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NAS FORT WORTH
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DRAFT SAMPLING AND ANALYSIS PLAN FOR REMEDIAL INVESTIGATION FEASIBILITY STUDY VOLUME 2 OF 3 NAS FORT WORTH TX

6/1/1993

LAW ENGINEERING AND ENVIRONMENTAL

File: 17G
A.F.

150000

NAVAL AIR STATION
FORT WORTH JRB
CARSWELL FIELD
TEXAS

ADMINISTRATIVE RECORD
COVER SHEET

AR File Number 150

File: 17A-41
D.B. 150

150001

DRAFT

CARSWELL AIR FORCE BASE

RI/FS Sampling and Analysis Plan

Volume II - Figures

June 1993

Prepared for:

7th Support Group
7 Civil Engineering Squadron
Environmental Management Flight
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FIGURE 1-1

REGIONAL SETTING OF CARSWELL AFB

(AFTER RADIAN, 1986)

CARSWELL AIR FORCE BASE, TEXAS

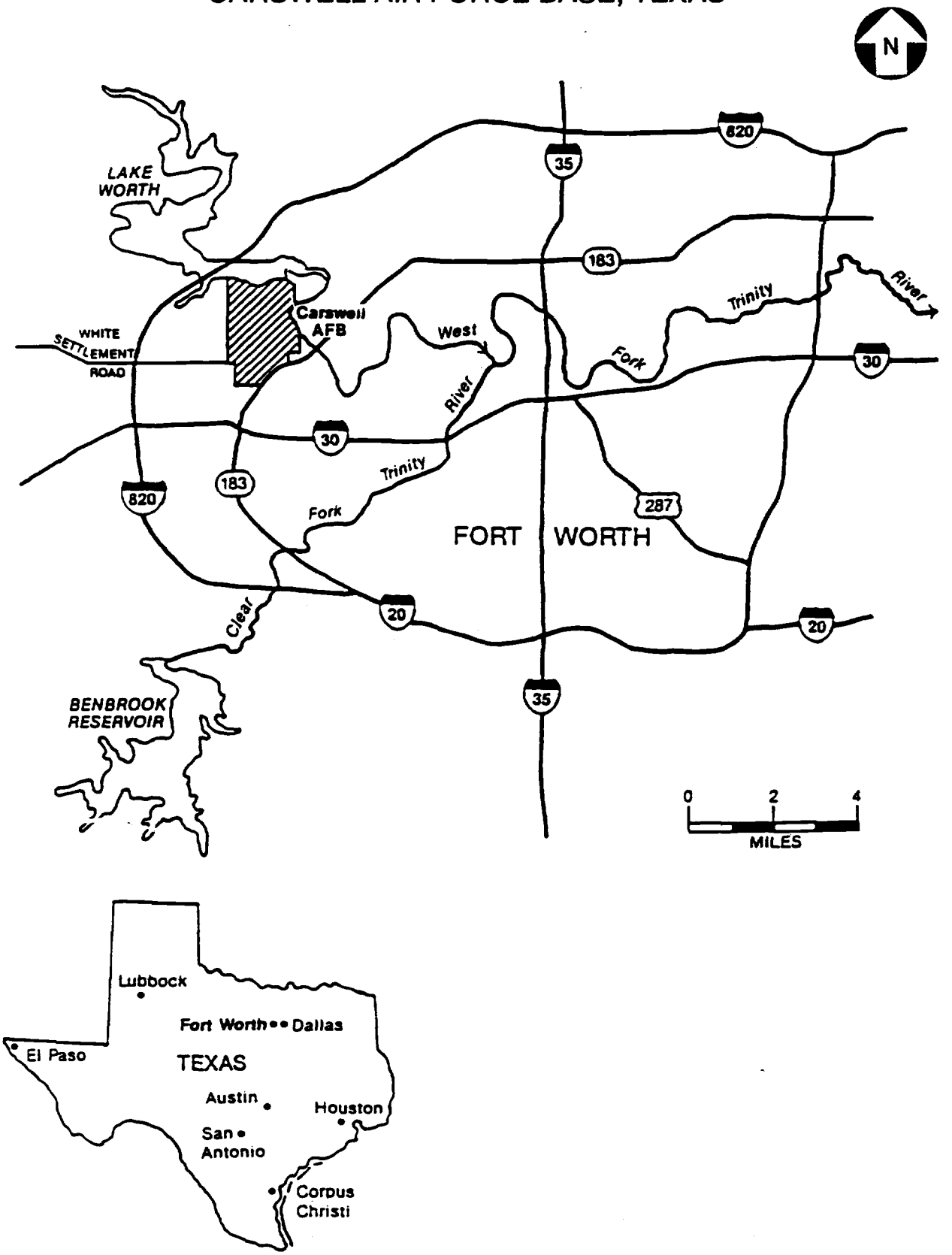

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FIGURE 1-2

PROJECT ORGANIZATION AND QM RESPONSIBILITIES

PRELIMINARY ASSESSMENT/SITE INVESTIGATION
CARSWELL AIR FORCE BASE, TEXAS

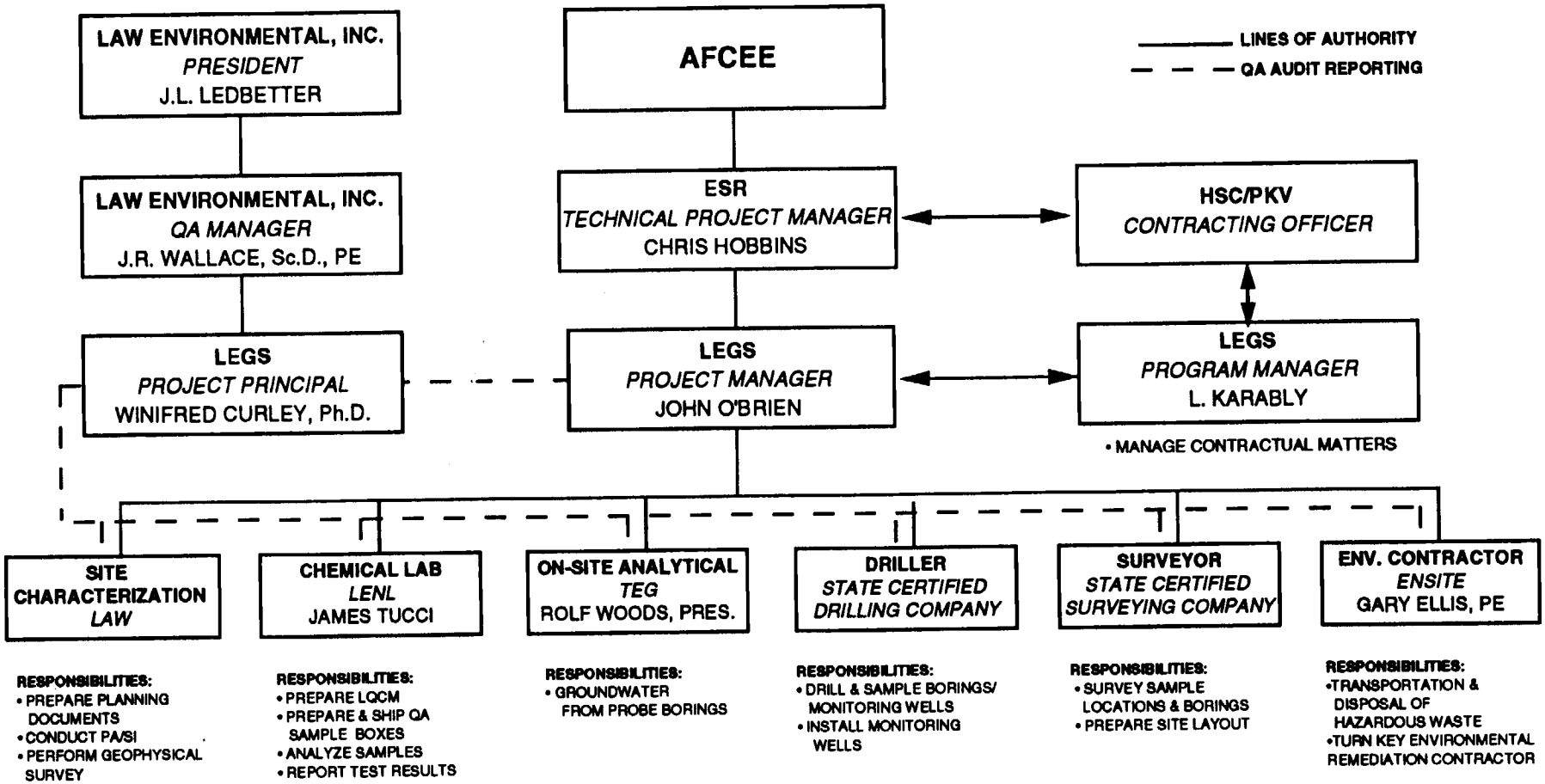

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FIGURE 2-1

LOCATION OF EAST AREA SITES

(AFTER RADIAN, 1986)

