EPA Region 5 Records Ctr.
330589

WOODLAND LANDFILL II

KANE COUNTY, ILLINOIS

SITE OWNER:

WASTE MANAGEMENT OF ILLINOIS, INC.

OAK BROOK, ILLINOIS

SITE OPERATOR:

WASTE MANAGEMENT OF ILLINOIS, INC.

OAK BROOK, ILLINOIS

PREPARED BY:

PATRICK ENGINEERING INC.

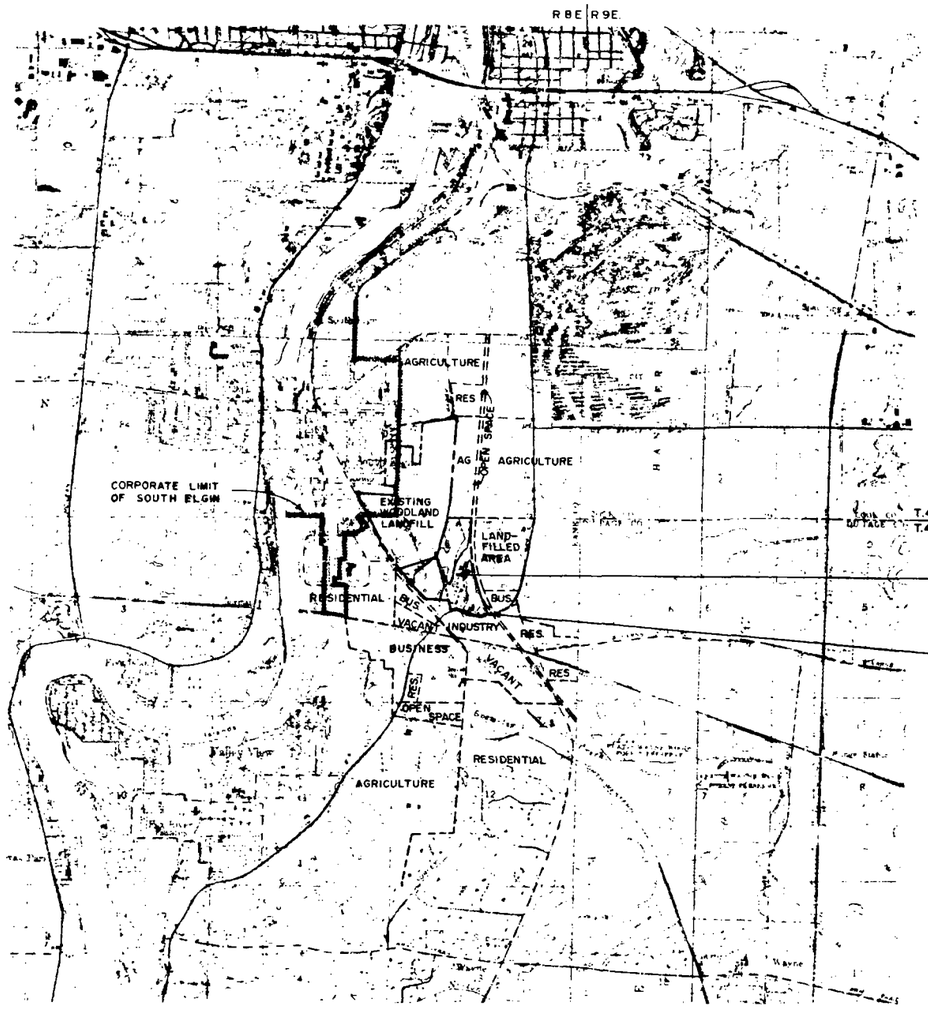
346 TAFT AVENUE
GLEN ELLYN, ILLINOIS
(312)858-7050

THESE PLANS ARE THE PROPERTY OF PATRICK ENGINEERING INC. THEY MAY NOT BE REPRODUCED WITHOUT THE PRIOR WRITTEN PERMISSION OF PATRICK ENGINEERING INC. AND WASTE MANAGEMENT OF ILLINOIS, INC.

These drawings have been prepared under my direction, and to the best of my knowledge, the design complies with the Illinois Environmental Protection Agency Requirements for development of a non-hazardous solid waste management site.

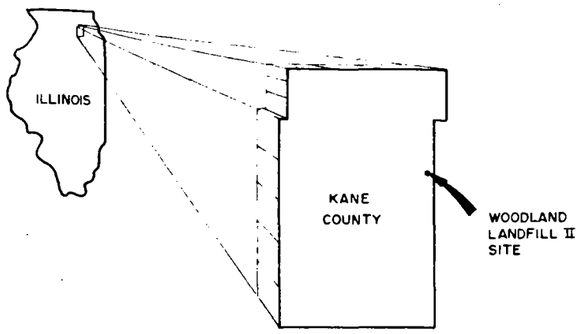
Daniel P. Dietzler July 23, 1982
ENGINEER DATE
DANIEL P. DIETZLER
PATRICK ENGINEERING INC.

110-100



WOODLAND LANDFILL II, PROPOSED EXPANSION AREA = 88 ACRES

STATE OF ILLINOIS PLANE COORDINATE N.1,934,800, E.516,700 (EAST ZONE) △1
REF S E CORNER OF THE PROPOSED EXPANSION AREA



LOCATION & GENERAL LAND USE MAP

CONTOUR INTERVAL. 10 FEET
SCALE 0 — 2000 FEET

PROJECT DATA

AREA OF PROPERTY:	88 ACRES
LANDFILL AREA:	48 ACRES
REQUIRED EXCAVATION:	1,840,000 C.Y.
FILL FOR FINAL COVER:	400,000 C.Y.
FILL FOR DIKES, BERMS, AND SEALS.	400,000 C.Y.
FILL FOR DAILY COVER:	1,040,000 C.Y.
REFUSE STORAGE CAPACITY (AIR SPACE):	3,500,000 C.Y. △1
DAILY RECEIPTS:	3,000 C.Y./DAY
ESTIMATED FILLING PERIOD:	10 to 20 YEARS
TYPE OF WASTE:	NON-HAZARDOUS MUNICIPAL, COMMERCIAL, CONSTRUCTION SOLID WASTES; NON-HAZARDOUS SOLID SPECIAL WASTE; MUNICIPAL WASTEWATER TREATMENT PLANT SLUDGE

INDEX OF DRAWINGS

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△1

NOTES

1. GENERAL LAND USE CLASSIFICATION TAKEN FROM KANE COUNTY MASTER LAND USE PLAN, REVISED DECEMBER 31, 1980, PREPARED BY KANE COUNTY PLANNING DEPARTMENT.

2000 0 2000 4000 6000 8000 10000
SCALE IN FEET

REV	DATE	DESCRIPTION	DR BY	APP BY
△1	10/21/82	CHANGED PROJECT DATA & REMOVED DWG NO. 110-118	WM	DPD

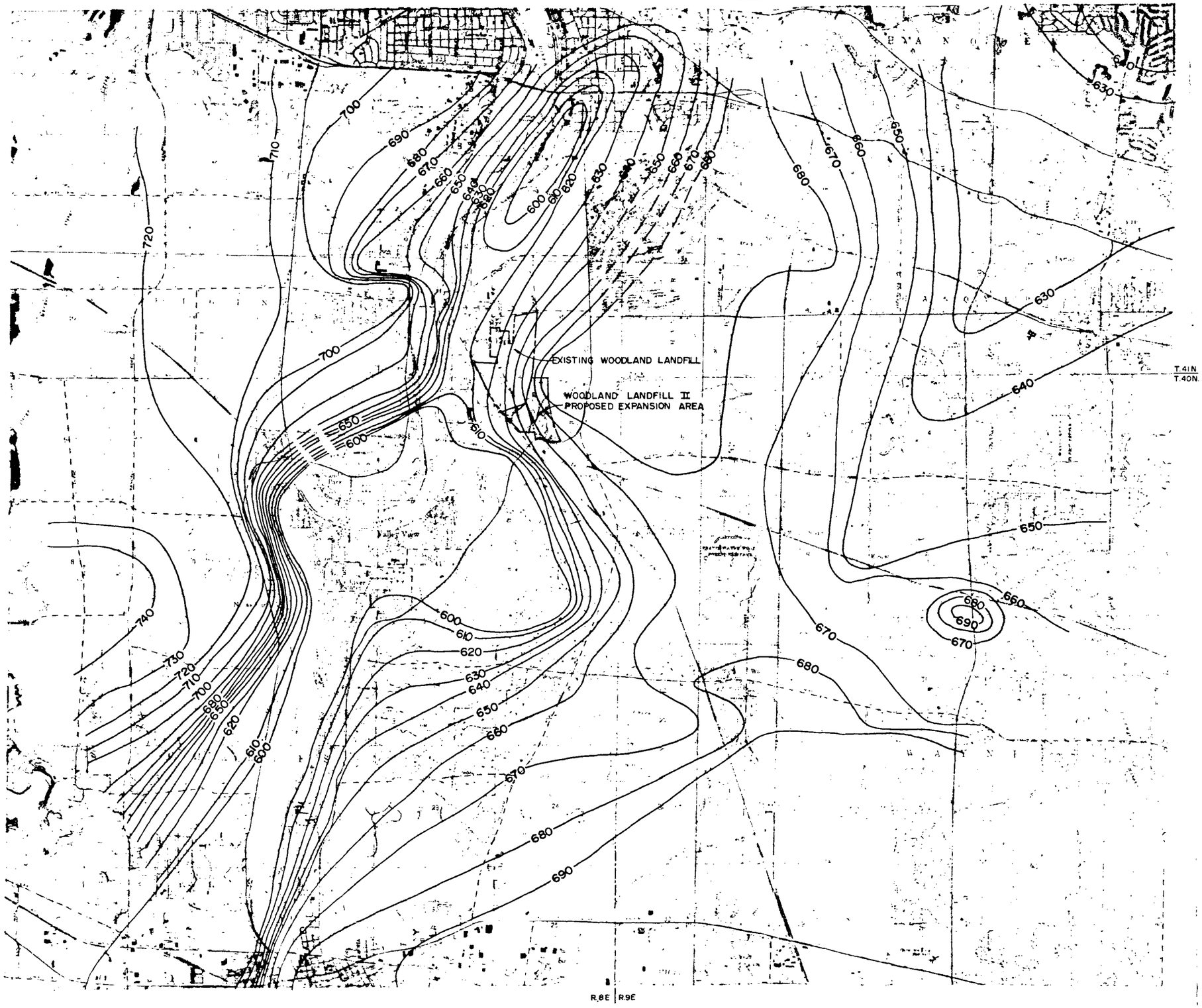
SCALE 1" = 2000'
DATE JUNE, 1982
DES BY KMB
DR BY WM
CHK BY KMB
APP BY DPD

PROJECT: WOODLAND LANDFILL II, KANE COUNTY, ILLINOIS
SHEET TITLE: PROJECT LOCATION MAP

Waste Management, Inc.
Oak Brook, Illinois 60521

SHEET 2 OF 18
DRAWING NO. 110-101 R1

PATRICK ENGINEERING INC.
Geotechnical Environmental Engineers
Glen Ellyn, Illinois



LEGEND

—700— ELEVATION OF TOP OF BEDROCK SURFACE IN FEET ABOVE MSL

NOTES

1. BEDROCK SURFACE ELEVATIONS OBTAINED FROM INTERPRETATION OF WATER WELL LOGS ON FILE WITH THE ILLINOIS STATE GEOLOGICAL SURVEY, WARRENVILLE, ILLINOIS, MAY, 1982.
2. CONTOURS BELOW EL. 600 NOT SHOWN DUE TO LACK OF SUFFICIENT DATA.
3. DASHED CONTOURS INDICATE ESTIMATED CONTOURS.

2000 0 2000 4000 6000 8000 10000
SCALE IN FEET

REV	DATE	DESCRIPTION	DR BY	APP BY

SCALE 1" = 2000'
DATE JUNE, 1982
DES BY KMB
DR BY WM
CHK BY KMB
APP BY

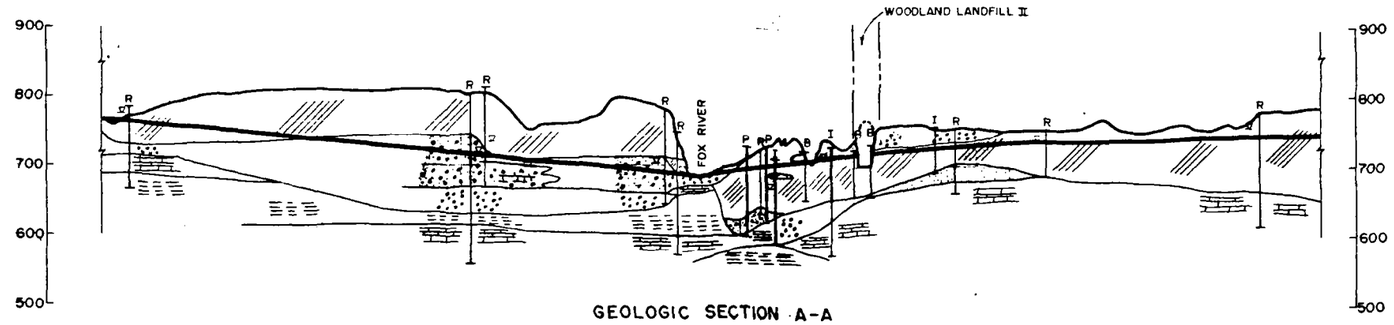
PROJECT
WOODLAND LANDFILL II
KANE COUNTY, ILLINOIS

SHEET TITLE
BEDROCK SURFACE MAP

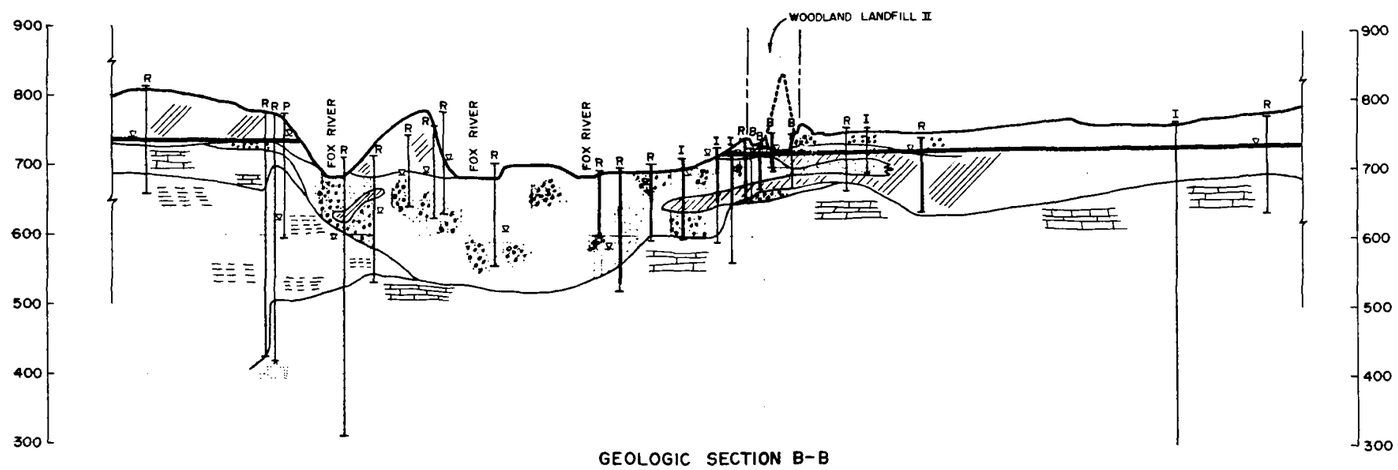
SHEET 3 OF 18
DRAWING NO
110-102

Waste Management, Inc.
Oak Brook, Illinois 60521

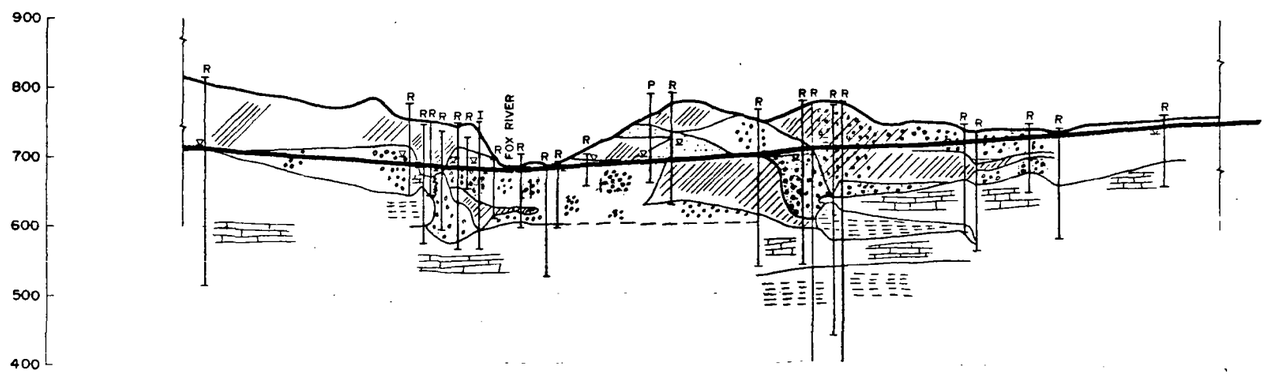
PATRICK ENGINEERING INC.
Geotechnical, Environmental Engineers
Glen Ellyn, Illinois



GEOLOGIC SECTION A-A



GEOLOGIC SECTION B-B



GEOLOGIC SECTION C-C

LEGEND

- CLAY
- GRAVEL
- SAND
- LIMESTONE
- SHALE
- SANDSTONE
- PROPERTY LINE
- WATER LEVEL
- R RESIDENTIAL WELL
- I INDUSTRIAL WELL
- P PUBLIC WELL
- B BORING
- CASING
- APPROXIMATE REGIONAL POTENTIOMETRIC LEVEL IN THE DOLOMITE/GRAVEL AQUIFER

NOTES

1. GROUND ELEVATION, STATIC WATER LEVEL, AND WATER USE DETERMINED FROM WELL LOGS ON FILE WITH THE ILLINOIS STATE GEOLOGICAL SURVEY.
2. CROSS-SECTIONS WERE DEVELOPED FROM INTERPRETATION OF LOGS OF WATER SUPPLY WELLS AND PUBLISHED GEOLOGIC INFORMATION.

SCALE
HORZ 0 2000 FEET
VERT. 0 100 FEET

REV.	DATE	DESCRIPTION	DR BY	APP BY

SCALE: AS SHOWN
DATE: JUNE, 1982
DES BY: KMB
DR BY: WM
CHK BY: KMB
APP BY: DPC

PROJECT: WOODLAND LANDFILL II
KANE COUNTY, ILLINOIS

SHEET TITLE: GEOLOGIC SECTIONS A,B,&C

Waste Management, Inc.
Oak Brook, Illinois 60521

SHEET 5 OF 18
DRAWING NO. 110-104

PATRICK ENGINEERING INC.
Geotechnical/Environmental Engineers
Glen Ellyn, Illinois

FINAL SURVEY
ORIGINAL SURVEY

PLATE 3-FULL CROSS SECTION-FULL DOT

LEGEND

3 — CROSS SECTION

3 (110-113) — DWG NO. WHERE SECTION IS PLOTTED

BP-29 — BORINGS BY PATRICK ENGINEERING, INC. DRILLED IN 1982.

B-21-81 — BORINGS BY TSC AND YEAR IN WHICH THEY WERE DRILLED.

STS B8-70 — BORINGS BY SOIL TESTING SERVICES, INC. AND YEAR IN WHICH THEY WERE DRILLED, APPROXIMATE LOCATION

x 739.4 — SPOT ELEVATION

— 740 — CONTOUR LINE

WOVEN WIRE FENCE

UNIMPROVED ACCESS ROAD

LANDFILL PROPERTY LINE

O = MW installed

NOTES

1. TOPOGRAPHY SUPPLIED BY ABRAMS AERIAL SURVEY CO., JULY, 1981.
2. TSC BORING LOCATIONS SCALED FROM SKETCHES. STS BORING LOCATIONS SCALED FROM SKETCHES. PATRICK ENGINEERING BORING LOCATIONS DETERMINED BY SURVEY.
3. BOUNDARY SURVEY PROVIDED BY WASTE MANAGEMENT OF ILLINOIS, INC.
4. PROJECT BASELINE IS THE SOUTHERNMOST EAST-WEST PROPERTY LINE. THUS, PROJECT NORTH IS N 1°-55'-50"E.

SEE LEGEND AND NOTES AT LEFT.

RP REFERENCE POINT
THESE SELECTED POINTS ARE PLOTTED WITH EXTREME CARE AND ARE RECOMMENDED AS BASES FOR LINES DURING CONSTRUCTION

ACCURACIES NOT GUARANTEED IN OBSCURED AREAS SHOWN BY DASHED CONTOURS AND UNDERLINED ELEVATIONS

200 0 200 400 600
SCALE 1" = 200' CONTOUR INTERVAL 5'
GRIDS BASED ON LOCAL COORDINATE SYSTEM.
DATE OF PHOTOGRAPHY MAY 1981 DATE OF MAPPING JULY 1981

PATRICK ENGINEERING INC.
Geotechnical/Environmental Engineers
Glen Ellyn, Illinois

REV	DATE	DESCRIPTION	DR BY	APP BY
1	1/12/83	ADDED BOUNDARY SURVEY DATA & NOTES 3 & 4	WM	DPD

1"=260'

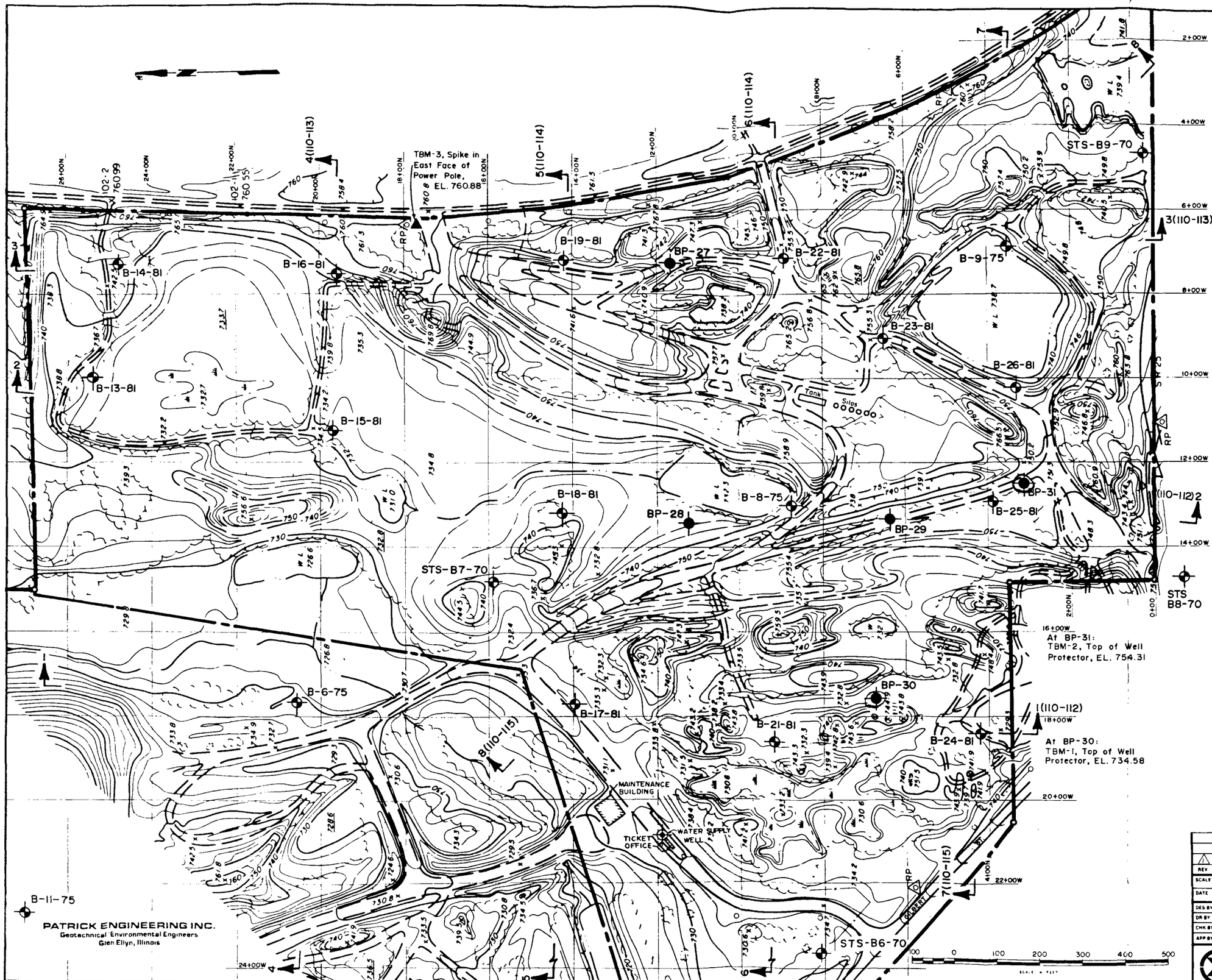
SCALE	1" = 200'
DATE	JUNE, 1982
DES BY	KMB
DR BY	WM
CHK BY	KMB
APP BY	DPD

PROJECT
WOODLAND LANDFILL II
KANE COUNTY, ILLINOIS

SHEET TITLE
AREA TOPOGRAPHY & BORING LOCATION MAP

Waste Management, Inc.
Oak Brook, Illinois

SHEET 6 OF 18
DRAWING NO
110-105RI



PATRICK ENGINEERING INC.
Geotechnical · Environmental Engineers
Glen Ellyn, Illinois

LEGEND

- 2 — CROSS SECTION
- 2 (110-112) — DWG NO WHERE SECTION IS PLOTTED
- BP-27 — BORINGS BY PATRICK ENGINEERING, INC. DRILLED IN 1982
- B-21-81 — BORINGS BY TSC AND YEAR IN WHICH THEY WERE DRILLED.
- STS B9-70 — BORINGS BY SOIL TESTING SERVICES, INC AND YEAR IN WHICH THEY WERE DRILLED, APPROXIMATE LOCATION
- WATER SUPPLY WELL
- LANDFILL PROPERTY LINE
- UNIMPROVED ACCESS ROAD
- CHAIN LINK FENCE
- 740 — CONTOUR LINE
- X 7394 — SPOT ELEVATION
- O = MW installed

NOTES

1. BORINGS BP-30 AND BP-31 ARE GROUNDWATER MONITORING WELLS.
2. TOPOGRAPHY DATED JULY, 1981 SUPPLIED BY ABRAMS AERIAL SURVEY CO., LANSING, MICHIGAN.
3. PROJECT BASELINE IS THE SOUTHERNMOST EAST-WEST PROPERTY LINE. THUS, PROJECT NORTH IS N1°-55'-50"E.

