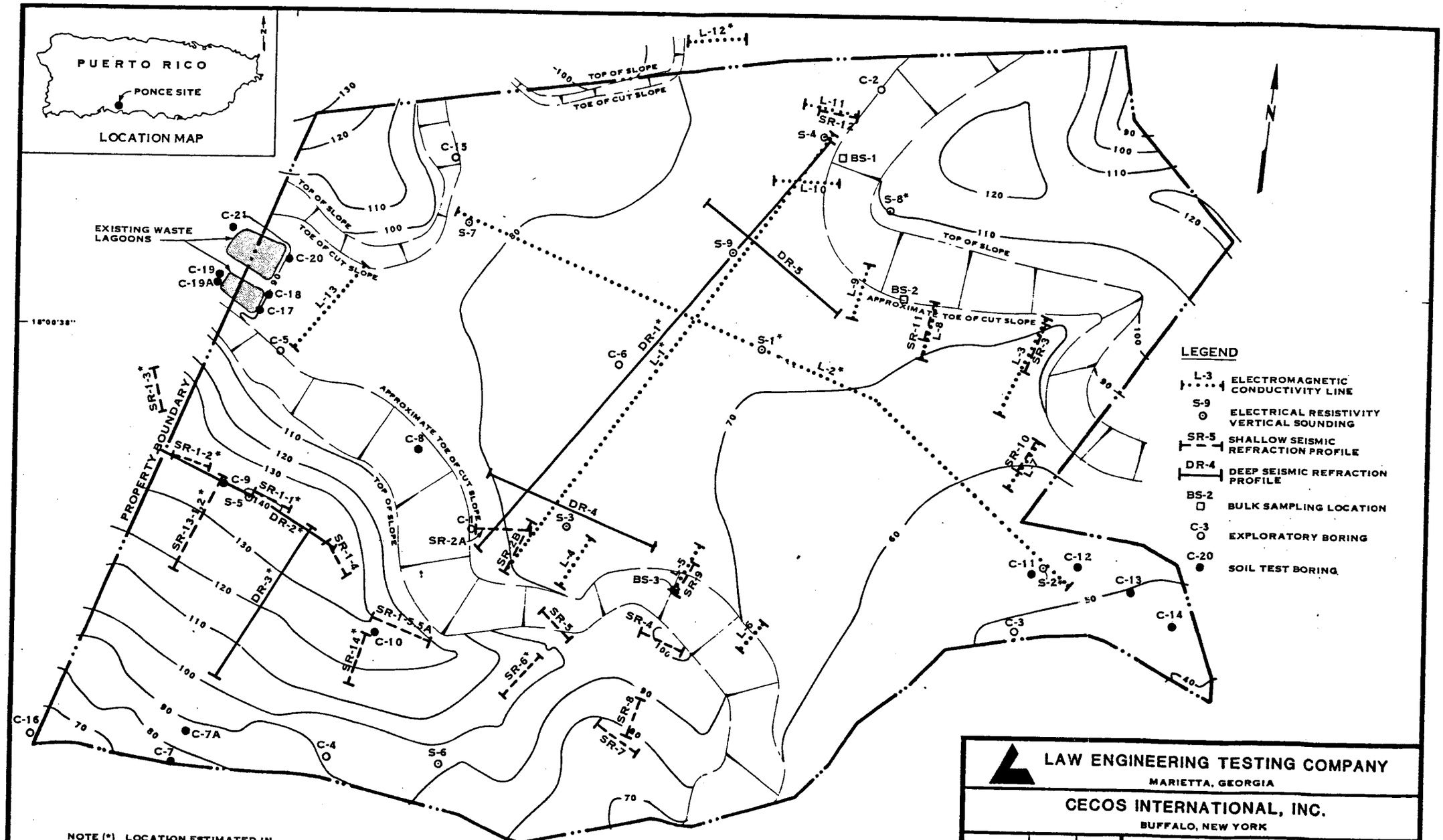
4.0 FIGURES



NOTE (*) LOCATION ESTIMATED IN FIELD BY LETCO PERSONNEL. SURVEYED LOCATION EITHER UNAVAILABLE OR APPARENTLY IN ERROR

BASE MAP MODIFIED FROM: PLANO TOPOGRAFICO DE FINCAS COMPONENTES, 1:1000 SCALE, BY MENSURAS PROFESIONALES, 1980

CONTOUR INTERVAL 10 METERS: DATUM IS MEAN SEA LEVEL

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BUFFALO, NEW YORK

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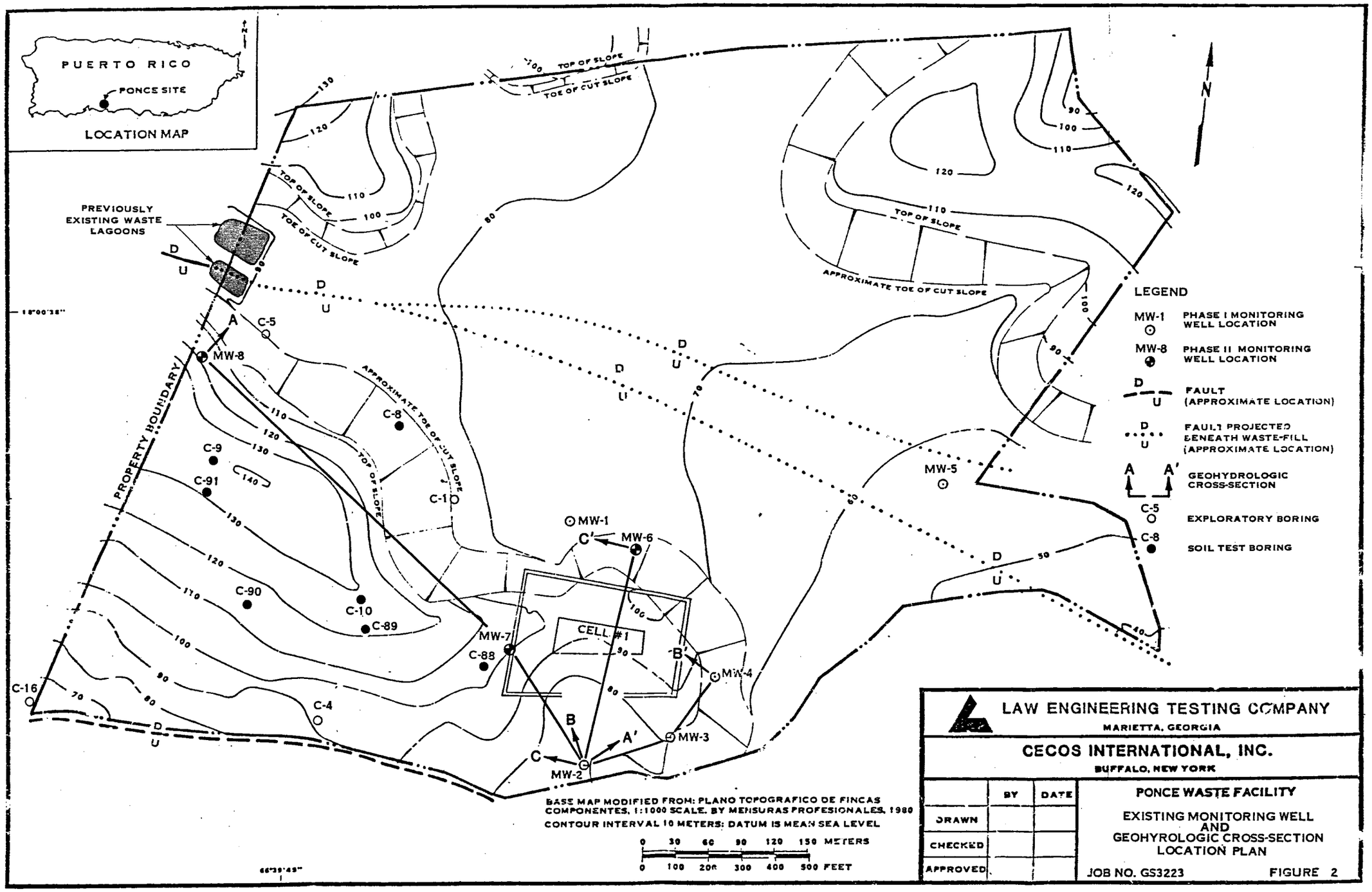
CHECKED	M.P.	7/22/83
APPROVED	LSK	7/23/83

