

February 20, 2025

Stantec 801 Jones Franklin Road, Suite 300 Raleigh, North Carolina 27606

Attention: Mr. Ricky Greene, PE

Senior Project Manager

Reference: Pavement and Subgrade Investigation Report

NC 9 from US 74 Alt to Henderson/Buncombe County Line

Bat Cave

Henderson County, North Carolina

TIP No. W-0920

S&ME Project No. 24350796 NC PE Firm License No. F-0176

S&ME has completed the evaluation of the pavement and subgrade investigation for this project and presents the following.

The proposed work consists of repairing NC-9 from US 74 Alt to the Henderson/Buncombe County line and the associated grading and pavement work.

The subgrade beneath the existing roadway consists of Inner Piedmont residual soils and roadway embankment soils. The predominant soils encountered were classified as sandy silt (A-4) and silty sand (A-2-4).

Anticipated borrow will likely consist of Inner Piedmont sandy silt and silty sand.

The length of this project is 1.967 miles.

Overall, the pavement for -L- is in fair to poor condition. Pavement surface distresses are characterized as low severity transverse cracking and low to moderate severity fatigue cracking, with few areas exhibiting moderate severity longitudinal cracking and high severity fatigue cracking.



AREAS OF SPECIAL GEOTECHNICAL INTEREST

A. Highly Plastic Clays:

There were no locations where clays with a PI of 26 or greater were found.

B. Trapped Water within the Pavement:

There were no locations where trapped water within the pavement was found.

C. Soils with a High Moisture Content

There were no locations where soils with high moisture content were found.

D. Pavements which Have Been or May Have Been Damaged

The following locations are areas where the landslides/debris flows have destroyed pavements or likely compromised the integrity of the pavements, or where water flow along shoulders has undermined the pavement section.

LINE	STATION RANGE
-L-	10+00 to 34+00
-L-	50+00 to 54+00
-L-	68+00 to 71+50
-L-	76+00 to 85+00

LAC/SEM/KHH

72275FD8BA38437... Luis A. Campos, P.E.

Senior Geotechnical Engineer

ATTACHMENT 1: Pavement and Subgrade Inventory 22

Stacie E. Mitchell P.E.

Senior Geotechnical Engineer

February 20, 2025 2

$W_{-}0920$	61 / 6
REFERENCE	

CONTENTS

DESCRIPTION

LEGEND (SOIL & ROCK)

PAVEMENT INVESTIGATION DATA SHEETS CONE PENETROMETER DATA SHEETS

PAVEMENT CORE PHOTOGRAPHS

PLAN SHEET LAYOUT

TITLE SHEET

PLAN SHEETS

SHEET NO.

12 - 13

14 - 20

18314.104503

STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION **DIVISION OF HIGHWAYS** GEOTECHNICAL ENGINEERING UNIT

ROADWAY SUBSURFACE INVESTIGATION

COUNTY <u>HENDERSON</u>

PROJECT DESCRIPTION GRADING, DRAINAGE, PAVING, AND RETAINING WALLS

PAVEMENT AND SUBGRADE INVENTORY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	W-0920	1	22

CAUTION NOTICE

THE SUBSURFACE INFORMATION AND THE SUBSURFACE INVESTIGATION ON WHICH IT IS BASED WERE MADE FOR THE PURPOSE OF PREPARING THE SCOPE OF WORK TO BE INCLUDED IN THE REQUEST FOR PROPOSAL. 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 1991 707-6550. THE SUBSURFACE PLANA AND REPORTS, FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA ARE NOT PART OF THE CONTRACT.

SOIL AND ROCK BOUNDARIES WITHIN A BOREHOLE ARE BASED ON GEOTECHNICAL INTERPRETATION UNLESS ENCOUNTERED IN A SAMPLE, INTERPRETED BOUNDARIES MAY NOT NECESSARILY REFLECT ACTUAL SUBSURFACE CONDITIONS BETWEEN SAMPLED STRATA AND BOREHOLE INFORMATION MAY NOT NECESSARILY REFLECT ACTUAL SUBSURFACE CONDITIONS BETWEEN BORNICS. THE LABORATORY SAMPLE DATA AND THE IN SITU UN-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 HOLD WATER LEVELS OR SOIL MOISTURE CONDITIONS HOLD 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, PERCEINTAND AND WIND AS WELL AS OTHER MOMELHANTIC FACTORS. 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 PERFORM INDEPENDENT SUBSURFACE INVESTIGATIONS AND MAKE INTERPRETATIONS AS NECESSARY TO CONFIRM CONDITIONS ENCOUNTERED. OTHER PROJECT. THE CONTRACTOR SHALL HAVE NO CLAMA 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.

- IES:
 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.
 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.

C. COGDILL C. PAYNE L. CAMPOS

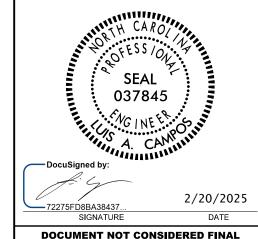
INVESTIGATED BY _____S&ME, INC. DRAWN BY _____C. CHANDLER

CHECKED BY K. HILL

DATE FEBRUARY 2025



8848 RED OAK BLVD SUITE A CHARLOTTE, NC 28217 (704) 523-4726



UNLESS ALL SIGNATURES COMPLETED

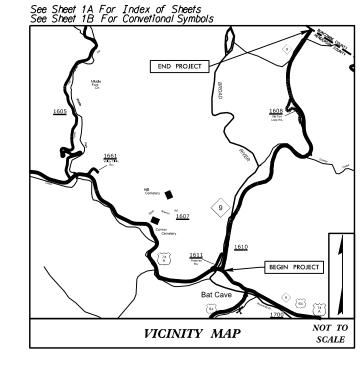
PROJECT REPERENCE NO. SHEET NO. 2

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS GEOTECHNICAL ENGINEERING UNIT

SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

	PLASTICITY PLASTICITY INDEX (PI) ORY STRENGTH	CME-55 B* HOLLOW AUGERS CME-550 HARD FACED FINGER BITS TUNGCARBIDE INSERTS CASING W/ ADVANCER CASING W/ ADVANCER	RE SIZE: -B -H -H	FOR SEDIMENTARY ROCKS, FRIABLE MODERATELY INDUR INDURATED	, INDURATION IS THE HARDEN RUBBING WITH CENTLE BLOW I GRAINS CAN BE BREAKS EASILY GRAINS ARE DI	ATION. ATION ING OF MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC FINGER FREES NUMEROUS GRAINS; BY HAMMER DISINTEGRATES SAMPLE. SEPARATED FROM SAMPLE WITH STEEL PROBE; WHEN HIT WITH HAMMER. FICULT TO SEPARATE WITH STEEL PROBE; BREAK WITH HAMMER.	<u>-</u>
NON PLASTIC SLIGHTLY PLASTIC MODERATELY PLASTIC	DHY - (D)	CME-55 B* HOLLOW AUGERS CME-550 HARD FACED FINGER BITS TUNGCARBIDE INSERTS CASING W/ ADVANCER PORTABLE HOIST TRICONE STEEL TEETH	-BH -N ND TOOLS: POST HOLE DIGGER	- FRIABLE	, INDURATION IS THE HARDEN RUBBING WITH GENTLE BLOW I GRAINS CAN BE BREAKS EASILY	ATION ING OF MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC FINGER FREES NUMEROUS GRAINS; BY HAMMER DISINTEGRATES SAMPLE. SEPARATED FROM SAMPLE WITH STEEL PROBE; WHEN HIT WITH HAMMER.	<u>=</u>
NON PLASTIC SLIGHTLY PLASTIC MODERATELY PLASTIC	DHY - (D)	CME-55 B* HOLLOW AUGERS CME-550 HARD FACED FINGER BITS TUNGCARBIDE INSERTS CASING W/ ADVANCER CASING W/ ADVANCER	-BH -N ND TOOLS:	- FRIABLE	, INDURATION IS THE HARDEN RUBBING WITH GENTLE BLOW (ATION ING OF MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC FINGER FREES NUMEROUS GRAINS; BY HAMMER DISINTEGRATES SAMPLE.	<u>=</u>
NON PLASTIC	DHY - (D)	CME-550 8*HOLLOW AUGERS CME-550 HARD FACED FINGER BITS TUNG,-CARBIDE INSERTS]-B		INDURATION IS THE HARDEN RUBBING WITH	ATION ING OF MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC FINGER FREES NUMEROUS GRAINS;	
-	PLASTICITY	8° HOLLOW AUGERS]-в	FOR SEDIMENTARY ROCKS.		ATION	<u></u>
	DRY - (D) ATTAIN OPTIMUM MOISTURE	CME-55 <u></u>			זווחו ום		-
				1		THINLY LAMINATED < 0.008 FEET	
	REQUIRES ADDITIONAL WATER TO	CME-45C CLAY BITS 6. CONTINUOUS FLIGHT AUGER CO	AUTOMATIC MANUAL	CLOSE VERY CLOSE	0.16 TO 1 FOOT LESS THAN 0.16 FEET	VERY THINLY BEDDED 0.03 - 0.16 FEET THICKLY LAMINATED 0.008 - 0.03 FEET	
OM OPTIMUM MOISTURE SL SHRINKAGE LIMIT	Societies of the control of the cont		MMER TYPE:	MODERATELY CLOSE	1 TO 3 FEET	THINLY BEDOED 0.16 - 1.5 FEET	NOTES:
_	MOIST - (M) SOLID; AT OR NEAR OPTIMUM MOISTURE	EQUIPMENT USED ON SUBJECT PR	OJECT	VERY WIDE WIDE	MORE THAN 10 FEET 3 TO 10 FEET	VERY THICKLY BEODED 4 FEET THICKLY BEDDED 1.5 - 4 FEET	ELEVATION: FEET
(PI) PL PLASTIC LIMIT	ATTAIN OPTIMUM MOISTURE	FRAGS FRAGMENTS	CBR - CALIFORNIA BEARING RATIO	TERM	E SPACING SPACING	TERM THICKNESS	BENCH MARK:
PLASTIC RANGE < -	WET - (W) SEMISOLID: REQUIRES DRYING TO	FRAC FRACTURED, FRACTURES TCR - TRICONE REFUSAL	RT - RECOMPACTED TRIAXIAL	FINGERNAIL.	E SPACING	BEDDING	TOPSOIL (TS.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.
LL _ LIQUID LIMIT	(SAT.) FROM BELOW THE GROUND WATER TABLE		ST - SHELBY TUBE RS - ROCK	SOFT OR MORE IN	THICKNESS CAN BE BROKEN B	Y FINGER PRESSURE. CAN BE SCRATCHED READILY BY	THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE.
-	SATURATED - USUALLY LIQUID; VERY WET, USUALLY	e - VOID RATIO SD SAND, SANDY	S - BULK SS - SPLIT SPOON		BE BROKEN BY FINGER PRESS	URE. AVATED READILY WITH POINT OF PICK, PIECES 1 INCH	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
	DESCRIPTION GUIDE FOR FIELD MOISTURE DESCRIPTION	DMT - DILATOMETER TEST PMT - PRESSUREMETER TEST	SAMPLE ABBREVIATIONS	FROM CHIPS	TO SEVERAL INCHES IN SIZE	NIFE OR PICK. CAN BE EXCAVATED IN FRAGMENTS BY MODERATE BLOWS OF A PICK POINT. SMALL, THIN	STRATA CORE RECOVERY (SREC.) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE.
	E - CORRELATION OF TERMS	CPT - CONE PENETRATION TEST NP - NON PLASTIC CSE COARSE ORG ORGANIC	7 - DRY UNIT WEIGHT	POINT OF A	GEOLOGIST'S PICK.		TO OR LESS THAN 0.1 FOOT PER 60 BLOWS.
SIZE IN. 12 3		BT - BORING TERMINATED MICA MICACEOUS CL CLAY MOD MODERATELY	WEA WEATHERED 7 - UNIT WEIGHT			DEEP BY FIRM PRESSURE OF KNIFE OR PICK POINT. EICES 1 INCH MAXIMUM SIZE BY HARD BLOWS OF THE	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
GRAIN MM 305 75	2.0 0.25 0.05 0.005	AR - AUGER REFUSAL MED MEDIUM	VST - VANE SHEAR TEST	HARD EXCAVATED 6 BY MODERATI		ST'S PICK. HAND SPECIMENS CAN BE DETACHED	STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS (N OR BPF) OF
BOULDER COBBLE GRAVEL (BLDR.) (COB.) (GR.)	SAND SAND SILT CLAY (CSE. SD.) (F SD.) (SL.) (CL.)	ACCEPTABLE DEGRADABLE ROCK ABBREVIATIONS		MODERATELY CAN BE SCRA	RATCHED BY KNIFE OR PICK. GO	DUGES OR GROOVES TO 0.25 INCHES DEEP CAN BE	<u>SLICKENSIDE</u> - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE.
	2.00 0.42 0.25 0.075 0.053	SHALLOW UNCLASSIFIED EXCAVATION -	ISED IN THE TOP 3 FEET OF		RATCHED BY KNIFE OR PICK ON HAND SPECIMEN.	LY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED	RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS.
U.S. STD. SIEVE SIZE 4	10 40 60 200 270		INCLASSIFIED EXCAVATION -		SCRATCHED BY KNIFE OR SHAF ARD BLOWS OF THE GEOLOGIST"	P PICK. BREAKING OF HAND SPECIMENS REQUIRES S PICK.	SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND
	URE OR GRAIN SIZE	RECOMMENDATION SYMBOLS		VERY HARD CANDOT OF		ARDNESS	SAPROLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK.
(COHESIVE) VERY STIFF HARD		TTTTT ALLUVIAL SOIL BOUNDARY A PIEZOMETER INSTALLATION	- SPT N-VALUE	ALSO AN EXA	MAMPLE.		ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE.
SILT-CLAY MEDIUM STIF MATERIAL STIFF	8 TO 15 1 TO 2	INFERRED ROCK LINE "O MONITORING WELL	WITH CORE			DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND BE PRESENT AS DIKES OR STRINGERS, SAPROLITE IS	ROCK QUALITY DESIGNATION (ROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF
VERY SOFT GENERALLY SOFT			TEST BORING	VESTIGES OF	F ORIGINAL ROCK FABRIC REMA	NN. <u>IF TESTED, WOULD YIELD SPT N VALUES < 100 BPF</u>	RESIDUAL (RES.) SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK.
VERT DENSE			SOUNDING ROD	SEVERE BUT MASS IS	S EFFECTIVELY REDUCED TO S	OIL STATUS, WITH ONLY FRAGMENTS OF STRONG ROCK ROCK WEATHERED TO A DEGREE THAT ONLY MINOR	PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE OF AN INTERVENING IMPERVIOUS STRATUM.
MATERIAL MEDIUM DENS (NON-COHESIVE) DENSE	30 TO 50	ARTIFICIAL FILL (AF) OTHER THAN ROADWAY EMBANKMENT AUGER BORING	CONE PENETROMETER			STAINED. ROCK FABRIC ELEMENTS ARE DISCERNIBLE	USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE.
GENERALLY VERY LOOSE GRANULAR LOOSE	4 TO 10	SOIL SYMBOL OF DAT TEST BORING	INSTALLATION	TO SOME EX	(TENT. SOME FRAGMENTS OF ST WOULD YIELD SPT N VALUES >	TRONG ROCK USUALLY REMAIN.	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
	(N-VALUE) (TUNS/FT-)	WITH SOIL DESCRIPTION - OF ROCK STRUCTURES	SLOPE INDICATOR			STAINED. ROCK FABRIC CLEAR AND EVIDENT BUT N GRANITOID ROCKS ALL FELDSPARS ARE KAOLINIZED	ITS LATERAL EXTENT.
PRIMARY SOIL TYPE COMPACTNESS CONSISTENCY	, PENETRATION RESISTENCE COMPRESSIVE STRENGTH	ROADWAY EMBANKMENT (RE) 25/825 DIP & DIP DIRECTION			WOULD YIELD SPT REFUSAL	13 1104, HOUR DIVES CLOWN SUUND WHEN SIMULK.	LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO
CONSIS	TENCY OR DENSENESS	MISCELLANEOUS SYMBOLS		SEVERE AND DISCOLO	ORED AND A MAJORITY SHOW K	AOLINIZATION, ROCK SHOWS SEVERE LOSS OF STRENGTH T'S PICK, ROCK GIVES "CLUNK" SOUND WHEN STRUCK.	FIELD. JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED.
	S ≤ LL - 30 : PI OF A-7-6 SUBGROUP IS > LL - 30	- SPRING OR SEEP		WITH FRESH MODERATELY ALL ROCK EX		STAINED. IN GRANITOID ROCKS, ALL FELDSPARS DULL	FORMATION (FM.) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE
GEN. RATING AS SUBGRADE EXCELLENT TO GOOD	FAIR TO POOR FAIR TO POOR UNSUITABL	PERCHED WATER, SATURATED ZONE, OR WATE	R BEARING STRATA	DULL SOUND	UNDER HAMMER BLOWS AND S	HOWS SIGNIFICANT LOSS OF STRENGTH AS COMPARED	FLOOD PLAIN (FP) - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM.
MATERIALS SAND SAND GRAVEL AND		STATIC WATER LEVEL AFTER 24 HOURS	D 0540146 070-7-			COLORATION AND WEATHERING EFFECTS. IN ULL AND DISCOLORED, SOME SHOW CLAY. ROCK HAS	FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLODGED FROM PARENT MATERIAL.
USUAL TYPES STONE FRAGS. OF MAJOR GRAVEL, AND	LAYEY SILTY CLAYEY MATTER	WATER LEVEL IN BORE HOLE IMMEDIATELY	AFTER DRILLING			IN GRANITOID ROCKS SOME OCCASIONAL FELDSPAR YSTALLINE ROCKS RING UNDER HAMMER BLOWS.	FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES.
GROUP INDEX 8 8 8	4 MX 8 MX 12 MX 16 MX NO MX AMOUNTS OF UNGANIC	GROUND WATER		SLIGHT ROCK GENERA	RALLY FRESH, JOINTS STAINED	AND DISCOLORATION EXTENDS INTO ROCK UP TO	FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE.
	MX 41 MN 48 MX 41 MN 48 MX 41 MN		OME 20 - 35% IGHLY 35% AND ABOVE	(V SLI.) CRYSTALS OF		HINE BRIGHTLY. ROCK RINGS UNDER HAMMER BLOWS IF	DIP DIRECTION (DIP AZIMUTH) - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH,
Material Passing "40	SOILS WITH	LITTLE ORGANIC MATTER 3 - 5% 5 - 12% LI	TTLE 10 - 20%		CRYSTALLINE. RALLY FRESH, JOINTS STAINED,	SOME JOINTS MAY SHOW THIN CLAY COATINGS IF OPEN.	HORIZONTAL.
"200 15 MX 25 MX 10 MX 35 MX 35 MX 35	MX 35 MX 36 MN 36 MN 36 MN 36 MN 36 MN	ORGANIC MATERIAL SOILS SOILS	OTHER MATERIAL RACE 1 - 10%			S MAY SHOW SLIGHT STAINING. ROCK RINGS UNDER	DIP - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE
"10 50 MX "40 30 MX 50 MX 51 MN	GRANULAR SILI' MUCK, SOILS CLAY PEAT	PERCENTAGE OF MATERIAL GRANULAR SILT - CLAY				ERING	DIKE - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK.
% PASSING	Sli T-	HIGHLY COMPRESSIBLE LL	> 50	SEDIMENTARY ROCK		K TYPE INCLUDES LIMESTONE, SANDSTONE, CEMENTED	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.
SYMBOL OCCOORDING		SLIGHTLY COMPRESSIBLE LL	< 31 = 31 - 50	COASTAL PLAIN	ROCK TYPE INCLUD	ES PHYLLITE, SLATE, SANDSTONE, ETC. DIMENTS CEMENTED INTO ROCK, BUT MAY NOT YIELD	=
CROUP A-1 A-3 A-2 CLASS. A-1-6 A-1-6 A-2-4 A-2-5 A-	A-4 A-5 A-6 A-7 A-1, A-2 A-4, A-5 A-6 A-7 A-1, A-2 A-4, A-5 A-6, A-7 A-7, A-7, A-7, A-7, A-7, A-7, A-7,	COMPRESSIBILITY		NON-CRYSTALLINE	FINE TO COARSE G	RAIN METAMORPHIC AND NON-COASTAL PLAIN THAT WOULD YEILD SPT REFUSAL IF TESTED.	CALLEGROUS CALCO SOLES THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBUNATE. COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE.
CLASS. (≤ 35% PASSING "200)	(> 35% PASSING "200) UNGANIC MATERIALS	MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, K ARE USED IN DESCRIPTIONS WHEN THEY ARE CONSIDERED		CRYSTALLINE ROCK (CR)	WOULD YIELD SPT GNEISS, GABBRO, SC	REFUSAL IF TESTED. ROCK TYPE INCLUDES GRANITE, HIST, ETC.	SURFACE. <u>CALCAREOUS (CALC.)</u> - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE.
GENERAL GRANULAR MATERIALS	AND AASHTO CLASSIFICATION SILT-CLAY MATERIALS OPERANDE MATERIALS	MINERALOGICAL COMPOSITION		ROCK (WR)		RAIN IGNEOUS AND METAMORPHIC ROCK THAT	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
VERY STIFF, GRAY, SILTY CLAY, MOIST V	WITH INTERBEDDED FINE SAND LAYERS, HIGHLY PLASTIC, A-7-6	THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS IS DESIGNA ANGULAR, SUBANGULAR, SUBROUNDED, OR ROUNDED.	ILLU BY THE TERMS:	WEATHERED VIII	NON-COASTAL PLAI	N MATERIAL THAT WOULD YIELD SPT N VALUES >	A NOTABLE PROPORTION OF CLAY IN THEIR COMPOSITION, SUCH AS SHALE, SLATE, ETC.
CONSISTENCY, COLOR, TEXTURE, MOISTURE,	AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH ANGULARITY, STRUCTURE, PLASTICITY, ETC. FOR EXAMPLE,	ANGULARITY OF GRAINS	TED BY THE TERMS	REPRESENTED BY A ZONE	OF WEATHERED ROCK. PICALLY DIVIDED AS FOLLOW		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
ACCORDING TO THE STANDARD PENETRAL	TION TEST (AASHTO T 206, ASTM DIS86). SOIL CLASSIFICATION BASIC DESCRIPTIONS GENERALLY INCLUDE THE FOLLOWING:	<u>UNIFORMLY GRADED</u> - INDICATES THAT SOIL PARTICLES ARE ALL APPI <u>GAP-GRADED</u> - INDICATES A MIXTURE OF UNIFORM PARTICLE SIZES OF		SPT REFUSAL IS PENETRA BLOWS IN NON-COASTAL	ATION BY A SPLIT SPOON SA PLAIN MATERIAL. THE TRAI	MPLER EQUAL TO OR LESS THAN 0.1 FOOT PER 60 NSITION BETWEEN SOIL AND ROCK IS OFTEN	AQUIFER - A WATER BEARING FORMATION OR STRATA,
SOIL IS CONSIDERED UNCONSOLIDATED, SE	EMI-CONSOLIDATED, OR WEATHERED EARTH MATERIALS THAT CAN GHT POWER AUGER AND YIELD LESS THAN 100 BLOWS PER FOOT	WELL GRADED - INDICATES A GOOD REPRESENTATION OF PARTICLE SI.			TAL PLAIN MATERIAL THAT W	OULD YIELD SPT REFUSAL IF TESTED. AN INFERRED STAL PLAIN MATERIAL WOULD YIELD SPT REFUSAL.	ALLUVIUM (ALLUV.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER.
SO	DIL DESCRIPTION	GRADATION		<u> </u>	ROCK DES	SCRIPTION	TERMS AND DEFINITIONS



STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

HENDERSON COUNTY

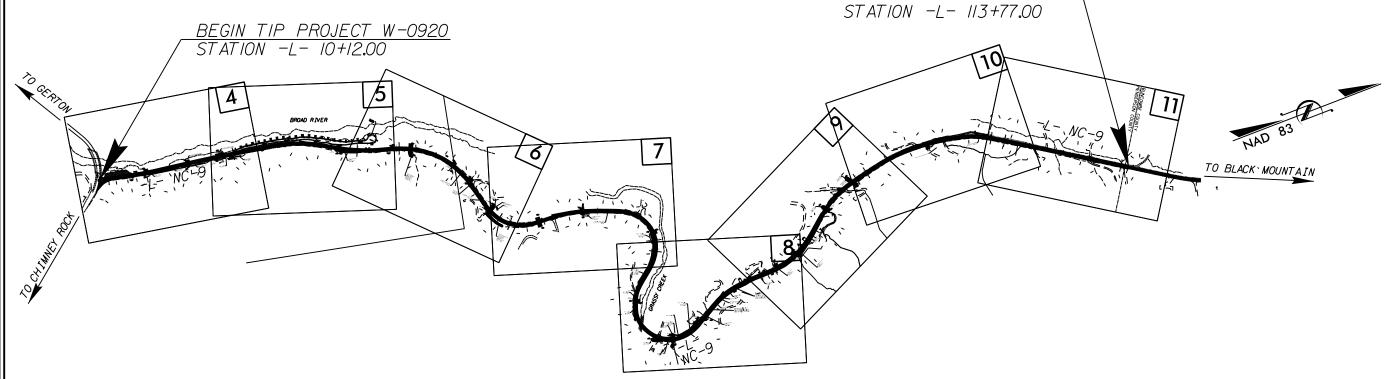
LOCATION: NC-9 FROM US 74 ALT TO HENDERSON/BUNCOMBE COUNTY LINE

TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND RETAINING WALLS

STATE	STATE	PROJECT REPERENCE NO.	NO.	SHEETS
N.C.	V	3		
STAT	E PROJ. NO.	P. A. PROJ. NO.	BESCRIPT	10N
18314	.1045035		PE	
·			·	, i



PRE-HYDRO PLAN SET



DESIGN EXCEPTION FOR SPEED, HORIZONTAL CURVATURE AND HORIZONTAL SIGHT DISTANCE(?)
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III
THIS IS A NO CONTROL OF ACCESS PROJECT



W-0920

PROJEC

GRAPHIC SCALES 50 25 0 50 100 PLANS 50 25 0 50 100 PROFILE (HORIZONTAL) 10 5 0 10 20 F

PROFILE (VERTICAL)

DESIGN DATA

ADT 2025 = 1000 K = N/A D = N/A T - 7%

T = 7% V = 45 MPH

FUNC CLASSIFICATION =
MAJOR COLLECTOR
REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT W-0920 = 1.967 MILES

TOTAL LENGTH TIP PROJECT W-0920 = 1.967 MILES

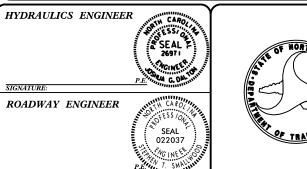
Stantec
Sungate Design Group, P.A.

