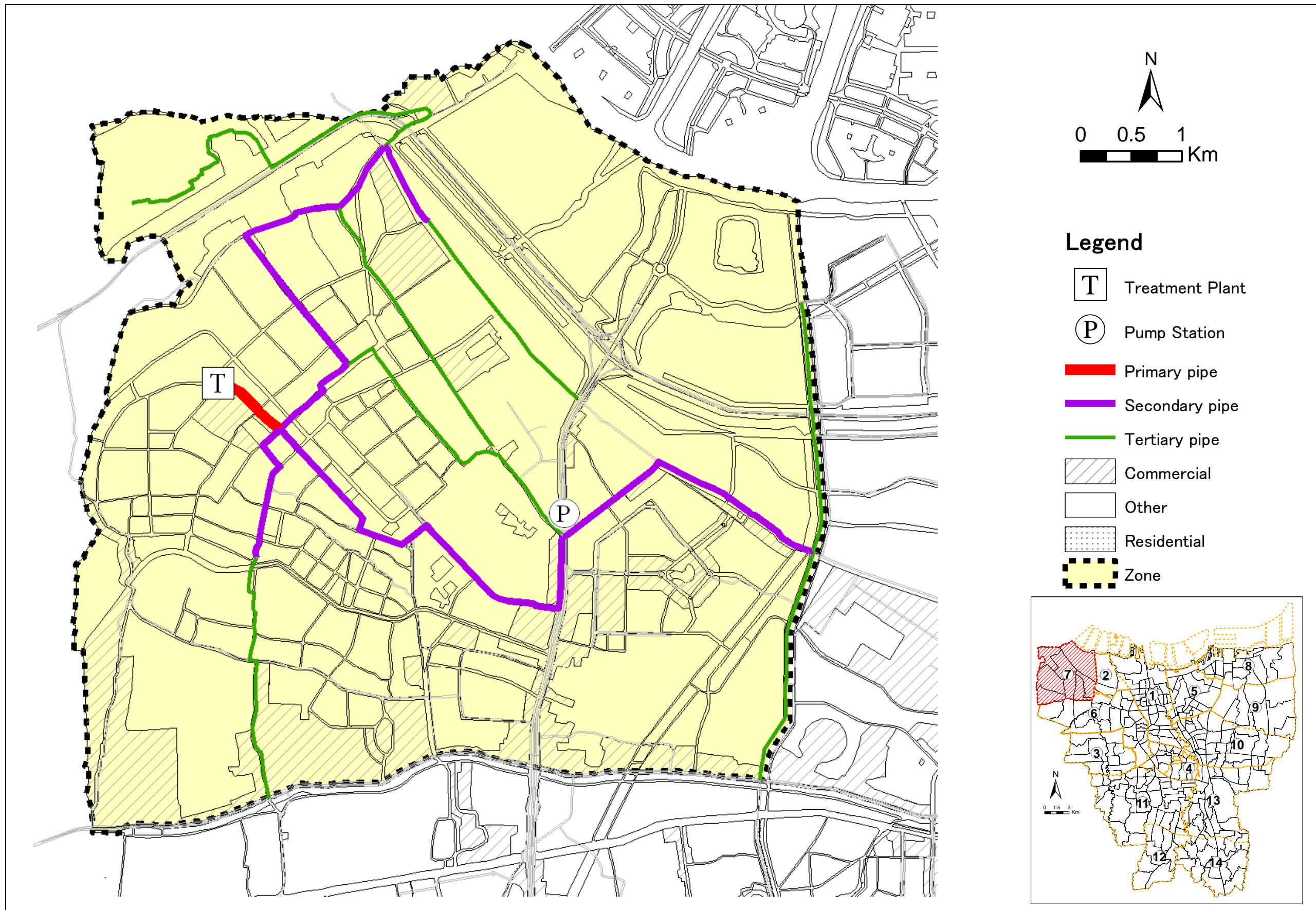


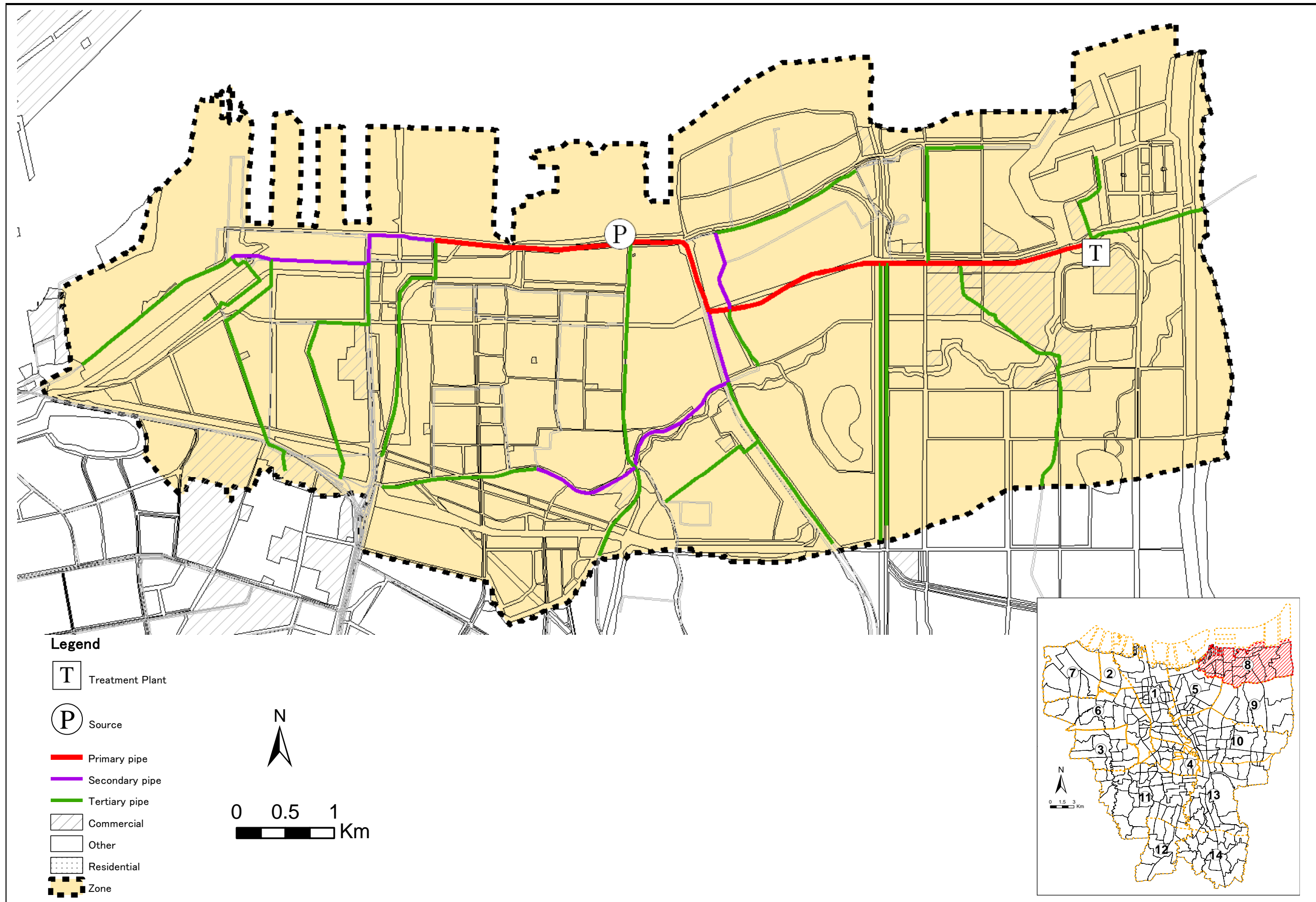
Source: JICA expert team

Figure S/R-D7-9 Main Sewerage Facility Plan in Sewerage Zone No. 6



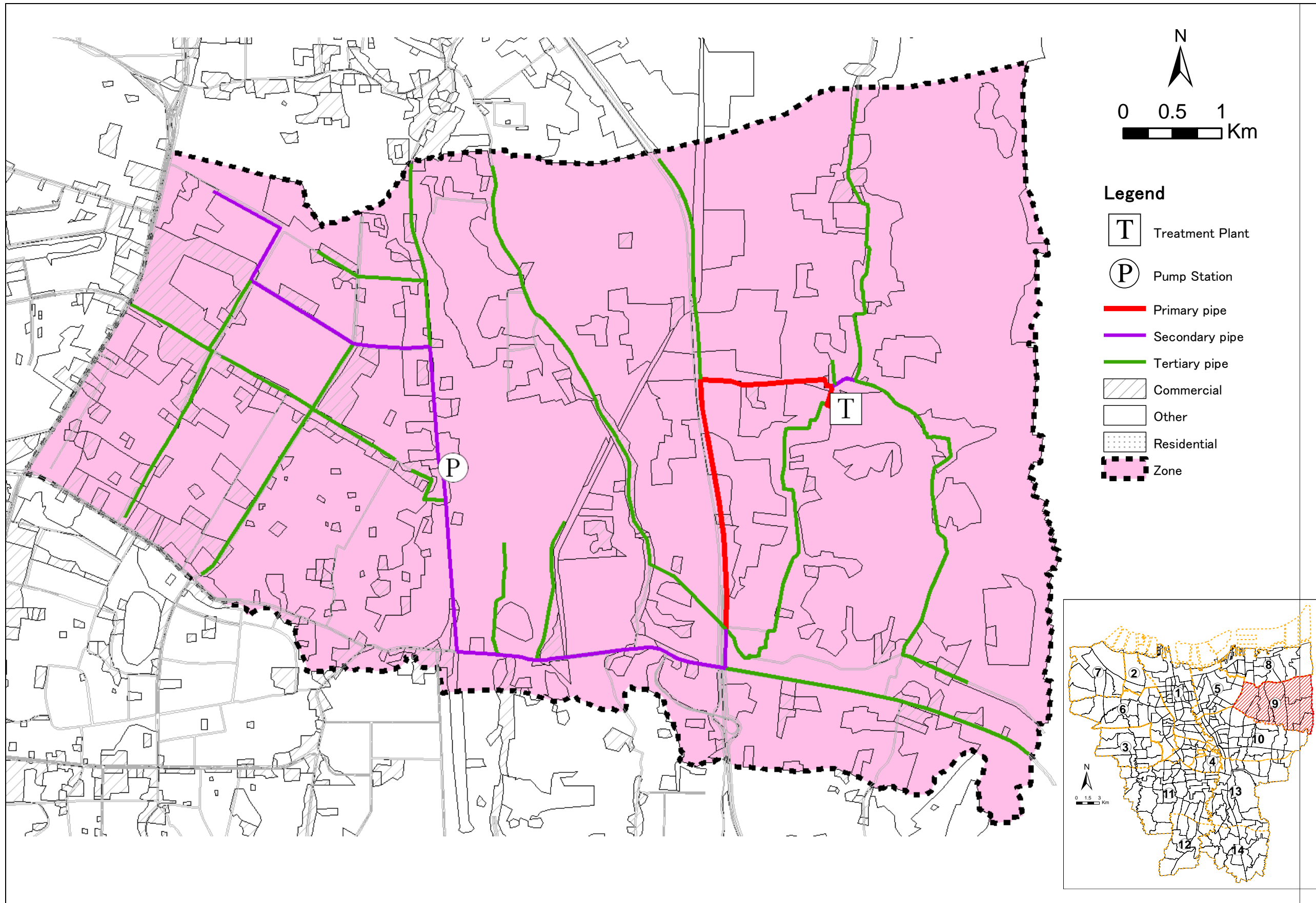
Source: JICA expert team

Figure S/R-D7-10 Main Sewerage Facility Plan in Sewerage Zone No. 7



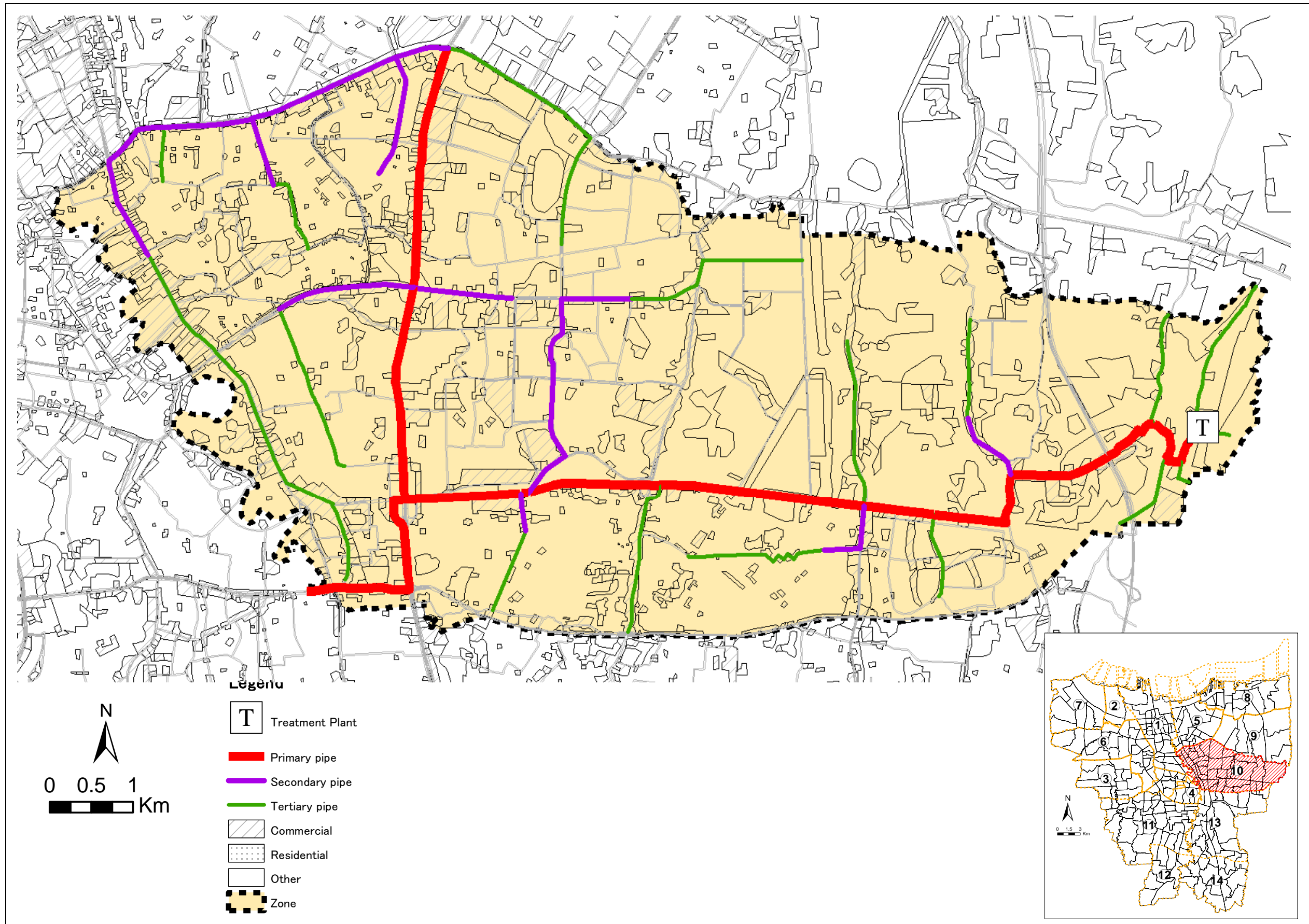
Source: JICA expert team

Figure S/R-D7-11 Main Sewerage Facility Plan in Sewerage Zone No. 8



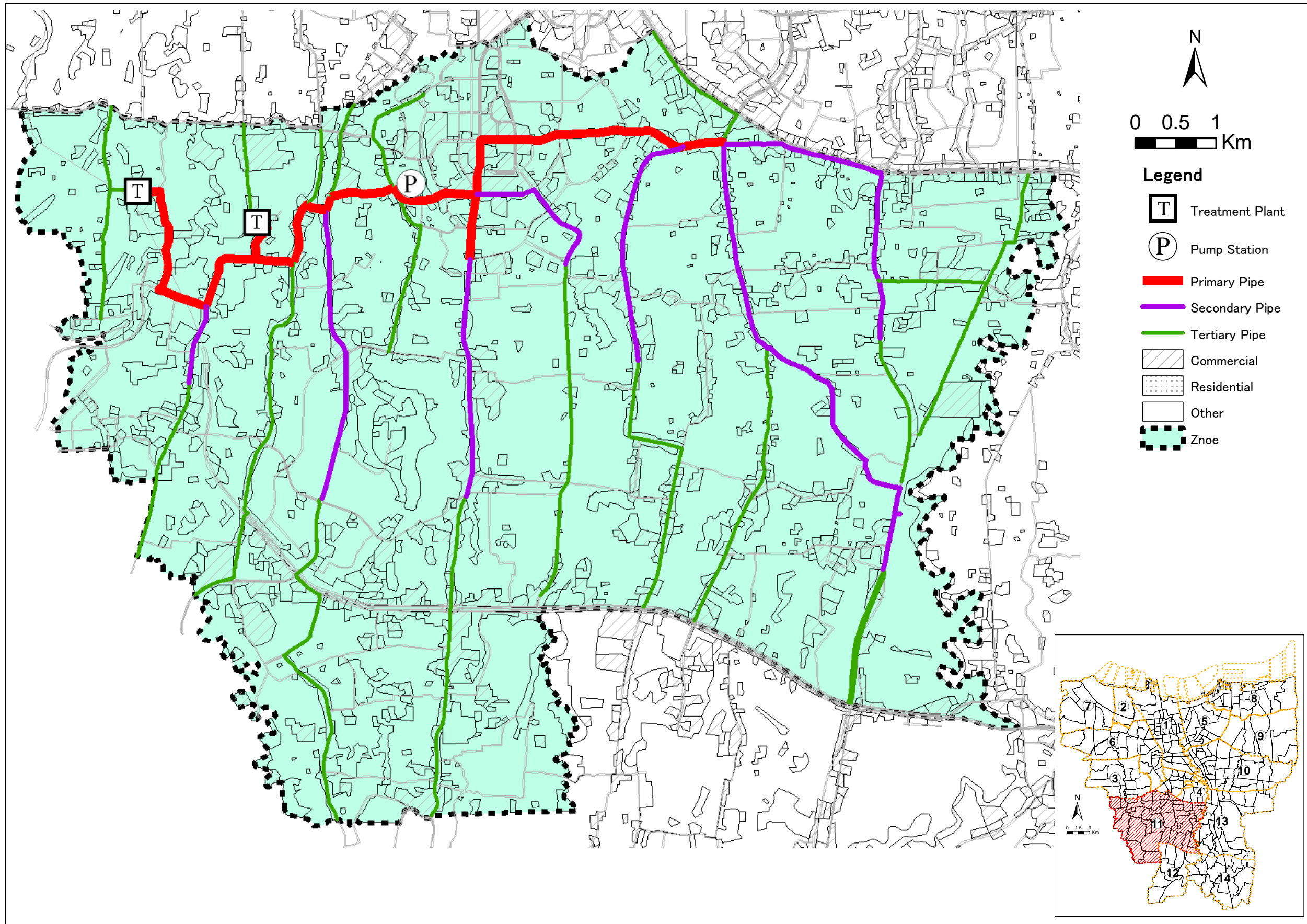
Source: JICA expert team

Figure S/R-D7-12 Main Sewerage Facility Plan in Sewerage Zone No. 9



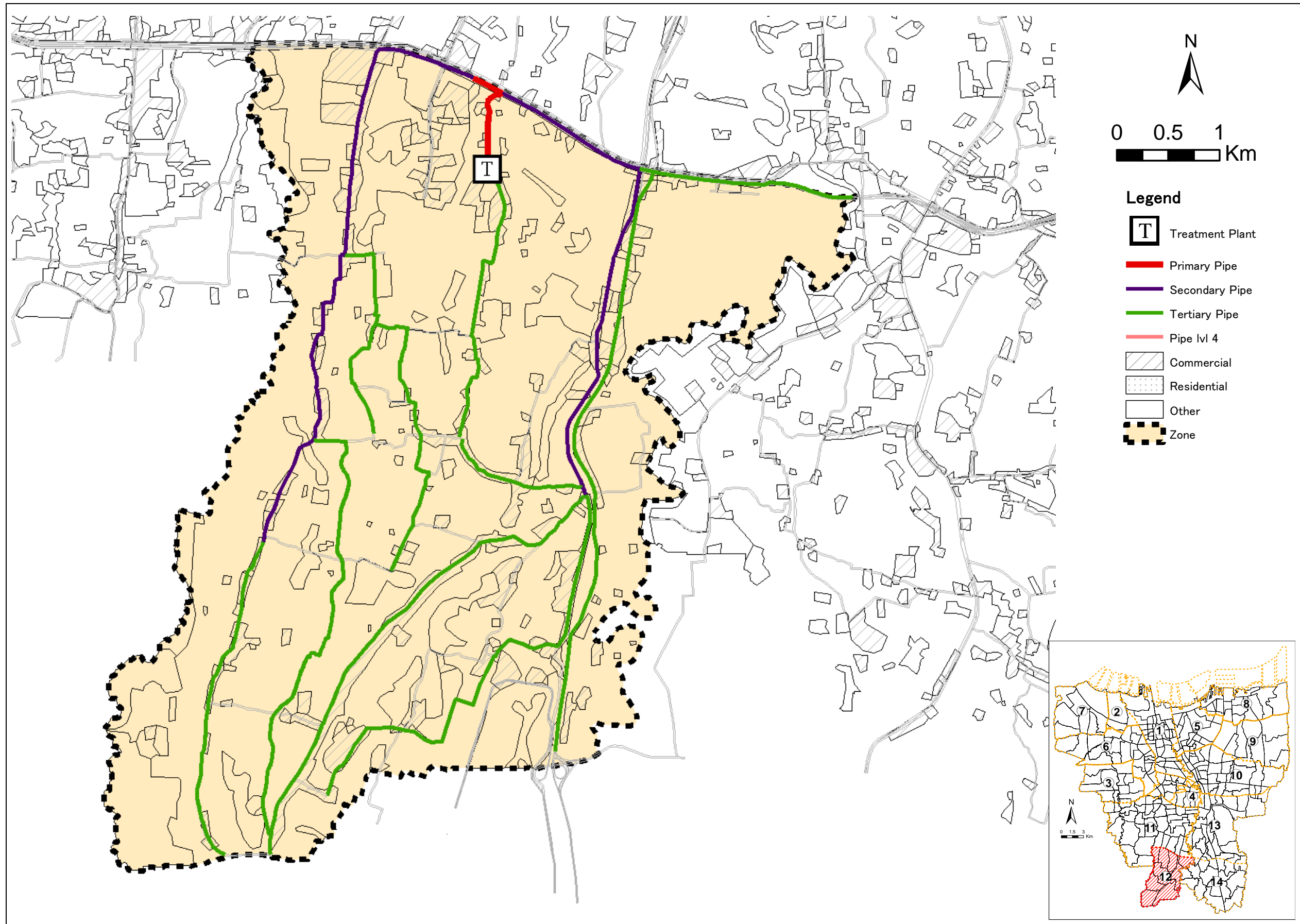
Source: JICA expert team

Figure S/R-D7-13 Main Sewerage Facility in Sewerage Zone No. 10



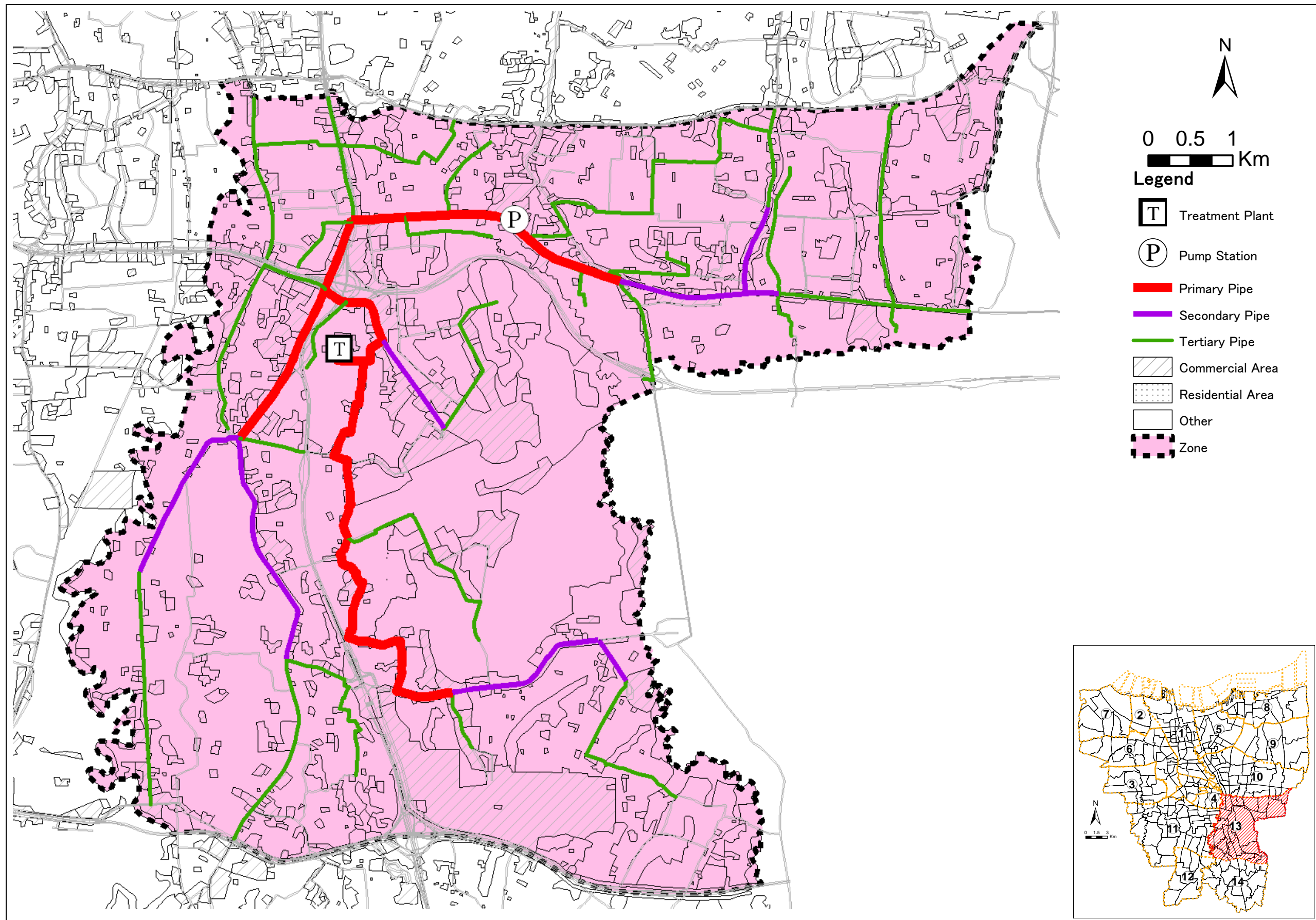
Source: JICA expert team

Figure S/R-D7-14 Main Sewerage Facility Plan in Sewerage Zone No. 11



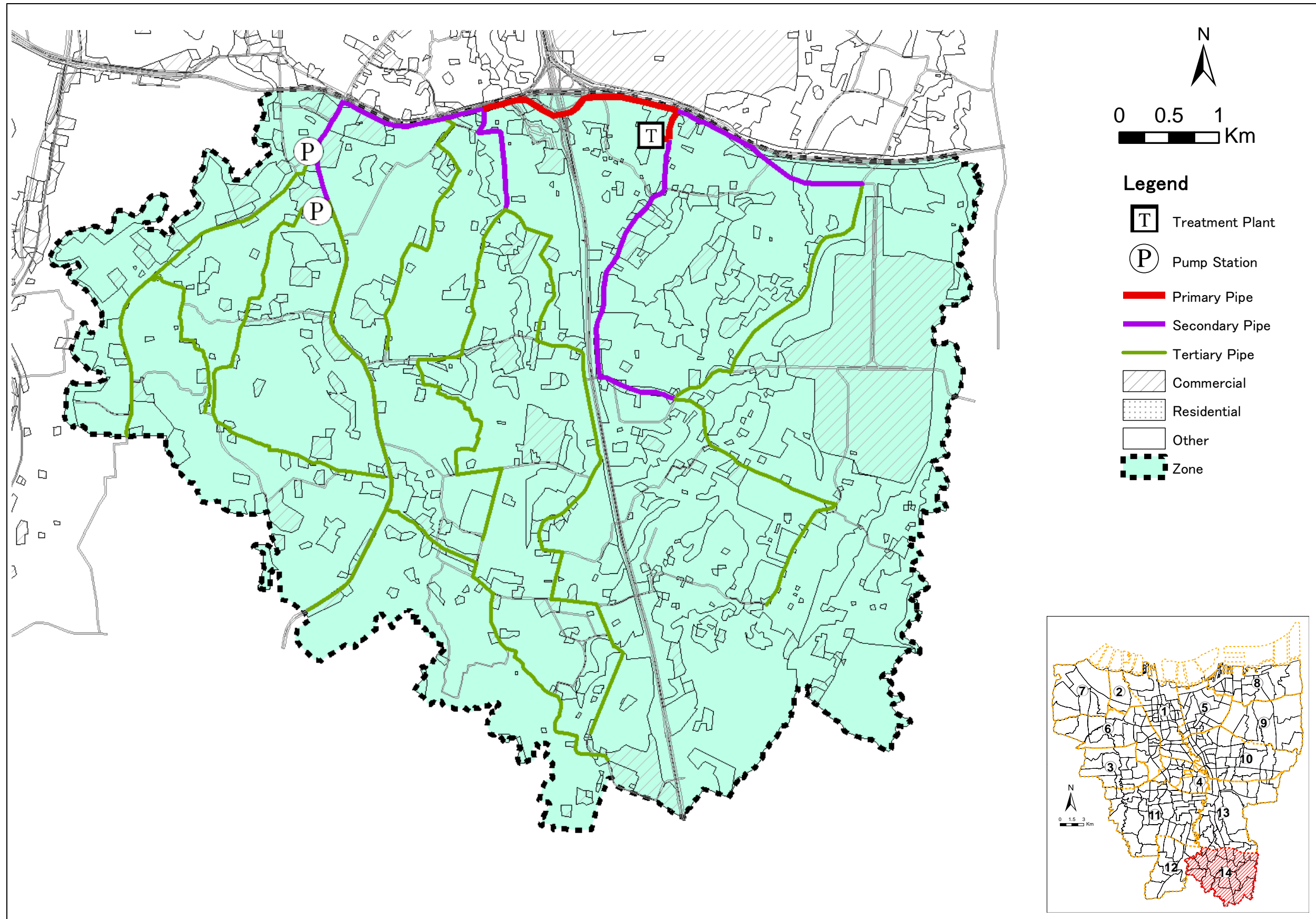
Source: JICA expert team

Figure S/R-D7-15 Main Sewerage Facility Plan in Sewerage Zone No. 12



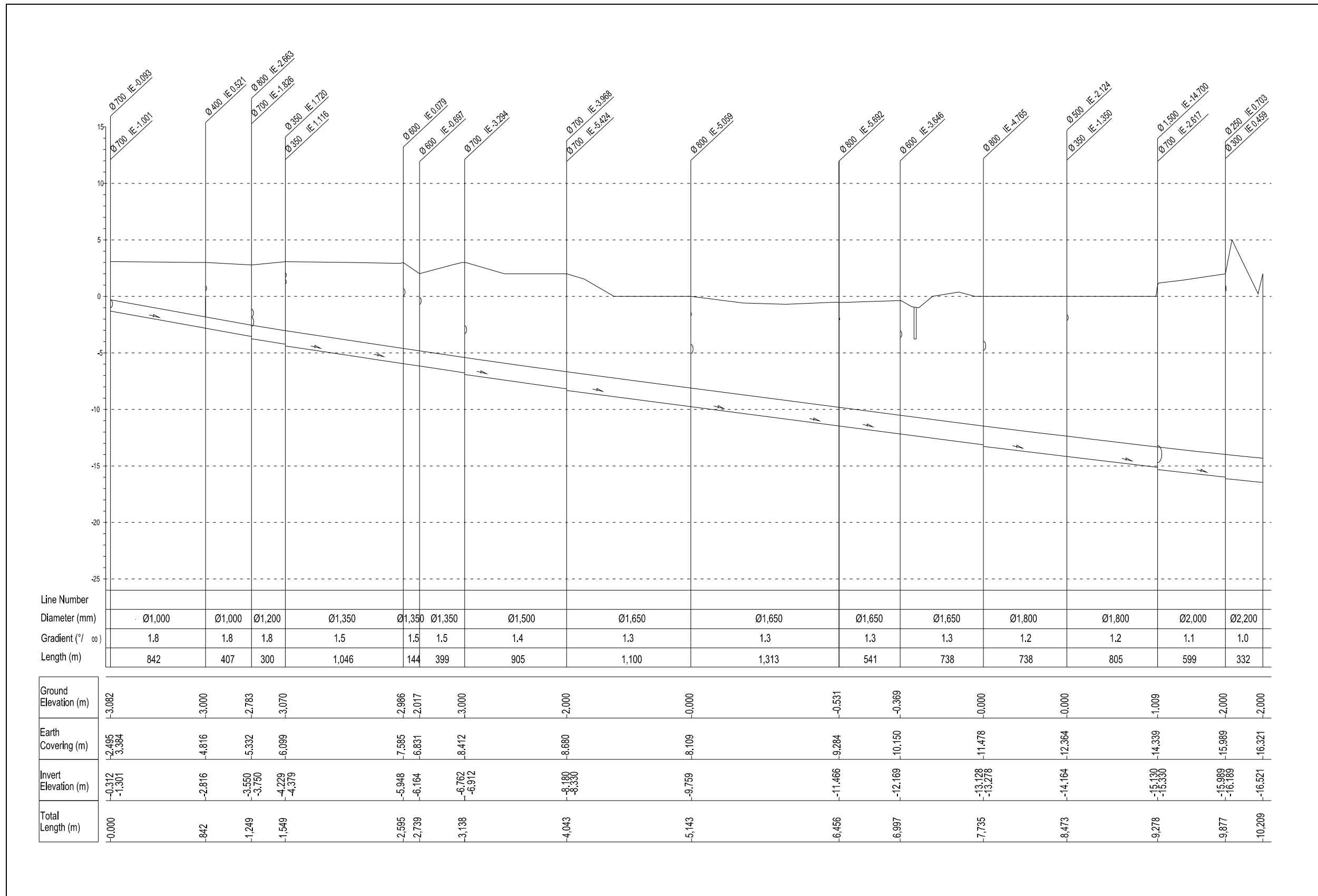
Source: JICA expert team

Figure S/R-D7-16 Main Sewerage Facility Plan in Sewerage Zone No. 13



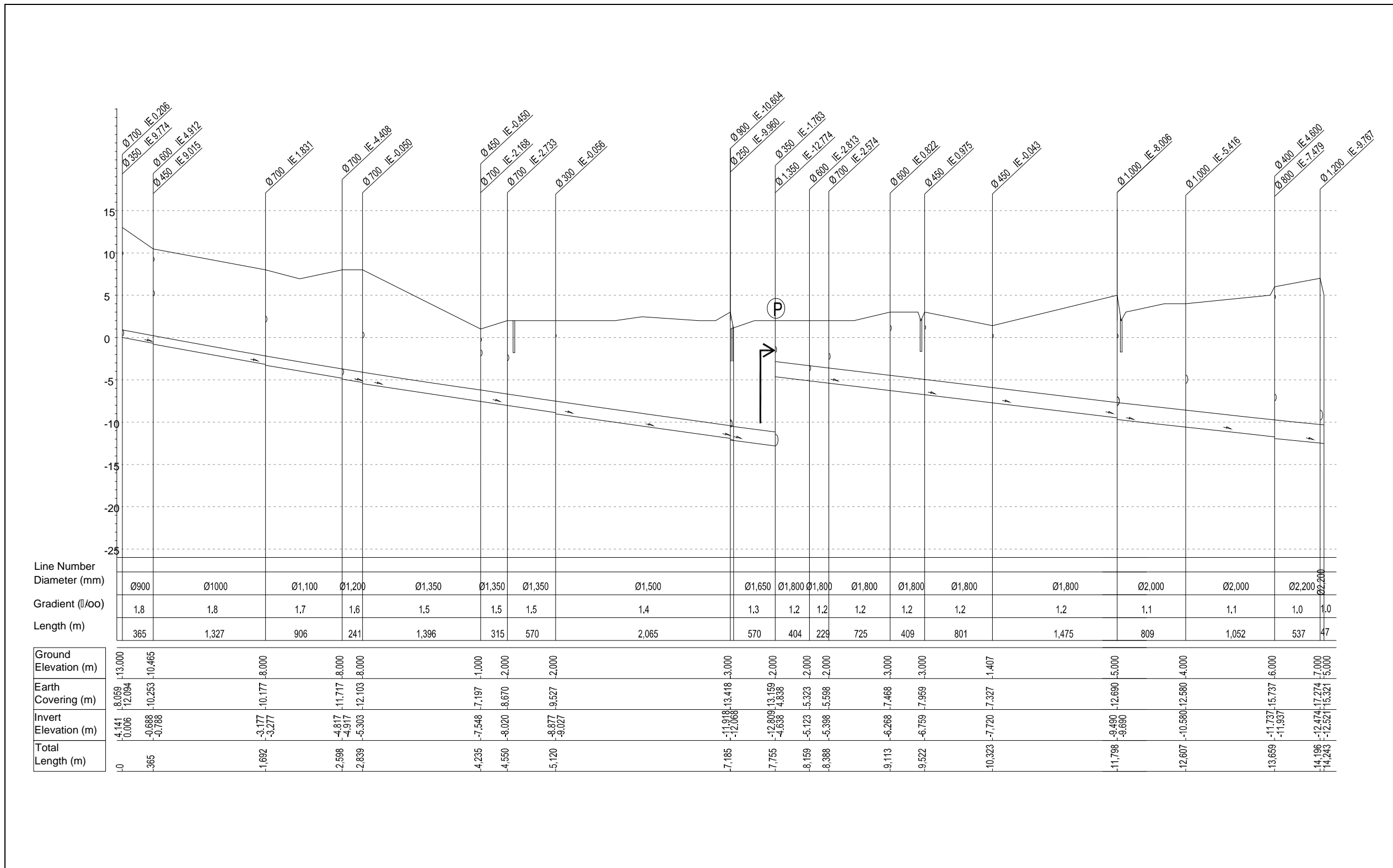
Source: JICA expert team

Figure S/R-D7-17 Main Sewerage Facility Plan in Sewerage Zone No. 14



Source: JICA expert team

Figure S/R-D7-18 Profile of Trunk Sewer in Sewerage Zone No. 1



Source: JICA expert team

Figure S/R-D7-19 Profile of Trunk Sewer in Sewerage Zone No. 6

Table S/R-D7-13 Computation of Sewer Design for Sewerage Zone No. 7

Table with 18 columns: Node, Population, Subzone, Micro, Sewerage Area* (ha), Average Flow (m3/d), Peak Factor, Max. Flow (m3/s), Diameter, Slope (%), V (m/s), Cap. (m3/s), Allowance, Length, Depth, Surface, Depth S at Top, Depth S at Invert, Depth E in Top, Depth E in Invert, Depth S Edge, Depth S Connect.

Table S/R-D7-14 Computation of Sewer Design for Sewerage Zone No. 8