CARSWELL AIR FORCE BASE, TEXAS

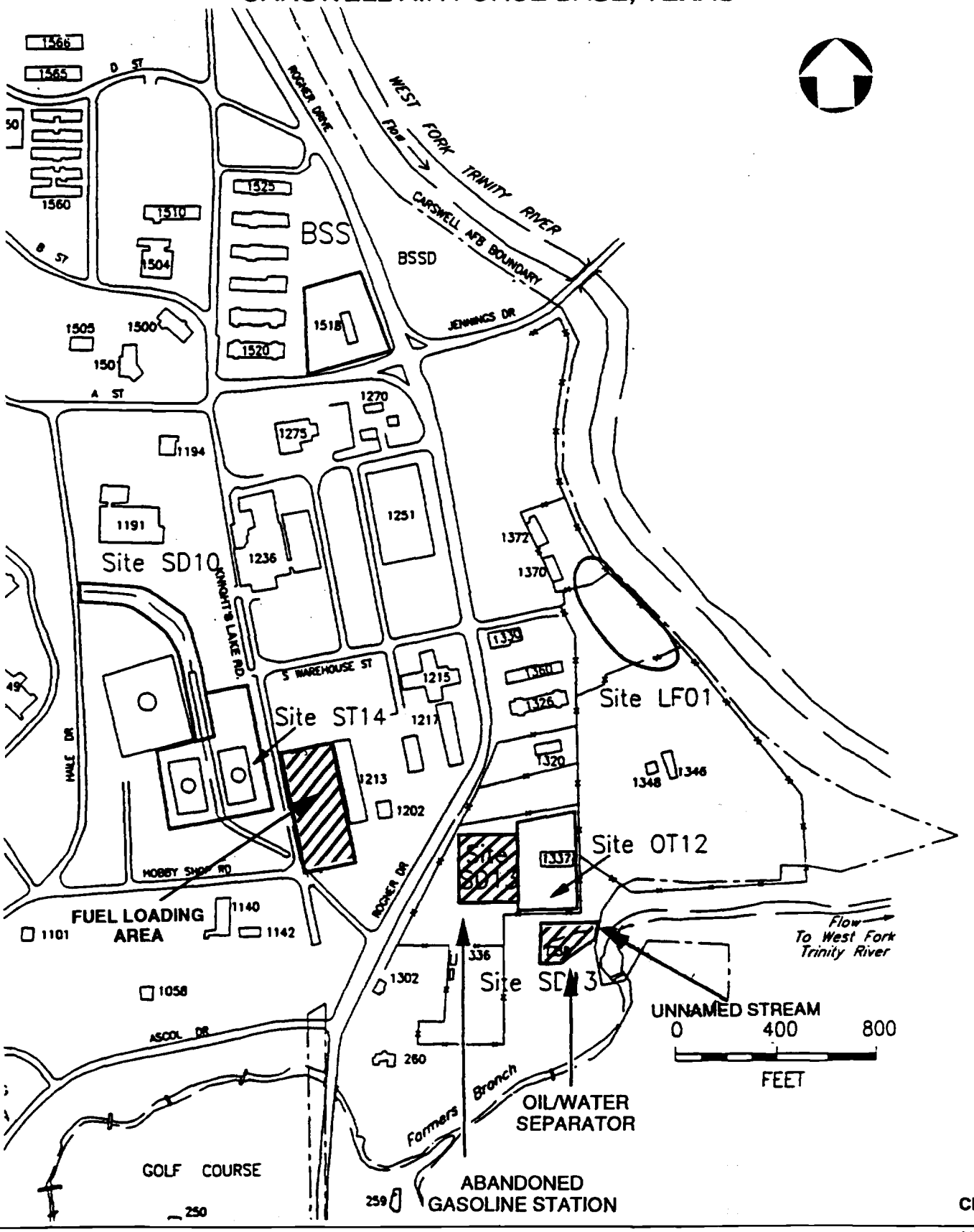

FIGURE 2-2

LOCATION OF WELLS AND SURFACE WATER SAMPLING LOCATIONS AND APPROXIMATE LOCATIONS OF FRENCH DRAIN AND OIL/WATER SEPARATOR, SITE SD13,

(AFTER RADIAN, 1991a)

