

本署編號  
OUR REF: (10) in Ax(34) to EPI/G/72 Pt. IV  
來函編號  
YOUR REF: C/HSD/KTE/E1005#871244  
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By Post and Fax (fax: 2993 7577)

13 July 2009

MTR Corporation Limited  
MTR Headquarters Building, Telford Plaza  
GPO Box 9916, Hong Kong  
Attn.: Mr. Richard KWAN

|                          |             |                          |            |
|--------------------------|-------------|--------------------------|------------|
| Date                     | 17 DEC 2009 |                          |            |
| Action                   | Info        | Initial                  | Date       |
| TSC                      |             | TSC                      | 17/12      |
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Dear Richard,

**Kwun Tong Line Extension (No. ESB-188/2008)**  
**Contamination Assessment Plan (CAP) (June 2009)**

We refer to your letter dated 20.6.09, enclosing the CAP (June 2009).

The EIA study brief (No. ESB-188/2008) has been issued to MTRC on 5.6.08 for carrying out the EIA study for the subject Project. For ease of reference, the concerned EIA study brief requirement for CAP (S.3.4.5.4 of EIA study brief No. ESB-188/2008) is reproduced below:

*"During the course of the EIA study, the Applicant shall submit a Contamination Assessment Plan (CAP) to the Director for endorsement prior to conducting the contamination impact assessment of the relevant land or site(s). The CAP shall include proposal with details on representative sampling and analysis required to determine the nature and the extent of the contamination of the relevant land or site(s)."*

MTRC submitted the first version of CAP for the subject Project on 9.1.09. In response to our comments sent on 30.1.09, 7.4.09 and 21.5.09, MTRC submitted revised versions of CAP on 18.3.09 and 29.4.09 and submits the current version on 20.6.09.

Please note we have no further comment to the responses-to-comments in MTRC's current letter dated 20.6.09. We herewith endorse the subject CAP (June 2009) under S.3.4.5.4 of the EIA study brief (No. ESB-188/2008).

Should you have any query on the above, please contact our Mr. Keith LAM at Tel.: 2835 1844.

Yours sincerely,

  
(Alex TANG)

Acting Senior Environmental Protection Officer  
for Director of Environmental Protection

c.c.  
RDO, HyD  
MIEL

(Attn.: Mr. Thomas S. Chapman)

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Internal  
S(RA)4

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Your ref: f(8) to Ax(34) to EP1/G/72 Pt.II

Our ref: C/HSD/KTE/E1005  
#871244

Attn.: Mr. Keith Lam

20 June, 2009

Dear Mr. Lam,

**Kwun Tong Line Extension**  
**EIA Study Brief No. ESB-188/2008**  
**Environmental Impact Assessment Submission – Contamination Assessment Plan**

Your fax dated 21 May 2009 on the subject refers.

Attached please find 2 hardcopies and 1 PDF copy of the revised Contamination Assessment Plan with the relevant comment / response sheet for reference and endorsement.

Should you have any query, please contact the responsible environmental engineer C.W. Chan at 2688 1969.

Yours sincerely,

Richard Kwan  
Manager – Environmental

Encl.

c.c. MIEL - Attn: Thomas S. Chapman (w/o encl.)

RK/WC/KCT/bl

|                                     |             |         |                                     |
|-------------------------------------|-------------|---------|-------------------------------------|
| Date                                | 25 JUN 2009 |         |                                     |
| Action                              | Info        | Initial | Date                                |
| TSC                                 |             | YSC     | 25/6                                |
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**Meinhardt China**  
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Our Ref.: HJC/FL/8179/91135.201/qn

19 June 2009

MTR Corporation Limited  
Fo Tan Railway House  
No. 9, Lok King Street  
Fo Tan, Shatin  
N.T., Hong Kong

*By Hand*

Attn.: Mr. Richard Kwan

Dear Sirs,

**Re: Kwun Tong Line Extension**  
**Contract No. NEX/2207**  
**Environmental Impact Assessment (EIA) Study for KTE**  
**Contamination Assessment Plan**

We refer to the EPD's letter ref: f(8) in Ax(34) to EP1/G/72 Pt. II dated 21 May 2009 regarding the captioned CAP.


Please find enclosed herewith 5 copies of our responses to EPD's comments and the revised CAP for your record and submission to the EPD.

If you require any further information, please do not hesitate to contact our Tom Chapman at 2859 0125 or the undersigned at 2859 1734.

Yours faithfully,  
MEINHARDT INFRASTRUCTURE AND ENVIRONMENT LIMITED

  
Helen Cochrane  
Director

Encl.

Distn.  HJC, TSC, FL

**Meinhardt Infrastructure and Environment Ltd**  
**邁進基建環保工程顧問有限公司**

Member of Association of Consulting Engineers of Hong Kong  
香港顧問工程師協會會員

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**Comment**

***EPD letter ref. f(8) in Ax(34) to EPI/G/72 Pt. II dated 21 May 2009  
by Keith Lam***

**Response**

MTRC's letter dated 29.4.09 on the subject refers.

2. Please find attached comments on the R-to-C and CAP (April 2009).

3. It is noted that some SCL-related items at Ho Man Tin are mentioned in the subject KTE CAP. Please note the EIA study brief (ESB-188/2008) is issued for the KTE project. The study requirements for other MTRC's projects are stipulated in separate EIA study briefs. Having said that, please demarcate clearly which component(s) / element(s) / part(s) / item(s) of the HMT station is(are) belonged to the KTE and which part is belonged to other MTRC's project. Without prejudicing the EIA study brief requirements for other MTRC's project, the KTE EIA study shall focus to KTE-related component(s) / element(s) / part(s) / item(s) and focus to the KTE EIA study brief (ESB-188/2008) requirements. Please see related comments (12) to (14) in the attachment.

Please note that all of the station structures and provisions within HMT Station (including all the vent shafts and caverns) belong to the KTE project and will be studied under KTE EIA.

S1.1.2 has been revised to satisfy your comment and the interface with the adjoining SCL running tunnels made at both ends of HMT Station is shown in Figures 2.4 and 2.5.

4. Please note this facsimile and the attached comments are provided on an administrative basis; and should not be construed in any way as influencing or prejudicial to our decision on any future statutory application(s) for KTE under the EIAO. In sum, please ensure to follow the criteria and assessment methodologies stipulated in the EIA study brief (ESB-188/2008) and the TM on EIA Process (EIAO-TM) in carrying out the EIA study for KTE.

Noted.

Comment

Response

Contamination Assessment Plan (April 2009)

Section 2.3.8 (response to Item (1) (a) of "Comment on Section 1.1.2" refers)

(1)(a) Relevant details regarding the potential contamination issues within the "works sites" and "works areas" including "barging points" and "Magazine site (at Tseung Kwan O)" are NOT found in the desktop review, etc. presented in Section 5 of this CAP. Please provide the relevant details as appropriate.

Desktop review of the works sites / areas is given in Tables 5.1 and 5.2,

(1)(b) Please note that all lands to be acquired for the proposed railway extension, "works sites" and "works areas" including "barging points" and "Magazine site (at Tseung Kwan O)", the project proponent shall make sure the lands are free of contamination prior to the occupation of the land for the proposed use.

Noted.

(1)(c) Should "...project **Table 2.1...**" as appeared in the 3<sup>rd</sup> line be read as "...project. The location and size of each of these works sites and works areas are presented in **Table 2.1** and their locations are shown on **Figure 2.2**", please review and amend as appropriate.

The typos have been amended accordingly.

(1)(d) Please add "and works areas" after "works sites" in the last sentence of this Section.

The relevant text has been updated accordingly.

Section 5.1

(2) Please refer to "Comment on Section 2.3.8" above and provide the relevant details as appropriate.

Desktop review of the works sites / areas is given in Tables 5.1 and 5.2,

Table 5.1 (Section 5.1.34 refers)

(3) Please refer to "Comment on Section 2.3.8" above and include the relevant details in this Table as appropriate.

The table has been reviewed and amendment as appropriate.

**Comment**

**Section 5.2**

(4) Please refer to "Comment on Section 2.3.8" above and amend the text as appropriate.

The section has been reviewed as appropriate and we opine that no amendment is required..

**Section 5.3**

(5) Please refer to "Comment on Section 2.3.8" above and amend the text as appropriate.

The section has been reviewed as appropriate and we opine that no amendment is required.

**Table 5.2 (Section 5.4.1 refers)**

(6) Please refer to "Comment on Section 2.3.8" above and include the relevant details in this Table as appropriate.

The section has been reviewed and amendment as appropriate.

**Section 6**

(7) Please refer to "Comment on Section 2.3.8" above and amend the site investigation proposal as appropriate.

The section has been reviewed as appropriate and we opine that no amendment is required.

**Section 10**

(8) Please refer to "Comment on Section 2.3.8" above and amend the samples testing schedule as appropriate.

The section has been reviewed as appropriate and we opine that no amendment is required.

**Section 11**

(9) Please note that (i) the clean up of contaminated sites (if any) shall be carried out in accordance with the approved RAP, and a Remediation Report (RR) to demonstrate adequate clean-up should be prepared and submitted to the EPD for endorsement prior to the commencement of any development works within the site and (ii) the CAP, CAR and RAP shall be documented in the EIA report. Please amend the text as appropriate.

The relevant text has been updated as appropriate.

**Figures 5.2 to 5.7 inclusive (Section 5.1.16 refers)**

(10) Please refer to "Comment on Section 2.3.8" above and show the "Works Sites", "Works Areas", "Barging Points" and/or "Magazine Site (at Tseung Kwan O)" on these Figures as appropriate.

Available photographs and maps have been supplemented in Tables 5.1 for the works sites, works areas, barging points and magazine site as necessary.

**Comment**

**Figure 5.8 (Section 5.1.34 refers)**

(11) Please refer to "Comment on Section 2.3.8" above and include the relevant information for the "Works Sites", "Works Areas", "Barging Points" and/or "Magazine Site (at Tseung Kwan O)" as appropriate.

Last sentence of paragraph 1.1.2 (i.e. ... The KTE project also includes the design of the civil and structural facilities for the SCL at HMT Station ....), Paragraph 5.3.4, Figure 5.9

(12) Please demarcate clearly which component(s) / element(s) / part(s) / item(s) of the HMT station is(are) belonged to the KTE and which component(s) / element(s) / part(s) / item(s) is(are) belonged to other MTRC's project. Without prejudicing the EIA study brief requirements for other MTRC's project, the KTE EIA study shall focus to KTE-related component(s) / part(s) / element(s) / item(s) and focus to the KTE EIA study brief (ESB-188/2008) requirements, with information for other MTRC's project to be back to the relevant EIA study covered by separate EIA study brief.

**Textural**

(13) Is the third bullet point of paragraph 2.1.1 referring to "HMT Station with associated structures and provisions including the Shatin Central Link (SCL) interchange station structures and provisions..." or "HMT Station with associated structures and provisions including the Shatin-Central Link-(SCL) interchange structures and provisions for interchange with the Shatin Central Link (SCL)..." Please note the EIA study brief (ESB-188/2008) is issued for the KTE project. Other MTRC's project is covered by separate EIA study brief.

**Response**

The figure has been reviewed as appropriate and we opine that no amendment is required.

Please note that all of the station structures and provisions within HMT Station (including all the vent shafts and caverns) belong to the KTE project and will be studied under KTE EIA.

S1.1.2 has been revised to satisfy your comment and the interface with the adjoining SCL running tunnels made at both ends of HMT Station is shown in Figures 2.4 and 2.5.

The text has been revised and the scope of the EIA study for the KTE project will adhere to the EIA Study Brief. Please note that all of the station structures and provisions within HMT Station (including all the vent shafts and caverns) belong to the KTE project and will be studied under KTE EIA.

**Comment**

- (14) “...property development enabling works” is regarded by the 3<sup>rd</sup> bullet point of paragraph 2.1.1 as “Major components of the project...” As mentioned in previous comment via our facsimile dated 11.3.09, Item A.2, Part I, Schedule 2 of the EIAO is related to “A railway and its associated stations”. It is not appropriate to regard the concurrent project of property development enabling works as a component of the project.

**Response**

The text has been revised.

**Other**

- (15) As per the requirement in Section 3.4.3.4(ix) of the EIA study brief (ESB-188/2008), “If contaminated groundwater is identified in the land contamination assessment, the potential impacts during construction stage shall be evaluated and properly addressed.”
- (16) Please note the construction methods in Figures 2.15 and 2.16 of the CAP shall not prejudice the requirement for the EIA study to address Section 3.3.3 of the EIA study brief (ESB-188/2008) on alternative construction methods(s).

The contamination assessment will be undertaken in accordance with the scope of the EIA Study Brief and the relevant guidance notes. Assessment result and evaluation of the potential impacts during construction stage will be addressed in CAR-RAP as appropriate.

Noted. The Project’s construction methods including tunnels and stations as stated in the CAP are based on the preliminary design. Alternative construction methods are always studied during the design process and considerations given to the finally selected construction methods will be described in the draft EIA report to address Section 3.3.3 of the EIA study brief.





# MTR Corporation Limited

## Contract No. NEX/2207 Kwun Tong Line Extension Environmental Impact Assessment (EIA) Study for KTE

### Contamination Assessment Plan

#### Meinhardt Infrastructure and Environment Ltd

Sub-Consultants:  
Archaeological Assessments Ltd  
...initiatives  
Wilkinson Murray

Document Rev: 4  
Document Status: Final  
Document Ref.: 91135/002

Prepared By:



(Fredrick Leong)

Date:

19.6.2009

Checked By:



(Tom Chapman)

Date:

19/6/09

Approved By:



(Helen Cochrane)

Date:

19/6/09

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## 1 INTRODUCTION

- 1.1.1 Meinhardt Infrastructure and Environment Limited (MIEL) was commissioned by the MTR Corporation Limited (MTRCL) as the Consultant to undertake an EIA study pursuant to section 5(7)(a) of the EIAO for the proposed Kwun Tong Line Extension (KTE) which is planned for completion in 2015.
- 1.1.2 The KTE is an extension of the existing Kwun Tong Line (KTL) from Yau Ma Tei (YMT) Station to a new Whampoa (WHA) Station and with an interchange with the Shatin to Central Link (SCL) at the proposed Ho Man Tin (HMT) Station as shown in **Figure 1.1** with the interface with the adjoining SCL running tunnels made at both ends of HMT Station as indicated in **Figures 2.4 and 2.5**.
- 1.1.3 Section 3.4.5 of the EIA Study Brief No: ESB-188/2008 for the KTE project dated 5 June 2008 issued by the Environmental Protection Department (EPD) specified that a land contamination assessment shall be undertaken and that a Contamination Assessment Plan (CAP) shall be submitted to the EPD for endorsement prior to conducting the assessment.

## 2 PROJECT DESCRIPTION

### 2.1 Background

2.1.1 The KTE project comprises a new railway extension approximately 3.0 km long running from the existing Kwun Tong Line overrun track at YMT Station to the Whampoa area. Major components of the project include the following:

- Running tunnels from YMT (existing overrun tunnels) to the HMT Station;
- Running tunnels between HMT Station to Whampoa Station (WHA);
- HMT Station with associated structures and provisions including structures and provisions for interchange with the Shatin to Chentral Link (SCL);
- WHA Station with associated structures and provisions;
- Emergency Access Point (EAP) structures at Club de Recreio;
- A number of proposed Essential Public Infrastructure Works including footbridge connection for crossing Chatham Road North, lay-by along Chung Hau Street and subway across Fat Kwong Street; and
- Providing temporary access opening at Gascogne Road Rest Garden for existing railway connection and modification works.

### 2.2 Alignment Options

2.2.1 There were 3 alignment options, namely the (i) Base Scheme, (ii) Wuhu Street – Tak On Street, and (iii) Wuhu Street – Dyer Avenue, for the KTE project developed by the MTRCL since the commencement of the preliminary design as shown in **Figure 2.1**. The Base Scheme was the originally proposed KTE alignment as shown in the EIA Study Brief No: ESB-188/2008. The Wuhu Street – Tak On Street option has been agreed as the preferred route and its details are shown in **Figures 2.2-2.14**, based on which this CAP was developed. An interchange with the proposed SCL is provided at HMT Station. The Wuhu Street – Tak On Street option places the WHA terminus station beneath Tak On Street with a crossover immediately east of HMT Station beneath the junction of Chatham Road North and Wuhu Street. An overview of the construction methods is shown in **Figures 2.15-2.16**.

### 2.3 Works Elements for Preferred Option

#### *YMT Interface*

2.3.1 The existing twin tunnels beyond YMT Station provide an overrun and refuge siding length beyond the southern end of the platform. From each tunnel end wall, a smaller size cable tunnel was originally built to connect with the existing Gascoigne Road Traction Substation which is a small multi-level basement extending around 24m below ground built within the Gascoigne Road Rest Garden opposite the Astor Plaza/Eaton Hotel development.

- 2.3.2 Gascoigne Road Traction Substation serves the Tsuen Wan Line (TWL) and KTL via separate cable tunnels – the TWL level being above the KTL level. The track level of the KTL overrun/refuge siding tunnels is around 24m below street level at the interface. In order to construct the new KTE running tunnels, it is necessary to divert the existing traction power cables and other cables and services without disruption to the operating railway.
- 2.3.3 To minimise the disturbance to Gascoigne Road Rest Garden, it is proposed that the works access will be via Gascoigne Road Traction Substation (the existing overrun tunnels) and, as KTE works progress, via the KTE running tunnels from King's Park. Some local breaking out of the existing cable tunnel linings is envisaged in order to carry out the diversion works.

#### ***Running Tunnels – YMT to HMT***

- 2.3.4 From the interface with the existing YMT overrun tunnels, the two single bores curve beneath Gascoigne Road, partly below the existing Gascoigne Road elevated road, front entrance retaining wall of the Lands Tribunal building, Labour Tribunal building and caisson retaining wall in front of Block S of Queen Elizabeth Hospital School of General Nursing. From the access road of Queen Elizabeth Hospital, the tunnel alignment continues beneath India Club, YMCA King's Park Centenary Centre elevated platform and Club de Recreio. A mid-point Emergency Access Point (EAP) is proposed at the Club de Recreio site. At Wylie Road, the tunnels pass beneath the former Canterbury Court and Worcester Heights (demolished government residential buildings) and King's Park Sports Ground, which then curve beneath Princess Margaret Road, East Rail Line, Shun Mun House of Oi Man Estate, Holy Trinity Church Secondary School and King's Park High Level Service Reservoir. Around 200m from HMT Station, the separate tunnels converge to allow a track spacing of 5.5m between KTE platforms.

#### ***Mid-Point Emergency Access Point***

- 2.3.5 This comprises a deep rectangular shaft straddling the twin bore horseshoe tunnels. It contains a fireman's staircase and lift shaft with plantrooms and water tanks above ground. To allow for future installation of a ventilation system there are openings in the tunnel roof for future connections via plenums to a future vent building above ground. The overall depth of the shaft is some 42m to track slab level. The EAP location will also be used as a construction access shaft for tunnelling works.

#### ***HMT Station***

- 2.3.6 HMT Station is located beneath the fill platform originally occupied by the Valley Road Estate of the Hong Kong Housing Authority and is bounded by Fat Kwong Street, Chung Hau Street and Yan Fung Street. The site is allocated for an MTRCL property development currently schemed for 10-25 storey residential towers above a two level semi-basement car parking podium. The site is currently leased to a private operator as a car and lorry park on a short term tenancy. There is a large level difference across the station site, with the existing car park generally being between +36mPD at the southern face rising via flat platforms to +45mPD at the north corner at the junction of Fat Kwong Street and Chung Hau Street. Yan Fung

Street curves round the south-east of the site and rises from +6mPD at Chatham Road North to +29mPD at the junction with Fat Kwong Street. The Station will be effectively two cavern stations with the KTE and SCL lines crossing in plan as a “tee” shape. The KTE platform is at the lowest level with SCL above it. The track spacing of SCL is 25.2m with two side platform caverns and interconnecting cross adits. The track spacing of KTE is 5.5m with two side platforms in a single cavern connected to the SCL concourse by adits. The platform rail level of KTE is -23mPD and hence the platform level is on average around 62m below the temporary car park level. The platform rail level of SCL is -7.44mPD with the platform level being around 47m on average below the car park level.

### *WHA Station*

- 2.3.7 WHA Station is located in Tak On Street between the junction of Hung Hom Road and Tak Ting Street. The station has a single side platform at the upper level served by a split concourse and plant rooms at the west and east ends. A refuge siding is contained in a tunnel directly beneath the upper platform track. A 110m long overrun tunnel is proposed beyond the platform end.

### *Works Sites and Works Areas*

- 2.3.8 There would be 15 works sites (with construction activities) and 6 works areas (for erection of site offices and storage of materials) for the development of the KTE project. The location and size of each of these works sites and works areas are presented in **Table 2.1** and their locations are shown on **Figure 2.2**. Any potential contamination issues within these works sites and works areas would be included in the desktop review.

**Table 2.1: Location and Size of Works Sites and Works Areas**

| <b>Works Site and Works Area</b>   | <b>Location</b>  | <b>Size</b>          |
|--|--|----------------------|
| <i>Works Sites:</i>  |  |                      |
| WS1: KTL Existing Cable Tunnel Diversion Works                                   | Gascoigne Road Rest Garden   | 2,650m <sup>2</sup>  |
| WS7a: EAP Construction and KTE Tunnel Mucking-out (Using Drill and Blast Method) | Hockey Field at Club de Recreio  | 4,300m <sup>2</sup>  |
| WS14: HMT Station Construction   | Open space next to Chung Hau Street  | 750m <sup>2</sup>    |
| WS15: HMT Station Construction   | Area between Yan Fung Street, Chung Hau Street and Fat Kwong Street            | 44,450m <sup>2</sup> |
| WS16: Slope stabilization and upgrading works due to HMT construction            | Open space next to Chatham Road North  | 2,750m <sup>2</sup>  |
| WS17: HMT Adit Construction  | Open space next to the junction between Yan Fung Street and Chatham Road North | 1,050m <sup>2</sup>  |
| WS18: Slope Stabilization and upgrading works due to HMT Construction            | Open space next to Yan Fung Street   | 700m <sup>2</sup>    |
| WS19: HMT Footbridge construction  | Garden next to Yan Fung Street   | 1,830m <sup>2</sup>  |
| WS20: Permanent Slope Works  | Area next to Yan Fung Street   | 550m <sup>2</sup>    |
| WS25: HMT Footbridge construction and corresponding Temporary Traffic Management | Wuhu Street Temporary Playground   | 2,150m <sup>2</sup>  |
| WS26: KTE Tunnel Mucking-out   | Fat Kwong Street Playground  | 5,300m <sup>2</sup>  |



| <b>Works Site and Works Area</b>  | <b>Location</b>  | <b>Size</b>          |
|---|--|----------------------|
| WS30: WHC C&C Structure Construction and Corresponding Temporary Traffic Management | Tak On Street  | 13,550m <sup>2</sup> |
| WS43: Formation of Magazine Site  | Tseung Kwan O Area 136   | 14,550m <sup>2</sup> |
| WSCK: Barging Point   | Area between Chi Kiang Street, Bailey Street and Sung On Street facing To Kwan Wan Typhoon Shelter | 11,050m <sup>2</sup> |
| WSHH: Barging Point   | Finger Pier located within MTR Freight Terminal Hung Hom   | 10,500m <sup>2</sup> |
| <b>Works Areas:</b>   |  |                      |
| WA1: Site Office  | Sheung Lok Street near Kwun Hei Court  | 4,250m <sup>2</sup>  |
| WA2: Site Office  | Near Ho Man Tin East Service Reservoir Playground  | 10,490m <sup>2</sup> |
| WA4: Site Office  | Tsing Chau Street and Wo Chung Street  | 2,100m <sup>2</sup>  |
| WA7: Site Office  | Hung Luen Road near Harbour Place  | 7,300m <sup>2</sup>  |
| WA9: Site Office  | Wah Shun Street near Cross Border Coach Terminus   | 1,000m <sup>2</sup>  |
| WA12: Magazine Site   | Tseung Kwan O Area 136   | 3,050m <sup>2</sup>  |

### **3 OBJECTIVES**

3.1.1 The purpose of this CAP is to present a proposal for the land contamination site investigation that is required to determine the nature and extent of any potential land contamination associated with the previous operations and activities within the study area. Upon endorsement of the CAP, a contaminated land assessment will be undertaken accordingly and a Contamination Assessment Report (CAR) will be prepared based on the study results. Should significant contamination be identified within the study area, a Remediation Action Plan (RAP) will be prepared for devising the necessary remedial measures. The Project Proponent shall clean up the contaminated land following the approved RAP so as to demonstrate that adequate cleaning-up of the site has been accomplished. The Remediation Report (RR) shall be prepared and submitted to the EPD for endorsement prior to the commencement of any construction/development works.

3.1.2 The scope of this CAP includes:

- Review of available borehole records and geological information along the preferred alignment and stations;
- Review of the relevant legislation, guideline and standard on land contamination;
- Identification of potential contamination activities including the past and existing activities; and
- Identification of the contaminants of concern and scoping of requirements for sampling and laboratory testing of soil and groundwater samples.

## **4 ENVIRONMENTAL STANDARDS AND CRITERIA**

4.1.1 This CAP was developed in accordance with the following guidance:

- Technical Memorandum of EIAO;
- Guidance Note for Contaminated Land Assessment and Remediation;
- Guidance Manual for Use of Risk-Based Remediation Goals (RBRGs) for Contaminated Land Management;
- Guidance Notes for Investigation Remediation of Contaminated Sites of Petrol Filling Stations, Boatyards, and Car Repair/Dismantling Workshops.

## 5 INITIAL SITE APPRAISAL

### 5.1 Desktop Review

5.1.1 The available geotechnical information relevant to the development of the KTE project has been reviewed. The information included the archived borehole records, geological maps, historic maps, aerial photographs, and the findings of the site specific ground investigation works recently completed in October 2008 for the development of the KTE project. A summary of the reviewed information is shown below.

#### *Topography*

##### Tunnels from YMT to HMT

5.1.2 At the western end of the route, where the preferred alignment connects with the existing YMT overrun tunnels and runs parallel with the existing Gascoigne Road, the ground level is approximately +6mPD to +8mPD. The tunnel alignment will be in the proximity of caisson foundations of the existing Gascoigne Road Flyover, future foundations for widening of Gascoigne Road Flyover, registered geotechnical features and foundations for Queen Elizabeth Hospital.

5.1.3 The alignment will then pass underneath various sports grounds and across Wylie Road and will be in the vicinity of buildings of various associations including India Club, YMCA King's Park Centenary Centre, Club de Recreio, etc with the existing ground level varies from +15mPD to +35mPD.

5.1.4 The alignment continues to run under Princess Margaret Road, tunnel portal of East Rail, Oi Man Estate and King's Park High Level Service Reservoir before reaching HMT Station. The ground level rises gradually from +20mPD at Princess Margaret Road to +70mPD at the King's Park High Level Service Reservoir.

##### HMT Station

5.1.5 HMT Station will be situated at the ex-Valley Road Estate site, which generally comprises 3 platforms with approximate levels of +40mPD, +36.8mPD and +44.5mPD. It is bounded by Chung Hau Street to the west, Fat Kwong Street to the northeast, Yan Fung Street to the southeast, and a natural slope to the south.

##### Tunnels from HMT to WHA and WHA Station

5.1.6 To the east of HMT Station, the preferred alignment runs under Chatham Road North into the Whampoa area. The ground level at Chatham Road North is about +9mPD whereas the Whampoa area is fairly flat with levels of about +4mPD along Wuhu Street, Tak On Street and Tak Man Street. The tunnel will be in the proximity of existing foundations of footbridge and building structures.

## *Site Geology*

- 5.1.7 The preferred alignment lies almost entirely within the Kowloon Granite as shown in **Figure 5.1**. A mantle of decomposed granite overlies the bedrock to varying depths. The majority of the alignment is covered with a generally thin layer of fill that is thicker in the area of the ex-Valley Road Estate where in excess of 30m of fill is encountered. **Figures 2.2-2.14** also shows the geological longitudinal sections of the preferred alignment. The findings of the site specific ground investigation works recently completed in October 2008 for the development of the KTE project are included in **Appendix 5.1**.

### Tunnels from YMT to HMT

- 5.1.8 The proposed alignment starts at the end of the existing KTL overrun tunnels. The route is entirely within granitic rocks, however the grain size varies from fine to medium grained, and most of this tunnel section will be in megacrystic granite. The fine grained granite would be a minor intrusion into the main medium grained Kowloon Granite pluton. A number of minor faults and photolineaments have been identified within the granite, the majority of which cross perpendicularly to the preferred alignment, thus minimising the extent of poor rock mass quality encountered in the excavation. These faults include the low rockhead at Pier No.7 of Gascoigne Road Flyover, a fault running along Wylie Road, a fault within King's Park, and a fault that runs parallel to East Rail. The rockhead to the east of Oi Man Estate is relatively high within some minor faulting present.

### HMT Station

- 5.1.9 HMT Station will be formed at the ex-Valley Road Estate platform, which was previously constructed by backfilling a valley. The fill was up to 35m thick in places and has very low standard penetration test values. The rock is medium grained granite of the Kowloon Granite, with a steeply dipping rockhead tracing the original valley profile. High rockhead is present to the east and west of the valley. A photolineation is present running along the line of the pre-existing valley, but no faulted material has been encountered in any of the drillholes.

### Tunnels from HMT to WHA

- 5.1.10 This alignment portion will run through medium grained Kowloon Granite. The rockhead is generally dipping gently towards the south and old coastline. One northeast to southwest trending fault is present at the approximate location of Gille's Avenue South. Minor alluvial deposits have been noted adjacent to Chatham Road North where the HMT Station valley has deposited alluvium. The alignment comes very close to the original shoreline in this area, although no marine deposits have been noted near the proposed tunnels. To the east of Ma Tau Wai Road, the preferred alignment at Tak Man Street will generally be within sound rocks with an undulating rockhead. Varying levels of fill are encountered in this area.

### WHA Station

- 5.1.11 WHA Station will be excavated at Tak On Street which is in medium grained granite. The western portion of the Station will be in completely decomposed granite. Towards the eastern end of the Station, the rockhead rises where a small hill was present.

### *Hydrogeology*

- 5.1.12 Prior to the development in Ho Man Tin, the preferred alignment appears to cross 2 significant rivers, one of which runs along the route of the current East Rail and the other down the valley that was filled in to create the ex-Valley Road Estate. Other minor streams would have been present to drain the small island of Tai Wan at the site of the current Whampoa Estate and King's Park. The rivers and streams generally flowed in a north to south direction and the flow patterns of these watercourses would have been highly seasonal. There were no records of the rivers that have been culverted, but it appeared that the surface drainage was constructed to divert flows into storm drains.

### *Groundwater Level*

#### Tunnels from YMT to HMT

- 5.1.13 At the western end of the route, there were 4 previous boreholes installed with standpipes or piezometers along Gascoigne Road. The measured groundwater table ranges between +5.7mPD and +7.3mPD, which is about 1-2m below the existing ground surface. For the areas beneath the sports grounds, there were 14 previous boreholes installed with standpipes or piezometers. To the west of Wylie Road, the measured groundwater table varies from +7.6mPD to +13.4mPD which is about 2-6m below the existing ground surface. To the east of Wylie Road, the measured groundwater table varies from +6.0mPD to +12.9mPD which is about 4-13m below the existing ground surface. For the areas beneath the tunnel portal of East Rail, there were 4 previous boreholes installed with standpipes or piezometers. The measured groundwater tables vary considerably, with level ranging from +6.7mPD to +13.5mPD.

#### HMT Station

- 5.1.14 There were about 11 previous boreholes installed with standpipes or piezometers at the ex-Valley Road Estate site. The measured groundwater table ranges between +12.9mPD and +153.3mPD which is about 10-25m below the existing ground surface.

#### Tunnels from HMT to WHA and WHA Station

- 5.1.15 There were about 15 previous boreholes installed in the proximity of the proposed HMT to WHA running tunnels and WHA Station. Along Tak Man Street and Tak On Street, the measured groundwater table varies from +1.0mPD to +2.5mPD, which is approximately 2.5-4.5m below the existing ground surface.

### *Past Land Use and Activities*

5.1.16 A summary of the reclamation history based on historic maps and aerial photographs is illustrated in **Figure 5.2**. Across the south Kowloon peninsula to Hung Hom areas, reclamation has been undertaken since the late 1860's till mid 1990's. The development history of the study area was reviewed and illustrated in **Figures 5.3-5.7**. A summary of the past land use and activities is described below and tabulated in **Appendix 5.2**.

#### Year 1863

5.1.17 The western end of the preferred alignment would run through the hilly terrain of the Kowloon peninsula while the HMT Station would be located in a valley which dates back to year 1863. The alignment would be located inland and its eastern end will be close to the shore.

#### Year 1863-1887

5.1.18 The preferred alignment would pass through a dockyard which was built on the reclaimed land to the southeast of the alignment in this period.

#### Year 1887-1903

5.1.19 The preferred alignment would be located in a valley to the north of Hung Hom within this period. A series of docks were constructed in the Whampoa Dockyard including No.1 dock which may clash with the alignment. The former bay area at the eastern end of the alignment would appear to be filled between 1887 and 1902. A cement works was formed by reclaiming land to the north of the alignment.

#### Year 1903-1924

5.1.20 Further reclamation occurred to the east of the preferred alignment, possibly for the extension of Whampoa Dockyard. The ex-Kowloon Canton Railway was built between 1903 and 1924 crossing the alignment. The No.1 Dock at Whampoa was extended between 1907 and 1911.

#### Year 1945

5.1.21 The straightened coastline to the east of the preferred alignment indicated that reclamations took place before 1945. The Hong Kong Dock and Whampoa Dock were also built prior to 1945. The end section of the alignment appeared to be located at the shore in 1945. HMT Station would be situated in a valley (Lo Tung Hang) where the natural terrain was dissected by fluvial erosion.

#### Year 1945-1959

5.1.22 The natural terrain around HMT Station was disturbed by the construction of a cemetery and site formation works adjacent to the preferred alignment.

#### Year 1959-1964

- 5.1.23 The former valley slope at HMT Station was infilled for the construction of the Valley Road Estate under which the preferred alignment would pass through. Some cutting was carried out to form slope areas. Terraced platforms were formed to the east of King's Park.

#### Year 1964-1974

- 5.1.24 Oi Man Estate was under construction to the north of the preferred alignment. An oil depot and reclaimed land were formed to the eastern end of the alignment.

#### Year 1974-1983

- 5.1.25 Part of the Whampoa Dockyard was demolished and infilling of docks in this area was carried out. High rise industrial and residential buildings began to develop during this period. The preferred alignment would pass through Whampoa Estate that was developed between 1974 and 1983.

#### Year 1983-1994

- 5.1.26 The Whampoa Dockyard was completely demolished and replaced by a large-scale residential estate, Whampoa Garden. The preferred alignment was located at the north and centre of Whampoa Garden and would pass through the southern part of Ka Wai Chuen which was built between 1983 and 1994. Hutchison Park was built to the north of the alignment between 1983 and 1994. Hung Hom Wan was being reclaimed in 1994.

#### Year 1994-2000

- 5.1.27 Hung Hom Wan reclamation works was completed in 2000 and a residential estate, Laguna Verde, was developed between 1994 and 2000 to the north of the preferred alignment.

#### Year 2000-2005


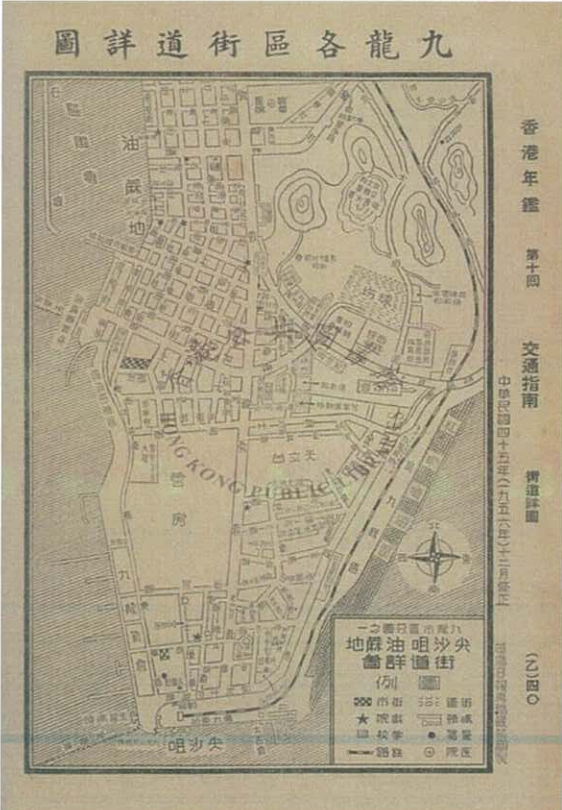
- 5.1.28 The ex-Valley Road Estate was demolished between 2000 and 2005 and isolated residential developments were observed.



#### Works Sites and Works Areas


- 5.1.29 The historic land use of works sites and works areas is summarised in **Table 5.1**.



**Table 5.1: Past Land Use of Works Sites and Works Areas**

| Works Site and Works Area   | Past Land Use Description  |
|---|--|
| <p>WS1: KTL Existing Cable Tunnel Diversion Works</p>                                   | <p>The area would be located at the open space where Gascoigne Road branches off Nathan Road. As shown in <b>Figure 5.6</b>, it was undeveloped until the establishment of Gascoigne Road in 1940s (also see below a photograph in 1965 downloaded from internet). During the early 1980s, the ventilation shaft for Yau Ma Tei Station was constructed and the area was later reinstated back to a rest garden. No apparent pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.</p>  |
| <p>WS7a: EAP Construction and KTE Tunnel Mucking-out (Using Drill and Blast Method)</p> | <p>The area would be located at the sports ground of Club de Recreio, which was an outdoor recreation club established in 1906 (also see below a map in 1956 downloaded from internet). No apparent pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.</p>   |

| Works Site and Works Area   | Past Land Use Description   |
|---|---|
| WS14: Slope Stabilization and Upgrading Works due to HMT Station Construction | <p>The area would be located at the slope at Yan Fung Street and was an undeveloped open space with vegetation (see below a photograph in 1980s downloaded from internet). No apparent pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.</p>   |
| WS15: HMT Station Construction  | <p>The area would be located on the site of the former Valley Road Estate (see also <b>Section 5.1.32</b> and below a photograph in 1971 downloaded from internet and the photograph in 1980s for WS14). No apparent pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns except the kerosene store which will be discussed in <b>Section 5.1.32</b>.</p>  |
| WS16: Slope stabilization and upgrading works due to HMT construction         | <p>The area located south of WS15 which was left undeveloped (see the photograph in 1980s for WS14 above). No apparent pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.</p>   |
| WS17: HMT Adit Construction   | <p>The area located east of WS16 and is very similar. It was undeveloped (see the photograph in 1980s for WS14 above). No apparent pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.</p>   |
| WS18: Slope Stabilization and upgrading works due to HMT Construction         | <p>The area would be located between WS15 and Yan Fung Street. It was undeveloped. No apparent pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.</p>   |
| WS19: HMT Footbridge construction   | <p>The area would be located south of WS15 and east of WS18. It was undeveloped. No apparent pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.</p>   |
| WS20: Permanent Slope Works   | <p>The area would be located between WS15 and Yan Fung Street. It was undeveloped. No apparent pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.</p>   |

| Works Site and Works Area   | Past Land Use Description   |
|---|---|
| WS25: HMT Footbridge construction and corresponding Temporary Traffic Management    | The area would be located at the junction between Wuhu Street and Chatham Road North. As shown in <b>Figures 5.6 and 5.7</b> , it was left undeveloped since 1974 and then established as a playground. No apparent pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.  |
| WS26: KTE Tunnel Mucking-out  | The area would be located at the junction between Fat Kwong Street and Chatham Road North. As shown in <b>Figures 5.6 and 5.7</b> , it was left undeveloped since 1974 and is then established as a sports ground until now. No apparent pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.   |
| WS30: WHC C&C Structure Construction and Corresponding Temporary Traffic Management | The area would be located at Tak On Street that runs through the centre of Whampoa Garden. Immediately at its south was the former Hong Kong and Whampoa Dock (see also <b>Section 5.1.25 and 5.1.26</b> ).   |
| WS43: Formation of Magazine Site  | The area would be located on a newly reclaimed area within TKO Area 136 adjoining Tit Cham Chau, which was a recreation ground famous for canoeing. The area was an undeveloped open space. No apparent pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.  |
| WSCK: Barging Point   | The area would be located on a reclaimed land formed during 1974-1983. It was an undeveloped open space. No apparent pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.   |
| WSHH: Barging Point   | <p>The area would be located at the existing Hung Hom Freight Yard beside the Hung Hom Station and International Mail Centre. It was a reclaimed land for a container handling pier which is concrete-paved (see below a photograph in 1970s downloaded from internet). No apparent pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.</p>  |

| <b>Works Site and Works Area</b> | <b>Past Land Use Description</b>  |
|----------------------------------|---|
| WA1: Site Office                 | The area would be located on an open area north of the Ho Man Tin East Service Reservoir adjacent to Sheung Lok Street and Ho Man Tin Estate. As shown in <b>Figure 5.6</b> , it was a small hill and the area remained undeveloped. No apparent pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns. |
| WA2: Site Office                 | The area would be located on the small open space to the east of Ho Man Tin East Service Reservoir. The area was an undeveloped open space covered by vegetation. No apparent pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.  |
| WA4: Site Office                 | The area would be located on a small open space to the north east of Fat Kwong Street Playground. No apparent pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.  |
| WA7: Site Office                 | The area would be located on a reclaimed land. As shown in <b>Figure 5.2</b> , the area was reclaimed during 1983-1994. No apparent pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.  |
| WA9: Site Office                 | The area would be located on reclaimed land. As shown in <b>Figure 5.2</b> , the area was reclaimed during 1983-1994. No apparent pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.  |
| WA12: Magazine Site              | The area would be located on a newly reclaimed area within TKO Area 136 adjoining Tit Cham Chau, which was a recreation ground famous for canoeing. The area was an undeveloped open space. No apparent pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.  |

### *Existing Land Use and Activities*

- 5.1.30 The majority of the existing land use along the preferred alignment and stations are mainly commercial, residential, hotel, school, hospital and recreation buildings and facilities (**Figure 2.1**). A summary of the existing land use and activities is included in **Table 5.2**.
- 5.1.31 Nevertheless, there are 2 Esso petrol and diesel filling stations identified in the immediate vicinity of the preferred alignment. One of which is located at Princess Margaret Road, Ho Man Tin next to the Society for the Prevention of Cruelty to Animals (Hong Kong) and an LPG store next to this filling station was also identified. The other filling station is located at No.157-171, Wuhu Street, Hung Hom. Underground petrol and diesel storage tanks are known to exist at these premises which may be prone to potential leakage problems, together with their routine operation. There are also various vehicle repairing garages near the Esso petrol and diesel filling station along Wuhu Street, which are also contamination hotspots.

5.1.32 The Concord kerosene store is situated at No.33, Chung Hau Street, Ho Man Tin, which is adjacent to the preferred alignment. The store has been operated for almost 40 years which comprises a single-storey framed reinforced concrete structure above Chung Hau Street level with 2 lower levels below the street.

5.1.33 The existing land use of works sites and works areas is summarised in **Table 5.2**.

**Table 5.2: Existing Land Use of Works Sites and Works Areas**

| <b>Works Site and Works Area</b>   | <b>Existing Land Use Description</b>   |
|--|--|
| WS1: KTL Existing Cable Tunnel Diversion Works                                   | The area is currently the Gascoigne Road Rest Garden with a ventilation shaft for MTR Yau Ma Tei Station. No apparent pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.                             |
| WS7a: EAP Construction and KTE Tunnel Mucking-out (Using Drill and Blast Method) | The area is currently the tennis court of Club de Recreio. No apparent pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.  |
| WS14: Slope Stabilization and Upgrading Works due to HMT Station Construction    | The area is currently a paved slope. No apparent pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.  |
| WS15: HMT Station Construction   | The area is currently an open space car park and unpaved slopes. No apparent pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns except the kerosene store which has been discussed in Section 5.1.32. |
| WS16: Slope stabilization and upgrading works due to HMT construction            | The area is currently an unpaved slope covered with vegetation. No apparent pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.   |
| WS17: HMT Adit Construction  | The area is currently an unpaved slope covered with vegetation. No apparent pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.   |
| WS18: Slope Stabilization and upgrading works due to HMT Construction            | The area is currently an unpaved slope covered with vegetation. No apparent pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.   |
| WS19: HMT Footbridge construction  | The area is currently the pavement and footbridge across Chatham Road North. There is also a rest garden. No apparent pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.                             |
| WS20: Permanent Slope Works  | The area is currently a paved slope. No apparent pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.  |
| WS25: HMT Footbridge construction and corresponding Temporary Traffic Management | The area is currently the Wuhu Street Temporary Playground. No apparent pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.   |
| WS26: KTE Tunnel Mucking-out   | The area is currently the Fat Kwong Street Playground. No apparent pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.  |

| <b>Works Site and Works Area</b>  | <b>Existing Land Use Description</b>   |
|---|--|
| WS30: WHC C&C Structure Construction and Corresponding Temporary Traffic Management | The area is currently a dual lane road passing through Whampoa Garden with a small portion of pavement. No apparent pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns. |
| WS43: Formation of Magazine Site  | The area is currently an undeveloped open space. No apparent pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.  |
| WSCK: Barging Point   | The area is currently an undeveloped open space. No apparent pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.  |
| WSHH: Barging Point   | The area is currently the loading and unloading pier for container barges at Hung Hom Freight Yard. No apparent pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.     |
| WA1: Site Office  | The area is currently an undeveloped open space. No apparent pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.  |
| WA2: Site Office  | The area is currently an undeveloped open space. No apparent pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.  |
| WA4: Site Office  | The area is currently Tsing Chau Street Playground. No apparent pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.   |
| WA7: Site Office  | The area is currently an undeveloped open space. No apparent pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.  |
| WA9: Site Office  | The area is currently an undeveloped open space. No apparent pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.  |
| WA12: Magazine Site   | The area is currently an undeveloped open space. No apparent pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.  |

### ***Future Land Use and Activities***

- 5.1.34 In accordance with the Guidance Note for Contaminated Land Assessment and Remediation, Guidance Manual for Use of Risk-Based Remediation Goals for Contaminated Land Management, there are 4 different post-restoration land use scenarios (***Urban Residential, Rural Residential, Industrial, Public Parks***) reflecting the typical physical settings in Hong Kong are categorised under which people could be exposed to contaminated soil and groundwater.
- 5.1.35 RBRGs have been developed to protect workers at industrial sites, the public visiting public parks, and residents in urban and rural areas. Separate sets of RBRGs have been developed according to different land uses, as the ways in which people come into contact with contaminated soil and/or groundwater, including the

intensity and frequency of their contact, are largely dependent on the type of land use.

- 5.1.36 The future land use of the KTE development would be classified as “Railway” including the tunnels, ventilation buildings, plant rooms, etc and “Community Facilities”, “Commercial”, “Pedestrian Walkway” and “Open Space” including the concourses, platforms, shops, offices, etc. The corresponding RBRGs for the land use in accordance with the Guidance Note for Contaminated Land Assessment and Remediation, Guidance Manual for Use of Risk-Based Remediation Goals for Contaminated Land Management is summarised in **Table 5.3** and **Figure 5.8** based on which the land contamination assessment and remediation (if required) criteria will be carried out. A summary of the future land use and activities is included in **Table 5.3**.

**Table 5.3: Post-restoration Land Use and Appropriate RBRGs of the Site**

| Alignment Section       | Proposed Land Use              | Corresponding RBRGs Land Use |
|-------------------------|--------------------------------|------------------------------|
| Tunnels from YMT to HMT | Railway                        | Industrial                   |
| Emergency Access Point  | Railway                        | Industrial                   |
| HMT Station             | Commercial, Residential        | Urban Residential            |
|                         | Pedestrian Walkway, Open Space | Public Park                  |
| Tunnels from HMT to WHA | Railway                        | Industrial                   |
| WHA Station             | Commercial                     | Urban Residential            |
|                         | Pedestrian Walkway, Open Space | Public Park                  |
|                         | Maintenance Access, Railway    | Industrial                   |

## 5.2 Reconnaissance Site Visit

- 5.2.1 Reconnaissance site visits were carried out on 13 September 2008, 3 October 2008 (for all study sites except the interior of Concord kerosene store) and 14 April 2009 (only entering the interior of Concord kerosene store) to verify the desktop review findings and to identify any additional neighbouring activities along the footprint of preferred alignments and stations which may represent potential hotspots of land contamination. Key observations of the site visits are included in the preliminary Site Appraisal Checklist and Checklist of Possible Contaminants with reference to the Guidance Notes for Investigation Remediation of Contaminated Sites of Petrol Filling Stations, Boatyards, and Car Repair/Dismantling Workshops are included in **Appendix 5.3**.

## 5.3 Potential Sources of Contamination

- 5.3.1 Based on the initial site appraisal, reconnaissance site visit, review of previous SI and other relevant information, the potential sources of land contamination relevant to the KTE development were identified as described below. The contaminants of concern (COCs) for the site have been selected based on the historical land use information collected during the above initial site appraisal with reference to the Guidance Note for Contaminated Land Assessment and Remediation, Guidance Manual for Use of Risk-Based Remediation Goals for Contaminated Land Management. With respect to the historic land use information, the broad groups of selected COCs for this investigation include volatile organic compounds (BTEX:

benzene, toluene, ethylbenzene, xylene), semivolatile organic compounds (PAHs: polycyclic aromatic hydrocarbons), metals, petroleum hydrocarbon, PCBs, cyanide, and organometallic compound (TBTO: tributyltin oxide).

### *Tunnels from YMT to HMT*

- 5.3.2 It is envisaged that drill-and-blast as well as some sections of soft ground tunnelling will be adopted for the tunnel construction. Sheet pile walling would be envisaged to form the cofferdam for the EAP access shaft at the tennis courts at Club De Recreio for tunnel construction, disposal of spoil and delivery of construction and demolition (C&D) materials. **Figures 2.5-2.7** (up track) and **2.10-2.12** (down track) show the layout and typical cross-sections of the tunnels from YMT Station to HMT Station.
- 5.3.3 Historic and existing landuse and geological information reviewed in this CAP suggest that potential impacts due to contamination land issues for the construction and operation of the running tunnels from YMT to HMT would not be anticipated. Although there are petrol and diesel filling station and LPG store located at Princess Margaret Road as shown in **Figure 5.3**, the tunnels would be deeply situated within the rock cavern and would not be affected by any potential contamination incidents from these premises above ground. As such, there were no sampling points designated for this section of the study area.

### *HMT Station*

- 5.3.4 The HMT Station contains two caverns at right angles to each other. There would also be 3 rectangular cut-and-cover access shafts: these are at the southern end (Vent Shaft), middle (South Box), and at the northern end (North Box) of the platform. There is also a mucking out point at the footprint of the existing Concord kerosene store (at No.33, Chung Hau Street, Ho Man Tin), the access shaft at Wu Hu Street Temporary Playground, and the future Entrances (B1, B2, C1 and C2). Sheet pile walling would be envisaged to form the cofferdam for the temporary access shaft at Wuhu Street Temporary Playground for tunnel construction and disposal of spoil and delivery of C&D materials. **Figures 5.9-5.14** show the layout and typical cross-sections of the HMT Station and its associated key structures.
- 5.3.5 Historic and existing landuse and geological information reviewed in this CAP suggest that the operation of Concord kerosene store would be a potential hotspot of land contamination, as its location would be encroached upon the footprint of the mucking out point and the future Entrances B1 and B2 as shown in **Figure 5.9**. The kerosene store is under a Short Term Tenancy land lease (STT KX1484) which will be expired in 2010. According to a representative of Concord Oil (Hong Kong) Limited, there are 3 underground kerosene tanks in the premises for supplying kerosene to their domestic and industrial customers. The tanks, enclosed in concrete walls, were installed on a rock platform adjacent to the slope and at the basement of the building structure inside the kerosene store (2 floors beneath the ground level from Chung Hau Street). The tanks are arranged in series and, based on site measurement, the dimension of all the 3 tanks is approximately 10m (L) x 5m (W) x 2.5m (H), i.e.  $\sim 125\text{m}^3$  (total). Kerosene would be pumped from these 3 tanks up to the kerosene filling area at the ground level and delivered by trucks to the customers. There was continuous operation of these kerosene supply, but the last



refilling occurred in around end of 2008 to early 2009 and no further refilling of the tanks has been made since then. However, the representative of Concord Oil (Hong Kong) Limited advised that, due to their safety concern including their vicinity to the slope along Chung Hau Street and the structural stability of their building, they would unlikely permit any proposed GI works within their premises to be undertaken, especially near or underneath the 3 underground kerosene tanks. It should also be noted that, according to the Fire Services Department (**Appendix 5.4**), there was no record of spillage incidents reported at this kerosene store. An additional sampling point (BH1) has also been designated adjacent to the location of the future Entrance B which extends from HMT Station in order to verify if any potential migration of contaminant occurred.

- 5.3.6 On the other hand, as the access shaft the access shaft at Wu Hu Street Temporary Playground and the future Entrance C2 will be at >40m from the existing Esso Filling Station and vehicle repairing garages at Wuhu Street (**Figure 5.9**), any potential migration of contaminants arising from the operation of these premises would not be anticipated. There were no other hotspots of land contamination identified at the footprint of HMT Station and, hence, there were no other sampling points designated.

#### *Tunnels from HMT to WHA*

- 5.3.7 It is envisaged that drill-and-blast as well as some sections of soft ground tunnelling will be adopted for the tunnel construction. **Figures 2.7-2.9** (up track) and **2.12-2.13** (down track) show the layout and typical cross-sections of the tunnels from HMT Station to WHA Station.
- 5.3.8 Historic and existing landuse and geological information reviewed in this CAP suggest that potential impacts due to land contamination issues for the construction and operation of the running tunnels from HMT to WHA would not be anticipated. As such, there were no sampling points designated for this section of the study area.

#### *WHA Station*

- 5.3.9 Conventional cut-and-cover method would be proposed for the construction of the east concourse, west concourse and ventilation plantroom of WHA Station. The concourse and vent building structures are envisaged to be constructed from the bottom-up. **Figures 5.15-5.17** show the layout and typical cross-sections of the WHA Station and its associated structures.
- 5.3.10 Although the major footprint of the WHA Station for the preferred alignment at Tak On Street will be very near the previous dockyard areas (**Figure 5.3**), the available geological information suggests that the Station will be constructed within the existing underground rock head where historic contamination would be negligible (**Figure 5.1**). Nevertheless, 3 sampling points (BH2, BH3 and BH4) are designated at the station adits which extend from WHA Station towards the former dockyard area in order to verify if any potential contamination exists (**Figure 5.15**).

## 5.4 Conceptual Site Model

5.4.1 The conceptual site model for the land contamination assessment of the KTE project is shown in **Table 5.4**, which describes the potential sources of contamination, receptors and pathways that one may reach each other. Based on this conceptual site model, the approach to the site investigation has been devised as described in Section 6 of this CAP.

**Table 5.4: Conceptual Site Model**

| Potential Sources of Contamination   | Potential Human Receptors                                      | Potential Pathways  | Preliminary Appraisal of Potential Impact  |
|--|--|---|--|
| <i>Tunnels from YMT to HMT</i>   |  |   |  |
| Esso filling station and LPG store at Princess Margaret Road, Ho Man Tin next to the Society for the Prevention of Cruelty to Animals, and possible spillage and/or leakage of fuel from underground storage tanks, past landuse and operation | Construction Phase:<br>Construction workers inside the tunnels | The tunnels would be situated deep in the rock cavern with no major fault lines identified and physically separated from any potential contamination sources, hence unlikely forming pathways for migration of contaminants | Not anticipated, as no direct/indirect pathways for the exposure of human receptors to the possible source of contaminants |
|  | Operational Phase:<br>Passengers and staff of KTE project      | The tunnels would be situated deep in the rock cavern with no major fault lines identified and physically separated from any potential contamination sources, hence unlikely forming pathways for migration of contaminants | Not anticipated, as no direct/indirect pathways for the exposure of human receptors to the possible source of contaminants |

| Potential Sources of Contamination  | Potential Human Receptors  | Potential Pathways  | Preliminary Appraisal of Potential Impact  |
|---|--|---|--|
| <b>HMT Station</b>  |  |   |  |
| Concord kerosene store at No.33, Chung Hau Street, Ho Man Tin, and possible spillage and/or leakage of kerosene from past landuse and operation (from the identified decommissioned underground kerosene storage tank); | Construction Phase:<br>Construction workers for construction of the station Entrances B1 and B2 and adits        | Rock nature of site geology and existence of concrete floor of the premises, but uncertain for any other pathways inside the premises leading to spillage and leakage, hence migration of contaminants, due to restriction of site access | <b>Potential contamination anticipated.</b> There are 3 kerosene storage tanks beneath the building of the kerosene store. Also, the owner would unlikely permit any proposed GI works to be undertaken within their premises, especially near or underneath the 3 kerosene tanks. Also, the inspection and identification of any hotspots at the kerosene filling area was not permitted by the owner. As such, it is suggested that the necessary GI works for the contamination assessment at this kerosene store would only be conducted upon the resumption of the land area when the STT KX1484 land lease expired after 2010. |
|   | Operational Phase:<br>Passengers and staff using the station Entrances B1 and B2 and adits                       | The above ground station entrance and adit would be physically separated from any potential underground contamination sources, hence unlikely forming pathways for migration of contaminants  | Not anticipated, as no direct/indirect pathways for the exposure of human receptors to the possible source of contaminants   |
| Esso filling station at No.157-171, Wuhu Street, Hung Hom (from the underground storage tanks), and the nearby vehicle repairing garages  | Workers for the construction of the access shaft at Wuhu Street Temporary Playground and HMT Station Entrance C2 | The station entrance would be physically separated at long distance (>40m) from any potential contamination sources, hence unlikely forming pathways for migration of contaminants  | Unlikely at the access shaft, as the potential pathway would be too long for the direct and indirect exposure of human receptors to the possible source of contaminants  |

| Potential Sources of Contamination   | Potential Human Receptors  | Potential Pathways  | Preliminary Appraisal of Potential Impact   |
|--|--|---|---|
|  | Operational Phase:<br>Passengers and staff using the station Entrance C2 | The station entrance would be physically separated at long distance (>40m) from any potential contamination sources, hence unlikely forming pathways for migration of contaminants  | Unlikely at the access shaft, as the potential pathway would be too long for the direct and indirect exposure of human receptors to the possible source of contaminants |
| <b><i>Tunnels from HMT to WHA</i></b>  |  |   |   |
| Esso filling station at No.157-171, Wuhu Street, Hung Hom (from the underground storage tanks), and the nearby vehicle repairing garages   | Construction Phase:<br>Construction workers inside the tunnels           | The tunnels would be situated beneath the rock head with no major fault lines identified and physically separated from any potential contamination sources, hence unlikely forming pathways for migration of contaminants | Not anticipated, as no direct/indirect pathways for the exposure of human receptors to the possible source of contaminants  |
|  | Operational Phase:<br>Passengers and staff of KTE project                | The tunnels would be situated beneath the rock head with no major fault lines identified and physically separated from any potential contamination sources, hence unlikely forming pathways for migration of contaminants | Not anticipated, as no direct/indirect pathways for the exposure of human receptors to the possible source of contaminants  |
| Historic operation of dockyards at the existing Tak On Street along the preferred alignment, and possible contamination due to previous landuse e.g. metal workshop, ship repairing, etc | Construction Phase:<br>Construction workers inside the tunnels           | The construction works would be physically separated at long distance (~100m) from any potential contamination sources, hence unlikely forming pathways for migration of contaminants                                     | Unlikely, as the potential pathway would be too long for the direct and indirect exposure of human receptors to the possible source of contaminants                     |
|  | Operational Phase:<br>Passengers and staff of KTE project                | The tunnels would be physically separated from any potential underground contamination sources, hence unlikely forming pathways for migration of contaminants   | Not anticipated, as no direct/indirect pathways for the exposure of human receptors to the possible source of contaminants  |

| Potential Sources of Contamination  | Potential Human Receptors   | Potential Pathways  | Preliminary Appraisal of Potential Impact   |
|---|---|---|---|
| <b>WHA Station</b>  |   |   |   |
| Historic operation of dockyards at the southern side of Tak On Street to the proposed WHA Station, and possible contamination due to previous landuse, e.g. metal workshop, ship repairing, etc | Construction Phase:<br>Workers for the construction of station entrance and adits at the southern side of WHA Station to be built along Hung Hom Road and Shung King Street | Potential direct and indirect contacts with contaminants in soil and/or groundwater   | <b>Potential contamination anticipated</b> , as direct and indirect pathways for the exposure of human receptors to the possible source of contaminants exist |
|   | Operation Phase:<br>Passengers and staff using the station entrance and adit to be built at that location   | The above ground station entrance and underground adits would be physically separated from any potential underground contamination sources, hence unlikely forming pathways for migration of contaminants | Not anticipated, as no direct/indirect pathways for the exposure of human receptors to the possible source of contaminants                                    |

## 6 SITE INVESTIGATION STRATEGY

- 6.1.1 The possible construction scheme for the tunnel from HMT to WHA comprises the construction of access shafts followed by drill-and-blast and mechanical breaking along the alignment. Excavated materials will be mucked out at designated locations near the potentially contaminated sites as shown in **Figures 5.9** and **5.15**. As such, excavation workers at these locations would be potentially prone to the risk of land contamination impact.
- 6.1.2 The sampling locations for the SI are depicted in **Figures 5.9** and **5.15** at BH1-BH4 by drilling of boreholes (to the base of the fill materials below ground level or as instructed by the Contamination Specialist) and TP1 by construction of trial pit. The exact locations will be agreed with the Contamination Specialist on-site. Upon determination of the exact sampling locations, a survey will be undertaken to measure the Hong Kong Grid co-ordinates and mPD level of the sampling location.
- 6.1.3 Soil bore logs with description of sub-soil strata will be prepared for all sampling locations. All sampling equipment and apparatus will be thoroughly cleaned and decontaminated before and after drilling and sampling at each sampling location. All necessary measures will be provided to comply with statutory requirements in respect of environmental, health and safety aspects.

## 7 SAMPLING

### 7.1 Soil Sampling

#### *Drilling of Boreholes*

- 7.1.1 A preliminary metal detection survey will be undertaken at each drilling location. Only metal (or utility) free locations will be drilled. The concrete road pavement will need to be removed (if any) before the actual fill material samples can be taken from underneath. U-76 samplers will be deployed for soil sampling at all boreholes.
- 7.1.2 No organic (carbon or petroleum based lubricants) or any kind of metal containing lubricants will be allowed for use as drilling bit lubricant. When required, only a minimum amount of clean fresh water will be used as lubricating medium as instructed and agreed by the Contamination Specialist in order to avoid sample contamination.
- 7.1.3 Drilling will be undertaken to a depth at the base of the fill materials or as instructed by the Contamination Specialist. From each borehole, soil samples will be collected at 0.5m, 1.5m, 3m below ground level or as instructed by the Contamination Specialist due to unforeseeable underground conditions.
- 7.1.4 Sampling of soil will be carried out with a stainless steel spoon. The samples will be scooped directly from the sampling core box into the sample containers and the spoon must be decontaminated by washing with distilled water between samples. If a gloved hand comes into contact with the sample, new gloves should be used for each new sample.
- 7.1.5 Field personnel must wash hands before sampling and wear a new pair of clean PVC/latex disposable gloves before and during sampling. Field personnel will avoid handling the samples directly and will manipulate the samples into the appropriate laboratory sampling jars using the cleaned spoon(s). All sampling equipment will be decontaminated in between each sampling. A clean area will be established immediately adjacent to each drilling location with a portable table covered with a clean plastic sheet, on which all equipment may be placed.
- 7.1.6 Each sample will be labelled uniquely and unambiguously. The nature of the soil/fill material in the core will be recorded at different depths for each core. Records will be made of the details of depth and the sampling location and other pertinent data such as any non-standard sampling events. The description of soil samples will include but not be restricted to:
- Test site where the sample is collected;
  - Sample identification number;
  - Soil sampling depth (with respect to the lowest level of the concrete cover, if any);
  - Estimated physical characteristics (clay, silt, sand, gravel, stone, cobble, colour, odour, moisture); and
  - Colour photograph, etc.

- 7.1.7 All samples will be stored in portable cool box with frozen chilled packs at 0-4°C whilst in the field or in transit and returned to the laboratory on the same evening as the day of sampling. A chain-of-custody form will be completed for all the samples delivered.
- 7.1.8 Each sample tube will be fully sealed, except that the tube ends will be first covered by decontaminated metal foil so that the foil is the only material in direct contact with the soil sample collected. The sample tube will be sealed tightly such that leakage into and out of the tube is minimised.
- 7.1.9 Strata logging for boreholes will be conducted by a qualified geologist during the drilling and sampling. The logs will include general stratigraphic description, soil sampling depth, sample notation and level of groundwater. The presence of rocks/boulders/cobbles and foreign objects (e.g. wood, metals and plastics) will be recorded.
- 7.1.10 All equipment used for sample handling and storage will be decontaminated before and after collection of each sample. Standard procedures for cleaning the drilling rig and sampling equipment is described below:
- Clean with fresh water and lab-grade detergent (use brush if necessary) to remove particulate matter and surface film;
  - Rinse thoroughly with tap water (for drilling equipment) or distilled water (for sampling equipment);
  - After field cleaning, the equipment will be handled by personnel wearing clean gloves to avoid re-contamination. If the equipment is not to be used immediately, it should be covered with clean plastic sheeting or put in a box to avoid re-contamination; and
  - The drilling equipment and sampling equipment will be cleaned according to the above procedures between sampling holes.
- 7.1.11 As the Toxicity Characteristic Leaching Procedure may be required for all soil samples if landfill disposal is selected as the remediation method, surplus soil samples will be collected and stored for use.

### ***Construction of Trial Pit***

- 7.1.12 The trial pit would be constructed either manually or by excavator. The exact location of soil sampling would be determined on-site by the Contamination Specialist. Soil samples would be collected at 0.5m, 1.5m, 3m below ground level; or as instructed by the Contamination Specialist due to unforeseeable underground conditions.

