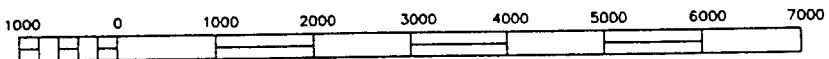
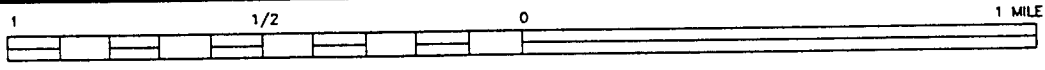
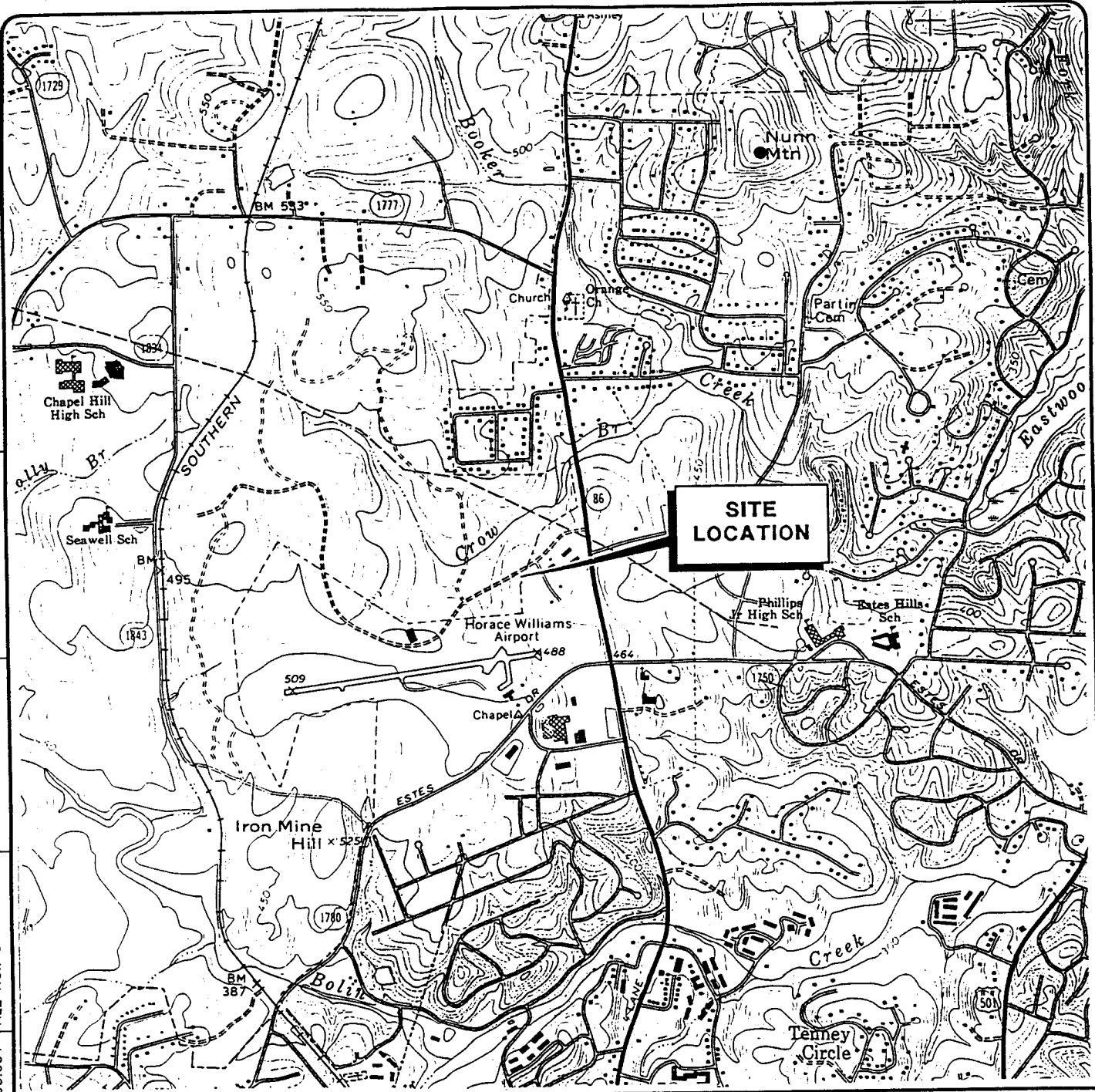


FIGURES



DWG DATE: 28JAN97 | PRJCT NO.: NC0293.004 | FILE NO.: SYM | DRAWING: TOPD-NC | CHECKED: N. SHETTY | APPROVED: J. SHILLDAY | DRAFTER: A. WARREN



SCALE 1:24000

Contour Interval 10 Feet Datum is Mean Sea Level
U.S.G.S. 7.5 Minute Series Chapel Hill, N.C.
Topographic Quadrangle, Photorevised 1981.

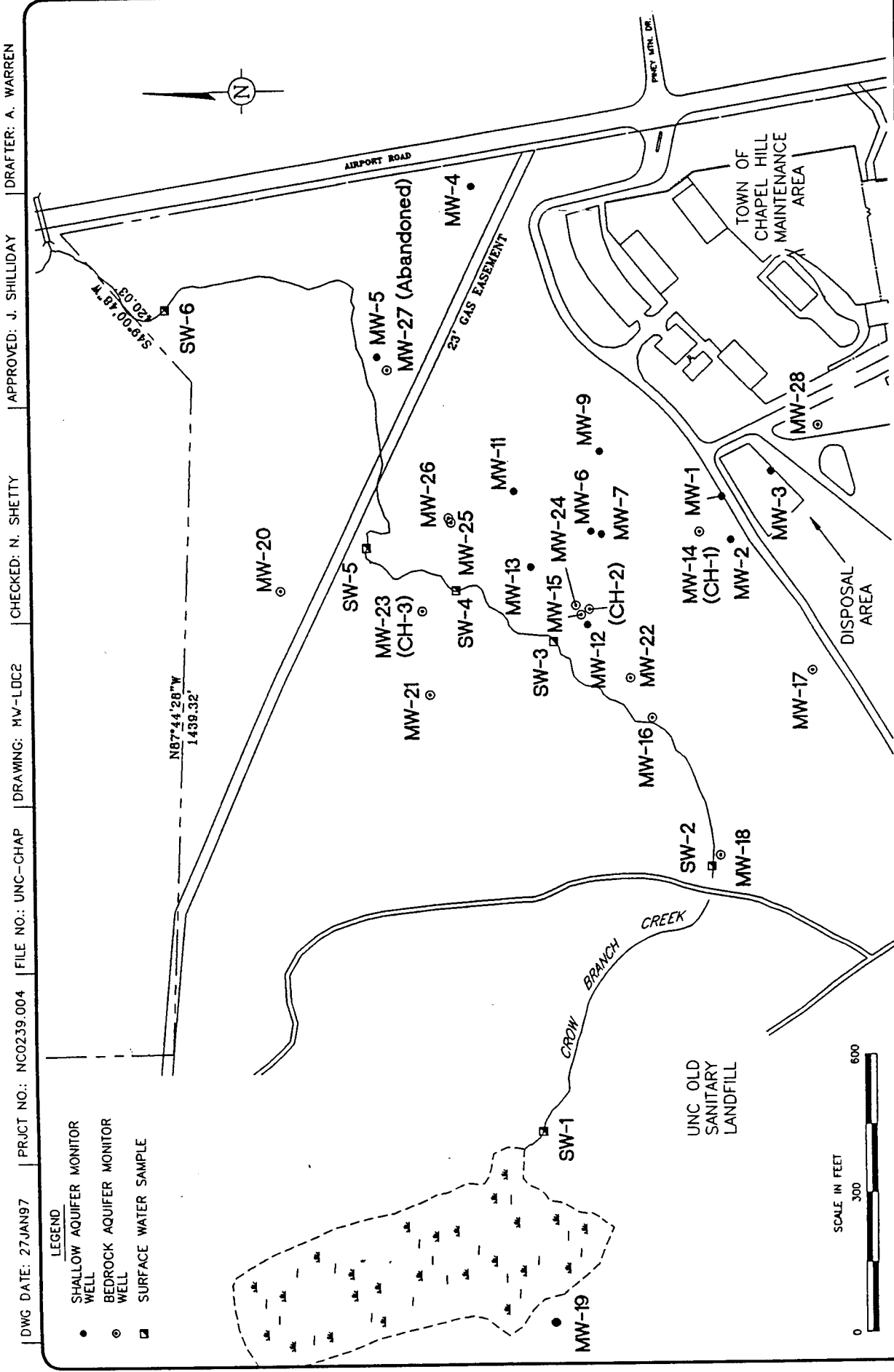


County Location



**SITE LOCATION
TOPOGRAPHIC MAP**
THE UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL
AIRPORT ROAD WASTE DISPOSAL AREA
CHAPEL HILL, NORTH CAROLINA

