

For information

Legislative Council Panel on Transport

Improvement to Tung Chung Road

PURPOSE

This paper informs Members of our proposal to upgrade **718TH** – Improvement to Tung Chung Road (TCR) between Lung Tseng Tau and Cheung Sha to Category A to carry out improvement works to TCR between Lung Tseng Tau and Cheung Sha.

PROJECT SCOPE

2. The latest scope of **718TH** will include –
- (a) widening and realignment of 3.6-kilometre (km) long TCR between Lung Tseng Tau and Pak Kung Au from a single-lane road for two-way traffic to a single two-lane road with a minimum of 1.6-metre (m) wide footpath;
 - (b) construction of a 2.6-km long single two-lane road between Pak Kung Au and Cheung Sha with a minimum of 1.6-m wide footpath, including elevated highway structures of a total length of 750 m;
 - (c) provision of a roundabout at Cheung Sha and 21 passing bays/bus lay-bys along TCR;
 - (d) provision of a traffic control and surveillance system (TCSS); and
 - (e) associated works including road rehabilitation, drainage, environmental mitigation measures, geotechnical, junction modification, landscaping, slope stabilization, lighting and electrical and mechanical (E&M) works.

A site plan and typical road sections of TCR are at the **Enclosure**.

JUSTIFICATIONS

3. The existing TCR is the only vehicular access connecting north and south Lantau between Tung Chung and Cheung Sha in the north and south Lantau. It is generally a 3.5-m wide single-lane carriageway with some 40 passing bays for two-way traffic with sharp bends, poor visibility and steep gradients of up to 20% at certain locations. In view of the limited capacity and the substandard condition of the road, we are operating a dual-permit system¹ restricting the number of vehicles using the road.

4. The opening of the North Lantau Highway and then the Hong Kong International Airport in Chek Lap Kok in 1998 have significantly increased the traffic demand between the north and south Lantau and exacerbated the traffic situation on TCR. The road is currently operating beyond its capacity of 100 vehicles per hour (vph), with a volume/capacity (V/C)² ratio of 1.4 during peak hours. The substandard design coupled with the busy traffic also affect safety on the road. Between 1998 and 2002, there were 163 traffic accidents on TCR, majority of which occurred between Lung Tseng Tau and Cheung Sha and resulting in 123 injuries. Rescue and recovery operations for serious traffic accidents on the road are difficult and often require full road closure for two to 12 hours due to jam-packed traffic at both ends of the accident scene. The prolonged road closures caused severe inconvenience to residents of south Lantau.

5. To meet the traffic demand up to 2016 and improve road safety, TCR is to be upgraded to a single two-lane rural road of 7.3-m wide with footpath for two-way traffic. First stage of such improvement works, namely “754TH – Widening of Tung Chung Road between Pa Mei and Lung Tseng Tau” is in progress and is planned for completion by December 2003. We now propose to proceed with second stage of the improvement works, i.e. the proposed improvement of the section of TCR between Lung Tseng Tau and Cheung Sha.

¹ The dual-permit system means the TCR Prohibited Zone Permit System and the Lantau Closed Road Permit System. Currently, all vehicles, except franchised buses, Lantau taxis and emergency vehicles, require both permits to travel on the section of TCR between Shek Mun Kap Road and South Lantau Road from 8:00 a.m. to 6:00 p.m. everyday. Vehicles not exceeding 5.5 tonnes but possessing only Lantau Closed Road Permits can travel on that section of TCR outside the above period. Vehicles exceeding 5.5 tonnes are generally banned from using that section of the road.

² V/C ratio is an indicator which reflects the performance of a road. A V/C ratio equal to or less than 1.0 means that a road has sufficient capacity to cope with the volume of vehicular traffic under consideration and the resultant traffic will flow smoothly. A V/C ratio above 1.0 indicates the onset of congestion; that above 1.2 indicates more serious congestion with traffic speeds deteriorating progressively with further increase in traffic.

6. Second stage of the improvement works involve widening and realignment of the section of TCR between Lung Tseng Tau and Pak Kung Au along its existing alignment and also construction of a new road for the section between Pak Kung Au and Cheung Sha to reduce the gradient to within 15%. We will also provide a roundabout at Cheung Sha to connect the TCR with South Lantau Road. The projected V/C ratios in 2006, 2011 and 2016 with and without the improvement works are as follows -

V/C Ratio of TCR ³	Year		
	2006	2011	2016
Without improvement	1.4	1.4	1.4
With improvement	0.69	0.84	0.99

7. The proposed improvement works will affect the Lantau North, Lantau South and the proposed Lantau North (Extension) Country Parks. To limit the footprint on the adjoining Country Parks and minimize the impacts on the key ecologically sensitive streams, we will construct elevated structures and retaining walls. We will also install a TCSS comprising four closed circuit televisions and a set of prismatic variable message signs for monitoring and directing traffic flow on TCR.