## **7.2 Groundwater Sampling**

- 7.2.1 Groundwater may be encountered during drilling and construction of trial pit depending on the water table at the drilling and excavation locations. If groundwater is encountered at the sampling location, water sampling will be carried out and samples will be sent to the laboratory for analysis.



- 7.2.2 The general groundwater flow pattern in Kowloon peninsula is anticipated to be from uphill terrain down towards seashore, hence borehole BH3 as shown in **Figure 5.15** near the former shoreline has been designated as the downstream monitoring well for groundwater. Completed drilled boreholes will be used for groundwater sampling by installing groundwater monitoring wells (**Figure 7.1**), if the site condition is considered appropriate by the Contamination Specialist. Prior to installing the monitoring well screen and casing, the boreholes will be reamed to provide a minimum 50 mm annulus around the casing.
- 7.2.3 Purging of groundwater from the boreholes will be undertaken prior to sampling to remove fine-grained materials and to collect freshly infiltrating representative samples. The boreholes will be purged by removing not less than three times the original volume of groundwater within the boreholes with a pump, e.g. WaTerra Pump or Teflon bailer. At least two hours after purging, the depth to water table will be measured. One groundwater sample will be collected at each borehole using a hand operated pump.
- 7.2.4 The groundwater in the boreholes will be removed with the selected pump, decanted into a separate clear glass vessel and allowed to settle for five minutes. The presence of any supernatant free product on the groundwater and the respective thickness will be recorded. Emulsification of the groundwater will be noted. The floating layer will be removed/recovered and analysed separately from the main aqueous phase of the groundwater (as far as is reasonably practicable). All samples will be uniquely labelled.
- 7.2.5 Between samples, all equipment used for sample handling and storage will be thoroughly decontaminated with laboratory-grade detergent. Samples will be stored in appropriate pre-washed containers (provided by the laboratory) and immediately put in an insulated cool box. It will be ensured that the sample containers and the box are tightly closed and that sufficient chilling packs or ice are provided to maintain a temperature of 0-4°C inside the box.
- 7.2.6 Chilled groundwater samples will be transferred to the custody of the HKOLAS accredited laboratory on the same day as sampling. A chain-of-custody system will be operated in triplicate as part of the QA/QC procedure. The accredited laboratory QA/QC procedures will be precisely followed.

### 7.3 QC Sampling

- 7.3.1 The following QC samples for soil and groundwater will be collected for laboratory analysis during the sampling:
- 1 equipment blank (i.e. equipment “rinsate”) per 20 samples;
  - 1 field blank per 20 samples; and
  - 1 set of duplicate sample per 20 samples.

## 8 MINIMISATION OF CROSS-CONTAMINATION

- 8.1.1 All drilling and sampling equipment will be decontaminated before and after collection of each soil or groundwater sample. Standard procedures for cleaning the drilling rig and sampling equipment are as follows:
- Clean with lab-grade (non-phosphorus) detergent and tap water to remove particulate matter and surface film (use a brush if necessary); then
  - Rinse thoroughly with tap water; then
  - Clean by steam cleaning; then
  - Rinse with distilled water.
- 8.1.2 To avoid re-contamination after field cleaning, the cleaned equipment will be handled by personnel wearing clean gloves. If the equipment will not be used immediately, it will be protected with clean plastic cover or stored in a box to avoid re-contamination.
- 8.1.3 All materials for groundwater well installation will be decontaminated before use so as to avoid sample contamination.
- 8.1.4 Before leaving the site, all drilling equipment will be washed clean to prevent potentially contaminated soil, surface or groundwater from being brought outside the site.
- 8.1.5 The drilling rig deployed or other mechanical equipment will be in sound condition and free of oil leaks. For avoidance of cross contamination from unexpected leaks drip trays (or other appropriate measures) will be placed under the rig and around the drill hole before and during drilling as far as practicable.
- 8.1.6 Field personnel will wash hands and wear a new pair of clean PVC/latex disposable gloves before and during sampling. Field personnel will avoid handling the samples directly. If a gloved hand comes into contact with the sample, then new gloves should be used for each new sample. A clean area will be established immediately adjacent to each drilling location with a portable table covered with a clean plastic sheet, on which all equipment can be placed.

## **9 HEALTH AND SAFETY MEASURES**

- 9.1.1 All field personnel should wear adequate personal protective equipment (PPE) while working within the study area, such as eye goggles, masks, safety helmet, protective gloves, protective clothing, protective shoes, etc. All personnel will always maintain basic hygiene standard and be responsible for maintaining and storing their own PPE in a secure location before leaving the site.
- 9.1.2 Eating, drinking and smoking are prohibited within the site area. The specific safety measures to be taken depend on the site conditions, the nature and magnitude of contamination, and relevant regulations related to site safety. Workmen Compensation Insurance and third party insurance will be provided for the SI.

## 10 LABORATORY ANALYSES

- 10.1.1 A comprehensive analytical testing programme for soil and groundwater is devised as part of the Contamination Assessment Plan. The analytical program tests soil and groundwater samples for potential chemical contaminants based upon the nature of materials and chemicals used in the study area. Chemical testing will be performed by a HOKLAS accredited laboratory under the instruction of the Contamination Specialist.
- 10.1.2 The collected soil and groundwater samples will be analysed for the parameters shown in **Tables 10.1-10.2**, with respect to a preliminary sampling and testing schedule or as instructed by the Contamination Specialist. All laboratory test methods will be HOKLAS accredited in accordance with the Guidance Manual for Use of Risk-Based Remediation Goals for Contaminated Land Management and carried out by HOKLAS accredited laboratory or one of its Mutual Recognition Arrangement partners.
- 10.1.3 Soil and groundwater samples collected from the boreholes will be analysed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, petroleum hydrocarbon, PCBs, cyanide and organometallic compound in accordance with a preliminary sampling and testing schedule as shown in **Table 10.3**.
- 10.1.4 Remediation options such as treatment of contaminated soils will be considered where necessary. Landfill disposal may be an option but would be considered only as a last resort. If exceedance of land contamination standards is confirmed and in case “excavation and disposal at landfill” in accordance with the Guidance Notes for Investigation Remediation of Contaminated Sites of Petrol Filling Stations, Boatyards, and Car Repair/Dismantling Workshops is recommended as the remediation method, the Toxicity Characteristic Leaching Procedure (TCLP) test will be carried out for all soil samples.



**Table 10.1 Testing Method and Reporting Limit for Soil and Groundwater Analyses under RBRGs Framework\***

| Test Parameter                   | Test Method   | Reporting Limit for Soil (mg/kg)  | Reporting Limit for Groundwater (ug/L) |    |
|----------------------------------|---------------|-----------------------------------|--|----|
| <b>VOCs</b>                      |               |                                   |  |    |
| Benzene                          | USEPA 8260    | 0.2                               | 1                                      |    |
| Ethylbenzene                     | USEPA 8260    | 0.2                               | 1                                      |    |
| Toluene                          | USEPA 8260    | 0.2                               | 1                                      |    |
| Xylenes (total)                  | USEPA 8260    | 0.4                               | 2                                      |    |
| <b>SVOCs</b>                     |               |                                   |  |    |
| Acenaphthene                     | USEPA 8270    | 0.5                               | 2                                      |    |
| Acenaphthylene                   | USEPA 8270    | 0.5                               | 2                                      |    |
| Anthracene                       | USEPA 8270    | 0.5                               | 2                                      |    |
| Benzo(a)anthracene               | USEPA 8270    | 0.5                               | --                                     |    |
| Benzo(a)pyrene                   | USEPA 8270    | 0.5                               | --                                     |    |
| Benzo(b)fluoranthene             | USEPA 8270    | 0.1                               | 2                                      |    |
| Benzo(k)fluoranthene             | USEPA 8270    | 0.1                               | --                                     |    |
| Benzo(g,h,i)perylene             | USEPA 8270    | 0.5                               | --                                     |    |
| Chrysene                         | USEPA 8270    | 0.5                               | 2                                      |    |
| Dibenzo(a,h)anthracene           | USEPA 8270    | 0.5                               | --                                     |    |
| Fluoranthene                     | USEPA 8270    | 0.5                               | 2                                      |    |
| Fluorene                         | USEPA 8270    | 0.5                               | 2                                      |    |
| Indeno(1,2,3-cd)pyrene           | USEPA 8270    | 0.5                               | --                                     |    |
| Naphthalene                      | USEPA 8270    | 0.5                               | 2                                      |    |
| Phenanthrene                     | USEPA 8270    | 0.5                               | 2                                      |    |
| Pyrene                           | USEPA 8270    | 0.5                               | 2                                      |    |
| <b>Metals</b>                    |               |                                   |  |    |
| Antimony                         | USEPA 6020A   | 0.5                               | --                                     |    |
| Arsenic                          |               | 1                                 | --                                     |    |
| Barium                           |               | 1                                 | --                                     |    |
| Cadmium                          |               | 0.1                               | --                                     |    |
| Cobalt                           |               | 1                                 | --                                     |    |
| Copper                           |               | 1                                 | --                                     |    |
| Lead                             |               | 1                                 | --                                     |    |
| Manganese                        |               | 0.5                               | --                                     |    |
| Mercury                          |               | 0.05                              | 0.5                                    |    |
| Molybdenum                       |               | 1                                 | --                                     |    |
| Nickel                           |               | 1                                 | --                                     |    |
| Tin                              |               | 1                                 | --                                     |    |
| Zinc                             |               | 20                                | --                                     |    |
| Chromium III                     |               | By subtracting CrVI from total Cr | 1                                      | -- |
| Chromium VI                      |               | APHA 3500Cr: D                    | 1                                      | -- |
| <b>Dioxins/PCBs</b>              |               |                                   |  |    |
| PCBs                             | USEPA 8270C   | 0.2                               | 0.1                                    |    |
| <b>Petroleum Carbon Ranges</b>   |               |                                   |  |    |
| C6 – C8                          | USEPA 8015    | 50                                | 5mg/L                                  |    |
| C9 – C16                         | USEPA 8015    | 50                                | 2.8mg/L                                |    |
| C17 – C35                        | USEPA 8015    | 100                               | 2.8mg/L                                |    |
| <b>Other Inorganic Compounds</b> |               |                                   |  |    |
| Cyanide, free (as Total)         | APHA 4500CN   | 1                                 | 0.01mg/L                               |    |
| <b>Organometallics</b>           |               |                                   |  |    |
| TBTO                             | UNEP/IOC/IAEA | 1mg TBT/kg                        | 0.015ug-TBT/L                          |    |

\* According to the Guidance Manual for Use of Risk-Based Remediation Goals for Contaminated Land Management (EPD, 2007), all laboratory test methods must be accredited by the HOKLAS or one of its Mutual Recognition Arrangement partners and "--" denotes "not specified" in the Manual.



**Table 10.2 Testing Method and Reporting Limit for TCLP Analyses of Soil Samples for Landfill Disposal**

| Parameters  | Test Method                           | Reporting Limit for Soil (mg/L) |     |
|---|---------------------------------------|---------------------------------|-----|
| TCLP Leachate Preparation followed by analysis for: | TCLP Leachate Preparation: USEPA 1311 | --                              |     |
| Antimony (Sb)                                       | USEPA 6020                            | 1                               |     |
| Arsenic (As)  | USEPA 6020                            | 1                               |     |
| Barium (Ba)   |                                       | 1                               |     |
| Beryllium (Be)                                      |                                       | 1                               |     |
| Cadmium (Cd)  |                                       | 0.2                             |     |
| Chromium (Cr)                                       |                                       | 1                               |     |
| Copper (Cu)   |                                       | 1                               |     |
| Lead (Pb)   |                                       | 1                               |     |
| Nickel (Ni)   |                                       | 1                               |     |
| Selenium (Se)                                       |                                       | 0.1                             |     |
| Silver (Ag)   |                                       | 1                               |     |
| Thallium (Tl)                                       |                                       | 0.1                             |     |
| Tin (Sn)  |                                       | 1                               |     |
| Vanadium (V)  |                                       | 1                               |     |
| Zinc (Zn)   |                                       | USEPA 6020                      | 1   |
| Mercury (Hg)  |                                       | USEPA SW7471 or APHA 3112B      | 0.5 |

**Table 10.3 Preliminary Sampling and Testing Schedule**

| Location | Sample Matrix and Sampling Depth | Metals | VOCs | SVOCs | TPH | TBTO | TCLP (Metals)* |
|----------|----------------------------------|--------|------|-------|-----|------|----------------|
| BH1      | 0.5m                             | Y      | Y    | Y     | Y   | -    | Y              |
|          | 1.5m                             | Y      | Y    | Y     | Y   | -    | -              |
|          | 3m                               | Y      | Y    | Y     | Y   | -    | -              |
|          | Groundwater                      | Y      | Y    | Y     | Y   | -    | -              |
| BH2      | 0.5m                             | Y      | Y    | Y     | Y   | Y    | Y              |
|          | 1.5m                             | Y      | Y    | Y     | Y   | Y    | -              |
|          | 3m                               | Y      | Y    | Y     | Y   | Y    | -              |
|          | Groundwater                      | Y      | Y    | Y     | Y   | Y    | -              |
| BH3      | 0.5m                             | Y      | Y    | Y     | Y   | Y    | Y              |
|          | 1.5m                             | Y      | Y    | Y     | Y   | Y    | -              |
|          | 3m                               | Y      | Y    | Y     | Y   | Y    | -              |
|          | Groundwater                      | Y      | Y    | Y     | Y   | Y    | -              |
| BH4      | 0.5m                             | Y      | Y    | Y     | Y   | Y    | Y              |
|          | 1.5m                             | Y      | Y    | Y     | Y   | Y    | -              |
|          | 3m                               | Y      | Y    | Y     | Y   | Y    | -              |
|          | Groundwater                      | Y      | Y    | Y     | Y   | Y    | -              |
| TP1      | 0.5m                             | Y      | Y    | Y     | Y   | -    | Y              |
|          | 1.5m                             | Y      | Y    | Y     | Y   | -    | -              |
|          | 3m                               | Y      | Y    | Y     | Y   | -    | -              |
|          | Groundwater                      | Y      | Y    | Y     | Y   | -    | -              |

\* To be conducted only when exceedance of RBRGs criteria was determined in soil samples

## 11 INTERPRETATION OF RESULTS

- 11.1.1 The results of the laboratory analyses will be interpreted in accordance with the Guidance Note for Contaminated Land Assessment and Remediation, and Guidance Manual for Use of Risk-Based Remediation Goals for Contaminated Land Management. Reference will be made to the RBRG criteria for assessing the degree of land contamination in the site based on the proposed future land use as tabulated in **Tables 11.1-11.2**. A Contamination Assessment Report (CAR) will be prepared based on the results of the SI and, if significant contamination is revealed, a Remediation Action Plan (RAP) will be prepared and submitted together with the CAR to EPD for approval.
- 11.1.2 The clean up of contaminated sites, if any, shall be carried out in accordance with the approved RAP and a Remediation Report (RR) to demonstrate adequate clean-up should be prepared and submitted to the EPD for endorsement prior to the commencement of any development works within the site. The endorsed CAP, CAR and RAP shall be documented in the EIA report.

**Table 11.1 Risk-Based Remediation Goals for Soil and Soil Saturation Limit**

| Chemical                         | Risk-Based Remediation Goals for Soil |                       |                         | Soil Saturation Limit (Csat)<br>(mg/kg) |
|----------------------------------|---------------------------------------|-----------------------|-------------------------|---|
|                                  | Urban Residential<br>(mg/kg)          | Industrial<br>(mg/kg) | Public Parks<br>(mg/kg) |   |
| <b>VOCs</b>                      |                                       |                       |                         |   |
| Benzene                          | 7.04E-01                              | 3.21E+00              | 4.22E+01                | 3.36E+02                                |
| Ethylbenzene                     | 7.09E+02                              | 8.24E+03              | 1.00E+04*               | 1.38E+02                                |
| Toluene                          | 1.44E+03                              | 1.00E+04*             | 1.00E+04*               | 2.35E+02                                |
| Xylenes (Total)                  | 9.50E+01                              | 1.23E+03              | 1.00E+04*               | 1.50E+02                                |
| <b>SVOCs</b>                     |                                       |                       |                         |   |
| Acenaphthene                     | 3.51E+03                              | 1.00E+04*             | 1.00E+04*               | 6.02E+01                                |
| Acenaphthylene                   | 2.34E+03                              | 1.00E+04*             | 1.00E+04*               | 1.98E+01                                |
| Anthracene                       | 1.00E+04*                             | 1.00E+04*             | 1.00E+04*               | 2.56E+00                                |
| Benzo(a)anthracene               | 1.20E+01                              | 9.18E+01              | 3.83E+01                | -                                       |
| Benzo(a)pyrene                   | 1.20E+00                              | 9.18E+00              | 3.83E+00                | -                                       |
| Benzo(b)fluoranthene             | 9.88E+00                              | 1.78E+01              | 2.04E+01                | -                                       |
| Benzo(g,h,i)perylene             | 1.80E+03                              | 1.00E+04*             | 5.74E+03                | -                                       |
| Benzo(k)fluoranthene             | 1.20E+02                              | 9.18E+02              | 3.83E+02                | -                                       |
| Chrysene                         | 8.71E+02                              | 1.14E+03              | 1.54E+03                | -                                       |
| Dibenzo(a,h)anthracene           | 1.20E+00                              | 9.18E+00              | 3.83E+00                | -                                       |
| Fluoranthene                     | 2.40E+03                              | 1.00E+04*             | 7.62E+03                | -                                       |
| Fluorene                         | 2.38E+03                              | 1.00E+04*             | 7.45E+03                | 5.47E+01                                |
| Indeno(1,2,3-cd)pyrene           | 1.20E+01                              | 9.18E+01              | 3.83E+01                | -                                       |
| Naphthalene                      | 1.82E+02                              | 4.53E+02              | 9.14E+02                | 1.25E+02                                |
| Phenanthrene                     | 1.00E+04*                             | 1.00E+04*             | 1.00E+04*               | 2.80E+01                                |
| Pyrene                           | 1.80E+03                              | 1.00E+04*             | 5.72E+03                | -                                       |
| <b>Metals</b>                    |                                       |                       |                         |   |
| Antimony                         | 2.95E+01                              | 2.61E+02              | 9.79E+01                | -                                       |
| Arsenic                          | 2.21E+01                              | 1.96E+02              | 7.35E+01                | -                                       |
| Barium                           | 1.00E+04*                             | 1.00E+04*             | 1.00E+04*               | -                                       |
| Cadmium                          | 7.38E+01                              | 6.53E+02              | 2.45E+02                | -                                       |
| Chromium III                     | 1.00E+04*                             | 1.00E+04*             | 1.00E+04*               | -                                       |
| Chromium VI                      | 2.21E+02                              | 2.18E+02              | 7.35E+02                | -                                       |
| Cobalt                           | 1.48E+03                              | 1.00E+04*             | 4.90E+03                | -                                       |
| Copper                           | 2.95E+03                              | 1.00E+04*             | 9.79E+03                | -                                       |
| Lead                             | 2.58E+02                              | 2.29E+03              | 8.57E+02                | -                                       |
| Manganese                        | 1.00E+04*                             | 1.00E+04*             | 1.00E+04*               | -                                       |
| Mercury                          | 1.10E+01                              | 3.84E+01              | 4.56E+01                | -                                       |
| Molybdenum                       | 3.69E+02                              | 3.26E+03              | 1.22E+03                | -                                       |
| Nickel                           | 1.48E+03                              | 1.00E+04*             | 4.90E+03                | -                                       |
| Tin                              | 1.00E+04*                             | 1.00E+04*             | 1.00E+04*               | -                                       |
| Zinc                             | 1.00E+04*                             | 1.00E+04*             | 1.00E+04*               | -                                       |
| <b>Dioxins/PCBs</b>              |                                       |                       |                         |   |
| PCBs                             | 2.36E-01                              | 7.48E-01              | 7.56E-01                | -                                       |
| <b>Petroleum Carbon Ranges</b>   |                                       |                       |                         |   |
| C6 - C8                          | 1.41E+03                              | 1.00E+04*             | 1.00E+04*               | 1.00E+03                                |
| C9 - C16                         | 2.24E+03                              | 1.00E+04*             | 1.00E+04*               | 3.00E+03                                |
| C17 - C35                        | 1.00E+04*                             | 1.00E+04*             | 1.00E+04*               | 5.00E+03                                |
| <b>Other Inorganic Compounds</b> |                                       |                       |                         |   |
| Cyanide, free                    | 1.48E+03                              | 1.00E+04*             | 4.90E+03                | -                                       |
| <b>Organometallics</b>           |                                       |                       |                         |   |
| TBTO                             | 2.21E+01                              | 1.96E+02              | 7.35E+01                | -                                       |

Notes:

Soil saturation limits for petroleum carbon ranges taken from the Canada-Wide Standards for Petroleum Hydrocarbons in Soil, CCME 2000.

\* denotes a 'ceiling limit' concentration.



**Table 11.2 Risk-Based Remediation Goals for Groundwater and Solubility Limit**

| Chemical                         | Risk-Based Remediation Goals for Groundwater: |                   | Solubility Limit (mg/L) |
|----------------------------------|---|-------------------|-------------------------|
|                                  | Urban Residential (mg/L)                      | Industrial (mg/L) |                         |
| <b>VOCs</b>                      |   |                   |                         |
| Benzene                          | 3.86E+00                                      | 5.40E+01          | 1.75E+03                |
| Ethylbenzene                     | 1.02E+03                                      | 1.00E+04*         | 1.69E+02                |
| Toluene                          | 5.11E+03                                      | 1.00E+04*         | 5.26E+02                |
| Xylenes (Total)                  | 1.12E+02                                      | 1.57E+03          | 1.75E+02                |
| <b>SVOCs</b>                     |   |                   |                         |
| Acenaphthene                     | 1.00E+04*                                     | 1.00E+04*         | 4.24E+00                |
| Acenaphthylene                   | 1.41E+03                                      | 1.00E+04*         | 3.93E+00                |
| Anthracene                       | 1.00E+04*                                     | 1.00E+04*         | 4.34E-02                |
| Benzo(a)anthracene               | -   | -                 | -                       |
| Benzo(a)pyrene                   | -   | -                 | -                       |
| Benzo(b)fluoranthene             | 5.39E-01                                      | 7.53E+00          | 1.50E-03                |
| Benzo(g,h,i)perylene             | -   | -                 | -                       |
| Benzo(k)fluoranthene             | -   | -                 | -                       |
| Chrysene                         | 5.81E+01                                      | 8.12E+02          | 1.60E-03                |
| Dibenzo(a,h)anthracene           | -   | -                 | -                       |
| Fluoranthene                     | 1.00E+04*                                     | 1.00E+04*         | 2.06E-01                |
| Fluorene                         | 1.00E+04*                                     | 1.00E+04*         | 1.98E+00                |
| Indeno(1,2,3-cd)pyrene           | -   | -                 | -                       |
| Naphthalene                      | 6.17E+01                                      | 8.62E+02          | 3.10E+01                |
| Phenanthrene                     | 1.00E+04*                                     | 1.00E+04*         | 1.00E+00                |
| Pyrene                           | 1.00E+04*                                     | 1.00E+04*         | 1.35E-01                |
| <b>Metals</b>                    |   |                   |                         |
| Antimony                         | -   | -                 | -                       |
| Arsenic                          | -   | -                 | -                       |
| Barium                           | -   | -                 | -                       |
| Cadmium                          | -   | -                 | -                       |
| Chromium III                     | -   | -                 | -                       |
| Chromium VI                      | -   | -                 | -                       |
| Cobalt                           | -   | -                 | -                       |
| Copper                           | -   | -                 | -                       |
| Lead                             | -   | -                 | -                       |
| Manganese                        | -   | -                 | -                       |
| Mercury                          | 4.86E-01                                      | 6.79E+00          | -                       |
| Molybdenum                       | -   | -                 | -                       |
| Nickel                           | -   | -                 | -                       |
| Tin                              | -   | -                 | -                       |
| Zinc                             | -   | -                 | -                       |
| <b>Dioxins/PCBs</b>              |   |                   |                         |
| PCBs                             | 4.33E-01                                      | 5.11E+00          | 3.10E-02                |
| <b>Petroleum Carbon Ranges</b>   |   |                   |                         |
| C6 - C8                          | 8.22E+01                                      | 1.15E+03          | 5.23E+00                |
| C9 - C16                         | 7.14E+02                                      | 9.98E+03          | 2.80E+00                |
| C17 - C35                        | 1.28E+01                                      | 1.78E+02          | 2.80E+00                |
| <b>Other Inorganic Compounds</b> |   |                   |                         |
| Cyanide, free                    | -   | -                 | -                       |
| <b>Organometallics</b>           |   |                   |                         |
| TBTO                             | -   | -                 | -                       |

Notes:

“-“ denotes that RBRG could not be calculated because the toxicity or physical/chemical values were unavailable, or the condition of Henry’s Law Constant > 1.00E-05 was not met for the inhalation pathway. Water solubilities for Petroleum Carbon Range aliphatic C9-C16 and greater than C16 generally are considered to be effectively zero and therefore the aromatic solubility for C9-C16 is used.

\* denotes a ‘ceiling limit’ concentration.

## 12 REFERENCES

Deliverable 3.4 Final Geotechnical Engineering Report – Consultancy Agreement No. NEX/2203 Kwun Tong Line Extension Preliminary Design for Yau Ma Tei to Whampoa, February 2009.

Deliverable 3.12 Final Civil Engineering Scheme Report – Consultancy Agreement No. NEX/2203 Kwun Tong Line Extension Preliminary Design for Yau Ma Tei to Whampoa, February 2009.

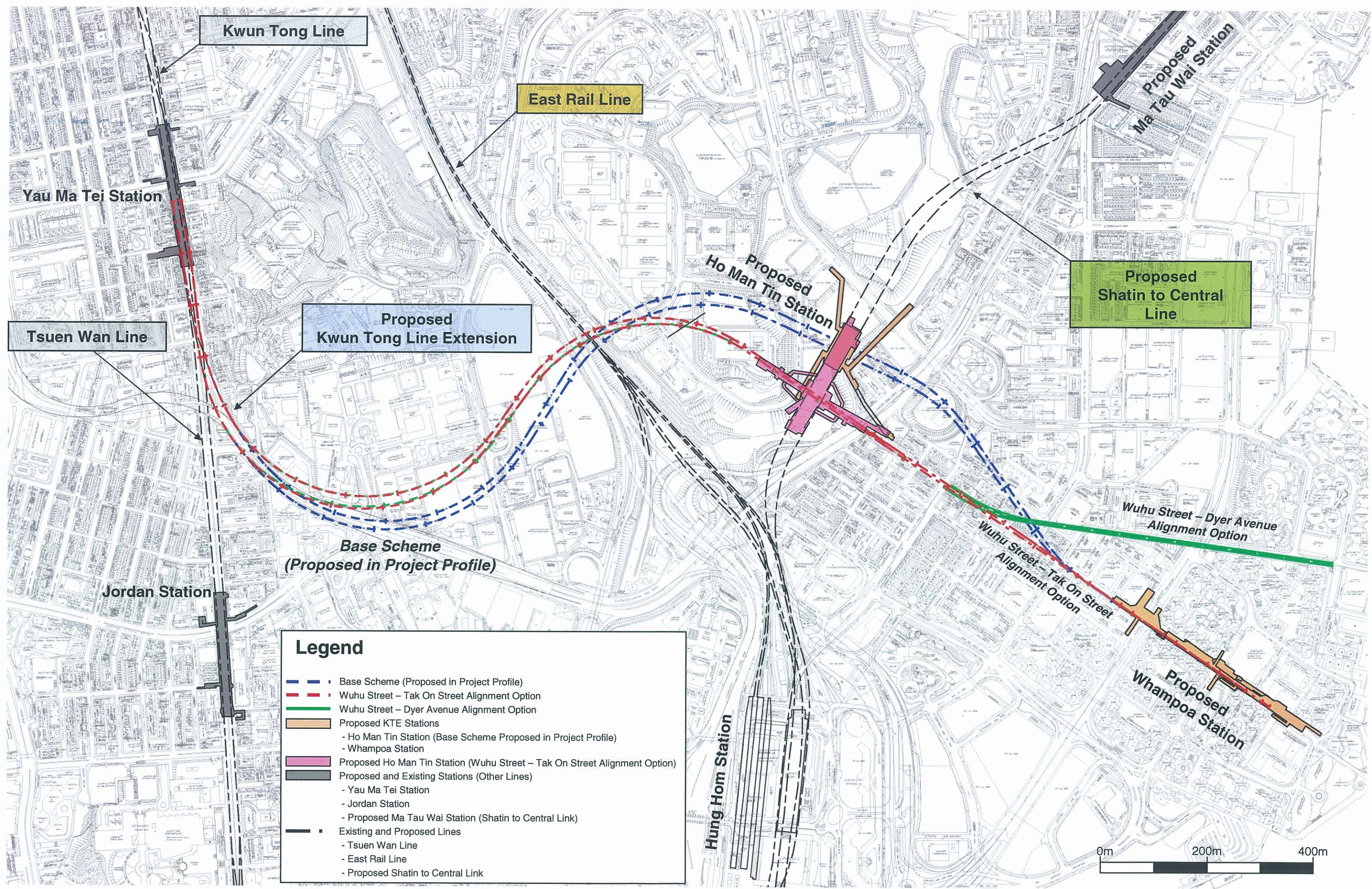
## *Figures*



HRWSL003-SK0067.DGN

/dev/0067/HRWSL003-SK0067.dgn 21-03-2006

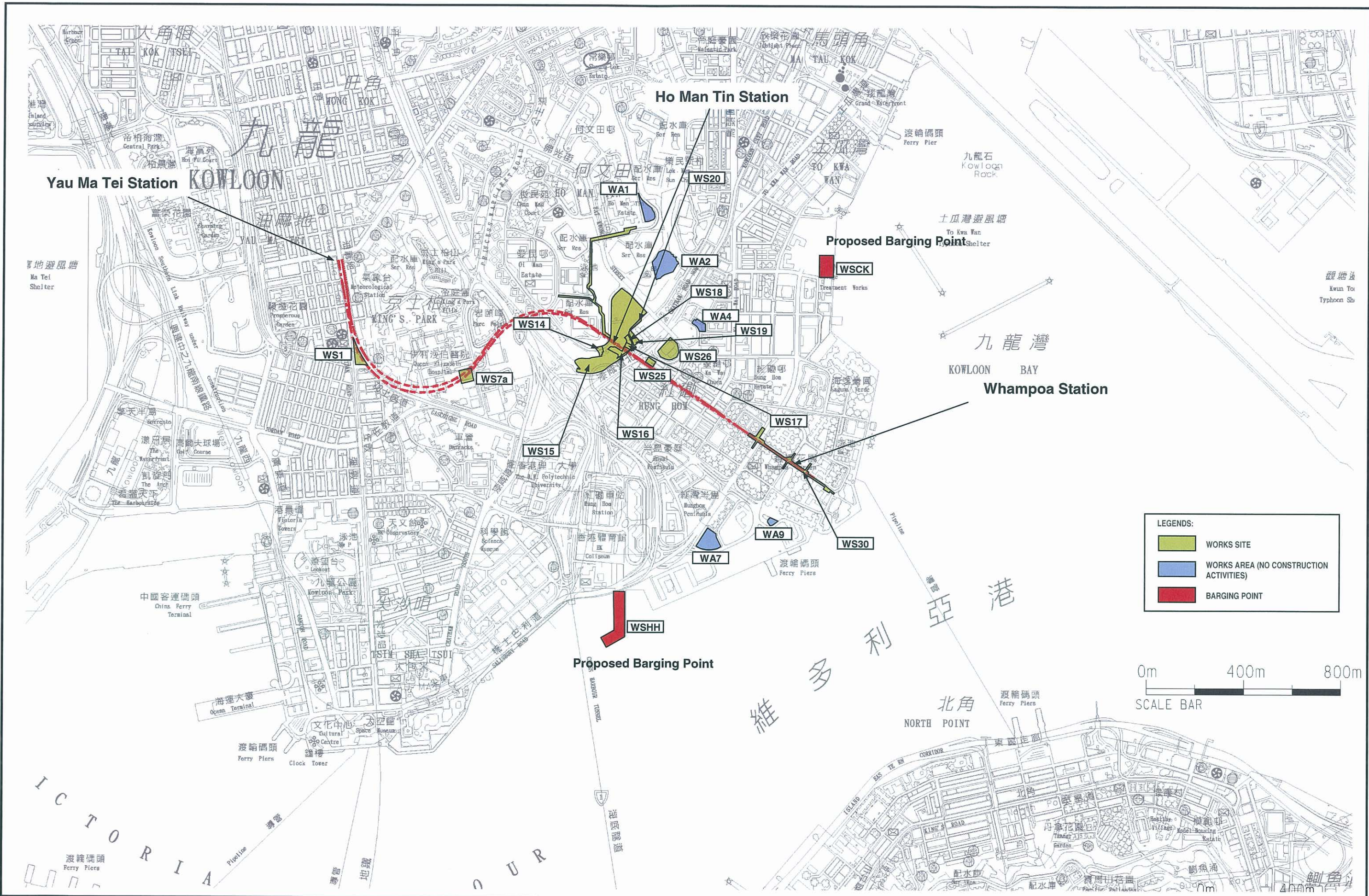
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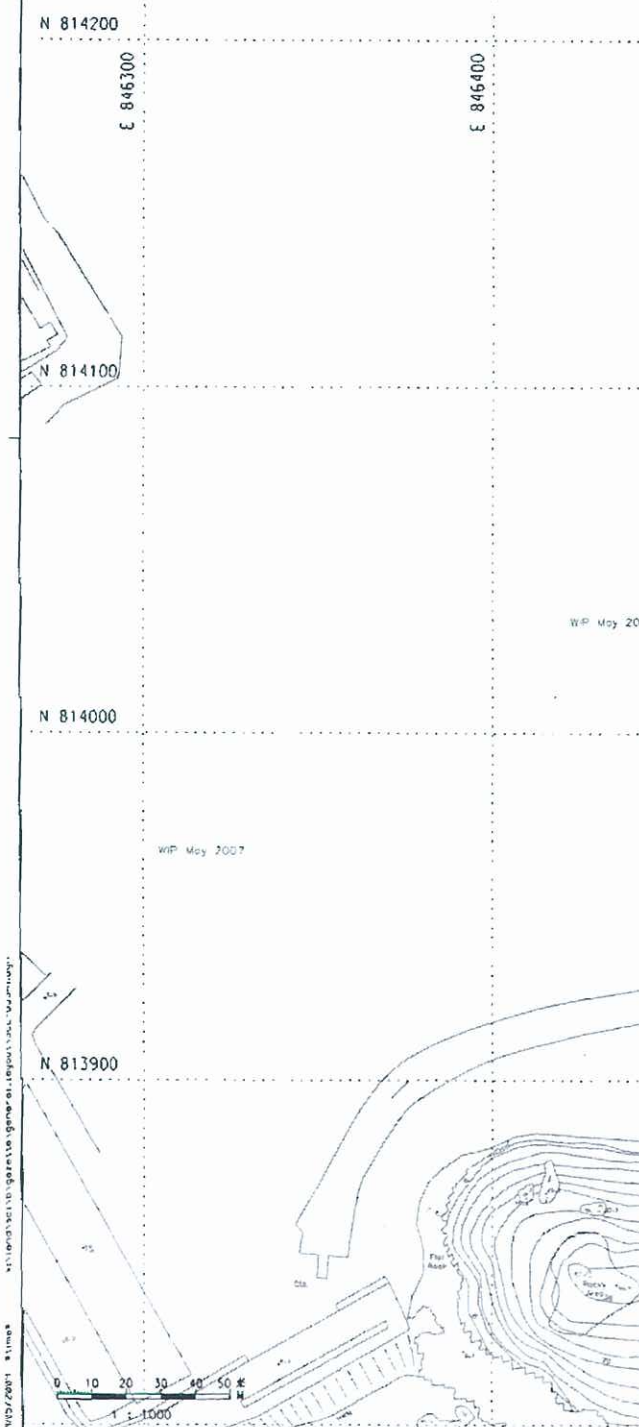
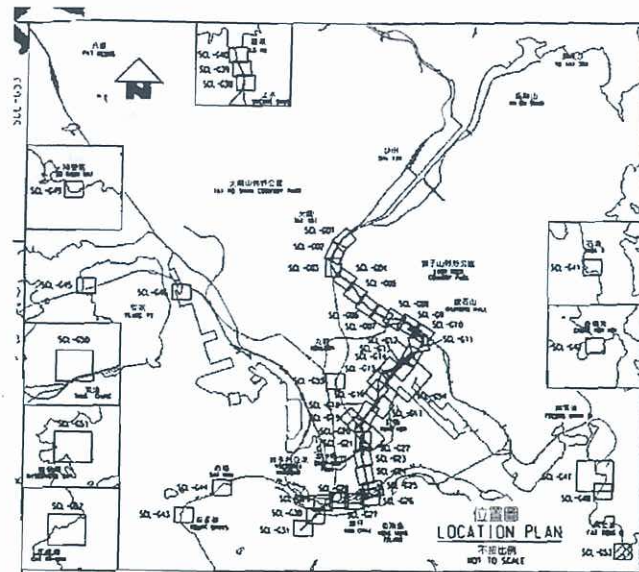


**Legend**

- Base Scheme (Proposed in Project Profile)
- - - Wuhu Street - Tak On Street Alignment Option
- Wuhu Street - Dyer Avenue Alignment Option
- Proposed KTE Stations
  - Ho Man Tin Station (Base Scheme Proposed in Project Profile)
  - Whampoa Station
- Proposed Ho Man Tin Station (Wuhu Street - Tak On Street Alignment Option)
- Proposed and Existing Stations (Other Lines)
  - Yau Ma Tei Station
  - Jordan Station
  - Proposed Ma Tau Wai Station (Shatin to Central Link)
- Existing and Proposed Lines
  - Tsuen Wan Line
  - East Rail Line
  - Proposed Shatin to Central Link

Figure 2.1 Alignment Options





WS43

擬設置的炸藥庫的臨時施工區  
PROPOSED TEMPORARY WORKS AREA FOR MAGAZINE

WA12

Proposed Magazine Site at Tseung Kwan O Area 136

- 圖例 LEGEND**
- 方案界線  
BOUNDARY OF THE SCHEME
  - 擬建的軌道中線  
PROPOSED RAILWAY TRACK CENTRE LINE
  - 現有的軌道中線  
EXISTING RAILWAY TRACK CENTRE LINE
  - 擬建的鐵路車站(地下)  
PROPOSED RAILWAY STATION (UNDERGROUND)
  - 擬建的車站/車站入口/通風大樓/通風井/其他鐵路設施或永久建築物  
PROPOSED STATION / STATION ENTRANCES / VENTILATION BUILDINGS / VENTILATION SHAFTS / OTHER RAILWAY FACILITIES OR PERMANENT STRUCTURES
  - 擬建的鐵路設施(地下)  
PROPOSED RAILWAY FACILITIES (UNDERGROUND)
  - 擬建的臨時設施(地下)  
PROPOSED TEMPORARY FACILITIES (UNDERGROUND)
  - 擬採用鑽挖或鑽掘的鐵路設施或隧道(地下)  
PROPOSED RAILWAY FACILITIES/TUNNEL BY BORED / MINED / DRILL AND BLAST METHOD (UNDERGROUND)
  - 擬採用明挖或填土法興建的鐵路設施或隧道(地下)  
PROPOSED RAILWAY FACILITIES/TUNNEL BY CUT-AND-COVER METHOD (UNDERGROUND)
  - 擬建的地下臨時建築通道  
PROPOSED TEMPORARY UNDERGROUND CONSTRUCTION ACCESS
  - 擬用作方案工程的臨時工地 / 擬設置地盤設施的臨時施工區  
PROPOSED TEMPORARY WORKS SITES FOR CONSTRUCTION OF RAILWAY SCHEME WORKS / PROPOSED TEMPORARY WORKS AREA FOR SITE FACILITIES
  - 可能永久封閉的道路 (包括行車道、行人徑及露天地方)  
ROADS (INCLUDING CARRIAGEWAYS, FOOTPATHS AND OPEN PLACE) WHICH MAY BE CLOSED PERMANENTLY
  - 擬設置地盤設施的臨時施工區  
PROPOSED TEMPORARY WORKS AREA FOR SITE FACILITIES
  - 可能在其上進行填海工程或  
其他工程的政府前濱或海岸  
GOVERNMENT FORESHORE OF SEABED OVER OR UPON WHICH RECLAMATION OR OTHER WORKS MAY BE CARRIED OUT

DATE OF DRAFT: 19/05/2009

一般說明 GENERAL NOTES  
1. 有關一般說明參閱圖號 SCL - G01.  
FOR GENERAL NOTES, REFER TO DRAWING NO. SCL - G01.

修改表  
TABLE OF AMENDMENTS

| NO. | REVISED BY | DATE | DESCRIPTION |
|-----|------------|------|-------------|
| 01  | WIP        | 2007 | PP          |
| 02  | WIP        | 2007 | PP          |
| 03  | WIP        | 2007 | PP          |
| 04  | WIP        | 2007 | PP          |
| 05  | WIP        | 2007 | PP          |
| 06  | WIP        | 2007 | PP          |
| 07  | WIP        | 2007 | PP          |
| 08  | WIP        | 2007 | PP          |
| 09  | WIP        | 2007 | PP          |
| 10  | WIP        | 2007 | PP          |
| 11  | WIP        | 2007 | PP          |
| 12  | WIP        | 2007 | PP          |
| 13  | WIP        | 2007 | PP          |
| 14  | WIP        | 2007 | PP          |
| 15  | WIP        | 2007 | PP          |
| 16  | WIP        | 2007 | PP          |
| 17  | WIP        | 2007 | PP          |
| 18  | WIP        | 2007 | PP          |
| 19  | WIP        | 2007 | PP          |
| 20  | WIP        | 2007 | PP          |
| 21  | WIP        | 2007 | PP          |
| 22  | WIP        | 2007 | PP          |
| 23  | WIP        | 2007 | PP          |
| 24  | WIP        | 2007 | PP          |
| 25  | WIP        | 2007 | PP          |
| 26  | WIP        | 2007 | PP          |
| 27  | WIP        | 2007 | PP          |
| 28  | WIP        | 2007 | PP          |
| 29  | WIP        | 2007 | PP          |
| 30  | WIP        | 2007 | PP          |
| 31  | WIP        | 2007 | PP          |
| 32  | WIP        | 2007 | PP          |
| 33  | WIP        | 2007 | PP          |
| 34  | WIP        | 2007 | PP          |
| 35  | WIP        | 2007 | PP          |
| 36  | WIP        | 2007 | PP          |
| 37  | WIP        | 2007 | PP          |
| 38  | WIP        | 2007 | PP          |
| 39  | WIP        | 2007 | PP          |
| 40  | WIP        | 2007 | PP          |
| 41  | WIP        | 2007 | PP          |
| 42  | WIP        | 2007 | PP          |
| 43  | WIP        | 2007 | PP          |
| 44  | WIP        | 2007 | PP          |
| 45  | WIP        | 2007 | PP          |
| 46  | WIP        | 2007 | PP          |
| 47  | WIP        | 2007 | PP          |
| 48  | WIP        | 2007 | PP          |
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| 50  | WIP        | 2007 | PP          |
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| 52  | WIP        | 2007 | PP          |
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| 54  | WIP        | 2007 | PP          |
| 55  | WIP        | 2007 | PP          |
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| 57  | WIP        | 2007 | PP          |
| 58  | WIP        | 2007 | PP          |
| 59  | WIP        | 2007 | PP          |
| 60  | WIP        | 2007 | PP          |
| 61  | WIP        | 2007 | PP          |
| 62  | WIP        | 2007 | PP          |
| 63  | WIP        | 2007 | PP          |
| 64  | WIP        | 2007 | PP          |
| 65  | WIP        | 2007 | PP          |
| 66  | WIP        | 2007 | PP          |
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| 69  | WIP        | 2007 | PP          |
| 70  | WIP        | 2007 | PP          |
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| 82  | WIP        | 2007 | PP          |
| 83  | WIP        | 2007 | PP          |
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| 86  | WIP        | 2007 | PP          |
| 87  | WIP        | 2007 | PP          |
| 88  | WIP        | 2007 | PP          |
| 89  | WIP        | 2007 | PP          |
| 90  | WIP        | 2007 | PP          |
| 91  | WIP        | 2007 | PP          |
| 92  | WIP        | 2007 | PP          |
| 93  | WIP        | 2007 | PP          |
| 94  | WIP        | 2007 | PP          |
| 95  | WIP        | 2007 | PP          |
| 96  | WIP        | 2007 | PP          |
| 97  | WIP        | 2007 | PP          |
| 98  | WIP        | 2007 | PP          |
| 99  | WIP        | 2007 | PP          |
| 100 | WIP        | 2007 | PP          |

批准發出  
APPROVED FOR ISSUE

林啟華  
LIM CHIU HUNG  
鐵路拓展處處長(1)  
GOVERNMENT ENGINEER/  
RAILWAY DEVELOPMENT 111  
HIGHWAYS DEPARTMENT

發出日期 DATE OF ISSUE

圖號 DRAWING TITLE  
鐵路條例(第519章)  
2 more options

SHATIN TO CENTRAL LINK  
GENERAL LAYOUT PLAN SHEET 47 OF 49

圖號 DRAWING NO. SCL-G53  
比例 SCALE 1:1000 (A1)  
詳細顯示 OR AS SHOWN

香港特別行政區政府  
THE GOVERNMENT OF THE HONG KONG  
SPECIAL ADMINISTRATIVE REGION  
路政署  
HIGHWAYS DEPARTMENT  
鐵路拓展處  
RAILWAY DEVELOPMENT OFFICE



Figure 2.4 Details of Preferred Alignment (3 of 13)



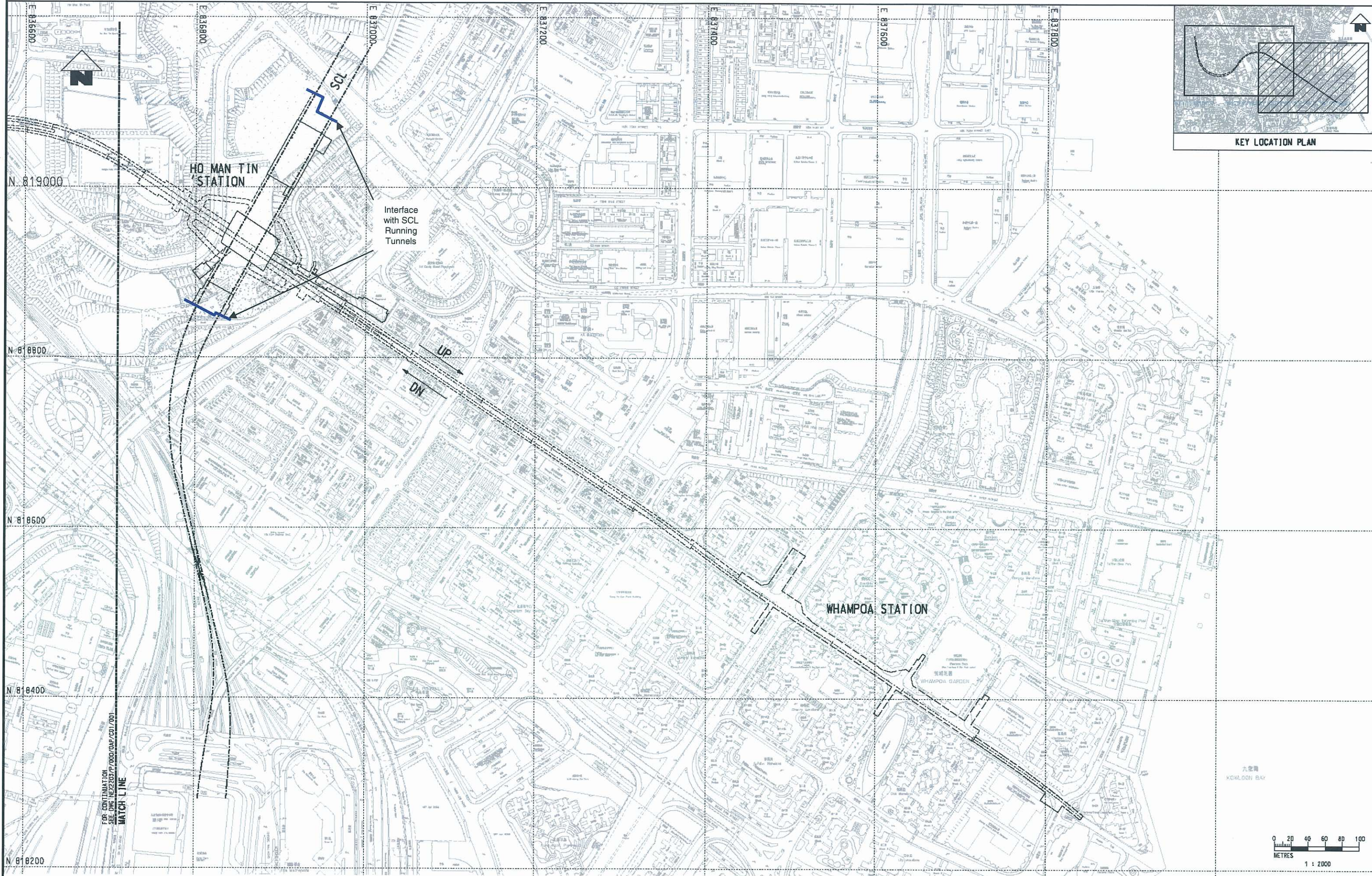
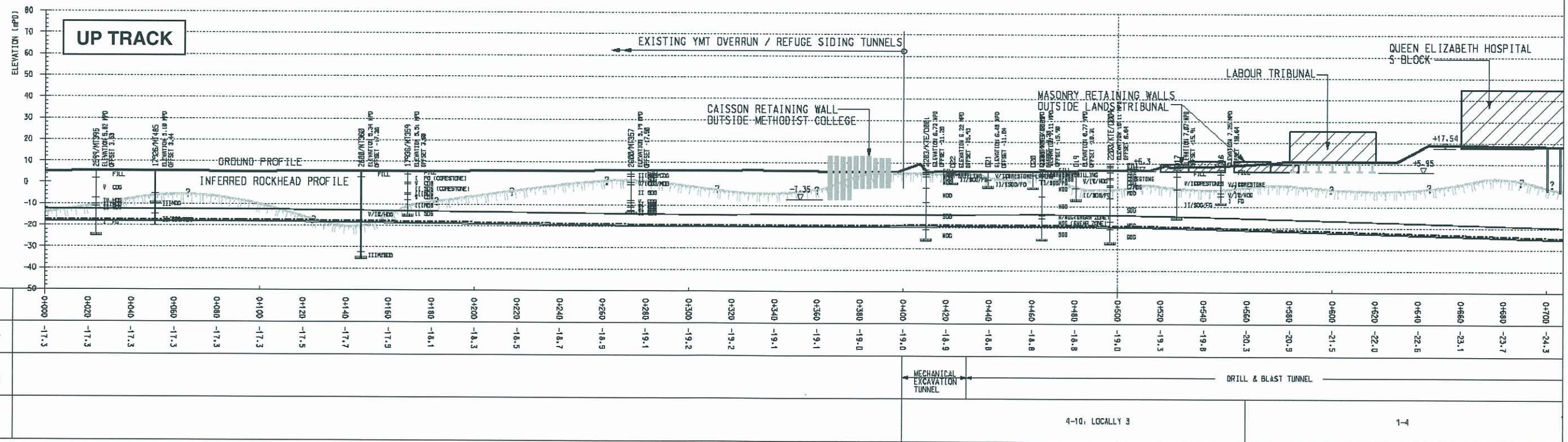
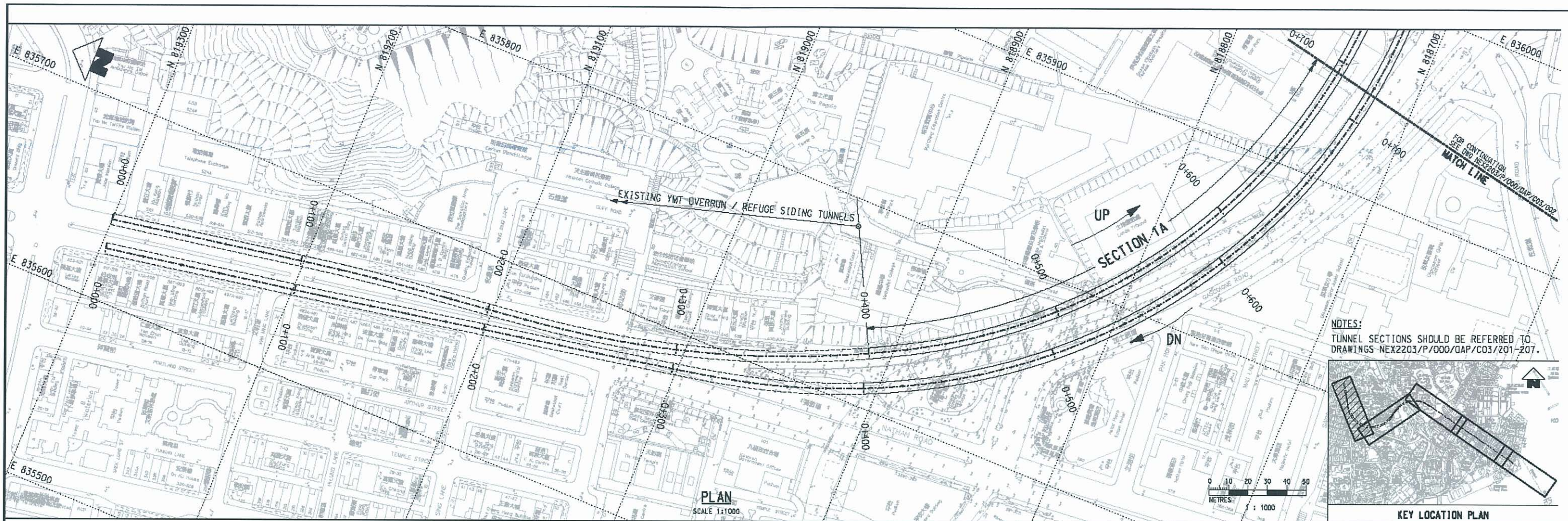
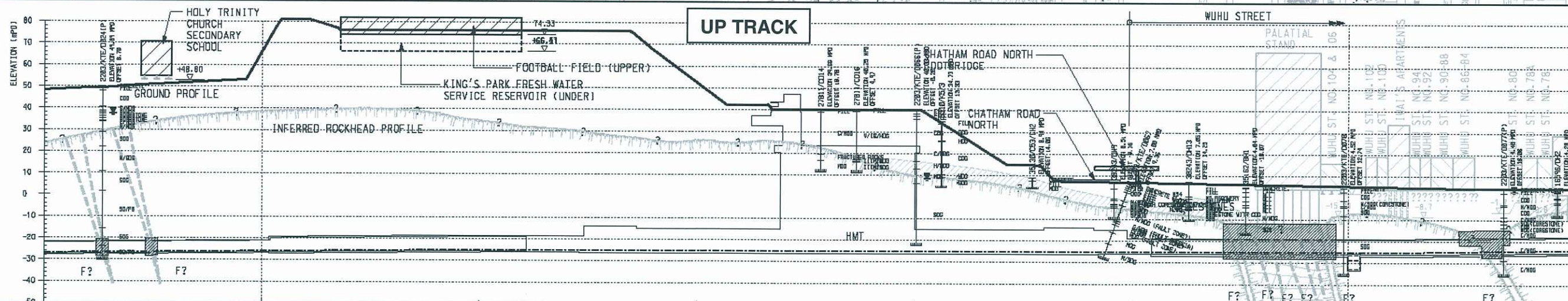
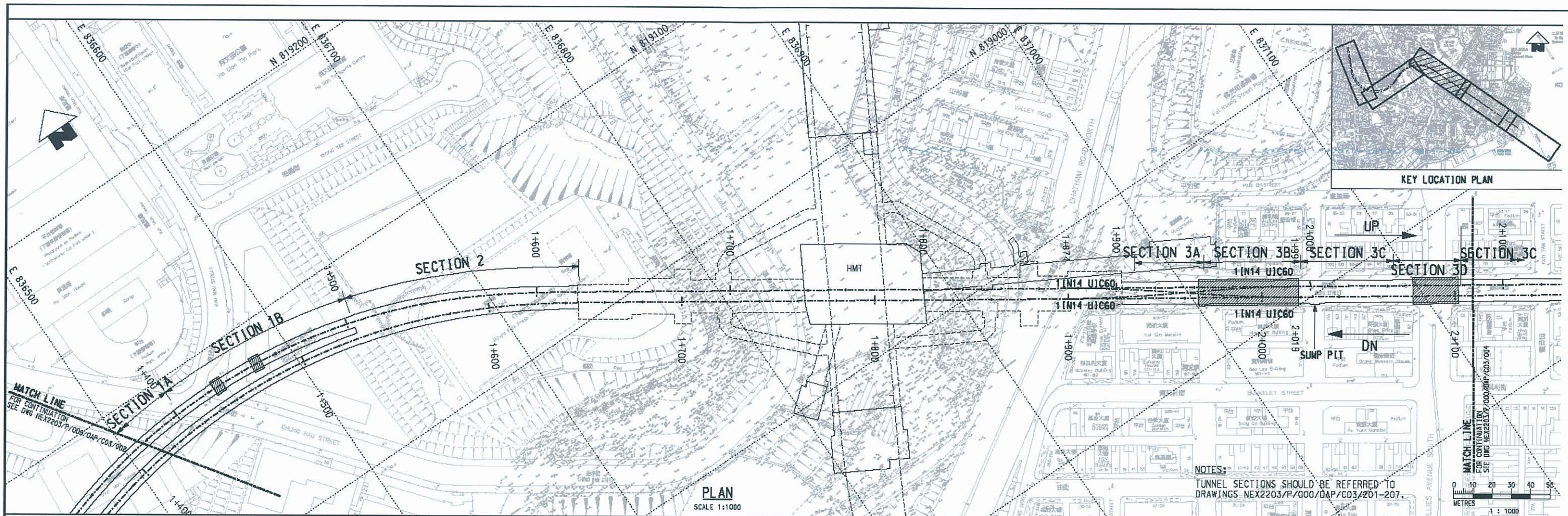


Figure 2.5 Details of Preferred Alignment (4 of 13)



Note: “?” denotes the inferred rockhead profile from surrounding bore log information





| CHAINAGE | PROPOSED RAIL LEVEL (UP TRACK) | ENVISAGED CONSTRUCTION METHOD | ESTIMATED Q ROCK |
|----------|--------------------------------|-------------------------------|------------------|
| 1+100    | -26.8                          | RRC                           | 1-4              |
| 1+420    | -26.6                          | SGT                           | 0.01-2           |
| 1+440    | -26.5                          | RRC                           | 1-4              |
| 1+460    | -26.3                          | RRC                           | 0.01-1           |
| 1+480    | -26.1                          | RRC                           | 1-4              |
| 1+500    | -25.9                          | RRC                           | 1-4              |
| 1+520    | -25.7                          | RRC                           | 1-4              |
| 1+540    | -25.5                          | RRC                           | 1-4              |
| 1+560    | -25.4                          | RRC                           | 1-4              |
| 1+580    | -25.2                          | RRC                           | 1-4              |
| 1+600    | -25.0                          | RRC                           | 1-4              |
| 1+620    | -25.0                          | RRC                           | 1-4              |
| 1+640    | -25.0                          | RRC                           | 1-4              |
| 1+660    | -25.0                          | RRC                           | 1-4              |
| 1+680    | -25.0                          | RRC                           | 1-4              |
| 1+700    | -25.0                          | RRC                           | 1-4              |
| 1+720    | -25.0                          | RRC                           | 1-4              |
| 1+740    | -25.0                          | RRC                           | 1-4              |
| 1+760    | -25.0                          | RRC                           | 1-4              |
| 1+780    | -25.0                          | RRC                           | 1-4              |
| 1+800    | -25.0                          | RRC                           | 1-4              |
| 1+820    | -25.0                          | RRC                           | 1-4              |
| 1+840    | -25.0                          | RRC                           | 1-4              |
| 1+860    | -25.0                          | RRC                           | 1-4              |
| 1+880    | -25.0                          | RRC                           | 1-4              |
| 1+900    | -25.0                          | RRC                           | 1-4              |
| 1+920    | -25.0                          | RRC                           | 1-4              |
| 1+940    | -25.0                          | RRC                           | 1-4              |
| 1+960    | -25.0                          | RRC                           | 1-4              |
| 1+980    | -25.0                          | RRC                           | 1-4              |
| 2+000    | -25.0                          | SGT                           | 0.07-0.4         |
| 2+020    | -25.0                          | DRILL & BLAST TUNNEL          | 0.07-1           |
| 2+040    | -24.9                          | RRC                           | 0.4-1            |
| 2+060    | -24.6                          | SGT                           | 0.4-0.7          |
| 2+080    | -24.3                          | RRC                           | 0.4-0.7          |
| 2+100    | -24.0                          | RRC                           | 0.4-0.7          |

**LEGEND:**

ZONES OF GROUTING TO IMPROVE TUNNEL STABILITY AND REDUCE GROUNDWATER INFLOW

**LONGITUDINAL SECTION**

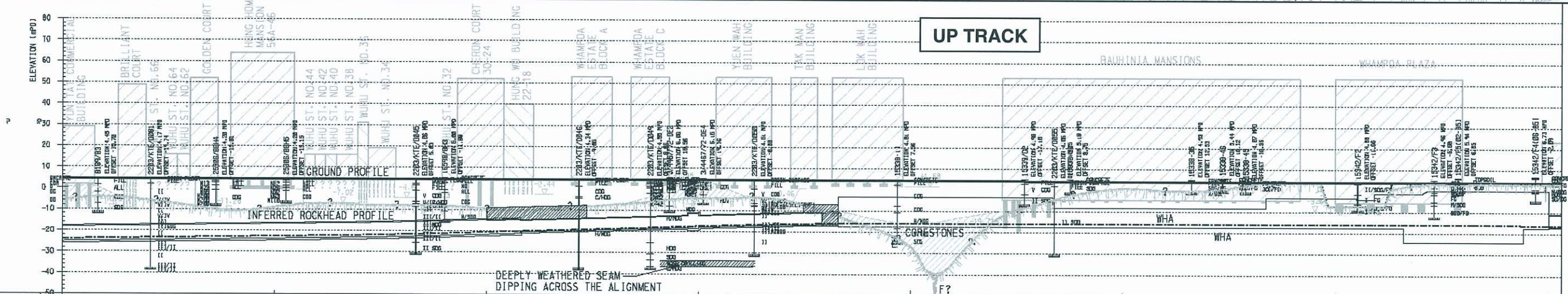
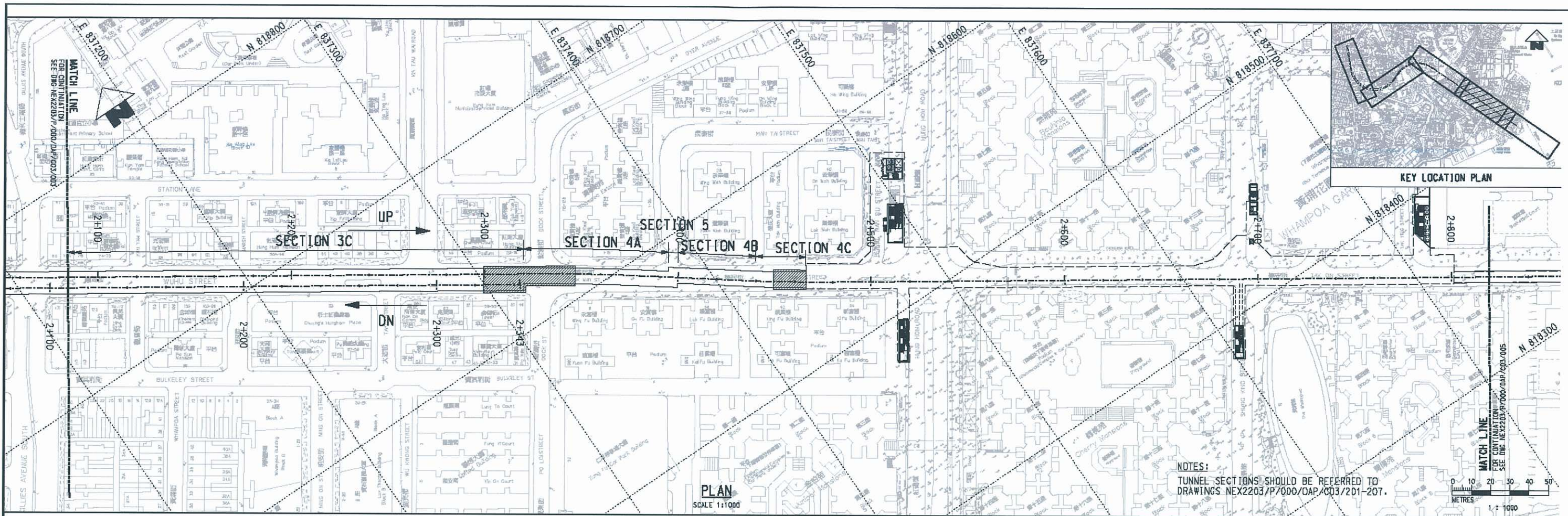
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**NOTES:**

RRC = DRILL & BLAST WITH REDUCED ROCK COVER  
SGT = SOFT GROUND TUNNELLING

Note: "?" denotes the inferred rockhead profile from surrounding bore log information





|                                |                      |       |       |                                       |       |       |                      |       |       |        |                    |       |       |                     |       |       |                    |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |  |  |  |  |
|--------------------------------|----------------------|-------|-------|---------------------------------------|-------|-------|----------------------|-------|-------|--------|--------------------|-------|-------|---------------------|-------|-------|--------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--|--|--|--|
| CHAINAGE                       | 2+100                | 2+120 | 2+140 | 2+160                                 | 2+180 | 2+200 | 2+220                | 2+240 | 2+260 | 2+280  | 2+300              | 2+320 | 2+340 | 2+360               | 2+380 | 2+400 | 2+420              | 2+440 | 2+460 | 2+480 | 2+500 | 2+520 | 2+540 | 2+560 | 2+580 | 2+600 | 2+620 | 2+640 | 2+660 | 2+680 | 2+700 | 2+720 | 2+740 | 2+760 | 2+780 | 2+800 |       |       |       |  |  |  |  |
| PROPOSED RAIL LEVEL (UP TRACK) | -24.0                | -23.8 | -23.5 | -23.2                                 | -23.0 | -22.7 | -22.4                | -22.1 | -21.7 | -21.1  | -20.5              | -19.9 | -19.3 | -18.7               | -18.1 | -17.5 | -16.9              | -16.4 | -16.1 | -16.0 | -16.0 | -16.0 | -16.0 | -16.0 | -16.0 | -16.0 | -16.0 | -16.0 | -16.0 | -16.0 | -16.0 | -16.0 | -16.0 | -16.0 | -16.0 | -16.0 | -16.0 | -16.1 | -16.1 |  |  |  |  |
| ENVISAGED CONSTRUCTION METHOD  | DRILL & BLAST TUNNEL |       |       | DRILL & BLAST WITH REDUCED ROCK COVER |       |       | DRILL & BLAST TUNNEL |       |       | SGT    | CUT & COVER TUNNEL |       |       | MECHANICAL BREAKING |       |       | CUT & COVER TUNNEL |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |  |  |  |  |
| ESTIMATED Q ROCK               |                      |       |       | T                                     |       |       |                      |       |       | 0.07-1 | <0.03              |       |       | 0.07-1              |       |       |                    |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |  |  |  |  |

**LEGEND:**

ZONES OF GROUTING TO IMPROVE TUNNEL STABILITY AND REDUCE GROUNDWATER INFLOW

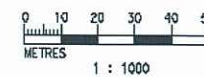
**LONGITUDINAL SECTION**

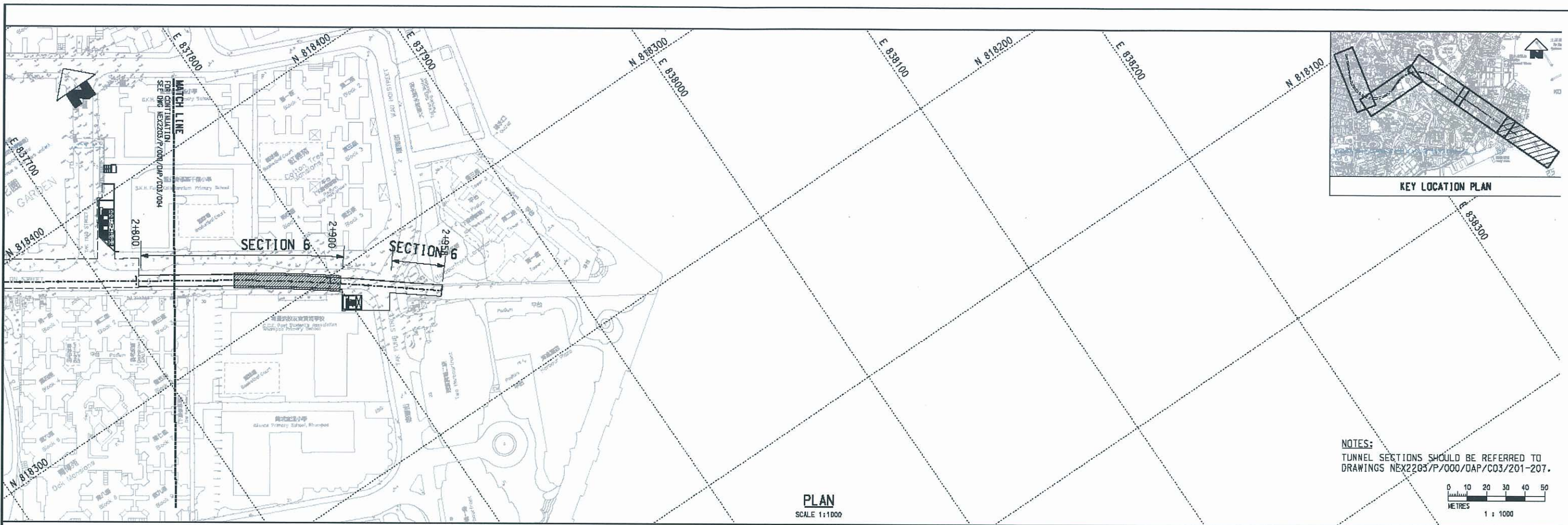
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**NOTES:**

RRC = DRILL & BLAST WITH REDUCED ROCK COVER  
SGT = SOFT GROUND TUNNELLING

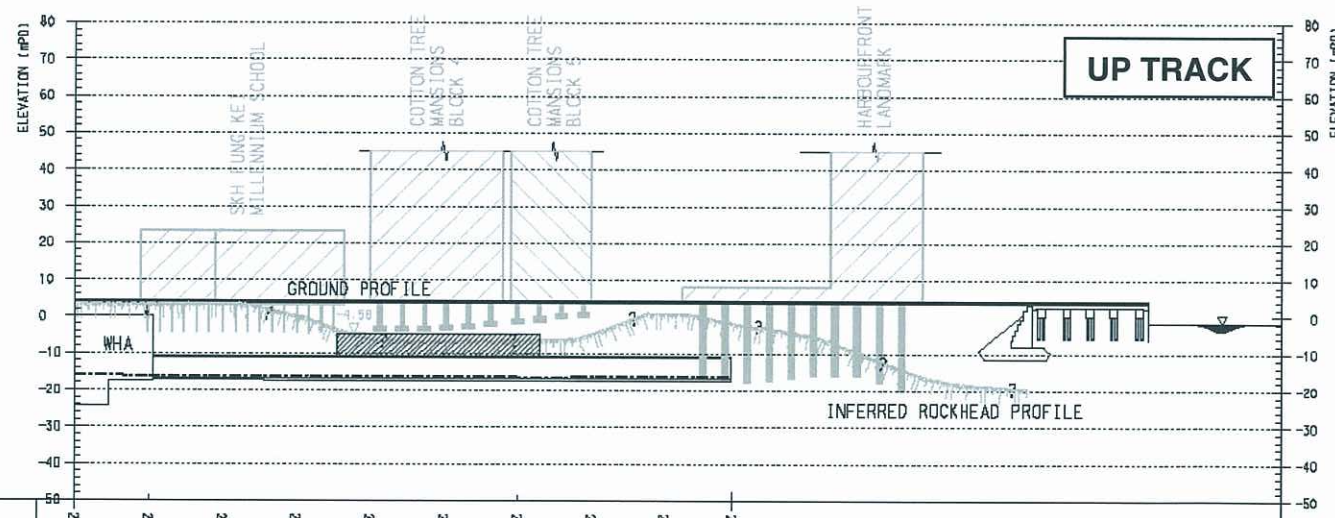
Note: “?” denotes the inferred rockhead profile from surrounding bore log information





NOTES:  
TUNNEL SECTIONS SHOULD BE REFERRED TO DRAWINGS NEX2203/P/000/DAP/CO3/201-207.

