

Groundwater

Static groundwater was found at depths of 0.5 to 3.8 feet on the flood plain. Groundwater was not found in any borings outside the floodplain.

Geotechnical Descriptive Analysis

Stations 10+00 to 12+50

This segment of the project lies in the existing roadway. Only minimal cuts and fills are proposed here. No subsurface study was done.

Stations 12+50 to 14+50

This segment lies on a very gentle slope between the existing roadway and the floodplain. A boring penetrated 7 feet of residual, soft to medium stiff, sandy clay-silt (A-5) and 8.5 feet of loose, micaceous sand saprolite (A-2-5) before termination at a depth of 15.5 feet.

Stations 14+50 to 18+00

This segment comprises the floodplain and channel of Smokey Creek. The floodplain is approximately 250 feet wide on the east side of the channel and about 50 feet wide on the west side. The new bridge is expected to span the floodplain on the west side. Plans call for an embankment of 20 feet over the floodplain on the east side.

Two borings were made on the east side, at Stations 15+00 and 16+45. The boring at Station 15+00 found 8.7 feet of alluvial, soft to medium stiff clay (A-6) and clay-silt (A-4) overlying hard rock. No groundwater was found in this boring at the time it was drilled. After 24 hours, however, water had risen in the hole to within 0.5 feet of the ground surface.

The boring at Station 16+45, near the proposed end bent, found a foot of alluvial, loose silty sand (A-2-4) and 2.8 feet of medium stiff clay (A-6) overlying thin layers of sandy saprolite (A-2-5) and weathered rock. Hard rock was encountered at a depth of 7.0 feet. The static groundwater table in this boring was at a depth of 3.8 feet.

Stations 18+00 to 19+50

This segment comprises the lower part of the slope adjacent to the floodplain on the west side of Smokey Creek, where plans call for as much as 25 feet of embankment behind the proposed bridge abutment. A boring was made near the proposed end bent about 10 feet forward of the west border of the floodplain. The site is at the top of a 4-foot bank overlooking the floodplain. The boring penetrated 3.7 feet of colluvial, very soft, red clay and terminated on hard rock.

Stations 19+50 to 27+00

Construction in this segment will involve a long cut on an uphill grade as the new alignment approaches and merges with the existing roadway. A through cut is planned as far as Station 23+00, where the proposed new roadway begins to merge with the existing roadway. The cut will be only on the Right Side from Station 23+00 to the end of the project. The cut will be 12 to 15 feet deep for most of its length with a maximum of 18 feet at the Right Side ditch line at Station 21+50.

Five borings were made along the length of this segment. The soil profile is consistent for most of the segment up to about Station 26+00. Seven to 9 feet of residual, stiff, sandy clay to clay-silt (A-7-5, A-5) overlies loose to dense, micaceous, sandy saprolite (A-2-5) with a few isolated, thin ledges or lenses of weathered rock. A boring at Station 26+50 encountered boulders near the ground surface and penetrated interlayered zones of weathered rock and saprolite with numerous hard rock seams.

Respectfully submitted,



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