REV	DATE	DESCRIPTION	DR BY	APP BY
1	1/5/83	EXTENDED GRID LINES / ADDED NOTE 3.	WM	DPD

SCALE	1" = 100'
DATE	JUNE, 1982
DES BY	KMB
DR BY	WM
CHK BY	KMB
APP BY	DPD

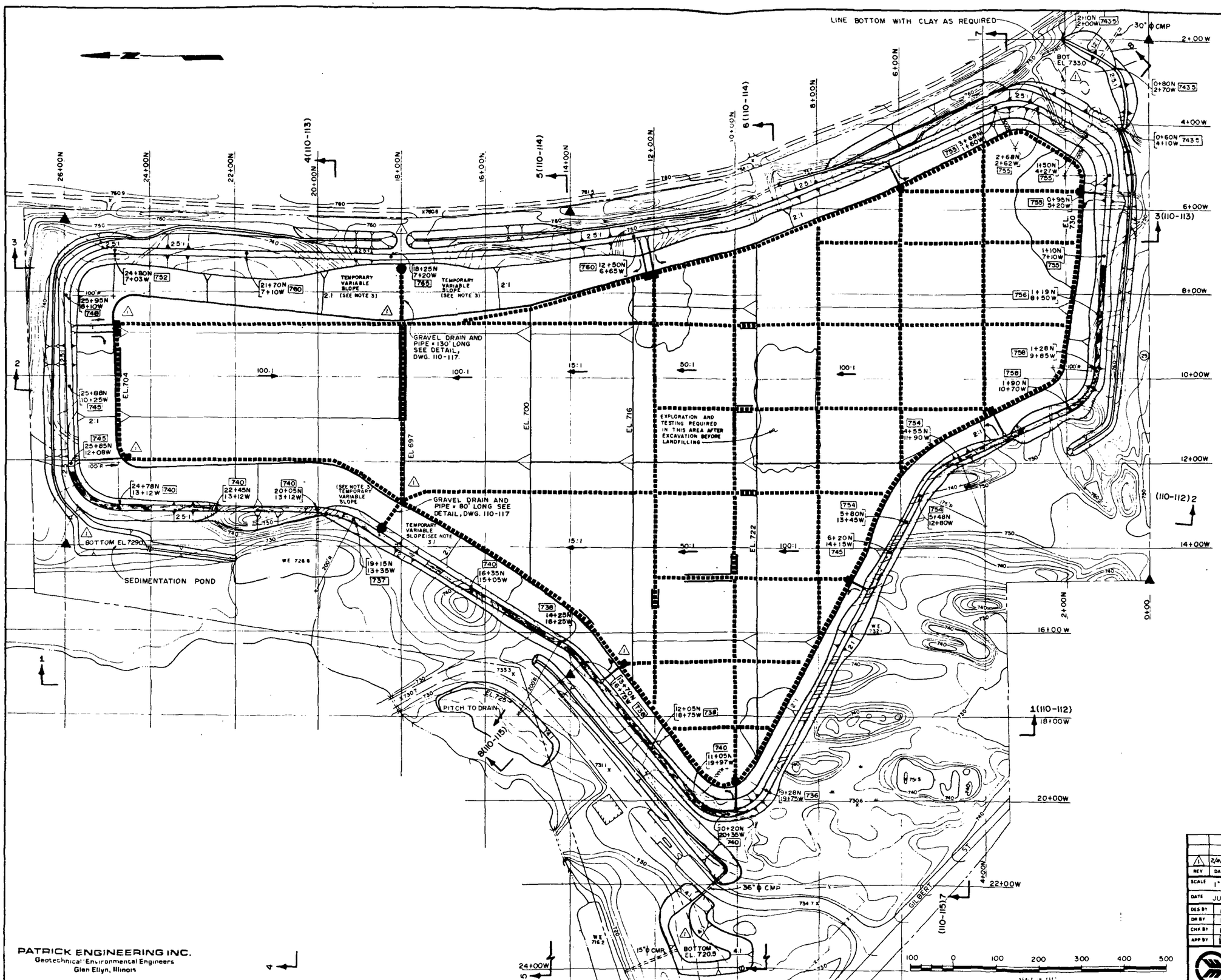
PROJECT: WOODLAND LANDFILL II
KANE COUNTY, ILLINOIS

SHEET TITLE: SITE TOPOGRAPHY & BORING LOCATIONS

Waste Management, Inc.
Oak Brook, Illinois 60521

SHEET 7 OF 18

DRAWING NO 110-106 R1



LEGEND

- 2 — CROSS SECTION
- 2(110-112) — DWG NO WHERE SECTION IS PLOTTED
- 755 2+68N 2+62W — CONSTRUCTION CONTROL COORDINATES AND TOP ELEVATION FOR PERIMETER DIKE AND BERM
- TOP OF CUT SLOPE
- EXCAVATION SURFACE
- BOTTOM OF CUT SLOPE
- TOP OF FILL SLOPE
- FILL SURFACE
- BOTTOM OF FILL SLOPE
- LEACHATE COLLECTION DRAIN
- LEACHATE COLLECTION POINT
- DIRECTION OF SLOPE
- APPROXIMATE AREA OF BOTTOM AND SIDE SEAL
- PROPERTY LINE
- 730 EXISTING CONTOUR LINE
- CONSTRUCTION CONTROL MONUMENT & BENCHMARK
- LEACHATE UNDERDRAIN
- EXTENT OF PERIMETER BERM, MIN 4' HIGH
- LEACHATE COLLECTION SUMP
- DIRECTION OF SANITARY TEE AT LEACHATE COLLECTION RISER

NOTES

1. A MINIMUM OF ONE ADDITIONAL BORING SHALL BE MADE PER ACRE BEFORE LANDFILLING, TO VERIFY THAT A MINIMUM OF 10 FEET OF SOIL WITH AN INSITU PERMEABILITY OF 1×10^{-7} cm/sec. EXISTS BETWEEN CONTAMINANTS AND ANY PERMEABLE SOILS.
2. THE LEACHATE COLLECTION DRAINS SHOWN ARE CONSIDERED THE MINIMUM REQUIRED. ADDITIONAL LEACHATE DRAINS MAY BE ADDED.
3. EXCAVATED SLOPE AT LEACHATE COLLECTION SUMPS SHALL BE INSPECTED FOR STABILITY BY AN ENGINEER DURING CONSTRUCTION.
4. CONSTRUCTION OF LEACHATE COLLECTION SUMPS TO BE AS DIRECTED BY AN ENGINEER.
5. SANITARY TEE CONNECTORS SHALL BE INSTALLED AT THE BOTTOM OF EACH LEACHATE COLLECTION RISE IN THE INDICATED DIRECTION.

REV	DATE	DESCRIPTION	DR BY	APP BY
1	2/10/83	ADDED LEACHATE SUMPS, COLLECTION PTS & NOTES 3,4 & 5	WM	DPD

SCALE	1" = 100'
DATE	JUNE, 1982
DES BY	KMB
DR BY	WM
CHK BY	KMB
APP BY	DPD

PROJECT: WOODLAND LANDFILL II
KANE COUNTY, ILLINOIS

SHEET TITLE: EXCAVATION & LEACHATE COLLECTION PLAN

Waste Management, Inc.
Oak Brook, Illinois 60521

SHEET 8 OF 18

DRAWING NO 110-107 R1

PATRICK ENGINEERING INC.
Geotechnical Environmental Engineers
Glen Ellyn, Illinois

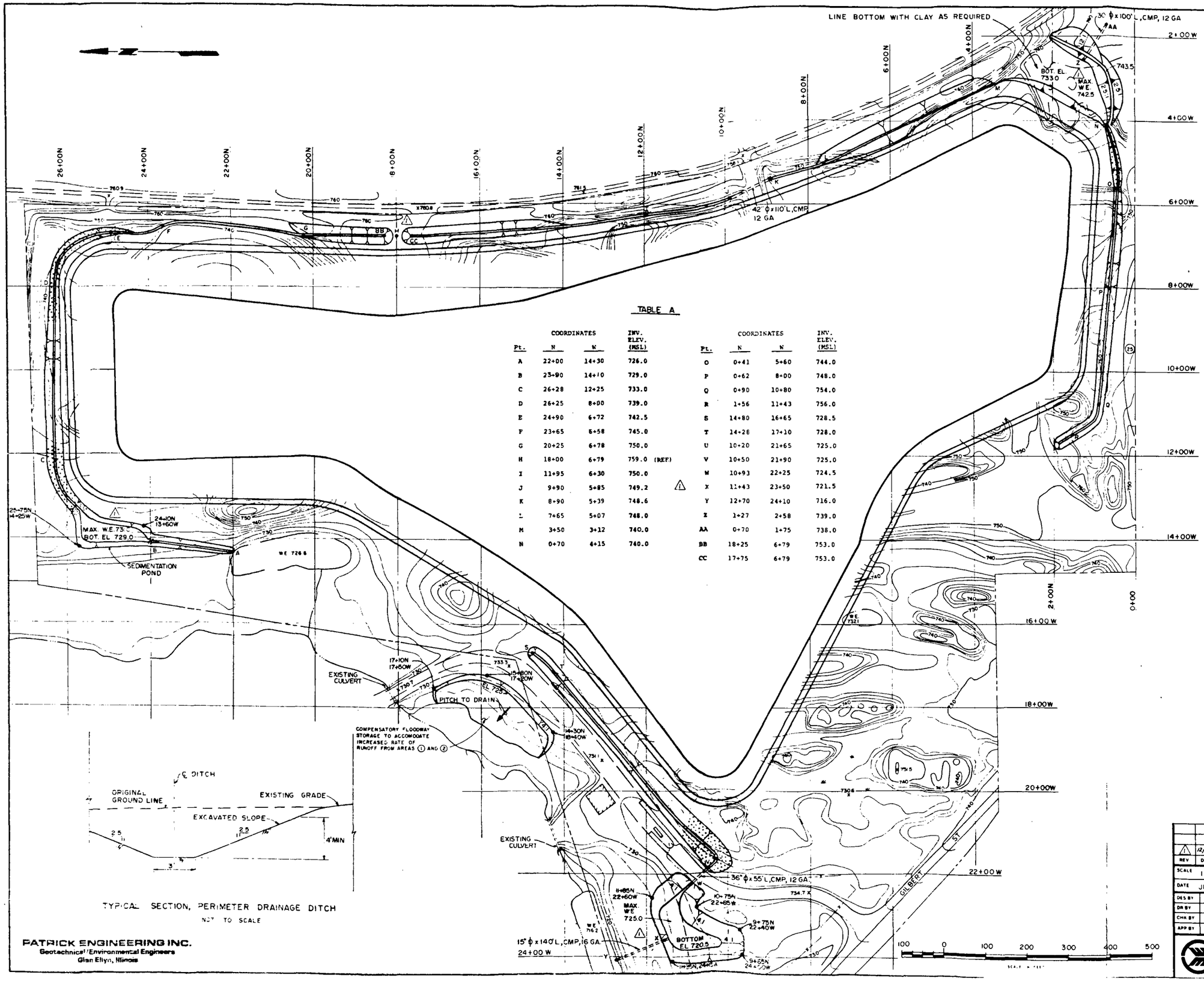


TABLE A

Pt.	COORDINATES N	COORDINATES W	INV. ELEV. (MSL)	Pt.	COORDINATES N	COORDINATES W	INV. ELEV. (MSL)
A	22+00	14+30	726.0	O	0+41	5+60	744.0
B	23+90	14+10	729.0	P	0+62	8+00	748.0
C	26+28	12+25	733.0	Q	0+90	10+80	754.0
D	26+25	8+00	739.0	R	1+56	11+43	756.0
E	24+90	6+72	742.5	S	14+80	16+65	728.5
F	23+65	6+58	745.0	T	14+28	17+10	728.0
G	20+25	6+78	750.0	U	10+20	21+65	725.0
H	18+00	6+79	759.0 (REF)	V	10+50	21+90	725.0
I	11+95	6+30	750.0	W	10+93	22+25	724.5
J	9+90	5+85	749.2	X	11+43	23+50	721.5
K	8+90	5+39	748.6	Y	12+70	24+10	716.0
L	7+65	5+07	748.0	Z	1+27	2+58	739.0
M	3+50	3+12	740.0	AA	0+70	1+75	738.0
N	0+70	4+15	740.0	BB	18+25	6+79	753.0
				CC	17+75	6+79	753.0

LEGEND

- CONSTRUCTION CONTROL POINT (SEE TABLE A FOR COORDINATES AND INVERT ELEVATION)
- 15" ϕ CMP x 140' LONG — CORRUGATED METAL PIPE DIA & LENGTH
- TOP OF CUT SLOPE
- EXCAVATION SURFACE
- BOTTOM OF CUT SLOPE
- TOP OF FILL SLOPE
- FILL SURFACE
- BOTTOM OF FILL SLOPE
- PROPERTY LINE
- 730 EXISTING CONTOUR LINE
- RIP RAP

NOTES

1. STORMWATER DETENTION AREAS ARE DESIGNED TO ACCOMMODATE A 50 YEAR STORM AND RELEASE AT 3 YEAR RATE OF RUNOFF FROM UNENVELOPED AREA. AREAS WHICH DRAIN ONTO THE SITE ARE ROUTED THRU SITE WITHOUT DETENTION.
2. DITCHES & CULVERTS ARE SIZED TO ACCOMMODATE A 50 YEAR STORM.

TYPICAL SECTION, PERIMETER DRAINAGE DITCH

NOT TO SCALE

PATRICK ENGINEERING INC.
Geotechnical/Environmental Engineers
Glen Ellyn, Illinois

REV	DATE	DESCRIPTION	DR BY	APP BY
1	12/8/82	CHANGED WATER EL. (TABLE A), ADDED CMP LENGTHS	WM	DPD

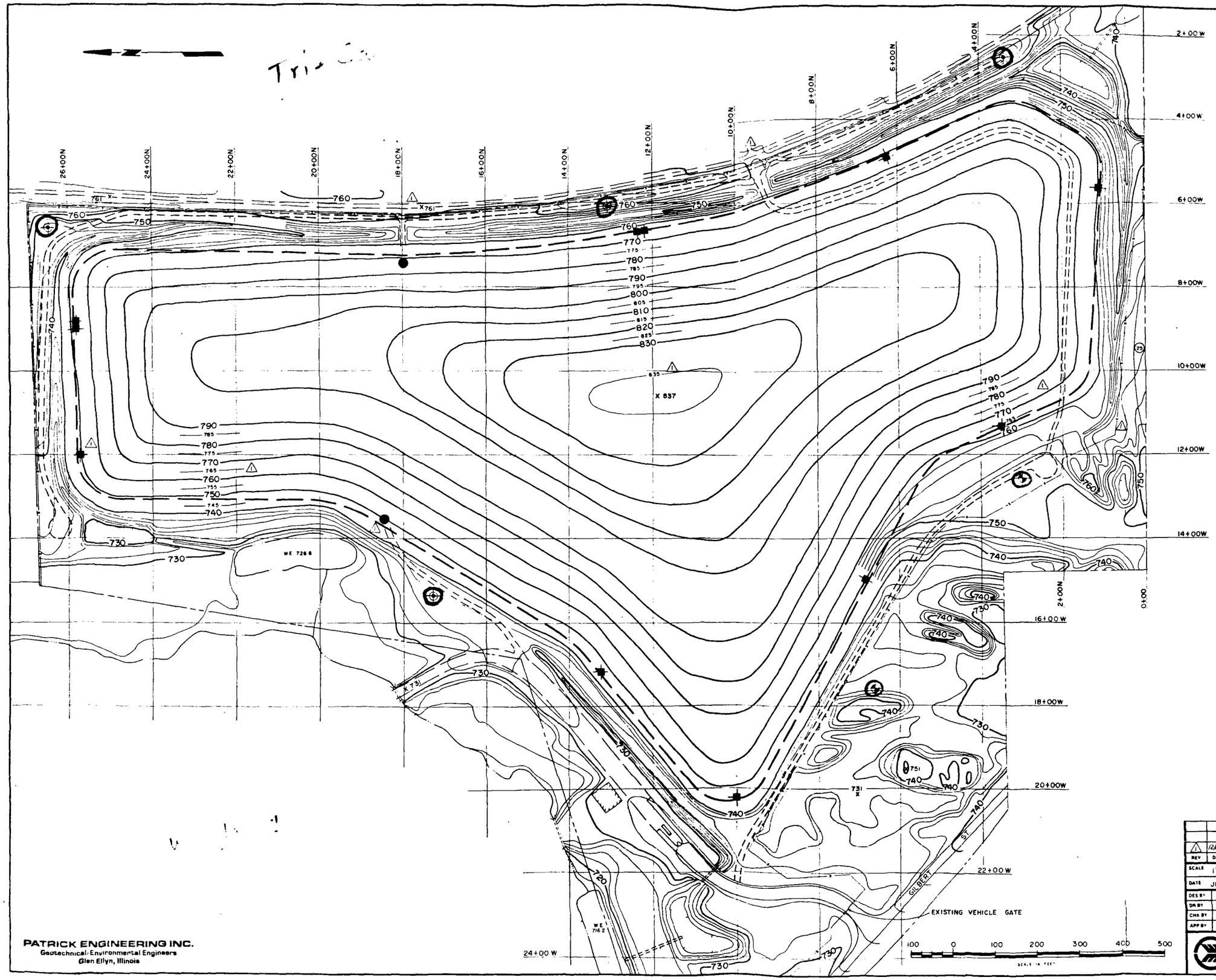
SCALE	1" = 100'
DATE	JUNE, 1982
DES BY	KMB
DR BY	WM
CHK BY	KMB
APP BY	DPD

PROJECT: WOODLAND LANDFILL II
KANE COUNTY, ILLINOIS

SHEET TITLE: DRAINAGE PLAN

Waste Management, Inc.
Oak Brook, Illinois 60521

SHEET 9 OF 18
DRAWING NO. 110-108R1



LEGEND

- —800— FINAL CONTOUR
- PROPERTY LINE
- CHAIN LINK FENCE
- LIMIT OF REFUSE
- PERIMETER ACCESS ROAD
- LEACHATE COLLECTION POINT AT SURFACE
- EXISTING GROUNDWATER MONITORING WELL
- PROPOSED GROUNDWATER MONITORING WELL
- LEACHATE COLLECTION SUMP

NOTES

1. FINAL CONTOURS REPRESENT THE GENERAL LANDFORM AFTER FILLING IS COMPLETE.
2. FINAL SLOPES ARE TO BE SEEDED.
3. GAS VENTS TO BE INSTALLED AS REQUIRED TO COLLECT AND DISSIPATE OR RECOVER METHANE GAS.

REV	DATE	DESCRIPTION	DR BY	APP BY
1	12/1/82	ADDED ROADS, SUMPS, COLLECTION PTS., 5' CONTOURS	W.M.	D.P.D.

SCALE	1" = 100'
DATE	JUNE, 1982
DES BY	K.M.B.
DR BY	W.M.
CHK BY	K.M.B.
APP BY	D.P.D.

PROJECT: WOODLAND LANDFILL II
KANE COUNTY, ILLINOIS

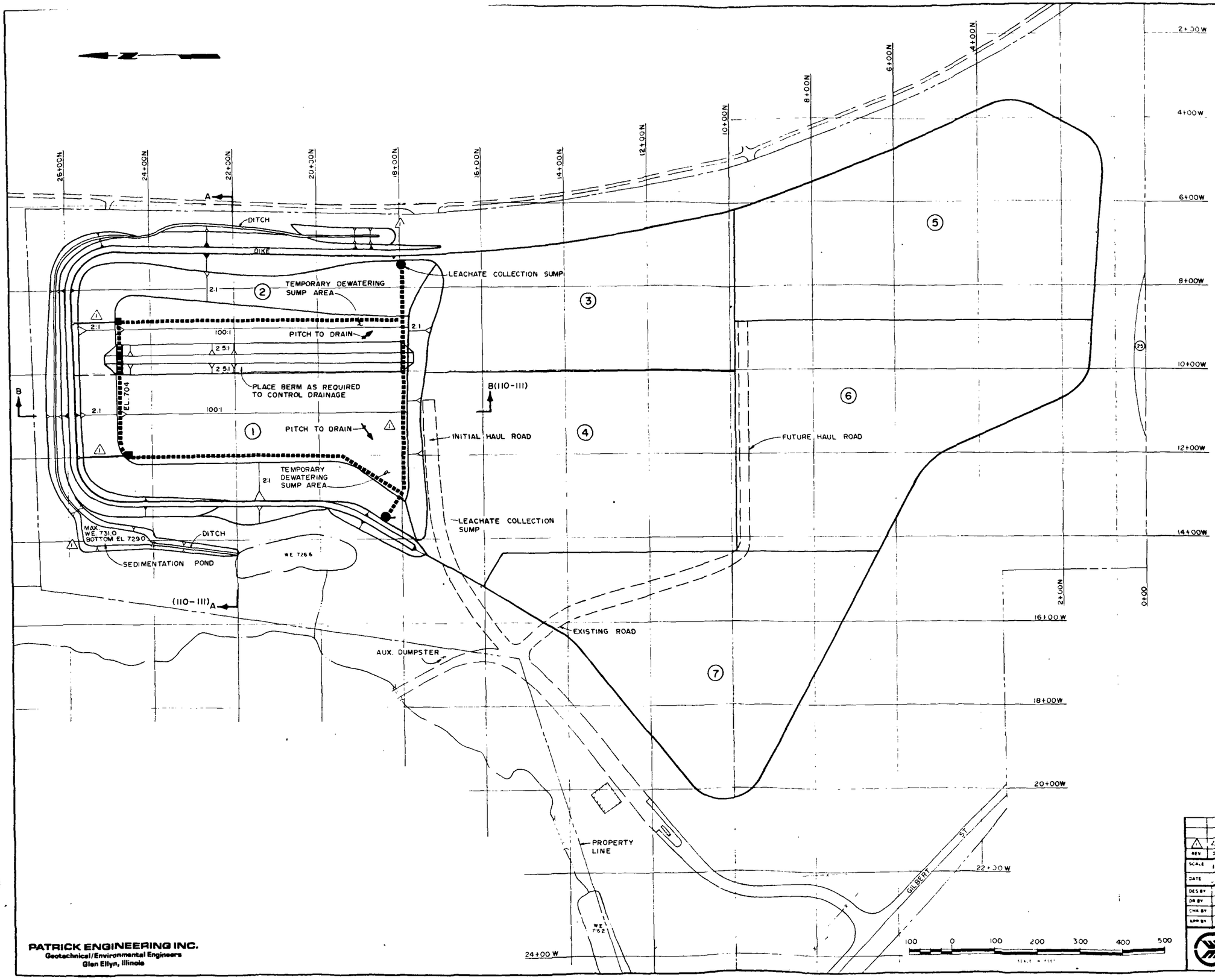
SHEET TITLE: FINAL LANDFORM - DEVELOPED SITE

Waste Management, Inc.
Oak Brook, Illinois 60521

SHEET 12 OF 18

DRAWING NO 110-109 RI

PATRICK ENGINEERING INC.
Geotechnical-Environmental Engineers
Glen Ellyn, Illinois



LEGEND

A — CROSS SECTION — A(110-111) DWG NO WHERE SECTION IS PLOTTED

TOP OF CUT SLOPE
EXCAVATION SURFACE
BOTTOM OF CUT SLOPE
TOP OF FILL SLOPE
FILL SURFACE
BOTTOM OF FILL SLOPE

(2) SEQUENCE OF EXCAVATION & LANDFILL ADVANCEMENT

LEACHATE COLLECTION POINT

LEACHATE UNDERDRAIN

•707 DITCH INVERT ELEVATION

X712 ℄ ELEVATION OF ROAD

LEACHATE COLLECTION DRAIN

PROPERTY LINE

CONSTRUCTION CONTROL COORDINATES

LEACHATE COLLECTION SUMP

NOTES

1. ENTRANCE TO LANDFILL AND TRAFFIC CONTROL GATE SHOWN ON DWG. NO. 7, PROJECT NO. 059-250-53, FOR EXISTING WOODLAND LANDFILL.

2. THE PERIOD OF LANDFILLING IS ESTIMATED TO BE 10 TO 20 YEARS. EACH AREA WILL ACCOMMODATE APPROXIMATELY TWO YEARS OF REFUSE.

REV	DATE	DESCRIPTION	DR BY	APP BY
1	2-2-82	ADDED POND SUMPS, COLLECTION PTS REVISED HAUL RD.	WM	DPD

SCALE	1" = 100'
DATE	JUNE, 1982
DES BY	K.M.S.
DR BY	W.M.
CHK BY	K.M.S.
APP BY	D.P.D.

