

Information Note on Three Proposed Drainage Tunnels LegCo Panel on Planning, Lands and Works

**103CD – Drainage Improvement in Northern Hong Kong Island
– Hong Kong West Drainage Tunnel**

**108CD – West Kowloon Drainage Improvement – Lai Chi Kok Transfer
Scheme**

**111CD – Drainage Improvement in Tsuen Wan and Kwai Chung
– Tsuen Wan Drainage Tunnel**

INTRODUCTION

This paper is to inform the Members on the latest progress of investigation for the three proposed drainage tunnel schemes, viz. Hong Kong West, Lai Chi Kok Transfer Scheme and Tsuen Wan.

BACKGROUND

2. The drainage systems in the urban areas of Hong Kong West, Lai Chi Kok, and Tsuen Wan were built several decades ago. The rapid urbanization of these areas in past decades has changed rural unpaved areas into built-up areas, which results in a substantial increase in surface runoff. Consequently, the urban drainage systems are less capable of handling the surface runoff. Flooding frequently occurs at low-lying urban areas during heavy rainstorms.

3. The traditional approach to increase the capacity of the existing drainage systems in these highly urbanized areas is to enlarge or construct additional drains or box culverts. However, due to congestion of underground utilities, it is often impracticable to find sufficient room in the ground to lay the drains. The construction would also require extensive road opening in the busy roads causing serious disruption to traffic and other disturbance to the public. The drainage tunnel schemes have been therefore proposed to intercept and convey the surface runoff in mid-hill areas for discharge into the sea. The proposal can do away with the need to implement extensive pipelaying works

in the busy streets of the areas in question. This helps to reduce the disturbance to the public and environment to a minimum.

4. We obtained the endorsement of the PWSC for carrying out three Investigation Studies for the drainage tunnels by consultants at its meeting held on 6 February 2002. The part upgrading of the respective PWP items for funding the Investigation Studies was subsequently approved by FC on 8 March 2002.

PROGRESS OF INVESTIGATION STUDY

5. We started the Investigation Study assignments (hereinafter referred as “Studies”) in November 2002. The Studies are now in the Preliminary Design Stage and the various investigations, including geotechnical, traffic, environmental, physical hydraulic modelling and benefit-cost analysis, are in active progress.

