

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

STATE	PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BD-5101K	1	6

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**STRUCTURE
 SUBSURFACE INVESTIGATION**

PROJ. REFERENCE NO. 45347.1.12 (BD-5101K) F.A. PROJ. BRZ-1100(31)
 COUNTY CHOWAN
 PROJECT DESCRIPTION BRIDGE NO. 1 ON SR 1100 OVER MIDDLETON
 CREEK AT -L- STA. 12 + 28.50

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 919 707-4850. NEITHER THE SUBSURFACE PLANS AND REPORTS, NOR THE FIELD BORING LOGS, ROCK CORES, OR SOIL TEST DATA ARE 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. THE ACTUAL SUBSURFACE CONDITIONS BETWEEN BORINGS OR BETWEEN SAMPLED STRATA MAY DIFFER FROM THE INDICATED BOUNDARIES AND THE IN SITU UNPLACED TEST DATA RELIED ON ONLY TO THE DEGREE OF RELIABILITY INDICATED IN THE SUBSURFACE INVESTIGATION. 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 CONTRACTOR AS TO THE TYPE OF MATERIALS AND CONDITIONS TO BE ENCOUNTERED. THE BIDDER OR CONTRACTOR IS CAUTIONED THAT THE SUBSURFACE INVESTIGATION IS FOR INFORMATIONAL PURPOSES ONLY AND NECESSARY TO SATISFY HIMSELF AS TO CONDITIONS TO BE ENCOUNTERED ON HIS 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.

PERSONNEL

JRS

RES

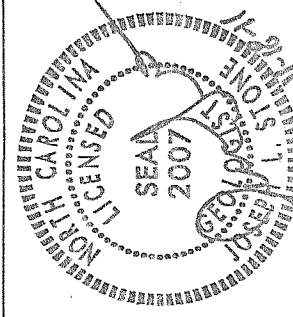
JMB

INVESTIGATED BY J.L. STONE

CHECKED BY D.N. ARGENBRIGHT

SUBMITTED BY D.N. ARGENBRIGHT

DATE NOVEMBER 2011



NOTE - 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.

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

DRAWN BY: C.P. TURNER

ID: BD-5101K

PROJECT: 45347.1.12

GEO TECHNICAL ENGINEERING UNIT
SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

SOIL DESCRIPTION: SOIL IS CONSIDERED TO BE THE UNCONSOLIDATED, SEMI-CONSOLIDATED, OR WEATHERED EARTH MATERIALS THAT CAN BE PENETRATED WITH A STANDARD PENETRATION TEST...

SOIL LEGEND AND AASHTO CLASSIFICATION: TABLE WITH COLUMNS FOR GROUP CLASS., SYMBOL, PERCENTAGE OF MATERIAL (GRAVEL, SAND, SILT, CLAY), AND AASHTO CLASSIFICATION (A-1, A-2, A-3, A-4, A-5, A-6, A-7).

GRADATION: TABLE WITH COLUMNS FOR TEST BORING, SPT N-VALUE, SPT REFUSAL, TEST BORING WITH SOIL DESCRIPTION, SOIL SYMBOL, ARTIFICIAL FILL (FT/O) OTHER THAN ROADWAY EMBANKMENT, INFERRED SOIL BOUNDARY, INFERRED SOIL BOUNDARY, ALLUVIAL ROCK BOUNDARY, DIP & DIP DIRECTION OF ROCK STRUCTURES.

MISCELLANEOUS SYMBOLS: TABLE WITH COLUMNS FOR ROADWAY EMBANKMENT (RE) WITH SOIL DESCRIPTION, SOIL SYMBOL, ARTIFICIAL FILL (FT/O) OTHER THAN ROADWAY EMBANKMENT, INFERRED SOIL BOUNDARY, INFERRED SOIL BOUNDARY, ALLUVIAL ROCK BOUNDARY, DIP & DIP DIRECTION OF ROCK STRUCTURES.

ABBREVIATIONS: TABLE WITH COLUMNS FOR AR - AUGER REFUSAL, BT - BORING TERMINATED, CL - CLAY, CPT - CONE PENETRATION TEST, CSE - COARSE, DHT - DYNAMIC TEST, DPT - DYNAMIC PENETRATION TEST, F - FINE, FOS - FOSSILIFEROUS, FRAC - FRACTURED, FRACTURES, FRAGS - FRAGMENTS, HI - HIGHLY.

