R-234

No GW

2106

Memorandum

UTAH DEPARTMENT OF TRANSPORTATION

FOUNDATION

DATE: June 25, 1982

TO : Those Listed Below

FROM : Heber Vlam, P.E., Engineer of Materials and Research H.V.

SUBJECT: I-15-5(11)213 - Mills Junction to South Nephi
Foundation Report for I-15 over Wildlife Access Road, ℄ Survey Station 231+50

T14S R1W sec 32 R

SITE CONDITIONS

Two single-span prestressed beam structures are proposed to carry I-15 over the Wildlife Access Road. The two structures will be 57 feet long and 44 feet wide with a crossing angle of 90 degrees.

The approach embankments for I-15 NBL and SBL are approximately 21 feet high.

Drainage at the structure site is fair.

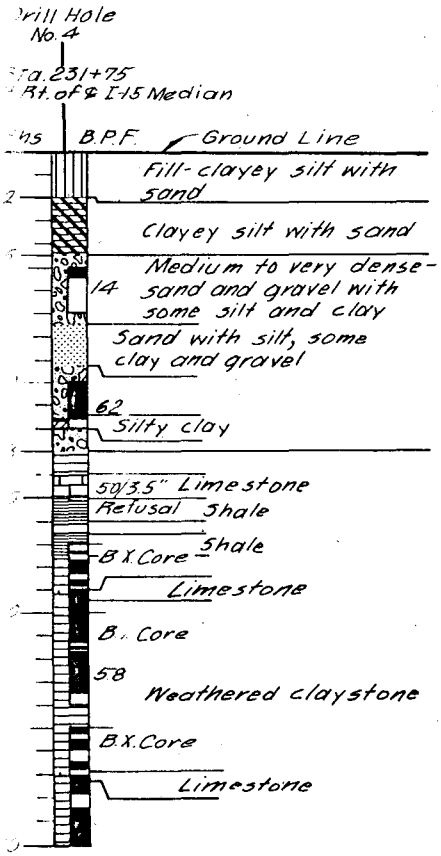
SUBSOILS EXPLORATION

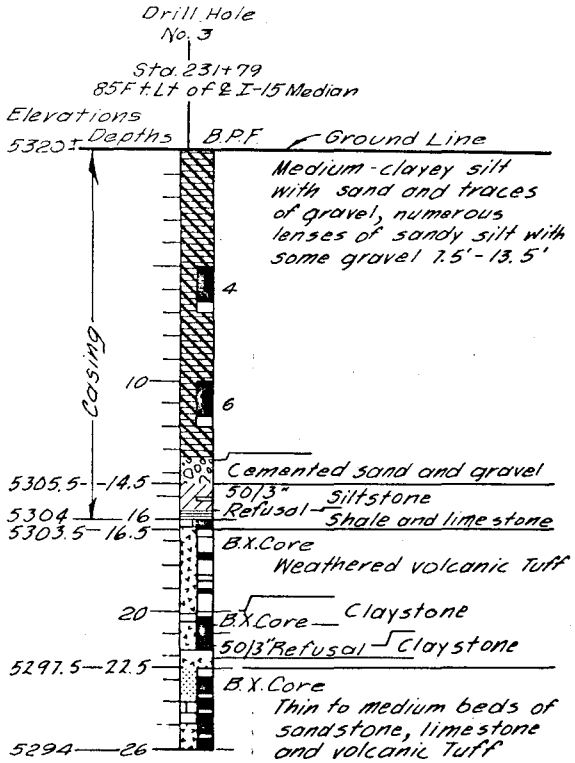
Four test holes were drilled at this site to depths of 26 to 30 feet. The correlation of subsoils strata between the four holes is good. In general, the subsoils consist of: from the ground surface to aproximately 16 feet - loose to very dense clayey silt with traces of sandy silt and some gravel; and from 16 feet to the total depth of exploration - highly weathered claystone with some calcareous zones and a few thin beds of siltstone, limestone and sandstone. Refer to the Drill Logs (Fig. 1) for further details on the subsoils and location of the holes.

No ground water was found in any of the four holes.

FOUNDATION RECOMMENDATIONS

Drilled caissons are recommended for support of the abutments on both structures. Caissons with 3.5 foot diameter may be loaded to 7.00 T.S.F. The caisson tips should be founded a minimum of 5 feet into the highly weathered claystone (See Fig. 1). The recommended caisson tip elevations are as follows:





