



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

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GOVERNOR

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STATE PROJECT: 33261.1.1 (B-3805)
COUNTY: Ashe
DESCRIPTION: Bridge No. 310 on SR-1507 over Buffalo Creek
SUBJECT: Geotechnical Report – Foundation Investigation

Introduction

This project is located in central Ashe County, approximately 5.0 miles north of West Jefferson. The existing bridge is to be replaced with a single-span structure, 75 feet long. The new bridge will be relocated 60.0 feet north of the existing one.

The subsurface investigation was conducted using a CME-550 and -NX- casing with advancer. Rock core was retrieved using -NXWL- equipment. Standard Penetration Tests (SPT) were performed, where appropriate, at intervals of 5.0 feet using an automatic drop-hammer.

Geology and Rock Characteristics

The rocks recovered from the borings on this project are dark gray amphibolites and amphibolite gneisses. Except for the first 10.0 feet of core from EB1-C, the rock is hard and slightly weathered to fresh. The first 10.0 feet from EB1-C contained many seams of saprolite and severely weathered rock that weren't recoverable.

Foundation Material

End Bent One

Embankment is present from surface at EB1-C. This consists of 5.4 feet of small (1.0 foot diameter) boulders in a matrix of silty sand and gravel. The embankment was emplaced directly on rock.

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CENTURY CENTER COMPLEX
BUILDING B
1020 BIRCH RIDGE DRIVE
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Coring was begun in EB1-C at 5.7 feet (Elevation 2701.0) and terminated at 42.9 feet (Elevation 2663.8). The 0.3 foot of rock between the bottom of the embankment and the beginning of coring was penetrated by the casing advancer. The Recoveries ranged from 25% to 100% (78% average); RQD's ranged from 0% to 100% (65% average).

End Bent Two

Here, too, embankment was encountered at the surface. This material is 14.4 feet thick and consists of silty sand and gravel with occasional small (≤ 1.0 foot diameter) boulders. Rock is directly under the embankment. Coring in rock was begun at 14.4 feet (Elevation 2697.0) and terminated at 42.4 feet (Elevation 2669.0). The Recoveries were from 82% to 100% (95% average); RQD's were from 59% to 100% (88% average).

Respectfully Submitted,

Charles A. Dunnagan, LG
Project Engineering Geologist