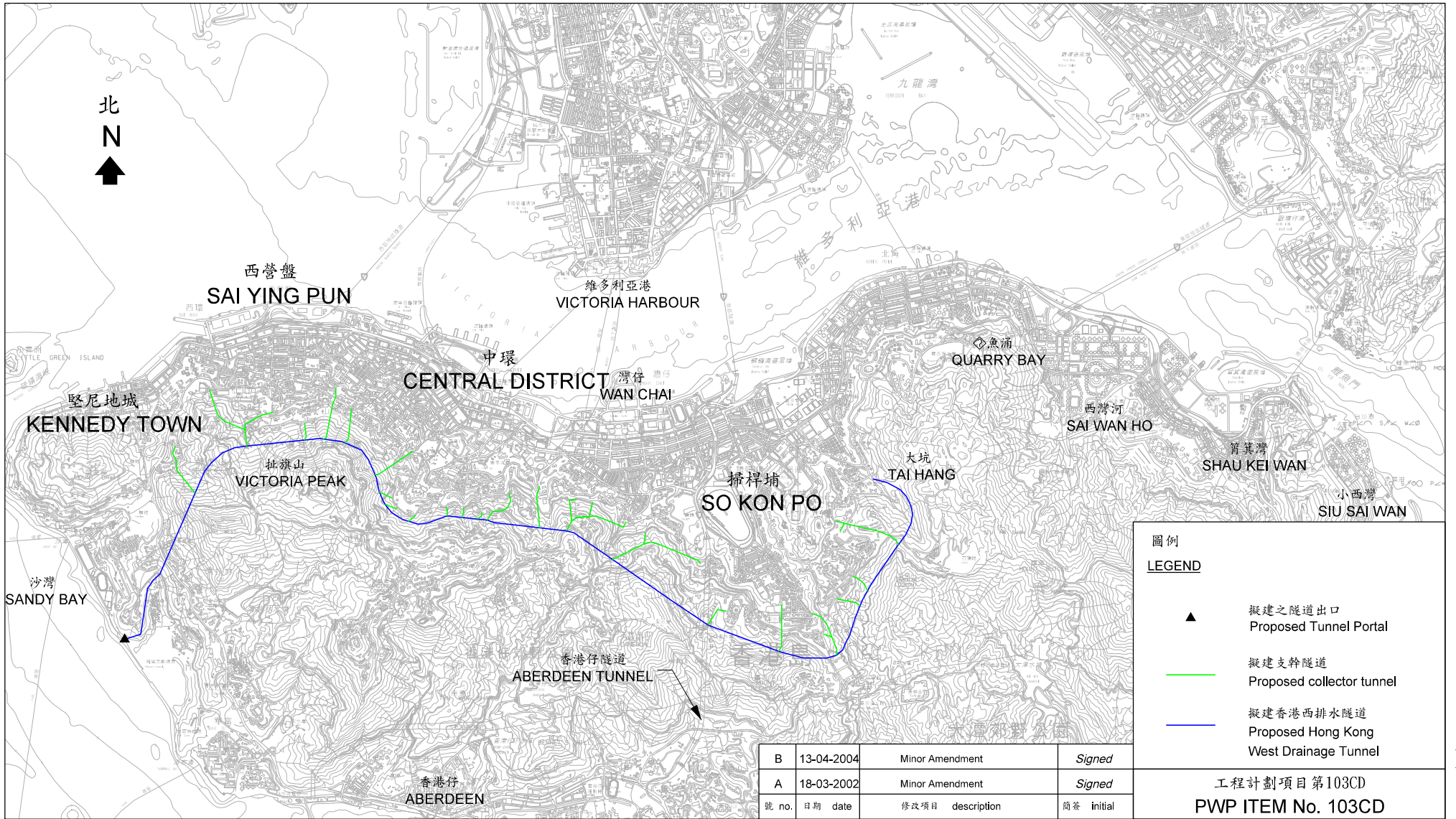
6. Based on the results of the preliminary reviews, the tunnel schemes are considered to be technically feasible with regard to the construction methods available, geotechnical conditions, hydraulic and maintenance requirements. The preliminary reviews also indicate that the tunnel schemes are cost-effective engineering solutions and that the interception approach is a better solution than the traditional approach of enlarging drains and box culverts along busy roads, which would cause extensive social disturbance to the public in traffic and environmental aspects. Further data collection and analysis will be undertaken in the Preliminary Design Stage to verify the technical feasibility and cost effectiveness of the schemes. The tunnel alignments have also been reviewed and designed to minimize encroachment upon private land lots as far as possible. For the Hong Kong West and Lai Chi Kok Transfer Scheme drainage tunnels, the preliminary tunnel alignments will not encroach upon any private lots whereas for the Tsuen Wan drainage tunnel, only five private lots would be inevitably affected. The preliminary alignments of the three drainage tunnels are shown in Enclosures 1, 2 and 3 for Members’ reference. It is anticipated that as more information becomes available from the investigations, we shall be able to finalize the tunnel alignments by mid 2005. We will then seek Members' comments before proceeding to undertaking the detailed design for the tunnels.

LATEST PROGRAMME AND PROJECT COST

7. Subject to availability of funds, the latest programme and estimated project cost for the three drainage tunnel projects are as follows :

Proposed drainage tunnel	Construction date	Commissioning date	Estimated project cost
Hong Kong West	2007/08	2011	\$1800M
Lai Chi Kok Transfer Scheme	2007/08	2011	\$1050M
Tsuen Wan	2007/08	2011	\$1060M

Environment, Transport and Works Bureau
April 2004



圖例
LEGEND

- ▲ 擬建之隧道出口
Proposed Tunnel Portal
- 擬建支幹隧道
Proposed collector tunnel
- 擬建香港西排水隧道
Proposed Hong Kong West Drainage Tunnel

B	13-04-2004	Minor Amendment	Signed
A	18-03-2002	Minor Amendment	Signed
號 no.	日期 date	修改項目 description	簡簽 initial
繪畫 drawn	Original Signed	T.C. CHAN	日期 date 05-03-2002
核對 checked	Original Signed	W.C. LAM	日期 date 05-03-2002
批核 approved	Original Signed	W.C. IP	日期 date 05-03-2002
部門 office	工程管理部 PROJECT MANAGEMENT DIVISION		

工程計劃項目第103CD
PWP ITEM No. 103CD

圖則編號 drawing no. **DPM 0041B** 比例 scale N.T.S.

