

**Section 16 Planning Application for Proposed Minor Relaxation of the
Maximum Domestic GFA of Site B for the Urban Renewal Authority
Sai Yee Street/ Flower Market Road Development Scheme
("YTM-013"), Mong Kok, Kowloon**

Sewerage Impact Assessment
(V1.0)

June 2026

Approved By


(Project Manager: K.S. Lee)

REMARKS:

The information supplied and contained within this report is, to the best of our knowledge, correct at the time of printing.

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1 INTRODUCTION

1.1 Background

- 1.1.1 The Urban Renewal Authority (URA) has proposed the Sai Yee Street / Flower Market Road Development Scheme (YTM-013) (the Scheme) under Section 25 of the Urban Renewal Authority Ordinance (URAO). The Chief Executive in Council (CE in C) approved the draft Development Scheme Plan (DSP) on April 8, 2025, and published this decision in the Government Gazette on 17th April 2025. The approved DSP No. S/K3/URA5/2 was exhibited for public inspection on the same day.
- 1.1.2 To optimize the utilization of the Scheme area and in view to the current unoptimistic office market sentiment with a high office vacancy rate and the Government’s directive of suspending the sales of commercial sites, the URA proposes to increase the maximum domestic Gross Floor Area (GFA) to allow flexibility for future development to meet the market needs and enhance market attractiveness of the Scheme. A Section 16 planning application (S.16 Application) is proposed to seek for minor relaxation of domestic GFA in Sub-area (1) of Site B (the whole Site B as the Application Site), zoned as “OU(MU)2” from 46,605 m² (equivalent to a Domestic Plot Ratio (DPR) 6.5) to 53,775 m² (equivalent to a DPR 7.5), while keeping the total maximum GFA of Site B unchanged. The Application Site of the current S.16 Application will only cover Site B of the approved DSP. **Figure 1-1** shows the Application Site of the current S.16 Application.
- 1.1.3 This S.16 Application is a non-scheme-based submission. The notional design is prepared based on the proposed minor relaxation of the Approved DSP parameters. Under the non-scheme-based approach, the notional design and indicative development parameters provided are only for illustrative purposes and for conducting necessary technical assessments to demonstrate the impacts of the proposed minor relaxation. Except for any planning condition(s) to be imposed, the design of the future development will not be bounded by the notional design submitted in the S.16 Application.
- 1.1.4 Cinotech Consultants Limited has been commissioned by the URA to conduct a Sewerage Impact Assessment (SIA) to support the submission of the S.16 Application to the Town Planning Board (TPB) for consideration.

2 DESCRIPTION OF THE ENVIRONMENT

2.1 Existing Environment

- 2.1.1 To demonstrate the complete picture of the future development in the urban context, the assessment will describe the Proposed Development of the whole DSP (i.e. both Site A and Site B) (the Scheme). The Scheme is located in the northeastern part of Mong Kok. With a total gross site area of 29,315m², the Scheme is divided into Site A (about 4,445m²) and Site B (about 24,870m²). The location of the Scheme is shown on **Figure 1-1**.
- 2.1.2 Site B of the Scheme (the Application Site) is currently occupied by various leisure, recreation and GIC facilities, including Boundary Sports Centre No.1 and No.2, Boundary Street Recreation Ground, Sai Yee Street Children’s Playground, Boundary Street Amenity Plot, Boundary Street Sports Centres, Sai Yee Street (Flower Market Road) Refuse Collection Point, Sai Yee Street Public Toilet, Leisure and Cultural Services Department (“LCSD”) Boundary Street Plant Nursery and CLP Power Hong Kong Limited Boundary Street Sports Ground Substation. In addition, Site B also includes the whole of Flower Market Path, which is a public footpath. There is no private lot within Site B.
- 2.1.3 Site A of the Scheme (not forming the Application Site) comprises five sub-areas, named Sites A1 to A5 respectively. All five sub-areas of Site A are currently occupied by low-rise residential/ composite buildings aged 60 and above.

2.2 The Proposed Development

Approved DSP and S.16 Application

- 2.2.1 According to the approved DSP of the Scheme, Site B, the Application Site, is zoned “Other Specified Uses (Mixed Uses) 2” (“OU(MU)2”), and is further divided into Sub-area (1) and Sub area (2). Sub-area (1) of Site B will be for a high-rise development with a maximum domestic gross floor area (“GFA”) of 46,605m² and a total GFA of 64,530 m², as well as a building height restriction (“BHR”) of 150mPD adopting a stepped height profile. Sub-area (2) of “OU(MU)2” zone comprises the Waterway Park and ancillary retail/ commercial uses and LCDS’s sports/ GIC facilities with a BHR of 30mPD. It has a maximum non-domestic GFA of 8,955 m²
- 2.2.2 Site A (not forming the Application Site) is zoned “Other Specified Uses (Mixed Use) 1” (“OU(MU)1”) and it consists of 5 Sub-areas – Sub-areas (1) to (5) (i.e. Sites A1 – A5). Site A1 will be developed for residential development cum commercial podium, with a BHR of 150mPD. Open space and 1-storey retail shops will be provided at Sites A2 to A5.
- 2.2.3 Under this minor relaxation application, the maximum domestic GFA of Sub-area (1) in Site B is proposed to increase from 46,605m² to approximately 53,775m², equivalent to an increase in DPR from 6.5 to 7.5 (see **Table 2-1**). The total GFA for Sub-area (1) remains at 64,530m² (PR = 9.0). The development parameters of Sub-area (2) of Site B remain the same as the under the previously endorsed DSP.

Comparison between the Approved DSP and Current S.16 Application Proposal (Site B)

- 2.2.4 A comparison between the development parameters of the approved DSP and that of the S.16 Application is provided in **Table 2-1** below.

Table 2-1 Comparison between the Approved DSP and the Current S.16 Application Proposal (Site B)

Development Parameters of Site B	Approved DSP [A]			Current S.16 Application [B]			Difference [B] – [A] (% change)
Zoning	OU(MU)2			OU(MU)2			N/A
Gross Site Area (m ²)	About 24,870			About 24,870			N/A
	Sub-area (1)	Sub-area (2)	Total [A]	Sub-area (1)	Sub-area (2)	Total [B]	
Net Site Area (m²) (for PR Calculation) [1]	About 7,170	About 17,700	About 24,870	About 7,170	About 17,700	About 24,870	N/A
Maximum GFA							
-Total GFA (m ²)	64,530	8,955	73,485	64,530	8,955	73,485	N/A
-Domestic GFA (m ²)	46,605	N/A	46,605	53,775	N/A	53,775	+15.4%
Maximum Building Height (mPD)	150	30	N/A	150	30	N/A	N/A

Remark:

[1] Subject to site survey

Notional Design

- 2.2.5 A notional design, which is illustrated in **Appendix 2-1**, is prepared based on the development parameters to demonstrate the proposed planning intention and development concepts of the Scheme. Compared to the notional design for the approved DSP, the current notional design for S.16 Application has only revised the design of Site B, while keeping the notional design of other parts in the DSP unchanged from the approved DSP.
- 2.2.6 Regarding the Application Site, under the current notional design for Sub-area (1) of Site B (the north-east corner of Site B), a development featuring 3 high-rise developments, including 2 residential towers and 1 mixed-use composite tower with residential/ hotel uses, along with retail/ recreation and GIC facilities at the podium level, is proposed. Ancillary parking and a public vehicle park (PVP) are proposed in the basement levels of Site B. An at-grade open space, named "Waterway Park," is proposed in the Sub-area (2) of Site B. Ancillary retail facilities are planned at the ground level and the Waterway Park to enhance retail activities and vibrancy adjoining the existing Flower Market.
- 2.2.7 Compared to the approved Scheme for approved DSP, the major change is at Sub-area (1) of Site B, where the hotel/ office tower in the approved Scheme is changed to a composite tower of residential/ hotel tower, with the same height (130 mPD) in the current S.16 Application.
- 2.2.8 The notional design for Site A is the same as the approved DSP at planning stage and will be referenced for the purpose of technical assessments to support the S.16 Application. Site A1 is proposed to be developed into high-rise residential towers with retail podium, at-grade open space and basements for ancillary parking spaces and loading/ unloading bays. Sites A2-A5 are proposed to be developed into 1-storey retail blocks/ open space to create nodal points and continuation of retail frontages for the Flower Market.
- 2.2.9 The Proposed Development of the Scheme will be redeveloped in phases. Phased development and completion may be adopted by further sub-division of Site B, subject to

liaison and agreement with relevant government departments at the implementation stage. The tentative completion year of the whole Scheme is in 2036.

Development Parameters of the Notional Design

2.2.10 The development parameters of the notional design of Site A shown in **Table 2-2** remains the same as those under the approved DSP. This assessment is prepared based on the development parameters in **Table 2-2 & Table 2-3** of the notional design, which are subject to changes at detailed design stage.

Table 2-2 Development Parameters of the Notion Design (Site A)

Site A	A1	A2	A3	A4	A5
Gross Site Area	About 3,570m ²	About 268m ²	About 123m ²	About 233m ²	About 251m ²
	About 4,445m ²				
Net Site Area (subject to survey)	About 2,640m ²	About 239m ²	About 109m ²	About 202m ²	About 198m ²
	About 3,388m ²				
Zoning	OU(MU)1				
Domestic GFA [1]	23,716m ²	-	-	-	-
Non-Domestic GFA [1]	6,576m ²	-	-	100m ²	100m ²
No. of Building Blocks [2]	2	-	-	1	1
Building Height	150mPD	-	-	1 storey	1 storey
No. of Flats [2]	474	-	-	-	-
Average Flat Size [2]	50m ²	-	-	-	-
At-grade Open Space	About 800m ²				

Note

- [1] Under the proposed "OU(MU)" zoning, flexibility is allowed to interchange GFA of various compatible uses. The proposed GFA mix in the current notional design is indicative only and subject to changes in detailed design stage.
- [2] Number of building blocks, number of flats and average flat size are indicative only and subject to detailed design.

Table 2-3 Development Parameters of the Notion Design (Site B – Application Site)

Site B			
Gross Site Area	About 24,870m ²		
Zoning	OU(MU)2		
	Sub-area (1)	Sub-area (2)	Total
Net Site Area (subject to survey)	7,170m ²	17,700m ²	24,870m ²
Domestic GFA [1]	53,775m ²	-	53,775m ²
Non-Domestic GFA [1]	10,755m ²	8,955m ²	19,710m ²
- Retail	(5,755m ²)	(8,955m ²)	(14,710m ²)
- Hotel	(5,000m ²)	-	(5,000m ²)
GIC GFA (to be exempted from GFA calculation) [3]	30,000m ²		
No. of Building Blocks [2]	2 residential towers and 1 composite tower with residential and hotel uses on top of GIC/ recreation/ retail podia + 1 retail block		
Building Height	150mPD (residential towers) 130mPD (composite tower) 1 storey (retail block)		
No. of Flats [2]	About 1,080	-	About 1,080
Average Flat Size [2]	50m ²	-	50m ²
At-grade Open Space	About 8,800m ²		
Public Vehicle Park [4]	About 220 private car parking spaces + About 10 loading/unloading bays		

Note

- [1] Under the proposed “OU(MU)” zoning, flexibility is allowed to interchange GFA of various compatible uses. The proposed GFA mix in the current notional design is indicative only and subject to changes in detailed design stage.
- [2] Number of building blocks, number of flats and average flat size are indicative only and subject to detailed design.
- [3] The actual GIC GFA is subject to liaison with Government departments. As a conservative approach, 30,000m² GIC GFA is assumed in this assessment.
- [4] Subject to liaison with Transport Department.

2.2.11 It should be noted that sections of an existing decked nullah and its branch lies within Sites A1 & B (**Figure 2-1**). The Scheme is not expected to modify the existing decked nullah. Instead, a buffer region of 3m will be provided for its future maintenance.

2.2.12 Furthermore, as part of the redevelopment, the existing back alleys within Site A1 (see **Figure 1-1**) will be permanently closed, necessitating the re-diversion of sewers.

2.2.13 Sites A2, A3, A4, and A5 are currently occupied by four-storey tenement buildings with shops/retails on the ground floor. Upon redevelopment, these sites will either become open spaces or one-storey retail blocks. Based on the notional design, the estimated sewage generated from Sites A2, A3, A4, and A5 is expected to significantly decrease (as listed in **Table 3-5**), thereby eliminating any anticipated adverse sewerage impact for these sites.

2.3 Upgrading of West Kowloon and Tsuen Wan Sewerage – Phase 2

- 2.3.1 It should be noted that there is an ongoing project by the Drainage Services Department (DSD) called the Upgrading of West Kowloon and Tsuen Wan Sewerage – Phase 2 (PWP No. 4389DS)¹, which covers a large area of Kowloon.
- 2.3.2 Considering that the planned completion date of the DSD's project is in mid-2026, according to the implementation programme provided by the URA, the construction works of the Proposed Development will commence after the completion of the DSD's Project PWP No. 4389DS. As a result, the sewer works of the URA's Scheme will not interface with the DSD's project.
- 2.3.3 During the detailed design stage, DSD will be consulted and the proposed sewerage system of the Proposed Development will be reviewed based on the latest drainage layout.

¹ PWP No. 4389DS - Upgrading of West Kowloon and Tsuen Wan Sewerage – Phase 2
https://www.dsd.gov.hk/EN/Our_Projects/All_Projects/4389DS.html

3 SEWERAGE IMPACT ASSESSMENT

3.1 Sewage Discharge from the Scheme

- 3.1.1 As mentioned in **Section 2.1.1**, the assessment will take into account of the Proposed Development for both Site A and Site B under the notional design for a complete picture and its accumulated impacts to the existing sewerage system.
- 3.1.2 According to the Population Census 2021, the average domestic household size is 2.3 for the Mong Kok East District Council Constituency Area and Tertiary Planning Unit 222, and 2.5 for Yau Tsim Mong District. For the purpose of conservative assessment, a household size of 2.5 has been adopted in the current assessment.
- 3.1.3 The population of non-residential area such as restaurant, retail, club house & lobby G/IC and hotel are estimated according to the usable floor area (UFA) per person and the worker density from Figure 9 of Commercial and Industrial Floor Space Utilization, published by Planning Department. **Table 3-1** indicates the population calculation of the Scheme.

Table 3-1 Estimation of Population

Section	No. of Flat	Non-residential GFA (m ²)	Population Factor		Population	
			No. of person per flat ^[1]	Residential Population	Worker Density (worker/100 m ²) ^[3]	No. of Employee
Site A1						
Residential	474	-	2.5	1,185	-	-
Club House & Lobby ^[2]	-	1,186	-	-	3.3	40
Retail	-	3,946	-	-	3.5	139
Restaurant	-	2,630	-	-	5.1	135
Site A2						
Retail	-	0	-	-	3.5	0
Restaurant	-	0	-	-	5.1	0
Site A3						
Retail	-	0	-	-	3.5	0
Restaurant	-	0	-	-	5.1	0
Site A4						
Retail	-	60	-	-	3.5	3
Restaurant	-	40	-	-	5.1	3
Site A5						
Retail	-	60	-	-	3.5	3
Restaurant	-	40	-	-	5.1	3
Site B						
Residential	1,080	-	2.5	2,700	-	-
Club House & Lobby ^[2]	-	2,250	-	-	3.3	75
G/IC	-	30,000	-	-	3.3	990
Hotel	-	5,000	-	-	3.2	160

Section	No. of Flat	Non-residential GFA (m ²)	Population Factor		Population	
			No. of person per flat ^[1]	Residential Population	Worker Density (worker/100 m ²) ^[3]	No. of Employee
Retail	-	8,826	-	-	3.5	309
Restaurant	-	5,884	-	-	5.1	301

Note:

- [1] According to the Population Census 2021, the average domestic household size is 2.3 for Mong Kok East District Council Constituency Area and Tertiary Planning Unit 222; and 2.5 for Yau Tsim Mong District. For conservative assessment household size of 2.5 has been adopted.
- [2] Area of club house and lobby are estimated as per the GFA concession for recreational facilities stipulated in PNAP APP-104.
- [3] According to figure of Commercial and Industrial Floor Space Utilization Survey by Planning Department, the staff densities are: -
 -- 3.3 staff per 100m² GFA for G/IC, Club House (Community, Social & Personal Services)
 -- 3.5 staff per 100m² GFA for Retails and Shops
 -- 5.1 staff per 100m² GFA for Restaurants
 -- 3.2 staff per 100m² GFA for Hotel
- [4] No swimming pool is provided in the current notional design.

