

REFERENCE: BD-5109AC

PROJECT: 45355

CONTENTS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	LEGEND
3	SITE PLAN
4	PROFILE(S)
5-6	CROSS SECTION(S)
7-8	BORE LOG(S)
9	SITE PHOTOGRAPH(S)

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

STRUCTURE
SUBSURFACE INVESTIGATION

COUNTY FORSYTH

PROJECT DESCRIPTION BRIDGE 283 ON SR 1893
(PRIDY FARM RD.) OVER MUDDY CREEK

SITE DESCRIPTION _____

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

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 (919) 707-6850. 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 10/8/2014





SIGNATURE

DATE

**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 206, 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 60 BLOWS PER FOOT 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:	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 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 (ROD) - 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 60 BLOWS PER FOOT. 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.
SOIL LEGEND AND AASHTO CLASSIFICATION	ANGULARITY OF GRAINS THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS IS DESIGNATED BY THE TERMS: ANGULAR, SUBANGULAR, SUBROUNDED, OR ROUNDED.	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 (ICR)  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 (CPS)  COASTAL PLAIN SEDIMENTS CEMENTED INTO ROCK, BUT MAY NOT YIELD SPT REFUSAL. ROCK TYPE INCLUDES LIMESTONE, SANDSTONE, CEMENTED SHELL BEDS, ETC.	
MINERALOGICAL COMPOSITION MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHEN THEY ARE CONSIDERED OF SIGNIFICANCE.	COMPRESSIBILITY SLIGHTLY COMPRESSIBLE LL < 31 MODERATELY COMPRESSIBLE LL = 31 - 50 HIGHLY COMPRESSIBLE LL > 50	WEATHERING 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 1/4 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, WOULD YIELD SPT N VALUES > 100 BPF. VERY SEVERE (V SEV.) - ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED, ROCK FABRIC ELEMENTS ARE DISCERNIBLE BUT MASS IS EFFECTIVELY REDUCED TO SOIL STATUS, WITH ONLY FRAGMENTS OF STRONG ROCK REMAINING. SAPROLITE IS AN EXAMPLE OF ROCK WEATHERED TO A DEGREE THAT ONLY MINOR VESTIGES OF ORIGINAL ROCK FABRIC REMAIN. IF TESTED, WOULD YIELD 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.	
SOIL CLASSIFICATION TABLE	PERCENTAGE OF MATERIAL ORGANIC MATERIAL GRANULAR SOILS SILT-CLAY SOILS OTHER MATERIAL TRACE OF ORGANIC MATTER 2 - 3% 3 - 5% TRACE 1 - 10% LITTLE ORGANIC MATTER 3 - 5% 5 - 12% LITTLE 10 - 20% MODERATELY ORGANIC 5 - 10% 12 - 20% SOME 20 - 35% HIGHLY ORGANIC > 10% > 20% HIGHLY 35% AND ABOVE		
USUAL TYPES OF MAJOR MATERIALS	GROUND WATER ▽ WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING ▽ 24 STATIC WATER LEVEL AFTER 24 HOURS ▽ PM PERCHED WATER, SATURATED ZONE, OR WATER BEARING STRATA ○ SPRING OR SEEP		
CONSISTENCY OR DENSENESS	MISCELLANEOUS SYMBOLS		
TEXTURE OR GRAIN SIZE	RECOMMENDATION SYMBOLS		
SOIL MOISTURE - CORRELATION OF TERMS	ABBREVIATIONS		
PLASTICITY	EQUIPMENT USED ON SUBJECT PROJECT		
COLOR	INDURATION		

BENCHMARKS (NAVD88)

 BM1 ELEVATION = 928.47'
 N 915736 E 1609624
 EL STATION 11+46 112' LEFT
 RR SPIKE IN SOUTH ROOT OF A BLACK WALNUT

 2 ELEVATION = 927.66'
 N 915265 E 1609845
 EL STATION 16+41
 REBAR WITH ALUMINUM CAP STAMPED
 "GPS BD5109AB-2" (SET FLUSH WITH GROUND).
 POINT LIES 4.3' SOUTH OF EDGE OF
 TUTTLE ROAD.

