

LOCATION: \_\_\_\_\_

DATE DRILLED: 17 April 1980

| FIELD NO. | Sample Depth, Feet |      | CLASSIFICATION<br><br>ELEVATION TOP BORING _____                           | Length of sample rec'd | SYMBOL | CONSISTENCY | POCKET (1)<br>PENETROMETER | STAN. PENET.<br>BLOWS/FT (2) | MOISTURE<br>CONTENT % | DRY DENSITY<br>p. c. f. | L.L. | P.L. | Lab Sample No. | BAR<br>L.S. | SIEVE ANALYSIS |      |       |           |                                 |        |        |         |    |  |  |
|-----------|--------------------|------|----------------------------------------------------------------------------|------------------------|--------|-------------|----------------------------|------------------------------|-----------------------|-------------------------|------|------|----------------|-------------|----------------|------|-------|-----------|---------------------------------|--------|--------|---------|----|--|--|
|           | FROM               | TO   |                                                                            |                        |        |             |                            |                              |                       |                         |      |      |                |             | PERCENT        |      |       | INIT. WT. | ACC. WT. RTND.<br>SIEVE NO. (3) |        |        |         |    |  |  |
|           |                    |      |                                                                            |                        |        |             |                            |                              |                       |                         |      |      |                |             | GRVL           | SAND | FINES |           | NO. 4                           | NO. 10 | NO. 40 | NO. 200 |    |  |  |
| 1C        | 00.0               | 2.5  | Yellowish gray sand clay with<br>decaying roots 0.0-5.0                    | 1.15                   | CH     | M           | 0.75                       |                              | 21                    | *                       |      |      | 527            |             |                |      |       |           |                                 |        |        |         |    |  |  |
| 2C        | 2.5                | 5.0  | Gray and red sandy clay                                                    | 1.0                    |        | M           | 0.75                       |                              | 31                    | 94                      | 61   | 19   | 528            |             | 0              | 32   | 68    | 50        | 0                               | 0      | 0      | 0       | 16 |  |  |
| 3C        | 5.0                | 7.5  | Yellowish brown and gray clayey<br>sand phasing to gray silty sand 5.0-7.5 | 1.1                    | SC     | ST          | 1.00                       |                              | 29                    | 98                      |      |      | 529            | 8.5         | 0              | 58   | 42    | 50        | 0                               | 0      | 0      | 0       | 29 |  |  |
| 4J        | 7.5                | 10.0 | Gray silty sand 7.5-15.0                                                   |                        | SM     |             |                            |                              | 26                    |                         |      |      | 530            | 0           | 0              | 84   | 16    | 50        | 0                               | 0      | 0      | 0       | 42 |  |  |
| 5J        | 10.0               | 12.0 | Gray silty sand                                                            |                        |        | VD          |                            | 22                           | 20                    |                         |      |      | 531            |             |                |      |       |           |                                 |        |        |         |    |  |  |
|           | 12.0               | 15.0 | #washed                                                                    |                        |        |             |                            |                              |                       |                         |      |      |                |             |                |      |       |           |                                 |        |        |         |    |  |  |
| 6J        | 15.0               | 17.0 | Yellow and gray sand 15.0-32.0                                             |                        | SP     | VD          |                            | 33                           | 28                    |                         |      |      | 532            |             |                |      |       |           |                                 |        |        |         |    |  |  |
|           | 17.0               | 20.0 | #washed                                                                    |                        |        |             |                            |                              |                       |                         |      |      |                |             |                |      |       |           |                                 |        |        |         |    |  |  |