3.1.4 As the Design Parameters of the Scheme is subject to detailed design, a 5% design allowance have been adopted in the sewage discharge from the Scheme. The estimated sewage flow rates from Scheme are summarised in **Table 3-2**. The average daily dry weather flow (ADWF) with additional 5% for conservative assessment are 612.5 m³/day, 5.9 m³/day, 5.9 m³/day & 1,934.2 m³/day for Sites A1, A4, A5 & B, respectively, while no sewage discharge is anticipated at Sites A2 and A3.

Table 3-2 Calculation of Sewage Discharge

Occupant Type	Unit Flow Factors (m ³ /day/person) ^[1]	No. of Occupants / Employee	Flow Rate (m ³ /day) ^[2]
Site A1			
Residential	0.27	1185	320.0
Club House & Lobby	0.28	40	11.2
Retail	0.28	139	38.9
Restaurant	1.58	135	213.3
Total (+5%)^[3]			<u>612.5</u>
Site A2			
Retail	0.28	0	0
Restaurant	1.58	0	0
Total (+5%)^[3]			<u>0</u>
Site A3			
Retail	0.28	0	0
Restaurant	1.58	0	0
Total (+5%)^[3]			<u>0</u>
Site A4			
Retail	0.28	3	0.8
Restaurant	1.58	3	4.7
Total (+5%)^[3]			<u>5.9</u>
Site A5			
Retail	0.28	3	0.8

Occupant Type	Unit Flow Factors (m ³ /day/person) ^[1]	No. of Occupants / Employee	Flow Rate (m ³ /day) ^[2]
Restaurant	1.58	3	4.7
<u>Total (+5%)^[3]</u>			<u>5.9</u>
Site B			
Residential	0.27	2700	729.0
Club House & Lobby	0.28	75	21.0
G/IC	0.28	990	277.2
Hotel	1.58	160	252.8
Retail	0.28	309	86.5
Restaurant	1.58	301	475.6
<u>Total (+5%)^[3]</u>			<u>1934.2</u>

Noted

[1] According to EPD's Guidelines for Estimating Sewage Flows for Infrastructure Planning, the Unit Flow Factor are: -

-- 0.27 m³/day/person for Residential flat (R2);

-- 0.28 m³/day/staff for Clubhouse & Lobby, Retail as well as G/IC;

-- 1.58 m³/day/staff for Restaurant & Hotel; and

[2] Average Dry Weather Flow (ADWF).

[3] Additional of 5% ADWF has been adopted for conservative assessment.

3.2 Comparison with the Existing Condition of Sites

3.2.1 The existing sewage discharge of the Site A1 to A5 and B are estimated in **Table 3-4**, based on the existing number of flats and population estimated by URA (**Table 3-3**). Upon redevelopment, Sites A2 to A5 will either become open spaces or one-storey retail blocks. Based on the notional design, the estimated sewage generated from Sites A2, A3, A4, and A5 (**Table 3-2**) is expected to significantly decrease as shown in **Table 3-5**, thereby eliminating any anticipated adverse sewerage impact for these sites. For Sites A1 and B, since the expected sewage generated is higher than existing scenario, detailed hydraulic calculation is conducted and detailed in **Section 3.4**.

Table 3-3 Existing Population

Residential Section	Number of Units ^[1]		Population (Residential) ^[1]
Total			600
Site A1 – Residential Flat	112		510
Site A2 -- Residential Flat	6		25
Site A3 -- Residential Flat	3		15
Site A4 -- Residential Flat	6		25
Site A5 -- Residential Flat	6		25
Non-Residential Section	GFA (m ²) ^[2]	Staff Density (per 100m ²) ^[3]	No. of Employees
Total			254
Site A1 -- Retail	1,480	3.5	52
Site A2 -- Retail	200	3.5	7
Site A3 -- Retail	70	3.5	3
Site A4 -- Retail	130	3.5	5
Site A5 -- Retail	130	3.5	5
Site B – G/IC	5,500	3.3	182

[1] The number of units are based on the approved General Building Plans. The population is estimated based the number of units and URA's previous experience in handling similar redevelopment projects.

[2] Estimated values.

[3] According to figure of Commercial and Industrial Floor Space Utilization Survey by Planning Department, the staff density are: -
 -- 3.5 staff per 100m² GFA for Retails and Shops
 -- 3.3 staff per 100m² GFA for Community, Social & Personal Services

Table 3-4 Calculation of Existing Sewage Discharge

Occupant Type	Unit Flow Factors (m ³ /day/person)	No. of Occupants / Employees	ADWF (m ³ /day)
Site A1 -- Residential Flat	0.27	510	137.7
Site A2 -- Residential Flat	0.27	25	6.8
Site A3 -- Residential Flat	0.27	15	4.1
Site A4 -- Residential Flat	0.27	25	6.8
Site A5 -- Residential Flat	0.27	25	6.8
Site A1 -- Retail	0.28	52	14.6
Site A2 -- Retail	0.28	7	2.0
Site A3 -- Retail	0.28	3	0.8
Site A4 -- Retail	0.28	5	1.4
Site A5 -- Retail	0.28	5	1.4
Site B -- G/IC	0.28	182	51.0
Site B -- Public Toilet	--	--	10.6
Site A1 Total			152.3
Site A2 Total			8.7
Site A3 Total			4.9
Site A4 Total			8.2
Site A5 Total			8.2
Site B Total			61.6
Total	-	-	243.7

- [1] According to EPD's Guidelines for Estimating Sewage Flows for Infrastructure Planning, the Unit Flow Factor are: -
 -- 0.27 m³/day/person for Residential flat (R2);
 -- 0.28 m³/day/staff for Clubhouse, Lobby & Retail;
- [2] Average Dry Weather Flow (ADWF).
- [3] Detailed calculation of ADWF from the existing public toilet in Site B is presented in **Appendix 3-1**.

Table 3-5 Comparison of Sewage Discharge

Occupant Type	Existing ADWF (m ³ /day)	Proposed Scheme ADWF (m ³ /day)
Site A1 Total	152.3	612.5
Site A2 Total	8.7	0
Site A3 Total	4.9	0
Site A4 Total	8.2	5.9
Site A5 Total	8.2	5.9
Site B Total	61.6	1934.2

- [1] The ADWF of the Existing case and Proposed Scheme are presented in **Table 3-4** & **Table 3-2** respectively.

3.3 Sewage Discharge from the Vicinity

- 3.3.1 The surrounding developments near the Scheme is sectioned into different catchments based on the existing sewerage system. The sewage catchment areas in the vicinity are shown in

Figure 3-1 and the estimated sewage discharges from each catchment are summarised in **Table 3-6**. It should be noted that average domestic household size of 2.5, instead of 2.3, as stated in **Section 3.1.1**, has been adopted for conservative assessment. Catchments C and E are referenced from Sewerage Impact Assessment of "OZP Amendments in Yau Ma Tei and Mong Kok Districts" and the extracted pages are presented in **Appendix 3-2**. The population and detailed calculation of flow rate is presented in **Appendix 3-3**.

Table 3-6 Sewage Discharge from Surrounding Catchments

Catchment ID	Development	Total Flowrate / catchment ^[1]
A	Oscar Court	122.2 m ³ /day
	Kam Ming Court	
	Circle Garden	
B	Mongkok City Building	64.9 m ³ /day
	Hentiff (Ho Tat) Building	
C	144-152 Prince Edward Road West	376.6 m ³ /day
	207-221 Fa Yuen Street	
	210-238 Tung Choi Street	
	6-10 Playing Field Road	
D	Mong Kok Police Station	119.3 m ³ /day
E	304-328 Sai Yeung Choi Street North	992.0 m ³ /day
	7-29 Playing Field Road	
	40-46, 52-56, 68 Boundary Street	
	209-229, 240-254 Tung Choi Street	
	225-239, 244-266 Fa Yuen Street	
F	233-251 Sai Yee Street	676.6 m ³ /day
	Bijou Apartments	
	Bijou Court	
	Cheung Ling Mansion	
US01 ^[2]	Cosmopolitan Centre	497.2 L/s
	Upstream Area served by Sewer US01 (FWD4018096)	
US02 ^[2]	Upstream Area served by Sewer US02 (FWD4052975)	1285.7 L/s

[1] ADWF has been presented unless specified.

[2] The full capacity of the corresponding pipe has been adopted.

[3] The calculation is detailed in **Appendix 3-3**.

3.4 Assessment of Sewerage System

Downstream of Sites A1 & B

3.4.1 The sewage discharge from Sites A1 & B is expected to increase after the redevelopment, the downstream sewers shall be checked for sufficient capacities to cater sewerage discharge. Besides, some existing sewers are planned to be demolished or reconstructed either due to the need of the Scheme or for other practical reasons, which will be described in the following

paragraphs. The existing sewers to be demolished or reconstructed are illustrated in **Figure 3-2** and the proposed new sewers or upgrading are illustrated in **Figures 3-3a to 3-3e**.

- 3.4.2 Firstly, the existing 900 mm sewer between public sewer manholes FMH4017916 and FMH4017917 across Sai Yee Street shall be removed to facilitate the basement development at Site B (**Figure 3-2**). Consequently, the remaining sewers running from public sewer manhole FMH4017916 to FMH4017920 along Playing Field Road and Fa Yuen Street are proposed to be demolished (see **Figure 3-2**) and replaced by a more direct, shortened route connecting the same two public sewer manholes, as depicted in **Figure 3-3c**.
- 3.4.3 Secondly, the existing developments to the north of Site A1 will no longer be able to discharge through the current southward route (**Figure 3-2**; sewers PS15 to PS17). Instead, the sewage from those developments will be redirected to the north and connected to the main sewer through the newly proposed 300mm sewers, as illustrated in **Figure 3-3c**. It is important to note that the existing 900mm sewer along Fa Yuen Street from public sewer manholes FMH4017918 to FMH4017920 cannot be reused. This is because the invert levels of the sewers near the decked nullah need to be raised to accommodate the proposed upgrades for the drainage pipes SMD4004100 and SMD4004101 that run beneath the existing sewers. The details of the proposed stormwater pipes should be referred to the Drainage Impact Assessment Report prepared for the Project separately.
- 3.4.4 Thirdly, as mentioned previously, the sewers in the vicinity of the decked nullah will be elevated to create additional space for the proposed upgrades to the drainage pipes. Therefore, the invert level of the existing sewer that crosses the decked nullah near Sai Yee Street (**Figure 3-2**; sewer PS05) will be raised. Moreover, the upgrading of current PS05 sewer will likely reduce potential disruptions to the flow of the decked nullah due to its current low invert level (downstream invert level of 3.75mPD). To comply with current standards, the diameter of PS05 will increase from 150mm to 225mm.
- 3.4.5 Lastly, it has been identified that sewer FWD4018104, located between public sewer manholes FMH4017920 and FMH4017921 across Prince Edward Road West (**Figure 3-2**), is at risk of surcharging due to its very shallow gradient ($0.04 \text{ m} / 44 \text{ m} = 0.00091$). To improve sewer capacity, the proposed upgrades will shorten the sewer route and provide new public manholes FMH-02 and FMH-03 outside the garden area, as shown in **Figure 3-3d**. With these proposed changes, the flow is expected to achieve the self-cleansing velocity of 1.0 m/s under full-pipe conditions (see **Table A in Appendix 3-5** for Sewer PP04 and PP05).
- 3.4.6 It is important to note that there are two 300mm sewers connected to the public sewer manholes FMH4017921 in the southeast. A preliminary desktop assessment indicates that these two 300mm sewers are likely not in use. However, the condition of these sewers will be further assessed in a later stage. If it is determined that the two 300mm sewers are indeed in use, it would be more practical to divert the sewage to nearby sewers in the southwest, rather than allowing it to cross the decked nullah at its current invert level (current invert levels: 3.25-3.32mPD).

Downstream of Sites A2 - A5

- 3.4.7 As stated in **Section 3.2**, the sewage flow from each of the Sites A2 – A5 is expected to decrease. Therefore, no adverse sewerage impact is anticipated from the discharge of those sites thus the assessment of their downstream sewers is not necessary.

Summary of Sewers to be Demolished

3.4.8 The sewers to be demolished are illustrate **Figure 3-2** and summarised in **Table 3-7**.

Table 3-7 Summary of Sewers to be Demolished

Location	From Manhole	To Manhole	Sewer Diameter	Remarks
South-west of Site B; Playing Field Road; & Fa Yuen Street.	FMH4017916	FMH4017920	900mm	To be diverted to a shorter route.
Along the nullah within Site A1 and its downstream	FMH4018197	FMH4017922	450-900mm	To be upgraded/modified.
Within Site A1	FMH4079142	FMH4018197	225mm	
Within Site A1	FMH4018192	FMH4018189	100-300mm	
Flower Market Road	FMH4073742	FMH4018199	225mm	No longer required.

Capacity of Existing Downstream Sewers

3.4.9 The capacities of the existing downstream foul sewer pipe sections (PS 01 - PS 17, **Figure 3-2**), based on the planned flow configuration as illustrated in **Figures 3-3a to 3-3e**, have been calculated by Colebrook-White Equation. The calculated capacities are listed in **Table 3-8** and the detailed calculation can be found in **Table A of Appendix 3-4**.

Table 3-8 Capacity of Downstream Foul Sewers

Pipe Section	Upstream Manhole	Downstream Manhole	Full Capacity (L/s)
PS01	FMH4017914	FMH4017915	1000.3
PS02	FMH4017915	FMH4017916	1000.3
PS03	FMH4018199	FMH4018200	160.6
PS04	FMH4018200	FMH4018197	124.9
PS05	FMH4018202	FMH4018200	41.5
PS06	FMH4017922	FMH4017923	686.3
PS07	FMH4017923	FMH4017924	1596.9
PS08	FMH4017924	FMH4018185	2320.4
PS09	FMH4018185	FMH4018251	2814.3
PS10	FMH4018251	FMH4018252	836.2
PS11	FMH4018252	FMH4018253	989.3
PS12	FMH4018253	FMH4018254	1626.0
PS13	FMH4018254	FSH4000280	3172.9
PS14	FSH4000280	FMH4018257	3402.6
PS15 ^[1]	FMH4079142	FMH4079141	-
PS16 ^[1]	FMH4079141	FMH4079140	-
PS17 ^[1]	FMH4079140	FMH4018194	-
US01 ^[2]	FMH4017912	FMH4017913	492.7
US02 ^[2]	FMH4046195	FMH4046196	1285.7

Note:

- [1] Sewage flow direction between PS15 to PS17 is reserved based on planned flow configuration.
 [2] The full capacity of the US01 has been adopted as upstream flow volume.
 [3] The calculation is detailed in **Table A of Appendix 3-4**.

3.4.10 A summary of the utilization of the sewers is shown in **Table 3-9**. Detailed calculation is shown in **Tables B of Appendix 3-4**. The results indicate that the existing sewers PS03, PS04 & PS06 are unable to cater the expected sewer flow. In addition, the flow direction of sewers PS15, PS16 & PS17 will need to be reversed due to the redevelopment of Site A1.