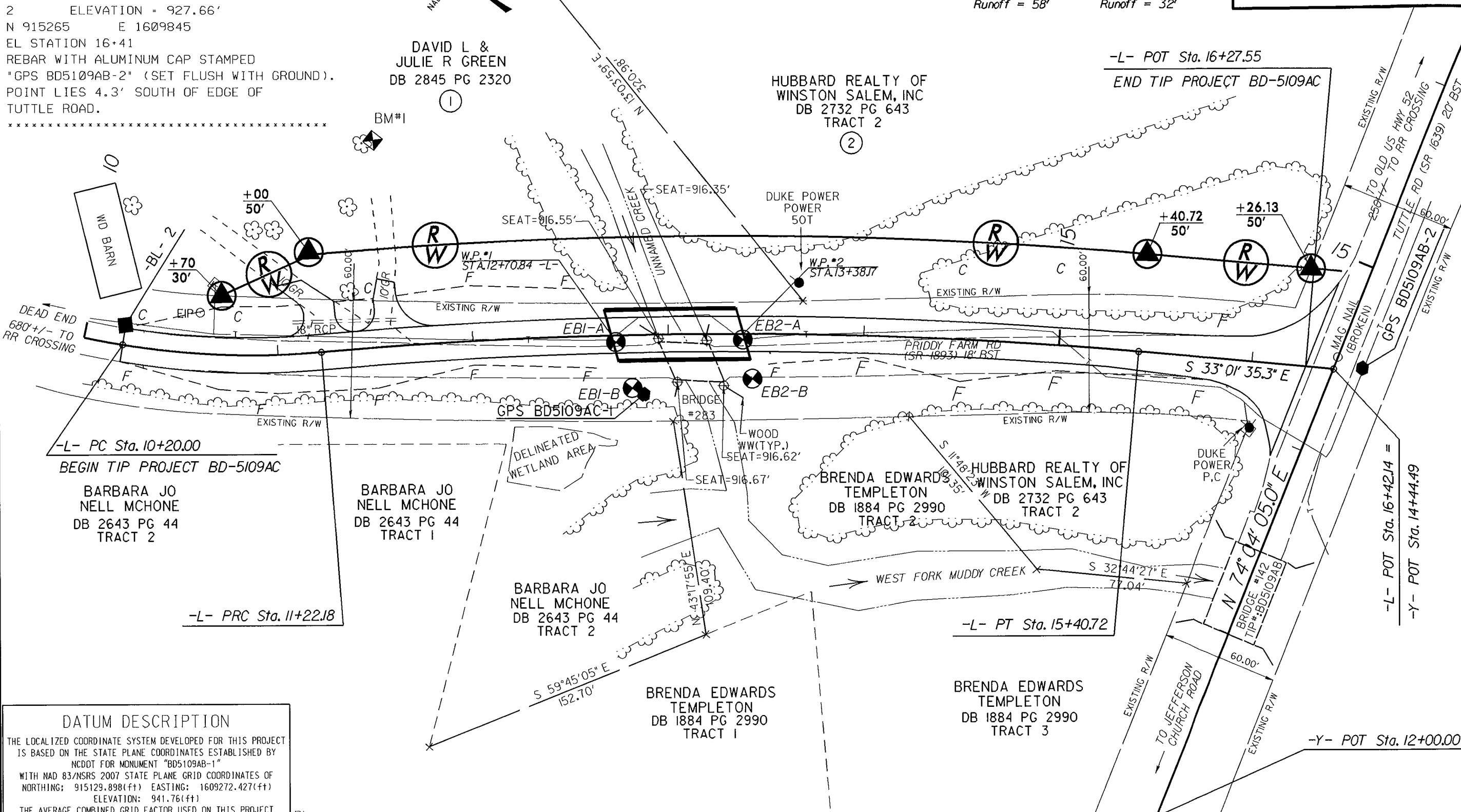
FORSYTH COUNTY LOW IMPACT BRIDGE

LS 09-12-063
 WBS 45355.129
 TIP BD-5109-AC

-L- CURVE DATA

PI Sta 10+61.55	PI Sta 13+31.98
$\Delta = 17^{\circ}04'26.1"$ (LT)	$\Delta = 9^{\circ}59'30.9"$ (RT)
D = 13'58'28.5"	D = 2'23'14.4"
L = 122.18'	L = 418.54'
T = 61.55'	T = 209.80'
R = 410.00'	R = 2,400.00'
e = 4.0%	e = 2.2%
Ds = 35mph	Ds = 35mph
Runoff = 58'	Runoff = 32'

PROJECT REFERENCE NO.	SHEET
45355.129 (BD-5109AC)	3
SITE PLAN	
SKEW=75 DEG.	



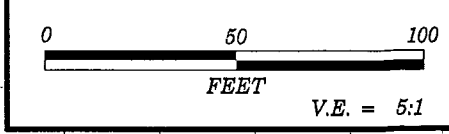
DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "BD5109AB-1" WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF NORTHING: 915129.898(ft) EASTING: 1609272.427(ft) ELEVATION: 941.76(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9999867881 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "BD5109AB-1" TO -L- STATION IS

