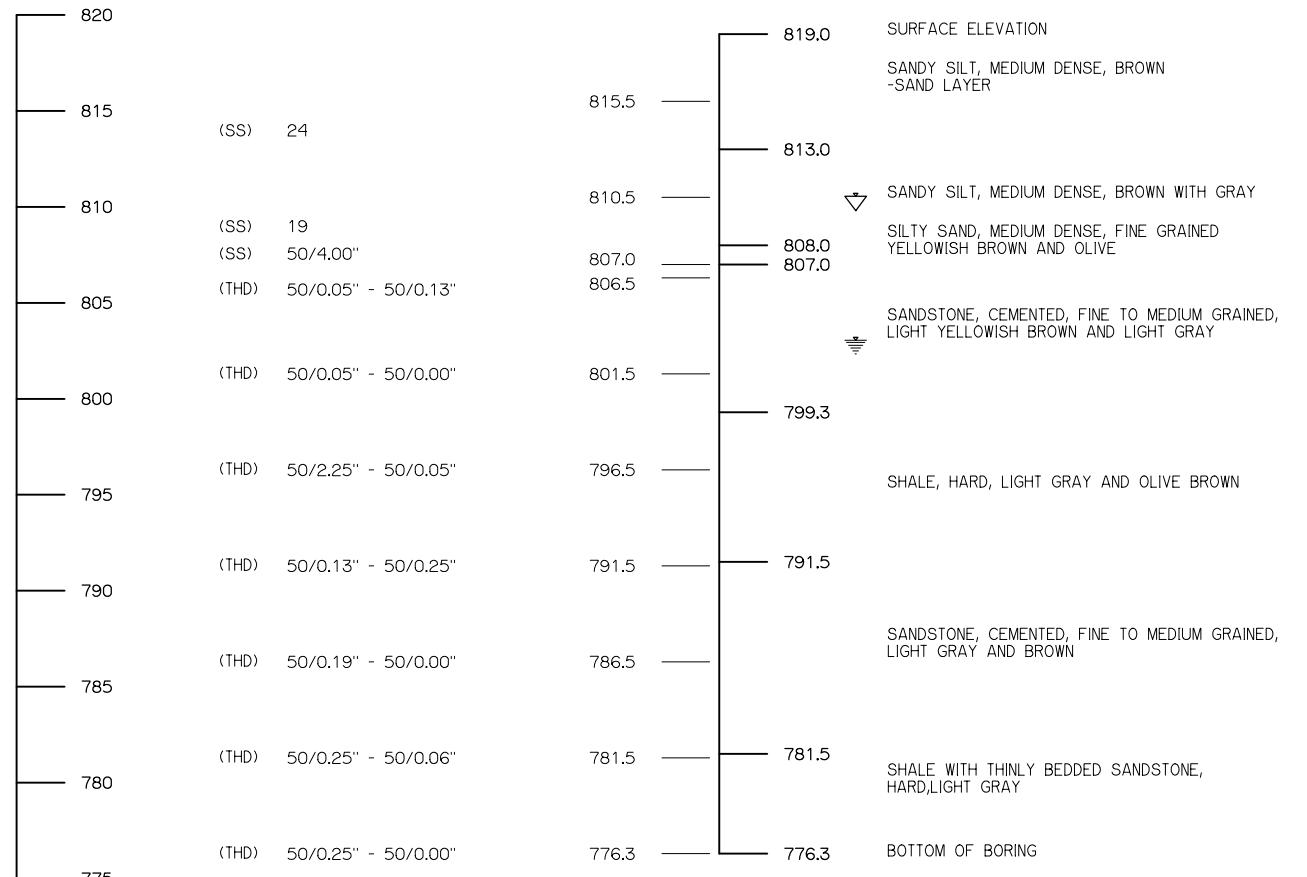
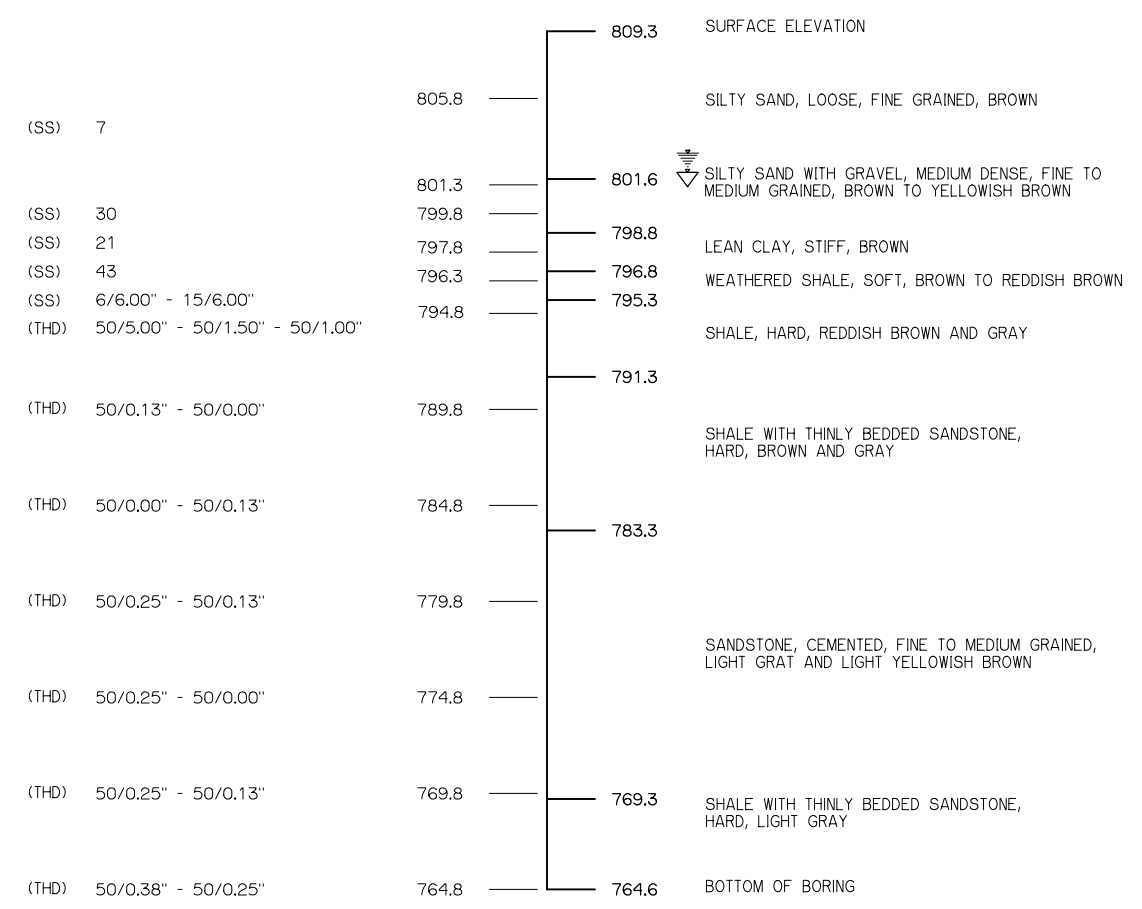


