feldspar-quartz-biotite varieties of rock. Cumulative recovery was 84%, and cumulative RQD was 80.5%.

END BENT TWO (EB-2)

The new endbent 2 will be located about 12' outboard of the existing endbent 2 at –L- 27+75 with skew of 90. SPT borings through NW casing were completed to refusal, from the existing road elevation, at both sides of the bent.

The "A" hole at this bent was reported at –L-27+78, 11.00' LT., elevation 394.81'.

Soil stratigraphy: From surface to 8.0', very soft to medium stiff tan clayey A-6 roadway fill was found. From 8.0' to 26.8' medium stiff, wet, tan sandy A-4 silt was encountered, with A-2-4 sand at the base. Sandy A-3 and A-2-4 residual soil showed increasing blow counts from 26.8' to weathered rock at 34.4'. Weathered rock continued from 34.4 to refusal at 44.6'.

The "B" hole at this bent was reported at –L-27+77' 11.00 RT., elevation 394.48'.

Soil stratigraphy: From surface to 8.0', very soft A-6 roadway fill was drilled. From 8.0' to 21.3', soft to very soft A-4 alluvium was drilled. Very little residual soil was seen, with weathered rock starting at 22.3' and continuing to the end of boring and refusal at 29.4'

Groundwater:

Groundwater was measured at 386.6 on the "A" side and at 387.9 on the "B" side. The groundwater is at the roadway fill-alluvium boundary.

Rock Surface:

Tri-cone refusal elev. was at 355.41' on the "A" side, and at 365 at the "B" side. This variability between the two borings also appears in the top of weathered rock elevation, and to a lesser degree in the top of residual soil elevation.

DETOUR BRIDGE

A detour bridge location is indicated 40 feet downstream, (centerline to centerline) of the planned permanent bridge. Because the area was underwater at the time of investigation, no borings were completed for the Detour Bridge. Predictions of subsurface conditions follow below, but a warning is appropriate. There is an old dam not far beyond the detour bridge, which may have been built on rock. This would indicate conditions different than the 15' to 20' depth of rock at the bridge site.

Groundwater:

Static water level is controlled by the water level in the creek.

Alluvial Soil:

There will probably be about 10 to 12 feet of very soft alluvial A-4 soil, with a sharp increase in hardness at the residual soil line.

Residual Soil:

There will probably be less than 10 feet of residual soil above weathered rock.

Rock and Weathered Rock:

Weathered rock should be encountered around 365' elevation. About 15' below land surface.

CULVERT AT PRONG OF COUNTRY LINE CREEK

PROJECT DESCRIPTION

This is a description of the investigation for a proposed triple barrel culvert as a replacement for an existing two bent bridge.

LOCATION:

This structure is located at –L-15+91, 1074' east of the main structure at Bridge 11. A well-developed floodplain is continuous from the culvert project to the bridge project. The culvert is on the inside of a broad curve in the main river. In flood stage, part of the Country Line Creek flow goes through the culvert and eventually returns to the main creek downstream.

PROPOSED STRUCTURE (S):

The proposed culvert is a 57' long triple barrel #@ 12' x 8' RCBC. The centerline station is at -L-15+91, elevation 395.10.0'. The benchmark is: "**BM # 2 –BL-STA.11+35 R/R SPIKE SET IN 16" OAK, 164' RT.**, elev. 389" The supporting documents for this project included sketches for a detour and a detour culvert for the proposed new culvert. Unfortunately, these detours fall on a floodplain that was flooded at the time of the investigation. We believe that for planning purposes, the alluvial soil conditions found at the culvert are consistent and represent what would be found at the detour bridge location.

DRILLING:

One boring was completed at the endbent 2-A side at –L- 16+21, 11 Left. We found 9.5 feet of soft A-6 roadway fill, over 9.5' of medium stiff A-6 alluvium, followed by 6' of loose A-2 sand and then by weathered rock at an elevation of 368.56, and a depth of 25.3'. The boring was terminated at 29.6'.

CLOSING STATEMENT

The geotechnical foundation investigation, analysis and recommendations are based on plans sealed 08/26/03. If any significant changes are made in the design or location of the proposed structure, the subsurface information and recommendations will have to be reviewed and modified as necessary.

Respectfully Submitted

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