Table 3-9 Proportion of Peak Flow to Full Capacity (Existing Pipes)

Pipe Section	Full Capacity (L/s)	Peak Flow (L/s)	Utilization (%)
PS01	1000.3	497.2	50%
PS02	1000.3	642.8	64%
<u>PS03</u>	<u>160.6</u>	<u>642.8</u>	<u>400%</u>
<u>PS04</u>	<u>124.9</u>	<u>647.6</u>	<u>519%</u>
PS05	41.5	7.8	19%
<u>PS06</u>	<u>686.3</u>	<u>661.8</u>	<u>96%</u>
PS07	1596.9	661.8	41%
PS08	2320.4	661.8	29%
PS09	2814.3	751.3	27%
PS10	836.2	751.3	90%
PS11	989.3	751.3	76%
PS12	1626.0	751.3	46%
PS13	3172.9	792.1	25%
PS14	3402.6	2077.7	61%
<u>PS15</u>	-	<u>14.7</u>	-
<u>PS16</u>	-	<u>14.7</u>	-
<u>PS17</u>	-	<u>14.7</u>	-

Note:

- [1] Surcharged sewers are **Bold Underlined**.
 [2] The calculation is detailed in **Table B of Appendix 3-4**.
 [3] Utilization of $\geq 92.5\%$ is considered surcharged.

Terminal Manholes and Discharge Sewers of the Sites

- 3.4.11 The sewage discharge from the Site A1 is proposed to be collected by terminal manhole FTMH-A01 and discharged via a proposed PE sewer PP-A01, with diameter of 300mm and slope of 1:100, connected to new manhole FMH-01 (**Figure 3-3c**).
- 3.4.12 The sewage discharge from the Site A4 is proposed to be collected by terminal manhole FTMH-A04 and discharged via a proposed PE sewer PP-A04, with diameter of 225mm and slope of 1:100, connected to existing manhole FMH4084221 (**Figure 3-3e**).
- 3.4.13 The sewage discharge from the Site A5 is proposed to be collected by terminal manhole FTMH-A05 and discharged via a proposed PE sewer PP-A05, with diameter of 225mm and slope of 1:100, connected to existing manhole FMH4018214 (**Figure 3-3e**).

3.4.14 The sewage discharge from the Site B is proposed to be collected by terminal manhole FTMH-B01 and discharged via a proposed PE sewer PP-B01, with diameter of 400mm and slope of 1:100, connected to existing manhole FMH4017915 (**Figure 3-3b**).

3.4.15 No terminal manhole and discharge sewers will be provided for Sites A2 & A3.

Proposed New Sewers and Upgrading in the Surrounding

3.4.16 In addition to the sewers connected to the terminal manholes of the Sites, 11 new sewers (PP01 to PP11) are proposed. PP01 to PP06 are proposed as precast concrete pipes with PVC (or equivalent) lining to handle increased sewage flows and to facilitate shortening of the existing 900 mm sewers. PP07 to PP11 are proposed as PE pipes intended for diverting sewage from existing developments (see **Figures 3-3c and 3-3d**).

3.4.17 Nine (9) sewers (PS01 to PS06 and PS15 to PS17) are proposed to be upgraded and/or modified. The invert levels of PS01 and PS02 are proposed to be adjusted to align with the invert level of the proposed new sewers; PS03 and PS04 are proposed to be upgraded from 450 mm to 900 mm to cater for the upstream flow; PS05 is proposed to be upgraded from 150 mm to 225 mm with an increased invert level to align with the invert level of the proposed sewers; the slope of PS06 is proposed to be increased to cater for the upstream flow; the slopes of PS15 to PS17 are proposed to be reversed to change the flow direction. The proposed pipes will be either PE pipes or precast concrete pipes with PVC or equivalent lining.

3.4.18 The proposed new pipes and upgrades are presented in **Table 3-10 & Table 3-11** below. For upgrading works regarding adjustment of invert level, concerned pipe sections shall be replaced by new pipes. The exact location of the new manholes and invert levels will be subject to detailed design. All proposed sewerage works are illustrated **Figure 3-4**. With the proposed new sewers and upgrades, the downstream sewer will be able to cater the expected peak sewage flow, thus no adverse sewerage impact arising from the Proposed Development is anticipated.

Table 3-10 Proportion of Peak Flow to Full Capacity (Proposed New Sewers)

Pipe Section	Upstream Manhole	Downstream Manhole	Full Capacity (L/s)	Peak Flow (L/s)	Utilization (%)
PP-A01	FTMH-A01	FMH-01	120.4	55.3	46%
PP-A04	FTMH-A04	FMH4084221	56.4	0.7	1%
PP-A05	FTMH-A05	FMH4018214	56.4	0.7	1%
PP-B01	FTMH-B01	FMH4017915	256.4	145.5	57%
PP01	FMH4017916	FMH4018199	1137.9	642.8	56%
PP02	FMH4018197	FMH-01	1146.3	647.6	56%
PP03	FMH-01	FMH4017920	1146.7	661.8	58%
PP04	FMH4017920	FMH-02	1151.2	661.8	57%
PP05	FMH-02	FMH-03	1421.8	661.8	47%
PP06	FMH-03	FMH4017922	1461.3	661.8	45%
PP07	FMH4018194	FMH-04	42.3	14.7	35%
PP08	FMH-04	FMH-05	26.7	14.7	55%
PP09	FMH-05	FMH-06	23.6	14.7	62%
PP10	FMH-06	FMH-07	23.6	14.7	62%
PP11	FMH-07	FMH-01	92.3	14.7	16%

[1] The proposed new pipes will be either PE pipes or precast concrete pipes with PVC or equivalent lining.

Table 3-11 Proportion of Peak Flow to Full Capacity (Proposed Upgrading)

Pipe Section	Upstream Manhole	Downstream Manhole	Full Capacity (L/s)	Peak Flow (L/s)	Utilization (%)
PS01	FMH4017914	FMH4017915	877.7	497.2	57%
PS02	FMH4017915	FMH4017916	1065.3	642.8	60%
PS03	FMH4018199	FMH4018200	1234.9	642.8	52%
PS04	FMH4018200	FMH4018197	1153.7	647.6	56%
PS05	FMH4018202	FMH4018200	89.5	7.8	9%
PS06	FMH4017922	FMH4017923	1414.5	661.8	47%
PS15	FMH4079142	FMH4079141	19.2	14.7	77%
PS16	FMH4079141	FMH4079140	17.6	14.7	83%
PS17	FMH4079140	FMH4018194	18.9	14.7	78%

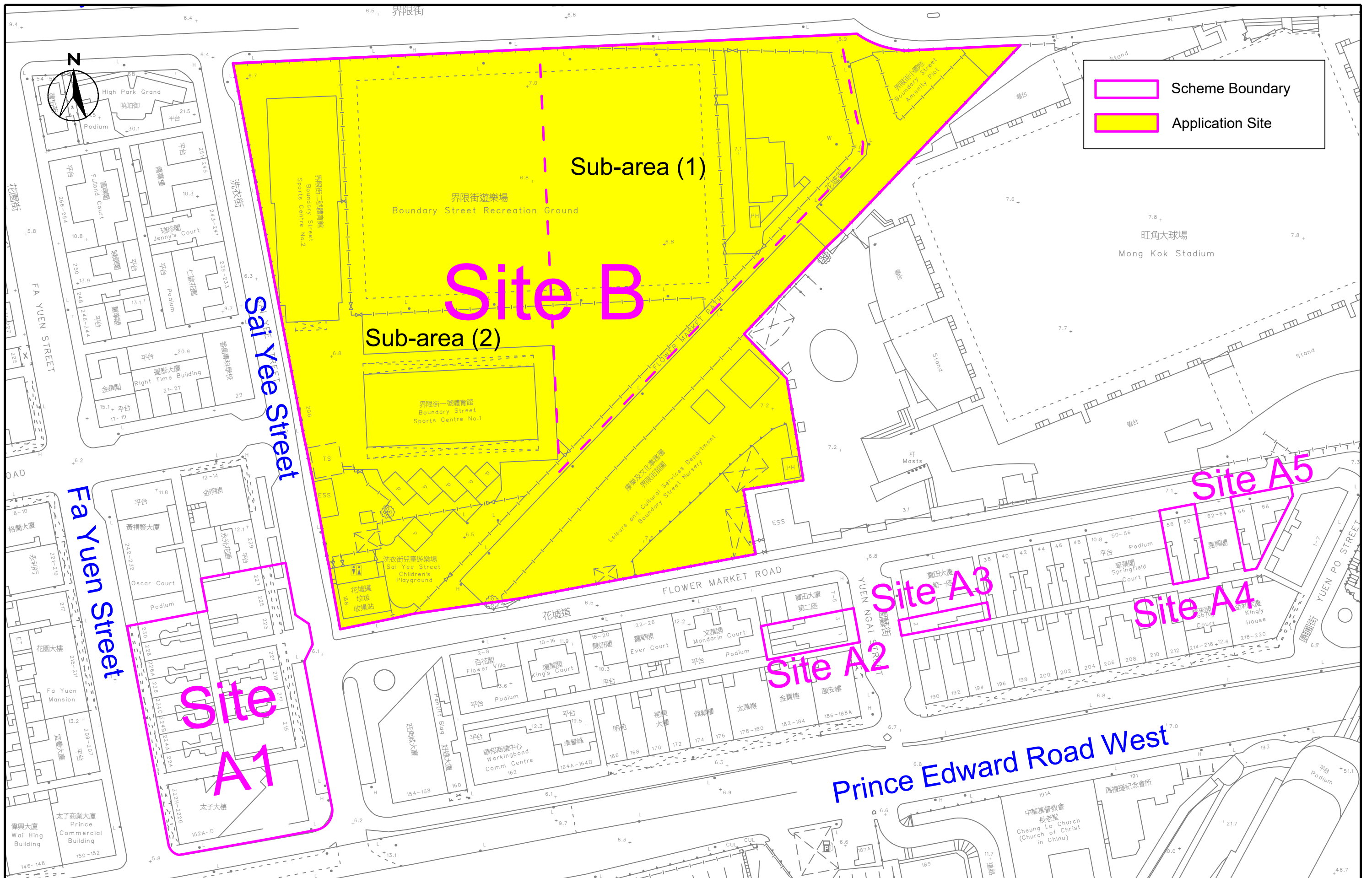
[1] The proposed upgrades pipes will be either PE pipes or precast concrete pipes with PVC or equivalent lining.

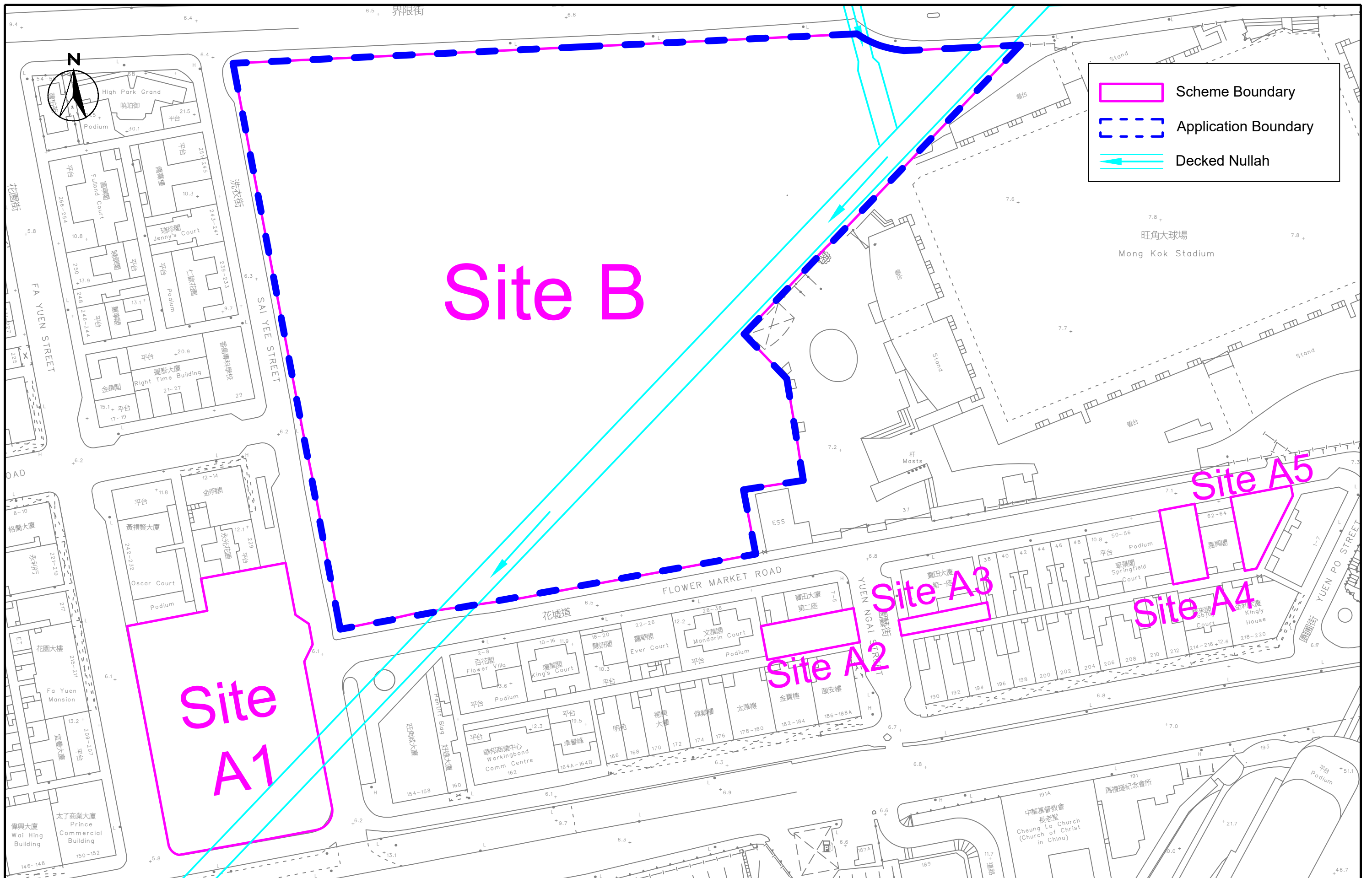
3.4.19 The necessity and arrangement of temporary sewer diversion will be subject to detailed design. By implementing appropriate works sequencing and temporary sewer diversion measures in the implementation stage, it is anticipated that any potential sewerage impact during the sewerage works can be effectively mitigated.

