No Liquefiable Deposits

2115

R-234

FOUNDATIONS

Memorandum

UTAH DEPARTMENT OF TRANSPORTATION

DATE: April 3, 1980

TO : Those Listed Below

FROM : Edwin E. Lovelace, Engineer of Materials and Research E.E.L

SUBJECT: I-15-5(6)220 - South Nephi to North Nephi
I-15 Over SR-132 at ℄ Survey Station 975+70.58

T 13S R 1E
Sec. 3 E

SITE CONDITIONS

Two single-span steel beam structures are proposed to carry I-15 over SR-132. The two structures will be 138 feet long and 44 feet wide with crossing angles of approximately 62 degrees. The approach embankments for I-15 NBL & SBL will be 12 to 16 feet high.

Drainage in the area is fair.

SUBSOILS EXPLORATION

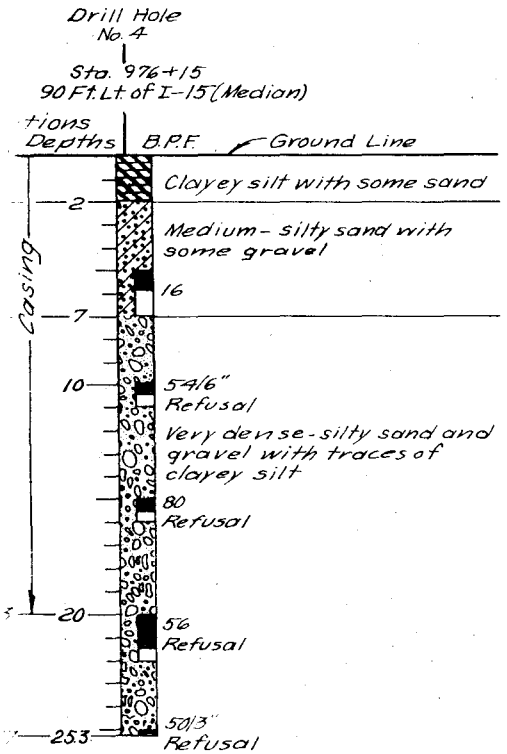
Four test holes were drilled at this structure site to depths ranging between 25 and 40 feet. The correlation of subsoils strata between holes is good. The subsoils in all holes consist mainly of silty sand and gravel with some traces of clay and show little variation throughout their depths. Refer to the drill logs (Fig. 1) for further subsoil details and the location of holes.

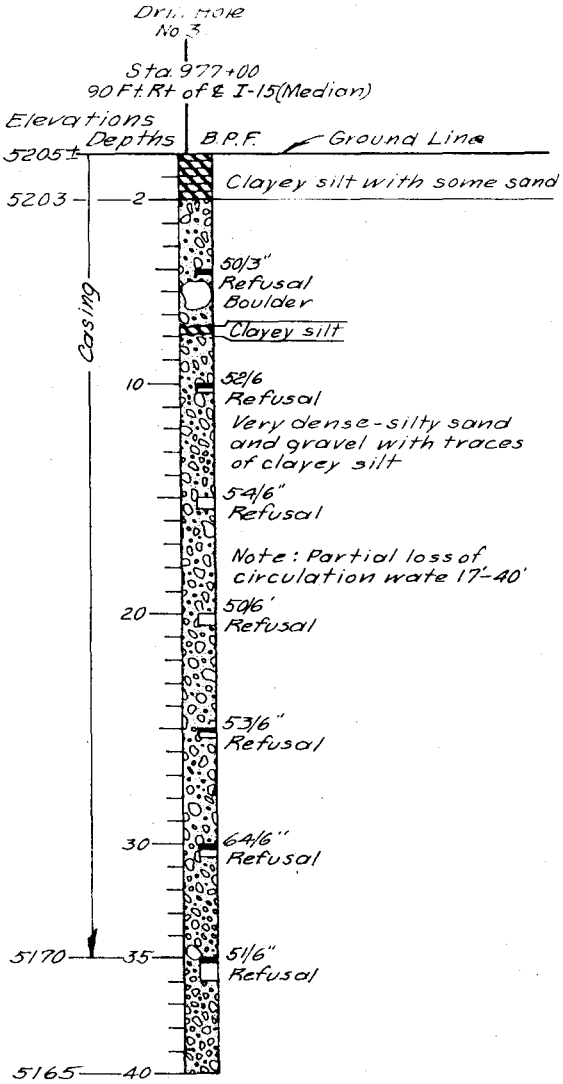
Ground water was not found in drill holes #2, 3, & 4, but in drill hole #1, water was measured at approximately 34'.