PROJECT: WOODLAND LANDFILL II
KANE COUNTY, ILLINOIS

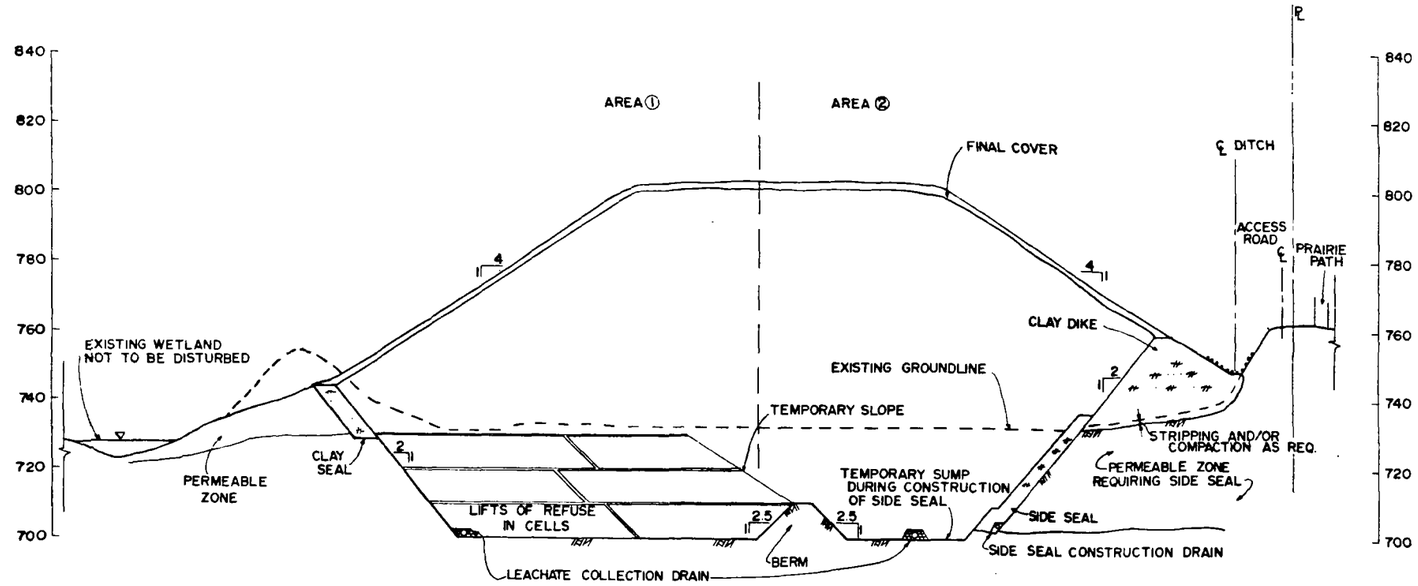
SHEET TITLE: INITIAL DEVELOPMENT & FILL PROGRESSION PLAN

Waste Management, Inc.
Oak Brook, Illinois 60521

SHEET 1 OF 8

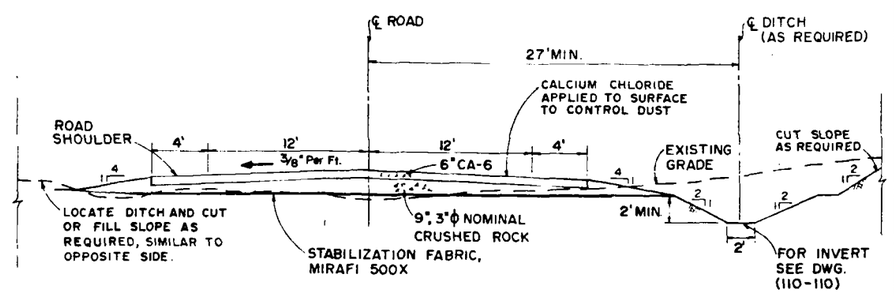
DRAWING NO 110-110 R1

PATRICK ENGINEERING INC.
Geotechnical/Environmental Engineers
Glen Ellyn, Illinois



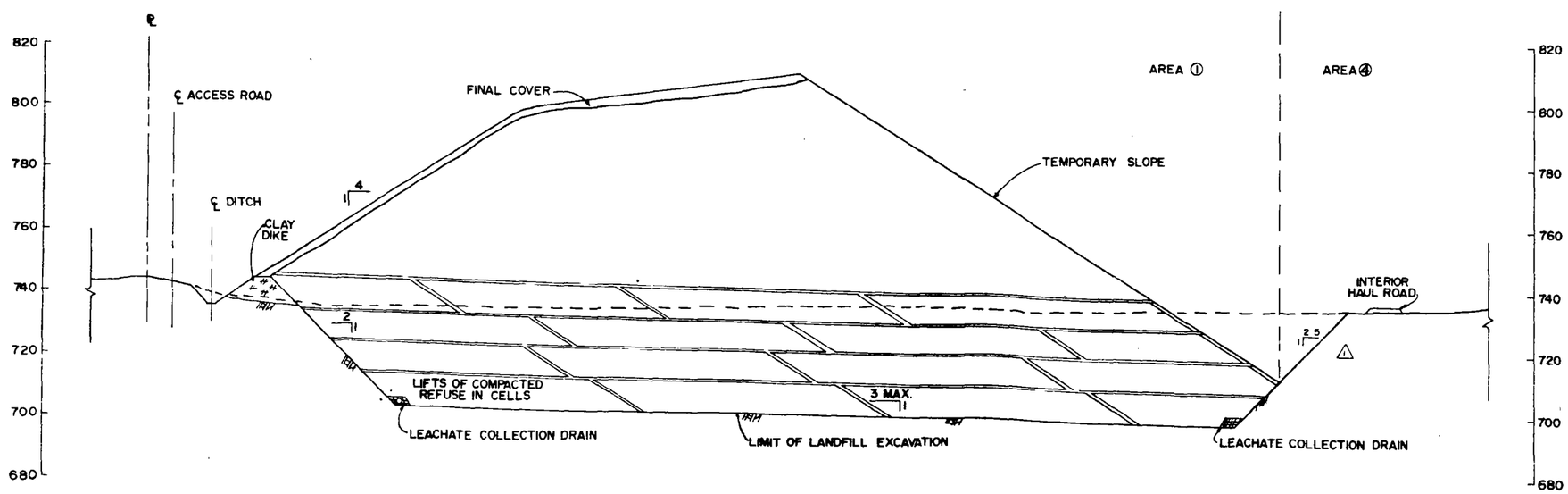
SECTION A-A
22+00 NORTH

SCALE
HORZ 0 50 FEET
VERT 0 20 FEET



TYPICAL SECTION, INTERIOR HAUL ROAD

SCALE 0 5 FEET



SECTION B-B
11+00 WEST

SCALE
HORZ 0 50 FEET
VERT 0 20 FEET

NOTES

1. CA-6 SHALL BE CRUSHED LIMESTONE MEETING ILLINOIS DEPARTMENT OF TRANSPORTATION SPECIFICATIONS.

REV	DATE	DESCRIPTION	DR BY	APP BY
1	12/1/82	REMOVED TYPICAL SECTION, PERIMETER ACCESS RD	WM	DPD

SCALE	AS SHOWN
DATE	JUNE, 1982
DES BY	DPD
DR BY	RJA
CHK BY	KMB
APP BY	DPD

PROJECT: WOODLAND LANDFILL II
KANE COUNTY, ILLINOIS

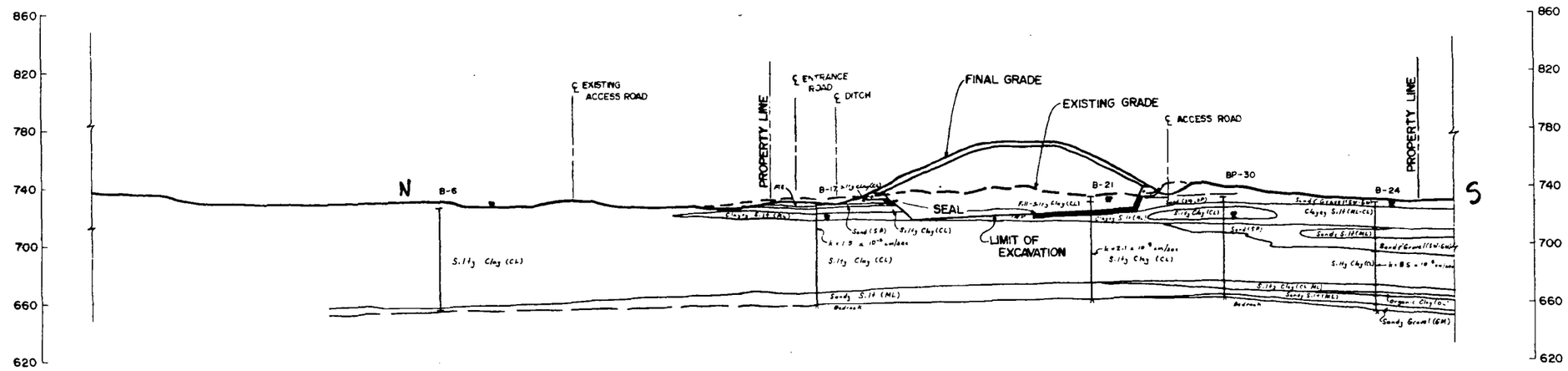
SHEET TITLE: INITIAL DEVELOPMENT SECTIONS

Waste Management, Inc.
Oak Brook, Illinois 60521

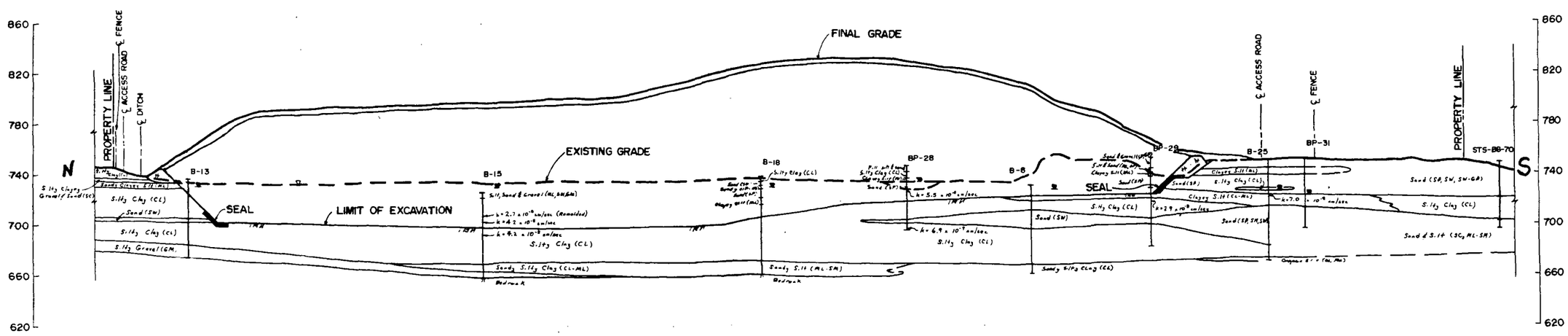
SHEET 12 OF 18

DRAWING NO 110-111 R1

PATRICK ENGINEERING INC.
Geotechnical/Environmental Engineers
Glen Ellyn, Illinois



CROSS SECTION 1-1



CROSS SECTION 2-2

NOTE

✓ THE GEOLOGIC CONDITIONS INDICATED ON THIS DRAWING WERE INTERPRETED FROM THE AVAILABLE DATA. A MINIMUM OF ONE ADDITIONAL BORING SHALL BE MADE PER ACRE BEFORE LANDFILLING, TO VERIFY THAT A MINIMUM OF 10 FEET OF SOIL WITH AN INSITU PERMEABILITY OF AT LEAST 1 X 10^{-7} CM/SEC. EXISTS BETWEEN CONTAMINANTS AND ANY PERMEABLE SOILS.

SCALE

HORZ 0 100 FEET

VERT. 0 40 FEET

REV	DATE	DESCRIPTION	DR BY	APP BY

SCALE AS SHOWN

DATE JUNE, 1982

DES BY KMB

DR BY WMRK

CHK BY KMB, DRS

APP BY

PROJECT: WOODLAND LANDFILL II
KANE COUNTY, ILLINOIS

SHEET TITLE CROSS SECTIONS 1 & 2

Waste Management, Inc.
Oak Brook, Illinois 60521

SHEET 13 OF 18

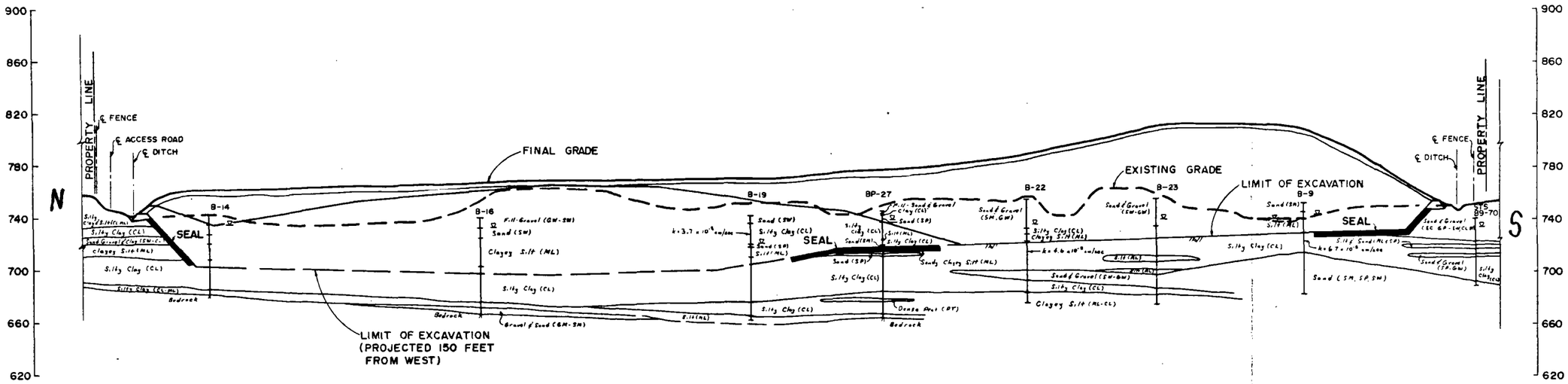
DRAWING NO 110-112

PATRICK ENGINEERING INC.
Geotechnical, Environmental Engineers
Glen Ellyn, Illinois

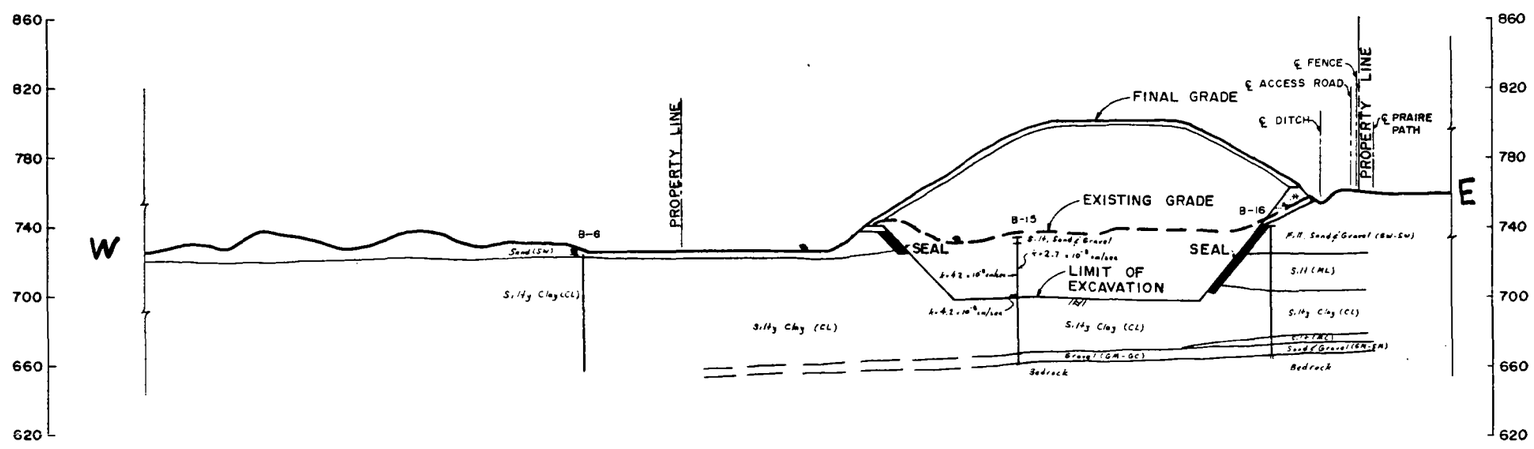
FINAL SURVEY — SURVEYED, PLOTTED, TEMPLATE, AREAS, AREAS CHECKED — MOST ROCK, NO — DATE, BY

ORIGINAL SURVEY — SURVEYED, PLOTTED, TEMPLATE, AREAS, AREAS CHECKED — NO — DATE, BY

PLATE 3-FULL CROSS SECTION-FULL DOT



CROSS SECTION 3-3



CROSS SECTION 4-4

NOTE

THE GEOLOGIC CONDITIONS INDICATED ON THIS DRAWING WERE INTERPRETED FROM THE AVAILABLE DATA. A MINIMUM OF ONE ADDITIONAL BORING SHALL BE MADE PER ACRE BEFORE LANDFILLING, TO VERIFY THAT A MINIMUM OF 10 FEET OF SOIL WITH AN INSITU PERMEABILITY OF AT LEAST 1 X 10^{-7} CM SEC. EXISTS BETWEEN CONTAMINANTS AND ANY PERMEABLE SOILS.

SCALE
HORZ. 0 100 FEET
VERT 0 40 FEET

REV	DATE	DESCRIPTION	DR BY	APP BY

SCALE AS SHOWN
DATE JUNE, 1982
DES BY KMB
DR BY JM
CHK BY KMB DRS
APP BY JW

PROJECT: WOODLAND LANDFILL II
KANE COUNTY, ILLINOIS

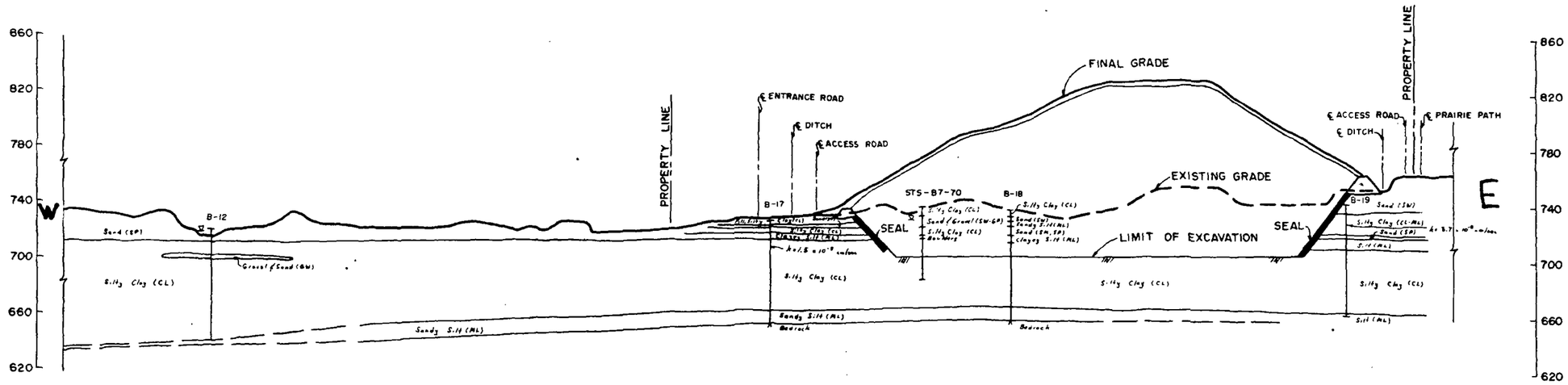
SHEET TITLE: CROSS SECTIONS 3 & 4

Waste Management, Inc.
Oak Brook, Illinois 60521

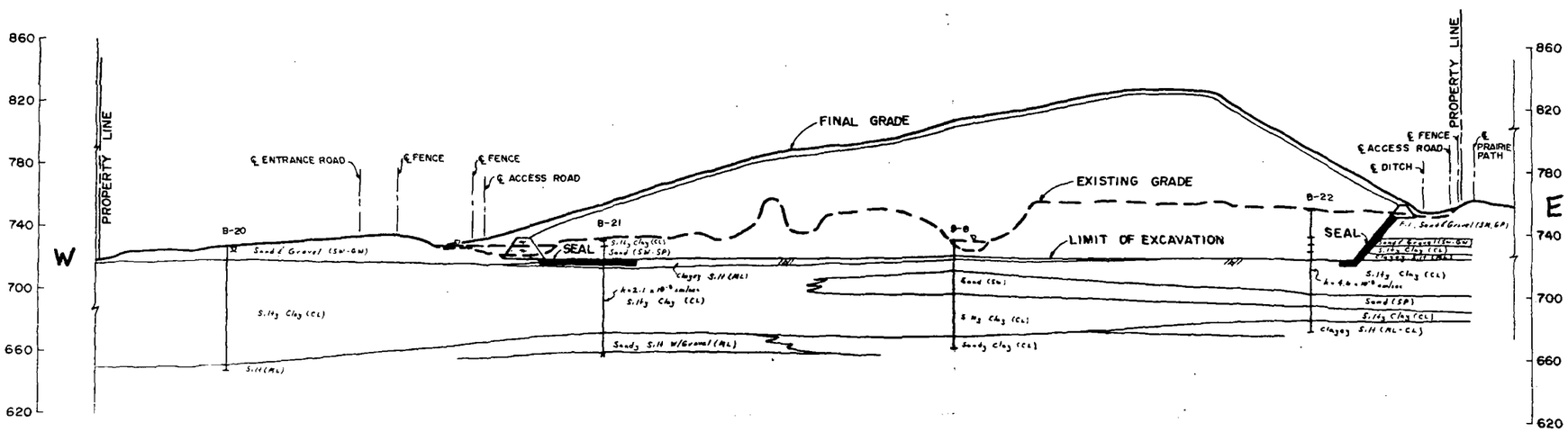
SHEET 4 OF 18
DRAWING NO. 110-113

PATRICK ENGINEERING INC.
Geotechnical/Environmental Engineers
Glen Ellyn, Illinois

PLATE 3-FULL CROSS SECTION-FULL DOT



CROSS SECTION 5-5



CROSS SECTION 6-6

NOTE

THE GEOLOGIC CONDITIONS INDICATED ON THIS DRAWING WERE INTERPRETED FROM THE AVAILABLE DATA. A MINIMUM OF ONE ADDITIONAL BORING SHALL BE MADE PER ACRE BEFORE LANDFILLING, TO VERIFY THAT A MINIMUM OF 10 FEET OF SOIL WITH AN IN-SITU PERMEABILITY OF AT LEAST 1 X 10⁻⁷ CM/SEC. EXISTS BETWEEN CONTAMINANTS AND ANY PERMEABLE SOILS.

SCALE
HORZ. 0 100 FEET
VERT. 0 40 FEET

REV	DATE	DESCRIPTION	DR BY	APP BY

SCALE AS SHOWN
DATE JUNE, 1982
DES BY KMB
DR BY WM
CHK BY KMB, DRS
APP BY DDV

PROJECT: WOODLAND LANDFILL II
KANE COUNTY, ILLINOIS

SHEET TITLE: CROSS SECTIONS 5 & 6

Waste Management, Inc.
Oak Brook, Illinois 60521

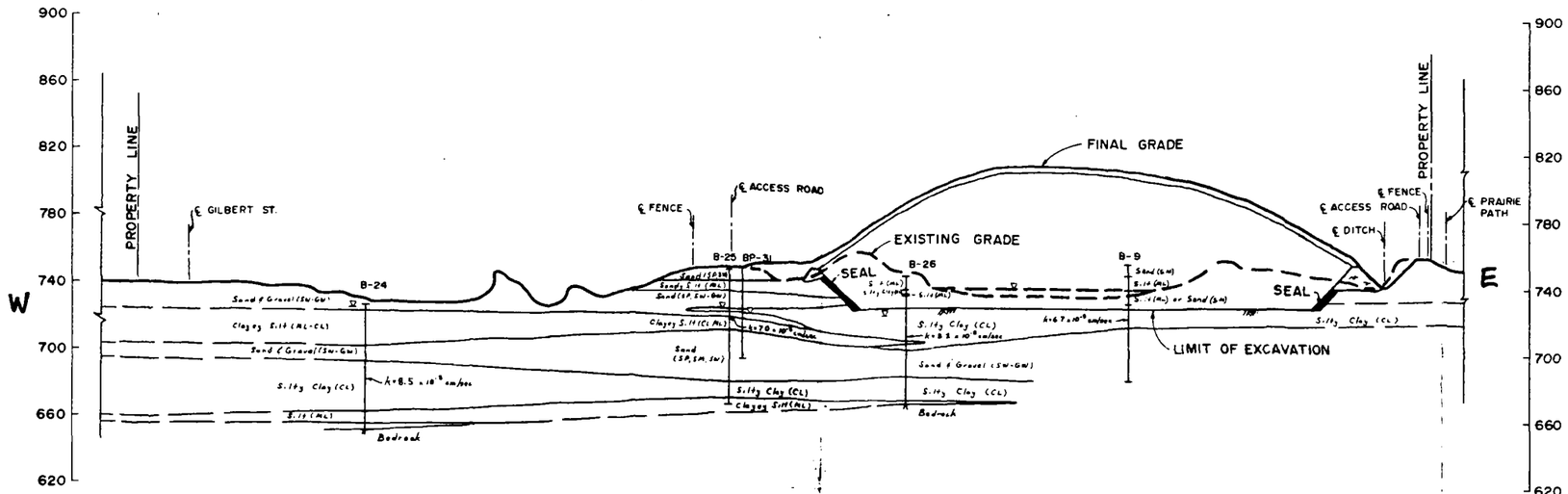
SHEET 15 OF 18
DRAWING NO 110-114

PATRICK ENGINEERING INC.
Geotechnical/Environmental Engineers
Glen Ellyn, Illinois

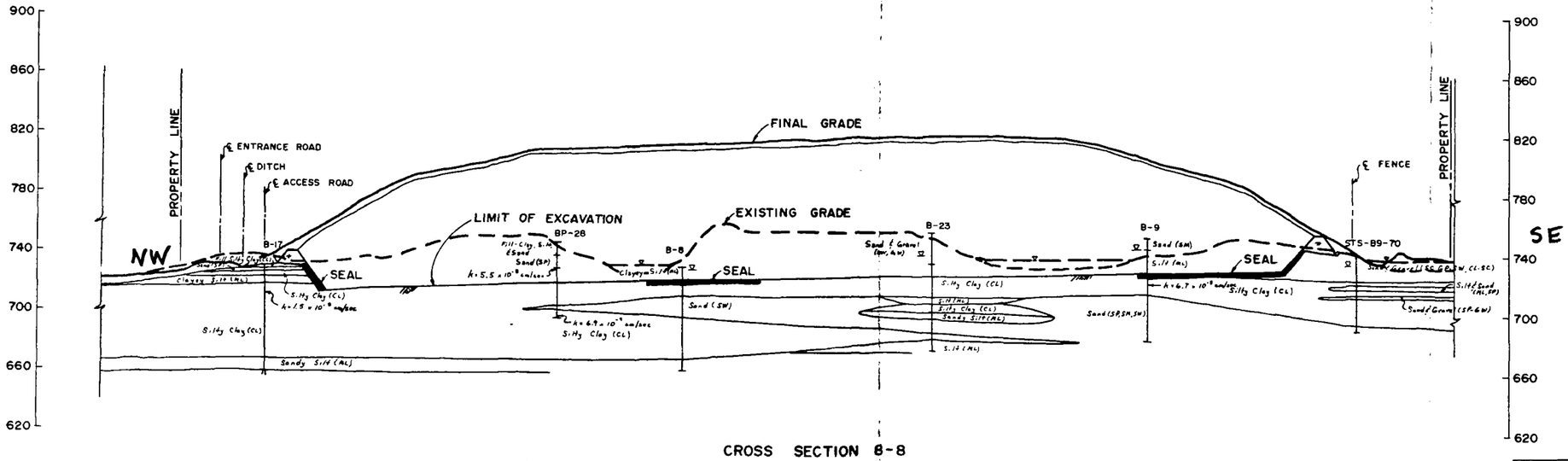
FINAL SURVEY — SURVEYED / PLOTTED / TEMPLATE / AREA / CROSS CHECKED — NOTE BOOK NO. — DATE — BY

ORIGINAL SURVEY — SURVEYED / PLOTTED / TEMPLATE / AREA / CROSS CHECKED — NOTE BOOK NO. — DATE — BY

PLATE 3-FULL CROSS SECTION FULL DOT



CROSS SECTION 7-7



CROSS SECTION 8-8

NOTE:

THE GEOLOGIC CONDITIONS INDICATED ON THIS DRAWING WERE INTERPRETED FROM THE AVAILABLE DATA. A MINIMUM OF ONE ADDITIONAL BORING SHALL BE MADE PER ACRE BEFORE LANDFILLING, TO VERIFY THAT A MINIMUM OF 10 FEET OF SOIL WITH AN INSITU PERMEABILITY OF AT LEAST 1 X 10^{-7} CM/SEC. EXISTS BETWEEN CONTAMINANTS AND ANY PERMEABLE SOILS.