FIGURE
1-1

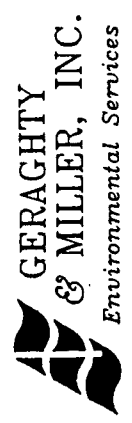


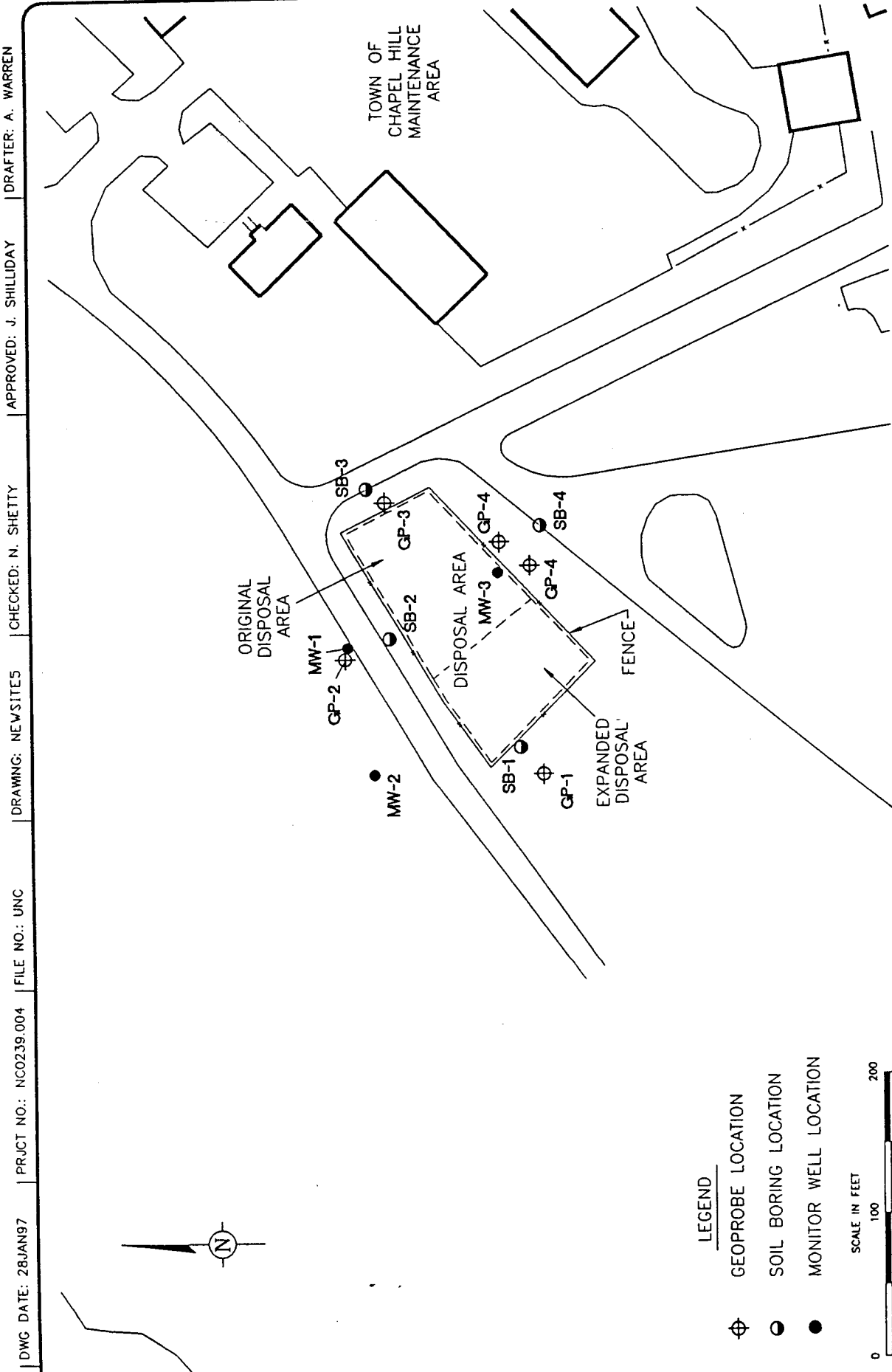
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FIGURE

1-2

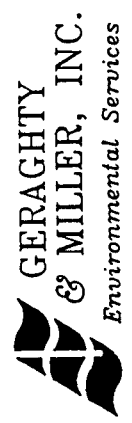
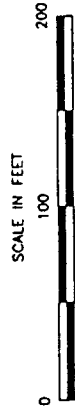
MONITOR WELL AND SURFACE WATER SAMPLE LOCATIONS
 THE UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL
 AIRPORT ROAD WASTE DISPOSAL AREA
 CHAPEL HILL, NORTH CAROLINA





DWG DATE: 28JAN97 | PRJCT NO.: NC0239.004 | FILE NO.: UNC | DRAWING: NEWSITES | CHECKED: N. SHETTY | APPROVED: J. SHILLIDAY | DRAFTER: A. WARREN

- LEGEND**
- ⊕ GEOPROBE LOCATION
 - ⊙ SOIL BORING LOCATION
 - MONITOR WELL LOCATION



SOIL BORING AND GEOPROBE SOIL SAMPLE LOCATIONS

THE UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL
 AIRPORT ROAD WASTE DISPOSAL AREA
 CHAPEL HILL, NORTH CAROLINA

FIGURE

1-3

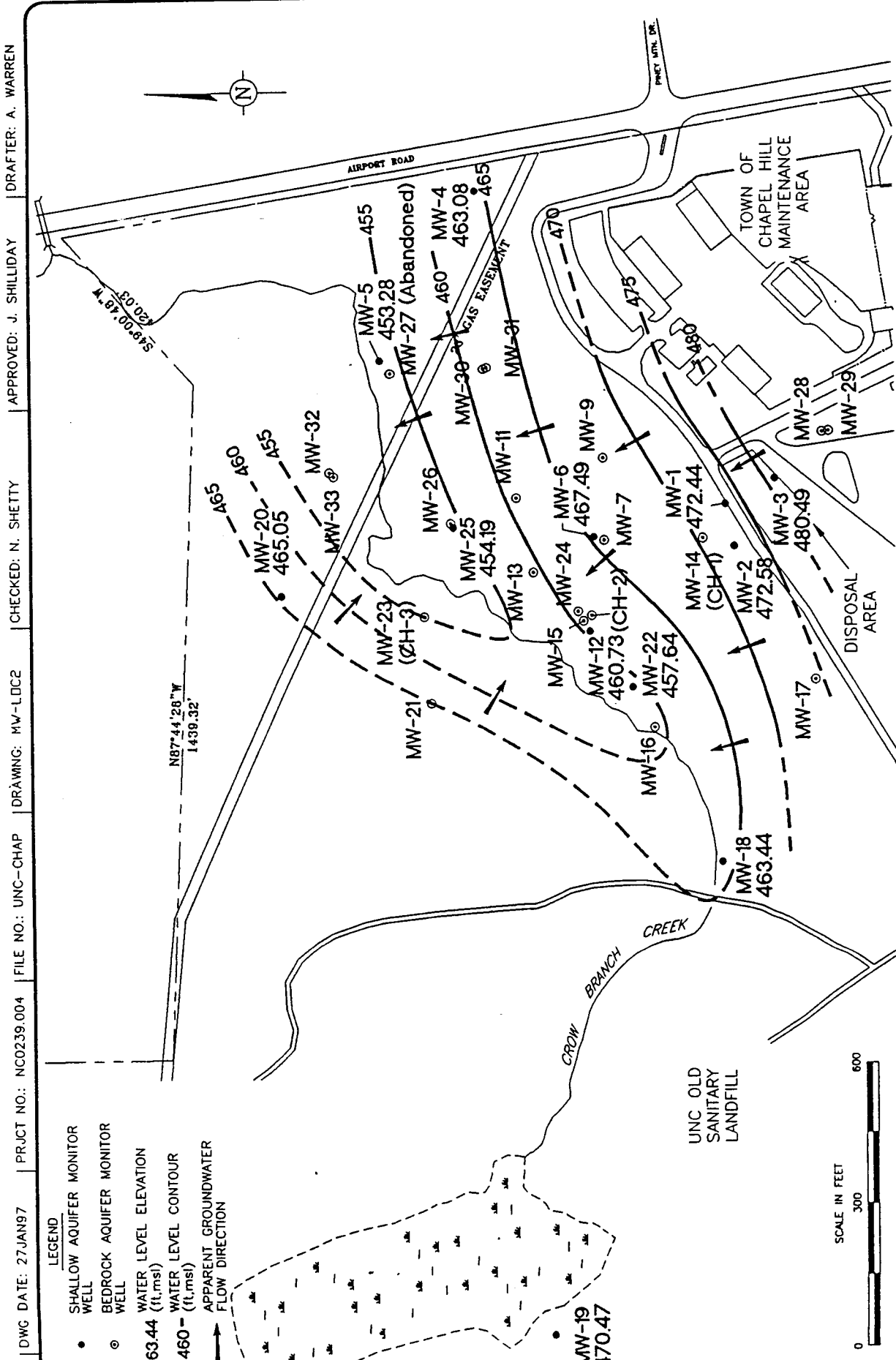
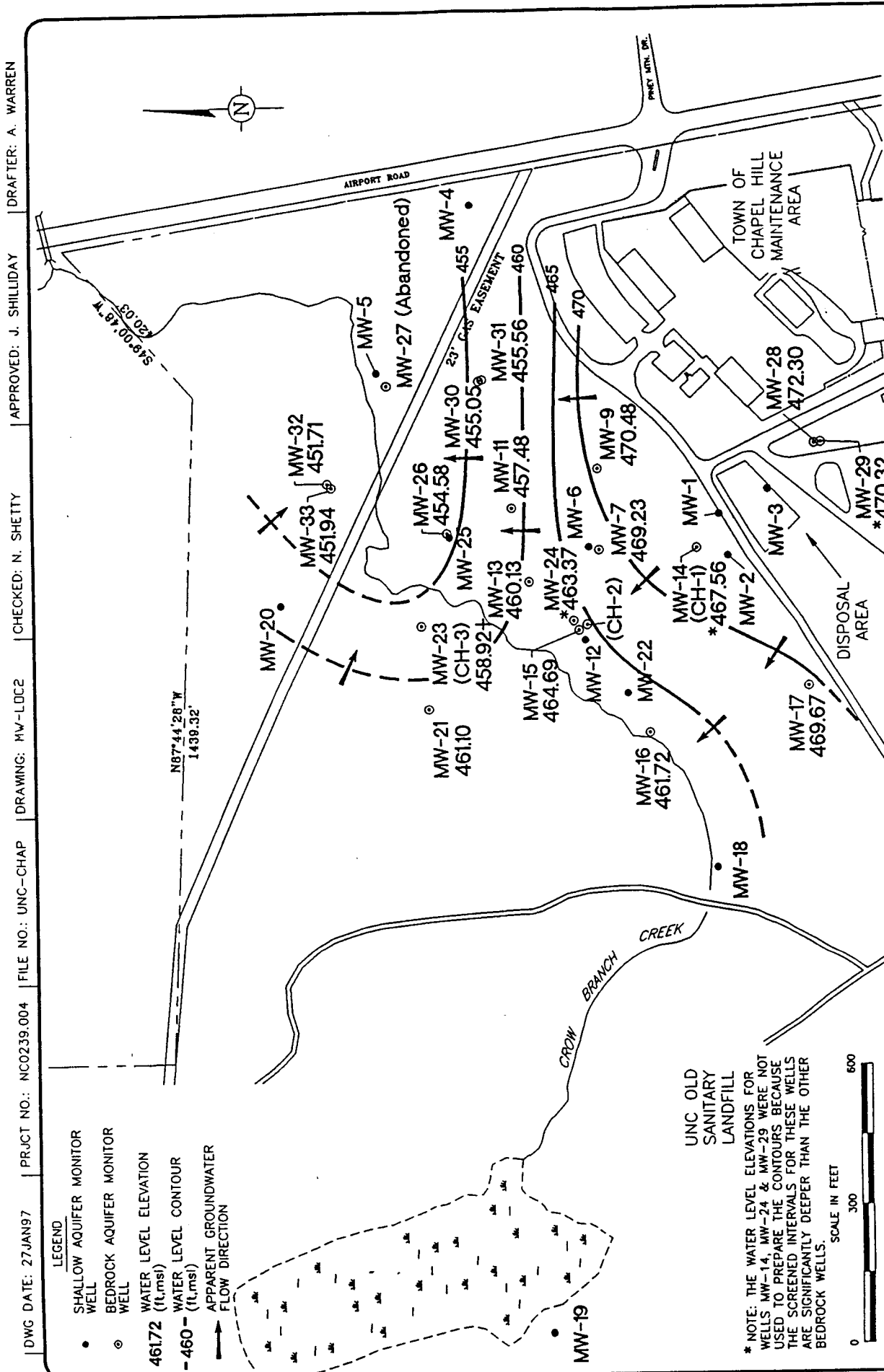


