



BOARD OF COUNTY COMMISSIONERS  
CITRUS COUNTY  
NEW CITRUS COUNTY COURTHOUSE  
110 North Apopka Avenue  
Inverness, Florida 32650

(904) 726-8500

Reply To:  
Dept. Technical Services  
Div. of Engineering  
Permits & Compliance  
P. O. Box 440  
Lecanto, FL 32661-0440  
(904) 746-2694

November 8, 1988

Mr. Kim Ford  
Dept. of Environmental Regulation  
4520 Oakfair Blvd.  
Tampa, FL 33610-7347

5009-11795  
4009 000086  
WACS 39859

Dear Mr. Ford:

Please find enclosed our response to the list of deficiencies as noted in your interoffice memorandum to Clabe Polk dated August 18, 1988, as well as a copy of the aforementioned memorandum.

As will be noted in our responses, items 1, 2, 3, and 4 are the only items for which a complete response is possible at this time. The additional items (5 through 10) are individually noted in this document, and the responses will hinge on the completion of our Closure Grading and Drainage Plan being developed at this time.

The previous Grading and Drainage Plan for closure was found to be inaccurate following an aerial topographic survey and data compiled regarding depth of refuse. Therefore, we are developing a new plan to coincide with existing field conditions. The survey and topographic data has been compiled, and the engineering design is under way at this time.

Upon completion of the Closure Grading and Drainage Plan, the closure schedule, description of final cover, stormwater system design and Southwest Florida Water Management District permits, closure actions, financial responsibility documents, and closure cost estimates (items 5 through 10) will be submitted for your review. We expect this additional information to be available for submittal by December 9, 1988.

D. E. R.

NOV 18 1988

SOUTH WEST DISTRICT  
TAMPA

November 8, 1988  
Mr. Kim Ford  
Page 2

Please review this information as submitted and, following your review, please inform this office of any further modifications or additional information required to obtain a closure permit for the Citrus County Landfill.

Sincerely,



James E. Barker, Jr.,  
Chief, Permits & Compliance

JEB:RM:cmh

cc: James W. Pinkerton, Dir. Dept. Technical Services  
Richard A. Berg, Dir. Div. of Engineering



State of Florida  
DEPARTMENT OF ENVIRONMENTAL REGULATION

For Routing To Other Than The Addressee	
To: _____	Location: _____
To: _____	Location: _____
To: _____	Location: _____
From: _____	Date: _____

# Interoffice Memorandum

TO: File

THRU: Clabe Polk

FROM: Kim B. Ford (CV)

DATE: August 18, 1988

SUBJECT: Permit Modification for Closure  
S009-111795  
Citrus County Landfill

Information received July 5, 1988 regarding closure of the Citrus County Central Class I Sanitary Landfill is extremely incomplete and inadequate. A meeting held between Citrus County and the Department on April 11, 1988, outlined specific items that needed to be addressed by Citrus County, furthermore, the Department suggested ways for Citrus County to submit complete Closure information. Citrus County has again failed to demonstrate a meaningful effort to resolve existing landfill problems.

The information submitted is incomplete or inadequate. The items needed are indicated in the Closure Permit Application Form and as follows:

1. Lease/ownership agreement shall be submitted and shall verify conformance with Rules 17-7.070 through 17-7.076, F.A.C., for long-term care, right of entry, and groundwater monitoring.
2. Area Information Report shall be submitted.
3. Gas Migration Investigation to be conducted ASAP, and results submitted.
4. Groundwater assessment is needed based upon more recent data.
5. Closure Schedule of four years is unacceptable and shall be revised.

Memo to File/Citrus County Landfill  
August 18, 1988  
Page Two

6. Final Cover shall be completely described including the source of material, permeability, construction methods, and compaction.
7. Stormwater System shall meet SWFWMD requirements as necessary and verification of SWFWMD approvals shall be submitted.
8. Closure actions shall be completely described including placement of cover, grading, construction of berms, ditches, roads, ponds, gas controls or wells, and seeding or sodding.
9. Financial Responsibility documents shall be provided.
10. Closure Cost Estimates shall be provided.

In order for the existing 60 acre landfill site to conform to the requirements of F.A.C. Chapter 17-7, additional activities are recommended as per the memorandum dated April 6, 1988, and as follows:

1. By June 1, 1989, the surface water management system shall be constructed as required.
2. By June 1, 1989, the closure of unlined and inactive portions of the landfill areas shall be completed as required.
3. Citrus County shall submit monthly progress reports until the activities in 1. and 2. are completed.

The County's failure to respond in a timely manner and failure to provide acceptable explanations or time frames for compliance indicates unwillingness on the County's part to resolve this matter amicably. The matter should be referred to the appropriate enforcement personnel for resolution.

KBF/ab



## I N D E X

### RESPONSE TO:

ITEM 1, Lease/Ownership Agreement.....	TAB 1
ITEM 2, Area Information Report.....	TAB 2
ITEM 3, Gas Migration Investigation.....	TAB 3
ITEM 4, Groundwater Assessment.....	TAB 4
ITEM 5, Closure Schedule.....	TAB 5
ITEM 6, Final Cover Description.....	TAB 6
ITEM 7, Stormwater System Information & Permits.....	TAB 7
ITEM 8, Closure Actions Description.....	TAB 8
ITEM 9, Financial Responsibility Document.....	TAB 9
ITEM 10, Closure Cost Estimates.....	TAB 10

- 1) Attached is a copy of a letter dated October 11, 1988 to Jim Barker from Mr. Helm of the Florida Department of Agriculture and Consumer Services. The letter confirms that Citrus County has been granted continuous access to the 60 acre landfill site for long term care and groundwater monitoring. This access is terminated in no less than 20 years.



STATE OF FLORIDA  
DOYLE CONNER, COMMISSIONER

# FLORIDA DEPARTMENT OF AGRICULTURE & CONSUMER SERVICES

DIVISION OF FORESTRY ■ 3125 CONNER BLVD. ■ TALLAHASSEE, FLORIDA 32399-1650

6231.3  
October 11, 1988

OCT 14 1988

CITRUS COUNTY-012-012

Mr. James Barker, Department  
of Technical Services  
Citrus County Engineering  
Division  
110 North Apopka Avenue  
Inverness, Florida 32650

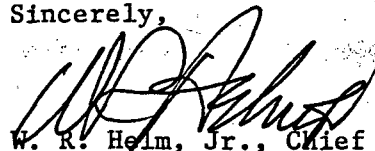
Dear Mr. Barker:

Reference is made to your recent telephone conversation with John O'Meara concerning access to the 60 acre Citrus County Landfill on Withlacoochee State Forest, after the current Extension Agreement terminates.

This letter confirms that for a minimum of 20 years, Citrus County will be granted continuous access to the entire 60 acre parcel for purposes of long term care and maintenance and for groundwater monitoring.

If you require additional information, please advise.

Sincerely,

  
W. R. Helm, Jr., Chief  
Forest Management  
Division of Forestry  
904/488-6611

cc: Bill Korn, Withlacoochee Forestry Center Manager

- 2) Please find attached several copies supplying information for the lands near our 60 acre landfill site.

Attachment (A) is a copy of U.S. Geologic Survey Lecanto quadrangle showing the topography of the area in question.

Attachment (B) is a copy of the above with surface water drainage patterns shown. There are no hydrologic features within this area due to higher altitude and a high percolation rate.

Attachment (C) is a copy of soil bores taken on the present 60 acre site. The soil conditions encountered at the boring sites consisted of a dappled mixture of sands, clayey sands and silty sands varying in depth and density. The conditions at this site should be representative of the typical soil condition within a one mile radius of the landfill. The area in question should not contain unconsolidated deposits, major confining units or sinkholes.

Attachment (D) is hydrolgeologic information copied from the Groundwater Resource Availability Inventory for Citrus County supplied by Southwest Florida Water Management District. The area in question is highlighted on each of the four copies. Included are thickness of the upper confining unit, depth to top of the Floridan aquifer, potable water zone thickness, and flow direction of the Floridan

aquifer.

The groundwater table has been recorded at approximately 120 feet below ground elevation at the landfill site. This is representative of the area with topographic variations resulting in some changes. The groundwater typically flows from east to west. There is no recharge/discharge areas within one mile of the landfill site. There are numerous private wells north of the landfill and no public wells within the one mile radius.

Groundwater quality is addressed under response #4 groundwater assessment. There are no surface water bodies within a one mile radius of the landfill, hence there is no surface water quality report.

Land use information is as follows:

Attachment (E) shows highlighted adjacent properties with ownerships being:

Lot 13000, Garland Pottersfield Estate  
Union Building  
Charleston, VA 25301

Lot 12350, Henry Johansky & Florene Pitt  
280 Malcolm Ave.  
Garfield, NJ 07026

80 acres of land along the eastern border is owned by Citrus County.

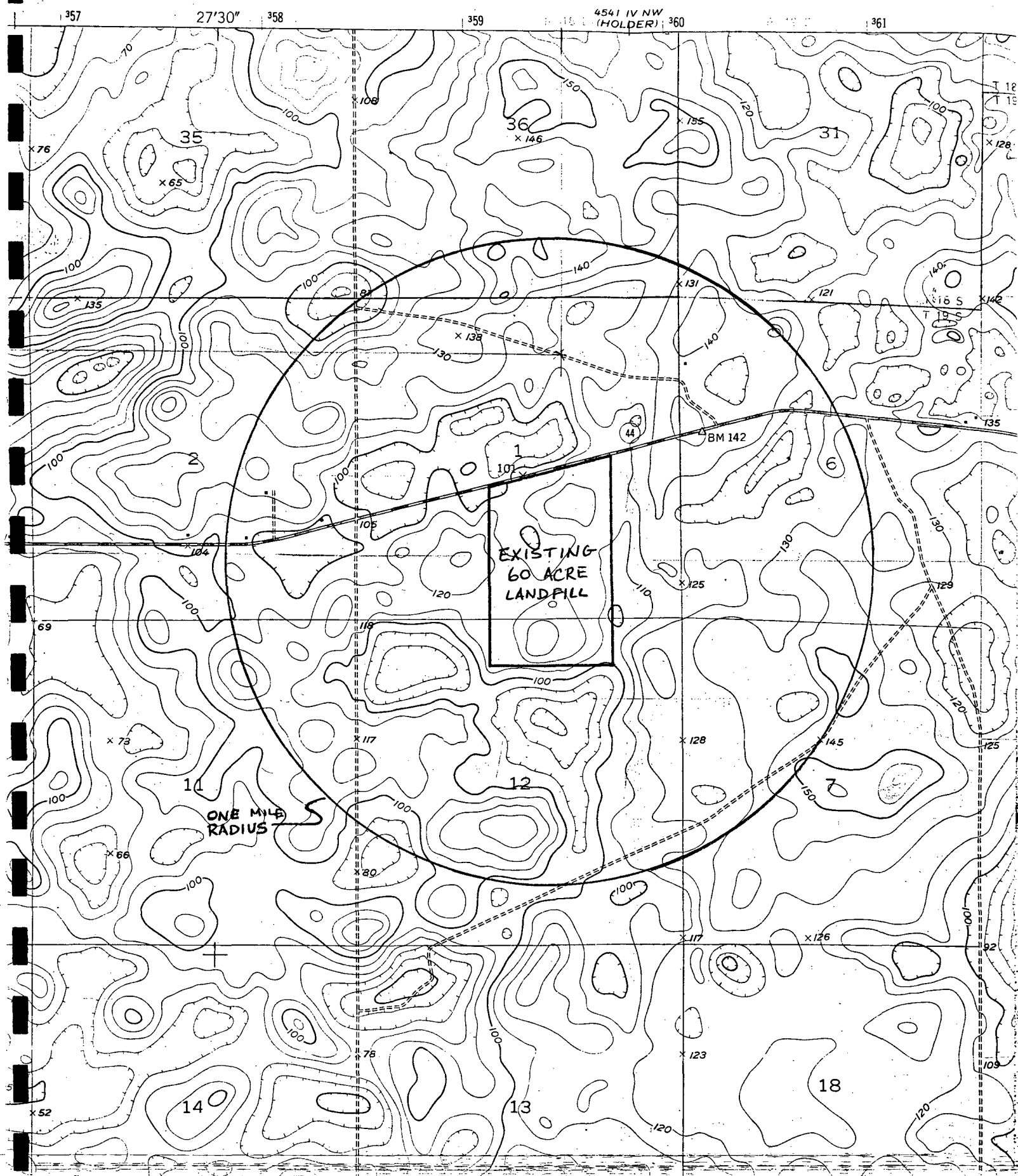
Land along south and west perimeters is property of U.S. Department of Agriculture and Consumer Services.