| 7J        | 20.0               | 22.0 | Yellow and gray sand                                                       |                        |        | D           |                            | 15                           | 27                    |                         |      |      | 533            | 0           | 0              | 96   | 4     | 50        | 0                               | 0      | 2      | 48      |    |  |  |
|           | 22.0               | 25.0 | #washed                                                                    |                        |        |             |                            |                              |                       |                         |      |      |                |             |                |      |       |           |                                 |        |        |         |    |  |  |
| 8J        | 25.0               | 27.0 | Yellow and gray sand                                                       |                        |        | D           |                            | 15                           | 27                    |                         |      |      | 534            | 0           | 0              | 96   | 4     | 50        | 0                               | 0      | 22     | 48      |    |  |  |
|           | 27.0               | 30.0 | #washed                                                                    |                        |        |             |                            |                              |                       |                         |      |      |                |             |                |      |       |           |                                 |        |        |         |    |  |  |
| 9J        | 30.0               | 32.0 | Yellow and gray sand                                                       |                        |        | D           |                            | 16                           | 25                    |                         |      |      | 535            |             |                |      |       |           |                                 |        |        |         |    |  |  |
|           | 32.0               | 34.0 | #washed                                                                    |                        |        |             |                            |                              |                       |                         |      |      |                |             |                |      |       |           |                                 |        |        |         |    |  |  |
| 10C       | 34.0               | 35.0 | Gray and yellow clay-Top 0.4'<br>sand with clay seams 34.0-42.5            | 1.05                   | CH     | ST          | 1.25                       |                              | 42                    | 82                      |      |      | 536            |             |                |      |       |           |                                 |        |        |         |    |  |  |
| 11C       | 35.0               | 37.5 | Gray and yellow clay-                                                      | 0.85                   |        | VST         | 2.25                       |                              | 33                    | 88                      |      |      | 537            |             |                |      |       |           |                                 |        |        |         |    |  |  |
| 12C       | 37.5               | 40.0 | Yellowish brown and gray clay                                              | 1.1                    |        | VST         | 3.50                       |                              | 30                    | 95                      | 22   | 19   | 538            |             | 0              | 2    | 98    | 50        | 0                               | 0      | 0      | 1       |    |  |  |
| 13C       | 40.0               | 42.5 | Gray and yellowish brown clay                                              | 1.1                    |        | VST         | 2.50                       |                              | 25                    | 103                     |      |      | 539            |             |                |      |       |           |                                 |        |        |         |    |  |  |
| 14C       | 42.5               | 45.0 | Gray and yellowish brown sandy<br>clay 42.5-45.0                           | 1.2                    | CL     | ST          | 1.50                       |                              | 16                    | 116                     | 30   | 13   | 540            |             | 0              | 40   | 60    | 50        | 0                               | 0      | 0      | 20      |    |  |  |
| 15C       | 45.0               | 47.5 | Gray and yellowish brown clayey<br>sand 45.0-50.0                          | 0.85                   | SC     | ST          | 1.00                       |                              | 17                    | 115                     |      |      | 541            | 6           | 0              | 50   | 50    | 50        | 0                               | 0      | 0      | 25      |    |  |  |
| 16C       | 47.5               | 50.0 | Gray and yellowish brown clayey<br>sand                                    | 1.1                    |        | ST          | 1.50                       |                              | 20                    | 108                     |      |      | 542            |             |                |      |       |           |                                 |        |        |         |    |  |  |

