

Check W/
 GW map
 Memorandum

2123
 2124

UTAH STATE DEPARTMENT OF HIGHWAYS

2123 T105 RIE
 2124 T105 RIE
 Sec 33Q Sec 22G

DATE: March 1, 1972

TO : Those Listed Below

W. J. Liddle

FROM : W. J. Liddle, Engineer of Materials and Tests

FOUNDATIONS
 Filed 4-2-72 *Sc*

SUBJECT: I-15-5(3)228 and I-15-6(35)241, 1st Contract -
 North Nephi to South Santaquin; Foundation Report on I-15 Over "E" Line
 at I-15 Station 681+43; I-15 Over Deer Crossing at I-15 Station 846+50;
 South Santaquin Interchange at I-15 Station 48+00.

SUMMARY OF RECOMMENDATIONS

<u>Location</u>	<u>Foundation Type</u>	<u>Safe Load Capacity</u>	<u>Approx. Base Elevation</u>
2123 I-15 Over "E" Line	Abuts: Drilled Caissons	8.0 TSF	SBL - 5011', 5015 NBL - 5021', 5006
	Bents: Spread Footings	3.0 TSF	SBL - 5014' NBL - 5022'
2124 I-15 Over Deer X-ing	Abuts: Spread Footings	2.1 TSF	In Fills
	Bents: Spread Footings	3.6 TSF	SBL - 5054' NBL - 5060'
So. Santaquin Interchange	Abuts: Spread Footings Bents: None	2.1 TSF	In Fills

I-15 OVER "E" LINE - STATION 681+43

Site Conditions: Two three-span continuous steel beam structures, 89 feet long and 44 feet wide, are proposed at this site. Interstate 15 will cross "E" line at an 83° skew angle. The design height of the approach embankments varies from 9 to 12 feet. Seven to ten feet of cut will be required for "E" line. Surface drainage is westerly and is adequate to prevent ponding.

Subsoils: Four test holes were drilled at this site. Correlation between Drill Holes 3, and 4 was good, and correlation between Drill Holes 1 and 2 was fair. In general, the subsoils are: from the ground surface to 11 feet - very loose to medium sandy and clayey silt with some gravel and cobbles; from 11 feet to the maximum depth of exploration - medium to very dense gravel and sandy silt. Refer to the attached Drilling Logs (Fig. 1) for detailed subsoil description and hole locations.

Ground water table observations were not obtained due to hole caving as the casing was removed.

**KEY TO D:
RELATIVE DEN**

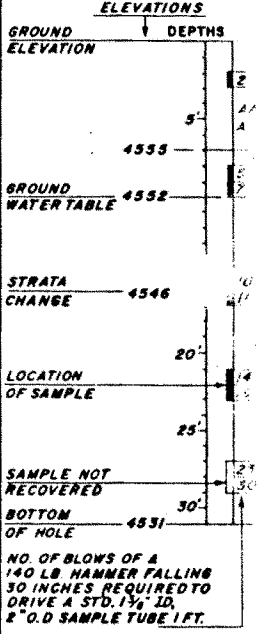
VERY LOOSE -
LOOSE - 4 TL
MEDIUM - 10 TO 30 BL
DENSE - 30 TO 50 BL
VERY DENSE - MORE TH