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METRES  
1 : 1000



NOTES:  
RRC = DRILL & BLAST WITH REDUCED ROCK COVER  
SGT = SOFT GROUND TUNNELLING

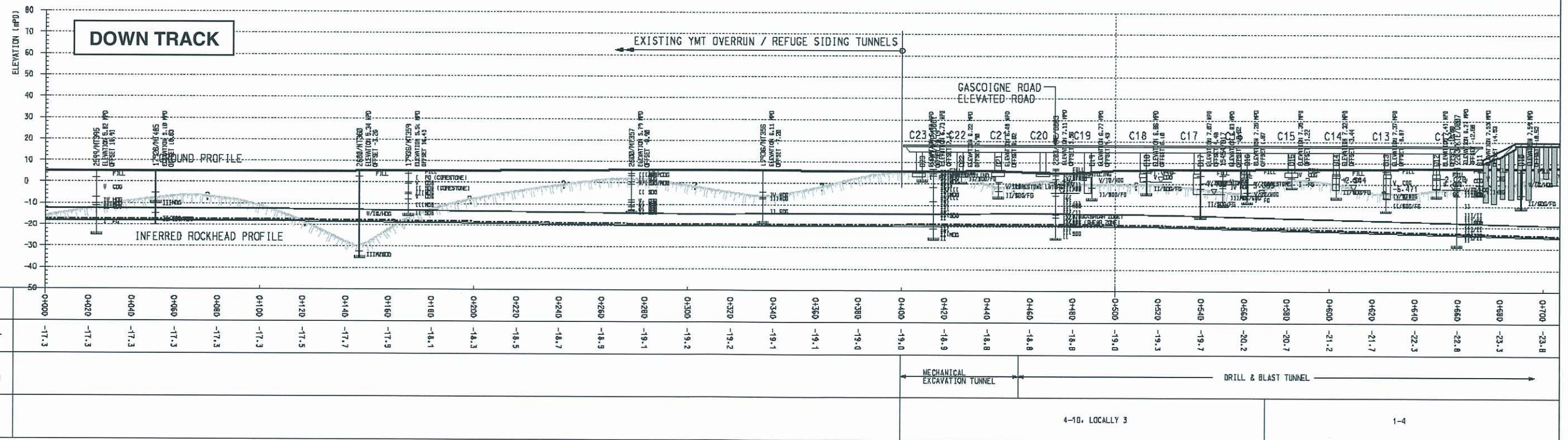
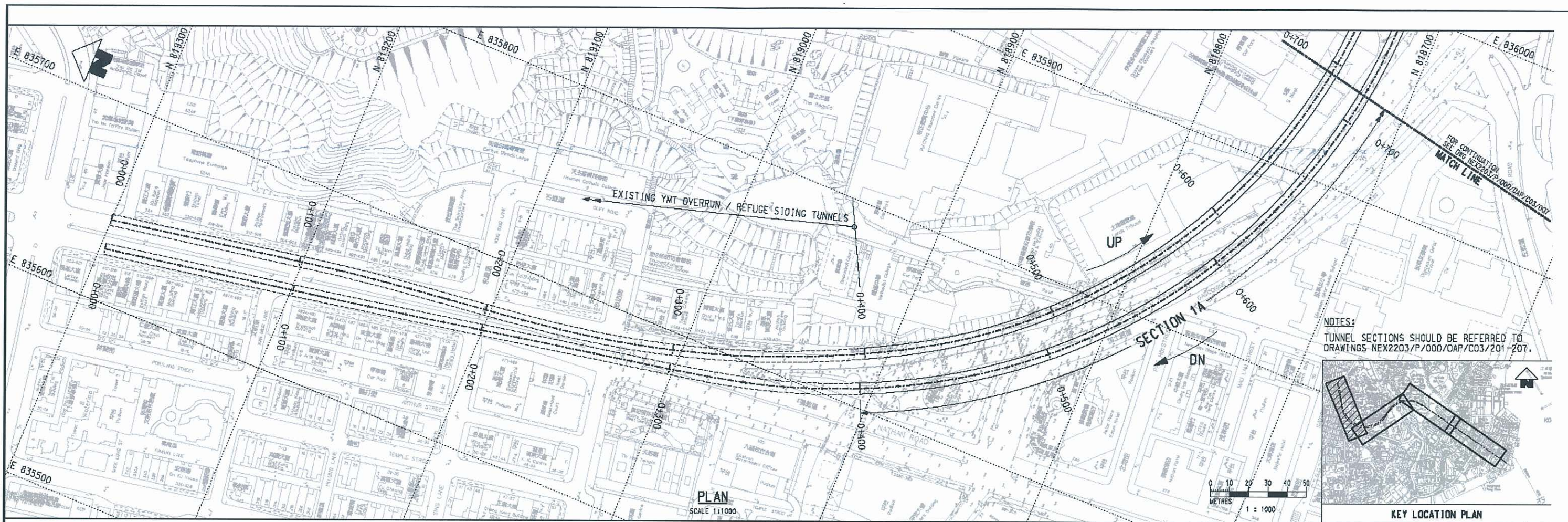
LEGEND:  
[Hatched Box] ZONES OF GROUTING TO IMPROVE TUNNEL STABILITY AND REDUCE GROUNDWATER INFLOW

|                                |       |                     |       |       |       |       |                    |       |                     |       |
|--------------------------------|-------|---------------------|-------|-------|-------|-------|--------------------|-------|---------------------|-------|
| CHAINAGE                       | 2+780 | 2+800               | 2+820 | 2+840 | 2+860 | 2+880 | 2+900              | 2+920 | 2+940               | 2+950 |
| PROPOSED RAIL LEVEL (UP TRACK) | -16.1 | -16.1               | -16.2 | -16.3 | -16.3 | -16.4 | -16.4              | -16.4 | -16.2               |       |
| ENVISAGED CONSTRUCTION METHOD  |       | MECHANICAL BREAKING |       |       | RRC   |       | CUT & COVER TUNNEL |       | MECHANICAL BREAKING |       |
| ESTIMATED Q ROCK               |       | 1                   |       |       |       |       |                    |       |                     |       |

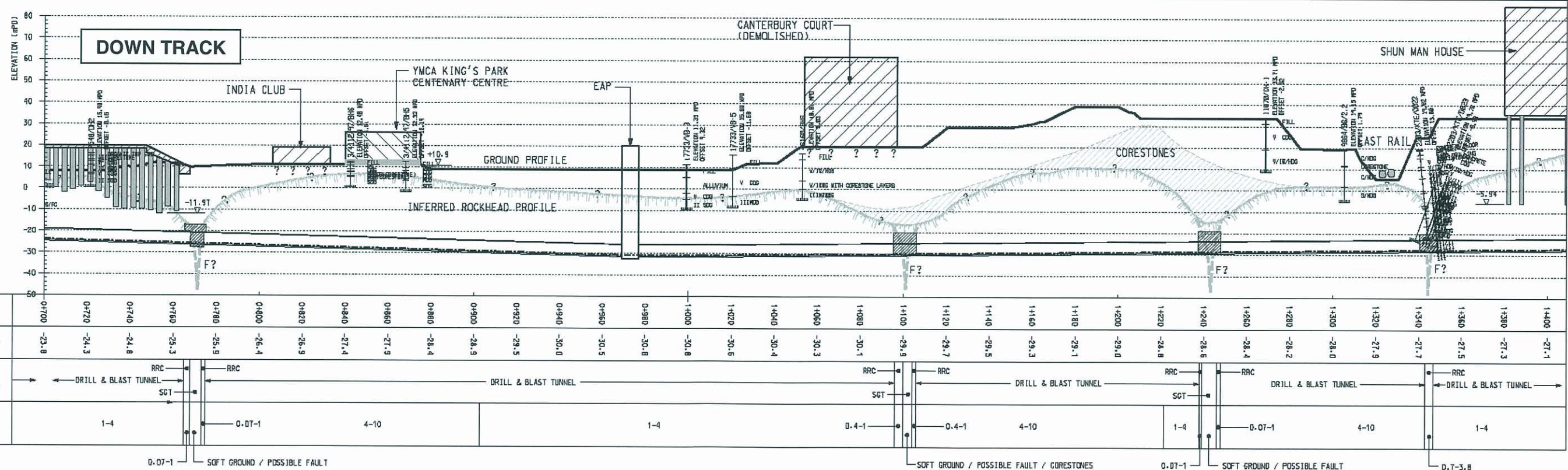
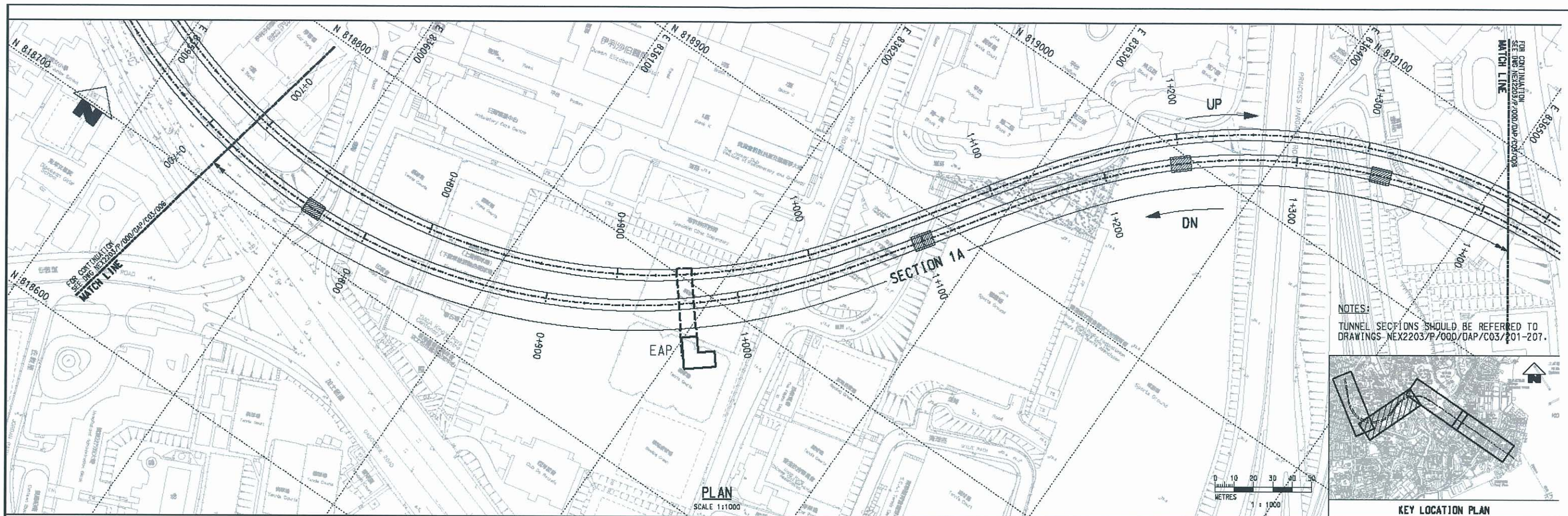
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SCALE VER 1:1000  
HOR 1:1000

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METRES  
1 : 1000

Note: "?" denotes the inferred rockhead profile from surrounding bore log information

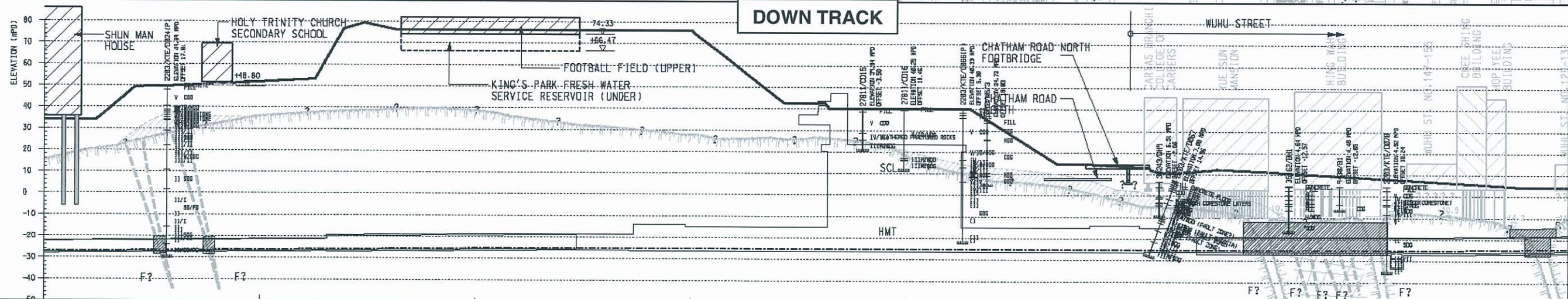
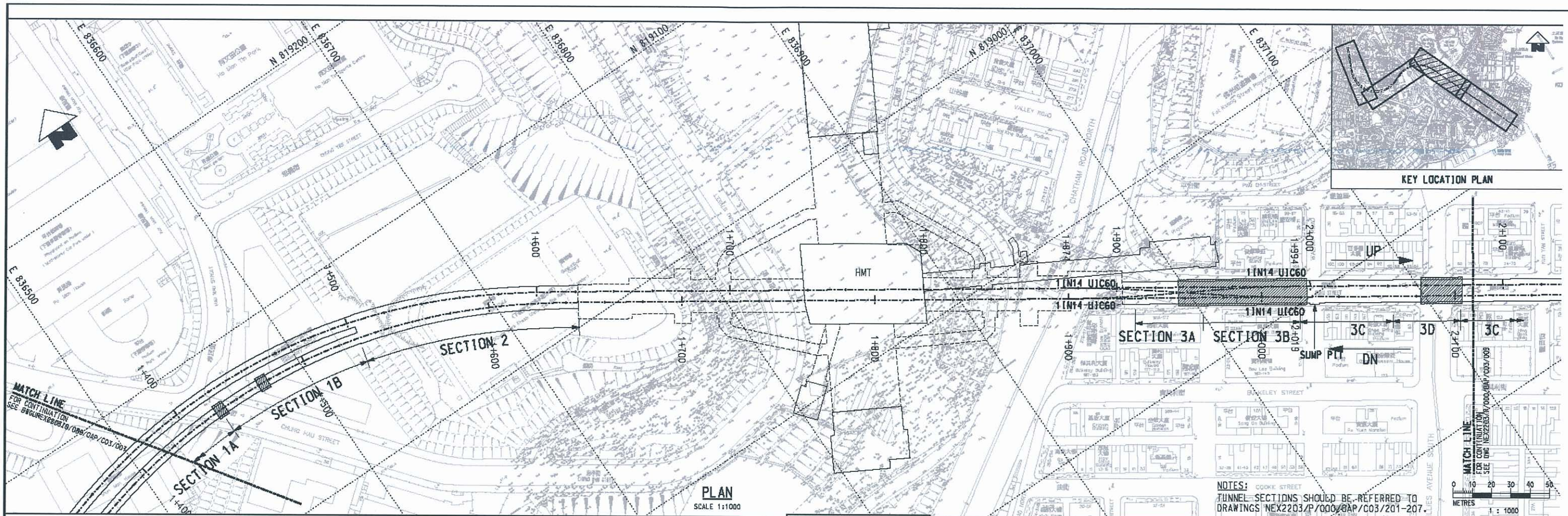


Note: "?" denotes the inferred rockhead profile from surrounding bore log information



Note: "?" denotes the inferred rockhead profile from surrounding bore log information





| CHAINAGE                         | 1+400                | 1+420  | 1+440 | 1+460  | 1+480                | 1+500 | 1+520 | 1+540    | 1+560 | 1+580  | 1+600  | 1+620  | 1+640  | 1+660  | 1+680  | 1+700  | 1+720  | 1+740                | 1+760  | 1+780  | 1+800  | 1+820  | 1+840  | 1+860  | 1+880  | 1+900  | 1+920  | 1+940  | 1+960  | 1+980  | 2+000  | 2+020  | 2+040  | 2+060  | 2+080  | 2+100 |
|----------------------------------|----------------------|--------|-------|--------|----------------------|-------|-------|----------|-------|--------|--------|--------|--------|--------|--------|--------|--------|----------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| PROPOSED RAIL LEVEL (DOWN TRACK) | -27.1                | -26.9  | -26.7 | -26.6  | -26.4                | -26.2 | -26.0 | -25.8    | -25.6 | -25.4  | -25.3  | -25.1  | -25.0  | -25.0  | -25.0  | -25.0  | -25.0  | -25.0                | -25.0  | -25.0  | -25.0  | -25.0  | -25.0  | -25.0  | -25.0  | -25.0  | -25.0  | -25.0  | -25.0  | -25.0  | -25.0  | -25.0  | -24.9  | -24.7  | -24.4  |       |
| ENVISAGED CONSTRUCTION METHOD    | DRILL & BLAST TUNNEL |        |       | SGT    | DRILL & BLAST TUNNEL |       |       |          |       |        |        |        |        |        |        |        | SGT    | DRILL & BLAST TUNNEL |        | SGT    |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |
| ESTIMATED Q ROCK                 | 1-4                  | 0.01-1 | 1-4   | 0.01-1 | 1-4                  | 4-10  | 1-4   | 0.07-0.4 | 0.4-1 | 0.07-1 | 0.07-1 | 0.07-1 | 0.07-1 | 0.07-1 | 0.07-1 | 0.07-1 | 0.07-1 | 0.07-1               | 0.07-1 | 0.07-1 | 0.07-1 | 0.07-1 | 0.07-1 | 0.07-1 | 0.07-1 | 0.07-1 | 0.07-1 | 0.07-1 | 0.07-1 | 0.07-1 | 0.07-1 | 0.07-1 | 0.07-1 | 0.07-1 | 0.07-1 |       |

LEGEND:

ZONES OF GROUTING TO IMPROVE TUNNEL STABILITY AND REDUCE GROUNDWATER INFLOW

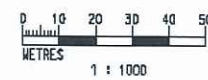
LONGITUDINAL SECTION

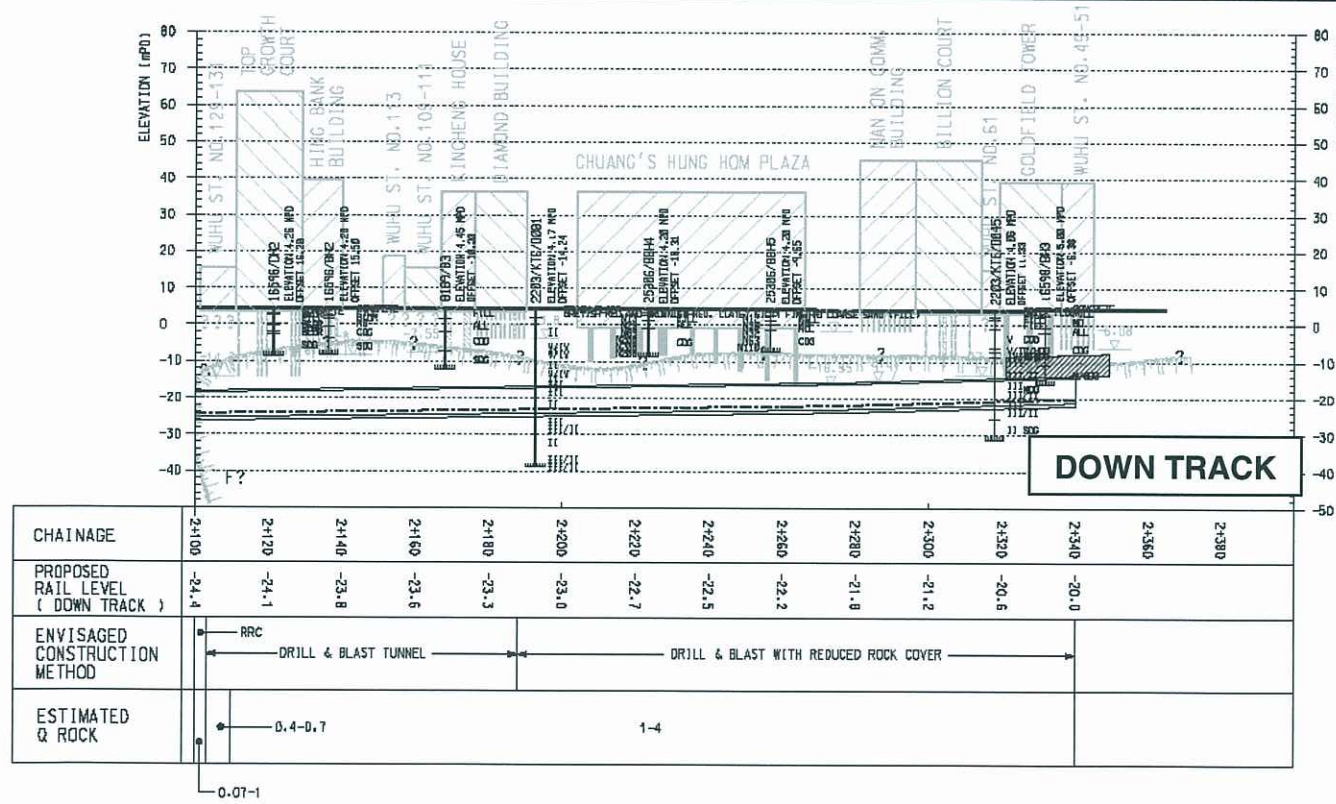
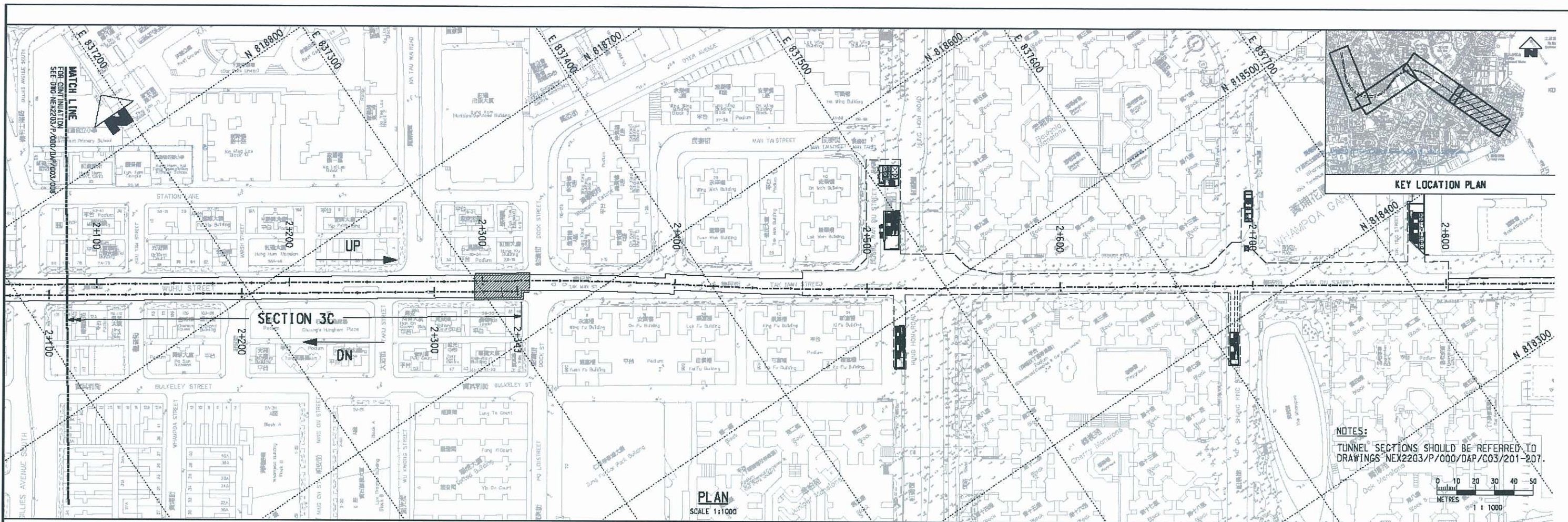
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NOTES:

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SGT = SOFT GROUND TUNNELLING

Note: "?" denotes the inferred rockhead profile from surrounding bore log information



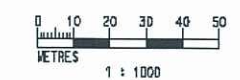


**LONGITUDINAL SECTION**

SCALE VER 1:1000  
HOR 1:1000

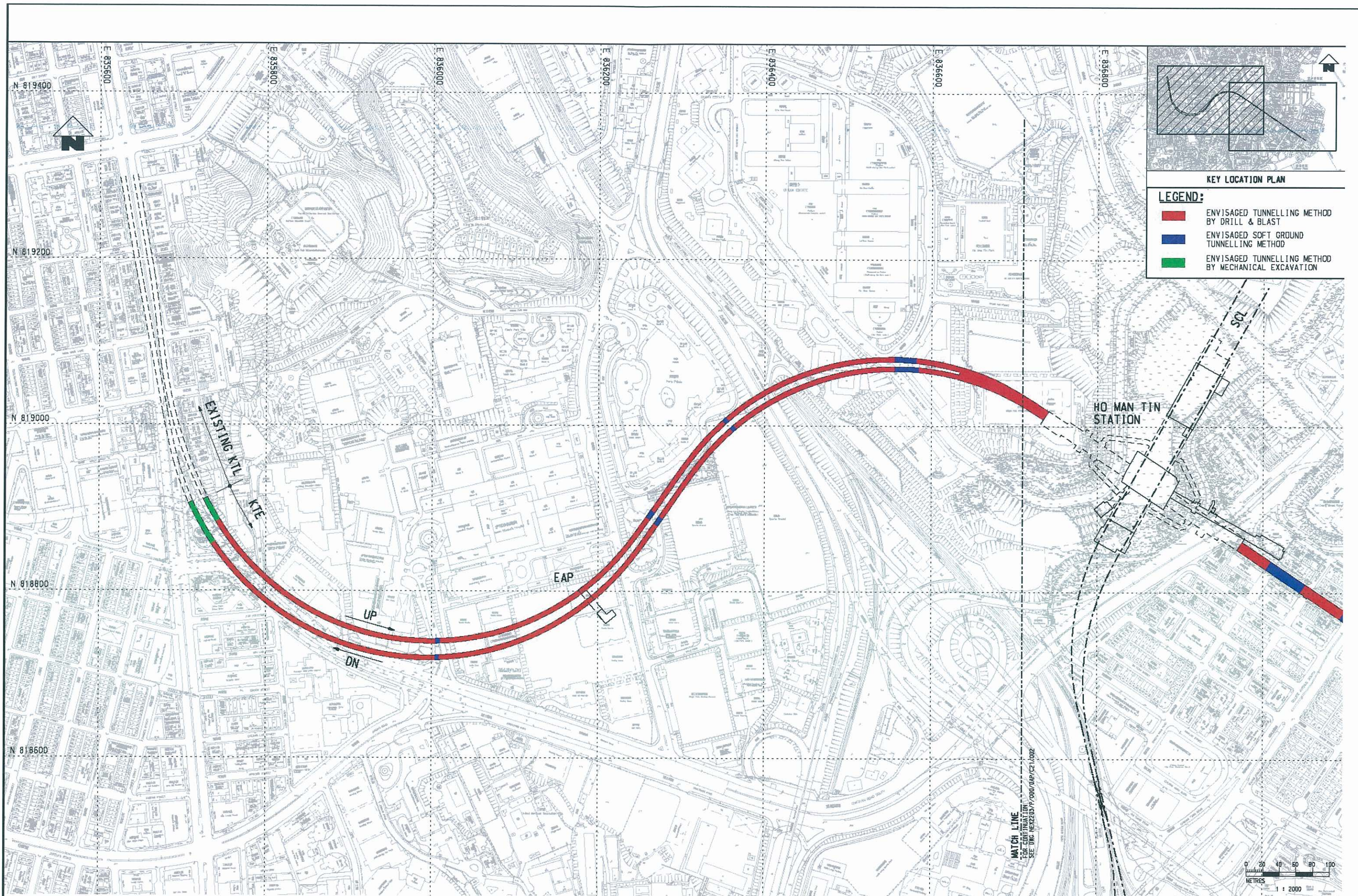
**NOTES:**  
RRC = DRILL & BLAST WITH REDUCED ROCK COVER  
SGT = SOFT GROUND TUNNELLING

**LEGEND:**  
ZONES OF GROUTING TO IMPROVE TUNNEL STABILITY AND REDUCE GROUNDWATER INFLOW



Note: "?" denotes the inferred rockhead profile from surrounding bore log information

Figure 2.14 Details of Preferred Alignment (13 of 13)





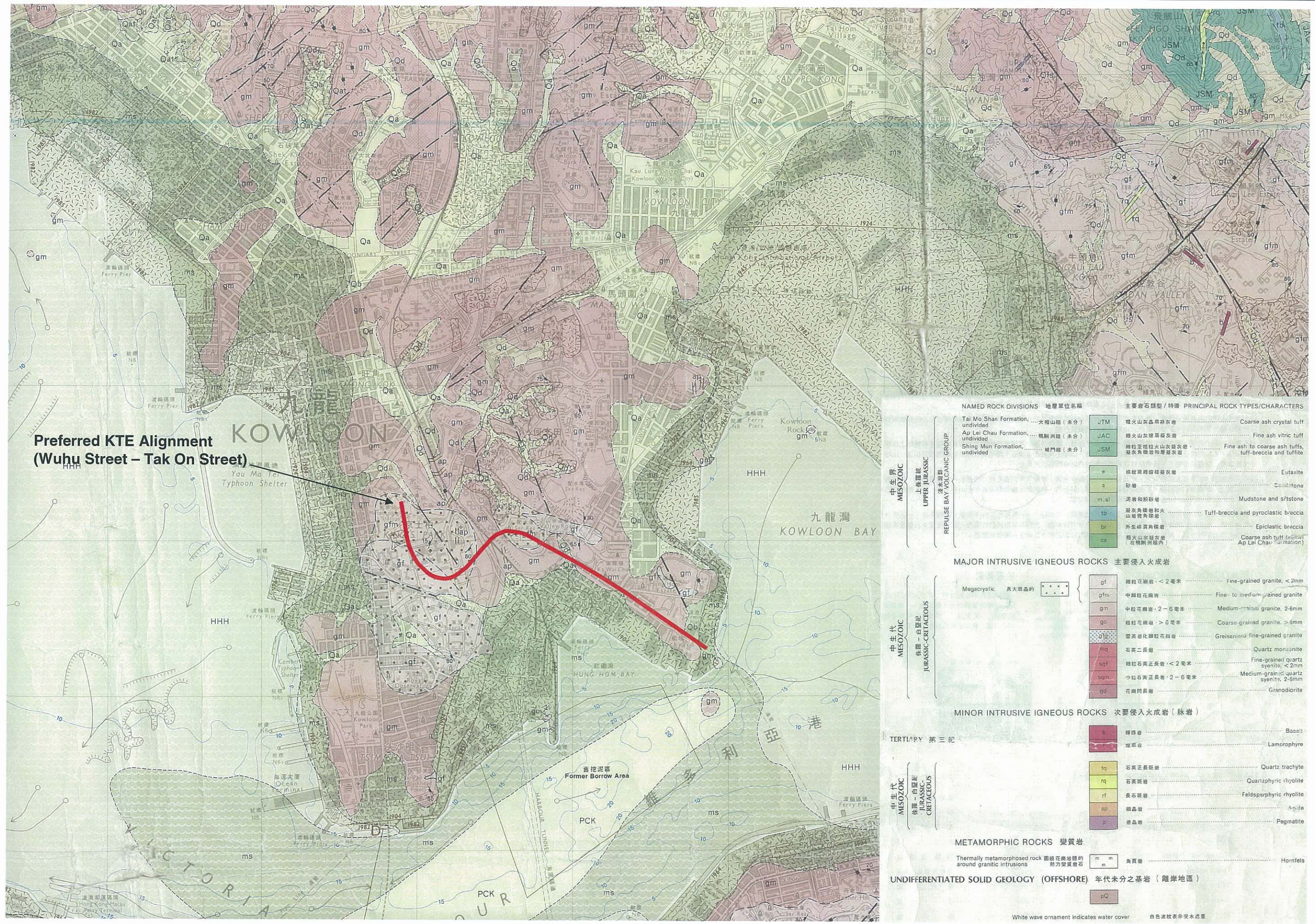


Figure 5.1 Geological Map



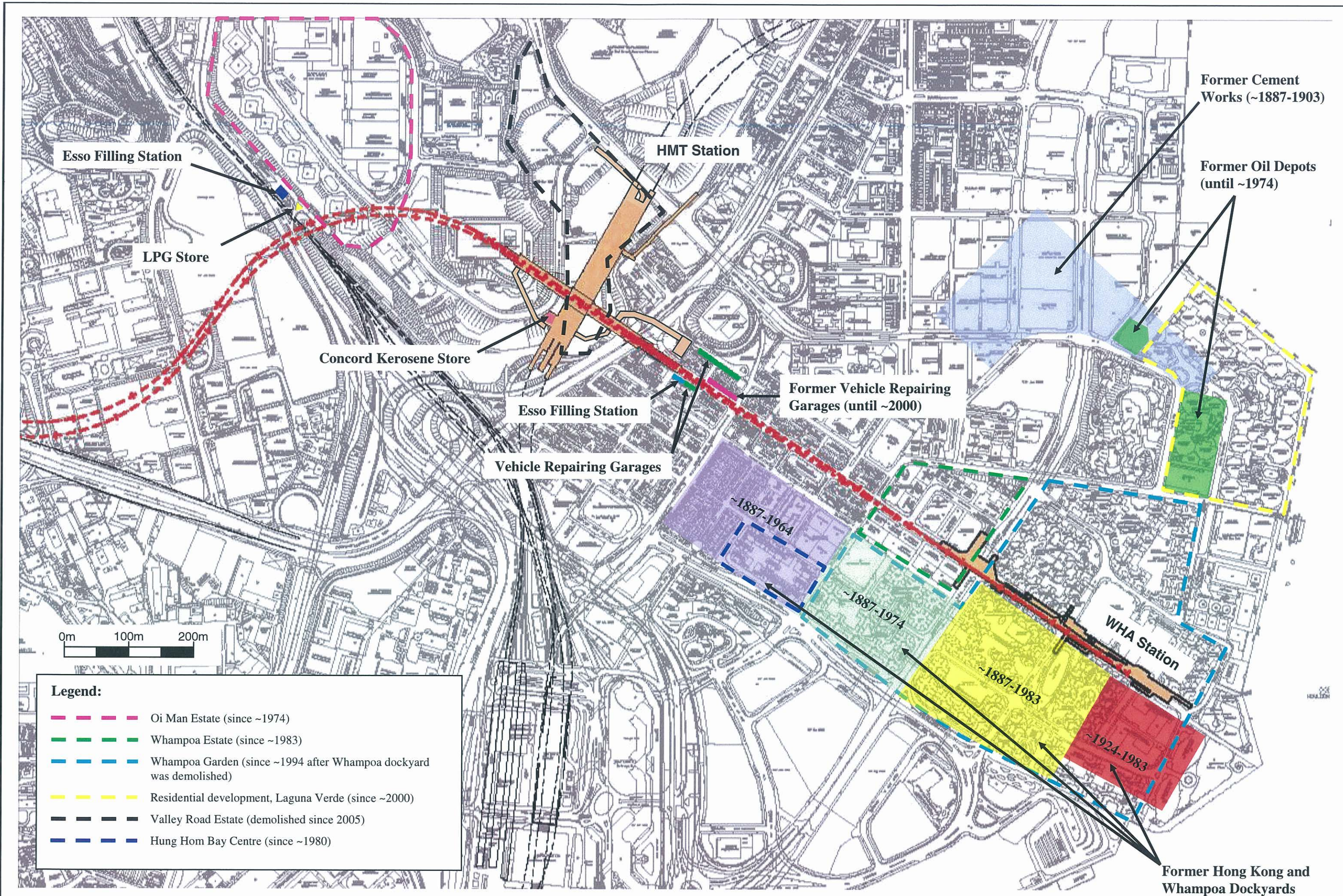
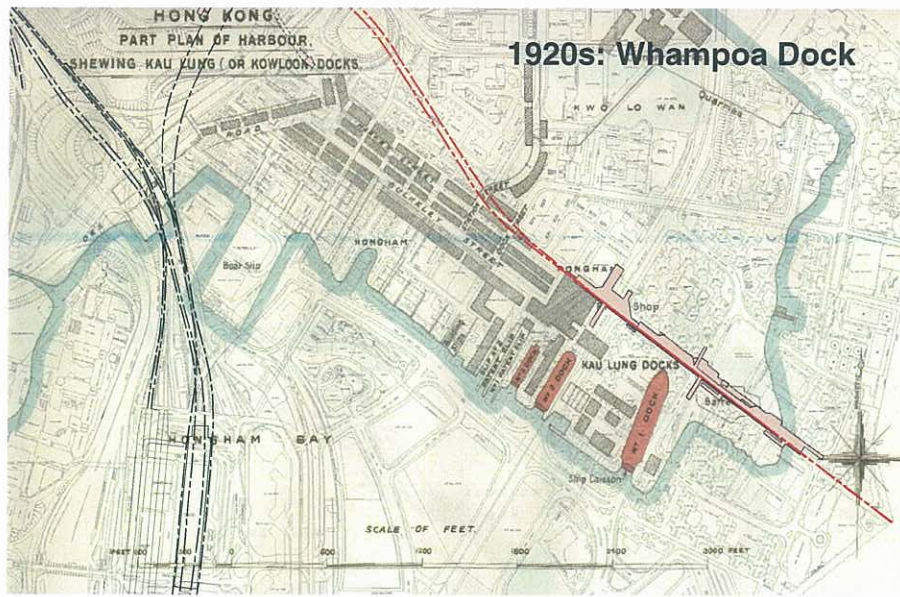
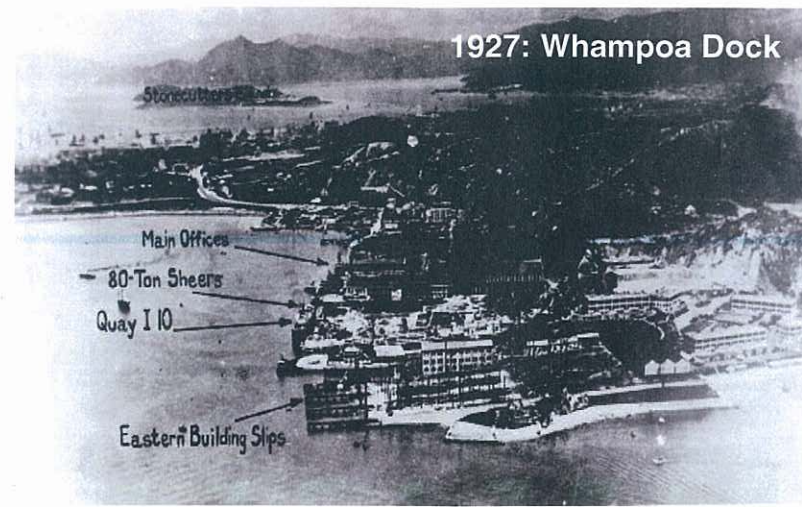


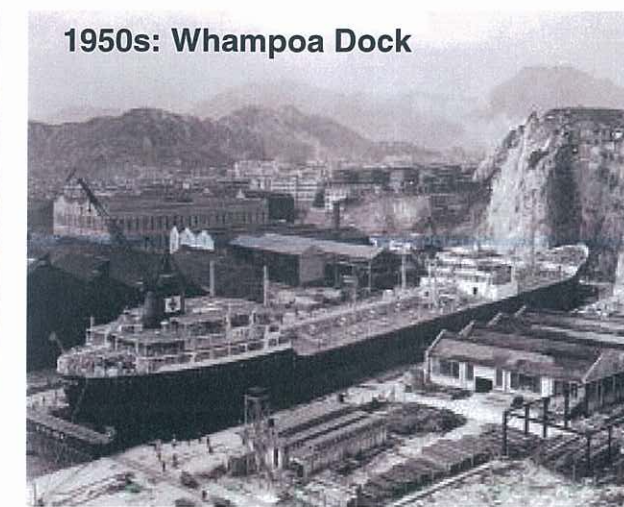
Figure 5.3 Development History of Study Area



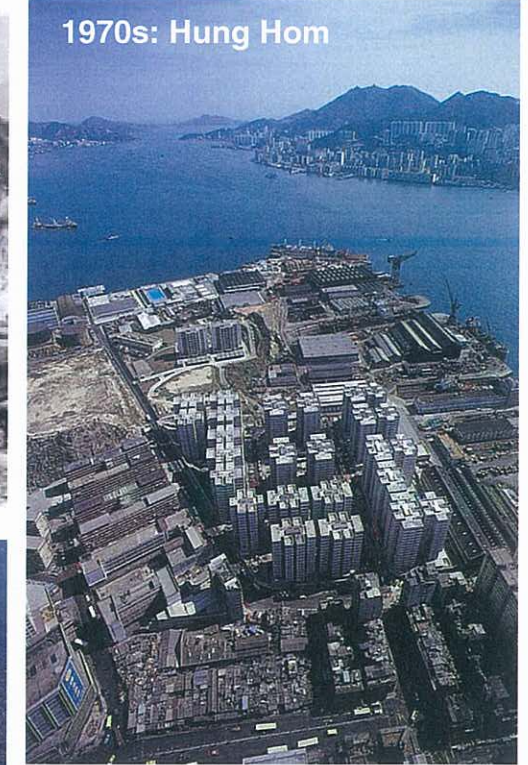
1920s: Whampoa Dock



1927: Whampoa Dock



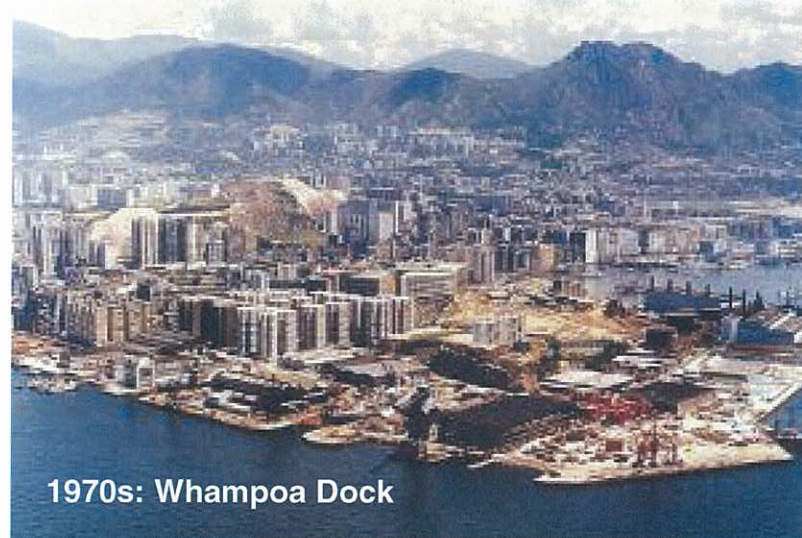
1950s: Whampoa Dock



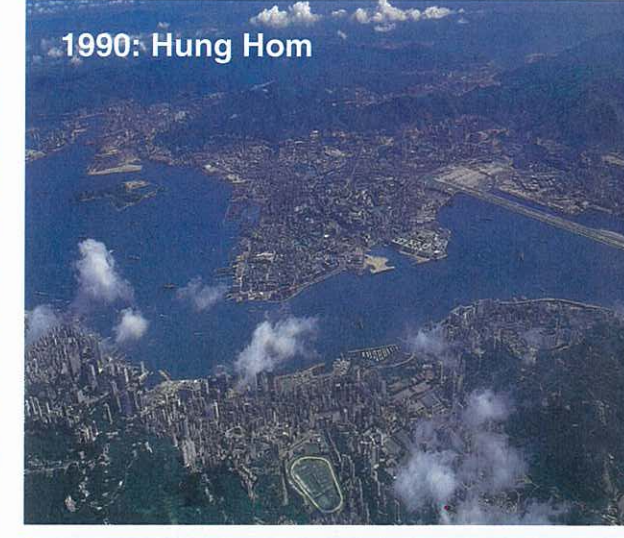
1970s: Hung Hom



Kowloon Docks in the 50s



1970s: Whampoa Dock



1990: Hung Hom



2002: Hung Hom



1972: Whampoa Dock

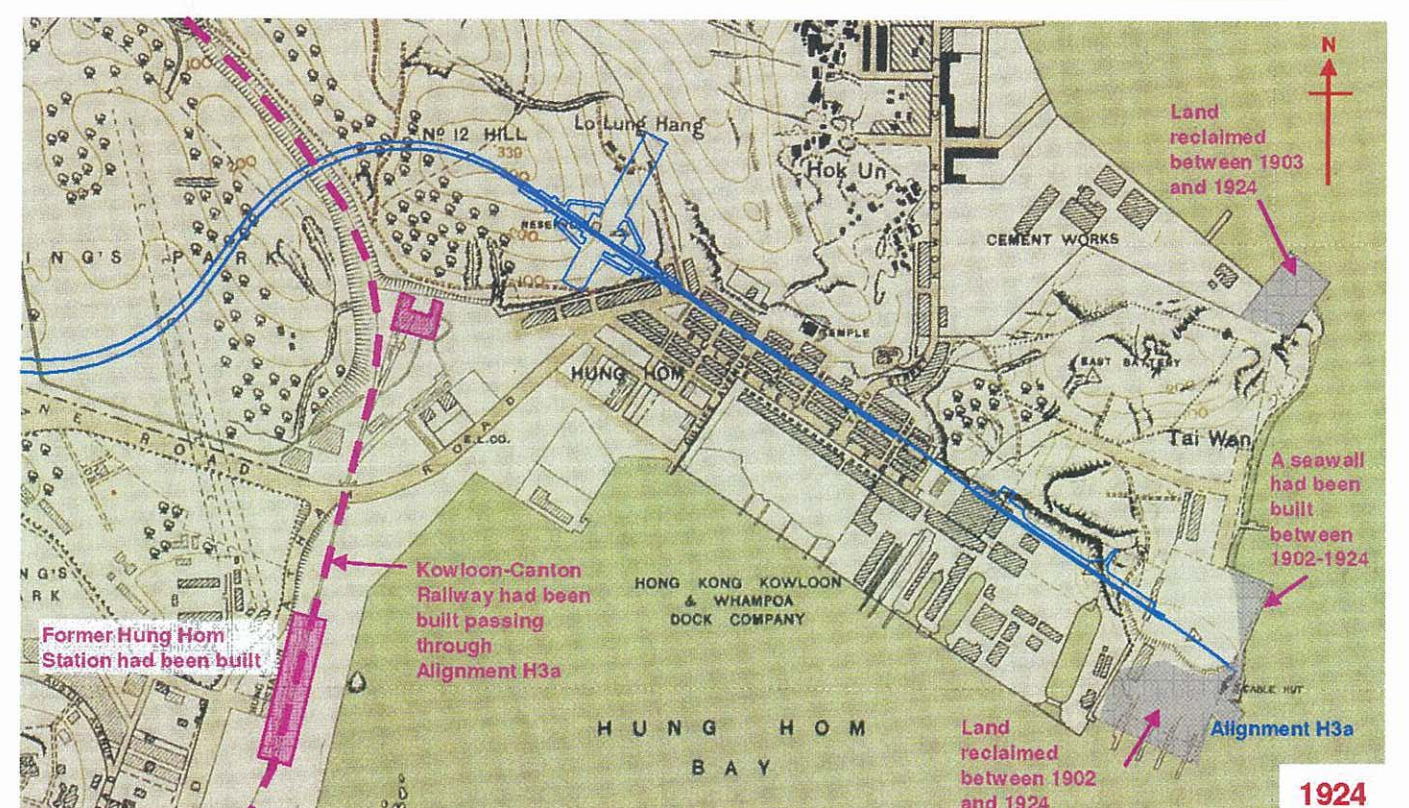
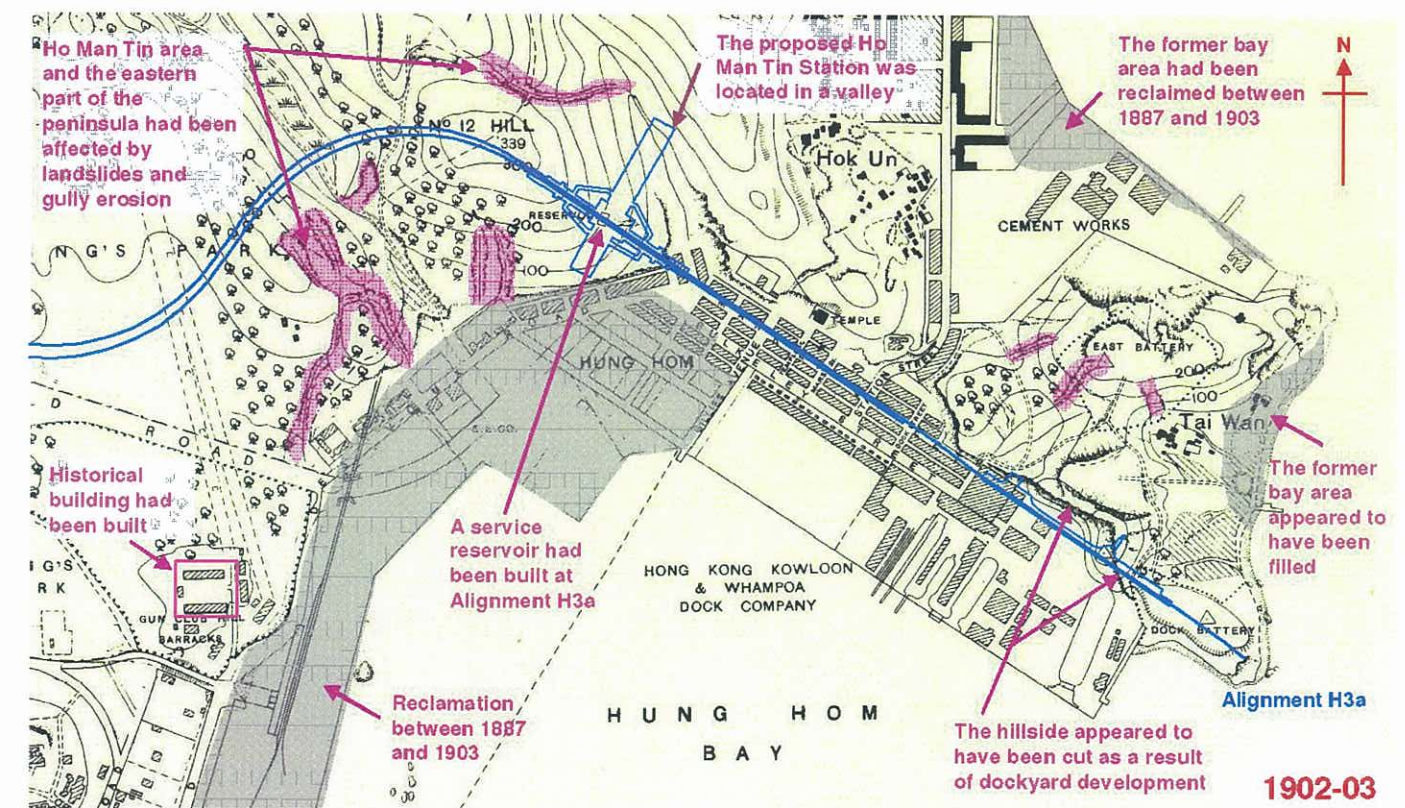
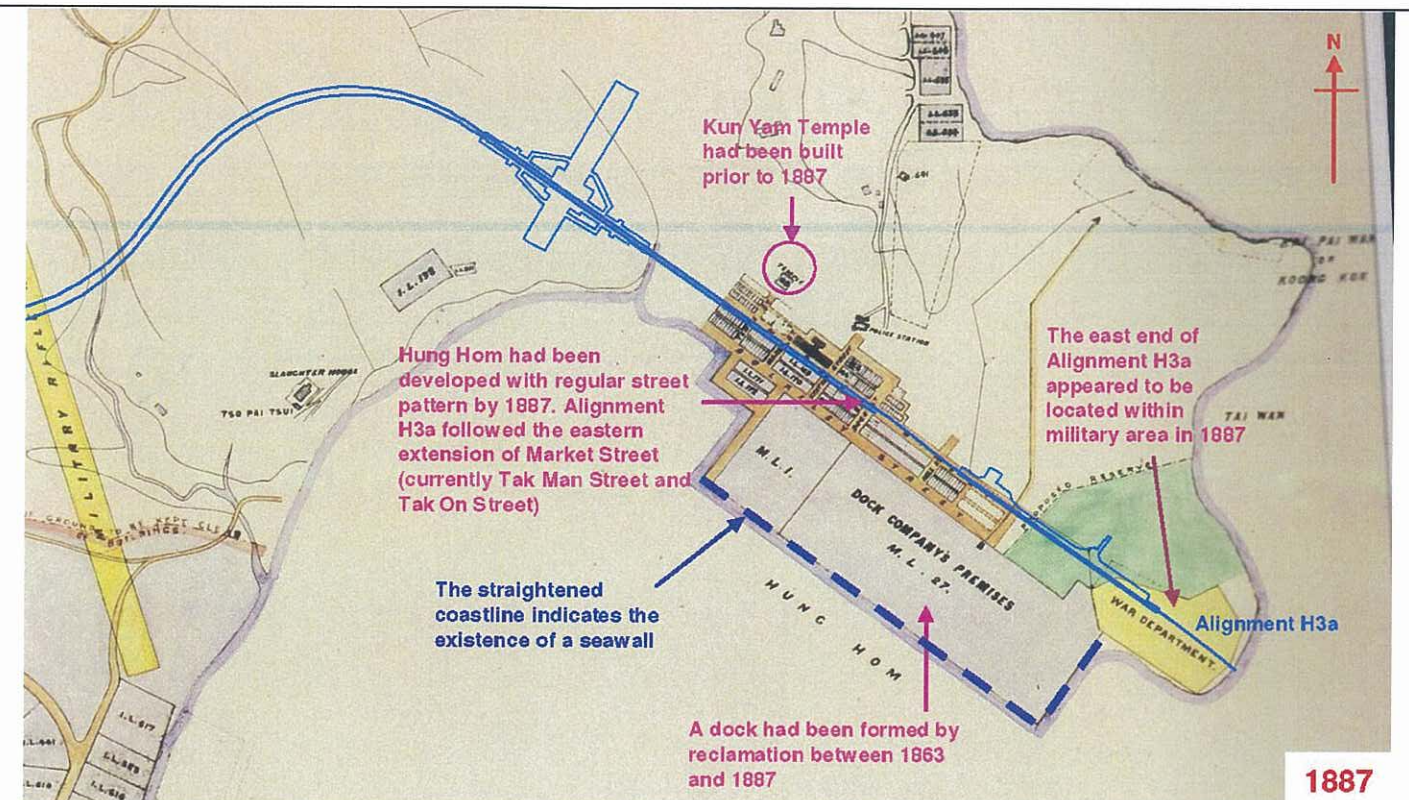
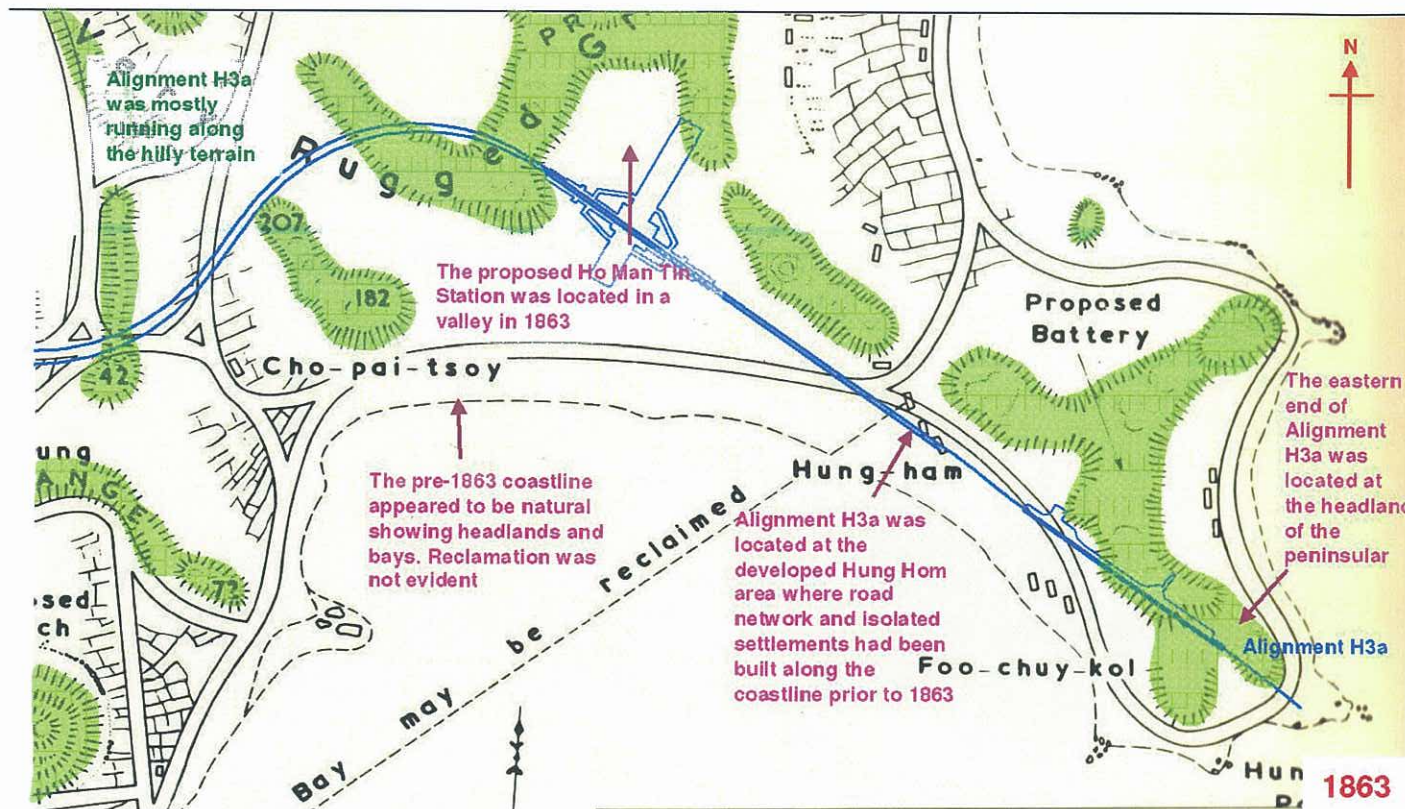


1982: Hung Hom



2000: Hung Hom





**Year 1863**

- Alignment H3a ran through the hilly terrain of the peninsula while the proposed Ho Man Tin Station appeared to be located in a valley.
- Alignment H3a was located inland and the eastern end was located along the headland.
- Alignment H3a passed through Hung Hom area that had been developed prior to 1863.

**Year 1863-87**

- Kun Yam Temple had been built in Hung Hom prior to 1887.
- A dockyard had been built on reclaimed land to the southeast of Alignment H3a in this period.