Florida Department of Transportation owns land immediately adjacent to landfill on north side.

Attachment (F) indicates present zoning classifications of lands within a one mile radius of the landfill. The adjacent lands are used for light industrial, single family residential, and government (forestry) purposes.

Attachment (G) shows all roads and highways within the prescribed area.

COPIED FROM U.S. GEOLOGIC SURVEY  
LECANTO QUADRANGLE (TOPOGRAPHIC)



COPIED FROM U.S. GEOLOGIC SURVEY  
ECANTO QUADRANGLE (TOPOGRAPHIC)  
WITH SURFACE DRAINAGE PATTERNS

## ■ ECANTO QUADRANGLE (TOPOGRAPHIC)

WITH SURFACE DRAINAGE PATTERNS

. 357

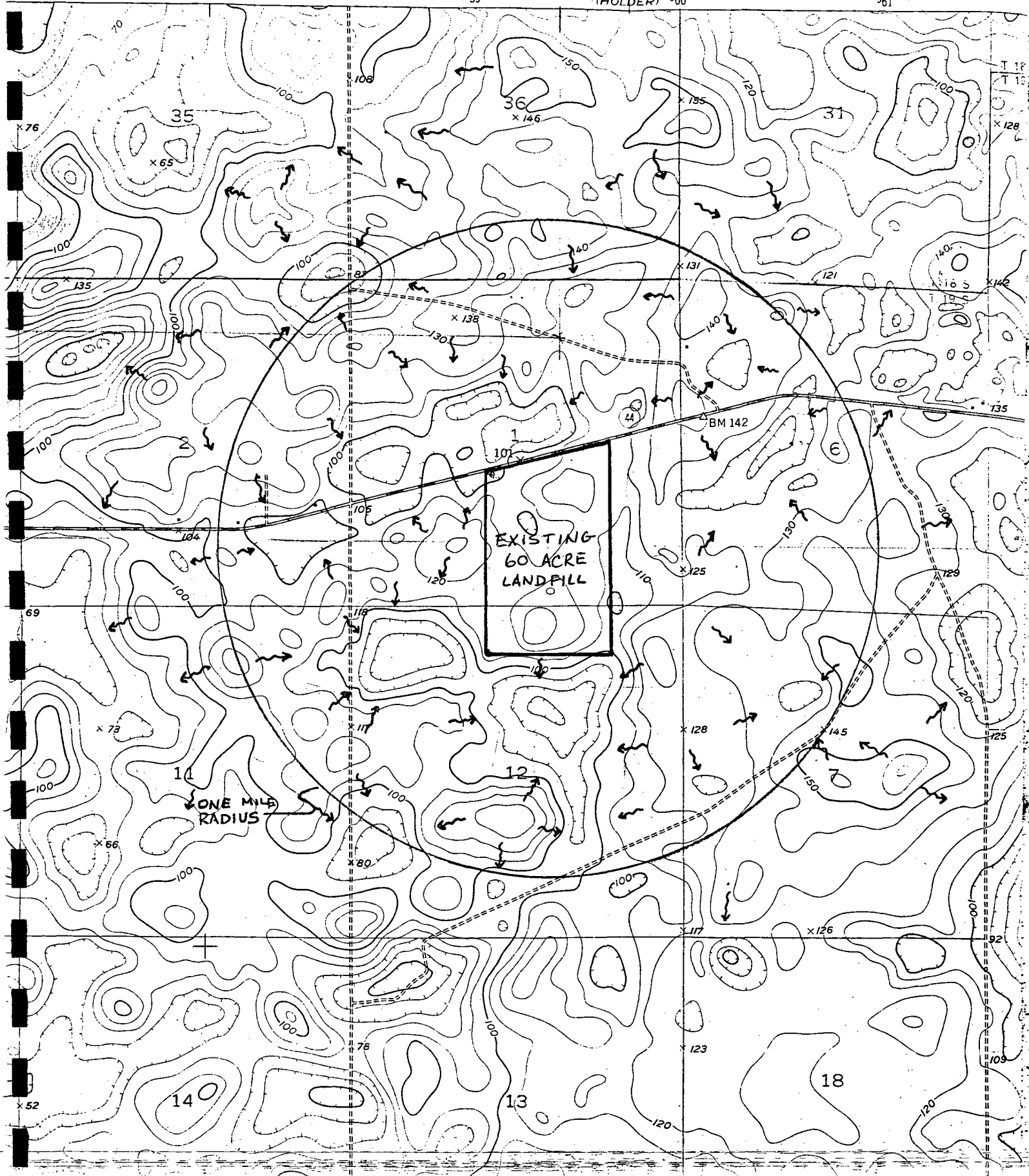
27'30"

358

359

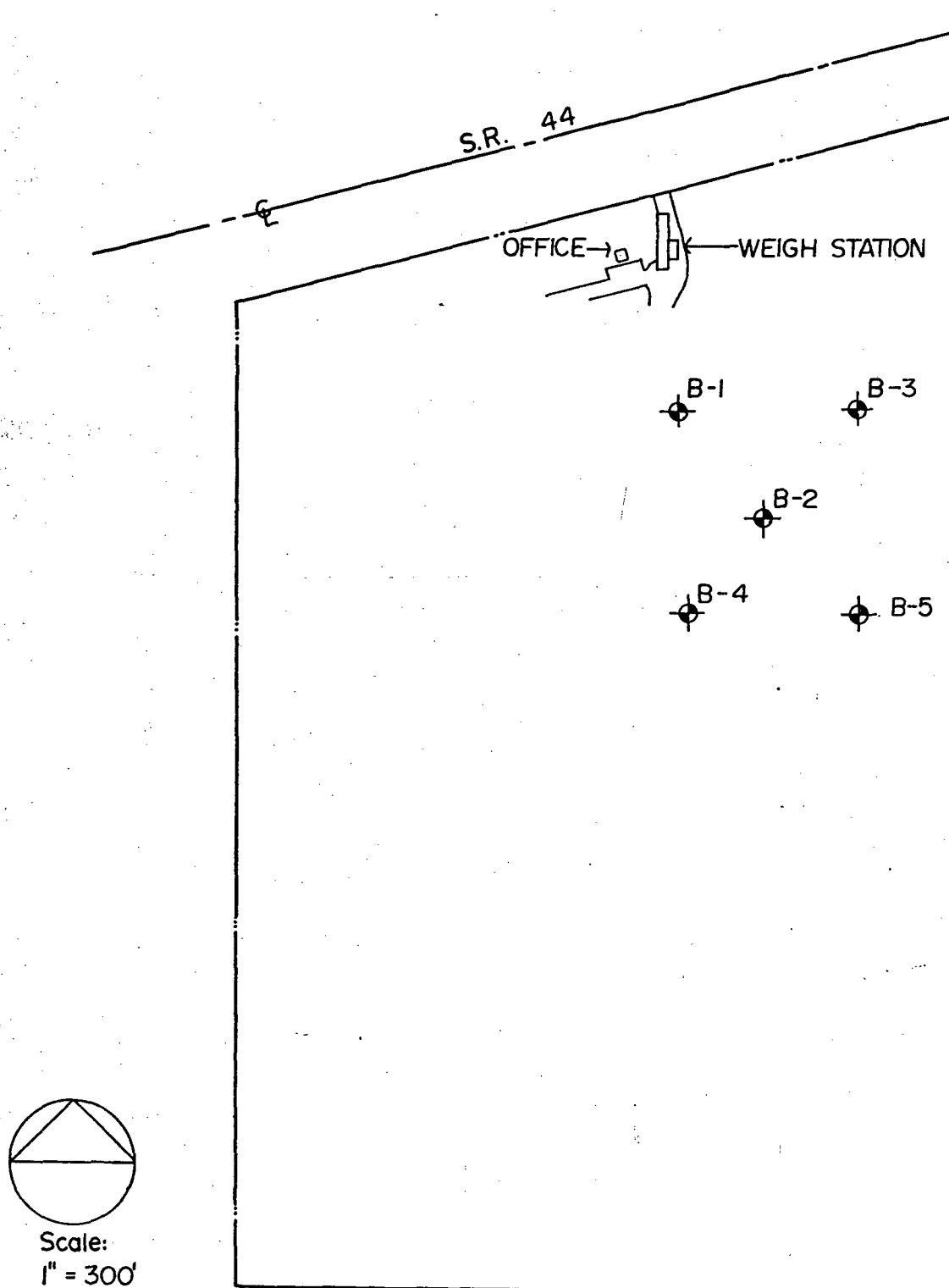
4541 IV NW  
(HOLDER) 360

361



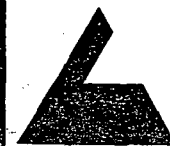


# ATTACHMENT (C) GEOLOGIC REPORT



TEST BORING LOCATION

CITRUS COUNTY LANDFILL



PROJECT NO. T-5077

LAW ENGINEERING TESTING CO.

# KEY TO CLASSIFICATIONS AND SYMBOLS

## CORRELATION OF PENETRATION RESISTANCE WITH RELATIVE DENSITY AND CONSISTENCY

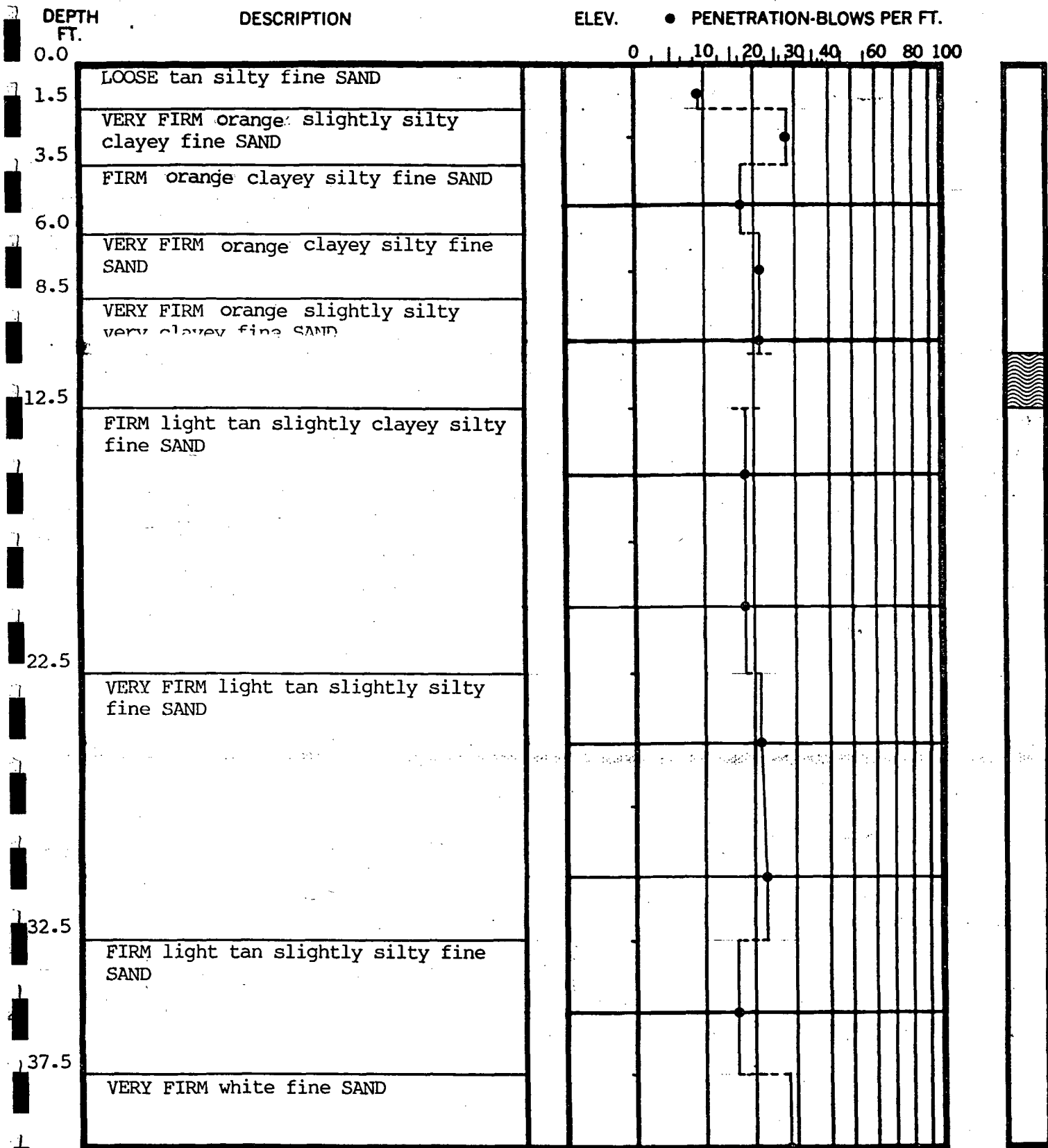
	<u>NO. OF BLOWS, N</u>			<u>RELATIVE DENSITY</u>
SAND	0	-	4	VERY LOOSE
	5	-	10	LOOSE
	11	-	20	FIRM
	21	-	30	VERY FIRM
	31	-	50	DENSE
	OVER 50			VERY DENSE
				<u>CONSISTENCY</u>
SILTS AND CLAYS	0	-	1	VERY SOFT
	2	-	4	SOFT
	5	-	8	FIRM
	9	-	15	STIFF
	16	-	30	VERY STIFF
	31	-	50	HARD
OVER 50			VERY HARD	

## SYMBOLS



Undisturbed Sample (UD) Recovered

100/2"	-	Number of Blows (100) to Drive the Spoon a Number of Inches (2)
AX, BX, NX	-	Core Barrel Sizes Which Obtain Cores 1-1/8, 1-5/8 and 2-1/8 Inches in Diameter Respectively
65%	-	Percentage (65) of Rock Core Recovered
RQD	-	Rock Quality Designation - % of Core Segments 4 or More Inches Long
▽	-	Water Table At Least <u>24</u> Hours After Drilling
▽	-	Water Table One Hour or Less After Drilling
◀	-	Loss of Drilling Water
PP	-	Pocket Penetrometer Reading in TSF (kg/cm <sup>2</sup> )
TV	-	Torvane Reading in TSF (kg/cm <sup>2</sup> )



## TEST BORING RECORD

BORING AND SAMPLING MEETS ASTM D-1586  
CORE DRILLING MEETS ASTM D-2113

PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER  
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.