FIGURE 1-4

WATER LEVEL ELEVATIONS IN THE SHALLOW AQUIFER - DECEMBER 11, 1996

THE UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL
 AIRPORT ROAD WASTE DISPOSAL AREA
 CHAPEL HILL, NORTH CAROLINA

GERAGHTY & MILLER, INC.
Environmental Services



GERAGHTY & MILLER, INC.
Environmental Services

FIGURE 1-5

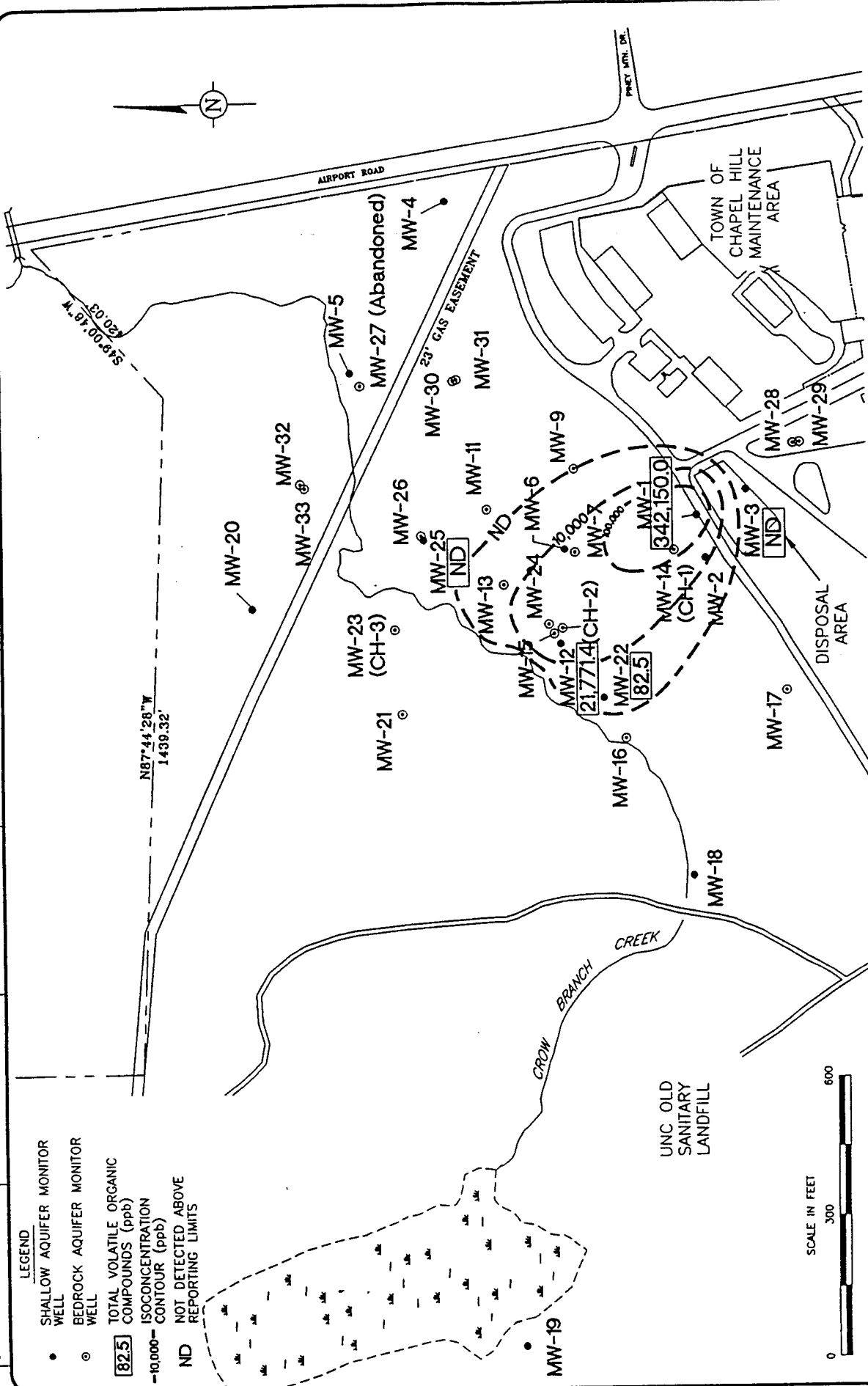


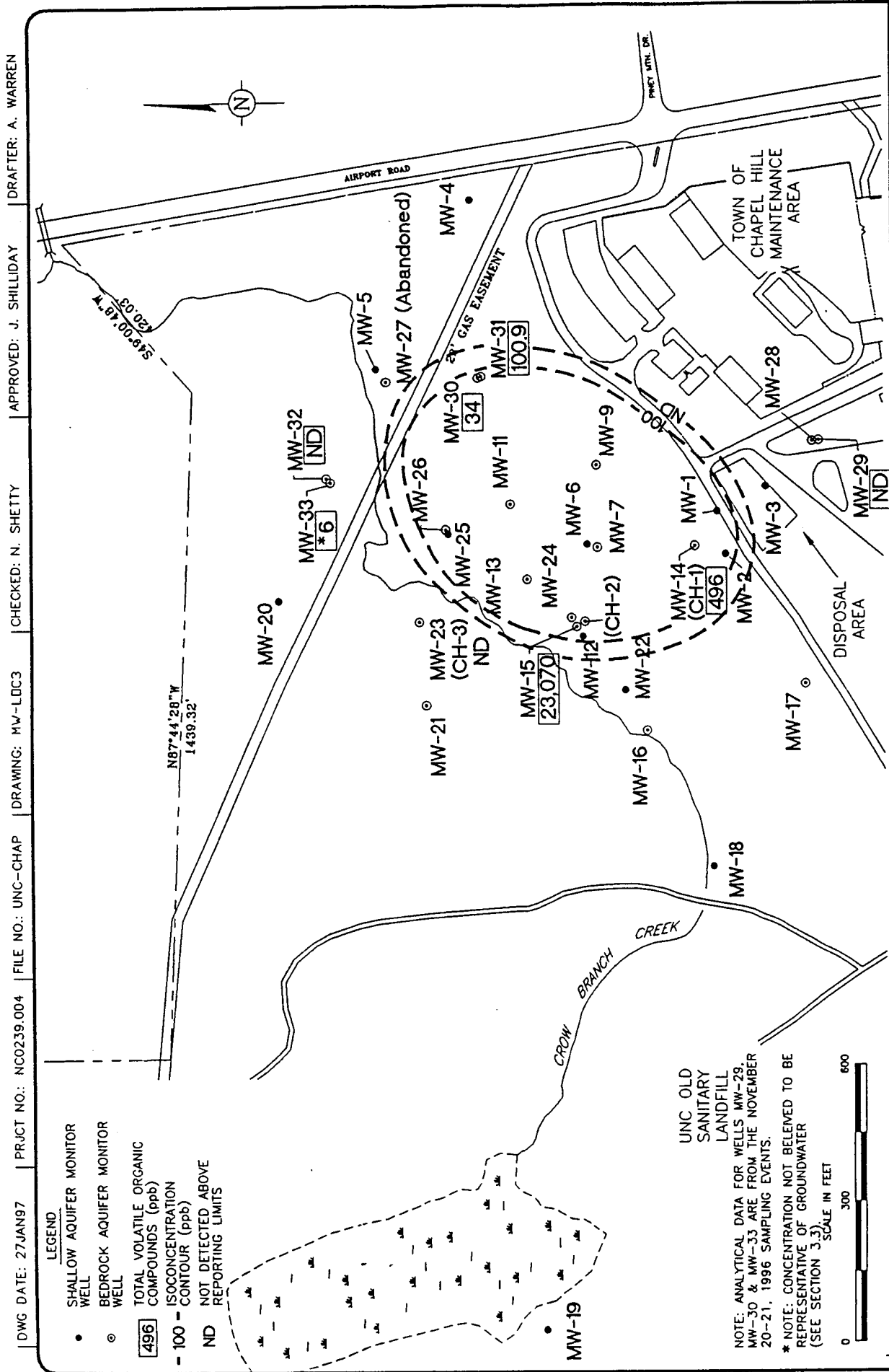
FIGURE 1-6

TOTAL VOLATILE ORGANIC COMPOUNDS (ppb) ISOCONCENTRATION CONTOUR MAP

SHALLOW AQUIFER MONITOR WELLS - DECEMBER 12-13, 1996

THE UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL
 AIRPORT ROAD WASTE DISPOSAL AREA
 CHAPEL HILL, NORTH CAROLINA