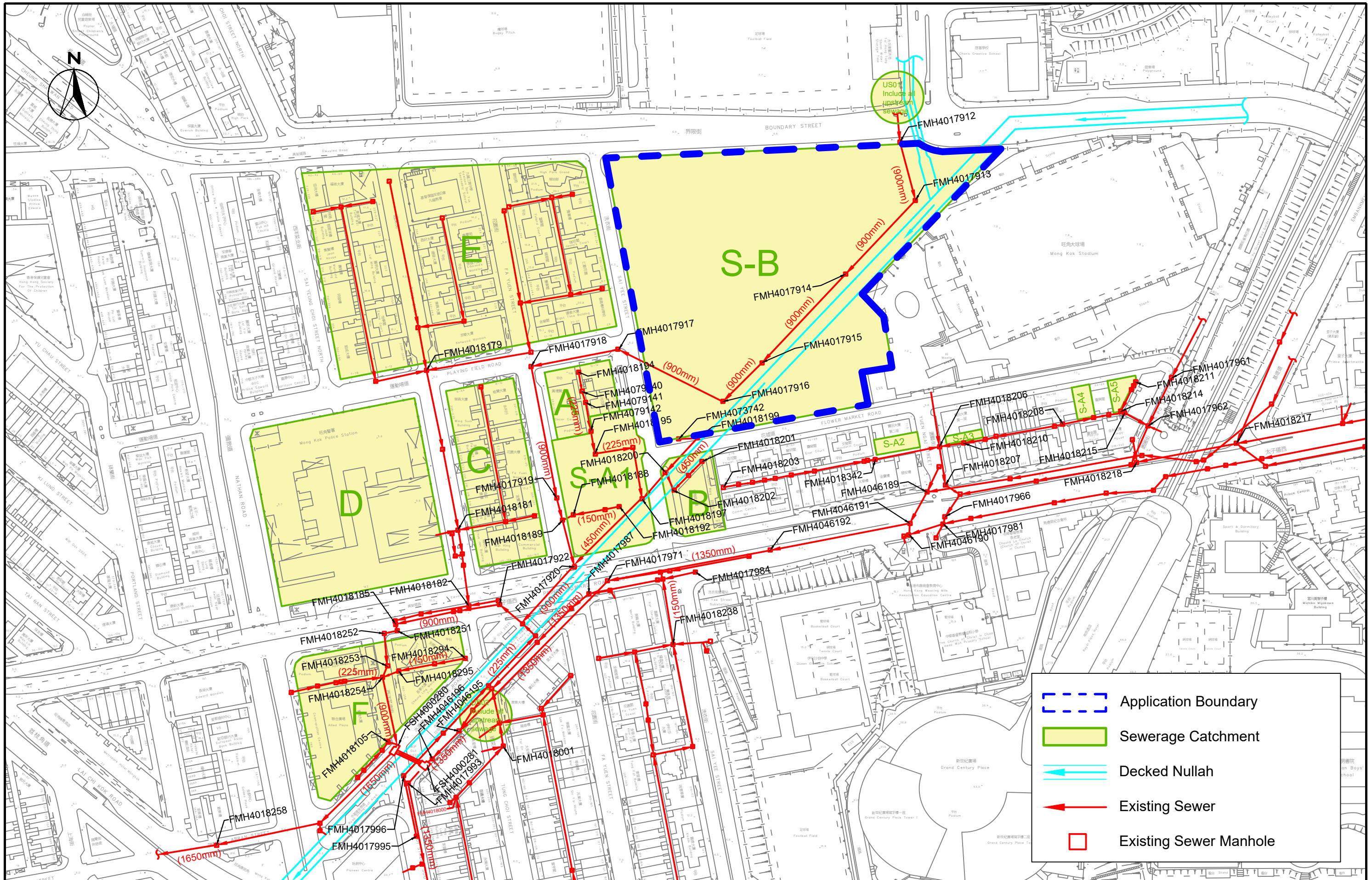
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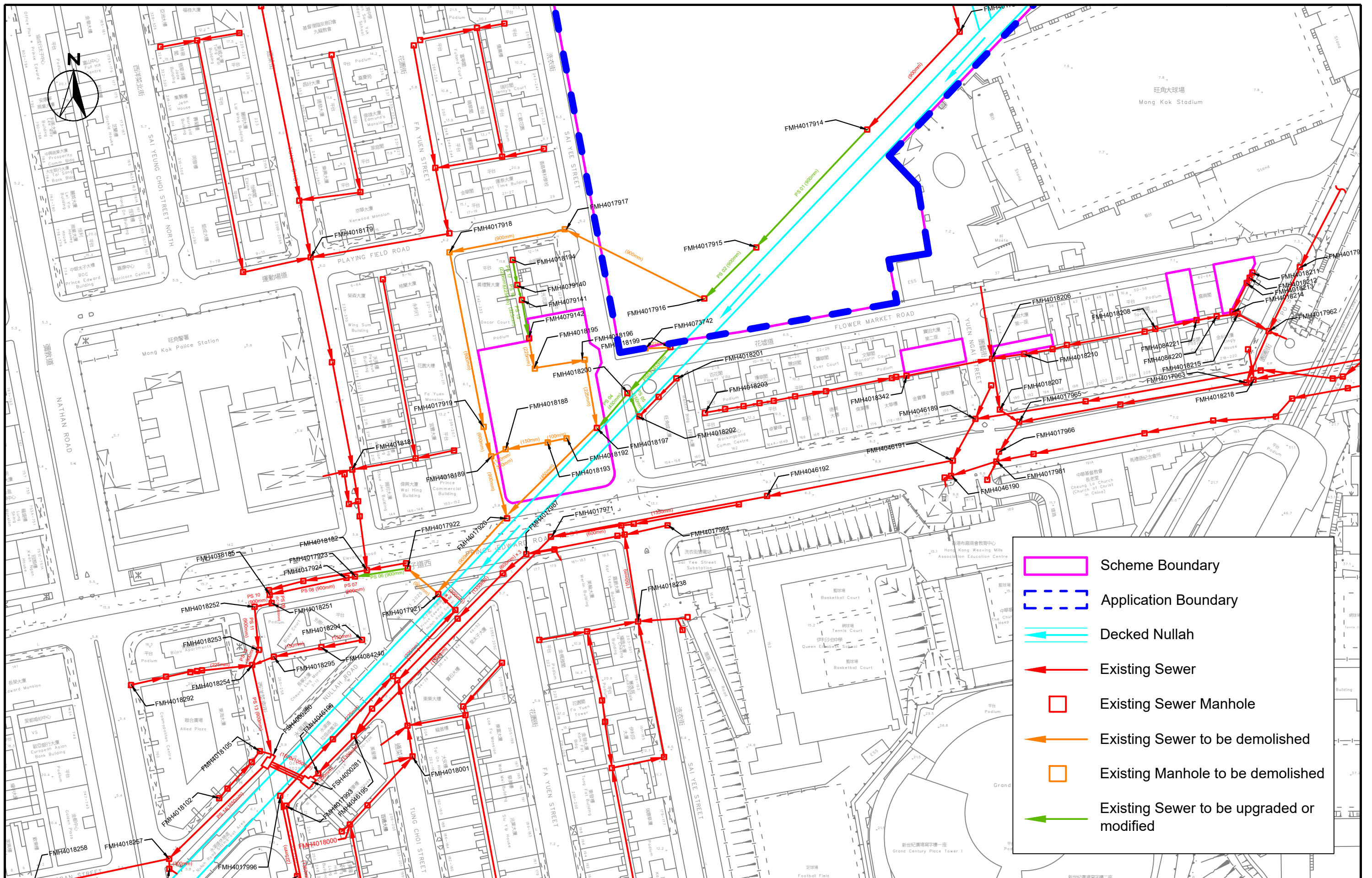
- 4.1.1 This Sewerage Impact Assessment has been undertaken to assess the potential sewerage impact of the Proposed Development and to serve as a supporting document for the S.16 Application to the TPB for consideration.
- 4.1.2 The sewage discharge from Sites A1 & B are expected to be increased while the sewage discharge from Sites A2 to A5 are expected to be reduced.
- 4.1.3 The sewage discharge from the Site A1 is proposed to be collected by terminal manhole FTMH-A01 and discharged via proposed 300mm sewer PP-A01 to new manhole FMH-01; The sewage discharge from the Site A4 is proposed to be collected by terminal manhole FTMH-A04 and discharged via proposed 225mm sewer PP-A04 to existing manhole FMH4084221; The sewage discharge from the Site A5 is proposed to be collected by terminal manhole FTMH-A05 and discharged via proposed 225mm sewer PP-A05 to existing manhole FMH4018214; The sewage discharge from the Site B is proposed to be collected by terminal manhole FTMH-B01 and discharged via proposed 400mm sewer PP-B01 to existing manhole FMH4017915. No terminal manhole and discharge sewers will be provided for Sites A2 & A3.
- 4.1.4 There are 11 proposed new sewers (PP01 to PP11). PP01 to PP06 are proposed to handle the increased sewage flow and facilitate the shortening of the 900mm sewers, while PP07 to PP11 are intended for diverting sewage from existing developments.
- 4.1.5 There are 9 sewers (PS01 to PS06, and PS15 to PS17) proposed to be upgraded and/or modified. The invert levels of PS01 & PS02 are proposed to be adjusted to align with the invert level of the proposed new sewers; PS03 & PS04 are proposed to be upgraded from 450mm to 900mm to cater the upstream flow; PS05 is proposed to be upgraded from 150mm to 225mm with increased invert level to align with the invert level of the proposed sewers; the slope of PS06 is proposed to be increased to cater the upstream flow; the slope of the PS15 to PS17 are proposed to be reversed to change the flow direction.
- 4.1.6 The proposed sewers will be either PE pipes or precast concrete pipes with PVC or equivalent lining.
- 4.1.7 With the proposed new sewers and upgrades, the downstream sewer will be able to cater the expected peak sewage flow, thus no adverse sewerage impact arising from the Proposed Development with the minor relaxation of domestic GFA in Site B under the S.16 Application is anticipated.
- 4.1.8 The necessity and arrangement of temporary sewer diversion will be subject to detailed design. By implementing appropriate works sequencing and temporary sewer diversion measures in the implementation stage, it is anticipated that any potential sewerage impact during the sewerage works can be effectively mitigated.

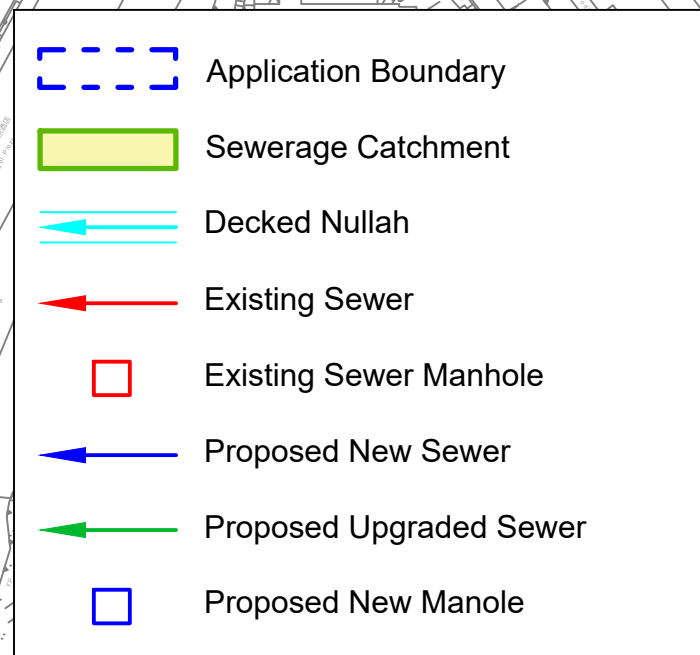
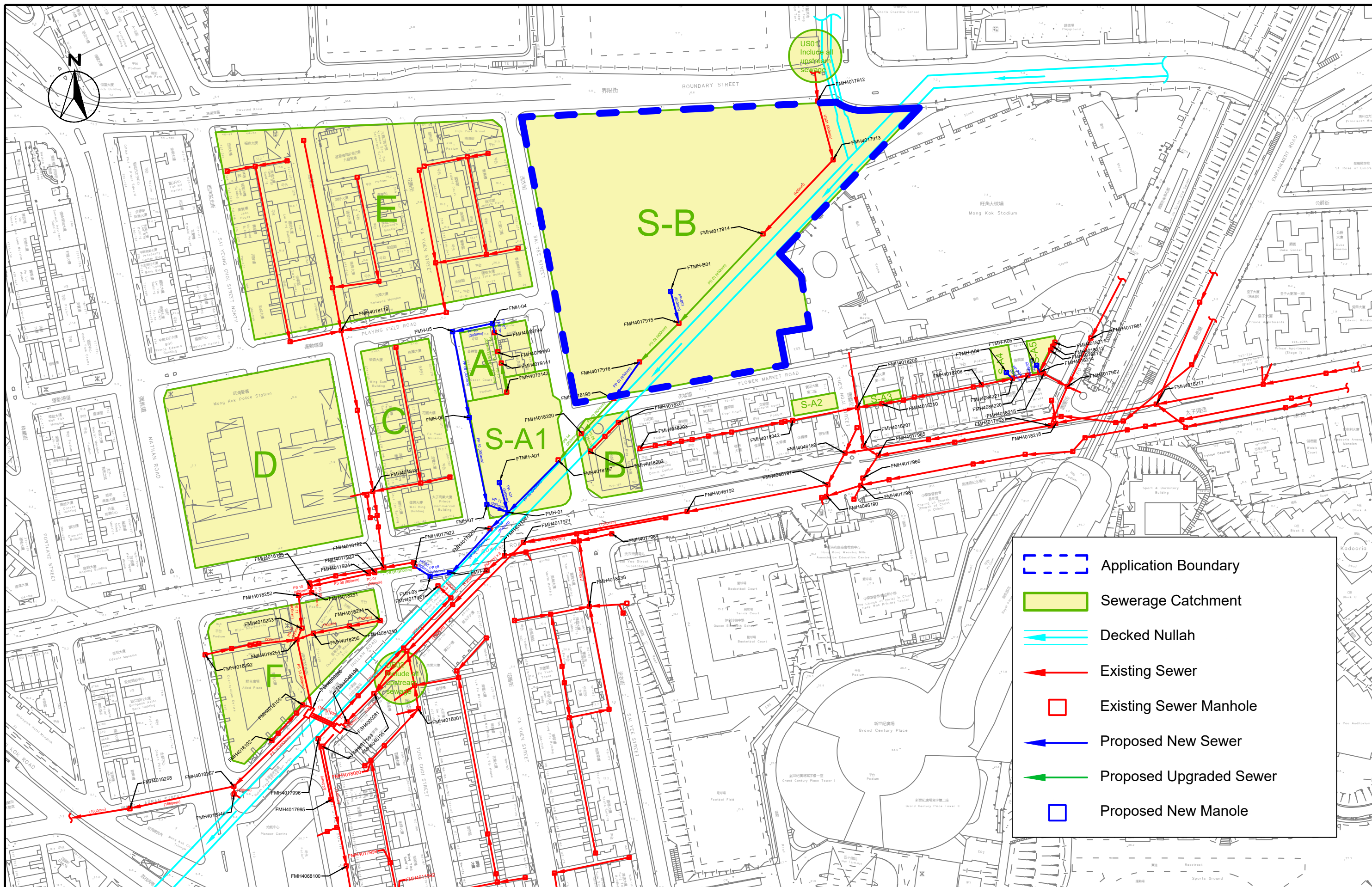
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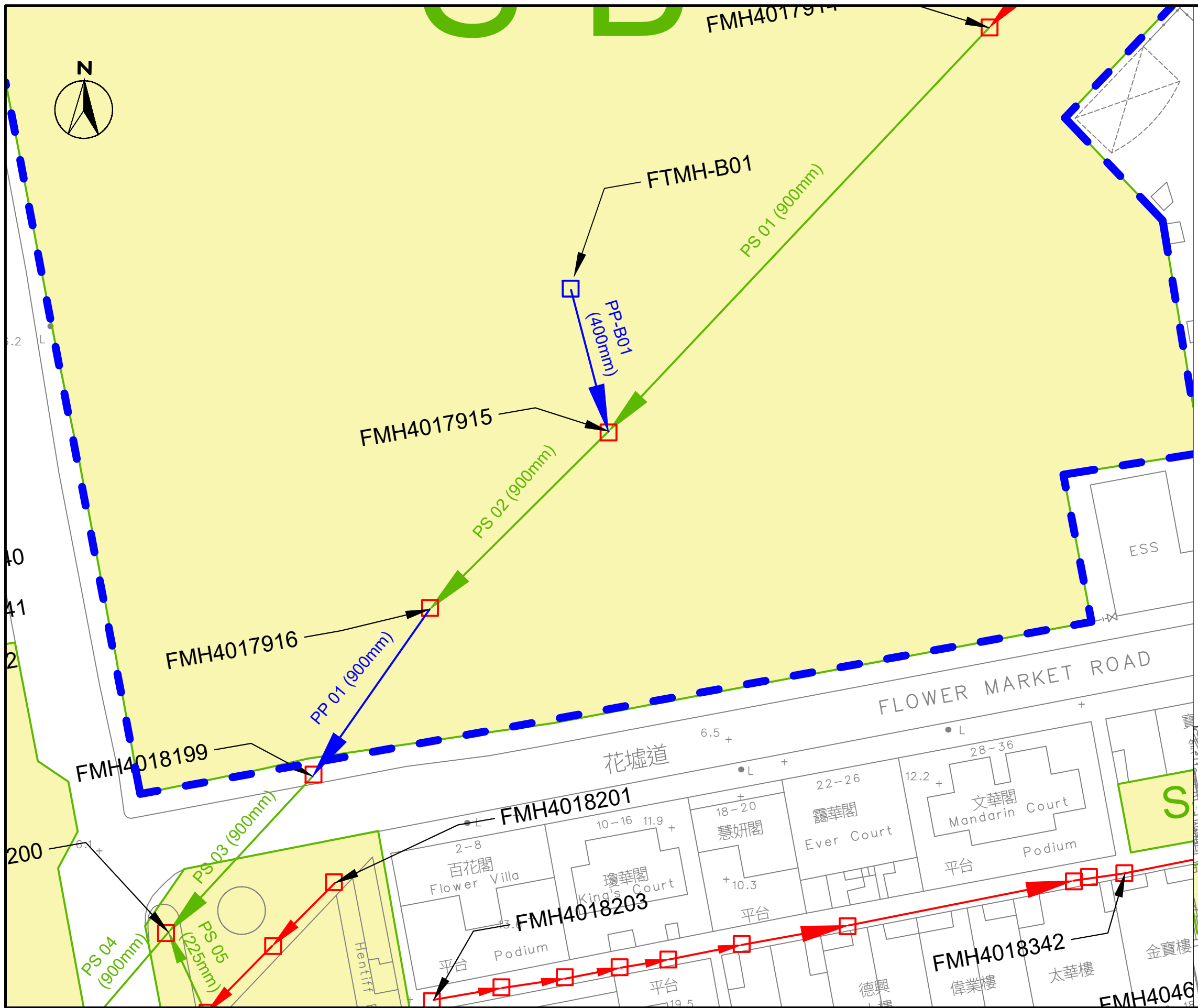