UNDISTURBED SAMPLE



WATER TABLE, 24 HR.



WATER TABLE, TOB



C/O ROCK CORE RECOVERY

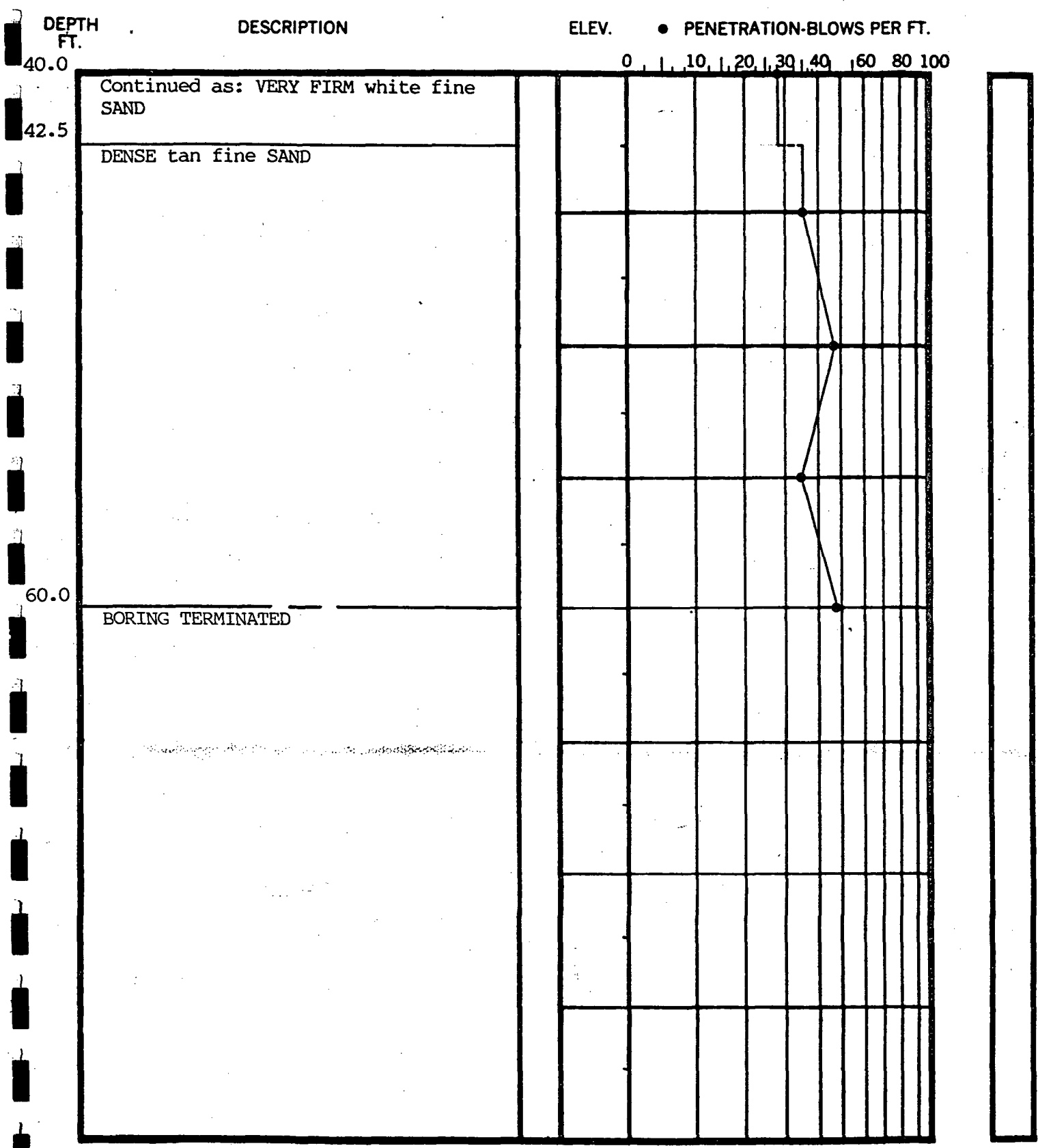


LOSS OF DRILLING WATER

BORING NO. B-1  
DATE DRILLED 12-10-86  
JOB NO. T-5077

SHT. 1 OF 2

LAW ENGINEERING TESTING CO.



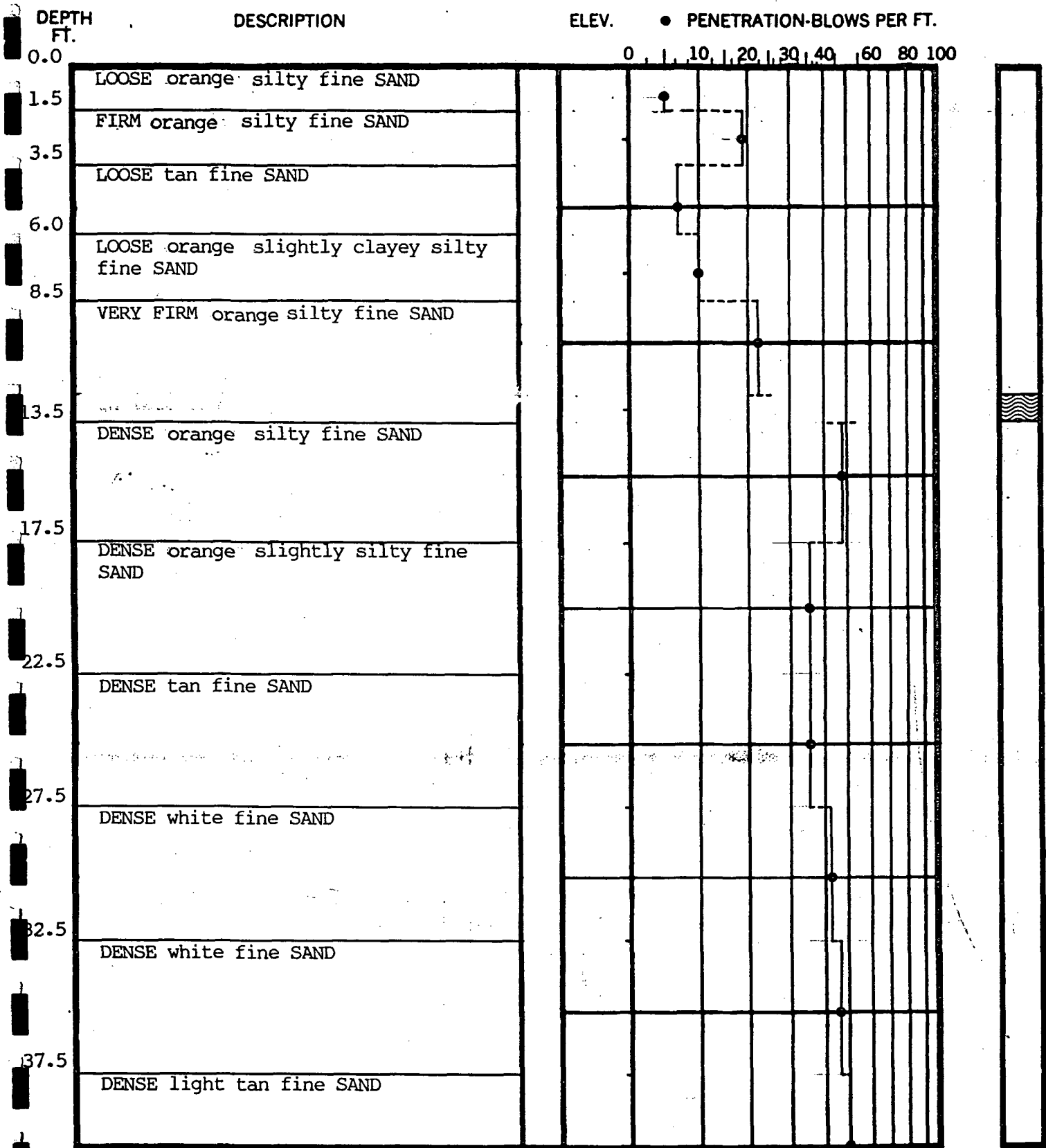
# TEST BORING RECORD

BORING AND SAMPLING MEETS ASTM D-1586  
CORE DRILLING MEETS ASTM D-2113

PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER  
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

- UNDISTURBED SAMPLE
- WATER TABLE, 24 HR.
- WATER TABLE, TOB
- C/O ROCK CORE RECOVERY
- LOSS OF DRILLING WATER

BORING NO. B - 1  
DATE DRILLED 12-10-86  
JOB NO. T-5077  
SHT. 2 OF 2  
LAW ENGINEERING TESTING CO.



# TEST BORING RECORD

BORING AND SAMPLING MEETS ASTM D-1586  
CORE DRILLING MEETS ASTM D-2113

PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER  
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

- UNDISTURBED SAMPLE
- WATER TABLE, 24 HR.
- WATER TABLE, TOB
- C/O ROCK CORE RECOVERY
- LOSS OF DRILLING WATER

BORING NO. B-2  
DATE DRILLED 12-11-86  
JOB NO. T-5040  
SHT. 1 OF 2  
LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	ELEV.	● PENETRATION-BLOWS PER FT. 0 10 20 30 40 60 80 100										
40.0	Continued as: DENSE light tan fine SAND												
42.5	VERY DENSE light orange fine SAND												
47.5	VERY DENSE white fine SAND												
57.5	VERY DENSE tan fine SAND												
60.0	BORING TERMINATED												

## TEST BORING RECORD

BORING AND SAMPLING MEETS ASTM D-1586  
CORE DRILLING MEETS ASTM D-2113

PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER  
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

 UNDISTURBED SAMPLE

 WATER TABLE, 24 HR.