Table with 18 columns: Node, Population, Subzone, Micro, Sewerage Area* (ha), Average Flow (m3/d), Peak Factor, Max. Flow (m3/s), Diameter, Slope (%), V (m/s), Cap. (m3/s), Allowance, Length, Depth, Surface, Depth S at Top, Depth S at Invert, Depth E in Top, Depth E in Invert, Depth S Edge, Depth S Connect.

Table S/R-D7-15 Computation of Sewer Design for Sewerage Zone No. 9

Table with 18 columns: Node, Population, Subzone, Micro, Sewerage Area* (ha), Average Flow (m3/d), Peak Factor, Max. Flow (m3/s), Diameter, Slope (%), V (m/s), Cap. (m3/s), Allowance, Length, Depth, Surface, Depth S at Top, Depth S at Invert, Depth E in Top, Depth E in Invert, Depth S Edge, Depth S Connect.

Table S/R-D7-16 Computation of Sewer Design for Sewerage Zone No. 10

Table with 18 columns: Node, Population, Subzone, Micro, Sewerage Area* (ha), Average Flow (m3/d), Peak Factor, Max. Flow (m3/s), Diameter, Slope (%), V (m/s), Cap. (m3/s), Allowance, Length, Depth, Surface, Depth S at Top, Depth S at Invert, Depth E in Top, Depth E in Invert, Depth S Edge, Depth S Connect.

D8 On-site Sanitation System Planning, Design and O&M

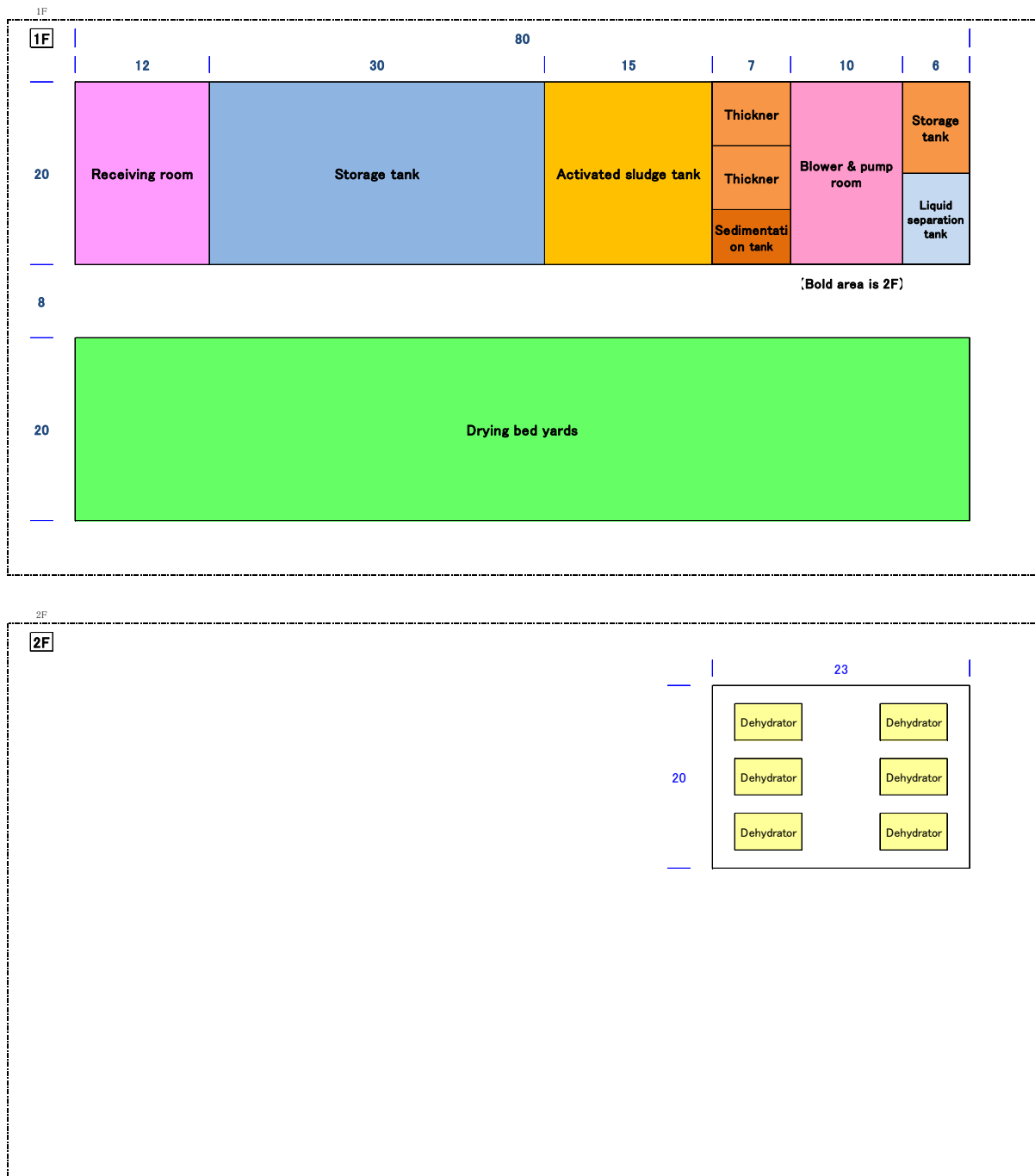


Figure S/R-D8-1 Proposed Layout Plan for New Sludge Treatment Plant

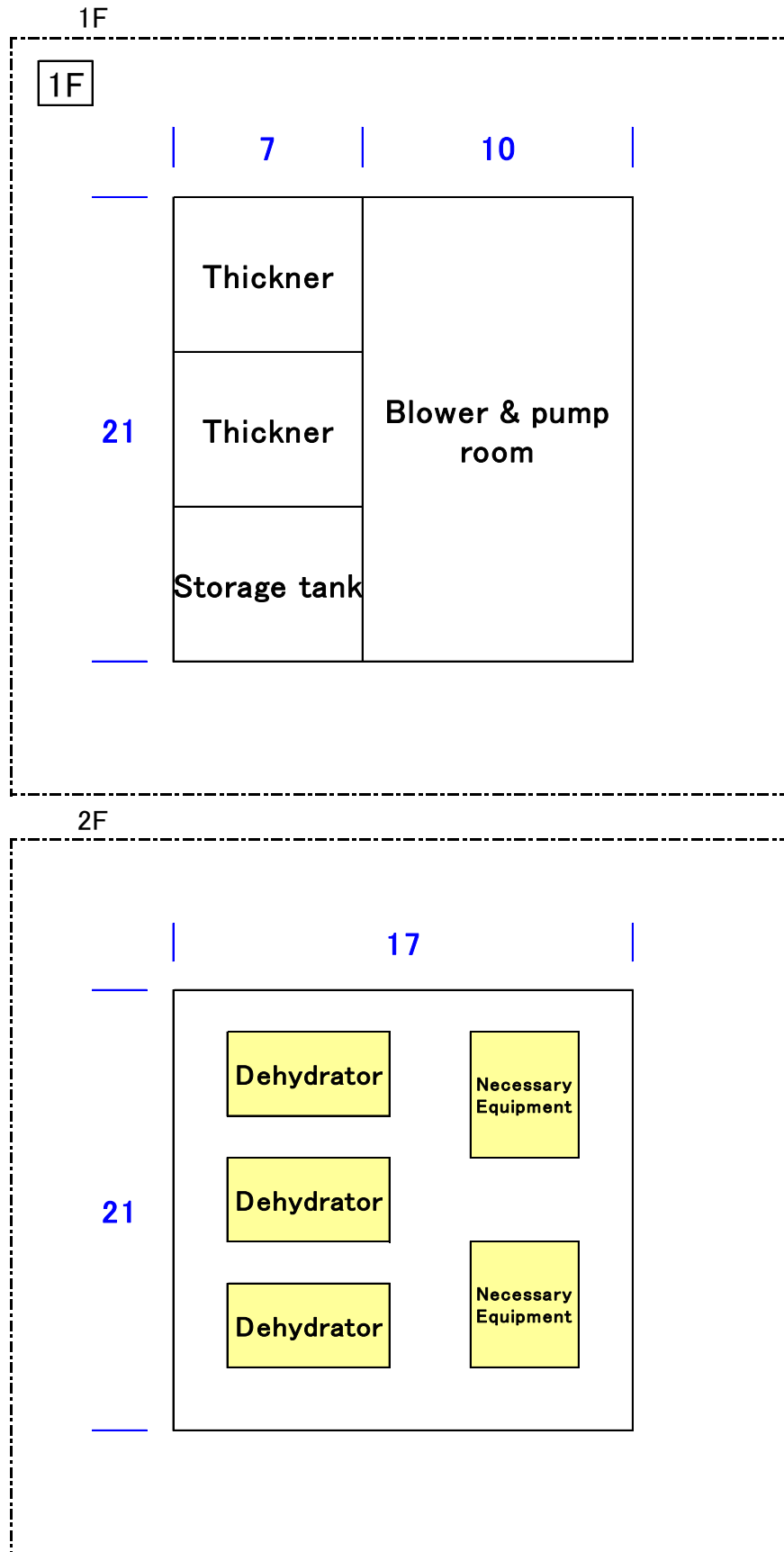


Figure S/R-D8-2 Layout Plan (Rehabilitation of Existing Sludge Treatment Plant)

D9 Implementation Programme

D9.1 Construction Cost and O&M Cost

D9.1.1 Basis for Calculation of Construction Cost

Estimation for construction cost of sewerage facilities has been conducted on the basis of the following conditions. Especially, pipe installation cost has been calculated for three categories such as open-cut method, pipe jacking method and shield tunneling method because the cost differs depending on the conditions such as pipe diameters, installation depth, soil properties, etc.

