

GORDON N. SCOTT

900 WILSHIRE BOULEVARD
LOS ANGELES 90017

MADISON 9-3896

19 January 1970

File: SCS 6724c

Mr. W. E. Ingalsbe
Perliter and Ingalsbe
620 West Olympic Boulevard
Los Angeles, California 90015

SOILS
CMWD
240

Subj: Calleguas Municipal Water District; soil corrosivity
survey of Lindero Feeder Unit 2 (Project No. 173)

Incls: (1) Soil Conductivity and Probability (in 5 sheets)
(2) Sequential Distribution of Soil Resistivity
(3) Probability Distribution of Soil Resistivity

Dear Mr. Ingalsbe:

In accordance with your authorization dated 13 March 1967 a resistivity survey was run over the proposed right-of-way of the Lindero Feeder Unit 2 in June 1967.

The 157 measurements made plus 8 measurements along the lateral to storage, together with certain reductions thereof are given in the accompanying table. The resistivities are shown as sequential and probability distributions in respective charts.

There are two highly corrosive stretches shown as Classes B and D in the charts. These comprise about one-third of the right-of-way. Gas and oil lines generally follow the water pipeline route. The gas lines are under substantial cathodic protection. For these several reasons it was recommended by letter to you dated 5 October 1967 that a coating thickness of 1-1/4 in. over the rods be used throughout, that all joints be bonded, and that the pipeline be segmented by installing isolating joints at convenient points such as mainline valves. It was further recommended that the usual test lead schedule be applied.

Very sincerely yours,


Gordon N. Scott

GNS/pws

Test No.	Station (Mas.Wheel)	Resistivity (Ohm-cm.)	Conductivity (Micromho/cm.)	Class	Rank	Cumulative Percent
1	2+00	2800		A	68	83.80
2	4	1900		A	48	59.20
3	6	2500		A	61	75.20
4	8	6200	Omit	--	--	--
5	10	2800		A	69	85.00
6	12+00	3100		A	73	90.10
7	14	2400		A	58	71.50
8	16	1370		A	26	32.10
9	18	8800	Omit	--	--	--
10	20	1300		A	21	25.90
11	22+00	2200		A	52	64.20
12	24	2600		A	64	78.80
13	26	2400		A	59	72.70
14	28	2200		A	53	65.40
15	30	1080		A	12	14.80
16	32+00	1540		A	40	49.40
17	34	1380		A	27	33.30
18	36	1200		A	15	18.60
19	38	1180		A	14	17.30
20	40	1620		A	45	55.50
21	42+00	960		A	6	7.42
22	44	960		A	7	8.65
23	46	880		A	3	3.70
24	48	1600		A	43	53.00
25	50	2300		A	56	69.00
26	52+00	1300		A	22	27.10
27	54	2900		A	71	87.50
28	56	960		A	8	9.88
29	58	680		A	1	1.24
30	60	960		A	9	11.10
31	62+00	1240		A	20	24.70
32	64	1200		A	16	19.80
33	66	1500		A	35	43.20
34	68	1410		A	29	35.80
35	70+00	2200		A	54	66.60

NOTES: MW 0+00, Fence So. of Pump Sta. site
9+22, So. Fence existing station property
17+62, NS Fence
30+82, EW Fence
44+24, N. Fence, Simi Rd.

SOIL CONDUCTIVITY AND PROBABILITY

Table 6724
Lindero Feeder Unit 2

Test No.	Station (Meas.Wheel)	Resistivity (Ohm-cm.)	Conductivity (Micromho/cm.)	Class	Rank	Cumulative Percent
36	72+00	1580		A	42	51.80
37	74	2300		A	57	70.30
38	76	2100		A	50	61.60
39	78	2500		A	62	76.50
40	80	2700		A	65	80.20
41	82+00	2500		A	63	77.70
42	84	3200		A	74	91.35
43	86	3700		A	78	96.30
44	88	3800		A	80	98.76
45	90	1100		A	13	16.10
46	92+00	1460		A	32	39.50
47	94	2800		A	70	86.30
48	96	1520		A	38	46.90
49	98	1420		A	30	37.00
50	100	820		A	2	2.47
51	102+00	1320		A	23	28.40
52	104	1200		A	17	21.00
53	106	2000		A	49	60.50
54	108	1690		A	46	56.70
55	110	1540		A	41	50.60
56	112+00	980		A	10	12.40
57	114	1320		A	24	29.60
58	116	2400		A	60	74.00
59	118	2200		A	55	67.80
60	120	1440		A	31	38.20
61	122+00	1880		A	47	58.00
62	124	2900		A	72	88.90
63	126	3300		A	76	93.82
64	128	2700		A	66	81.30
65	130	1480		A	34	42.00
66	132+00	2100		A	51	63.00
67	134	3700		A	79	97.53
68	136	1500		A	36	44.40
69	138	1220		A	19	23.40
70	140	950		A	4	4.94