SCALE
HORZ. 0 100 FEET
VERT. 0 40 FEET

REV	DATE	DESCRIPTION	DR BY	APP BY

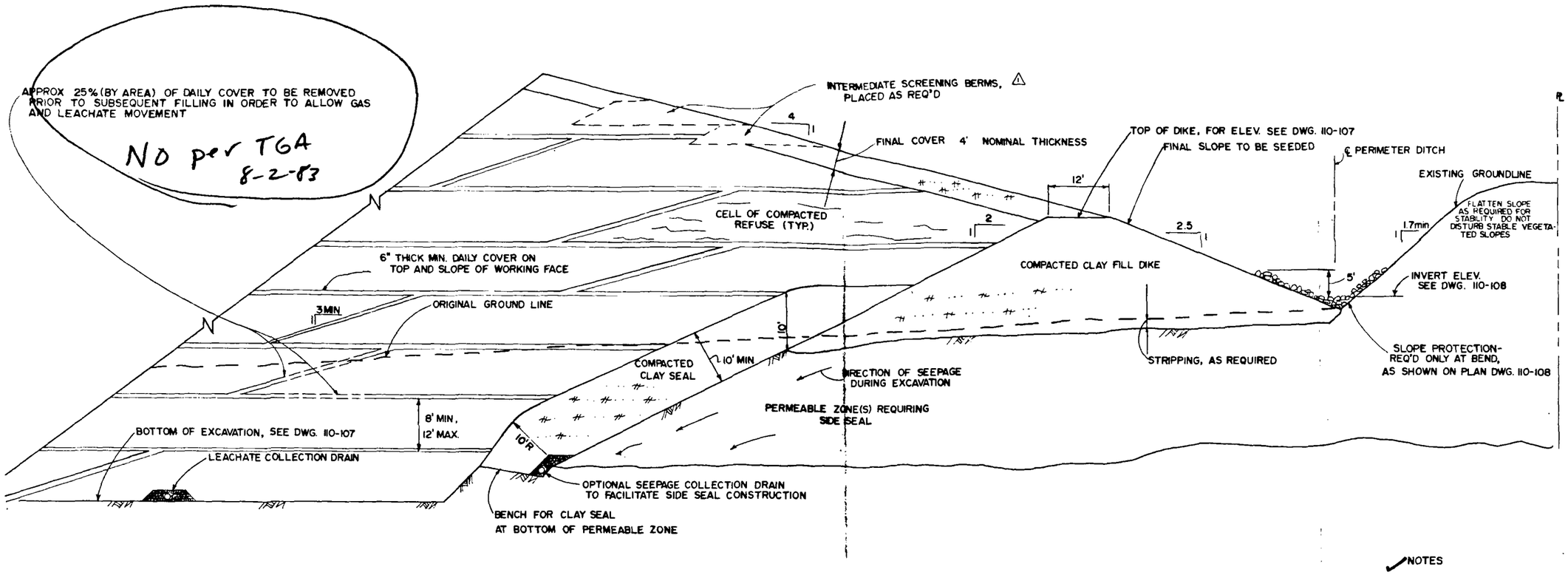
SCALE: AS SHOWN	PROJECT: WOODLAND LANDFILL II, KANE COUNTY, ILLINOIS
DATE: JUNE, 1982	
DES BY: KMB	SHEET TITLE: CROSS SECTIONS 7 & 8
DR BY: WM	
CHK BY: KMB, DRS	
APP BY:	SHEET 16 OF 18
Waste Management, Inc. Oak Brook, Illinois 60521	DRAWING NO. 110-115

PATRICK ENGINEERING INC.
Geotechnical/Environmental Engineers
Glen Ellyn, Illinois

FINAL SURVEY — DIGITIZED / PLOTTED / TEMPLATE / AREA / CHECKED — DATE / BY / NO.

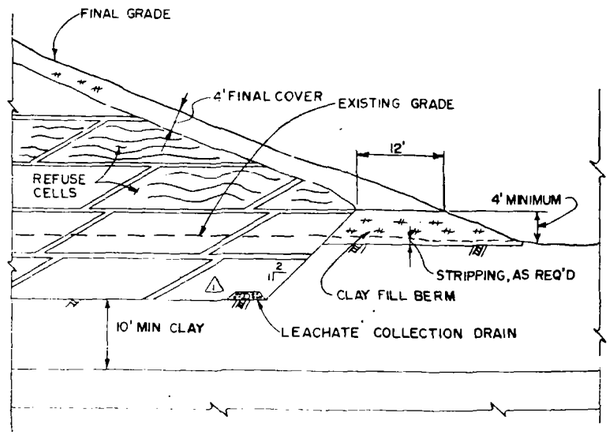
ORIGINAL SURVEY — DIGITIZED / PLOTTED / TEMPLATE / AREA / CHECKED — DATE / BY / NO.

PLATE 3-FULL CROSS SECTION FULL DOT

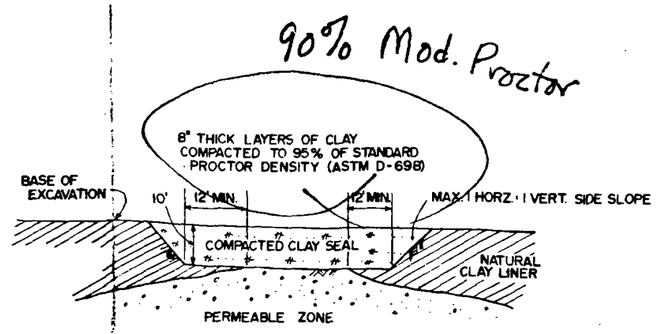


TYPICAL SECTION OF PERIMETER DITCH, DIKE & SIDE SEAL CONSTRUCTION

EAST SIDE OF LANDFILL



TYPICAL SECTION, PERIMETER CLAY BERM



TYPICAL SECTION, BOTTOM SEAL CONSTRUCTION

NOTES

1. CLAY REFERS TO NATURAL OR COMPACTED CLAY, SANDY CLAY, OR CLAYEY SAND WITH AN INSITU PERMEABILITY OF 1×10^{-7} cm/sec. OR LESS.
2. INTERMEDIATE OR FINAL COVER TO BE PLACED WITHIN 60 DAYS OF COMPLETION OF FILLING IN ANY AREA.
3. CLAY FILL FOR SEALS AND DIKE SHALL BE COMPACTED WITH SHEEPSFOOT ROLLER TO MIN. 95% OF STANDARD PROCTOR DENSITY, ASTM D698.
4. REFUSE TO BE PLACED IN 2 FOOT LAYERS AND COMPACTED.
5. INDICATED SLOPES ARE AVERAGES FROM TOP OF SLOPE TO TOE OF SLOPE.
6. △ FINAL COVER SHALL BE ±3.5 FEET OF LOW PERMEABILITY SOILS BELOW A ±0.5 FOOT LAYER FOR GROWTH OF GRASS.

REV	DATE	DESCRIPTION	DR BY	APP BY
△1	12/21/82	CHANGED NOTE 6 & SCREENING BERM DESCRIPTION	WM	DPD

SCALE	NOT TO SCALE
DATE	JULY, 1982
DES BY	DPD, KMB
DR BY	RJK
CHK BY	KMB
APP BY	DPD

PROJECT: WOODLAND LANDFILL II, KANE COUNTY, ILLINOIS

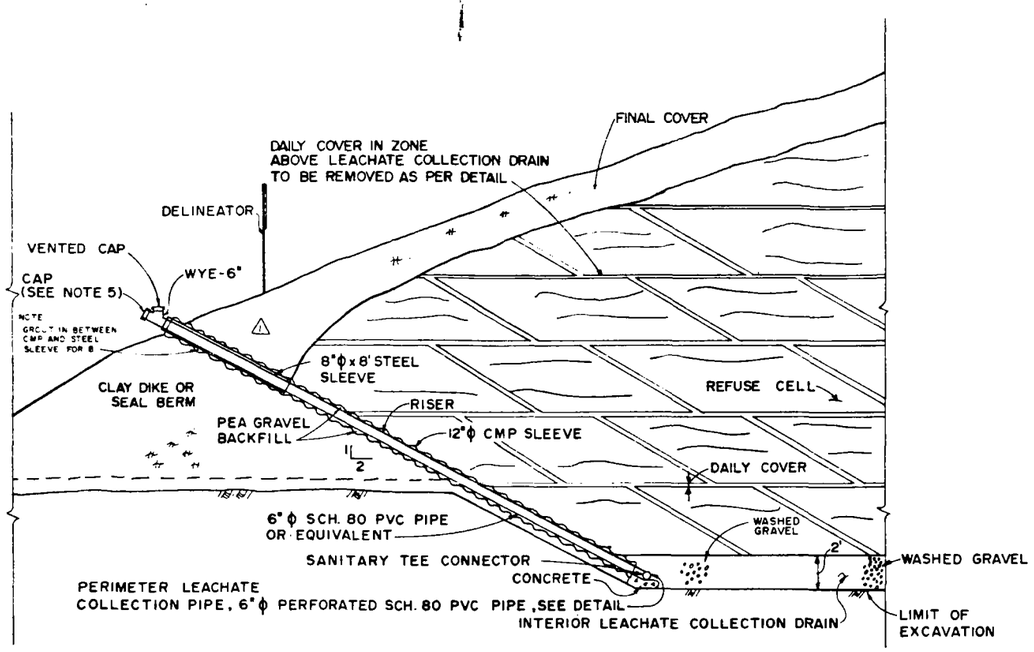
SHEET TITLE: DETAILS

Waste Management, Inc.
Oak Brook, Illinois 60521

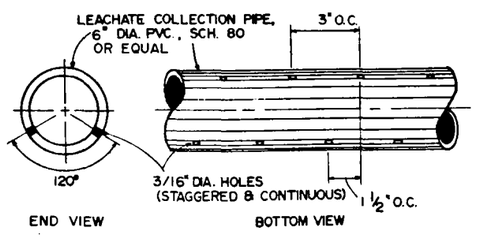
SHEET 17 OF 18

DRAWING NO 110-116 R1

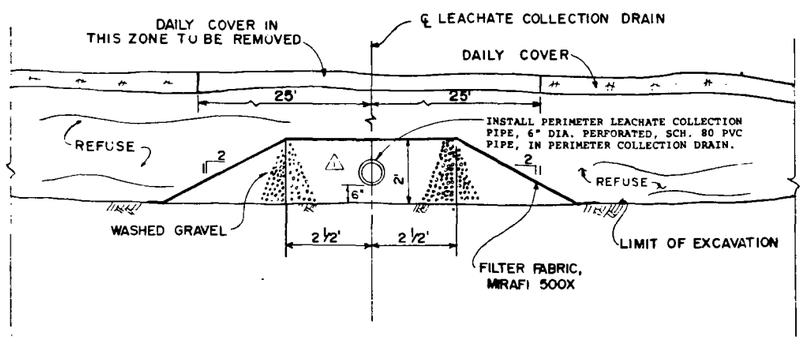
PATRICK ENGINEERING INC.
Geotechnical/Environmental Engineers
Glen Ellyn, Illinois



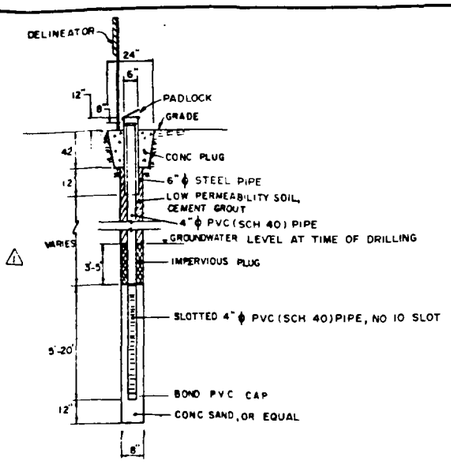
TYPICAL SECTION, LEACHATE COLLECTION POINT & RISER



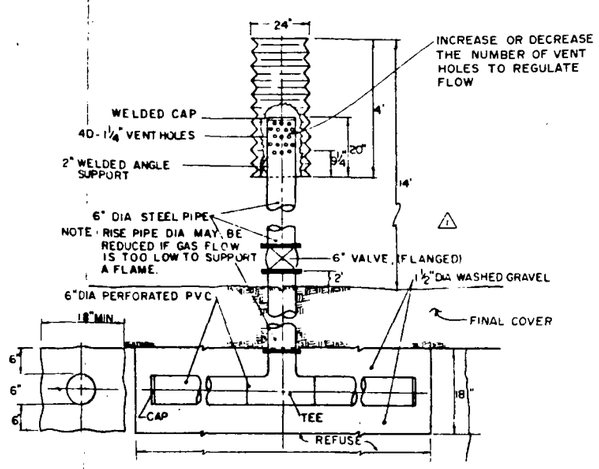
PERFORATION DETAIL



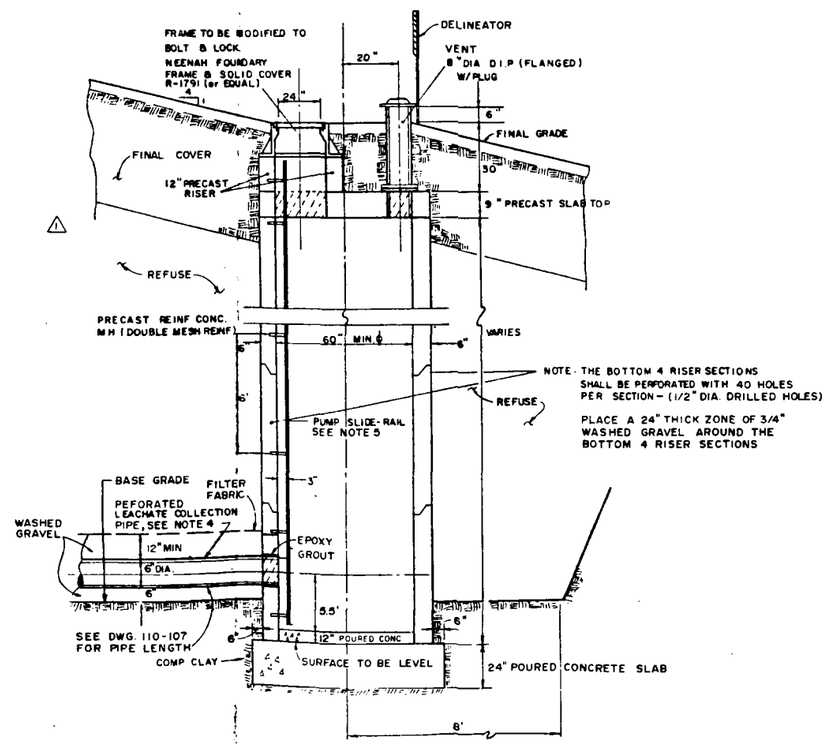
TYPICAL SECTION, LEACHATE COLLECTION DRAIN



MONITORING WELL DETAIL

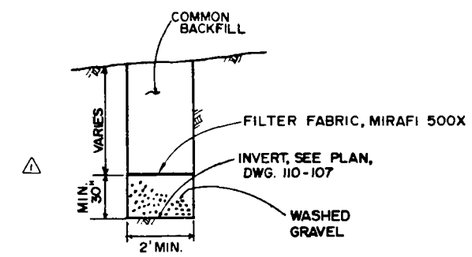


GAS FLARE DETAIL



LEACHATE COLLECTION SUMP DETAIL

(SEE NOTE 5)



TYPICAL SECTION, LEACHATE UNDERDRAIN

NOTES

1. WASHED GRAVEL SHALL CONSIST OF WASHED, SCREENED GRAVEL NOMINAL SIZE 3/8 INCHES TO 1-1/2 INCHES. CLEAN PEA GRAVEL FROM REQUIRED EXCAVATION ON SITE IS ACCEPTABLE.
2. REMOVE INTERMEDIATE AND DAILY COVER BEFORE PLACING ADDITIONAL REFUSE 25 FEET EITHER SIDE OF LEACHATE COLLECTION DRAINS THROUGH ENTIRE HEIGHT OF REFUSE FILL.
3. ONE PERFORATED, 6 INCH DIAMETER, SCH. 80 LEACHATE COLLECTION PIPE EMBEDDED IN FILTER STONE TO EXTEND OUT FROM EACH LEACHATE COLLECTION SUMP INTO PERIMETER LEACHATE COLLECTION PIPE AS SHOWN IN PLAN ON DRAWING 110-107.
4. THE LEACHATE COLLECTION SUMPS ARE NOT INTENDED TO BE ENTERED BY WORKMEN UNLESS PROPER SAFETY PRECAUTIONS ARE TAKEN. CAUTION SHALL BE EXERCISED DURING REMOVAL OF THE LID IN CASE OF METHANE GAS.
5. IF A SUBMERSIBLE TYPE PUMP IS LOWERED INTO THE SUMP OR LEACHATE COLLECTION POINT RISER, THE PUMP SHALL BE EXPLOSION PROOF.

REV	DATE	DESCRIPTION	DR BY	APP BY
1	12/30/82	ADDED NOTES 3,4 & 5, GAS FLARE, SUMP & WELL MOD LEACH PT	W.M.	DPD

SCALE	NOT TO SCALE
DATE	JULY, 1982
DES BY	KMB
DR BY	RJK
CHK BY	KMB
APP BY	DPD

PROJECT: WOODLAND LANDFILL II
KANE COUNTY, ILLINOIS

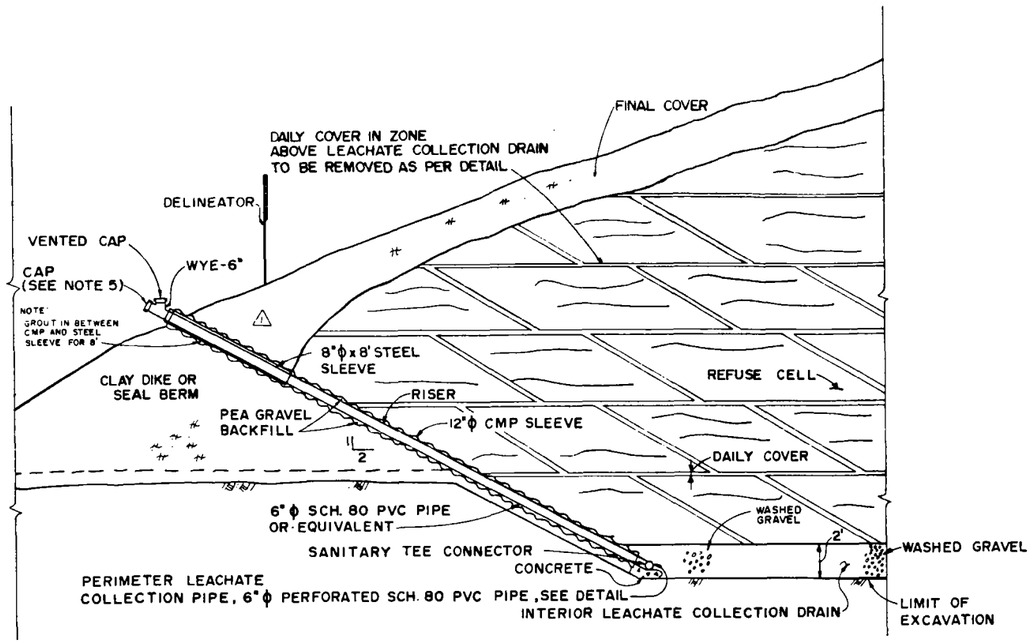
SHEET TITLE: DETAILS

Waste Management, Inc.
Oak Brook, Illinois 60521

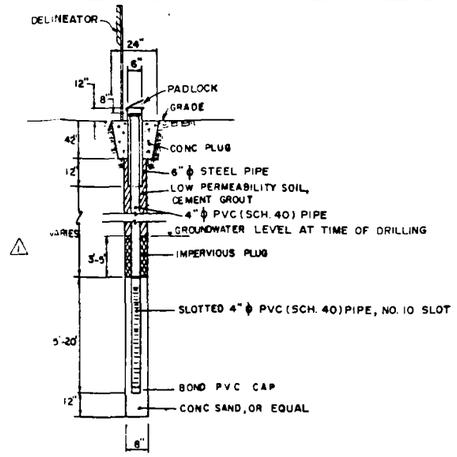
SHEET 18 OF 18

DRAWING NO 110-117 R1

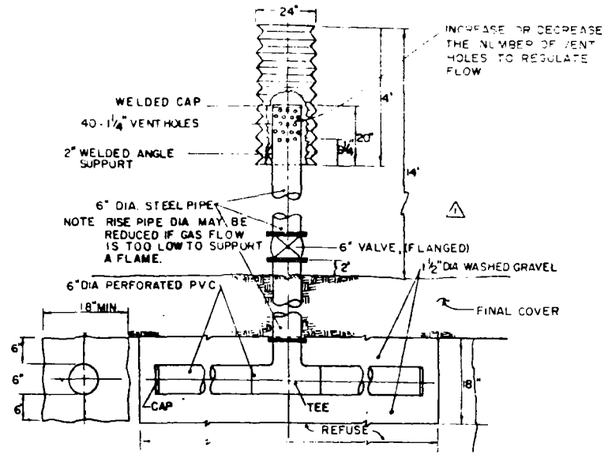
PATRICK ENGINEERING INC.
Geotechnical/Environmental Engineers
Glen Ellyn, Illinois



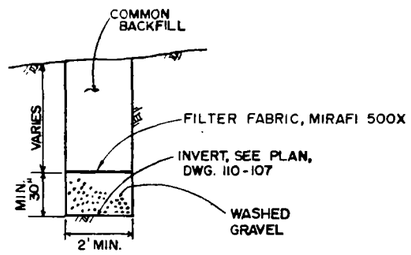
TYPICAL SECTION, LEACHATE COLLECTION POINT & RISER



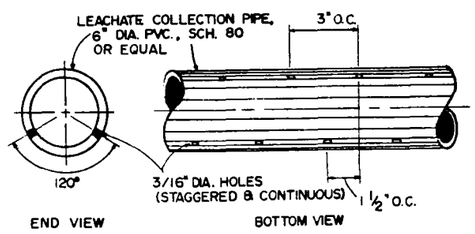
MONITORING WELL DETAIL



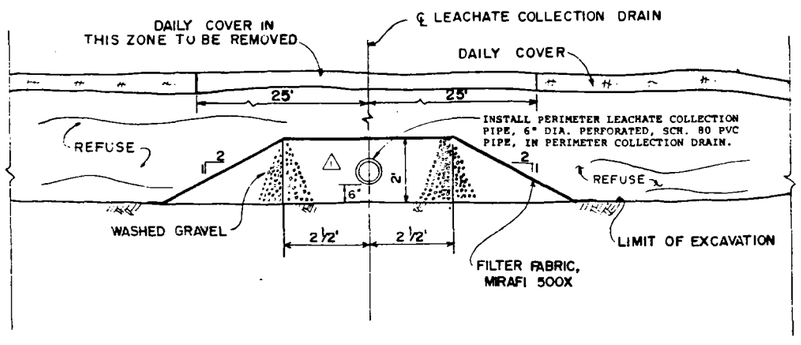
GAS FLARE DETAIL



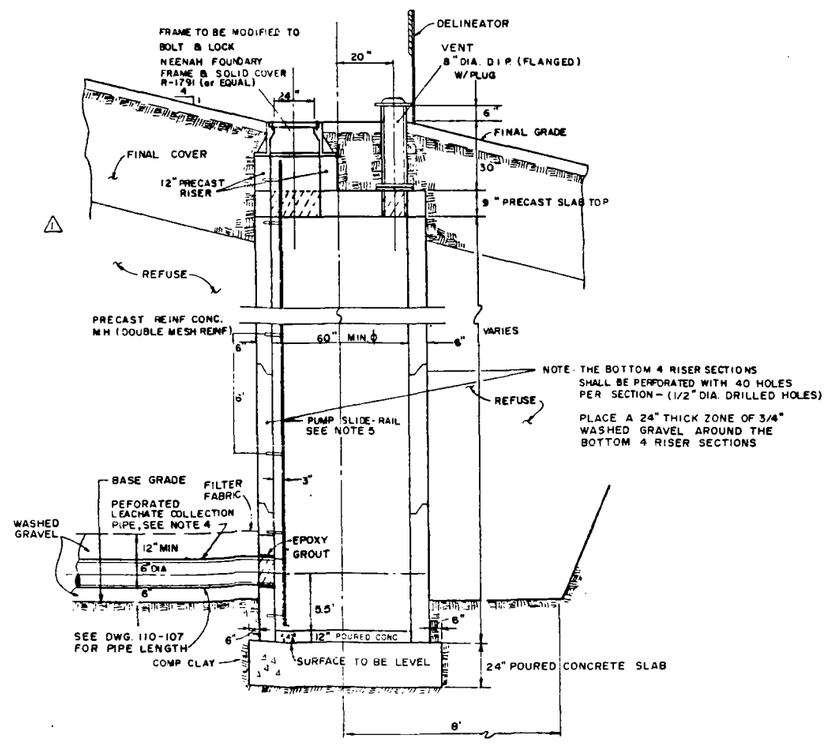
TYPICAL SECTION, LEACHATE UNDERDRAIN



PERFORATION DETAIL



TYPICAL SECTION, LEACHATE COLLECTION DRAIN



LEACHATE COLLECTION SUMP DETAIL

(SEE NOTE 5)

NOTES

1. WASHED GRAVEL SHALL CONSIST OF WASHED, SCREENED GRAVEL NOMINAL SIZE 3/8 INCHES TO 1-1/2 INCHES. CLEAN PEA GRAVEL FROM REQUIRED EXCAVATION ON SITE IS ACCEPTABLE.
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REV	DATE	DESCRIPTION	DR BY	APP BY
1	12/30/82	ADDED NOTES 3 & 4 & S. GAS FLARE, SUMP & WELL. MOD LEACH PT	W.M.	D.P.D.