EQUIPMENT USED ON SUBJECT PROJECT: TABLE WITH COLUMNS FOR DRILL UNITS, ADVANCING TOOLS, HAMMER TYPE, CORE SIZE, HAND TOOLS, CORE BIT.

SOIL MOISTURE - CORRELATION OF TERMS: TABLE WITH COLUMNS FOR SOIL MOISTURE SCALE (FIELD MOISTURE, WETTERBERG LIMITS), FIELD MOISTURE DESCRIPTION, GUIDE FOR FIELD MOISTURE DESCRIPTION, USUALLY LIQUID; VERY WET, USUALLY FROM BELOW THE GROUND WATER TABLE, SEMISOLID; REQUIRES DRYING TO ATTAIN OPTIMUM MOISTURE, SOLID; AT OR NEAR OPTIMUM MOISTURE, REQUIRES ADDITIONAL WATER TO ATTAIN OPTIMUM MOISTURE, DRY STRENGTH, PLASTICITY INDEX (PI), PLASTICITY, COLOR.

ROCK DESCRIPTION: HARD ROCK IS NON-COASTAL PLAIN MATERIAL THAT IF TESTED, WOULD YIELD SPT REFUSAL, AN INFERRED ROCK LINE INDICATES THE LEVEL AT WHICH NON-COASTAL PLAIN MATERIAL WOULD YIELD SPT REFUSAL...

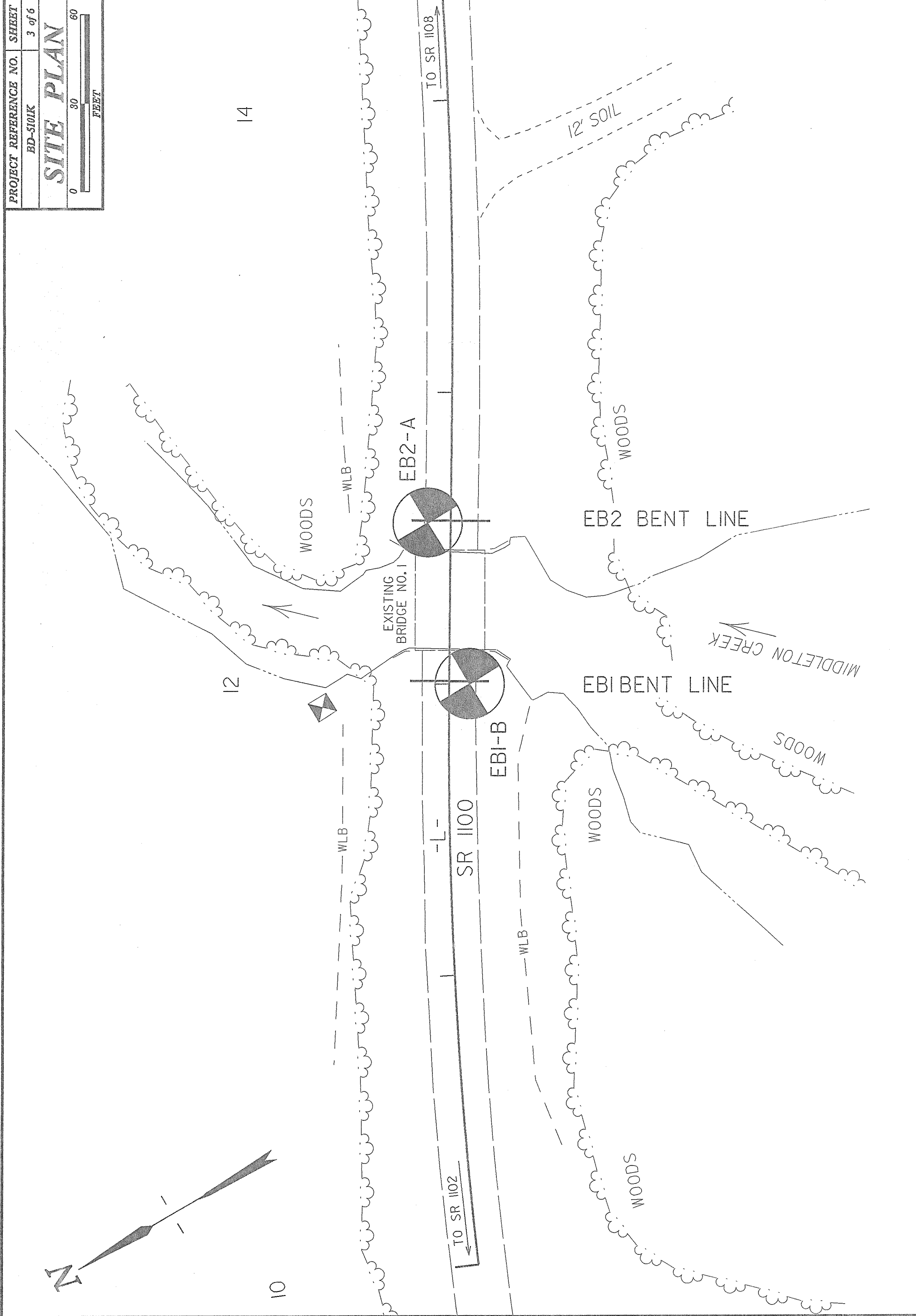
WEATHERING: ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING, ROCK RINGS UNDER HAMMER IF CRYSTALLINE, ROCK GENERALLY FRESH, JOINTS STAINED, SOME JOINTS MAY SHOW THIN CLAY COATINGS...

