

Catchment C

- 6.7.1.7 Catchment C is bounded by the airport tunnel, culvert R and culvert Q. Sewage collected within the catchment along with the flows from pump station 2 is fed to pumping station 4 through a gravity system. From pump station 4 the sewage is pumped directly to the To Kwa Wan Preliminary Treatment Works.

Catchment D

- 6.7.1.8 Catchment D is bounded by culverts Q and P2. The sewage is flows through a gravity system to pumping station 5 where it is then pumped to the To Kwa Wan Preliminary Treatment Works along with the sewage from Catchment E.

Catchment E

- 6.7.1.9 Catchment E is located in the southwestern corner of the SEKD and is separated from catchment D by culvert P1. Sewerage from this catchment flows to pump station 6 where it is then pumped to pumping station 5 in catchment D.

Catchment F

- 6.7.1.10 Catchment F is bounded by culverts R and S. Sewage from this catchment flows to Pumping Station 7 where it is pumped into catchment G.

Catchment G

- 6.7.1.11 Catchment G is bounded by culverts T and S. Sewage in catchment G along with pumped flow from catchments F and H is transported by a gravity system to pumping station 8. Pumping station 8 delivers the sewage via a rising main to the KTPTW.

Catchment H

- 6.7.1.12 Catchment H is located on the southeastern tip of the old runway and is separated from catchment G by culvert T. The sewage from this catchment is pumped into catchment G via Pumping Station 9.

Catchment I

- 6.7.1.13 Catchment I is the area around the existing Kwun Tong PTW. The catchment boundaries are existing developed sites and the sea. This catchment is non-residential and the expected sewage generation is small (details provided in flow calculations in **Appendix 6A**). The sewage from this catchment passes to KTPTW.

6.8 Sewerage Infrastructure

6.8.1 Catchment A

Sewage Pumping Station – PS1

- 6.8.1.1 This pumping station is shown on **Drawing Nos. 22936/SP/001 and 22936/SP/002**. It consists of a wet well/dry well station and pumps a peak flow of 2.00 m³/s. This flow includes a contribution of 1.2m³/s (peak flow) from the existing North Kowloon Trunk Sewer.

Rising Main

- 6.8.1.2 The rising main between PS 1 and Catchment B consists of a 300m long, twin 900mm diameter concrete lined ductile iron pipe.

6.8.1.3 As discussed previously, an interim connection (twin 900mm rising main) from PS1 to the existing Prince Edward Road Sewer (DN1650) has been allowed for. The proposed connection point is shown on **Drawing No. 22936/SW/014**. The following should be considered at detailed design, in connection with the exact alignment of the rising main.

- Alignment of existing utilities; and
- Temporary traffic arrangements/possible use of trenchless construction methods such as pipejacking.

6.8.1.4 Upon completion of the downstream pumping stations (PS2 and PS4), rising mains and sewers, the interim connection from PS1 will be decommissioned and the permanent rising main arrangement within the SEKD would be commissioned. Appropriate valving should be provided to allow the routing of pumped flows from the interim rising mains to the permanent rising mains.

Gravity Sewer Mains

6.8.1.5 The gravity sewerage system within catchment A is shown on plan **Drawing No. 22936/SW/010** and long sections provided. Pipes smaller than 600mm dia will be vitrified clay (VC) while those over 600mm dia will be reinforced concrete (RC). A summary of pipe sizes and lengths is given in **Table 6.12** below.

Table 6.12 Pipe sizes and Quantities for Catchment A

Size	Length (m)	Material
300	39	VC
600	1,002	VC
1050	786	RC
1200	25	RC
Total	1,852	

6.8.1.6 In this catchment the upstream ends of the sewers have been deepened from the standard minimum cover of 900 mm to provide approximately 2.0 m cover. This has been provided to ensure that all the Housing Development sites can be served by gravity sewer without additional pumping.

6.8.2 Catchment A1

Sewage Pumping Station – PSIA

6.8.2.1 This pumping station is shown on **Drawing Nos. 22936/SP/001** and **22936/SP/002**. It consists of a wet well/dry well station and pumps a peak flow of 0.451 m³/s.