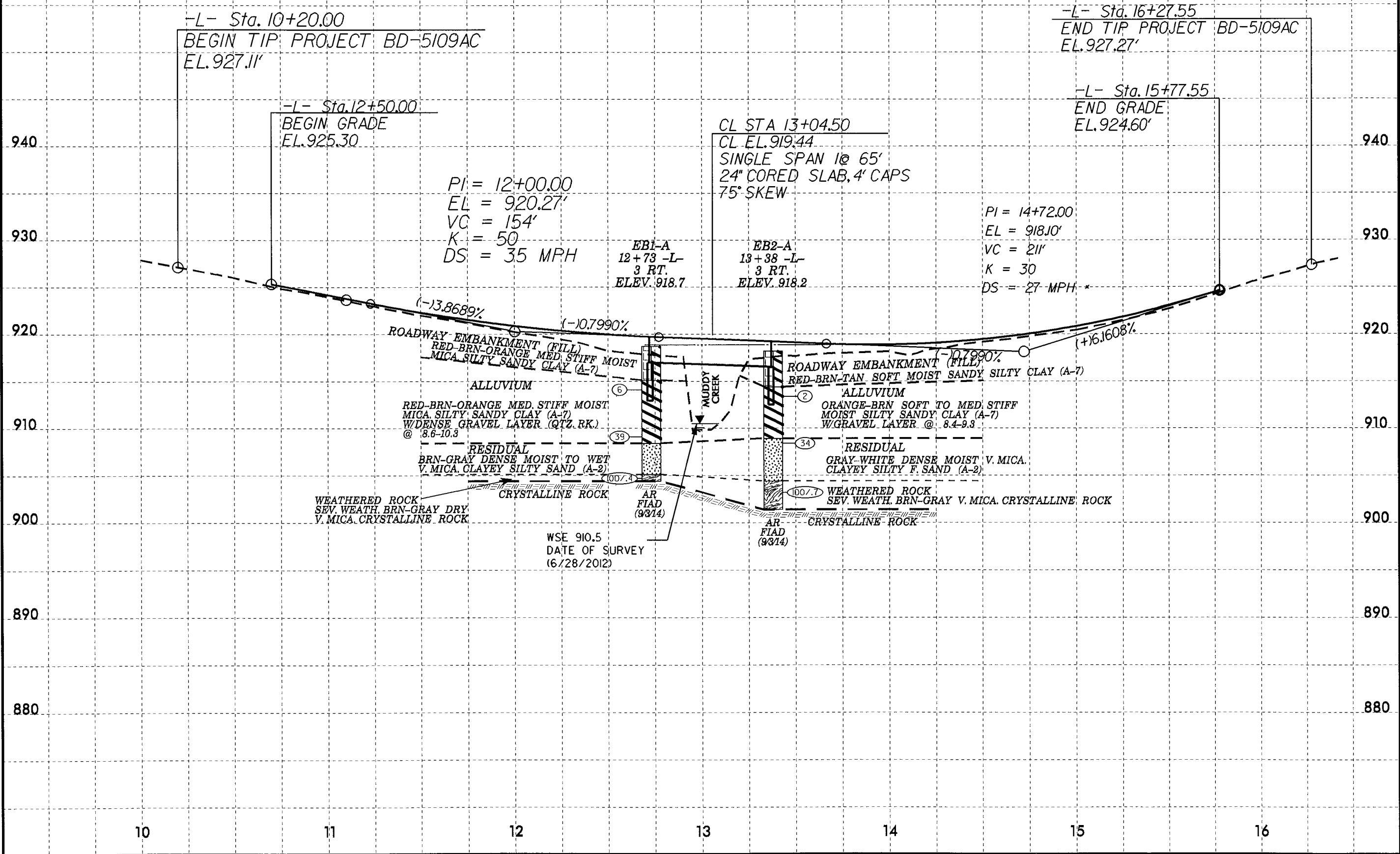
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

POINT	DESC.	NORTH	EAST	ELEVATION	ELLAC STATION	OFFSET
AC2	BL-2	915778.0721	1609471.7887	926.40	10+19.89	10.23 LT
AC1	GPS BD5109AC-1	915547.2750	1609607.2934	917.94	12+87.10	16.30 RT
2	GPS BD5109AB-2	915264.5210	1609845.0910	927.66	OUTSIDE PROJECT LIMITS	

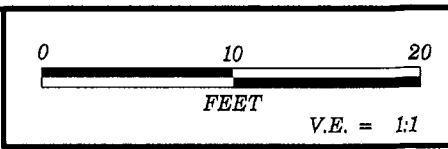
NOTE:
 BORINGS ARE LOCATED OFF OF CHAIN -LREV- FROM Job9AC.gpk.
 CHAIN -LREV- IS SHOWN ON THE PLAN VIEW AS -L-.
 BORINGS SHOWN WITH -L- TO COINCIDE WITH PLAN VIEW.