ROCK HARDNESS: VERY HARD CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK, BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK, HARD HAMMER BLOWS REQUIRED TO DETACH HAND SPECIMEN...

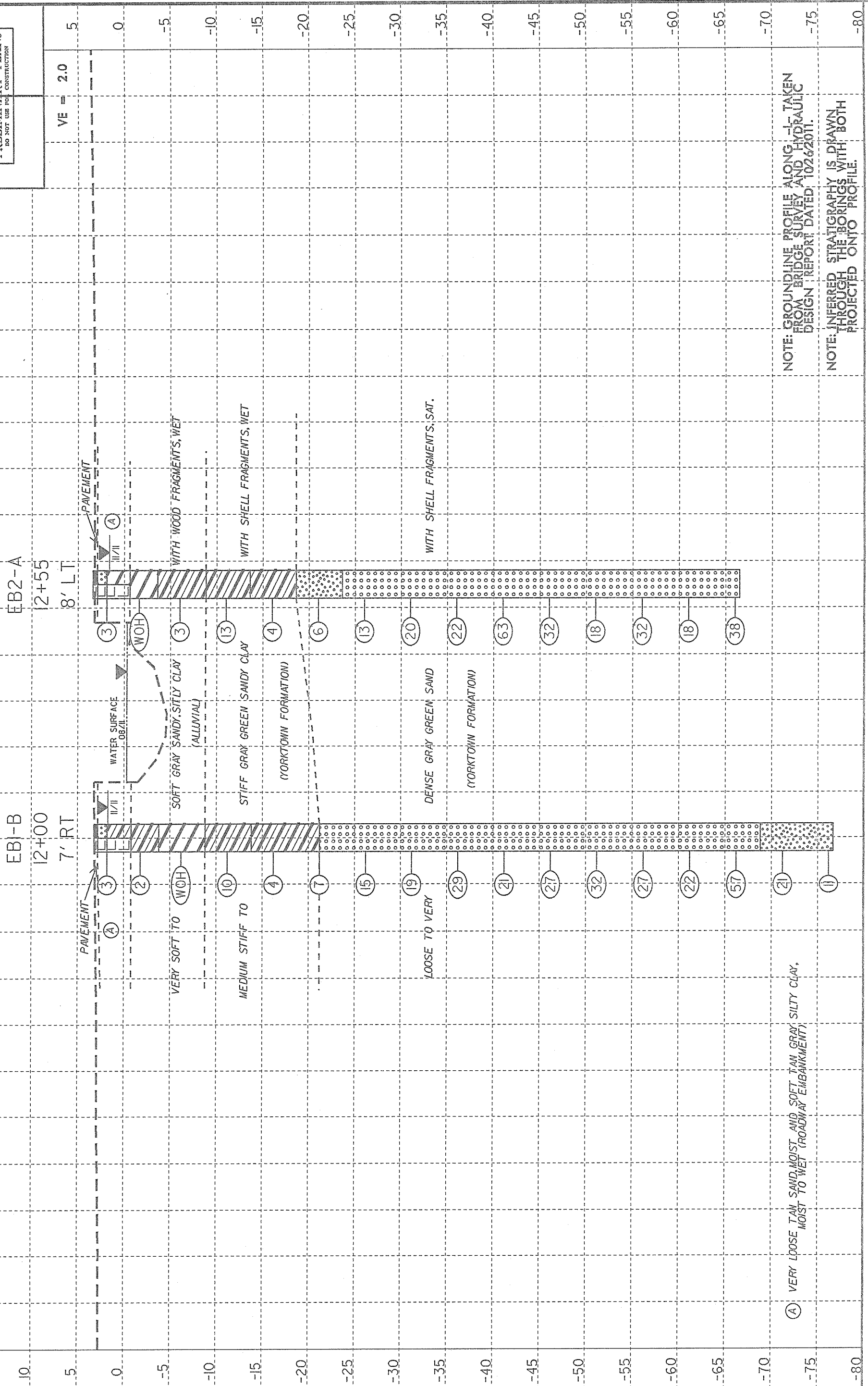
FRACTURE SPACING: TABLE WITH COLUMNS FOR TERM, SPACING, THICKNESS, BEDDING, INDURATION.

