Annex D

Drainage Impact Assessment

(Town Planning Board's Reference No.: TPB/A/STT/26)

Section 16 Planning Application for Proposed Filling of Ponds for Permitted Innovation and Technology Hub (including Permitted Cargo Handling and Forwarding Facilities, Creative Industries, Eating Place, Flat (Staff Quarters only), Industrial Use, Information Technology and Telecommunications Industries, Office, Public Utility Installation, Research, Design and Development Centre, Shop and Services, Warehouse (excluding Dangerous Goods Godown)) at Lot 764 RP (Part) in D.D. 99, San Tin, Yuen Long, N.T.

(HT25108)

Drainage Impact Assessment (DIA) Report

November 2025

Prepared & Approved by:	K. C. LEE *MICE, MHKIE*

何田顧問工程師有限公司
HO TIN & ASSOCIATES
CONSULTING ENGINEERS LIMITED

CONTENT

FIGURE

1. Introduction

1.1 Ho Tin & Associates Consulting Engineers Limited (HTA) was appointed by the client to prepare a Drainage Impact Assessment (DIA) in support of a S16 Planning Application for proposed filling of ponds for permitted innovation and technology hub (including permitted cargo handling and forwarding facilities, creative industries, eating place, flat (staff quarters only), industrial use, information technology and telecommunications industries, office, public utility installation, research, design and development centre, shop and services, warehouse (excluding dangerous goods godown)) ("the proposed development") at Lot 764 RP (Part) in D.D. 99, San Tin, Yuen Long, N.T. ("the Application Site").

1.2 This report presents the DIA for the proposed development at the Application Site.

2. Objectives of This DIA

2.1 The Application Site is situated in the lower reach of the Northern New Territories Drainage Master Plan Study Area. San Tin Eastern Main Drainage Channel was constructed and San Tin Western Main Drainage Channel was planned to alleviate the flooding problems of the areas. Besides, the San Tin Village Flood Protection Scheme has been implemented to protect seven low-lying villages in San Tin, Yuen Long against the risk of flood damage during heavy rainfalls.

2.2 The Application Site falls within the area zoned "Other Specified Uses" annotated "Innovation and Technology" ("OU(I&T)") on the Approved San Tin Technopole Outline Zoning Plan (OZP) No. S/STT/2. Under the approved OZP, the existing ponds are presumed to be filled up for the planned developments. It is therefore envisaged that the Government will address the drainage problems, if any, in the catchment region and will implement measures, if necessary.

2.3 This DIA therefore aims to deal with drainage provisions and flood control measures to the local area of the Application Site which shall include the lot itself and the surrounding grounds.

3. General Site Description and the Proposed Development

3.1 The site location is shown in **Figure 1A**. The Application Site comprises of Lot 764 RP (Part) in D.D. 99, San Tin, Yuen Long, New Territories. It has an area of about 163,181m^2 and is located along the northwest side of San Tin Tsuen Road to the north of San Tin Highway. Majority of the Application Site is currently used as fish ponds with scattered residential dwellings, while the southwestern portion has been filled and used as storage/open storage yards, vehicle repair workshops, container vehicle park, and a logistics centre for over 20 years.

3.2 Site photos are shown below for information and the locations of the photo taking are shown in **Figure 2** of this DIA for reference:

<table>
<tr><td> 
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<tr><td>Photo No. 1 – View from outside towards the northwestern boundary of the Application Site</td><td>Photo No. 2 – View of the southwestern portion of the Application Site</td></tr>
<tr><td> 
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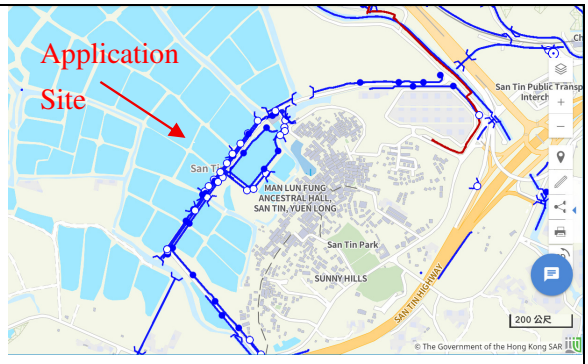
</td></tr>
<tr><td>Photo No. 3 – View along San Tin Tsuen Road</td><td>Photo No. 4 – View from San Tin Tsuen Road towards the southeastern portion of the Application Site (1)</td></tr>
</table>