GERAGHTY & MILLER, INC.
 Environmental Services



DWG DATE: 27JAN97 | PRCT NO.: NC0239.004 | FILE NO.: UNC-CHAP | DRAWING: MV-LDC3 | CHECKED: N. SHETTY | APPROVED: J. SHILLIDAY | DRAFTER: A. WARREN

FIGURE 1-7

**TOTAL VOLATILE ORGANIC COMPOUNDS (ppb)
ISOCENTRATION CONTOUR MAP
BEDROCK AQUIFER MONITOR WELLS - DECEMBER 12-13, 1996**
THE UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL
AIRPORT ROAD WASTE DISPOSAL AREA
CHAPEL HILL, NORTH CAROLINA

GERAGHTY & MILLER, INC.
Environmental Services

- LEGEND**
- SHALLOW AQUIFER MONITOR WELL
 - BEDROCK AQUIFER MONITOR WELL
 - 496 TOTAL VOLATILE ORGANIC COMPOUNDS (ppb) ISOCENTRATION CONTOUR (ppb)
 - 100 - NOT DETECTED ABOVE REPORTING LIMITS
 - ND

UNC OLD SANITARY LANDFILL

NOTE: ANALYTICAL DATA FOR WELLS MW-29, MW-30 & MW-33 ARE FROM THE NOVEMBER 20-21, 1996 SAMPLING EVENTS.

* NOTE: CONCENTRATION NOT BELIEVED TO BE REPRESENTATIVE OF GROUNDWATER (SEE SECTION 3.3).

SCALE IN FEET

0 300 600

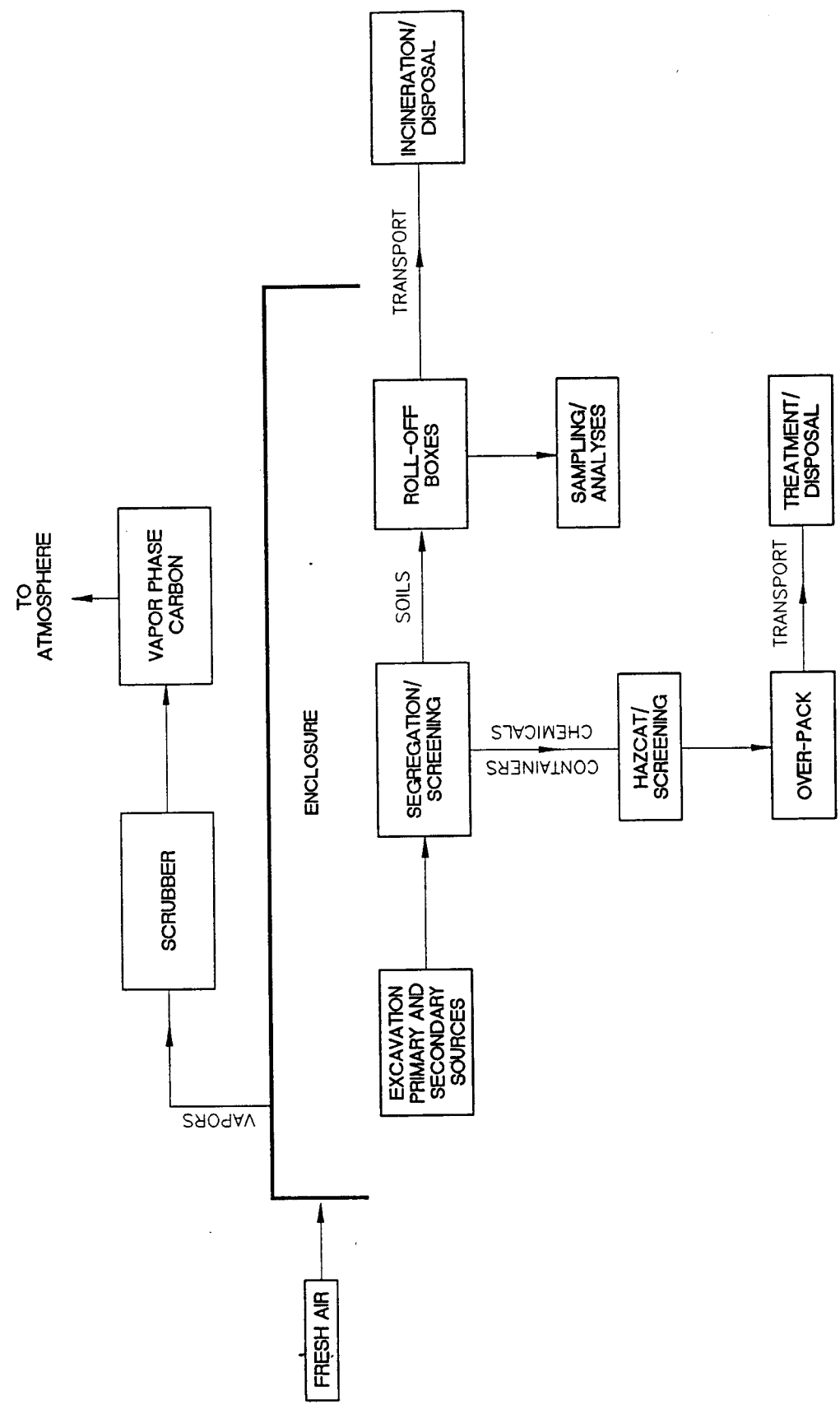


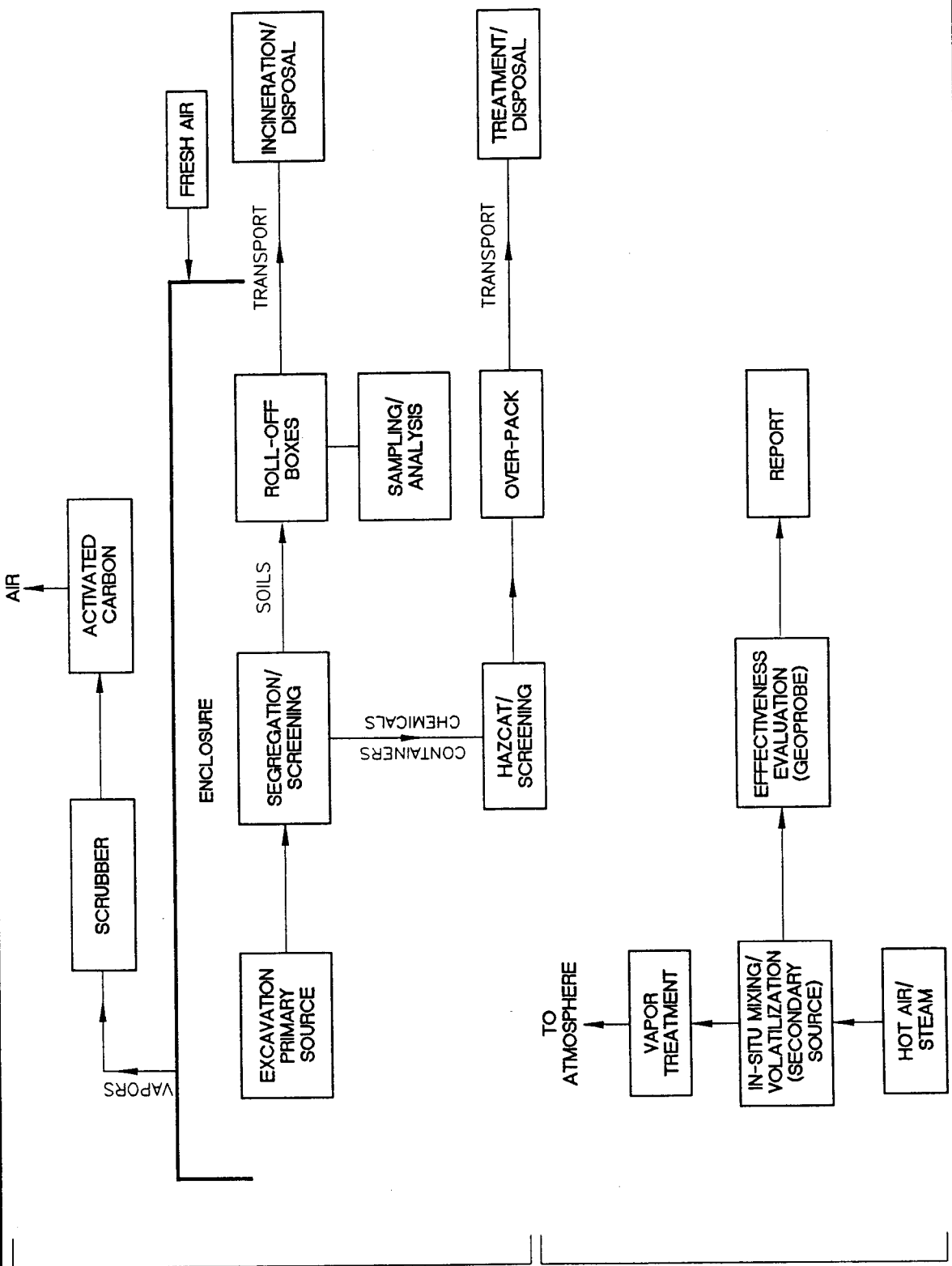
FIGURE 2-1

CONCEPTUAL PROCESS FLOW SCHEMATIC
SCA-2; EXCAVATION OF PRIMARY AND SECONDARY
SOURCES, OFF-SITE TREATMENT, AND OFF-SITE DISPOSAL
 THE UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL
 AIRPORT ROAD WASTE DISPOSAL AREA
 CHAPEL HILL, NORTH CAROLINA