SCALE: NOT TO SCALE
DATE: JULY, 1982
DES BY: KMB
DR BY: RJK
CHK BY: KMB
APP BY: DPD

PROJECT: WOODLAND LANDFILL II
KANE COUNTY, ILLINOIS

SHEET TITLE: DETAILS

Waste Management, Inc.
Oak Brook, Illinois 60521

SHEET 18 OF 18
DRAWING NO 110-117 R1

PATRICK ENGINEERING INC.
Geotechnical/Environmental Engineers
Glen Ellyn, Illinois

DRAWINGS

110-100	TITLE SHEET
110-101	PROJECT LOCATION MAP
110-102	BEDROCK SURFACE MAP
110-103	GROUNDWATER CONDITIONS & GEOLOGIC SECTION LOCATIONS
110-104	GEOLOGIC SECTIONS A, B, & C
110-105	AREA TOPOGRAPHY & BORING LOCATION MAP
110-106	SITE TOPOGRAPHY & BORING LOCATIONS
110-107	EXCAVATION & LEACHATE COLLECTION PLAN
110-108	DRAINAGE PLAN
110-109	FINAL LANDFORM - DEVELOPED SITE
110-110	INITIAL DEVELOPMENT & FILL PROGRESSION PLAN
110-111	INITIAL DEVELOPMENT SECTIONS
110-112	CROSS SECTIONS 1 & 2
110-113	CROSS SECTIONS 3 & 4
110-114	CROSS SECTIONS 5 & 6
110-115	CROSS SECTIONS 7 & 8
110-116	DETAILS
110-117	DETAILS

EXHIBIT 1

SEQUENCE OF BEDROCK DEPOSITS

SYSTEM	SERIES	GROUP OR FORMATION	AQUIFER	LOG	THICKNESS (FT)	DESCRIPTION
QUATERNARY	PLEISTOCENE		Sands and Gravels		0-300	Unconsolidated glacial deposits pebbly clay (till), silt, sand and gravel. Alluvial silts and sands along streams
SILURIAN	NIAGARAN	Racine	Silurian (Shallow (dolomite) aquifer system)	reef	0-180	Dolomite, very pure to argillaceous, silty, cherty, reefs in upper part
		Sugar Run				Dolomite, slightly argillaceous and silty
		Joliet				Dolomite, very pure to shaly and shale, dolomitic, white, light gray, green, pink, maroon
	ALEXANDRIAN	Kankakee			0-70	Dolomite, pure top 1'-2', thin green shale partings, base glauconitic
		Elwood				Dolomite, slightly argillaceous, abundant layered white chert
		Wilhelmi				Dolomite, gray, argillaceous and becomes dolomitic shale at base
ORDOVICIAN	CINCINNATIAN	Maquoketa			0-210	Shale, red to maroon, oolites. Shale, silty, dolomitic, greenish gray, weak (Upper unit). Dolomite and limestone, white, light gray, interbedded shale (Middle unit). Shale, dolomitic, brown, gray (Lower unit)
	CHAMPLAINIAN	Galena	Galena Platteville (Cambrian Ordovician aquifer system)		300-350	Dolomite, and or limestone, cherty (Lower part). Dolomite, shale partings, speckled. Dolomite and or limestone, cherty, sandy at base
		Platteville				
		Glenwood	Glenwood St. Peter		200-500	Sandstone, fine and coarse grained, little dolomite, shale at top. Sandstone, fine to medium grained, locally cherty red shale at base
		St. Peter				
	CANADIAN	Shakopee, New Richmond, Oneota, Gunter	Prairie du Chien		0-200	Dolomite, sandy, cherty (oolitic); sandstone. Sandstone interbedded with dolomite. Dolomite, white to pink, coarse grained cherty (oolitic). Sandstone, medium grained, slightly dolomitic
CAMBRIAN	CROIXAN	Eminence	Eminence Potosi		0-300	Dolomite, light colored, sandy, thin sandstones
		Potosi				Dolomite, fine grained, gray to brown, drusy quartz
		Franconia	Franconia		60-85	Dolomite, sandstone and shale, glauconitic, green to red, micaceous
		Ironton	Ironton Galesville		160-210	Sandstone, fine to coarse grained, well sorted, upper part dolomitic
		Galesville				
		Eau Claire			390-430	Shale and siltstone, dolomitic glauconitic, sandstone, dolomitic glauconitic
		Elmhurst Member	Elmhurst Mt. Simon (Elmhurst Mt. Simon aquifer)		2000-2600	Sandstone, coarse grained, white, red in lower half, lenses of shale and siltstone, red, micaceous
		Mt. Simon				
PRE-CAMBRIAN						Granitic rocks

Generalized column of rock stratigraphic units and aquifers in Kane County
(Prepared by M. L. Sargent, Illinois State Geological Survey)

PATRICK ENGINEERING INC.

TIMETABLE AND SEQUENCE OF GLACIAL DEPOSITS

TIME TABLE OF PLEISTOCENE GLACIATION

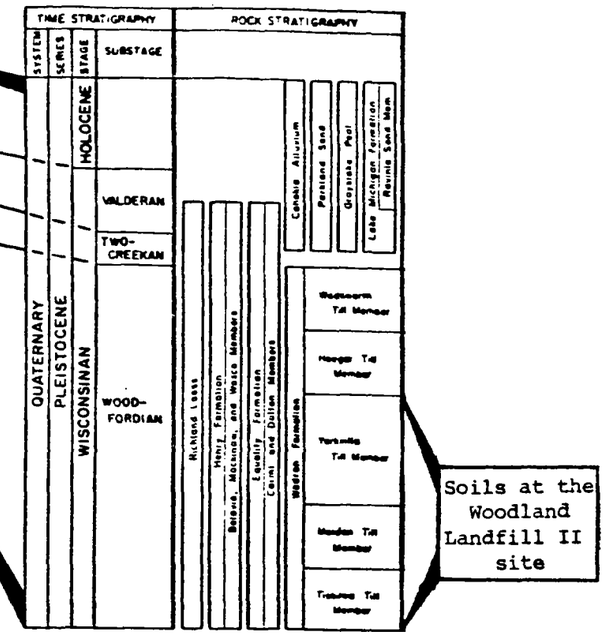
STAGE	SUBSTAGE	NATURE OF DEPOSITS	SPECIAL FEATURES
HOLOCENE	Years Before Present	Soil, youthful profile of weathering, lake and river deposits, dunes, peat	
	7,000		
WISCONSINAN (4th glacial)	Valderan	Outwash, lake deposits	Outwash along Mississippi Valley
	11,000		
	Twocreekan	Peat and alluvium	Ice withdrawal, erosion
	12,500		
	Woodfordian	Drift, loess, dunes, lake deposits	Glaciation; building of many moraines as far south as Shelbyville; extensive valley trains, outwash plains, and lakes
	22,000		
	Farmdalian	Soil, loess, and peat	Ice withdrawal, weathering and erosion
	28,000		
	Altonian	Drift, loess	Glaciation in northeastern Illinois, valley trains along major streams
SANGAMONIAN (3rd interglacial)	[illegible]	Soil, mature profile of weathering	
ILLINOIAN (3rd glacial)	[illegible]	Drift, loess	Glaciation in northeastern Illinois, valley trains along major streams
	[illegible]	Drift, loess	
	[illegible]	Drift, loess	
	300,000		
YARMOUTHIAN (2nd interglacial)	[illegible]	Soil, mature profile of weathering	
	600,000		
NEBRASKAN (2nd glacial)	[illegible]	Drift, loess	Glaciers from northwest and northeast covered much of state
	700,000		
AFTONIAN (1st interglacial)	[illegible]	Soil, mature profile of weathering	
	[illegible]		
KANSAN (1st glacial)	[illegible]	Drift	Glaciers from northwest covered much of state

(Illinois State Geological Survey, 1973)

NOTE

Shaded area represents the period in Kane County for which the glacial deposition was eroded prior to deposition of the Woodfordian. However, the bedrock surface was significantly altered by this earlier glacial activity. The irregular bedrock surface and deep bedrock valley are related to this early glacial activity.

STRATIGRAPHY OF THE LOCAL GLACIAL DEPOSITS



Soils at the Woodland Landfill II site

(Illinois State Geological Survey, 1970)

GENERALIZED GEOLOGIC SEQUENCE OF OVERBURDEN AND BEDROCK FOR KANE COUNTY, ILLINOIS

ST. CHARLES SKYLINE SEWER & WATER CO. (VALLEY VIEW)

St. Charles Skyline Sewer & Water Co. (Valley View) (est. 500), located within the village of Valley View, installed a public water supply in 1958. Two wells are in use. In 1965 there were 92 services, all metered; the average daily pumpage was 25,000 gpd. In 1974 there were 151 services plus the Illinois Youth Center (Valley View), all metered; the average and maximum daily pumpages were 55,000 and 70,000 gpd, respectively. The water is chlorinated, fluoridated, and treated with polyphosphate to keep iron in solution.

WELL NO. 2, finished in sand and gravel, was completed in June 1969 to a depth of 135 ft by the Layne-Western Co., Aurora. The well is located at the northeast corner of Clyde Parkway and Skyline Drive, approximately 1165 ft N and 1080 ft E of the SW corner of Section 11, T40N, R8E. The land surface elevation at the well is approximately 787 ft.

A drillers log of Well No. 2 follows:

Strata	*Thickness (ft)*	*Depth (ft)*
Top soil (brown)	1	1
Sandy clay	2	3
Brown and gray clay	9	12
Gray clay	15	27
Fine gray sand, trace of gravel	3	30
Gray clay	13	43
Gray sand	2	45
Pinkish clay, soft few sand streaks	36	81
Coarse sand and gravel, some fine gray shale	54	135
Gray shale	2	137

An 18-in. diameter hole was drilled to a depth of 137 ft. The well is cased with 10-in. pipe from 2 ft above the pumphouse floor to a depth of 115 ft followed by 20 ft of 10-in. No. 6 (0.080 in.) Layne shutter screen. The annulus between the bore hole and casing-screen assembly is filled with concrete from 0 to 20 ft, with pit run from 20 to 50 ft, and with 5 yards of No. 3 Muscatine gravel from 50 to 137 ft.

A production test was conducted by the driller on June 9, 1969. After 8 hr of pumping at rates ranging from 375 to 340 gpm, the final drawdown was 16 ft from a nonpumping water level of 104 ft below the top of the casing.

On February 21, 1972, the well reportedly produced 250 gpm with a drawdown of 9 ft from a nonpumping water level of 105 ft.

The pumping equipment presently installed is a Layne vertical turbine centrifugal pump (Serial No. 61917) set at 123.7 ft, rated at 250 gpm at about 111 ft TDH, and powered by a 10-hp 1750 rpm General Electric motor (Model No. 5K6227XHIA, Serial No. CEJ319379).

The following mineral analysis made by the Illinois Environmental Protection Agency (Lab. No. C006382) is for a water sample from the well collected February 19, 1976, after 45 min of pumping at 250 gpm.

WELL NO. 2, LABORATORY NO. C006382

		mg/l	me/l			mg/l	me/l
Iron	Fe	1.5		Silica	SiO_2	16.5	
Manganese	Mn	0.05		Fluoride	F	0.4	0.02
Ammonium	NH_4	0.75	0.04	Boron	B	0.1	
Sodium	Na	5	0.22	Nitrate	NO_3	0.4	0.01
Potassium	K	1.5	0.04	Chloride	Cl	4	0.11
Calcium	Ca	77	3.84	Sulfate	SO_4	65	1.35
Magnesium	Mg	45	3.70	Alkalinity (as $CaCO_3$)		336	6.72
Arsenic	As	0.000		Hardness (as $CaCO_3$)		380	7.60
Barium	Ba	0.1					
Copper	Cu	0.00		Total dissolved minerals		418	
Cadmium	Cd	0.00					
Chromium	Cr	0.00					
Lead	Pb	0.00					
Mercury	Hg	0.0000		pH (as rec'd)		8.3	
Nickel	Ni	0.0		Radioactivity			
Selenium	Se	0.00		Alpha pc/l		0.6	
Silver	Ag	0.00		± deviation		1.2	
Cyanide	CN	0.00		Beta pc/l		4.5	
Zinc	Zn	0.00		±deviation		1.7	

SOUTH ELGIN

The village of South Elgin (4289) installed a public water supply in 1939. Two wells (Nos. 3 and 4) are in use and another well (No. 2) is available for emergency use. In 1950 there were 250 services, 70 percent metered; the average daily pumpage was 65,000 gpd. In 1977 there were 1350 services, all metered; the average and maximum daily pumpages in 1976 were 363,565 and 545,000 gpd, respectively. The water from Well Nos. 3 and 4 is chlorinated and fluoridated; in addition the water from Well No. 3 is aerated. The water from Well No. 2 is chlorinated as needed.

WELL NO. 4, finished in sand and gravel, was completed in October 1973 to a depth of 109 ft by the Layne-Western Co., Aurora. The well is located east of Martin St. and 60 ft south of Division St. extended, approximately 600 ft S and 650 ft W of the NE corner of Section 34, T41N, R8E. The land surface elevation at the well is approximately 762 ft.

A drillers log of Well No. 4 follows:

Strata	*Thickness (ft)*	*Depth (ft)*
Black sandy top soil	1	1
Brown sandy clay	1	2
Sand and gravel	2.5	4.5
Brown sandy clay	7.5	12
Gray sandy clay with gravel embedded	30	42
Fine sand to coarse gravel with boulders	15	57
Fine to coarse sand and some small gravel	7	64
Fine sand to coarse gravel	7	71
Pink sandy clay with gravel embedded	2.5	73.5
Gray medium sand to coarse gravel	35.5	109
Limestone below		

A 30-in. diameter hole was drilled to a depth of 109 ft. The well is cased with 24-in. pipe from 2 ft above land surface to a depth of 68 ft and 12-in. pipe from 2 ft above land surface to a depth of 84 ft followed by 25 ft of 12-in. No. 5 (0.105 in.) Layne stainless steel shutter screen. The annulus between the bore hole and 24-in. casing is filled with cement from 0 to 50 ft and the annulus between the 24- and 12-in. casings and between the bore hole and 12-in. casing-screen assembly is filled with Muscatine gravel from 0 to 109 ft.

A production test was conducted by the driller on October 22, 1973. After 7.2 hr of pumping at rates from 690 to 876 gpm, the final drawdown was 4.5 ft from a nonpumping water level of 66.0 ft below land surface. One min after pumping was stopped, full recovery was observed.

The pumping equipment presently installed is a Layne & Bowler turbine pump (No. 81812) set at 80 ft, rated at 800 gpm, and powered by a 60-hp 1770 rpm U. S. electric motor.

The following mineral analysis made by the Illinois Environmental Protection Agency (Lab. No. B50649) is for a water sample from the well collected June 14, 1977, after 1.5 hr of pumping at 490 gpm.

WELL NO. 4, LABORATORY NO. B50649

		mg/l	me/l			mg/l	me/l
Iron	Fe	0.0		Silica	SiO_2	14	
Manganese	Mn	0.01		Fluoride	F	0.2	0.01
Ammonium	NH_4	0.00	0.00	Boron	B	0.1	
Sodium	Na	6	0.26	Nitrate	NO_3	2.2	0.04
Potassium	K	1.3	0.03	Chloride	Cl	12	0.34
Calcium	Ca	85	4.24	Sulfate	SO_4	79	1.64
Magnesium	Mg	42	3.46	Alkalinity (as $CaCO_3$)		314	6.28
Arsenic	As	0.00					
Barium	Ba	0.1		Hardness (as $CaCO_3$)		419	8.38
Copper	Cu	0.00					
Cadmium	Cd	0.00					
Chromium	Cr	0.00		Total dissolved minerals		418	
Lead	Pb	0.00					
Mercury	Hg	0.0000					
Nickel	Ni	0.0					
Selenium	Se	0.00					
Silver	Ag	0.00					
Cyanide	CN	0.00					
Zinc	Zn	0.0		pH (as rec'd)		7.5	

RIVER GRANGE LAKES SUBDIVISION

River Grange Lakes Subdivision (est. 50), located 1 mile west of Valley View, installed a public water supply in 1963. The water system is owned and operated by the Valley Water Co. One well is in use. In 1976 there were 15 services, none metered; the average daily pumpage was 6000 gpd. The water is chlorinated and fluoridated.

WELL NO. 1, open to the Silurian dolomite and the Maquoketa Group, was completed in 1963 to a depth of 180 ft by the Shaver Well Drilling Co., Downers Grove. The well is located approximately 1800 ft N and 350 ft W of the SE corner of Section 9, T40N, R8E. The land surface elevation at the well is approximately 775 ft.

An 8-in. diameter hole was drilled to a depth of 180 ft. The well is cased with 8-in. pipe from above land surface to a depth of 84 ft.

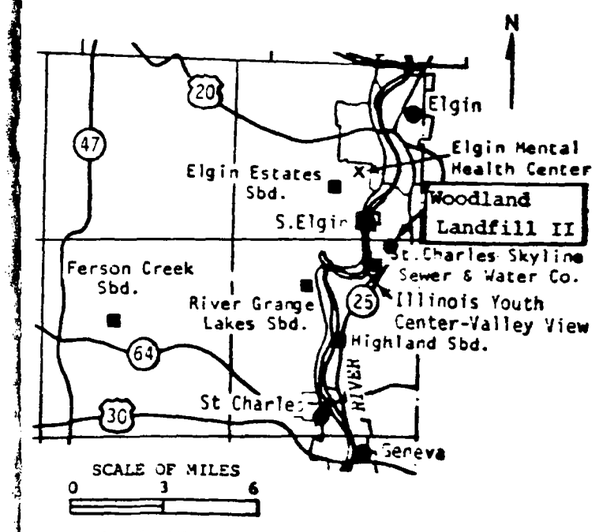
Upon completion, the well reportedly produced 350 gpm for 8 hr and the nonpumping water level was 30 ft below the top of the casing.

The pumping equipment presently installed is a Fairbanks-Morse submersible pump set at 100 ft, rated at 100 gpm at about 40 ft TDH, and powered by a 10-hp electric motor.

The following mineral analysis made by the Illinois Environmental Protection Agency (Lab. No. A15190) is for a water sample from the well collected in March 1976.

WELL NO. 1, LABORATORY NO. A15190

		mg/l	me/l			mg/l	me/l
Iron	Fe	1.35		Silica	SiO_2	17	
Manganese	Mn	0.12		Fluoride	F	0.7	0.04
Ammonium	NH_4	0.51	0.03	Boron	B	0.1	
Sodium	Na	12	0.52	Nitrate	NO_3	0.4	0.01
Potassium	K	1.5	0.04	Chloride	Cl	3	0.08
Calcium	Ca	71	3.54	Sulfate	SO_4	34	0.71
Magnesium	Mg	44	3.62	Alkalinity (as $CaCO_3$)		332	6.64
Arsenic	As	0.002		Hardness (as $CaCO_3$)		359	7.18
Barium	Ba	0.0					
Copper	Cu	0.02		Total dissolved minerals		380	
Cadmium	Cd	0.00					
Chromium	Cr	0.00					
Lead	Pb	0.00					
Mercury	Hg	0.0000		pH (as rec'd)		7.7	
Nickel	Ni	0.0		Radioactivity			
Selenium	Se	0.00		Alpha pc/l		1.8	
Silver	Ag	0.00		± deviation		1.5	
Cyanide	CN	0.01		Beta pc/l		5.0	
Zinc	Zn	0.0		± deviation		1.6	



Location of public groundwater supply systems in Kane County

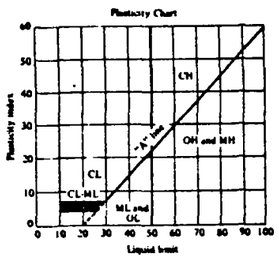
(Ref. Public Groundwater Supplies in Kane County, Illinois State Water Survey, 1978)

WATER QUALITY OF THE SHALLOW AQUIFER IN KANE COUNTY, ILLINOIS

EXHIBIT 4

UNIFIED SOIL CLASSIFICATION SYSTEM.

Major Divisions			Group Symbols	Typical Names	Laboratory Classification Criteria
Coarse-grained soils (More than half of material is larger than No. 200 sieve size)	Gravels (More than half of coarse fraction is larger than No. 4 sieve size)	Clean gravels (Little or no fines)	GW	Well-graded gravels, gravel-sand mixtures, little or no fines	$C_u = \frac{D_{60}}{D_{10}}$ greater than 4, $C_c = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ between 1 and 3
			GP	Poorly graded gravels, gravel-sand mixtures, little or no fines	Not meeting all gradation requirements for GW
		Gravels with fines (Appreciable amount of fines)	GM[a] d u	Silty gravels, gravel-sand-silt mixtures	Atterberg limits below "A" line or P.I. less than 4 / Above "A" line with P.I. between 4 and 7 are borderline cases requiring use of dual symbols
			GC	Clayey gravels, gravel-sand-clay mixtures	Atterberg limits below "A" line with P.I. greater than 7
	Sands (More than half of coarse fraction is smaller than No. 4 sieve size)	Clean sands (Little or no fines)	SW	Well-graded sands, gravelly sands, little or no fines	$C_u = \frac{D_{60}}{D_{10}}$ greater than 6, $C_c = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ between 1 and 3
			SP	Poorly graded sands, gravelly sands, little or no fines	Not meeting all gradation requirements for SW
		Sands with fines (Appreciable amount of fines)	SM[a] d u	Silty sands, sand-silt mixtures	Atterberg limits above "A" line or P.I. less than 4 / Limits plotting in hatched zone with P.I. between 4 and 7 are borderline cases requiring use of dual symbols
			SC	Clayey sands, sand-clay mixtures	Atterberg limits above "A" line with P.I. greater than 7
					Determine percentages of sand and gravel from grain-size curve. Depending on percentage of fines (fraction smaller than No. 200 sieve size), coarse-grained soils are classified as follows: Less than 5 per cent: GW, GP, SW, SP, GM, GC, SM, SC. More than 12 per cent: GM, GC, SM, SC. 5 to 12 per cent: Borderline cases requiring dual symbols[b]
Fine-grained soils (More than half of material is smaller than No. 200 sieve)	Silts and clays (Liquid limit less than 50)		ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands, or clayey silts with slight plasticity	
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays	
			OL	Organic silts and organic silty clays of low plasticity	
	Silts and clays (Liquid limit greater than 50)		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts	
			CH	Inorganic clays of high plasticity, fat clays	
			OH	Organic clays of medium to high plasticity, organic silts	
	Highly organic soils		Pt	Peat and other highly organic soils	



[a] Division of GM and SM groups into subdivisions of d and u are for roads and airfields only. Subdivision is based on Atterberg limits; suffix d used when L.L. is 28 or less and the P.I. is 6 or less; the suffix u used when L.L. is greater than 28.
[b] Borderline classifications, used for soils possessing characteristics of two groups, are designated by combinations of group symbols. For example: GW-GC, well-graded gravel-sand mixture with clay binder.

(ASTM D-2487)

ABBREVIATIONS USED ON BORING LOG

- SS - Split-spoon Sampler 2" O.D. by 1-3/8" I.D.
- 2T - Thinwall Tube Sampler 2" O.D. by 1-7/8" I.D.
- 3T - Thinwall Tube Sampler 3" O.D. by 2-7/8" I.D.
- CA - Continuous Flight Auger
- HA - Hand Auger
- HSA - Hollow Stem Continuous Flight Auger
- W - Wash Sample
- AX - Rock Core 1-3/16" Diameter
- BX - Rock Core 1-5/8" Diameter
- NX - Rock Core 2-1/8" Diameter
- SPT - Standard Penetration Test, 140 Lb. hammer dropped 30"
- q_u - Unconfined Compressive Strength Test
- q_{u*} - Estimated Unconfined Compressive Strength (Pocket Penetrometer)
- γ_d - Dry Unit Weight
- w - Natural Water Content
- occ. - Occasional
- v. - Very
- med. - Medium

SOIL DESCRIPTION TERMINOLOGY

Soils are identified and classified in this report according to the Unified Soil Classification System with the following modifiers:

RELATIVE DENSITY OF GRANULAR SOILS

Description	Blows/Foot
Very Loose	0 to 4
Loose	4 to 10
Medium Dense	10 to 30
Dense	30 to 50
Very Dense	50 to 80
Extremely Dense	80+

CONSISTENCY OF COHESIVE SOILS

Description	N	q_u (tsf)
Very Soft	2	0 to 0.25
Soft	2-4	0.25 to 0.50
Medium	4-8	0.5 to 1.0
Stiff	8-15	1.0 to 2.0
Very Stiff	15-30	2.0 to 4.0
Hard	30	4.0 to 8.0
Very Hard		8.0+

PARTICLE SIZES

Components		Size or Sieve No.
Boulders	-	Over 8 in.
Cobbles	-	3 to 8 in.
Gravel	- Coarse	3/4 to 3 in.
	- Fine	No. 4 to 3/4 in.
Sand	- Coarse	No. 10 to No. 4
	- Medium	No. 40 to No. 10
	- Fine	No. 200 to No. 40
Fines (Silt and Clay)	-	Below No. 200

RELATIVE PROPORTIONS

Descriptive Term	% by Weight
trace/occasional	0 to 10
little	10 to 20
some	20 to 35
and	35 to 50

ROCK QUALITY DETERMINATION

The Rock Quality Determination (Deere, et at., 1969) method of determining rock quality is as follows:

Sum up the total length of core recovered in each run, but count only those pieces of core which are four inches (10 cm) in length or longer and which are hard and sound. The sum is then represented as a percentage over the length of the run. If the core is broken by handling or by the drilling process, the fresh broken pieces are fitted together and counted as one piece provided that they form the requisite length of four inches (10 cm).

