

5702

FOUNDATIONS

Memorandum

UTAH DEPARTMENT OF TRANSPORTATION

DATE: October 11, 1983

: Those Listed Below

+ 255 R5U
SEC 366

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

ECT: I-70-1(17)19 - Belknap Interchange to Sevier Junction;
Foundation Report on I-70 over "J" Line Channel
Change #9 at I-70 Sta. 869+65.69, Drg. No. F-498

SITE CONDITIONS

Two single-span prestressed concrete beam structures are proposed to carry I-70 over "J" Line. The structure will be approximately 79 feet long by 44 feet wide and will cross "J" Line at right angles. The approach embankments will be 25 to 27 feet high.

Surface drainage at this site is good.

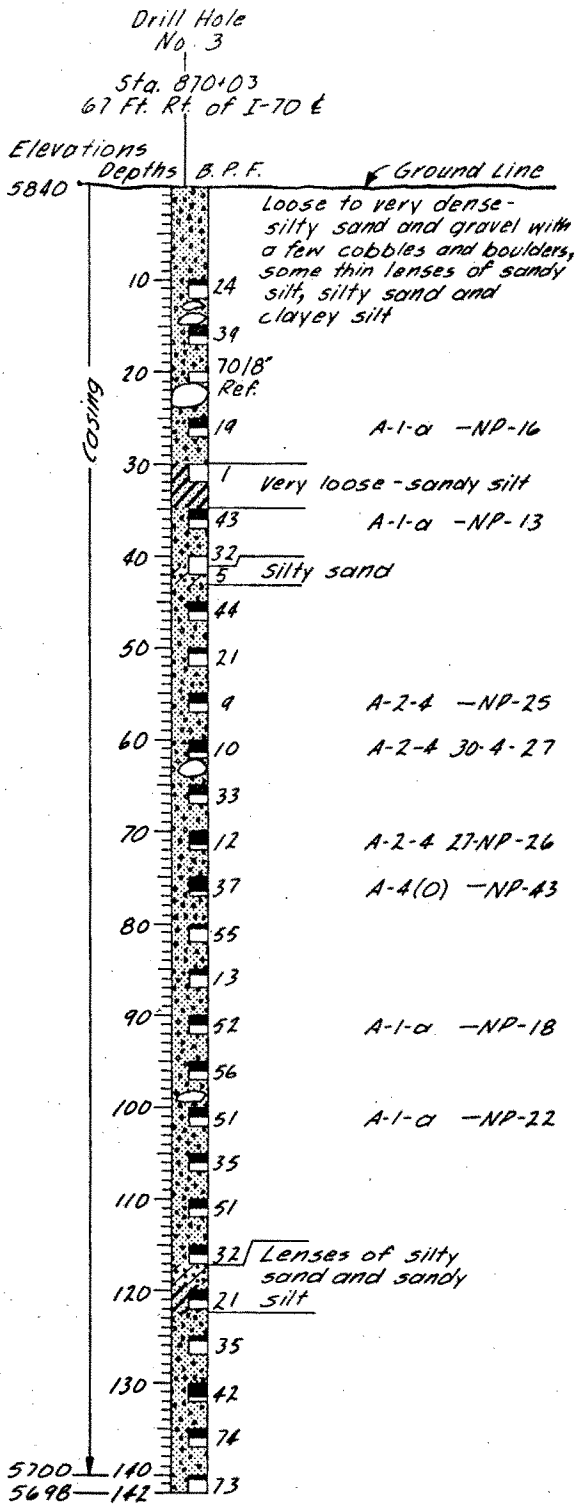
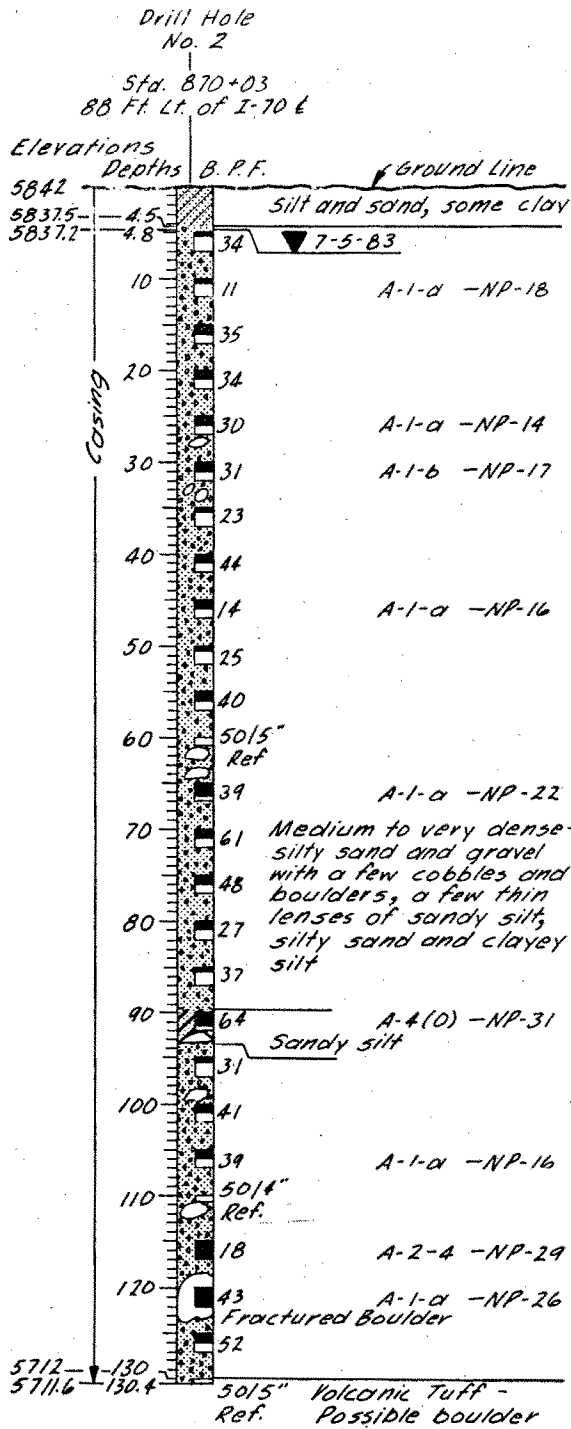
SUBSURFACE EXPLORATION