CONSISTEN

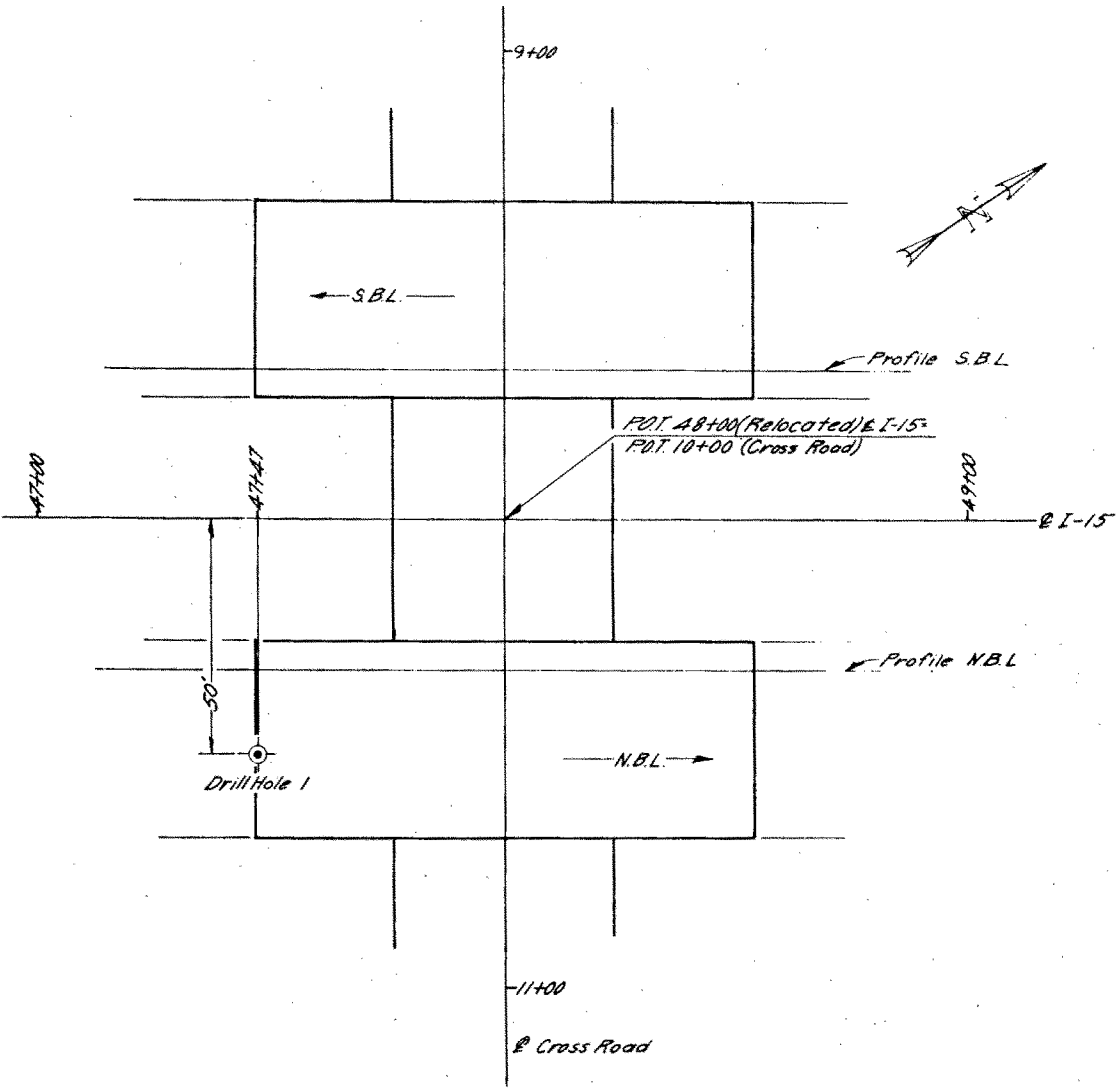
VERY SOFT - LESS TH
SOFT - 2 TO 4 BLOW
MEDIUM - 4 TO 8 BL
STIFF - 8 TO 15 BLOW
VERY STIFF 15 TO 30
HARD - MORE THAN 30

- TOPSOIL OR FILL
- GRAVEL
- SAND
- SILT
- CLAY
- SHALE
- DC
- CC
- DC

DRILL HOLE NO. 1
STATION 0+00 E



- ABBREVIAT**
- L.L. - LIQUID
 - P.I. - PLASTIC
 - N. - NATURAL
 - W.G. - WELL GR
 - PEN. - PENETRA
 - G.W.T. - GROUND
 - B.P.F. - BLOWS P
 - N.P. - NON PL