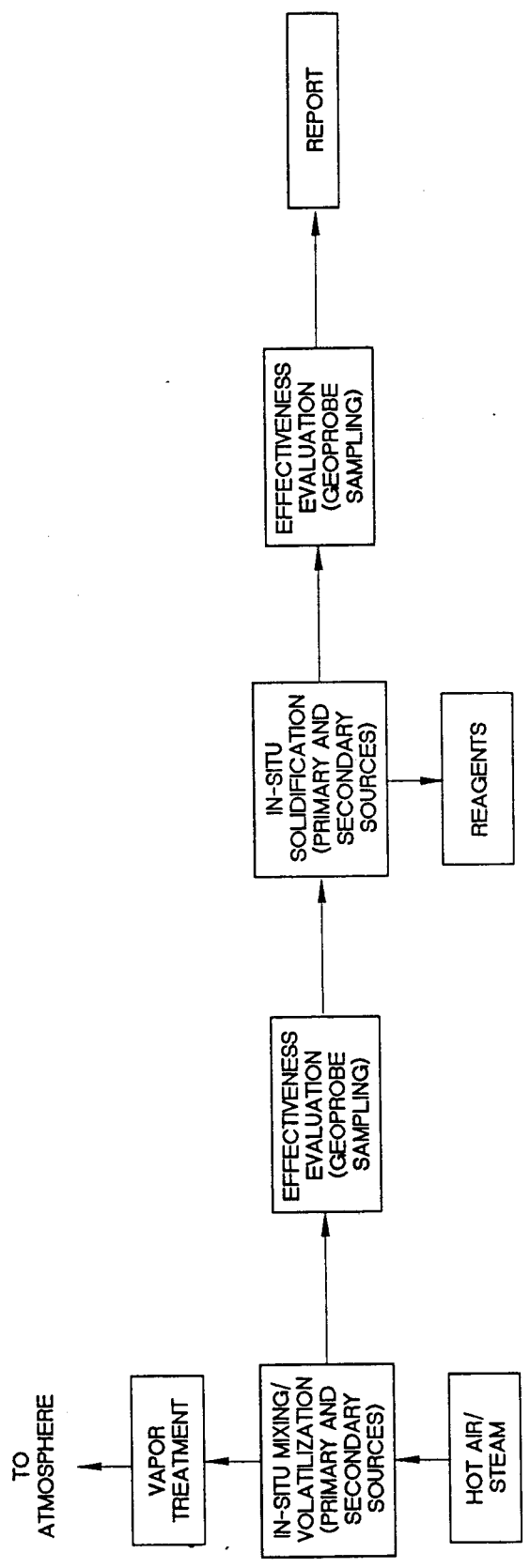
PRIMARY SOURCE
REMEDIATION

SECONDARY SOURCE
REMEDIATION



**CONCEPTUAL PROCESS FLOW SCHEMATIC
SCA-3, EXCAVATION AND OFF-SITE TREATMENT/DISPOSAL,
AND IN-SITU VOLATILIZATION OF SECONDARY SOURCE**
THE UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL
AIRPORT ROAD WASTE DISPOSAL AREA
CHAPEL HILL, NORTH CAROLINA





GERAGHTY & MILLER, INC.
Environmental Services

**CONCEPTUAL PROCESS FLOW SCHEMATIC
 SCA-4, IN-SITU VOLATILIZATION AND SOLIDIFICATION
 OF PRIMARY AND SECONDARY SOURCES**
 THE UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL
 AIRPORT ROAD WASTE DISPOSAL AREA
 CHAPEL HILL, NORTH CAROLINA

FIGURE
 2-3

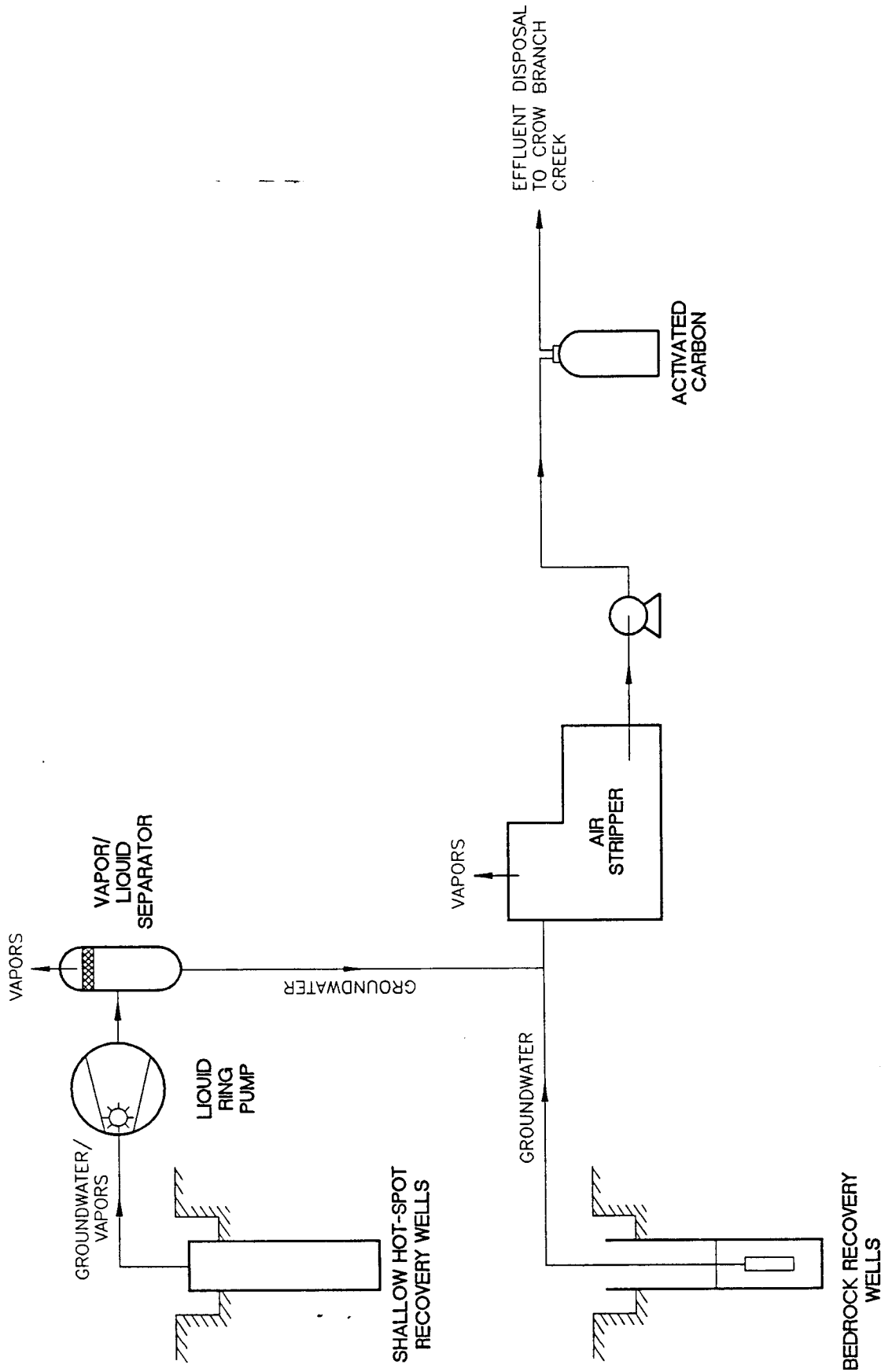
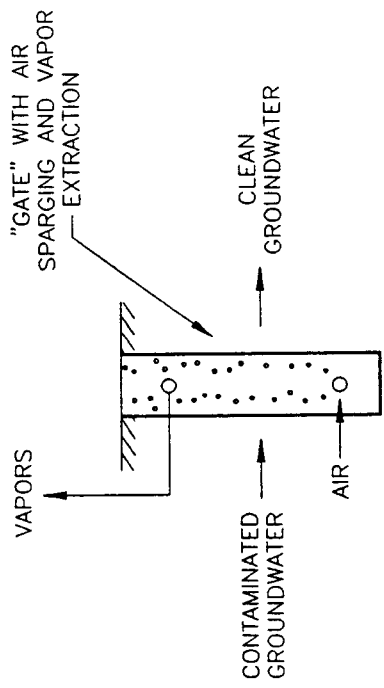


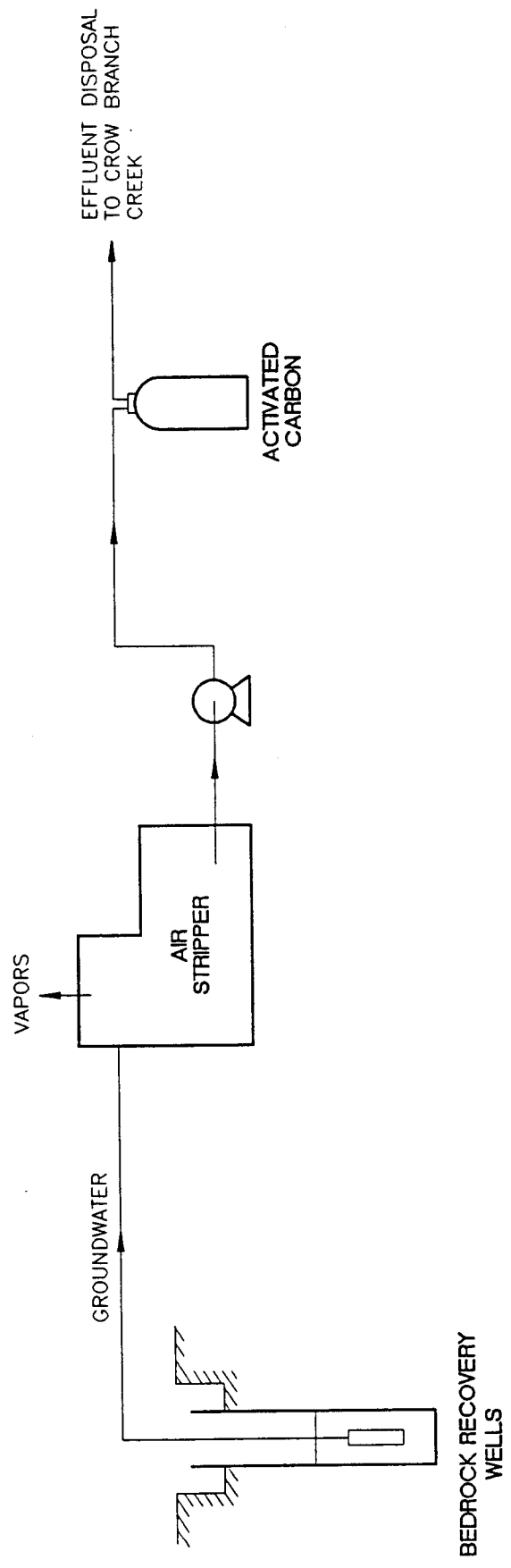
FIGURE 2-4

**CONCEPTUAL PROCESS FLOW SCHEMATIC
 GWA-2: VACUUM ENHANCED RECOVERY OF SHALLOW GROUNDWATER (HOT SPOT)
 AND CONVENTIONAL RECOVERY OF BEDROCK GROUNDWATER, TREATMENT, AND DISPOSAL**
 THE UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL
 AIRPORT ROAD WASTE DISPOSAL AREA
 CHAPEL HILL, NORTH CAROLINA





