

3.2 Proposed Collection System

The whole area will be covered by conventional collection system. Their required sewer lengths are as follows.

Tertiary and secondary sewer (ϕ 150mm - ϕ 300mm)	368,600 m
Main sewer (ϕ 350mm - ϕ 800mm)	56,700 m
Trunk sewer (ϕ 900mm - ϕ 2300mm)	21,800 m
<hr/>	
Total	447,100 m

The proposed sewer networks is shown in Fig. K.6.

3.3 Proposed Treatment Plant

Potential treatment plant site for this sewerage development area is identified only in the green area located along north-east edge of this sewerage development area.

This green area of 20 ha will be intersected by the proposed East Banjir Canal in future. This area of 20 ha is insufficient to treat the whole wastewater of 235,000 m³/day from the proposed East-Jakarta Sewerage development area by aerated lagoon system. Therefore, conventional activated sludge system will be applied in order to cope with the limited available area for treatment plant.

Table K.1(1) Detailed Sewer Design

Line No.	Sewerage Area (ha)	Sewer Line		Sewer Length (m)
		Diameter(mm)	Slope(0/100)	
1	0.7	150	3	75
(2-1)	0.0	150	3	110
2	0.9	150	3	90
(3-1)	0.0	150	3	50
3	1.4	150	3	150
(4-1)	0.0	200	3	200
4	0.9	150	3	80
(5-1)	0.0	200	3	40
5	2.2	250	2.8	200
6	0.8	150	3	140
(7-1)	0.0	150	3	50
7	1.1	150	3	100
(8-1)	0.0	200	3	85
8	1.4	150	3	105
(9-1)	0.0	200	3	100
9	1.1	150	3	100
(10-1)	0.0	200	3	80
10	0.7	150	3	85
(11-1)	0.0	250	2.8	230
11	0.7	300	2.8	170
12	0.8	150	3	110
13	1.3	200	3	200
14	0.6	150	3	90
15	0.4	200	3	70
16	0.8	150	3	100
17	0.3	200	3	40
18	0.8	150	3	100
19	1.0	150	3	150
20	0.5	200	3	70
21	0.8	150	3	100
22	0.3	200	3	35
23	0.0	250	2.8	120
24	1.8	350	4	340
25	0.6	150	3	105
26	1.1	150	3	140
27	0.6	200	3	60
28	0.9	150	3	100
29	0.3	200	3	40
30	0.7	150	3	100
31	1.2	200	3	150
32	0.6	200	3	70
33	0.9	150	3	100
34	0.3	200	3	40
35	0.0	250	2.8	120
36	0.9	350	4	220
37	0.6	150	3	90
38	0.4	150	3	70
39	0.5	150	3	100
40	0.8	150	3	105
41	0.4	200	3	110
42	0.9	400	3.5	280
43	0.6	150	3	120
44	0.3	150	3	55
45	0.0	150	3	55
46	0.4	150	3	60
47	0.4	150	3	90
48	0.5	150	3	70
49	0.0	200	3	60
50	0.5	150	3	100
51	0.3	200	3	110
52	0.7	150	3	100
53	0	200	3	60
54	0.5	150	3	85
55	0.4	150	3	80
56	0.4	150	3	50
57	0	250	2.8	60
58	0.8	150	3	105
59	0.3	250	2.8	120
60	0.9	150	3	95
61	0	250	2.8	55
62	0.3	150	3	70
63	0.3	150	3	60
64	0.4	150	3	75
65	0.9	250	2.8	150
66	0.4	150	3	50
67	0.5	150	3	165
68	0.3	150	3	85
69	0.2	150	3	60
70	0.7	150	3	110
71	0.2	200	3	55
72	0.3	150	3	35
73	0.6	150	3	120
74	0.2	200	3	60
75	0.2	200	3	60
76	0.3	150	3	75
77	0.2	200	3	60

