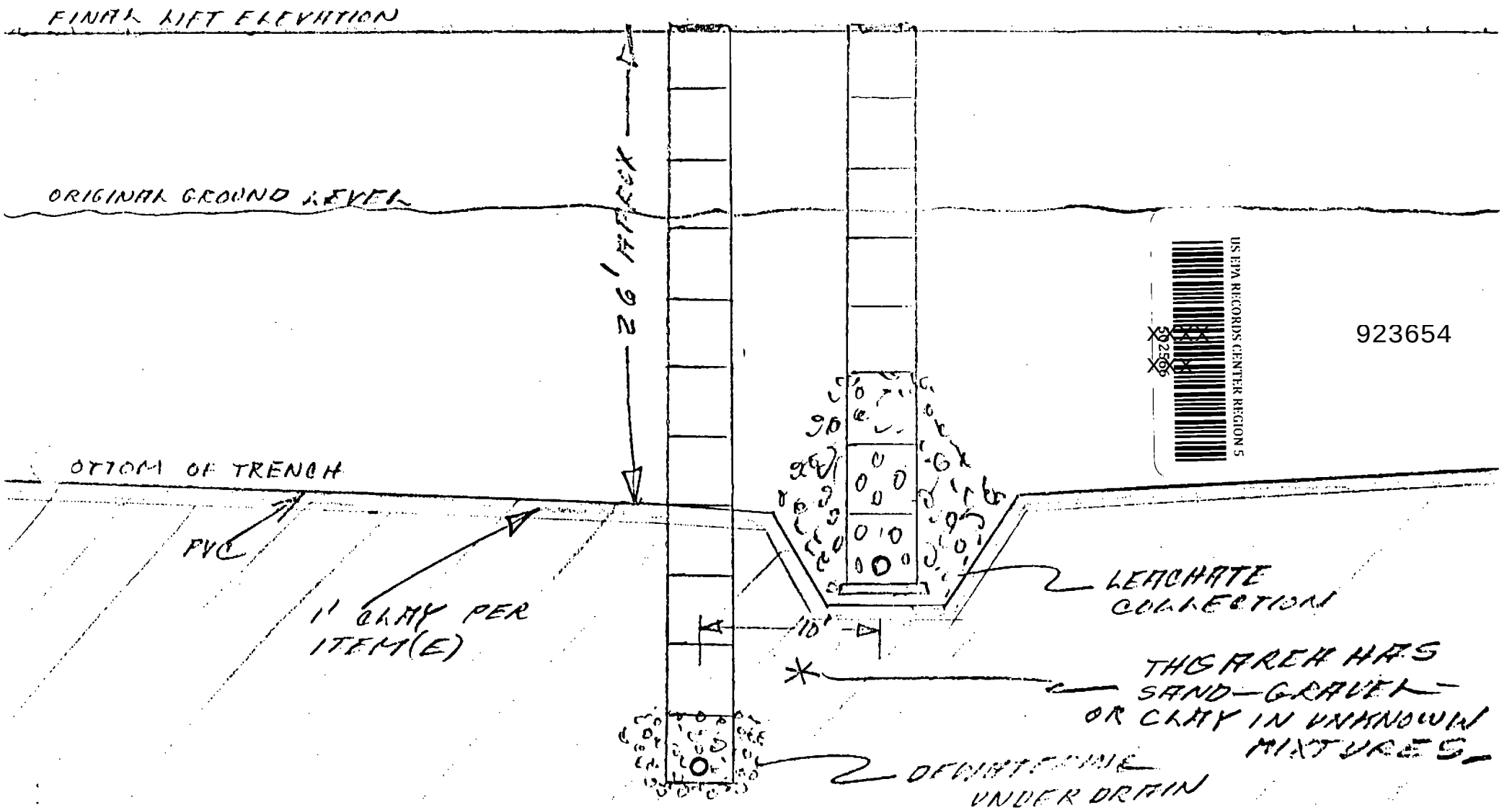
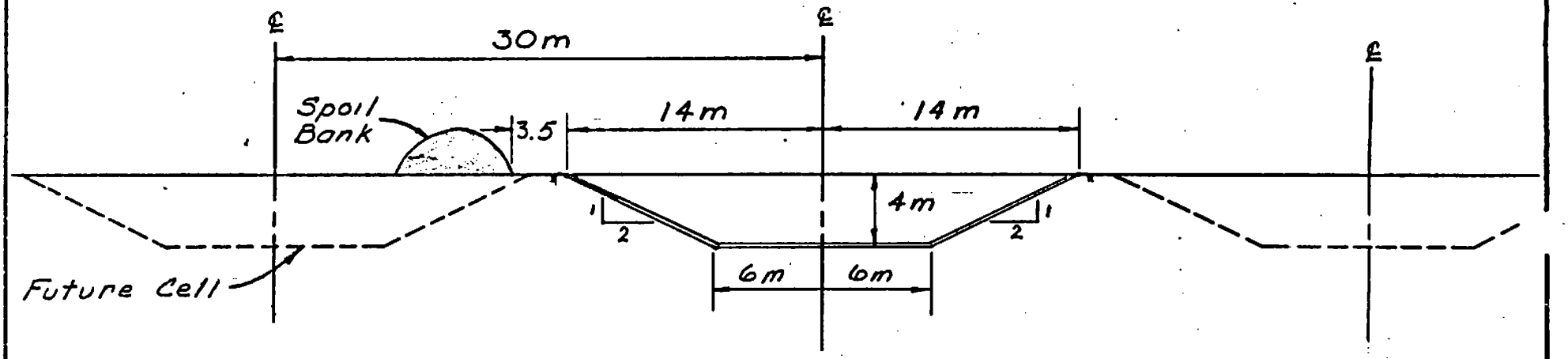
923654

CROSS SECTION OF MAIN N-S COLLECTION SYSTEM



US EPA RECORDS CENTER REGION 5
92566

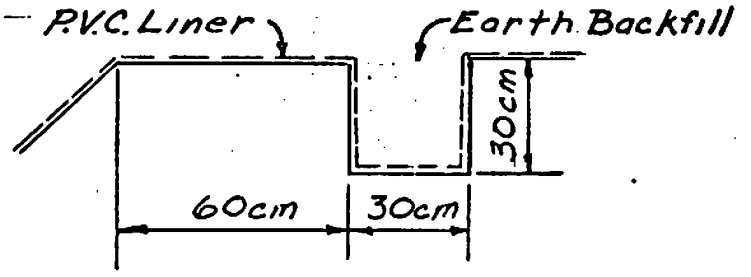
923654



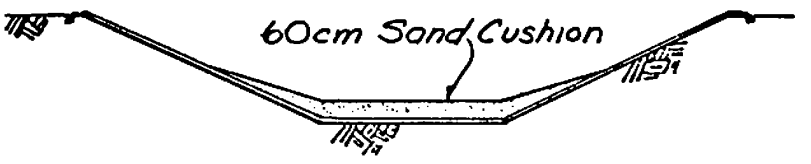
TYPICAL CELL SECTION

NOTE

1. Typical Side Wall Slopes 1 on 2 or 1 on 1½ As Soil Conditions Warrant.
2. Excavation Contractor Will Prepare Cell Bottom For Liner Material.
3. 60 cm of Sand Cushion Will Be Placed Over Liner. Sand Cushion For Side Slopes Will Be Placed In Approximately 3 m High Intervals By D.P.W. Front End Loader

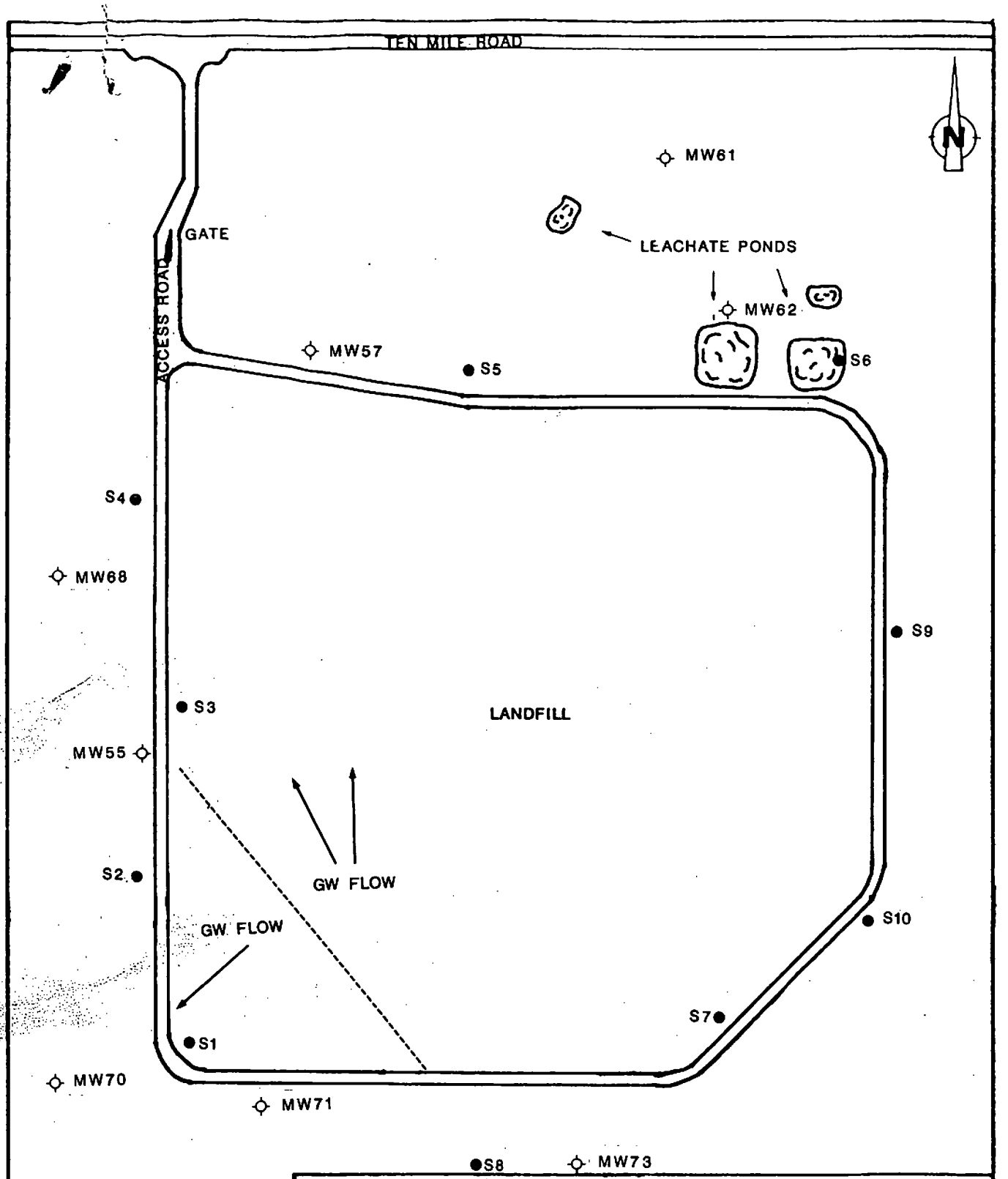


ANCHOR DEVISE



SAND CUSHION DETAIL

D.5



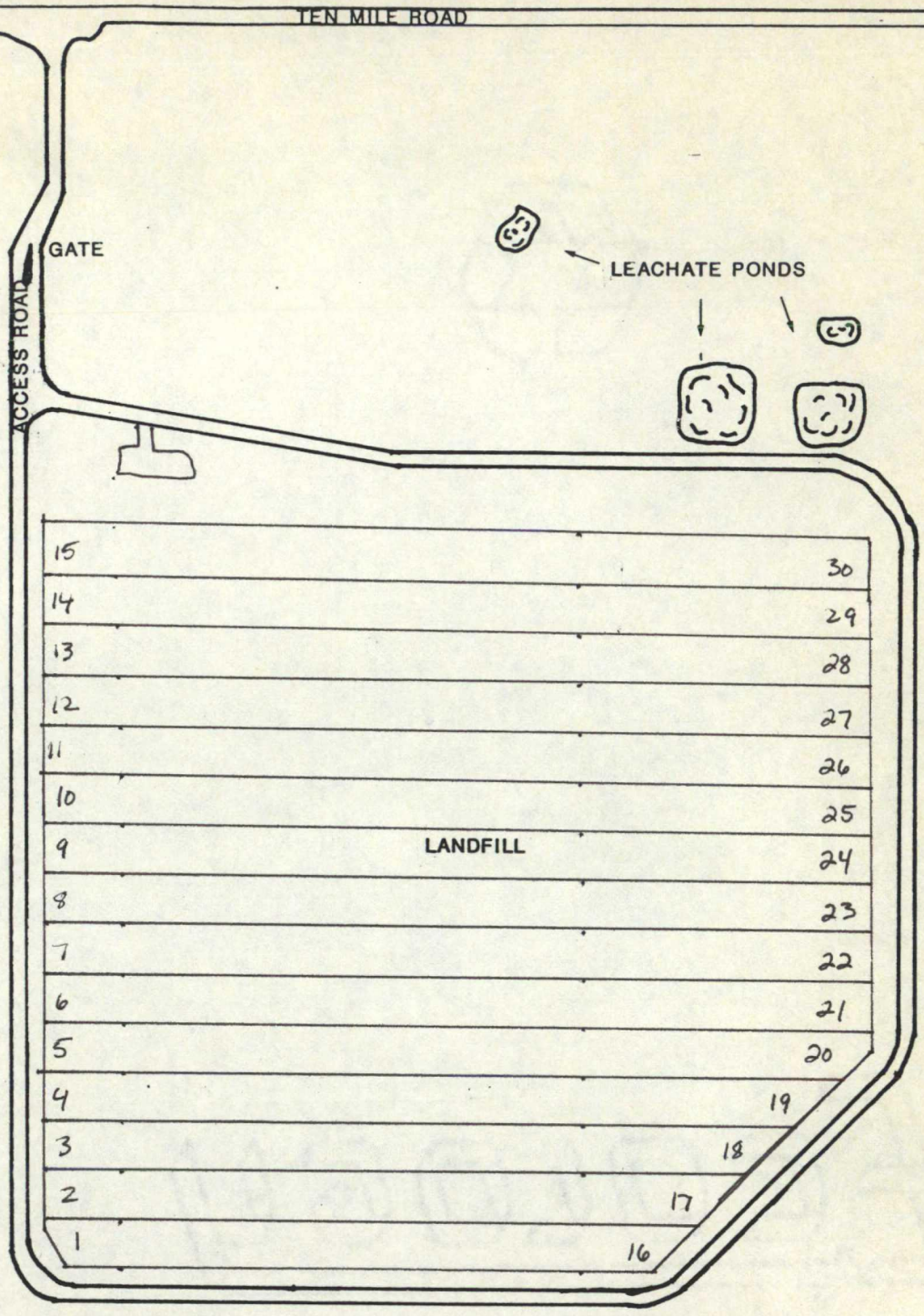
ecology and environment, inc.