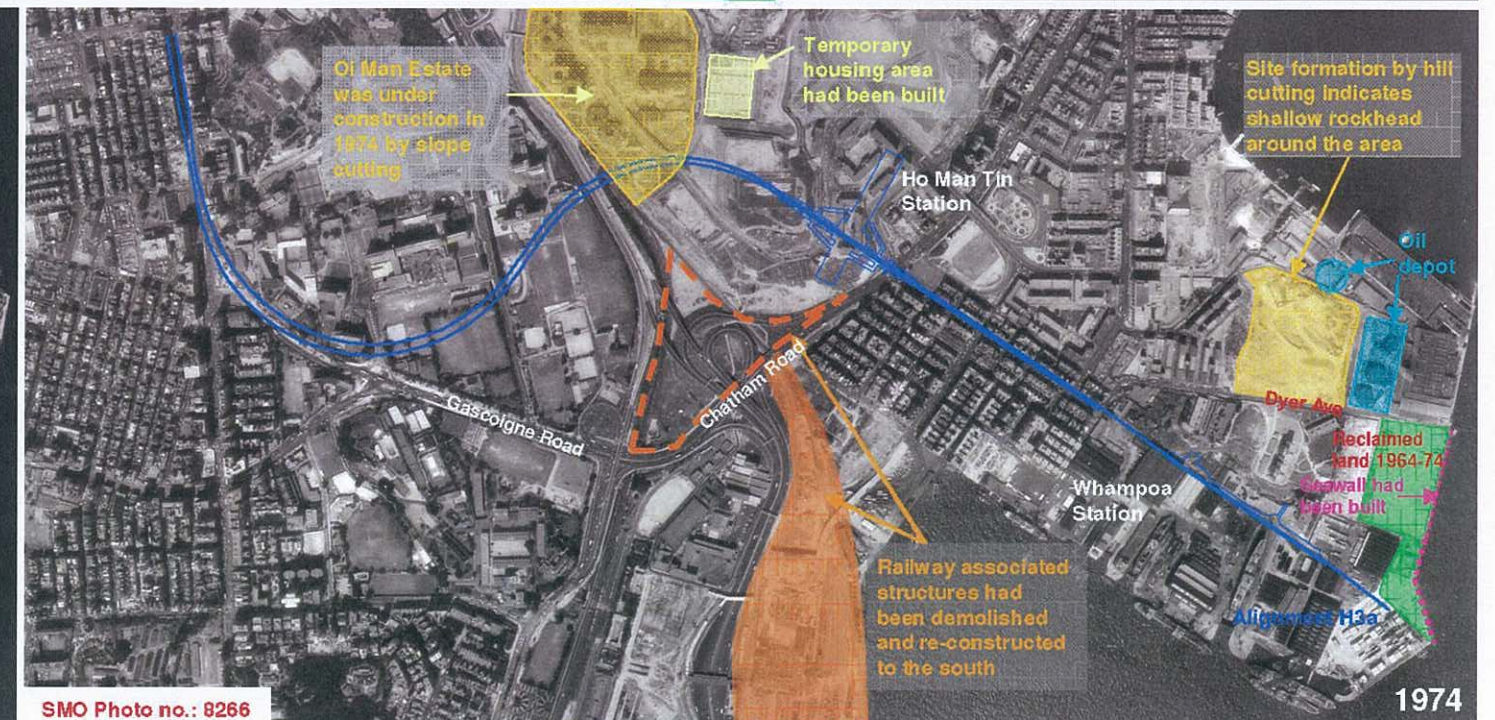
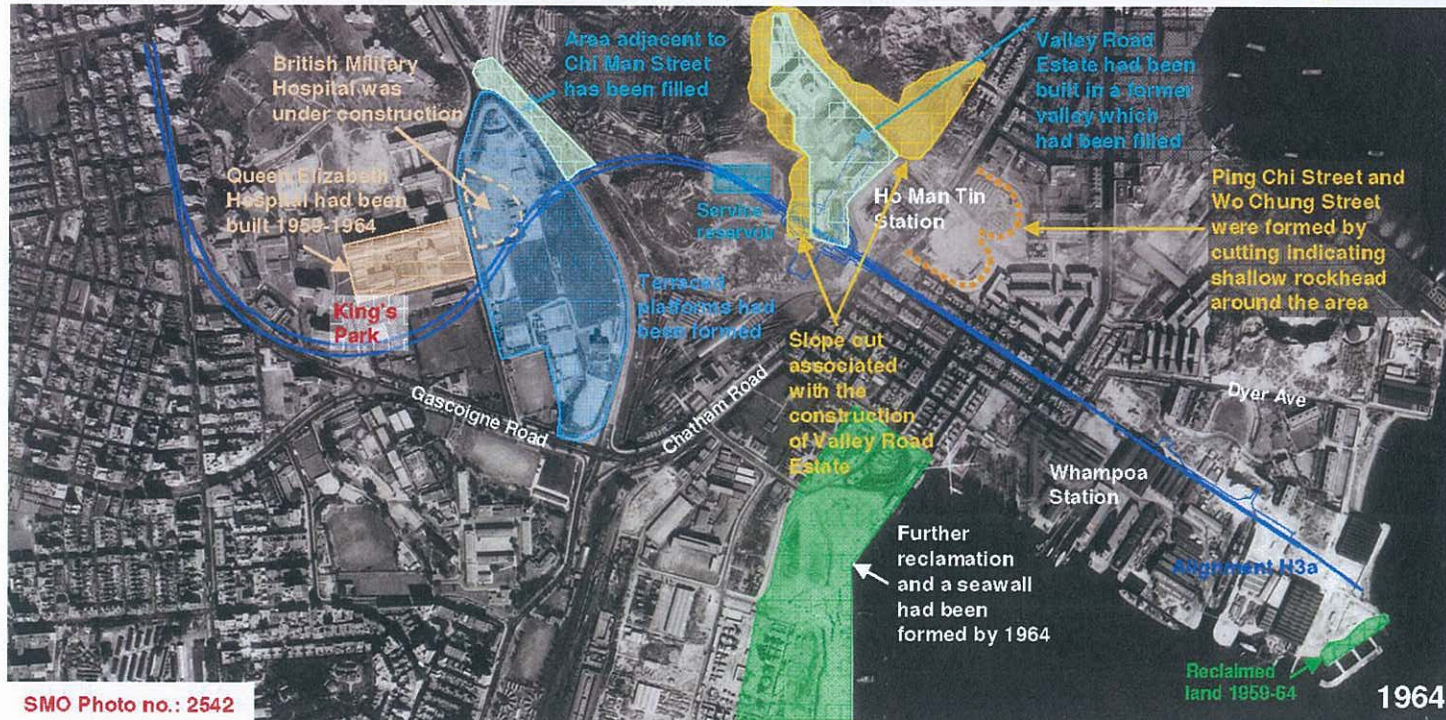
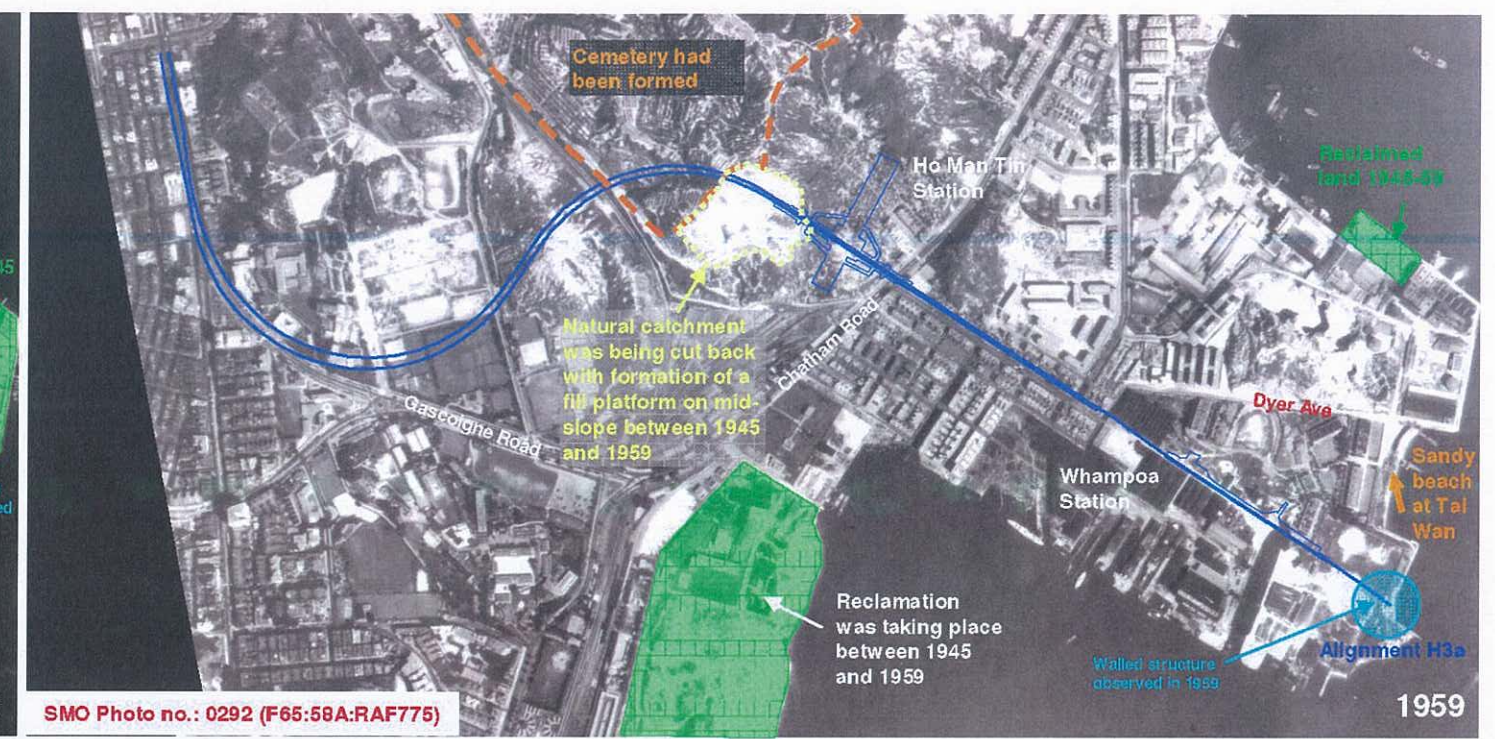
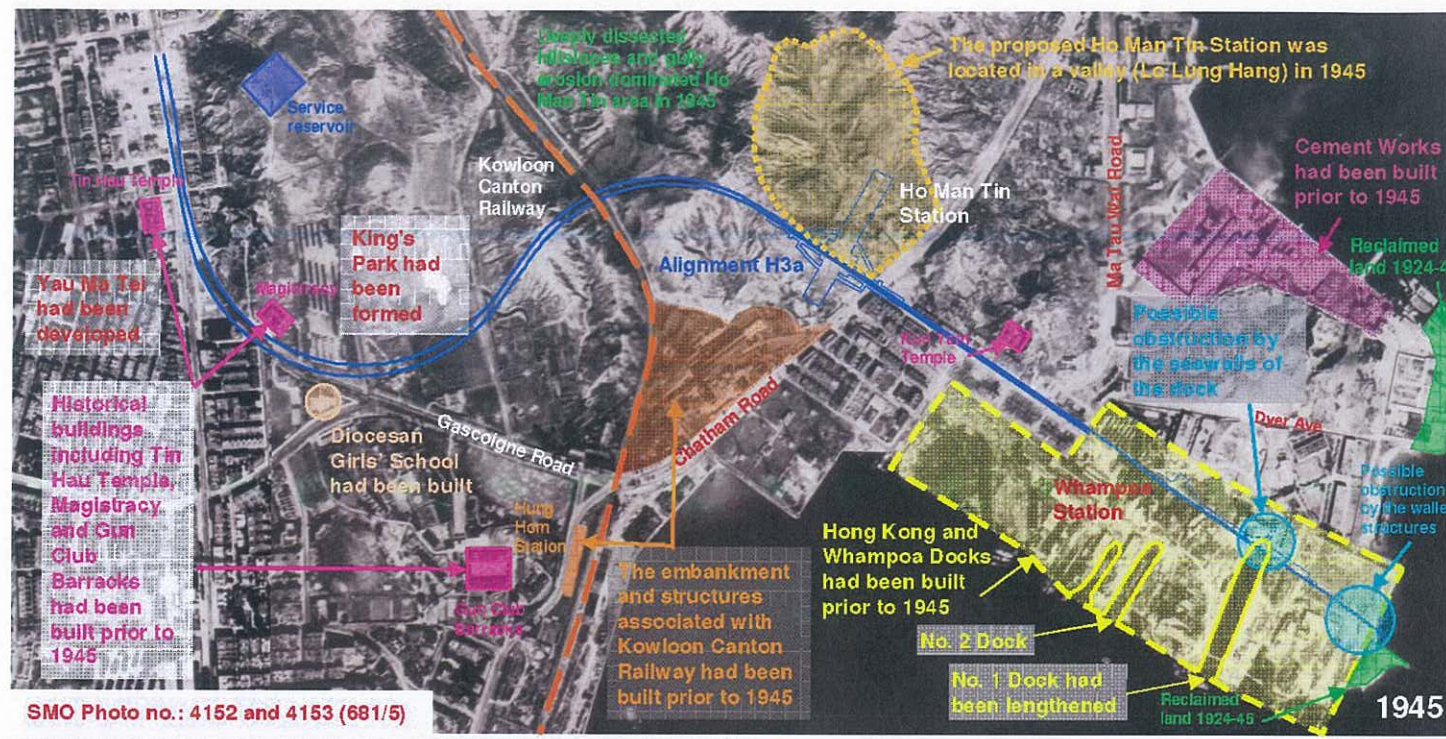
**Year 1887-1903**

- The topographic map indicated that Alignment H3a was located in a valley to the north of Hung Hom.
- Part of the hillside along the east of Alignment H3a appeared to have been cut as a result of the development of Hong Kong Kowloon & Whampoa Dock Company between 1887 and 1902.

**Year 1903-1924**

- Further reclamation was noted to the east of Alignment H3a possibly related to the extension of the Whampoa Dockyard. An associated seawall was also built.
- Kowloon-Canton railway had been built between 1903 and 1924 passing through Alignment H3a.

Source of historical maps: Empson, H (1992) Mapping Hong Kong: A Historical Atlas. The Government Printer



**Year 1945**

- The straightened coastline to the east of the proposed Alignment H3a indicated that reclamation had been taken place prior to 1945 for the Whampoa Docks.
- The eastern section of Alignment H3a appeared to be obstructed by the seawalls of the No. 1 Dock and the walled structures built before 1945.
- Ho Man Tin Station was located in a valley (Lo Lung Hang) where the natural terrain was dissected by fluvial erosion.
- Historical buildings including Magistracy, Gun Club Barracks and Tin Hau Temple had been built to the western section of the alignment. Alignment H3a will be in the proximity to the Kun Yam temple in Hung Hom.
- The Kowloon-Canton Railway above the central part of Alignment H3a was built prior to 1945.

**Year 1945-59**

- The natural terrain around the proposed Ho Man Tin Station had been disturbed by the construction of a cemetery and site formation works. The site formation was adjacent to Alignment H3a.

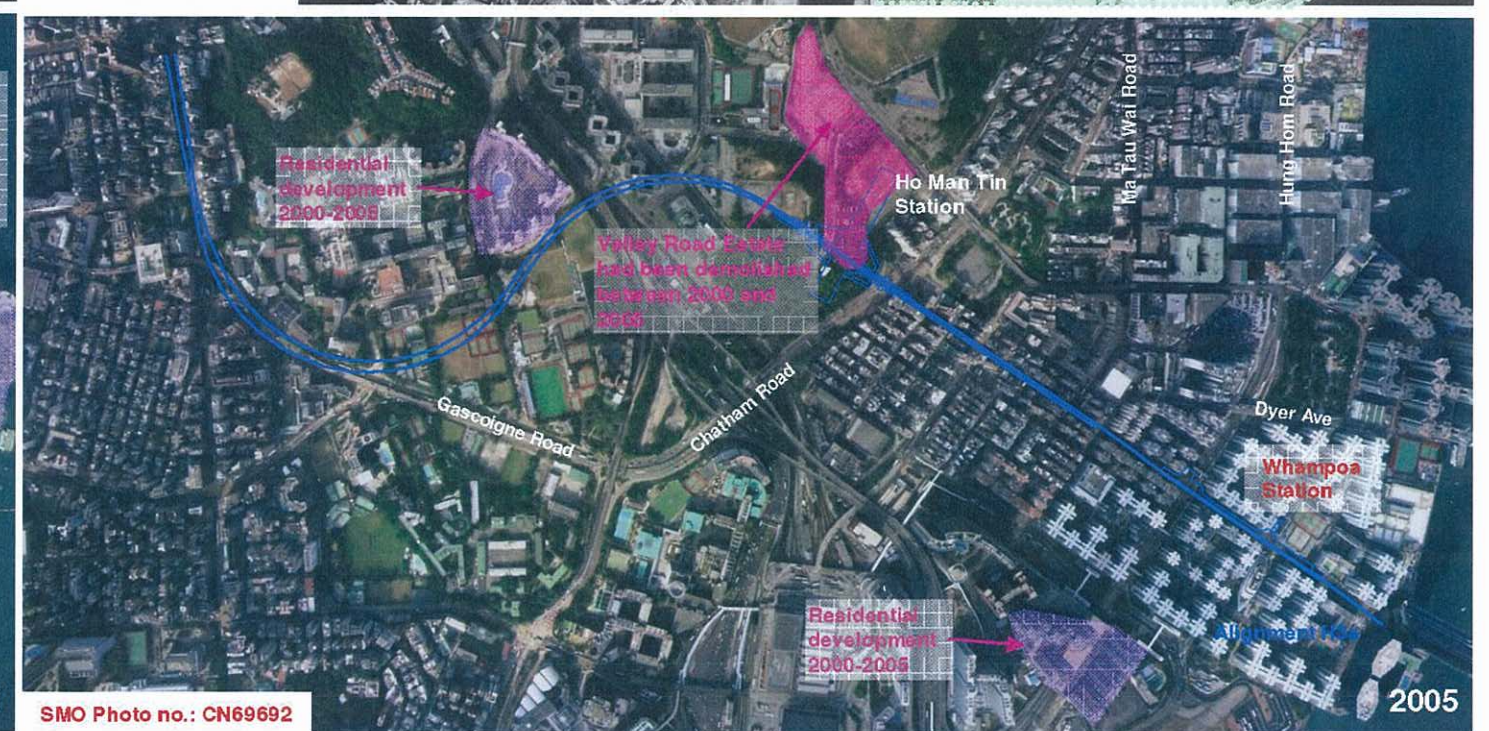
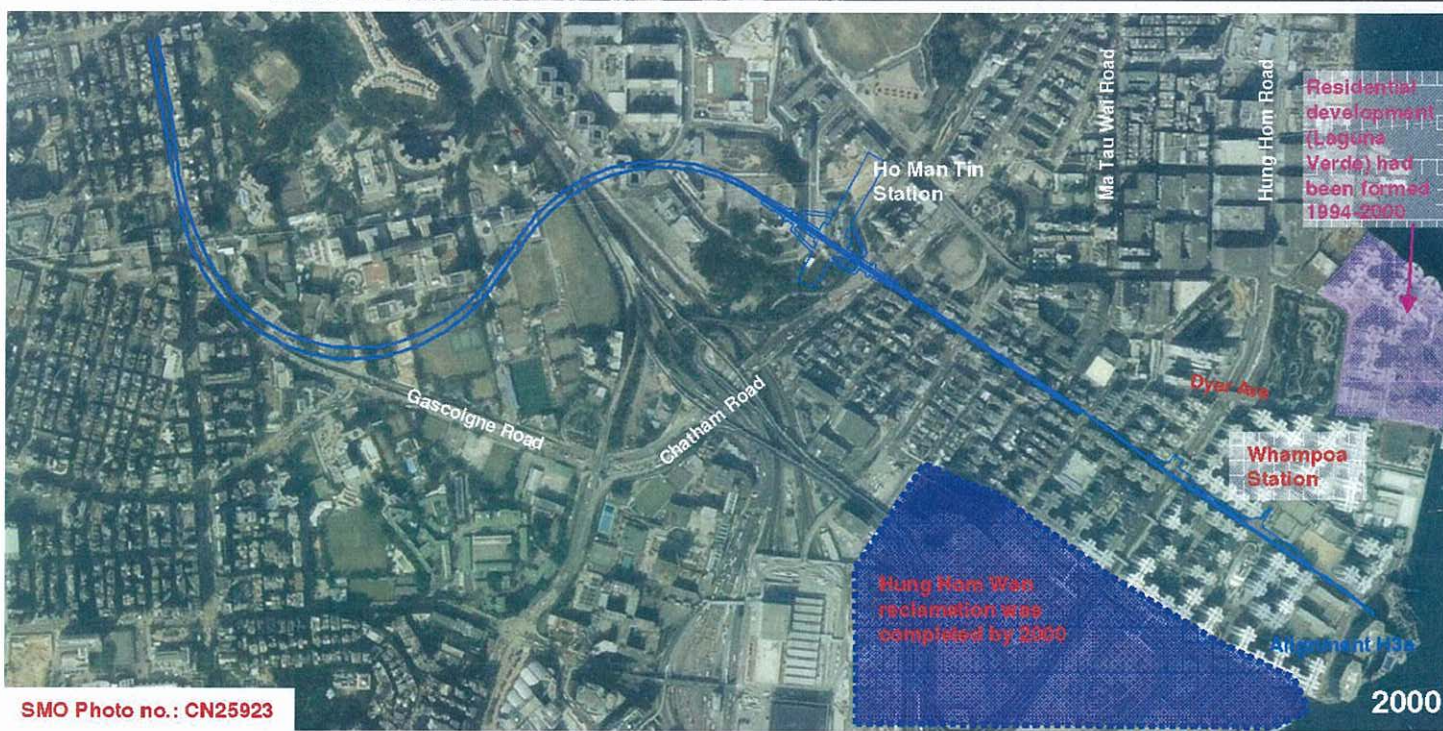
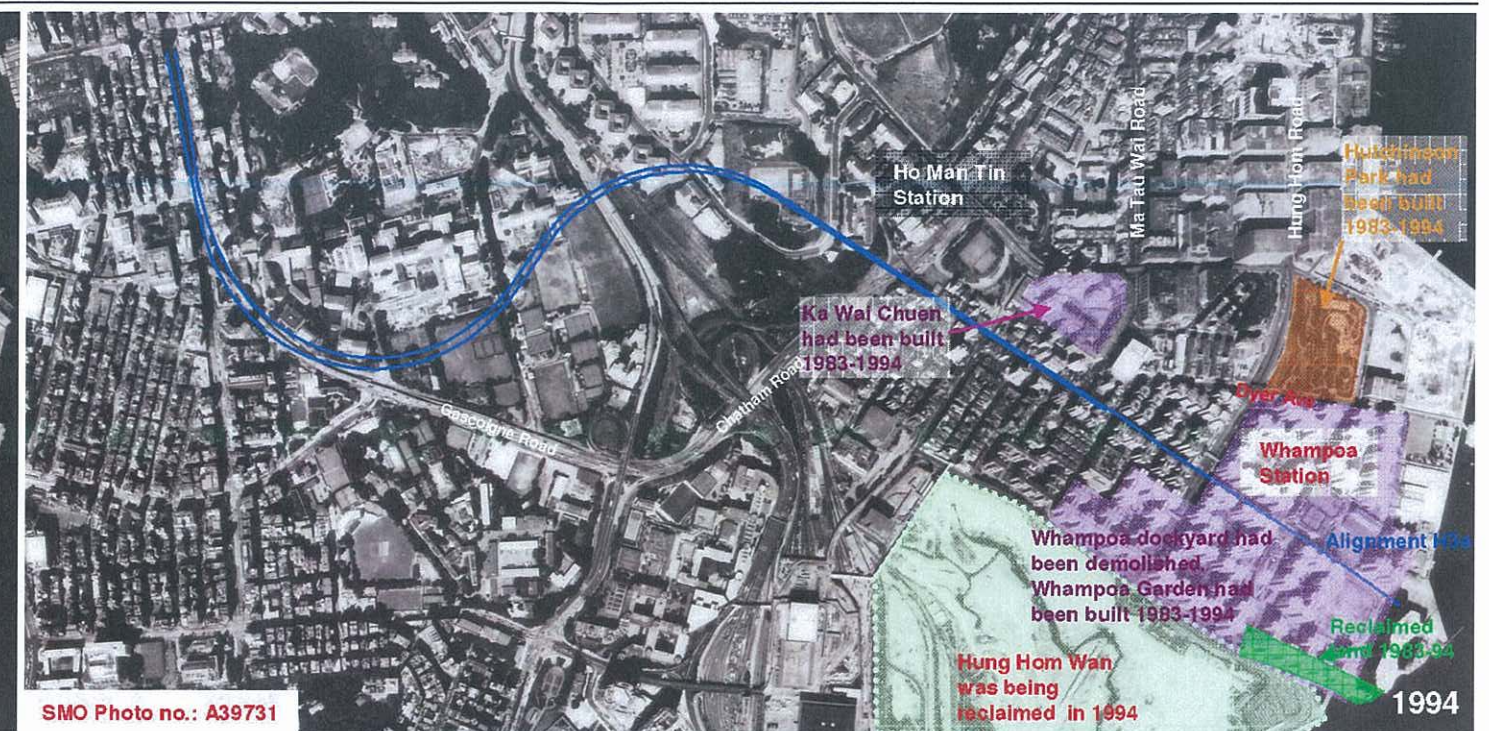
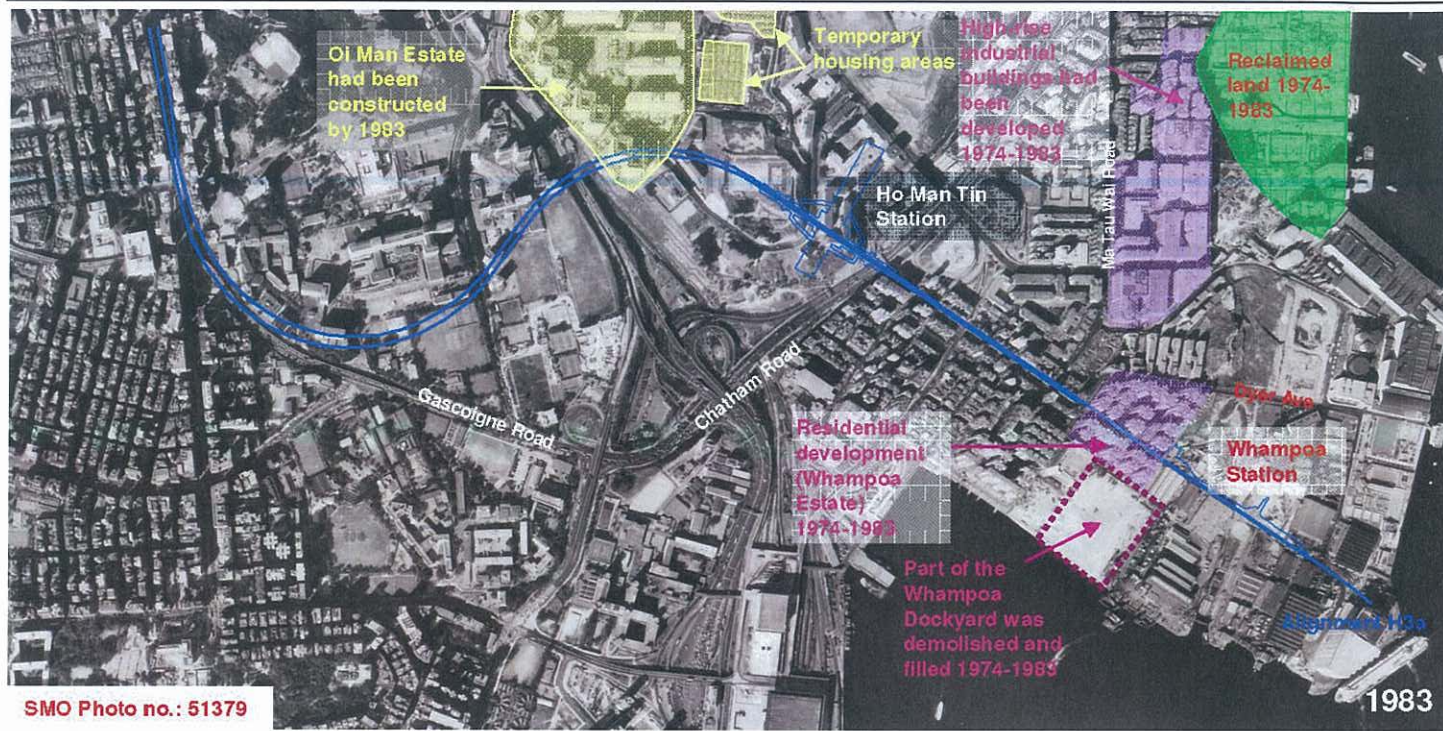
**Year 1959-64**

- The former valley slope at Ho Man Tin Station was cut and filled for the construction of Valley Road Estate that Alignment H3a would pass through. Terraced platforms were also formed to the east of King's Park.
- Part of the Kowloon-Canton Railway section adjacent to Chi Man Street appeared to have been filled in association with the construction of flyovers at Princess Margaret Road.

**Year 1964-74**

- Oi Man Estate was under construction to the north of Alignment H3a.
- An oil depot and reclaimed land had been formed to the northeast of Alignment H3a.
- Reclaimed land had been formed to the east of Alignment H3a between 1964 and 1974.

**Figure 5.6 Site History and Historic Photographs between 1945 and 1974**



**Year 1974-83**

- Part of the Whampoa Dockyard was demolished by land reclamation and infilling docks.
- High rise industrial and residential buildings began to develop during this period.
- Alignment H3a will be nearby the Whampoa Estate that had been developed between 1974 and 1983.

**Year 1983-94**

- Whampoa Dockyard was completely demolished and replaced by a large-scale residential estate (Whampoa Garden) by 1994. Alignment H3a was located at the centre of Whampoa Garden.
- Ka Wai Chuen had been built to the north of Alignment H3a between 1983 and 1994.
- Hutchinson Park had been built to the north of Whampoa Garden between 1983 and 1994.
- Hung Hom Wan was being reclaimed in 1994.

**Year 1994-2000**

- Hung Hom Wan reclamation works had been completed by 2000.
- A residential estate (Laguna Verde) was developed to the north of Whampoa Garden between 1994 and 2000.

**Year 2000-05**

- Valley Road Estate had been demolished between 2000 and 2005.
- Isolated residential developments were observed.
- No other significant changes had been observed along Alignment H3a.

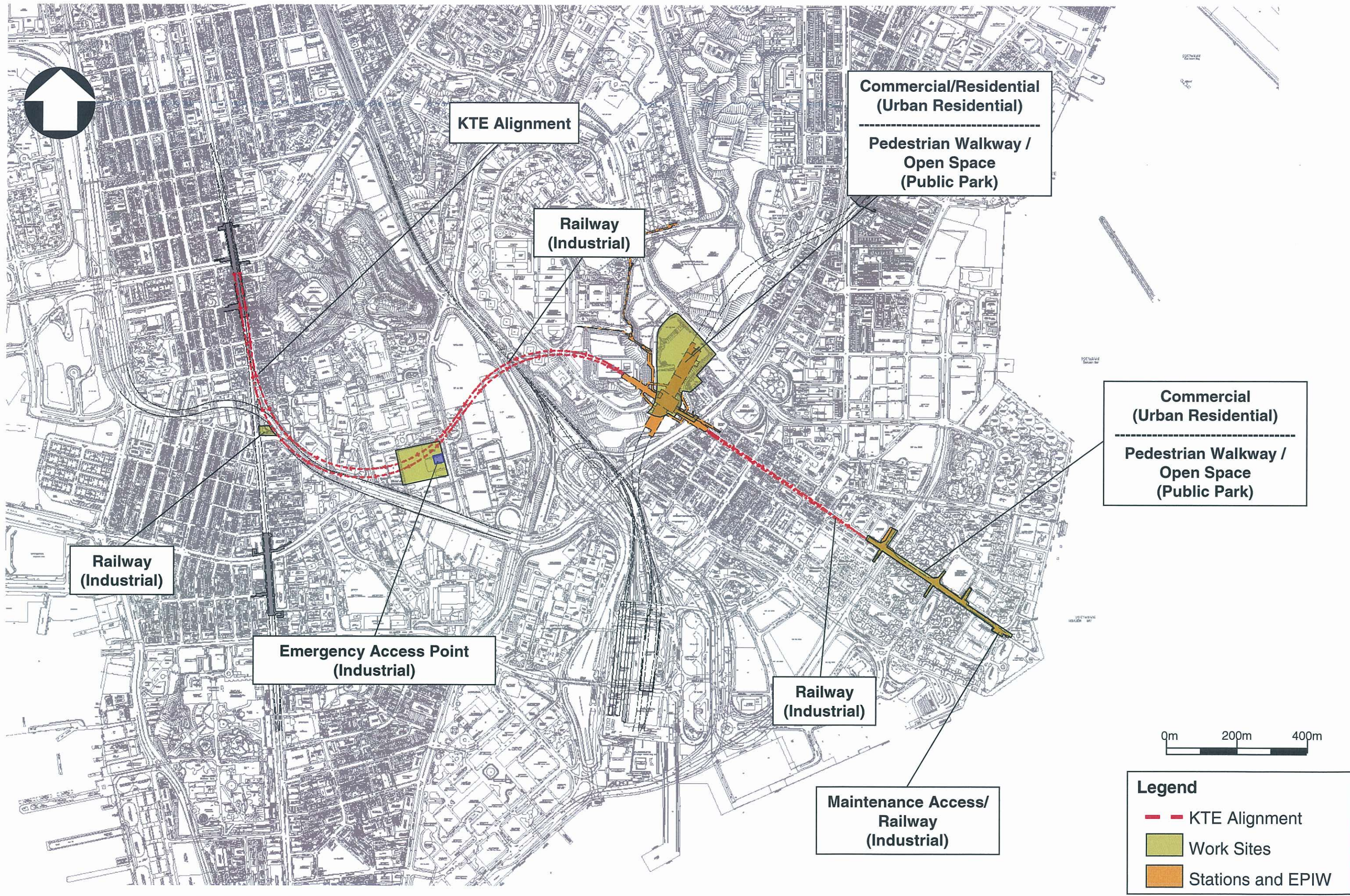


Figure 5.8 Post-restoration Landuse and Appropriate RBRGs within Project Areas

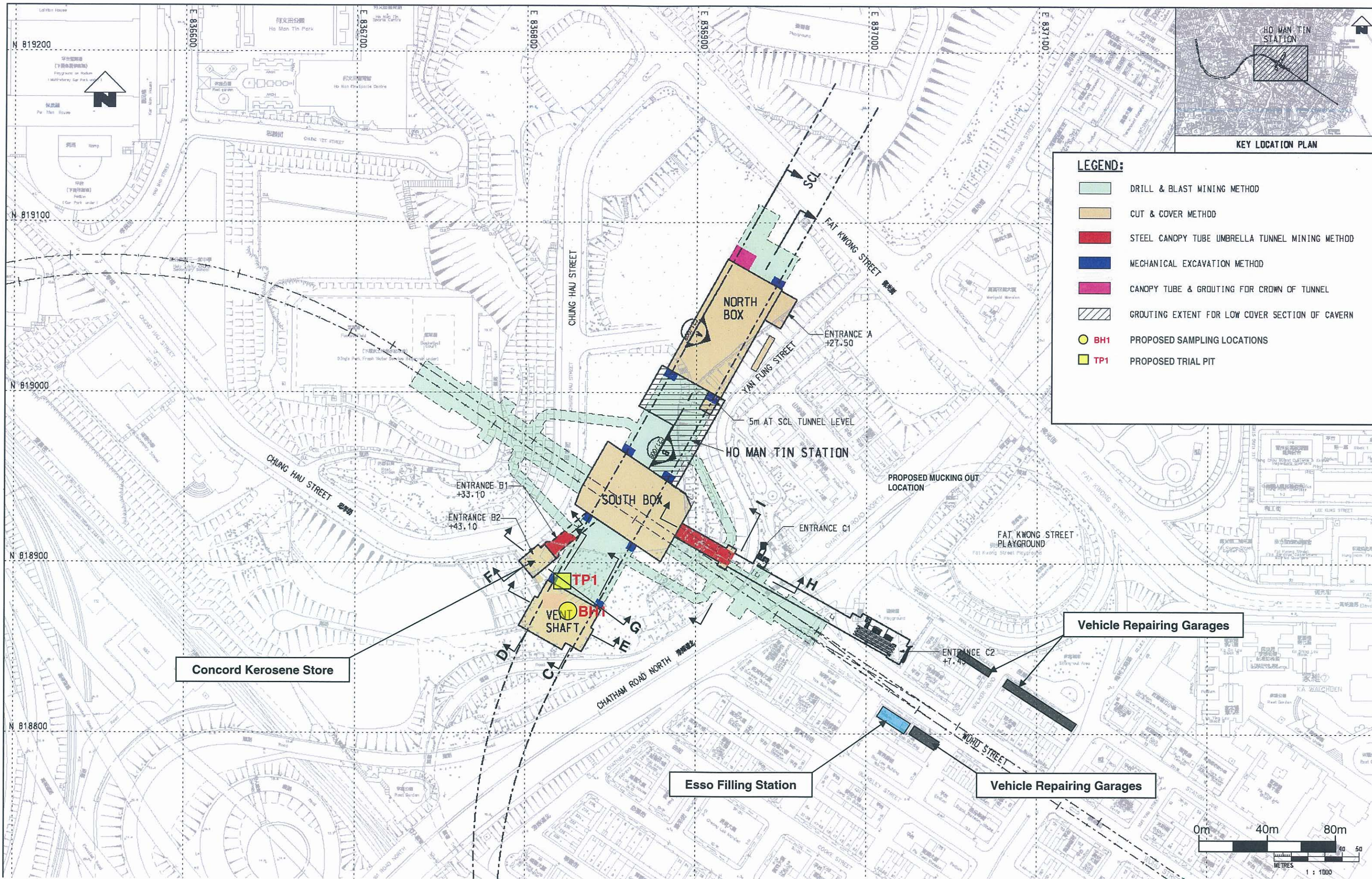
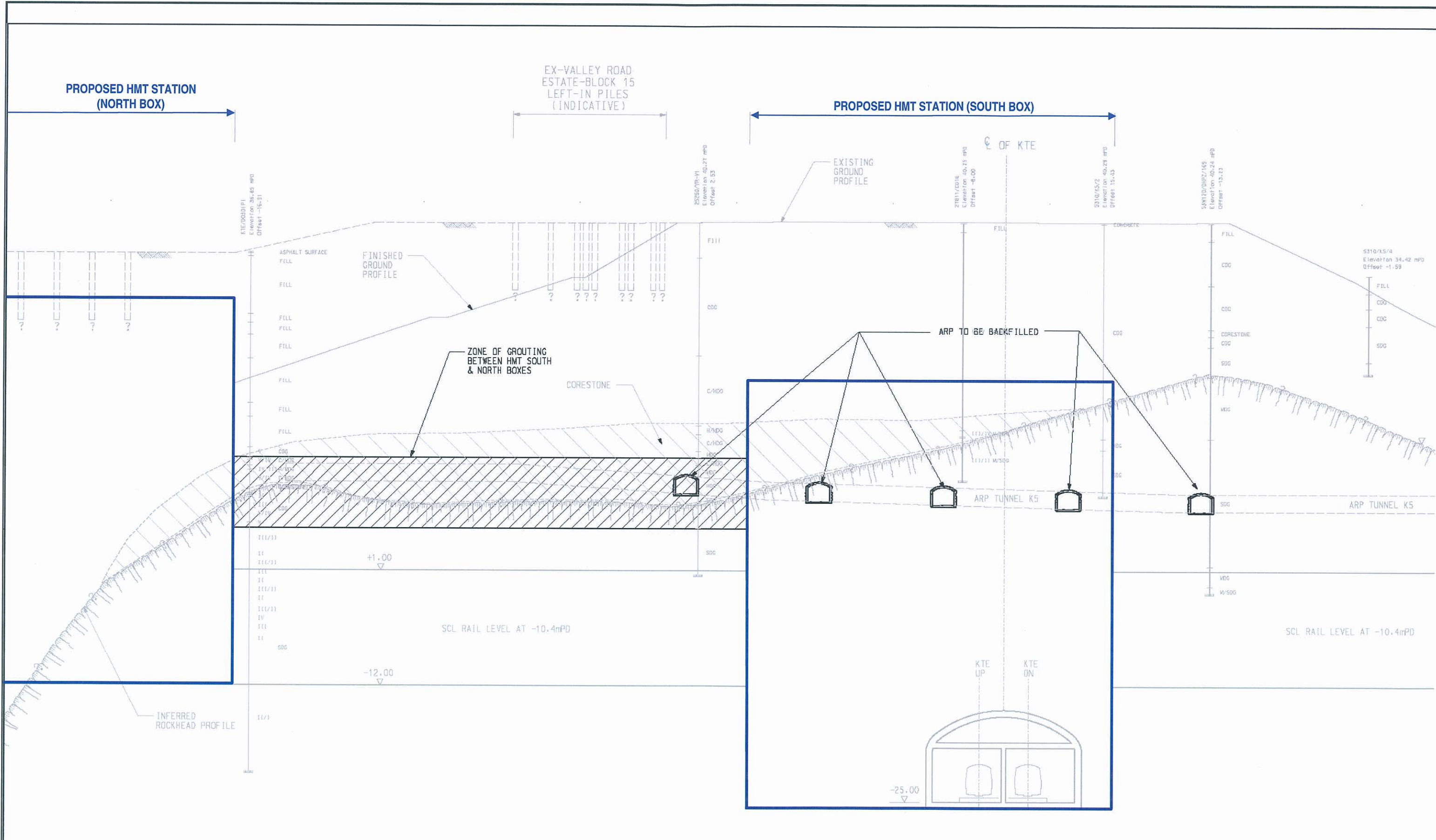
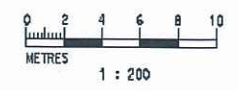


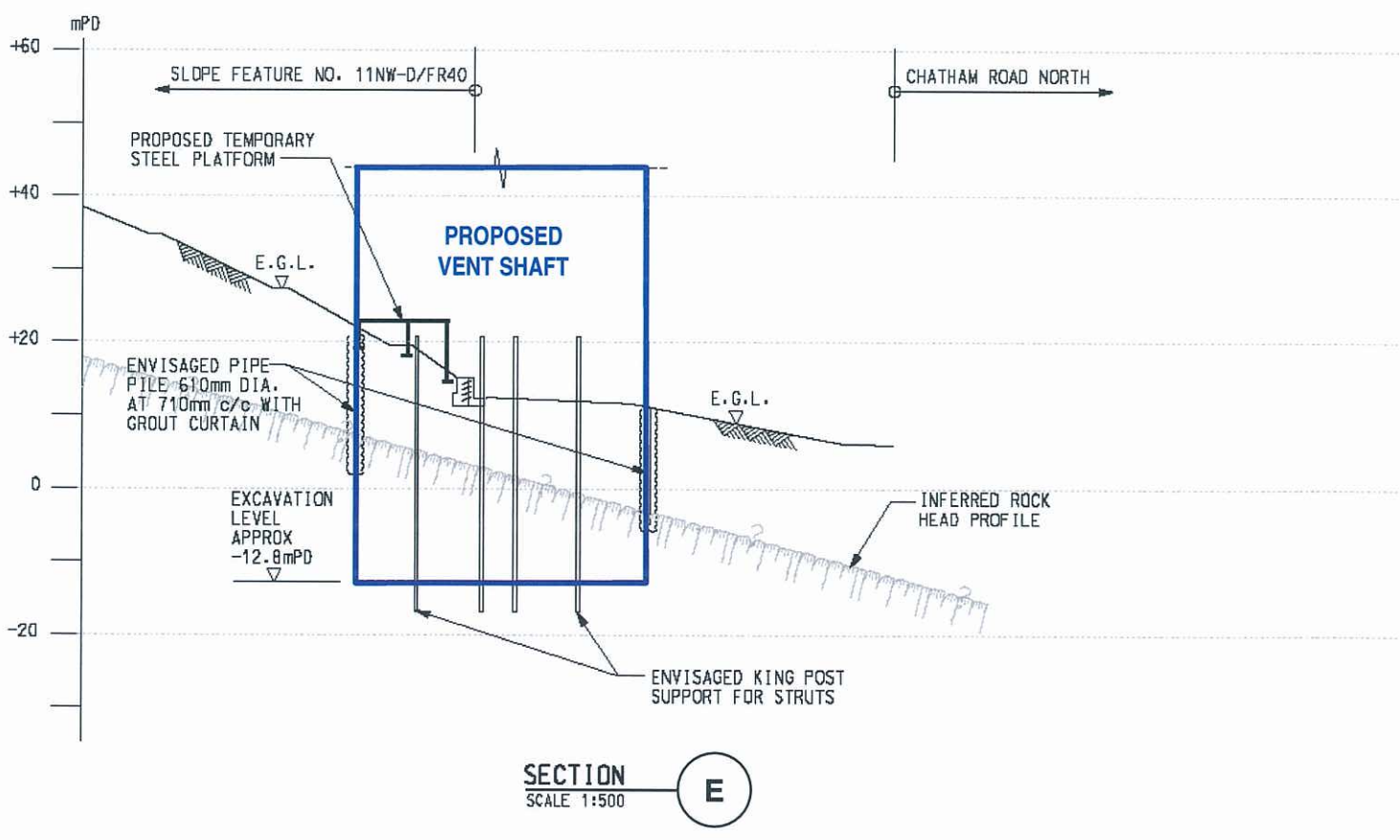
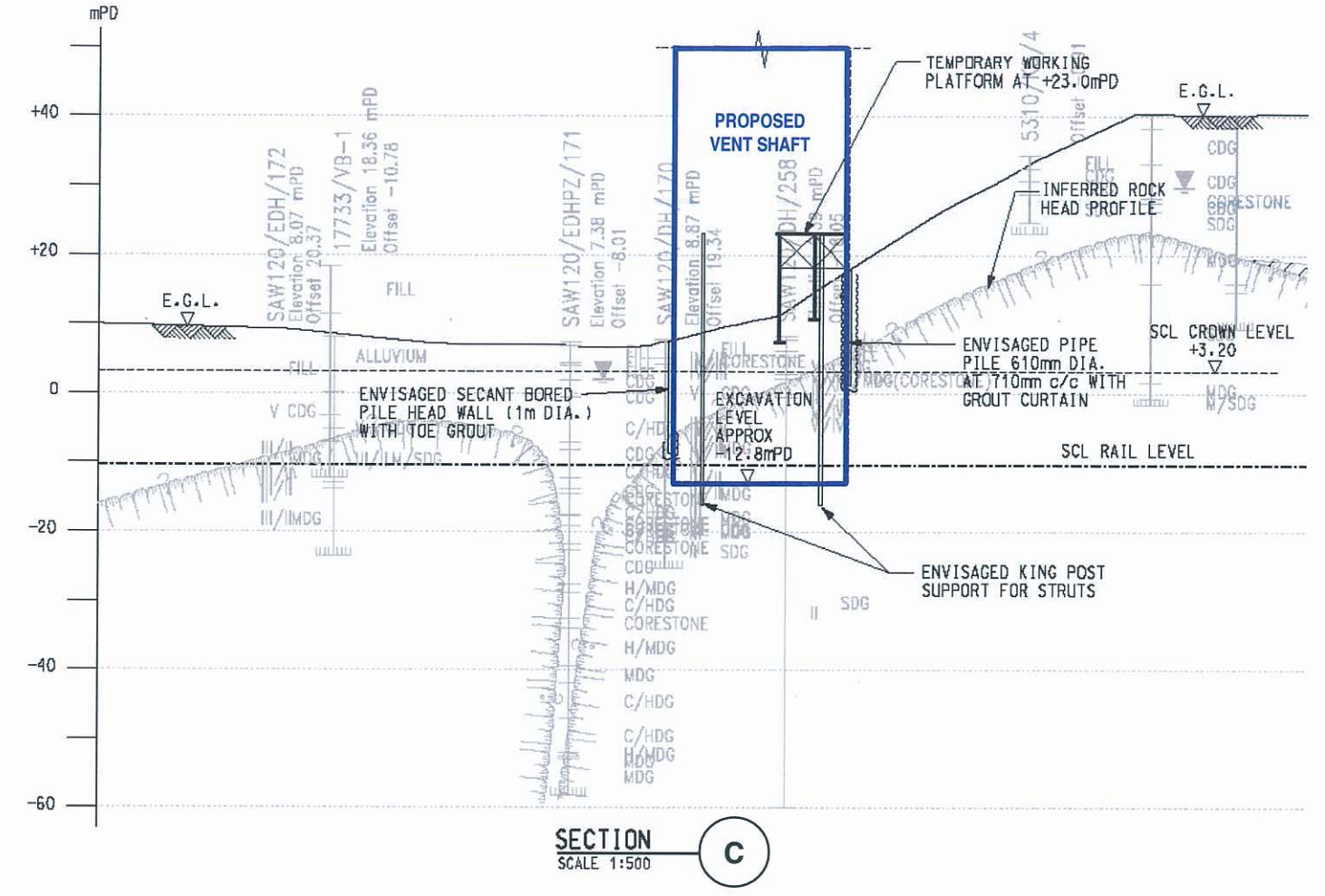
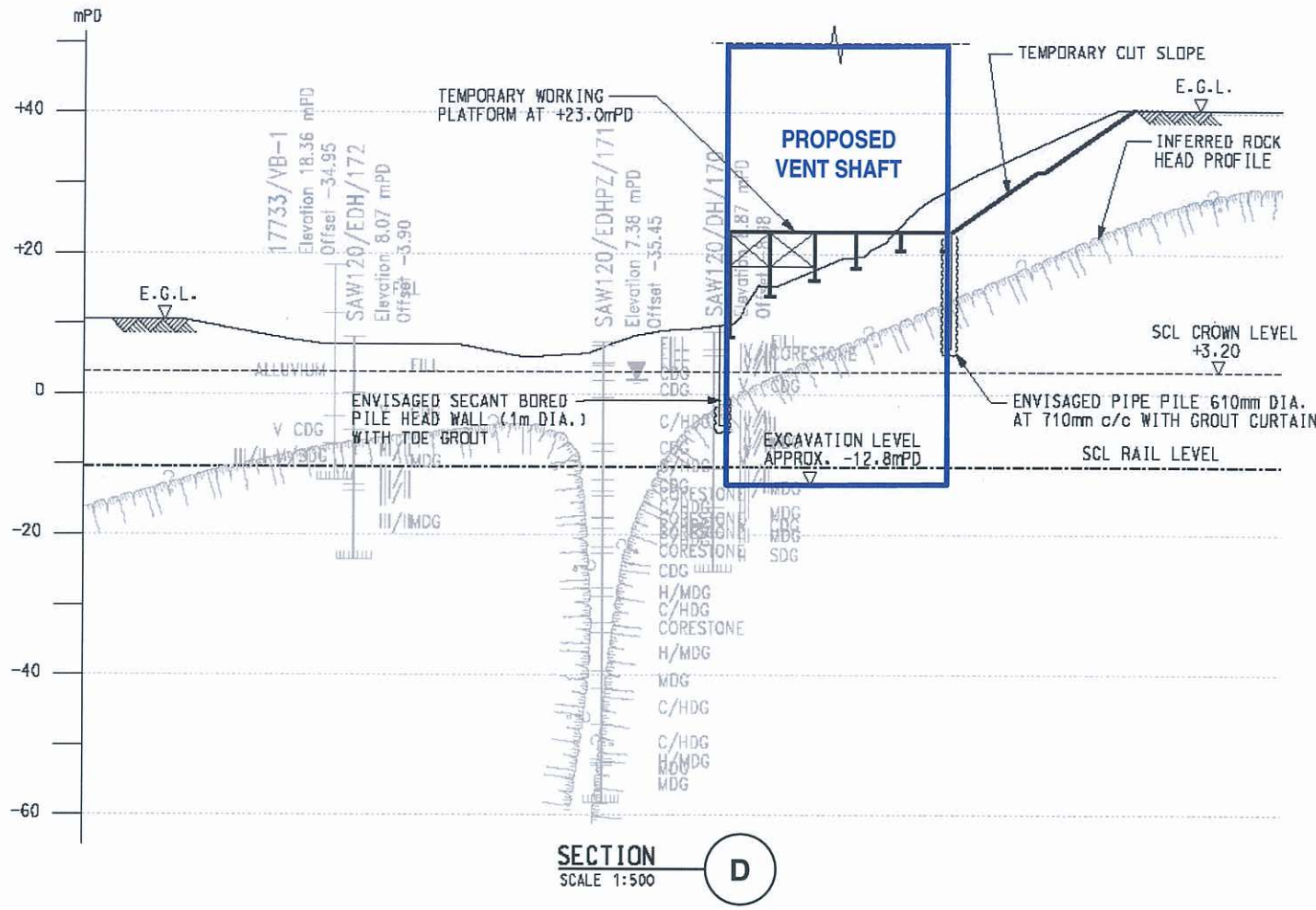
Figure 5.9 Details of HMT Station (1 of 6)



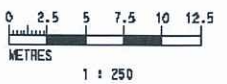
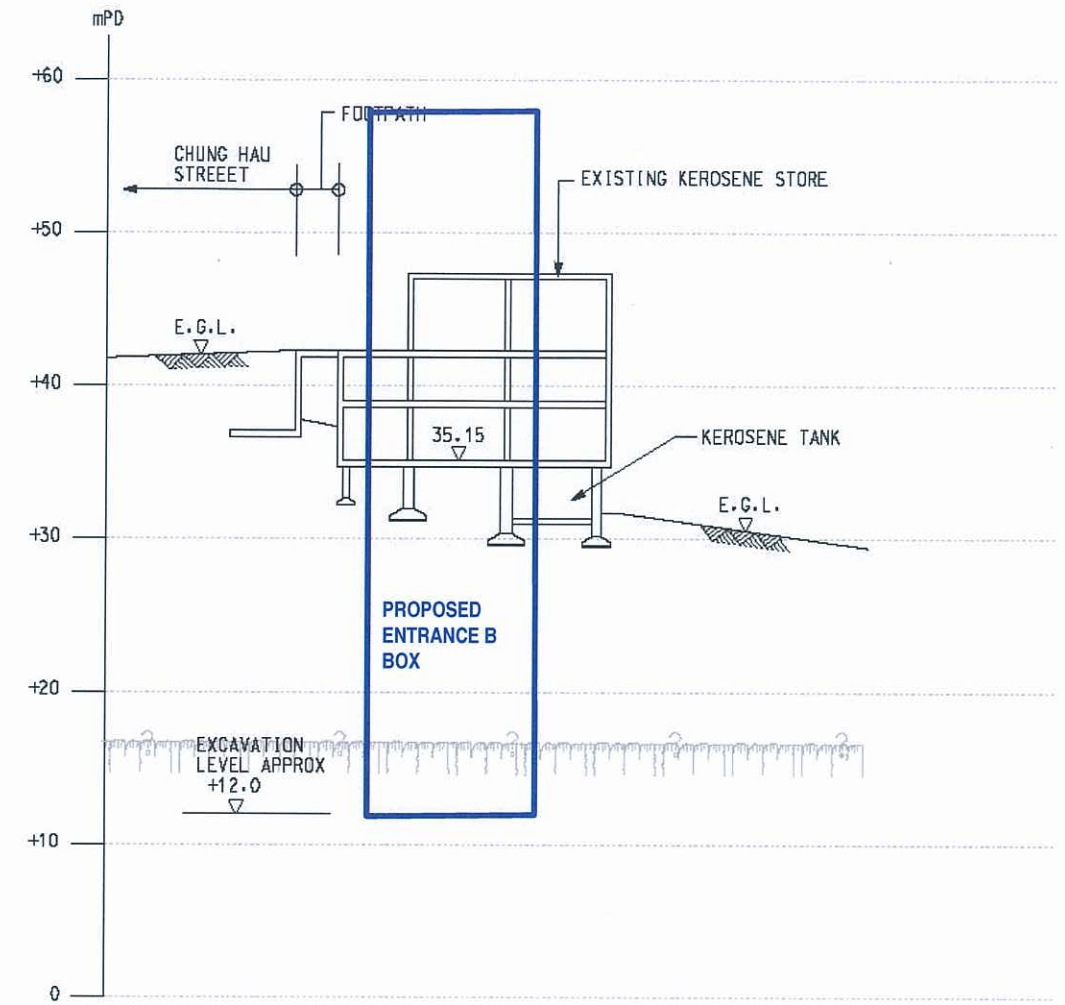
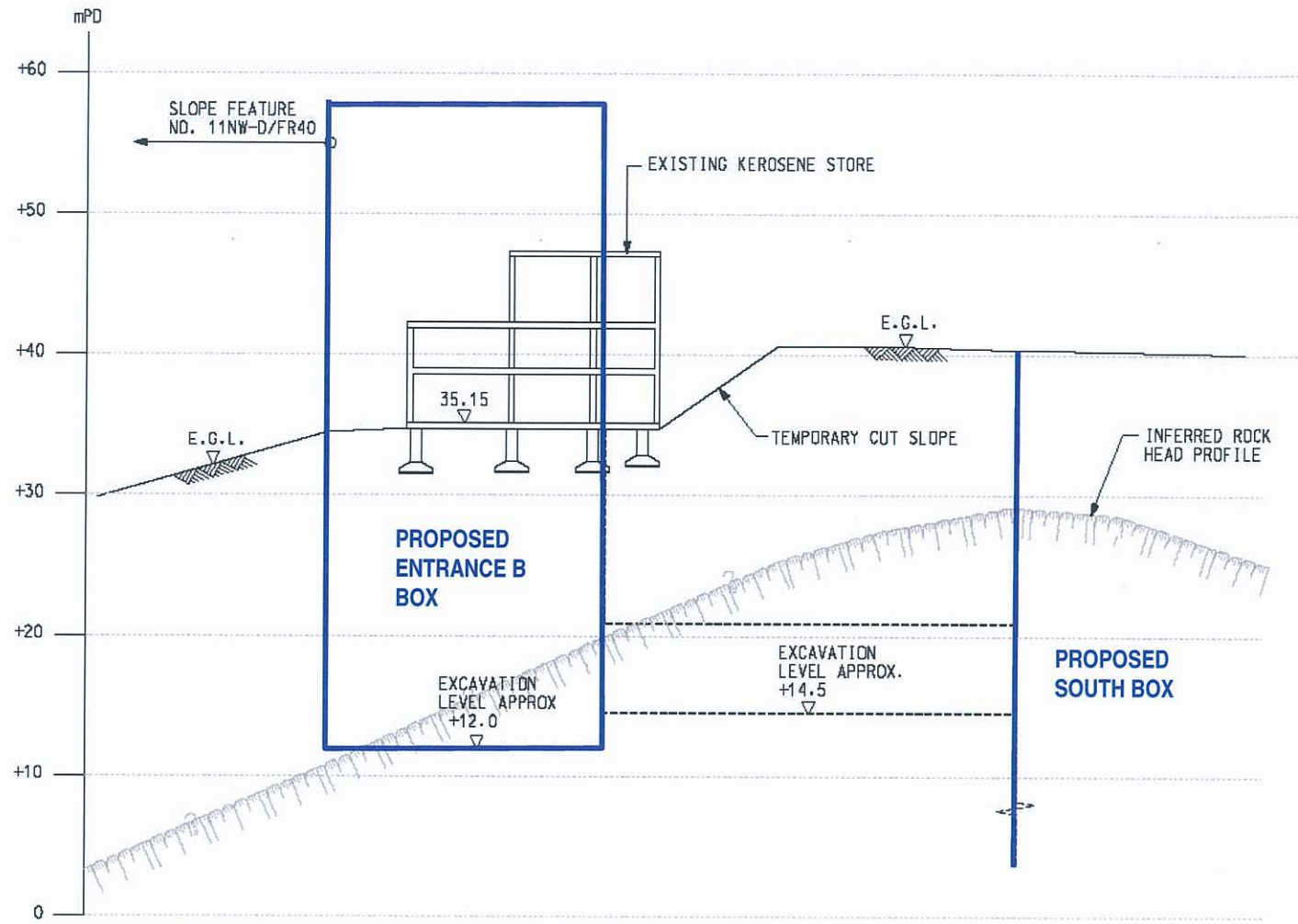


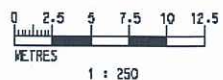
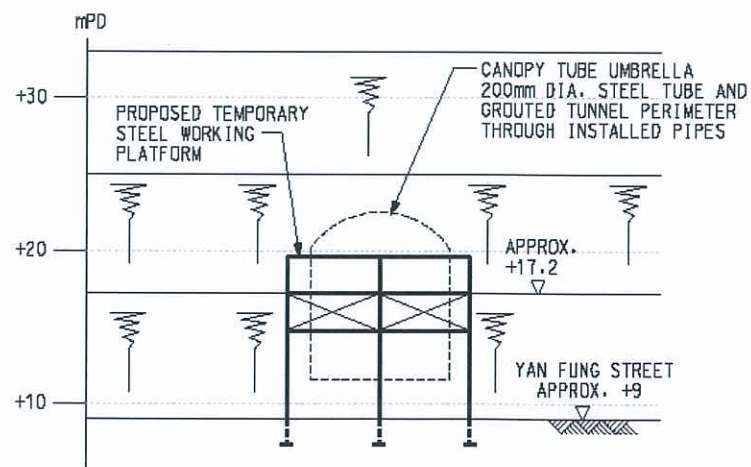
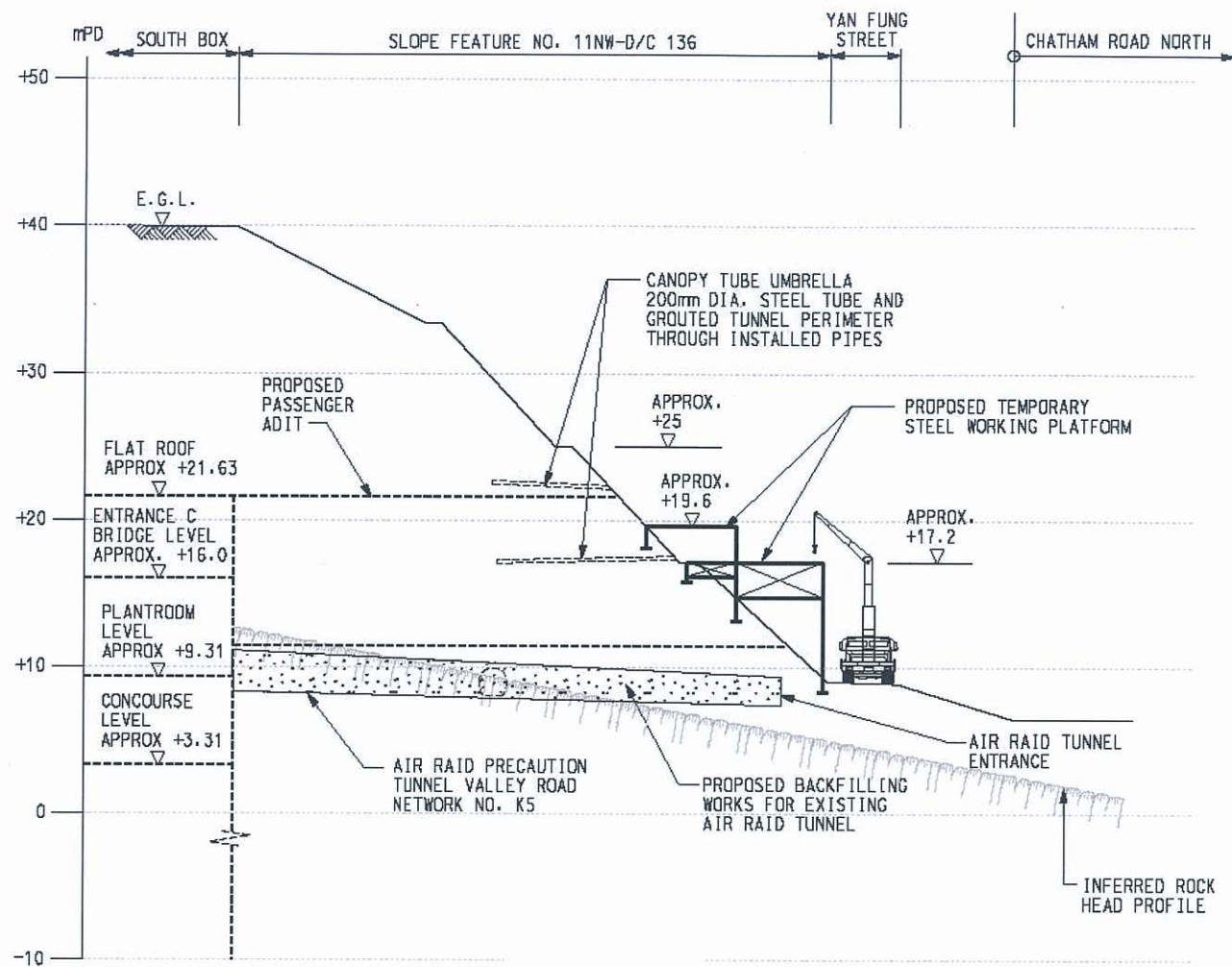
SECTION B  
SCALE 1:200  
C21/001