Rising Main

6.8.2.2 The rising main between PS 1A and Catchment A consists of a 700m long, twin 450mm diameter concrete lined ductile iron pipe.

Gravity Sewer Mains

6.8.2.3 The gravity sewerage system within catchment A1 is shown on plan **Drawing No. 22936/SW/010** and long sections. A summary of pipe sizes and lengths is given in **Table 6.13** below.

Table 6.13 Pipe sizes and Quantities for Catchment A1

Size	Length (m)	Material
300	142	VC
450	121	VC

Size	Length (m)	Material
600	745	VC
750	94	RC
900	43	RC
Total	3,460	RC

6.8.2.4 In this catchment the upstream ends of the sewers have been deepened from the standard minimum cover of 900 mm to provide approximately 2.0 m cover. This has been provided to ensure that all the Housing Development can be served by gravity sewer without any additional pumping.

6.8.3 *Catchment B*

Sewage Pumping Station – PS2

6.8.3.1 This pumping station is shown on **Drawing Nos. 22936/SP/001 and 22936/SP/002**. It consists of a wet well/dry well station and pumps a peak flow of 2.56 m³/s.

Rising Main

6.8.3.2 The rising main between PS 2 and Catchment C consists of twin 1050 mm diameter concrete lined ductile iron pipe with an approximate length of 250 m.

Sewage Pumping Station – PS3

6.8.3.3 This pumping station is shown on **Drawing Nos. 22936/SP/001 and 22936/SP/002**. This pumping station collects flows from the North Kowloon Trunk sewer, and pumps the flows to PS4. PS3 consists of a wet well/dry well station and pumps a peak flow of 0.14 m³/s.

Rising Main

6.8.3.4 The rising main between PS3 and PS4 consists of twin 250mm diameter concrete lined ductile iron pipe with an approximate length of 700m.

Gravity Sewer Mains

6.8.3.5 The gravity sewerage system within catchment B is shown on plan **Drawing No. 22936/SW/010** and long sections. A summary of pipe sizes and lengths is given in **Table 6.14** below.

Table 6.14 Pipe sizes and Quantities for Catchment B

Size	Length (m)	Material
450	47	VC
600	318	VC
750	289	RC
1,800	729	RC
Total	1,383	

6.8.4 *Catchment C*

Sewage Pumping Station – PS4

6.8.4.1 This pumping station is shown on **Drawing Nos. 22936/SP/001 and 22936/SP/002**. It consists of a wet well/dry well station and pumps a peak flow of 3.35 m³/s.

Rising Main

- 6.8.4.2 The rising main between PS 4 and TKWPTW consists of twin 1,050 mm diameter concrete lined ductile iron pipe. The length of the pipeline is approximately 2200m.

Gravity Sewer Mains

- 6.8.4.3 The gravity sewerage system within catchment C is shown on plan **Drawing No. 22936/SW/010** and long sections. A summary of pipe sizes and lengths is given in **Table 6.15** below.

Table 6.15 Pipe sizes and Quantities for Catchment C

Size	Length (m)	Material
300	325	VC
450	640	VC
600	332	VC
750	277	RC
1,800	912	RC
Total	2,486	

6.8.5 Catchment D

Sewage Pumping Station – PS 5

- 6.8.5.1 This pumping station is shown on **Drawing Nos. 22936/SP/001** and **22936/SP/002**. It consists of a wet well/dry well station and pumps a peak flow of 0.72 m³/s.

Rising Main

- 6.8.5.2 The rising main between PS 5 and TKWPTW consists of twin 600 mm diameter concrete lined ductile iron pipe with an approximate length of 350m.

Gravity Sewer Mains

- 6.8.5.3 The gravity sewerage system within catchment D is shown on plan **Drawing No. 22936/SW/010** and long sections. A summary of pipe sizes and lengths is given in **Table 6.16** below.