KEY TO DRILLING LOG

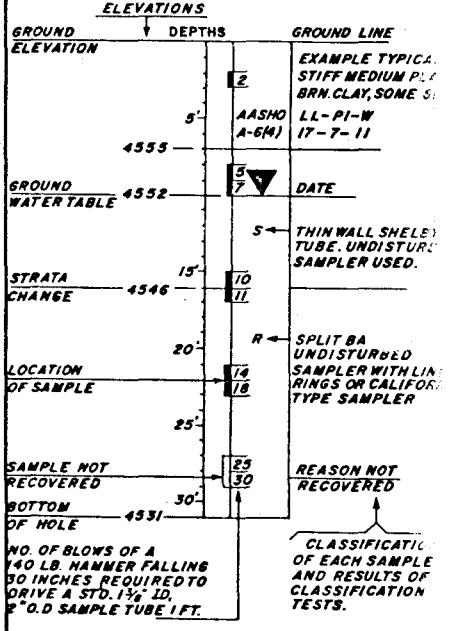
RELATIVE DENSITY (NON-PLASTIC SANDS)

VERY LOOSE – LESS THAN 4 BLOWS PER FOOT
LOOSE – 4 TO 10 BLOWS PER FOOT.
MEDIUM – 10 TO 30 BLOWS PER FOOT.
DENSE – 30 TO 50 BLOWS PER FOOT.
VERY DENSE – MORE THAN 50 BLOWS PER FOOT

CONSISTENCY (PLASTIC-SILT & CLAY)

VERY SOFT – LESS THAN 2 BLOWS PER FOOT
SOFT – 2 TO 4 BLOWS PER FOOT.
MEDIUM – 4 TO 8 BLOWS PER FOOT.
STIFF – 8 TO 15 BLOWS PER FOOT.
VERY STIFF 15 TO 30 BLOWS PER FOOT.
HARD – MORE THAN 30 BLOWS PER FOOT.

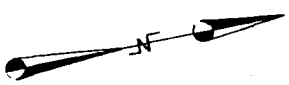
TOPSOIL OR FILL
GRAVEL
SAND
SILT
CLAY
SHALE
IGNEOUS
LIMESTONE
CONGLOMERATE
DOLOMITE
SAN CLA
CLA SAN
SILT CLAY
CLAY SILT
SILT SAND
SAND SILT



ABBREVIATIONS

L.L. – LIQUID LIMIT IN %
P.I – PLASTIC INDEX
w. – NATURAL MOISTURE CONTENT
W.G. – WELL GRADED
PEN. – PENETRATION
G.W.T. – GROUND WATER TABLE
B.P.F. – BLOWS PER FOOT.
N.P – NON PLASTIC

Note: Refusal More than 50 Blows per 6"



Note: Holes drilled 4Th & 5th month - 1980

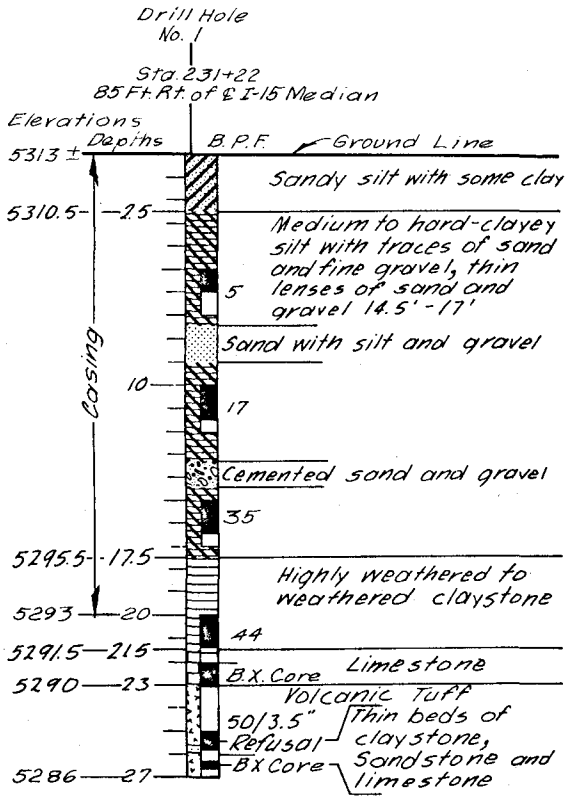
NO.	BY	DATE	REMARKS

REVISIONS

UTAH STATE DEPARTMENT OF HIGHWAYS
SALT LAKE CITY, UTAH
MATERIALS AND TESTS DIVISION

MILLS JUNCTION TO SO. NEPHI
I-15 OVER WILDLIFE ACCESS RD.

DRAWN BY Boyd C. Searle	CHECKED BY D.K. Powell	I-15-5	213
CHECKED BY P. Sizemore	CHECKED BY	PROJECT	SECTION
CHECKED BY	CHECKED BY	231+3	
APPROVED AND RECOMMENDED BY Siri Sakhai		STATION	
RECEIVED DATE	CHIEF STRUCTURAL ENG'R.	JUAB CO	
		COUNTY	
BR. NO	DRG NO		OF



Note: A ground water table was not encountered in any of the Drill Holes.