111 WEST JACKSON BLVD., CHICAGO, ILLINOIS 60604, TEL. 312-663-9415

TITLE: PROPOSED SAMPLE LOCATION	FIGURE #: 3
SITE: KENT COUNTY PLAINFIELD LANDFILL	SCALE: 1CM=150 FEET
CITY: GRAND RAPIDS STATE: MI	P.A.N.: FMIO310SA
SOURCE: MAP MDNR SITE SKETCH	DATE: 4/27/88
	REVISED:

MW SAMPLE LOCATION ◇

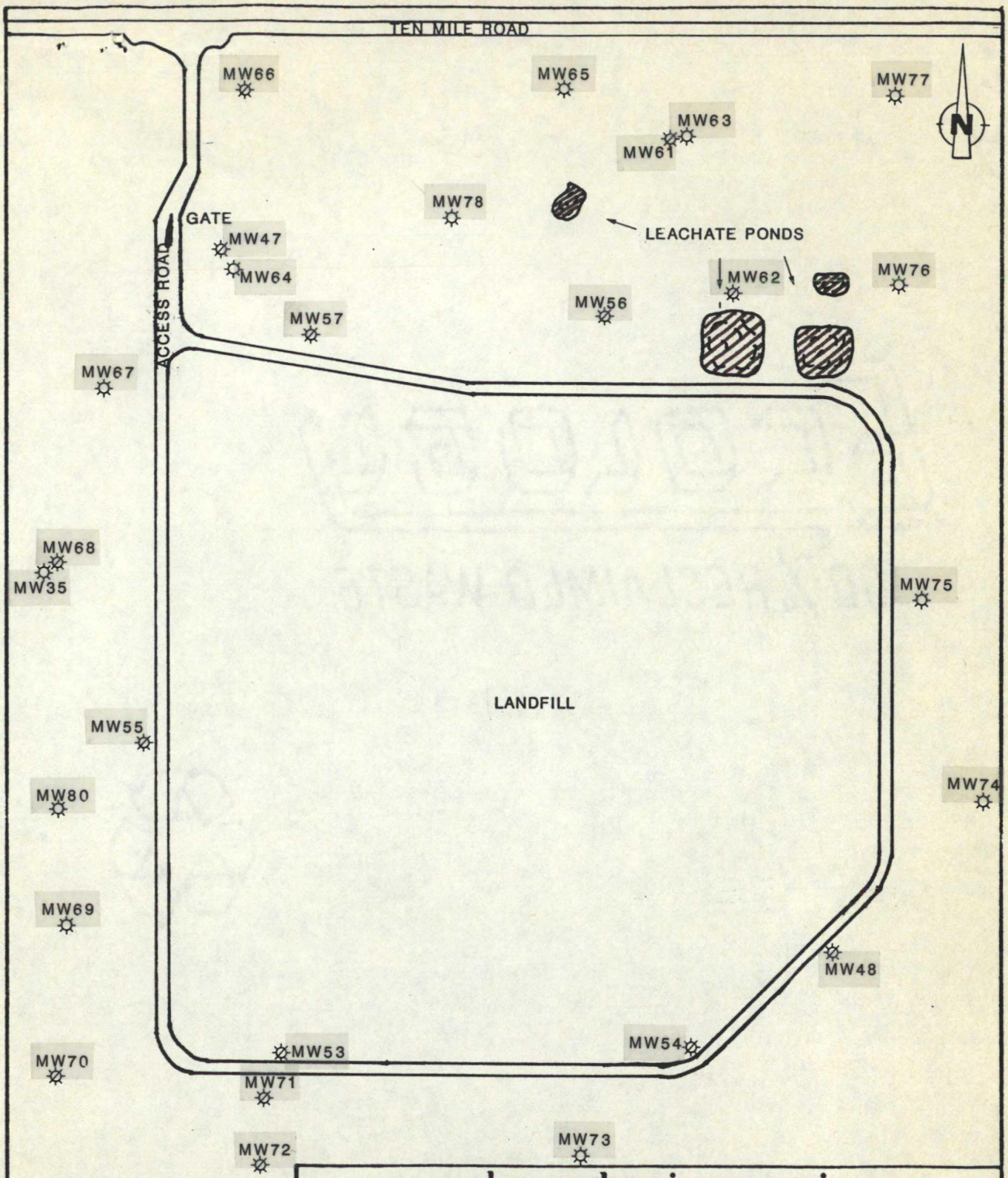
SOIL/SED. SAMPLE LOCATION ●



ecology and environment, inc.

111 WEST JACKSON BLVD., CHICAGO, ILLINOIS 60604, TEL. 312-663-9415

TITLE	FIGURE #
SITE	SCALE
CITY STATE	P.A.N.
SOURCE	DATE
	REVISED



ecology and environment, inc.

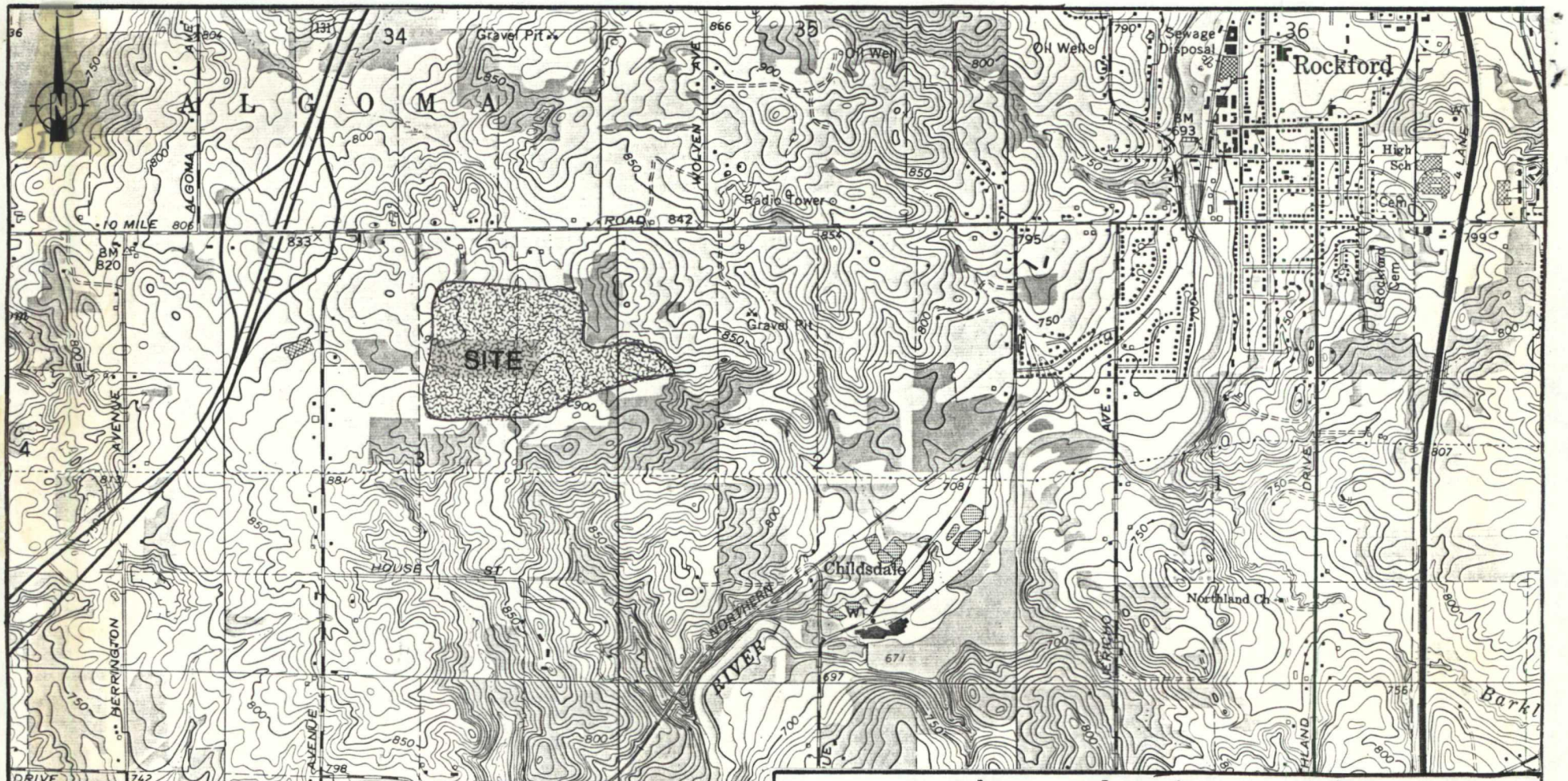
111 WEST JACKSON BLVD., CHICAGO, ILLINOIS 60604, TEL. 312-663-9415

TITLE: DOCUMENTED/ALLEGED TARGET COMPOUND MAP	FIGURE #: 2
SITE: KENT COUNTY PLAINFIELD LANDFILL	SCALE: 1CM=150 FEET
CITY: GRAND RAPIDS STATE: MI	P.A.N.: FMI0310SA
SOURCE: MDNR SITE SKETCH	DATE: 4/27/88
	REVISED:

AREA OF ALLEGED CONTAMINATION

NO MW CONTAMINATION ☼

ALLEGED MW CONTAMINATION ☼



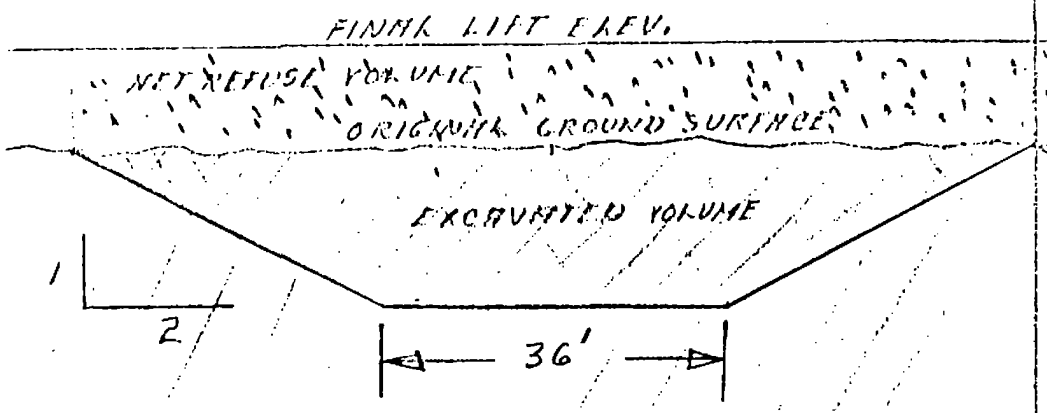
ecology and environment, inc.

111 WEST JACKSON BLVD., CHICAGO, ILLINOIS 60604, TEL. 312-663-9415

TITLE SITE LOCATION MAP(TOPO)	FIGURE # 1
SITE KENT COUNTY PLAINFIELD LANDFILL	SCALE 1:24,000
CITY GRAND RAPIDS STATE MI	P.A.N. FMIO310SA
SOURCE USGS ROCKFORD QUAD 7.5'	DATE 4/27/88
	REVISED

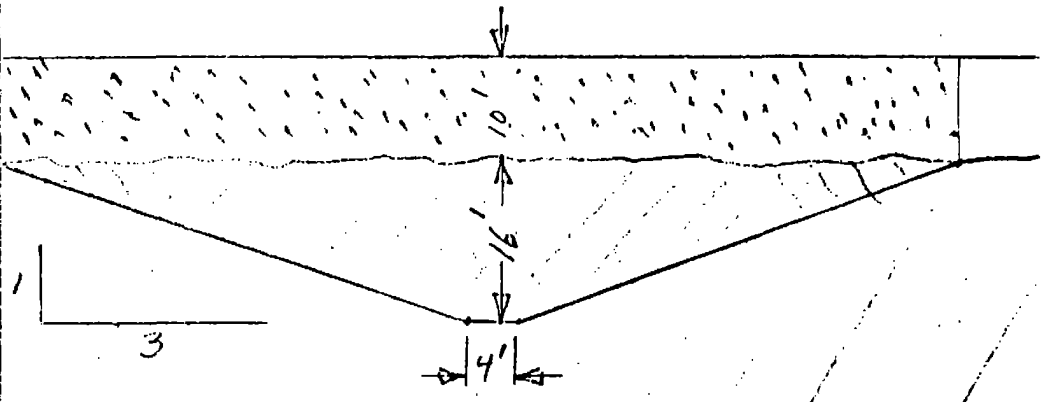
CROSS SECTION ANALYSIS

I



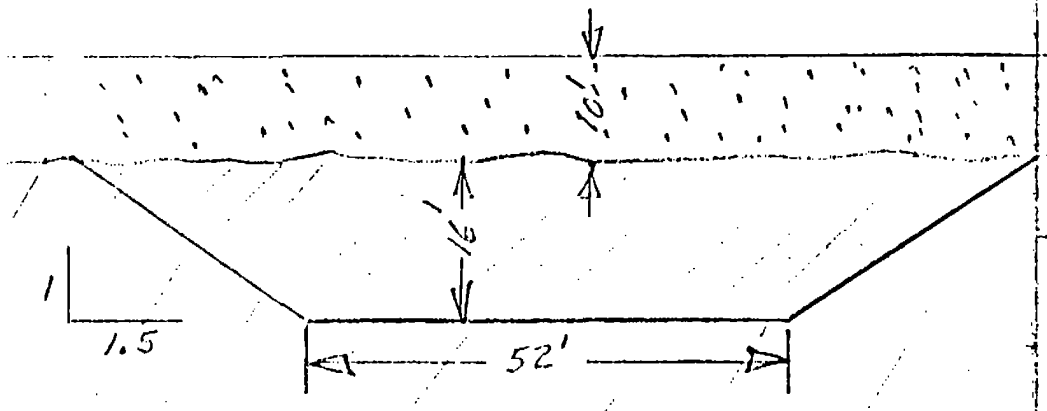
EXCAVATED AREA = 1,088 □'
FILL AREA = 1,000 □'

II



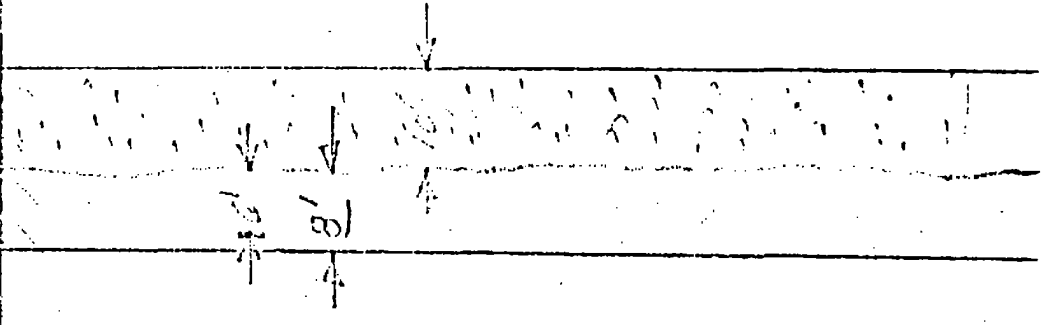
EXCAVATED AREA = 832 □'
FILL AREA = 1,000