Four test holes were drilled at this site in June and July, 1983. Their depths ranged from 130 to 142 feet. Correlation of subsurface materials between drill holes is good in general, but poor for the thinner layers. Generally all four drill holes encountered one main soil type which was very loose to very dense silty sand, gravel, cobbles and boulders with some scattered layers of sandy silt and weathered volcanic tuff. See Fig. 1, Log of Borings for more detailed descriptions and drill hole locations.

FOUNDATION RECOMMENDATIONS

Steel pipe piles are recommended to support these structures. The estimated pile tip elevations are approximately 72 to 92 feet below the ground surface in the denser portions of the silty sand and gravel (see Fig. 1). Piles driven to the recommended tip elevations may be loaded to a safe bearing capacity of 200 kips per pile. The recommended pile tip elevations are as follows:

<u>Location</u>	<u>Estimated Pile Tip Elevation Ft.</u>	<u>Corresponding Depth Below Ground Surface Ft.</u>
E.B.L. Abut. #1 (West Abut.)	5748	92
E.B.L. Abut. #2 (East Abut.)	5750	90
W.B.L. Abut. #1 (West Abut.)	5768	74
W.B.L. Abut. #2 (East Abut.)	5770	72



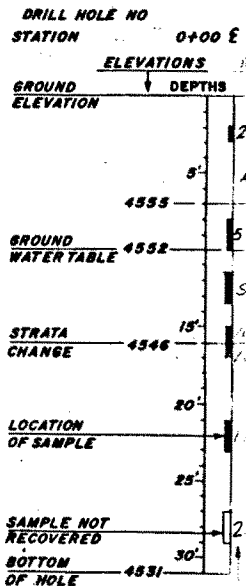
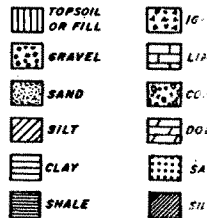
KEY TO DRILL LOG

RELATIVE DENSITY (NO. OF BLOWS REQUIRED TO PENETRATE 30 INCHES WITH 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO DRIVE A STD. 1 1/2" ID. 2" O.D. SAMPLE TUBE 1 FT.)

VERY LOOSE - LESS THAN 4
 LOOSE - 4 TO 10
 MEDIUM - 10 TO 30
 DENSE - 30 TO 50
 VERY DENSE - MORE THAN 50

CONSISTENCY (PLASTICITY INDEX)

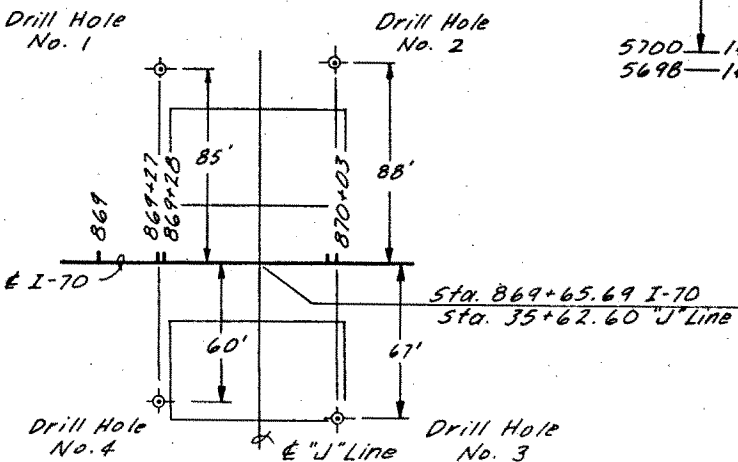
VERY SOFT - LESS THAN 10
 SOFT - 10 TO 20
 MEDIUM - 20 TO 30
 STIFF - 30 TO 40
 VERY STIFF - 40 TO 50
 HARD - MORE THAN 50



NO. OF BLOWS OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO DRIVE A STD. 1 1/2" ID. 2" O.D. SAMPLE TUBE 1 FT.

ABBREVIATIONS

L.L. - LIQUIDITY
 P.I. - PLASTICITY INDEX
 N. - NATURAL
 Ref. - REFERENCE
 PEN. - PENETRATION
 G.W.T. - GROUND WATER TABLE
 B.P.F. - BLOWS PER FOOT
 NP - NON PLASTIC
 AASHTO - SOIL CLASSIFICATION



NOTE: Water table readings not taken on holes #1, #3 and #4
 Date Drilled: June & July 1983

NO.	BY	DATE

UTAH STATE DEPARTMENT OF TRANSPORTATION
 MATERIALS and RESOURCES DIVISION
 BELKNAP INTERCHANGE
 I-70 OVER "B" BRIDGE

Drawn By: *R. Kistler* Checked By: _____
 Checked By: *E. Stearns* Checked By: _____
 Checked By: *D. Salkin* Checked By: _____

Approval Recommended By: *Leon Hill*

Received _____ Date _____ Chief _____

Foundations File No. _____

NORTH