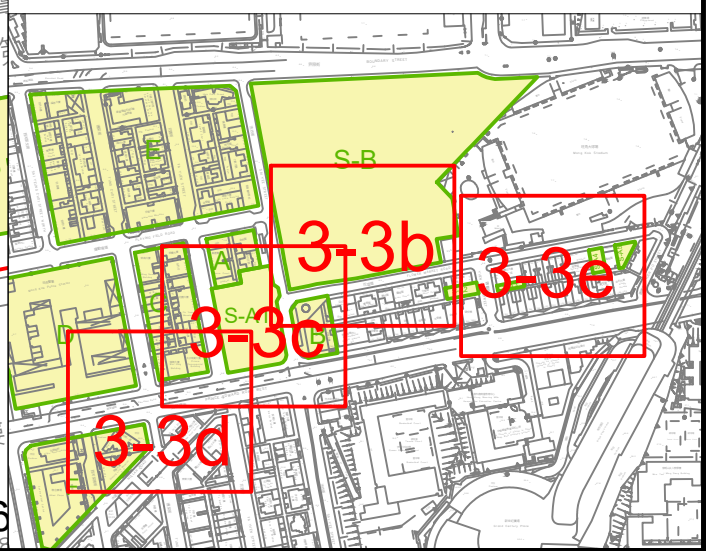






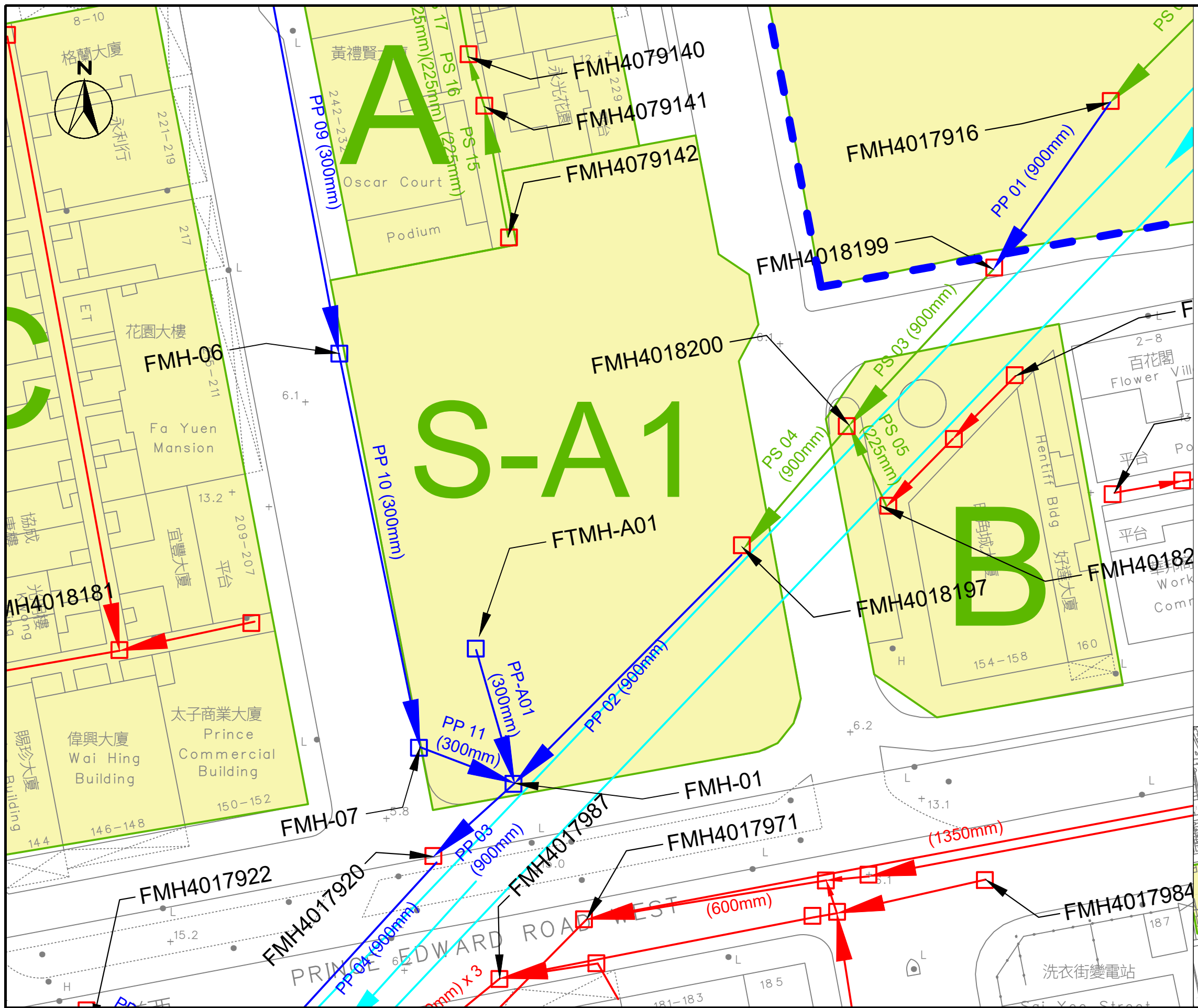
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- Sewerage Catchment
- Decked Nullah
- Existing Sewer
- Existing Sewer Manhole
- Proposed New Sewer
- Proposed Upgraded Sewer
- Proposed New Manhole

Key Plan
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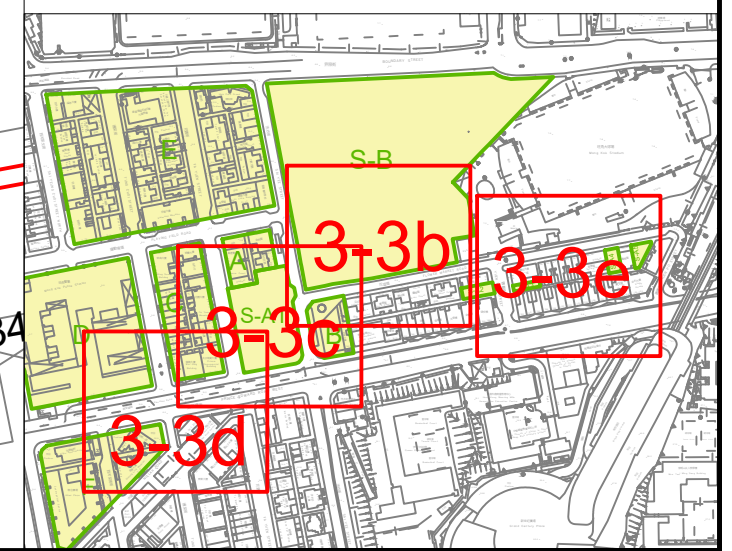
Section 16 Planning Application for Proposed Minor Relaxation of the Maximum Domestic GFA of Site B for the Urban Renewal Authority
Sai Yee Street/ Flower Market Road Development Scheme
Proposed New Sewer and Sewer Manhole - 1

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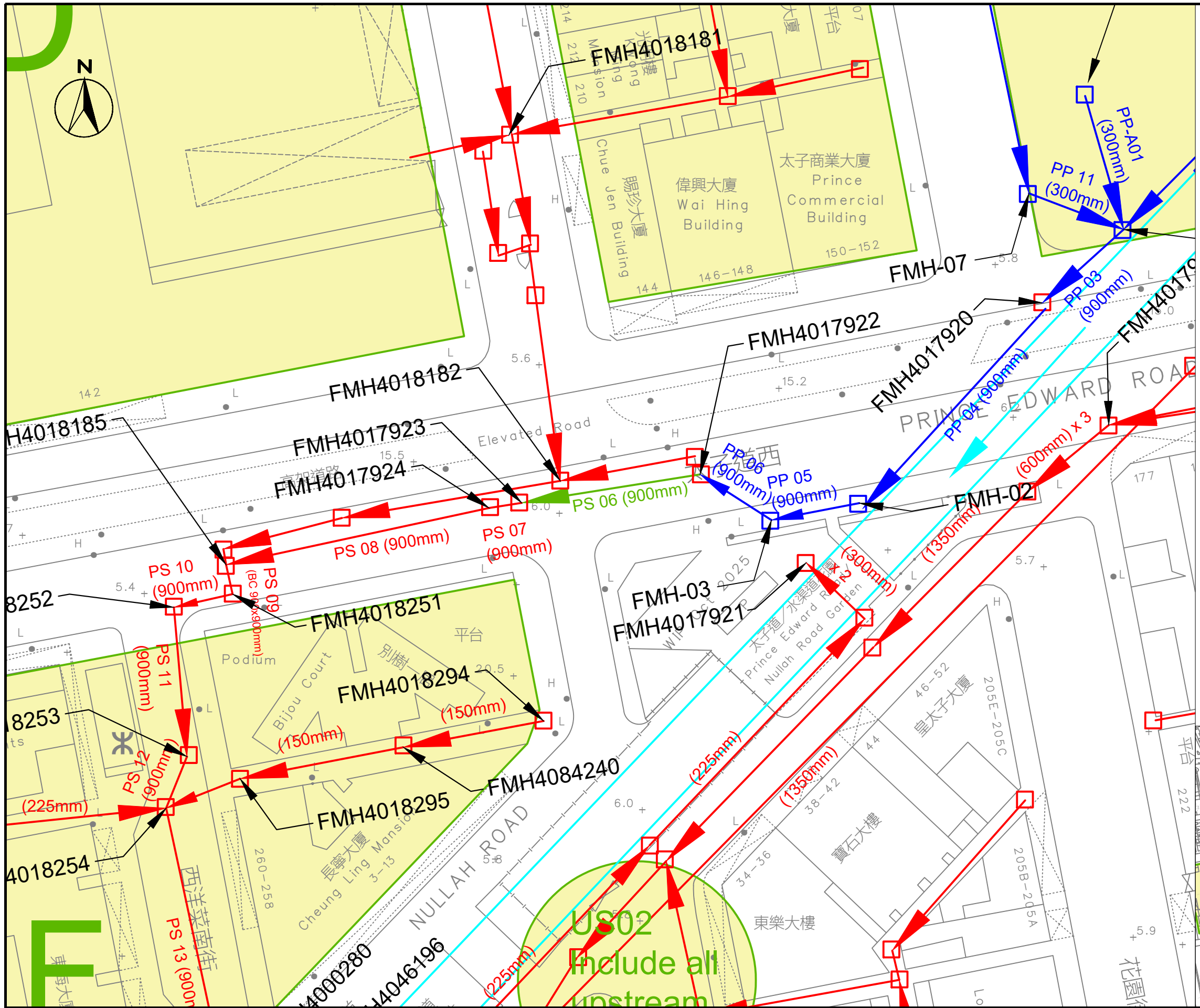
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- ← Proposed Upgraded Sewer
- Proposed New Manhole

Key Plan
1:6000 @ A3



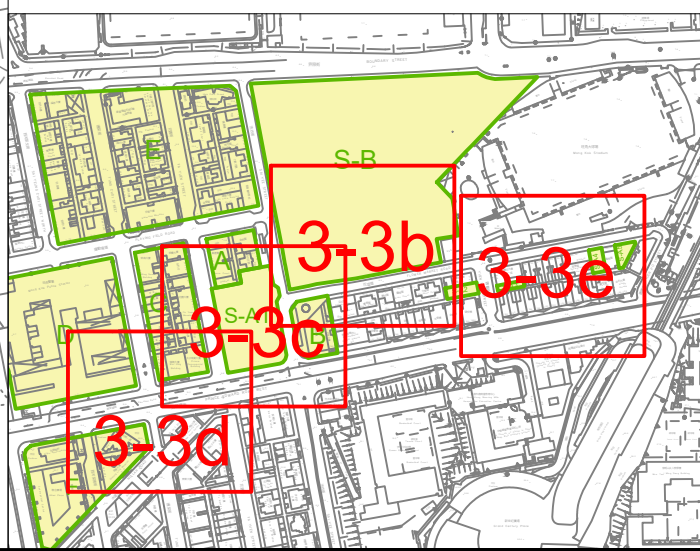
Section 16 Planning Application for Proposed Minor Relaxation of the Maximum Domestic GFA of Site B for the Urban Renewal Authority
Sai Yee Street/ Flower Market Road Development Scheme
Proposed New Sewer and Sewer Manhole - 2