Photo No. 5 – View from San Tin Tsuen Road towards the southeastern portion of the Application Site (2)



Existing Public Drainage Layout extracted from the LandsD's website of 'Geoinfo' in October 2025

3.3 The Application Site is currently zoned "Other Specified Uses" annotated "Innovation and Technology" ("OU(I&T)") on the Approved San Tin Technopole Outline Zoning Plan (OZP) No. S/STT/2. It is proposed to develop the Application Site into a large-scale Innovation and Technology (I&T) hub, focusing on I&T development and low-altitude economy. The major development parameters of the proposed development are summarized in Table 2.3 in the following:

Table 2.3 Proposed Development Parameters

Parameter	Details
Site Area	About 163,181m^2
Plot Ratio (PR)	About 4.24
Total Gross Floor Area (GFA)	About 691,498m^2
Site Coverage	About 41%
No. of Blocks	14 comprising of: - Seven blocks of 12-storey I&T blocks - Three blocks of 19-storey commercial and staff quarters blocks - One block of 9-storey automatic parking system/ data centre - One block of 3-storey visitor & education centre - One block of 2-storey cooling centre - One block of 2-storey sub-station

3.4 Master Layout Plan of Ground Floor Plan and Roof Plan is shown in **Figure 3** and **4** respectively.

4. Existing Drainage System of the Area

4.1 The Application Site is situated at about 350m to the southwest of the San Tin Eastern Main Drainage Channel and at the immediate northeast side of the planned San Tin Western Main Drainage Channel.

4.2 With respect to the latest drainage information retrieved from the LandsD's website of Geoinfo, public stormwater drainage including two 3000mm (W) x 2000mm (H) box culverts, underground drains and surface channels, exist along San Tin Tsuen Road. The San Tin Stormwater Pumping Station is located on the southeast side of San Tin Tsuen Road opposite to the eastern corner of the Application Site.

4.3 The surface of San Tin Tsuen Road is at a level relatively higher than those on the both sides such that the road embankment would serve as a bund to protect the areas bounded by San Tin Tsuen Road and San Tin Highway from flooding caused by high tides at Deep Bay. Stormwater collected within the areas bounded by San Tin Tsuen Road and San Tin Highway would be discharged, when appropriate, via the San Tin Stormwater Pumping Station into the two 3000mm (W) x 2000mm (H) box culverts underneath San Tin Tsuen Road. The two box culverts discharge into an existing watercourse which runs along the southwestern boundary of the Application Site and conveys its flow towards the northwest into Shenzhen River.

4.4 At present, there are several stormwater intakes near San Tin Tsuen Road to allow the existing ponds within the Application Site to discharge. The intakes will convey the flows into an existing watercourse which runs along the northeastern boundary of the Application Site towards Shenzhen River. Except those at San Tin Tsuen, there is no other existing public stormwater drainage within the Application Site nor in its vicinity.

4.5 The existing levels of the ponds are ranging from +0.1mPD to +3.19mPD while the existing levels of the land are ranging from +0.82mPD to +5.36mPD. The concerned area is susceptible to both tidal and fluvial floods.

4.6 It is noticed that the San Tin Western Main Drainage Channel will be constructed along the southwestern boundary of the Application Site under CEDD's Agreement No. CE 15/2023 (CE) - 'First Phase Development of The New Territories North – San Tin / Lok Ma Chau Development Node – Investigation'. The Channel was scheduled to be completed before the mass intake of the area in 2034. In addition, flood retention facilities including retention ponds and three underground storage tanks are also planned in four "Open Space" zones on the southeast side of San Tin Highway to cater for the increase of surface runoff under the development of the upstream areas of the Application Site and the climate change effect.

5. Potential Drainage Impact

5.1 The proposed development at the Application Site will involve filling of pond and land of about 163,181m^2. In order to avoid both tidal and fluvial floods, the Application Site is proposed to be filled up to levels of not lower than +6.08mPD in general which is similar to the existing levels of San Tin Tsuen Road. With respect to the Table 8, 29, 30b and 31 in the Stormwater Drainage Manual Corrigendum No. 1/2022, the extreme sea level rise due to climate change and possible higher greenhouse gases emission scenarios in end of 21st century at Tsim Bei Tsui in 200 years return period would be +(4.78 + 0.47 + 0.26 + 0.27)mPD = +5.78mPD < +6.08mPD (allowing 0.3m for freeboard) which is then considered as appropriate.