 WATER TABLE, TOB

 C/O ROCK CORE RECOVERY

 LOSS OF DRILLING WATER

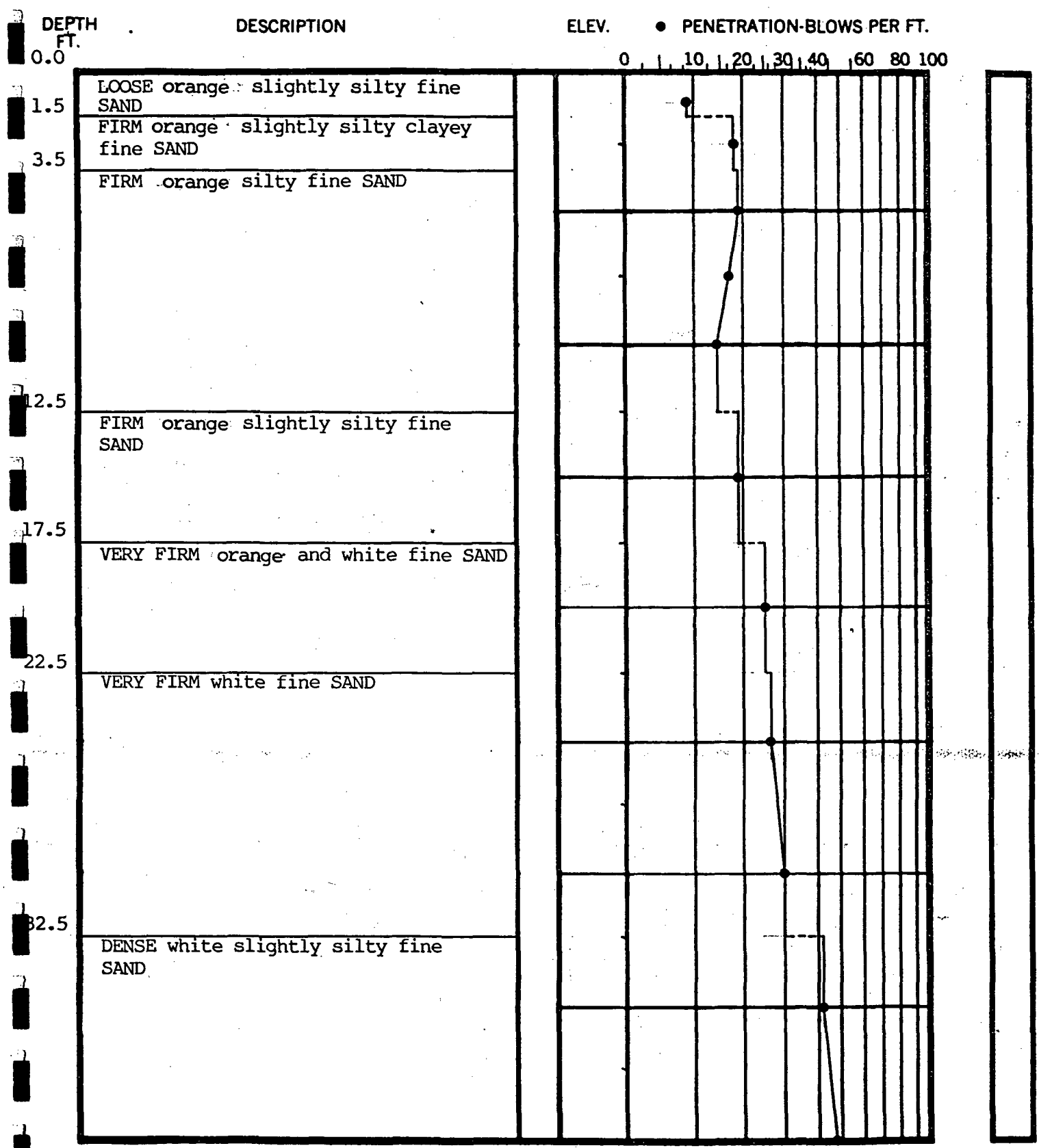
BORING NO. B-2

DATE DRILLED 12-11-86

JOB NO. T-5040

SHT. 2 OF 2

LAW ENGINEERING TESTING CO.



TEST BORING RECORD

BORING AND SAMPLING MEETS ASTM D-1586  
CORE DRILLING MEETS ASTM D-2113

PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER  
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE

C/O ROCK CORE RECOVERY

WATER TABLE, 24 HR.

WATER TABLE, TOB

LOSS OF DRILLING WATER

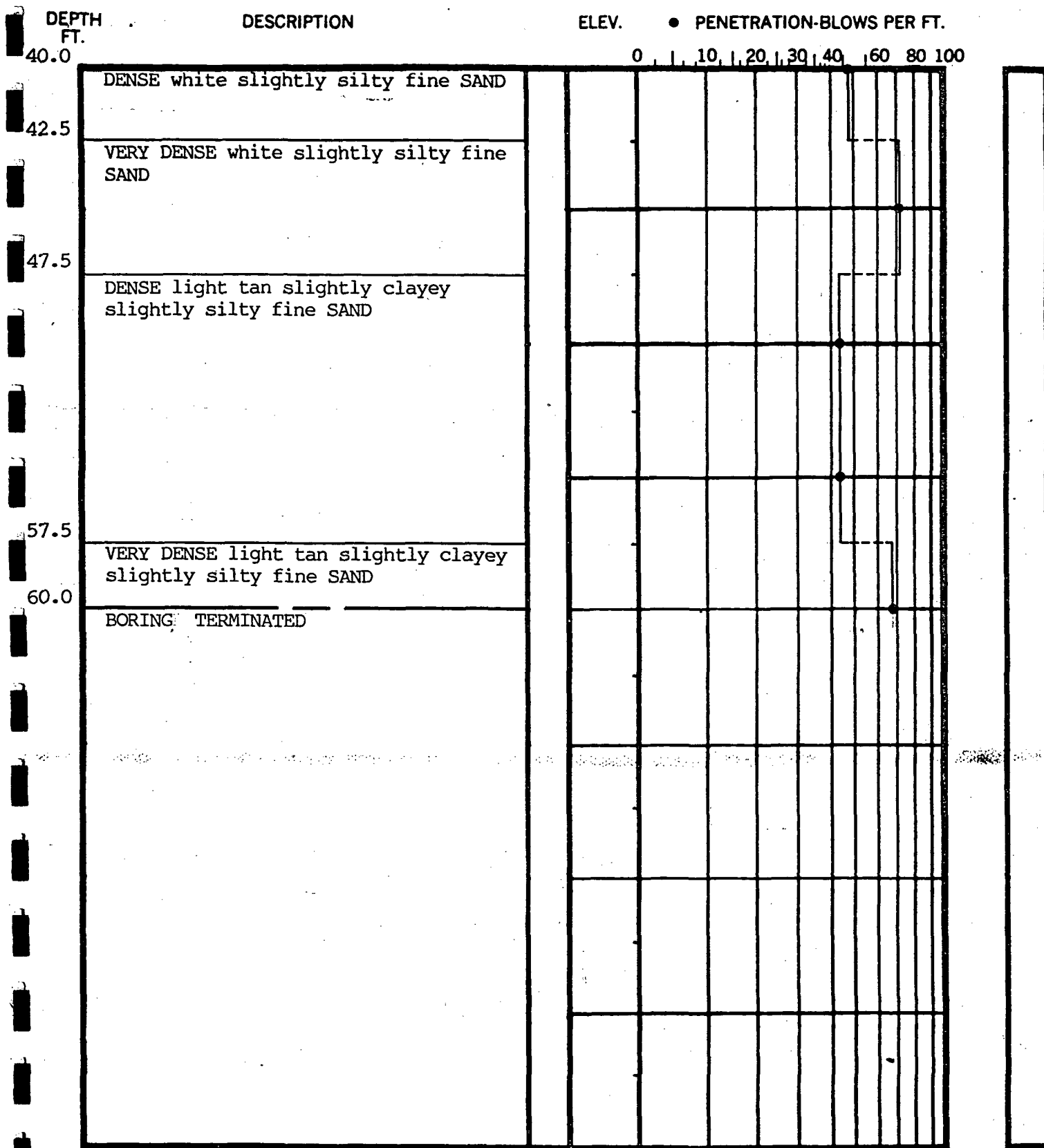
BORING NO. B-3

DATE DRILLED 12-12-86

JOB NO. T-5077

SHT. 1 OF 2

LAW ENGINEERING TESTING CO.



## TEST BORING RECORD

BORING AND SAMPLING MEETS ASTM D-1586  
CORE DRILLING MEETS ASTM D-2113

PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER  
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.



UNDISTURBED SAMPLE



WATER TABLE, 24 HR.



WATER TABLE, TOB



C/O ROCK CORE RECOVERY



LOSS OF DRILLING WATER

BORING NO. B-3  
DATE DRILLED 12-12-86  
JOB NO. T-5077

SHT. 2 OF 2

LAW ENGINEERING TESTING CO



DEPTH  
FT.

DESCRIPTION

ELEV.

● PENETRATION-BLOWS PER FT.

0 10 20 30 40 60 80 100

0.0

FIRM orange slightly silty fine SAND

1.5

VERY FIRM orange slightly clayey  
silty fine SAND

6.0

VERY FIRM orange slightly clayey  
slightly silty fine SAND

8.5

FIRM orange slightly clayey silty  
fine SAND

12.5

VERY FIRM orange silty fine SAND

17.5

DENSE orange silty fine SAND

22.5

VERY DENSE orange slightly silty  
fine SAND

27.5

DENSE orange slightly silty fine  
SAND

32.5

VERY DENSE orange slightly silty  
fine SAND

37.5

VERY DENSE grey slightly silty  
clayey fine SAND

## TEST BORING RECORD

BORING AND SAMPLING MEETS ASTM D-1586  
CORE DRILLING MEETS ASTM D-2113PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER  
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE



WATER TABLE, 24 HR.



WATER TABLE, TOB



C/O ROCK CORE RECOVERY



LOSS OF DRILLING WATER

BORING NO. B-4DATE DRILLED 12-15-86JOB NO. T-5077

SHT. 1 OF 2

LAW ENGINEERING TESTING CO.

[illegible]

## TEST BORING RECORD

**BORING AND SAMPLING MEETS ASTM D-1586**  
**CORE DRILLING MEETS ASTM D-2113**

**PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.**

 **UNDISTURBED SAMPLE**

**100 C/O ROCK CORE RECOVERY**

**WATER TABLE, 24 HR.**

**WATER TABLE, TOB**

LOSS OF DRILLING WATER

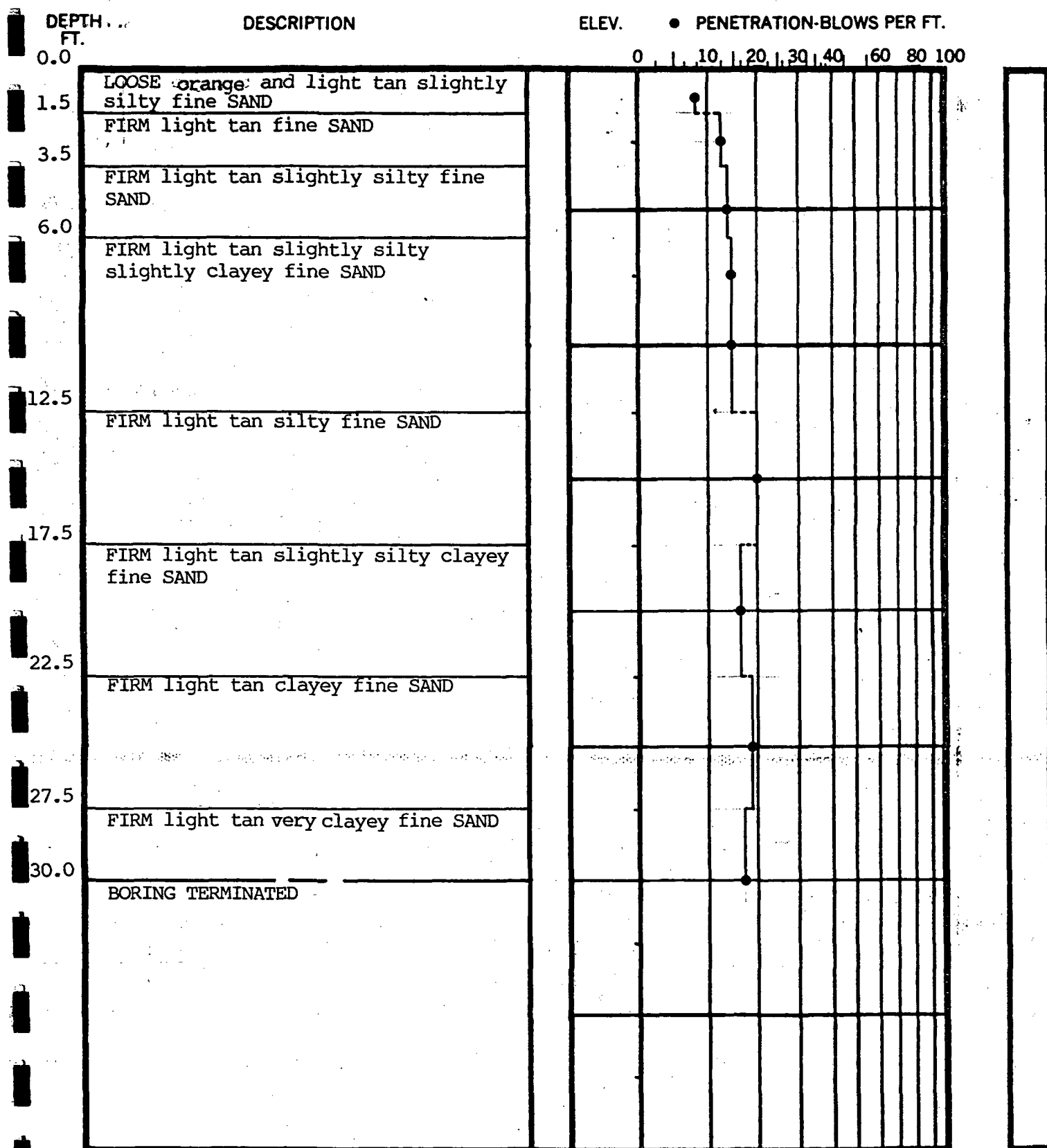
BORING NO. B-4

DATE DRILLED 12-15-86

JOB NO. T-5077

SHT.20F2

**LAW ENGINEERING TESTING CO.**








TEST BORING RECORD

BORING AND SAMPLING MEETS ASTM D-1586  
CORE DRILLING MEETS ASTM D-2113

PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER  
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

