

REFERENCE: B-5348

PROJECT: 46062

SEE SHEET 3 FOR PLAN SHEET LAYOUT
AT TIME OF INVESTIGATION

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<u>LINE</u>	<u>STATION</u>	<u>PLAN</u>	<u>PROFILE</u>
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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

ROADWAY

SUBSURFACE INVESTIGATION

COUNTY Orange
PROJECT DESCRIPTION Replace Bridge No. 85 over Phil's
Creek on SR 1005 (Old Greensboro Rd.)

INVENTORY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5348	1	7

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

Chris Taylor

Mike Morgan

Harold Morris

INVESTIGATED BY D. Michael Gragg

DRAWN BY Tamara Stivers

CHECKED BY Kenneth Bussey

SUBMITTED BY HDR|ICA

DATE December, 2015



DocuSigned by:
Kenneth R. Bussey, Jr.

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SIGNATURE DATE

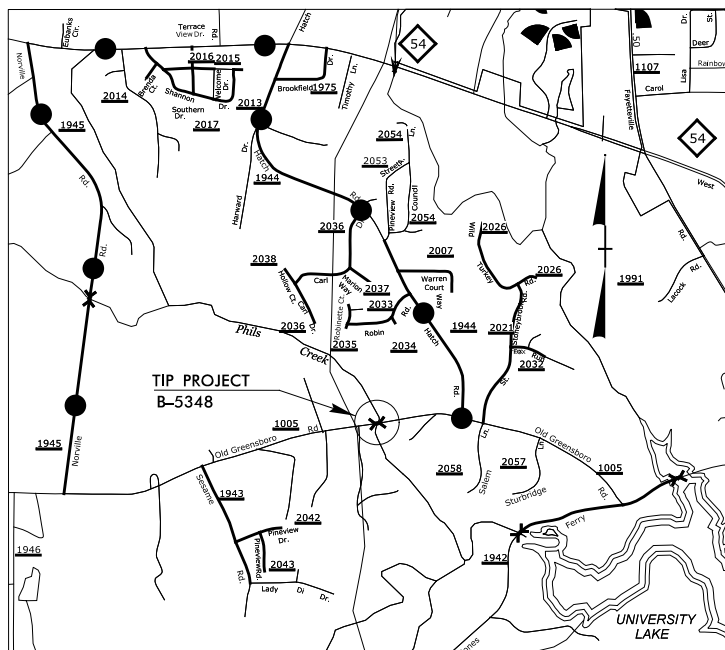
**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT
SUBSURFACE INVESTIGATION
SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

Table with multiple columns: SOIL DESCRIPTION, GRADATION, ROCK DESCRIPTION, TERMS AND DEFINITIONS, SOIL LEGEND AND AASHTO CLASSIFICATION, MINERALOGICAL COMPOSITION, COMPRESSIBILITY, PERCENTAGE OF MATERIAL, GROUND WATER, MISCELLANEOUS SYMBOLS, RECOMMENDATION SYMBOLS, ABBREVIATIONS, SOIL MOISTURE - CORRELATION OF TERMS, PLASTICITY, COLOR, EQUIPMENT USED ON SUBJECT PROJECT, FRACTURE SPACING, BEDDING, INDURATION.