5.2 The low lying areas bounded by San Tin Tsuen Road and San Tin Highway are protected from flooding by the road embankments in associated with the existing stormwater drainage system at San Tin Tsuen Road and the existing San Tin Stormwater Pumping Station. Filling of pond and land at the Application Site would be located outside San Tin Tsuen Road and would not obstruct any stormwater discharge route of the polder areas, it therefore would not cause adverse drainage effects upon the low lying areas on the opposite side of San Tin Tsuen Road. In addition, after completion of the San Tin Western Main Drainage Channel, flow from the polder areas between San Tin Tsuen Road and San Tin Highway can be discharged more effectively via the Channel.

5.3 It is anticipated to have no technical difficulties in designing internal drainage system of the Application Site. In view of its close proximity, it is proposed to discharge the stormwater flow from the Application Site directly into the San Tin Western Main Drainage Channel which runs along the southwestern boundary of the Application Site. Besides, completion of the internal drainage system of the Application Site shall tie in with

the latest programme of the San Tin Western Main Drainage Channel which at present is targeted to be completed in about 2034.

6. Proposed Drainage Works

6.1 The Application Site would be filled to levels not lower than +6.08mPD. Peripheral channels would be constructed to intercept surface runoff flowing across the site boundary. Peripheral channels would be constructed along the boundary of the Application Site to collect all surface runoff crossing the boundary. Underground drainage would be constructed within the Application Site to collect all the surface runoff including those from the peripheral channels and convey the runoff to a terminal stormwater manhole located at the western corner of the Application Site. The terminal stormwater manhole would discharge directly into the San Tin Western Main Drainage Channel.

6.2 Detailed design of the proposed drainage works will be submitted to relevant Government departments for approval at the later stage. No particular technical problem is envisaged. A Proposed Stormwater Drainage Management Plan is shown in **Figure 5**.

6.3 Nevertheless, aiming at improvement of the sustainability and resilience of Hong Kong's drainage system, application of blue-green drainage infrastructure which facilitates the infiltration of rainfall and the process of natural filtering to reduce the quantity and improve the quality of runoff, will be considered, where appropriate, under the subject proposed development at the later detailed design stage. Tentatively, green roofs, porous pavements and rainwater harvesting facilities will be recommended for consideration. The harvested water, if appropriate or after treatment, will be used for toilet flushing, drip irrigation, sprayed irrigation, water features, car washing and street cleansing, etc.

6.4 The subject proposed development is committed to obtain consents from parties/owners of adjacent relevant land/lots prior to commencement of the proposed drainage works outside the subject site and to maintain the completed drainage works to the satisfaction of relevant Government departments.

7. Conclusion

7.1 The Application Site will be filled up to levels not lower than +6.08mPD which is higher than the projected extreme sea level rise due to climate change and possible higher

greenhouse gases emission scenarios in end of 21st century. The Application Site would therefore not be flooded due to high tides.

