

## Memorandum

UTAH STATE DEPARTMENT OF HIGHWAYS

DATE: April 16, 1968

TO : Those Listed Below

*H. J. Liddle*

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

FOUNDATIONS

*Filed → 4-19-68  
PJP*

SUBJECT: I-15-5(5)213 West Levan to South Nephi  
Foundation Report on West Levan Interchange ("E" Line over I-15)  
I-15 Station 1999+00

Enclosed are: Summary of Test Data, Generalized Soil Profile, and  
Drilling Logs.

*T14S R1W  
Sec. 34 C*

## SUMMARY OF RECOMMENDATIONS

| <u>Foundation Location</u> | <u>Foundation Type</u>            | <u>Capacity (Tons)</u> | <u>Load Supporting Length (Feet)</u> | <u>Approx. Tip Elev. (Feet)</u> |
|----------------------------|-----------------------------------|------------------------|--------------------------------------|---------------------------------|
| East Abutment              | 12" tip diameter<br>Tapered Piles | 50                     | 33                                   | 5115                            |
| Pier                       | " "                               | 50                     | 31                                   | 5117                            |
| West Abutment              | " "                               | 50                     | 30                                   | 5119                            |

## Embankment:

Primary Settlement: 4.7 inches for 27 ft. embankment height.

Time for 90% Primary Settlement: Less than one year

Slopes: 2:1 side slopes and 1.5:1 end slopes

## SITE CONDITIONS

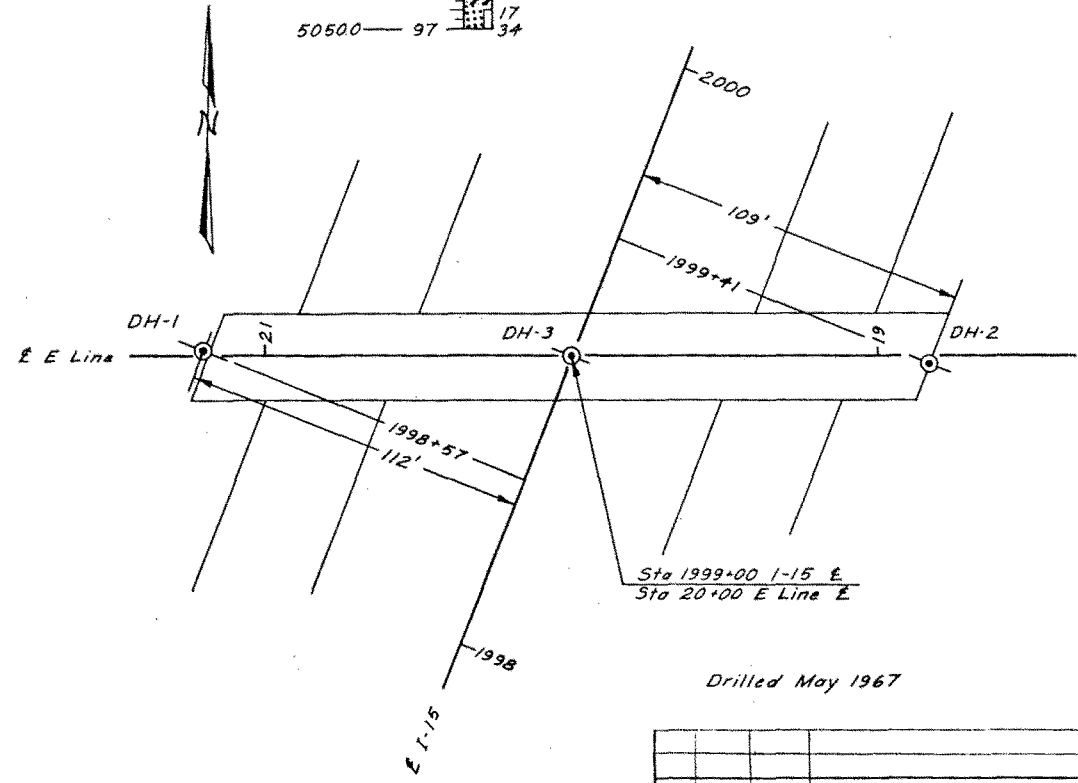
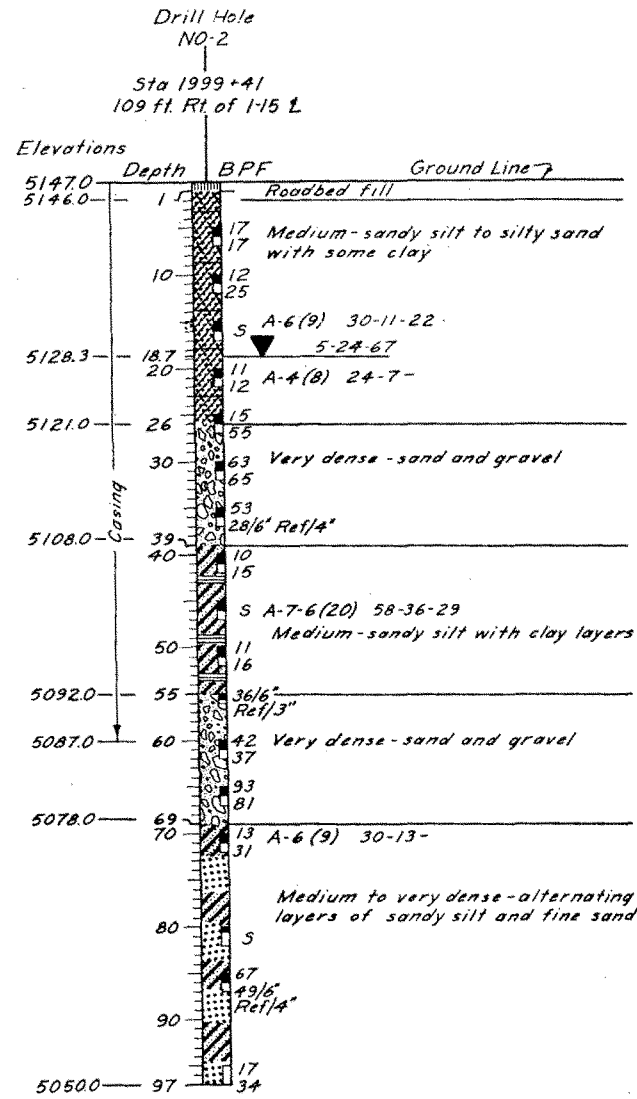
A two span continuous steel structure is proposed to carry "E" line over I-15. The structure is 236 feet long, 34 feet wide and crosses I-15 at a 69 degree skew angle. The approach fills are 27 feet high. The structure site is approximately three miles west of Levan, Utah.