Line No.	Sewerage Area (ha)	Sewer Line		Sewer Length (m)
		Diameter(mm)	Slope(0/100)	
78	0.5	150	3	100
79	0.5	250	2.8	105
80	0.3	150	3	45
81	0.7	250	2.8	120
82	0.8	150	3	110
83	0.5	250	2.8	120
84	0.5	350	4	155
85	0.3	150	3	50
86	1.4	350	4	195
87	0.6	150	3	50
88	0.3	350	4	55
89	0.7	150	3	90
90	1.1	350	4	160
91	0.7	150	3	110
92	0.3	150	3	45
93	0.5	150	3	115
94	0.6	150	3	85
95	0.4	200	3	60
96	0.6	150	3	90
97	0.4	200	3	80
98	0.8	150	3	70
99	0.3	150	3	80
100	0.3	250	2.8	55
101	1.3	150	3	185
102	0	250	2.8	60
103	0.6	150	3	85
104	0	250	2.8	60
105	0.6	150	3	80
106	0	250	2.8	55
108	0	350	4	25
109	1.4	500	2.8	130
110	0	500	2.8	155
(110-1)	2.5	200	3	180
(110-2)	2.3	200	3	130
(110-3)	0	250	2.8	60
111	3.8	500	2.8	120
112	1.9	200	3	325
113	0.2	500	2.8	85
114	2	200	3	330
115	0.3	500	2.8	70
116	1.2	150	3	230
117	0.3	150	3	80
118	1.6	150	3	240
119	0.2	200	3	60
120	1.1	150	3	230
121	0.2	200	3	50
122	1.6	150	3	325
(122-1)	0	600	2.6	15
123	0.4	150	3	125
124	1	150	3	305
125	0.4	150	3	130
126	0.3	150	3	50
127	0.4	150	3	135
128	0.2	150	3	45
129	0.1	150	3	25
130	1.1	200	3	160
131	0.5	150	3	110
132	0.2	200	3	60
133	0.6	150	3	110
134	0.2	200	3	70
135	2.3	250	2.8	280
136	0.2	150	3	35
137	0.6	150	3	110
138	1.2	200	3	155
139	1	150	3	120
140	0.1	150	3	10
141	0.2	150	3	50
142	1	150	3	120
143	0.2	200	3	50
144	0.2	200	3	60
145	1.5	150	3	110
146	0.3	250	2.8	60
147	0.3	300	2.8	110
148	0.3	150	3	90
149	0.2	150	3	50
150	0.5	150	3	90
151	2.1	200	3	160
152	0.1	350	4	55
153	0.6	150	3	100
154	0.2	150	3	65
155	1.9	600	2.6	215
156	0.5	150	3	125
157	0.1	150	3	15
158	0.2	150	3	50
159	0.5	150	3	125
160	0.2	150	3	50

Line No.	Sewerage Area (ha)	Sewer Line		Sewer Length (m)
		Diameter(mm)	Slope(0/100)	
161	0.6	150	3	100
162	0.4	150	3	50
163	0.8	150	3	150
164	0.3	200	3	65
165	0.2	600	2.6	75
166	0.2	150	3	80
167	0.4	150	3	70
168	0.6	150	3	180
169	0.1	150	3	20
170	0.4	150	3	105
171	0.1	150	3	40
(172-1)	0	150	3	15
172	0.7	150	3	120
173	0.6	150	3	110
174	0.3	200	3	75
175	0.5	150	3	80
176	0.2	200	3	50
177	0.6	200	3	190
178	0.7	150	3	130
179	0.7	250	2.8	150
180	0.5	150	3	60
181	0.4	250	2.8	60
182	0.5	150	3	70
183	0.4	250	2.8	130
184	0.3	150	3	60
185	0.2	150	3	50
186	0.4	150	3	80
187	0.3	150	3	60
188	0.4	150	3	60
189	0.5	150	3	90
190	0.2	200	3	60
191	0.6	150	3	130
192	0.3	200	3	100
193	0.5	150	3	120
194	0.5	150	3	150
195	0.1	200	3	50
196	0.3	150	3	80
197	0	200	3	70
198	0.6	150	3	100
199	0.3	150	3	70
200	0.7	250	2.8	200
201	0	300	2.8	110
202	1.5	600	2.6	310
203	0.5	150	3	110
204	0.1	150	3	20
205	0.5	150	3	90
206	0.2	150	3	50
207	0.1	150	3	50
208	0.6	150	3	100
209	0.4	200	3	80
210	0.6	150	3	110
211	0.3	150	3	130
212	0.5	150	3	130
213	1	150	3	50
214	0.5	150	3	130
215	0.8	200	3	120
216	0.8	200	3	230
217	0.6	150	3	110
218	0.6	150	3	130
219	0.2	150	3	60
220	0.6	150	3	120
221	0.2	200	3	70
222	1	250	2.8	280
223	0.2	150	3	40
224	0.5	150	3	120
225	1	150	3	150
226	0.5	150	3	120
227	0.1	150	3	20
228	0.3	150	3	50
229	0.5	150	3	120
230	0.1	150	3	50
231	0.2	200	3	70
232	0.4	150	3	110
233	0.1	200	3	75
234	2.6	300	2.8	160
235	0.6	150	3	130
236	0.3	150	3	60
237	0.5	150	3	120
238	0.1	150	3	70
239	0.9	350	4	250
240	0	600	2.6	80
241	0	600	2.6	230
242	0.8	150	3	190
243	0.8	150	3	200
244	0.7	200	3	180
245	0.8	150	3	220

