

HOLE NO. 6ST-7

| DEPARTMENT OF THE ARMY<br>DIVISION <u>Southwestern</u><br>INSTALLATION <u>Galv Dist, Eng Div</u><br><b>DRILLING LOG</b> |       |        | 1. PROJECT<br><u>Port Mansfield</u>                                         |                 | SHEET OF                                                          |                                                                                |
|-------------------------------------------------------------------------------------------------------------------------|-------|--------|-----------------------------------------------------------------------------|-----------------|-------------------------------------------------------------------|--------------------------------------------------------------------------------|
| 4. HOLE NO. (As shown on drawing title and file No.)<br><u>6ST-7</u>                                                    |       |        | 2. LOCATION (Coordinates or Station)<br><u>Sta-18+00</u>                    |                 |                                                                   |                                                                                |
| 6. DIRECTION OF HOLE<br><input type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED DEGREES WITH VERTICAL       |       |        | 3. DRILLING AGENCY<br><u>Brown &amp; Root Marine Operators, Inc</u>         |                 |                                                                   |                                                                                |
| 10. SIZE AND TYPE OF BIT<br><u>Shelby Tube - 6"</u>                                                                     |       |        | 5. NAME OF DRILLER<br><u>Fowler</u>                                         |                 |                                                                   |                                                                                |
| 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN<br>DISTURBED                                                                  |       |        | 11. DATUM FOR ELEVATION SHOWN<br>(TBM or MSL)                               |                 | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>(450' R of C)          |                                                                                |
| 14. TOTAL NO. CORE BOXES                                                                                                |       |        | 15. ELEV. GROUND WATER -50                                                  |                 | 16. DATE HOLE<br>STARTED <u>12 Jan</u> COMPLETED <u>12 Jan 60</u> |                                                                                |
| 17. ELEV. TOP OF HOLE<br><u>-18.0 ±</u>                                                                                 |       |        | 18. TOTAL CORE RECOVERY FOR BORING (%)                                      |                 | 19. SIGNATURE OF INSPECTOR                                        |                                                                                |
| ELEVATION                                                                                                               | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS (Description)                                   | % CORE RECOVERY | BOX OR SAMPLE NO.                                                 | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) |
|                                                                                                                         |       |        | 0-18.0' water surface of Gulf bed 18.0' below surface of water.             |                 |                                                                   |                                                                                |
| 18.0                                                                                                                    | 19.5  |        | Tan fine sand, some shell                                                   |                 |                                                                   | Jar 1A & 1B                                                                    |
| 19.5                                                                                                                    | 20    |        | Soft gray clay, silt, sand, pockets                                         |                 |                                                                   | Cont. 1 0.30                                                                   |
| 20                                                                                                                      | 21    |        | Soft gray clay, trace of red                                                | Shear           |                                                                   | Cont. 2 Quick 0.50                                                             |
| 21                                                                                                                      | 22    |        | Same as above                                                               | Consol.         |                                                                   | Cont. 3 0.50                                                                   |
| 22                                                                                                                      | 23    |        | Same as above                                                               |                 |                                                                   | Cont. 4 0.50                                                                   |
| 23                                                                                                                      | 24    |        | Soft gray clay, small shell imbedded                                        | Shear           |                                                                   | Cont. 5 0.75                                                                   |
| 24                                                                                                                      | 25    |        | Top, same as above, Trace of red in bottom                                  |                 |                                                                   | Cont. 6 0.50                                                                   |
| 25                                                                                                                      | 26    |        | Soft gray and red clay, imbedded shell                                      |                 |                                                                   | Cont. 7 Consol. 0.50                                                           |
| 26                                                                                                                      | 27    |        | Same as above                                                               |                 |                                                                   | Cont. 8 Quick Shear 0.50                                                       |
| 27                                                                                                                      | 28    |        | Same as above, more shell in bottom                                         |                 |                                                                   | Cont. 9 0.50                                                                   |
| 28                                                                                                                      | 29    |        | Top same as above. Bottom intermixed soft gray clay and clayey sand w/shell |                 |                                                                   | Cont. 10 Consol.                                                               |
| 29                                                                                                                      | 30    |        | Same as above, Trace red at bottom                                          |                 |                                                                   | Cont. 11                                                                       |
| 30                                                                                                                      | 31    |        | Same as above w/trace red                                                   |                 |                                                                   | Cont. 12                                                                       |
| 31                                                                                                                      | 32    |        | Intermixed soft gray clay, sand and silt w/shell                            |                 |                                                                   | Cont. 13                                                                       |
| 32                                                                                                                      | 33    |        | Gray silty fine sand, trace clay                                            |                 |                                                                   | Cont. 14                                                                       |
| 33                                                                                                                      | 34    |        | Same as above, Trace tan at bottom                                          |                 |                                                                   | Cont. 15                                                                       |
| 34                                                                                                                      | 34.5  |        | No sample, same as below                                                    |                 |                                                                   |                                                                                |
| 34.5                                                                                                                    | 35.5  |        | Gray and tan silty fine sand, trace of clay                                 |                 |                                                                   | Cont. 16                                                                       |
| 36                                                                                                                      | -     |        | No sample, same as above                                                    |                 |                                                                   |                                                                                |
| 36                                                                                                                      | 38    |        | Same as above                                                               |                 |                                                                   | Jars 2A & 2B                                                                   |
| 38                                                                                                                      | 40    |        | Washed, same as above - No sample                                           |                 |                                                                   |                                                                                |
| 40                                                                                                                      | 42    |        | Brown fine sand. 27 blows 41 to 42                                          |                 |                                                                   | Jars 3A & 3B                                                                   |
| 42                                                                                                                      | 44    |        | Same as above 7 blows 42 to 43<br>15 blows 43 to 44                         |                 |                                                                   | Jars 4A & 4B                                                                   |
| 44                                                                                                                      | 46    |        | Washed. Same as above - No sample                                           |                 |                                                                   |                                                                                |
| 46                                                                                                                      | 48    |        | Same as above - 13 blows 46 to 47<br>26 blows 47 to 48                      |                 |                                                                   | Jars 5A & 5B                                                                   |