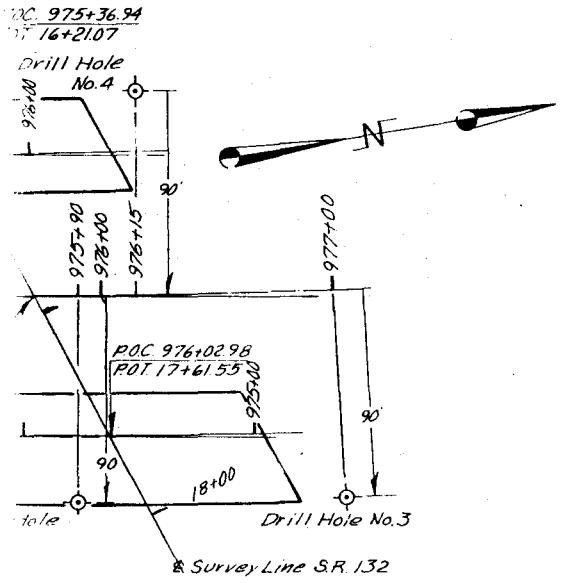
FOUNDATION RECOMMENDATIONS

Drilled caissons founded in the very dense silty sand and gravel, approximately 11 feet below the gound surface, are recommended for support of these structures. The recommended maximum bearing capacities and tip elevations for 3.0 feet diameter caissons are as follows:

Location	Recommended Tip Elevation Ft.	Approximate Caisson Length Ft.	Allowable Caisson Load, Tons
S.B.L.			
South Abut.	5191	24	87
North Abut.	5192	23	87







KEY TO DRILLING LOG

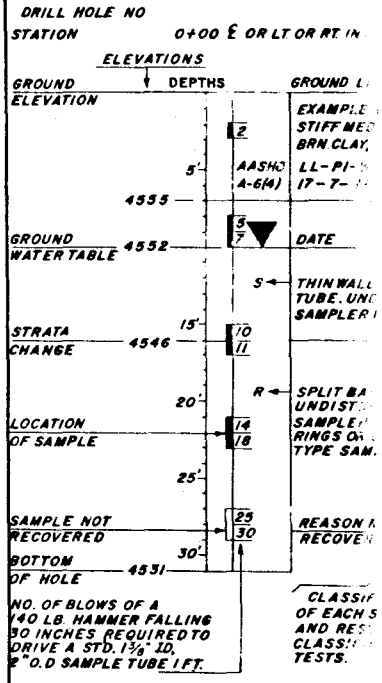
RELATIVE DENSITY (NON-PLASTIC S

VERY LOOSE - LESS THAN 4 BLOWS P
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 P

CONSISTENCY (PLASTIC-SILT & CL

VERY SOFT - LESS THAN 2 BLOWS P
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 F.

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



ABBREVIATIONS

L.L. — LIQUID LIMIT IN %
P.I — PLASTIC INDEX
W. — NATURAL MOISTURE C
W.G. — WELL GRADED
PEN. — PENETRATION
G.W.T. — GROUND WATER TAB
B.P.F. — BLOWS PER FOOT.
N.P - NON PLASTIC

Note: Refusal - more than 50 blows per 6"