Relation of RQD and Rock Quality

RQD (%)	Description of Rock Quality
0 - 25	Very poor
25 - 50	Poor
50 - 75	Fair
75 - 90	Good
90 - 100	Excellent

NOTE: RQD can only be used on NX core or larger. The RQD should always be shown on the core log as a percentage. The diagnostic description is intended primarily for evaluating problems with tunnels or excavations in rock.

GRAPHIC LOG SYMBOLS

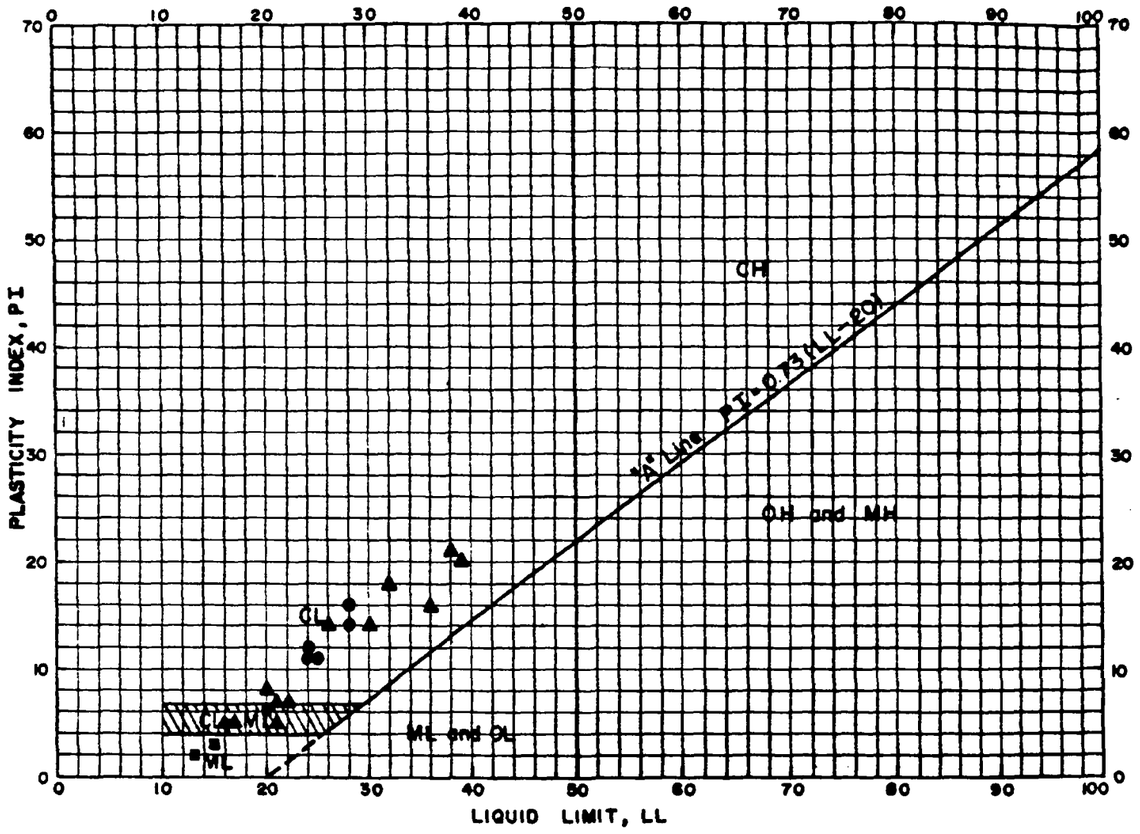
- Clean Sand
- Sand & Gravel
- Silty Sand or Sandy Silt
- Clay
- Organic Clay
- Organic Silt
- Silt
- Silty Clay or Clayey Silt
- Fill
- Boulders
- Limestone or Dolomite Bedrock
- Shale
- Topsoil or Peat
- Coal
- Sandy Dolomite
- Argilaceous Dolomite
- Brecciated Limestone
- Sandstone

- Water Level, During Drilling
- Water Level, After Drilling
- Water Level, After 24 Hours

SOIL & ROCK CLASSIFICATION, TERMINOLOGY, & SYMBOLS

PATRICK ENGINEERING INC.

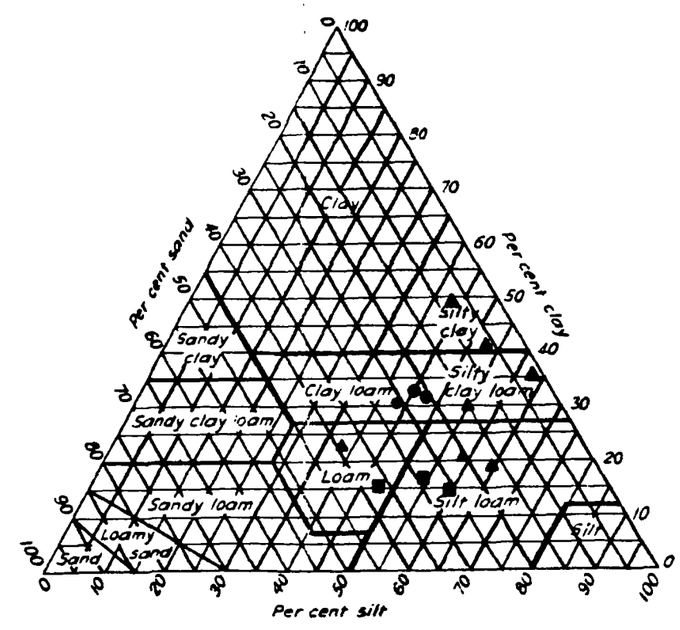
EXHIBIT 8



Plasticity chart used by the Unified Soil Classification System.

GRAIN SIZE, mm

USDA System	Gravel	Sand	Silt	Clay
		2	0.05	0.002



Triangular textural classification chart used by the U.S. Department of Agriculture.

- ● Properties of Reddish Brown Silty Clays.
- ▲ Properties of Gray Silty Clays.
- ■ Properties of Gray Silts.

PATRICK ENGINEERING INC.
Geotechnical/Environmental Engineers

SOIL CLASSIFICATION CHARTS

WOODLAND LANDFILL II
KANE COUNTY, ILLINOIS
FOR
WASTE MANAGEMENT, INC.

PROJECT TRI COUNTY LANDFILL, KANE COUNTY, ILLINOIS

CLIENT WASTE MANAGEMENT OF ILLINOIS, INC., P.O. Box 563, Palos Heights, Illinois

BORING 4 DATE STARTED 3-26-75 DATE COMPLETED 3-26-75 JOB L-12,466

ELEVATIONS

GROUND SURFACE 751.7

END OF BORING 681.7

WATER TABLE

AT END OF BORING

24 HOURS Caved "Dry"

7 Days Caved "Dry" @ -9.0'

While Drilling -23.5'

SAMPLE NO	TYPE	N	WC	Q_u	% DRY	DEPTH	ELEV.	SOIL DESCRIPTIONS
						1.0	750.7	Brown sandy TOPSOIL, moist
1	SS	16						Firm brown fine to coarse SAND, trace small gravel, moist (SP)
2	SS	18						
						12.5	739.2	
3	SS	5	27.6					Loose brown clayey SILT, trace fine sand, moist (ML)
						16.0	735.7	
4	SS	46						Dense brown fine to coarse SAND, trace small gravel, moist (SW)
						22.0	729.7	
5	SS	22						Firm brown silty fine to coarse SAND, trace small gravel, very moist to saturated (SM)
						27.0	724.7	
6	SS	21						Firm to dense brown small to large GRAVEL and fine to coarse SAND, saturated (GW)
7	SS	32						
						37.0	714.7	
8	SS	39						Dense brown fine to coarse SAND, trace gravel, saturated (SW)
						42.0	709.7	
9	SS	22	13.7		1.67 1.75*			
10	SS	27	15.7		2.62 2.25*			Tough to very tough gray silty CLAY, trace to little sand and gravel, moist, layer of cobbles @ -63 feet (CL)
11	SS	12	14.0		2.0*			
12	SS	20	16.0		1.25*			
13	SS	33	14.4		2.0*			
14	SS	19	13.4		3.68			

Distance Below Surface in Feet: 0, 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70

* - Approximate unconfined compression strength based on measurements with a calibrated pocket penetrometer

End of Boring at 70.0 feet

TESTING SERVICE CORPORATION

DRILL RIG NO 60

PROJECT TRI COUNTY LANDFILL, KANE COUNTY, ILLINOIS

CLIENT WASTE MANAGEMENT OF ILLINOIS, INC., P.O. Box 563, Palos Heights, Illinois

BORING 5 DATE STARTED 3-24-75 DATE COMPLETED 3-24-75 JOB L-12,466

ELEVATIONS

GROUND SURFACE 727.4

END OF BORING 657.4

WATER TABLE

AT END OF BORING -3.0'

24 HOURS -0.0'

Water encountered @ -6.0' while drilling

@ 7 days: -2½'

SAMPLE NO.	TYPE	N	WC	Q_u	DRY	DEPTH	ELEV	SOIL DESCRIPTIONS
						1.0	726.4	Dark brown TOPSOIL, moist
1	SS	29						Brown fine to medium SAND, trace small gravel, moist to saturated (SP)
2	SS	16	12.9	6.03 4.5+*		8.0	719.4	
3	SS	26	12.1	3.68 3.5*				Very tough to hard gray silty CLAY, little sand and gravel, occasional cobbles, moist (CL)
4	SS	15	12.6	3.09 3.75*				
5	SS	15	14.0	3.57 4.0*		25.0	702.4	
6	SS	16	13.7	2.73 3.0*				
7	SS	17	14.8	2.25*				
8	SS	20	15.0					Tough to hard grayish-brown silty CLAY, little sand and gravel, moist (CL)
9	SS	21	14.9	1.54 1.5*				
10	SS	20	13.5	4.05 3.75				
11	SS	20	15.9					
12	SS	21	13.6	3.92 3.25*				
13	SS	42	13.9	3.22 3.0*				
14	SS	31	13.6	3.15 3.0*				

Distance Below Surface in Feet: 0, 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70

*- Approximate unconfined compression strength based on measurements with a calibrated pocket penetrometer

End of Boring at 70.0 feet

TESTING SERVICE CORPORATION

FIELD REC. NO 60

PROJECT TRI COUNTY LANDFILL, KANE COUNTY, ILLINOIS

CLIENT WASTE MANAGEMENT OF ILLINOIS, INC., P.O. Box 5[illegible], Palos Heights, Illinois

BORING 6 DATE STARTED 3-22-75 DATE COMPLETED 3-22-75 JOB L-12,466

ELEVATIONS

GROUND SURFACE 726.7

END OF BORING 65[illegible].7

WATER TABLE

AT END OF BORING -11.0'

24 HOURS 0.0'

While Drilling -13.0'

7 Days 0.0'

SAMPLE NO.	TYPE	N	WC	Q_u	DRY	DEPTH	ELEV.	SOIL DESCRIPTIONS
						2.5	72[illegible].2	Black organic CLAY, moist (OH)
1	SS	8	20.6	3.25*		3.5	723.2	Loose brown & gray fine to coarse SAND, moist (SW)
								Very tough brown silty CLAY, moist (CL)
						8.0	718.7	
2	SS	16	11.9	3.5*				
3	SS	50	13.6	3.01 4.0*				
4	SS	19	14.9					
5	SS	17	16.9	2.0*				Very tough to hard silty CLAY, trace to little sand and gravel, occasional gravel or cobble layers to -30 feet, moist (CL)
6	SS	16	13.9	2.68 2.5*				
7	SS	17	14.0	2.92 2.75*				
8	SS	22	13.6	4.28 3.75*				
9	SS	32	12.8	7.46 4.5+*				
10	SS	43	12.7	6.56 4.5+*				
11	SS	22	13.5	4.71 4.5*				
12	SS	30	12.8	6.12 4.5+*				
13	SS	42	12.1	3.75*				
14	SS	41	12.1	5.12 4.5*				

Distance Below Surface in Feet: 0, 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70

* - Approximate unconfined compression strength based on measurements with a calibrated pocket penetrometer

End of Boring at 7[illegible].0 feet

TESTING SERVICE CORPORATION

CIVIL ENG NO

PROJECT TRI COUNTY LANDFILL, KANE COUNTY, ILLINOIS

CLIENT WASTE MANAGEMENT OF ILLINOIS, INC., P.O. Box 563, Palos Heights, Illinois

BORING 8 DATE STARTED 3-21-75 DATE COMPLETED 3-22-75 JOB L-12,466

ELEVATIONS

GROUND SURFACE 731.5

END OF BORING 661.5

WATER TABLE

AT END OF BORING -22.0'

24 HOURS - 2.0'

7 Days - 1.5'

While Drilling -19.5'

SAMPLE NO.	TYPE	N	WC	Q_u	DRY	DEPTH	ELEV.	SOIL DESCRIPTIONS
						0.2	731.3	Black sandy TOPSOIL, moist
1	SS	8	14.2					Loose to firm brown to brownish-gray clayey SILT, trace sand and small gravel, very moist (ML)
2	SS	11	13.5					
						12.0	719.5	
3	SS	13	14.8	1.79 2.25*				Tough to very tough brownish-gray silty CLAY, little sand and gravel, moist (CL)
4	SS	29	12.7	3.25*		19.5	712.0	
5	SS	19						Firm gray-brown fine to coarse SAND and small to medium GRAVEL, saturated (SM)
6	SS	20						
7	SS	46	10.3	4.5+*		34.5	697.0	
8	SS	40	10.5	0.72 4.5+*				
9	SS	51	10.7	4.5+*				Hard reddish-brown to brownish-gray silty CLAY, some sand, trace to little gravel, moist (CL)
10	SS	66	11.5	4.5+*				
11	SS	78	15.[illegible]					
12	SS	75	10.0	0.91 4.5+*				
						63.0	668.5	
13	SS	33	26.4					Very tough black silty CLAY, moist
						68.0	663.5	
14	SS	48	12.9	2.54 3.5*				Very tough brownish-gray sandy CLAY, little silt & gravel, moist (CL)

Distance Below Surface in Feet: 0, 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70

End of Boring at 70.0 feet

DRILL RIG NO.

TESTING SERVICE CORPORATION

*- Approximate unconfined compression strength based on measurements with a calibrated pocket penetrometer

PROJECT TRI COUNTY LANDFILL, KANE COUNTY, ILLINOIS

CLIENT WASTE MANAGEMENT OF ILLINOIS, INC., P.O. Box 563, Palos Heights, Illinois

BORING 9 DATE STARTED 3-21-75 DATE COMPLETED 3-21-75 JOB L-12,466

ELEVATIONS

GROUND SURFACE 752.6

END OF BORING 682.6

WATER TABLE

AT END OF BORING -32.0'

24 HOURS -12.0'

7 Days - 7.0'

While Drilling -33.5'

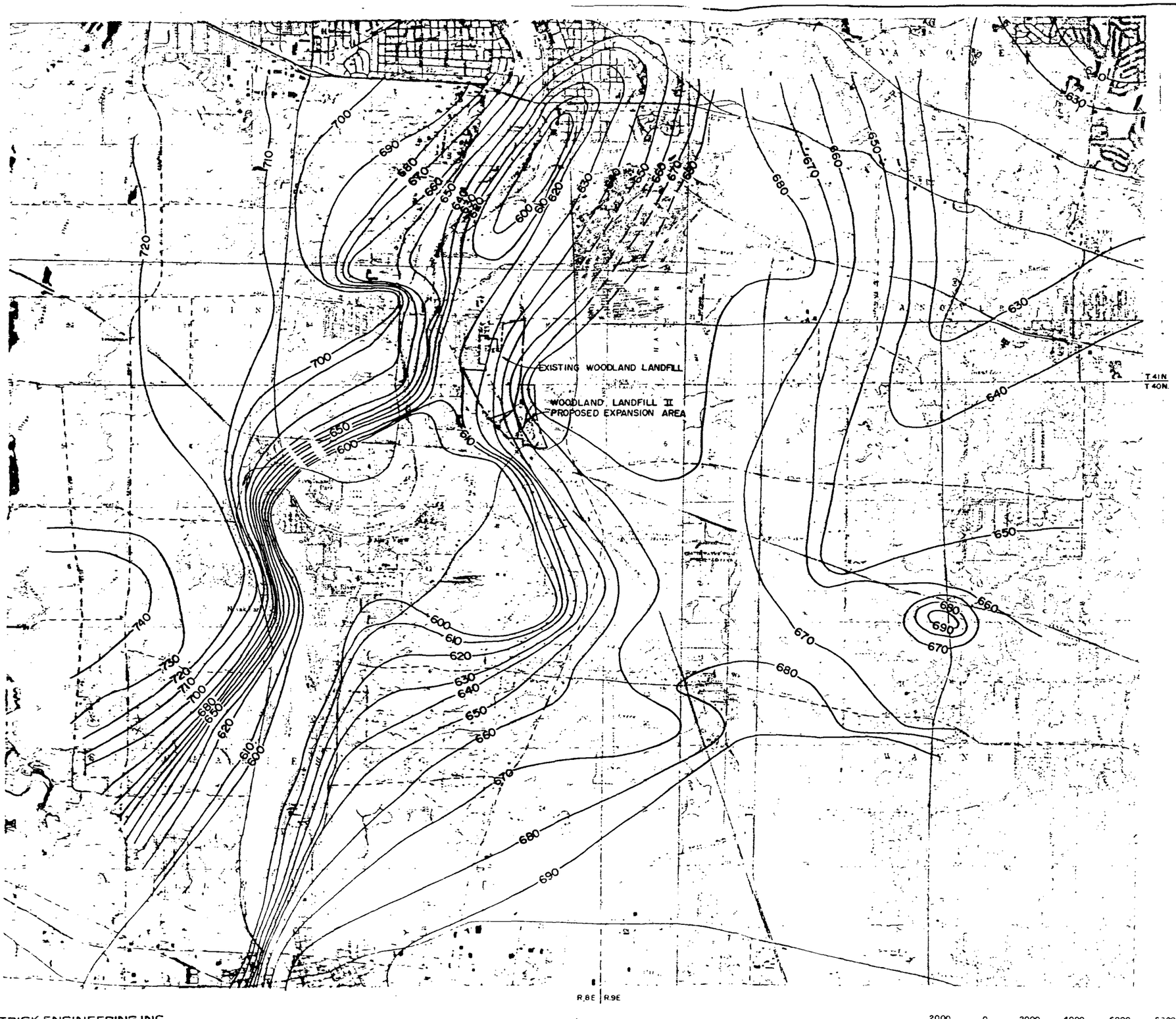
Distance Below Surface in Feet	Sample No.	Type	N	WC	Q_u	γ_{DRY}	Depth	Elev.	Soil Descriptions
5	1	SS	8						Loose brown silty fine SAND, trace gravel, moist (SM)
							7.0	745.6	
10	2	SS	9	18.4					Loose to firm brown clayey SILT, trace sand and small gravel, moist (ML)
15	3	SS	25	19.2			15.0	737.6	
20	4	SS	8						Loose gray SILT, little fine sand, trace clay and small gravel, very moist (SM)
25	5	SS	21	12.9	3.15 3.0*		23.0	729.6	
30	6	SS	23	16.6	3.5*				Very tough to hard gray silty CLAY, trace sand and gravel, occasional fine sand seam, moist (CL)
35	7	SS	22	18.0	4.46 4.5*				
40	8	SS	18				38.0	714.6	Firm gray-brown fine SAND, little silt, trace small gravel, saturated (SM)
							43.0	709.6	
	9	SS	32				44.0	708.6	Dense gray medium SAND, saturated (SP)
50	10	SS	24						Firm to dense gray silty fine SAND, trace clay and gravel, wet (SM)
55	11	SS	17						
60	12	SS	52				58.0	694.6	Very dense gray fine SAND, saturated (SP)
65	13	SS	36				63.0	689.6	Dense gray fine to coarse SAND, little gravel, saturated (SW)
70	14	SS	57				68.0	684.6	Very dense gray fine to medium SAND, trace clay and gravel, saturated (SP)

End of Boring at 70.0 feet

DRILL RIG NO. 3

TESTING SERVICE CORPORATION

* - Approximate unconfined compression strength based on measurements with a calibrated pocket penetrometer



LEGEND

—700— ELEVATION OF TOP OF BEDROCK SURFACE IN FEET ABOVE MSL.

NOTES

1. BEDROCK SURFACE ELEVATIONS OBTAINED FROM INTERPRETATION OF WATER WELL LOGS ON FILE WITH THE ILLINOIS STATE GEOLOGICAL SURVEY, WARRENVILLE, ILLINOIS, MAY, 1982.
2. CONTOURS BELOW EL. 600 NOT SHOWN DUE TO LACK OF SUFFICIENT DATA.
3. DASHED CONTOURS INDICATE ESTIMATED CONTOURS.

REV.	DATE	DESCRIPTION	DR BY	APP BY

SCALE 1" = 2000'
DATE JUNE, 1982
DESIGN K.M.B.
DR BY W.M.
CHK BY K.M.B.
APP BY

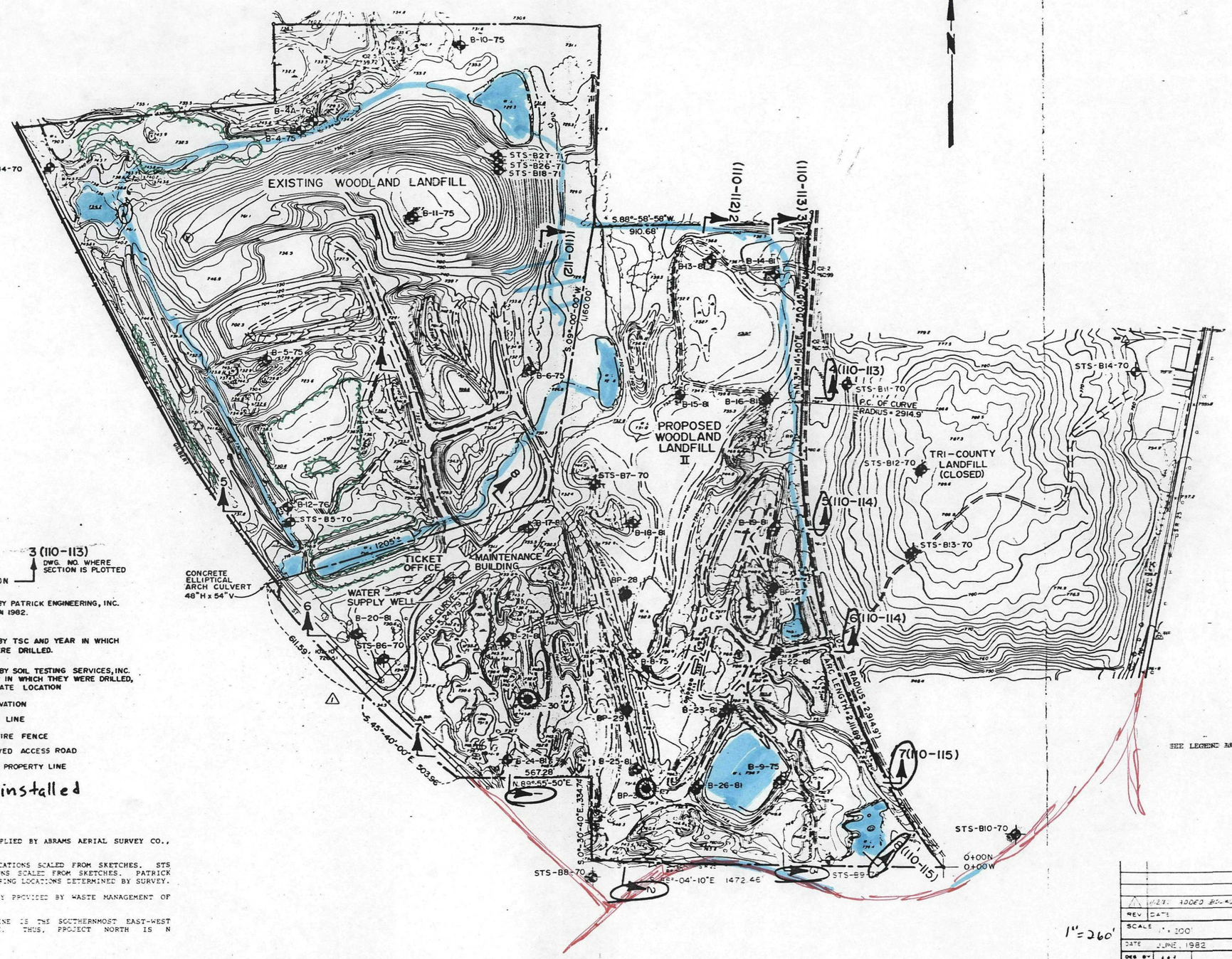
PROJECT: WOODLAND LANDFILL II
KANE COUNTY, ILLINOIS

SHEET TITLE: BEDROCK SURFACE MAP

Waste Management, Inc.
Oak Brook, Illinois 60521

SHEET 3 OF 3
DRAWING NO. 110-102

PATRICK ENGINEERING INC.
Geotechnical, Environmental Engineers
Glen Ellyn, Illinois



LEGEND

- 3 — CROSS SECTION; 3 (110-113) — DWG. NO. WHERE SECTION IS PLOTTED
- BP-29 — BORINGS BY PATRICK ENGINEERING, INC. DRILLED IN 1982.
- B-21-81 — BORINGS BY TSC AND YEAR IN WHICH THEY WERE DRILLED.
- STS B8-70 — BORINGS BY SOIL TESTING SERVICES, INC. AND YEAR IN WHICH THEY WERE DRILLED, APPROXIMATE LOCATION
- ×789.4 — SPOT ELEVATION
- 740 — CONTOUR LINE
- WOVEN WIRE FENCE
- UNIMPROVED ACCESS ROAD
- LANDFILL PROPERTY LINE
- O = MW installed

NOTES

1. TOPOGRAPHY SUPPLIED BY ABRAMS AERIAL SURVEY CO., JULY, 1981.
2. TSC BORING LOCATIONS SCALED FROM SKETCHES. STS BORING LOCATIONS SCALED FROM SKETCHES. PATRICK ENGINEERING BORING LOCATIONS DETERMINED BY SURVEY.
3. BOUNDARY SURVEY PROVIDED BY WASTE MANAGEMENT OF ILLINOIS, INC.
4. PROJECT BASELINE IS THE SOUTHERNMOST EAST-WEST PROPERTY LINE. THUS, PROJECT NORTH IS N 1°-55'-50"E.