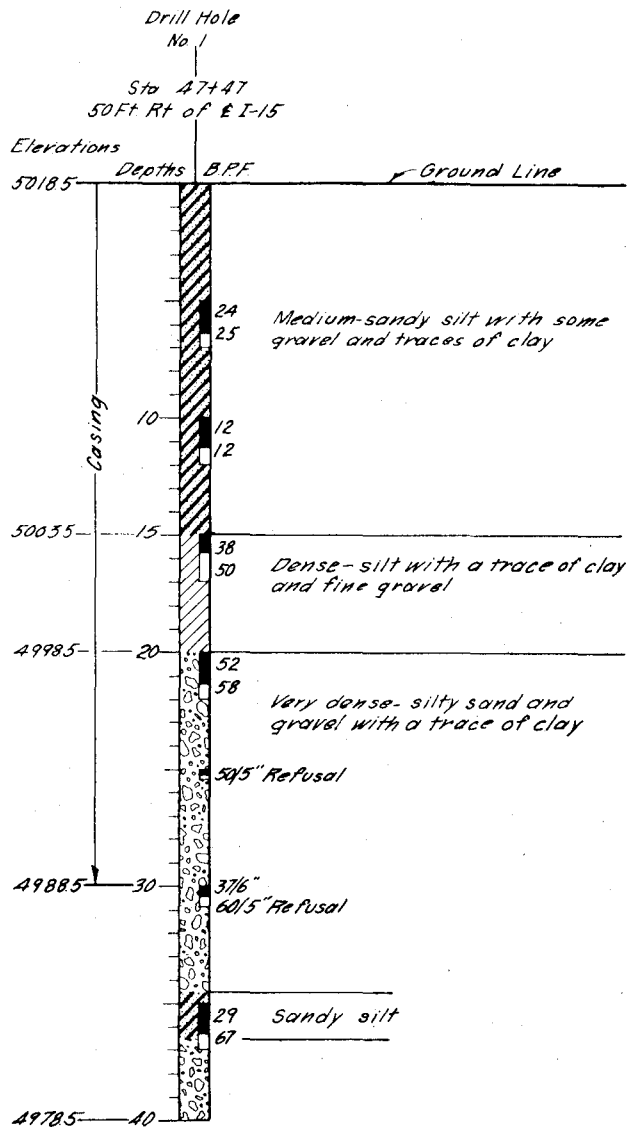
UTAH STATE DEPARTMENT
SALT LAKE CITY
MATERIALS AND TESTS
NORTH NEPHI TO SOUTH
SOUTH SANTAQUIN

Note: Water table measurements were not made because of hole caving
Drilled: April 1970

DRAWN BY: *[Signature]* CHKL
CHECKED BY: *[Signature]* CHECKED BY: *[Signature]*
APPROVED BY: *[Signature]* CHECKED BY: *[Signature]*
RECOMMENDED BY: *[Signature]*

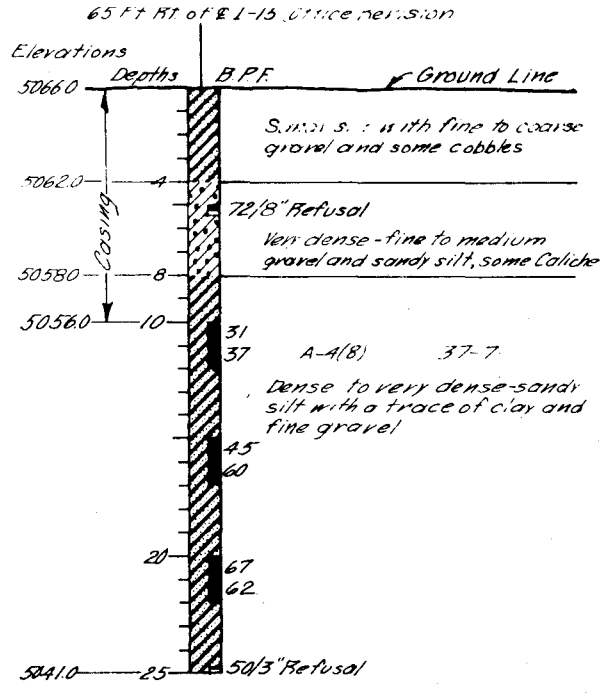
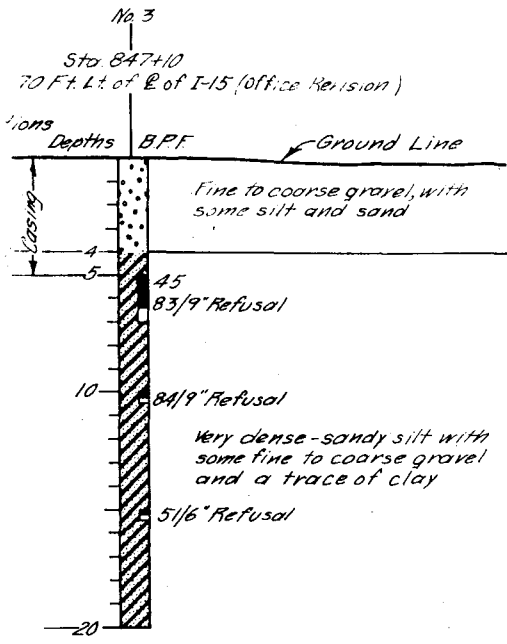
NO.	BY	DATE	REVISIONS	RECEIVED	DATE	NAME	STRUCTURE

