

Memorandum.

T25J R4U
Sec 31K

5104

Foundations

UTAH DEPARTMENT OF TRANSPORTATION

DATE: July 11, 1983

Those Listed Below

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

I-70-1(17)19- Belknap Interchange to Sevier Junction;
Foundation Report on I-70 over Channel Change #16 at
Station 995+59.55 of I-70

Two single span prestressed concrete beam structures are proposed to carry I-70 over Channel Change #16. These structures will be 110 feet long by 44 feet wide and will cross the channel change at right angles. The approach embankments will be approximately 15 to 17 feet high.

Surface drainage at this site is good.

SUBSURFACE EXPLORATION

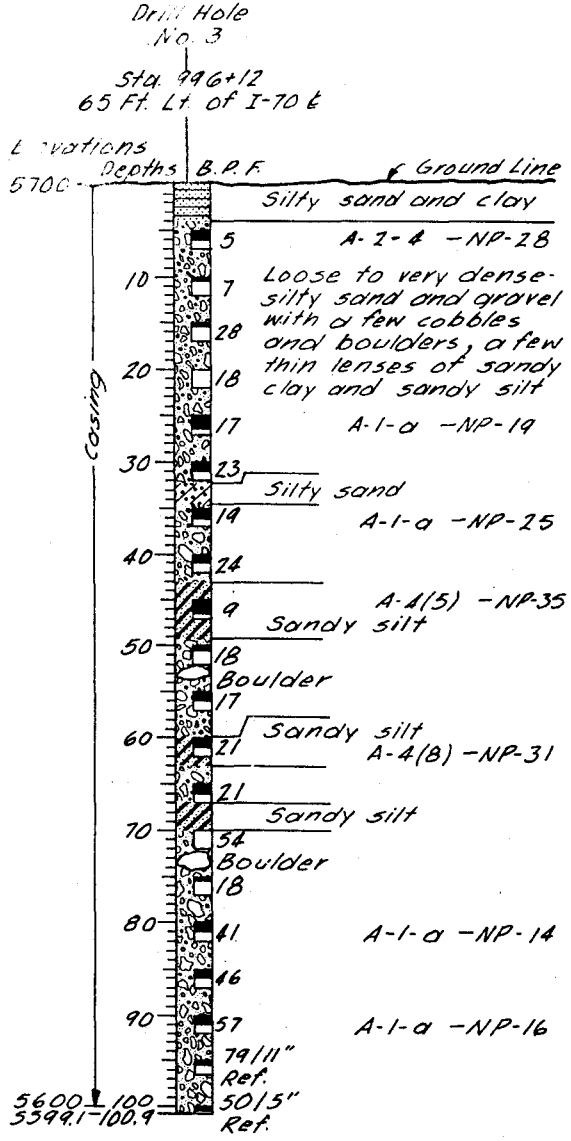
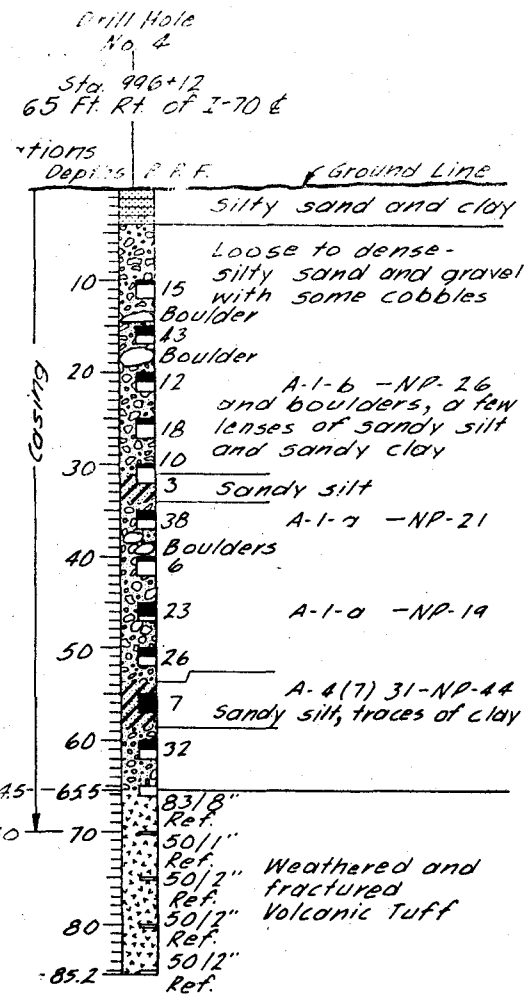
Four test holes were drilled at this site in April and May, 1983. Their depths ranged from 85 to 120 feet. Correlation of the subsurface materials is good and in general these materials may be described as follows: from the ground surface to a depth of 6 feet - silty sand with some clay and silty clay with some sand and gravel; from 6 feet to 94 feet and the maximum depth of exploration in Drill Hole No. 3 - loose to very dense silty sand and gravel with some cobbles and boulders and layers of sandy silt; from 94 feet to the maximum depth of exploration - weathered and fractured volcanic tuff.