NOTES: MW 61+09, Gate
85+19, Gas P.L. Test Leads
85+50, N.S. Road
121+89, C/L Gas Co. Vault

SOIL CONDUCTIVITY AND PROBABILITY

Table 6724
Lindero Feeder Unit 2

Test No.	Station (Meas. Wheel)	Resistivity (Ohm-cm.)	Conductivity (Micromho/cm.)	Class	Rank	Cumulative Percent
71	142+00	950		A	5	6.18
72	144	3200		A	75	92.58
73	146	1000		A	11	13.60
74	148	1460		A	33	40.70
75	150	1200		A	18	22.20
76	152+00	1350		A	25	30.90
77	154	1510		A	37	45.70
78	156	1610		A	44	54.40
79	158	1380		A	28	34.60
80	160	3400		A	77	95.06
81	162+00	2700		A	67	82.50
82	164	1520		A	39	48.20
83	166	840		B	23	57.50
84	168	830		B	20	50.00
85	170	540		B	1	2.50
86	172+00	1300		B	38	95.00
87	174	660		B	9	22.50
88	176	600		B	3	7.50
89	178	1080		B	33	82.50
90	180	1000		B	31	77.50
91	182+00	1080		B	34	85.00
92	184	940		B	29	72.50
93	186	1120		B	35	87.50
94	188	830		B	21	52.50
95	190	1020		B	32	80.00
96	192+00	840		B	24	60.00
97	194	720		B	13	32.50
98	196	800		B	17	42.50
99	198	880		B	28	70.00
100	200	680		B	10	25.00
101	202+00	600		B	4	10.00
102	204	600		B	5	12.50
103	206	630		B	8	20.00
104	208	780		B	15	37.50
105	210	590		B	2	5.00

NOTES: MW 157+72, Double power line crossing
161+53, Fence
180+46, Fence, end property

SOIL CONDUCTIVITY AND PROBABILITY

Table 6724
Lindero Feeder Unit 2

Test No.	Station (Meas.Wheel)	Resistivity (Ohm-cm.)	Conductivity (Micromho/cm.)	Class	Rank	Cumulative Percent
106	212+00	830		B	22	55.00
107	214	850		B	27	67.50
108	216	790		B	16	40.00
109	218	700		B	11	27.50
110	220	800		B	18	45.00
111	222+00	800		B	19	47.50
112	224	620		B	7	17.50
113	226	700		B	12	30.00
114	228	990		B	30	75.00
115	230	750		B	14	35.00
116	232+00	840		B	25	62.50
117	234	2400	Omit	--	--	--
118	236	840		B	26	65.00
119	238	600		B	6	15.00
120	240	1200		B	37	92.50
121	242+00	7600	Omit	--	--	--
122	244	1460		B	39	97.50
123	246	1140		B	36	90.00
124	248	3500		C-1	11	84.60
125	250	4400		C-1	12	92.38
126	252+00	2300		C-1	6	46.20
127	254	3200		C-1	10	76.90
128	256	1420		C-1	2	15.40
129	258	1360		C-1	1	7.68
130	260	1780		C-1	4	30.70
131	262+00	1820		C-1	5	38.40
132	264	2400		C-1	7	53.80
133	266	3000		C-1	9	69.30
134	269	5800	Omit	--	--	--
135	270	1640		C-1	3	23.10
136	272+00	2800		C-1	8	61.60
137	274	700		D	1	9.10
138	276	1000		D	4	36.40
139	278	1070		D	7	63.60
140	280	1220		D	9	81.80

NOTES: MW 230+29, Gas Co. Pipe line marker
246+79, C/L Ditch
255+85, draw
265+90, sharp curve in road
278+11, C/L Dirt Road (Test #139)