41064455



A7+47

u.10624425



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

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

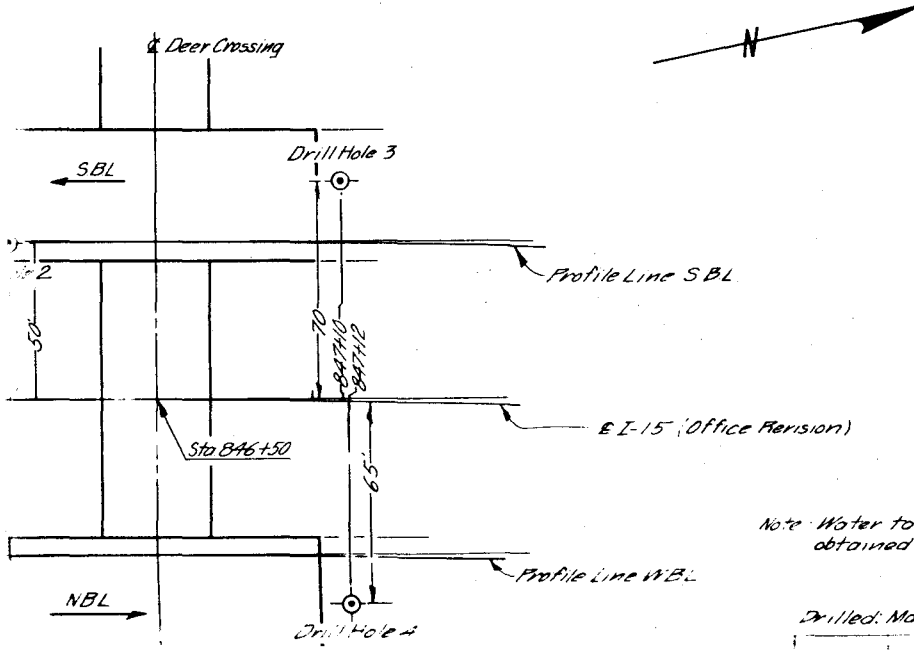
DRILL HOLE STATION NO. 0+00 E OR L OR T OR R

ELEVATIONS	DEPTH	GROUND ELEVATION	EXPLANATION
4555	5'		AASHO A-6(4) 17
4552	7'		DATA
4546	15'		STRATA CHANGE
	20'		LOCATION OF SAMPLE
	25'		SAMPLE NOT RECOVERED
4531	30'		BOTTOM OF HOLE

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

ABBREVIATIONS

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



Note: Water table readings were not obtained because of hole casing.