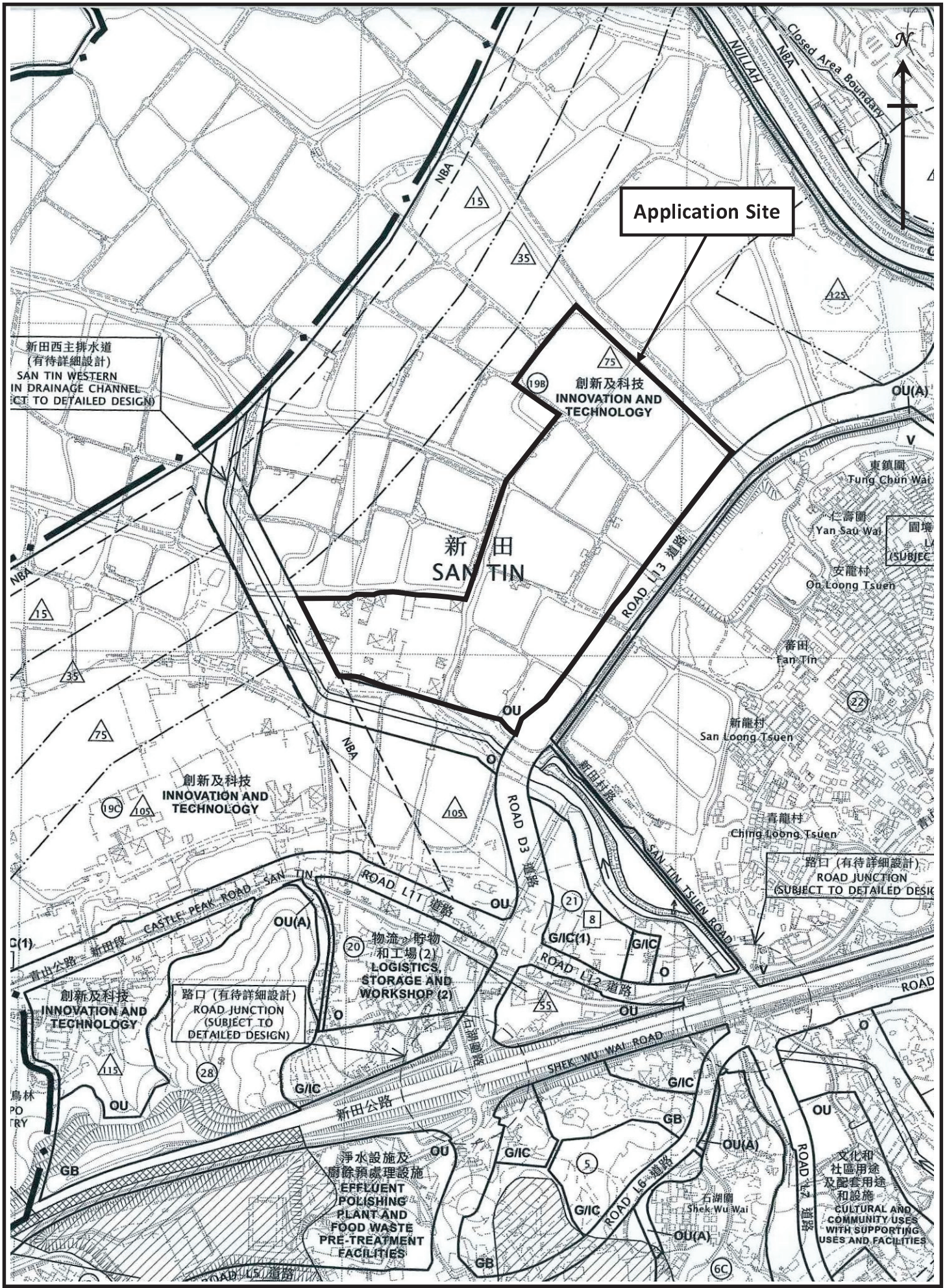
7.2 The Application Site is located on the opposite side of San Tin Tsuen Road which by nature is an embankment protecting the existing low lying areas bounded by San Tin Tsuen Road and San Tin Highway. The proposed filling works of the Application Site would not affect the existing drainage conditions of the concerned low lying areas. Besides, the existing stormwater discharge routes of the concerned low lying areas would not be disturbed.

7.3 Surface runoff within the Application Site would be properly managed by means of properly designed engineering drainage system of which the detailed design will be submitted to relevant Government departments for approval at the later stage. No insurmountable technical problem is anticipated.

7.4 Stormwater flow from the Application Site will be collected into a terminal stormwater manhole from which the flow will be discharged into the San Tin Western Main Drainage Channel which runs along the southwestern boundary of the Application Site. Completion of the internal drainage system of the Application Site shall tie in with the latest programme of the San Tin Western Main Drainage Channel which at present would be completed in about 2034.

7.5 The subject proposed development is committed to obtain consents from parties/owners of adjacent relevant land/lots prior to commencement of the proposed drainage works outside the subject site and to maintain the completed drainage works to the satisfaction of relevant Government departments.

7.6 In conclusion, the subject proposed development would not cause unacceptable adverse drainage impacts onto the surroundings.

