

Memorandum

UTAH DEPARTMENT OF TRANSPORTATION

NO
GW

: Those Listed Below

T 255 R4V
Sec 15G

DATE: January 24, 1983

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

ECT: I-70-1(12)22 - Sevier Junction to Joseph,
Foundation Report for I-70 over Joseph Connection at
I-70 Stations 1273+87.36 W.B.L. and 1275+74.59 E.B.L.

SITE CONDITIONS

Two single span prestressed concrete beam structures 90 feet long by 44 feet wide are proposed to carry I-70 over the Joseph Connection road. The crossing of both structures will be at right angles. Both lanes of I-70 will require approach fills of 34 to 38 feet in height, and Joseph Connection will require about 10 feet of fill at this site.

Surface drainage in the area is good.

SUBSURFACE EXPLORATION

Four test holes were drilled at this site to depths of 40 to 55 feet. With the exception of a few cobbles and small boulders near the ground surface, all test holes encountered medium to very dense sand with some silt and gravel. For a more detailed description of the subsurface materials and test hole locations, refer to Fig. 1, Log of Borings.

A ground water table was not found in any of the test holes.

FOUNDATION RECOMMENDATIONS

Drilled caissons are recommended to support all four abutments. The recommended maximum bearing capacities and tip elevations for 3.5 feet diameter caissons founded in the very dense silty sand are as follows:

Location	Tip Elevation Ft.	Approximate Caisson Length Ft.	Allowable Caisson Load Kips
Abut. #1 E.B.L.	5489	41	230
Abut. #2 E.B.L.	5491	39	230
Abut. #1 W.B.L.	5499	41	230
Abut. #2 W.B.L.	5497	42	230

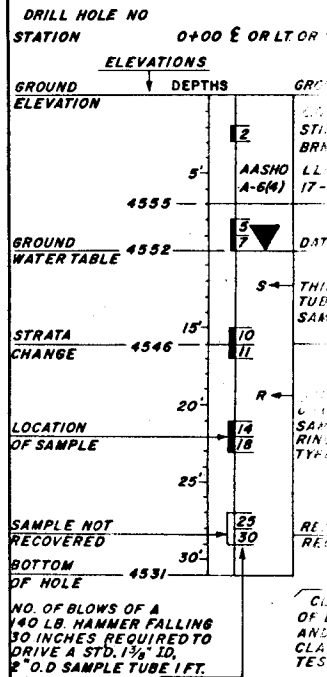
The bearing capacities for drilled caissons of other diameters are given in Fig. 2.

KEY TO DRILLING

RELATIVE DENSITY (NON-PLASTIC)
 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