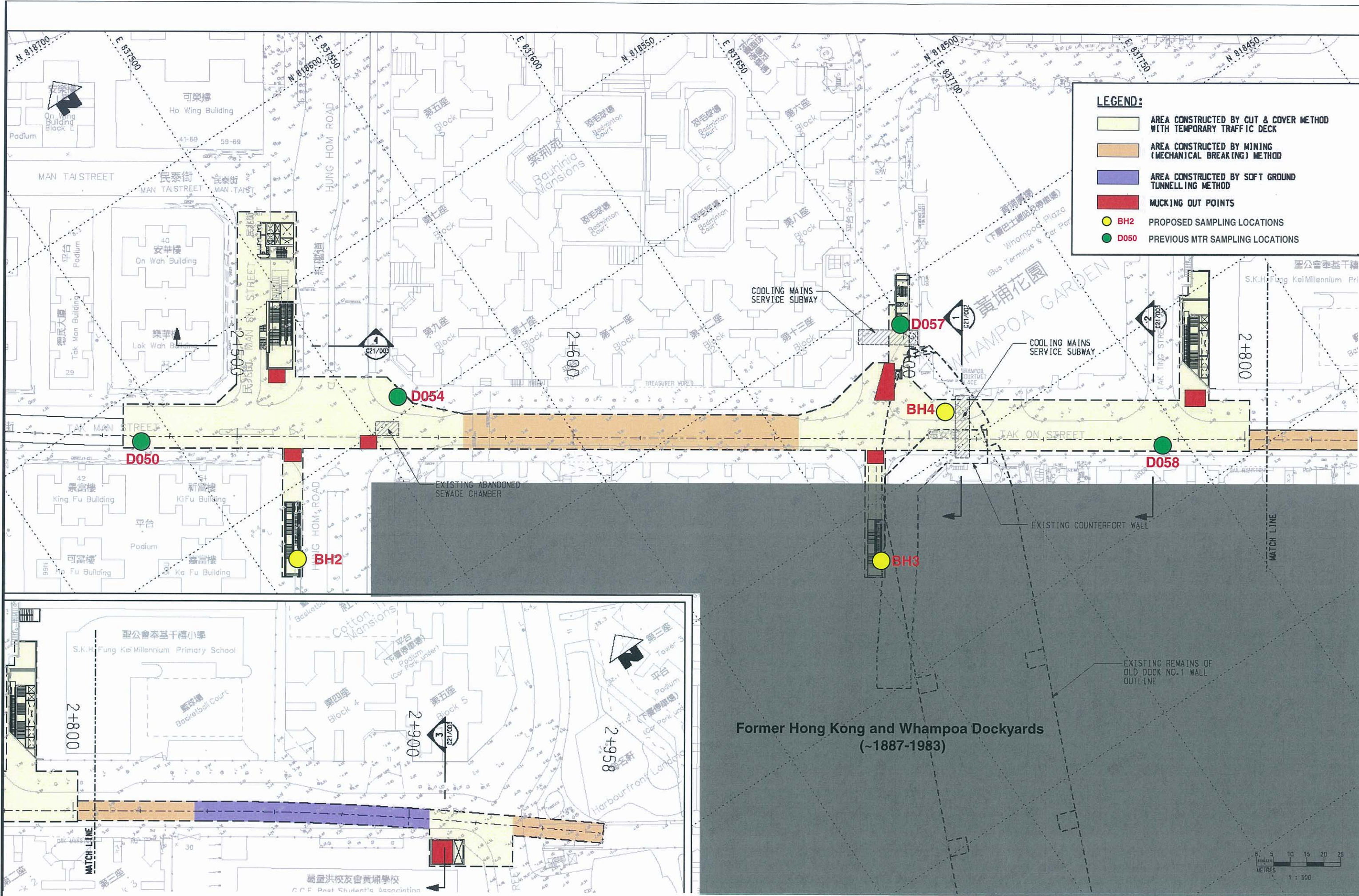
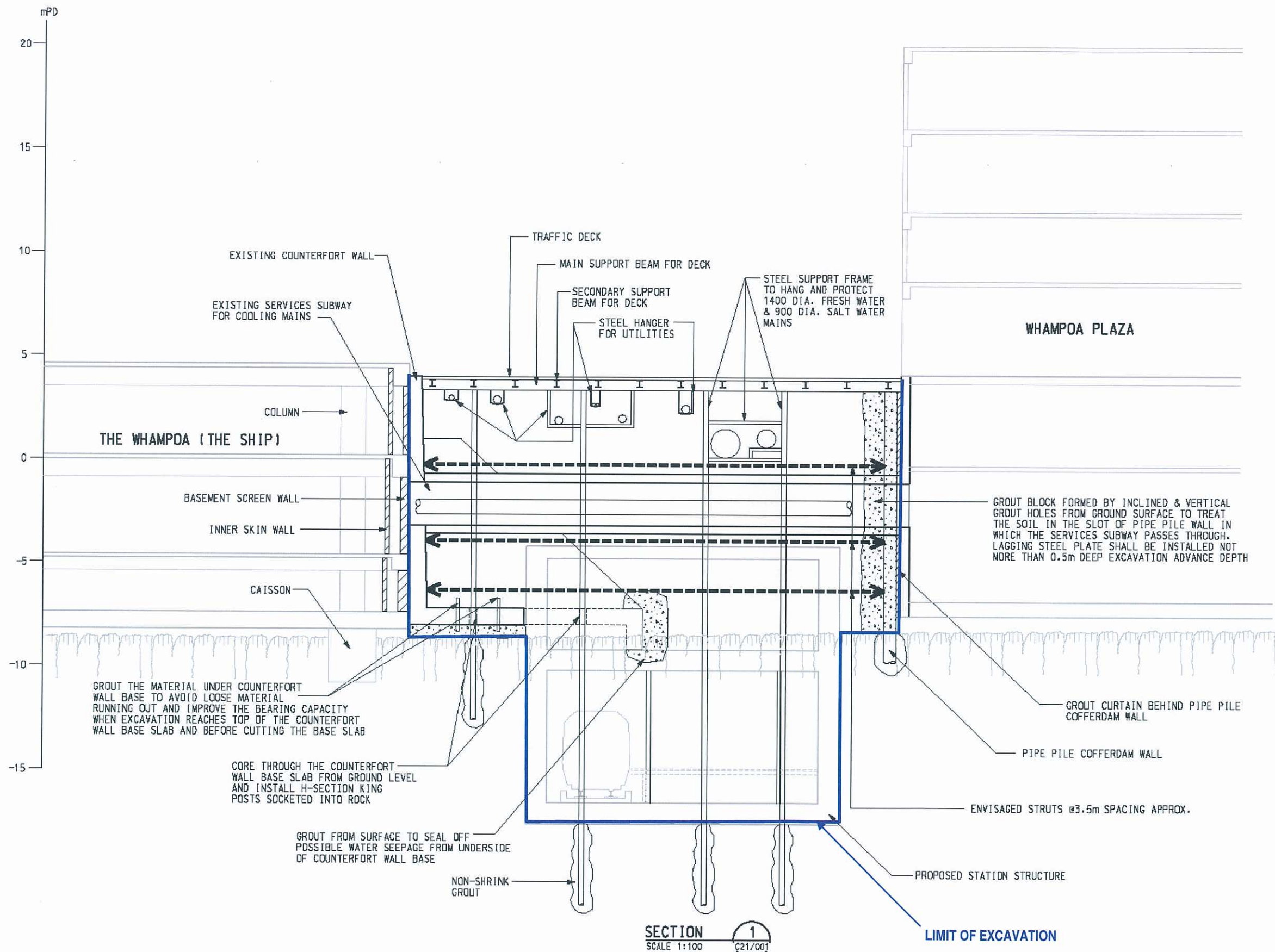
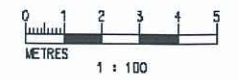
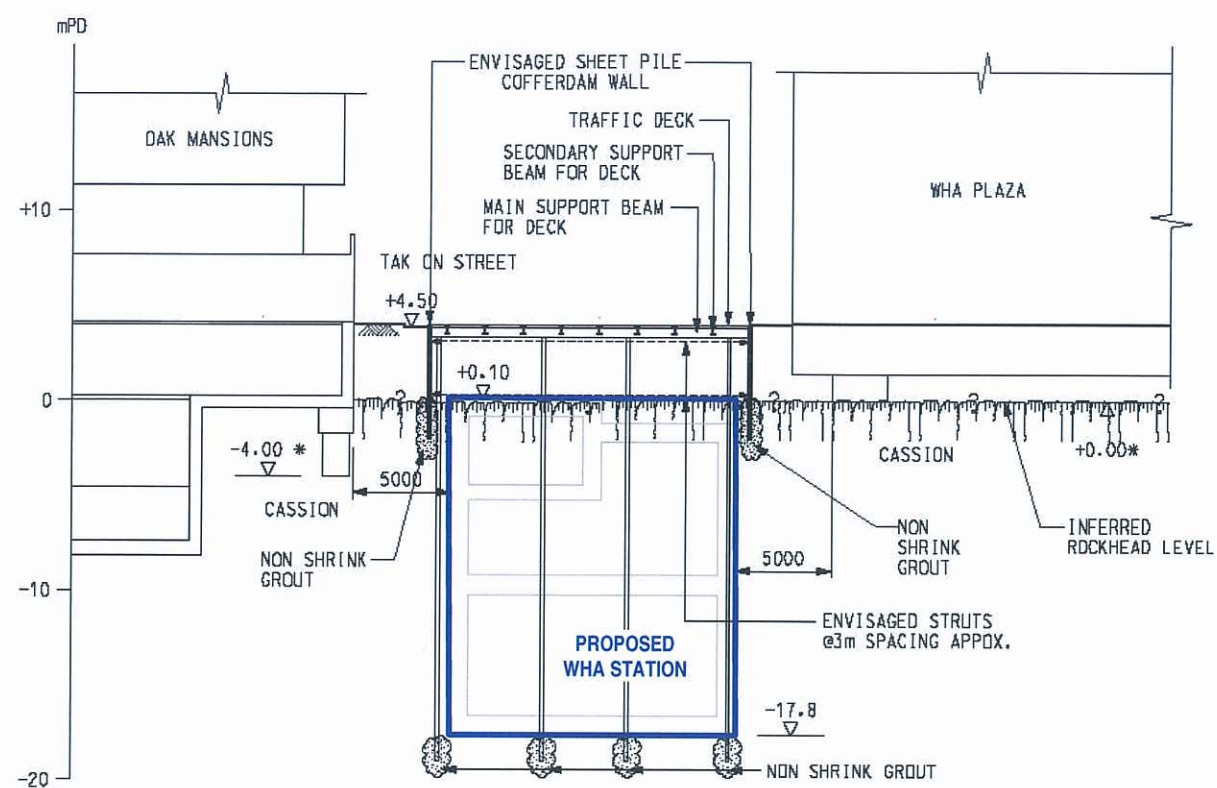


Figure 5.15 Details of WHA Station (1 of 3)

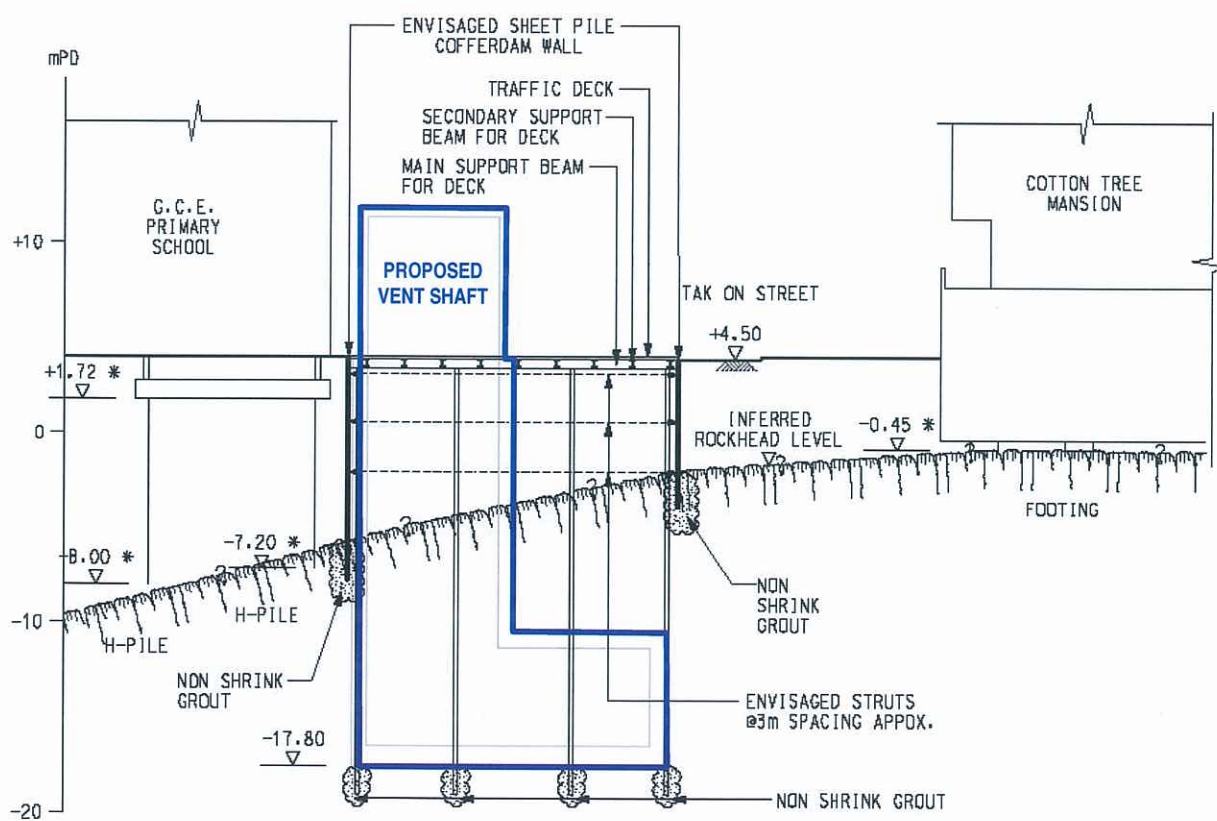


ENVISAGED CONSTRUCTION METHOD (CUT & COVER) FOR WHA STATION (EAST CONCOURSE)

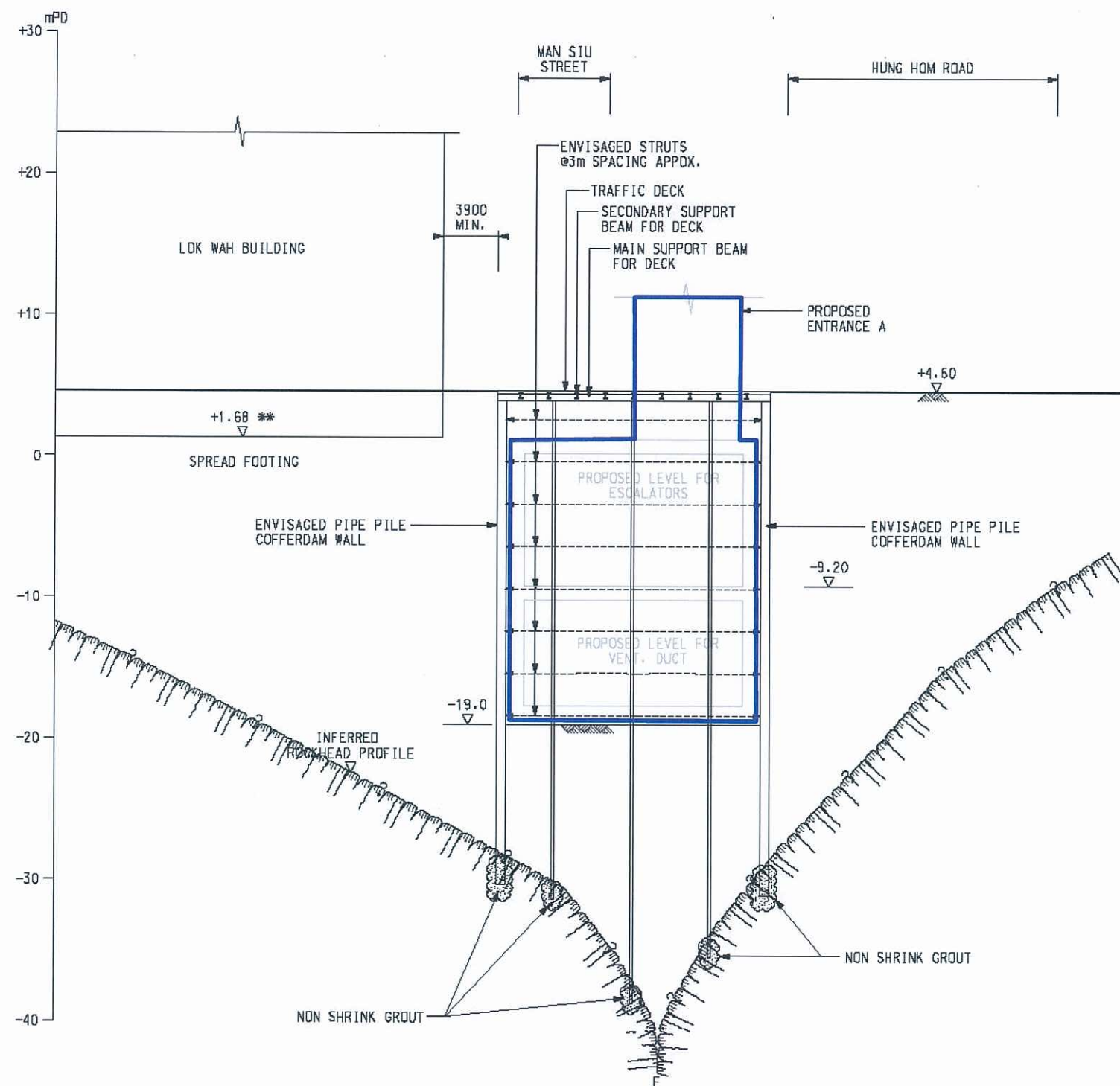




SECTION 2  
SCALE 1:200  
C21/001

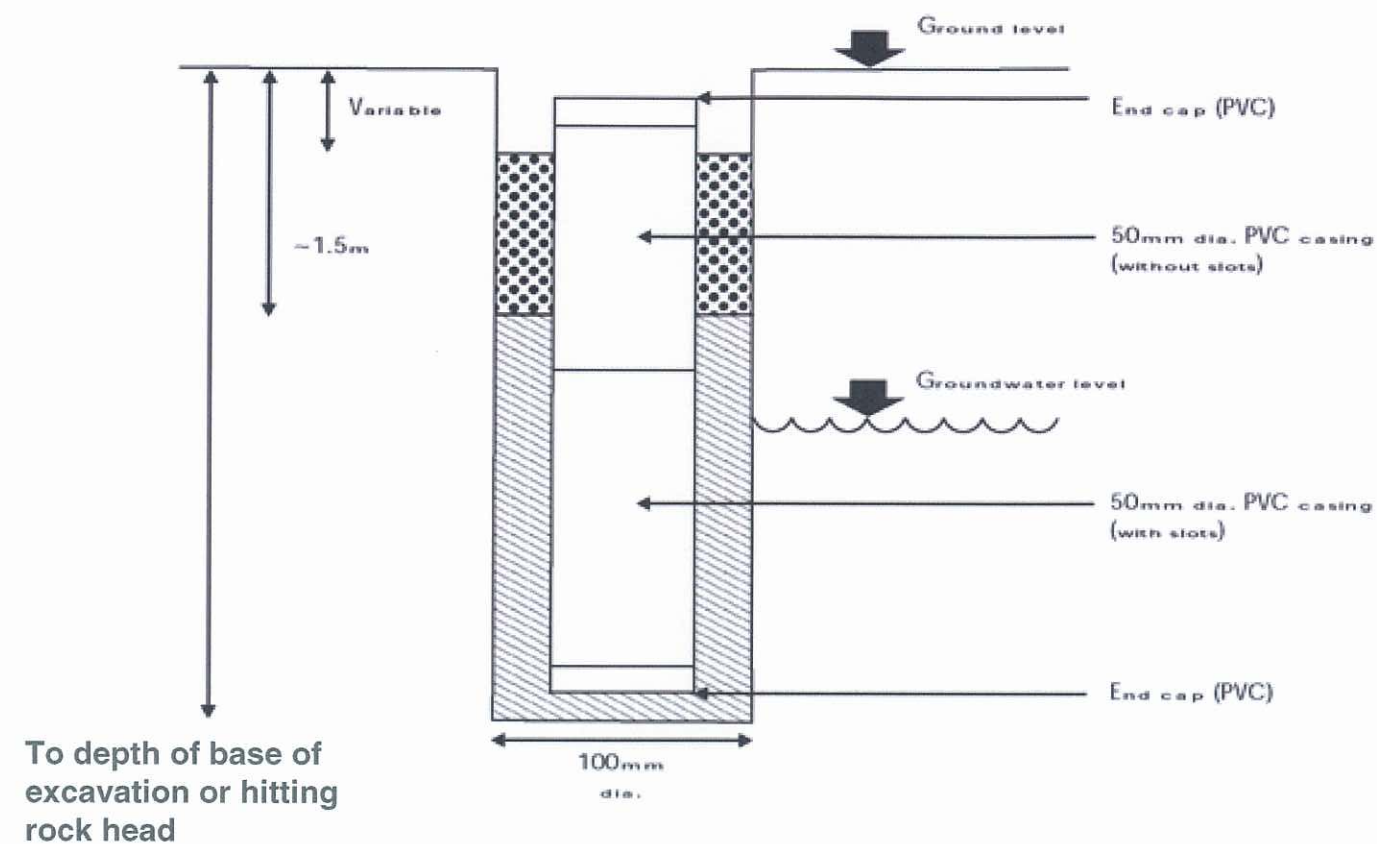


SECTION 3  
SCALE 1:200  
C21/001

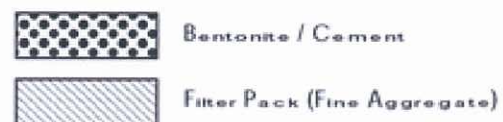


SECTION 4  
SCALE 1:200  
C21/001





(N.T.S)

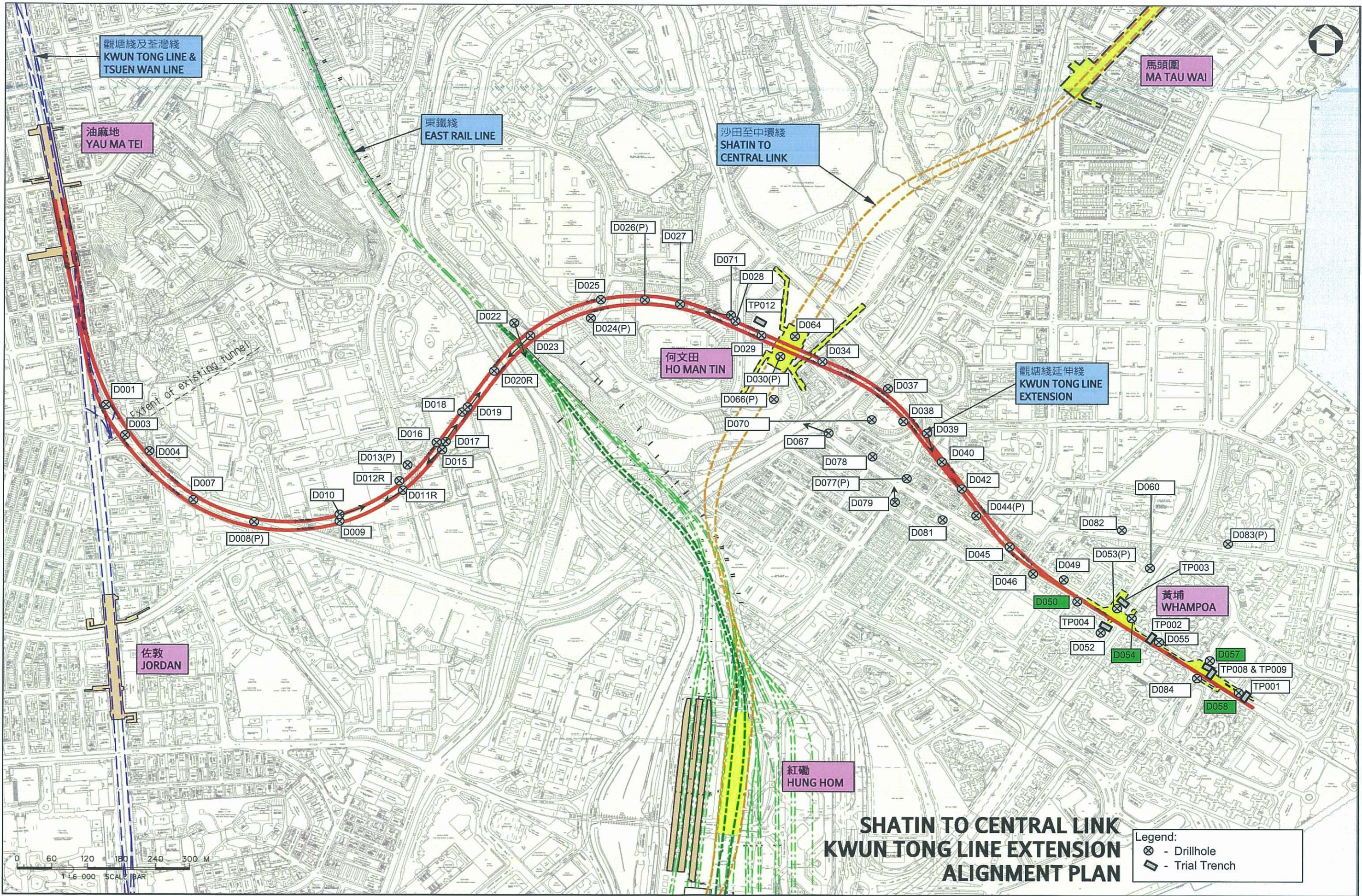


## *Appendices*

## *Appendix 5.1*

### *Summary of Interim Findings of Site Specific Ground Investigation Works for Kwun Tong Line Extension*





觀塘綫及荃灣綫  
KWUN TONG LINE &  
TSUEN WAN LINE

油麻地  
YAU MA TEI

東鐵綫  
EAST RAIL LINE

沙田至中環綫  
SHATIN TO CENTRAL LINK

馬頭圍  
MA TAU WAI

何文田  
HO MAN TIN

觀塘綫延伸綫  
KWUN TONG LINE  
EXTENSION

佐敦  
JORDAN

紅磡  
HUNG HOM

黃埔  
WHAMPOA

**SHATIN TO CENTRAL LINK  
KWUN TONG LINE EXTENSION  
ALIGNMENT PLAN**

Legend:  
 ⊗ - Drillhole  
 ⊠ - Trial Trench

0 60 120 180 240 300 M  
 1:6,000 SCALE BAR

**Appendix 5.1 Previous Laboratory Results of Soil Samples Collected during the MTR Geotechnical Investigation for KTE  
(Refer to Attached Laboratory Test Reports)**

| Chemicals                      | D050  |       |       | D054  |       | D057  |       | D058  |       | RBRGs<br>Urban Residential | RBRGs<br>Public Parks |
|--------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------------------------|-----------------------|
|                                | 0.50m | 1.50m | 2.00m | 4.50m | 1.50m | 0.50m | 1.50m | 0.50m | 1.50m |                            |                       |
| <b>VOCs</b>                    |       |       |       |       |       |       |       |       |       |                            |                       |
| Benzene                        | <0.20 | <0.20 | <0.20 | <0.20 | ND    | ND    | ND    | ND    | ND    | 7.04E-01                   | 4.22E+01              |
| Ethylbenzene                   | <0.20 | <0.20 | <0.20 | <0.20 | ND    | ND    | ND    | ND    | ND    | 7.09E+02                   | 1.00E+04*             |
| Toluene                        | <0.20 | <0.20 | <0.20 | <0.20 | ND    | ND    | ND    | ND    | ND    | 1.44E+03                   | 1.00E+04*             |
| Xylenes (Total)                | <0.40 | <0.40 | <0.40 | <0.40 | ND    | ND    | ND    | ND    | ND    | 9.50E+01                   | 1.00E+04*             |
| <b>SVOCs (ug/Lg)</b>           |       |       |       |       |       |       |       |       |       |                            |                       |
| Acenaphthene                   | <55   | <55   | <55   | <55   | <55   | <55   | <55   | <55   | <55   | 3.51E+03                   | 1.00E+04*             |
| Acenaphthylene                 | 67    | <55   | <55   | <55   | <55   | <55   | <55   | <55   | <55   | 2.34E+03                   | 1.00E+04*             |
| Anthracene                     | 84    | <55   | <55   | <55   | <55   | <55   | <55   | <55   | <55   | 1.00E+04*                  | 1.00E+04*             |
| Benzo(a)anthracene             | 330   | <170  | <170  | <170  | <170  | <170  | <170  | <170  | <170  | 1.20E+01                   | 3.83E+01              |
| Benzo(a)pyrene                 | 250   | <170  | <170  | <170  | <170  | <170  | <170  | <170  | <170  | 1.20E+00                   | 3.83E+00              |
| Benzo(b)fluoranthene           | 590   | <170  | <170  | <170  | <170  | <170  | <170  | <170  | <170  | 9.88E+00                   | 2.04E+01              |
| Benzo(g,h,i)perylene           | 310   | <170  | <170  | <170  | <170  | <170  | <170  | <170  | <170  | 1.80E+03                   | 5.74E+03              |
| Benzo(k)fluoranthene           | 180   | <170  | <170  | <170  | <170  | <170  | <170  | <170  | <170  | 1.20E+02                   | 3.83E+02              |
| Chrysene                       | 320   | <170  | <170  | <170  | <170  | <170  | <170  | <170  | <170  | 8.71E+02                   | 1.54E+03              |
| Dibenzo(a,h)anthracene         | <170  | <170  | <170  | <170  | <170  | <170  | <170  | <170  | <170  | 1.20E+00                   | 3.83E+00              |
| Fluoranthene                   | 510   | 190   | <170  | <170  | <170  | <170  | <170  | <170  | <170  | 2.40E+03                   | 7.62E+03              |
| Fluorene                       | <55   | <55   | <55   | <55   | <55   | <55   | <55   | <55   | <55   | 2.38E+03                   | 7.45E+03              |
| Indeno(1,2,3-cd)pyrene         | <170  | <170  | <170  | <170  | <170  | <170  | <170  | <170  | <170  | 1.20E+01                   | 3.83E+01              |
| Naphthalene                    | <55   | <55   | <55   | <55   | <55   | <55   | <55   | <55   | <55   | 1.82E+02                   | 9.14E+02              |
| Phenanthrene                   | <55   | 100   | <55   | <55   | <55   | <55   | <55   | <55   | <55   | 1.00E+04*                  | 1.00E+04*             |
| Pyrene                         | 1100  | 260   | 190   | <170  | <170  | <170  | <170  | <170  | <170  | 1.80E+03                   | 5.72E+03              |
| <b>Metals (mg/Lg)</b>          |       |       |       |       |       |       |       |       |       |                            |                       |
| Cadmium                        | 0.19  | 0.18  | 0.22  | <0.10 | 0.13  | 0.11  | <0.10 | 0.13  | <0.10 | 7.38E+01                   | 2.45E+02              |
| Chromium                       | 6.6   | 4.6   | 4.0   | 1.2   | 3.0   | <1.0  | 1.5   | 1.0   | 1.3   | 1.00E+04*                  | 1.00E+04*             |
| Copper                         | 14    | 52    | 16    | 3.5   | 8.1   | 3.3   | 10    | 8.6   | 3.3   | 2.95E+03                   | 9.79E+03              |
| Nickel                         | 2.3   | 4.1   | 2.5   | 1.1   | 2.4   | <1.0  | 1.4   | 1.1   | <1.0  | 1.48E+03                   | 4.90E+03              |
| Lead                           | 37    | 67    | 50    | 54    | 18    | 13    | 55    | 58    | 110   | 2.58E+02                   | 8.57E+02              |
| Zinc                           | 61    | 100   | 95    | 77    | 51    | <20   | 27    | 24    | 31    | 1.00E+04*                  | 1.00E+04*             |
| Mercury                        | 0.12  | 0.76  | 0.15  | 0.07  | 0.19  | 0.17  | <0.05 | 0.05  | <0.05 | 1.10E+01                   | 4.56E+01              |
| Silver                         | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <1.0  | <1.0  | <1.0  | 1.48E+03                   | 4.90E+03              |
| <b>Petroleum Carbon Ranges</b> |       |       |       |       |       |       |       |       |       |                            |                       |
| C6 - C8                        | <5.0  | <5.0  | <5.0  | <5.0  | <5.0  | <5.0  | <5.0  | <5.0  | <5.0  | 1.41E+03                   | 1.00E+04*             |
| C9 - C16                       | <200  | <200  | <200  | <200  | <200  | <200  | <200  | <200  | <200  | 2.24E+03                   | 1.00E+04*             |
| C17 - C35                      | <500  | <500  | <500  | <500  | <500  | <500  | <500  | <500  | <500  | 1.00E+04*                  | 1.00E+04*             |

\* denotes a 'ceiling limit' concentration; ND denotes 'Not Determined'

**TEST REPORT**

**Report No.** : 106549N  
**Project Name** : MTR Contract NEX/2208 Ground Investigation for Kwun Tong Line Extension  
**Customer** : Lam Geotechnics Limited  
**Address** : 11/F, Centre Point, 181 - 185 Gloucester Road, Wanchai, Hong Kong.

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**Lab Job No.** : J653  
**Lab Sample No.** : 21052/1-2, 21070/1-2  
**Sample Description** : 4 samples said to be soils  
**Sample Receipt Date** : 23 June 2008  
**Test Period** : 28 June 2008 - 8 July 2008

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**Test Information****1. Low Molecular Weight Polyaromatic Hydrocarbons, LMW PAHs**

| CODE    | Test Parameter | Reporting Limit | Test Procedure |
|---------|----------------|-----------------|----------------|
|         |                | ug/kg           |                |
| NAP     | Naphthalene    | 55              | S/O/PAH        |
| ANY     | Acenaphthylene | 55              | S/O/PAH        |
| ANA     | Acenaphthene   | 55              | S/O/PAH        |
| FLU     | Fluorene       | 55              | S/O/PAH        |
| PHE     | Phenanthrene   | 55              | S/O/PAH        |
| ANT     | Anthracene     | 55              | S/O/PAH        |
| LMW PAH | Total LMW PAH  | 55              | S/O/PAH        |

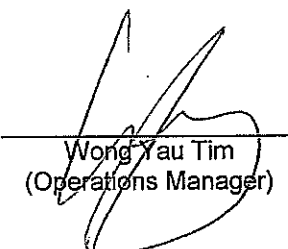
**2. High Molecular Weight Polyaromatic Hydrocarbons, HMW PAHs**

| CODE    | Test Parameter         | Reporting Limit | Test Procedure |
|---------|------------------------|-----------------|----------------|
|         |                        | ug/kg           |                |
| CHR     | Chrysene               | 170             | S/O/PAH        |
| BaA     | Benzo(a)anthracene     | 170             | S/O/PAH        |
| BbF     | Benzo(b)fluoranthene   | 170             | S/O/PAH        |
| BkF     | Benzo(k)fluoranthene   | 170             | S/O/PAH        |
| BaP     | Benzo(a)pyrene         | 170             | S/O/PAH        |
| DBA     | Dibenz(ah)anthracene   | 170             | S/O/PAH        |
| FLT     | Fluoranthene           | 170             | S/O/PAH        |
| IPY     | Indeno(1,2,3-cd)pyrene | 170             | S/O/PAH        |
| PYR     | Pyrene                 | 170             | S/O/PAH        |
| BPE     | Benzo(ghi)perylene     | 170             | S/O/PAH        |
| HMW PAH | Total HMW PAH          | 170             | S/O/PAH        |

- Notes :
1. This report shall not be reproduced, except in full, without prior approval from Lam Laboratories Ltd.
  2. Results relate to samples as received.
  3. Results are based on dry sample weight.
  4. < = less than
  5. N/A = Not applicable
  6. Test results satisfy all in-house QA/QC protocols as attached.
  7. Test description (for in-house methods only) as follows:  
S/O/PAH: Ultra-Sonic extraction and GC-MS Quantification.
  8. Total LMW PAH equals to the sum of NAP, ANY, ANA, FLU, PHE, ANT.
  9. Total HMW PAH equals to the sum of CHR, BaA, BbF, BkF, BaP, DBA, FLT, IPY, PYR, BPE.
  10. This is a draft report.

Authorized Signatory :

Issue Date: 8 July. 2008



Wong Yau Tim  
(Operations Manager)

**TEST REPORT**

**Report No.** : 106549N  
**Project Name** : MTR Contract NEX/2208 Ground Investigation for Kwun Tong Line Extension  
**Customer** : Lam Geotechnics Limited  


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**Lab Job No.** : J653  
**Lab Sample No.** : 21052/1-2, 21070/1-2

**Test Results****1. Low Molecular Weight Polyaromatic Hydrocarbons, LMW PAHs**

| Customer Ref.<br>Drillhole No. | Sample   |      |    |                             | NAP<br>ug/kg | ANY<br>ug/kg | ANA<br>ug/kg | FLU<br>ug/kg | PHE<br>ug/kg | ANT<br>ug/kg | LMW<br>PAH<br>ug/kg |
|--------------------------------|----------|------|----|-----------------------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------------|
|                                | Depth, m |      |    | Type<br>Specimen<br>Depth m |              |              |              |              |              |              |                     |
|                                | No.      | From | To |                             |              |              |              |              |              |              |                     |
| 2203/KTE/D057<br>No. 2         | NA       | NA   | NA |                             | 0.50         | <55          | <55          | <55          | <55          | <55          | <55                 |
| 2203/KTE/D057<br>No. 5         | NA       | NA   | NA |                             | 1.50         | <55          | <55          | <55          | <55          | <55          | <55                 |
| 2203/KTE/D058<br>No.2          | NA       | NA   | NA |                             | 0.50         | <55          | <55          | <55          | <55          | <55          | <55                 |
| 2203/KTE/D058<br>No.5          | NA       | NA   | NA |                             | 1.50         | <55          | <55          | <55          | <55          | <55          | <55                 |

**TEST REPORT**

**Report No.** : 106549N  
**Project Name** : MTR Contract NEX/2208 Ground Investigation for Kwun Tong Line Extension  
**Customer** : Lam Geotechnics Limited  
**Lab Job No.** : J653  
**Lab Sample No.** : 21052/1-2, 21070/1-2

**Test Results****2. High Molecular Weight Polyaromatic Hydrocarbons, HMW PAHs**

| Customer Ref.<br>Drillhole No. | Sample   |      |    |      |                     | CHR<br>ug/kg | BaA<br>ug/kg | BbF<br>ug/kg | BkF<br>ug/kg | BaP<br>ug/kg | DBA<br>ug/kg | FLT<br>ug/kg | IPY<br>ug/kg | PYR<br>ug/kg | BPE<br>ug/kg | HMW<br>PAH<br>ug/kg |
|--------------------------------|----------|------|----|------|---------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------------|
|                                | Depth, m |      |    | Type | Specimen<br>Depth m |              |              |              |              |              |              |              |              |              |              |                     |
|                                | No.      | From | To |      |                     |              |              |              |              |              |              |              |              |              |              |                     |
| 2203/KTE/D057<br>No. 2         | NA       | NA   | NA |      | 0.50                | <170         | <170         | <170         | <170         | <170         | <170         | <170         | <170         | <170         | <170         | <170                |
| 2203/KTE/D057<br>No. 5         | NA       | NA   | NA |      | 1.50                | <170         | <170         | <170         | <170         | <170         | <170         | <170         | <170         | <170         | <170         | <170                |
| 2203/KTE/D058<br>No.2          | NA       | NA   | NA |      | 0.50                | <170         | <170         | <170         | <170         | <170         | <170         | <170         | <170         | <170         | <170         | <170                |
| 2203/KTE/D058<br>No.5          | NA       | NA   | NA |      | 1.50                | <170         | <170         | <170         | <170         | <170         | <170         | <170         | <170         | <170         | <170         | <170                |

--- End of Report---

**QUALITY CONTROL REPORT**

Report No. : 106549N  
 Project Name : MTR Contract NEX/2208 Ground Investigation for Kwun Tong Line Extension  
 Customer : Lam Geotechnics Limited  
 Lab Job No. : J653  
 Lab Sample No. : 21052/1-2, 21070/1-2

**QC Results****1. Low Molecular Weight Polyaromatic Hydrocarbons, LMW PAHs****1.1 Sample Duplicate**

| Customer Ref.<br>Drillhole No. | Sample   |      |    |      | Batch | NAP                  | ANY | ANA | FLU | PHE | ANT |     |
|--------------------------------|----------|------|----|------|-------|----------------------|-----|-----|-----|-----|-----|-----|
|                                | Depth, m |      |    | Type |       | Specimen<br>Depth m  | %   | %   | %   | %   | %   | %   |
|                                | No.      | From | To |      |       |                      | %   | %   | %   | %   | %   | %   |
| 2203/KTE/D057<br>No. 2         | N/A      | NA   | NA |      | 0.50  | 1                    | na* | na* | na* | na* | na* | na* |
| Control Limits                 |          |      |    |      |       | +/- 30 % of the mean |     |     |     |     |     |     |

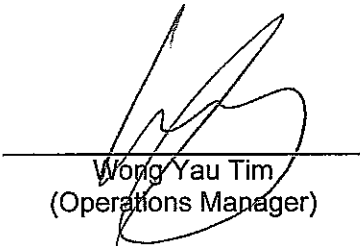
**1.2 Sample Spike (Spike Level = 5 ug)**

| Customer Ref.<br>Drillhole No. | Sample   |      |    |      | Batch | NAP                 | ANY | ANA | FLU | PHE | ANT |     |
|--------------------------------|----------|------|----|------|-------|---------------------|-----|-----|-----|-----|-----|-----|
|                                | Depth, m |      |    | Type |       | Specimen<br>Depth m | %   | %   | %   | %   | %   | %   |
|                                | No.      | From | To |      |       |                     | %   | %   | %   | %   | %   | %   |
| 2203/KTE/D057<br>No. 2         | N/A      | NA   | NA |      | 0.50  | 1                   | 104 | 113 | 109 | 109 | 103 | 110 |
| Control Limits                 |          |      |    |      |       | 70 - 130 %          |     |     |     |     |     |     |

**Notes :**

1. na\* = Relative deviation (RD) for duplicates cannot be evaluated as the value determined is lower than reporting limit.

Authorized Signatory :



Wong Yau Tim  
(Operations Manager)

Issue Date: : 8 July. 2008

**QUALITY CONTROL REPORT**

Report No. : 106549N  
 Project Name : MTR Contract NEX/2208 Ground Investigation for Kwun Tong Line Extension  
 Customer : Lam Geotechnics Limited  
 Lab Job No. : J653  
 Lab Sample No. : 21052/1-2, 21070/1-2

**QC Results****2. High Molecular Weight Polyaromatic Hydrocarbons, HMW PAHs****2.1 Sample Duplicate**

| Customer Ref.          | Sample   |      |    |                     | Batch | CHR                  | BaA | BbF | BkF | BaP | DBA | FLT | IPY | PYR | BPE |
|------------------------|----------|------|----|---------------------|-------|----------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Drillhole No.          | Depth, m |      |    | Specimen<br>Depth m |       | %                    | %   | %   | %   | %   | %   | %   | %   | %   | %   |
|                        | No.      | From | To |                     |       | %                    | %   | %   | %   | %   | %   | %   | %   | %   |     |
| 2203/KTE/D057<br>No. 2 | NA       | NA   | NA | 0.50                | 1     | na*                  | na* | na* | na* | na* | na* | na* | na* | na* | na* |
|                        |          |      |    |                     |       |                      |     |     |     |     |     |     |     |     |     |
|                        |          |      |    |                     |       |                      |     |     |     |     |     |     |     |     |     |
|                        |          |      |    |                     |       |                      |     |     |     |     |     |     |     |     |     |
| Control Limits         |          |      |    |                     |       | +/- 30 % of the mean |     |     |     |     |     |     |     |     |     |

**2.2 Sample Spike (Spike Level = 5 ug)**

| Customer Ref.          | Sample   |      |    |                     | Batch | CHR        | BaA | BbF | BkF | BaP | DBA | FLT | IPY | PYR | BPE |
|------------------------|----------|------|----|---------------------|-------|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Drillhole No.          | Depth, m |      |    | Specimen<br>Depth m |       | %          | %   | %   | %   | %   | %   | %   | %   | %   | %   |
|                        | No.      | From | To |                     |       | %          | %   | %   | %   | %   | %   | %   | %   | %   |     |
| 2203/KTE/D057<br>No. 2 | N/A      | NA   | NA | 0.50                | 1     | 100        | 94  | 113 | 106 | 92  | 102 | 99  | 106 | 108 | 99  |
|                        |          |      |    |                     |       |            |     |     |     |     |     |     |     |     |     |
|                        |          |      |    |                     |       |            |     |     |     |     |     |     |     |     |     |
|                        |          |      |    |                     |       |            |     |     |     |     |     |     |     |     |     |
| Control Limits         |          |      |    |                     |       | 70 - 130 % |     |     |     |     |     |     |     |     |     |

**Notes :**

- na\* = Relative deviation (RD) for duplicates cannot be evaluated as the value determined is lower than reporting limit.

**QUALITY CONTROL REPORT**

**Report No.** : 106549N  
**Project Name** : MTR Contract NEX/2208 Ground Investigation for Kwun Tong Line Extension  
**Customer** : Lam Geotechnics Limited  


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**Lab Job No.** : J653  
**Lab Sample No.** : 21052/1-2, 21070/1-2

**QC Results****1. Low Molecular Weight Polyaromatic Hydrocarbons, LMW PAHs****1.3 QC Sample (SETOC 2007.4.1)**

| Customer Ref.  | Sample        |          |      |    |      | Batch | NAP<br>%                    | ANY<br>% | ANA<br>% | FLU<br>% | PHE<br>% | ANT<br>% |                     |
|----------------|---------------|----------|------|----|------|-------|-----------------------------|----------|----------|----------|----------|----------|---------------------|
|                | Drillhole No. | Depth, m |      |    | Type |       |                             |          |          |          |          |          | Specimen<br>Depth m |
|                |               | No.      | From | To |      |       |                             |          |          |          |          |          |                     |
| SETOC 2007.4.1 | N/A           | N/A      | N/A  |    | N/A  | 1     | 78                          | 114      | 71       | 85       | 84       | 92       |                     |
|                |               |          |      |    |      |       |                             |          |          |          |          |          |                     |
|                |               |          |      |    |      |       |                             |          |          |          |          |          |                     |
|                |               |          |      |    |      |       |                             |          |          |          |          |          |                     |
| Control Limits |               |          |      |    |      |       | 70 - 130 % of nominal value |          |          |          |          |          |                     |

**1.4 Method Blank**

| Customer Ref.  | Sample        |          |      |    |      | Batch | NAP<br>ug/kg              | ANY<br>ug/kg | ANA<br>ug/kg | FLU<br>ug/kg | PHE<br>ug/kg | ANT<br>ug/kg |                     |
|----------------|---------------|----------|------|----|------|-------|---------------------------|--------------|--------------|--------------|--------------|--------------|---------------------|
|                | Drillhole No. | Depth, m |      |    | Type |       |                           |              |              |              |              |              | Specimen<br>Depth m |
|                |               | No.      | From | To |      |       |                           |              |              |              |              |              |                     |
| N/A            | N/A           | N/A      | N/A  |    | N/A  | 1     | <55                       | <55          | <55          | <55          | <55          | <55          |                     |
|                |               |          |      |    |      |       |                           |              |              |              |              |              |                     |
|                |               |          |      |    |      |       |                           |              |              |              |              |              |                     |
|                |               |          |      |    |      |       |                           |              |              |              |              |              |                     |
| Control Limits |               |          |      |    |      |       | Less than reporting limit |              |              |              |              |              |                     |



**QUALITY CONTROL REPORT**

Report No. : 106549N  
 Project Name : MTR Contract NEX/2208 Ground Investigation for Kwun Tong Line Extension  
 Customer : Lam Geotechnics Limited  
 Lab Job No. : J653  
 Lab Sample No. : 21052/1-2, 21070/1-2

**QC Results****2. High Molecular Weight Polyaromatic Hydrocarbons, HMW PAHs****2.3 QC Sample (SETOC 2007.4.1)**

| Customer Ref.  | Sample   |      |     |      |          | Batch                      | CHR | BaA | BbF | BkF | BaP | DBA | FLT | IPY | PYR | BPE |
|----------------|----------|------|-----|------|----------|----------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Drillhole No.  | Depth, m |      |     | Type | Specimen |                            | %   | %   | %   | %   | %   | %   | %   | %   | %   | %   |
|                | No.      | From | To  |      | Depth m  |                            |     |     |     |     |     |     |     |     |     |     |
| SETOC 2007.4.1 | N/A      | N/A  | N/A |      | N/A      | 1                          | 84  | 95  | 113 | 82  | 73  | 108 | 75  | 78  | 91  | 95  |
|                |          |      |     |      |          |                            |     |     |     |     |     |     |     |     |     |     |
|                |          |      |     |      |          |                            |     |     |     |     |     |     |     |     |     |     |
|                |          |      |     |      |          |                            |     |     |     |     |     |     |     |     |     |     |
| Control Limits |          |      |     |      |          | 70 - 130% of nominal value |     |     |     |     |     |     |     |     |     |     |

**2.4 Method Blank**

| Customer Ref.  | Sample   |      |     |      |          | Batch                     | CHR   | BaA   | BbF   | BkF   | BaP   | DBA   | FLT   | IPY   | PYR   | BPE   |
|----------------|----------|------|-----|------|----------|---------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Drillhole No.  | Depth, m |      |     | Type | Specimen |                           | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg |
|                | No.      | From | To  |      | Depth m  |                           |       |       |       |       |       |       |       |       |       |       |
| N/A            | N/A      | N/A  | N/A |      | N/A      | 1                         | <170  | <170  | <170  | <170  | <170  | <170  | <170  | <170  | <170  | <170  |
|                |          |      |     |      |          |                           |       |       |       |       |       |       |       |       |       |       |
|                |          |      |     |      |          |                           |       |       |       |       |       |       |       |       |       |       |
|                |          |      |     |      |          |                           |       |       |       |       |       |       |       |       |       |       |
| Control Limits |          |      |     |      |          | Less than reporting limit |       |       |       |       |       |       |       |       |       |       |

**TEST REPORT**

**Report No.** : 106550N  
**Project Name** : MTR Contract NEX/2208 Ground Investigation for Kwun Tong Line Extension  
**Customer** : Lam Geotechnics Limited  
**Address** : 11/F, Centre Point, 181 - 185 Gloucester Road, Wanchai, Hong Kong.  


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**Lab Job No.** : J653  
**Lab Sample No.** : 21052/1-2, 21070/1-2  
**Sample Description** : 4 samples said to be soils  
**Sample Receipt Date** : 23 June 2008  
**Test Period** : 28 June 2008 - 8 July 2008  

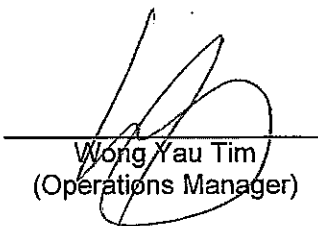

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**Test Information**

| CODE | Test Parameter | Reporting Limit | Test Procedure |
|------|----------------|-----------------|----------------|
|      |                | mg/kg           |                |
| TPH  | C6-C8          | 5.0             | S/O/TPH        |
| TPH  | C9-C16         | 200             | S/O/TPH        |
| TPH  | C17-C35        | 500             | S/O/TPH        |

- Notes :
1. This report shall not be reproduced, except in full, without prior approval from Lam Laboratories Ltd.
  2. Results relate to samples as received.
  3. Results are based on dry sample weight.
  4. < = less than
  5. N/A = Not applicable
  6. Test results satisfy all in-house QA/QC protocols as attached.
  7. Test description (for in-house methods only) as follows:  
S/O/TPH: Solvent extraction and GC-FID Quantification.

Authorized Signatory :



Wong Yau Tim  
(Operations Manager)

Issue Date: 8 July. 2008

TEST REPORT

**Report No.** : 106550N  
**Project Name** : MTR Contract NEX/2208 Ground Investigation for Kwun Tong Line Extension  
**Customer** : Lam Geotechnics Limited  


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**Lab Job No.** : J653  
**Lab Sample No.** : 21052/1-2, 21070/1-2

Test Results

| Customer Ref.<br>Drillhole No. | Sample   |      |    |      | C6-C8<br>mg/kg | C9-C16<br>mg/kg | C17-C35<br>mg/kg |                     |
|--------------------------------|----------|------|----|------|----------------|-----------------|------------------|---------------------|
|                                | Depth, m |      |    | Type |                |                 |                  | Specimen<br>Depth m |
|                                | No.      | From | To |      |                |                 |                  |                     |
| 2203/KTE/D057<br>No. 2         | NA       | NA   | NA |      | 0.50           | <5.0            | <200             | <500                |
| 2203/KTE/D057<br>No. 5         | NA       | NA   | NA |      | 1.50           | <5.0            | <200             | <500                |
| 2203/KTE/D058<br>No.2          | NA       | NA   | NA |      | 0.50           | <5.0            | <200             | <500                |
| 2203/KTE/D058<br>No.5          | NA       | NA   | NA |      | 1.50           | <5.0            | <200             | <500                |

--- End of Report ---

**QUALITY CONTROL REPORT**

**Report No.** : 106550N  
**Project Name** : MTR Contract NEX/2208 Ground Investigation for Kwun Tong Line Extension  
**Customer** : Lam Geotechnics Limited  


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**Lab Job No.** : J653  
**Lab Sample No.** : 21052/1-2, 21070/1-2

**QC Results****1.1 Sample Duplicate**

| Customer Ref.<br>Drillhole No. | Sample   |      |    |      | Batch | C6-C8<br>%          | C9-C16<br>% | C17-C35<br>% |                     |
|--------------------------------|----------|------|----|------|-------|---------------------|-------------|--------------|---------------------|
|                                | Depth, m |      |    | Type |       |                     |             |              | Specimen<br>Depth m |
|                                | No.      | From | To |      |       |                     |             |              |                     |
| 2203/KTE/D057 No. 2            | NA       | NA   | NA |      | NA    | 1                   | na*         | na*          | na*                 |
|                                |          |      |    |      |       |                     |             |              |                     |
|                                |          |      |    |      |       |                     |             |              |                     |
|                                |          |      |    |      |       |                     |             |              |                     |
| Control Limit                  |          |      |    |      |       | +/- 30% of the mean |             |              |                     |

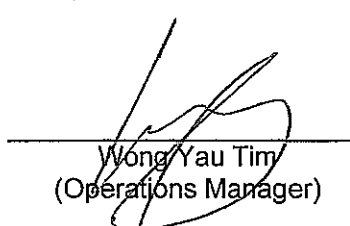
**1.2 Sample Spike**

| Customer Ref.<br>Drillhole No. | Sample   |      |    |      | Batch | C6-C8<br>% | C9-C16<br>% | C17-C35<br>% |                     |
|--------------------------------|----------|------|----|------|-------|------------|-------------|--------------|---------------------|
|                                | Depth, m |      |    | Type |       |            |             |              | Specimen<br>Depth m |
|                                | No.      | From | To |      |       |            |             |              |                     |
| 2203/KTE/D057 No. 2            | NA       | NA   | NA |      | NA    | 1          | 113         | 110          | 107                 |
|                                |          |      |    |      |       |            |             |              |                     |
|                                |          |      |    |      |       |            |             |              |                     |
|                                |          |      |    |      |       |            |             |              |                     |
| Control Limit                  |          |      |    |      |       | 70-130 %   |             |              |                     |

**Notes :**

1. na\* = Relative deviation (RD) for duplicates cannot be evaluated as the value determined is lower than reporting limit.

Authorized Signatory :



Wong Yau Tim  
(Operations Manager)

Issue Date: 8 July, 2008

**QUALITY CONTROL REPORT**

**Report No.** : 106550N  
**Project Name** : MTR Contract NEX/2208 Ground Investigation for Kwun Tong Line Extension  
**Customer** : Lam Geotechnics Limited  


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**Lab Job No.** : J653  
**Lab Sample No.** : 21052/1-2, 21070/1-2

**QC Results****1.3 QC Sample**

| Customer Ref. | Sample   |      |     |      |                     | Batch | C6-C8    | C9-C16 | C17-C35 |
|---------------|----------|------|-----|------|---------------------|-------|----------|--------|---------|
| Drillhole No. | Depth, m |      |     | Type | Specimen<br>Depth m |       | %        | %      | %       |
|               | No.      | From | To  |      |                     |       |          |        |         |
| N/A           | N/A      | N/A  | N/A |      | N/A                 | 1     | 102      | 104    | 113     |
|               |          |      |     |      |                     |       |          |        |         |
|               |          |      |     |      |                     |       |          |        |         |
|               |          |      |     |      |                     |       |          |        |         |
| Control Limit |          |      |     |      |                     |       | 70-130 % |        |         |

**1.4 Method Blank**

| Customer Ref. | Sample   |      |     |      |                     | Batch | C6-C8                     | C9-C16 | C17-C35 |
|---------------|----------|------|-----|------|---------------------|-------|---------------------------|--------|---------|
| Drillhole No. | Depth, m |      |     | Type | Specimen<br>Depth m |       | mg/kg                     | mg/kg  | mg/kg   |
|               | No.      | From | To  |      |                     |       |                           |        |         |
| N/A           | N/A      | N/A  | N/A |      | N/A                 | 1     | <5.0                      | <200   | <500    |
|               |          |      |     |      |                     |       |                           |        |         |
|               |          |      |     |      |                     |       |                           |        |         |
|               |          |      |     |      |                     |       |                           |        |         |
| Control Limit |          |      |     |      |                     |       | Less than reporting limit |        |         |

TEST REPORT

Report No. : 106573N  
 Project Name : MTR Contract NEX/2208 Ground Investigation for Kwun Tong Line Extension

Customer : Lam Geotechnics Limited

Address : 11/F, Centre Point, 181 - 185 Gloucester Road, Wanchai, Hong Kong.

Lab Job No. : J653

Lab Sample No. : 21052/1-2, 21070/1-2

Sample Description : 4 samples said to be soils

Sample Receipt Date : 23 June 2008 -28 June 2008

Test Period : 28 June 2008 - 11 July 2008

**Test Information**

| Code | Test Parameter | Reporting Limits | Test Procedure         |
|------|----------------|------------------|------------------------|
|      |                | Sediment/Soil    |                        |
|      |                | mg/kg            |                        |
| Cd   | Cadmium        | 0.10             | S/M/DIG-RAR & M/ICP-MS |
| Cr   | Chromium       | 1.0              | S/M/DIG-RAR & M/ICP-MS |
| Cu   | Copper         | 1.0              | S/M/DIG-RAR & M/ICP-MS |
| Ni   | Nickel         | 1.0              | S/M/DIG-RAR & M/ICP-MS |
| Pb   | Lead           | 1.0              | S/M/DIG-RAR & M/ICP-MS |
| Zn   | Zinc           | 20               | S/M/DIG-RAR & M/ICP-MS |
| Hg   | Mercury        | 0.05             | S/M/DIG-RAR & M/ICP-MS |
| Ag   | Silver         | 0.10             | S/M/DIG-RAR & M/ICP-MS |

- Notes :
1. This report shall not be reproduced, except in full, without prior approval from Lam Laboratories Ltd.
  2. Results related to samples as received.
  3. Results are based on dry sample weight.
  4. < = less than
  5. N/A = Not applicable
  6. Test results satisfy all in-house QA/QC protocols as attached.
  7. Test description (for in-house methods) as follows:  
 S/M/DIG-RAR: Acid digestion.  
 M/ICP-MS: ICP-MS Quantification.

Authorized Signatory :

  
 Wong Yau Tim  
 (Operations Manager)

Issue Date:

11 July 2008

TEST REPORT

Report No. : 106573N  
 Project Name : MTR Contract NEX/2208 Ground Investigation for Kwun Tong Line Extension

Customer : Lam Geotechnics Limited

Lab Job No. : J653  
 Lab Sample No. : 21052/1-2, 21070/1-2

## Test Result

| Customer Ref.<br>Drillhole No. | Sample   |      |    |                           | Cd<br>mg/kg | Cr<br>mg/kg | Cu<br>mg/kg | Ni<br>mg/kg | Pb<br>mg/kg | Zn<br>mg/kg | Hg<br>mg/kg | Ag<br>mg/kg |
|--------------------------------|----------|------|----|---------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|                                | Depth, m |      |    | Type Specimen<br>Depth, m |             |             |             |             |             |             |             |             |
|                                | No.      | From | To |                           |             |             |             |             |             |             |             |             |
| 2203/KTE/D057<br>No. 2         | NA       | NA   | NA | 0.50                      | <0.10       | 1.5         | 10          | 1.4         | 55          | 27          | <0.05       | <1.0        |
| 2203/KTE/D057<br>No. 5         | NA       | NA   | NA | 1.50                      | <0.10       | 1.0         | 8.6         | 1.1         | 58          | 24          | 0.05        | <1.0        |
| 2203/KTE/D058<br>No.2          | NA       | NA   | NA | 0.50                      | 0.13        | 1.4         | 3.3         | <1.0        | 110         | 31          | <0.05       | <1.0        |
| 2203/KTE/D058<br>No.5          | NA       | NA   | NA | 1.50                      | <0.10       | 1.3         | 3.6         | 1.4         | 110         | 30          | <0.05       | <1.0        |

---End of Report---

**QUALITY CONTROL REPORT**

Report No. : 106573N  
 Project Name : MTR Contract NEX/2208 Ground Investigation for Kwun Tong Line Extension

Customer : Lam Geotechnics Limited

Lab Job No. : J653  
 Lab Sample No. : 21052/1-2, 21070/1-2

**QC Results**

**1.1 Sample Duplicate (Relative deviation)**

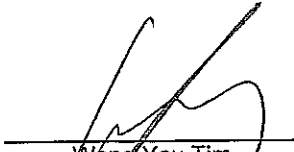
| Customer Ref.<br>Drillhole No. | Sample   |      |    |      |                     | Batch                | Cd<br>% | Cr<br>% | Cu<br>% | Ni<br>% | Pb<br>% | Zn<br>% | Hg<br>% | Ag<br>% |
|--------------------------------|----------|------|----|------|---------------------|----------------------|---------|---------|---------|---------|---------|---------|---------|---------|
|                                | Depth, m |      |    | Type | Specimen<br>Depth m |                      |         |         |         |         |         |         |         |         |
|                                | No.      | From | To |      |                     |                      |         |         |         |         |         |         |         |         |
| 2203/KTE/D057<br>No. 2         | NA       | NA   | NA |      | NA                  | 1                    | *na     | 3.4     | 2.8     | 6.6     | 2.3     | 9.4     | *na     | *na     |
| Control Limits                 |          |      |    |      |                     | +/- 30 % of the mean |         |         |         |         |         |         |         |         |

**1.2 Method Spike (Standard Addition)**

| Customer Ref.<br>Drillhole No. | Sample   |      |    |      |                     | Batch      | Cd<br>% | Cr<br>% | Cu<br>% | Ni<br>% | Pb<br>% | Zn<br>% | Hg<br>% | Ag<br>% |
|--------------------------------|----------|------|----|------|---------------------|------------|---------|---------|---------|---------|---------|---------|---------|---------|
|                                | Depth, m |      |    | Type | Specimen<br>Depth m |            |         |         |         |         |         |         |         |         |
|                                | No.      | From | To |      |                     |            |         |         |         |         |         |         |         |         |
| 2203/KTE/D057<br>No. 2         | NA       | NA   | NA |      | NA                  | 1          | 102     | 99      | 87      | 96      | 82      | 84      | 81      | 93      |
| Control Limits                 |          |      |    |      |                     | 75 - 125 % |         |         |         |         |         |         |         |         |

Note: 1. \*na = Relative deviation(RD) for duplicates cannot be evaluated as the value determined is lower than reporting limits.  
 2. Results are based on dry sample weight  
 3. < = less than

Authorized Signatory :

  
 Wong Yau Tim  
 (Operations Manager)

Issue Date:

11 July 2008



**QUALITY CONTROL REPORT**

Report No. : 106573N  
 Project Name : MTR Contract NEX/2208 Ground Investigation for Kwun Tong Line Extension

Customer : Lam Geotechnics Limited

Lab Job No. : J653  
 Lab Sample No. : 21052/1-2, 21070/1-2

**QC Results****1.3 Sample Reference Material (ISE 2005.4.4)**

| Reference      | Sample   |      |     |                             | Batch | Cd<br>%                    | Cr<br>% | Cu<br>% | Ni<br>% | Pb<br>% | Zn<br>% | Hg<br>% | Ag<br>% |     |
|----------------|----------|------|-----|-----------------------------|-------|----------------------------|---------|---------|---------|---------|---------|---------|---------|-----|
|                | Depth, m |      |     | Type<br>Specimen<br>Depth m |       |                            |         |         |         |         |         |         |         |     |
|                | No.      | From | To  |                             |       |                            |         |         |         |         |         |         |         |     |
| ISE 050303     | N/A      | N/A  | N/A |                             | N/A   | 1                          | 112     | 107     | 109     | 105     | 101     | 110     | 86      | 118 |
| Control Limits |          |      |     |                             |       | 75 - 125% of nominal value |         |         |         |         |         |         |         |     |

**1.4 Method Blank**

| Reference      | Sample   |      |     |                             | Batch | Cd                        | Cr    | Cu   | Ni   | Pb   | Zn   | Hg  | Ag    |       |
|----------------|----------|------|-----|-----------------------------|-------|---------------------------|-------|------|------|------|------|-----|-------|-------|
|                | Depth, m |      |     | Type<br>Specimen<br>Depth m |       |                           |       |      |      |      |      |     |       |       |
|                | No.      | From | To  |                             |       |                           |       |      |      |      |      |     |       |       |
| N/A            | N/A      | N/A  | N/A |                             | N/A   | 1                         | <0.10 | <1.0 | <1.0 | <1.0 | <1.0 | <20 | <0.05 | <0.10 |
| Control Limits |          |      |     |                             |       | Less than reporting limit |       |      |      |      |      |     |       |       |

Note: 1. Results are based on dry sample weight  
 2. < = less than

**TEST REPORT**

Report No. : 106697N  
 Project Name : MTR Contract NEX/2208 Ground Investigation for Kwun Tong Line Extension

Customer : Lam Geotechnics Limited

Address : 11/F, Centre Point, 181 - 185 Gloucester Road, Wanchai, Hong Kong.