HOLE NO. 6ST-7 (Cont'd)

|                                                                                           |       |                                            |                                                                           |                                         |                            |                                                                                |  |
|-------------------------------------------------------------------------------------------|-------|--------------------------------------------|---------------------------------------------------------------------------|-----------------------------------------|----------------------------|--------------------------------------------------------------------------------|--|
| DEPARTMENT OF THE ARMY                                                                    |       |                                            | 1. PROJECT<br>Port Mansfield                                              |                                         | SHEET OF                   |                                                                                |  |
| DIVISION                                                                                  |       |                                            | 2. LOCATION (Coordinates or Station)                                      |                                         |                            |                                                                                |  |
| INSTALLATION                                                                              |       |                                            | 3. DRILLING AGENCY<br>Brown & Root Marine Operators, Inc                  |                                         |                            |                                                                                |  |
| DRILLING LOG                                                                              |       |                                            | 5. NAME OF DRILLER                                                        |                                         |                            |                                                                                |  |
| 4. HOLE NO. (As shown on drawing title and file No.)                                      |       |                                            |                                                                           |                                         |                            |                                                                                |  |
| 6. DIRECTION OF HOLE                                                                      |       |                                            | 7. THICKNESS OF OVERBURDEN                                                |                                         | 9. TOTAL DEPTH OF HOLE     |                                                                                |  |
| <input type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED DEGREES WITH VERTICAL |       |                                            |                                                                           |                                         | 8. DEPTH DRILLED INTO ROCK |                                                                                |  |
| 10. SIZE AND TYPE OF BIT                                                                  |       | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL) |                                                                           | 12. MANUFACTURER'S DESIGNATION OF DRILL |                            |                                                                                |  |
| 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN                                                 |       | 14. TOTAL NO. CORE BOXES                   |                                                                           | 15. ELEV. GROUND WATER                  |                            | 16. DATE HOLE                                                                  |  |
| DISTURBED                                                                                 |       | UNDISTURBED                                |                                                                           | STARTED                                 |                            | COMPLETED                                                                      |  |
| 17. ELEV. TOP OF HOLE                                                                     |       | 18. TOTAL CORE RECOVERY FOR BORING (%)     |                                                                           | 19. SIGNATURE OF INSPECTOR              |                            |                                                                                |  |
| ELEVATION                                                                                 | DEPTH | LEGEND                                     | CLASSIFICATION OF MATERIALS (Description)                                 | % CORE RECOVERY                         | BOX OR SAMPLE NO.          | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) |  |
| 48                                                                                        | 50    |                                            | Washed, same as above - No sample                                         |                                         |                            |                                                                                |  |
| 50                                                                                        | 52    |                                            | Same as above, w/cemented lumps<br>34 blows 50 to 51<br>50 blows 51 to 52 |                                         |                            | Jars 6A & 6B                                                                   |  |
|                                                                                           |       |                                            | Water depth 18'<br>Hammer weight 680 lb<br>Drop 2ft                       |                                         |                            |                                                                                |  |