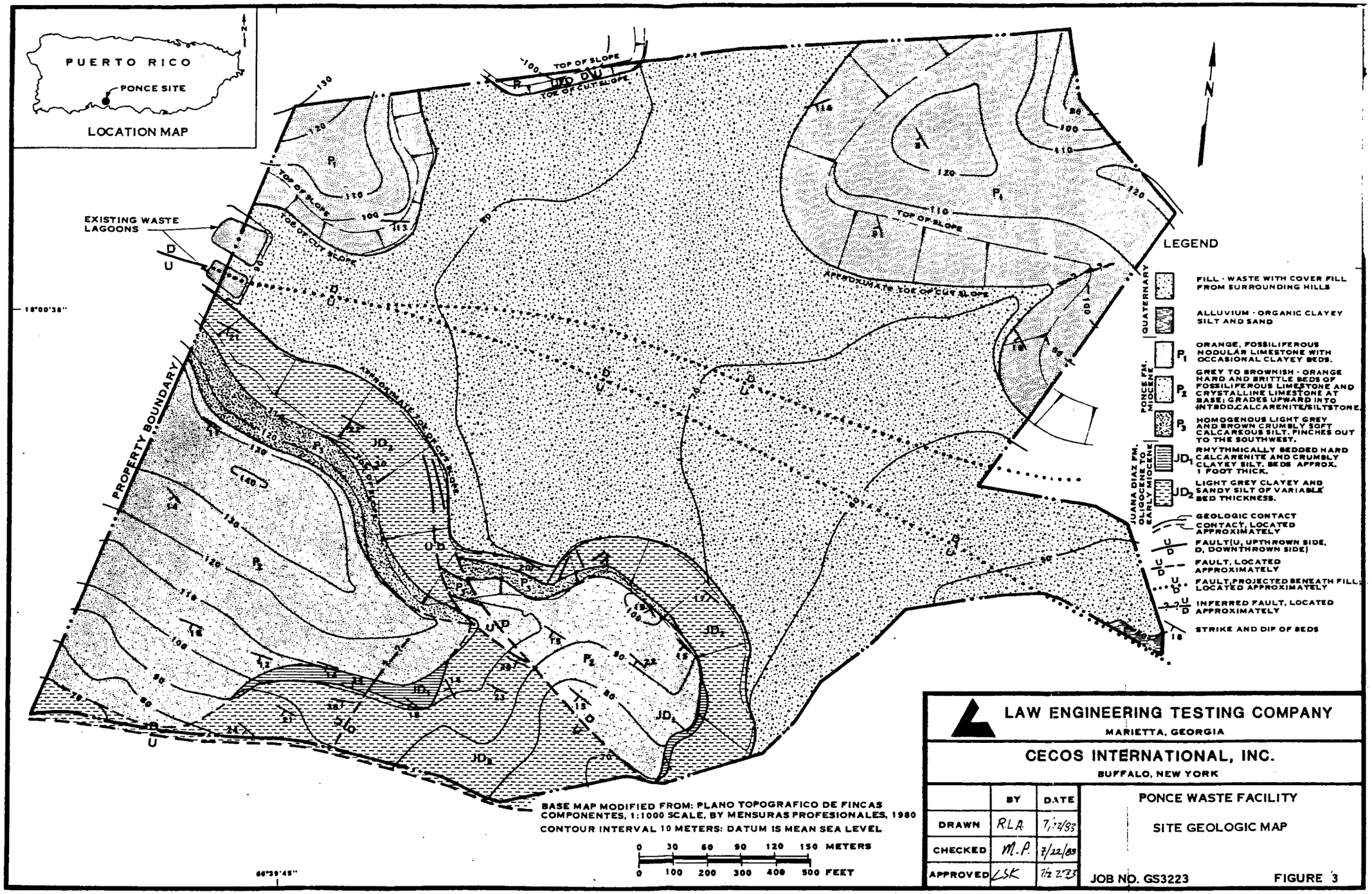
PONCE WASTE FACILITY

FIELD INVESTIGATIONS MAP

JOB NO. GS3223

FIGURE 1


PUERTO RICO
PONCE SITE
LOCATION MAP
N
PREVIOUSLY EXISTING WASTE LAGOONS
TOP OF SLOPE
TOE OF CUT SLOPE
APPROXIMATE TOE OF CUT SLOPE
PROPERTY BOUNDARY
CELL #1
MW-1
MW-2
MW-3
MW-4
MW-5
MW-6
MW-7
MW-8
C-1
C-4
C-5
C-8
C-9
C-10
C-16
C-88
C-89
C-90
C-91
A
A'
B
B'
C
C'
D
U
LEGEND
MW-1 PHASE I MONITORING WELL LOCATION
MW-8 PHASE II MONITORING WELL LOCATION
FAULT (APPROXIMATE LOCATION)
FAULT PROJECTED BENEATH WASTE-FILL (APPROXIMATE LOCATION)
GEOHYDROLOGIC CROSS-SECTION
EXPLORATORY BORING
SOIL TEST BORING
BASE MAP MODIFIED FROM: PLANO TOPOGRAFICO DE FINCAS COMPONENTES, 1:1000 SCALE, BY MENSURAS PROFESIONALES, 1980
CONTOUR INTERVAL 10 METERS; DATUM IS MEAN SEA LEVEL
0 30 60 90 120 150 METERS
0 100 200 300 400 500 FEET
LAW ENGINEERING TESTING COMPANY
MARIETTA, GEORGIA
CECOS INTERNATIONAL, INC.
BUFFALO, NEW YORK
BY
DATE
DRAWN
CHECKED
APPROVED
PONCE WASTE FACILITY
EXISTING MONITORING WELL AND GEOHYROLOGIC CROSS-SECTION LOCATION PLAN
JOB NO. GS3223
FIGURE 2



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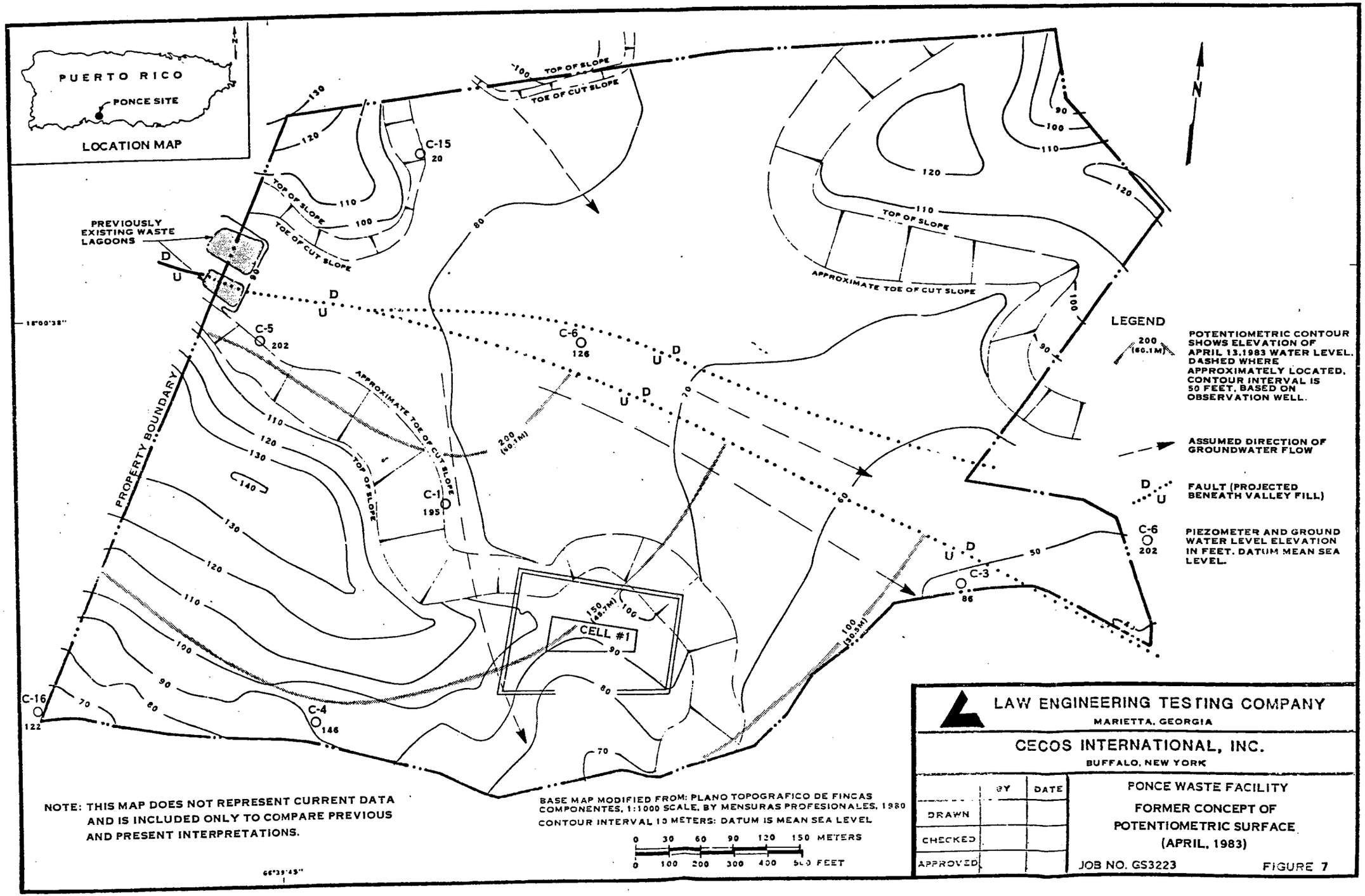
PONCE WASTE FACILITY