See Fig. 1 Log of Borings for more detailed descriptions and drill hole locations.

FOUNDATION RECOMMENDATIONS

Steel piles are recommended to support these structures. The pile tips should be driven into the dense to very dense silty sand and gravel found immediately above the weathered and fractured volcanic tuff or in the volcanic tuff itself. These piles may be loaded to a safe bearing capacity of 200 kips per pile. The recommended pile tip elevations are as follows:

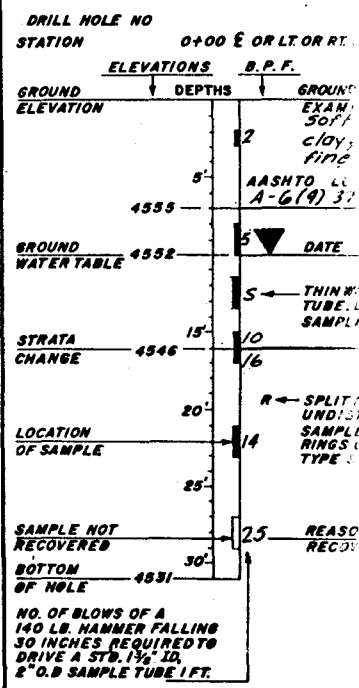
Location	Estimated Pile Tip Elevation, Ft.	Corresponding Depth Below Ground Surface, Ft.
W.B.L. Abut. #1 (West Abut.)	5600	100
E.B.L. Abut. #2 (East Abut.)	5629	71
W.B.L. Abut. #1 (West Abut.)	5629	71
E.B.L. Abut. #2 (East Abut.)	5614	86



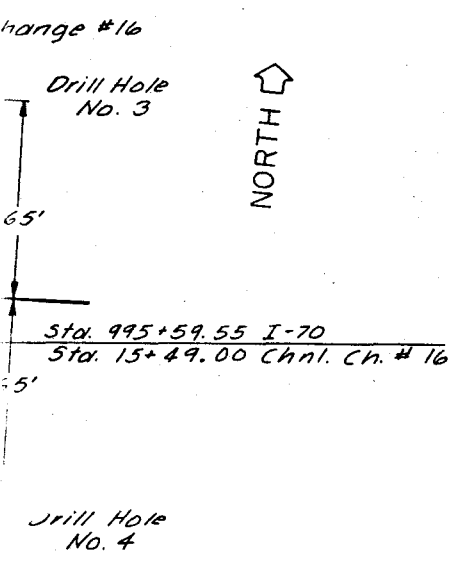
KEY TO DRILLING LOG
RELATIVE DENSITY (NON-PLASTIC)
VERY LOOSE - LESS THAN 2 BLOWS PER FOOT.
LOOSE - 4 TO 10 BLOWS PER FOOT.
MEDIUM - 10 TO 30 BLOWS PER FOOT.
DENSE - 30 TO 50 BLOWS PER FOOT.
VERY DENSE - MORE THAN 50 BLOWS PER FOOT.

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
- SANDSTONE
- SILTSTONE



- ABBREVIATIONS**
- L.L. - LIQUID LIMIT IN %
 - P.I. - PLASTIC INDEX
 - w. - NATURAL MOISTURE %
 - Ref. - REFUSAL ≥ 50 BLOWS PER FOOT
 - PEN. - PENETRATION
 - G.W.T. - GROUND WATER TABLE
 - B.P.F. - BLOWS PER FOOT
 - N.P. - NON PLASTIC
 - AASHTO - SOIL CLASSIFICATION



NOTE: Water table readings were not taken in Drill Holes #2, #3 and #4

Date Drilled: April & May 1983

NO.	BY	DATE

UTAH STATE DEPARTMENT OF TRANSPORTATION
SALT LAKE CITY, UTAH
MATERIALS and RESEARCH
BELKNAP INTERCHANGE TO SEVIER
I-70 OVER CHANNEL CHANGE NO. 16

Drawn By K. H. Her Checked By J. Ryan
Checked By E. B. Sapping Checked By
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Approval Recommended By Loren H. Rauscher
Received Date Chief Structural Engr.

Foundations File No. 82-7-FS-37 Dwg. No. F-495