NOTES: CONSISTENCY - COHESIVE SOILS  
 Vs Very Soft K Soft ST Stiff VST Very Stiff H Hard VL Very Loose L Loose M Medium D Dense VD Very Dense

(1) Tons/Sq. Ft. Unconfined Compressive Strength  
 (2) Split Barrel Sampler  
 (3) Acc. Wt. Rtd. : Init. Wt. x 100 = % Red.

BORING NO. 80-25Bottomed at 50.0

Water at \_\_\_\_\_

Tide Reading \_\_\_\_\_

Sheet 1 of sheets 1

# Information obtained from driller's log  
 \* Disturbed

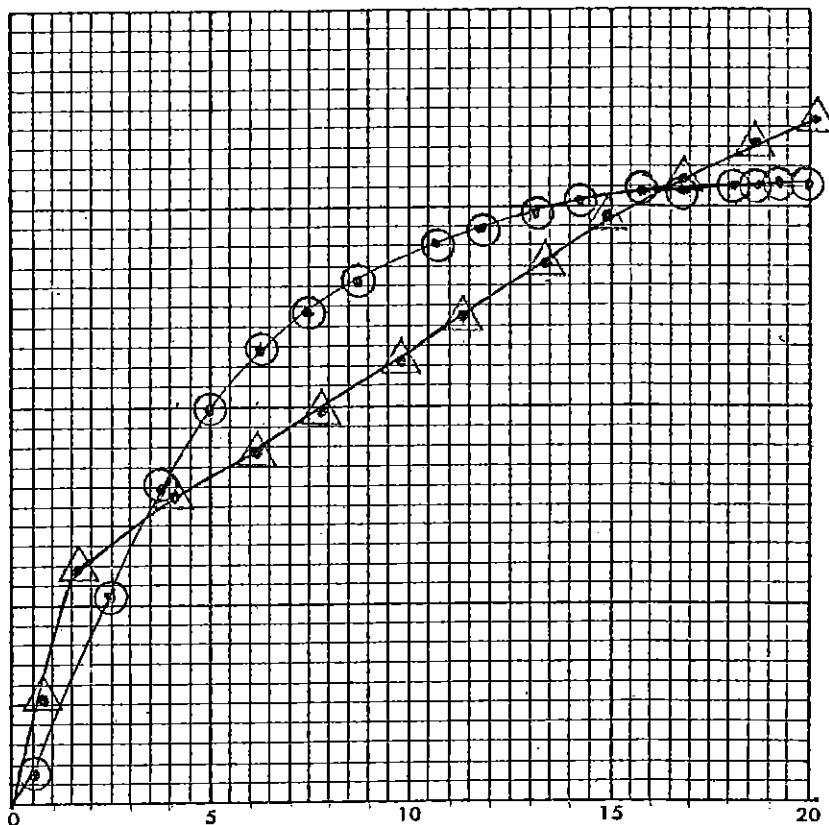
FAILURE SKETCHES 8000

1500

1000

500

COMPRESSIVE STRESS, T/SQ FT



AXIAL STRAIN, %

☐ CONTROLLED STRESS

☐ CONTROLLED STRAIN

TEST NO.

TYPE OF SPECIMEN

|                                          |                       |            |   |   |   |   |
|------------------------------------------|-----------------------|------------|---|---|---|---|
| INITIAL                                  | WATER CONTENT         | $w_o$      | % | % | % | % |
|                                          | VOID RATIO            | $e_o$      |   |   |   |   |
|                                          | SATURATION            | $S_o$      | % | % | % | % |
|                                          | DRY DENSITY, LB/CU FT | $\gamma_d$ |   |   |   |   |
| TIME TO FAILURE, MIN                     |                       | $t_f$      |   |   |   |   |
| UNCONFINED COMPRESSIVE STRENGTH, T/SQ FT |                       | $q_u$      |   |   |   |   |
| UNDRAINED SHEAR STRENGTH, T/SQ FT        |                       | $s_u$      |   |   |   |   |
| SENSITIVITY RATIO                        |                       | $S_t$      |   |   |   |   |
| INITIAL SPECIMEN DIAMETER, IN            |                       | $D_o$      |   |   |   |   |
| INITIAL SPECIMEN HEIGHT, IN.             |                       | $H_o$      |   |   |   |   |

CLASSIFICATION

LL PL PI G.

REMARKS

80-25, 5-2, 2.5-5.0  
80-24, 5-4, 7.0-9.0

PROJECT NECHES RIVER

AREA

BORING NO.

DEPTH  
EL

SAMPLE NO.