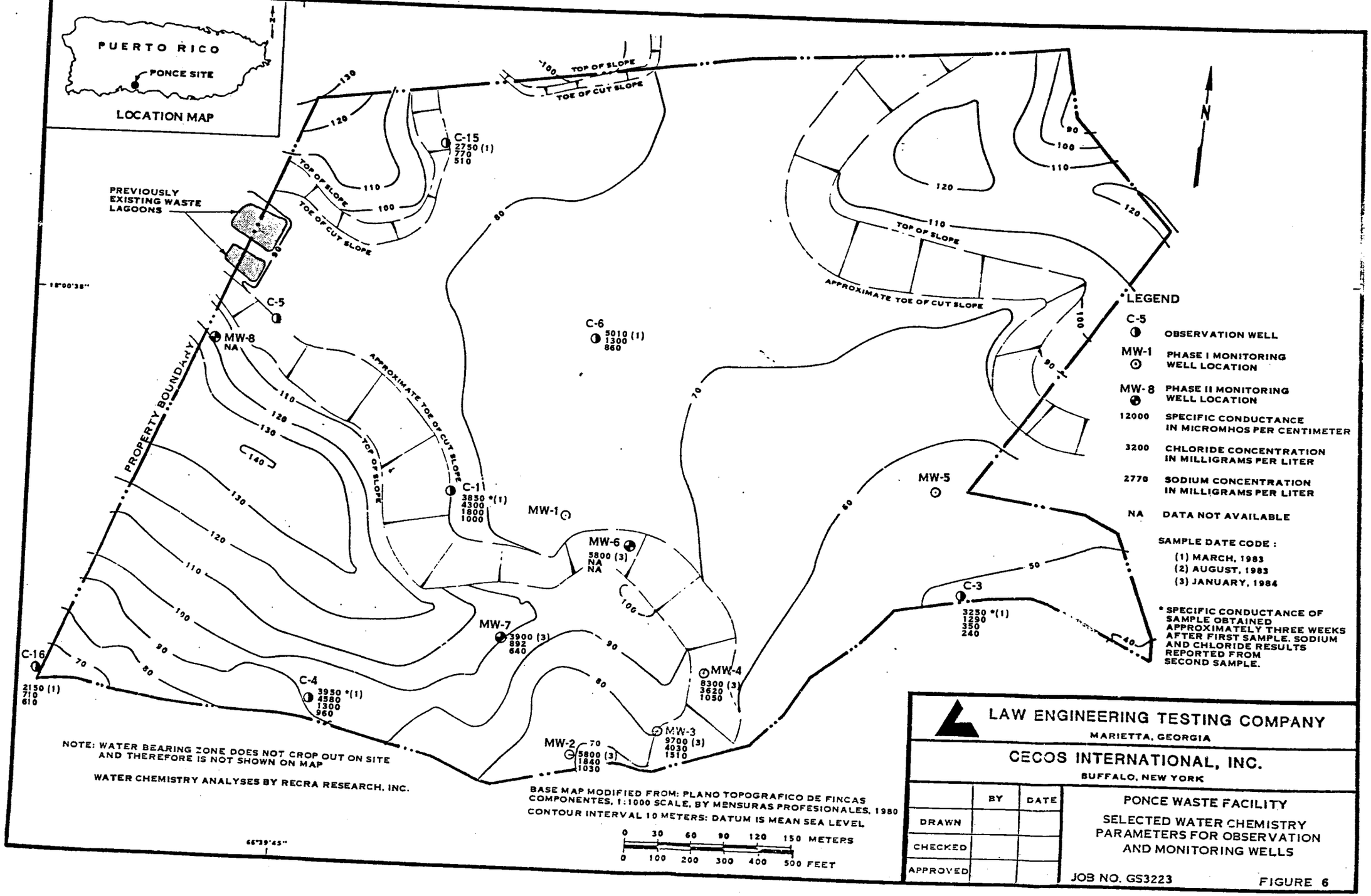
SITE GEOLOGIC MAP

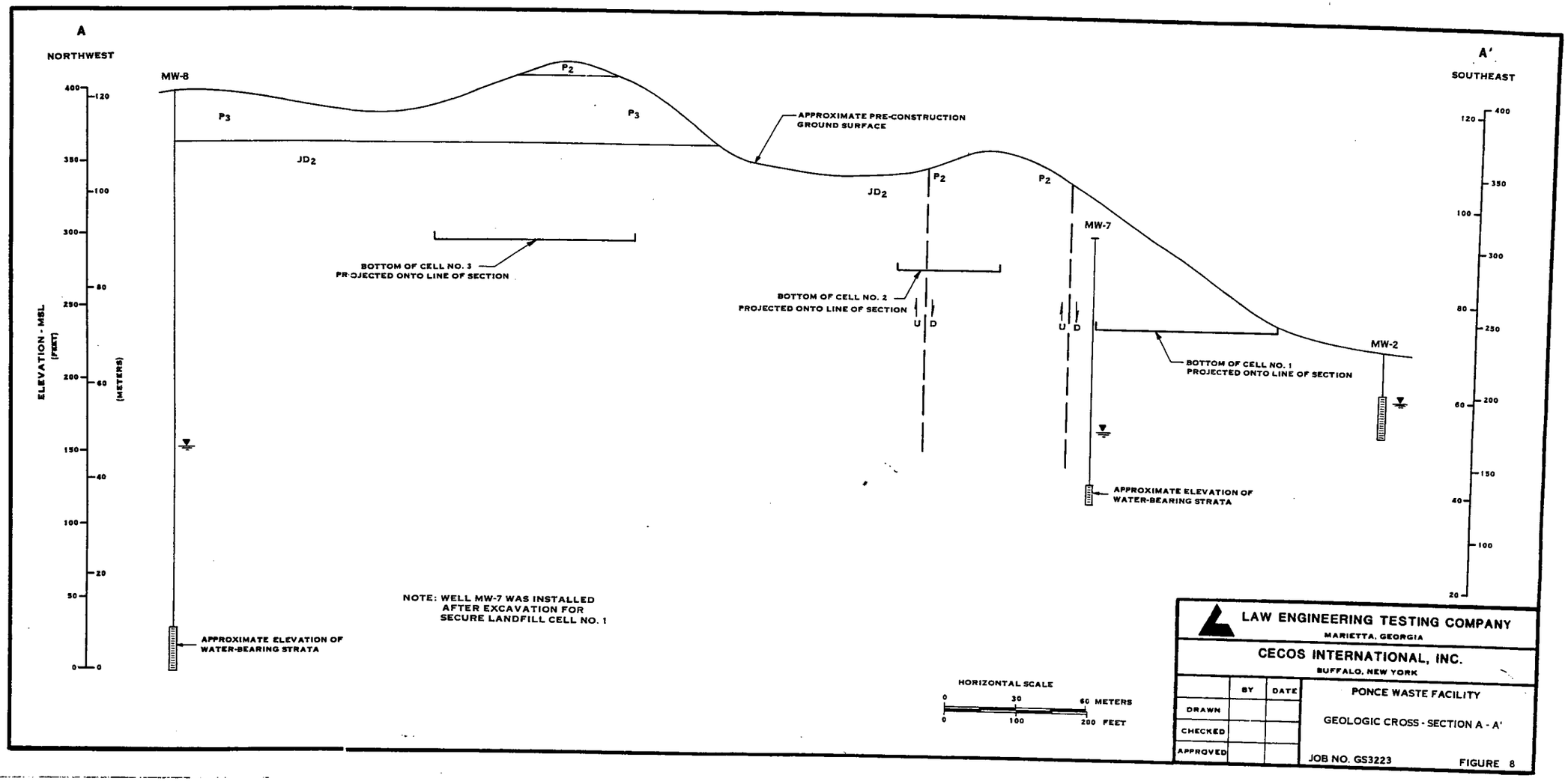
JOB NO. GS3223

FIGURE 3

REVISED: M.P. 9/21/83


PUERTO RICO
PONCE SITE
LOCATION MAP
N
PREVIOUSLY EXISTING WASTE LAGOONS
PROPERTY BOUNDARY
TOP OF SLOPE
TOE OF CUT SLOPE
APPROXIMATE TOE OF CUT SLOPE
CELL #1
C-1 195
C-3 86
C-4 146
C-5 202
C-6 126
C-15 20
C-16 122
200 (60.1M)
150 (45.7M)
100 (30.5M)
LEGEND
POTENTIOMETRIC CONTOUR SHOWS ELEVATION OF APRIL 13,1983 WATER LEVEL. DASHED WHERE APPROXIMATELY LOCATED. CONTOUR INTERVAL IS 50 FEET. BASED ON OBSERVATION WELL.
ASSUMED DIRECTION OF GROUNDWATER FLOW
FAULT (PROJECTED BENEATH VALLEY FILL)
PIEZOMETER AND GROUND WATER LEVEL ELEVATION IN FEET. DATUM MEAN SEA LEVEL.
NOTE: THIS MAP DOES NOT REPRESENT CURRENT DATA AND IS INCLUDED ONLY TO COMPARE PREVIOUS AND PRESENT INTERPRETATIONS.
BASE MAP MODIFIED FROM: PLANO TOPOGRAFICO DE FINCAS COMPONENTES, 1:1000 SCALE, BY MENSURAS PROFESIONALES, 1980
CONTOUR INTERVAL 10 METERS: DATUM IS MEAN SEA LEVEL
0 30 60 90 120 150 METERS
0 100 200 300 400 500 FEET
LAW ENGINEERING TESTING COMPANY
MARIETTA, GEORGIA
CECOS INTERNATIONAL, INC.
BUFFALO, NEW YORK
BY DATE
DRAWN
CHECKED
APPROVED
PONCE WASTE FACILITY
FORMER CONCEPT OF POTENTIOMETRIC SURFACE (APRIL, 1983)
JOB NO. GS3223
FIGURE 7


PUERTO RICO
PONCE SITE
LOCATION MAP
N
PREVIOUSLY EXISTING WASTE LAGOONS
PROPERTY BOUNDARY
TOP OF SLOPE
TOE OF CUT SLOPE
APPROXIMATE TOE OF CUT SLOPE
C-15 2750 (1) 770 510
C-5
MW-8 NA
C-6 5010 (1) 1300 860
C-11 3850 *(1) 4300 1800 1000
MW-1
MW-6 5800 (3) NA NA
MW-5
C-3 3250 *(1) 1290 350 240
MW-7 3900 (3) 892 640
C-16 2150 (1) 710 610
C-4 3950 *(1) 4580 1300 960
MW-4 8300 (3) 3620 1050
MW-3 9700 (3) 4030 1510
MW-2 5800 (3) 1840 1030
LEGEND
C-5 OBSERVATION WELL
MW-1 PHASE I MONITORING WELL LOCATION
MW-8 PHASE II MONITORING WELL LOCATION
12000 SPECIFIC CONDUCTANCE IN MICROMHOS PER CENTIMETER
3200 CHLORIDE CONCENTRATION IN MILLIGRAMS PER LITER
2770 SODIUM CONCENTRATION IN MILLIGRAMS PER LITER
NA DATA NOT AVAILABLE
SAMPLE DATE CODE :
(1) MARCH, 1983
(2) AUGUST, 1983
(3) JANUARY, 1984
* SPECIFIC CONDUCTANCE OF SAMPLE OBTAINED APPROXIMATELY THREE WEEKS AFTER FIRST SAMPLE. SODIUM AND CHLORIDE RESULTS REPORTED FROM SECOND SAMPLE.
NOTE: WATER BEARING ZONE DOES NOT CROP OUT ON SITE AND THEREFORE IS NOT SHOWN ON MAP
WATER CHEMISTRY ANALYSES BY RECRA RESEARCH, INC.
BASE MAP MODIFIED FROM: PLANO TOPOGRAFICO DE FINCAS COMPONENTES, 1:1000 SCALE, BY MENSURAS PROFESIONALES, 1980
CONTOUR INTERVAL 10 METERS: DATUM IS MEAN SEA LEVEL
0 30 60 90 120 150 METERS
0 100 200 300 400 500 FEET
LAW ENGINEERING TESTING COMPANY
MARIETTA, GEORGIA
CECOS INTERNATIONAL, INC.
BUFFALO, NEW YORK
BY DATE
DRAWN
CHECKED
APPROVED
PONCE WASTE FACILITY
SELECTED WATER CHEMISTRY PARAMETERS FOR OBSERVATION AND MONITORING WELLS
JOB NO. GS3223
FIGURE 6



