

**Legislative Council Panel on Transport  
Supplementary Information on  
Tseung Kwan O Extension (Phase II) Service**

**Background**

At the meeting of Panel on Transport on 24 April 2009, Members further discussed the feasibility of enhancing the train frequency of the Tseung Kwan O Line (TKL) and extending the Kwun Tong Line (KTL) to LOHAS Park Station. This paper provides supplementary information as requested by Members.

**The suggestion to extend Kwun Tong Line to LOHAS Park Station**

*Existing situation of railway tunnels and pilings*

2. With regard to Members' suggestion to extend the KTL to LOHAS Park Station, information on the alignment of the tunnels of the KTL and TKL is provided below to facilitate understanding of the feasibility of the suggestion.

3. The terminal of the KTL is currently Tiu Keng Leng Station. Both Tiu Keng Leng and Yau Tong Stations serve as interchange stations between the KTL and TKL (see **Figure 1**). The westbound platforms (towards Yau Tong Station) of the KTL and TKL are located at the upper level of Tiu Keng Leng Station while the terminal of the KTL and the eastbound platform (towards Tseung Kwan O Station) of the TKL are located at the lower level. At Tiu Keng Leng Station, trains of the KTL, after terminating at the platform on the lower level and allowing passengers to leave the train compartments, will continue their journeys in the overrun tunnels in the east before they can turn back at the turnback siding and return to the westbound platform of the KTL at the upper level to pick up passengers for stations in the direction of Yau Ma Tei Station. Based on safety and operational needs, these overrun tunnels have to be about 600m long hence extend to Tseung Kwan O Station. An existing section of the tunnels, of about 48m long, is embedded in the structure of

Tseung Kwan O Station (the location of that section of the overrun tunnels is indicated by the red ellipse in **Figure 2**).

4. In the section from Tiu Keng Leng Station to Tseung Kwan O Station, there are 4 tunnels for the back and forth directions of the KTL and TKL. At Tiu Keng Leng Station, the westbound platforms of the KTL and TKL are located at the upper level while the eastbound platforms of the KTL and TKL are located at the lower level (section A-A of **Figure 2**). At the turnback, all four tunnels are at the same level (section D-D of **Figure 2**). At Tseung Kwan O Station, the tunnels of the KTL and those of the TKL are at the lower and upper levels respectively (section E-E of **Figure 2**). As such, along the section from Tiu Keng Leng Station to Tseung Kwan O Station, the four tunnels of the KTL and TKL are cross-stacked.

5. The structure of Tseung Kwan O Station ground-level concourse and underground platforms is supported by piles. Existing and planned property developments, including Park Central and The Grandiose etc., are located on the north side of the station and tunnels.

6. Both tunnels of the KTL will have to be extended from Tiu Keng Leng Station at the same time if the KTL is to be extended to LOHAS Park Station. Various options have been examined and the results are set out in paragraphs 7 to 10 below.

#### *Extension of the overrun tunnels of the Kwun Tong Line*

7. The first option is to extend the existing KTL eastbound and westbound tracks to the east directly by making use of the existing overrun tunnels. As described in paragraph 3, the existing section of the tunnels is embedded in the structure of Tseung Kwan O Station, with elevation at about -11mPD. This extension (the green dotted lines in **Figure 3**) will be in conflict with the station piles as described in paragraph 5 (the green shaded areas of Sections B-B and C-C in **Figure 3**) and requires corresponding structural modification works. These structural modification works would involve suspending the operation of Tseung Kwan O Station.

### *Diversion of tracks to the north*

8. The second option requires diversion of the westbound tunnel of the KTL between Tiu Keng Leng Station and Tseung Kwan O Station to the north (the red dotted lines in **Figure 4**) in order to avoid the piles of Tseung Kwan O Station. The alignment is found to be in conflict with the piles of the foundations of the existing Park Central and the buildings under construction as mentioned in paragraph 5 (the pink shaded area in **Figure 4**) and hence is not feasible.

### *Diversion of tracks to the south*

9. To take the alignment to the south, both the eastbound and westbound tracks of the KTL are to be diverted to the south. This is not a feasible option as the diverted westbound KTL track (the red dotted line in **Figure 5**) will be in conflict with the existing westbound TKL track between Tiu Keng Leng and Tseung Kwan O Stations (the pink shaded areas in **Figure 5**) given that the tunnels of the KTL and TKL are cross-stacked as stated in paragraph 4 above.