Table 6.16 Pipe sizes and Quantities for Catchment D

Size	Length (m)	Material
300	307	VC
450	391	VC
600	563	VC
750	99	RC
900	439	RC
Total	1,899	

6.8.6 Catchment E

Sewage Pumping Station – PS 6

- 6.8.6.1 This pumping station is shown on **Drawing Nos. 22936/SP/001** and **22936/SP/002**. It consists of a wet well/dry well station and pumps a peak flow of 0.18 m³/s.

Rising Main

- 6.8.6.2 The rising main between PS 6 and PS 5 consists of twin 300 mm diameter concrete lined Ductile Iron pipe approximately 380 m long.

Gravity Sewer Mains

- 6.8.6.3 The gravity sewerage system within catchment E is shown on plan **Drawing No. 22936/SW/010** and long section. A summary of pipe sizes and lengths is given in **Table 6.17** below.

Table 6.17 Pipe sizes and Quantities for Catchment E

Size	Length (m)	Material
300	358	VC
450	260	VC
600	233	VC
Total	851	

6.8.7 Catchment F

Sewage Pumping Station – PS7

- 6.8.7.1 This pumping station is shown on **Drawing Nos. 22936/SP/001** and **22936/SP/002**. It consists of a wet well/dry well station and pumps a peak flow of 0.48 m³/s.

Rising Main

- 6.8.7.2 The rising main between PS 7 and Line catchment G consists of twin 450 mm diameter concrete lined ductile iron pipe about 300 m long.

Gravity Sewer Mains

- 6.8.7.3 The gravity sewerage system within catchment F is shown on plan **Drawing No. 22936/SW/010** and long section. A summary of pipe sizes and lengths is given in **Table 6.18** below.

Table 6.18 Pipe sizes and Quantities for Catchment F

Size	Length (m)	Material
450	317	VC
600	876	VC
750	122	RC
900	176	RC
Total	1,491	

6.8.8 Catchment G

Sewage Pumping Station – PS8

- 6.8.8.1 This pumping station is shown on **Drawing Nos. 22936/SP/001** and **22936/SP/002**. It consists of a wet well/dry well station and pumps a peak flow of 1.58 m³/s.

Rising Main

- 6.8.8.2 The rising main between PS 8 and KTPTW consists of twin 750 mm diameter concrete lined ductile iron pipe with an approximate length of 1300 m.

Gravity Sewer Mains

- 6.8.8.3 The gravity sewerage system within catchment G is shown on plan **Drawing No. 22936/SW/010** and long sections. A summary of pipe sizes and lengths is given in **Table 6.19** below.

Table 6.19 Pipe sizes and Quantities for Catchment G

Size	Length (m)	Material
300	661	VC
450	929	VC
600	1,219	VC
750	444	RC
900	376	RC
1050	38	RC
1200	775	RC
1350	241	RC
1500	200	RC
Total	4,883	

6.8.9 Catchment H

Sewage Pumping Station – PS9

- 6.8.9.1 This pumping station is shown on **Drawing Nos. 22936/SP/001** and **22936/SP/002**. It consists of a wet well/dry well station and pumps a peak flow of 0.13 m³/s

Rising Main

- 6.8.9.2 The rising main between PS 9 and catchment G consists of twin 300 mm diameter concrete lined Ductile Iron pipe with an approximate length of 100m.

Gravity Sewer Mains

- 6.8.9.3 The gravity sewerage system within catchment H is shown on plan **Drawing No. 22936/SW/010** and long sections. A summary of pipe sizes and lengths is given in **Table 6.20** below.

Table 6.20 Pipe sizes and Quantities for Catchment H

Size	Length (m)	Material
450	86	VC
600	76	VC
Total	162	

6.8.10 Catchment I

- 6.8.10.1 Catchment I is the area around the existing Kwun Tong PTW. The expected sewage generation from this area is very small and because of its close proximity to the PTW's it is expected that sewage generated in this catchment will gravitate into gravity sewers leading to the treatment plant. Other options if it is not possible to gravitate the sewage to the treatment plant include constructing a small pumping station and rising main to discharge directly into the PTW or gravitating the sewage northwest to pump station 8 in sewage catchment G.