For discussion **PWSC(1999-2000)87**
on 26 January 2000

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 703 - BUILDINGS
Support - Boundary facilities (other than road works)
6GB - Expansion of kiosks and other facilities at Lok Ma Chau boundary crossing – remaining works

Members are invited to recommend to Finance Committee the upgrading of **6GB** to Category A at an estimated cost of $1,199.0 million in money-of-the-day prices for the remaining works of the expansion of Lok Ma Chau boundary crossing.

PROBLEM

The existing facilities at the Lok Ma Chau boundary crossing cannot cope with the anticipated increase in vehicular and passenger traffic between Hong Kong and Huanggang, Shenzhen.

PROPOSAL

2. The Director of Architectural Services (D Arch S), with the support of the Secretary for Security, proposes to upgrade **6GB** to Category A at an estimated cost of $1,199.0 million in money-of-the-day (MOD) prices to carry out the remaining works for the expansion of the Lok Ma Chau boundary crossing.

PROJECT SCOPE AND NATURE

3. The expansion project at the Lok Ma Chau boundary crossing is

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divided into two phases. The first phase which was approved by the Finance Committee in February 1999 comprises -

(a) the construction of ten additional pairs of immigration and customs kiosks for clearing vehicles in both directions of traffic (five Hong Kong bound and five Mainland bound) and three pairs of kiosks in the inbound direction for the re-provisioning of existing kiosks, canopy structure and traffic aids;

(b) the civil infrastructural works including site formation and associated geotechnical works to provide additional hardstanding area to accommodate the additional kiosks mentioned in sub-paragraph (a) above and canopy structures, roadworks, drainage, sewerage, lighting, traffic aids and utilities works; and

(c) the provision of computer systems for the additional kiosks for the immigration and customs clearance of the cross boundary traffic of people and vehicles.

4. The works in Phase 1 have been completed and the ten additional pairs of kiosks were opened to the public on 28 December 1999. Enclosure 1 is the site plan of Phase 1 works.

5. The remaining expansion works under **6GB,** which we now propose to upgrade to Category A, mainly involve the expansion of the passenger hall and support facilities, the improvement of the cargo examination facilities, the reprovisioning of the existing kiosks and the streamlining of traffic flow. The works include -

(a) the civil infrastructural works including site formation, reclamation and associated geotechnical works to provide additional hardstanding area to accommodate the new structures as described in sub-paragraphs (b) and (c) below, roadworks, drainage, sewerage, lighting, traffic aids and utilities works;

(b) the renovation and extension of the existing main building to provide additional office areas, customs

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and immigration counters, passenger queuing areas and public amenities to cater for an overall daily average of 35 000 passengers, together with associated building services works;

(c) the reprovisioning and extension of the cargo examination buildings, vehicle inspection and detention areas and related supporting facilities for the Customs & Excise Department (C&ED), Immigration Department (ImmD), Hong Kong Police Force, Food and Environmental Hygiene Department, Agriculture, Fisheries and Conservation Department and Department of Health;

(d) the reprovisioning of the remaining 11 pairs of existing kiosks (seven pairs in the outbound direction and four pairs in the inbound direction), canopy structures and traffic aids in each direction of traffic, together with associated building services works;

(e) the provision of two sets of fixed X-ray vehicle inspection systems, associated buildings and supporting services for C&ED; and

(f) the provision of computer systems for immigration and customs clearance at the reprovisioned kiosks, and within the reprovisioned cargo examination buildings and main buildings.

Enclosure 2 is the site plan for the remaining works under **6GB**. We intend to award the contract for the manufacture and installation of the fixed X-ray vehicle inspection systems in March 2000 and expect to complete the installation by December 2002. We plan to start the building works in November 2000, after we have incorporated the dimensions and other details of the fixed X-ray vehicle inspection systems into the relevant contract documents. We plan to complete the building works in September 2003.