Table S/R-D9-1 Basis for Calculating Construction Costs for Sewerage System

Item	Specification	Basis for Estimation						
Pipeline Installation Cost	House Connection Cost	φ 150mm	Actual records of DSDP-II					
	Main Sewer Cost	Open-cut Method (φ 200mm- φ 800mm)	Actual records of DSDP-II and calculation (see "Remark")					
		Pipe Jacking Method (φ 900mm- φ 1,200mm)	Software for cost estimation on the basis that construction shall be executed in Japan					
		Shield Tunneling Method (φ 1,350mm more)	Construction costs Estimate by the integrated software assuming the construction in Japan					
Pump Station Construction Cost		Actual records of DSDP-II and calculation						
WWTP Construction Cost		Actual records of Malaysia and calculation (see "Remark")						
Remark								
Basis for Cost Estimation in the New M/P								
[WWTP]								
Country	Process Type	Capacity m ³ /day	Contract Price JPY	Unit Price (Direct Cost)		Remark		
				JPY/m ³	IDR/m ³			
Viet Nam	CAS	140,000	11,727,000,000	72,875	7,825,000	Completed in 2009		
Malaysia	CAS	88,000		52,776	5,667,000	Refer to Note 1 to 3		
	CAS	94,250		51,448	5,524,000	Refer to Note 1 to 3		
	CAS	93,000		53,582	5,753,000	Refer to Note 1 to 3		
New M/P (Zone No.1)		198,000		70,628	7,584,000			
Note:				JY1.0 = IDR107.38 (average from Mar. to Aug. 2011)				
1. Unit price of New M/P includes price escalation (+16%) of Malaysian case and cost increase due to different type of treatment process (+ 30%) shown below.								
- Treatment process in Malaysia: Conventional activated sludge process (CAS)								
- Treatment process in the New M/P: Step-feed biological nitrogen removal process as one example of advanced treatment processes								
2. Contract price consists of direct construction cost, administration cost (3%) and contingency (10%).								
3. Unit price is only for direct construction cost not including the administration cost and contingency.								
[Sewers]								
Country	Area ha	Length m	Pipe Dia. mm	Material	Contract Price JPY	Unit Price (Direct Cost)		Remark
						JPY/m	IDR/m ³	
Sri Lanka	733	85,000			2,138,517,401	24,515	2,632,000	Estimated in 2009
					(Direct const. cost)			Refer to Note 1 below
New M/P (Zone No.1)	4901	758,239	200~2400	PVC/HP	17,636,310,300	23,260	2,497,000	Refer to Note 2 below
New M/P (Zone No.6)	5874	1,008,080	200~2400	PVC/HP	25,992,428,758	25,784	2,768,000	Refer to Note 2 below
Note:				JY1.0 = IDR107.38 (average from Mar. to Aug. 2011)				
1. Price escalation of Sri Lanka from 2009 to 2011 is assumed as 12%.								
2. The New M/P applies the unit cost of sewer installation work of DSDP-II in 2009. So price escalation of 12% should be taken into account.								

D9.1.2 Basis for Calculation of Pipe Diameter and Pipe Extension

(1) Basic Flow of Estimation Model of Pipe Length and Diameter

Pipe diameters for sewer network have been determined by equations applied in the preliminary design and based on the rough reexamination results. Pipe length and diameter are estimated using following basic flow diagram.

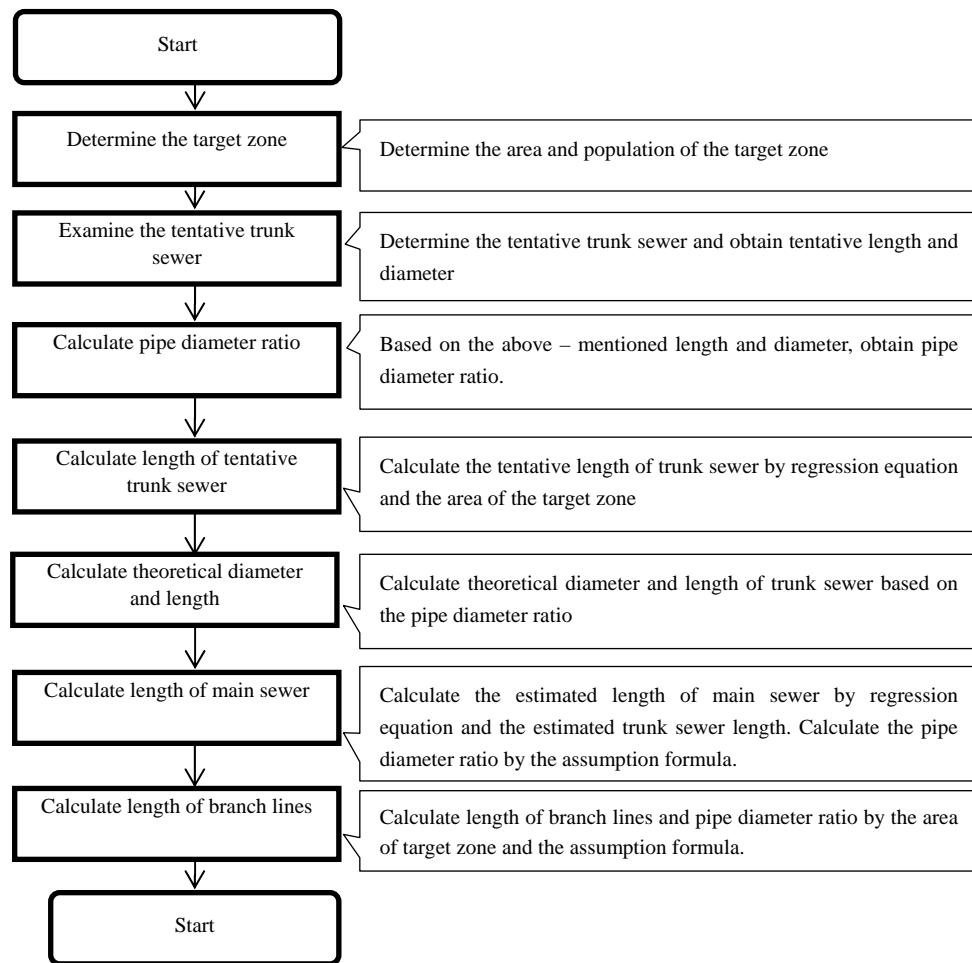


Figure S/R-D9-1 Basic Flow of Estimation Model

Characteristics of sewer network in each sewerage zone were assumed to reflect the rate of pipe diameter obtained from the examination of tentative trunk sewer.

Since the target population is constant regardless of the network location, the rate of pipe diameter is kept almost the same.

Note : Trunk sewer = ϕ 800mm- ϕ 2,400mm

Main sewer = ϕ 200mm- ϕ 700mm

Branch pipe = ϕ 200mm

(2) Estimation Model Pipe diameter and Bypass Extension

Relation among trunk sewer length, house connection length and zone area for Zone No.1 and Zone No.1 is shown below:

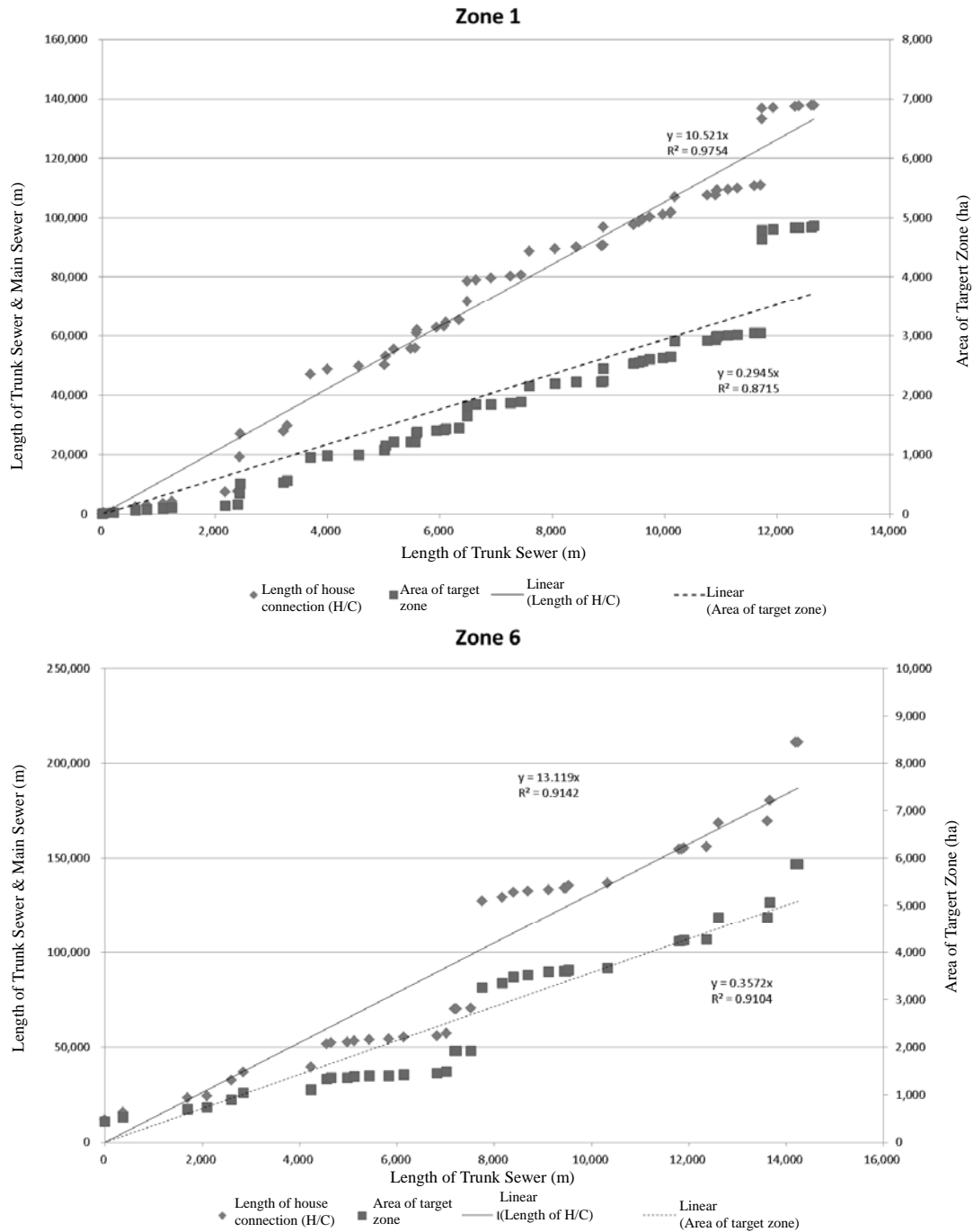


Figure S/R-D9-2 Relation among Trunk Sewer/ House Connection Length and Zone Area

Results of regression analysis are shown below:

Table S/R-D9-2 Results of Regression Analysis

Zone	Regression Equation of Trunk Sewer Length*	Correlation Coefficient	Regression Equation of Zone Area*	Correlation Coefficient
No.1	$Y1 = 10.52 x$	0.97	$Y2 = 0.295 x$	0.87
No.6	$Y1 = 13.11 x$	0.91	$Y2 = 0.357 x$	0.91

* Intercept = fixed as 0, determined by the least square method.

X: Length of trunk sewer (m)

Y1: Length of main sewer (m)

Y2: Area of zone (ha)

As a result of regression analysis, it is found that the length of main sewer and the area of zone to the length of trunk sewer are constant. According to the result of Zone No.6, the lengths of trunk sewer and main sewer are estimated as follows:

$$\text{Length of trunk sewer (m)} = \text{Area of zone (ha)} / 0.357$$

$$\text{Length of main sewer (m)} = (13.11 - 1) \times \text{Length of trunk sewer (m)}$$

In the New M/P, relation equation of trunk sewer obtained in the examination of Zone No.6 has been applied. This is because the equation obtained from Zone No.6 including the suburbs is considered more practicable than that obtained from Zone No.1.

(3) Trunk Sewer Length and Pipe Diameter

Trunk sewer length and pipe diameter were obtained by the following equation and rough examination:

$$\text{Trunk sewer length (m)} = \text{Area of zone (ha)} / 0.357$$

(4) Main sewer length and Pipe Diameter

Main sewer length is obtained from the following equation:

$$\text{Main sewer length} = (13.11 - 1) \times \text{Main sewer length (from the regression equation)}$$

In the model case, when the trunk sewer length is 1km, trunk sewer of 1km and main sewer of 12.1km will cover the zone area of 357ha. It was assumed that the zone is divided into five (5) blocks (200m in width: typical blocks of ordinary houses in DKI Jakarta and estimated from CAD drawing) and three main sewers are connected to the trunk sewer. The target population for the model case was obtained by the population density of 250 PE/ha applied in Zone No.6. Covering population to the pipe diameter was calculated through the parameter study based on the relation between the pipe diameters and the pipe slope.

$$357\text{ha} / 3(\text{systems}) = 119 \text{ ha (coverage area per system)}$$

$$119 \times 250 \text{ (PE/ha)} = 29,750 \text{ (coverage population per system)}$$

Table S/R-D9-3 Area and Length of Main Sewer for Each Pipe Diameter

Pipe Diameter	Population of Capacity	Area of Capacity (ha)	Ratio	1 System	3 Systems
200	1,088	4.35	4%	0.15	0.44
250	1,870	7.48	3%	0.11	0.32
300	3,110	12.44	4%	0.17	0.50
350	4,878	19.51	6%	0.24	0.72
400	7,153	28.61	8%	0.31	0.92
450	9,953	39.812	9%	0.38	1.14
500	13,642	54.57	12%	0.50	1.50
600	23,608	94.43	33%	1.35	4.05
700	29,750	119.00	21%	0.83	2.50
Total				4.03	12.09

(5) Estimation Model for Estimation of Branch Line Length

The model block was assumed as follows:

- ① The basic unit area of the block shall be 200m x 50m (ordinary housing block in Jakarta and estimated from CAD drawing) and the road where sewer can be installed is located at the center of the block.
- ② Main sewer shall be connected to the trunk line for the population which ϕ 200 can cover (1,000 PE in about 5ha).
- ③ The number of household in one block is assumed as 40 (area per household is about 250m²)
- ④ Road width is assumed as 6m.

- ⑤ Sewers shall be installed 10m before the most upstream area of the block (it is assumed that sewer installation is not required)

Table S/R-D9-4 Estimation Model Branchlet Extension Pipe

Item	5 blocks per formula	Per 5.68ha (m)	Per 1ha (m)
Branch Line Length	$5 \times (200+3-10)+(5-1) \times (50+6)+28$	1,217	214.11
Area of block	$(50+6) \times (200+3) \times 5$	5.68	1.00
Number of House Connection	$200/10 \times 2 \times 5$	200	35.19

Table S/R-D9-5 Number of Installing Pipe and Branch Pipe Extension of Each Sewerage Zones

Sewerage Zone	Population (PE)	Area (ha)	Green & Open Area (%)	Living space (ha)	Branch Line Length (m)	Number of House Connection (No.)
1	1,236,736	4,901	26.10%	3,622	620,377	101,952
2	149,042	1,376	24.90%	1,033	177,005	29,089
3	721,501	3,563	13.80%	3,071	526,077	86,455
4	290,796	935	18.70%	760	130,205	21,398
5	795,109	3,375	25.00%	2,531	433,572	71,253
6	1,465,718	5,874	20.80%	4,652	796,867	130,956
7	692,649	4,544	33.20%	3,035	519,926	85,444
8	1,100,137	4,702	29.10%	3,334	571,025	93,841
9	537,477	5,389	24.40%	4,074	697,841	114,682
10	1,549,252	6,289	20.70%	4,987	854,243	140,385
11	1,578,573	8,246	16.20%	6,910	1,183,624	194,515
12	555,385	3,172	32.90%	2,128	364,571	59,913
13	1,053,724	6,433	37.10%	4,046	693,092	113,902
14	617,269	4,605	37.60%	2,874	492,199	80,887
Total	12,343,368	63,404	24.80%	47,059	8,060,624	1,324,671

Table S/R-D9-6 Construction Cost for Sewerage Development Plan by each Zone (1/3)

*** Expenditure**

(1) Total Construction Cost; Initial Construction Cost and Facilities Replacement Cost from 2013 to 2050

Unit : Million IDR

Items	Cost	Zone No.														
		Total	1	2	3	4	5	6	7	8	9	10	11	12	13	14
A. Construction Cost	Direct Construction Cost plus Indirect Construction Cost	56,125,784	5,127,423	946,911	3,046,184	520,238	3,398,813	6,923,407	3,263,191	4,620,518	3,558,238	7,327,577	7,113,142	2,660,143	4,598,258	3,021,741
a. Direct Construction Cost		49,668,836	4,537,543	837,974	2,695,738	460,388	3,007,799	6,126,909	2,887,780	4,088,954	3,148,883	6,484,581	6,294,816	2,354,109	4,069,255	2,674,108
(1)House Connection Cost		4,694,090	361,275	103,078	306,360	75,824	252,490	464,054	302,778	332,536	406,387	497,467	689,282	212,307	403,621	286,631
(2)Collection Sewer Line	Tertiary and Secondary	10,144,598	807,717	221,294	655,001	162,386	542,084	1,018,759	652,608	715,263	872,267	1,066,179	1,474,874	464,907	871,896	619,363
	Main	9,990,725	373,380	220,863	578,872	148,567	536,474	761,287	732,571	782,829	912,846	1,015,699	1,318,783	766,913	1,059,820	781,821
	Trunk	2,546,535	124,359	85,257	125,640	62,690	138,565	294,624	291,042	138,492	138,774	161,779	405,047	199,038	233,354	147,874
	Conveyance	3,018,448	588,331	0	125,533	10,921	142,528	716,397	24,552	175,848	134,121	507,455	326,184	35,968	183,643	46,967
	Sub-total	25,700,306	1,893,787	527,414	1,485,046	384,564	1,359,651	2,791,067	1,700,773	1,812,432	2,058,008	2,751,112	3,524,888	1,466,826	2,348,713	1,596,025
(3)Lift Pump Station	Civil/Architect Works	233,930	0	12,733	7,220	0	9,845	53,547	12,534	17,110	9,422	20,798	60,549	0	17,613	12,559
	Mecanical Facility	187,143	0	10,187	5,776	0	7,876	42,838	10,027	13,688	7,537	16,638	48,439	0	14,090	10,047
	Electrical Facility	46,781	0	2,546	1,444	0	1,969	10,709	2,506	3,422	1,884	4,159	12,109	0	3,522	2,511
		Sub-total	467,854	0	25,466	14,440	0	19,690	107,094	25,067	34,220	18,843	41,595	121,097	0	35,225
(4)Wastewater Treatmentmment Plant	Civil/Architect Works	7,496,784	750,816	91,008	436,080	0	481,584	891,120	420,912	667,392	326,112	1,118,640	959,376	337,488	640,848	375,408
	Mecanical Facility	5,997,427	600,653	72,806	348,864	0	385,267	712,896	336,730	533,914	260,890	894,912	767,501	269,990	512,678	300,326
	Electrical Facility	1,499,357	150,163	18,202	87,216	0	96,317	178,224	84,182	133,478	65,222	223,728	191,875	67,498	128,170	75,082
		Sub-total	14,993,568	1,501,632	182,016	872,160	0	963,168	1,782,240	841,824	1,334,784	652,224	2,237,280	1,918,752	674,976	1,281,696
(5)Facilities Replacement (from 2013 to 2050)	Mecanical Facility	2,838,223	600,653	0	0	0	314,515	755,734	0	438,081	0	729,240	0	0	0	0
	Electrical Facility	974,795	180,196	0	17,732	0	98,286	226,720	17,338	136,900	13,421	227,887	40,797	0	0	15,519
		Sub-total	3,813,018	780,849	0	17,732	0	412,800	982,454	17,338	574,982	13,421	957,127	40,797	0	0
b. Indirect Construction Cost	13% of Direct Construction Cost	6,456,949	589,881	108,937	350,446	59,850	391,014	796,498	375,411	531,564	409,355	842,996	818,326	306,034	529,003	347,634
B. Engineering Cost	7% of Direct Construction Cost	3,476,818	317,628	58,658	188,702	32,227	210,546	428,884	202,145	286,227	220,422	453,921	440,637	164,788	284,848	187,188
C. Physical Contingency	5% of Construction Cost	2,806,289	256,371	47,346	152,309	26,012	169,941	346,170	163,160	231,026	177,912	366,379	355,657	133,007	229,913	151,087
D. Land Use Cost	Land unit costs are assumed zero because the sites are public lands.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total		62,408,892	5,701,422	1,052,914	3,387,195	578,478	3,779,300	7,698,461	3,628,495	5,137,770	3,956,572	8,147,876	7,909,436	2,957,938	5,113,019	3,360,016
E. Value Added Tax	10%	6,240,889	570,142	105,291	338,719	57,848	377,930	769,846	362,850	513,777	395,657	814,788	790,944	295,794	511,302	336,002
Grand Total		68,649,781	6,271,565	1,158,206	3,725,914	636,325	4,157,230	8,468,307	3,991,345	5,651,547	4,352,229	8,962,664	8,700,380	3,253,732	5,624,321	3,696,018

