

2125

File 1770
8/10/66

FOUNDATIONS DEPT.

Memorandum

UTAH STATE DEPARTMENT OF HIGHWAYS

DATE: August 8, 1966

Those Listed Below

T105 R1E

Sec 27L

W. B. Liddle, Engineer of Materials & Research

Re: I-15-5(1)207, North Nephi to South Santaquin. Foundation Report on I-15 Over "H" Line at I-15 Station 798+00.47.

Enclosed are Foundation Recommendations, Location Plan, Summary of Test Data, Drilling Logs, Sketch of Approximate Cut and Fill Situation, and Allowable Bearing Capacity Curves for Spread Footings.

SURFACE CONDITIONS

Two single span type structures are proposed to allow I-15 to pass over "H" Line at approximately right angles. Each structure will be about 84 feet long and 41 feet wide with a median of 90 feet. The proposed N.B. grade is located approximately 2 and 4 feet below the existing ground surface at the north and south abutments respectively. An additional 21 foot cut will provide the grade separation required.

The S.B. grade will be located on about 6 feet of fill at the north abutment and about 4 feet of fill at the south abutment. This fill plus an 18 foot cut will provide the grade separation for the S.B. Lane. Approximate cut and fill requirements are detailed in Figure 1.

SUBSOILS

The two structures will be located on sloping sagebrush pasture ground which is underlain by an alluvial fan. The alluvial fan soil conditions were investigated utilizing penetration samples recovered from the four drill holes shown on the location plan. The drill holes indicate that subsoils are not stratified to any significant extent.

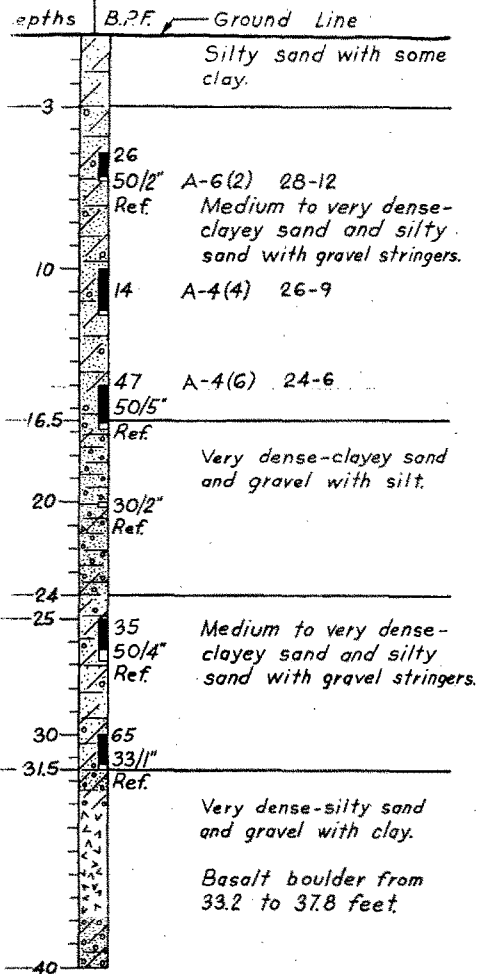
The subsurface consists generally of silty sand with gravel from ground surface to 2 feet; from 3 to 30 feet, silty sand and clayey sand with some gravel stringers; and below 30 feet to the bottom of the drill holes, gravel and clayey sand with some silt.

Ground water was not encountered in any of the drill holes.

STRUCTURE RECOMMENDATIONS

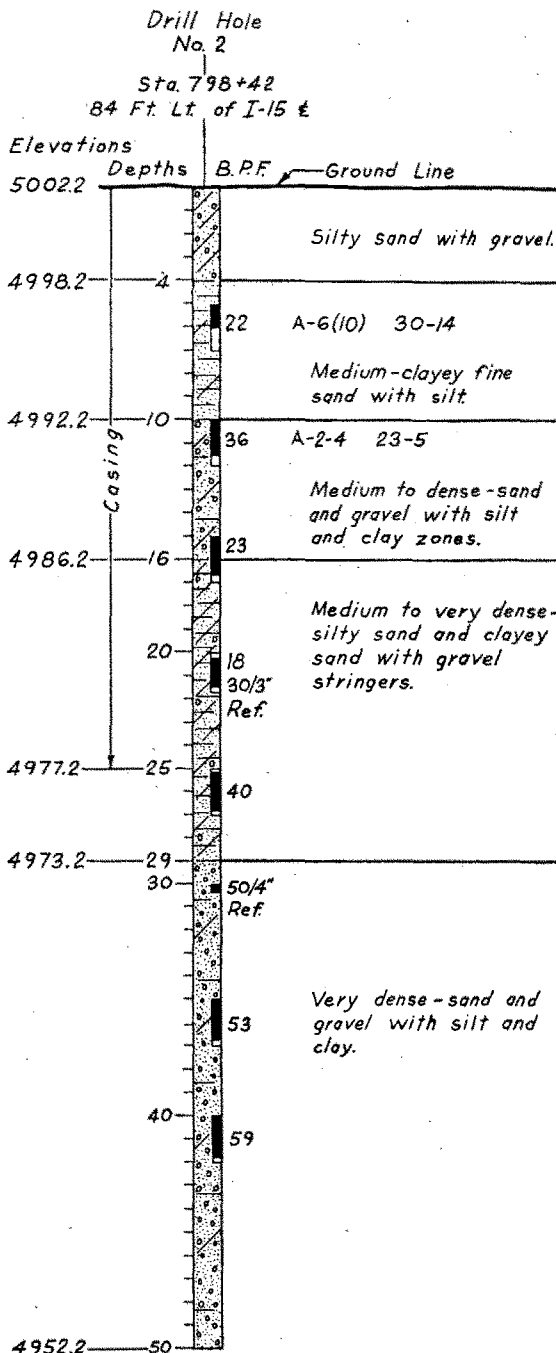
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Drill Hole
No. 3
Sta. 798+42
Ft. Rt. of I-15 E