BORING NO. B-5  
DATE DRILLED 12-15-86  
JOB NO. T-5077

 UNDISTURBED SAMPLE  
 WATER TABLE, 24 HR.  
 WATER TABLE, TOB  
 C/O ROCK CORE RECOVERY  
 LOSS OF DRILLING WATER

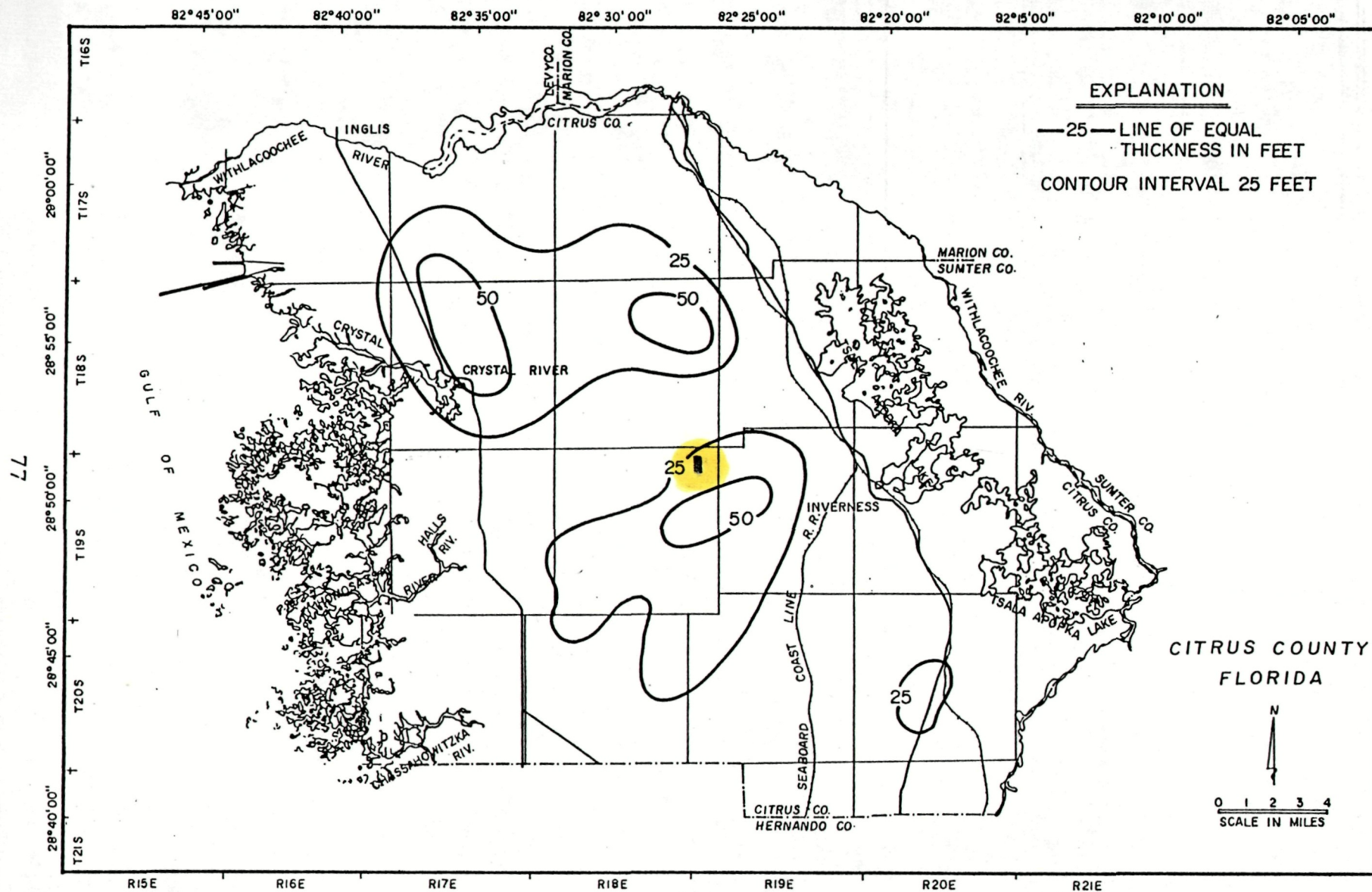


Figure 38. Thickness of the upper Confining Unit in Citrus County (from Buono and others, 1970).



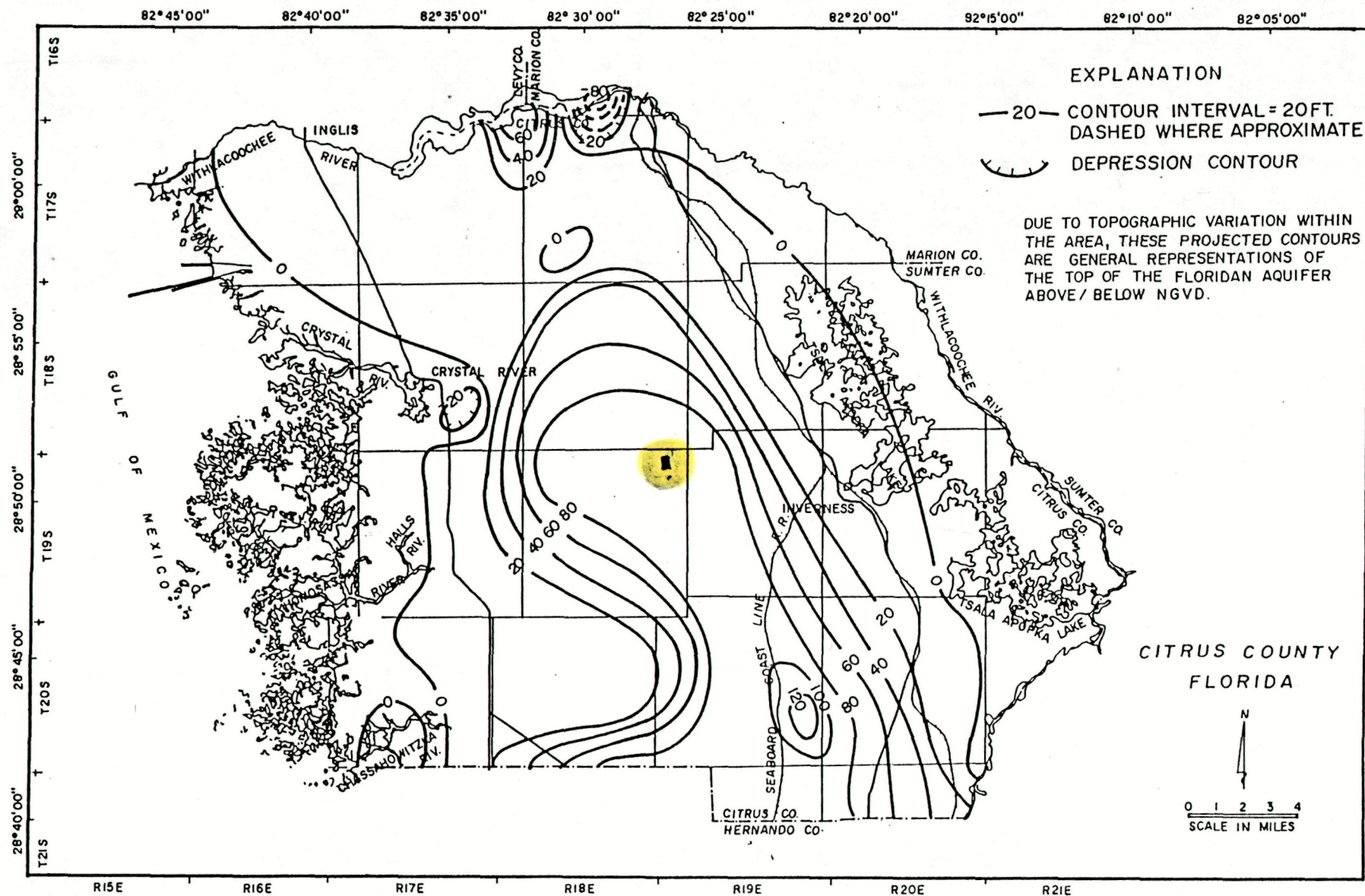


Figure 39. Structure Contour Map of the Top of the Floridan Aquifer Above/Below NGVD.



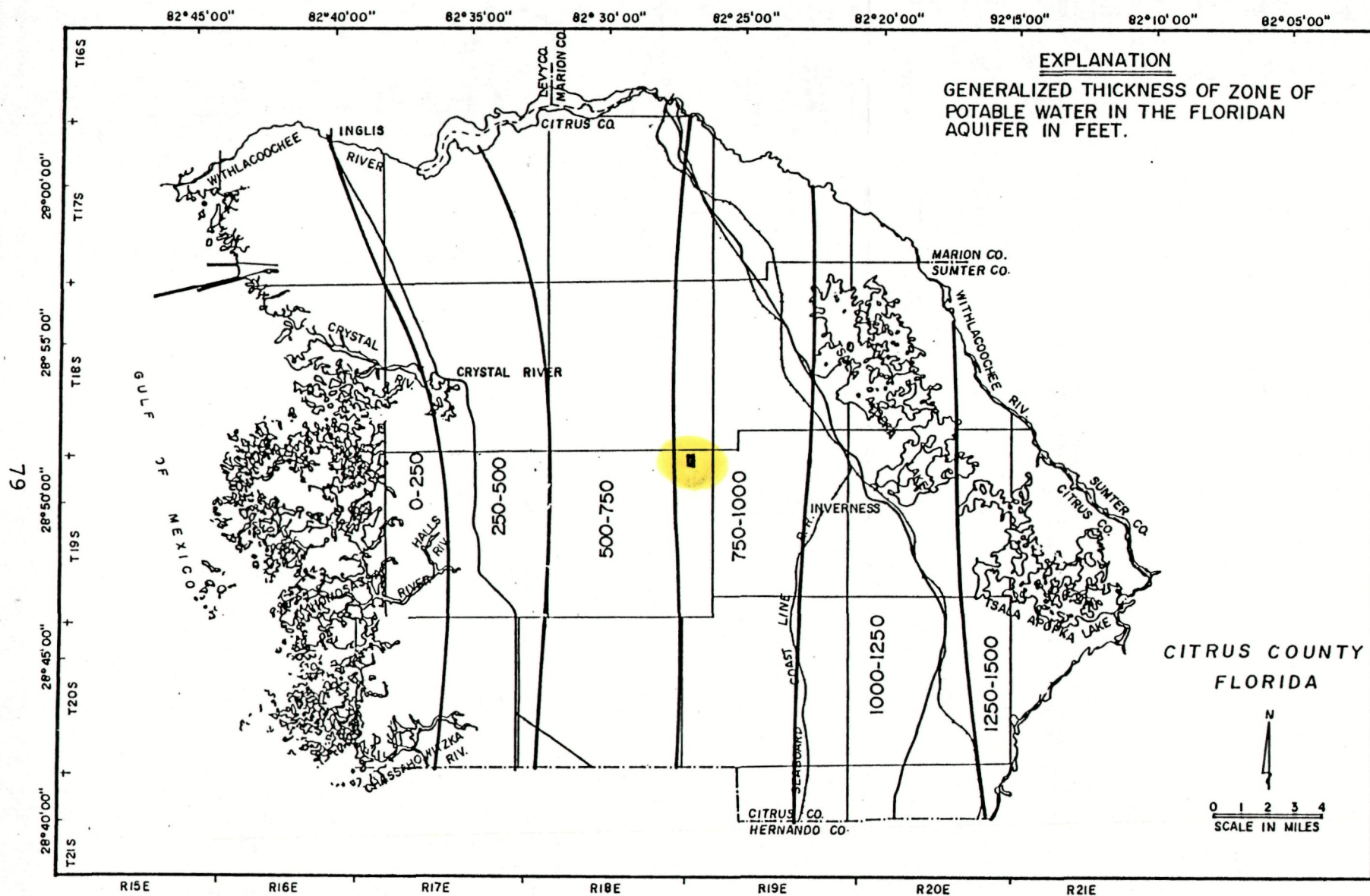


Figure 40. Thickness of the Zone of Potable Water in the Upper Floridan Aquifer (from Causey and Leve, 1976).



