

a sediment. It almost certainly was derived locally.

Rock

As defined by auger refusal, this segment had the majority of rock of the project. Rock was found at or above grade from -L-25+80 through -L-28+20. Additional rock was found at 31+20 through 33+40 and 45+00 through 45+80.

Groundwater

Groundwater was detected infrequently, even in the deeper borings, except near streams. It did occur at or above planned grade, within weathered rock, in borings at -L-32+00, -L-32+40, and -L-33+20

2. -L- 46+85 Culvert

A culvert is planned for an unnamed tributary to Rich Fork Creek that will be crossed by the new alignment. The culvert will be on a new alignment and covered by about 8 meters of fill (so a separate structural investigation was not necessary). The inlet invert is 222.67m elevation and the outlet invert is 222m elevation. The streambed will be relocated and have a streambed elevation of 222m.

Physical Description

The culvert location in the new roadway alignment is about 500 meters southwest of the existing road. The -L- centerline borings: 46+80 and 47+70 bracketed the culvert. It seems likely that the proposed culvert foundation will be on weathered rock throughout.

Soil

A-4 alluvial soil soft to medium stiff and slightly micaceous was found in the 47+70 boring.

A-2-4 alluvial soil that was loose was found in the 46+80 boring.

Weathered Rock

Weathered rock was found near the 222m elevation level in both borings.

Rock

Both borings were drilled to 221 without encountering hard rock.

Groundwater

Groundwater was within the alluvial section and probably controlled by the stream water level.

3. Rich Fork Creek Bridge, (-L-61+40)

This segment includes only the preliminary borings for Rich Fork Creek, near the center of the project.

Physical Description

Two two-lane bridges will replace the existing single two-lane bridge. One boring was completed at each side of the stream. Bearing capacity for the planned bridges will probably have to come from the weathered rock below the sediments.

Soil

A-2-4 residual soil was found and logged as tan silty sand as a transition into weathered rock.

A-1 residual soil provided the transition to weathered rock if A-2-4 did not.

A-4 alluvial soil soft to medium stiff and slightly micaceous makes up the majority of the 5-meter thick alluvial section.

A-2-4 alluvial soil loose was found at the uppermost part of the alluvial section.

Weathered Rock

A 5 meters thick section of weathered rock was drilled below the alluvium without reaching auger refusal.

Rock

Hard Rock was not found in the boreholes

Groundwater

Groundwater occurred within the alluvial section and probably reflected the stream level elevation.

4. Station L-62+70 to End Project @ RTLN 2-79+43, Including Y11, Y12, Y13, Y14 and LTLN2 and RTLN2.

This segment is the -L- line and the Y lines and their intersections with NC 109 from Rich Fork Creek to the end of the project.

Physical Description

The project begins at 61+70 at elevation 214m, and travels up a "hollow" to Ledford Middle School and Lexington Avenue at the top of a broad ridge at 72+00 and 246m elevation. From here, the -L- line crosses a drainage obliquely to reach the end of the project at 234m.

Soil

A-7 residual soil: Two of four occurrences of A-7 within the project occur on this segment. One is at the top of the residual section, and was logged as tan micaceous silt above weathered rock. The P.I. was 17, but the liquid limit pushed it into the A-7 category. The other occurrence is at 75+40 with a PI of 22. It is a blue green soil and may be derived from an isolated xenolith within the metagranite.

A-6 residual soil often occurred at the top of the section. It was logged as tan micaceous clayey sand. Testing found the P.I. to be greater than 10, which pushed it into an A-6 classification rather than the less plastic A-2 or A-4.

A-2-4 residual soil was found in nearly every borehole in the segment. It was logged as tan silty sand, often as a transition into weathered rock.

A-1 residual soil provided the transition to weathered rock if A-2-4 did not.

A-4 alluvial soil is found in the larger streams, is usually micaceous and almost always loose to very loose.

A-2-4 alluvial soil often loose to very loose was found almost as commonly as A-4 as a sediment. It almost certainly was derived locally.

Rock

As defined by auger refusal, the one occurrence of rock in this segment was at 62+00.