DATE

UNCONFINED COMPRESSION TEST REPORT

FAILURE SKETCHES

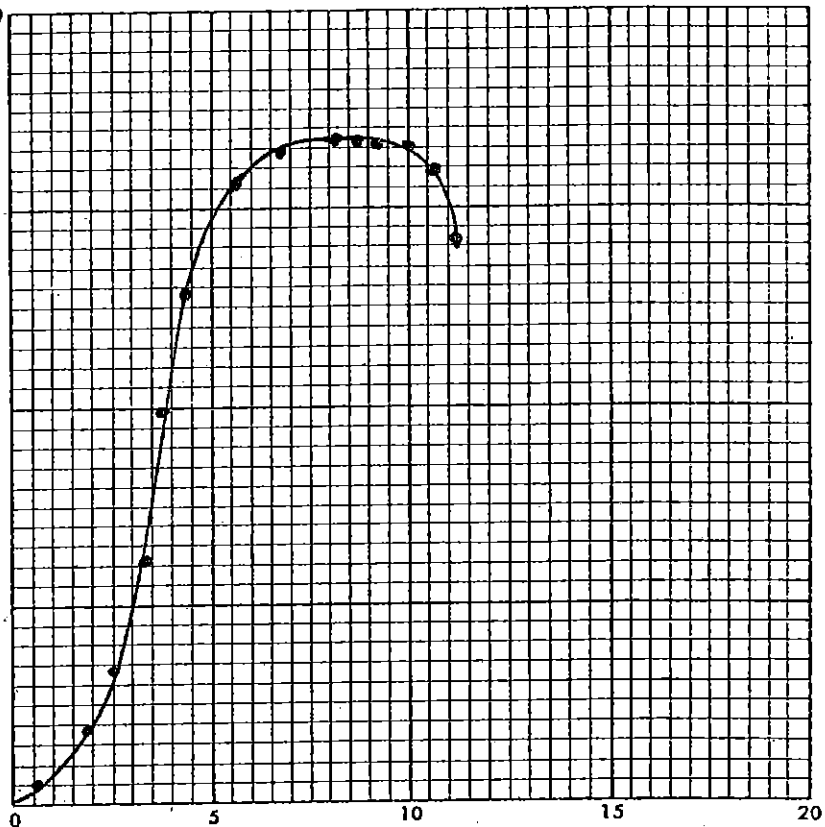
6000

4500

3000

1500

COMPRESSION STRESS, T/SQ FT



☐ CONTROLLED STRESS

☐ CONTROLLED STRAIN

TEST NO.

TYPE OF SPECIMEN

|                                          |                       |            |   |   |   |   |
|------------------------------------------|-----------------------|------------|---|---|---|---|
| INITIAL                                  | WATER CONTENT         | $w_o$      | % | % | % | % |
|                                          | VOID RATIO            | $e_o$      |   |   |   |   |
|                                          | SATURATION            | $S_o$      | % | % | % | % |
|                                          | DRY DENSITY, LB/CU FT | $\gamma_d$ |   |   |   |   |
| TIME TO FAILURE, MIN                     |                       | $t_f$      |   |   |   |   |
| UNCONFINED COMPRESSIVE STRENGTH, T/SQ FT |                       | $q_u$      |   |   |   |   |
| UNDRAINED SHEAR STRENGTH, T/SQ FT        |                       | $s_u$      |   |   |   |   |
| SENSITIVITY RATIO                        |                       | $S_i$      |   |   |   |   |
| INITIAL SPECIMEN DIAMETER, IN            |                       | $D_o$      |   |   |   |   |
| INITIAL SPECIMEN HEIGHT, IN.             |                       | $H_o$      |   |   |   |   |

CLASSIFICATION

LL PL PI  $G_s$

REMARKS

• 80-25, 5-12, 37.5-40.0

PROJECT

NECHES RIVER

AREA

BORING NO.

SAMPLE NO.

DEPTH  
EL

DATE

UNCONFINED COMPRESSION TEST REPORT

## UNCONFINED COMPRESSION TEST

DATE

8/6/80

PROJECT

NECHES RIVER

Hole #

80-25

Lab. #

80-538

Sample

12/31.5-4.0

Depth

4.0

PROVING RING DIAL NUMBER

LC-2

PROVING RING NUMBER

5977

CALIBRATION CURVE NUMBER

3-5977

PROVING RING CONSTANT,  $K_r$ 

\*45.072

0-900 Dial

vertical dial #

LC-8

Cyl. #

3

RATE OF LOAD APPLICATION

0.040

FORMULAS

Deflection only

$$\text{Area} = \frac{\pi D^2}{4} = \frac{C^2 D}{4}$$

$$\text{Corrected Area, } A = \frac{A_0 (\text{sq. ft.})}{1 - E}$$

$$\text{Unit Strain, } E = \frac{\Delta L}{L_0}$$

$$\text{Unit Stress} = \frac{P (\text{lb.})}{A (\text{sq. ft.})}$$

\*45.072

## INITIAL MEASUREMENTS ON SAMPLE

AVERAGE AREA,  $A_0$ 

|        | DIAMETER, D (in.) | CIRCUMFERENCE, C (in.) | AREA (sq. in.) | SQ. IN.             | SQ. FT. |
|--------|-------------------|------------------------|----------------|---------------------|---------|
| TOP    | 1.95              |                        | 2.99           | 2.99                |         |
| CENTER |                   |                        |                | HEIGHT, $L_0$ (in.) |         |
| BOTTOM |                   |                        |                | 4.0                 |         |