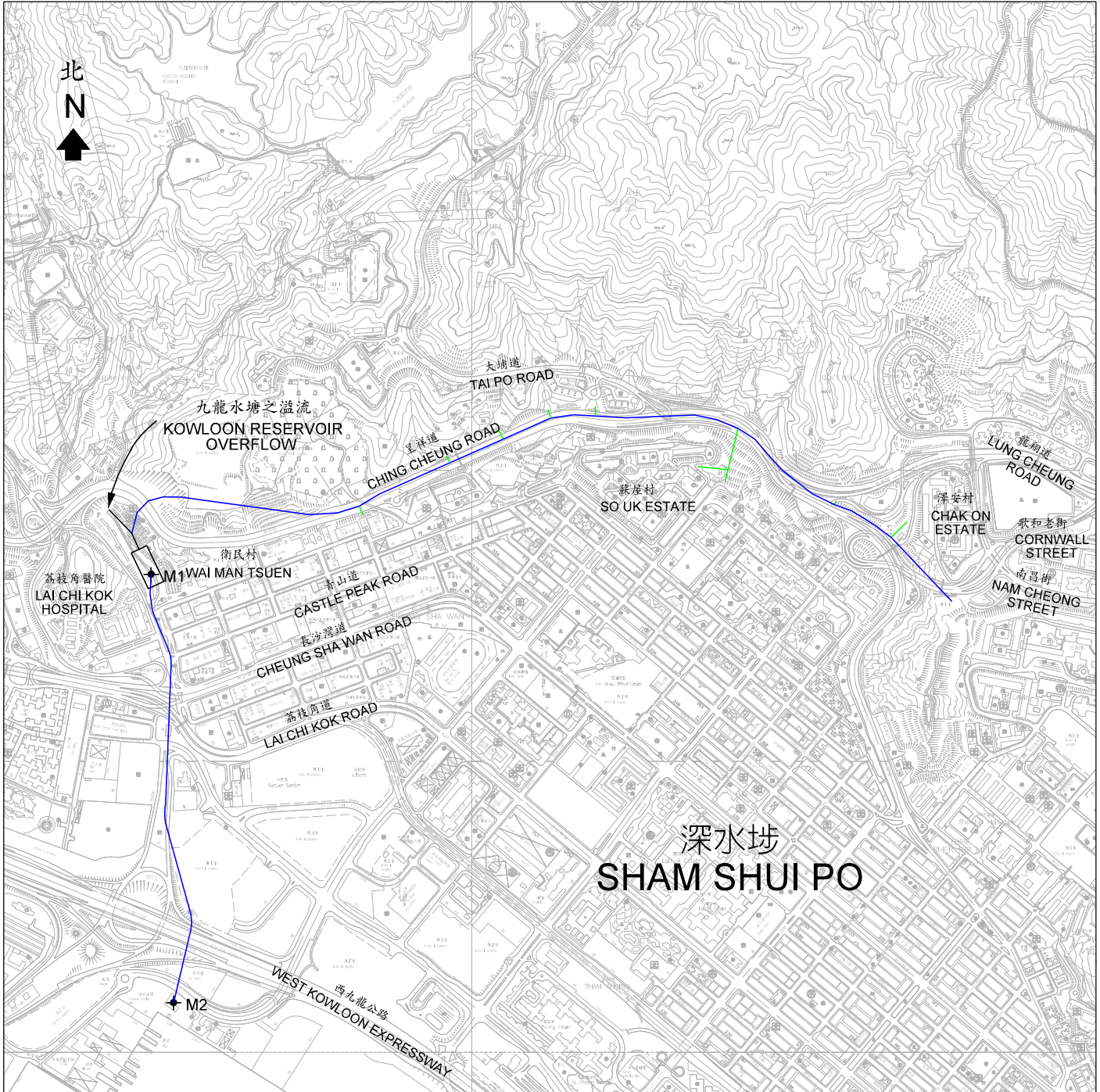
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DRAINAGE SERVICES DEPARTMENT
GOVERNMENT OF THE HONG KONG SPECIAL ADMINISTRATIVE REGION

圖則名稱 drawing title

港島北雨水排放系統改善工程-
香港西排水隧道

**DRAINAGE IMPROVEMENT IN NORTHERN HONG KONG ISLAND -
HONG KONG WEST DRAINAGE TUNNEL**



圖例
LEGEND

- 擬建支幹隧道
PROPOSED BRANCH AND COLLECTOR TUNNEL
- 擬建主幹隧道
PROPOSED MAIN TUNNEL
- 擬建盛水池
PROPOSED STILLING BASIN
- M1 擬建主幹隧道豎井
PROPOSED MAIN TUNNEL SHAFT