PORT MANSFIELD

## TEST DATA SUMMARY

JETTY CONSTRUCTION

FEATURE LOG OF SOIL BORINGS

| BORING NO. | SAMPLE NO. | DEPTH OR ELEV. OF SAMPLE | MECHANICAL ANALYSIS                                          |        |         |      | ATTERBERG LIMITS |      | BAR L. S. % | NATURAL WATER CONTENT % | NATURAL DRY DENSITY LBS./CU.FT. | LABORATORY CLASSIFICATION |
|------------|------------|--------------------------|--------------------------------------------------------------|--------|---------|------|------------------|------|-------------|-------------------------|---------------------------------|---------------------------|
|            |            |                          | GRAVEL %                                                     | SAND % | FINES % | DL % | LL               | PL   |             |                         |                                 |                           |
| 65-7       | 60-        | 0.0                      | Gulf Water (Surface of Gulf floor 18.0' below water surface) |        |         |      |                  |      |             |                         |                                 |                           |
|            |            | 18.0                     | 0                                                            | 98     | 2       | -    |                  |      | 0.0         | 22.6                    | -                               | G, Sa (SP)                |
| 126        |            |                          | 0                                                            | 98     | 2       | -    |                  |      | 0.0         | 22.6                    | -                               | G, Sa (SP)                |
|            |            |                          | 0                                                            | 99     | 1       | -    |                  |      | 0.0         | 23.4                    | -                               | G, Sa (SP)                |
| 127        |            | 19.5                     | 0                                                            | 99     | 1       | -    |                  |      | 0.0         | 23.4                    | -                               | G, Sa (SP)                |
| 128        |            | 20.0                     | 0                                                            | 14     | 86      | 0.25 | 55.0             |      | 18.0        | 44.9                    | 70.0                            | G, CI (CH), So            |
| 129        |            | 21.0                     | 0                                                            | 1      | 99      | 0.50 | 63.3             | 23.1 | 21.0        | 51.7                    | 72.6                            | G, CI (CH), PI            |
| 130        |            | 22.0                     | 0                                                            | 1      | 99      | 0.50 | 64.4             | 27.5 | 20.0        | 45.6                    | 73.8                            | G, CI (CH), PI            |
| 131        |            | 23.0                     | (Same as 60-130)                                             |        |         |      | 0.50             |      |             | 54.7                    | 67.6                            | G, CI (CH) PI             |
| 132        |            | 24.0                     | 0                                                            | 9      | 91      | 0.50 | 49.0             | 19.9 | 15.0        | 46.0                    | 79.8                            | G, CI (CL), PI            |
| 133        |            | 25.0                     | (Same as 60-134)                                             |        |         |      | 0.50             |      |             | 47.1                    | 76.3                            | G, CI (CH), PI            |
| 134        |            | 26.0                     | 0                                                            | 1      | 99      | 0.75 | 53.5             | 22.4 | 17.0        | 36.2                    | 79.6                            | G, CI (CH), PI            |
| 135        |            | 27.0                     | 0                                                            | 3      | 97      | 0.50 | 50.6             | 21.1 | 16.5        | 41.6                    | 82.1                            | G-Ru, CI (CH), PI         |
| 136        |            | 28.0                     | 0                                                            | 7      | 93      | 0.50 | 52.8             |      | 15.0        | 46.1                    | 79.6                            | G-Ru, CI (CH), PI         |
| 137        |            | 29.0                     | 0                                                            | 43     | 57      | 0.50 | 31.7             | 15.4 | 7.0         | 31.8                    | 91.0                            | G, Sa CI (CL), PI         |
| 138        |            | 30.0                     | 0                                                            | 58     | 42      | 0.75 | 24.1             |      | 4.0         | 25.1                    | 101.0                           | G, CI Sa (SC), PI         |
| 139        |            | 31.0                     | (Same as 60-140)                                             |        |         |      | 1.50             |      |             | 22.4                    | -                               | G, Sa CI (CL), St.        |
| 140        |            | 32.0                     | 0                                                            | 37     | 63      | 1.00 | 34.4             |      | 8.0         | 23.5                    | 101.5                           | G, Sa CI (CL), St.        |
| 141        |            | 33.0                     | (Same as 60-140)                                             |        |         |      | 0.50             |      |             | 26.1                    | -                               | G, Sa CI (CL), PI         |
| 142        |            | 34.0                     | 0                                                            | 78     | 22      | 0.25 |                  |      | 2.0         | 24.9                    | -                               | Ru, Si Sa (SM)            |
| 143        |            | 36.0                     | 0                                                            | 53     | 47      | 0.25 | 29.2             |      | 4.0         | 26.2                    | -                               | Ru, CI Sa (SC)            |
| 144        |            |                          | 0                                                            | 62     | 38      | -    |                  |      | 6.0         | 26.3                    | -                               | G, CI Sa (SC)             |
| 145        |            |                          | 0                                                            | 20     | 30      | -    |                  |      | 2.0         | 28.4                    | -                               | G, Si Sa (SM)             |
| -          |            | 38.0                     | No Sample Driller's Classification                           |        |         |      |                  |      |             |                         |                                 |                           |
| 146        |            | 40.0                     | 0                                                            | 92     | 8       | -    |                  |      |             | 22.6                    | -                               | Ru, Sa (SP)               |
| 147        |            | 42.0                     | 0                                                            | 94     | 6       | -    |                  |      |             | 23.1                    | -                               | Ru, Sa (SP)               |