| REV. NO. | DESCRIPTION | REVISIONS | DATE |
|----------|-------------|-----------|------|
|          |             |           |      |

**BORING B-01**  
 STA. 1066+74  
 21' RIGHT OF NEW C.R.L.



**BORING B-02**  
 STA. 1067+35  
 20' LEFT OF NEW C.R.L.



**GENERAL SITE GEOLOGY**

ACCORDING TO THE "ENGINEERING CLASSIFICATION OF GEOLOGIC MATERIALS DIVISION EIGHT" FROM THE OKLAHOMA HIGHWAY DEPARTMENT, 1970, THE SITE APPEARS TO BE LOCATED WITHIN THE VAMOOSA UNIT (PVM). A BRIEF DESCRIPTION OF THIS UNIT IS PROVIDED IN THE FOLLOWING PARAGRAPHS.

VAMOOSA UNIT (PVM): THIS UNIT CONSISTS MOSTLY OF SHALE WHICH CONTAINS LENSES OF MASSIVE SANDSTONE AND A FEW THIN LIMESTONES. THE SHALE IS GRAY, GRAYISH GREEN, BLUE-GRAY, OR MAROON, AND IS SILTY TO CLAYEY.

THE VAMOOSA IS IN ZONES RANGING UP TO 100 FEET IN THICKNESS. THE SANDSTONES ARE MOSTLY SOFT TO MODERATELY HARD, BROWN TO TAN, GENERALLY 10 FEET TO 25 FEET OR MORE THICK, AND LOCALLY UP TO ABOUT 100 FEET THICK. APPROXIMATELY 100 FEET ABOVE THE BASE OF THE UNIT, A 10 TO 15 FOOT BED OF HARD SANDSTONE IS PRESENT.

THE LAND SURFACE FORMED BY THIS UNIT IS FAIRLY RUGGED AND HILLY. THE SANDSTONES CAP THE HILLS AND FORM SCARPS, WITH THE SHALES FORMING THE STEEP SLOPES AND VALLEYS. THIS UNIT OUTCROPS IN OSAGE AND PAWNEE COUNTIES OF DIVISION EIGHT.

☼ WATER TABLE  
 ▽ WATER TABLE AT TIME OF DRILLING

|  |  |                                     |  |        |      |               |
|--|--|-------------------------------------|--|--------|------|---------------|
| SH-99 OVER BIRCH CREEK                           |  | OSAGE COUNTY                        |  | Design | SBH  | 5/12          |
| FOUNDATION REPORT - BRIDGE "C"<br>(SHEET 1 OF 3) |  |                                     |  | Detail | WLL  | 5/12          |
|  |  |                                     |  | Check  | SBH  | 5/12          |
| NO. 5730 1228X                                   |  | NBI 30315                           |  | Squad  | .... |               |
| Engr.  |  | ....                                |  |        |      |               |
| <b>STATE OF OKLAHOMA</b>                         |  | <b>DEPARTMENT OF TRANSPORTATION</b> |  |        |      |               |
| JOB PIECE NO. 24261(04)                          |  |                                     |  |        |      | SHEET NO. 112 |

Plotted By: rdm Date: 6/7/2017 4:52:45 PM  
 FILE: I:\2010\10K11 Birch Salt Rock Creek\*001 - Birch Creek\*Final PSE Submittal 6-7-17\*112- Foundation Report Bridge C Sheet 1 of 3.dgn