Lab Job No. : J653

Lab Sample No. : 21152, 21162, 21193

Sample Description : 6 samples said to be soils

Sample Receipt Date : 18 July 2008 - 30 July 2008

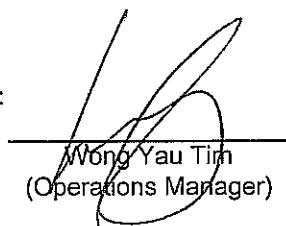
Test Period : 19 July 2008 - 7 August 2008

**Test Information**

| Code | Test Parameter | Reporting Limits | Test Procedure         |
|------|----------------|------------------|------------------------|
|      |                | Sediment/Soil    |                        |
|      |                | mg/kg            |                        |
| Cd   | Cadmium        | 0.10             | S/M/DIG-RAR & M/ICP-MS |
| Cr   | Chromium       | 1.0              | S/M/DIG-RAR & M/ICP-MS |
| Cu   | Copper         | 1.0              | S/M/DIG-RAR & M/ICP-MS |
| Ni   | Nickel         | 1.0              | S/M/DIG-RAR & M/ICP-MS |
| Pb   | Lead           | 1.0              | S/M/DIG-RAR & M/ICP-MS |
| Zn   | Zinc           | 20               | S/M/DIG-RAR & M/ICP-MS |
| Hg   | Mercury        | 0.05             | S/M/DIG-RAR & M/ICP-MS |
| Ag   | Silver         | 0.10             | S/M/DIG-RAR & M/ICP-MS |

- Notes :
1. This report shall not be reproduced, except in full, without prior approval from Lam Laboratories Ltd.
  2. Results related to samples as received.
  3. Results are based on dry sample weight.
  4. < = less than
  5. N/A = Not applicable
  6. Test results satisfy all in-house QA/QC protocols as attached.
  7. Test description (for in-house methods) as follows:  
 S/M/DIG-RAR: Acid digestion.  
 M/ICP-MS: ICP-MS Quantification.

Authorized Signatory :

  
 Wong Yau Tim  
 (Operations Manager)

Issue Date: 7 August 2008

TEST REPORT

Report No. : 106697N  
 Project Name : MTR Contract NEX/2208 Ground Investigation for Kwun Tong Line Extension

Customer : Lam Geotechnics Limited

Lab Job No. : J653  
 Lab Sample No. : 21152, 21162, 21193

## Test Result

| Customer Ref.         | Sample   |      |      |      | Cd       | Cr    | Cu    | Ni    | Pb    | Zn    | Hg    | Ag    |
|-----------------------|----------|------|------|------|----------|-------|-------|-------|-------|-------|-------|-------|
| Drillhole No.         | Depth, m |      |      | Type | Specimen |       |       |       |       |       |       |       |
|                       | No.      | From | To   |      | Depth, m | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg |
| DO50                  | NA       | NA   | NA   |      | 0.50     | 0.19  | 6.6   | 14    | 2.3   | 37    | 61    | <0.10 |
| DO50                  | NA       | NA   | NA   |      | 1.50     | 0.18  | 4.6   | 52    | 4.1   | 67    | 100   | <0.10 |
| DO50                  | NA       | 2.00 | 2.45 |      | NA       | 0.22  | 4.0   | 16.0  | 2.5   | 50    | 95    | <0.10 |
| DO50                  | NA       | 4.50 | 4.95 |      | NA       | <0.10 | 1.2   | 3.5   | 1.1   | 54    | 77    | <0.10 |
| 2203/KTG/DO09<br>No.1 | NA       | NA   | NA   |      | 0.50     | 0.26  | 6.0   | 11    | 5.8   | 32    | 180   | <0.10 |
| 2203/KTG/DO09<br>No.2 | NA       | NA   | NA   |      | 1.50     | <0.10 | <1.0  | <1.0  | <1.0  | 14    | 9.0   | <0.10 |

---End of Report---

QUALITY CONTROL REPORT

Report No. : 106697N  
 Project Name : MTR Contract NEX/2208 Ground Investigation for Kwun Tong Line Extension

Customer : Lam Geotechnics Limited

Lab Job No. : J653  
 Lab Sample No. : 21152, 21162, 21193

## QC Results

## 1.1 Sample Duplicate (Relative deviation)

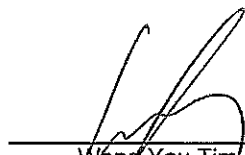
| Customer Ref.<br>Drillhole No. | Sample   |      |    |      |                     | Batch | Cd<br>%              | Cr<br>% | Cu<br>% | Ni<br>% | Pb<br>% | Zn<br>% | Hg<br>% | Ag<br>% |
|--------------------------------|----------|------|----|------|---------------------|-------|----------------------|---------|---------|---------|---------|---------|---------|---------|
|                                | Depth, m |      |    | Type | Specimen<br>Depth m |       |                      |         |         |         |         |         |         |         |
|                                | No.      | From | To |      |                     |       |                      |         |         |         |         |         |         |         |
| DO50                           | NA       | NA   | NA |      | NA                  | 1     | *na                  | 3.4     | 2.8     | 6.6     | 2.3     | 9.4     | *na     | *na     |
|                                |          |      |    |      |                     |       |                      |         |         |         |         |         |         |         |
|                                |          |      |    |      |                     |       |                      |         |         |         |         |         |         |         |
|                                |          |      |    |      |                     |       |                      |         |         |         |         |         |         |         |
| Control Limits                 |          |      |    |      |                     |       | +/- 30 % of the mean |         |         |         |         |         |         |         |

## 1.2 Method Spike (Standard Addition)

| Customer Ref.<br>Drillhole No. | Sample   |      |    |      |                     | Batch | Cd<br>%    | Cr<br>% | Cu<br>% | Ni<br>% | Pb<br>% | Zn<br>% | Hg<br>% | Ag<br>% |
|--------------------------------|----------|------|----|------|---------------------|-------|------------|---------|---------|---------|---------|---------|---------|---------|
|                                | Depth, m |      |    | Type | Specimen<br>Depth m |       |            |         |         |         |         |         |         |         |
|                                | No.      | From | To |      |                     |       |            |         |         |         |         |         |         |         |
| DO50                           | NA       | NA   | NA |      | NA                  | 1     | 102        | 99      | 87      | 96      | 82      | 84      | 81      | 93      |
|                                |          |      |    |      |                     |       |            |         |         |         |         |         |         |         |
|                                |          |      |    |      |                     |       |            |         |         |         |         |         |         |         |
|                                |          |      |    |      |                     |       |            |         |         |         |         |         |         |         |
| Control Limits                 |          |      |    |      |                     |       | 75 - 125 % |         |         |         |         |         |         |         |

Note: 1. \*na = Relative deviation(RD) for duplicates cannot be evaluated as the value determined is lower than reporting limits.  
 2. Results are based on dry sample weight  
 3. < = less than

Authorized Signatory :

  
 Wong Yau Tim  
 (Operations Manager)

Issue Date: 7 August 2008

**QUALITY CONTROL REPORT**

Report No. : 106697N  
 Project Name : MTR Contract NEX/2208 Ground Investigation for Kwun Tong Line Extension

Customer : Lam Geotechnics Limited

Lab Job No. : J653  
 Lab Sample No. : 21152, 21162, 21193

**QC Results****1.3 Sample Reference Material (ISE 2005.4.4)**

| Reference      | Sample   |      |     |      |          | Batch | Cd                         | Cr  | Cu  | Ni  | Pb  | Zn  | Hg | Ag  |
|----------------|----------|------|-----|------|----------|-------|----------------------------|-----|-----|-----|-----|-----|----|-----|
|                | Depth, m |      |     | Type | Specimen |       |                            |     |     |     |     |     |    |     |
|                | No.      | From | To  |      |          |       |                            |     |     |     |     |     |    |     |
| ISE 050303     | N/A      | N/A  | N/A |      | N/A      | 1     | 112                        | 107 | 109 | 105 | 101 | 110 | 86 | 118 |
| Control Limits |          |      |     |      |          |       | 75 - 125% of nominal value |     |     |     |     |     |    |     |

**1.4 Method Blank**

| Reference      | Sample   |      |     |      |          | Batch | Cd                        | Cr   | Cu   | Ni   | Pb   | Zn  | Hg    | Ag    |
|----------------|----------|------|-----|------|----------|-------|---------------------------|------|------|------|------|-----|-------|-------|
|                | Depth, m |      |     | Type | Specimen |       |                           |      |      |      |      |     |       |       |
|                | No.      | From | To  |      |          |       |                           |      |      |      |      |     |       |       |
| N/A            | N/A      | N/A  | N/A |      | N/A      | 1     | <0.10                     | <1.0 | <1.0 | <1.0 | <1.0 | <20 | <0.05 | <0.10 |
| Control Limits |          |      |     |      |          |       | Less than reporting limit |      |      |      |      |     |       |       |

Note: 1. Results are based on dry sample weight  
 2. < = less than

**TEST REPORT**

**Report No.** : 106734N  
**Project Name** : MTR Contract NEX/2208 Ground Investigation for Kwun Tong Line Extension  
**Customer** : Lam Geotechnics Limited  
**Address** : 11/F, Centre Point, 181 - 185 Gloucester Road, Wanchai, Hong Kong.  


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**Lab Job No.** : J653  
**Lab Sample No.** : 21152, 21162, 21193  
**Sample Description** : 6 samples said to be soils  
**Sample Receipt Date** : 30 July 2008  
**Test Period** : 31 July 2008 - 7 August 2008

**Test Information****1. Low Molecular Weight Polyaromatic Hydrocarbons, LMW PAHs**

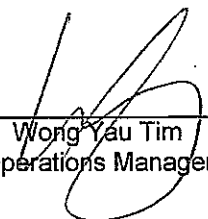
| CODE    | Test Parameter | Reporting Limit | Test Procedure |
|---------|----------------|-----------------|----------------|
|         |                | ug/kg           |                |
| NAP     | Naphthalene    | 55              | S/O/PAH        |
| ANY     | Acenaphthylene | 55              | S/O/PAH        |
| ANA     | Acenaphthene   | 55              | S/O/PAH        |
| FLU     | Fluorene       | 55              | S/O/PAH        |
| PHE     | Phenanthrene   | 55              | S/O/PAH        |
| ANT     | Anthracene     | 55              | S/O/PAH        |
| LMW PAH | Total LMW PAH  | 55              | S/O/PAH        |

**2. High Molecular Weight Polyaromatic Hydrocarbons, HMW PAHs**

| CODE    | Test Parameter         | Reporting Limit | Test Procedure |
|---------|------------------------|-----------------|----------------|
|         |                        | ug/kg           |                |
| CHR     | Chrysene               | 170             | S/O/PAH        |
| BaA     | Benzo(a)anthracene     | 170             | S/O/PAH        |
| BbF     | Benzo(b)fluoranthene   | 170             | S/O/PAH        |
| BkF     | Benzo(k)fluoranthene   | 170             | S/O/PAH        |
| BaP     | Benzo(a)pyrene         | 170             | S/O/PAH        |
| DBA     | Dibenz(ah)anthracene   | 170             | S/O/PAH        |
| FLT     | Fluoranthene           | 170             | S/O/PAH        |
| IPY     | Indeno(1,2,3-cd)pyrene | 170             | S/O/PAH        |
| PYR     | Pyrene                 | 170             | S/O/PAH        |
| BPE     | Benzo(ghi)perylene     | 170             | S/O/PAH        |
| HMW PAH | Total HMW PAH          | 170             | S/O/PAH        |

- Notes :
1. This report shall not be reproduced, except in full, without prior approval from Lam Laboratories Ltd.
  2. Results relate to samples as received.
  3. Results are based on dry sample weight.
  4. < = less than
  5. N/A = Not applicable
  6. Test results satisfy all in-house QA/QC protocols as attached.
  7. Test description (for in-house methods only) as follows:  
S/O/PAH: Ultra-Sonic extraction and GC-MS Quantification.
  8. Total LMW PAH equals to the sum of NAP, ANY, ANA, FLU, PHE, ANT.
  9. Total HMW PAH equals to the sum of CHR, BaA, BbF, BkF, BaP, DBA, FLT, IPY, PYR, BPE.
  10. This is a draft report.

Authorized Signatory :

  
 \_\_\_\_\_  
 Wong Yau Tim  
 (Operations Manager)

Issue Date: 11 August. 2008

**TEST REPORT**

**Report No.** : 106734N  
**Project Name** : MTR Contract NEX/2208 Ground Investigation for Kwun Tong Line Extension  
**Customer** : Lam Geotechnics Limited  


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**Lab Job No.** : J653  
**Lab Sample No.** : 21152, 21162, 21193

**Test Results****1. Low Molecular Weight Polyaromatic Hydrocarbons, LMW PAHs**

| Customer Ref.<br>Drillhole No. | Sample   |      |      |      | NAP<br>ug/kg | ANY<br>ug/kg | ANA<br>ug/kg | FLU<br>ug/kg | PHE<br>ug/kg | ANT<br>ug/kg | LMW<br>PAH<br>ug/kg |                     |
|--------------------------------|----------|------|------|------|--------------|--------------|--------------|--------------|--------------|--------------|---------------------|---------------------|
|                                | Depth, m |      |      | Type |              |              |              |              |              |              |                     | Specimen<br>Depth m |
|                                | No.      | From | To   |      |              |              |              |              |              |              |                     |                     |
| DO50                           | NA       | NA   | NA   |      | 0.50         | <55          | 67           | <55          | <55          | <55          | 84                  | 200                 |
| DO50                           | NA       | NA   | NA   |      | 1.50         | <55          | <55          | <55          | <55          | 100          | <55                 | 120                 |
| DO50                           | NA       | 2.00 | 2.45 |      | NA           | <55          | <55          | <55          | <55          | <55          | <55                 | <55                 |
| DO50                           | NA       | 4.50 | 4.95 |      | NA           | <55          | <55          | <55          | <55          | <55          | <55                 | <55                 |
| 2203/KTG/DO09<br>No.1          | NA       | NA   | NA   |      | 0.50         | <55          | <55          | <55          | <55          | <55          | <55                 | <55                 |
| 2203/KTG/DO09<br>No.2          | NA       | NA   | NA   |      | 1.50         | <55          | <55          | <55          | <55          | <55          | <55                 | <55                 |

**TEST REPORT**

**Report No.** : 106734N  
**Project Name** : MTR Contract NEX/2208 Ground Investigation for Kwun Tong Line Extension  
**Customer** : Lam Geotechnics Limited  


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**Lab Job No.** : J653  
**Lab Sample No.** : 21152, 21162, 21193

**Test Results****2. High Molecular Weight Polyaromatic Hydrocarbons, HMW PAHs**

| Customer Ref.<br>Drillhole No. | Sample |      |      |      | Specimen<br>Depth m | CHR<br>ug/kg | BaA<br>ug/kg | BbF<br>ug/kg | BkF<br>ug/kg | BaP<br>ug/kg | DBA<br>ug/kg | FLT<br>ug/kg | IPY<br>ug/kg | PYR<br>ug/kg | BPE<br>ug/kg | HMW<br>PAH<br>ug/kg |
|--------------------------------|--------|------|------|------|---------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------------|
|                                | No.    | From | To   | Type |                     |              |              |              |              |              |              |              |              |              |              |                     |
| DO50                           | NA     | NA   | NA   |      | 0.50                | 320          | 330          | 590          | 180          | 250          | <170         | 510          | <170         | 1100         | 310          | 3600                |
| DO50                           | NA     | NA   | NA   |      | 1.50                | <170         | <170         | 210          | <170         | <170         | <170         | 190          | <170         | 260          | <170         | 1200                |
| DO50                           | NA     | 2.00 | 2.45 |      | NA                  | <170         | <170         | <170         | <170         | <170         | <170         | <170         | <170         | 190          | <170         | 600                 |
| DO50                           | NA     | 4.50 | 4.95 |      | NA                  | <170         | <170         | <170         | <170         | <170         | <170         | <170         | <170         | <170         | <170         | <170                |
| 2203/KTG/DO09<br>No.1          | NA     | NA   | NA   |      | 0.50                | <170         | <170         | <170         | <170         | <170         | <170         | <170         | <170         | <170         | <170         | <170                |
| 2203/KTG/DO09<br>No.2          | NA     | NA   | NA   |      | 1.50                | <170         | <170         | <170         | <170         | <170         | <170         | <170         | <170         | <170         | <170         | <170                |

— End of Report —



**QUALITY CONTROL REPORT**

Report No. : 106734N  
 Project Name : MTR Contract NEX/2208 Ground Investigation for Kwun Tong Line Extension  
 Customer : Lam Geotechnics Limited  
 Lab Job No. : J653  
 Lab Sample No. : 21152, 21162, 21193

**QC Results****1. Low Molecular Weight Polyaromatic Hydrocarbons, LMW PAHs****1.1 Sample Duplicate**

| Customer Ref.  | Sample        |          |      |    |      | Batch | NAP<br>%             | ANY<br>% | ANA<br>% | FLU<br>% | PHE<br>% | ANT<br>% |                     |
|----------------|---------------|----------|------|----|------|-------|----------------------|----------|----------|----------|----------|----------|---------------------|
|                | Drillhole No. | Depth, m |      |    | Type |       |                      |          |          |          |          |          | Specimen<br>Depth m |
|                |               | No.      | From | To |      |       |                      |          |          |          |          |          |                     |
| DO50           | N/A           | NA       | NA   |    | 0.50 | 1     | na*                  | 19       | na*      | na*      | na*      | 27       |                     |
|                |               |          |      |    |      |       |                      |          |          |          |          |          |                     |
|                |               |          |      |    |      |       |                      |          |          |          |          |          |                     |
|                |               |          |      |    |      |       |                      |          |          |          |          |          |                     |
| Control Limits |               |          |      |    |      |       | +/- 30 % of the mean |          |          |          |          |          |                     |

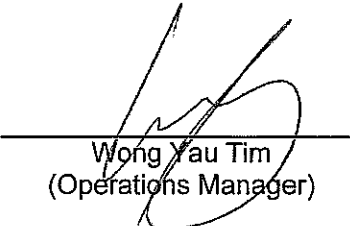
**1.2 Sample Spike (Spike Level = 5 ug)**

| Customer Ref.  | Sample        |          |      |    |      | Batch | NAP<br>%   | ANY<br>% | ANA<br>% | FLU<br>% | PHE<br>% | ANT<br>% |                     |
|----------------|---------------|----------|------|----|------|-------|------------|----------|----------|----------|----------|----------|---------------------|
|                | Drillhole No. | Depth, m |      |    | Type |       |            |          |          |          |          |          | Specimen<br>Depth m |
|                |               | No.      | From | To |      |       |            |          |          |          |          |          |                     |
| DO50           | N/A           | NA       | NA   |    | 0.50 | 1     | 113        | 119      | 115      | 115      | 120      | 77       |                     |
|                |               |          |      |    |      |       |            |          |          |          |          |          |                     |
|                |               |          |      |    |      |       |            |          |          |          |          |          |                     |
|                |               |          |      |    |      |       |            |          |          |          |          |          |                     |
| Control Limits |               |          |      |    |      |       | 70 - 130 % |          |          |          |          |          |                     |

**Notes :**

- na\* = Relative deviation (RD) for duplicates cannot be evaluated as the value determined is lower than reporting limit.

Authorized Signatory :



Wong Yau Tim  
(Operations Manager)

Issue Date: : 11 August. 2008

**QUALITY CONTROL REPORT**

**Report No.** : 106734N  
**Project Name** : MTR Contract NEX/2208 Ground Investigation for Kwun Tong Line Extension  
**Customer** : Lam Geotechnics Limited  
**Lab Job No.** : J653  
**Lab Sample No.** : 21152, 21162, 21193

**QC Results****2. High Molecular Weight Polyaromatic Hydrocarbons, HMW PAHs****2.1 Sample Duplicate**

| Customer Ref.  | Sample        |          |      |    | Batch | CHR                  | BaA  | BbF | BkF | BaP | DBA | FLT | IPY | PYR | BPE |    |
|----------------|---------------|----------|------|----|-------|----------------------|------|-----|-----|-----|-----|-----|-----|-----|-----|----|
|                | Drillhole No. | Depth, m |      |    |       | Specimen<br>Depth m  | %    | %   | %   | %   | %   | %   | %   | %   | %   | %  |
|                |               | No.      | From | To |       |                      | Type |     |     |     |     |     |     |     |     |    |
| DO50           | NA            | NA       | NA   |    | 0.50  | 1                    | 13   | 6.1 | 22  | 2.7 | 11  | na* | 19  | na* | 18  | 22 |
|                |               |          |      |    |       |                      |      |     |     |     |     |     |     |     |     |    |
|                |               |          |      |    |       |                      |      |     |     |     |     |     |     |     |     |    |
|                |               |          |      |    |       |                      |      |     |     |     |     |     |     |     |     |    |
| Control Limits |               |          |      |    |       | +/- 30 % of the mean |      |     |     |     |     |     |     |     |     |    |

**2.2 Sample Spike (Spike Level = 5 ug)**

| Customer Ref.  | Sample        |          |      |    | Batch | CHR                 | BaA  | BbF | BkF | BaP | DBA | FLT | IPY | PYR | BPE |     |
|----------------|---------------|----------|------|----|-------|---------------------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|                | Drillhole No. | Depth, m |      |    |       | Specimen<br>Depth m | %    | %   | %   | %   | %   | %   | %   | %   | %   | %   |
|                |               | No.      | From | To |       |                     | Type |     |     |     |     |     |     |     |     |     |
| DO50           | N/A           | NA       | NA   |    | 0.50  | 1                   | 93   | 82  | 98  | 118 | 75  | 122 | 76  | 118 | 79  | 109 |
|                |               |          |      |    |       |                     |      |     |     |     |     |     |     |     |     |     |
|                |               |          |      |    |       |                     |      |     |     |     |     |     |     |     |     |     |
|                |               |          |      |    |       |                     |      |     |     |     |     |     |     |     |     |     |
| Control Limits |               |          |      |    |       | 70 - 130 %          |      |     |     |     |     |     |     |     |     |     |

**Notes :**

1. na\* = Relative deviation (RD) for duplicates cannot be evaluated as the value determined is lower than reporting limit.

**QUALITY CONTROL REPORT**

**Report No.** : 106734N  
**Project Name** : MTR Contract NEX/2208 Ground Investigation for Kwun Tong Line Extension  
**Customer** : Lam Geotechnics Limited  


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**Lab Job No.** : J653  
**Lab Sample No.** : 21152, 21162, 21193

**QC Results****1. Low Molecular Weight Polyaromatic Hydrocarbons, LMW PAHs****1.3 QC Sample (SETOC 2007.4.1)**

| Customer Ref.  | Sample   |      |     |      |                     | Batch | NAP<br>%                    | ANY<br>% | ANA<br>% | FLU<br>% | PHE<br>% | ANT<br>% |
|----------------|----------|------|-----|------|---------------------|-------|-----------------------------|----------|----------|----------|----------|----------|
|                | Depth, m |      |     | Type | Specimen<br>Depth m |       |                             |          |          |          |          |          |
|                | No.      | From | To  |      |                     |       |                             |          |          |          |          |          |
| SETOC 2007.4.1 | N/A      | N/A  | N/A |      | N/A                 | 1     | 92                          | 108      | 81       | 94       | 83       | 109      |
|                |          |      |     |      |                     |       |                             |          |          |          |          |          |
|                |          |      |     |      |                     |       |                             |          |          |          |          |          |
|                |          |      |     |      |                     |       |                             |          |          |          |          |          |
| Control Limits |          |      |     |      |                     |       | 70 - 130 % of nominal value |          |          |          |          |          |

**1.4 Method Blank**

| Customer Ref.  | Sample   |      |     |      |                     | Batch | NAP<br>ug/kg              | ANY<br>ug/kg | ANA<br>ug/kg | FLU<br>ug/kg | PHE<br>ug/kg | ANT<br>ug/kg |
|----------------|----------|------|-----|------|---------------------|-------|---------------------------|--------------|--------------|--------------|--------------|--------------|
|                | Depth, m |      |     | Type | Specimen<br>Depth m |       |                           |              |              |              |              |              |
|                | No.      | From | To  |      |                     |       |                           |              |              |              |              |              |
| N/A            | N/A      | N/A  | N/A |      | N/A                 | 1     | <55                       | <55          | <55          | <55          | <55          | <55          |
|                |          |      |     |      |                     |       |                           |              |              |              |              |              |
|                |          |      |     |      |                     |       |                           |              |              |              |              |              |
|                |          |      |     |      |                     |       |                           |              |              |              |              |              |
| Control Limits |          |      |     |      |                     |       | Less than reporting limit |              |              |              |              |              |

**QUALITY CONTROL REPORT**

**Report No.** : 106734N  
**Project Name** : MTR Contract NEX/2208 Ground Investigation for Kwun Tong Line Extension  
**Customer** : Lam Geotechnics Limited  


---

**Lab Job No.** : J653  
**Lab Sample No.** : 21152, 21162, 21193

**QC Results****2. High Molecular Weight Polyaromatic Hydrocarbons, HMW PAHs****2.3 QC Sample (SETOC 2007.4.1)**

| Customer Ref.  | Sample   |      |     |      |                     | Batch | CHR                        | BaA | BbF | BkF | BaP | DBA | FLT | IPY | PYR | BPE |
|----------------|----------|------|-----|------|---------------------|-------|----------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|                | Depth, m |      |     | Type | Specimen<br>Depth m |       | %                          | %   | %   | %   | %   | %   | %   | %   | %   | %   |
|                | No.      | From | To  |      |                     |       |                            |     |     |     |     |     |     |     |     |     |
| SETOC 2007.4.1 | N/A      | N/A  | N/A |      | N/A                 | 1     | 85                         | 90  | 111 | 94  | 93  | 105 | 74  | 80  | 93  | 100 |
|                |          |      |     |      |                     |       |                            |     |     |     |     |     |     |     |     |     |
|                |          |      |     |      |                     |       |                            |     |     |     |     |     |     |     |     |     |
|                |          |      |     |      |                     |       |                            |     |     |     |     |     |     |     |     |     |
| Control Limits |          |      |     |      |                     |       | 70 - 130% of nominal value |     |     |     |     |     |     |     |     |     |

**2.4 Method Blank**

| Customer Ref.  | Sample   |      |     |      |                     | Batch | CHR                       | BaA   | BbF   | BkF   | BaP   | DBA   | FLT   | IPY   | PYR   | BPE   |
|----------------|----------|------|-----|------|---------------------|-------|---------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|                | Depth, m |      |     | Type | Specimen<br>Depth m |       | ug/kg                     | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg |
|                | No.      | From | To  |      |                     |       |                           |       |       |       |       |       |       |       |       |       |
| N/A            | N/A      | N/A  | N/A |      | N/A                 | 1     | <170                      | <170  | <170  | <170  | <170  | <170  | <170  | <170  | <170  | <170  |
|                |          |      |     |      |                     |       |                           |       |       |       |       |       |       |       |       |       |
|                |          |      |     |      |                     |       |                           |       |       |       |       |       |       |       |       |       |
|                |          |      |     |      |                     |       |                           |       |       |       |       |       |       |       |       |       |
| Control Limits |          |      |     |      |                     |       | Less than reporting limit |       |       |       |       |       |       |       |       |       |

**TEST REPORT**

**Report No.** : 106735N  
**Project Name** : MTR Contract NEX/2208 Ground Investigation for Kwun Tong Line Extension  
**Customer** : Lam Geotechnics Limited  
**Address** : 11/F, Centre Point, 181 - 185 Gloucester Road, Wanchai, Hong Kong.

---

**Lab Job No.** : J653  
**Lab Sample No.** : 21152, 21162, 21193  
**Sample Description** : 6 samples said to be soils  
**Sample Receipt Date** : 30 July 2008  
**Test Period** : 31 July 2008 - 7 August 2008

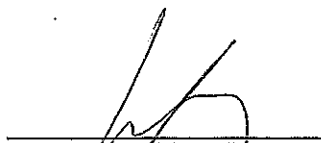
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**Test Information**

| CODE | Test Parameter | Reporting Limit | Test Procedure |
|------|----------------|-----------------|----------------|
|      |                | mg/kg           |                |
| TPH  | C6-C8          | 5.0             | S/O/TPH        |
| TPH  | C9-C16         | 200             | S/O/TPH        |
| TPH  | C17-C35        | 500             | S/O/TPH        |

- Notes :
1. This report shall not be reproduced, except in full, without prior approval from Lam Laboratories Ltd.
  2. Results relate to samples as received.
  3. Results are based on dry sample weight.
  4. < = less than
  5. N/A = Not applicable
  6. Test results satisfy all in-house QA/QC protocols as attached.
  7. Test description (for in-house methods only) as follows:  
S/O/TPH: Solvent extraction and GC-FID Quantification.

Authorized Signatory :



Wong Yau Tim  
(Operations Manager)

Issue Date: 8 July. 2008

**TEST REPORT**

**Report No.** : 106735N  
**Project Name** : MTR Contract NEX/2208 Ground Investigation for Kwun Tong Line Extension  
**Customer** : Lam Geotechnics Limited  


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**Lab Job No.** : J653  
**Lab Sample No.** : 21152, 21162, 21193

**Test Results**

| Customer Ref.<br>Drillhole No. | Sample   |      |      |      | Specimen<br>Depth m | C6-C8<br>mg/kg | C9-C16<br>mg/kg | C17-C35<br>mg/kg |
|--------------------------------|----------|------|------|------|---------------------|----------------|-----------------|------------------|
|                                | Depth, m |      |      | Type |                     |                |                 |                  |
|                                | No.      | From | To   |      |                     |                |                 |                  |
| DO50                           | NA       | NA   | NA   |      | 0.50                | <5.0           | <200            | <500             |
| DO50                           | NA       | NA   | NA   |      | 1.50                | <5.0           | <200            | <500             |
| DO50                           | NA       | 2.00 | 2.45 |      | NA                  | <5.0           | <200            | <500             |
| DO50                           | NA       | 4.50 | 4.95 |      | NA                  | <5.0           | <200            | <500             |
| 2203/KTG/DO09<br>No.1          | NA       | NA   | NA   |      | 0.50                | <5.0           | <200            | <500             |
| 2203/KTG/DO09<br>No.2          | NA       | NA   | NA   |      | 1.50                | <5.0           | <200            | <500             |

— End of Report —

**QUALITY CONTROL REPORT**

Report No. : 106735N  
 Project Name : MTR Contract NEX/2208 Ground Investigation for Kwun Tong Line Extension  
 Customer : Lam Geotechnics Limited  
 Lab Job No. : J653  
 Lab Sample No. : 21152, 21162, 21193

**QC Results****1.1 Sample Duplicate**

| Customer Ref.<br>Drillhole No. | Sample   |      |    |      |                     | Batch | C6-C8<br>%          | C9-C16<br>% | C17-C35<br>% |
|--------------------------------|----------|------|----|------|---------------------|-------|---------------------|-------------|--------------|
|                                | Depth, m |      |    | Type | Specimen<br>Depth m |       |                     |             |              |
|                                | No.      | From | To |      |                     |       |                     |             |              |
| DO50                           | NA       | NA   | NA |      | NA                  | 1     | na*                 | na*         | na*          |
|                                |          |      |    |      |                     |       |                     |             |              |
|                                |          |      |    |      |                     |       |                     |             |              |
|                                |          |      |    |      |                     |       |                     |             |              |
| Control Limit                  |          |      |    |      |                     |       | +/- 30% of the mean |             |              |

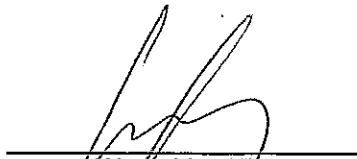
**1.2 Sample Spike**

| Customer Ref.<br>Drillhole No. | Sample   |      |    |      |                     | Batch | C6-C8<br>% | C9-C16<br>% | C17-C35<br>% |
|--------------------------------|----------|------|----|------|---------------------|-------|------------|-------------|--------------|
|                                | Depth, m |      |    | Type | Specimen<br>Depth m |       |            |             |              |
|                                | No.      | From | To |      |                     |       |            |             |              |
| DO50                           | NA       | NA   | NA |      | NA                  | 1     | 97         | 100         | 97           |
|                                |          |      |    |      |                     |       |            |             |              |
|                                |          |      |    |      |                     |       |            |             |              |
|                                |          |      |    |      |                     |       |            |             |              |
| Control Limit                  |          |      |    |      |                     |       | 70-130 %   |             |              |

## Notes :

1. na\* = Relative deviation (RD) for duplicates cannot be evaluated as the value determined is lower than reporting limit.

Authorized Signatory :

  
 Wong Yau Tim  
 (Operations Manager)

Issue Date: 8 July. 2008

**QUALITY CONTROL REPORT**

**Report No.** : 106735N  
**Project Name** : MTR Contract NEX/2208 Ground Investigation for Kwun Tong Line Extension  
**Customer** : Lam Geotechnics Limited  


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**Lab Job No.** : J653  
**Lab Sample No.** : 21152, 21162, 21193

**QC Results****1.3 QC Sample**

| Customer Ref. | Sample   |      |     |      | Batch | C6-C8               | C9-C16   | C17-C35 |    |
|---------------|----------|------|-----|------|-------|---------------------|----------|---------|----|
| Drillhole No. | Depth, m |      |     | Type |       | Specimen<br>Depth m | %        | %       | %  |
|               | No.      | From | To  |      |       |                     |          |         |    |
| N/A           | N/A      | N/A  | N/A |      | N/A   | 1                   | 83       | 82      | 84 |
|               |          |      |     |      |       |                     |          |         |    |
|               |          |      |     |      |       |                     |          |         |    |
|               |          |      |     |      |       |                     |          |         |    |
| Control Limit |          |      |     |      |       |                     | 70-130 % |         |    |

**1.4 Method Blank**

| Customer Ref. | Sample   |      |     |      | Batch | C6-C8               | C9-C16                    | C17-C35 |       |
|---------------|----------|------|-----|------|-------|---------------------|---------------------------|---------|-------|
| Drillhole No. | Depth, m |      |     | Type |       | Specimen<br>Depth m | mg/kg                     | mg/kg   | mg/kg |
|               | No.      | From | To  |      |       |                     |                           |         |       |
| N/A           | N/A      | N/A  | N/A |      | N/A   | 1                   | <5.0                      | <200    | <500  |
|               |          |      |     |      |       |                     |                           |         |       |
|               |          |      |     |      |       |                     |                           |         |       |
|               |          |      |     |      |       |                     |                           |         |       |
| Control Limit |          |      |     |      |       |                     | Less than reporting limit |         |       |



**TEST REPORT**

**Report No.** : 106741N  
**Project Name** : MTR Contract NEX/2208 Ground Investigation for Kwun Tong Line Extension  
**Customer** : Lam Geotechnics Limited  
**Client Address** : 11/F, Centre Point, 181 - 185 Gloucester Road, Wanchai, Hong Kong.  


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**Lab Job No.** : J653  
**Lab Sample No.** : 21152, 21162, 21193  
**Sample Description** : 6 samples said to be soils  
**Sample Receipt Date** : 30 July 2008  
**Test Period** : 31 July 2008 - 9 August 2008  


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**Test Information**

| CODE | Test Parameter | Reporting Limit | Test Procedure |
|------|----------------|-----------------|----------------|
|      |                | mg/kg           |                |
| Ben  | Benzene        | 0.20            | S/O/VOCs       |
| Tol  | Toluene        | 0.20            | S/O/VOCs       |
| EtB  | Ethylbenzene   | 0.20            | S/O/VOCs       |
| Xyl  | xylenes        | 0.40            | S/O/VOCs       |

- N-1. This report shall not be reproduced, except in full, without prior approval from Lam Laboratories Ltd.
2. Results relate to samples as received.
  3. Results are based on dry sample weight.
  4. < = less than
  5. N/A = Not applicable
  6. Test results satisfy all in-house QA/QC protocols as attached.
  7. Test description (for in-house methods only) as follows:  
 SA : Extraction follow by quantification with purge-and-trap and GC-MS.

Authorized Signatory :



Wong Yau Tim  
(Operations Manager)

Issue Date: 11 August. 2008

**TEST REPORT**

**Report No.** : 106741N  
**Project Name** : MTR Contract NEX/2208 Ground Investigation for Kwun Tong Line Extension  
**Customer** : Lam Geotechnics Limited  
**Lab Job No.** : J653  
**Lab Sample No.** : 21152, 21162, 21193

**Test Results**

| Customer Ref.         | Sample   |      |      |      | Ben                 | Tol   | EtB   | Xyl   |       |
|-----------------------|----------|------|------|------|---------------------|-------|-------|-------|-------|
| Drillhole No.         | Depth, m |      |      | Type | Specimen<br>Depth m | mg/kg | mg/kg | mg/kg | mg/kg |
|                       | No.      | From | To   |      |                     |       |       |       |       |
| DO50                  | NA       | NA   | NA   |      | 0.50                | <0.20 | <0.20 | <0.20 | <0.40 |
| DO50                  | NA       | NA   | NA   |      | 1.50                | <0.20 | <0.20 | <0.20 | <0.40 |
| DO50                  | NA       | 2.00 | 2.45 |      | NA                  | <0.20 | <0.20 | <0.20 | <0.40 |
| DO50                  | NA       | 4.50 | 4.95 |      | NA                  | <0.20 | <0.20 | <0.20 | <0.40 |
| 2203/KTG/DO09<br>No.1 | NA       | NA   | NA   |      | 0.50                | <0.20 | <0.20 | <0.20 | <0.40 |
| 2203/KTG/DO09<br>No.2 | NA       | NA   | NA   |      | 1.50                | <0.20 | <0.20 | <0.20 | <0.40 |

-----End of Report-----

**QUALITY CONTROL REPORT**

**Report No.** : 106741N  
**Project Name** : MTR Contract NEX/2208 Ground Investigation for Kwun Tong Line Extension  
**Customer** : Lam Geotechnics Limited  
**Lab Job No.** : J653  
**Lab Sample No.** : 21152, 21162, 21193

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**QC Results**

**1.1 Sample Duplicate**

| Customer Ref.<br>Drillhole No. | Sample   |      |    |      |                     | Batch | Ben<br>%            | Tol<br>% | EtB<br>% | Xyl<br>% |
|--------------------------------|----------|------|----|------|---------------------|-------|---------------------|----------|----------|----------|
|                                | Depth, m |      |    | Type | Specimen<br>Depth m |       |                     |          |          |          |
|                                | No.      | From | To |      |                     |       |                     |          |          |          |
| 21185/1                        | NA       | NA   | NA |      | NA                  | 1     | na*                 | na*      | na*      | na*      |
|                                |          |      |    |      |                     |       |                     |          |          |          |
|                                |          |      |    |      |                     |       |                     |          |          |          |
|                                |          |      |    |      |                     |       |                     |          |          |          |
| Control Limit                  |          |      |    |      |                     |       | +/- 30% of the mean |          |          |          |

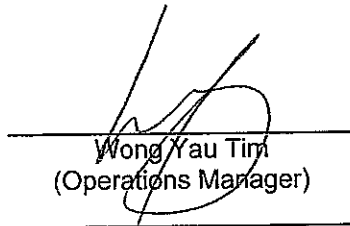
**1.2 Sample Spike**

| Customer Ref.<br>Drillhole No. | Sample   |      |    |      |                     | Batch | Ben<br>% | Tol<br>% | EtB<br>% | Xyl<br>% |
|--------------------------------|----------|------|----|------|---------------------|-------|----------|----------|----------|----------|
|                                | Depth, m |      |    | Type | Specimen<br>Depth m |       |          |          |          |          |
|                                | No.      | From | To |      |                     |       |          |          |          |          |
| 21185/1                        | NA       | NA   | NA |      | NA                  | 1     | 89       | 89       | 105      | 98       |
|                                |          |      |    |      |                     |       |          |          |          |          |
|                                |          |      |    |      |                     |       |          |          |          |          |
|                                |          |      |    |      |                     |       |          |          |          |          |
| Control Limit                  |          |      |    |      |                     |       | 70-130 % |          |          |          |

**Notes :**

- na\* = Relative deviation (RD) for duplicates cannot be evaluated as the value determined is lower than reporting limit.

Authorized Signatory :



Wong Yau Tim  
(Operations Manager)

Issue Date: 11 August. 2008

**QUALITY CONTROL REPORT**

**Report No.** : 106741N  
**Project Name** : MTR Contract NEX/2208 Ground Investigation for Kwun Tong Line Extension  
**Customer** : Lam Geotechnics Limited  
**Lab Job No.** : J653  
**Lab Sample No.** : 21152, 21162, 21193

**QC Results****1.3 QC Sample**

| Customer Ref.<br>Drillhole No. | Sample   |      |     |      | Batch | Ben<br>% | Tol<br>% | EtB<br>% | Xyl<br>% |                     |
|--------------------------------|----------|------|-----|------|-------|----------|----------|----------|----------|---------------------|
|                                | Depth, m |      |     | Type |       |          |          |          |          | Specimen<br>Depth m |
|                                | No.      | From | To  |      |       |          |          |          |          |                     |
| N/A                            | N/A      | N/A  | N/A |      | N/A   | 1        | 72       | 101      | 108      | 101                 |
|                                |          |      |     |      |       |          |          |          |          |                     |
|                                |          |      |     |      |       |          |          |          |          |                     |
|                                |          |      |     |      |       |          |          |          |          |                     |
| Control Limit                  |          |      |     |      |       |          | 70-130 % |          |          |                     |

**1.4 Method Blank**

| Customer Ref.<br>Drillhole No. | Sample   |      |     |      | Batch | Ben<br>mg/kg | Tol<br>mg/kg              | EtB<br>mg/kg | Xyl<br>mg/kg |                     |
|--------------------------------|----------|------|-----|------|-------|--------------|---------------------------|--------------|--------------|---------------------|
|                                | Depth, m |      |     | Type |       |              |                           |              |              | Specimen<br>Depth m |
|                                | No.      | From | To  |      |       |              |                           |              |              |                     |
| N/A                            | N/A      | N/A  | N/A |      | N/A   | 1            | <0.20                     | <0.20        | <0.20        | <0.40               |
|                                |          |      |     |      |       |              |                           |              |              |                     |
|                                |          |      |     |      |       |              |                           |              |              |                     |
|                                |          |      |     |      |       |              |                           |              |              |                     |
| Control Limit                  |          |      |     |      |       |              | Less than reporting limit |              |              |                     |

**TEST REPORT**

Report No. : 107071N  
 Project Name : MTR Contract NEX/2208 Ground Investigation for Kwun Tong Line Extension

Customer : Lam Geotechnics Limited

Address : 11/F, Centre Point, 181 - 185 Gloucester Road, Wanchai, Hong Kong.

Lab Job No. : J653

Lab Sample No. : 21357/1-2

Sample Description : 2 samples said to be soils

Sample Receipt Date : 16 September 2008

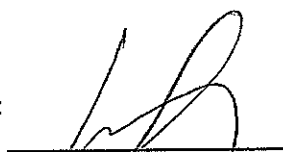
Test Period : 20 September 2008 - 23 September 2008

**Test Information**

| Code | Test Parameter | Reporting Limits |  | Test Procedure         |
|------|----------------|------------------|--|------------------------|
|      |                | Sediment/Soil    |  |                        |
|      |                | mg/kg            |  |                        |
| Cd   | Cadmium        | 0.10             |  | S/M/DIG-RAR & M/ICP-MS |
| Cr   | Chromium       | 1.0              |  | S/M/DIG-RAR & M/ICP-MS |
| Cu   | Copper         | 1.0              |  | S/M/DIG-RAR & M/ICP-MS |
| Ni   | Nickel         | 1.0              |  | S/M/DIG-RAR & M/ICP-MS |
| Pb   | Lead           | 1.0              |  | S/M/DIG-RAR & M/ICP-MS |
| Zn   | Zinc           | 20               |  | S/M/DIG-RAR & M/ICP-MS |
| Hg   | Mercury        | 0.05             |  | S/M/DIG-RAR & M/ICP-MS |
| Ag   | Silver         | 0.10             |  | S/M/DIG-RAR & M/ICP-MS |

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  2. Results related to samples as received.
  3. Results are based on dry sample weight.
  4. < = less than
  5. N/A = Not applicable
  6. Test results satisfy all in-house QA/QC protocols as attached.
  7. Test description (for in-house methods) as follows:  
 S/M/DIG-RAR: Acid digestion.  
 M/ICP-MS: ICP-MS Quantification.

Authorized Signatory :

  
 Wong Yau Tim  
 (Operations Manager)

Issue Date: 25 September 2008

**TEST REPORT**

Report No. : 107071N  
 Project Name : MTR Contract NEX/2208 Ground Investigation for Kwun Tong Line Extension

Customer : Lam Geotechnics Limited

Lab Job No. : J653  
 Lab Sample No. : 21357/1-2

**Test Result**

| Customer Ref.         | Sample        |          |      |    |      | Cd<br>mg/kg | Cr<br>mg/kg | Cu<br>mg/kg | Ni<br>mg/kg | Pb<br>mg/kg | Zn<br>mg/kg | Hg<br>mg/kg | Ag<br>mg/kg |                      |
|-----------------------|---------------|----------|------|----|------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|----------------------|
|                       | Drillhole No. | Depth, m |      |    | Type |             |             |             |             |             |             |             |             | Specimen<br>Depth, m |
|                       |               | No.      | From | To |      |             |             |             |             |             |             |             |             |                      |
| 2003/KTE/DO54<br>NO.2 | NA            | NA       | NA   |    | 0.50 | 0.13        | 3.0         | 8.1         | 2.4         | 18          | 51          | 0.19        | <0.10       |                      |
| 2003/KTE/DO54<br>NO.2 | NA            | NA       | NA   |    | 1.50 | 0.11        | <1.0        | 3.3         | <1.0        | 13          | <20         | 0.17        | <0.10       |                      |

---End of Report---

**QUALITY CONTROL REPORT**

Report No. : 107071N  
 Project Name : MTR Contract NEX/2208 Ground Investigation for Kwun Tong Line Extension

Customer : Lam Geotechnics Limited

Lab Job No. : J653  
 Lab Sample No. : 21357/1-2

**QC Results****1.1 Sample Duplicate (Relative deviation)**

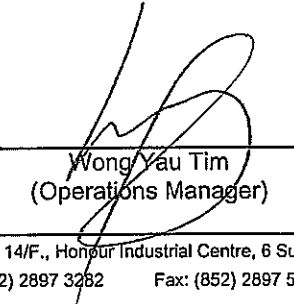
| Customer Ref.  | Sample   |      |    |      |                     | Batch | Cd<br>%              | Cr<br>% | Cu<br>% | Ni<br>% | Pb<br>% | Zn<br>% | Hg<br>% | Ag<br>% |
|----------------|----------|------|----|------|---------------------|-------|----------------------|---------|---------|---------|---------|---------|---------|---------|
|                | Depth, m |      |    | Type | Specimen<br>Depth m |       |                      |         |         |         |         |         |         |         |
|                | No.      | From | To |      |                     |       |                      |         |         |         |         |         |         |         |
| 21229/59       | NA       | NA   | NA |      | NA                  | 1     | 2.4                  | 0.9     | 0.0     | 0.2     | 1.2     | 0.9     | 7.0     | 2.4     |
| Control Limits |          |      |    |      |                     |       | +/- 30 % of the mean |         |         |         |         |         |         |         |

**1.2 Method Spike (Standard Addition)**

| Customer Ref.  | Sample   |      |    |      |                     | Batch | Cd<br>%    | Cr<br>% | Cu<br>% | Ni<br>% | Pb<br>% | Zn<br>% | Hg<br>% | Ag<br>% |
|----------------|----------|------|----|------|---------------------|-------|------------|---------|---------|---------|---------|---------|---------|---------|
|                | Depth, m |      |    | Type | Specimen<br>Depth m |       |            |         |         |         |         |         |         |         |
|                | No.      | From | To |      |                     |       |            |         |         |         |         |         |         |         |
| 21229/59       | NA       | NA   | NA |      | NA                  | 1     | 103        | 97      | 94      | 96      | 103     | 102     | 98      | 93      |
| Control Limits |          |      |    |      |                     |       | 75 - 125 % |         |         |         |         |         |         |         |

- Note: 1. \*na = Relative deviation(RD) for duplicates cannot be evaluated as the value determined is lower than reporting limits.  
 2. Results are based on dry sample weight  
 3. < = less than

Authorized Signatory :

  
 Wong Yau Tim  
 (Operations Manager)

Issue Date: 25 September 2008

**QUALITY CONTROL REPORT**

Report No. : 107071N  
 Project Name : MTR Contract NEX/2208 Ground Investigation for Kwun Tong Line Extension

Customer : Lam Geotechnics Limited

Lab Job No. : J653  
 Lab Sample No. : 21357/1-2

**QC Results**

**1.3 Sample Reference Material (ISE 2005.4.4)**

| Reference      | Sample   |      |     |      |                     | Batch | Cd<br>%                    | Cr<br>% | Cu<br>% | Ni<br>% | Pb<br>% | Zn<br>% | Hg<br>% | Ag<br>% |
|----------------|----------|------|-----|------|---------------------|-------|----------------------------|---------|---------|---------|---------|---------|---------|---------|
|                | Depth, m |      |     | Type | Specimen<br>Depth m |       |                            |         |         |         |         |         |         |         |
|                | No.      | From | To  |      |                     |       |                            |         |         |         |         |         |         |         |
| ISE 050303     | N/A      | N/A  | N/A |      | N/A                 | 1     | 100                        | 98      | 99      | 100     | 92      | 95      | 98      | 84      |
| Control Limits |          |      |     |      |                     |       | 75 - 125% of nominal value |         |         |         |         |         |         |         |

**1.4 Method Blank**

| Reference      | Sample   |      |     |      |                     | Batch | Cd                        | Cr   | Cu   | Ni   | Pb   | Zn  | Hg    | Ag    |
|----------------|----------|------|-----|------|---------------------|-------|---------------------------|------|------|------|------|-----|-------|-------|
|                | Depth, m |      |     | Type | Specimen<br>Depth m |       |                           |      |      |      |      |     |       |       |
|                | No.      | From | To  |      |                     |       |                           |      |      |      |      |     |       |       |
| N/A            | N/A      | N/A  | N/A |      | N/A                 | 1     | <0.10                     | <1.0 | <1.0 | <1.0 | <1.0 | <20 | <0.05 | <0.10 |
| Control Limits |          |      |     |      |                     |       | Less than reporting limit |      |      |      |      |     |       |       |

Note: 1. Results are based on dry sample weight  
 2. < = less than



**TEST REPORT**

**Report No.** : 107073N  
**Project Name** : MTR Contract NEX/2208 Ground Investigation for Kwun Tong Line Extension  
**Customer** : Lam Geotechnics Limited  
**Address** : 11/F, Centre Point, 181 - 185 Gloucester Road, Wanchai, Hong Kong.  


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**Lab Job No.** : J653  
**Lab Sample No.** : 21357/1-2  
**Sample Description** : 2 samples said to be soil  
**Sample Receipt Date** : 16 Sep 2008  
**Test Period** : 17 Sep 2008 - 20 Sep 2008

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**Test Information****1. Low Molecular Weight Polyaromatic Hydrocarbons, LMW PAHs**

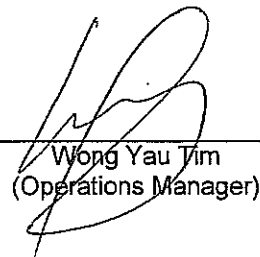
| CODE    | Test Parameter | Reporting Limit | Test Procedure |
|---------|----------------|-----------------|----------------|
|         |                | ug/kg           |                |
| NAP     | Naphthalene    | 55              | S/O/PAH        |
| ANY     | Acenaphthylene | 55              | S/O/PAH        |
| ANA     | Acenaphthene   | 55              | S/O/PAH        |
| FLU     | Fluorene       | 55              | S/O/PAH        |
| PHE     | Phenanthrene   | 55              | S/O/PAH        |
| ANT     | Anthracene     | 55              | S/O/PAH        |
| LMW PAH | Total LMW PAH  | 55              | S/O/PAH        |

**2. High Molecular Weight Polyaromatic Hydrocarbons, HMW PAHs**

| CODE    | Test Parameter         | Reporting Limit | Test Procedure |
|---------|------------------------|-----------------|----------------|
|         |                        | ug/kg           |                |
| CHR     | Chrysene               | 170             | S/O/PAH        |
| BaA     | Benzo(a)anthracene     | 170             | S/O/PAH        |
| BbF     | Benzo(b)fluoranthene   | 170             | S/O/PAH        |
| BkF     | Benzo(k)fluoranthene   | 170             | S/O/PAH        |
| BaP     | Benzo(a)pyrene         | 170             | S/O/PAH        |
| DBA     | Dibenz(ah)anthracene   | 170             | S/O/PAH        |
| FLT     | Fluoranthene           | 170             | S/O/PAH        |
| IPY     | Indeno(1,2,3-cd)pyrene | 170             | S/O/PAH        |
| PYR     | Pyrene                 | 170             | S/O/PAH        |
| BPE     | Benzo(ghi)perylene     | 170             | S/O/PAH        |
| HMW PAH | Total HMW PAH          | 170             | S/O/PAH        |

- Notes :
1. This report shall not be reproduced, except in full, without prior approval from Lam Laboratories Ltd.
  2. Results relate to samples as received.
  3. Results are based on dry sample weight.
  4. < = less than
  5. N/A = Not applicable
  6. Test results satisfy all in-house QA/QC protocols as attached.
  7. Test description (for in-house methods only) as follows:  
S/O/PAH: Ultra-Sonic extraction and GC-MS Quantification.
  8. Total LMW PAH equals to the sum of NAP, ANY, ANA, FLU, PHE, ANT.
  9. Total HMW PAH equals to the sum of CHR, BaA, BbF, BkF, BaP, DBA, FLT, IPY, PYR, BPE.
  10. This is a draft report.

Authorized Signatory :



Wong Yau Tim  
(Operations Manager)

Issue Date:

25 Sep. 2008

**TEST REPORT**

Report No. : 107073N  
 Project Name : MTR Contract NEX/2208 Ground Investigation for Kwun Tong Line Extension  
 Customer : Lam Geotechnics Limited  
 Lab Job No. : J653  
 Lab Sample No. : 21357/1-2

**Test Results****1. Low Molecular Weight Polyaromatic Hydrocarbons, LMW PAHs**

| Customer Ref.<br>Drillhole No. | Sample   |      |    |      | Specimen<br>Depth m | NAP<br>ug/kg | ANY<br>ug/kg | ANA<br>ug/kg | FLU<br>ug/kg | PHE<br>ug/kg | ANT<br>ug/kg | LMW<br>PAH<br>ug/kg |
|--------------------------------|----------|------|----|------|---------------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------------|
|                                | Depth, m |      |    | Type |                     |              |              |              |              |              |              |                     |
|                                | No.      | From | To |      |                     |              |              |              |              |              |              |                     |
| 2203/KTE/DO54<br>No.2          | NA       | NA   | NA |      | 0.50                | <55          | <55          | <55          | <55          | <55          | <55          | <55                 |
| 2203/KTE/DO54<br>No.5          | NA       | NA   | NA |      | 1.50                | <55          | <55          | <55          | <55          | <55          | <55          | <55                 |

**TEST REPORT**

**Report No.** : 107073N  
**Project Name** : MTR Contract NEX/2208 Ground Investigation for Kwun Tong Line Extension  
**Customer** : Lam Geotechnics Limited  


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**Lab Job No.** : J653  
**Lab Sample No.** : 21357/1-2

**Test Results****2. High Molecular Weight Polyaromatic Hydrocarbons, HMW PAHs**

| Customer Ref.<br>Drillhole No. | Sample   |      |    |      |                     | CHR<br>ug/kg | BaA<br>ug/kg | BbF<br>ug/kg | BkF<br>ug/kg | BaP<br>ug/kg | DBA<br>ug/kg | FLT<br>ug/kg | IPY<br>ug/kg | PYR<br>ug/kg | BPE<br>ug/kg | HMW<br>PAH<br>ug/kg |
|--------------------------------|----------|------|----|------|---------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------------|
|                                | Depth, m |      |    | Type | Specimen<br>Depth m |              |              |              |              |              |              |              |              |              |              |                     |
|                                | No.      | From | To |      |                     |              |              |              |              |              |              |              |              |              |              |                     |
| 2203/KTE/DO54<br>No.2          | NA       | NA   | NA |      | 0.50                | <170         | <170         | <170         | <170         | <170         | <170         | <170         | <170         | <170         | <170         | <170                |
| 2203/KTE/DO54<br>No.5          | NA       | NA   | NA |      | 1.50                | <170         | <170         | <170         | <170         | <170         | <170         | <170         | <170         | <170         | <170         | <170                |

— End of Report —

**QUALITY CONTROL REPORT**

Report No. : 107073N  
 Project Name : MTR Contract NEX/2208 Ground Investigation for Kwun Tong Line Extension  
 Customer : Lam Geotechnics Limited  
 Lab Job No. : J653  
 Lab Sample No. : 21357/1-2

**QC Results**

**1. Low Molecular Weight Polyaromatic Hydrocarbons, LMW PAHs**

**1.1 Sample Duplicate**

| Customer Ref.         | Sample   |      |    |      |                     | Batch | NAP                  | ANY | ANA | FLU | PHE | ANT |
|-----------------------|----------|------|----|------|---------------------|-------|----------------------|-----|-----|-----|-----|-----|
|                       | Depth, m |      |    | Type | Specimen<br>Depth m |       | %                    | %   | %   | %   | %   | %   |
|                       | No.      | From | To |      |                     |       | %                    | %   | %   | %   | %   | %   |
| 2203/KTE/DO54<br>No.2 | N/A      | NA   | NA |      | 0.50                | 1     | na*                  | na* | na* | na* | na* | na* |
|                       |          |      |    |      |                     |       |                      |     |     |     |     |     |
|                       |          |      |    |      |                     |       |                      |     |     |     |     |     |
|                       |          |      |    |      |                     |       |                      |     |     |     |     |     |
| Control Limits        |          |      |    |      |                     |       | +/- 30 % of the mean |     |     |     |     |     |


**1.2 Sample Spike (Spike Level = 5 ug)**

| Customer Ref.         | Sample   |      |    |      |                     | Batch | NAP        | ANY | ANA | FLU | PHE | ANT |
|-----------------------|----------|------|----|------|---------------------|-------|------------|-----|-----|-----|-----|-----|
|                       | Depth, m |      |    | Type | Specimen<br>Depth m |       | %          | %   | %   | %   | %   | %   |
|                       | No.      | From | To |      |                     |       | %          | %   | %   | %   | %   | %   |
| 2203/KTE/DO54<br>No.2 | N/A      | NA   | NA |      | 0.50                | 1     | 111        | 96  | 97  | 99  | 119 | 105 |
|                       |          |      |    |      |                     |       |            |     |     |     |     |     |
|                       |          |      |    |      |                     |       |            |     |     |     |     |     |
|                       |          |      |    |      |                     |       |            |     |     |     |     |     |
| Control Limits        |          |      |    |      |                     |       | 70 - 130 % |     |     |     |     |     |

Notes :

- 1. na\* = Relative deviation (RD) for duplicates cannot be evaluated as the value determined is lower than reporting limit.

Authorized Signatory :



Wong Yau Tim  
(Operations Manager)

Issue Date: : 25 Sep. 2008

**QUALITY CONTROL REPORT**

**Report No.** : 107073N  
**Project Name** : MTR Contract NEX/2208 Ground Investigation for Kwun Tong Line Extension  
**Customer** : Lam Geotechnics Limited  


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**Lab Job No.** : J653  
**Lab Sample No.** : 21357/1-2

**QC Results****2. High Molecular Weight Polyaromatic Hydrocarbons, HMW PAHs****2.1 Sample Duplicate**

| Customer Ref.<br>Drillhole No. | Sample   |      |    |      | Batch | CHR                  | BaA | BbF | BkF | BaP | DBA | FLT | IPY | PYR | BPE |
|--------------------------------|----------|------|----|------|-------|----------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|                                | Depth, m |      |    | Type |       | Specimen<br>Depth m  | %   | %   | %   | %   | %   | %   | %   | %   | %   |
|                                | No.      | From | To |      |       |                      | %   | %   | %   | %   | %   | %   | %   | %   | %   |
| 2203/KTE/DO54<br>No.2          | NA       | NA   | NA |      | 0.50  | 1                    | na* | na* | na* | na* | na* | na* | na* | na* | na* |
|                                |          |      |    |      |       |                      |     |     |     |     |     |     |     |     |     |
|                                |          |      |    |      |       |                      |     |     |     |     |     |     |     |     |     |
|                                |          |      |    |      |       |                      |     |     |     |     |     |     |     |     |     |
| Control Limits                 |          |      |    |      |       | +/- 30 % of the mean |     |     |     |     |     |     |     |     |     |

**2.2 Sample Spike (Spike Level = 5 ug)**

| Customer Ref.<br>Drillhole No. | Sample   |      |    |      | Batch | CHR                 | BaA | BbF | BkF | BaP | DBA | FLT | IPY | PYR | BPE |     |
|--------------------------------|----------|------|----|------|-------|---------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|                                | Depth, m |      |    | Type |       | Specimen<br>Depth m | %   | %   | %   | %   | %   | %   | %   | %   | %   |     |
|                                | No.      | From | To |      |       |                     | %   | %   | %   | %   | %   | %   | %   | %   | %   |     |
| 2203/KTE/DO54<br>No.2          | N/A      | NA   | NA |      | 0.50  | 1                   | 88  | 110 | 110 | 83  | 106 | 113 | 124 | 112 | 95  | 110 |
|                                |          |      |    |      |       |                     |     |     |     |     |     |     |     |     |     |     |
|                                |          |      |    |      |       |                     |     |     |     |     |     |     |     |     |     |     |
|                                |          |      |    |      |       |                     |     |     |     |     |     |     |     |     |     |     |
| Control Limits                 |          |      |    |      |       | 70 - 130 %          |     |     |     |     |     |     |     |     |     |     |

**Notes :**

1. na\* = Relative deviation (RD) for duplicates cannot be evaluated as the value determined is lower than reporting limit.

**QUALITY CONTROL REPORT**

**Report No.** : 107073N  
**Project Name** : MTR Contract NEX/2208 Ground Investigation for Kwun Tong Line Extension  
**Customer** : Lam Geotechnics Limited  


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**Lab Job No.** : J653  
**Lab Sample No.** : 21357/1-2

**QC Results****1. Low Molecular Weight Polyaromatic Hydrocarbons, LMW PAHs****1.3 QC Sample (SETOC 2007.4.1)**

| Customer Ref.  | Sample   |      |     |      |                     | Batch | NAP<br>%                    | ANY<br>% | ANA<br>% | FLU<br>% | PHE<br>% | ANT<br>% |
|----------------|----------|------|-----|------|---------------------|-------|-----------------------------|----------|----------|----------|----------|----------|
|                | Depth, m |      |     | Type | Specimen<br>Depth m |       |                             |          |          |          |          |          |
|                | No.      | From | To  |      |                     |       |                             |          |          |          |          |          |
| SETOC 2007.4.1 | N/A      | N/A  | N/A |      | N/A                 | 1     | 78                          | 110      | 92       | 83       | 77       | 126      |
|                |          |      |     |      |                     |       |                             |          |          |          |          |          |
|                |          |      |     |      |                     |       |                             |          |          |          |          |          |
|                |          |      |     |      |                     |       |                             |          |          |          |          |          |
| Control Limits |          |      |     |      |                     |       | 70 - 130 % of nominal value |          |          |          |          |          |

**1.4 Method Blank**

| Customer Ref.  | Sample   |      |     |      |                     | Batch | NAP<br>ug/kg              | ANY<br>ug/kg | ANA<br>ug/kg | FLU<br>ug/kg | PHE<br>ug/kg | ANT<br>ug/kg |
|----------------|----------|------|-----|------|---------------------|-------|---------------------------|--------------|--------------|--------------|--------------|--------------|
|                | Depth, m |      |     | Type | Specimen<br>Depth m |       |                           |              |              |              |              |              |
|                | No.      | From | To  |      |                     |       |                           |              |              |              |              |              |
| N/A            | N/A      | N/A  | N/A |      | N/A                 | 1     | <55                       | <55          | <55          | <55          | <55          | <55          |
|                |          |      |     |      |                     |       |                           |              |              |              |              |              |
|                |          |      |     |      |                     |       |                           |              |              |              |              |              |
|                |          |      |     |      |                     |       |                           |              |              |              |              |              |
| Control Limits |          |      |     |      |                     |       | Less than reporting limit |              |              |              |              |              |

**QUALITY CONTROL REPORT**

Report No. : 107073N  
 Project Name : MTR Contract NEX/2208 Ground Investigation for Kwun Tong Line Extension  
 Customer : Lam Geotechnics Limited  
 Lab Job No. : J653  
 Lab Sample No. : 21357/1-2

**QC Results**

**2. High Molecular Weight Polyaromatic Hydrocarbons, HMW PAHs**

**2.3 QC Sample (SETOC 2007.4.1)**

| Customer Ref.  | Sample   |      |     |      |          | Batch | CHR                        | BaA | BbF | BkF | BaP | DBA | FLT | IPY | PYR | BPE |
|----------------|----------|------|-----|------|----------|-------|----------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|                | Depth, m |      |     | Type | Specimen |       | %                          | %   | %   | %   | %   | %   | %   | %   | %   | %   |
|                | No.      | From | To  |      | Depth m  |       |                            |     |     |     |     |     |     |     |     |     |
| SETOC 2007.4.1 | N/A      | N/A  | N/A |      | N/A      | 1     | 80                         | 92  | 100 | 119 | 80  | 101 | 101 | 89  | 98  | 103 |
| Control Limits |          |      |     |      |          |       | 70 - 130% of nominal value |     |     |     |     |     |     |     |     |     |

**2.4 Method Blank**

| Customer Ref.  | Sample   |      |     |      |          | Batch | CHR                       | BaA   | BbF   | BkF   | BaP   | DBA   | FLT   | IPY   | PYR   | BPE   |
|----------------|----------|------|-----|------|----------|-------|---------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|                | Depth, m |      |     | Type | Specimen |       | ug/kg                     | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg |
|                | No.      | From | To  |      | Depth m  |       |                           |       |       |       |       |       |       |       |       |       |
| N/A            | N/A      | N/A  | N/A |      | N/A      | 1     | <170                      | <170  | <170  | <170  | <170  | <170  | <170  | <170  | <170  | <170  |
| Control Limits |          |      |     |      |          |       | Less than reporting limit |       |       |       |       |       |       |       |       |       |

**TEST REPORT**

**Report No.** : 107074N  
**Project Name** : MTR Contract NEX/2208 Ground Investigation for Kwun Tong Line Extension  
**Customer** : Lam Geotechnics Limited  
**Address** : 11/F, Centre Point, 181 - 185 Gloucester Road, Wanchai, Hong Kong.  