工程計劃項目第108CD
PWP ITEM No. 108CD

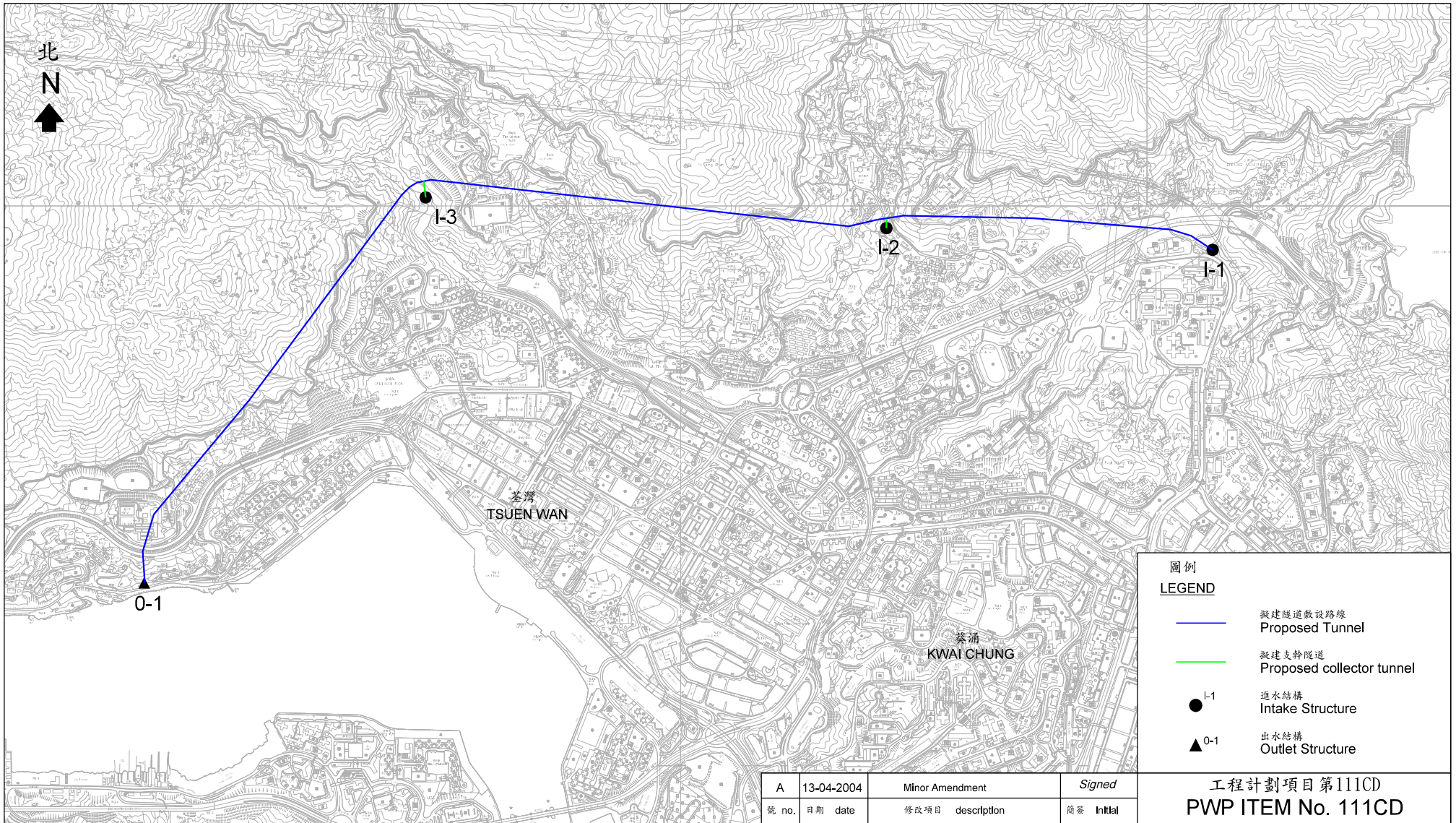
圖則編號 drawing no. **DPM 0035A** 比例 scale N.T.S.

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A	13-04-2004	Minor Amendment	<i>Signed</i>
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繪畫 drawn	<i>Original Signed</i>	T.C. CHAN	日期 date 08-02-2002
核對 checked	<i>Original Signed</i>	H.S. WONG	日期 date 18-02-2002
批核 approved	<i>Original Signed</i>	Y.F. KAN	日期 date 18-02-2002
部門 office	工程管理部 PROJECT MANAGEMENT DIVISION		

圖則名稱 drawing title
荔枝角雨水轉運計劃 --
擬建之荔枝角雨水轉運計劃路線圖
LAI CHI KOK TRANSFER SCHEME --
PLAN OF THE PROPOSED
LAI CHI KOK TRASFER SCHEME



圖例
LEGEND

- 擬建隧道敷設路線
Proposed Tunnel
- 擬建支幹隧道
Proposed collector tunnel
- I-1 進水結構
Intake Structure
- ▲ O-1 出水結構
Outlet Structure

圖別名稱 drawing title

荃灣及葵涌雨水排放系統改善計劃
荃灣雨水排放隧道
DRAINAGE IMPROVEMENT IN TSUEN WAN AND KWAI CHUNG
TSUEN WAN DRAINAGE TUNNEL

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核對 checked	Original Signed	K.L. WONG	日期 date 05-10-2001
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部門 office	顧問工程管理部 CONSULTANTS MANAGEMENT DIVISION		

工程計劃項目第111CD
PWP ITEM No. 111CD

圖別編號 drawing no. 比例 scale
DCM/2001/065A N.T.S.

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