Table S/R-D9-6 Construction Cost for Sewerage Development Plan by each Zone (2/3)

(2) Initial Construction Cost

Unit : Million IDR

Items	Cost	Zone No.														
	Total	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
A. Construction Cost	Direct Construction Cost plus Indirect Construction Cost	51,817,074	4,245,064	946,911	3,026,147	520,238	2,932,349	5,813,234	3,243,599	3,970,788	3,543,072	6,246,023	7,067,041	2,660,143	4,598,258	3,004,206
a. Direct Construction Cost		45,855,818	3,756,694	837,974	2,678,006	460,388	2,594,999	5,144,455	2,870,442	3,513,972	3,135,462	5,527,454	6,254,019	2,354,109	4,069,255	2,658,589
(1)House Connection Cost		4,694,090	361,275	103,078	306,360	75,824	252,490	464,054	302,778	332,536	406,387	497,467	689,282	212,307	403,621	286,631
(2)Collection Sewer Line	Tertiary and Secondary	10,144,598	807,717	221,294	655,001	162,386	542,084	1,018,759	652,608	715,263	872,267	1,066,179	1,474,874	464,907	871,896	619,363
	Main	9,990,725	373,380	220,863	578,872	148,567	536,474	761,287	732,571	782,829	912,846	1,015,699	1,318,783	766,913	1,059,820	781,821
	Trunk	2,546,535	124,359	85,257	125,640	62,690	138,565	294,624	291,042	138,492	138,774	161,779	405,047	199,038	233,354	147,874
	Conveyance	3,018,448	588,331	0	125,533	10,921	142,528	716,397	24,552	175,848	134,121	507,455	326,184	35,968	183,643	46,967
	Sub-total	25,700,306	1,893,787	527,414	1,485,046	384,564	1,359,651	2,791,067	1,700,773	1,812,432	2,058,008	2,751,112	3,524,888	1,466,826	2,348,713	1,596,025
(3)Lift Pump Station	Civil/Architect Works	233,930	0	12,733	7,220	0	9,845	53,547	12,534	17,110	9,422	20,798	60,549	0	17,613	12,559
	Mecanical Facility	187,143	0	10,187	5,776	0	7,876	42,838	10,027	13,688	7,537	16,638	48,439	0	14,090	10,047
	Electrical Facility	46,781	0	2,546	1,444	0	1,969	10,709	2,506	3,422	1,884	4,159	12,109	0	3,522	2,511
		Sub-total	467,854	0	25,466	14,440	0	19,690	107,094	25,067	34,220	18,843	41,595	121,097	0	35,225
(4)Wastewater Treatment Plant	Civil/Architect Works	7,496,784	750,816	91,008	436,080	0	481,584	891,120	420,912	667,392	326,112	1,118,640	959,376	337,488	640,848	375,408
	Mecanical Facility	5,997,427	600,653	72,806	348,864	0	385,267	712,896	336,730	533,914	260,890	894,912	767,501	269,990	512,678	300,326
	Electrical Facility	1,499,357	150,163	18,202	87,216	0	96,317	178,224	84,182	133,478	65,222	223,728	191,875	67,498	128,170	75,082
		Sub-total	14,993,568	1,501,632	182,016	872,160	0	963,168	1,782,240	841,824	1,334,784	652,224	2,237,280	1,918,752	674,976	1,281,696
b. Indirect Construction Cost	13% of Direct Construction Cost	5,961,256	488,370	108,937	348,141	59,850	337,350	668,779	373,157	456,816	407,610	718,569	813,022	306,034	529,003	345,617
B. Engineering Cost	7% of Direct Construction Cost	3,209,907	262,969	58,658	187,460	32,227	181,650	360,112	200,931	245,978	219,482	386,922	437,781	164,788	284,848	186,101
C. Physical Contingency	5% of Construction Cost	2,590,854	212,253	47,346	151,307	26,012	146,617	290,662	162,180	198,539	177,154	312,301	353,352	133,007	229,913	150,210
D. Land Use Cost	Land unit costs are assumed zero because the sites are public lands.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	57,617,835	4,720,286	1,052,914	3,364,915	578,478	3,260,616	6,464,008	3,606,710	4,415,306	3,939,708	6,945,246	7,858,175	2,957,938	5,113,019	3,340,517
E. Value Added Tax	10%	5,761,784	472,029	105,291	336,491	57,848	326,062	646,401	360,671	441,531	393,971	694,525	785,817	295,794	511,302	334,052
	Grand Total	63,379,619	5,192,315	1,158,206	3,701,406	636,325	3,586,678	7,110,408	3,967,381	4,856,836	4,333,679	7,639,771	8,643,992	3,253,732	5,624,321	3,674,569

Table S/R-D9-6 Construction Cost for Sewerage Development Plan by each Zone (3/3)

(3) Facilities Replacement Cost from 2013 to 2050

Unit : Million IDR

Items		Cost	Zone No.													
			Total	1	2	3	4	5	6	7	8	9	10	11	12	13
A. Construction Cost	Direct Construction Cost plus Indirect Construction Cost	4,308,710	882,359	0	20,037	0	466,464	1,110,173	19,592	649,729	15,166	1,081,554	46,100	0	0	17,536
a. Facilities Replacement Cost (Direct Construction Cost) (from 2013 to 2050)	Mechanical Facility	2,838,223	600,653	0	0	0	314,515	755,734	0	438,081	0	729,240	0	0	0	0
	Electrical Facility	974,795	180,196	0	17,732	0	98,286	226,720	17,338	136,900	13,421	227,887	40,797	0	0	15,519
	Sub-total	3,813,018	780,849	0	17,732	0	412,800	982,454	17,338	574,982	13,421	957,127	40,797	0	0	15,519
b. Indirect Construction Cost	13% of Direct Construction Cost	495,692	101,510	0	2,305	0	53,664	127,719	2,254	74,748	1,745	124,427	5,304	0	0	2,017
B. Engineering Cost	7% of Direct Construction Cost	266,911	54,659	0	1,241	0	28,896	68,772	1,214	40,249	939	66,999	2,856	0	0	1,086
C. Physical Contingency	5% of Construction Cost	215,435	44,118	0	1,002	0	23,323	55,509	980	32,486	758	54,078	2,305	0	0	877
Total		4,791,057	981,136	0	22,280	0	518,684	1,234,453	21,785	722,464	16,864	1,202,630	51,261	0	0	19,499
D. Value Added Tax	10%	479,106	98,114	0	2,228	0	51,868	123,445	2,178	72,246	1,686	120,263	5,126	0	0	1,950
Grand Total		5,270,162	1,079,250	0	24,508	0	570,552	1,357,898	23,963	794,711	18,550	1,322,893	56,387	0	0	21,449

Table S/R-D9-7 Annual O&M Cost for Sewerage Development Plan by each Zone

* Annual O&M Cost

Unit : Million IDR/year

Items		Total	Zone No.													
			1	2	3	4	5	6	7	8	9	10	11	12	13	14
A. Collection Sewer Line	0.3% of Direct Construction Cost of Sewer and House Connection Cost	91,183	6,765	1,891	5,374	1,381	4,836	9,765	6,011	6,435	7,393	9,746	12,643	5,037	8,257	5,648
B. Lift Pump Station	3% of Direct Construction Cost of Lift P/S	14,036	0	764	433	0	591	3,213	752	1,027	565	1,248	3,633	0	1,057	754
C. Wastewater Treatment Plant	1,479 IDR/m3(Wastewater flow)	1,066,141	106,821	12,873	62,319	25,117	68,676	126,599	59,827	95,023	46,424	133,814	136,347	47,971	91,014	53,316
Total		1,171,360	113,587	15,529	68,126	26,498	74,104	139,578	66,589	102,484	54,382	144,808	152,622	53,008	100,328	59,717
D. Value Added Tax	10%	117,136	11,359	1,553	6,813	2,650	7,410	13,958	6,659	10,248	5,438	14,481	15,262	5,301	10,033	5,972
Grand Total		1,288,496	124,945	17,082	74,939	29,148	81,514	153,535	73,248	112,733	59,821	159,289	167,885	58,309	110,360	65,689

Table S/R-D9-8 Sewerage Service Income by each Zone

*** Income**

Annual Income

Unit : Million IDR

Items	Cost	Zone No.														
	Total	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
Population for Off-site	9,874,694	989,389	119,234	577,201	232,637	636,087	1,172,574	554,119	880,110	429,982	1,239,402	1,262,858	444,308	842,979	493,815	
Population	Household	7,603,183	517,450	98,129	515,440	188,668	405,824	880,603	453,824	718,169	362,045	972,930	1,049,435	374,107	671,011	395,546
	Non-household	2,271,511	471,938	21,104	61,760	43,968	230,264	291,971	100,296	161,940	67,937	266,471	213,423	70,201	171,968	98,269
Population Ratio (based on Land use area data as average of 2007 and 2030)	Household	77.0%	52.3%	82.3%	89.3%	81.1%	63.8%	75.1%	81.9%	81.6%	84.2%	78.5%	83.1%	84.2%	79.6%	80.1%
	Non-household	23.0%	47.7%	17.7%	10.7%	18.9%	36.2%	24.9%	18.1%	18.4%	15.8%	21.5%	16.9%	15.8%	20.4%	19.9%
Water Flow (m3/day)(Daily average)	Daily average	1,974,939	197,878	23,847	115,440	46,527	127,217	234,515	110,824	176,022	85,996	247,880	252,572	88,862	168,596	98,763
	Household	1,520,637	103,490	19,626	103,088	37,734	81,165	176,121	90,765	143,634	72,409	194,586	209,887	74,821	134,202	79,109
	Non-household	454,302	94,388	4,221	12,352	8,794	46,053	58,394	20,059	32,388	13,587	53,294	42,685	14,040	34,394	19,654
Sewerage Tariff Income (IDR/day)	Household	716,219,864	48,743,822	9,243,776	48,554,478	17,772,568	38,228,586	82,952,838	42,750,185	67,651,561	34,104,593	91,650,030	98,856,808	35,240,911	63,209,278	37,260,431
	Non-household	2,070,255,245	430,124,710	19,234,502	56,288,507	40,072,759	209,862,214	266,102,393	91,409,387	147,592,268	61,917,866	242,861,983	194,513,786	63,980,885	156,731,414	89,562,571
	Total	2,786,475,109	478,868,533	28,478,278	104,842,984	57,845,326	248,090,801	349,055,231	134,159,573	215,243,828	96,022,459	334,512,013	293,370,594	99,221,796	219,940,691	126,823,002
Sewerage Tariff Income (Million IDR/year)	Household	261,420	17,791	3,374	17,722	6,487	13,953	30,278	15,604	24,693	12,448	33,452	36,083	12,863	23,071	13,600
	Non-household	755,643	156,996	7,021	20,545	14,627	76,600	97,127	33,364	53,871	22,600	88,645	70,998	23,353	57,207	32,690
	Total	1,017,063	174,787	10,395	38,268	21,114	90,553	127,405	48,968	78,564	35,048	122,097	107,080	36,216	80,278	46,290
Sewerage Tariff Income Rate (%)	Household	26%	10%	32%	46%	31%	15%	24%	32%	31%	36%	27%	34%	36%	29%	29%
	Non-household	74%	90%	68%	54%	69%	85%	76%	68%	69%	64%	73%	66%	64%	71%	71%

Table S/R-D9-9 Project Cost for Sewerage Development Plan by each Term

* Expenditure

* Construction Cost

Unit : Million IDR

Items	Cost	Zone No.																
		Short-term		Medium-term				Long-term										
		1	6	4	5	8	10	2	3	7	9	11	12	13	14			
A. Construction Cost(including indirect construction cost, engineering cost and physical contingency)																		
(1)House Connection Cost	5,898,124	453,942	583,084	95,273	317,254	417,831	625,067	129,518	384,941	380,441	510,625	866,083	266,764	507,150	360,152			
(2)Collection Sewer Line (including Lift P/S)	Tertiary and Secondary	12,746,687	1,014,896	1,280,071	204,038	681,129	898,728	1,339,654	278,056	823,009	820,002	1,096,003	1,853,179	584,156	1,095,537	778,230		
	Conveyance, Trunk, Main and Lift P/S	20,133,606	1,364,647	2,361,469	279,167	1,052,013	1,421,590	2,169,382	416,638	1,061,095	1,348,516	1,513,560	2,728,001	1,258,911	1,899,881	1,258,735		
	Sub-total	32,880,293	2,379,543	3,641,539	483,205	1,733,142	2,320,318	3,509,036	694,694	1,884,104	2,168,518	2,609,563	4,581,180	1,843,067	2,995,418	2,036,965		
(3)Wastewater Treatment Plant	18,839,418	1,886,801	2,239,385	0	1,210,221	1,677,156	2,811,142	228,703	1,095,869	1,057,752	819,519	2,410,912	848,107	1,610,451	943,400			
(4)Facilities Replacement (from 2013 to 2050)	Mecanical Facility	3,566,227	754,720	949,580	0	395,188	550,449	916,290	0	0	0	0	0	0	0	0	0	0
	Electrical Facility	1,224,830	226,416	284,873	0	123,496	172,015	286,340	0	22,280	21,785	16,864	51,261	0	0	19,499		
	Sub-total	4,791,057	981,136	1,234,453	0	518,684	722,464	1,202,630	0	22,280	21,785	16,864	51,261	0	0	19,499		
B. Land Use Cost	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	62,408,892	5,701,422	7,698,461	578,478	3,779,300	5,137,770	8,147,876	1,052,914	3,387,195	3,628,495	3,956,572	7,909,436	2,957,938	5,113,019	3,360,016			
C. Value Added Tax	10%	6,240,889	570,142	769,846	57,848	377,930	513,777	814,788	105,291	338,719	362,850	395,657	790,944	295,794	511,302	336,002		
Grand Total	68,649,781	6,271,565	8,468,307	636,325	4,157,230	5,651,547	8,962,664	1,158,206	3,725,914	3,991,345	4,352,229	8,700,380	3,253,732	5,624,321	3,696,018			
			14,739,871			19,407,766						34,502,144						

* Annual O&M Cost

Unit : Million IDR/year

Items	Annual Cost	Zone No.																	
		Short-term		Medium-term				Long-term											
		1	6	4	5	8	10	2	3	7	9	11	12	13	14				
A. Collection Sewer Line	0.3% of Direct Construction Cost of Sewer and House Connection Cost	91,183	6,765	9,765	1,381	4,836	6,435	9,746	1,891	5,374	6,011	7,393	12,643	5,037	8,257	5,648			
B. Lift Pump Station	3% of Direct Construction Cost of Lift P/S	14,036	0	3,213	0	591	1,027	1,248	764	433	752	565	3,633	0	1,057	754			
C. Wastewater Treatment Plant	1,479 IDR/m3(Wastewater flow)	1,066,141	106,821	126,599	25,117	68,676	95,023	133,814	12,873	62,319	59,827	46,424	136,347	47,971	91,014	53,316			
Total	1,171,360	113,587	139,578	26,498	74,104	102,484	144,808	15,529	68,126	66,589	54,382	152,622	53,008	100,328	59,717				
D. Value Added Tax	10%		11,359	13,958	2,650	7,410	10,248	14,481	1,553	6,813	6,659	5,438	15,262	5,301	10,033	5,972			
Grand Total	1,288,496	124,945	153,535	29,148	81,514	112,733	159,289	17,082	74,939	73,248	59,821	167,885	58,309	110,360	65,689				
			278,480			382,684						627,332							

Table S/R-D9-10 Sewerage Service Income by each term

* Income

* Annual Income

Unit : Million IDR

Items	Annual Income	Zone No.																	
		Short-term		Medium-term				Long-term											
		1	6	4	5	8	10	2	3	7	9	11	12	13	14				
Sewerage Tariff Income	Household	261,420	17,791	30,278	6,487	13,953	24,693	33,452	3,374	17,722	15,604	12,448	36,083	12,863	23,071	13,600			
(Million IDR/year)	Non-household	755,643	156,996	97,127	14,627	76,600	53,871	88,645	7,021	20,545	33,364	22,600	70,998	23,353	57,207	32,690			
Total	1,017,063	174,787	127,405	21,114	90,553	78,564	122,097	10,395	38,268	48,968	35,048	107,080	36,216	80,278	46,290				

Table S/R-D9-12 Annual O&M Cost for Sewerage Development Plan by each Zone (Breakdown by Local currency and Foreign currency)

Unit : Million IDR/year

Items		Annual O&M Cost			1		2		3		4		5		6		7	
		Local currency	Foreign currency	Total	Local currency	Foreign currency	Local currency	Foreign currency	Local currency	Foreign currency	Local currency	Foreign currency	Local currency	Foreign currency	Local currency	Foreign currency	Local currency	Foreign currency
A. Collection Sewer Line	0.3% of Direct Construction Cost of Sewer and House Connection Cost	91,183	0	91,183	6,765	0	1,891	0	5,374	0	1,381	0	4,836	0	9,765	0	6,011	0
B. Lift Pump Station	3% of Direct Construction Cost of Lift P/S	14,036	0	14,036	0	0	764	0	433	0	0	0	591	0	3,213	0	752	0
C. Wastewater Treatment Plant	1,479 IDR/m3(Wastewater flow)	1,066,141	0	1,066,141	106,821	0	12,873	0	62,319	0	25,117	0	68,676	0	126,599	0	59,827	0
Total		1,171,360	0	1,171,360	113,587		15,529		68,126		26,498		74,104		139,578		66,589	
D. Value Added Tax	10%				11,359	0	1,553	0	6,813	0	2,650	0	7,410	0	13,958	0	6,659	0
Grand Total					124,945		17,082		74,939		29,148		81,514		153,535		73,248	

Items		8		9		10		11		12		13		14	
		Local currency	Foreign currency	Local currency	Foreign currency	Local currency	Foreign currency	Local currency	Foreign currency	Local currency	Foreign currency	Local currency	Foreign currency	Local currency	Foreign currency
A. Collection Sewer Line	0.3% of Direct Construction Cost of Sewer and House Connection Cost	6,435	0	7,393	0	9,746	0	12,643	0	5,037	0	8,257	0	5,648	0
B. Lift Pump Station	3% of Direct Construction Cost of Lift P/S	1,027	0	565	0	1,248	0	3,633	0	0	0	1,057	0	754	0
C. Wastewater Treatment Plant	1,479 IDR/m3(Wastewater flow)	95,023	0	46,424	0	133,814	0	136,347	0	47,971	0	91,014	0	53,316	0
Total		102,484		54,382		144,808		152,622		53,008		100,328		59,717	
D. Value Added Tax	10%	10,248	0	5,438	0	14,481	0	15,262	0	5,301	0	10,033	0	5,972	0
Grand Total		112,733		59,821		159,289		167,885		58,309		110,360		65,689	

Table S/R-D9-13 Breakdown of Construction Cost for Sewerage Development (1/7)

(1) Zone 1

Zone Area = 4,901 ha

Items	Unit	Quantity	Unit Cost IDR	Construction Cost (Million IDR)
(1) House Connection	place	101,952	-	361,275
(2) Collection Sewer Line				
1) Tertiary and Secondary φ 200mm~φ 300mm	m	656,638	-	807,717
2) Main φ 350mm~φ 800mm	m	86,069	-	373,380
3) Trunk φ 900mm~φ1,200mm	m	5,263	-	124,359
4) Conveyance φ1,350mm~φ2,400mm	m	10,269	-	588,331
Sub Total	m	758,238		1,893,787
(3) Lift Pump Station				
P1 Civil/Archtect Works	ls	1	-	0
Mecanical Facility			-	0
Eletrical Facility			-	0
P1 total				0
P2 Civil/Archtect Works	ls	1	-	0
Mecanical Facility			-	0
Eletrical Facility			-	0
P2 total				0
Sub Total				0
(4) Wastewater Treatment Plant Capacity: 264,000 m3/day Pump Station Capacity : 244.7 m3/min				
1) Civil/Archtect Works	ls	1		750,816
2) Mecanical Facility	ls	1		600,653
3) Eletrical Facility	ls	1		150,163
Sub Total				1,501,632
Direct Construction Cost Total {(1) + (2) + (3) + (4)}				3,756,694
(5) Land Use Cost				
1) Lift Pump Station P1	m ²	0	0	0
2) Lift Pump Station P2	m ²	0	0	0
3) Treatment Plant	m ²	69,200	0	0
Sub Total				0
Total {(1) + (2) + (3) + (4) + (5)}				3,756,694

(2) Zone 2

Zone Area = 1,376 ha

Items	Unit	Quantity	Unit Cost IDR	Construction Cost (Million IDR)
(1) House Connection	place	29,089	-	103,078
(2) Collection Sewer Line				
1) Tertiary and Secondary φ 200mm~φ 300mm	m	181,881	-	221,294
2) Main φ 350mm~φ 800mm	m	42,041	-	220,863
3) Trunk φ 900mm~φ1,200mm	m	3,580	-	85,257
4) Conveyance φ1,350mm~φ2,400mm	m	0	-	0
Sub Total	m	227,501		527,414
(3) Lift Pump Station				
P1 Capacity 40.8 m3/min Civil/Archtect Works	ls	1	-	12,733
Mecanical Facility			-	10,187
Eletrical Facility			-	2,546
P1 total				25,466
P2 Civil/Archtect Works	ls	1	-	0
Mecanical Facility			-	0
Eletrical Facility			-	0
P2 total				0
Sub Total				25,466
(4) Wastewater Treatment Plant Capacity: 32,000 m3/day Pump Station Capacity : . m3/min				
1) Civil/Archtect Works	ls	1		91,008
2) Mecanical Facility	ls	1		72,806
3) Eletrical Facility	ls	1		18,202
Sub Total				182,016
Direct Construction Cost Total {(1) + (2) + (3) + (4)}				837,974
(5) Land Use Cost				
1) Lift Pump Station P1	m ²	800	0	0
2) Lift Pump Station P2	m ²	0	0	0
3) Treatment Plant	m ²	8,300	0	0
Sub Total				0
Total {(1) + (2) + (3) + (4) + (5)}				837,974