Table K.1(2) Detailed Sewer Design

Line No.	Sewerage Area (ha)	Sewer Line		Sewer Length (m)
		Diameter(mm)	Slope(0/00)	
246	0.5	150	3	80
247	0.2	150	3	20
248	0.2	150	3	130
249	0.2	150	3	50
250	0.7	150	3	120
251	0.2	200	3	50
252	0.7	150	3	110
253	0.2	200	3	70
254	0.7	250	2.8	130
255	0.7	250	2.8	135
256	0.6	150	3	120
257	0.2	150	3	60
258	0.6	150	3	120
259	0.2	150	3	50
260	0.6	150	3	120
261	0.2	200	3	70
262	0.3	250	2.8	70
263	1.6	150	3	180
264	0.3	300	2.8	70
265	1.1	150	3	190
266	0.7	300	2.8	110
267	0.3	150	3	80
268	0.4	150	3	60
269	0.4	150	3	80
270	0.2	150	3	50
271	0.4	150	3	80
272	0.2	200	3	50
273	0.3	150	3	80
274	0.2	200	3	50
275	0.2	300	3	70
276	0.1	350	4	65
277	0.7	150	3	110
278	0.5	150	3	90
279	0.2	150	3	50
280	0.5	150	3	90
281	0.2	200	3	50
282	0.5	150	3	90
283	0.2	200	3	60
284	0.4	350	2.8	140
285	0.2	150	3	45
286	0.5	150	3	110
287	1.4	200	3	210
288	1.2	350	4	280
289	0.2	700	2.4	100
290	0.8	150	3	130
291	0.4	150	3	60
292	0.7	150	3	130
293	0.3	200	3	60
294	1.2	150	3	130
295	0.4	200	3	80
296	0.8	150	3	40
297	1.7	200	3	110
298	1.2	200	3	90
299	1	700	2.4	150
300	0.6	150	3	130
301	1.2	150	3	110
302	1.2	200	3	80
303	0.5	150	3	130
304	0.9	200	3	100
305	1.2	700	2.4	170
306	1	150	3	130
307	0.3	150	3	70
308	0.9	150	3	130
309	0.3	200	3	50
310	0.9	150	3	130
311	0.3	200	3	60
312	1	150	3	130
313	0.3	250	2.8	75
314	0.4	150	3	160
315	1	150	3	110
316	0.9	200	3	70
317	0.7	150	3	150
318	0.6	200	3	90
319	0.4	700	2.4	70
320	0.8	150	3	210
321	1.2	150	3	250
322	0.2	200	3	80
323	0.2	150	3	20
324	0.5	150	3	90
325	0.3	150	3	50
326	1	150	3	110
327	0.3	200	3	60
328	0.8	150	3	130
329	0.4	200	3	80
330	0.2	150	3	40
331	0.4	150	3	40

Line No.	Sewerage Area (ha)	Sewer Line		Sewer Length (m)
		Diameter(mm)	Slope(0/00)	
332	0.2	150	3	50
333	0.3	150	3	50
334	0.2	150	3	50
335	0.3	150	3	40
336	0.2	150	3	50
337	0.5	150	3	130
338	0.2	200	3	50
339	0.6	150	3	130
340	0.2	200	3	50
341	0.6	150	3	130
342	0.3	200	3	60
343	2	300	2.8	280
344	0.8	150	3	120
345	0.4	150	3	60
346	0.7	150	3	120
347	0.3	200	3	60
348	0.7	150	3	120
349	0.3	200	3	70
350	0.1	150	3	20
351	0.3	150	3	60
352	0.2	150	3	30
353	0.3	150	3	70
355	0.2	150	3	40
356	0.2	150	3	50
357	0.6	150	3	130
358	0.2	200	3	50
359	0.6	150	3	130
360	0.2	200	3	50
361	0.6	150	3	130
362	0.2	200	3	50
363	0.6	150	3	130
364	0.2	200	3	60
365	0.2	350	4	70
366	1	150	3	200
367	1.5	150	3	280
368	0.2	150	3	70
369	1	150	3	120
370	1	200	3	120
371	0.2	200	3	65
372	5	350	4	250
373	0.6	150	3	100
374	0.4	150	3	80
375	0.2	150	3	45
376	0.4	150	3	90
377	0.3	200	3	65
378	0.4	150	3	80
379	0.3	150	3	50
380	0.4	150	3	80
381	0.2	150	3	50
382	0.4	150	3	80
383	0.2	200	3	50
384	0.4	150	3	80
385	0.2	200	3	50
386	0.6	150	3	110
387	0.9	150	3	160
388	0.1	150	3	25
389	0.1	150	3	40
390	0.1	150	3	40
391	0.2	150	3	40
392	0.2	150	3	50
393	0.2	150	3	50
394	0.2	200	3	45
395	0.2	150	3	40
396	0.1	200	3	45
397	0.2	200	3	65
398	0.8	150	3	170
399	0.1	150	3	20
400	0.3	150	3	70
401	0.2	250	2.8	60
402	1.6	400	3.5	130
403	0.1	150	3	30
404	0.2	150	3	35
405	0.2	150	3	60
406	0.2	150	3	40
407	0.2	150	3	60
408	1	150	3	90
409	0.7	200	3	165
410	1.3	150	3	200
411	1	200	3	200
412	1.2	200	3	230
413	0.8	200	3	170
414	0.5	250	2.8	135
415	0.8	250	2.8	150
416	0.2	450	3	50
417	1.4	450	3	220
418	0.2	150	3	60