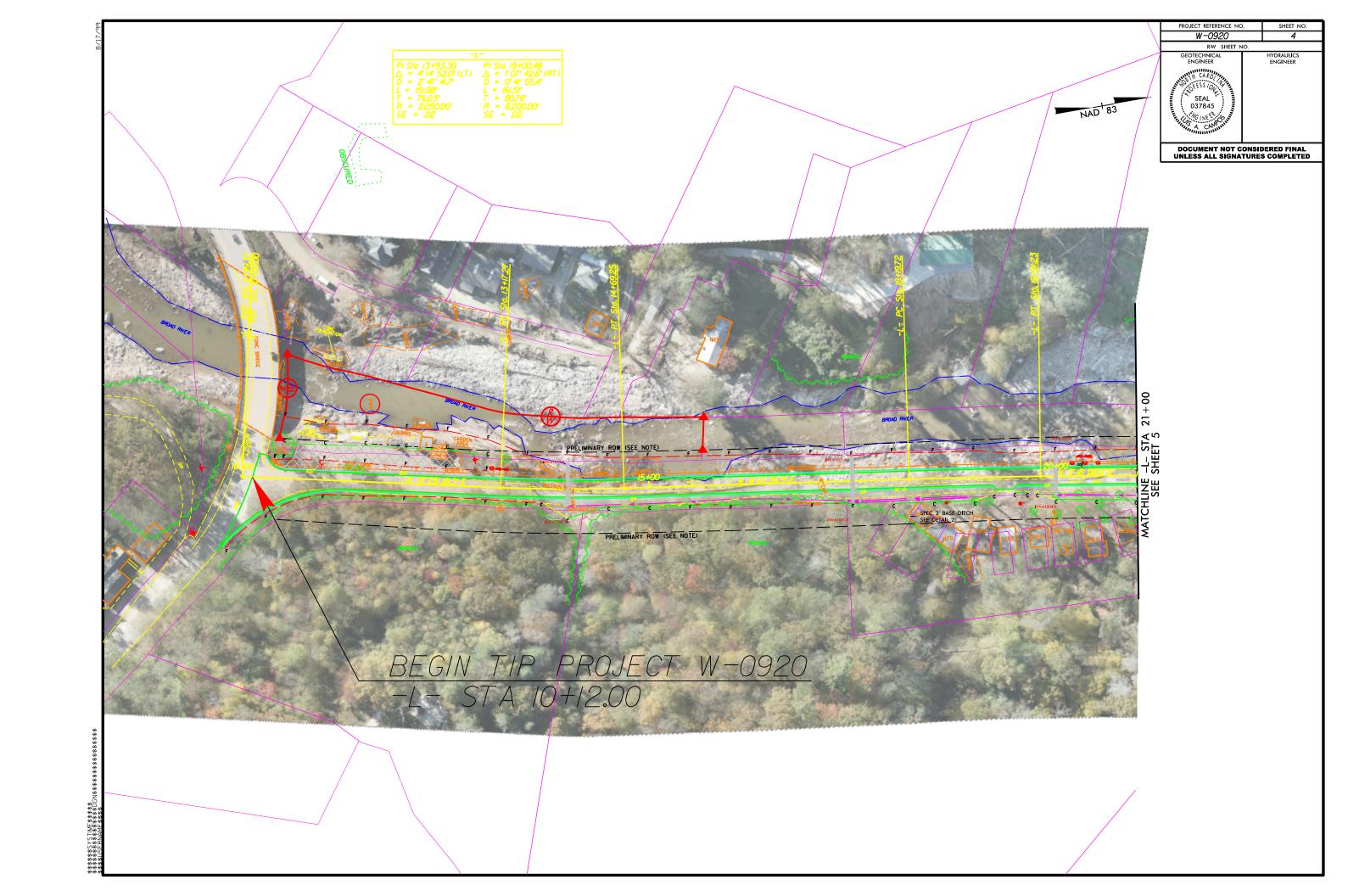
Sungate Design Group,

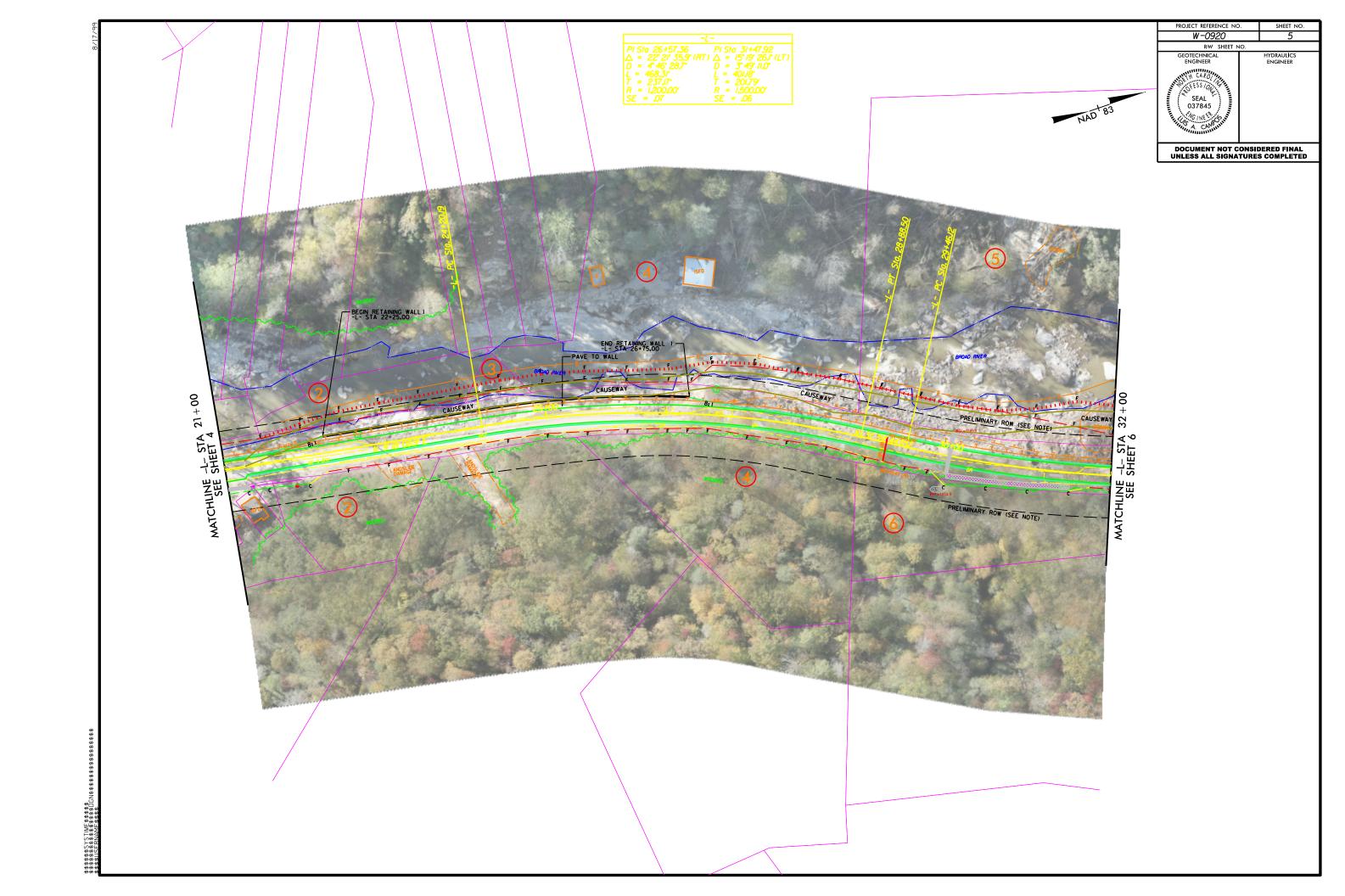
END TIP PROJECT W-0920

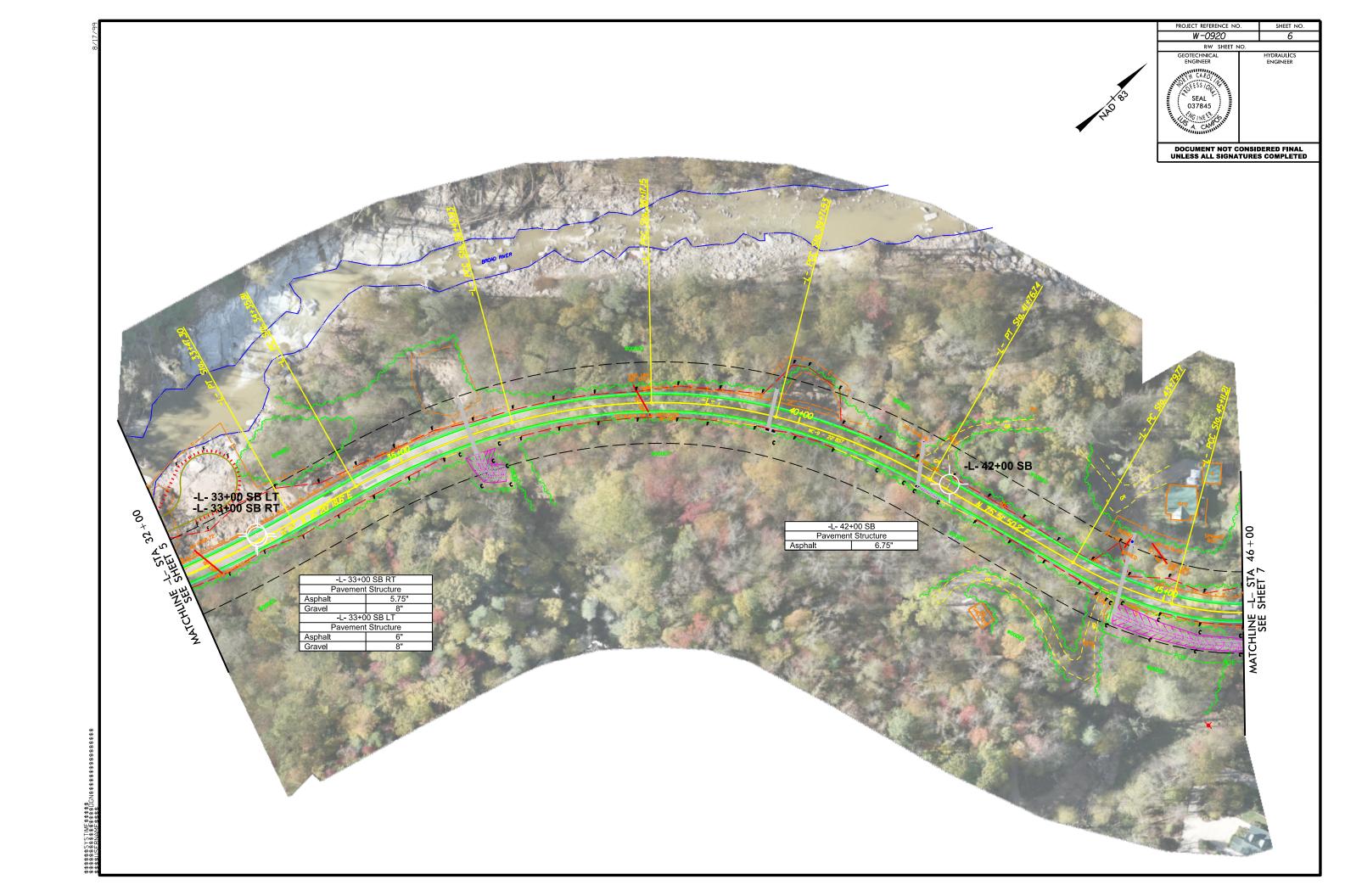
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

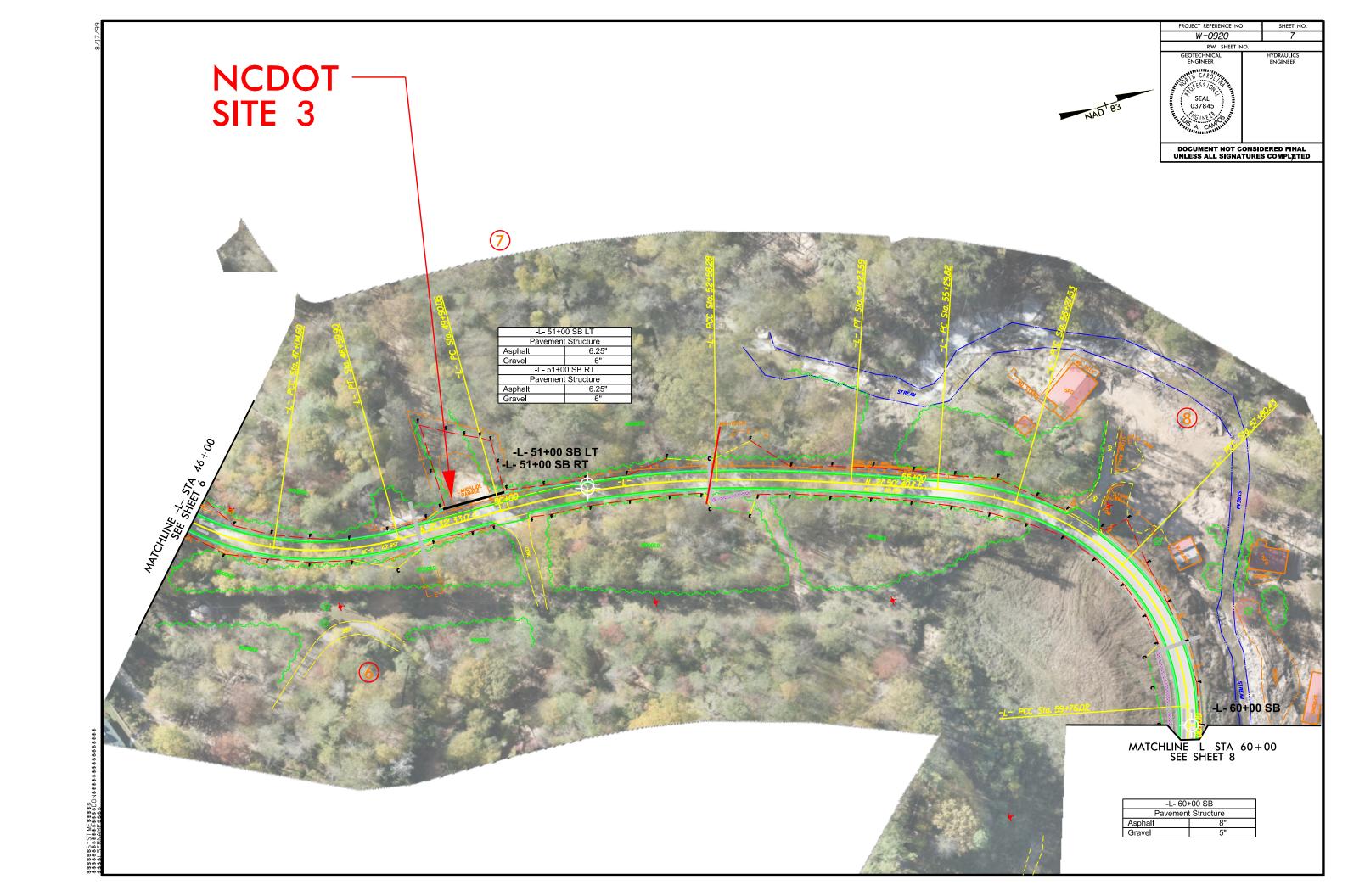
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETE

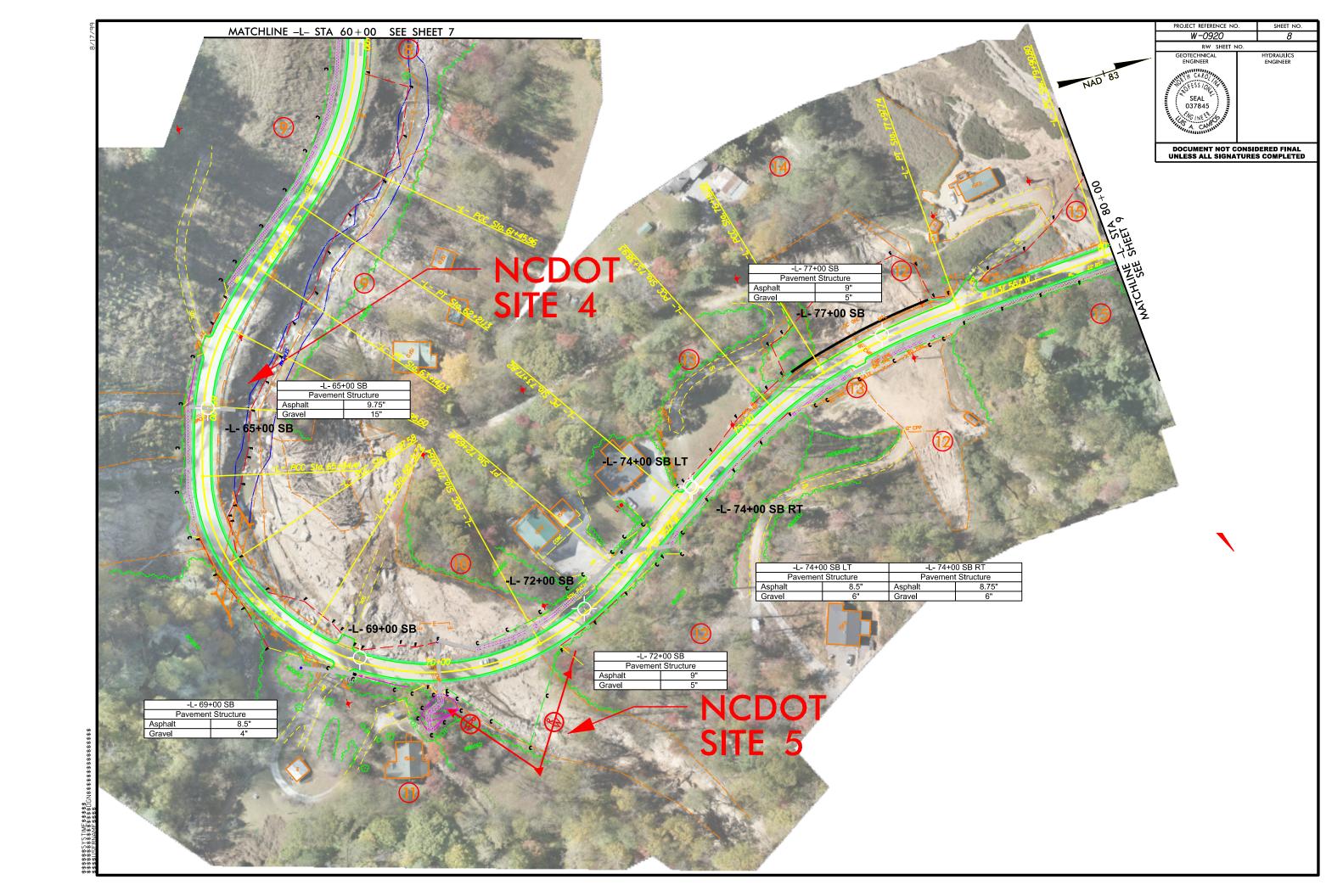


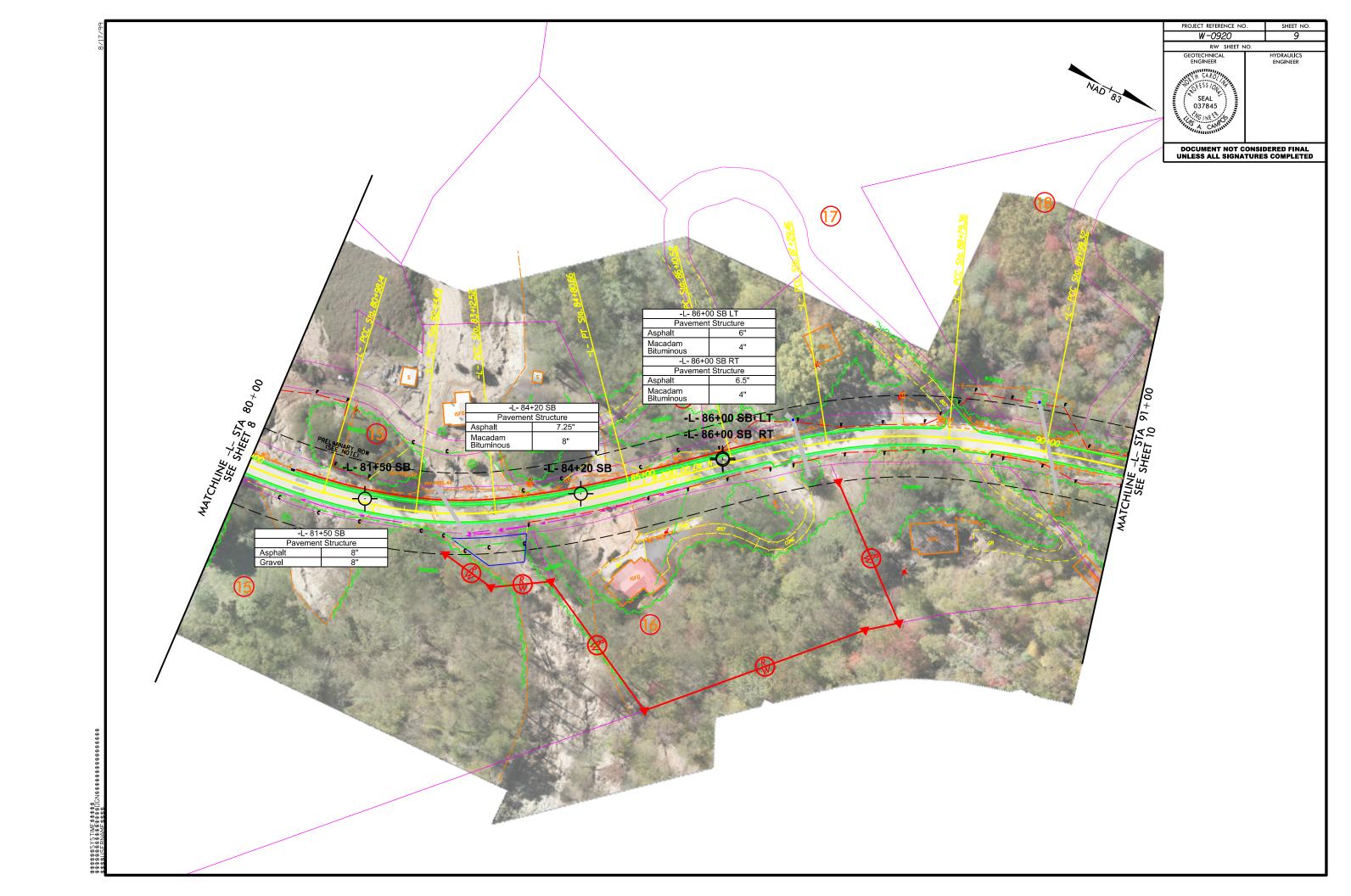




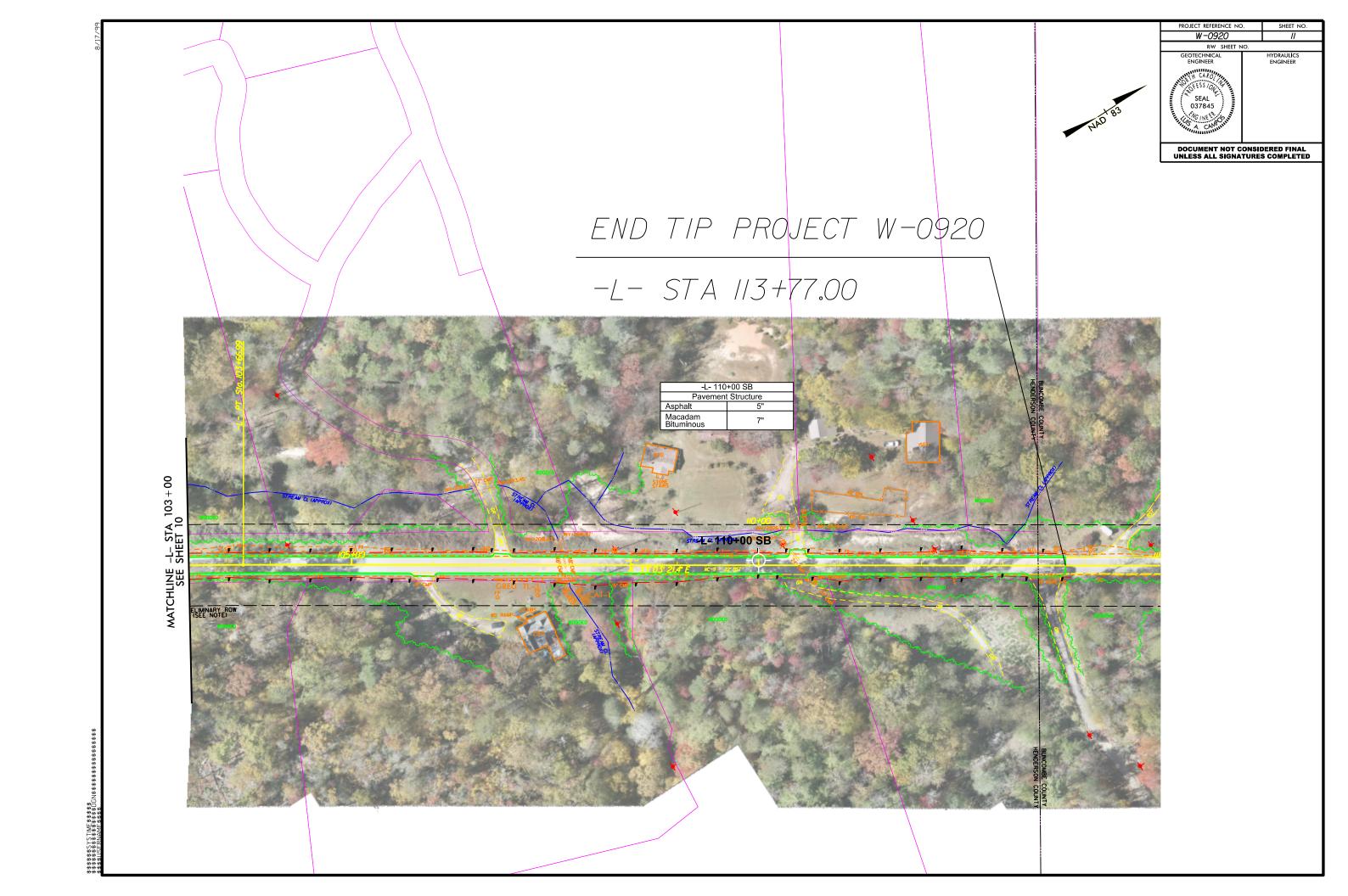












PAVEMENT INVESTIGATION DATA SHEET

Project: TIP: 18314.1045035 W-0920

	<u> </u>
Route:	NC 9 from US 74A to Buncombe County Line
County:	Henderson

Date:	1/21/2025	
Notes By:	L. Campos	

		Width						Thickn	ess			Subgrade						GPS Coo	dinates
Position (Sta.,Lane,Shldr.)	Cut/Fill (Est. of Amount) (ft)	Lane(s) (ft)	Shoulder(s) (ft)	Offset Distance (See Notes) (ft)	Crown "C" or Super "S"	Gross to Top of Soil	Asphalt (in.)	Cement-Treated Base Course (in.)	Gravel (in.)	Macadam (in.)	Pavement Layering	Description	Sample Number	AASHTO Classification	Soil Moisture	Probe Depth (ft)	Asphalt Notes	Northing	Easting
	1		Ī	1	T	T		Г		I				T		I		<u> </u>	I
-L- 33+00 SB RT	Cut 20	10.0	-	5 FYL	С	13.75	5.75	-	8.0	-	Asphalt Gravel	0.0 - 2.0 Residual, Brown Sandy Silt	-	A-4	М	2	Moderate Severity Fatigue Cracking	638,314	1,021,020
-L- 33+00 SB LT	Cut 20	10.0	-	9 FYL	С	14.0	6.0	-	8.0	-	Asphalt Gravel	0.0 - 2.0 Residual, Brown Sandy Silt	-	A-4	М	2	Moderate Severity Fatigue Cracking	638,315	1,021,017
-L- 42+00 SB	Cut 5	11.0	-	7 FYL	С	6.75	6.75	-	-	-	Asphalt	Refusal on Rock	-	-	М	0	High Severity Fatigue Cracking in Wheelpath	638,953	1,021,584
-L- 51+00 SB RT	Cut 10	10.0	-	4 FYL	s	12.25	6.25	-	6.0	-	Asphalt Gravel	0.0 - 2.0 Residual, Orange Sandy Silt	-	A-4	М	2	Moderate Severity Fatigue Cracking in Wheelpath	639,566	1,022,063
-L- 51+00 SB LT	Cut 10	10.0	-	9 FYL	s	12.25	6.25	-	6.0	-	Asphalt Gravel	0.0 - 2.0 Residual, Orange Sandy Silt	-	A-4	М	2	Moderate Severity Fatigue Cracking in Wheelpath	639,567	1,022,059
-L- 60+00 SB	Fill 15	10.5	-	4 FYL	S	13	8.0	-	5.0	-	Asphalt Gravel	0.0 - 2.0 RE, Brown Sandy Silt	-	A-4	М	2	No Visible Distresses	640,182	1,022,570
-L- 65+00 SB	Cut 10	11.0	1.0	5 FYL	S	9.75	9.75	-	15.0	-	Asphalt Gravel	0.0 - 2.0 Residual, Brown Silty Sand	-	A-2-4	М	2	No Visible Distresses	639,863	1,022,944
-L- 69+00 SB	G	11.0	1.0	5 FYL	S	12.5	8.5	-	4.0	-	Asphalt Gravel	0.0 - 2.0 Residual, Brown Silty Sand	-	A-2-4	М	2	Low Severity Transverse Cracking	639,946	1,023,294
-L- 72+00 SB	Cut 25	10.5	-	5 FYL	S	14.0	9	-	5.0	-	Asphalt Gravel	0.0 - 2.0 Residual, Brown Silty Sand	-	A-2-4	М	2	Low Severity Transverse Cracking	640,227	1,023,322
-L- 74+00 SB RT	Cut 30	10.0	-	5 FYL	S	14.75	8.75	-	6.0	-	Asphalt Gravel	0.0 - 2.0 Residual, Tan Silty Sand	-	A-2-4	М	2	No Visible Distresses	640,398	1,023,221
-L- 74+00 SB LT	Cut 30	10.0	-	8 FYL	S	14.5	8.5	-	6.0	-	Asphalt Gravel	0.0 - 2.0 Residual, Tan Silty Sand	-	A-2-4	-	2	No Visible Distresses	640,397	1,023,219
-L- 77+00 SB	Fill 40	10.0	-	6 FYL	S	14.0	9.0	-	5.0	-	Asphalt Gravel	0.0 - 2.0 RE, Brown Sandy Silt	-	A-4	М	2	Low Severity Transverse and Fatigue Cracking, Moderate Severity Longitudinal Cracking	640,679	1,023,115
-L- 81+50 SB	Cut 10	10.0	-	5 FYL	S	16.0	8.0	-	8.0	-	Asphalt Gravel	0.0 - 2.0 Residual, Tan Sandy Silt	-	A-4	М	2	Low Severity Transverse Cracking, Low Severity Fatigue Cracking	641,126	1,023,083
-L- 84+20 SB	Cut 5	10.0	-	8 FYL	S	15.25	7.25	-	-	8.0	Asphalt Macadam	0.0 - 2.0 RE, Gray White Sandy Silt	-	A-4	М	2	Low Severity Transverse Cracking, Low Severity Fatigue Cracking	641,363	1,022,964
-L- 86+00 SB RT	Fill 5	10.5	-	6 FYL	С	10.5	6.5	-	-	4.0	Asphalt Macadam	0.0 - 2.0 RE, Brown Tan Sandy Silt	-	A-4	М	2	Low Severity Transverse Cracking, Low Severity Fatigue Cracking	641,503	1,022,851
-L- 86+00 SB LT	Fill 5	10.5	-	8 FYL	С	10.0	6.0	-	-	4.0	Asphalt Macadam	0.0 - 2.0 RE, Brown Tan Sandy Silt	-	A-4	М	2	Low Severity Transverse Cracking, Low Severity Fatigue Cracking	641,502	1,022,850

Notes:

SB = Southbound

LT = Left Side of Lane

RT = Right Side of Lane

FYL = From Yellow Line G = Grade RE = Roadway Embankment



PAVEMENT INVESTIGATION DATA SHEET

Project: TIP: 18314.1045035 W-0920

Route:	NC 9 from US 74A to Buncombe County Line
County:	Henderson

Date:	1/21/2025	
Notes By:	L. Campos	

		Width						Thickn	ess			Subgrade						GPS Coor	dinates
Position (Sta.,Lane,Shldr.)	Cut/Fill (Est. of Amount) (ft)	Lane(s) (ft)	Shoulder(s) (ft)	Offset Distance (See Notes) (ft)	Crown "C" or Super "S"	Gross to Top of Soil	Asphalt (in.)	Cement-Treated Base Course (in.)	Gravel (in.)	Macadam (in.)	Pavement Layering	Description	Sample Number	AASHTO Classification	Soil Moisture	Probe Depth (ft)	Asphalt Notes	Northing	Easting
	I _ I		T T	1 _		1		T			T								
-L- 92+00 SB	Cut 30	10.0	-	5 FYL	S	10.5	4.5	-	-	6.0	Asphalt Macadam	0.0 - 2.0 Residual, Brown Sandy Silt	-	A-4	М	2	Low Severity Transverse Cracking	642,052	1,022,623
-L- 110+00 SB	Cut 5	10.0	-	6 FYL	С	12.0	5.0	-	-	7.0	Asphalt Macadam	0.0 - 2.0 RE, Brown Silty Sand	-	A-4	М	2	Low Severity Fatigue Cracking in Wheelpath	643,704	1,023,156
				<u> </u>	<u> </u>	1													
					-														
					-									1					
	<u>. </u>		<u> </u>		<u> </u>			<u> </u>					•	1					



