STRATIGRAPHY

END BENT 1

Existing roadway embankment was encountered at the ground surface in the borings advanced across End Bent 1. The embankment extends to a depth of 6.8 feet (elevation 150.4 to 150.5 feet) and consists of soft to medium stiff, fine to coarse sandy, silty clay (A-6). Beneath the embankment is alluvial soil consisting of soft to medium stiff, fine to coarse sandy or silty clay (A-6) and fine sandy silt (A-4). The alluvium extends to a depth of 15.5 feet (elevation 141.7 to 141.8 feet). The alluvial soil is directly underlain by non-crystalline rock (NCR), defined by Standard Penetration Test (SPT) refusal, to the boring termination depths of 22.3 to 24.0 feet (elevation 133.2 to 135.0 feet). Both borings were terminated by auger refusal.

INTERIOR BENT 1

The borings advanced at Bent 1 encountered alluvial soil at the ground surface consisting of very soft to medium stiff silty clay (A-6). A layer of medium dense, fine to coarse sand (A-1-a, A-1-b) was encountered at the base of the alluvial soil. Weathered rock (WR) directly underlies the alluvial soil at a depth of 11.5 to 12.0 feet (elevation 137.4 feet). Coring began in both borings at a depth of 15.2 feet. The cored material consists of layers of WR and NCR (meta-argillite) to the boring termination depths of 42.5 to 42.7 feet (elevation 106.4 to 106.7 feet). This material is discussed in more detail in the Rock Properties section below.

INTERIOR BENT 2

The borings at Bent 2 encountered alluvial soil at the ground surface to a depth of 9.8 to 10.0 feet (elevation 138.4 to 139.1 feet). The alluvium consists of very soft, fine sandy clay (A-6) and loose, silty, fine to coarse sand (A-2-4). Residual soil was encountered directly beneath the alluvium in boring B2-A, and consists of hard, fine to coarse sandy silt (A-5). This residual soil was underlain by weathered rock at a depth of 14.3 feet (elevation 134.6 feet). Residual soil was also encountered in boring B2-B but it underlies a zone of weathered rock located directly beneath the alluvium. The residual soil in boring B2-B consists of hard, fine to coarse sandy silt (A-4) and is underlain by WR at a depth of 20.5 feet (elevation 127.9 feet). Coring began in the borings at Bent 2 at depths of 19.6 feet

(B2-A) and 20.7 feet (B2-B) (elevation 127.7 to 129.3 feet). The cored material consists of layers of WR and NCR (meta-argillite) to the boring termination depths of 46.6 to 48.8 feet (elevation 99.6 to 102.3 feet). In addition, a thin zone of dense, fine to coarse sand (A-1-b) was encountered in boring B2-A from a depth of 26.6 feet to 27.1 feet (elevation 122.3 to 121.8 feet). The cored material is discussed in more detail in the Rock Properties section below.

END BENT 2

The borings at End Bent 2 encountered existing roadway embankment at the ground surface to a depth of 6.8 feet (elevation 151.3 to 151.5 feet). The embankment consists of medium stiff to stiff silty clay (A-6). The embankment is underlain by alluvial soil consisting of soft to stiff, fine to coarse sandy or silty clay (A-6, A-7-5, A-7-6). The alluvium extends to a depth of 17.5 feet (elevation 140.6 to 140.8 feet) where it is underlain by either residual soil or weathered rock. Boring EB2-A encountered very dense, silty, fine to coarse sand (A-2-4) directly beneath the alluvium and hard, fine to coarse sandy silt (A-4) interlayered with the weathered rock below. Boring EB2-B encountered weathered rock directly beneath the alluvial soil; this boring also contains a zone of hard, fine to coarse sandy silt (A-4) within the weathered rock. Both borings at End Bent 2 were terminated in weathered rock (meta-argillite) at depths of 38.7 to 44.8 feet (elevation 113.3 to 119.6 feet).

ROCK PROPERTIES

The cored material generally consists of layers of weathered rock and non-crystalline rock (meta-argillite). Some of the recovered core exhibits a near vertical metamorphic foliation. SPT tests were performed between some of the core runs and a thin zone of residual soil was encountered in boring B2-A consisting of dense, fine to coarse sand (A-1-b). The weathering ranges from severely weathered to moderately weathered while the rock hardness ranges from soft to moderately hard. Recoveries (REC) ranged from 0% to 100%, while the rock quality designation (RQD) values ranged from 0% to 81% in core runs in which the majority of the material is designated as NCR. Four samples of the recovered core were trimmed and subjected to unconfined compressive strength testing; strengths ranged from 2,707 psi to 6,085 psi.