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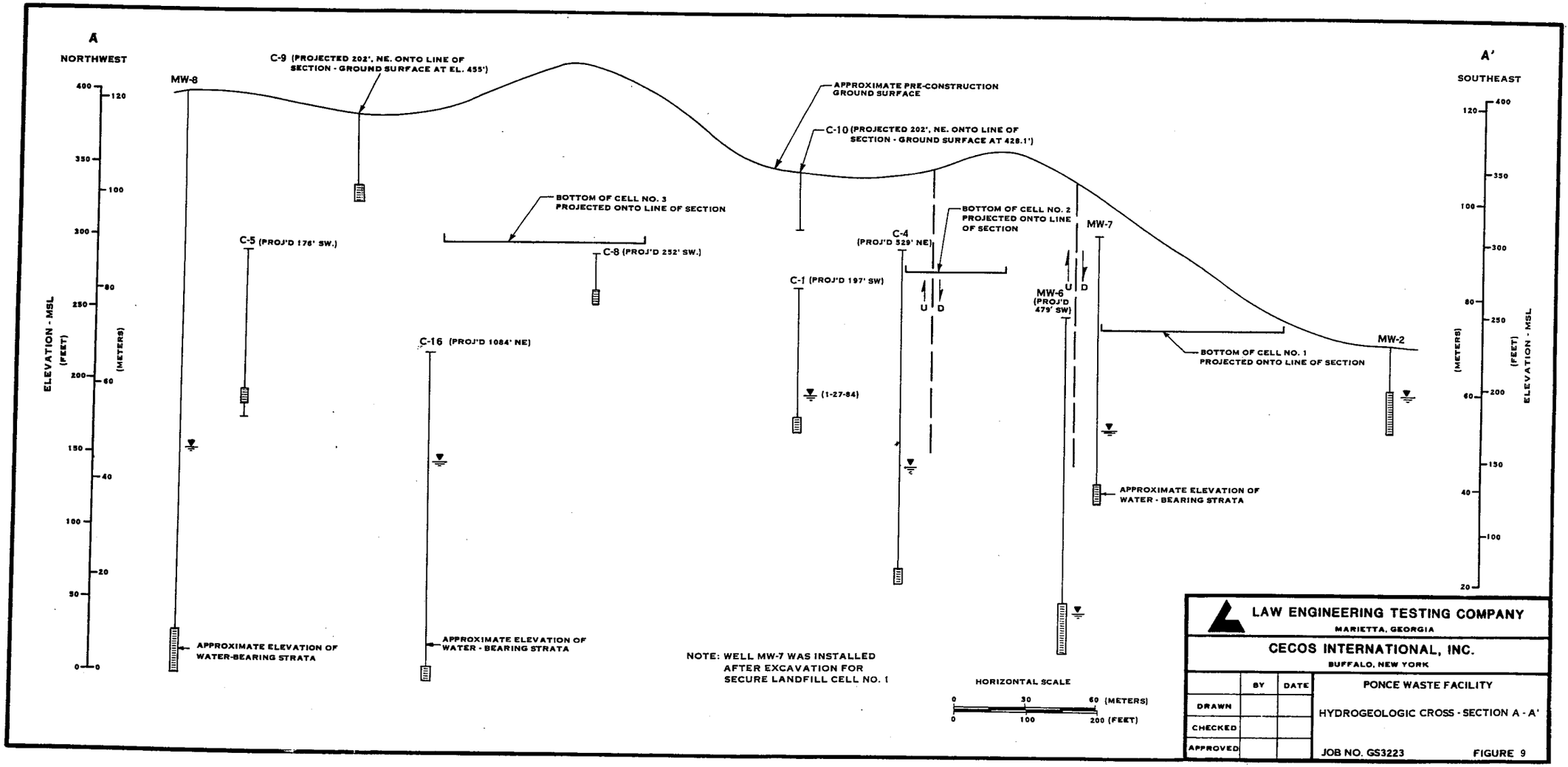
	BY	DATE
DRAWN		
CHECKED		
APPROVED		

PONCE WASTE FACILITY

GEOLOGIC CROSS - SECTION A - A'

JOB NO. GS3223

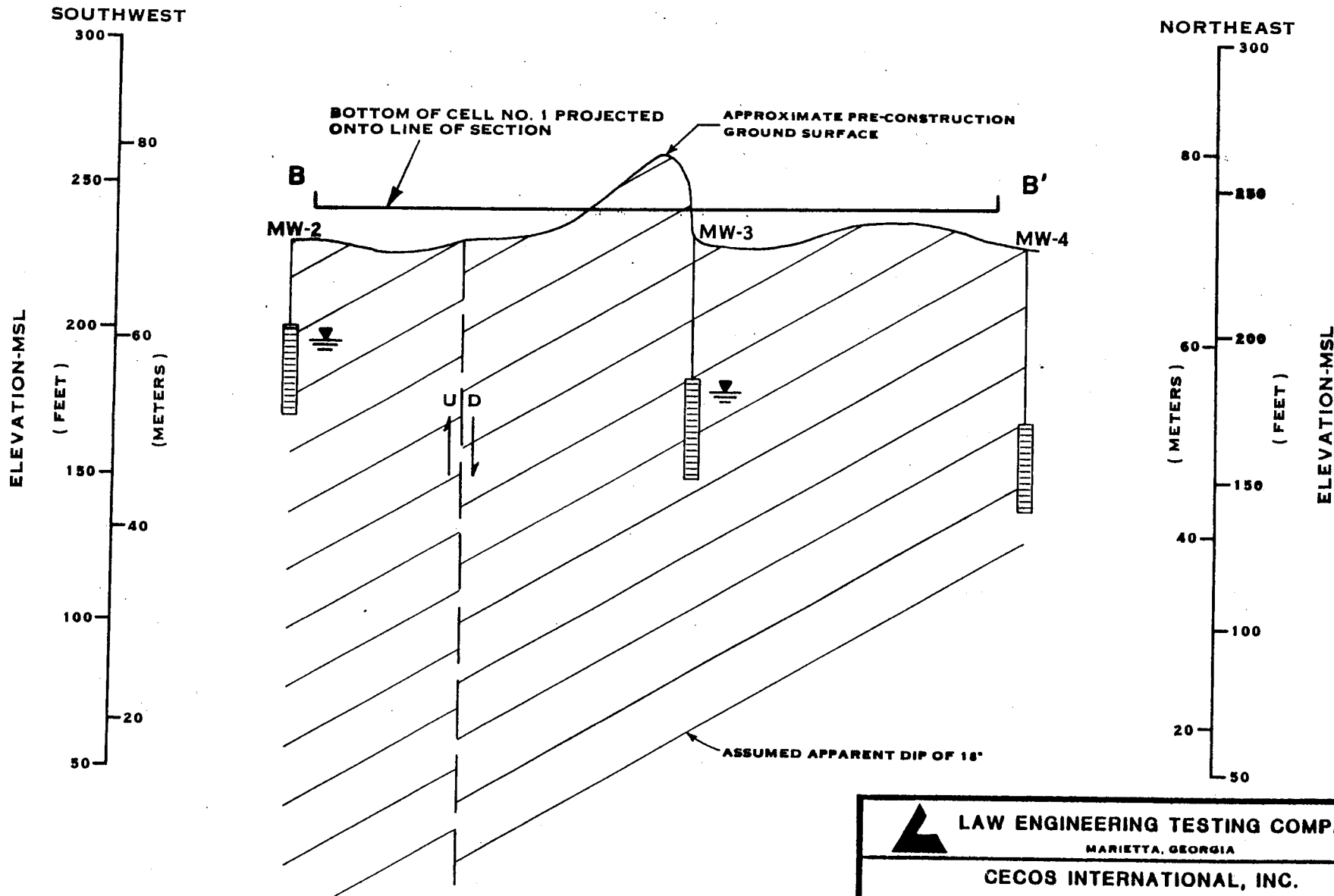
FIGURE 8



LAW ENGINEERING TESTING COMPANY
MARIETTA, GEORGIA

CECOS INTERNATIONAL, INC.
BUFFALO, NEW YORK

	BY	DATE	PONCE WASTE FACILITY
DRAWN			HYDROGEOLOGIC CROSS - SECTION A - A'
CHECKED			
APPROVED			JOB NO. GS3223 FIGURE 9



HORIZONTAL SCALE

0 30 60 METERS

0 100 200 FEET

LAW ENGINEERING TESTING COMPANY
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CECOS INTERNATIONAL, INC.
BUFFALO, NEW YORK