---

**Lab Job No.** : J653  
**Lab Sample No.** : 21357/1-2  
**Sample Description** : 2 samples said to be soil  
**Sample Receipt Date** : 16 Sep 2008  
**Test Period** : 17 Sep 2008 - 20 Sep 2008  

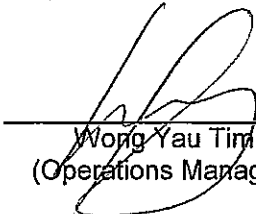

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**Test Information**

| CODE | Test Parameter | Reporting Limit | Test Procedure |
|------|----------------|-----------------|----------------|
|      |                | mg/kg           |                |
| TPH  | C6-C8          | 5.0             | S/O/TPH        |
| TPH  | C9-C16         | 200             | S/O/TPH        |
| TPH  | C17-C35        | 500             | S/O/TPH        |

- Notes :
1. This report shall not be reproduced, except in full, without prior approval from Lam Laboratories Ltd.
  2. Results relate to samples as received.
  3. Results are based on dry sample weight.
  4. < = less than
  5. N/A = Not applicable
  6. Test results satisfy all in-house QA/QC protocols as attached.
  7. Test description (for in-house methods only) as follows:  
S/O/TPH: Solvent extraction and GC-FID Quantification.

Authorized Signatory :



Wong Yau Tim  
(Operations Manager)

Issue Date: 25 Sep. 2008



**TEST REPORT**

**Report No.** : 107074N  
**Project Name** : MTR Contract NEX/2208 Ground Investigation for Kwun Tong Line Extension  
**Customer** : Lam Geotechnics Limited  


---

**Lab Job No.** : J653  
**Lab Sample No.** : 21357/1-2

**Test Results**

| Customer Ref.<br>Drillhole No. | Sample   |      |    |      | Specimen<br>Depth m | C6-C8<br>mg/kg | C9-C16<br>mg/kg | C17-C35<br>mg/kg |
|--------------------------------|----------|------|----|------|---------------------|----------------|-----------------|------------------|
|                                | Depth, m |      |    | Type |                     |                |                 |                  |
|                                | No.      | From | To |      |                     |                |                 |                  |
| 2203/KTE/DO54<br>No.2          | NA       | NA   | NA |      | 0.50                | <5.0           | <200            | <500             |
| 2203/KTE/DO54<br>No.5          | NA       | NA   | NA |      | 1.50                | <5.0           | <200            | <500             |

--- End of Report ---

**QUALITY CONTROL REPORT**

Report No. : 107074N  
 Project Name : MTR Contract NEX/2208 Ground Investigation for Kwun Tong Line Extension  
 Customer : Lam Geotechnics Limited  
 Lab Job No. : J653  
 Lab Sample No. : 21357/1-2

**QC Results****1.1 Sample Duplicate**

| Customer Ref.<br>Drillhole No. | Sample   |      |    |      |                     | Batch | C6-C8<br>%          | C9-C16<br>% | C17-C35<br>% |
|--------------------------------|----------|------|----|------|---------------------|-------|---------------------|-------------|--------------|
|                                | Depth, m |      |    | Type | Specimen<br>Depth m |       |                     |             |              |
|                                | No.      | From | To |      |                     |       |                     |             |              |
| 2203/KTE/DO54<br>No.2          | NA       | NA   | NA |      | NA                  | 1     | na*                 | na*         | na*          |
|                                |          |      |    |      |                     |       |                     |             |              |
|                                |          |      |    |      |                     |       |                     |             |              |
|                                |          |      |    |      |                     |       |                     |             |              |
| Control Limit                  |          |      |    |      |                     |       | +/- 30% of the mean |             |              |

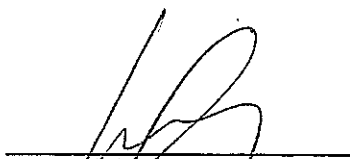
**1.2 Sample Spike**

| Customer Ref.<br>Drillhole No. | Sample   |      |    |      |                     | Batch | C6-C8<br>% | C9-C16<br>% | C17-C35<br>% |
|--------------------------------|----------|------|----|------|---------------------|-------|------------|-------------|--------------|
|                                | Depth, m |      |    | Type | Specimen<br>Depth m |       |            |             |              |
|                                | No.      | From | To |      |                     |       |            |             |              |
| 2203/KTE/DO54<br>No.2          | NA       | NA   | NA |      | NA                  | 1     | 87         | 93          | 94           |
|                                |          |      |    |      |                     |       |            |             |              |
|                                |          |      |    |      |                     |       |            |             |              |
|                                |          |      |    |      |                     |       |            |             |              |
| Control Limit                  |          |      |    |      |                     |       | 70-130 %   |             |              |

## Notes :

1. na\* = Relative deviation (RD) for duplicates cannot be evaluated as the value determined is lower than reporting limit.

Authorized Signatory :

  
 Wong Yau Tim  
 (Operations Manager)

Issue Date: 25 Sep. 2008

**QUALITY CONTROL REPORT**

Report No. : 107074N  
 Project Name : MTR Contract NEX/2208 Ground Investigation for Kwun Tong Line Extension  
 Customer : Lam Geotechnics Limited  
 Lab Job No. : J653  
 Lab Sample No. : 21357/1-2

**QC Results****1.3 QC Sample**

| Customer Ref.<br>Drillhole No. | Sample   |      |     |      | Batch | C6-C8<br>% | C9-C16<br>% | C17-C35<br>% |                     |
|--------------------------------|----------|------|-----|------|-------|------------|-------------|--------------|---------------------|
|                                | Depth, m |      |     | Type |       |            |             |              | Specimen<br>Depth m |
|                                | No.      | From | To  |      |       |            |             |              |                     |
| N/A                            | N/A      | N/A  | N/A |      | N/A   | 1          | 75          | 86           | 85                  |
|                                |          |      |     |      |       |            |             |              |                     |
|                                |          |      |     |      |       |            |             |              |                     |
|                                |          |      |     |      |       |            |             |              |                     |
| Control Limit                  |          |      |     |      |       |            | 70-130 %    |              |                     |

**1.4 Method Blank**

| Customer Ref.<br>Drillhole No. | Sample   |      |     |      | Batch | C6-C8<br>mg/kg | C9-C16<br>mg/kg           | C17-C35<br>mg/kg |                     |
|--------------------------------|----------|------|-----|------|-------|----------------|---------------------------|------------------|---------------------|
|                                | Depth, m |      |     | Type |       |                |                           |                  | Specimen<br>Depth m |
|                                | No.      | From | To  |      |       |                |                           |                  |                     |
| N/A                            | N/A      | N/A  | N/A |      | N/A   | 1              | <5.0                      | <200             | <500                |
|                                |          |      |     |      |       |                |                           |                  |                     |
|                                |          |      |     |      |       |                |                           |                  |                     |
|                                |          |      |     |      |       |                |                           |                  |                     |
| Control Limit                  |          |      |     |      |       |                | Less than reporting limit |                  |                     |

## *Appendix 5.2*

### *Summary of Past, Existing and Future Land Use and Activities*

**Standard Form 3.1**  
**Summary of On-Site Land Use**

**Property Name**      Concord Kerosene Store at No. 33, Chung Hau Street, Ho Man Tin, Kowloon

**Current Use**

| Type of facility/<br>business | On-site property<br>land use | Date began<br>(at least) | Description of business<br>process/primary products | Owner/<br>Occupier                    | Approximate size of<br>on-site property | Off-site property<br>affected?<br>Yes    No |
|-------------------------------|------------------------------|--------------------------|---|---------------------------------------|---|---|
| Kerosene store                | Industrial                   | Since 1988<br>(at least) | Storage of dangerous goods<br>(LPG and kerosene)    | Concord Oil<br>(Hong Kong)<br>Limited | ~110 m <sup>2</sup>                     | Unknown                                     |

**Past Use**

Are past uses different from current uses?        Yes   N   No    If Yes, complete this section.  
Complete this table with each different operation, use, or status of the on-site property. Include all operations back to pre-commercial or pre-industrial time if this information is necessary to characterize the site. Specify the status of the property at each stage, including times it may have been vacant. Start with the most recent use and list in chronological order backwards through time.

| Type of facility/<br>business | On-site property<br>land use | Date began? | Date ended? | Description of<br>business process/<br>primary products | Owner/<br>Occupier | Approximate size<br>of on-site property | Off-site property<br>affected?<br>Yes    No |
|-------------------------------|------------------------------|-------------|-------------|---|--------------------|---|---|
|                               |                              |             |             |   |                    |   |   |

**Future Use**

Will future uses be different from current uses?      Y   Yes      N   No    If Yes, complete this section.

| Type of facility/<br>business | On-site property<br>land use        | Description of business process/primary products | Owner or<br>Occupier    | Approximate size<br>of on-site property |
|-------------------------------|-------------------------------------|--|-------------------------|---|
| Railway station               | Entrance and exit<br>of HMT Station | Public transport, pedestrian walkway             | MTR Corporation Limited | ~110 m <sup>2</sup>                     |

\* HMT denotes Ho Man Tin

- 1 Specify the approximate year in which the current use of the on-site property began.
- 2 Specify the approximate year in which the past use of the on-site property began.
- 3 Specify the approximate year in which the past use of the on-site property ended.
- 4 Specify all applicable land use including urban residential, rural residential, industrial or public parks.

**Standard Form 3.1**  
**Summary of On-Site Land Use**

**Property Name**     Area near Whampoa Garden at Tak On Street, Hung Hom, Kowloon

**Current Use**

| Type of facility / business | On-site property land use | Date began <sup>5</sup> | Description of business process / primary products | Owner or Occupier          | Approximate size of on-site property | Off-site property affected?<br>Yes ___ No ___ |
|-----------------------------|---------------------------|-------------------------|--|----------------------------|--------------------------------------|---|
| Residential building        | Residential               | ~25 years               | Residential  | Hutchison Property Limited | ~20,000m <sup>2</sup>                | No  |

**Past Use**

Are past uses different from current uses?    Y Yes    No If Yes, complete this section.  
Complete this table with each different operation, use, or status of the on-site property. Include all operations back to pre-commercial or pre-industrial time if this information is necessary to characterize the site. Specify the status of the property at each stage, including times it may have been vacant. Start with the most recent use and list in chronological order backwards through time.

| Type of facility / business | On-site property land use | Date began <sup>6</sup> | Date ended <sup>7</sup> | Description of business process / primary products                  | Owner or Occupier                 | Approximate size of on-site property | Off-site property affected?<br>Yes ___ No ___ |
|-----------------------------|---------------------------|-------------------------|-------------------------|---|-----------------------------------|--------------------------------------|---|
| Industrial premises         | Dockyards                 | 1887                    | 1990                    | Ship building, repairing, breaking, painting, chemical storage, etc | Hong Kong and Whampoa Dock Co Ltd | ~50,000m <sup>2</sup>                | No  |

**Future Use**

Will future uses be different from current uses?    Y Yes    No If Yes, complete this section.

| Type of facility / business | On-site property land use | Description of business process / primary products   | Owner or Occupier       | Approximate size of on-site property |
|-----------------------------|---------------------------|--|-------------------------|--------------------------------------|
| Underground railway station | WHA Station               | Public transport, commercial facilities, open space, pedestrian walkway, community facilities, | MTR Corporation Limited | ~2,000 m <sup>2</sup>                |

\* WHA denotes Whampoa

<sup>5</sup> Specify the approximate year in which the current use of the on-site property began.

<sup>6</sup> Specify the approximate year in which the past use of the on-site property began.

<sup>7</sup> Specify the approximate year in which the past use of the on-site property ended.

<sup>8</sup> Specify all applicable land use including urban residential, rural residential, industrial or public parks.

## *Appendix 5.3*

### *Preliminary Site Appraisal Checklist and Checklist of Possible Contaminants*

## Preliminary Site Appraisal Checklist

### Checklist No.1

|                  |  |
|------------------|--|
| Name of company: | Concord Kerosene Store   |
| Site address:    | No. 33, Chung Hau Street, Hom Man Tin, Kowloon (STT KX1484)                                |
| Date:            | Since 1988 (to be confirmed by the owner of the premises, Concord Oil (Hong Kong) Limited) |

#### Checklist for Site Appraisal:

|     |  |   |
|-----|--|---|
| 1.  | What is your company's main current activities/operations in the above address?  | Storage of dangerous goods (bottled LPG and kerosene)   |
| 2.  | Area of your site?   | ~110 m <sup>2</sup> (on plan)   |
| 3.  | Length of operation?   | At least 20 years (to be confirmed by the owner of the premises, Concord Oil (Hong Kong) Limited)   |
| 4.  | Do you know the type of land use before you took over the site?<br>(If yes, please give details.)  | Currently for storage of bottled LPG and kerosene   |
| 5.  | Have you ever received any notices of violation of environmental regulations or public complaints?<br>(If yes, please give details.)                                 | No (according to the owner of the premises)   |
| 6.  | Do you have regular check for any spillage and monitoring of chemicals handled?<br>(If yes, please give details.)  | Unknown   |
| 7.  | Did any tank/truck spillage or leakage happen in your site? Do you have any internal records about the type, duration and quantities? (If yes, please give details.) | Unknown   |
| 8.  | Do you have any registered hazardous installations as defined under relevant ordinances?<br>(If yes, please give details.)   | Unknown   |
| 9.  | Do you have any underground storage tank?<br>(If yes, please give details.)  | Yes. According to the owner of the premises, there are 3 underground kerosene tanks for supplying to their domestic and industrial customers. The tanks, enclosed in concrete walls, were installed on a rock platform adjacent to the slope and at the basement of the building structure inside the kerosene store (at 2 floors beneath the ground level from Chung Hau Street). The tanks are arranged in series and, based on site measurement, the dimension of all the 3 tanks is approximately 10m (L) x 5m (W) x m 2.5 (H), i.e. ~125m <sup>3</sup> (totally). Kerosene would be pumped from these 3 tanks up to the kerosene filling area at the ground level and delivered by trucks to the customers. There was continuous operation of these kerosene supply, but the last refilling occurred in around end of 2008 to early 2009 and no further refilling of the tanks has been made since then. |
| 10. | Do you have any records of major renovation of your site or rearrangement of underground utilities, pipework/underground tanks?<br>(If yes, please give details.)    | Unknown   |



### Checklist of Possible Contaminants

| Materials                                | Possible Source   | Yes/No | Method of Disposal (historical & current), if applicable (see <i>Note</i> below) |
|--|---|--------|--|
| 1. Fuels                                 | Petroleum storage, LPG storage  | Yes    | Unknown  |
| 2. Lubricating oils, hydraulic fluids    | Spillage, maintenance and dismantling of equipment, scrapped tanks and pipeworks, vehicle maintenance | -      | Unknown  |
| 3. Cleaning solvents                     | Engine room and equipment maintenance   | -      | Unknown  |
| 4. Used chemical solutions               | Engine coolant, battery fluid   | -      | Unknown  |
| 5. Acids                                 | Treating steel plate to remove millscale  | No     | --   |
| 6. Asbestos                              | Application and removal of engine room insulation   | No     | --   |
| 7. Transformer oil (PCB)                 | Scrapped electrical equipment   | No     | --   |
| 8. Anti-corrosive paints, thinners       | Application of anti-corrosive coatings  | No     | --   |
| 9. Coal, ash, oily tank and bilge sludge | Boiler room/engine room maintenance, tank cleaning  | -      | Unknown  |
| 10. Finely divided metal wastes          | Grinding and milling operations, especially welding joints  | No     | --   |
| 11. Electrical wiring                    | Electrical installation, maintenance, scrapped electrical equipment                                   | No     | --   |
| 12. Low-level radioactive waste          | Scrapped instruments  | No     | --   |
| 13. Wood preservatives                   | Timber treatment  | No     | --   |
| 14. Polyurethane foam                    | Hull manufacture/maintenance  | No     | --   |

*Note: Methods of disposal include:*

- i) collection by a municipal solid waste collector;*
- ii) collection by a licensed chemical waste collector;*
- iii) disposal to foul sewer in liquid form;*
- iv) disposal to storm drain in liquid form;*
- v) burial at pits within the site.*

## Checklist No.2

|                  |   |
|------------------|---|
| Name of company: | Area near Whampoa Garden at Tak On Street |
| Site address:    | Tak On Street, Hung Hom, Kowloon          |
| Date:            | ~1887 to 1983                             |

### Checklist for Site Appraisal:

|     |  |   |
|-----|--|---|
| 1.  | What is your company's main current activities/operations in the above address?  | Ship building, breaking, repairing, etc |
| 2.  | Area of your site?   | ~20,000m <sup>2</sup>                   |
| 3.  | Length of operation?   | ~94 years                               |
| 4.  | Do you know the type of land use before you took over the site?<br>(If yes, please give details.)  | Yes, residential (after industrial)     |
| 5.  | Have you ever received any notices of violation of environmental regulations or public complaints?<br>(If yes, please give details.)                                 | Unknown                                 |
| 6.  | Do you have regular check for any spillage and monitoring of chemicals handled?<br>(If yes, please give details.)  | Unknown                                 |
| 7.  | Did any tank/truck spillage or leakage happen in your site? Do you have any internal records about the type, duration and quantities? (If yes, please give details.) | Unknown                                 |
| 8.  | Do you have any registered hazardous installations as defined under relevant ordinances?<br>(If yes, please give details.)   | Unknown                                 |
| 9.  | Do you have any underground storage tank?<br>(If yes, please give details.)  | Unknown                                 |
| 10. | Do you have any records of major renovation of your site or rearrangement of underground utilities, pipework/underground tanks?<br>(If yes, please give details.)    | Unknown                                 |

### Checklist of Possible Contaminants

| Materials                                | Possible Source   | Yes/No | Method of Disposal (historical & current), if applicable (see <i>Note</i> below) |
|--|---|--------|--|
| 1. Fuels                                 | Petroleum storage, LPG storage  | Yes    | Unknown  |
| 2. Lubricating oils, hydraulic fluids    | Spillage, maintenance and dismantling of equipment, scrapped tanks and pipeworks, vehicle maintenance | Yes    | Unknown  |
| 3. Cleaning solvents                     | Engine room and equipment maintenance   | Yes    | Unknown  |
| 4. Used chemical solutions               | Engine coolant, battery fluid   | Yes    | Unknown  |
| 5. Acids                                 | Treating steel plate to remove millscale  | Yes    | Unknown  |
| 6. Asbestos                              | Application and removal of engine room insulation   | No     | --   |
| 8. Transformer oil (PCB)                 | Scrapped electrical equipment   | Yes    | Unknown  |
| 8. Anti-corrosive paints, thinners       | Application of anti-corrosive coatings  | Yes    | Unknown  |
| 9. Coal, ash, oily tank and bilge sludge | Boiler room/engine room maintenance, tank cleaning  | Yes    | Unknown  |
| 10. Finely divided metal wastes          | Grinding and milling operations, especially welding joints  | Yes    | Unknown  |
| 11. Electrical wiring                    | Electrical installation, maintenance, scrapped electrical equipment                                   | Yes    | Unknown  |
| 12. Low-level radioactive waste          | Scrapped instruments  | No     | --   |
| 13. Wood preservatives                   | Timber treatment  | Yes    | Unknown  |
| 14. Polyurethane foam                    | Hull manufacture/maintenance  | Yes    | Unknown  |

*Note: Methods of disposal include:*

- vi) collection by a municipal solid waste collector;*
- vii) collection by a licensed chemical waste collector;*
- viii) disposal to foul sewer in liquid form;*
- ix) disposal to storm drain in liquid form;*
- x) burial at pits within the site.*

***Appendix 5.4***

***Confirmation from the Fire Services  
Department on No Spillage Incidents  
Recorded at Concord Kerosene Store***



本署檔號  
 OUR REF: (49) in AX(34) to EP1/G/72 Pt. V  
 來函檔號  
 YOUR REF: NEX2207-COR-HSD-ENV-012106  
 電話  
 TEL NO.: 2835 1106  
 圖文傳真  
 FAX NO.: 2591 0558  
 電子郵件  
 E-MAIL:  
 網址  
 HOMEPAGE: <http://www.epd.gov.hk>

**Environmental Protection Department**  
**Branch Office**  
 28th Floor, Southern Centre,  
 130 Hennessy Road,  
 Wan Chai, Hong Kong.



環境保護署分處  
 香港灣仔  
 軒尼詩道  
 一百三十號  
 修頓中心廿八樓

By Post and Fax (fax: 2993 7577)

17 December 2009

MTR Corporation Limited  
 MTR Headquarters Building, Telford Plaza  
 GPO Box 9916, Hong Kong  
 Attn.: Mr. Richard KWAN

Dear Richard,

**Kwun Tong Line Extension (No. ESB-188/2008)**  
**Supplementary Contamination Assessment Plan (CAP) (Nov 2009)**

We refer to MTRC's letter dated 2.12.09, enclosing the supplementary CAP (Nov 2009).

The CAP (June 2009) has been endorsed under clause 3.4.5.4 of the EIA study brief (No. ESB-188/2008) on 13.7.09. Our letter dated 13.7.09 is attached for ease of reference.

Subsequent to our endorsement of the CAP, there are some changes to the size and location of works sites / works areas as proposed by MTRC / relevant party under the gazette plan. MTRC submitted the first version of supplementary CAP on 9.11.09 to summarize the latest information of works sites and works areas of KTE. The current Nov 2009 version has addressed our textual observations sent to MTRC on 13.11.09. Further, according to the email advice from MTRC's consultant on 16.12.09, other changes to the supplementary CAP (i.e. changes to para. 3.1.6 of the supplementary CAP), that EPD has not requested, do not affect the use of the supplementary CAP.

The above said, we herewith endorse the supplementary CAP (Nov 2009). Please ensure that the CAP and the supplementary CAP to be incorporated in the future EIA Report are the endorsed version.

Should you have any query on the above, please contact our Mr. Keith LAM at Tel.: 2835 1844.

|                  |   |         |       |
|------------------|---|---------|-------|
| Date             | 17 DEC 2009   |         |       |
| Action           | Info  | Initial | Date  |
| TSC              |   | YSC     | 17/12 |
|                  | FL  | A       | 17/12 |
|                  |   |         |       |
|                  |   |         |       |
|                  |   |         |       |
|                  |   |         |       |
| I/F File         | 91135-30  |         |       |
| PMF Registration | <input type="checkbox"/> Subscription <input type="checkbox"/> Client Reg |         |       |

Yours sincerely,

(David COX)

Senior Environmental Protection Officer  
 for Director of Environmental Protection

c.c.  
 RDO, HyD  
 MIEL

(Attn.: Ms. Tonia Lo)  
 (Attn.: Mr. Thomas S. Chapman)

Fax: 2714 5297  
 Fax: 2559 1613

Internal  
 S(RA)4

Environmental Protection Department,  
28<sup>th</sup> Floor, Southorn Centre,  
130 Hennessy Road,  
Wanchai,  
Hong Kong

Your ref :

Our ref: NEX2207-COR-HSD-ENV-012106

Attention: Mr. David Cox

2 December, 2009

| Date                     | 04 DEC 2009 |                          |            |
|--------------------------|-------------|--------------------------|------------|
| Action                   | Info        | Initial                  | Date       |
| TSC                      |             | Ycc                      | 8/12/      |
|                          | H3c         | MM                       | 3/12       |
|                          | FL          | A                        | 4/12       |
|                          |             |                          |            |
|                          |             |                          |            |
| L5                       | File        | 9135.201                 |            |
| PMF Registration         |             |                          |            |
| <input type="checkbox"/> | Submission  | <input type="checkbox"/> | Client Req |
| <input type="checkbox"/> | Des Change  | <input type="checkbox"/> | Doc Rec'd  |
| Reg. done by             |             |                          | (Initial)  |

Dear Mr. Cox,

**Kwun Tong Line Extension**  
**EIA Study Brief No. ESB-188/2008**  
**Environmental Impact Assessment Submission – Supplementary Contamination**  
**Assessment Plan**

Your fax dated 13 November 2009 on the subject refers.

Attached please find 2 hardcopies and 1 PDF copy of the revised Supplementary Contamination Assessment Plan with the relevant comment / response sheet for reference and endorsement.

Should you have any query, please contact the responsible environmental engineer C.W. Chan at 2688 1969.

Yours sincerely,



Richard Kwan  
Environmental Manager

Encl.

c.c. **Thomas S. Chapman (MIEL)** w/o encl.

RK/WC/KCT/bl

**Meinhardt Infrastructure and Environment Ltd**  
邁進基建環保工程顧問有限公司

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**MEINHARDT**

Engineers • Planners • Managers  
工程設計、策劃、統籌  
Member of ACEHK  
香港顧問工程師協會會員

Our Ref.: HJC/FL/9181/91135.201/qn

27 November 2009

MTR Corporation Limited  
Fo Tan Railway House  
No. 9, Lok King Street  
Fo Tan, Shatin  
N.T., Hong Kong

*By Hand*

Attn.: Mr. Richard Kwan

Dear Sirs,

**Re: Kwun Tong Line Extension**  
**Contract No. NEX/2207**  
**Environmental Impact Assessment (EIA) Study for KTE**  
**Supplementary Contamination Assessment Plan**

Further to EPD's comments on the captioned Supplementary Contamination Assessment Plan, please find enclosed herewith 5 copies for your submission to the EPD.

If you require any further information, please do not hesitate to contact our Tom Chapman at 2859 0125 or the undersigned at 2859 1734.

Yours faithfully,  
MEINHARDT INFRASTRUCTURE AND ENVIRONMENT LIMITED

  
Helen Cochrane  
Director

Encl.

Distn.   
HJC, TSC, FL

Meinhardt China: Beijing Hong Kong Macau Shanghai Shenzhen  
中國: 北京 香港 澳門 上海 深圳

Meinhardt International: Australia India Indonesia Malaysia Pakistan Philippines Singapore Thailand U.A.E. UK USA Vietnam  
海外: 澳大利亞 印度 印尼 馬來西亞 巴基斯坦 菲律賓 新加坡 泰國 阿聯酋 英國 美國 越南



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New Territories

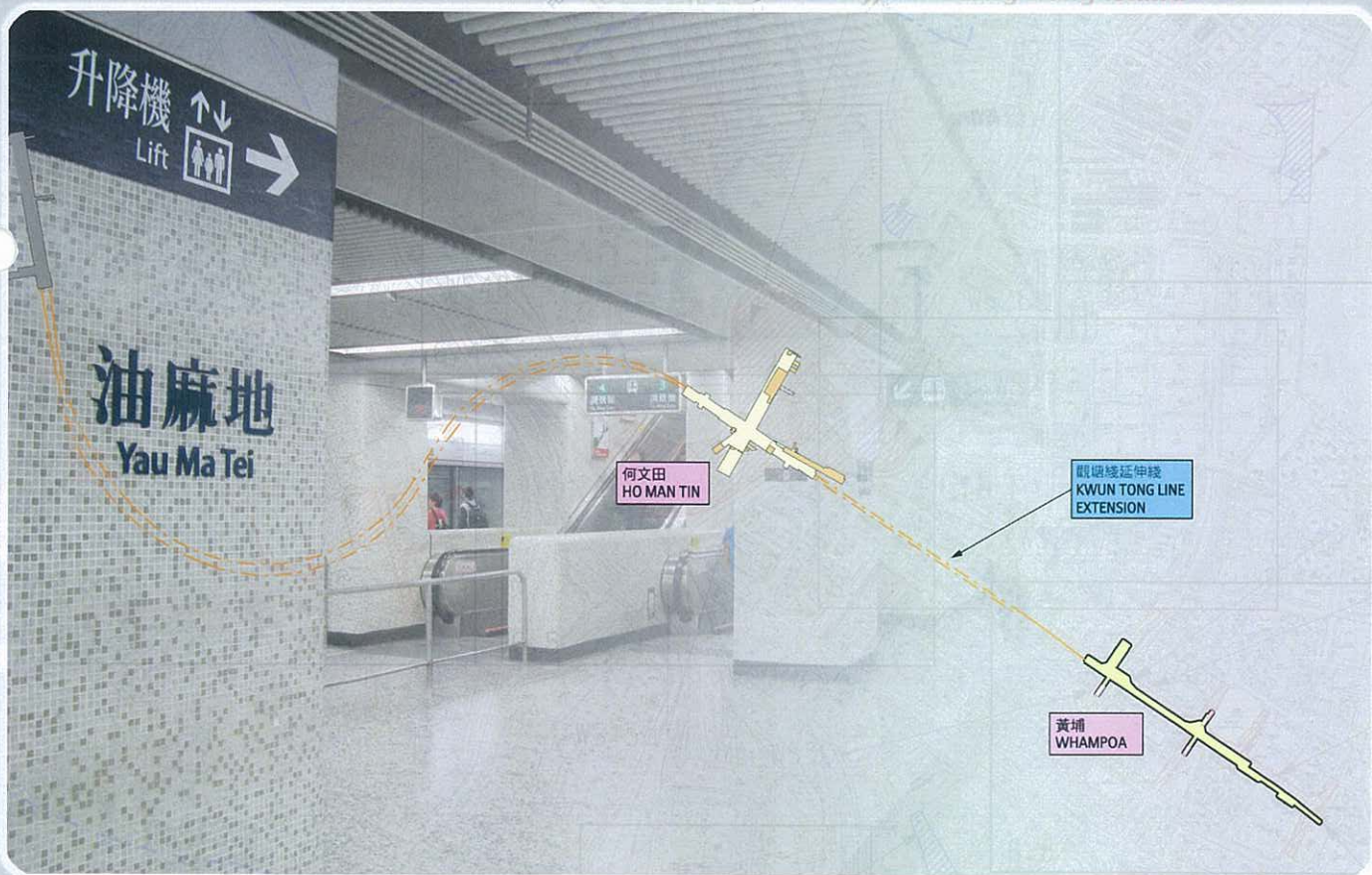
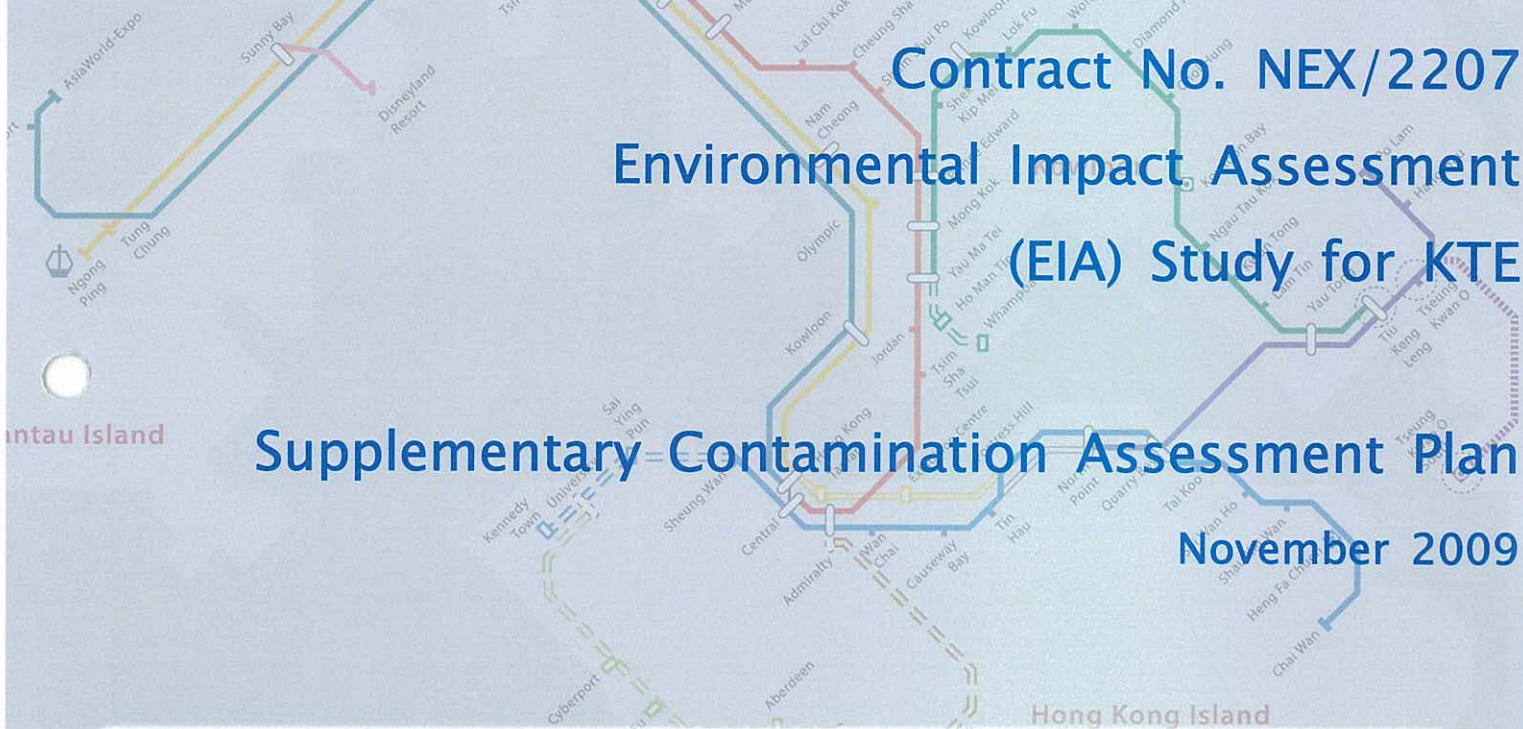
*Kwun Tong Line Extension*

**Contract No. NEX/2207**

**Environmental Impact Assessment  
(EIA) Study for KTE**

**Supplementary Contamination Assessment Plan**

**November 2009**



Meinhardt Infrastructure and Environment Ltd  
邁進基建環保工程顧問有限公司

# MTR Corporation

## Contract No. NEX/2207 Kwun Tong Line Extension Environmental Impact Assessment (EIA) Study for KTE

### Supplementary Contamination Assessment Plan

#### Meinhardt Infrastructure and Environment Ltd

Sub-Consultants:  
Archaeological Assessments Ltd  
...initiatives  
Wilkinson Murray

Document Rev: 1  
Document Status: Final  
Document Ref.: 91135/012

Prepared By:  Date: 26.11.09  
(Fredrick Leong)

Checked By:  Date: 26/11/09  
(Tom Chapman)

Approved By:  Date: 26/11/09  
(Helen Cochrane)

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| 4 CONCLUSION .....                                     | 4-1         |

### **FIGURES**

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| KTE-G02A4   | General Layout Plan Sheet 2 of 8 |
| KTE-G03A4   | General Layout Plan Sheet 3 of 8 |
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| KTE-G06A4   | General Layout Plan Sheet 6 of 8 |
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| Table S3.3 | Post-restoration Land Use and Appropriate RBRGs of the Site |

## 1 INTRODUCTION

- 1.1.1 Meinhardt Infrastructure and Environment Limited (MIEL) was commissioned by the MTR Corporation as the Consultant to undertake an EIA study pursuant to section 5(7)(a) of the EIAO for the proposed Kwun Tong Line Extension (KTE) which is planned for completion in 2015.
- 1.1.2 The KTE is an extension of the existing Kwun Tong Line (KTL) from Yau Ma Tei (YMT) Station to a new Whampoa (WHA) Station and with an interchange with the Shatin to Central Link (SCL) at the proposed Ho Man Tin (HMT) Station as shown in **Figure 1.1** of the endorsed CAP with the interface with the adjoining SCL running tunnels made at both ends of HMT Station as indicated in **Figures 2.4 and 2.5** of the endorsed CAP.
- 1.1.3 Section 3.4.5 of the EIA Study Brief No: ESB-188/2008 for the KTE project dated 5 June 2008 issued by the Environmental Protection Department (EPD) specified that a land contamination assessment shall be undertaken and that a Contamination Assessment Plan (CAP) shall be submitted to the EPD for endorsement prior to conducting the assessment.
- 1.1.4 The CAP has been endorsed by the EPD on 13 July 2009. However, subsequent to the endorsement of the CAP by the EPD, there have been changes in the status of the land application for the location and size of works sites and works areas for the KTE project. As such, this supplementary CAP is prepared for submission to the EPD which summarises the latest updated details of the works sites and works areas with a review of any potential land contamination issues associated. This supplementary CAP shall be read in conjunction with the endorsed CAP.

## 2 UPDATED DETAILS OF WORKS SITES AND WORKS AREAS

2.1.1 **Figures KTE-G01A4 to KTE-G08A4** show the gazette plans of the KTE project, which are the most updated details of individual works sites and works areas. There would now be 28 works sites (with construction activities) and 6 works areas (used as barging point, magazine site, and site offices and material storage) for the development of the KTE project. The location and size of each of these works sites and works areas are presented in **Table S2.1** and their locations are shown in **Figure S2.2**. Any potential contamination issues within these works sites and works areas would be included in the desktop review.

**Table S2.1: Updated Location and Size of Works Sites and Works Areas**

| Works Site and Works Area  | Location  | Size                 |
|--|---|----------------------|
| <i>Works Sites:</i>  |   |                      |
| WS1: KTL Existing Cable Tunnel Diversion Works<br>(Figure KTE-G01A4)   | Gascoigne Road Rest Garden  | 2,660m <sup>2</sup>  |
| WS2: Slope Stabilisation<br>(Figure KTE-G01A4)   | Gascoigne Road near Methodist College   | 480m <sup>2</sup>    |
| WS3: KTE Tunnel Construction (Underground)<br>(Figure KTE-G01A4)   | YMT Station to underneath Wylie Road  | 20,610m <sup>2</sup> |
| WS4a: Slope Stabilisation<br>(Figure KTE-G01A4)  | Gascoigne Road near India Club  | 500m <sup>2</sup>    |
| WS6a: Slope Stabilisation<br>(Figures KTE-G01A4 and KTE-G02A4)   | Gascoigne Road near Club de Recreio   | 420m <sup>2</sup>    |
| WS7a1: EAP Construction and KTE Tunnel Mucking-out (Using Drill-and-Blast Method)<br>(Figures KTE-G01A4 and KTE-G02A4) | Tennis court at Club de Recreio   | 5,550m <sup>2</sup>  |
| WS10: KTE Tunnel Construction (Underground)<br>(Figures KTE-G02A4)   | Underneath Wylie Road connecting the works site of HMT Station  | 17,980m <sup>2</sup> |
| WS12: HMT Cavern Platform Construction<br>(Figure KTE-G03A4)   | Adjoining the works site of HMT Station and KTE tunnels underneath King's Park High Level Service Reservoir | 3,870m <sup>2</sup>  |
| WS13: HMT Civil Provision and WSD Freshwater Main Diversion and TTM<br>(Figure KTE-G03A4)                              | Chung Hau Street near the works site of HMT Station   | 6,730m <sup>2</sup>  |
| WS15a: HMT Construction<br>(Figure KTE-G03A4)  | Area bounded by Yan Fung Street, Chung Hau Street, Chatham Road North and Fat Kwong Street                  | 50,330m <sup>2</sup> |
| WS19: HMT Footbridge Construction<br>(Figure KTE-G03A4)  | Yan Fung Street Rest Garden   | 1,840m <sup>2</sup>  |
| WS20: Permanent Slope Works<br>(Figure KTE-G03A4)  | Yan Fung Street near Fat Kwong Street   | 480m <sup>2</sup>    |
| WS25: HMT Footbridge Construction and TTM<br>(Figure KTE-G03A4)  | Wuhu Street Temporary Playground  | 2,140m <sup>2</sup>  |
| WS26a: KTE Tunnel Mucking-out<br>(Figure KTE-G03A4)  | Fat Kwong Street Playground   | 3,130m <sup>2</sup>  |
| WS27: Slope Stabilisation<br>(Figure KTE-G03A4)  | Fat Kwong Street Playground   | 3,810m <sup>2</sup>  |

| <b>Works Site and Works Area</b>   | <b>Location</b>  | <b>Size</b>          |
|--|--|----------------------|
| WS28: Temporary Access Adit to KTE Tunnel<br>(Figure KTE-G03A4)                          | Walker Street  | 690m <sup>2</sup>    |
| WS29: KTE Tunnel Construction (Underground)<br>(Figures KTE-G03A4 and KTE-G04A4)         | Underneath Wuhu Street adjoining the works site of WHA Station                         | 9,330m <sup>2</sup>  |
| WS30: WHA C&C Structure Construction and TTM<br>(Figure KTE-G04A4)                       | Hung Hom Road and Tak On Street  | 13,380m <sup>2</sup> |
| WS31: WHA Cavern Platform Construction and TTM<br>(Figure KTE-G04A4)                     | Tak On Street  | 2,100m <sup>2</sup>  |
| WS33: WHA C&C Structure Construction and TTM<br>(Figure KTE-G04A4)                       | Tak On Street, Sheung King Street, Tak Ting Street, Wan Hoi Street and Tak Fung Street | 13,520m <sup>2</sup> |
| WS36a: KTE Refuge Siding Tunnel and Ventilation Shaft Construction<br>(Figure KTE-G04A4) | Tak On Street  | 440m <sup>2</sup>    |
| WS37a: Escape Staircase and Staircase Pressurisation Fan Room<br>(Figure KTE-G04A4)      | Tak On Street  | 70m <sup>2</sup>     |
| WS38: HMT Civil Provision and TTM<br>(Figure KTE-G03A4)                                  | Valley Road  | 1,340m <sup>2</sup>  |
| WS44: Slope Stabilisation<br>(Figure KTE-G02A4)  | Wylie Road near Filipino Club  | 140m <sup>2</sup>    |
| WS45: Slope Stabilisation<br>(Figures KTE-G01A4 and KTE-G02A4)                           | Gascoigne Road near YMCA King's Park Centenary Centre                                  | 440m <sup>2</sup>    |
| WS47: Slope Stabilisation<br>(Figure KTE-G02A4)  | Wylie Path   | 650m <sup>2</sup>    |
| WS48: Public Transport Facilities<br>(Figure KTE-G03A4)                                  | Chung Hau Street adjacent to the works site of HMT Station                             | 9,590m <sup>2</sup>  |
| WS54: Slope Stabilisation<br>(Figure KTE-G03A4)  | Chatham Road North near Valley Road  | 940m <sup>2</sup>    |
| <b>Works Areas:</b>  |  |                      |
| WA2a: Site Office<br>(Figure KTE-G07A4)  | Shun Yung Street near Custom and Excise Service Married Quarters                       | 1,940m <sup>2</sup>  |
| WA6: Site Office<br>(Figure KTE-G05A4)   | Hung Lok Road near Yan Yung Street   | 5,570m <sup>2</sup>  |
| WA12a: Magazine Site<br>(Figure KTE-G08A4)   | Tseung Kwan O Area 137   | 3,050m <sup>2</sup>  |
| WA13: Formation of Magazine Site<br>(Figure KTE-G08A4)                                   | Tseung Kwan O Area 137   | 12,950m <sup>2</sup> |
| WA14: Barging Point<br>(Figure KTE-G06A4)  | Existing Hung Hom Finger Pier  | 42,870m <sup>2</sup> |
| WA15: Site Office<br>(Figure KTE-G03A4)  | Fat Kwong Street Playground  | 2,230m <sup>2</sup>  |

### 3 INITIAL SITE APPRAISAL


#### 3.1 Desktop Review

3.1.1 The available geotechnical information relevant to the development of the KTE project has been reviewed. The information included the archived borehole records, geological maps, historic maps, aerial photographs, and the findings of the site specific ground investigation works recently completed in October 2008 for the development of the KTE project. A summary of the newly reviewed information for all works sites and works areas is shown below.

##### *Past Land Use and Activities*


3.1.2 The historic land use of works sites and works areas is summarised in **Table S3.1**.

**Table S3.1: Past Land Use of Works Sites and Works Areas**

| Works Site and Works Area                      | Past Land Use Description  |
|--|--|
| <i>Works Sites:</i>                            |  |
| WS1: KTL Existing Cable Tunnel Diversion Works | <p>This site would be located at the open space where Gascoigne Road branches off Nathan Road. As shown in <b>Figure 5.6</b> in the endorsed CAP, it was undeveloped until the establishment of Gascoigne Road in 1940s (see below a photograph in 1965). During the early 1980s, the ventilation shaft for Yau Ma Tei Station was constructed and the area was later reinstated back to a rest garden. No apparent historic pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.</p>  |
| WS2: Slope Stabilisation                       | <p>This site would be located at Gascoigne Road near Methodist College. No apparent historic pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.</p>  |
| WS3: KTE Tunnel Construction (Underground)     | <p>This site would be located underground from YMT Station to underneath Wylie Road connecting the works site of the EAP at Club de Recreio. No apparent historic pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.</p>   |
| WS4a: Slope Stabilisation                      | <p>This site would be located at Gascoigne Road near India Club. No apparent historic pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.</p>   |


| Works Site and Works Area   | Past Land Use Description  |
|---|--|
| WS6a: Slope Stabilisation   | This site would be located at Gascoigne Road near Club de Recreio. No apparent historic pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.   |
| WS7a1: EAP Construction and KTE Tunnel Mucking-out (Using Drill-and-Blast Method) | <p>This site would be located at the tennis court of Club de Recreio, which was an outdoor recreation club established in 1906 (also see below a map in 1956 downloaded from internet). No apparent historic pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.</p> <div style="text-align: center;"> <p>圖詳道街區各龍九</p> <p>香港年鑑 第十四 交通指南 青洲詳圖<br/>             中華民國四十五年(一九五六年)十二月出版<br/>             每張售價港幣四角</p> </div> |
| WS10: KTE Tunnel Construction (Underground)                                       | This site would be located underground from underneath Wylie Road near Club de Recreio to the works site at HMT Cavern Platform connecting HMT Station. No apparent historic pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.  |
| WS12: HMT Cavern Platform Construction  | This site would be located underground adjoining the works site of HMT Station and KTE tunnels underneath King's Park High Level Service Reservoir. No apparent historic pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.  |
| WS13: HMT Civil Provision and WSD Freshwater Main Diversion and TTM               | This site would be located at Chung Hau Street near the works site for HMT Station. No apparent historic pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.  |



| Works Site and Works Area                 | Past Land Use Description   |
|---|---|
| WS15a: HMT Construction                   | <p>This site would be located at the area bounded by Yan Fung Street, Chung Hau Street, Chatham Road North and Fat Kwong Street (see below the photographs in 1970s-80s). No apparent historic pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns except the kerosene store (refer to <b>Section 5</b> of the endorsed CAP).</p>  |
| WS19: HMT Footbridge construction         | <p>This site would be located at Yan Fung Street Rest Garden near the works site of HMT Station. No apparent historic pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.</p>  |
| WS20: Permanent Slope Works               | <p>This site would be located at Yan Fung Street near Fat Kwong Street. No apparent historic pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.</p>   |
| WS25: HMT Footbridge construction and TTM | <p>This site would be located at the junction between Wuhu Street and Chatham Road North. As shown in <b>Figures 5.6</b> and <b>5.7</b> of the endorsed CAP, it was left undeveloped since 1974 and then established as a playground. No apparent historic pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.</p>   |
| WS26a: KTE Tunnel Mucking-out             | <p>This site would be located at the junction between Fat Kwong Street and Chatham Road North. As shown in <b>Figures 5.6</b> and <b>5.7</b> of the endorsed CAP, it was left undeveloped since 1974 and is then established as a sports ground until now. No apparent historic pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.</p>  |



| <b>Works Site and Works Area</b>                                   | <b>Past Land Use Description</b>  |
|--|---|
| WS27: Slope Stabilisation  | This site would be located at Fat Kwong Street Playground. No apparent historic pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.  |
| WS28: Temporary Access Adit to KTE Tunnel                          | This site would be located at Walker Street. No apparent historic pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.  |
| WS29: KTE Tunnel Construction (Underground)                        | This site would be located underground from Wuhu Street adjoining the works site of WHA Station. No apparent historic pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.  |
| WS30: WHA C&C Structure Construction and TTM                       | This site would be located at Tak On Street that runs through the centre of Whampoa Garden. Immediately at its south was the former Hong Kong and Whampoa Dock and possible land contamination would be anticipated (refer to <b>Section 5</b> of the endorsed CAP).  |
| WS31: WHA Cavern Platform Construction and TTM                     | This site would be located at Tak On Street that runs through the centre of Whampoa Garden. Immediately at its south was the former Hong Kong and Whampoa Dock and possible land contamination would be anticipated (refer to <b>Section 5</b> of the endorsed CAP).  |
| WS33: WHA C&C Structure Construction and TTM                       | This site would be located at Tak On Street, Sheung King Street, Tak Ting Street, Wan Hoi Street and Tak Fung Street that runs through the centre of Whampoa Garden. Immediately at its south was the former Hong Kong and Whampoa Dock and possible land contamination would be anticipated (refer to <b>Section 5</b> of the endorsed CAP). |
| WS36a: KTE Refuge Siding Tunnel and Ventilation Shaft Construction | This site would be located at Tak On Street that runs through the centre of Whampoa Garden. Immediately at its south was the former Hong Kong and Whampoa Dock and possible land contamination would be anticipated (refer to <b>Section 5</b> of the endorsed CAP).  |
| WS37a: Escape Staircase and Staircase Pressurisation Fan Room      | This site would be located at Tak On Street that runs through the centre of Whampoa Garden. Immediately at its south was the former Hong Kong and Whampoa Dock and possible land contamination would be anticipated (refer to <b>Section 5</b> of the endorsed CAP).  |
| WS38: HMT Civil Provision and TTM                                  | This site would be located at Valley Road. No apparent historic pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.  |
| WS44: Slope Stabilisation  | This site would be located at Wylie Road near Filipino Club. No apparent historic pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.  |
| WS45: Slope Stabilisation  | This site would be located at Gascoigne Road near YMCA King's Park Centenary Centre. No apparent historic pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.  |
| WS47: Slope Stabilisation  | This site would be located at Wylie Path. No apparent historic pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.   |
| WS48: Public Transport Facilities                                  | This site would be located at Chung Hau Street adjacent to the works site of HMT Station. No apparent historic pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.   |

| Works Site and Works Area        | Past Land Use Description  |
|----------------------------------|--|
| WS54: Slope Stabilisation        | This site would be located at Chatham Road North near Valley Road. No apparent historic pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.   |
| <b>Works Areas:</b>              |  |
| WA2a: Site Office                | The area would be located at Shun Yung Street near Custom and Excise Service Married Quarters. No apparent historic pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.   |
| WA6: Site Office                 | The area would be located at Hung Lok Road near Yan Yung Street. As shown in <b>Figure 5.2</b> of the endorsed CAP, the area was reclaimed during 1983-1994. No apparent historic pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.   |
| WA12a: Magazine Site             | The area would be located on a newly reclaimed area within TKO Area 137 adjoining Tit Cham Chau, which was a recreation ground famous for canoeing. The area was an undeveloped open space. No apparent historic pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.  |
| WA13: Formation of Magazine Site | The area would be located on a newly reclaimed area within TKO Area 137 adjoining Tit Cham Chau, which was a recreation ground famous for canoeing. The area was an undeveloped open space. No apparent historic pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.  |
| WA14: Barging Point              | <p>The area would be located at the existing Hung Hom Finger Pier beside the Hung Hom Station and International Mail Centre. It was a reclaimed land for a container handling pier which is concrete-paved (see below a photograph in 1970s). No apparent historic pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.</p>  |

| Works Site and Works Area | Past Land Use Description   |
|---------------------------|---|
| WA15: Site Office         | The area would be located at Fat Kwong Street Playground. No apparent historic pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns. |

### *Existing Land Use and Activities*

3.1.3 The existing land use of works sites and works areas is summarised in **Table S3.2**.

**Table S3.2: Existing Land Use of Works Sites and Works Areas**

| Works Site and Works Area   | Existing Land Use Description  |
|---|--|
| <i>Works Sites:</i>   |  |
| WS1: KTL Existing Cable Tunnel Diversion Works                                    | This site would be at the existing Gascoigne Road Rest Garden with a ventilation shaft for MTR Yau Ma Tei Station. No apparent existing pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.   |
| WS2: Slope Stabilisation  | This site would be at the existing paved slope at Gascoigne Road near Methodist College. No apparent existing pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.   |
| WS3: KTE Tunnel Construction (Underground)  | This site would be at the existing over-run tunnels of YMT Station and the <i>in-situ</i> rock and earth ground underneath Gascoigne Road and Wylie Road. No apparent existing pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.                                |
| WS4a: Slope Stabilisation   | This site would be at the existing paved slope at Gascoigne Road near India Club. No apparent existing pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.  |
| WS6a: Slope Stabilisation   | This site would be at the existing paved slope at Gascoigne Road near Club de Recreio. No apparent existing pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.   |
| WS7a1: EAP Construction and KTE Tunnel Mucking-out (Using Drill-and-Blast Method) | This site would be at the existing tennis court of Club de Recreio. No apparent existing pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.  |
| WS10: KTE Tunnel Construction (Underground)                                       | This site would be at the existing <i>in-situ</i> rock and earth ground from underneath Wylie Road near Club de Recreio to the works site at HMT Cavern Platform connecting HMT Station. No apparent existing pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns. |
| WS12: HMT Cavern Platform Construction  | This site would be at the existing <i>in-situ</i> rock and earth ground underneath King's Park High Level Service Reservoir. No apparent existing pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.   |
| WS13: HMT Civil Provision and WSD Freshwater Main Diversion and TTM               | This site would be at the existing Chung Hau Street. No apparent existing pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.   |

| Works Site and Works Area  | Existing Land Use Description   |
|--|---|
| WS15a: HMT Construction  | This site would be at the existing open space car parks and unpaved slopes covered by vegetation bounded by Yan Fung Street, Chung Hau Street, Chatham Road North and Fat Kwong Street. No apparent existing pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns except the kerosene store (refer to <b>Section 5</b> of the endorsed CAP). |
| WS19: HMT Footbridge construction                                  | The site would be at the existing Yan Fung Street Rest Garden with pavement and footbridge across Chatham Road North. No apparent existing pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.   |
| WS20: Permanent Slope Works  | This site would be at the existing paved slope at Yan Fung Street near Fat Kwong Street. No apparent existing pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.  |
| WS25: HMT Footbridge construction and TTM                          | This site would be at the existing junction between Wuhu Street and Chatham Road North. No apparent existing pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.   |
| WS26a: KTE Tunnel Mucking-out                                      | This site would be at the existing junction between Fat Kwong Street and Chatham Road North. No apparent existing pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.  |
| WS27: Slope Stabilisation  | This site would be at the existing Fat Kwong Street Playground. No apparent existing pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.   |
| WS28: Temporary Access Adit to KTE Tunnel                          | This site would be at the existing earth ground underneath Walker Street. No apparent existing pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.   |
| WS29: KTE Tunnel Construction (Underground)                        | This site would be at the existing <i>in-situ</i> rock and earth ground underneath Wuhu Street adjoining the works site of WHA Station. No apparent existing pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.   |
| WS30: WHA C&C Structure Construction and TTM                       | This site would be at the existing Tak On Street that runs through the centre of Whampoa Garden. No apparent existing pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.  |
| WS31: WHA Cavern Platform Construction and TTM                     | This site would be at the existing Tak On Street that runs through the centre of Whampoa Garden. No apparent existing pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.  |
| WS33: WHA C&C Structure Construction and TTM                       | This site would be at the existing Tak On Street, Sheung King Street, Tak Ting Street, Wan Hoi Street and Tak Fung Street that runs through the centre of Whampoa Garden. No apparent existing pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.   |
| WS36a: KTE Refuge Siding Tunnel and Ventilation Shaft Construction | This site would be at the existing Tak On Street that runs through the centre of Whampoa Garden. No apparent existing pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.  |



| <b>Works Site and Works Area</b>                              | <b>Existing Land Use Description</b>   |
|---|--|
| WS37a: Escape Staircase and Staircase Pressurisation Fan Room | This site would be at the existing Tak On Street that runs through the centre of Whampoa Garden. No apparent existing pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.   |
| WS38: HMT Civil Provision and TTM                             | This site would be at the existing Valley Road. No apparent existing pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.  |
| WS44: Slope Stabilisation                                     | This site would be at the existing paved slope at Wylie Road near Filipino Club. No apparent existing pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.   |
| WS45: Slope Stabilisation                                     | This site would be the existing paved slope at Gascoigne Road near YMCA King's Park Centenary Centre. No apparent existing pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.  |
| WS47: Slope Stabilisation                                     | This site would be at the existing paved slope at Wylie Path. No apparent existing pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.  |
| WS48: Public Transport Facilities                             | This site would be at the existing Chung Hau Street adjacent to the works site of HMT Station. No apparent existing pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.   |
| WS54: Slope Stabilisation                                     | This site would be at the existing paved slope at Chatham Road North near Valley Road. No apparent existing pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.   |
| <b>Works Areas:</b>   |  |
| WA2a: Site Office   | The area would be at the existing undeveloped open space at Shun Yung Street near Custom and Excise Service Married Quarters. No apparent existing pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.                      |
| WA6: Site Office  | The area would be at the existing undeveloped open space at Hung Lok Road near Yan Yung Street. No apparent existing pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.  |
| WA12a: Magazine Site  | The area would be at the existing undeveloped open space at TKO Area 137. No apparent existing pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.  |
| WA13: Formation of Magazine Site                              | The area would be at the existing undeveloped open space at TKO Area 137. No apparent existing pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.  |
| WA14: Barging Point   | The area would be at the existing Hung Hom Finger Pier for the loading and unloading of containers and cargo via marine barges at the finger pier. No apparent existing pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns. |
| WA15: Site Office   | The area would be at the existing Fat Kwong Street Playground. No apparent existing pollution sources were identified in the immediate vicinity of the site which may lead to significant land contamination concerns.   |

### ***Future Land Use and Activities***

- 3.1.4 In accordance with the Guidance Note for Contaminated Land Assessment and Remediation, Guidance Manual for Use of Risk-Based Remediation Goals for Contaminated Land Management, there are 4 different post-restoration land use scenarios (***Urban Residential, Rural Residential, Industrial, Public Parks***) reflecting the typical physical settings in Hong Kong are categorised under which people could be exposed to contaminated soil and groundwater.
- 3.1.5 RBRGs have been developed to protect workers at industrial sites, the public visiting public parks, and residents in urban and rural areas. Separate sets of RBRGs have been developed according to different land uses, as the ways in which people come into contact with contaminated soil and/or groundwater, including the intensity and frequency of their contact, are largely dependent on the type of land use.
- 3.1.6 The future land use of the KTE development would be classified as “Railway” including the stations, tunnels, ventilation buildings, plant rooms, etc and “Community Facilities”, “Commercial”, “Pedestrian Walkway” and “Open Space” including the pedestrian areas. The corresponding RBRGs for the land use in accordance with the Guidance Note for Contaminated Land Assessment and Remediation, Guidance Manual for Use of Risk-Based Remediation Goals for Contaminated Land Management is summarised in the endorsed CAP based on which the land contamination assessment and remediation (if required) criteria will be carried out.

### **3.2 Reconnaissance Site Visit**

3.2.1 Reconnaissance site visits were carried out on 7-9 September 2009 to verify the desktop review findings of this supplementary CAP and to identify any additional neighbouring activities along the footprint of preferred alignments and stations which may represent potential hotspots of land contamination. Key observations of the site visits confirmed that the desktop review findings were valid and aligned with the preliminary Site Appraisal Checklist and Checklist of Possible Contaminants in **Appendix 5.3** of the endorsed CAP with reference to the Guidance Notes for Investigation Remediation of Contaminated Sites of Petrol Filling Stations, Boatyards, and Car Repair/Dismantling Workshops.

### **3.3 Potential Sources of Contamination**

3.3.1 Based on the above initial site appraisal, reconnaissance site visits, review of previous SI and other relevant information in this supplementary CAP, there would be no additional potential sources of land contamination as compared with those identified in the endorsed CAP due to the recent changes in the status of the land application for the location and size of works sites and works areas.





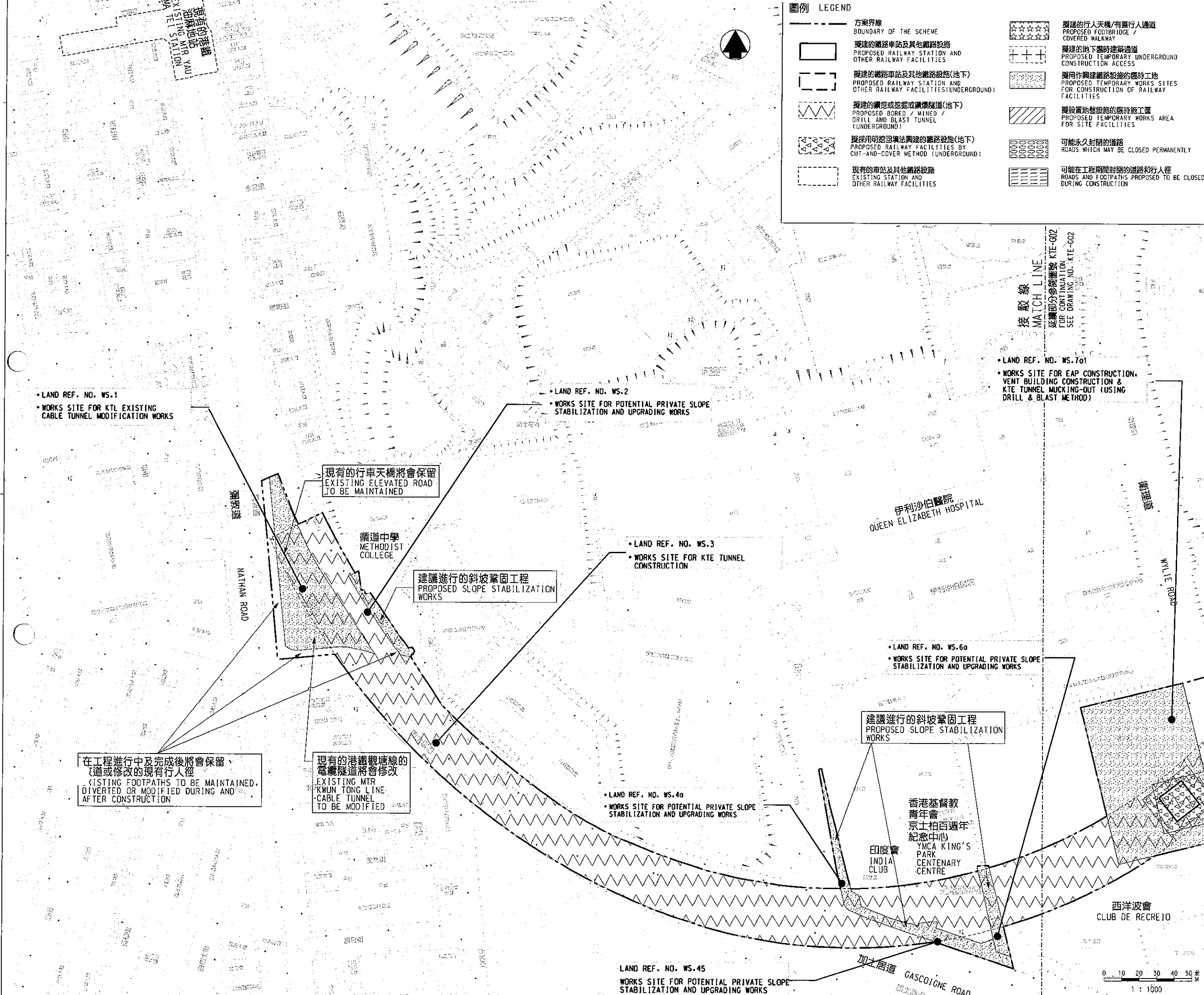
## 4 CONCLUSION

- 4.1.1 The findings in this supplementary CAP concluded that, with the recent changes in the status of the land application for the location and size of works sites and works areas for the KTE project, there would be no change in the scope of the site investigation proposed in the endorsed CAP.

C

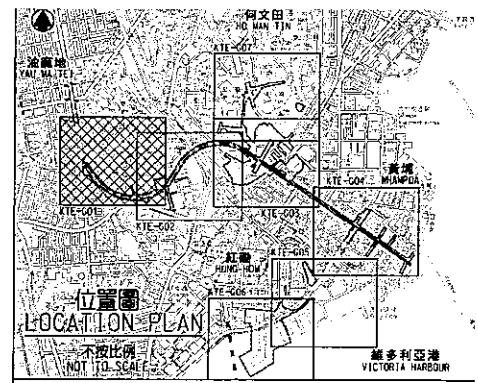
## *Figures*

C



**圖例 LEGEND**

|   |   |
|---|---|
| 方案界線<br>BOUNDARY OF THE SCHEME  | 擬建的行人天橋/有蓋行人通道<br>PROPOSED FOOTBRIDGE / COVERED WALKWAY                                 |
| 擬建的鐵路車站及其他鐵路設施<br>PROPOSED RAILWAY STATION AND OTHER RAILWAY FACILITIES                   | 擬建的地下臨時建築通道<br>PROPOSED TEMPORARY UNDERGROUND CONSTRUCTION ACCESS                       |
| 擬建的鐵路車站及其他鐵路設施(地下)<br>PROPOSED RAILWAY STATION AND OTHER RAILWAY FACILITIES (UNDERGROUND) | 擬用作興建鐵路設施的臨時工地<br>PROPOSED TEMPORARY WORKS SITES FOR CONSTRUCTION OF RAILWAY FACILITIES |
| 擬建的鑽孔或掘地或鑽爆隧道(地下)<br>PROPOSED BORED / MINED / DRILL AND BLAST TUNNEL (UNDERGROUND)        | 擬設置地盤設施的臨時施工區<br>PROPOSED TEMPORARY WORKS AREA FOR SITE FACILITIES                      |
| 擬採用明挖回填法興建的鐵路設施(地下)<br>PROPOSED RAILWAY FACILITIES BY CUT-AND-COVER METHOD (UNDERGROUND)  | 可能永久封閉的道路<br>ROADS WHICH MAY BE CLOSED PERMANENTLY                                      |
| 現有的車站及其他鐵路設施<br>EXISTING STATION AND OTHER RAILWAY FACILITIES                             | 可能在工程期間封閉的道路和行人徑<br>ROADS AND FOOTPATHS PROPOSED TO BE CLOSED DURING CONSTRUCTION       |



- 一般說明 GENERAL NOTES**
1. 剖面圖所示鐵路設施的形狀和輪廓均屬示意性質。  
GEOMETRY AND CONFIGURATION OF RAILWAY FACILITIES SHOWN IN SECTIONS ARE SCHEMATIC.
  2. 所有在方案界線內的道路(包括行車道、行人徑及露天地方), 無論有否在圖則中顯示, 都有可能永久或暫時封閉或大幅改動。  
ALL ROADS INCLUDING CARRIAGEWAYS, FOOTPATHS AND OPEN PLACES WITHIN THE BOUNDARY OF THE SCHEME, WHETHER OR NOT SHOWN ON THE DRAWINGS MAY BE CLOSED OR ALTERED SUBSTANTIALLY ON A PERMANENT OR TEMPORARY BASIS.
  3. 除非圖則中特別註明, 否則在方案界線內, 或與方案界線毗鄰的所有建築物的汽車通道及行人通道, 包括逃生路徑, 將會保留。  
UNLESS NOTED OTHERWISE ON THE DRAWINGS, VEHICULAR AND PEDESTRIAN ACCESSES INCLUDING MEANS OF ESCAPE TO AND FROM ALL BUILDINGS WITHIN OR ADJACENT TO THE BOUNDARY OF THE SCHEME ARE TO BE MAINTAINED.
  4. 所有水平均為約數, 以米為單位, 並高於香港的主水平基準。  
ALL LEVELS ARE APPROXIMATE AND IN METRES ABOVE HONG KONG PRINCIPAL DATUM (mPD).
  5. 圖則顯示的建造方法分界線只是大抵位置, 有關界線可因應當時的地盤情況而作出改動。  
BOUNDARIES SHOWN ON DRAWINGS FOR THE CONSTRUCTION METHODS TO BE CARRIED OUT ARE APPROXIMATE ONLY. THESE BOUNDARIES MAY BE ALTERED ON SITE TO SUIT PREVAILING SITE CONDITIONS.