09/08/99

See Sheet 1-A For Index of Sheets



TIP PROJECT: B-5348

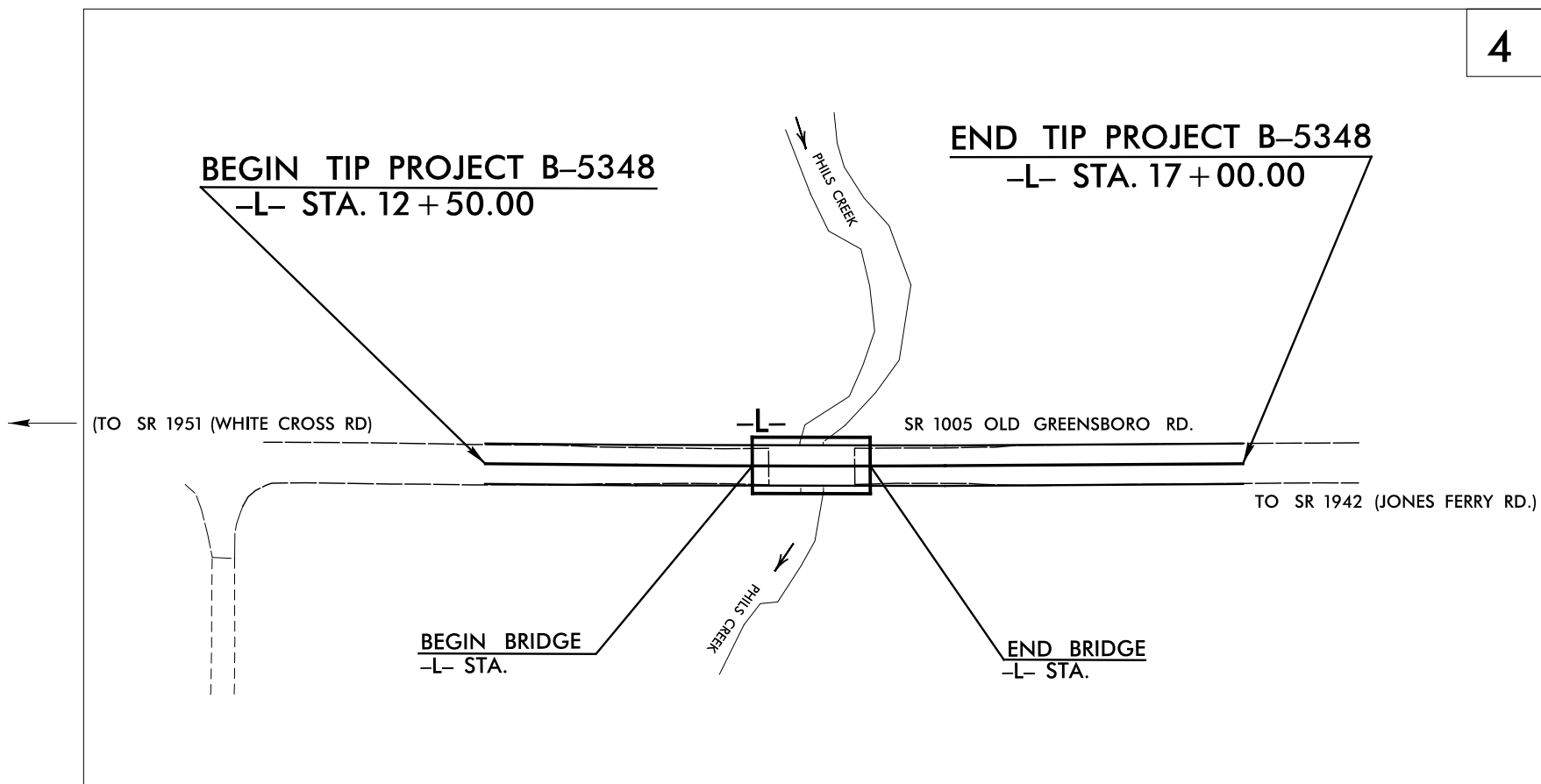
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

ORANGE COUNTY

**LOCATION: REPLACE BRIDGE No. 85 OVER PHILS CREEK
ON SR 1005 (OLD GREENSBORO RD)**

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5348	3	7
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
46062.1.1	BRSTP-1005 (31)	P.E.	



*DESIGN EXCEPTION REQUIRED FOR SAG VC "K" FACTORS AND NIGHTTIME SSD.
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD _____
THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.

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

CONTRACT:

<p>GRAPHIC SCALES</p> <p>50 25 0 50 100 PLANS</p> <p>50 25 0 50 100 PROFILE (HORIZONTAL)</p> <p>10 5 0 10 20 PROFILE (VERTICAL)</p>	<p>DESIGN DATA</p> <p>ADT 2013 = 4,300 ADT 2035 = 5,800 K = 9 % D = 65 % T = 3 % * V = 50 MPH * TTST = 1% DUAL 2% FUNC CLASS = COLLECTOR SUB-REGIONAL TIER</p>	<p>PROJECT LENGTH</p> <p>LENGTH ROADWAY TIP PROJECT B-5348 = MI LENGTH STRUCTURE TIP PROJECT B-5348 = MI TOTAL LENGTH OF TIP PROJECT B-5348 = 0.085 MI</p>	<p>Prepared in the Office of: DIVISION OF HIGHWAYS 1000 Birch Ridge Dr., Raleigh NC, 27610</p> <p>2012 STANDARD SPECIFICATIONS</p> <p>RIGHT OF WAY DATE: DECEMBER 16, 2016</p> <p>LETTING DATE: DECEMBER 19, 2017</p> <p>JAMES A. SPEER, PE PROJECT ENGINEER</p> <p>ALLISON K. WHITE PROJECT DESIGN ENGINEER</p>	<p>HYDRAULICS ENGINEER</p> <p>SIGNATURE: _____ P.E.</p> <p>ROADWAY DESIGN ENGINEER</p> <p>SIGNATURE: _____ P.E.</p>	
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\$\$\$\$\$ SYSTEM TIME\$\$\$\$\$
\$\$\$\$\$ DDON\$\$\$\$\$
\$\$\$\$\$ USERNAME\$\$\$\$\$