				PROJE	CT NUMB	BER		TIP ROUTE									
DYNAN	IIC CONE F	PENETROM	ETER		4350796			W-0920 NC-9									
		N-SITU CBR			OUNTY			GEOLOGIST TECHNICIANS									
					NDERSON			C. PAYNE C. COGDILL									
TEST LOCA	ATION DESCR	RIPTION		DA	ATE RUN												
	-L- 33+00			1/	/24/2025												
DATUM	CUT / FILL				ASTING		CORRELATED CBR VALUES										
ABC	CUT	638,3			,021,020												
		IVE PENETRA		CENTIMETE	RS												
0.1	7.1	26.3	70.8		0.0	(0,0)		0 20 40 60 80 100									
0.3	7.3	27.0	71.3		0.0			0 +									
0.4	7.4	27.8	##	!##	0.0												
0.6	7.5	28.3			1.0		-										
0.9	7.6	28.7			0.00		-										
1.1	7.8 7.9	29.2 29.6						4									
1.5	8.0	30.1					1	GRAVEL									
1.7	8.0	30.1					1										
2.0	8.5	31.0					1										
2.1	8.7	31.4					1	8									
2.2	8.8	31.8					1										
2.3	9.1	32.5				0.0	1										
2.5	9.2	33.1			0.0	0.0	1	SOIL									
2.6	9.5	33.5			11(1)	0.0	1	SUBGRADE SUBGRADE									
2.8	9.8	34.2			1.0	0.0	1										
2.9	10.3	35.0	- 0		0.0	(),()	1										
3.0	10.6	36.1	0.		0.0	0.0											
3.2	11.0	36.7	0		0.0		1	16									
3.3	11.3	37.1	10.		93(9)	0.0											
3.4	11.5	37.9	- 10		93(9)	(),()											
3.5	11.9	38.6	- 0		0.0	(),()	ં છે										
3.6	12.2	39.4			0.0	(),()	Depth Below Datum (inches)	20									
3.7	12.6	41.1			0.0	0.0	ق ا										
3.8	12.9	42.0			0.00		Ę										
3.9	13.4	42.8					atc										
4.0 4.1	14.2	43.9 45.1					2	24									
4.1	14.2	46.6					é										
4.2	15.0	47.8					l 🛎										
4.4	15.3	49.1				0.0	효										
4.5	15.9	51.3			0.0		a 2	28									
4.6	16.2	53.6	0		0.0	0.0	1										
4.7	16.7	55.0			0.0	0.0	1										
4.8	17.1	57.1			120	0.0											
4.9	17.5	58.9			0.0	0.0	3	32									
5.0	17.8	60.1			0.0	0.0											
5.1	18.4	61.0			1.0												
5.2	18.8	62.6				10.00	1										
5.3	19.1	63.4			1.1		3	36									
5.4	19.7	64.0															
5.5	20.1	64.7					-										
5.6 5.7	20.4	64.9 65.6					ł										
5.7	21.4	66.0					4	40									
5.8	22.3	66.7					1										
6.0	22.9	67.5				0.0	1										
6.2	23.4	67.9				(1) (1)	1										
6.3	23.8	68.5				0.0	4	44									
6.5	24.5	69.0			0.0	0.0	1										
6.7	25.0	69.4			0.0	0.0	1										
6.9	25.4	69.9			1.0	0.0	1										
7.0	25.9	70.2			0.0	0.0	4	48									
Notes:							_										

אח	/ N Д М І	C CONE	DEV	IFTPC	METE	_R F		JECT N 24350		:K			3.	TIP V-09				7					NC-9				
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LOI	LUCA	-L- 42						1/24/2																			
DV.	TUM	CUT / FIL			RTHING			EASTI							-	COP	REI	ΔΤΕ	D C	BR '	\/ΔΙ	HES					
	G G	CUT / FIL			8,953			1,021,									KLL			۱۱ ات	V/L	JLC					
		CUMULA	TIVE			V IN CE	NTIME																				
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.2	0.4							0.0		0.0			0		2	20		4	0		6)		80)		10
.4						(0.00		0.0		0.0		0	П						Ш								
.6	0.9	0				0.0		0.0		0.0										ROC	K						
.9	0,3	0.0				(0)(0)		0.0		0.0									П			711					
.1	(1,9)					0.0		0.0		0.0																	
.4	0.3	0.0		0.		0.0		0.0		0.0		4	Ш	Ш	\top	\Box	Ш	\top		\Box		\top			\top	Ш	
.8		101								90																	
.9	0.4	- 10				0.0		0.0		0.0																	
.0	0.1	0.2				0.0		0,0		0.0																	
	(2.0)	(1)				0.0		(0)(0)		0.0		8	\Box	$\dagger \dagger$	$\forall \uparrow$	$\dagger \dagger$	$\forall \forall$	$\dagger \dagger$	$\parallel \parallel$	$\forall \uparrow$	$\parallel \parallel$	$\dagger \dagger$	+	\parallel	$\dagger \dagger$	\forall	$\dagger \dagger$
						0.0		0.0		0.0																	
	0.0			0.		0.0		0.0		0.0																	
	0.0	0.1		0.		0.0		0.0		0.0																	
	0.0	0.		107		10.0		0.0		0.0		12	H	+	+	$\dagger \dagger$	H	+	+	++	+	+	+	\forall	+	H	+
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	0.0	0.		. 0.		0.0		0.0		0.0																	
	0.0	0.0				0.0		0.0		0.0		16	H	+	++	$\forall \forall$	++	+	++	++	++	+		Н	++-	H	+
	0.0	10.0				(0)(0)	_	0.0		(0,0)																	
				100		(1) (1)	_	0.0		(0,0)																	
						10.10					(se																
								1000			Depth Below Datum (inches)	20	\square	+	++	HH	++	+				+			++-	H	+
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						(0.00		0.0		0.0	×	24	\Box	++			++	+				+++			++-	H	+
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	(0,0)	0.0				0.0		0,0		(0,0)	ŏ	28	Н	+	++	H	++	+	++	++	+	+		H	++	H	+
	0.0			10%		(0)(0)		0.0		0.0																	
	0.0	(1)		0		0.0		0.0		0.0																	
	0.0	(0)		0.		0.0		0.0		0.0																	
	0.0	0.		10).		0.0		0.0		0.0		32	H	+	++	++	++	+	++	++	++	+	+	H	+	H	$+\!\!+\!\!-$
	0.0	0.				0.0		0.0		0.0																	
				10		0.0		0.0		1111																	
						11,11		0.0		0.0																	
	11.0						-					36	H	$+\!\!+\!\!\!+$	$+\!\!+$	₩	++	+	++	++	+	$+\!\!+\!\!+$	+	H	+	H	+
						11/11																					
							-																				
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												40	H	$+\!\!+\!\!\!+$	++	++	++	+	++	++	+	+	$+\!\!+$	H	++	H	$+\!\!+\!\!\!+$
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			PROJECT NUMBER	TIP	ROUTE
DYNAN	IIC CONE F	PENETROMETER	24350796	W-0920	NC-9
		N-SITU CBR	COUNTY	GEOLOGIST	TECHNICIANS
			HENDERSON	C. PAYNE	C. COGDILL
TEST LOC	ATION DESCI	RIPTION	DATE RUN		
	-L- 51+00		1/24/2025		
DATUM	CUT / FILL	. NORTHING	EASTING	CORRELAT	FED CBR VALUES
ABC	CUT	639,566	1,022,063		
	CUMULAT	IVE PENETRATION IN (CENTIMETERS		
0.3	15.7	37.6	0.00	0 20	40 60 80 100
0.6	16.4	38.3	0.0	0	
1.0	16.9	38.6	0.0		
1.3	17.3	39.0	0.0		
1.7	17.9	39.4	0.0	GRAVEL	
2.0	18.5	39.9	0.0	4	
2.3	19.0	40.4	0.0		
2.7	19.7	40.9			
3.0	20.2	41.6			
3.2	20.6	42.1	100	8	
3.5	21.1	42.8		SOIL	
3.7	21.7	43.7	100	SUBGRADE	
3.8					
4.1 4.4	22.8	45.0 45.9		12	
4.4	23.1	46.5		·	
4.7	23.4	47.1			
4.9	24.1	47.8			
5.1	24.6	48.8		16	
5.2	24.9	50.6		. 10	
5.4	25.2	51.4			
5.7	25.6	52.3	0.00	 	
5.8	25.9	53.0	0.0	20 Pepth Below Datum (inches) 24 Pepth Below Datum 24 Pepth Below Datum 24 Pepth Below Datum (inches) 28 Pepth Below (in	
5.9	26.3	54.0	0.0		
6.2	26.7	55.1	0.0	┨ ╶ ╸┈┈┈┈	
6.4	27.0	56.3	0.0	▍┋┈┈╟╟╟╟╟┞┸	.
6.7	27.2	57.4	0.0	S 24	*
6.9	27.5	58.3	0.00		
7.1	27.7	59.4	0.0		
7.4	27.9	60.6	0.0	<u> </u>	9
7.7	28.2	61.6	0.0		
7.9	28.4	62.7	0.0	Ž 28	
8.2	28.8	64.0	0.0		
8.5	29.1	65.0		 	
8.8	29.5	66.3	120		<u> </u>
9.1	29.9	67.2 68.3		32	
9.3 9.6	30.4	68.3		 	
10.0	31.0	70.2		 	
10.0	31.4	71.0		26	
10.6	31.8	72.2		36	
10.9	32.3	(72.2)		1	
11.2	32.6	()	100	1	
11.6	32.9		0.00	10	
11.9	33.2		0.0	40	
12.2	33.6		0.00	1	
12.5	34.1	100	(000)	1	
12.9	34.5		0.00	1	
13.4	34.8	(1)(1)	000	44	
13.9	35.4	100	000]	
14.4	35.9	(0.0)	0.00]	
14.8	36.5		0.00		
15.1	37.0	10.00	0.00	48	
Notes:				-	<u> </u>

DYNAN	IIC CONE PEN	IETROMETER	PROJECT N 243507			TIP W-092)			NC-9	
	ATA AND IN-S		COUN			GEOLOG				HNICIAN	3
_			HENDER			C. PAYN				COGDILL	
EST LOC	ATION DESCRIPT	TION	DATE R								
	-L- 60+00 S		1/24/20								
DATUM	CUT / FILL	NORTHING	EASTIN				CORRE	LATED CE	R VALUE	3	
ABC	FILL	640,182	1,022,5		-						
		PENETRATION IN CE			1						
).3	38.6	0.0	0.0	(1,0)		0	20	40	60	00	
).7	40.0	0.0	0.0		0	0	20	40	60	80	
1.2	42.3	0.0	0.0		1 ,						
1.6	44.3	0.0	0.0		i						
1.9	46.5	1000	0.0	0.0	1	C.D.A	VEI				
2.3	49.9	100	(818)	0.0	1 .	GRA	VEL				
2.8	58.1	100	(818)	0.0	4						
3.2	63.2	(1)(1)	0.0	0.0	1						
3.7	(63.2)	(1)(1)	0.0	0.0	1						
1.1	(9)(9)	(0.0)	1000	(0.0)	1		╅┩╢				
1.3	(9)(9)	(0)(0)	(8)(8)	(0.0)	8	 				 	
1.6	(9)(9)	(30)	0.0	(0,0)	1				SOIL		
1.9	(9)(9)	1070	910	0.0			 	SUE	BGRADE]	
5.2	(9.19)	1000	0.0	(0,(0)						T	
5.5	(9.19)	(9)	0.0	0.0	12		3				
5.8		1000	0.01	(1)(1)							
.2	0.0	0.00	0.0	0.0	1		.				
3.5	0.0	0.0	0.0	0.0	1		H				
6.7	1979	100	9.0	0.0	16						
7.0	0.0	0.0	0.0	0.0	1						
7.2	(9)(9)	1000	(9.6)	(0,0)			J				
7.4	0.0	(0.0)	0.0	0.0	જ						
7.6	0.0	0.0	0.0	0.0	Depth Below Datum (inches)						
7.9	0.0	0.0	0.0	0.0	ا يق						
3.3	0.0	0.0	0.0	0.0	ΙĒ						
3.5	0.0	0.0	0.0	0.0	Įį						
3.7	0.0	0.0	0.0	0.0	24						
3.9	0.0	100	0.0	(1,1)	8 -						
9.2	0.0	11.0	0.0	0.0	1 2 2						
9.4	0.0	100	0.0	(1,1)	.						
9.7	0.0	0.0	0.0	0.0	9 28						
0.2		0.0	0.0	0.0							
10.5					ł						
10.9		100									
11.3		100									
1.6		100	100		32						
2.1		100	100		ł						
2.8		100	1000		ł						
3.4		100		1111	1						
3.9		100	200		36						
4.5		100	1000		ł						
5.6			-	17.1	ł						
7.0		100	1000		ł						
9.3					40						
0.7		100	200		ł						
22.4					ł						
3.9		100	1000		ł						
26.4		100	1000		44		++++	+++++	++++++		++++
28.7		100	100		ł						
30.5		1000	-		ł						
32.7		100	-		ł						
5.1		100	-		48						
87.0 Notes:			1000		I 70						