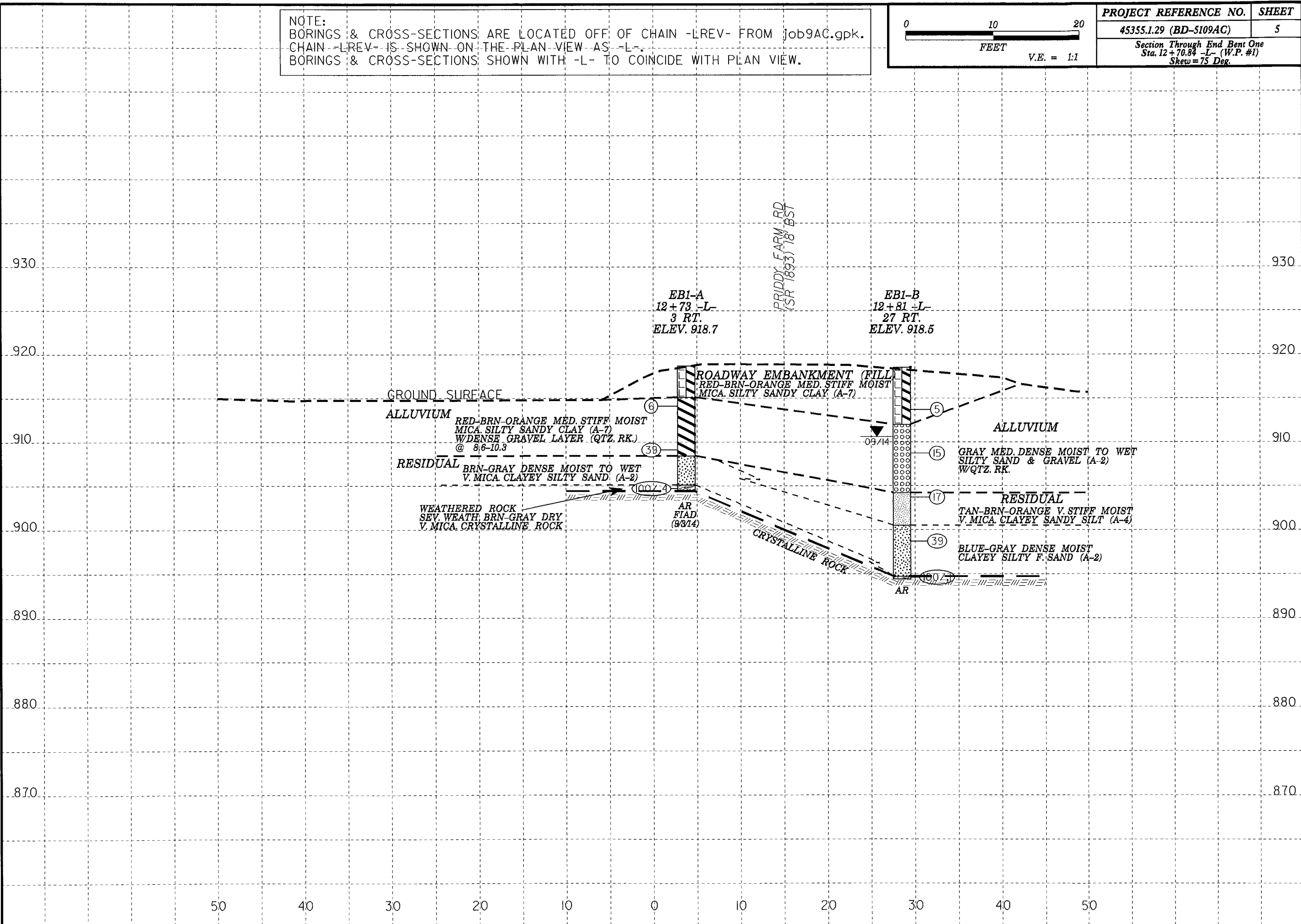
PROJECT REFERENCE NO.	SHEET
45355.1.29 (BD-5109AC)	4
Profile -L-	
(Note: Profile cut along Chain -LREV-)	



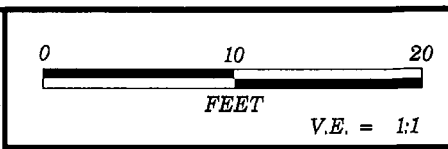
NOTE:
 BORINGS & CROSS-SECTIONS ARE LOCATED OFF OF CHAIN -LREV- FROM job9AC.gpk.
 CHAIN -LREV- IS SHOWN ON THE PLAN VIEW AS -L-
 BORINGS & CROSS-SECTIONS SHOWN WITH -L- TO COINCIDE WITH PLAN VIEW.