December 30, 2015

WBS NUMBER: 46062.1.1
TIP NUMBER: B-5348
F.A. NUMBER: BRSTP-1005(31)
COUNTY: Orange
DESCRIPTION: Replace Bridge 85 on SR 1005 over Phil's Creek

SUBJECT: Geotechnical Report – Inventory

PROJECT DESCRIPTION

The project is located in south-central Orange County, North Carolina. This project consists of the widening of 0.085 miles of SR 1005 (-L-).

A CME 45C drill rig with an automatic hammer was used for the geotechnical investigation during October 2015. At selected locations, standard penetration tests (SPT) were performed by HDR | ICA.

The following alignment, totaling 0.085 miles of roadway, was investigated. Profiles and cross sections of this alignment are included within this report.

<u>LINE</u>	<u>STATIONS</u>
-L-	12+50.00 to 17+00.00

AREAS OF SPECIAL GEOTECHNICAL INTEREST

No soils with plasticity indices in excess of 25 were penetrated within the project limits.

Soils with natural moisture contents in excess of the liquid limit or excessively high moisture contents were not encountered within the proposed project limits.

No soft soils were revealed during SPT investigation within the proposed project limits.

Alluvial soils were noted within the creek floodplain but not penetrated during the SPT investigation within the proposed project limits.

No rock was encountered by advanced borings above proposed roadway grade.

PHYSIOGRAPHY AND GEOLOGY

The project is located in the Piedmont Physiographic Province. The project corridor is comprised of woodlands tracts with occasional home lots. The general topography of the site consists of a narrow, relatively flat floodplain moderately steep side slopes and broad gently sloping uplands.

Geologically, the project is located in the Carolina Slate Belt (*Geologic Map of North Carolina, 1985*) within a strata unit described as metamorphosed felsic metavolcanic rocks. The felsic metavolcanic stratigraphic units are considered Late Proterozoic Era. The overlying residual soils are the product of the physical and chemical weathering of these underlying crystalline rocks.

SOIL PROPERTIES

Soils encountered during this investigation are combined into two (2) origin categories: residual soils and roadway embankment.

Residual soils are present throughout the proposed –L– alignment and are derived from the weathering of the underlying metavolcanic rocks. Typically, residual soils were recognized at the surface, except boring L_1392R, then penetrated to weathered rock or boring termination. The residual soils consisted of medium dense to dense, brown, orange, red-orange, silty sand (A-2-4) and dense, tan, gray, brown, light gray, red-orange, clayey sand (A-2-6).

Roadway embankment material was encountered within L_1392R described as rock fragments and aggregate. This material extended from the existing ground surface to 4.5' in depth.

Weathered rock, determined by SPT drive and visual description of recovered SPT samples, was encountered within the project limits. Recovered samples were described as Metavolcanic rock. In boring L_1550L, weathered rock was intercepted within residual soils. Weathered rock strata units may also contain isolated seams of residual silty and clayey sand. Intercepted weathered rock thickness appears as great as 5.3 feet. Elevation at the top of weathered rock varies depending upon location from 385.4 feet near the west side of the existing bridge over Phil's Creek to 405.9 feet near the east end of the project limits.

Advanced borings did not encounter rock along or underlying the proposed -L- alignment to the depths penetrated by advanced borings.