SOIL CONDUCTIVITY AND PROBABILITY

Table 6724

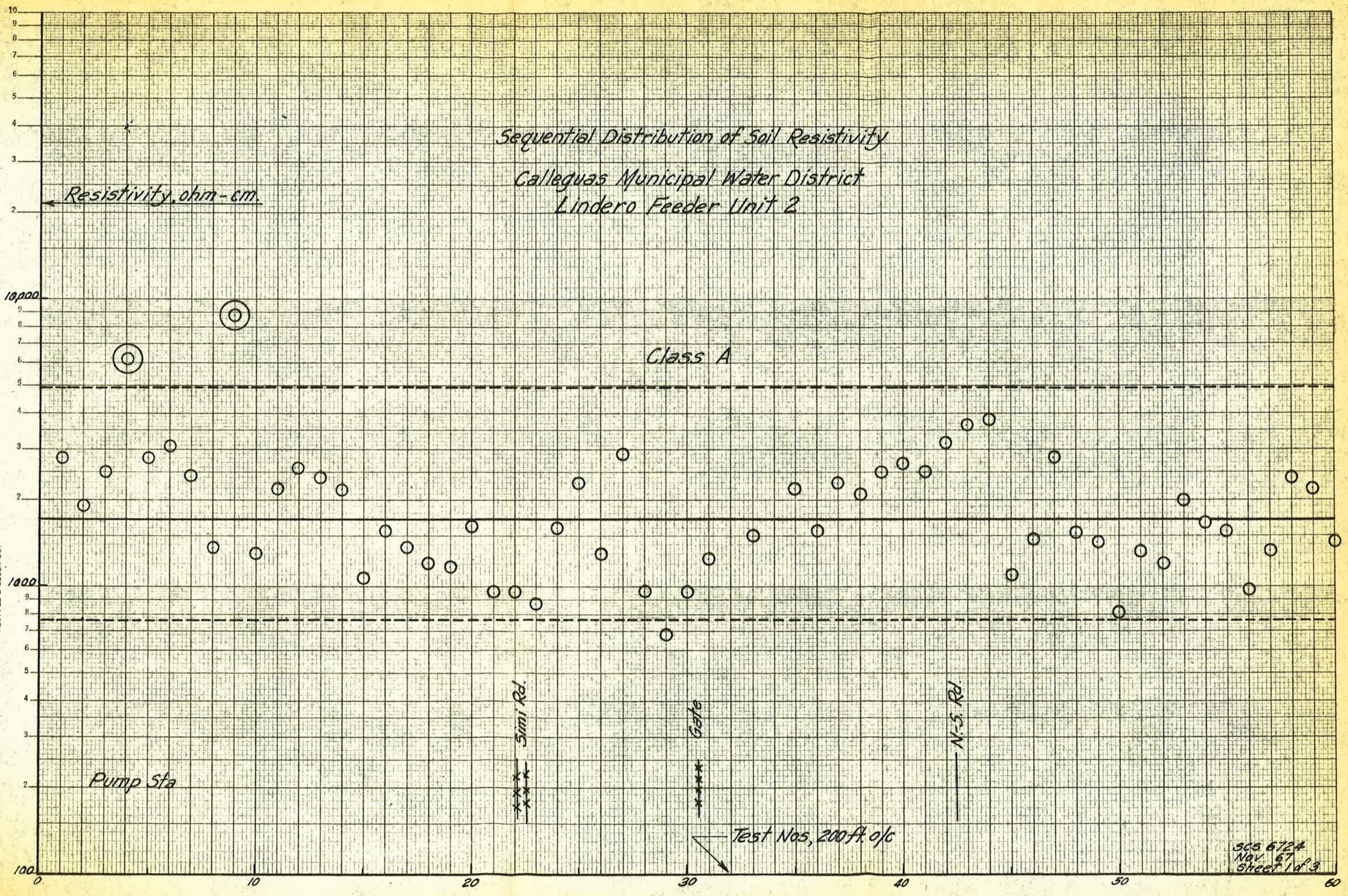
Test No.	Station (Meas. Wheel)	Resistivity (Ohm-cm.)	Conductivity (Micromho/cm.)	Class	Rank	Cumulative Percent
141	282+00	1040		D	5	45.50
142	284	870		D	2	18.20
143	286	1280		D	10	90.90
144	288	900		D	3	27.30
145	290	1050		D	6	54.50
146	292+00	1200		D	8	72.80
147	294	2400		C-2	4	41.70
148	296	1570		C-2	2	16.70
149	298	2600		C-2	6	50.00
150	300	3300		C-2	11	91.65
151	302+00	2800		C-2	8	66.70
152	304	3200		C-2	10	83.30
153	306	2600		C-2	7	58.40
154	308	2800		C-2	9	75.00
155	310	1800		C-2	4	33.00
156	312	1390		C-2	1	8.35
157	314+00	1640		C-2	3	25.00
	Reservoir	Line				
1	2+00	1060				
2		1430				
3		3300				
4		800				
5		9600				
6	12+00	11600				
7		14200				
8	16+00	1800				