△ REFERENCE POINT
THESE SELECTED POINTS ARE PLOTTED WITH EXTREME CARE AND ARE RECOMMENDED AS BASIC TIES DURING CONSTRUCTION

ACCURACIES NOT GUARANTEED IN OBSCURED AREAS SHOWN BY DASHED CONTOURS AND UNDERLINED ELEVATIONS

SCALE 1" = 200' — CONTOUR INTERVAL 2'
GRIDS BASED ON LOCAL COORDINATE SYSTEM.
DATE OF PHOTOGRAPHY MAY 1981 — DATE OF MAPPING JULY 1981

1"=260'

REV	DATE	DESCRIPTION	DR BY	APP BY
1	11-23-83	ADDED BOUNDARY SURVEY DATA NOTES 3 & 4	WM	JPD

SCALE 1" = 200'
DATE JUNE, 1982
DES BY
DR BY
CHK BY
APP BY

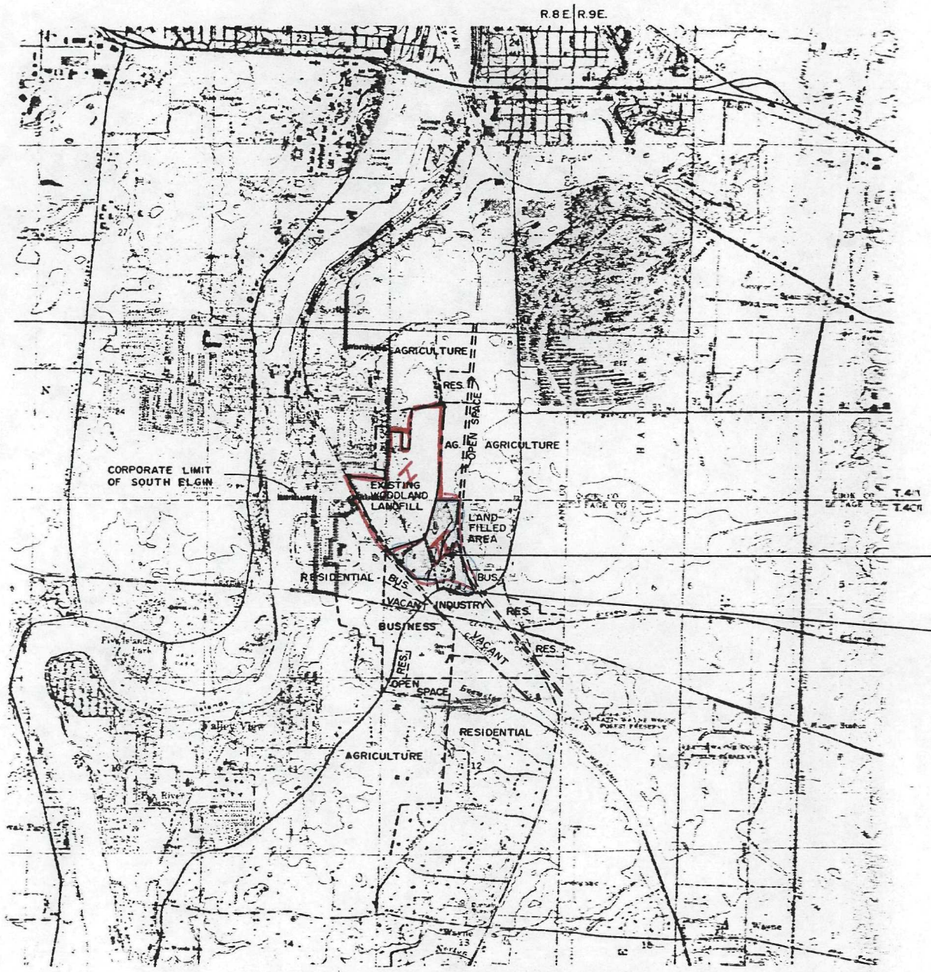
PROJECT: WOODLAND LANDFILL II, KANE COUNTY, ILLINOIS

SHEET TITLE: AREA TOPOGRAPHY & BORING LOCATION MAP

Waste Management, Inc.

SHEET 6 OF 18
DRAWING NO 110-105R1

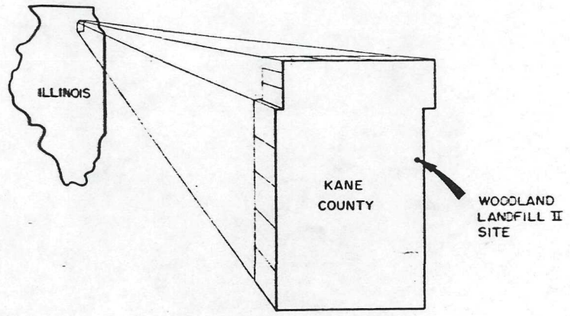
PATRICK ENGINEERING INC.
Geotechnical/Environmental Engineers
Glen Ellyn, Illinois



LOCATION & GENERAL LAND USE MAP

CONTOUR INTERVAL: 10 FEET

SCALE 0 — 2000 FEET



WOODLAND LANDFILL II, PROPOSED EXPANSION AREA = 88 ACRES

STATE OF ILLINOIS PLANE COORDINATE N.1,934,800, E.516,700 (EAST ZONE) △1
REF. S.E. CORNER OF THE PROPOSED EXPANSION AREA

PROJECT DATA

AREA OF PROPERTY:	88 ACRES
LANDFILL AREA:	46 ACRES
REQUIRED EXCAVATION:	1,840,000 C.Y.
FILL FOR FINAL COVER:	400,000 C.Y.
FILL FOR DIKES, BERMS, AND SEALS.	400,000 C.Y.
FILL FOR DAILY COVER:	1,040,000 C.Y.
REFUSE STORAGE CAPACITY (AIR SPACE):	3,500,000 C.Y. △1
DAILY RECEIPTS:	3,000 C.Y./DAY
ESTIMATED FILLING PERIOD:	10 to 20 YEARS

TYPE OF WASTE: NON-HAZARDOUS MUNICIPAL, COMMERCIAL, CONSTRUCTION SOLID WASTES; NON-HAZARDOUS SOLID SPECIAL WASTE; MUNICIPAL WASTEWATER TREATMENT PLANT SLUDGE

INDEX OF DRAWINGS

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110-105	AREA TOPOGRAPHY & BORING LOCATION MAP
110-106	SITE TOPOGRAPHY & BORING LOCATIONS
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110-114	CROSS SECTIONS 5 & 6
110-115	CROSS SECTIONS 7 & 8
110-116	DETAILS
110-117	DETAILS

△1

NOTES

1. GENERAL LAND USE CLASSIFICATION TAKEN FROM KANE COUNTY MASTER LAND USE PLAN, REVISED DECEMBER 31, 1980, PREPARED BY KANE COUNTY PLANNING DEPARTMENT.

2000 0 2000 4000 6000 8000 10000

SCALE IN FEET

REV	DATE	DESCRIPTION	DR BY	APP BY
△1	02/21/82	CHANGED PROJECT DATA & REMOVED DWG NO. 110-116	W.M.	D.P.C.

SCALE 1" = 2000'
DATE JUNE, 1982
DES BY KMB
DR BY W.M.
CHK BY KMB
APP BY DPC

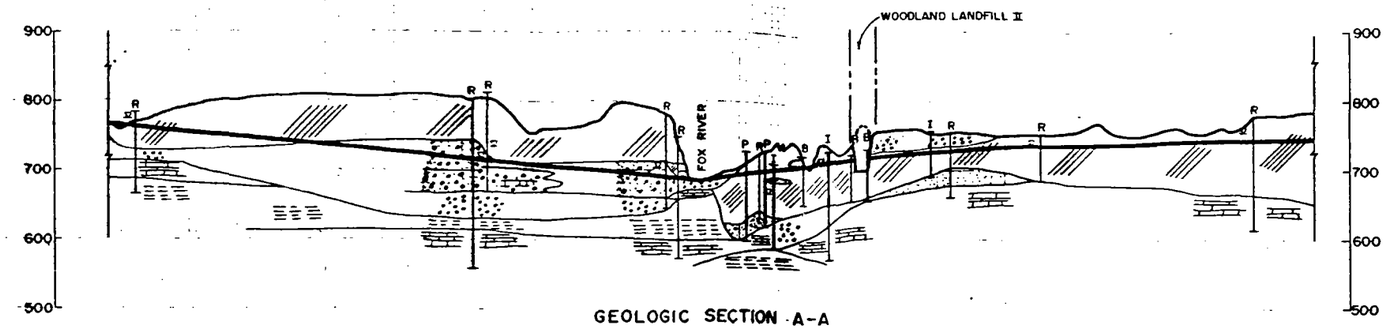
PROJECT: WOODLAND LANDFILL II, KANE COUNTY, ILLINOIS

SHEET TITLE: PROJECT LOCATION MAP

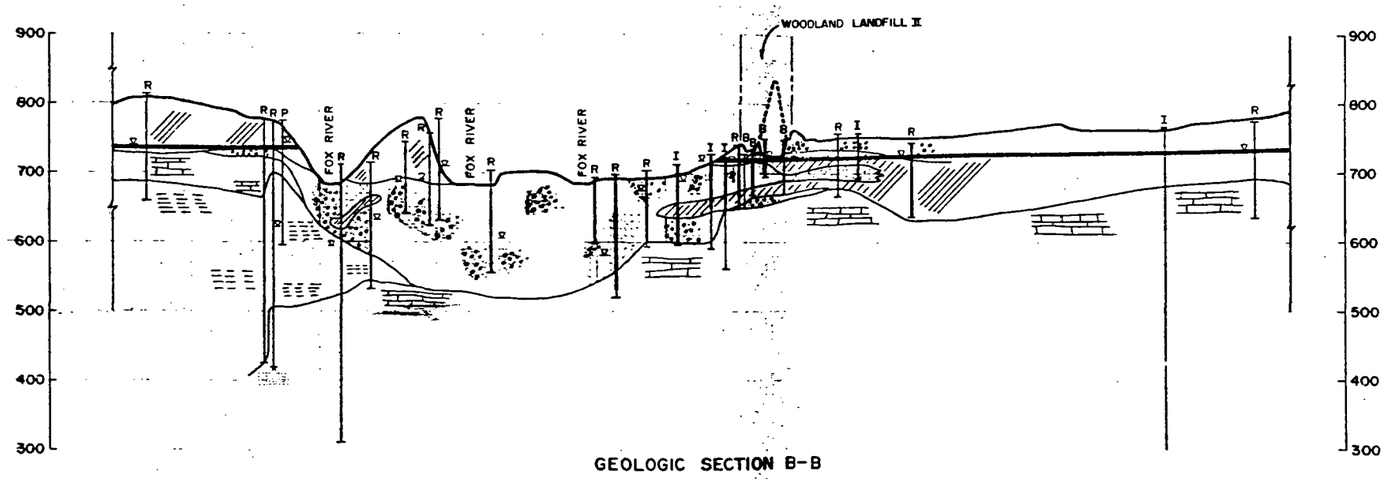
Waste Management, Inc.
Oak Brook, Illinois 60521

SHEET 2 OF 18
DRAWING NO. 110-101

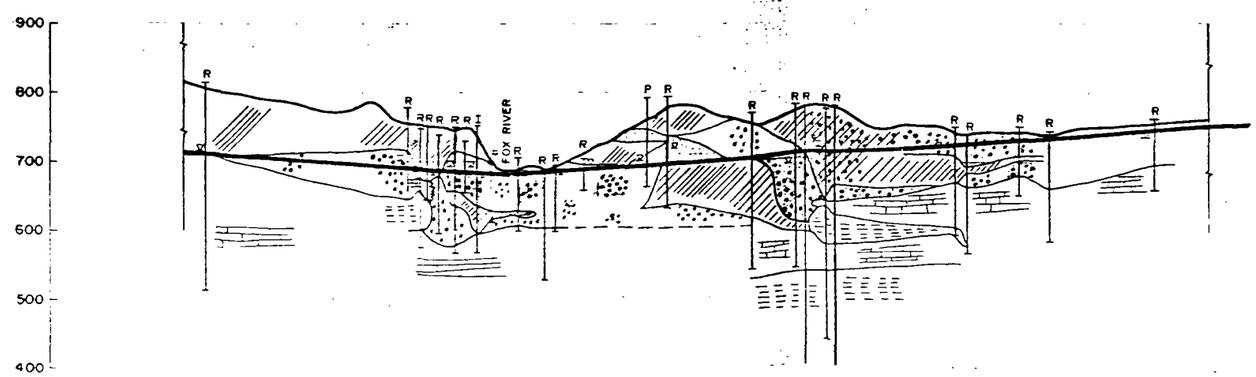
PATRICK ENGINEERING INC.
Geotechnical/Environmental Engineers
Glen Ellyn, Illinois



GEOLOGIC SECTION A-A



GEOLOGIC SECTION B-B



GEOLOGIC SECTION C-C

LEGEND

- CLAY
- GRAVEL
- SAND
- LIMESTONE
- SHALE
- SANDSTONE
- PROPERTY LINE
- WATER LEVEL
- R RESIDENTIAL WELL
- I INDUSTRIAL WELL
- P PUBLIC WELL
- B BORING
- CASING
- APPROXIMATE REGIONAL POTENTIOMETRIC LEVEL IN THE DOLOMITE/GRAVEL AQUIFER

NOTES

1. GROUND ELEVATIONS, STATIC WATER LEVEL, AND WATER USE DETERMINED FROM WELL LOGS ON FILE WITH THE ILLINOIS STATE GEOLOGICAL SURVEY.
2. CROSS-SECTIONS WERE DEVELOPED FROM INTERPRETATION OF LOGS OF WATER SUPPLY WELLS AND PUBLISHED GEOLOGIC INFORMATION.

SCALE
HORZ 0 2000 FEET
VERT. 0 100 FEET

REV	DATE	DESCRIPTION	DR BY	APP BY

SCALE AS SHOWN
DATE JUNE 1986
DES BY KMB
DR BY WAB
CHK BY KMB
APP BY DPC

PROJECT WOODLAND LANDFILL II
KANE COUNTY, ILLINOIS

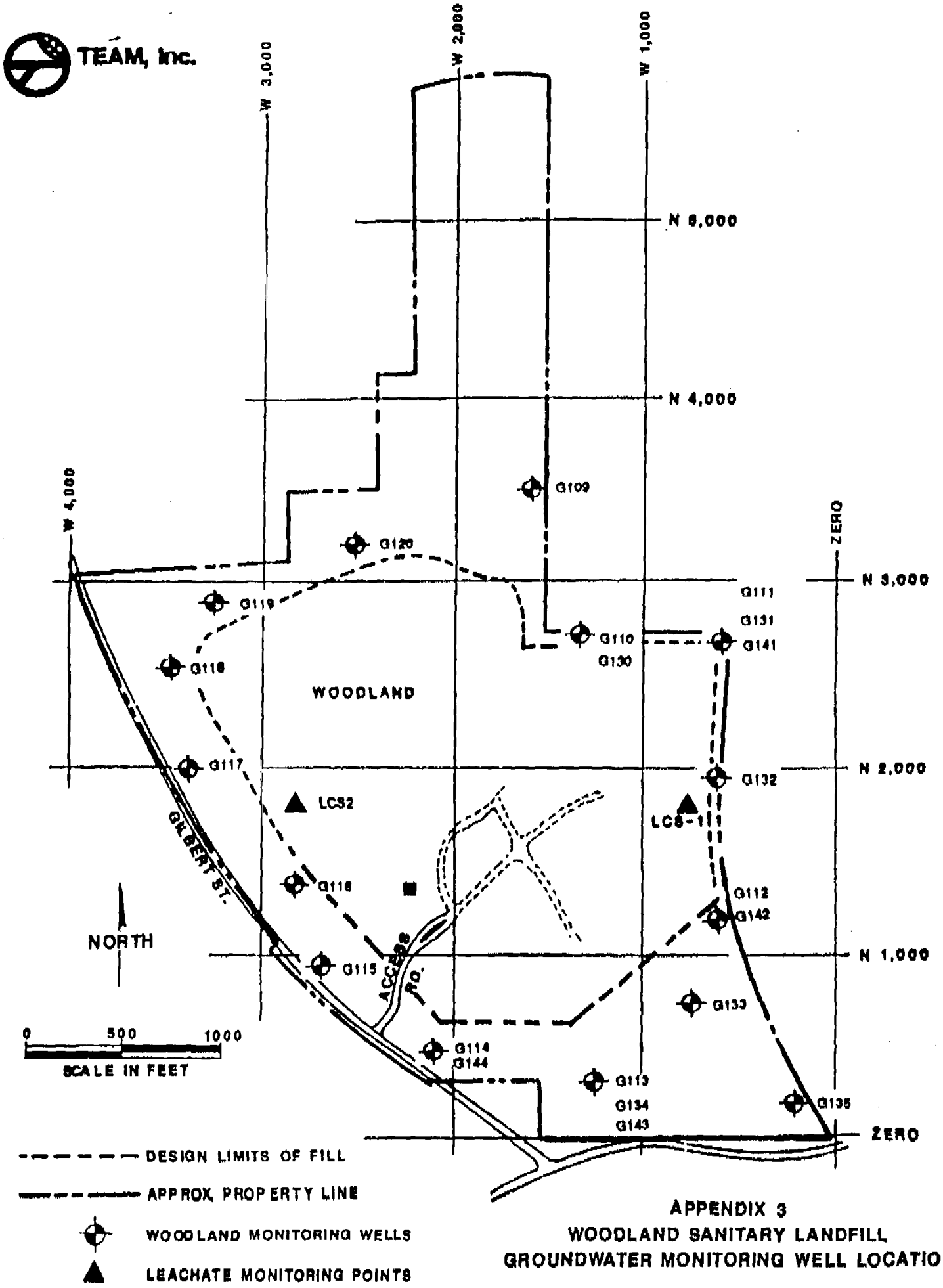
SHEET TITLE GEOLOGIC SECTIONS A,B,&C

Waste Management, Inc.
Oak Brook, Illinois 60521

SHEET 5 OF 18
DRAWING NO. 110-104

PATRICK ENGINEERING INC.
Geotechnical, Environmental Engineers
Glen Ellyn, Illinois

PLATE 3-FULL CROSS SECTION FULL DOT



APPENDIX 3
WOODLAND SANITARY LANDFILL
GROUNDWATER MONITORING WELL LOCATIONS

July 30, 1990

Ecology & Environment
111 W. Jackson Bvd.
Chicago, IL 60604

RE: WOODLAND LANDFILL

Mr. Sullivan:

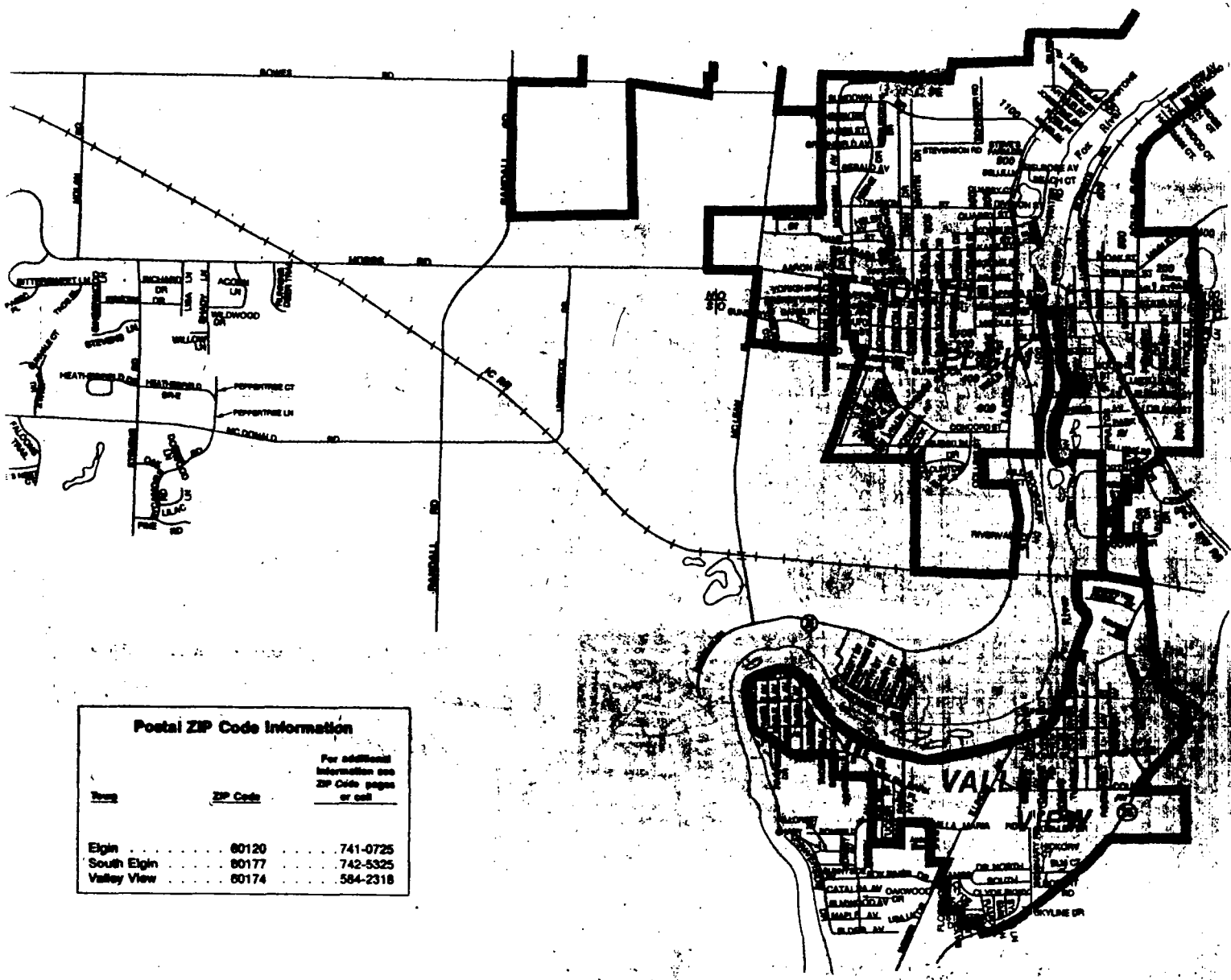
As discussed with Mike Phillips, we will exercise our right to split groundwater samples during your inspection. In order to coordinate the split-sampling event with our sample team, it is necessary to know what wells you will be sampling atleast two weeks prior to the August 20th inspection date. Please send this information to my attention. To assist you in well selection, I have included in this transmission the most current map of Woodland's monitoring system.

If you have any questions concerning this request, or would like to arrange the start time for the initial interview, I can be reached at 708/232-7664.

Regards,

Janet M. Hruby
Environmental Engineer
Midwest Region
Waste Management of Illinois, Inc.