Line No.	Sewerage Area (ha)	Sewer Line		Sewer Length (m)
		Diameter(mm)	Slope(0/00)	
419	1.1	150	3	185
420	0.5	150	3	100
421	0.3	700	2.4	70
422	0.2	150	3	50
423	1.1	150	3	190
424	0.5	150	3	100
425	0.3	150	3	45
426	1	150	3	60
427	1.1	200	3	150
428	0.2	200	3	50
429	0.8	150	3	130
430	0.2	200	3	50
431	0.9	150	3	140
432	0.2	200	3	60
433	0.4	700	2.4	70
434	0.1	150	3	50
435	1.3	150	3	190
436	0.4	150	3	95
437	0.5	700	2.4	100
438	0.9	150	3	180
439	0.7	150	3	190
440	1.1	200	3	260
441	1.3	200	3	195
442	0.8	250	2.8	275
443	0.6	800	2.2	160
444	0.9	150	3	130
445	0.9	150	3	120
446	0.2	200	3	40
447	0.8	150	3	125
448	0	200	3	35
449	0.6	800	2.2	140
450	0.6	800	2.2	130
451	0.7	150	3	130
452	0.6	150	3	140
453	0	150	3	90
454	0.6	150	3	130
455	0.6	150	3	140
456	0	200	3	40
457	0.6	800	2.2	150
TOTAL	262.0			47,855

Table K.2 Area, Population and Population Density by Kelurahan
in West Jakarta Sewerage Development Area

Kelurahan	Area (ha)	Population (Person)		Target Population	Population Density (Person/ha)	
		1988	2010		1988	2010
Kembangan	681	32,879	122,500	204,300	48.3	179.9
Kedoya	620	55,662	151,000	186,000	89.8	243.5
Duri Kepa	386	40,631	96,800	115,800	105.3	250.8
Maruya Ilir	520	27,201	93,200	156,000	52.3	179.2
Maruya Udik	285	17,892	55,900	85,500	62.8	196.1
Sreng Seng	492	19,251	87,700	147,600	39.1	178.3
Kebon Jeruk	314	38,833	77,700	94,200	123.7	247.5
Total	3,298	232,349	684,800	989,400	70.5	207.6

Table K.3 Area, Population and Population Density by Kelurahan in East Jakarta Sewerage Development Area

Kelurahan	Area (ha)	Sewerage Development Area (ha)	Population (person)		Population Density (person/ha)	Design Population Density (person/ha)	Design Population (person)
			1988	2010			
Jatinegara	123.5	123.5	26,645	39,600	215.8	320.6	39,600
Kaum							
Pondokbambu	499.7	499.7	50,391	102,700	100.8	205.5	149,900
Klender	308.9	308.9	55,955	87,400	181.1	282.9	92,700
Durenawit	454.3	454.3	37,393	82,100	82.3	180.7	136,300
Malakasari	138.2	138.2	38,388	52,300	277.7	378.4	52,300
Pondokkelapa	572.2	572.2	30,776	90,100	53.8	157.5	171,600
Malakajaya	98.3	98.3	49,488	59,800	503.3	608.2	59,800
Pondokkopi	206.0	206.0	30,992	44,200	150.4	214.6	61,800
Jatinegara	659.8	229.8	43,563	112,600	189.6	490.1	112,600
Penggilingan	448.5	318.5	37,337	78,700	117.2	247.1	95,500
Pulogelang	685.8	685.8	40,446	98,400	59.0	143.5	205,700
Total	4,195.2	3,635.2	441,374	847,900	121.4	233.2	1,177,800