CARSWELL AIR FORCE BASE, TEXAS

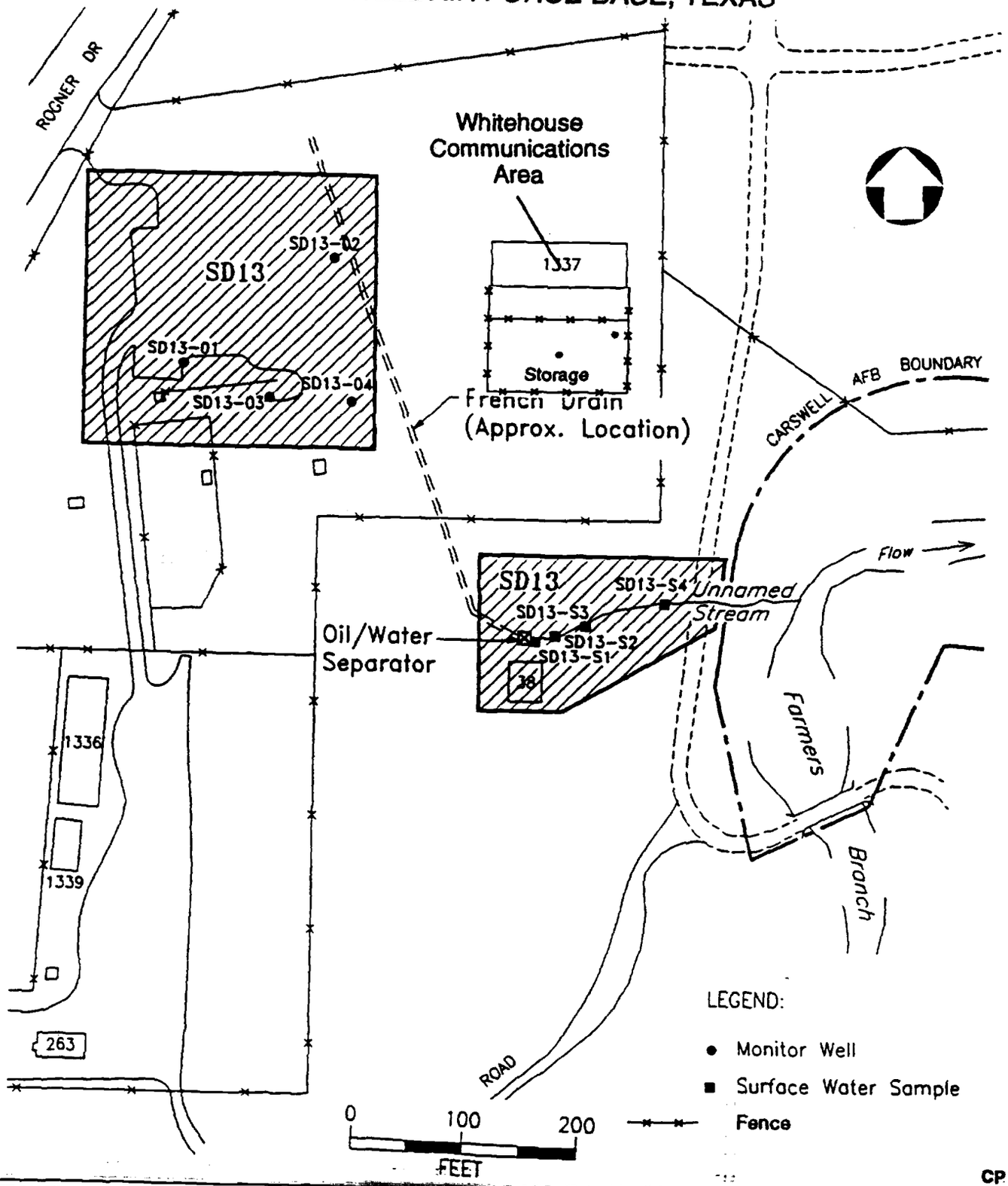

FIGURE 2-3

PROPOSED HYDROPUNCH SAMPLING AREA

(POTENTIOMETRIC CONTOURS AFTER RADIAN, 1986)