8. To expedite completion of the improvement works, we will carry out construction works in different road sections concurrently from 7:00 a.m. to 11:00 p.m. Each section will be opened to traffic upon completion of the works.

FINANCIAL IMPLICATIONS

9. We estimate the cost of the project to be \$629.8 million in money-of-the-day (MOD) prices made up as follows –

³ Assuming that the TCR Prohibited Zone Permit System will be waived after the commissioning of the upgraded road and the Lantau Closed Road Permit System will remain in operation.

		\$ million
(a)	Road and drainage works	98.9
(b)	Earthworks and retaining walls	300.9
(c)	Elevated highway structures	114.6
(d)	TCSS	5.8
(e)	Landscaping works	8.2
(f)	Consultants' fees	86.9
	(i) construction supervision and contract administration	10.3
	(ii) site staff costs	70.5
	(iii) environmental monitoring and audit (EM&A) programme ⁴	5.8
	(iv) Electrical and Mechanical Services Trading Fund (EMSTF) charges ⁵	0.3
(g)	Contingencies	<u>61.5</u>

⁴ We will engage consultants to implement an EM&A programme at estimated cost of \$5.8 million to ensure timely and effective implementation of the recommended mitigation measures for the project.

⁵ Since the establishment on 1 August 1996 under the Trading Fund Ordinance, the EMSTF charges government departments for design and technical consultancy services for E&M installations provided by the Electrical and Mechanical Services Department (EMSD). The services rendered for this project include checking consultants' submission on all E&M installations and providing technical advice to the Government on all E&M works and their impacts on the project.

	\$ million	
	Sub-total	676.8 (in September 2002 prices)
(h) Provision for price adjustment	(47.0)	
	Total:	629.8 (in MOD prices)

10. Item 9(a) includes road pavements, street furniture, traffic signs and road markings, drainage, temporary traffic arrangement measures. Item 9(b) includes slope cutting, embankment filling and retaining wall works. Item 9(c) includes bridges and associated foundation works.

11. We estimate the annual recurrent expenditure arising from this project to be \$2.7 million. It is expected to generate 515 jobs comprising 110 professional/technical staff and 405 labourers during construction stage, totalling 15 500 man-months.

ENVIRONMENTAL IMPLICATIONS

12. The project **718TH** is a designated project under Schedule 2 of the Environmental Impact Assessment (EIA) Ordinance and an environmental permit is required for the construction and operation. The Advisory Committee on the Environment endorsed the EIA report on 17 June 2002 with conditions. The Director of Environmental Protection (DEP) approved the EIA report for the project with conditions under the EIA Ordinance in July 2002.

13. The main environmental impacts of the proposed second stage of improvement works relate to water quality, ecology and noise impacts. We will implement a series of mitigation measures under **718TH** to ensure that statutory levels under the EIA Ordinance will not be exceeded. The mitigation measures are -

- (a) construction of elevated structures to traverse the key ecologically sensitive streams and retaining walls to minimize the extent of slope cutting. By doing so, we can minimize the footprint of the works and hence the adverse environmental impact particularly the loss of key habitats such as the Fong Yuen Marsh;

- (b) provision of drainage system to avoid carriageway runoff from being discharged into both the Tung Chung and Cheung Sha Streams and also to water gathering grounds;
- (c) re-planting of 25 hectares to compensate for trees felled due to the project works⁶; and
- (d) implementation of dust suppression measures and use of on-site movable barriers and quiet plants to control dust and noise impact during construction to within established standards.

14. As regards the noise impact, the statutory level is not expected to be exceeded in the initial years after completion of the project. We will monitor the noise level and will erect noise barriers when it becomes clear that the noise level is expected to exceed the statutory limit. DEP has agreed to the proposed arrangement. We will also consult the public on the details of the noise barriers (e.g. design) before their erection and arrange funding separately.

PUBLIC CONSULTATION

15. We last consulted this Panel on the improvement to Tung Chung Road on 19 January 2001 and 25 January 2002 respectively. On both occasions, Members urged the Administration to complete the improvement as soon as possible. We also consulted the Islands District Council (IDC) on 11 January 2001, 15 October 2001 and 10 June 2002 on the matter. Members supported the improvement and urged for its early completion.