JUSTIFICATION

6. The Lok Ma Chau boundary crossing opened in 1989 is the largest of the three vehicular land crossings. The road traffic between Hong Kong and

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Huanggang, Shenzhen has increased rapidly in the past decade. The daily average number of vehicles crossing the boundary at Lok Ma Chau rose from 6 300 in 1992 to 12 300 in 1995 and to 18 100 in 1999 (representing an increase of 187% over seven years). Passenger traffic has also increased substantially from a daily average of 2 300 in 1992 to 6 900 in 1995 and to 25 100 in 1999 (representing an increase of 991% over seven years). There has been frequent traffic congestion at the Lok Ma Chau crossing which, to a large extent, can be attributed to the physical constraints at the existing boundary crossing.

7. Prior to the commissioning of the ten additional pairs of kiosks under Phase 1 on 28 December 1999, there were only 14 pairs of customs and immigration kiosks (seven Hong Kong bound and seven Mainland bound), with a maximum handling capacity of about 1 200 vehicles per hour. The cross boundary traffic usually starts to build up in the early morning and by late morning the volume of traffic will have exceeded this maximum handling capacity, resulting in tail backs and congestion. Long queues accumulate and the congestion does not ease off until early evening when the volume of traffic reduces to the level of about 1 000 vehicles per hour. The capacity of the existing passenger hall is also stretched. It lacks sufficient immigration and customs counters and queuing areas. Boarding and alighting bays for passenger coaches are also very limited. These facilities can only barely cope with the current level of 25 000 passengers daily.

8. The latest traffic forecast for the Lok Ma Chau crossing suggests that cross boundary passenger and freight traffic will continue to increase at an annual growth rate of about 9%. To meet the anticipated demand up to 2004/2005 before the opening of the spur line between Lok Ma Chau and Sheung Shui (scheduled for completion in 2004) and the proposed Shenzhen Western Corridor (scheduled for completion in 2005), five additional pairs of kiosks in each direction for C&ED and ImmD have been provided under Phase 1 works with a total processing capacity of about 2 200 vehicles per hour. These works, while improving the throughflow of vehicles, cannot address the problem of overcrowding inside the passenger hall during peak hours, on festive days and at weekends, or of future increases in passenger movements. Therefore, we also need to provide the expansion of the main passenger hall and other facilities for user departments to facilitate passenger movements. These will include cargo examination facilities together with the provision of two sets of fixed X-ray vehicle inspection systems, and ancillary facilities to support the additional kiosks provided under Phase 1 to ensure streamlining of the cross boundary traffic. These are covered in the remaining works under **6GB**.

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9. There are now 28 immigration counters in the passenger hall. Ten additional counters will be provided in the remaining works under **6GB**. The extended passenger hall will also provide for expanded queuing areas. More boarding and alighting bays for passenger coaches will also be constructed. These improvements would increase the capacity of passenger throughput to an average of 35 000 per day, streamline passenger traffic flow and help maintain the present standard of immigration and customs services.

10. The provision of the two X-ray vehicle inspection systems is primarily to facilitate customs clearance of freight vehicles. Currently, searching of freight vehicles is conducted manually by Customs officers based on profiling techniques and intelligence. Cargoes have to be unloaded and unpacked for inspection. Detailed checks and thorough searches of the cargo compartment of a fully loaded freight vehicle involve time consuming laborious work and could affect the smooth flow of the cross boundary traffic. Use of the X-ray machine systems would reduce the need for unloading laden vehicles, speed up the customs clearance process, enhance customs detection capabilities and facilitate legitimate trade. Where necessary and appropriate, non-goods vehicles may also be checked by these X-ray vehicle inspection systems.

FINANCIAL IMPLICATIONS

11. We estimate the total capital cost of **6GB** to be $1,199.0 million in MOD prices (see paragraph 12 below), made up as follows -

		$ million
(a)	Site formation	36.5
(b)	Piling	50.0
(c)	Building and carriageways	303.6
(d)	Building services	111.8
(e)	Supply and installation of fixed X-ray vehicle inspection system and other electrical and mechanical facilities	208.3

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(f)	Drainage and external works		179.4	
(g)	Environmental mitigation measures		8.7	
(h)	Furniture and equipment		27.4	
(i)	Consultants' fees for		20.2	
	(i) contract administration	16.7		
	(ii) site supervision	3.5		
(j)	Electrical and Mechanical Services Trading Fund (EMSTF) charges for project management/contract administration[1]		10.0	
(k)	Contingencies		82.4	
	Sub-total		1,038.3	(at December 1998 prices)
(l)	Provisions for price adjustment		160.7	
	Total		1,199.0	(in MOD prices)

A breakdown by man months of the cost estimates for consultants' fees is at Enclosure 3.