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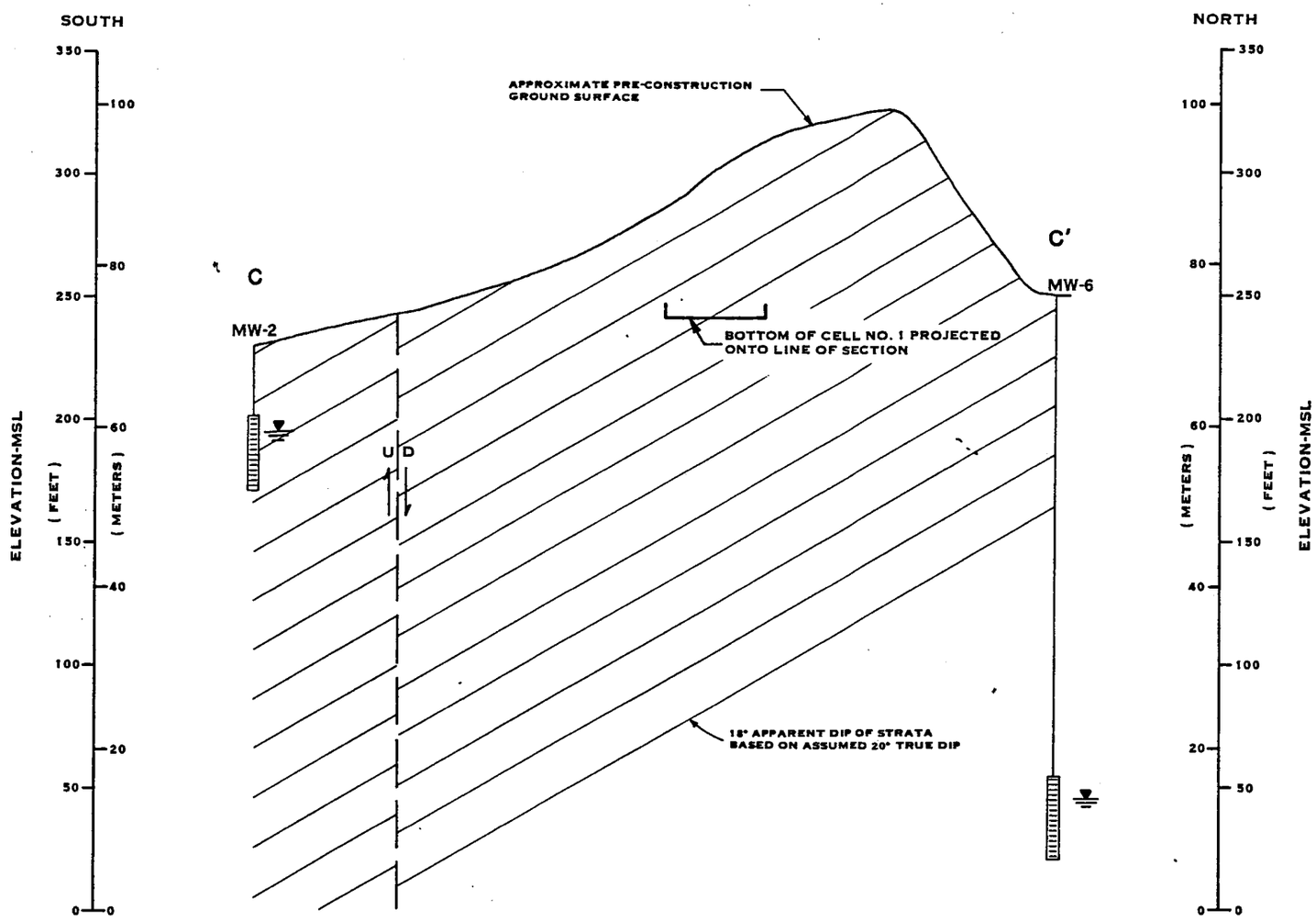
DRAWN		
CHECKED		
APPROVED		

PONCE WASTE FACILITY

HYDROGEOLOGIC CROSS-SECTION B-B'

JOB NO. GS3223

FIGURE 10



HORIZONTAL SCALE

0 30 60 METERS

0 100 200 FEET

LAW ENGINEERING TESTING COMPANY
MARIETTA, GEORGIA

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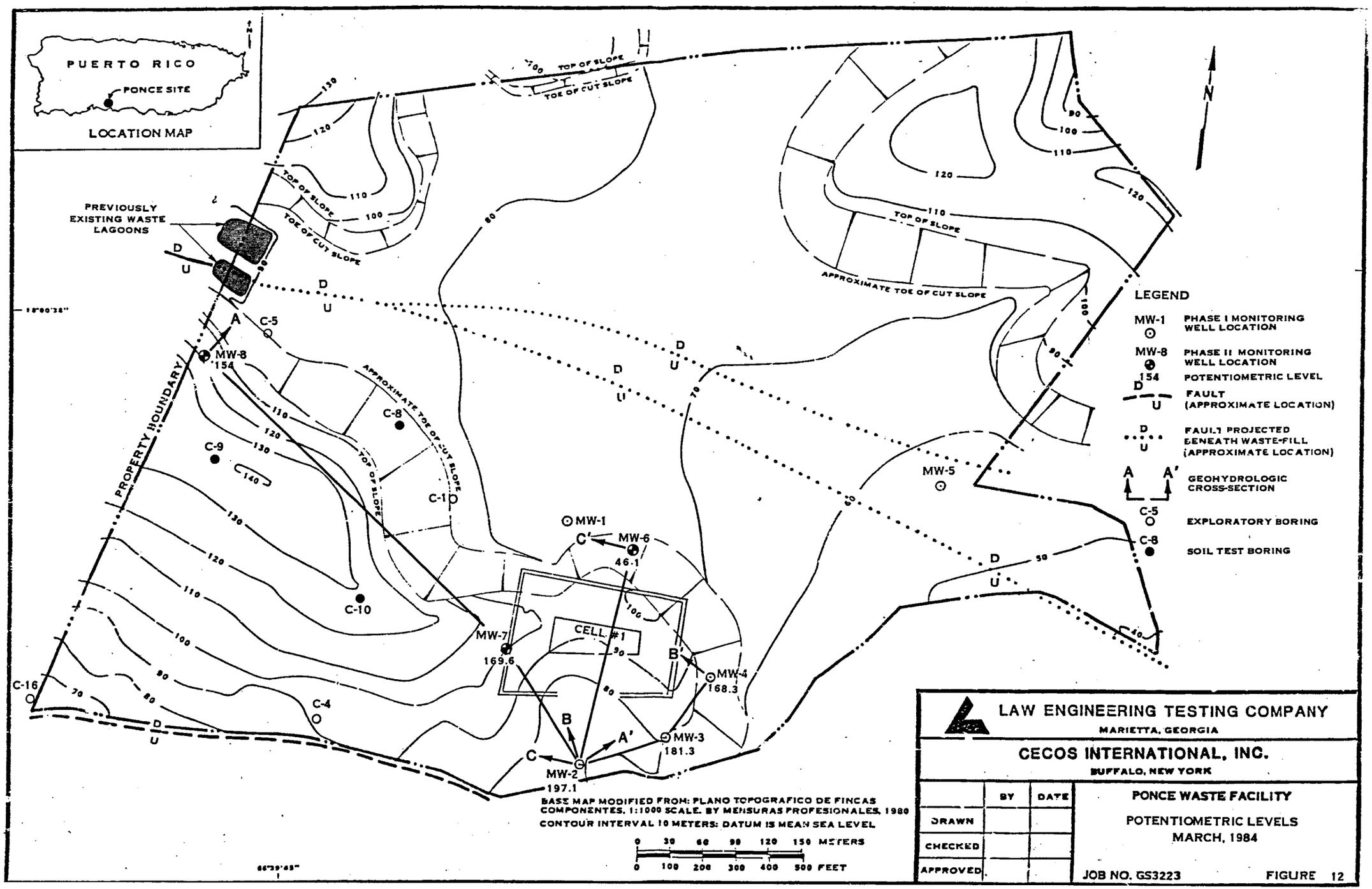
CHECKED		
APPROVED		