### *Conclusion*

10. In summary of the technical and geographical considerations in exploring the various options above, extending both tracks of the KTL to LOHAS Park Station will involve substantial modifications to the railway tracks, tunnels and station structure. Such modifications are expected to cause major disruptions to the railway operations and services of the TKL as well as affecting the surrounding buildings. Hence the suggestion to extend the KTL to LOHAS Park Station is practically not feasible.

### **Feasibility of enhancing train services of the TKL**

11. Upon the commencement of train service of the Tseung Kwan O Line Extension (Phase II), the TKL will bifurcate at Tseung Kwan O Station, southbound to LOHAS Park Station and northbound to Hang Hau and Po Lam Stations (route map in **Figure 1**). The maximum

train service frequency between North Point and Tseung Kwan O Stations can be enhanced to about 30 trains per hour, which is similar to the train service of other MTR lines in the urban area.

12. As Po Lam Station is provided with only one platform, trains from Hang Hau Station to Po Lam Station can only start to enter Po Lam Station after the preceding train has departed from Po Lam Station. With consideration of the minimum safety distance required for trains going in and out of the station and the time required for passengers to alight and board trains, 2 minutes and 30 seconds is the minimum distance between two consecutive trains. As the train service frequency is constrained by the platform design of Po Lam Station, it cannot be enhanced even if the signaling system of the TKL can support a higher train frequency. As for the feasibility of re-provisioning of dual platforms at Po Lam Station, given the proximity of the platform and surrounding buildings, there is insufficient space for constructing an additional platform.

13. As a matter of fact, the planning of the TKL in the 1990s had already taken into consideration on the overall planning of the Tseung Kwan O area, including population distribution and forecast. The current north-south bifurcation arrangement of the TKL, its stations and tracks facilities had all taken into account the transport demand in the local area.

14. After the opening of LOHAS Park Station, the average train loading between Hang Hau and Tseung Kwan O Stations in the peak hour on a weekday is expected to reach 40% of train capacity. For the section between Tseung Kwan O and North Point Stations, passengers should be distributed between trains from Po Lam and LOHAS Park Stations. Therefore, the design capacity of the TKL will be adequate to meet the traffic demand of the area for a period of time in the future.

15. The Corporation will continue to closely monitor the actual number of passengers and changes in utilization after the opening of LOHAS Park Station. Appropriate measures will be duly deployed to ensure a smooth flow of passengers and to ensure that train services meet the needs of passengers and the local community.