FUNNEL-AND-GATE FOR SHALLOW HOT-SPOT REMEDIATION



GERAGHTY & MILLER, INC.
Environmental Services

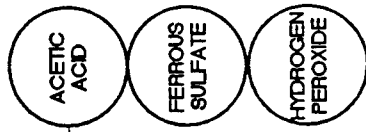
CONCEPTUAL PROCESS FLOW SCHEMATIC

GWA-3; FUNNEL-AND-GATE FOR SHALLOW HOT SPOT REMEDIATION AND CONVENTIONAL RECOVERY OF BEDROCK GROUNDWATER, TREATMENT, AND DISPOSAL

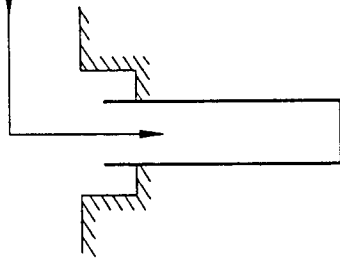
THE UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL
AIRPORT ROAD WASTE DISPOSAL AREA
CHAPEL HILL, NORTH CAROLINA

FIGURE **2-5**

CLEANOX® PROCESS

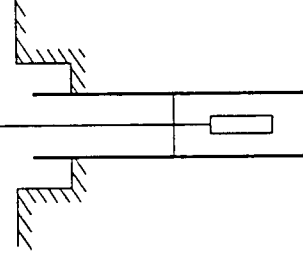
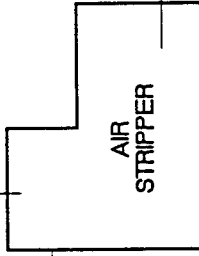


**IN-SITU CHEMICAL OXIDATION
FOR SHALLOW AND DEEP
HOT-SPOTS REMEDIATION (GROUNDWATER)**



VAPORS

GROUNDWATER



**BEDROCK RECOVERY
WELLS**

EFFLUENT DISPOSAL
TO CROW BRANCH
CREEK



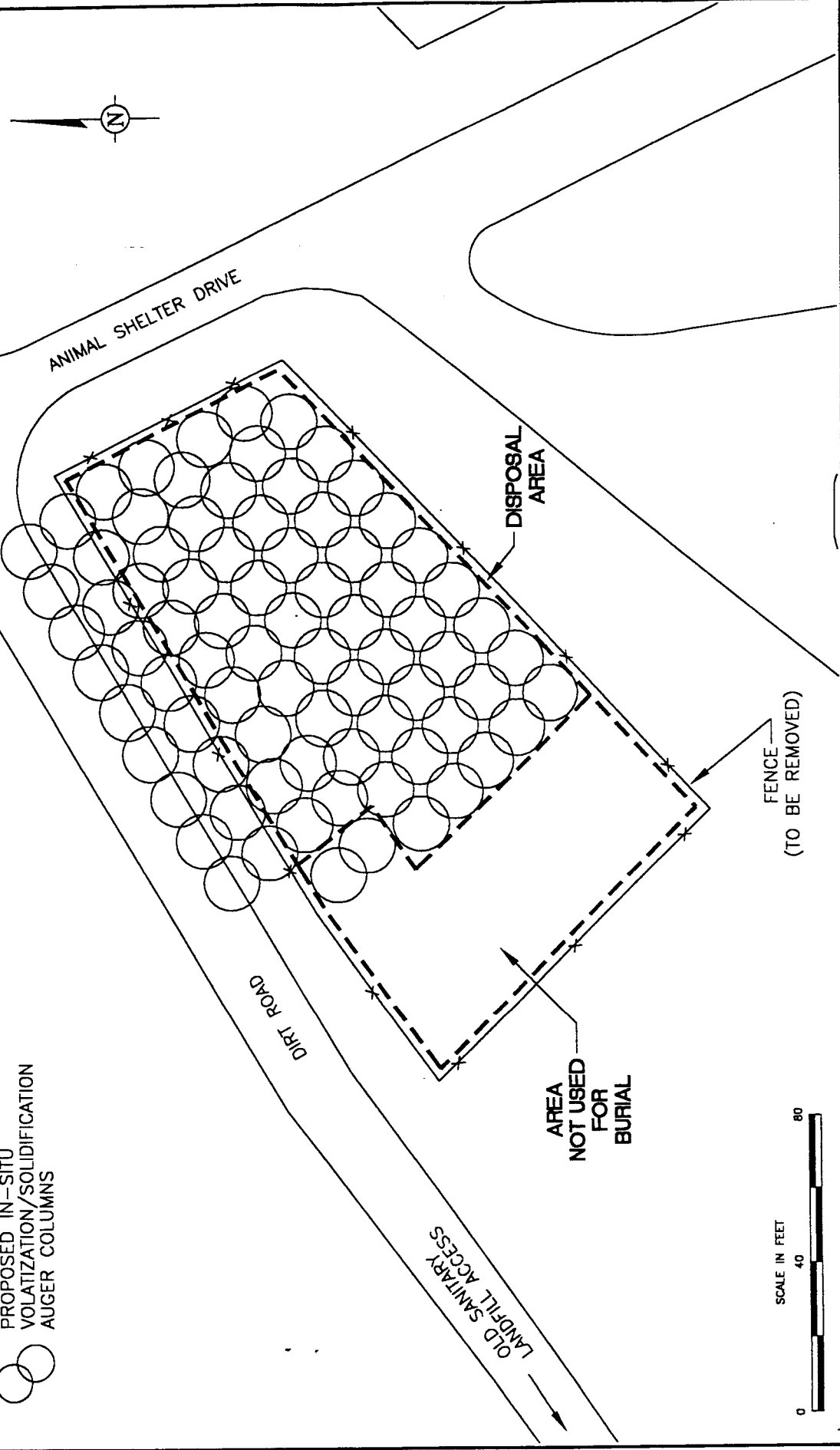
**ACTIVATED
CARBON**

**CONCEPTUAL PROCESS FLOW SCHEMATIC
GWA-4, IN-SITU CHEMICAL TREATMENT OF SHALLOW AND DEEP HOT SPOT GROUNDWATER
AND CONVENTIONAL RECOVERY OF BEDROCK GROUNDWATER, TREATMENT, AND DISPOSAL**
THE UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL
AIRPORT ROAD WASTE DISPOSAL AREA
CHAPEL HILL, NORTH CAROLINA



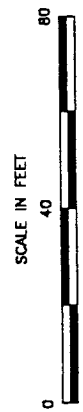
LEGEND

PROPOSED IN-SITU
VOLATILIZATION/SOLIDIFICATION
AUGER COLUMNS



FENCE
(TO BE REMOVED)