Table S/R-D9-13 Breakdown of Construction Cost for Sewerage Development (2/7)

(3) Zone 3

Zone Area = 3,563 ha

Items	Unit	Quantity	Unit Cost IDR	Construction Cost (Million IDR)
(1) House Connection	place	86,455	-	306,360
(2) Collection Sewer Line				
1) Tertiary and Secondary ϕ 200mm~ ϕ 300mm	m	538,705	-	655,001
2) Main ϕ 350mm~ ϕ 800mm	m	109,736	-	578,872
3) Trunk ϕ 900mm~ ϕ 1,200mm	m	5,277	-	125,640
4) Conveyance ϕ 1,350mm~ ϕ 2,400mm	m	3,125	-	125,533
Sub Total	m	656,843		1,485,046
(3) Lift Pump Station				
P1 Capacity 10. m3/min				
Civil/Archtect Works	ls	1	-	3,610
Mecanical Facility			-	2,888
Eletrical Facility			-	722
P1 total				7,220
P2 Capacity 10. m3/min				
Civil/Archtect Works	ls	1	-	3,610
Mecanical Facility			-	2,888
Eletrical Facility			-	722
P2 total				7,220
Sub Total				14,440
(4) Wastewater Treatment Plant Capacity: 154,000 m3/day Pump Station Capacity : 155.1 m3/min				
1) Civil/Archtect Works	ls	1		436,080
2) Mecanical Facility	ls	1		348,864
3) Eletrical Facility	ls	1		87,216
Sub Total				872,160
Direct Construction Cost Total {(1) + (2) + (3) + (4)}				2,678,006
(5) Land Use Cost				
1) Lift Pump Station P1	m ²	400	0	0
2) Lift Pump Station P2	m ²	400	0	0
3) Treatment Plant	m ²	40,400	0	0
Sub Total				0
Total {(1) + (2) + (3) + (4) + (5)}				2,678,006

(4) Zone 4

Zone Area = 935 ha

Items	Unit	Quantity	Unit Cost IDR	Construction Cost (Million IDR)
(1) House Connection	place	21,398	-	75,824
(2) Collection Sewer Line				
1) Tertiary and Secondary ϕ 200mm~ ϕ 300mm	m	133,518	-	162,386
2) Main ϕ 350mm~ ϕ 800mm	m	28,375	-	148,567
3) Trunk ϕ 900mm~ ϕ 1,200mm	m	2,313	-	62,690
4) Conveyance ϕ 1,350mm~ ϕ 2,400mm	m	304	-	10,921
Sub Total	m	164,510		384,564
(3) Lift Pump Station				
P1				
Civil/Archtect Works	ls	1	-	0
Mecanical Facility			-	0
Eletrical Facility			-	0
P1 total				0
P2				
Civil/Archtect Works	ls	1	-	0
Mecanical Facility			-	0
Eletrical Facility			-	0
P2 total				0
Sub Total				0
(4) Wastewater Treatment Plant				
1) Civil/Archtect Works	ls	1		0
2) Mecanical Facility	ls	1		0
3) Eletrical Facility	ls	1		0
Sub Total				0
Direct Construction Cost Total {(1) + (2) + (3) + (4)}				460,388
(5) Land Use Cost				
1) Lift Pump Station P1	m ²	0	0	0
2) Lift Pump Station P2	m ²	0	0	0
3) Treatment Plant	m ²	0	0	0
Sub Total				0
Total {(1) + (2) + (3) + (4) + (5)}				460,388

Table S/R-D9-13 Breakdown of Construction Cost for Sewerage Development (3/7)

(5) Zone 5

Zone Area = 3,375 ha

Items	Unit	Quantity	Unit Cost IDR	Construction Cost (Million IDR)
(1) House Connection	place	71,253	-	252,490
(2) Collection Sewer Line				
1) Tertiary and Secondary φ 200mm~φ 300mm	m	445,534	-	542,084
2) Main φ 350mm~φ 800mm	m	102,462	-	536,474
3) Trunk φ 900mm~φ 1,200mm	m	6,369	-	138,565
4) Conveyance φ 1,350mm~φ 2,400mm	m	3,079	-	142,528
Sub Total	m	557,445		1,359,651
(3) Lift Pump Station				
P1 Capacity 27.3 m ³ /min				
Civil/Archtect Works	ls	1	-	9,845
Mecanical Facility			-	7,876
Eletrical Facility			-	1,969
P1 total				19,690
P2				
Civil/Archtect Works	ls	1	-	0
Mecanical Facility			-	0
Eletrical Facility			-	0
P2 total				0
Sub Total				19,690
(4) Wastewater Treatment Plant Capacity: 170,000 m ³ /day Pump Station Capacity : 168.4 m ³ /min				
1) Civil/Archtect Works	ls	1		481,584
2) Mecanical Facility	ls	1		385,267
3) Eletrical Facility	ls	1		96,317
Sub Total				963,168
Direct Construction Cost Total {(1) + (2) + (3) + (4)}				2,594,999
(5) Land Use Cost				
1) Lift Pump Station P1	m ²	500	0	0
2) Lift Pump Station P2	m ²	0	0	0
3) Treatment Plant	m ²	44,500	0	0
Sub Total				0
Total {(1) + (2) + (3) + (4) + (5)}				2,594,999

(6) Zone 6

Zone Area = 5,874 ha

Items	Unit	Quantity	Unit Cost IDR	Construction Cost (Million IDR)
(1) House Connection	place	130,956	-	464,054
(2) Collection Sewer Line				
1) Tertiary and Secondary φ 200mm~φ 300mm	m	829,313	-	1,018,759
2) Main φ 350mm~φ 800mm	m	154,809	-	761,287
3) Trunk φ 900mm~φ 1,200mm	m	11,532	-	294,624
4) Conveyance φ 1,350mm~φ 2,400mm	m	12,426	-	716,397
Sub Total	m	1,008,080		2,791,067
(3) Lift Pump Station				
P1 Capacity 171.8 m ³ /min				
Civil/Archtect Works	ls	1	-	53,547
Mecanical Facility			-	42,838
Eletrical Facility			-	10,709
P1 total				107,094
P2				
Civil/Archtect Works	ls	1	-	0
Mecanical Facility			-	0
Eletrical Facility			-	0
P2 total				0
Sub Total				107,094
(4) Wastewater Treatment Plant Capacity: 313,000 m ³ /day Pump Station Capacity : 282.5 m ³ /min				
1) Civil/Archtect Works	ls	1		891,120
2) Mecanical Facility	ls	1		712,896
3) Eletrical Facility	ls	1		178,224
Sub Total				1,782,240
Direct Construction Cost Total {(1) + (2) + (3) + (4)}				5,144,455
(5) Land Use Cost				
1) Lift Pump Station P1	m ²	2,000	0	0
2) Lift Pump Station P2	m ²	0	0	0
3) Treatment Plant	m ²	82,000	0	0
Sub Total				0
Total {(1) + (2) + (3) + (4) + (5)}				5,144,455

Table S/R-D9-13 Breakdown of Construction Cost for Sewerage Development (4/7)

(7) Zone 7

Zone Area = 4,544 ha

Items	Unit	Quantity	Unit Cost IDR	Construction Cost (Million IDR)
(1) House Connection	place	85,444	-	302,778
(2) Collection Sewer Line				
1) Tertiary and Secondary ϕ 200mm~ ϕ 300mm	m	536,031	-	652,608
2) Main ϕ 350mm~ ϕ 800mm	m	139,243	-	732,571
3) Trunk ϕ 900mm~ ϕ 1,200mm	m	11,037	-	291,042
4) Conveyance ϕ 1,350mm~ ϕ 2,400mm	m	402	-	24,552
Sub Total	m	686,714		1,700,773
(3) Lift Pump Station				
P1 Capacity 50.1 m ³ /min				
Civil/Archtect Works	ls	1	-	12,534
Mecanical Facility			-	10,027
Eletrical Facility			-	2,506
P1 total				25,067
P2				
Civil/Archtect Works	ls	1	-	0
Mecanical Facility			-	0
Eletrical Facility			-	0
P2 total				0
Sub Total				25,067
(4) Wastewater Treatment Plant Capacity: 148,000 m ³ /day Pump Station Capacity : 149.8 m ³ /min				
1) Civil/Archtect Works	ls	1		420,912
2) Mecanical Facility	ls	1		336,730
3) Eletrical Facility	ls	1		84,182
Sub Total				841,824
Direct Construction Cost Total {(1) + (2) + (3) + (4)}				2,870,442
(5) Land Use Cost				
1) Lift Pump Station P1	m ²	1,000	0	0
2) Lift Pump Station P2	m ²	0	0	0
3) Treatment Plant	m ²	38,700	0	0
Sub Total				0
Total {(1) + (2) + (3) + (4) + (5)}				2,870,442

(8) Zone 8

Zone Area = 4,702 ha

Items	Unit	Quantity	Unit Cost IDR	Construction Cost (Million IDR)
(1) House Connection	place	93,841	-	332,536
(2) Collection Sewer Line				
1) Tertiary and Secondary ϕ 200mm~ ϕ 300mm	m	587,691	-	715,263
2) Main ϕ 350mm~ ϕ 800mm	m	147,192	-	782,829
3) Trunk ϕ 900mm~ ϕ 1,200mm	m	5,400	-	138,492
4) Conveyance ϕ 1,350mm~ ϕ 2,400mm	m	3,333	-	175,848
Sub Total	m	743,616		1,812,432
(3) Lift Pump Station				
P1 Capacity 68.4 m ³ /min				
Civil/Archtect Works	ls	1	-	17,110
Mecanical Facility			-	13,688
Eletrical Facility			-	3,422
P1 total				34,220
P2				
Civil/Archtect Works	ls	1	-	0
Mecanical Facility			-	0
Eletrical Facility			-	0
P2 total				0
Sub Total				34,220
(4) Wastewater Treatment Plant Capacity: 235,000 m ³ /day Pump Station Capacity : 221.6 m ³ /min				
1) Civil/Archtect Works	ls	1		667,392
2) Mecanical Facility	ls	1		533,914
3) Eletrical Facility	ls	1		133,478
Sub Total				1,334,784
Direct Construction Cost Total {(1) + (2) + (3) + (4)}				3,513,972
(5) Land Use Cost				
1) Lift Pump Station P1	m ²	1,300	0	0
2) Lift Pump Station P2	m ²	0	0	0
3) Treatment Plant	m ²	61,600	0	0
Sub Total				0
Total {(1) + (2) + (3) + (4) + (5)}				3,513,972

Table S/R-D9-13 Breakdown of Construction Cost for Sewerage Development (5/7)

(9) Zone 9

Zone Area = 5,389 ha

Items	Unit	Quantity	Unit Cost IDR	Consstruction Cost (Million IDR)
(1) House Connection	place	114,682	-	406,387
(2) Collection Sewer Line				
1) Tertiary and Secondary φ 200mm~φ 300mm	m	511,296	-	872,267
2) Main φ 350mm~φ 800mm	m	170,647	-	912,846
3) Trunk φ 900mm~φ1,200mm	m	5,026	-	138,774
4) Conveyance φ1,350mm~φ2,400mm	m	2,998	-	134,121
Sub Total	m	689,968		2,058,008
(3) Lift Pump Station				
P1 Capacity 37.7 m3/min				
Civil/Archtect Works	ls	1	-	9,422
Mecanical Facility			-	7,537
Eletrical Facility			-	1,884
P1 total				18,843
P2				
Civil/Archtect Works	ls	1	-	0
Mecanical Facility			-	0
Eletrical Facility			-	0
P2 total				0
Sub Total				18,843
(4) Wastewater Treatment Plant Capacity: 115,000 m3/day Pump Station Capacity : 120.9 m3/min				
1) Civil/Archtect Works	ls	1		326,112
2) Mecanical Facility	ls	1		260,890
3) Eletrical Facility	ls	1		65,222
Sub Total				652,224
Direct Construction Cost Total {(1) + (2) + (3) + (4)}				3,135,462
(5) Land Use Cost				
1) Lift Pump Station P1	m ²	800	0	0
2) Lift Pump Station P2	m ²	0	0	0
3) Treatment Plant	m ²	30,000	0	0
Sub Total				0
Total {(1) + (2) + (3) + (4) + (5)}				3,135,462

(10) Zone 10

Zone Area = 6,289 ha

Items	Unit	Quantity	Unit Cost IDR	Consstruction Cost (Million IDR)
(1) House Connection	place	140,385	-	497,467
(2) Collection Sewer Line				
1) Tertiary and Secondary φ 200mm~φ 300mm	m	876,530	-	1,066,179
2) Main φ 350mm~φ 800mm	m	192,932	-	1,015,699
3) Trunk φ 900mm~φ1,200mm	m	6,860	-	161,779
4) Conveyance φ1,350mm~φ2,400mm	m	8,726	-	507,455
Sub Total	m	1,085,049		2,751,112
(3) Lift Pump Station				
P1 Capacity 83.1 m3/min				
Civil/Archtect Works	ls	1	-	20,798
Mecanical Facility			-	16,638
Eletrical Facility			-	4,159
P1 total				41,595
P2				
Civil/Archtect Works	ls	1	-	0
Mecanical Facility			-	0
Eletrical Facility			-	0
P2 total				0
Sub Total				41,595
(4) Wastewater Treatment Plant Capacity: 393,000 m3/day Pump Station Capacity : 342.4 m3/min				
1) Civil/Archtect Works	ls	1		1,118,640
2) Mecanical Facility	ls	1		894,912
3) Eletrical Facility	ls	1		223,728
Sub Total				2,237,280
Direct Construction Cost Total {(1) + (2) + (3) + (4)}				5,527,454
(5) Land Use Cost				
1) Lift Pump Station P1	m ²	1,400	0	0
2) Lift Pump Station P2	m ²	0	0	0
3) Treatment Plant	m ²	103,000	0	0
Sub Total				0
Total {(1) + (2) + (3) + (4) + (5)}				5,527,454

Table S/R- D9-13 Breakdown of Construction Cost for Sewerage Development (6/7)

(11) Zone 11

Zone Area = 8,246 ha

Items	Unit	Quantity	Unit Cost IDR	Consrtruction Cost (Million IDR)
(1) House Connection	place	194,515	-	689,282
(2) Collection Sewer Line				
1) Tertiary and Secondary φ 200mm~φ 300mm	m	1,212,849	-	1,474,874
2) Main φ 350mm~φ 800mm	m	251,348	-	1,318,783
3) Trunk φ 900mm~φ 1,200mm	m	15,789	-	405,047
4) Conveyance φ 1,350mm~φ 2,400mm	m	6,285	-	326,184
Sub Total	m	1,486,271		3,524,888
(3) Lift Pump Station				
P1 Capacity 194.2 m3/min				
Civil/Archtect Works	ls	1	-	60,549
Mecanical Facility			-	48,439
Eletrical Facility			-	12,109
P1 total				121,097
P2				
Civil/Archtect Works	ls	1	-	0
Mecanical Facility			-	0
Eletrical Facility			-	0
P2 total				0
Sub Total				121,097
(4) Wastewater Treatment Plant Capacity: 337,000 m3/day Pump Station Capacity : 332.4 m3/min				
1) Civil/Archtect Works	ls	1		959,376
2) Mecanical Facility	ls	1		767,501
3) Eletrical Facility	ls	1		191,875
Sub Total				1,918,752
Direct Construction Cost Total {(1) + (2) + (3) + (4)}				6,254,019
(5) Land Use Cost				
1) Lift Pump Station P1	m ²	2,000	0	0
2) Lift Pump Station P2	m ²	0	0	0
3) Treatment Plant	m ²	88,400	0	0
Sub Total				0
Total {(1) + (2) + (3) + (4) + (5)}				6,254,019

(12) Zone 12

Zone Area = 3,172 ha

Items	Unit	Quantity	Unit Cost IDR	Consrtruction Cost (Million IDR)
(1) House Connection	place	59,913	-	212,307
(2) Collection Sewer Line				
1) Tertiary and Secondary φ 200mm~φ 300mm	m	536,245	-	464,907
2) Main φ 350mm~φ 800mm	m	144,176	-	766,913
3) Trunk φ 900mm~φ 1,200mm	m	7,844	-	199,038
4) Conveyance φ 1,350mm~φ 2,400mm	m	660	-	35,968
Sub Total	m	688,925		1,466,826
(3) Lift Pump Station				
P1				
Civil/Archtect Works	ls	1	-	0
Mecanical Facility			-	0
Eletrical Facility			-	0
P1 total				0
P2				
Civil/Archtect Works	ls	1	-	0
Mecanical Facility			-	0
Eletrical Facility			-	0
P2 total				0
Sub Total				0
(4) Wastewater Treatment Plant Capacity: 118,000 m3/day Pump Station Capacity : 124.3 m3/min				
1) Civil/Archtect Works	ls	1		337,488
2) Mecanical Facility	ls	1		269,990
3) Eletrical Facility	ls	1		67,498
Sub Total				674,976
Direct Construction Cost Total {(1) + (2) + (3) + (4)}				2,354,109
(5) Land Use Cost				
1) Lift Pump Station P1	m ²	0	0	0
2) Lift Pump Station P2	m ²	0	0	0
3) Treatment Plant	m ²	31,100	0	0
Sub Total				0
Total {(1) + (2) + (3) + (4) + (5)}				2,354,109

Table S/R-D9-13 Breakdown of Construction Cost for Sewerage Development (7/7)

(13) Zone 13

Zone Area = 6,433 ha

Items	Unit	Quantity	Unit Cost IDR	Construction Cost (Million IDR)
(1) House Connection	place	113,902	-	403,621
(2) Collection Sewer Line				
1) Tertiary and Secondary ϕ 200mm~ ϕ 300mm	m	715,891	-	871,896
2) Main ϕ 350mm~ ϕ 800mm	m	199,969	-	1,059,820
3) Trunk ϕ 900mm~ ϕ 1,200mm	m	9,659	-	233,354
4) Conveyance ϕ 1,350mm~ ϕ 2,400mm	m	3,676	-	183,643
Sub Total	m	929,195		2,348,713
(3) Lift Pump Station				
P1 Capacity 70.4 m3/min				
Civil/Archtect Works	ls	1	-	17,613
Mecanical Facility			-	14,090
Eletrical Facility			-	3,522
P1 total				35,225
P2				
Civil/Archtect Works	ls	1	-	0
Mecanical Facility			-	0
Eletrical Facility			-	0
P2 total				0
Sub Total				35,225
(4) Wastewater Treatment Plant Capacity: 225,000 m3/day Pump Station Capacity : 213.7 m3/min				
1) Civil/Archtect Works	ls	1		640,848
2) Mecanical Facility	ls	1		512,678
3) Eletrical Facility	ls	1		128,170
Sub Total				1,281,696
Direct Construction Cost Total {(1) + (2) + (3) + (4)}				4,069,255
(5) Land Use Cost				
1) Lift Pump Station P1	m ²	1,300	0	0
2) Lift Pump Station P2	m ²	0	0	0
3) Treatment Plant	m ²	59,000	0	0
Sub Total				0
Total {(1) + (2) + (3) + (4) + (5)}				4,069,255

(14) Zone 14

Zone Area = 4,605 ha

Items	Unit	Quantity	Unit Cost IDR	Construction Cost (Million IDR)
(1) House Connection	place	80,887	-	286,631
(2) Collection Sewer Line				
1) Tertiary and Secondary ϕ 200mm~ ϕ 300mm	m	508,518	-	619,363
2) Main ϕ 350mm~ ϕ 800mm	m	146,045	-	781,821
3) Trunk ϕ 900mm~ ϕ 1,200mm	m	5,703	-	147,874
4) Conveyance ϕ 1,350mm~ ϕ 2,400mm	m	932	-	46,967
Sub Total	m	661,198		1,596,025
(3) Lift Pump Station				
P1 Capacity 20.7 m3/min				
Civil/Archtect Works	ls	1	-	7,469
Mecanical Facility			-	5,975
Eletrical Facility			-	1,493
P1 total				14,937
P2 Capacity 14.1 m3/min				
Civil/Archtect Works	ls	1	-	5,090
Mecanical Facility			-	4,072
Eletrical Facility			-	1,018
P2 total				10,180
Sub Total				25,117
(4) Wastewater Treatment Plant Capacity: 132,000 m3/day Pump Station Capacity : 135.9 m3/min				
1) Civil/Archtect Works	ls	1		375,408
2) Mecanical Facility	ls	1		300,326
3) Eletrical Facility	ls	1		75,082
Sub Total				750,816
Direct Construction Cost Total {(1) + (2) + (3) + (4)}				2,658,589
(5) Land Use Cost				
1) Lift Pump Station P1	m ²	500	0	0
2) Lift Pump Station P2	m ²	500	0	0
3) Treatment Plant	m ²	34,500	0	0
Sub Total				0
Total {(1) + (2) + (3) + (4) + (5)}				2,658,589

Table S/R-D9-14 Construction Cost for On-site Development Plan (1/3)

*** Expenditure**

(1) Total Construction Cost; Inicial Construction Cost and Facilities Replacement Cost from 2013 to 2050

Unit : Million IDR

Items	Total	1. On-site STP Development Plan	2. Integration Plan for Off-site WWTP and On-site STP		
		Construction of a new STP in South area	(1) Duri Kosambi WWTP integrated with existing On-site STP (WWTP site No. 6 / Zone 6)	(2) Pulo Gebang WWTP expanded and integrated with existing On-site STP (WWTP site No. 10 / Zone 10)	Rehabilitation and Extension of Pulo Gebang STP
A. Construction Cost	799,991	50,996	192,966	19,940	182,209
a. Direct Construction Cost	707,957	45,129	170,766	17,646	161,247
(1) Civil and Building works	242,393	15,851	56,173	6,682	56,777
(2) Mechanical facilities	200,948	14,309	44,939	10,750	45,422
(3) Electrical facilities	44,486	300	11,235	214	11,355
(4)Facilities Replacement	from 2013 to 2050	14,669	58,420	0	47,693
b. Indirect Construction Cost	13% of Direct Construction Cost	92,034	5,867	22,200	2,294
B. Engineering Cost	7% of Direct Construction Cost	49,557	3,159	11,954	1,235
C. Physical Contingency	5% of Construction Cost	40,000	2,550	9,648	997
D. Land Use Cost	Land unit costs are assumed zero because the sites are public lands.	0	0	0	0
Total	889,548	56,705	214,568	22,172	202,607
E. Value Added Tax	10%	88,955	5,670	21,457	2,217
Grand Total	978,503	62,375	236,025	24,390	222,868