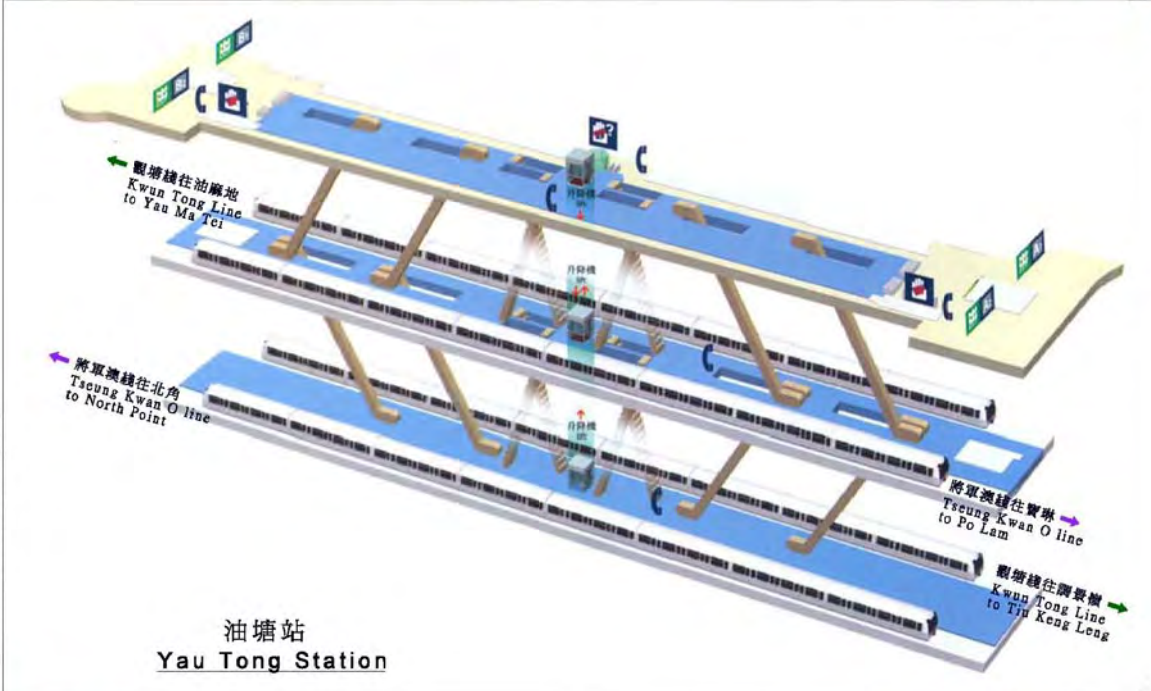
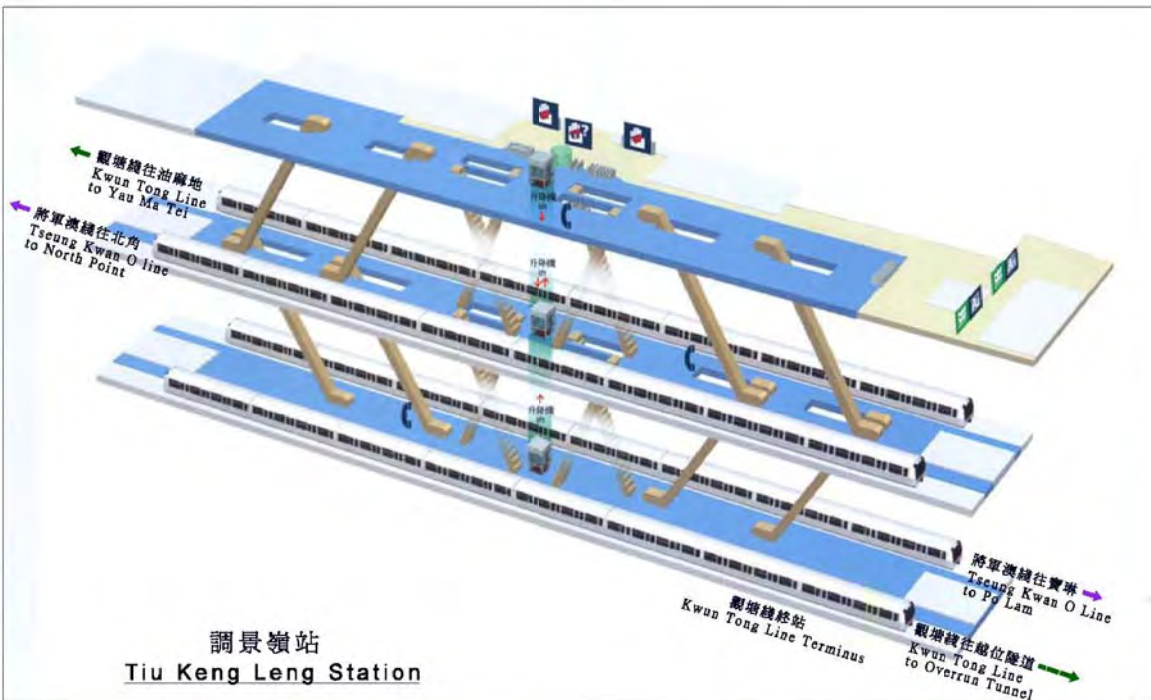
## **Journey Time between Po Lam and North Point Stations**

16. Regarding an enquiry on whether the journey time of the TKL would be affected after the opening of LOHAS Park Station, it is confirmed from the results of test runs conducted in the last 2 months by the Corporation that, under the new train service arrangement, the single-journey travelling time from Po Lam Station to North Point Station will be 16 minutes, which is the same as that under the current train service.

## **Conclusion**

17. Members are invited to note the supplementary information on the Tseung Kwan O Extension (Phase II) as set out in this paper.