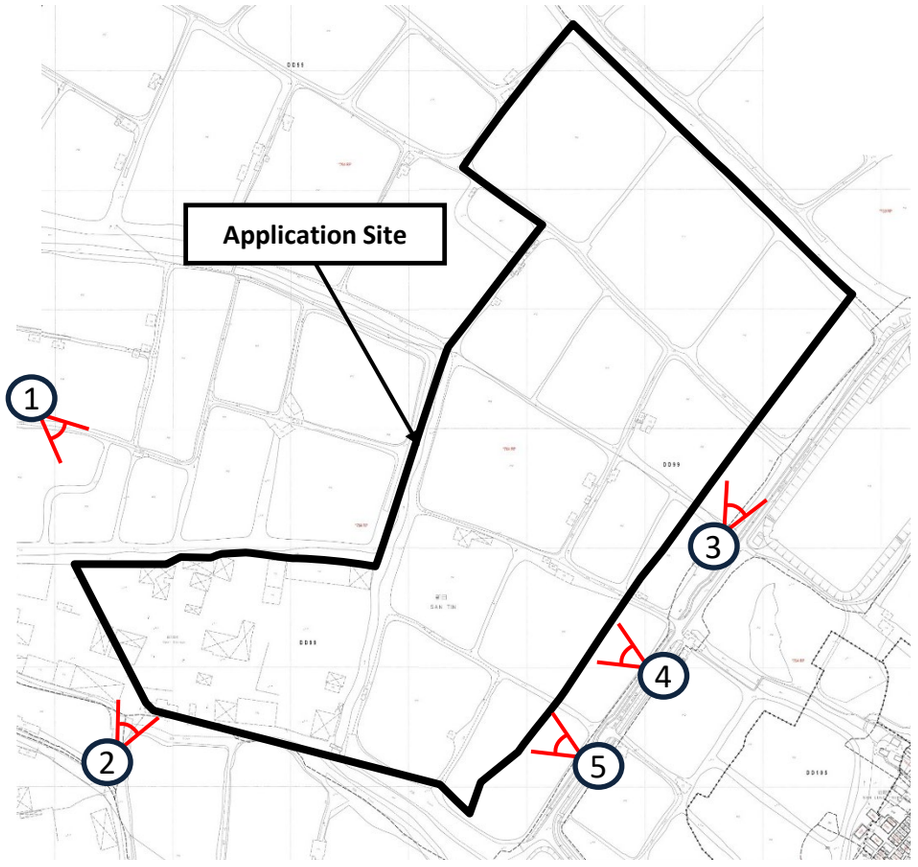


Location Plan
(Extract from Approved San Tin Technopole Outline Zoning Plan No. S/STT/2)

Figure 1A

1 : 7500

羅迅測計師行
Lawson David & Sung
SURVEYORS LIMITED
Property Consultants • Planning • Valuers • Auctioneers
Estate Agency Licence No. C-006328