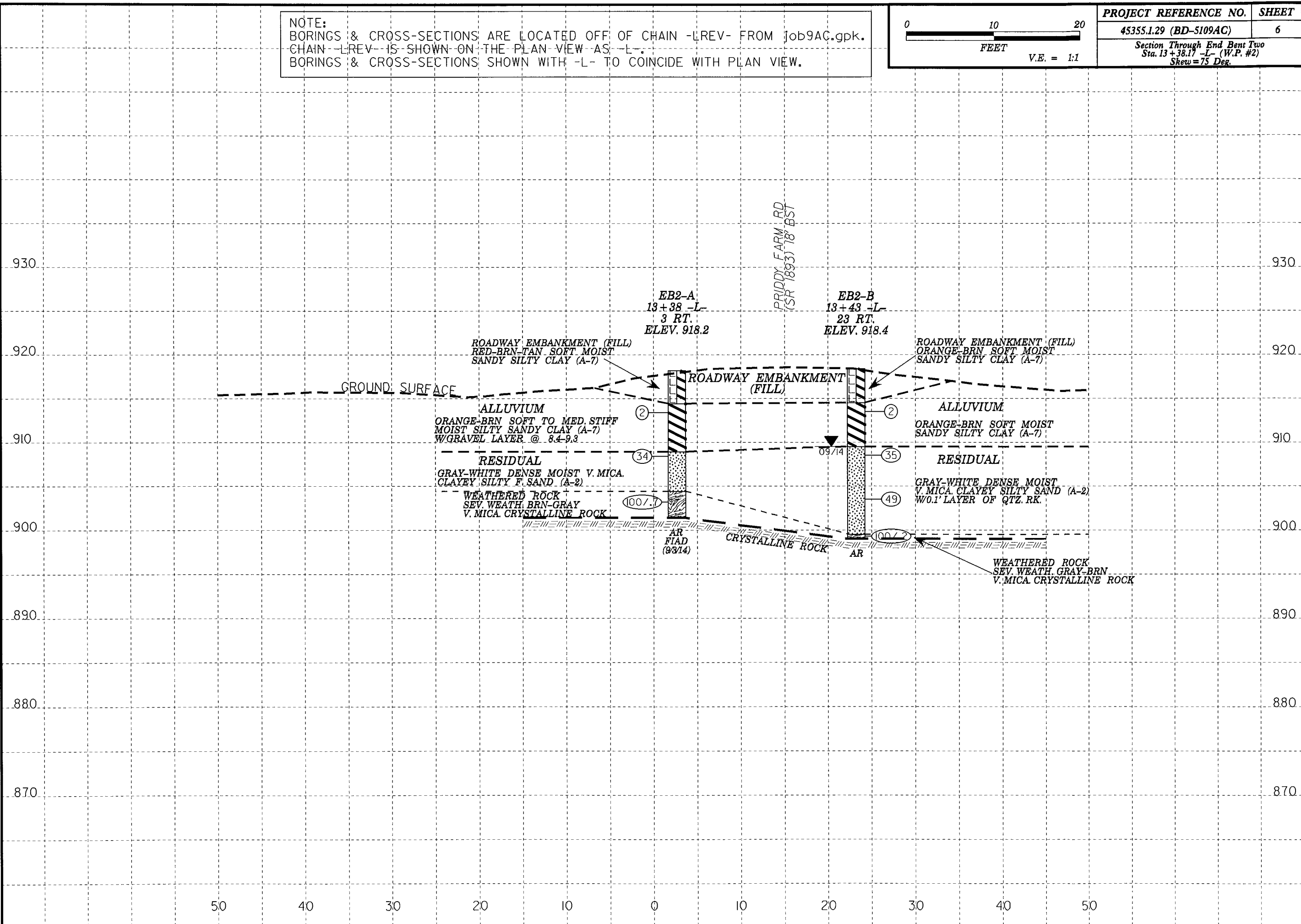
PROJECT REFERENCE NO.	SHEET
45355.1.29 (BD-5109AC)	5
Section Through End Bent One Sta. 12+70.84 -L- (W.P. #1) Skew = 75 Deg.	



NOTE:
 BORINGS & CROSS-SECTIONS ARE LOCATED OFF OF CHAIN -LREV- FROM Job9AC.gpk.