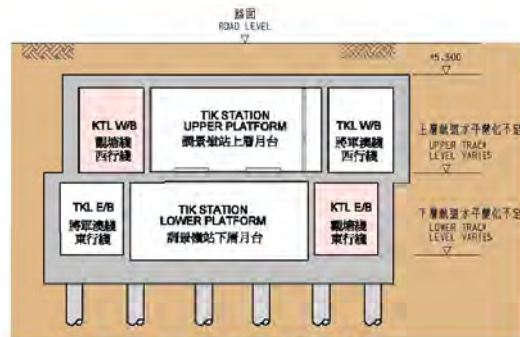
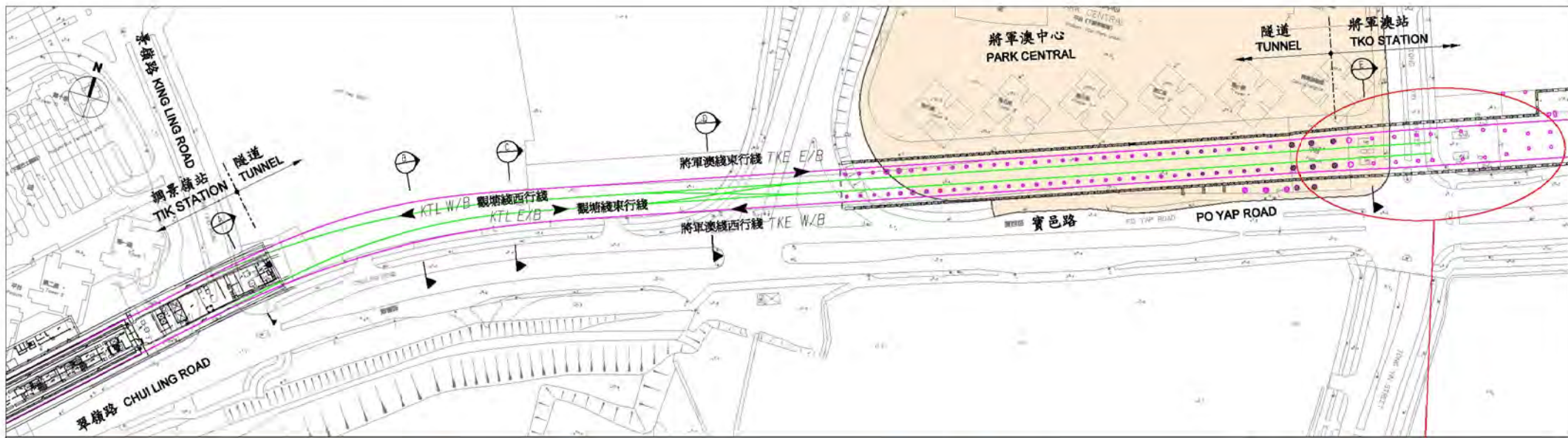
MTR Corporation  
July 2009



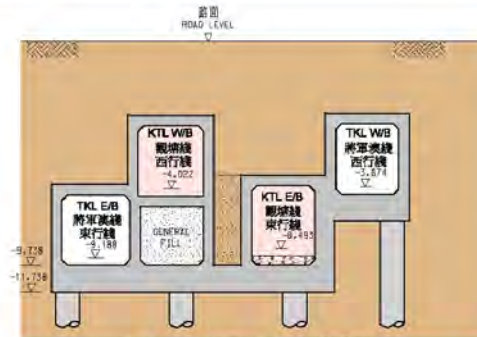
伸延觀塘綫至康城站的建議  
THE SUGGESTION OF EXTENDING KWUN TONG LINE TO LOHAS PARK STATION  
油塘站及調景嶺站  
YAU TONG STATION AND TIU KENG LENG STATION



