

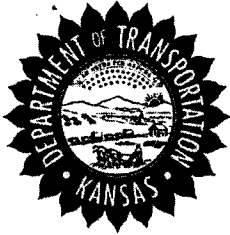
# KANSAS DEPARTMENT OF TRANSPORTATION



|           |                        |              |                   |                |                    |
|-----------|------------------------|--------------|-------------------|----------------|--------------------|
| RTE./CO.  | I-35-46                | SOUNDING NO. | CD 1              | SHEET          | 1 of 3             |
|           |                        | PROJ. NO.    | 46-35 KA-1109-02  | BRIDGE NO.     | 46-34-3.22 (416)   |
| SITE NAME | Homestead Ln over I-35 |              |                   | HOLE STA.      | 71+23, 51.0' Rt CL |
| GEOLOGIST | C. Ridley              | SCALE        | 1 inch = 5.0 feet | DATE           | January 26, 2011   |
| DRILLER   | J. Burns               | RIG TYPE     | CME 55            | TOP HOLE ELEV. | 982.83             |
| GW ELEV.  | N/A                    | TOTAL DEPTH  | 49.0              | M/B ELEV.      | 978.33             |

| Bit Type         | GEOLOGIC NAME  | STRATIGRAPHIC COLUMN | DEPTH | ELEVATION | CLASSIFICATION OF MATERIALS<br>DESCRIPTION AND REMARKS                                                                                                                        | UNCONFINED<br>COMPRESSION<br>(TSF) | ELASTIC<br>MODULUS<br>(PSF) | N60 COUNT<br>(SPT) | ELEVATION |
|------------------|----------------|----------------------|-------|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|-----------------------------|--------------------|-----------|
| 8" Hollow Augers |                |                      |       | 982.8     | Clay, silty, dark-brown, moist                                                                                                                                                |                                    |                             |                    |           |
|                  |                |                      | 4.5   | 978.3     | Weathered Shale, clayey, maroon, brownish-gray to gray. Firmer with depth                                                                                                     |                                    |                             |                    |           |
| Diamond          | Bonner Springs |                      | 1     | 975       |                                                                                                                                                                               | 3.07                               | 447000                      |                    | 974.93    |
|                  |                |                      | 2     | 970       | Shale, gray clayey, finely bedded                                                                                                                                             | 2.45                               | 203000                      |                    | 971.93    |
|                  |                |                      | 3     |           |                                                                                                                                                                               | 7.05                               | 221000                      |                    | 969.43    |
|                  |                |                      | 4     |           |                                                                                                                                                                               | 1.55                               | 98200                       |                    | 966.83    |
|                  | Farley         |                      | 15.5  | 967.3     | Shale, softer gray                                                                                                                                                            |                                    |                             |                    |           |
|                  |                |                      | 16.7  | 966.1     | Shale, gray clayey, finely bedded                                                                                                                                             |                                    |                             |                    |           |
|                  |                |                      | 18.5  | 964.3     | Shale, gray, limey with limestone stringers, very finely bedded                                                                                                               |                                    |                             |                    |           |
|                  |                |                      | 19.0  | 963.8     | Limestone, white to buff, wavy bedded with calcite veins and fossils common. Thin shale seam (0.1 ft) with thin shaley limestones present below. High angled jointing common. | 482.5                              | 2.44E+08                    |                    | 962.43    |
|                  |                |                      | 5     |           |                                                                                                                                                                               | 385                                | 1.12E+08                    |                    | 960.83    |
|                  |                |                      | 6     |           |                                                                                                                                                                               | 310                                | 1.34E+08                    |                    | 959.33    |
|                  |                |                      | 24.0  | 958.8     | Limestone, white to buff with high angle shale seams                                                                                                                          |                                    |                             |                    |           |
|                  |                |                      | 25.0  | 957.8     | Limestone, wavy bedded with thin shale seams, Quartz filled nodule at 27.7                                                                                                    | 396                                | 1.53E+08                    |                    | 957.23    |
|                  |                |                      |       |           |                                                                                                                                                                               | 100                                | 5.33E+07                    |                    | 955.23    |