16. We also consulted the Country and Marine Parks Board (CMPB) on 11 January 2001 and 20 June 2002 and its Country Parks Committee (CPC) on 19 November 2001 and 8 April 2003 on the Phase II improvement works under **718TH**. The CMPB raised no objection to the proposed improvement works and the proposed working hours for construction from 7:00 a.m. to 11:00 p.m. on weekdays and on Sundays and public holidays, on the condition that visual impacts of cut slopes should be minimised. We have further raised the possibility of 24-hour work and are in further discussion with the CPC on the issue.

17. We gazetted the road scheme for the second stage of the improvement works to TCR under the Roads (Works, Use and Compensation)

⁶ About 9,971 trees are found to fall within the project limit, of which we will retain some 5,478, transplant eight and fell 4,485 trees. We will replant about 148,880 trees and shrubs to compensate for the tress loss.

Ordinance on 1 November 2002. We will be seeking the Chief Executive-in-Council's authorization of the works shortly on this.

LAND ACQUISITION

18. We plan to resume about 890 square metres of private land for the proposed works. Land acquisition and clearance will not affect any structures and families. We will charge the land acquisition and clearance costs, estimated to be \$2.4 million at September 2002 prices to **Head 701** - "Land Acquisition" **Subhead 1100CA** - "Compensation and ex-gratia allowances in respect of projects in the Public Works Programme".

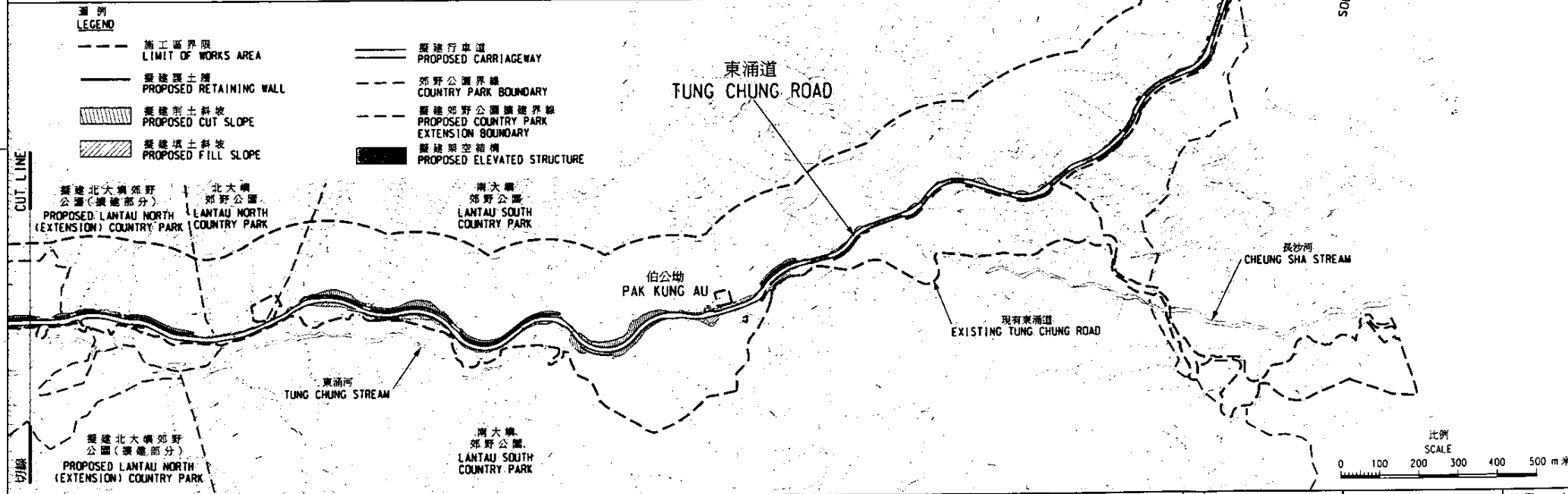
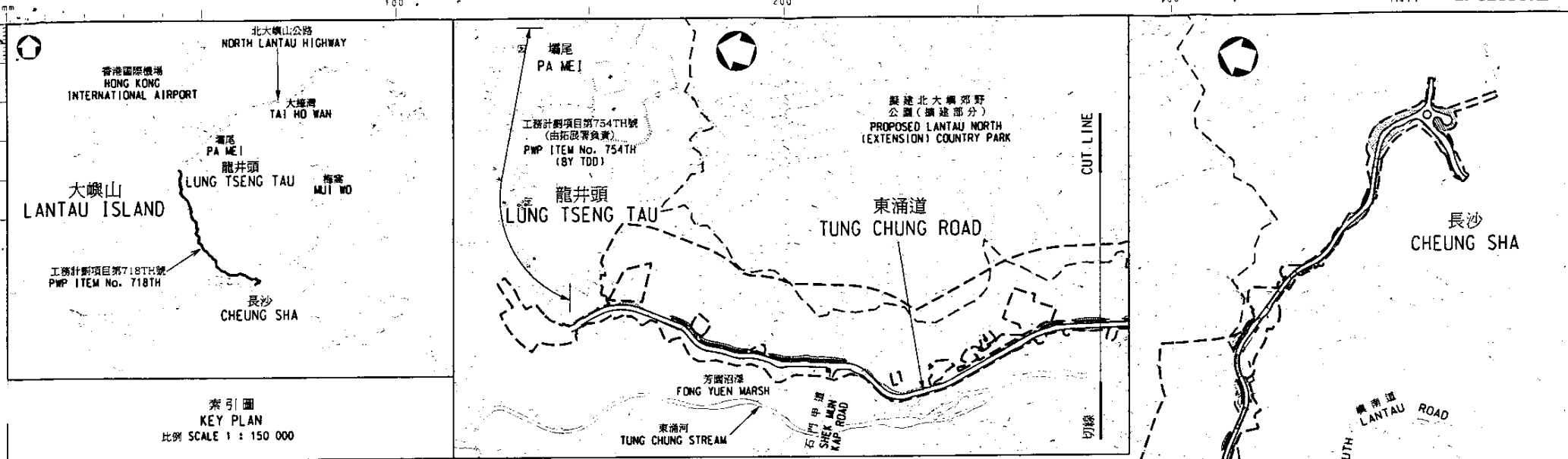
THE WAY FORWARD