CARSWELL AIR FORCE BASE, TEXAS

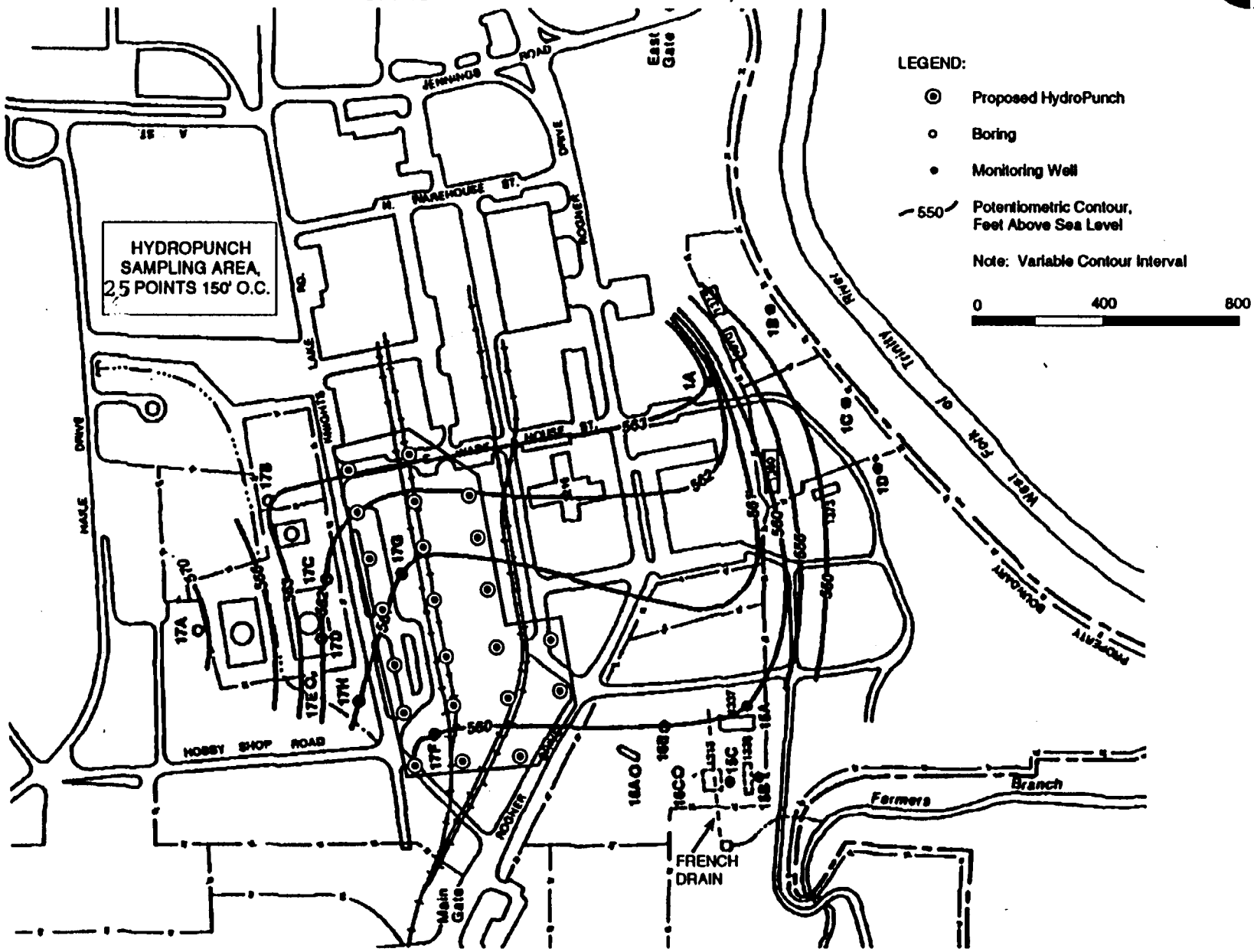

FIGURE 2-4

SAMPLING LOCATIONS, FRENCH DRAIN/UNNAMED STREAM

CARSWELL AIR FORCE BASE, TEXAS

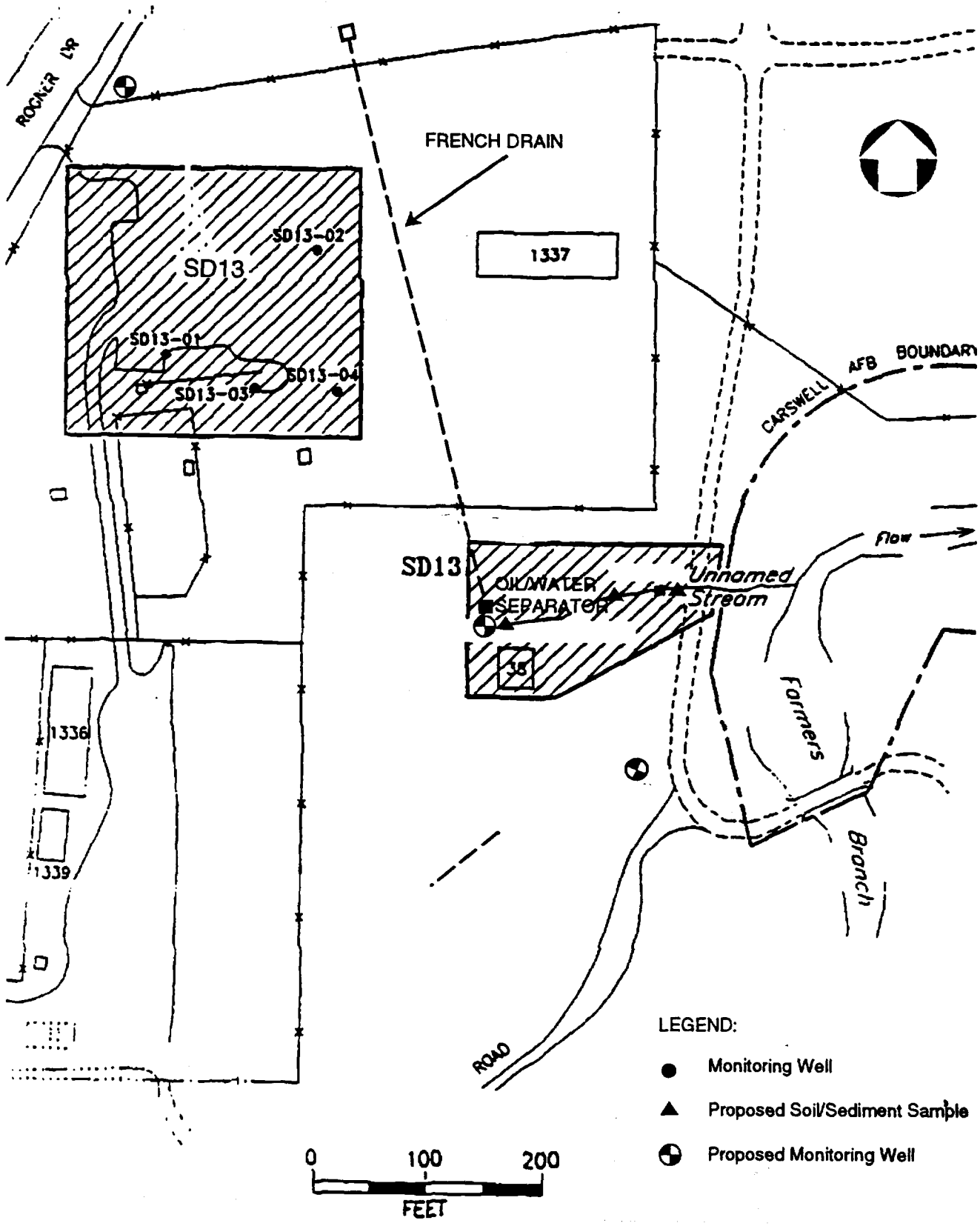

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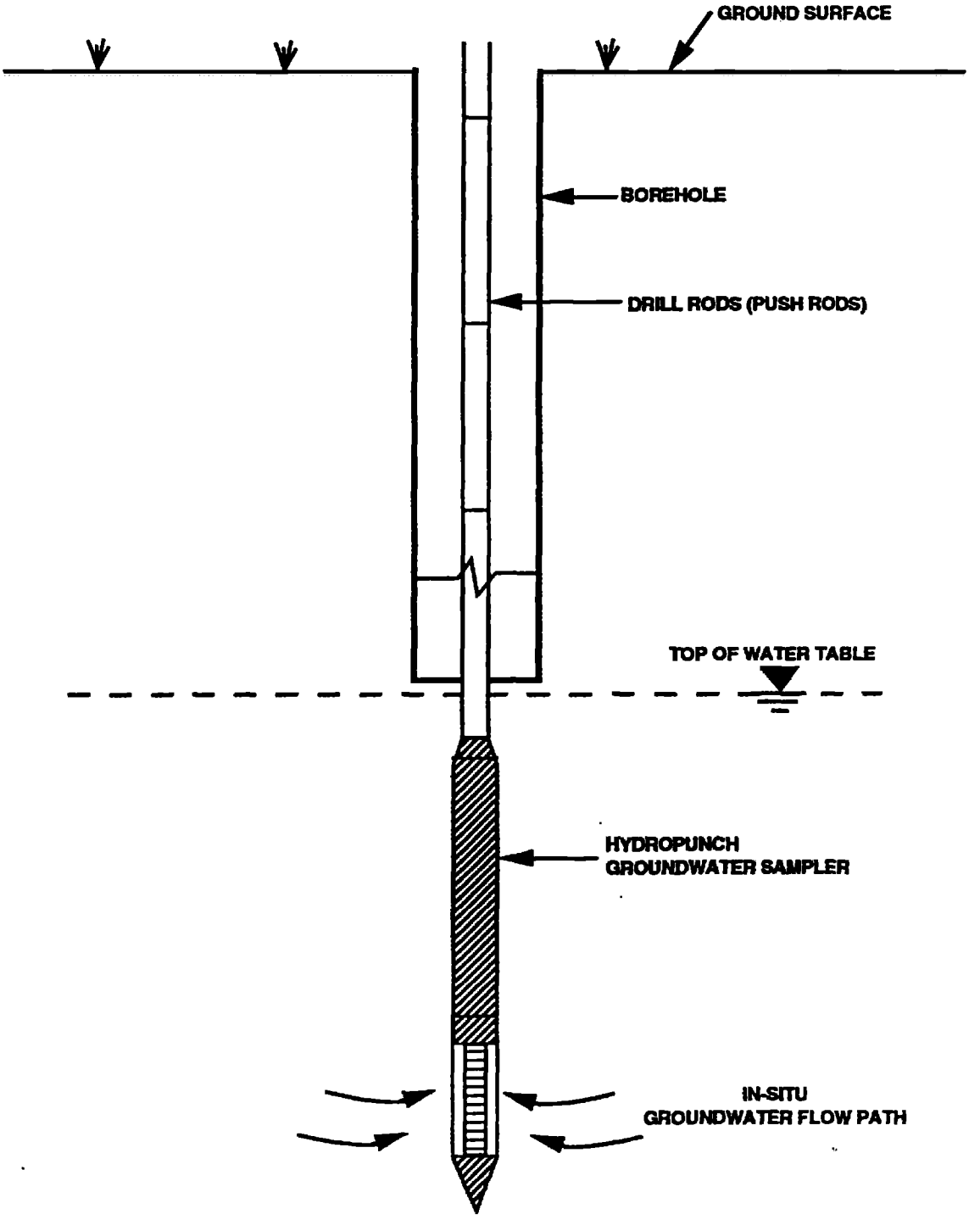
FIGURE 2-5

HYDROPUNCH SAMPLER DIAGRAM

CARSWELL AFB, TEXAS



NOT TO SCALE

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FIGURE 2-6

SOIL TEST BORING RECORD

LAW ENVIRONMENTAL, INC.
GOVERNMENT SERVICES DIVISION
KENNESAW, GEORGIA

JOB NO. _____ BORING NO. _____
JOB NAME _____ G.S. ELEV. _____
DATE: _____ HOURS MOVING _____
WEATHER _____ HOURS DRILLING _____
DRILLER _____ PAGE _____ OF _____

DEPTH (FEET)	STRATA DESCRIPTION	#	"N" 1	2	3	4	N	PID	REC	SOIL CLASSIFICATON AND REMARKS	DEPTH (FEET)

		METHOD OF ADVANCING BORING	DEPTH
BORING TERMINATED: _____		POWER AUGER	TO
BORING REFUSAL: _____		HAND CHOP: W/MUD: W/WATER	TO
WATER TOB DEPTH _____		ROTARY DRILL: W/MUD: W/WATER	TO
WATER 24 HR.: DEPTH _____		DIAMOND CORE	TO
WATER LOSSES _____			
CASING: SIZE _____	LENGTH _____		