 CHAIN -LREV- IS SHOWN ON THE PLAN VIEW AS -L-
 BORINGS & CROSS-SECTIONS SHOWN WITH -L- TO COINCIDE WITH PLAN VIEW.



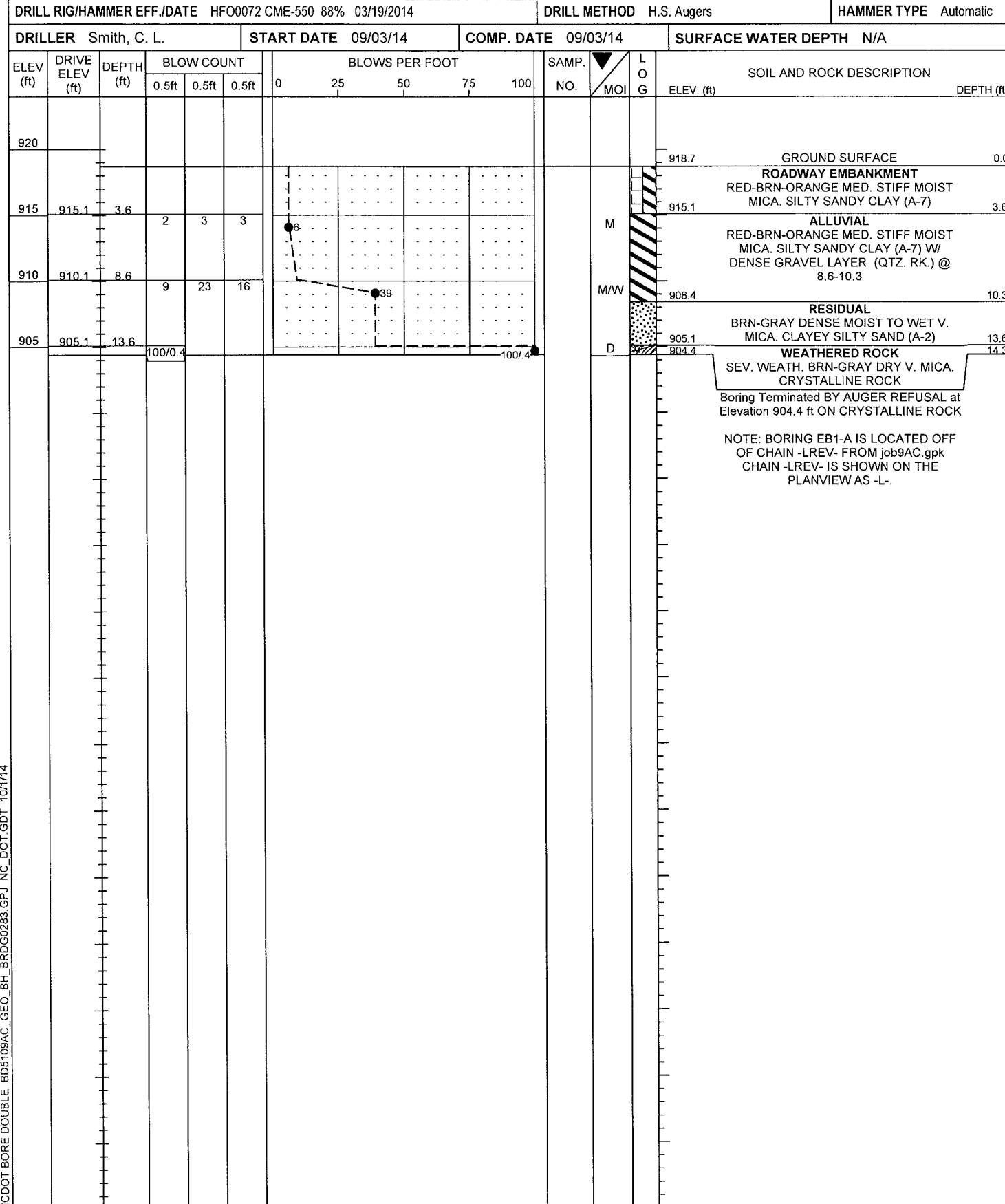
PROJECT REFERENCE NO.	SHEET
45355.129 (BD-5109AC)	6
Section Through End Bent Two Sta. 13+38.17 -L- (W.P. #2) Skew=75 Deg.	