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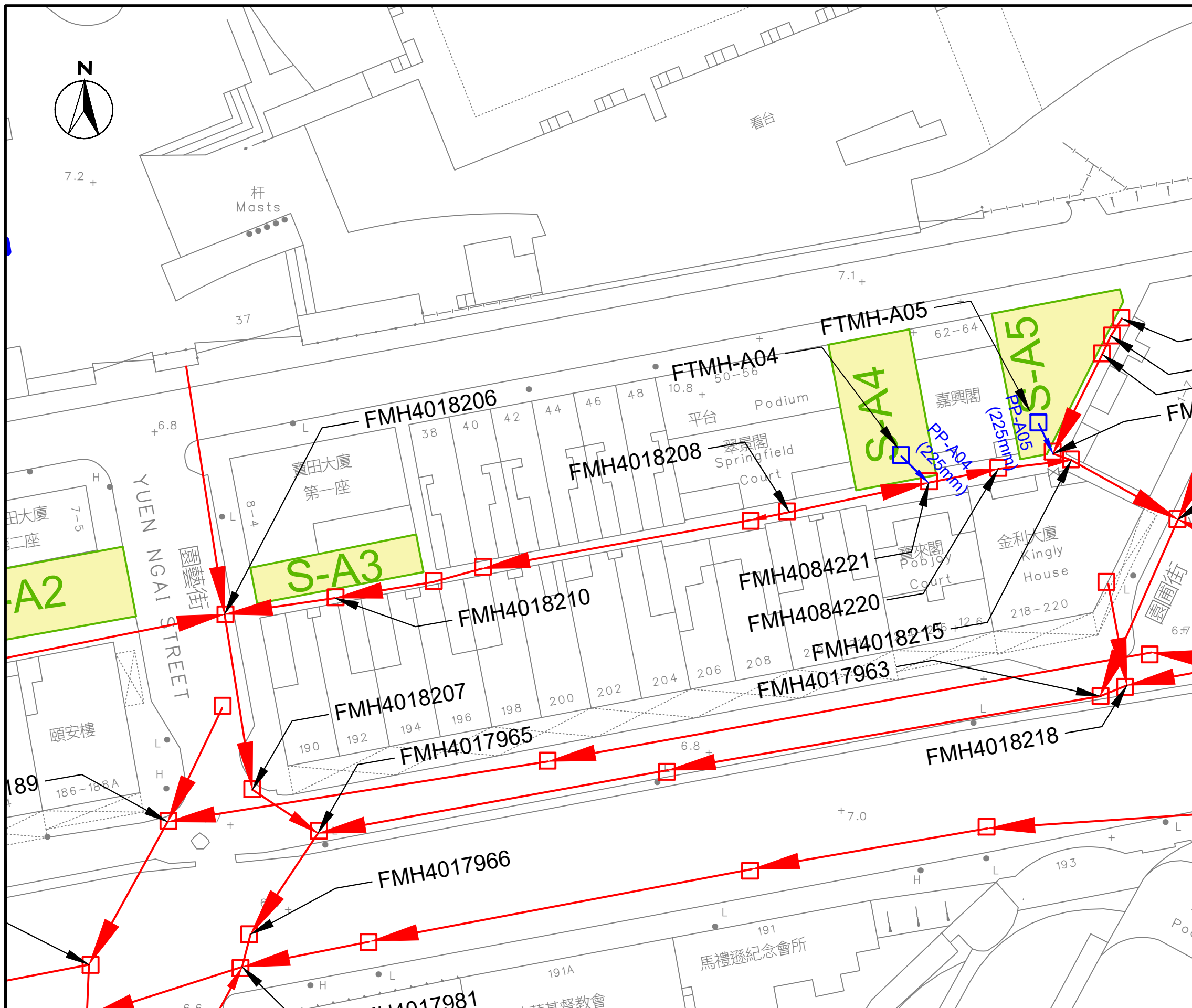
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- Proposed Upgraded Sewer
- Proposed New Manhole

Key Plan
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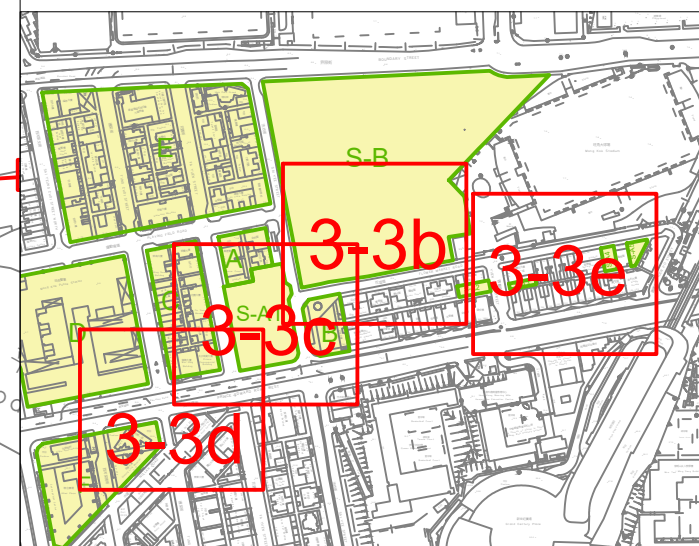
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Sai Yee Street/ Flower Market Road Development Scheme
Proposed New Sewer and Sewer Manhole - 3

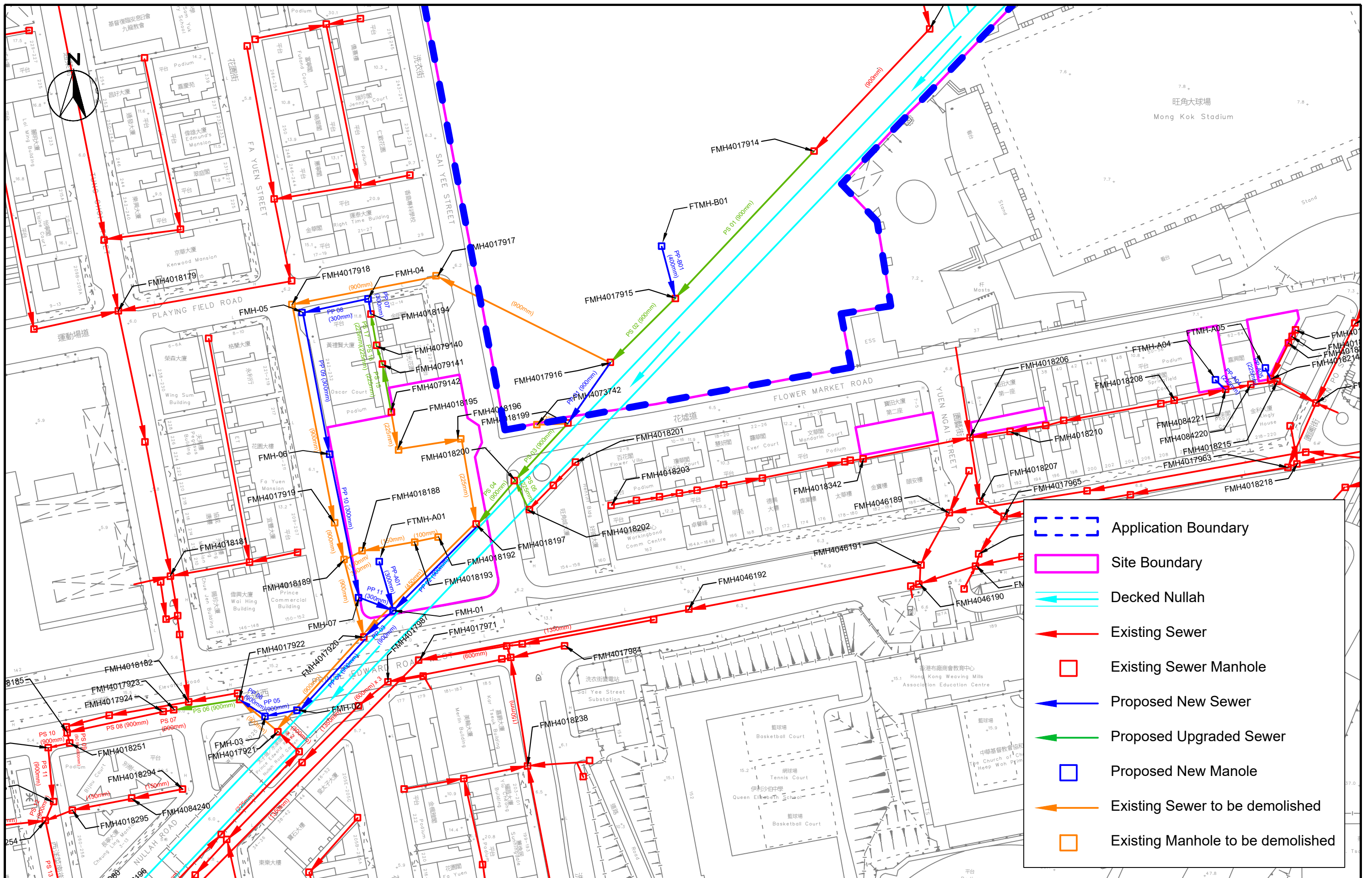
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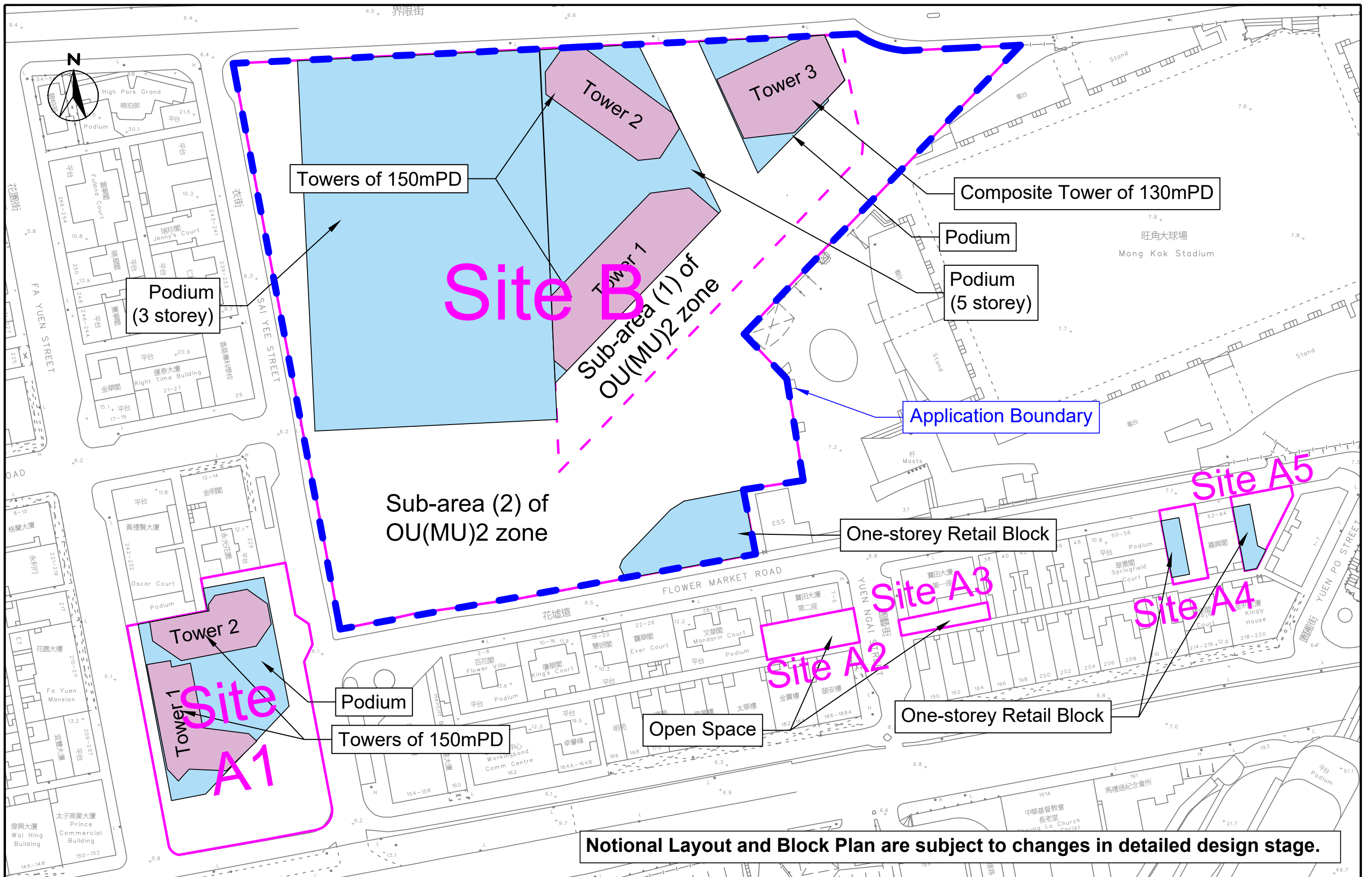
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- ← Proposed New Sewer
- ← Proposed Upgraded Sewer
- Proposed New Manhole

Key Plan
1:6000 @ A3





**APPENDIX 2-1
NOTIONAL PLAN OF THE PROPOSED
DEVELOPMENT**



**APPENDIX 3-1
CALCULATION OF SEWAGE FLOW
FROM THE EXISTING PUBLIC TOILET IN
SITE B**

Appendix 3-1: Calculation of Sewage Flow from the Existing Public Toilet in Site B

	Unit	Female W. C.	Male W. C.	Male Urinal	Accessible W.C
Number of W.C./Urinal [4]	nos	12	8	15	1
Volume of flushing water per use [5]	Litre	6.5	6.5	2.5	6.5
Volume of washing water used per minute [5]	Litre/Minute	4	4	4	4
Operation time for washing [6]	Second	20	20	20	20
Volume of washing water per use	Litre/Use	1.4	1.4	1.4	1.4
Number of daily user [1,2,3]	nos	1650			
		758	152	606	134
Total volume of sewage generated	Litre/day	5988.2	1200.8	2363.4	1058.6
	Litre/day	10611			
	m ³ /Day	10.6			

Notes:

[1] Ratio of users with disability (8.1%) has made reference to the Hong Kong Monthly Digest of Statistics (January 2015) Feature Article – Persons with Disabilities and Chronic Diseases in Hong Kong.

Available at: <http://www.statistics.gov.hk/pub/B71501FB2015XXXXB0100.pdf>. [Accessed June 2024].

[2] With reference to “Chapter 1 of Planning, provision and management of public toilets by the Food and Environmental Hygiene Department”, the public toilet shall be considered as high utilization rate(“300 to 3,000 daily users”) and average daily users between 300 and 3,000 (~1,650) has been assumed in the calculation.

Available at: <https://www.legco.gov.hk/yr19-20/english/counmtg/papers/cm20191127-sp058-e.pdf> [Assessed June 2024]

[3] For users without disability, ratio of male to female has been assumed to be 1:1, and the ratio of Male W.C. & Male Urinal has been assumed as 1:4 in accordance with the Credit WU 7 in BEAM Plus New Building (v2.0).

[4] The number of WC/Urinal is based on site visit dated 16 May 2024.

[5] According to the "Particular guidelines and examples of recommended applications of water-saving/water-efficient devices to be used in government projects" published by WSD, it is recommended to use water-efficient devices with water efficiency grade 1 for government projects. For a conservative approach, water efficiency grade 2 have adopted in the assessment.

-- Water closet (6.5L/use)

-- Urinal (2.5L/use)

-- Non-mixing water tap (4L/min)

[6] The operation time per use (20 sec) has made reference to the Credit WU P1 in BEAM Plus New Building (v2.0).

