BORING 9 DESCRIPTION BROWN SAND, LOOSE, MOIST, GRAB 20/2" RQD NX 80% 100% RQD NX 100% 100% WITH SOME GRAVEL BROWN TO GRAY BASALT, SLIGHTLY WEATHERED, LITTLE FRACTURED, HARD, STRONG BORING COMPLETED AT 7.0 FEET ON IO-08-85 GROUNDWATER NOT ENCOUNTERED BORING 10 DESCRIPTION

SP BROWN SAND, LOOSE, MOIST,
WITH SOME ASH
BROWN GRAVE GRAB BROWN GRAVEL, DENSE, MOIST, WITH NUMEROUS COBBLES & BOULDERS 25 BROWN SAND, DENSE, WITH SOME GRAVEL AND ASH BROWN GRAVEL, MEDIUM DENSE, WET, WITH SOME SAND AND ASH 17 93 15 BORING COMPLETED AT II.5 FEET ON IO-07-85 GROUNDWATER NOT ENCOUNTERED BORING II DESCRIPTION REDDISH BROWN SAND, LOOSE, MOIST, WITH SOME GRAVEL RQD NX 77% 99% DARK GRAY BASALT, SLIGHTLY WEATHERED, LITTLE FRACTURED, HARD, STRONG BORING COMPLETED AT 8.0 FEET 14.

ON 10-07-85 GROUNDWATER

NOT ENCOUNTERED

BORING 8

DESCRIPTION

BECOMES MEDIUM DENSE

ON 10-08-85 GROUNDWATER

BORING COMPLETED AT 10.0 FEET

WITH MORE GRAVEL

NOT ENCOUNTERED

BOULDERS

GRAB

56

SP BROWN SAND, LOOSE, MOIST, WITH

SOME GRAVEL AND OCCASIONAL

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-H-01,-86	1987	98	115

BORING NOTES:

- I. THE INFORMATION SHOWN IN THE BORING LOGS WERE OBTAINED FOR THE USE OF THE ENGINEER.
- THE ENGINEER WILL NOT BE HELD
 RESPONSIBLE IF THE INFORMATION IS FOUND
 ERRONEOUS AND/OR DOES NOT INDICATE
 TRUE CONDITIONS.
- 3. NO GUARANTEE IS GIVEN AS TO THE CHARACTER OF THE MATERIAL ENCOUNTERED IN ANY BORING NOR IS ANY GUARANTEE GIVEN THAT THE BORING REPRESENTS THE TRUE CHARACTER OF THE MATERIAL WHICH WILL BE ENCOUNTERED DURING CONSTRUCTION.
- 4. THE INFORMATION FOR THE BORING LOGS WERE TAKEN FROM A GEOTECHNICAL ENGINEERING INVESTIGATION REPORT PREPARED FOR THE PROJECT BY DAMES & MOORE DATED FEBRUARY 28, 1986. THE CONTRACTOR SHALL REVIEW THE ABOVE REPORT AND DRAW HIS OWN CONCLUSIONS.

REGISTERED PROFESSIONAL PROFESSIONAL ENGINEER
No. 2107-C
WAIL U.S.
WHIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION
RICHARD
FUKUNAGA & ASSOCIATES