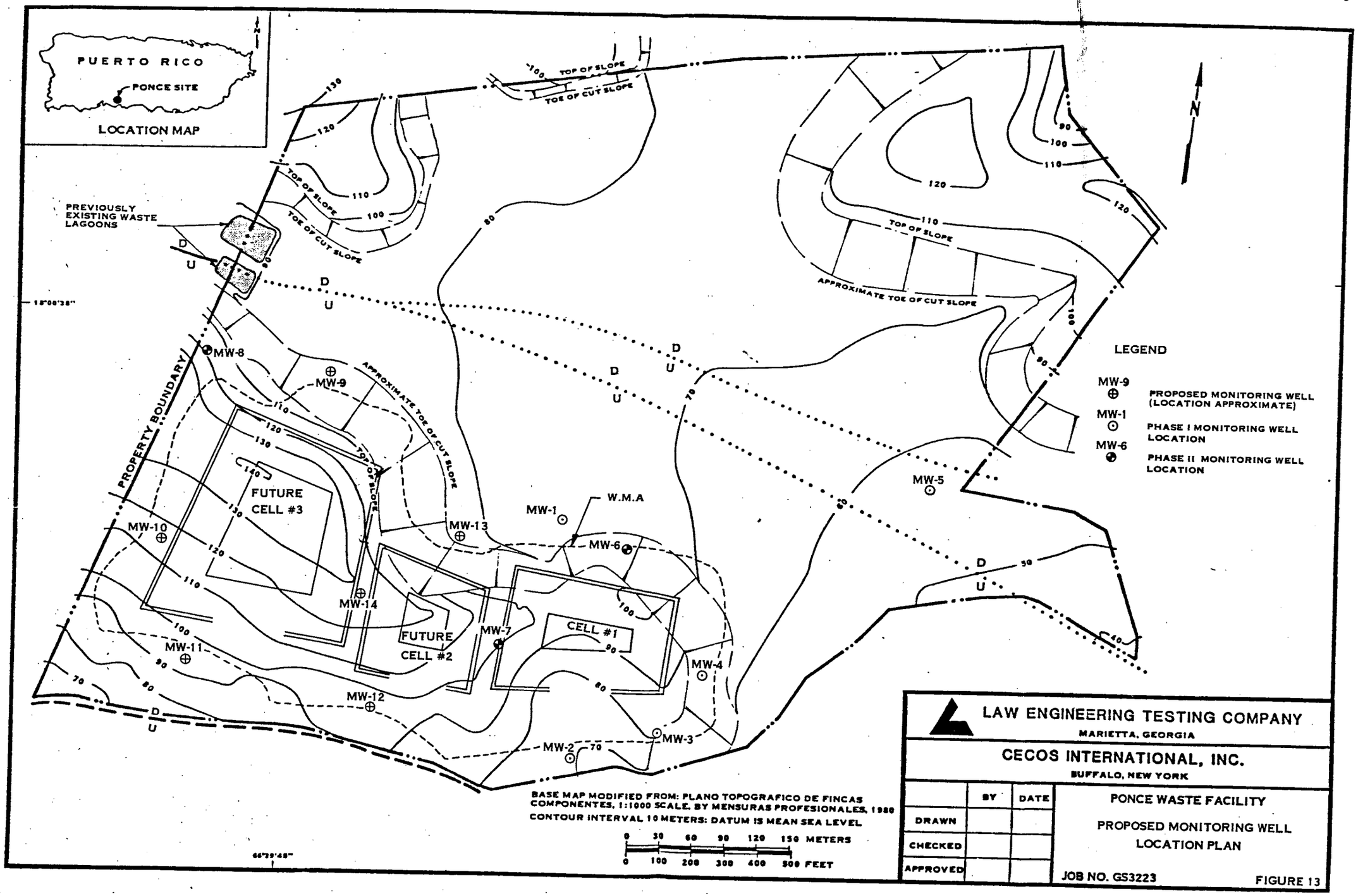
PONCE WASTE FACILITY

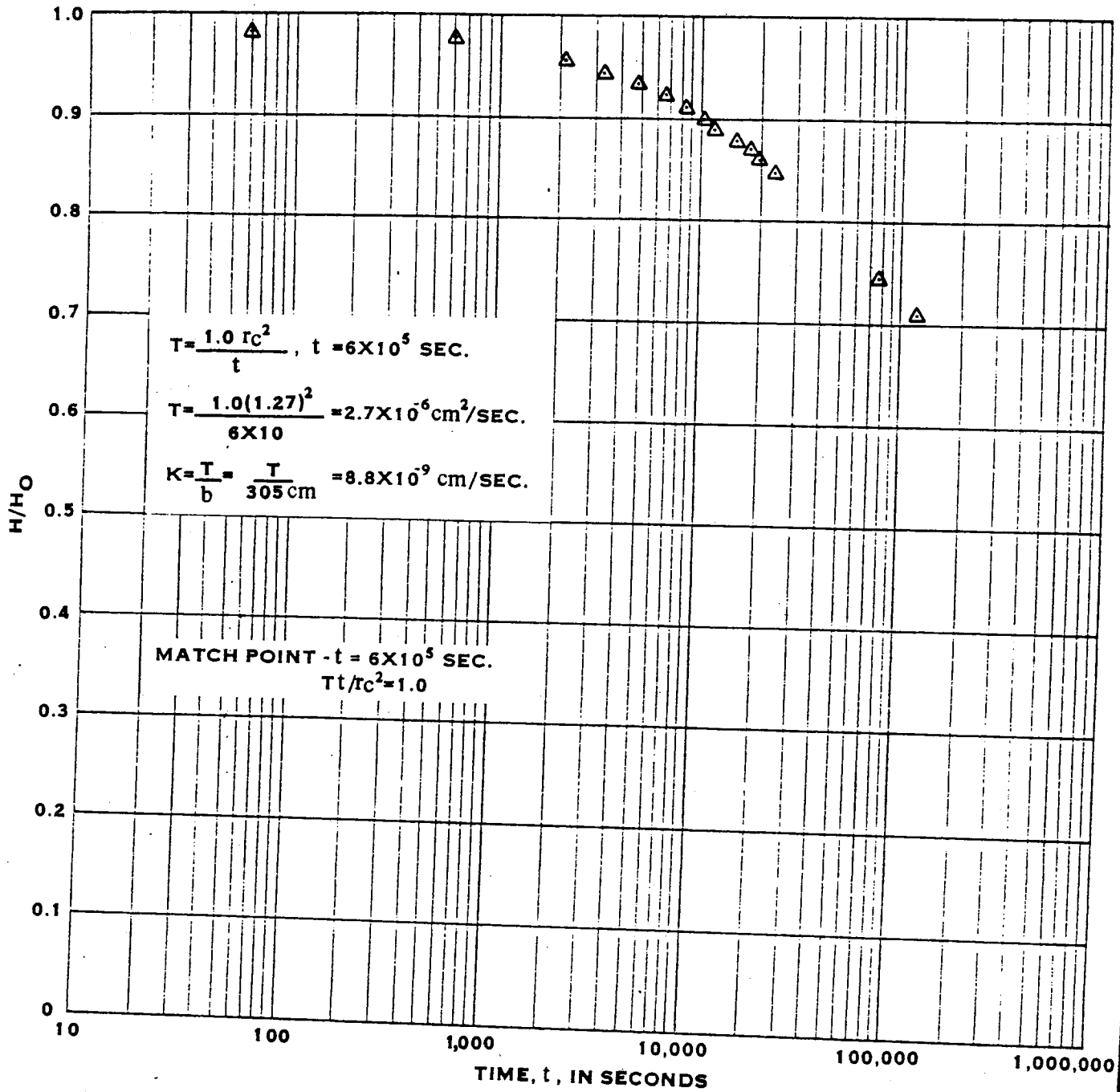
HYDROGEOLOGIC CROSS-SECTION C-C'

JOB NO. GS3223

FIGURE 11


PUERTO RICO
PONCE SITE
LOCATION MAP
N
PREVIOUSLY EXISTING WASTE LAGOONS
PROPERTY BOUNDARY
TOP OF SLOPE
TOE OF CUT SLOPE
APPROXIMATE TOE OF CUT SLOPE
CELL #1
MW-1
MW-2
MW-3
MW-4
MW-5
MW-6
MW-7
MW-8
154
46.1
169.6
168.3
181.3
197.1
C-1
C-4
C-5
C-8
C-9
C-10
C-16
A
A'
B
B'
C
C'
D
U
LEGEND
MW-1 PHASE I MONITORING WELL LOCATION
MW-8 PHASE II MONITORING WELL LOCATION
154 POTENTIOMETRIC LEVEL
FAULT (APPROXIMATE LOCATION)
FAULT PROJECTED BENEATH WASTE-FILL (APPROXIMATE LOCATION)
GEOHYDROLOGIC CROSS-SECTION
C-5 EXPLORATORY BORING
C-8 SOIL TEST BORING
BASE MAP MODIFIED FROM: PLANO TOPOGRAFICO DE FINCAS COMPONENTES, 1:1000 SCALE. BY MENSURAS PROFESIONALES, 1980
CONTOUR INTERVAL 10 METERS: DATUM IS MEAN SEA LEVEL
0 30 60 90 120 150 METERS
0 100 200 300 400 500 FEET
LAW ENGINEERING TESTING COMPANY
MARIETTA, GEORGIA
CECOS INTERNATIONAL, INC.
BUFFALO, NEW YORK
BY
DATE
DRAWN
CHECKED
APPROVED
PONCE WASTE FACILITY
POTENTIOMETRIC LEVELS
MARCH, 1984
JOB NO. GS3223
FIGURE 12


PUERTO RICO
PONCE SITE
LOCATION MAP
N
PREVIOUSLY EXISTING WASTE LAGOONS
TOP OF SLOPE
TOE OF CUT SLOPE
APPROXIMATE TOE OF CUT SLOPE
PROPERTY BOUNDARY
FUTURE CELL #3
FUTURE CELL #2
CELL #1
W.M.A
MW-1
MW-2
MW-3
MW-4
MW-5
MW-6
MW-7
MW-8
MW-9
MW-10
MW-11
MW-12
MW-13
MW-14
LEGEND
MW-9 PROPOSED MONITORING WELL (LOCATION APPROXIMATE)
MW-1 PHASE I MONITORING WELL LOCATION
MW-6 PHASE II MONITORING WELL LOCATION
BASE MAP MODIFIED FROM: PLANO TOPOGRAFICO DE FINCAS COMPONENTES, 1:1000 SCALE, BY MENSURAS PROFESIONALES, 1980
CONTOUR INTERVAL 10 METERS: DATUM IS MEAN SEA LEVEL
0 30 60 90 120 150 METERS
0 100 200 300 400 500 FEET
LAW ENGINEERING TESTING COMPANY
MARIETTA, GEORGIA
CECOS INTERNATIONAL, INC.
BUFFALO, NEW YORK
BY
DATE
DRAWN
CHECKED
APPROVED
PONCE WASTE FACILITY
PROPOSED MONITORING WELL LOCATION PLAN
JOB NO. GS3223
FIGURE 13