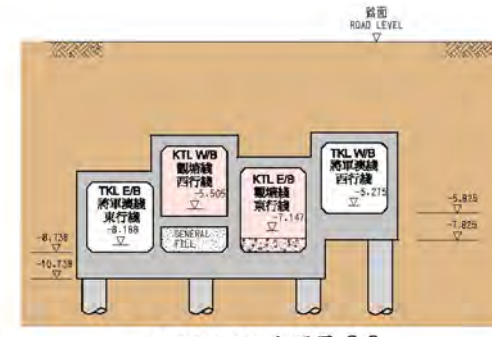
圖一  
Figure No. 1



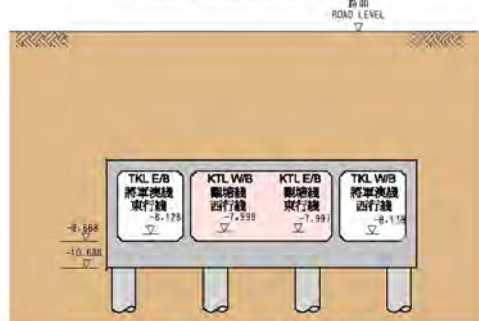
SECTION A-A 切面圖 A-A



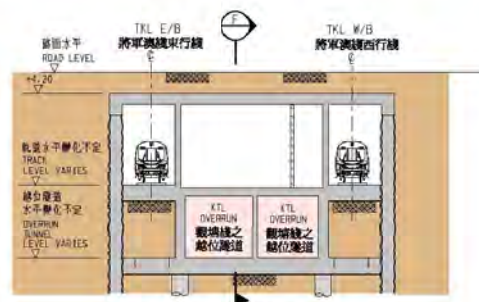
SECTION B-B 切面圖 B-B



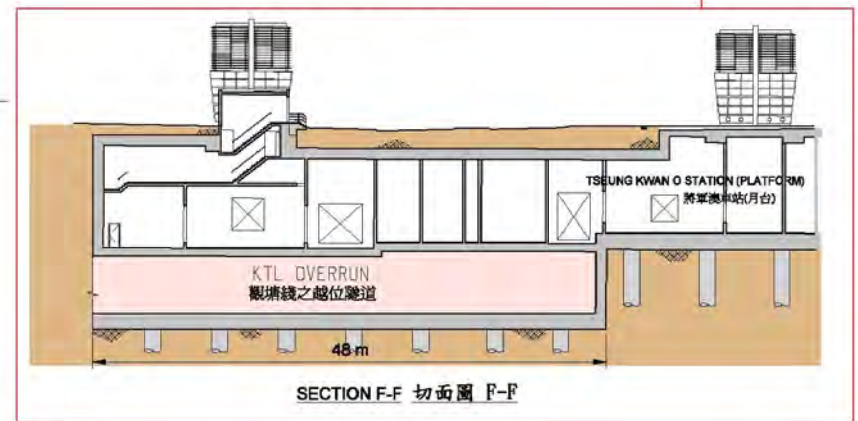
SECTION C-C 切面圖 C-C



SECTION D-D 切面圖 D-D



SECTION E-E 切面圖 E-E



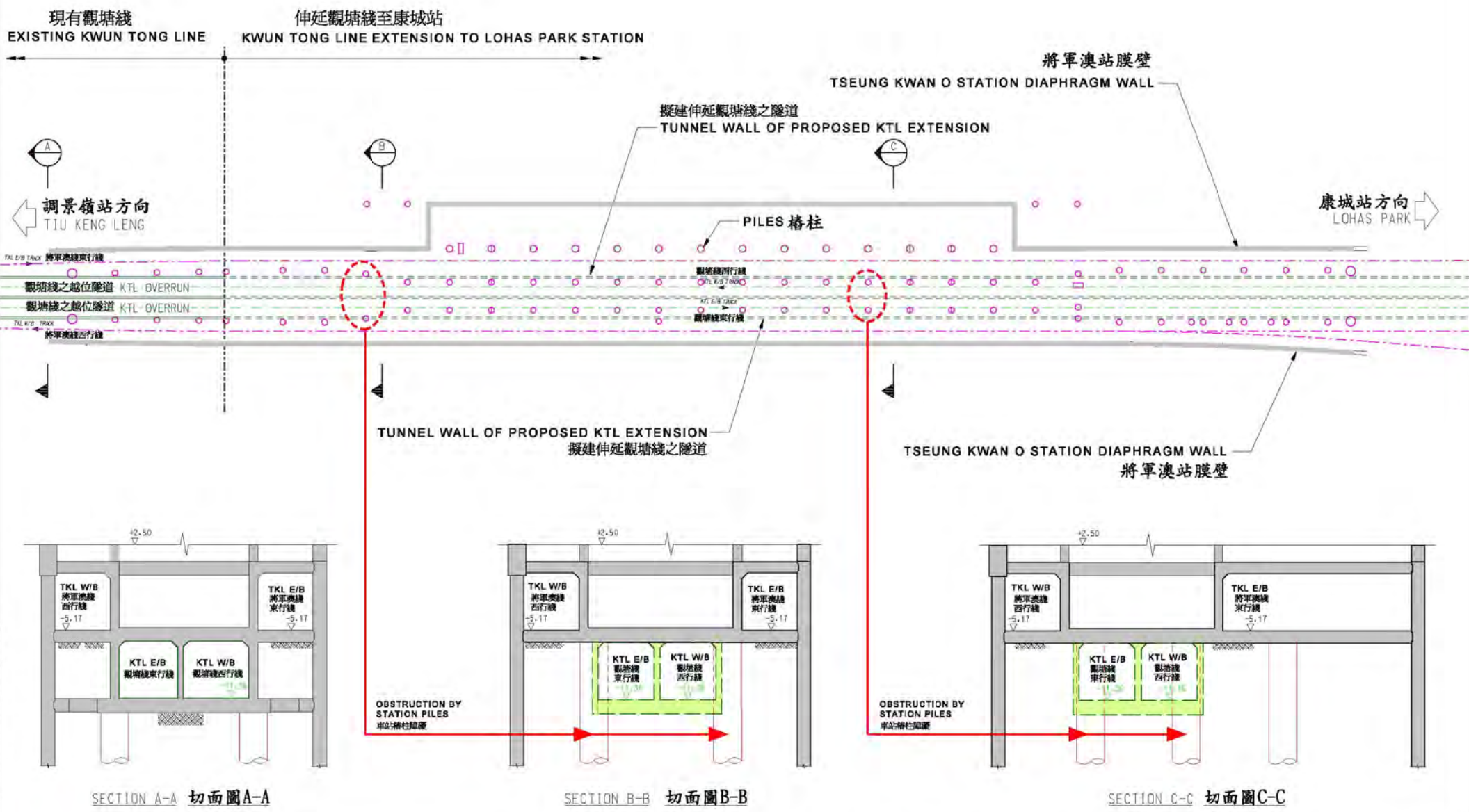
SECTION F-F 切面圖 F-F