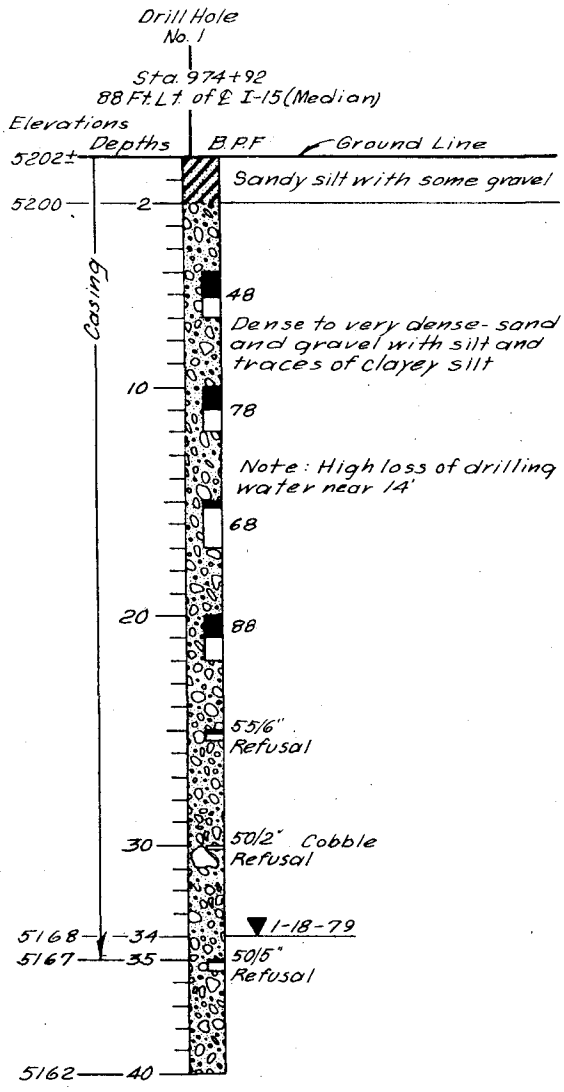
Drilled: Jan. 1979

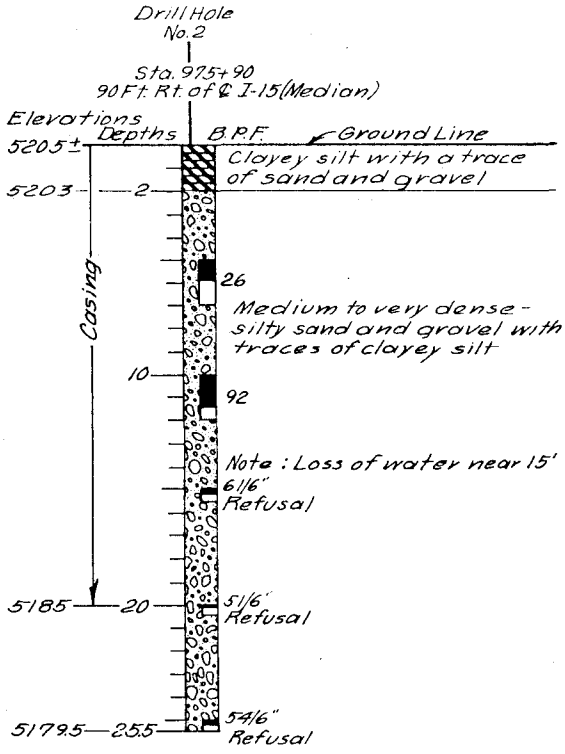
NO	BY	DATE	REMARKS

REVISIONS

UTAH DEPARTMENT OF TRANSPORTA
SALT LAKE CITY, UTAH
MATERIALS AND RESEARCH SEC
SOUTH NEPHI - NORTH NEPHI
I-15 OVER SR-132

DRAWN BY boyd c. searle	CHECKED BY B. Kistler	I-15
CHECKED BY SI SAKHAI	CHECKED BY	
CHECKED BY J Bytheway	CHECKED BY	SB: 9 NP: 2
APPROVAL RECOMMENDED BY L. A. Ramsden		
RECEIVED DATE	CHIEF STRUCTURAL ENG.	
BR NO	DRG. NO	





Note : A water table was encoun in Drill Hole No. 1 only.