Note < 1: Population Density = Population / Sewerage Development Area

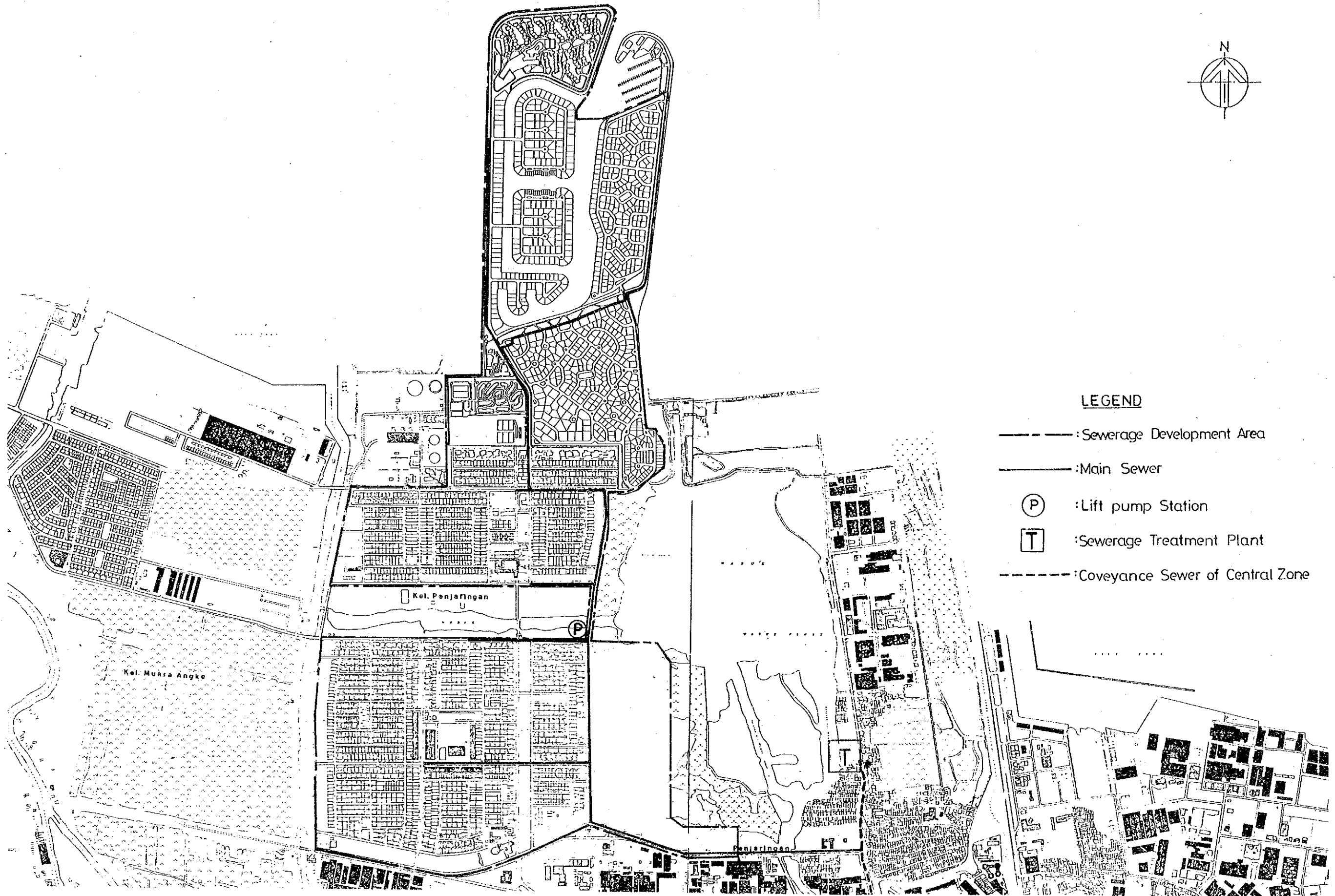


FIG. K.1

SEWERAGE DEVELOPMENT FOR PLUIT HOUSING ESTATE