QA / QC INSTALLED BY: _____ CHECKED BY: _____ DISCREPANCIES: _____

HF

FIGURE 2-7

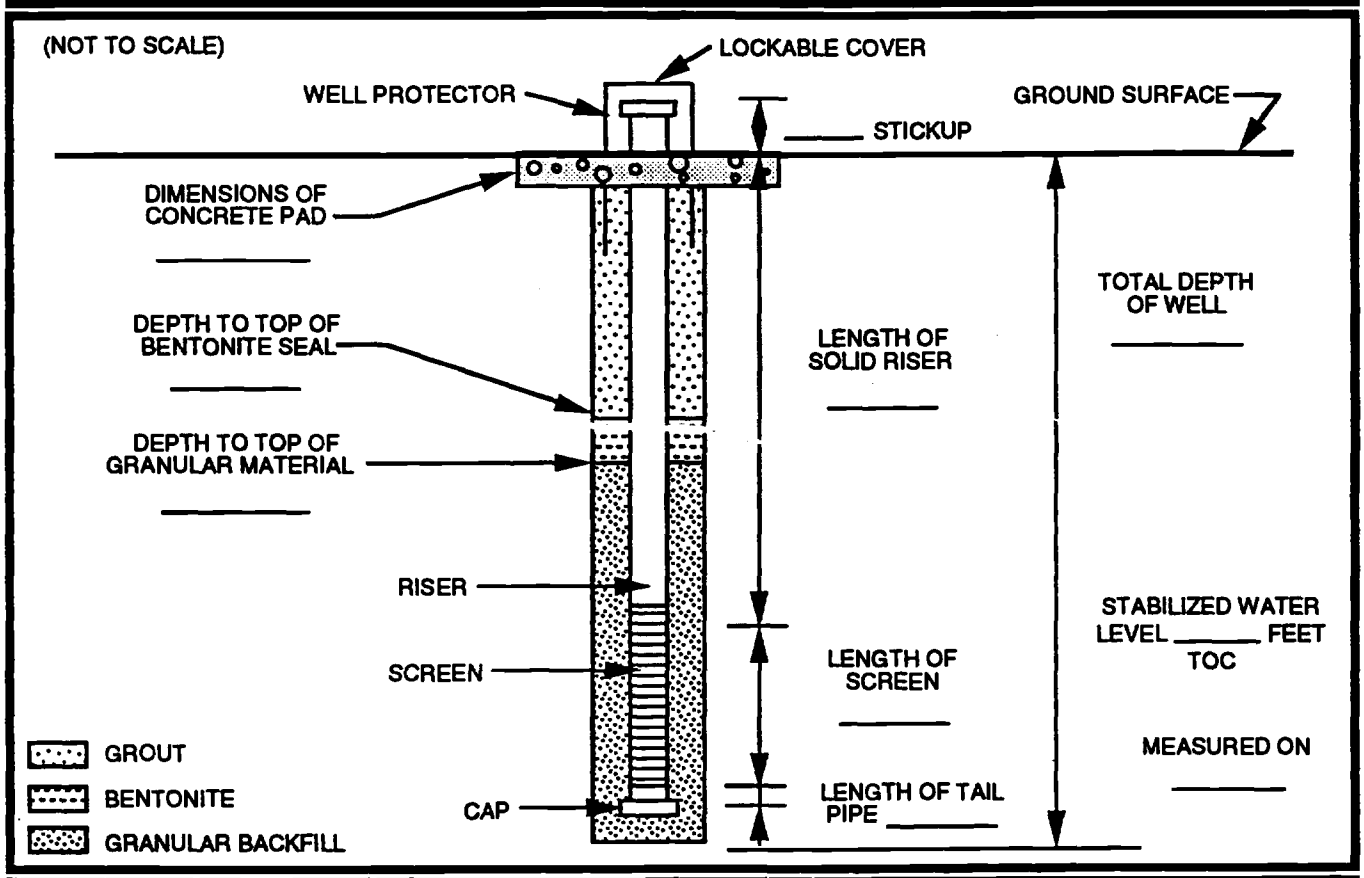
MONITORING WELL INSTALLATION DIAGRAM

JOB NAME _____
WELL NO. _____ JOB NO. _____
DATE _____ TIME _____
WELL LOCATION _____

GROUND SURFACE ELEVATION _____
TOP OF SCREEN ELEVATION _____
REFERENCE POINT ELEVATION _____
TYPE SAND PACK _____ GRADATION _____
SAND PACK MANUFACTURER _____
SCREEN MATERIAL _____
MANUFACTURER _____
RISER MATERIAL _____
MANUFACTURER _____
RISER DIAMETER _____
DRILLING TECHNIQUE _____
AUGER SIZE AND TYPE _____

BENTONITE TYPE _____
MANUFACTURER _____
CEMENT TYPE _____
MANUFACTURER _____
BOREHOLE DIAMETER _____
SCREEN DIAMETER _____ SLOT SIZE _____
LAW ENVIRONMENTAL, INC.
FIELD REPRESENTATIVE _____
DRILLING CONTRACTOR _____
AMOUNT BENTONITE USED _____
AMOUNT CEMENT USED _____
AMOUNT SAND USED _____
STATIC WATER DEPTH (after dev.) _____

REMARKS _____



QA / QC	INSTALLED BY: _____ INSTALLATION OBSERVED BY: _____
	DISCREPANCIES: _____

HF

FIGURE 2-8

JOB NAME _____ JOB No. _____

BY _____ CHECKED _____ SHEET _____ OF _____

WELL DEVELOPMENT DATA

1. Well No. _____
2. Date of Installation : _____
3. Date of Development : _____
4. Static Water Level : Before Development _____ ft.: 24 Hours After _____ ft
5. Quantity of Water Loss During Drilling, If Used _____ Gal.
6. Quantity of Standing Water in Well and Annulus Before Development _____ Gal.