Drilled: March 1971

UTAH STATE DEPARTMENT OF MATERIALS AND TESTS

NORTH NEPHI TO SANTA FE I-15 OVER DEER CROSS

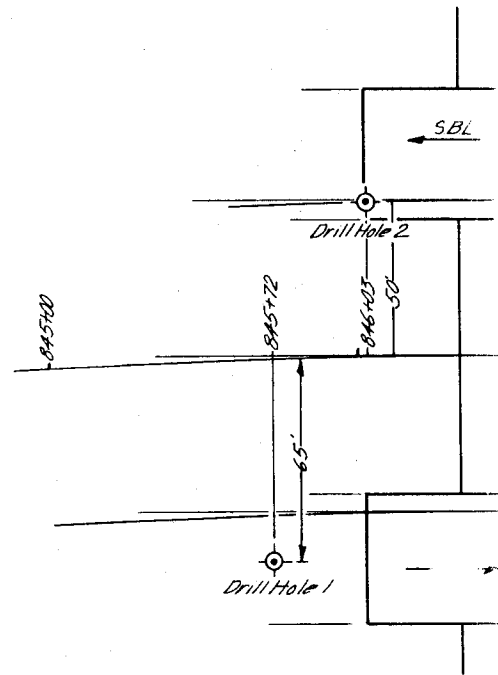
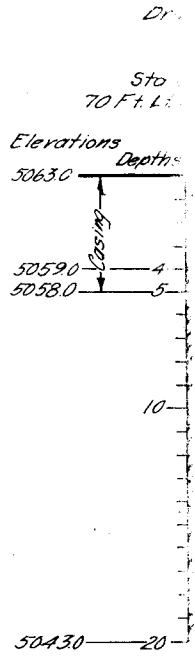
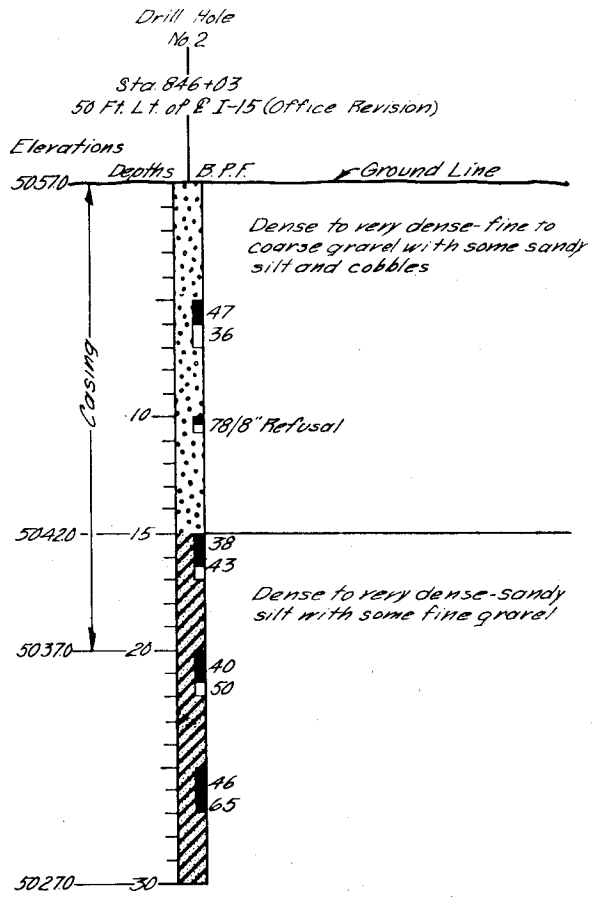
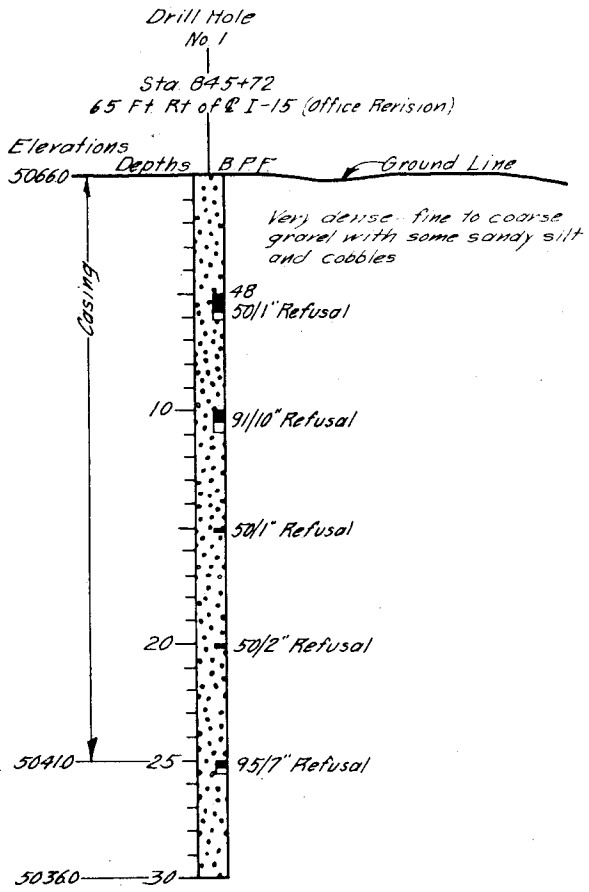
Drawn by: B.C. Seayle Checked by: B.K. ...