19. We intend to submit the project to the Public Works Sub-Committee (PWSC) and Finance Committee (FC) of the Legislative Council in June 2003 and July 2003 respectively for upgrading the project to Category A. Subject to funding approval, we plan to commence construction in December 2003 and complete the works in two phases from end 2005 to end 2006. Improvement works will be carried out in sections and each section will be opened to traffic as soon as it is completed.

ADVICE SOUGHT

20. Members are invited to note the content of this paper.

Environment, Transport and Works Bureau
16 May 2003
ETWB(T)4/6/133



圖則名稱 plan title
工務計劃項目第718TH號
龍井頭至長沙一段東涌道的改善工程 - 位置圖
PWP ITEM No. 718TH
IMPROVEMENT TO TUNG CHUNG ROAD BETWEEN LUNG TSENG TAU AND CHEUNG SHA - LOCATION PLAN

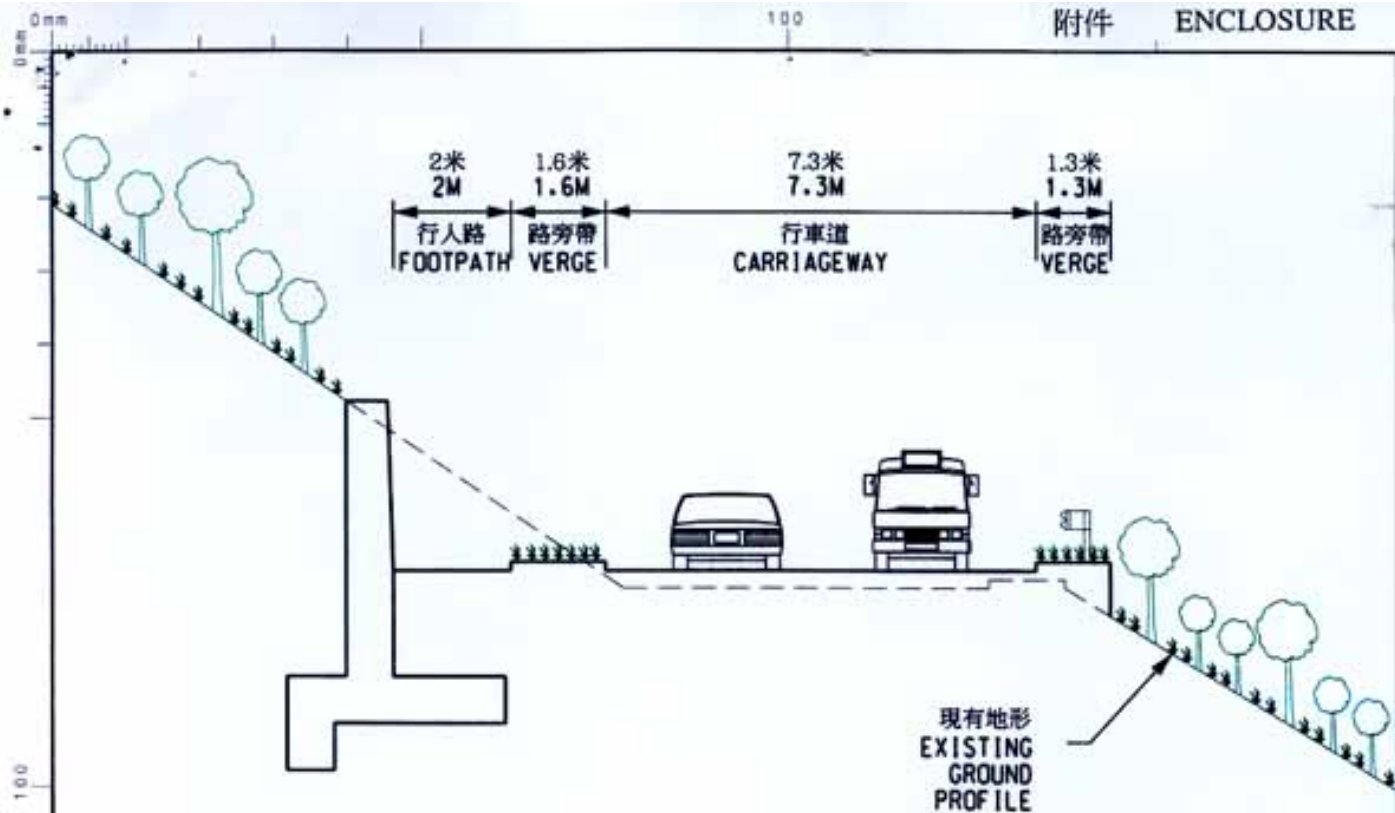