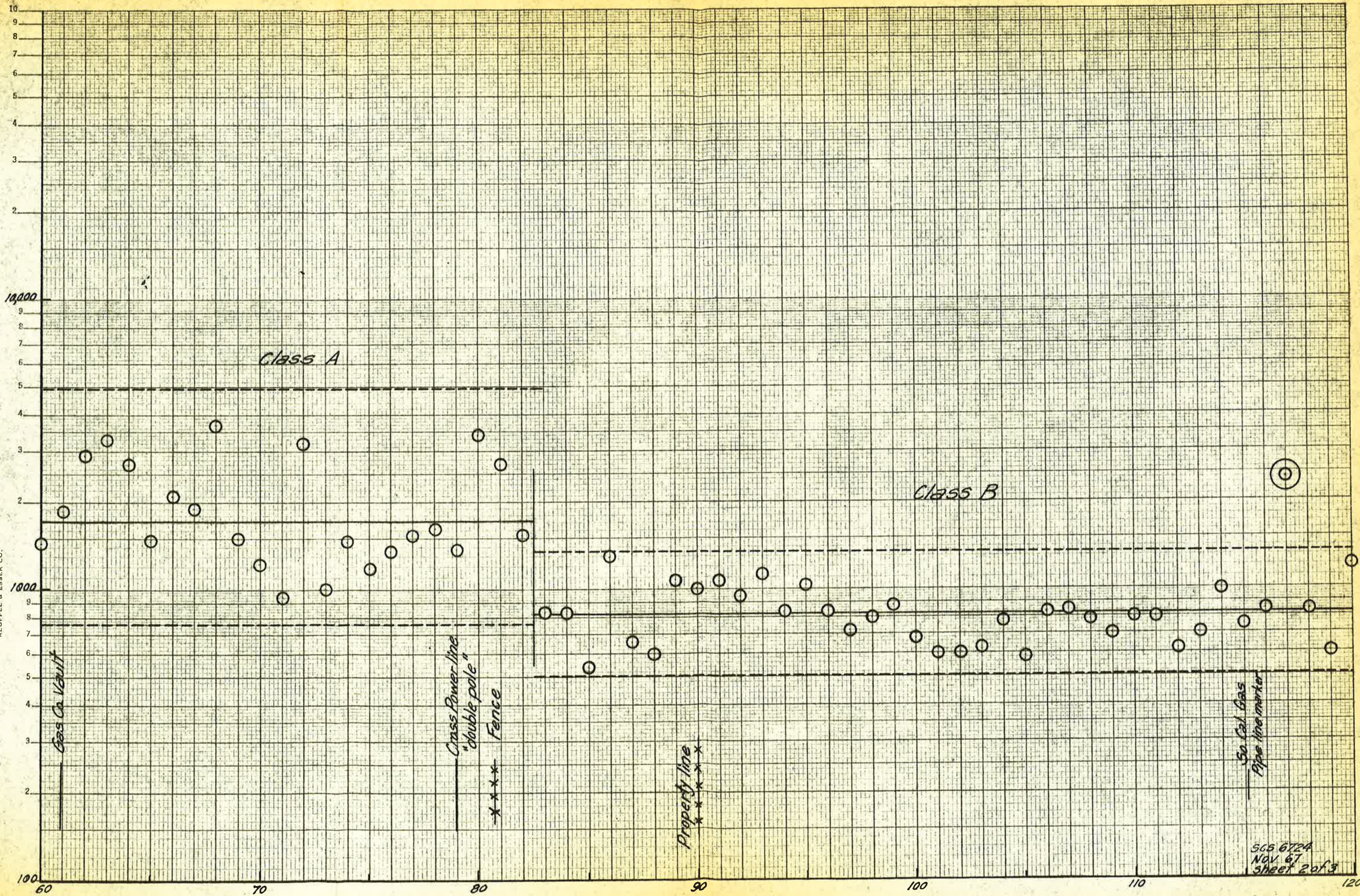
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