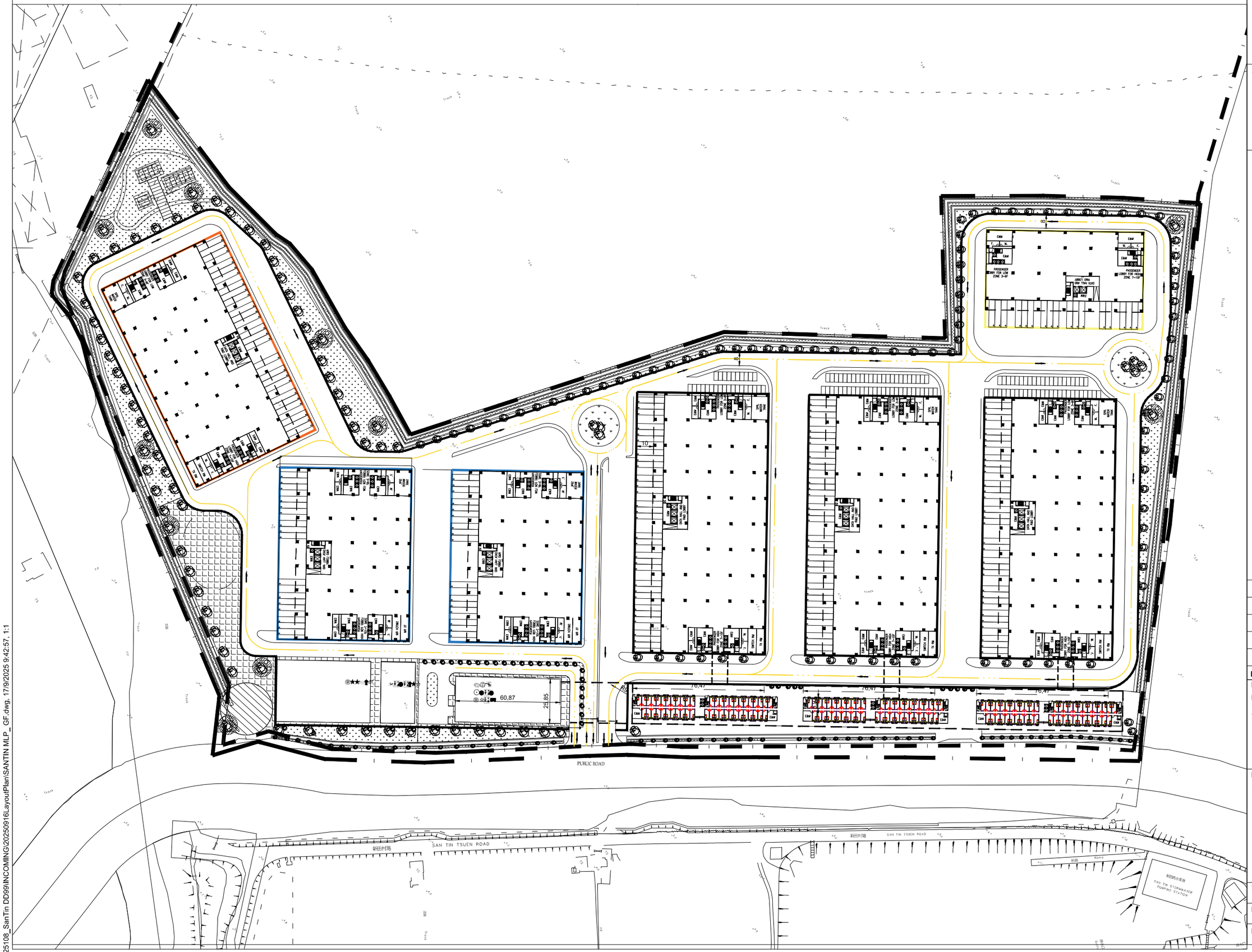
Legend:

Viewpoint of the Photo

1 Photo No.

LOCATIONS OF PHOTO TAKING

FIGURE 2



CLIENT

Kenwell Limited

ARCHITECT

llewelyn davies

ARCHITECTS PLANNERS DESIGNERS

Llewelyn-Davies Hong Kong Ltd

GENERAL NOTE:

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REV.	DATE	DESCRIPTION

PROJECT

PROPOSED LOGISTIC DEVELOPMENT IN SAN TIN TECHNOPOLE, LOT 764RP (PART) IN D.D. 99, SAN TIN, YUEN LONG, N.T.

DRAWING TITLE

MASTER LAYOUT PLAN
GROUND FLOOR PLAN

FIGURE 3

SCALE	DATE
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DRAWING NO.: 77216 / TYP / GP002	REV: –

1: 2000 @ A3

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W1
+75MPD

W2
+75MPD

W3
+75MPD

W4
+75MPD

W5
+75MPD

W6
+75MPD

W7
+75MPD

12 MPD
GOV
COOLING
PLANT

60.87

25.85

TOURIST
CENTRE

SUB- STATION

PUBLIC ROAD

SAN TIN NEW ROAD

SAN TIN TSUEN ROAD

SAN TIN STORMWATER PUMPING STATION

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PROJECT

PROPOSED LOGISTIC DEVELOPMENT IN SAN TIN TECHNOPOLE, LOT 764RP (PART) IN D.D. 99, SAN TIN, YUEN LONG, N.T.