Elgin, South Elgin and Valley View



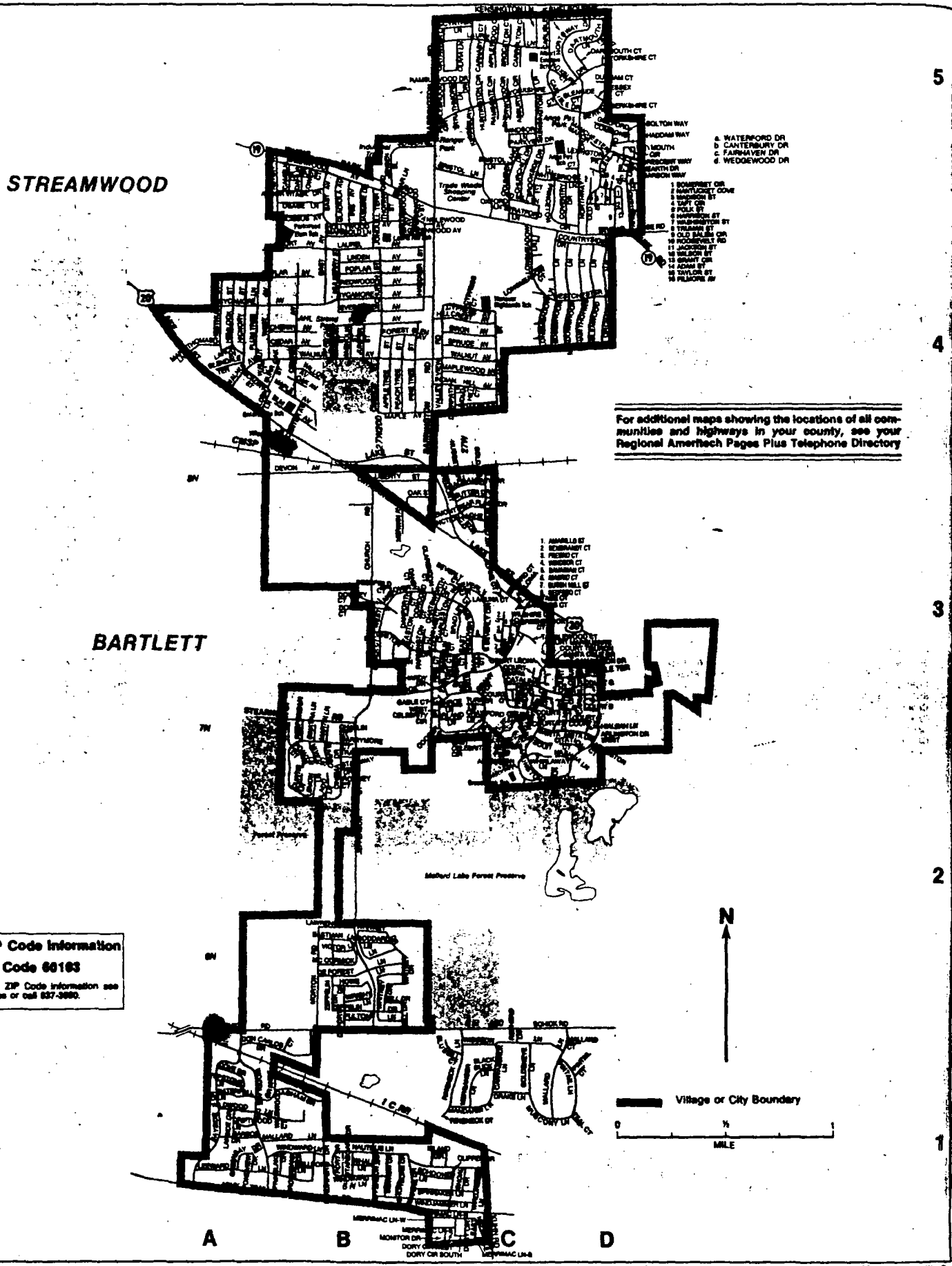
Postal ZIP Code Information

Town	ZIP Code	For additional information see ZIP Code pages or call
Elgin	60120	741-0725
South Elgin	60177	742-5325
Valley View	60174	584-2318

A B C D E F G

018400 © The Reuben H. Donnelley Corporation 1988 Elgin, Ill.-C

Hanover Park



Postal ZIP Code Information

ZIP Code 60103

For additional ZIP Code information see ZIP Code pages or call 637-3600.

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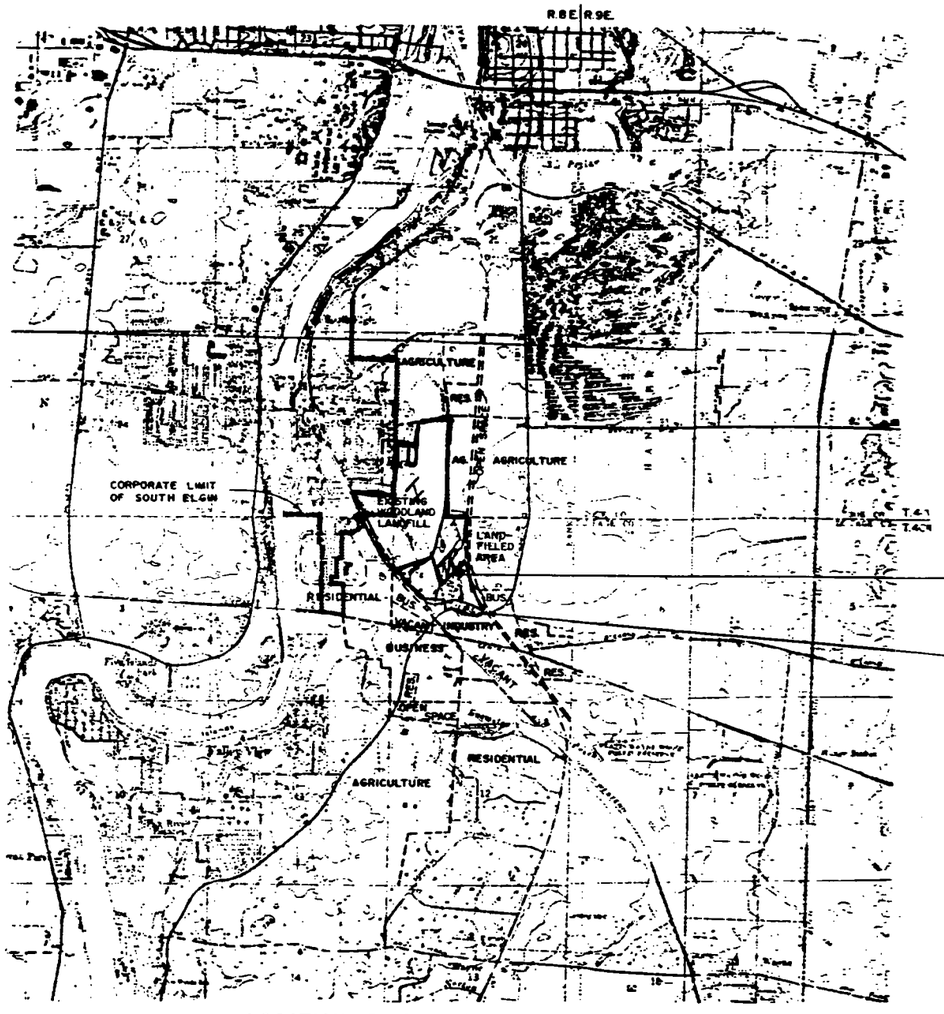

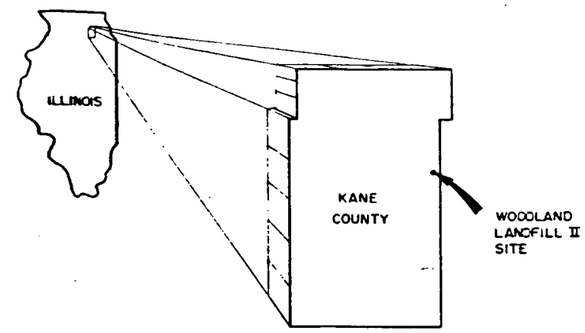

LOCATION & GENERAL LAND USE MAP

CONTOUR INTERVAL: 10 FEET

SCALE 0 2000 FEET

PROJECT DATA

AREA OF PROPERTY:	88 ACRES
LANDFILL AREA:	48 ACRES
REQUIRED EXCAVATION:	1,840,000 C.Y.
FILL FOR FINAL COVER:	400,000 C.Y.
FILL FOR DIKES, BERMS, AND SEALS.	400,000 C.Y.
FILL FOR DAILY COVER:	1,040,000 C.Y.
REFUSE STORAGE CAPACITY (AIR SPACE):	3,500,000 C.Y. △1
DAILY RECEIPTS:	3,000 C.Y./DAY
ESTIMATED FILLING PERIOD:	10 to 20 YEARS
TYPE OF WASTE:	NON-HAZARDOUS MUNICIPAL, COMMERCIAL, CONSTRUCTION SOLID WASTES; NON-HAZARDOUS SOLID SPECIAL WASTE; MUNICIPAL WASTEWATER TREATMENT PLANT SLUDGE

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110-117	DETAILS

△1

NOTES

1. GENERAL LAND USE CLASSIFICATION TAKEN FROM KANE COUNTY MASTER LAND USE PLAN, REVISED DECEMBER 31, 1980, PREPARED BY KANE COUNTY PLANNING DEPARTMENT.

2000 0 2000 4000 6000 8000 10000

REV	DATE	DESCRIPTION	DR BY	APP BY
△1	01/11/82	CHANGED PROJECT DATA, REVISED DWG. NO. 110-116	W.M.	[illegible]

SCALE	1" = 2000'
DATE	JUNE, 1982
DES BY	KMB
DR BY	WM
CHK BY	KMB
APP BY	[illegible]

PROJECT: WOODLAND LANDFILL II, KANE COUNTY, ILLINOIS

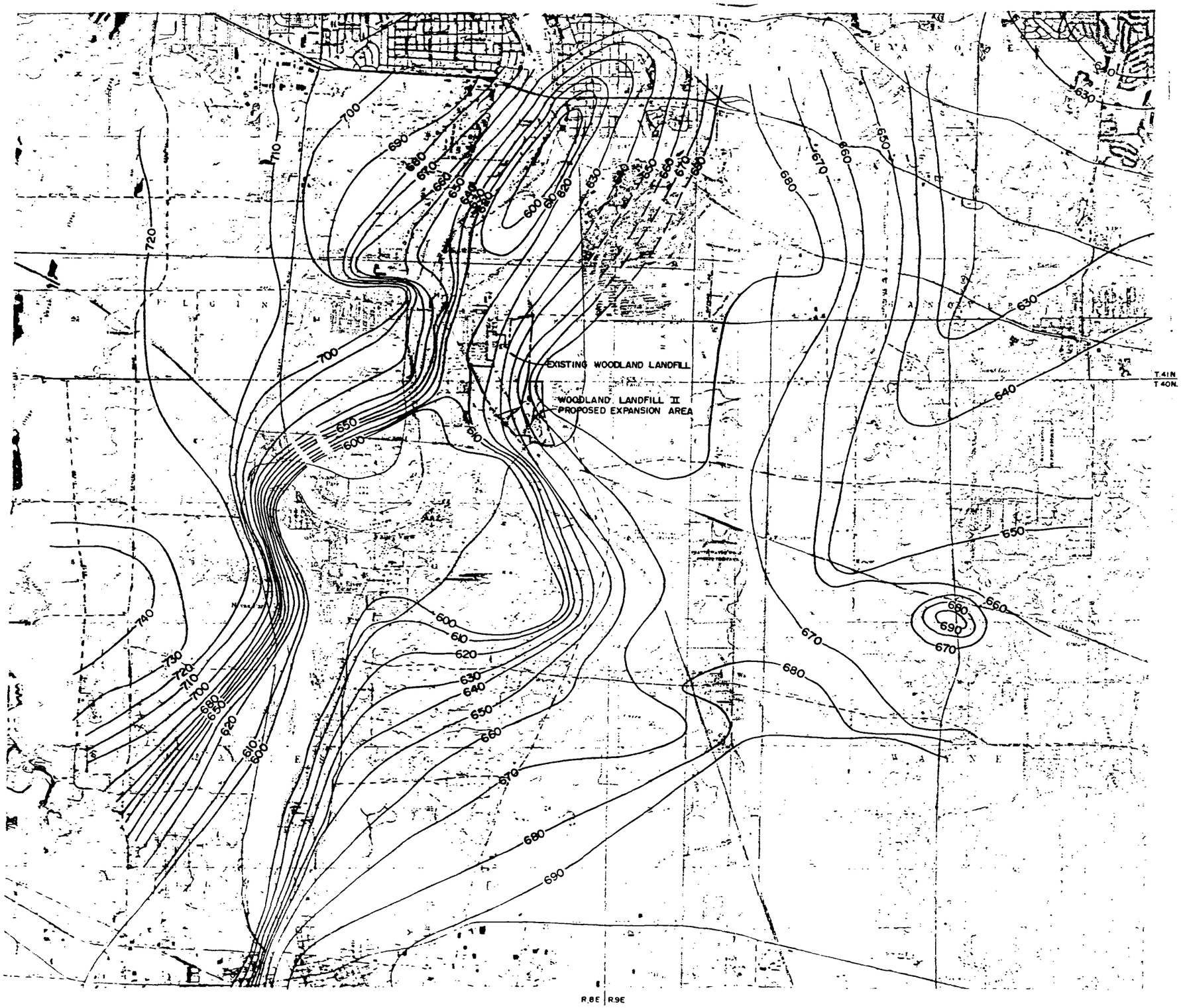
SHEET TITLE: PROJECT LOCATION MAP

Waste Management, Inc.
Oak Brook, Illinois 60521

SHEET 2 OF 18

DRAWING NO. 110-101

PATRICK ENGINEERING INC.
Geotechnical/Environmental Engineers
Glen Ellyn, Illinois



LEGEND

—700— ELEVATION OF TOP OF BEDROCK SURFACE IN FEET ABOVE MSL.

NOTES

1. BEDROCK SURFACE ELEVATIONS OBTAINED FROM INTERPRETATION OF WATER WELL LOGS ON FILE WITH THE ILLINOIS STATE GEOLOGICAL SURVEY, WARREKVILLE, ILLINOIS, MAY, 1982.
2. CONTOURS BELOW EL. 600 NOT SHOWN DUE TO LACK OF SUFFICIENT DATA.
3. DASHED CONTOURS INDICATE ESTIMATED CONTOURS.

2000 0 2000 4000 6000 8000 10000

PATRICK ENGINEERING INC.
Geotechnical, Environmental Engineers
Glen Ellyn, Illinois

REV.	DATE	DESCRIPTION	DR BY	APP BY

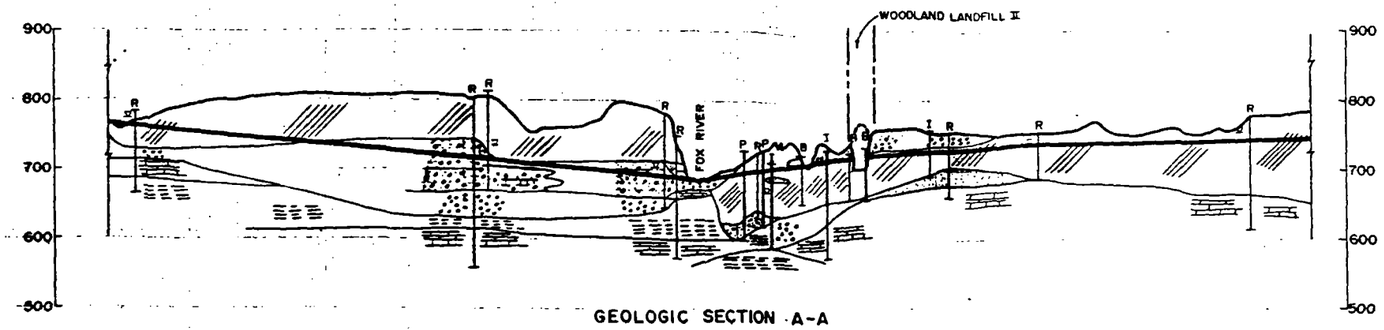
SCALE: 1" = 2000'
DATE: JUNE, 1982
DESIGN: K.M.B.
DR BY: W.M.
CHK BY: K.M.B.
APP BY: J.E.

PROJECT: WOODLAND LANDFILL II
KANE COUNTY, ILLINOIS

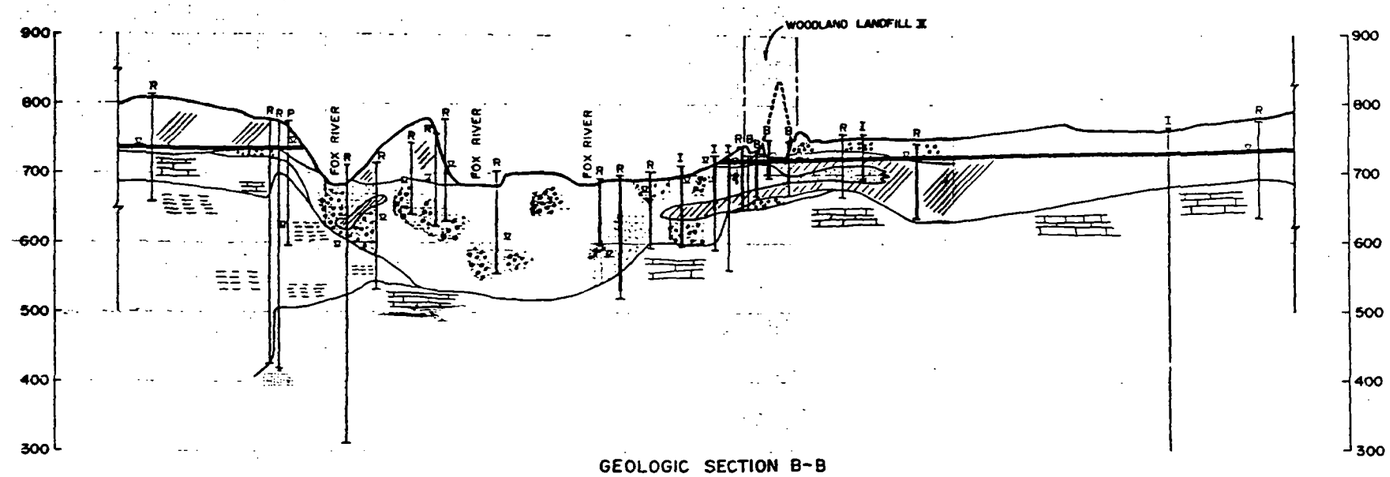
SHEET TITLE: BEDROCK SURFACE MAP

Waste Management, Inc.
Oak Brook, Illinois 60521

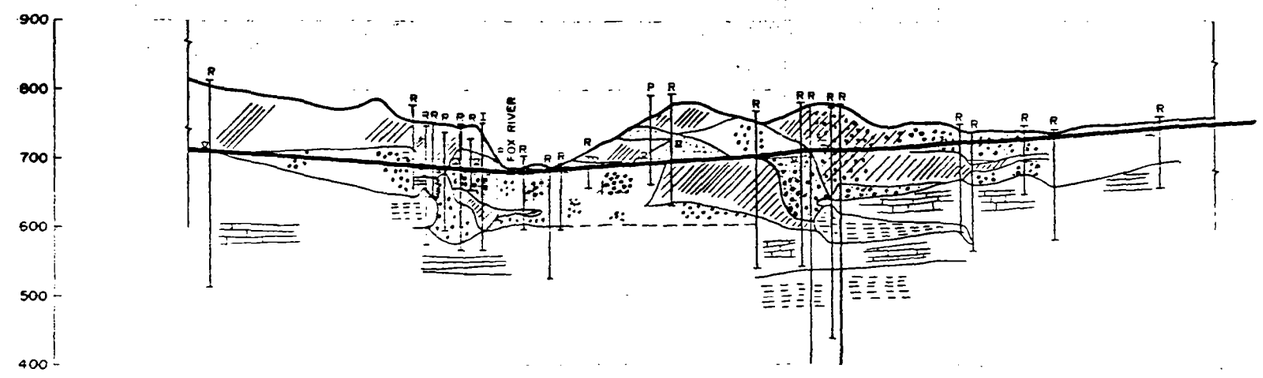
SHEET 3 OF 3
DRAWING NO. 110-102



GEOLOGIC SECTION A-A



GEOLOGIC SECTION B-B



GEOLOGIC SECTION C-C

LEGEND

- CLAY
- GRAVEL
- SAND
- LIMESTONE
- SHALE
- SANDSTONE
- PROPERTY LINE
- WATER LEVEL
- R RESIDENTIAL WELL
- I INDUSTRIAL WELL
- P PUBLIC WELL
- B BORING
- CASING
- APPROXIMATE REGIONAL POTENTIOMETRIC LEVEL IN THE DOLOMITE/GRAVEL AQUIFER

NOTES

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2. CROSS-SECTIONS WERE DEVELOPED FROM INTERPRETATION OF LOGS OF WATER SUPPLY WELLS AND PUBLISHED GEOLOGIC INFORMATION.

SCALE
HORZ 0 2000 FEET
VERT. 0 100 FEET

REV	DATE	DESCRIPTION	DR BY	APP BY

SCALE AS SHOWN
DATE JUNE 1980
DES BY R.W.B.
DR BY W.W.
CHK BY K.W.A.
APP BY L.V.

PROJECT
WOODLAND LANDFILL II
KANE COUNTY, ILLINOIS

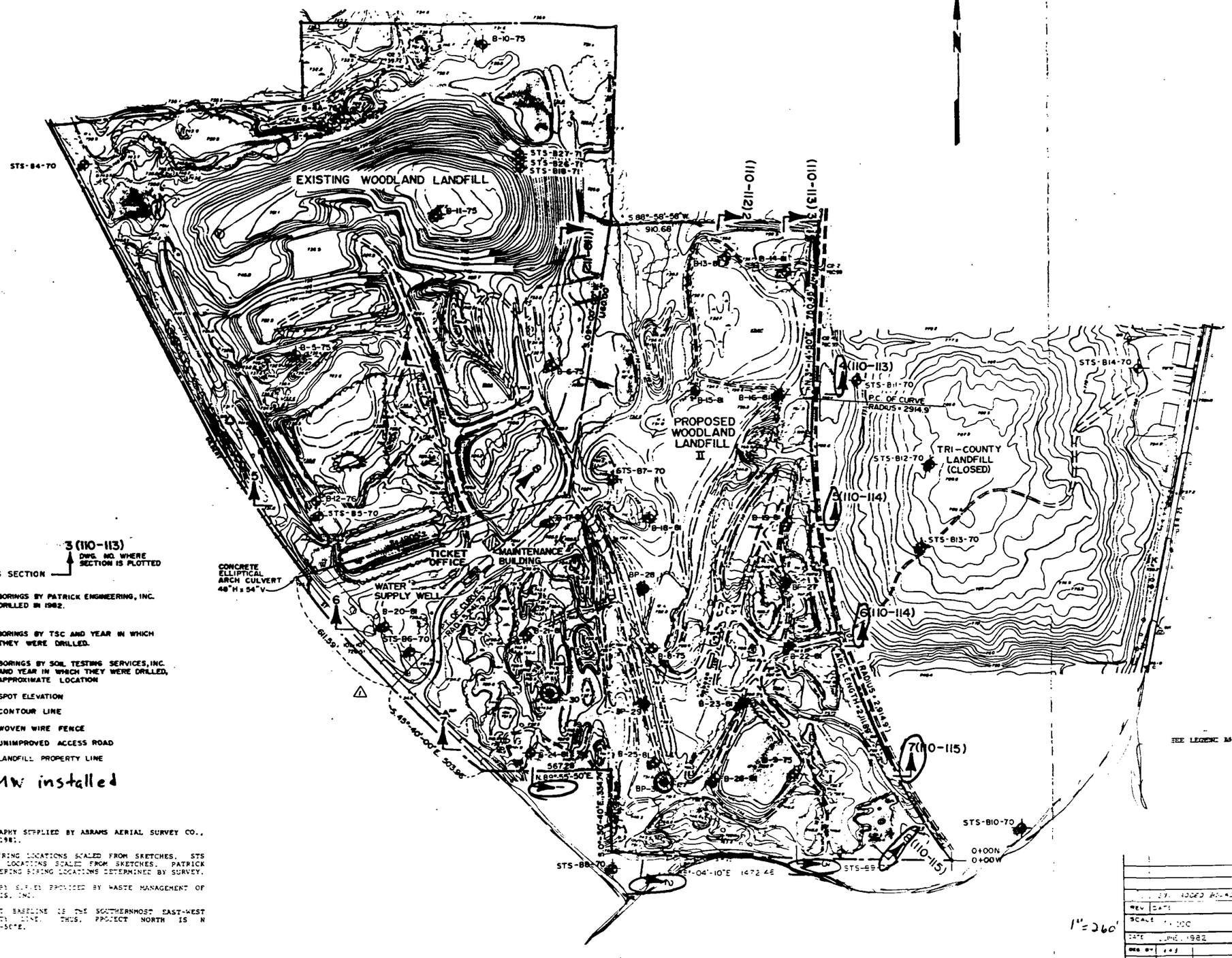
SHEET TITLE
GEOLOGIC SECTIONS A,B,&C

Waste Management, Inc.
Oak Brook, Illinois 60521

SHEET 2 OF 18
DRAWING NO
110-104

PATRICK ENGINEERING INC.
Geotechnical, Environmental Engineers
Glen Ellyn, Illinois

PLATE 3-FULL CROSS SECTION-FULL SET



LEGEND

3 — CROSS SECTION

3 (110-113) — DWG. NO. WHERE SECTION IS PLOTTED

BP-29 — BORINGS BY PATRICK ENGINEERING, INC. DRILLED IN 1982.

B-21-81 — BORINGS BY TSC AND YEAR IN WHICH THEY WERE DRILLED.

STS B8-70 — BORINGS BY SOIL TESTING SERVICES, INC. AND YEAR IN WHICH THEY WERE DRILLED, APPROXIMATE LOCATION

+7394 — SPOT ELEVATION

— 740 — CONTOUR LINE

—·—·— WOVEN WIRE FENCE

= = = UNIMPROVED ACCESS ROAD

— — — LANDFILL PROPERTY LINE

O = MW installed

NOTES

1. TOPOGRAPHY SUPPLIED BY ABRAMS AERIAL SURVEY CO., JULY, 1981.
2. TSC BORING LOCATIONS SCALED FROM SKETCHES. STS BORING LOCATIONS SCALED FROM SKETCHES. PATRICK ENGINEERING BORING LOCATIONS DETERMINED BY SURVEY.
3. BOUNDARY SURVEY PROVIDED BY WASTE MANAGEMENT OF ILLINOIS, INC.
4. PROJECT BASELINE IS THE SOUTHERNMOST EAST-WEST PROPERTY LINE. THUS, PROJECT NORTH IS N 1°-04'-10"E.

PATRICK ENGINEERING INC.
Geotechnical/Environmental Engineers
Glen Ellyn, Illinois

△ RP REFERENCE POINT
THESE SELECTED POINTS ARE PLOTTED WITH EXTREME CARE AND ARE RECOMMENDED AS BASIS FOR OUR CONSTRUCTION

ACCURACIES NOT GUARANTEED IN OBSCURED AREAS SHOWN BY DASHED CONTOURS AND UNDERLINED ELEVATIONS

SCALE 1" = 200' — CONTOUR INTERVAL 5'
GRIDS BASED ON LOCAL COORDINATE SYSTEM.
DATE OF PHOTOGRAPHY MAY 1981 — DATE OF MAPPING JULY 1981

1" = 200'

REV	DATE	DESCRIPTION	DR BY	APP BY
		ST. ADDED BOUNDARY SURVEY DATA NOTES 3/4	WM	

SCALE 1" = 200'
DATE JUNE, 1982
DES BY
DR BY
CHK BY
APP BY

PROJECT: WOODLAND LANDFILL II
KANE COUNTY, ILLINOIS

SHEET TITLE: AREA TOPOGRAPHY & BORING LOCATION MAP

Waste Management, Inc.

SHEET 6 OF 18
DRAWING NO 110-105R1