THE STUDY ON URBAN DRAINAGE AND WASTE WATER DISPOSAL PROJECT IN THE CITY OF JAKARTA

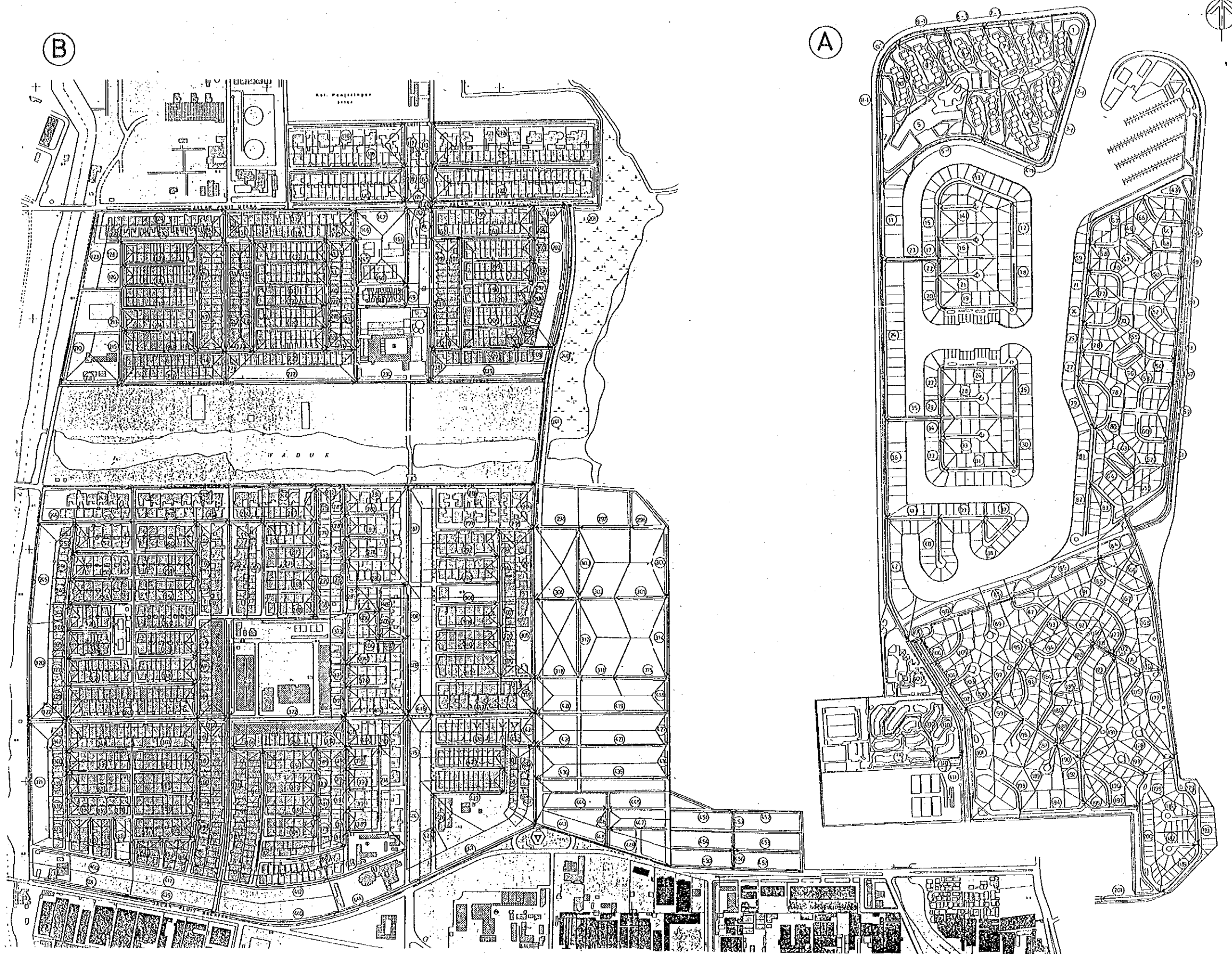
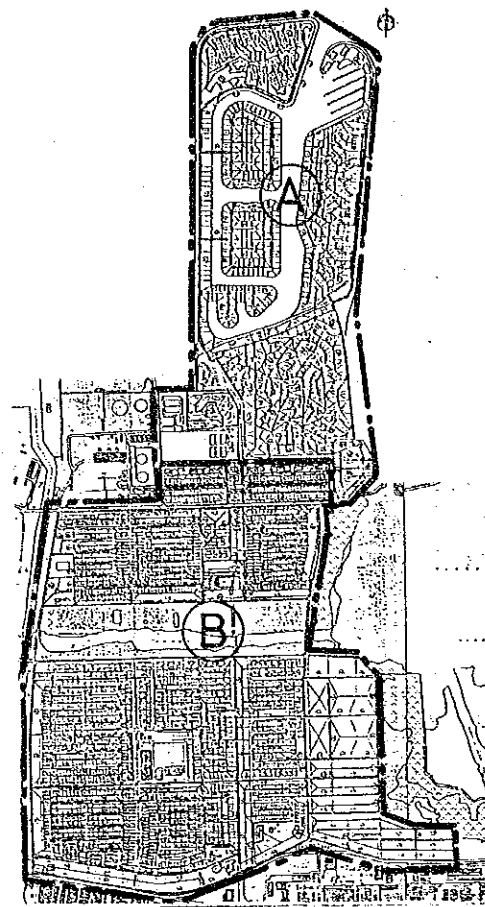