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[1] Since the establishment of the EMSTF on 1 August 1996 under the Trading Funds Ordinance, government departments are charged for design and technical consultancy services for electrical and mechanical installations provided by the EMSTF. Services rendered for this project include project management services and contract administration for the provision and installation of the two fixed X-ray vehicle inspection systems, close circuit television systems, public address systems, high mast lighting, electronic traffic aids, intercom system, motorised barriers, dock levellers, under vehicles surveillance system, weigh bridge and miscellaneous equipment. The figures above are based on estimates prepared by the Director of Architectural Services. The actual cost for the service charges is subject to further discussion between the Government and the EMSTF.

12. Subject to approval, we will phase the expenditure as follows -

Year	$ million (Dec 1998)	Price adjustment factor	$ million (MOD)
2000 - 2001	82.1	1.05814	86.9
2001 - 2002	334.6	1.11104	371.8
2002 - 2003	417.4	1.16660	486.9
2003 - 2004	150.8	1.22493	184.7
2004 - 2005	53.4	1.28617	68.7
	1,038.3		1,199.0

13. We have derived the MOD estimates on the basis of the latest Government's forecast of trend labour and construction prices for the period 2000 to 2005. We will tender the building contract on a lump sum basis with provision for price fluctuation because the contract period will be longer than 21 months. The contract for the fixed X-ray vehicle inspection systems and other electrical and mechanical facilities will be tendered on a lump sum fixed price basis.

14. We estimate the additional annually recurrent expenditure of the project to be $68.55 million.

PUBLIC CONSULTATION

15. We consulted the Yuen Long Provisional District Board on the whole expansion project in December 1998. Members supported the expansion project. We also consulted representatives of the freight and transportation industry in September 1999. They indicated support of the expansion works which would improve the cross boundary traffic at the Lok Ma Chau boundary crossing. We briefed the Legislative Council Panel on Security on the proposed expansion works on 7 December 1999 and Members did not raise any objection.

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16. We will maintain full 24 hours operations of the boundary crossing during the works period and we will closely liaise with the industry and the relevant Mainland authorities to minimise congestion during the works, and to harness the full impact of the improvements on completion of the works.

ENVIRONMENTAL IMPLICATIONS

17. The Director of Highways engaged consultants in March 1995 to conduct a Preliminary Environmental Review (PER) for the project. The Director of Environmental Protection vetted and agreed the findings of the PER. The PER concluded that an environmental assessment study should be conducted at the detailed design stage to ensure that adverse environmental impacts arising from the construction and operation of the Lok Ma Chau boundary crossing extension would be mitigated to within established standards and guidelines.

18. Authorisation to proceed with the Lok Ma Chau boundary crossing was obtained under the Roads (Works, Use and Compensation) Ordinance in 1985, thus the project was exempted from the provisions of the Environmental Impact Assessment Ordinance. However, in line with current practice, we have completed an Environmental Study Report (ESR) in March 1999. The Advisory Committee on the Environment endorsed the findings and recommendations of the ESR. We will implement construction mitigation measures, water quality monitoring and the formation of compensatory reed beds to provide ecological compensation for affected disused fish ponds which have been partly undertaken in the Phase 1 expansion works. During construction, we will control noise, dust and site run-off nuisances to within established standards and guidelines. These will require, for example, the use of silencers, mufflers, acoustic lining or shields for noisy construction activities, hoarding, barriers, warning signs, dust screens, etc., frequent cleaning and watering of the site, wheel washing facilities, dust suppression equipment, the provision of temporary drainage within the site and the adequate maintenance of existing site drainage. For long term impact, we will complete the compensatory reed beds, construct an improved drainage system with fuel interceptors and provide noise barriers at the north-eastern boundary of the crossing facilities. We estimate the cost of implementing the above mitigation measures including environmental monitoring and auditing requirements to be $8.7 million. We have included this cost in the project estimate.