III

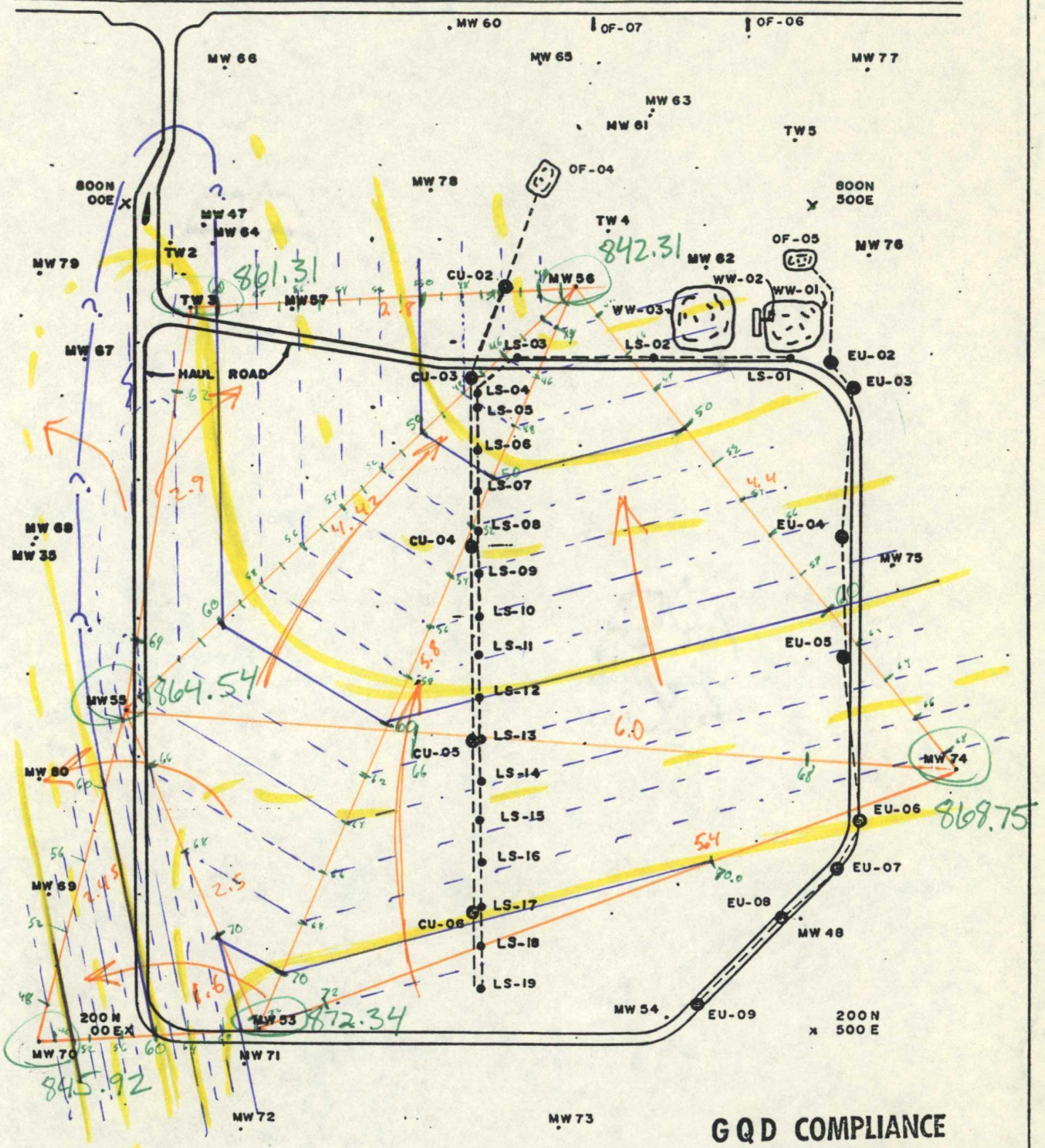


EXCAVATED AREA = 1,216 □'
FILL AREA = 1,000 □'

IV



6' PIT EXCAVATED AREA = 600 □'
8' PIT EXCAVATED AREA = 800 □'
FILL AREA = 1,000 □'



MW = 4" MONITORING WELL
TW = 2" TEMPORARY WELL
CU = CENTER UNDERDRAINS
EU = EASTERN UNDERDRAINS
LS = LEACHATE MANHOLES

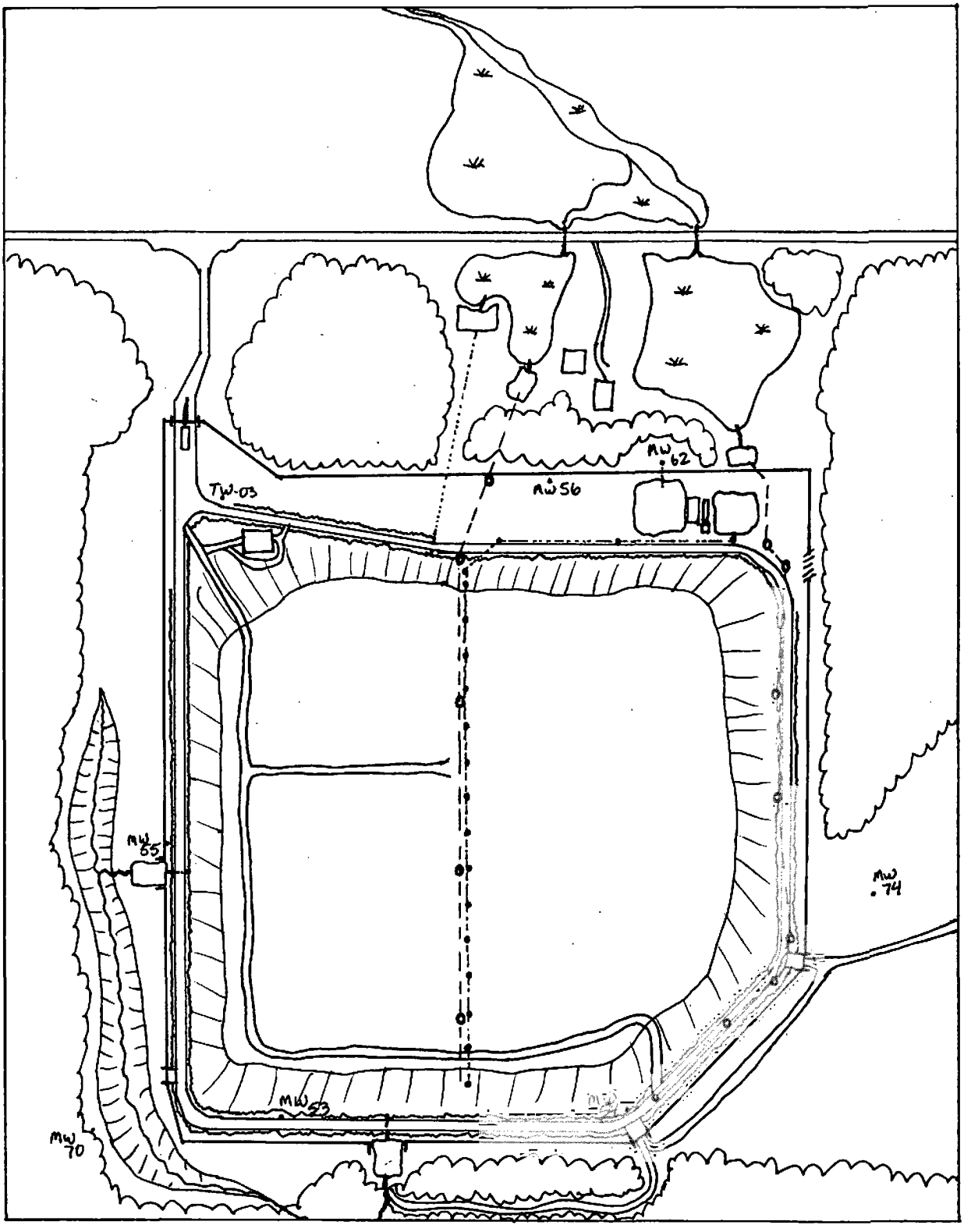
870, 65, 60, 55, 50, 45
60, 55, 50

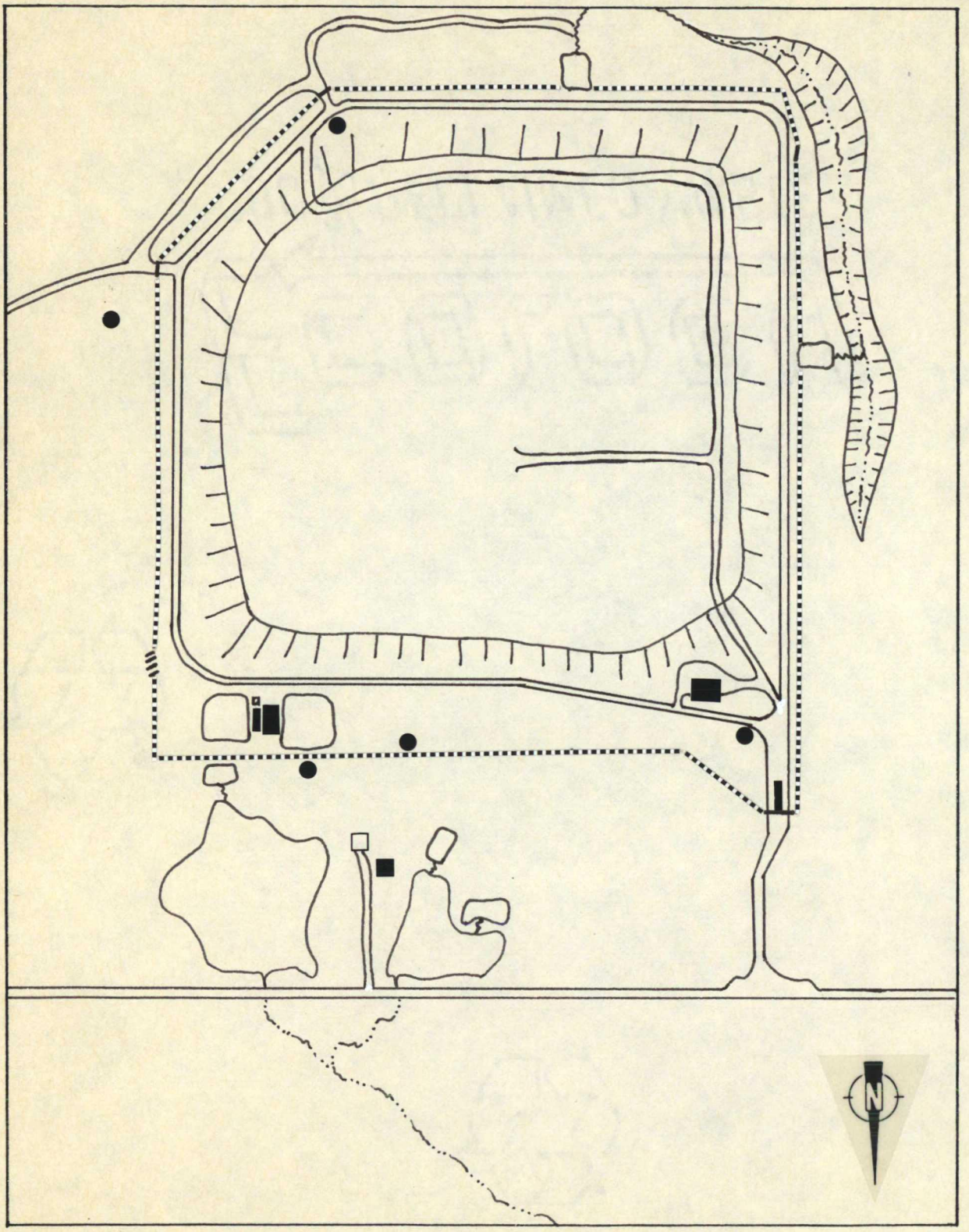
NORTH KENT LANDFILL

GQD COMPLIANCE
GRAND RAPIDS

FEB 10 1986

RECEIVED


TW-03
MW 56
MW 62
MW 65
MW 74
MW 53
MW 70


N

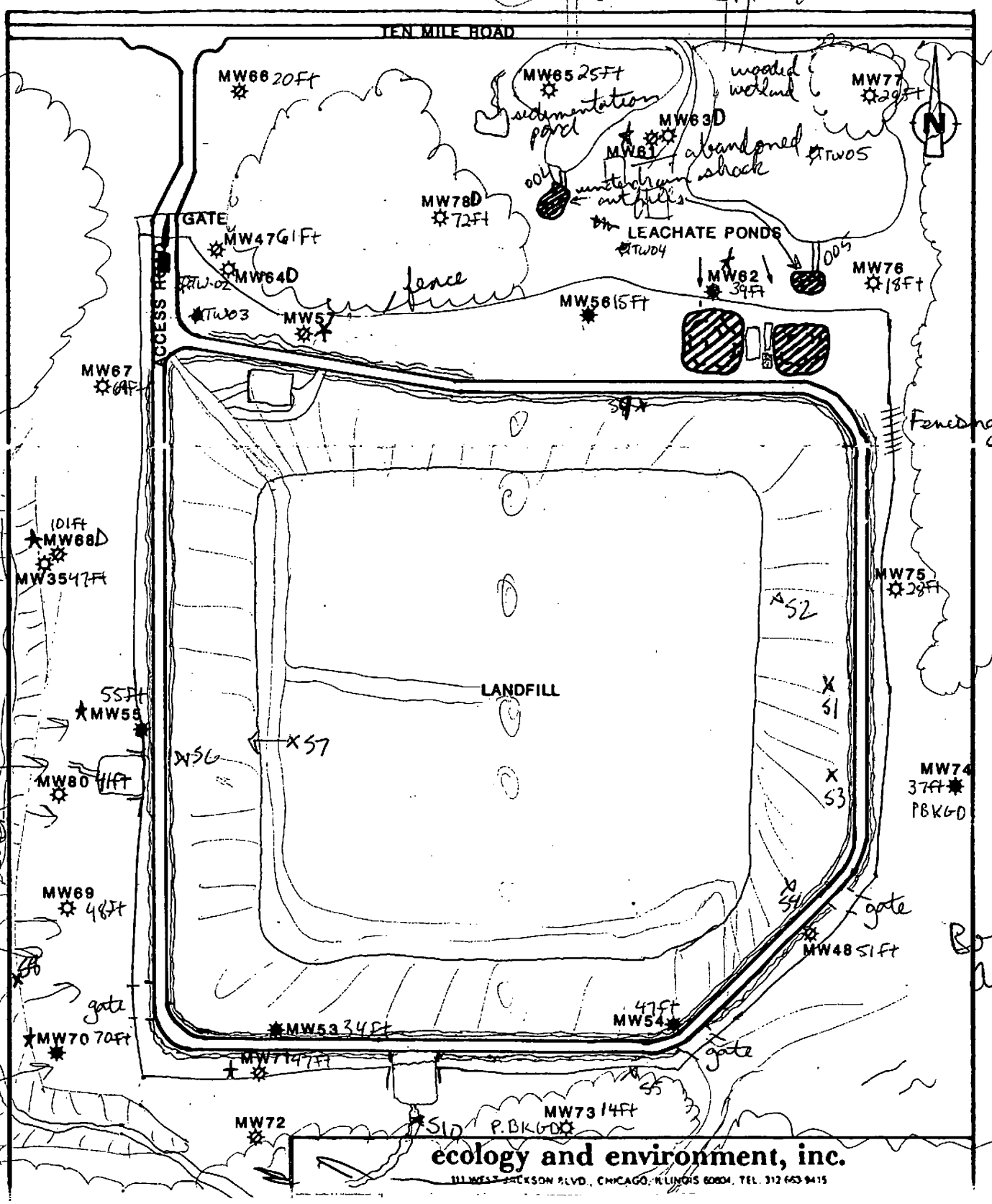
Wells to sample (backup in parentheses):