\* Laboratory Penetrometer Readings

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PORT MANUSFIELD

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## TEST DATA SUMMARY

JETTY CONSTRUCTION

FEATURE LOG OF SOIL BORINGS

| BORING NO. | SAMPLE NO. | DEPTH OR ELEV. OF SAMPLE | MECHANICAL ANALYSIS |        |         |      | ATTENBERG LIMITS           |    | BAR L. S. % | NATURAL WATER CONTENT % | NATURAL DRY DENSITY LBS./CU. FT. | LABORATORY CLASSIFICATION |
|------------|------------|--------------------------|---------------------|--------|---------|------|----------------------------|----|-------------|-------------------------|----------------------------------|---------------------------|
|            |            |                          | GRAVEL %            | SAND % | FINES % | CL % | LL                         | PL |             |                         |                                  |                           |
| 157-7      | 60-        | 42.0                     | 0-0-92              |        |         |      |                            |    |             |                         |                                  |                           |
| (Cont)     | 148        |                          | 0                   | 92     | 8       | -    |                            |    |             | 23.4                    | -                                | Br, Sa (SP)               |
|            |            |                          | 0-0-92              |        |         |      |                            |    |             |                         |                                  |                           |
|            | 149        |                          | 0                   | 92     | 8       | -    |                            |    |             | 23.8                    | -                                | Br, Sa (SP)               |
|            |            | 44.0                     |                     |        |         |      |                            |    |             |                         |                                  |                           |
|            | -          |                          | No Sample           |        |         |      | Driller's Classification   |    |             |                         |                                  | Br, Sa (SP)               |
|            |            | 46.0                     | 0-1-92              |        |         |      |                            |    |             |                         |                                  |                           |
|            | 150        |                          | 0                   | 93     | 7       | -    |                            |    |             | 25.3                    | -                                | Br, Sa (SP)               |
|            |            |                          | 1-1-88              |        |         |      |                            |    |             |                         |                                  |                           |
|            | 151        |                          | 0                   | 90     | 10      | -    |                            |    |             | 25.6                    |                                  | Br, Sa (SP)               |
|            |            | 48.0                     |                     |        |         |      |                            |    |             |                         |                                  |                           |
|            | -          |                          | No Sample           |        |         |      | Driller's Classification   |    |             |                         |                                  | Br, Sa (SP)               |
|            |            | 50.0                     | 3-2-91              |        |         |      |                            |    |             |                         |                                  |                           |
|            | 152        |                          | 0                   | 96     | 4       | -    |                            |    |             | 27.4                    |                                  | Br, Sa (SP)               |
|            |            |                          | 0-5-92              |        |         |      |                            |    |             |                         |                                  |                           |
|            | 153        |                          | 0                   | 95     | 5       | -    |                            |    |             | 26.1                    |                                  | Br, Sa (SP)               |
|            |            | 52.0                     |                     |        |         |      |                            |    |             |                         |                                  |                           |
|            |            |                          | Bottomed @ 52.0' in |        |         |      | Br, Sa (SP)                |    |             |                         |                                  |                           |
| 157-8      | 59-        | 0.0                      | 0-1-94              |        |         |      |                            |    |             |                         |                                  |                           |