**APPENDIX 3-2
EXTRACTED PAGES FROM SEWERAGE
IMPACT ASSESSMENT OF OZP
AMENDMENTS IN YAU MA TEI AND
MONG KOK DISTRICTS**

Prepared for

Urban Renewal Authority

Prepared by

Ramboll Hong Kong Limited

OUTLINE ZONING PLAN AMENDMENTS IN YAU MA TEI AND MONG KOK DISTRICTS

SEWERAGE IMPACT ASSESSMENT

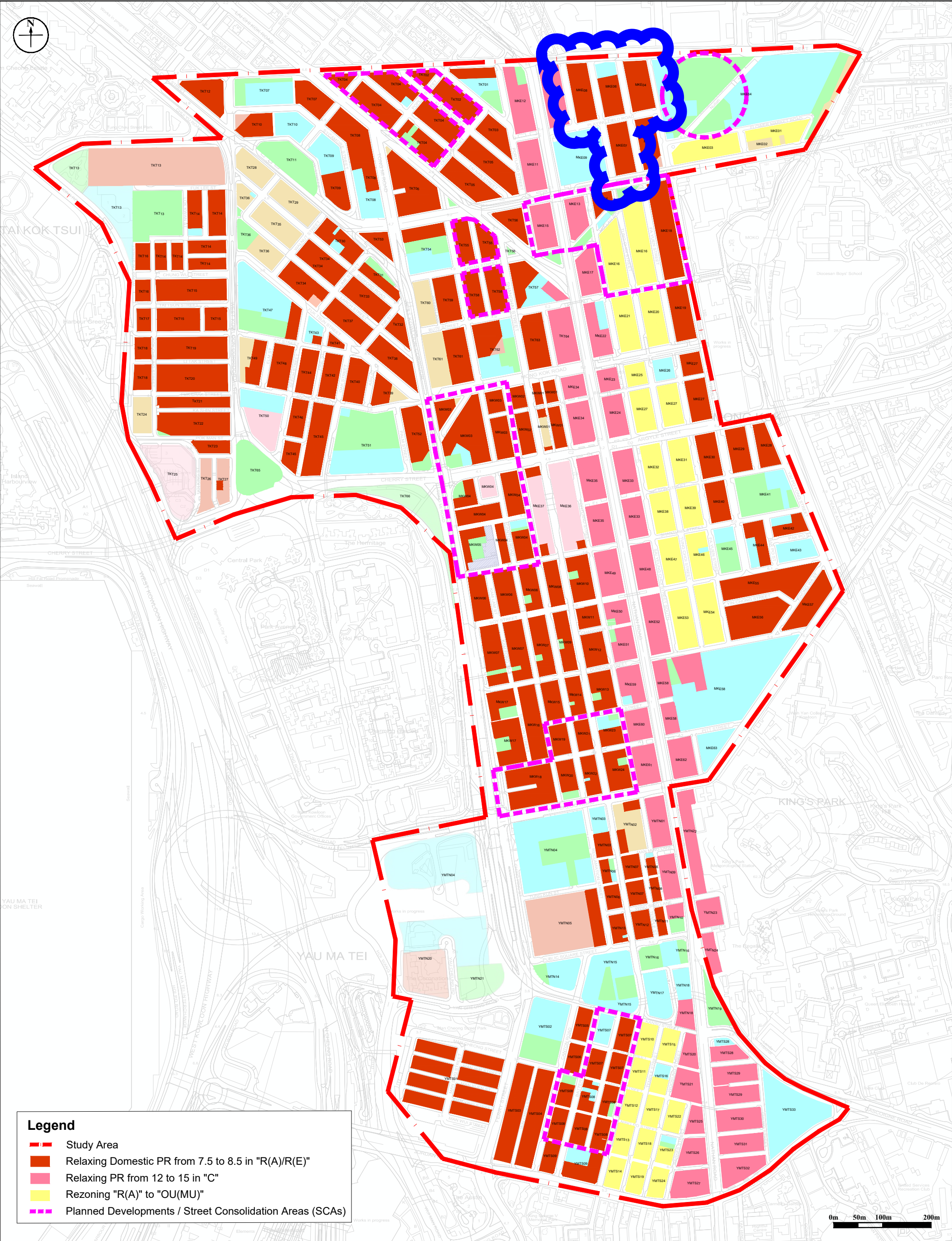


Figure: 1.2

Title: Location of Street Blocks

Project: Outline Zoning Plan Amendments in Yau Ma Tei and Mong Kok Districts

RAMBOLL

Drawn by: KL

Checked by: KY

Rev.: 2.0

Date: May 2022

Street Block	Population ¹	Private	Total Residential ADWF	Number of Students	School	Employment Population ²	Employment	Total ADWF m ³ /day
		0.27			0.04		0.28	
		ADWF			Total ADWF of Student		ADWF for Employment	
MKE01	329	88.8	88.8		0.0	49	13.7	102.5
MKE02	366	98.8	98.8		0.0	314	87.9	186.7
MKE03	1,164	314.2	314.2		0.0	701	196.3	510.5
MKE04	848	228.9	228.9		0.0	467	130.8	359.6
MKE05	673	181.8	181.8		0.0	123	34.4	216.2
MKE06	736	198.8	198.8	720	28.8	196	54.9	282.5
MKE07	955	257.8	257.8		0.0	424	118.7	376.6
MKE08	912	246.3	246.3		0.0	370	103.6	349.9
MKE09	0	0.0	0.0		0.0	0	0.0	0.0
MKE10	935	252.4	252.4		0.0	1,280	358.4	610.8
MKE11	761	205.3	205.3		0.0	868	243.0	448.4
MKE12	729	196.8	196.8		0.0	974	272.7	469.6
MKE13	252	67.9	67.9		0.0	59	16.5	84.5
MKE14	217	58.7	58.7		0.0	53	14.8	73.5
MKE15	665	179.5	179.5		0.0	974	272.7	452.2
MKE16	3,620	977.3	977.3		0.0	1,460	408.8	1386.1
MKE17	0	0.0	0.0		0.0	2,275	637.0	637.0
MKE18	1,577	425.7	425.7		0.0	575	161.0	586.7
MKE19	1,800	485.9	485.9		0.0	392	109.8	595.7
MKE20	1,630	440.0	440.0		0.0	343	96.0	536.1
MKE21	1,308	353.2	353.2		0.0	394	110.3	463.5
MKE22	981	264.8	264.8		0.0	1,048	293.4	558.2
MKE23	0	0.0	0.0		0.0	1,689	472.9	472.9
MKE24	0	0.0	0.0		0.0	3,038	850.6	850.6
MKE25	226	61.0	61.0		0.0	842	235.8	296.7
MKE26	0	0.0	0.0		0.0	0	0.0	0.0
MKE27	4,906	1324.7	1324.7		0.0	1,668	467.0	1791.7
MKE28	995	268.6	268.6		0.0	269	75.3	344.0
MKE29	871	235.1	235.1		0.0	576	161.3	396.3
MKE30	1,187	320.4	320.4		0.0	388	108.6	429.0
MKE31	996	269.0	269.0		0.0	345	96.6	365.6
MKE32	748	201.9	201.9		0.0	579	162.1	364.0
MKE33	553	149.4	149.4		0.0	4,239	1186.9	1336.3
MKE34	1,167	315.0	315.0		0.0	2,440	683.2	998.2
MKE35	317	85.7	85.7		0.0	5,295	1482.6	1568.3
MKE36	0	0.0	0.0		0.0	7,010	1962.8	1962.8
MKE37	339	91.5	91.5		0.0	2,882	807.0	898.4
MKE38	655	176.8	176.8		0.0	443	124.0	300.8
MKE39	889	240.1	240.1		0.0	262	73.4	313.4
MKE40	586	158.3	158.3		0.0	1,011	283.1	441.3
MKE41	722	194.9	194.9		0.0	467	130.8	325.7
MKE42	932	251.7	251.7	950	38.0	147	41.2	330.8
MKE43	0	0.0	0.0	1480	59.2	0	0.0	59.2
MKE44	522	140.9	140.9		0.0	120	33.6	174.5
MKE45	0	0.0	0.0	332	13.3	0	0.0	13.3

**APPENDIX 3-3
SEWAGE DISCHARGE FROM
SURROUNDING CATCHMENTS**

Appendix 3-3: Sewage Discharge from Surrounding Catchments

Catchment ID	Building	No. of Flats	Total Area (m ²) [2]			Population [1]				ADWF (m ³ /day)				ADWF / Building (m ³ /day)	Total ADWF / catchment (m ³ /day)	Reference
			Community, Social & Personal Services	Retails	Restaurants	Staff (by worker density - Community, Social & Personal Services)	Staff (by worker density - Retails)	Staff (by worker density - Restaurants)	Residential	Residential UFF = 0.27	Community, Social & Personal Services UFF = 0.28	Wholesale & Retail UFF = 0.28	Restaurants UFF = 1.58			
A	Oscar Court	69	--	400	200	--	14	11	173	46.7	--	3.9	17.4	68.0	122.2	Estimation & Centaline Property
	Kam Ming Court	45	--	260	--	--	10	--	113	30.5	--	2.8	--	33.3		Estimation & Centaline Property
	Circle Garden	28	--	200	--	--	7	--	70	18.9	--	2.0	--	20.9		Estimation & Centaline Property
B	Mongkok City Building	45	1440	--	--	48	--	--	113	30.5	13.4	--	--	44.0	64.9	Centaline Property
	Hentiff (Ho Tat) Building	24	--	480	--	--	17	--	60	16.2	--	4.8	--	21.0		Centaline Property
C	144-152 Prince Edward Road West	--	--	--	--	--	--	--	-	--	--	--	--	--	376.6	Outline Zoning Plan Amendments in Yau Ma Tei and Mong Kok Districts - SIA Report Block MKE07
	207-221 Fa Yuen Street	--	--	--	--	--	--	--	-	--	--	--	--	--		
	210-238 Tung Choi Street	--	--	--	--	--	--	--	-	--	--	--	--	--		
	6-10 Playing Field Road	--	--	--	--	--	--	--	-	--	--	--	--	--		
D	Mong Kok Police Station	--	12900	--	--	426	--	--	-	--	119.3	--	--	119.3	119.3	Estimation
E	304-328 Sai Yeung Choi Street North	--	--	--	--	--	--	--	-	--	--	--	--	--	992.0	Outline Zoning Plan Amendments in Yau Ma Tei and Mong Kok Districts - SIA Report Blocks MKE04, MKE06, & MKE08
	7-29 Playing Field Road	--	--	--	--	--	--	--	-	--	--	--	--	--		
	40-46, 52-56, 68 Boundary Street	--	--	--	--	--	--	--	-	--	--	--	--	--		
	209-229, 240-254 Tung Choi Street	--	--	--	--	--	--	--	-	--	--	--	--	--		
	225-239, 244-266 Fa Yuen Street	--	--	--	--	--	--	--	-	--	--	--	--	--		
	233-251 Sai Yee Street	--	--	--	--	--	--	--	-	--	--	--	--	--		
F	Bijou Apartments	171	--	935	--	--	33	--	428	115.6	--	9.2	--	124.8	676.6	Centaline Property
	Bijou Court	84	--	928	--	--	33	--	210	56.7	--	9.2	--	65.9		Centaline Property
	Cheung Ling Mansion	92	--	300	50	--	11	3	230	62.1	--	3.1	4.7	69.9		Centaline Property
	Cosmopolitan Centre	330		2130	2130	0	75	109	825	222.8	0.0	21.0	172.2	416.0		Centaline Property
US01	Upstream Area served by Sewer US01 (FWD4018096)	The full capacity of Pipe US01 has been adopted. The peaking factor and catchment inflow factors are not applicable for this catchment.													Peak flow: 497.2L/s	Appendix 3-4
US02	Upstream Area served by Sewer US02 (FWD4052975)	The full capacity of Pipe US02 has been adopted. The peaking factor and catchment inflow factors are not applicable for this catchment.													Peak flow: 1285.7L/s	Appendix 3-4

Notes:

[1] According to the Population Census 2021, the average domestic household size is 2.3 for Mong Kok East District Council Constituency Area and Tertiary Planning Unit 222; and 2.5 for Yau Tsim Mong District. For conservative assessment household size of 2.5 has been adopted.

According to figure of Commercial and Industrial Floor Space Utilization Survey by Planning Department, the staff density is: -

- 3.3 staff per 100m² GFA for Community, Social & Personal Services
- 3.5 staff per 100m² GFA for Retails and Shops
- 5.1 staff per 100m² GFA for Restaurants

[2] Estimated according to available information.

[3] According to EPD's Guidelines for Estimating Sewage Flows for Sewage Infrastructure Planning (Version 1.0), the Unit Flow Factors are: -

- 0.27 m³/person/day for Residential flat (R2)
- 0.28 m³/staff/day (0.08 + 0.20) for Community, Social & Personal Services
- 0.28 m³/staff/day (0.08 + 0.20) for Wholesale & Retail
- 1.58 m³/staff/day (0.08 + 1.50) for Restaurants & Hotels

[4] Number of flats are reference to Centaline Property (<https://hk.centanet.com/estate/index>).

[5] Discharge from Catchment C and E are referenced to attachment VIh of MPC Paper No. 10/22, Outline Zoning Plan Amendments in Yau Ma Tei and Mong Kok Districts - SIA Report. Extracted pages from the "Outline Zoning Plan Amendments in Yau Ma Tei and Mong Kok Districts - SIA Report" is presented in **Appendix 3-2**.

**APPENDIX 3-4
DETAILED CALCULATION OF EXISTING
SEWERS**

Appendix 3-4: Detailed Calculation of Existing Sewers

Table A: Calculation of Existing Sewers Capacity

Sewer	Upstream Manhole	Downstream Manhole	Upstream Invert Level (mPD)	Downstream Invert Level (mPD)	Length (m)	Diameter (mm)	Diameter (m)	Area (m²)	Hydraulic Radius (m)	Slope	Kinematic Viscosity (m²/s)	Pipe Material	Hydraulic Pipeline Roughness (m) ^[1]	Velocity (m/s)	Full Capacity (l/s)
Existing Downstream Sewer															
PS01	FMH4017914	FMH4017915	4.46	4.19	70.0	900	0.9	0.636	0.225	0.0038	0.00000114	Concrete	0.003	1.57	1000.3
PS02	FMH4017915	FMH4017916	4.19	4.07	31.9	900	0.9	0.636	0.225	0.0038	0.00000114	Concrete	0.003	1.57	1000.3
PS03	FMH4018199	FMH4018200	3.67	3.54	26.8	450	0.45	0.159	0.1125	0.0048	0.00000114	Concrete	0.006	1.01	160.6
PS04	FMH4018200	FMH4018197	3.54	3.48	20.4	450	0.45	0.159	0.1125	0.0029	0.00000114	Concrete	0.006	0.79	124.9
PS05	FMH4018202	FMH4018200	4.78	3.75	11.3	150	0.15	0.018	0.0375	0.0913	0.00000114	Concrete	0.003	2.35	41.5
PS06	FMH4017922	FMH4017923	3.15	3.10	22.8	900	0.9	0.636	0.225	0.0022	0.00000114	Concrete	0.006	1.08	686.3
PS07	FMH4017923	FMH4017924	3.10	3.06	4.1	900	0.9	0.636	0.225	0.0096	0.00000114	Concrete	0.003	2.51	1596.9
PS08	FMH4017924	FMH4018185	3.06	2.37	33.9	900	0.9	0.636	0.225	0.0203	0.00000114	Concrete	0.003	3.65	2320.4
PS09	FMH4018185	FMH4018251	2.37	2.30	3.8	BC 900x900		0.810	0.225	0.0185	0.00000114	Concrete	0.003	3.47	2814.3
PS10	FMH4018251	FMH4018252	2.30	2.28	7.5	900	0.9	0.636	0.225	0.0026	0.00000114	Concrete	0.003	1.31	836.2
PS11	FMH4018252	FMH4018253	2.27	2.20	18.9	900	0.9	0.636	0.225	0.0037	0.00000114	Concrete	0.003	1.56	989.3
PS12	FMH4018253	FMH4018254	1.19	1.12	7.0	900	0.9	0.636	0.225	0.0100	0.00000114	Concrete	0.003	2.56	1626.0
PS13	FMH4018254	FSH4000280	1.10	-0.40	39.5	900	0.9	0.636	0.225	0.0380	0.00000114	Concrete	0.003	4.99	3172.9
PS14	FSH4000280	FMH4018257	-0.62	-0.72	55.8	1650	1.65	2.138	0.4125	0.0018	0.00000114	Concrete	0.003	1.59	3402.6
PS15	FMH4079142	FMH4079141	--	--	16.7	225	0.225	0.040	0.05625	N/A	0.00000114	Concrete	0.003	-	-
PS16	FMH4079141	FMH4079140	--	--	6.6	225	0.225	0.040	0.05625	N/A	0.00000114	Concrete	0.003	-	-
PS17	FMH4079140	FMH4018194	--	4.62	11.5	225	0.225	0.040	0.05625	N/A	0.00000114	Concrete	0.003	-	-
Existing Upstream Sewer															
US01	FMH4017912	FMH4017913	4.69	4.65	34.7	900	0.9	0.636	0.225	0.0012	0.00000114	Concrete	0.006	0.78	497.2
US02	FMH4046195	FMH4046196	-0.22	-0.24	22.3	1350	1.35	1.431	0.3375	0.0009	0.00000114	Concrete	0.006	0.90	1285.7

Note:

[1] The roughness coefficient for slimed concrete sewer under poor condition has been adopted; the ks values are 3mm for velocities greater than 1.2m/s, otherwise 6mm.