	Start	During		End
7. Specific Conductance (umhos/cm)	_____	_____	_____	_____
Temperature (c°)	_____	_____	_____	_____
pH (s.u.)	_____	_____	_____	_____

8. Depth From Top of Well Casing to Bottom of Well _____ ft. (from Well Installation Diagram)
9. Well Diameter _____
10. Screen Length _____ ft.
11. Minimum Quantity of Water to be Removed (5 Well Volumes) _____
12. Depth to Top of Sediment : Before Development _____ ft.; After Development _____ ft.
13. Physical Character of Water: _____

_____

14. Type and Size of Well Development Equipment : _____

_____

15. Description of Surge Technique, If Used : _____

_____

16. Height of Well Casing Above Ground Surface : _____ ft. (from Well Installation Diagram)
17. Quantity of Water Removed : _____ Gal. Time for Removal : _____ Hr./Min.
18. 1-Liter Water Sample Collected : _____ (Time)
19. Turbidity in Nephelometric Units _____ NTUs

*Development Conditions : 1) Well Water if Reasonably Clear
2) Sediment Thickness 5% of Screen Length
3) Removal of 5 Well Volumes, Including Saturated Filter Annulus
4) Stabilization of Specific Conductance and Water Temperature

FIGURE 2-8 (CONT'D)
WELL DEVELOPMENT DATA RECORD - PAGE 2

Date/ Time	Hrs Dev/ Cum Hrs Dev	Gals Purged/ Cum Gals Purged	pH	Temp	Cond	Remarks

FIGURE 2-9

REQUEST FOR ANALYSIS FORM

150 11

Project: _____
Project #: _____
Manager: _____
Chemist: _____

SAMPLE ID: _____

ANALYTICAL REQUEST

Container	No	Preservation	Parameter	Method

COMMENT: _____

PLEASE RETURN A COPY OF THIS FORM WITH THE DATA PACKAGE

FIGURE 2-10

CHAIN OF CUSTODY RECORD

4636

SAMPLING INFORMATION	NAME OF FACILITY:
	STREET ADDRESS:
	CITY/STATE: ZIP:

PROJECT NAME	JOB NO.
SAMPLERS (SIGNATURE)	
SAMPLING DATE	

TIME	GRAB	COMP.	SOURCE CODE*	SAMPLE STATION DESCRIPTION	TOTAL NO. OF CONTAINERS	CONTAINER TYPE: 40 ml/G ($Na_2S_2O_3$) • $5H_2O$	1 L G, P (HNO_3)	1 L G, P (NaOH)	1 L G, P (H_2SO_4)	1 L G, P	1 L P, (NaOH + Ascorbic Acid)	1 L, Teflon	1 L G, P (Zn Acetate + NaOH)	8oz. G, P	1 L G - Amber	1 L P - Opaque	250 ml/G - Amber

RELINQUISHED BY: (SIGNATURE)	DATE / TIME	RECEIVED BY: (SIGNATURE)	RELINQUISHED BY: (SIGNATURE)	DATE / TIME	RECEIVED BY: (SIGNATURE)
RELINQUISHED BY: (SIGNATURE)	DATE / TIME	RECEIVED BY: (SIGNATURE)	RELINQUISHED BY: (SIGNATURE)	DATE / TIME	RECEIVED AT LABORATORY: (SIGNATURE)

DISTRIBUTION: ORIGINAL AND PINK COPIES ACCOMPANY SAMPLE SHIPMENT TO LABORATORY. PINK COPY RETAINED BY LABORATORY. YELLOW COPY RETAINED BY SAMPLERS.

REMARKS:

* SOURCE CODES:
- RECOVERY WELL - RW
- RCRA MONITORING WELL - MW
- SOIL/SEDIMENT - SO
- SLUDGE - SL
- NPDES DISCHARGE - ND
- DRINKING WATER - DW

HF

FIGURE 2-11

DAILY QUALITY CONTROL REPORT

REPORT No. _____ CONTRACT No. _____ DATE _____

LOCATION OF WORK _____

DESCRIPTION OF WORK _____

WEATHER _____ RAINFALL (INCHES) _____ TEMPERATURE _____ MIN _____MAX

WIND DIRECTION _____

1. WORK PERFORMED _____

2. SAMPLES COLLECTED _____

3. PERSONNEL AND VISITORS AT SITE _____

SITE MANAGER: _____

HF

FINAL PAGE

ADMINISTRATIVE RECORD

FINAL PAGE

FINAL PAGE

ADMINISTRATIVE RECORD

FINAL PAGE