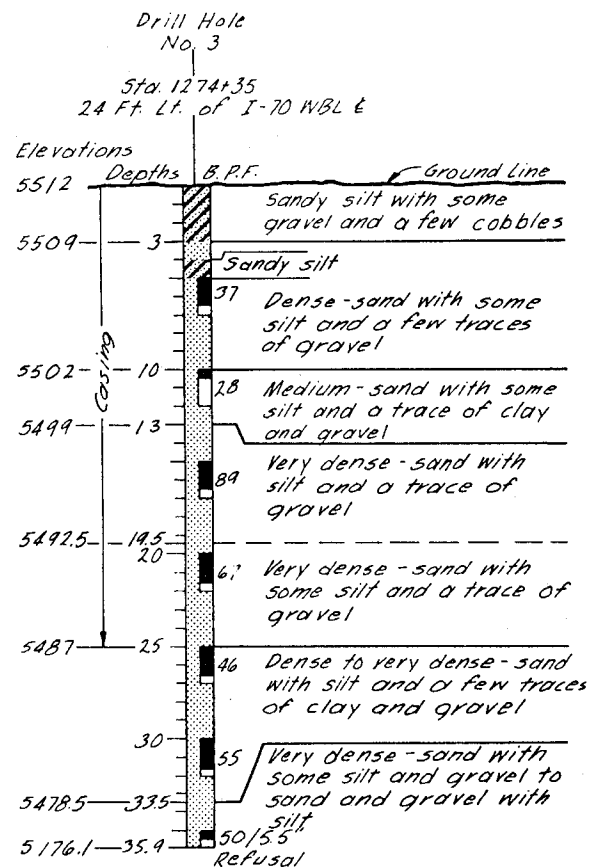
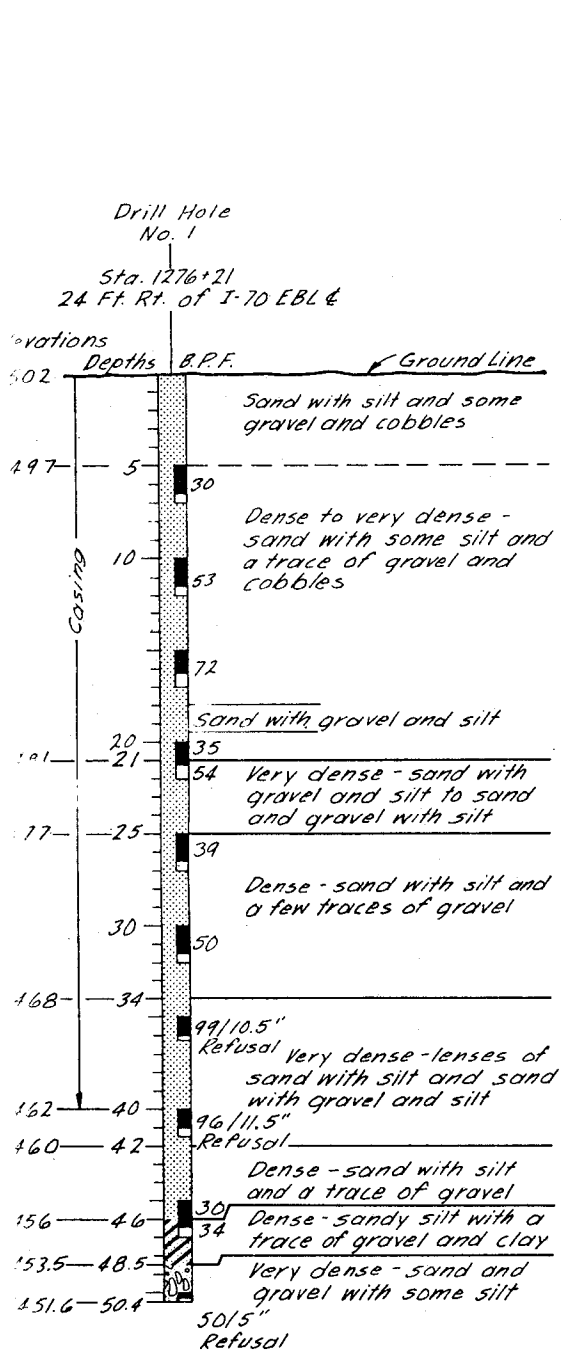
CONSISTENCY (PLASTIC SILT & CLAY)
 VERY SOFT - LESS THAN 2 BLOWS PER FOOT
 SOFT - 2 TO 4 BLOWS PER FOOT
 MEDIUM - 4 TO 8 BLOWS PER FOOT
 STIFF - 8 TO 15 BLOWS PER FOOT
 VERY STIFF - 15 TO 30 BLOWS PER FOOT
 HARD - MORE THAN 30 BLOWS PER FOOT

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



ABBREVIATIONS
 L.L. - LIQUID LIMIT IN PERCENT
 P.I. - PLASTIC INDEX IN PERCENT
 W. - NATURAL MOISTURE IN PERCENT
 W.G. - WELL GRADED
 PEN. - PENETRATION IN TENTHS OF AN INCH
 G.W.T. - GROUND WATER TABLE
 B.P.F. - BLOWS PER FOOT
 N.P. - NON PLASTIC

NOTE: REFUSAL = 50 or more blows per foot



Note: A water table was not encountered in any of the drill holes.

Date Drilled: June 1980

NO.	BY	DATE	REMARKS
REVISIONS			

UTAH DEPARTMENT OF TRANSPORTATION
 SALT LAKE CITY, UTAH
 MATERIALS AND RESEARCH SECTION

SEVIER JUNCTION TO JOSEPH CONNECTION
 I-70 OVER JOSEPH CONNECTION

DRAWN BY B. Kistler CHECKED BY _____
 CHECKED BY P. Sizemore CHECKED BY D. K. Powell
 CHECKED BY S. B. Ballew CHECKED BY _____
 APPROVAL RECOMMENDED BY Loren H. Rauber
 RECEIVED _____ DATE _____ CHIEF STRUCTURAL ENGINEER

BR. NO. _____ DRG. NO. _____

FIGURE 1