			PROJECT N	UMBER				ΓIP								ROU	TE				
DYNAM	IIC CONE P	ENETROMETER	243507					0920								NC-					
	ATA AND IN		COUNT				GEO		ST						TEC	CHNI		NS			
			HENDER					AYNE								COG					
TEST LOCA	ATION DESCR		DATE R	UN																	
	-L- 65+0		1/24/20																		
DATUM	CUT / FILL	NORTHING	EASTIN						COF	RREI	_ATI	ED C	BR	VAI	_UE	S					
ABC	CUT	639,863	1,022,9	44																	
		VE PENETRATION IN (CENTIMETERS																		
0.10	4.30	0.0		0.0			0		20		4	10		ϵ	60		8	80		:	100
0.30	4.32			0.0	-	0						П					П				1
0.40	4.40			0.0	-										RAV		٦.				
0.50	4.43																4				1
0.70 0.90	4.44 4.45				-																
1.00	4.45					4	+++	++++	+	++	Н	\vdash	++	+		+	+	++	Н	H	-
1.10	4.52																				
1.30	4.55																				
1.50	4.60																				
1.60	4.65				1	8	+++	+++	++	+	\mathbb{H}	++	++	+	H	$+\!+\!+$	+	H	\mathbb{H}	\mathbb{H}	+
1.70	4.70	1111	11111	n n	1																
1.80	4.75	1111	11111	0.0	1																
2.00	4.80	0.0	0.0	(0,0)																	
2.10	4.90	1111	1111	(11)	1	12	+++	+++	\mathbb{H}	#	\mathbb{H}	H	$+\!\!+\!\!\!+$	+	H	$+\!\!+\!\!\!+$	+	H	\mathbb{H}	Н	+
2.20	5.00	11111		(0.0)	1																
2.30	5.10	(1)(0)	1000	0.0																	
2.40	5.11	(0.0)	10.00	0.0																	
2.50	5.12	(0.0)	0.0	0.0		16	+++	++++					+	+		Ш	-		Ш	Ш	4
2.60	5.13	0.0	0.0	(0,0)																	
2.70	5.14	0.0	0.0	0.0																	
2.80	5.15	0.0	10.0	0.0	ြွ																
2.90	5.16	(0.0)	0.00	0.0	Depth Below Datum (inches)	20					Ш	Ш	Ш	#		Ш	4		Ш	Ш	4
3.00	5.17	0.0	0.0	0.0	اغ. ا																
3.05	5.18	0.0	0.0	0.0	ĮΈ																
3.10	5.19	0.0	0.0	(1),(1)	뒱																
3.15	5.20	0.0	0.0	0.0	Įĕ	24					Ш		Ш	4		Ш			Ш	Ш	4
3.20	5.21	0.0		0.0	ا ا																
3.30	5.22	0.0		0.0	BB																
3.40	5.23	0.0		0.0	Ę																
3.42	5.24			1000	₩	28	$\sqcup \sqcup$	Ш			Ш			4		Ш			Ш	Ш	_
3.47	5.25			- 2/2	- 1																
3.50 3.55	5.26 5.27																				
3.60	5.27				1																
3.62	5.28				1	32	Ш	Ш	Ш	Щ	Ш	Ш	Ш	\bot	Ш	Ш	\bot	Ш	Ш	Ш	
3.64	5.30				1																
3.68	(5.3)				1																
3.70	(3.3)	0.0																			
3.80	0.0	11111		0.0	1	36	Ш	Ш	Ш	Щ	Ш	Ш	Ш	\bot	Ш	Ш	\bot	Ш	Ш	Ш	
3.82	(0)(0)	110	100	(11)	1	55															
3.84	0.0	1111	100	(0,0)	1																
3.90	0.0	1111	100	0.0	1																
3.94	(1)()	1070	1000	(0.0)	1	40	Ш	Ш	Ш	Ш	Ш	Ш	Ш	Ш	Ш	Ш		Ш	Ш	Ш	
3.96	(0)(0)	0.00	(0)(0)	(0.0)		-70					T	\prod						\prod			
4.01	0.0	(0.0)	0.00	(0.0)																	
4.10	0.0	100	0.00	(0,0)																	
4.14	0.00	1000	1000	0.0		44															
4.15	0.0	1111		0.0	1	44					П		\prod	\prod			\prod		\square	П	1
4.20	0.0			0.0																	
4.22	0.0	10.00		0.0	1																
4.24	0.0	1111		(1)(1)	1	40															
4.26	100	1111		(0)(0)		48			•												_
Notes:																					

DVNAM	IIC CONE	DENIET		_{:TEB} ⊨	PROJEC		EK				IP 0020	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \							IC 0				
	IIC CONE I ATA AND II			I ER		350796					0920						-		VC-9		,		
D.	ATA AND I	11-311C	CDK	 		DERSON				GEOL C. P								ECH C. C					
COT LOC	ATION DECC	DIDTIC	VI							U. P	ΑYN	_						U. U	UGL	ЛLL			
EST LOCA	ATION DESC -L- 69+		N			E RUN																	
DATUM			NODTIN	NO		4/2025 CTING						CO	DDE	. AT	ED C	DD 1	///	IEC					
ABC	GRADE	-	NORTHI 639,94			STING 23,294						CO	KKE	LAI	EDC	DK	VAL	JES					
ABC		IVE DE			NTIMETER																		
١.٥	23.8	47.6	INE IIVA	ION IN CL	INTIIVILTEI		0.00																_
).2	25.6	48.1			_				()		20			40		60			80			1
					_				0 -			Т								\top		П	П
0.6	27.5	48.5																					
).7	28.8	49.0									GR/	VEL	7									Щ	Щ
).9	29.6 29.9	49.4								╽┡		VLL	-										\pm
0.0									4 -	+++	+++	₩	+++	+++								-	-
.2	30.3	50.4						ł						H	₩					\prod			
1.3	30.5	51.0						ł					#										
1.4	30.8	51.4						ł					7				soı						
1.6	31.2 31.5	51.8						ł	8 -		Ш	Щ	Ш	Ш	\bot			L ADE		\bot	Щ	1	μ
1.8		52.3						ł			Щ	.			╽┡	J J							
2.1	31.7	52.7 53.5										411											
2.3	32.0											Ш											
2.5	32.3 32.7	54.2 55.1						ł	12 -	Ш	Ш		+	Ш	+++	Ш	Н	Н	Ш	#	Ш	Ш	Ш
									14														
2.7	32.9 33.4	55.8 56.5						ł															
3.0																		-					=
3.1	33.6	57.6																		7		•	
3.3	33.8	58.4							16 -		Ш			Ш		Ш		\Box		П		F	
3.6	34.1	58.9																					
3.9	34.4	59.4														_	щ	ш	П				П
1.1	34.6	60.3						Depth Below Datum (inches)															
1.4	35.0							Š	20 -		+++	+++		+++	+		+	++	ш			3	+
1.6	35.3	61.8 62.7						Ē								5			T	T		7	
1.8	35.7				_			Ę								5							
5.0	36.0 36.6	63.7 64.6			_			atı							1		+		-				
5.5	37.0	65.6						 	24 -	+++	+++	+++	+++	++	7				┰╫	+	++	₩	$^{+}$
5.6	37.3	66.7						Į į															
5.0	37.7	67.7						ă															
5.3	38.2	68.8						t t						₽									
6.6	38.5	00.0	(68.8)	0.0			0.00		28 -			+++	+++	$+\!+\!+$	++	-	$\sqcup \!\!\! \perp$		Ш	+	1	#	$^{+}$
5.8	38.9		(00.0)					l _															
7.0	39.3																						
7.4	39.8																						
7.6	40.3							ł	32 -	Ш	Ш	\coprod	Ш	Ш	$\perp \perp \perp$	Ш	Ш	Ш	Ш	$\perp \! \! \! \! \! \! \! \! \perp$	Щ	\perp	\perp
7.8	40.6							1															
3.1	41.0							1															
3.3	41.4						0.0	1															
3.6	41.7		() ()				0.0	1	36 -		Ш		Ш						Ш				
9.0	41.9			77.77			1111	l	50 -													\prod	Π
9.3	42.3		(17)				(11)	l															
9.8	42.5		1010	7.77			0.00	1															
0.3	42.9		(717)	10.00			0.0	1	40														
0.7	43.3		(170	1000			0.0	1	40 -	$\top \!$	$\dagger\dagger$	$\dagger \dagger \dagger$	++	$\parallel \parallel$		$\parallel \parallel$	\Box	$\forall \dagger$	$\parallel \parallel$	$\dagger \dagger$	$\parallel \parallel$	$\dagger \dagger$	\dagger
1.5	43.6		(717)	10.00			0.0	1															
2.3	43.9			1000			0.0	1															
3.5	44.4							1															
5.0	44.7							1	44 -	++	H	+++	H	\mathbb{H}	++	++	++	++	H	+	++	+	+
6.2	45.2							ł															
7.5	45.2		(7.77					ł															
9.1	46.7																						
	170.1							ł	48														Ш

DYNAMIC CONF PENETROMETER 24/50796 W-9820 NC-9 N				PROJECT NUMBER	TIP	ROUTE
TEST LOCATION DESCRIPTION -1-72-09 SB 1/23-0202 DATUM CUTFIEL NOWTHING ARC CUT 640.227 1023.322 COMMATTOE PER PRATICION N CENTRINE FERS 0.2 16.9 0.7 19.0 1.0 20.3 1.1 21.3 1.1 21.3 2.3 26.1 2.3 26.1 2.3 26.1 2.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3					W-0920	NC-9
TESTICATION DESCRIPTION -1-7240 98 1/22/205 DATUM CUT_FILL NOATHING EASTING ABC CUT 640.277 1/02/322 CUMALATIVE PRICE PRATION IN CENTIMETERS CUMALATIVE PRICE PRATION IN CENTIMETERS 0.5 180 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	D.	ATA AND IN	I-SITU CBR	COUNTY	GEOLOGIST	
1-72409 SB				HENDERSON	C. PAYNE	C. COGDILL
DATINAL CUT: FILL NORTHING EASTING ABC CUT 640,227 1,023,322 CUMULATIVE PENETRATION IN CENTIMETERS 0.5	TEST LOCA	ATION DESCR	IPTION	DATE RUN		
ABC CUT 640,227 1,023,322 CUNUATIVE PENTRATION IN CENTIMETERS 0.2 16.9 0.7 19.0 0.7 19.0 0.7 19.0 1.0 20.3 1.4 21.8 1.7 2.1 2.1 24.9 2.3 26.1 2.3 26.1 2.6 27.3 2.8 20.0 3.1 30.1 3.1 30.1 3.3 30.1 3.1 30.1 3.3 30.5 4.4 30.5 4.5 4.2 4.0 4.0 4.0 4.0 50.9 4.2 27.5 5.0 4.8 4.8 4.0 4.0 50.9 4.2 4.1 4.1 4.5 4.1 4.1 4.5 4.1 4.1 4.5 4.1 4.1 4.5 4.1 4.1 4.5 4.1 4.1 4.5 4.1 4.1 4.5 4.1 4.1 4.5 4.1		-L- 72+0	0 SB	1/23/2025		
CUNULATIVE PENETRATION IN CENTIMETERS 02					CORRELA	ATED CBR VALUES
02 18.9	ABC					
0.5 18.0 0.7 19.0 1.0			VE PENETRATION IN	CENTIMETERS		
0.7 19.0 10.	0.2		0.0	0.0	0 20	40 60 80 100
1.0					0 +	
14. 218					_	
1.7						
2.1					GRAVEL	
2.1					4	
2.3						
29 29.0 31 30.1 33 31.7 36 33.0 38 34.2 40 35.9 42 37.5 43 39.5 44 42.0 46 43.8 47.7 45.4 49 47.8 5.1 49.6 5.3 51.7 5.5 54.8 5.6 59.3 5.8 65.7 5.9 (65.7) 6.0 6.1 6.1 6.3 6.4 6.4 6.5 6.7 7.7 7.7 7.9 8.1 8.3 8.6 8.8 8.9 9.3 9.3 9.3 9.3 9.3 9.3 9.3 9.3 9.3 9					┈ ┨ ╶	
3.1 30.1 33.3 31.7 3.3 31.7 3.3 33.0 33.0 33.0 33.0 33.0 33.0 33.					-	
33 31.7 36 33.0 38 34.2 40 35.9 42 37.5 43 39.5 44.5 42.0 46.6 43.8 47 45.4 49 47.8 5.1 49.6 5.3 51.7 5.5 54.8 5.6 59.3 5.8 65.7 5.9 (65.7) 6.0 6.1 6.1 6.3 6.3 6.4 6.5 6.7 8.9 8.9 8.7 7.7 7.7 7.9 8.1 8.3 8.6 8.9 9.7 9.7 9.9 8.1 8.3 8.6 8.9 9.9 9.7 9.7 9.9 8.1 1.3 11.7 11.7 11.7 11.7 11.7 11.7 11.					8	
3.6 33.0 33.0 33.0 33.0 33.0 33.0 33.0 3					-	
3.8					 	
4.0						
4.2 37.5 4.3 39.5 4.4 4.5 42.0 4.6 43.8 4.7 45.4 4.9 47.8 5.1 49.6 5.3 51.7 5.6 54.8 5.6 59.3 5.8 65.7 5.9 (65.7) 6.0 6.1 6.3 6.4 6.4 6.5 6.5 6.6 5.8 6.5 6.5 6.8 6.5 6.5 6.5 6.5 6.8 6.5 6.5 6.5 6.5 6.5 6.5 6.5 6.5 6.5 6.5	4.0				12	
4.5 42.0 4.6 43.8 4.7 45.4 4.9 47.8 5.1 49.6 5.3 51.7 5.5 54.8 5.6 59.3 5.8 65.7 5.9 (65.7) 6.0 6.1 6.3 6.4 6.4 6.6 6.5 6.7 7.1 7.3 7.7 7.9 8 8.1 8.3 8.6 8.8 8.9 9.3 9.3 9.7 10.2 10.8 11.3 11.7 11.7 12.2 12.9 13.5 14.6 14.6 15.8	4.2		1000		 	
4.5	4.3					
4.6 43.8 4.7 45.4 4.9 47.8 5.1 49.6 5.3 51.7 5.5 54.8 5.6 59.3 5.8 65.7 5.9 6.0 6.0 6.1 6.1 6.3 6.4 6.5 6.7 6.9 7.1 7.3 7.7 7.9 8.1 8.1 8.3 8.6 8.8 9.9 9.9 9.9 9.9 9.9 9.9 9.9 9.9 9.9	4.5		0.0	0.0		
4.7 45.4 4.9 47.8 5.1 49.6 5.3 5.1 49.6 5.5 5.4 8 5.6 59.3 5.8 65.7 5.9 (65.7) 6.0 6.1 6.3 6.4 6.5 6.5 6.5 6.6 59.3 7.1 7.3 7.7 7.9 7.9 8.1 8.3 8.6 8.8 9.9 9.9 9.3 9.9 9.9 9.9 9.9 9.9 9.9 9.9	4.6			0.0	16	
5.1	4.7		0.0	0.0	█ <mark>▋</mark>	
5.3	4.9	47.8	0.00	10.0	 	
6.7 6.9 7.1 7.3 7.7 7.9 8.1 8.3 8.6 8.9 9.3 9.7 10.2 10.8 11.3 11.7 12.2 12.9 13.5 14.6 15.8	5.1	49.6	0.0	0.0	lacksquare	
6.7 6.9 7.1 7.3 7.7 7.9 8.1 8.3 8.6 8.9 9.3 9.7 10.2 10.8 11.3 11.7 12.2 12.9 13.5 14.6 15.8	5.3	51.7	0.0	0.0	<u> </u>	
6.7 6.9 7.1 7.3 7.7 7.9 8.1 8.3 8.6 8.9 9.3 9.7 10.2 10.8 11.3 11.7 12.2 12.9 13.5 14.6 15.8	5.5		0.0	0.0	<u> </u>	
6.7 6.9 7.1 7.3 7.7 7.9 8.1 8.3 8.6 8.9 9.3 9.7 10.2 10.8 11.3 11.7 12.2 12.9 13.5 14.6 15.8	5.6		0.0	0.0	_	
6.7 6.9 7.1 7.3 7.7 7.9 8.1 8.3 8.6 8.9 9.3 9.7 10.2 10.8 11.3 11.7 12.2 12.9 13.5 14.6 15.8	5.8		0.0	0.0	atr	
6.7 6.9 7.1 7.3 7.7 7.9 8.1 8.3 8.6 8.9 9.3 9.7 10.2 10.8 11.3 11.7 12.2 12.9 13.5 14.6 15.8		(65.7)			Ö 24	
6.7 6.9 7.1 7.3 7.7 7.9 8.1 8.3 8.6 8.9 9.3 9.7 10.2 10.8 11.3 11.7 12.2 12.9 13.5 14.6 15.8						
6.7 6.9 7.1 7.3 7.7 7.9 8.1 8.3 8.6 8.9 9.3 9.7 10.2 10.8 11.3 11.7 12.2 12.9 13.5 14.6 15.8						
6.7 6.9 7.1 7.3 7.7 7.9 8.1 8.3 8.6 8.9 9.3 9.7 10.2 10.8 11.3 11.7 12.2 12.9 13.5 14.6 15.8					ᅴ 뒳	
6.7 6.9 7.1 7.3 7.7 7.9 8.1 8.3 8.6 8.9 9.3 9.7 10.2 10.8 11.3 11.7 12.2 12.9 13.5 14.6 15.8					28	
6.9 7.1 7.3 7.7 7.7 7.9 8.1 8.3 8.6 8.9 9.3 9.7 10.2 10.8 11.3 11.7 12.2 12.9 13.5 14.6 15.8					_	
7.1 7.3 7.7 7.9 8.1 8.3 8.6 8.9 9.3 9.7 10.2 10.8 11.3 11.7 12.2 12.9 13.5 14.6 15.8						
7.3 7.7 7.9 8.1 8.3 8.6 8.9 9.3 9.7 10.2 10.8 11.3 11.7 12.2 12.9 13.5 14.6 15.8					-	
7.7 7.9 8.1 8.3 8.6 8.9 9.3 9.7 10.2 10.8 11.3 11.7 12.2 12.9 13.5 14.6 15.8	7.3	1111			32	
7.9 8.1 8.3 36 8.6 8.9 9.3 9.7 10.2 40 10.8 11.3 11.7 41 12.2 12.9 13.5 44 14.6 48	7.7	(10)	0.0	101		
8.1 8.3 8.6 8.9 9.3 9.7 10.2 10.8 11.3 11.7 12.2 12.9 13.5 14.6 15.8	7.9	0.0				
8.3	8.1	00	100	100		
8.6	8.3	0.0		FOR STATE OF	36	
8.9 9.3 9.7 9.7 9.7 9.7 9.7 9.7 9.7 9.7 9.7 9.7	8.6	0.0	(10.0)	F/3		
9.7 10.2 10.8 11.3 11.7 12.2 12.9 13.5 14.6 15.8	8.9	0.0	0.0			
10.2	9.3	0.0				
10.2 10.8 11.3 11.7 12.2 12.9 13.5 14.6 15.8	9.7	(0.0)		000	40	
11.3 11.7 12.2 12.9 13.5 14.6 15.8	10.2	0.0		E 100 E		
11.7 12.2 12.9 13.5 14.6 15.8	10.8	1111	0.00			
12.2 12.9 13.5 14.6 15.8	11.3	100				
12.2 12.9 13.5 14.6 15.8	11.7	0.00			44	
13.5 14.6 15.8						
14.6 15.8						
15.8					-	
13.0					48	
	Notes:	1100				