GROUNDWATER

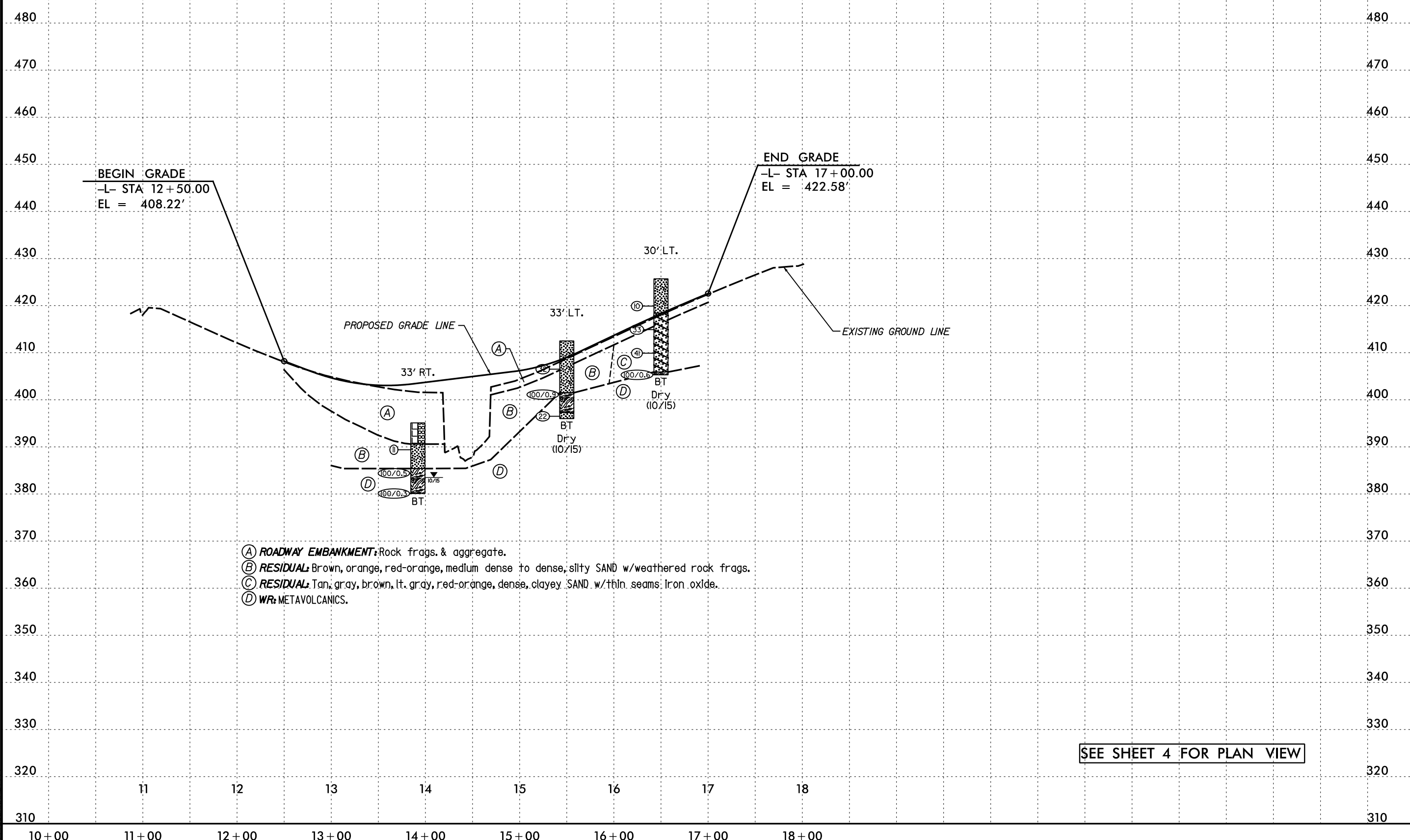
Groundwater level measurements were performed within each of the three (3) borings. Dry conditions were recorded immediately after drilling for two (2) of the borings. An elevation was measured within L_1392R immediately after drilling with a level of 381.7 feet recorded. Dry conditions were recorded after a 24-hour stabilization period for two (2) of the borings. An elevation was measured within L_1392R after a 24-hour stabilization period with a level of 383.5 feet recorded.

Prepared by,
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Senior Project Geologist

5/14/99

PROJECT REFERENCE NO. B-5348	SHEET NO. 5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



- (A) ROADWAY EMBANKMENT: Rock frags. & aggregate.
- (B) RESIDUAL: Brown, orange, red-orange, medium dense to dense, silty SAND w/weathered rock frags.
- (C) RESIDUAL: Tan, gray, brown, lt. gray, red-orange, dense, clayey SAND w/thin seams Iron oxide.
- (D) WR: METAVOLCANICS.

SEE SHEET 4 FOR PLAN VIEW

SYTIME.DGN