- MW74 (73)
- MW54 (48)
- MW71 (53)
- MW72 (70)
- MW55 (68)
- MW56 (61)
- TW-03 (MW57)
- MW62 (76) (TW-05)

cattle grazing land

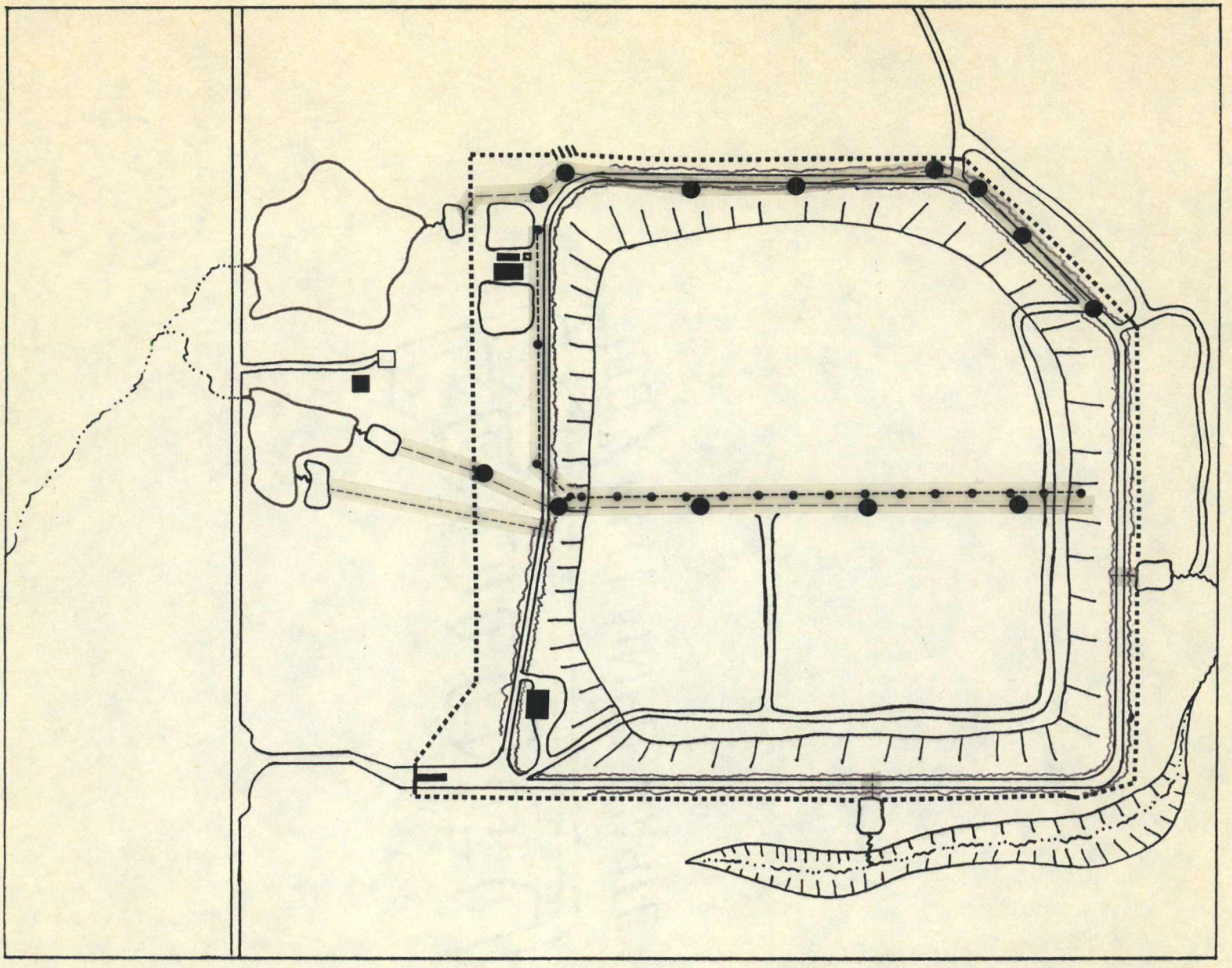
wooded wetland

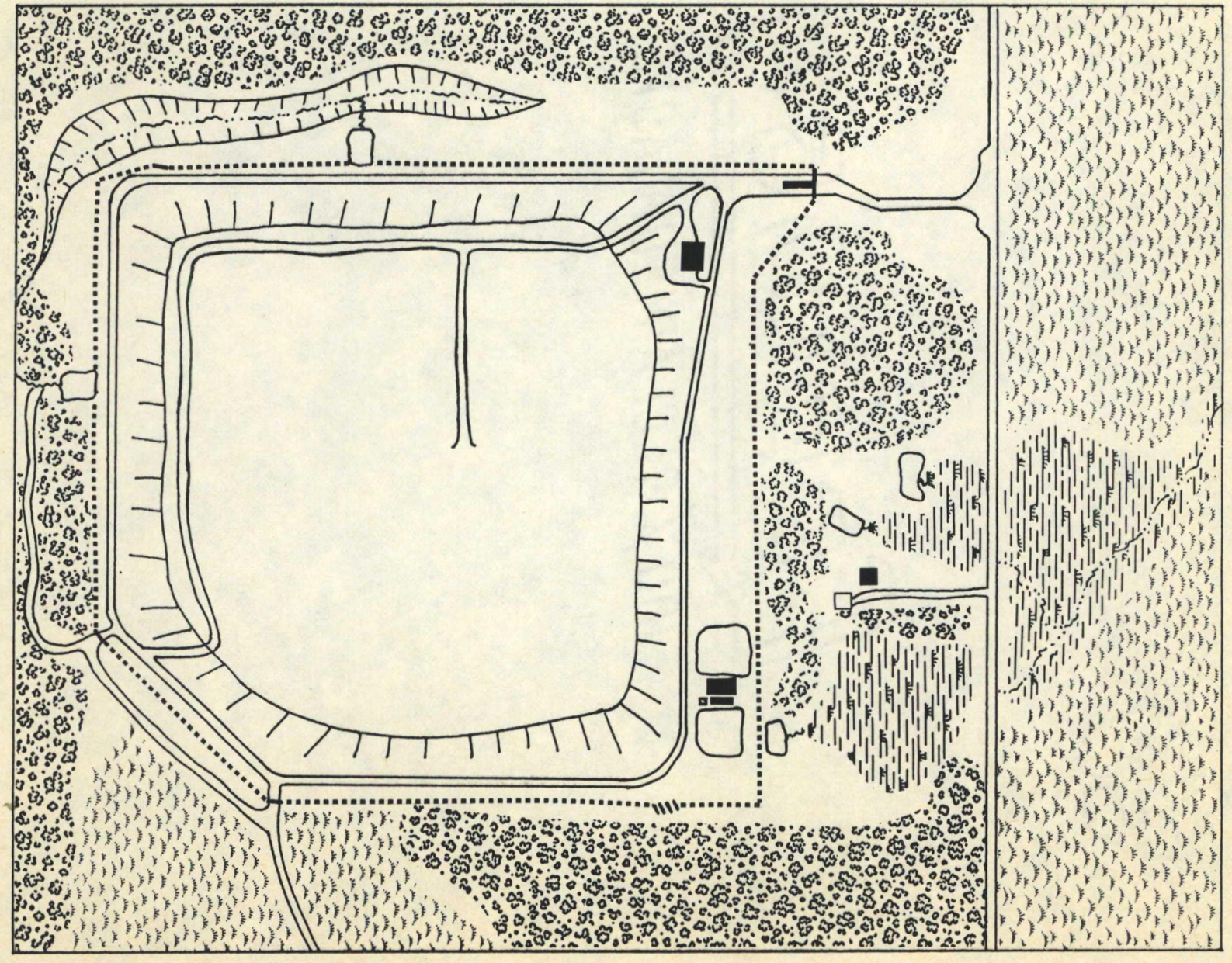
sheep grazing land



ecology and environment, inc.

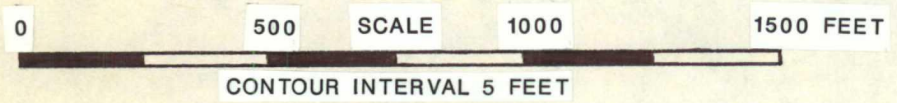
111 WEST JACKSON BLVD., CHICAGO, ILLINOIS 60604, TEL. 312 663 9415