DRAWING TITLE

MASTER LAYOUT PLAN
ROOF PLAN

FIGURE 4

SCALE	DATE
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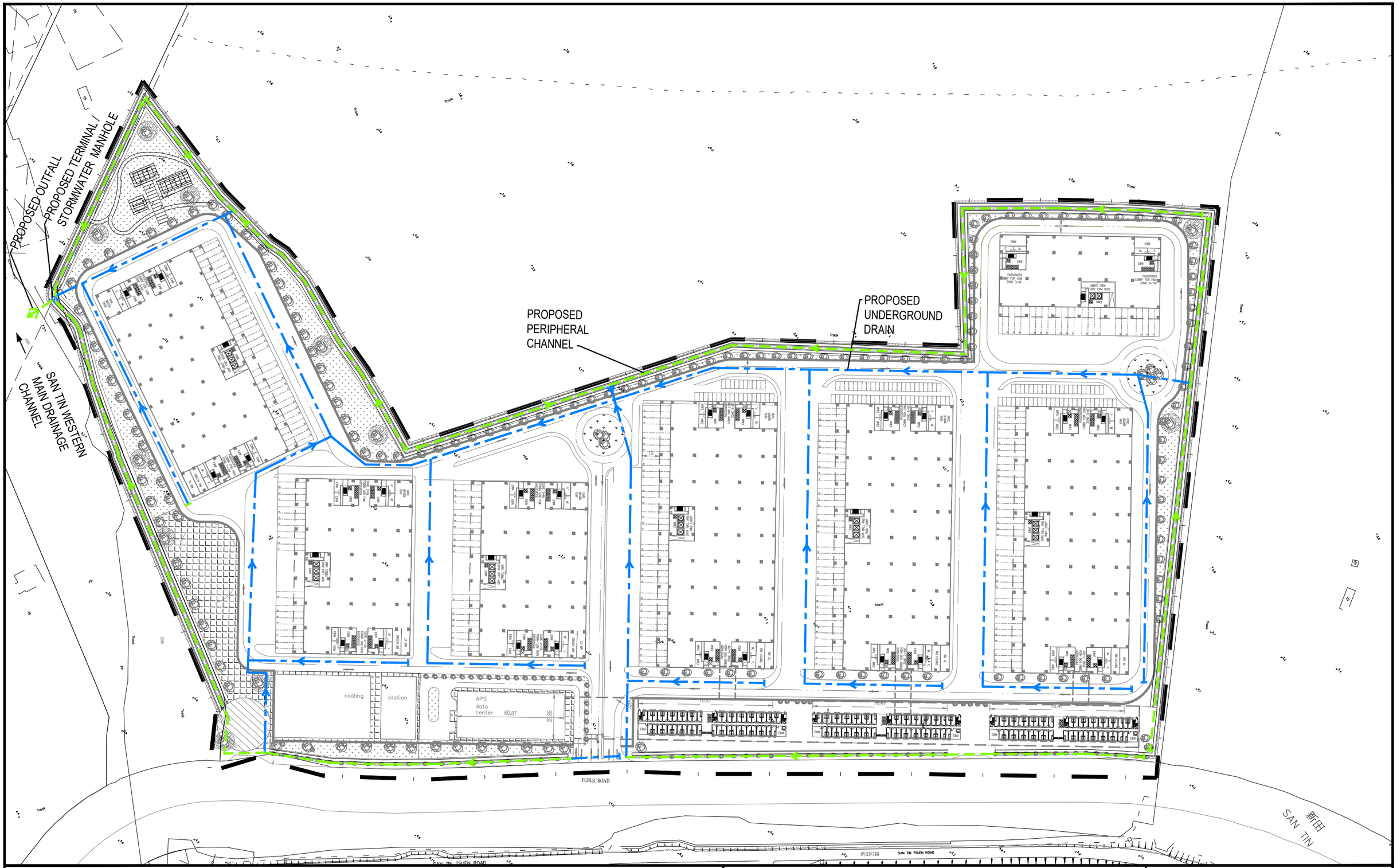

LEGEND:

PROPOSED PERIPHERAL CHANNEL

PROPOSED UNDERGROUND DRAIN

REMARK:
MANHOLES AND CATCHPITS AT JUNCTIONS ARE NOT SHOWN FOR CLARITY

PROJECT

何田顧問工程師有限公司
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TITLE

PROPOSED STORMWATER DRAINAGE MANAGEMENT PLAN

SCALE
1 : 2000 @ A3

DRAWING No.
FIGURE 5