|            | 3817       |                          | 0                   | 95     | 5       | -    |                            |    | 0.0         | 5.1                     | -                                | G, Sa (SP)                |
|            | 3818       |                          | (Same as 59-3817)   |        |         |      |                            |    |             | 5.1                     | -                                | G, Sa (SP)                |
|            |            | 1.0                      |                     |        |         |      |                            |    |             |                         |                                  |                           |
|            | -          |                          | No Sample           |        |         |      | (Driller's Classification) |    |             |                         |                                  | G, Sa (SP)                |
|            |            | 2.0                      |                     |        |         |      |                            |    |             |                         |                                  |                           |
|            | 3819       |                          | 1                   | 16     | 83      | -    | 56.2                       |    | 21.0        | 41.6                    | -                                | G, CI (CH)                |
|            | 3820       |                          | (Same as 59-3819)   |        |         |      |                            |    |             | 29.9                    | -                                | G, CI (CH)                |
|            |            | 3.5                      |                     |        |         |      |                            |    |             |                         |                                  |                           |
|            | -          |                          | No Sample           |        |         |      | (Driller's Classification) |    |             |                         |                                  | G, Sa (SP)                |
|            |            | 8.0                      | 0-0-95              |        |         |      |                            |    |             |                         |                                  |                           |
|            | 3821       |                          | 0                   | 95     | 5       | -    |                            |    | 0.0         | 24.4                    | -                                | G, Sa (SP)                |
|            |            |                          | 3-0-84              |        |         |      |                            |    |             |                         |                                  |                           |
|            | 3822       |                          | 0                   | 87     | 13      | -    |                            |    | 0.0         | 23.0                    | -                                | G, Si-Sa (SP-SM)          |
|            |            | 9.5                      |                     |        |         |      |                            |    |             |                         |                                  |                           |
|            | -          |                          | No Sample           |        |         |      | Driller's Classification   |    |             |                         |                                  | G, Si-Sa (SP-SM)          |
|            |            | 11.0                     |                     |        |         |      |                            |    |             |                         |                                  |                           |
|            | 3823       |                          | 0                   | 4      | 96      | 0.25 | 38.4                       |    | 9.5         | 32.5                    | 88.9                             | T, CI (CL), Sa            |
|            |            | 12.5                     |                     |        |         |      |                            |    |             |                         |                                  |                           |
|            | 3824A      |                          | 0                   | 0      | 100     | -    | 40.8                       |    | 10.0        | 33.2                    | -                                | G, CI (CL)                |
|            | 3824B      |                          | (Same as 59-3824A)  |        |         |      |                            |    |             | 32.9                    | -                                | G, CI (CL)                |
|            |            | 14.0                     |                     |        |         |      |                            |    |             |                         |                                  |                           |
|            | 3825       |                          | 0                   | 0      | 100     | 1.25 | 57.7                       |    | 19.0        | 33.6                    | 87.6                             | T, CI (CH), St.           |
|            |            | 15.5                     |                     |        |         |      |                            |    |             |                         |                                  |                           |

\* - Laboratory Penetrometer Readings

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