Unit : Million IDR

Items	3. Co-treatment Plan of On-site sludge at Off-site WWTPs		
	(1) Pejagalan WWTP (site No.2 / Zone 1)	(2) Sunter Pond WWTP (site No.5 / Zone 5)	(3) Marunda WWTP (site No.8 / Zone 8)
A. Construction Cost	163,917	79,474	110,489
a. Direct Construction Cost	145,060	70,331	97,778
(1) Civil and Building works	47,717	24,765	34,429
(2) Mechanical facilities	38,174	19,812	27,543
(3) Electrical facilities	9,543	4,953	6,886
(4)Facilities Replacement	from 2013 to 2050	49,626	20,802
b. Indirect Construction Cost	18,858	9,143	12,711
B. Engineering Cost	10,154	4,923	6,844
C. Physical Contingency	8,196	3,974	5,524
D. Land Use Cost	0	0	0
Total	182,267	88,371	122,857
E. Value Added Tax	10%	18,227	8,837
Grand Total	200,494	97,208	135,143

Table S/R-D9-14 Construction Cost for On-site Development Plan (2/3)**(2) Initial Construction Cost**

Unit : Million IDR

Items		Total	1. On-site STP Development Plan	2. Integration Plan for Off-site WWTP and On-site STP		
			Construction of a new STP in South area	(1) Duri Kosambi WWTP integrated with existing On-site STP (WWTP site No. 6 / Zone 6)	(2) Pulo Gebang WWTP expanded and integrated with existing On-site STP (WWTP site No. 10 / Zone 10)	Rehabilitation and Extension of Pulo Gebang STP
A. Construction Cost		309,628	34,420	126,951	19,940	128,316
a. Direct Construction Cost		487,827	30,460	112,346	17,646	113,554
(1) Civil and Building works		242,393	15,851	56,173	6,682	56,777
(2) Mechanical facilities		200,948	14,309	44,939	10,750	45,422
(3) Electrical facilities		44,486	300	11,235	214	11,355
b. Indirect Construction Cost	13% of Direct Construction Cost	63,418	3,960	14,605	2,294	14,762
B. Engineering Cost	7% of Direct Construction Cost	34,148	2,132	7,864	1,235	7,949
C. Physical Contingency	5% of Construction Cost	27,562	1,721	6,348	997	6,416
D. Land Use Cost	Land unit costs are assumed zero because the sites are public lands.	0	0	0	0	0
Total		612,955	38,273	141,163	22,172	142,681
E. Value Added Tax	10%	61,295	3,827	14,116	2,217	14,268
Grand Total		674,250	42,100	155,279	24,390	156,949

Unit : Million IDR

Items		3. Co-treatment Plan of On-site sludge at Off-site WWTPs		
		(1) Pejagalan WWTP (site No.2 / Zone 1)	(2) Sunter Pond WWTP (site No.5 / Zone 5)	(3) Marunda WWTP (site No.8 / Zone 8)
A. Construction Cost		107,840	55,968	77,809
a. Direct Construction Cost		95,434	49,529	68,857
(1) Civil and Building works		47,717	24,765	34,429
(2) Mechanical facilities		38,174	19,812	27,543
(3) Electrical facilities		9,543	4,953	6,886
b. Indirect Construction Cost		12,406	6,439	8,951
B. Engineering Cost		6,680	3,467	4,820
C. Physical Contingency		5,392	2,798	3,890
D. Land Use Cost		0	0	0
Total		119,913	62,233	86,519
E. Value Added Tax	10%	11,991	6,223	8,652
Grand Total		131,904	68,457	95,171

Table S/R-D9-14 Construction Cost for On-site Development Plan (3/3)

(3) Facilities Replacement Cost from 2013 to 2050

Unit : Million IDR

Items		Total	1. On-site STP Development Plan	2. Integration Plan for Off-site WWTP and On-site STP		
			Construction of a new STP in South area	(1) Duri Kosambi WWTP integrated with existing On-site STP (WWTP site No. 6 / Zone 6)	(2) Pulo Gebang WWTP expanded and integrated with existing On-site STP (WWTP site No. 10 / Zone 10)	
					Rehabilitation and Extension of Pulo Gebang STP	Pulo Gebang WWTP integrated with existing On-site STP (WWTP site No. 10 / Zone 10)
A. Construction Cost		248,747	16,576	66,015	0	53,893
a. Facilities Replacement Cost	from 2013 to 2050	220,130	14,669	58,420	0	47,693
b. Indirect Construction Cost	13% of Direct Construction Cost	28,617	1,907	7,595	0	6,200
B. Engineering Cost	7% of Direct Construction Cost	15,409	1,027	4,089	0	3,338
C. Physical Contingency	5% of Construction Cost	12,437	829	3,301	0	2,695
Total		276,593	18,431	73,405	0	59,926
D. Value Added Tax	10%	27,659	1,843	7,340	0	5,993
Grand Total		304,252	20,275	80,745	0	65,919

Unit : Million IDR

Items		3. Co-treatment Plan of On-site sludge at Off-site WWTPs		
		(1) Pejagalan WWTP (site No.2 / Zone 1)	(2) Sunter Pond WWTP (site No.5 / Zone 5)	(3) Marunda WWTP (site No.8 / Zone 8)
A. Construction Cost		56,077	23,506	32,680
a. Facilities Replacement Cost	from 2013 to 2050	49,626	20,802	28,920
b. Indirect Construction Cost		6,451	2,704	3,760
B. Engineering Cost		3,474	1,456	2,024
C. Physical Contingency		2,804	1,175	1,634
Total		62,355	26,138	36,338
E. Value Added Tax	10%	6,235	2,614	3,634
Grand Total		68,590	28,752	39,972

Table S/R-D9-15 Annual O&M Cost for On-site Development Plan

* Annual O&M Cost

Unit : Million IDR

Items		Total	1. On-site STP Development Plan	2. Integration Plan for Off-site WWTP and On-site STP		
			Construction of a new STP in South area	(1) Duri Kosambi WWTP integrated with existing On-site STP (WWTP site No. 6 / Zone 6)	(2) Pulo Gebang WWTP expanded and integrated with existing On-site STP (WWTP site No. 10 / Zone 10)	
					Rehabilitation and Extension of Pulo Gebang STP	Pulo Gebang WWTP integrated with existing On-site STP (WWTP site No. 10 / Zone 10)
A. O&M cost	year of maximum sludge amount	39,009	11,758	6,197	2,998	6,263
Total		39,009	11,758	6,197	2,998	6,263
B. Value Added Tax	10%	3,901	1,176	620	300	626
Grand Total		42,910	12,934	6,816	3,298	6,889

Items		3. Co-treatment Plan of On-site sludge at Off-site WWTPs		
		(1) Pejagalan WWTP (site No.2 / Zone 1)	(2) Sunter Pond WWTP (site No.5 / Zone 5)	(3) Marunda WWTP (site No.8 / Zone 8)
A. O&M cost	year of maximum sludge amount	5,264	2,732	3,798
Total		5,264	2,732	3,798
B. Value Added Tax	10%	526	273	380

Table S/R-D9-16 Income from Sludge Handling Fee

*** Income**

Annual Income (The year when the amount of sludge at the maximum)

Unit : Million IDR/year

Items		Total	1. On-site STP Development Plan	2. Integration Plan for Off-site WWTP and On-site STP		
			Construction of a new STP in South area	(1) Duri Kosambi WWTP integrated with existing On-site STP (WWTP site No. 6 / Zone 6)	(2) Pulo Gebang WWTP expanded and integrated with existing On-site STP (WWTP site No. 10 / Zone 10)	Rehabilitation and Extension of Pulo Gebang STP
Income from sludge handling fee	year of maximum sludge amount	7,537	1,095	1,697	821	1,716

Items		3. Co-treatment Plan of On-site sludge at Off-site WWTPs		
		(1) Pejagalan WWTP (site No.2 / Zone 1)	(2) Sunter Pond WWTP (site No.5 / Zone 5)	(3) Marunda WWTP (site No.8 / Zone 8)
Income from sludge handling fee	year of maximum sludge amount	1,442	748	1,040

Table S/R-D9-17 Construction Cost for On-site STPs Development Plans (Breakdown by Local currency and Foreign currency) (Market price-based) (1/2)

* Construction Cost (Market price-based)

Unit : Million IDR

Unit : Million IDR

Items	Cost	1. On-site STP Development Plan			2. Integration Plan for Off-site WWTP and On-site STP							
		Local currency	Foreign currency	Total	Construction of a new STP in South area		(1) Duri Kosambi WWTP integrated with existing On-site STP (WWTP site No. 6 / Zone 6)		(2) Pulo Gebang WWTP expanded and integrated with existing On-site STP (WWTP site No. 10 / Zone 10)		Pulo Gebang WWTP integrated with existing On-site STP (WWTP site No. 10 / Zone 10)	
					Local currency	Foreign currency	Local currency	Foreign currency	Local currency	Foreign currency	Local currency	Foreign currency
A. Construction Cost		414,190	385,801	799,991	21,363	29,633	99,902	93,064	8,808	11,132	97,551	84,658
a. Direct Construction Cost		366,540	341,417	707,957	18,905	26,224	88,409	82,357	7,795	9,851	86,328	74,919
(1) Civil and Building works		242,393	0	242,393	15,851	0	56,173	0	6,682	0	56,777	0
(2) Mechanical facilities		16,812	184,135	200,948	1,197	13,112	3,760	41,179	899	9,851	3,800	41,622
(3) Electrical facilities		44,486	0	44,486	300	0	11,235	0	214	0	11,355	0
(4) Facilities Replacement (from 2013 to 2050)		14,360	157,282	171,642	1,197	13,112	3,760	41,179	0	0	3,040	33,297
	Mecanical Facility	14,360	157,282	171,642	1,197	13,112	3,760	41,179	0	0	3,040	33,297
	Electrical Facility	48,488	0	48,488	360	0	13,482	0	0	0	11,355	0
	Sub-total	62,848	157,282	220,130	1,557	13,112	17,241	41,179	0	0	14,396	33,297
b. Indirect Construction Cost	13% of Direct Construction Cost	47,650	44,384	92,034	2,458	3,409	11,493	10,706	1,013	1,281	11,223	9,739
B. Engineering Cost	7% of Direct Construction Cost	25,658	23,899	49,557	1,323	1,836	6,189	5,765	546	690	6,043	5,244
C. Physical Contingency	5% of Construction Cost	20,710	19,290	40,000	1,068	1,482	4,995	4,653	440	557	4,878	4,233
D. Land Use Cost		0	0	0	0	0	0	0	0	0	0	0
Total		460,557	428,990	889,548	23,755	32,950	111,086	103,482	9,795	12,378	108,472	94,135
E. Value Added Tax	10%	46,056	42,899	88,955	2,375	3,295	11,109	10,348	979	1,238	10,847	9,414
Grand Total		506,613	471,890	978,503	26,130	36,245	122,194	113,830	10,774	13,616	119,319	103,549

Unit : Million IDR

Items	Cost	3. Co-treatment Plan of On-site sludge at Off-site WWTPs					
		(1) Pejagalan WWTP (site No.2 / Zone 1)		(2) Sunter Pond WWTP (site No.5 / Zone 5)		(3) Marunda WWTP (site No.8 / Zone 8)	
		Local currency	Foreign currency	Local currency	Foreign currency	Local currency	Foreign currency
A. Construction Cost		84,863	79,054	42,549	36,925	59,153	51,335
a. Direct Construction Cost		75,100	69,960	37,654	32,677	52,348	45,429
(1) Civil and Building works		47,717	0	24,765	0	34,429	0
(2) Mechanical facilities		3,194	34,980	1,658	18,154	2,304	25,239
(3) Electrical facilities		9,543	0	4,953	0	6,886	0
(4) Facilities Replacement (from 2013 to 2050)		3,194	34,980	1,326	14,523	1,844	20,191
	Mecanical Facility	11,452	0	4,953	0	6,886	0
	Electrical Facility	11,452	0	4,953	0	6,886	0
	Sub-total	14,646	34,980	6,279	14,523	8,729	20,191
b. Indirect Construction Cost	13% of Direct Construction Cost	9,763	9,095	4,895	4,248	6,805	5,906
B. Engineering Cost	7% of Direct Construction Cost	5,257	4,897	2,636	2,287	3,664	3,180
C. Physical Contingency	5% of Construction Cost	4,243	3,953	2,127	1,846	2,958	2,567
D. Land Use Cost		0	0	0	0	0	0
Total		94,363	87,904	47,312	41,059	65,775	57,082
E. Value Added Tax	10%	9,436	8,790	4,731	4,106	6,578	5,708
Grand Total		103,800	96,695	52,043	45,165	72,353	62,790

Table S/R-D9-17 Construction Cost for On-site STPs Development Plans (Breakdown by Local currency and Foreign currency) (Market price-based) (2/2)

* Construction Cost (Economic value-based)

Economic value = Market price × SER(Shadow Exchange Rate) [Foreign currency applicable only]

*SER(Shadow Exchange Rate) = 1.1

Unit : Million IDR

Items	Cost	1. On-site STP Development Plan				2. Integration Plan for Off-site WWTP and On-site STP							
		Construction of a new STP in South area			(1) Duri Kosambi WWTP integrated with existing On-site STP (WWTP site No. 6 / Zone 6)				(2) Pulo Gebang WWTP expanded and integrated with existing On-site STP (WWTP site No. 10 / Zone 10)				
		Local currency	Foreign currency	Total	Local currency	Foreign currency	Local currency	Foreign currency	Local currency	Foreign currency	Local currency	Foreign currency	
A. Construction Cost		414,190	424,381	838,571	21,363	32,596	99,902	102,370	8,808	12,245	97,551	93,124	
a. Direct Construction Cost		366,540	375,559	742,099	18,905	28,846	88,409	90,593	7,795	10,836	86,328	82,411	
(1) Civil and Building works		242,393	0	242,393	15,851	0	56,173	0	6,682	0	56,777	0	
(2) Mechanical facilities		16,812	202,549	219,361	1,197	14,423	3,760	45,297	899	10,836	3,800	45,784	
(3) Electrical facilities		44,486	0	44,486	300	0	11,235	0	214	0	11,355	0	
(4)Facilities Replacement (from 2013 to 2050)	Mecanical Facility	14,360	173,010	187,370	1,197	14,423	3,760	45,297	0	0	3,040	36,627	
	Electrical Facility	48,488	0	48,488	360	0	13,482	0	0	0	11,355	0	
	Sub-total	62,848	173,010	235,858	1,557	14,423	17,241	45,297	0	0	14,396	36,627	
b. Indirect Construction Cost	13% of Direct Construction Cost	47,650	48,823	96,473	2,458	3,750	11,493	11,777	1,013	1,409	11,223	10,713	
B. Engineering Cost	7% of Direct Construction Cost	25,658	26,289	51,947	1,323	2,019	6,189	6,342	546	759	6,043	5,769	
C. Physical Contingency	5% of Construction Cost	20,710	21,219	41,929	1,068	1,630	4,995	5,119	440	612	4,878	4,656	
D. Land Use Cost		0	0	0	0	0	0	0	0	0	0	0	
Total		460,557	471,890	932,447	23,755	36,245	111,086	113,830	9,795	13,616	108,472	103,549	
E. Value Added Tax	10%	46,056	47,189	93,245	2,375	3,624	11,109	11,383	979	1,362	10,847	10,355	
Grand Total		506,613	519,079	1,025,692	26,130	39,869	122,194	125,213	10,774	14,977	119,319	113,904	

Unit : Million IDR

Items	Cost	3. Co-treatment Plan of On-site sludge at Off-site WWTPs					
		(1) Pejagalan WWTP (site No.2 / Zone 1)		(2) Sunter Pond WWTP (site No.5 / Zone 5)		(3) Marunda WWTP (site No.8 / Zone 8)	
		Local currency	Foreign currency	Local currency	Foreign currency	Local currency	Foreign currency
A. Construction Cost		84,863	86,960	42,549	40,618	59,153	56,469
a. Direct Construction Cost		75,100	76,956	37,654	35,945	52,348	49,972
(1) Civil and Building works		47,717	0	24,765	0	34,429	0
(2) Mechanical facilities		3,194	38,478	1,658	19,969	2,304	27,762
(3) Electrical facilities		9,543	0	4,953	0	6,886	0
(4)Facilities Replacement (from 2013 to 2050)	Mecanical Facility	3,194	38,478	1,326	15,976	1,844	22,210
	Electrical Facility	11,452	0	4,953	0	6,886	0
	Sub-total	14,646	38,478	6,279	15,976	8,729	22,210
b. Indirect Construction Cost	13% of Direct Construction Cost	9,763	10,004	4,895	4,673	6,805	6,496
B. Engineering Cost	7% of Direct Construction Cost	5,257	5,387	2,636	2,516	3,664	3,498
C. Physical Contingency	5% of Construction Cost	4,243	4,348	2,127	2,031	2,958	2,823
D. Land Use Cost		0	0	0	0	0	0
Total		94,363	96,695	47,312	45,165	65,775	62,790
E. Value Added Tax	10%	9,436	9,669	4,731	4,516	6,578	6,279
Grand Total		103,800	106,364	52,043	49,681	72,353	69,069

Table S/R-D9-18 Annual O&M Cost for On-site STPs Development Plans(Breakdown by Local currency and Foreign currency)

Items	Annual O&M Cost			1. On-site STP Development Plan		2. Integration Plan for Off-site WWTP and On-site STP						
				Construction of a new STP in South area		(1) Duri Kosambi WWTP integrated with existing On-site STP (WWTP site No. 6 / Zone 6)		(2) Pulo Gebang WWTP expanded and integrated with existing On-site STP (WWTP site No. 10 / Zone 10)		Rehabilitation and Extension of Pulo Gebang STP		Pulo Gebang WWTP integrated with existing On-site STP (WWTP site No. 10 / Zone 10)
	Local currency	Foreign currency	Total	Local currency	Foreign currency	Local currency	Foreign currency	Local currency	Foreign currency	Local currency	Foreign currency	
A. O&M cost	27,216	0	27,216	11,758	0	6,197	0	2,998	0	6,263	0	
Total	27,216	0	27,216	11,758		6,197		2,998		6,263		
D. Value Added Tax	10%	2,722	0	2,722	1,176	0	620	0	300	0	626	0
Grand Total		29,938		12,934		6,816		3,298		6,889		

Unit : Million IDR/year

Items				3. Co-treatment Plan of On-site sludge at Off-site WWTPs					
				(1) Pejagalan WWTP (site No.2 / Zone 1)		(2) Sunter Pond WWTP (site No.5 / Zone 5)		(3) Marunda WWTP (site No.8 / Zone 8)	
	Local currency	Foreign currency	Local currency	Foreign currency	Local currency	Foreign currency			
A. O&M cost			5,264	0	2,732	0	3,798	0	
Total			5,264		2,732		3,798		
D. Value Added Tax	10%		526	0	273	0	380	0	
Grand Total			5,790		3,005		4,178		

D9.2 Construction Cost Estimates

D9.2.1 Schedule Quantities and Construction Costs

Table S/R-D9-19 Quantities and Construction Costs for Each Sewerage Zone

ITEM	Unit	ZONE-1	ZONE-2	ZONE-3	ZONE-4	ZONE-5	ZONE-6	ZONE-7	ZONE-8	ZONE-9	ZONE-10	ZONE-11	ZONE-12	ZONE-13	ZONE-14	Total
Area	ha	4,901	1,376	3,563	935	3,375	5,874	4,544	4,702	5,389	6,289	8,246	3,172	6,433	4,605	63,404
(1) House Connection	Place	101,952	29,089	86,455	21,398	71,253	130,956	85,444	93,841	114,682	140,385	194,515	59,913	113,902	80,887	1,324,671
(2) Collection Sewer Line																
1) Tertiary and Secondary	φ 200mm~φ 300mm	656,638	181,881	538,705	133,518	445,534	829,313	536,031	587,691	716,938	876,530	1,212,849	380,890	715,891	508,518	8,320,928
2) Main Sewer	φ 350mm~φ 800mm	86,069	42,041	109,736	28,375	102,462	154,809	139,243	147,192	170,647	192,932	251,348	144,176	199,969	146,045	1,915,044
3) Trunk Sewer (by Jacking method)	φ 900mm~φ1,200mm	5,263	3,580	5,277	2,313	6,369	11,532	11,037	5,400	5,026	6,860	15,789	7,844	9,659	5,703	101,654
4) Trunk Sewer (by Shielded tunnel)	φ1.350mm~φ2,400mm	10,269	0	3,125	304	3,079	12,426	402	3,333	2,998	8,726	6,285	660	3,676	932	56,214
sub total	m	758,238	227,501	656,843	164,510	557,445	1,008,080	686,714	743,616	895,610	1,085,049	1,486,271	533,571	929,195	661,198	10,393,841
(3) Lift Pump Station																
1) P1 Capacity	m ³ /min		40.8	10.0		27.3	171.8	50.1	68.4	37.7	83.1	194.2		70.4	20.7	
2) P2 Capacity	m ³ /min			10.0											14.1	
3) The number of Lift Pump Station	Place	0	1	2	0	1	1	1	1	1	1	1	0	1	2	13
(4) Wastewater Treatment Plant																
1) Wastewater Treatment Plant Capacity	m ³ /day	197,878	23,847	115,440		127,217	234,515	110,824	176,022	85,996	294,408	252,572	88,862	168,596	98,763	1,974,939
2) Pump Station Capacity	m ³ /min	244.7		155.1		168.4	282.5	149.8	221.6	120.9	342.4	332.4	124.3	213.7	135.9	2,492
(5) Land Acquisition																
1) Lift Pump Station	P1		800	400		500	2,000	1,000	1,300	800	1,400	2,000		1,300	500	12,000
2) Lift Pump Station	P2			400											500	900
3) Wastewater Treatment Plant	m ²	69,200	8,300	40,400		44,500	82,000	38,700	61,600	30,000	103,000	88,400	31,100	59,000	34,500	690,700