24/06/2009 PM 1:00:20 FN W:\REFINA\CAD\_Mac\TKL View Folder\Figure 2.dgn



伸延觀塘綫至康城站的建議  
 THE SUGGESTION OF EXTENDING KWUN TONG LINE TO LOHAS PARK STATION  
 現有調景嶺站至將軍澳站切面圖  
 EXISTING TIU KING LENG STATION TO TSEUNG KWAN O STATION - CROSS SECTIONS

圖二  
 Figure No. 2



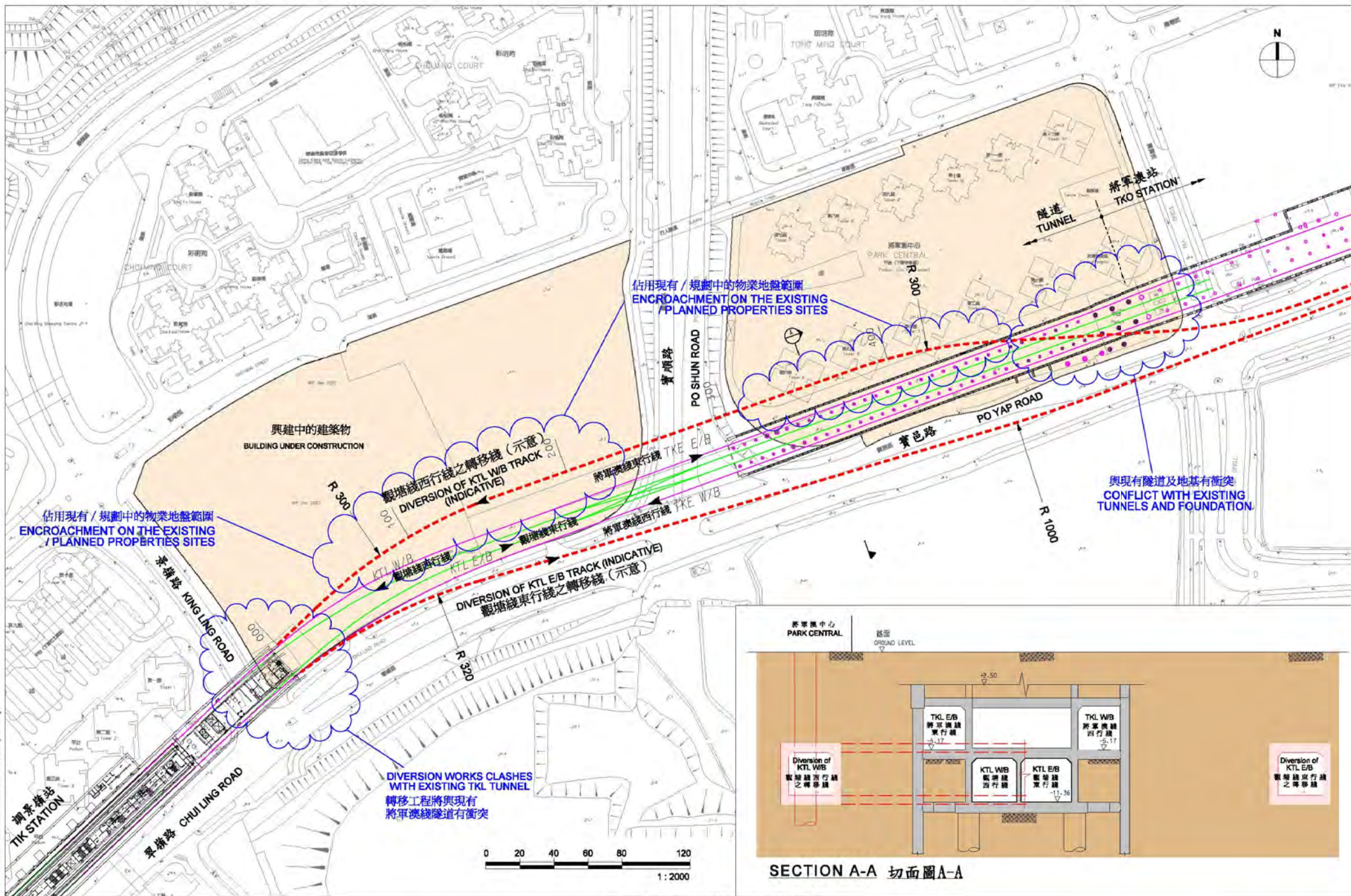
09/07/2009 5:44:05 PM W:\REFINA\CAD\Mac\TKL View Folder\Figure 3b.dgn