DYNAN	IIC CONF PEN	NETROMETER	24350				TIP /-0920							UTE C-9			
	ATA AND IN-S		COUN				LOGIS	Т				Т		VICIA	NS		
			HENDER				PAYNE							GDIL			
EST LOC	ATION DESCRIP	TION	DATE F														
	-L- 74+00 SE		1/23/20														
DATUM	CUT / FILL	NORTHING	EASTI				(CORR	ELAT	ΓED	CBR	VALL	JES				
ABC	CUT	640,398	1,023,2														
	CUMULATIVE	PENETRATION IN CE	ENTIMETERS		1												
0.3	16.9	0.0	0.0	0.0		0		20		40		60		,	30		1
0.5	17.4	0.0	9.0	0.0	0	+		20		40		00			50		
0.8	18.0	0.0	9.0	0.0	1											Ш	Ш
1.1	18.9	0.0	0.0	(0.0)													П
1.4	19.5	0.0	0.0	(0.0)			CD AVE										Щ
1.7	20.1	0.0	0.0	0.0	4		GRAVE	الب				🖶		Ħ			H
2.0	20.8	0.0	0.0	0.0	4												Д
2.4	21.9	0.0	0.0	0.0										+	-		世
2.7	22.5	0.0	0.0	0.0													П
3.1	23.4	0.0	0.0	(1)(1)						#	$+ \blacksquare$	HT		•			
3.3	24.6	(1)	(1)	0.0	8	+++							Ш	+++	$\dagger\dagger$	+++	\dagger
3.5	25.4	(0.0)	(1)	0.0					Щ	ı							
3.7	26.6	0.0	0.0							7		Ш			Ш		
4.0	27.6	(0.0)	(1)	0.0									S	OIL			
1.2	28.8	(1)	1000	0.01	12	+++	+++		+++	+	+++	8		RAD	E	++	+
1.4	30.1	(1)	0.0						Ш							•	
4.6	31.7	10.0	9.0	0.0					5								
4.8	33.1	10.0	9.0	(0.0)				4	\Box								
4.9	34.0	10.0	9.0	0.0	16	+++				+	+++	+++	+++	+++	+++	+++	+
5.0	35.1	10.0	9.0	(0.0)					7								
5.2	36.1	10.0	9.0	0.0				T									
5.4	37.9	0.0	0.0	0.0	જે			 									
5.7	39.5	(0.0)	(9.6)	(0,0)	Depth Below Datum (inches) 24 28					Ш	$\perp \downarrow \downarrow$	$\sqcup \! \! \! \perp$		+++	\sqcup		\perp
5.8	40.9	0.0	0.0	0.0] <u>:</u>		Щ	$oldsymbol{ m J}$									
5.9	42.0	(0.0)	(9.6)	(0,0)	٦		Щ										
5.1	43.5	0.0	0.0	0.0	Ī												
5.3	45.3	0.0	0.0	0.0	မို 24			Щ									
5.4	47.4	0.0	0.0	0.0	J ≷ ²												
6.7	48.8	0.0	0.0	0.0	, j												
7.0	50.5	0.0	0.0	0.0	ي ا												
7.4	52.0	0.0	0.0	0.0	<u> </u>												
7.8	54.7	110		0.0	28 کا					\parallel	\Box		ПП	$\top \!\!\!\!\!\top$	\prod		\sqcap
3.4	56.5	0.0	0.0	(0.0)													
9.0	58.3	1111		0.0													
9.3	60.2	1110		0.0													
9.8	61.5	1000	100	(1).(1)	32	+++	+++	+++	+++	+	+++	++	+++	++	+	+++	+
10.3	(61.5)	1110		0.0													
10.7	11/11/11	1110	250	0.0													
11.2		1110	9.0	(1)													
11.7	1010	1110	1171	1111	36	+++	++++		+++	+	+++	++	+++	+++	₩	+++	+
12.0		1110	9.49	10.0													
12.2		11.0	100	1000													
12.5	10.00	1111	11111	1111													
12.7	11/11/1	1110	9.0	1121	40	+++	++++	+++	+++	++	+++	+	+++	+++	H	+++	+
12.8		1110	9.49	10.0													
13.0		11.0	100	1000													
13.4	11/11/11	1110	250	0.0													
13.9	11/11/11	1110	250	0.0	44	Ш	ШШ	$\perp \downarrow \downarrow \downarrow$	Ш	Ш	Ш		Ш	Ш	Ш	Ш	Ц
14.3		(1)	100	0.0	. ~												
14.6	1010	1110	1171	1111													
15.0		100	1000	(1)(1)													
15.7		1110	1000	0.0													
16.2	(0.00)	10.0	1000		48			• • • • •									

DYNAMIC COME PENETROMETER DATA AND IN-SITU OR COUNTY GROUGHT TECHNICIANS COUNTY COUNTY GROUGHT TECHNICIANS C. COGDILL C. COGDI			_	PROJECT NUMBER		TIP	ROUTE
DATA AND IN-STRI CER	DYNAM	IIC CONE P	ENETROMETER				1
### HINDERSON C. PAYNE C. COGGUL ### C. PAYNE C. PAYNE ### C. PAYNE C. PAYNE ### C. PAYNE C. PAYNE ###							1
CORRELATED CBR VALUES							
1/2 1/2	TEST LOCA	ATION DESCR	RIPTION				
DATIM CUT_FILL MORTHNIG EASTING							
ABC FIL 640,679 1,023,115 CULTURE TO THE TATOR IN CENTIMETERS 33 28.1	DATUM	CUT / FILL	NORTHING			CORRELAT	TED CBR VALUES
33 281							
188 29.5 18.		CUMULATI	VE PENETRATION IN C				
188 29.5 18.	0.3		0.0	0.0		0 20	40 60 00 400
181 333 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0.6		0.0	0.0		0 20	40 60 80 100
1.1	0.8		0.0	0.0	- U		
1.44	1.1		0.0	0.0			
177	1.4		0.0	0.00			<mark> </mark>
193	1.7		0.0	0.0		GRAVEL	
23	1.9			0.00	4		
2.6	2.3		0.0	0.00			
3.0	2.6		0.0	0.0			
333 55.0 38.8 57.1 59.0 1.1 61.0 63.2 65.2 65.2 65.2 65.2 65.2 65.2 65.3	3.0		0.0	1000			
35	3.3		1111	1000	8		
3.7	3.5		1111	100			
133	3.7	59.0	100	EX.			SUBGRADE
1.5 65.2 1.7 (65.2) 1.6 1.	4.1	61.0	0.0	0.0			
16.7 (65.2) 3.3 (65.2) 3.6 (65.2) 3.8 (7.1) 3.8 (7.1) 3.1 (7.7) 3.1 (7.7) 3.1 (7.7) 3.2 (7.7) 3.3 (7.7) 3.3 (7.7) 3.3 (7.7) 3.3 (7.7) 3.3 (7.7) 3.4 (7.7) 3.5 (7.7) 3.6 (7.7) 3.7 (7.7) 3.8 (7.7) 3.9 (7.7) 3.1 (7.7) 3.	4.3	63.2	0.0	0.0	12		_ \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
5.0	4.5	65.2	0.0	10(0)			
5.3 5.6 5.8 5.8 5.5 5.8 5.5 5.8 5.8 5.5 5.8 5.5 5.8 5.8 5.5 5.8	4.7	(65.2)	(0.0)	1000			
5.6	5.0	0.0		1000			
5.8	5.3	(0.0)	0.0	10(0)	16		
32	5.6	0.0	0.0	10.0			
8.5	5.8	(0.0)	0.0	10(0)			
3.1	6.2	0.0	0.0	0.0			
3.1	6.5	0.0	0.0	0.0			
3.1	6.8	0.0	0.0	0.0	<u>_</u>		
3.1	7.1	0.0	0.0	10.0	Ē		
3.1	7.4	0.0	0.0	0.0	1 2		
3.1	7.7	0.0		10.0	<u>24</u>		
3.1	7.9	0.0		10.0	_ ₫		
3.1	8.1	0.0		0.0	Be		
3.1	8.4	0.0		0.0	Ę		
3.1	8.6	0.0		0.0			
9.3 9.6		0.00					
9.6	9.1	- 0.0					
10.0 32 32 32 33 34 34 35 36 37 37 37 37 37 37 37							
10.3					22		
10.7 11.0 11.3 36 11.8 12.1 12.6 13.4 40 40 41.2 41.2 41.7 41.9 4					32		
11.0							
11.3							
11.8		-					
12.1					36		
12.6							
13.4							
14.2							
15.7 16.7 17.9 19.1 20.5 22.4 24.2 26.0					40		
16.7 17.9 19.1 20.5 22.4 24.2 26.0							
17.9 19.1 20.5 22.4 24.2 26.0							
19.1 20.5 22.4 24.2 26.0							
20.5 22.4 24.2 26.0					44		\
22.4 24.2 26.0							
24.2 48 48							
26.0							
	26.0				48		
	Notes:						

		PENETROMETER IN-SITU CBR	PROJECT NUMBER 24350796 COUNTY		GEC	7-0920 DLOGIST	ROUTE NC-9 TECHNICIANS
ESTLOC	ATION DESC	PIDTION	HENDERSON DATE RUN		C.	PAYNE	C. COGDILL
EST LOCA		+50 SB	1/23/2025				
DATUM	CUT / FIL		EASTING			CORRELA	TED CBR VALUES
ABC	CUT	641,126	1,023,083			3322.	
	CUMULA	TIVE PENETRATION IN					
0.4	10.2	30.2	100	0.0	0	20	40 60 80 10
0.7	10.3	31.6	0.00	0.10	0 +	20	40 00 80 10
1.0	10.4	33.0	0.0	0.0			
1.4	10.6	33.7	100	0)(0)			
1.7	10.8	34.9	100	0)(0)		GRA	VEL
2.0	11.0	35.7	100	9,40	4	JIKA	VEC
2.3	11.2	36.8	0.0	0.0	7		
2.7	11.3	37.8	0.0	0.0			
3.1	11.5	39.0	0.0	0.00			
3.5	11.7	40.0	100		8		
3.7	12.0	41.1					
3.9	12.3	42.5					<u>-{ </u>
1.0	12.5	43.4					7
1.2	12.6	44.7			12		
1.4	12.8 12.9	46.0			12		
4.6 4.8	13.0	47.4 49.1					
+.o 4.9	13.3	50.1					SOIL SUBGRADE
5.0	13.7	51.3			16		SUBGRADE
5.1	14.1	52.2			10		<u> </u>
5.2	14.6	53.7					7
5.4	14.8	54.4	100	_		▎▕▕ <mark>▁</mark> ▞▘▏▏▏	
5.5	15.0	56.0	100	Depth Below Datum (inches)	20		
5.6	15.2	56.7	100	힐	20		=
5.8	15.4	57.6	110	ت ر			
5.0	15.7	58.4	11(1)	Ē			
6.2	15.9	59.5	0.00	Da	24		
6.4	16.1	60.6	100	MO W	24		
6.5	16.3	61.4	100	Sel.			
5.7	16.5	62.2	0.0	<u> </u>		<mark> </mark> 	⇒
6.8	16.7	63.3	0.0		20		
5.9	16.9	64.5	100		28		
7.0	17.1	65.2		0.00			
7.2	17.4	66.3					
7.3	17.6	67.2			32		
7.5 7.6	17.9 18.2	68.3 (68.3)			J2		
7.7	18.5	(00.3)					
7.9	18.8						
3.0	19.2				36		
3.2	19.5					$ \cdot \cdot \cdot \cdot $	
3.3	19.9		100	0.0			
3.4	20.5	1000	17.70	0.0			
3.5	21.1		10.00	0.(0)	40		
3.7	21.8	1000		0.(0)	.	$ \cdot \cdot \cdot \cdot $	
3.9	22.6	0.0	100				
9.1	23.5		1111				
9.2	24.9			0.00	44		
9.4	25.8	0.0	100	0.4	77		
9.5	26.8	1311	1111				
9.6	28.0		1111				
9.8	28.9				48		<u> </u>
10.0 Notes:	29.0	1000			70		