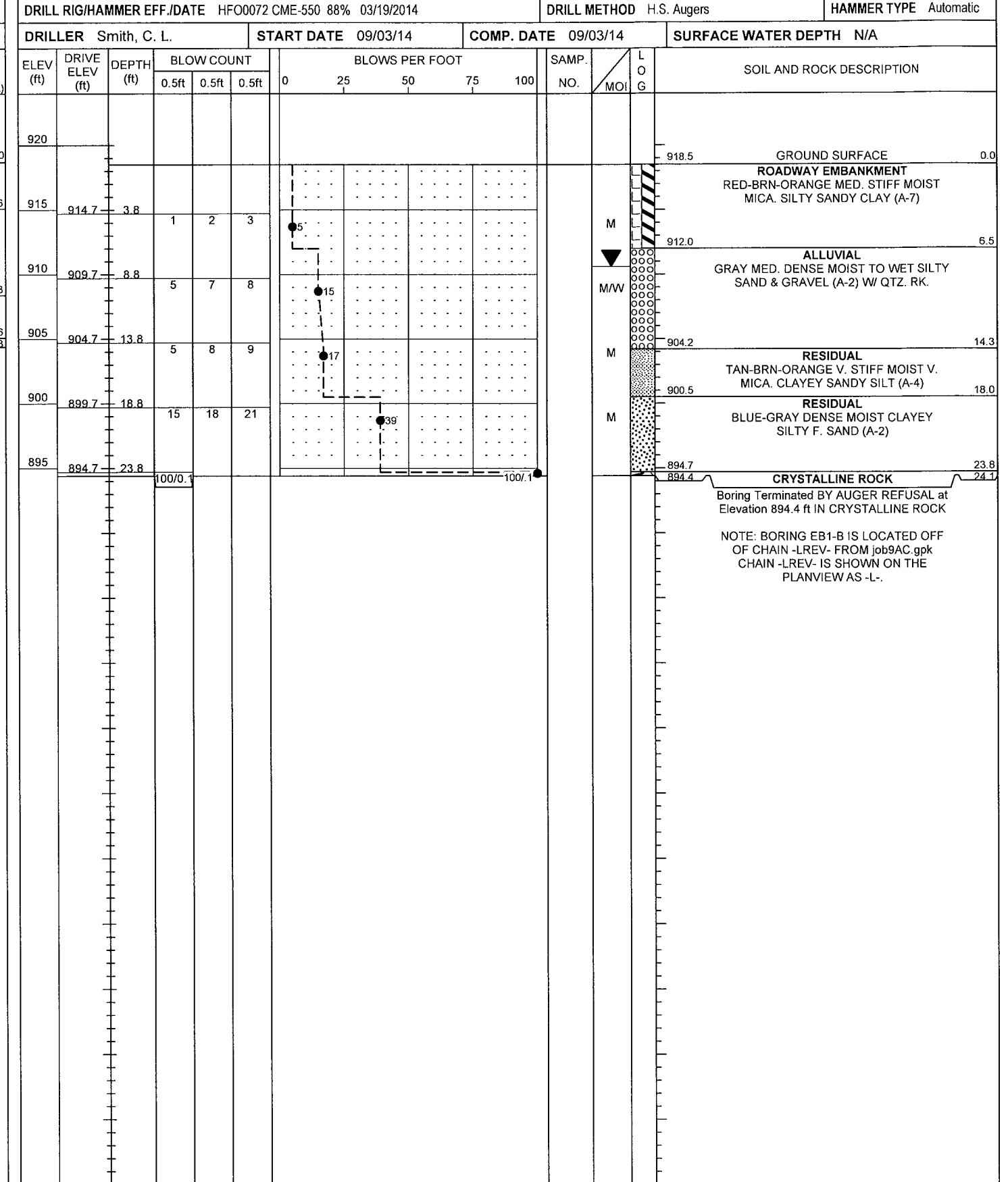


NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

WBS 45355.1.29	TIP BD-5109AC	COUNTY FORSYTH	GEOLOGIST Stickney, J. K.
SITE DESCRIPTION BRIDGE 283 ON SR 1893 (PRIDDY FARM RD.) OVER MUDDY CREEK			GROUND WTR (ft)
BORING NO. EB1-A	STATION 12+73	OFFSET 3 ft RT	ALIGNMENT -L-
COLLAR ELEV. 918.7 ft	TOTAL DEPTH 14.3 ft	NORTHING 915,575	EASTING 1,609,619
DRILL RIG/HAMMER EFF./DATE HFO0072 CME-550 88% 03/19/2014			DRILL METHOD H.S. Augers
DRILLER Smith, C. L.			HAMMER TYPE Automatic
START DATE 09/03/14		COMP. DATE 09/03/14	SURFACE WATER DEPTH N/A



WBS 45355.1.29	TIP BD-5109AC	COUNTY FORSYTH	GEOLOGIST Stickney, J. K.
SITE DESCRIPTION BRIDGE 283 ON SR 1893 (PRIDDY FARM RD.) OVER MUDDY CREEK			GROUND WTR (ft)
BORING NO. EB1-B	STATION 12+81	OFFSET 27 ft RT	ALIGNMENT -L-
COLLAR ELEV. 918.5 ft	TOTAL DEPTH 24.1 ft	NORTHING 915,554	EASTING 1,609,606
DRILL RIG/HAMMER EFF./DATE HFO0072 CME-550 88% 03/19/2014			DRILL METHOD H.S. Augers
DRILLER Smith, C. L.			HAMMER TYPE Automatic
START DATE 09/03/14		COMP. DATE 09/03/14	SURFACE WATER DEPTH N/A





NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

WBS 45355.1.29	TIP BD-5109AC	COUNTY FORSYTH	GEOLOGIST Stickney, J. K.
SITE DESCRIPTION BRIDGE 283 ON SR 1893 (PRIDDY FARM RD.) OVER MUDDY CREEK			GROUND WTR (ft)
BORING NO. EB2-A	STATION 13+38	OFFSET 3 ft RT	ALIGNMENT -L-
COLLAR ELEV. 918.2 ft	TOTAL DEPTH 16.8 ft	NORTHING 915,525	EASTING 1,609,660
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 09/03/14	COMP. DATE 09/03/14	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				
920												918.2	0.0
												914.4	3.8
915	914.4	3.8	0	1	1						M	914.4	3.8
												909.4	8.8
910	909.4	8.8	6	15	19						M	908.9	9.3
												904.4	13.8
905	904.4	13.8	34	59	41/0.2						M	901.4	16.8

Boring Terminated BY AUGER REFUSAL at Elevation 901.4 ft ON CRYSTALLINE ROCK

NOTE: BORING EB2-A IS LOCATED OFF OF CHAIN -LREV- FROM job9AC.gpk CHAIN -LREV- IS SHOWN ON THE PLANVIEW AS -L-.

WBS 45355.1.29	TIP BD-5109AC	COUNTY FORSYTH	GEOLOGIST Stickney, J. K.
SITE DESCRIPTION BRIDGE 283 ON SR 1893 (PRIDDY FARM RD.) OVER MUDDY CREEK			GROUND WTR (ft)
BORING NO. EB2-B	STATION 13+43	OFFSET 23 ft RT	ALIGNMENT -L-
COLLAR ELEV. 918.4 ft	TOTAL DEPTH 19.4 ft	NORTHING 915,508	EASTING 1,609,648
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 09/03/14	COMP. DATE 09/03/14	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				
920												918.4	0.0
												914.5	3.9
915	914.5	3.9	1	1	1						M	914.5	3.9
												909.5	8.9
910	909.5	8.9	9	15	20						M	909.5	8.9
												904.5	13.9
905	904.5	13.9	25	23	26						M	899.5	18.9
												899.0	19.4
900	899.5	18.9	100/0.2								M	899.0	19.4

Boring Terminated BY AUGER REFUSAL at Elevation 899.0 ft ON CRYSTALLINE ROCK

NOTE: BORING EB2-B IS LOCATED OFF OF CHAIN -LREV- FROM job9AC.gpk CHAIN -LREV- IS SHOWN ON THE PLANVIEW AS -L-.

