STATION 12+73.00 90 LEFT
R/R SPIKE SET IN BASE OF 24" OAK TREE

BL	POINT	DESC.	NORTH	EAST	ELEVATION	EL STATION	OFFSET
1	BD-5109V-1		734717.4190	1589723.3080	674.83	OUTSIDE PROJECT LIMITS	
2	BD-5109V-2		735390.7524	1589986.7365	666.62	14+03.84	20.73 LT
3	BD-5109V-3		735865.6147	1590210.9645	674.72	OUTSIDE PROJECT LIMITS	