					PRO	OJECTI	NUMBEF	3				TIP									ROI	JTE				
DYNAN	IIC CONE F	PENETF	ROME	TER		24350					V	/-092	0								NC					
	ATA AND IN			-		COUN						LOG								TEC		ICIA	NS	,		
					-	HENDE						PAYN										GDI				
TEST LOC	ATION DESC	RIPTION				DATE																				
	-L- 84+2					1/23/2																				
DATUM	CUT / FILL	. NO	ORTHIN	NG		EAST	ING						C	ORF	RELA	ATE	D C	BR	VAL	UE	S					
ABC	CUT		641,363			1,022,	,964																			
	CUMULAT	IVE PEN	ETRAT	ION IN (CENTIMI	ETERS																				
0.3	9.7	21.0	0.6	(1),		0.0		0.0			0		20)		40)		6	0			80			10
0.5	9.9	21.7	0.7	0.		0.0		0.0		0	-									_			-			
0.7	10.1	22.2	0.5	0.		0.0		0.0																		
0.9	10.2	22.8	0.6									ш,				Щ										
1.0	10.4	23.5	0.7	- 0		0.0		0.0					MA	CAD	AM											
1.2	10.5	24.0		(1),				(0,0)		4		В		MIN		S	-	Ш	-		-	Ш			-	
1.4	10.7	24.8	0.0					0.10					Е	BASI	Ε										4	Ш
1.7	10.9	25.3		- 0												П										
1.9	11.0	26.5																							+	H
2.2	11.1	27.2 28.0								8	4		Щ	111	1	Щ	4	Щ								\perp
2.4 2.6	11.3	28.0																	٥		+			\top		
2.6	11.4	29.5				100															3					
2.7	11.6	30.1													Ħ	П					П					
3.0	11.8	30.1								12	Ш	Ш	Ш	Ш	4	Ш	H	4	\Rightarrow	Ш	1	Ш	Ш	4	\perp	Ш
3.1	11.9	32.7								_			d	ш	\pm		ً ا									
3.3	12.0	33.7												C	7						20			7		
3.4	12.1	35.0												Ш					ı		SO	IL RAD	Œ			
3.5	12.3	36.2								16	Ш	Ш					Ш	Ш	Ļ	30	301	171		┛	Ш	Ш
3.6	12.7	37.4	1,2	(1)		(1),(1)				10					Щ											
3.7	12.8	38.9	1.5	0.		0.0								Н	4											
3.8	12.9	40.0	1.1	0.		0.0			·				۱ ۱													
4.0	13.0	41.2	1.2	(),		(0,0)		0.0	Depth Below Datum (inches)	20	Ш			Ш			Ш	Ш			Ш	Ш		Ш	Ш	Ш
4.2	13.2	42.8	1.6	(0).		0.0		0.0	inc	20																
4.4	13.5	43.8	1.0	(1),		0.0		0.0) u			ľ														
4.6	13.6	45.9	21	(0).		(0,0)		0.0	ıtu			4														
4.9	13.8	47.9	2.0	(0).		0.0			Ď	24	Ш	4		Ш				Ш			Ш	Ш			Ш	Ш
5.0	14.0	50.3	2.4	(0).		0.0			ŏ																	
5.1	14.2	52.9	2.0						Bel																	
5.3	14.5	55.7	223	0.		0.0		(0),(1)	ţ.			J														
5.6	14.7	58.8		(0).	U	0.0)eb	28	Ш			Ш			Ш	Ш			Ш	Ш		Ш	Ш	
5.9	15.0	61.4	20					0.10		20																
6.1	15.1	63.9					\vdash																			
6.4	15.3	66.4				100																				
6.7 7.0	15.5 15.7	69.1	(69.1)							32	Ш	Ш	Ш	Ш		Ш	Ш	Ш		Ш	Ш	Ш	Ш	Ш		
7.0	15.7		(00 . 1)							J2																
7.5	16.1																									
7.8	16.3					770																				
8.1	16.4					1111				36	Ш		Ш	Ш		Ш	Ш	Ш		Ш		Ш	Ш	Ш		Ш
8.2	16.7		0.0			0.0				50																
8.3	17.0					(1)(1)																				
8.4	17.4		0.0			0.0																				
8.5	17.7		0.0	0		0.0		0.0		40								Ш								
8.7	17.9		0.0			(0,0				- -U			T													
8.8	18.1		0.0			0.0																				
8.9	18.4		(1),(1)	0		(0)(0)																				
9.0	18.7		(0)(0)	- 0		(0.0)				44						Ш		Ш								
9.1	19.0		0.0			0.0				44					\prod	П					\prod			\top		
9.3	19.3					0.0																				
9.4	19.7		0.0	0		0.0																				
9.5	20.1					11.0				48																
9.6	20.4					0.0				40																
Notes:																										

DYNAN	IIC CONE PEI	NETROMETER	24350796			TIP W-0920		UTE C-9
	ATA AND IN-S		COUNTY		(-	EOLOGIST		NICIANS
_			HENDERSO			C. PAYNE		GDILL
EST LOC	ATION DESCRIP	TION	DATE RUN				3. 00	
_0. 200	-L- 86+00 SI		1/23/2025					
DATUM	CUT / FILL	NORTHING	EASTING			CORRE	LATED CBR VALUES	
ABC	FILL	641,503	1,022,851					
		PENETRATION IN CE						
).3	60.6	0.0	0.0	0.0	0	20	40 60	90 1
).7	62.7	0.0	0.0	0.0	0 +	20	40 60	80 1
1.0	64.8	0.0	0.0	(1)(1)	Ϋ́	MACADAM		
1.4	66.6	0.0	0.0	0.0	1	BITUMINOUS		
1.8	68.3	0.0	10.0	0.0	1	BASE		
2.3	69.9	0.0	0.0	0.0			┩║╻	,
2.7	71.6	10.0	1000	0.0	4 -			
3.1	(71.6)	(0.0)	1000	0.0	1			
3.6	10.0	(0.0)	1000	0.0	1			
1.2	E ROYAL	1000	(0)(0)	0.0				
1.5	E PER PER	1070	1000	0.0	8 +		 	
1.7	(0X0)	(0.0)	(0)(0)	0.0				
1.9	(0X0)	(10)	1070	(1)(1)				
5.2	(0)(0)	(10)	(0)(0)	(8)(8)		 		
5.4	(1)	(03)	(1)	(0)(0)	12 +	┤┤┤ ┩		
5.8	10 (1)	(0.00)	(1)	(1)(1)				
6.1	0.0	0.0	0.0	0.0	1			
6.7	0.0	0.0	0.0	0.0				
7.2	19.9	10.0	10.0	0.0	16 🕂	_		
7.7	10.0	0.0		(0)(0)		 		
3.2	(9)(9)	(0.0)	1000	(0)(0)				
3.8	0.0	0.0	0.0	0.0	જ્રિ		SOIL	
9.6	0.0	0.0	0.0	0.0	Depth Below Datum (inches) 20 24 28		SUBGRADE	
10.6	0.0	0.0	0.0	0.0	ie			
11.3	0.0	0.0	0.0	0.0	Ε			
12.1	0.0	0.0	0.0	0.0] <u> </u>			
13.2	0.0	0.0	0.0	0.0	ك 24 ⊥			
14.5	0.0	0.0	0.0	(1).(1)	8			
15.4	10.0	0.0	10.0	0.0	Be	 		
16.6	0.0	10.0	(0.0)	0.0	Ê			
17.8	0.00	0.0		0.0	d 28			
19.1	0.00	0.0		(0)(0)				
20.9	113.15	100		100				
23.0	115.15	100		100				
24.6	11000	100			3.			
26.3	11 11 11			1000	32			
28.2	11 11 11			1000				
30.1				100				
32.0								
34.0					36			
35.9 37.6								
37.6								
11.6								
3.3					40 +	 	 	
4.7								
16.2								
18.6								
50.1					44		+++++++++++++++++++++++++++++++++++++++	
52.8								
54.0								
6.4 56.4								
8.4					48 L			
Notes:								

DYNAMIC COME PENETROMETER 24500796						PROJECT I	NUMBER				TIP									RO	UTE				
COUNTY CEDIOGIST TECHNICANS TECHNICA	DYNAN	MIC CONE F	PENETRO	METER						V		0													
### HENDERSON C. PAYNE C. COGGILL ### C. COGGILL ### C. PAYNE C. COGGILL ### C. COGGILL ### C. PAYNE C. COGGILL ### C. COGGILL ### C. COGGILL ### C. PAYNE C. COGGILL ### C.			_																TE			NS	}		
						HENDE	RSON												С	. CC	GDI	LL		_	_
DATILIA CUIT_FIEL NORTHING	TEST LOC	ATION DESCI	RIPTION			DATE I	RUN																		
ABC CUT 642,052 1,022,623 C.MULATIVE PRINT PATIONIN CENTIMETERS 1.20 0 9.00 28.40 41.10 1.00 1		-L- 92+	00 SB			1/23/2	025																		
CUNULATIVE PRINTERATION IN CENTIMETERS 1.020	DATUM	CUT / FILL	. NOR	THING		EAST	NG					C	ORI	REL	.ATI	ED (CBR	VA	LUI	ES					
1.00	ABC			,			623																		
10.30 10.30 22.80 41.20 10.00		CUMULAT	IVE PENET	RATION I	N CEN	TIMETERS																			
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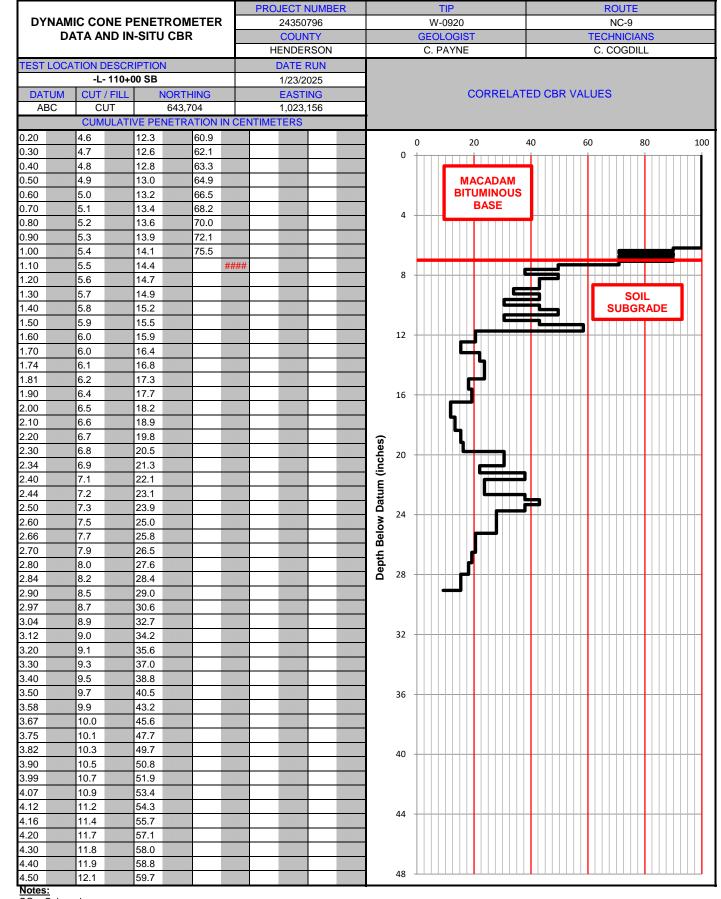
Notes: SG = Subgrade

SS = Stabilized Soil

CTBC = Cement-Treated Base Course

ABC = Aggregate Base Course

ESG = Estimated Subgrade (Approximately 1 foot below the existing ground surface)



SG = Subgrade

SS = Stabilized Soil

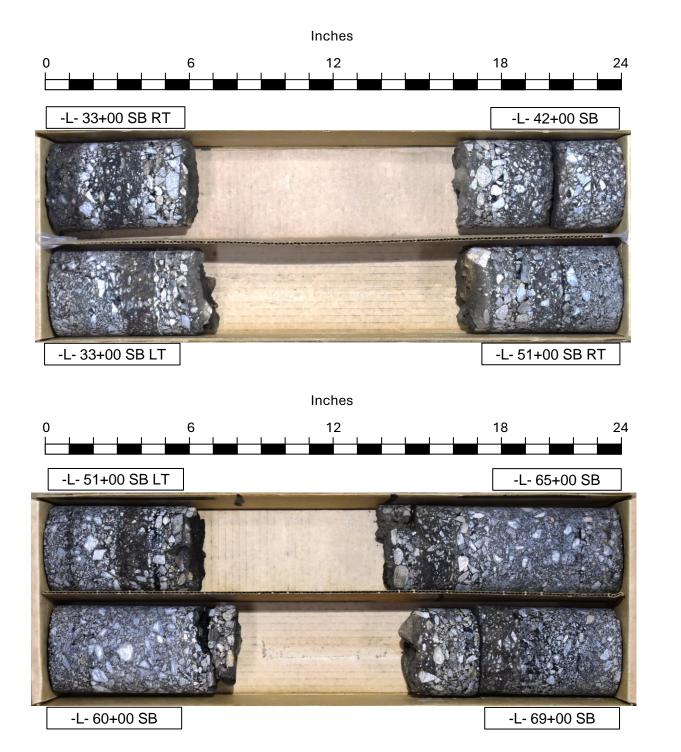
CTBC = Cement-Treated Base Course

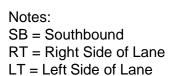
ABC = Aggregate Base Course

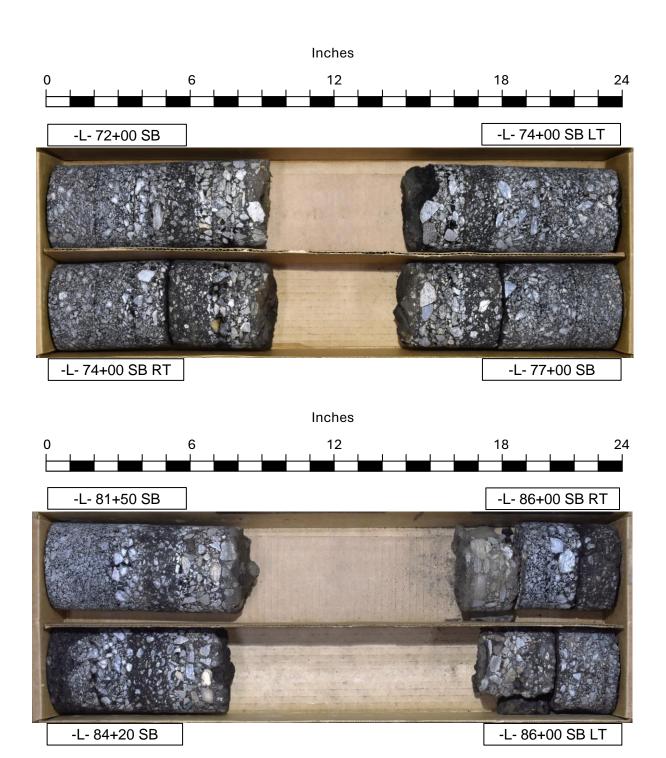
ESG = Estimated Subgrade (Approximately 1 foot below the existing ground surface)

PAVEMENT CORE PHOTOGRAPHS

WBS: 18314.1045035 TIP: W-0920 Route: NC-9 from US 74A to Buncombe County Line in Bat Cave County: Henderson





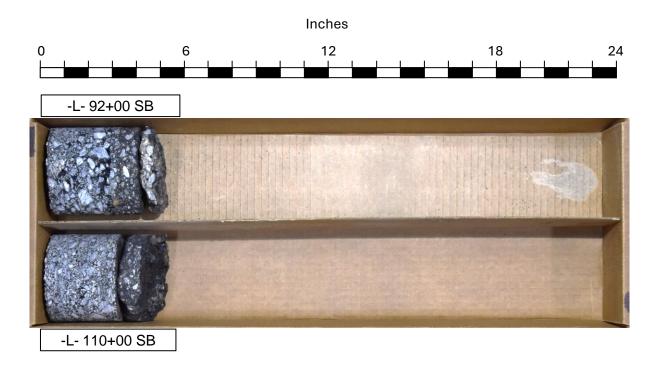




S&ME, Inc. 8848 Red Oak Boulevard, Suite A Charlotte, North Carolina 28217

PAVEMENT CORE PHOTOGRAPHS

WBS: 18314.1045035 TIP: W-0920 Route: NC-9 from US 74A to Buncombe County Line in Bat Cave County: Henderson



LT = Left Side of Lane