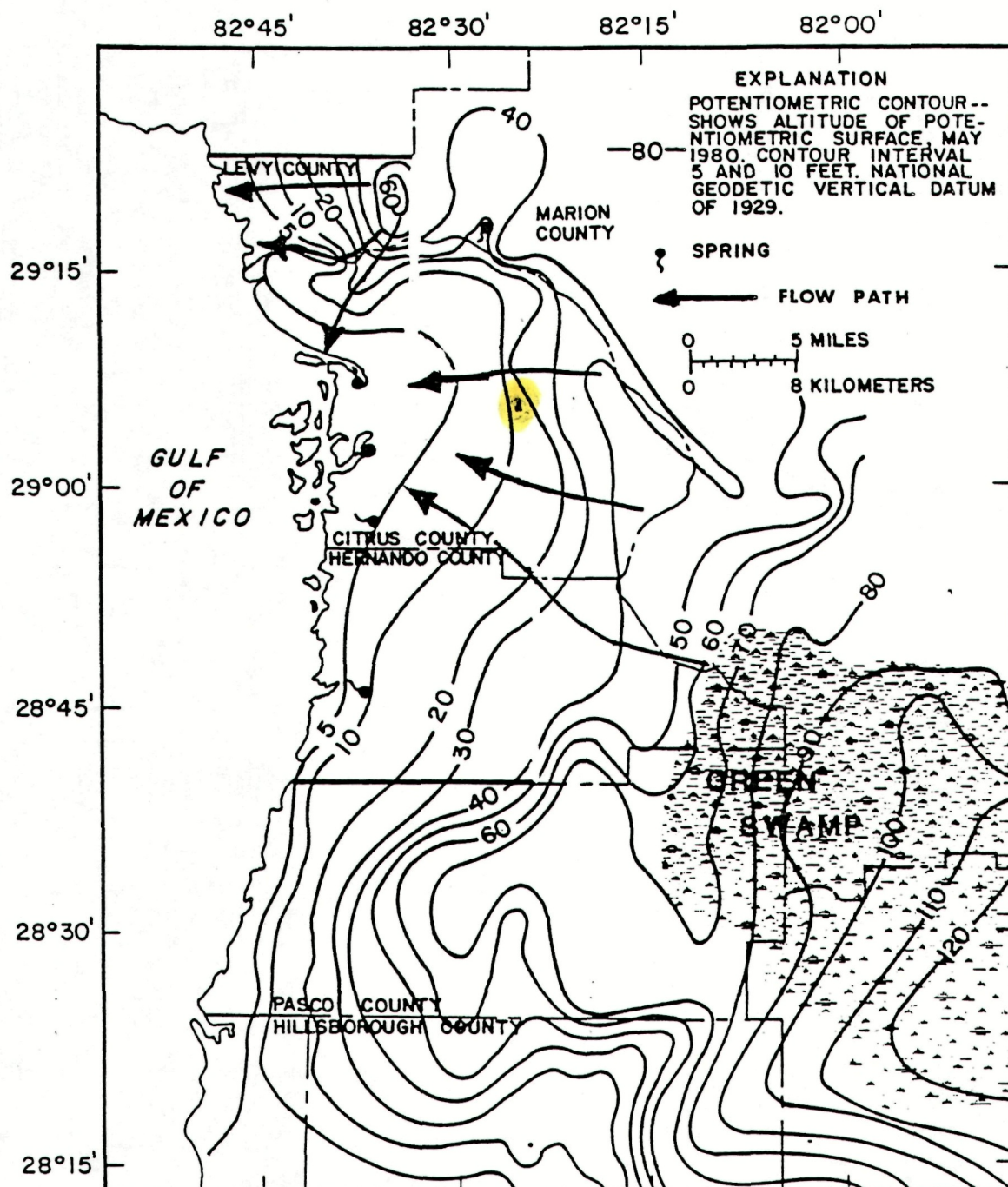
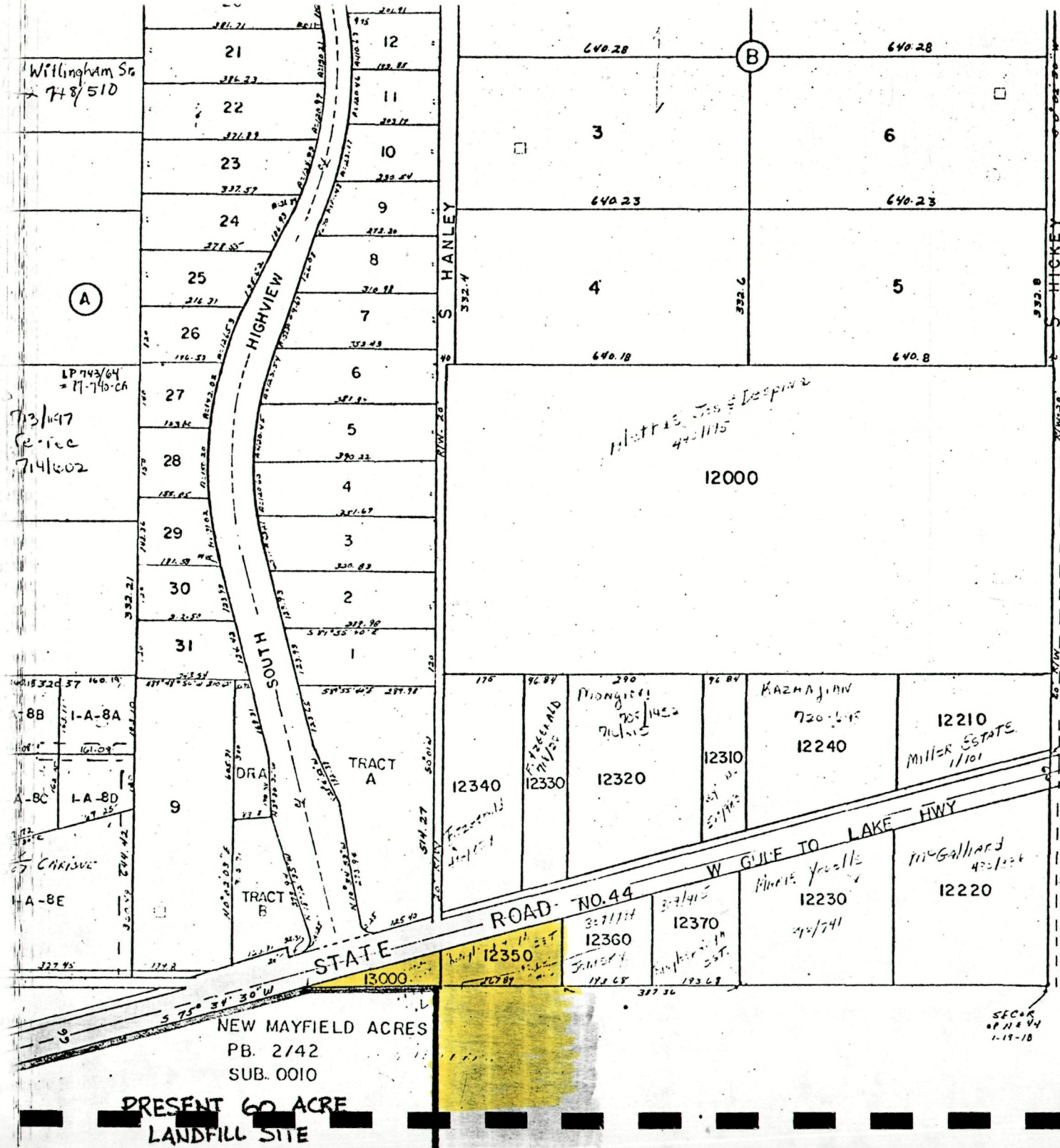


Figure 42. Potentiometric Surface of the Upper Floridan Aquifer Near Citrus County Showing Flow Paths, May 1980 (modified from Yobbi and others, 1980).





Sec. 1 Twp. 19 Rng. 18  
Quarter NE 1/4  
Aerial 110A  
MAP 345 A  
Scale: 1" = 200

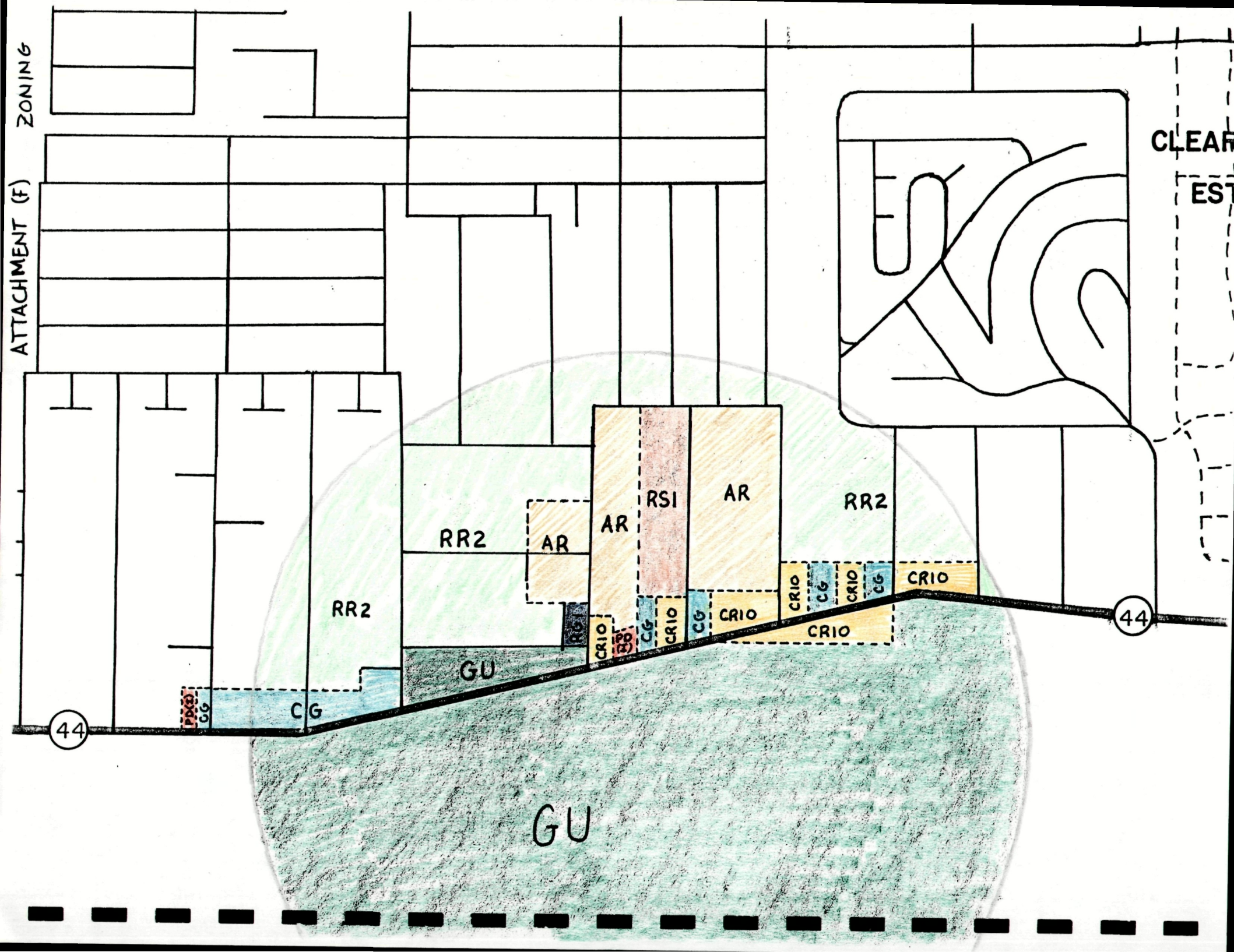
Prepared by the office of  
CHARLES H. ALLEN  
Citrus County Property Appraiser  
FOR ASSESSMENT PURPOSES ONLY

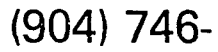


ATTACHMENT (F)