| ELAPSED TIME (min.) | PROVING RING DIAL READING (0.0001 in.) | LOAD, P (lb.) (Ring Dial $\times K_r$ , or from calibration curve) | VERTICAL DIAL READING (in.) | VERTICAL DIAL DIFFERENCE, $\Delta L$ (in.) | UNIT STRAIN, E (in./in.) | CORRECTED AREA, A (sq. ft.) | UNIT STRESS (lb./sq. ft.) |
|---------------------|----------------------------------------|--------------------------------------------------------------------|-----------------------------|--------------------------------------------|--------------------------|-----------------------------|---------------------------|
|                     | 10                                     |                                                                    | 025                         | 025                                        | .625                     | 3.01                        | 150                       |
|                     | 20                                     |                                                                    | 050                         | 050                                        | 1.25                     | 3.03                        | 298                       |
|                     | 30                                     |                                                                    | 075                         | 075                                        | 1.87                     | 3.05                        | 532                       |
|                     | 60                                     |                                                                    | 100                         | 100                                        | 2.50                     | 3.06                        | 972                       |
|                     | 125                                    |                                                                    | 125                         | 125                                        | 3.13                     | 3.09                        | 1852                      |
|                     | 203                                    |                                                                    | 150                         | 150                                        | 3.75                     | 3.11                        | 2942                      |
|                     | 264                                    |                                                                    | 175                         | 175                                        | 4.38                     | 3.13                        | 3802                      |
|                     | 305                                    |                                                                    | 200                         | 200                                        | 5.00                     | 3.15                        | 4364                      |
|                     | 329                                    |                                                                    | 225                         | 225                                        | 5.63                     | 3.17                        | 4678                      |
|                     | 343                                    |                                                                    | 250                         | 250                                        | 6.25                     | 3.19                        | 4846                      |
|                     | 352                                    |                                                                    | 275                         | 275                                        | 6.88                     | 3.21                        | 4942                      |
|                     | 360                                    |                                                                    | 300                         | 300                                        | 7.50                     | 3.23                        | 5024                      |
|                     | 365                                    |                                                                    | 325                         | 325                                        | 8.13                     | 3.25                        | 5062                      |
|                     | 369                                    |                                                                    | 350                         | 350                                        | 8.75                     | 3.28                        | 5071                      |
|                     | 370                                    |                                                                    | 375                         | 375                                        | 9.38                     | 3.30                        | 5054                      |
|                     | 366                                    |                                                                    | 400                         | 400                                        | 10.00                    | 3.32                        | 4969                      |
|                     | 350                                    |                                                                    | 425                         | 425                                        | 10.63                    | 3.34                        | 4723                      |
|                     | 318                                    |                                                                    | 450                         | 450                                        | 11.25                    | 3.37                        | 4253                      |
|                     |                                        |                                                                    | 475                         | 475                                        | 11.88                    | 3.39                        |                           |
|                     |                                        |                                                                    | 500                         | 500                                        | 12.50                    | 3.42                        |                           |
|                     |                                        |                                                                    | 525                         | 525                                        | 13.13                    | 3.44                        |                           |
|                     |                                        |                                                                    | 550                         | 550                                        | 13.75                    | 3.47                        |                           |

WATER CONTENT (%)

W. in Cyl # 3

465

UNCONFINED COMPRESSIVE STRENGTH,  $q_u$  (lb./sq. ft.)

REMARKS AND CALCULATIONS (Use reverse side, if more space is needed)

(failure sketch)

Pen - 3.9  
 Color - Gray  
 Dch - 453  
 W. W. - 321  
 D. W. -



TECHNICIAN (Signature)

COMPUTED BY (Signature)