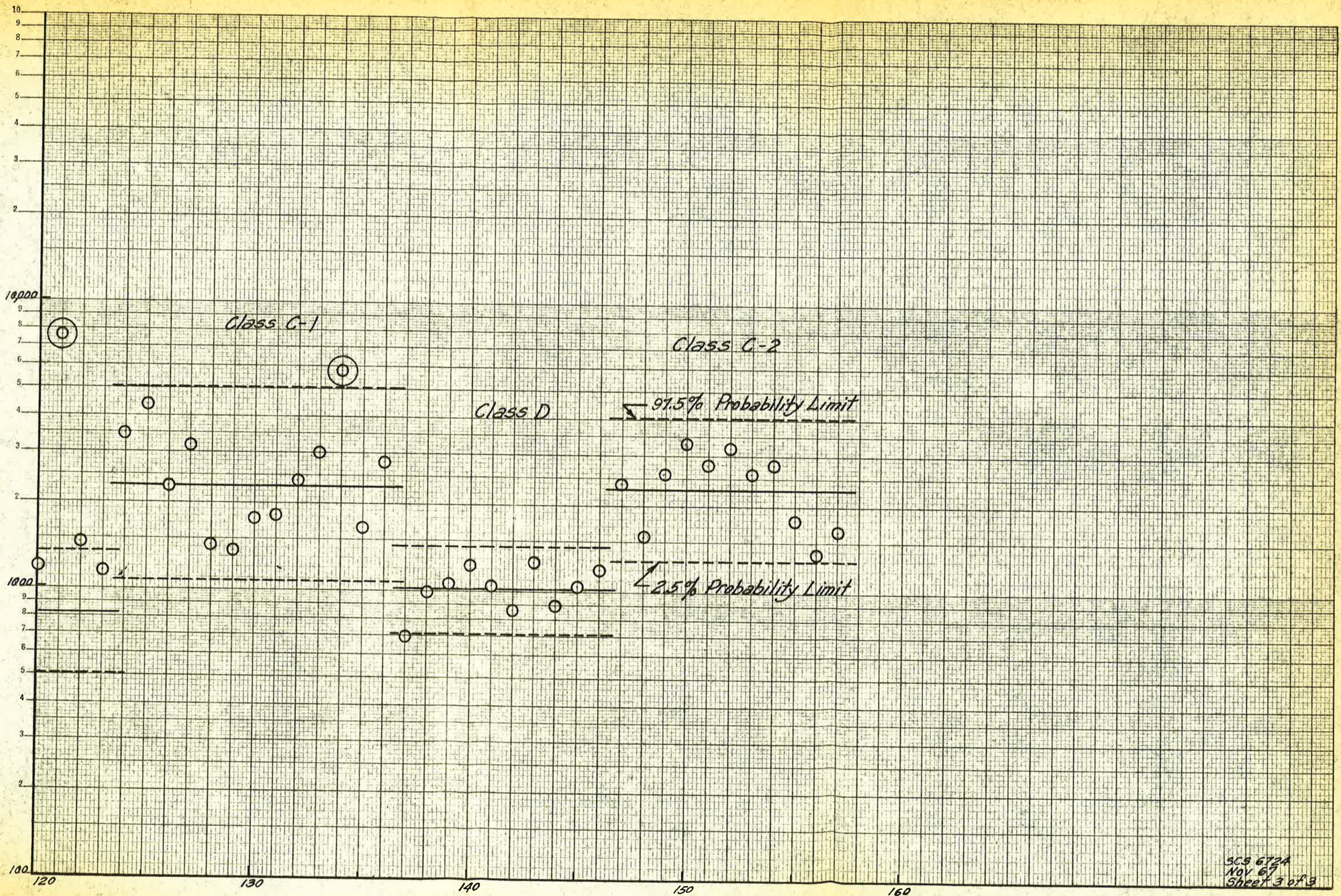
SOIL CONDUCTIVITY AND PROBABILITY