ZONING

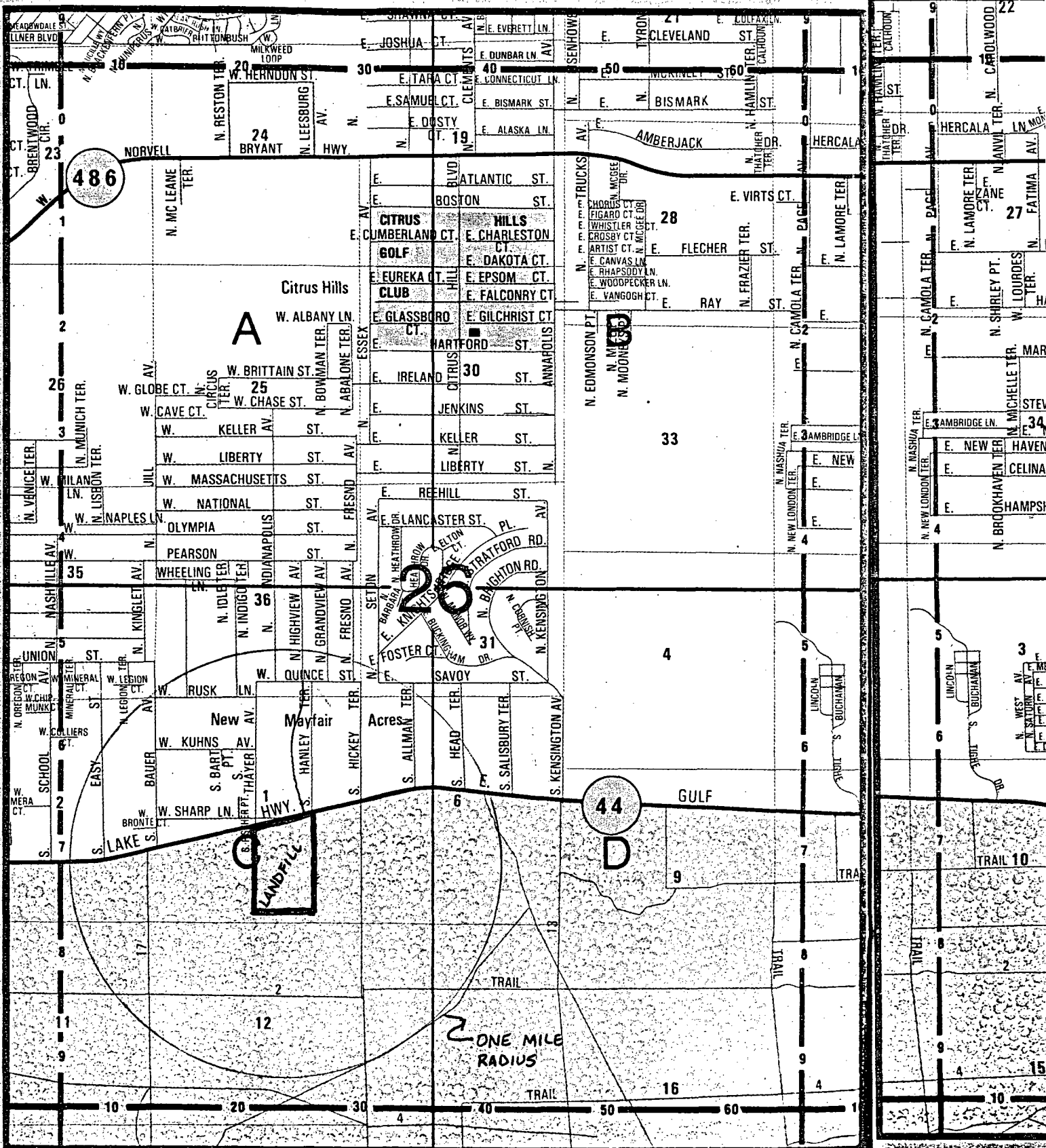
CLEAR  
EST





36 HOLES OF GOLF • HOMES • HOMESITES • CONDOS

## ENTRANCES ON ROUTES 44 & 486 BETWEEN CRYSTAL RIVER AND INVERNESS



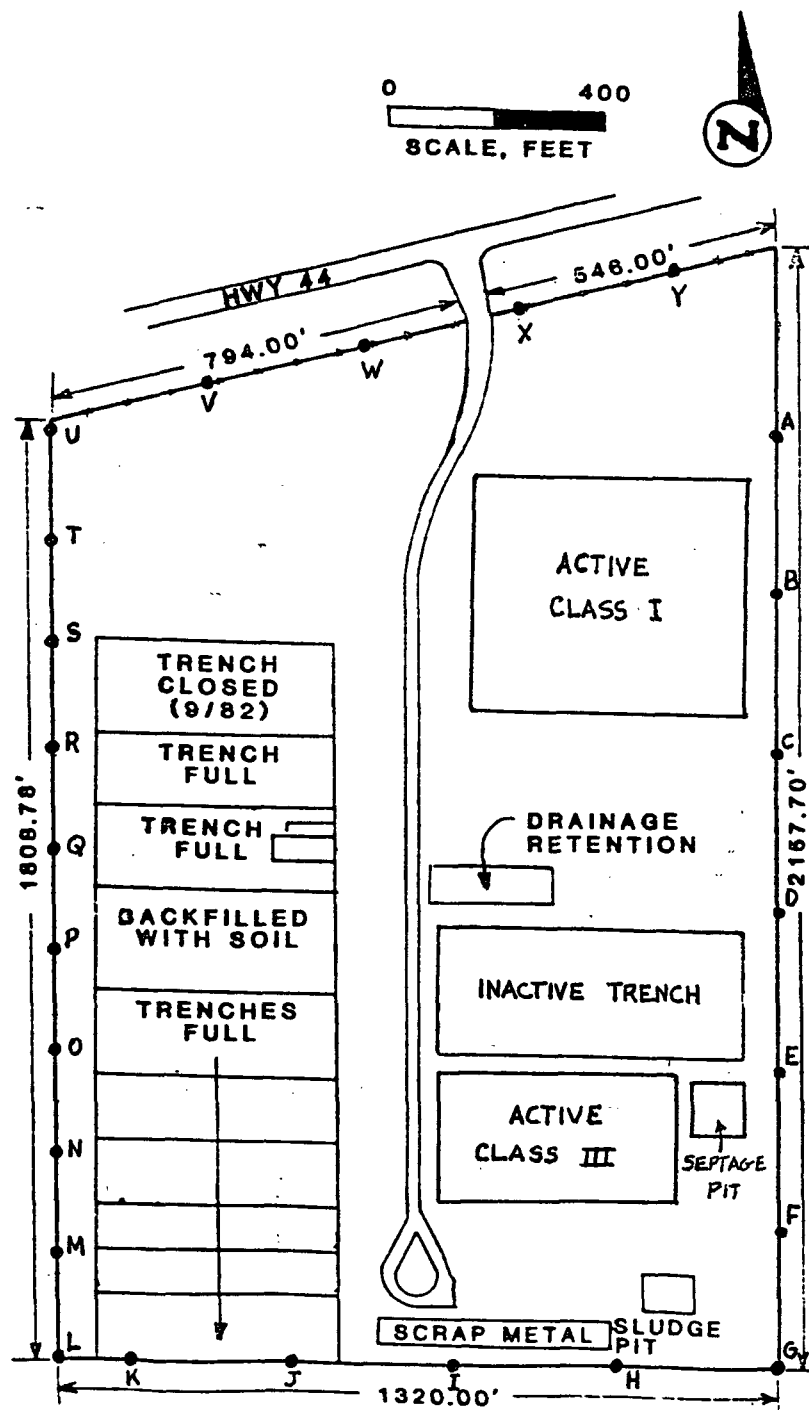
### 3) RESULTS OF GAS MIGRATION TESTING

Tests were conducted on October 4, 1988 at the Citrus County Central Landfill to determine the extent and concentration of methane gas migration. The tests were conducted at 300 +/- foot intervals along the perimeter of the property, except for the west boundary which was tested at 200 +/- foot intervals due to the proximity of numerous inactive trenches.

A 3/4 inch hole was plugged from the ground at each of the test points. A cover was positioned over each hole and allowed to stand undisturbed for a minimum of fifteen minutes. Readings were then taken at each test point, as indicated on attached sheet, with a Gastech Model #GP-204 combustible gas indicator according to the instructions supplied with the meter.

The findings are noted in % LEL and are as follows:

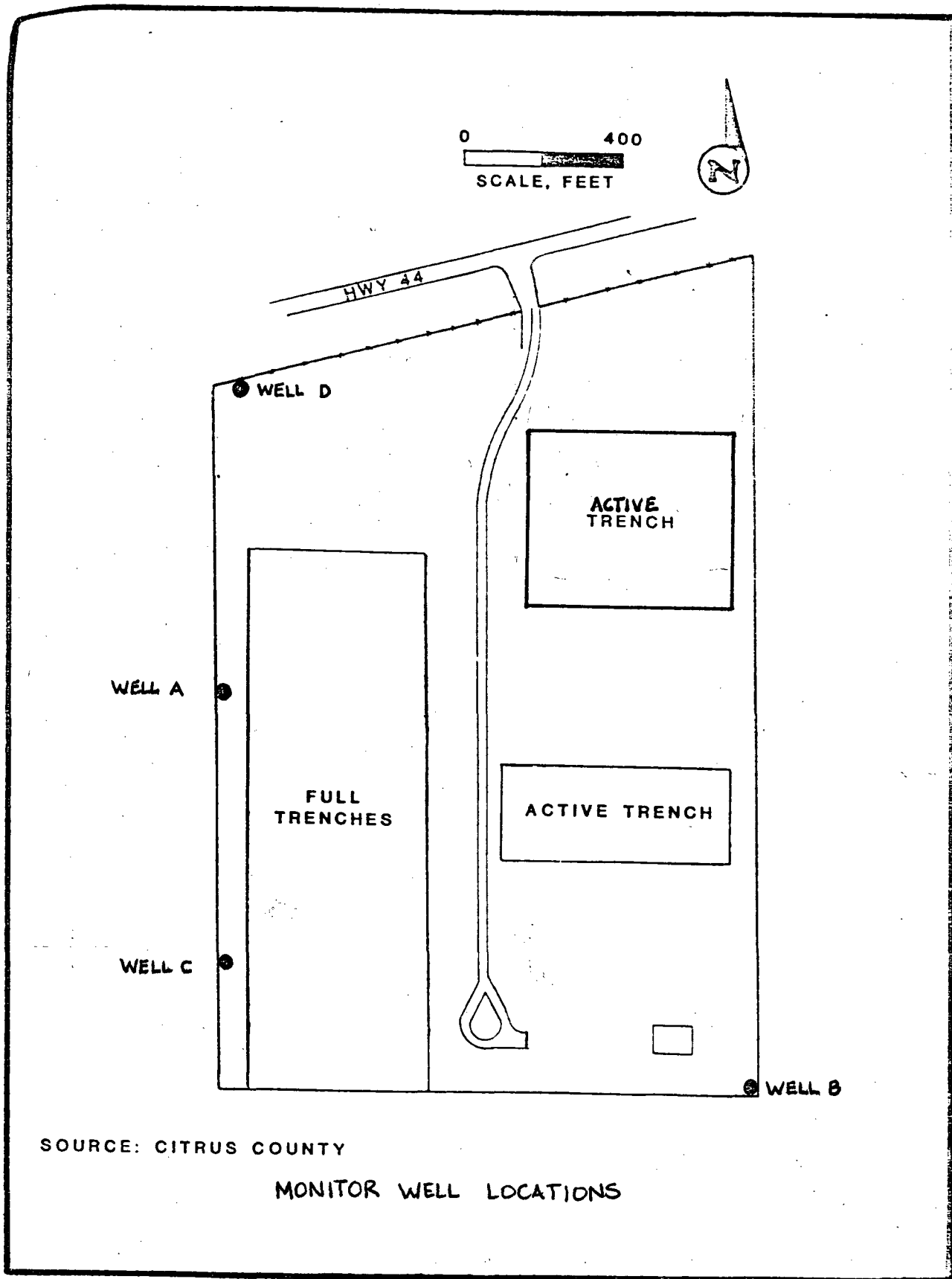
TEST POINT	READING (%LEL)	TEST POINT	READING (%LEL)
A	0	N	0
B	0	O	10
C	0	P	3
D	60	Q	100
E	0	R	100
F	0	S	5
G	0	T	0
H	0	U	0
I	0	V	0
J	0	W	0
K	100	X	0
L	0	Y	0
M	100		



LOCATION OF GAS MIGRATION TEST HOLES

- 4) Please find attached two attachments, J and K, regarding monitor well locations and our most recent analysis of groundwater samples taken May 19, 1988. Should further assessment or interpretation be necessary, please notify this office and so advise.





Jefferson L. Flowers, Ph.D.

Jefferson S. Flowers, Ph.D.