CHECKED BY (Signature)

| UNCONFINED COMPRESSION TEST                                                                                                                                                                                                                                            |                                        |                                                                         |                                                                    |                                                                                                           |                            |                               | DATE<br>8/6/80            |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|-------------------------------------------------------------------------|--------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|----------------------------|-------------------------------|---------------------------|--|
| PROJECT<br><b>NECHES RIVER</b>                                                                                                                                                                                                                                         |                                        |                                                                         |                                                                    | Hole #<br><b>80-25</b>                                                                                    | Lab. #<br><b>80-528</b>    | Sample<br><b>2 (2.5-5.0)</b>  | Depth                     |  |
| PROVING RING DIAL NUMBER<br><b>LC-2</b>                                                                                                                                                                                                                                |                                        | PROVING RING NUMBER<br><b>5977</b>                                      |                                                                    | CALIBRATION CURVE NUMBER<br><b>3-5977</b>                                                                 |                            |                               |                           |  |
| PROVING RING CONSTANT, $K_r$<br><b>*45.072</b>                                                                                                                                                                                                                         |                                        | vertical dial #<br><b>LC-8</b>                                          | Cyl. #<br><b>3</b>                                                 | RATE OF LOAD APPLICATION<br><b>0.040</b>                                                                  |                            |                               |                           |  |
| FORMULAS      Deflection only<br>$\text{Area} = \frac{\pi D^2}{4} = \frac{C^2 D}{4}$ $\text{Corrected Area, } A = \frac{A_0 (\text{sq. ft.})}{1 - E}$ $\text{Unit Strain, } E = \frac{\Delta L}{L_0}$ $\text{Unit Stress} = \frac{P (\text{lb.})}{A (\text{sq. ft.})}$ |                                        |                                                                         |                                                                    |                                                                                                           |                            |                               |                           |  |
| INITIAL MEASUREMENTS ON SAMPLE                                                                                                                                                                                                                                         |                                        |                                                                         |                                                                    |                                                                                                           |                            |                               | AVERAGE AREA, $A_0$       |  |
|                                                                                                                                                                                                                                                                        | DIAMETER, $D$ (in.)                    | CIRCUMFERENCE, $C$ (in.)                                                | AREA (sq. in.)                                                     |                                                                                                           |                            | SQ. IN.                       | SQ. FT.                   |  |
| TOP                                                                                                                                                                                                                                                                    | 1.95                                   |                                                                         | 2.99                                                               |                                                                                                           |                            | 2.99                          |                           |  |
| CENTER                                                                                                                                                                                                                                                                 |                                        |                                                                         |                                                                    |                                                                                                           |                            | HEIGHT, $L_0$ (in.)           |                           |  |
| BOTTOM                                                                                                                                                                                                                                                                 |                                        |                                                                         |                                                                    |                                                                                                           |                            | 4.0                           |                           |  |
| ELAPSED TIME (min.)                                                                                                                                                                                                                                                    | PROVING RING DIAL READING (0.0001 in.) | LOAD, $P$ (lb.)<br>(Ring Dial $\times K_r$ , or from calibration curve) | VERTICAL DIAL READING (in.)                                        | VERTICAL DIAL DIFFERENCE, $\Delta L$ (in.)                                                                | UNIT STRAIN, $E$ (in./in.) | CORRECTED AREA, $A$ (sq. ft.) | UNIT STRESS (lb./sq. ft.) |  |
|                                                                                                                                                                                                                                                                        | 5                                      |                                                                         | 025                                                                | 025                                                                                                       | .625                       | 3.01                          | 75                        |  |
|                                                                                                                                                                                                                                                                        | 12                                     |                                                                         | 050                                                                | 050                                                                                                       | 1.25                       | 3.03                          | 179                       |  |
|                                                                                                                                                                                                                                                                        | 23                                     |                                                                         | 075                                                                | 075                                                                                                       | 1.87                       | 3.05                          | 340                       |  |
|                                                                                                                                                                                                                                                                        | 35                                     |                                                                         | 100                                                                | 100                                                                                                       | 2.50                       | 3.06                          | 516                       |  |
|                                                                                                                                                                                                                                                                        | 46                                     |                                                                         | 125                                                                | 125                                                                                                       | 3.13                       | 3.09                          | 691                       |  |
|                                                                                                                                                                                                                                                                        | 55                                     |                                                                         | 150                                                                | 150                                                                                                       | 3.75                       | 3.11                          | 797                       |  |
|                                                                                                                                                                                                                                                                        | 63                                     |                                                                         | 175                                                                | 175                                                                                                       | 4.38                       | 3.13                          | 907                       |  |
|                                                                                                                                                                                                                                                                        | 69                                     |                                                                         | 200                                                                | 200                                                                                                       | 5.00                       | 3.15                          | 987                       |  |
|                                                                                                                                                                                                                                                                        | 75                                     |                                                                         | 225                                                                | 225                                                                                                       | 5.63                       | 3.17                          | 1066                      |  |