AREA
NOT USED
FOR
BURIAL



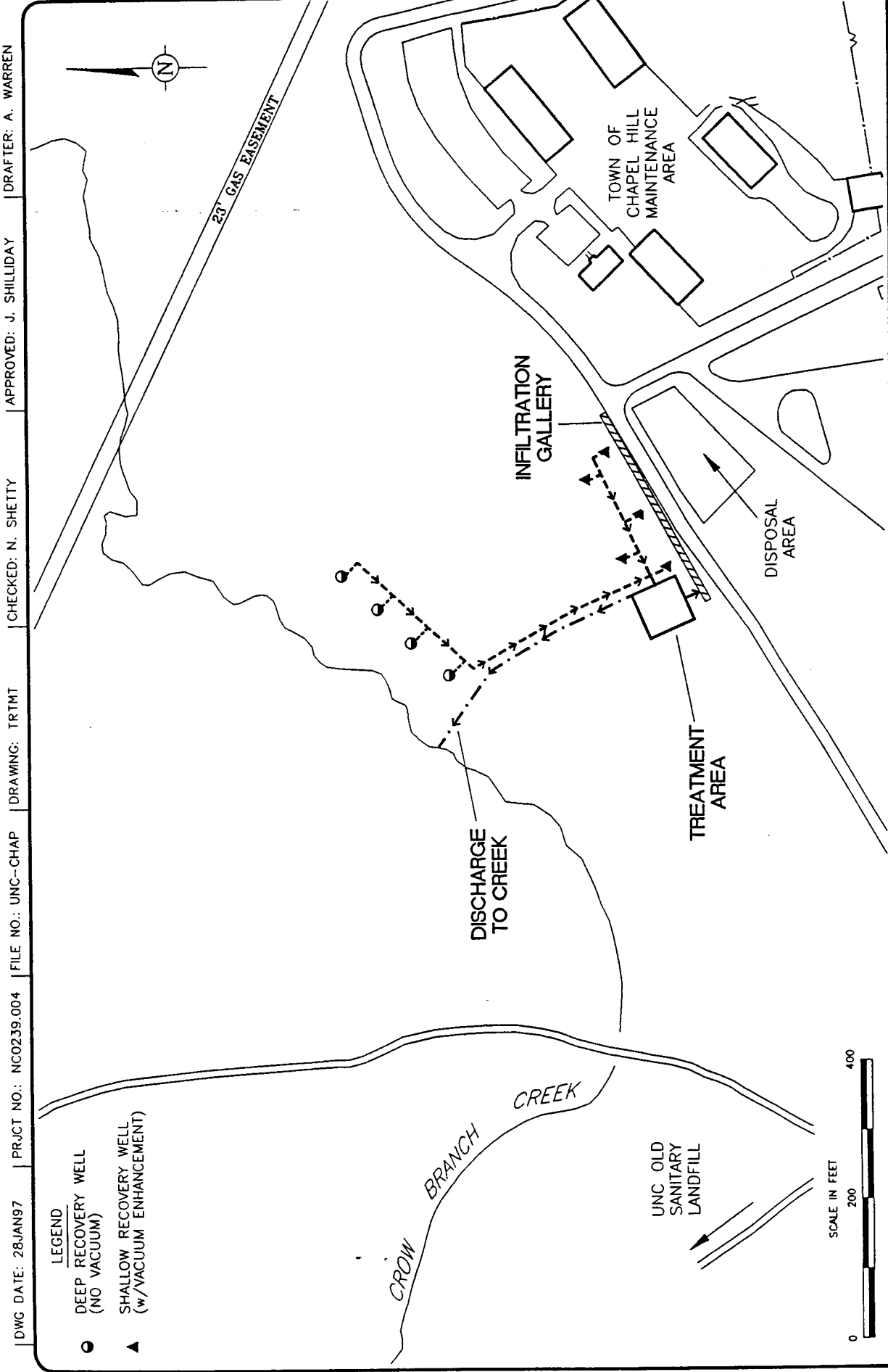
FIGURE

3-1

**PRELIMINARY LAYOUT OF IN-SITU
VOLATILIZATION/SOLIDIFICATION FOR SOURCE CONTROL**

THE UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL
AIRPORT ROAD WASTE DISPOSAL AREA
CHAPEL HILL, NORTH CAROLINA





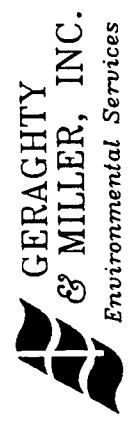
- LEGEND**
- DEEP RECOVERY WELL (NO VACUUM)
 - ▲ SHALLOW RECOVERY WELL (w/VACUUM ENHANCEMENT)



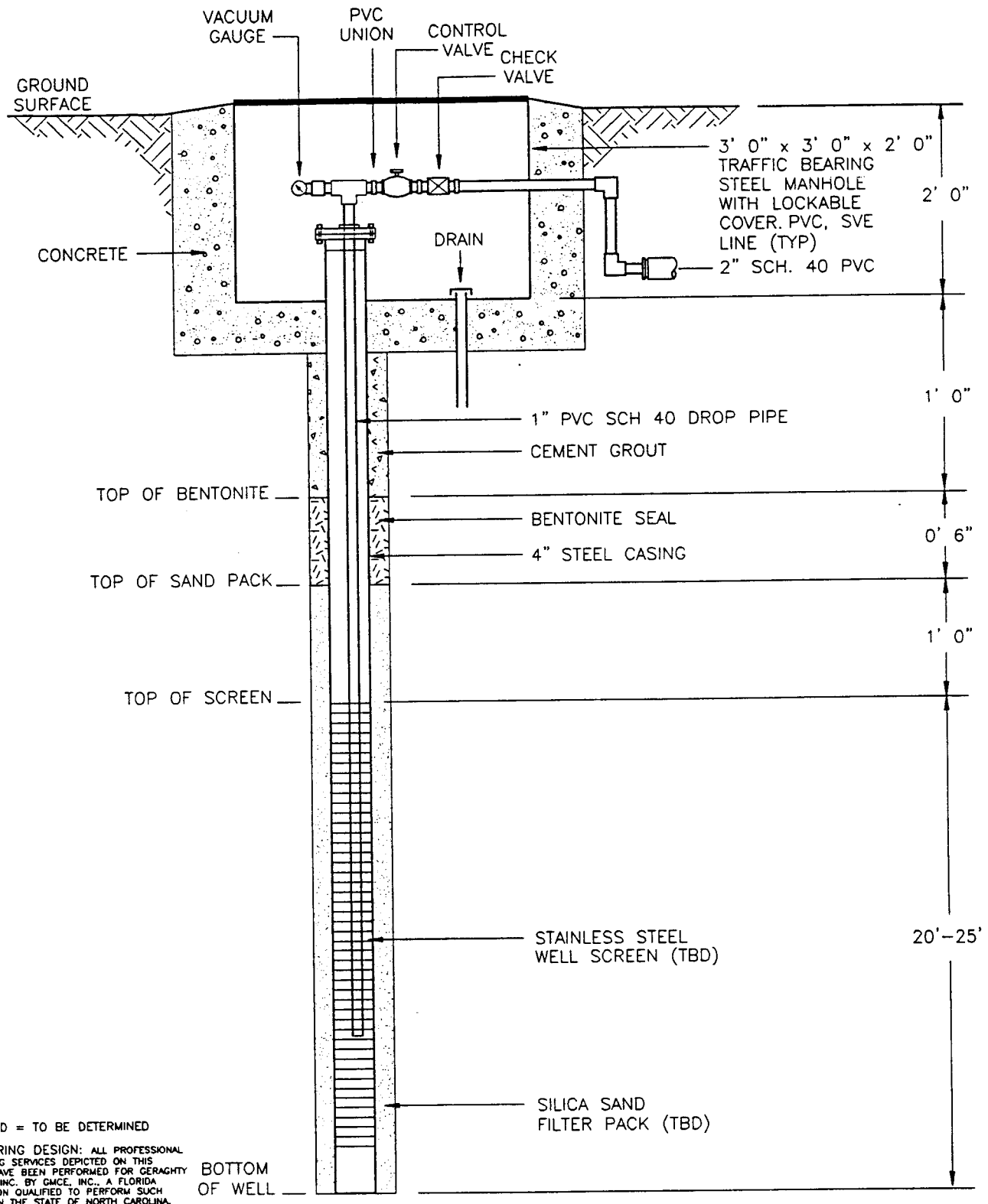
FIGURE
3-2

**PRELIMINARY LAYOUT OF RECOVERY WELLS,
TREATMENT AND EFFLUENT DISPOSAL AREAS**

THE UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL
AIRPORT ROAD WASTE DISPOSAL AREA
CHAPEL HILL, NORTH CAROLINA



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NOTE: TBD = TO BE DETERMINED
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TYPICAL VACUUM ENHANCED RECOVERY WELLS WITH DROP TUBE

THE UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL
 AIRPORT ROAD WASTE DISPOSAL AREA
 CHAPEL HILL, NORTH CAROLINA

FIGURE
3-3

NOT TO SCALE

DRAFTER: A. WARREN

APPROVED: J. SHILLIDAY

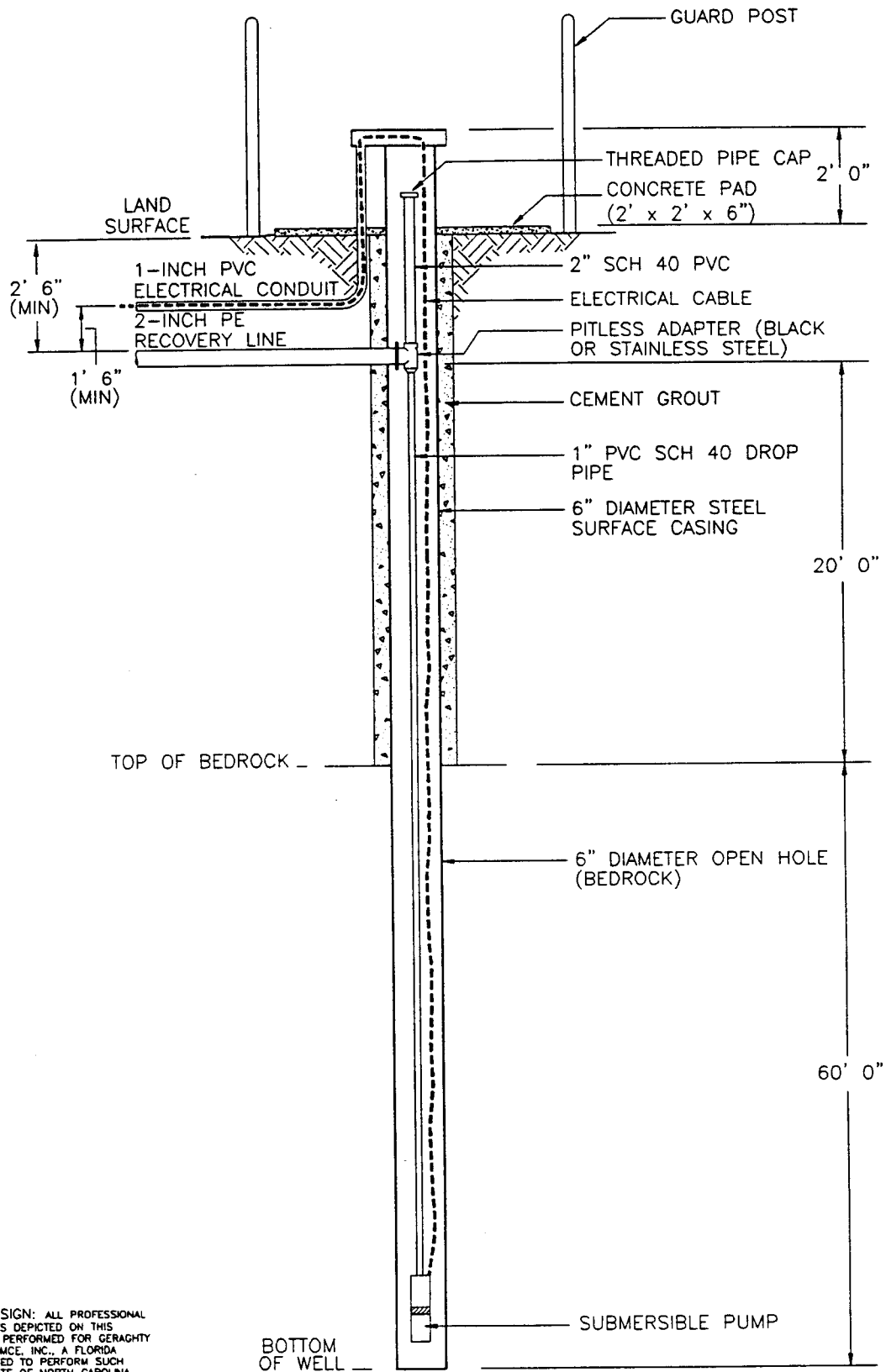
CHECKED: N. SHETTY

DRAWING: BED-REC

FILE NO.: UNC-CHAP

PRJCT NO.: NC0239,004

DWG DATE: 28JAN97



ENGINEERING DESIGN: ALL PROFESSIONAL
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 DRAWING HAVE BEEN PERFORMED FOR GERAGHTY
 & MILLER, INC. BY GACE, INC., A FLORIDA
 CORPORATION QUALIFIED TO PERFORM SUCH
 SERVICES IN THE STATE OF NORTH CAROLINA.