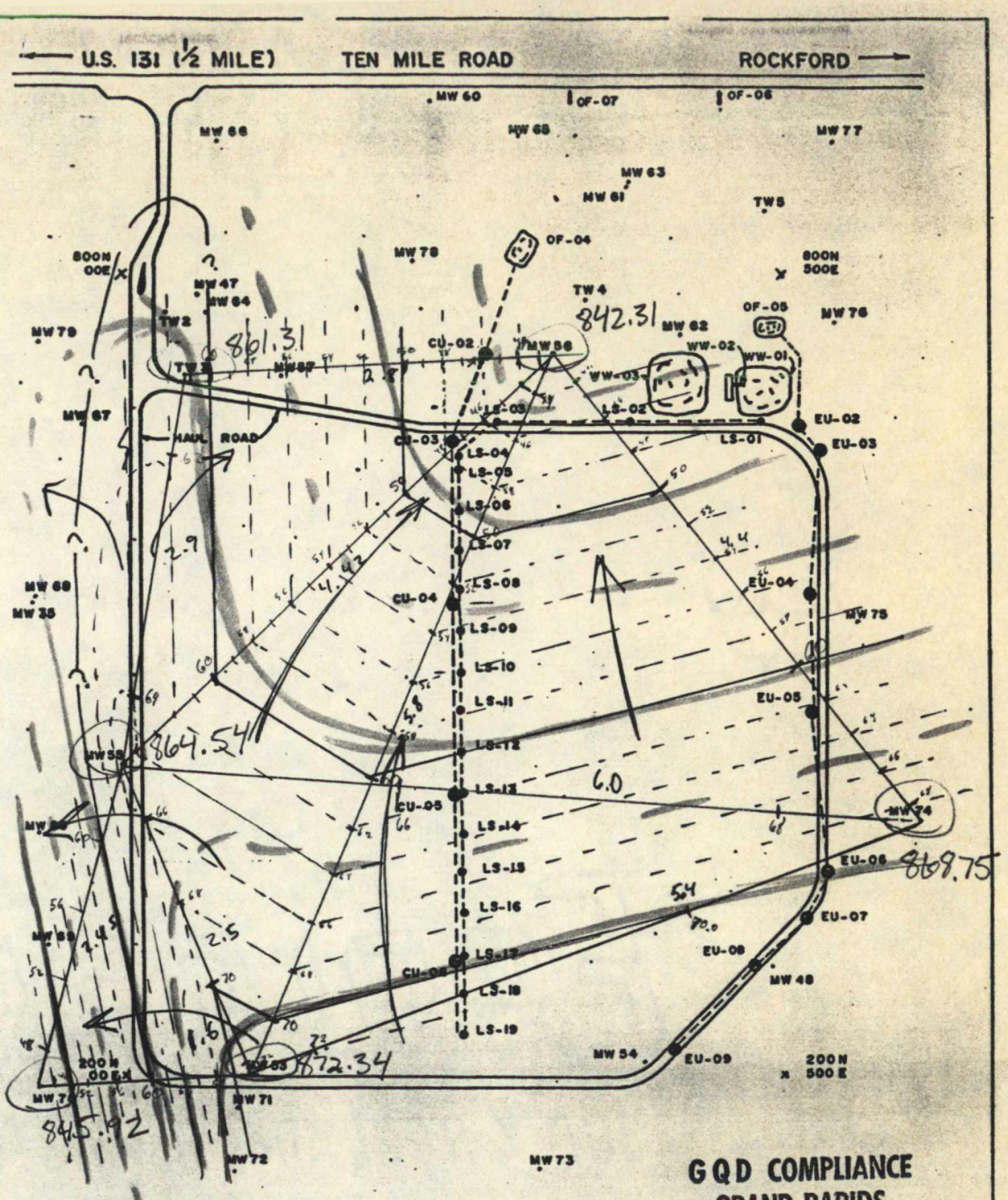


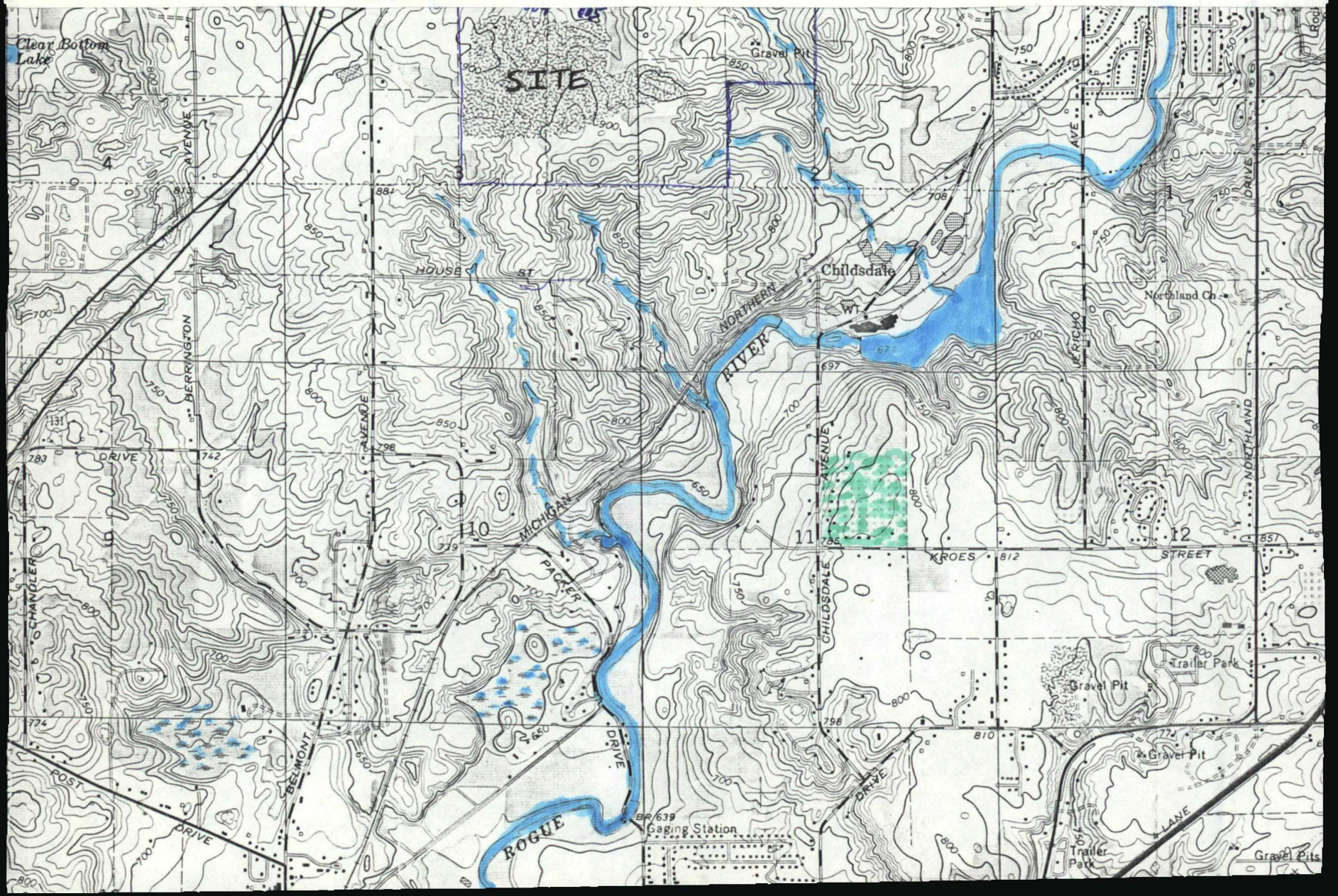
Designation	Metric TOC	x3.2808 Feet	— Water level	=
MW53	272.60	894.35	− 22.01	= 872.34
MW54	278.30	913.05	− 36.30	= 876.75
MW55	272.30	893.36	− 28.82	= 864.54
MW56	264.60	868.10	− 25.79	= 842.31
MW70	273.60	897.63	− 51.71	= 845.92
MW74	268.40	880.57	− 11.82	= 868.75
MW03	273.60	897.63	− 36.32	= 861.31

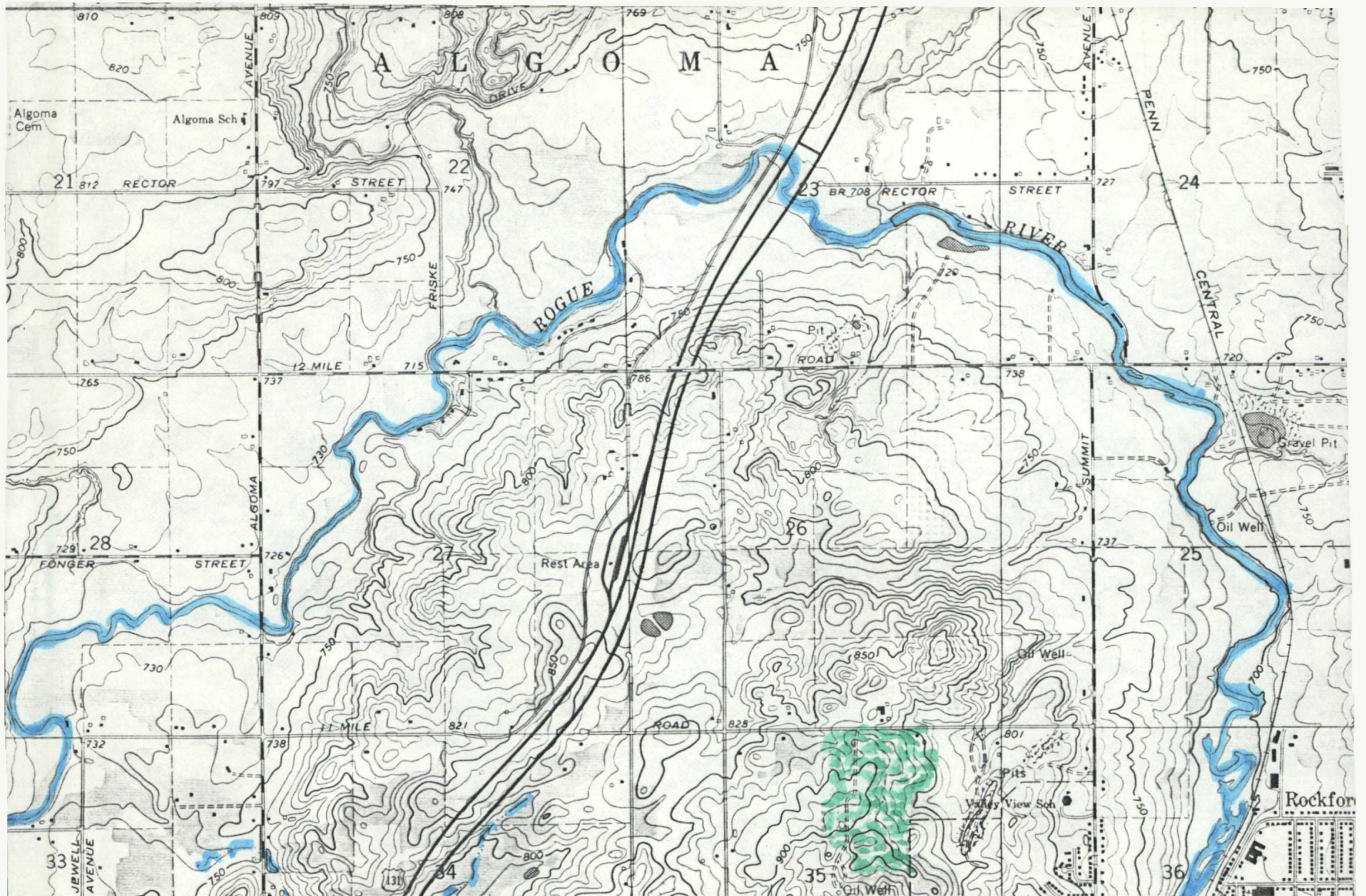
Water level measurements 10/26/88



recycled paper
ecology and environment

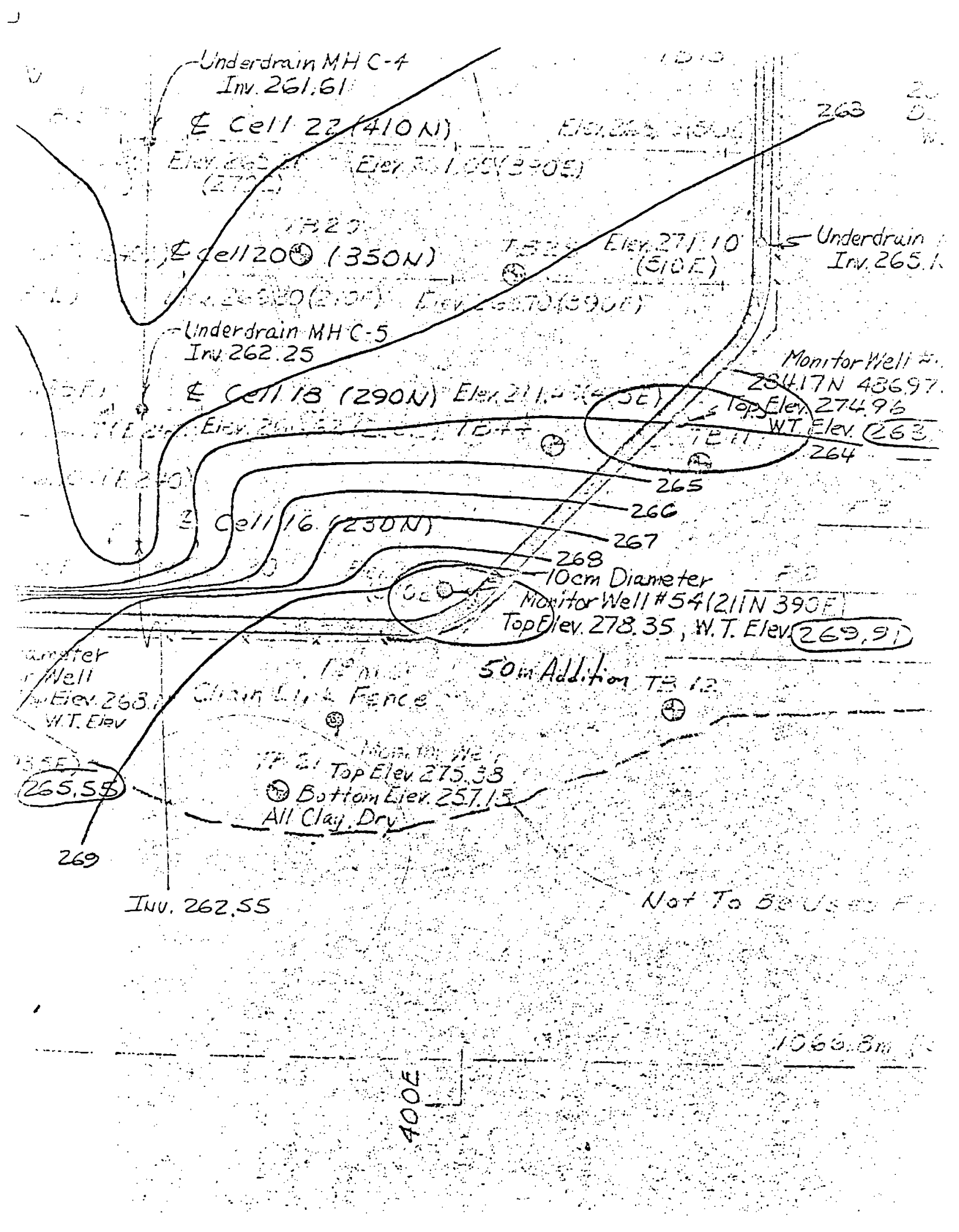

U.S. 131 (½ MILE)
TEN MILE ROAD
ROCKFORD
MW 60
OF-07
OF-06
MW 66
MW 65
MW 77
MW 63
MW 61
TW5
OF-04
MW 78
800N 500E
800N 00E
MW 47
MW 64
TW4
OF-05
MW 76
MW 79
TW2
861.31
842.31
MW 62
WW-02
WW-01
CU-02
MW 56
WW-03
LS-03
LS-02
MW 67
HAUL ROAD
CU-03
LS-01
EU-02
EU-03
LS-04
LS-05
LS-06
LS-07
LS-08
CU-04
EU-04
MW 68
MW 35
MW 75
LS-09
LS-10
LS-11
EU-05
LS-12
MW 58
864.54
LS-13
6.0
CU-05
MW 74
LS-14
LS-15
EU-06
868.75
LS-16
EU-07
MW 59
LS-17
EU-08
CU-06
MW 48
LS-18
LS-19
MW 54
EU-09
200N 500E
200N 00E
872.34
MW 70
MW 71
845.92
MW 72
MW 73
MW= 4" MONITORING WELL
TW= 2" TEMPORARY WELL
CU= CENTER UNDERDRAINS
EU= EASTERN UNDERDRAINS
LS= LEACHATE MANHOLES
GQD COMPLIANCE
GRAND RAPIDS
FEB 10 1986
RECEIVED
NORTH KENT LANDFILL


Clear Bottom Lake
SITE
Gravel Pit
Childsdale
Wt
Northland Ch
HOUSE ST
NORTHERN
RIVER
BERRINGTON AVENUE
AVENUE
DRIVE
CHANDLER
MICHIGAN
PACKER
BELMONT
POST DRIVE
ROGUE
BR 639
Gaging Station
CHILDSDALE AVENUE
DRIVE
KROES STREET
JERICHO AVE
NORTHLAND DRIVE
Trailer Park
Gravel Pit
LANE
Gravel Pits
4
3
2
10
11
12



Mapped, edited, and published by the Geological Survey
f Michigan agencies

methods from aerial
d checked 1967
orth American datum


Underdrain MH C-4
Inv. 261.61
℄ Cell 22 (410 N)
℄ Cell 20 (350 N)
Elev. 271.10
(510 E)
Underdrain
Inv. 265.
Underdrain MH C-5
Inv. 262.25
℄ Cell 18 (290 N)
Monitor Well #
284.17 N 436.97
Top Elev. 274.96
W.T. Elev. 263
264
265
266
267
268
10cm Diameter
Monitor Well #54 (211 N 390 E)
Top Elev. 278.35, W.T. Elev. 269.91
℄ Cell 16 (230 N)
50m Addition
Chain Link Fence
Top Elev. 275.38
Bottom Elev. 257.15
All Clay, Dry
265.55
269
263
Inv. 262.55
Not To Be Used
400E