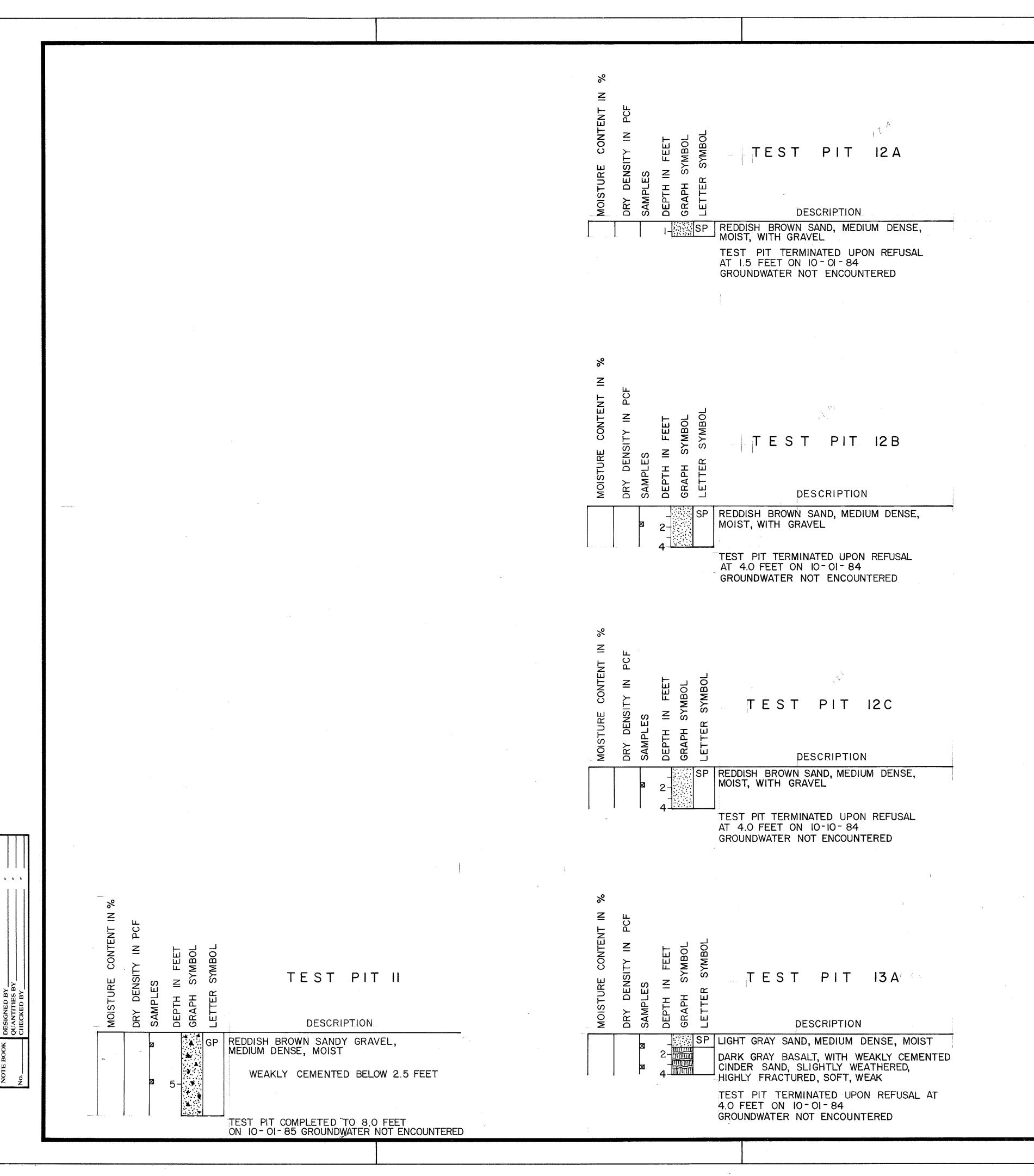
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

BORING AND TEST PIT LOGS, AND NOTES

MAUNA KEA OBSERVATORY ACCESS ROAD
PROJECT NO. HWY.-H-OF-86

SHEET No. | OF 2 SHEETS

98



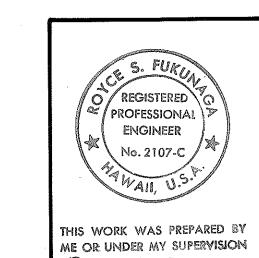
13 13 TEST PIT 13B DESCRIPTION REDDISH BROWN GRAVEL, MEDIUM DENSE, MOIST DARK GRAY BASALT, INTERBEDDED WITH MODERATELY CEMENTED VOLCANIC ASH, SLIGHTLY WEATHERED, HIGHLY FRACTURED MODERATELY HARD WEAK TEST PIT TERMINATED UPON REFUSAL AT 4.0 FEET ON IO-01-84 GROUNDWATER NOT ENCOUNTERED TEST PIT 14

HARD BASALTIC ROCK AT 8.0 FEET
TEST PIT TERMINATED UPON REFUSAL
AT 8.0 FEET ON 09-30-84
GROUNDWATER NOT ENCOUNTERED

DESCRIPTION

REDDISH BROWN SAND, MEDIUM DENSE, MOIST

GP LIGHT GRAY SANDY GRAVEL, MEDIUM DENSE, MOIST



STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION

TEST PIT LOGS

MAUNA KEA OBSERVATORY ACCESS ROAD PHASE II-A PROJECT NO HWY-H-OL-86

SHEET No. 2 OF 2 SHEETS

FISCAL SHEET TOTAL YEAR NO. SHEETS

99

SHEETS

FED. ROAD DIST. NO.

HAWAII

STATE

PROJ. NO.

HAW. HWY-H-OI.-86 1987