FIG. K.2

PROPOSED SEWER NETWORKS IN PLUIT SEWERAGE
DEVELOPMENT AREA

THE STUDY ON URBAN DRAINAGE AND WASTE WATER DISPOSAL PROJECT IN THE CITY OF JAKARTA

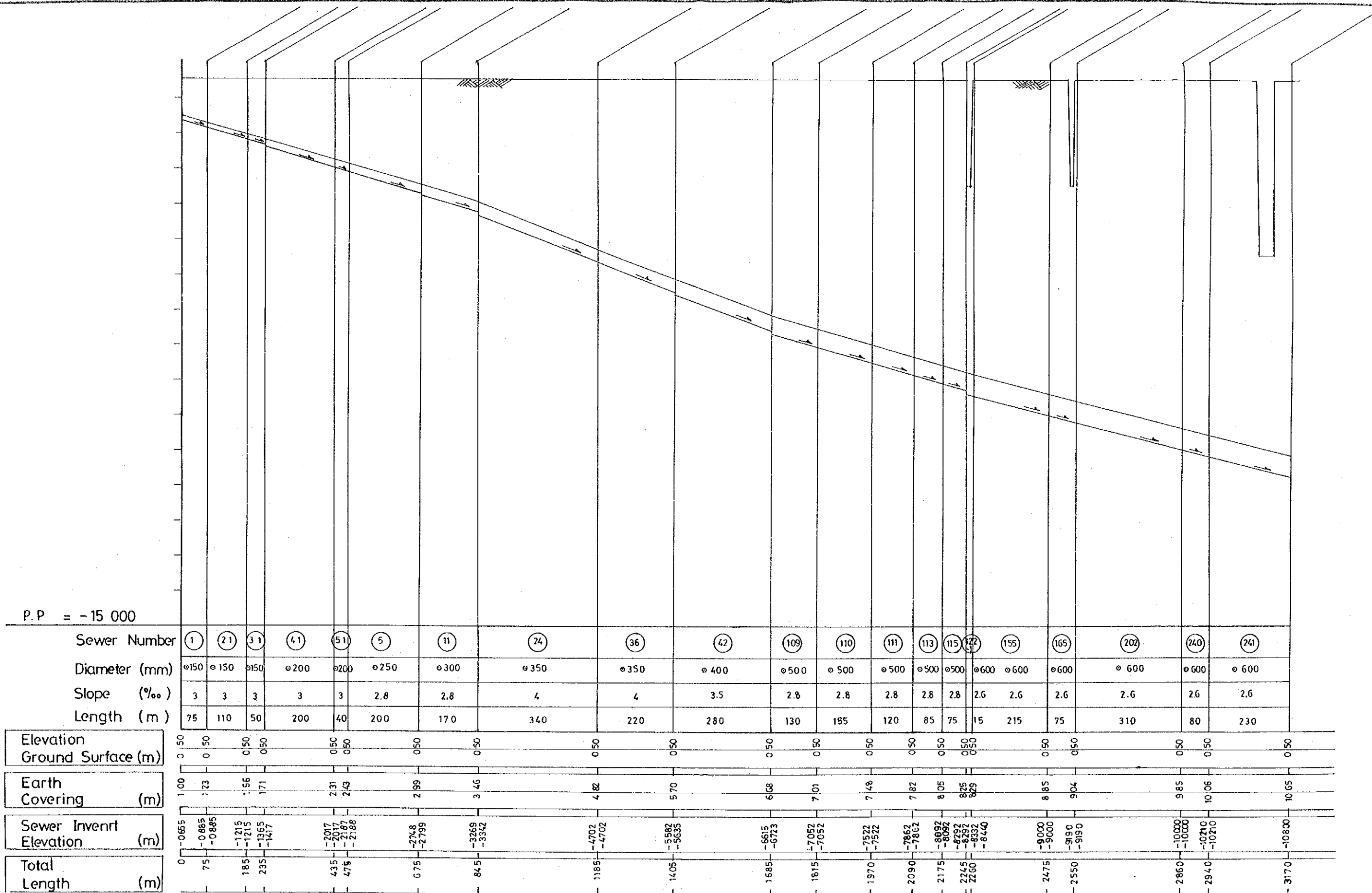


FIG. K.3 (1) GROUND PLAN AND SECTION PLAN FOR SEWER SYSTEM
THE STUDY ON URBAN DRAINAGE AND WASTE WATER DISPOSAL PROJECT IN THE CITY OF JAKARTA

