

# Memorandum

UTAH DEPARTMENT OF TRANSPORTATION

T 175 R 20  
Sec. 16 P

DATE: December 11, 1953

TO : Those Listed Below

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

SUBJECT: I-15-4(18)188 - Scipio to Sevier River; Foundation Repo  
for I-15 over "Y" Line - Deer Crossing at Sta. 1025+00  
N.B.L. I-15

## SITE CONDITIONS

Two single span prestressed concrete beam structures are proposed to carry I-15 over "Y" Line, a Deer Crossing. The proposed structures will be approximately 59 feet long by 44 feet wide and will cross "Y" line at right angles. The approach embankments will be nearly 20 to 24 feet high while "Y" Line will have about 2 to 6 feet of fill at the crossing site.

Surface drainage in the area is good.

## SUBSURFACE CONDITIONS

Four test holes were drilled at this site with depths ranging from 60 feet to 75.9 feet. Correlation between test holes is fair and in general the subsurface materials may be described as follows: from the ground surface to a depth of 18 feet - fill consisting of sand and gravel with silt; from 18 feet to 41 feet - medium to very dense sandy silt with traces of gravel and clay, some layers of sand with gravel and silt; from 41 feet to the maximum depth of exploration - dense to very dense sand with gravel and silt, some layers of sandy silt. See Figure 1, Log of Borings, for more detailed descriptions and test hole locations.

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

## FOUNDATION RECOMMENDATIONS

Drilled caissons are recommended to support the abutments of these structures. Three foot diameter caissons with tips founded in the dense to very dense sand with gravel and silt or sand and gravel with silt (See Fig. 1) may be loaded to 145 kips per caisson. See Figure 2 for

KEY TO DRILL LOG

RELATIVE DENSITY (NON-PLASTIC)  
 VERY LOOSE - LESS THAN 10 BLOWS PER FOOT  
 LOOSE - 10 TO 20 BLOWS PER FOOT  
 MEDIUM - 20 TO 30 BLOWS PER FOOT  
 DENSE - 30 TO 50 BLOWS PER FOOT  
 VERY DENSE - MORE THAN 50 BLOWS PER FOOT