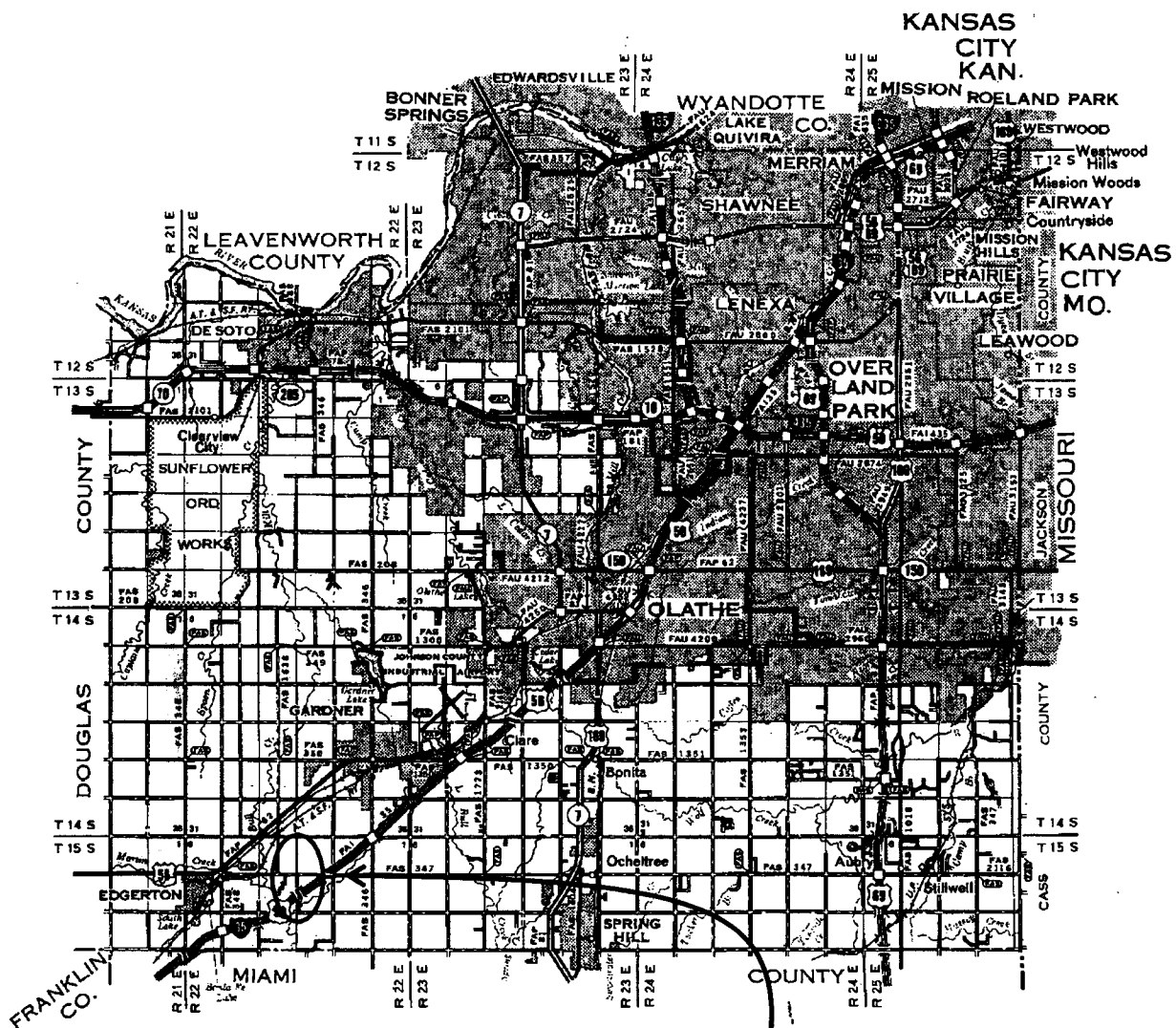
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# KANSAS DEPARTMENT OF TRANSPORTATION

|           |                        |              |                  |                              |
|-----------|------------------------|--------------|------------------|------------------------------|
| RTE./CO.  | I-35-46                | SOUNDING NO. | CD 1             | SHEET 2 of 3                 |
|           |                        | PROJ. NO.    | 46-35 KA-1109-02 | BRIDGE NO. 46-34-3.22 (416)  |
| SITE NAME | Homestead Ln over I-35 |              |                  | HOLE STA. 71+23, 51.0' Rt CL |

| Bit Type | GEOLOGIC NAME | STRATIGRAPHIC COLUMN | DEPTH | ELEVATION | CLASSIFICATION OF MATERIALS<br>DESCRIPTION AND REMARKS                                                                                                                                                                                                             | UNCONFINED<br>COMPRESSION<br>(TSF) | ELASTIC<br>MODULUS<br>(PSF) | N60 COUNT<br>(SPT) | ELEVATION |
|----------|---------------|----------------------|-------|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|-----------------------------|--------------------|-----------|
| Diamond  | Farley        |                      | 30.4  | 952.4     | Limestone, shaley zone, higher concentration of shale partings and calcite seams                                                                                                                                                                                   | 282.5                              | 1.91E+08                    |                    | 952.43    |
|          |               |                      | 31.8  | 951.0     | Limestone, white to buff fairly pure                                                                                                                                                                                                                               | 119.5                              | 6.24E+07                    |                    | 949.33    |
|          |               |                      | 35.4  | 947.4     | Limestone, alternating brown and white limestone layers (roughly 2.0ft). White limestone is pure, with much fewer shale breaks. Brown layers have wavy bedded shale breaks 0.1ft thick, with abundant fossils. Lower portion is white with calcite filled nodules. | 373.5                              | 1.91E+08                    |                    | 947.33    |
|          |               |                      | 45.8  | 937.0     | Limestone, gray to buff with wavy bedded shale seams and calcite replaced alge. Very thin (less than 0.01 ft) shale breaks common.                                                                                                                                 | 126.5                              | 1.81E+08                    |                    | 935.83    |
|          |               |                      | 49.0  | 933.83    | T.D. = 49                                                                                                                                                                                                                                                          |                                    |                             |                    |           |



35-46 KA-1109-02

Br. No.35-46-3.22(416)NB

Homestead Lane over I-35

Johnson County

CD1

N:38.758669 E:94.964300

NE ¼, NE ¼, SE ¼, S09 ~~T12S~~, R22E  
T15S