TERMS AND DEFINITIONS: ALLUVIUM (ALLUV.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER, AQUIFER - A WATER BEARING FORMATION OR STRATA, ARGILLACEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND...

NOTES: BENCH MARK: TBM-2; SPIKE IN 18" GUM AT -BL- STA. 9+13.41' LT, ELEVATION: 2.64 FT., NOTES: FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF THE MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC.



PROFILE THROUGH BORINGS PROJECTED ALONG -L-



(A) VERY LOOSE TAN SAND, MOIST, AND SOFT TAN GRAY SILTY CLAY, MOIST TO WET (ROADWAY EMBANKMENT)

NOTE: GROUNDLINE PROFILE ALONG -L- TAKEN FROM BRIDGE SURVEY AND HYDRAULIC DESIGN REPORT DATED 10/26/2011.

NOTE: INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ONTO PROFILE.



**NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT**

WBS 45347.1.12		TIP BD-5101K		COUNTY CHOWAN		GEOLOGIST Swartley, J. R.	
SITE DESCRIPTION BRIDGE NO. 1 ON L- (SR 1100) OVER MIDDLETON CREEK							
BORING NO. EB2-A		STATION 12+55		OFFSET 8 ft LT		ALIGNMENT -L-	
COLLAR ELEV. 3.4 ft		TOTAL DEPTH 69.9 ft		NORTHING 854,177		EASTING 2,737,611	
DRILL RIG/HAMMER EFF./DATE GFO0063 CME-45B 92% 6/27/2011		DRILL METHOD Mud Rotary		SURFACE WATER DEPTH N/A		HAMMER TYPE Automatic	
DRILLER Smith, R. E.		START DATE 11/15/11		COMP. DATE 11/15/11		SURFACE WATER DEPTH N/A	
ELEV (ft)	DEPTH (ft)	BLOW COUNT		SAMP. NO.	SOIL AND ROCK DESCRIPTION	ELEV. (ft)	DEPTH (ft)
		0.5ft	0.5ft				
5							
0	2.9	4	1			3.4	0.0
						1.9	1.3
	4.0	WOH	WOH			-0.6	4.0
						-3.6	7.0
	8.4	WOH	WOH			-5.8	12.2
						-18.6	22.0
	13.4	5	6			-23.6	27.0
	18.4	2	2				
	23.4	2	3				
	28.4	6	7				
	33.4	6	9				
	38.4	9	10				
	43.4	18	31				
	48.4	13	16				
	53.4	9	9				
	58.4	14	14				
	63.4	9	7				
	68.4	14	18				
	69.9						

Boring Terminated at Elevation -66.5 ft IN
DENSE SAND