Hole No. 2
Sta. 799+00
Ft. I-15

Hole No. 3
Sta. 798+42
Ft. Rt. of I-15 E

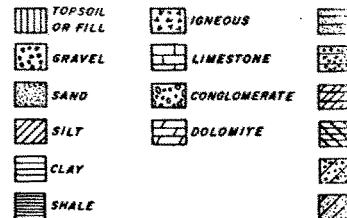


KEY TO DRILLING LOGS RELATIVE DENSITY(SAND & SILT)

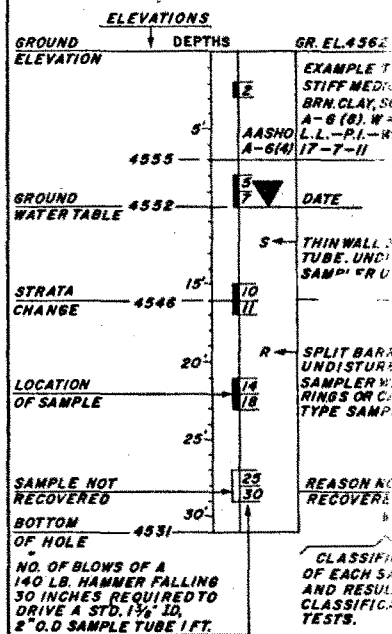
VERY LOOSE— LESS THAN 4 BLOWS PER FOOT
LOOSE— 4 TO 10 BLOWS PER FOOT
MEDIUM— 10 TO 30 BLOWS PER FOOT
DENSE— 30 TO 50 BLOWS PER FOOT
VERY DENSE— MORE THAN 50 BLOWS PER FOOT

CONSISTENCY (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



DRILL HOLE NO.
STATION 0+00 E OR LT OR RT IN FT.



ABBREVIATIONS

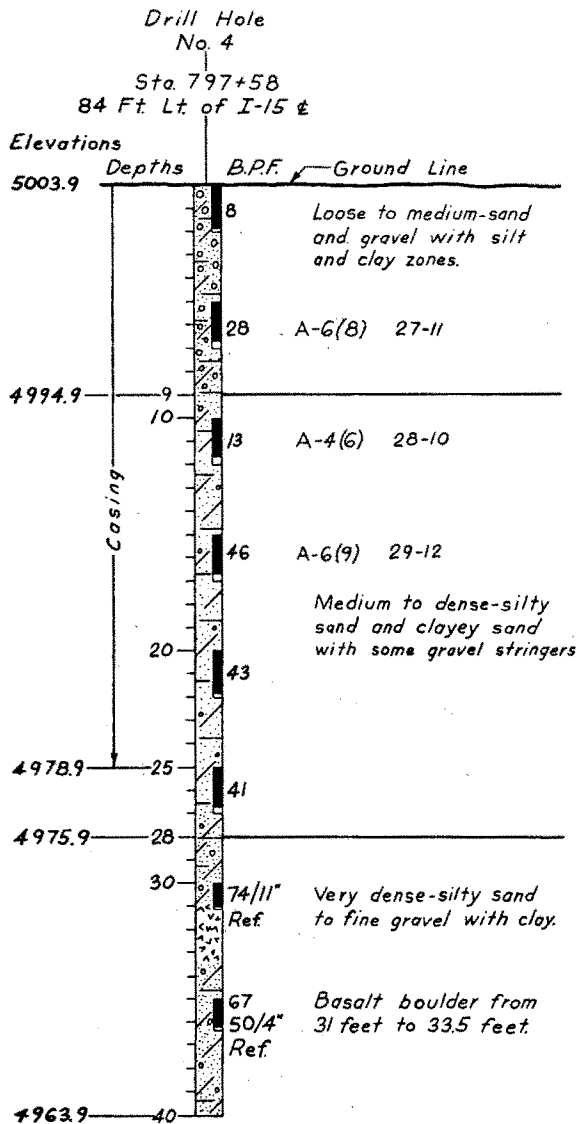
L.L.— LIQUID LIMIT IN %
P.I.— PLASTIC INDEX
N.— NATURAL MOISTURE CONTENT
W.G.— WELL GRADED
PEN.— PENETRATION
G.W.T.— GROUND WATER TABLE
B.P.F.— BLOWS PER FOOT
N.P.— NON-PLASTIC
REF.— REFUSAL

UTAH STATE DEPARTMENT OF HIGHWAYS
SALT LAKE CITY, UTAH
MATERIALS AND RESEARCH DIVISION
MILLS JUNCTION TO JUAB—UTAH COUNTY
I-15 OVER "H" LINE

DRAWN BY McClary CHECKED BY A.E.K.
CHECKED BY P.E.M. CHECKED BY W.J.C.
CHECKED BY OTD CHECKED BY W.H.
APPROVAL
RECOMMENDED BY W.H.
RECEIVED BY DATE CHIEF STRUCTURAL ENGINEER

NO.	BY	DATE	REMARKS

BR. NO. _____ DRG. NO. _____



Note: No ground water table encountered in any of the drill holes.