|                                                                                                                                                                                                                                                                        | 80                                     |                                                                         | 250                                                                | 250                                                                                                       | 6.25                       | 3.19                          | 1130                      |  |
|                                                                                                                                                                                                                                                                        | 84                                     |                                                                         | 275                                                                | 275                                                                                                       | 6.88                       | 3.21                          | 1174                      |  |
|                                                                                                                                                                                                                                                                        | 88                                     |                                                                         | 300                                                                | 300                                                                                                       | 7.50                       | 3.23                          | 1228                      |  |
|                                                                                                                                                                                                                                                                        | 91                                     |                                                                         | 325                                                                | 325                                                                                                       | 8.13                       | 3.25                          | 1262                      |  |
|                                                                                                                                                                                                                                                                        | 95                                     |                                                                         | 350                                                                | 350                                                                                                       | 8.75                       | 3.28                          | 1305                      |  |
|                                                                                                                                                                                                                                                                        | 98                                     |                                                                         | 375                                                                | 375                                                                                                       | 9.38                       | 3.30                          | 1338                      |  |
|                                                                                                                                                                                                                                                                        | 101                                    |                                                                         | 400                                                                | 400                                                                                                       | 10.00                      | 3.32                          | 1371                      |  |
|                                                                                                                                                                                                                                                                        | 104                                    |                                                                         | 425                                                                | 425                                                                                                       | 10.63                      | 3.34                          | 1403                      |  |
|                                                                                                                                                                                                                                                                        | 106                                    |                                                                         | 450                                                                | 450                                                                                                       | 11.25                      | 3.37                          | 1418                      |  |
|                                                                                                                                                                                                                                                                        | 109                                    |                                                                         | 475                                                                | 475                                                                                                       | 11.88                      | 3.39                          | 1449                      |  |
|                                                                                                                                                                                                                                                                        | 111                                    |                                                                         | 500                                                                | 500                                                                                                       | 12.50                      | 3.42                          | 1463                      |  |
|                                                                                                                                                                                                                                                                        | 113                                    |                                                                         | 525                                                                | 525                                                                                                       | 13.13                      | 3.44                          | 1467                      |  |
|                                                                                                                                                                                                                                                                        | 115                                    |                                                                         | 550                                                                | 550                                                                                                       | 13.75                      | 3.47                          | 1494                      |  |
| WATER CONTENT (%)<br><b>3</b>                                                                                                                                                                                                                                          |                                        |                                                                         | UNCONFINED COMPRESSIVE STRENGTH, $q_u$ (lb./sq. ft.)<br><b>463</b> |                                                                                                           |                            |                               |                           |  |
| REMARKS AND CALCULATIONS (Use reverse side, if more space is needed)                                                                                                                                                                                                   |                                        |                                                                         |                                                                    |                                                                                                           |                            |                               |                           |  |
| Pen - <b>8</b>                                                                                                                                                                                                                                                         |                                        |                                                                         |                                                                    | (failure sketch)<br> |                            |                               |                           |  |
| Color - <b>Brown</b>                                                                                                                                                                                                                                                   |                                        |                                                                         |                                                                    |                                                                                                           |                            |                               |                           |  |
| Dish - <b>237</b>                                                                                                                                                                                                                                                      |                                        |                                                                         |                                                                    |                                                                                                           |                            |                               |                           |  |
| W. W. - <b>369</b>                                                                                                                                                                                                                                                     |                                        |                                                                         |                                                                    |                                                                                                           |                            |                               |                           |  |
| D. W. -                                                                                                                                                                                                                                                                |                                        |                                                                         |                                                                    |                                                                                                           |                            |                               |                           |  |
| TECHNICIAN (Signature)                                                                                                                                                                                                                                                 |                                        |                                                                         | COMPUTED BY (Signature)                                            |                                                                                                           | CHECKED BY (Signature)     |                               |                           |  |