[2] The estimated inverted levels are highlighted. The invert levels were estimated by interpolation of the invert levels at FMH4017914 (4.46mPD) and FMH4017917 (3.82mPD).

[3] The invert levels of PS15 to PS17 are not available

[4] Sewage flow direction between PS15 to PS17 is reserved based on the with Project configuration.

Appendix 3-4: Detailed Calculation of Existing Sewers

Table B: Calculation of Existing Sewers Utilization

Sewer	Upstream Manhole	Downstream Manhole	Full Capacity (L/s)	Catchment	Total catchment discharge - ADWF (Exclude Upstream Sewers) (m³/day)	Contributing Population ^[1]	Peaking Factor ^[2]	Catchment Inflow Factors, P _{CIF} ^[3]	Peak Flow (Exclude Upstream Sewers) ^[4] (L/s)	Total Peak Flow ^[5] (L/s)	% of full capacity
Existing Downstream Sewer											
PS01	FMH4017914	FMH4017915	1000.3	US01	0.0	0	8	1.3	0.0	497.2	50%
PS02	FMH4017915	FMH4017916	1000.3	S-B, US01	1934.2	7164	5	1.3	145.5	642.8	64%
PS03	FMH4018199	FMH4018200	160.6	S-B, US01	1934.2	7164	5	1.3	145.5	642.8	400%
PS04	FMH4018200	FMH4018197	124.9	S-B, B, US01	1999.1	7404	5	1.3	150.4	647.6	519%
PS05	FMH4018202	FMH4018200	41.5	B	64.9	240	8	1.3	7.8	7.8	19%
PS06	FMH4017922	FMH4017923	686.3	S-A1, S-B, A, B, US01	2733.8	10125	4	1.3	164.5	661.8	96%
PS07	FMH4017923	FMH4017924	1596.9	S-A1, S-B, A, B, US01	2733.8	10125	4	1.3	164.5	661.8	41%
PS08	FMH4017924	FMH4018185	2320.4	S-A1, S-B, A, B, US01	2733.8	10125	4	1.3	164.5	661.8	29%
PS09	FMH4018185	FMH4018251	2814.3	S-A1, S-B, A, B, C, D, E, US01	4221.7	15636	4	1.3	254.1	751.3	27%
PS10	FMH4018251	FMH4018252	836.2	S-A1, S-B, A, B, C, D, E, US01	4221.7	15636	4	1.3	254.1	751.3	90%
PS11	FMH4018252	FMH4018253	989.3	S-A1, S-B, A, B, C, D, E, US01	4221.7	15636	4	1.3	254.1	751.3	76%
PS12	FMH4018253	FMH4018254	1626.0	S-A1, S-B, A, B, C, D, E, US01	4221.7	15636	4	1.3	254.1	751.3	46%
PS13	FMH4018254	FSH4000280	3172.9	S-A1, S-B, A, B, C, D, E, F, US01	4898.3	18142	4	1.3	294.8	792.1	25%
PS14	FSH4000280	FMH4018257	3402.6	S-A1, S-B, A, B, C, D, E, F, US01, US02	4898.3	18142	4	1.3	294.8	2077.7	61%
PS15	FMH4079142	FMH4079141	-	A	122.2	453	8	1.3	14.7	14.7	-
PS16	FMH4079141	FMH4079140	-	A	122.2	453	8	1.3	14.7	14.7	-
PS17	FMH4079140	FMH4018194	-	A	122.2	453	8	1.3	14.7	14.7	-

Note:

[1] The contributing population = total catchment discharge (m³/day) / 0.27(m³/day/person)

[2] Peaking Factor of 8 for contribution population <1,000, 6 for contribution population of 1000 - 5000, 5 for contribution population of 5000 - 10000, 4 for contribution population of 10000 - 50000.

[3] For conservative Assessment, Catchment Inflow Factor for North-west Kowloon (1.3) has been adopted.

[4] Peak Flow = Daily average dry weather flow × Peaking Factor (including stormwater allowance) × Catchment Inflow Factor / 24 / 3600, the operation hour is assumed to be 24 hours.

[5] Total Peak Flow = Peak Flow (Exclude Upstream Sewers) + discharge of Upstream Sewers.

[6] The invert levels of PS15 to PS17 are not available

**APPENDIX 3-5
DETAILED CALCULATION OF
PROPOSED SEWERS**

Appendix 3-5: Detailed Calculation of Proposed Sewers

Table A: Calculation of Proposed Sewers Capacity

Sewer	Upstream Manhole	Downstream Manhole	Upstream Invert Level (mPD)	Downstream Invert Level (mPD)	Length (m)	Diameter (mm)	Diameter (m)	Area (m ²)	Hydraulic Radius (m)	Slope	Kinematic Viscosity (m ² /s)	Pipe Material ^[1]	Hydraulic Pipeline Roughness (m) ^[1]	Velocity (m/s)	Full Capacity (l/s)
Proposed New Sewer															
PP-A01	FTMH-A01	FMH-01	--	--	--	300	0.3	0.071	0.075	0.0100	0.00000114	PE	0.0003	1.70	120.4
PP-A04	FTMH-A04	FMH4084221	--	--	--	225	0.225	0.040	0.05625	0.0100	0.00000114	PE	0.0003	1.42	56.4
PP-A05	FTMH-A05	FMH4018214	--	--	--	225	0.225	0.040	0.05625	0.0100	0.00000114	PE	0.0003	1.42	56.4
PP-B01	FTMH-B01	FMH4017915	--	--	--	400	0.4	0.126	0.1	0.0100	0.00000114	PE	0.0003	2.04	256.4
PP01	FMH4017916	FMH4018199	4.26	4.06	70.0	900	0.9	0.636	0.225	0.0029	0.00000114	PE	0.0003	1.79	1137.9
PP02	FMH4018197	FMH-01	3.91	3.79	41.4	900	0.9	0.636	0.225	0.0029	0.00000114	PE	0.0003	1.80	1146.3
PP03	FMH-01	FMH4017920	3.79	3.75	13.8	900	0.9	0.636	0.225	0.0029	0.00000114	PE	0.0003	1.80	1146.7
PP04	FMH4017920	FMH-02	3.75	3.65	34.2	900	0.9	0.636	0.225	0.0029	0.00000114	PE	0.0003	1.81	1151.2
PP05	FMH-02	FMH-03	3.65	3.60	11.3	900	0.9	0.636	0.225	0.0044	0.00000114	PE	0.0003	2.23	1421.8
PP06	FMH-03	FMH4017922	3.60	3.55	10.7	900	0.9	0.636	0.225	0.0047	0.00000114	PE	0.0003	2.30	1461.3
PP07	FMH4018194	FMH-04	3.97	3.96	5.3	300	0.3	0.071	0.075	0.0019	0.00000114	PE	0.0015	0.60	42.3
PP08	FMH-04	FMH-05	3.96	3.94	26.3	300	0.3	0.071	0.075	0.0008	0.00000114	PE	0.0015	0.38	26.7
PP09	FMH-05	FMH-06	3.94	3.91	50.3	300	0.3	0.071	0.075	0.0006	0.00000114	PE	0.0015	0.33	23.6
PP10	FMH-06	FMH-07	3.91	3.88	50.6	300	0.3	0.071	0.075	0.0006	0.00000114	PE	0.0015	0.33	23.6
PP11	FMH-07	FMH-01	3.88	3.79	15.2	300	0.3	0.071	0.075	0.0059	0.00000114	PE	0.0003	1.31	92.3

Appendix 3-5: Detailed Calculation of Proposed Sewers

Table A: Calculation of Proposed Sewers Capacity

Sewer	Upstream Manhole	Downstream Manhole	Upstream Invert Level (mPD)	Downstream Invert Level (mPD)	Length (m)	Diameter (mm)	Diameter (m)	Area (m ²)	Hydraulic Radius (m)	Slope	Kinematic Viscosity (m ² /s)	Pipe Material ^[1]	Hydraulic Pipeline Roughness (m) ^[1]	Velocity (m/s)	Full Capacity (l/s)
Proposed Upgrade Sewer															
PS01	FMH4017914	FMH4017915	4.46	<u>4.34</u>	70.0	900	0.9	0.636	0.225	0.0017	0.00000114	PE	0.000	1.38	877.7
PS02	FMH4017915	FMH4017916	<u>4.34</u>	<u>4.26</u>	31.9	900	0.9	0.636	0.225	0.0025	0.00000114	PE	0.000	1.67	1065.3
PS03	FMH4018199	FMH4018200	<u>4.06</u>	<u>3.97</u>	26.8	<u>900</u>	0.9	0.636	0.225	0.0034	0.00000114	PE	0.000	1.94	1234.9
PS04	FMH4018200	FMH4018197	<u>3.97</u>	<u>3.91</u>	20.4	<u>900</u>	0.9	0.636	0.225	0.0029	0.00000114	PE	0.000	1.81	1153.7
PS05	FMH4018202	FMH4018200	4.78	<u>4.50</u>	11.3	<u>225</u>	0.225	0.040	0.05625	0.0248	0.00000114	PE	0.000	2.25	89.5
PS06	FMH4017922	FMH4017923	<u>3.55</u>	<u>3.45</u>	22.8	900	0.9	0.636	0.225	0.0044	0.00000114	PE	0.000	2.22	1414.5
PS15	FMH4079142	FMH4079141	<u>4.03</u>	<u>4.00</u>	16.7	225	0.225	0.040	0.05625	0.0018	0.00000114	PE	0.0015	0.48	19.2
PS16	FMH4079141	FMH4079140	<u>4.00</u>	<u>3.99</u>	6.6	225	0.225	0.040	0.05625	0.0015	0.00000114	PE	0.0015	0.44	17.6
PS17	FMH4079140	FMH4018194	<u>3.99</u>	<u>3.97</u>	11.5	225	0.225	0.040	0.05625	0.0017	0.00000114	PE	0.0015	0.48	18.9

Note:

[1]

The proposed pipes will be either PE pipes or precast concrete pipes with PVC or equivalent lining.

The roughness coefficient for Slimed uPVC sewer under poor condition has been adopted for PE sewer; the ks values are 0.3mm for velocities greater than 1.2m/s, otherwise 1.5mm.

[2]

The proposed modifications to existing sewers are **bolded & underlined**.

[3]

All proposed new/upgrade sewer manhole and pipes are subject to change during detail design stage.

[4]

Sewage flow direction between PS14 to PS16 is reserved based on planned flow configuration.

Appendix 3-5: Detailed Calculation of Proposed Sewers

Table B: Calculation of Propsoed Sewers Utilization

Sewer	Upstream Manhole	Downstream Manhole	Full Capacity (L/s)	Catchment	Total catchment discharge - ADWF (Exclude Upstream Sewers) (m³/day)	Contributing Population ^[1]	Peaking Factor ^[2]	Catchment Inflow Factors, P _{CIF} ^[3]	Peak Flow (Exclude Upstream Sewers) ^[4] (L/s)	Total Peak Flow ^[5] (L/s)	% of full capacity
Proposed New Sewer											
PP-A01	FTMH-A01	FMH-01	120.4	S-A1	612.5	2269	6	1.3	55.3	55.3	46%
PP-A04	FTMH-A04	FMH4084221	56.4	S-A4	5.9	22	8	1.3	0.7	0.7	1%
PP-A05	FTMH-A05	FMH4018214	56.4	S-A5	5.9	22	8	1.3	0.7	0.7	1%
PP-B01	FTMH-B01	FMH4017915	256.4	S-B	1934.2	7164	5	1.3	145.5	145.5	57%
PP01	FMH4017916	FMH4018199	1137.9	S-B, US01	1934.2	7164	5	1.3	145.5	642.8	56%
PP02	FMH4018197	FMH-01	1146.3	S-B, B, US01	1999.1	7404	5	1.3	150.4	647.6	56%
PP03	FMH-01	FMH4017920	1146.7	S-A1, S-B, A, B, US01	2733.8	10125	4	1.3	164.5	661.8	58%
PP04	FMH4017920	FMH-02	1151.2	S-A1, S-B, A, B, US01	2733.8	10125	4	1.3	164.5	661.8	57%
PP05	FMH-02	FMH-03	1421.8	S-A1, S-B, A, B, US01	2733.8	10125	4	1.3	164.5	661.8	47%
PP06	FMH-03	FMH4017922	1461.3	S-A1, S-B, A, B, US01	2733.8	10125	4	1.3	164.5	661.8	45%
PP07	FMH4018194	FMH-04	42.3	A	122.2	453	8	1.3	14.7	14.7	35%
PP08	FMH-04	FMH-05	26.7	A	122.2	453	8	1.3	14.7	14.7	55%
PP09	FMH-05	FMH-06	23.6	A	122.2	453	8	1.3	14.7	14.7	62%
PP10	FMH-06	FMH-07	23.6	A	122.2	453	8	1.3	14.7	14.7	62%
PP11	FMH-07	FMH-01	92.3	A	122.2	453	8	1.3	14.7	14.7	16%

Appendix 3-5: Detailed Calculation of Proposed Sewers

Table B: Calculation of Propsoed Sewers Utilization

Sewer	Upstream Manhole	Downstream Manhole	Full Capacity (L/s)	Catchment	Total catchment discharge - ADWF (Exclude Upstream Sewers) (m³/day)	Contributing Population ^[1]	Peaking Factor ^[2]	Catchment Inflow Factors, P _{CIF} ^[3]	Peak Flow (Exclude Upstream Sewers) ^[4] (L/s)	Total Peak Flow ^[5] (L/s)	% of full capacity
Proposed Upgrade/Modify											
PS01	FMH4017914	FMH4017915	877.7	US01	0.0	0	8	1.3	0.0	497.2	57%
PS02	FMH4017915	FMH4017916	1065.3	S-B, US01	1934.2	7164	5	1.3	145.5	642.8	60%
PS03	FMH4018199	FMH4018200	1234.9	S-B, US01	1934.2	7164	5	1.3	145.5	642.8	52%
PS04	FMH4018200	FMH4018197	1153.7	S-B, B, US01	1999.1	7404	5	1.3	150.4	647.6	56%
PS05	FMH4018202	FMH4018200	89.5	B	64.9	240	8	1.3	7.8	7.8	9%
PS06	FMH4017922	FMH4017923	1414.5	S-A1, S-B, A, B, US01	2733.8	10125	4	1.3	164.5	661.8	47%
PS15	FMH4079142	FMH4079141	19.2	A	122.2	453	8	1.3	14.7	14.7	77%
PS16	FMH4079141	FMH4079140	17.6	A	122.2	453	8	1.3	14.7	14.7	83%
PS17	FMH4079140	FMH4018194	18.9	A	122.2	453	8	1.3	14.7	14.7	78%

Note:

[1] The contributing population = total catchment discharge (m³/day) / 0.27(m³/day/person)

[2] Peaking Factor of 8 for contribution population <1,000, 6 for contribution population of 1000 - 5000, 5 for contribution population of 5000 - 10000, 4 for contribution population of 10000 - 50000.

[3] For conservative Assessment, Catchment Inflow Factor for North-west Kowloon (1.3) has been adopted.

[4] Peak Flow = Daily average dry weather flow × Peaking Factor (including stormwater allowance) × Catchment Inflow Factor / 24 / 3600, the operation hour is assumed to be 24 hours.

[5] Total Peak Flow = Peak Flow (Exclude Upstream Sewers) + discharge of Upstream Sewers.