設計 designed Y.M.SIU 29/04/03	繪圖 drawn H.W.SHU 29/04/03
覆核 checked Y.M.SIU 16/05/03	批准 approved K.M.CHAN 16/05/03
主要工程管理處 MAJOR WORKS PROJECT MANAGEMENT OFFICE	

圖則編號 plan no.
HMW6718TH-SP0002

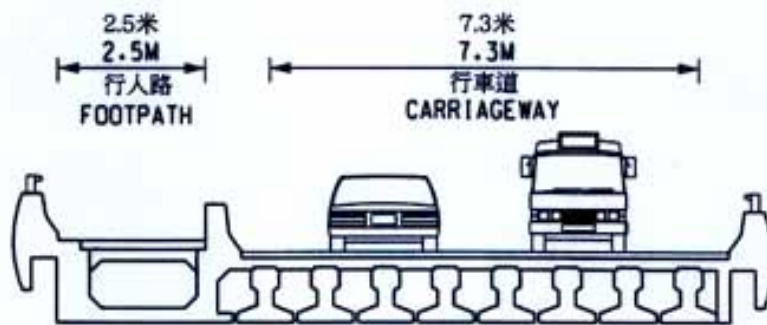
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HK HIGHWAYS 路
DEPARTMENT 政
HONG KONG 署



典型地面路橫切面
TYPICAL SECTION OF AT-GRADE ROAD



典型結構橫切面
TYPICAL SECTION OF STRUCTURE

圖則名稱 plan title 工務計劃項目第718TH號 龍井頭至長沙一段東涌道的改善工程-切面 PWP ITEM No. 718TH IMPROVEMENT TO TUNG CHUNG ROAD BETWEEN LUNG TSENG TAU AND CHEUNG SHA - SECTIONS 兩張中的第二張 (SHEET 2 OF 2)	設計 designed Y.M.SIU 29/04/03	繪圖 drawn W.K.CHIU 29/04/03	圖則編號 plan no. HMW6718TH-SP0003	比例 scale 不按比例 N.T.S.
	覆核 checked Y.M.SIU 16/05/03	批准 approved K.W. CHAN 16/05/03	© 版權所有 COPYRIGHT RESERVED	
	主要工程管理處 MAJOR WORKS PROJECT MANAGEMENT OFFICE		 HIGHWAYS DEPARTMENT HONG KONG 路政署 香港	