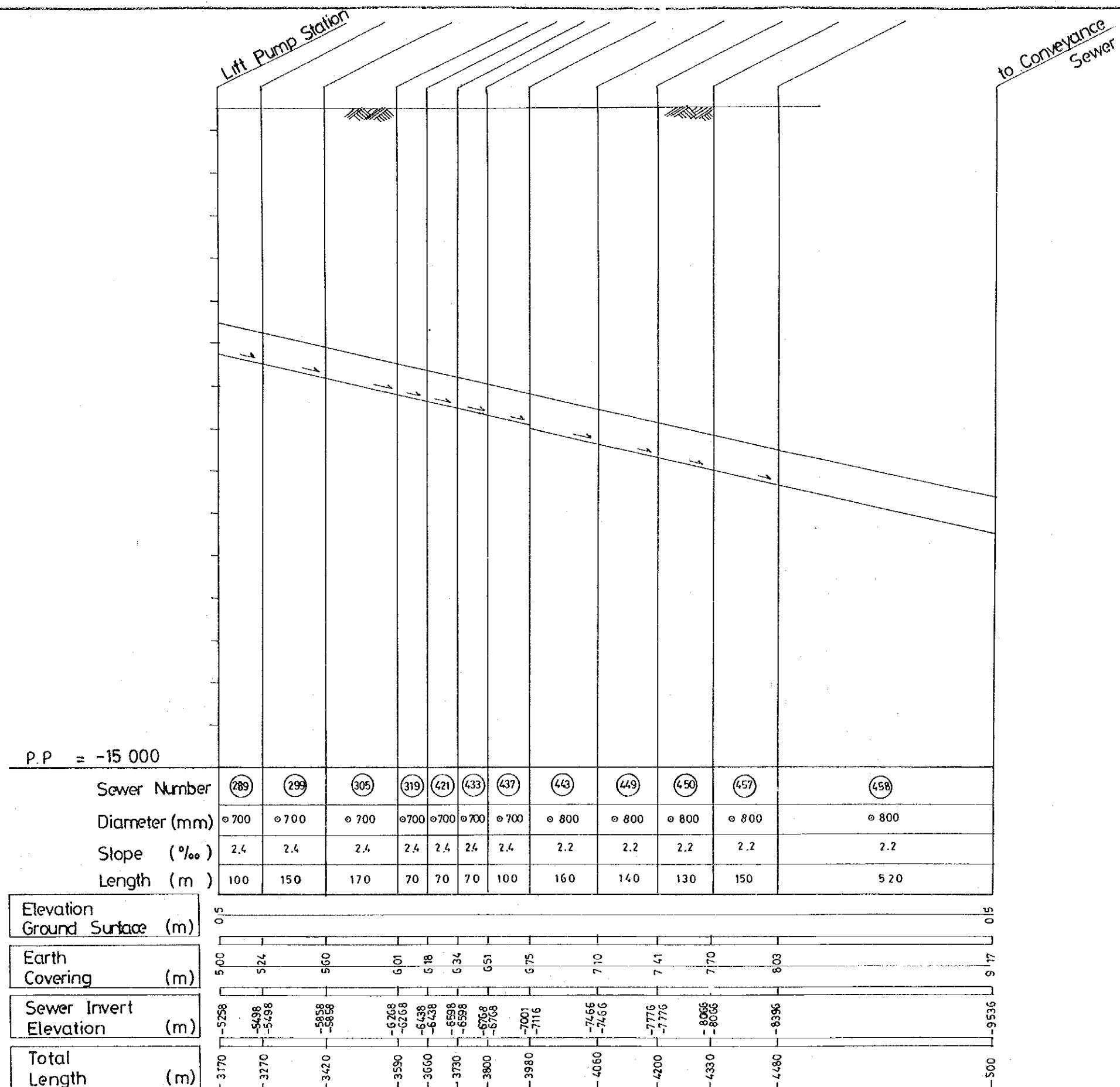


FIG. K.3(2)

GROUND PLAN AND SECTION PLAN FOR SEWER SYSTEM

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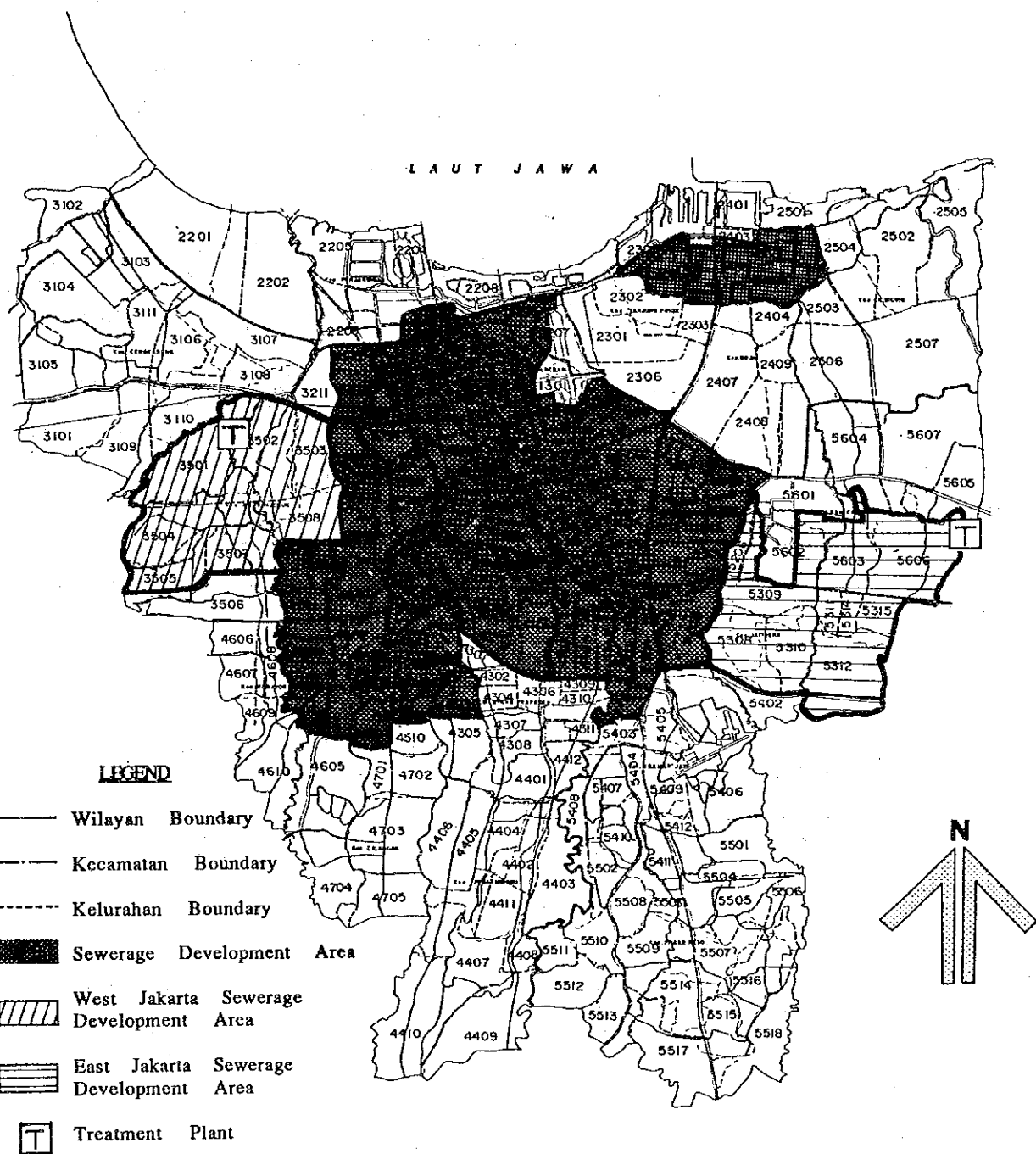


FIG. K.4

LOCATION OF WEST JAKARTA AND EAST JAKARTA
SEWERAGE DEVELOPMENT AREA

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