• LAND REF. NO. WS.1  
• WORKS SITE FOR KTL EXISTING CABLE TUNNEL MODIFICATION WORKS

• LAND REF. NO. WS.2  
• WORKS SITE FOR POTENTIAL PRIVATE SLOPE STABILIZATION AND UPGRADING WORKS

• LAND REF. NO. WS.3  
• WORKS SITE FOR KTE TUNNEL CONSTRUCTION

• LAND REF. NO. WS.701  
• WORKS SITE FOR EAP CONSTRUCTION, VENT BUILDING CONSTRUCTION & KTE TUNNEL MUCKING-OUT (USING DRILL & BLAST METHOD)

• LAND REF. NO. WS.6a  
• WORKS SITE FOR POTENTIAL PRIVATE SLOPE STABILIZATION AND UPGRADING WORKS

• LAND REF. NO. WS.4a  
• WORKS SITE FOR POTENTIAL PRIVATE SLOPE STABILIZATION AND UPGRADING WORKS

• LAND REF. NO. WS.45  
• WORKS SITE FOR POTENTIAL PRIVATE SLOPE STABILIZATION AND UPGRADING WORKS

現有的行車天橋將會保留  
EXISTING ELEVATED ROAD TO BE MAINTAINED

建議進行的斜坡鞏固工程  
PROPOSED SLOPE STABILIZATION WORKS

建議進行的斜坡鞏固工程  
PROPOSED SLOPE STABILIZATION WORKS

在工程進行中及完成後將會保留、  
7道或修改的現有行人徑  
(EXISTING FOOTPATHS TO BE MAINTAINED,  
DIVERTED OR MODIFIED DURING AND  
AFTER CONSTRUCTION)

現有的港鐵觀塘線的  
電纜隧道將會修改  
EXISTING MTR  
KWUN TONG LINE  
CABLE TUNNEL  
TO BE MODIFIED

- 一般說明 GENERAL NOTES**
1. 有關一般說明參閱圖號 KTE - G01.  
FOR GENERAL NOTES, REFER TO DRAWING NO. KTE - G01.

修訂表  
TABLE OF AMENDMENTS

| 修訂號 | 日期          | 由  | 類別  | 說明  |                      |
|-----|-------------|----|-----|-----|----------------------|
| REV | DATE        | BY | SUB | APP | DESCRIPTION          |
| A4  | 01 OCT 2009 | WF | WC  | CH  | DRAFT FOR DISCUSSION |
| A3  | 02 JUL 2009 | WS | WC  | CH  | DRAFT FOR DISCUSSION |
| A2  | 31 MAR 2009 | AL | SK  | CH  | DRAFT FOR DISCUSSION |
| A1  | 16 MAR 2009 | FF | SK  | CH  | DRAFT FOR DISCUSSION |

批准發出  
APPROVED FOR ISSUE

發出日期 DATE OF ISSUE

圖則名稱 DRAWING TITLE  
**鐵路條例(第519章)  
- 觀塘線延線  
總體規劃圖則 8頁的第1頁**

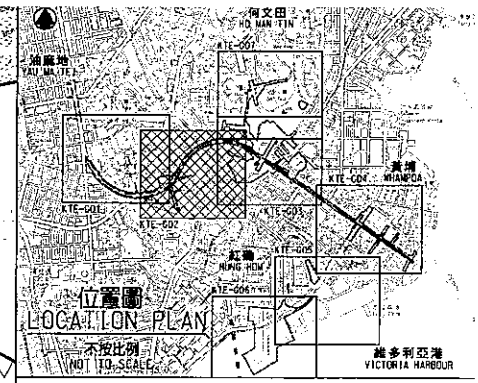
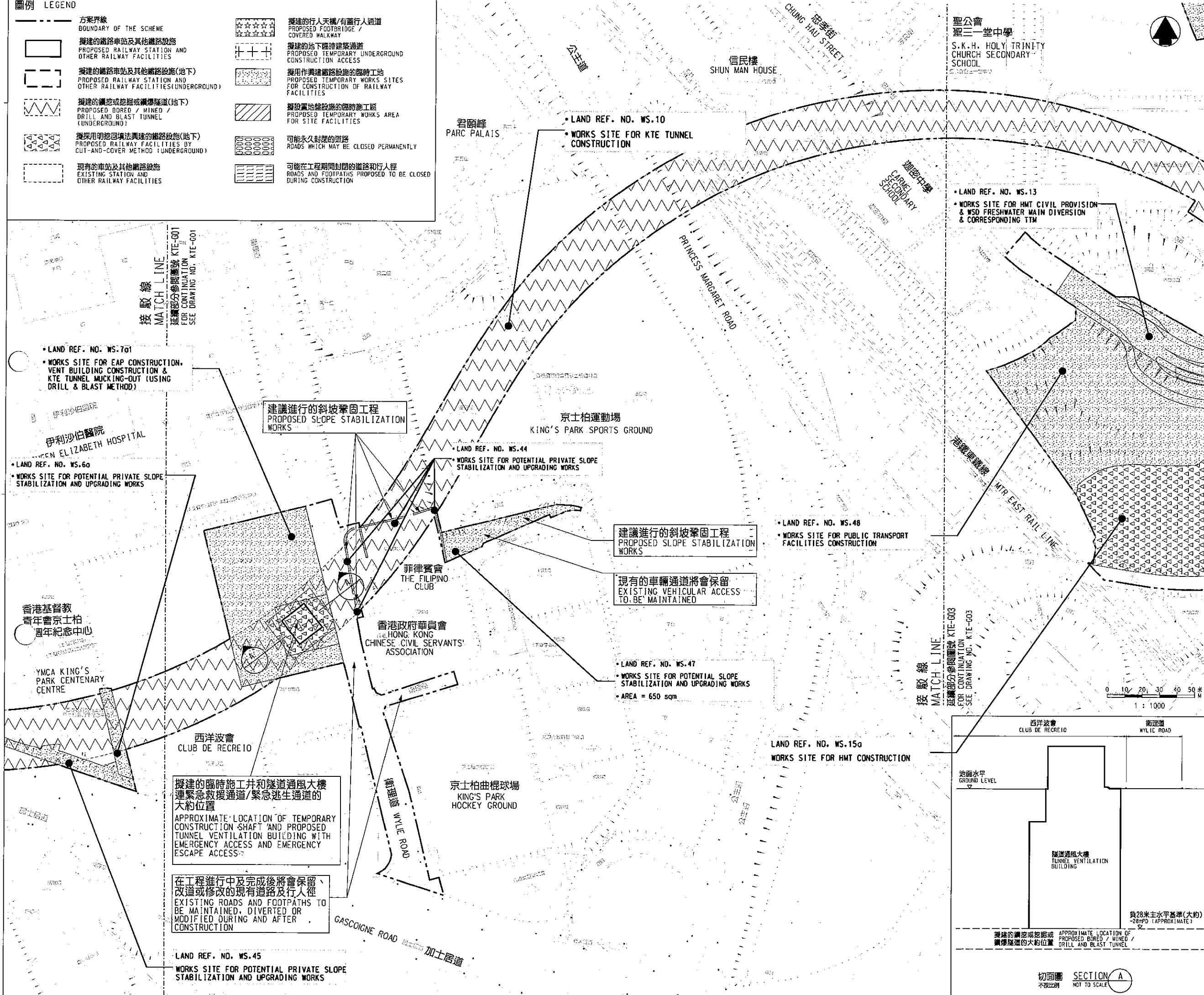
RAILWAYS ORDINANCE (CHAPTER 519)  
- KWUN TONG LINE EXTENSION  
GENERAL LAYOUT PLAN SHEET 1 OF 8

圖號 DRAWING NO.  
KTE-G01

比例 SCALE  
1:1000 (A1)  
或如顯示  
OR AS SHOWN

圖例 LEGEND

- 方案界線  
BOUNDARY OF THE SCHEME
- 擬建的鐵路車站及其他鐵路設施  
PROPOSED RAILWAY STATION AND OTHER RAILWAY FACILITIES
- 擬建的鐵路車站及其他鐵路設施(地下)  
PROPOSED RAILWAY STATION AND OTHER RAILWAY FACILITIES (UNDERGROUND)
- 擬建的鑽挖或掘掘或鑽爆隧道(地下)  
PROPOSED BORED / MINED / DRILL AND BLAST TUNNEL (UNDERGROUND)
- 擬採用明挖回填法興建的鐵路設施(地下)  
PROPOSED RAILWAY FACILITIES BY CUT-AND-COVER METHOD (UNDERGROUND)
- 現有的車站及其他鐵路設施  
EXISTING STATION AND OTHER RAILWAY FACILITIES
- 擬建的行人天橋/有蓋行人通道  
PROPOSED WALKBRIDGE / COVERED WALKWAY
- 擬建的地下臨時建築通道  
PROPOSED TEMPORARY UNDERGROUND CONSTRUCTION ACCESS
- 擬用作興建鐵路設施的臨時工地  
PROPOSED TEMPORARY WORKS SITES FOR CONSTRUCTION OF RAILWAY FACILITIES
- 擬設置地鐵設施的臨時施工區  
PROPOSED TEMPORARY WORKS AREA FOR SITE FACILITIES
- 可能永久封閉的道路  
ROADS WHICH MAY BE CLOSED PERMANENTLY
- 可能在工程期間封閉的道路和行人徑  
ROADS AND FOOTPATHS PROPOSED TO BE CLOSED DURING CONSTRUCTION



接駁線  
MATCH LINE  
延續部分參閱圖號 KTE-G01  
FOR CONTINUATION  
SEE DRAWING NO. KTE-G01

• LAND REF. NO. WS.761  
• WORKS SITE FOR EAP CONSTRUCTION, VENT BUILDING CONSTRUCTION & KTE TUNNEL MUCKING-OUT (USING DRILL & BLAST METHOD)

伊利沙伯醫院  
ELIZABETH HOSPITAL  
• LAND REF. NO. WS.60  
• WORKS SITE FOR POTENTIAL PRIVATE SLOPE STABILIZATION AND UPGRADING WORKS

香港基督教青年會京士柏周年紀念中心  
YMCA KING'S PARK CENTENARY CENTRE

西洋波會  
CLUB DE RECREIO

擬建的臨時施工井和隧道通風大樓連緊急救援通道/緊急逃生通道的大約位置  
APPROXIMATE LOCATION OF TEMPORARY CONSTRUCTION SHAFT AND PROPOSED TUNNEL VENTILATION BUILDING WITH EMERGENCY ACCESS AND EMERGENCY ESCAPE ACCESS

在工程進行中及完成後將會保留、改道或修改的現有道路及行人徑  
EXISTING ROADS AND FOOTPATHS TO BE MAINTAINED, DIVERTED OR MODIFIED DURING AND AFTER CONSTRUCTION

• LAND REF. NO. WS.45  
• WORKS SITE FOR POTENTIAL PRIVATE SLOPE STABILIZATION AND UPGRADING WORKS

• LAND REF. NO. WS.47  
• WORKS SITE FOR POTENTIAL SLOPE STABILIZATION AND UPGRADING WORKS  
• AREA = 650 sqm

• LAND REF. NO. WS.48  
• WORKS SITE FOR PUBLIC TRANSPORT FACILITIES CONSTRUCTION

• LAND REF. NO. WS.50  
• WORKS SITE FOR HMT CONSTRUCTION

建議進行的斜坡鞏固工程  
PROPOSED SLOPE STABILIZATION WORKS

• LAND REF. NO. WS.44  
• WORKS SITE FOR POTENTIAL PRIVATE SLOPE STABILIZATION AND UPGRADING WORKS

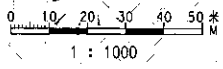
建議進行的斜坡鞏固工程  
PROPOSED SLOPE STABILIZATION WORKS

現有的車輛通道將會保留  
EXISTING VEHICULAR ACCESS TO BE MAINTAINED

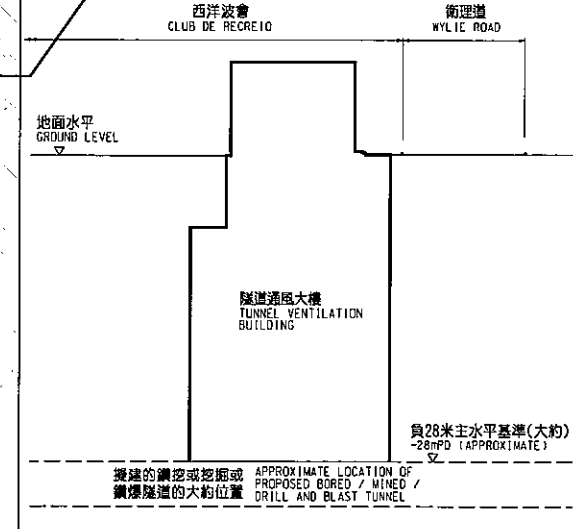
• LAND REF. NO. WS.48  
• WORKS SITE FOR PUBLIC TRANSPORT FACILITIES CONSTRUCTION

• LAND REF. NO. WS.150  
• WORKS SITE FOR HMT CONSTRUCTION

• LAND REF. NO. WS.13  
• WORKS SITE FOR HMT CIVIL PROVISION & WSD FRESHWATER MAIN DIVERSION & CORRESPONDING TTM



1 : 1000



切面圖 SECTION A  
不按比例 NOT TO SCALE

一般說明 GENERAL NOTES

1. 有關一般說明參閱圖號 KTE - G01.  
FOR GENERAL NOTES, REFER TO DRAWING NO. KTE - G01.

修訂表  
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| REV | DATE        | BY | CHK | APP | DESCRIPTION          |
|-----|-------------|----|-----|-----|----------------------|
| A4  | 01 OCT 2009 | WF | WC  | CH  | DRAFT FOR DISCUSSION |
| A3  | 20 JUL 2009 | WS | WC  | CH  | DRAFT FOR DISCUSSION |
| A2  | 31 MAR 2009 | AL | SK  | CH  | DRAFT FOR DISCUSSION |
| A1  | 16 MAR 2009 | FF | SK  | CH  | DRAFT FOR DISCUSSION |

審核表  
APPROVED FOR ISSUE

林耀雄 LAW CHIU HUNG  
鐵路拓展處處長(1)  
GOVERNMENT ENGINEER/  
RAILWAY DEVELOPMENT (1)  
HIGHWAYS DEPARTMENT

發出日期 DATE OF ISSUE

圖則名稱 DRAWING TITLE

鐵路條例(第519章)  
- 觀塘線延線  
總體規劃圖則 8頁的第2頁

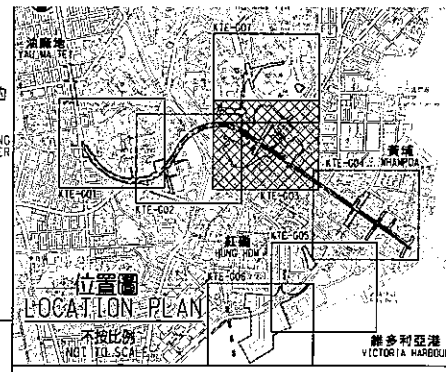
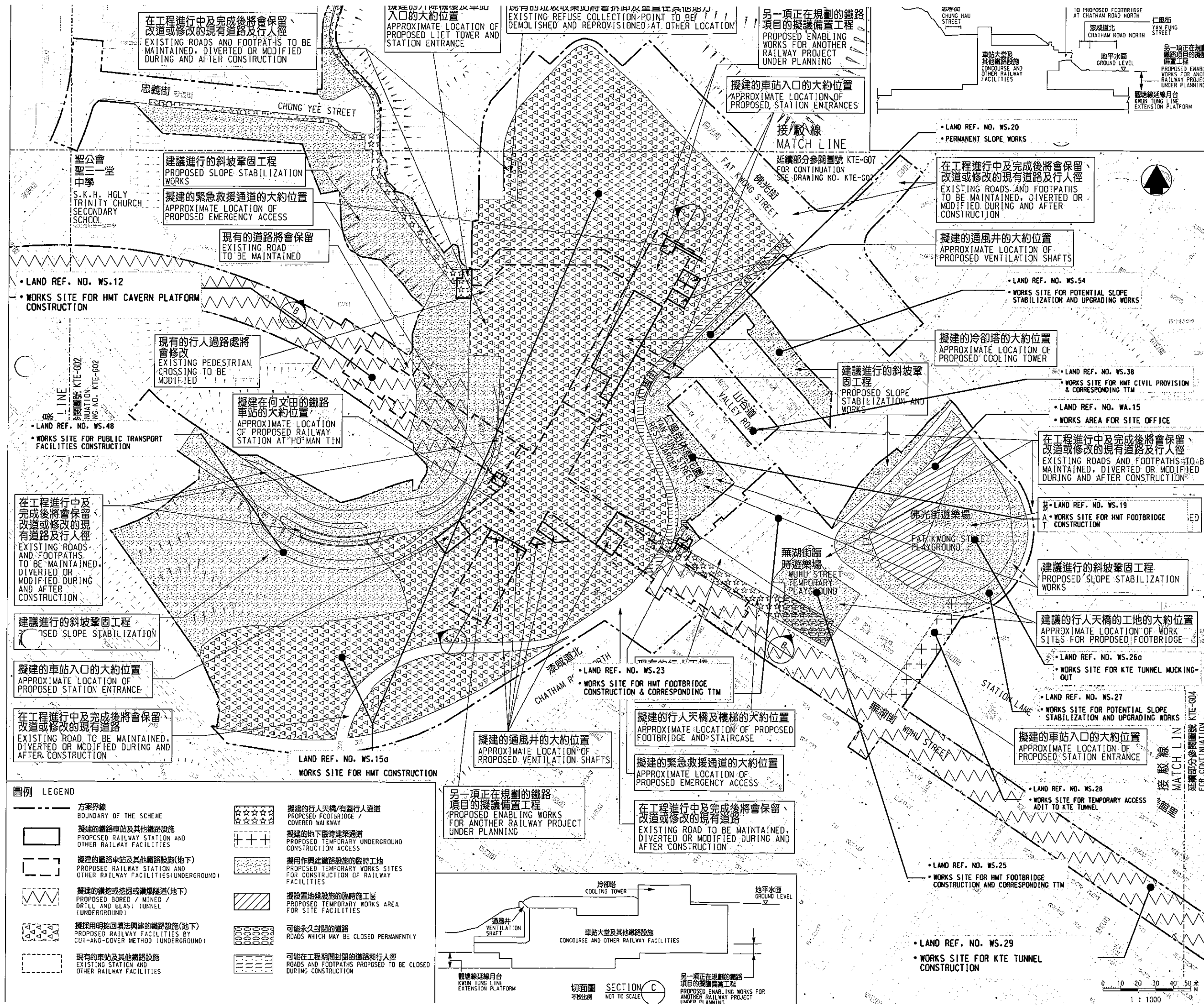
RAILWAYS ORDINANCE (CHAPTER 519)  
- KWUN TONG LINE EXTENSION

GENERAL LAYOUT PLAN SHEET 2 OF 8

圖號 DRAWING NO. KTE-G02

比例 SCALE 1:1000 (A1) 或如顯示 OR AS SHOWN

香港特別行政區政府  
THE GOVERNMENT OF THE HONG KONG SPECIAL ADMINISTRATIVE REGION  
路政署  
HIGHWAYS DEPARTMENT  
鐵路拓展處  
RAILWAY DEVELOPMENT OFFICE



在工程進行中及完成後將會保留、改道或修改的現有道路及行人徑  
EXISTING ROADS AND FOOTPATHS TO BE MAINTAINED, DIVERTED OR MODIFIED DURING AND AFTER CONSTRUCTION

擬建的車站入口的大約位置  
APPROXIMATE LOCATION OF PROPOSED LIFT TOWER AND STATION ENTRANCE

另一項正在規劃的鐵路項目的擬議備置工程  
PROPOSED ENABLING WORKS FOR ANOTHER RAILWAY PROJECT UNDER PLANNING

擬建的車站入口的大約位置  
APPROXIMATE LOCATION OF PROPOSED STATION ENTRANCES

車站大堂及其他鐵路設施  
CONCOURSE AND OTHER RAILWAY FACILITIES

• LAND REF. NO. WS.20  
• PERMANENT SLOPE WORKS

在工程進行中及完成後將會保留、改道或修改的現有道路及行人徑  
EXISTING ROADS AND FOOTPATHS TO BE MAINTAINED, DIVERTED OR MODIFIED DURING AND AFTER CONSTRUCTION

擬建的通風井的大約位置  
APPROXIMATE LOCATION OF PROPOSED VENTILATION SHAFTS

• LAND REF. NO. WS.54  
• WORKS SITE FOR POTENTIAL SLOPE STABILIZATION AND UPGRADING WORKS

擬建的冷卻塔的大約位置  
APPROXIMATE LOCATION OF PROPOSED COOLING TOWER

• LAND REF. NO. WS.38  
• WORKS SITE FOR HMT CIVIL PROVISION & CORRESPONDING TTM

• LAND REF. NO. WA.15  
• WORKS AREA FOR SITE OFFICE

在工程進行中及完成後將會保留、改道或修改的現有道路及行人徑  
EXISTING ROADS AND FOOTPATHS TO BE MAINTAINED, DIVERTED OR MODIFIED DURING AND AFTER CONSTRUCTION

• LAND REF. NO. WS.19  
A • WORKS SITE FOR HMT FOOTBRIDGE CONSTRUCTION

建議進行的斜坡鞏固工程  
PROPOSED SLOPE STABILIZATION WORKS

建議的行人天橋的工地的大約位置  
APPROXIMATE LOCATION OF WORK SITES FOR PROPOSED FOOTBRIDGE

• LAND REF. NO. WS.26g  
• WORKS SITE FOR KTE TUNNEL MUCKING-OUT

• LAND REF. NO. WS.27  
• WORKS SITE FOR POTENTIAL SLOPE STABILIZATION AND UPGRADING WORKS

擬建的車站入口的大約位置  
APPROXIMATE LOCATION OF PROPOSED STATION ENTRANCE

• LAND REF. NO. WS.28  
• WORKS SITE FOR TEMPORARY ACCESS ADIT TO KTE TUNNEL

• LAND REF. NO. WS.25  
• WORKS SITE FOR HMT FOOTBRIDGE CONSTRUCTION AND CORRESPONDING TTM

• LAND REF. NO. WS.29  
• WORKS SITE FOR KTE TUNNEL CONSTRUCTION

• LAND REF. NO. WS.12  
• WORKS SITE FOR HMT CAVERN PLATFORM CONSTRUCTION

• LAND REF. NO. WS.48  
• WORKS SITE FOR PUBLIC TRANSPORT FACILITIES CONSTRUCTION

在工程進行中及完成後將會保留、改道或修改的現有道路及行人徑  
EXISTING ROADS AND FOOTPATHS TO BE MAINTAINED, DIVERTED OR MODIFIED DURING AND AFTER CONSTRUCTION

建議進行的斜坡鞏固工程  
PROPOSED SLOPE STABILIZATION

擬建的車站入口的大約位置  
APPROXIMATE LOCATION OF PROPOSED STATION ENTRANCE

在工程進行中及完成後將會保留、改道或修改的現有道路  
EXISTING ROAD TO BE MAINTAINED, DIVERTED OR MODIFIED DURING AND AFTER CONSTRUCTION

LAND REF. NO. WS.15g  
WORKS SITE FOR HMT CONSTRUCTION

• LAND REF. NO. WS.23  
• WORKS SITE FOR HMT FOOTBRIDGE CONSTRUCTION & CORRESPONDING TTM

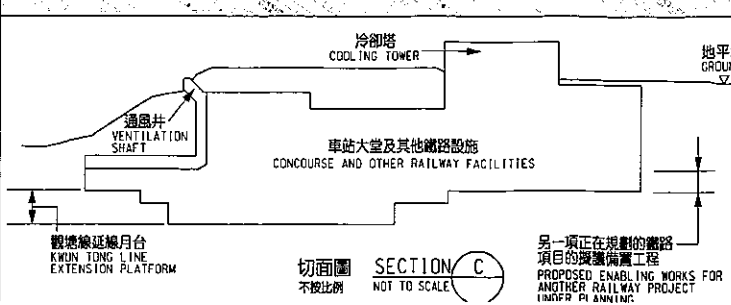
擬建的行人天橋及樓梯的大約位置  
APPROXIMATE LOCATION OF PROPOSED FOOTBRIDGE AND STAIRCASE

擬建的緊急救援通道的大約位置  
APPROXIMATE LOCATION OF PROPOSED EMERGENCY ACCESS

在工程進行中及完成後將會保留、改道或修改的現有道路  
EXISTING ROAD TO BE MAINTAINED, DIVERTED OR MODIFIED DURING AND AFTER CONSTRUCTION

另一項正在規劃的鐵路項目的擬議備置工程  
PROPOSED ENABLING WORKS FOR ANOTHER RAILWAY PROJECT UNDER PLANNING

擬建的通風井的大約位置  
APPROXIMATE LOCATION OF PROPOSED VENTILATION SHAFTS



**圖例 LEGEND**

|   |   |
|---|---|
| 方案界線<br>BOUNDARY OF THE SCHEME  | 擬建的行人天橋/有蓋行人通道<br>PROPOSED FOOTBRIDGE / COVERED WALKWAY                                 |
| 擬建的鐵路車站及其他鐵路設施<br>PROPOSED RAILWAY STATION AND OTHER RAILWAY FACILITIES                   | 擬建的地下臨時建築通道<br>PROPOSED TEMPORARY UNDERGROUND CONSTRUCTION ACCESS                       |
| 擬建的鐵路車站及其他鐵路設施(地下)<br>PROPOSED RAILWAY STATION AND OTHER RAILWAY FACILITIES (UNDERGROUND) | 擬用作興建鐵路設施的臨時工地<br>PROPOSED TEMPORARY WORKS SITES FOR CONSTRUCTION OF RAILWAY FACILITIES |
| 擬建的鑽挖或掘或鑽爆隧道(地下)<br>PROPOSED BORED / MINED / DRILL AND BLAST TUNNEL (UNDERGROUND)         | 擬設置地盤設施的臨時施工區<br>PROPOSED TEMPORARY WORKS AREA FOR SITE FACILITIES                      |
| 擬採用明挖回填法興建的鐵路設施(地下)<br>PROPOSED RAILWAY FACILITIES BY CUT-AND-COVER METHOD (UNDERGROUND)  | 可能永久封閉的道路<br>ROADS WHICH MAY BE CLOSED PERMANENTLY                                      |
| 現有的車站及其他鐵路設施<br>EXISTING STATION AND OTHER RAILWAY FACILITIES                             | 可能在工程期間封閉的道路和行人徑<br>ROADS AND FOOTPATHS PROPOSED TO BE CLOSED DURING CONSTRUCTION       |

**一般說明 GENERAL NOTES**  
1. 有關一般說明參閱圖號 KTE - G01.  
FOR GENERAL NOTES, REFER TO DRAWING NO. KTE - G01.

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|-----|-------------|----|----|----|----------------------|
| A4  | 05 OCT 2008 | WF | WC | CH | DRAFT FOR DISCUSSION |
| A3  | 08 JUL 2008 | RL | WC | CH | DRAFT FOR DISCUSSION |
| A2  | 31 MAR 2008 | AL | SK | CH | DRAFT FOR DISCUSSION |
| A1  | 16 MAR 2008 | FF | SK | CH | DRAFT FOR DISCUSSION |

核准發出  
APPROVED FOR ISSUE

林經雄  
LAW CHIU HUNG  
總工程師  
政府工程師  
鐵路發展副處長(1)  
政府工程師  
鐵路發展副處長(11)  
路政署  
HIGHWAYS DEPARTMENT

發出日期  
DATE OF ISSUE

圖則名稱  
DRAWING TITLE

**鐵路條例(第519章)**  
- 觀塘線延伸  
**總體規劃圖則** 8頁的第3頁

RAILWAYS ORDINANCE (CHAPTER 519)  
- KWUN TONG LINE EXTENSION

GENERAL LAYOUT PLAN SHEET 3 OF 8

圖號  
DRAWING NO.

KTE-G03

比例  
SCALE

1:1000 (A1)  
或如顯示  
OR AS SHOWN

香港特別行政區政府  
THE GOVERNMENT OF THE HONG KONG  
SPECIAL ADMINISTRATIVE REGION

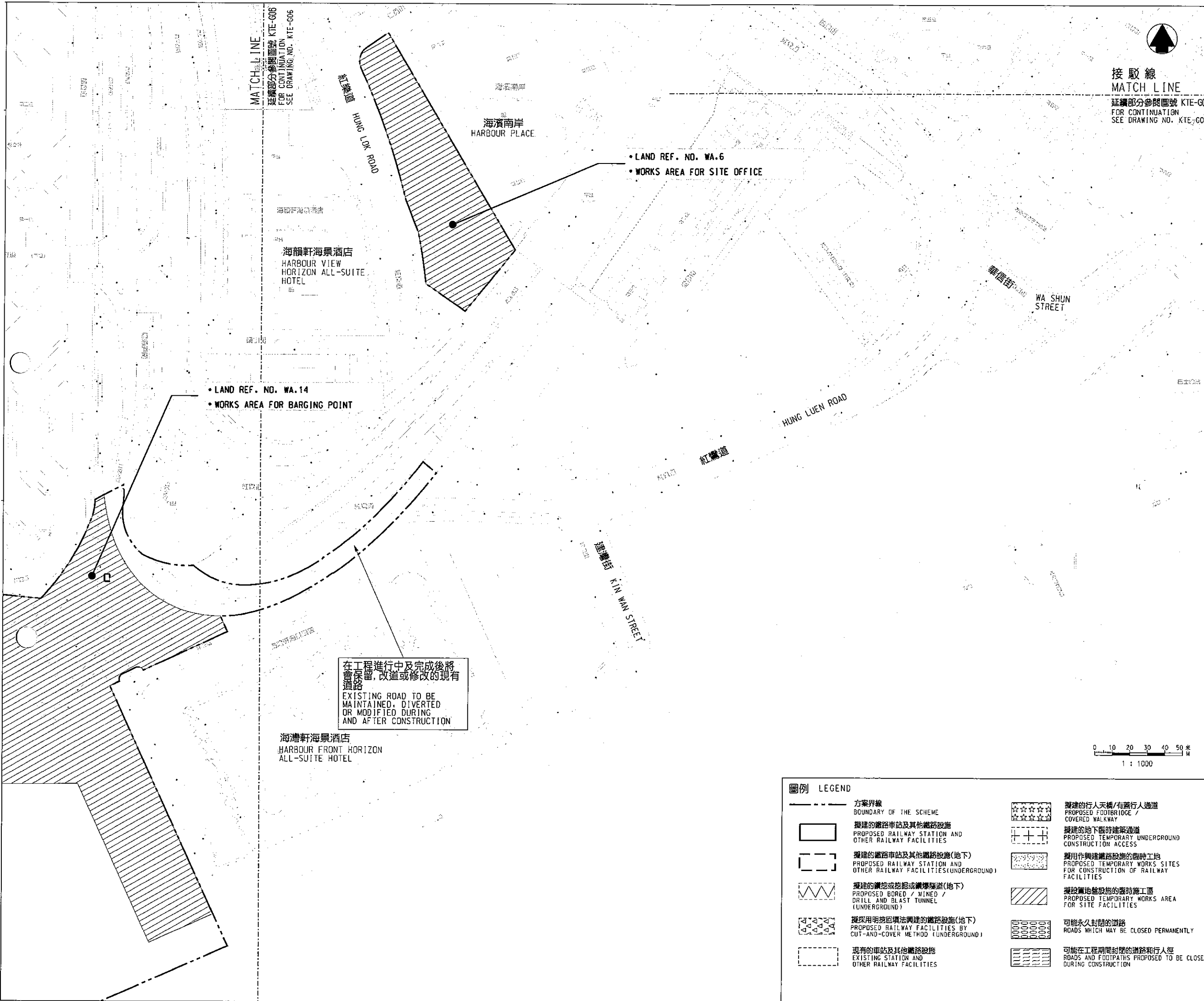
路政署  
HIGHWAYS DEPARTMENT

鐵路拓展處  
RAILWAY DEVELOPMENT OFFICE

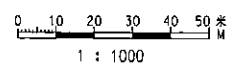


MATCH LINE  
 延續部分參閱圖號 KTE-G06  
 FOR CONTINUATION  
 SEE DRAWING NO. KTE-G06

接駁線  
 MATCH LINE  
 延續部分參閱圖號 KTE-G04  
 FOR CONTINUATION  
 SEE DRAWING NO. KTE-G04



在工程進行中及完成後將會保留、改道或修改的現有道路  
 EXISTING ROAD TO BE MAINTAINED, DIVERTED OR MODIFIED DURING AND AFTER CONSTRUCTION



**圖例 LEGEND**

|  |  |  |   |
|--|--|--|---|
|  | 方案界線<br>BOUNDARY OF THE SCHEME   |  | 擬建的行人天橋/有蓋行人過道<br>PROPOSED FOOTBRIDGE / COVERED WALKWAY                                 |
|  | 擬建的鐵路車站及其他鐵路設施<br>PROPOSED RAILWAY STATION AND OTHER RAILWAY FACILITIES                  |  | 擬建的地下臨時建築通道<br>PROPOSED TEMPORARY UNDERGROUND CONSTRUCTION ACCESS                       |
|  | 擬建的鐵路車站及其他鐵路設施(地下)<br>PROPOSED RAILWAY STATION AND OTHER RAILWAY FACILITIES(UNDERGROUND) |  | 擬用作興建鐵路設施的臨時工地<br>PROPOSED TEMPORARY WORKS SITES FOR CONSTRUCTION OF RAILWAY FACILITIES |
|  | 擬建的鑽挖或掘掘或鑽爆隧道(地下)<br>PROPOSED BORED / MINED / DRILL AND BLAST TUNNEL (UNDERGROUND)       |  | 擬設置地盤設施的臨時施工區<br>PROPOSED TEMPORARY WORKS AREA FOR SITE FACILITIES                      |
|  | 擬採用明挖回填法興建的鐵路設施(地下)<br>PROPOSED RAILWAY FACILITIES BY CUT-AND-COVER METHOD (UNDERGROUND) |  | 可能永久封閉的道路<br>ROADS WHICH MAY BE CLOSED PERMANENTLY                                      |
|  | 現有的車站及其他鐵路設施<br>EXISTING STATION AND OTHER RAILWAY FACILITIES                            |  | 可能在工程期間封閉的道路和行人徑<br>ROADS AND FOOTPATHS PROPOSED TO BE CLOSED DURING CONSTRUCTION       |

**一般說明 GENERAL NOTES**  
 1. 有關一般說明參閱圖號 KTE - G01.  
 FOR GENERAL NOTES, REFER TO DRAWING NO. KTE - G01.

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| REV | DATE        | BY | SUB | APP | DESCRIPTION          |
| A4  | 29 OCT 2008 | WF | WC  | CH  | DRAFT FOR DISCUSSION |
| A3  | 28 JUL 2008 | RL | WC  | CH  | DRAFT FOR DISCUSSION |
| A2  | 31 MAR 2008 | AL | SK  | CH  | DRAFT FOR DISCUSSION |
| A1  | 15 MAR 2008 | FF | SK  | CH  | DRAFT FOR DISCUSSION |

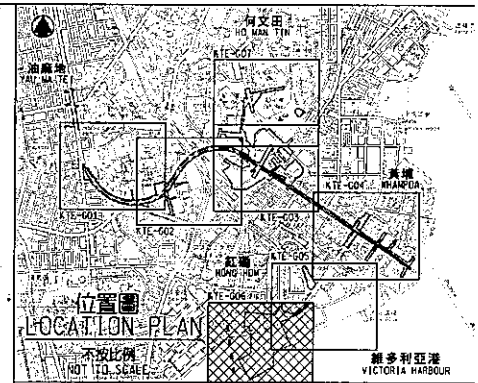
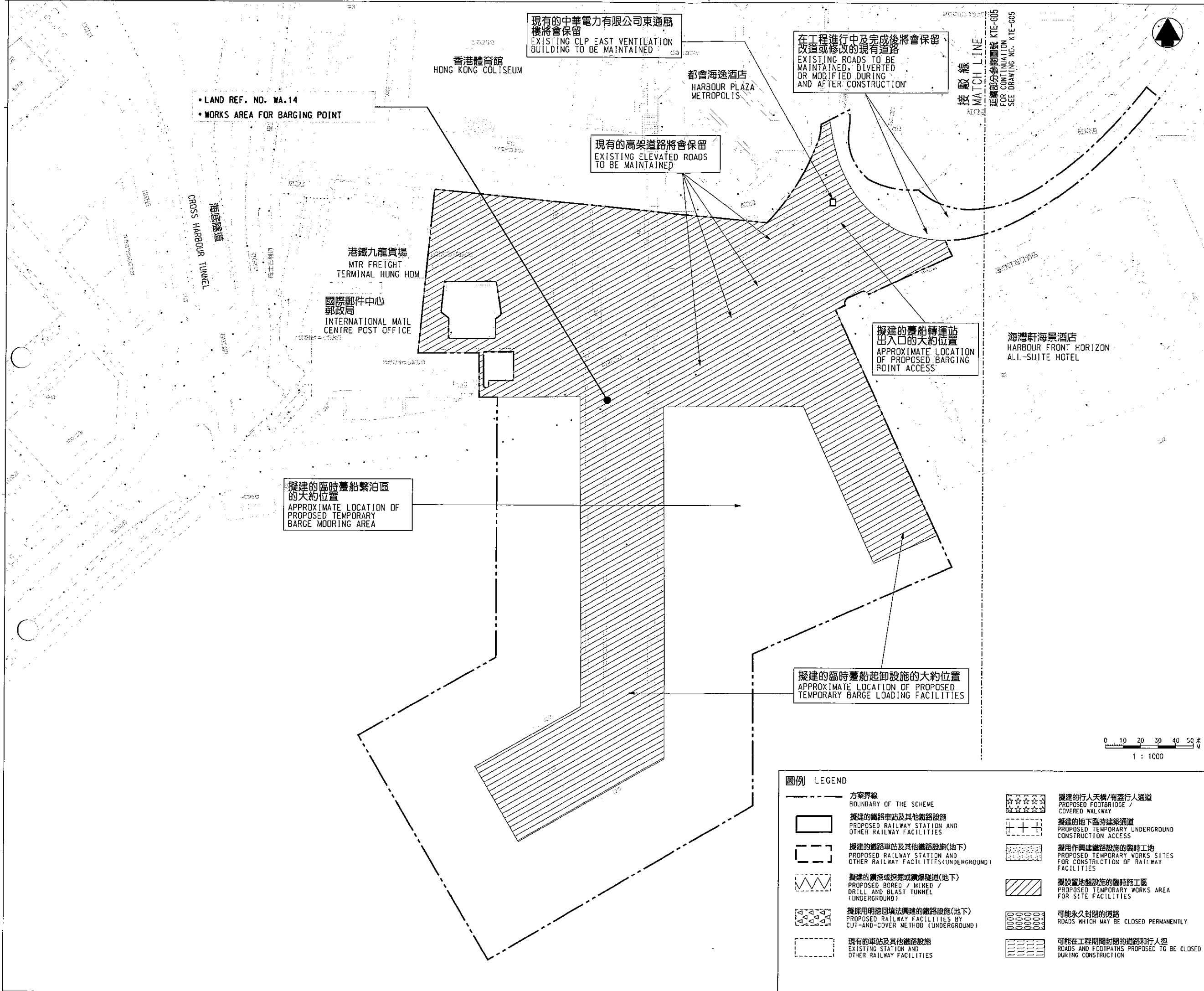
林超雄 LAM CHEU HUNG  
 獲准發出  
 APPROVED FOR ISSUE  
 鐵路署  
 鐵路拓展處副處長(1)  
 GOVERNMENT ENGINEER/  
 RAILWAY DEVELOPMENT (1)  
 HIGHWAYS DEPARTMENT

發出日期 DATE OF ISSUE

圖則名稱 DRAWING TITLE  
**鐵路條例(第519章)**  
**- 觀塘線延線**  
**總體規劃圖則 8頁的第5頁**  
 RAILWAYS ORDINANCE (CHAPTER 519)  
 - KWUN TONG LINE EXTENSION  
 GENERAL LAYOUT PLAN SHEET 5 OF 8

圖號 DRAWING NO.  
 KTE-G05  
 比例 SCALE  
 1:1000 (A1)  
 或如顯示  
 OR AS SHOWN

**香港特別行政區政府**  
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**路政署**  
 HIGHWAYS DEPARTMENT  
**鐵路拓展處**  
 RAILWAY DEVELOPMENT OFFICE



• LAND REF. NO. WA.14  
• WORKS AREA FOR BARGING POINT

現有的中華電力有限公司東通風機將會保留  
EXISTING CLP EAST VENTILATION BUILDING TO BE MAINTAINED

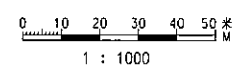
在工程進行中及完成後將會保留、改道或修改的現有道路  
EXISTING ROADS TO BE MAINTAINED, DIVERTED OR MODIFIED DURING AND AFTER CONSTRUCTION

現有的高架道路將會保留  
EXISTING ELEVATED ROADS TO BE MAINTAINED

擬建的躉船轉運站出入口的大約位置  
APPROXIMATE LOCATION OF PROPOSED BARGING POINT ACCESS

擬建的臨時躉船繫泊區的大約位置  
APPROXIMATE LOCATION OF PROPOSED TEMPORARY BARGE MOORING AREA

擬建的臨時躉船起卸設施的大約位置  
APPROXIMATE LOCATION OF PROPOSED TEMPORARY BARGE LOADING FACILITIES



| 圖例 LEGEND |   |
|-----------|---|
|           | 方案界線<br>BOUNDARY OF THE SCHEME  |
|           | 擬建的鐵路車站及其他鐵路設施<br>PROPOSED RAILWAY STATION AND OTHER RAILWAY FACILITIES                   |
|           | 擬建的鐵路車站及其他鐵路設施(地下)<br>PROPOSED RAILWAY STATION AND OTHER RAILWAY FACILITIES (UNDERGROUND) |
|           | 擬建的鑽挖或掘地或鑽爆隧道(地下)<br>PROPOSED BORED / MINED / DRILL AND BLAST TUNNEL (UNDERGROUND)        |
|           | 擬採用明挖回填法興建的鐵路設施(地下)<br>PROPOSED RAILWAY FACILITIES BY CUT-AND-COVER METHOD (UNDERGROUND)  |
|           | 現有的車站及其他鐵路設施<br>EXISTING STATION AND OTHER RAILWAY FACILITIES                             |
|           | 擬建的行人天橋/有蓋行人通道<br>PROPOSED FOOTBRIDGE / COVERED WALKWAY                                   |
|           | 擬建的地下臨時建築通道<br>PROPOSED TEMPORARY UNDERGROUND CONSTRUCTION ACCESS                         |
|           | 擬用作興建鐵路設施的臨時施工地<br>PROPOSED TEMPORARY WORKS SITES FOR CONSTRUCTION OF RAILWAY FACILITIES  |
|           | 擬設置地盤設施的臨時施工區<br>PROPOSED TEMPORARY WORKS AREA FOR SITE FACILITIES                        |
|           | 可能永久封閉的道路<br>ROADS WHICH MAY BE CLOSED PERMANENTLY  |
|           | 可能在工程期間封閉的道路和行人徑<br>ROADS AND FOOTPATHS PROPOSED TO BE CLOSED DURING CONSTRUCTION         |

一般說明 GENERAL NOTES  
1. 有關一般說明參閱圖號 KTE - G01.  
FOR GENERAL NOTES, REFER TO DRAWING NO. KTE - G01.

| 修訂表 TABLE OF AMENDMENTS |             |    |     |     |                      |
|-------------------------|-------------|----|-----|-----|----------------------|
| A4                      | 02 OCT 2008 | WF | WC  | CH  | DRAFT FOR DISCUSSION |
| A3                      | 08 JUN 2008 | RC | WC  | CH  | DRAFT FOR DISCUSSION |
| A2                      | 01 MAR 2008 | AL | SK  | CH  | DRAFT FOR DISCUSSION |
| A1                      | 16 MAR 2008 | FF | SK  | CH  | DRAFT FOR DISCUSSION |
| REV.                    | DATE        | BY | SUB | APP | DESCRIPTION          |

核准發出 APPROVED FOR ISSUE  
發出日期 DATE OF ISSUE

林超雄 LAM CHIU HUNG  
總政署  
鐵路拓展處副處長(1)  
GOVERNMENT ENGINEER/  
RAILWAY DEVELOPMENT (1)  
HIGHWAYS DEPARTMENT

圖則名稱 DRAWING TITLE  
**鐵路條例(第519章)  
- 觀塘線延線  
總體規劃圖則 8頁的第6頁**

RAILWAYS ORDINANCE (CHAPTER 519)  
- KWUN TONG LINE EXTENSION  
GENERAL LAYOUT PLAN SHEET 6 OF 8

圖號 DRAWING NO. KTE-G06  
比例 SCALE 1:1000 (A1)  
或如顯示  
OR AS SHOWN

香港特別行政區政府  
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路政署  
HIGHWAYS DEPARTMENT  
鐵路拓展處  
RAILWAY DEVELOPMENT OFFICE



**圖例 LEGEND**

|  |   |  |   |
|--|---|--|---|
|  | 方案界線<br>BOUNDARY OF THE SCHEME  |  | 擬建的行人天橋/有蓋行人通道<br>PROPOSED FOOTBRIDGE / COVERED WALKWAY                                 |
|  | 擬建的鐵路車站及其他鐵路設施<br>PROPOSED RAILWAY STATION AND OTHER RAILWAY FACILITIES                   |  | 擬建的地下臨時建築通道<br>PROPOSED TEMPORARY UNDERGROUND CONSTRUCTION ACCESS                       |
|  | 擬建的鐵路車站及其他鐵路設施(地下)<br>PROPOSED RAILWAY STATION AND OTHER RAILWAY FACILITIES (UNDERGROUND) |  | 擬用作興建鐵路設施的臨時工地<br>PROPOSED TEMPORARY WORKS SITES FOR CONSTRUCTION OF RAILWAY FACILITIES |
|  | 擬建的鑽挖或掘埋或鑽爆隧道(地下)<br>PROPOSED BORED / MINED / DRILL AND BLAST TUNNEL (UNDERGROUND)        |  | 擬設置地盤設施的臨時施工區<br>PROPOSED TEMPORARY WORKS AREA FOR SITE FACILITIES                      |
|  | 擬採用明挖回填法興建的鐵路設施(地下)<br>PROPOSED CUT-AND-COVER METHOD (UNDERGROUND)                        |  | 可能永久封閉的道路<br>ROADS WHICH MAY BE CLOSED PERMANENTLY                                      |
|  | 現有的車站及其他鐵路設施<br>EXISTING STATION AND OTHER RAILWAY FACILITIES                             |  | 可能在工程期間封閉的道路和行人徑<br>ROADS AND FOOTPATHS PROPOSED TO BE CLOSED DURING CONSTRUCTION       |

切面圖 SECTION Q 不按比例 NOT TO SCALE

切面圖 SECTION N 不按比例 NOT TO SCALE

切面圖 SECTION Q 不按比例 NOT TO SCALE

切面圖 SECTION R 不按比例 NOT TO SCALE

切面圖 SECTION P 不按比例 NOT TO SCALE

位置圖 LOCATION PLAN 不按比例 NOT TO SCALE

在工程進行中及完成後將會保留、改道或修改的現有道路及行人徑  
EXISTING ROADS AND FOOTPATHS TO BE MAINTAINED, DIVERTED OR MODIFIED DURING AND AFTER CONSTRUCTION

現有車輛通道將會保留  
EXISTING VEHICULAR ACCESS TO BE MAINTAINED

冠輝苑 KWUN HEI COURT

常樂街 SHEUNG LOK STREET

常樂街花園 (第二期) SHEUNG LOK STREET GARDEN (STAGE II)

擬建升降機樓的大約位置  
APPROXIMATE LOCATION OF PROPOSED LIFT TOWER

• LAND REF. NO. WA.2a  
• WORKS AREA FOR SITE OFFICE

何文田西食水配水庫 HO MAN TIN WEST FRESH WATER SERVICE RESERVOIR

香港房屋委員會標準單位模擬中心 HOUSING AUTHORITY MOCK-UP CENTRE

建議進行的斜坡鞏固工程  
PROPOSED SLOPE STABILIZATION WORKS

在工程進行中及完成後將會保留、改道或修改的現有行人徑  
EXISTING FOOTPATHS TO BE MAINTAINED, DIVERTED OR MODIFIED DURING AND AFTER CONSTRUCTION

何文田公園 HO MAN TIN PARK

何文田體育館 HO MAN TIN SPORTS CENTRE

東何文田配水庫遊樂場 HO MAN TIN EAST SERVICE RESERVOIR PLAYGROUND

LAND REF. NO. WS.15a  
WORKS SITE FOR HMT CONSTRUCTION

接駁線 MATCH LINE

延續部分參閱圖號 KTE-G03 FOR CONTINUATION. SEE DRAWING NO. KTE-G03

0 10 20 30 40 50 M  
1 : 1000

**一般說明 GENERAL NOTES**

1. 有關一般說明參閱圖號 KTE - G01.  
FOR GENERAL NOTES, REFER TO DRAWING NO. KTE - G01.

| 修訂表                 |             |    |     |     |                      |
|---------------------|-------------|----|-----|-----|----------------------|
| TABLE OF AMENDMENTS |             |    |     |     |                      |
| A4                  | 05 OCT 2009 | WF | WC  | CH  | DRAFT FOR DISCUSSION |
| A3                  | 28 JUL 2009 | RL | WC  | CH  | DRAFT FOR DISCUSSION |
| A2                  | 31 MAR 2009 | AL | SK  | CH  | DRAFT FOR DISCUSSION |
| A1                  | 16 MAR 2009 | FF | SK  | CH  | DRAFT FOR DISCUSSION |
| REV                 | DATE        | 由  | 核對  | 負責  | 說明                   |
|                     |             | BY | SUB | APP | DESCRIPTION          |

發行人 林建雄 LAN CHIU HUNG  
 審核人 陸政署 鐵路拓展處處長(1)  
 GOVERNMENT ENGINEER / RAILWAY DEVELOPMENT (1)  
 發行人 陸政署 鐵路拓展處處長(1)  
 HIGHWAYS DEPARTMENT

發出日期 DATE OF ISSUE

圖則名稱 DRAWING TITLE  
**鐵路條例(第519章)**  
**- 觀塘線延線**  
總體規劃圖則 8頁的第7頁

RAILWAYS ORDINANCE (CHAPTER 519)  
- KWUN TONG LINE EXTENSION  
GENERAL LAYOUT PLAN SHEET 7 OF 8

|                |                                    |
|----------------|------------------------------------|
| 圖號 DRAWING NO. | 比例 SCALE                           |
| KTE-G07        | 1:1000 (A1)<br>或如顯示<br>OR AS SHOWN |

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路政署  
HIGHWAYS DEPARTMENT

鐵路拓展處  
RAILWAY DEVELOPMENT OFFICE

將軍澳  
137區  
TSEUNG KWAN O  
AREA 137

• LAND REF. NO. WA.13  
• WORKS AREA FOR FORMATION OF  
MAGAZINE SITE

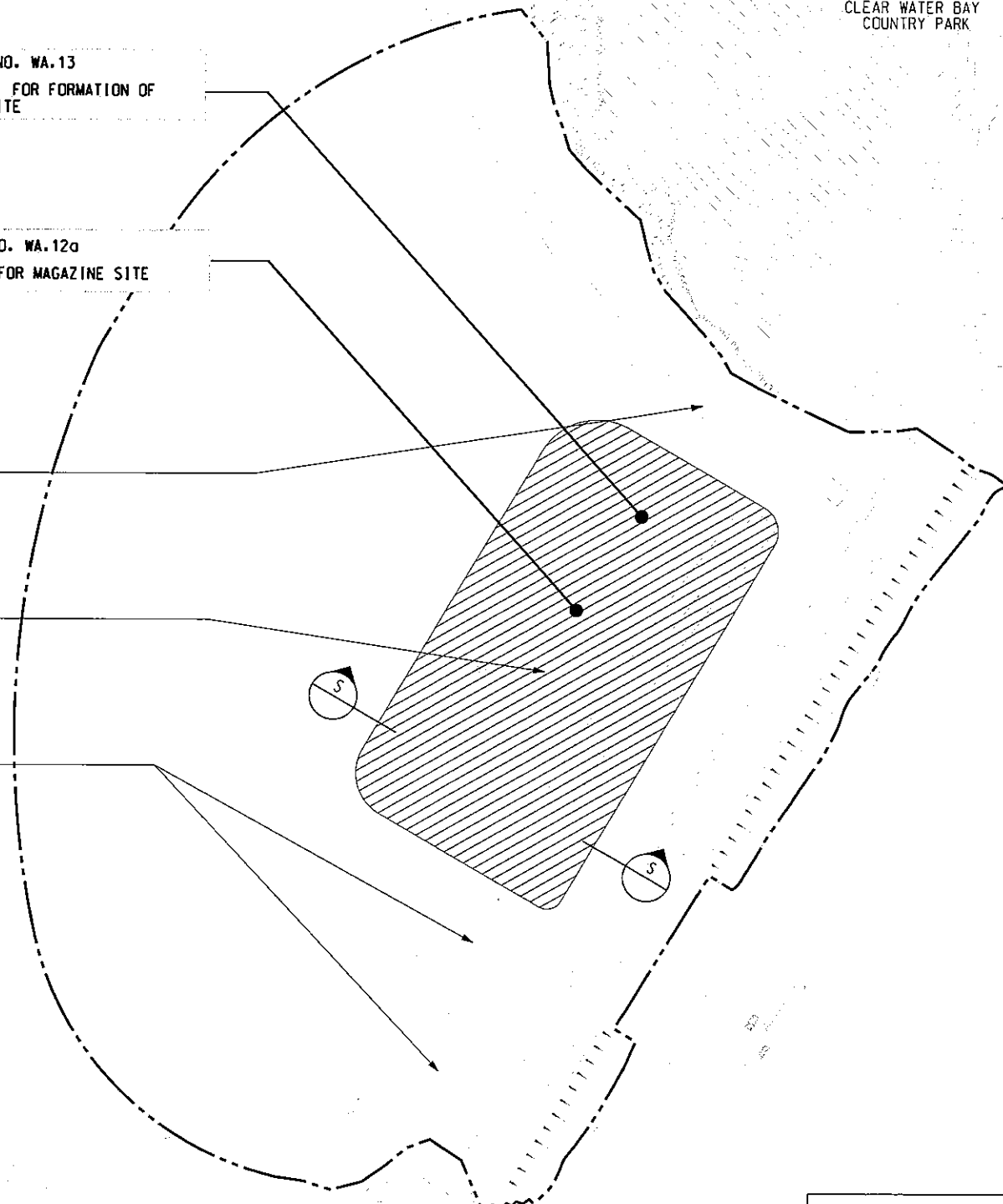
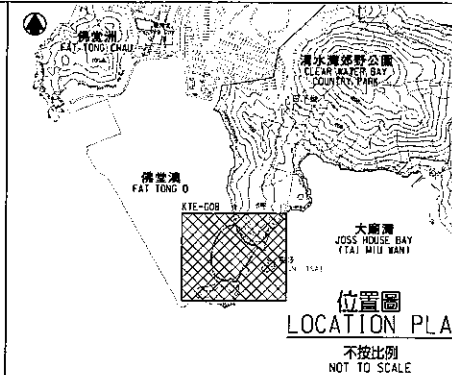
• LAND REF. NO. WA.12a  
• WORKS AREA FOR MAGAZINE SITE

在工程進行中及完成後將會保留、  
改道或修改的現有明渠  
EXISTING OPEN CHANNEL TO BE  
MAINTAINED, DIVERTED OR MODIFIED  
DURING AND AFTER CONSTRUCTION

擬建的臨時炸藥庫的大約位置  
APPROXIMATE LOCATION OF PROPOSED  
TEMPORARY MAGAZINE

在工程進行中及完成後將會保留、  
改道或修改的現有明渠  
EXISTING OPEN CHANNELS TO BE  
MAINTAINED, DIVERTED OR MODIFIED  
DURING AND AFTER CONSTRUCTION

清水灣郊野公園  
CLEAR WATER BAY  
COUNTRY PARK



觀仔

0 10 20 30 40 50 米  
1 : 1000

一般說明 GENERAL NOTES

1. 有關一般說明參閱圖號 KTE - G01.  
FOR GENERAL NOTES, REFER TO DRAWING NO. KTE - G01.

| 修訂表                 |             |    |     |     |                      |
|---------------------|-------------|----|-----|-----|----------------------|
| TABLE OF AMENDMENTS |             |    |     |     |                      |
| A4                  | 20 DEC 2009 | WF | WC  | CH  | DRAFT FOR DISCUSSION |
| A3                  | 18 JUL 2009 | RL | WC  | CH  | DRAFT FOR DISCUSSION |
| A2                  | 31 MAR 2009 | AL | SK  | CH  | DRAFT FOR DISCUSSION |
| A1                  | 16 MAR 2009 | FF | SK  | CH  | DRAFT FOR DISCUSSION |
| 修訂                  | 日期          | 類別 | 類別  | 類別  | 說明                   |
| REV                 | DATE        | BY | SUB | APP | DESCRIPTION          |

林超雄 LAM CHIU HUNG  
獲准發出  
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鐵路發展處處長(1)  
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HIGHWAYS DEPARTMENT

發出日期 DATE OF ISSUE

圖則名稱 DRAWING TITLE

鐵路條例(第519章)

- 觀塘線延線

總體規劃圖則 8頁的第8頁

RAILWAYS ORDINANCE (CHAPTER 519)

- KWUN TONG LINE EXTENSION

GENERAL LAYOUT PLAN SHEET 8 OF 8

圖號 DRAWING NO.

KTE-G08

比例 SCALE

1:1000 (A1)

或如顯示

OR

AS SHOWN

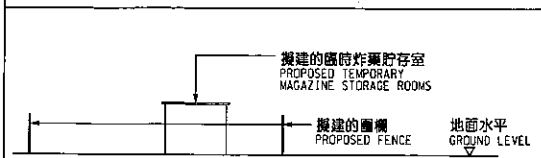
香港特別行政區政府  
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SPECIAL ADMINISTRATIVE REGION

路政署  
HIGHWAYS DEPARTMENT

鐵路拓展處  
RAILWAY DEVELOPMENT OFFICE

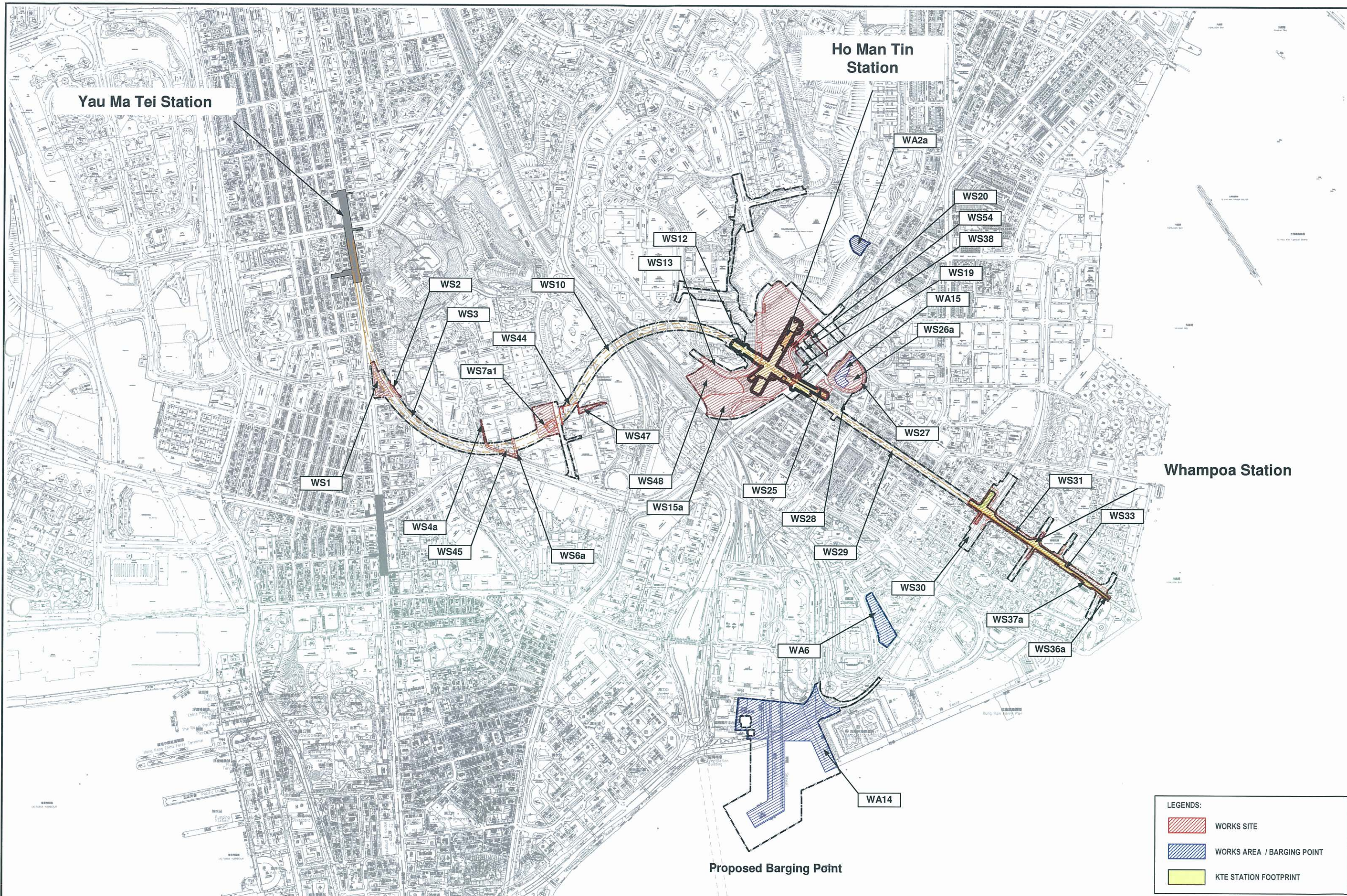
圖例 LEGEND

|  |   |  |   |
|--|---|--|---|
|  | 方案界線<br>BOUNDARY OF THE SCHEME  |  | 擬建的行人天橋/有蓋行人通道<br>PROPOSED FOOTBRIDGE /<br>COVERED WALKWAY                                    |
|  | 擬建的鐵路車站及其他鐵路設施<br>PROPOSED RAILWAY STATION AND<br>OTHER RAILWAY FACILITIES                  |  | 擬建的地下臨時建築通道<br>PROPOSED TEMPORARY UNDERGROUND<br>CONSTRUCTION ACCESS                          |
|  | 擬建的鐵路車站及其他鐵路設施(地下)<br>PROPOSED RAILWAY STATION AND<br>OTHER RAILWAY FACILITIES(UNDERGROUND) |  | 擬用作興建鐵路設施的臨時工地<br>PROPOSED TEMPORARY WORKS SITES<br>FOR CONSTRUCTION OF RAILWAY<br>FACILITIES |
|  | 擬建的鑽挖或掘掘或鑽爆隧道(地下)<br>PROPOSED BORED / MINED /<br>DRILL AND BLAST TUNNEL<br>(UNDERGROUND)    |  | 擬設置地盤設施的臨時施工區<br>PROPOSED TEMPORARY WORKS AREA<br>FOR SITE FACILITIES                         |
|  | 擬採用明挖回填法興建的鐵路設施(地下)<br>PROPOSED RAILWAY FACILITIES BY<br>CUT-AND-COVER METHOD (UNDERGROUND) |  | 可能永久封閉的道路<br>ROADS WHICH MAY BE CLOSED PERMANENTLY  |
|  | 現有的車站及其他鐵路設施<br>EXISTING STATION AND<br>OTHER RAILWAY FACILITIES                            |  | 可能在工程期間封閉的道路和行人徑<br>ROADS AND FOOTPATHS PROPOSED TO BE CLOSED<br>DURING CONSTRUCTION          |



剖面圖 SECTION S  
不按比例 NOT TO SCALE

鐵蔘洲  
TIT CHAM CHAU  
鐵蔘洲



LEGENDS:

|   |                            |
|---|----------------------------|
|  | WORKS SITE                 |
|  | WORKS AREA / BARGING POINT |
|  | KTE STATION FOOTPRINT      |

Figure S2.2 Details of Preferred Alignment