COST

ITEM	Unit Cost (×1,000 IDR.)	ZONE-1	ZONE-2	ZONE-3	ZONE-4	ZONE-5	ZONE-6	ZONE-7	ZONE-8	ZONE-9	ZONE-10	ZONE-11	ZONE-12	ZONE-13	ZONE-14	Total
		(×Million IDR.)														
(1) House Connection	3,544×1,000 IDR/Place	361,275	103,078	306,360	75,824	252,490	464,054	302,778	332,536	406,387	497,467	689,282	212,307	403,621	286,631	4,694,090
(2) Collection Sewer Line																
1) Tertiary and Secondary	φ 200mm~φ 300mm 984 ~ 1,635 × 1,000 IDR/m	807,717	221,294	655,001	162,386	542,084	1,018,759	652,608	715,263	872,267	1,066,179	1,474,874	464,907	871,896	619,363	10,144,598
2) Main Sewer	φ 350mm~φ 800mm 1,936 ~ 7,768 × 1,000 IDR/m	373,380	220,863	578,872	148,567	536,474	761,287	732,571	782,829	912,846	1,015,699	1,318,783	766,913	1,059,820	781,821	9,990,725
3) Trunk Sewer (by Jacking method)	φ 900mm~φ1,200mm 19,438 ~ 29,806 × 1,000 IDR/m	124,359	85,257	125,640	62,690	138,565	294,624	291,042	138,492	138,774	161,779	405,047	199,038	233,354	147,874	2,546,535
4) Trunk Sewer (by Shielded tunnel)	φ1.350mm~φ2,400mm 51,287 ~ 82,164 × 1,000 IDR/m	588,331	0	125,533	10,921	142,528	716,397	24,552	175,848	134,121	507,455	326,184	35,968	183,643	46,967	3,018,448
sub total		1,893,787	527,414	1,485,046	384,564	1,359,651	2,791,067	1,700,773	1,812,432	2,058,008	2,751,112	3,524,888	1,466,826	2,348,713	1,596,025	25,700,306
(3) Lift Pump Station																
1) P1	Civil/Architect Works 500,390~722,040 Mechanical Facility Electrical Facility P1 total		12,733 10,187 2,546	3,610 2,888 722		9,845 7,876 1,969	53,547 42,838 10,709	12,534 10,027 2,506	17,110 13,688 4,159	9,422 7,537 1,884	20,798 16,638 4,159	60,549 48,439 12,109		17,613 14,090 3,522	7,469 5,975 1,493	
2) P2	Civil/Architect Works 500,390~722,040 Mechanical Facility Electrical Facility P2 total			3,610 2,888 722											5,090 4,072 1,018	
sub total		0	25,466	14,440	0	19,690	107,094	25,067	34,220	18,843	41,595	121,097	0	35,225	25,117	467,854
(4) Wastewater Treatment Plant																
1) Civil/Architect Works	Treatment Plant = 7,584 × 1,000 IDR/m ³ /day	750,816	91,008	436,080	0	481,584	891,120	420,912	667,392	326,112	1,118,640	959,376	337,488	640,848	375,408	7,496,784
2) Mechanical Facility		600,653	72,806	348,864	0	385,267	712,896	336,730	533,914	260,890	894,912	767,501	269,990	512,678	300,326	5,997,427
3) Electrical Facility		150,163	18,202	87,216	0	96,317	178,224	84,182	133,478	65,222	223,728	191,875	67,498	128,170	75,082	1,499,357
sub total		1,501,632	182,016	872,160	0	963,168	1,782,240	841,824	1,334,784	652,224	2,237,280	1,918,752	674,976	1,281,696	750,816	14,993,568
Direct Cost	(1)+(2)+(3)+(4)	3,756,694	837,974	2,678,006	460,388	2,594,999	5,144,455	2,870,442	3,513,972	3,135,462	5,527,454	6,254,019	2,354,109	4,069,255	2,658,589	45,855,818
(5) Land Acquisition																
1) Lift Pump Station	P1 4,000 × 1,000 IDR/m ²	0	0		0											0
2) Lift Pump Station	P2	0	0		0											0
3) Wastewater Treatment Plant		0	0		0											0
sub total		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total		3,756,694	837,974	2,678,006	460,388	2,594,999	5,144,455	2,870,442	3,513,972	3,135,462	5,527,454	6,254,019	2,354,109	4,069,255	2,658,589	45,855,818

□ : 80% shield construction (U.S. dollars or yen) exchange
 □ : 50% of jacking construction (U.S. dollars or yen) exchange

IDR. 45,855,818,000,000
 Yen. 427,042,000,000
 Yen=IDR 107.38

Table S/R-D9-20 Unit Construction Costs of Pipe Laying Work

Unit Construction Cost of Pipe Laying Work.

Diameter (mm)	Earth Covering depth (m)	Open Cut method		Manhole (1,000 Rp./Nos)	Jacking method		Shielded tunnel method (1,000 Rp./m)	House Connection (1,000 Rp./m)	Remarks
		PVC (VU) (1,000 Rp./m)	RC (HP) (1,000 Rp./m)		Small-Diameter (1,000 Rp./m)	Large-Diameter (1,000 Rp./m)			
150	1.0~1.5m	984							
200	1.0~1.5m	1,110	1,603						
250	1.0~1.5m	1,293	1,662		17,440				
300	1.0~1.5m	1,635	1,876		18,235				
350	1.0~1.5m	1,936			22,722				
400	1.5~2.0m	3,063	3,131		23,085				
450	1.5~2.0m	3,848			24,597				
500	2.0~3.0m		4,711		22,632				
600	2.0~3.0m		5,424		25,424				
700	3.0~4.0m		6,937		26,650				
800	3.0~4.0m		7,768			18,603			
900	5.0m		18,390			19,438			
1,000	7.0m		20,320			25,781			
1,100	7.0m		21,215			28,056			
1,200	8.0m		23,740			29,806			
1,300	6.0m		24,853						
1,350	8.0m		26,018			35,682	51,287		
1,500	9.0m		28,538			39,061	55,840		
1,650	9.0m					43,590	60,873		
1,800	10.0m					47,699	66,386		
2,000	10.0m					55,446	71,144		
2,200	11.0m					62,105	76,403		
2,400	11.0m					72,872	82,164		
2,600	12.0m					81,329	87,979		
2,800	12.0m					95,346	94,258		
3,000	12.0m					103,689	101,002		
MH Type-1	1.0~1.5m			9,989					
	1.5~2.0m			12,704					
MH Type-2	2.0~3.0m			24,174					
	3.0~4.0m			31,654					
MH Type-3	4.0~5.0m			42,664					
	5.0~6.0m			47,962					
House Connection							3,544	Length: 2~4m, Depth: 1~3m	

Price Escalation = 1.119

Breakdown of Unit Rate, refer to attached documents.

(2) Sewerage Zone No.2

Table S/R-D9-22 Estimated Construction Costs for Sewerage Zone No.2

Sewerage Zone No.2 Another extension of pipe diameter aggregate
Main pipe extension 3,852
Total Population 149,042 108.3
Area 13,758,517

	200	250	300	350	400	450	500	600	700
Bypass ratio	4%	3%	4%	6%	8%	9%	12%	33%	21%
	Column Labels								
	800	900	1,000	1,100	Grand Total				
Sum of Leng	7.06%	40.26%	33.04%	19.63%	100.00%				

Sewerage Zone No.2 Construction costs estimated spreadsheet at another extension of pipe diameter

Pipe diameter	200	250	300	350	400	450	500	600	700	800	900	1000	1100	1200	1350	1500	1650	1800	2000	2200	2400	Total	
Pipe Length										272	1,551	1,273	756									3,852	
Pipe Length (by pass)	1,706	1,226	1,944	2,772	3,567	4,390	5,784	15,626	9,630													46,645	
Branch Pipe Length (ø 200mm)	177,005																					177,005	
Total Pipe Length	178,711	1,226	1,944	2,772	3,567	4,390	5,784	15,626	9,630	272	1,551	1,273	756									227,501	
Pipe Length of class			181,881							42,041				3,580								0	227,501
m per unit	1,110	1,293	1,635	1,936	3,063	3,848	4,711	5,424	6,937	7,768	19,438	25,781	28,056	29,806	35,682	55,840	60,873	66,386	71,144	76,403	82,164		
Pipeline amount	198,424,367	1,585,036	3,179,232	5,367,583	10,927,141	16,893,291	27,248,208	84,752,918	66,805,428	2,112,830	30,145,138	32,813,878	21,214,674	0	0	0	0	0	0	0	0	0	501,469,725
Number of Manhole	1,787	10	16	22	29	35	46	104	64	2	10	8	4	0	0	0	0	0	0	0	0	0	2,137
l per unit	9,989	9,989	9,989	9,989	12,704	12,704	24,174	24,174	31,654	31,654	47,962	47,962	47,962	47,962	47,962	47,962	47,962	47,962	47,962	47,962	47,962	47,962	
Manhole amount	17,852,192	97,984	155,371	221,529	362,508	446,164	1,118,568	2,518,219	2,032,187	57,400	495,864	406,966	181,335	0	0	0	0	0	0	0	0	0	25,946,287
Total	216,276,559	1,683,020	3,334,603	5,589,112	11,289,649	17,339,455	28,366,777	87,271,137	68,837,615	2,170,230	30,641,001	33,220,844	21,396,010	0	0	0	0	0	0	0	0	0	527,416,012
Class amount			221,294,182							220,863,975				85,257,855								0	527,416,012
Number of House Connection																							29,089
l per unit																							3,544
House Connection amount																							103,078,530
(Unit amount 1,000 Rp.)																						Pipeline + House Connection	630,494,542

(5) Sewerage Zone No.5

Table S/R-D9-25 Estimated Construction Costs for Sewerage Zone No.5

Sewerage Zone No.5 Another extension of pipe diameter aggregate

Main pipe extension 9,449
Total Population 795,109 235.6
Area 33,750,819

	200	250	300	350	400	450	500	600	700
Bypass ratio	4%	3%	4%	6%	8%	9%	12%	33%	21%
		Column Labels							
	900	1000	1100	1350	1500	1800	Grand Total		
Sum of Leng	46.71%	19.18%	1.51%	16.75%	14.09%	1.75%	100.00%		

Sewerage Zone No.5 Construction costs estimated spreadsheet at another extension of pipe diameter

Pipe diameter	200	250	300	350	400	450	500	600	700	800	900	1000	1100	1200	1350	1500	1650	1800	2000	2200	2400	Total	
Pipe Length											4,414	1,813	143		1,583	1,331		166					9,449
Pipe Length (bypass)	4,185	3,008	4,769	6,800	8,750	10,769	14,189	38,331	23,623														114,424
Branch Pipe Length (φ 200mm)	433,572																						433,572
Total Pipe Length	437,757	3,008	4,769	6,800	8,750	10,769	14,189	38,331	23,623		4,414	1,813	143		1,583	1,331		166					557,445
Pipe Length of class			445,534							102,462				6,369								3,079	557,445
m per unit	1,110	1,293	1,635	1,936	3,063	3,848	4,711	5,424	6,937	7,768	19,438	25,781	28,056	29,806	35,682	55,840	60,873	66,386	71,144	76,403	82,164		
Pipeline amount	486,046,419	3,888,229	7,798,929	13,167,139	26,805,213	41,440,689	66,842,185	207,906,157	163,879,429	0	85,796,639	46,733,420	4,010,272	0	56,474,001	74,320,763	0	10,995,570	0	0	0	0	1,296,105,055
Number of Manhole	4,378	24	38	54	70	86	114	256	157	0	29	12	1	0	8	7	0	1	0	0	0	0	5,234
l per unit	9,989	9,989	9,989	9,989	12,704	12,704	24,174	24,174	31,654	31,654	47,962	47,962	47,962	47,962	47,962	47,962	47,962	47,962	47,962	47,962	47,962	47,962	
Manhole amount	43,729,479	240,363	381,139	543,430	889,263	1,094,478	2,743,944	6,177,407	4,985,129	0	1,411,286	579,599	34,278	0	379,543	319,174	0	39,720	0	0	0	0	63,548,232
Total	529,775,898	4,128,592	8,180,067	13,710,569	27,694,476	42,535,166	69,586,129	214,083,564	168,864,558	0	87,207,926	47,313,019	4,044,551	0	56,853,545	74,639,937	0	11,035,289	0	0	0	0	1,359,653,287
Class amount			542,084,557							536,474,462				138,565,496								142,528,771	1,359,653,287
Number of House Connection																							71,253
l per unit																							3,544
House Connection amount																							252,490,408
(Unit amount 1,000 Rp.)																						Pipeline + House Connection	1,612,143,695

Table S/R-D9-35 Implementation Programme for Sewerage Development Plan (WWTP Capacity) (2/2)

Items	Population in 2030 Persons	Wastewater Flow m ³ /day	WWTP Capacity m ³ /day	Unit of WWTP Capacity : m ³ /day																				
				2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	
Design Population	1,000person			12,665	12,665	12,665	12,665	12,665	12,665	12,665	12,665	12,665	12,665	12,665	12,665	12,665	12,665	12,665	12,665	12,665	12,665	12,665		
Administrative Population	1,000person			12,665	12,665	12,665	12,665	12,665	12,665	12,665	12,665	12,665	12,665	12,665	12,665	12,665	12,665	12,665	12,665	12,665	12,665	12,665		
Sewerage Development Plan																								
Facility Coverage Ratio	%			42.9%	44.1%	45.2%	47.4%	49.6%	52.8%	56.0%	58.1%	61.3%	63.6%	65.8%	69.2%	71.4%	72.5%	73.6%	75.9%	78.2%	79.3%	79.3%	80.3%	
Adopted as Target of Facility Coverage Ratio	%			42%	44%	46%	48%	50%	53%	56%	59%	62%	65%	67%	69%	71%	73%	75%	76%	77%	78%	79%	80%	
Facility Coverage Population	Persons			5,436,891	5,580,641	5,724,391	6,006,891	6,286,058	6,688,974	7,091,891	7,356,058	7,764,599	8,049,391	8,334,183	8,759,599	9,040,641	9,181,266	9,321,891	9,610,016	9,898,141	10,045,641	10,045,641	10,165,641	
Facility Capacity (daily average wastewater flow)	m ³ /day			1,087,378	1,116,128	1,144,878	1,201,378	1,257,212	1,337,795	1,418,378	1,471,212	1,552,920	1,609,878	1,666,837	1,751,920	1,808,128	1,836,253	1,864,378	1,922,003	1,979,628	2,009,128	2,009,128	2,033,128	
Facility Capacity (daily maximum wastewater flow)	m ³ /day			1,420,491	1,458,825	1,497,158	1,572,491	1,646,936	1,754,380	1,861,825	1,932,269	2,041,213	2,117,158	2,193,102	2,306,547	2,381,491	2,418,991	2,456,491	2,533,325	2,610,158	2,649,491	2,649,491	2,681,491	
Service Coverage Ratio	%			38.4%	40.5%	42.8%	44.3%	45.6%	47.6%	50.1%	51.9%	53.8%	56.3%	58.8%	60.7%	63.4%	65.5%	67.7%	69.8%	72.2%	74.6%	76.9%	80.3%	
Adopted as Target of Service Coverage Ratio	%			37%	39%	41%	43%	45%	47%	49%	51%	53%	55%	58%	61%	64%	67%	70%	72%	74%	76%	78%	80%	
Served Population for Off-Site	Persons			4,859,912	5,132,099	5,419,704	5,609,391	5,774,927	6,024,713	6,345,213	6,579,463	6,813,713	7,130,463	7,447,213	7,684,677	8,027,610	8,299,829	8,572,047	8,844,266	9,144,610	9,444,954	9,745,297	10,165,641	
Wastewater Flow should be treated(daily average)	m ³ /day			949,973	1,004,410	1,061,931	1,099,868	1,132,976	1,182,933	1,247,033	1,293,883	1,340,733	1,404,083	1,467,433	1,514,926	1,583,512	1,637,956	1,692,400	1,746,843	1,806,912	1,866,981	1,927,050	2,011,118	
Wastewater Flow should be treated (daily maximum)	m ³ /day			1,266,630	1,339,213	1,415,908	1,466,491	1,510,634	1,577,244	1,662,710	1,725,177	1,787,644	1,872,110	1,956,577	2,019,901	2,111,350	2,183,941	2,256,533	2,329,125	2,409,216	2,489,308	2,569,400	2,681,491	
Short-term (2012-2020)																								
Zone 1	WWTP	989,389	198,000	264,000																				
	Sewer H/C																							
Zone 6	WWTP	1,172,574	235,000	313,000																				
	Sewer H/C																							
Medium-term (2021-2030)																								
Zone 4	WWTP	232,637	(47,000)*	(62,000)*																				
	Sewer H/C				* Wastewater in Zone 4 is treated at WWTP of Zone 10. Therefore there is no WWTP for Zone 4.																			
Zone 5	WWTP	636,087	127,000	170,000																				
	Sewer H/C				18,889	18,889																		
Zone 8	WWTP	880,110	176,000	235,000																				
	Sewer H/C				26,111	26,111	26,111																	
Zone 10	WWTP	1,239,402	295,000	393,000																				
	Sewer H/C				27,583	27,583	27,583	27,583																
Long-term (2031-2050)																								
Zone 2	WWTP	119,234	24,000	32,000																				
	Sewer H/C																							
Zone 3	WWTP	577,201	115,000	154,000																				
	Sewer H/C				77,000 38,500 38,500 22,000 22,000 22,000 22,000																			
Zone 7	WWTP	554,119	111,000	148,000																				
	Sewer H/C				74,000 74,000 37,000 37,000 37,000 37,000 21,143 21,143 21,143 21,143 21,143 21,143																			
Zone 9	WWTP	429,982	86,000	115,000																				
	Sewer H/C				57,500 57,500 38,333 38,333 38,333 23,000 23,000 23,000 23,000 23,000																			
Zone 11	WWTP	1,262,858	253,000	337,000																				
	Sewer H/C				84,250 84,250 37,444 37,444 37,444 37,444 37,444 22,467 22,467 22,467 22,467 22,467																			
Zone 12	WWTP	444,308	89,000	118,000																				
	Sewer H/C				84,250 84,250 59,000 59,000 39,333 39,333 39,333 29,500 29,500 29,500																			
Zone 13	WWTP	842,979	169,000	225,000																				
	Sewer H/C				75,000 75,000 75,000 37,500 37,500 37,500 37,500 28,125 28,125 28,125 28,125 28,125 28,125																			
Zone 14	WWTP	493,815	99,000	132,000																				
	Sewer H/C				66,000 66,000 33,000 33,000 33,000 18,857 18,857 18,857 18,857																			
Total	WWTP				57,500	0	131,500	84,250	66,000	74,000	84,250	143,000	84,250	0	236,250	0	0	75,000	59,000	75,000	59,000	0	32,000	0
	Sewer				0	38,333	38,333	75,333	74,444	107,444	107,444	70,444	108,944	75,944	75,944	113,444	74,944	37,500	37,500	76,833	76,833	39,333	0	32,000
	H/C				72,583	72,583	76,694	50,583	44,143	66,610	85,467	62,467	62,467	84,467	84,467	63,324	91,449	72,592	72,592	72,592	80,092	80,092	80,092	112,092
	Total	9,874,694	1,977,000	2,636,000																				

Note : 1. H/C=House Connection

2. The number of Facility Coverage Population and Served Population for Off-Site after 2031 are added up the population in the reclamation area as 110,049.

Table S/R-D9-38 Construction Cost for Sewerage Development Plan by Stage(Breakdown by each facility) (2/6)

Unit: Million IDR

Items	WWTP Capacity m ³ /day	Currency	Construction Cost Million IDR	Facilities Replacement Cost Million IDR	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030		
Long-term(2031-2050)	Zone No.2	WWTP	32,000	Local currency Foreign currency	114,670 67,346																				
		Lift P/S		Local currency Foreign currency	16,043 9,423																				
		Replacement		Local currency Foreign currency		0 0																			
		Sewer		Local currency Foreign currency	484,786 42,629																				
		H/C		Local currency Foreign currency	103,078 0																				
	Zone No.3	WWTP	154,000	Local currency Foreign currency	549,461 322,699																				
		Lift P/S		Local currency Foreign currency	9,097 5,343																				
		Replacement		Local currency Foreign currency		8,866 8,866																			
		Sewer		Local currency Foreign currency	1,321,800 163,246																				
		H/C		Local currency Foreign currency	306,360 0																				
Zone No.7	WWTP	148,000	Local currency Foreign currency	530,349 311,475																					
	Lift P/S		Local currency Foreign currency	15,792 9,275																					
	Replacement		Local currency Foreign currency		8,669 8,669																				
	Sewer		Local currency Foreign currency	1,535,610 165,163																					
	H/C		Local currency Foreign currency	302,778 0																					
Zone No.9	WWTP	115,000	Local currency Foreign currency	410,901 241,323																					
	Lift P/S		Local currency Foreign currency	11,871 6,972																					
	Replacement		Local currency Foreign currency		6,711 6,711																				
	Sewer		Local currency Foreign currency	1,881,324 176,684																					
	H/C		Local currency Foreign currency	406,387 0																					
Zone No.11	WWTP	337,000	Local currency Foreign currency	1,208,814 709,938																					
	Lift P/S		Local currency Foreign currency	76,291 44,806																					
	Replacement		Local currency Foreign currency		20,398 20,398																				
	Sewer		Local currency Foreign currency	3,061,417 463,471																					
	H/C		Local currency Foreign currency	689,282 0																					
Zone No.12	WWTP	118,000	Local currency Foreign currency	425,235 249,741																					
	Lift P/S		Local currency Foreign currency	0 0																					
	Replacement		Local currency Foreign currency		0 0																				
	Sewer		Local currency Foreign currency	1,338,533 128,293																					
	H/C		Local currency Foreign currency	212,307 0																					
Zone No.13	WWTP	225,000	Local currency Foreign currency	807,468 474,228																					
	Lift P/S		Local currency Foreign currency	22,192 13,033																					
	Replacement		Local currency Foreign currency		0 0																				
	Sewer		Local currency Foreign currency	2,085,122 263,591																					
	H/C		Local currency Foreign currency	403,621 0																					
Zone No.14	WWTP	132,000	Local currency Foreign currency	473,014 277,802																					
	Lift P/S		Local currency Foreign currency	15,824 9,293																					
	Replacement		Local currency Foreign currency		7,759 7,759																				
	Sewer		Local currency Foreign currency	1,484,514 111,511																					
	H/C		Local currency Foreign currency	286,631 0																					

Table S/R-D9-38 Construction Cost for Sewerage Development Plan by Stage(Breakdown by each facility) (3/6)