伸延觀塘綫至康城站的建議  
 THE SUGGESTION OF EXTENDING KWUN TONG LINE TO LOHAS PARK STATION  
 伸延觀塘綫越位隧道於將軍澳站面對之限制  
 EXTENSION OF KTL OVERRUN TUNNELS - CONSTRAINTS AT TKO STATION

圖三  
 Figure No. 3



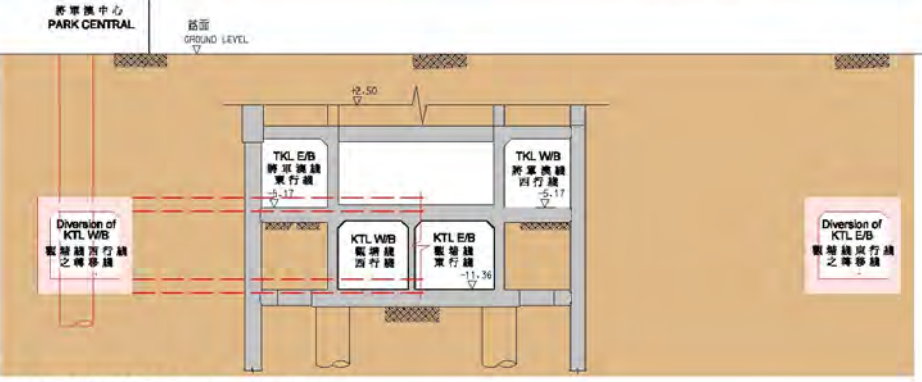


佔用現有 / 規劃中的物業地盤範圍  
ENCROACHMENT ON THE EXISTING / PLANNED PROPERTIES SITES

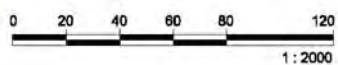
佔用現有 / 規劃中的物業地盤範圍  
ENCROACHMENT ON THE EXISTING / PLANNED PROPERTIES SITES