BOTTOM
 OF WELL



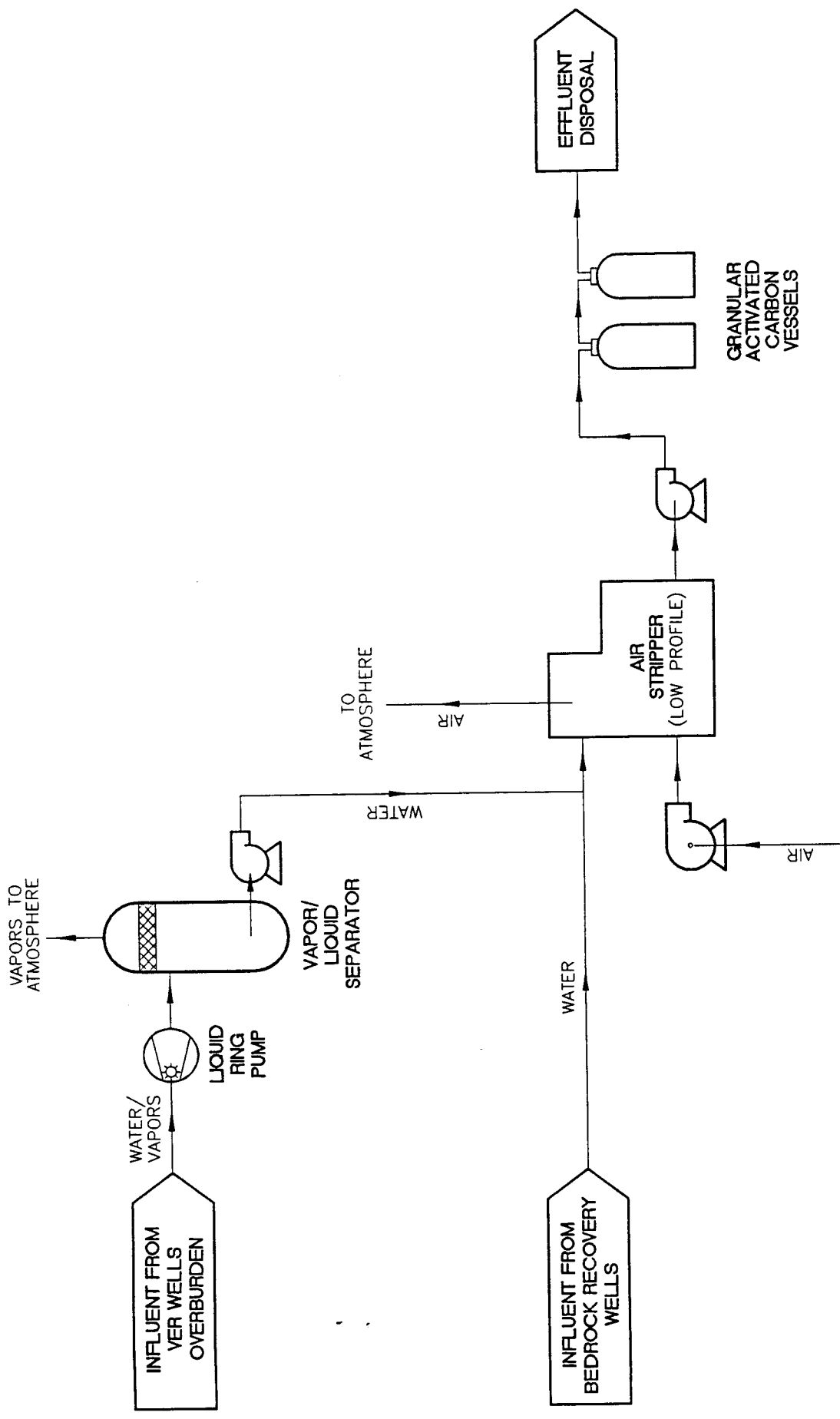
NOT TO SCALE

TYPICAL BEDROCK RECOVERY WELL DETAILS

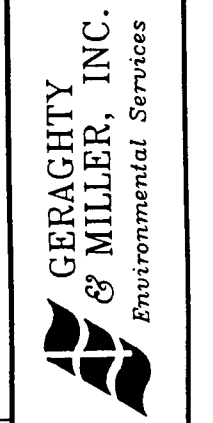
THE UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL
 AIRPORT ROAD WASTE DISPOSAL AREA
 CHAPEL HILL, NORTH CAROLINA

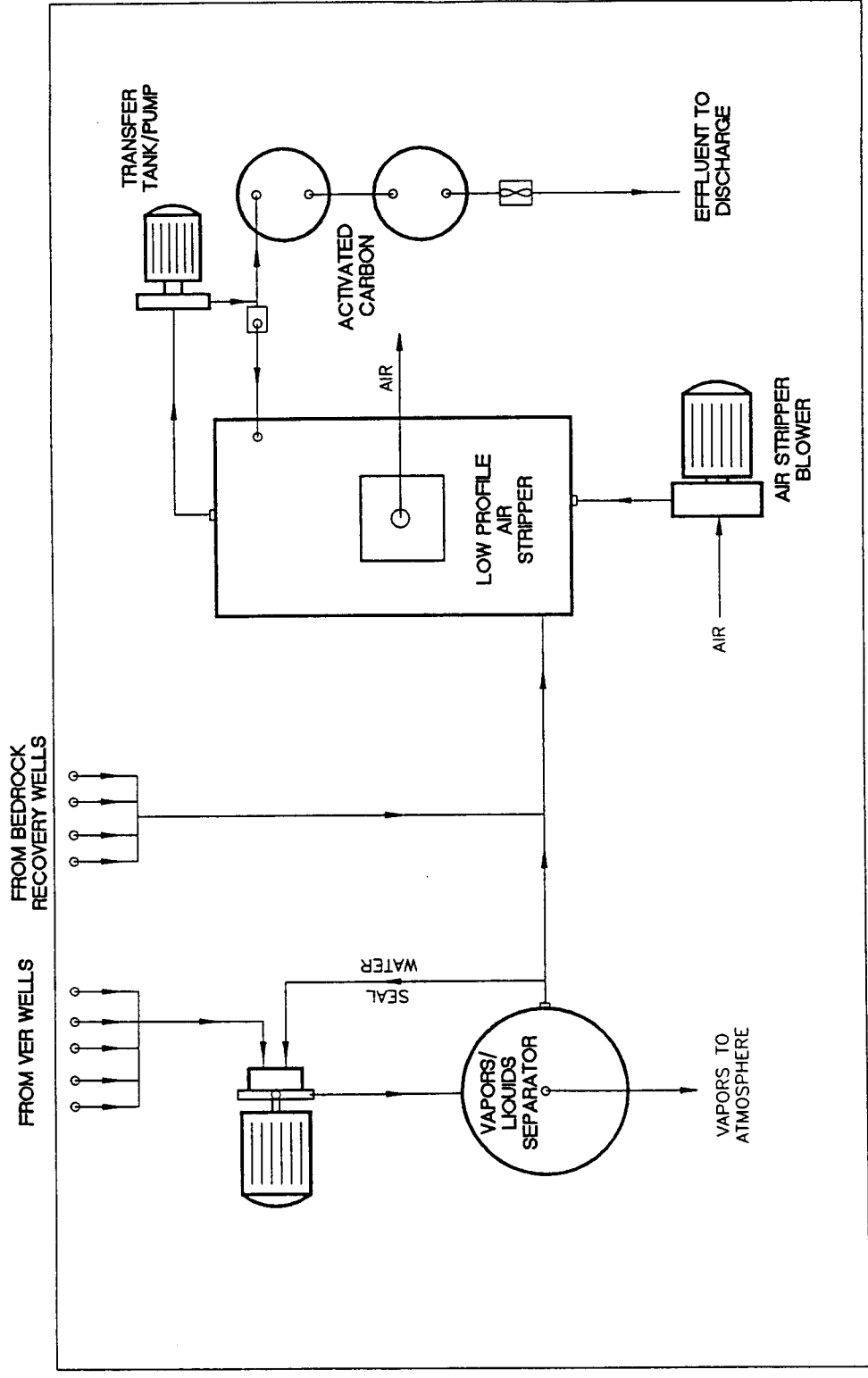
FIGURE



3-4



**PRELIMINARY PROCESS FLOW DIAGRAM
 GROUNDWATER REMEDIATION**
 THE UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL
 AIRPORT ROAD WASTE DISPOSAL AREA
 CHAPEL HILL, NORTH CAROLINA





- LEGEND**
-  PRESSURE RELIEF VALVE
 -  FLOW TOTALIZER



NOT TO SCALE

PRELIMINARY TREATMENT SYSTEM LAYOUT
 THE UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL
 AIRPORT ROAD WASTE DISPOSAL AREA
 CHAPEL HILL, NORTH CAROLINA