Checked by: A. Rasmussen Checked by: K. ...

Checked by: R.T. ... Checked by: S. Jensen

APPROVAL

Recommended by: W. ...

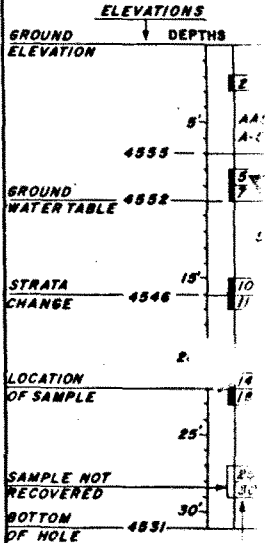


KEY TO DRILL
RELATIVE DENSITY (NON)
 VERY LOOSE - LESS THAN 4
 LOOSE - 4 TO 10 BLOWS
 MEDIUM - 10 TO 30 BLOWS
 DENSE - 30 TO 50 BLOWS
 VERY DENSE - MORE THAN 50 BLOWS

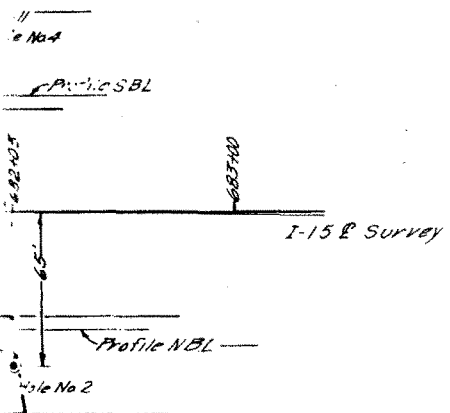
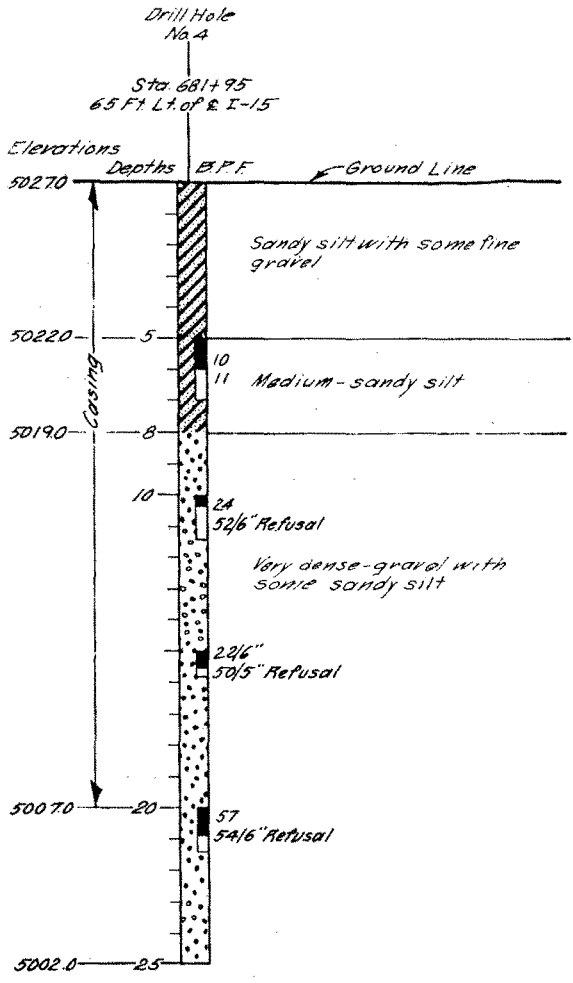
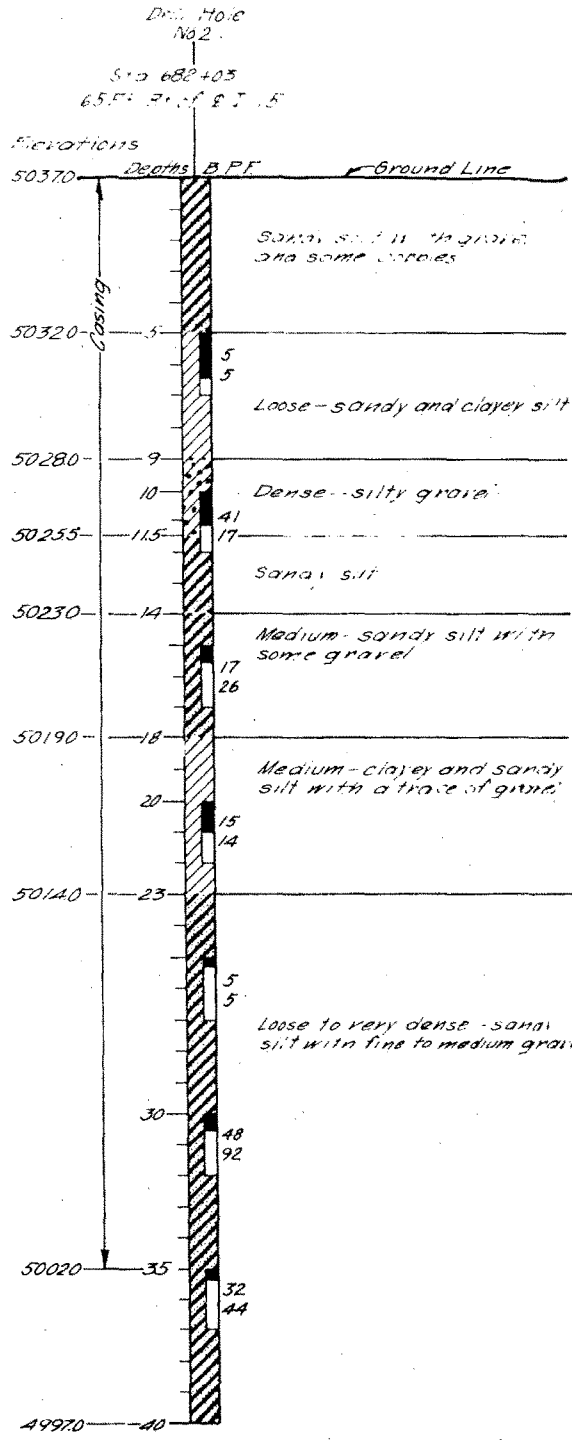
CONSISTENCY (PLASTIC)
 VERY SOFT - LESS THAN 2
 SOFT - 2 TO 4 BLOWS PER
 MEDIUM - 4 TO 8 BLOWS
 STIFF - 8 TO 15 BLOWS
 VERY STIFF - 15 TO 30 BLOWS
 HARD - MORE THAN 30 BLOWS

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

DRILL HOLE NO 0+00 E OF



ABBREVIATIONS
 L.L. - LIQUID
 P.I. - PLASTIC
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 B.P.F. - BLOWS PER FOOT
 N.P. - NON PLASTIC



Note: Water table readings were not obtained because of hole caving

Drawn April, 1977

NO.	BY	DATE	REMARKS

UTAH STATE DEPARTMENT OF TRANSPORTATION
 MATERIALS AND TESTING DIVISION
 NORTH NEPHITE
 I-15 OVERPASS

DRAWN BY: *D. Searle*
 CHECKED BY: *L. H. Rauscher*
 CHECKED BY: *D. P. Price*
 APPROVAL RECOMMENDED BY: *W. B. ...*
 RECEIVED: _____ DATE: _____