19. We estimate about 15 100 cubic metres of construction and demolition waste will be disposed of at landfills and 5 700 cubic metres of public

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fill will be delivered to public filling areas. We have considered in the planning and design stages to reduce the generation of construction and demolition materials as far as possible. We will require our contractor under the contracts to submit a waste management plan to the D Arch S for approval including the allocation of an area for waste segregation. We will ensure that the day-to-day operations on site comply with the waste management plan submitted. We will also require the contractor to re-use the excavated material, on site or on other sites, as filling materials as far as possible to minimise the disposal of public fill to public filling areas. To further minimise the generation of construction and demolition materials, we will encourage the contractor to use non-timber formwork, hoarding and other temporary works. We will require the contractor to separate public fill from construction and demolition waste for disposal at appropriate locations and to sort the construction and demolition waste by category on site to facilitate re-use/recycling in order to reduce the generation of such waste. We will control the disposal of construction and demolition materials to approved public filling facility and/or landfill through a trip ticket system, and record the disposal, reuse and recycling of construction and demolition materials for monitoring purposes.

LAND ACQUISITION

20. The project does not require any land acquisition.

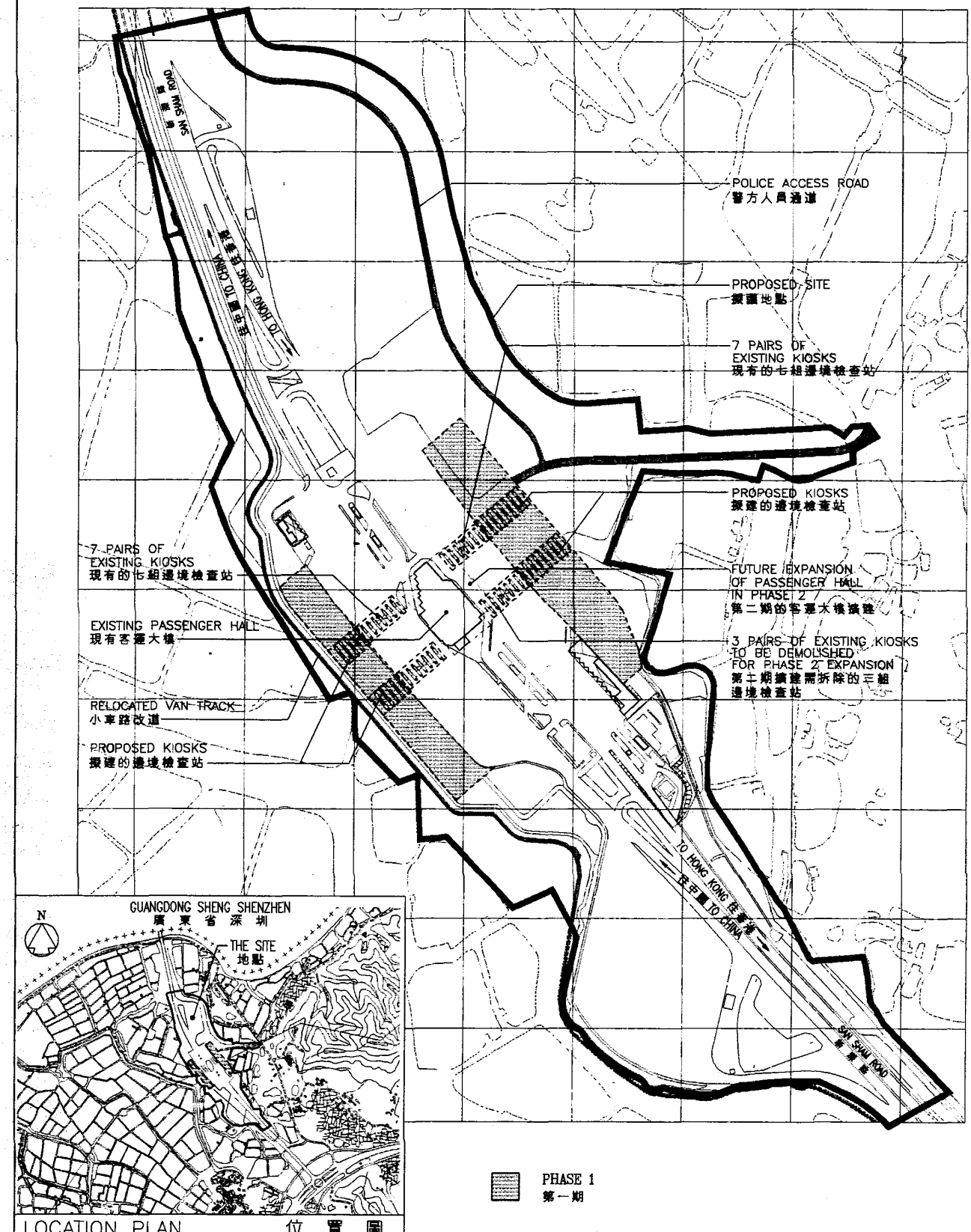
BACKGROUND INFORMATION

21. We upgraded **6GB** to Category B in September 1995. Finance Committee approved the upgrading of part of **6GB** in January 1998 as **7GB**, entitled "Expansion of kiosks and other facilities at Lok Ma Chau boundary crossing - pre-contract consultancy and design" with an approved project estimate (APE) of $104.1 million in MOD prices. Finance Committee further approved the upgrading of part of **6GB** in February 1999 as **8GB**, entitled "Expansion of kiosks and other facilities at Lok Ma Chau boundary crossing – phase 1 works" with an APE of $292.5 million in MOD prices. We have substantially completed the detailed design works. Phase 1 works comprising the construction of additional kiosks and associated civil infrastructural works under **8GB** were completed in December 1999.

Security Bureau
January 2000

(PWSC0217/WIN8)