Ph. (305) 339-5984

# **FLOWERS CHEMICAL LABORATORIES, INC.** ANALYTICAL & CONSULTING CHEMISTS



Received FROM:

Citrus Cnty/BARKER  
PO Box 440  
Lecanto, FL 32661

Date Reported: Jun 9 1988

DHRS Lab# : 83139  
DER Lab# : E83018

For: CON SEC N03 NA TB TOC TKN TCOL LIST

Date Received: May 19 1988

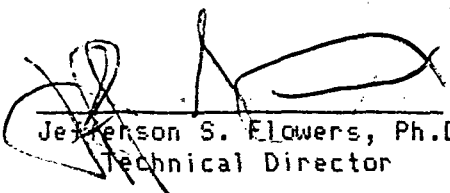
Lab Numbers: 13383-13386

## REPORT OF ANALYSIS

Parameter	Unit	Method	%ACC	%PRC	13383	13384	13385	13386
					MW A	MW B	MW C	MW D
		Detection Limit						
Nitrate	mg/L	.013	101	0.30	<.0130	.187	<.0130	<.0130
Sodium	mg/L	.002	100.	0.00	4	3.2	2.6	5.2
Turbidity	NTU	0.05	97.0	-	1.8	0.72	0.5	5.9
Chloride	mg/L	.015	101	0.60	6.08	3.6	3.94	14.3
Color	PCU	5	-	-	20	10	10	20
Surfactants	mg/L	0.1	96.9	2.80	<0.10	<0.10	<0.10	<0.10
Sulfate	mg/L	.206	101	0.30	5.55	2.18	4.75	4.37
Iron	mg/L	0.01	99.8	0.05	.314	.436	.162	1.75
Manganese	mg/L	.005	100.	0.22	.214	<.0050	<.0050	1.44
Odor	TON	1	-	-	<1	<1	<1	<1
Copper	mg/L	.005	100.	0.10	.152	.254	0.25	.165
Zinc	mg/L	.001	99.2	0.62	.164	.131	.101	.206
Calcium	mg/L	0.1	100.	0.09	99.2	.984	46.7	130
Magnesium	mg/L	0.01	100.	0.59	3.40	.221	2.6	5.12
Total Dissolved Solids	mg/L	2.5	-	0.41	268	60	180	360
Total Hardness	mg/L	0.1	100.	0.09	262	3.37	127	345
Carbonate Hardness	mg/L	0.1	100.	0.59	262	3.37	127	345
N_Carbonate Hardness	mg/L	0.1	-	0.41	<0.10	<0.10	<0.10	<0.10
Alkalinity	mg/L	0.1	-	2.00	266	4.9	147	354
Bicarb Alkalinity	mg/L	0.1	-	2.00	266	4.9	147	354
Carbonate Alkalinity	mg/L	0.1	-	2.00	<0.10	<0.10	<0.10	<0.10
Hydroxide Alkalinity	mg/L	0.1	-	2.00	<0.10	<0.10	<0.10	<0.10
Carbon Dioxide	mg/L	0.1	-	2.00	23.8	15.1	5.23	38
Stability Index	pH	0.01	99.7	4.10	6.75	15.5	7.46	6.34
pH	pH	0.01	99.7	4.10	7.34	5.80	7.75	7.27
pH_saturation	pHs	0.01	99.7	4.10	7.04	10.6	7.61	6.80

Data Release Authorization

Sample integrity and reliability certified by Lab personnel prior to analysis.  
Methods of analysis in accordance with FCL QA and EPA approved methodology.

  
Jefferson S. Flowers, Ph.D.  
Technical Director

**FLOWERS CHEMICAL LABORATORIES, INC.**  
**ANALYTICAL & CONSULTING CHEMISTS**



Received From:

Citrus Cnty/BARKER  
PO Box 440  
Lecanto, FL 32661

Date Reported: Jun 9 1988

DHRS Lab# : 83139  
DER Lab# : E83018

For: CON SEC N03 NA TB TOC TKN TCOL LIST

Date Received:

May 19 1988

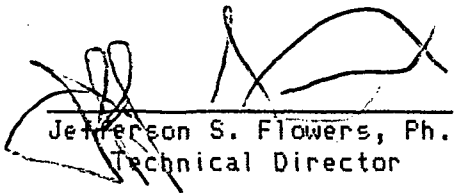
Lab Numbers: 13383-13386

**REPORT OF ANALYSIS**

Parameter	Unit	Method	%ACC	%PRC	13383	13384	13385	13386
					MW A	MW B	MW C	MW D
		Detection Limit						
Langelier_Index	LX	0.01	99.7	4.10	0.3	-4.88	0.14	0.46
Total_Organic_Carbon	mg/L	1	98.2	2.03	75	5	37	142
Specific_Conductance	umhos/c	0.2	-	-	415	30	245	593
Total_Kjeldahl_Nitrogen	mg/L	0.1	96.9	1.27	<0.10	0.19	<0.10	0.37
Total_Coliform	CFU/100	1	-	-	<1	<1	<1	5
1,1,1-Trichloroethane	ug/L	1	103	13.7	<1	<1	<1	<1
1,1-Dichloroethylene	ug/L	1	107	7.48	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	1	108	2.16	<1	<1	<1	<1
Carbon_Tetrachloride	ug/L	1	93.6	-	<1	<1	<1	<1
Trichloroethylene	ug/L	1	101	9.21	<1	<1	<1	<1
Tetrachloroethylene	ug/L	1	100.	8.52	<1	<1	<1	<1
p-Dichlorobenzene	ug/L	0.5	108	1.53	2.7	<0.50	<0.50	5.9
Benzene	ug/L	0.5	103	11.4	<0.50	<0.50	<0.50	<0.50
Vinyl_Chloride	ug/L	1	107	14.2	14.8	<1	<1	23.3
Ethylene_Dibromide	ug/L	.005	101	0.48	<.0050	<.0050	<.0050	<.0050
Dilution_Factor		1	-	-	1	1	1	1

**Data Release Authorization**

Sample integrity and reliability certified by Lab personnel prior to analysis.  
Methods of analysis in accordance with FCL QA and EPA approved methodology.

  
Jefferson S. Flowers, Ph.D.  
Technical Director



CITRUS COUNTY LANDFILL  
FIELD LOG SHEET

AMBIENT WEATHER CONDITIONS: *Slightly Cloudy*

AIR TEMP: *28.7 °C*

WIND CONDITIONS: *5-10 MPH*

*13386*

SAMPLE SOURCE ID: *MW-D 1:30p ~~5-19-88~~ 5-19-88*

pH Determinations are made with a Cole-Parmer Model 5985-75

Reading #1: *6.84* std. pH units

Reading #2: *6.77* "

Reading #3: *6.82* "

Conductivity determinations made with YSI Model 33 S-C-T mtr.

Reading #1: *589* uMHOS

Reading #2: *594* uMHOS

Reading #3: *593* uMHOS

Temperature determinations made by H-B laboratory thermometer

Reading #1: *24.1* degrees centigrade

Reading #2: *23.9* degrees centigrade

Reading #3: *24.1* degrees centigrade

Well Depth determinations made by Brainard-Kilman Model 2220

Reading #1: *56' 7"* feet from ground level

Reading #2: *56' 7"* feet from ground level

Reading #3: *56' 4"* feet from ground level

All reading taken at intervals during the sampling session to insure consistency of samples after well development.

Additional Field Notes:

CITRUS COUNTY LANDFILL  
FIELD LOG SHEET

AMBIENT WEATHER CONDITIONS: *Slightly Cloudy*

AIR TEMP: *28.7*

WIND CONDITIONS: *5-10 MPH W-NW*

*13385* SAMPLE SOURCE ID: *MW-C* *5-19-88* *11:35 a*

pH Determinations are made with a Cole-Parmer Model 5985-75

Reading #1: *6.43* std. pH units

Reading #2: *6.41* "

Reading #3: *6.44* "

Conductivity determinations made with YSI Model 33 S-C-T mtr.

Reading #1: *241* uMHOS

Reading #2: *247* uMHOS

Reading #3: *245* uMHOS

Temperature determinations made by H-B laboratory thermometer

Reading #1: *23.7* degrees centigrade

Reading #2: *23.7* degrees centigrade

Reading #3: *23.6* degrees centigrade

Well Depth determinations made by Brainard-Kilman Model 2220

Reading #1: *102.9* feet from ground level

Reading #2: *102.9* feet from ground level

Reading #3: *102.9* feet from ground level

All reading taken at intervals during the sampling session to insure consistency of samples after well development.

Additional Field Notes:

CITRUS COUNTY LANDFILL  
FIELD LOG SHEET

AMBIENT WEATHER CONDITIONS: *Partly cloudy*

AIR TEMP: *28.6 °C*

WIND CONDITIONS: *W-NW 5-10 MPH*

*13384* SAMPLE SOURCE ID: *MW-B 5-19-88 10:25a*

pH Determinations are made with a Cole-Parmer Model 5985-75

Reading #1: 5.65 std. pH units

Reading #2: 5.64 "

Reading #3: 5.65 "

Conductivity determinations made with YSI Model 33 S-C-T mtr.

Reading #1: 31 uMHOS

Reading #2: 31 uMHOS

Reading #3: 30 uMHOS

Temperature determinations made by H-B laboratory thermometer

Reading #1: 22.9 degrees centigrade

Reading #2: 22.9 degrees centigrade

Reading #3: 22.9 degrees centigrade

Well Depth determinations made by Brainard-Kilman Model 2220

Reading #1: 104.3 feet from ground level

Reading #2: 104.3 feet from ground level

Reading #3: 104.3 feet from ground level

All reading taken at intervals during the sampling session to insure consistency of samples after well development.

Additional Field Notes:

CITRUS COUNTY LANDFILL  
FIELD LOG SHEET

AMBIENT WEATHER CONDITIONS: *Slightly Cloudy*

AIR TEMP: *28.9 °C*

WIND CONDITIONS: *5-10 MPH W-NW*

*13383*

SAMPLE SOURCE ID: *MW-A 5-19-88 12:45p*

pH Determinations are made with a Cole-Parmer Model 5985-75

Reading #1: *6.77* std. pH units

Reading #2: *6.72* "

Reading #3: *6.83* "

Conductivity determinations made with YSI Model 33 S-C-T mtr.

Reading #1: *411* uMHOS

Reading #2: *423* uMHOS

Reading #3: *415* uMHOS

Temperature determinations made by H-B laboratory thermometer

Reading #1: *24.8* degrees centigrade

Reading #2: *24.8* degrees centigrade

Reading #3: *24.8* degrees centigrade

Well Depth determinations made by Brainard-Kilman Model 2220

Reading #1: *98.6"* feet from ground level

Reading #2: *98.5"* feet from ground level

Reading #3: *98.6"* feet from ground level

All reading taken at intervals during the sampling session to insure consistency of samples after well development.

Additional Field Notes:

- 5)           A revised closure schedule will be submitted following closure development. It would be difficult to provide a closure schedule without the finalization of the Closure Grading and Drainage Plan variables which are yet to be finalized.

          This information shall be submitted to your office for review no later than December 15, 1988.

- 6)           At this point in time, the type of final cover remains to be decided.   Once the Grading Plan is available, the feasibility of using a synthetic geomembrane liner, or a soil admixture, as a cover will be determined by our engineering staff.

          This information shall be submitted to your office for review no later than December 15, 1988.

- 7)           The information previously submitted to the Southwest Florida Water Management District for the purpose of obtaining a stormwater management permit is no longer accurate. The topographic variations at the landfill site require that our stormwater management plan be revised to meet the realistic conditions and the drainage system which will reasonably maximize proper drainage while minimizing construction expenses and time delay.

          Upon completion of the Closure Grading and Drainage Plan, the revised information shall be submitted to Southwest Florida Water Management District personnel for review and permit acquisition.

          This information shall be submitted to your office for review no later than December 15, 1988.

- 8) Closure actions shall be described with the submittal of our Closure Grading and Drainage Plan. Some of the general information regarding this item is available, but the specifics rely on the development of this plan.

This information shall be submitted to your office for review no later than December 15, 1988.



- 9) Financial Responsibility documents will be forthcoming following the development of our closure plan. The funding for the construction and maintenance is determined, but the completion of this document also depends upon the closure cost estimates being developed along with the closure plan.

This information shall be submitted to your office for review no later than December 15, 1988.

- 10)           The closure cost estimates will be determined along with the completion of the Closure Grading and Drainage Plan. A large percentage of the closure cost is the unit and placement cost of fill material. Since the amount of fill is dependent upon the grading design which must meet the requirements of Florida Department of Environmental Regulation, Southwest Florida Water Management District, and the lease agreement with the Florida Department of Agriculture and Consumer Services, determination of cost estimates cannot be provided without the completion of the Grading Plan.

          This information shall be submitted to your office for review no later than December 15, 1988.