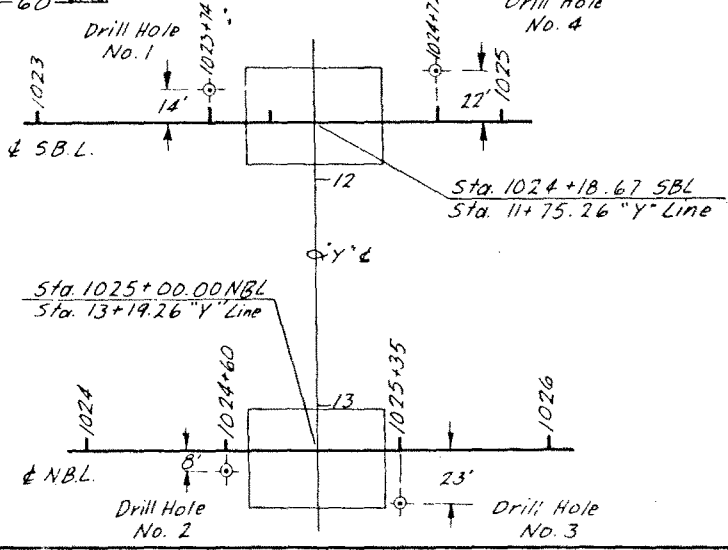
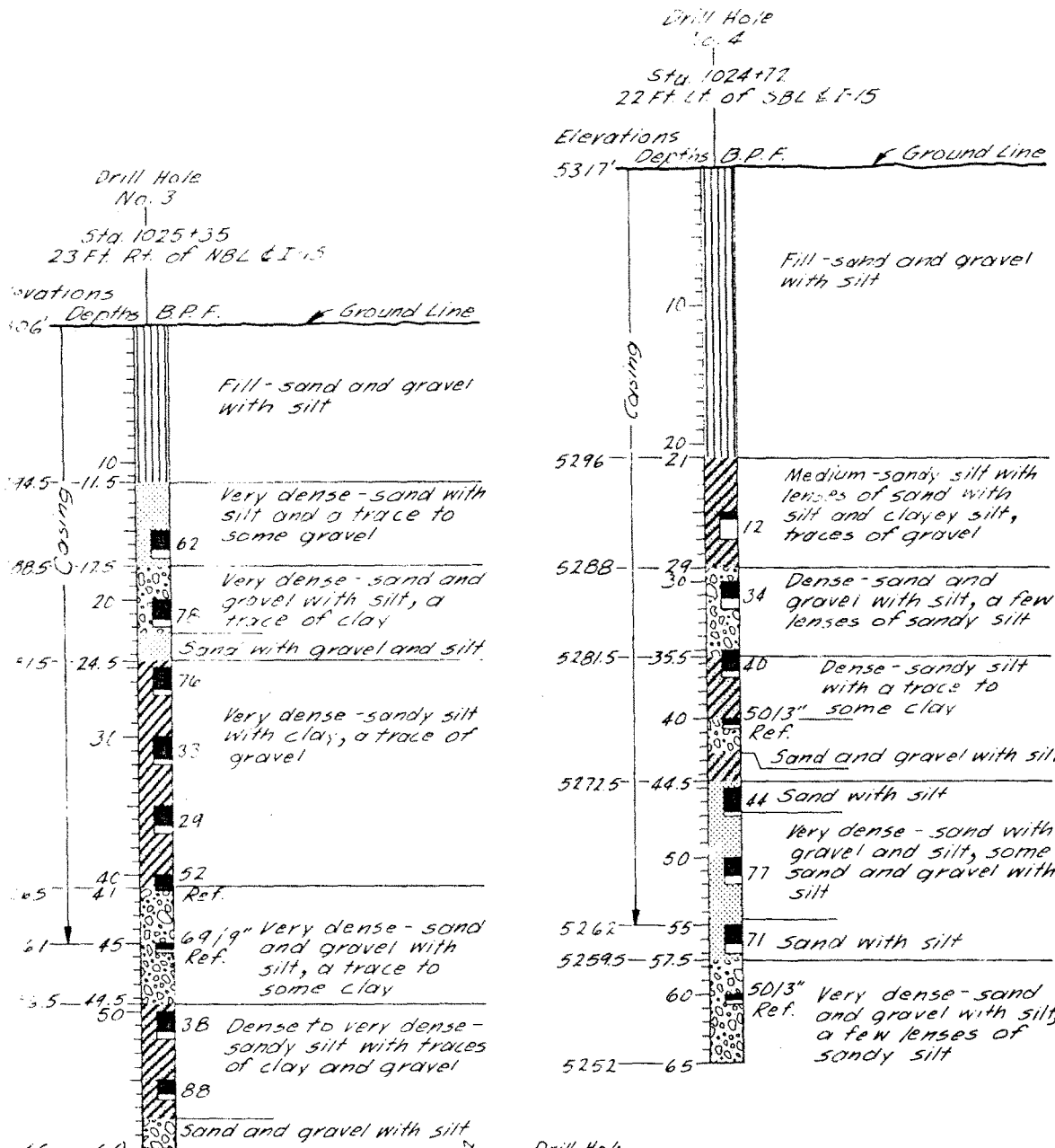
CONSISTENCY (PLASTIC)  
 VERY SOFT - LESS THAN 2 BLOWS PER FOOT  
 SOFT - 2 TO 4 BLOWS PER FOOT  
 MEDIUM - 4 TO 8 BLOWS PER FOOT  
 STIFF - 8 TO 15 BLOWS PER FOOT  
 VERY STIFF - 15 TO 30 BLOWS PER FOOT  
 HARD - MORE THAN 30 BLOWS PER FOOT

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

DRILL HOLE NO.	STATION	ELEVATIONS	B.P.F.	DEPTHS
	0+00 E OR W			
GROUND ELEVATION				2
				5
GROUND WATER TABLE		4533		5
				5
STRATA CHANGE		4546		10
				16
LOCATION OF SAMPLE				14
				25
SAMPLE NOT RECOVERED				25
BOTTOM OF HOLE		4531		30

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. - LIQUID LIMESTONE
  - P.I. - PLASTIC LIMESTONE
  - N. - NATURAL MOISTURE
  - Ref. - REFUSAL TO PENETRATE
  - PEN. - PENETRATION
  - G.W.T. - GROUND WATER TABLE
  - B.P.F. - BLOWS PER FOOT
  - N.P. - NON PLASTIC
  - AASHTO - SOIL CLASSIFICATION



NOTE: A water table was not encountered in any of the test holes.  
 Date Drilled: June & Sept. 1982

NO.	BY	DATE

REVISIONS

UTAH STATE DEPARTMENT OF TRANSPORTATION  
 SALT LAKE CITY  
**MATERIALS and RESEARCH**  
 SCIPIO TO SEVIER ROAD  
 1.5 OVER DEER CROSSING

Drawn By: *Kistler*      Checked By: *W. S. Edwards*  
 Checked By: *R. S. Clarke*      Approved By: *Leon H. Rawson*

Received: \_\_\_\_\_ Date: \_\_\_\_\_

Conditions File No. \_\_\_\_\_