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BUFFALO, NEW YORK

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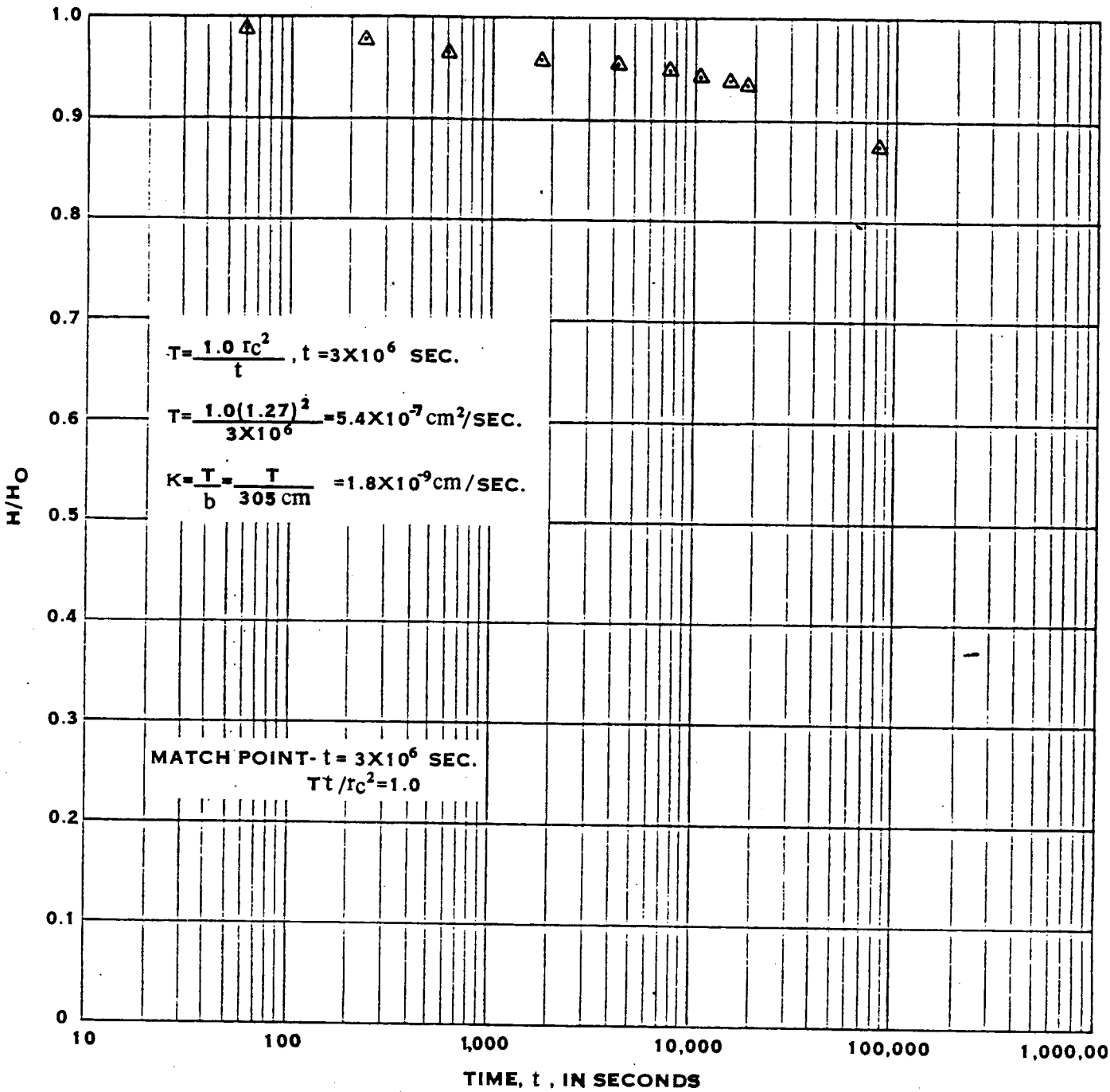
APPROVED	LSK	7/22/83

PONCE WASTE FACILITY

FIELD PERMEABILITY TEST
WELL C-8

JOB NO. GS3223

FIGURE 4



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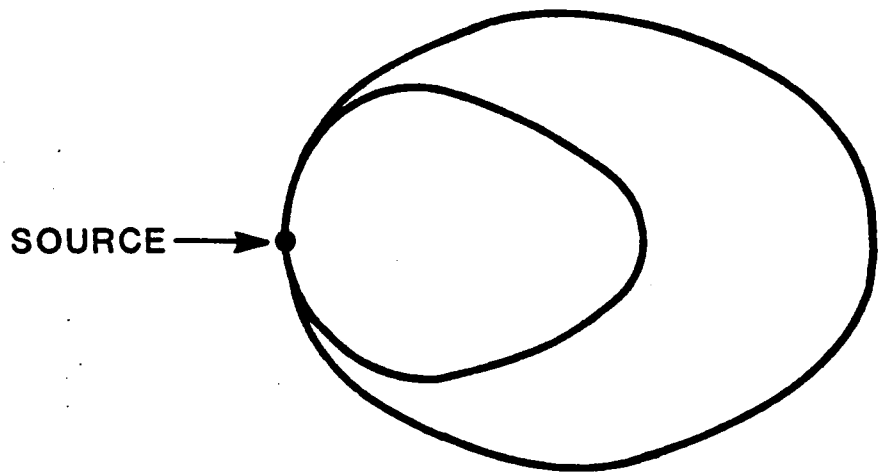
APPROVED	LSK	7/22/83

PONCE WASTE FACILITY

FIELD PERMEABILITY TEST
WELL C-9

JOB NO. GS3223

FIGURE 5



0 200 400

SCALE IN FEET

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CECOS INTERNATIONAL, INC.

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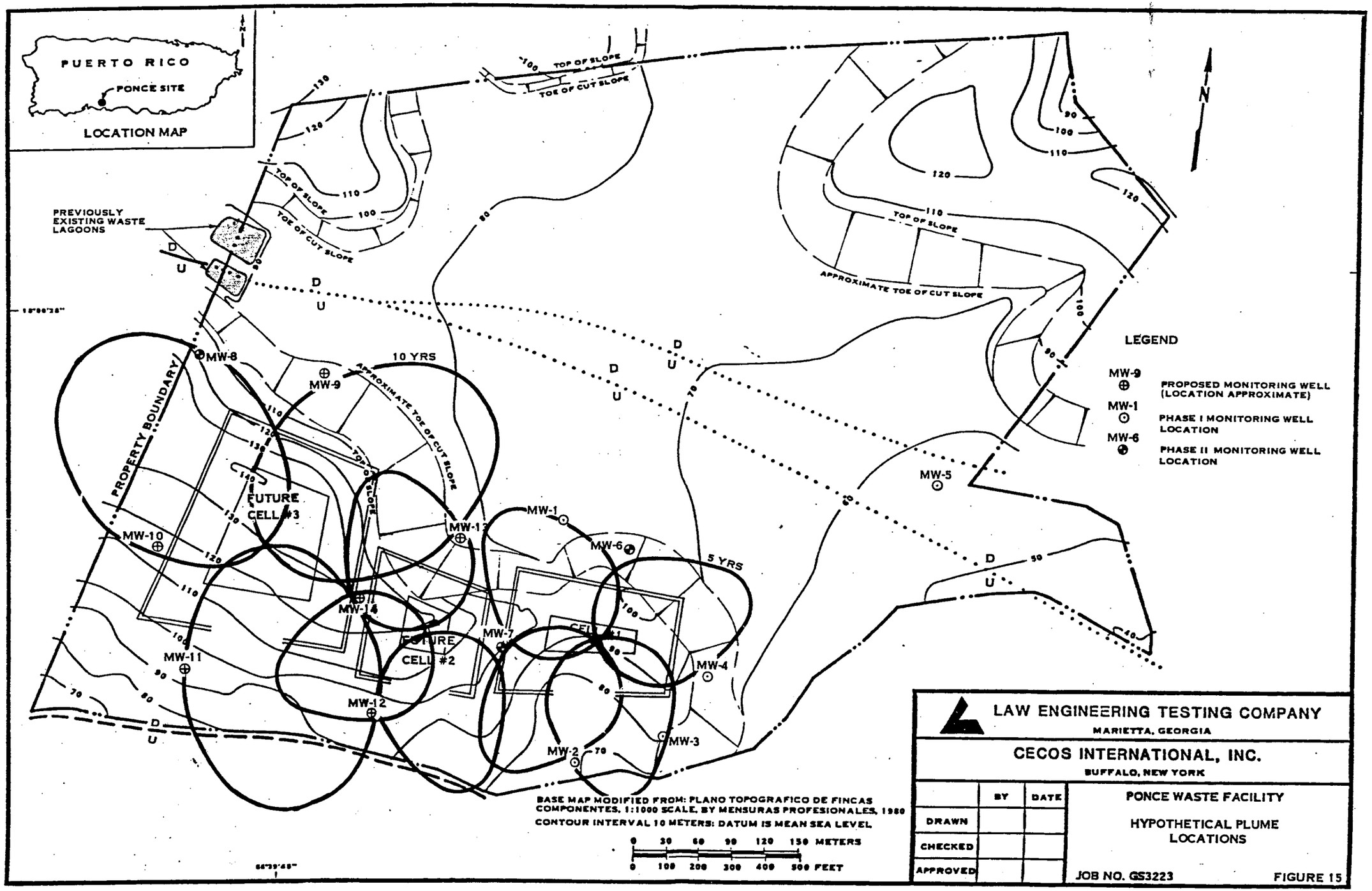
CHECKED		
APPROVED		