## SUBSOILS

Three test holes were drilled at this location. Test hole one was drilled to 100 feet, test hole two to 97 feet, and test hole three to 150 feet.

*"safe today - alive tomorrow"*

Ground Line  
 Roadbed fill  
 Heavy clay with some sand  
 7-6 (15) 47-26-25  
 5-31-67  
 Medium to dense sand and gravel  
 with some silt and clay  
 8-4 11-NP-  
 Medium-sandy silt  
 Dense to very dense sand and  
 gravel  
 Medium to very dense-sandy silt  
 with clay and sand layers



**KEY RELATIVE**

VERY LOOSE  
 LOOSE  
 MEDIUM  
 DENSE-30 TO  
 VERY DENSE-40

**CONS**

VERY SOFT-2 TO 4  
 SOFT-4 TO 10  
 MEDIUM-4 TO 10  
 STIFF-8 TO 15  
 VERY STIFF 15 TO 20  
 HARD-MORE THAN 20

TOP SOIL OR FILL  
 GRAVEL  
 SAND  
 SILT  
 CLAY  
 SHALE

**DRILL HOLE STATION**

GROUND ELEVATION  
 WATER TABLE

STRATA CHANGE

LOCATION OF SAMPLE

SAMPLE NOT RECOVERED

NO. OF BLOWS OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO DRIVE A STD. 1 3/8" I.D., 2" O.D. SAMPLE TUBE 1 FT.

ABBS  
 L.L.-L.L.  
 P.I.-P.I.  
 W-N  
 NP-NP  
 PEN-PEN  
 G.W.T.-G.W.T.  
 B.P.F.-B.P.F.  
 DH-DH  
 REF-REF

UTAH STATE DEPARTMENT OF TRANSPORTATION  
 SALT LAKE CITY  
 MATERIALS AND TESTING DIVISION  
 WEST LEVAN  
 WEST LEVAN

DRAWN BY E. Jenkins  
 CHECKED BY A.M.  
 CHECKED BY B. Price  
 APPROVAL RECOMMENDED BY William H. [Signature]

RECEIVED \_\_\_\_\_ DATE \_\_\_\_\_

| NO.       | BY | DATE | REMARKS |
|-----------|----|------|---------|
| REVISIONS |    |      |         |

BR. NO. \_\_\_\_\_

Drilled May 1967