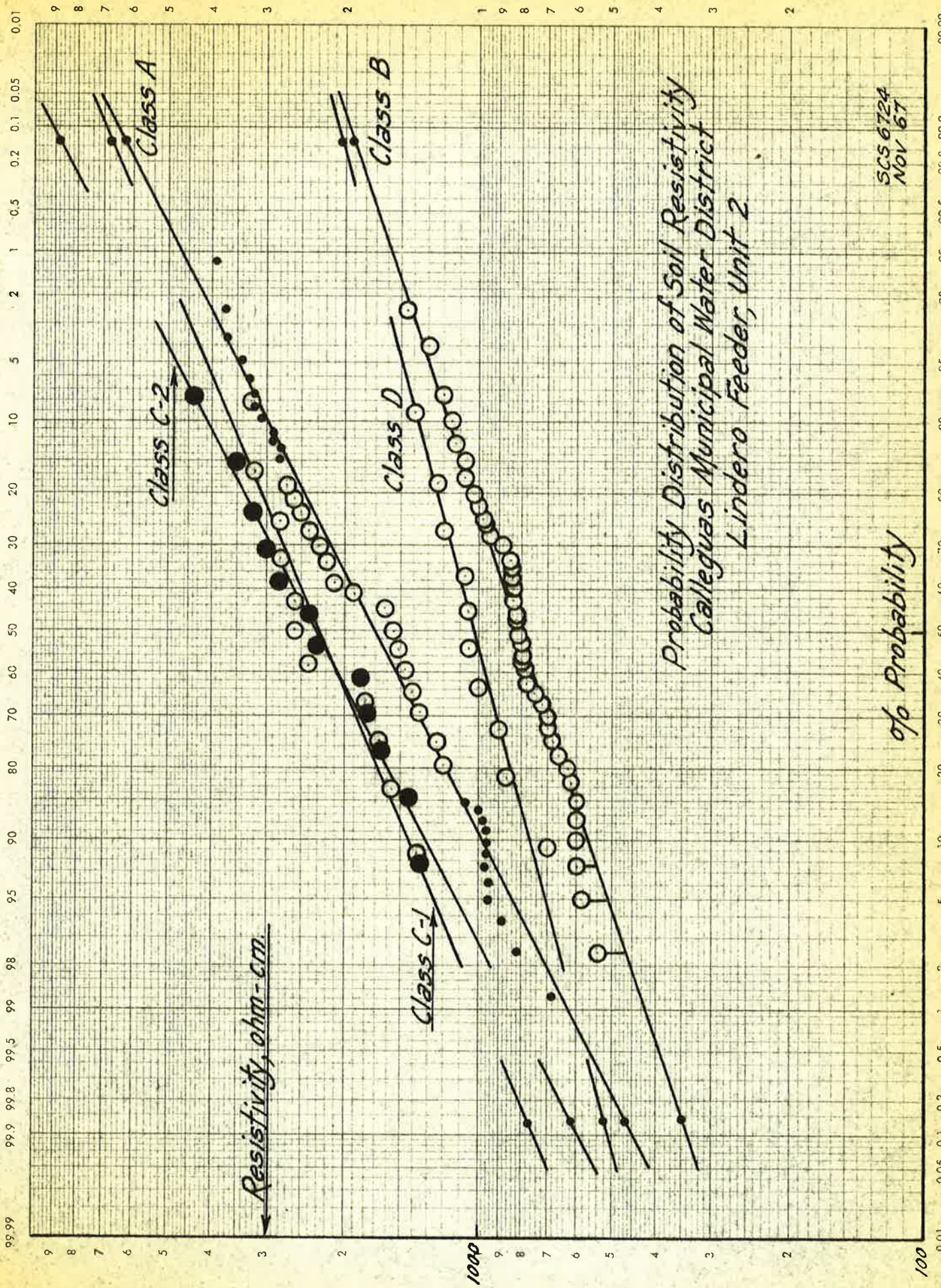
Table 6724
Lindero Feeder Unit 2

KE SEMI-LOGARITHMIC 47 5813
3 CYCLES X 300 DIVISIONS
KEUFFEL & ESSER CO.









SCS 6724
Nov 67

Probability Distribution of Soil Resistivity
Lindero Feeder, Unit 2

% Probability