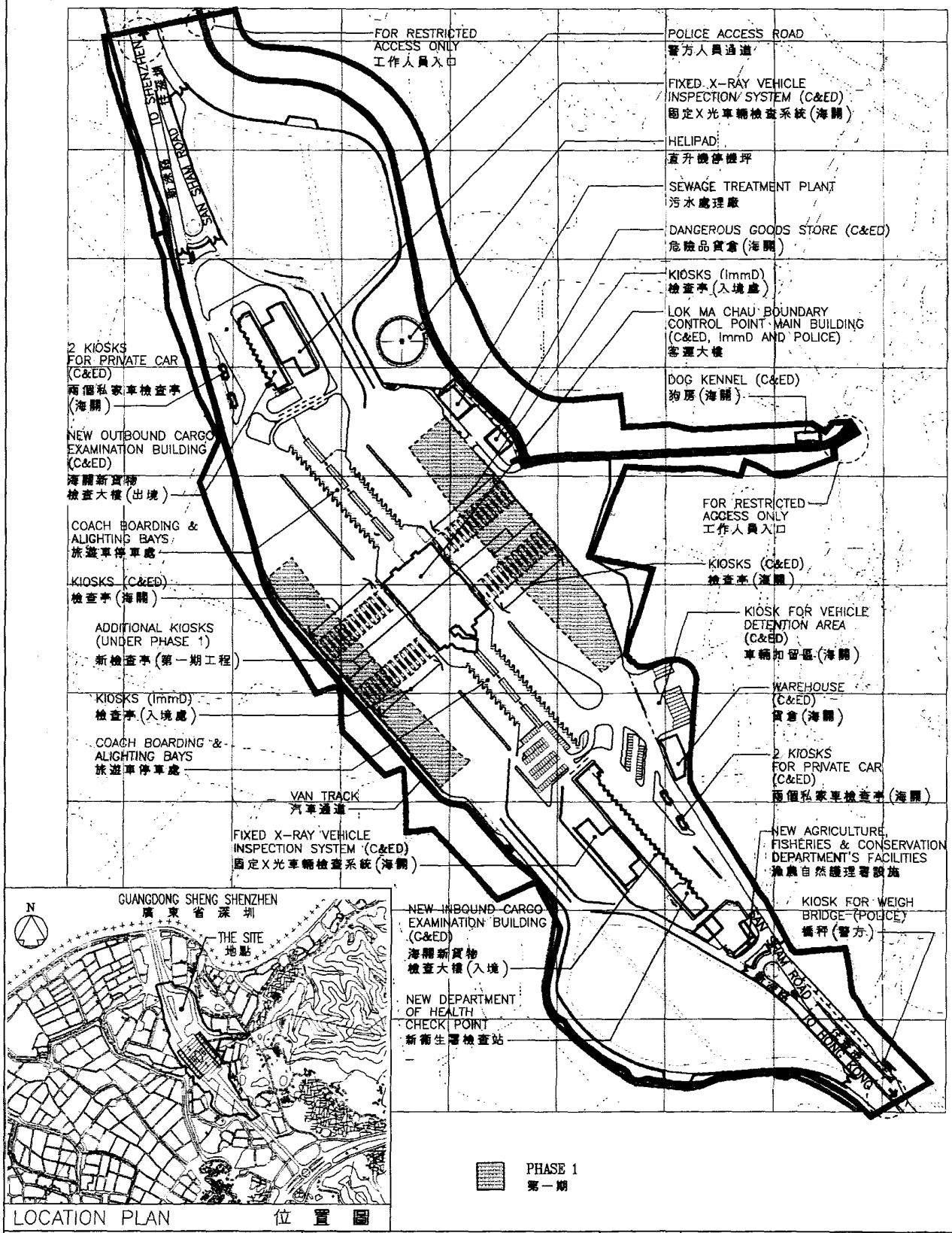
附件一
ENCLOSURE 1 TO PWSC
(1999-2000)87



LOCATION PLAN 位置圖

Title 8GB 擴建落馬洲跨界通道的檢查亭及其他設施 — 第一期 EXPANSION OF KIOSKS AND OTHER FACILITIES AT LOK MA CHAU BOUNDARY CROSSING – PHASE 1	drawn by	date 11-99	drawing no. K/01/11
	approved	date 11-99	scale 1:5000
	office ARCHITECTURAL BRANCH		ARCHITECTURAL SERVICES DEPARTMENT

附件二
ENCLOSURE 2 TO PWSC
(1999-2000)87



LOCATION PLAN 位置圖

Title 6GB 擴建落馬洲跨界通道的檢查亭及其他設施－餘下工程 EXPANSION OF KIOSKS AND OTHER FACILITIES AT LOK MA CHAU BOUNDARY CROSSING – REMAINING WORKS	drawn by	date 11-99	drawing no. K/01/11B	scale 1:5000
	approved	date 11-99		
	office ARCHITECTURAL BRANCH		ARCHITECTURAL SERVICES DEPARTMENT	

Enclosure 3 to PWSC(1999-2000)87

6GB - Expansion of kiosks and other facilities at Lok Ma Chau boundary crossing - remaining works

DETAILS OF CONSULTANTS' FEES

Breakdown of estimates of consultants' fees

			Estimated Man Months	Average MPS* salary point	Multiplier factor	Estimated fee ($million)
(A)	**Consultants' staff costs**					
(I)	Contract administration					
	(a) Architectural discipline	Professional	58.3	40	2.4	8.78
		Technical	43.6	16	2.4	2.20
	(b) Civil/structural engineering discipline	Professional	16.6	40	2.4	2.50
		Technical	19.8	16	2.4	1.00
	(c) Building services discipline	Professional	10.0	40	2.4	1.50
		Technical	13.9	16	2.4	0.70
	(d) Specialist consultants (traffic engineering)	Professional	0.1	40	2.4	0.02
					Sub-total	16.70
(II)	Site supervision					
	Civil/structural engineering discipline	Professional	30.0	40	1.7	3.20
		Technical	8.4	16	1.7	0.30
					Sub-total	3.50
					Total	20.20

* MPS = Master Pay Scale

Notes

1 A multiplier factor of 2.4 is applied to the average MPS point to arrive at the full staff costs including the consultant's overheads and profit, as the staff will be employed in the consultant's offices (At 1.4.1998, MPS pt. 40 = $62,780 p.m. and MPS pt. 16 = $21,010 p.m.). A multiplier factor of 1.7 is applied in case of site staff supplied by the consultants.

2 The consultants' fees for the post-contract stage formed an optional part of the lump sum price quoted by the consultants selected to carry out the consultancy services for both **7GB** and **8GB**. Subject to Members' approval to upgrade **6GB** to Category A, the Director of Architectural Services will direct the necessary works to be carried out.

(PWSC0217/WIN8)