MI-310-12

9-22 - G. Heyt

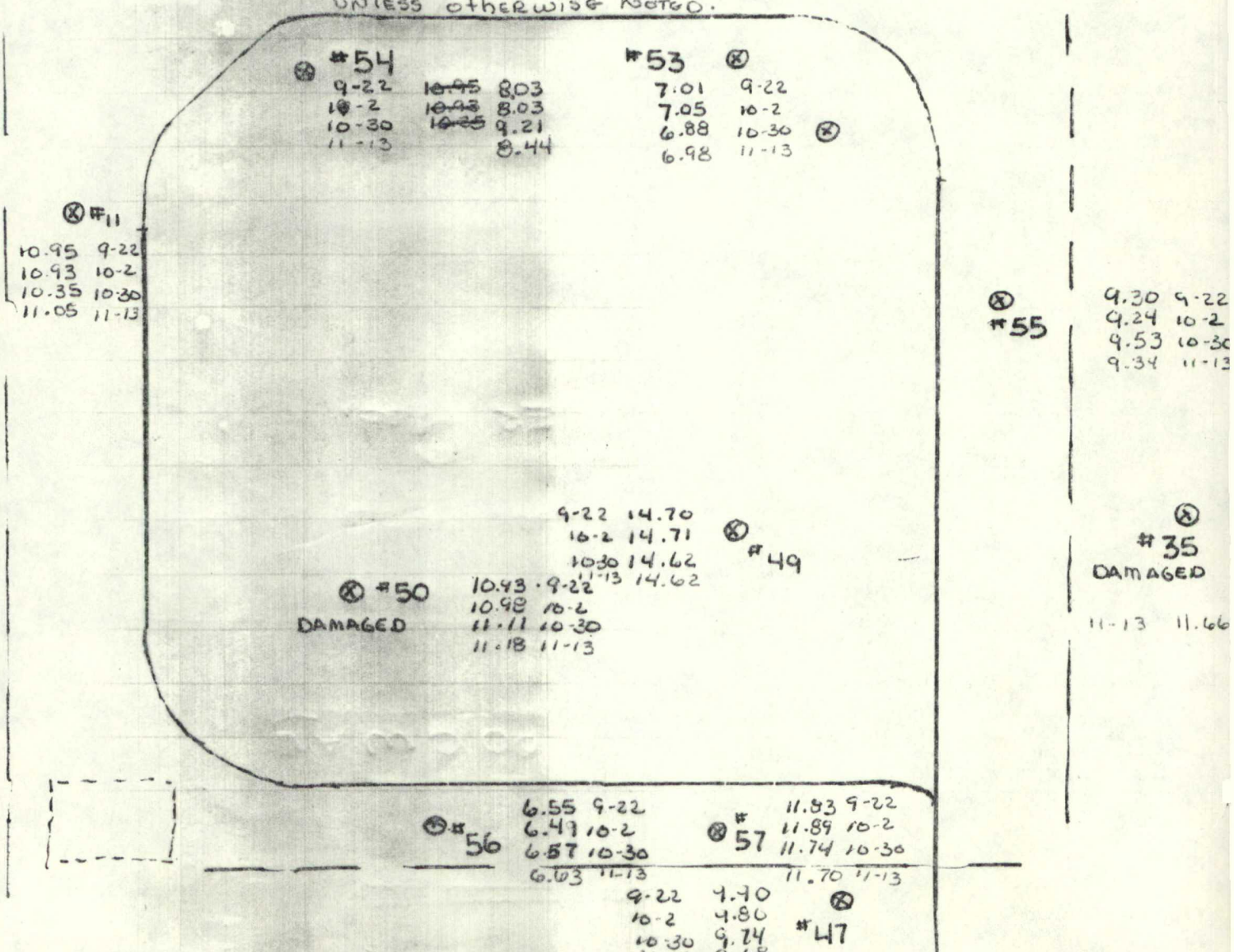
10-2 - D. Montgomery - G. Heyt

10-30 - G. Heyt - C. Kemppanen

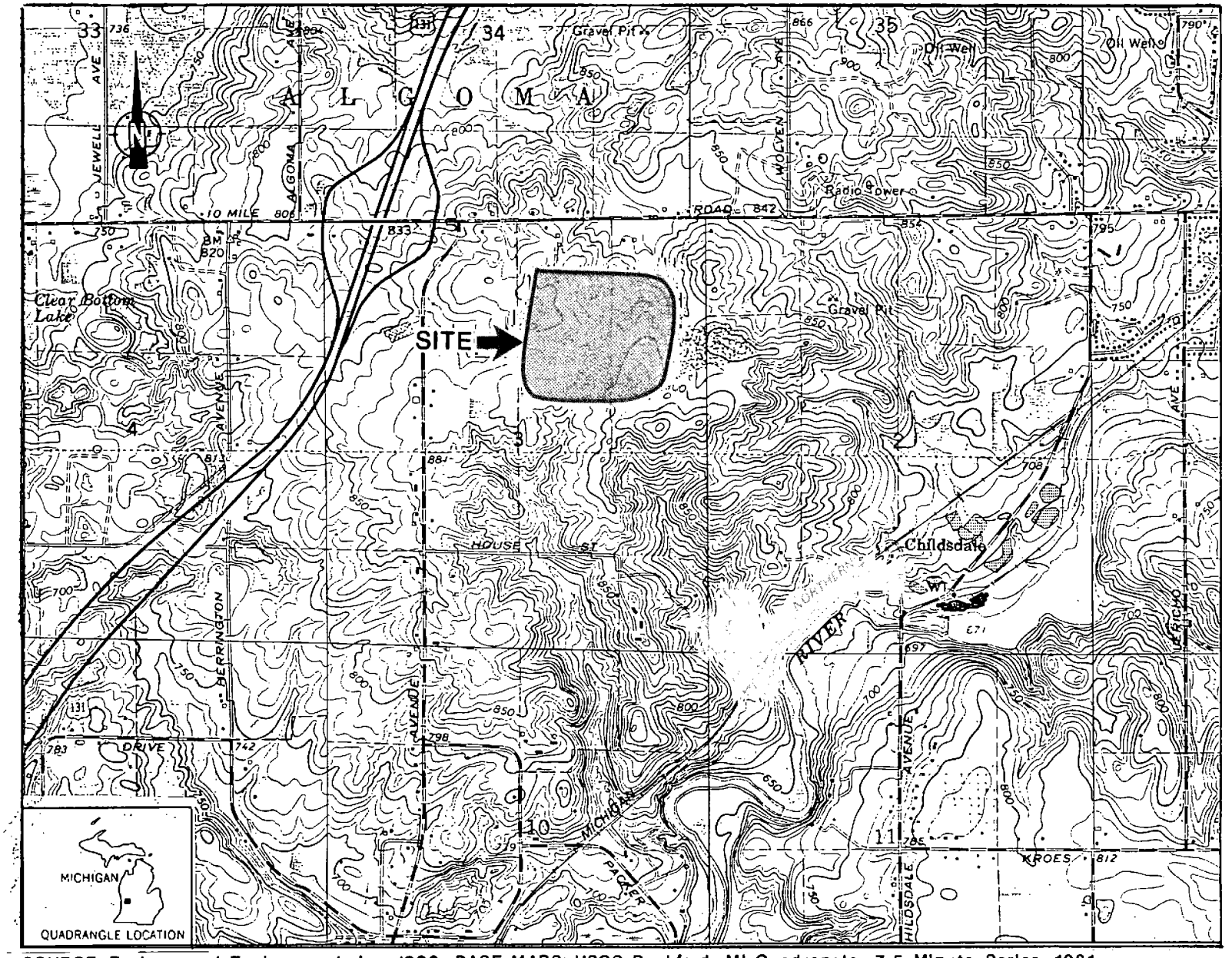
11-13 - G. HEYT - C. Kemppanen
J. JANICZAK

KENT CO LANDFILL PLAINFIELD TWP.

ALL MEASUREMENTS ARE IN METERS
UNLESS OTHERWISE NOTED.



ORIGINAL FIGURES

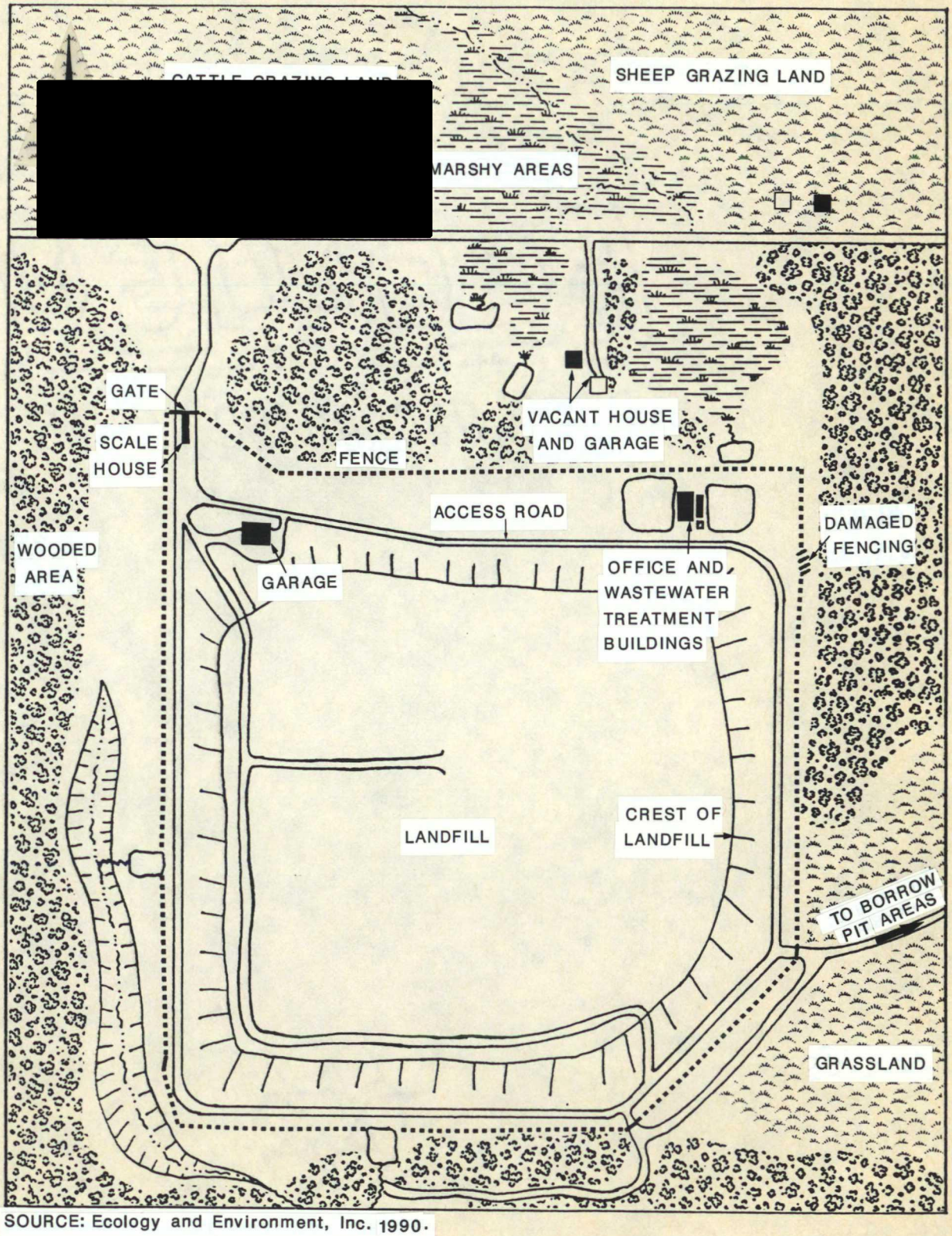


SOURCE: Ecology and Environment, Inc. 1990; BASE MAPS: USGS Rockford, MI Quadrangle, 7.5 Minute Series, 1981.

SCALE

0 ½ 1 MILE

FIGURE 2-1 SITE LOCATION MAP

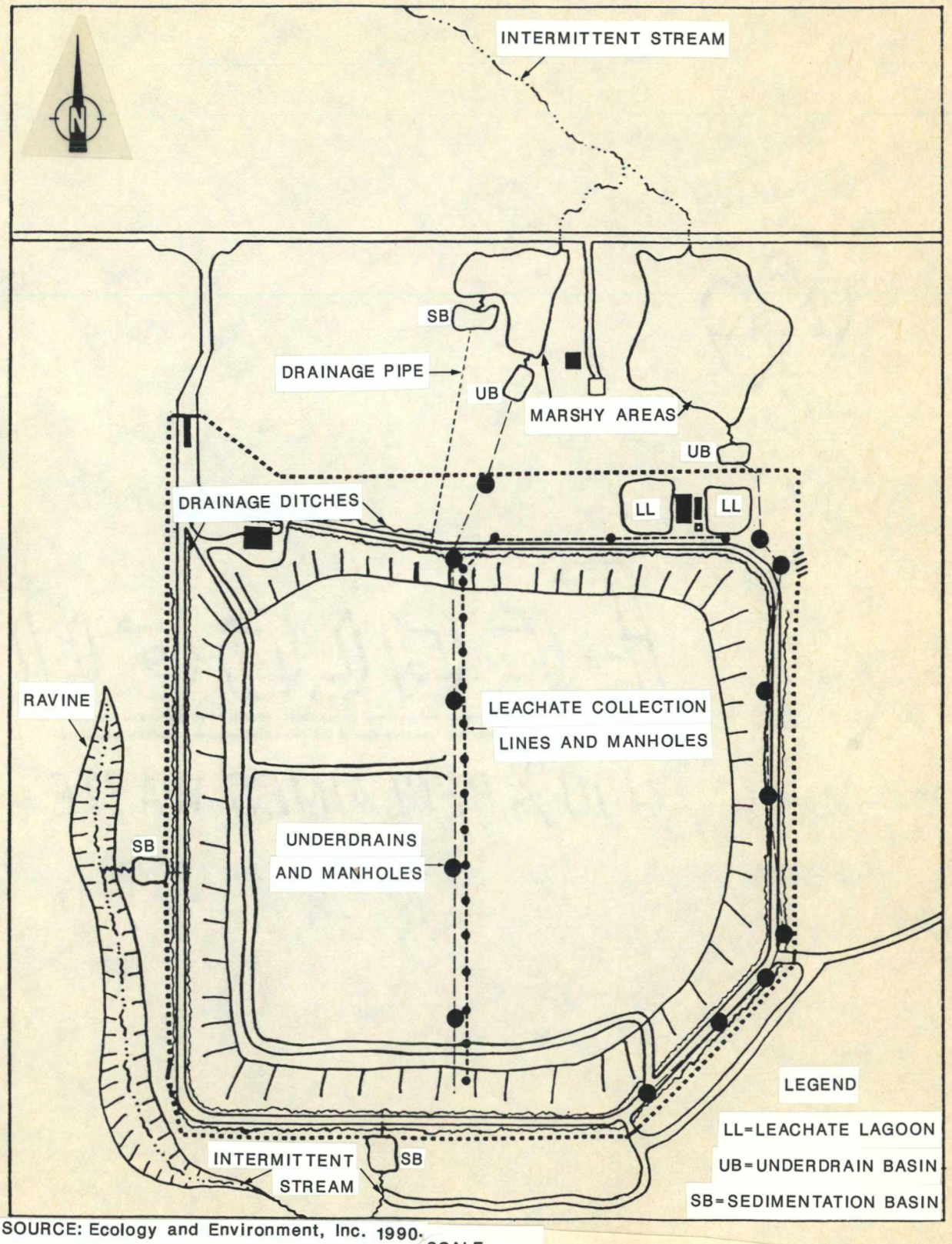


SOURCE: Ecology and Environment, Inc. 1990.