與現有隧道及地基有衝突  
CONFLICT WITH EXISTING TUNNELS AND FOUNDATION

DIVERSION WORKS CLASHES WITH EXISTING TKL TUNNEL  
轉移工程將與現有將軍澳綫隧道有衝突



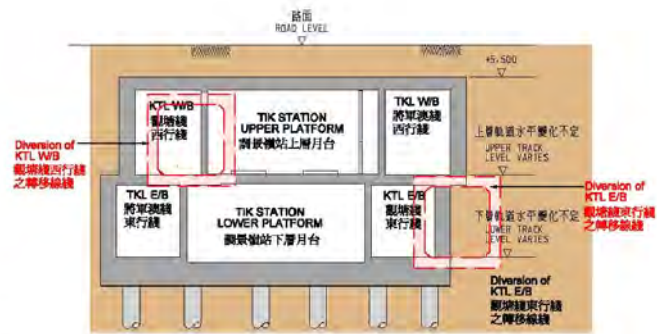
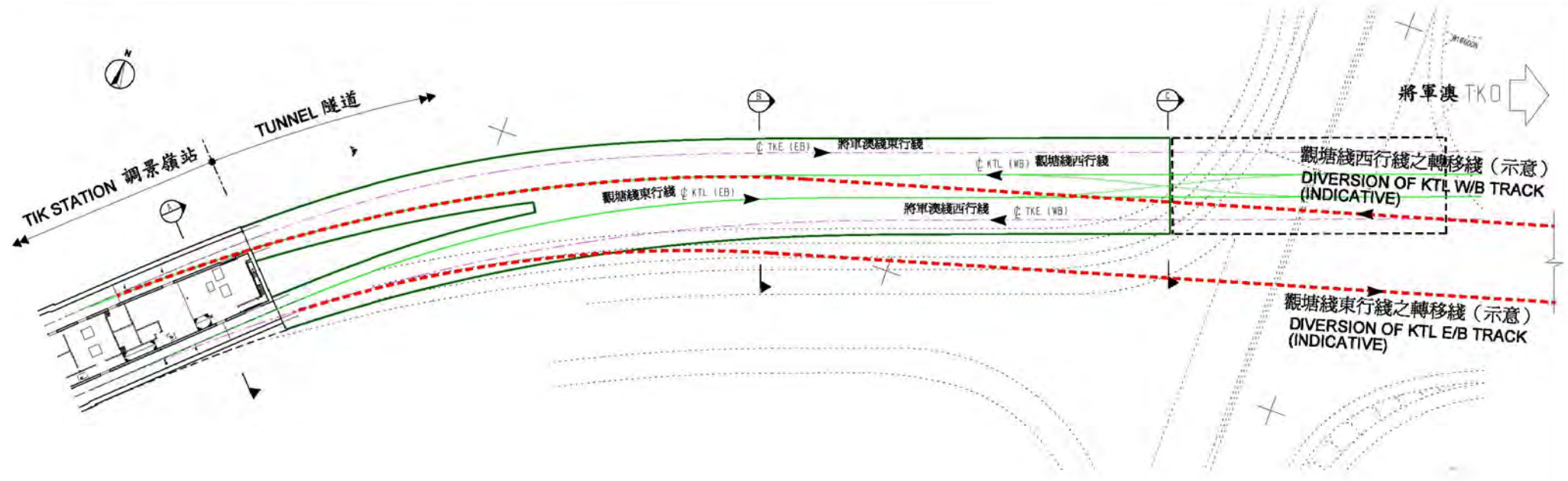
SECTION A-A 切面圖 A-A



伸延觀塘綫至康城站的建議  
THE SUGGESTION OF EXTENDING KWUN TONG LINE TO LOHAS PARK STATION  
觀塘綫西行綫向北面轉移於將軍澳站面對之限制  
DIVERSION OF KTL W/B TRACK TO NORTH - CONSTRAINTS AT TKO STATION

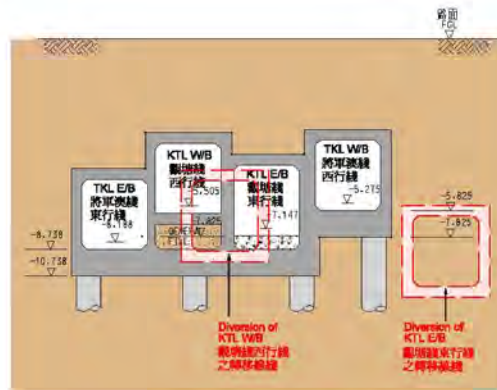
圖四  
Figure No. 4

24/06/2009 01:07 PM W:\REFM\CDD\_Mac\TKE View Folder\Figure 4.dgn



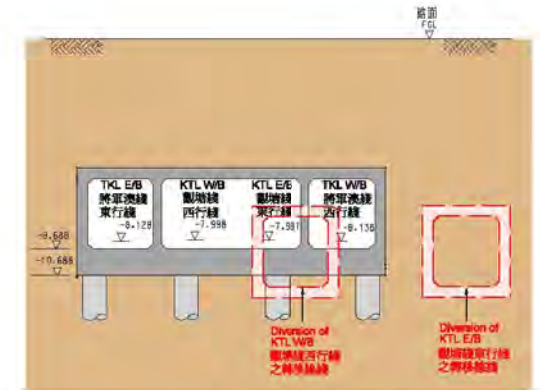
SECTION A-A 切面圖A-A

Clash with Existing Structures  
與現有建築物在位置上有衝突



SECTION B-B 切面圖B-B

Clash with Existing Structures  
與現有建築物在位置上有衝突



SECTION C-C 切面圖C-C

Clash with Existing Structures  
與現有建築物在位置上有衝突

23/06/2009 8:09:00 PM W:\REFINA\CADD\_Mac\TKO\_View\_Folder\Figure 5a.dgn



伸延觀塘綫至康城站的建議  
THE SUGGESTION OF EXTENDING KWUN TONG LINE TO LOHAS PARK STATION  
觀塘綫西行綫向南面轉移於將軍澳站面對之限制  
DIVERSION OF KTL W/B TRACK TO SOUTH - CONSTRAINTS AT TKO STATION

圖五  
Figure No. 5