NCDOT BORE DOUBLE BD5109AC_GEO_BH_BRDG0283.GPJ NC_DOT.GDT 10/1/14

BENCHMARKS (NAVD88)

 BM1 ELEVATION = 928.47'
 N 915736 E 1609624
 EL STATION 11+46.112' LEFT
 RR SPIKE IN SOUTH ROOT OF A BLACK WALNUT

 2 ELEVATION = 927.66'
 N 915265 E 1609845
 EL STATION 16+41
 REBAR WITH ALUMINUM CAP STAMPED
 GPS BD5109AB-2 (SET FLUSH WITH GROUND).
 POINT LIES 4.3' SOUTH OF EDGE OF
 TUTTLE ROAD.

FORSYTH COUNTY LOW IMPACT BRIDGE

LS 09-12-063
 WBS 45355.129
 TIP BD-5109-AC

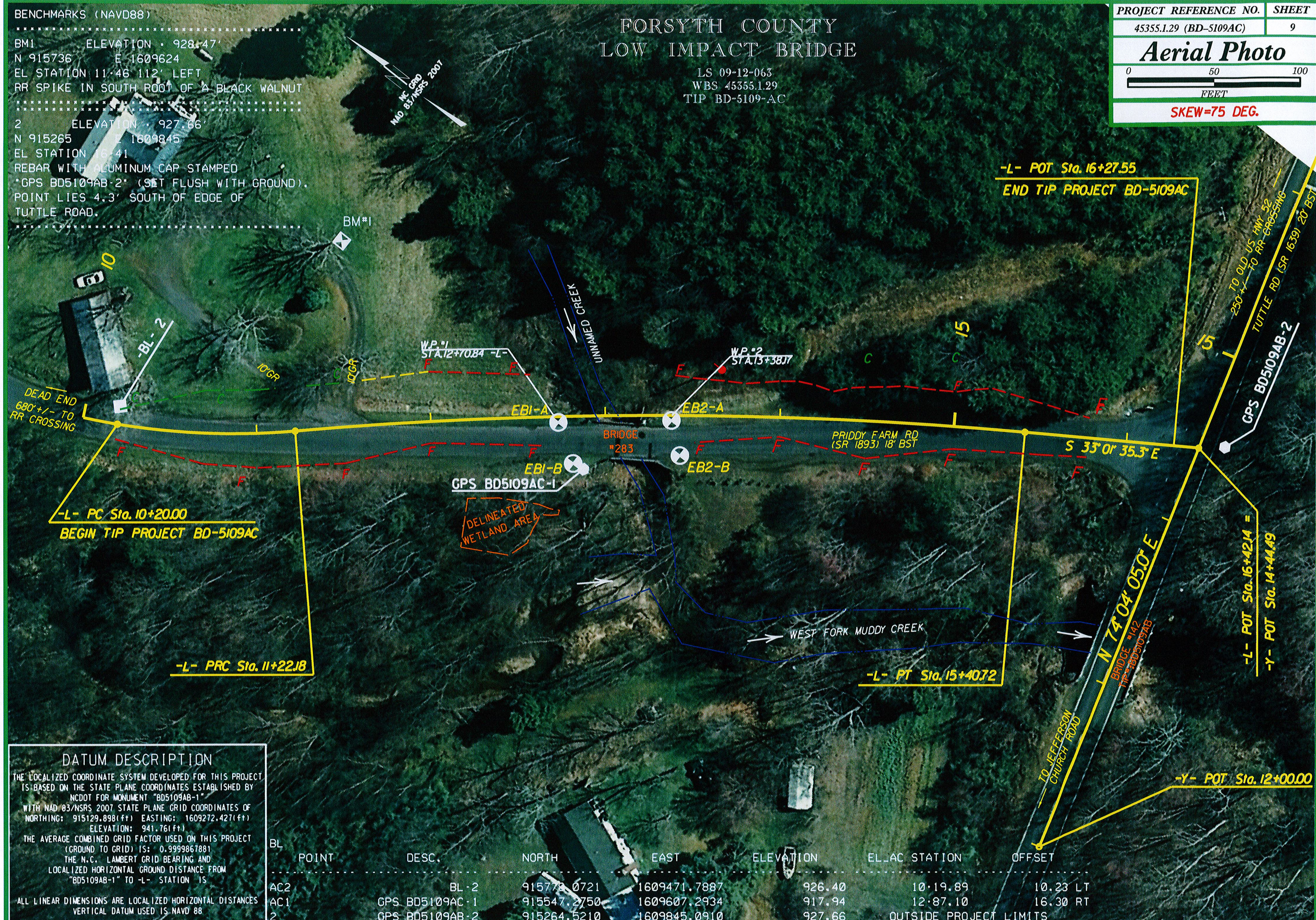
PROJECT REFERENCE NO. SHEET

45355.1.29 (BD-5109AC) 9

Aerial Photo



SKEW=75 DEG.



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "BD5109AB-1" WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF NORTHING: 915129.898(ft) EASTING: 1609272.427(ft) ELEVATION: 941.761(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9999867881 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "BD5109AB-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. AC STATION	OFFSET
AC2		BL-2	915779.0721	1609471.7887	926.40	10+19.89	10.23 LT
AC1		GPS BD5109AC-1	915547.2750	1609607.2934	917.94	12+87.10	16.30 RT
2		GPS BD5109AB-2	915264.5210	1609845.0910	927.66	OUTSIDE PROJECT LIMITS	