SCALE

0 500 1000 1,500 FEET

FIGURE 3-1 SITE FEATURES

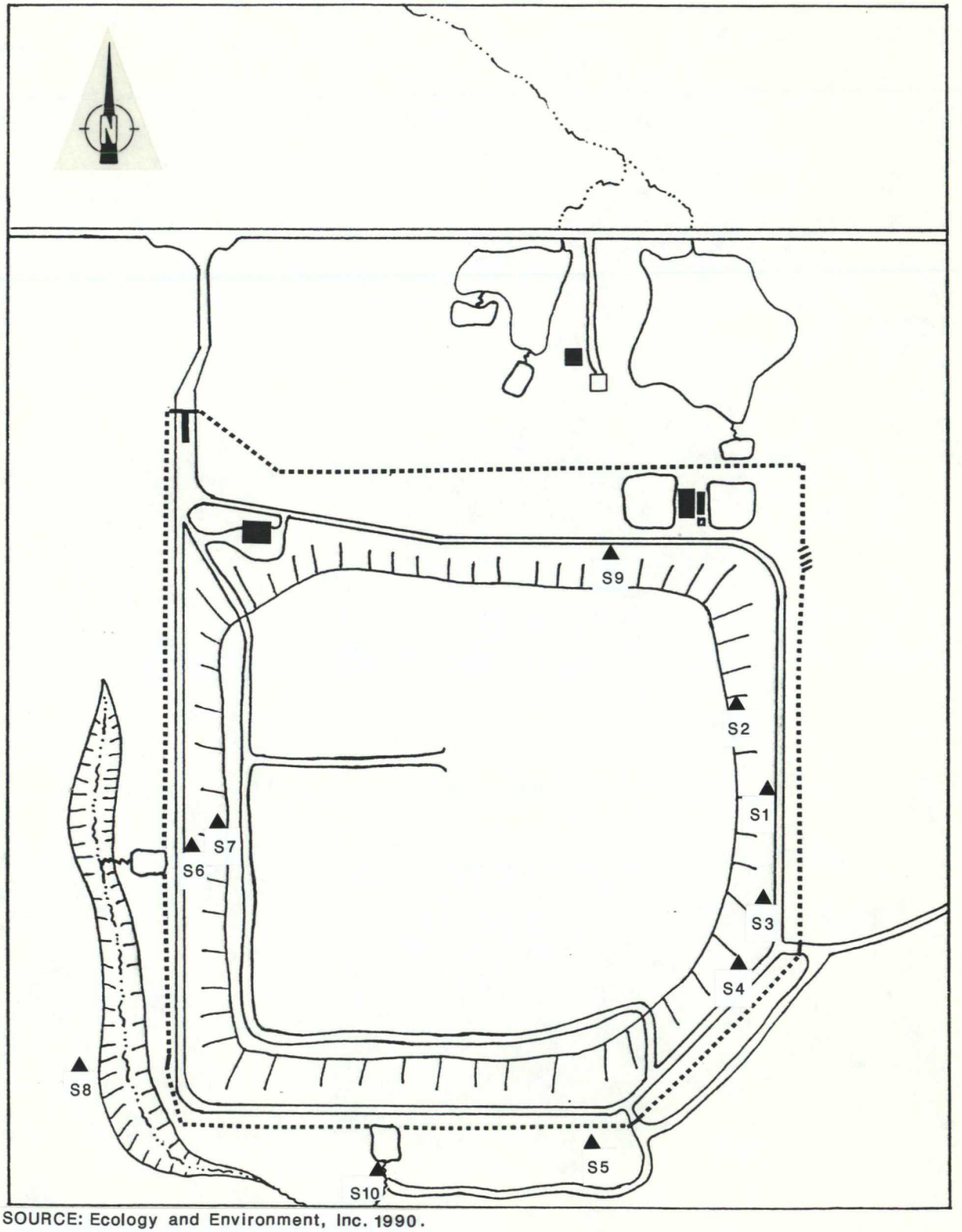


SOURCE: Ecology and Environment, Inc. 1990.

SCALE

0 500 1000 1,500 FEET

FIGURE 3-2 SITE DRAINAGE FEATURES

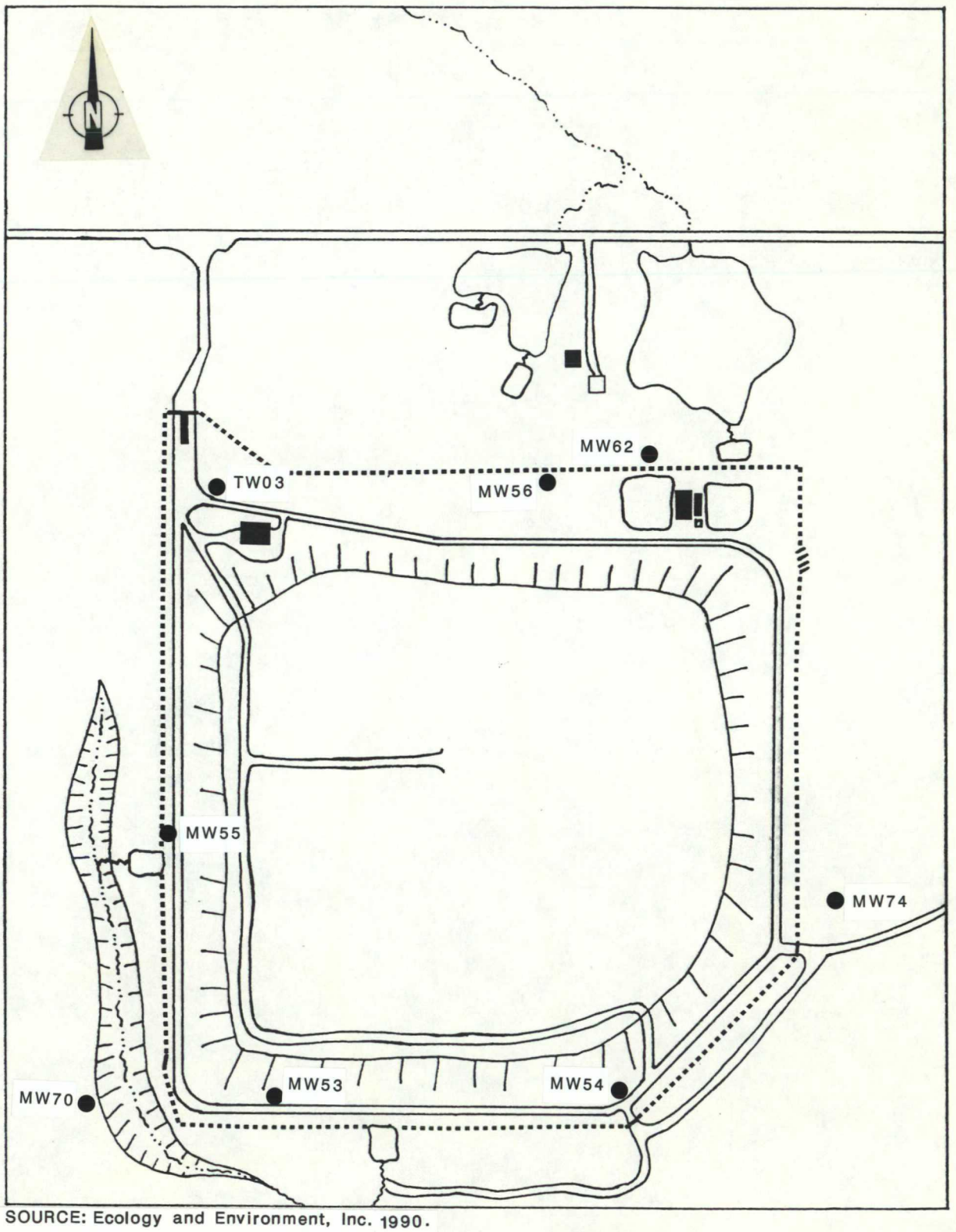


SOURCE: Ecology and Environment, Inc. 1990.

SCALE

0 500 1000 1,500 FEET

FIGURE 3-3 SOIL SAMPLING LOCATIONS

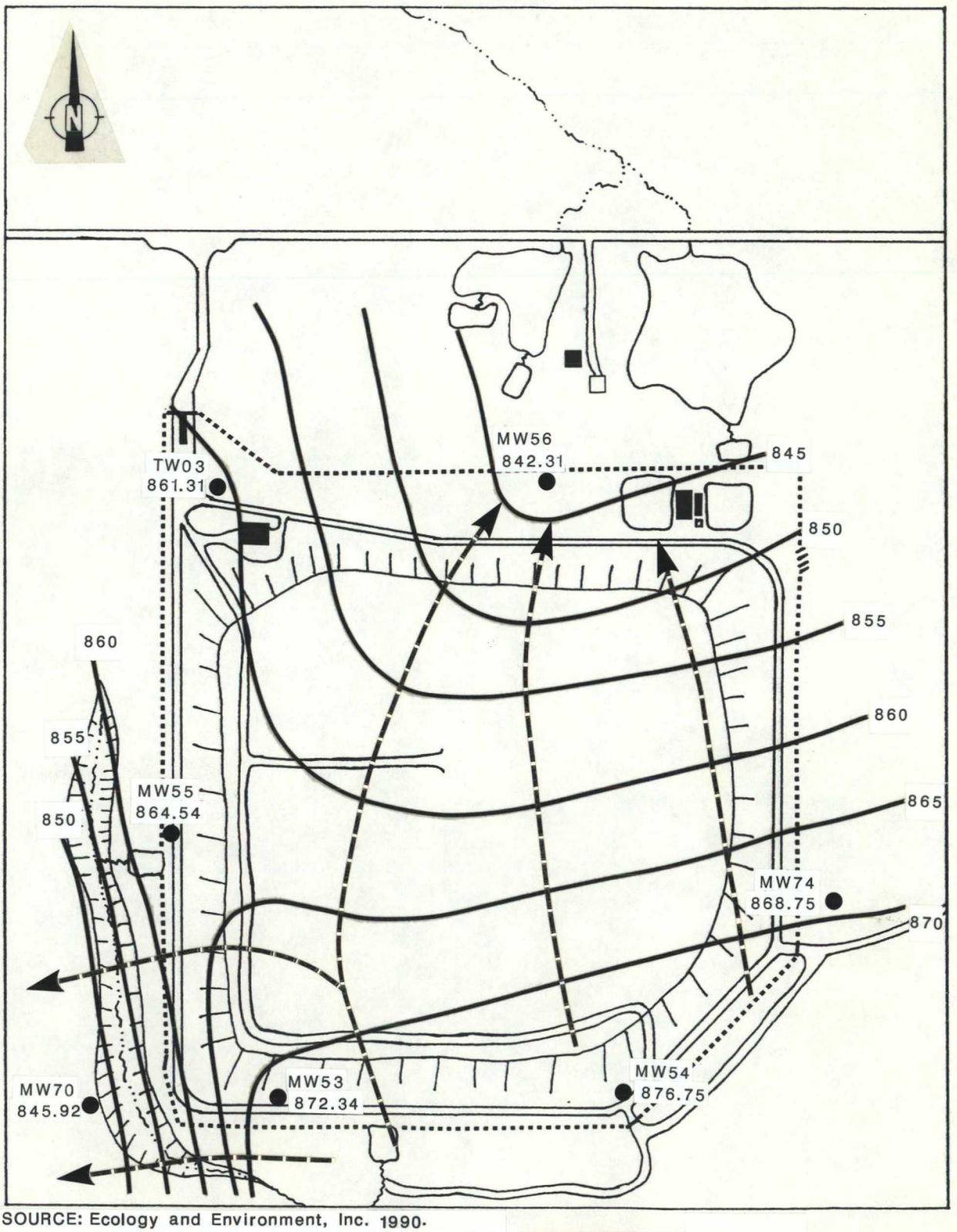


SOURCE: Ecology and Environment, Inc. 1990.

SCALE

0 500 1000 1,500 FEET

FIGURE 3-5 MONITORING WELL SAMPLING LOCATIONS



SOURCE: Ecology and Environment, Inc. 1990.