Unit: Million IDR

Items		WWTP Capacity m ³ /day	Currency	Construction Cost Million IDR	Facilities Replacement Cost Million IDR	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
b. Indirect Construction Cost	13% of Direct Construction Cost	13%	Local currency	4,875,274	0	136,408	69,652	147,138	78,423	147,138	69,652	106,143	44,377	56,538	86,965	123,344	158,557	160,136	200,644	138,331	193,280	88,641	17,125	
			Foreign currency	1,581,674	0	67,110	21,603	67,110	26,754	67,110	21,603	43,034	11,707	26,903	31,076	36,079	45,076	43,988	67,986	19,831	63,369	12,460	0	0
B. Engineering Cost	7% of Direct Construction Cost	7%	Local currency	2,625,148	0	73,451	37,505	79,228	42,228	79,228	37,505	57,154	23,895	30,443	46,827	66,416	85,377	86,227	108,039	74,486	104,074	47,730	9,221	
			Foreign currency	851,671	0	36,136	11,632	36,136	14,406	36,136	11,632	23,172	6,304	14,486	16,733	19,427	24,272	23,686	36,608	10,678	34,122	6,709	0	
C. Physical Contingency	5% of Construction Cost	5%	Local currency	2,118,869	0	59,285	30,272	63,948	34,084	63,948	30,272	46,131	19,287	24,572	37,796	53,607	68,911	69,598	87,203	60,121	84,002	38,525	7,443	
			Foreign currency	687,420	0	29,167	9,389	29,167	11,628	29,167	9,389	18,703	5,088	11,693	13,506	15,680	19,591	19,118	29,548	8,619	27,541	5,415	0	
D Land Use Cost	Land unit costs are assumed zero because the sites are public lands.		Local currency	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
			Foreign currency	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Short-term (2012-2020)	Zone No.1		Local currency	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
			Foreign currency	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Long-term (2031-2050)	Zone No.4		Local currency	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
			Foreign currency	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Long-term (2031-2050)	Zone No.5		Local currency	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
			Foreign currency	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Long-term (2031-2050)	Zone No.8		Local currency	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
			Foreign currency	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Long-term (2031-2050)	Zone No.10		Local currency	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
			Foreign currency	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Long-term (2031-2050)	Zone No.2		Local currency	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
			Foreign currency	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Long-term (2031-2050)	Zone No.3		Local currency	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
			Foreign currency	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Long-term (2031-2050)	Zone No.7		Local currency	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
			Foreign currency	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Long-term (2031-2050)	Zone No.9		Local currency	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
			Foreign currency	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Long-term (2031-2050)	Zone No.11		Local currency	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
			Foreign currency	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Long-term (2031-2050)	Zone No.12		Local currency	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
			Foreign currency	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Long-term (2031-2050)	Zone No.13		Local currency	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
			Foreign currency	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Long-term (2031-2050)	Zone No.14		Local currency	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
			Foreign currency	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total (excluding Value Added Tax)			Local currency	47,121,400	0	1,318,440	673,211	1,422,142	757,986	1,422,142	673,211	1,025,914	428,922	546,458	840,552	1,192,167	1,532,518	1,547,779	1,939,300	1,337,024	1,868,123	856,745	165,523	
Total (excluding Value Added Tax)			Foreign currency	15,287,492	0	648,647	208,798	648,647	258,587	648,647	208,798	415,941	113,152	260,031	300,357	348,718	435,677	425,160	657,112	191,674	612,489	120,428	0	
E. Value Added Tax	10%		Local currency	4,712,140	0	131,844	67,321	142,214	75,799	142,214	67,321	102,591	42,892	54,646	84,055	119,217	153,252	154,778	193,930	133,702	186,812	85,674	16,552	
			Foreign currency	1,528,749	0	64,865	20,880	64,865	25,859	64,865	20,880	41,594	11,315	26,003	30,036	34,872	43,568	42,516	65,711	19,167	61,249	12,043	0	
Grand Total			Local currency	51,833,540	0	1,450,284	740,532	1,564,357	833,785	1,564,357	740,532	1,128,506	471,814	601,103	924,607	1,311,384	1,685,770	1,702,556	2,133,230	1,470,726	2,054,936	942,419	182,075	
Grand Total			Foreign currency	16,816,241	0	713,511	229,678	713,511	284,445	713,511	229,678	457,535	124,468	286,034	330,393	383,589	479,245	467,677	722,823	210,841	673,738	132,471	0	
			Local currency	51,833,540											13,008,806									
			Foreign currency	16,816,241	8,494,167										3,686,811									
			Total	68,649,781	11,960,505										16,695,618									

Table S/R-D9-38 Construction Cost for Sewerage Development Plan by Stage(Breakdown by each facility) (6/6)

Unit: Million IDR

Items		WWTP Capacity m ³ /day	Currency	Construction Cost Million IDR	Facilities Replacement Cost Million IDR	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	
b. Indirect Construction Cost	13% of Direct Construction Cost	13%	Local currency	4,875,274	40,548	96,907	164,742	191,689	163,145	226,611	219,065	175,848	192,815	109,788	219,780	150,215	129,117	130,327	114,625	163,788	152,905	77,436	37,578	95,855		
			Foreign currency	1,581,674	15,686	8,563	44,866	40,265	89,682	109,842	44,584	49,351	39,392	12,000	76,598	18,584	51,920	115,079	89,069	51,004	30,155	5,559	11,132	5,542		
B. Engineering Cost	7% of Direct Construction Cost	7%	Local currency	2,625,148	21,834	52,181	88,707	103,217	87,847	122,021	117,958	94,687	103,823	59,117	118,343	80,885	69,524	70,176	61,721	88,193	82,334	41,696	20,234	51,614		
			Foreign currency	851,671	8,446	4,611	24,159	21,681	48,290	59,146	24,007	26,574	21,211	6,462	41,245	10,007	27,957	61,966	47,960	27,464	16,238	2,994	5,994	2,984		
C. Physical Contingency	5% of Construction Cost	5%	Local currency	2,118,869	17,623	42,117	71,599	83,311	70,905	98,489	95,209	76,426	83,800	47,716	95,520	65,286	56,116	56,642	49,818	71,185	66,455	33,655	16,332	41,660		
			Foreign currency	687,420	6,817	3,721	19,499	17,500	38,977	47,739	19,377	21,449	17,120	5,215	33,291	4,077	22,565	50,015	38,711	22,167	13,106	2,416	4,838	2,409		
D Land Use Cost	Land unit costs are assumed zero because the sites are public lands.		Local currency	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
			Foreign currency	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Short-term (2012-2020)	Zone No.1		Local currency	0																						
			Foreign currency	0																						
Zone No.6			Local currency	0																						
			Foreign currency	0																						
Long-term (2031-2050)	Zone No.4		Local currency	0																						
			Foreign currency	0																						
Zone No.5			Local currency	0																						
			Foreign currency	0																						
Zone No.8			Local currency	0																						
			Foreign currency	0																						
Zone No.10			Local currency	0																						
			Foreign currency	0																						
Long-term (2031-2050)	Zone No.2		Local currency	0																				0		
			Foreign currency	0																						
Zone No.3			Local currency	0										0												
			Foreign currency	0																						
Zone No.7			Local currency	0			0																			
			Foreign currency	0																						
Zone No.9			Local currency	0	0																					
			Foreign currency	0																						
Zone No.11			Local currency	0			0																			
			Foreign currency	0																						
Zone No.12			Local currency	0															0							
			Foreign currency	0																						
Zone No.13			Local currency	0											0											
			Foreign currency	0																						
Zone No.14			Local currency	0					0																	
			Foreign currency	0																						
Total (excluding Value Added Tax)				Local currency	47,121,400	391,914	936,643	1,592,291	1,852,745	1,576,855	2,190,282	2,117,346	1,699,639	1,863,628	1,061,148	2,124,260	1,451,890	1,247,962	1,259,665	1,107,890	1,583,072	1,477,889	748,446	363,205	926,474	
				Foreign currency	15,287,492	151,611	82,761	433,646	389,180	866,811	1,061,665	430,923	476,999	380,736	115,985	740,353	179,618	501,831	1,112,283	860,889	492,978	291,464	53,734	107,600	53,563	
E. Value Added Tax	10%		Local currency	4,712,140	39,191	93,664	159,229	185,274	157,686	219,028	211,735	169,964	186,363	106,115	212,426	145,189	124,796	125,966	110,789	158,307	147,789	74,845	36,321	92,647		
			Foreign currency	1,528,749	15,161	8,276	43,365	38,918	86,681	106,167	43,092	47,700	38,074	11,599	74,035	17,962	50,183	111,228	86,089	49,298	29,146	5,373	10,760	5,356		
Grand Total				Local currency	51,833,540	431,105	1,030,307	1,751,520	2,038,019	1,734,541	2,409,310	2,329,081	1,869,602	2,049,991	1,167,262	2,336,686	1,597,079	1,372,758	1,385,631	1,218,679	1,741,380	1,625,678	823,290	399,526	1,019,121	
				Foreign currency	16,816,241	166,772	91,037	477,010	428,098	953,492	1,167,832	474,016	524,699	418,810	127,584	814,388	197,580	552,014	1,223,511	946,978	542,276	320,611	59,107	118,360	58,919	
				Local currency	51,833,540																					30,330,566
				Foreign currency	16,816,241																					9,663,092
				Total	68,649,781																					39,993,659

Table S/R-D9-42 Construction Cost for On-site STPs Development Plans by Stage

Unit: Million IDR

Items	Term	Short-term										Medium-term									
	Total	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	
A. Construction Cost	799,991	0	271,942	17,210	0	0	0	0	0	0	64,158	64,158	58,507	77,877	2,157	0	0	0	0	0	
a. Direct Construction Cost	707,957	0	240,656	15,230	0	0	0	0	0	0	56,777	56,777	51,776	68,917	1,909	0	0	0	0	0	
1. On-site STP Development Plan	45,129	0	15,230	15,230	0	0	0	0	0	0	0	0	0	60	0	0	0	0	0	0	
2. Integration Plan for Off-site WWTP and On-site STP	349,660	0	129,992	0	0	0	0	0	0	0	56,777	56,777	2,247	0	0	0	0	0	0	0	
3. Co-treatment Plan of On-site sludge at Off-site WWTPs	313,168	0	95,434	0	0	0	0	0	0	0	0	0	49,529	68,857	1,909	0	0	0	0	0	
b. Indirect Construction Cost	92,034	0	31,285	1,980	0	0	0	0	0	0	7,381	7,381	6,731	8,959	248	0	0	0	0	0	
B. Engineering Cost	49,557	0	16,846	1,066	0	0	0	0	0	0	3,974	3,974	3,624	4,824	134	0	0	0	0	0	
C. Physical Contingency	40,000	0	13,597	860	0	0	0	0	0	0	3,208	3,208	2,925	3,894	108	0	0	0	0	0	
D. Land Use Cost	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total (excluding Value Added Tax)	889,548	0	302,385	19,137	0	0	0	0	0	0	71,341	71,341	65,056	86,595	2,398	0	0	0	0	0	
E. Value Added Tax	88,955	0	30,238	1,914	0	0	0	0	0	0	7,134	7,134	6,506	8,659	240	0	0	0	0	0	
Grand Total	978,503	0	332,623	21,050	0	0	0	0	0	0	78,475	78,475	71,562	95,254	2,638	0	0	0	0	0	
		353,673										326,403									

Items	Long-term																				
	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	
A. Construction Cost	0	2,566	51,900	13,206	44,692	0	0	0	0	0	0	51,327	35,082	3,302	41,908	0	0	0	0	0	
a. Direct Construction Cost	0	2,271	45,929	11,687	39,551	0	0	0	0	0	0	45,422	31,046	2,922	37,086	0	0	0	0	0	
1. On-site STP Development Plan	0	0	0	11,687	0	0	0	0	0	0	0	0	0	2,922	0	0	0	0	0	0	
2. Integration Plan for Off-site WWTP and On-site STP	0	2,271	44,939	0	0	0	0	0	0	0	0	45,422	11,235	0	0	0	0	0	0	0	
3. Co-treatment Plan of On-site sludge at Off-site WWTPs	0	0	991	0	39,551	0	0	0	0	0	0	0	19,812	0	37,086	0	0	0	0	0	
b. Indirect Construction Cost	0	295	5,971	1,519	5,142	0	0	0	0	0	0	5,905	4,036	380	4,821	0	0	0	0	0	
B. Engineering Cost	0	159	3,215	818	2,769	0	0	0	0	0	0	3,180	2,173	205	2,596	0	0	0	0	0	
C. Physical Contingency	0	128	2,595	660	2,235	0	0	0	0	0	0	2,566	1,754	165	2,095	0	0	0	0	0	
D. Land Use Cost	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total (excluding Value Added Tax)	0	2,854	57,710	14,685	49,695	0	0	0	0	0	0	57,072	39,010	3,671	46,599	0	0	0	0	0	
E. Value Added Tax	0	285	5,771	1,468	4,970	0	0	0	0	0	0	5,707	3,901	367	4,660	0	0	0	0	0	
Grand Total	0	3,139	63,481	16,153	54,665	0	0	0	0	0	0	62,780	42,911	4,038	51,259	0	0	0	0	0	
		298,426																			

Table S/R-D9-45 O&M Cost for On-site STPs Development Plans by Stage

Items	Term	Short-term										Medium-term									
		Total	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
		Unit: Million IDR																			
A. O&M Cost	2,896,675	5,034	5,505	27,137	54,159	57,524	60,788	63,950	67,007	69,957	73,868	77,656	80,941	84,613	87,774	90,725	93,509	95,770	97,830	99,686	
New STP in South area	1,269,876	0	0	0	35,274	35,274	35,274	35,274	35,274	35,274	35,274	35,274	35,274	35,274	35,274	35,274	35,274	35,274	35,274	35,274	
Duri Kosambi WWTP	422,189	2,517	2,752	9,942	5,463	7,289	9,061	10,777	12,436	14,037	16,160	18,215	14,741	13,561	11,967	12,639	13,274	13,789	14,258	14,682	
Pulo Gebang WWTP	478,230	2,517	2,752	8,819	8,819	8,819	8,819	8,819	8,819	8,819	8,819	8,819	8,819	18,505	17,023	15,022	15,866	16,663	17,310	17,899	
Sludge treatment by Off-site WWTPs	726,380	0	0	8,376	4,603	6,142	7,634	9,080	10,478	11,827	13,615	15,348	12,420	18,755	25,512	26,946	28,298	29,397	30,398	31,300	
Total (excluding Value Added Tax)	2,896,675	5,034	5,505	27,137	54,159	57,524	60,788	63,950	67,007	69,957	73,868	77,656	80,941	84,613	87,774	90,725	93,509	95,770	97,830	99,686	
B. Value Added Tax	289,668	503	550	2,714	5,416	5,752	6,079	6,395	6,701	6,996	7,387	7,766	8,094	8,461	8,777	9,073	9,351	9,577	9,783	9,969	
Total	3,186,343	5,538	6,055	29,850	59,575	63,276	66,867	70,345	73,707	76,953	81,255	85,421	89,035	93,075	96,552	99,798	102,860	105,347	107,613	109,654	
		452,166										970,608									

Items	Long-term																				
	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	
A. O&M Cost	99,131	98,809	98,103	97,639	97,046	95,697	93,635	91,806	89,704	86,792	83,586	80,631	76,678	72,936	68,925	64,647	59,896	54,878	49,595	43,110	
New STP in South area	35,274	35,274	35,274	35,274	35,274	35,274	35,274	35,274	35,274	35,274	35,274	35,274	35,274	35,274	35,274	35,274	35,274	35,274	35,274	35,274	
Duri Kosambi WWTP	14,555	14,482	14,321	14,215	14,080	13,772	13,302	12,886	12,406	11,743	11,012	10,338	9,437	8,584	7,670	6,695	5,612	4,468	3,264	1,786	
Pulo Gebang WWTP	18,271	18,179	17,977	17,844	17,675	17,289	16,699	16,175	15,574	14,741	13,823	12,978	11,847	10,776	9,628	8,404	7,045	5,609	4,098	2,242	
Sludge treatment by Off-site WWTPs	31,030	30,874	30,531	30,305	30,017	29,362	28,359	27,471	26,449	25,034	23,476	22,041	20,120	18,301	16,352	14,273	11,965	9,526	6,959	3,888	
Total (excluding Value Added Tax)	99,131	98,809	98,103	97,639	97,046	95,697	93,635	91,806	89,704	86,792	83,586	80,631	76,678	72,936	68,925	64,647	59,896	54,878	49,595	43,110	
B. Value Added Tax	9,913	9,881	9,810	9,764	9,705	9,570	9,363	9,181	8,970	8,679	8,359	8,063	7,668	7,294	6,892	6,465	5,990	5,488	4,960	4,311	
Total	109,044	108,690	107,913	107,403	106,751	105,267	102,998	100,987	98,674	95,471	91,945	88,695	84,346	80,229	75,817	71,112	65,886	60,366	54,555	47,421	
		1,763,568																			

Table S/R-D9-46 Estimated Revenue from Sludge Handling Fee by Stage

Items	Term	Short-term										Medium-term									
		Total	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
		Unit: Million IDR																			
Revenue from Sludge Bringing Fee																					
New STP in South area	39,420	0	0	0	1095	1095	1095	1095	1095	1095	1095	1095	1095	1095	1095	1095	1095	1095	1095	1095	
Duri Kosambi WWTP	39,317	234	256	926	509	679	844	1004	1158	1307	1505	1696	1373	1263	1114	1177	1236	1284	1328	1367	
Pulo Gebang WWTP	15,038	0	0	0	0	0	0	0	0	0	0	0	0	683	602	636	668	694	718	739	
Sludge treatment by Off-site WWTPs	19,894	0	0	0	0	0	0	0	0	0	0	0	0	0	835	882	926	962	994	1024	
Total	113,670	234	256	926	1604	1774	1939	2099	2253	2402	2600	2791	2468	3040	3646	3790	3925	4035	4135	4225	
		13,487										34,655									

Items	Long-term																				
	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	
Revenue from Sludge Bringing Fee																					
New STP in South area	1095	1095	1095	1095	1095	1095	1095	1095	1095	1095	1095	1095	1095	1095	1095	1095	1095	1095	1095	1095	
Duri Kosambi WWTP	1355	1349	1334	1324	1311	1283	1239	1200	1155	1094	1026	963	879	799	714	623	523	416	304	166	
Pulo Gebang WWTP	733	729	721	715	709	693	669	649	624	591	554	520	475	432	386	337	282	225	164	90	
Sludge treatment by Off-site WWTPs	1015	1010	999	991	982	961	928	899	865	819	768	721	658	599	535	467	391	312	228	125	
Total	4198	4183	4148	4126	4097	4031	3931	3842	3740	3599	3443	3299	3107	2925	2730	2522	2292	2048	1791	1476	
		65,527																			

Table S/R-D9-47 Operation and Maintenance Cost for On-site STPs Development Project by Stage(Breakdown)

Items		Unit: Million IDR																				
		Term		Short-term								Medium-term										
		O&M Cost	Million IDR	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
A. O&M Cost		2,896,675	5,034	5,505	27,137	54,159	57,524	60,788	63,950	67,007	69,957	73,868	77,656	80,941	84,613	87,774	90,725	93,509	95,770	97,830	99,686	
New STP in South area		1,269,876	0	0	0	35,274	35,274	35,274	35,274	35,274	35,274	35,274	35,274	35,274	35,274	35,274	35,274	35,274	35,274	35,274	35,274	
Duri Kosambi WWTP		422,189	2,517	2,752	9,942	5,463	7,289	9,061	10,777	12,436	14,037	16,160	18,215	14,741	13,561	11,967	12,639	13,274	13,789	14,258	14,682	
Pulo Gebang WWTP		478,230	2,517	2,752	8,819	8,819	8,819	8,819	8,819	8,819	8,819	8,819	8,819	18,505	17,023	15,022	15,866	16,663	17,310	17,899	18,430	
Sludge treatment by Off-site WWTPs		726,380	0	0	8,376	4,603	6,142	7,634	9,080	10,478	11,827	13,615	15,348	12,420	18,755	25,512	26,946	28,298	29,397	30,398	31,300	
Pejagalan WWTP (site No. 2 / Zone 1)		351,277	0	0	8,376	4,603	6,142	7,634	9,080	10,478	11,827	13,615	15,348	12,420	11,426	10,082	10,649	11,184	11,618	12,014	12,370	
Sunter Pond WWTP (site No. 5 / Zone 5)		161,478	0	0	0	0	0	0	0	0	0	0	0	0	7,329	6,467	6,831	7,173	7,452	7,706	7,934	
Marunda WWTP (site No. 8 / Zone 8)		213,625	0	0	0	0	0	0	0	0	0	0	0	0	0	8,962	9,466	9,941	10,327	10,679	10,996	
Total		2,896,675	5,034	5,505	27,137	54,159	57,524	60,788	63,950	67,007	69,957	73,868	77,656	80,941	84,613	87,774	90,725	93,509	95,770	97,830	99,686	
B. Value Added Tax		10%	289,668	503	550	2,714	5,416	5,752	6,079	6,395	6,701	6,996	7,387	7,766	8,094	8,461	8,777	9,073	9,351	9,577	9,783	9,969
Grand Total		3,186,343	5,538	6,055	29,850	59,575	63,276	66,867	70,345	73,707	76,953	81,255	85,421	89,035	93,075	96,552	99,798	102,860	105,347	107,613	109,654	
			452,166								970,608											

Items		Unit: Million IDR																					
		Term		Long-term																			
		O&M Cost	Million IDR	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
A. O&M Cost		2,896,675	99,131	98,809	98,103	97,639	97,046	95,697	93,635	91,806	89,704	86,792	83,586	80,631	76,678	72,936	68,925	64,647	59,896	54,878	49,595	43,110	
New STP in South area		1,269,876	35,274	35,274	35,274	35,274	35,274	35,274	35,274	35,274	35,274	35,274	35,274	35,274	35,274	35,274	35,274	35,274	35,274	35,274	35,274	35,274	
Duri Kosambi WWTP		422,189	14,555	14,482	14,321	14,215	14,080	13,772	13,302	12,886	12,406	11,743	11,012	10,338	9,437	8,584	7,670	6,695	5,612	4,468	3,264	1,786	
Pulo Gebang WWTP		478,230	18,271	18,179	17,977	17,844	17,675	17,289	16,699	16,175	15,574	14,741	13,823	12,978	11,847	10,776	9,628	8,404	7,045	5,609	4,098	2,242	
Sludge treatment by Off-site WWTPs		726,380	31,030	30,874	30,531	30,305	30,017	29,362	28,359	27,471	26,449	25,034	23,476	22,041	20,120	18,301	16,352	14,273	11,965	9,526	6,959	3,808	
Pejagalan WWTP (site No. 2 / Zone 1)		351,277	12,263	12,202	12,066	11,977	11,863	11,604	11,208	10,857	10,453	9,894	9,278	8,711	7,951	7,233	6,462	5,641	4,729	3,765	2,750	1,505	
Sunter Pond WWTP (site No. 5 / Zone 5)		161,478	7,866	7,826	7,739	7,682	7,609	7,443	7,189	6,964	6,705	6,346	5,951	5,587	5,100	4,639	4,145	3,618	3,033	2,415	1,764	965	
Marunda WWTP (site No. 8 / Zone 8)		213,625	10,901	10,846	10,725	10,646	10,545	10,315	9,963	9,650	9,292	8,794	8,247	7,743	7,068	6,429	5,744	5,014	4,203	3,346	2,445	1,338	
Total		2,896,675	99,131	98,809	98,103	97,639	97,046	95,697	93,635	91,806	89,704	86,792	83,586	80,631	76,678	72,936	68,925	64,647	59,896	54,878	49,595	43,110	
B. Value Added Tax		10%	289,668	9,913	9,881	9,810	9,764	9,705	9,570	9,363	9,181	8,970	8,679	8,359	8,063	7,688	7,294	6,892	6,465	5,990	5,488	4,960	4,311
Grand Total		3,186,343	109,044	108,690	107,913	107,403	106,751	105,267	102,998	100,987	98,674	95,471	91,945	88,695	84,346	80,229	75,817	71,112	65,886	60,366	54,555	47,421	
			1,763,568																				