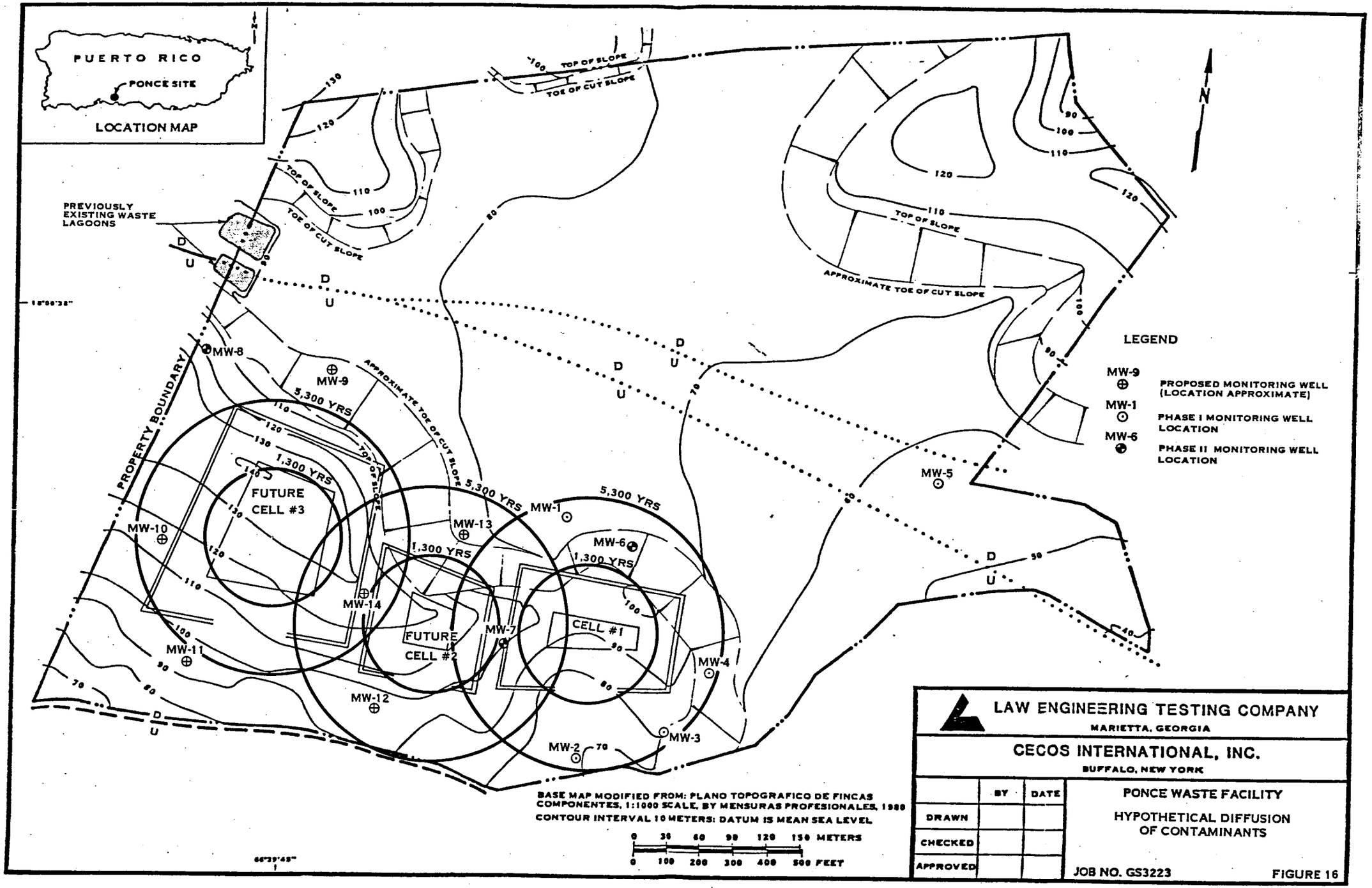
PONCE WASTE FACILITY

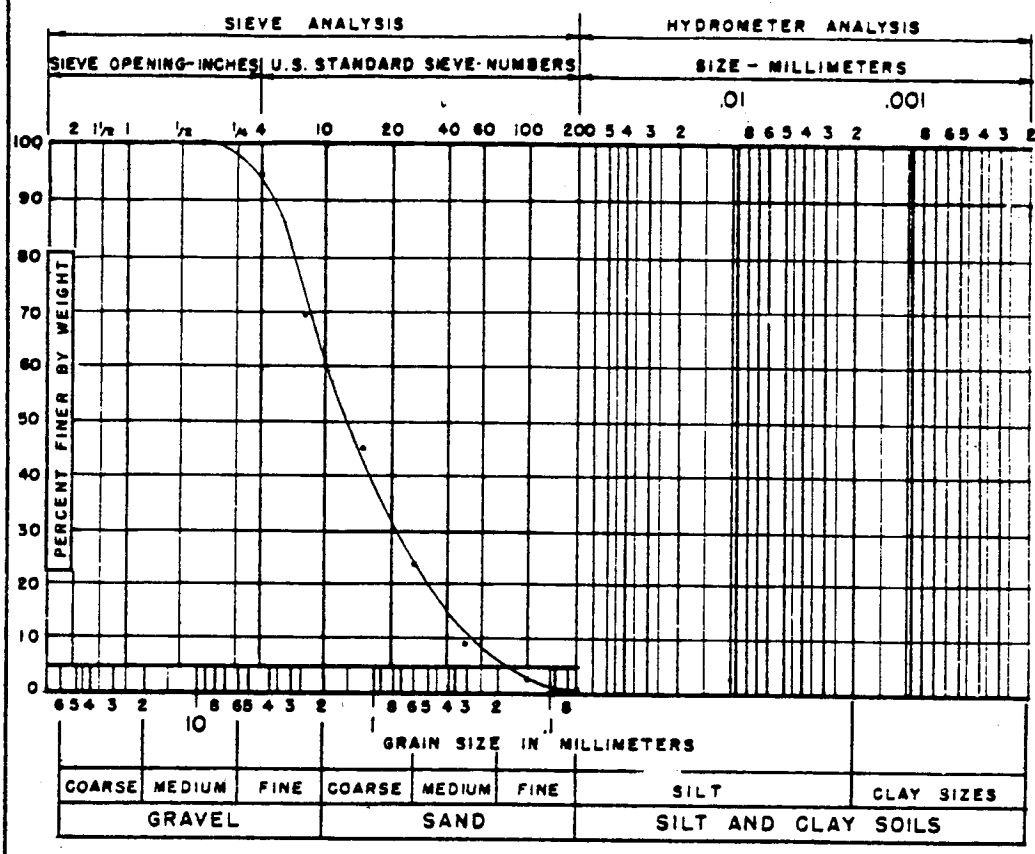
CALCULATED PLUME FOR JUANA DIAZ FORMATION

JOB NO. GS3223

FIGURE 14


PUERTO RICO
PONCE SITE
LOCATION MAP
N
PREVIOUSLY EXISTING WASTE LAGOONS
TOP OF SLOPE
TOE OF CUT SLOPE
APPROXIMATE TOE OF CUT SLOPE
PROPERTY BOUNDARY
10 YRS
5 YRS
FUTURE CELL #3
FUTURE CELL #2
MW-1
MW-2
MW-3
MW-4
MW-5
MW-6
MW-7
MW-8
MW-9
MW-10
MW-11
MW-12
MW-13
MW-14
LEGEND
MW-9 PROPOSED MONITORING WELL (LOCATION APPROXIMATE)
MW-1 PHASE I MONITORING WELL LOCATION
MW-6 PHASE II MONITORING WELL LOCATION
BASE MAP MODIFIED FROM: PLANO TOPOGRAFICO DE FINCAS COMPONENTES, 1:1000 SCALE, BY MENSURAS PROFESIONALES, 1980
CONTOUR INTERVAL 10 METERS: DATUM IS MEAN SEA LEVEL
0 30 60 90 120 150 METERS
0 100 200 300 400 500 FEET
LAW ENGINEERING TESTING COMPANY
MARIETTA, GEORGIA
CECOS INTERNATIONAL, INC.
BUFFALO, NEW YORK
BY
DATE
DRAWN
CHECKED
APPROVED
PONCE WASTE FACILITY
HYPOTHETICAL PLUME LOCATIONS
JOB NO. GS3223
FIGURE 15


PUERTO RICO
PONCE SITE
LOCATION MAP
PREVIOUSLY EXISTING WASTE LAGOONS
PROPERTY BOUNDARY
TOP OF SLOPE
TOE OF CUT SLOPE
APPROXIMATE TOE OF CUT SLOPE
FUTURE CELL #3
FUTURE CELL #2
CELL #1
5,300 YRS
1,300 YRS
MW-1
MW-2
MW-3
MW-4
MW-5
MW-6
MW-7
MW-8
MW-9
MW-10
MW-11
MW-12
MW-13
MW-14
LEGEND
MW-9 PROPOSED MONITORING WELL (LOCATION APPROXIMATE)
MW-1 PHASE I MONITORING WELL LOCATION
MW-6 PHASE II MONITORING WELL LOCATION
BASE MAP MODIFIED FROM: PLANO TOPOGRAFICO DE FINCAS COMPONENTES, 1:1000 SCALE, BY MENSURAS PROFESIONALES, 1980
CONTOUR INTERVAL 10 METERS: DATUM IS MEAN SEA LEVEL
0 30 60 90 120 150 METERS
0 100 200 300 400 500 FEET
LAW ENGINEERING TESTING COMPANY
MARIETTA, GEORGIA
CECOS INTERNATIONAL, INC.
BUFFALO, NEW YORK
BY
DATE
DRAWN
CHECKED
APPROVED
PONCE WASTE FACILITY
HYPOTHETICAL DIFFUSION OF CONTAMINANTS
JOB NO. GS3223
FIGURE 16



CURVE NO.	SYM.	SAMPLE NUMBER	DEPTH	ELEV.	L.L.	P.I.	DESCRIPTION
1							Grayish brown coarse to fine sand, some fine gravel

CARIBBEAN SOIL TESTING CO., INC.
Consulting Engineers, Rio Piedras, P.R.

GRAIN SIZE DISTRIBUTION

BY: DATE:

DWG.

LAW ENGINEERING TESTING COMPANY
MARIETTA, GEORGIA

CECOS INTERNATIONAL, INC.
BUFFALO, NEW YORK

	BY	DATE
DRAWN	R.L.A.	9/28/83
CHECKED	R.K.S	10/27/83
APPROVED	J.D.G	10/27/83

PONCE WASTE FACILITY

GRAIN SIZE ANALYSIS OF WELL FILTER SAND

JOB NO. GS3223

FIGURE 17