0 500 SCALE 1000 1,500 FEET

CONTOUR INTERVAL 5 FEET

FIGURE 5-1 GROUNDWATER ELEVATION COUNTOURS

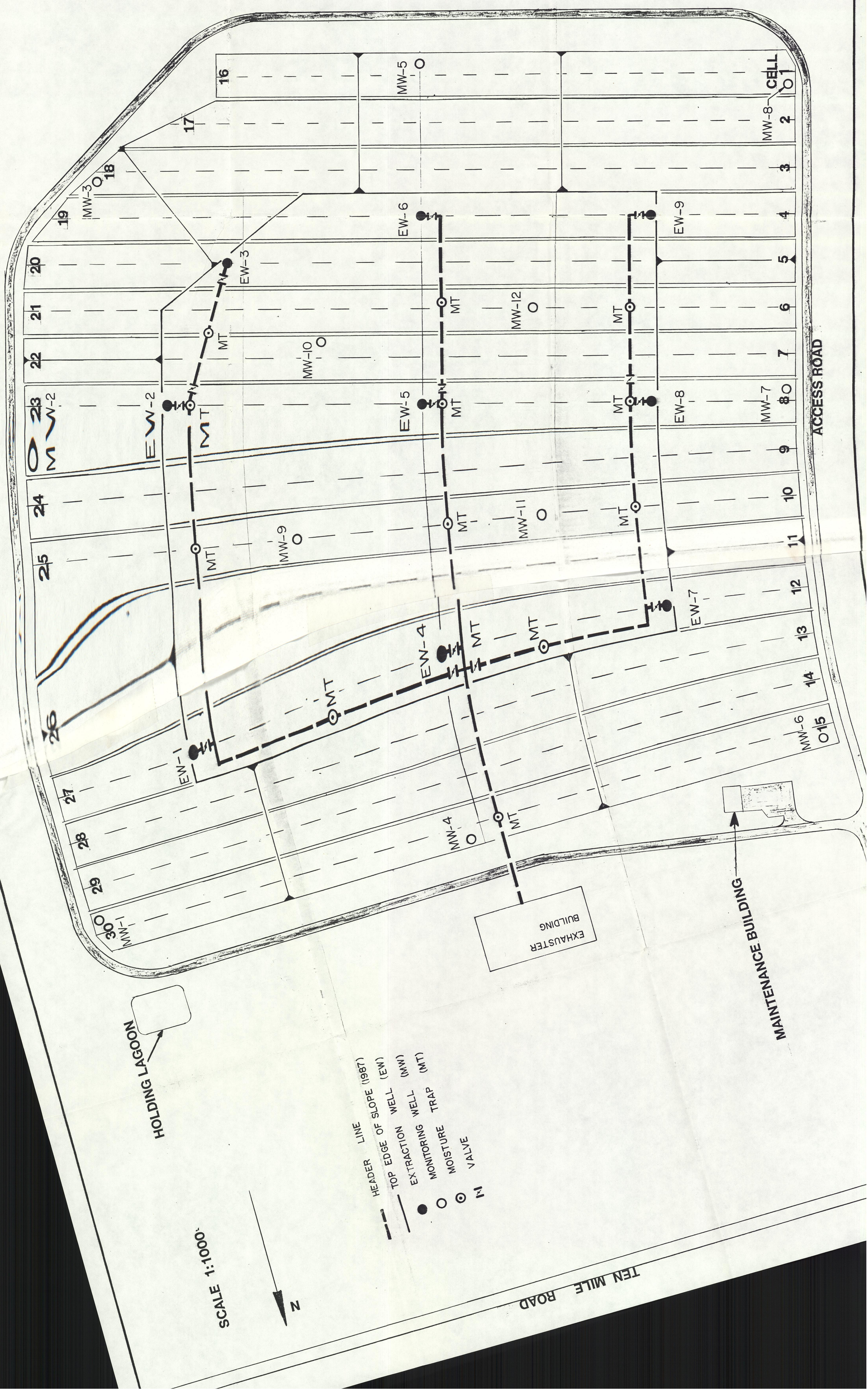


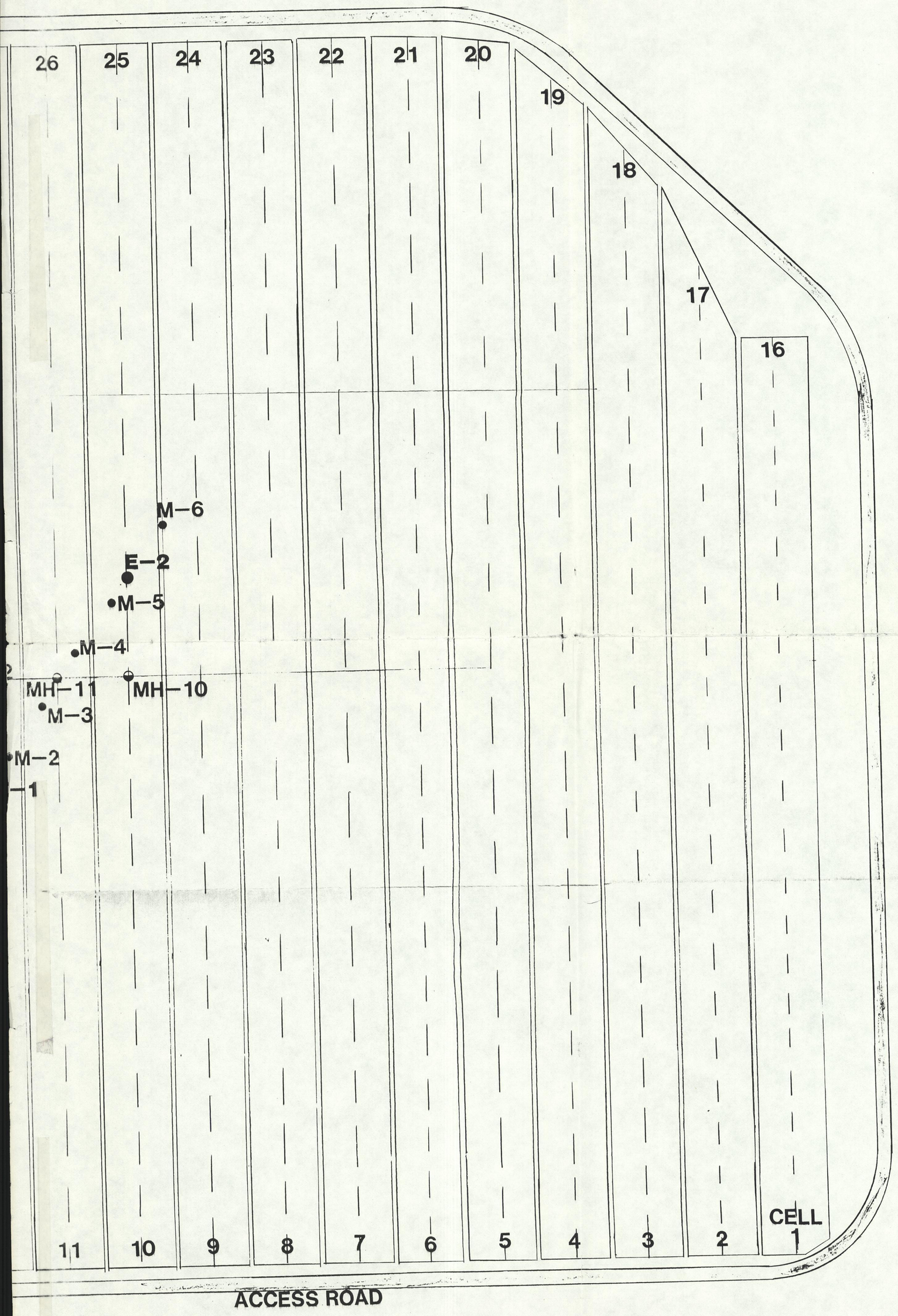
FIGURE 5-2
FULL-SCALE SYSTEM WELLS
AND OTHER FEATURES

NO.	REVISION	DATE

LANDFILL GAS FEASIBILITY STUDY
KENT COUNTY, MICHIGAN
DEPARTMENT OF PUBLIC WORKS

SCS ENGINEERS
STEARNS, CONRAD AND SCHMIDT
CONSULTING ENGINEERS, INC.
TEL.606/341-5353
211 GRANDVIEW DRIVE COVINGTON, KENTUCKY 41017

SCALE:
DATE: 12.20.84
DRAWING BY: MDH.
CHECKED BY:
PROJECT Nº 58406
DRAWING Nº



NO.	REVISION	DATE

FIGURE 3-1

TEST EXTRACTION WELL LOCATION PLAN

LANDFILL GAS FEASIBILITY STUDY

KENT COUNTY, MICHIGAN

SCS ENGINEERS

STEARNS, CONRAD AND SCHMIDT CONSULTING ENGINEERS, INC.

TEL. 606/341-5353

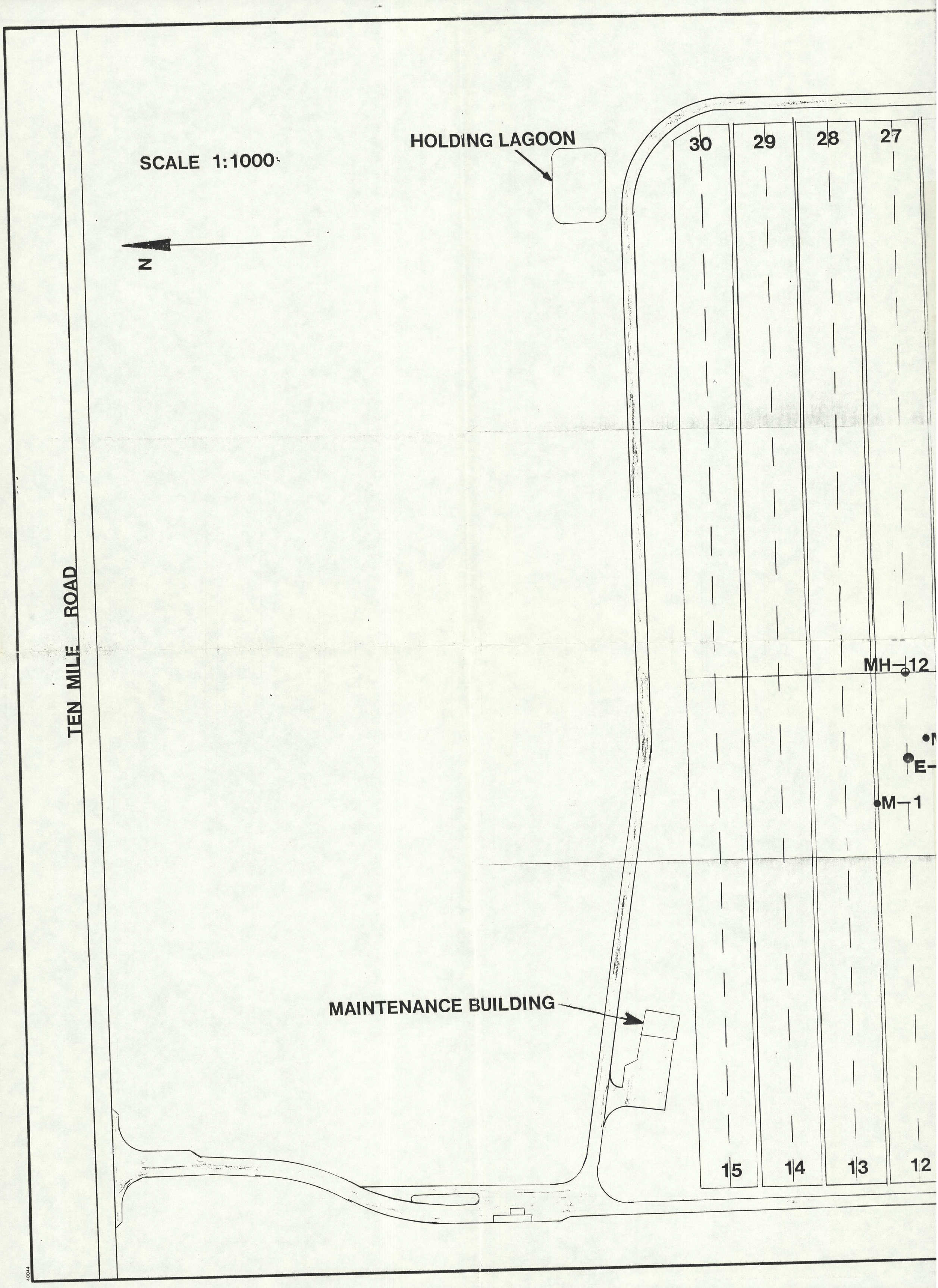
SCALE: AS NOTED

DATE: 11-26-84

DRAWING BY: Bill

PROJECT Nº 58406

DRAWING Nº


SCALE 1:1000
N
HOLDING LAGOON
TEN MILE ROAD
MAINTENANCE BUILDING
30
29
28
27
MH—12
E—
M—1
15
14
13
12
40044

ALGOMA
COURTLAND
PLAINFIELD
CANNON
Rockford
Belmont
Alpine
Edgerton
Childsdale
Sparta Airport
Scott Lake
Clear Bottom Lake
Mead Lake
Mud Lake
Elk Lake
Little Pine Island Lake
Nelson Lake
Meek Lake
Wallace Lake
Whit Lake
High Lake
Low Lake
Grand Island Golf Course
Blythefield Country Club
Blythefield Memorial Gardens
Trailer Park
Gravel Pit
Gravel Pits
Oil Well
Water Tank
Radio Tower
Sewage Disposal
Waterworks
Sandpit
Boat Ramp
Northview High Sch
Northview Jr High Sch
Crestwood Sch
Blessed Virgin Sch
Northland Ch
Gaging Station
Rest Area
Scott Lake Golf Course
Englishville Sch
Englishville Cem
Morning Star Sch
Algoma Sch
Algoma Cem
Algoma Ch
Myers Sch
Myers Cem
Golf Course
Trailer Park
Post Sch
Oakwood Cem
Plainfield Cem
North Kent Ch
Blackardson Sch
Drive-in Theater
Shopping
Stout Creek
Barkley Creek
Grass Lake
Rum Creek
Shaw Creek
Porter Hollow
Stegman Hollow
Cedar Creek
ROGUE RIVER
GRAND RIVER
12W 9N
8N 11W
8N 10W
8N 9N
ecology and environment, inc.
REFERENCE
SITE NAME Plainfield Twp LF
SITE ID
USGS TOPOGRAPHIC MAPS:
NAME Sparta
DATE 1967
REVISED 1972
NAME Cedar Springs
DATE 1967
REVISED 1972
NAME Cedar Springs SW
DATE 1967
REVISED 1972
NAME Rockford
DATE 1967
REVISED 1981
SCALE
0
1/2
1 MILE
MICHIGAN
QUADRANGLE LOCATION
QUADRANGLE LOCATION

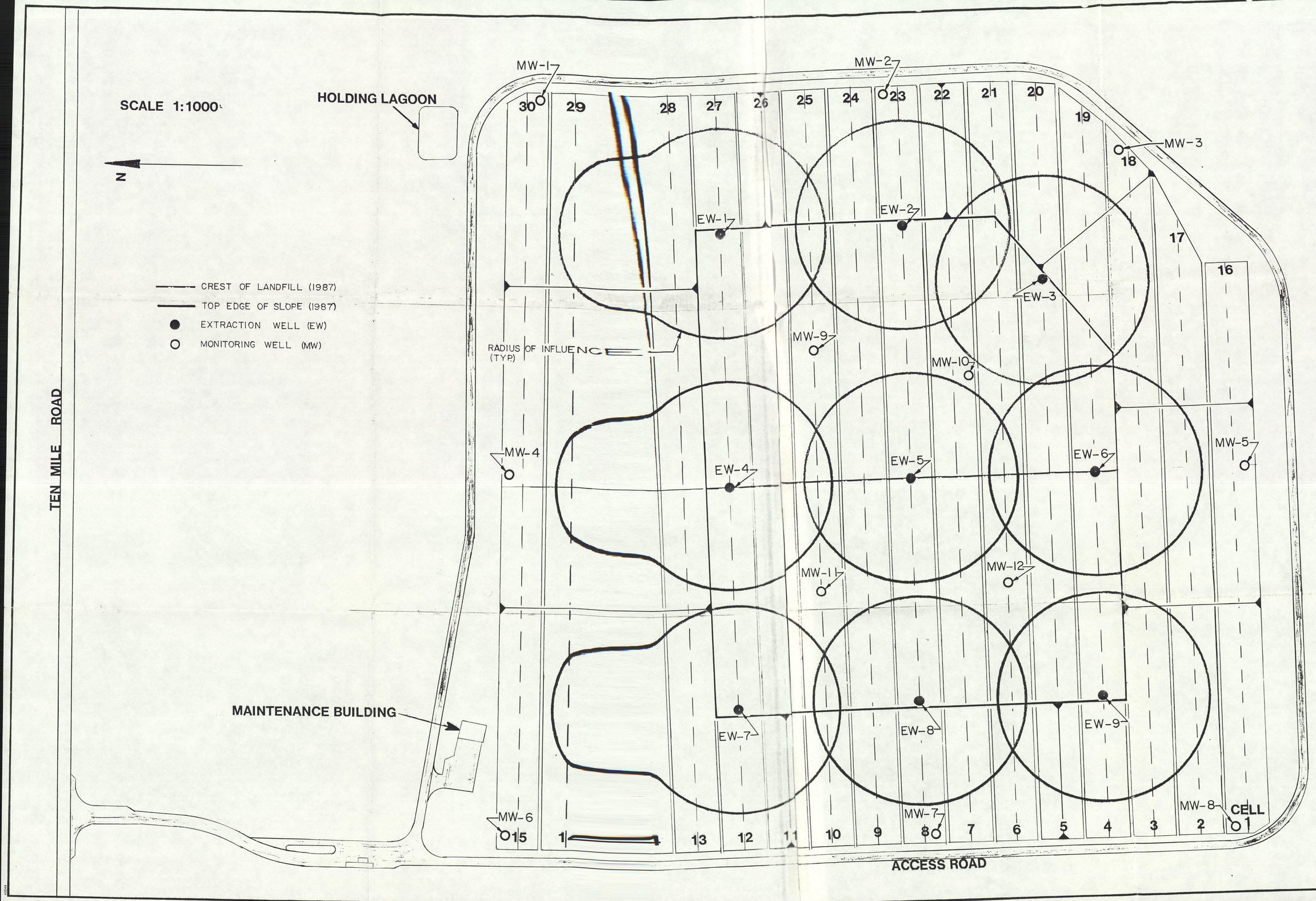


FIGURE 5-1

FULL-SCALE SYSTEM WELL LAYOUT

LANDFILL GAS FEASIBILITY STUDY

KENT COUNTY, MICHIGAN

DEPARTMENT OF PUBLIC WORKS

NO.	REVISION	DATE

SCS ENGINEERS

STEARNS, CONRAD AND SCHMIDT CONSULTING ENGINEERS, INC.

TEL 606/341-5353

211 GRANDVIEW DRIVE, COVINGTON, KENTUCKY 41017

SCALE:

DATE: 12-20-84

DRAWING BY: MDH

CHECKED BY:

PROJECT № 58406

DRAWING №